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The limits of the nuclear landscape explored by the relativistic continuum Hartree–Bogoliubov theory

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ABSTRACT

The ground-state properties of nuclei with $8 \leqslant Z \leqslant 120$ from the proton drip line to the neutron drip line have been investigated using the spherical relativistic continuum Hartree–Bogoliubov (RCHB) theory with the relativistic density functional PC-PK1. With the effects of the continuum included, there are totally 9035 nuclei predicted to be bound, which largely extends the existing nuclear landscapes predicted with other methods. The calculated binding energies, separation energies, neutron and proton Fermi surfaces, root-mean-square (rms) radii of neutron, proton, matter, and charge distributions, ground-state spins and parities are tabulated. The extension of the nuclear landscape obtained with RCHB is discussed in detail, in particular for the neutron-rich side, in comparison with the relativistic mean field calculations without pairing correlations and also other predicted landscapes. It is found that the coupling between the bound states and the continuum due to the pairing correlations plays an essential role in extending the nuclear landscape. The systematics of the separation energies, radii, densities, potentials and pairing energies of the RCHB calculations are also discussed. In addition, the α-decay energies and proton emitters based on the RCHB calculations are investigated.

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Contents

1. Introduction

Nuclear landscape or nuclear chart is a diagrammatic representation of atomic nuclei consisting of a bound collection of Z protons and N neutrons using Z and N as axes in the plot. Along or near to the diagonal $N = Z$ line, the stable nuclei inhabit, forming the valley of stability. Away from this valley by adding or removing nucleons, there emerge the vast territory of short-lived radioactive nuclei, which disintegrate by emitting particles or other transmutations. Sequentially adding or removing more nucleons, the boundary of nuclear landscape, i.e., the drip line, is reached. Exploring the limit of nuclear binding has always been a priority in nuclear physics and investigating the properties of all nuclei in the nuclear landscape is crucial for understanding the nuclear force, and the formation of elements in astrophysics, etc. [1,2].

To date, the existence of about 3000 nuclides has been confirmed experimentally [1,2]. The proton-rich boundary of the nuclear territory has been experimentally determined up to protactinium [1,2]. However, the neutron-rich boundary is known only up to oxygen [1,2], and most of the neutron-rich nuclei far from the valley of stability seem still beyond the experimental capability in the foreseeable future.

The nuclear mass or binding energy is of crucial importance not only to nuclear structure, but also to the weak interactions [3,4] and the origin of elements [5]. Despite of the considerable achievements in the precise mass measurements [6], the vast territory of neutron-rich nuclei are still beyond the experimental capability. Therefore, the development of a reliable theoretical nuclear mass model is very important to grasp a complete understanding of the nature.

Many theoretical efforts have been made to predict nuclear binding energies and to explore the great unknowns of the nuclear landscape [7–28]. With macroscopic–microscopic models, precise descriptions of nuclear masses have been achieved [7–14]. Based on the non-relativistic density functional theory (DFT), a series of Hartree–Fock–Bogoliubov mass models has been developed [15–19]. Recently, to explore the limits of the nuclear landscape and to estimate theoretical uncertainties in drip lines, the Skyrme-DFT calculations with six different parametrizations have been performed, and approximately 7000 bound nuclei with $Z \leq 120$ were predicted [20]. However, the continuum effects are absent in these investigations.

The covariant density functional theory (CDFT) has attracted wide attentions for its successful description of many nuclear phenomena [29–34]. It includes naturally the nucleonic spin degree of freedom and automatically results in the nuclear spin–orbit potential with the empirical strength in a covariant way. It can reproduce well the isotopic shifts in the Pb region [35], and give naturally the origin of the pseudospin symmetry [36] and the spin symmetry in the anti-nucleon spectrum [37,38]. Furthermore, it can include the nuclear magnetism [39], that is, a consistent description of currents and time-odd fields, which plays an important role in nuclear magnetic moments [40–44] and nuclear rotations [33,45–51].

Therefore, it is natural to investigate the nuclear landscape based on the CDFT. The masses of about 2000 even–even nuclei with $8 \leq Z \leq 120$ up to the proton and neutron drip lines were investigated using relativistic mean field (RMF) theory without pairing correlations in 1997 [21]. Later on, by including pairing correlations with Bardeen–Cooper–Schrieffer (BCS) method, the ground-state properties of 1315 even-even nuclei with $10 \leq Z \leq 98$ were calculated [22]. By employing the state-dependent BCS method with a zero-range pairing force, the first systematic study of the ground-state properties for over 7000 nuclei ranging from the proton drip line to the neutron drip line was performed [23]. To explore the location of the proton and neutron drip lines, a systematic investigation has been performed for even–even nuclei by employing relativistic Hartree–Bogoliubov (RHB) theory with four sets of parametrizations [24–26]. Very recently, the binding energies for even–even nuclei with proton number ranging from $Z = 8$ to $Z = 108$ were calculated and the dynamical correlation energies which include the rotational correction energies and quadrupole vibrational correction energies were investigated [27,28].

It is well known that continuum and pairing correlations play a critical role in exotic nuclei. For the exotic nuclei close to the nucleon drip lines, where the Fermi levels are very close to the continuum threshold, pairing correlations can scatter the valence nucleons between the bound states and continuum, and therefore provide a significant coupling between them. As a result, some unbound nuclei predicted without pairing correlations can exist as a bound state. For example, it is found that after taking into account pairing correlations and the contribution from continuum, the neutron-rich nuclei $^{62-72}$Ca predicted unbound without pairing correlations are found to be bound [52]. Therefore, the couplings between the bound states and the continuum due to the pairing correlations can strongly influence the position of the drip line.

A consistent description of neutron-rich nuclei requires a unified and self-consistent treatment of continuum, mean-field potentials and pairing correlations. By extending the relativistic mean field theory with the Bogoliubov transformation in the coordinate representation, the relativistic continuum Hartree–Bogoliubov (RCHB) theory was developed [53,54] and it provides a proper treatment of pairing correlations and mean-field potentials in the presence of the continuum. With the RCHB theory, the first microscopic self-consistent description of halo in ^{11}Li has been provided [53] and the giant halos in light and medium-heavy nuclei have been predicted [52,55,56]. The RCHB theory has been generalized to treat the odd nucleon system [57], and together with the Glauber model, the charge-changing cross sections from carbon (C) to fluorine (F) isotopes on a carbon target have been well reproduced [58]. For deformed nuclei, much effort has been made to develop a deformed RHB theory in continuum and an interesting shape decoupling between the core and the halo was predicted [59,60]. Later, the deformed RHB theory in continuum has been extended to incorporate the density-dependent meson–nucleon couplings [61], and the blocking effect which is required for the description of odd-nucleon systems [62].

As one of the most successful relativistic energy density functionals, PC-PK1 [63], which is fitted to the binding energies, charge radii, and empirical pairing gaps of 60 selected spherical nuclei, has been used successfully in describing not only nuclear ground-state properties [27,28,64] but also various excited state properties [65–72]. In particular, PC-PK1 provides a good description for the isospin dependence of binding energy along either the isotopic or the isotonic chain, which makes it more reliable for describing exotic nuclei [63,64].

Focusing on the continuum effects on the limits of the nuclear landscape, systematic spherical calculations over the nuclear landscape in the framework of RCHB theory with PC-PK1 will be performed. As a first attempt, the results from O to Ti isotopes were reported in Ref. [73], and the nuclear landscape from O to Ti is remarkably extended. Here, the results for all isotopes from $Z = 8$ and $Z = 120$ are reported. The paper is organized as follows: In Section 2, the theoretical framework is introduced briefly. The numerical details are given in Section 3. Extensive results are compiled in Section 4, including the binding energies, one-nucleon and two-nucleon separation energies, neutron and proton Fermi surfaces, root-mean-square (rms) radii of neutron, proton, matter, and charge distributions, ground-state spins and parities. Finally, a brief summary is presented.

2. Theoretical framework

The covariant density functional theory is constructed with either the finite-range meson-exchange interaction or the contact interaction in the point-coupling representation between nucleons [29,31,34,63,74,75]. For the former, the nucleus is described as a system of Dirac nucleons that interact with each other via the exchange of mesons (e.g., scalar meson σ, vector meson ω, and isovector meson ρ). For the latter, the meson exchange in each channel (scalar–isoscalar, vector–isoscalar, scalar–isovector, and vector–isovector) is replaced by the corresponding local four-point (contact) interaction between nucleons.

Following the point-coupling representation in Ref. [63], one starts with the Lagrangian density as

$$\begin{aligned}\mathcal{L} = {} & \bar{\psi}(i\gamma_\mu\partial^\mu - M)\psi - \frac{1}{2}\alpha_S(\bar{\psi}\psi)(\bar{\psi}\psi) \\ & - \frac{1}{2}\alpha_V(\bar{\psi}\gamma_\mu\psi)(\bar{\psi}\gamma^\mu\psi) - \frac{1}{2}\alpha_{TV}(\bar{\psi}\vec{\tau}\gamma_\mu\psi)(\bar{\psi}\vec{\tau}\gamma^\mu\psi) \\ & - \frac{1}{2}\alpha_{TS}(\bar{\psi}\vec{\tau}\psi)(\bar{\psi}\vec{\tau}\psi) - \frac{1}{3}\beta_S(\bar{\psi}\psi)^3 \\ & - \frac{1}{4}\gamma_S(\bar{\psi}\psi)^4 - \frac{1}{4}\gamma_V[(\bar{\psi}\gamma_\mu\psi)(\bar{\psi}\gamma^\mu\psi)]^2 \\ & - \frac{1}{2}\delta_S\partial_\nu(\bar{\psi}\psi)\partial^\nu(\bar{\psi}\psi) - \frac{1}{2}\delta_V\partial_\nu(\bar{\psi}\gamma_\mu\psi)\partial^\nu(\bar{\psi}\gamma^\mu\psi) \\ & - \frac{1}{2}\delta_{TV}\partial_\nu(\bar{\psi}\vec{\tau}\gamma_\mu\psi)\partial^\nu(\bar{\psi}\vec{\tau}\gamma_\mu\psi) \\ & - \frac{1}{2}\delta_{TS}\partial_\nu(\bar{\psi}\vec{\tau}\psi)\partial^\nu(\bar{\psi}\vec{\tau}\psi) \\ & - \frac{1}{4}F^{\mu\nu}F_{\mu\nu} - e\frac{1-\tau_3}{2}\bar{\psi}\gamma^\mu\psi A_\mu, \end{aligned} \tag{1}$$

where M is the nucleon mass; A_μ and $F_{\mu\nu}$ are respectively the four-vector potential and field strength tensor of the electromagnetic field. Here α_S, α_V, α_{TS} and α_{TV} represent the coupling constants for four-fermion point-coupling terms, β_S, γ_S and γ_V are those for the higher-order terms which are responsible for the effects of medium dependence, and δ_S, δ_V, δ_{TS} and δ_{TV} refer to those for the gradient terms which are included to simulate the finite range effects. The subscripts S, V and T stand for scalar, vector and isovector, respectively.

The Hamiltonian density can be obtained by the Legendre transformation,

$$\mathcal{H} = \frac{\partial\mathcal{L}}{\partial(\partial_0\phi)}\partial_0\phi - \mathcal{L}, \tag{2}$$

where ϕ represents the nucleon or photon field. Then, the total Hamiltonian reads,

$$\begin{aligned} H = {} & \int d^3r\mathcal{H} \\ = {} & \int d^3r\{\bar{\psi}(-i\gamma^i\partial_i + M)\psi \\ & + \frac{1}{2}\alpha_S(\bar{\psi}\psi)(\bar{\psi}\psi) + \frac{1}{2}\alpha_V(\bar{\psi}\gamma_\mu\psi)(\bar{\psi}\gamma^\mu\psi) \\ & + \frac{1}{2}\alpha_{TV}(\bar{\psi}\vec{\tau}\gamma_\mu\psi)(\bar{\psi}\vec{\tau}\gamma^\mu\psi) \\ & + \frac{1}{3}\beta_S(\bar{\psi}\psi)^3 + \frac{1}{4}\gamma_S(\bar{\psi}\psi)^4 + \frac{1}{4}\gamma_V[(\bar{\psi}\gamma_\mu\psi)(\bar{\psi}\gamma^\mu\psi)]^2 \\ & - \frac{1}{2}\delta_V[\partial_0(\bar{\psi}\gamma_\mu\psi)\partial^0(\bar{\psi}\gamma^\mu\psi) + \nabla(\bar{\psi}\gamma_\mu\psi)\cdot\nabla(\bar{\psi}\gamma^\mu\psi)] \\ & - \frac{1}{2}\delta_{TV}[\partial_0(\bar{\psi}\vec{\tau}\gamma_\mu\psi)\partial^0(\bar{\psi}\vec{\tau}\gamma^\mu\psi) + \nabla(\bar{\psi}\vec{\tau}\gamma_\mu\psi)\cdot\nabla(\bar{\psi}\vec{\tau}\gamma^\mu\psi)] \\ & + \frac{1}{4}F^{\mu\nu}F_{\mu\nu} + e\bar{\psi}\gamma^\mu\frac{1-\tau_3}{2}A_\mu\psi - F^{0\mu}\partial^0A_\mu\}. \end{aligned} \tag{3}$$

With the mean-field and the no-sea approximations, the nucleon field operators can be written as

$$\begin{aligned}\psi(x) &= \sum_k \psi_k(x)c_k, \\ \psi^\dagger(x) &= \sum_k \psi_k^\dagger(x)c_k^\dagger, \end{aligned} \tag{4}$$

where c_k is the annihilation operator for a nucleon in the state k and ψ_k is the corresponding single-particle wave function. The operator c_k and its conjugate $c_k^\dagger$ satisfy the anticommutation relation for fermions,

$$\{c_k, c_{k'}^\dagger\} = \delta_{kk'},$$
$$\{c_k, c_{k'}\} = \{c_k^\dagger, c_{k'}^\dagger\} = 0. \tag{5}$$

The ground state of a nucleus can be written as

$$|\Phi\rangle = \prod_i^A c_i^\dagger|0\rangle \text{ with } \langle\Phi|\Phi\rangle = 1. \tag{6}$$

The energy density functional for the nucleus system can be represented as

$$\begin{aligned} E_{DF} &= \langle\Phi|H|\Phi\rangle \\ &= \int d^3r\{\sum_k \psi_k^\dagger(\boldsymbol{\alpha}\cdot\boldsymbol{p} + \beta M)\psi_k + \frac{1}{2}\alpha_S\rho_S^2 + \frac{1}{2}\alpha_V j_\mu j^\mu \\ &+ \frac{1}{2}\alpha_{TV}(\vec{j}_{TV})_\mu\vec{j}_{TV}^\mu \\ &+ \frac{1}{3}\beta_S\rho_S^3 + \frac{1}{4}\gamma_S\rho_S^4 + \frac{1}{4}\gamma_V(j_\mu j^\mu)^2 \\ &- \frac{1}{2}\delta_S[\partial_0\rho_S\partial^0\rho_S + \nabla\rho_S\cdot\nabla\rho_S] \\ &- \frac{1}{2}\delta_V[\partial_0 j_\mu\partial^0 j^\mu + \nabla j_\mu\cdot\nabla j^\mu] \\ &- \frac{1}{2}\delta_{TV}[\partial_0(\vec{j}_{TV})_\mu\partial^0\vec{j}_{TV}^\mu + \nabla(\vec{j}_{TV})_\mu\cdot\nabla\vec{j}_{TV}^\mu] \\ &+ eA_\mu j_p^\mu - F^{0\mu}\partial^0 A_\mu + \frac{1}{4}F_{\mu\nu}F^{\mu\nu}\}, \end{aligned} \tag{7}$$

where the local densities and currents are given by

$$\rho_S = \langle\Phi|:\bar{\psi}\psi:|\Phi\rangle = \sum_k^A \bar{\psi}_k(x)\psi_k(x), \tag{8a}$$

$$j^\mu = \langle\Phi|:\bar{\psi}\gamma^\mu\psi:|\Phi\rangle = \sum_k^A \bar{\psi}_k(x)\gamma^\mu\psi_k(x), \tag{8b}$$

$$\vec{j}_{TV}^\mu = \langle\Phi|:\bar{\psi}\gamma^\mu\vec{\tau}\psi:|\Phi\rangle = \sum_k^A \bar{\psi}_k(x)\gamma^\mu\vec{\tau}\psi_k(x), \tag{8c}$$

$$j_p^\mu = \langle\Phi|:\bar{\psi}\gamma^\mu\frac{1-\tau_3}{2}\psi:|\Phi\rangle = \sum_k^A \bar{\psi}_k(x)\gamma^\mu\frac{1-\tau_3}{2}\psi_k(x). \tag{8d}$$

By minimizing the energy density functional with respect to the densities, one obtains the Dirac equation for the nucleons:

$$[\boldsymbol{\alpha}\cdot(\boldsymbol{p} - \boldsymbol{V}) + V^0 + \beta(M + S)]\psi_k = \varepsilon\psi_k, \tag{9}$$

with the local scalar $S(\boldsymbol{r})$ and vector $V^\mu(\boldsymbol{r})$ potentials

$$S(\mathbf{r}) = \alpha_S\rho_S + \beta_S\rho_S^2 + \gamma_S\rho_S^3 + \delta_S\triangle\rho_S, \tag{10}$$

$$\begin{aligned} V^\mu(\mathbf{r}) &= \alpha_V j^\mu + \gamma_V(j_\mu j^\mu)j^\mu + \delta_V\triangle j^\mu + eA^\mu \\ &+ \alpha_{TV}\tau_3\vec{j}_{TV}^\mu + \delta_{TV}\tau_3\triangle\vec{j}_{TV}^\mu. \end{aligned} \tag{11}$$

For a system with time reversal invariance, the space-like components of the current and the vector potential vanish. Furthermore, one can assume that the nucleon single-particle states do not mix isospin, i.e. the single-particle states are eigenstates of τ_3. Therefore, the energy density functional can be written as

$$\begin{aligned} E_{\mathrm{DF}} &= \langle\Phi|H|\Phi\rangle \\ &= \int d^3r\{\sum_k \psi_k^\dagger(\boldsymbol{\alpha}\cdot\boldsymbol{p} + \beta M)\psi_k + \frac{1}{2}\alpha_S\rho_S^2 \\ &+ \frac{1}{2}\alpha_V\rho_V^2 + \frac{1}{2}\alpha_{TV}(\rho_{TV})^2 \\ &+ \frac{1}{3}\beta_S\rho_S^3 + \frac{1}{4}\gamma_S\rho_S^4 + \frac{1}{4}\gamma_V(\rho_V)^4 + \frac{1}{2}\delta_S\rho_S\Delta\rho_S \\ &+ \frac{1}{2}\delta_V\rho_V\Delta\rho_V + \frac{1}{2}\delta_{TV}\rho_{TV}\Delta\rho_{TV} + \frac{1}{2}eA_0\rho_p\}. \end{aligned} \tag{12}$$

Pairing correlations are crucial in the description of open-shell nuclei. The relativistic Hartree–Bogoliubov model provides a unified description of particle–hole (ph) and particle–particle (pp) correlations on a mean field level by using two average potentials: the self-consistent mean field $\hat{h}$ and a pairing field $\hat{\Delta}$. In analogy to Eq. (6) the ground state of a nucleus is described by a generalized Slater determinant $|\Phi\rangle$ that represents the vacuum with respect to quasiparticles. The quasiparticle operators are defined by the unitary Bogoliubov transformation of the single-nucleon creation and annihilation operators

$$\alpha_k^\dagger = \sum_n U_{nk}c_n^\dagger + V_{nk}c_n, \tag{13}$$

and ground state wave function can be written as

$$|\Phi\rangle = \prod_k \alpha_k|-\rangle, \tag{14}$$

where the index n refers to the original basis, e.g. an oscillator basis or the coordinates in space, spin and isospin ($\boldsymbol{r}, s, t$). The matrices U and V are the Hartree–Bogoliubov wave functions determined by the variational principle. In the presence of pairing, the single-particle density matrix is generalized to two different densities: the normal density $\hat{\rho}$ and the pairing tensor $\hat{\kappa}$,

$$\begin{aligned} \hat{\rho}_{nn'} &= \langle\Phi|c_{n'}^\dagger c_n|\Phi\rangle, \\ \hat{\kappa}_{nn'} &= \langle\Phi|c_{n'}c_n|\Phi\rangle. \end{aligned} \tag{15}$$

The RHB energy density functional thus depends on both $\hat{\rho}$ and $\hat{\kappa}$

$$E_{\mathrm{RHB}}[\hat{\rho}, \hat{\kappa}] = E_{\mathrm{DF}}[\hat{\rho}] + E_{\mathrm{pair}}[\hat{\kappa}], \tag{16}$$

where $E_{DF}[\hat{\rho}]$ is the usual relativistic mean-field functional defined in Eq. (7) or (12), and the pairing part of the RHB functional reads

$$E_{\mathrm{pair}}[\hat{\kappa}] = \frac{1}{4}\sum_{n_1n_1'}\sum_{n_2n_2'}\hat{\kappa}_{n_1n_1'}^*\langle n_1n_1'|V^{pp}|n_2n_2'\rangle\hat{\kappa}_{n_2n_2'}, \tag{17}$$

where $\langle n_1n_1'|V^{pp}|n_2n_2'\rangle$ represent the matrix elements of the pairing interaction. The RHB equation is obtained by the variational principle,

$$\begin{pmatrix} \hat{h}_D - \lambda & \hat{\Delta} \\ -\hat{\Delta}^* & -\hat{h}_D + \lambda \end{pmatrix}\begin{pmatrix} U_k \\ V_k \end{pmatrix} = E_k\begin{pmatrix} U_k \\ V_k \end{pmatrix}, \tag{18}$$

where E_k is the quasiparticle energy, λ the chemical potential or the Fermi surface, and h_D the Dirac Hamiltonian in Eq. (9), in which the densities can be constructed by quasiparticle wave functions,

$$\begin{aligned} \rho_S(\mathbf{r}) &= \sum_{k>0}\bar{V}_k(\mathbf{r})V_k(\mathbf{r}), \\ \rho_V(\mathbf{r}) &= \sum_{k>0}V_k^\dagger(\mathbf{r})V_k(\mathbf{r}), \\ \rho_{TV}(\mathbf{r}) &= \sum_{k>0}V_k^\dagger(\mathbf{r})\tau_3V_k(\mathbf{r}). \end{aligned} \tag{19}$$

The pairing potential is determined by

$$\hat{\Delta}_{n_1n_1'} = \frac{1}{2}\sum_{n_2n_2'}\langle n_1n_1'|V^{pp}|n_2n_2'\rangle\hat{\kappa}_{n_2n_2'}, \tag{20}$$

which depends on the pairing tensor $\kappa = U^*V^T$ and pairing interaction V^{pp} in the particle–particle channel. There have been several

types of effective pairing forces V^{pp} in the literatures. The finite-range Gogny force can provide a good treatment of the coupling to the highly excited states but requires more numerical costs [76]. The separable pairing force is also a finite-range force but has a separable form, which reduces significantly the computational costs [77]. The density-dependent zero-range force has a simple form and a realistic density-dependent behavior

$$V^{pp}(\mathbf{r_1},\mathbf{r_2}) = V_0\delta(\mathbf{r_1}-\mathbf{r_2})\frac{1}{2}(1-P^\sigma)(1-\eta\frac{\rho(\mathbf{r_1})}{\rho_0}). \tag{21}$$

Here, V_0 is the interaction strength and ρ_0 is the saturation density of nuclear matter. Note that η here can be either 0 or 1. For $\eta = 1$, it is called as a surface pairing force, because the force is dramatically suppressed in the nuclear interior and has its largest contribution in the surface. Conversely, $\eta = 0$ corresponds to a volume pairing force. For a zero-range pairing force, one has to introduce an energy cut-off to avoid the divergence of the pairing energy and, thus, the interaction strength V_0 has to be properly justified in a given cut-off.

With spherical symmetry, the quasiparticle wave function in the coordinate space can be written as

$$U_k = \frac{1}{r}\begin{pmatrix} iG_U^k(r)Y_{jm}^l(\theta,\phi) \\ F_U^k(r)(\boldsymbol{\sigma}\cdot\hat{\mathbf{r}})Y_{jm}^l(\theta,\phi)\end{pmatrix}\chi_t(t),$$
$$V_k = \frac{1}{r}\begin{pmatrix} iG_V^k(r)Y_{jm}^l(\theta,\phi) \\ F_V^k(r)(\boldsymbol{\sigma}\cdot\hat{\mathbf{r}})Y_{jm}^l(\theta,\phi)\end{pmatrix}\chi_t(t). \tag{22}$$

The corresponding RHB equation can be expressed as the following radial integral–differential equations in coordinate space [54]:

$$\begin{aligned}
&\frac{dG_U}{dr}+\frac{\kappa}{r}G_U(r)-(E+\lambda-V(r)+S(r))F_U(r)\\
&\quad+r\int r'dr'\Delta_F(r,r')F_V(r')=0,\\
&\frac{dF_U}{dr}-\frac{\kappa}{r}F_U(r)+(E+\lambda-V(r)-S(r))G_U(r)\\
&\quad+r\int r'dr'\Delta_G(r,r')G_V(r')=0,\\
&\frac{dG_V}{r}+\frac{\kappa}{r}G_V(r)+(E-\lambda+V(r)-S(r))F_V(r)\\
&\quad+r\int r'dr'\Delta_F(r,r')F_U(r')=0,\\
&\frac{dF_V}{r}-\frac{\kappa}{r}F_V(r)-(E-\lambda+V(r)+S(r))G_V(r)\\
&\quad+r\int r'dr'\Delta_G(r,r')G_U(r')=0.
\end{aligned} \tag{23}$$

If the zero-range pairing force is applied, the above coupled integral-differential equations can be reduced to differential ones, which can be solved in coordinate space using the shooting method with Runge–Kutta algorithms [54]. After the solution, new densities and fields are obtained, which are iterated in the differential equations until convergence is achieved.

Finally, one can calculate the total energy of a nucleus by [54]

$$\begin{aligned}
E_{\mathrm{RHB}} &= \sum_k(\lambda-E_k)V_k^2-E_{\mathrm{pair}}\\
&\quad-\int d^3r\{\frac{1}{2}\alpha_S\rho_S^2+\frac{1}{2}\alpha_V\rho_V^2+\frac{1}{2}\alpha_{TV}(\rho_{TV})^2\\
&\quad+\frac{2}{3}\beta_S\rho_S^3+\frac{3}{4}\gamma_S\rho_S^4+\frac{3}{4}\gamma_V(\rho_V)^4+\frac{1}{2}\delta_S\rho_S\Delta\rho_S\\
&\quad+\frac{1}{2}\delta_V\rho_V\Delta\rho_V+\frac{1}{2}\delta_{TV}\rho_{TV}\Delta\rho_{TV}+\frac{1}{2}eA_0\rho_p\}\\
&\quad-\frac{1}{2MA}\langle\hat{P}_{cm}^2\rangle,
\end{aligned} \tag{24}$$

and the root-mean-square (rms) radius by

$$R_{\mathrm{rms}} = \langle r^2\rangle^{1/2} = \left\{\int d^3\boldsymbol{r}[r^2\rho_V(\boldsymbol{r})]\right\}^{1/2}. \tag{25}$$

Note that for odd-A and odd–odd nuclei, the blocking effects of the unpaired nucleon(s) have to be taken into account. Generally, the ground state of an odd system can be written as an one-quasiparticle state,

$$|\Phi_1\rangle = \alpha_1^\dagger\prod_k\alpha_k|-\rangle, \tag{26}$$

where $\alpha_1^\dagger$ corresponds to the quasiparticle state which is blocked. As explained in great detail in Ref. [78], this state $|\Phi_1\rangle$ can be regarded as the vacuum with respect to a new set of quasiparticle operators $(\alpha_1',\ldots\alpha_N')$ with

$$\alpha_1' = \alpha_1^\dagger,\ \alpha_2' = \alpha_1,\ \ldots,\ \alpha_N' = \alpha_N'. \tag{27}$$

In such a way, the odd-nucleon systems can be simply treated just like an even-even system. The only difference is the exchange of the quasiparticle operator $\alpha_1^\dagger \leftrightarrow \alpha_1$, which corresponds to the exchange of the column $(U_{n1}, V_{n1}) \leftrightarrow (V_{n1}^*, U_{n1}^*)$ in the Bogoliubov transform matrix.

3. Numerical details

To explore the nuclear landscape extended by the continuum effects, the systematic calculations for nuclei with $8 \leqslant Z \leqslant 120$ from proton drip line to neutron drip line are performed by using the relativistic continuum Hartree–Bogoliubov theory with PC-PK1. In order to describe the continuum and its coupling to the bound states properly, the RCHB equation (23) is solved in coordinate space using the shooting method. Each atomic nucleus is described within a box by imposing the boundary condition $U_k(r = R_{\mathrm{box}}) = V_k(r = R_{\mathrm{box}}) = 0$.

As shown in Fig. 1, the convergence of the RCHB solutions with respect to the box size, the mesh size and the angular momentum cutoff has been examined for nuclei $^{304}120$. In Fig. 1, the box size $R_{\mathrm{box}} = 20$ fm leads to a relative accuracy of 0.002% in total energy for $^{304}120$ in comparison with $R_{\mathrm{box}} = 27.5$ fm. The energy difference between the calculations with $\Delta r = 0.1$ fm and $\Delta r = 0.05$ fm is smaller than 0.0035 MeV for $^{304}120$, which is about 0.0002% of the total energy. Similar convergence has also been confirmed for the angular momentum cutoff $J_{\max} = 19/2\ \hbar$, as shown in Fig. 1. Note that the pairing correlation is neglected in the convergence check for angular momentum cutoff in order to avoid renormalizing the strength of the zero-range pairing force to the corresponding model space. In the following calculations, we fix the box size $R_{\mathrm{box}} = 20$ fm, the mesh size $\Delta r = 0.1$ fm, and the angular momentum cutoff $J_{\max} = 19/2\ \hbar$.

3.1. Relativistic density functional PC-PK1

In the present systematic calculations, the relativistic density functional PC-PK1 [63] listed in Table A is adopted for the particle-hole channel. PC-PK1 has turned out to be very successful in providing good descriptions for the isospin dependence of the binding energy along either the isotopic or the isotonic chain. In Ref. [64], a crucial test of the predictive power of PC-PK1 was performed by the comparison with the new and accurate experimental masses in the element range from 50 to 91 [79], and it was found that the experimental data can be reproduced quite well with a rms deviation 0.859 MeV. PC-PK1 has also been applied successfully to investigate nuclear low-lying excited states [65–72], magnetic rotation [50,80–83], antimagnetic rotation [49,51,84–86], chiral rotation modes [87], fission barrier [88], and superheavy nuclei [89], etc.

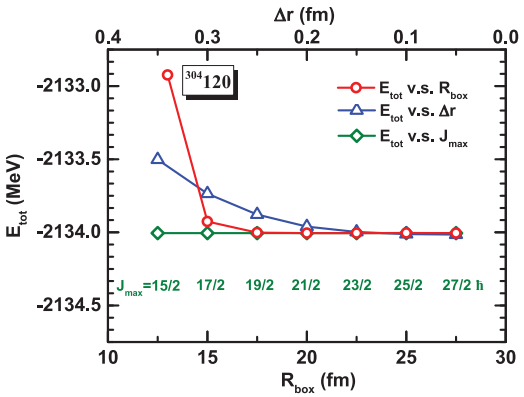

Fig. 1. Total energies of the nucleus $^{304}120$ as functions of box size R_{box} (red line), mesh size Δr (blue line) and angular momentum cutoff J_{max} (olive line). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

Table A
The parameter set of the relativistic density functional PC-PK1 [63].

Coupling constant	Value	Dimension
α_S	-3.96291×10^{-4}	MeV^{-2}
β_S	8.6653×10^{-11}	MeV^{-5}
γ_S	-3.80724×10^{-17}	MeV^{-8}
δ_S	-1.09108×10^{-10}	MeV^{-4}
α_V	2.6904×10^{-4}	MeV^{-2}
γ_V	-3.64219×10^{-18}	MeV^{-8}
δ_V	-4.32619×10^{-10}	MeV^{-4}
α_{TV}	2.95018×10^{-5}	MeV^{-2}
δ_{TV}	-4.11112×10^{-10}	MeV^{-4}

3.2. Pairing strength

For the particle–particle channel, the surface pairing force with $\eta = 1$ in Eq. (21) is used. The parameters in the pairing force include the saturation density ρ_0 and pairing strength V_0. The empirical saturation density of nuclear matter ρ_0 is 0.152 fm^{-3}. The pairing strength V_0 is fitted to the odd–even mass differences for given energy cutoff E_{cut}. In the present RCHB calculations, the pairing strength $V_0 = -342.5$ MeV fm^3 for both neutron and proton is fixed by reproducing the experimental odd-even mass differences in the Ca, Sn, Pb and U isotopic chains, as well as the N = 20, 50 isotonic chains with a cutoff energy of 100 MeV for the pairing window. For the odd–even mass difference, a three-point formula is utilized,

$$\Delta = \frac{(-1)^N}{2}\left[E_b(Z,N+1) - 2E_b(Z,N) + E_b(Z,N-1)\right]. \quad (28)$$

The corresponding comparison between the theoretical and experimental odd-even mass differences is shown in Fig. 2.

3.3. Blocking effects for odd-A and odd-odd nuclei

For the odd-A or odd-odd nuclei, one has to take into account the blocking effect of the odd nucleon(s) [78]. The procedure to determine the ground state of an odd-A nucleus with even Z and odd N in RCHB calculations is as follows:

(i) Perform the calculation for its neighboring even-even nucleus $(Z, N-1)$.

(ii) From the single particle levels in the even-even nucleus $(Z, N-1)$, choose two neutron levels just below the Fermi surface (labeled as E_1 and E_2) and two neutron levels just above the Fermi surface (labeled as E_3 and E_4).

(iii) Perform the calculations for the odd-A nucleus (Z, N) with blocking levels E_1, E_2, E_3 and E_4, respectively, and choose the one with the lowest total energy as the ground state of the odd-A nucleus (Z, N).

The blocking procedure for odd-odd nucleus (Z, N) is similar to the odd-A nuclei, but requires blocking for both the proton and neutron levels at the same time. From the single particle levels in the neighboring even-even nucleus $(Z-1, N-1)$, one chooses the blocking proton and neutron levels (two just below and two just above the Fermi surfaces). By performing the calculations for the odd-odd nucleus (Z, N) with the blocking proton and neutron levels, the one with the lowest total energy is chosen as the ground state of the odd-odd nucleus (Z, N).

4. Results and discussions

4.1. Nuclear mass

We perform systematic calculations for all nuclei from $Z = 8$ to $Z = 120$ by varying the neutron number from the proton drip line to neutron one. In Table 1, the ground-state properties of these nuclei are summarized. The mass number A, neutron number N, binding energy E_b, neutron Fermi surface λ_n, proton Fermi surface λ_p, matter root-mean-square (rms) radius R_m, neutron rms radius R_n, proton rms radius R_p, charge radius R_c, ground-state spin and the parity of proton $j^\pi(P)$ and neutron $j^\pi(N)$ are listed. The binding energy per nucleon E_b/A, two-neutron S_{2n}, two-proton S_{2p}, one-neutron S_n and one-proton separation energy S_p for each nucleus are also provided. In addition, the available experimental binding energies [6] and charge radii [90] are shown for comparison. There are totally 9035 nuclei from O ($Z = 8$) to $Z = 120$ which are predicted to be bound by the RCHB theory with the relativistic density functional PC-PK1. For guidance, one or two unbound nuclei just outside the drip lines are listed and underlined in the table as well.

In Fig. 3, the nuclear landscape from O ($Z = 8$) to $Z = 120$ explored by the RCHB theory with PC-PK1 is shown, where the squares represent the bound nuclei. The squares with cross denote the 288 stable or practically stable (that is, have half-lives longer than the expected life of the Solar System) nuclei existing in nature. Among these 9035 bound nuclei, the masses of 2284 nuclei have been measured experimentally [6]. The relative binding energy differences $(E_b^{Exp.} - E_b^{Cal.})/E_b^{Exp.}$ for these measured nuclei scaled by colors are plotted. It is found that most of the deviations are between -0.75% and 0.75%, and the root of the relative square (rrs) deviation $\sigma_r = \sqrt{\sum_i^n \frac{(E_b^{Exp.} - E_b^{Cal.})^2/(E_b^{Exp.})^2}{n}}$ for these 2284 nuclei is around 0.710%. It is noted that the relative differences increase when the neutron (proton) number goes away from the magic number, due to the spherical symmetry adopted here.

Therefore, it is interesting to focus the comparisons on the nuclei with either neutron or proton magic number. For the nuclei considered here (Z =8, 20, 28, 50, 82 or N =8, 20, 28, 50, 82, 126), the corresponding rrs deviation is reduced to 0.583%. The rms deviation of the binding energy $\sigma = \sqrt{\sum_i^n (E_i^{Exp.} - E_i^{Cal.})^2/n}$ for these either neutron or proton magic nuclei is 2.157 MeV, which is remarkably smaller than the rms deviation of 7.960 MeV for the 2284 nuclei with masses measured. Therefore, we can infer that the deviation between the present RCHB calculations and experimental data comes mainly from the absence of the deformation effects.

To investigate the deformation effects, the rms deviation of binding energy σ in RCHB calculations is compared with the average quadrupole deformation parameter $\langle\beta_2\rangle = (\sum_i^{n'} |\beta_2^i|)/n'$ for each isotopic chain in Fig. 4, where the deformation parameters for even-even nuclei are from 3DRHB [91] calculations with PC-PK1. It can be seen that, for isotopic chains, the rms deviations are

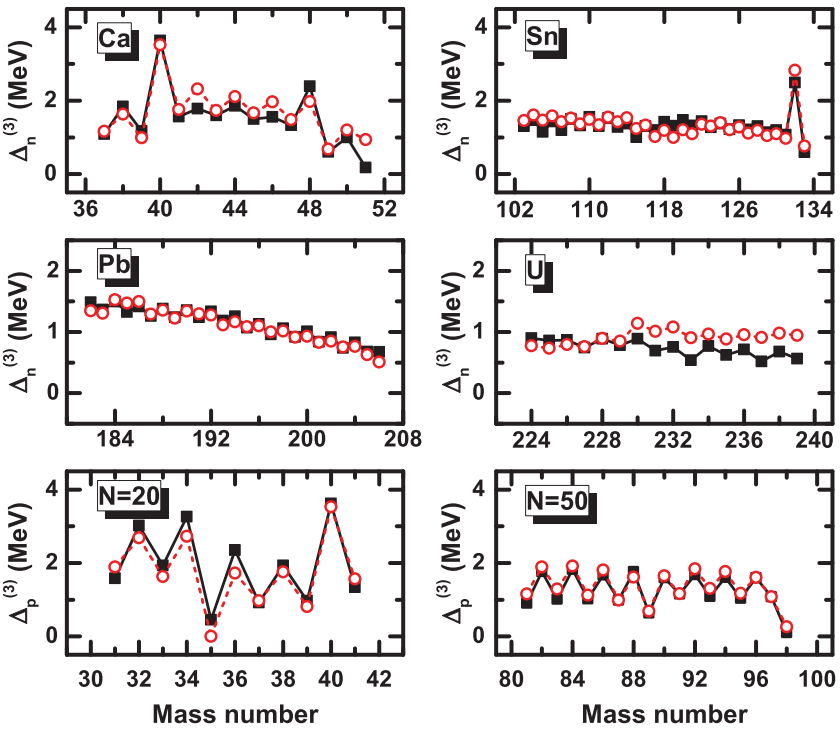

Fig. 2. (Color online) Odd-even mass differences of Ca, Sn, Pb and U isotopic chains, as well as $N = 20$, 50 isotonic chains in RCHB theory as a function of the mass number, with the pairing strength $V_0 = -342.5$ MeV fm^3 and saturation density $\rho_0 = 0.152$ fm^{-3}. The corresponding experimental data [6] are shown for comparison.

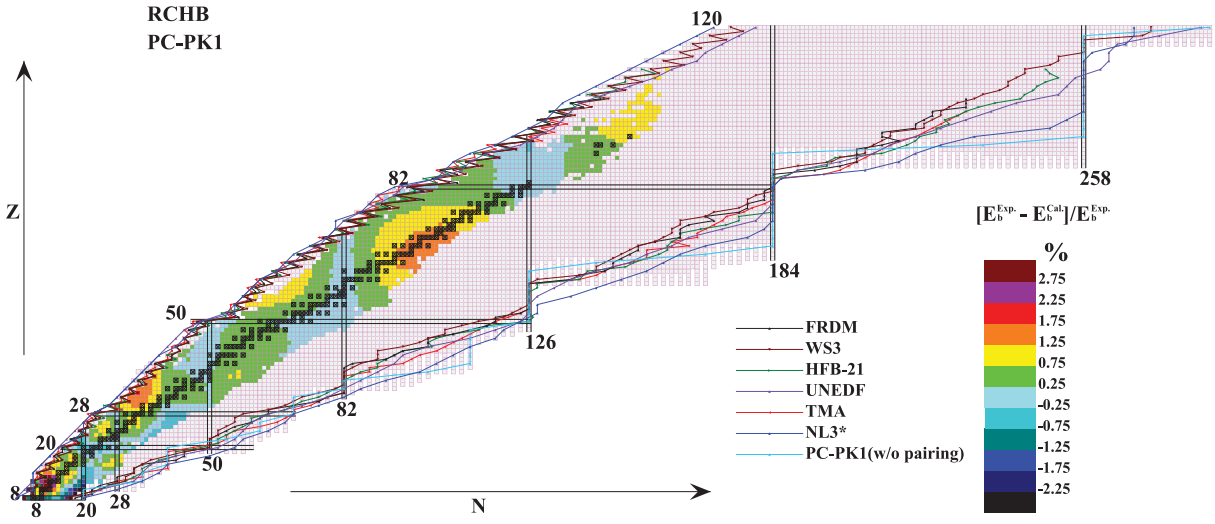

Fig. 3. (Color online) 9035 bound nuclei from O ($Z = 8$) to $Z = 120$ predicted by RCHB theory with PC-PK1 [63]. For the 2284 nuclei with mass measured, the relative binding energy differences between the data and RCHB calculations are scaled by colors. Furthermore, the nucleon drip lines predicted by mass table TMA [23] , HFB-21 [18], FRDM [7], WS3 [11], UNEDF [20], NL3* [24,25], and also PC-PK1 without pairing correlations are plotted for comparison.

small at the closed shell Z =20, 28, 50, 82, and large around the middle of two closed shells. Furthermore, a similar tendency for the average deformations is also found in the lower panel of Fig. 4(a). Analogously, for isotonic chains, the variation of σ is similar to that of $\langle\beta_2\rangle$ as well. These correspondences between the σ and $\langle\beta_2\rangle$ indicate that taking the deformation effects into account in the future will improve the agreement with the experimental data.

It should be emphasized that it is not the aim of the present RCHB calculations to reproduce the experimental binding energy to a high level of accuracy, but rather to investigate how the continuum states influence the positions of the drip lines, i.e., to which extent the nuclear landscape will be extended by considering the coupling to the continuum. In Fig. 3, the drip lines determined from the mass table TMA [23] , HFB-21 [18], FRDM [7], WS3 [11], UNEDF [20], NL3* [24,25], and also PC-PK1 without pairing correlations are shown. The comparisons of the nuclear landscape predicted by different models will be discussed in the following sections in detail.

4.2. The limits of the nuclear landscape

4.2.1. One-nucleon and two-nucleon separation energies

The one-neutron separation energies S_n and one-proton separation energies S_p are respectively defined as

$$S_n(Z, N) = E_b(Z, N) - E_b(Z, N-1),$$

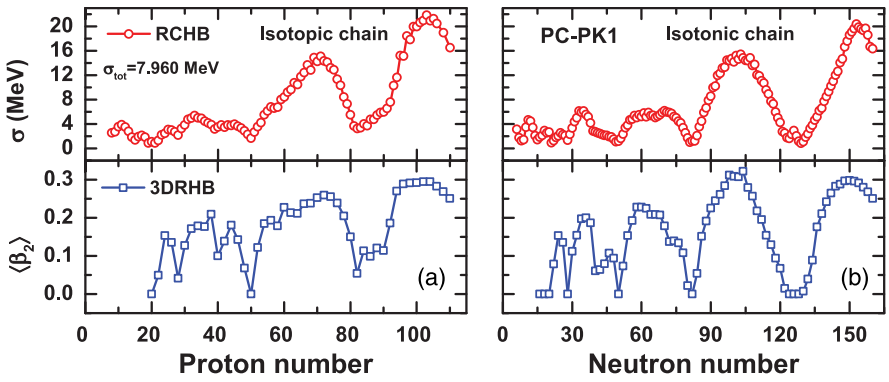

Fig. 4. (Color online) The rms deviation of binding energy σ in RCHB calculations compared with the average quadrupole deformation parameter $\langle\beta_2\rangle = (\sum_i^{n'}|\beta_2^i|)/n'$ for each isotopic chain as a function of the proton number (a), and for each isotonic chain as a function of the neutron number (b). The deformation parameters for even-even nuclei are from 3DRHB [91] calculations with PC-PK1.

$$S_p(Z,N) = E_b(Z,N) - E_b(Z-1,N). \tag{29}$$

The two-neutron separation energies S_{2n} and two-proton separation energies S_{2p} are respectively defined as

$$S_{2n}(Z,N) = E_b(Z,N) - E_b(Z,N-2),$$
$$S_{2p}(Z,N) = E_b(Z,N) - E_b(Z-2,N). \tag{30}$$

These quantities provide information on whether a nucleus is stable against one or two nucleon emissions, and thus define the nucleon drip lines. In the present work, we consider a nucleus is bound only if both the one- and two-nucleon separation energies of this nucleus are positive. For each isotopic chain, the last bound nucleus in the neutron-rich side is the neutron drip-line nucleus and that in the neutron-deficient side is the proton drip-line nucleus.

In Fig. 5, the two-neutron separation energies S_{2n} of the bound nuclei predicted by the RCHB theory with PC-PK1 are shown. From a global view, S_{2n} is large at proton drip-line side and close to zero at neutron drip-line side. For a given isotopic (isotonic) chain, S_{2n} decreases with the increasing neutron number, while increases with the proton number. It is found that there are 87 nuclei with the predicted two-neutron separation energies larger than 30 MeV, and most of them are located at the proton-rich side of nuclear landscape with $Z \leqslant 50$. There are 388 nuclei with S_{2n} in the range 21–30 MeV, mainly located in the proton-rich region of the nuclear chart; 1967 nuclei with S_{2n} in the range of 12–21 MeV, most of which are near the valley of stability; 4715 nuclei with S_{2n} in the range 3–12 MeV which lie on the neutron-rich region mostly. In addition, there are 1828 nuclei with their S_{2n} less than 3 MeV, and most of them are located in the region far from the stability line, and are even approaching to the neutron drip line.

It should be noted that, there are 586 weakly bound nuclei with $S_{2n} \leqslant 1$ MeV in the RCHB calculations. They are the extremely neutron-rich nuclei predicted by RCHB, and many of them lie even beyond the neutron drip lines predicted by the other nuclear mass models. For these weakly bound nuclei, as the neutron Fermi surface is close to the continuum threshold, pairing correlations could scatter the nucleons from bound states to the continuum, thus provide a significant coupling between the continuum and bound states [73]. The RCHB theory allows a proper treatment of the continuum and the coupling to the bound states, so it predicts a more extended neutron drip line than the other models. In addition, the nearly vanishing S_{2n} around the neutron drip line might be regarded as a sign of the neutron giant halo [52,55], which invokes the further analysis of neutron radii and single particle levels.

S_{2n} is a widely used probe of the neutron shell structure. Generally, for a given isotopic chain S_{2n} decreases smoothly with the neutron number N, except at a magic number where S_{2n} drops significantly. An abrupt decline of S_{2n} indicates the occurrence of neutron shell closure. It can be seen in Fig. 5 that, the significant drops exist at the traditional magic numbers $N = 20$, 28, 50, 82 and 126, which demonstrates that these shell closures are well reproduced in the RCHB theory. Apart from this, a dramatic decline of S_{2n} can be found at $N = 184$, which indicates that neutron number $N = 184$ may be a new magic number [92].

In Fig. 6, the one-neutron separation energies S_n of bound nuclei predicted by the RCHB theory are shown with different colors. Analogous to S_{2n}, S_n decreases (increases) with the increase of the neutron (proton) number for a given isotopic (isotonic) chain. It is found that 95 nuclei have their S_n larger than 15 MeV, 214 nuclei within 12–15 MeV, 610 nuclei within 9–12 MeV, 1516 nuclei within 6–9 MeV, 2583 nuclei within 3–6 MeV, and 4006 nuclei less than 3 MeV. Note that there are 1096 nuclei with $S_n \leqslant 1$ MeV and 466 nuclei with $S_n \leqslant 0.5$ MeV. Due to the pairing correlations, which make the nuclei with even nucleon number more bound than their neighbors with odd nucleon number, S_n has a ragged evolution pattern with the variation of neutron number that zigzags between odd- and even-particle nuclei.

In addition to the neutron separation energies S_{2n} and S_n, the two-proton S_{2p} and one-proton separation energies S_p of the bound nuclei are scaled by colors in Figs. 7 and 8. The proton separation energies increase with the neutron number for a given isotopic chain, while decrease with the proton number for a given isotonic chain. In the present calculations, it is found that there are 520 nuclei with $S_{2p} \geqslant 40$ MeV, 594 nuclei with $36 \leqslant S_{2p} < 40$ MeV, 802 nuclei with $32 \leqslant S_{2p} < 36$ MeV, 977 nuclei with $28 \leqslant S_{2p} < 32$ MeV, 1150 nuclei with $24 \leqslant S_{2p} < 28$ MeV, 1088 nuclei with $20 \leqslant S_{2p} < 24$ MeV, 957 nuclei with $16 \leqslant S_{2p} < 20$ MeV, 857 nuclei with $12 \leqslant S_{2p} < 16$ MeV, 781 nuclei with $8 \leqslant S_{2p} < 12$ MeV, 731 nuclei with $4 \leqslant S_{2p} < 8$ MeV and 381 nuclei with $0 \leqslant S_{2p} < 4$ MeV. It is noted that the proton drip line predicted by the RCHB calculations is close to the proton drip lines predicted by the other mass tables. At the proton magic numbers 20, 28, 50 and 82, S_{2p} changes abruptly. This indicates that the RCHB theory reproduces the traditional proton closed shells quite well. Note that a sudden change of the S_{2p} can be also found at $Z = 92$, while this has been considered as a pseudo shell in the previous relativistic mean field calculations [93].

In Fig. 8, there are 589 nuclei with $S_p \geqslant 20$ MeV, 1348 nuclei with $16 \leqslant S_p < 20$ MeV, 2083 nuclei with $12 \leqslant S_p < 16$ MeV, 2075 nuclei with $8 \leqslant S_p < 12$ MeV, 1648 nuclei with $4 \leqslant S_p < 8$ MeV and 1227 nuclei with $0 \leqslant S_p < 4$ MeV. Due to the pairing correlations, S_p is staggering between odd- and even-particle nuclei for a given isotonic chain. It should be noted that the number of the nuclei with $S_{2p} \leqslant 1$ MeV is 176, which is much less than the number of the nuclei with $S_{2n} \leqslant 1$ MeV. This is consistent with

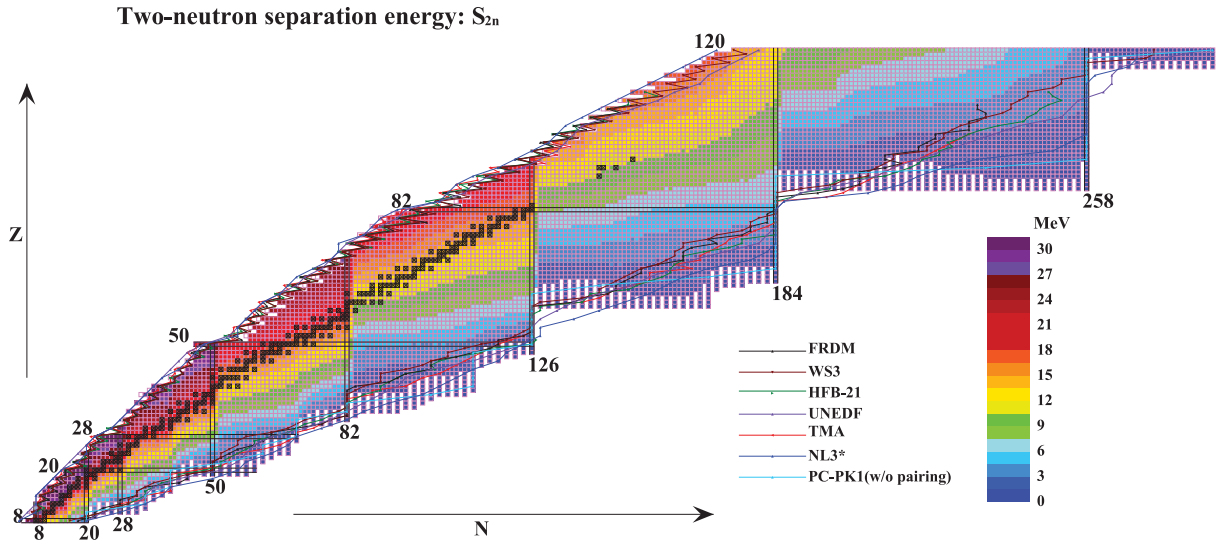

Fig. 5. (Color online) Two-neutron separation energies of bound nuclei in the RCHB calculations with PC-PK1 scaled by colors. Furthermore, the nucleon drip lines predicted by mass table TMA [23] , HFB-21 [18], FRDM [7], WS3 [11], UNEDF [20], NL3* [24,25], and also PC-PK1 without pairing correlations are plotted for comparison.

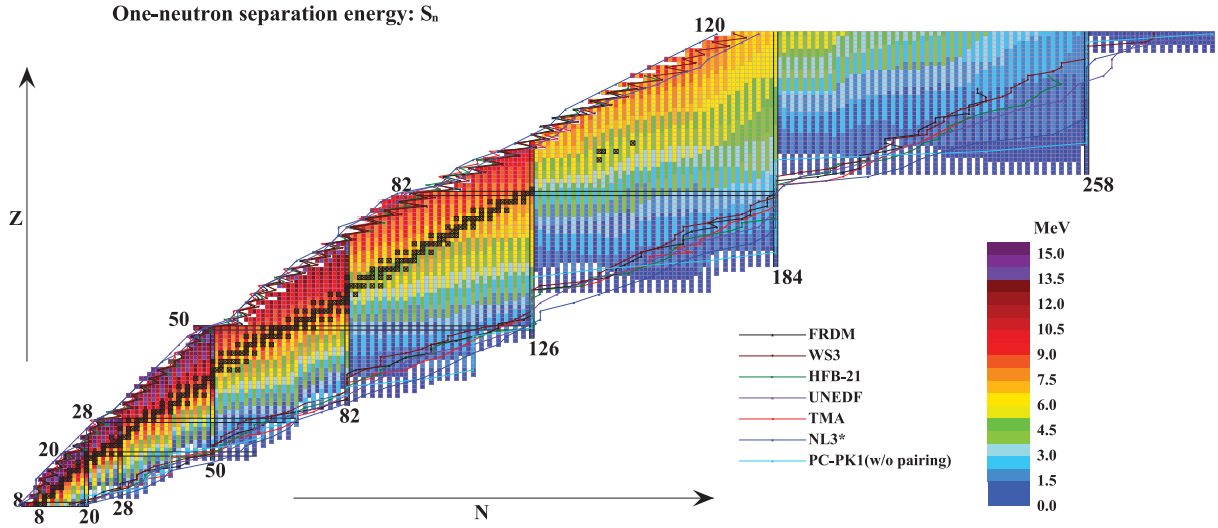

Fig. 6. (Color online) One-neutron separation energies of bound nuclei in the RCHB calculations with PC-PK1 scaled by colors. Furthermore, the nucleon drip lines predicted by mass table TMA [23] , HFB-21 [18], FRDM [7], WS3 [11], UNEDF [20], NL3* [24,25], and also PC-PK1 without pairing correlations are plotted for comparison.

the number of halo nuclei observed in the proton-rich side is much less than that in the neutron-rich side, which should be attributed to the existence of the Coulomb barrier. Moreover, although the proton Fermi surface is approaching zero for the neutron-deficient nuclei, the contributions from the continuum are suppressed due to the Coulomb barrier in comparison with that for the neutron-rich nuclei. This also explains why the proton drip line obtained by the RCHB calculations is very close to the ones predicted by the other mass models.

4.2.2. Neutron drip line

In Fig. 3, the nucleon drip lines predicted by the mass tables TMA [23], HFB-21 [18], FRDM [7], WS3 [11], UNEDF [20], and NL3* [24,25] have been plotted for comparison, together with the drip line given by the PC-PK1 calculations without taking pairing correlations into account. At present, the experimental proton-rich border of the nuclear territory has been reached up to protactinium [1] ($Z = 91$). Due to the Coulomb repulsive interaction among protons, the proton drip line does not lie so far away from the valley of stability. Moreover, the proton continuum is effectively shifted up in energy as a result of the confining effect of the Coulomb barrier. Therefore, the proton drip line obtained by the present calculations is very close to those from other mass tables, which are roughly the same with the experimental observations.

On the neutron-rich side, however, the neutron-rich boundary is known only up to oxygen ($Z = 8$) experimentally. In contrast to the proton drip line, the locations of neutron drip lines from the various mass tables obviously differ with each other, especially for the heavy mass region. The differences of neutron drip lines increase with the proton number. The neutron drip line predicted by the RCHB theory is most extended compared with other models. For example, the last bound neutron-rich nucleus of the Kr ($Z = 36$) isotope is ^{118}Kr in the calculations of FRDM, WS3, HFB-21, TMA and the PC-PK1 calculations without pairing correlations, ^{122}Kr in UNDEF and ^{128}Kr in NL3*, while the present RCHB calculations predict ^{136}Kr as the last bound nucleus of Kr isotopes in the neutron rich side.

In order to explore where and how the continuum extends the neutron drip line, we compare the neutron drip lines obtained from the RCHB calculations with those from the calculations without pairing correlation. The most neutron-rich even-even nuclei predicted to be bound in the RCHB theory and the calculations without

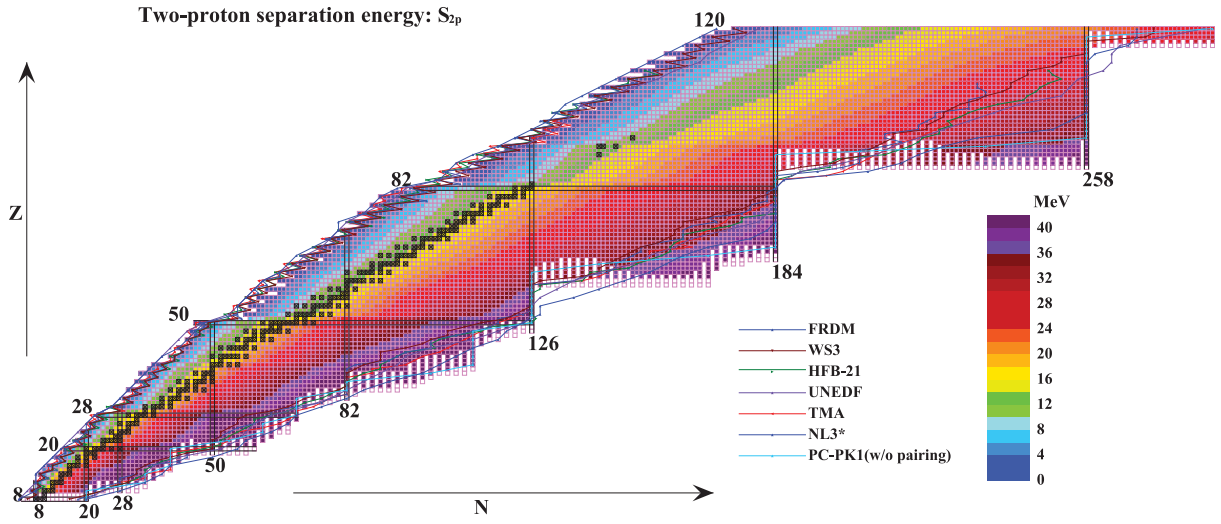

Fig. 7. (Color online) Two-proton separation energies of bound nuclei in the RCHB calculations with PC-PK1 scaled by colors. Furthermore, the nucleon drip lines predicted by mass table TMA [23] , HFB-21 [18], FRDM [7], WS3 [11], UNEDF [20], NL3* [24,25], and also PC-PK1 without pairing correlations are plotted for comparison.

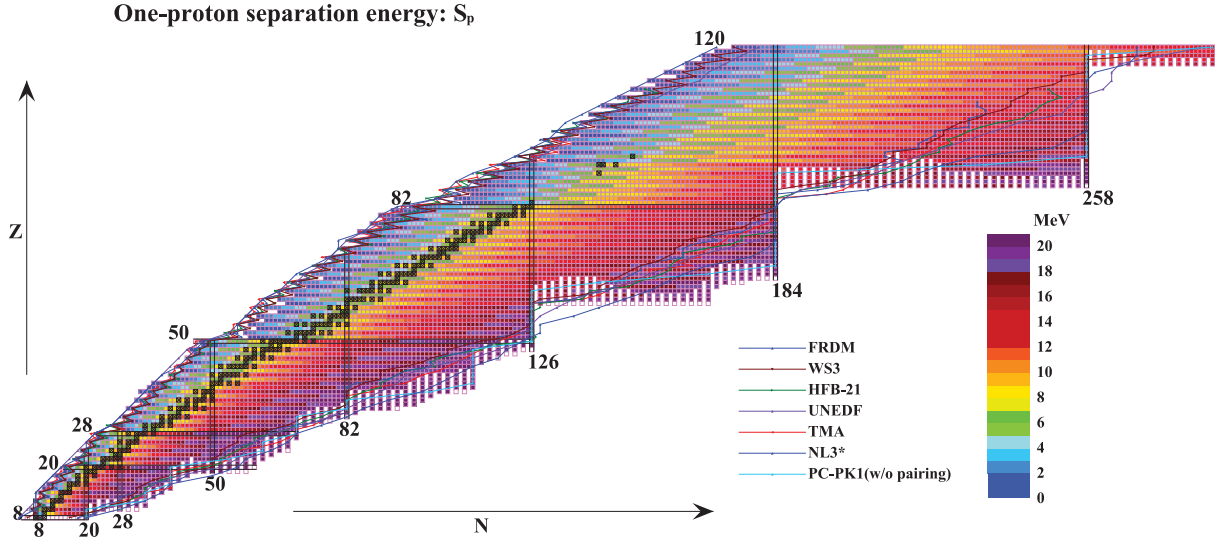

Fig. 8. (Color online) One-proton separation energies of bound nuclei in the RCHB calculations with PC-PK1 scaled by colors. Furthermore, the nucleon drip lines predicted by the mass table TMA [23] , HFB-21 [18], FRDM [7], WS3 [11], UNEDF [20], NL3* [24,25], and also PC-PK1 without pairing correlations are plotted for comparison.

pairing is listed in Table B for different isotopic chains. Marked at sub-shell or shell closures $N = 40, 70, 82, 112, 126, 184$ and 258, the extensions are dramatic when the next sub-shell or shell is occupied.

A similar comparison is performed for the RCHB theory and the FRDM. The number of neutron-rich nuclei predicted to be bound by the RCHB, but unbound in the FRDM are listed in Table C. It can be found that the neutron drip line of the RCHB results is much farther away from the β-stability line than that of the FRDM for almost all isotopic chains. For example, from the isotopic chains Se ($Z = 34$) to Zr ($Z = 40$), the FRDM gives the drip line at $N = 82$. The RCHB theory predicts 6 to 19 more bound neutron-rich nuclei from the isotopic chains Se ($Z = 34$) to Zr ($Z = 40$).

Comparing to the drip line of RHB calculations in harmonic oscillator (HO) basis with NL3* [24,25], the present RCHB calculations show considerable difference from it. The considerable difference of the drip line between RHB in HO calculations and present RCHB calculations are due to different functionals (PC-PK1 or NL3*), different pairing forces used, and the treatment of continuum in coordinate or HO space. Future investigations with same density functional and pairing force in both coordinate space and in harmonic oscillator basis are needed.

4.2.3. Continuum effects

To illustrate the extension of the neutron drip line in RCHB theory, by taking ^{60,66,80}Ca, ^{118,124,136}Kr and ^{188,194,230}Sm as examples, we compare the neutron single particle levels in canonical basis from the RCHB calculations with those of ^{60}Ca, ^{118}Kr and ^{188}Sm from the calculations without pairing, respectively in Fig. 9–11.

For Ca isotopes in Fig. 9, ^{60}Ca is the neutron drip-line nucleus in the calculations without pairing, while with 20 more neutrons, ^{80}Ca is the neutron drip-line nucleus in the RCHB calculations. In the calculations without pairing, the neutron Fermi surface of ^{60}Ca is $1f_{5/2}$, the last bound level. The occupation of the next level $1g_{9/2}$ which has a positive single particle energy will lead to the unbound nucleus ^{62}Ca. In RCHB theory, due to the pairing correlations, the neutron Fermi surface locates between $1f_{5/2}$ and $1g_{9/2}$, and the continuum in the canonical basis also have small occupation

Table B
The neutron number of the most neutron-rich even-even nuclei predicted to be bound in the RCHB theory, in comparison with the calculations without pairing correlations.

Element	Neutron number		Element	Neutron number		Element	Neutron number	
(Z)	No pairing	RCHB	(Z)	No pairing	RCHB	(Z)	No pairing	RCHB
O (8)	20	20	Pd (46)	112	118	Po (84)	184	184
Ne (10)	20	32	Cd (48)	112	126	Rn (86)	184	184
Mg (12)	34	34	Sn (50)	126	126	Ra (88)	184	258
Si (14)	34	38	Te (52)	126	126	Th (90)	184	258
S (16)	40	40	Xe (54)	126	126	U (92)	234	258
Ar (18)	40	44	Ba (56)	126	126	Pu (94)	258	258
Ca (20)	40	60	Ce (58)	126	126	Cm (96)	258	258
Ti (22)	54	62	Nd (60)	126	168	Cf (98)	258	258
Cr (24)	62	68	Sm (62)	126	168	Fm (100)	258	258
Fe (26)	62	68	Gd (64)	142	176	No (102)	258	258
Ni (28)	70	70	Dy (66)	168	184	Rf (104)	258	258
Zn (30)	70	72	Er (68)	184	184	Sg (106)	258	258
Ge (32)	70	82	Yb (70)	184	184	Hs (108)	258	258
Se (34)	82	94	Hf (72)	184	184	Ds (110)	258	258
Kr (36)	82	100	W (74)	184	184	Cn (112)	258	258
Sr (38)	102	110	Os (76)	184	184	Fl (114)	258	258
Zr (40)	112	112	Pt (78)	184	184	Lv (116)	258	288
Mo (42)	112	112	Hg (80)	184	184	Og (118)	258	288
Ru (44)	112	112	Pb (82)	184	184	$Z = 120$	288	288

Table C
Number of neutron-rich nuclei predicted to be bound by the RCHB, but unbound in the FRDM.

Element (Z)	ΔN	Element (Z)	ΔN	Element (Z)	ΔN	Element (Z)	ΔN	Element (Z)	ΔN
O (8)	2	Ni (28)	6	Rh (45)	11	Dy (66)	25	Fr (87)	29
Ne (10)	10	Cu (29)	6	Pd (46)	13	Ho (67)	23	Ra (88)	28
Na (11)	10	Zn (30)	1	Ag (47)	9	Er (68)	24	Ac (89)	28
Mg (12)	6	Ga (31)	1	Cd (48)	6	Tm (69)	26	Th (90)	37
Al (13)	8	Ge (32)	2	In (49)	4	Yb (70)	20	Pa (91)	43
Si (14)	6	As (33)	1	Sn (50)	6	Lu (71)	21	U (92)	39
P (15)	8	Se (34)	6	Sb (51)	8	Hf (72)	21	Np (93)	38
S (16)	6	Br (35)	7	Te (52)	2	Ta (73)	19	Pu (94)	44
K (19)	14	Kr (36)	9	I (53)	1	W (74)	13	Am (95)	45
Ca (20)	10	Rb (37)	10	Xe (54)	1	Re (75)	16	Cm (96)	38
Sc (21)	10	Sr (38)	14	Pr (59)	20	Os (76)	6	Bk (97)	38
Ti (22)	12	Y (39)	21	Nd (60)	16	Ir (77)	6	Cf (98)	37
V (23)	10	Zr (40)	19	Pm (61)	15	Pt (78)	6	Es (99)	35
Cr (24)	10	Nb (41)	12	Sm (62)	19	Au (79)	2	Fm (100)	36
Mn (25)	8	Mo (42)	12	Eu (63)	22	Hg (80)	2	Md (101)	28
Fe (26)	5	Tc (43)	13	Gd (64)	25	Tl (81)	2	No (102)	28
Co (27)	4	Ru (44)	10	Tb (65)	27	Rn (86)	31	Lr (103)	28

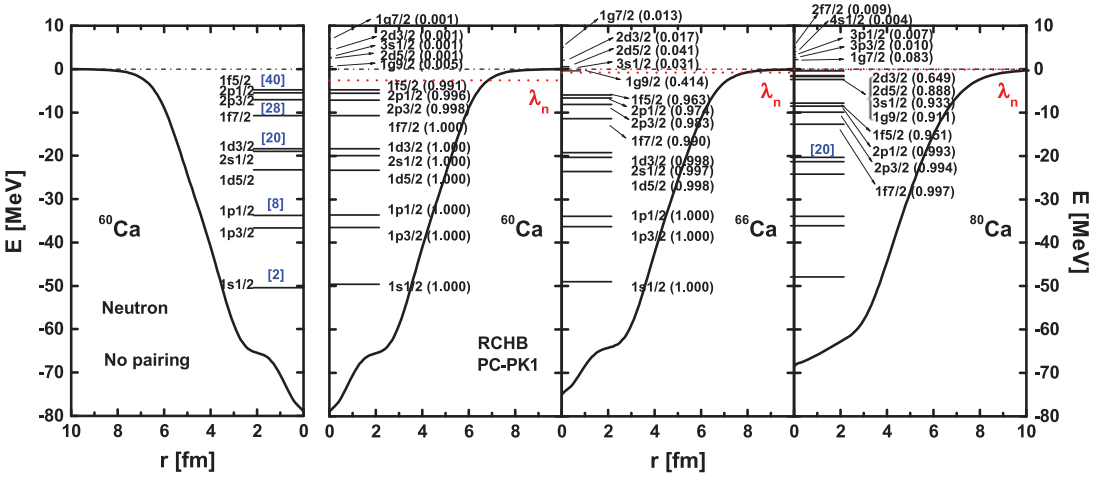

Fig. 9. (Color online) The neutron single particle levels (occupation probability) for ^{60,66,80}Ca in canonical basis from the RCHB calculations, in comparison with those for ^{60}Ca from the calculations without pairing. The corresponding potentials $V + S$ are also shown.

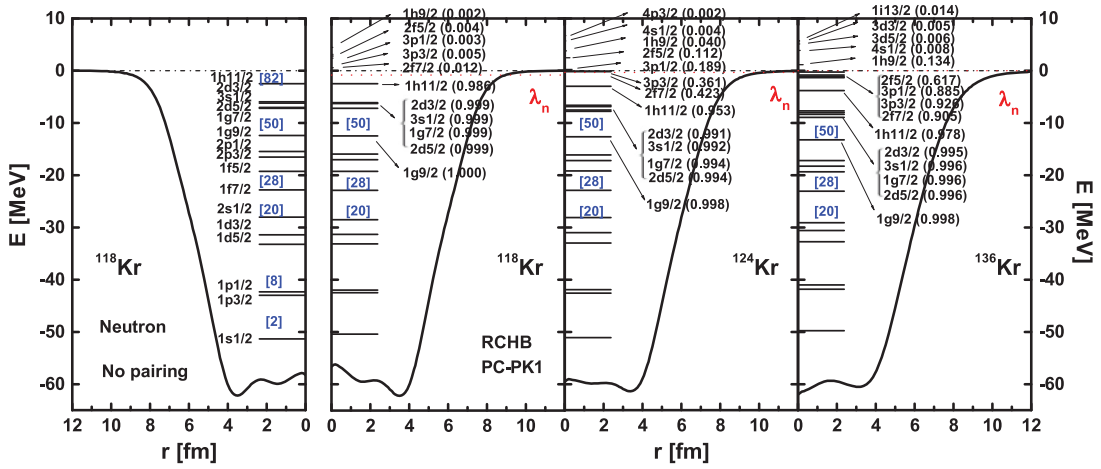

Fig. 10. (Color online) Same as Fig. 9, but for ^{118,124,136}Kr from the RCHB calculations and ^{118}Kr from the calculations without pairing.

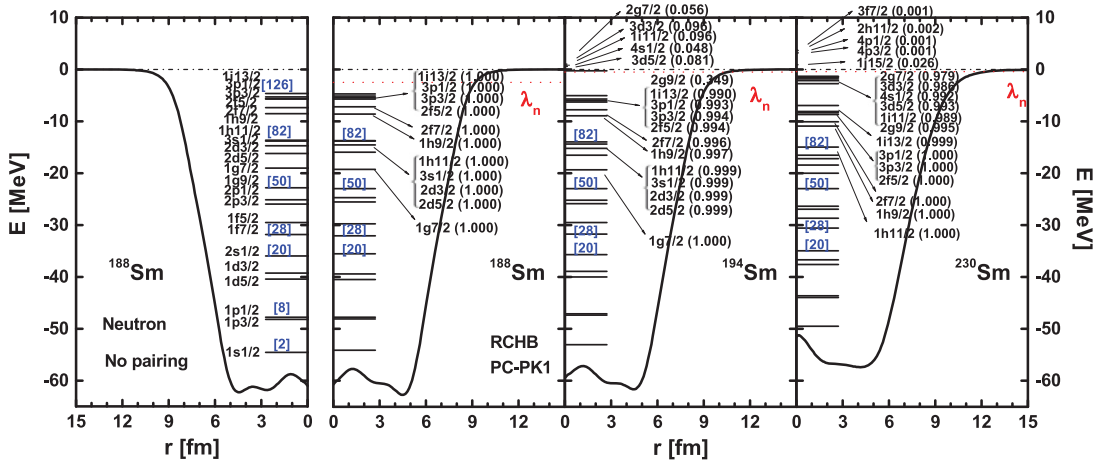

Fig. 11. (Color online) Same as Fig. 9, but for ^{188,194,230}Sm from the RCHB calculations and ^{188}Sm from the calculations without pairing.

probabilities in ^{60}Ca. Adding more neutrons, see ^{66}Ca in the figure, although the occupation probabilities of the continuum in the canonical basis become larger, the neutron Fermi surface remains negative. This means that the nucleus is still bound. Moreover, with more neutrons added, the level $1g_{9/2}$ becomes negative and the neutron Fermi surface remains negative up to ^{80}Ca, which is turned out to be the last bound nucleus in the RCHB calculations.

The mechanisms are similar for the Kr and Sm isotopic chains, as shown in Figs. 10 and 11, respectively. Therefore, we conclude that the pairing correlations and the coupling between continuum and bound states are responsible for the extension of the neutron drip line.

4.2.4. Discussion on deformation effects

It should be noted that the present survey is performed with the assumption of spherical symmetry. A natural question is whether and how the deformation will influence the position of the neutron drip line.

To explore the deformation effects on the position of neutron drip line, taking argon isotopic chain as an example, the calculations with the deformed relativistic Hartree–Bogoliubov theory in continuum (DRHBc) [59,60] are performed, where the axial deformation, continuum and pairing correlation are treated self-consistently. In the DRHBc calculations, the relativistic density functional PC-PK1 is employed. We use a box size $R_{\rm box} = 20$ fm, a mesh size $\Delta r = 0.1$ fm, a cutoff energy of Woods–Saxon basis $E^{+}_{\rm cut} = 160$ MeV and a cutoff of angular moment $J_{\rm max} = 25/2\hbar$. For the particle–particle channel, the pairing force and pairing parameters are the same as Ref. [60].

In Fig. 12, the two-neutron separation energies from RCHB and DRHBc calculations for argon (Ar) isotopes and the corresponding ground-state deformations from the DRHBc calculations are shown. It can be seen that most argon isotopes are oblate in ground states, and the deformation parameter β_2 increases with the increase of neutron number for $N > 40$. In Fig. 12(a), S_{2n} from the DRHBc calculations are close to those from the RCHB calculations globally. However, the deviation exists at $N > 44$ where the large deformation occurs. In the RCHB calculations, the S_{2n} becomes negative after $N = 44$ and still decreases with the increase of neutron number, while S_{2n} from DRHBc calculations keeps positive for $44 < N < 52$ and becomes negative for $N = 54$, i.e. the neutron drip-line nuclei of argon isotopes are ^{62}Ar in the RCHB and ^{70}Ar in the DRHBc calculations, respectively.

In Fig. 13, the pairing energies of argon isotopes from the DRHBc and RCHB calculations are shown. It can be seen that proton pairing energies of DRHBc calculations are close to zero and deviate from the ones of RCHB calculations for ^{36}Ar,$^{44-56}$Ar and $^{64-70}$Ar which may be attributed to the occurrence of large deformation there. On the other hand, neutron pairing energies from these two calculations present similar evolution trend. For $N > 44$, the pairing energy in RCHB calculations increases slowly with the neutron number, while the pairing energy in DRHBc calculation increases rapidly.

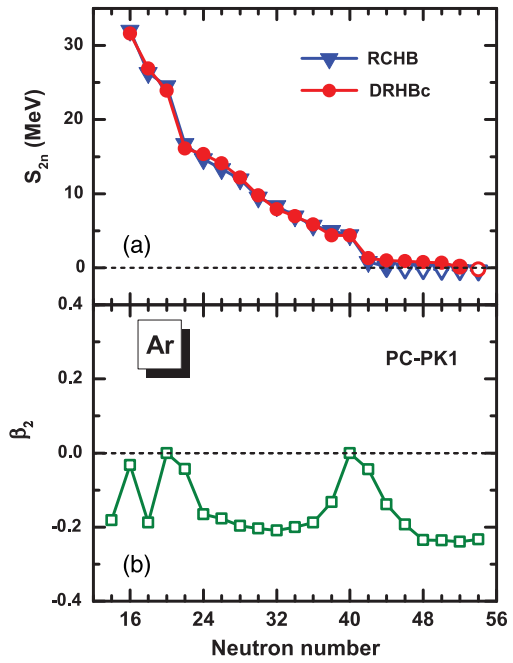

Fig. 12. (Color online) (a) Two-neutron separation energy S_{2n} from the RCHB calculations and DRHBc calculations for argon isotopes as a function of neutron number. (b) The ground-state quadrupole deformation β_2 for argon isotopes as a function of neutron number within the DRHBc calculations with PC-PK1.

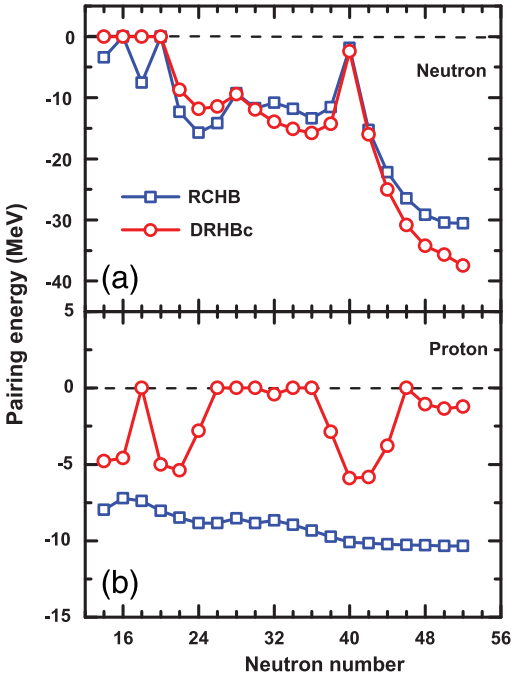

Fig. 13. (Color online) Comparison of pairing energies between the DRHBc calculations and RCHB calculations for argon isotopic chain.

Fig. 14 shows the neutron single particle energy from DRHBc calculations for $^{58-70}$Ar. It can be seen that, with the evolution of neutron number, the single particle levels around the Fermi surface are getting denser and denser, and the pairing correlation is enhanced. The deformation, continuum and pairing correlation extend the neutron drip-line nucleus from ^{62}Ar in the RCHB to ^{70}Ar in the DRHBc calculations.

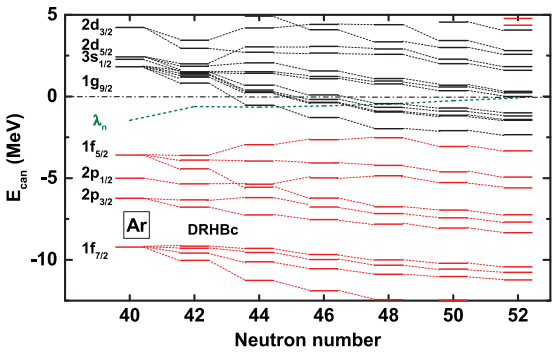

Fig. 14. (Color online) The neutron single particle energy of argon isotopes as a function of neutron number within the DRHBc calculations with PC-PK1.

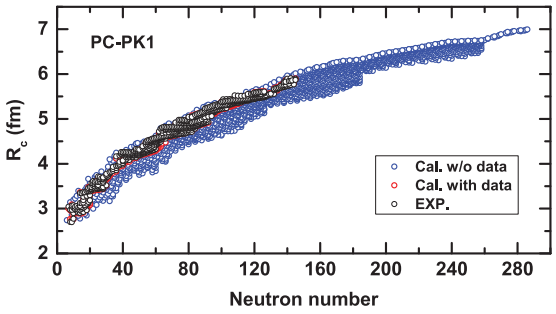

Fig. 15. The charge radii calculated by the RCHB theory with PC-PK1 as a function of neutron number in comparison with the data available [90]. The black circles are the experimental values, the red circles represent the calculated ones for the nuclei with data available, and the blue circles are the predictions for the nuclei without experimental data. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

From above discussions, one can find that the deformation would affect the position of neutron drip line. For argon isotopes, self-consistent treatment of the deformation and continuum extends the neutron drip line to more neutron-rich region.

In Fig. 3, the deformed RHB calculations with NL3* in harmonic oscillator basis [24] predicted less neutron-rich drip-line nuclei than the RCHB calculations for most of the isotopic chains. Although quite time-consuming and numerically challenging, considering the deformation and continuum effects simultaneously is essential to determine the drip line and should be investigated in the future.

4.3. Radii of nucleon distributions

4.3.1. Charge radii

The nuclear charge radius is one of the most important nuclear observables that estimates the size of nuclei. In Fig. 15, the charge radii calculated by the RCHB theory with PC-PK1 are shown as a function of neutron number in comparison with the data available. The charge radii in the RCHB calculations reproduce the experiment quite well for the nuclei with data available [90], and the charge radii of the nuclei without experimental data are predicted.

In Fig. 16, the available experimental charge radii, the RCHB calculated charge radii with PC-PK1, and the difference between the RCHB calculated charge radii and the experimental data [90] are shown. One can see that most deviations are in the range of $-0.05 \sim 0.05$ fm, and the rms deviation σ of the RCHB calculations from the data is 0.0358 fm, which is in comparison with the results from the RHB calculations for NL3* $\sigma = 0.0407$ fm, for DD-ME2 $\sigma = 0.0376$ fm, for DD-MEδ $\sigma = 0.0412$ fm, for DD-PC1 $\sigma =$

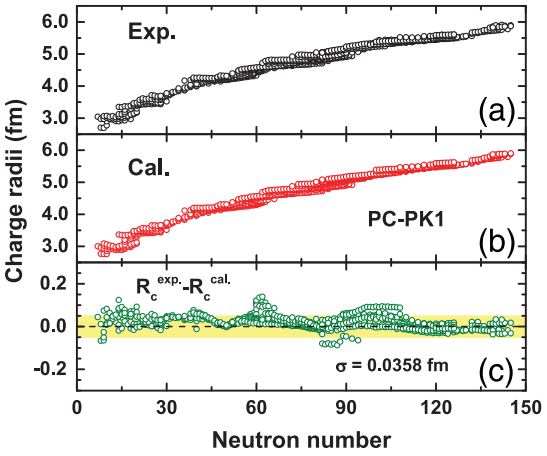

Fig. 16. (Color online) The available experimental charge radii [90] (a), the RCHB calculated charge radii with PC-PK1 (b), and the difference between the RCHB calculated charge radii and the experimental data [90] (c) as a function of the neutron number. The rms deviation is also shown.

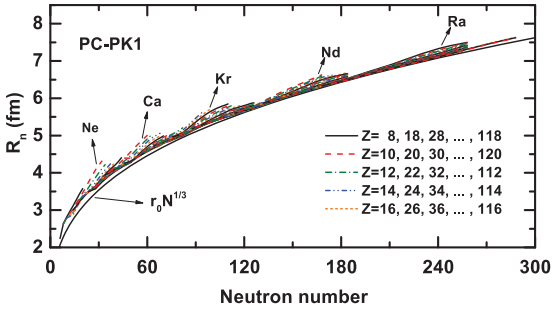

Fig. 17. (Color online) The neutron rms radii for the even-even nuclei with $8 \leqslant Z \leqslant 120$ from the RCHB calculations with PC-PK1 as a function of the neutron number. The empirical formula $r_0N^{1/3}$ with $r_0 = 1.140$ determined by R_n of ^{208}Pb is also plotted for guidance.

0.0402 fm [25], the HFB calculations $\sigma = 0.026$ fm [19], and the formula based on the Weizsacker–Skyrme mass model $\sigma = 0.022$ fm [94].

In Fig. 16, larger deviations are located between $N = 28$ and 50, $N = 50$ and 82, as well as $N = 82$ and 126. These deviations are expected to be reduced when the deformation effects are included.

4.3.2. Neutron radii

In Fig. 17, the calculated neutron rms radii of the neutron density distribution for even-even nuclei with $8 \leqslant Z \leqslant 120$ are shown as a function of neutron number. In addition, the empirical formula $R_n = r_0N^{1/3}$ is shown for guidance with $r_0 = 1.140$ fm determined by R_n of ^{208}Pb. Except for extremely neutron-rich nuclei, the systematic trend of the neutron radii follows the simple empirical formula quite well. Pronounced deviations of RCHB calculations from the empirical formula can be found in some extremely neutron-rich nuclei near the drip line. Such deviations are regarded as signals of the so-called giant halo predicted in Ca [52] and Zr [55].

To give a deeper insight of the deviations from the empirical formula, the differences of neutron radii between the RCHB calculations and the empirical formula are shown in Fig. 18 for the even-even nuclei with $8 \leqslant Z \leqslant 120$, in which the smallest ratio $R_n/N^{1/3}$ in each isotopic chain is chosen as r_0 to ensure non-negative differences.

From Fig. 18, one can see the pronounced deviations in some isotopic chains, such as Ne, Ca, Kr, Nd and Ra, which indicates

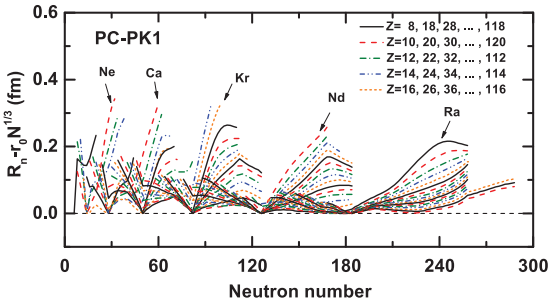

Fig. 18. (Color online) The deviations of the neutron rms radii between the RCHB calculations with PC-PK1 and the empirical formula $r_0N^{1/3}$ for the even-even nuclei with $8 \leqslant Z \leqslant 120$, in which the smallest ratio $R_n/N^{1/3}$ in each isotopic chain is chosen as r_0 to ensure non-negative differences.

the possible existence of the giant halos. The deviations show two different behaviors when approaching the neutron drip line. One increases with neutron number monotonically. The other increases with neutron number at the beginning then bends down at next stage. The different behavior is connected to the shell closure and the occupation of levels with high angular momentum.

4.4. Neutron density distributions

To investigate the evolution of the density distribution in each isotopic chain, in Fig. 19, the neutron density distributions of even-even Ne, Ca, Ni, Kr, Sr and Nd isotopes are shown as examples, where the density distributions of proton and neutron drip-line nuclei have been labeled, and the increase of the neutron number is marked.

There are several features to be noted in this figure. Firstly, it is a global trend that the neutron density distributions are extended further with neutron number. The surface expands outward rapidly, and the internal density distribution changes slightly. Secondly, for the Ne, Ca and Kr isotopes, the tails of the density distributions extend with the neutron number monotonically until the neutron drip line. For the Ni, Sr and Nd isotopes, however, the tails of the density distributions reach a maximum at certain neutron-rich nucleus, then saturate or even decrease with the neutron number till the neutron drip line. Thirdly, the shell structures influence the density distribution significantly, which can be seen from the dramatic change at the tail of the neutron density distribution when the neutron number N in a nucleus crosses the magic numbers 20, 28, 50, 82 and 126.

4.5. Neutron potential and diffuseness

To examine the isospin dependence of the mean-field potentials, we have investigated the neutron vector plus the scalar potentials $V(r) + S(r)$. The neutron potentials $V(r) + S(r)$ for even-even Ne, Ca, Ni, Kr, Sr and Nd isotopes from the proton drip-line nuclei to the neutron drip-line nuclei in the RCHB calculations are shown in Fig. 20. The increase of the neutron number is marked. Generally, the depths of the potentials rise with the neutron number, except for some fluctuation due to the shell structure. At the surface, the potentials extend outward and the diffuseness increases significantly with the neutron number. As a result, the potentials for nuclei near the neutron drip line become highly diffused. Such highly diffused potential will dramatically influence the low-l orbits near the threshold, which may lead to the level crossing and the halos in drip-line nuclei.

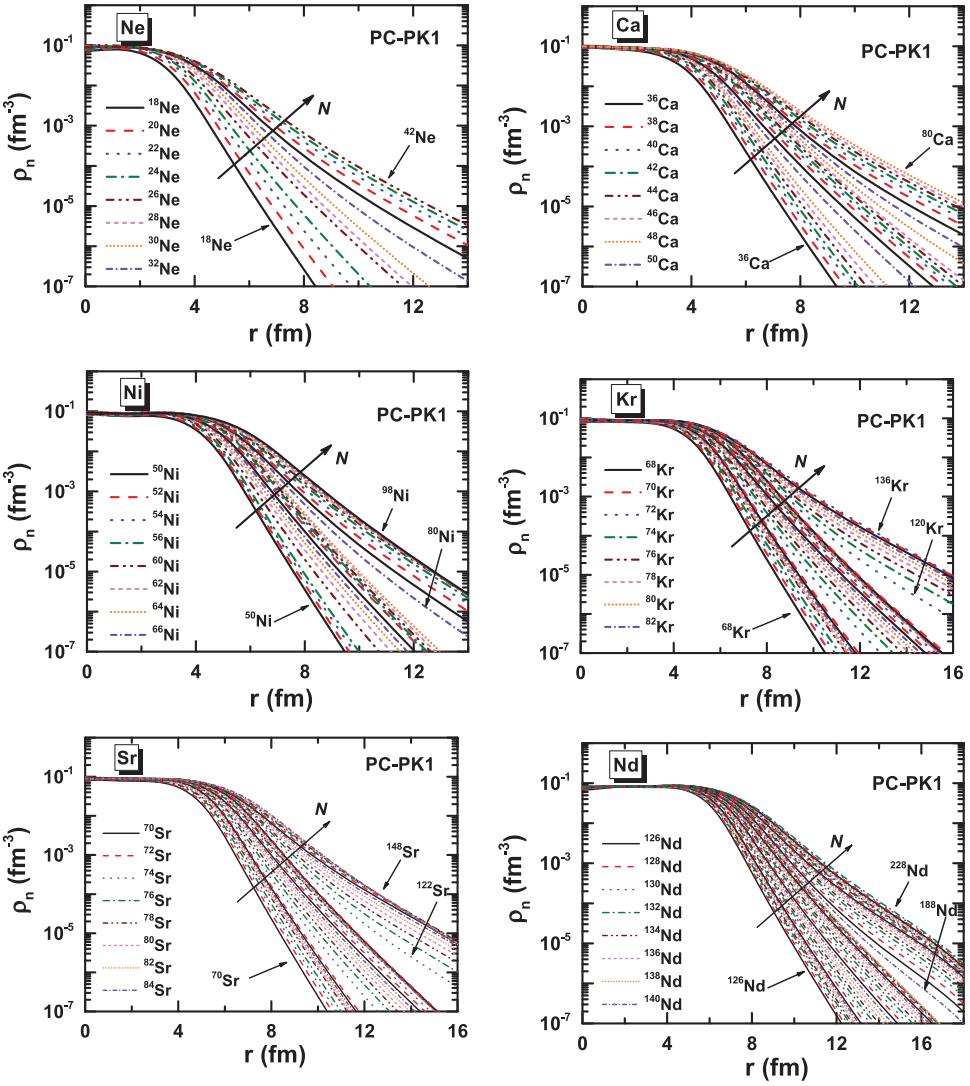

Fig. 19. (Color online) The neutron density distributions of Ne, Ca, Ni, Kr, Sr and Nd isotopic chains obtained from the RCHB calculation with PC-PK1, where the thick arrows represent the evolution trend of density with neutron number.

4.6. Pairing energies

To examine the pairing correlation globally, we investigate the pairing energies $E_{\rm pair}$ for the even-even nuclei over the nuclear landscape.

In the RCHB calculations, the pairing energy is defined as

$$E_{\rm pair} = -\frac{1}{2}{\rm Tr}(\Delta\kappa). \tag{31}$$

In Fig. 21, the neutron pairing energies $E^N_{\rm pair}$ of even-even nuclei with $8 \leqslant Z \leqslant 120$ from the RCHB calculations are shown. One can see that the neutron pairing energies are approaching to zero or even vanish for the nuclei near the closed shells $N = 8$, 20, 28, 50, 82 and 126, and they have maximum values for nuclei in the middle of the shells. Furthermore, the neutron pairing energies vanish at $N = 184$ and 258, which agrees with the predicted possible magic number $N = 184$ in Ref. [92]. For the isotopic chains with Z around 10, 20 and 38, the pairing energies for nuclei near the drip line do not vanish, which suggest the disappearance of the neutron magic numbers 28, 50 and 82 in these nuclei.

In Fig. 22, the proton pairing energies $E^P_{\rm pair}$ of even-even nuclei with $8 \leqslant Z \leqslant 120$ from the RCHB calculations are shown. Similar to the neutron, the proton pairing energies are also approaching to zero or even vanish at the closed shells $Z = 8$, 20, 28, 50 and 82, and have the maximum value in the middle of the shells. In comparison with the neutron case, the proton pairing energies in each isotopic chain remain almost the same or change modestly with the neutron number. Finally, the total pairing energies of even-even nuclei with $8 \leqslant Z \leqslant 120$ from the RCHB calculations are shown in Fig. 23, where the shell structure effects appear again.

4.7. Alpha decay energies

By using the binding energies provided in the RCHB theory with PC-PK1, we can extract the Q_α values of the bound nuclei with $10 \leq Z \leq 120$ [95],

$$Q_\alpha = E_B(Z-2, N-2) + E_B(2,2) - E_B(Z,N), \tag{32}$$

where $E_B(Z,N)$ is the binding energy for the nucleus with proton number Z and neutron number N. In Fig. 24, the Q_α obtained both from the RCHB calculations and the data in AME2012 [6] are shown, where the nuclei observed with α-decay radioactivity experimentally [1] are marked with green crosses.

From the RCHB calculations, the Q_α values of 3703 nuclei are positive, and they are scaled by colors in Fig. 24(a).

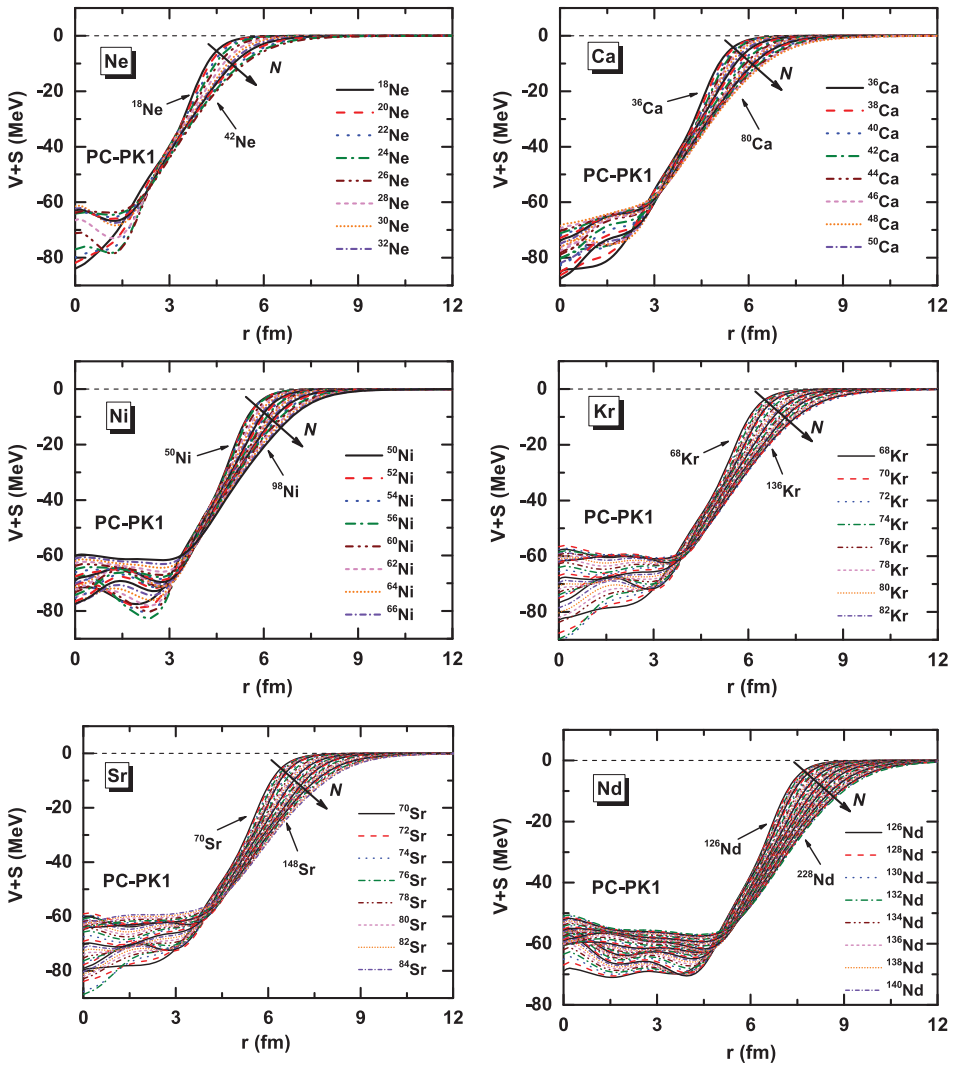

Fig. 20. (Color online) Same with Fig. 19, but for the neutron mean-field potentials $V + S$.

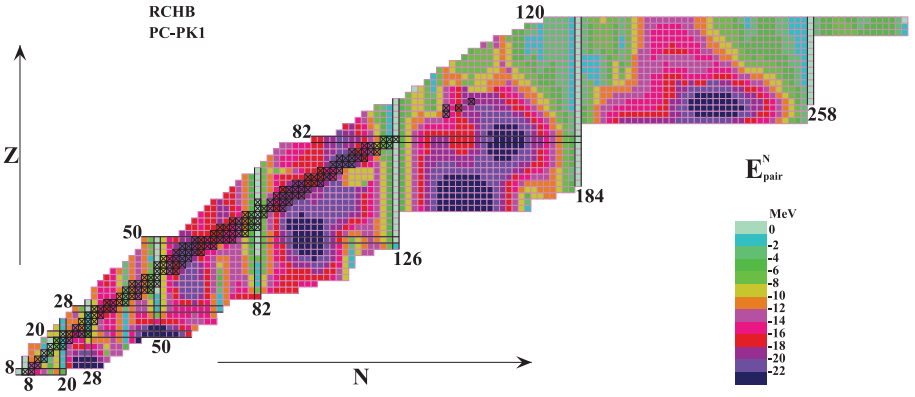

Fig. 21. (Color online) The neutron pairing energies of even-even nuclei with $8 \leqslant Z \leqslant 120$ from the RCHB calculations with PC-PK1.

Experimentally, as shown in Fig. 24(b), the existing data give 1067 nuclei with their Q_α values positive. Comparing the two panels of Fig. 24, we see the following features. Firstly, the positive α-decay energies deduced from the RCHB results present a similar pattern with those from available experimental values, although spherical symmetry is assumed. Secondly, in Fig. 24(a), 719 nuclei observed experimentally with the radioactivity of α-decay are marked with green crosses. Most of these nuclei are in the heavy and superheavy regions predicted to have Q_α values larger than 4 MeV. Thirdly, in the nuclear region with $N > 184$ and $Z > 92$, most nuclei in the up-left corner have $Q_\alpha > 4$ MeV. This indicates a possibility of α-radioactivity for these nuclei.

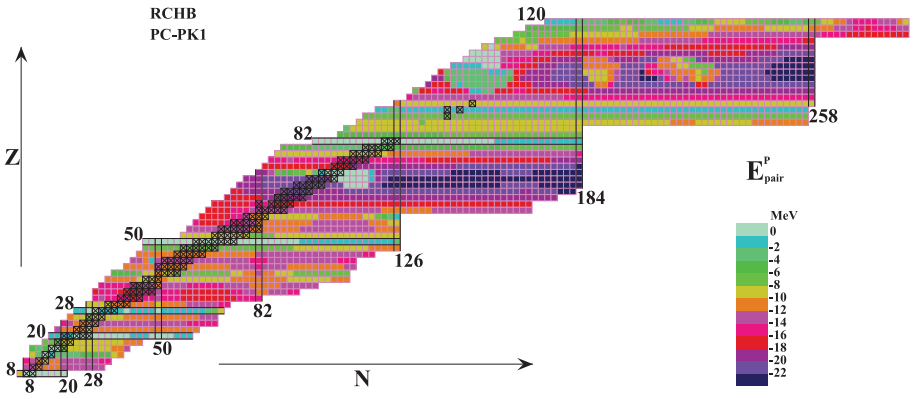

Fig. 22. (Color online) Same as Fig. 21, but for proton pairing energies.

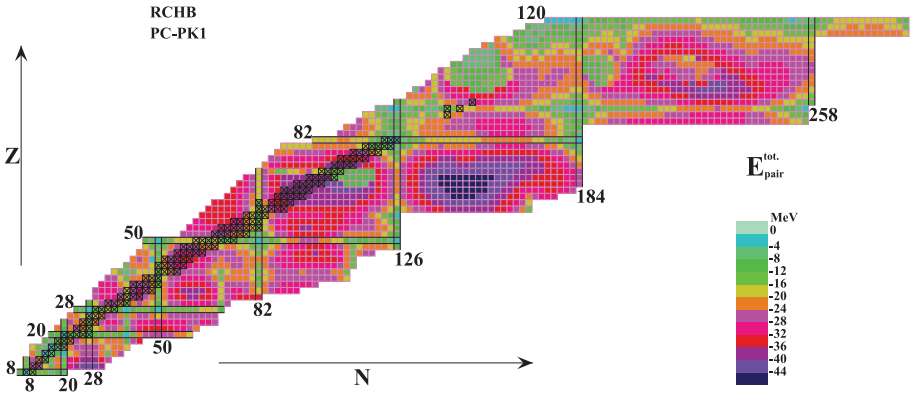

Fig. 23. (Color online) Same as Fig. 21, but for total pairing energies.

4.8. Proton emitters

The proton radioactivity from neutron-deficient nuclei beyond the proton drip line provides not only spectroscopic information on nuclear structure but also valuable clues on the nuclear force beyond the proton drip line. These proton emitters are also interesting open systems for quantum mechanical tunneling as the emitted proton goes through the barrier of Coulomb and centrifugal potentials.

Based on the RCHB mass table, the properties of (near) spherical proton emitters in the region from I ($Z = 53$) to Bi ($Z = 83$) isotopes are systematically studied [96]. In Fig. 25, the nuclear chart from the I ($Z = 53$) to Bi ($Z = 83$) isotopes is shown, where the experimentally known proton emitters [97] are highlighted.

The proton emitter candidates are located outside the proton drip line with positive Q values. Accordingly, the proton emitter candidates in the calculations satisfy the Fermi surface $\lambda_p > 0$, and one-proton separation energy $S_p < 0$ or two-proton separation energy $S_{2p} < 0$. The proton emitters observed in this region are well reproduced by the self-consistent RCHB calculations, except ^{170,171}Au, ^{176,177}Tl and ^{185}Bi. The half-lives of the proton emitters are calculated in Ref. [96] by combining the RCHB calculations and Wentzel–Kramers–Brillouin (WKB) method, and good agreements with the data are obtained.

5. Summary

In summary, we have performed systematic spherical calculations for all nuclei from $Z = 8$ to $Z = 120$ by using the RCHB theory with the relativistic density functional PC-PK1. The calculated binding energies, separation energies, neutron and proton Fermi surfaces, rms radii of neutron, proton, matter, and charge distributions, ground-state spins and parities are tabulated.

With the effects of the continuum included, there are totally 9035 nuclei predicted to be bound from $Z = 8$ to $Z = 120$. Comparing with the calculation without pairing, the RCHB theory predicts more bound nuclei in the neutron-rich side and extends the neutron drip line to more neutron-rich region. For the nuclei close to the neutron drip line, as the neutron Fermi surface is close to the continuum threshold, pairing correlations could scatter the nucleons from bound states to the continuum, thus provide a significant coupling between the continuum and bound states. As a result, some unbound nuclei predicted without pairing correlations can exist as bound ones. Therefore, the RCHB theory which allows a proper treatment of the continuum and the coupling to the bound states predicts a more extended neutron drip line than the other models. The considerable difference of the drip line between RHB in HO calculations with NL3* and present RCHB calculations are due to different functionals (PC-PK1 or NL3*), different pairing forces used, and the treatment of continuum in coordinate or HO space. Future investigations with same density functional and pairing force in both coordinate space and in harmonic oscillator basis are needed. The separation energy evolutions for two-neutron S_{2n}, one-neutron S_n, two-proton S_{2p} and one-proton S_p are presented and discussed.

The deformation effects on the neutron drip line are investigated with the DRHBc theory by taking Ar isotopes as examples. It is found that the deformation would affect the position of neutron drip line. For Ar isotopic chain, self-consistent treatment of the deformation and continuum extends the neutron drip-line nucleus from ^{62}Ar in the RCHB to ^{70}Ar in the DRHBc calculations.

The RCHB calculated charge radii R_c with PC-PK1 are compared with the experimental values, the rms deviation σ of the RCHB

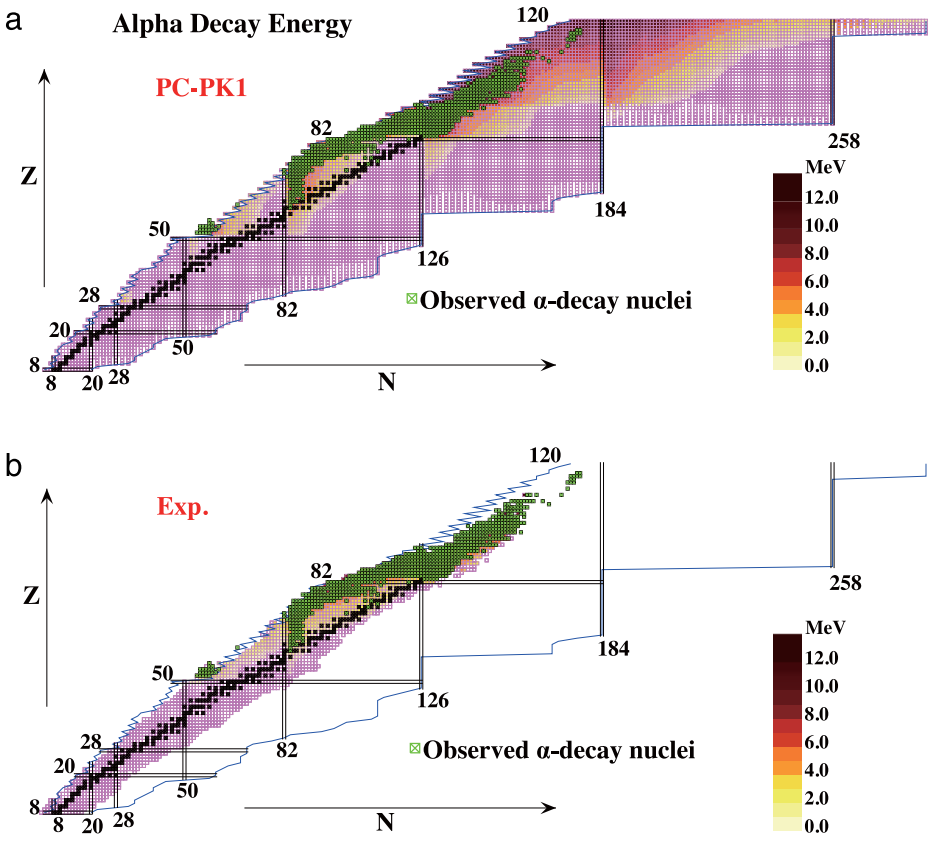

Fig. 24. α-decay energies Q_α for nuclei with $10 \leqslant Z \leqslant 120$, provided by (a) RCHB theory with PC-PK1 and (b) available experimental values [6]. Blue lines are proton and neutron drip lines predicted by the RCHB theory. The nuclei predicted to be bound in present work and observed experimentally are represented as the squares in panel (a) and (b), respectively. Furthermore, 719 nuclei observed experimentally with the radioactivity of α-decay are marked with green crosses. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

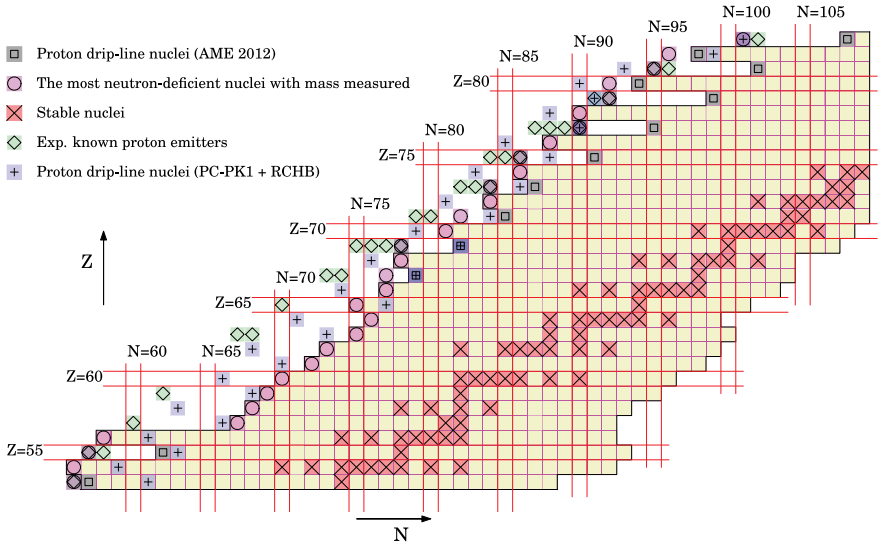

Fig. 25. (Color online) Part of nuclear chart from I ($Z = 53$) to Bi ($Z = 83$) isotopes by the RCHB theory with PC-PK1. The experimentally known proton emitters are denoted with the symbol $\diamond$, while the proton drip-line nuclei given by the spherical RCHB calculations are shown with the symbol $+$. The stable nuclei, the most neutron-deficient nuclei with mass measured and the proton drip-line nuclei in AME2012 [6] are also shown.

calculations from the data is 0.0358 fm. The comparison of the neutron rms radii of even-even nuclei with $8 \leqslant Z \leqslant 120$ between the RCHB calculations and the empirical formula are performed. Except for extremely neutron-rich nuclei, the systematic trend of the neutron radii in the RCHB calculations follows the simple empirical formula quite well.

The neutron density distributions of even-even Ne, Ca, Ni, Kr, Sr and Nd isotopes are discussed. For the Ne, Ca and Kr isotopes, the tails of the density distributions extend with the neutron number monotonically until the neutron drip line. For the Ni, Sr and Nd isotopes, the tails of the density distributions reach a maximum at certain neutron-rich nucleus, then saturate or even decrease with the neutron number till the neutron drip line.

The neutron potentials of even-even Ne, Ca, Ni, Kr, Sr and Nd isotopes are investigated. The depths of potentials generally rise with the neutron number, except for some fluctuation due to the shell structure. At the surface, the potentials extend outward and the diffuseness increases significantly with the neutron number.

The pairing energies of the even-even nuclei over the nuclear landscape are discussed. The pairing energies are approaching to zero or even vanish for the nuclei near the closed shells, and they have maximum values for nuclei in the middle of the shells. The possible magic numbers $N = 184$ and 258 in superheavy are predicted.

In addition, the α-decay energies and proton emitters based on the RCHB calculations are investigated. The α-decay energy pattern deduced from the RCHB calculations is similar to the one from available experimental values, and most of the proton emitters observed in the region from I ($Z = 53$) to Bi ($Z = 83$) isotopes are well reproduced by the self-consistent RCHB calculations.

The successful exploration of the nuclear chart by using the RCHB theory with the relativistic density functional PC-PK1 demonstrated the important effects of the continuum on the nuclear landscape. It is quite encouraging to consider the deformation and continuum effects simultaneously in determining the drip line in the future although it is quite time-consuming and numerically challenging.

Acknowledgments

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Explanation of Tables

Table 1. **Ground-state properties of nuclei calculated by RCHB theory with relativistic density functional PC-PK1**

Z	Proton number
N	Neutron number
A	Mass number
$E_{\rm b}^{\rm Cal.}$	Binding energy from RCHB calculations
$E_{\rm b}^{\rm Exp.}$	Binding energy from experimental data
$E_{\rm b}^{\rm Cal.}/A$	Per nucleon binding energy from RCHB calculations
$E_{\rm b}^{\rm Exp.}/A$	Per nucleon binding energy from experimental data
S_{2n}	Two-neutron separation energy
S_{2p}	Two-proton separation energy
S_n	One-neutron separation energy
S_p	One-proton separation energy
λ_n	Neutron Fermi surface
λ_p	Proton Fermi surface
R_m	Matter root-mean-square radius
R_n	Neutron root-mean-square radius
R_p	Proton root-mean-square radius
$R_{\rm c}^{\rm Cal.}$	Charge radius from RCHB calculations
$R_{\rm c}^{\rm Exp.}$	Charge radius from experimental data
$j^{\pi}(P)$	Ground state spin j and parity π of proton
$j^{\pi}(N)$	Ground state spin j and parity π of neutron
σ	rms deviations of binding energies and charge radii for each isotopic chain.

Table 1
Ground-state properties of nuclei calculated by RCHB theory with PC-PK1, in comparison with the available data of masses and charge radii. In addition, the data labeled with underline means the nucleus is unbound.

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
$Z = 8$ (O)																		
12	4	60.44	58.68	5.04	4.88					−19.45	0.44	2.738	2.335	2.919	3.027		0^+	0^+
13	5	77.81	75.56	5.99	5.81			17.38		−17.01	−0.99	2.619	2.373	2.762	2.876		0^+	$3/2^-$
14	6	101.86	98.73	7.28	7.05	41.42		24.05		−19.96	−1.34	2.465	2.238	2.621	2.741		0^+	0^+
15	7	112.81	111.96	7.52	7.46	34.99		10.95		−15.48	−5.43	2.599	2.537	2.652	2.770		0^+	$1/2^-$
16	8	127.29	127.62	7.96	7.98	25.43		14.48		−11.64	−7.83	2.638	2.626	2.649	2.768	2.701	0^+	0^+
17	9	132.48	131.76	7.79	7.75	19.67		5.19		−13.49	−9.79	2.690	2.733	2.642	2.760	2.695	0^+	$5/2^+$
18	10	141.63	139.81	7.87	7.77	14.34		9.15		−6.94	−11.79	2.736	2.807	2.644	2.763	2.775	0^+	0^+
19	11	145.27	143.76	7.65	7.57	12.79		3.64		−6.18	−13.50	2.792	2.896	2.642	2.760		0^+	$5/2^+$
20	12	153.16	151.37	7.66	7.57	11.54		7.89		−5.76	−15.10	2.842	2.964	2.649	2.767		0^+	0^+
21	13	156.04	155.18	7.43	7.39	10.77		2.88		−5.74	−16.16	2.935	3.096	2.653	2.771		0^+	$1/2^+$
22	14	162.91	162.03	7.41	7.36	9.75		6.87		−4.79	−18.54	2.955	3.111	2.659	2.777		0^+	0^+
23	15	166.49	164.77	7.24	7.16	10.45		3.58		−3.63	−19.61	3.001	3.173	2.650	2.768		0^+	$1/2^+$
24	16	170.90	168.95	7.12	7.02	7.99		4.41		−3.39	−20.52	3.082	3.268	2.672	2.789		0^+	0^+
25	17	172.02	168.18	6.88	6.73	5.53		1.12		−3.41	−23.79	3.169	3.370	2.692	2.809		0^+	$3/2^+$
26	18	175.10	168.86	6.73	6.49	4.20		3.08		−2.14	−22.36	3.230	3.428	2.732	2.847		0^+	0^+
27	19	175.57		6.50		3.56		0.47		−0.89	−23.36	3.310	3.516	2.760	2.874		0^+	$3/2^+$
28	20	178.02		6.36		2.92		2.45		−0.89	−23.36	3.370	3.576	2.790	2.903		0^+	0^+
σ		2.55													0.054			
$Z = 9$ (F)																		
17	8	128.76	128.22	7.57	7.54	28.40		16.64	1.47	−13.36	−8.41	2.704	2.623	2.774	2.887		$5/2^+$	0^+
18	9	135.84	137.37	7.55	7.63	23.72		7.08	3.36	−12.04	−8.74	2.734	2.720	2.749	2.863		$5/2^+$	$5/2^+$
19	10	146.83	147.80	7.73	7.78	18.07		10.99	5.20	−8.65	−11.89	2.766	2.789	2.741	2.855	2.898	$5/2^+$	0^+
20	11	152.29	154.40	7.61	7.72	16.45		5.46	7.02	−7.85	−12.81	2.805	2.866	2.729	2.844		$5/2^+$	$5/2^+$
21	12	161.83	162.50	7.71	7.74	15.00		9.54	8.67	−7.33	−14.38	2.845	2.928	2.730	2.844		$5/2^+$	0^+
22	13	166.10	167.73	7.55	7.62	13.81		4.27	10.05	−6.28	−15.07	2.888	2.997	2.723	2.838		$5/2^+$	$5/2^+$
23	14	174.70	175.29	7.60	7.62	12.87		8.60	11.79	−6.12	−17.77	2.933	3.057	2.729	2.844		$5/2^+$	0^+
24	15	179.70	179.11	7.49	7.46	13.60		5.00	13.21	−4.87	−22.62	2.978	3.122	2.720	2.836		$5/2^+$	$1/2^+$
25	16	184.97	183.38	7.40	7.34	10.28		5.28	14.07	−4.39	−21.13	3.051	3.213	2.742	2.856		$5/2^+$	0^+
26	17	186.99	184.15	7.19	7.10	7.30		2.02	14.97	−4.37	−23.63	3.130	3.307	2.766	2.879		$5/2^+$	$3/2^+$
27	18	191.04	186.25	7.08	6.89	6.06		4.05	15.94	−3.09	−22.83	3.192	3.369	2.805	2.917		$5/2^+$	0^+
28	19	192.47	186.03	6.87	6.64	5.48		1.43	16.90	−1.61	−23.41	3.265	3.450	2.834	2.945		$5/2^+$	$3/2^+$
29	20	195.92		6.76		4.88		3.45	17.90	−1.65	−24.73	3.321	3.507	2.865	2.975		$5/2^+$	0^+
30	21	195.25		6.51		2.78		−0.67	18.02	−1.67	−24.39	3.654	3.943	2.867	2.977		$5/2^+$	$3/2^-$
31	22	196.42		6.34		0.50		1.17	18.79	−0.49	−25.40	3.487	3.704	2.890	2.998		$5/2^+$	0^+
32	23	195.57		6.11		0.32		−0.85		−0.39	−25.31	3.810	4.114	2.893	3.002		$5/2^+$	$3/2^-$
33	24	196.34		5.95		−0.08		0.77		−0.27	−25.61	3.662	3.907	2.911	3.019		$5/2^+$	0^+
σ		2.70													0.043			
$Z = 10$ (Ne)																		
16	6	100.87	97.33	6.30	6.08		−0.99		0.51	−22.43	0.37	2.735	2.280	2.975	3.081		0^+	0^+
17	7	115.25	112.89	6.78	6.64		2.45	14.38	3.13	−21.08	−1.02	2.757	2.553	2.891	2.999	3.043	0^+	$1/2^-$
18	8	133.74	132.14	7.43	7.34	32.87	6.45	18.48	4.98	−15.60	−2.73	2.754	2.630	2.850	2.960	2.971	0^+	0^+
19	9	142.63	143.78	7.51	7.57	27.38	10.15	8.90	6.79	−16.73	−4.40	2.774	2.718	2.823	2.934	3.008	0^+	$5/2^+$
20	10	155.45	160.64	7.77	8.03	21.71	13.82	12.82	8.62	−10.32	−6.05	2.798	2.784	2.811	2.923	3.005	0^+	0^+
21	11	162.69	167.41	7.75	7.97	20.06	17.42	7.24	10.40	−9.49	−7.75	2.824	2.851	2.795	2.907	2.970	0^+	$5/2^+$
22	12	173.93	177.77	7.91	8.08	18.48	20.77	11.24	12.10	−8.91	−9.35	2.856	2.908	2.791	2.904	2.953	0^+	0^+
23	13	180.01	182.97	7.83	7.96	17.32	23.97	6.08	13.91	−7.65	−11.03	2.883	2.961	2.777	2.890	2.910	0^+	$5/2^+$
24	14	190.09	191.84	7.92	7.99	16.16	27.17	10.08	15.39	−7.46	−12.48	2.922	3.019	2.781	2.894	2.901	0^+	0^+
25	15	196.36	196.02	7.85	7.84	16.35	29.87	6.27	16.66	−6.74	−13.83	2.966	3.086	2.777	2.890	2.932	0^+	$1/2^+$
26	16	202.63	201.55	7.79	7.75	12.54	31.73	6.27	17.65	−5.41	−14.75	3.035	3.174	2.799	2.911	2.925	0^+	0^+
27	17	205.67	203.07	7.62	7.52	9.31	33.65	3.04	18.68	−5.39	−15.78	3.107	3.262	2.825	2.936		0^+	$3/2^+$
28	18	210.78	206.88	7.53	7.39	8.15	35.68	5.11	19.74	−4.09	−16.81	3.169	3.327	2.863	2.973	2.964	0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
29	19	213.25	207.84	7.35	7.18	7.58	37.67	2.47	20.78	−2.69	−17.82	3.235	3.402	2.892	3.001		0^+	$3/2^+$
30	20	217.80	211.28	7.26	7.04	7.02	39.77	4.55	21.87	−2.49	−18.83	3.290	3.459	2.923	3.031		0^+	0^+
31	21	217.26	211.57	7.01	6.82	4.01	40.03	−0.54	22.01	−2.56	−19.00	3.568	3.836	2.926	3.033		0^+	$3/2^-$
32	22	219.51		6.86		1.72	41.88	2.26	23.09	−1.05	−20.25	3.423	3.617	2.951	3.058		0^+	0^+
33	23	218.86		6.63		1.60		−0.65	23.29	−0.98	−20.48	3.680	3.954	2.955	3.061		0^+	$3/2^-$
34	24	220.49		6.49		0.98		1.63	24.16	−0.78	−21.46	3.565	3.784	2.975	3.081		0^+	0^+
35	25	219.73		6.28		0.86		−0.77		−0.69	−21.74	3.810	4.095	2.981	3.086		0^+	$3/2^-$
36	26	221.17		6.14		0.68		1.45		−0.62	−22.56	3.703	3.941	2.998	3.103		0^+	0^+
37	27	220.38		5.96		0.65		−0.79		−0.60	−22.75	3.962	4.264	3.001	3.106		0^+	$1/2^-$
38	28	221.66		5.83		0.49		1.28		−0.49	−23.59	3.832	4.083	3.019	3.123		0^+	0^+
39	29	220.86		5.66		0.48		−0.80		−0.41	−23.86	4.060	4.360	3.024	3.128		0^+	$1/2^-$
40	30	221.97		5.55		0.31		1.11		−0.34	−24.59	3.950	4.209	3.041	3.144		0^+	0^+
41	31	221.02		5.39		0.16		−0.95		−0.20	−24.91	4.184	4.489	3.047	3.151		0^+	$1/2^-$
42	32	222.04		5.29		0.06		1.02		−0.12	−25.58	4.057	4.320	3.063	3.166		0^+	0^+
43	33	220.79		5.13		−0.23		−1.25		0.03	−25.80	4.365	4.688	3.069	3.172		0^+	$1/2^-$
44	34	221.59		5.04		−0.45		0.79		0.26	−26.50	4.164	4.431	3.089	3.191		0^+	0^+
σ		3.56													0.046			
$Z = 11$ (Na)																		
17	6	98.28		5.78			−2.08		−2.59	−23.41	0.74	3.851	2.284	4.480	4.551		$1/2^+$	0^+
18	7	113.49	111.64	6.30	6.25		1.36	15.21	−1.77	−17.86	−0.61	3.139	2.557	3.458	3.550		$1/2^+$	$1/2^-$
19	8	133.04	131.82	7.00	6.94	34.76	4.28	19.55	−0.70	−16.92	−1.71	2.830	2.633	2.966	3.072		$5/2^+$	0^+
20	9	143.69	145.97	7.18	7.30	30.20	7.85	10.65	1.05	−16.07	−3.28	2.826	2.713	2.915	3.023	2.972	$5/2^+$	$5/2^+$
21	10	158.26	163.08	7.54	7.77	25.22	11.43	14.57	2.81	−12.00	−4.88	2.836	2.775	2.890	2.999	3.014	$5/2^+$	0^+
22	11	167.31	174.15	7.61	7.92	23.63	15.02	9.05	4.62	−11.19	−6.56	2.848	2.833	2.863	2.972	2.985	$5/2^+$	$5/2^+$
23	12	180.26	186.56	7.84	8.11	22.00	18.43	12.95	6.33	−10.57	−8.18	2.868	2.884	2.850	2.960	2.994	$5/2^+$	0^+
24	13	188.50	193.52	7.85	8.06	21.19	22.41	8.24	8.49	−9.08	−10.03	2.873	2.917	2.820	2.932	2.974	$5/2^+$	$5/2^+$
25	14	200.03	202.53	8.00	8.10	19.77	25.33	11.53	9.94	−8.87	−11.53	2.904	2.970	2.819	2.931	2.977	$5/2^+$	0^+
26	15	207.26	208.11	7.97	8.00	18.76	27.56	7.23	10.90	−7.26	−12.69	2.957	3.050	2.825	2.936	2.993	$5/2^+$	$1/2^+$
27	16	214.37	214.84	7.94	7.96	14.34	29.39	7.11	11.74	−6.38	−13.61	3.022	3.136	2.848	2.958	3.013	$5/2^+$	0^+
28	17	218.37	218.38	7.80	7.80	11.11	31.37	4.00	12.70	−6.32	−14.63	3.090	3.221	2.875	2.985	3.040	$5/2^+$	$3/2^+$
29	18	224.49	222.78	7.74	7.68	10.13	33.45	6.13	13.71	−5.10	−15.68	3.150	3.287	2.913	3.021	3.092	$5/2^+$	0^+
30	19	227.96	225.06	7.60	7.51	9.59	35.49	3.47	14.71	−3.37	−16.70	3.212	3.358	2.941	3.048	3.118	$5/2^+$	$3/2^+$
31	20	233.54	229.34	7.53	7.39	9.05	37.62	5.58	15.75	−3.43	−17.73	3.264	3.414	2.972	3.078	3.170	$5/2^+$	0^+
32	21	233.16	230.87	7.29	7.21	5.20	37.91	−0.38	15.91	−3.53	−17.95	3.488	3.728	2.976	3.081		$5/2^+$	$3/2^-$
33	22	236.73		7.17		3.19	40.31	3.57	17.22	−1.74	−19.34	3.377	3.551	3.001	3.106		$5/2^+$	0^+
34	23	236.32		6.95		3.16	40.76	−0.40	17.46	−1.69	−19.62	3.574	3.816	3.006	3.110		$5/2^+$	$3/2^-$
35	24	238.96		6.83		2.23	42.62	2.63	18.46	−1.39	−20.71	3.498	3.694	3.027	3.131		$5/2^+$	0^+
36	25	238.50		6.62		2.17		−0.46	18.77	−1.32	−21.06	3.673	3.921	3.033	3.137		$5/2^+$	$3/2^-$
37	26	240.76		6.51		1.81		2.27	19.59	−1.19	−21.93	3.619	3.834	3.050	3.154		$5/2^+$	0^+
38	27	240.19		6.32		1.70		−0.57	19.81	−1.08	−22.33	3.782	4.040	3.058	3.161		$5/2^+$	$3/2^-$
39	28	242.32		6.21		1.56		2.13	20.66	−1.03	−23.04	3.736	3.967	3.072	3.175		$5/2^+$	0^+
40	29	241.80		6.04		1.60		−0.53	20.94	−0.98	−23.36	3.900	4.170	3.077	3.180		$5/2^+$	$1/2^-$
41	30	243.69		5.94		1.37		1.89	21.72	−0.86	−24.09	3.847	4.089	3.093	3.194		$5/2^+$	0^+
42	31	243.17		5.79		1.38		−0.52	22.15	−0.73	−24.50	3.990	4.262	3.099	3.201		$5/2^+$	$1/2^-$
43	32	244.81		5.69		1.12		1.64	22.78	−0.63	−25.10	3.953	4.203	3.113	3.214		$5/2^+$	0^+
44	33	243.91		5.54		0.74		−0.90	23.12	−0.36	−25.46	4.160	4.453	3.120	3.221		$5/2^+$	$1/2^-$
45	34	245.37		5.45		0.56		1.46	23.79	−0.15	−26.04	4.052	4.307	3.136	3.236		$5/2^+$	0^+
46	35	243.97		5.30		0.06		−1.40		−0.03	−26.13	4.412	4.742	3.141	3.241		$5/2^+$	$1/2^-$
47	36	244.66		5.21		−0.71		0.69		0.34	−26.72	4.174	4.436	3.171	3.270		$5/2^+$	0^+
σ		3.86													0.055			
$Z = 12$ (Mg)																		
19	7	114.54	112.14	6.03	5.84		−0.71		1.05	−23.65	0.36	2.935	2.573	3.127	3.228		0^+	$1/2^-$
20	8	136.23	134.47	6.81	6.72		2.49	21.69	3.19	−18.59	−1.01	2.886	2.643	3.037	3.141		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
21	9	148.42	149.20	7.07	7.10	33.88	5.79	12.19	4.74	−19.93	−2.47	2.874	2.719	2.985	3.090		0^+	$5/2^+$
22	10	164.63	168.58	7.48	7.66	28.40	9.18	16.21	6.37	−13.56	−3.97	2.875	2.777	2.954	3.061		0^+	0^+
23	11	175.35	181.73	7.62	7.90	26.93	12.66	10.72	8.04	−12.79	−5.59	2.876	2.828	2.920	3.028		0^+	$5/2^+$
24	12	189.98	198.26	7.92	8.26	25.35	16.05	14.62	9.72	−12.18	−7.18	2.887	2.873	2.901	3.010	3.057	0^+	0^+
25	13	200.11	205.59	8.00	8.22	24.76	20.10	10.13	11.61	−10.49	−9.03	2.881	2.897	2.864	2.974	3.029	0^+	$5/2^+$
26	14	213.56	216.68	8.21	8.33	23.59	23.48	13.45	13.53	−10.30	−10.77	2.890	2.927	2.845	2.955	3.034	0^+	0^+
27	15	221.50	223.12	8.20	8.26	21.39	25.14	7.93	14.24	−9.68	−11.69	2.955	3.024	2.867	2.976		0^+	$1/2^+$
28	16	229.57	231.63	8.20	8.27	16.01	26.94	8.07	15.20	−7.41	−12.61	3.019	3.110	2.893	3.002		0^+	0^+
29	17	234.63	235.28	8.09	8.11	13.14	28.97	5.07	16.27	−7.37	−13.64	3.083	3.193	2.921	3.028		0^+	$3/2^+$
30	18	241.87	241.64	8.06	8.06	12.30	31.09	7.23	17.37	−6.15	−14.71	3.141	3.258	2.957	3.063		0^+	0^+
31	19	246.40	243.95	7.95	7.87	11.77	33.16	4.54	18.44	−4.81	−15.75	3.199	3.327	2.985	3.091		0^+	$3/2^+$
32	20	253.06	249.72	7.91	7.81	11.19	35.26	6.66	19.52	−4.42	−16.79	3.249	3.382	3.015	3.119		0^+	0^+
33	21	253.45	252.00	7.68	7.64	7.05	36.19	0.39	20.29	−4.63	−17.77	3.303	3.450	3.029	3.133		0^+	$7/2^-$
34	22	257.96	256.71	7.59	7.54	4.90	38.44	4.51	21.23	−2.51	−18.55	3.349	3.504	3.043	3.147		0^+	0^+
35	23	257.86	257.47	7.37	7.36	4.41	39.00	−0.10	21.53	−2.48	−18.88	3.502	3.717	3.049	3.152		0^+	$3/2^-$
36	24	261.63	260.80	7.27	7.24	3.67	41.14	3.77	22.67	−2.06	−20.07	3.454	3.631	3.070	3.173		0^+	0^+
37	25	261.55		7.07		3.70	41.83	−0.08	23.05	−2.00	−20.48	3.585	3.805	3.077	3.179		0^+	$3/2^-$
38	26	264.70		6.97		3.07	43.53	3.15	23.94	−1.78	−21.41	3.562	3.758	3.094	3.196		0^+	0^+
39	27	264.58		6.78		3.03	44.20	−0.12	24.39	−1.69	−21.88	3.676	3.904	3.102	3.203		0^+	$3/2^-$
40	28	267.42		6.69		2.72	45.76	2.84	25.09	−1.57	−22.60	3.669	3.882	3.116	3.217		0^+	0^+
41	29	267.22		6.52		2.64	46.36	−0.20	25.42	−1.56	−22.98	3.793	4.038	3.121	3.222		0^+	$1/2^-$
42	30	269.87		6.43		2.45	47.90	2.65	26.18	−1.37	−23.69	3.774	4.001	3.135	3.236		0^+	0^+
43	31	269.84		6.28		2.62	48.82	−0.03	26.67	−1.29	−24.15	3.873	4.122	3.141	3.241		0^+	$1/2^-$
44	32	272.04		6.18		2.17	50.00	2.20	27.22	−1.12	−24.71	3.877	4.116	3.154	3.253		0^+	0^+
45	33	271.72		6.04		1.88	50.93	−0.32	27.81	−0.68	−25.22	3.984	4.244	3.161	3.261		0^+	$1/2^-$
46	34	273.60		5.95		1.56		1.87		−0.56	−25.64	3.978	4.225	3.174	3.273		0^+	0^+
47	35	272.80		5.80		1.08		−0.80		−0.57	−25.65	4.300	4.623	3.173	3.273		0^+	$1/2^+$
48	36	273.55		5.70		−0.05		0.75		0.04	−26.36	4.076	4.325	3.214	3.312		0^+	0^+
σ		3.51													0.062			
$Z = 13$ (Al)																		
20	7	112.14		5.61			−1.35		−2.40	−18.81	0.73	3.645	2.577	4.107	4.184		$1/2^+$	$1/2^-$
21	8	134.70		6.00			1.66	22.56	−1.53	−19.28	−0.62	3.079	2.648	3.317	3.412		$1/2^+$	0^+
22	9	147.87		6.72		35.73	4.18	13.71	−0.55	−18.08	−2.18	2.991	2.724	3.163	3.263		$1/2^+$	$5/2^+$
23	10	165.51	168.72	7.20	7.33	30.81	7.25	17.64	0.88	−15.11	−2.53	2.919	2.771	3.027	3.131		$5/2^+$	0^+
24	11	178.22	183.59	7.43	7.65	30.35	10.91	12.71	2.86	−14.55	−3.85	2.897	2.809	2.970	3.076		$5/2^+$	$5/2^+$
25	12	194.86	200.53	7.79	8.02	29.35	14.60	16.64	4.88	−14.04	−5.20	2.892	2.844	2.935	3.042		$5/2^+$	0^+
26	13	207.00	211.89	7.96	8.15	28.78	18.50	12.14	6.89	−11.99	−6.69	2.880	2.866	2.894	3.003		$5/2^+$	$5/2^+$
27	14	222.44	224.95	8.24	8.33	27.57	22.41	15.44	8.87	−11.68	−8.29	2.878	2.888	2.866	2.976	3.061	$5/2^+$	0^+
28	15	231.04	232.68	8.25	8.31	24.04	23.78	8.60	9.54	−9.31	−9.39	2.944	2.989	2.892	3.001		$5/2^+$	$1/2^+$
29	16	239.85	242.11	8.27	8.35	17.41	25.48	8.81	10.28	−8.29	−10.52	3.006	3.074	2.920	3.028		$5/2^+$	0^+
30	17	245.81	247.84	8.19	8.26	14.77	27.44	5.96	11.18	−8.19	−11.67	3.067	3.156	2.947	3.054		$5/2^+$	$3/2^+$
31	18	254.05	254.99	8.20	8.23	14.20	29.55	8.24	12.18	−7.16	−12.75	3.123	3.220	2.983	3.089		$5/2^+$	0^+
32	19	259.55	259.21	8.11	8.10	13.74	31.59	5.51	13.15	−5.23	−13.82	3.178	3.287	3.012	3.116		$5/2^+$	$3/2^+$
33	20	267.21	264.65	8.10	8.02	13.16	33.67	7.65	14.15	−5.43	−14.86	3.226	3.342	3.041	3.144		$5/2^+$	0^+
34	21	268.61	267.32	7.90	7.86	9.05	35.44	1.40	15.16	−5.28	−15.85	3.273	3.402	3.053	3.156		$5/2^+$	$7/2^-$
35	22	273.90	272.55	7.83	7.78	6.70	37.18	5.30	15.95	−3.63	−16.73	3.315	3.453	3.067	3.169		$5/2^+$	0^+
36	23	274.45	274.45	7.62	7.63	5.84	38.12	0.54	16.59	−2.98	−17.64	3.363	3.514	3.079	3.182		$5/2^+$	$7/2^-$
37	24	279.08	278.66	7.54	7.53	5.18	40.12	4.64	17.45	−2.79	−18.40	3.409	3.568	3.093	3.093		$5/2^+$	0^+
38	25	279.36	280.33	7.35	7.38	4.91	40.86	0.28	17.81	−2.78	−18.87	3.515	3.713	3.101	3.203		$5/2^+$	$3/2^-$
39	26	283.47		7.27		4.39	42.71	4.11	18.77	−2.43	−19.88	3.506	3.685	3.118	3.219		$5/2^+$	0^+
40	27	283.83		7.10		4.47	43.64	0.36	19.25	−2.37	−20.41	3.595	3.801	3.126	3.227		$5/2^+$	$3/2^-$
41	28	287.36		7.01		3.89	45.04	3.53	19.94	−2.16	−21.18	3.606	3.802	3.141	3.241		$5/2^+$	0^+
42	29	287.71		6.85		3.89	45.92	0.35	20.49	−2.03	−21.75	3.682	3.898	3.148	3.248		$5/2^+$	$3/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
43	30	290.90		6.77		3.54	47.21	3.19	21.03	−1.92	−22.33	3.706	3.919	3.160	3.260		$5/2^+$	0^+
44	31	291.31		6.62		3.60	48.14	0.41	21.47	−1.87	−22.83	3.783	4.014	3.165	3.264		$5/2^+$	$1/2^-$
45	32	294.10		6.54		3.20	49.29	2.79	22.07	−1.63	−23.37	3.806	4.034	3.176	3.275		$5/2^+$	0^+
46	33	294.48		6.40		3.17	50.57	0.37	22.76	−1.02	−23.99	3.869	4.110	3.179	3.279		$5/2^+$	$1/2^-$
47	34	296.65		6.31		2.55	51.28	2.17	23.06	−0.94	−24.30	3.907	4.148	3.192	3.291		$5/2^+$	0^+
48	35	295.84		6.16		1.36	51.87	−0.81	23.04	−0.96	−24.31	3.974	4.228	3.192	3.291		$5/2^+$	$1/2^-$
49	36	297.04		6.06		0.39	52.38	1.20	23.49	−0.26	−25.10	4.003	4.244	3.243	3.340		$5/2^+$	0^+
50	37	296.28		5.93		0.44		−0.76		−0.28	−25.12	4.293	4.605	3.244	3.341		$5/2^+$	$1/2^-$
51	38	296.77		5.82		−0.27		0.49		0.02	−25.88	4.100	4.342	3.293	3.389		$5/2^+$	0^+
σ		2.81													0.085			
$Z = 14$ (Si)																		
22	8	135.95		6.18			−0.28		1.25	−21.08	0.38	3.035	2.660	3.230	3.328		0^+	0^+
23	9	150.93		6.56			2.51	14.98	3.06	−23.58	−0.81	2.991	2.728	3.148	3.248		0^+	$5/2^+$
24	10	170.17	172.01	7.09	7.17	34.22	5.54	19.24	4.66	−16.48	−2.04	2.966	2.779	3.093	3.195		0^+	0^+
25	11	184.22	187.01	7.37	7.48	33.29	8.87	14.05	6.00	−15.95	−3.33	2.939	2.814	3.033	3.137		0^+	$5/2^+$
26	12	202.45	206.05	7.79	7.92	32.28	12.47	18.23	7.59	−15.61	−4.65	2.917	2.838	2.983	3.089		0^+	0^+
27	13	216.67	219.36	8.02	8.12	32.45	16.56	14.23	9.67	−13.45	−5.97	2.887	2.846	2.924	3.032		0^+	$5/2^+$
28	14	234.04	236.54	8.36	8.45	31.59	20.48	17.37	11.60	−13.13	−7.35	2.875	2.862	2.889	2.998	3.122	0^+	0^+
29	15	243.44	245.01	8.39	8.45	26.77	21.95	9.40	12.41	−13.25	−8.61	2.942	2.964	2.919	3.026	3.117	0^+	$1/2^+$
30	16	253.15	255.62	8.44	8.52	19.11	23.58	9.70	13.30	−9.27	−9.90	3.003	3.049	2.949	3.056	3.133	0^+	0^+
31	17	259.99	262.21	8.39	8.46	16.55	25.36	6.85	14.18	−9.20	−11.08	3.068	3.135	2.985	3.090		0^+	$3/2^+$
32	18	269.34	271.41	8.42	8.48	16.20	27.48	9.35	15.30	−8.24	−12.13	3.123	3.200	3.020	3.124		0^+	0^+
33	19	275.89	275.91	8.36	8.36	15.90	29.49	6.55	16.34	−7.20	−13.19	3.176	3.266	3.050	3.153		0^+	$3/2^+$
34	20	284.63	283.43	8.37	8.34	15.29	31.58	8.74	17.43	−6.47	−14.23	3.223	3.320	3.078	3.180		0^+	0^+
35	21	287.11	285.90	8.20	8.17	11.21	33.66	2.47	18.50	−7.26	−15.25	3.263	3.375	3.088	3.190		0^+	$7/2^-$
36	22	293.31	292.01	8.15	8.11	8.68	35.36	6.21	19.41	−4.25	−16.17	3.302	3.424	3.101	3.202		0^+	0^+
37	23	294.85	294.28	7.97	7.95	7.74	37.27	1.54	20.40	−3.84	−17.13	3.344	3.478	3.112	3.213		0^+	$7/2^-$
38	24	300.29	299.93	7.90	7.89	6.98	38.66	5.44	21.21	−3.59	−17.95	3.386	3.529	3.126	3.226		0^+	0^+
39	25	301.26	301.51	7.72	7.74	6.41	40.36	0.97	21.90	−3.22	−18.82	3.429	3.583	3.136	3.236		0^+	$7/2^-$
40	26	306.25	306.47	7.66	7.66	5.96	41.54	4.99	22.78	−3.12	−19.54	3.473	3.635	3.150	3.250		0^+	0^+
41	27	307.15	307.85	7.49	7.51	5.89	42.92	0.90	23.32	−3.10	−20.10	3.548	3.734	3.157	3.257		0^+	$3/2^-$
42	28	311.48		7.42		5.24	44.06	4.82	24.12	−2.76	−20.92	3.564	3.745	3.171	3.271		0^+	0^+
43	29	312.46		7.27		5.31	45.24	0.98	24.75	−2.65	−21.54	3.627	3.825	3.179	3.278		0^+	$3/2^-$
44	30	316.17		7.19		4.69	46.30	3.71	25.27	−2.44	−22.10	3.659	3.859	3.190	3.289		0^+	0^+
45	31	317.05		7.05		4.59	47.21	0.88	25.74	−2.42	−22.61	3.725	3.941	3.194	3.293		0^+	$1/2^-$
46	32	320.39		6.97		4.22	48.35	3.34	26.29	−2.10	−23.13	3.757	3.974	3.206	3.304		0^+	0^+
47	33	321.47		6.84		4.42	49.75	1.08	27.00	−1.42	−23.73	3.810	4.040	3.203	3.301		0^+	$1/2^-$
48	34	323.86		6.75		3.47	50.27	2.39	27.21	−1.33	−24.03	3.857	4.090	3.219	3.317		0^+	0^+
49	35	323.28		6.60		1.80	50.50	−0.59	27.64	−1.40	−24.43	3.918	4.160	3.234	3.332		0^+	$5/2^-$
50	36	324.95		6.50		1.09	51.40	1.68	27.91	−0.63	−24.84	3.952	4.185	3.275	3.371		0^+	0^+
51	37	324.20		6.36		0.92		−0.75	28.47	−0.65	−24.86	4.238	4.550	3.275	3.372		0^+	$1/2^-$
52	38	325.46		6.26		0.51		1.26	28.69	−0.35	−25.67	4.043	4.276	3.329	3.423		0^+	0^+
53	39	324.77		6.13		0.57		−0.69	29.42	−0.38	−25.69	4.300	4.599	3.329	3.424		0^+	$1/2^+$
54	40	325.46		6.03		−0.00		0.69		0.17	−26.42	4.150	4.389	3.374	3.467		0^+	0^+
σ		1.84													0.099			
$Z = 15$ (P)																		
22	7	108.82		4.95						−19.90	1.73	4.105	2.594	4.645	4.713		$1/2^+$	$1/2^-$
23	8	133.70		5.81			−0.22	24.88	−2.25	−21.93	1.01	3.464	2.661	3.824	3.907		$1/2^+$	0^+
24	9	150.46		6.27		41.64	2.82	16.76	−0.47	−22.53	0.52	3.053	2.720	3.237	3.334		$1/2^+$	$5/2^+$
25	10	170.98		6.84		37.27	5.46	20.52	0.81	−17.82	−0.97	3.022	2.773	3.177	3.276		$1/2^+$	0^+
26	11	186.05		7.16		35.60	7.84	15.08	1.83	−17.12	−2.40	2.997	2.816	3.124	3.225		$1/2^+$	$5/2^+$
27	12	205.05	206.91	7.59	7.66	34.07	10.18	18.99	2.60	−16.56	−3.52	2.985	2.854	3.086	3.188		$1/2^+$	0^+
28	13	219.68	221.41	7.85	7.91	33.63	12.68	14.64	3.01	−14.58	−4.26	2.963	2.872	3.039	3.143		$1/2^+$	$5/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
29	14	237.73	239.29	8.20	8.25	32.69	15.30	18.05	3.69	−14.31	−6.98	2.951	2.892	3.005	3.110		$1/2^+$	0^+
30	15	249.13	250.60	8.30	8.35	29.45	18.10	11.40	5.69	−13.99	−8.05	3.002	2.984	3.020	3.124		$1/2^+$	$1/2^+$
31	16	260.83	262.92	8.41	8.48	23.10	20.99	11.70	7.69	−10.78	−8.99	3.047	3.060	3.033	3.137	3.189	$1/2^+$	0^+
32	17	269.07	270.85	8.41	8.46	19.94	23.26	8.24	9.08	−10.77	−9.84	3.098	3.134	3.057	3.160		$1/2^+$	$3/2^+$
33	18	279.40	280.96	8.47	8.51	18.57	25.36	10.33	10.06	−9.20	−10.80	3.146	3.197	3.083	3.185		$1/2^+$	0^+
34	19	286.98	287.24	8.44	8.45	17.91	27.42	7.57	11.08	−7.64	−11.76	3.192	3.259	3.106	3.208		$1/2^+$	$3/2^+$
35	20	296.59	295.62	8.47	8.45	17.19	28.46	9.62	11.96	−7.36	−13.41	3.235	3.311	3.130	3.230		$1/2^+$	0^+
36	21	299.94	299.08	8.33	8.31	12.96	31.33	3.35	12.83	−7.21	−13.94	3.272	3.365	3.138	3.238		$1/2^+$	$7/2^-$
37	22	307.06	305.90	8.30	8.27	10.47	32.59	7.12	13.75	−5.11	−15.36	3.308	3.412	3.148	3.248		$1/2^+$	0^+
38	23	309.42	309.64	8.14	8.15	9.48	34.64	2.36	14.57	−4.66	−16.30	3.346	3.463	3.157	3.257		$1/2^+$	$7/2^-$
39	24	315.70	315.88	8.09	8.10	8.64	36.62	6.28	15.41	−4.39	−17.12	3.384	3.512	3.169	3.268		$1/2^+$	0^+
40	25	317.45	319.19	7.94	7.98	8.03	38.09	1.75	16.19	−3.99	−18.01	3.423	3.562	3.178	3.277		$1/2^+$	$7/2^-$
41	26	323.21	324.17	7.88	7.91	7.51	39.74	5.76	16.96	−3.86	−18.74	3.462	3.611	3.189	3.288		$1/2^+$	0^+
42	27	324.82	326.25	7.73	7.77	7.37	40.99	1.61	17.67	−3.42	−19.32	3.523	3.692	3.196	3.294		$1/2^+$	$3/2^-$
43	28	329.89	330.65	7.67	7.66	6.68	42.53	5.07	18.41	−3.43	−20.16	3.545	3.713	3.208	3.306		$1/2^+$	0^+
44	29	331.55		7.54		6.73	43.84	1.66	19.09	−3.30	−20.87	3.595	3.778	3.214	3.312		$1/2^+$	$3/2^-$
45	30	335.90		7.46		6.01	45.00	4.35	19.73	−3.05	−21.46	3.631	3.818	3.225	3.322		$1/2^+$	0^+
46	31	337.32		7.33		5.77	46.20	1.42	20.26	−2.70	−22.12	3.680	3.879	3.230	3.328		$1/2^+$	$3/2^-$
47	32	341.26		7.26		5.36	47.15	3.94	20.87	−2.61	−22.51	3.721	3.927	3.239	3.337		$1/2^+$	0^+
48	33	343.05		7.15		5.73	48.57	1.79	21.57	−1.96	−23.01	3.770	3.989	3.237	3.334		$1/2^+$	$1/2^-$
49	34	345.61		7.05		4.35	48.96	2.56	21.75	−1.76	−23.41	3.818	4.041	3.254	3.351		$1/2^+$	0^+
50	35	345.45		6.91		2.40	49.61	−0.16	22.18	−1.81	−23.89	3.874	4.106	3.268	3.365		$1/2^+$	$5/2^-$
51	36	347.58		6.82		1.97	50.54	2.13	22.63	−1.01	−24.30	3.906	4.132	3.301	3.397		$1/2^+$	0^+
52	37	347.04		6.67		1.58	50.76	−0.55	23.01	−0.81	−24.76	3.957	4.187	3.323	3.418		$1/2^+$	$5/2^-$
53	38	348.78		6.58		1.20	52.01	1.75	23.32	−0.71	−25.24	3.993	4.220	3.352	3.446		$1/2^+$	0^+
54	39	348.14		6.45		1.10	52.79	−0.64	23.38	−0.74	−25.25	4.239	4.534	3.352	3.446		$1/2^+$	$1/2^-$
55	40	349.42		6.35		0.63		1.28	23.96	−0.09	−26.09	4.087	4.316	3.403	3.495		$1/2^+$	0^+
56	41	348.87		6.23		0.73		−0.55		−0.05	−26.13	4.300	4.584	3.405	3.497		$1/2^+$	$1/2^+$
57	42	348.62		6.12		−0.79		−0.24		0.33	−26.40	4.301	4.576	3.415	3.508		$1/2^+$	0^+
σ		1.36													0.052			
$Z = 16$ (S)																		
23	7	107.31		4.67					−1.51	−22.17	2.90	3.371	2.627	3.649	3.735		0^+	$1/2^-$
24	8	133.19		5.55			−2.76	25.88	−0.51	−23.07	2.08	3.212	2.677	3.448	3.540		0^+	0^+
25	9	150.32		6.01		43.00	−0.61	17.13	−0.14	−23.76	1.18	3.142	2.743	3.346	3.440		0^+	$5/2^+$
26	10	171.70		6.60		38.51	1.53	21.38	0.72	−18.61	0.27	3.103	2.796	3.280	3.376		0^+	0^+
27	11	187.51		6.94		37.19	3.29	15.81	1.46	−17.92	−0.60	3.072	2.840	3.223	3.321		0^+	$5/2^+$
28	12	207.36	209.41	7.41	7.48	35.66	4.91	19.85	2.31	−17.37	−1.52	3.057	2.880	3.183	3.282		0^+	0^+
29	13	222.61	224.71	7.68	7.66	35.10	5.93	15.25	2.92	−15.75	−2.27	3.031	2.899	3.134	3.234		0^+	$5/2^+$
30	14	241.42	243.68	8.05	7.91	34.06	7.38	18.81	3.69	−15.54	−3.13	3.019	2.923	3.099	3.201		0^+	0^+
31	15	254.85	256.74	8.22	8.25	32.24	11.40	13.43	5.71	−15.31	−4.63	3.054	3.000	3.104	3.205		0^+	$1/2^+$
32	16	269.38	271.78	8.42	8.35	27.96	16.24	14.54	8.55	−12.85	−6.75	3.077	3.058	3.058	3.198	3.261	0^+	0^+
33	17	278.50	280.42	8.44	8.48	23.65	18.51	9.12	9.43	−12.50	−7.84	3.124	3.131	3.117	3.218		0^+	$3/2^+$
34	18	289.64	291.84	8.52	8.46	20.26	20.30	11.14	10.24	−10.03	−8.88	3.168	3.194	3.138	3.238	3.285	0^+	0^+
35	19	297.92	298.82	8.51	8.51	19.42	22.02	8.27	10.94	−9.19	−9.79	3.218	3.262	3.166	3.266		0^+	$3/2^+$
36	20	308.55	308.71	8.57	8.45	18.90	23.91	10.63	11.95	−8.45	−10.82	3.262	3.317	3.190	3.289	3.298	0^+	0^+
37	21	312.96	313.02	8.46	8.45	15.04	25.85	4.41	13.02	−9.14	−11.82	3.297	3.370	3.199	3.297		0^+	$7/2^-$
38	22	321.11	321.05	8.45	8.31	12.57	27.80	8.16	14.05	−6.12	−12.79	3.330	3.416	3.208	3.307		0^+	0^+
39	23	324.58	325.43	8.32	8.27	11.63	29.74	3.47	15.16	−5.68	−13.77	3.364	3.463	3.217	3.315		0^+	$7/2^-$
40	24	331.84	333.17	8.30	8.15	10.73	31.55	7.26	16.14	−5.35	−14.69	3.399	3.508	3.228	3.325		0^+	0^+
41	25	334.72	337.42	8.16	8.10	10.13	33.46	2.87	17.27	−7.43	−15.65	3.432	3.551	3.235	3.333		0^+	$7/2^-$
42	26	341.34	344.12	8.13	7.98	9.50	35.09	6.62	18.13	−4.72	−16.49	3.467	3.596	3.246	3.344		0^+	0^+
43	27	343.51	346.74	7.99	8.06	8.79	36.36	2.17	18.69	−4.74	−17.11	3.523	3.673	3.253	3.350		0^+	$3/2^-$
44	28	349.71	351.82	7.95	7.99	8.37	38.23	6.20	19.82	−4.10	−18.09	3.540	3.688	3.264	3.361		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
45	29	352.09	354.68	7.82	7.88	8.58	39.63	2.38	20.54	−4.00	−18.78	3.586	3.749	3.270	3.366		0^+	$3/2^-$
46	30	356.92		7.76		7.20	40.74	4.83	21.02	−3.57	−19.35	3.624	3.794	3.281	3.377		0^+	0^+
47	31	358.97		7.64		6.88	41.92	2.05	21.65	−3.18	−19.93	3.671	3.855	3.286	3.382		0^+	$3/2^-$
48	32	363.22		7.57		6.31	42.83	4.25	21.97	−3.07	−20.40	3.712	3.903	3.296	3.392		0^+	0^+
49	33	365.41		7.47		6.44	43.93	2.18	22.36	−2.53	−20.87	3.760	3.967	3.291	3.387		0^+	$1/2^-$
50	34	368.40		7.37		5.18	44.54	3.00	22.79	−2.30	−21.32	3.804	4.014	3.315	3.410		0^+	0^+
51	35	368.75		7.23		3.34	45.47	0.34	23.30	−2.33	−21.81	3.856	4.074	3.329	3.424		0^+	$5/2^-$
52	36	371.76		7.15		3.35	46.80	3.01	24.17	−1.67	−22.46	3.891	4.105	3.360	3.454		0^+	0^+
53	37	371.88		7.02		3.13	47.85	0.12	24.84	−1.49	−23.00	3.938	4.156	3.381	3.474		0^+	$5/2^-$
54	38	374.38		6.93		2.63	48.92	2.50	25.60	−1.35	−23.60	3.973	4.188	3.408	3.501		0^+	0^+
55	39	374.29		6.81		2.41	50.23	−0.09	26.15	−0.42	−24.14	4.018	4.235	3.432	3.524		0^+	$5/2^-$
56	40	376.43		6.72		2.05	50.97	2.14	27.02	−0.50	−24.68	4.054	4.269	3.456	3.548		0^+	0^+
57	41	375.89		6.59		1.60		−0.55	27.02	−0.50	−24.71	4.269	4.547	3.457	3.548		0^+	$1/2^+$
58	42	375.91		6.48		−0.52		0.03	27.29	0.18	−25.23	4.199	4.444	3.473	3.564		0^+	0^+
σ		1.93													0.046			
$Z = 17$ (Cl)																		
28	11	185.67		6.63			−0.40		−1.84	−18.80	−0.32	3.160	2.867	3.336	3.430		$3/2^+$	$5/2^+$
29	12	206.45		7.12			1.40	20.78	−0.91	−18.27	−1.23	3.134	2.909	3.283	3.379		$3/2^+$	0^+
30	13	222.45		7.42		36.78	2.77	16.00	−0.16	−16.79	−2.00	3.104	2.929	3.231	3.328		$3/2^+$	$5/2^+$
31	14	242.02	243.98	7.81	7.87	35.57	4.28	19.56	0.60	−16.59	−2.87	3.095	2.963	3.199	3.297		$3/2^+$	0^+
32	15	256.77	258.31	8.02	8.07	34.32	7.63	14.75	1.92	−15.60	−4.43	3.114	3.028	3.188	3.287		$3/2^+$	$1/2^+$
33	16	272.21	274.06	8.25	8.30	30.19	11.37	15.44	2.82	−14.06	−6.38	3.131	3.082	3.177	3.276		$3/2^+$	0^+
34	17	282.86	285.56	8.32	8.40	26.09	13.79	10.65	4.36	−13.24	−7.29	3.171	3.151	3.192	3.291		$3/2^+$	$3/2^+$
35	18	295.51	298.21	8.44	8.52	23.30	16.11	12.65	5.87	−11.45	−8.22	3.210	3.211	3.209	3.307	3.365	$3/2^+$	0^+
36	19	305.35	306.79	8.48	8.52	22.49	18.37	9.84	7.43	−9.78	−9.21	3.246	3.266	3.224	3.321		$3/2^+$	$3/2^+$
37	20	317.07	317.10	8.57	8.57	21.56	20.48	11.72	8.52	−9.45	−10.22	3.282	3.317	3.241	3.338	3.384	$3/2^+$	0^+
38	21	322.38	323.21	8.48	8.51	17.03	22.44	5.31	9.43	−9.43	−11.09	3.316	3.369	3.249	3.346		$3/2^+$	$7/2^-$
39	22	331.48	331.28	8.50	8.49	14.41	24.42	9.09	10.36	−7.08	−12.01	3.347	3.414	3.258	3.354		$3/2^+$	0^+
40	23	336.11	337.11	8.40	8.43	13.73	26.69	4.63	11.52	−6.64	−12.93	3.378	3.460	3.264	3.361		$3/2^+$	$7/2^-$
41	24	344.23	344.93	8.40	8.41	12.75	28.53	8.12	12.38	−6.29	−13.82	3.409	3.502	3.274	3.370		$3/2^+$	0^+
42	25	348.17	350.61	8.29	8.35	12.06	30.72	3.94	13.45	−5.89	−14.58	3.439	3.542	3.281	3.377		$1/2^+$	$7/2^-$
43	26	355.68	358.09	8.27	8.32	11.45	32.47	7.51	14.34	−5.62	−15.50	3.470	3.582	3.290	3.386		$1/2^+$	0^+
44	27	358.78	362.45	8.15	8.23	10.60	33.96	3.10	15.27	−4.83	−16.48	3.499	3.622	3.295	3.391		$1/2^+$	$7/2^-$
45	28	365.77	368.27	8.13	8.18	10.09	35.88	6.99	16.06	−4.81	−17.24	3.534	3.666	3.305	3.401		$1/2^+$	0^+
46	29	368.87	371.79	8.02	8.10	10.10	37.32	3.10	16.78	−4.70	−17.91	3.575	3.722	3.310	3.405		$1/2^+$	$3/2^-$
47	30	374.16		7.96		8.39	38.26	5.29	17.24	−4.09	−18.39	3.615	3.770	3.323	3.418		$1/2^+$	0^+
48	31	376.74		7.85		7.86	39.42	2.58	17.77	−3.64	−18.89	3.661	3.831	3.328	3.423		$1/2^+$	$3/2^-$
49	32	381.42		7.78		7.27	40.17	4.69	18.20	−3.56	−19.67	3.699	3.877	3.336	3.431		$3/2^+$	0^+
50	33	383.96		7.68		7.22	40.91	2.53	18.55	−3.13	−20.15	3.744	3.940	3.332	3.427		$3/2^+$	$1/2^-$
51	34	387.44		7.60		6.02	41.83	3.48	19.04	−2.82	−20.59	3.787	3.984	3.359	3.453		$3/2^+$	0^+
52	35	388.26		7.47		4.30	42.81	0.82	19.17	−2.82	−21.09	3.835	4.040	3.374	3.467		$3/2^+$	$5/2^-$
53	36	391.95		7.40		4.51	44.37	3.69	20.20	−2.28	−21.43	3.873	4.075	3.403	3.496		$1/2^+$	0^+
54	37	392.65		7.27		4.40	45.62	0.70	20.77	−2.09	−22.00	3.917	4.124	3.423	3.515		$1/2^+$	$5/2^-$
55	38	395.77		7.20		3.81	46.98	3.11	21.38	−1.93	−22.66	3.951	4.156	3.448	3.540		$1/2^+$	0^+
56	39	396.25		7.08		3.59	48.11	0.48	21.96	−0.91	−23.24	3.993	4.201	3.470	3.561		$1/2^+$	$5/2^-$
57	40	398.98		7.00		3.21	49.56	2.73	22.55	−0.96	−23.86	4.027	4.234	3.494	3.584		$1/2^+$	0^+
58	41	398.46		6.87		2.21	49.59	−0.52	22.57	−0.98	−23.87	4.236	4.507	3.495	3.585		$1/2^+$	$1/2^+$
59	42	399.00		6.76		0.02	50.38	0.54	23.09	−0.08	−24.62	4.127	4.351	3.515	3.605		$1/2^+$	0^+
60	43	398.43		6.64		−0.03		−0.58	22.82	−0.04	−24.70	4.307	4.582	3.518	3.607		$1/2^+$	$1/2^+$
61	44	398.52		6.53		−0.48		0.10		0.06	−25.20	4.249	4.496	3.532	3.622		$1/2^+$	0^+
σ		2.11													0.052			
$Z = 18$ (Ar)																		
28	10	168.05		6.00			−3.65			−20.40	2.05	3.259	2.861	3.461	3.552		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
29	11	185.53		6.40			−1.98	17.48	−0.14	−19.74	1.19	3.219	2.907	3.395	3.488		0^+	$5/2^+$
30	12	207.30		6.91		39.25	−0.06	21.77	0.86	−19.23	0.25	3.195	2.948	3.349	3.444		0^+	0^+
31	13	224.12		7.23		38.59	1.52	16.82	1.67	−17.80	−0.61	3.164	2.968	3.298	3.393		0^+	$5/2^+$
32	14	244.69	246.40	7.65	7.70	37.39	3.27	20.57	2.67	−17.57	−1.60	3.156	3.004	3.269	3.365	3.346	0^+	0^+
33	15	260.46	261.66	7.89	7.93	34.28	5.62	15.77	3.69	−17.32	−2.51	3.167	3.057	3.255	3.352	3.343	0^+	$1/2^+$
34	16	276.72	278.72	8.14	8.20	32.03	7.33	16.26	4.51	−15.04	−3.33	3.180	3.106	3.244	3.341	3.365	0^+	0^+
35	17	288.87	291.46	8.25	8.33	28.41	10.37	12.16	6.02	−14.57	−4.74	3.215	3.172	3.256	3.353	3.363	0^+	$3/2^+$
36	18	303.03	306.72	8.42	8.52	26.32	13.39	14.16	7.52	−12.87	−6.14	3.251	3.230	3.271	3.368	3.390	0^+	0^+
37	19	314.31	315.50	8.49	8.53	25.44	16.39	11.27	8.96	−11.65	−7.44	3.282	3.282	3.282	3.378	3.390	0^+	$3/2^+$
38	20	327.54	327.34	8.62	8.61	24.50	18.99	13.23	10.47	−10.70	−8.72	3.313	3.328	3.295	3.391	3.402	0^+	0^+
39	21	334.09	333.94	8.57	8.56	19.78	21.13	6.55	11.70	−11.26	−9.80	3.340	3.375	3.299	3.394	3.409	0^+	$7/2^-$
40	22	344.26	343.81	8.61	8.60	16.73	23.15	10.18	12.79	−8.10	−10.81	3.368	3.418	3.305	3.401	3.427	0^+	0^+
41	23	349.78	349.91	8.53	8.53	15.70	25.20	5.52	13.68	−7.62	−11.84	3.395	3.461	3.309	3.405	3.425	0^+	$7/2^-$
42	24	358.94	359.34	8.55	8.56	14.68	27.10	9.16	14.71	−7.24	−12.79	3.423	3.501	3.317	3.412	3.441	0^+	0^+
43	25	363.85	364.99	8.46	8.49	14.06	29.13	4.90	15.68	−6.79	−13.79	3.449	3.538	3.321	3.416	3.435	0^+	$7/2^-$
44	26	372.26	373.73	8.46	8.49	13.32	30.92	8.41	16.58	−6.50	−14.68	3.477	3.576	3.328	3.423	3.445	0^+	0^+
45	27	376.48	378.90	8.37	8.42	12.63	32.97	4.22	17.71	−5.54	−15.67	3.498	3.606	3.330	3.425		0^+	$7/2^-$
46	28	384.22	386.92	8.35	8.41	11.96	34.51	7.74	18.45	−5.51	−16.45	3.531	3.648	3.340	3.434	3.436	0^+	0^+
47	29	388.03	390.48	8.26	8.31	11.55	35.94	3.80	19.15	−5.41	−17.15	3.569	3.701	3.344	3.439		0^+	$3/2^-$
48	30	393.70		8.20		9.48	36.78	5.67	19.54	−4.66	−17.63	3.611	3.755	3.359	3.453		0^+	0^+
49	31	396.86		8.10		8.83	37.89	3.16	20.12	−4.12	−18.18	3.653	3.811	3.363	3.363		0^+	$3/2^-$
50	32	402.03		8.04		8.33	38.81	5.17	20.61	−4.05	−18.67	3.692	3.859	3.376	3.470		0^+	0^+
51	33	404.93		7.94		8.07	39.52	2.90	20.97	−3.70	−19.02	3.738	3.921	3.376	3.469		0^+	$1/2^-$
52	34	408.97		7.86		6.94	40.57	4.04	21.53	−3.35	−19.65	3.777	3.961	3.402	3.495		0^+	0^+
53	35	410.40		7.74		5.47	41.65	1.43	22.14	−2.73	−20.36	3.821	4.009	3.425	3.517		0^+	$1/2^-$
54	36	414.67		7.68		5.70	42.92	4.27	22.72	−2.86	−20.80	3.857	4.050	3.440	3.532		0^+	0^+
55	37	415.94		7.56		5.54	44.06	1.27	23.29	−2.68	−21.34	3.899	4.097	3.458	3.550		0^+	$5/2^-$
56	38	419.68		7.49		5.01	45.30	3.74	23.91	−2.50	−21.97	3.933	4.130	3.483	3.573		0^+	0^+
57	39	420.74		7.38		4.80	46.45	1.06	24.49	−1.43	−22.51	3.974	4.173	3.503	3.593		0^+	$5/2^-$
58	40	424.09		7.31		4.41	47.66	3.35	25.12	−1.47	−23.11	4.007	4.206	3.526	3.616		0^+	0^+
59	41	423.62		7.18		2.88	47.74	−0.47	25.17	−1.49	−23.15	4.203	4.468	3.527	3.616		0^+	$1/2^+$
60	42	424.88		7.08		0.79	48.97	1.25	25.88	−0.42	−23.99	4.087	4.297	3.550	3.639		0^+	0^+
61	43	424.40		6.96		0.77	48.91	−0.48	25.97	−0.41	−24.07	4.264	4.528	3.552	3.641		0^+	$1/2^+$
62	44	425.01		6.86		0.13		0.61	26.49	−0.23	−24.71	4.182	4.407	3.571	3.659		0^+	0^+
63	45	424.48		6.74		0.09		−0.53		−0.20	−24.84	4.333	4.602	3.574	3.662		0^+	$1/2^+$
64	46	424.92		6.64		−0.09		0.44		−0.14	−25.34	4.282	4.524	3.588	3.676		0^+	0^+
σ		1.82													0.019			
$Z = 19$ (K)																		
32	13	222.91		6.97			0.46		−0.99	−18.74	1.09	3.232	3.001	3.381	3.474		$3/2^+$	$5/2^+$
33	14	244.48		7.41			2.47	21.58	−0.21	−18.52	0.07	3.219	3.036	3.347	3.442		$3/2^+$	0^+
34	15	261.22		7.68		38.31	4.45	16.73	0.76	−17.34	−0.79	3.221	3.083	3.326	3.421		$3/2^+$	$1/2^+$
35	16	278.15	278.80	7.95	7.97	33.67	5.95	16.93	1.44	−15.89	−1.79	3.239	3.139	3.322	3.417		$3/2^+$	0^+
36	17	291.85	293.12	8.11	8.14	30.63	9.00	13.70	2.98	−15.46	−2.97	3.259	3.190	3.319	3.414		$3/2^+$	$3/2^+$
37	18	307.44	308.57	8.31	8.34	29.29	11.93	15.59	4.40	−14.15	−4.30	3.289	3.245	3.329	3.424		$3/2^+$	0^+
38	19	320.00	320.65	8.42	8.44	28.15	14.66	12.57	5.70	−11.79	−5.39	3.313	3.292	3.335	3.429	3.426	$3/2^+$	$3/2^+$
39	20	334.49	333.72	8.58	8.56	27.06	17.42	14.49	6.96	−11.83	−6.80	3.339	3.335	3.343	3.438	3.435	$3/2^+$	0^+
40	21	342.11	341.52	8.55	8.54	22.11	19.73	7.62	8.03	−11.40	−7.78	3.363	3.380	3.344	3.438	3.438	$3/2^+$	$7/2^-$
41	22	353.30	351.62	8.62	8.58	18.80	21.82	11.18	9.03	−9.09	−9.13	3.387	3.420	3.348	3.442	3.452	$3/2^+$	0^+
42	23	359.81	359.15	8.57	8.55	17.69	23.70	6.51	10.02	−8.57	−10.03	3.411	3.460	3.350	3.444	3.452	$3/2^+$	$7/2^-$
43	24	369.88	368.78	8.60	8.58	16.58	25.65	10.07	10.93	−8.14	−10.92	3.436	3.499	3.355	3.449	3.455	$3/2^+$	0^+
44	25	375.86	376.05	8.54	8.55	16.05	27.68	5.98	12.01	−7.97	−11.61	3.459	3.533	3.359	3.453	3.456	$1/2^+$	$7/2^-$
45	26	385.35	384.96	8.56	8.55	15.47	29.67	9.49	13.09	−7.62	−12.54	3.483	3.567	3.364	3.458	3.460	$1/2^+$	0^+
46	27	391.04	391.83	8.50	8.52	15.18	32.26	5.69	14.55	−6.28	−13.31	3.498	3.591	3.361	3.455	3.455	$1/2^+$	$7/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
47	28	399.63	400.20	8.50	8.51	14.28	33.86	8.59	15.41	−6.22	−14.93	3.524	3.626	3.368	3.462	3.453	$1/2^+$	0^+
48	29	403.87	404.84	8.41	8.43	12.86	34.99	4.24	15.84	−6.12	−14.97	3.566	3.685	3.376	3.469		$1/2^+$	$3/2^-$
49	30	409.70	410.24	8.36	8.39	10.07	35.54	5.84	16.00	−4.98	−15.85	3.610	3.740	3.394	3.487		$1/2^+$	0^+
50	31	413.33	414.43	8.27	8.28	9.46	36.59	3.63	16.47	−4.62	−16.51	3.646	3.792	3.394	3.487		$3/2^+$	$3/2^-$
51	32	418.99		8.22		9.29	37.56	5.66	16.96	−4.57	−17.05	3.685	3.840	3.409	3.501		$3/2^+$	0^+
52	33	422.18		8.12		8.85	38.22	3.19	17.25	−4.31	−17.41	3.731	3.902	3.413	3.505		$3/2^+$	$1/2^-$
53	34	426.82		8.05		7.83	39.38	4.64	17.85	−3.87	−18.02	3.767	3.938	3.438	3.530		$3/2^+$	0^+
54	35	429.00		7.94		6.82	40.74	2.18	18.60	−3.36	−18.57	3.808	3.986	3.457	3.548		$3/2^+$	$1/2^-$
55	36	433.60		7.88		6.78	41.65	4.60	18.93	−3.43	−19.08	3.844	4.026	3.473	3.564		$3/2^+$	0^+
56	37	435.40		7.78		6.40	42.75	1.80	19.46	−3.25	−19.56	3.884	4.072	3.490	3.580		$3/2^+$	$5/2^-$
57	38	439.73		7.71		6.12	43.96	4.33	20.05	−3.06	−20.18	3.917	4.104	3.512	3.602		$3/2^+$	0^+
58	39	441.33		7.61		5.93	45.08	1.60	20.59	−2.06	−20.24	3.961	4.151	3.538	3.627		$1/2^+$	$5/2^-$
59	40	445.38		7.55		5.66	46.41	4.05	21.29	−2.09	−20.91	3.992	4.182	3.560	3.649		$1/2^+$	0^+
60	41	444.88		7.41		3.55	46.42	−0.51	21.25	−2.13	−20.90	4.192	4.453	3.562	3.651		$1/2^+$	$1/2^+$
61	42	447.18		7.33		1.79	48.17	2.30	22.30	−0.89	−21.93	4.059	4.256	3.586	3.674		$1/2^+$	0^+
62	43	446.70		7.20		1.82	48.27	−0.47	22.30	−0.90	−22.11	4.239	4.497	3.588	3.676		$1/2^+$	$1/2^+$
63	44	448.12		7.11		0.94	49.59	1.42	23.11	−0.62	−22.76	4.134	4.341	3.610	3.697		$1/2^+$	0^+
64	45	447.67		6.99		0.97		−0.44	23.19	−0.62	−22.99	4.294	4.551	3.612	3.699		$1/2^+$	$1/2^+$
65	46	448.70		6.90		0.58		1.02	23.77	−0.47	−23.48	4.216	4.435	3.630	3.717		$1/2^+$	0^+
66	47	448.25		6.79		0.58		−0.44	22.08	−0.46	−23.68	4.355	4.614	3.633	3.720		$1/2^+$	$1/2^+$
67	48	449.09		6.70		0.40		0.84	20.31	−0.39	−24.10	4.302	4.534	3.648	3.735		$1/2^+$	0^+
68	49	448.62		6.59		0.36		−0.47	22.57	−0.36	−24.34	4.420	4.684	3.653	3.739		$1/2^+$	$1/2^+$
69	50	449.39		6.51		0.30		0.78	20.86	−0.33	−24.75	4.389	4.634	3.664	3.751		$1/2^+$	0^+
70	51	448.86		6.40		0.24		−0.54	22.05	−0.28	−25.05	4.489	4.758	3.670	3.756		$1/2^+$	$1/2^+$
71	52	449.64		6.33		0.25		0.79	21.49	−0.29	−25.26	4.474	4.731	3.679	3.765		$1/2^+$	0^+
72	53	449.01		6.23		0.15		−0.63		−0.22	−25.58	4.561	4.836	3.686	3.772		$1/2^+$	$1/2^+$
73	54	449.85		6.16		0.21		0.84		−0.24	−25.77	4.556	4.823	3.694	3.779		$1/2^+$	0^+
74	55	449.09		6.06		0.08		−0.76		−0.16	−26.09	4.637	4.919	3.702	3.787		$1/2^+$	$1/2^+$
75	56	450.00		5.99		0.16		0.92		−0.19	−26.28	4.635	4.911	3.707	3.793		$1/2^+$	0^+
76	57	449.19		5.90		0.10		−0.82		−0.18	−26.47	4.712	5.001	3.711	3.796		$1/2^+$	$3/2^+$
77	58	450.08		5.84		0.08		0.90		−0.10	−26.77	4.712	4.995	3.721	3.806		$1/2^+$	0^+
78	59	449.24		5.76		0.05		−0.84		−0.03	−27.41	4.778	5.071	3.725	3.810		$1/2^+$	$3/2^+$
79	60	450.02		5.70		−0.06		0.78		0.04	−27.64	4.789	5.078	3.733	3.818		$1/2^+$	0^+
σ		0.88													0.006			
$Z = 20$ (Ca)																		
33	13	223.52		6.77			−0.37		0.61	−19.68	1.54	3.288	3.034	3.443	3.535		0^+	$5/2^+$
34	14	246.10		7.24			1.41	22.58	1.62	−19.47	0.62	3.273	3.068	3.409	3.501		0^+	0^+
35	15	263.68		7.53		40.16	3.22	17.58	2.47	−19.49	−0.21	3.270	3.109	3.385	3.478		0^+	$1/2^+$
36	16	281.63	281.37	7.82	7.82	35.53	4.92	17.95	3.48	−16.90	−1.29	3.289	3.167	3.383	3.477		0^+	0^+
37	17	296.38	296.13	8.01	8.00	32.70	7.51	14.75	4.53	−16.63	−2.25	3.301	3.211	3.375	3.468		0^+	$3/2^+$
38	18	313.46	313.12	8.25	8.24	31.83	10.43	17.08	6.02	−15.42	−3.45	3.326	3.263	3.381	3.474		0^+	0^+
39	19	327.28	326.41	8.39	8.37	30.90	12.97	13.82	7.28	−14.36	−4.59	3.345	3.305	3.382	3.476	3.460	0^+	$3/2^+$
40	20	343.07	342.05	8.58	8.55	29.61	15.53	15.79	8.58	−12.99	−5.76	3.367	3.346	3.388	3.481	3.478	0^+	0^+
41	21	351.81	350.41	8.58	8.55	24.53	17.73	8.74	9.70	−13.95	−6.79	3.387	3.388	3.387	3.480	3.478	0^+	$7/2^-$
42	22	364.06	361.90	8.67	8.62	20.99	19.80	12.25	10.76	−10.14	−7.77	3.409	3.427	3.389	3.482	3.508	0^+	0^+
43	23	371.68	369.83	8.64	8.60	19.86	21.89	7.62	11.87	−9.61	−8.78	3.430	3.464	3.389	3.482	3.495	0^+	$7/2^-$
44	24	382.77	380.96	8.70	8.66	18.71	23.83	11.09	12.89	−9.16	−9.72	3.452	3.501	3.393	3.486	3.518	0^+	0^+
45	25	389.65	388.37	8.66	8.63	17.97	25.80	6.88	13.79	−8.67	−10.68	3.472	3.533	3.393	3.486	3.494	0^+	$7/2^-$
46	26	399.86	398.77	8.69	8.67	17.09	27.60	10.21	14.51	−8.31	−11.60	3.494	3.567	3.397	3.490	3.495	0^+	0^+
47	27	406.14	406.05	8.64	8.64	16.49	29.66	6.28	15.11	−7.07	−12.54	3.508	3.591	3.393	3.486	3.478	0^+	$7/2^-$
48	28	415.39	416.00	8.65	8.67	15.53	31.17	9.25	15.76	−7.01	−13.34	3.536	3.629	3.401	3.494	3.477	0^+	0^+
49	29	420.69	421.15	8.59	8.59	14.55	32.66	5.30	16.82	−6.89	−14.05	3.569	3.677	3.406	3.499		0^+	$3/2^-$
50	30	427.34	427.51	8.55	8.55	11.95	33.65	6.65	17.64	−5.80	−14.60	3.611	3.731	3.423	3.515	3.517	0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
51	31	431.60	432.33	8.46	8.48	10.91	34.74	4.26	18.28	−5.11	−15.14	3.649	3.784	3.429	3.521		0^+	$3/2^-$
52	32	437.73	438.32	8.42	8.43	10.38	35.70	6.13	18.74	−5.07	−15.67	3.686	3.829	3.445	3.537		0^+	0^+
53	33	441.20		8.32		9.60	36.28	3.47	19.02	−4.86	−16.06	3.730	3.889	3.451	3.543		0^+	$1/2^-$
54	34	446.65		8.27		8.92	37.68	5.45	19.83	−4.46	−16.76	3.763	3.923	3.475	3.565		0^+	0^+
55	35	449.51		8.17		8.31	39.11	2.86	20.51	−4.06	−17.35	3.803	3.971	3.491	3.582		0^+	$1/2^-$
56	36	454.65		8.12		8.00	39.98	5.14	21.05	−4.06	−17.90	3.837	4.008	3.508	3.598		0^+	0^+
57	37	457.03		8.02		7.52	41.09	2.38	21.63	−3.89	−18.46	3.875	4.053	3.524	3.613		0^+	$5/2^-$
58	38	462.05		7.97		7.39	42.37	5.01	22.32	−3.69	−19.07	3.908	4.086	3.544	3.634		0^+	0^+
59	39	464.23		7.87		7.20	43.49	2.18	22.90	−2.56	−19.59	3.945	4.128	3.561	3.650		0^+	$5/2^-$
60	40	468.81		7.81		6.77	44.72	4.58	23.43	−2.57	−20.23	3.976	4.158	3.582	3.670		0^+	0^+
61	41	468.48		7.68		4.25	44.86	−0.34	23.60	−7.68	−20.26	4.146	4.395	3.583	3.672		0^+	$1/2^+$
62	42	471.49		7.60		2.68	46.61	3.01	24.32	−1.31	−21.25	4.038	4.229	3.606	3.694		0^+	0^+
63	43	471.20		7.48		2.72	46.80	−0.30	24.50	−1.33	−21.34	4.191	4.437	3.608	3.695		0^+	$1/2^+$
64	44	473.23		7.39		1.74	48.22	2.04	25.11	−0.99	−22.20	4.107	4.307	3.629	3.716		0^+	0^+
65	45	472.98		7.28		1.78	48.50	−0.25	25.31	−1.00	−22.30	4.242	4.487	3.631	3.718		0^+	$1/2^+$
66	46	474.53		7.19		1.30	49.61	1.55	25.84	−0.82	−22.98	4.182	4.393	3.649	3.736		0^+	0^+
67	47	474.29		7.08		1.31	48.12	−0.25	26.03	−0.80	−23.14	4.299	4.545	3.653	3.739		0^+	$1/2^+$
68	48	475.59		6.99		1.06	46.81	1.30	26.50	−0.70	−23.69	4.261	4.485	3.667	3.754		0^+	0^+
69	49	475.31		6.89		1.02	49.26	−0.28	26.69	−0.67	−23.87	4.360	4.612	3.672	3.758		0^+	$1/2^+$
70	50	476.50		6.81		0.91	47.97	1.20	27.11	−0.63	−24.33	4.341	4.578	3.684	3.769		0^+	0^+
71	51	476.14		6.71		0.83	49.34	−0.36	27.28	−0.56	−24.53	4.426	4.683	3.690	3.776		0^+	$1/2^+$
72	52	477.32		6.63		0.82	49.18	1.19	27.68	−0.56	−24.88	4.421	4.669	3.699	3.784		0^+	0^+
73	53	476.83		6.53		0.69		−0.49	27.83	−0.47	−25.13	4.496	4.761	3.706	3.792		0^+	$1/2^+$
74	54	478.06		6.46		0.74		1.23	28.21	−0.50	−25.44	4.499	4.757	3.713	3.798		0^+	0^+
75	55	477.40		6.37		0.57		−0.66	28.31	−0.38	−25.66	4.572	4.845	3.721	3.806		0^+	$1/2^+$
76	56	478.71		6.30		0.64		1.31	28.70	−0.41	−25.91	4.574	4.841	3.726	3.811		0^+	0^+
77	57	478.10		6.21		0.70		−0.60	28.91	−0.43	−26.09	4.645	4.926	3.730	3.815		0^+	$3/2^+$
78	58	479.21		6.14		0.50		1.11	29.12	−0.30	−26.37	4.649	4.924	3.740	3.824		0^+	0^+
79	59	478.61		6.06		0.51		−0.60	31.86	−0.25	−26.58	4.710	4.996	3.743	3.827		0^+	$3/2^+$
80	60	479.49		5.99		0.29		0.88		−0.13	−26.78	4.726	5.009	3.752	3.836		0^+	0^+
81	61	478.65		5.91		0.04		−0.84		0.20	−27.00	4.786	5.079	3.756	3.840		0^+	$3/2^+$
82	62	479.34		5.85		−0.16		0.68		0.23	−27.15	4.803	5.093	3.766	3.850		0^+	0^+
σ		1.09													0.015			
$Z = 21$ (Sc)																		
32	11	176.62		5.52				21.79		−21.50	3.19	4.180	2.967	4.692	4.760		$7/2^-$	$5/2^+$
33	12	200.32		6.07		45.49		23.70		−21.07	2.49	4.118	3.009	4.634	4.703		$7/2^-$	0^+
34	13	218.71		6.43		42.09	−4.19	18.40	−4.80	−19.72	1.64	4.036	3.035	4.547	4.617		$7/2^-$	$5/2^+$
35	14	242.64		6.93		42.32	−1.84	23.93	−3.46	−19.48	0.73	3.970	3.068	4.471	4.542		$1/2^-$	0^+
36	15	260.23		7.23		41.52	−0.99	17.59	−3.45	−18.55	−0.09	3.947	3.109	4.449	4.521		$1/2^-$	$1/2^+$
37	16	278.89		7.54		36.25	0.74	18.66	−2.75	−17.85	−1.25	3.336	3.179	3.452	3.543		$7/2^-$	0^+
38	17	294.50		7.75		34.27	2.65	15.62	−1.88	−17.47	−2.28	3.344	3.224	3.438	3.530		$7/2^-$	$3/2^+$
39	18	312.80	312.52	8.02	8.01	33.91	5.36	18.29	−0.66	−16.48	−3.37	3.361	3.270	3.437	3.529		$7/2^-$	0^+
40	19	327.68	326.95	8.19	8.17	33.18	7.68	14.88	0.40	−14.03	−4.34	3.376	3.310	3.434	3.526		$7/2^-$	$3/2^+$
41	20	344.59	343.14	8.40	8.37	31.79	10.09	16.91	1.52	−14.02	−5.71	3.394	3.349	3.436	3.528		$7/2^-$	0^+
42	21	354.34	354.69	8.44	8.44	26.66	12.23	9.75	2.53	−13.34	−6.49	3.411	3.389	3.433	3.525	3.570	$7/2^-$	$7/2^-$
43	22	367.57	366.83	8.55	8.53	22.98	14.27	13.23	3.51	−11.11	−7.94	3.430	3.427	3.433	3.525	3.558	$7/2^-$	0^+
44	23	376.19	376.52	8.55	8.56	21.85	16.39	8.62	4.52	−10.58	−8.90	3.448	3.463	3.431	3.523	3.543	$7/2^-$	$7/2^-$
45	24	388.24	387.85	8.63	8.62	20.67	18.36	12.05	5.47	−10.12	−10.21	3.468	3.497	3.433	3.525	3.546	$7/2^-$	0^+
46	25	396.13	396.61	8.61	8.62	19.94	20.27	7.89	6.48	−9.63	−10.48	3.485	3.529	3.431	3.523	3.524	$7/2^-$	$7/2^-$
47	26	407.27	407.25	8.67	8.67	19.03	21.92	11.14	7.41	−9.25	−11.40	3.505	3.561	3.434	3.526		$7/2^-$	0^+
48	27	414.60	415.49	8.64	8.66	18.48	23.57	7.33	8.46	−7.84	−11.97	3.517	3.583	3.429	3.522		$7/2^-$	$7/2^-$
49	28	424.87	425.62	8.67	8.69	17.60	25.24	10.27	9.48	−7.74	−13.42	3.536	3.613	3.432	3.524		$7/2^-$	0^+
50	29	430.58	431.68	8.61	8.63	15.98	26.72	5.71	9.89	−7.57	−14.09	3.574	3.667	3.441	3.533		$7/2^-$	$3/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
51	30	437.73	438.43	8.58	8.60	12.86	28.03	7.15	10.39	−6.32	−14.88	3.614	3.719	3.459	3.550		$7/2^-$	0^+
52	31	442.46	443.45	8.51	8.53	11.88	29.13	4.73	10.86	−5.66	−15.28	3.651	3.771	3.466	3.557		$7/2^-$	$3/2^-$
53	32	449.13	449.46	8.47	8.48	11.40	30.14	6.66	11.40	−5.61	−15.85	3.687	3.815	3.482	3.573		$7/2^-$	0^+
54	33	453.03	453.02	8.39	8.39	10.57	30.85	3.90	11.82	−5.42	−16.23	3.728	3.872	3.489	3.580		$7/2^-$	$1/2^-$
55	34	459.17	457.47	8.35	8.31	10.04	32.35	6.14	12.52	−5.03	−16.81	3.761	3.906	3.512	3.602		$7/2^-$	0^+
56	35	462.63		8.26		9.61	33.64	3.46	13.12	−4.69	−17.31	3.799	3.953	3.528	3.617		$7/2^-$	$1/2^-$
57	36	468.33		8.22		9.16	34.73	5.69	13.68	−4.64	−17.87	3.832	3.990	3.546	3.635		$7/2^-$	0^+
58	37	471.27		8.13		8.63	35.87	2.94	14.23	−4.47	−18.38	3.869	4.033	3.561	3.649		$7/2^-$	$5/2^-$
59	38	476.90		8.08		8.57	37.18	5.64	14.86	−4.28	−19.08	3.900	4.066	3.581	3.669		$7/2^-$	0^+
60	39	479.65		7.99		8.38	38.32	2.75	15.42	−3.11	−19.57	3.936	4.108	3.597	3.685		$7/2^-$	$5/2^-$
61	40	484.86		7.95		7.96	39.47	5.21	16.04	−3.15	−20.29	3.967	4.138	3.617	3.705		$7/2^-$	0^+
62	41	485.07		7.82		5.42	40.19	0.21	16.59	−3.14	−20.79	3.997	4.172	3.630	3.717		$7/2^-$	$9/2^+$
63	42	488.61		7.76		3.75	41.44	3.55	17.12	−1.81	−21.45	4.025	4.204	3.641	3.728		$7/2^-$	0^+
64	43	488.37		7.63		3.31	41.67	−0.24	17.18	−1.84	−21.54	4.170	4.404	3.643	3.730		$7/2^-$	$1/2^+$
65	44	491.32		7.56		2.71	43.20	2.95	18.09	−1.44	−22.42	4.087	4.274	3.665	3.751		$7/2^-$	0^+
66	45	491.16		7.44		2.79	43.48	−0.16	18.18	−1.47	−22.58	4.215	4.448	3.667	3.753		$7/2^-$	$1/2^+$
67	46	493.47		7.37		2.15	44.77	2.31	18.93	−1.20	−23.19	4.153	4.350	3.686	3.772		$7/2^-$	0^+
68	47	493.36		7.26		2.21	45.11	−0.10	19.08	−1.22	−23.37	4.265	4.498	3.689	3.775		$7/2^-$	$1/2^+$
69	48	495.26		7.18		1.79	46.16	1.89	19.67	−1.04	−23.84	4.224	4.432	3.706	3.791		$7/2^-$	0^+
70	49	495.18		7.07		1.81	46.56	−0.08	19.87	−1.03	−24.02	4.320	4.556	3.710	3.795		$7/2^-$	$1/2^+$
71	50	496.81		7.00		1.56	47.42	1.63	20.31	−0.93	−24.66	4.299	4.519	3.723	3.808		$7/2^-$	0^+
72	51	496.71		6.90		1.53	47.86	−0.10	20.57	−0.89	−24.73	4.380	4.622	3.728	3.813		$7/2^-$	$1/2^+$
73	52	498.21		6.82		1.40	48.57	1.50	20.89	−0.84	−25.41	4.376	4.609	3.738	3.823		$7/2^-$	0^+
74	53	498.03		6.73		1.32	49.03	−0.18	21.20	−0.76	−25.58	4.445	4.694	3.744	3.829		$7/2^-$	$1/2^+$
75	54	499.50		6.66		1.28	49.65	1.46	21.43	−0.75	−25.90	4.453	4.698	3.752	3.836		$7/2^-$	0^+
76	55	499.17		6.57		1.13	50.08	−0.33	21.77	−0.64	−26.05	4.515	4.773	3.759	3.843		$7/2^-$	$3/2^+$
77	56	500.65		6.50		1.16	50.65	1.49	21.95	−0.66	−26.34	4.530	4.785	3.764	3.849		$7/2^-$	0^+
78	57	500.24		6.41		1.08	51.06	−0.41	22.14	−0.69	−26.50	4.594	4.864	3.768	3.852		$7/2^-$	$3/2^+$
79	58	501.63		6.35		0.98	51.55	1.39	22.42	−0.53	−26.72	4.605	4.871	3.777	3.861		$7/2^-$	0^+
80	59	501.27		6.27		1.03	54.52	−0.36	22.66	−0.49	−26.94	4.662	4.939	3.779	3.863		$7/2^-$	$3/2^+$
81	60	502.35		6.20		0.72	53.02	1.08	22.86	−0.34	−27.13	4.682	4.957	3.789	3.872		$7/2^-$	0^+
82	61	501.75		6.12		0.48		−0.60	23.09	0.00	−27.26	4.738	5.022	3.791	3.875		$7/2^-$	$3/2^+$
83	62	502.59		6.06		0.24		0.85	23.26	0.02	−27.37	4.758	5.040	3.803	3.886		$7/2^-$	0^+
84	63	500.98		5.96		−0.77		−1.62		0.37	−27.49	4.854	5.154	3.816	3.899		$7/2^-$	$3/2^+$
85	64	501.83		5.90		−0.76		0.86		0.40	−27.67	4.817	5.099	3.832	3.915		$7/2^-$	0^+
σ		0.90													0.028			
$Z = 22$ (Ti)																		
38	16	279.57		7.36			−2.06		0.68	−18.77	1.39	3.373	3.192	3.500	3.590		0^+	0^+
39	17	296.08		7.59			−0.30	16.51	1.58	−18.36	0.49	3.380	3.235	3.487	3.578		0^+	$3/2^+$
40	18	315.42	314.49	7.89	7.86	35.85	1.95	19.33	2.62	−17.46	−0.49	3.393	3.280	3.483	3.574		0^+	0^+
41	19	331.28	329.41	8.08	8.03	35.20	4.00	15.86	3.60	−15.59	−1.45	3.405	3.317	3.479	3.569		0^+	$3/2^+$
42	20	349.24	346.89	8.32	8.26	33.82	6.17	17.96	4.65	−15.00	−2.48	3.420	3.355	3.479	3.570		0^+	0^+
43	21	359.96	359.18	8.37	8.35	28.68	8.15	10.72	5.62	−15.04	−3.44	3.435	3.394	3.474	3.565		0^+	$7/2^-$
44	22	374.14	375.47	8.50	8.53	24.91	10.08	14.18	6.57	−12.04	−4.36	3.452	3.430	3.473	3.564	3.612	0^+	0^+
45	23	383.74	385.00	8.53	8.56	23.78	12.06	9.59	7.54	−11.51	−5.32	3.467	3.465	3.470	3.561	3.594	0^+	$7/2^-$
46	24	396.72	398.19	8.62	8.66	22.58	13.95	12.98	8.48	−11.04	−6.24	3.485	3.498	3.471	3.562	3.607	0^+	0^+
47	25	405.59	407.07	8.63	8.66	21.85	15.94	8.86	9.46	−10.56	−7.21	3.499	3.527	3.468	3.559	3.592	0^+	$7/2^-$
48	26	417.66	418.70	8.70	8.72	20.94	17.80	12.07	10.39	−10.18	−8.12	3.517	3.557	3.469	3.560	3.596	0^+	0^+
49	27	425.99	426.84	8.69	8.71	20.41	19.85	8.33	11.39	−8.66	−9.13	3.528	3.579	3.463	3.555	3.573	0^+	$7/2^-$
50	28	437.27	437.78	8.75	8.76	19.61	21.88	11.27	12.39	−8.48	−10.07	3.543	3.605	3.463	3.555	3.570	0^+	0^+
51	29	443.42	444.15	8.69	8.71	17.43	22.73	6.15	12.84	−8.33	−10.57	3.582	3.661	3.475	3.565		0^+	$3/2^-$
52	30	451.12	451.96	8.68	8.69	13.85	23.77	7.70	13.39	−6.85	−11.11	3.620	3.711	3.492	3.583		0^+	0^+
53	31	456.35	457.40	8.61	8.63	12.93	24.75	5.23	13.89	−6.22	−11.62	3.656	3.761	3.501	3.591		0^+	$3/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
54	32	463.60	464.23	8.59	8.60	12.49	25.88	7.25	14.48	−6.18	−12.20	3.691	3.805	3.518	3.607		0^+	0^+
55	33	467.97	468.38	8.51	8.52	11.62	26.77	4.37	14.95	−5.99	−12.68	3.729	3.859	3.526	3.615		0^+	$1/2^-$
56	34	474.83	473.99	8.48	8.46	11.23	28.18	6.86	15.66	−5.62	−13.37	3.761	3.893	3.548	3.637		0^+	0^+
57	35	478.95	476.72	8.40	8.36	10.97	29.44	4.12	16.31	−5.33	−13.93	3.799	3.940	3.563	3.651		0^+	$1/2^-$
58	36	485.19		8.37		10.36	30.54	6.25	16.86	−5.23	−14.56	3.830	3.975	3.581	3.669		0^+	0^+
59	37	488.74		8.28		9.79	31.70	3.54	17.47	−4.92	−15.21	3.865	4.014	3.602	3.690		0^+	$1/2^-$
60	38	494.98		8.25		9.78	32.93	6.24	18.07	−4.87	−15.74	3.897	4.051	3.615	3.703		0^+	0^+
61	39	498.29		8.17		9.55	34.06	3.31	18.64	−3.72	−16.26	3.931	4.091	3.630	3.717		0^+	$5/2^-$
62	40	504.14		8.13		9.16	35.32	5.85	19.28	−3.73	−16.89	3.961	4.122	3.651	3.737		0^+	0^+
63	41	504.96		8.02		6.67	36.48	0.82	19.89	−3.76	−17.51	3.990	4.154	3.663	3.749		0^+	$9/2^+$
64	42	509.02		7.95		4.89	37.53	4.07	20.41	−2.34	−18.05	4.016	4.184	3.674	3.760		0^+	0^+
65	43	509.25		7.83		4.29	38.05	0.22	20.87	−2.09	−18.63	4.045	4.217	3.686	3.772		0^+	$9/2^+$
66	44	512.77		7.77		3.75	39.54	3.53	21.45	−1.92	−19.12	4.074	4.250	3.698	3.783		0^+	0^+
67	45	512.69		7.65		3.44	39.71	−0.09	21.53	−1.96	−19.20	4.195	4.417	3.700	3.786		0^+	$1/2^+$
68	46	515.86		7.59		3.09	41.33	3.17	22.39	−1.62	−20.09	4.134	4.318	3.720	3.805		0^+	0^+
69	47	515.87		7.48		3.18	41.58	0.01	22.51	−1.66	−20.20	4.240	4.461	3.723	3.808		0^+	$1/2^+$
70	48	518.47		7.41		2.61	42.88	2.60	23.21	−1.40	−20.94	4.198	4.392	3.741	3.825		0^+	0^+
71	49	518.56		7.30		2.69	43.25	0.09	23.38	−1.41	−21.10	4.289	4.513	3.744	3.829		0^+	$1/2^+$
72	50	520.71		7.23		2.25	44.21	2.16	23.90	−1.22	−21.66	4.267	4.473	3.758	3.843		0^+	0^+
73	51	520.84		7.13		2.28	44.70	0.13	23.13	−1.21	−21.86	4.345	4.573	3.763	3.847		0^+	$1/2^+$
74	52	522.70		7.06		1.99	45.38	1.86	24.49	−1.09	−22.25	4.341	4.560	3.773	3.857		0^+	0^+
75	53	522.79		6.97		1.33	45.96	0.09	24.76	−1.04	−22.49	4.407	4.644	3.779	3.863		0^+	$1/2^+$
76	54	524.49		6.90		1.79	46.43	1.70	25.00	−0.99	−22.76	4.418	4.650	3.787	3.870		0^+	0^+
77	55	524.47		6.81		1.67	47.07	−0.03	25.30	−0.88	−23.03	4.475	4.720	3.793	3.876		0^+	$1/2^+$
78	56	526.12		6.75		1.62	47.41	1.65	25.47	−0.88	−23.22	4.494	4.740	3.799	3.882		0^+	0^+
79	57	525.88		6.66		1.41	47.78	−0.24	25.64	−0.91	−23.40	4.554	4.813	3.802	3.885		0^+	$3/2^+$
80	58	527.53		6.59		1.41	48.33	1.65	25.90	−0.73	−23.65	4.570	4.827	3.811	3.894		0^+	0^+
81	59	527.37		6.51		1.50	48.76	−0.16	26.11	−0.70	−23.83	4.625	4.893	3.813	3.896		0^+	$3/2^+$
82	60	528.65		6.45		1.11	49.15	1.27	26.30	−0.53	−24.05	4.646	4.914	3.822	3.905		0^+	0^+
83	61	528.24		6.36		0.86	49.58	−0.41	26.49	−0.20	−24.22	4.699	4.977	3.825	3.907		0^+	$3/2^+$
84	62	529.27		6.30		0.62	49.93	1.03	26.67	−0.19	−24.44	4.720	4.995	3.837	3.920		0^+	0^+
85	63	528.22		6.21		−0.02	50.39	−1.05	27.24	−0.21	−24.43	4.881	5.197	3.837	3.919		0^+	$1/2^+$
86	64	528.98		6.15		−0.28		0.76		0.16	−24.92	4.775	5.049	3.868	3.950		0^+	0^+
σ		1.31													0.035			
$Z = 23$ (V)																		
41	18	313.21		7.64			0.41		−2.21	−18.45	0.24	3.430	3.288	3.537	3.626		$7/2^-$	0^+
42	19	330.04		7.86			2.36	16.83	−1.24	−16.19	−0.68	3.436	3.323	3.527	3.617		$7/2^-$	$3/2^+$
43	20	349.08	346.99	8.12		35.88	4.49	19.05	−0.15	−15.98	−1.69	3.448	3.359	3.524	3.614		$7/2^-$	0^+
44	21	360.80	361.26	8.20	8.21	30.76	6.46	11.71	0.84	−14.93	−2.63	3.460	3.396	3.517	3.607		$7/2^-$	$7/2^-$
45	22	375.94	377.10	8.35	8.38	26.86	8.37	15.15	1.80	−13.00	−3.55	3.474	3.432	3.514	3.604		$7/2^-$	0^+
46	23	386.53	390.36	8.40	8.49	25.73	10.34	10.59	2.79	−12.47	−4.50	3.486	3.464	3.508	3.598		$7/2^-$	$7/2^-$
47	24	400.46	403.36	8.52	8.58	24.52	12.22	13.94	3.74	−11.99	−5.42	3.501	3.496	3.507	3.597		$7/2^-$	0^+
48	25	410.33	413.91	8.55	8.62	23.80	14.20	9.86	4.74	−11.52	−6.38	3.514	3.524	3.502	3.592		$7/2^-$	$7/2^-$
49	26	423.35	425.46	8.64	8.68	22.88	16.08	13.02	5.69	−11.13	−7.30	3.529	3.553	3.502	3.592		$7/2^-$	0^+
50	27	432.70	434.80	8.65	8.70	22.38	18.10	9.36	6.71	−9.45	−8.31	3.538	3.574	3.495	3.585		$7/2^-$	$7/2^-$
51	28	444.94	445.85	8.72	8.74	21.60	20.07	12.24	7.68	−9.25	−9.25	3.551	3.598	3.493	3.584	3.600	$7/2^-$	0^+
52	29	451.58	453.16	8.68	8.71	18.87	21.00	6.63	8.16	−9.05	−9.75	3.588	3.653	3.505	3.595		$7/2^-$	$3/2^-$
53	30	459.81	461.64	8.68	8.71	14.87	22.08	8.24	8.69	−7.39	−10.31	3.625	3.701	3.523	3.613		$7/2^-$	0^+
54	31	465.53	467.75	8.62	8.66	13.95	23.07	5.71	9.17	−6.79	−10.82	3.660	3.751	3.533	3.622		$7/2^-$	$3/2^-$
55	32	473.35	475.08	8.61	8.64	13.54	24.22	7.82	9.74	−6.74	−11.42	3.694	3.794	3.550	3.639		$7/2^-$	0^+
56	33	478.17	480.12	8.54	8.57	12.64	25.14	4.82	10.20	−6.56	−11.90	3.731	3.846	3.559	3.647		$7/2^-$	$1/2^-$
57	34	485.72	486.30	8.52	8.53	12.37	26.55	7.55	10.89	−6.22	−12.59	3.762	3.880	3.580	3.668		$7/2^-$	0^+
58	35	490.37	490.46	8.45	8.45	12.20	27.74	4.65	11.43	−5.98	−13.15	3.798	3.926	3.594	3.682		$7/2^-$	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
59	36	497.27	496.05	8.43	8.39	11.55	28.94	6.90	12.08	−5.83	−13.79	3.829	3.960	3.613	3.700		$7/2^-$	0^+
60	37	501.47	499.53	8.36	8.31	11.10	30.20	4.20	12.74	−5.56	−14.43	3.862	3.999	3.632	3.719		$7/2^-$	$1/2^-$
61	38	508.23	504.86	8.33	8.28	10.96	31.33	6.76	13.26	−5.46	−14.97	3.893	4.034	3.646	3.733		$7/2^-$	0^+
62	39	512.08		8.26		10.61	32.43	3.85	13.79	−4.32	−15.49	3.926	4.075	3.660	3.746		$7/2^-$	$5/2^-$
63	40	518.56		8.23		10.33	33.70	6.48	14.42	−4.33	−16.12	3.955	4.105	3.680	3.766		$7/2^-$	0^+
64	41	520.01		8.13		7.93	34.94	1.45	15.05	−4.34	−16.75	3.982	4.136	3.691	3.777		$7/2^-$	$9/2^+$
65	42	524.63		8.07		6.07	36.02	4.62	15.61	−2.90	−17.32	4.008	4.165	3.703	3.788		$7/2^-$	0^+
66	43	525.46		7.96		5.45	37.09	0.83	16.22	−2.65	−17.91	4.035	4.196	3.714	3.800		$7/2^-$	$9/2^+$
67	44	529.49		7.90		4.86	38.17	4.03	16.71	−2.44	−18.43	4.062	4.227	3.726	3.811		$7/2^-$	0^+
68	45	529.96		7.79		4.50	38.80	0.47	17.27	−2.22	−19.01	4.089	4.257	3.737	3.822		$7/2^-$	$9/2^+$
69	46	533.60		7.73		4.11	40.13	3.64	17.74	−2.10	−19.47	4.117	4.290	3.748	3.833		$7/2^-$	0^+
70	47	533.73		7.62		3.77	40.37	0.13	17.86	−1.85	−20.01	4.145	4.321	3.759	3.843		$7/2^-$	$9/2^+$
71	48	537.13		7.57		3.53	41.87	3.40	18.66	−1.80	−20.41	4.175	4.356	3.769	3.853		$7/2^-$	0^+
72	49	537.37		7.46		3.64	42.19	0.25	18.81	−1.84	−20.55	4.261	4.472	3.773	3.857		$7/2^-$	$1/2^+$
73	50	540.13		7.40		3.01	43.32	2.76	19.42	−1.55	−21.18	4.239	4.431	3.788	3.871		$7/2^-$	0^+
74	51	540.46		7.30		3.09	43.75	0.33	19.62	−1.55	−21.37	4.313	4.528	3.792	3.875		$7/2^-$	$1/2^+$
75	52	542.71		7.24		2.58	44.50	2.25	20.01	−1.36	−21.78	4.310	4.516	3.803	3.886		$7/2^-$	0^+
76	53	543.05		7.15		2.58	45.02	0.34	20.25	−1.32	−22.00	4.374	4.598	3.808	3.891		$7/2^-$	$1/2^+$
77	54	545.00		7.08		2.29	45.50	1.95	20.50	−1.22	−22.27	4.386	4.607	3.816	3.899		$7/2^-$	0^+
78	55	545.24		6.99		2.19	46.07	0.24	20.77	−1.13	−22.51	4.440	4.675	3.821	3.904		$7/2^-$	$1/2^+$
79	56	547.07		6.92		2.07	46.42	1.83	20.95	−1.10	−22.71	4.462	4.697	3.828	3.911		$7/2^-$	0^+
80	57	547.08		6.84		1.84	46.84	0.01	21.20	−0.92	−22.96	4.512	4.758	3.834	3.917		$7/2^-$	$1/2^+$
81	58	548.90		6.78		1.83	47.27	1.82	21.36	−0.94	−23.12	4.537	4.786	3.840	3.922		$7/2^-$	0^+
82	59	548.93		6.69		1.85	47.66	0.04	21.56	−0.91	−23.28	4.589	4.849	3.841	3.924		$7/2^-$	$3/2^+$
83	60	550.40		6.63		1.50	48.05	1.47	21.76	−0.73	−23.51	4.612	4.872	3.852	3.934		$7/2^-$	0^+
84	61	550.18		6.55		1.24	48.43	−0.23	21.94	−0.42	−23.67	4.662	4.932	3.854	3.936		$7/2^-$	$3/2^+$
85	62	551.41		6.49		1.01	48.82	1.23	22.14	−0.41	−23.91	4.683	4.951	3.868	3.950		$7/2^-$	0^+
86	63	550.36		6.40		0.18	49.38	−1.05	22.14	−0.43	−23.90	4.844	5.154	3.867	3.949		$7/2^-$	$3/2^-$
87	64	551.60		6.34		0.19	49.77	1.24	22.62	−0.09	−24.40	4.738	5.005	3.899	3.980		$7/2^-$	0^+
88	65	550.58		6.26		0.22		−1.02		−0.10	−24.39	4.889	5.195	3.899	3.980		$7/2^-$	$3/2^-$
89	66	551.33		6.19		−0.27		0.76		0.08	−24.92	4.789	5.052	3.935	4.015		$7/2^-$	0^+
σ		2.20													0.016			
$Z = 24$ (Cr)																		
42	18	314.35		7.48			−1.07		1.14	−19.35	0.85	3.464	3.299	3.583	3.671		0^+	0^+
43	19	332.04		7.72			0.77	17.70	2.01	−16.88	−0.02	3.468	3.332	3.571	3.660		0^+	$3/2^+$
44	20	352.07		8.00		37.72	2.83	20.02	2.98	−16.89	−0.99	3.476	3.366	3.565	3.654		0^+	0^+
45	21	364.70	363.95	8.10	8.09	32.66	4.74	12.64	3.91	−16.87	−1.90	3.485	3.402	3.556	3.645		0^+	$7/2^-$
46	22	380.77	381.98	8.28	8.30	28.70	6.62	16.06	4.82	−13.90	−2.80	3.497	3.436	3.551	3.640		0^+	0^+
47	23	392.29	395.13	8.35	8.41	27.59	8.55	11.52	5.76	−13.38	−3.74	3.507	3.467	3.544	3.634		0^+	$7/2^-$
48	24	407.15	411.47	8.48	8.57	26.38	10.43	14.86	6.68	−12.91	−4.65	3.520	3.498	3.542	3.631		0^+	0^+
49	25	417.96	422.05	8.53	8.61	25.67	12.38	10.82	7.64	−12.45	−5.60	3.530	3.524	3.535	3.625		0^+	$7/2^-$
50	26	431.90	435.05	8.64	8.70	24.76	14.24	13.94	8.56	−12.06	−6.52	3.543	3.551	3.533	3.623	3.659	0^+	0^+
51	27	442.24	444.31	8.67	8.71	24.28	16.25	10.34	9.54	−10.28	−7.52	3.550	3.571	3.525	3.615		0^+	$7/2^-$
52	28	455.42	456.35	8.76	8.78	23.52	18.15	13.18	10.48	−10.02	−8.46	3.561	3.594	3.522	3.612	3.645	0^+	0^+
53	29	462.57	464.29	8.73	8.76	20.33	19.15	7.15	10.99	−9.76	−8.96	3.597	3.648	3.534	3.624	3.651	0^+	$3/2^-$
54	30	471.39	474.01	8.73	8.78	15.97	20.28	8.83	11.58	−7.94	−9.54	3.633	3.696	3.553	3.642	3.689	0^+	0^+
55	31	477.63	480.25	8.68	8.73	15.06	21.27	6.23	12.10	−7.39	−10.06	3.667	3.744	3.564	3.652		0^+	$3/2^-$
56	32	486.06	488.50	8.68	8.72	14.67	22.46	8.44	12.72	−7.33	−10.67	3.700	3.787	3.581	3.669		0^+	0^+
57	33	491.38	493.81	8.62	8.66	13.75	23.40	5.31	13.21	−7.15	−11.17	3.735	3.837	3.591	3.679		0^+	$1/2^-$
58	34	499.64	501.19	8.61	8.64	13.58	24.81	8.26	13.92	−6.82	−11.86	3.766	3.871	3.611	3.699		0^+	0^+
59	35	504.64	505.32	8.55	8.56	13.26	25.69	5.00	14.27	−6.62	−12.40	3.800	3.915	3.625	3.712		0^+	$1/2^-$
60	36	512.41	512.01	8.54	8.53	12.77	27.22	7.78	15.14	−6.43	−13.06	3.830	3.949	3.644	3.730		0^+	0^+
61	37	517.28	516.03	8.48	8.45	12.64	28.54	4.86	15.80	−6.21	−13.69	3.862	3.987	3.662	3.748		0^+	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
62	38	524.59	522.54	8.46	8.42	12.17	29.61	7.31	16.35	−6.05	−14.25	3.892	4.022	3.676	3.762		0^+	0^+
63	39	529.14	525.44	8.40	8.34	11.86	30.85	4.56	17.06	−4.93	−14.95	3.923	4.054	3.699	3.785		0^+	$1/2^-$
64	40	536.08		8.38		11.50	31.95	6.94	17.53	−4.92	−15.39	3.952	4.092	3.708	3.794		0^+	0^+
65	41	538.17		8.28		9.03	33.22	2.09	18.16	−4.89	−16.02	3.978	4.122	3.719	3.804		0^+	$9/2^+$
66	42	543.37		8.23		7.29	34.35	5.20	18.74	−3.47	−16.61	4.002	4.150	3.730	3.815		0^+	0^+
67	43	544.81		8.13		6.64	35.57	1.44	19.35	−3.21	−17.22	4.028	4.180	3.741	3.826		0^+	$9/2^+$
68	44	549.37		8.08		6.00	36.59	4.55	19.88	−2.98	−17.77	4.054	4.209	3.753	3.837		0^+	0^+
69	45	550.44		7.98		5.63	37.76	1.08	20.48	−2.75	−18.36	4.079	4.238	3.764	3.848		0^+	$9/2^+$
70	46	554.56		7.92		5.20	38.70	4.12	20.96	−2.60	−18.86	4.106	4.268	3.775	3.859		0^+	0^+
71	47	555.29		7.82		4.84	39.41	0.72	21.56	−2.33	−19.44	4.131	4.296	3.785	3.869		0^+	$9/2^+$
72	48	559.10		7.77		4.53	40.63	3.81	21.97	−2.24	−19.88	4.158	4.328	3.796	3.879		0^+	0^+
73	49	559.48		7.66		4.19	40.92	0.38	22.11	−2.30	−20.01	4.239	4.439	3.799	3.883		0^+	$1/2^+$
74	50	562.94		7.61		3.84	42.23	3.47	22.81	−1.88	−20.72	4.217	4.397	3.815	3.898		0^+	0^+
75	51	563.46		7.51		3.98	42.61	0.52	22.99	−1.90	−20.90	4.287	4.491	3.819	3.902		0^+	$1/2^+$
76	52	566.10		7.45		3.16	43.40	2.64	23.39	−1.61	−21.31	4.287	4.481	3.830	3.913		0^+	0^+
77	53	566.64		7.36		3.18	43.84	0.54	23.59	−1.58	−21.50	4.348	4.561	3.834	3.917		0^+	$1/2^+$
78	54	568.84		7.29		2.74	44.34	2.20	23.84	−1.44	−21.78	4.361	4.572	3.843	3.926		0^+	0^+
79	55	569.31		7.21		2.67	44.84	0.47	24.07	−1.35	−21.99	4.414	4.640	3.848	3.930		0^+	$1/2^+$
80	56	571.32		7.14		2.48	45.20	2.01	24.25	−1.30	−22.20	4.436	4.662	3.855	3.937		0^+	0^+
81	57	571.58		7.06		2.27	45.70	0.26	24.50	−1.13	−22.43	4.483	4.721	3.861	3.943		0^+	$1/2^+$
82	58	573.53		6.99		2.22	46.00	1.96	24.64	−1.13	−22.60	4.510	4.751	3.867	3.949		0^+	0^+
83	59	573.74		6.91		2.16	46.37	0.21	24.81	−1.10	−22.76	4.560	4.813	3.869	3.951		0^+	$3/2^+$
84	60	575.41		6.85		1.88	46.77	1.67	25.01	−0.93	−22.99	4.583	4.835	3.880	3.962		0^+	0^+
85	61	575.35		6.77		1.61	47.12	−0.06	25.18	−0.63	−23.15	4.630	4.893	3.883	3.964		0^+	$3/2^+$
86	62	576.81		6.71		1.40	47.54	1.46	25.40	−0.63	−23.40	4.651	4.912	3.898	3.979		0^+	0^+
87	63	575.96		6.62		0.61	47.74	−0.85	25.60	−0.67	−23.62	4.687	4.952	3.908	3.989		0^+	$7/2^+$
88	64	577.51		6.56		0.70	48.53	1.55	25.91	−0.35	−23.90	4.707	4.967	3.929	4.009		0^+	0^+
89	65	576.54		6.48		0.59		−0.97	25.97	−0.28	−24.14	4.738	5.000	3.943	4.023		0^+	$7/2^+$
90	66	577.80		6.42		0.29		1.26	26.47	−0.19	−24.44	4.758	5.015	3.965	4.045		0^+	0^+
91	67	576.81		6.34		0.27		−0.99		−0.20	−24.44	4.900	5.194	3.964	4.044		0^+	$3/2^-$
92	68	577.86		6.28		0.06		1.05		−0.02	−24.98	4.808	5.062	4.002	4.081		0^+	0^+
93	69	576.92		6.20		0.11		−0.95		−0.05	−24.98	4.941	5.229	4.002	4.081		0^+	$3/2^-$
94	70	577.56		6.14		−0.30		0.65		0.47	−25.51	4.865	5.118	4.038	4.116		0^+	0^+
σ		2.46													0.036			
$Z = 25$ (Mn)																		
43	18	310.97		7.23			−2.24		−3.38	−20.26	1.55	3.502	3.307	3.635	3.722		$7/2^-$	0^+
44	19	329.59		7.49			−0.45	18.62	−2.45	−18.07	0.46	3.500	3.342	3.615	3.702		$7/2^-$	$1/2^+$
45	20	350.63		7.79		39.65	1.54	21.03	−1.44	−17.83	−0.23	3.504	3.370	3.607	3.695		$7/2^-$	0^+
46	21	364.24		7.92		34.64	3.44	13.61	−0.47	−17.61	−1.14	3.509	3.405	3.595	3.683		$7/2^-$	$7/2^-$
47	22	381.25	382.36	8.11	8.14	30.63	5.31	17.02	0.49	−14.85	−2.04	3.518	3.438	3.588	3.676		$7/2^-$	0^+
48	23	393.76	397.19	8.20	8.27	29.53	7.23	12.51	1.47	−14.33	−2.98	3.526	3.467	3.579	3.667		$7/2^-$	$7/2^-$
49	24	409.57	413.57	8.36	8.44	28.31	9.10	15.81	2.42	−13.86	−3.89	3.536	3.496	3.574	3.662		$7/2^-$	0^+
50	25	421.38	426.63	8.43	8.53	27.62	11.06	11.81	3.42	−13.41	−4.85	3.544	3.521	3.566	3.654	3.712	$7/2^-$	$7/2^-$
51	26	436.28	440.32	8.55	8.63	26.71	12.93	14.89	4.37	−13.03	−5.78	3.554	3.547	3.562	3.651	3.703	$7/2^-$	0^+
52	27	447.63	450.86	8.61	8.67	26.25	14.93	11.36	5.39	−10.87	−6.78	3.560	3.566	3.553	3.642	3.671	$7/2^-$	$7/2^-$
53	28	461.79	462.91	8.71	8.73	25.51	16.84	14.15	6.37	−10.82	−7.73	3.569	3.588	3.548	3.637	3.666	$7/2^-$	0^+
54	29	469.40	471.85	8.69	8.74	21.77	17.83	7.62	6.84	−10.70	−8.22	3.604	3.640	3.561	3.649	3.683	$7/2^-$	$3/2^-$
55	30	478.81	482.08	8.71	8.77	17.02	18.99	9.40	7.41	−8.49	−8.82	3.639	3.687	3.580	3.668	3.706	$7/2^-$	0^+
56	31	485.53	489.35	8.67	8.74	16.12	20.00	6.72	7.90	−7.97	−9.34	3.672	3.735	3.591	3.679	3.715	$7/2^-$	$3/2^-$
57	32	494.55	497.99	8.68	8.74	15.75	21.21	9.03	8.49	−7.90	−9.96	3.704	3.777	3.608	3.696		$7/2^-$	0^+
58	33	500.43	504.41	8.63	8.70	14.90	22.26	5.88	9.05	−7.80	−10.58	3.737	3.820	3.625	3.712		$7/2^-$	$5/2^-$
59	34	509.29	512.17	8.63	8.68	14.73	23.57	8.86	9.65	−7.43	−11.15	3.768	3.859	3.639	3.726		$7/2^-$	0^+
60	35	514.83	517.69	8.58	8.63	14.40	24.45	5.54	10.19	−7.26	−11.69	3.801	3.903	3.652	3.739		$7/2^-$	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
61	36	523.25	524.53	8.58	8.60	13.96	25.98	8.42	10.84	−7.03	−12.35	3.829	3.936	3.671	3.757		$7/2^-$	0^+
62	37	528.75		8.53	8.53	13.92	27.27	5.50	11.47	−6.85	−12.96	3.861	3.974	3.688	3.773		$7/2^-$	$1/2^-$
63	38	536.60	535.82	8.52	8.51	13.35	28.37	7.85	12.01	−6.64	−13.53	3.889	4.008	3.702	3.787		$7/2^-$	0^+
64	39	541.86	539.99	8.47	8.44	13.12	29.78	5.27	12.72	−5.57	−14.22	3.920	4.040	3.724	3.809		$7/2^-$	$1/2^-$
65	40	549.22	546.04	8.45	8.40	12.63	30.66	7.36	13.14	−5.52	−14.66	3.948	4.077	3.733	3.818		$7/2^-$	0^+
66	41	551.97	549.90	8.36	8.33	10.10	31.96	2.74	13.79	−5.50	−15.30	3.973	4.106	3.743	3.828		$7/2^-$	$9/2^+$
67	42	557.76		8.32		8.54	33.13	5.80	14.39	−4.07	−15.91	3.996	4.133	3.754	3.838		$7/2^-$	0^+
68	43	559.84		8.23		7.87	34.37	2.07	15.02	−3.80	−16.53	4.020	4.162	3.764	3.848		$7/2^-$	$9/2^+$
69	44	564.94		8.19		7.18	35.46	5.11	15.58	−3.56	−17.09	4.045	4.190	3.775	3.859		$7/2^-$	0^+
70	45	566.64		8.09		6.80	36.68	1.70	16.20	−3.32	−17.70	4.069	4.218	3.786	3.869		$7/2^-$	$9/2^+$
71	46	571.28		8.05		6.33	37.68	4.64	16.71	−3.14	−18.23	4.093	4.246	3.797	3.880		$7/2^-$	0^+
72	47	572.63		7.95		5.99	38.90	1.35	17.34	−2.87	−18.84	4.117	4.272	3.807	3.890		$7/2^-$	$9/2^+$
73	48	576.90		7.90		5.62	39.78	4.28	17.80	−2.74	−19.32	4.142	4.302	3.818	3.900		$7/2^-$	0^+
74	49	577.68		7.81		5.06	40.31	0.78	18.21	−2.18	−19.89	4.166	4.330	3.827	3.909		$7/2^-$	$9/2^+$
75	50	581.69		7.76		4.79	41.56	4.01	18.75	−2.22	−20.26	4.195	4.364	3.837	3.919		$7/2^-$	0^+
76	51	582.43		7.66		4.74	41.96	0.74	18.97	−2.21	−20.60	4.234	4.413	3.843	3.925		$7/2^-$	$5/2^+$
77	52	585.38		7.60		3.69	42.66	2.95	19.28	−1.84	−20.81	4.264	4.449	3.852	3.934		$7/2^-$	0^+
78	53	586.10		7.51		3.67	43.05	0.72	19.46	−1.82	−20.98	4.323	4.527	3.856	3.938		$7/2^-$	$1/2^+$
79	54	588.53		7.45		3.16	43.53	2.44	19.69	−1.65	−21.24	4.337	4.539	3.865	3.947		$7/2^-$	0^+
80	55	589.20		7.36		3.10	43.96	0.67	19.89	−1.58	−21.43	4.389	4.606	3.870	3.951		$7/2^-$	$1/2^+$
81	56	591.40		7.30		2.87	44.33	2.20	20.08	−1.50	−21.65	4.411	4.629	3.878	3.960		$7/2^-$	0^+
82	57	591.88		7.22		2.69	44.80	0.49	20.30	−1.35	−21.87	4.457	4.686	3.883	3.964		$7/2^-$	$1/2^+$
83	58	593.99		7.16		2.60	45.09	2.11	20.46	−1.34	−22.04	4.483	4.716	3.890	3.972		$7/2^-$	0^+
84	59	594.37		7.08		2.48	45.43	0.37	20.63	−1.30	−22.20	4.531	4.776	3.892	3.973		$7/2^-$	$3/2^+$
85	60	596.26		7.01		2.26	45.86	1.89	20.84	−1.13	−22.44	4.554	4.799	3.904	3.985		$7/2^-$	0^+
86	61	596.36		6.93		2.00	46.19	0.11	21.01	−0.86	−22.60	4.599	4.855	3.907	3.988		$7/2^-$	$3/2^+$
87	62	598.05		6.87		1.80	46.65	1.69	21.24	−0.86	−22.86	4.620	4.873	3.923	4.004		$7/2^-$	0^+
88	63	597.47		6.79		1.11	47.12	−0.58	21.51	−0.90	−23.07	4.655	4.912	3.934	4.014		$7/2^-$	$7/2^+$
89	64	599.23		6.73		1.18	47.64	1.76	21.72	−0.61	−23.35	4.676	4.930	3.954	4.034		$7/2^-$	0^+
90	65	598.51		6.65		1.04	47.93	−0.72	21.97	−0.55	−23.59	4.707	4.962	3.968	4.048		$7/2^-$	$7/2^+$
91	66	600.04		6.59		0.80	48.70	1.53	22.24	−0.46	−23.89	4.728	4.979	3.990	4.070		$7/2^-$	0^+
92	67	599.26		6.51		0.74		−0.78	22.44	−0.36	−24.14	4.757	5.008	4.006	4.086		$7/2^-$	$7/2^+$
93	68	600.63		6.46		0.60		1.38	22.77	−0.30	−24.43	4.778	5.026	4.028	4.106		$7/2^-$	0^+
94	69	599.73		6.38		0.48		−0.90	22.81	0.37	−24.70	4.806	5.053	4.046	4.125		$7/2^-$	$7/2^+$
95	70	600.91		6.33		0.28		1.18		0.32	−24.98	4.830	5.075	4.066	4.144		$7/2^-$	0^+
σ		3.08													0.041			
$Z = 26$ (Fe)																		
46	20	352.23		7.66			0.16		1.61	−18.67	0.36	3.533	3.378	3.648	3.735		0^+	0^+
47	21	366.72		7.80			2.01	14.49	2.48	−18.29	−0.51	3.536	3.411	3.633	3.720		0^+	$7/2^-$
48	22	384.62		8.01		32.39	3.85	17.91	3.37	−15.72	−1.39	3.542	3.443	3.624	3.711		0^+	0^+
49	23	398.04	399.90	8.12	8.16	31.33	5.75	13.42	4.28	−15.23	−2.31	3.547	3.471	3.613	3.700		0^+	$7/2^-$
50	24	414.75	417.71	8.30	8.35	30.13	7.61	16.71	5.19	−14.76	−3.21	3.555	3.499	3.606	3.694		0^+	0^+
51	25	427.51	431.50	8.38	8.46	29.46	9.55	12.75	6.13	−14.33	−4.17	3.560	3.522	3.596	3.684		0^+	$7/2^-$
52	26	443.32	447.70	8.53	8.61	28.57	11.42	15.81	7.05	−13.96	−5.09	3.569	3.546	3.591	3.679		0^+	0^+
53	27	455.65	458.39	8.60	8.65	28.14	13.41	12.33	8.01	−11.62	−6.09	3.572	3.564	3.580	3.668		0^+	$7/2^-$
54	28	470.74	471.76	8.72	8.74	27.42	15.32	15.10	8.96	−11.62	−7.04	3.579	3.584	3.574	3.663	3.693	0^+	0^+
55	29	478.87	481.06	8.71	8.75	23.22	16.30	8.13	9.47	−11.37	−7.53	3.613	3.636	3.587	3.675		0^+	$3/2^-$
56	30	488.90	492.26	8.73	8.79	18.16	17.51	10.03	10.10	−9.07	−8.15	3.647	3.683	3.606	3.694	3.738	0^+	0^+
57	31	496.16	499.91	8.70	8.77	17.29	18.53	7.25	10.63	−8.59	−8.68	3.680	3.730	3.618	3.706	3.753	0^+	$3/2^-$
58	32	505.82	509.95	8.72	8.79	16.92	19.76	9.67	11.27	−8.50	−9.30	3.711	3.771	3.636	3.723	3.775	0^+	0^+
59	33	512.23	516.53	8.68	8.75	16.07	20.85	6.40	11.80	−8.06	−9.93	3.744	3.815	3.652	3.739		0^+	$3/2^-$
60	34	521.77	525.35	8.70	8.76	15.95	22.13	9.55	12.49	−8.04	−10.50	3.773	3.852	3.667	3.753		0^+	0^+
61	35	527.88	530.93	8.65	8.70	15.65	23.24	6.10	13.05	−7.90	−11.04	3.804	3.895	3.680	3.766		0^+	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
62	36	536.97	538.96	8.66	8.69	15.19	24.55	9.09	13.72	−7.64	−11.71	3.832	3.927	3.698	3.783		0^+	0^+
63	37	543.13	543.79	8.62	8.63	15.25	25.85	6.16	14.38	−7.49	−12.30	3.863	3.964	3.714	3.799		0^+	$1/2^-$
64	38	551.52	551.19	8.62	8.61	14.55	26.93	8.39	14.92	−7.23	−12.89	3.890	3.997	3.728	3.813		0^+	0^+
65	39	557.48	555.52	8.58	8.55	14.35	28.34	5.96	15.62	−6.21	−13.55	3.920	4.029	3.749	3.833		0^+	$1/2^-$
66	40	565.28	562.43	8.56	8.52	13.76	29.19	7.80	16.06	−6.11	−14.00	3.947	4.065	3.757	3.842		0^+	0^+
67	41	568.68	566.51	8.49	8.45	11.20	30.50	3.40	16.71	−6.08	−14.64	3.971	4.094	3.767	3.851		0^+	$9/2^+$
68	42	575.09	572.33	8.46	8.41	9.81	31.72	6.41	17.32	−4.68	−15.27	3.993	4.120	3.777	3.861		0^+	0^+
69	43	577.79		8.37		9.11	32.97	2.70	17.95	−4.40	−15.89	4.016	4.149	3.787	3.871		0^+	$9/2^+$
70	44	583.47		8.34		8.39	34.10	5.68	18.53	−4.14	−16.48	4.039	4.175	3.798	3.881		0^+	0^+
71	45	585.79		8.25		8.00	35.35	2.32	19.15	−3.89	−17.10	4.062	4.202	3.808	3.891		0^+	$9/2^+$
72	46	590.97		8.21		7.50	36.41	5.18	19.69	−3.70	−17.65	4.086	4.229	3.818	3.901		0^+	0^+
73	47	592.95		8.12		7.16	37.67	1.98	20.33	−3.44	−18.27	4.107	4.254	3.828	3.911		0^+	$9/2^+$
74	48	597.74		8.08		6.77	38.64	4.79	20.84	−3.27	−18.79	4.131	4.281	3.838	3.921		0^+	0^+
75	49	599.25		7.99		6.30	39.77	1.51	21.57	−2.53	−19.47	4.150	4.302	3.847	3.930		0^+	$9/2^+$
76	50	603.61		7.94		5.87	40.67	4.36	21.92	−2.57	−19.85	4.178	4.335	3.857	3.940		0^+	0^+
77	51	604.72		7.85		5.47	41.26	1.11	22.29	−2.56	−20.20	4.214	4.382	3.864	3.946		0^+	$5/2^+$
78	52	607.75		7.79		4.14	41.65	3.03	22.38	−2.05	−20.34	4.248	4.423	3.873	3.955		0^+	0^+
79	53	608.62		7.70		3.90	41.99	0.87	22.53	−2.03	−20.49	4.304	4.499	3.877	3.958		0^+	$1/2^+$
80	54	611.30		7.64		3.55	42.46	2.68	22.77	−1.85	−20.75	4.319	4.513	3.887	3.969		0^+	0^+
81	55	612.14		7.56		3.52	42.84	0.84	22.95	−1.79	−20.92	4.370	4.579	3.891	3.972		0^+	$1/2^+$
82	56	614.55		7.49		3.25	43.24	2.41	23.16	−1.70	−21.16	4.391	4.601	3.900	3.982		0^+	0^+
83	57	615.25		7.41		3.11	43.67	0.70	23.37	−1.56	−21.36	4.436	4.657	3.905	3.986		0^+	$1/2^+$
84	58	617.53		7.35		2.98	44.00	2.28	23.54	−1.53	−21.55	4.462	4.687	3.914	3.995		0^+	0^+
85	59	618.06		7.27		2.81	44.32	0.53	23.69	−1.49	−21.71	4.507	4.744	3.915	3.996		0^+	$3/2^+$
86	60	620.18		7.21		2.65	44.77	2.12	23.92	−1.34	−21.95	4.530	4.768	3.929	4.009		0^+	0^+
87	61	620.45		7.13		2.39	45.10	0.27	24.09	−1.10	−22.12	4.573	4.821	3.933	4.013		0^+	$3/2^+$
88	62	622.40		7.07		2.22	45.59	1.95	24.34	−1.10	−22.39	4.595	4.840	3.949	4.029		0^+	0^+
89	63	622.00		6.99		1.55	46.04	−0.40	24.53	−0.79	−22.64	4.630	4.877	3.967	4.047		0^+	$3/2^+$
90	64	624.10		6.93		1.70	46.59	2.10	24.86	−0.88	−22.89	4.651	4.897	3.980	4.059		0^+	0^+
91	65	623.64		6.85		1.64	47.09	−0.46	25.13	−0.84	−23.13	4.682	4.931	3.994	4.073		0^+	$7/2^+$
92	66	625.47		6.80		1.37	47.67	1.83	25.43	−0.74	−23.43	4.703	4.948	4.016	4.095		0^+	0^+
93	67	624.97		6.72		1.33	48.15	−0.50	25.71	−0.65	−23.68	4.733	4.978	4.032	4.110		0^+	$7/2^+$
94	68	626.65		6.67		1.18	48.79	1.69	26.02	−0.59	−23.99	4.754	4.996	4.053	4.131		0^+	0^+
95	69	626.05		6.59		1.08	49.13	−0.61	26.31	−1.05	−24.25	4.783	5.025	4.071	4.149		0^+	$7/2^+$
96	70	627.56		6.54		0.91	49.99	1.51	26.65	0.10	−24.55	4.805	5.044	4.092	4.170		0^+	0^+
σ		2.99													0.044			
$Z = 27$ (Co)																		
49	22	383.95		7.84		2.70			−0.67	−16.73	0.22	3.559	3.442	3.652	3.739		$7/2^-$	0^+
50	23	398.39		7.97		4.63		14.43	0.34	−16.22	−0.57	3.563	3.469	3.640	3.727		$7/2^-$	$7/2^-$
51	24	416.07	417.86	8.16	8.19	32.11	6.50	17.68	1.31	−15.75	−1.52	3.569	3.496	3.632	3.719		$7/2^-$	0^+
52	25	429.83		8.27		31.44	8.45	13.76	2.32	−15.33	−2.50	3.572	3.518	3.621	3.709		$7/2^-$	$7/2^-$
53	26	446.61	449.32	8.43	8.48	30.55	10.34	16.78	3.29	−14.95	−3.17	3.579	3.541	3.614	3.702		$7/2^-$	0^+
54	27	459.97	462.74	8.52	8.57	30.14	12.33	13.35	4.32	−12.22	−3.82	3.581	3.558	3.603	3.690		$7/2^-$	$7/2^-$
55	28	476.05	476.83	8.66	8.67	29.44	14.27	16.08	5.31	−12.45	−4.47	3.586	3.577	3.595	3.683		$7/2^-$	0^+
56	29	484.63	486.91	8.65	8.69	24.67	15.23	8.58	5.76	−11.95	−5.10	3.619	3.629	3.608	3.696		$7/2^-$	$3/2^-$
57	30	495.28	498.29	8.69	8.74	19.23	16.47	10.65	6.38	−9.63	−6.28	3.652	3.674	3.628	3.715		$7/2^-$	0^+
58	31	503.02	506.86	8.67	8.74	18.39	17.49	7.74	6.87	−9.18	−6.86	3.684	3.721	3.641	3.727		$7/2^-$	$3/2^-$
59	32	513.30	517.31	8.70	8.77	18.02	18.75	10.28	7.48	−9.08	−6.89	3.714	3.761	3.658	3.745	3.788	$7/2^-$	0^+
60	33	520.31	524.81	8.67	8.75	17.29	19.88	7.01	8.08	−8.69	−7.55	3.746	3.804	3.674	3.760		$7/2^-$	$3/2^-$
61	34	530.40	534.12	8.70	8.76	17.10	21.11	10.10	8.63	−8.64	−8.17	3.774	3.840	3.689	3.774		$7/2^-$	0^+
62	35	537.02	540.73	8.66	8.72	16.71	22.19	6.62	9.14	−8.51	−8.78	3.805	3.882	3.701	3.787		$7/2^-$	$1/2^-$
63	36	546.77	549.22	8.68	8.72	16.36	23.52	9.75	9.80	−8.24	−9.69	3.832	3.914	3.719	3.804		$7/2^-$	0^+
64	37	553.58	555.23	8.65	8.68	16.56	24.83	6.81	10.46	−8.12	−10.23	3.861	3.951	3.734	3.819		$7/2^-$	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
65	38	562.47	562.70	8.65	8.66	15.70	25.87	8.89	10.95	−7.80	−10.80	3.887	3.983	3.749	3.833		$7/2^-$	0^+
66	39	569.07	567.99	8.62	8.61	15.49	27.21	6.60	11.60	−6.85	−11.37	3.916	4.015	3.768	3.852		$7/2^-$	$1/2^-$
67	40	577.29	574.98	8.62	8.58	14.82	28.07	8.22	12.01	−6.71	−11.95	3.942	4.050	3.776	3.860		$7/2^-$	0^+
68	41	581.36	579.64	8.55	8.52	12.28	29.39	4.07	12.68	−6.68	−12.65	3.965	4.079	3.786	3.869		$7/2^-$	$9/2^+$
69	42	588.40	585.97	8.53	8.49	11.11	30.64	7.04	13.31	−5.31	−13.42	3.986	4.104	3.795	3.878		$7/2^-$	0^+
70	43	591.75	590.79	8.45	8.42	10.39	31.91	3.35	13.96	−5.02	−14.16	4.008	4.131	3.804	3.888		$7/2^-$	$9/2^+$
71	44	598.02	596.31	8.42	8.39	9.62	33.08	6.28	14.55	−4.74	−14.71	4.030	4.157	3.815	3.898		$7/2^-$	0^+
72	45	600.98		8.35		9.23	34.34	2.96	15.19	−4.50	−15.40	4.052	4.183	3.824	3.906		$7/2^-$	$9/2^+$
73	46	606.73		8.31		8.71	35.45	5.75	15.76	−4.29	−15.89	4.074	4.209	3.834	3.916		$7/2^-$	0^+
74	47	609.35		8.23		8.38	36.73	2.63	16.40	−4.04	−16.38	4.095	4.233	3.843	3.925		$7/2^-$	$9/2^+$
75	48	614.69		8.20		7.96	37.79	5.33	16.95	−3.86	−16.96	4.117	4.258	3.853	3.935		$7/2^-$	0^+
76	49	617.00		8.12		7.64	39.32	2.31	17.75	−2.92	−17.63	4.134	4.277	3.861	3.943		$7/2^-$	$9/2^+$
77	50	621.82		8.08		7.14	40.14	4.83	18.21	−2.93	−17.89	4.157	4.304	3.871	3.953		$7/2^-$	0^+
78	51	623.21		7.99		6.21	40.78	1.38	18.49	−2.93	−18.21	4.194	4.353	3.877	3.959		$7/2^-$	$5/2^+$
79	52	626.25		7.93		4.42	40.87	3.04	18.50	−2.24	−18.53	4.229	4.396	3.887	3.969		$7/2^-$	0^+
80	53	627.28		7.84		4.08	41.19	1.03	18.66	−2.10	−18.74	4.268	4.447	3.893	3.974		$7/2^-$	$5/2^+$
81	54	630.16		7.78		3.91	41.63	2.88	18.86	−2.05	−19.10	4.299	4.485	3.902	3.983		$7/2^-$	0^+
82	55	631.15		7.70		3.87	41.96	1.00	19.01	−2.00	−19.27	4.348	4.549	3.906	3.987		$7/2^-$	$1/2^+$
83	56	633.77		7.64		3.62	42.38	2.62	19.22	−1.89	−19.44	4.369	4.571	3.916	3.997		$7/2^-$	0^+
84	57	634.66		7.56		3.50	42.77	0.88	19.41	−1.77	−19.81	4.412	4.627	3.920	4.001		$7/2^-$	$1/2^+$
85	58	637.11		7.50		3.34	43.12	2.46	19.58	−1.73	−20.01	4.437	4.655	3.930	4.010		$7/2^-$	0^+
86	59	637.79		7.42		3.14	43.43	0.68	19.73	−1.68	−20.14	4.480	4.710	3.932	4.012		$7/2^-$	$3/2^+$
87	60	640.13		7.36		3.02	43.88	2.34	19.95	−1.55	−20.32	4.504	4.734	3.945	4.026		$7/2^-$	0^+
88	61	640.56		7.28		2.77	44.20	0.43	20.11	−1.32	−20.55	4.545	4.785	3.950	4.030		$7/2^-$	$3/2^+$
89	62	642.75		7.22		2.62	44.70	2.19	20.35	−1.32	−20.85	4.567	4.805	3.966	4.046		$7/2^-$	0^+
90	63	642.56		7.14		2.00	45.09	−0.19	20.56	−1.03	−21.13	4.601	4.841	3.984	4.064		$7/2^-$	$3/2^+$
91	64	644.89		7.09		2.14	45.66	2.33	20.79	−1.12	−21.40	4.623	4.863	3.997	4.076		$7/2^-$	0^+
92	65	644.65		7.01		2.09	46.14	−0.24	21.02	−1.08	−21.66	4.654	4.896	4.010	4.090		$7/2^-$	$7/2^+$
93	66	646.73		6.95		1.84	46.69	2.08	21.26	−0.99	−22.02	4.675	4.914	4.033	4.111		$7/2^-$	0^+
94	67	646.45		6.88		1.80	47.20	−0.28	21.49	−0.90	−22.30	4.705	4.945	4.048	4.127		$7/2^-$	$7/2^+$
95	68	648.35		6.82		1.62	47.72	1.90	21.70	−0.85	−22.66	4.727	4.964	4.071	4.149		$7/2^-$	0^+
96	69	647.97		6.75		1.52	48.24	−0.38	21.93	−0.09	−22.95	4.756	4.993	4.089	4.167		$7/2^-$	$7/2^+$
97	70	649.74		6.70		1.39	48.83	1.77	22.18	−0.14	−23.30	4.779	5.013	4.112	4.189		$7/2^-$	0^+
98	71	648.86		6.62		0.88		−0.88		−0.16	−23.31	4.902	5.170	4.112	4.189		$7/2^-$	$3/2^-$
99	72	648.57		6.55		−1.17		−0.28		0.53	−23.71	4.869	5.119	4.128	4.205		$7/2^-$	0^+
σ		2.71													0.043			
$Z = 28$ (Ni)																		
50	22	385.84		7.72			1.22		1.89	−17.54	0.57	3.586	3.449	3.690	3.775		0^+	0^+
51	23	401.29		7.87			3.25	15.45	2.91	−17.13	−0.10	3.582	3.472	3.670	3.756		0^+	$7/2^-$
52	24	419.89		8.07		34.04	5.13	18.59	3.82	−16.66	−0.80	3.586	3.498	3.660	3.747		0^+	0^+
53	25	434.60	435.50	8.20	8.22	33.30	7.09	14.71	4.77	−16.26	−1.54	3.587	3.519	3.648	3.734		0^+	$7/2^-$
54	26	452.31	453.17	8.38	8.39	32.43	8.99	17.72	5.70	−15.89	−2.28	3.592	3.540	3.639	3.726		0^+	0^+
55	27	466.64	467.35	8.48	8.50	32.04	10.99	14.33	6.67	−13.48	−3.03	3.592	3.556	3.626	3.714		0^+	$7/2^-$
56	28	483.68	483.99	8.64	8.64	31.37	12.94	17.04	7.63	−13.27	−3.86	3.596	3.574	3.618	3.705		0^+	0^+
57	29	492.76	494.24	8.64	8.67	26.12	13.89	9.08	8.13	−12.74	−4.48	3.628	3.625	3.631	3.718		0^+	$3/2^-$
58	30	504.08	506.46	8.69	8.73	20.40	15.18	11.33	8.80	−10.22	−5.19	3.661	3.670	3.651	3.737	3.776	0^+	0^+
59	31	512.36	515.46	8.68	8.74	19.60	16.21	8.28	9.34	−9.81	−5.83	3.691	3.715	3.664	3.750		0^+	$3/2^-$
60	32	523.31	526.85	8.72	8.78	19.22	17.48	10.95	10.01	−9.69	−6.52	3.721	3.755	3.682	3.768	3.812	0^+	0^+
61	33	530.94	534.67	8.70	8.77	18.57	18.71	7.63	10.63	−9.34	−7.18	3.752	3.797	3.697	3.783	3.823	0^+	$3/2^-$
62	34	541.63	545.26	8.74	8.79	18.32	19.86	10.69	11.23	−9.25	−7.85	3.779	3.833	3.712	3.797	3.840	0^+	0^+
63	35	548.80	552.10	8.71	8.76	17.86	20.92	7.17	11.78	−9.03	−8.46	3.807	3.871	3.726	3.811		0^+	$5/2^-$
64	36	559.22	561.76	8.74	8.78	17.59	22.25	10.42	12.45	−8.84	−9.11	3.835	3.905	3.742	3.827	3.857	0^+	0^+
65	37	566.31	567.86	8.71	8.74	17.51	23.18	7.09	12.73	−8.74	−9.71	3.863	3.942	3.756	3.841		0^+	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
66	38	576.10	576.81	8.73	8.74	16.89	24.59	9.79	13.64	−8.38	−10.33	3.888	3.973	3.770	3.854		0^+	0^+
67	39	583.34	582.62	8.71	8.70	17.03	25.86	7.23	14.26	−7.49	−10.98	3.916	4.005	3.788	3.872		0^+	$1/2^-$
68	40	592.00	590.41	8.71	8.68	15.90	26.72	8.67	14.71	−7.30	−11.49	3.941	4.039	3.796	3.880		0^+	0^+
69	41	596.73	594.99	8.65	8.62	13.40	28.05	4.73	15.37	−7.27	−12.10	3.963	4.067	3.805	3.889		0^+	$9/2^+$
70	42	604.42	602.30	8.63	8.60	12.42	29.33	7.69	16.02	−5.93	−12.73	3.983	4.092	3.814	3.897		0^+	0^+
71	43	608.41	606.56	8.57	8.54	11.68	30.62	3.99	16.67	−5.65	−13.36	4.005	4.118	3.823	3.906		0^+	$9/2^+$
72	44	615.29	613.45	8.55	8.52	10.88	31.82	6.88	17.27	−5.35	−13.96	4.026	4.144	3.833	3.915		0^+	0^+
73	45	618.89	617.41	8.48	8.46	10.48	33.10	3.60	17.91	−5.11	−14.58	4.046	4.169	3.841	3.924		0^+	$9/2^+$
74	46	625.22		8.45		9.93	34.25	6.34	18.50	−4.89	−15.18	4.067	4.194	3.851	3.933		0^+	0^+
75	47	628.50		8.38		9.61	35.55	3.27	19.14	−4.64	−15.80	4.087	4.217	3.859	3.941		0^+	$9/2^+$
76	48	634.40		8.35		9.18	36.66	5.91	19.71	−4.45	−16.38	4.108	4.241	3.869	3.951		0^+	0^+
77	49	637.39		8.28		8.90	38.14	2.99	20.39	−3.35	−17.05	4.125	4.260	3.876	3.958		0^+	$9/2^+$
78	50	642.87		8.24		8.47	39.26	5.48	21.04	−3.32	−17.64	4.144	4.282	3.886	3.967		0^+	0^+
79	51	644.38		8.16		6.99	39.66	1.51	21.17	−3.33	−17.88	4.183	4.334	3.892	3.974		0^+	$5/2^+$
80	52	647.57		8.09		4.70	39.82	3.19	21.32	−2.44	−18.08	4.216	4.375	3.903	3.984		0^+	0^+
81	53	648.81		8.01		4.43	40.18	1.24	21.52	−2.29	−18.32	4.254	4.425	3.908	3.989		0^+	$5/2^+$
82	54	651.86		7.95		4.30	40.56	3.06	21.71	−2.25	−18.57	4.284	4.462	3.918	3.999		0^+	0^+
83	55	653.01		7.87		4.21	40.87	1.15	21.86	−2.22	−18.75	4.331	4.526	3.922	4.003		0^+	$1/2^+$
84	56	655.87		7.81		4.00	41.31	2.85	22.09	−2.09	−19.04	4.352	4.546	3.933	4.014		0^+	0^+
85	57	656.93		7.73		3.92	41.68	1.07	22.28	−1.99	−19.25	4.394	4.602	3.937	4.018		0^+	$1/2^+$
86	58	659.59		7.67		3.73	42.06	2.66	22.48	−1.93	−19.51	4.418	4.628	3.948	4.028		0^+	0^+
87	59	660.42		7.59		3.49	42.36	0.83	22.63	−1.87	−19.69	4.459	4.681	3.951	4.031		0^+	$3/2^+$
88	60	663.01		7.53		3.42	42.83	2.58	22.87	−1.76	−19.99	4.483	4.706	3.965	4.045		0^+	0^+
89	61	663.60		7.46		3.18	43.15	0.59	23.04	−1.56	−20.19	4.523	4.755	3.970	4.050		0^+	$3/2^+$
90	62	666.06		7.40		3.05	43.66	2.45	23.30	−1.56	−20.51	4.545	4.775	3.987	4.066		0^+	0^+
91	63	666.11		7.32		2.51	44.11	0.05	23.55	−1.31	−20.82	4.579	4.812	4.005	4.084		0^+	$3/2^+$
92	64	668.68		7.27		2.62	44.58	2.57	23.79	−1.40	−21.11	4.602	4.835	4.019	4.098		0^+	0^+
93	65	668.68		7.19		2.57	45.04	0.00	24.03	−1.37	−21.38	4.633	4.869	4.033	4.112		0^+	$7/2^+$
94	66	671.06		7.14		2.38	45.59	2.38	24.33	−1.29	−21.75	4.656	4.888	4.057	4.135		0^+	0^+
95	67	671.06		7.06		2.38	46.09	0.00	24.61	−1.22	−22.04	4.686	4.920	4.073	4.151		0^+	$7/2^+$
96	68	673.32		7.01		2.26	46.67	2.26	24.97	−1.17	−22.40	4.709	4.939	4.096	4.173		0^+	0^+
97	69	673.25		6.94		2.19	47.21	−0.07	25.28	−0.38	−22.69	4.738	4.970	4.113	4.190		0^+	$7/2^+$
98	70	675.37		6.89		2.05	47.82	2.12	25.64	−0.44	−23.04	4.762	4.990	4.135	4.212		0^+	0^+
99	71	674.49		6.81		1.24		−0.88	25.64	−0.46	−23.05	4.882	5.147	4.135	4.212		0^+	$3/2^-$
100	72	674.63		6.75		−0.74		0.14	26.06	0.36	−23.59	4.823	5.058	4.157	4.233		0^+	0^+
σ		2.17													0.040			
$Z = 29$ (Cu)																		
51	22	383.41		7.52			−0.54		−2.43	−18.02	0.93	3.638	3.457	3.770	3.854		$3/2^-$	0^+
52	23	399.15		7.68			0.76	15.74	−2.14	−17.53	0.16	3.634	3.484	3.749	3.833		$3/2^-$	$7/2^-$
53	24	418.16		7.89		34.75	2.10	19.01	−1.73	−17.07	−0.57	3.634	3.510	3.734	3.819		$3/2^-$	0^+
54	25	433.26		8.02		34.11	3.43	15.10	−1.34	−16.66	−1.05	3.633	3.531	3.718	3.803		$3/2^-$	$7/2^-$
55	26	451.40	452.87	8.21	8.23	33.23	4.78	18.14	−0.92	−16.30	−1.94	3.635	3.554	3.707	3.792		$3/2^-$	0^+
56	27	466.09		8.32		32.84	6.13	14.70	−0.55	−14.24	−2.82	3.634	3.570	3.692	3.777		$3/2^-$	$7/2^-$
57	28	483.55	484.69	8.48	8.50	32.15	7.50	17.46	−0.13	−13.83	−3.55	3.636	3.588	3.681	3.767		$3/2^-$	0^+
58	29	493.58	497.12	8.51	8.57	27.49	8.95	10.03	0.82	−13.73	−4.37	3.663	3.636	3.690	3.776		$3/2^-$	$3/2^-$
59	30	505.63	509.88	8.57	8.64	22.08	10.35	12.05	1.54	−11.00	−5.01	3.693	3.681	3.705	3.791		$3/2^-$	0^+
60	31	514.77	519.94	8.58	8.67	21.19	11.75	9.14	2.41	−10.52	−5.41	3.720	3.724	3.715	3.800		$3/2^-$	$3/2^-$
61	32	526.40	531.65	8.63	8.72	20.77	13.10	11.63	3.09	−10.41	−6.56	3.747	3.764	3.730	3.814		$3/2^-$	0^+
62	33	534.71	540.52	8.62	8.72	19.94	14.40	8.31	3.77	−9.96	−7.20	3.776	3.804	3.743	3.828		$3/2^-$	$3/2^-$
63	34	546.13	551.38	8.67	8.75	19.73	15.73	11.42	4.50	−9.90	−7.68	3.801	3.839	3.755	3.840	3.882	$3/2^-$	0^+
64	35	554.00	559.30	8.66	8.74	19.29	16.98	7.87	5.20	−9.67	−8.20	3.827	3.876	3.768	3.852		$3/2^-$	$5/2^-$
65	36	565.00	569.21	8.69	8.76	18.87	18.24	11.01	5.79	−9.45	−8.82	3.853	3.910	3.782	3.866	3.902	$3/2^-$	0^+
66	37	572.75	576.28	8.68	8.73	18.75	19.17	7.74	6.44	−9.33	−9.40	3.880	3.945	3.795	3.878		$3/2^-$	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
67	38	583.10	585.41	8.70	8.74	18.10	20.63	10.36	7.00	−8.97	−10.02	3.904	3.976	3.808	3.891		$3/2^-$	0^+
68	39	590.94	591.73	8.69	8.70	18.19	21.87	7.84	7.61	−8.02	−10.61	3.930	4.007	3.825	3.908		$3/2^-$	$1/2^-$
69	40	600.20	599.97	8.70	8.70	17.10	22.91	9.26	8.20	−7.84	−11.08	3.954	4.040	3.833	3.915		$3/2^-$	0^+
70	41	605.42	605.28	8.65	8.65	14.48	24.06	5.22	8.69	−7.80	−11.57	3.975	4.068	3.841	3.923		$3/2^-$	$9/2^+$
71	42	613.59	613.09	8.64	8.64	13.39	25.19	8.17	9.17	−6.42	−12.55	3.995	4.092	3.849	3.931		$3/2^-$	0^+
72	43	618.06	618.23	8.58	8.59	12.64	26.31	4.47	9.65	−6.12	−13.26	4.015	4.119	3.857	3.939		$3/2^-$	$9/2^+$
73	44	625.42	625.51	8.57	8.57	11.83	27.40	7.36	10.12	−5.82	−13.79	4.035	4.144	3.865	3.947		$3/2^-$	0^+
74	45	629.65	630.60	8.51	8.52	11.59	28.67	4.23	10.76	−5.79	−14.54	4.060	4.172	3.879	3.961		$5/2^-$	$9/2^+$
75	46	636.66	637.13	8.49	8.50	11.24	29.93	7.01	11.43	−5.57	−15.12	4.080	4.196	3.888	3.969		$5/2^-$	0^+
76	47	640.63	641.71	8.43	8.44	10.99	31.28	3.98	12.13	−5.32	−15.46	4.098	4.218	3.895	3.977		$5/2^-$	$9/2^+$
77	48	647.20		8.41		10.54	32.51	6.57	12.80	−5.12	−16.12	4.118	4.242	3.904	3.985		$5/2^-$	0^+
78	49	650.91	651.37	8.35	8.35	10.28	33.91	3.71	13.52	−3.86	−16.66	4.134	4.261	3.911	3.992		$5/2^-$	$9/2^+$
79	50	657.06		8.32		9.86	35.23	6.15	14.19	−3.79	−17.25	4.153	4.282	3.919	4.000		$5/2^-$	0^+
80	51	658.78		8.23		7.87	35.58	1.73	14.41	−3.82	−17.45	4.190	4.332	3.926	4.007		$5/2^-$	$5/2^+$
81	52	662.23		8.18		5.17	35.98	3.44	14.66	−2.69	−18.05	4.221	4.371	3.938	4.018		$5/2^-$	0^+
82	53	663.68		8.09		4.90	36.40	1.46	14.88	−2.54	−18.12	4.257	4.420	3.944	4.024		$5/2^-$	$5/2^+$
83	54	667.01		8.04		4.78	36.85	3.33	15.15	−2.50	−18.54	4.287	4.455	3.955	4.035		$5/2^-$	0^+
84	55	668.33		7.96		4.65	37.18	1.32	15.32	−2.48	−18.62	4.332	4.516	3.959	4.039		$5/2^-$	$1/2^+$
85	56	671.50		7.90		4.49	37.73	3.17	15.63	−2.35	−18.97	4.351	4.536	3.971	4.051		$5/2^-$	0^+
86	57	672.75		7.82		4.42	38.10	1.25	15.82	−2.26	−19.14	4.392	4.590	3.976	4.056		$5/2^-$	$1/2^+$
87	58	675.72		7.77		4.22	38.60	2.97	16.13	−2.20	−19.34	4.415	4.614	3.988	4.067		$5/2^-$	0^+
88	59	676.75		7.69		4.00	38.96	1.04	16.33	−2.05	−19.56	4.452	4.661	3.995	4.075		$5/2^-$	$1/2^+$
89	60	679.66		7.64		3.94	39.52	2.90	16.65	−2.05	−19.79	4.477	4.687	4.007	4.086		$3/2^-$	0^+
90	61	680.48		7.56		3.73	39.92	0.83	16.88	−1.90	−19.89	4.509	4.730	4.003	4.082		$5/2^-$	$3/2^+$
91	62	683.31		7.51		3.66	40.56	2.83	17.26	−1.91	−20.32	4.536	4.754	4.030	4.109		$5/2^-$	0^+
92	63	683.79		7.43		3.30	41.23	0.47	17.68	−1.73	−20.60	4.569	4.791	4.045	4.124		$5/2^-$	$3/2^+$
93	64	686.71		7.38		3.40	41.82	2.92	18.03	−1.78	−20.89	4.592	4.814	4.059	4.137		$5/2^-$	0^+
94	65	687.06		7.31		3.27	42.41	0.35	18.38	−1.76	−21.15	4.622	4.847	4.071	4.149		$5/2^-$	$7/2^+$
95	66	689.91		7.26		3.20	43.18	2.85	18.85	−1.67	−21.51	4.645	4.868	4.092	4.169		$5/2^-$	0^+
96	67	690.26		7.19		3.20	43.81	0.35	19.20	−1.60	−21.78	4.674	4.899	4.105	4.182		$5/2^-$	$7/2^+$
97	68	692.96		7.14		3.05	44.61	2.70	19.64	−1.54	−22.14	4.696	4.919	4.126	4.203		$5/2^-$	0^+
98	69	693.23		7.07		2.97	45.26	0.27	19.97	−0.74	−22.41	4.725	4.950	4.141	4.218		$5/2^-$	$7/2^+$
99	70	695.75		7.03		2.80	46.01	2.52	20.38	−0.80	−22.77	4.747	4.969	4.162	4.238		$5/2^-$	0^+
100	71	694.86		6.95		1.64	46.01	−0.89	20.37	−0.82	−22.77	4.867	5.127	4.162	4.239		$5/2^-$	$3/2^-$
101	72	695.63		6.89		−0.13	47.06	0.76	21.00	0.08	−23.41	4.794	5.018	4.187	4.263		$5/2^-$	0^+
σ		3.27													0.039			
$Z = 30$ (Zn)																		
56	26	451.92		8.07			−0.39		0.52	−16.82	0.40	3.673	3.574	3.757	3.841		0^+	0^+
57	27	467.11		8.19			0.47	15.20	1.02	−14.80	−0.06	3.670	3.591	3.741	3.825		0^+	$7/2^-$
58	28	485.14	486.96	8.36	8.40	33.22	1.46	18.03	1.59	−14.49	−0.56	3.672	3.610	3.730	3.814		0^+	0^+
59	29	495.95	499.95	8.41	8.47	28.84	3.19	10.81	2.37	−14.14	−1.36	3.697	3.655	3.738	3.823		0^+	$3/2^-$
60	30	508.82	514.98	8.48	8.58	23.68	4.74	12.87	3.19	−11.76	−2.09	3.726	3.699	3.753	3.837		0^+	0^+
61	31	518.72	525.22	8.50	8.61	22.77	6.36	9.90	3.95	−11.28	−2.85	3.751	3.740	3.762	3.846		0^+	$3/2^-$
62	32	531.12	538.12	8.57	8.68	22.30	7.82	12.41	4.73	−11.14	−3.55	3.777	3.779	3.775	3.859		0^+	0^+
63	33	540.17	547.24	8.57	8.69	21.46	9.24	9.05	5.47	−10.70	−4.24	3.804	3.819	3.788	3.872		0^+	$3/2^-$
64	34	552.34	559.10	8.63	8.74	21.21	10.71	12.16	6.21	−10.62	−4.94	3.828	3.852	3.799	3.883	3.928	0^+	0^+
65	35	560.92	567.08	8.63	8.72	20.75	12.12	8.59	6.93	−10.37	−5.62	3.852	3.887	3.811	3.894		0^+	$5/2^-$
66	36	572.65	578.14	8.68	8.76	20.32	13.44	11.73	7.65	−10.15	−6.26	3.877	3.921	3.825	3.907	3.949	0^+	0^+
67	37	581.11	585.19	8.67	8.73	20.19	14.80	8.46	8.36	−10.05	−6.91	3.903	3.956	3.836	3.919	3.953	0^+	$1/2^-$
68	38	592.15	595.39	8.71	8.76	19.50	16.05	11.04	9.05	−9.63	−7.53	3.926	3.986	3.849	3.932	3.966	0^+	0^+
69	39	600.74	601.87	8.71	8.72	19.63	17.40	8.59	9.80	−8.72	−8.20	3.951	4.016	3.864	3.946		0^+	$1/2^-$
70	40	610.54	611.09	8.72	8.73	18.39	18.53	9.80	10.33	−8.47	−8.74	3.973	4.048	3.872	3.954	3.985	0^+	0^+
71	41	616.43	616.92	8.68	8.69	15.69	19.70	5.90	11.01	−8.43	−9.33	3.994	4.076	3.880	3.961		0^+	$9/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
72	42	625.30	625.81	8.68	8.69	14.77	20.88	8.87	11.71	−7.10	−9.91	4.013	4.100	3.888	3.969		0^+	0^+
73	43	630.48	631.33	8.64	8.65	14.05	22.07	5.18	12.42	−6.82	−10.50	4.033	4.126	3.895	3.976		0^+	$9/2^+$
74	44	638.55	639.56	8.63	8.64	13.25	23.26	8.07	13.14	−6.52	−11.09	4.053	4.151	3.904	3.985		0^+	0^+
75	45	643.36	644.44	8.58	8.59	12.88	24.47	4.80	13.71	−6.29	−11.68	4.072	4.175	3.911	3.992		0^+	$9/2^+$
76	46	650.89	652.25	8.56	8.58	12.34	25.66	7.53	14.23	−6.07	−12.27	4.091	4.199	3.920	4.001		0^+	0^+
77	47	655.40	656.81	8.51	8.53	12.04	26.90	4.51	14.77	−5.85	−12.87	4.109	4.221	3.927	4.008		0^+	$9/2^+$
78	48	662.51	663.58	8.49	8.51	11.62	28.11	7.11	15.31	−5.66	−13.46	4.128	4.244	3.936	4.016		0^+	0^+
79	49	666.79	667.60	8.44	8.45	11.40	29.40	4.28	15.88	−4.18	−14.09	4.144	4.264	3.942	4.022		0^+	$9/2^+$
80	50	673.51	673.88	8.42	8.42	11.00	30.64	6.72	16.45	−4.25	−14.69	4.162	4.284	3.950	4.030		0^+	0^+
81	51	675.57	676.51	8.34	8.35	8.78	31.19	2.06	16.78	−4.24	−14.97	4.197	4.332	3.957	4.037		0^+	$5/2^+$
82	52	679.37		8.28		5.85	31.80	3.80	17.14	−3.03	−15.29	4.227	4.370	3.969	4.049		0^+	0^+
83	53	681.16		8.21		5.59	32.35	1.79	17.48	−2.88	−15.58	4.261	4.415	3.975	4.055		0^+	$5/2^+$
84	54	684.85		8.15		5.48	32.98	3.69	17.84	−2.85	−15.92	4.290	4.450	3.986	4.066		0^+	0^+
85	55	686.45		8.08		5.29	33.43	1.60	18.12	−2.83	−16.15	4.331	4.507	3.990	4.070		0^+	$1/2^+$
86	56	690.03		8.02		5.18	34.16	3.58	18.53	−2.68	−16.54	4.351	4.527	4.003	4.082		0^+	0^+
87	57	691.58		7.95		5.14	34.65	1.55	18.83	−2.60	−16.78	4.389	4.577	4.008	4.087		0^+	$1/2^+$
88	58	694.91		7.90		4.89	35.32	3.33	19.20	−2.53	−17.15	4.412	4.601	4.021	4.099		0^+	0^+
89	59	696.25		7.82		4.67	35.83	1.34	19.50	−2.37	−17.43	4.447	4.646	4.029	4.107		0^+	$1/2^+$
90	60	699.51		7.77		4.60	36.50	3.26	19.85	−2.38	−17.78	4.471	4.672	4.041	4.120		0^+	0^+
91	61	700.62		7.70		4.36	37.01	1.11	20.13	−2.27	−18.04	4.506	4.714	4.048	4.126		0^+	$3/2^+$
92	62	703.84		7.65		4.33	37.78	3.22	20.53	−2.25	−18.44	4.529	4.737	4.065	4.143		0^+	0^+
93	63	704.71		7.58		4.10	38.61	0.88	20.93	−2.11	−18.78	4.561	4.773	4.078	4.156		0^+	$3/2^+$
94	64	707.95		7.53		4.12	39.28	3.24	21.25	−2.14	−19.13	4.583	4.796	4.093	4.171		0^+	0^+
95	65	708.63		7.46		3.92	39.95	0.68	21.57	−2.11	−19.43	4.613	4.829	4.105	4.182		0^+	$7/2^+$
96	66	711.91		7.42		3.95	40.85	3.28	22.00	−2.03	−19.85	4.636	4.851	4.124	4.201		0^+	0^+
97	67	712.59		7.35		3.96	41.53	0.69	22.33	−1.96	−20.15	4.665	4.883	4.136	4.213		0^+	$7/2^+$
98	68	715.72		7.30		3.81	42.40	3.12	22.76	−1.90	−20.57	4.687	4.903	4.156	4.233		0^+	0^+
99	69	716.32		7.24		3.73	43.07	0.61	23.10	−1.08	−20.86	4.716	4.935	4.169	4.245		0^+	$7/2^+$
100	70	719.27		7.19		3.55	43.90	2.95	23.52	−1.15	−21.27	4.739	4.955	4.190	4.266		0^+	0^+
101	71	718.41		7.11		2.09	43.92	−0.86	23.55	−1.17	−21.29	4.855	5.110	4.190	4.266		0^+	$3/2^-$
102	72	719.85		7.06		0.58	45.22	1.44	24.22	−0.23	−22.01	4.782	4.999	4.216	4.291		0^+	0^+
103	73	719.00		6.98		0.59		−0.85		−0.24	−22.03	4.892	5.144	4.216	4.291		0^+	$3/2^-$
104	74	719.81		6.92		−0.04		0.81		−0.03	−22.67	4.830	5.050	4.240	4.315		0^+	0^+
105	75	718.99		6.85		−0.01		−0.82		−0.03	−22.71	4.933	5.184	4.241	4.315		0^+	$3/2^-$
106	76	719.46		6.79		−0.35		0.47		0.10	−23.26	4.884	5.109	4.262	4.336		0^+	0^+
σ		3.82													0.038			
$Z = 31$ (Ga)																		
59	28	483.81		8.20			0.26		−1.34	−15.06	0.07	3.711	3.623	3.789	3.873		$3/2^-$	0^+
60	29	495.46		8.26			1.88	11.65	−0.49	−14.89	−0.65	3.732	3.667	3.793	3.876		$3/2^-$	$3/2^-$
61	30	509.04	515.23	8.34	8.45	25.23	3.41	13.58	0.22	−12.50	−1.38	3.758	3.710	3.804	3.887		$3/2^-$	0^+
62	31	519.75	528.16	8.38	8.52	24.29	4.98	10.71	1.03	−11.96	−2.08	3.779	3.748	3.809	3.892		$3/2^-$	$3/2^-$
63	32	532.83	540.79	8.46	8.58	23.79	6.43	13.08	1.70	−11.83	−2.79	3.803	3.786	3.820	3.903		$3/2^-$	0^+
64	33	542.51	551.15	8.48	8.61	22.76	7.80	9.69	2.34	−11.32	−3.48	3.828	3.826	3.831	3.914		$3/2^-$	$3/2^-$
65	34	555.40	563.04	8.54	8.66	22.57	9.27	12.89	3.06	−11.25	−4.16	3.849	3.858	3.839	3.922		$3/2^-$	0^+
66	35	564.67	572.18	8.56	8.67	22.15	10.67	9.27	3.74	−10.99	−4.85	3.872	3.892	3.849	3.931		$3/2^-$	$5/2^-$
67	36	576.96	583.40	8.61	8.71	21.56	11.95	12.29	4.30	−10.75	−5.50	3.896	3.926	3.862	3.944		$3/2^-$	0^+
68	37	586.04	591.68	8.62	8.70	21.38	13.30	9.09	4.94	−10.65	−6.14	3.920	3.960	3.873	3.954		$3/2^-$	$1/2^-$
69	38	597.65	602.00	8.66	8.72	20.69	14.54	11.60	5.50	−10.21	−6.79	3.943	3.989	3.885	3.966	3.997	$3/2^-$	0^+
70	39	606.85	609.65	8.67	8.71	20.81	15.91	9.21	6.11	−9.29	−7.47	3.966	4.019	3.898	3.980		$3/2^-$	$1/2^-$
71	40	617.20	618.95	8.69	8.72	19.55	17.00	10.34	6.66	−9.03	−8.00	3.988	4.050	3.906	3.987	4.012	$3/2^-$	0^+
72	41	623.62	625.47	8.66	8.69	16.77	18.20	6.43	7.19	−8.96	−8.60	4.008	4.077	3.913	3.994		$3/2^-$	$9/2^+$
73	42	633.02	634.65	8.67	8.69	15.82	19.43	9.40	7.72	−7.63	−9.22	4.026	4.102	3.920	4.001		$3/2^-$	0^+
74	43	638.72	641.07	8.63	8.66	15.10	20.66	5.71	8.24	−7.34	−9.82	4.045	4.128	3.927	4.008		$3/2^-$	$9/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
75	44	647.31	649.56	8.63	8.66	14.30	21.90	8.59	8.76	−7.04	−10.43	4.064	4.152	3.935	4.015		$3/2^-$	0^+
76	45	652.75	655.46	8.59	8.62	14.03	23.10	5.44	9.39	−6.94	−11.00	4.084	4.178	3.944	4.024		$5/2^-$	$9/2^+$
77	46	660.92	663.23	8.58	8.61	13.61	24.27	8.17	10.04	−6.72	−11.57	4.103	4.201	3.952	4.032		$5/2^-$	0^+
78	47	666.10	669.02	8.54	8.58	13.35	25.47	5.18	10.70	−6.50	−12.15	4.120	4.223	3.958	4.038		$5/2^-$	$9/2^+$
79	48	673.86	675.93	8.53	8.56	12.94	26.66	7.76	11.35	−6.31	−12.73	4.138	4.245	3.966	4.046		$5/2^-$	0^+
80	49	678.84	680.68	8.49	8.51	12.74	27.93	4.98	12.05	−4.78	−13.34	4.153	4.264	3.972	4.052		$5/2^-$	$9/2^+$
81	50	686.22	687.15	8.47	8.48	12.36	29.17	7.39	12.71	−4.75	−13.94	4.170	4.285	3.979	4.059		$5/2^-$	0^+
82	51	688.50	690.53	8.40	8.42	9.67	29.72	2.28	12.94	−4.72	−14.23	4.204	4.330	3.987	4.066		$5/2^-$	$5/2^+$
83	52	692.60	694.92	8.34	8.37	6.38	30.37	4.10	13.23	−3.31	−14.58	4.233	4.367	3.999	4.078		$5/2^-$	0^+
84	53	694.62		8.27		6.12	30.94	2.03	13.47	−3.16	−14.88	4.266	4.411	4.005	4.084		$5/2^-$	$5/2^+$
85	54	698.62		8.22		6.03	31.61	4.00	13.78	−3.13	−15.24	4.293	4.444	4.017	4.096		$5/2^-$	0^+
86	55	700.41		8.14		5.79	32.08	1.79	13.97	−3.12	−15.48	4.333	4.499	4.021	4.100		$5/2^-$	$1/2^+$
87	56	704.36		8.10		5.73	32.86	3.94	14.33	−2.98	−15.90	4.352	4.518	4.035	4.114		$5/2^-$	0^+
88	57	706.12		8.02		5.71	33.37	1.76	14.54	−2.91	−16.16	4.389	4.567	4.040	4.119		$5/2^-$	$1/2^+$
89	58	709.82		7.98		5.46	34.10	3.70	14.91	−2.84	−16.55	4.411	4.589	4.055	4.133		$5/2^-$	0^+
90	59	711.42		7.90		5.30	34.66	1.60	15.17	−2.71	−16.85	4.444	4.632	4.063	4.141		$5/2^-$	$1/2^+$
91	60	715.02		7.86		5.20	35.37	3.60	15.51	−2.71	−17.22	4.468	4.657	4.076	4.154		$5/2^-$	0^+
92	61	716.39		7.79		4.97	35.90	1.37	15.77	−2.63	−17.50	4.500	4.698	4.084	4.161		$5/2^-$	$3/2^+$
93	62	720.01		7.74		4.99	36.70	3.62	16.17	−2.60	−17.89	4.523	4.720	4.101	4.178		$5/2^-$	0^+
94	63	721.23		7.67		4.84	37.44	1.22	16.51	−2.50	−18.23	4.554	4.756	4.112	4.190		$5/2^-$	$3/2^+$
95	64	724.83		7.63		4.82	38.12	3.60	16.87	−2.50	−18.59	4.577	4.779	4.127	4.204		$5/2^-$	0^+
96	65	725.89		7.56		4.66	38.83	1.06	17.25	−2.39	−18.98	4.606	4.810	4.144	4.220		$5/2^-$	$3/2^+$
97	66	729.51		7.52		4.69	39.61	3.63	17.61	−2.41	−19.28	4.628	4.834	4.156	4.233		$5/2^-$	0^+
98	67	730.51		7.45		4.62	40.25	0.99	17.91	−2.33	−19.56	4.657	4.867	4.167	4.243		$5/2^-$	$7/2^+$
99	68	734.07		7.41		4.55	41.11	3.56	18.35	−2.27	−19.98	4.679	4.887	4.186	4.262		$5/2^-$	0^+
100	69	734.97		7.35		4.46	41.74	0.90	18.64	−1.45	−20.24	4.708	4.920	4.197	4.272		$5/2^-$	$7/2^+$
101	70	738.34		7.31		4.27	42.58	3.37	19.07	−1.54	−20.65	4.730	4.940	4.217	4.292		$5/2^-$	0^+
102	71	737.68		7.23		2.71	42.81	−0.66	19.27	−1.53	−21.05	4.751	4.961	4.231	4.306		$5/2^-$	$11/2^-$
103	72	739.71		7.18		1.38	44.09	2.04	19.86	−0.61	−21.42	4.770	4.980	4.243	4.318		$5/2^-$	0^+
104	73	738.88		7.10		1.20		−0.84	19.88	−0.62	−21.44	4.879	5.125	4.244	4.318		$5/2^-$	$3/2^-$
105	74	740.40		7.05		0.69		1.52	20.59	−0.37	−22.13	4.814	5.025	4.269	4.343		$5/2^-$	0^+
106	75	739.60		6.98		0.72		−0.80	20.61	−0.38	−22.16	4.916	5.159	4.269	4.343		$5/2^-$	$3/2^-$
107	76	740.72		6.92		0.31		1.12	21.25	−0.21	−22.79	4.859	5.072	4.293	4.367		$5/2^-$	0^+
108	77	739.95		6.85		0.35		−0.77		−0.22	−22.83	4.954	5.197	4.294	4.368		$5/2^-$	$3/2^-$
109	78	740.76		6.80		0.05		0.82		−0.08	−23.40	4.908	5.125	4.315	4.389		$5/2^-$	0^+
110	79	740.03		6.73		0.08		−0.74		−0.09	−23.45	4.996	5.239	4.317	4.390		$5/2^-$	$3/2^-$
111	80	740.60		6.67		−0.16		0.57		0.02	−23.91	4.964	5.187	4.334	4.408		$5/2^-$	0^+
σ		4.76													0.028			
$Z = 32$ (Ge)																		
60	28	484.62		8.08			−0.52		0.82	−15.68	0.39	3.745	3.643	3.832	3.914		0^+	0^+
61	29	496.99		8.15			1.04	12.36	1.53	−15.29	−0.32	3.764	3.684	3.836	3.918		0^+	$3/2^-$
62	30	511.34		8.25		26.72	2.52	14.36	2.31	−13.21	−1.03	3.789	3.727	3.846	3.929		0^+	0^+
63	31	522.75	530.38	8.30	8.42	25.76	4.03	11.41	3.00	−12.68	−1.73	3.808	3.763	3.851	3.933		0^+	$3/2^-$
64	32	536.57	545.84	8.38	8.53	25.22	5.44	13.82	3.74	−12.53	−2.41	3.831	3.800	3.861	3.943		0^+	0^+
65	33	546.97	556.08	8.41	8.56	24.22	6.79	10.40	4.45	−12.03	−3.08	3.854	3.839	3.871	3.952		0^+	$3/2^-$
66	34	560.55	569.28	8.49	8.63	23.98	8.21	13.58	5.15	−11.94	−3.75	3.874	3.870	3.878	3.960		0^+	0^+
67	35	570.51	578.40	8.52	8.63	23.54	9.58	9.96	5.84	−11.65	−4.42	3.895	3.902	3.887	3.968		0^+	$5/2^-$
68	36	583.49	590.79	8.58	8.69	22.94	10.84	12.98	6.53	−11.41	−5.05	3.919	3.936	3.899	3.980		0^+	0^+
69	37	593.23	598.99	8.60	8.68	22.72	12.12	9.74	7.18	−11.32	−5.67	3.941	3.969	3.909	3.990		0^+	$1/2^-$
70	38	605.52	610.52	8.65	8.72	22.03	13.37	12.29	7.87	−10.84	−6.30	3.963	3.998	3.920	4.001	4.0414	0^+	0^+
71	39	615.40	617.93	8.67	8.70	22.18	14.67	9.89	8.55	−9.94	−6.95	3.984	4.027	3.932	4.013		0^+	$1/2^-$
72	40	626.28	628.69	8.70	8.73	20.77	15.75	10.88	9.09	−9.63	−7.48	4.005	4.057	3.940	4.020	4.0576	0^+	0^+
73	41	633.35	635.47	8.68	8.71	17.94	16.92	7.06	9.73	−9.57	−8.06	4.024	4.084	3.946	4.026	4.0632	0^+	$9/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
74	42	643.39	645.66	8.69	8.73	17.11	18.09	10.05	10.38	−8.26	−8.64	4.042	4.108	3.953	4.033	4.0742	0^+	0^+
75	43	649.75	652.17	8.66	8.70	16.40	19.27	6.36	11.03	−7.98	−9.22	4.060	4.133	3.959	4.039		0^+	$9/2^+$
76	44	659.00	661.60	8.67	8.71	15.61	20.45	9.25	11.69	−7.69	−9.80	4.078	4.158	3.967	4.047	4.0811	0^+	0^+
77	45	664.99	667.67	8.64	8.67	15.25	21.64	5.99	12.25	−7.46	−10.38	4.096	4.181	3.973	4.053		0^+	$9/2^+$
78	46	673.71	676.39	8.64	8.67	14.71	22.82	8.72	12.79	−7.25	−10.96	4.114	4.204	3.981	4.060		0^+	0^+
79	47	679.43	682.13	8.60	8.63	14.44	24.04	5.72	13.33	−7.04	−11.55	4.130	4.226	3.987	4.066		0^+	$9/2^+$
80	48	687.75	690.21	8.60	8.63	14.03	25.24	8.31	13.88	−6.86	−12.13	4.148	4.247	3.994	4.073		0^+	0^+
81	49	693.29	695.03	8.56	8.58	13.85	26.49	5.54	14.45	−4.99	−12.74	4.163	4.266	3.999	4.078		0^+	$9/2^+$
82	50	701.24	702.23	8.55	8.56	13.49	27.72	7.95	15.01	−5.23	−13.33	4.179	4.286	4.006	4.085		0^+	0^+
83	51	703.86	705.86	8.48	8.50	10.57	28.29	2.62	15.35	−5.19	−13.63	4.211	4.330	4.013	4.092		0^+	$5/2^+$
84	52	708.33	711.10	8.43	8.47	7.09	28.96	4.47	15.73	−3.66	−13.99	4.239	4.365	4.026	4.105		0^+	0^+
85	53	710.70	714.15	8.36	8.40	6.84	29.54	2.37	16.07	−3.51	−14.30	4.270	4.407	4.033	4.111		0^+	$5/2^+$
86	54	715.07		8.31		6.74	30.22	4.38	16.45	−3.48	−14.66	4.297	4.440	4.045	4.123		0^+	0^+
87	55	717.16		8.24		6.47	30.72	2.09	16.75	−3.30	−14.97	4.328	4.481	4.052	4.130		0^+	$5/2^+$
88	56	721.51		8.20		6.44	31.49	4.35	17.16	−3.32	−15.33	4.354	4.511	4.064	4.142		0^+	0^+
89	57	723.58		8.13		6.41	32.00	2.06	17.46	−3.27	−15.60	4.388	4.557	4.068	4.146		0^+	$1/2^+$
90	58	727.67		8.09		6.15	32.76	4.09	17.85	−3.17	−16.00	4.410	4.580	4.083	4.161		0^+	0^+
91	59	729.58		8.02		6.01	33.33	1.92	18.17	−3.06	−16.30	4.442	4.621	4.092	4.169		0^+	$1/2^+$
92	60	733.56		7.97		5.89	34.05	3.97	18.54	−3.05	−16.68	4.465	4.645	4.106	4.183		0^+	0^+
93	61	735.26		7.91		5.67	34.64	1.70	18.87	−2.92	−17.02	4.496	4.681	4.118	4.195		0^+	$1/2^+$
94	62	739.23		7.86		5.68	35.40	3.98	19.23	−2.94	−17.37	4.519	4.707	4.130	4.207		0^+	0^+
95	63	740.80		7.80		5.55	36.09	1.57	19.58	−2.86	−17.69	4.548	4.742	4.141	4.218		0^+	$3/2^+$
96	64	744.75		7.76		5.52	36.80	3.95	19.93	−2.84	−18.06	4.571	4.765	4.156	4.233		0^+	0^+
97	65	746.21		7.69		5.41	37.58	1.46	20.33	−2.76	−18.43	4.599	4.796	4.171	4.247		0^+	$3/2^+$
98	66	750.14		7.65		5.39	38.23	3.93	20.63	−2.75	−18.75	4.622	4.820	4.184	4.260		0^+	0^+
99	67	751.48		7.59		5.26	38.88	1.34	20.97	−2.62	−19.16	4.649	4.848	4.202	4.278		0^+	$3/2^+$
100	68	755.39		7.55		5.25	39.67	3.91	21.32	−2.60	−19.43	4.672	4.873	4.212	4.287		0^+	0^+
101	69	756.57		7.49		5.09	40.24	1.18	21.60	−1.81	−19.67	4.700	4.906	4.221	4.296		0^+	$7/2^+$
102	70	760.33		7.45		4.95	41.06	3.77	22.00	−1.88	−20.08	4.722	4.926	4.240	4.315		0^+	0^+
103	71	760.07		7.38		3.50	41.66	−0.27	22.39	−1.90	−20.48	4.742	4.947	4.254	4.328		0^+	$11/2^-$
104	72	762.46		7.33		2.12	42.61	2.39	22.74	−0.95	−20.87	4.761	4.965	4.266	4.341		0^+	0^+
105	73	761.84		7.26		1.77	42.83	−0.62	22.96	−0.82	−21.25	4.782	4.986	4.280	4.354		0^+	$11/2^-$
106	74	763.84		7.21		1.39	44.03	2.01	23.44	−0.70	−21.60	4.803	5.007	4.292	4.366		0^+	0^+
107	75	763.07		7.13		1.24	44.08	−0.77	23.48	−0.71	−21.63	4.902	5.140	4.292	4.366		0^+	$3/2^-$
108	76	764.83		7.08		0.98	45.36	1.76	24.11	−0.52	−22.30	4.845	5.051	4.317	4.390		0^+	0^+
109	77	764.10		7.01		1.03		−0.73	24.15	−0.53	−22.34	4.938	5.174	4.317	4.391		0^+	$3/2^-$
110	78	765.51		6.96		0.68		1.41	24.75	−0.36	−22.97	4.889	5.097	4.341	4.414		0^+	0^+
111	79	764.82		6.89		0.73		−0.68	24.80	−0.38	−23.01	4.975	5.210	4.341	4.415		0^+	$3/2^-$
112	80	765.91		6.84		0.40		1.09	25.31	−0.21	−23.56	4.936	5.148	4.362	4.435		0^+	0^+
113	81	765.27		6.77		0.45		−0.64		−0.22	−23.62	5.015	5.250	4.364	4.436		0^+	$3/2^-$
114	82	766.02		6.72		0.11		0.75		−0.07	−24.02	4.992	5.212	4.379	4.451		0^+	0^+
115	83	765.41		6.66		0.14		−0.61		−0.07	−24.10	5.064	5.303	4.381	4.454		0^+	$3/2^-$
116	84	765.89		6.60		−0.13		0.48		0.01	−24.32	5.060	5.293	4.390	4.462		0^+	0^+
σ		4.96													0.038			
$Z = 33$ (As)																		
61	28	482.17		7.90			−1.64		−2.46	−16.27	0.97	3.785	3.660	3.888	3.970		$3/2^-$	0^+
62	29	495.17		7.99			−0.29	13.00	−1.82	−15.98	0.35	3.801	3.699	3.888	3.969		$3/2^-$	$3/2^-$
63	30	510.24		8.10		28.07	1.20	15.07	−1.10	−13.87	−0.37	3.823	3.742	3.896	3.977		$3/2^-$	0^+
64	31	522.26		8.16		27.09	2.51	12.02	−0.49	−13.35	−0.98	3.840	3.778	3.898	3.979		$3/2^-$	$3/2^-$
65	32	536.78	545.76	8.26	8.40	26.55	3.96	14.52	0.22	−13.19	−1.68	3.861	3.814	3.906	3.987		$3/2^-$	0^+
66	33	547.88	558.92	8.30	8.47	25.62	5.37	11.09	0.91	−12.71	−2.36	3.882	3.851	3.914	3.995		$3/2^-$	$3/2^-$
67	34	562.11	571.55	8.39	8.53	25.33	6.71	14.23	1.56	−12.60	−3.00	3.901	3.882	3.920	4.001		$3/2^-$	0^+
68	35	572.74	581.93	8.42	8.56	24.86	8.07	10.63	2.23	−12.32	−3.65	3.919	3.912	3.927	4.007		$3/2^-$	$5/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
69	36	586.40	594.22	8.50	8.61	24.29	9.44	13.66	2.91	−12.06	−4.33	3.941	3.945	3.937	4.018		$3/2^-$	0^+
70	37	596.74	603.52	8.52	8.62	24.00	10.69	10.34	3.51	−11.98	−4.94	3.962	3.977	3.946	4.026		$3/2^-$	$1/2^-$
71	38	609.68	615.14	8.59	8.66	23.29	12.04	12.95	4.17	−11.44	−5.61	3.982	4.004	3.956	4.036		$3/2^-$	0^+
72	39	620.21	623.55	8.61	8.66	23.47	13.36	10.53	4.81	−10.56	−6.26	4.002	4.032	3.966	4.046		$3/2^-$	$1/2^-$
73	40	631.59	634.34	8.65	8.69	21.90	14.39	11.37	5.30	−10.20	−6.77	4.022	4.062	3.973	4.053		$3/2^-$	0^+
74	41	639.24	642.32	8.64	8.68	19.03	15.62	7.65	5.89	−10.14	−7.38	4.040	4.088	3.979	4.059		$3/2^-$	$9/2^+$
75	42	649.87	652.57	8.66	8.70	18.28	16.85	10.63	6.48	−8.84	−7.99	4.057	4.112	3.985	4.064	4.097	$3/2^-$	0^+
76	43	656.80	659.89	8.64	8.68	17.56	18.08	6.93	7.05	−8.55	−8.59	4.074	4.137	3.990	4.070		$3/2^-$	$9/2^+$
77	44	666.61	669.59	8.66	8.70	16.75	19.30	9.81	7.61	−8.25	−9.20	4.091	4.161	3.997	4.076		$3/2^-$	0^+
78	45	673.16	676.56	8.63	8.67	16.36	20.41	6.55	8.17	−8.02	−9.80	4.108	4.184	4.002	4.081		$3/2^-$	$9/2^+$
79	46	682.46	685.45	8.64	8.68	15.84	21.53	9.29	8.74	−7.85	−10.26	4.125	4.207	4.009	4.088		$5/2^-$	0^+
80	47	688.79	692.10	8.61	8.65	15.63	22.69	6.34	9.36	−7.64	−10.81	4.141	4.228	4.014	4.093		$5/2^-$	$9/2^+$
81	48	697.72	700.49	8.61	8.65	15.26	23.85	8.92	9.97	−7.47	−11.36	4.158	4.249	4.021	4.100		$5/2^-$	0^+
82	49	703.89	706.13	8.58	8.61	15.10	25.06	6.18	10.61	−5.79	−11.91	4.172	4.268	4.026	4.104		$5/2^-$	$9/2^+$
83	50	712.47	713.77	8.58	8.60	14.76	26.25	8.58	11.24	−5.74	−12.46	4.188	4.287	4.032	4.111		$5/2^-$	0^+
84	51	715.36	718.03	8.52	8.55	11.47	26.86	2.89	11.50	−5.61	−12.81	4.218	4.329	4.040	4.118		$5/2^-$	$5/2^+$
85	52	720.19	723.43	8.47	8.51	7.71	27.59	4.83	11.86	−3.99	−13.21	4.246	4.364	4.053	4.131		$5/2^-$	0^+
86	53	722.83	727.28	8.41	8.46	7.47	28.21	2.65	12.14	−3.84	−13.56	4.275	4.404	4.060	4.138		$5/2^-$	$5/2^+$
87	54	727.57	732.01	8.36	8.41	7.38	28.94	4.74	12.50	−3.82	−13.95	4.302	4.436	4.073	4.150		$5/2^-$	0^+
88	55	729.95		8.29		7.11	29.53	2.38	12.78	−3.64	−14.29	4.331	4.475	4.080	4.157		$5/2^-$	$5/2^+$
89	56	734.66		8.25		7.09	30.30	4.71	13.14	−3.67	−14.67	4.356	4.505	4.092	4.169		$5/2^-$	0^+
90	57	736.98		8.19		7.04	30.86	2.33	13.41	−3.63	−15.07	4.388	4.548	4.096	4.173		$3/2^-$	$1/2^+$
91	58	741.47		8.15		6.81	31.65	4.49	13.80	−3.52	−15.39	4.410	4.571	4.113	4.190		$5/2^-$	0^+
92	59	743.70		8.08		6.71	32.28	2.23	14.11	−3.42	−15.79	4.440	4.610	4.120	4.197		$3/2^-$	$1/2^+$
93	60	748.05		8.04		6.58	33.03	4.35	14.49	−3.40	−16.18	4.463	4.634	4.134	4.211		$3/2^-$	0^+
94	61	750.07		7.98		6.38	33.69	2.03	14.82	−3.28	−16.53	4.492	4.669	4.147	4.223		$3/2^-$	$1/2^+$
95	62	754.41		7.94		6.37	34.41	4.34	15.18	−3.29	−16.89	4.515	4.694	4.158	4.235		$3/2^-$	0^+
96	63	756.32		7.88		6.25	35.10	1.91	15.52	−3.24	−17.20	4.544	4.728	4.169	4.245		$3/2^-$	$3/2^+$
97	64	760.62		7.84		6.20	35.79	4.29	15.87	−3.19	−17.59	4.566	4.751	4.184	4.260		$3/2^-$	0^+
98	65	762.46		7.78		6.13	36.57	1.84	16.24	−3.12	−17.94	4.593	4.782	4.197	4.273		$3/2^-$	$3/2^+$
99	66	766.70		7.74		6.08	37.19	4.24	16.56	−3.10	−18.16	4.616	4.806	4.211	4.287		$5/2^-$	0^+
100	67	768.46		7.68		6.00	37.95	1.76	16.98	−2.99	−18.55	4.643	4.834	4.228	4.303		$5/2^-$	$3/2^+$
101	68	772.64		7.65		5.94	38.57	4.18	17.25	−2.95	−18.82	4.665	4.859	4.238	4.313		$5/2^-$	0^+
102	69	774.21		7.59		5.75	39.24	1.58	17.64	−2.21	−19.23	4.691	4.885	4.257	4.332		$5/2^-$	$3/2^+$
103	70	778.23		7.56		5.59	39.89	4.02	17.90	−2.25	−19.44	4.714	4.912	4.264	4.338		$5/2^-$	0^+
104	71	778.39		7.48		4.18	40.71	0.16	18.32	−2.29	−19.82	4.735	4.933	4.277	4.351		$5/2^-$	$11/2^-$
105	72	781.17		7.44		2.94	41.45	2.78	18.71	−1.34	−20.20	4.753	4.951	4.289	4.363		$5/2^-$	0^+
106	73	780.96		7.37		2.57	42.08	−0.21	19.12	−1.21	−20.58	4.773	4.971	4.302	4.376		$5/2^-$	$11/2^-$
107	74	783.32		7.32		2.16	42.92	2.37	19.48	−1.07	−20.93	4.793	4.991	4.315	4.388		$5/2^-$	0^+
108	75	782.94		7.25		1.98	43.34	−0.39	19.87	−0.96	−21.29	4.813	5.012	4.328	4.401		$5/2^-$	$11/2^-$
109	76	785.05		7.20		1.73	44.34	2.12	20.23	−0.87	−21.62	4.833	5.032	4.340	4.413		$5/2^-$	0^+
110	77	784.53		7.13		1.59	44.58	−0.53	20.43	−0.76	−21.98	4.853	5.052	4.353	4.426		$5/2^-$	$11/2^-$
111	78	786.46		7.09		1.41	45.70	1.94	20.95	−0.70	−22.29	4.874	5.074	4.365	4.437		$5/2^-$	0^+
112	79	785.81		7.02		1.28	45.78	−0.66	20.98	−0.73	−22.34	4.958	5.186	4.365	4.438		$5/2^-$	$3/2^-$
113	80	787.56		6.97		1.10	46.96	1.76	21.65	−0.51	−22.93	4.915	5.117	4.389	4.461		$5/2^-$	0^+
114	81	786.97		6.90		1.16		−0.60	21.69	−0.54	−22.98	4.994	5.220	4.389	4.462		$5/2^-$	$3/2^-$
115	82	788.23		6.85		0.67		1.27	22.21	−0.26	−23.45	4.963	5.170	4.408	4.480		$5/2^-$	0^+
116	83	787.69		6.79		0.73		−0.54	22.28	−0.27	−23.53	5.035	5.263	4.410	4.482		$5/2^-$	$3/2^-$
117	84	788.37		6.74		0.14		0.68	22.48	−0.10	−23.74	5.029	5.249	4.418	4.490		$5/2^-$	0^+
118	85	787.83		6.68		0.14		−0.54		−0.09	−23.82	5.093	5.332	4.420	4.492		$5/2^-$	$3/2^-$
119	86	788.30		6.62		−0.07		0.47		−0.05	−23.96	5.100	5.336	4.425	4.497		$5/2^-$	0^+
120	87	787.74		6.56		−0.09		−0.56		−0.03	−24.05	5.158	5.409	4.427	4.499		$5/2^-$	$3/2^-$
121	88	788.17		6.51		−0.13		0.43		−0.02	−24.17	5.171	5.422	4.431	4.503		$5/2^-$	0^+
122	89	787.60		6.46		−0.14		−0.57		−0.03	−24.23	5.232	5.499	4.433	4.504		$5/2^-$	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
123	90	788.02		6.41		−0.15		0.43		−0.01	−24.37	5.239	5.504	4.437	4.509		$5/2^-$	0^+
124	91	787.49		6.35		−0.11		−0.54		0.00	−24.45	5.293	5.570	4.439	4.510		$5/2^-$	$1/2^-$
125	92	787.87		6.30		−0.15		0.38		0.01	−24.56	5.305	5.582	4.443	4.514		$5/2^-$	0^+
σ		5.39													0.033			
$Z = 34$ (Se)																		
62	28	482.37		7.78			−2.25		0.21	−16.87	1.24	3.816	3.677	3.927	4.007		0^+	0^+
63	29	496.11		7.87			−0.88	13.74	0.94	−16.48	0.61	3.830	3.714	3.927	4.007		0^+	$3/2^-$
64	30	511.90		8.00		29.53	0.56	15.79	1.66	−14.57	−0.08	3.851	3.756	3.934	4.014		0^+	0^+
65	31	524.65		8.07		28.54	1.90	12.74	2.39	−14.03	−0.70	3.866	3.789	3.935	4.015		0^+	$3/2^-$
66	32	539.85		8.18		27.95	3.28	15.20	3.07	−13.86	−1.37	3.886	3.825	3.942	4.022		0^+	0^+
67	33	551.59	560.76	8.23	8.37	26.94	4.63	11.74	3.71	−13.35	−2.03	3.906	3.861	3.949	4.029		0^+	$3/2^-$
68	34	566.51	576.44	8.33	8.48	26.66	5.96	14.92	4.40	−13.24	−2.66	3.922	3.890	3.954	4.034		0^+	0^+
69	35	577.82	586.76	8.37	8.50	26.23	7.31	11.31	5.08	−12.94	−3.30	3.939	3.920	3.958	4.039		0^+	$5/2^-$
70	36	592.07	600.32	8.46	8.58	25.56	8.58	14.25	5.67	−12.68	−3.94	3.961	3.952	3.969	4.049		0^+	0^+
71	37	603.02	609.61	8.49	8.59	25.20	9.79	10.95	6.28	−12.60	−4.54	3.981	3.984	3.977	4.057		0^+	$1/2^-$
72	38	616.58	622.40	8.56	8.64	24.52	11.07	13.57	6.90	−12.04	−5.18	4.000	4.011	3.987	4.066		0^+	0^+
73	39	627.73	630.83	8.60	8.64	24.71	12.32	11.14	7.52	−11.14	−5.80	4.019	4.039	3.996	4.075		0^+	$1/2^-$
74	40	639.66	642.89	8.64	8.69	23.07	13.37	11.93	8.07	−10.77	−6.33	4.038	4.067	4.003	4.082	4.070	0^+	0^+
75	41	647.88	650.92	8.64	8.68	20.15	14.54	8.22	8.64	−10.70	−6.90	4.055	4.093	4.008	4.087		0^+	$9/2^+$
76	42	659.09	662.07	8.67	8.71	19.44	15.70	11.21	9.23	−9.41	−7.48	4.071	4.118	4.014	4.093	4.140	0^+	0^+
77	43	666.61	669.49	8.66	8.69	18.73	16.86	7.52	9.81	−9.13	−8.05	4.088	4.142	4.019	4.097	4.140	0^+	$9/2^+$
78	44	677.02	679.99	8.68	8.72	17.92	18.02	10.41	10.41	−8.84	−8.62	4.105	4.165	4.025	4.103	4.141	0^+	0^+
79	45	684.17	686.95	8.66	8.70	17.56	19.18	7.15	11.01	−8.61	−9.18	4.121	4.188	4.030	4.108		0^+	$9/2^+$
80	46	694.04	696.87	8.68	8.71	17.02	20.33	9.87	11.59	−8.40	−9.74	4.137	4.210	4.036	4.114	4.140	0^+	0^+
81	47	700.94	703.57	8.65	8.69	16.77	21.50	6.90	12.14	−8.20	−10.30	4.152	4.231	4.041	4.119		0^+	$9/2^+$
82	48	710.41	712.84	8.66	8.69	16.37	22.66	9.47	12.69	−8.02	−10.85	4.168	4.252	4.047	4.125	4.140	0^+	0^+
83	49	717.15	718.66	8.64	8.66	16.21	23.86	6.74	13.25	−5.80	−11.41	4.182	4.270	4.051	4.129		0^+	$9/2^+$
84	50	726.28	727.34	8.65	8.66	15.87	25.05	9.14	13.81	−6.16	−11.96	4.197	4.289	4.057	4.135		0^+	0^+
85	51	729.52	731.88	8.58	8.61	12.38	25.67	3.24	14.16	−5.83	−12.31	4.226	4.330	4.064	4.142		0^+	$5/2^+$
86	52	734.76	738.04	8.54	8.58	8.47	26.43	5.24	14.57	−4.36	−12.72	4.253	4.363	4.078	4.156		0^+	0^+
87	53	737.75	742.03	8.48	8.53	8.22	27.05	2.99	14.91	−4.21	−13.06	4.281	4.402	4.085	4.163		0^+	$5/2^+$
88	54	742.88	747.56	8.44	8.50	8.12	27.81	5.13	15.31	−4.18	−13.46	4.307	4.433	4.098	4.176		0^+	0^+
89	55	745.60	750.74	8.38	8.44	7.85	28.44	2.72	15.65	−4.00	−13.80	4.335	4.471	4.106	4.183		0^+	$5/2^+$
90	56	750.70	755.62	8.34	8.40	7.82	29.18	5.10	16.04	−4.02	−14.19	4.360	4.500	4.118	4.195		0^+	0^+
91	57	753.31		8.28		7.71	29.73	2.61	16.32	−3.99	−14.48	4.390	4.542	4.123	4.200		0^+	$1/2^+$
92	58	758.23		8.24		7.53	30.56	4.93	16.76	−3.88	−14.91	4.412	4.564	4.140	4.216		0^+	0^+
93	59	760.76		8.18		7.46	31.18	2.53	17.07	−3.80	−15.23	4.441	4.602	4.148	4.224		0^+	$1/2^+$
94	60	765.51		8.14		7.28	31.96	4.75	17.47	−3.75	−15.63	4.463	4.625	4.163	4.239		0^+	0^+
95	61	767.90		8.08		7.14	32.65	2.39	17.83	−3.65	−15.97	4.492	4.660	4.174	4.250		0^+	$1/2^+$
96	62	772.59		8.05		7.08	33.36	4.69	18.18	−3.64	−16.34	4.514	4.684	4.187	4.263		0^+	0^+
97	63	774.83		7.99		6.93	34.03	2.24	18.51	−3.54	−16.70	4.542	4.716	4.202	4.277		0^+	$1/2^+$
98	64	779.51		7.95		6.92	34.76	4.68	18.90	−3.54	−17.03	4.564	4.740	4.212	4.287		0^+	0^+
99	65	781.72		7.90		6.89	35.50	2.21	19.26	−3.49	−17.38	4.590	4.771	4.224	4.299		0^+	$3/2^+$
100	66	786.29		7.86		6.78	36.15	4.57	19.59	−3.43	−17.71	4.612	4.794	4.237	4.312		0^+	0^+
101	67	788.44		7.81		6.73	36.97	2.16	19.99	−3.34	−18.08	4.638	4.823	4.251	4.326		0^+	$3/2^+$
102	68	792.89		7.77		6.61	37.51	4.45	20.26	−3.27	−18.36	4.660	4.847	4.262	4.336		0^+	0^+
103	69	794.89		7.72		6.45	38.32	2.00	20.68	−2.57	−18.75	4.686	4.874	4.279	4.353		0^+	$3/2^+$
104	70	799.12		7.68		6.22	38.78	4.23	20.89	−2.60	−18.97	4.708	4.900	4.286	4.360		0^+	0^+
105	71	799.67		7.62		4.78	39.60	0.56	21.28	−2.64	−19.35	4.729	4.922	4.298	4.372		0^+	$11/2^-$
106	72	802.83		7.57		3.72	40.38	3.16	21.67	−1.71	−19.75	4.746	4.938	4.310	4.384		0^+	0^+
107	73	803.01		7.50		3.33	41.17	0.17	22.05	−1.57	−20.13	4.766	4.959	4.323	4.396		0^+	$11/2^-$
108	74	805.73		7.46		2.90	41.88	2.72	22.40	−1.42	−20.49	4.785	4.978	4.335	4.408		0^+	0^+
109	75	805.73		7.39		2.72	42.65	−0.00	22.79	−1.31	−20.86	4.805	4.998	4.347	4.420		0^+	$11/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
110	76	808.18		7.35		2.45	43.35	2.45	23.13	−1.22	−21.21	4.824	5.018	4.360	4.432		0^+	0^+
111	77	808.04		7.28		2.31	43.94	−0.14	23.51	−1.11	−21.58	4.843	5.037	4.372	4.445		0^+	$11/2^-$
112	78	810.30		7.23		2.12	44.79	2.26	23.83	−1.04	−21.90	4.863	5.057	4.384	4.457		0^+	0^+
113	79	810.01		7.17		1.97	45.18	−0.29	24.20	−0.89	−22.28	4.881	5.075	4.397	4.469		0^+	$11/2^-$
114	80	812.10		7.12		1.81	46.19	2.10	24.54	−0.83	−22.58	4.901	5.096	4.409	4.481		0^+	0^+
115	81	811.55		7.06		1.54	46.28	−0.56	24.58	−0.86	−22.63	4.978	5.198	4.409	4.481		0^+	$3/2^-$
116	82	813.42		7.01		1.32	47.40	1.87	25.19	−0.45	−23.20	4.943	5.141	4.431	4.502		0^+	0^+
117	83	812.94		6.95		1.39	47.53	−0.48	25.25	−0.46	−23.27	5.013	5.233	4.432	4.504		0^+	$3/2^-$
118	84	813.77		6.90		0.35	47.88	0.83	25.40	−0.20	−23.45	5.008	5.220	4.440	4.511		0^+	0^+
119	85	813.30		6.83		0.36		−0.47	25.47	−0.19	−23.52	5.071	5.303	4.441	4.512		0^+	$3/2^-$
120	86	813.87		6.78		0.10		0.57	25.57	−0.14	−23.65	5.077	5.306	4.446	4.517		0^+	0^+
121	87	813.39		6.72		0.09		−0.49	25.65	−0.12	−23.73	5.134	5.378	4.448	4.519		0^+	$3/2^-$
122	88	813.92		6.67		0.05		0.53	25.75	−0.11	−23.85	5.145	5.390	4.452	4.523		0^+	0^+
123	89	813.40		6.61		0.02		−0.52	25.81	−0.09	−23.94	5.197	5.454	4.454	4.526		0^+	$3/2^-$
124	90	813.95		6.56		0.03		0.55	25.93	−0.10	−24.05	5.213	5.471	4.458	4.529		0^+	0^+
125	91	813.47		6.51		0.07		−0.48	25.99	−0.10	−24.12	5.266	5.538	4.459	4.530		0^+	$1/2^-$
126	92	813.98		6.46		0.03		0.50	26.11	−0.09	−24.24	5.277	5.548	4.464	4.535		0^+	0^+
127	93	813.51		6.41		0.04		−0.46		−0.06	−24.33	5.324	5.604	4.466	4.537		0^+	$1/2^-$
128	94	813.98		6.36		0.00		0.47		−0.06	−24.43	5.340	5.622	4.470	4.541		0^+	0^+
129	95	813.42		6.31		−0.10		−0.56		0.01	−24.53	5.378	5.666	4.473	4.544		0^+	$1/2^-$
130	96	813.93		6.26		−0.05		0.51		−0.01	−24.62	5.399	5.690	4.477	4.547		0^+	0^+
131	97	813.20		6.21		−0.21		−0.73		0.10	−24.73	5.430	5.725	4.481	4.552		0^+	$1/2^-$
132	98	813.78		6.17		−0.15		0.58		0.06	−24.81	5.454	5.753	4.484	4.555		0^+	0^+
σ		5.00													0.033			
$Z = 35$ (Br)																		
65	30	509.99		7.85			−0.24		−1.91	−15.18	0.30	3.886	3.768	3.984	4.064		$1/2^-$	0^+
66	31	523.36		7.93			1.10	13.37	−1.28	−14.62	−0.31	3.898	3.800	3.982	4.062		$1/2^-$	$3/2^-$
67	32	539.17		8.05		29.18	2.39	15.81	−0.68	−14.45	−0.98	3.915	3.835	3.987	4.067		$1/2^-$	0^+
68	33	551.54		8.11		28.18	3.66	12.37	−0.05	−13.99	−1.52	3.931	3.872	3.987	4.066		$5/2^-$	$3/2^-$
69	34	567.13	575.65	8.22	8.34	27.96	5.02	15.59	0.61	−13.88	−2.13	3.946	3.900	3.990	4.069		$5/2^-$	0^+
70	35	579.14	589.04	8.27	8.41	27.60	6.40	12.02	1.32	−13.57	−2.75	3.959	3.926	3.991	4.071		$5/2^-$	$5/2^-$
71	36	593.97	602.18	8.37	8.48	26.84	7.57	14.83	1.90	−13.29	−3.39	3.980	3.959	4.002	4.081		$5/2^-$	0^+
72	37	605.47	612.82	8.41	8.51	26.33	8.73	11.50	2.45	−13.22	−3.98	4.000	3.990	4.010	4.089		$5/2^-$	$1/2^-$
73	38	619.68	625.47	8.49	8.57	25.71	9.99	14.21	3.09	−12.60	−4.61	4.017	4.017	4.017	4.096		$5/2^-$	0^+
74	39	631.42	635.18	8.53	8.58	25.95	11.21	11.74	3.69	−11.69	−5.22	4.035	4.043	4.026	4.104		$5/2^-$	$1/2^-$
75	40	643.83	647.07	8.58	8.63	24.15	12.24	12.41	4.17	−11.32	−5.74	4.054	4.072	4.033	4.112		$5/2^-$	0^+
76	41	652.61	656.33	8.59	8.64	21.19	13.37	8.78	4.73	−11.25	−6.30	4.070	4.098	4.038	4.116		$5/2^-$	$9/2^+$
77	42	664.40	667.34	8.63	8.67	20.57	14.53	11.79	5.30	−10.04	−6.82	4.088	4.124	4.045	4.123		$3/2^-$	0^+
78	43	672.54	675.63	8.62	8.66	19.93	15.74	8.14	5.93	−9.75	−7.41	4.103	4.147	4.049	4.127		$3/2^-$	$9/2^+$
79	44	683.55	686.32	8.65	8.69	19.16	16.94	11.02	6.54	−9.44	−7.99	4.119	4.170	4.054	4.132	4.163	$3/2^-$	0^+
80	45	691.31	694.21	8.64	8.68	18.77	18.14	7.75	7.13	−9.21	−8.57	4.134	4.192	4.058	4.136		$3/2^-$	$9/2^+$
81	46	701.76	704.37	8.66	8.70	18.21	19.30	10.45	7.72	−8.98	−9.14	4.149	4.214	4.063	4.141	4.160	$3/2^-$	0^+
82	47	709.23	711.96	8.65	8.68	17.93	20.44	7.47	8.29	−8.77	−9.72	4.164	4.234	4.067	4.145		$3/2^-$	$9/2^+$
83	48	719.27	721.55	8.67	8.69	17.51	21.55	10.04	8.86	−8.59	−10.28	4.179	4.254	4.072	4.150		$3/2^-$	0^+
84	49	726.57	728.40	8.65	8.67	17.33	22.67	7.30	9.42	−6.43	−10.84	4.192	4.272	4.076	4.154		$3/2^-$	$9/2^+$
85	50	736.25	737.26	8.66	8.67	16.98	23.78	9.69	9.97	−6.66	−11.40	4.206	4.291	4.081	4.158		$3/2^-$	0^+
86	51	739.84	742.38	8.60	8.63	13.28	24.49	3.59	10.32	−6.26	−11.75	4.234	4.330	4.089	4.166		$3/2^-$	$5/2^+$
87	52	745.49	748.71	8.57	8.61	9.24	25.30	5.65	10.73	−4.74	−12.16	4.260	4.363	4.103	4.180		$3/2^-$	0^+
88	53	748.82	753.61	8.51	8.56	8.98	25.99	3.33	11.07	−4.58	−12.51	4.287	4.400	4.110	4.188		$3/2^-$	$5/2^+$
89	54	754.35	759.24	8.48	8.53	8.86	26.78	5.53	11.47	−4.56	−12.91	4.313	4.431	4.124	4.201		$3/2^-$	0^+
90	55	757.40	763.04	8.42	8.48	8.59	27.46	3.05	11.80	−4.38	−13.25	4.340	4.467	4.132	4.209		$3/2^-$	$5/2^+$
91	56	762.89	768.21	8.38	8.44	8.54	28.23	5.49	12.19	−4.39	−13.65	4.364	4.496	4.145	4.222		$3/2^-$	0^+
92	57	765.79	771.41	8.32	8.38	8.39	28.81	2.90	12.49	−4.36	−13.93	4.394	4.536	4.151	4.227		$3/2^-$	$1/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
93	58	771.14	776.22	8.29	8.35	8.25	29.67	5.35	12.91	−4.25	−14.38	4.415	4.558	4.167	4.243		$3/2^-$	0^+
94	59	773.98		8.23		8.19	30.28	2.84	13.22	−4.18	−14.69	4.443	4.595	4.175	4.251		$3/2^-$	$1/2^+$
95	60	779.14		8.20		8.00	31.09	5.16	13.63	−4.12	−15.11	4.465	4.618	4.190	4.266		$3/2^-$	0^+
96	61	781.87		8.14		7.89	31.79	2.73	13.96	−4.04	−15.45	4.492	4.651	4.201	4.277		$3/2^-$	$1/2^+$
97	62	786.93		8.11		7.79	32.52	5.07	14.34	−4.01	−15.83	4.514	4.675	4.214	4.289		$3/2^-$	0^+
98	63	789.53		8.06		7.66	33.20	2.60	14.70	−3.91	−16.20	4.541	4.706	4.228	4.303		$3/2^-$	$1/2^+$
99	64	794.55		8.03		7.62	33.94	5.03	15.04	−3.90	−16.53	4.562	4.730	4.238	4.313		$3/2^-$	0^+
100	65	797.11		7.97		7.59	34.66	2.56	15.40	−3.86	−16.87	4.588	4.760	4.250	4.324		$3/2^-$	$3/2^+$
101	66	802.01		7.94		7.46	35.31	4.90	15.73	−3.78	−17.21	4.610	4.784	4.262	4.337		$3/2^-$	0^+
102	67	804.55		7.89		7.44	36.09	2.54	16.11	−3.70	−17.57	4.634	4.811	4.275	4.349		$3/2^-$	$3/2^+$
103	68	809.27		7.86		7.26	36.64	4.73	16.38	−3.60	−17.86	4.656	4.836	4.285	4.359		$3/2^-$	0^+
104	69	811.66		7.80		7.11	37.44	2.38	16.77	−2.95	−18.21	4.681	4.863	4.300	4.374		$3/2^-$	$3/2^+$
105	70	816.10		7.77		6.82	37.87	4.44	16.98	−2.96	−18.46	4.703	4.888	4.307	4.381		$3/2^-$	0^+
106	71	817.06		7.71		5.40	38.67	0.96	17.38	−2.99	−18.83	4.723	4.910	4.319	4.392		$3/2^-$	$11/2^-$
107	72	820.61		7.67		4.52	39.45	3.56	17.78	−2.10	−19.25	4.740	4.927	4.331	4.404		$3/2^-$	0^+
108	73	821.17		7.60		4.12	40.22	0.56	18.17	−1.96	−19.63	4.759	4.947	4.343	4.416		$3/2^-$	$11/2^-$
109	74	824.26		7.56		3.65	40.94	3.09	18.53	−1.80	−20.01	4.778	4.965	4.355	4.427		$3/2^-$	0^+
110	75	824.64		7.50		3.46	41.70	0.38	18.91	−1.69	−20.39	4.797	4.985	4.366	4.439		$3/2^-$	$11/2^-$
111	76	827.43		7.45		3.18	42.38	2.80	19.25	−1.58	−20.75	4.816	5.004	4.378	4.451		$3/2^-$	0^+
112	77	827.67		7.39		3.03	43.14	0.23	19.63	−1.47	−21.12	4.834	5.023	4.390	4.462		$3/2^-$	$11/2^-$
113	78	830.26		7.35		2.82	43.79	2.59	19.96	−1.39	−21.46	4.853	5.042	4.402	4.474		$3/2^-$	0^+
114	79	830.35		7.28		2.68	44.54	0.09	20.34	−1.25	−21.84	4.871	5.060	4.414	4.486		$3/2^-$	$11/2^-$
115	80	832.76		7.24		2.50	45.20	2.41	20.66	−1.17	−22.17	4.890	5.079	4.425	4.497		$3/2^-$	0^+
116	81	832.68		7.18		2.33	45.72	−0.08	21.13	−0.61	−22.62	4.904	5.092	4.440	4.511		$3/2^-$	$11/2^-$
117	82	834.80		7.14		2.04	46.56	2.12	21.38	−0.65	−22.87	4.926	5.116	4.449	4.520		$3/2^-$	0^+
118	83	834.40		7.07		1.72	46.71	−0.40	21.46	−0.68	−22.94	4.993	5.205	4.450	4.522		$3/2^-$	$3/2^-$
119	84	835.33		7.02		0.53	46.96	0.92	21.55	−0.30	−23.07	4.991	5.197	4.457	4.528		$3/2^-$	0^+
120	85	834.93		6.96		0.52	47.09	−0.40	21.63	−0.30	−23.14	5.052	5.277	4.458	4.529		$3/2^-$	$3/2^-$
121	86	835.62		6.91		0.30	47.33	0.70	21.75	−0.25	−23.28	5.057	5.279	4.464	4.535		$3/2^-$	0^+
122	87	835.22		6.85		0.29	47.48	−0.41	21.83	−0.23	−23.35	5.112	5.350	4.466	4.537		$3/2^-$	$3/2^-$
123	88	835.87		6.80		0.25	47.71	0.66	21.96	−0.22	−23.48	5.123	5.360	4.471	4.542		$3/2^-$	0^+
124	89	835.45		6.74		0.23	47.85	−0.43	22.04	−0.20	−23.57	5.172	5.423	4.473	4.544		$3/2^-$	$3/2^-$
125	90	836.11		6.69		0.24	48.09	0.66	22.16	−0.21	−23.68	5.187	5.438	4.477	4.548		$3/2^-$	0^+
126	91	835.69		6.63		0.25	48.21	−0.42	22.22	−0.21	−23.75	5.241	5.506	4.478	4.549		$3/2^-$	$1/2^-$
127	92	836.33		6.59		0.22	48.46	0.64	22.36	−0.19	−23.88	5.250	5.514	4.484	4.554		$3/2^-$	0^+
128	93	835.96		6.53		0.27		−0.37	22.45	−0.17	−23.96	5.297	5.572	4.485	4.556		$3/2^-$	$1/2^-$
129	94	836.53		6.48		0.20		0.57	22.55	−0.16	−24.08	5.312	5.587	4.490	4.561		$3/2^-$	0^+
130	95	836.08		6.43		0.12		−0.45	22.66	−0.10	−24.17	5.350	5.634	4.493	4.564		$3/2^-$	$1/2^-$
131	96	836.68		6.39		0.15		0.60	22.75	−0.12	−24.27	5.370	5.655	4.498	4.568		$3/2^-$	0^+
132	97	836.07		6.33		−0.01		−0.61	22.86	−0.01	−24.38	5.401	5.691	4.502	4.573		$3/2^-$	$1/2^-$
133	98	836.72		6.29		0.04		0.65	22.94	−0.05	−24.47	5.425	5.717	4.506	4.577		$3/2^-$	0^+
134	99	836.01		6.24		−0.05		−0.71		0.00	−24.52	5.463	5.763	4.506	4.577		$3/2^-$	$5/2^-$
135	100	836.62		6.20		−0.11		0.60		0.05	−24.67	5.475	5.774	4.517	4.587		$3/2^-$	0^+
σ		4.91													0.026			
$Z = 36$ (Kr)																		
66	30	510.71		7.74			−1.19		0.72	−15.84	0.81	3.914	3.786	4.017	4.096		0^+	0^+
67	31	524.66		7.83			0.01	13.95	1.29	−15.33	0.23	3.925	3.818	4.015	4.094		0^+	$3/2^-$
68	32	541.20		7.96		30.49	1.35	16.55	2.03	−15.12	−0.41	3.942	3.852	4.020	4.099		0^+	0^+
69	33	554.25		8.03		29.59	2.66	13.05	2.71	−14.65	−1.04	3.958	3.886	4.023	4.102		0^+	$3/2^-$
70	34	570.43		8.15		29.22	3.92	16.18	3.30	−14.51	−1.64	3.972	3.914	4.026	4.105		0^+	0^+
71	35	583.00	591.23	8.21	8.33	28.75	5.18	12.57	3.86	−14.21	−2.24	3.986	3.941	4.028	4.107		0^+	$5/2^-$
72	36	598.55	606.91	8.31	8.43	28.13	6.49	15.56	4.58	−13.92	−2.88	4.004	3.971	4.036	4.115	4.164	0^+	0^+
73	37	610.66	617.59	8.37	8.46	27.66	7.64	12.10	5.19	−13.85	−3.45	4.022	4.001	4.043	4.122		0^+	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
74	38	625.54	631.44	8.45	8.53	26.99	8.96	14.88	5.86	−13.20	−4.08	4.037	4.026	4.049	4.127	4.187	0^+	0^+
75	39	637.88	641.51	8.51	8.55	27.22	10.15	12.34	6.46	−12.34	−4.68	4.054	4.052	4.056	4.134	4.210	0^+	$1/2^-$
76	40	650.84	654.27	8.56	8.61	25.30	11.18	12.96	7.01	−11.89	−5.20	4.072	4.080	4.063	4.141	4.202	0^+	0^+
77	41	660.22	663.50	8.57	8.62	22.34	12.34	9.38	7.61	−11.81	−5.77	4.087	4.104	4.067	4.145	4.208	0^+	$9/2^+$
78	42	672.58	675.58	8.62	8.66	21.74	13.49	12.37	8.19	−10.54	−6.34	4.102	4.128	4.071	4.148	4.204	0^+	0^+
79	43	681.23	683.91	8.62	8.66	21.02	14.62	8.65	8.70	−10.25	−6.89	4.116	4.151	4.074	4.152	4.203	0^+	$9/2^+$
80	44	692.76	695.43	8.66	8.69	20.18	15.74	11.53	9.21	−9.95	−7.44	4.131	4.174	4.079	4.156	4.197	0^+	0^+
81	45	701.02	703.31	8.65	8.68	19.79	16.85	8.26	9.72	−9.71	−7.97	4.146	4.196	4.082	4.160	4.195	0^+	$9/2^+$
82	46	711.99	714.27	8.68	8.71	19.23	17.94	10.96	10.23	−9.48	−8.50	4.161	4.217	4.087	4.165	4.192	0^+	0^+
83	47	719.97	721.74	8.67	8.70	18.94	19.03	7.98	10.74	−9.27	−9.02	4.174	4.237	4.091	4.168	4.187	0^+	$9/2^+$
84	48	730.50	732.27	8.70	8.72	18.52	20.10	10.54	11.24	−9.08	−9.52	4.188	4.257	4.095	4.173	4.188	0^+	0^+
85	49	738.30	739.38	8.69	8.70	18.33	21.15	7.79	11.73	−7.10	−10.01	4.201	4.275	4.098	4.176	4.185	0^+	$9/2^+$
86	50	748.46	749.23	8.70	8.71	17.96	22.18	10.17	12.21	−7.16	−10.48	4.214	4.293	4.103	4.180	4.184	0^+	0^+
87	51	752.51	754.75	8.65	8.68	14.21	22.98	4.04	12.66	−6.74	−10.93	4.241	4.331	4.111	4.188	4.198	0^+	$5/2^+$
88	52	758.59	761.80	8.62	8.66	10.13	23.83	6.08	13.10	−5.16	−11.36	4.267	4.363	4.125	4.202	4.217	0^+	0^+
89	53	762.34	766.72	8.57	8.61	9.83	24.59	3.75	13.52	−4.99	−11.78	4.293	4.399	4.133	4.209	4.229	0^+	$5/2^+$
90	54	768.29	773.21	8.54	8.59	9.70	25.41	5.95	13.94	−4.96	−12.20	4.318	4.429	4.146	4.223	4.242	0^+	0^+
91	55	771.74	777.30	8.48	8.54	9.40	26.14	3.45	14.34	−4.77	−12.59	4.344	4.463	4.154	4.231	4.254	0^+	$5/2^+$
92	56	777.63	783.17	8.45	8.51	9.34	26.93	5.89	14.74	−4.78	−13.00	4.368	4.492	4.167	4.243	4.272	0^+	0^+
93	57	780.86	786.60	8.40	8.46	9.12	27.56	3.23	15.07	−4.76	−13.33	4.396	4.531	4.172	4.248	4.279	0^+	$1/2^+$
94	58	786.66	791.89	8.37	8.42	9.03	28.43	5.79	15.52	−4.62	−13.77	4.417	4.552	4.189	4.265	4.300	0^+	0^+
95	59	789.85	794.77	8.31	8.37	8.98	29.09	3.19	15.87	−4.56	−14.11	4.444	4.588	4.197	4.272	4.307	0^+	$1/2^+$
96	60	795.41	799.76	8.29	8.33	8.75	29.89	5.56	16.27	−4.48	−14.52	4.465	4.611	4.212	4.287	4.327	0^+	0^+
97	61	798.50	802.18	8.23	8.27	8.65	30.60	3.09	16.63	−4.40	−14.87	4.492	4.643	4.223	4.298		0^+	$1/2^+$
98	62	803.93		8.20		8.52	31.34	5.43	17.00	−4.36	−15.24	4.513	4.667	4.236	4.311		0^+	0^+
99	63	806.90		8.15		8.40	32.07	2.97	17.37	−4.26	−15.60	4.539	4.697	4.249	4.324		0^+	$1/2^+$
100	64	812.26		8.12		8.33	32.74	5.36	17.70	−4.24	−15.95	4.560	4.721	4.259	4.334		0^+	0^+
101	65	815.17		8.07		8.27	33.45	2.91	18.05	−4.21	−16.28	4.585	4.750	4.270	4.345		0^+	$3/2^+$
102	66	820.39		8.04		8.14	34.10	5.23	18.38	−4.10	−16.62	4.606	4.774	4.283	4.357		0^+	0^+
103	67	823.29		7.99		8.13	34.85	2.90	18.74	−4.03	−16.97	4.630	4.801	4.295	4.369		0^+	$3/2^+$
104	68	828.29		7.96		7.90	35.40	5.00	19.02	−3.91	−17.25	4.652	4.826	4.305	4.379		0^+	0^+
105	69	831.03		7.91		7.74	36.14	2.74	19.37	−3.29	−17.60	4.676	4.853	4.318	4.392		0^+	$3/2^+$
106	70	835.71		7.88		7.42	36.59	4.68	19.61	−3.28	−17.84	4.697	4.877	4.326	4.399		0^+	0^+
107	71	837.03		7.82		6.00	37.36	1.32	19.98	−3.31	−18.19	4.718	4.900	4.337	4.410		0^+	$11/2^-$
108	72	840.96		7.79		5.25	38.13	3.93	20.35	−2.44	−18.57	4.734	4.916	4.348	4.421		0^+	0^+
109	73	841.88		7.72		4.85	38.87	0.92	20.71	−2.30	−18.92	4.753	4.936	4.359	4.432		0^+	$11/2^-$
110	74	845.31		7.68		4.35	39.58	3.43	21.05	−2.13	−19.27	4.771	4.954	4.371	4.444		0^+	0^+
111	75	846.04		7.62		4.16	40.31	0.73	21.40	−2.02	−19.61	4.790	4.974	4.382	4.455		0^+	$11/2^-$
112	76	849.16		7.58		3.85	40.98	3.13	21.73	−1.90	−19.93	4.808	4.992	4.394	4.466		0^+	0^+
113	77	849.74		7.52		3.70	41.70	0.57	22.07	−1.79	−20.26	4.826	5.011	4.405	4.477		0^+	$11/2^-$
114	78	852.63		7.48		3.47	42.34	2.90	22.38	−1.70	−20.57	4.844	5.030	4.416	4.488		0^+	0^+
115	79	853.06		7.42		3.32	43.05	0.42	22.71	−1.56	−20.89	4.862	5.047	4.427	4.499		0^+	$11/2^-$
116	80	855.76		7.38		3.13	43.66	2.71	23.00	−1.47	−21.18	4.880	5.066	4.439	4.510		0^+	0^+
117	81	856.01		7.32		2.96	44.47	0.25	23.33	−0.83	−21.52	4.895	5.080	4.451	4.522		0^+	$11/2^-$
118	82	858.45		7.27		2.68	45.03	2.43	23.65	−0.85	−21.79	4.913	5.099	4.462	4.533		0^+	0^+
119	83	858.15		7.21		2.14	45.21	−0.30	23.75	−0.88	−21.90	4.976	5.183	4.463	4.534		0^+	$3/2^-$
120	84	859.21		7.16		0.76	45.43	1.06	23.88	−0.43	−22.07	4.977	5.179	4.470	4.541		0^+	0^+
121	85	858.90		7.10		0.75	45.60	−0.31	23.97	−0.43	−22.17	5.034	5.255	4.471	4.542		0^+	$3/2^-$
122	86	859.77		7.05		0.56	45.90	0.87	24.15	−0.37	−22.36	5.040	5.257	4.477	4.548		0^+	0^+
123	87	859.46		6.99		0.56	46.08	−0.31	24.24	−0.36	−22.46	5.092	5.325	4.479	4.550		0^+	$3/2^-$
124	88	860.27		6.94		0.50	46.36	0.81	24.40	−0.34	−22.63	5.103	5.335	4.485	4.556		0^+	0^+
125	89	859.95		6.88		0.49	46.54	−0.33	24.50	−0.32	−22.74	5.150	5.395	4.487	4.558		0^+	$3/2^-$
126	90	860.75		6.83		0.48	46.80	0.81	24.64	−0.33	−22.90	5.165	5.411	4.492	4.563		0^+	0^+
127	91	860.42		6.77		0.47	46.94	−0.34	24.72	−0.33	−22.98	5.217	5.477	4.494	4.564		0^+	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
128	92	861.21		6.73		0.46	47.24	0.80	24.88	−0.30	−23.15	5.226	5.485	4.499	4.570		0^+	0^+
129	93	860.92		6.67		0.50	47.41	−0.29	24.96	−0.29	−23.24	5.272	5.542	4.501	4.571		0^+	$1/2^-$
130	94	861.63		6.63		0.42	47.65	0.72	25.10	−0.27	−23.39	5.286	5.556	4.507	4.577		0^+	0^+
131	95	861.29		6.57		0.37	47.87	−0.35	25.20	−0.22	−23.49	5.325	5.603	4.509	4.580		0^+	$1/2^-$
132	96	861.99		6.53		0.36	48.06	0.70	25.31	−0.22	−23.62	5.343	5.622	4.515	4.585		0^+	0^+
133	97	861.48		6.48		0.19	48.27	−0.51	25.41	−0.12	−23.72	5.375	5.659	4.520	4.590		0^+	$1/2^-$
134	98	862.24		6.43		0.25	48.45	0.76	25.51	−0.15	−23.84	5.396	5.683	4.524	4.595		0^+	0^+
135	99	861.59		6.38		0.12		−0.64	25.58	−0.10	−23.91	5.433	5.728	4.525	4.595		0^+	$5/2^-$
136	100	862.33		6.34		0.10		0.74	25.72	−0.06	−24.06	5.445	5.737	4.537	4.607		0^+	0^+
137	101	861.52		6.29		−0.07		−0.81		0.08	−24.16	5.478	5.776	4.540	4.610		0^+	$5/2^-$
138	102	862.22		6.25		−0.11		0.70		0.05	−24.33	5.489	5.783	4.553	4.623		0^+	0^+
σ		4.45													0.039			
$Z = 37$ (Rb)																		
67	30	508.38		7.59			−1.62		−2.33	−16.46	1.19	3.947	3.801	4.062	4.140		$1/2^-$	0^+
68	31	522.93		7.69			−0.43	14.55	−1.73	−15.95	0.61	3.957	3.832	4.059	4.137		$1/2^-$	$3/2^-$
69	32	539.90		7.82		31.52	0.73	16.97	−1.31	−15.72	−0.05	3.972	3.865	4.061	4.139		$1/2^-$	0^+
70	33	553.55		7.91		30.63	2.01	13.66	−0.70	−15.24	−0.70	3.986	3.897	4.063	4.141		$1/2^-$	$3/2^-$
71	34	570.32		8.03		30.43	3.20	16.77	−0.10	−15.09	−1.31	3.999	3.925	4.065	4.143		$1/2^-$	0^+
72	35	583.43		8.10		29.88	4.29	13.11	0.43	−14.77	−1.93	4.011	3.952	4.067	4.145		$1/2^-$	$5/2^-$
73	36	599.57		8.21		29.24	5.60	16.13	1.01	−14.48	−2.56	4.028	3.981	4.073	4.151		$1/2^-$	0^+
74	37	612.28	620.25	8.27	8.38	28.85	6.81	12.72	1.63	−14.40	−3.12	4.044	4.009	4.078	4.156		$1/2^-$	$1/2^-$
75	38	627.65	633.62	8.37	8.45	28.09	7.97	15.37	2.11	−13.78	−3.77	4.059	4.035	4.084	4.161		$1/2^-$	0^+
76	39	640.54	644.95	8.43	8.49	28.25	9.12	12.88	2.66	−12.84	−4.38	4.075	4.060	4.090	4.167	4.227	$1/2^-$	$1/2^-$
77	40	654.18	657.38	8.50	8.54	26.53	10.35	13.64	3.34	−12.45	−4.86	4.090	4.086	4.095	4.172	4.236	$1/2^-$	0^+
78	41	664.08	667.55	8.51	8.56	23.54	11.47	9.90	3.86	−12.37	−5.43	4.104	4.110	4.097	4.175	4.239	$1/2^-$	$9/2^+$
79	42	676.94	679.49	8.57	8.60	22.76	12.54	12.86	4.35	−11.05	−6.01	4.118	4.134	4.100	4.178	4.228	$1/2^-$	0^+
80	43	686.09	688.93	8.58	8.61	22.01	13.55	9.15	4.85	−10.75	−6.56	4.132	4.157	4.103	4.181	4.227	$1/2^-$	$9/2^+$
81	44	698.10	700.29	8.62	8.65	21.17	14.55	12.02	5.34	−10.44	−7.10	4.147	4.179	4.107	4.185	4.221	$1/2^-$	0^+
82	45	706.96	709.09	8.62	8.65	20.88	15.66	8.86	5.94	−10.32	−7.13	4.160	4.201	4.110	4.187	4.216	$3/2^-$	$9/2^+$
83	46	718.51	720.04	8.66	8.68	20.41	16.75	11.55	6.53	−10.07	−7.64	4.174	4.222	4.114	4.191	4.206	$3/2^-$	0^+
84	47	727.06	728.80	8.66	8.68	20.10	17.83	8.55	7.09	−9.84	−8.13	4.186	4.241	4.116	4.193	4.200	$3/2^-$	$9/2^+$
85	48	738.13	739.28	8.68	8.70	19.62	18.86	11.07	7.63	−9.62	−8.61	4.200	4.260	4.120	4.197	4.204	$3/2^-$	0^+
86	49	746.42	747.93	8.68	8.70	19.36	19.86	8.30	8.13	−7.44	−9.08	4.211	4.278	4.122	4.199	4.203	$3/2^-$	$9/2^+$
87	50	757.06	757.86	8.70	8.71	18.94	20.81	10.64	8.60	−7.61	−9.53	4.224	4.295	4.125	4.202	4.199	$3/2^-$	0^+
88	51	761.56	763.94	8.65	8.68	15.13	21.71	4.49	9.05	−7.18	−10.02	4.250	4.332	4.134	4.210	4.217	$3/2^-$	$5/2^+$
89	52	768.08	771.11	8.63	8.66	11.01	22.59	6.52	9.49	−5.58	−10.46	4.275	4.364	4.148	4.224	4.239	$3/2^-$	0^+
90	53	772.22	776.84	8.58	8.63	10.67	23.40	4.15	9.88	−5.40	−10.91	4.300	4.398	4.156	4.232	4.255	$3/2^-$	$5/2^+$
91	54	778.59	783.29	8.56	8.61	10.52	24.24	6.37	10.30	−5.36	−11.33	4.325	4.428	4.170	4.246	4.272	$3/2^-$	0^+
92	55	782.41	788.39	8.50	8.57	10.19	25.01	3.82	10.67	−5.17	−11.76	4.350	4.462	4.179	4.255	4.290	$3/2^-$	$5/2^+$
93	56	788.70	794.31	8.48	8.54	10.11	25.81	6.29	11.07	−5.17	−12.17	4.374	4.490	4.192	4.267	4.305	$3/2^-$	0^+
94	57	792.23	798.32	8.43	8.49	9.82	26.44	3.53	11.37	−5.15	−12.47	4.401	4.528	4.198	4.273	4.318	$3/2^-$	$1/2^+$
95	58	798.48	803.72	8.41	8.46	9.78	27.34	6.25	11.82	−5.01	−12.96	4.421	4.549	4.214	4.289	4.339	$3/2^-$	0^+
96	59	801.98	807.25	8.35	8.41	9.75	28.00	3.50	12.13	−4.96	−13.29	4.448	4.584	4.222	4.297	4.350	$3/2^-$	$1/2^+$
97	60	807.97	812.49	8.33	8.38	9.49	28.83	5.99	12.56	−4.86	−13.72	4.469	4.606	4.237	4.312	4.423	$3/2^-$	0^+
98	61	811.41	816.36	8.28	8.33	9.43	29.54	3.44	12.91	−4.80	−14.07	4.494	4.638	4.247	4.322	4.434	$3/2^-$	$1/2^+$
99	62	817.22	821.32	8.25	8.30	9.25	30.29	5.82	13.30	−4.73	−14.45	4.515	4.660	4.261	4.335		$3/2^-$	0^+
100	63	820.56		8.21		9.16	31.03	3.34	13.66	−4.65	−14.82	4.540	4.690	4.273	4.347		$3/2^-$	$1/2^+$
101	64	826.26		8.18		9.04	31.71	5.70	14.01	−4.60	−15.15	4.561	4.713	4.283	4.358		$3/2^-$	0^+
102	65	829.51		8.13		8.95	32.40	3.25	14.34	−4.58	−15.48	4.585	4.742	4.294	4.368		$3/2^-$	$3/2^+$
103	66	835.08		8.11		8.82	33.06	5.57	14.69	−4.45	−15.82	4.605	4.765	4.306	4.379		$3/2^-$	0^+
104	67	838.33		8.06		8.82	33.78	3.25	15.04	−4.38	−16.15	4.629	4.793	4.317	4.390		$3/2^-$	$3/2^+$
105	68	843.62		8.03		8.54	34.34	5.29	15.33	−4.23	−16.46	4.650	4.817	4.327	4.400		$3/2^-$	0^+
106	69	846.68		7.99		8.35	35.02	3.06	15.65	−3.66	−16.78	4.674	4.844	4.338	4.412		$3/2^-$	$3/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
107	70	851.62		7.96		8.00	35.52	4.94	15.91	−3.63	−17.06	4.694	4.868	4.346	4.419		$3/2^-$	0^+
108	71	853.32		7.90		6.64	36.27	1.71	16.29	−3.66	−17.39	4.714	4.890	4.356	4.429		$3/2^-$	$11/2^-$
109	72	857.66		7.87		6.04	37.04	4.33	16.69	−2.83	−17.77	4.730	4.906	4.367	4.440		$3/2^-$	0^+
110	73	858.95		7.81		5.62	37.77	1.29	17.07	−2.68	−18.11	4.748	4.926	4.377	4.450		$3/2^-$	$11/2^-$
111	74	862.73		7.77		5.08	38.47	3.79	17.42	−2.50	−18.44	4.766	4.944	4.388	4.461		$3/2^-$	0^+
112	75	863.81		7.71		4.87	39.18	1.08	17.78	−2.37	−18.77	4.784	4.963	4.398	4.471		$3/2^-$	$11/2^-$
113	76	867.27		7.67		4.53	39.83	3.45	18.10	−2.25	−19.09	4.801	4.981	4.409	4.481		$3/2^-$	0^+
114	77	868.17		7.62		4.36	40.50	0.91	18.44	−2.12	−19.41	4.819	4.999	4.420	4.491		$3/2^-$	$11/2^-$
115	78	871.38		7.58		4.11	41.12	3.20	18.74	−2.02	−19.71	4.836	5.018	4.430	4.502		$3/2^-$	0^+
116	79	872.12		7.52		3.95	41.77	0.74	19.06	−1.88	−20.02	4.853	5.035	4.441	4.512		$3/2^-$	$11/2^-$
117	80	875.11		7.48		3.74	42.35	2.99	19.35	−1.78	−20.31	4.871	5.053	4.451	4.523		$3/2^-$	0^+
118	81	875.68		7.42		3.56	43.00	0.57	19.66	−1.06	−20.64	4.886	5.068	4.462	4.534		$3/2^-$	$11/2^-$
119	82	878.42		7.38		3.31	43.62	2.75	19.98	−1.08	−20.93	4.903	5.084	4.473	4.544		$3/2^-$	0^+
120	83	878.22		7.32		2.55	43.82	−0.20	20.07	−1.11	−21.02	4.962	5.164	4.474	4.545		$3/2^-$	$3/2^-$
121	84	879.46		7.27		1.04	44.14	1.24	20.26	−0.59	−21.23	4.964	5.162	4.482	4.553		$3/2^-$	0^+
122	85	879.27		7.21		1.05	44.35	−0.19	20.37	−0.59	−21.34	5.018	5.234	4.484	4.554		$3/2^-$	$3/2^-$
123	86	880.33		7.16		0.87	44.71	1.06	20.56	−0.52	−21.55	5.024	5.237	4.491	4.562		$3/2^-$	0^+
124	87	880.14		7.10		0.87	44.92	−0.19	20.68	−0.51	−21.66	5.073	5.301	4.493	4.564		$3/2^-$	$3/2^-$
125	88	881.13		7.05		0.80	45.26	0.99	20.86	−0.49	−21.86	5.084	5.311	4.500	4.570		$3/2^-$	0^+
126	89	880.92		6.99		0.78	45.47	−0.21	20.97	−0.46	−21.98	5.129	5.369	4.502	4.573		$3/2^-$	$3/2^-$
127	90	881.89		6.94		0.76	45.78	0.97	21.13	−0.46	−22.15	5.144	5.384	4.508	4.578		$3/2^-$	0^+
128	91	881.64		6.89		0.72	45.95	−0.25	21.22	−0.47	−22.25	5.194	5.448	4.509	4.580		$3/2^-$	$1/2^-$
129	92	882.61		6.84		0.72	46.27	0.97	21.40	−0.43	−22.43	5.204	5.456	4.516	4.586		$3/2^-$	0^+
130	93	882.40		6.79		0.76	46.44	−0.21	21.48	−0.42	−22.54	5.248	5.512	4.518	4.588		$3/2^-$	$1/2^-$
131	94	883.28		6.74		0.67	46.74	0.88	21.64	−0.40	−22.70	5.262	5.525	4.524	4.594		$3/2^-$	0^+
132	95	883.05		6.69		0.65	46.96	−0.23	21.76	−0.34	−22.81	5.300	5.573	4.527	4.597		$3/2^-$	$1/2^-$
133	96	883.87		6.65		0.59	47.19	0.82	21.88	−0.34	−22.96	5.317	5.590	4.533	4.604		$3/2^-$	0^+
134	97	883.47		6.59		0.42	47.40	−0.40	21.99	−0.25	−23.06	5.349	5.627	4.538	4.608		$3/2^-$	$1/2^-$
135	98	884.34		6.55		0.47	47.61	0.87	22.10	−0.27	−23.21	5.369	5.649	4.545	4.614		$3/2^-$	0^+
136	99	883.77		6.50		0.31	47.76	−0.56	22.18	−0.23	−23.29	5.405	5.692	4.546	4.616		$3/2^-$	$5/2^-$
137	100	884.67		6.46		0.33	48.05	0.89	22.34	−0.20	−23.46	5.417	5.702	4.558	4.628		$3/2^-$	0^+
138	101	883.96		6.41		0.19		−0.70	22.44	−0.09	−23.57	5.448	5.738	4.563	4.632		$3/2^-$	$5/2^-$
139	102	884.83		6.37		0.17		0.87	22.61	−0.11	−23.75	5.459	5.746	4.576	4.646		$3/2^-$	0^+
140	103	883.89		6.31		−0.07		−0.94		−0.12	−23.74	5.551	5.862	4.575	4.644		$3/2^-$	$1/2^+$
141	104	884.83		6.28		−0.00		0.93		−0.04	−24.08	5.497	5.782	4.599	4.668		$3/2^-$	0^+
142	105	883.91		6.22		0.02		−0.92		−0.04	−24.08	5.585	5.893	4.598	4.667		$3/2^-$	$1/2^+$
143	106	884.70		6.19		−0.13		0.79		0.02	−24.45	5.531	5.814	4.626	4.694		$3/2^-$	0^+
σ		4.17													0.049			
$Z = 38$ (Sr)																		
70	32	540.80		7.73			−0.40		0.91	−16.32	0.54	3.998	3.879	4.095	4.172		0^+	0^+
71	33	555.06		7.82			0.81	14.26	1.51	−15.88	−0.03	4.010	3.911	4.095	4.173		0^+	$3/2^-$
72	34	572.43		7.95		31.63	2.00	17.37	2.11	−15.71	−0.60	4.023	3.938	4.097	4.174		0^+	0^+
73	35	586.15		8.03		31.09	3.15	13.72	2.72	−15.39	−1.15	4.034	3.964	4.097	4.174		0^+	$5/2^-$
74	36	602.96		8.15		30.53	4.41	16.81	3.39	−15.11	−1.74	4.049	3.992	4.102	4.179		0^+	0^+
75	37	616.21	622.24	8.22	8.30	30.06	5.55	13.25	3.92	−15.04	−2.32	4.064	4.019	4.107	4.184		0^+	$1/2^-$
76	38	632.32	637.94	8.32	8.39	29.36	6.78	16.11	4.66	−14.35	−2.86	4.076	4.043	4.110	4.187		0^+	0^+
77	39	645.80	649.57	8.39	8.44	29.59	7.92	13.48	5.26	−13.41	−3.42	4.091	4.067	4.115	4.192	4.257	0^+	$1/2^-$
78	40	659.85	663.01	8.46	8.50	27.53	9.01	14.05	5.67	−13.01	−4.01	4.107	4.093	4.121	4.198	4.256	0^+	0^+
79	41	670.35	673.38	8.49	8.52	24.55	10.13	10.50	6.27	−12.91	−4.56	4.120	4.117	4.123	4.200	4.259	0^+	$9/2^+$
80	42	683.83	686.29	8.55	8.58	23.98	11.24	13.48	6.89	−11.64	−5.08	4.133	4.139	4.125	4.202	4.256	0^+	0^+
81	43	693.57	695.58	8.56	8.59	23.22	12.33	9.74	7.48	−11.33	−5.60	4.146	4.162	4.127	4.204	4.255	0^+	$9/2^+$
82	44	706.16	708.13	8.61	8.64	22.33	13.40	12.59	8.05	−11.00	−6.11	4.159	4.183	4.130	4.207	4.248	0^+	0^+
83	45	715.46	716.99	8.62	8.64	21.89	14.43	9.30	8.50	−10.74	−6.61	4.171	4.204	4.132	4.209	4.246	0^+	$9/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
84	46	727.43	728.91	8.66	8.68	21.27	15.44	11.97	8.91	−10.49	−7.10	4.185	4.224	4.136	4.212	4.239	0^+	0^+
85	47	736.39	737.44	8.66	8.68	20.93	16.42	8.96	9.33	−10.25	−7.58	4.197	4.243	4.138	4.215	4.230	0^+	$9/2^+$
86	48	747.87	748.93	8.70	8.71	20.44	17.37	11.49	9.74	−10.04	−8.05	4.209	4.263	4.141	4.218	4.231	0^+	0^+
87	49	756.58	757.36	8.70	8.71	20.19	18.28	8.71	10.16	−7.93	−8.51	4.221	4.280	4.143	4.220	4.225	0^+	$9/2^+$
88	50	767.64	768.47	8.72	8.73	19.77	19.18	11.06	10.58	−8.09	−8.96	4.233	4.297	4.147	4.223	4.224	0^+	0^+
89	51	772.67	774.83	8.68	8.71	16.09	20.16	5.03	11.11	−7.82	−9.45	4.257	4.332	4.154	4.231	4.241	0^+	$5/2^+$
90	52	779.65	782.64	8.66	8.70	12.01	21.06	6.98	11.57	−6.05	−9.89	4.282	4.364	4.168	4.244	4.261	0^+	0^+
91	53	784.31	788.41	8.62	8.66	11.64	21.97	4.67	12.09	−5.85	−10.36	4.306	4.397	4.176	4.252	4.274	0^+	$5/2^+$
92	54	791.12	795.70	8.60	8.65	11.47	22.83	6.80	12.52	−5.81	−10.78	4.330	4.426	4.189	4.264	4.292	0^+	0^+
93	55	795.42	800.99	8.55	8.61	11.10	23.68	4.30	13.01	−5.59	−11.22	4.354	4.458	4.197	4.273	4.303	0^+	$5/2^+$
94	56	802.13	807.82	8.53	8.59	11.01	24.50	6.71	13.43	−5.59	−11.63	4.376	4.486	4.210	4.285	4.319	0^+	0^+
95	57	806.06	812.17	8.48	8.55	10.65	25.20	3.94	13.83	−5.57	−11.96	4.402	4.522	4.215	4.291	4.331	0^+	$1/2^+$
96	58	812.75	818.05	8.47	8.52	10.62	26.09	6.68	14.27	−5.40	−12.44	4.423	4.544	4.231	4.306	4.352	0^+	0^+
97	59	816.65	821.78	8.42	8.47	10.59	26.81	3.91	14.67	−5.35	−12.78	4.448	4.577	4.239	4.314	4.363	0^+	$1/2^+$
98	60	823.03	827.69	8.40	8.45	10.28	27.62	6.37	15.05	−5.24	−13.21	4.469	4.599	4.254	4.329	4.438	0^+	0^+
99	61	826.85	831.84	8.35	8.40	10.20	28.35	3.83	15.44	−5.16	−13.57	4.493	4.630	4.264	4.338	4.450	0^+	$1/2^+$
100	62	833.02	837.24	8.33	8.37	9.99	29.09	6.17	15.80	−5.08	−13.94	4.514	4.653	4.277	4.351	4.464	0^+	0^+
101	63	836.73	841.04	8.28	8.33	9.87	29.83	3.71	16.16	−4.99	−14.32	4.538	4.682	4.289	4.363		0^+	$1/2^+$
102	64	842.76	845.90	8.26	8.29	9.74	30.50	6.03	16.50	−4.93	−14.64	4.558	4.705	4.300	4.374		0^+	0^+
103	65	846.36		8.22		9.64	31.20	3.60	16.85	−4.92	−14.98	4.582	4.734	4.310	4.384		0^+	$3/2^+$
104	66	852.24		8.19		9.48	31.85	5.88	17.16	−4.76	−15.31	4.602	4.756	4.322	4.395		0^+	0^+
105	67	855.84		8.15		9.48	32.55	3.61	17.52	−4.69	−15.65	4.625	4.783	4.333	4.406		0^+	$3/2^+$
106	68	861.40		8.13		9.16	33.11	5.56	17.78	−4.53	−15.95	4.646	4.807	4.343	4.416		0^+	0^+
107	69	864.81		8.08		8.96	33.78	3.41	18.13	−3.97	−16.26	4.669	4.834	4.354	4.427		0^+	$3/2^+$
108	70	869.98		8.06		8.58	34.27	5.17	18.36	−3.94	−16.54	4.689	4.858	4.362	4.435		0^+	0^+
109	71	872.00		8.00		7.19	34.97	2.02	18.68	−3.96	−16.87	4.709	4.880	4.372	4.444		0^+	$11/2^-$
110	72	876.66		7.97		6.68	35.70	4.66	19.01	−3.15	−17.24	4.725	4.896	4.382	4.455		0^+	0^+
111	73	878.27		7.91		6.26	36.39	1.60	19.32	−2.99	−17.57	4.743	4.916	4.392	4.464		0^+	$11/2^-$
112	74	882.36		7.88		5.70	37.05	4.10	19.63	−2.80	−17.91	4.760	4.933	4.402	4.475		0^+	0^+
113	75	883.75		7.82		5.49	37.71	1.39	19.94	−2.67	−18.23	4.778	4.952	4.412	4.484		0^+	$11/2^-$
114	76	887.51		7.79		5.14	38.35	3.76	20.24	−2.54	−18.55	4.795	4.971	4.423	4.495		0^+	0^+
115	77	888.72		7.73		4.97	38.99	1.22	20.55	−2.42	−18.87	4.812	4.989	4.433	4.504		0^+	$11/2^-$
116	78	892.22		7.69		4.72	39.59	3.50	20.85	−2.31	−19.18	4.830	5.007	4.443	4.515		0^+	0^+
117	79	893.27		7.63		4.55	40.22	1.05	21.16	−2.18	−19.50	4.846	5.024	4.453	4.525		0^+	$11/2^-$
118	80	896.56		7.60		4.34	40.80	3.29	21.45	−2.07	−19.79	4.864	5.042	4.464	4.535		0^+	0^+
119	81	897.45		7.54		4.18	41.44	0.89	21.77	−1.28	−20.12	4.879	5.057	4.475	4.546		0^+	$11/2^-$
120	82	900.50		7.50		3.94	42.05	3.05	22.07	−1.31	−20.42	4.895	5.074	4.486	4.556		0^+	0^+
121	83	900.40		7.44		2.95	42.25	−0.10	22.18	−1.31	−20.60	4.926	5.113	4.490	4.560		0^+	$7/2^-$
122	84	901.84		7.39		1.34	42.63	1.44	22.38	−0.74	−20.74	4.953	5.147	4.495	4.565		0^+	0^+
123	85	901.75		7.33		1.35	42.86	−0.08	22.48	−0.74	−20.85	5.004	5.215	4.496	4.567		0^+	$3/2^-$
124	86	903.02		7.28		1.18	43.25	1.27	22.69	−0.67	−21.06	5.011	5.219	4.504	4.574		0^+	0^+
125	87	902.95		7.22		1.19	43.49	−0.07	22.81	−0.67	−21.18	5.057	5.280	4.506	4.576		0^+	$3/2^-$
126	88	904.13		7.18		1.11	43.85	1.18	23.00	−0.64	−21.38	5.068	5.290	4.513	4.583		0^+	0^+
127	89	904.04		7.12		1.09	44.09	−0.08	23.12	−0.62	−21.51	5.111	5.345	4.515	4.585		0^+	$3/2^-$
128	90	905.18		7.07		1.06	44.43	1.14	23.30	−0.61	−21.69	5.126	5.361	4.521	4.591		0^+	0^+
129	91	905.05		7.02		1.01	44.64	−0.13	23.41	−0.57	−21.82	5.165	5.410	4.524	4.594		0^+	$3/2^-$
130	92	906.20		6.97		1.01	44.99	1.14	23.59	−0.58	−21.99	5.183	5.430	4.529	4.600		0^+	0^+
131	93	906.10		6.92		1.04	45.18	−0.10	23.70	−0.57	−22.10	5.226	5.485	4.531	4.601		0^+	$1/2^-$
132	94	907.15		6.87		0.95	45.51	1.05	23.87	−0.53	−22.27	5.239	5.497	4.538	4.608		0^+	0^+
133	95	907.04		6.82		0.94	45.75	−0.11	23.99	−0.48	−22.38	5.277	5.544	4.541	4.611		0^+	$1/2^-$
134	96	908.00		6.78		0.85	46.01	0.96	24.13	−0.47	−22.54	5.293	5.560	4.548	4.618		0^+	0^+
135	97	907.71		6.72		0.67	46.23	−0.29	24.24	−0.37	−22.65	5.324	5.597	4.554	4.624		0^+	$1/2^-$
136	98	908.71		6.68		0.72	46.48	1.01	24.38	−0.40	−22.80	5.343	5.617	4.561	4.630		0^+	0^+
137	99	908.24		6.63		0.54	46.65	−0.47	24.47	−0.36	−22.89	5.377	5.658	4.563	4.632		0^+	$5/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
138	100	909.29		6.59		0.58	46.96	1.05	24.62	−0.33	−23.08	5.389	5.667	4.576	4.646		0^+	0^+
139	101	908.71		6.54		0.47	47.19	−0.58	24.74	−0.25	−23.19	5.419	5.702	4.581	4.651		0^+	$5/2^-$
140	102	909.73		6.50		0.44	47.51	1.03	24.90	−0.26	−23.37	5.431	5.711	4.595	4.664		0^+	0^+
141	103	908.98		6.45		0.27		−0.76	25.08	−0.17	−23.55	5.456	5.738	4.605	4.674		0^+	$5/2^-$
142	104	910.06		6.41		0.33		1.09	25.24	−0.21	−23.70	5.469	5.749	4.617	4.686		0^+	0^+
143	105	909.15		6.36		0.17		−0.92	25.24	−0.22	−23.70	5.557	5.860	4.616	4.685		0^+	$1/2^+$
144	106	910.31		6.32		0.24		1.16	25.61	−0.16	−24.06	5.505	5.783	4.642	4.710		0^+	0^+
145	107	909.41		6.27		0.26		−0.90		−0.17	−24.06	5.590	5.890	4.641	4.710		0^+	$1/2^+$
146	108	910.49		6.24		0.18		1.08		−0.11	−24.42	5.540	5.815	4.669	4.737		0^+	0^+
147	109	909.61		6.19		0.20		−0.87		−0.12	−24.43	5.621	5.918	4.668	4.736		0^+	$1/2^+$
148	110	910.61		6.15		0.12		0.99		−0.04	−24.79	5.574	5.846	4.697	4.765		0^+	0^+
149	111	909.76		6.11		0.15		−0.85		−0.05	−24.80	5.652	5.945	4.697	4.764		0^+	$1/2^+$
150	112	910.60		6.07		−0.01		0.84		−1.01	−25.16	5.607	5.876	4.727	4.794		0^+	0^+
σ		3.89													0.053			
$Z = 39$ (Y)																		
73	34	571.93		7.83			1.61		−0.50	−16.32	0.50	4.048	3.951	4.131	4.208		$1/2^-$	0^+
74	35	586.25		7.92			2.82	14.32	0.10	−15.99	−0.08	4.058	3.975	4.130	4.207		$1/2^-$	$5/2^-$
75	36	603.66		8.05		31.73	4.09	17.40	0.70	−15.69	−0.69	4.072	4.002	4.134	4.211		$1/2^-$	0^+
76	37	617.43		8.12		31.18	5.15	13.78	1.23	−15.65	−1.21	4.086	4.030	4.138	4.215		$1/2^-$	$1/2^-$
77	38	634.14		8.24		30.48	6.48	16.70	1.82	−14.90	−1.84	4.097	4.052	4.141	4.217		$1/2^-$	0^+
78	39	648.17		8.31		30.73	7.63	14.03	2.37	−13.95	−2.41	4.110	4.076	4.145	4.222		$1/2^-$	$1/2^-$
79	40	662.74	665.48	8.39	8.42	28.60	8.56	14.57	2.89	−13.54	−2.91	4.125	4.101	4.149	4.226		$1/2^-$	0^+
80	41	673.80	676.34	8.42	8.45	25.63	9.72	11.06	3.45	−13.44	−3.48	4.137	4.124	4.151	4.227		$1/2^-$	$9/2^+$
81	42	687.81	688.98	8.49	8.51	25.07	10.87	14.01	3.98	−12.16	−4.07	4.149	4.146	4.152	4.229		$1/2^-$	0^+
82	43	698.06	699.40	8.51	8.53	24.26	11.97	10.25	4.49	−11.83	−4.65	4.161	4.168	4.154	4.230		$1/2^-$	$9/2^+$
83	44	711.13	711.61	8.57	8.57	23.32	13.03	13.07	4.97	−11.48	−5.21	4.173	4.189	4.156	4.232		$1/2^-$	0^+
84	45	720.89	721.37	8.58	8.59	22.84	13.93	9.76	5.44	−11.20	−5.73	4.185	4.209	4.157	4.234		$1/2^-$	$9/2^+$
85	46	733.30	733.39	8.63	8.63	22.17	14.79	12.41	5.87	−10.93	−6.26	4.198	4.229	4.160	4.236		$1/2^-$	0^+
86	47	742.67	742.90	8.64	8.64	21.78	15.61	9.37	6.28	−10.66	−6.78	4.209	4.248	4.161	4.238	4.251	$1/2^-$	$9/2^+$
87	48	754.53	754.71	8.67	8.67	21.23	16.41	11.86	6.66	−10.43	−7.28	4.221	4.267	4.164	4.241	4.250	$1/2^-$	0^+
88	49	763.58	764.06	8.68	8.68	20.91	17.16	9.05	7.00	−8.18	−7.78	4.232	4.284	4.166	4.242	4.244	$1/2^-$	$9/2^+$
89	50	774.99	775.55	8.71	8.71	20.46	17.93	11.42	7.35	−8.50	−8.26	4.244	4.301	4.169	4.245	4.243	$1/2^-$	0^+
90	51	780.67	782.40	8.67	8.69	17.09	19.11	5.67	8.00	−7.80	−8.70	4.267	4.335	4.176	4.252	4.257	$1/2^-$	$5/2^+$
91	52	788.15	790.33	8.66	8.68	13.16	20.07	7.48	8.50	−6.59	−9.13	4.290	4.366	4.188	4.264		$1/2^-$	0^+
92	53	793.41	796.87	8.62	8.66	12.74	21.19	5.26	9.10	−6.36	−9.55	4.313	4.397	4.195	4.271	4.289	$1/2^-$	$5/2^+$
93	54	800.66	804.35	8.61	8.65	12.51	22.07	7.25	9.54	−6.29	−9.97	4.336	4.426	4.208	4.283	4.305	$1/2^-$	0^+
94	55	805.45	810.55	8.57	8.62	12.04	23.04	4.79	10.04	−6.04	−10.38	4.359	4.457	4.216	4.291	4.314	$1/2^-$	$5/2^+$
95	56	812.59	817.48	8.55	8.61	11.93	23.89	7.14	10.46	−6.04	−10.77	4.381	4.484	4.228	4.303	4.328	$1/2^-$	0^+
96	57	816.91	822.68	8.51	8.57	11.46	24.68	4.32	10.85	−5.79	−11.19	4.405	4.515	4.239	4.314	4.340	$1/2^-$	$5/2^+$
97	58	824.05	828.54	8.50	8.54	11.46	25.57	7.14	11.30	−5.81	−11.55	4.426	4.540	4.250	4.324	4.358	$1/2^-$	0^+
98	59	828.33	832.78	8.45	8.50	11.42	26.35	4.28	11.68	−5.77	−11.96	4.450	4.573	4.257	4.332	4.371	$1/2^-$	$1/2^+$
99	60	835.11	839.21	8.44	8.48	11.06	27.14	6.78	12.09	−5.63	−12.34	4.470	4.595	4.272	4.346	4.466	$1/2^-$	0^+
100	61	839.32	843.96	8.39	8.44	10.99	27.91	4.21	12.47	−5.55	−12.72	4.494	4.625	4.282	4.356	4.471	$1/2^-$	$1/2^+$
101	62	845.84	849.76	8.37	8.41	10.73	28.62	6.52	12.83	−5.45	−13.12	4.515	4.648	4.295	4.368	4.486	$1/2^-$	0^+
102	63	849.93	853.94	8.33	8.37	10.61	29.37	4.09	13.20	−5.35	−13.47	4.538	4.675	4.306	4.380	4.491	$1/2^-$	$1/2^+$
103	64	856.28	859.29	8.31	8.34	10.44	30.02	6.36	13.53	−5.28	−13.83	4.558	4.699	4.317	4.390		$1/2^-$	0^+
104	65	860.23		8.27		10.30	30.72	3.95	13.87	−5.27	−14.15	4.581	4.727	4.327	4.400		$1/2^-$	$3/2^+$
105	66	866.42		8.25		10.14	31.35	6.19	14.19	−5.09	−14.50	4.601	4.749	4.338	4.411		$1/2^-$	0^+
106	67	870.37		8.21		10.14	32.04	3.95	14.53	−5.03	−14.84	4.623	4.776	4.349	4.422		$1/2^-$	$3/2^+$
107	68	876.20		8.19		9.78	32.59	5.83	14.80	−4.84	−15.09	4.644	4.799	4.358	4.431		$1/2^-$	0^+
108	69	879.93		8.15		9.56	33.25	3.73	15.13	−4.30	−15.46	4.666	4.826	4.369	4.442		$1/2^-$	$3/2^+$
109	70	885.36		8.12		9.16	33.75	5.43	15.38	−4.26	−15.70	4.686	4.849	4.378	4.450		$1/2^-$	0^+
110	71	887.69		8.07		7.76	34.37	2.33	15.69	−4.27	−16.05	4.705	4.872	4.387	4.459		$1/2^-$	$11/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
111	72	892.70		8.04		7.34	35.04	5.01	16.04	−3.48	−16.39	4.721	4.887	4.396	4.468		$1/2^-$	0^+
112	73	894.62		7.99		6.93	35.67	1.92	16.35	−3.31	−16.76	4.738	4.907	4.405	4.477		$1/2^-$	$11/2^-$
113	74	899.02		7.96		6.32	36.29	4.40	16.66	−3.11	−17.10	4.755	4.924	4.415	4.487		$1/2^-$	0^+
114	75	900.70		7.90		6.08	36.89	1.68	16.95	−2.97	−17.44	4.772	4.943	4.424	4.496		$1/2^-$	$11/2^-$
115	76	904.74		7.87		5.72	37.47	4.04	17.23	−2.83	−17.78	4.789	4.961	4.433	4.505		$1/2^-$	0^+
116	77	906.25		7.81		5.55	38.08	1.51	17.53	−2.70	−18.11	4.806	4.979	4.443	4.514		$1/2^-$	$11/2^-$
117	78	909.92		7.78		5.18	38.54	3.67	17.70	−2.59	−18.44	4.823	4.997	4.453	4.524		$1/2^-$	0^+
118	79	911.26		7.72		5.01	39.14	1.34	17.98	−2.45	−18.78	4.839	5.014	4.463	4.534		$1/2^-$	$11/2^-$
119	80	914.80		7.69		4.88	39.69	3.54	18.24	−2.34	−19.09	4.856	5.032	4.473	4.544		$1/2^-$	0^+
120	81	915.94		7.63		4.68	40.26	1.14	18.48	−1.54	−19.45	4.871	5.047	4.483	4.554		$1/2^-$	$11/2^-$
121	82	919.23		7.60		4.43	40.81	3.29	18.73	−1.55	−19.77	4.887	5.063	4.494	4.564		$1/2^-$	0^+
122	83	919.34		7.54		3.41	41.12	0.11	18.94	−1.55	−19.93	4.916	5.100	4.498	4.569		$1/2^-$	$7/2^-$
123	84	920.98		7.49		1.76	41.52	1.64	19.15	−0.95	−20.06	4.943	5.134	4.503	4.574		$1/2^-$	0^+
124	85	921.09		7.43		1.75	41.82	0.11	19.34	−0.96	−20.17	4.989	5.196	4.504	4.575		$1/2^-$	$3/2^-$
125	86	922.66		7.38		1.68	42.33	1.57	19.64	−0.88	−20.36	4.997	5.202	4.512	4.583		$1/2^-$	0^+
126	87	922.76		7.32		1.67	42.62	0.10	19.81	−0.88	−20.48	5.040	5.258	4.514	4.584		$1/2^-$	$3/2^-$
127	88	924.17		7.28		1.51	43.04	1.41	20.05	−0.84	−20.66	5.052	5.271	4.521	4.591		$1/2^-$	0^+
128	89	924.26		7.22		1.50	43.34	0.09	20.22	−0.82	−20.78	5.091	5.321	4.524	4.594		$1/2^-$	$3/2^-$
129	90	925.62		7.18		1.45	43.73	1.36	20.44	−0.80	−20.95	5.108	5.338	4.531	4.601		$1/2^-$	0^+
130	91	925.65		7.12		1.39	44.01	0.03	20.60	−0.75	−21.08	5.144	5.384	4.534	4.604		$1/2^-$	$3/2^-$
131	92	926.99		7.08		1.37	44.39	1.34	20.80	−0.75	−21.24	5.163	5.405	4.540	4.610		$1/2^-$	0^+
132	93	927.03		7.02		1.38	44.63	0.04	20.93	−0.74	−21.36	5.203	5.457	4.542	4.612		$1/2^-$	$1/2^-$
133	94	928.27		6.98		1.28	45.00	1.24	21.13	−0.69	−21.52	5.217	5.470	4.550	4.620		$1/2^-$	0^+
134	95	928.31		6.93		1.28	45.26	0.04	21.27	−0.63	−21.64	5.253	5.515	4.553	4.623		$1/2^-$	$1/2^-$
135	96	929.42		6.88		1.15	45.55	1.11	21.42	−0.62	−21.79	5.269	5.531	4.561	4.631		$1/2^-$	0^+
136	97	929.25		6.83		0.94	45.78	−0.17	21.54	−0.51	−21.92	5.299	5.566	4.568	4.637		$1/2^-$	$1/2^-$
137	98	930.41		6.79		0.99	46.07	1.16	21.70	−0.54	−22.05	5.318	5.586	4.575	4.645		$1/2^-$	0^+
138	99	930.04		6.74		0.79	46.27	−0.37	21.80	−0.52	−22.15	5.350	5.624	4.578	4.648		$1/2^-$	$5/2^-$
139	100	931.25		6.70		0.85	46.59	1.22	21.97	−0.48	−22.33	5.362	5.634	4.592	4.661		$1/2^-$	0^+
140	101	930.80		6.65		0.76	46.84	−0.45	22.10	−0.43	−22.45	5.391	5.667	4.598	4.667		$1/2^-$	$5/2^-$
141	102	931.99		6.61		0.73	47.16	1.19	22.25	−0.43	−22.63	5.403	5.677	4.611	4.680		$1/2^-$	0^+
142	103	931.41		6.56		0.61	47.52	−0.57	22.44	−0.36	−22.79	5.428	5.704	4.621	4.690		$1/2^-$	$5/2^-$
143	104	932.64		6.52		0.65	47.81	1.23	22.58	−0.39	−22.96	5.442	5.716	4.633	4.702		$1/2^-$	0^+
144	105	931.93		6.47		0.51	48.02	−0.71	22.78	−0.31	−23.14	5.464	5.738	4.646	4.715		$1/2^-$	$5/2^-$
145	106	933.23		6.44		0.59	48.53	1.30	22.92	−0.35	−23.28	5.479	5.752	4.657	4.725		$1/2^-$	0^+
146	107	932.47		6.39		0.54		−0.76	23.06	−0.34	−23.43	5.501	5.775	4.666	4.734		$1/2^-$	$9/2^-$
147	108	933.77		6.35		0.54		1.30	23.28	−0.30	−23.64	5.515	5.786	4.682	4.750		$1/2^-$	0^+
148	109	933.02		6.30		0.55		−0.75	23.40	−0.26	−23.79	5.535	5.808	4.692	4.759		$1/2^-$	$9/2^-$
149	110	934.25		6.27		0.48		1.23	23.64	−0.23	−24.01	5.549	5.819	4.708	4.775		$1/2^-$	0^+
150	111	933.46		6.22		0.44		−0.79	23.70	0.43	−24.15	5.570	5.840	4.719	4.786		$1/2^-$	$9/2^-$
151	112	934.59		6.19		0.35		1.14	23.99	−1.23	−24.37	5.584	5.851	4.735	4.802		$1/2^-$	0^+
σ		3.19													0.061			
$Z = 40$ (Zr)																		
74	34	572.27		7.73			−0.16		0.33	−16.80	1.00	4.073	3.960	4.167	4.243		0^+	0^+
75	35	587.01		7.83			0.86	14.74	0.76	−16.47	0.46	4.082	3.985	4.166	4.242		0^+	$5/2^-$
76	36	604.93		7.96		32.66	1.97	17.92	1.27	−16.19	−0.10	4.094	4.011	4.168	4.244		0^+	0^+
77	37	619.35		8.04		32.34	3.14	14.42	1.92	−16.10	−0.65	4.106	4.037	4.170	4.246		0^+	$1/2^-$
78	38	636.42		8.16		31.49	4.10	17.07	2.28	−15.47	−1.19	4.118	4.060	4.172	4.248		0^+	0^+
79	39	650.97		8.24		31.62	5.17	14.55	2.80	−14.50	−1.73	4.130	4.083	4.175	4.251		0^+	$1/2^-$
80	40	666.36	669.93	8.33	8.37	29.94	6.51	15.39	3.62	−14.11	−2.30	4.143	4.107	4.178	4.254		0^+	0^+
81	41	677.88	680.88	8.37	8.41	26.91	7.53	11.52	4.08	−14.00	−2.83	4.154	4.129	4.179	4.255		0^+	$9/2^+$
82	42	692.33		8.44		25.97	8.50	14.45	4.52	−12.64	−3.35	4.165	4.151	4.180	4.255		0^+	0^+
83	43	703.05	704.54	8.47	8.49	25.17	9.48	10.72	4.99	−12.32	−3.87	4.176	4.172	4.180	4.256		0^+	$9/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
84	44	716.60	718.12	8.53	8.55	24.27	10.44	13.55	5.47	−11.98	−4.38	4.188	4.193	4.182	4.258		0^+	0^+
85	45	726.85	727.94	8.55	8.56	23.80	11.39	10.26	5.96	−11.71	−4.89	4.199	4.213	4.183	4.259		0^+	$9/2^+$
86	46	739.77	740.81	8.60	8.61	23.17	12.34	12.91	6.46	−11.45	−5.40	4.211	4.233	4.185	4.261		0^+	0^+
87	47	749.66	750.26	8.62	8.62	22.81	13.28	9.90	6.99	−11.21	−5.91	4.221	4.251	4.186	4.262	4.279	0^+	$9/2^+$
88	48	762.09	762.61	8.66	8.67	22.32	14.21	12.42	7.55	−10.99	−6.41	4.233	4.269	4.188	4.264	4.279	0^+	0^+
89	49	771.73	771.93	8.67	8.67	22.06	15.15	9.64	8.15	−8.87	−6.92	4.242	4.285	4.189	4.265	4.271	0^+	$9/2^+$
90	50	783.72	783.90	8.71	8.71	21.64	16.08	12.00	8.73	−9.03	−7.42	4.253	4.302	4.191	4.267	4.269	0^+	0^+
91	51	789.72	791.09	8.68	8.69	17.99	17.05	6.00	9.05	−8.86	−7.85	4.276	4.335	4.199	4.274	4.285	0^+	$5/2^+$
92	52	797.60	799.73	8.67	8.69	13.87	17.95	7.88	9.45	−6.96	−8.28	4.299	4.366	4.212	4.287	4.306	0^+	0^+
93	53	803.22	806.46	8.64	8.67	13.50	18.91	5.63	9.81	−6.75	−8.70	4.321	4.397	4.219	4.294		0^+	$5/2^+$
94	54	810.89	814.68	8.63	8.67	13.29	19.77	7.67	10.23	−6.68	−9.12	4.344	4.425	4.231	4.306	4.332	0^+	0^+
95	55	816.10	821.14	8.59	8.64	12.88	20.69	5.21	10.65	−6.43	−9.53	4.366	4.456	4.239	4.314		0^+	$5/2^+$
96	56	823.65	829.00	8.58	8.64	12.76	21.52	7.55	11.06	−6.43	−9.93	4.387	4.483	4.251	4.325	4.351	0^+	0^+
97	57	828.36	834.58	8.54	8.60	12.26	22.29	4.71	11.45	−6.17	−10.33	4.411	4.512	4.262	4.336	4.379	0^+	$5/2^+$
98	58	835.91	840.99	8.53	8.58	12.26	23.16	7.55	11.86	−6.19	−10.73	4.431	4.538	4.272	4.346	4.401	0^+	0^+
99	59	840.44	845.39	8.49	8.54	12.08	23.78	4.53	12.10	−6.17	−11.01	4.455	4.571	4.279	4.353	4.416	0^+	$1/2^+$
100	60	847.73	852.22	8.48	8.52	11.82	24.70	7.29	12.62	−5.99	−11.49	4.475	4.591	4.294	4.368	4.489	0^+	0^+
101	61	852.24	857.08	8.44	8.49	11.81	25.39	4.51	12.92	−5.94	−11.80	4.498	4.622	4.303	4.377	4.512	0^+	$1/2^+$
102	62	859.18	863.58	8.42	8.47	11.45	26.16	6.94	13.34	−5.80	−12.23	4.518	4.643	4.317	4.390	4.529	0^+	0^+
103	63	863.64	867.88	8.38	8.43	11.40	26.91	4.46	13.71	−5.73	−12.58	4.541	4.671	4.327	4.401		0^+	$1/2^+$
104	64	870.31	873.86	8.37	8.40	11.13	27.55	6.68	14.03	−5.62	−12.93	4.561	4.694	4.339	4.412		0^+	0^+
105	65	874.65	877.67	8.33	8.36	11.02	28.29	4.34	14.42	−5.50	−13.31	4.583	4.720	4.351	4.424		0^+	$1/2^+$
106	66	881.12		8.31		10.81	28.88	6.47	14.70	−5.42	−13.60	4.603	4.744	4.360	4.433		0^+	0^+
107	67	885.38		8.27		10.73	29.53	4.26	15.01	−5.34	−13.92	4.625	4.770	4.370	4.443		0^+	$3/2^+$
108	68	891.55		8.26		10.43	30.15	6.18	15.35	−5.16	−14.24	4.644	4.793	4.380	4.452		0^+	0^+
109	69	895.56		8.22		10.18	30.75	4.01	15.63	−4.63	−14.53	4.667	4.820	4.390	4.462		0^+	$3/2^+$
110	70	901.35		8.19		9.80	31.37	5.79	15.99	−4.59	−14.85	4.686	4.842	4.398	4.470		0^+	0^+
111	71	904.01		8.14		8.45	32.01	2.66	16.32	−4.60	−15.18	4.705	4.865	4.407	4.479		0^+	$11/2^-$
112	72	909.41		8.12		8.06	32.75	5.41	16.71	−3.84	−15.57	4.720	4.880	4.417	4.488		0^+	0^+
113	73	911.70		8.07		7.69	33.43	2.29	17.08	−3.68	−15.93	4.737	4.900	4.426	4.497		0^+	$11/2^-$
114	74	916.47		8.04		7.05	34.11	4.77	17.45	−3.48	−16.30	4.754	4.917	4.435	4.507		0^+	0^+
115	75	918.53		7.99		6.83	34.78	2.06	17.83	−3.34	−16.65	4.770	4.936	4.444	4.516		0^+	$11/2^-$
116	76	922.93		7.96		6.47	35.43	4.41	18.19	−3.20	−17.01	4.787	4.953	4.454	4.526		0^+	0^+
117	77	924.81		7.90		6.29	36.09	1.88	18.56	−3.08	−17.36	4.804	4.971	4.464	4.535		0^+	$11/2^-$
118	78	928.95		7.87		6.01	36.73	4.14	19.03	−2.96	−17.70	4.820	4.989	4.473	4.544		0^+	0^+
119	79	930.66		7.82		5.85	37.39	1.72	19.41	−2.83	−18.06	4.836	5.005	4.483	4.554		0^+	$11/2^-$
120	80	934.58		7.79		5.63	38.02	3.91	19.78	−2.72	−18.40	4.853	5.023	4.493	4.563		0^+	0^+
121	81	936.15		7.74		5.48	38.69	1.57	20.21	−1.77	−18.76	4.867	5.038	4.503	4.573		0^+	$11/2^-$
122	82	939.82		7.70		5.25	39.33	3.68	20.60	−1.80	−19.10	4.883	5.054	4.513	4.583		0^+	0^+
123	83	940.08		7.64		3.93	39.68	0.26	20.74	−1.79	−19.27	4.911	5.090	4.517	4.587		0^+	$7/2^-$
124	84	941.82		7.60		1.99	39.98	1.74	20.83	−1.06	−19.40	4.936	5.121	4.523	4.593		0^+	0^+
125	85	941.95		7.54		1.87	40.19	0.13	20.86	−1.00	−19.57	4.964	5.157	4.527	4.597		0^+	$7/2^-$
126	86	943.65		7.49		1.84	40.63	1.71	20.99	−1.00	−19.71	4.989	5.187	4.533	4.603		0^+	0^+
127	87	943.81		7.43		1.87	40.86	0.16	21.05	−1.00	−19.81	5.031	5.243	4.535	4.605		0^+	$3/2^-$
128	88	945.40		7.39		1.75	41.28	1.59	21.23	−0.95	−20.01	5.042	5.253	4.543	4.613		0^+	0^+
129	89	945.57		7.33		1.76	41.53	0.17	21.31	−0.94	−20.12	5.080	5.303	4.545	4.615		0^+	$3/2^-$
130	90	947.08		7.29		1.68	41.90	1.51	21.46	−0.91	−20.30	5.095	5.319	4.552	4.622		0^+	0^+
131	91	947.23		7.23		1.66	42.18	0.15	21.58	−0.88	−20.42	5.131	5.365	4.555	4.625		0^+	$3/2^-$
132	92	948.70		7.19		1.62	42.50	1.47	21.71	−0.87	−20.57	5.148	5.384	4.561	4.631		0^+	0^+
133	93	948.83		7.13		1.60	42.73	0.13	21.80	−0.87	−20.67	5.188	5.434	4.563	4.633		0^+	$1/2^-$
134	94	950.24		7.09		1.54	43.09	1.41	21.96	−0.82	−20.84	5.201	5.447	4.571	4.641		0^+	0^+
135	95	950.38		7.04		1.55	43.34	0.14	22.07	−0.77	−20.95	5.236	5.491	4.574	4.643		0^+	$1/2^-$
136	96	951.66		7.00		1.42	43.66	1.28	22.24	−0.76	−21.12	5.252	5.507	4.583	4.652		0^+	0^+
137	97	951.61		6.95		1.23	43.91	−0.04	22.37	−0.66	−21.25	5.282	5.542	4.589	4.658		0^+	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
138	98	952.93		6.91		1.28	44.22	1.32	22.52	−0.69	−21.41	5.299	5.560	4.597	4.666		0^+	0^+
139	99	952.67		6.85		1.06	44.43	−0.26	22.63	−0.59	−21.56	5.324	5.588	4.608	4.677		0^+	$1/2^-$
140	100	954.09		6.81		1.15	44.80	1.41	22.83	−0.64	−21.71	5.343	5.608	4.614	4.683		0^+	0^+
141	101	953.77		6.76		1.09	45.06	−0.32	22.96	−0.60	−21.84	5.371	5.640	4.620	4.689		0^+	$5/2^-$
142	102	955.15		6.73		1.06	45.41	1.38	23.16	−0.60	−22.04	5.384	5.651	4.634	4.702		0^+	0^+
143	103	954.75		6.68		0.98	45.77	−0.40	23.33	−0.55	−22.19	5.409	5.679	4.643	4.711		0^+	$5/2^-$
144	104	956.15		6.64		1.00	46.09	1.40	23.51	−0.56	−22.37	5.423	5.691	4.655	4.723		0^+	0^+
145	105	955.65		6.59		0.90	46.50	−0.50	23.72	−0.50	−22.57	5.445	5.714	4.667	4.735		0^+	$5/2^-$
146	106	957.11		6.56		0.96	46.80	1.46	23.88	−0.53	−22.73	5.461	5.728	4.678	4.746		0^+	0^+
147	107	956.51		6.51		0.86	47.10	−0.60	24.04	−0.52	−22.87	5.483	5.752	4.687	4.754		0^+	$9/2^-$
148	108	958.03		6.47		0.92	47.54	1.52	24.26	−0.49	−23.09	5.497	5.764	4.702	4.770		0^+	0^+
149	109	957.44		6.43		0.93	47.83	−0.59	24.43	−0.45	−23.23	5.519	5.787	4.711	4.779		0^+	$9/2^-$
150	110	958.90		6.39		0.87	48.29	1.46	24.65	−0.42	−23.45	5.533	5.798	4.727	4.795		0^+	0^+
151	111	958.27		6.35		0.83	48.51	−0.63	24.81	0.16	−23.59	5.554	5.821	4.737	4.804		0^+	$9/2^-$
152	112	959.64		6.31		0.74	49.04	1.37	25.04	−1.45	−23.81	5.569	5.832	4.754	4.821		0^+	0^+
σ		3.50													0.067			
$Z = 41$ (Nb)																		
77	36	602.47		7.82			−1.19		−2.46	−16.74	0.21	4.116	4.019	4.199	4.274		$9/2^+$	0^+
78	37	617.42		7.92			−0.01	14.95	−1.93	−16.67	−0.34	4.126	4.044	4.200	4.275		$9/2^+$	$1/2^-$
79	38	635.08		8.04		32.61	0.94	17.66	−1.34	−16.02	−0.86	4.137	4.066	4.201	4.277		$9/2^+$	0^+
80	39	650.18		8.13		32.76	2.01	15.10	−0.79	−15.06	−1.38	4.148	4.089	4.204	4.279		$9/2^+$	$1/2^-$
81	40	666.07		8.22		30.99	3.33	15.89	−0.28	−14.65	−1.96	4.160	4.112	4.206	4.281		$9/2^+$	0^+
82	41	678.16		8.27		27.98	4.36	12.09	0.28	−14.55	−2.49	4.170	4.134	4.206	4.281		$9/2^+$	$9/2^+$
83	42	693.17	696.25	8.35	8.39	27.10	5.37	15.01	0.85	−13.18	−2.98	4.181	4.156	4.206	4.281		$9/2^+$	0^+
84	43	704.42		8.39		26.26	6.37	11.25	1.38	−12.84	−3.48	4.191	4.177	4.206	4.282		$9/2^+$	$9/2^+$
85	44	718.48	720.27	8.45	8.47	25.31	7.35	14.06	1.89	−12.50	−3.98	4.202	4.197	4.207	4.283		$9/2^+$	0^+
86	45	729.26	731.19	8.48	8.50	24.83	8.36	10.78	2.41	−12.23	−4.48	4.212	4.216	4.208	4.283		$9/2^+$	$9/2^+$
87	46	742.70	744.00	8.54	8.55	24.22	9.40	13.44	2.93	−12.10	−4.11	4.221	4.233	4.208	4.283		$1/2^-$	0^+
88	47	753.26	754.38	8.56	8.57	24.00	10.59	10.56	3.60	−11.84	−4.70	4.231	4.251	4.208	4.284		$1/2^-$	$9/2^+$
89	48	766.31	766.90	8.61	8.62	23.61	11.77	13.05	4.22	−11.60	−5.27	4.242	4.269	4.210	4.286		$1/2^-$	0^+
90	49	776.57	777.01	8.63	8.63	23.31	12.99	10.27	4.85	−9.26	−5.86	4.251	4.285	4.211	4.286	4.289	$1/2^-$	$9/2^+$
91	50	789.16	789.05	8.67	8.67	22.85	14.16	12.58	5.43	−9.47	−6.43	4.262	4.302	4.213	4.288	4.288	$1/2^-$	0^+
92	51	795.43	796.94	8.65	8.66	18.86	14.77	6.28	5.71	−9.29	−6.75	4.284	4.334	4.220	4.295	4.303	$1/2^-$	$5/2^+$
93	52	803.70	805.77	8.64	8.66	14.54	15.55	8.26	6.10	−7.29	−7.16	4.307	4.364	4.234	4.309	4.324	$1/2^-$	0^+
94	53	809.55	813.00	8.61	8.65	14.12	16.14	5.86	6.33	−7.07	−7.49	4.328	4.394	4.242	4.316		$1/2^-$	$5/2^+$
95	54	817.61	821.49	8.61	8.65	13.91	16.95	8.06	6.72	−7.01	−7.90	4.351	4.423	4.255	4.329		$1/2^-$	0^+
96	55	823.18	828.38	8.57	8.63	13.62	17.72	5.57	7.08	−6.84	−9.11	4.372	4.454	4.260	4.335		$9/2^+$	$5/2^+$
97	56	831.13	836.45	8.57	8.62	13.52	18.54	7.95	7.48	−6.83	−9.52	4.394	4.481	4.272	4.346		$9/2^+$	0^+
98	57	836.24	842.45	8.53	8.60	13.07	19.33	5.11	7.88	−6.57	−9.92	4.416	4.510	4.283	4.357		$9/2^+$	$5/2^+$
99	58	844.19	849.31	8.53	8.58	13.06	20.14	7.94	8.28	−6.59	−10.32	4.436	4.535	4.293	4.367	4.406	$9/2^+$	0^+
100	59	848.99	854.86	8.49	8.55	12.75	20.66	4.80	8.55	−6.58	−10.59	4.460	4.568	4.300	4.374		$9/2^+$	$1/2^+$
101	60	856.78	862.01	8.48	8.53	12.59	21.66	7.79	9.05	−6.37	−11.10	4.479	4.587	4.315	4.388	4.486	$9/2^+$	0^+
102	61	861.60	867.51	8.45	8.51	12.61	22.28	4.82	9.36	−6.34	−11.39	4.502	4.617	4.324	4.397		$9/2^+$	$1/2^+$
103	62	868.97	874.29	8.44	8.49	12.20	23.13	7.37	9.79	−6.17	−11.84	4.521	4.638	4.337	4.410	4.510	$9/2^+$	0^+
104	63	873.77	879.17	8.40	8.45	12.17	23.84	4.80	10.13	−6.11	−12.17	4.543	4.666	4.347	4.420		$9/2^+$	$1/2^+$
105	64	880.81	885.32	8.39	8.43	11.84	24.53	7.04	10.50	−5.97	−12.54	4.563	4.688	4.359	4.432		$9/2^+$	0^+
106	65	885.52	889.68	8.35	8.39	11.75	25.29	4.71	10.87	−5.87	−12.91	4.584	4.714	4.370	4.443		$9/2^+$	$1/2^+$
107	66	892.29	895.27	8.34	8.37	11.48	25.87	6.77	11.17	−5.75	−13.21	4.604	4.737	4.380	4.452		$9/2^+$	0^+
108	67	896.87	899.17	8.30	8.33	11.35	26.50	4.58	11.50	−5.66	−13.53	4.625	4.763	4.390	4.463		$9/2^+$	$3/2^+$
109	68	903.36	904.32	8.29	8.30	11.06	27.15	6.48	11.80	−5.48	−13.85	4.644	4.786	4.399	4.471		$9/2^+$	0^+
110	69	907.65		8.25		10.77	27.71	4.29	12.09	−4.98	−14.13	4.666	4.813	4.409	4.481		$9/2^+$	$3/2^+$
111	70	913.76		8.23		10.40	28.39	6.11	12.41	−4.93	−14.46	4.685	4.834	4.417	4.489		$9/2^+$	0^+
112	71	916.74		8.19		9.10	29.05	2.99	12.74	−4.94	−14.79	4.703	4.857	4.426	4.498		$9/2^+$	$11/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
113	72	922.56		8.16		8.80	29.86	5.82	13.15	−4.22	−15.17	4.719	4.873	4.435	4.507		$9/2^+$	0^+
114	73	925.22		8.12		8.47	30.60	2.66	13.52	−4.12	−14.73	4.736	4.890	4.447	4.519		$1/2^-$	$11/2^-$
115	74	930.42		8.09		7.86	31.40	5.20	13.95	−3.90	−15.14	4.752	4.907	4.457	4.528		$1/2^-$	0^+
116	75	932.91		8.04		7.69	32.21	2.49	14.38	−3.76	−15.53	4.768	4.926	4.465	4.536		$1/2^-$	$11/2^-$
117	76	937.73		8.01		7.31	32.99	4.82	14.79	−3.61	−15.93	4.784	4.943	4.475	4.546		$1/2^-$	0^+
118	77	940.03		7.97		7.12	33.78	2.30	15.21	−3.48	−16.32	4.800	4.961	4.483	4.554		$1/2^-$	$11/2^-$
119	78	944.55		7.94		6.83	34.64	4.53	15.61	−3.36	−16.70	4.816	4.978	4.493	4.563		$1/2^-$	0^+
120	79	946.69		7.89		6.66	35.43	2.13	16.02	−3.23	−17.10	4.832	4.995	4.501	4.572		$1/2^-$	$11/2^-$
121	80	950.97		7.86		6.42	36.18	4.29	16.40	−3.11	−17.48	4.848	5.012	4.511	4.581		$1/2^-$	0^+
122	81	952.95		7.81		6.27	37.02	1.98	16.81	−1.93	−17.89	4.863	5.028	4.519	4.590		$1/2^-$	$11/2^-$
123	82	956.99		7.78		6.02	37.77	4.04	17.17	−2.06	−18.28	4.878	5.044	4.529	4.599		$1/2^-$	0^+
124	83	957.37		7.72		4.42	38.03	0.38	17.30	−1.99	−18.40	4.905	5.079	4.534	4.604		$1/2^-$	$7/2^-$
125	84	959.22		7.67		2.23	38.24	1.85	17.40	−1.18	−18.51	4.930	5.109	4.541	4.611		$1/2^-$	0^+
126	85	959.46		7.61		2.09	38.37	0.25	17.52	−1.11	−18.64	4.957	5.144	4.546	4.616		$1/2^-$	$7/2^-$
127	86	961.28		7.57		2.06	38.62	1.81	17.62	−1.11	−18.76	4.981	5.173	4.553	4.623		$1/2^-$	0^+
128	87	961.51		7.51		2.05	38.75	0.24	17.70	−1.11	−18.83	5.022	5.227	4.555	4.625		$1/2^-$	$3/2^-$
129	88	963.23		7.47		1.95	39.05	1.71	17.83	−1.05	−19.01	5.033	5.237	4.564	4.634		$1/2^-$	0^+
130	89	963.47		7.41		1.96	39.21	0.24	17.90	−1.04	−19.09	5.070	5.286	4.567	4.636		$1/2^-$	$3/2^-$
131	90	965.09		7.37		1.87	39.47	1.62	18.01	−1.01	−19.25	5.085	5.301	4.575	4.644		$1/2^-$	0^+
132	91	965.32		7.31		1.85	39.67	0.23	18.09	−1.03	−20.09	5.117	5.345	4.573	4.642		$9/2^+$	$3/2^-$
133	92	966.95		7.27		1.86	39.96	1.63	18.25	−1.02	−20.26	5.134	5.363	4.580	4.649		$9/2^+$	0^+
134	93	967.18		7.22		1.85	40.15	0.23	18.35	−1.01	−20.36	5.172	5.412	4.582	4.651		$9/2^+$	$1/2^-$
135	94	968.76		7.18		1.81	40.49	1.58	18.52	−0.97	−20.54	5.185	5.424	4.591	4.660		$9/2^+$	0^+
136	95	969.01		7.13		1.84	40.70	0.25	18.63	−0.92	−20.65	5.220	5.468	4.594	4.663		$9/2^+$	$1/2^-$
137	96	970.46		7.08		1.70	41.04	1.45	18.80	−0.91	−20.83	5.235	5.482	4.603	4.672		$9/2^+$	0^+
138	97	970.56		7.03		1.55	41.31	0.10	18.94	−0.83	−20.96	5.264	5.518	4.610	4.678		$9/2^+$	$1/2^-$
139	98	972.03		6.99		1.57	41.62	1.47	19.10	−0.85	−21.14	5.281	5.535	4.618	4.687		$9/2^+$	0^+
140	99	971.93		6.94		1.37	41.89	−0.10	19.26	−0.76	−21.29	5.306	5.563	4.629	4.697		$9/2^+$	$1/2^-$
141	100	973.49		6.90		1.47	42.24	1.57	19.41	−0.81	−21.46	5.324	5.582	4.636	4.705		$9/2^+$	0^+
142	101	973.31		6.85		1.38	42.51	−0.19	19.54	−0.78	−21.58	5.351	5.614	4.642	4.710		$9/2^+$	$5/2^-$
143	102	974.89		6.82		1.39	42.90	1.58	19.74	−0.77	−21.79	5.365	5.625	4.656	4.724		$9/2^+$	0^+
144	103	974.65		6.77		1.34	43.24	−0.24	19.90	−0.74	−21.94	5.390	5.653	4.664	4.732		$9/2^+$	$5/2^-$
145	104	976.23		6.73		1.35	43.59	1.58	20.08	−0.75	−22.13	5.405	5.666	4.677	4.745		$9/2^+$	0^+
146	105	975.93		6.68		1.28	44.01	−0.30	20.28	−0.70	−22.31	5.427	5.689	4.688	4.756		$9/2^+$	$5/2^-$
147	106	977.55		6.65		1.32	44.32	1.62	20.44	−0.72	−22.47	5.443	5.704	4.699	4.767		$9/2^+$	0^+
148	107	977.17		6.60		1.24	44.71	−0.37	20.67	−0.66	−22.69	5.463	5.724	4.713	4.780		$9/2^+$	$5/2^-$
149	108	978.84		6.57		1.29	45.07	1.66	20.81	−0.68	−22.83	5.480	5.741	4.722	4.789		$9/2^+$	0^+
150	109	978.40		6.52		1.23	45.39	−0.44	20.96	−0.64	−22.96	5.501	5.765	4.730	4.798		$9/2^+$	$9/2^-$
151	110	980.08		6.49		1.24	45.83	1.68	21.18	−0.61	−23.18	5.516	5.777	4.746	4.813		$9/2^+$	0^+
152	111	979.61		6.44		1.21	46.15	−0.47	21.34	0.01	−23.31	5.538	5.800	4.755	4.822		$9/2^+$	$9/2^-$
153	112	981.19		6.41		1.11	46.60	1.59	21.56	−1.67	−23.53	5.552	5.812	4.771	4.838		$9/2^+$	0^+
σ		3.83													0.055			
$Z = 42$ (Mo)																		
80	38	636.48		7.96			0.06		1.40	−16.56	0.54	4.154	4.072	4.227	4.302		0^+	0^+
81	39	652.13		8.05			1.16		1.95	−15.63	0.00	4.164	4.093	4.229	4.304		0^+	$1/2^-$
82	40	668.45		8.15			2.10	16.32	2.38	−15.17	−0.47	4.175	4.116	4.230	4.305		0^+	0^+
83	41	681.13		8.21		29.00	3.25	12.68	2.97	−15.05	−1.02	4.185	4.138	4.230	4.305		0^+	$9/2^+$
84	42	696.74		8.29		28.29	4.41	15.61	3.57	−13.77	−1.60	4.195	4.159	4.230	4.305		0^+	0^+
85	43	708.61	710.71	8.34	8.36	27.48	5.56	11.87	4.18	−13.44	−2.17	4.205	4.180	4.230	4.305		0^+	$9/2^+$
86	44	723.28	725.38	8.41	8.43	26.54	6.68	14.67	4.80	−13.09	−2.73	4.215	4.200	4.231	4.306		0^+	0^+
87	45	734.66	736.23	8.44	8.46	26.05	7.81	11.38	5.40	−12.81	−3.30	4.225	4.219	4.231	4.306		0^+	$9/2^+$
88	46	748.67	750.10	8.51	8.52	25.39	8.90	14.01	5.97	−12.54	−3.86	4.235	4.238	4.232	4.307		0^+	0^+
89	47	759.67	760.50	8.54	8.54	25.01	10.00	11.00	6.41	−12.29	−4.43	4.245	4.256	4.232	4.307		0^+	$9/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
90	48	773.16	773.73	8.59	8.60	24.49	11.07	13.49	6.85	−12.06	−4.98	4.255	4.274	4.234	4.308	4.327	0^+	0^+
91	49	783.88	783.84	8.61	8.61	24.21	12.15	10.72	7.30	−10.32	−5.54	4.263	4.289	4.233	4.308	4.318	0^+	$9/2^+$
92	50	796.92	796.51	8.66	8.66	23.76	13.20	13.05	7.77	−9.98	−6.09	4.273	4.306	4.235	4.310	4.315	0^+	0^+
93	51	803.71	804.58	8.64	8.65	19.83	13.99	6.78	8.27	−10.04	−6.44	4.294	4.337	4.242	4.317		0^+	$5/2^+$
94	52	812.43	814.26	8.64	8.66	15.51	14.83	8.72	8.73	−7.75	−6.86	4.317	4.367	4.255	4.330	4.353	0^+	0^+
95	53	818.80	821.63	8.62	8.65	15.09	15.58	6.37	9.25	−7.53	−7.21	4.338	4.396	4.262	4.337	4.363	0^+	$5/2^+$
96	54	827.29	830.78	8.62	8.65	14.86	16.40	8.49	9.68	−7.46	−7.62	4.359	4.424	4.275	4.349	4.385	0^+	0^+
97	55	833.24	837.60	8.59	8.64	14.44	17.14	5.95	10.07	−7.23	−7.98	4.380	4.453	4.283	4.357	4.388	0^+	$5/2^+$
98	56	841.59	846.25	8.59	8.64	14.30	17.94	8.35	10.46	−7.20	−8.38	4.401	4.479	4.295	4.369	4.409	0^+	0^+
99	57	847.10	852.17	8.56	8.61	13.85	18.74	5.50	10.85	−6.96	−8.78	4.423	4.508	4.306	4.380		0^+	$5/2^+$
100	58	855.39	860.46	8.55	8.60	13.80	19.49	8.30	11.21	−6.96	−9.15	4.443	4.532	4.316	4.390	4.447	0^+	0^+
101	59	860.52	865.86	8.52	8.57	13.43	20.09	5.13	11.53	−6.86	−9.54	4.464	4.558	4.327	4.400		0^+	$7/2^+$
102	60	868.75	873.99	8.52	8.57	13.36	21.03	8.23	11.98	−6.75	−9.92	4.484	4.584	4.338	4.411	4.491	0^+	0^+
103	61	873.88	879.46	8.48	8.54	13.36	21.64	5.13	12.28	−6.73	−10.22	4.507	4.614	4.347	4.420	4.515	0^+	$1/2^+$
104	62	881.72	886.92	8.48	8.53	12.97	22.54	7.84	12.75	−6.54	−10.68	4.525	4.634	4.360	4.433	4.525	0^+	0^+
105	63	886.86	891.98	8.45	8.50	12.98	23.22	5.14	13.09	−6.50	−11.01	4.547	4.662	4.370	4.443	4.539	0^+	$1/2^+$
106	64	894.31	898.85	8.44	8.48	12.59	24.00	7.45	13.50	−6.32	−11.41	4.566	4.683	4.382	4.454	4.549	0^+	0^+
107	65	899.38	903.33	8.41	8.44	12.53	24.73	5.08	13.86	−6.23	−11.77	4.587	4.709	4.393	4.465		0^+	$1/2^+$
108	66	906.49	909.61	8.39	8.42	12.18	25.37	7.11	14.19	−6.08	−12.10	4.606	4.731	4.402	4.474	4.560	0^+	0^+
109	67	911.39	913.59	8.36	8.38	12.01	26.01	4.90	14.52	−5.98	−12.42	4.627	4.757	4.412	4.484		0^+	$3/2^+$
110	68	918.19	919.54	8.35	8.36	11.70	26.64	6.80	14.83	−5.78	−12.74	4.646	4.780	4.421	4.493		0^+	0^+
111	69	922.76	923.00	8.31	8.36	11.37	27.20	4.57	15.12	−5.32	−13.03	4.667	4.805	4.430	4.502		0^+	$3/2^+$
112	70	929.19		8.30		11.00	27.84	6.43	15.44	−5.26	−13.35	4.685	4.827	4.438	4.510		0^+	0^+
113	71	932.53		8.25		9.77	28.53	3.34	15.79	−5.27	−13.70	4.703	4.849	4.446	4.518		0^+	$11/2^-$
114	72	938.79		8.23		9.60	29.38	6.26	16.23	−4.61	−14.11	4.718	4.866	4.455	4.526		0^+	0^+
115	73	941.85		8.19		9.31	30.15	3.06	16.63	−4.45	−14.50	4.735	4.885	4.464	4.535		0^+	$11/2^-$
116	74	947.39		8.17		8.60	30.92	5.54	16.97	−4.23	−14.90	4.751	4.902	4.473	4.544		0^+	0^+
117	75	950.21		8.12		8.36	31.68	2.82	17.30	−4.10	−15.28	4.767	4.920	4.481	4.552		0^+	$11/2^-$
118	76	955.36		8.10		7.97	32.43	5.15	17.64	−3.94	−15.67	4.783	4.937	4.490	4.561		0^+	0^+
119	77	958.00		8.05		7.79	33.19	2.64	17.97	−3.82	−16.06	4.799	4.955	4.499	4.569		0^+	$11/2^-$
120	78	962.86		8.02		7.50	33.91	4.86	18.30	−3.69	−16.43	4.814	4.972	4.508	4.578		0^+	0^+
121	79	965.33		7.98		7.33	34.66	2.47	18.64	−3.56	−16.82	4.830	4.988	4.516	4.587		0^+	$11/2^-$
122	80	969.95		7.95		7.09	35.37	4.62	18.97	−3.45	−17.19	4.845	5.005	4.526	4.596		0^+	0^+
123	81	972.28		7.90		6.95	36.13	2.33	19.33	−2.29	−17.58	4.860	5.020	4.534	4.604		0^+	$11/2^-$
124	82	976.66		7.88		6.71	36.84	4.38	19.67	−2.31	−17.95	4.875	5.036	4.544	4.613		0^+	0^+
125	83	977.24		7.82		4.96	37.16	0.58	19.87	−2.25	−18.10	4.901	5.070	4.548	4.618		0^+	$7/2^-$
126	84	979.25		7.77		2.59	37.44	2.01	20.03	−1.36	−18.23	4.925	5.099	4.556	4.625		0^+	0^+
127	85	979.70		7.71		2.46	37.75	0.44	20.23	−1.29	−18.38	4.951	5.133	4.560	4.630		0^+	$7/2^-$
128	86	981.68		7.67		2.43	38.03	1.98	20.40	−1.28	−18.52	4.974	5.161	4.568	4.637		0^+	0^+
129	87	982.01		7.61		2.32	38.20	0.33	20.50	−1.30	−18.60	5.013	5.214	4.570	4.639		0^+	$3/2^-$
130	88	983.99		7.57		2.31	38.59	1.98	20.76	−1.23	−18.80	5.023	5.222	4.579	4.648		0^+	0^+
131	89	984.36		7.51		2.34	38.78	0.37	20.89	−1.23	−18.89	5.060	5.270	4.582	4.651		0^+	$3/2^-$
132	90	986.20		7.47		2.21	39.12	1.84	21.10	−1.18	−19.06	5.073	5.284	4.590	4.659		0^+	0^+
133	91	986.55		7.42		2.20	39.32	0.36	21.23	−1.15	−19.16	5.107	5.328	4.593	4.663		0^+	$3/2^-$
134	92	988.31		7.38		2.12	39.61	1.76	21.37	−1.13	−19.32	5.123	5.345	4.602	4.671		0^+	0^+
135	93	988.60		7.32		2.05	39.78	0.29	21.43	−1.07	−19.43	5.156	5.386	4.606	4.675		0^+	$3/2^-$
136	94	990.34		7.28		2.03	40.10	1.74	21.58	−1.08	−19.58	5.173	5.404	4.614	4.683		0^+	0^+
137	95	990.63		7.23		2.03	40.25	0.29	21.62	−1.05	−19.67	5.207	5.447	4.617	4.686		0^+	$1/2^-$
138	96	992.27		7.19		1.93	40.61	1.64	21.81	−1.03	−19.85	5.221	5.460	4.628	4.697		0^+	0^+
139	97	992.51		7.14		1.88	40.90	0.24	21.96	−0.98	−19.97	5.251	5.497	4.634	4.703		0^+	$1/2^-$
140	98	994.11		7.10		1.84	41.18	1.60	22.08	−0.99	−20.14	5.267	5.512	4.644	4.713		0^+	0^+
141	99	994.21		7.05		1.70	41.54	0.10	22.28	−0.93	−20.31	5.293	5.542	4.653	4.721		0^+	$1/2^-$
142	100	995.88		7.01		1.77	41.80	1.67	22.39	−0.96	−20.46	5.310	5.559	4.662	4.730		0^+	0^+
143	101	995.84		6.96		1.63	42.07	−0.04	22.53	−0.89	−20.66	5.333	5.584	4.674	4.742		0^+	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
144	102	997.60		6.93		1.72	42.46	1.77	22.72	−0.94	−20.79	5.351	5.603	4.682	4.750		0^+	0^+
145	103	997.51		6.88		1.67	42.77	−0.09	22.86	−0.92	−20.94	5.375	5.631	4.690	4.758		0^+	$5/2^-$
146	104	999.30		6.84		1.70	43.15	1.79	23.07	−0.92	−21.14	5.390	5.645	4.702	4.770		0^+	0^+
147	105	999.18		6.80		1.67	43.53	−0.12	23.25	−0.89	−21.31	5.413	5.669	4.713	4.780		0^+	$5/2^-$
148	106	1000.99		6.76		1.68	43.88	1.81	23.44	−0.90	−21.49	5.429	5.684	4.724	4.791		0^+	0^+
149	107	1000.82		6.72		1.64	44.31	−0.17	23.64	−0.85	−21.69	5.450	5.705	4.737	4.804		0^+	$5/2^-$
150	108	1002.65		6.68		1.67	44.62	1.83	23.81	−0.86	−21.85	5.466	5.722	4.746	4.813		0^+	0^+
151	109	1002.42		6.64		1.60	44.98	−0.24	24.01	−0.79	−22.07	5.485	5.740	4.762	4.828		0^+	$5/2^-$
152	110	1004.28		6.61		1.63	45.38	1.86	24.20	−0.80	−22.21	5.503	5.759	4.769	4.836		0^+	0^+
153	111	1003.95		6.56		1.53	45.68	−0.33	24.34	−0.09	−22.33	5.526	5.784	4.777	4.843		0^+	$9/2^-$
154	112	1005.77		6.53		1.50	46.14	1.83	24.58	−0.16	−22.56	5.541	5.796	4.793	4.859		0^+	0^+
155	113	1004.96		6.48		1.01		−0.81		−0.17	−22.56	5.615	5.892	4.793	4.859		0^+	$1/2^+$
156	114	1004.66		6.44		−1.11		−0.30		0.57	−22.97	5.581	5.838	4.812	4.878		0^+	0^+
σ		3.46													0.062			
$Z = 43$ (Tc)																		
83	40	666.89		8.03			0.82			−15.69	0.09	4.192	4.121	4.256	4.331		$9/2^+$	0^+
84	41	680.13		8.10			1.97		−1.00	−15.56	−0.46	4.201	4.142	4.256	4.330		$9/2^+$	$9/2^+$
85	42	696.33		8.19			3.16	16.19	−0.41	−14.33	−1.04	4.210	4.163	4.255	4.330		$9/2^+$	0^+
86	43	708.77		8.24		28.63	4.34	12.44	0.16	−14.00	−1.60	4.219	4.183	4.254	4.329		$9/2^+$	$9/2^+$
87	44	724.01	726.25	8.32	8.35	27.68	5.52	15.24	0.73	−13.65	−2.17	4.229	4.203	4.255	4.329		$9/2^+$	0^+
88	45	735.96	738.31	8.36	8.39	27.19	6.70	11.95	1.30	−13.37	−2.74	4.238	4.222	4.254	4.329		$9/2^+$	$9/2^+$
89	46	750.53	752.10	8.43	8.45	26.52	7.83	14.57	1.86	−13.09	−3.31	4.248	4.241	4.255	4.329		$9/2^+$	0^+
90	47	762.09	763.50	8.47	8.48	26.13	8.83	11.56	2.42	−12.84	−3.88	4.256	4.258	4.254	4.329		$9/2^+$	$9/2^+$
91	48	776.13	776.84	8.53	8.54	25.60	9.83	14.04	2.97	−12.60	−4.44	4.266	4.275	4.255	4.330		$9/2^+$	0^+
92	49	787.40	787.85	8.56	8.56	25.31	10.83	11.27	3.52	−10.58	−5.01	4.274	4.291	4.255	4.329		$9/2^+$	$9/2^+$
93	50	800.99	800.60	8.61	8.61	24.86	11.83	13.58	4.07	−10.40	−5.56	4.283	4.307	4.256	4.330		$9/2^+$	0^+
94	51	808.14	809.22	8.60	8.61	20.74	12.71	7.15	4.43	−10.34	−5.90	4.304	4.337	4.263	4.337		$9/2^+$	$5/2^+$
95	52	817.29	819.16	8.60	8.62	16.30	13.59	9.15	4.86	−8.15	−6.32	4.326	4.367	4.276	4.350		$9/2^+$	0^+
96	53	824.02	827.03	8.58	8.61	15.87	14.46	6.73	5.22	−7.93	−6.66	4.346	4.396	4.283	4.358		$9/2^+$	$5/2^+$
97	54	832.93	836.50	8.59	8.62	15.64	15.32	8.91	5.64	−7.85	−7.08	4.367	4.424	4.296	4.370		$9/2^+$	0^+
98	55	839.24	843.78	8.56	8.61	15.23	16.07	6.32	6.00	−7.63	−7.44	4.388	4.452	4.305	4.378		$9/2^+$	$5/2^+$
99	56	848.00	852.75	8.57	8.61	15.07	16.87	8.75	6.41	−7.59	−7.85	4.408	4.478	4.316	4.390		$9/2^+$	0^+
100	57	853.90	859.51	8.54	8.60	14.66	17.66	5.90	6.80	−7.37	−8.24	4.430	4.505	4.327	4.401		$9/2^+$	$5/2^+$
101	58	862.58	867.90	8.54	8.59	14.58	18.39	8.68	7.19	−7.36	−8.62	4.449	4.530	4.338	4.411		$9/2^+$	0^+
102	59	868.10	874.20	8.51	8.57	14.20	19.11	5.52	7.58	−7.25	−9.01	4.469	4.556	4.348	4.421		$9/2^+$	$7/2^+$
103	60	876.71	882.31	8.51	8.57	14.14	19.94	8.61	7.96	−7.14	−9.40	4.490	4.581	4.359	4.432		$9/2^+$	0^+
104	61	882.13	888.29	8.48	8.54	14.03	20.53	5.42	8.25	−7.14	−9.69	4.511	4.610	4.367	4.440		$9/2^+$	$1/2^+$
105	62	890.44	896.14	8.48	8.53	13.73	21.47	8.31	8.72	−6.92	−10.16	4.530	4.630	4.381	4.454		$9/2^+$	0^+
106	63	895.91	901.69	8.45	8.51	13.77	22.14	5.46	9.05	−6.89	−10.48	4.551	4.657	4.390	4.463		$9/2^+$	$1/2^+$
107	64	903.77	908.74	8.45	8.49	13.32	22.95	7.86	9.46	−6.68	−10.90	4.569	4.678	4.402	4.474		$9/2^+$	0^+
108	65	909.19	913.98	8.42	8.46	13.29	23.67	5.43	9.81	−6.59	−11.24	4.590	4.704	4.412	4.484		$9/2^+$	$1/2^+$
109	66	916.63	920.41	8.41	8.44	12.87	24.34	7.44	10.14	−6.41	−11.58	4.608	4.726	4.422	4.494		$9/2^+$	0^+
110	67	921.86	925.23	8.38	8.41	12.67	24.99	5.23	10.47	−6.23	−11.93	4.629	4.751	4.433	4.504		$9/2^+$	$1/2^+$
111	68	928.96	931.30	8.37	8.39	12.33	25.61	7.10	10.77	−6.09	−12.22	4.647	4.773	4.440	4.512		$9/2^+$	0^+
112	69	933.82	935.60	8.34	8.35	11.95	26.17	4.85	11.06	−5.67	−12.51	4.667	4.798	4.449	4.520		$9/2^+$	$3/2^+$
113	70	940.57	941.23	8.32	8.33	11.61	26.81	6.75	11.38	−5.61	−12.84	4.685	4.819	4.457	4.528		$9/2^+$	0^+
114	71	944.25		8.28		10.43	27.32	3.68	11.72	−5.60	−13.19	4.703	4.841	4.465	4.536		$9/2^+$	$11/2^-$
115	72	950.93		8.27		10.36	28.37	6.68	12.14	−5.01	−13.59	4.718	4.858	4.473	4.544		$9/2^+$	0^+
116	73	954.38		8.23		10.03	29.16	3.45	12.53	−4.85	−13.98	4.735	4.877	4.482	4.552		$9/2^+$	$11/2^-$
117	74	960.31		8.21		9.38	29.90	5.94	12.92	−4.62	−14.39	4.750	4.894	4.490	4.561		$9/2^+$	0^+
118	75	963.53		8.17		9.15	30.62	3.22	13.32	−4.49	−14.78	4.766	4.912	4.498	4.569		$9/2^+$	$11/2^-$
119	76	969.06		8.14		8.75	31.34	5.53	13.70	−4.33	−15.17	4.781	4.929	4.507	4.577		$9/2^+$	0^+
120	77	972.08		8.10		8.56	32.06	3.02	14.08	−4.20	−15.56	4.797	4.947	4.515	4.585		$9/2^+$	$11/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
121	78	977.32		8.08		8.26	32.76	5.23	14.46	−4.07	−15.95	4.812	4.964	4.524	4.594		$9/2^+$	0^+
122	79	980.17		8.03		8.09	33.49	2.86	14.84	−3.94	−16.34	4.827	4.980	4.532	4.602		$9/2^+$	$11/2^-$
123	80	985.16		8.01		7.84	34.18	4.98	15.21	−3.82	−16.72	4.842	4.997	4.541	4.611		$9/2^+$	0^+
124	81	987.87		7.97		7.70	34.92	2.72	15.59	−2.54	−17.11	4.856	5.012	4.549	4.619		$9/2^+$	$11/2^-$
125	82	992.62		7.94		7.46	35.62	4.74	15.96	−2.58	−17.49	4.871	5.028	4.558	4.628		$9/2^+$	0^+
126	83	993.36		7.88		5.49	35.99	0.74	16.12	−2.60	−17.64	4.897	5.061	4.563	4.633		$9/2^+$	$7/2^-$
127	84	995.53		7.84		2.91	36.31	2.17	16.28	−1.52	−17.78	4.920	5.089	4.571	4.641		$9/2^+$	0^+
128	85	996.13		7.78		2.77	36.67	0.60	16.43	−1.44	−17.92	4.945	5.121	4.576	4.645		$9/2^+$	$7/2^-$
129	86	998.26		7.74		2.74	36.99	2.13	16.58	−1.44	−18.07	4.967	5.149	4.584	4.653		$9/2^+$	0^+
130	87	998.73		7.68		2.60	37.22	0.47	16.72	−1.36	−18.20	4.993	5.182	4.588	4.658		$9/2^+$	$7/2^-$
131	88	1000.87		7.64		2.60	37.64	2.14	16.88	−1.38	−18.35	5.015	5.208	4.596	4.665		$9/2^+$	0^+
132	89	1001.33		7.59		2.60	37.86	0.46	16.97	−1.38	−18.43	5.051	5.255	4.599	4.668		$9/2^+$	$3/2^-$
133	90	1003.35		7.54		2.49	38.26	2.02	17.15	−1.32	−18.62	5.064	5.267	4.608	4.677		$9/2^+$	0^+
134	91	1003.81		7.49		2.49	38.49	0.46	17.26	−1.30	−18.71	5.097	5.311	4.612	4.681		$9/2^+$	$3/2^-$
135	92	1005.74		7.45		2.38	38.79	1.92	17.43	−1.27	−18.89	5.112	5.327	4.621	4.690		$9/2^+$	0^+
136	93	1006.14		7.40		2.33	38.97	0.40	17.54	−1.22	−19.00	5.144	5.366	4.626	4.694		$9/2^+$	$3/2^-$
137	94	1008.03		7.36		2.29	39.27	1.89	17.69	−1.23	−19.16	5.160	5.384	4.635	4.703		$9/2^+$	0^+
138	95	1008.40		7.31		2.26	39.39	0.37	17.77	−1.21	−19.25	5.194	5.426	4.638	4.707		$9/2^+$	$1/2^-$
139	96	1010.24		7.27		2.21	39.78	1.84	17.97	−1.19	−19.44	5.207	5.438	4.650	4.718		$9/2^+$	0^+
140	97	1010.61		7.22		2.22	40.06	0.37	18.10	−1.15	−19.56	5.237	5.475	4.656	4.724		$9/2^+$	$1/2^-$
141	98	1012.38		7.18		2.14	40.35	1.77	18.27	−1.16	−19.75	5.252	5.489	4.666	4.735		$9/2^+$	0^+
142	99	1012.65		7.13		2.04	40.72	0.27	18.44	−1.11	−19.90	5.279	5.520	4.675	4.743		$9/2^+$	$1/2^-$
143	100	1014.47		7.09		2.09	40.98	1.82	18.59	−1.13	−20.07	5.295	5.536	4.685	4.753		$9/2^+$	0^+
144	101	1014.63		7.05		1.98	41.33	0.16	18.79	−1.08	−20.26	5.318	5.562	4.696	4.764		$9/2^+$	$1/2^-$
145	102	1016.54		7.01		2.06	41.65	1.90	18.94	−1.12	−20.41	5.336	5.581	4.704	4.772		$9/2^+$	0^+
146	103	1016.60		6.96		1.96	41.95	0.06	19.09	−1.10	−20.55	5.360	5.608	4.712	4.780		$9/2^+$	$5/2^-$
147	104	1018.59		6.93		2.05	42.35	1.99	19.29	−1.10	−20.75	5.375	5.623	4.725	4.792		$9/2^+$	0^+
148	105	1018.64		6.88		2.04	42.71	0.05	19.46	−1.08	−20.92	5.398	5.647	4.735	4.802		$9/2^+$	$5/2^-$
149	106	1020.63		6.85		2.04	43.08	1.99	19.64	−1.08	−21.11	5.414	5.663	4.746	4.813		$9/2^+$	0^+
150	107	1020.66		6.80		2.02	43.49	0.03	19.84	−1.05	−21.29	5.435	5.685	4.758	4.825		$9/2^+$	$5/2^-$
151	108	1022.66		6.77		2.03	43.82	2.00	20.01	−1.05	−21.46	5.452	5.702	4.767	4.834		$9/2^+$	0^+
152	109	1022.65		6.73		1.99	44.25	−0.01	20.23	−0.98	−21.66	5.472	5.721	4.781	4.848		$9/2^+$	$5/2^-$
153	110	1024.65		6.70		1.99	44.57	2.00	20.37	−0.98	−21.81	5.489	5.740	4.789	4.856		$9/2^+$	0^+
154	111	1024.53		6.65		1.88	44.92	−0.12	20.58	−0.31	−22.03	5.508	5.758	4.806	4.872		$9/2^+$	$5/2^-$
155	112	1026.51		6.62		1.86	45.32	1.98	20.74	−0.37	−22.15	5.527	5.779	4.811	4.877		$9/2^+$	0^+
156	113	1025.70		6.57		1.17		−0.81	20.74	−0.38	−22.15	5.602	5.875	4.811	4.877		$9/2^+$	$1/2^+$
157	114	1025.82		6.53		−0.69		0.12	21.16	0.38	−22.62	5.558	5.808	4.833	4.899		$9/2^+$	0^+
σ		3.85																
$Z = 44$ (Ru)																		
85	41	681.68		8.02						−16.06	0.14	4.216	4.147	4.280	4.354		0^+	$9/2^+$
86	42	698.45		8.12			1.71		2.12	−14.90	−0.44	4.225	4.168	4.279	4.353		0^+	0^+
87	43	711.46		8.18			2.85	13.01	2.69	−14.57	−1.00	4.233	4.188	4.277	4.352		0^+	$9/2^+$
88	44	727.26		8.26		28.81	3.98	15.81	3.25	−14.21	−1.56	4.242	4.207	4.277	4.352		0^+	0^+
89	45	739.79		8.31		28.33	5.13	12.52	3.83	−13.94	−2.13	4.251	4.225	4.276	4.351		0^+	$9/2^+$
90	46	754.92	756.88	8.39	8.41	27.66	6.25	15.14	4.39	−13.66	−2.69	4.260	4.244	4.277	4.351		0^+	0^+
91	47	767.06	768.31	8.43	8.44	27.27	7.39	12.14	4.97	−13.41	−3.25	4.268	4.260	4.276	4.350		0^+	$9/2^+$
92	48	781.67	782.44	8.50	8.50	26.75	8.51	14.61	5.54	−13.17	−3.81	4.277	4.278	4.276	4.351		0^+	0^+
93	49	793.52	793.42	8.53	8.53	26.46	9.64	11.85	6.12	−11.04	−4.38	4.284	4.293	4.275	4.350		0^+	$9/2^+$
94	50	807.67	806.86	8.59	8.58	26.00	10.75	14.15	6.68	−10.92	−4.93	4.293	4.308	4.276	4.350		0^+	0^+
95	51	815.15	815.81	8.58	8.59	21.63	11.44	7.47	7.01	−10.75	−5.27	4.313	4.338	4.283	4.357		0^+	$5/2^+$
96	52	824.73	826.50	8.59	8.61	17.06	12.30	9.58	7.44	−8.53	−5.71	4.335	4.368	4.297	4.371	4.391	0^+	0^+
97	53	831.78	834.62	8.58	8.60	16.63	12.98	7.05	7.76	−8.31	−6.05	4.355	4.396	4.305	4.378		0^+	$5/2^+$
98	54	841.12	844.79	8.58	8.62	16.40	13.83	9.34	8.19	−8.24	−6.49	4.376	4.424	4.317	4.391	4.423	0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
99	55	847.79	852.26	8.56	8.61	16.01	14.55	6.67	8.55	−8.03	−6.85	4.396	4.451	4.326	4.400	4.434	0^+	$5/2^+$
100	56	856.96	861.93	8.57	8.62	15.84	15.37	9.17	8.96	−7.98	−7.27	4.417	4.477	4.338	4.411	4.453	0^+	0^+
101	57	863.26	868.73	8.55	8.60	15.47	16.16	6.30	9.36	−7.77	−7.67	4.437	4.504	4.349	4.422	4.461	0^+	$5/2^+$
102	58	872.32	877.95	8.55	8.61	15.36	16.93	9.06	9.74	−7.75	−8.05	4.456	4.529	4.359	4.432	4.481	0^+	0^+
103	59	878.25	884.18	8.53	8.58	14.99	17.73	5.93	10.15	−7.54	−8.48	4.478	4.556	4.372	4.444		0^+	$5/2^+$
104	60	887.24	893.09	8.53	8.59	14.92	18.49	8.99	10.53	−7.52	−8.83	4.496	4.578	4.381	4.453	4.510	0^+	0^+
105	61	892.97	899.00	8.50	8.56	14.72	19.09	5.73	10.84	−7.36	−9.20	4.515	4.603	4.391	4.463		0^+	$7/2^+$
106	62	901.75	907.46	8.51	8.56	14.51	20.03	8.78	11.31	−7.29	−9.60	4.535	4.627	4.402	4.474		0^+	0^+
107	63	907.53	913.07	8.48	8.53	14.56	20.67	5.78	11.62	−7.28	−9.91	4.555	4.654	4.411	4.483		0^+	$1/2^+$
108	64	915.81	920.94	8.48	8.53	14.07	21.50	8.29	12.04	−7.04	−10.33	4.573	4.674	4.423	4.495		0^+	0^+
109	65	921.58	926.09	8.45	8.50	14.05	22.20	5.77	12.39	−6.95	−10.67	4.594	4.699	4.433	4.504		0^+	$7/2^+$
110	66	929.37	933.49	8.45	8.49	13.56	22.88	7.79	12.74	−6.74	−11.02	4.611	4.721	4.442	4.514		0^+	0^+
111	67	934.94	938.27	8.42	8.45	13.36	23.55	5.57	13.08	−6.56	−11.35	4.632	4.746	4.452	4.524		0^+	$1/2^+$
112	68	942.34	945.19	8.41	8.44	12.96	24.15	7.40	13.38	−6.40	−11.66	4.649	4.768	4.460	4.531		0^+	0^+
113	69	947.47	949.51	8.38	8.40	12.53	24.71	5.13	13.65	−6.01	−11.95	4.669	4.792	4.468	4.539		0^+	$3/2^+$
114	70	954.56	955.92	8.37	8.39	12.22	25.37	7.09	13.99	−5.94	−12.28	4.686	4.813	4.476	4.547		0^+	0^+
115	71	958.59	960.08	8.34	8.35	11.13	26.06	4.04	14.34	−5.93	−12.63	4.703	4.834	4.484	4.555		0^+	$11/2^-$
116	72	965.67	965.92	8.32	8.33	11.12	26.88	7.08	14.74	−5.40	−13.02	4.719	4.852	4.492	4.563		0^+	0^+
117	73	969.52	969.44	8.29	8.29	10.92	27.67	3.84	15.14	−5.25	−13.40	4.735	4.871	4.500	4.571		0^+	$11/2^-$
118	74	975.86		8.27		10.19	28.47	6.35	15.55	−5.02	−13.81	4.750	4.888	4.508	4.579		0^+	0^+
119	75	979.48		8.23		9.96	29.27	3.62	15.95	−4.88	−14.20	4.766	4.906	4.516	4.587		0^+	$11/2^-$
120	76	985.41		8.21		9.55	30.05	5.93	16.35	−4.72	−14.60	4.781	4.923	4.525	4.595		0^+	0^+
121	77	988.84		8.17		9.36	30.84	3.43	16.76	−4.59	−14.99	4.796	4.940	4.533	4.603		0^+	$11/2^-$
122	78	994.46		8.15		9.05	31.60	5.62	17.14	−4.46	−15.38	4.811	4.956	4.541	4.611		0^+	0^+
123	79	997.72		8.11		8.88	32.39	3.26	17.55	−4.33	−15.77	4.826	4.973	4.549	4.619		0^+	$11/2^-$
124	80	1003.09		8.09		8.63	33.14	5.37	17.93	−4.22	−16.15	4.840	4.989	4.558	4.627		0^+	0^+
125	81	1006.22		8.05		8.50	33.94	3.13	18.35	−2.83	−16.55	4.854	5.004	4.565	4.635		0^+	$11/2^-$
126	82	1011.35		8.03		8.26	34.69	5.13	18.73	−2.86	−16.93	4.869	5.020	4.574	4.644		0^+	0^+
127	83	1012.23		7.97		6.01	34.99	0.88	18.87	−2.91	−17.08	4.894	5.052	4.580	4.649		0^+	$7/2^-$
128	84	1014.53		7.93		3.19	35.28	2.31	19.00	−1.66	−17.23	4.916	5.080	4.588	4.657		0^+	0^+
129	85	1015.28		7.87		3.05	35.58	0.74	19.15	−1.58	−17.38	4.941	5.111	4.593	4.662		0^+	$7/2^-$
130	86	1017.55		7.83		3.01	35.87	2.27	19.29	−1.57	−17.53	4.963	5.138	4.601	4.670		0^+	0^+
131	87	1018.14		7.77		2.87	36.13	0.60	19.41	−1.49	−17.67	4.988	5.170	4.606	4.675		0^+	$7/2^-$
132	88	1020.42		7.73		2.87	36.43	2.28	19.55	−1.51	−17.83	5.009	5.196	4.614	4.683		0^+	0^+
133	89	1020.96		7.68		2.82	36.60	0.54	19.63	−1.51	−17.91	5.044	5.242	4.617	4.686		0^+	$3/2^-$
134	90	1023.17		7.64		2.75	36.97	2.21	19.82	−1.45	−18.12	5.056	5.253	4.628	4.696		0^+	0^+
135	91	1023.72		7.58		2.76	37.17	0.55	19.91	−1.43	−18.21	5.089	5.296	4.631	4.700		0^+	$3/2^-$
136	92	1025.81		7.54		2.64	37.50	2.10	20.07	−1.40	−18.41	5.104	5.310	4.642	4.710		0^+	0^+
137	93	1026.32		7.49		2.60	37.72	0.51	20.18	−1.36	−18.52	5.134	5.350	4.646	4.715		0^+	$3/2^-$
138	94	1028.37		7.45		2.56	38.03	2.05	20.34	−1.36	−18.70	5.150	5.366	4.656	4.725		0^+	0^+
139	95	1028.82		7.40		2.50	38.19	0.45	20.42	−1.35	−18.79	5.183	5.408	4.660	4.729		0^+	$1/2^-$
140	96	1030.87		7.36		2.49	38.60	2.04	20.63	−1.34	−19.00	5.196	5.419	4.672	4.740		0^+	0^+
141	97	1031.33		7.31		2.51	38.82	0.46	20.72	−1.31	−19.12	5.226	5.456	4.678	4.746		0^+	$1/2^-$
142	98	1033.31		7.28		2.45	39.20	1.98	20.93	−1.31	−19.32	5.240	5.468	4.690	4.758		0^+	0^+
143	99	1033.75		7.23		2.42	39.54	0.44	21.10	−1.28	−19.46	5.267	5.501	4.698	4.765		0^+	$1/2^-$
144	100	1035.73		7.19		2.42	39.85	1.97	21.26	−1.30	−19.65	5.282	5.515	4.708	4.776		0^+	0^+
145	101	1036.09		7.15		2.34	40.25	0.36	21.46	−1.26	−19.82	5.306	5.543	4.718	4.786		0^+	$1/2^-$
146	102	1038.13		7.11		2.40	40.53	2.04	21.59	−1.29	−19.99	5.323	5.560	4.728	4.795		0^+	0^+
147	103	1038.42		7.06		2.33	40.91	0.29	21.82	−1.24	−20.19	5.345	5.584	4.740	4.807		0^+	$1/2^-$
148	104	1040.53		7.03		2.40	41.23	2.12	21.94	−1.28	−20.33	5.363	5.603	4.748	4.815		0^+	0^+
149	105	1040.75		6.98		2.34	41.57	0.22	22.11	−1.26	−20.49	5.385	5.628	4.757	4.824		0^+	$5/2^-$
150	106	1042.93		6.95		2.40	41.94	2.18	22.30	−1.26	−20.68	5.402	5.644	4.768	4.835		0^+	0^+
151	107	1043.16		6.91		2.40	42.34	0.22	22.50	−1.23	−20.86	5.423	5.666	4.779	4.846		0^+	$5/2^-$
152	108	1045.33		6.88		2.39	42.68	2.17	22.67	−1.23	−21.03	5.440	5.684	4.789	4.855		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
153	109	1045.53		6.83		2.37	43.11	0.20	22.88	−1.17	−21.22	5.460	5.704	4.802	4.868		0^+	$5/2^-$
154	110	1047.68		6.80		2.35	43.40	2.15	23.03	−1.16	−21.37	5.477	5.723	4.810	4.876		0^+	0^+
155	111	1047.78		6.76		2.26	43.83	0.10	23.25	−0.50	−21.57	5.498	5.743	4.825	4.891		0^+	$5/2^-$
156	112	1049.89		6.73		2.21	44.12	2.10	23.38	−0.58	−21.69	5.516	5.763	4.830	4.896		0^+	0^+
157	113	1049.07		6.68		1.29	44.11	−0.81	23.37	−0.59	−21.69	5.590	5.860	4.830	4.896		0^+	$1/2^+$
158	114	1049.68		6.64		−0.21	45.02	0.60	23.86	0.16	−22.20	5.544	5.789	4.853	4.919		0^+	0^+
σ		3.77													0.041			
$Z = 45$ (Rh)																		
87	42	697.07		8.01						−15.46	0.07	4.240	4.172	4.302	4.376		$9/2^+$	0^+
88	43	710.65		8.08			1.88		−0.81	−15.13	−0.49	4.248	4.191	4.301	4.374		$9/2^+$	$9/2^+$
89	44	727.02		8.17			3.01	16.37	−0.24	−14.77	−1.05	4.256	4.210	4.300	4.374		$9/2^+$	0^+
90	45	740.12		8.22		29.47	4.16	13.09	0.33	−14.50	−1.61	4.264	4.228	4.299	4.372		$9/2^+$	$9/2^+$
91	46	755.82		8.31		28.79	5.29	15.70	0.90	−14.22	−2.17	4.272	4.246	4.298	4.372		$9/2^+$	0^+
92	47	768.52	770.35	8.35	8.37	28.41	6.43	12.71	1.46	−13.97	−2.74	4.279	4.263	4.297	4.371		$9/2^+$	$9/2^+$
93	48	783.69	784.44	8.43	8.43	27.87	7.56	15.17	2.02	−13.73	−3.30	4.288	4.279	4.297	4.371		$9/2^+$	0^+
94	49	796.11	796.41	8.47	8.47	27.58	8.71	12.42	2.59	−11.40	−3.87	4.295	4.294	4.296	4.369		$9/2^+$	$9/2^+$
95	50	810.81	809.91	8.53	8.53	27.12	9.82	14.70	3.14	−11.44	−4.43	4.303	4.310	4.296	4.369		$9/2^+$	0^+
96	51	818.63	819.33	8.53	8.53	22.52	10.49	7.82	3.48	−11.07	−4.76	4.322	4.339	4.303	4.377		$9/2^+$	$5/2^+$
97	52	828.66	830.31	8.54	8.56	17.84	11.37	10.03	3.93	−8.93	−5.21	4.344	4.368	4.317	4.390		$9/2^+$	0^+
98	53	836.06	838.96	8.53	8.56	17.43	12.04	7.40	4.28	−8.72	−5.55	4.364	4.396	4.325	4.398		$9/2^+$	$5/2^+$
99	54	845.84	849.43	8.54	8.58	17.18	12.91	9.78	4.72	−8.63	−6.00	4.385	4.423	4.338	4.411		$9/2^+$	0^+
100	55	852.87	857.51	8.53	8.58	16.82	13.63	7.04	5.08	−8.43	−6.36	4.404	4.451	4.347	4.420		$9/2^+$	$5/2^+$
101	56	862.46	867.41	8.54	8.59	16.62	14.46	9.59	5.50	−8.38	−6.78	4.424	4.476	4.358	4.431		$9/2^+$	0^+
102	57	869.15	874.85	8.52	8.58	16.28	15.25	6.69	5.89	−8.18	−7.18	4.444	4.503	4.369	4.442		$9/2^+$	$5/2^+$
103	58	878.60	884.17	8.53	8.58	16.14	16.02	9.45	6.28	−8.14	−7.57	4.463	4.527	4.380	4.452	4.495	$9/2^+$	0^+
104	59	884.96	891.16	8.51	8.57	15.81	16.86	6.36	6.71	−7.94	−8.00	4.484	4.553	4.391	4.464		$9/2^+$	$5/2^+$
105	60	894.30	900.13	8.52	8.57	15.70	17.59	9.34	7.06	−7.91	−8.35	4.502	4.576	4.401	4.473		$9/2^+$	0^+
106	61	900.40	906.71	8.49	8.55	15.44	18.27	6.10	7.43	−7.74	−8.72	4.520	4.600	4.410	4.482		$9/2^+$	$7/2^+$
107	62	909.58	915.29	8.50	8.55	15.27	19.14	9.17	7.83	−7.67	−9.12	4.540	4.623	4.422	4.493		$9/2^+$	0^+
108	63	915.66	921.53	8.48	8.53	15.26	19.75	6.09	8.13	−7.67	−9.42	4.560	4.650	4.430	4.502		$9/2^+$	$1/2^+$
109	64	924.38	929.57	8.48	8.53	14.80	20.61	8.72	8.57	−7.40	−9.85	4.577	4.670	4.442	4.513		$9/2^+$	0^+
110	65	930.48	935.47	8.46	8.50	14.81	21.29	6.10	8.90	−7.32	−10.18	4.597	4.695	4.451	4.522		$9/2^+$	$1/2^+$
111	66	938.62	943.01	8.46	8.50	14.24	21.99	8.14	9.25	−7.08	−10.54	4.614	4.716	4.461	4.532		$9/2^+$	0^+
112	67	944.51	948.52	8.43	8.47	14.04	22.65	5.89	9.57	−6.89	−10.86	4.634	4.741	4.470	4.541		$9/2^+$	$1/2^+$
113	68	952.21	955.62	8.43	8.46	13.59	23.25	7.70	9.87	−6.72	−11.18	4.651	4.762	4.478	4.549		$9/2^+$	0^+
114	69	957.65	960.64	8.40	8.43	13.13	23.83	5.44	10.18	−6.35	−11.52	4.670	4.785	4.488	4.558		$9/2^+$	$1/2^+$
115	70	965.05	967.23	8.39	8.41	12.84	24.48	7.41	10.49	−6.29	−11.81	4.686	4.806	4.494	4.564		$9/2^+$	0^+
116	71	969.49	971.81	8.36	8.38	11.85	25.24	4.44	10.90	−5.75	−12.30	4.702	4.824	4.504	4.574		$9/2^+$	$1/2^+$
117	72	976.91	978.04	8.35	8.36	11.86	25.98	7.42	11.24	−5.79	−12.54	4.719	4.845	4.509	4.580		$9/2^+$	0^+
118	73	981.14	982.10	8.31	8.32	11.64	26.76	4.22	11.62	−5.65	−12.92	4.735	4.864	4.517	4.587		$9/2^+$	$11/2^-$
119	74	987.89	988.10	8.30	8.30	10.98	27.58	6.75	12.03	−5.41	−13.33	4.750	4.881	4.525	4.595		$9/2^+$	0^+
120	75	991.90		8.27		10.76	28.37	4.01	12.42	−5.28	−13.72	4.765	4.899	4.533	4.603		$9/2^+$	$11/2^-$
121	76	998.22		8.25		10.33	29.16	6.33	12.81	−5.11	−14.12	4.780	4.915	4.541	4.611		$9/2^+$	0^+
122	77	1002.04		8.21		10.15	29.96	3.82	13.20	−4.99	−14.51	4.794	4.933	4.548	4.618		$9/2^+$	$11/2^-$
123	78	1008.05		8.20		9.83	30.73	6.01	13.59	−4.85	−14.91	4.809	4.949	4.557	4.626		$9/2^+$	0^+
124	79	1011.71		8.16		9.66	31.54	3.65	13.99	−4.72	−15.30	4.823	4.965	4.564	4.634		$9/2^+$	$11/2^-$
125	80	1017.45		8.14		9.40	32.29	5.75	14.36	−4.60	−15.69	4.838	4.981	4.572	4.642		$9/2^+$	0^+
126	81	1020.97		8.10		9.27	33.10	3.52	14.75	−3.04	−16.09	4.852	4.997	4.580	4.649		$9/2^+$	$11/2^-$
127	82	1026.48		8.08		9.02	33.86	5.50	15.13	−3.11	−16.47	4.866	5.012	4.588	4.657		$9/2^+$	0^+
128	83	1027.52		8.03		6.55	34.16	1.04	15.29	−3.09	−16.62	4.890	5.044	4.594	4.663		$9/2^+$	$7/2^-$
129	84	1029.99		7.98		3.51	34.46	2.47	15.46	−1.82	−16.78	4.912	5.070	4.602	4.671		$9/2^+$	0^+
130	85	1030.88		7.93		3.36	34.75	0.89	15.60	−1.74	−16.93	4.936	5.101	4.608	4.677		$9/2^+$	$7/2^-$
131	86	1033.32		7.89		3.33	35.06	2.43	15.77	−1.74	−17.09	4.958	5.127	4.617	4.685		$9/2^+$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
132	87	1034.06		7.83		3.18	35.33	0.74	15.92	−1.64	−17.23	4.982	5.158	4.622	4.691		$9/2^+$	$7/2^-$
133	88	1036.49		7.79		3.18	35.62	2.43	16.07	−1.66	−17.39	5.003	5.183	4.631	4.699		$9/2^+$	0^+
134	89	1037.13		7.74		3.06	35.80	0.63	16.17	−1.68	−17.48	5.037	5.229	4.634	4.702		$9/2^+$	$3/2^-$
135	90	1039.54		7.70		3.05	36.19	2.42	16.37	−1.60	−17.70	5.049	5.239	4.645	4.713		$9/2^+$	0^+
136	91	1040.19		7.65		3.06	36.38	0.65	16.47	−1.59	−17.79	5.080	5.281	4.649	4.717		$9/2^+$	$3/2^-$
137	92	1042.48		7.61		2.94	36.74	2.29	16.67	−1.56	−18.00	5.095	5.294	4.660	4.728		$9/2^+$	0^+
138	93	1043.10		7.56		2.91	36.96	0.62	16.78	−1.53	−18.11	5.124	5.333	4.665	4.733		$9/2^+$	$3/2^-$
139	94	1045.33		7.52		2.86	37.30	2.24	16.96	−1.52	−18.30	5.140	5.348	4.676	4.744		$9/2^+$	0^+
140	95	1045.89		7.47		2.79	37.49	0.56	17.07	−1.48	−18.44	5.168	5.383	4.682	4.750		$9/2^+$	$3/2^-$
141	96	1048.13		7.43		2.80	37.89	2.24	17.26	−1.50	−18.62	5.184	5.399	4.693	4.761		$9/2^+$	0^+
142	97	1048.69		7.39		2.80	38.08	0.56	17.36	−1.49	−18.73	5.214	5.436	4.699	4.766		$9/2^+$	$1/2^-$
143	98	1050.90		7.35		2.77	38.52	2.21	17.59	−1.48	−18.94	5.228	5.448	4.711	4.778		$9/2^+$	0^+
144	99	1051.49		7.30		2.80	38.84	0.59	17.74	−1.46	−19.08	5.255	5.481	4.718	4.786		$9/2^+$	$1/2^-$
145	100	1053.65		7.27		2.75	39.18	2.16	17.92	−1.47	−19.28	5.269	5.495	4.730	4.797		$9/2^+$	0^+
146	101	1054.20		7.22		2.71	39.57	0.55	18.11	−1.45	−19.45	5.294	5.524	4.739	4.806		$9/2^+$	$1/2^-$
147	102	1056.39		7.19		2.75	39.85	2.20	18.26	−1.47	−19.62	5.310	5.540	4.749	4.816		$9/2^+$	0^+
148	103	1056.89		7.14		2.69	40.29	0.49	18.47	−1.43	−19.81	5.333	5.565	4.760	4.827		$9/2^+$	$1/2^-$
149	104	1059.14		7.11		2.75	40.55	2.26	18.61	−1.46	−19.97	5.350	5.583	4.769	4.835		$9/2^+$	0^+
150	105	1059.58		7.06		2.69	40.94	0.43	18.83	−1.41	−20.18	5.371	5.604	4.782	4.848		$9/2^+$	$1/2^-$
151	106	1061.90		7.03		2.75	41.27	2.32	18.97	−1.44	−20.31	5.389	5.624	4.789	4.855		$9/2^+$	0^+
152	107	1062.30		6.99		2.73	41.64	0.41	19.14	−1.42	−20.48	5.410	5.648	4.799	4.865		$9/2^+$	$5/2^-$
153	108	1064.64		6.96		2.74	41.98	2.34	19.31	−1.41	−20.65	5.427	5.665	4.809	4.875		$9/2^+$	0^+
154	109	1065.04		6.92		2.74	42.39	0.40	19.51	−1.36	−20.83	5.448	5.687	4.821	4.886		$9/2^+$	$5/2^-$
155	110	1067.34		6.89		2.70	42.69	2.30	19.66	−1.33	−20.99	5.465	5.705	4.828	4.894		$9/2^+$	0^+
156	111	1067.65		6.84		2.61	43.12	0.31	19.87	−0.75	−21.17	5.486	5.727	4.842	4.907		$9/2^+$	$5/2^-$
157	112	1069.88		6.81		2.54	43.37	2.23	19.99	−0.79	−21.29	5.504	5.747	4.847	4.913		$9/2^+$	0^+
158	113	1069.07		6.77		1.42	43.37	−0.81	20.00	−0.80	−21.29	5.578	5.844	4.847	4.913		$9/2^+$	$1/2^-$
159	114	1070.17		6.73		0.29	44.35	1.10	20.49	−0.08	−21.81	5.531	5.771	4.871	4.936		$9/2^+$	0^+
160	115	1069.36		6.68		0.29		−0.81		0.08	−21.82	5.602	5.864	4.871	4.936		$9/2^+$	$1/2^-$
	116	1069.98		6.65		−0.19		0.62		0.10	−22.29	5.561	5.799	4.893	4.958		$9/2^+$	0^+
161																		
σ		3.96													0.043			
$Z = 46$ (Pd)																		
89	43	712.19		8.00						−15.69	0.03	4.262	4.196	4.323	4.397		0^+	$9/2^+$
90	44	729.12		8.10			1.86			−15.33	−0.53	4.270	4.215	4.322	4.395		0^+	0^+
91	45	742.78		8.16			2.99	13.65	2.66	−15.06	−1.09	4.277	4.232	4.320	4.394		0^+	$9/2^+$
92	46	759.04		8.25		29.91	4.12	16.26	3.22	−14.78	−1.64	4.285	4.250	4.319	4.393		0^+	0^+
93	47	772.31		8.30		29.53	5.25	13.28	3.79	−14.53	−2.21	4.291	4.266	4.318	4.391		0^+	$9/2^+$
94	48	788.04	788.82	8.38	8.39	29.00	6.37	15.73	4.35	−14.30	−2.76	4.299	4.282	4.317	4.391		0^+	0^+
95	49	801.03	800.75	8.43	8.43	28.72	7.51	12.99	4.92	−11.87	−3.33	4.306	4.296	4.315	4.389		0^+	$9/2^+$
96	50	816.30	815.04	8.50	8.49	28.26	8.63	15.27	5.49	−11.93	−3.89	4.313	4.311	4.315	4.388		0^+	0^+
97	51	824.44	824.74	8.50	8.50	23.41	9.29	8.14	5.81	−11.60	−4.22	4.332	4.340	4.322	4.396		0^+	$5/2^+$
98	52	834.93	836.32	8.52	8.53	18.64	10.20	10.50	6.27	−9.32	−4.69	4.354	4.369	4.337	4.410		0^+	0^+
99	53	842.67	845.26	8.51	8.54	18.23	10.89	7.74	6.61	−9.12	−5.04	4.373	4.397	4.345	4.418		0^+	$5/2^+$
100	54	852.91	856.37	8.53	8.56	17.97	11.79	10.23	7.07	−9.03	−5.49	4.394	4.424	4.358	4.431		0^+	0^+
101	55	860.31	864.65	8.52	8.56	17.63	12.52	7.40	7.44	−8.85	−5.86	4.413	4.451	4.367	4.440		0^+	$5/2^+$
102	56	870.33	875.21	8.53	8.58	17.42	13.37	10.02	7.87	−8.77	−6.29	4.433	4.476	4.379	4.451	4.483	0^+	0^+
103	57	877.42	882.84	8.52	8.57	17.11	14.16	7.09	8.27	−8.59	−6.69	4.452	4.503	4.389	4.462		0^+	$5/2^+$
104	58	887.26	892.82	8.53	8.58	16.93	14.94	9.84	8.66	−8.53	−7.08	4.471	4.526	4.400	4.472	4.508	0^+	0^+
105	59	894.05	899.92	8.51	8.57	16.63	15.80	6.79	9.09	−8.35	−7.51	4.491	4.552	4.412	4.484	4.515	0^+	$5/2^+$
106	60	903.75	909.48	8.53	8.58	16.49	16.51	9.70	9.45	−8.30	−7.87	4.509	4.575	4.421	4.493	4.532	0^+	0^+
107	61	910.22	916.01	8.51	8.56	16.17	17.25	6.47	9.82	−8.11	−8.23	4.527	4.598	4.430	4.502		0^+	$7/2^+$
108	62	919.80	925.24	8.52	8.57	16.05	18.05	9.58	10.22	−8.05	−8.63	4.545	4.621	4.441	4.513	4.556	0^+	0^+

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Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
109	63	926.19	931.39	8.50	8.54	15.97	18.66	6.39	10.53	−8.05	−8.93	4.565	4.647	4.449	4.521		0^+	$1/2^+$
110	64	935.35	940.19	8.50	8.55	15.55	19.54	9.16	10.97	−7.75	−9.37	4.582	4.667	4.461	4.532	4.578	0^+	0^+
111	65	941.79	945.91	8.48	8.52	15.60	20.21	6.44	11.31	−7.71	−9.70	4.601	4.691	4.471	4.542		0^+	$1/2^+$
112	66	950.27	954.32	8.48	8.52	14.93	20.90	8.48	11.65	−7.40	−10.05	4.618	4.712	4.479	4.550		0^+	0^+
113	67	956.48	959.66	8.46	8.49	14.69	21.54	6.21	11.97	−7.22	−10.36	4.637	4.736	4.488	4.559		0^+	$1/2^+$
114	68	964.49	967.63	8.46	8.49	14.22	22.15	8.02	12.28	−7.04	−10.69	4.654	4.757	4.496	4.567		0^+	0^+
115	69	970.26	972.64	8.44	8.46	13.78	22.79	5.77	12.61	−6.71	−11.03	4.672	4.780	4.505	4.576		0^+	$1/2^+$
116	70	977.97	980.12	8.43	8.45	13.48	23.41	7.71	12.92	−6.63	−11.34	4.688	4.800	4.512	4.582		0^+	0^+
117	71	982.89	984.78	8.40	8.42	12.63	24.30	4.92	13.40	−6.15	−11.80	4.704	4.819	4.521	4.591		0^+	$1/2^+$
118	72	990.56	991.82	8.39	8.41	12.59	24.89	7.67	13.65	−6.18	−12.06	4.720	4.839	4.527	4.597		0^+	0^+
119	73	995.17	995.91	8.36	8.37	12.28	25.65	4.61	14.03	−6.05	−12.43	4.736	4.858	4.534	4.604		0^+	$11/2^-$
120	74	1002.33	1002.85	8.35	8.36	11.77	26.47	7.16	14.44	−5.81	−12.84	4.750	4.875	4.542	4.612		0^+	0^+
121	75	1006.74	1006.82	8.32	8.36	11.57	27.26	4.41	14.84	−5.68	−13.22	4.765	4.893	4.549	4.619		0^+	$11/2^-$
122	76	1013.47	1013.33	8.31	8.31	11.14	28.06	6.73	15.25	−5.51	−13.63	4.780	4.909	4.557	4.627		0^+	0^+
123	77	1017.69		8.27		10.95	28.85	4.22	15.65	−5.38	−14.02	4.794	4.926	4.564	4.634		0^+	$11/2^-$
124	78	1024.09		8.26		10.63	29.63	6.41	16.04	−5.24	−14.41	4.809	4.942	4.573	4.642		0^+	0^+
125	79	1028.15		8.23		10.46	30.43	4.06	16.44	−5.12	−14.81	4.823	4.959	4.580	4.649		0^+	$11/2^-$
126	80	1034.29		8.21		10.20	31.20	6.14	16.84	−5.00	−15.20	4.837	4.974	4.588	4.657		0^+	0^+
127	81	1038.22		8.17		10.07	32.00	3.93	17.25	−3.46	−15.59	4.850	4.990	4.595	4.664		0^+	$11/2^-$
128	82	1044.12		8.16		9.82	32.77	5.90	17.64	−3.46	−15.98	4.864	5.005	4.603	4.672		0^+	0^+
129	83	1045.31		8.10		7.09	33.08	1.19	17.79	−3.70	−16.13	4.888	5.036	4.609	4.678		0^+	$7/2^-$
130	84	1047.93		8.06		3.81	33.40	2.62	17.94	−1.97	−16.30	4.909	5.062	4.618	4.687		0^+	0^+
131	85	1048.97		8.01		3.66	33.69	1.04	18.09	−1.89	−16.45	4.933	5.092	4.624	4.692		0^+	$7/2^-$
132	86	1051.56		7.97		3.63	34.01	2.59	18.24	−1.89	−16.62	4.954	5.118	4.633	4.701		0^+	0^+
133	87	1052.44		7.91		3.48	34.30	0.88	18.38	−1.79	−16.77	4.978	5.148	4.638	4.707		0^+	$7/2^-$
134	88	1055.04		7.87		3.48	34.62	2.59	18.55	−1.81	−16.94	4.999	5.173	4.648	4.716		0^+	0^+
135	89	1055.75		7.82		3.30	34.79	0.71	18.62	−1.83	−17.03	5.031	5.217	4.651	4.719		0^+	$3/2^-$
136	90	1058.38		7.78		3.34	35.21	2.63	18.84	−1.75	−17.26	5.043	5.227	4.663	4.731		0^+	0^+
137	91	1059.12		7.73		3.37	35.40	0.74	18.93	−1.75	−17.36	5.074	5.268	4.667	4.735		0^+	$3/2^-$
138	92	1061.62		7.69		3.24	35.81	2.50	19.14	−1.71	−17.58	5.088	5.280	4.679	4.747		0^+	0^+
139	93	1062.35		7.64		3.23	36.03	0.73	19.25	−1.69	−17.69	5.117	5.318	4.684	4.752		0^+	$3/2^-$
140	94	1064.78		7.61		3.16	36.41	2.43	19.45	−1.68	−17.90	5.132	5.332	4.696	4.764		0^+	0^+
141	95	1065.47		7.56		3.12	36.65	0.69	19.58	−1.65	−18.04	5.160	5.367	4.703	4.770		0^+	$3/2^-$
142	96	1067.89		7.52		3.12	37.02	2.43	19.76	−1.66	−18.23	5.175	5.382	4.714	4.781		0^+	0^+
143	97	1068.55		7.47		3.08	37.22	0.66	19.86	−1.66	−18.35	5.204	5.419	4.720	4.787		0^+	$1/2^-$
144	98	1070.99		7.44		3.09	37.68	2.44	20.09	−1.65	−18.57	5.218	5.430	4.732	4.800		0^+	0^+
145	99	1071.68		7.39		3.13	37.93	0.70	20.19	−1.64	−18.71	5.245	5.464	4.740	4.807		0^+	$1/2^-$
146	100	1074.08		7.36		3.09	38.35	2.39	20.43	−1.64	−18.91	5.259	5.477	4.751	4.818		0^+	0^+
147	101	1074.81		7.31		3.12	38.72	0.73	20.61	−1.63	−19.07	5.284	5.506	4.760	4.827		0^+	$1/2^-$
148	102	1077.17		7.28		3.09	39.04	2.36	20.78	−1.64	−19.26	5.299	5.521	4.771	4.837		0^+	0^+
149	103	1077.87		7.23		3.06	39.45	0.70	20.98	−1.62	−19.44	5.323	5.547	4.781	4.848		0^+	$1/2^-$
150	104	1080.27		7.20		3.10	39.74	2.40	21.13	−1.63	−19.60	5.339	5.565	4.790	4.857		0^+	0^+
151	105	1080.93		7.16		3.06	40.18	0.66	21.35	−1.60	−19.80	5.360	5.587	4.802	4.868		0^+	$1/2^-$
152	106	1083.38		7.13		3.11	40.45	2.45	21.48	−1.61	−19.95	5.378	5.607	4.810	4.876		0^+	0^+
153	107	1083.98		7.08		3.05	40.82	0.61	21.68	−1.56	−20.16	5.398	5.627	4.823	4.889		0^+	$1/2^-$
154	108	1086.47		7.05		3.09	41.14	2.49	21.83	−1.58	−20.28	5.416	5.648	4.829	4.894		0^+	0^+
155	109	1087.05		7.01		3.07	41.52	0.58	22.01	−1.53	−20.45	5.437	5.671	4.840	4.905		0^+	$5/2^-$
156	110	1089.51		6.98		3.04	41.83	2.46	22.17	−1.50	−20.61	5.454	5.689	4.847	4.913		0^+	0^+
157	111	1090.00		6.94		2.95	42.22	0.49	22.35	−0.97	−20.76	5.476	5.713	4.859	4.924		0^+	$5/2^-$
158	112	1092.35		6.91		2.84	42.46	2.35	22.47	−1.00	−20.90	5.494	5.732	4.865	4.930		0^+	0^+
159	113	1091.70		6.87		1.70	42.63	−0.65	22.75	−1.02	−21.16	5.508	5.745	4.876	4.941		0^+	$13/2^+$
160	114	1093.17		6.83		0.82	43.49	1.47	23.00	−0.32	−21.43	5.520	5.756	4.888	4.953		0^+	0^+
161	115	1092.37		6.78		0.67		−0.80	23.34	−0.33	−21.43	5.591	5.849	4.888	4.953		0^+	$1/2^+$
162	116	1093.47		6.75		0.30		1.10	23.49	−0.14	−21.92	5.549	5.782	4.911	4.976		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
163	117	1092.68		6.70		0.31		−0.79		−0.15	−21.93	5.618	5.872	4.910	4.975		0^+	$1/2^+$
164	118	1093.48		6.67		0.01		0.80		−0.01	−22.40	5.578	5.810	4.933	4.998		0^+	0^+
165	119	1092.71		6.62		0.03		−0.77		−0.02	−22.40	5.645	5.897	4.933	4.998		0^+	$1/2^+$
σ		3.60													0.038			
$Z = 47$ (Ag)																		
90	43	710.51		7.89						−16.25	0.53	4.276	4.200	4.345	4.418		$9/2^+$	$9/2^+$
91	44	728.01		8.00			0.99		−1.11	−15.89	−0.03	4.283	4.218	4.343	4.417		$9/2^+$	0^+
92	45	742.23		8.07			2.11	14.22	−0.55	−15.62	−0.59	4.289	4.235	4.341	4.414		$9/2^+$	$9/2^+$
93	46	759.05		8.16		31.04	3.23	16.82	0.01	−15.34	−1.15	4.297	4.252	4.340	4.413		$9/2^+$	0^+
94	47	772.90		8.22		30.67	4.38	13.85	0.59	−15.10	−1.72	4.303	4.268	4.338	4.411		$9/2^+$	$9/2^+$
95	48	789.19		8.31		30.13	5.50	16.29	1.15	−14.86	−2.27	4.310	4.284	4.337	4.410		$9/2^+$	0^+
96	49	802.75	802.59	8.36	8.36	29.85	6.64	13.56	1.72	−12.25	−2.84	4.316	4.298	4.334	4.408		$9/2^+$	$9/2^+$
97	50	818.58	816.97	8.44	8.42	29.39	7.77	15.83	2.28	−12.43	−3.40	4.323	4.312	4.334	4.407		$9/2^+$	0^+
98	51	827.05	827.29	8.44	8.44	24.30	8.42	8.47	2.61	−11.96	−3.73	4.341	4.341	4.341	4.414		$9/2^+$	$5/2^+$
99	52	838.02	839.00	8.46	8.47	19.44	9.36	10.97	3.09	−9.73	−4.21	4.363	4.370	4.355	4.428		$9/2^+$	0^+
100	53	846.10	848.50	8.46	8.48	19.06	10.04	8.08	3.43	−9.54	−4.56	4.381	4.397	4.363	4.436		$9/2^+$	$5/2^+$
101	54	856.79	859.77	8.48	8.51	18.78	10.95	10.69	3.88	−9.43	−5.03	4.402	4.424	4.377	4.449	4.480	$9/2^+$	0^+
102	55	864.56	868.75	8.48	8.52	18.46	11.69	7.77	4.25	−9.26	−5.40	4.421	4.451	4.386	4.458		$9/2^+$	$5/2^+$
103	56	875.01	879.38	8.50	8.54	18.22	12.55	10.45	4.68	−9.17	−5.83	4.440	4.476	4.398	4.470	4.504	$9/2^+$	0^+
104	57	882.49	887.76	8.49	8.54	17.93	13.34	7.48	5.07	−9.01	−6.23	4.460	4.502	4.408	4.480	4.512	$9/2^+$	$5/2^+$
105	58	892.74	897.79	8.50	8.55	17.73	14.14	10.24	5.48	−8.93	−6.63	4.478	4.525	4.419	4.491	4.527	$9/2^+$	0^+
106	59	899.95	905.73	8.49	8.54	17.45	14.99	7.21	5.90	−8.76	−7.05	4.497	4.550	4.430	4.502		$9/2^+$	$5/2^+$
107	60	910.01	915.27	8.50	8.55	17.27	15.71	10.06	6.26	−8.69	−7.41	4.515	4.572	4.439	4.511	4.545	$9/2^+$	0^+
108	61	916.92	922.54	8.49	8.54	16.97	16.52	6.91	6.70	−8.48	−7.85	4.534	4.597	4.452	4.523		$9/2^+$	$5/2^+$
109	62	926.82	931.72	8.50	8.55	16.81	17.24	9.91	7.02	−8.42	−8.18	4.550	4.618	4.459	4.531	4.564	$9/2^+$	0^+
110	63	933.50	938.53	8.49	8.53	16.58	17.84	6.68	7.31	−8.44	−8.47	4.569	4.644	4.467	4.538		$9/2^+$	$1/2^+$
111	64	943.10	947.36	8.50	8.53	16.28	18.72	9.60	7.75	−8.11	−8.91	4.586	4.663	4.479	4.549		$9/2^+$	0^+
112	65	949.86	953.80	8.48	8.52	16.36	19.38	6.76	8.07	−8.06	−9.23	4.605	4.687	4.488	4.559		$9/2^+$	$1/2^+$
113	66	958.70	962.32	8.48	8.52	15.60	20.08	8.84	8.43	−7.74	−9.59	4.621	4.708	4.496	4.567		$9/2^+$	0^+
114	67	965.21	968.29	8.47	8.49	15.35	20.70	6.51	8.73	−7.55	−9.89	4.639	4.732	4.505	4.575		$9/2^+$	$1/2^+$
115	68	973.55	976.41	8.47	8.49	14.85	21.34	8.34	9.06	−7.36	−10.23	4.655	4.752	4.513	4.583		$9/2^+$	0^+
116	69	979.65	982.05	8.45	8.47	14.44	22.00	6.09	9.39	−7.07	−10.56	4.674	4.775	4.521	4.592		$9/2^+$	$1/2^+$
117	70	987.66	989.76	8.44	8.46	14.11	22.61	8.02	9.69	−6.97	−10.88	4.689	4.794	4.528	4.598		$9/2^+$	0^+
118	71	993.05	995.20	8.42	8.43	13.40	23.56	5.38	10.16	−6.56	−11.32	4.705	4.813	4.537	4.607		$9/2^+$	$1/2^+$
119	72	1000.98	1002.36	8.41	8.42	13.31	24.07	7.93	10.42	−6.56	−11.60	4.720	4.833	4.542	4.612		$9/2^+$	0^+
120	73	1005.96	1007.44	8.38	8.40	12.91	24.82	4.98	10.79	−6.45	−11.96	4.736	4.852	4.550	4.619		$9/2^+$	$11/2^-$
121	74	1013.53	1014.26	8.38	8.38	12.55	25.64	7.57	11.20	−6.21	−12.37	4.750	4.869	4.557	4.627		$9/2^+$	0^+
122	75	1018.32	1019.04	8.35	8.35	12.36	26.42	4.79	11.58	−6.08	−12.75	4.765	4.886	4.564	4.634		$9/2^+$	$11/2^-$
123	76	1025.45	1025.55	8.34	8.34	11.93	27.23	7.13	11.98	−5.90	−13.16	4.779	4.903	4.572	4.641		$9/2^+$	0^+
124	77	1030.07	1030.27	8.31	8.31	11.75	28.03	4.61	12.38	−5.78	−13.55	4.793	4.919	4.579	4.648		$9/2^+$	$11/2^-$
125	78	1036.87	1036.38	8.29	8.29	11.42	28.82	6.80	12.78	−5.64	−13.95	4.807	4.935	4.587	4.656		$9/2^+$	0^+
126	79	1041.32		8.26		11.25	29.61	4.45	13.17	−5.52	−14.34	4.821	4.951	4.594	4.663		$9/2^+$	$11/2^-$
127	80	1047.85		8.25		10.98	30.40	6.53	13.56	−5.39	−14.74	4.835	4.967	4.601	4.670		$9/2^+$	0^+
128	81	1052.17		8.22		10.85	31.20	4.32	13.95	−3.72	−15.14	4.848	4.982	4.608	4.677		$9/2^+$	$11/2^-$
129	82	1058.45		8.21		10.60	31.97	6.28	14.33	−3.68	−15.53	4.862	4.997	4.616	4.684		$9/2^+$	0^+
130	83	1059.80		8.15		7.63	32.28	1.35	14.49	−4.03	−15.68	4.885	5.028	4.622	4.691		$9/2^+$	$7/2^-$
131	84	1062.60		8.11		4.14	32.61	2.79	14.67	−2.14	−15.85	4.906	5.053	4.631	4.700		$9/2^+$	0^+
132	85	1063.79		8.06		3.99	32.91	1.20	14.82	−2.05	−16.01	4.929	5.083	4.637	4.706		$9/2^+$	$7/2^-$
133	86	1066.55		8.02		3.96	33.23	2.76	14.99	−2.06	−16.18	4.950	5.108	4.647	4.715		$9/2^+$	0^+
134	87	1067.59		7.97		3.80	33.53	1.04	15.15	−1.96	−16.33	4.973	5.137	4.653	4.721		$9/2^+$	$7/2^-$
135	88	1070.35		7.93		3.80	33.86	2.76	15.31	−1.98	−16.51	4.993	5.161	4.663	4.731		$9/2^+$	0^+
136	89	1071.20		7.88		3.61	34.07	0.84	15.45	−1.87	−16.66	5.017	5.191	4.669	4.737		$9/2^+$	$7/2^-$
137	90	1074.02		7.84		3.66	34.48	2.82	15.64	−1.92	−16.84	5.037	5.214	4.679	4.747		$9/2^+$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
138	91	1074.86		7.79		3.66	34.67	0.84	15.74	−1.93	−16.94	5.067	5.254	4.683	4.751		$9/2^+$	$3/2^-$
139	92	1077.57		7.75		3.56	35.09	2.71	15.95	−1.88	−17.17	5.081	5.266	4.696	4.764		$9/2^+$	0^+
140	93	1078.42		7.70		3.56	35.32	0.84	16.07	−1.87	−17.28	5.109	5.303	4.701	4.769		$9/2^+$	$3/2^-$
141	94	1081.06		7.67		3.48	35.73	2.64	16.28	−1.85	−17.51	5.124	5.317	4.714	4.781		$9/2^+$	0^+
142	95	1081.88		7.62		3.46	35.99	0.82	16.41	−1.83	−17.64	5.151	5.351	4.721	4.788		$9/2^+$	$3/2^-$
143	96	1084.50		7.58		3.44	36.37	2.62	16.61	−1.84	−17.85	5.166	5.366	4.733	4.800		$9/2^+$	0^+
144	97	1085.29		7.54		3.41	36.60	0.79	16.74	−1.81	−18.00	5.192	5.397	4.741	4.808		$9/2^+$	$3/2^-$
145	98	1087.93		7.50		3.43	37.03	2.64	16.94	−1.83	−18.19	5.208	5.413	4.752	4.818		$9/2^+$	0^+
146	99	1088.74		7.46		3.44	37.25	0.81	17.06	−1.83	−18.32	5.234	5.446	4.759	4.825		$9/2^+$	$1/2^-$
147	100	1091.36		7.42		3.43	37.71	2.62	17.28	−1.82	−18.54	5.249	5.459	4.771	4.837		$9/2^+$	0^+
148	101	1092.24		7.38		3.50	38.04	0.88	17.43	−1.82	−18.69	5.274	5.489	4.779	4.846		$9/2^+$	$1/2^-$
149	102	1094.80		7.35		3.44	38.41	2.56	17.63	−1.82	−18.88	5.289	5.503	4.790	4.857		$9/2^+$	0^+
150	103	1095.68		7.30		3.45	38.79	0.89	17.81	−1.81	−19.05	5.312	5.530	4.800	4.866		$9/2^+$	$1/2^-$
151	104	1098.24		7.27		3.45	39.10	2.56	17.97	−1.81	−19.23	5.328	5.547	4.809	4.875		$9/2^+$	0^+
152	105	1099.10		7.23		3.42	39.52	0.86	18.17	−1.78	−19.41	5.350	5.570	4.820	4.886		$9/2^+$	$1/2^-$
153	106	1101.69		7.20		3.45	39.79	2.59	18.31	−1.79	−19.56	5.367	5.589	4.828	4.894		$9/2^+$	0^+
154	107	1102.51		7.16		3.41	40.21	0.82	18.53	−1.74	−19.76	5.387	5.610	4.840	4.906		$9/2^+$	$1/2^-$
155	108	1105.12		7.13		3.43	40.48	2.61	18.65	−1.75	−19.89	5.405	5.631	4.847	4.912		$9/2^+$	0^+
156	109	1105.87		7.09		3.36	40.83	0.75	18.82	−1.70	−20.05	5.426	5.654	4.857	4.922		$9/2^+$	$5/2^-$
157	110	1108.48		7.06		3.36	41.14	2.61	18.97	−1.66	−20.21	5.443	5.673	4.864	4.929		$9/2^+$	0^+
158	111	1109.14		7.02		3.27	41.49	0.66	19.14	−1.18	−20.34	5.466	5.697	4.874	4.940		$9/2^+$	$5/2^-$
159	112	1111.61		6.99		3.13	41.73	2.47	19.26	−1.21	−20.49	5.482	5.716	4.881	4.946		$9/2^+$	0^+
160	113	1111.23		6.95		2.09	42.28	−0.38	19.53	−1.24	−20.74	5.497	5.730	4.892	4.957		$9/2^-$	$13/2^+$
161	114	1112.97		6.91		1.36	42.80	1.74	19.80	−0.57	−21.02	5.509	5.740	4.904	4.969		$9/2^+$	0^+
162	115	1112.33		6.87		1.10	43.30	−0.64	19.96	−0.49	−21.27	5.523	5.753	4.915	4.980		$9/2^+$	$13/2^+$
163	116	1113.75		6.83		0.78	43.77	1.42	20.28	−0.38	−21.52	5.537	5.766	4.926	4.991		$9/2^+$	0^+
164	117	1113.00		6.79		0.67		−0.75	20.32	−0.32	−21.77	5.551	5.780	4.937	5.002		$9/2^+$	$13/2^+$
165	118	1114.23		6.75		0.48		1.23	20.75	−0.25	−22.00	5.565	5.793	4.949	5.013		$9/2^+$	0^+
166	119	1113.46		6.71		0.46		−0.77	20.82	−0.26	−22.01	5.632	5.880	4.949	5.013		$9/2^+$	$1/2^+$
167	120	1114.49		6.67		0.26		1.05		−0.14	−22.48	5.594	5.820	4.971	5.035		$9/2^+$	0^+
168	121	1113.74		6.63		0.28		−0.75		−0.15	−22.48	5.657	5.904	4.971	5.035		$9/2^+$	$1/2^+$
169	122	1114.56		6.60		0.07		0.78		−0.02	−22.95	5.623	5.848	4.993	5.057		$9/2^+$	0^+
170	123	1113.84		6.55		0.10		−0.72		−0.07	−22.95	5.685	5.929	4.993	5.057		$9/2^+$	$1/2^+$
σ		3.34													0.033			
$Z = 48$ (Cd)																		
92	44	729.10		7.92			−0.02		1.09	−16.44	0.45	4.297	4.222	4.365	4.437		0^+	0^+
93	45	743.88		8.00			1.10	14.78	1.65	−16.17	−0.11	4.303	4.239	4.362	4.435		0^+	$9/2^+$
94	46	761.25		8.10		32.15	2.21	17.38	2.20	−15.90	−0.67	4.309	4.256	4.360	4.433		0^+	0^+
95	47	775.66		8.16		31.78	3.35	14.40	2.76	−15.66	−1.23	4.315	4.271	4.357	4.430		0^+	$9/2^+$
96	48	792.50		8.26		31.25	4.46	16.85	3.31	−15.42	−1.79	4.321	4.286	4.356	4.429		0^+	0^+
97	49	806.63		8.32		30.97	5.60	14.13	3.88	−12.94	−2.35	4.327	4.300	4.353	4.426		0^+	$9/2^+$
98	50	823.02	821.07	8.40	8.38	30.52	6.72	16.39	4.44	−13.14	−2.91	4.333	4.314	4.352	4.425		0^+	0^+
99	51	831.81	831.44	8.40	8.40	25.18	7.37	8.79	4.76	−12.32	−3.23	4.351	4.343	4.359	4.432		0^+	$5/2^+$
100	52	843.29	843.77	8.43	8.44	20.27	8.36	11.48	5.27	−10.14	−3.74	4.373	4.371	4.374	4.447		0^+	0^+
101	53	851.72	853.49	8.43	8.45	19.91	9.05	8.43	5.62	−9.96	−4.09	4.391	4.399	4.382	4.455		0^+	$5/2^+$
102	54	862.89	865.38	8.46	8.48	19.60	9.98	11.17	6.10	−9.84	−4.57	4.411	4.425	4.396	4.468	4.481	0^+	0^+
103	55	871.03	874.45	8.46	8.49	19.31	10.72	8.14	6.47	−9.68	−4.94	4.430	4.451	4.405	4.477	4.495	0^+	$5/2^+$
104	56	881.93	885.83	8.48	8.52	19.03	11.60	10.90	6.92	−9.58	−5.38	4.449	4.476	4.417	4.489	4.512	0^+	0^+
105	57	889.80	894.27	8.47	8.52	18.78	12.38	7.88	7.31	−9.42	−5.78	4.468	4.502	4.427	4.499	4.522	0^+	$5/2^+$
106	58	900.46	905.14	8.49	8.54	18.53	13.20	10.66	7.72	−9.33	−6.19	4.486	4.525	4.438	4.510	4.538	0^+	0^+
107	59	908.09	913.07	8.49	8.53	18.28	14.04	7.63	8.14	−9.16	−6.60	4.505	4.550	4.449	4.520	4.547	0^+	$5/2^+$
108	60	918.52	923.40	8.50	8.55	18.06	14.77	10.43	8.51	−9.08	−6.97	4.522	4.572	4.458	4.529	4.558	0^+	0^+
109	61	925.87	930.73	8.49	8.54	17.78	15.65	7.35	8.95	−8.88	−7.40	4.541	4.596	4.470	4.541	4.560	0^+	$5/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
110	62	936.10	940.64	8.51	8.55	17.58	16.30	10.23	9.28	−8.80	−7.73	4.557	4.617	4.478	4.549	4.577	0^+	0^+
111	63	943.06	947.62	8.50	8.54	17.19	16.87	6.96	9.56	−8.82	−8.01	4.575	4.642	4.485	4.556	4.585	0^+	$1/2^+$
112	64	953.11	957.01	8.51	8.54	17.01	17.76	10.04	10.01	−8.46	−8.45	4.591	4.661	4.496	4.567	4.594	0^+	0^+
113	65	960.13	963.55	8.50	8.53	17.06	18.34	7.02	10.27	−8.39	−8.74	4.609	4.684	4.504	4.575	4.601	0^+	$1/2^+$
114	66	969.38	972.60	8.50	8.53	16.28	19.11	9.26	10.68	−8.07	−9.13	4.625	4.704	4.513	4.584	4.609	0^+	0^+
115	67	976.19	978.74	8.49	8.51	16.07	19.71	6.81	10.98	−7.89	−9.43	4.643	4.728	4.522	4.592	4.611	0^+	$1/2^+$
116	68	984.88	987.44	8.49	8.51	15.50	20.39	8.69	11.33	−7.69	−9.78	4.658	4.748	4.529	4.599	4.620	0^+	0^+
117	69	991.30	993.21	8.47	8.49	15.11	21.04	6.42	11.65	−7.42	−10.11	4.676	4.770	4.538	4.608	4.614	0^+	$1/2^+$
118	70	999.65	1001.57	8.47	8.49	14.77	21.68	8.35	11.99	−7.31	−10.44	4.691	4.789	4.544	4.614	4.625	0^+	0^+
119	71	1005.47	1006.91	8.45	8.46	14.17	22.58	5.82	12.42	−6.96	−10.86	4.707	4.808	4.553	4.622		0^+	$1/2^+$
120	72	1013.68	1014.96	8.45	8.46	14.03	23.12	8.21	12.70	−6.94	−11.15	4.722	4.828	4.559	4.628	4.630	0^+	0^+
121	73	1018.78	1020.15	8.42	8.43	13.32	23.86	5.11	13.07	−6.58	−11.67	4.736	4.844	4.567	4.637		0^+	$11/2^-$
122	74	1027.00	1027.76	8.42	8.42	13.32	24.67	8.22	13.47	−6.60	−11.92	4.751	4.863	4.573	4.642		0^+	0^+
123	75	1032.19	1032.63	8.39	8.39	13.40	25.45	5.18	13.87	−6.48	−12.30	4.766	4.881	4.580	4.649		0^+	$11/2^-$
124	76	1039.72	1039.99	8.38	8.39	12.72	26.25	7.54	14.27	−6.30	−12.70	4.779	4.897	4.587	4.656		0^+	0^+
125	77	1044.74	1044.71	8.36	8.36	12.55	27.05	5.01	14.67	−6.18	−13.09	4.793	4.914	4.594	4.663		0^+	$11/2^-$
126	78	1051.94	1051.69	8.35	8.35	12.22	27.85	7.20	15.07	−6.04	−13.49	4.807	4.929	4.601	4.670		0^+	0^+
127	79	1056.79	1056.00	8.32	8.31	12.06	28.64	4.85	15.47	−5.92	−13.88	4.821	4.945	4.608	4.677		0^+	$11/2^-$
128	80	1063.72	1062.82	8.31	8.30	11.78	29.43	6.93	15.87	−5.79	−14.28	4.834	4.961	4.615	4.684		0^+	0^+
129	81	1068.45		8.28		11.66	30.23	4.73	16.28	−4.79	−14.68	4.847	4.976	4.622	4.691		0^+	$11/2^-$
130	82	1075.13	1073.26	8.27	8.26	11.41	31.01	6.68	16.68	−4.15	−15.07	4.860	4.991	4.629	4.698		0^+	0^+
131	83	1076.63		8.22		8.18	31.32	1.50	16.83	−4.93	−15.23	4.883	5.020	4.636	4.704		0^+	$7/2^-$
132	84	1079.60		8.18		4.47	31.67	2.97	17.00	−2.30	−15.41	4.904	5.046	4.646	4.714		0^+	0^+
133	85	1080.94		8.13		4.31	31.97	1.34	17.15	−2.22	−15.56	4.926	5.075	4.652	4.720		0^+	$7/2^-$
134	86	1083.88		8.09		4.28	32.32	2.94	17.33	−2.22	−15.75	4.947	5.099	4.662	4.730		0^+	0^+
135	87	1085.06		8.04		4.12	32.62	1.18	17.47	−2.12	−15.90	4.969	5.128	4.668	4.736		0^+	$7/2^-$
136	88	1088.00		8.00		4.13	32.96	2.94	17.65	−2.15	−16.09	4.990	5.152	4.678	4.746		0^+	0^+
137	89	1088.99		7.95		3.93	33.24	0.99	17.79	−2.04	−16.24	5.013	5.181	4.685	4.753		0^+	$7/2^-$
138	90	1091.99		7.91		3.99	33.61	3.00	17.97	−2.09	−16.43	5.033	5.203	4.696	4.763		0^+	0^+
139	91	1092.93		7.86		3.94	33.81	0.94	18.07	−2.10	−16.53	5.062	5.243	4.700	4.767		0^+	$3/2^-$
140	92	1095.88		7.83		3.89	34.26	2.95	18.31	−2.05	−16.78	5.075	5.254	4.714	4.781		0^+	0^+
141	93	1096.84		7.78		3.91	34.49	0.96	18.42	−2.05	−16.89	5.103	5.290	4.719	4.786		0^+	$3/2^-$
142	94	1099.71		7.74		3.82	34.93	2.87	18.65	−2.03	−17.13	5.117	5.303	4.733	4.800		0^+	0^+
143	95	1100.66		7.70		3.82	35.19	0.96	18.78	−2.02	−17.26	5.144	5.337	4.739	4.806		0^+	$3/2^-$
144	96	1103.50		7.66		3.79	35.61	2.83	19.00	−2.01	−17.48	5.159	5.351	4.752	4.819		0^+	0^+
145	97	1104.44		7.62		3.78	35.89	0.95	19.15	−2.00	−17.63	5.184	5.382	4.760	4.827		0^+	$3/2^-$
146	98	1107.27		7.58		3.78	36.28	2.83	19.34	−2.00	−17.83	5.200	5.398	4.772	4.838		0^+	0^+
147	99	1108.20		7.54		3.76	36.52	0.93	19.46	−2.01	−17.97	5.226	5.430	4.778	4.845		0^+	$1/2^-$
148	100	1111.06		7.51		3.78	36.98	2.85	19.70	−2.00	−18.19	5.240	5.443	4.791	4.857		0^+	0^+
149	101	1112.04		7.46		3.84	37.23	0.98	19.80	−2.00	−18.33	5.265	5.473	4.799	4.865		0^+	$1/2^-$
150	102	1114.84		7.43		3.79	37.67	2.80	20.04	−1.99	−18.54	5.280	5.487	4.810	4.876		0^+	0^+
151	103	1115.91		7.39		3.87	38.04	1.07	20.23	−1.99	−18.69	5.303	5.514	4.819	4.885		0^+	$1/2^-$
152	104	1118.64		7.36		3.79	38.37	2.73	20.40	−1.98	−18.88	5.319	5.530	4.829	4.895		0^+	0^+
153	105	1119.70		7.32		3.78	38.77	1.06	20.60	−1.97	−19.05	5.341	5.555	4.839	4.905		0^+	$1/2^-$
154	106	1122.43		7.29		3.79	39.05	2.73	20.74	−1.96	−19.21	5.358	5.573	4.848	4.913		0^+	0^+
155	107	1123.46		7.25		3.76	39.48	1.03	20.95	−1.92	−19.40	5.378	5.596	4.859	4.924		0^+	$1/2^-$
156	108	1126.19		7.22		3.76	39.72	2.73	21.07	−1.91	−19.53	5.396	5.615	4.865	4.930		0^+	0^+
157	109	1127.16		7.18		3.70	40.11	0.96	21.29	−1.83	−19.73	5.415	5.636	4.877	4.942		0^+	$1/2^-$
158	110	1129.88		7.15		3.68	40.37	2.72	21.40	−1.82	−19.84	5.434	5.658	4.882	4.947		0^+	0^+
159	111	1130.66		7.11		3.50	40.66	0.78	21.52	−1.39	−19.96	5.456	5.684	4.891	4.956		0^+	$5/2^-$
160	112	1133.28		7.08		3.41	40.93	2.63	21.67	−1.41	−20.13	5.472	5.701	4.897	4.962		0^+	0^+
161	113	1133.17		7.04		2.51	41.47	−0.12	21.94	−1.45	−20.35	5.488	5.717	4.907	4.972		0^+	$13/2^+$
162	114	1135.18		7.01		1.90	42.01	2.02	22.21	−0.83	−20.65	5.499	5.726	4.920	4.984		0^+	0^+
163	115	1134.81		6.96		1.64	42.52	−0.38	22.48	−0.75	−20.90	5.514	5.740	4.931	4.995		0^+	$13/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
164	116	1136.48		6.93		1.29	43.01	1.67	22.73	−0.63	−21.15	5.527	5.752	4.942	5.006		0^+	0^+
165	117	1135.99		6.88		1.18	43.52	−0.49	22.99	−0.57	−21.40	5.541	5.765	4.953	5.017		0^+	$13/2^+$
166	118	1137.46		6.85		0.98	43.98	1.47	23.23	−0.49	−21.65	5.555	5.778	4.964	5.028		0^+	0^+
167	119	1136.88		6.81		0.90	44.48	−0.58	23.48	−0.43	−21.90	5.570	5.792	4.975	5.039		0^+	$13/2^+$
168	120	1138.21		6.78		0.75		1.33	23.72	−0.38	−22.13	5.584	5.805	4.987	5.050		0^+	0^+
169	121	1137.56		6.73		0.68		−0.65	23.99	−0.31	−22.38	5.598	5.818	4.998	5.062		0^+	$13/2^+$
170	122	1138.78		6.70		0.56		1.22	24.22	−0.26	−22.61	5.612	5.832	5.009	5.072		0^+	0^+
171	123	1138.04		6.66		0.48		−0.74	24.49	−0.18	−22.87	5.625	5.845	5.021	5.084		0^+	$13/2^+$
172	124	1139.15		6.62		0.38		1.11		−0.13	−23.09	5.640	5.859	5.032	5.095		0^+	0^+
173	125	1138.46		6.58		0.42		−0.69		−0.15	−23.10	5.700	5.937	5.032	5.095		0^+	$1/2^+$
174	126	1139.28		6.55		0.13		0.82		−1.02	−23.64	5.665	5.880	5.057	5.120		0^+	0^+
σ		2.87													0.022			
$Z = 49$ (In)																		
96	47	775.45		8.08			2.55			0.25	−16.22	4.326	4.273	4.376	4.449		$9/2^+$	$9/2^+$
97	48	792.86		8.17			3.67	17.41	0.36	−0.05	−15.98	4.332	4.288	4.374	4.447		$9/2^+$	0^+
98	49	807.56		8.24		32.11	4.81	14.70	0.93	−0.43	−13.33	4.336	4.301	4.371	4.444		$9/2^+$	$9/2^+$
99	50	824.51		8.33		31.65	5.93	16.95	1.49	−1.30	−13.53	4.342	4.315	4.369	4.442		$9/2^+$	0^+
100	51	833.62	833.11	8.34	8.33	26.06	6.57	9.11	1.81	−1.23	−12.90	4.360	4.343	4.377	4.449		$9/2^+$	$5/2^+$
101	52	845.62		8.37		21.10	7.60	12.00	2.33	−2.75	−10.55	4.382	4.372	4.392	4.464		$9/2^+$	0^+
102	53	854.39	855.63	8.38	8.39	20.77	8.29	8.77	2.67	−2.99	−10.39	4.399	4.399	4.400	4.472		$9/2^+$	$5/2^+$
103	54	866.04	867.64	8.41	8.42	20.43	9.25	11.66	3.15	−3.71	−10.26	4.420	4.425	4.413	4.485		$9/2^+$	0^+
104	55	874.55	877.26	8.41	8.44	20.16	9.99	8.50	3.52	−3.97	−10.10	4.438	4.451	4.422	4.494	4.518	$9/2^+$	$5/2^+$
105	56	885.90	888.79	8.44	8.46	19.85	10.89	11.35	3.97	−4.35	−9.98	4.457	4.476	4.435	4.506	4.531	$9/2^+$	0^+
106	57	894.16	897.83	8.44	8.47	19.61	11.67	8.26	4.36	−4.60	−9.84	4.475	4.501	4.445	4.516	4.538	$9/2^+$	$5/2^+$
107	58	905.23	908.86	8.46	8.49	19.33	12.49	11.07	4.77	−5.12	−9.73	4.492	4.524	4.455	4.527	4.549	$9/2^+$	0^+
108	59	913.26	917.48	8.46	8.50	19.10	13.31	8.04	5.18	−5.19	−9.57	4.511	4.548	4.466	4.537	4.557	$9/2^+$	$5/2^+$
109	60	924.07	927.93	8.48	8.51	18.84	14.06	10.80	5.55	−5.86	−9.46	4.527	4.570	4.475	4.546	4.569	$9/2^+$	0^+
110	61	931.84	935.98	8.47	8.51	18.58	14.92	7.77	5.97	−5.98	−9.27	4.546	4.593	4.487	4.557	4.574	$9/2^+$	$5/2^+$
111	62	942.40	945.97	8.49	8.52	18.33	15.58	10.56	6.30	−9.17	−6.47	4.561	4.614	4.494	4.565	4.586	$9/2^+$	0^+
112	63	949.76	953.65	8.48	8.51	17.92	16.26	7.37	6.70	−8.87	−6.96	4.580	4.637	4.506	4.576	4.591	$9/2^+$	$5/2^+$
113	64	960.12	963.09	8.50	8.52	17.72	17.02	10.35	7.01	−8.81	−7.22	4.595	4.657	4.512	4.583	4.601	$9/2^+$	0^+
114	65	967.41	970.37	8.49	8.51	17.65	17.55	7.30	7.29	−8.75	−7.45	4.612	4.681	4.520	4.590	4.606	$9/2^+$	$1/2^+$
115	66	977.06	979.40	8.50	8.52	16.94	18.36	9.65	7.67	−8.40	−7.87	4.628	4.700	4.529	4.599	4.616	$9/2^+$	0^+
116	67	984.15	986.19	8.48	8.50	16.74	18.94	7.09	7.96	−8.23	−8.10	4.645	4.723	4.536	4.606	4.621	$9/2^+$	$1/2^+$
117	68	993.20	994.95	8.49	8.50	16.14	19.65	9.05	8.31	−8.02	−8.38	4.660	4.742	4.544	4.614	4.629	$9/2^+$	0^+
118	69	999.93	1001.31	8.47	8.49	15.78	20.28	6.74	8.63	−7.79	−8.68	4.677	4.764	4.552	4.622	4.634	$9/2^+$	$1/2^+$
119	70	1008.62	1009.85	8.48	8.49	15.42	20.96	8.69	8.97	−7.66	−9.03	4.692	4.783	4.559	4.628	4.641	$9/2^+$	0^+
120	71	1014.85	1015.95	8.46	8.47	14.92	21.80	6.23	9.38	−7.36	−9.60	4.708	4.802	4.567	4.636	4.644	$9/2^+$	$1/2^+$
121	72	1023.35	1024.13	8.46	8.46	14.74	22.37	8.50	9.67	−7.32	−9.83	4.722	4.821	4.573	4.642	4.651	$9/2^+$	0^+
122	73	1029.06	1029.94	8.43	8.44	14.21	23.10	5.71	10.28	−7.22	−10.14	4.737	4.840	4.579	4.649	4.653	$9/2^+$	$11/2^-$
123	74	1037.44	1037.86	8.43	8.44	14.09	23.91	8.37	10.44	−6.99	−10.56	4.751	4.857	4.586	4.656	4.659	$9/2^+$	0^+
124	75	1043.00	1043.38	8.41	8.41	13.94	24.68	5.56	10.82	−6.88	−10.89	4.765	4.874	4.593	4.662	4.663	$9/2^+$	$11/2^-$
125	76	1050.94	1051.06	8.41	8.41	13.50	25.49	7.94	11.22	−6.70	−11.25	4.779	4.890	4.600	4.669	4.667	$9/2^+$	0^+
126	77	1056.34	1056.42	8.38	8.38	13.34	26.27	5.40	11.61	−6.58	−11.57	4.792	4.907	4.607	4.676	4.670	$9/2^+$	$11/2^-$
127	78	1063.95	1063.62	8.38	8.37	13.01	27.08	7.61	12.01	−6.43	−11.94	4.806	4.922	4.614	4.683	4.673	$9/2^+$	0^+
128	79	1069.20	1068.94	8.35	8.35	12.85	27.88	5.25	12.40	−6.31	−12.29	4.819	4.938	4.620	4.689		$9/2^+$	$11/2^-$
129	80	1076.52	1075.70	8.35	8.34	12.57	28.67	7.32	12.80	−6.18	−12.69	4.832	4.953	4.627	4.696		$9/2^+$	0^+
130	81	1081.64	1080.82	8.32	8.31	12.45	29.47	5.12	13.19	−4.62	−13.01	4.845	4.968	4.634	4.702		$9/2^+$	$11/2^-$
131	82	1088.71	1087.03	8.31	8.30	12.19	30.26	7.07	13.58	−4.45	−13.52	4.858	4.983	4.641	4.709		$9/2^+$	0^+
132	83	1090.37	1089.49	8.26	8.25	8.73	30.57	1.66	13.74	−4.90	−13.67	4.880	5.012	4.647	4.716		$9/2^+$	$7/2^-$
133	84	1093.52		8.22		4.81	30.92	3.15	13.92	−2.48	−13.96	4.901	5.037	4.658	4.726		$9/2^+$	0^+
134	85	1095.02		8.17		4.65	31.23	1.50	14.08	−2.39	−14.11	4.923	5.066	4.664	4.732		$9/2^+$	$7/2^-$
135	86	1098.14		8.13		4.62	31.59	3.12	14.26	−2.40	−14.33	4.943	5.090	4.674	4.742		$9/2^+$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
136	87	1099.47		8.08		4.45	31.88	1.33	14.41	−2.30	−14.49	4.965	5.118	4.681	4.749		$9/2^+$	$7/2^-$
137	88	1102.60		8.05		4.46	32.25	3.12	14.59	−2.32	−14.70	4.985	5.141	4.692	4.759		$9/2^+$	0^+
138	89	1103.74		8.00		4.27	32.54	1.15	14.75	−2.22	−14.86	5.007	5.169	4.699	4.767		$9/2^+$	$7/2^-$
139	90	1106.93		7.96		4.33	32.91	3.18	14.93	−2.27	−15.07	5.027	5.192	4.710	4.777		$9/2^+$	0^+
140	91	1107.96		7.91		4.22	33.10	1.04	15.03	−2.28	−15.17	5.056	5.230	4.714	4.781		$9/2^+$	$3/2^-$
141	92	1111.15		7.88		4.23	33.58	3.19	15.27	−2.23	−15.42	5.069	5.241	4.729	4.796		$9/2^+$	0^+
142	93	1112.22		7.83		4.26	33.80	1.07	15.39	−2.24	−15.54	5.096	5.277	4.734	4.801		$9/2^+$	$3/2^-$
143	94	1115.32		7.80		4.17	34.26	3.10	15.62	−2.21	−15.78	5.110	5.289	4.748	4.815		$9/2^+$	0^+
144	95	1116.41		7.75		4.18	34.53	1.09	15.74	−2.20	−15.90	5.136	5.322	4.755	4.822		$9/2^+$	$3/2^-$
145	96	1119.45		7.72		4.13	34.95	3.05	15.96	−2.19	−16.10	5.151	5.336	4.768	4.835		$9/2^+$	0^+
146	97	1120.55		7.67		4.14	35.26	1.09	16.11	−2.18	−16.23	5.176	5.367	4.776	4.843		$9/2^+$	$3/2^-$
147	98	1123.58		7.64		4.12	35.65	3.03	16.30	−2.18	−16.44	5.192	5.382	4.788	4.854		$9/2^+$	0^+
148	99	1124.67		7.60		4.12	35.93	1.09	16.46	−2.17	−16.61	5.215	5.410	4.797	4.863		$9/2^+$	$3/2^-$
149	100	1127.70		7.57		4.12	36.34	3.03	16.65	−2.18	−16.79	5.231	5.427	4.808	4.874		$9/2^+$	0^+
150	101	1128.81		7.53		4.14	36.57	1.11	16.77	−2.19	−16.94	5.256	5.456	4.815	4.881		$9/2^+$	$1/2^-$
151	102	1131.83		7.50		4.13	37.03	3.02	16.99	−2.17	−17.15	5.270	5.471	4.827	4.893		$9/2^+$	0^+
152	103	1133.03		7.45		4.22	37.35	1.20	17.11	−2.17	−17.30	5.294	5.498	4.835	4.901		$9/2^+$	$1/2^-$
153	104	1135.96		7.42		4.13	37.72	2.93	17.32	−2.15	−17.50	5.309	5.514	4.846	4.911		$9/2^+$	0^+
154	105	1137.20		7.38		4.17	38.10	1.24	17.50	−2.14	−17.67	5.331	5.539	4.855	4.920		$9/2^+$	$1/2^-$
155	106	1140.08		7.36		4.12	38.39	2.88	17.65	−2.12	−17.84	5.347	5.556	4.863	4.929		$9/2^+$	0^+
156	107	1141.29		7.32		4.09	38.78	1.21	17.83	−2.09	−18.02	5.368	5.580	4.873	4.939		$9/2^+$	$1/2^-$
157	108	1144.15		7.29		4.08	39.03	2.86	17.96	−2.07	−18.18	5.385	5.599	4.880	4.945		$9/2^+$	0^+
158	109	1145.31		7.25		4.02	39.44	1.15	18.15	−2.00	−18.37	5.404	5.620	4.891	4.956		$9/2^+$	$1/2^-$
159	110	1148.14		7.22		3.98	39.66	2.83	18.26	−1.98	−18.49	5.423	5.641	4.896	4.961		$9/2^+$	0^+
160	111	1149.04		7.18		3.73	39.90	0.90	18.38	−1.59	−18.70	5.441	5.661	4.908	4.972		$9/2^+$	$1/2^-$
161	112	1151.82		7.15		3.68	40.21	2.78	18.54	−1.61	−18.80	5.460	5.684	4.911	4.976		$9/2^+$	0^+
162	113	1151.92		7.11		2.89	40.69	0.10	18.76	−1.65	−19.04	5.477	5.702	4.920	4.985		$9/2^+$	$13/2^+$
163	114	1154.23		7.08		2.41	41.26	2.31	19.04	−1.08	−19.34	5.488	5.710	4.933	4.997		$9/2^+$	0^+
164	115	1154.10		7.04		2.17	41.77	−0.13	19.29	−1.00	−19.60	5.502	5.724	4.943	5.008		$9/2^+$	$13/2^+$
165	116	1156.01		7.01		1.78	42.26	1.92	19.53	−0.87	−19.88	5.515	5.736	4.955	5.019		$9/2^+$	0^+
166	117	1155.77		6.96		1.67	42.77	−0.25	19.78	−0.81	−20.14	5.530	5.750	4.965	5.029		$9/2^+$	$13/2^+$
167	118	1157.47		6.93		1.46	43.24	1.70	20.01	−0.73	−20.41	5.543	5.762	4.977	5.041		$9/2^+$	0^+
168	119	1157.14		6.89		1.37	43.68	−0.33	20.26	−0.67	−20.67	5.557	5.776	4.987	5.051		$9/2^+$	$13/2^+$
169	120	1158.69		6.86		1.22	44.20	1.55	20.48	−0.61	−20.93	5.571	5.789	4.998	5.062		$9/2^+$	0^+
170	121	1158.28		6.81		1.15	44.54	−0.41	20.73	−0.55	−21.20	5.585	5.802	5.009	5.073		$9/2^+$	$13/2^+$
171	122	1159.72		6.78		1.03	45.16	1.43	20.94	−0.50	−21.46	5.599	5.815	5.020	5.084		$9/2^+$	0^+
172	123	1159.23		6.74		0.95	45.39	−0.49	21.20	−0.42	−21.73	5.612	5.828	5.032	5.095		$9/2^+$	$13/2^+$
173	124	1160.56		6.71		0.84		1.33	21.41	−0.37	−21.99	5.626	5.841	5.043	5.106		$9/2^+$	0^+
174	125	1159.99		6.67		0.75		−0.57	21.53	0.17	−22.56	5.638	5.851	5.055	5.118		$9/2^+$	$13/2^+$
175	126	1161.19		6.64		0.63		1.20	21.53	−1.24	−22.30	5.652	5.864	5.066	5.129		$9/2^+$	0^+
σ		2.28													0.016			
$Z = 50$ (Sn)																		
93	43	708.16		7.61						−17.91	0.50	4.319	4.213	4.408	4.480		0^+	$9/2^+$
94	44	727.33		7.74			−1.77	19.18		−17.55	−0.04	4.324	4.230	4.405	4.477		0^+	0^+
95	45	743.22		7.82		35.07	−0.66	15.89		−17.29	−0.58	4.328	4.246	4.401	4.473		0^+	$9/2^+$
96	46	761.72		7.93		34.39	0.47	18.50		−17.01	−1.14	4.333	4.262	4.398	4.471		0^+	0^+
97	47	777.25		8.01		34.03	1.59	15.53		−16.78	−1.69	4.338	4.276	4.395	4.467		0^+	$9/2^+$
98	48	795.22		8.11		33.50	2.66	17.97	2.36	−16.54	−2.24	4.343	4.291	4.393	4.465		0^+	0^+
99	49	810.47		8.19		33.23	3.94	15.26	2.91	−14.22	−2.80	4.347	4.304	4.389	4.461		0^+	$9/2^+$
100	50	827.99	825.30	8.28	8.25	32.77	6.97	17.52	3.48	−14.12	−3.36	4.352	4.317	4.387	4.459		0^+	0^+
101	51	837.51	836.39	8.29	8.28	27.01	5.70	9.52	3.88	−13.92	−0.90	4.374	4.347	4.401	4.473		0^+	$7/2^+$
102	52	849.96	849.09	8.33	8.32	21.97	6.67	12.46	4.34	−10.98	−1.14	4.391	4.374	4.409	4.481		0^+	0^+
103	53	859.15	859.20	8.34	8.34	21.65	7.43	9.19	4.76	−10.81	−1.44	4.411	4.401	4.422	4.494		0^+	$7/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
104	54	871.25	871.92	8.38	8.38	21.28	8.35	12.09	5.20	−10.68	−1.70	4.429	4.426	4.431	4.503		0^+	0^+
105	55	880.13	881.71	8.38	8.40	20.98	9.10	8.89	5.58	−10.50	−2.39	4.448	4.452	4.443	4.515		0^+	$7/2^+$
106	56	891.94	893.80	8.41	8.43	20.69	10.01	11.81	6.04	−10.40	−2.60	4.465	4.476	4.453	4.524		0^+	0^+
107	57	900.59	903.03	8.42	8.44	20.46	10.79	8.66	6.43	−10.26	−3.25	4.483	4.501	4.462	4.534		0^+	$5/2^+$
108	58	912.09	914.66	8.45	8.47	20.15	11.63	11.50	6.86	−10.13	−3.44	4.500	4.524	4.473	4.544	4.561	0^+	0^+
109	59	920.54	923.29	8.45	8.47	19.94	12.45	8.45	7.27	−9.98	−4.06	4.518	4.547	4.484	4.554	4.568	0^+	$5/2^+$
110	60	931.72	934.57	8.47	8.50	19.63	13.20	11.18	7.65	−9.85	−4.31	4.535	4.569	4.493	4.563	4.579	0^+	0^+
111	61	939.92	942.74	8.47	8.49	19.38	14.05	8.20	8.07	−9.65	−4.81	4.552	4.592	4.504	4.574	4.584	0^+	$5/2^+$
112	62	950.80	953.53	8.49	8.51	19.08	14.70	10.88	8.40	−9.54	−5.10	4.568	4.613	4.511	4.582	4.595	0^+	0^+
113	63	958.59	961.27	8.48	8.51	18.67	15.52	7.79	8.82	−9.23	−5.84	4.586	4.635	4.522	4.592	4.602	0^+	$5/2^+$
114	64	969.23	971.57	8.50	8.52	18.43	16.12	10.64	9.11	−9.16	−5.92	4.600	4.655	4.528	4.599	4.610	0^+	0^+
115	65	976.80	979.12	8.49	8.51	18.21	16.67	7.57	9.39	−9.10	−6.14	4.617	4.678	4.536	4.606	4.615	0^+	$1/2^+$
116	66	986.84	988.68	8.51	8.52	17.61	17.46	10.05	9.79	−8.74	−6.59	4.632	4.697	4.544	4.614	4.625	0^+	0^+
117	67	994.22	995.62	8.50	8.51	17.42	18.03	7.38	10.07	−8.57	−6.93	4.649	4.720	4.552	4.622	4.630	0^+	$1/2^+$
118	68	1003.64	1004.95	8.51	8.52	16.80	18.76	9.42	10.44	−8.36	−7.25	4.663	4.738	4.559	4.629	4.639	0^+	0^+
119	69	1010.69	1011.43	8.49	8.50	16.47	19.39	7.05	10.76	−8.15	−7.63	4.680	4.760	4.567	4.637	4.644	0^+	$1/2^+$
120	70	1019.73	1020.54	8.50	8.50	16.09	20.08	9.04	11.12	−8.01	−7.95	4.694	4.778	4.574	4.643	4.652	0^+	0^+
121	71	1026.36	1026.71	8.48	8.49	15.67	20.89	6.63	11.51	−7.75	−8.39	4.710	4.798	4.581	4.651	4.657	0^+	$1/2^+$
122	72	1035.18	1035.53	8.49	8.49	15.44	21.50	8.82	11.83	−7.68	−8.67	4.724	4.816	4.587	4.657	4.663	0^+	0^+
123	73	1041.29	1041.47	8.47	8.47	14.92	22.50	6.11	12.22	−7.39	−9.13	4.738	4.833	4.595	4.664	4.667	0^+	$1/2^+$
124	74	1050.02	1049.96	8.47	8.47	14.84	23.01	8.73	12.58	−7.38	−9.42	4.752	4.851	4.601	4.670	4.674	0^+	0^+
125	75	1055.96	1055.70	8.45	8.45	14.67	23.77	5.94	12.96	−7.27	−9.79	4.766	4.869	4.607	4.676	4.677	0^+	$7/2^-$
126	76	1064.31	1063.89	8.45	8.44	14.29	24.58	8.35	13.36	−7.09	−10.20	4.779	4.885	4.614	4.683	4.683	0^+	0^+
127	77	1070.10	1069.41	8.43	8.42	14.14	25.36	5.79	13.75	−6.98	−10.70	4.793	4.901	4.620	4.689	4.687	0^+	$11/2^-$
128	78	1078.11	1077.37	8.42	8.42	13.80	26.17	8.01	14.16	−6.83	−10.98	4.806	4.917	4.627	4.696	4.692	0^+	0^+
129	79	1083.75	1082.68	8.40	8.39	13.65	26.96	5.65	14.56	−6.72	−11.44	4.819	4.932	4.634	4.702	4.693	0^+	$11/2^-$
130	80	1091.48	1090.29	8.40	8.39	13.38	27.76	7.73	14.96	−6.59	−11.81	4.832	4.947	4.640	4.709	4.702	0^+	0^+
131	81	1097.01	1095.50	8.37	8.36	13.25	28.55	5.52	15.36	−6.34	−12.30	4.844	4.962	4.646	4.715	4.708	0^+	$11/2^-$
132	82	1104.48	1102.85	8.37	8.35	13.00	29.35	7.47	15.77	−4.81	−12.61	4.857	4.977	4.653	4.722	4.709	0^+	0^+
133	83	1106.29	1105.24	8.32	8.31	9.28	29.66	1.81	15.92	−6.19	−12.85	4.878	5.005	4.660	4.728		0^+	$7/2^-$
134	84	1109.62	1108.87	8.28	8.27	5.15	30.03	3.33	16.10	−2.65	−13.03	4.899	5.030	4.671	4.739		0^+	0^+
135	85	1111.27	1111.14	8.23	8.23	4.99	30.34	1.65	16.26	−2.56	−13.17	4.921	5.058	4.677	4.745		0^+	$7/2^-$
136	86	1114.58		8.20		4.96	30.71	3.31	16.45	−2.57	−13.40	4.941	5.082	4.688	4.756		0^+	0^+
137	87	1116.07		8.15		4.80	31.01	1.49	16.60	−2.47	−13.67	4.962	5.110	4.695	4.763		0^+	$7/2^-$
138	88	1119.39		8.11		4.81	31.39	3.32	16.80	−2.50	−13.83	4.982	5.133	4.706	4.774		0^+	0^+
139	89	1120.70		8.06		4.63	31.71	1.31	16.96	−2.40	−14.10	5.004	5.160	4.714	4.782		0^+	$7/2^-$
140	90	1124.07		8.03		4.68	32.08	3.38	17.15	−2.45	−14.26	5.024	5.182	4.725	4.792		0^+	0^+
141	91	1125.21		7.98		4.51	32.28	1.13	17.25	−2.47	−14.45	5.051	5.220	4.730	4.797		0^+	$3/2^-$
142	92	1128.66		7.95		4.59	32.78	3.46	17.51	−2.41	−14.68	5.065	5.230	4.745	4.812		0^+	0^+
143	93	1129.84		7.90		4.64	33.01	1.18	17.62	−2.43	−14.82	5.091	5.265	4.750	4.817		0^+	$3/2^-$
144	94	1133.19		7.87		4.53	33.49	3.35	17.87	−2.39	−15.11	5.105	5.277	4.765	4.832		0^+	0^+
145	95	1134.41		7.82		4.57	33.75	1.22	18.00	−2.40	−15.30	5.131	5.310	4.772	4.838		0^+	$3/2^-$
146	96	1137.69		7.79		4.50	34.20	3.28	18.24	−2.38	−15.54	5.146	5.323	4.786	4.852		0^+	0^+
147	97	1138.94		7.75		4.52	34.49	1.24	18.39	−2.38	−15.74	5.170	5.354	4.793	4.860		0^+	$3/2^-$
148	98	1142.18		7.72		4.49	34.91	3.25	18.60	−2.37	−15.97	5.185	5.368	4.806	4.872		0^+	0^+
149	99	1143.44		7.67		4.50	35.23	1.26	18.77	−2.36	−16.18	5.209	5.397	4.815	4.881		0^+	$3/2^-$
150	100	1146.67		7.64		4.49	35.61	3.23	18.97	−2.36	−16.39	5.224	5.413	4.826	4.892		0^+	0^+
151	101	1147.93		7.60		4.49	35.89	1.26	19.12	−2.34	−16.59	5.247	5.439	4.836	4.901		0^+	$3/2^-$
152	102	1151.15		7.57		4.48	36.31	3.22	19.32	−2.34	−16.79	5.263	5.456	4.845	4.911		0^+	0^+
153	103	1152.46		7.53		4.53	36.55	1.31	19.43	−2.35	−16.97	5.286	5.484	4.853	4.919		0^+	$1/2^-$
154	104	1155.63		7.50		4.47	36.99	3.17	19.67	−2.32	−17.17	5.301	5.499	4.863	4.929		0^+	0^+
155	105	1157.04		7.46		4.58	37.34	1.42	19.84	−2.32	−17.36	5.323	5.525	4.872	4.937		0^+	$1/2^-$
156	106	1160.07		7.44		4.45	37.64	3.03	20.00	−2.29	−17.54	5.339	5.542	4.881	4.946		0^+	0^+
157	107	1161.47		7.40		4.43	38.01	1.39	20.18	−2.26	−17.72	5.360	5.566	4.890	4.955		0^+	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
158	108	1164.47		7.37		4.39	38.27	3.00	20.31	−2.23	−17.88	5.376	5.584	4.897	4.962		0^+	0^+
159	109	1165.80		7.33		4.34	38.65	1.34	20.50	−2.16	−18.07	5.396	5.606	4.906	4.971		0^+	$1/2^-$
160	110	1168.75		7.30		4.28	38.87	2.94	20.61	−2.13	−18.21	5.414	5.627	4.912	4.977		0^+	0^+
161	111	1169.84		7.27		4.03	39.18	1.09	20.80	−1.79	−18.41	5.432	5.647	4.922	4.987		0^+	$1/2^-$
162	112	1172.72		7.24		3.97	39.43	2.88	20.90	−1.80	−18.53	5.450	5.668	4.927	4.991		0^+	0^+
163	113	1173.01		7.20		3.18	39.85	0.30	21.09	−1.85	−18.75	5.467	5.687	4.935	5.000		0^+	$13/2^+$
164	114	1175.64		7.17		2.92	40.46	2.63	21.41	−1.34	−19.06	5.479	5.696	4.947	5.011		0^+	
165	115	1175.76		7.13		2.75	40.96	0.12	21.67	−1.26	−19.33	5.493	5.711	4.957	5.021		0^+	$13/2^+$
166	116	1177.94		7.10		2.30	41.46	2.18	21.93	−1.13	−19.61	5.506	5.722	4.969	5.033		0^+	0^+
167	117	1177.95		7.05		2.19	41.96	0.01	22.18	−1.06	−19.88	5.520	5.736	4.979	5.043		0^+	$13/2^+$
168	118	1179.90		7.02		1.96	42.44	1.95	22.43	−0.98	−20.16	5.534	5.749	4.990	5.054		0^+	0^+
169	119	1179.83		6.98		1.88	42.95	−0.07	22.69	−0.92	−20.43	5.548	5.762	5.001	5.064		0^+	$13/2^+$
170	120	1181.63		6.95		1.72	43.41	1.80	22.93	−0.86	−20.70	5.561	5.775	5.012	5.075		0^+	0^+
171	121	1181.48		6.91		1.65	43.92	−0.15	23.19	−0.80	−20.97	5.575	5.788	5.023	5.086		0^+	$13/2^+$
172	122	1183.15		6.88		1.53	44.38	1.67	23.43	−0.75	−21.23	5.589	5.801	5.034	5.097		0^+	0^+
173	123	1182.93		6.84		1.45	44.89	−0.22	23.70	−0.68	−21.51	5.603	5.814	5.045	5.108		0^+	$13/2^+$
174	124	1184.49		6.81		1.34	45.34	1.56	23.93	−0.63	−21.77	5.617	5.827	5.056	5.119		0^+	0^+
175	125	1184.20		6.77		1.28	45.75	−0.29	24.22	−0.31	−22.07	5.630	5.839	5.068	5.131		0^+	$13/2^+$
176	126	1185.65		6.74		1.16	46.37	1.45		−1.50	−22.33	5.643	5.852	5.080	5.142		0^+	0^+
σ		1.66													0.009			
$Z = 51$ (Sb)																		
100	49	805.84		8.00			−1.71			−16.83	0.30	4.373	4.313	4.429	4.501		$5/2^+$	$9/2^+$
101	50	823.62		8.15			−0.89	17.78	−4.37	−14.38	−0.50	4.417	4.354	4.435	4.507		$5/2^+$	0^+
102	51	833.59		8.17		27.74	−0.03	9.97	−3.92	−13.82	−0.49	4.392	4.353	4.431	4.503		$5/2^+$	$5/2^+$
103	52	846.45		8.22		22.83	0.83	12.86	−3.51	−11.40	−1.86	4.413	4.382	4.444	4.516		$5/2^+$	0^+
104	53	856.21	858.69	8.23		22.62	1.82	9.76	−2.94	−11.32	−2.00	4.436	4.417	4.456	4.527		$7/2^+$	$7/2^+$
105	54	868.77	871.60	8.27	8.30	22.32	2.72	12.56	−2.48	−11.19	−3.41	4.453	4.441	4.465	4.536		$7/2^+$	0^+
106	55	878.22	882.13	8.29	8.32	22.01	3.67	9.45	−1.91	−11.00	−3.03	4.471	4.466	4.476	4.547		$7/2^+$	$7/2^+$
107	56	890.48	894.38	8.32	8.36	21.72	4.59	12.26	−1.45	−10.89	−4.32	4.488	4.490	4.486	4.556		$7/2^+$	0^+
108	57	899.60	904.25	8.33	8.37	21.38	5.44	9.12	−0.99	−10.77	−3.69	4.505	4.514	4.495	4.565		$7/2^+$	$5/2^+$
109	58	911.62	916.12	8.36	8.40	21.14	6.39	12.02	−0.47	−10.60	−5.16	4.522	4.536	4.505	4.576		$7/2^+$	0^+
110	59	920.55	925.39	8.37	8.41	20.95	7.28	8.93	0.01	−10.45	−4.35	4.539	4.560	4.515	4.586		$7/2^+$	$5/2^+$
111	60	932.18	936.85	8.40	8.44	20.56	8.11	11.63	0.46	−10.29	−5.95	4.555	4.581	4.524	4.594		$7/2^+$	0^+
112	61	940.86	945.69	8.40	8.44	20.31	9.02	8.68	0.95	−10.09	−5.08	4.572	4.603	4.534	4.604		$7/2^+$	$5/2^+$
113	62	952.12	956.58	8.43	8.47	19.94	9.73	11.26	1.32	−9.95	−6.66	4.586	4.623	4.541	4.611		$7/2^+$	0^+
114	63	960.38	964.73	8.42	8.46	19.51	10.61	8.26	1.79	−9.63	−5.94	4.603	4.645	4.551	4.621		$7/2^+$	$5/2^+$
115	64	971.35	975.31	8.45	8.48	19.22	11.23	10.97	2.12	−9.54	−7.31	4.617	4.664	4.557	4.627		$7/2^+$	0^+
116	65	979.24	983.20	8.44	8.48	18.86	11.82	7.89	2.44	−9.48	−6.48	4.633	4.686	4.564	4.634		$7/2^+$	$1/2^+$
117	66	989.71	993.09	8.46	8.49	18.36	12.65	10.47	2.86	−9.11	−7.97	4.648	4.705	4.572	4.642		$7/2^+$	0^+
118	67	997.40	1000.51	8.45	8.48	18.17	13.25	7.69	3.18	−8.95	−7.25	4.664	4.727	4.579	4.649		$7/2^+$	$1/2^+$
119	68	1007.24	1010.06	8.46	8.49	17.53	14.04	9.84	3.59	−8.73	−8.63	4.678	4.745	4.587	4.656		$7/2^+$	0^+
120	69	1014.62	1017.08	8.46	8.48	17.22	14.69	7.38	3.93	−8.54	−7.93	4.694	4.766	4.594	4.663		$7/2^+$	$1/2^+$
121	70	1024.07	1026.33	8.46	8.48	16.83	15.45	9.45	4.33	−8.39	−8.25	4.708	4.784	4.601	4.670	4.680	$7/2^+$	0^+
122	71	1031.09	1033.14	8.45	8.47	16.47	16.24	7.02	4.73	−8.17	−8.68	4.723	4.804	4.608	4.677		$7/2^+$	$1/2^+$
123	72	1040.28	1042.10	8.46	8.47	16.21	16.93	9.19	5.10	−8.08	−8.96	4.736	4.821	4.614	4.683	4.688	$7/2^+$	0^+
124	73	1046.87	1048.57	8.44	8.46	15.78	17.80	6.59	5.58	−7.83	−9.40	4.750	4.838	4.621	4.690		$7/2^+$	$1/2^+$
125	74	1055.93	1057.27	8.45	8.46	15.65	18.49	9.06	5.91	−7.79	−9.66	4.764	4.856	4.627	4.695		$7/2^+$	0^+
126	75	1062.26	1063.48	8.43	8.44	15.40	19.26	6.33	6.31	−7.69	−10.00	4.778	4.873	4.633	4.701		$7/2^+$	$11/2^-$
127	76	1071.05	1071.86	8.43	8.44	15.13	20.11	8.79	6.75	−7.52	−10.39	4.791	4.889	4.639	4.708		$7/2^+$	0^+
128	77	1077.26	1077.86	8.42	8.42	14.99	20.91	6.21	7.16	−7.41	−10.74	4.804	4.906	4.645	4.714		$7/2^+$	$11/2^-$
129	78	1085.71	1085.93	8.42	8.42	14.66	21.76	8.45	7.60	−7.26	−11.14	4.816	4.921	4.652	4.720		$7/2^+$	0^+
130	79	1091.77	1091.66	8.40	8.40	14.52	22.58	6.06	8.02	−7.15	−11.50	4.829	4.937	4.658	4.726		$7/2^+$	$11/2^-$
131	80	1099.95	1099.42	8.40	8.39	14.24	23.43	8.18	8.47	−7.02	−11.94	4.842	4.951	4.664	4.733		$7/2^+$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
132	81	1105.90	1105.15	8.38	8.37	14.12	24.25	5.95	8.89	−6.20	−12.37	4.854	4.966	4.670	4.738		$7/2^+$	$11/2^-$
133	82	1113.81	1112.51	8.37	8.36	13.86	25.10	7.91	9.33	−5.16	−12.82	4.866	4.980	4.677	4.745		$7/2^+$	0^+
134	83	1115.80	1115.68	8.33	8.33	9.90	25.43	1.99	9.51	−6.12	−12.97	4.887	5.009	4.683	4.751		$7/2^+$	$7/2^-$
135	84	1119.41	1119.42	8.29	8.29	5.60	25.89	3.61	9.78	−2.88	−13.24	4.908	5.033	4.695	4.763		$7/2^+$	0^+
136	85	1121.24	1122.31	8.24	8.25	5.44	26.22	1.83	9.96	−2.80	−13.42	4.929	5.060	4.702	4.770		$7/2^+$	$7/2^-$
137	86	1124.83	1125.90	8.21	8.22	5.42	26.69	3.59	10.24	−2.81	−13.64	4.949	5.083	4.714	4.781		$7/2^+$	0^+
138	87	1126.50		8.16		5.27	27.03	1.67	10.43	−2.72	−13.81	4.970	5.110	4.721	4.789		$7/2^+$	$7/2^-$
139	88	1130.11		8.13		5.28	27.51	3.61	10.72	−2.75	−14.04	4.990	5.133	4.733	4.800		$7/2^+$	0^+
140	89	1131.62		8.08		5.12	27.88	1.51	10.93	−2.66	−14.21	5.011	5.159	4.742	4.809		$7/2^+$	$7/2^-$
141	90	1135.28		8.05		5.17	28.35	3.66	11.20	−2.70	−14.45	5.030	5.181	4.753	4.820		$7/2^+$	0^+
142	91	1136.64		8.00		5.02	28.68	1.36	11.43	−2.62	−14.63	5.052	5.207	4.763	4.830		$7/2^+$	$7/2^-$
143	92	1140.37		7.97		5.09	29.21	3.73	11.70	−2.67	−14.85	5.070	5.228	4.774	4.840		$7/2^+$	0^+
144	93	1141.70		7.93		5.06	29.47	1.33	11.85	−2.69	−14.95	5.096	5.262	4.779	4.845		$7/2^+$	$3/2^-$
145	94	1145.41		7.90		5.04	30.09	3.71	12.21	−2.65	−15.23	5.110	5.273	4.794	4.861		$7/2^+$	0^+
146	95	1146.79		7.85		5.09	30.39	1.38	12.38	−2.66	−15.35	5.135	5.305	4.801	4.867		$7/2^+$	$3/2^-$
147	96	1150.41		7.83		5.01	30.96	3.62	12.72	−2.63	−15.62	5.149	5.318	4.815	4.881		$7/2^+$	0^+
148	97	1151.84		7.78		5.05	31.30	1.43	12.91	−2.64	−15.76	5.173	5.348	4.823	4.889		$7/2^+$	$3/2^-$
149	98	1155.40		7.75		4.99	31.82	3.56	13.22	−2.61	−16.01	5.188	5.362	4.836	4.901		$7/2^+$	0^+
150	99	1156.86		7.71		5.02	32.20	1.46	13.43	−2.61	−16.16	5.211	5.390	4.844	4.910		$7/2^+$	$3/2^-$
151	100	1160.37		7.68		4.97	32.66	3.51	13.70	−2.59	−16.39	5.226	5.405	4.855	4.921		$7/2^+$	0^+
152	101	1161.85		7.64		4.99	33.04	1.48	13.92	−2.59	−16.55	5.248	5.432	4.865	4.930		$7/2^+$	$3/2^-$
153	102	1165.31		7.62		4.95	33.48	3.46	14.16	−2.57	−16.75	5.264	5.448	4.874	4.939		$7/2^+$	0^+
154	103	1166.80		7.58		4.95	33.77	1.49	14.34	−2.55	−16.93	5.285	5.473	4.884	4.949		$7/2^+$	$3/2^-$
155	104	1170.22		7.55		4.91	34.26	3.42	14.60	−2.53	−17.10	5.301	5.491	4.892	4.957		$7/2^+$	0^+
156	105	1171.78		7.51		4.99	34.59	1.56	14.74	−2.53	−17.25	5.323	5.517	4.899	4.964		$7/2^+$	$1/2^-$
157	106	1175.08		7.48		4.86	35.00	3.30	15.01	−2.49	−17.43	5.338	5.533	4.908	4.973		$7/2^+$	0^+
158	107	1176.69		7.45		4.90	35.40	1.61	15.22	−2.47	−17.57	5.359	5.558	4.916	4.981		$7/2^+$	$1/2^-$
159	108	1179.85		7.42		4.77	35.70	3.16	15.38	−2.42	−17.75	5.375	5.576	4.923	4.988		$7/2^+$	0^+
160	109	1181.39		7.38		4.71	36.09	1.54	15.59	−2.35	−17.90	5.395	5.599	4.931	4.996		$7/2^+$	$1/2^-$
161	110	1184.48		7.36		4.63	36.35	3.09	15.73	−2.30	−18.05	5.412	5.618	4.937	5.002		$7/2^+$	0^+
162	111	1185.78		7.32		4.39	36.75	1.30	15.95	−2.03	−18.24	5.430	5.638	4.946	5.011		$7/2^+$	$1/2^-$
163	112	1188.80		7.29		4.32	36.98	3.02	16.08	−2.03	−18.35	5.447	5.659	4.951	5.015		$7/2^+$	0^+
164	113	1189.33		7.25		3.55	37.41	0.53	16.32	−2.07	−18.58	5.464	5.677	4.959	5.024		$7/2^+$	$13/2^+$
165	114	1192.32		7.23		3.52	38.09	2.99	16.68	−1.65	−18.87	5.476	5.688	4.970	5.034		$7/2^+$	0^+
166	115	1192.74		7.19		3.41	38.64	0.42	16.98	−1.58	−19.12	5.491	5.703	4.980	5.044		$7/2^+$	$13/2^+$
167	116	1195.24		7.16		2.93	39.23	2.50	17.30	−1.44	−19.41	5.504	5.715	4.991	5.055		$7/2^+$	0^+
168	117	1195.56		7.12		2.82	39.79	0.32	17.61	−1.37	−19.67	5.518	5.729	5.001	5.065		$7/2^+$	$13/2^+$
169	118	1197.83		7.09		2.58	40.36	2.27	17.92	−1.29	−19.94	5.531	5.741	5.012	5.076		$7/2^+$	0^+
170	119	1198.06		7.05		2.50	40.92	0.23	18.23	−1.23	−20.20	5.545	5.755	5.022	5.086		$7/2^+$	$13/2^+$
171	120	1200.16		7.02		2.33	41.47	2.10	18.53	−1.16	−20.47	5.559	5.768	5.033	5.096		$7/2^+$	0^+
172	121	1200.32		6.98		2.26	42.04	0.16	18.84	−1.10	−20.73	5.572	5.781	5.044	5.107		$7/2^+$	$13/2^+$
173	122	1202.29		6.95		2.13	42.58	1.97	19.14	−1.05	−21.00	5.586	5.794	5.054	5.117		$7/2^+$	0^+
174	123	1202.39		6.91		2.07	43.16	0.10	19.46	−0.98	−21.27	5.599	5.806	5.065	5.128		$7/2^+$	$13/2^+$
175	124	1204.25		6.88		1.96	43.69	1.86	19.76	−0.93	−21.53	5.613	5.819	5.076	5.138		$7/2^+$	0^+
176	125	1204.29		6.84		1.90	44.30	0.04	20.09	−0.34	−21.82	5.626	5.831	5.087	5.149		$7/2^+$	$13/2^+$
177	126	1206.03		6.81		1.78		1.74	20.38	−0.17	−22.09	5.639	5.843	5.097	5.160		$7/2^+$	0^+
178	127	1205.38		6.77		1.09		−0.65		−0.36	−22.09	5.696	5.919	5.098	5.160		$7/2^+$	$1/2^+$
179	128	1204.96		6.73		−1.07		−0.42		0.46	−22.14	5.703	5.925	5.102	5.164		$7/2^+$	0^+
σ		2.66													0.008			
$Z = 52$ (Te)																		
109	57	901.01	906.81	8.27	8.32		0.42		1.41	−11.19	0.06	4.523	4.524	4.523	4.593		0^+	$5/2^+$
110	58	913.47	919.39	8.30	8.36		1.38	12.46	1.85	−11.03	−0.41	4.540	4.546	4.533	4.603		0^+	0^+
111	59	922.84	928.82	8.31	8.37	21.83	2.31	9.37	2.29	−10.88	−0.86	4.557	4.569	4.543	4.613		0^+	$5/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
112	60	934.91	940.87	8.35	8.40	21.43	3.19	12.06	2.73	−10.71	−1.29	4.572	4.590	4.551	4.621		0^+	0^+
113	61	944.02	949.72	8.35	8.40	21.18	4.11	9.12	3.16	−10.51	−1.74	4.589	4.612	4.561	4.630		0^+	$5/2^+$
114	62	955.69	961.34	8.38	8.43	20.79	4.89	11.67	3.57	−10.35	−2.12	4.602	4.631	4.568	4.637		0^+	0^+
115	63	964.37	969.58	8.39	8.43	20.34	5.78	8.67	3.99	−10.02	−2.56	4.619	4.653	4.577	4.646		0^+	$5/2^+$
116	64	975.73	980.86	8.41	8.46	20.04	6.50	11.37	4.39	−9.93	−2.91	4.632	4.672	4.583	4.652	4.685	0^+	0^+
117	65	983.99	988.76	8.41	8.45	19.63	7.20	8.26	4.76	−9.87	−3.26	4.647	4.693	4.589	4.658		0^+	$1/2^+$
118	66	994.87	999.43	8.43	8.47	19.14	8.03	10.88	5.16	−9.48	−3.67	4.661	4.712	4.597	4.666	4.696	0^+	0^+
119	67	1002.93	1006.99	8.43	8.46	18.93	8.71	8.06	5.53	−9.32	−4.01	4.677	4.733	4.604	4.673		0^+	$1/2^+$
120	68	1013.15	1017.25	8.44	8.48	18.28	9.51	10.22	5.91	−9.09	−4.41	4.691	4.751	4.611	4.680	4.704	0^+	0^+
121	69	1020.90	1024.49	8.44	8.47	17.97	10.20	7.75	6.27	−8.90	−4.76	4.706	4.772	4.618	4.687		0^+	$1/2^+$
122	70	1030.71	1034.33	8.45	8.48	17.56	10.98	9.81	6.64	−8.75	−5.14	4.720	4.789	4.624	4.693	4.710	0^+	0^+
123	71	1038.10	1041.26	8.44	8.47	17.20	11.74	7.39	7.01	−8.53	−5.51	4.735	4.809	4.631	4.700	4.712	0^+	$1/2^+$
124	72	1047.65	1050.69	8.45	8.47	16.94	12.47	9.55	7.37	−8.44	−5.88	4.748	4.826	4.637	4.706	4.718	0^+	0^+
125	73	1054.62	1057.26	8.44	8.46	16.52	13.34	6.97	7.76	−8.20	−6.30	4.762	4.843	4.645	4.713	4.720	0^+	$1/2^+$
126	74	1064.02	1066.37	8.44	8.46	16.37	14.00	9.40	8.09	−8.15	−6.63	4.775	4.861	4.650	4.718	4.727	0^+	0^+
127	75	1070.72	1072.66	8.43	8.45	16.09	14.76	6.70	8.45	−8.05	−7.00	4.788	4.878	4.656	4.724		0^+	$11/2^-$
128	76	1079.89	1081.44	8.44	8.45	15.87	15.58	9.17	8.83	−7.88	−7.40	4.801	4.894	4.663	4.731	4.735	0^+	0^+
129	77	1086.45	1087.52	8.42	8.43	15.74	16.36	6.57	9.20	−7.78	−7.78	4.814	4.910	4.668	4.736		0^+	$11/2^-$
130	78	1095.30	1095.94	8.43	8.43	15.41	17.19	8.85	9.59	−7.64	−8.19	4.827	4.925	4.675	4.743	4.742	0^+	0^+
131	79	1101.74	1101.87	8.41	8.41	15.28	17.99	6.44	9.97	−7.53	−8.57	4.839	4.941	4.681	4.749		0^+	$11/2^-$
132	80	1110.31	1109.92	8.41	8.41	15.01	18.83	8.57	10.36	−7.40	−8.99	4.852	4.955	4.687	4.755	4.750	0^+	0^+
133	81	1116.64	1115.74	8.40	8.39	14.91	19.64	6.33	10.75	−6.98	−9.38	4.864	4.970	4.693	4.760		0^+	$11/2^-$
134	82	1124.96	1123.41	8.40	8.38	14.65	20.49	8.32	11.15	−5.64	−9.80	4.876	4.984	4.699	4.767	4.757	0^+	0^+
135	83	1127.17	1126.67	8.35	8.35	10.52	20.88	2.20	11.37	−6.77	−10.00	4.896	5.012	4.706	4.773		0^+	$7/2^-$
136	84	1131.08	1131.44	8.32	8.32	6.11	21.45	3.91	11.67	−3.13	−10.31	4.917	5.035	4.718	4.785	4.782	0^+	0^+
137	85	1133.12	1134.39	8.27	8.28	5.96	21.85	2.05	11.89	−3.05	−10.51	4.937	5.062	4.725	4.792		0^+	$7/2^-$
138	86	1137.02	1138.86	8.24	8.25	5.94	22.44	3.90	12.20	−3.07	−10.82	4.957	5.085	4.738	4.805		0^+	0^+
139	87	1138.93	1141.44	8.19	8.21	5.80	22.85	1.90	12.42	−2.98	−11.04	4.977	5.111	4.745	4.812		0^+	$7/2^-$
140	88	1142.83	1145.66	8.16	8.18	5.81	23.44	3.91	12.73	−3.01	−11.34	4.997	5.133	4.758	4.824		0^+	0^+
141	89	1144.60		8.12		5.67	23.90	1.76	12.97	−2.93	−11.58	5.018	5.159	4.766	4.833		0^+	$7/2^-$
142	90	1148.54		8.09		5.71	24.46	3.94	13.26	−2.97	−11.87	5.037	5.180	4.778	4.845		0^+	0^+
143	91	1150.17		8.04		5.57	24.96	1.63	13.53	−2.89	−12.13	5.057	5.205	4.788	4.855		0^+	$7/2^-$
144	92	1154.17		8.02		5.63	25.50	4.00	13.80	−2.93	−12.41	5.076	5.226	4.799	4.865		0^+	0^+
145	93	1155.67		7.97		5.50	25.83	1.50	13.97	−2.86	−12.68	5.097	5.250	4.811	4.877		0^+	$7/2^-$
146	94	1159.74		7.94		5.57	26.55	4.07	14.33	−2.91	−12.94	5.115	5.270	4.820	4.886		0^+	0^+
147	95	1161.31		7.90		5.64	26.90	1.57	14.52	−2.93	−13.11	5.138	5.302	4.826	4.892		0^+	$3/2^-$
148	96	1165.27		7.87		5.53	27.58	3.96	14.86	−2.88	−13.45	5.153	5.314	4.841	4.907		0^+	0^+
149	97	1166.90		7.83		5.59	27.97	1.63	15.06	−2.90	−13.64	5.176	5.343	4.848	4.914		0^+	$3/2^-$
150	98	1170.77		7.81		5.49	28.58	3.86	15.37	−2.85	−13.95	5.191	5.357	4.862	4.927		0^+	0^+
151	99	1172.44		7.76		5.54	29.00	1.68	15.58	−2.86	−14.15	5.213	5.385	4.870	4.935		0^+	$3/2^-$
152	100	1176.22		7.74		5.46	29.55	3.78	15.85	−2.82	−14.43	5.228	5.400	4.881	4.946		0^+	0^+
153	101	1177.93		7.70		5.49	30.00	1.71	16.07	−2.82	−14.64	5.250	5.426	4.890	4.955		0^+	$3/2^-$
154	102	1181.63		7.67		5.41	30.48	3.70	16.32	−2.79	−14.88	5.265	5.442	4.900	4.964		0^+	0^+
155	103	1183.34		7.63		5.41	30.88	1.71	16.54	−2.76	−15.09	5.286	5.467	4.909	4.973		0^+	$3/2^-$
156	104	1186.97		7.61		5.34	31.35	3.64	16.75	−2.74	−15.31	5.302	5.484	4.916	4.981		0^+	0^+
157	105	1188.69		7.57		5.35	31.65	1.72	16.91	−2.74	−15.48	5.323	5.510	4.924	4.988		0^+	$1/2^-$
158	106	1192.24		7.55		5.26	32.16	3.54	17.16	−2.68	−15.70	5.338	5.526	4.932	4.996		0^+	0^+
159	107	1194.04		7.51		5.35	32.58	1.81	17.36	−2.66	−15.87	5.359	5.551	4.939	5.003		0^+	$1/2^-$
160	108	1197.38		7.48		5.15	32.92	3.34	17.53	−2.60	−16.07	5.374	5.568	4.946	5.011		0^+	0^+
161	109	1199.11		7.45		5.07	33.31	1.73	17.72	−2.53	−16.24	5.394	5.592	4.954	5.018		0^+	$1/2^-$
162	110	1202.37		7.42		4.98	33.62	3.26	17.89	−2.48	−16.41	5.410	5.610	4.960	5.024		0^+	0^+
163	111	1203.87		7.39		4.76	34.03	1.50	18.09	−2.26	−16.62	5.428	5.630	4.968	5.032		0^+	$1/2^-$
164	112	1207.04		7.36		4.68	34.33	3.17	18.25	−2.25	−16.78	5.444	5.650	4.974	5.037		0^+	0^+
165	113	1207.85		7.32		3.98	34.84	0.80	18.52	−1.88	−17.16	5.457	5.661	4.988	5.051		0^+	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
166	114	1211.09		7.30		4.05	35.45	3.25	18.78	−1.93	−17.30	5.474	5.681	4.992	5.055		0^+	0^+
167	115	1211.79		7.26		3.94	36.03	0.70	19.05	−1.87	−17.56	5.489	5.696	5.001	5.064		0^+	$13/2^+$
168	116	1214.60		7.23		3.51	36.66	2.81	19.36	−1.72	−17.88	5.502	5.708	5.012	5.075		0^+	0^+
169	117	1215.20		7.19		3.41	37.25	0.60	19.64	−1.66	−18.15	5.516	5.723	5.022	5.085		0^+	$13/2^+$
170	118	1217.77		7.16		3.17	37.87	2.57	19.94	−1.57	−18.46	5.530	5.735	5.032	5.096		0^+	0^+
171	119	1218.29		7.12		3.09	38.46	0.52	20.23	−1.52	−18.74	5.544	5.749	5.042	5.105		0^+	$13/2^+$
172	120	1220.69		7.10		2.92	39.06	2.40	20.53	−1.45	−19.04	5.557	5.761	5.053	5.116		0^+	0^+
173	121	1221.15		7.06		2.86	39.67	0.46	20.82	−1.39	−19.33	5.571	5.775	5.063	5.126		0^+	$13/2^+$
174	122	1223.41		7.03		2.72	40.26	2.26	21.12	−1.34	−19.62	5.584	5.788	5.074	5.137		0^+	0^+
175	123	1223.81		6.99		2.66	40.88	0.40	21.42	−1.28	−19.92	5.597	5.801	5.084	5.147		0^+	$13/2^+$
176	124	1225.96		6.97		2.55	41.47	2.15	21.71	−1.22	−20.21	5.611	5.813	5.095	5.157		0^+	0^+
177	125	1226.31		6.93		2.50	42.11	0.35	22.02	−1.07	−20.51	5.624	5.826	5.105	5.168		0^+	$13/2^+$
178	126	1228.35		6.90		2.39	42.70	2.04	22.32	−0.31	−20.80	5.637	5.838	5.116	5.178		0^+	0^+
179	127	1227.71		6.86		1.39		−0.65	22.33	−0.56	−20.81	5.693	5.913	5.116	5.178		0^+	$1/2^+$
180	128	1227.35		6.82		−1.00		−0.35	22.39	0.43	−20.88	5.695	5.913	5.122	5.184		0^+	0^+
σ		3.54													0.016			
$Z = 53$ (I)																		
109	56	889.25	895.98	8.16	8.22		−1.23			−11.81	0.89	4.529	4.514	4.545	4.615		$7/2^+$	0^+
110	57	899.32	906.84	8.18	8.24		−1.69	10.07	−0.28	−11.57	0.43	4.546	4.537	4.555	4.624		$7/2^+$	$7/2^+$
111	58	912.25	919.41	8.22	8.28	23.00	−1.22	12.93	0.63	−11.49	−0.01	4.561	4.559	4.564	4.633		$7/2^+$	0^+
112	59	922.08	929.59	8.23	8.30	22.76	−0.76	9.83	1.53	−11.35	−0.46	4.577	4.581	4.572	4.642		$7/2^+$	$5/2^+$
113	60	934.58	941.71	8.27	8.33	22.33	−0.33	12.50	2.40	−11.13	−0.88	4.592	4.602	4.581	4.650		$7/2^+$	0^+
114	61	944.15		8.28		22.08	3.29	9.57	0.13	−10.92	−1.32	4.607	4.623	4.589	4.659		$7/2^+$	$5/2^+$
115	62	956.18	963.07	8.31	8.37	21.60	4.06	12.03	0.49	−10.74	−1.69	4.621	4.642	4.596	4.665		$7/2^+$	0^+
116	63	965.28	972.30	8.32	8.38	21.13	4.90	9.10	0.91	−10.40	−2.11	4.636	4.663	4.604	4.673		$7/2^+$	$5/2^+$
117	64	976.97	983.31	8.35	8.40	20.79	5.62	11.69	1.24	−10.30	−2.46	4.649	4.681	4.610	4.679		$7/2^+$	0^+
118	65	985.53	991.92	8.35	8.41	20.25	6.29	8.56	1.54	−10.24	−2.80	4.663	4.702	4.615	4.684		$7/2^+$	$1/2^+$
119	66	996.83	1002.79	8.38	8.43	19.86	7.12	11.30	1.96	−9.85	−3.21	4.677	4.720	4.623	4.692		$7/2^+$	0^+
120	67	1005.20	1010.85	8.38	8.42	19.67	7.80	8.37	2.27	−9.66	−3.56	4.692	4.740	4.630	4.699		$7/2^+$	$3/2^+$
121	68	1015.84	1021.42	8.40	8.44	19.01	8.60	10.64	2.69	−9.46	−3.95	4.705	4.758	4.636	4.705		$7/2^+$	0^+
122	69	1023.91	1029.32	8.39	8.44	18.71	9.29	8.07	3.01	−9.28	−4.29	4.720	4.778	4.643	4.711		$7/2^+$	$1/2^+$
123	70	1034.14	1039.25	8.41	8.45	18.30	10.07	10.23	3.43	−9.12	−4.68	4.733	4.795	4.649	4.718		$7/2^+$	0^+
124	71	1041.90	1046.75	8.40	8.44	17.99	10.81	7.76	3.80	−8.93	−5.04	4.747	4.815	4.656	4.724		$7/2^+$	$1/2^+$
125	72	1051.83	1056.29	8.41	8.45	17.69	11.55	9.93	4.18	−8.83	−5.41	4.760	4.831	4.662	4.730		$7/2^+$	0^+
126	73	1059.25	1063.43	8.41	8.44	17.35	12.38	7.42	4.63	−8.62	−5.81	4.774	4.849	4.669	4.737		$7/2^+$	$1/2^+$
127	74	1068.99	1072.58	8.42	8.45	17.16	13.06	9.74	4.97	−8.55	−6.16	4.787	4.866	4.674	4.742	4.750	$7/2^+$	0^+
128	75	1076.07	1079.40	8.41	8.43	16.82	13.81	7.08	5.35	−8.46	−6.52	4.800	4.883	4.680	4.748		$7/2^+$	$11/2^-$
129	76	1085.67	1088.24	8.42	8.44	16.68	14.62	9.60	5.78	−8.30	−6.91	4.812	4.898	4.686	4.754		$7/2^+$	0^+
130	77	1092.63	1094.74	8.40	8.42	16.56	15.37	6.96	6.18	−8.20	−7.28	4.825	4.915	4.692	4.759		$7/2^+$	$11/2^-$
131	78	1101.92	1103.32	8.41	8.42	16.25	16.21	9.29	6.62	−8.06	−7.69	4.837	4.930	4.698	4.766		$7/2^+$	0^+
132	79	1108.76	1109.65	8.40	8.41	16.13	16.99	6.84	7.02	−7.96	−8.07	4.849	4.945	4.703	4.771		$7/2^+$	$11/2^-$
133	80	1117.78	1117.91	8.40	8.41	15.86	17.83	9.02	7.47	−7.83	−8.48	4.862	4.960	4.710	4.777		$7/2^+$	0^+
134	81	1124.52	1124.16	8.39	8.39	15.76	18.62	6.74	7.88	−6.31	−8.87	4.873	4.974	4.715	4.782		$7/2^+$	$11/2^-$
135	82	1133.28	1131.95	8.39	8.38	15.50	19.47	8.76	8.32	−5.60	−9.29	4.885	4.988	4.721	4.788		$7/2^+$	0^+
136	83	1135.66	1135.78	8.35	8.35	11.14	19.86	2.38	8.49	−6.34	−9.48	4.905	5.015	4.728	4.795		$7/2^+$	$7/2^-$
137	84	1139.89	1140.66	8.32	8.33	6.61	20.48	4.23	8.81	−3.39	−9.82	4.926	5.038	4.741	4.808		$7/2^+$	0^+
138	85	1142.13	1144.36	8.28	8.29	6.47	20.89	2.24	9.01	−3.32	−10.03	4.946	5.065	4.749	4.815		$7/2^+$	$7/2^-$
139	86	1146.34	1148.91	8.25	8.27	6.45	21.51	4.21	9.32	−3.33	−10.36	4.965	5.087	4.762	4.829		$7/2^+$	0^+
140	87	1148.45	1152.12	8.20	8.23	6.32	21.95	2.11	9.52	−3.26	−10.58	4.986	5.112	4.770	4.837		$7/2^+$	$7/2^-$
141	88	1152.67		8.17		6.33	22.56	4.22	9.84	−3.28	−10.90	5.005	5.134	4.783	4.849		$7/2^+$	0^+
142	89	1154.66	1152.12	8.13	8.23	6.21	23.04	1.99	10.06	−3.21	−11.15	5.025	5.159	4.792	4.859		$7/2^+$	$7/2^-$
143	90	1158.90		8.10		6.23	23.62	4.24	10.36	−3.24	−11.45	5.044	5.180	4.804	4.870		$7/2^+$	0^+
144	91	1160.79		8.06		6.13	24.15	1.89	10.62	−3.17	−11.71	5.064	5.204	4.815	4.881		$7/2^+$	$7/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
145	92	1165.06		8.03		6.16	24.69	4.27	10.89	−3.20	−11.99	5.082	5.224	4.826	4.892		$7/2^+$	0^+
146	93	1166.85		7.99		6.06	25.15	1.79	11.18	−3.14	−12.27	5.103	5.248	4.837	4.903		$7/2^+$	$7/2^-$
147	94	1171.16		7.97		6.10	25.75	4.31	11.42	−3.17	−12.53	5.120	5.268	4.847	4.913		$7/2^+$	0^+
148	95	1172.90		7.92		6.05	26.11	1.74	11.59	−3.20	−12.70	5.143	5.298	4.853	4.919		$7/2^+$	$3/2^-$
149	96	1177.21		7.90		6.05	26.80	4.31	11.94	−3.14	−13.05	5.158	5.311	4.868	4.934		$7/2^+$	0^+
150	97	1179.02		7.86		6.12	27.18	1.81	12.12	−3.16	−13.23	5.180	5.340	4.875	4.940		$7/2^+$	$3/2^-$
151	98	1183.21		7.84		6.00	27.81	4.19	12.44	−3.10	−13.56	5.195	5.353	4.889	4.954		$7/2^+$	0^+
152	99	1185.08		7.80		6.06	28.22	1.87	12.64	−3.11	−13.75	5.216	5.380	4.896	4.961		$7/2^+$	$3/2^-$
153	100	1189.15		7.77		5.94	28.78	4.07	12.93	−3.06	−14.03	5.231	5.395	4.908	4.972		$7/2^+$	0^+
154	101	1191.05		7.73		5.97	29.20	1.90	13.12	−3.05	−14.23	5.252	5.420	4.916	4.980		$7/2^+$	$3/2^-$
155	102	1195.00		7.71		5.85	29.69	3.95	13.37	−3.00	−14.48	5.267	5.437	4.925	4.990		$7/2^+$	0^+
156	103	1196.91		7.67		5.86	30.11	1.91	13.57	−2.98	−14.68	5.288	5.461	4.934	4.998		$7/2^+$	$3/2^-$
157	104	1200.76		7.65		5.76	30.54	3.85	13.79	−2.94	−14.89	5.303	5.478	4.942	5.006		$7/2^+$	0^+
158	105	1202.64		7.61		5.73	30.86	1.88	13.95	−2.90	−15.09	5.323	5.502	4.950	5.014		$7/2^+$	$3/2^-$
159	106	1206.40		7.59		5.64	31.32	3.76	14.16	−2.87	−15.28	5.338	5.520	4.956	5.020		$7/2^+$	0^+
160	107	1208.35		7.55		5.71	31.66	1.95	14.31	−2.85	−15.44	5.359	5.544	4.963	5.027		$7/2^+$	$1/2^-$
161	108	1211.90		7.53		5.50	32.05	3.55	14.52	−2.78	−15.64	5.373	5.561	4.970	5.034		$7/2^+$	0^+
162	109	1213.80		7.49		5.45	32.41	1.90	14.69	−2.72	−15.80	5.393	5.584	4.977	5.040		$7/2^+$	$1/2^-$
163	110	1217.23		7.47		5.33	32.75	3.43	14.86	−2.66	−16.00	5.408	5.601	4.983	5.047		$7/2^+$	0^+
164	111	1218.93		7.43		5.13	33.15	1.70	15.06	−2.49	−16.19	5.426	5.622	4.991	5.055		$7/2^+$	$1/2^-$
165	112	1222.27		7.41		5.04	33.47	3.34	15.23	−2.47	−16.38	5.442	5.640	4.997	5.060		$7/2^+$	0^+
166	113	1223.47		7.37		4.54	34.14	1.20	15.62	−2.18	−16.71	5.456	5.653	5.009	5.072		$7/2^+$	$1/2^-$
167	114	1226.84		7.35		4.57	34.52	3.37	15.75	−2.22	−16.86	5.472	5.672	5.013	5.077		$7/2^+$	0^+
168	115	1227.81		7.31		4.34	35.07	0.97	16.02	−2.17	−17.11	5.487	5.689	5.022	5.085		$7/2^+$	$13/2^+$
169	116	1230.95		7.28		4.11	35.71	3.14	16.35	−2.03	−17.43	5.500	5.701	5.033	5.096		$7/2^+$	0^+
170	117	1231.84		7.25		4.03	36.28	0.89	16.64	−1.97	−17.69	5.514	5.716	5.042	5.105		$7/2^+$	$13/2^+$
171	118	1234.73		7.22		3.78	36.90	2.89	16.96	−1.87	−18.00	5.527	5.728	5.052	5.115		$7/2^+$	0^+
172	119	1235.55		7.18		3.71	37.49	0.82	17.26	−1.82	−18.28	5.541	5.742	5.062	5.125		$7/2^+$	$13/2^+$
173	120	1238.25		7.16		3.52	38.09	2.70	17.56	−1.75	−18.59	5.554	5.754	5.073	5.135		$7/2^+$	0^+
174	121	1239.01		7.12		3.46	38.69	0.76	17.86	−1.70	−18.87	5.568	5.768	5.082	5.145		$7/2^+$	$13/2^+$
175	122	1241.58		7.09		3.33	39.29	2.57	18.17	−1.64	−19.17	5.581	5.780	5.093	5.155		$7/2^+$	0^+
176	123	1242.28		7.06		3.27	39.89	0.70	18.47	−1.58	−19.46	5.594	5.794	5.102	5.165		$7/2^+$	$13/2^+$
177	124	1244.74		7.03		3.16	40.49	2.46	18.78	−1.53	−19.76	5.607	5.806	5.113	5.175		$7/2^+$	0^+
178	125	1245.39		7.00		3.11	41.10	0.65	19.08	−0.90	−20.05	5.620	5.819	5.123	5.185		$7/2^+$	$13/2^+$
179	126	1247.73		6.97		2.99	41.70	2.34	19.38	−0.49	−20.35	5.633	5.831	5.133	5.195		$7/2^+$	0^+
180	127	1247.09		6.93		1.70	41.71	−0.64	19.38	−0.96	−20.35	5.689	5.906	5.134	5.195		$7/2^+$	$1/2^+$
181	128	1246.81		6.89		−0.92	41.85	−0.28	19.46	0.39	−20.45	5.687	5.899	5.140	5.202		$7/2^+$	0^+
σ		4.22													0.008			
$Z = 54$ (Xe)																		
112	58	913.31	921.77	8.15	8.23		−0.16		1.06	−11.91	0.33	4.579	4.569	4.590	4.659		0^+	0^+
113	59	923.57	932.02	8.17	8.25		0.73	10.26	1.49	−11.77	−0.11	4.595	4.591	4.599	4.668		0^+	$5/2^+$
114	60	936.49	944.97	8.21	8.29	23.18	1.58	12.92	1.91	−11.54	−0.52	4.609	4.611	4.606	4.675		0^+	0^+
115	61	946.48	954.61	8.23	8.30	22.92	2.46	9.99	2.33	−11.32	−0.95	4.624	4.632	4.615	4.684		0^+	$5/2^+$
116	62	958.91	967.07	8.27	8.34	22.42	3.22	12.43	2.73	−11.14	−1.32	4.637	4.650	4.621	4.689	4.721	0^+	0^+
117	63	968.41	976.28	8.28	8.34	21.93	4.04	9.50	3.13	−10.78	−1.73	4.651	4.671	4.629	4.697		0^+	$5/2^+$
118	64	980.48	988.25	8.31	8.37	21.57	4.75	12.07	3.51	−10.68	−2.08	4.663	4.688	4.634	4.702	4.739	0^+	0^+
119	65	989.41	997.03	8.31	8.38	21.00	5.41	8.92	3.88	−10.62	−2.41	4.677	4.708	4.639	4.707		0^+	$1/2^+$
120	66	1001.11	1008.48	8.34	8.40	20.63	6.24	11.71	4.28	−10.21	−2.82	4.690	4.726	4.646	4.715	4.751	0^+	0^+
121	67	1009.85	1016.86	8.35	8.40	20.45	6.92	8.74	4.65	−10.02	−3.17	4.705	4.746	4.653	4.721		0^+	$3/2^+$
122	68	1020.85	1027.81	8.37	8.42	19.74	7.70	11.00	5.01	−9.82	−3.55	4.718	4.764	4.659	4.727	4.759	0^+	0^+
123	69	1029.28	1035.77	8.37	8.42	19.43	8.38	8.43	5.37	−9.64	−3.89	4.732	4.784	4.665	4.734		0^+	$1/2^+$
124	70	1039.87	1046.26	8.39	8.44	19.02	9.16	10.59	5.73	−9.48	−4.28	4.745	4.801	4.672	4.740	4.766	0^+	0^+
125	71	1047.99	1053.86	8.38	8.43	18.71	9.89	8.12	6.09	−9.29	−4.64	4.759	4.820	4.678	4.746		0^+	$1/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
126	72	1058.28	1063.89	8.40	8.44	18.41	10.63	10.29	6.45	−9.18	−5.01	4.772	4.836	4.684	4.752	4.772	0^+	0^+
127	73	1066.07	1071.13	8.39	8.43	18.08	11.45	7.79	6.82	−8.98	−5.40	4.785	4.854	4.691	4.758	4.775	0^+	$1/2^+$
128	74	1076.16	1080.74	8.41	8.44	17.88	12.14	10.09	7.17	−8.91	−5.75	4.797	4.870	4.696	4.764	4.777	0^+	0^+
129	75	1083.61	1087.65	8.40	8.43	17.54	12.89	7.45	7.54	−8.71	−6.18	4.810	4.886	4.703	4.770	4.778	0^+	$1/2^+$
130	76	1093.56	1096.91	8.41	8.44	17.40	13.67	9.95	7.89	−8.66	−6.50	4.823	4.903	4.708	4.775	4.782	0^+	0^+
131	77	1100.88	1103.51	8.40	8.42	17.27	14.43	7.32	8.25	−8.56	−6.86	4.835	4.919	4.713	4.781	4.781	0^+	$11/2^-$
132	78	1110.55	1112.45	8.41	8.43	16.99	15.25	9.67	8.63	−8.43	−7.26	4.847	4.934	4.719	4.787	4.786	0^+	0^+
133	79	1117.75	1118.88	8.40	8.41	16.87	16.01	7.20	8.99	−8.33	−7.63	4.859	4.949	4.725	4.792	4.783	0^+	$11/2^-$
134	80	1127.16	1127.43	8.41	8.41	16.61	16.85	9.41	9.38	−8.21	−8.04	4.871	4.964	4.731	4.798	4.790	0^+	0^+
135	81	1134.27	1133.80	8.40	8.40	16.52	17.63	7.11	9.75	−6.43	−8.42	4.883	4.978	4.736	4.803		0^+	$11/2^-$
136	82	1143.43	1141.88	8.41	8.40	16.27	18.47	9.16	10.15	−5.95	−8.83	4.894	4.992	4.741	4.809	4.796	0^+	0^+
137	83	1146.03	1145.91	8.37	8.36	11.76	18.86	2.60	10.37	−6.75	−9.03	4.914	5.018	4.748	4.815	4.809	0^+	$7/2^-$
138	84	1150.60	1151.57	8.34	8.34	7.17	19.52	4.57	10.71	−3.66	−9.39	4.934	5.041	4.763	4.829	4.828	0^+	0^+
139	85	1153.06	1155.31	8.30	8.31	7.03	19.94	2.46	10.93	−3.60	−9.60	4.954	5.067	4.770	4.837	4.841	0^+	$7/2^-$
140	86	1157.62	1160.72	8.27	8.29	7.02	20.60	4.56	11.28	−3.60	−9.95	4.973	5.089	4.784	4.851	4.857	0^+	0^+
141	87	1159.96	1164.01	8.23	8.26	6.90	21.03	2.34	11.51	−3.54	−10.18	4.993	5.114	4.792	4.859	4.869	0^+	$7/2^-$
142	88	1164.51	1169.11	8.20	8.23	6.89	21.68	4.55	11.84	−3.55	−10.51	5.012	5.135	4.806	4.872	4.884	0^+	0^+
143	89	1166.76	1172.15	8.16	8.20	6.80	22.16	2.25	12.10	−3.49	−10.76	5.032	5.159	4.815	4.881	4.894	0^+	$7/2^-$
144	90	1171.30	1176.90	8.13	8.17	6.79	22.76	4.54	12.40	−3.51	−11.06	5.051	5.180	4.827	4.893	4.908	0^+	0^+
145	91	1173.46	1179.59	8.09	8.14	6.70	23.29	2.16	12.67	−3.45	−11.33	5.070	5.204	4.838	4.904		0^+	$7/2^-$
146	92	1178.01	1184.12	8.07	8.11	6.71	23.84	4.55	12.95	−3.47	−11.62	5.088	5.224	4.849	4.915	4.932	0^+	0^+
147	93	1180.08		8.03		6.62	24.41	2.07	13.23	−3.41	−11.90	5.108	5.247	4.861	4.926		0^+	$7/2^-$
148	94	1184.66		8.00		6.65	24.92	4.58	13.50	−3.43	−12.16	5.126	5.267	4.871	4.936		0^+	0^+
149	95	1186.64		7.96		6.56	25.33	1.98	13.74	−3.37	−12.45	5.146	5.289	4.883	4.948		0^+	$7/2^-$
150	96	1191.24		7.94		6.58	25.97	4.60	14.03	−3.39	−12.68	5.162	5.309	4.892	4.957		0^+	0^+
151	97	1193.23		7.90		6.59	26.33	1.99	14.21	−3.42	−12.86	5.184	5.336	4.898	4.963		0^+	$3/2^-$
152	98	1197.74		7.88		6.50	26.97	4.51	14.53	−3.34	−13.18	5.199	5.350	4.912	4.976		0^+	0^+
153	99	1199.81		7.84		6.58	27.37	2.07	14.73	−3.36	−13.37	5.219	5.376	4.918	4.983		0^+	$3/2^-$
154	100	1204.16		7.82		6.42	27.94	4.35	15.01	−3.28	−13.66	5.234	5.391	4.930	4.995		0^+	0^+
155	101	1206.27		7.78		6.46	28.34	2.11	15.22	−3.28	−13.85	5.254	5.416	4.938	5.002		0^+	$3/2^-$
156	102	1210.46		7.76		6.30	28.83	4.19	15.46	−3.21	−14.10	5.269	5.432	4.947	5.012		0^+	0^+
157	103	1212.58		7.72		6.31	29.24	2.12	15.67	−3.19	−14.29	5.289	5.456	4.955	5.019		0^+	$3/2^-$
158	104	1216.63		7.70		6.17	29.66	4.05	15.87	−3.14	−14.51	5.304	5.473	4.963	5.027		0^+	0^+
159	105	1218.71		7.66		6.13	30.02	2.08	16.07	−3.09	−14.70	5.324	5.496	4.971	5.035		0^+	$3/2^-$
160	106	1222.66		7.64		6.03	30.42	3.95	16.26	−3.05	−14.89	5.339	5.514	4.977	5.041		0^+	0^+
161	107	1224.72		7.61		6.01	30.68	2.06	16.37	−3.03	−15.05	5.358	5.538	4.983	5.047		0^+	$1/2^-$
162	108	1228.53		7.58		5.87	31.15	3.81	16.63	−2.96	−15.26	5.373	5.554	4.991	5.054		0^+	0^+
163	109	1230.60		7.55		5.88	31.49	2.07	16.80	−2.90	−15.42	5.392	5.577	4.997	5.060		0^+	$1/2^-$
164	110	1234.21		7.53		5.68	31.84	3.61	16.98	−2.84	−15.62	5.407	5.594	5.003	5.067		0^+	0^+
165	111	1236.10		7.49		5.50	32.23	1.89	17.17	−2.71	−15.81	5.424	5.614	5.011	5.074		0^+	$1/2^-$
166	112	1239.63		7.47		5.42	32.59	3.53	17.36	−2.68	−16.01	5.439	5.631	5.017	5.080		0^+	0^+
167	113	1241.14		7.43		5.04	33.29	1.51	17.67	−2.45	−16.31	5.454	5.646	5.028	5.091		0^+	$1/2^-$
168	114	1244.67		7.41		5.04	33.58	3.53	17.83	−2.48	−16.48	5.470	5.665	5.033	5.096		0^+	0^+
169	115	1245.89		7.37		4.75	34.10	1.22	18.08	−2.44	−16.71	5.485	5.681	5.041	5.104		0^+	$13/2^+$
170	116	1249.32		7.35		4.65	34.72	3.43	18.37	−2.30	−17.01	5.498	5.694	5.051	5.114		0^+	0^+
171	117	1250.48		7.31		4.59	35.28	1.16	18.64	−2.25	−17.27	5.512	5.709	5.060	5.123		0^+	$13/2^+$
172	118	1253.66		7.29		4.34	35.89	3.18	18.93	−2.15	−17.58	5.525	5.721	5.071	5.133		0^+	0^+
173	119	1254.75		7.25		4.27	36.46	1.09	19.20	−2.10	−17.85	5.539	5.736	5.080	5.142		0^+	$13/2^+$
174	120	1257.75		7.23		4.09	37.06	3.00	19.50	−2.03	−18.15	5.552	5.748	5.090	5.153		0^+	0^+
175	121	1258.79		7.19		4.04	37.64	1.04	19.78	−1.98	−18.43	5.566	5.762	5.100	5.162		0^+	$13/2^+$
176	122	1261.65		7.17		3.90	38.24	2.86	20.07	−1.92	−18.73	5.579	5.774	5.110	5.172		0^+	0^+
177	123	1262.64		7.13		3.85	38.83	0.99	20.36	−1.87	−19.01	5.592	5.788	5.119	5.182		0^+	$13/2^+$
178	124	1265.38		7.11		3.73	39.42	2.74	20.64	−1.81	−19.31	5.605	5.800	5.130	5.192		0^+	0^+
179	125	1266.33		7.07		3.69	40.02	0.95	20.94	−1.43	−19.60	5.618	5.813	5.139	5.201		0^+	$13/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
180	126	1268.96		7.05		3.58	40.61	2.63	21.23	−0.72	−19.89	5.631	5.825	5.150	5.211		0^+	0^+
181	127	1268.32		7.01		1.99	40.61	−0.64	21.23	−1.16	−19.90	5.686	5.900	5.150	5.212		0^+	$1/2^+$
182	128	1268.15		6.97		−0.81	40.80	−0.17	21.34	0.33	−20.01	5.681	5.887	5.157	5.219		0^+	0^+
σ		5.52													0.018			
$Z = 55$ (Cs)																		
113	58	911.34	920.79	8.06	8.15		−0.91		−1.97	−12.36	0.75	4.600	4.582	4.619	4.688		$7/2^+$	0^+
114	59	922.04	931.78	8.09	8.17		−0.03	10.70	−1.52	−12.22	0.32	4.615	4.604	4.627	4.695		$7/2^+$	$5/2^+$
115	60	935.39		8.13		24.05	0.81	13.35	−1.10	−11.95	−0.08	4.628	4.623	4.634	4.703		$7/2^+$	0^+
116	61	945.81		8.15		23.76	1.65	10.41	−0.68	−11.71	−0.50	4.642	4.643	4.642	4.710		$7/2^+$	$5/2^+$
117	62	958.57	967.81	8.19	8.27	23.18	2.39	12.77	−0.34	−11.51	−0.86	4.654	4.661	4.647	4.715		$7/2^+$	0^+
118	63	968.46	977.80	8.21	8.29	22.65	3.18	9.89	0.05	−11.15	−1.26	4.668	4.680	4.654	4.722	4.783	$7/2^+$	$5/2^+$
119	64	980.86	989.76	8.24	8.32	22.29	3.89	12.40	0.38	−11.05	−1.61	4.680	4.697	4.659	4.727	4.790	$7/2^+$	0^+
120	65	990.08	999.42	8.25	8.33	21.62	4.55	9.22	0.68	−10.95	−1.97	4.694	4.718	4.666	4.734	4.792	$7/2^+$	$3/2^+$
121	66	1002.20	1010.70	8.28	8.35	21.34	5.37	12.12	1.09	−10.58	−2.35	4.706	4.734	4.671	4.739	4.777	$7/2^+$	0^+
122	67	1011.26	1019.81	8.29	8.36	21.18	6.06	9.06	1.41	−10.39	−2.70	4.719	4.754	4.677	4.745	4.777	$7/2^+$	$3/2^+$
123	68	1022.66	1030.79	8.31	8.38	20.46	6.82	11.40	1.81	−10.18	−3.08	4.732	4.771	4.683	4.751	4.782	$7/2^+$	0^+
124	69	1031.42	1039.55	8.32	8.38	20.16	7.51	8.76	2.14	−10.02	−3.42	4.746	4.790	4.689	4.757	4.783	$7/2^+$	$1/2^+$
125	70	1042.42	1049.97	8.34	8.40	19.76	8.28	11.00	2.55	−9.85	−3.80	4.758	4.807	4.695	4.763	4.788	$7/2^+$	0^+
126	71	1050.90	1058.30	8.34	8.40	19.48	9.00	8.48	2.91	−9.69	−4.16	4.772	4.826	4.701	4.769	4.787	$7/2^+$	$1/2^+$
127	72	1061.58	1068.27	8.36	8.41	19.16	9.75	10.68	3.30	−9.56	−4.53	4.784	4.842	4.707	4.775	4.794	$7/2^+$	0^+
128	73	1069.78	1076.03	8.36	8.41	18.88	10.53	8.20	3.71	−9.39	−4.91	4.797	4.859	4.713	4.781	4.792	$7/2^+$	$1/2^+$
129	74	1080.23	1085.67	8.37	8.42	18.65	11.24	10.45	4.07	−9.30	−5.26	4.809	4.875	4.719	4.786	4.798	$7/2^+$	0^+
130	75	1088.14	1093.14	8.37	8.41	18.36	12.07	7.91	4.53	−9.13	−5.67	4.822	4.892	4.725	4.792	4.799	$7/2^+$	$1/2^+$
131	76	1098.42	1102.37	8.38	8.42	18.19	12.75	10.28	4.86	−9.06	−5.99	4.834	4.908	4.730	4.797	4.803	$7/2^+$	0^+
132	77	1106.11	1109.54	8.38	8.41	17.97	13.48	7.69	5.23	−8.96	−6.35	4.846	4.923	4.735	4.802	4.800	$7/2^+$	$11/2^-$
133	78	1116.21	1118.53	8.39	8.41	17.79	14.29	10.10	5.66	−8.83	−6.74	4.858	4.938	4.741	4.808	4.804	$7/2^+$	0^+
134	79	1123.80	1125.42	8.39	8.40	17.69	15.04	7.59	6.05	−8.74	−7.10	4.870	4.954	4.746	4.813	4.803	$7/2^+$	$11/2^-$
135	80	1133.65	1134.18	8.40	8.40	17.44	15.87	9.85	6.49	−8.62	−7.51	4.881	4.968	4.752	4.819	4.807	$7/2^+$	0^+
136	81	1141.16	1141.01	8.39	8.39	17.36	16.64	7.51	6.89	−6.86	−7.87	4.892	4.982	4.757	4.824	4.806	$7/2^+$	$11/2^-$
137	82	1150.77	1149.29	8.40	8.39	17.12	17.49	9.61	7.34	−6.28	−8.29	4.904	4.996	4.762	4.829	4.813	$7/2^+$	0^+
138	83	1153.54	1153.70	8.36	8.36	12.38	17.88	2.77	7.51	−6.73	−8.49	4.923	5.022	4.769	4.836	4.826	$7/2^+$	$7/2^-$
139	84	1158.50	1159.59	8.33	8.34	7.73	18.61	4.96	7.90	−3.95	−8.88	4.943	5.044	4.785	4.851	4.842	$7/2^+$	0^+
140	85	1161.15	1164.01	8.29	8.31	7.61	19.02	2.65	8.09	−3.89	−9.09	4.963	5.070	4.793	4.859	4.855	$7/2^+$	$7/2^-$
141	86	1166.07	1169.51	8.27	8.29	7.57	19.73	4.92	8.45	−3.89	−9.46	4.983	5.091	4.808	4.874	4.869	$7/2^+$	0^+
142	87	1168.63	1173.62	8.23	8.26	7.48	20.18	2.56	8.67	−3.83	−9.70	5.002	5.116	4.816	4.882	4.883	$7/2^+$	$7/2^-$
143	88	1173.52	1178.84	8.21	8.24	7.45	20.85	4.89	9.01	−3.84	−10.04	5.021	5.137	4.830	4.896	4.897	$7/2^+$	0^+
144	89	1176.01	1182.51	8.17	8.21	7.38	21.35	2.49	9.25	−3.79	−10.30	5.040	5.160	4.840	4.905	4.906	$7/2^+$	$7/2^-$
145	90	1180.88	1187.37	8.14	8.19	7.36	21.98	4.87	9.58	−3.79	−10.62	5.059	5.181	4.853	4.918	4.919	$7/2^+$	0^+
146	91	1183.30	1190.95	8.10	8.16	7.29	22.51	2.42	9.84	−3.75	−10.89	5.078	5.204	4.863	4.929	4.928	$7/2^+$	$7/2^-$
147	92	1188.15	1195.47	8.08	8.13	7.27	23.09	4.85	10.14	−3.75	−11.18	5.096	5.224	4.875	4.940		$7/2^+$	0^+
148	93	1190.51	1198.82	8.04	8.10	7.21	23.66	2.36	10.43	−3.70	−11.46	5.115	5.246	4.886	4.951		$7/2^+$	$7/2^-$
149	94	1195.34		8.02		7.19	24.18	4.83	10.68	−3.70	−11.73	5.133	5.266	4.896	4.961		$7/2^+$	0^+
150	95	1197.62		7.98		7.11	24.72	2.28	10.98	−3.65	−12.02	5.152	5.288	4.908	4.973		$7/2^+$	$7/2^-$
151	96	1202.45		7.96		7.11	25.24	4.83	11.21	−3.65	−12.25	5.168	5.307	4.917	4.982		$7/2^+$	0^+
152	97	1204.64		7.93		7.02	25.62	2.19	11.41	−3.58	−12.55	5.188	5.329	4.929	4.994		$7/2^+$	$7/2^-$
153	98	1209.45		7.90		7.00	26.24	4.81	11.71	−3.59	−12.75	5.204	5.348	4.937	5.001		$7/2^+$	0^+
154	99	1211.69		7.87		7.05	26.61	2.24	11.88	−3.61	−12.93	5.224	5.374	4.943	5.007		$7/2^+$	$3/2^-$
155	100	1216.33		7.85		6.88	27.18	4.64	12.17	−3.51	−13.22	5.238	5.388	4.955	5.019		$7/2^+$	0^+
156	101	1218.62		7.81		6.93	27.57	2.29	12.35	−3.51	−13.40	5.258	5.413	4.961	5.025		$7/2^+$	$3/2^-$
157	102	1223.06		7.79		6.73	28.06	4.44	12.60	−3.43	−13.66	5.273	5.428	4.971	5.035		$7/2^+$	0^+
158	103	1225.36		7.76		6.74	28.45	2.30	12.78	−3.40	−13.84	5.292	5.452	4.978	5.042		$7/2^+$	$3/2^-$
159	104	1229.63		7.73		6.57	28.87	4.27	13.00	−3.34	−14.06	5.306	5.468	4.986	5.050		$7/2^+$	0^+
160	105	1231.88		7.70		6.52	29.24	2.25	13.17	−3.29	−14.24	5.325	5.491	4.993	5.057		$7/2^+$	$3/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
161	106	1236.03		7.68		6.40	29.63	4.15	13.37	−3.24	−14.44	5.340	5.508	5.000	5.063		$7/2^+$	0^+
162	107	1238.22		7.64		6.34	29.87	2.19	13.50	−3.22	−14.59	5.359	5.532	5.005	5.069		$7/2^+$	$1/2^-$
163	108	1242.26		7.62		6.23	30.36	4.04	13.73	−3.15	−14.82	5.373	5.548	5.013	5.076		$7/2^+$	0^+
164	109	1244.49		7.59		6.27	30.69	2.23	13.89	−3.10	−14.97	5.392	5.571	5.019	5.082		$7/2^+$	$1/2^-$
165	110	1248.29		7.57		6.03	31.06	3.80	14.08	−3.04	−15.19	5.406	5.586	5.026	5.089		$7/2^+$	0^+
166	111	1250.37		7.53		5.88	31.44	2.08	14.27	−2.94	−15.38	5.423	5.607	5.033	5.096		$7/2^+$	$1/2^-$
167	112	1254.10		7.51		5.81	31.83	3.73	14.47	−2.90	−15.59	5.438	5.623	5.039	5.102		$7/2^+$	0^+
168	113	1255.92		7.48		5.55	32.45	1.82	14.78	−2.74	−15.86	5.453	5.639	5.049	5.112		$7/2^+$	$1/2^-$
169	114	1259.62		7.45		5.52	32.78	3.70	14.95	−2.74	−16.04	5.468	5.656	5.055	5.117		$7/2^+$	0^+
170	115	1261.09		7.42		5.17	33.28	1.47	15.20	−2.56	−16.41	5.481	5.669	5.067	5.130		$7/2^+$	$1/2^-$
171	116	1264.83		7.40		5.21	33.88	3.74	15.51	−2.59	−16.56	5.496	5.687	5.072	5.134		$7/2^+$	0^+
172	117	1266.26		7.36		5.17	34.42	1.43	15.78	−2.55	−16.81	5.511	5.702	5.080	5.142		$7/2^+$	$13/2^+$
173	118	1269.76		7.34		4.93	35.03	3.50	16.10	−2.45	−17.11	5.524	5.715	5.090	5.152		$7/2^+$	0^+
174	119	1271.14		7.31		4.88	35.59	1.38	16.39	−2.41	−17.38	5.538	5.729	5.099	5.161		$7/2^+$	$13/2^+$
175	120	1274.46		7.28		4.70	36.21	3.32	16.71	−2.33	−17.68	5.551	5.742	5.109	5.171		$7/2^+$	0^+
176	121	1275.79		7.25		4.65	36.78	1.33	17.00	−2.29	−17.96	5.564	5.756	5.118	5.180		$7/2^+$	$13/2^+$
177	122	1278.97		7.23		4.51	37.39	3.18	17.32	−2.22	−18.26	5.577	5.768	5.128	5.190		$7/2^+$	0^+
178	123	1280.25		7.19		4.46	37.97	1.28	17.61	−2.17	−18.54	5.590	5.781	5.137	5.199		$7/2^+$	$13/2^+$
179	124	1283.31		7.17		4.34	38.57	3.06	17.93	−2.12	−18.84	5.603	5.794	5.147	5.209		$7/2^+$	0^+
180	125	1284.56		7.14		4.31	39.17	1.25	18.23	−1.66	−19.13	5.616	5.807	5.156	5.218		$7/2^+$	$13/2^+$
181	126	1287.50		7.11		4.19	39.77	2.94	18.54	−1.04	−19.43	5.628	5.819	5.166	5.228		$7/2^+$	0^+
182	127	1286.86		7.07		2.30	39.77	−0.64	18.54	−1.32	−19.44	5.683	5.893	5.166	5.228		$7/2^+$	$1/2^+$
183	128	1286.80		7.03		−0.70	39.99	−0.06	18.65	0.27	−19.56	5.675	5.877	5.175	5.236		$7/2^+$	0^+
σ		6.12													0.025			
$Z = 56$ (Ba)																		
116	60	936.57		8.07			0.08		1.17	−12.34	0.24	4.645	4.633	4.659	4.727		0^+	0^+
117	61	947.38	958.15	8.10	8.19		0.90	10.82	1.57	−12.10	−0.17	4.659	4.652	4.666	4.734		0^+	$5/2^+$
118	62	960.53		8.14		23.97	1.62	13.15	1.96	−11.89	−0.53	4.670	4.669	4.671	4.739		0^+	0^+
119	63	970.81	981.27	8.16	8.25	23.43	2.40	10.28	2.35	−11.52	−0.91	4.683	4.688	4.677	4.745		0^+	$5/2^+$
120	64	983.59	993.64	8.20	8.28	23.05	3.10	12.78	2.73	−11.42	−1.27	4.694	4.705	4.682	4.750	4.809	0^+	0^+
121	65	993.18	1003.56	8.21	8.29	22.38	3.78	9.60	3.10	−11.32	−1.62	4.708	4.724	4.689	4.756	4.818	0^+	$3/2^+$
122	66	1005.67	1015.50	8.24	8.32	22.08	4.56	12.49	3.47	−10.94	−2.00	4.719	4.741	4.693	4.761	4.815	0^+	0^+
123	67	1015.10	1024.62	8.25	8.33	21.92	5.25	9.43	3.84	−10.75	−2.34	4.732	4.760	4.699	4.767	4.814	0^+	$3/2^+$
124	68	1026.87	1036.12	8.28	8.36	21.20	6.02	11.77	4.21	−10.54	−2.72	4.745	4.777	4.705	4.773	4.819	0^+	0^+
125	69	1035.97	1044.77	8.29	8.36	20.87	6.69	9.10	4.55	−10.38	−3.06	4.758	4.796	4.711	4.778	4.818	0^+	$1/2^+$
126	70	1047.34	1055.84	8.31	8.38	20.47	7.47	11.37	4.92	−10.20	−3.44	4.770	4.813	4.717	4.784	4.822	0^+	0^+
127	71	1056.17	1064.06	8.32	8.38	20.20	8.18	8.83	5.27	−10.04	−3.79	4.783	4.831	4.722	4.790	4.820	0^+	$1/2^+$
128	72	1067.21	1074.70	8.34	8.40	19.87	8.93	11.04	5.63	−9.91	−4.16	4.795	4.847	4.728	4.795	4.826	0^+	0^+
129	73	1075.77	1082.45	8.34	8.39	19.60	9.70	8.56	5.99	−9.75	−4.53	4.808	4.864	4.734	4.801	4.825	0^+	$1/2^+$
130	74	1086.56	1092.72	8.36	8.41	19.35	10.40	10.79	6.33	−9.65	−4.89	4.820	4.880	4.739	4.806	4.828	0^+	0^+
131	75	1094.86	1100.22	8.36	8.40	19.09	11.25	8.30	6.72	−9.49	−5.29	4.833	4.897	4.746	4.812	4.828	0^+	$1/2^+$
132	76	1105.46	1110.04	8.37	8.41	18.90	11.90	10.60	7.04	−9.41	−5.62	4.844	4.912	4.750	4.817	4.830	0^+	0^+
133	77	1113.52	1117.23	8.37	8.40	18.66	12.64	8.06	7.41	−9.25	−6.06	4.856	4.927	4.757	4.824	4.829	0^+	$1/2^+$
134	78	1123.97	1126.70	8.39	8.41	18.51	13.42	10.45	7.76	−9.19	−6.35	4.868	4.943	4.761	4.828	4.832	0^+	0^+
135	79	1131.91	1133.67	8.38	8.40	18.39	14.16	7.94	8.11	−9.10	−6.70	4.879	4.958	4.766	4.833	4.829	0^+	$11/2^-$
136	80	1142.13	1142.77	8.40	8.40	18.16	14.97	10.22	8.48	−8.98	−7.10	4.890	4.972	4.772	4.838	4.833	0^+	0^+
137	81	1149.99	1149.68	8.39	8.39	18.08	15.72	7.86	8.83	−7.08	−7.46	4.902	4.986	4.776	4.843	4.831	0^+	$11/2^-$
138	82	1159.99	1158.29	8.41	8.39	17.86	16.56	10.00	9.22	−6.62	−7.86	4.913	5.000	4.782	4.848	4.838	0^+	0^+
139	83	1162.98	1163.02	8.37	8.37	12.99	16.95	2.99	9.44	−7.20	−8.07	4.931	5.025	4.788	4.855	4.851	0^+	$7/2^-$
140	84	1168.33	1169.44	8.35	8.35	8.34	17.73	5.35	9.83	−4.24	−8.47	4.952	5.048	4.805	4.871	4.868	0^+	0^+
141	85	1171.26	1173.98	8.31	8.33	8.28	18.20	2.93	10.11	−4.21	−8.85	4.973	5.071	4.821	4.886	4.881	0^+	$9/2^-$
142	86	1176.51	1180.16	8.29	8.31	8.18	18.89	5.25	10.44	−4.18	−9.08	4.991	5.094	4.828	4.894	4.895	0^+	0^+
143	87	1179.32	1184.32	8.25	8.28	8.06	19.36	2.81	10.69	−4.13	−9.31	5.009	5.117	4.837	4.902	4.909	0^+	$7/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
144	88	1184.56	1190.23	8.23	8.27	8.05	20.05	5.24	11.04	−4.13	−9.67	5.029	5.138	4.851	4.917	4.924	0^+	0^+
145	89	1187.31	1194.05	8.19	8.23	7.99	20.55	2.75	11.30	−4.08	−9.93	5.047	5.161	4.861	4.926	4.935	0^+	$7/2^-$
146	90	1192.49	1199.54	8.17	8.22	7.93	21.19	5.18	11.61	−4.07	−10.26	5.066	5.182	4.874	4.939	4.948	0^+	0^+
147	91	1195.19	1202.94	8.13	8.18	7.88	21.73	2.70	11.89	−4.03	−10.53	5.085	5.204	4.885	4.950	4.973	0^+	$7/2^-$
148	92	1200.34	1208.34	8.11	8.16	7.85	22.33	5.15	12.19	−4.02	−10.83	5.103	5.224	4.896	4.961		0^+	0^+
149	93	1202.98		8.07		7.79	22.90	2.64	12.47	−3.98	−11.11	5.122	5.246	4.908	4.973		0^+	$7/2^-$
150	94	1208.08		8.05		7.74	23.42	5.10	12.74	−3.97	−11.38	5.138	5.265	4.918	4.983		0^+	0^+
151	95	1210.66		8.02		7.68	24.02	2.58	13.04	−3.91	−11.67	5.157	5.287	4.930	4.994		0^+	$7/2^-$
152	96	1215.72		8.00		7.64	24.48	5.06	13.27	−3.90	−11.90	5.174	5.306	4.938	5.003		0^+	0^+
153	97	1218.20		7.96		7.54	24.97	2.48	13.56	−3.83	−12.19	5.193	5.327	4.951	5.015		0^+	$7/2^-$
154	98	1223.22		7.94		7.50	25.48	5.02	13.77	−3.83	−12.40	5.208	5.346	4.957	5.022		0^+	0^+
155	99	1225.64		7.91		7.44	25.83	2.42	13.95	−3.85	−12.57	5.227	5.371	4.963	5.027		0^+	$3/2^-$
156	100	1230.57		7.89		7.35	26.41	4.93	14.24	−3.73	−12.86	5.242	5.385	4.975	5.039		0^+	0^+
157	101	1233.04		7.85		7.40	26.77	2.47	14.42	−3.74	−13.04	5.261	5.410	4.981	5.045		0^+	$3/2^-$
158	102	1237.74		7.83		7.17	27.28	4.70	14.68	−3.64	−13.29	5.275	5.425	4.991	5.055		0^+	0^+
159	103	1240.22		7.80		7.18	27.64	2.48	14.86	−3.61	−13.47	5.294	5.448	4.997	5.061		0^+	$3/2^-$
160	104	1244.72		7.78		6.98	28.09	4.50	15.09	−3.53	−13.70	5.308	5.464	5.005	5.069		0^+	0^+
161	105	1247.15		7.75		6.93	28.44	2.43	15.27	−3.49	−13.87	5.326	5.487	5.012	5.075		0^+	$3/2^-$
162	106	1251.50		7.73		6.78	28.84	4.35	15.47	−3.44	−14.09	5.341	5.503	5.019	5.082		0^+	0^+
163	107	1253.85		7.69		6.70	29.13	2.35	15.63	−3.37	−14.27	5.359	5.525	5.026	5.089		0^+	$3/2^-$
164	108	1258.10		7.67		6.60	29.57	4.25	15.84	−3.34	−14.47	5.373	5.542	5.032	5.095		0^+	0^+
165	109	1260.50		7.64		6.65	29.90	2.40	16.01	−3.30	−14.63	5.391	5.564	5.037	5.100		0^+	$1/2^-$
166	110	1264.52		7.62		6.42	30.31	4.02	16.23	−3.23	−14.85	5.405	5.579	5.045	5.108		0^+	0^+
167	111	1266.79		7.59		6.29	30.69	2.27	16.42	−3.15	−15.04	5.422	5.600	5.051	5.114		0^+	$1/2^-$
168	112	1270.72		7.56		6.20	31.09	3.93	16.62	−3.11	−15.26	5.436	5.615	5.058	5.121		0^+	0^+
169	113	1272.80		7.53		6.01	31.66	2.08	16.88	−2.99	−15.50	5.452	5.633	5.067	5.130		0^+	$1/2^-$
170	114	1276.69		7.51		5.97	32.02	3.89	17.07	−2.98	−15.70	5.466	5.649	5.073	5.136		0^+	0^+
171	115	1278.49		7.48		5.69	32.60	1.80	17.40	−2.83	−16.03	5.480	5.662	5.084	5.147		0^+	$1/2^-$
172	116	1282.39		7.46		5.70	33.07	3.90	17.56	−2.84	−16.20	5.494	5.680	5.089	5.152		0^+	0^+
173	117	1284.06		7.42		5.57	33.58	1.67	17.80	−2.81	−16.44	5.509	5.696	5.097	5.160		0^+	$13/2^+$
174	118	1287.84		7.40		5.45	34.18	3.78	18.08	−2.72	−16.73	5.522	5.708	5.107	5.169		0^+	0^+
175	119	1289.48		7.37		5.42	34.73	1.64	18.34	−2.68	−16.98	5.536	5.723	5.115	5.177		0^+	$13/2^+$
176	120	1293.09		7.35		5.25	35.34	3.61	18.63	−2.60	−17.29	5.549	5.736	5.125	5.187		0^+	0^+
177	121	1294.69		7.31		5.21	35.90	1.60	18.90	−2.56	−17.55	5.562	5.750	5.134	5.196		0^+	$13/2^+$
178	122	1298.15		7.29		5.06	36.50	3.46	19.18	−2.50	−17.85	5.575	5.762	5.144	5.206		0^+	0^+
179	123	1299.71		7.26		5.02	37.07	1.56	19.46	−2.45	−18.12	5.588	5.776	5.152	5.214		0^+	$13/2^+$
180	124	1303.06		7.24		4.91	37.68	3.35	19.75	−2.40	−18.43	5.601	5.788	5.162	5.224		0^+	0^+
181	125	1304.59		7.21		4.88	38.26	1.53	20.03	−1.81	−18.71	5.614	5.801	5.171	5.233		0^+	$13/2^+$
182	126	1307.82		7.19		4.76	38.86	3.23	20.32	−1.16	−19.01	5.626	5.813	5.181	5.243		0^+	0^+
183	127	1307.19		7.14		2.60	38.87	−0.63	20.33	−1.39	−19.01	5.681	5.887	5.181	5.243		0^+	$1/2^+$
184	128	1307.27		7.10		−0.55	39.12	0.08	20.47	0.20	−19.15	5.670	5.867	5.191	5.252		0^+	0^+
σ		6.79													0.028			
$Z = 57$ (La)																		
119	62	959.27		8.06			0.70		−1.26	−12.26	0.00	4.687	4.679	4.695	4.763		$7/2^+$	0^+
120	63	969.92		8.08			1.46	10.64	−0.89	−11.89	−0.38	4.699	4.697	4.701	4.769		$7/2^+$	$5/2^+$
121	64	983.04		8.12		23.77	2.18	13.12	−0.54	−11.78	−0.75	4.710	4.713	4.706	4.773		$7/2^+$	0^+
122	65	992.96		8.14		23.05	2.88	9.92	−0.22	−11.68	−1.12	4.723	4.732	4.712	4.779		$7/2^+$	$3/2^+$
123	66	1005.84		8.18		22.80	3.64	12.88	0.17	−11.31	−1.48	4.734	4.748	4.716	4.784		$7/2^+$	0^+
124	67	1015.61	1026.51	8.19	8.28	22.65	4.35	9.77	0.51	−11.12	−1.84	4.746	4.767	4.722	4.789		$7/2^+$	$3/2^+$
125	68	1027.76	1038.08	8.22	8.30	21.92	5.10	12.15	0.89	−10.90	−2.20	4.758	4.784	4.727	4.795		$7/2^+$	0^+
126	69	1037.18	1047.37	8.23	8.31	21.57	5.76	9.42	1.21	−10.75	−2.55	4.771	4.802	4.733	4.800		$7/2^+$	$1/2^+$
127	70	1048.95	1058.36	8.26	8.33	21.19	6.53	11.77	1.61	−10.57	−2.91	4.783	4.819	4.739	4.806		$7/2^+$	0^+
128	71	1058.13	1067.17	8.27	8.34	20.95	7.23	9.18	1.96	−10.42	−3.26	4.796	4.837	4.744	4.811		$7/2^+$	$1/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
129	72	1069.55	1077.93	8.29	8.36	20.60	7.97	11.42	2.34	−10.28	−3.61	4.807	4.853	4.750	4.816		$7/2^+$	0^+
130	73	1078.48	1086.31	8.30	8.36	20.35	8.70	8.93	2.71	−10.13	−3.97	4.820	4.870	4.755	4.822		$7/2^+$	$1/2^+$
131	74	1089.64	1096.52	8.32	8.37	20.09	9.41	11.16	3.08	−10.02	−4.31	4.831	4.885	4.760	4.827		$7/2^+$	0^+
132	75	1098.35	1104.54	8.32	8.37	19.87	10.21	8.71	3.49	−9.88	−4.68	4.844	4.902	4.766	4.833		$7/2^+$	$1/2^+$
133	76	1109.29	1114.39	8.34	8.38	19.65	10.87	10.94	3.83	−9.79	−5.01	4.855	4.917	4.771	4.838		$7/2^+$	0^+
134	77	1117.81	1122.18	8.34	8.37	19.46	11.70	8.52	4.29	−9.65	−5.39	4.867	4.932	4.777	4.844		$7/2^+$	$1/2^+$
135	78	1128.56	1131.68	8.36	8.38	19.27	12.35	10.75	4.59	−9.57	−5.70	4.878	4.947	4.781	4.848	4.8488	$7/2^+$	0^+
136	79	1136.92	1139.14	8.36	8.38	19.11	13.12	8.36	5.01	−9.45	−6.09	4.889	4.962	4.788	4.854		$7/2^+$	$1/2^+$
137	80	1147.50	1148.32	8.38	8.38	18.94	13.85	10.58	5.37	−9.37	−6.38	4.900	4.976	4.792	4.858	4.8496	$7/2^+$	0^+
138	81	1155.74	1155.77	8.37	8.38	18.82	14.58	8.24	5.75	−7.37	−6.80	4.911	4.990	4.798	4.864	4.8473	$7/2^+$	$1/2^+$
139	82	1166.16	1164.55	8.39	8.38	18.66	15.39	10.42	6.17	−7.09	−7.06	4.922	5.004	4.801	4.868	4.855	$7/2^+$	0^+
140	83	1169.38	1169.71	8.35	8.36	13.64	15.84	3.22	6.40	−7.60	−7.43	4.944	5.029	4.818	4.884		$7/2^+$	$9/2^-$
141	84	1175.13	1176.40	8.33	8.34	8.97	16.63	5.75	6.80	−4.56	−7.70	4.961	5.051	4.826	4.892		$7/2^+$	0^+
142	85	1178.28	1181.56	8.30	8.32	8.90	17.13	3.15	7.02	−4.51	−8.05	4.982	5.075	4.842	4.907		$7/2^+$	$9/2^-$
143	86	1183.93	1187.78	8.28	8.31	8.80	17.86	5.65	7.42	−4.49	−8.32	5.000	5.097	4.850	4.916		$7/2^+$	0^+
144	87	1187.00	1192.53	8.24	8.28	8.72	18.37	3.07	7.68	−4.44	−8.66	5.020	5.119	4.865	4.931		$7/2^+$	$9/2^-$
145	88	1192.59	1198.58	8.22	8.27	8.66	19.07	5.59	8.03	−4.43	−8.93	5.038	5.141	4.874	4.940		$7/2^+$	0^+
146	89	1195.58	1202.87	8.19	8.24	8.58	19.57	2.99	8.27	−4.38	−9.25	5.057	5.163	4.888	4.953		$7/2^+$	$9/2^-$
147	90	1201.13	1208.57	8.17	8.22	8.54	20.25	5.55	8.64	−4.37	−9.52	5.075	5.183	4.898	4.963		$7/2^+$	0^+
148	91	1204.09	1212.67	8.14	8.19	8.51	20.79	2.96	8.90	−4.34	−9.79	5.093	5.206	4.908	4.973		$7/2^+$	$7/2^-$
149	92	1209.56	1218.25	8.12	8.18	8.43	21.41	5.47	9.22	−4.31	−10.09	5.111	5.225	4.921	4.985		$7/2^+$	0^+
150	93	1212.48		8.08		8.39	21.97	2.92	9.50	−4.27	−10.37	5.129	5.247	4.932	4.996		$7/2^+$	$7/2^-$
151	94	1217.85		8.07		8.29	22.51	5.37	9.77	−4.24	−10.64	5.146	5.266	4.942	5.007		$7/2^+$	0^+
152	95	1220.72		8.03		8.24	23.10	2.87	10.06	−4.19	−10.92	5.165	5.287	4.954	5.018		$7/2^+$	$7/2^-$
153	96	1226.01		8.01		8.16	23.56	5.29	10.29	−4.16	−11.16	5.180	5.306	4.962	5.026		$7/2^+$	0^+
154	97	1228.78		7.98		8.06	24.14	2.77	10.58	−4.08	−11.43	5.199	5.327	4.974	5.038		$7/2^+$	$7/2^-$
155	98	1233.99		7.96		7.98	24.54	5.21	10.77	−4.06	−11.66	5.214	5.345	4.980	5.044		$7/2^+$	0^+
156	99	1236.61		7.93		7.83	24.92	2.62	10.97	−3.95	−11.92	5.232	5.366	4.991	5.055		$7/2^+$	$7/2^-$
157	100	1241.79		7.91		7.80	25.46	5.18	11.22	−3.96	−12.13	5.246	5.384	4.997	5.061		$7/2^+$	0^+
158	101	1244.41		7.88		7.80	25.79	2.62	11.37	−3.96	−12.32	5.265	5.407	5.002	5.066		$7/2^+$	$3/2^-$
159	102	1249.37		7.86		7.58	26.31	4.96	11.63	−3.85	−12.58	5.279	5.422	5.012	5.075		$7/2^+$	0^+
160	103	1252.00		7.83		7.59	26.64	2.63	11.78	−3.82	−12.76	5.297	5.445	5.017	5.081		$7/2^+$	$3/2^-$
161	104	1256.74		7.81		7.37	27.11	4.74	12.02	−3.74	−13.00	5.311	5.461	5.026	5.089		$7/2^+$	0^+
162	105	1259.33		7.77		7.33	27.45	2.59	12.18	−3.69	−13.18	5.329	5.483	5.032	5.095		$7/2^+$	$3/2^-$
163	106	1263.90		7.75		7.16	27.87	4.57	12.40	−3.63	−13.41	5.343	5.499	5.039	5.102		$7/2^+$	0^+
164	107	1266.42		7.72		7.09	28.20	2.52	12.57	−3.58	−13.60	5.360	5.520	5.046	5.109		$7/2^+$	$3/2^-$
165	108	1270.88		7.70		6.98	28.62	4.46	12.78	−3.54	−13.81	5.374	5.536	5.052	5.115		$7/2^+$	0^+
166	109	1273.35		7.67		6.93	28.86	2.47	12.85	−3.50	−13.98	5.392	5.558	5.057	5.120		$7/2^+$	$1/2^-$
167	110	1277.68		7.65		6.80	29.39	4.33	13.16	−3.44	−14.21	5.405	5.573	5.065	5.128		$7/2^+$	0^+
168	111	1280.15		7.62		6.80	29.78	2.47	13.36	−3.38	−14.39	5.422	5.593	5.071	5.134		$7/2^+$	$1/2^-$
169	112	1284.30		7.60		6.62	30.20	4.15	13.58	−3.33	−14.62	5.435	5.608	5.079	5.141		$7/2^+$	0^+
170	113	1286.62		7.57		6.47	30.70	2.32	13.82	−3.25	−14.83	5.451	5.626	5.086	5.149		$7/2^+$	$1/2^-$
171	114	1290.72		7.55		6.42	31.10	4.10	14.03	−3.22	−15.05	5.465	5.641	5.093	5.156		$7/2^+$	0^+
172	115	1292.85		7.52		6.23	31.76	2.13	14.36	−3.12	−15.30	5.479	5.656	5.103	5.166		$7/2^+$	$1/2^-$
173	116	1296.93		7.50		6.21	32.10	4.08	14.54	−3.11	−15.50	5.493	5.672	5.109	5.171		$7/2^+$	0^+
174	117	1298.86		7.46		6.01	32.60	1.93	14.80	−3.00	−15.80	5.507	5.685	5.121	5.183		$7/2^+$	$1/2^-$
175	118	1302.95		7.45		6.02	33.19	4.09	15.11	−3.01	−15.97	5.521	5.702	5.126	5.188		$7/2^+$	0^+
176	119	1304.86		7.41		6.00	33.72	1.91	15.38	−2.98	−16.19	5.535	5.717	5.134	5.196		$7/2^+$	$13/2^+$
177	120	1308.79		7.39		5.84	34.33	3.93	15.70	−2.91	−16.46	5.548	5.730	5.144	5.206		$7/2^+$	0^+
178	121	1310.68		7.36		5.82	34.89	1.89	15.99	−2.88	−16.69	5.562	5.744	5.152	5.214		$7/2^+$	$13/2^+$
179	122	1314.48		7.34		5.69	35.51	3.80	16.33	−2.82	−16.95	5.574	5.757	5.162	5.224		$7/2^+$	0^+
180	123	1316.36		7.31		5.68	36.11	1.88	16.65	−2.78	−17.18	5.588	5.771	5.170	5.232		$7/2^+$	$13/2^+$
181	124	1320.05		7.29		5.57	36.74	3.69	16.99	−2.73	−17.44	5.600	5.783	5.180	5.241		$7/2^+$	0^+
182	125	1321.89		7.26		5.53	37.33	1.84	17.30	−1.97	−17.69	5.613	5.796	5.188	5.249		$7/2^+$	$13/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
183	126	1325.45		7.24		5.40	37.95	3.56	17.63	−1.43	−17.96	5.625	5.808	5.198	5.259		$7/2^+$	0^+
184	127	1324.82		7.20		2.93	37.96	−0.63	17.63	−1.99	−17.97	5.679	5.882	5.198	5.259		$7/2^+$	$1/2^+$
185	128	1325.02		7.16		−0.43	38.22	0.20	17.75	0.14	−18.15	5.667	5.860	5.208	5.269		$7/2^+$	0^+
σ		6.59													0.011			
$Z = 58$ (Ce)																		
120	62	960.55		8.00			0.01		1.27	−12.63	0.30	4.702	4.688	4.718	4.786		0^+	0^+
121	63	971.57		8.03			0.76	11.02	1.65	−12.26	−0.08	4.714	4.705	4.724	4.791		0^+	$5/2^+$
122	64	985.06		8.07		24.51	1.47	13.49	2.02	−12.15	−0.44	4.724	4.721	4.728	4.795		0^+	0^+
123	65	995.34		8.09		23.78	2.16	10.28	2.38	−12.04	−0.80	4.737	4.739	4.734	4.801		0^+	$3/2^+$
124	66	1008.60		8.13		23.54	2.93	13.26	2.76	−11.66	−1.17	4.747	4.755	4.738	4.805		0^+	0^+
125	67	1018.72		8.15		23.38	3.62	10.12	3.11	−11.47	−1.52	4.760	4.773	4.744	4.811		0^+	$3/2^+$
126	68	1031.23	1042.43	8.18	8.27	22.63	4.36	12.51	3.47	−11.26	−1.88	4.771	4.790	4.749	4.815		0^+	0^+
127	69	1040.99	1051.66	8.20	8.28	22.27	5.02	9.76	3.81	−11.10	−2.22	4.783	4.808	4.753	4.820		0^+	$1/2^+$
128	70	1053.14	1063.29	8.23	8.31	21.91	5.80	12.15	4.19	−10.92	−2.59	4.795	4.825	4.759	4.826		0^+	0^+
129	71	1062.65	1072.11	8.24	8.31	21.66	6.48	9.51	4.52	−10.77	−2.93	4.807	4.842	4.764	4.831		0^+	$1/2^+$
130	72	1074.44	1083.32	8.26	8.33	21.30	7.23	11.79	4.89	−10.63	−3.29	4.819	4.858	4.770	4.836		0^+	0^+
131	73	1083.72	1091.67	8.27	8.33	21.07	7.95	9.28	5.24	−10.49	−3.65	4.831	4.875	4.775	4.842		0^+	$1/2^+$
132	74	1095.23	1102.51	8.30	8.35	20.79	8.67	11.51	5.59	−10.37	−3.99	4.842	4.890	4.780	4.847		0^+	0^+
133	75	1104.30	1110.53	8.30	8.35	20.58	9.44	9.07	5.95	−10.23	−4.36	4.854	4.907	4.786	4.852		0^+	$1/2^+$
134	76	1115.58	1121.02	8.33	8.37	20.35	10.12	11.28	6.29	−10.13	−4.69	4.865	4.921	4.790	4.857		0^+	0^+
135	77	1124.47	1128.87	8.33	8.36	20.17	10.95	8.89	6.66	−10.01	−5.07	4.877	4.937	4.796	4.862		0^+	$1/2^+$
136	78	1135.54	1138.83	8.35	8.37	19.96	11.57	11.07	6.98	−9.92	−5.38	4.888	4.951	4.800	4.867	4.874	0^+	0^+
137	79	1144.30	1146.31	8.35	8.37	19.83	12.39	8.76	7.38	−9.81	−5.78	4.899	4.966	4.806	4.872		0^+	$1/2^+$
138	80	1155.17	1156.03	8.37	8.38	19.63	13.04	10.87	7.67	−9.72	−6.06	4.909	4.980	4.810	4.876	4.874	0^+	0^+
139	81	1163.84	1163.49	8.37	8.37	19.54	13.85	8.67	8.10	−7.83	−6.48	4.920	4.994	4.816	4.882		0^+	$1/2^+$
140	82	1174.51	1172.69	8.39	8.38	19.34	14.52	10.67	8.35	−7.55	−6.74	4.931	5.008	4.819	4.885	4.877	0^+	0^+
141	83	1178.12	1178.12	8.36	8.36	14.28	15.14	3.61	8.74	−7.87	−7.11	4.952	5.032	4.835	4.901		0^+	$9/2^-$
142	84	1184.14	1185.28	8.34	8.35	9.63	15.81	6.02	9.01	−4.87	−7.39	4.970	5.054	4.844	4.910	4.906	0^+	0^+
143	85	1187.64	1190.43	8.31	8.32	9.52	16.38	3.50	9.36	−4.82	−7.74	4.990	5.077	4.860	4.925		0^+	$9/2^-$
144	86	1193.58	1197.32	8.29	8.31	9.44	17.07	5.94	9.65	−4.80	−8.02	5.008	5.099	4.869	4.934	4.930	0^+	0^+
145	87	1196.99	1202.03	8.26	8.29	9.35	17.67	3.41	9.99	−4.74	−8.36	5.028	5.121	4.884	4.949		0^+	$9/2^-$
146	88	1202.86	1208.68	8.24	8.28	9.28	18.30	5.87	10.27	−4.73	−8.63	5.045	5.143	4.894	4.959	4.959	0^+	0^+
147	89	1206.19	1213.12	8.21	8.25	9.20	18.88	3.33	10.61	−4.66	−8.95	5.065	5.164	4.908	4.972		0^+	$9/2^-$
148	90	1212.01	1219.58	8.19	8.24	9.15	19.52	5.82	10.88	−4.66	−9.23	5.082	5.185	4.917	4.982	4.989	0^+	0^+
149	91	1215.24	1223.92	8.16	8.21	9.05	20.05	3.23	11.15	−4.63	−9.50	5.100	5.207	4.928	4.992		0^+	$7/2^-$
150	92	1221.02	1230.17	8.14	8.20	9.01	20.68	5.78	11.46	−4.59	−9.80	5.117	5.226	4.940	5.005		0^+	0^+
151	93	1224.22	1234.62	8.11	8.18	8.98	21.24	3.20	11.74	−4.55	−10.08	5.135	5.247	4.951	5.015		0^+	$7/2^-$
152	94	1229.87		8.09		8.85	21.79	5.65	12.02	−4.51	−10.36	5.152	5.266	4.961	5.026		0^+	0^+
153	95	1233.02		8.06		8.80	22.36	3.15	12.30	−4.45	−10.63	5.170	5.287	4.973	5.037		0^+	$7/2^-$
154	96	1238.55		8.04		8.68	22.83	5.53	12.54	−4.41	−10.88	5.185	5.305	4.981	5.045		0^+	0^+
155	97	1241.59		8.01		8.57	23.39	3.04	12.81	−4.32	−11.15	5.203	5.326	4.992	5.056		0^+	$7/2^-$
156	98	1247.03		7.99		8.48	23.81	5.44	13.04	−4.30	−11.37	5.218	5.344	4.999	5.062		0^+	0^+
157	99	1249.90		7.96		8.31	24.26	2.87	13.29	−4.18	−11.63	5.236	5.364	5.009	5.072		0^+	$7/2^-$
158	100	1255.29		7.94		8.26	24.72	5.39	13.50	−4.18	−11.84	5.250	5.382	5.015	5.078		0^+	0^+
159	101	1258.09		7.91		8.19	25.05	2.80	13.68	−4.18	−12.02	5.267	5.405	5.019	5.083		0^+	$3/2^-$
160	102	1263.31		7.90		8.02	25.57	5.22	13.94	−4.06	−12.29	5.281	5.419	5.029	5.092		0^+	0^+
161	103	1266.12		7.86		8.03	25.90	2.81	14.12	−4.04	−12.47	5.299	5.442	5.034	5.097		0^+	$3/2^-$
162	104	1271.09		7.85		7.78	26.37	4.97	14.35	−3.94	−12.71	5.313	5.457	5.043	5.106		0^+	0^+
163	105	1273.86		7.82		7.74	26.71	2.77	14.53	−3.90	−12.90	5.330	5.479	5.049	5.112		0^+	$3/2^-$
164	106	1278.66		7.80		7.57	27.16	4.80	14.76	−3.83	−13.13	5.344	5.494	5.056	5.119		0^+	0^+
165	107	1281.36		7.77		7.50	27.51	2.70	14.94	−3.78	−13.31	5.361	5.516	5.063	5.125		0^+	$3/2^-$
166	108	1286.04		7.75		7.38	27.94	4.68	15.16	−3.74	−13.53	5.374	5.531	5.069	5.132		0^+	0^+
167	109	1288.66		7.72		7.30	28.16	2.62	15.31	−3.71	−13.70	5.392	5.553	5.075	5.137		0^+	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
168	110	1293.24		7.70		7.20	28.72	4.58	15.56	−3.64	−13.94	5.405	5.567	5.083	5.145		0^+	0^+
169	111	1295.90		7.67		7.24	29.11	2.66	15.75	−3.60	−14.12	5.421	5.587	5.088	5.151		0^+	$1/2^-$
170	112	1300.26		7.65		7.02	29.54	4.36	15.96	−3.54	−14.36	5.434	5.601	5.096	5.158		0^+	0^+
171	113	1302.80		7.62		6.90	30.00	2.54	16.18	−3.48	−14.56	5.450	5.620	5.103	5.165		0^+	$1/2^-$
172	114	1307.11		7.60		6.85	30.42	4.31	16.39	−3.45	−14.79	5.463	5.635	5.110	5.172		0^+	0^+
173	115	1309.51		7.57		6.71	31.02	2.40	16.66	−3.36	−15.03	5.478	5.651	5.119	5.181		0^+	$1/2^-$
174	116	1313.78		7.55		6.67	31.39	4.27	16.85	−3.35	−15.23	5.492	5.666	5.125	5.187		0^+	0^+
175	117	1316.01		7.52		6.50	31.95	2.23	17.15	−3.25	−15.51	5.505	5.679	5.136	5.198		0^+	$1/2^-$
176	118	1320.27		7.50		6.49	32.43	4.26	17.32	−3.25	−15.70	5.519	5.696	5.142	5.203		0^+	0^+
177	119	1322.41		7.47		6.40	32.93	2.14	17.55	−3.22	−15.92	5.533	5.711	5.149	5.211		0^+	$13/2^+$
178	120	1326.61		7.45		6.34	33.52	4.20	17.82	−3.16	−16.18	5.546	5.724	5.158	5.220		0^+	0^+
179	121	1328.73		7.42		6.32	34.04	2.12	18.05	−3.13	−16.40	5.560	5.739	5.166	5.228		0^+	$13/2^+$
180	122	1332.80		7.40		6.19	34.65	4.07	18.32	−3.07	−16.66	5.572	5.751	5.176	5.237		0^+	0^+
181	123	1334.91		7.38		6.18	35.20	2.11	18.55	−3.04	−16.89	5.585	5.765	5.184	5.245		0^+	$13/2^+$
182	124	1338.87		7.36		6.07	35.81	3.96	18.82	−2.99	−17.15	5.598	5.777	5.194	5.255		0^+	0^+
183	125	1340.98		7.33		6.07	36.39	2.11	19.09	−2.15	−17.39	5.611	5.791	5.202	5.263		0^+	$13/2^+$
184	126	1344.83		7.31		5.96	37.01	3.85	19.38	−1.70	−17.65	5.623	5.803	5.211	5.272		0^+	0^+
185	127	1344.21		7.27		3.23	37.02	−0.62	19.39	−1.67	−17.66	5.677	5.877	5.212	5.273		0^+	$1/2^+$
186	128	1344.57		7.23		−0.26	37.30	0.36	19.55	0.05	−17.86	5.663	5.852	5.223	5.284		0^+	0^+
σ		6.76													0.005			
$Z = 59$ (Pr)																		
121	62	958.51		7.92			−0.77		−2.04	−13.01	0.65	4.718	4.696	4.742	4.809		$5/2^+$	0^+
122	63	969.91		7.95			−0.01	11.40	−1.66	−12.63	0.28	4.729	4.713	4.747	4.814		$5/2^+$	$5/2^+$
123	64	983.77		8.00		25.27	0.73	13.87	−1.29	−12.52	−0.08	4.739	4.728	4.751	4.818		$5/2^+$	0^+
124	65	994.42		8.02		24.51	1.46	10.64	−0.93	−12.41	−0.43	4.751	4.746	4.757	4.823		$5/2^+$	$3/2^+$
125	66	1008.03		8.06		24.26	2.19	13.61	−0.57	−12.02	−0.79	4.761	4.762	4.760	4.827		$5/2^+$	0^+
126	67	1018.51		8.08		24.09	2.90	10.48	−0.21	−11.83	−1.14	4.773	4.780	4.765	4.832		$5/2^+$	$3/2^+$
127	68	1031.38		8.12		23.35	3.62	12.87	0.15	−11.61	−1.50	4.784	4.797	4.770	4.837		$5/2^+$	0^+
128	69	1041.47	1053.30	8.14	8.23	22.96	4.29	10.09	0.48	−11.46	−1.84	4.796	4.814	4.775	4.841		$5/2^+$	$1/2^+$
129	70	1053.98	1064.82	8.17	8.25	22.60	5.03	12.51	0.84	−11.27	−2.21	4.808	4.830	4.780	4.847		$5/2^+$	0^+
130	71	1063.83	1074.29	8.18	8.26	22.36	5.70	9.85	1.18	−11.12	−2.55	4.819	4.848	4.785	4.851		$5/2^+$	$1/2^+$
131	72	1075.98	1085.48	8.21	8.29	22.00	6.43	12.15	1.54	−10.97	−2.91	4.831	4.863	4.790	4.857		$5/2^+$	0^+
132	73	1085.60	1094.47	8.22	8.29	21.77	7.12	9.62	1.88	−10.84	−3.26	4.842	4.880	4.795	4.862		$5/2^+$	$1/2^+$
133	74	1097.45	1105.26	8.25	8.31	21.47	7.81	11.85	2.22	−10.71	−3.61	4.853	4.895	4.800	4.866		$5/2^+$	0^+
134	75	1106.88	1113.93	8.26	8.31	21.28	8.53	9.43	2.58	−10.58	−3.97	4.865	4.911	4.805	4.871		$5/2^+$	$1/2^+$
135	76	1118.47	1124.41	8.29	8.33	21.02	9.18	11.59	2.89	−10.47	−4.30	4.875	4.926	4.810	4.876		$5/2^+$	0^+
136	77	1127.73	1132.88	8.29	8.33	20.85	9.92	9.26	3.26	−10.35	−4.68	4.887	4.941	4.815	4.881		$5/2^+$	$1/2^+$
137	78	1139.11	1142.81	8.31	8.34	20.64	10.55	11.38	3.57	−10.25	−4.99	4.897	4.955	4.819	4.885		$5/2^+$	0^+
138	79	1148.22	1150.81	8.32	8.34	20.49	11.30	9.11	3.92	−10.14	−5.39	4.908	4.970	4.824	4.890		$5/2^+$	$1/2^+$
139	80	1159.40	1160.58	8.34	8.35	20.29	11.90	11.18	4.23	−10.05	−5.68	4.918	4.984	4.828	4.894		$5/2^+$	0^+
140	81	1168.42	1168.52	8.35	8.35	20.20	12.68	9.02	4.58	−8.00	−6.09	4.929	4.997	4.834	4.899		$5/2^+$	$1/2^+$
141	82	1179.38	1177.91	8.36	8.35	19.98	13.22	10.96	4.87	−7.75	−6.35	4.939	5.011	4.837	4.903	4.892	$5/2^+$	0^+
142	83	1183.33	1183.76	8.33	8.34	14.91	13.95	3.95	5.21	−8.24	−6.72	4.960	5.035	4.852	4.918		$5/2^+$	$9/2^-$
143	84	1189.65	1191.11	8.32	8.33	10.27	14.52	6.32	5.51	−5.19	−7.00	4.977	5.057	4.862	4.927		$5/2^+$	0^+
144	85	1193.49	1196.86	8.29	8.31	10.16	15.21	3.84	5.85	−5.13	−7.35	4.998	5.080	4.877	4.942		$5/2^+$	$9/2^-$
145	86	1199.71	1203.81	8.27	8.30	10.06	15.78	6.22	6.13	−5.11	−7.63	5.015	5.101	4.886	4.951		$5/2^+$	0^+
146	87	1203.45	1208.94	8.24	8.28	9.96	16.45	3.74	6.46	−5.05	−7.97	5.035	5.123	4.901	4.966		$5/2^+$	$9/2^-$
147	88	1209.61	1215.77	8.23	8.27	9.90	17.02	6.16	6.75	−5.03	−8.25	5.052	5.144	4.910	4.975		$5/2^+$	0^+
148	89	1213.24	1220.93	8.20	8.25	9.79	17.66	3.63	7.05	−4.96	−8.57	5.071	5.165	4.924	4.988		$5/2^+$	$9/2^-$
149	90	1219.35	1227.51	8.18	8.24	9.74	18.22	6.11	7.34	−4.96	−8.85	5.087	5.186	4.934	4.998		$5/2^+$	0^+
150	91	1222.86	1232.84	8.15	8.22	9.62	18.77	3.51	7.62	−4.92	−9.13	5.105	5.207	4.944	5.008		$5/2^+$	$7/2^-$
151	92	1228.92	1239.39	8.14	8.21	9.57	19.36	6.06	7.90	−4.87	−9.43	5.122	5.226	4.956	5.020		$5/2^+$	0^+
152	93	1232.41	1244.44	8.11	8.19	9.55	19.93	3.49	8.19	−4.83	−9.71	5.140	5.247	4.967	5.031		$5/2^+$	$7/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
153	94	1238.33	1250.33	8.09	8.17	9.41	20.48	5.92	8.46	−4.78	−9.98	5.156	5.266	4.977	5.041		$5/2^+$	0^+
154	95	1241.75	1255.02	8.06	8.15	9.34	21.03	3.42	8.73	−4.72	−10.26	5.174	5.286	4.988	5.052		$5/2^+$	$7/2^-$
155	96	1247.53	1260.31	8.05	8.13	9.20	21.52	5.78	8.98	−4.67	−10.51	5.189	5.304	4.996	5.060		$5/2^+$	0^+
156	97	1250.85		8.02		9.10	22.07	3.32	9.26	−4.58	−10.77	5.207	5.324	5.007	5.070		$5/2^+$	$7/2^-$
157	98	1256.52		8.00		8.99	22.53	5.67	9.49	−4.55	−11.00	5.221	5.342	5.014	5.077		$5/2^+$	0^+
158	99	1259.64		7.97		8.79	23.03	3.12	9.74	−4.42	−11.26	5.238	5.362	5.024	5.087		$5/2^+$	$7/2^-$
159	100	1265.25		7.96		8.73	23.46	5.61	9.96	−4.42	−11.47	5.252	5.379	5.029	5.093		$5/2^+$	0^+
160	101	1268.26		7.93		8.62	23.85	3.01	10.17	−4.42	−11.66	5.269	5.402	5.034	5.097		$5/2^+$	$3/2^-$
161	102	1273.73		7.91		8.48	24.36	5.47	10.42	−4.29	−11.92	5.283	5.417	5.044	5.107		$5/2^+$	0^+
162	103	1276.74		7.88		8.48	24.74	3.01	10.62	−4.26	−12.11	5.300	5.439	5.049	5.112		$5/2^+$	$3/2^-$
163	104	1281.95		7.86		8.22	25.21	5.21	10.86	−4.16	−12.35	5.314	5.454	5.058	5.121		$5/2^+$	0^+
164	105	1284.92		7.83		8.18	25.59	2.97	11.06	−4.12	−12.54	5.331	5.475	5.063	5.126		$5/2^+$	$3/2^-$
165	106	1289.94		7.82		7.99	26.04	5.02	11.28	−4.05	−12.77	5.344	5.490	5.071	5.134		$5/2^+$	0^+
166	107	1292.84		7.79		7.92	26.42	2.90	11.48	−4.00	−12.96	5.361	5.511	5.077	5.140		$5/2^+$	$3/2^-$
167	108	1297.74		7.77		7.80	26.86	4.90	11.70	−3.95	−13.19	5.374	5.526	5.084	5.147		$5/2^+$	0^+
168	109	1300.54		7.74		7.70	27.19	2.80	11.88	−3.88	−13.39	5.391	5.546	5.091	5.154		$5/2^+$	$3/2^-$
169	110	1305.35		7.72		7.61	27.67	4.81	12.11	−3.85	−13.60	5.404	5.561	5.098	5.160		$5/2^+$	0^+
170	111	1308.20		7.70		7.66	28.05	2.85	12.30	−3.81	−13.78	5.420	5.581	5.103	5.166		$5/2^+$	$1/2^-$
171	112	1312.79		7.68		7.44	28.49	4.59	12.53	−3.76	−14.02	5.433	5.595	5.111	5.173		$5/2^+$	0^+
172	113	1315.53		7.65		7.33	28.91	2.74	12.73	−3.70	−14.22	5.449	5.614	5.118	5.180		$5/2^+$	$1/2^-$
173	114	1320.07		7.63		7.28	29.35	4.54	12.96	−3.67	−14.45	5.462	5.628	5.125	5.187		$5/2^+$	0^+
174	115	1322.69		7.60		7.16	29.84	2.62	13.18	−3.59	−14.69	5.476	5.644	5.133	5.195		$5/2^+$	$1/2^-$
175	116	1327.18		7.58		7.11	30.25	4.49	13.40	−3.57	−14.90	5.490	5.659	5.140	5.202		$5/2^+$	0^+
176	117	1329.66		7.55		6.97	30.80	2.48	13.65	−3.48	−15.17	5.503	5.673	5.150	5.212		$5/2^+$	$1/2^-$
177	118	1334.13		7.54		6.95	31.18	4.47	13.86	−3.48	−15.36	5.517	5.689	5.155	5.217		$5/2^+$	0^+
178	119	1336.48		7.51		6.82	31.62	2.35	14.07	−3.46	−15.57	5.531	5.705	5.162	5.224		$5/2^+$	$13/2^+$
179	120	1340.92		7.49		6.79	32.13	4.44	14.31	−3.39	−15.83	5.543	5.718	5.171	5.233		$5/2^+$	0^+
180	121	1343.26		7.46		6.78	32.58	2.34	14.53	−3.36	−16.05	5.557	5.732	5.178	5.240		$5/2^+$	$13/2^+$
181	122	1347.57		7.45		6.65	33.09	4.31	14.77	−3.30	−16.31	5.569	5.745	5.188	5.249		$5/2^+$	0^+
182	123	1349.90		7.42		6.64	33.54	2.33	14.99	−3.26	−16.54	5.582	5.759	5.195	5.256		$5/2^+$	$13/2^+$
183	124	1354.07		7.40		6.50	34.02	4.17	15.20	−3.20	−16.80	5.594	5.771	5.204	5.265		$5/2^+$	0^+
184	125	1356.37		7.37		6.47	34.48	2.30	15.39	−2.38	−17.04	5.607	5.784	5.211	5.272		$5/2^+$	$13/2^+$
185	126	1360.42		7.35		6.35	34.97	4.05	15.59	−1.82	−17.30	5.619	5.796	5.220	5.281		$5/2^+$	0^+
186	127	1359.83		7.31		3.46	35.01	−0.59	15.62	−1.97	−17.32	5.671	5.869	5.221	5.282		$5/2^+$	$1/2^+$
187	128	1360.44		7.28		0.02	35.42	0.61	15.87	−0.09	−17.52	5.658	5.843	5.233	5.293		$5/2^+$	0^+
188	129	1359.89		7.23		0.06		−0.55		−0.10	−17.54	5.707	5.911	5.233	5.294		$5/2^+$	$1/2^+$
189	130	1360.45		7.20		0.01		0.56		−0.09	−17.74	5.697	5.891	5.245	5.306		$5/2^+$	0^+
190	131	1359.93		7.16		0.04		−0.52		−0.10	−17.76	5.743	5.954	5.246	5.306		$5/2^+$	$1/2^+$
191	132	1360.46		7.12		0.01		0.53		−0.09	−17.96	5.736	5.938	5.257	5.318		$5/2^+$	0^+
192	133	1359.99		7.08		0.06		−0.47		−0.11	−17.99	5.780	5.997	5.258	5.319		$5/2^+$	$1/2^+$
193	134	1360.50		7.05		0.04		0.51		−0.11	−18.17	5.776	5.985	5.270	5.330		$5/2^+$	0^+
194	135	1360.05		7.01		0.06		−0.45		−0.12	−18.21	5.816	6.039	5.271	5.331		$5/2^+$	$1/2^+$
195	136	1360.55		6.98		0.05		0.50		−0.12	−18.39	5.815	6.032	5.282	5.342		$5/2^+$	0^+
196	137	1360.13		6.94		0.08		−0.42		−0.13	−18.43	5.852	6.081	5.284	5.344		$5/2^+$	$1/2^+$
197	138	1360.65		6.91		0.10		0.52		−0.14	−18.60	5.854	6.077	5.294	5.354		$5/2^+$	0^+
198	139	1360.25		6.87		0.12		−0.40		−0.15	−18.66	5.888	6.122	5.297	5.357		$5/2^+$	$1/2^+$
199	140	1360.79		6.84		0.14		0.54		−0.17	−18.82	5.892	6.122	5.307	5.367		$5/2^+$	0^+
200	141	1360.40		6.80		0.15		−0.39		−0.17	−18.89	5.924	6.162	5.310	5.370		$5/2^+$	$1/2^+$
201	142	1360.98		6.77		0.19		0.58		−0.19	−19.04	5.930	6.165	5.320	5.380		$5/2^+$	0^+
202	143	1360.61		6.74		0.21		−0.37		−0.20	−19.11	5.959	6.202	5.324	5.384		$5/2^+$	$1/2^+$
203	144	1361.22		6.71		0.24		0.61		−0.22	−19.26	5.967	6.207	5.334	5.393		$5/2^+$	0^+
204	145	1360.87		6.67		0.26		−0.35		−0.22	−19.35	5.993	6.240	5.339	5.399		$5/2^+$	$1/2^+$
205	146	1361.53		6.64		0.31		0.66		−0.25	−19.48	6.003	6.248	5.348	5.407		$5/2^+$	0^+
206	147	1361.18		6.61		0.31		−0.35		−0.25	−19.58	6.027	6.276	5.354	5.414		$5/2^+$	$1/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
207	148	1361.90		6.58		0.37		0.72		−0.27	−19.71	6.038	6.287	5.362	5.422		$5/2^+$	0^+
208	149	1361.58		6.55		0.40		−0.32		−0.27	−19.82	6.060	6.312	5.370	5.429		$5/2^+$	$1/2^+$
209	150	1362.33		6.52		0.43		0.75		−0.30	−19.93	6.072	6.324	5.377	5.436		$5/2^+$	0^+
210	151	1362.01		6.49		0.43		−0.32		−0.30	−20.05	6.092	6.347	5.386	5.445		$5/2^+$	$1/2^+$
211	152	1362.82		6.46		0.49		0.81		−0.33	−20.16	6.106	6.361	5.392	5.451		$5/2^+$	0^+
212	153	1362.50		6.43		0.49		−0.32		−0.33	−20.29	6.124	6.381	5.402	5.461		$5/2^+$	$1/2^+$
213	154	1363.37		6.40		0.55		0.87		−0.35	−20.38	6.139	6.397	5.407	5.466		$5/2^+$	0^+
214	155	1363.06		6.37		0.56		−0.31		−0.35	−20.52	6.156	6.415	5.418	5.476		$5/2^+$	$1/2^+$
215	156	1363.99		6.34		0.62		0.93		−0.38	−20.60	6.171	6.432	5.422	5.480		$5/2^+$	0^+
216	157	1363.67		6.31		0.61		−0.32		−0.37	−20.74	6.187	6.448	5.433	5.492		$5/2^+$	$1/2^+$
217	158	1364.66		6.29		0.67		0.99		−0.40	−20.81	6.204	6.467	5.436	5.495		$5/2^+$	0^+
218	159	1364.34		6.26		0.67		−0.32		−0.40	−20.92	6.223	6.488	5.444	5.503		$5/2^+$	$3/2^+$
219	160	1365.38		6.23		0.72		1.04		−0.41	−21.02	6.236	6.502	5.450	5.508		$5/2^+$	0^+
220	161	1365.08		6.20		0.74		−0.30		−0.41	−21.13	6.253	6.520	5.459	5.517		$5/2^+$	$3/2^+$
221	162	1366.14		6.18		0.76		1.06		−0.42	−21.22	6.268	6.536	5.464	5.522		$5/2^+$	0^+
222	163	1365.84		6.15		0.76		−0.30		−0.40	−21.33	6.284	6.553	5.473	5.531		$5/2^+$	$3/2^+$
223	164	1366.91		6.13		0.77		1.07		−0.41	−21.41	6.300	6.570	5.476	5.535		$5/2^+$	0^+
224	165	1366.60		6.10		0.76		−0.31		−0.37	−21.53	6.315	6.586	5.487	5.545		$5/2^+$	$3/2^+$
225	166	1367.68		6.08		0.77		1.08		−0.37	−21.59	6.331	6.605	5.489	5.547		$5/2^+$	0^+
226	167	1367.27		6.05		0.67		−0.41		0.04	−21.69	6.346	6.620	5.499	5.556		$5/2^+$	$3/2^+$
227	168	1368.36		6.03		0.68		1.09		−1.51	−21.74	6.365	6.642	5.499	5.557		$5/2^+$	0^+
σ		8.00													0.011			
$Z = 60$ (Nd)																		
124	64	984.86		7.94			−0.20		1.09	−12.88	0.40	4.753	4.736	4.771	4.838		0^+	0^+
125	65	995.87		7.97			0.53	11.01	1.46	−12.77	0.03	4.765	4.753	4.777	4.844		0^+	$3/2^+$
126	66	1009.85		8.01		24.99	1.25	13.98	1.82	−12.38	−0.32	4.774	4.769	4.780	4.847		0^+	0^+
127	67	1020.68		8.04		24.81	1.96	10.83	2.17	−12.18	−0.68	4.786	4.786	4.785	4.852		0^+	$3/2^+$
128	68	1033.90		8.08		24.05	2.67	13.22	2.52	−11.96	−1.02	4.797	4.803	4.790	4.856		0^+	0^+
129	69	1044.35		8.10		23.67	3.36	10.45	2.88	−11.75	−1.37	4.808	4.820	4.795	4.861		0^+	$3/2^+$
130	70	1057.21	1068.93	8.13	8.22	23.31	4.07	12.86	3.23	−11.61	−1.71	4.819	4.836	4.800	4.866		0^+	0^+
131	71	1067.40	1078.17	8.15	8.23	23.05	4.75	10.19	3.57	−11.47	−2.05	4.831	4.853	4.804	4.870		0^+	$1/2^+$
132	72	1079.90	1089.90	8.18	8.26	22.69	5.46	12.50	3.92	−11.31	−2.39	4.842	4.868	4.809	4.875	4.917	0^+	0^+
133	73	1089.87	1098.88	8.19	8.26	22.47	6.15	9.97	4.27	−11.18	−2.72	4.853	4.885	4.814	4.880		0^+	$1/2^+$
134	74	1102.06	1110.26	8.22	8.29	22.16	6.83	12.19	4.61	−11.05	−3.05	4.864	4.900	4.818	4.884	4.913	0^+	0^+
135	75	1111.83	1118.90	8.24	8.29	21.96	7.53	9.77	4.95	−10.92	−3.39	4.875	4.916	4.823	4.889	4.909	0^+	$1/2^+$
136	76	1123.75	1129.96	8.26	8.31	21.69	8.17	11.92	5.28	−10.80	−3.70	4.885	4.930	4.828	4.893	4.911	0^+	0^+
137	77	1133.35	1138.41	8.27	8.31	21.52	8.88	9.60	5.62	−10.68	−4.03	4.896	4.945	4.833	4.898	4.908	0^+	$1/2^+$
138	78	1145.05	1148.92	8.30	8.33	21.30	9.51	11.70	5.94	−10.58	−4.34	4.906	4.959	4.837	4.902	4.912	0^+	0^+
139	79	1154.51	1156.99	8.31	8.32	21.16	10.21	9.46	6.29	−10.47	−4.66	4.917	4.973	4.842	4.907	4.908	0^+	$1/2^+$
140	80	1165.98	1167.30	8.33	8.34	20.93	10.81	11.47	6.58	−10.37	−4.97	4.927	4.987	4.845	4.911	4.910	0^+	0^+
141	81	1175.33	1175.31	8.34	8.34	20.82	11.49	9.35	6.91	−9.74	−5.28	4.937	5.000	4.850	4.916	4.906	0^+	$1/2^+$
142	82	1186.60	1185.14	8.36	8.35	20.62	12.09	11.27	7.22	−8.23	−5.58	4.947	5.014	4.853	4.919	4.912	0^+	0^+
143	83	1190.87	1191.26	8.33	8.33	15.54	12.75	4.27	7.54	−9.00	−5.90	4.967	5.037	4.869	4.934	4.925	0^+	$9/2^-$
144	84	1197.50	1199.08	8.32	8.33	10.90	13.36	6.63	7.85	−5.49	−6.20	4.984	5.059	4.878	4.943	4.942	0^+	0^+
145	85	1201.65	1204.83	8.29	8.31	10.78	14.01	4.15	8.16	−5.43	−6.51	5.004	5.081	4.893	4.958	4.954	0^+	$9/2^-$
146	86	1208.18	1212.40	8.28	8.30	10.68	14.60	6.53	8.47	−5.40	−6.81	5.021	5.103	4.902	4.967	4.970	0^+	0^+
147	87	1212.22	1217.69	8.25	8.28	10.57	15.23	4.04	8.77	−5.34	−7.11	5.040	5.124	4.916	4.981		0^+	$9/2^-$
148	88	1218.67	1225.02	8.23	8.28	10.49	15.81	6.45	9.06	−5.32	−7.40	5.057	5.145	4.926	4.990	5.000	0^+	0^+
149	89	1222.59	1230.06	8.21	8.26	10.37	16.40	3.92	9.35	−5.24	−7.69	5.076	5.166	4.939	5.003		0^+	$9/2^-$
150	90	1228.98	1237.44	8.19	8.25	10.31	16.97	6.39	9.63	−5.23	−7.98	5.092	5.186	4.949	5.013	5.040	0^+	0^+
151	91	1232.79	1242.77	8.16	8.23	10.20	17.55	3.81	9.93	−5.20	−8.27	5.110	5.207	4.959	5.023		0^+	$7/2^-$
152	92	1239.13	1250.05	8.15	8.22	10.15	18.11	6.34	10.21	−5.14	−8.54	5.127	5.226	4.971	5.035		0^+	0^+
153	93	1242.90	1255.31	8.12	8.20	10.11	18.68	3.77	10.49	−5.10	−8.82	5.144	5.246	4.981	5.045		0^+	$7/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
154	94	1249.08	1261.73	8.11	8.19	9.95	19.21	6.18	10.75	−5.04	−9.09	5.160	5.265	4.991	5.055		0^+	0^+
155	95	1252.79	1266.40	8.08	8.17	9.89	19.77	3.71	11.04	−4.97	−9.36	5.177	5.285	5.002	5.066		0^+	$7/2^-$
156	96	1258.83	1272.66	8.07	8.16	9.75	20.28	6.04	11.30	−4.92	−9.63	5.192	5.303	5.010	5.073		0^+	0^+
157	97	1262.41	1262.41	8.04	8.13	9.62	20.82	3.58	11.56	−4.83	−9.89	5.209	5.323	5.021	5.084		0^+	$7/2^-$
158	98	1268.33		8.03		9.50	21.30	5.92	11.81	−4.79	−10.14	5.223	5.340	5.027	5.090		0^+	0^+
159	99	1271.71		8.00		9.30	21.81	3.38	12.07	−4.66	−10.39	5.240	5.360	5.037	5.100		0^+	$7/2^-$
160	100	1277.57		7.98		9.24	22.28	5.86	12.32	−4.65	−10.64	5.254	5.377	5.043	5.106		0^+	0^+
161	101	1280.79		7.96		9.08	22.70	3.22	12.53	−4.65	−10.86	5.271	5.399	5.048	5.111		0^+	$3/2^-$
162	102	1286.52		7.94		8.95	23.21	5.73	12.79	−4.51	−11.12	5.285	5.414	5.058	5.120		0^+	0^+
163	103	1289.73		7.91		8.94	23.61	3.21	12.99	−4.48	−11.33	5.301	5.435	5.062	5.125		0^+	$3/2^-$
164	104	1295.18		7.90		8.66	24.09	5.45	13.23	−4.37	−11.57	5.315	5.450	5.071	5.134		0^+	0^+
165	105	1298.35		7.87		8.62	24.49	3.17	13.43	−4.33	−11.77	5.331	5.471	5.077	5.139		0^+	$3/2^-$
166	106	1303.60		7.85		8.42	24.94	5.25	13.66	−4.26	−12.00	5.345	5.486	5.085	5.147		0^+	0^+
167	107	1306.70		7.82		8.35	25.34	3.10	13.86	−4.20	−12.20	5.361	5.507	5.091	5.153		0^+	$3/2^-$
168	108	1311.81		7.81		8.21	25.77	5.11	14.07	−4.15	−12.42	5.374	5.522	5.098	5.161		0^+	0^+
169	109	1314.82		7.78		8.12	26.16	3.01	14.28	−4.09	−12.63	5.391	5.541	5.105	5.167		0^+	$3/2^-$
170	110	1319.84		7.76		8.03	26.60	5.02	14.49	−4.06	−12.84	5.404	5.556	5.111	5.174		0^+	0^+
171	111	1322.85		7.74		8.03	26.95	3.01	14.65	−4.02	−13.03	5.419	5.576	5.117	5.179		0^+	$1/2^-$
172	112	1327.69		7.72		7.85	27.43	4.84	14.90	−3.96	−13.26	5.432	5.590	5.125	5.187		0^+	0^+
173	113	1330.64		7.69		7.79	27.84	2.95	15.11	−3.91	−13.45	5.448	5.608	5.131	5.193		0^+	$1/2^-$
174	114	1335.38		7.67		7.69	28.27	4.74	15.31	−3.87	−13.67	5.460	5.622	5.138	5.200		0^+	0^+
175	115	1338.22		7.65		7.58	28.71	2.84	15.53	−3.80	−13.88	5.475	5.639	5.146	5.208		0^+	$1/2^-$
176	116	1342.90		7.63		7.52	29.12	4.68	15.72	−3.78	−14.09	5.488	5.654	5.152	5.214		0^+	0^+
177	117	1345.60		7.60		7.38	29.59	2.70	15.94	−3.69	−14.30	5.501	5.668	5.162	5.223		0^+	$1/2^-$
178	118	1350.26		7.59		7.36	29.99	4.66	16.13	−3.68	−14.50	5.515	5.683	5.167	5.229		0^+	0^+
179	119	1352.81		7.56		7.21	30.40	2.55	16.33	−3.59	−14.73	5.527	5.695	5.178	5.239		0^+	$1/2^-$
180	120	1357.46		7.54		7.20	30.85	4.65	16.54	−3.59	−14.92	5.541	5.711	5.183	5.244		0^+	0^+
181	121	1359.99		7.51		7.18	31.26	2.53	16.73	−3.56	−15.12	5.554	5.726	5.189	5.251		0^+	$13/2^+$
182	122	1364.50		7.50		7.04	31.70	4.51	16.93	−3.49	−15.34	5.566	5.739	5.198	5.260		0^+	0^+
183	123	1367.02		7.47		7.03	32.11	2.52	17.12	−3.46	−15.54	5.579	5.753	5.206	5.267		0^+	$13/2^+$
184	124	1371.41		7.45		6.91	32.54	4.39	17.34	−3.40	−15.76	5.591	5.765	5.215	5.276		0^+	0^+
185	125	1373.92		7.43		6.90	32.94	2.51	17.55	−2.54	−15.96	5.604	5.778	5.222	5.283		0^+	$13/2^+$
186	126	1378.18		7.41		6.77	33.35	4.26	17.76	−2.13	−16.17	5.616	5.790	5.231	5.292		0^+	0^+
187	127	1377.66		7.37		3.74	33.45	−0.52	17.83	−2.17	−16.31	5.635	5.815	5.236	5.297		0^+	$9/2^+$
188	128	1378.46		7.33		0.28	33.89	0.80	18.02	−0.21	−16.45	5.654	5.836	5.244	5.305		0^+	0^+
189	129	1377.94		7.29		0.28		−0.52	18.05	−0.23	−16.48	5.702	5.903	5.244	5.305		0^+	$1/2^+$
190	130	1378.73		7.26		0.27		0.79	18.28	−0.21	−16.72	5.691	5.881	5.256	5.317		0^+	0^+
191	131	1378.26		7.22		0.32		−0.47	18.33	−0.23	−16.75	5.737	5.944	5.257	5.317		0^+	$1/2^+$
192	132	1379.01		7.18		0.28		0.75	18.55	−0.22	−16.98	5.729	5.926	5.269	5.329		0^+	0^+
193	133	1378.57		7.14		0.31		−0.44	18.58	−0.23	−17.02	5.772	5.985	5.270	5.330		0^+	$1/2^+$
194	134	1379.29		7.11		0.28		0.72	18.79	−0.23	−17.24	5.767	5.972	5.282	5.342		0^+	0^+
195	135	1378.90		7.07		0.33		−0.39	18.85	−0.24	−17.28	5.807	6.026	5.283	5.343		0^+	$1/2^+$
196	136	1379.60		7.04		0.31		0.70	19.05	−0.24	−17.49	5.805	6.016	5.295	5.355		0^+	0^+
197	137	1379.24		7.00		0.34		−0.36	19.11	−0.25	−17.54	5.843	6.066	5.296	5.356		0^+	$1/2^+$
198	138	1379.95		6.97		0.35		0.71	19.30	−0.26	−17.74	5.843	6.060	5.308	5.368		0^+	0^+
199	139	1379.62		6.93		0.38		−0.33	19.37	−0.27	−17.80	5.878	6.106	5.310	5.370		0^+	$1/2^+$
200	140	1380.33		6.90		0.38		0.71	19.54	−0.28	−17.99	5.880	6.103	5.321	5.381		0^+	0^+
201	141	1380.03		6.87		0.41		−0.30	19.63	−0.29	−18.06	5.912	6.145	5.324	5.384		0^+	$1/2^+$
202	142	1380.77		6.84		0.44		0.74	19.79	−0.30	−18.23	5.916	6.145	5.335	5.395		0^+	0^+
203	143	1380.48		6.80		0.45		−0.29	19.87	−0.31	−18.31	5.946	6.184	5.339	5.399		0^+	$1/2^+$
204	144	1381.25		6.77		0.48		0.77	20.03	−0.33	−18.47	5.953	6.186	5.350	5.409		0^+	0^+
205	145	1380.99		6.74		0.51		−0.26	20.12	−0.34	−18.56	5.980	6.221	5.354	5.414		0^+	$1/2^+$
206	146	1381.80		6.71		0.55		0.81	20.27	−0.36	−18.71	5.988	6.226	5.364	5.424		0^+	0^+
207	147	1381.55		6.67		0.56		−0.25	20.37	−0.36	−18.81	6.013	6.257	5.370	5.429		0^+	$1/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
208	148	1382.40		6.65		0.60		0.85	20.50	−0.39	−18.95	6.023	6.265	5.379	5.438		0^+	0^+
209	149	1382.21		6.61		0.66		−0.19	20.63	−0.39	−19.06	6.046	6.292	5.386	5.445		0^+	$1/2^+$
210	150	1383.07		6.59		0.67		0.86	20.74	−0.41	−19.19	6.057	6.302	5.394	5.453		0^+	0^+
211	151	1382.88		6.55		0.67		−0.19	20.87	−0.42	−19.30	6.078	6.327	5.402	5.461		0^+	$1/2^+$
212	152	1383.79		6.53		0.72		0.91	20.97	−0.44	−19.42	6.090	6.339	5.409	5.467		0^+	0^+
213	153	1383.61		6.50		0.73		−0.18	21.11	−0.44	−19.54	6.110	6.362	5.417	5.476		0^+	$1/2^+$
214	154	1384.58		6.47		0.79		0.97	21.21	−0.46	−19.65	6.124	6.376	5.423	5.482		0^+	0^+
215	155	1384.40		6.44		0.79		−0.18	21.34	−0.46	−19.77	6.142	6.396	5.433	5.491		0^+	$1/2^+$
216	156	1385.42		6.41		0.84		1.02	21.43	−0.48	−19.87	6.156	6.412	5.437	5.496		0^+	0^+
217	157	1385.23		6.38		0.83		−0.19	21.56	−0.48	−19.99	6.173	6.429	5.447	5.506		0^+	$1/2^+$
218	158	1386.30		6.36		0.88		1.07	21.64	−0.50	−20.08	6.189	6.447	5.451	5.509		0^+	0^+
219	159	1386.12		6.33		0.89		−0.18	21.78	−0.49	−20.21	6.205	6.463	5.462	5.520		0^+	$1/2^+$
220	160	1387.24		6.31		0.94		1.12	21.86	−0.51	−20.29	6.221	6.483	5.464	5.522		0^+	0^+
221	161	1387.05		6.28		0.93		−0.19	21.97	−0.51	−20.39	6.239	6.502	5.472	5.530		0^+	$3/2^+$
222	162	1388.20		6.25		0.96		1.15	22.06	−0.51	−20.48	6.253	6.518	5.477	5.535		0^+	0^+
223	163	1388.02		6.22		0.97		−0.18	22.18	−0.49	−20.58	6.270	6.535	5.485	5.543		0^+	$3/2^+$
224	164	1389.17		6.20		0.97		1.15	22.26	−0.50	−20.67	6.285	6.553	5.489	5.547		0^+	0^+
225	165	1388.96		6.17		0.94		−0.21	22.36	−0.46	−20.77	6.301	6.569	5.497	5.555		0^+	$3/2^+$
226	166	1390.13		6.15		0.96		1.17	22.45	−0.46	−20.85	6.318	6.588	5.500	5.558		0^+	0^+
227	167	1389.81		6.12		0.85		−0.32	22.54	−0.08	−20.93	6.333	6.605	5.508	5.566		0^+	$3/2^+$
228	168	1390.96		6.10		0.83		1.15	22.60	−0.10	−21.00	6.352	6.626	5.509	5.567		0^+	0^+
229	169	1389.80		6.07		−0.01		−1.16		−0.13	−21.17	6.361	6.634	5.521	5.579		0^+	$15/2^-$
230	170	1390.35		6.04		−0.61		0.55		0.37	−21.35	6.369	6.639	5.534	5.592		0^+	0^+
σ		8.42													0.017			
$Z = 61$ (Pm)																		
127	66	1008.55		7.94			0.52		−1.30	−12.73	0.13	4.788	4.776	4.802	4.868		$5/2^+$	0^+
128	67	1019.73		7.97			1.22	11.18	−0.95	−12.53	−0.23	4.799	4.793	4.807	4.873		$5/2^+$	$3/2^+$
129	68	1033.30		8.01		24.75	1.92	13.57	−0.60	−12.31	−0.57	4.810	4.809	4.811	4.877		$5/2^+$	0^+
130	69	1044.09		8.03		24.36	2.62	10.79	−0.26	−12.10	−0.92	4.821	4.826	4.815	4.881		$5/2^+$	$3/2^+$
131	70	1057.29		8.07		23.99	3.31	13.20	0.08	−11.96	−1.25	4.832	4.842	4.820	4.886		$5/2^+$	0^+
132	71	1067.81		8.09		23.72	3.98	10.52	0.41	−11.82	−1.58	4.843	4.858	4.824	4.890		$5/2^+$	$1/2^+$
133	72	1080.65	1091.17	8.13	8.20	23.36	4.67	12.84	0.75	−11.65	−1.91	4.853	4.874	4.829	4.895		$5/2^+$	0^+
134	73	1090.96	1100.57	8.14	8.21	23.15	5.36	10.31	1.09	−11.52	−2.25	4.864	4.890	4.833	4.899		$5/2^+$	$1/2^+$
135	74	1103.48	1111.93	8.17	8.24	22.83	6.03	12.52	1.42	−11.38	−2.57	4.874	4.904	4.838	4.903		$5/2^+$	0^+
136	75	1113.58	1121.16	8.19	8.24	22.62	6.70	10.10	1.75	−11.25	−2.90	4.885	4.920	4.842	4.908		$5/2^+$	$1/2^+$
137	76	1125.82	1132.12	8.22	8.26	22.34	7.35	12.24	2.07	−11.13	−3.21	4.895	4.934	4.846	4.912		$5/2^+$	0^+
138	77	1135.75	1141.06	8.23	8.27	22.17	8.02	9.93	2.40	−11.00	−3.53	4.906	4.949	4.851	4.916		$5/2^+$	$1/2^+$
139	78	1147.75	1151.69	8.26	8.29	21.93	8.64	12.00	2.70	−10.90	−3.83	4.915	4.963	4.854	4.920		$5/2^+$	0^+
140	79	1157.51	1160.47	8.27	8.29	21.76	9.29	9.76	3.00	−10.77	−4.14	4.926	4.976	4.859	4.924		$5/2^+$	$1/2^+$
141	80	1169.29	1170.86	8.29	8.30	21.54	9.89	11.78	3.31	−10.68	−4.44	4.935	4.990	4.862	4.928		$5/2^+$	0^+
142	81	1178.93	1179.55	8.30	8.31	21.42	10.51	9.64	3.60	−8.94	−4.75	4.945	5.003	4.867	4.932		$5/2^+$	$1/2^+$
143	82	1190.50	1189.44	8.33	8.32	21.21	11.12	11.57	3.90	−8.39	−5.05	4.955	5.017	4.870	4.935		$5/2^+$	0^+
144	83	1195.08	1195.96	8.30	8.31	16.15	11.75	4.58	4.21	−9.06	−5.36	4.975	5.040	4.885	4.950		$5/2^+$	$9/2^-$
145	84	1202.02	1203.89	8.29	8.30	11.52	12.37	6.94	4.52	−5.81	−5.67	4.991	5.061	4.894	4.959		$5/2^+$	0^+
146	85	1206.48	1210.14	8.26	8.29	11.40	12.99	4.46	4.83	−5.74	−5.97	5.011	5.083	4.908	4.973		$5/2^+$	$9/2^-$
147	86	1213.31	1217.80	8.25	8.28	11.29	13.60	6.83	5.13	−5.71	−6.27	5.028	5.104	4.917	4.982		$5/2^+$	0^+
148	87	1217.64	1223.70	8.23	8.27	11.16	14.19	4.33	5.42	−5.63	−6.57	5.046	5.126	4.931	4.995		$5/2^+$	$9/2^-$
149	88	1224.39	1230.97	8.22	8.26	11.08	14.78	6.75	5.72	−5.61	−6.86	5.063	5.146	4.940	5.005		$5/2^+$	0^+
150	89	1228.60	1236.57	8.19	8.24	10.96	15.36	4.21	6.01	−5.53	−7.15	5.081	5.167	4.953	5.017		$5/2^+$	$9/2^-$
151	90	1235.28	1244.43	8.18	8.24	10.89	15.93	6.68	6.30	−5.52	−7.44	5.097	5.186	4.963	5.027		$5/2^+$	0^+
152	91	1239.38	1250.37	8.15	8.23	10.78	16.52	4.10	6.59	−5.48	−7.72	5.114	5.207	4.972	5.036		$5/2^+$	$7/2^-$
153	92	1245.98	1257.84	8.14	8.22	10.70	17.06	6.60	6.85	−5.42	−8.00	5.131	5.226	4.984	5.048		$5/2^+$	0^+
154	93	1250.03	1263.75	8.12	8.21	10.65	17.62	4.05	7.13	−5.37	−8.28	5.148	5.246	4.994	5.058		$5/2^+$	$7/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
155	94	1256.48	1270.27	8.11	8.20	10.50	18.15	6.45	7.40	−5.31	−8.55	5.163	5.264	5.004	5.068		$5/2^+$	0^+
156	95	1260.46	1275.57	8.08	8.18	10.43	18.71	3.98	7.67	−5.24	−8.82	5.180	5.284	5.015	5.078		$5/2^+$	$7/2^-$
157	96	1266.77	1281.77	8.07	8.16	10.29	19.24	6.31	7.94	−5.19	−9.09	5.195	5.302	5.023	5.086		$5/2^+$	0^+
158	97	1270.61	1286.63	8.04	8.14	10.15	19.76	3.84	8.20	−5.09	−9.35	5.212	5.321	5.033	5.096		$5/2^+$	$7/2^-$
159	98	1276.80	1292.17	8.03	8.13	10.03	20.28	6.19	8.47	−5.05	−9.61	5.226	5.338	5.040	5.103		$5/2^+$	0^+
160	99	1280.43		8.00		9.82	20.79	3.63	8.72	−4.90	−9.86	5.242	5.358	5.050	5.113		$5/2^+$	$7/2^-$
161	100	1286.55		7.99		9.75	21.30	6.12	8.98	−4.90	−10.11	5.256	5.375	5.055	5.118		$5/2^+$	0^+
162	101	1290.00		7.96		9.57	21.74	3.45	9.21	−4.90	−10.33	5.272	5.396	5.060	5.123		$5/2^+$	$3/2^-$
163	102	1295.97		7.95		9.42	22.24	5.97	9.45	−4.74	−10.59	5.286	5.411	5.070	5.133		$5/2^+$	0^+
164	103	1299.42		7.92		9.42	22.68	3.45	9.69	−4.71	−10.80	5.302	5.432	5.075	5.138		$5/2^+$	$3/2^-$
165	104	1305.09		7.91		9.12	23.14	5.67	9.91	−4.60	−11.04	5.316	5.447	5.084	5.146		$5/2^+$	0^+
166	105	1308.48		7.88		9.06	23.56	3.39	10.13	−4.55	−11.25	5.332	5.467	5.089	5.152		$5/2^+$	$3/2^-$
167	106	1313.95		7.87		8.86	24.01	5.47	10.35	−4.48	−11.48	5.345	5.483	5.097	5.160		$5/2^+$	0^+
168	107	1317.26		7.84		8.78	24.42	3.31	10.56	−4.42	−11.68	5.361	5.503	5.103	5.166		$5/2^+$	$3/2^-$
169	108	1322.59		7.83		8.64	24.85	5.33	10.78	−4.37	−11.90	5.374	5.518	5.111	5.173		$5/2^+$	0^+
170	109	1325.80		7.80		8.54	25.26	3.21	10.98	−4.30	−12.11	5.390	5.537	5.117	5.179		$5/2^+$	$3/2^-$
171	110	1331.03		7.78		8.44	25.68	5.23	11.19	−4.27	−12.32	5.403	5.552	5.124	5.186		$5/2^+$	0^+
172	111	1334.24		7.76		8.44	26.04	3.21	11.39	−4.23	−12.52	5.419	5.571	5.130	5.192		$5/2^+$	$1/2^-$
173	112	1339.30		7.74		8.27	26.51	5.06	11.61	−4.18	−12.74	5.431	5.585	5.137	5.199		$5/2^+$	0^+
174	113	1342.45		7.72		8.21	26.92	3.15	11.81	−4.13	−12.94	5.446	5.603	5.143	5.205		$5/2^+$	$1/2^-$
175	114	1347.41		7.70		8.11	27.34	4.96	12.03	−4.08	−13.15	5.459	5.617	5.150	5.212		$5/2^+$	0^+
176	115	1350.45		7.67		8.00	27.76	3.04	12.23	−4.02	−13.36	5.473	5.633	5.158	5.220		$5/2^+$	$1/2^-$
177	116	1355.35		7.66		7.94	28.17	4.90	12.45	−3.99	−13.56	5.486	5.648	5.164	5.226		$5/2^+$	0^+
178	117	1358.26		7.63		7.81	28.60	2.91	12.66	−3.91	−13.78	5.499	5.662	5.173	5.235		$5/2^+$	$1/2^-$
179	118	1363.12		7.62		7.77	28.99	4.86	12.86	−3.89	−13.98	5.512	5.677	5.179	5.240		$5/2^+$	0^+
180	119	1365.88		7.59		7.62	29.40	2.76	13.07	−3.87	−14.18	5.526	5.693	5.185	5.246		$5/2^+$	$13/2^+$
181	120	1370.73		7.57		7.61	29.81	4.85	13.27	−3.80	−14.40	5.538	5.706	5.193	5.255		$5/2^+$	0^+
182	121	1373.47		7.55		7.59	30.21	2.74	13.48	−3.77	−14.60	5.551	5.720	5.200	5.261		$5/2^+$	$13/2^+$
183	122	1378.19		7.53		7.46	30.62	4.72	13.69	−3.70	−14.82	5.563	5.733	5.209	5.270		$5/2^+$	0^+
184	123	1380.91		7.50		7.44	31.01	2.72	13.89	−3.66	−15.02	5.576	5.747	5.216	5.277		$5/2^+$	$13/2^+$
185	124	1385.49		7.49		7.30	31.42	4.58	14.08	−3.60	−15.24	5.588	5.759	5.225	5.286		$5/2^+$	0^+
186	125	1388.20		7.46		7.29	31.83	2.71	14.28	−2.71	−15.45	5.601	5.772	5.232	5.293		$5/2^+$	$13/2^+$
187	126	1392.67		7.45		7.18	32.25	4.47	14.49	−2.32	−15.66	5.612	5.784	5.241	5.302		$5/2^+$	0^+
188	127	1392.29		7.41		4.09	32.46	−0.38	14.63	−2.37	−15.80	5.632	5.808	5.245	5.306		$5/2^+$	$9/2^+$
189	128	1393.24		7.37		0.57	32.80	0.95	14.78	−0.35	−15.94	5.649	5.828	5.254	5.314		$5/2^+$	0^+
190	129	1392.81		7.33		0.52	32.92	−0.43	14.87	−0.33	−16.08	5.668	5.852	5.258	5.319		$5/2^+$	$9/2^+$
191	130	1393.79		7.30		0.55	33.34	0.98	15.06	−0.35	−16.22	5.686	5.872	5.267	5.327		$5/2^+$	0^+
192	131	1393.35		7.26		0.54	33.42	−0.44	15.09	−0.37	−16.25	5.731	5.934	5.267	5.328		$5/2^+$	$1/2^+$
193	132	1394.34		7.22		0.55	33.88	0.99	15.33	−0.35	−16.49	5.723	5.916	5.280	5.340		$5/2^+$	0^+
194	133	1393.95		7.19		0.60	33.96	−0.39	15.38	−0.38	−16.53	5.765	5.974	5.281	5.341		$5/2^+$	$1/2^+$
195	134	1394.90		7.15		0.56	34.40	0.95	15.61	−0.36	−16.76	5.759	5.959	5.293	5.354		$5/2^+$	0^+
196	135	1394.55		7.12		0.60	34.50	−0.35	15.65	−0.38	−16.80	5.799	6.014	5.294	5.354		$5/2^+$	$1/2^+$
197	136	1395.47		7.08		0.57	34.92	0.92	15.87	−0.37	−17.02	5.796	6.002	5.307	5.367		$5/2^+$	0^+
198	137	1395.16		7.05		0.61	35.03	−0.31	15.92	−0.39	−17.07	5.834	6.053	5.308	5.368		$5/2^+$	$1/2^+$
199	138	1396.07		7.02		0.60	35.42	0.91	16.12	−0.39	−17.28	5.832	6.045	5.321	5.381		$5/2^+$	0^+
200	139	1395.80		6.98		0.64	35.55	−0.27	16.18	−0.41	−17.34	5.868	6.091	5.323	5.383		$5/2^+$	$1/2^+$
201	140	1396.71		6.95		0.64	35.92	0.91	16.38	−0.41	−17.54	5.869	6.086	5.336	5.395		$5/2^+$	0^+
202	141	1396.48		6.91		0.68	36.08	−0.23	16.45	−0.42	−17.60	5.902	6.129	5.338	5.398		$5/2^+$	$1/2^+$
203	142	1397.40		6.88		0.69	36.42	0.92	16.63	−0.43	−17.79	5.904	6.127	5.350	5.410		$5/2^+$	0^+
204	143	1397.19		6.85		0.71	36.58	−0.21	16.71	−0.45	−17.87	5.935	6.167	5.353	5.413		$5/2^+$	$1/2^+$
205	144	1398.13		6.82		0.73	36.91	0.94	16.88	−0.46	−18.04	5.940	6.167	5.365	5.425		$5/2^+$	0^+
206	145	1397.95		6.79		0.76	37.08	−0.18	16.96	−0.47	−18.13	5.968	6.203	5.369	5.428		$5/2^+$	$1/2^+$
207	146	1398.92		6.76		0.79	37.39	0.97	17.12	−0.48	−18.29	5.975	6.206	5.380	5.439		$5/2^+$	0^+
208	147	1398.77		6.72		0.82	37.59	−0.15	17.22	−0.49	−18.38	6.001	6.239	5.385	5.444		$5/2^+$	$1/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
209	148	1399.77		6.70		0.85	37.87	1.00	17.37	−0.51	−18.53	6.009	6.244	5.395	5.454		$5/2^+$	0^+
210	149	1399.67		6.67		0.90	38.09	−0.10	17.46	−0.52	−18.63	6.033	6.274	5.401	5.460		$5/2^+$	$1/2^+$
211	150	1400.67		6.64		0.90	38.34	1.00	17.60	−0.53	−18.77	6.043	6.282	5.410	5.469		$5/2^+$	0^+
212	151	1400.61		6.61		0.94	38.60	−0.06	17.73	−0.54	−18.88	6.065	6.309	5.417	5.475		$5/2^+$	$1/2^+$
213	152	1401.63		6.58		0.96	38.81	1.02	17.84	−0.56	−19.01	6.076	6.319	5.425	5.483		$5/2^+$	0^+
214	153	1401.58		6.55		0.97	39.08	−0.05	17.97	−0.56	−19.12	6.097	6.343	5.432	5.491		$5/2^+$	$1/2^+$
215	154	1402.65		6.52		1.02	39.28	1.07	18.07	−0.58	−19.23	6.109	6.355	5.439	5.497		$5/2^+$	0^+
216	155	1402.60		6.49		1.02	39.54	−0.05	18.20	−0.58	−19.35	6.129	6.377	5.447	5.505		$5/2^+$	$1/2^+$
217	156	1403.71		6.47		1.06	39.72	1.11	18.29	−0.59	−19.45	6.142	6.392	5.452	5.511		$5/2^+$	0^+
218	157	1403.66		6.44		1.06	39.99	−0.05	18.43	−0.59	−19.57	6.160	6.411	5.461	5.520		$5/2^+$	$1/2^+$
219	158	1404.82		6.41		1.11	40.16	1.16	18.52	−0.61	−19.66	6.175	6.428	5.465	5.524		$5/2^+$	0^+
220	159	1404.76		6.39		1.10	40.42	−0.06	18.64	−0.60	−19.79	6.191	6.445	5.475	5.533		$5/2^+$	$1/2^+$
221	160	1405.96		6.36		1.14	40.58	1.20	18.72	−0.61	−19.87	6.207	6.464	5.478	5.536		$5/2^+$	0^+
222	161	1405.89		6.33		1.13	40.81	−0.07	18.84	−0.59	−19.99	6.223	6.479	5.488	5.546		$5/2^+$	$1/2^+$
223	162	1407.13		6.31		1.17	40.99	1.24	18.93	−0.61	−20.06	6.239	6.499	5.490	5.548		$5/2^+$	0^+
224	163	1407.04		6.28		1.15	41.20	−0.09	19.02	−0.60	−20.16	6.256	6.518	5.497	5.555		$5/2^+$	$3/2^+$
225	164	1408.30		6.26		1.17	41.39	1.26	19.13	−0.60	−20.25	6.272	6.535	5.501	5.559		$5/2^+$	0^+
226	165	1408.18		6.23		1.14	41.58	−0.12	19.22	−0.55	−20.34	6.288	6.552	5.509	5.567		$5/2^+$	$3/2^+$
227	166	1409.43		6.21		1.13	41.75	1.25	19.30	−0.55	−20.43	6.304	6.571	5.512	5.569		$5/2^+$	0^+
228	167	1409.19		6.18		1.01	41.92	−0.24	19.38	−0.21	−20.49	6.320	6.589	5.519	5.576		$5/2^+$	$3/2^+$
229	168	1410.42		6.16		0.99	42.06	1.23	19.46	−0.23	−20.58	6.337	6.609	5.521	5.578		$5/2^+$	0^+
230	169	1409.43		6.13		0.24	19.63	−0.99	19.63	−0.26	−20.73	6.348	6.618	5.531	5.589		$5/2^+$	$15/2^-$
231	170	1410.15		6.10		−0.27	19.80	0.72	19.80	0.21	−20.92	6.355	6.622	5.545	5.602		$5/2^+$	0^+
σ		9.22																
$Z = 62$ (Sm)																		
128	66	1009.40		7.89			−0.45		0.85	−13.08	0.54	4.800	4.781	4.821	4.887		0^+	0^+
129	67	1020.96		7.91			0.28	11.56	1.23	−12.87	0.18	4.811	4.798	4.826	4.892		0^+	$3/2^+$
130	68	1034.85		7.96		25.45	0.95	13.89	1.55	−12.64	−0.14	4.821	4.814	4.830	4.895		0^+	0^+
131	69	1045.99		7.98		25.03	1.64	11.14	1.90	−12.42	−0.49	4.832	4.831	4.834	4.900		0^+	$3/2^+$
132	70	1059.51		8.03		24.66	2.30	13.52	2.22	−12.29	−0.82	4.843	4.847	4.838	4.904		0^+	0^+
133	71	1070.38		8.05		24.39	2.98	10.87	2.57	−12.14	−1.15	4.853	4.863	4.842	4.908		0^+	$1/2^+$
134	72	1083.53		8.09		24.02	3.63	13.15	2.88	−11.97	−1.47	4.864	4.878	4.847	4.912		0^+	0^+
135	73	1094.17	1103.98	8.10	8.18	23.79	4.30	10.64	3.21	−11.83	−1.80	4.874	4.894	4.851	4.916		0^+	$1/2^+$
136	74	1106.99	1116.00	8.14	8.21	23.46	4.93	12.82	3.51	−11.69	−2.12	4.884	4.908	4.855	4.920		0^+	0^+
137	75	1117.42	1125.29	8.16	8.21	23.25	5.59	10.43	3.84	−11.56	−2.44	4.895	4.924	4.859	4.925		0^+	$1/2^+$
138	76	1129.97	1136.83	8.19	8.24	22.98	6.22	12.55	4.15	−11.44	−2.75	4.904	4.938	4.863	4.928	4.960	0^+	0^+
139	77	1140.20	1145.79	8.20	8.24	22.78	6.85	10.23	4.45	−11.31	−3.07	4.915	4.952	4.867	4.933	4.956	0^+	$1/2^+$
140	78	1152.51	1156.93	8.23	8.26	22.54	7.46	12.31	4.76	−11.20	−3.37	4.924	4.966	4.871	4.936	4.957	0^+	0^+
141	79	1162.59	1165.48	8.25	8.27	22.39	8.08	10.08	5.08	−11.08	−3.68	4.934	4.980	4.875	4.940	4.952	0^+	$1/2^+$
142	80	1174.67	1176.61	8.27	8.29	22.16	8.69	12.08	5.38	−10.98	−3.99	4.943	4.993	4.879	4.944	4.952	0^+	0^+
143	81	1184.63	1185.21	8.28	8.29	22.04	9.30	9.96	5.70	−9.61	−4.30	4.953	5.006	4.883	4.948	4.948	0^+	$1/2^+$
144	82	1196.50	1195.73	8.31	8.30	21.83	9.90	11.87	6.00	−8.75	−4.59	4.962	5.019	4.886	4.951	4.952	0^+	0^+
145	83	1201.13	1202.49	8.28	8.29	16.50	10.26	4.63	6.05	−9.58	−4.90	4.978	5.041	4.893	4.958	4.965	0^+	$7/2^-$
146	84	1208.65	1210.90	8.28	8.29	12.15	11.15	7.52	6.63	−6.11	−5.21	4.999	5.063	4.910	4.974	4.981	0^+	0^+
147	85	1213.42	1217.24	8.25	8.28	12.29	11.77	4.77	6.94	−6.04	−5.52	5.018	5.085	4.924	4.988	4.989	0^+	$9/2^-$
148	86	1220.55	1225.39	8.25	8.28	11.90	12.37	7.13	7.24	−6.00	−5.82	5.034	5.106	4.933	4.997	5.004	0^+	0^+
149	87	1225.19	1231.26	8.22	8.26	11.77	12.97	4.64	7.55	−5.92	−6.12	5.053	5.127	4.946	5.011	5.013	0^+	$9/2^-$
150	88	1232.23	1239.24	8.21	8.26	11.68	13.56	7.04	7.84	−5.90	−6.41	5.069	5.147	4.956	5.020	5.039	0^+	0^+
151	89	1236.74	1244.84	8.19	8.24	11.55	14.15	4.51	8.14	−5.81	−6.70	5.087	5.168	4.968	5.032	5.055	0^+	$9/2^-$
152	90	1243.71	1253.10	8.18	8.24	11.48	14.73	6.97	8.43	−5.80	−6.99	5.103	5.187	4.978	5.041	5.082	0^+	0^+
153	91	1248.09	1258.97	8.16	8.23	11.35	15.30	4.38	8.71	−5.76	−7.27	5.119	5.207	4.987	5.051	5.093	0^+	$7/2^-$
154	92	1254.98	1266.93	8.15	8.23	11.27	15.85	6.89	9.00	−5.69	−7.55	5.136	5.226	4.999	5.062	5.105	0^+	0^+
155	93	1259.32	1272.74	8.12	8.21	11.23	16.42	4.34	9.29	−5.64	−7.83	5.152	5.246	5.009	5.072		0^+	$7/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
156	94	1266.04	1279.98	8.12	8.21	11.06	16.96	6.72	9.56	−5.58	−8.10	5.168	5.264	5.018	5.082		0^+	0^+
157	95	1270.30	1285.37	8.09	8.19	10.98	17.51	4.26	9.84	−5.51	−8.38	5.184	5.283	5.029	5.092		0^+	$7/2^-$
158	96	1276.86	1292.01	8.08	8.18	10.82	18.03	6.56	10.09	−5.45	−8.64	5.199	5.301	5.037	5.100		0^+	0^+
159	97	1280.98	1297.04	8.06	8.16	10.68	18.57	4.12	10.37	−5.34	−8.91	5.215	5.320	5.047	5.110		0^+	$7/2^-$
160	98	1287.42	1303.14	8.05	8.14	10.56	19.09	6.44	10.62	−5.30	−9.16	5.229	5.337	5.053	5.116		0^+	0^+
161	99	1291.30	1307.65	8.02	8.12	10.32	19.59	3.88	10.87	−5.14	−9.42	5.245	5.356	5.063	5.126		0^+	$7/2^-$
162	100	1297.66		8.01		10.24	20.09	6.36	11.11	−5.13	−9.67	5.258	5.373	5.069	5.131		0^+	0^+
163	101	1301.36		7.98		10.06	20.57	3.70	11.36	−5.13	−9.89	5.275	5.393	5.077	5.139		0^+	$5/2^-$
164	102	1307.56		7.97		9.90	21.04	6.20	11.59	−4.96	−10.15	5.288	5.408	5.083	5.146		0^+	0^+
165	103	1311.21		7.95		9.85	21.48	3.65	11.79	−4.93	−10.36	5.303	5.429	5.088	5.150		0^+	$3/2^-$
166	104	1317.13		7.93		9.57	21.95	5.92	12.04	−4.81	−10.60	5.317	5.444	5.097	5.159		0^+	0^+
167	105	1320.72		7.91		9.51	22.37	3.59	12.24	−4.76	−10.81	5.333	5.464	5.102	5.164		0^+	$3/2^-$
168	106	1326.42		7.90		9.29	22.82	5.70	12.47	−4.68	−11.04	5.346	5.479	5.110	5.173		0^+	0^+
169	107	1329.93		7.87		9.21	23.23	3.51	12.67	−4.63	−11.24	5.362	5.499	5.116	5.178		0^+	$3/2^-$
170	108	1335.48		7.86		9.06	23.67	5.55	12.89	−4.57	−11.47	5.375	5.514	5.124	5.186		0^+	0^+
171	109	1338.90		7.83		8.97	24.08	3.42	13.10	−4.51	−11.67	5.390	5.533	5.130	5.192		0^+	$3/2^-$
172	110	1344.35		7.82		8.87	24.51	5.45	13.32	−4.47	−11.89	5.403	5.547	5.137	5.199		0^+	0^+
173	111	1347.71		7.79		8.81	24.86	3.36	13.47	−4.44	−12.08	5.418	5.566	5.142	5.204		0^+	$1/2^-$
174	112	1353.03		7.78		8.68	25.34	5.32	13.73	−4.38	−12.31	5.431	5.580	5.150	5.212		0^+	0^+
175	113	1356.39		7.75		8.68	25.75	3.36	13.94	−4.34	−12.51	5.446	5.598	5.156	5.218		0^+	$1/2^-$
176	114	1361.55		7.74		8.52	26.17	5.16	14.14	−4.29	−12.72	5.458	5.612	5.163	5.225		0^+	0^+
177	115	1364.81		7.71		8.42	26.59	3.26	14.36	−4.23	−12.93	5.472	5.628	5.171	5.232		0^+	$1/2^-$
178	116	1369.91		7.70		8.36	27.01	5.10	14.56	−4.20	−13.14	5.485	5.643	5.177	5.238		0^+	0^+
179	117	1373.06		7.67		8.25	27.46	3.15	14.80	−4.12	−13.36	5.498	5.657	5.186	5.247		0^+	$1/2^-$
180	118	1378.11		7.66		8.20	27.85	5.05	14.99	−4.10	−13.56	5.511	5.672	5.191	5.252		0^+	0^+
181	119	1381.12		7.63		8.06	28.31	3.01	15.24	−4.02	−13.80	5.524	5.685	5.201	5.262		0^+	$1/2^-$
182	120	1386.15		7.62		8.04	28.69	5.03	15.42	−4.01	−13.98	5.537	5.700	5.206	5.267		0^+	0^+
183	121	1389.10		7.59		7.98	29.11	2.95	15.63	−3.98	−14.19	5.550	5.715	5.212	5.273		0^+	$13/2^+$
184	122	1394.05		7.58		7.90	29.55	4.95	15.86	−3.92	−14.41	5.562	5.727	5.221	5.282		0^+	0^+
185	123	1396.98		7.55		7.88	29.96	2.93	16.07	−3.88	−14.61	5.574	5.741	5.228	5.289		0^+	$13/2^+$
186	124	1401.80		7.54		7.75	30.39	4.82	16.31	−3.82	−14.84	5.586	5.753	5.237	5.297		0^+	0^+
187	125	1404.73		7.51		7.75	30.81	2.93	16.53	−2.82	−15.04	5.599	5.767	5.244	5.304		0^+	$13/2^+$
188	126	1409.43		7.50		7.63	31.25	4.70	16.76	−2.40	−15.27	5.611	5.779	5.253	5.313		0^+	0^+
189	127	1409.18		7.46		4.45	31.52	−0.25	16.89	−2.55	−15.40	5.629	5.802	5.257	5.318		0^+	$9/2^+$
190	128	1410.27		7.42		0.84	31.81	1.09	17.03	−0.48	−15.55	5.646	5.822	5.266	5.326		0^+	0^+
191	129	1409.96		7.38		0.78	32.02	−0.31	17.15	−0.45	−15.69	5.665	5.845	5.270	5.331		0^+	$9/2^+$
192	130	1411.09		7.35		0.82	32.36	1.13	17.30	−0.48	−15.84	5.682	5.865	5.279	5.340		0^+	0^+
193	131	1410.73		7.31		0.77	32.47	−0.36	17.38	−0.45	−15.97	5.701	5.888	5.284	5.344		0^+	$9/2^+$
194	132	1411.90		7.28		0.81	32.89	1.17	17.56	−0.48	−16.11	5.718	5.907	5.293	5.353		0^+	0^+
195	133	1411.54		7.24		0.81	32.97	−0.36	17.59	−0.51	−16.15	5.760	5.965	5.293	5.354		0^+	$1/2^+$
196	134	1412.72		7.21		0.82	33.43	1.18	17.82	−0.49	−16.39	5.754	5.949	5.307	5.367		0^+	0^+
197	135	1412.41		7.17		0.87	33.51	−0.31	17.86	−0.51	−16.43	5.793	6.003	5.308	5.368		0^+	$1/2^+$
198	136	1413.55		7.14		0.83	33.95	1.14	18.08	−0.50	−16.66	5.789	5.990	5.321	5.381		0^+	0^+
199	137	1413.29		7.10		0.88	34.05	−0.26	18.13	−0.52	−16.71	5.826	6.041	5.322	5.382		0^+	$1/2^+$
200	138	1414.41		7.07		0.86	34.46	1.12	18.34	−0.51	−16.93	5.825	6.031	5.336	5.396		0^+	0^+
201	139	1414.19		7.04		0.90	34.57	−0.22	18.39	−0.53	−16.98	5.860	6.078	5.338	5.397		0^+	$1/2^+$
202	140	1415.30		7.01		0.89	34.97	1.11	18.59	−0.53	−17.20	5.860	6.071	5.351	5.411		0^+	0^+
203	141	1415.13		6.97		0.94	35.10	−0.17	18.65	−0.55	−17.26	5.893	6.115	5.353	5.413		0^+	$1/2^+$
204	142	1416.24		6.94		0.94	35.47	1.11	18.84	−0.55	−17.46	5.895	6.111	5.367	5.426		0^+	0^+
205	143	1416.11		6.91		0.98	35.63	−0.13	18.92	−0.57	−17.52	5.926	6.151	5.369	5.428		0^+	$1/2^+$
206	144	1417.22		6.88		0.98	35.97	1.11	19.09	−0.58	−17.71	5.929	6.150	5.382	5.441		0^+	0^+
207	145	1417.13		6.85		1.02	36.14	−0.09	19.18	−0.59	−17.79	5.958	6.187	5.385	5.444		0^+	$1/2^+$
208	146	1418.26		6.82		1.04	36.46	1.13	19.34	−0.60	−17.96	5.964	6.188	5.397	5.456		0^+	0^+
209	147	1418.20		6.79		1.07	36.65	−0.06	19.43	−0.62	−18.05	5.991	6.222	5.401	5.460		0^+	$1/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
210	148	1419.35		6.76		1.09	36.95	1.15	19.58	−0.62	−18.21	5.997	6.226	5.412	5.471		0^+	0^+
211	149	1419.33		6.73		1.13	37.12	−0.02	19.66	−0.64	−18.30	6.023	6.257	5.417	5.476		0^+	$1/2^+$
212	150	1420.50		6.70		1.15	37.43	1.17	19.83	−0.65	−18.45	6.031	6.264	5.427	5.485		0^+	0^+
213	151	1420.52		6.67		1.19	37.64	0.02	19.91	−0.66	−18.55	6.054	6.292	5.432	5.491		0^+	$1/2^+$
214	152	1421.69		6.64		1.19	37.90	1.17	20.06	−0.67	−18.68	6.064	6.301	5.441	5.499		0^+	0^+
215	153	1421.75		6.61		1.23	38.14	0.06	20.17	−0.67	−18.79	6.086	6.326	5.448	5.506		0^+	$1/2^+$
216	154	1422.93		6.59		1.24	38.35	1.18	20.28	−0.68	−18.91	6.097	6.337	5.455	5.513		0^+	0^+
217	155	1423.01		6.56		1.26	38.61	0.08	20.41	−0.69	−19.02	6.117	6.360	5.462	5.520		0^+	$1/2^+$
218	156	1424.21		6.53		1.28	38.79	1.20	20.50	−0.70	−19.13	6.130	6.374	5.468	5.526		0^+	0^+
219	157	1424.29		6.50		1.28	39.06	0.08	20.63	−0.69	−19.24	6.148	6.395	5.476	5.534		0^+	$1/2^+$
220	158	1425.53		6.48		1.32	39.23	1.24	20.71	−0.71	−19.34	6.162	6.410	5.480	5.538		0^+	0^+
221	159	1425.60		6.45		1.31	39.48	0.07	20.84	−0.70	−19.45	6.180	6.429	5.489	5.547		0^+	$1/2^+$
222	160	1426.87		6.43		1.34	39.63	1.27	20.91	−0.71	−19.54	6.195	6.447	5.492	5.550		0^+	0^+
223	161	1426.92		6.40		1.32	39.87	0.05	21.03	−0.69	−19.65	6.211	6.464	5.501	5.559		0^+	$1/2^+$
224	162	1428.23		6.38		1.36	40.03	1.31	21.10	−0.70	−19.73	6.227	6.483	5.503	5.561		0^+	0^+
225	163	1428.25		6.35		1.33	40.23	0.02	21.21	−0.69	−19.82	6.244	6.502	5.510	5.567		0^+	$3/2^+$
226	164	1429.58		6.33		1.35	40.41	1.33	21.28	−0.69	−19.91	6.259	6.519	5.513	5.571		0^+	0^+
227	165	1429.57		6.30		1.32	40.61	−0.01	21.39	−0.64	−20.00	6.276	6.537	5.521	5.578		0^+	$3/2^+$
228	166	1430.90		6.28		1.32	40.77	1.33	21.47	−0.64	−20.08	6.291	6.555	5.523	5.581		0^+	0^+
229	167	1430.72		6.25		1.15	40.91	−0.18	21.53	−0.33	−20.16	6.308	6.573	5.530	5.588		0^+	$3/2^+$
230	168	1432.03		6.23		1.13	41.07	1.31	21.61	−0.35	−20.24	6.324	6.592	5.532	5.590		0^+	0^+
231	169	1431.20		6.20		0.48	41.40	−0.83	21.77	−0.38	−20.38	6.336	6.604	5.541	5.599		0^+	$15/2^-$
232	170	1432.12		6.17		0.09	41.77	0.92	21.97	0.05	−20.58	6.343	6.608	5.555	5.613		0^+	0^+
σ		9.63													0.022			
$Z = 63$ (Eu)																		
131	68	1033.27		7.89			−0.03		−1.58	−12.99	0.45	4.835	4.820	4.850	4.916		$5/2^+$	0^+
132	69	1044.75		7.91			0.66	11.48	−1.24	−12.76	0.11	4.845	4.837	4.854	4.920		$5/2^+$	$3/2^+$
133	70	1058.61		7.96		25.34	1.32	13.86	−0.90	−12.62	−0.22	4.855	4.852	4.858	4.924		$5/2^+$	0^+
134	71	1069.80		7.98		25.05	1.99	11.19	−0.58	−12.48	−0.55	4.866	4.868	4.862	4.928		$5/2^+$	$1/2^+$
135	72	1083.29		8.02		24.68	2.64	13.49	−0.24	−12.31	−0.88	4.875	4.883	4.866	4.932		$5/2^+$	0^+
136	73	1094.25		8.05		24.45	3.29	10.96	0.08	−12.17	−1.21	4.886	4.899	4.870	4.935		$5/2^+$	$1/2^+$
137	74	1107.40		8.08		24.11	3.92	13.15	0.41	−12.02	−1.53	4.895	4.913	4.874	4.939	4.976	$5/2^+$	0^+
138	75	1118.15	1126.30	8.10	8.16	23.90	4.57	10.75	0.73	−11.88	−1.86	4.905	4.928	4.878	4.943	4.978	$5/2^+$	$1/2^+$
139	76	1131.01	1138.02	8.14	8.19	23.61	5.19	12.86	1.04	−11.76	−2.17	4.915	4.942	4.881	4.946	4.976	$5/2^+$	0^+
140	77	1141.56	1147.68	8.15	8.20	23.41	5.81	10.55	1.36	−11.63	−2.49	4.924	4.956	4.885	4.950	4.970	$5/2^+$	$1/2^+$
141	78	1154.17	1158.69	8.19	8.22	23.16	6.42	12.61	1.66	−11.51	−2.80	4.934	4.970	4.889	4.954	4.970	$5/2^+$	0^+
142	79	1164.56	1168.15	8.20	8.23	23.00	7.05	10.39	1.97	−11.39	−3.13	4.943	4.983	4.892	4.957	4.961	$5/2^+$	$1/2^+$
143	80	1176.94	1179.15	8.23	8.25	22.77	7.65	12.38	2.27	−11.29	−3.42	4.952	4.996	4.896	4.961	4.964	$5/2^+$	0^+
144	81	1187.20	1188.60	8.24	8.25	22.64	8.27	10.26	2.57	−9.91	−3.76	4.961	5.009	4.900	4.965	4.961	$5/2^+$	$1/2^+$
145	82	1199.36	1199.05	8.27	8.27	22.42	8.86	12.16	2.86	−8.97	−4.04	4.970	5.022	4.903	4.968	4.966	$5/2^+$	0^+
146	83	1204.32	1206.24	8.25	8.26	17.12	9.24	4.96	3.19	−9.99	−4.34	4.986	5.044	4.909	4.974	4.979	$5/2^+$	$7/2^-$
147	84	1212.14	1214.74	8.25	8.26	12.78	10.12	7.82	3.49	−6.42	−4.66	5.006	5.065	4.926	4.990	4.994	$5/2^+$	0^+
148	85	1217.21	1221.57	8.22	8.25	12.89	10.73	5.07	3.79	−6.34	−4.98	5.025	5.087	4.939	5.004	5.005	$5/2^+$	$9/2^-$
149	86	1224.64	1229.78	8.22	8.25	12.50	11.33	7.43	4.09	−6.30	−5.27	5.041	5.107	4.948	5.013	5.020	$5/2^+$	0^+
150	87	1229.58	1236.20	8.20	8.24	12.37	11.94	4.94	4.39	−6.22	−5.57	5.059	5.128	4.961	5.026	5.030	$5/2^+$	$9/2^-$
151	88	1236.90	1244.13	8.19	8.24	12.26	12.51	7.32	4.67	−6.19	−5.86	5.075	5.148	4.971	5.035	5.052	$5/2^+$	0^+
152	89	1241.70	1250.44	8.17	8.23	12.12	13.10	4.80	4.96	−6.11	−6.16	5.092	5.169	4.983	5.047	5.106	$5/2^+$	$9/2^-$
153	90	1248.95	1258.99	8.16	8.23	12.05	13.67	7.25	5.24	−6.09	−6.44	5.108	5.188	4.992	5.056	5.112	$5/2^+$	0^+
154	91	1253.63	1265.43	8.14	8.22	11.93	14.25	4.68	5.54	−6.04	−6.73	5.124	5.208	5.001	5.065	5.124	$5/2^+$	$7/2^-$
155	92	1260.79	1273.58	8.13	8.22	11.84	14.81	7.16	5.81	−5.98	−7.01	5.140	5.226	5.013	5.076	5.122	$5/2^+$	0^+
156	93	1265.41	1279.92	8.11	8.20	11.78	15.38	4.62	6.09	−5.92	−7.29	5.157	5.246	5.023	5.086	5.126	$5/2^+$	$7/2^-$
157	94	1272.40	1287.37	8.10	8.20	11.61	15.92	6.99	6.36	−5.85	−7.56	5.172	5.264	5.032	5.095	5.135	$5/2^+$	0^+
158	95	1276.93	1293.24	8.08	8.18	11.52	16.47	4.53	6.63	−5.78	−7.84	5.188	5.283	5.042	5.105	5.141	$5/2^+$	$7/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
159	96	1283.76	1300.10	8.07	8.18	11.36	16.99	6.83	6.90	−5.72	−8.10	5.202	5.300	5.050	5.113	5.150	$5/2^+$	0^+
160	97	1288.15	1305.60	8.05	8.16	11.22	17.54	4.39	7.17	−5.60	−8.37	5.218	5.319	5.060	5.123		$5/2^+$	$7/2^-$
161	98	1294.85	1311.99	8.04	8.15	11.09	18.05	6.70	7.43	−5.56	−8.62	5.232	5.336	5.066	5.129		$5/2^+$	0^+
162	99	1298.98	1316.96	8.02	8.13	10.83	18.55	4.13	7.68	−5.39	−8.87	5.248	5.355	5.076	5.139		$5/2^+$	$7/2^-$
163	100	1305.60	1322.98	8.01	8.12	10.75	19.05	6.62	7.94	−5.38	−9.12	5.261	5.371	5.082	5.144		$5/2^+$	0^+
164	101	1309.48		7.98		10.50	19.48	3.88	8.12	−5.38	−9.32	5.276	5.392	5.086	5.148		$5/2^+$	$3/2^-$
165	102	1315.98		7.98		10.38	20.01	6.50	8.42	−5.20	−9.59	5.290	5.406	5.096	5.158		$5/2^+$	0^+
166	103	1319.85		7.95		10.37	20.43	3.87	8.64	−5.16	−9.80	5.305	5.426	5.101	5.163		$5/2^+$	$3/2^-$
167	104	1326.00		7.94		10.02	20.91	6.15	8.87	−5.04	−10.04	5.319	5.441	5.110	5.172		$5/2^+$	0^+
168	105	1329.81		7.92		9.96	21.33	3.81	9.09	−4.99	−10.25	5.334	5.461	5.115	5.177		$5/2^+$	$3/2^-$
169	106	1335.73		7.90		9.73	21.78	5.92	9.31	−4.91	−10.48	5.347	5.476	5.123	5.185		$5/2^+$	0^+
170	107	1339.45		7.88		9.64	22.19	3.72	9.52	−4.85	−10.69	5.362	5.495	5.129	5.191		$5/2^+$	$3/2^-$
171	108	1345.22		7.87		9.49	22.63	5.77	9.74	−4.79	−10.91	5.375	5.510	5.136	5.198		$5/2^+$	0^+
172	109	1348.85		7.84		9.40	23.05	3.63	9.95	−4.73	−11.12	5.391	5.529	5.143	5.205		$5/2^+$	$3/2^-$
173	110	1354.51		7.83		9.29	23.48	5.66	10.16	−4.69	−11.34	5.403	5.543	5.150	5.211		$5/2^+$	0^+
174	111	1358.06		7.80		9.21	23.82	3.55	10.35	−4.65	−11.53	5.418	5.562	5.155	5.217		$5/2^+$	$1/2^-$
175	112	1363.62		7.79		9.11	24.32	5.56	10.59	−4.60	−11.76	5.431	5.576	5.163	5.224		$5/2^+$	0^+
176	113	1367.19		7.77		9.13	24.74	3.57	10.80	−4.55	−11.96	5.445	5.594	5.169	5.230		$5/2^+$	$1/2^-$
177	114	1372.56		7.75		8.94	25.15	5.37	11.01	−4.50	−12.18	5.458	5.607	5.176	5.237		$5/2^+$	0^+
178	115	1376.02		7.73		8.83	25.57	3.46	11.21	−4.45	−12.39	5.472	5.624	5.183	5.244		$5/2^+$	$1/2^-$
179	116	1381.34		7.72		8.78	25.99	5.32	11.43	−4.41	−12.60	5.484	5.638	5.189	5.251		$5/2^+$	0^+
180	117	1384.69		7.69		8.67	26.43	3.35	11.63	−4.34	−12.83	5.497	5.652	5.198	5.259		$5/2^+$	$1/2^-$
181	118	1389.96		7.68		8.62	26.84	5.27	11.85	−4.32	−13.03	5.510	5.667	5.203	5.264		$5/2^+$	0^+
182	119	1393.19		7.65		8.50	27.31	3.23	12.07	−4.24	−13.28	5.523	5.680	5.213	5.274		$5/2^+$	$1/2^-$
183	120	1398.42		7.64		8.46	27.69	5.23	12.27	−4.23	−13.46	5.535	5.695	5.217	5.278		$5/2^+$	0^+
184	121	1401.57		7.62		8.38	28.10	3.15	12.47	−4.20	−13.66	5.548	5.710	5.224	5.285		$5/2^+$	$13/2^+$
185	122	1406.73		7.60		8.31	28.54	5.16	12.68	−4.13	−13.90	5.560	5.722	5.232	5.293		$5/2^+$	0^+
186	123	1409.87		7.58		8.30	28.96	3.14	12.89	−4.10	−14.10	5.573	5.736	5.239	5.300		$5/2^+$	$13/2^+$
187	124	1414.91		7.57		8.18	29.42	5.04	13.11	−4.04	−14.34	5.584	5.748	5.247	5.308		$5/2^+$	0^+
188	125	1418.04		7.54		8.17	29.84	3.13	13.31	−3.07	−14.55	5.597	5.761	5.254	5.315		$5/2^+$	$13/2^+$
189	126	1422.96		7.53		8.05	30.29	4.92	13.53	−2.54	−14.78	5.608	5.773	5.263	5.324		$5/2^+$	0^+
190	127	1422.85		7.49		4.81	30.56	−0.11	13.67	−2.77	−14.91	5.626	5.796	5.268	5.328		$5/2^+$	$9/2^+$
191	128	1424.09		7.46		1.13	30.85	1.24	13.82	−0.63	−15.07	5.643	5.815	5.277	5.337		$5/2^+$	0^+
192	129	1423.93		7.42		1.08	31.12	−0.16	13.97	−0.60	−15.20	5.662	5.838	5.282	5.342		$5/2^+$	$9/2^+$
193	130	1425.20		7.38		1.11	31.41	1.27	14.11	−0.63	−15.35	5.678	5.857	5.291	5.351		$5/2^+$	0^+
194	131	1424.99		7.35		1.06	31.64	−0.21	14.26	−0.59	−15.48	5.697	5.880	5.296	5.356		$5/2^+$	$9/2^+$
195	132	1426.31		7.31		1.11	31.97	1.32	14.41	−0.63	−15.63	5.713	5.898	5.305	5.365		$5/2^+$	0^+
196	133	1426.03		7.28		1.04	32.08	−0.28	14.49	−0.59	−15.77	5.732	5.921	5.310	5.370		$5/2^+$	$9/2^+$
197	134	1427.41		7.25		1.10	32.51	1.38	14.69	−0.63	−15.91	5.748	5.939	5.320	5.379		$5/2^+$	0^+
198	135	1427.14		7.21		1.11	32.59	−0.27	14.73	−0.66	−15.95	5.787	5.993	5.320	5.380		$5/2^+$	$1/2^+$
199	136	1428.52		7.18		1.11	33.05	1.38	14.97	−0.64	−16.19	5.783	5.979	5.335	5.394		$5/2^+$	0^+
200	137	1428.31		7.14		1.17	33.15	−0.21	15.02	−0.66	−16.24	5.820	6.029	5.335	5.395		$5/2^+$	$1/2^+$
201	138	1429.65		7.11		1.13	33.58	1.34	15.24	−0.65	−16.47	5.818	6.019	5.350	5.409		$5/2^+$	0^+
202	139	1429.49		7.08		1.18	33.69	−0.16	15.30	−0.68	−16.52	5.852	6.066	5.351	5.411		$5/2^+$	$1/2^+$
203	140	1430.82		7.05		1.17	34.11	1.33	15.52	−0.67	−16.74	5.852	6.058	5.366	5.425		$5/2^+$	0^+
204	141	1430.70		7.01		1.21	34.22	−0.12	15.57	−0.69	−16.79	5.885	6.102	5.367	5.426		$5/2^+$	$1/2^+$
205	142	1432.02		6.99		1.20	34.62	1.32	15.78	−0.69	−17.00	5.886	6.097	5.381	5.441		$5/2^+$	0^+
206	143	1431.95		6.95		1.25	34.76	−0.07	15.84	−0.71	−17.07	5.917	6.137	5.383	5.443		$5/2^+$	$1/2^+$
207	144	1433.26		6.92		1.24	35.13	1.31	16.04	−0.71	−17.27	5.920	6.135	5.397	5.456		$5/2^+$	0^+
208	145	1433.24		6.89		1.29	35.29	−0.02	16.11	−0.73	−17.33	5.949	6.172	5.400	5.459		$5/2^+$	$1/2^+$
209	146	1434.56		6.86		1.30	35.64	1.32	16.30	−0.73	−17.52	5.954	6.172	5.413	5.471		$5/2^+$	0^+
210	147	1434.58		6.83		1.34	35.81	0.02	16.38	−0.75	−17.60	5.981	6.207	5.416	5.475		$5/2^+$	$1/2^+$
211	148	1435.90		6.81		1.34	36.13	1.32	16.55	−0.75	−17.77	5.987	6.210	5.428	5.486		$5/2^+$	0^+
212	149	1435.96		6.77		1.38	36.29	0.06	16.63	−0.77	−17.85	6.012	6.242	5.432	5.490		$5/2^+$	$1/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
213	150	1437.29		6.75		1.39	36.62	1.33	16.79	−0.77	−18.01	6.020	6.247	5.442	5.501		$5/2^+$	0^+
214	151	1437.39		6.72		1.43	36.78	0.10	16.87	−0.78	−18.10	6.044	6.276	5.447	5.506		$5/2^+$	$1/2^+$
215	152	1438.72		6.69		1.43	37.09	1.33	17.03	−0.79	−18.25	6.053	6.284	5.456	5.515		$5/2^+$	0^+
216	153	1438.87		6.66		1.48	37.29	0.15	17.12	−0.80	−18.34	6.075	6.310	5.462	5.520		$5/2^+$	$1/2^+$
217	154	1440.19		6.64		1.47	37.54	1.32	17.26	−0.80	−18.47	6.086	6.320	5.470	5.528		$5/2^+$	0^+
218	155	1440.38		6.61		1.51	37.78	0.19	17.37	−0.80	−18.57	6.106	6.345	5.476	5.534		$5/2^+$	$1/2^+$
219	156	1441.70		6.58		1.51	37.99	1.32	17.49	−0.81	−18.69	6.118	6.357	5.482	5.540		$5/2^+$	0^+
220	157	1441.89		6.55		1.51	38.23	0.19	17.60	−0.81	−18.79	6.137	6.379	5.489	5.547		$5/2^+$	$1/2^+$
221	158	1443.23		6.53		1.53	38.41	1.34	17.70	−0.81	−18.89	6.151	6.394	5.494	5.552		$5/2^+$	0^+
222	159	1443.41		6.50		1.52	38.65	0.18	17.81	−0.81	−19.00	6.168	6.414	5.502	5.559		$5/2^+$	$1/2^+$
223	160	1444.78		6.48		1.55	38.82	1.37	17.91	−0.81	−19.09	6.183	6.430	5.505	5.563		$5/2^+$	0^+
224	161	1444.94		6.45		1.53	39.05	0.16	18.02	−0.79	−19.20	6.199	6.448	5.513	5.571		$5/2^+$	$1/2^+$
225	162	1446.33		6.43		1.55	39.20	1.39	18.10	−0.80	−19.28	6.215	6.467	5.516	5.574		$5/2^+$	0^+
226	163	1446.46		6.40		1.52	39.42	0.13	18.21	−0.77	−19.39	6.230	6.483	5.524	5.582		$5/2^+$	$1/2^+$
227	164	1447.87		6.38		1.54	39.57	1.41	18.29	−0.78	−19.46	6.247	6.503	5.526	5.583		$5/2^+$	0^+
228	165	1447.94		6.35		1.48	39.76	0.07	18.37	−0.73	−19.55	6.264	6.522	5.532	5.590		$5/2^+$	$3/2^+$
229	166	1449.37		6.33		1.50	39.94	1.43	18.47	−0.73	−19.63	6.279	6.539	5.535	5.593		$5/2^+$	0^+
230	167	1449.26		6.30		1.32	40.07	−0.11	18.54	−0.45	−19.71	6.295	6.557	5.542	5.600		$5/2^+$	$3/2^+$
231	168	1450.67		6.28		1.30	40.25	1.41	18.64	−0.47	−19.80	6.311	6.576	5.545	5.602		$5/2^+$	0^+
232	169	1449.97		6.25		0.71	40.54	−0.70	18.77	−0.51	−19.92	6.325	6.589	5.552	5.610		$5/2^+$	$15/2^-$
233	170	1451.08		6.23		0.41	40.93	1.11	18.96	−0.11	−20.13	6.331	6.592	5.566	5.623		$5/2^+$	0^+
234	171	1450.26		6.20		0.29		−0.82		−0.07	−20.29	6.342	6.602	5.577	5.634		$5/2^+$	$15/2^-$
235	172	1451.10		6.17		0.02		0.84		0.00	−20.46	6.352	6.609	5.588	5.645		$5/2^+$	0^+
σ		10.76													0.031			
$Z = 64$ (Gd)																		
134	70	1060.02		7.91			0.51		1.41	−12.94	0.10	4.866	4.857	4.876	4.942		0^+	0^+
135	71	1071.55		7.94			1.17		1.75	−12.79	−0.23	4.876	4.873	4.880	4.945		0^+	$1/2^+$
136	72	1085.34		7.98			1.81	13.79	2.05	−12.62	−0.55	4.886	4.887	4.884	4.949		0^+	0^+
137	73	1096.63		8.00		25.08	2.46	11.29	2.38	−12.48	−0.88	4.896	4.903	4.887	4.952		0^+	$1/2^+$
138	74	1110.08		8.04		24.74	3.09	13.45	2.68	−12.33	−1.19	4.905	4.917	4.891	4.956		0^+	0^+
139	75	1121.14		8.07		24.51	3.72	11.06	2.99	−12.19	−1.52	4.915	4.932	4.895	4.960		0^+	$1/2^+$
140	76	1134.31	1141.70	8.10	8.15	24.23	4.34	13.16	3.30	−12.06	−1.82	4.924	4.946	4.898	4.963		0^+	0^+
141	77	1145.17	1151.21	8.12	8.16	24.03	4.97	10.86	3.61	−11.93	−2.15	4.933	4.960	4.902	4.966		0^+	$1/2^+$
142	78	1158.08	1163.02	8.16	8.19	23.78	5.57	12.91	3.91	−11.82	−2.45	4.942	4.973	4.905	4.970		0^+	0^+
143	79	1168.78	1172.36	8.17	8.20	23.61	6.19	10.70	4.22	−11.70	−2.77	4.952	4.986	4.909	4.973		0^+	$1/2^+$
144	80	1181.47	1183.96	8.20	8.22	23.38	6.80	12.69	4.53	−11.59	−3.07	4.961	4.999	4.912	4.977		0^+	0^+
145	81	1192.05	1193.20	8.22	8.23	23.27	7.42	10.58	4.85	−10.46	−3.40	4.969	5.012	4.915	4.980	4.979	0^+	$1/2^+$
146	82	1204.50	1204.43	8.25	8.25	23.04	8.00	12.45	5.14	−9.49	−3.68	4.978	5.025	4.919	4.983	4.981	0^+	0^+
147	83	1210.04	1211.77	8.23	8.24	17.99	8.91	5.54	5.72	−10.17	−4.00	4.997	5.047	4.932	4.997		0^+	$9/2^-$
148	84	1217.90	1220.75	8.23	8.25	13.40	9.25	7.86	5.76	−6.72	−4.30	5.013	5.068	4.941	5.006	5.008	0^+	0^+
149	85	1223.29	1227.68	8.21	8.24	13.25	9.87	5.39	6.08	−6.64	−4.61	5.032	5.089	4.955	5.019		0^+	$9/2^-$
150	86	1231.02	1236.39	8.21	8.24	13.12	10.47	7.73	6.38	−6.60	−4.91	5.048	5.109	4.964	5.028	5.034	0^+	0^+
151	87	1236.27	1242.89	8.19	8.23	12.98	11.08	5.25	6.69	−6.51	−5.21	5.066	5.130	4.976	5.040		0^+	$9/2^-$
152	88	1243.89	1251.48	8.18	8.23	12.87	11.66	7.62	6.99	−6.48	−5.50	5.081	5.150	4.985	5.049	5.077	0^+	0^+
153	89	1248.99	1257.72	8.16	8.22	12.72	12.25	5.10	7.29	−6.39	−5.80	5.098	5.170	4.998	5.061		0^+	$9/2^-$
154	90	1256.53	1266.62	8.16	8.22	12.64	12.82	7.53	7.58	−6.37	−6.08	5.114	5.189	5.007	5.070	5.122	0^+	0^+
155	91	1261.50	1273.05	8.14	8.21	12.50	13.41	4.97	7.87	−6.33	−6.37	5.130	5.209	5.016	5.079	5.132	0^+	$7/2^-$
156	92	1268.94	1281.59	8.13	8.22	12.41	13.96	7.44	8.15	−6.25	−6.65	5.146	5.227	5.027	5.090	5.142	0^+	0^+
157	93	1273.84	1287.95	8.11	8.20	12.35	14.52	4.91	8.43	−6.20	−6.93	5.162	5.246	5.037	5.100	5.145	0^+	$7/2^-$
158	94	1281.11	1295.89	8.11	8.20	12.17	15.07	7.26	8.71	−6.12	−7.20	5.177	5.264	5.046	5.109	5.157	0^+	0^+
159	95	1285.92	1301.83	8.09	8.19	12.08	15.62	4.82	8.99	−6.04	−7.48	5.193	5.283	5.056	5.119		0^+	$7/2^-$
160	96	1293.01	1309.28	8.08	8.18	11.91	16.15	7.09	9.25	−5.98	−7.74	5.207	5.300	5.064	5.126	5.173	0^+	0^+
161	97	1297.68	1314.92	8.06	8.17	11.75	16.70	4.67	9.53	−5.86	−8.01	5.222	5.318	5.074	5.136		0^+	$7/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
162	98	1304.63	1321.76	8.05	8.16	11.61	17.21	6.95	9.78	−5.81	−8.26	5.236	5.335	5.080	5.142		0^+	0^+
163	99	1309.02	1326.87	8.03	8.14	11.34	17.72	4.39	10.04	−5.63	−8.52	5.251	5.353	5.089	5.152		0^+	$7/2^-$
164	100	1315.88		8.02		11.26	18.22	6.86	10.28	−5.62	−8.77	5.264	5.370	5.095	5.157		0^+	0^+
165	101	1319.97		8.00		10.95	18.61	4.09	10.49	−5.62	−8.98	5.279	5.390	5.099	5.161		0^+	$3/2^-$
166	102	1326.74		7.99		10.85	19.18	6.76	10.76	−5.42	−9.25	5.292	5.404	5.109	5.171		0^+	0^+
167	103	1330.81		7.97		10.84	19.60	4.08	10.96	−5.39	−9.45	5.307	5.424	5.113	5.175		0^+	$3/2^-$
168	104	1337.21		7.96		10.47	20.08	6.40	11.21	−5.26	−9.70	5.321	5.439	5.123	5.185		0^+	0^+
169	105	1341.22		7.94		10.41	20.50	4.01	11.41	−5.21	−9.91	5.336	5.458	5.128	5.190		0^+	$3/2^-$
170	106	1347.38		7.93		10.17	20.96	6.16	11.65	−5.12	−10.15	5.349	5.473	5.136	5.198		0^+	0^+
171	107	1351.31		7.90		10.09	21.38	3.93	11.86	−5.06	−10.35	5.364	5.492	5.142	5.204		0^+	$3/2^-$
172	108	1357.30		7.89		9.92	21.82	6.00	12.08	−5.00	−10.58	5.377	5.507	5.149	5.211		0^+	0^+
173	109	1361.14		7.87		9.83	22.24	3.84	12.29	−4.94	−10.79	5.391	5.525	5.156	5.217		0^+	$3/2^-$
174	110	1367.02		7.86		9.71	22.67	5.88	12.51	−4.90	−11.01	5.404	5.540	5.162	5.224		0^+	0^+
175	111	1370.75		7.83		9.62	23.04	3.74	12.69	−4.83	−11.22	5.419	5.557	5.170	5.231		0^+	$1/2^-$
176	112	1376.55		7.82		9.53	23.52	5.79	12.93	−4.80	−11.43	5.431	5.572	5.176	5.237		0^+	0^+
177	113	1380.33		7.80		9.58	23.94	3.78	13.14	−4.76	−11.63	5.445	5.589	5.182	5.243		0^+	$1/2^-$
178	114	1385.91		7.79		9.36	24.36	5.58	13.35	−4.71	−11.85	5.458	5.603	5.189	5.250		0^+	0^+
179	115	1389.59		7.76		9.26	24.78	3.68	13.57	−4.66	−12.07	5.472	5.619	5.196	5.257		0^+	$1/2^-$
180	116	1395.11		7.75		9.20	25.20	5.52	13.77	−4.62	−12.28	5.484	5.633	5.202	5.263		0^+	0^+
181	117	1398.70		7.73		9.11	25.64	3.59	14.01	−4.56	−12.50	5.497	5.648	5.210	5.271		0^+	$1/2^-$
182	118	1404.16		7.72		9.05	26.05	5.46	14.20	−4.53	−12.70	5.509	5.662	5.216	5.277		0^+	0^+
183	119	1407.64		7.69		8.95	26.52	3.49	14.45	−4.46	−12.95	5.522	5.675	5.225	5.286		0^+	$1/2^-$
184	120	1413.05		7.68		8.90	26.90	5.41	14.63	−4.44	−13.13	5.534	5.690	5.230	5.291		0^+	0^+
185	121	1416.43		7.66		8.79	27.33	3.38	14.86	−4.36	−13.39	5.547	5.702	5.240	5.301		0^+	$13/2^+$
186	122	1421.81		7.64		8.76	27.76	5.38	15.08	−4.35	−13.57	5.559	5.717	5.244	5.305		0^+	0^+
187	123	1425.16		7.62		8.73	28.18	3.35	15.29	−4.32	−13.77	5.571	5.731	5.251	5.311		0^+	$13/2^+$
188	124	1430.43		7.61		8.62	28.63	5.28	15.52	−4.26	−14.00	5.583	5.743	5.259	5.320		0^+	0^+
189	125	1433.78		7.59		8.62	29.05	3.34	15.74	−2.99	−14.21	5.595	5.757	5.266	5.326		0^+	$13/2^+$
190	126	1438.94		7.57		8.50	29.51	5.16	15.98	−2.65	−14.44	5.607	5.768	5.274	5.335		0^+	0^+
191	127	1438.96		7.53		5.18	29.78	0.02	16.11	−2.84	−14.58	5.625	5.791	5.279	5.339		0^+	$9/2^+$
192	128	1440.36		7.50		1.42	30.09	1.40	16.27	−0.77	−14.74	5.641	5.810	5.288	5.349		0^+	0^+
193	129	1440.32		7.46		1.36	30.36	−0.03	16.39	−0.74	−14.88	5.659	5.832	5.293	5.353		0^+	$9/2^+$
194	130	1441.75		7.43		1.40	30.66	1.43	16.55	−0.76	−15.03	5.676	5.851	5.303	5.363		0^+	0^+
195	131	1441.67		7.39		1.34	30.94	−0.09	16.68	−0.73	−15.17	5.693	5.873	5.308	5.368		0^+	$9/2^+$
196	132	1443.14		7.36		1.38	31.24	1.47	16.83	−0.76	−15.33	5.710	5.891	5.317	5.377		0^+	0^+
197	133	1442.99		7.32		1.33	31.45	−0.15	16.96	−0.73	−15.46	5.728	5.913	5.323	5.383		0^+	$9/2^+$
198	134	1444.52		7.30		1.38	31.80	1.53	17.11	−0.77	−15.62	5.744	5.930	5.333	5.392		0^+	0^+
199	135	1444.31		7.26		1.32	31.90	−0.21	17.17	−0.73	−15.75	5.762	5.952	5.339	5.399		0^+	$9/2^+$
200	136	1445.91		7.23		1.39	32.36	1.60	17.39	−0.77	−15.90	5.778	5.969	5.348	5.408		0^+	0^+
201	137	1445.74		7.19		1.43	32.45	−0.17	17.43	−15.95	−15.99	5.814	6.019	5.349	5.408		0^+	$1/2^+$
202	138	1447.32		7.16		1.41	32.91	1.58	17.67	−16.19	−16.19	5.812	6.008	5.364	5.424		0^+	0^+
203	139	1447.21		7.13		1.47	33.02	−0.11	17.72	−16.24	−16.28	5.846	6.055	5.365	5.425		0^+	$1/2^+$
204	140	1448.76		7.10		1.44	33.46	1.55	17.94	−16.47	−16.47	5.845	6.046	5.381	5.440		0^+	0^+
205	141	1448.70		7.07		1.49	33.57	−0.06	18.00	−16.52	−16.56	5.878	6.090	5.382	5.441		0^+	$1/2^+$
206	142	1450.23		7.04		1.47	33.99	1.53	18.21	−16.74	−16.74	5.879	6.084	5.397	5.456		0^+	0^+
207	143	1450.22		7.01		1.52	34.11	−0.01	18.27	−16.80	−16.84	5.910	6.125	5.398	5.457		0^+	$1/2^+$
208	144	1451.74		6.98		1.51	34.52	1.58	18.48	−17.01	−17.01	5.912	6.121	5.413	5.472		0^+	0^+
209	145	1451.78		6.95		1.56	34.65	0.04	18.54	−17.07	−17.07	5.941	6.159	5.415	5.474		0^+	$1/2^+$
210	146	1453.29		6.92		1.55	35.03	1.51	18.73	−0.85	−17.27	5.945	6.158	5.428	5.487		0^+	0^+
211	147	1453.38		6.89		1.60	35.18	0.10	18.80	−0.87	−17.34	5.972	6.193	5.431	5.490		0^+	$1/2^+$
212	148	1454.88		6.86		1.59	35.53	1.50	18.98	−0.87	−17.52	5.978	6.195	5.444	5.502		0^+	0^+
213	149	1455.02		6.83		1.64	35.69	0.14	19.06	−0.89	−17.60	6.004	6.228	5.447	5.505		0^+	$1/2^+$
214	150	1456.51		6.81		1.63	36.01	1.49	19.22	−0.88	−17.77	6.011	6.232	5.458	5.516		0^+	0^+
215	151	1456.69		6.78		1.68	36.17	0.19	19.30	−0.90	−17.85	6.035	6.262	5.462	5.520		0^+	$1/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
216	152	1458.17		6.75		1.67	36.48	1.48	19.45	−0.90	−18.00	6.043	6.268	5.472	5.530		0^+	0^+
217	153	1458.40		6.72		1.71	36.65	0.23	19.53	−0.91	−18.09	6.066	6.296	5.477	5.535		0^+	$1/2^+$
218	154	1459.87		6.70		1.69	36.94	1.47	19.68	−0.91	−18.22	6.076	6.305	5.485	5.543		0^+	0^+
219	155	1460.15		6.67		1.74	37.14	0.28	19.77	−0.91	−18.32	6.097	6.330	5.490	5.548		0^+	$1/2^+$
220	156	1461.59		6.64		1.72	37.38	1.44	19.89	−0.91	−18.44	6.108	6.342	5.497	5.555		0^+	0^+
221	157	1461.90		6.61		1.75	37.61	0.31	20.01	−0.91	−18.54	6.128	6.365	5.503	5.561		0^+	$1/2^+$
222	158	1463.32		6.59		1.73	37.79	1.42	20.09	−0.91	−18.64	6.140	6.379	5.508	5.566		0^+	0^+
223	159	1463.62		6.56		1.72	38.02	0.30	20.21	−0.90	−18.75	6.159	6.399	5.515	5.572		0^+	$1/2^+$
224	160	1465.07		6.54		1.75	38.20	1.45	20.29	−0.91	−18.84	6.172	6.415	5.519	5.576		0^+	0^+
225	161	1465.34		6.51		1.72	38.42	0.27	20.40	−0.89	−18.95	6.189	6.434	5.526	5.583		0^+	$1/2^+$
226	162	1466.81		6.49		1.74	38.58	1.47	20.48	−0.90	−19.03	6.204	6.452	5.529	5.586		0^+	0^+
227	163	1467.04		6.46		1.70	38.79	0.23	20.58	−0.86	−19.14	6.220	6.469	5.536	5.594		0^+	$1/2^+$
228	164	1468.53		6.44		1.72	38.95	1.49	20.66	−0.87	−19.21	6.236	6.488	5.538	5.596		0^+	0^+
229	165	1468.68		6.41		1.64	39.11	0.15	20.74	−0.82	−19.29	6.253	6.507	5.544	5.602		0^+	$3/2^+$
230	166	1470.19		6.39		1.66	39.29	1.50	20.82	−0.81	−19.38	6.268	6.525	5.547	5.605		0^+	0^+
231	167	1470.16		6.36		1.47	39.44	−0.03	20.90	−0.57	−19.47	6.284	6.542	5.554	5.611		0^+	$1/2^+$
232	168	1471.65		6.34		1.46	39.62	1.49	20.98	−0.59	−19.56	6.299	6.560	5.557	5.614		0^+	0^+
233	169	1471.07		6.31		0.92	39.87	−0.58	21.10	−0.63	−19.68	6.313	6.574	5.564	5.621		0^+	$3/2^+$
234	170	1472.40		6.29		0.75	40.28	1.33	21.32	−0.28	−19.87	6.320	6.579	5.577	5.634		0^+	0^+
235	171	1471.74		6.26		0.67		−0.66	21.48	−0.24	−20.02	6.332	6.589	5.587	5.644		0^+	$15/2^-$
236	172	1472.76		6.24		0.36		1.02	21.66	−0.16	−20.20	6.341	6.596	5.599	5.656		0^+	0^+
237	173	1472.05		6.21		0.31		−0.71		−0.13	−20.36	6.352	6.606	5.609	5.666		0^+	$15/2^-$
238	174	1472.94		6.19		0.18		0.89		−0.08	−20.52	6.362	6.614	5.621	5.678		0^+	0^+
239	175	1472.21		6.16		0.15		−0.74		−0.06	−20.68	6.374	6.624	5.632	5.688		0^+	$15/2^-$
240	176	1473.01		6.14		0.07		0.80		−0.03	−20.84	6.384	6.633	5.643	5.700		0^+	0^+
241	177	1472.26		6.11		0.05		−0.75		−0.01	−21.00	6.395	6.643	5.654	5.710		0^+	$15/2^-$
242	178	1473.00		6.09		−0.01		0.74		0.02	−21.16	6.406	6.651	5.666	5.722		0^+	0^+
σ		10.44													0.038			
$Z = 65$ (Tb)																		
136	71	1069.85		7.87			0.05		−1.70	−13.11	0.09	4.890	4.879	4.902	4.967		$3/2^+$	$1/2^+$
137	72	1083.94		7.91			0.65		−1.40	−12.92	−0.23	4.899	4.894	4.905	4.970		$3/2^+$	0^+
138	73	1095.55		7.94			1.30	11.60	−1.08	−12.78	−0.56	4.908	4.909	4.908	4.973		$3/2^+$	$1/2^+$
139	74	1109.27		7.98		25.33	1.87	13.73	−0.81	−12.62	−0.87	4.917	4.923	4.911	4.976		$3/2^+$	0^+
140	75	1120.65	1129.61	8.00	8.07	25.10	2.50	11.38	−0.49	−12.54	−0.88	4.926	4.937	4.914	4.979		$5/2^+$	$1/2^+$
141	76	1134.14	1141.74	8.04	8.10	24.87	3.13	13.49	−0.17	−12.40	−1.20	4.935	4.950	4.917	4.982		$5/2^+$	0^+
142	77	1145.36	1151.83	8.07	8.11	24.71	3.80	11.22	0.19	−12.27	−1.54	4.944	4.964	4.920	4.985		$5/2^+$	$1/2^+$
143	78	1158.58	1163.77	8.10	8.14	24.44	4.41	13.22	0.49	−12.15	−1.84	4.953	4.977	4.923	4.988		$5/2^+$	0^+
144	79	1169.65	1173.79	8.12	8.15	24.29	5.09	11.07	0.87	−12.04	−2.20	4.961	4.990	4.926	4.991		$5/2^+$	$1/2^+$
145	80	1182.61	1185.79	8.16	8.17	24.04	5.67	12.97	1.15	−11.92	−2.49	4.970	5.003	4.930	4.994		$5/2^+$	0^+
146	81	1193.58	1195.32	8.18	8.19	23.93	6.38	10.97	1.53	−10.56	−2.86	4.978	5.015	4.933	4.997		$5/2^+$	$1/2^+$
147	82	1206.29	1206.37	8.21	8.21	23.68	6.93	12.71	1.79	−9.63	−3.12	4.987	5.028	4.936	5.000	4.920	$5/2^+$	0^+
148	83	1212.16	1214.24	8.19	8.20	18.58	7.84	5.87	2.12	−10.38	−3.46	5.006	5.050	4.949	5.013	4.929	$5/2^+$	$9/2^-$
149	84	1220.32	1223.26	8.19	8.21	14.02	8.18	8.15	2.41	−7.03	−3.75	5.022	5.070	4.958	5.022	4.943	$5/2^+$	0^+
150	85	1226.03	1230.95	8.17	8.21	13.86	8.82	5.71	2.73	−6.95	−4.07	5.040	5.092	4.971	5.035	4.950	$5/2^+$	$9/2^-$
151	86	1234.04	1239.54	8.17	8.21	13.73	9.40	8.02	3.02	−6.90	−4.36	5.055	5.111	4.980	5.044	4.963	$5/2^+$	0^+
152	87	1239.60	1246.70	8.16	8.20	13.58	10.02	5.56	3.33	−6.81	−4.67	5.073	5.132	4.993	5.057	4.969	$5/2^+$	$9/2^-$
153	88	1247.51	1255.37	8.15	8.21	13.46	10.61	7.90	3.62	−6.78	−4.96	5.088	5.151	5.002	5.066	4.995	$5/2^+$	0^+
154	89	1252.91	1262.28	8.14	8.20	13.31	11.21	5.41	3.92	−6.68	−5.26	5.106	5.171	5.014	5.077	5.033	$5/2^+$	$9/2^-$
155	90	1260.73	1271.45	8.13	8.20	13.22	11.78	7.81	4.20	−6.66	−5.54	5.121	5.190	5.023	5.086	5.039	$5/2^+$	0^+
156	91	1265.97	1278.36	8.12	8.19	13.06	12.34	5.25	4.48	−6.62	−5.83	5.136	5.210	5.032	5.095		$5/2^+$	$7/2^-$
157	92	1273.70	1287.11	8.11	8.20	12.98	12.91	7.73	4.77	−6.53	−6.11	5.152	5.228	5.043	5.106	5.049	$5/2^+$	0^+
158	93	1278.89	1293.89	8.09	8.19	12.91	13.48	5.19	5.04	−6.48	−6.39	5.168	5.247	5.053	5.116		$5/2^+$	$7/2^-$
159	94	1286.42	1302.02	8.09	8.19	12.72	14.02	7.53	5.31	−6.40	−6.67	5.182	5.264	5.062	5.125	5.060	$5/2^+$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
160	95	1291.52	1308.39	8.07	8.18	12.63	14.59	5.10	5.59	−6.31	−6.94	5.198	5.283	5.072	5.135		$5/2^+$	$7/2^-$
161	96	1298.86	1316.09	8.07	8.17	12.44	15.10	7.34	5.85	−6.24	−7.20	5.212	5.300	5.079	5.142		$5/2^+$	0^+
162	97	1303.80	1322.38	8.05	8.16	12.28	15.65	4.94	6.12	−6.12	−7.47	5.227	5.318	5.089	5.151		$5/2^+$	$7/2^-$
163	98	1310.99	1329.37	8.04	8.16	12.13	16.14	7.19	6.36	−6.07	−7.72	5.240	5.334	5.095	5.157		$5/2^+$	0^+
164	99	1315.64	1334.92	8.02	8.14	11.84	16.66	4.65	6.62	−5.88	−7.98	5.256	5.353	5.104	5.167		$5/2^+$	$7/2^-$
165	100	1322.74		8.02		11.75	17.14	7.10	6.86	−5.87	−8.21	5.268	5.369	5.110	5.172		$5/2^+$	0^+
166	101	1327.02	1346.87	7.99	8.11	11.38	17.54	4.28	7.05	−5.87	−8.40	5.283	5.389	5.114	5.176		$5/2^+$	$3/2^-$
167	102	1334.07		7.99		11.33	18.09	7.05	7.33	−5.66	−8.69	5.296	5.403	5.124	5.186		$5/2^+$	0^+
168	103	1338.33		7.97		11.31	18.48	4.27	7.52	−5.62	−8.88	5.311	5.423	5.128	5.190		$5/2^+$	$3/2^-$
169	104	1344.99		7.96		10.93	18.99	6.66	7.78	−5.48	−9.15	5.324	5.437	5.137	5.199		$5/2^+$	0^+
170	105	1349.20		7.94		10.86	19.39	4.20	7.98	−5.44	−9.34	5.338	5.456	5.142	5.204		$5/2^+$	$3/2^-$
171	106	1355.61		7.93		10.61	19.88	6.41	8.23	−5.34	−9.59	5.352	5.471	5.151	5.213		$5/2^+$	0^+
172	107	1359.73		7.91		10.53	20.28	4.12	8.43	−5.29	−9.79	5.366	5.490	5.156	5.218		$5/2^+$	$3/2^-$
173	108	1365.97		7.90		10.36	20.75	6.23	8.66	−5.22	−10.03	5.379	5.504	5.164	5.226		$5/2^+$	0^+
174	109	1370.01		7.87		10.28	21.16	4.04	8.87	−5.17	−10.24	5.393	5.522	5.170	5.232		$5/2^+$	$3/2^-$
175	110	1376.11		7.86		10.15	21.60	6.11	9.10	−5.12	−10.46	5.406	5.536	5.177	5.239		$5/2^+$	0^+
176	111	1380.07		7.84		10.06	22.01	3.95	9.31	−5.06	−10.68	5.420	5.554	5.184	5.246		$5/2^+$	$3/2^-$
177	112	1386.07		7.83		9.96	22.45	6.01	9.52	−5.02	−10.89	5.432	5.568	5.190	5.252		$5/2^+$	0^+
178	113	1390.05		7.81		9.99	22.86	3.98	9.72	−4.99	−11.10	5.447	5.586	5.196	5.258		$5/2^+$	$1/2^-$
179	114	1395.86		7.80		9.79	23.30	5.81	9.95	−4.93	−11.32	5.459	5.599	5.203	5.265		$5/2^+$	0^+
180	115	1399.77		7.78		9.71	23.75	3.90	10.18	−4.89	−11.54	5.472	5.615	5.210	5.271		$5/2^+$	$1/2^-$
181	116	1405.49		7.77		9.63	24.15	5.73	10.39	−4.84	−11.75	5.484	5.629	5.216	5.277		$5/2^+$	0^+
182	117	1409.32		7.74		9.55	24.63	3.82	10.62	−4.79	−11.98	5.497	5.644	5.224	5.285		$5/2^+$	$1/2^-$
183	118	1414.98		7.73		9.48	25.02	5.66	10.82	−4.75	−12.19	5.510	5.658	5.230	5.291		$5/2^+$	0^+
184	119	1418.72		7.71		9.40	25.53	3.74	11.07	−4.69	−12.44	5.522	5.671	5.238	5.299		$5/2^+$	$1/2^-$
185	120	1424.31		7.70		9.34	25.89	5.60	11.26	−4.67	−12.62	5.534	5.686	5.243	5.304		$5/2^+$	0^+
186	121	1427.96		7.68		9.24	26.39	3.64	11.53	−4.59	−12.90	5.546	5.698	5.253	5.314		$5/2^+$	$1/2^-$
187	122	1433.51		7.67		9.20	26.78	5.56	11.71	−4.58	−13.07	5.559	5.713	5.257	5.318		$5/2^+$	0^+
188	123	1437.07		7.64		9.11	27.20	3.56	11.92	−4.55	−13.27	5.571	5.727	5.263	5.324		$5/2^+$	$13/2^+$
189	124	1442.59		7.63		9.07	27.68	5.51	12.15	−4.49	−13.52	5.582	5.739	5.272	5.332		$5/2^+$	0^+
190	125	1446.14		7.61		9.07	28.10	3.55	12.36	−3.14	−13.73	5.594	5.752	5.278	5.338		$5/2^+$	$13/2^+$
191	126	1451.54		7.60		8.95	28.58	5.40	12.60	−2.50	−13.97	5.606	5.764	5.286	5.346		$5/2^+$	0^+
192	127	1451.70		7.56		5.56	28.85	0.16	12.74	−3.03	−14.10	5.623	5.786	5.291	5.351		$5/2^+$	$9/2^+$
193	128	1453.25		7.53		1.72	29.16	1.55	12.89	−0.92	−14.26	5.640	5.805	5.301	5.361		$5/2^+$	0^+
194	129	1453.36		7.49		1.66	29.43	0.10	13.03	−0.89	−14.40	5.657	5.826	5.306	5.366		$5/2^+$	$9/2^+$
195	130	1454.94		7.46		1.69	29.74	1.59	13.19	−0.91	−14.56	5.674	5.845	5.316	5.376		$5/2^+$	0^+
196	131	1455.00		7.42		1.64	30.01	0.05	13.33	−0.88	−14.69	5.691	5.866	5.321	5.381		$5/2^+$	$9/2^+$
197	132	1456.62		7.39		1.68	30.31	1.63	13.48	−0.91	−14.85	5.707	5.884	5.331	5.391		$5/2^+$	0^+
198	133	1456.62		7.36		1.62	30.59	−0.01	13.62	−0.88	−14.99	5.725	5.905	5.337	5.397		$5/2^+$	$9/2^+$
199	134	1458.30		7.33		1.67	30.89	1.68	13.78	−0.91	−15.15	5.741	5.923	5.347	5.406		$5/2^+$	0^+
200	135	1458.23		7.29		1.61	31.09	−0.07	13.92	−0.88	−15.29	5.758	5.943	5.354	5.413		$5/2^+$	$9/2^+$
201	136	1459.98		7.26		1.68	31.46	1.75	14.06	−0.92	−15.44	5.774	5.961	5.363	5.422		$5/2^+$	0^+
202	137	1459.85		7.23		1.62	31.54	−0.13	14.15	−0.89	−15.58	5.792	5.981	5.371	5.430		$5/2^+$	$9/2^+$
203	138	1461.67		7.20		1.70	32.02	1.83	14.35	−0.93	−15.73	5.807	5.998	5.380	5.439		$5/2^+$	0^+
204	139	1461.60		7.16		1.75	32.11	−0.07	14.39	−0.96	−15.77	5.841	6.044	5.380	5.440		$5/2^+$	$1/2^+$
205	140	1463.39		7.14		1.72	32.57	1.79	14.63	−0.94	−16.01	5.840	6.035	5.396	5.455		$5/2^+$	0^+
206	141	1463.38		7.10		1.78	32.68	−0.01	14.68	−0.97	−16.06	5.872	6.079	5.397	5.456		$5/2^+$	$1/2^+$
207	142	1465.14		7.08		1.75	33.12	1.76	14.91	−0.96	−16.29	5.873	6.072	5.413	5.472		$5/2^+$	0^+
208	143	1465.19		7.04		1.81	33.24	0.05	14.97	−0.98	−16.35	5.904	6.113	5.415	5.473		$5/2^+$	$1/2^+$
209	144	1466.92		7.02		1.78	33.66	1.73	15.18	−0.97	−16.57	5.906	6.109	5.430	5.488		$5/2^+$	0^+
210	145	1467.02		6.99		1.84	33.78	0.11	15.24	−1.00	−16.63	5.935	6.147	5.431	5.490		$5/2^+$	$1/2^+$
211	146	1468.77		6.96		1.85	34.21	1.74	15.48	−0.99	−16.98	5.938	6.146	5.442	5.500		$3/2^+$	0^+
212	147	1468.91		6.93		1.89	34.33	0.15	15.53	−1.02	−17.05	5.965	6.181	5.444	5.502		$3/2^+$	$1/2^+$
213	148	1470.64		6.90		1.88	34.74	1.73	15.76	−1.00	−17.23	5.970	6.182	5.457	5.515		$3/2^+$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
214	149	1470.85		6.87		1.94	34.89	0.21	15.83	−1.03	−17.31	5.996	6.215	5.460	5.518		$3/2^+$	$1/2^+$
215	150	1472.53		6.85		1.89	35.24	1.68	16.02	−1.01	−17.48	6.002	6.218	5.471	5.529		$3/2^+$	0^+
216	151	1472.80		6.82		1.95	35.41	0.27	16.10	−1.03	−17.56	6.026	6.249	5.475	5.533		$3/2^+$	$1/2^+$
217	152	1474.44		6.79		1.91	35.72	1.64	16.27	−1.02	−17.71	6.034	6.255	5.485	5.543		$3/2^+$	0^+
218	153	1474.76		6.76		1.96	35.89	0.32	16.35	−1.04	−17.80	6.057	6.283	5.489	5.547		$3/2^+$	$1/2^+$
219	154	1476.36		6.74		1.92	36.17	1.61	16.49	−1.02	−17.94	6.066	6.291	5.497	5.555		$3/2^+$	0^+
220	155	1476.72		6.71		1.96	36.34	0.36	16.57	−1.03	−18.03	6.088	6.317	5.502	5.560		$3/2^+$	$1/2^+$
221	156	1478.30		6.69		1.94	36.60	1.58	16.71	−1.03	−18.15	6.098	6.328	5.509	5.567		$3/2^+$	0^+
222	157	1478.71		6.66		1.99	36.82	0.41	16.97	−1.03	−18.25	6.118	6.352	5.514	5.572		$3/2^+$	$1/2^+$
223	158	1480.24		6.64		1.94	37.01	1.54	16.92	−1.02	−18.36	6.130	6.364	5.520	5.578		$3/2^+$	0^+
224	159	1480.65		6.61		1.94	37.24	0.41	17.02	−1.03	−18.45	6.149	6.386	5.526	5.582		$3/2^+$	$1/2^+$
225	160	1482.19		6.59		1.95	37.41	1.54	17.12	−1.01	−18.55	6.162	6.401	5.530	5.588		$3/2^+$	0^+
226	161	1482.57		6.56		1.92	37.63	0.38	17.30	−1.00	−18.65	6.179	6.421	5.537	5.594		$3/2^+$	$1/2^+$
227	162	1484.12		6.54		1.93	37.79	1.55	17.03	−1.02	−18.45	6.194	6.437	5.540	5.583		$3/2^+$	0^+
228	163	1484.46		6.51		1.89	38.00	0.34	17.12	−1.01	−18.55	6.210	6.455	5.547	5.588		$3/2^+$	$1/2^+$
229	164	1486.03		6.49		1.91	38.16	1.57	17.23	−1.00	−18.65	6.225	6.474	5.549	5.594		$3/2^+$	0^+
230	165	1486.29		6.46		1.83	38.35	0.26	17.60	−0.90	−19.02	6.240	6.490	5.557	5.614		$3/2^+$	$1/2^+$
231	166	1487.87		6.44		1.84	38.50	1.58	17.68	−0.91	−19.09	6.257	6.510	5.558	5.615		$3/2^+$	0^+
232	167	1487.91		6.41		1.62	38.65	0.04	17.76	−0.69	−19.21	6.270	6.523	5.567	5.625		$3/2^+$	$1/2^+$
233	168	1489.51		6.39		1.64	38.84	1.60	17.86	−0.71	−19.27	6.287	6.544	5.568	5.625		$3/2^+$	0^+
234	169	1489.05		6.36		1.14	39.08	−0.46	17.98	−0.75	−19.39	6.301	6.558	5.575	5.633		$3/2^+$	$15/2^-$
235	170	1490.56		6.34		1.04	39.48	1.50	18.16	−0.43	−19.58	6.309	6.564	5.587	5.644		$3/2^+$	0^+
236	171	1490.04		6.31		0.99	39.78	−0.52	18.30	−0.40	−19.73	6.321	6.575	5.597	5.654		$3/2^+$	$15/2^-$
237	172	1491.22		6.29		0.66	40.12	1.18	18.46	−0.31	−19.91	6.330	6.583	5.609	5.665		$3/2^+$	0^+
238	173	1490.66		6.26		0.62		−0.56	18.60	−0.28	−20.06	6.342	6.593	5.619	5.675		$3/2^+$	$15/2^-$
239	174	1491.70		6.24		0.48		1.04	18.76	−0.23	−20.23	6.352	6.601	5.630	5.687		$3/2^+$	0^+
240	175	1491.11		6.21		0.45		−0.59	18.90	−0.21	−20.38	6.363	6.611	5.641	5.697		$3/2^+$	$15/2^-$
241	176	1492.07		6.19		0.37		0.96	19.06	−0.19	−20.42	6.374	6.620	5.655	5.711		$5/2^+$	0^+
242	177	1491.47		6.16		0.36		−0.60	19.21	−0.17	−20.58	6.386	6.630	5.665	5.722		$5/2^+$	$15/2^-$
243	178	1492.38		6.14		0.31		0.90	19.37	−0.15	−20.75	6.396	6.639	5.677	5.733		$5/2^+$	0^+
244	179	1491.77		6.11		0.29		−0.61		−0.13	−20.91	6.407	6.649	5.688	5.744		$5/2^+$	$15/2^-$
245	180	1492.62		6.09		0.25		0.86		−0.11	−21.07	6.418	6.658	5.699	5.755		$5/2^+$	0^+
246	181	1492.01		6.07		0.24		−0.62		−0.09	−21.24	6.429	6.668	5.710	5.766		$5/2^+$	$15/2^-$
247	182	1492.83		6.04		0.20		0.82		−0.07	−21.40	6.439	6.677	5.722	5.778		$5/2^+$	0^+
248	183	1492.21		6.02		0.20		−0.62		0.74	−21.57	6.450	6.687	5.733	5.789		$5/2^+$	$15/2^-$
249	184	1493.01		6.00		0.18		0.80		−0.80	−21.73	6.461	6.696	5.745	5.801		$5/2^+$	0^+
σ		11.75													0.073			
$Z = 66$ (Dy)																		
139	73	1097.22		7.89			0.59		1.67	−13.12	0.04	4.918	4.912	4.924	4.989		0^+	$1/2^+$
140	74	1111.31		7.94			1.23		2.04	−12.96	−0.28	4.927	4.926	4.927	4.992		0^+	0^+
141	75	1123.02		7.96			1.88	11.71	2.37	−12.83	−0.61	4.936	4.940	4.930	4.995		0^+	$1/2^+$
142	76	1136.80		8.01		25.49	2.49	13.78	2.66	−12.69	−0.92	4.944	4.954	4.933	4.998		0^+	0^+
143	77	1148.32	1154.73	8.03	8.08	25.30	3.15	11.52	2.95	−12.57	−1.26	4.953	4.967	4.936	5.000		0^+	$1/2^+$
144	78	1161.83	1167.20	8.07	8.11	25.03	3.75	13.52	3.25	−12.44	−1.56	4.962	4.980	4.939	5.004		0^+	0^+
145	79	1173.19	1176.95	8.09	8.12	24.87	4.41	11.36	3.54	−12.33	−1.90	4.970	4.993	4.942	5.006		0^+	$1/2^+$
146	80	1186.46	1189.33	8.13	8.15	24.63	4.99	13.27	3.85	−12.21	−2.19	4.979	5.006	4.945	5.009	5.044	0^+	0^+
147	81	1197.72	1199.04	8.15	8.16	24.53	5.67	11.26	4.14	−10.86	−2.55	4.987	5.018	4.948	5.012		0^+	$1/2^+$
148	82	1210.73	1210.78	8.18	8.18	24.27	6.23	13.01	4.44	−10.03	−2.82	4.995	5.031	4.951	5.015	5.046	0^+	0^+
149	83	1216.92	1218.69	8.17	8.18	19.20	6.87	6.19	4.75	−10.57	−3.15	5.013	5.052	4.964	5.028	5.057	0^+	$9/2^-$
150	84	1225.38	1228.37	8.17	8.19	14.65	7.48	8.47	5.07	−7.34	−3.44	5.029	5.073	4.973	5.037	5.071	0^+	0^+
151	85	1231.40	1235.89	8.15	8.18	14.48	8.11	6.02	5.37	−7.25	−3.76	5.047	5.094	4.986	5.050	5.080	0^+	$9/2^-$
152	86	1239.72	1245.32	8.16	8.19	14.34	8.70	8.32	5.68	−7.20	−4.05	5.062	5.114	4.995	5.058	5.095	0^+	0^+
153	87	1245.59	1252.42	8.14	8.19	14.19	9.32	5.86	5.98	−7.11	−4.36	5.080	5.134	5.007	5.071	5.104	0^+	$9/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
154	88	1253.79	1261.74	8.14	8.19	14.06	9.89	8.20	6.28	−7.07	−4.65	5.095	5.153	5.016	5.079	5.124	0^+	0^+
155	89	1259.49	1268.57	8.13	8.18	13.90	10.50	5.70	6.58	−6.97	−4.95	5.112	5.173	5.028	5.091	5.146	0^+	$9/2^-$
156	90	1267.59	1278.01	8.13	8.19	13.81	11.06	8.10	6.86	−6.94	−5.23	5.127	5.191	5.037	5.100	5.162	0^+	0^+
157	91	1273.13	1284.98	8.11	8.18	13.64	11.64	5.54	7.16	−6.90	−5.51	5.142	5.211	5.045	5.108	5.171	0^+	$7/2^-$
158	92	1281.14	1294.04	8.11	8.19	13.55	12.20	8.01	7.44	−6.81	−5.80	5.157	5.229	5.056	5.119	5.182	0^+	0^+
159	93	1286.62	1300.87	8.09	8.18	13.49	12.77	5.48	7.73	−6.75	−6.08	5.173	5.247	5.066	5.129	5.183	0^+	$7/2^-$
160	94	1294.42	1309.45	8.09	8.18	13.28	13.32	7.81	8.00	−6.67	−6.35	5.187	5.265	5.075	5.138	5.195	0^+	0^+
161	95	1299.80	1315.90	8.07	8.17	13.18	13.88	5.38	8.29	−6.58	−6.63	5.203	5.283	5.085	5.147	5.196	0^+	$7/2^-$
162	96	1307.41	1324.10	8.07	8.17	12.99	14.40	7.61	8.55	−6.51	−6.89	5.216	5.300	5.092	5.154	5.207	0^+	0^+
163	97	1312.63	1330.37	8.05	8.16	12.83	14.95	5.21	8.83	−6.38	−7.17	5.231	5.318	5.101	5.164	5.210	0^+	$7/2^-$
164	98	1320.08	1338.03	8.05	8.16	12.66	15.45	7.45	9.09	−6.33	−7.41	5.244	5.334	5.107	5.169	5.222	0^+	0^+
165	99	1324.99	1343.74	8.03	8.14	12.37	15.98	4.92	9.35	−6.12	−7.68	5.259	5.352	5.116	5.178		0^+	$7/2^-$
166	100	1332.35	1350.79	8.03	8.14	12.27	16.47	7.35	9.61	−6.11	−7.92	5.271	5.368	5.121	5.184		0^+	0^+
167	101	1336.85	1356.20	8.01	8.12	11.85	16.87	4.50	9.83	−6.11	−8.11	5.285	5.387	5.125	5.187		0^+	$3/2^-$
168	102	1344.16	1362.91	8.00	8.11	11.81	17.42	7.31	10.09	−5.89	−8.40	5.299	5.401	5.135	5.197		0^+	0^+
169	103	1348.65	1368.01	7.98	8.09	11.80	17.83	4.49	10.31	−5.84	−8.62	5.314	5.420	5.143	5.205		0^+	$3/2^-$
170	104	1355.54		7.97		11.39	18.33	6.90	10.55	−5.71	−8.86	5.326	5.435	5.149	5.211		0^+	0^+
171	105	1359.96		7.95		11.31	18.74	4.41	10.76	−5.66	−9.06	5.340	5.454	5.154	5.216		0^+	$3/2^-$
172	106	1366.60		7.95		11.06	19.22	6.64	11.00	−5.56	−9.31	5.353	5.468	5.163	5.224		0^+	0^+
173	107	1370.93		7.92		10.98	19.63	4.33	11.20	−5.51	−9.51	5.368	5.487	5.168	5.230		0^+	$3/2^-$
174	108	1377.40		7.92		10.80	20.10	6.46	11.43	−5.44	−9.75	5.380	5.501	5.176	5.237		0^+	0^+
175	109	1381.65		7.90		10.71	20.51	4.25	11.64	−5.38	−9.96	5.394	5.519	5.182	5.243		0^+	$3/2^-$
176	110	1387.98		7.89		10.58	20.96	6.33	11.86	−5.33	−10.1	5.408	5.533	5.189	5.250		0^+	0^+
177	111	1392.14		7.87		10.49	21.39	4.17	12.07	−5.27	−10.4	5.421	5.551	5.196	5.257		0^+	$3/2^-$
178	112	1398.36		7.86		10.39	21.81	6.22	12.29	−5.23	−10.6	5.433	5.565	5.202	5.263		0^+	0^+
179	113	1402.50		7.84		10.36	22.17	4.14	12.45	−5.20	−10.8	5.447	5.582	5.208	5.269		0^+	$1/2^-$
180	114	1408.58		7.83		10.21	22.67	6.08	12.71	−5.14	−11.0	5.460	5.595	5.215	5.276		0^+	0^+
181	115	1412.70		7.80		10.20	23.11	4.12	12.93	−5.10	−11.2	5.473	5.611	5.221	5.282		0^+	$1/2^-$
182	116	1418.63		7.79		10.06	23.52	5.94	13.14	−5.05	−11.4	5.485	5.625	5.228	5.289		0^+	0^+
183	117	1422.68		7.77		9.98	23.98	4.04	13.36	−5.01	−11.7	5.497	5.640	5.235	5.296		0^+	$1/2^-$
184	118	1428.54		7.76		9.91	24.38	5.86	13.56	−4.96	−11.9	5.509	5.654	5.241	5.302		0^+	0^+
185	119	1432.51		7.74		9.84	24.87	3.98	13.80	−4.91	−12.1	5.523	5.667	5.249	5.310		0^+	$1/2^-$
186	120	1438.31		7.73		9.77	25.25	5.79	13.99	−4.88	−12.3	5.534	5.681	5.255	5.315		0^+	0^+
187	121	1442.20		7.71		9.69	25.77	3.90	14.25	−4.81	−12.6	5.546	5.694	5.264	5.325		0^+	$1/2^-$
188	122	1447.94		7.70		9.63	26.13	5.73	14.42	−4.79	−12.7	5.559	5.708	5.268	5.329		0^+	0^+
189	123	1451.76		7.68		9.55	26.60	3.82	14.68	−4.72	−13.0	5.570	5.719	5.279	5.339		0^+	$13/2^+$
190	124	1457.44		7.67		9.51	27.01	5.69	14.86	−4.70	−13.2	5.582	5.734	5.282	5.343		0^+	0^+
191	125	1461.20		7.65		9.45	27.43	3.76	15.07	−3.38	−13.4	5.593	5.748	5.288	5.348		0^+	$13/2^+$
192	126	1466.84		7.64		9.39	27.90	5.63	15.30	−2.93	−13.6	5.606	5.760	5.297	5.357		0^+	0^+
193	127	1467.14		7.60		5.93	28.18	0.30	15.44	−3.25	−13.8	5.622	5.781	5.302	5.362		0^+	$9/2^+$
194	128	1468.86		7.57		2.02	28.50	1.72	15.61	−1.07	−13.9	5.639	5.800	5.312	5.372		0^+	0^+
195	129	1469.10		7.53		1.97	28.78	0.25	15.75	−1.04	−14.1	5.655	5.821	5.317	5.376		0^+	$9/2^+$
196	130	1470.85		7.50		2.00	29.10	1.75	15.91	−1.06	−14.2	5.673	5.839	5.327	5.387		0^+	0^+
197	131	1471.05		7.47		1.94	29.38	0.19	16.05	−1.03	−14.4	5.688	5.860	5.332	5.392		0^+	$9/2^+$
198	132	1472.84		7.44		1.98	29.70	1.79	16.21	−1.06	−14.5	5.706	5.877	5.342	5.402		0^+	0^+
199	133	1472.97		7.40		1.92	29.98	0.14	16.36	−1.03	−14.7	5.722	5.898	5.349	5.408		0^+	$9/2^+$
200	134	1474.81		7.37		1.98	30.29	1.84	16.51	−1.06	−14.8	5.739	5.915	5.359	5.418		0^+	0^+
201	135	1474.89		7.34		1.92	30.58	0.08	16.66	−1.03	−15.0	5.755	5.935	5.366	5.425		0^+	$9/2^+$
202	136	1476.79		7.31		1.98	30.88	1.90	16.81	−1.07	−15.1	5.771	5.953	5.375	5.435		0^+	0^+
203	137	1476.81		7.27		1.92	31.07	0.02	16.96	−1.03	−15.3	5.788	5.973	5.384	5.443		0^+	$9/2^+$
204	138	1478.78		7.25		1.99	31.46	1.97	17.11	−1.07	−15.4	5.804	5.989	5.392	5.451		0^+	0^+
205	139	1478.79		7.21		1.98	31.58	0.01	17.40	−1.10	−15.5	5.827	6.020	5.395	5.454		0^+	$5/2^+$
206	140	1480.79		7.19		2.01	32.03	2.00	17.48	−1.08	−15.7	5.836	6.026	5.410	5.468		0^+	0^+
207	141	1480.86		7.15		2.07	32.16	0.07	17.68	−1.11	−15.8	5.859	6.054	5.413	5.472		0^+	$5/2^+$

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Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
208	142	1482.82		7.13		2.03	32.59	1.96	17.69	−1.09	−16.0	5.869	6.062	5.427	5.485		0^+	0^+
209	143	1482.95		7.10		2.09	32.73	0.13	17.76	−1.12	−16.1	5.890	6.089	5.431	5.489		0^+	$5/2^+$
210	144	1484.88		7.07		2.06	33.14	1.93	17.96	−1.10	−16.3	5.900	6.098	5.443	5.502		0^+	0^+
211	145	1485.06		7.04		2.11	33.28	0.18	18.03	−1.12	−16.4	5.921	6.123	5.448	5.507		0^+	$1/2^+$
212	146	1486.97		7.01		2.09	33.68	1.91	18.20	−1.11	−16.6	5.932	6.133	5.459	5.518		0^+	0^+
213	147	1487.20		6.98		2.14	33.81	0.23	18.28	−1.14	−16.6	5.960	6.169	5.461	5.520		0^+	11/2+
214	148	1489.07		6.96		2.10	34.19	1.87	18.43	−1.12	−16.8	5.965	6.169	5.475	5.533		0^+	0^+
215	149	1489.36		6.93		2.16	34.34	0.29	18.51	−1.15	−16.9	5.989	6.202	5.477	5.535		0^+	$1/2^+$
216	150	1491.19		6.90		2.12	34.69	1.84	18.66	−1.12	−17.1	5.995	6.205	5.489	5.547		0^+	0^+
217	151	1491.54		6.87		2.18	34.84	0.34	18.74	−1.15	−17.1	6.020	6.236	5.492	5.550		0^+	$1/2^+$
218	152	1493.33		6.85		2.14	35.16	1.79	18.89	−1.13	−17.3	6.028	6.241	5.502	5.560		0^+	0^+
219	153	1493.72		6.82		2.19	35.32	0.39	18.97	−1.14	−17.4	6.050	6.270	5.506	5.563		0^+	$1/2^+$
220	154	1495.47		6.80		2.14	35.61	1.75	19.11	−1.12	−17.5	6.060	6.278	5.514	5.572		0^+	0^+
221	155	1495.91		6.77		2.19	35.76	0.44	19.19	−1.14	−17.6	6.081	6.304	5.518	5.576		0^+	$1/2^+$
222	156	1497.62		6.75		2.15	36.03	1.71	19.32	−1.12	−17.7	6.091	6.314	5.526	5.583		0^+	0^+
223	157	1498.10		6.72		2.19	36.20	0.48	19.40	−1.13	−17.8	6.111	6.339	5.530	5.588		0^+	$1/2^+$
224	158	1499.76		6.70		2.14	36.44	1.66	19.52	−1.11	−17.9	6.123	6.351	5.536	5.593		0^+	0^+
225	159	1500.28		6.67		2.18	36.66	0.52	19.63	−1.11	−18.1	6.141	6.373	5.541	5.596		0^+	1/2+
226	160	1501.90		6.65		2.13	36.83	1.77	19.71	−1.10	−18.1	6.154	6.387	5.546	5.603		0^+	0^+
227	161	1502.38		6.62		2.26	37.04	0.49	19.82	−1.09	−18.2	6.172	6.408	5.552	5.609		0^+	$1/2^+$
228	162	1504.01		6.60		2.12	37.20	1.63	19.89	−1.08	−18.3	6.186	6.424	5.555	5.612		0^+	0^+
229	163	1504.46		6.57		2.08	37.42	0.45	20.00	−1.05	−18.4	6.202	6.442	5.562	5.619		0^+	$1/2^+$
230	164	1506.09		6.55		2.08	37.57	1.63	20.07	−1.05	−18.5	6.217	6.460	5.564	5.621		0^+	0^+
231	165	1506.47		6.52		2.00	37.78	0.37	20.18	−0.98	−18.6	6.232	6.476	5.571	5.628		0^+	$1/2^+$
232	166	1508.11		6.50		2.01	37.92	1.64	20.24	−0.99	−18.7	6.247	6.496	5.573	5.630		0^+	0^+
233	167	1508.27		6.47		1.81	38.12	0.17	20.36	−0.81	−18.8	6.261	6.509	5.582	5.639		0^+	$1/2^+$
234	168	1509.93		6.45		1.82	38.28	1.66	20.42	−0.83	−18.9	6.277	6.529	5.583	5.640		0^+	0^+
235	169	1509.69		6.42		1.42	38.62	−0.24	20.64	−0.87	−19.0	6.290	6.543	5.590	5.647		0^+	$15/2^-$
236	170	1511.30		6.40		1.37	38.90	1.61	20.75	−0.61	−19.2	6.300	6.551	5.601	5.658		0^+	0^+
237	171	1510.95		6.38		1.26	39.21	−0.35	20.91	−0.58	−19.3	6.313	6.563	5.610	5.667		0^+	$15/2^-$
238	172	1512.33		6.35		1.02	39.56	1.37	21.11	−0.48	−19.5	6.321	6.570	5.622	5.678		0^+	0^+
239	173	1511.93		6.33		0.98	39.88	−0.39	21.28	−0.46	−19.7	6.333	6.581	5.631	5.688		0^+	$15/2^-$
240	174	1513.16		6.30		0.83	40.22	1.23	21.46	−0.40	−19.8	6.344	6.589	5.643	5.699		0^+	0^+
241	175	1512.74		6.28		0.81	40.53	−0.42	21.63	−0.38	−20.0	6.354	6.600	5.653	5.709		0^+	$15/2^-$
242	176	1513.87		6.26		0.71	40.86	1.13	21.80	−0.35	−20.2	6.365	6.608	5.664	5.720		0^+	0^+
243	177	1513.44		6.23		0.70	41.18	−0.44	21.96	−0.33	−20.3	6.377	6.619	5.675	5.731		0^+	$15/2^-$
244	178	1514.51		6.21		0.63	41.50	1.07	22.13	−0.30	−20.5	6.386	6.627	5.686	5.742		0^+	0^+
245	179	1514.06		6.18		0.62		−0.45	22.29	−0.28	−20.6	6.399	6.638	5.697	5.752		0^+	$15/2^-$
246	180	1515.08		6.16		0.57		1.02	22.46	−0.26	−20.8	6.408	6.647	5.708	5.764		0^+	0^+
247	181	1514.63		6.13		0.57		−0.45	22.62	−0.24	−21.0	6.420	6.657	5.719	5.775		0^+	$15/2^-$
248	182	1515.61		6.11		0.53		0.98	22.79	−0.23	−21.1	6.431	6.666	5.731	5.786		0^+	0^+
249	183	1515.17		6.09		0.54		−0.45	22.95	0.61	−21.33	6.441	6.676	5.742	5.797		0^+	$15/2^-$
250	184	1516.11		6.06		0.50		0.95	23.12	−0.96	−21.49	6.452	6.685	5.754	5.809		0^+	0^+
σ		12.41													0.048			
$Z = 67$ (Ho)																		
141	74	1109.94		7.87			0.67		−1.37	−13.26	0.10	4.939	4.931	4.947	5.011		$3/2^+$	0^+
142	75	1121.96		7.90			1.31		−1.06	−13.12	−0.24	4.947	4.946	4.949	5.014		$3/2^+$	$1/2^+$
143	76	1136.06		7.94			1.92	14.10	−0.74	−12.98	−0.56	4.956	4.959	4.952	5.016		$3/2^+$	0^+
144	77	1147.89	1154.46	7.97	8.02	25.93	2.53	11.83	−0.43	−12.85	−0.90	4.964	4.972	4.955	5.019		$3/2^+$	$1/2^+$
145	78	1161.68	1167.04	8.01	8.05	25.62	3.11	13.79	−0.15	−12.73	−1.21	4.972	4.985	4.958	5.022		$3/2^+$	0^+
146	79	1173.34	1177.23	8.04	8.06	25.45	3.69	11.66	0.15	−12.61	−1.56	4.981	4.998	4.960	5.024		$3/2^+$	$1/2^+$
147	80	1186.66	1189.82	8.07	8.09	24.98	4.05	13.33	0.20	−12.49	−1.85	4.989	5.011	4.963	5.027		$3/2^+$	0^+
148	81	1198.23	1200.13	8.10	8.11	24.90	4.65	11.57	0.52	−11.15	−2.21	4.997	5.022	4.965	5.029		$3/2^+$	$1/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
149	82	1211.48	1211.87	8.13	8.13	24.81	5.18	13.24	0.74	−10.20	−2.48	5.005	5.035	4.968	5.032		$3/2^+$	0^+
150	83	1217.99	1220.23	8.12	8.13	19.76	5.83	6.52	1.07	−10.89	−2.62	5.023	5.056	4.981	5.045		$3/2^+$	$9/2^-$
151	84	1226.74	1229.97	8.12	8.15	15.27	6.43	8.75	1.36	−7.64	−3.10	5.038	5.077	4.990	5.053	5.040	$3/2^+$	0^+
152	85	1233.10	1238.03	8.11	8.14	15.11	7.08	6.36	1.70	−7.56	−3.24	5.056	5.097	5.003	5.067	5.061	$3/2^+$	$9/2^-$
153	86	1241.70	1247.51	8.12	8.15	14.96	7.66	8.60	1.98	−7.51	−3.53	5.071	5.116	5.013	5.076	5.076	$3/2^+$	0^+
154	87	1247.91	1255.20	8.10	8.15	14.80	8.30	6.20	2.32	−7.41	−3.85	5.088	5.136	5.025	5.088	5.086	$3/2^+$	$9/2^-$
155	88	1256.38	1264.68	8.11	8.16	14.68	8.87	8.47	2.59	−7.38	−4.13	5.103	5.155	5.034	5.097	5.108	$3/2^+$	0^+
156	89	1262.41	1272.18	8.09	8.16	14.50	9.49	6.03	2.92	−7.26	−4.44	5.120	5.175	5.046	5.109	5.116	$3/2^+$	$9/2^-$
157	90	1270.78	1281.61	8.09	8.16	14.40	10.06	8.37	3.19	−7.24	−4.73	5.135	5.193	5.055	5.118	5.154	$3/2^+$	0^+
158	91	1276.60	1289.03	8.08	8.16	14.19	10.63	5.82	3.47	−7.11	−5.02	5.150	5.212	5.065	5.128	5.157	$3/2^+$	$9/2^-$
159	92	1284.91	1298.25	8.08	8.17	14.12	11.21	8.31	3.77	−7.09	−5.30	5.165	5.230	5.075	5.137	5.168	$3/2^+$	0^+
160	93	1290.66	1305.37	8.07	8.16	14.05	11.77	5.75	4.04	−7.04	−5.58	5.180	5.249	5.084	5.146	5.166	$3/2^+$	$7/2^-$
161	94	1298.74	1314.26	8.07	8.16	13.83	12.31	8.08	4.31	−6.94	−5.85	5.195	5.266	5.093	5.155	5.179	$3/2^+$	0^+
162	95	1304.39	1321.18	8.05	8.16	13.73	12.87	5.65	4.59	−6.85	−6.13	5.210	5.284	5.102	5.164	5.182	$3/2^+$	$7/2^-$
163	96	1312.31	1329.58	8.05	8.16	13.58	13.45	7.93	4.90	−6.79	−6.54	5.221	5.301	5.104	5.167	5.191	$3/2^+$	0^+
164	97	1317.83	1336.26	8.04	8.15	13.45	14.04	5.52	5.21	−6.66	−6.81	5.236	5.318	5.114	5.176		$3/2^+$	$7/2^-$
165	98	1325.71	1344.25	8.03	8.15	13.40	14.73	7.88	5.64	−6.61	−7.06	5.248	5.334	5.120	5.182	5.202	$3/2^+$	0^+
166	99	1330.89	1350.49	8.02	8.14	13.06	15.25	5.18	5.90	−6.39	−7.32	5.263	5.352	5.129	5.191		$3/2^+$	$7/2^-$
167	100	1338.47	1357.77	8.01	8.13	12.75	15.73	7.57	6.12	−6.37	−7.56	5.275	5.367	5.134	5.196		$3/2^+$	0^+
168	101	1343.21	1363.62	8.00	8.12	12.32	16.19	4.75	6.37	−6.38	−7.75	5.289	5.387	5.138	5.200		$3/2^+$	$3/2^-$
169	102	1350.74	1370.43	7.99	8.11	12.28	16.68	7.53	6.59	−6.13	−8.04	5.302	5.401	5.148	5.210		$3/2^+$	0^+
170	103	1355.46	1375.94	7.97	8.09	12.25	17.13	4.72	6.81	−6.08	−8.26	5.317	5.420	5.155	5.217		$3/2^+$	$5/2^-$
171	104	1362.58	1382.30	7.97	8.08	11.84	17.59	7.13	7.04	−5.94	−8.50	5.329	5.434	5.162	5.223		$3/2^+$	0^+
172	105	1367.21		7.95		11.75	18.01	4.62	7.25	−5.89	−8.69	5.343	5.453	5.166	5.228		$3/2^+$	$7/2^-$
173	106	1374.09		7.94		11.50	18.48	6.88	7.48	−5.79	−8.95	5.356	5.467	5.175	5.237		$3/2^+$	0^+
174	107	1378.63		7.92		11.42	18.90	4.54	7.69	−5.74	−9.15	5.370	5.485	5.181	5.242		$3/2^+$	$7/2^-$
175	108	1385.32		7.92		11.23	19.35	6.69	7.92	−5.66	−9.39	5.383	5.500	5.189	5.250		$3/2^+$	0^+
176	109	1389.78		7.90		11.15	19.77	4.46	8.13	−5.61	−9.60	5.397	5.517	5.194	5.256		$3/2^+$	$7/2^-$
177	110	1396.33		7.89		11.01	20.22	6.55	8.35	−5.55	−9.83	5.409	5.531	5.202	5.263		$3/2^+$	0^+
178	111	1400.71		7.87		10.93	20.64	4.38	8.57	−5.49	−10.04	5.423	5.548	5.208	5.269		$3/2^+$	$7/2^-$
179	112	1407.14		7.86		10.82	21.07	6.44	8.78	−5.45	−10.27	5.435	5.562	5.215	5.276		$3/2^+$	0^+
180	113	1411.47		7.84		10.76	21.41	4.32	8.97	−5.41	−10.47	5.449	5.579	5.221	5.281		$3/2^+$	$1/2^-$
181	114	1417.79		7.83		10.64	21.92	6.32	9.21	−5.35	−10.70	5.460	5.593	5.228	5.288		$3/2^+$	0^+
182	115	1422.11		7.81		10.65	22.35	4.33	9.42	−5.32	−10.91	5.474	5.609	5.234	5.295		$3/2^+$	$1/2^-$
183	116	1428.27		7.80		10.48	22.78	6.16	9.64	−5.26	−11.13	5.485	5.622	5.240	5.301		$3/2^+$	0^+
184	117	1432.53		7.79		10.42	23.21	4.26	9.85	−5.22	−11.36	5.498	5.637	5.247	5.308		$3/2^+$	$1/2^-$
185	118	1438.61		7.78		10.34	23.64	6.08	10.08	−5.17	−11.57	5.510	5.651	5.253	5.314		$3/2^+$	0^+
186	119	1442.82		7.76		10.29	24.10	4.21	10.31	−5.12	−11.81	5.522	5.664	5.261	5.322		$3/2^+$	$1/2^-$
187	120	1448.83		7.75		10.21	24.51	6.01	10.52	−5.09	−12.01	5.534	5.678	5.266	5.327		$3/2^+$	0^+
188	121	1452.96		7.73		10.14	25.00	4.13	10.75	−5.03	−12.27	5.546	5.691	5.276	5.336		$3/2^+$	$1/2^-$
189	122	1458.87		7.72		10.04	25.36	5.91	10.93	−5.00	−12.45	5.558	5.705	5.280	5.340		$3/2^+$	0^+
190	123	1462.84		7.70		9.88	25.77	3.97	11.08	−4.97	−12.60	5.570	5.715	5.293	5.353		$3/2^+$	$1/2^-$
191	124	1468.68		7.69		9.81	26.09	5.84	11.23	−4.94	−12.76	5.582	5.730	5.296	5.356		$3/2^+$	0^+
192	125	1472.75		7.67		9.92	26.61	4.08	11.55	−3.56	−13.07	5.593	5.740	5.307	5.367		$3/2^+$	$1/2^-$
193	126	1478.53		7.66		9.86	27.00	5.78	11.70	−2.94	−13.20	5.605	5.756	5.310	5.370		$3/2^+$	0^+
194	127	1479.00		7.62		6.25	27.30	0.47	11.86	−3.46	−13.48	5.621	5.777	5.312	5.372		$3/2^+$	$9/2^+$
195	128	1480.96		7.59		2.43	27.71	1.96	12.10	−1.25	−13.65	5.637	5.795	5.322	5.382		$3/2^+$	0^+
196	129	1481.34		7.56		2.34	27.99	0.38	12.24	−1.22	−13.78	5.654	5.816	5.327	5.387		$3/2^+$	$9/2^+$
197	130	1483.25		7.53		2.29	28.30	1.90	12.39	−1.24	−13.95	5.670	5.834	5.338	5.397		$3/2^+$	0^+
198	131	1483.58		7.49		2.24	28.59	0.33	12.54	−1.20	−14.09	5.687	5.854	5.343	5.403		$3/2^+$	$9/2^+$
199	132	1485.53		7.46		2.28	28.91	1.95	12.70	−1.23	−14.25	5.702	5.872	5.354	5.413		$3/2^+$	0^+
200	133	1485.83		7.43		2.25	29.21	0.29	12.86	−1.20	−14.40	5.719	5.892	5.360	5.419		$3/2^+$	$9/2^+$
201	134	1487.83		7.40		2.30	29.53	2.00	13.02	−1.23	−14.56	5.735	5.909	5.370	5.429		$3/2^+$	0^+
202	135	1488.07		7.37		2.24	29.84	0.24	13.18	−1.19	−14.70	5.752	5.929	5.377	5.436		$3/2^+$	$9/2^+$

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Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
203	136	1490.13		7.34		2.30	30.15	2.06	13.34	−1.23	−14.86	5.767	5.945	5.387	5.446		$3/2^+$	0^+
204	137	1490.30		7.31		2.24	30.46	0.18	13.50	−1.19	−15.01	5.784	5.965	5.395	5.454		$3/2^+$	$9/2^+$
205	138	1492.43		7.28		2.30	30.76	2.13	13.65	−1.23	−15.16	5.799	5.981	5.404	5.463		$3/2^+$	0^+
206	139	1492.54		7.25		2.24	30.94	0.11	13.75	−1.20	−15.32	5.816	6.001	5.414	5.472		$3/2^+$	$9/2^+$
207	140	1494.75		7.22		2.32	31.36	2.20	13.96	−1.24	−15.46	5.831	6.017	5.422	5.480		$3/2^+$	0^+
208	141	1494.92		7.19		2.38	31.54	0.18	14.06	−1.27	−15.55	5.853	6.045	5.425	5.483		$3/2^+$	$5/2^+$
209	142	1497.08		7.16		2.33	31.94	2.15	14.26	−1.24	−15.75	5.863	6.052	5.439	5.497		$3/2^+$	0^+
210	143	1497.32		7.13		2.39	32.13	0.24	14.37	−1.27	−15.85	5.883	6.079	5.443	5.501		$3/2^+$	$5/2^+$
211	144	1499.43		7.11		2.35	32.51	2.11	14.55	−1.25	−16.03	5.894	6.088	5.456	5.514		$3/2^+$	0^+
212	145	1499.72		7.07		2.40	32.69	0.29	14.66	−1.27	−16.14	5.914	6.113	5.461	5.519		$3/2^+$	$5/2^+$
213	146	1501.79		7.05		2.36	33.03	2.07	14.82	−1.25	−16.31	5.926	6.123	5.472	5.530		$3/2^+$	0^+
214	147	1502.13		7.02		2.41	33.21	0.34	14.93	−1.27	−16.41	5.945	6.146	5.478	5.536		$3/2^+$	$5/2^+$
215	148	1504.16		7.00		2.37	33.52	2.04	15.09	−1.25	−16.57	5.957	6.158	5.488	5.546		$3/2^+$	0^+
216	149	1504.56		6.97		2.43	33.71	0.40	15.20	−1.26	−16.68	5.976	6.181	5.494	5.552		$3/2^+$	$5/2^+$
217	150	1506.54		6.94		2.38	34.01	1.98	15.35	−1.25	−16.81	5.989	6.194	5.502	5.560		$3/2^+$	0^+
218	151	1506.96		6.91		2.39	34.16	0.41	15.42	−1.25	−16.93	6.007	6.215	5.508	5.566		$3/2^+$	$5/2^+$
219	152	1508.93		6.89		2.38	34.49	1.97	15.59	−1.25	−17.05	6.020	6.230	5.515	5.572		$3/2^+$	0^+
220	153	1509.40		6.86		2.44	34.58	0.47	15.61	−1.27	−17.12	6.042	6.258	5.518	5.575		$3/2^+$	$1/2^+$
221	154	1511.30		6.84		2.37	34.94	1.90	15.83	−1.24	−17.27	6.051	6.266	5.527	5.584		$3/2^+$	0^+
222	155	1511.82		6.81		2.42	34.98	0.52	15.79	−1.26	−17.35	6.072	6.293	5.530	5.588		$3/2^+$	$1/2^+$
223	156	1513.67		6.79		2.37	35.37	1.85	16.05	−1.23	−17.48	6.082	6.302	5.538	5.595		$3/2^+$	0^+
224	157	1514.23		6.76		2.41	35.40	0.56	16.00	−1.24	−17.56	6.102	6.327	5.541	5.599		$3/2^+$	$1/2^+$
225	158	1516.03		6.74		2.36	35.78	1.92	16.26	−1.22	−17.68	6.113	6.338	5.548	5.605		$3/2^+$	0^+
226	159	1516.64		6.71		2.54	36.18	0.61	16.59	−1.22	−17.76	6.132	6.361	5.552	5.610		$3/2^+$	$1/2^+$
227	160	1518.37		6.69		2.34	36.18	1.73	16.47	−1.21	−17.87	6.145	6.374	5.557	5.615		$3/2^+$	0^+
228	161	1518.97		6.66		2.33	36.40	0.60	16.58	−1.19	−17.96	6.162	6.395	5.563	5.620		$3/2^+$	$1/2^+$
229	162	1520.68		6.64		2.32	36.56	1.72	16.67	−1.19	−18.05	6.176	6.410	5.567	5.624		$3/2^+$	0^+
230	163	1521.25		6.61		2.28	36.79	0.56	16.78	−1.16	−18.14	6.192	6.429	5.573	5.630		$3/2^+$	$1/2^+$
231	164	1522.96		6.59		2.28	36.93	1.71	16.87	−1.15	−18.23	6.206	6.446	5.576	5.633		$3/2^+$	0^+
232	165	1523.45		6.57		2.20	37.16	0.49	16.98	−1.09	−18.33	6.222	6.463	5.583	5.640		$3/2^+$	$1/2^+$
233	166	1525.16		6.55		2.20	37.29	1.71	17.06	−1.09	−18.41	6.237	6.481	5.585	5.642		$3/2^+$	0^+
234	167	1525.47		6.52		2.02	37.55	0.30	17.19	−0.94	−18.53	6.250	6.495	5.594	5.651		$3/2^+$	$1/2^+$
235	168	1527.19		6.50		2.03	37.68	1.72	17.26	−0.96	−18.61	6.266	6.514	5.595	5.652		$3/2^+$	0^+
236	169	1527.07		6.47		1.60	38.02	−0.12	17.38	−0.74	−18.83	6.274	6.518	5.611	5.668		$3/2^+$	$1/2^+$
237	170	1528.84		6.45		1.65	38.28	1.77	17.54	−0.76	−18.90	6.290	6.538	5.612	5.669		$3/2^+$	0^+
238	171	1528.63		6.42		1.56	38.59	−0.21	17.68	−0.74	−19.04	6.302	6.550	5.620	5.677		$3/2^+$	$15/2^-$
239	172	1530.16		6.40		1.32	38.95	1.54	17.84	−0.64	−19.23	6.312	6.558	5.632	5.688		$3/2^+$	0^+
240	173	1529.91		6.37		1.29	39.26	−0.25	17.98	−0.61	−19.38	6.323	6.569	5.641	5.698		$3/2^+$	$15/2^-$
241	174	1531.30		6.35		1.13	39.60	1.38	18.14	−0.56	−19.56	6.333	6.577	5.652	5.709		$3/2^+$	0^+
242	175	1531.02		6.33		1.11	39.91	−0.28	18.28	−0.54	−19.72	6.345	6.588	5.662	5.718		$3/2^+$	$15/2^-$
243	176	1532.30		6.31		1.01	40.23	1.28	18.43	−0.50	−19.90	6.355	6.596	5.673	5.730		$3/2^+$	0^+
244	177	1532.01		6.28		0.99	40.54	−0.29	18.57	−0.48	−20.06	6.367	6.607	5.684	5.740		$3/2^+$	$15/2^-$
245	178	1533.23		6.26		0.92	40.85	1.21	18.72	−0.45	−20.23	6.377	6.616	5.695	5.751		$3/2^+$	0^+
246	179	1532.92		6.23		0.91	41.16	−0.30	18.86	−0.43	−20.39	6.388	6.626	5.705	5.761		$3/2^+$	$15/2^-$
247	180	1534.09		6.21		0.86	41.47	1.17	19.01	−0.41	−20.56	6.399	6.635	5.717	5.772		$3/2^+$	0^+
248	181	1533.78		6.18		0.86	41.77	−0.31	19.15	−0.39	−20.72	6.410	6.645	5.727	5.783		$3/2^+$	$15/2^-$
249	182	1534.91		6.16		0.82	42.08	1.13	19.30	−0.38	−20.88	6.421	6.655	5.739	5.794		$3/2^+$	0^+
250	183	1534.63		6.14		0.85	42.42	−0.28	19.46	0.52	−21.06	6.433	6.665	5.753	5.808		$11/2^-$	$15/2^-$
251	184	1535.75		6.12		0.84	42.74	1.12	19.64	−1.14	−21.23	6.444	6.674	5.754	5.820		$11/2^-$	0^+
σ		13.67													0.020			
$Z = 68$ (Er)																		
143	75	1123.15		7.85			0.13		1.19	−13.48	0.22	4.957	4.950	4.966	5.030		0^+	$1/2^+$
144	76	1137.56		7.90			0.76		1.50	−13.33	−0.10	4.965	4.962	4.968	5.032		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
145	77	1149.75		7.93			1.43	12.19	1.86	−13.21	−0.44	4.973	4.976	4.971	5.035		0^+	$1/2^+$
146	78	1163.87	1169.53	7.97	8.01	26.31	2.04	14.12	2.19	−13.08	−0.74	4.981	4.988	4.973	5.037		0^+	0^+
147	79	1175.92	1179.89	8.00	8.03	26.17	2.73	12.05	2.58	−12.98	−1.09	4.989	5.001	4.975	5.039		0^+	$1/2^+$
148	80	1189.76	1192.83	8.04	8.06	25.89	3.30	13.84	3.10	−12.84	−1.37	4.997	5.013	4.978	5.042		0^+	0^+
149	81	1201.73	1203.17	8.07	8.07	25.82	4.02	11.97	3.50	−11.53	−1.74	5.005	5.025	4.980	5.044		0^+	$1/2^+$
150	82	1215.29	1215.33	8.10	8.10	25.52	4.55	13.55	3.81	−10.48	−2.00	5.013	5.037	4.983	5.047	5.055	0^+	0^+
151	83	1222.13	1223.84	8.09	8.10	20.39	5.21	6.84	4.13	−11.15	−2.33	5.030	5.058	4.996	5.059		0^+	$9/2^-$
152	84	1231.19	1234.14	8.10	8.12	15.90	5.81	9.06	4.45	−7.95	−2.63	5.046	5.078	5.005	5.068	5.084	0^+	0^+
153	85	1237.85	1242.19	8.09	8.12	15.72	6.45	6.66	4.75	−7.86	−2.95	5.063	5.099	5.017	5.080		0^+	$9/2^-$
154	86	1246.76	1252.39	8.10	8.13	15.57	7.04	8.91	5.05	−7.80	−3.24	5.078	5.118	5.026	5.089	5.113	0^+	0^+
155	87	1253.25	1260.06	8.09	8.13	15.40	7.67	6.49	5.35	−7.70	−3.56	5.095	5.138	5.038	5.101		0^+	$9/2^-$
156	88	1262.03	1270.14	8.09	8.14	15.27	8.24	8.77	5.65	−7.66	−3.84	5.109	5.157	5.047	5.110	5.143	0^+	0^+
157	89	1268.34	1277.39	8.08	8.14	15.09	8.70	6.31	5.78	−7.55	−4.15	5.126	5.177	5.058	5.121		0^+	$9/2^-$
158	90	1277.01	1287.37	8.08	8.15	14.98	9.42	8.82	6.23	−7.52	−4.43	5.140	5.195	5.067	5.130	5.176	0^+	0^+
159	91	1283.12	1294.70	8.07	8.14	14.93	9.98	6.11	6.51	−7.39	−4.72	5.156	5.213	5.077	5.140		0^+	$9/2^-$
160	92	1291.71	1304.27	8.07	8.15	14.70	10.56	8.59	6.80	−7.37	−5.00	5.170	5.231	5.087	5.149	5.205	0^+	0^+
161	93	1297.75	1311.48	8.06	8.15	14.63	11.13	6.04	7.09	−7.31	−5.28	5.185	5.249	5.096	5.158		0^+	$7/2^-$
162	94	1306.10	1320.69	8.06	8.15	14.39	11.68	8.35	7.36	−7.21	−5.56	5.199	5.266	5.104	5.167	5.225	0^+	0^+
163	95	1312.04	1327.59	8.05	8.14	14.29	12.24	5.94	7.65	−7.12	−5.83	5.214	5.284	5.114	5.176		0^+	$7/2^-$
164	96	1320.17	1336.44	8.05	8.15	14.07	12.75	8.13	7.85	−7.04	−6.09	5.227	5.301	5.120	5.182	5.239	0^+	0^+
165	97	1325.93	1343.09	8.04	8.14	13.89	13.30	5.76	8.10	−6.90	−6.36	5.241	5.318	5.129	5.191		0^+	$7/2^-$
166	98	1333.87	1351.56	8.04	8.14	13.71	13.80	7.94	8.16	−6.84	−6.61	5.253	5.334	5.135	5.197	5.252	0^+	0^+
167	99	1339.32	1358.00	8.02	8.13	13.39	14.33	5.45	8.43	−6.62	−6.88	5.268	5.351	5.144	5.206	5.256	0^+	$7/2^-$
168	100	1347.15	1365.77	8.02	8.13	13.28	14.81	7.83	8.69	−6.60	−7.11	5.280	5.367	5.149	5.211	5.264	0^+	0^+
169	101	1352.09	1371.77	8.00	8.12	12.77	15.25	4.94	8.88	−6.34	−7.36	5.295	5.385	5.158	5.220		0^+	$7/2^-$
170	102	1359.93	1379.03	8.00	8.11	12.77	15.77	7.83	9.18	−6.36	−7.60	5.306	5.400	5.163	5.224	5.279	0^+	0^+
171	103	1364.88	1384.71	7.98	8.10	12.79	16.23	4.95	9.42	−6.31	−7.82	5.321	5.418	5.170	5.232		0^+	$5/2^-$
172	104	1372.24	1391.55	7.98	8.09	12.31	16.70	7.36	9.66	−6.16	−8.07	5.333	5.432	5.176	5.238		0^+	0^+
173	105	1377.06		7.96		12.18	17.10	4.82	9.85	−6.10	−8.29	5.347	5.450	5.183	5.245		0^+	$5/2^-$
174	106	1384.20		7.96		11.96	17.60	7.14	10.12	−6.01	−8.52	5.359	5.465	5.190	5.251		0^+	0^+
175	107	1388.93		7.94		11.88	18.00	4.73	10.31	−5.96	−8.72	5.373	5.483	5.195	5.256		0^+	$3/2^-$
176	108	1395.89		7.93		11.69	18.49	6.96	10.57	−5.88	−8.98	5.385	5.497	5.203	5.264		0^+	0^+
177	109	1400.55		7.91		11.62	18.90	4.66	10.77	−5.83	−9.18	5.399	5.514	5.209	5.270		0^+	$3/2^-$
178	110	1407.37		7.91		11.48	19.38	6.82	11.03	−5.77	−9.42	5.411	5.528	5.216	5.277		0^+	0^+
179	111	1411.94		7.89		11.39	19.80	4.58	11.23	−5.72	−9.63	5.425	5.545	5.222	5.283		0^+	$3/2^-$
180	112	1418.61		7.88		11.25	20.25	6.67	11.46	−5.67	−9.86	5.437	5.559	5.229	5.290		0^+	0^+
181	113	1423.13		7.86		11.19	20.63	4.52	11.66	−5.62	−10.08	5.450	5.575	5.236	5.297		0^+	$3/2^-$
182	114	1429.69		7.86		11.08	21.11	6.56	11.90	−5.57	−10.30	5.462	5.588	5.242	5.303		0^+	0^+
183	115	1434.26		7.84		11.14	21.57	4.57	12.15	−5.55	−10.51	5.475	5.604	5.248	5.309		0^+	$1/2^-$
184	116	1440.61		7.83		10.92	21.98	6.35	12.34	−5.48	−10.73	5.486	5.618	5.255	5.315		0^+	0^+
185	117	1445.11		7.81		10.85	22.44	4.50	12.58	−5.45	−10.95	5.499	5.633	5.261	5.322		0^+	$1/2^-$
186	118	1451.39		7.80		10.78	22.85	6.28	12.77	−5.40	−11.17	5.511	5.646	5.267	5.328		0^+	0^+
187	119	1455.84		7.79		10.73	23.33	4.46	13.02	−5.36	−11.40	5.523	5.660	5.275	5.335		0^+	$1/2^-$
188	120	1462.03		7.78		10.64	23.72	6.18	13.20	−5.31	−11.60	5.534	5.674	5.280	5.340		0^+	0^+
189	121	1466.44		7.76		10.60	24.24	4.42	13.49	−5.27	−11.86	5.546	5.686	5.288	5.348		0^+	$1/2^-$
190	122	1472.54		7.75		10.51	24.60	6.09	13.67	−5.23	−12.04	5.558	5.700	5.293	5.353		0^+	0^+
191	123	1476.92		7.73		10.47	25.16	4.38	14.08	−5.18	−12.32	5.569	5.712	5.302	5.362		0^+	$1/2^-$
192	124	1482.93		7.72		10.39	25.48	6.01	14.25	−5.15	−12.48	5.581	5.726	5.306	5.366		0^+	0^+
193	125	1487.27		7.71		10.36	26.07	4.34	14.52	−3.71	−12.78	5.592	5.736	5.317	5.377		0^+	$1/2^-$
194	126	1493.21		7.70		10.28	26.37	5.94	14.68	−3.16	−12.92	5.604	5.752	5.319	5.379		0^+	0^+
195	127	1493.79		7.66		6.52	26.66	0.58	14.79	−3.68	−13.06	5.620	5.773	5.324	5.384		0^+	$9/2^+$
196	128	1495.85		7.63		2.65	27.00	2.06	14.89	−1.38	−13.23	5.637	5.790	5.335	5.395		0^+	0^+
197	129	1496.38		7.60		2.59	27.28	0.53	15.04	−1.35	−13.38	5.653	5.811	5.340	5.400		0^+	$9/2^+$
198	130	1498.47		7.57		2.62	27.62	2.09	15.22	−1.37	−13.55	5.669	5.829	5.351	5.411		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
199	131	1498.95		7.53		2.57	27.91	0.48	15.37	−1.34	−13.70	5.685	5.849	5.357	5.416		0^+	$9/2^+$
200	132	1501.07		7.51		2.60	28.24	2.12	15.54	−1.37	−13.87	5.701	5.866	5.368	5.427		0^+	0^+
201	133	1501.50		7.47		2.55	28.53	0.43	15.67	−1.34	−14.01	5.718	5.886	5.374	5.434		0^+	$9/2^+$
202	134	1503.67		7.44		2.59	28.86	2.16	15.84	−1.37	−14.18	5.733	5.902	5.385	5.444		0^+	0^+
203	135	1504.04		7.41		2.54	29.16	0.38	15.98	−1.34	−14.33	5.750	5.922	5.392	5.452		0^+	$9/2^+$
204	136	1506.26		7.38		2.59	29.47	2.22	16.13	−1.37	−14.50	5.765	5.938	5.402	5.461		0^+	0^+
205	137	1506.59		7.35		2.54	29.78	0.32	16.28	−1.34	−14.65	5.782	5.957	5.411	5.470		0^+	$9/2^+$
206	138	1508.86		7.32		2.60	30.08	2.28	16.43	−1.38	−14.81	5.797	5.974	5.420	5.479		0^+	0^+
207	139	1509.13		7.29		2.55	30.34	0.27	16.59	−1.34	−14.97	5.814	5.993	5.430	5.489		0^+	$9/2^+$
208	140	1511.47		7.27		2.61	30.68	2.34	16.73	−1.38	−15.11	5.828	6.009	5.438	5.497		0^+	0^+
209	141	1511.72		7.23		2.59	30.86	0.25	16.80	−1.41	−15.20	5.850	6.037	5.441	5.500		0^+	$5/2^+$
210	142	1514.10		7.21		2.62	31.27	2.37	17.02	−1.38	−15.41	5.860	6.044	5.456	5.514		0^+	0^+
211	143	1514.42		7.18		2.69	31.47	0.32	17.10	−1.41	−15.51	5.880	6.070	5.460	5.518		0^+	$5/2^+$
212	144	1516.73		7.15		2.63	31.85	2.31	17.30	−1.38	−15.71	5.891	6.078	5.473	5.531		0^+	0^+
213	145	1517.11		7.12		2.70	32.06	0.38	17.40	−1.41	−15.81	5.911	6.103	5.478	5.536		0^+	$5/2^+$
214	146	1519.37		7.10		2.64	32.40	2.25	17.58	−1.38	−15.99	5.922	6.113	5.490	5.548		0^+	0^+
215	147	1519.80		7.07		2.69	32.61	0.44	17.68	−1.40	−16.09	5.941	6.136	5.495	5.553		0^+	$5/2^+$
216	148	1522.00		7.05		2.63	32.93	2.20	17.84	−1.38	−16.25	5.953	6.148	5.505	5.563		0^+	0^+
217	149	1522.51		7.02		2.71	33.15	0.51	17.95	−1.38	−16.36	5.971	6.170	5.511	5.569		0^+	$5/2^+$
218	150	1524.62		6.99		2.62	33.43	2.11	18.08	−1.37	−16.50	5.984	6.183	5.519	5.577		0^+	0^+
219	151	1525.15		6.96		2.64	33.61	0.52	18.19	−1.37	−16.61	6.002	6.204	5.525	5.583		0^+	$5/2^+$
220	152	1527.23		6.94		2.61	33.90	2.08	18.30	−1.35	−16.74	6.015	6.218	5.532	5.590		0^+	0^+
221	153	1527.77		6.91		2.60	34.03	0.52	18.37	−1.34	−16.85	6.032	6.239	5.538	5.596		0^+	$1/2^+$
222	154	1529.81		6.89		2.59	34.34	2.06	18.51	−1.34	−16.96	6.045	6.254	5.544	5.601		0^+	0^+
223	155	1530.40		6.86		2.57	34.41	0.50	18.58	−1.32	−17.07	6.063	6.275	5.550	5.607		0^+	$1/2^+$
224	156	1532.38		6.84		2.56	34.76	2.06	18.71	−1.33	−17.17	6.076	6.290	5.554	5.612		0^+	0^+
225	157	1533.01		6.81		2.57	34.79	0.51	18.78	−1.34	−17.25	6.095	6.313	5.558	5.615		0^+	$1/2^+$
226	158	1534.92		6.79		2.54	35.16	2.03	18.90	−1.31	−17.37	6.107	6.326	5.564	5.621		0^+	0^+
227	159	1535.59		6.76		2.70	35.31	0.67	18.95	−1.31	−17.45	6.126	6.350	5.568	5.625		0^+	$1/2^+$
228	160	1537.44		6.74		2.52	35.55	1.85	19.07	−1.29	−17.56	6.138	6.362	5.574	5.631		0^+	0^+
229	161	1538.13		6.72		2.54	35.75	0.69	19.16	−1.28	−17.65	6.155	6.384	5.578	5.635		0^+	$1/2^+$
230	162	1539.93		6.70		2.49	35.92	1.80	19.25	−1.27	−17.75	6.168	6.398	5.583	5.640		0^+	0^+
231	163	1540.58		6.67		2.45	36.12	0.65	19.33	−1.25	−17.84	6.185	6.417	5.588	5.645		0^+	$1/2^+$
232	164	1542.38		6.65		2.45	36.28	1.80	19.42	−1.24	−17.93	6.198	6.433	5.592	5.649		0^+	0^+
233	165	1542.96		6.62		2.38	36.49	0.58	19.51	−1.18	−18.04	6.214	6.450	5.598	5.655		0^+	$1/2^+$
234	166	1544.75		6.60		2.37	36.64	1.79	19.59	−1.18	−18.12	6.228	6.468	5.601	5.658		0^+	0^+
235	167	1545.18		6.58		2.22	36.90	0.43	19.71	−1.06	−18.25	6.242	6.481	5.610	5.666		0^+	$1/2^+$
236	168	1546.97		6.55		2.22	37.04	1.80	19.78	−1.08	−18.33	6.257	6.500	5.611	5.668		0^+	0^+
237	169	1547.09		6.53		1.91	37.40	0.12	20.02	−0.90	−18.53	6.266	6.506	5.626	5.682		0^+	$1/2^+$
238	170	1548.93		6.51		1.95	37.62	1.83	20.08	−0.93	−18.60	6.281	6.525	5.627	5.683		0^+	0^+
239	171	1548.87		6.48		1.78	37.92	−0.06	20.24	−0.91	−18.74	6.294	6.538	5.635	5.691		0^+	$15/2^-$
240	172	1550.61		6.46		1.68	38.28	1.74	20.44	−0.82	−18.92	6.304	6.546	5.646	5.702		0^+	0^+
241	173	1550.52		6.43		1.66	38.59	−0.08	20.61	−0.79	−19.07	6.316	6.558	5.654	5.711		0^+	$15/2^-$
242	174	1552.10		6.41		1.50	38.94	1.58	20.81	−0.74	−19.25	6.326	6.566	5.666	5.722		0^+	0^+
243	175	1552.00		6.39		1.48	39.26	−0.10	20.98	−0.72	−19.41	6.338	6.577	5.675	5.731		0^+	$15/2^-$
244	176	1553.48		6.37		1.37	39.60	1.47	21.17	−0.68	−19.59	6.348	6.586	5.686	5.742		0^+	0^+
245	177	1553.36		6.34		1.36	39.92	−0.12	21.35	−0.66	−19.74	6.359	6.596	5.696	5.752		0^+	$15/2^-$
246	178	1554.76		6.32		1.29	40.26	1.40	21.54	−0.63	−19.91	6.370	6.605	5.707	5.763		0^+	0^+
247	179	1554.64		6.29		1.28	39.84	−0.12	20.97	−0.61	−20.07	6.381	6.616	5.717	5.773		0^+	$15/2^-$
248	180	1555.99		6.27		1.23	40.91	2.09	21.90	−0.59	−20.24	6.392	6.625	5.728	5.784		0^+	0^+
249	181	1555.86		6.25		1.97	41.24	−0.13	22.08	−0.57	−20.40	6.403	6.635	5.739	5.794		0^+	$15/2^-$
250	182	1557.18		6.23		1.19	41.56	1.31	22.27	−0.55	−20.57	6.414	6.645	5.750	5.805		0^+	0^+
251	183	1557.06		6.20		1.19	41.89	−0.12	22.43	−1.04	−20.73	6.425	6.655	5.760	5.816		0^+	$15/2^-$
252	184	1558.33		6.18		1.15	42.22	1.27	22.58	−1.29	−20.90	6.436	6.664	5.772	5.827		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
σ		12.83													0.046			
$Z = 69$ (Tm)																		
145	76	1136.01		7.83			−0.05		−1.55	−13.63	0.28	4.976	4.967	4.987	5.051		$3/2^+$	0^+
146	77	1148.52		7.87			0.63		−1.23	−13.52	−0.06	4.984	4.980	4.989	5.052		$3/2^+$	$1/2^+$
147	78	1162.92	1168.48	7.91	7.95		1.24	14.40	−0.95	−13.38	−0.37	4.992	4.993	4.991	5.055		$3/2^+$	0^+
148	79	1175.29	1179.34	7.94	7.97	26.78	1.95	12.38	−0.62	−13.28	−0.73	4.999	5.005	4.993	5.056		$3/2^+$	$1/2^+$
149	80	1189.40		7.98		26.48	2.74	14.11	−0.36	−13.13	−1.02	5.007	5.017	4.996	5.059		$3/2^+$	0^+
150	81	1201.71		8.01		26.42	3.48	12.31	−0.02	−11.97	−1.40	5.014	5.029	4.997	5.061		$3/2^+$	$1/2^+$
151	82	1215.51	1215.57	8.05	8.05	26.11	4.04	13.80	0.23	−10.76	−1.66	5.022	5.041	5.000	5.064		$3/2^+$	0^+
152	83	1222.67	1224.63	8.04	8.06	20.95	4.67	7.15	0.54	−11.60	−2.00	5.040	5.062	5.012	5.076		$3/2^+$	$9/2^-$
153	84	1232.03	1234.92	8.05	8.07	16.51	5.28	9.36	0.84	−8.26	−2.29	5.055	5.082	5.021	5.084	5.064	$3/2^+$	0^+
154	85	1238.99	1243.43	8.05	8.07	16.33	5.89	6.97	1.14	−8.16	−2.62	5.072	5.103	5.033	5.096	5.076	$3/2^+$	$9/2^-$
155	86	1248.19	1253.70	8.05	8.09	16.17	6.49	9.20	1.44	−8.10	−2.90	5.086	5.122	5.042	5.105		$3/2^+$	0^+
156	87	1254.99	1261.98	8.04	8.09	15.99	7.08	6.79	1.73	−8.00	−3.22	5.103	5.142	5.053	5.116	5.098	$3/2^+$	$9/2^-$
157	88	1264.05	1271.95	8.05	8.10	15.85	7.67	9.06	2.02	−7.96	−3.50	5.117	5.160	5.062	5.125	5.114	$3/2^+$	0^+
158	89	1270.65	1279.99	8.04	8.10	15.67	8.25	6.61	2.31	−7.85	−3.81	5.133	5.179	5.073	5.136	5.124	$3/2^+$	$9/2^-$
159	90	1279.60	1289.93	8.05	8.11	15.56	8.82	8.95	2.60	−7.81	−4.09	5.147	5.197	5.081	5.144	5.139	$3/2^+$	0^+
160	91	1286.00	1297.73	8.04	8.11	15.34	9.40	6.39	2.88	−7.76	−4.37	5.162	5.216	5.090	5.152	5.150	$3/2^+$	$7/2^-$
161	92	1294.86	1307.40	8.04	8.12	15.26	9.96	8.87	3.16	−7.66	−4.66	5.177	5.233	5.100	5.163	5.162	$3/2^+$	0^+
162	93	1301.19	1315.05	8.03	8.12	15.19	10.53	6.32	3.44	−7.60	−4.94	5.191	5.251	5.109	5.171	5.171	$3/2^+$	$7/2^-$
163	94	1309.81	1324.37	8.04	8.12	14.95	11.08	8.63	3.71	−7.50	−5.21	5.205	5.268	5.118	5.180	5.185	$3/2^+$	0^+
164	95	1316.03	1331.62	8.02	8.12	14.85	11.65	6.22	4.00	−7.41	−5.49	5.219	5.286	5.127	5.189	5.191	$3/2^+$	$7/2^-$
165	96	1324.43	1340.71	8.03	8.13	14.62	12.12	8.40	4.27	−7.32	−5.74	5.232	5.302	5.133	5.195	5.200	$3/2^+$	0^+
166	97	1330.48	1347.74	8.01	8.12	14.44	12.64	6.04	4.55	−7.18	−6.02	5.246	5.319	5.142	5.204	5.205	$3/2^+$	$7/2^-$
167	98	1338.69	1356.47	8.02	8.12	14.26	12.98	8.21	4.82	−7.11	−6.25	5.258	5.334	5.148	5.210	5.213	$3/2^+$	0^+
168	99	1344.40	1363.31	8.00	8.11	13.93	13.51	5.71	5.08	−6.88	−6.52	5.272	5.351	5.157	5.218	5.217	$3/2^+$	$7/2^-$
169	100	1352.50	1371.35	8.00	8.11	13.81	14.04	8.10	5.35	−6.86	−6.75	5.284	5.367	5.162	5.223	5.226	$3/2^+$	0^+
170	101	1357.67	1377.94	7.99	8.11	13.27	14.46	5.17	5.58	−6.58	−7.01	5.299	5.384	5.171	5.232	5.230	$3/2^+$	$7/2^-$
171	102	1365.77	1385.42	7.99	8.10	13.27	15.03	8.10	5.84	−6.60	−7.23	5.310	5.399	5.175	5.237	5.239	$3/2^+$	0^+
172	103	1370.97	1391.66	7.97	8.09	13.30	15.51	5.20	6.09	−6.55	−7.45	5.325	5.417	5.183	5.244	5.241	$3/2^+$	$5/2^-$
173	104	1378.55	1398.61	7.97	8.08	12.78	15.96	7.58	6.31	−6.40	−7.70	5.336	5.432	5.189	5.250		$3/2^+$	0^+
174	105	1383.60	1404.29	7.95	8.07	12.63	16.39	5.05	6.54	−6.33	−7.92	5.350	5.449	5.196	5.257		$3/2^+$	$5/2^-$
175	106	1390.97	1410.81	7.95	8.06	12.42	16.88	7.37	6.76	−6.24	−8.17	5.362	5.464	5.203	5.264		$3/2^+$	0^+
176	107	1395.90	1415.94	7.93	8.05	12.30	17.27	4.93	6.97	−6.17	−8.39	5.376	5.481	5.209	5.270		$3/2^+$	$5/2^-$
177	108	1403.10		7.93		12.13	17.78	7.20	7.21	−6.11	−8.62	5.388	5.495	5.216	5.277		$3/2^+$	0^+
178	109	1407.97		7.91		12.07	18.19	4.86	7.42	−6.06	−8.82	5.401	5.512	5.221	5.282		$3/2^+$	$3/2^-$
179	110	1415.00		7.91		11.90	18.67	7.03	7.64	−5.99	−9.07	5.414	5.526	5.229	5.290		$3/2^+$	0^+
180	111	1419.80		7.89		11.83	19.09	4.80	7.86	−5.95	−9.28	5.427	5.543	5.235	5.296		$3/2^+$	$3/2^-$
181	112	1426.69		7.88		11.69	19.55	6.89	8.08	−5.89	−9.52	5.439	5.556	5.242	5.303		$3/2^+$	0^+
182	113	1431.43		7.86		11.63	19.96	4.74	8.30	−5.84	−9.74	5.452	5.572	5.248	5.309		$3/2^+$	$3/2^-$
183	114	1438.20		7.86		11.51	20.42	6.77	8.51	−5.79	−9.96	5.463	5.586	5.255	5.315		$3/2^+$	0^+
184	115	1442.95		7.84		11.52	20.84	4.75	8.69	−5.76	−10.17	5.476	5.602	5.261	5.321		$3/2^+$	$1/2^-$
185	116	1449.55		7.84		11.35	21.28	6.60	8.94	−5.70	−10.40	5.488	5.615	5.267	5.328		$3/2^+$	0^+
186	117	1454.26		7.82		11.31	21.73	4.71	9.15	−5.67	−10.62	5.500	5.630	5.273	5.334		$3/2^+$	$1/2^-$
187	118	1460.75		7.81		11.20	22.13	6.48	9.36	−5.61	−10.84	5.512	5.643	5.280	5.340		$3/2^+$	0^+
188	119	1465.42		7.79		11.15	22.60	4.67	9.57	−5.58	−11.07	5.524	5.657	5.286	5.347		$3/2^+$	$1/2^-$
189	120	1471.80		7.79		11.06	22.98	6.39	9.78	−5.53	−11.27	5.535	5.670	5.292	5.352		$3/2^+$	0^+
190	121	1476.44		7.77		11.03	23.48	4.64	10.00	−5.49	−11.53	5.547	5.683	5.300	5.360		$3/2^+$	$1/2^-$
191	122	1482.73		7.76		10.93	23.86	6.29	10.19	−5.44	−11.71	5.559	5.697	5.305	5.365		$3/2^+$	0^+
192	123	1487.35		7.75		10.91	24.51	4.62	10.44	−5.42	−11.98	5.570	5.708	5.314	5.374		$11/2^-$	$1/2^-$
193	124	1493.54		7.74		10.81	24.86	6.19	10.61	−5.36	−12.16	5.581	5.723	5.317	5.377		$3/2^+$	0^+
194	125	1498.18		7.72		10.83	25.42	4.64	10.91	−3.87	−12.43	5.592	5.732	5.328	5.388		$11/2^-$	$1/2^-$
195	126	1504.26		7.71		10.72	25.73	6.09	11.05	−3.30	−12.57	5.604	5.748	5.330	5.390		$11/2^-$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
196	127	1504.99		7.68		6.81	25.99	0.72	11.19	−3.87	−12.74	5.620	5.769	5.335	5.395		$3/2^+$	$9/2^+$
197	128	1507.23		7.65		2.96	26.26	2.24	11.37	−1.56	−12.91	5.636	5.787	5.346	5.405		$3/2^+$	0^+
198	129	1507.92		7.62		2.94	26.58	0.70	11.54	−1.53	−13.05	5.652	5.807	5.351	5.411		$3/2^+$	$9/2^+$
199	130	1510.19		7.59		2.96	26.94	2.26	11.72	−1.55	−13.23	5.668	5.824	5.362	5.422		$3/2^+$	0^+
200	131	1510.84		7.55		2.91	27.25	0.65	11.88	−1.52	−13.37	5.684	5.844	5.368	5.428		$3/2^+$	$9/2^+$
201	132	1513.13		7.53		2.94	27.59	2.29	12.05	−1.54	−13.54	5.700	5.861	5.379	5.438		$3/2^+$	0^+
202	133	1513.72		7.49		2.89	27.89	0.60	12.22	−1.51	−13.69	5.716	5.880	5.386	5.445		$3/2^+$	$9/2^+$
203	134	1516.05		7.47		2.93	28.23	2.33	12.39	−1.54	−13.86	5.732	5.897	5.396	5.455		$3/2^+$	0^+
204	135	1516.60		7.43		2.87	28.53	0.54	12.55	−1.50	−14.01	5.748	5.916	5.404	5.463		$3/2^+$	$9/2^+$
205	136	1518.98		7.41		2.92	28.85	2.38	12.71	−1.54	−14.17	5.763	5.932	5.414	5.473		$3/2^+$	0^+
206	137	1519.46		7.38		2.87	29.16	0.49	12.88	−1.50	−14.33	5.779	5.951	5.423	5.482		$3/2^+$	$9/2^+$
207	138	1521.90		7.35		2.92	29.47	2.43	13.03	−1.54	−14.48	5.794	5.967	5.432	5.491		$3/2^+$	0^+
208	139	1522.33		7.32		2.87	29.79	0.43	13.20	−1.50	−14.65	5.811	5.985	5.442	5.501		$3/2^+$	$9/2^+$
209	140	1524.82		7.30		2.93	30.07	2.49	13.35	−1.54	−14.79	5.825	6.002	5.451	5.509		$3/2^+$	0^+
210	141	1525.20		7.26		2.87	30.27	0.37	13.47	−1.50	−14.96	5.842	6.020	5.462	5.520		$3/2^+$	$9/2^+$
211	142	1527.75		7.24		2.93	30.67	2.56	13.66	−1.54	−15.10	5.856	6.036	5.469	5.527		$3/2^+$	0^+
212	143	1528.18		7.21		2.98	30.86	0.42	13.76	−1.57	−15.19	5.876	6.062	5.472	5.530		$3/2^+$	$5/2^+$
213	144	1530.68		7.19		2.93	31.26	2.50	13.95	−1.53	−15.39	5.887	6.070	5.486	5.544		$3/2^+$	0^+
214	145	1531.18		7.16		3.00	31.46	0.49	14.07	−1.56	−15.49	5.906	6.094	5.490	5.548		$3/2^+$	$5/2^+$
215	146	1533.61		7.13		2.92	31.82	2.43	14.24	−1.52	−15.68	5.918	6.104	5.503	5.561		$3/2^+$	0^+
216	147	1534.22		7.10		3.04	32.09	0.61	14.41	−1.54	−15.78	5.936	6.127	5.508	5.566		$3/2^+$	$5/2^+$
217	148	1536.51		7.08		2.91	32.35	2.30	14.51	−1.51	−15.94	5.948	6.138	5.519	5.576		$3/2^+$	0^+
218	149	1537.14		7.05		2.93	32.58	0.63	14.64	−1.52	−16.05	5.966	6.160	5.524	5.582		$3/2^+$	$5/2^+$
219	150	1539.39		7.03		2.88	32.85	2.25	14.77	−1.49	−16.19	5.979	6.173	5.533	5.590		$3/2^+$	0^+
220	151	1540.03		7.00		2.89	33.08	0.64	14.89	−1.49	−16.30	5.996	6.194	5.538	5.596		$3/2^+$	$5/2^+$
221	152	1542.24		6.98		2.85	33.32	2.21	15.01	−1.47	−16.43	6.009	6.208	5.545	5.603		$5/2^+$	0^+
222	153	1542.88		6.95		2.84	33.48	0.64	15.11	−1.46	−16.53	6.026	6.229	5.551	5.608		$3/2^+$	$5/2^+$
223	154	1545.05		6.93		2.81	33.75	2.18	15.24	−1.46	−16.65	6.039	6.244	5.557	5.614		$3/2^+$	0^+
224	155	1545.72		6.90		2.84	33.90	0.67	15.32	−1.47	−16.71	6.060	6.271	5.559	5.616		$3/2^+$	$1/2^+$
225	156	1547.84		6.88		2.78	34.17	2.12	15.46	−1.44	−16.85	6.070	6.279	5.567	5.624		$3/2^+$	0^+
226	157	1548.55		6.85		2.83	34.32	0.71	15.54	−1.45	−16.92	6.090	6.305	5.570	5.627		$3/2^+$	$1/2^+$
227	158	1550.59		6.83		2.75	34.56	2.04	15.67	−1.42	−17.05	6.100	6.315	5.577	5.634		$3/2^+$	0^+
228	159	1551.33		6.80		2.78	34.69	0.74	15.74	−1.42	−17.13	6.119	6.338	5.580	5.637		$3/2^+$	$1/2^+$
229	160	1553.31		6.78		2.72	34.94	1.98	15.87	−1.40	−17.24	6.130	6.350	5.586	5.643		$3/2^+$	0^+
230	161	1554.10		6.76		2.77	35.14	0.79	15.97	−1.39	−17.33	6.148	6.372	5.591	5.648		$3/2^+$	$1/2^+$
231	162	1556.00		6.74		2.69	35.32	1.90	16.07	−1.37	−17.43	6.160	6.385	5.596	5.653		$3/2^+$	0^+
232	163	1556.75		6.71		2.65	35.51	0.75	16.17	−1.35	−17.52	6.177	6.405	5.601	5.658		$3/2^+$	$1/2^+$
233	164	1558.64		6.69		2.64	35.68	1.89	16.26	−1.34	−17.62	6.190	6.420	5.605	5.662		$3/2^+$	0^+
234	165	1559.33		6.66		2.58	35.88	0.69	16.37	−1.29	−17.72	6.205	6.438	5.611	5.668		$3/2^+$	$1/2^+$
235	166	1561.21		6.64		2.57	36.04	1.88	16.46	−1.29	−17.81	6.219	6.454	5.614	5.671		$3/2^+$	0^+
236	167	1561.77		6.62		2.44	36.30	0.56	16.59	−1.19	−17.94	6.233	6.468	5.623	5.679		$3/2^+$	$1/2^+$
237	168	1563.65		6.60		2.44	36.46	1.88	16.67	−1.20	−18.02	6.247	6.485	5.625	5.682		$3/2^+$	0^+
238	169	1563.96		6.57		2.19	36.89	0.31	16.87	−1.06	−18.22	6.258	6.493	5.638	5.695		$3/2^+$	$1/2^+$
239	170	1565.87		6.55		2.22	37.02	1.91	16.94	−1.08	−18.29	6.272	6.512	5.640	5.696		$3/2^+$	0^+
240	171	1565.94		6.52		1.98	37.32	0.08	17.08	−1.07	−18.43	6.285	6.525	5.647	5.703		$3/2^+$	$15/2^-$
241	172	1567.85		6.51		1.98	37.68	1.90	17.24	−0.98	−18.61	6.295	6.534	5.657	5.714		$3/2^+$	0^+
242	173	1567.91		6.48		1.97	38.00	0.06	17.39	−0.96	−18.76	6.307	6.546	5.666	5.722		$3/2^+$	$15/2^-$
243	174	1569.65		6.46		1.81	38.36	1.74	17.55	−0.90	−18.95	6.317	6.554	5.677	5.733		$3/2^+$	0^+
244	175	1569.70		6.43		1.79	38.68	0.05	17.70	−0.88	−19.10	6.329	6.566	5.685	5.741		$3/2^+$	$15/2^-$
245	176	1571.34		6.41		1.68	39.03	1.64	17.86	−0.84	−19.28	6.339	6.574	5.696	5.752		$3/2^+$	0^+
246	177	1571.37		6.39		1.67	39.36	0.03	18.01	−0.82	−19.44	6.351	6.585	5.706	5.762		$3/2^+$	$15/2^-$
247	178	1572.93		6.37		1.59	39.70	1.56	18.16	−0.79	−19.62	6.361	6.594	5.717	5.772		$3/2^+$	0^+
248	179	1572.95		6.34		1.58	40.03	0.02	18.31	−0.77	−19.78	6.373	6.605	5.726	5.782		$3/2^+$	$15/2^-$
249	180	1574.46		6.32		1.53	40.37	1.50	18.47	−0.75	−19.95	6.383	6.614	5.737	5.793		$3/2^+$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
250	181	1574.49		6.30		1.53	40.70	0.03	18.62	−0.74	−20.14	6.395	6.625	5.749	5.805		$11/2^-$	$15/2^-$
251	182	1575.97		6.28		1.51	41.06	1.48	18.79	−0.72	−20.30	6.406	6.634	5.760	5.816		$11/2^-$	0^+
252	183	1576.01		6.25		1.53	41.39	0.05	18.96	−1.21	−20.46	6.417	6.645	5.771	5.826		$11/2^-$	$15/2^-$
253	184	1577.46		6.24		1.49	41.71	1.45	19.13	−1.46	−20.63	6.428	6.654	5.782	5.837		$11/2^-$	0^+
σ		14.87													0.009			
$Z = 70$ (Yb)																		
148	78	1164.33		7.87			0.46		1.41	−13.71	0.03	5.002	4.997	5.007	5.071		0^+	0^+
149	79	1177.07		7.90			1.15		1.78	−13.63	−0.32	5.009	5.009	5.009	5.072		0^+	$1/2^+$
150	80	1191.49		7.94			1.73	14.42	2.09	−13.47	−0.61	5.016	5.021	5.011	5.075		0^+	0^+
151	81	1204.19	1205.55	7.97	7.98	27.12	2.46	12.70	2.48	−12.40	−0.97	5.023	5.032	5.012	5.076		0^+	$1/2^+$
152	82	1218.26	1218.40	8.01	8.02	26.78	2.98	14.07	2.75	−11.15	−1.23	5.031	5.044	5.015	5.078	5.042	0^+	0^+
153	83	1225.77		8.01		21.58	3.64	7.50	3.10	−11.86	−1.56	5.048	5.065	5.027	5.090		0^+	$9/2^-$
154	84	1235.43	1238.15	8.02	8.04	17.16	4.24	9.66	3.40	−8.57	−1.86	5.063	5.085	5.036	5.099	5.088	0^+	0^+
155	85	1242.74	1246.79	8.02	8.04	16.97	4.89	7.31	3.74	−8.47	−2.18	5.079	5.105	5.048	5.111	5.104	0^+	$9/2^-$
156	86	1252.23	1257.62	8.03	8.06	16.80	5.47	9.49	4.04	−8.41	−2.47	5.094	5.124	5.057	5.120	5.122	0^+	0^+
157	87	1259.36	1265.86	8.02	8.06	16.63	6.11	7.13	4.38	−8.31	−2.79	5.110	5.144	5.069	5.131	5.132	0^+	$9/2^-$
158	88	1268.71	1276.51	8.03	8.08	16.48	6.68	9.35	4.66	−8.26	−3.08	5.125	5.162	5.077	5.140	5.150	0^+	0^+
159	89	1275.65	1284.41	8.02	8.08	16.29	7.31	6.94	4.99	−8.14	−3.39	5.141	5.181	5.089	5.151	5.163	0^+	$9/2^-$
160	90	1284.88	1294.81	8.03	8.09	16.17	7.87	9.23	5.28	−8.10	−3.67	5.155	5.199	5.098	5.160	5.178	0^+	0^+
161	91	1291.58	1302.56	8.02	8.09	15.93	8.47	6.70	5.58	−7.95	−3.97	5.170	5.217	5.108	5.170	5.189	0^+	$9/2^-$
162	92	1300.73	1312.61	8.03	8.10	15.85	9.03	9.15	5.87	−7.94	−4.25	5.184	5.235	5.117	5.179	5.205	0^+	0^+
163	93	1307.33	1320.16	8.02	8.10	15.75	9.59	6.60	6.15	−7.87	−4.53	5.198	5.252	5.125	5.187	5.216	0^+	$7/2^-$
164	94	1316.24	1329.95	8.03	8.11	15.50	10.14	8.90	6.42	−7.75	−4.80	5.212	5.269	5.134	5.196	5.231	0^+	0^+
165	95	1322.73	1337.29	8.02	8.10	15.40	10.69	6.49	6.70	−7.66	−5.08	5.226	5.286	5.142	5.204	5.240	0^+	$7/2^-$
166	96	1331.37	1346.67	8.02	8.11	15.13	11.21	8.64	6.94	−7.56	−5.33	5.238	5.302	5.149	5.211	5.253	0^+	0^+
167	97	1337.68	1353.73	8.01	8.11	14.95	11.75	6.31	7.20	−7.42	−5.60	5.252	5.319	5.157	5.219	5.262	0^+	$7/2^-$
168	98	1346.11	1362.80	8.01	8.11	14.74	12.24	8.43	7.42	−7.35	−5.85	5.264	5.335	5.163	5.225	5.270	0^+	0^+
169	99	1352.09	1369.66	8.00	8.10	14.41	12.77	5.98	7.69	−7.12	−6.11	5.278	5.352	5.171	5.233	5.277	0^+	$7/2^-$
170	100	1360.40	1378.12	8.00	8.11	14.29	13.25	8.31	7.90	−7.10	−6.35	5.289	5.367	5.176	5.238	5.285	0^+	0^+
171	101	1365.84	1384.74	7.99	8.10	13.75	13.75	5.44	8.18	−6.82	−6.61	5.303	5.384	5.185	5.246	5.291	0^+	$7/2^-$
172	102	1374.15	1392.76	7.99	8.10	13.75	14.22	8.30	8.38	−6.84	−6.84	5.315	5.399	5.190	5.251	5.300	0^+	0^+
173	103	1379.58	1399.12	7.97	8.09	13.73	14.70	5.43	8.61	−6.79	−7.07	5.329	5.417	5.197	5.258	5.305	0^+	$5/2^-$
174	104	1387.41	1406.59	7.97	8.08	13.26	15.17	7.83	8.86	−6.63	−7.32	5.340	5.431	5.203	5.264	5.311	0^+	0^+
175	105	1392.68	1412.41	7.96	8.07	13.10	15.62	5.27	9.08	−6.57	−7.54	5.354	5.448	5.210	5.271	5.314	0^+	$5/2^-$
176	106	1400.30	1419.28	7.96	8.06	12.89	16.09	7.62	9.33	−6.47	−7.79	5.366	5.462	5.217	5.278	5.322	0^+	0^+
177	107	1405.45	1424.84	7.94	8.05	12.77	16.51	5.15	9.55	−6.40	−8.01	5.379	5.479	5.223	5.284		0^+	$5/2^-$
178	108	1412.89	1431.62	7.94	8.04	12.60	17.00	7.45	9.79	−6.33	−8.25	5.391	5.493	5.230	5.291		0^+	0^+
179	109	1417.96		7.92		12.51	17.41	5.06	9.99	−6.29	−8.45	5.404	5.510	5.235	5.296		0^+	$3/2^-$
180	110	1425.25		7.92		12.36	17.89	7.29	10.25	−6.22	−8.70	5.416	5.524	5.243	5.304		0^+	0^+
181	111	1430.26		7.90		12.30	18.32	5.01	10.46	−6.18	−8.91	5.429	5.540	5.249	5.309		0^+	$3/2^-$
182	112	1437.40		7.90		12.15	18.79	7.14	10.71	−6.11	−9.15	5.441	5.554	5.256	5.317		0^+	0^+
183	113	1442.36		7.88		12.10	19.23	4.96	10.93	−6.07	−9.37	5.454	5.569	5.262	5.323		0^+	$3/2^-$
184	114	1449.36		7.88		11.96	19.67	7.01	11.16	−6.01	−9.59	5.465	5.583	5.269	5.329		0^+	0^+
185	115	1454.27		7.86		11.91	20.01	4.90	11.32	−5.97	−9.82	5.478	5.598	5.275	5.336		0^+	$3/2^-$
186	116	1461.16		7.86		11.80	20.55	6.90	11.61	−5.92	−10.03	5.489	5.611	5.281	5.341		0^+	0^+
187	117	1466.14		7.84		11.87	21.02	4.97	11.88	−5.90	−10.25	5.502	5.626	5.287	5.347		0^+	$1/2^-$
188	118	1472.81		7.83		11.65	21.42	6.68	12.07	−5.84	−10.47	5.513	5.639	5.293	5.353		0^+	0^+
189	119	1477.73		7.82		11.60	21.89	4.92	12.32	−5.82	−10.69	5.525	5.653	5.300	5.360		0^+	$1/2^-$
190	120	1484.32		7.81		11.51	22.30	6.59	12.52	−5.75	−10.90	5.536	5.666	5.306	5.366		0^+	0^+
191	121	1489.24		7.80		11.50	22.79	4.91	12.79	−5.73	−11.14	5.548	5.680	5.313	5.372		0^+	$1/2^-$
192	122	1495.71		7.79		11.38	23.17	6.47	12.97	−5.67	−11.33	5.559	5.693	5.318	5.377		0^+	0^+
193	123	1500.62		7.78		11.38	23.71	4.92	13.27	−5.65	−11.60	5.570	5.705	5.326	5.385		0^+	$1/2^-$
194	124	1506.97		7.77		11.26	24.04	6.35	13.43	−5.59	−11.76	5.582	5.719	5.330	5.389		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
195	125	1511.90		7.75		11.28	24.63	4.93	13.72	−4.03	−12.05	5.592	5.729	5.339	5.398		0^+	$1/2^-$
196	126	1518.12		7.75		11.15	24.91	6.22	13.85	−3.54	−12.19	5.604	5.745	5.342	5.401		0^+	0^+
197	127	1518.99		7.71		7.09	25.20	0.87	14.00	−4.07	−12.34	5.620	5.765	5.347	5.406		0^+	$9/2^+$
198	128	1521.41		7.68		3.29	25.56	2.42	14.18	−1.70	−12.52	5.636	5.782	5.358	5.418		0^+	0^+
199	129	1522.23		7.65		3.24	25.84	0.82	14.30	−1.67	−12.67	5.652	5.802	5.364	5.423		0^+	$9/2^+$
200	130	1524.67		7.62		3.26	26.20	2.44	14.48	−1.69	−12.85	5.668	5.820	5.376	5.435		0^+	0^+
201	131	1525.45		7.59		3.22	26.49	0.78	14.61	−1.67	−13.00	5.684	5.839	5.382	5.441		0^+	$9/2^+$
202	132	1527.92		7.56		3.24	26.84	2.47	14.79	−1.69	−13.18	5.700	5.856	5.393	5.452		0^+	0^+
203	133	1528.65		7.53		3.20	27.15	0.73	14.93	−1.66	−13.33	5.716	5.875	5.400	5.459		0^+	$9/2^+$
204	134	1531.15		7.51		3.24	27.49	2.50	15.10	−1.69	−13.51	5.731	5.892	5.411	5.470		0^+	0^+
205	135	1531.84		7.47		3.19	27.80	0.69	15.25	−1.66	−13.66	5.747	5.910	5.419	5.478		0^+	$9/2^+$
206	136	1534.39		7.45		3.23	28.13	2.55	15.41	−1.69	−13.83	5.762	5.927	5.429	5.488		0^+	0^+
207	137	1535.03		7.42		3.19	28.45	0.65	15.57	−1.66	−13.99	5.778	5.945	5.438	5.497		0^+	$9/2^+$
208	138	1537.62		7.39		3.24	28.76	2.59	15.73	−1.69	−14.15	5.793	5.961	5.447	5.506		0^+	0^+
209	139	1538.22		7.36		3.19	29.09	0.60	15.89	−1.66	−14.32	5.810	5.979	5.458	5.516		0^+	$9/2^+$
210	140	1540.86		7.34		3.24	29.39	2.64	16.04	−1.69	−14.47	5.824	5.995	5.466	5.524		0^+	0^+
211	141	1541.41		7.31		3.19	29.69	0.55	16.21	−1.65	−14.64	5.841	6.013	5.477	5.535		0^+	$9/2^+$
212	142	1544.10		7.28		3.24	30.00	2.69	16.35	−1.69	−14.78	5.855	6.029	5.484	5.542		0^+	0^+
213	143	1544.61		7.25		3.19	30.19	0.51	16.43	−1.72	−14.87	5.874	6.054	5.488	5.546		0^+	$5/2^+$
214	144	1547.33		7.23		3.23	30.60	2.73	16.65	−1.68	−15.09	5.885	6.062	5.502	5.560		0^+	0^+
215	145	1547.91		7.20		3.31	30.80	0.58	16.74	−1.71	−15.18	5.904	6.086	5.506	5.564		0^+	$5/2^+$
216	146	1550.54		7.18		3.21	31.18	2.63	16.94	−1.66	−15.38	5.915	6.096	5.519	5.577		0^+	0^+
217	147	1551.19		7.15		3.28	31.47	0.65	17.05	−1.68	−15.48	5.933	6.119	5.524	5.581		0^+	$5/2^+$
218	148	1553.72		7.13		3.18	31.72	2.53	17.21	−1.64	−15.65	5.945	6.130	5.535	5.592		0^+	0^+
219	149	1554.46		7.10		3.27	31.95	0.74	17.32	−1.65	−15.76	5.963	6.152	5.540	5.597		0^+	$5/2^+$
220	150	1556.85		7.08		3.13	32.23	2.39	17.46	−1.61	−15.91	5.975	6.164	5.549	5.606		0^+	0^+
221	151	1557.60		7.05		3.14	32.45	0.75	17.56	−1.61	−16.01	5.992	6.185	5.554	5.611		0^+	$5/2^+$
222	152	1559.93		7.03		3.08	32.70	2.33	17.68	−1.58	−16.14	6.005	6.199	5.561	5.618		0^+	0^+
223	153	1560.67		7.00		3.07	34.92	0.74	17.79	−1.57	−16.25	6.022	6.219	5.566	5.624		0^+	$5/2^+$
224	154	1562.95		6.98		3.03	35.10	2.28	17.90	−1.56	−16.36	6.035	6.234	5.572	5.629		0^+	0^+
225	155	1563.68		6.95		3.01	35.31	0.73	17.96	−1.58	−16.43	6.056	6.261	5.574	5.635		0^+	$5/2^+$
226	156	1565.93		6.93		2.98	35.49	2.25	18.09	−1.54	−16.57	6.065	6.269	5.582	5.639		0^+	0^+
227	157	1566.71		6.90		3.03	35.75	0.78	18.16	−1.55	−16.64	6.084	6.294	5.584	5.631		0^+	$5/2^+$
228	158	1568.88		6.88		2.94	33.95	2.16	18.29	−1.51	−16.78	6.094	6.304	5.592	5.649		0^+	0^+
229	159	1569.68		6.85		2.97	34.09	0.81	18.35	−1.52	−16.85	6.113	6.328	5.595	5.642		0^+	$1/2^+$
230	160	1571.79		6.83		2.91	34.34	2.10	18.47	−1.49	−16.98	6.124	6.339	5.602	5.659		0^+	0^+
231	161	1572.64		6.81		2.95	34.50	0.85	18.53	−1.49	−17.06	6.142	6.361	5.605	5.662		0^+	$1/2^+$
232	162	1574.66		6.79		2.87	34.73	2.02	18.66	−1.47	−17.17	6.153	6.373	5.611	5.668		0^+	0^+
233	163	1575.50		6.76		2.87	34.92	0.84	18.75	−1.45	−17.26	6.170	6.394	5.616	5.672		0^+	$1/2^+$
234	164	1577.48		6.74		2.82	35.10	1.98	18.84	−1.43	−17.37	6.182	6.407	5.620	5.677		0^+	0^+
235	165	1578.27		6.72		2.77	35.31	0.79	18.94	−1.40	−17.47	6.198	6.426	5.626	5.683		0^+	$1/2^+$
236	166	1580.24		6.70		2.76	35.49	1.97	19.03	−1.39	−17.57	6.211	6.440	5.630	5.687		0^+	0^+
237	167	1580.93		6.67		2.66	35.75	0.69	19.16	−1.32	−17.70	6.225	6.455	5.638	5.694		0^+	$1/2^+$
238	168	1582.89		6.65		2.65	35.92	1.96	19.24	−1.32	−17.79	6.239	6.471	5.641	5.697		0^+	0^+
239	169	1583.40		6.63		2.47	36.31	0.51	19.44	−1.21	−17.97	6.250	6.482	5.653	5.709		0^+	$1/2^+$
240	170	1585.38		6.61		2.49	36.46	1.98	19.52	−1.23	−18.05	6.264	6.499	5.655	5.711		0^+	0^+
241	171	1585.67		6.58		2.27	36.80	0.29	19.73	−1.12	−18.28	6.274	6.505	5.670	5.726		0^+	$1/2^+$
242	172	1587.69		6.56		2.31	37.09	2.02	19.84	−1.14	−18.35	6.288	6.522	5.671	5.727		0^+	0^+
243	173	1587.91		6.53		2.24	37.39	0.22	20.00	−1.13	−18.49	6.300	6.535	5.679	5.735		0^+	$15/2^-$
244	174	1589.85		6.52		2.15	37.74	1.93	20.19	−1.07	−18.67	6.310	6.544	5.690	5.746		0^+	0^+
245	175	1590.06		6.49		2.15	38.06	0.21	20.36	−1.05	−18.82	6.322	6.555	5.698	5.754		0^+	$15/2^-$
246	176	1591.88		6.47		2.04	38.41	1.83	20.55	−1.01	−19.00	6.333	6.564	5.709	5.765		0^+	0^+
247	177	1592.09		6.45		2.03	38.73	0.20	20.72	−0.99	−19.15	6.344	6.576	5.718	5.773		0^+	$15/2^-$
248	178	1593.83		6.43		1.95	39.07	1.75	20.91	−0.96	−19.33	6.355	6.585	5.729	5.784		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
249	179	1594.03		6.40		1.95	49.39	0.20	21.08	−0.95	−19.49	6.366	6.596	5.738	5.793		0^+	$15/2^-$
250	180	1595.72		6.38		1.89	39.73	1.69	21.27	−0.92	−19.66	6.377	6.605	5.749	5.804		0^+	0^+
251	181	1595.92		6.36		1.89	40.06	0.20	21.43	−0.90	−19.82	6.388	6.615	5.758	5.814		0^+	$15/2^-$
252	182	1597.57		6.34		1.85	40.39	1.65	21.60	−0.88	−19.99	6.399	6.625	5.769	5.825		0^+	0^+
253	183	1597.77		6.32		1.85	40.72	0.20	21.76	−1.37	−20.15	6.410	6.635	5.779	5.834		0^+	$15/2^-$
254	184	1599.38		6.30		1.81	41.05	1.61	21.92	−1.62	−20.32	6.421	6.645	5.790	5.845		0^+	0^+
σ		14.25													0.035			
$Z = 71$ (Lu)																		
150	79	1175.76		7.84			0.47		−1.31	−13.95	0.04	5.019	5.013	5.025	5.089		$3/2^+$	$1/2^+$
151	80	1190.45		7.88			1.05		−1.03	−13.78	−0.25	5.026	5.024	5.028	5.091		$3/2^+$	0^+
152	81	1203.51		7.92			1.80	13.06	−0.68	−12.58	−0.63	5.033	5.036	5.029	5.092		$3/2^+$	$1/2^+$
153	82	1217.82	1217.79	7.96	7.96	27.37	2.31	14.31	−0.44	−11.39	−0.89	5.040	5.047	5.031	5.095		$3/2^+$	0^+
154	83	1225.63		7.96		22.12	2.97	7.81	−0.13	−12.08	−1.23	5.057	5.068	5.043	5.106		$3/2^+$	$9/2^-$
155	84	1235.60	1238.06	7.97	7.99	17.77	3.57	9.96	0.17	−8.88	−1.52	5.072	5.088	5.052	5.115		$3/2^+$	0^+
156	85	1243.21	1247.33	7.97	8.00	17.58	4.22	7.61	0.47	−8.77	−1.85	5.088	5.108	5.064	5.127		$3/2^+$	$9/2^-$
157	86	1253.00	1258.11	7.98	8.01	17.40	4.81	9.79	0.77	−8.71	−2.14	5.102	5.127	5.072	5.135		$3/2^+$	0^+
158	87	1260.43	1266.93	7.98	8.02	17.22	5.44	7.43	1.07	−8.60	−2.46	5.118	5.146	5.084	5.146		$3/2^+$	$9/2^-$
159	88	1270.07	1277.51	7.99	8.03	17.07	6.02	9.64	1.36	−8.55	−2.75	5.133	5.165	5.093	5.155		$3/2^+$	0^+
160	89	1277.30	1286.13	7.98	8.04	16.87	6.64	7.23	1.65	−8.43	−3.06	5.148	5.183	5.103	5.166		$3/2^+$	$9/2^-$
161	90	1286.82	1296.50	7.99	8.05	16.75	7.21	9.52	1.94	−8.39	−3.34	5.162	5.201	5.112	5.174	5.229	$3/2^+$	0^+
162	91	1293.81	1304.84	7.99	8.05	16.51	7.81	6.99	2.22	−8.24	−3.64	5.177	5.219	5.122	5.184	5.240	$3/2^+$	$9/2^-$
163	92	1303.24	1314.87	8.00	8.07	16.42	8.37	9.43	2.50	−8.22	−3.92	5.191	5.236	5.131	5.193	5.257	$3/2^+$	0^+
164	93	1310.12	1322.79	7.99	8.07	16.32	8.93	6.89	2.79	−8.16	−4.19	5.205	5.254	5.139	5.201	5.268	$3/2^+$	$7/2^-$
165	94	1319.30	1332.66	8.00	8.08	16.06	9.48	9.18	3.06	−8.03	−4.47	5.218	5.270	5.148	5.209	5.283	$3/2^+$	0^+
166	95	1326.07	1340.31	7.99	8.07	15.95	10.04	6.78	3.34	−7.94	−4.74	5.232	5.288	5.156	5.218	5.297	$3/2^+$	$7/2^-$
167	96	1334.98	1349.86	7.99	8.08	15.68	10.55	8.91	3.61	−7.83	−4.99	5.244	5.303	5.163	5.224	5.311	$3/2^+$	0^+
168	97	1341.57	1357.50	7.99	8.08	15.49	11.09	6.58	3.89	−7.69	−5.26	5.258	5.320	5.171	5.232	5.323	$3/2^+$	$7/2^-$
169	98	1350.26	1366.59	7.99	8.09	15.28	11.57	8.69	4.15	−7.61	−5.50	5.269	5.335	5.176	5.238	5.329	$3/2^+$	0^+
170	99	1356.50	1373.88	7.98	8.08	14.94	12.10	6.24	4.41	−7.38	−5.76	5.283	5.352	5.184	5.246	5.336	$3/2^+$	$7/2^-$
171	100	1365.06	1382.48	7.98	8.08	14.80	12.56	8.56	4.66	−7.35	−5.99	5.294	5.367	5.190	5.251	5.344	$3/2^+$	0^+
172	101	1370.75	1389.46	7.97	8.08	14.25	13.09	5.69	4.91	−7.06	−6.26	5.308	5.384	5.198	5.259	5.349	$3/2^+$	$7/2^-$
173	102	1379.30	1397.67	7.97	8.08	14.24	13.53	8.55	5.16	−7.08	−6.48	5.319	5.398	5.203	5.264	5.358	$3/2^+$	0^+
174	103	1384.98	1404.43	7.96	8.07	14.23	14.01	5.68	5.40	−7.03	−6.70	5.333	5.416	5.210	5.271	5.363	$3/2^+$	$5/2^-$
175	104	1393.04	1412.10	7.96	8.07	13.73	14.49	8.06	5.63	−6.87	−6.96	5.344	5.430	5.216	5.277	5.370	$3/2^+$	0^+
176	105	1398.53	1418.39	7.95	8.06	13.55	14.93	5.50	5.86	−6.80	−7.18	5.358	5.447	5.223	5.284	5.374	$3/2^+$	$5/2^-$
177	106	1406.39	1425.46	7.95	8.05	13.35	15.42	7.86	6.09	−6.70	−7.44	5.369	5.461	5.230	5.291	5.382	$3/2^+$	0^+
178	107	1411.77	1431.49	7.93	8.04	13.23	15.87	5.38	6.32	−6.63	−7.66	5.383	5.477	5.237	5.297	5.386	$3/2^+$	$5/2^-$
179	108	1419.45	1438.28	7.93	8.04	13.06	16.34	7.68	6.55	−6.56	−7.90	5.394	5.492	5.243	5.304	5.392	$3/2^+$	0^+
180	109	1424.71	1443.97	7.92	8.02	12.94	16.74	5.26	6.75	−6.53	−8.10	5.407	5.508	5.248	5.309		$3/2^+$	$3/2^-$
181	110	1432.25	1450.16	7.91	8.01	12.81	17.25	7.54	7.00	−6.44	−8.36	5.419	5.522	5.256	5.317		$3/2^+$	0^+
182	111	1437.47		7.90		12.76	17.67	5.21	7.21	−6.41	−8.57	5.432	5.538	5.262	5.322		$3/2^+$	$3/2^-$
183	112	1444.85	1461.22	7.90	7.98	12.59	18.15	7.38	7.45	−6.34	−8.82	5.443	5.551	5.269	5.329		$3/2^+$	0^+
184	113	1450.02		7.88		12.55	18.59	5.17	7.66	−6.30	−9.03	5.456	5.567	5.275	5.335		$3/2^+$	$3/2^-$
185	114	1457.25		7.88		12.40	19.05	7.23	7.88	−6.24	−9.26	5.467	5.580	5.281	5.342		$3/2^+$	0^+
186	115	1462.37		7.86		12.36	19.42	5.13	8.11	−6.20	−9.49	5.480	5.595	5.288	5.348		$3/2^+$	$3/2^-$
187	116	1469.48		7.86		12.23	19.93	7.11	8.32	−6.14	−9.71	5.491	5.609	5.294	5.354		$3/2^+$	0^+
188	117	1474.66		7.84		12.28	20.40	5.18	8.52	−6.13	−9.92	5.503	5.623	5.300	5.360		$3/2^+$	$1/2^-$
189	118	1481.56		7.84		12.08	20.81	6.90	8.75	−6.05	−10.15	5.514	5.636	5.306	5.366		$3/2^+$	0^+
190	119	1486.70		7.82		12.04	21.28	5.14	8.97	−6.04	−10.37	5.526	5.650	5.312	5.372		$3/2^+$	$1/2^-$
191	120	1493.50		7.82		11.94	21.69	6.80	9.17	−5.97	−10.59	5.537	5.663	5.318	5.378		$3/2^+$	0^+
192	121	1498.63		7.81		11.93	22.19	5.13	9.39	−5.95	−10.83	5.549	5.677	5.324	5.384		$3/2^+$	$1/2^-$
193	122	1505.30		7.80		11.80	22.57	6.67	9.59	−5.88	−11.02	5.560	5.690	5.329	5.389		$3/2^+$	0^+
194	123	1510.44		7.79		11.81	23.09	5.14	9.82	−5.87	−11.28	5.571	5.702	5.337	5.396		$3/2^+$	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
195	124	1516.98		7.78		11.68	23.44	6.53	10.01	−5.80	−11.45	5.582	5.716	5.341	5.401		$3/2^+$	0^+
196	125	1522.15		7.77		11.71	23.98	5.18	10.26	−4.20	−11.70	5.593	5.726	5.350	5.409		$11/2^-$	$1/2^-$
197	126	1528.54		7.76		11.56	24.27	6.38	10.42	−3.85	−11.88	5.604	5.741	5.352	5.412		$3/2^+$	0^+
198	127	1529.57		7.73		7.42	24.58	1.04	10.58	−4.27	−12.01	5.620	5.761	5.357	5.417		$3/2^+$	$9/2^+$
199	128	1532.18		7.70		3.64	24.95	2.60	10.77	−1.88	−12.20	5.636	5.779	5.369	5.429		$3/2^+$	0^+
200	129	1533.16		7.67		3.58	25.23	0.98	10.93	−1.85	−12.34	5.652	5.798	5.375	5.434		$3/2^+$	$9/2^+$
201	130	1535.78		7.64		3.60	25.59	2.62	11.11	−1.87	−12.53	5.668	5.815	5.387	5.446		$3/2^+$	0^+
202	131	1536.72		7.61		3.56	25.88	0.94	11.27	−1.84	−12.67	5.683	5.835	5.393	5.452		$3/2^+$	$9/2^+$
203	132	1539.36		7.58		3.58	26.24	2.65	11.45	−1.86	−12.86	5.699	5.851	5.405	5.464		$3/2^+$	0^+
204	133	1540.26		7.55		3.54	26.53	0.89	11.61	−1.83	−13.01	5.715	5.870	5.412	5.471		$3/2^+$	$9/2^+$
205	134	1542.93		7.53		3.57	26.88	2.68	11.78	−1.86	−13.18	5.730	5.886	5.423	5.482		$3/2^+$	0^+
206	135	1543.78		7.49		3.53	27.19	0.85	11.94	−1.83	−13.34	5.746	5.905	5.431	5.490		$3/2^+$	$9/2^+$
207	136	1546.49		7.47		3.56	27.52	2.71	12.11	−1.86	−13.51	5.761	5.921	5.442	5.500		$3/2^+$	0^+
208	137	1547.30		7.44		3.52	27.84	0.81	12.27	−1.83	−13.67	5.777	5.939	5.451	5.509		$3/2^+$	$9/2^+$
209	138	1550.05		7.42		3.56	28.16	2.75	12.43	−1.86	−13.83	5.792	5.955	5.460	5.519		$3/2^+$	0^+
210	139	1550.82		7.38		3.52	28.49	0.76	12.60	−1.82	−14.00	5.808	5.973	5.471	5.529		$3/2^+$	$9/2^+$
211	140	1553.61		7.36		3.56	28.79	2.79	12.75	−1.85	−14.15	5.822	5.989	5.479	5.537		$3/2^+$	0^+
212	141	1554.33		7.33		3.51	29.13	0.72	12.92	−1.82	−14.33	5.838	6.006	5.490	5.548		$3/2^+$	$9/2^+$
213	142	1557.16		7.31		3.55	29.41	2.83	13.06	−1.84	−14.47	5.852	6.022	5.498	5.555		$3/2^+$	0^+
214	143	1557.82		7.28		3.49	29.64	0.66	13.21	−1.80	−14.64	5.869	6.039	5.509	5.567		$3/2^+$	$9/2^+$
215	144	1560.70		7.26		3.54	30.02	2.88	13.37	−1.83	−14.77	5.882	6.055	5.516	5.573		$3/2^+$	0^+
216	145	1561.38		7.23		3.56	30.21	0.68	13.47	−1.86	−14.87	5.901	6.079	5.519	5.577		$3/2^+$	$5/2^+$
217	146	1564.20		7.21		3.50	30.59	2.82	13.66	−1.80	−15.07	5.912	6.088	5.533	5.590		$3/2^+$	0^+
218	147	1565.04		7.18		3.66	30.82	0.84	13.85	−1.83	−15.17	5.930	6.111	5.537	5.594		$3/2^+$	$5/2^+$
219	148	1567.66		7.16		3.45	31.14	2.61	13.93	−1.77	−15.34	5.942	6.121	5.548	5.606		$3/2^+$	0^+
220	149	1568.52		7.13		3.48	31.38	0.86	14.06	−1.78	−15.44	5.959	6.143	5.553	5.610		$3/2^+$	$5/2^+$
221	150	1571.04		7.11		3.38	31.65	2.52	14.19	−1.74	−15.60	5.971	6.155	5.562	5.619		$3/2^+$	0^+
222	151	1571.90		7.08		3.38	31.87	0.86	14.30	−1.73	−15.70	5.988	6.176	5.567	5.624		$3/2^+$	$5/2^+$
223	152	1574.35		7.06		3.31	32.11	2.45	14.43	−1.70	−15.83	6.001	6.190	5.574	5.632		$3/2^+$	0^+
224	153	1575.21		7.03		3.30	32.33	0.85	14.54	−1.69	−15.94	6.017	6.210	5.580	5.637		$3/2^+$	$5/2^+$
225	154	1577.60		7.01		3.25	32.55	2.40	14.65	−1.67	−16.05	6.030	6.224	5.586	5.643		$3/2^+$	0^+
226	155	1578.43		6.98		3.22	32.71	0.82	14.75	−1.65	−16.16	6.047	6.244	5.591	5.648		$3/2^+$	$5/2^+$
227	156	1580.80		6.96		3.20	32.96	2.37	14.87	−1.64	−16.27	6.059	6.259	5.596	5.653		$3/2^+$	0^+
228	157	1581.64		6.94		3.21	33.09	0.84	14.93	−1.66	−16.33	6.079	6.278	5.598	5.655		$3/2^+$	$1/2^+$
229	158	1583.95		6.92		3.15	33.36	2.31	15.08	−1.62	−16.47	6.089	6.293	5.606	5.663		$3/2^+$	0^+
230	159	1584.83		6.89		3.19	33.50	0.88	15.15	−1.63	−16.54	6.107	6.317	5.609	5.665		$3/2^+$	$1/2^+$
231	160	1587.07		6.87		3.11	33.75	2.23	15.28	−1.60	−16.67	6.118	6.328	5.616	5.672		$3/2^+$	0^+
232	161	1587.97		6.84		3.14	33.87	0.91	15.34	−1.60	−16.75	6.136	6.350	5.619	5.676		$3/2^+$	$1/2^+$
233	162	1590.14		6.82		3.07	34.14	2.16	15.48	−1.57	−16.87	6.147	6.361	5.625	5.682		$3/2^+$	0^+
234	163	1591.08		6.80		3.11	34.33	0.95	15.58	−1.56	−16.95	6.163	6.382	5.630	5.686		$3/2^+$	$1/2^+$
235	164	1593.16		6.78		3.02	34.52	2.08	15.68	−1.54	−17.07	6.175	6.395	5.635	5.691		$3/2^+$	0^+
236	165	1594.06		6.75		2.97	34.72	0.89	15.79	−1.51	−17.17	6.191	6.413	5.641	5.697		$3/2^+$	$1/2^+$
237	166	1596.12		6.73		2.96	34.92	2.07	15.89	−1.50	−17.28	6.203	6.427	5.645	5.701		$3/2^+$	0^+
238	167	1596.94		6.71		2.88	35.17	0.82	16.01	−1.45	−17.40	6.217	6.443	5.653	5.709		$3/2^+$	$1/2^+$
239	168	1599.00		6.69		2.87	35.35	2.06	16.11	−1.45	−17.50	6.230	6.458	5.656	5.712		$3/2^+$	0^+
240	169	1599.68		6.67		2.74	35.72	0.68	16.28	−1.37	−17.67	6.243	6.469	5.667	5.723		$3/2^+$	$1/2^+$
241	170	1601.75		6.65		2.75	35.88	2.07	16.37	−1.37	−17.76	6.256	6.485	5.669	5.725		$3/2^+$	0^+
242	171	1602.26		6.62		2.58	36.32	0.51	16.59	−1.28	−17.97	6.266	6.493	5.683	5.739		$3/2^+$	$1/2^+$
243	172	1604.36		6.60		2.61	36.51	2.10	16.66	−1.30	−18.06	6.280	6.510	5.685	5.741		$3/2^+$	0^+
244	173	1604.72		6.58		2.46	36.80	0.36	16.81	−1.29	−18.19	6.292	6.523	5.692	5.748		$3/2^+$	$15/2^-$
245	174	1606.82		6.56		2.47	37.17	2.11	16.98	−1.23	−18.37	6.303	6.532	5.702	5.758		$3/2^+$	0^+
246	175	1607.18		6.53		2.47	37.48	0.36	17.13	−1.22	−18.52	6.315	6.544	5.710	5.766		$3/2^+$	$15/2^-$
247	176	1609.18		6.51		2.36	37.84	2.00	17.30	−1.17	−18.70	6.325	6.554	5.720	5.776		$3/2^+$	0^+
248	177	1609.54		6.49		2.35	38.17	0.36	17.45	−1.16	−18.89	6.337	6.565	5.729	5.784		$3/2^+$	$15/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
249	178	1611.46		6.47		2.28	38.53	1.92	17.62	−1.13	−19.06	6.348	6.574	5.739	5.795		$11/2^-$	0^+
250	179	1611.82		6.45		2.28	38.86	0.36	17.78	−1.11	−19.22	6.359	6.586	5.748	5.804		$3/2^+$	$15/2^-$
251	180	1613.68		6.43		2.22	39.22	1.86	17.95	−1.09	−19.39	6.370	6.595	5.759	5.814		$11/2^-$	0^+
252	181	1614.03		6.40		2.22	39.55	0.36	18.11	−1.07	−19.54	6.381	6.606	5.768	5.823		$3/2^+$	$15/2^-$
253	182	1615.85		6.39		2.17	39.88	1.82	18.28	−1.05	−19.71	6.391	6.615	5.779	5.834		$11/2^-$	0^+
254	183	1616.22		6.36		2.18	40.20	0.36	18.44	−1.53	−19.87	6.403	6.626	5.788	5.843		$3/2^+$	$15/2^-$
255	184	1617.99		6.35		2.14	40.53	1.78	18.61	−1.79	−20.04	6.413	6.635	5.799	5.854		$11/2^-$	0^+
σ		15.06													0.084			
$Z = 72$ (Hf)																		
152	80	1191.74		7.84			0.25		1.29	−14.10	0.12	5.036	5.029	5.043	5.107		0^+	0^+
153	81	1205.17		7.88			0.98		1.66	−12.97	−0.24	5.042	5.040	5.044	5.107		0^+	$1/2^+$
154	82	1219.76		7.92			1.49	14.59	1.93	−11.72	−0.50	5.049	5.051	5.047	5.110		0^+	0^+
155	83	1227.92		7.92		22.75	2.15	8.16	2.28	−12.26	−0.82	5.065	5.072	5.058	5.121		0^+	$9/2^-$
156	84	1238.18	1240.66	7.94	7.95	18.42	2.75	10.26	2.58	−9.19	−1.12	5.080	5.091	5.067	5.130		0^+	0^+
157	85	1246.14		7.94		18.22	3.40	7.96	2.93	−9.09	−1.44	5.096	5.111	5.079	5.141		0^+	$9/2^-$
158	86	1256.22	1261.04	7.95	7.98	18.04	3.99	10.08	3.22	−9.02	−1.74	5.111	5.130	5.088	5.150		0^+	0^+
159	87	1263.99	1269.86	7.95	7.99	17.86	4.63	7.77	3.57	−8.91	−2.06	5.126	5.149	5.099	5.161		0^+	$9/2^-$
160	88	1273.92	1281.02	7.96	8.01	17.70	5.21	9.93	3.85	−8.86	−2.34	5.141	5.167	5.108	5.170		0^+	0^+
161	89	1281.49	1289.47	7.96	8.01	17.49	5.84	7.57	4.19	−8.73	−2.66	5.156	5.186	5.119	5.181		0^+	$9/2^-$
162	90	1291.29	1300.39	7.97	8.03	17.37	6.41	9.80	4.47	−8.69	−2.94	5.170	5.203	5.127	5.189		0^+	0^+
163	91	1298.59	1308.56	7.97	8.03	17.10	7.01	7.30	4.78	−8.52	−3.24	5.184	5.221	5.137	5.199		0^+	$9/2^-$
164	92	1308.30	1319.19	7.98	8.04	17.01	7.57	9.71	5.06	−8.50	−3.52	5.198	5.238	5.146	5.208		0^+	0^+
165	93	1315.46	1327.07	7.97	8.04	16.87	8.13	7.16	5.34	−8.44	−3.80	5.212	5.256	5.154	5.216		0^+	$7/2^-$
166	94	1324.92	1337.37	7.98	8.06	16.61	8.68	9.45	5.62	−8.29	−4.07	5.225	5.272	5.163	5.224		0^+	0^+
167	95	1331.96	1345.05	7.98	8.05	16.50	9.23	7.05	5.89	−8.20	−4.35	5.239	5.289	5.171	5.232		0^+	$7/2^-$
168	96	1341.11	1355.01	7.98	8.07	16.20	9.74	9.15	6.13	−8.08	−4.60	5.250	5.305	5.177	5.239		0^+	0^+
169	97	1347.96	1362.44	7.98	8.06	15.99	10.28	6.85	6.39	−7.93	−4.87	5.264	5.321	5.185	5.246		0^+	$7/2^-$
170	98	1356.88	1372.05	7.98	8.07	15.77	10.77	8.92	6.62	−7.86	−5.11	5.275	5.336	5.191	5.252	5.290	0^+	0^+
171	99	1363.38	1379.30	7.97	8.07	15.43	11.29	6.50	6.88	−7.62	−5.38	5.288	5.353	5.198	5.259	5.304	0^+	$7/2^-$
172	100	1372.17	1388.34	7.98	8.07	15.29	11.77	8.79	7.11	−7.59	−5.62	5.299	5.367	5.203	5.264	5.307	0^+	0^+
173	101	1378.13	1395.42	7.97	8.07	14.75	12.29	5.96	7.38	−7.31	−5.88	5.313	5.384	5.212	5.273	5.314	0^+	$7/2^-$
174	102	1386.90	1403.93	7.97	8.07	14.73	12.75	8.77	7.60	−7.33	−6.11	5.324	5.399	5.216	5.277	5.320	0^+	0^+
175	103	1392.83	1410.63	7.96	8.06	14.69	13.25	5.92	7.85	−7.27	−6.34	5.338	5.416	5.224	5.284	5.319	0^+	$5/2^-$
176	104	1401.13	1418.80	7.96	8.06	14.22	13.72	8.30	8.09	−7.11	−6.60	5.349	5.430	5.230	5.291	5.329	0^+	0^+
177	105	1406.85	1425.18	7.95	8.05	14.03	14.18	5.73	8.32	−7.04	−6.83	5.362	5.447	5.237	5.297	5.331	0^+	$5/2^-$
178	106	1414.96	1432.81	7.95	8.05	13.84	14.67	8.11	8.57	−6.94	−7.08	5.374	5.460	5.243	5.304	5.337	0^+	0^+
179	107	1420.57	1438.90	7.94	8.04	13.72	15.12	5.61	8.80	−6.87	−7.31	5.387	5.477	5.250	5.310	5.341	0^+	$5/2^-$
180	108	1428.49	1446.29	7.94	8.03	13.53	15.60	7.92	9.05	−6.80	−7.55	5.398	5.491	5.256	5.317	5.347	0^+	0^+
181	109	1433.99	1451.99	7.92	8.02	13.42	16.03	5.49	9.28	−6.73	−7.78	5.411	5.506	5.263	5.323		0^+	$5/2^-$
182	110	1441.77	1458.70	7.92	8.01	13.28	16.52	7.78	9.52	−6.67	−8.01	5.422	5.520	5.269	5.330	5.352	0^+	0^+
183	111	1447.19	1464.01	7.91	8.00	13.20	16.93	5.42	9.72	−6.64	−8.22	5.435	5.536	5.275	5.335		0^+	$3/2^-$
184	112	1454.82	1470.30	7.91	7.99	13.06	17.42	7.64	9.98	−6.56	−8.47	5.446	5.549	5.282	5.342		0^+	0^+
185	113	1460.21	1475.18	7.89	7.97	13.02	17.85	5.38	10.19	−6.53	−8.68	5.459	5.565	5.288	5.348		0^+	$3/2^-$
186	114	1467.68	1481.36	7.89	7.96	12.86	18.32	7.48	10.44	−6.46	−8.92	5.470	5.578	5.295	5.355		0^+	0^+
187	115	1473.04		7.88		12.83	18.77	5.35	10.66	−6.43	−9.14	5.482	5.593	5.301	5.361		0^+	$3/2^-$
188	116	1480.37		7.87		12.69	19.21	7.34	10.89	−6.36	−9.36	5.493	5.606	5.307	5.367		0^+	0^+
189	117	1485.69		7.86		12.65	19.55	5.32	11.03	−6.33	−9.59	5.506	5.620	5.314	5.373		0^+	$3/2^-$
190	118	1492.90		7.86		12.53	20.08	7.21	11.34	−6.27	−9.80	5.516	5.633	5.319	5.379		0^+	0^+
191	119	1498.29		7.84		12.60	20.56	5.40	11.59	−6.26	−10.01	5.528	5.648	5.325	5.384		0^+	$1/2^-$
192	120	1505.28		7.84		12.38	20.95	6.98	11.78	−6.18	−10.23	5.539	5.660	5.330	5.390		0^+	0^+
193	121	1510.66		7.83		12.36	21.42	5.38	12.03	−6.18	−10.46	5.550	5.674	5.337	5.396		0^+	$1/2^-$
194	122	1517.52		7.82		12.24	21.81	6.86	12.22	−6.10	−10.66	5.561	5.687	5.342	5.401		0^+	0^+
195	123	1522.93		7.81		12.28	22.31	5.42	12.49	−6.10	−10.90	5.572	5.699	5.349	5.408		0^+	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
196	124	1529.63		7.80		12.11	22.66	6.69	12.65	−6.01	−11.07	5.583	5.713	5.353	5.412		0^+	0^+
197	125	1535.11		7.79		12.18	23.21	5.48	12.95	−4.38	−11.34	5.594	5.724	5.361	5.420		0^+	$1/2^-$
198	126	1541.61		7.79		11.98	23.49	6.50	13.07	−4.00	−11.48	5.605	5.738	5.364	5.423		0^+	0^+
199	127	1542.77		7.75		7.67	23.78	1.16	13.20	−4.41	−11.63	5.620	5.758	5.369	5.428		0^+	$9/2^+$
200	128	1545.57		7.73		3.96	24.16	2.80	13.40	−2.04	−11.82	5.637	5.775	5.381	5.441		0^+	0^+
201	129	1546.69		7.69		3.91	24.46	1.11	13.53	−2.01	−11.97	5.652	5.795	5.387	5.446		0^+	$9/2^+$
202	130	1549.51		7.67		3.93	24.83	2.82	13.72	−2.03	−12.17	5.668	5.812	5.399	5.458		0^+	0^+
203	131	1550.58		7.64		3.89	25.14	1.08	13.87	−2.01	−12.32	5.684	5.831	5.406	5.465		0^+	$9/2^+$
204	132	1553.42		7.61		3.91	25.50	2.83	14.05	−2.02	−12.51	5.699	5.847	5.418	5.477		0^+	0^+
205	133	1554.46		7.58		3.88	25.81	1.04	14.21	−2.00	−12.66	5.715	5.866	5.425	5.484		0^+	$9/2^+$
206	134	1557.32		7.56		3.90	26.17	2.86	14.39	−2.02	−12.85	5.730	5.882	5.436	5.495		0^+	0^+
207	135	1558.33		7.53		3.87	26.49	1.01	14.55	−2.00	−13.01	5.746	5.900	5.445	5.503		0^+	$9/2^+$
208	136	1561.22		7.51		3.90	26.83	2.89	14.72	−2.02	−13.18	5.761	5.916	5.455	5.513		0^+	0^+
209	137	1562.19		7.47		3.86	27.16	0.98	14.89	−1.99	−13.35	5.777	5.934	5.464	5.523		0^+	$9/2^+$
210	138	1565.11		7.45		3.89	27.48	2.92	15.05	−2.02	−13.51	5.791	5.950	5.474	5.532		0^+	0^+
211	139	1566.05		7.42		3.86	27.82	0.94	15.23	−1.99	−13.68	5.807	5.968	5.484	5.542		0^+	$9/2^+$
212	140	1568.99		7.40		3.89	28.13	2.95	15.38	−2.01	−13.84	5.821	5.983	5.493	5.551		0^+	0^+
213	141	1569.89		7.37		3.84	28.48	0.90	15.56	−1.98	−14.02	5.837	6.000	5.504	5.562		0^+	$9/2^+$
214	142	1572.87		7.35		3.88	28.77	2.98	15.71	−2.00	−14.16	5.851	6.016	5.511	5.569		0^+	0^+
215	143	1573.71		7.32		3.82	29.11	0.84	15.89	−1.95	−14.34	5.867	6.033	5.523	5.581		0^+	$9/2^+$
216	144	1576.72		7.30		3.85	29.39	3.01	16.02	−1.98	−14.48	5.881	6.049	5.529	5.587		0^+	0^+
217	145	1577.50		7.27		3.78	29.58	0.77	16.11	−2.01	−14.57	5.899	6.072	5.533	5.590		0^+	$5/2^+$
218	146	1580.53		7.25		3.81	29.99	3.03	16.33	−1.95	−14.78	5.910	6.081	5.546	5.604		0^+	0^+
219	147	1581.38		7.22		3.88	30.19	0.85	16.38	−1.97	−14.87	5.928	6.104	5.550	5.608		0^+	$5/2^+$
220	148	1584.26		7.20		3.73	30.54	2.88	16.61	−1.90	−15.06	5.939	6.114	5.562	5.619		0^+	0^+
221	149	1585.25		7.17		3.87	30.78	0.98	16.73	−1.92	−15.16	5.956	6.136	5.567	5.624		0^+	$5/2^+$
222	150	1587.91		7.15		3.64	31.06	2.66	16.87	−1.86	−15.32	5.968	6.148	5.576	5.633		0^+	0^+
223	151	1588.88		7.13		3.63	31.28	0.97	16.97	−1.86	−15.42	5.985	6.168	5.581	5.638		0^+	$5/2^+$
224	152	1591.46		7.10		3.55	31.53	2.58	17.10	−1.81	−15.56	5.997	6.182	5.588	5.645		0^+	0^+
225	153	1592.41		7.08		3.53	31.74	0.95	17.20	−1.80	−15.66	6.014	6.202	5.593	5.650		0^+	$5/2^+$
226	154	1594.93		7.06		3.47	31.97	2.52	17.32	−1.78	−15.78	6.026	6.216	5.599	5.656		0^+	0^+
227	155	1595.85		7.03		3.44	32.17	0.93	17.42	−1.76	−15.89	6.043	6.236	5.604	5.661		0^+	$5/2^+$
228	156	1598.33		7.01		3.41	32.40	2.48	17.53	−1.75	−16.00	6.055	6.250	5.610	5.667		0^+	0^+
229	157	1599.24		6.98		3.39	32.53	0.91	17.60	−1.77	−16.07	6.074	6.275	5.612	5.668		0^+	$1/2^+$
230	158	1601.69		6.96		3.36	32.81	2.45	17.73	−1.72	−16.21	6.084	6.284	5.620	5.677		0^+	0^+
231	159	1602.63		6.94		3.39	32.95	0.94	17.80	−1.73	−16.28	6.102	6.308	5.622	5.679		0^+	$1/2^+$
232	160	1605.00		6.92		3.31	33.22	2.37	17.94	−1.70	−16.42	6.112	6.317	5.630	5.686		0^+	0^+
233	161	1605.97		6.89		3.34	33.34	0.97	18.00	−1.70	−16.50	6.130	6.340	5.633	5.689		0^+	$1/2^+$
234	162	1608.27		6.87		3.27	33.62	2.30	18.14	−1.67	−16.63	6.141	6.351	5.640	5.696		0^+	0^+
235	163	1609.29		6.85		3.32	33.79	1.02	18.21	−1.67	−16.71	6.157	6.371	5.643	5.700		0^+	$1/2^+$
236	164	1611.50		6.83		3.23	34.02	2.21	18.34	−1.64	−16.84	6.168	6.383	5.649	5.706		0^+	0^+
237	165	1612.50		6.80		3.21	34.23	1.00	18.44	−1.62	−16.94	6.184	6.402	5.654	5.711		0^+	$1/2^+$
238	166	1614.67		6.78		3.17	34.43	2.17	18.55	−1.61	−17.06	6.196	6.415	5.660	5.716		0^+	0^+
239	167	1615.61		6.76		3.11	34.69	0.94	18.67	−1.57	−17.18	6.211	6.431	5.666	5.723		0^+	$1/2^+$
240	168	1617.77		6.74		3.10	34.88	2.16	18.77	−1.57	−17.29	6.223	6.445	5.671	5.727		0^+	0^+
241	169	1618.62		6.72		3.01	35.22	0.85	18.94	−1.51	−17.44	6.236	6.458	5.680	5.736		0^+	$1/2^+$
242	170	1620.78		6.70		3.01	35.40	2.16	19.03	−1.51	−17.54	6.248	6.473	5.683	5.739		0^+	0^+
243	171	1621.50		6.67		2.88	35.83	0.72	19.24	−1.44	−17.73	6.260	6.483	5.696	5.752		0^+	$1/2^+$
244	172	1623.68		6.65		2.90	35.99	2.18	19.32	−1.45	−17.82	6.273	6.498	5.698	5.754		0^+	0^+
245	173	1624.26		6.63		2.76	36.35	0.58	19.54	−1.38	−18.05	6.283	6.505	5.713	5.769		0^+	$1/2^+$
246	174	1626.46		6.61		2.79	36.62	2.20	19.64	−1.39	−18.12	6.296	6.522	5.714	5.770		0^+	0^+
247	175	1626.97		6.59		2.71	36.92	0.51	19.79	−1.38	−18.26	6.308	6.534	5.722	5.777		0^+	$15/2^-$
248	176	1629.15		6.57		2.69	37.27	2.18	19.97	−1.34	−18.44	6.319	6.544	5.732	5.788		0^+	0^+
249	177	1629.66		6.54		2.69	37.58	0.51	20.13	−1.33	−18.59	6.331	6.556	5.740	5.795		0^+	$15/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
250	178	1631.76		6.53		2.61	37.93	2.10	20.30	−1.29	−18.76	6.341	6.565	5.750	5.806		0^+	0^+
251	179	1632.28		6.50		2.61	38.24	0.51	20.46	−1.28	−18.91	6.353	6.576	5.759	5.814		0^+	$15/2^-$
252	180	1634.31		6.49		2.55	38.59	2.04	20.64	−1.25	−19.09	6.363	6.586	5.769	5.825		0^+	0^+
253	181	1634.83		6.46		2.55	38.91	0.51	20.79	−1.24	−19.24	6.374	6.597	5.778	5.833		0^+	$15/2^-$
254	182	1636.82		6.44		2.50	39.25	1.99	20.97	−1.22	−19.42	6.385	6.606	5.789	5.844		0^+	0^+
255	183	1637.34		6.42		2.51	39.57	0.52	21.13	−1.69	−19.57	6.396	6.617	5.798	5.853		0^+	$15/2^-$
256	184	1639.29		6.40		2.47	39.91	1.95	21.30	−1.96	−19.74	6.407	6.626	5.809	5.863		0^+	0^+
σ		14.33													0.037			
$Z = 73$ (Ta)																		
154	81	1203.84		7.82			0.33		−1.32	−13.18	0.11	5.051	5.043	5.060	5.123		$3/2^+$	$1/2^+$
155	82	1218.68		7.86			0.85		−1.08	−11.96	−0.15	5.058	5.054	5.062	5.125		$3/2^+$	0^+
156	83	1227.16		7.87			1.53	8.48	−0.76	−12.43	−0.49	5.074	5.075	5.074	5.136		$3/2^+$	$9/2^-$
157	84	1237.72	1239.73	7.88	7.90	19.04	2.12	10.56	−0.46	−9.50	−0.78	5.089	5.094	5.083	5.145		$3/2^+$	0^+
158	85	1246.00		7.89		18.84	2.79	8.28	−0.14	−9.39	−1.12	5.105	5.114	5.094	5.156		$3/2^+$	$9/2^-$
159	86	1256.37	1260.67	7.90	7.93	18.65	3.37	10.38	0.15	−9.33	−1.41	5.119	5.133	5.103	5.165		$3/2^+$	0^+
160	87	1264.46	1270.17	7.90	7.94	18.46	4.03	8.08	0.46	−9.21	−1.73	5.135	5.152	5.114	5.176		$3/2^+$	$9/2^-$
161	88	1274.67	1281.08	7.92	7.96	18.30	4.60	10.22	0.75	−9.16	−2.02	5.148	5.170	5.123	5.185		$3/2^+$	0^+
162	89	1282.54	1290.22	7.92	7.96	18.09	5.24	7.87	1.05	−9.02	−2.34	5.164	5.188	5.133	5.195		$3/2^+$	$9/2^-$
163	90	1292.62	1301.05	7.93	7.98	17.95	5.81	10.08	1.34	−8.98	−2.62	5.177	5.206	5.142	5.204		$3/2^+$	0^+
164	91	1300.22	1309.87	7.93	7.99	17.68	6.41	7.59	1.63	−8.80	−2.92	5.192	5.223	5.152	5.213		$3/2^+$	$9/2^-$
165	92	1310.21	1320.51	7.94	8.00	17.58	6.97	9.99	1.91	−8.78	−3.20	5.205	5.240	5.160	5.222		$3/2^+$	0^+
166	93	1317.65	1328.83	7.94	8.00	17.43	7.53	7.44	2.19	−8.72	−3.48	5.219	5.257	5.169	5.230		$3/2^+$	$7/2^-$
167	94	1327.38	1339.15	7.95	8.02	17.17	8.08	9.73	2.46	−8.57	−3.75	5.231	5.274	5.177	5.238		$3/2^+$	0^+
168	95	1334.70	1347.26	7.94	8.02	17.05	8.62	7.32	2.74	−8.47	−4.02	5.245	5.290	5.185	5.246		$3/2^+$	$7/2^-$
169	96	1344.10	1357.23	7.95	8.03	16.73	9.12	9.41	2.99	−8.35	−4.27	5.256	5.306	5.191	5.252		$3/2^+$	0^+
170	97	1351.22	1365.15	7.95	8.03	16.52	9.65	7.11	3.26	−8.19	−4.54	5.269	5.322	5.199	5.260		$3/2^+$	$7/2^-$
171	98	1360.38	1374.80	7.96	8.04	16.28	10.12	9.17	3.50	−8.11	−4.77	5.281	5.337	5.204	5.265		$3/2^+$	0^+
172	99	1367.15	1382.49	7.95	8.04	15.93	10.65	6.76	3.77	−7.88	−5.03	5.293	5.353	5.212	5.273		$3/2^+$	$7/2^-$
173	100	1376.17	1391.62	7.95	8.04	15.79	11.11	9.02	4.00	−7.84	−5.27	5.304	5.367	5.217	5.278		$3/2^+$	0^+
174	101	1382.40	1399.04	7.94	8.04	15.25	11.64	6.23	4.26	−7.56	−5.53	5.318	5.384	5.225	5.286		$3/2^+$	$7/2^-$
175	102	1391.39	1407.78	7.95	8.04	15.22	12.09	9.00	4.49	−7.57	−5.76	5.328	5.398	5.230	5.290		$3/2^+$	0^+
176	103	1397.56	1414.81	7.94	8.04	15.17	12.58	6.17	4.74	−7.52	−5.98	5.342	5.415	5.237	5.298		$3/2^+$	$5/2^-$
177	104	1406.10	1423.23	7.94	8.04	14.71	13.06	8.53	4.97	−7.35	−6.25	5.353	5.429	5.243	5.304		$3/2^+$	0^+
178	105	1412.05	1430.09	7.93	8.03	14.48	13.51	5.95	5.19	−7.29	−6.47	5.366	5.445	5.250	5.310		$3/2^+$	$5/2^-$
179	106	1420.41	1438.02	7.94	8.03	14.31	14.02	8.36	5.45	−7.18	−6.73	5.377	5.459	5.256	5.317		$3/2^+$	0^+
180	107	1426.25	1444.66	7.92	8.03	14.20	14.48	5.84	5.67	−7.11	−6.96	5.390	5.475	5.263	5.323		$3/2^+$	$5/2^-$
181	108	1434.41	1452.24	7.92	8.02	14.00	14.96	8.16	5.92	−7.03	−7.21	5.401	5.489	5.269	5.330	5.351	$3/2^+$	0^+
182	109	1440.13	1458.30	7.91	8.01	13.89	15.43	5.72	6.15	−6.97	−7.44	5.414	5.504	5.276	5.336		$3/2^+$	$5/2^-$
183	110	1448.15	1465.24	7.91	8.01	13.74	15.90	8.01	6.38	−6.91	−7.68	5.425	5.518	5.282	5.342		$3/2^+$	0^+
184	111	1453.77	1470.85	7.90	7.99	13.63	16.30	5.62	6.58	−6.88	−7.88	5.437	5.534	5.287	5.347		$3/2^+$	$3/2^-$
185	112	1461.66	1477.48	7.90	7.99	13.51	16.82	7.89	6.84	−6.79	−8.14	5.449	5.547	5.295	5.355		$3/2^+$	0^+
186	113	1467.25	1482.76	7.89	7.97	13.48	17.24	5.59	7.04	−6.76	−8.35	5.461	5.562	5.300	5.360		$3/2^+$	$3/2^-$
187	114	1474.97	1489.13	7.89	7.96	13.31	17.72	7.72	7.29	−6.69	−8.60	5.472	5.575	5.307	5.367		$3/2^+$	0^+
188	115	1480.54	1493.91	7.88	7.95	13.29	18.17	5.57	7.50	−6.66	−8.82	5.484	5.590	5.313	5.373		$3/2^+$	$3/2^-$
189	116	1488.10		7.87		13.13	18.62	7.56	7.73	−6.59	−9.05	5.495	5.603	5.319	5.379		$3/2^+$	0^+
190	117	1493.65		7.86		13.11	18.99	5.55	7.96	−6.56	−9.28	5.507	5.617	5.326	5.386		$3/2^+$	$3/2^-$
191	118	1501.07		7.86		12.96	19.51	7.42	8.17	−6.49	−9.49	5.518	5.630	5.331	5.391		$3/2^+$	0^+
192	119	1506.69		7.85		13.04	19.99	5.62	8.40	−6.49	−9.71	5.530	5.644	5.337	5.397		$3/2^+$	$1/2^-$
193	120	1513.89		7.84		12.82	20.39	7.20	8.61	−6.40	−9.92	5.540	5.657	5.343	5.402		$3/2^+$	0^+
194	121	1519.48		7.83		12.79	20.85	5.59	8.82	−6.40	−10.15	5.552	5.671	5.348	5.408		$3/2^+$	$1/2^-$
195	122	1526.54		7.83		12.65	21.24	7.06	9.02	−6.31	−10.35	5.562	5.683	5.354	5.413		$3/2^+$	0^+
196	123	1532.18		7.82		12.70	21.74	5.64	9.25	−6.32	−10.59	5.573	5.696	5.360	5.419		$3/2^+$	$1/2^-$
197	124	1539.06		7.81		12.52	22.09	6.88	9.44	−6.22	−10.77	5.584	5.709	5.364	5.424		$3/2^+$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
198	125	1544.78		7.80		12.60	22.63	5.72	9.67	−4.60	−11.03	5.594	5.721	5.371	5.430		$3/2^+$	$1/2^-$
199	126	1551.45		7.80		12.38	22.91	6.66	9.84	−4.21	−11.17	5.605	5.735	5.374	5.433		$3/2^+$	0^+
200	127	1552.76		7.76		7.98	23.19	1.32	9.99	−4.54	−11.31	5.621	5.755	5.380	5.439		$3/2^+$	$9/2^+$
201	128	1555.75		7.74		4.31	23.58	2.99	10.18	−2.21	−11.51	5.637	5.772	5.393	5.452		$3/2^+$	0^+
202	129	1557.02		7.71		4.26	23.86	1.27	10.33	−2.19	−11.65	5.652	5.791	5.399	5.458		$3/2^+$	$9/2^+$
203	130	1560.02		7.68		4.27	24.24	3.00	10.52	−2.20	−11.85	5.668	5.808	5.411	5.470		$3/2^+$	0^+
204	131	1561.25		7.65		4.23	24.54	1.23	10.67	−2.18	−12.00	5.684	5.826	5.418	5.477		$3/2^+$	$9/2^+$
205	132	1564.27		7.63		4.25	24.91	3.02	10.85	−2.20	−12.19	5.699	5.843	5.430	5.489		$3/2^+$	0^+
206	133	1565.47		7.60		4.22	25.21	1.20	11.01	−2.17	−12.34	5.715	5.861	5.438	5.496		$3/2^+$	$9/2^+$
207	134	1568.51		7.58		4.23	25.57	3.04	11.19	−2.19	−12.53	5.730	5.877	5.449	5.507		$3/2^+$	0^+
208	135	1569.67		7.55		4.20	25.89	1.17	11.34	−2.17	−12.69	5.745	5.895	5.457	5.516		$3/2^+$	$9/2^+$
209	136	1572.73		7.53		4.22	26.24	3.06	11.51	−2.19	−12.87	5.760	5.911	5.468	5.526		$3/2^+$	0^+
210	137	1573.87		7.49		4.19	26.56	1.14	11.68	−2.17	−13.03	5.776	5.929	5.478	5.536		$3/2^+$	$9/2^+$
211	138	1576.95		7.47		4.22	26.89	3.08	11.84	−2.18	−13.20	5.791	5.945	5.487	5.545		$3/2^+$	0^+
212	139	1578.06		7.44		4.19	27.24	1.11	12.01	−2.16	−13.37	5.806	5.962	5.498	5.555		$3/2^+$	$9/2^+$
213	140	1581.15		7.42		4.21	27.54	3.10	12.16	−2.17	−13.53	5.820	5.978	5.506	5.564		$11/2^-$	0^+
214	141	1582.23		7.39		4.17	27.90	1.07	12.34	−2.14	−13.70	5.836	5.995	5.517	5.575		$3/2^+$	$9/2^+$
215	142	1585.35		7.37		4.19	28.19	3.12	12.48	−2.16	−13.86	5.850	6.010	5.524	5.581		$11/2^-$	0^+
216	143	1586.37		7.34		4.14	28.55	1.02	12.65	−2.12	−14.03	5.866	6.027	5.535	5.593		$11/2^-$	$9/2^+$
217	144	1589.52		7.32		4.17	28.82	3.15	12.80	−2.14	−14.18	5.879	6.042	5.542	5.599		$11/2^-$	0^+
218	145	1590.45		7.30		4.09	29.07	0.93	12.96	−2.07	−14.35	5.895	6.059	5.554	5.611		$11/2^-$	$9/2^+$
219	146	1593.63		7.28		4.11	29.43	3.18	13.10	−2.10	−14.48	5.908	6.075	5.559	5.616		$11/2^-$	0^+
220	147	1594.59		7.25		4.14	29.55	0.96	13.21	−2.13	−14.58	5.925	6.097	5.563	5.620		$11/2^-$	$5/2^+$
221	148	1597.65		7.23		4.02	30.00	3.06	13.39	−2.04	−14.77	5.936	6.107	5.574	5.631		$11/2^-$	0^+
222	149	1598.75		7.20		4.16	30.23	1.10	13.51	−2.06	−14.87	5.953	6.128	5.579	5.636		$11/2^-$	$5/2^+$
223	150	1601.56		7.18		3.91	30.52	2.81	13.65	−1.99	−15.03	5.965	6.140	5.588	5.645		$11/2^-$	0^+
224	151	1602.64		7.15		3.89	30.74	1.08	13.77	−1.98	−15.13	5.981	6.161	5.593	5.650		$11/2^-$	$5/2^+$
225	152	1605.35		7.13		3.79	31.00	2.71	13.90	−1.93	−15.27	5.994	6.174	5.600	5.657		$11/2^-$	0^+
226	153	1606.41		7.11		3.77	31.21	1.06	14.00	−1.92	−15.37	6.010	6.194	5.605	5.662		$11/2^-$	$5/2^+$
227	154	1609.05		7.09		3.70	31.45	2.64	14.13	−1.89	−15.50	6.022	6.207	5.612	5.668		$11/2^-$	0^+
228	155	1610.08		7.06		3.67	31.65	1.03	14.23	−1.87	−15.61	6.038	6.227	5.617	5.673		$11/2^-$	$5/2^+$
229	156	1612.68		7.04		3.63	31.88	2.60	14.35	−1.86	−15.73	6.051	6.241	5.622	5.679		$11/2^-$	0^+
230	157	1613.67		7.02		3.59	32.03	0.99	14.43	−1.84	−15.83	6.067	6.260	5.628	5.684		$11/2^-$	$5/2^+$
231	158	1616.25		7.00		3.57	32.30	2.58	14.57	−1.83	−15.95	6.079	6.274	5.633	5.689		$11/2^-$	0^+
232	159	1617.27		6.97		3.59	32.43	1.01	14.63	−1.85	−16.01	6.097	6.298	5.635	5.691		$11/2^-$	$1/2^+$
233	160	1619.78		6.95		3.53	32.72	2.52	14.78	−1.81	−16.16	6.107	6.307	5.643	5.699		$11/2^-$	0^+
234	161	1620.83		6.93		3.56	32.85	1.05	14.85	−1.82	−16.24	6.124	6.330	5.645	5.702		$11/2^-$	$1/2^+$
235	162	1623.27		6.91		3.49	33.13	2.44	14.99	−1.78	−16.38	6.135	6.340	5.653	5.709		$11/2^-$	0^+
236	163	1624.34		6.88		3.51	33.26	1.07	15.05	−1.78	−16.46	6.151	6.361	5.656	5.713		$11/2^-$	$1/2^+$
237	164	1626.71		6.86		3.44	33.55	2.37	15.21	−1.76	−16.60	6.162	6.371	5.663	5.719		$11/2^-$	0^+
238	165	1627.82		6.84		3.49	33.77	1.11	15.33	−1.75	−16.69	6.178	6.391	5.668	5.724		$11/2^-$	$1/2^+$
239	166	1630.10		6.82		3.39	33.98	2.28	15.43	−1.73	−16.82	6.189	6.402	5.674	5.730		$11/2^-$	0^+
240	167	1631.17		6.80		3.34	34.23	1.07	15.56	−1.70	−16.93	6.204	6.419	5.680	5.736		$11/2^-$	$1/2^+$
241	168	1633.44		6.78		3.33	34.44	2.27	15.67	−1.69	−17.05	6.215	6.432	5.685	5.741		$11/2^-$	0^+
242	169	1634.44		6.75		3.27	34.76	1.00	15.82	−1.65	−17.19	6.229	6.447	5.693	5.749		$11/2^-$	$1/2^+$
243	170	1636.70		6.74		3.26	34.95	2.26	15.92	−1.65	−17.30	6.241	6.460	5.697	5.753		$11/2^-$	0^+
244	171	1637.61		6.71		3.17	35.35	0.91	16.11	−1.59	−17.48	6.253	6.472	5.708	5.764		$11/2^-$	$1/2^+$
245	172	1639.87		6.69		3.18	35.52	2.26	16.20	−1.60	−17.57	6.265	6.486	5.711	5.767		$11/2^-$	0^+
246	173	1640.68		6.67		3.07	35.96	0.81	16.42	−1.54	−17.78	6.276	6.495	5.724	5.780		$11/2^-$	$1/2^+$
247	174	1642.96		6.65		3.09	36.14	2.28	16.49	−1.55	−17.87	6.289	6.510	5.727	5.782		$11/2^-$	0^+
248	175	1643.65		6.63		2.97	36.47	0.69	16.68	−1.48	−18.10	6.299	6.517	5.742	5.797		$11/2^-$	$1/2^+$
249	176	1645.96		6.61		3.00	36.78	2.31	16.81	−1.50	−18.17	6.312	6.533	5.743	5.799		$11/2^-$	0^+
250	177	1646.62		6.59		2.96	37.08	0.66	16.95	−1.49	−18.31	6.324	6.545	5.751	5.806		$11/2^-$	$15/2^-$
251	178	1648.89		6.57		2.93	37.43	2.27	17.12	−1.45	−18.49	6.334	6.555	5.761	5.816		$11/2^-$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
252	179	1649.55		6.55		2.93	37.73	0.66	17.27	−1.44	−18.64	6.346	6.567	5.769	5.824		$11/2^-$	$15/2^-$
253	180	1651.76		6.53		2.87	38.08	2.21	17.44	−1.41	−18.81	6.356	6.576	5.779	5.834		$11/2^-$	0^+
254	181	1652.42		6.51		2.87	38.39	0.66	17.59	−1.40	−18.96	6.368	6.587	5.787	5.842		$11/2^-$	$15/2^-$
255	182	1654.58		6.49		2.82	38.73	2.16	17.76	−1.38	−19.13	6.378	6.597	5.798	5.853		$11/2^-$	0^+
256	183	1655.25		6.47		2.83	39.04	0.67	17.91	−1.86	−19.28	6.389	6.608	5.806	5.861		$11/2^-$	$15/2^-$
257	184	1657.37		6.45		2.79	39.37	2.11	18.08	−2.13	−19.45	6.400	6.617	5.817	5.872		$11/2^-$	0^+
σ		14.12													0.021			
$Z = 74$ (W)																		
156	82	1219.84		7.82			0.08		1.16	−12.31	0.21	5.068	5.058	5.078	5.140		0^+	0^+
157	83	1228.65		7.83			0.74	8.81	1.49	−12.67	−0.11	5.084	5.079	5.089	5.151		0^+	$9/2^-$
158	84	1239.52		7.85		19.68	1.34	10.86	1.80	−9.81	−0.41	5.098	5.098	5.098	5.160		0^+	0^+
159	85	1248.13		7.85		19.47	1.99	8.61	2.13	−9.70	−0.73	5.113	5.118	5.109	5.171		0^+	$9/2^-$
160	86	1258.80	1262.89	7.87	7.89	19.28	2.58	10.67	2.43	−9.64	−1.03	5.128	5.136	5.118	5.180		0^+	0^+
161	87	1267.22		7.87		19.09	3.22	8.41	2.76	−9.52	−1.34	5.143	5.155	5.129	5.191		0^+	$9/2^-$
162	88	1277.72	1283.66	7.89	7.92	18.92	3.80	10.51	3.05	−9.46	−1.63	5.157	5.173	5.137	5.199		0^+	0^+
163	89	1285.92	1292.64	7.89	7.93	18.70	4.43	8.20	3.38	−9.32	−1.94	5.172	5.191	5.148	5.210		0^+	$9/2^-$
164	90	1296.29	1304.04	7.90	7.95	18.57	5.00	10.37	3.67	−9.27	−2.23	5.185	5.208	5.157	5.218		0^+	0^+
165	91	1304.19	1312.74	7.90	7.96	18.27	5.61	7.90	3.98	−9.08	−2.52	5.199	5.226	5.166	5.228		0^+	$9/2^-$
166	92	1314.47	1323.83	7.92	7.97	18.18	6.17	10.28	4.26	−9.06	−2.81	5.213	5.243	5.175	5.236		0^+	0^+
167	93	1322.19	1332.11	7.92	7.98	17.99	6.72	7.72	4.54	−9.00	−3.08	5.226	5.260	5.183	5.244		0^+	$7/2^-$
168	94	1332.19	1342.98	7.93	7.99	17.72	7.28	10.00	4.82	−8.83	−3.36	5.239	5.276	5.191	5.252		0^+	0^+
169	95	1339.78	1351.08	7.93	7.99	17.59	7.82	7.59	5.09	−8.73	−3.63	5.252	5.292	5.199	5.260		0^+	$7/2^-$
170	96	1349.44	1361.52	7.94	8.01	17.25	8.33	9.66	5.34	−8.60	−3.89	5.263	5.308	5.205	5.266		0^+	0^+
171	97	1356.81	1369.39	7.93	8.01	17.03	8.86	7.37	5.60	−8.45	−4.15	5.276	5.324	5.212	5.273		0^+	$7/2^-$
172	98	1366.23	1379.47	7.94	8.02	16.79	9.35	9.42	5.85	−8.36	−4.40	5.287	5.338	5.217	5.278		0^+	0^+
173	99	1373.26	1387.17	7.94	8.02	16.44	9.87	7.03	6.11	−8.13	−4.66	5.299	5.354	5.224	5.285		0^+	$7/2^-$
174	100	1382.52	1396.74	7.95	8.03	16.29	10.35	9.27	6.35	−8.10	−4.90	5.310	5.369	5.230	5.290		0^+	0^+
175	101	1389.02	1404.22	7.94	8.02	15.76	10.88	6.49	6.62	−7.81	−5.17	5.323	5.385	5.237	5.298		0^+	$7/2^-$
176	102	1398.25	1413.30	7.94	8.03	15.73	11.35	9.23	6.86	−7.82	−5.40	5.334	5.399	5.242	5.303		0^+	0^+
177	103	1404.67	1420.43	7.94	8.03	15.65	11.84	6.42	7.10	−7.77	−5.63	5.347	5.416	5.249	5.310		0^+	$5/2^-$
178	104	1413.46	1429.21	7.94	8.03	15.21	12.33	8.79	7.36	−7.60	−5.90	5.358	5.429	5.255	5.316		0^+	0^+
179	105	1419.65	1436.17	7.93	8.02	14.98	12.80	6.19	7.60	−7.53	−6.13	5.371	5.446	5.262	5.323		0^+	$5/2^-$
180	106	1428.26	1444.58	7.93	8.03	14.80	13.30	8.61	7.85	−7.42	−6.38	5.382	5.459	5.268	5.329	5.349	0^+	0^+
181	107	1434.34	1451.27	7.92	8.02	14.69	13.77	6.08	8.09	−7.35	−6.62	5.394	5.475	5.275	5.335		0^+	$5/2^-$
182	108	1442.74	1459.33	7.93	8.02	14.48	14.25	8.40	8.33	−7.27	−6.86	5.405	5.489	5.282	5.342	5.356	0^+	0^+
183	109	1448.71	1465.52	7.92	8.01	14.37	14.72	5.96	8.57	−7.20	−7.10	5.418	5.504	5.288	5.348	5.361	0^+	$5/2^-$
184	110	1456.95	1472.94	7.92	8.01	14.21	15.19	8.25	8.81	−7.14	−7.33	5.429	5.518	5.294	5.354	5.366	0^+	0^+
185	111	1462.81	1478.69	7.91	7.99	14.10	15.62	5.85	9.04	−7.07	−7.57	5.441	5.532	5.301	5.361		0^+	$5/2^-$
186	112	1470.93	1485.88	7.91	7.99	13.98	16.11	8.13	9.27	−7.02	−7.80	5.452	5.546	5.307	5.367	5.374	0^+	0^+
187	113	1476.73	1491.35	7.90	7.98	13.92	16.52	5.80	9.48	−7.00	−8.01	5.464	5.561	5.312	5.372		0^+	$3/2^-$
188	114	1484.71	1498.18	7.90	7.97	13.77	17.02	7.97	9.73	−6.91	−8.25	5.475	5.574	5.319	5.379		0^+	0^+
189	115	1490.49	1503.20	7.89	7.95	13.76	17.45	5.78	9.95	−6.89	−8.47	5.487	5.589	5.325	5.385		0^+	$3/2^-$
190	116	1498.29	1510.04	7.89	7.95	13.58	17.92	7.80	10.18	−6.81	−8.70	5.498	5.601	5.332	5.391		0^+	0^+
191	117	1504.06	1514.90	7.87	7.93	13.57	18.37	5.77	10.41	−6.78	−8.93	5.510	5.616	5.338	5.397		0^+	$3/2^-$
192	118	1511.70		7.87		13.41	18.80	7.64	10.63	−6.71	−9.14	5.520	5.628	5.343	5.403		0^+	0^+
193	119	1517.46		7.86		13.40	19.17	5.76	10.77	−6.68	−9.38	5.532	5.642	5.350	5.409		0^+	$3/2^-$
194	120	1524.94		7.86		13.24	19.66	7.48	11.05	−6.61	−9.57	5.542	5.655	5.355	5.414		0^+	0^+
195	121	1530.78		7.85		13.32	20.13	5.84	11.30	−6.62	−9.79	5.553	5.668	5.360	5.420		0^+	$1/2^-$
196	122	1538.03		7.85		13.09	20.51	7.24	11.49	−6.52	−9.99	5.564	5.681	5.365	5.425		0^+	0^+
197	123	1543.90		7.84		13.12	20.97	5.88	11.72	−6.54	−10.22	5.575	5.694	5.371	5.430		0^+	$1/2^-$
198	124	1550.96		7.83		12.93	21.33	7.05	11.89	−6.42	−10.40	5.585	5.707	5.376	5.435		0^+	0^+
199	125	1556.94		7.82		13.03	21.83	5.98	12.15	−4.78	−10.64	5.595	5.718	5.382	5.441		0^+	$1/2^-$
200	126	1563.72		7.82		12.76	22.11	6.78	12.27	−4.42	−10.78	5.607	5.733	5.385	5.444		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
201	127	1565.18		7.79		8.24	22.41	1.46	12.42	−4.77	−10.93	5.622	5.752	5.390	5.449		0^+	$9/2^+$
202	128	1568.38		7.76		4.66	22.81	3.20	12.63	−2.38	−11.14	5.638	5.769	5.404	5.463		0^+	0^+
203	129	1569.80		7.73		4.62	23.11	1.42	12.78	−2.36	−11.29	5.653	5.788	5.410	5.469		0^+	$9/2^+$
204	130	1573.01		7.71		4.63	23.50	3.21	12.98	−2.38	−11.49	5.669	5.805	5.423	5.481		0^+	0^+
205	131	1574.40		7.68		4.60	23.81	1.39	13.14	−2.36	−11.65	5.684	5.823	5.429	5.488		0^+	$9/2^+$
206	132	1577.61		7.66		4.60	24.19	3.21	13.34	−2.37	−11.84	5.700	5.840	5.442	5.500		0^+	0^+
207	133	1578.97		7.63		4.58	24.51	1.36	13.50	−2.35	−12.00	5.715	5.858	5.449	5.508		0^+	$9/2^+$
208	134	1582.20		7.61		4.59	24.88	3.23	13.69	−2.36	−12.19	5.730	5.874	5.461	5.519		0^+	0^+
209	135	1583.54		7.58		4.56	25.21	1.33	13.86	−2.35	−12.36	5.746	5.892	5.469	5.528		0^+	$9/2^+$
210	136	1586.77		7.56		4.58	25.56	3.24	14.05	−2.36	−12.54	5.761	5.908	5.480	5.538		0^+	0^+
211	137	1588.09		7.53		4.55	25.90	1.32	14.22	−2.34	−12.71	5.776	5.925	5.489	5.547		0^+	$9/2^+$
212	138	1591.34		7.51		4.57	26.24	3.25	14.40	−2.35	−12.88	5.790	5.941	5.499	5.557		0^+	0^+
213	139	1592.63		7.48		4.54	26.58	1.29	14.57	−2.33	−13.05	5.806	5.958	5.510	5.567		0^+	$9/2^+$
214	140	1595.90		7.46		4.55	26.90	3.27	14.74	−2.34	−13.21	5.820	5.973	5.518	5.576		0^+	0^+
215	141	1597.15		7.43		4.52	27.26	1.25	14.92	−2.31	−13.39	5.836	5.990	5.529	5.587		0^+	$9/2^+$
216	142	1600.43		7.41		4.53	27.56	3.28	15.08	−2.32	−13.54	5.849	6.005	5.537	5.595		0^+	0^+
217	143	1601.63		7.38		4.48	27.92	1.20	15.26	−2.28	−13.72	5.865	6.022	5.549	5.606		0^+	$9/2^+$
218	144	1604.92		7.36		4.49	28.19	3.29	15.40	−2.29	−13.86	5.878	6.037	5.555	5.612		0^+	0^+
219	145	1606.03		7.33		4.40	28.54	1.11	15.58	−2.22	−14.04	5.894	6.054	5.567	5.624		0^+	$9/2^+$
220	146	1609.33		7.32		4.42	28.80	3.30	15.70	−2.24	−14.17	5.906	6.069	5.572	5.629		0^+	0^+
221	147	1610.37		7.29		4.34	28.99	1.04	15.78	−2.27	−14.27	5.923	6.091	5.576	5.633		0^+	$5/2^+$
222	148	1613.64		7.27		4.31	29.38	3.27	15.99	−2.18	−14.46	5.935	6.101	5.588	5.645		0^+	0^+
223	149	1614.81		7.24		4.43	29.56	1.16	16.05	−2.19	−14.56	5.951	6.122	5.592	5.649		0^+	$5/2^+$
224	150	1617.81		7.22		4.17	29.90	3.00	16.25	−2.11	−14.73	5.963	6.133	5.602	5.658		0^+	0^+
225	151	1619.00		7.20		4.20	30.12	1.19	16.36	−2.11	−14.83	5.979	6.154	5.606	5.662		0^+	$5/2^+$
226	152	1621.84		7.18		4.03	30.38	2.84	16.49	−2.05	−14.97	5.991	6.166	5.614	5.671		0^+	0^+
227	153	1623.00		7.15		4.00	30.59	1.16	16.59	−2.04	−15.07	6.007	6.186	5.618	5.675		0^+	$5/2^+$
228	154	1625.77		7.13		3.93	30.84	2.76	16.71	−2.01	−15.21	6.019	6.200	5.625	5.682		0^+	0^+
229	155	1626.90		7.10		3.90	31.04	1.13	16.81	−1.99	−15.31	6.035	6.219	5.630	5.686		0^+	$5/2^+$
230	156	1629.61		7.09		3.85	31.28	2.72	16.93	−1.97	−15.44	6.047	6.232	5.636	5.693		0^+	0^+
231	157	1630.71		7.06		3.81	31.47	1.10	17.04	−1.95	−15.54	6.063	6.252	5.641	5.698		0^+	$5/2^+$
232	158	1633.40		7.04		3.79	31.71	2.69	17.15	−1.94	−15.66	6.075	6.265	5.647	5.703		0^+	0^+
233	159	1634.48		7.01		3.77	31.85	1.08	17.21	−1.96	−15.73	6.093	6.289	5.648	5.705		0^+	$1/2^+$
234	160	1637.14		7.00		3.74	32.14	2.66	17.36	−1.92	−15.89	6.102	6.297	5.657	5.713		0^+	0^+
235	161	1638.26		6.97		3.78	32.28	1.12	17.43	−1.93	−15.96	6.120	6.320	5.659	5.716		0^+	$1/2^+$
236	162	1640.84		6.95		3.70	32.57	2.58	17.58	−1.89	−16.11	6.129	6.329	5.668	5.724		0^+	0^+
237	163	1641.99		6.93		3.73	32.69	1.14	17.65	−1.90	−16.19	6.146	6.350	5.671	5.727		0^+	$1/2^+$
238	164	1644.50		6.91		3.66	33.00	2.52	17.79	−1.87	−16.33	6.156	6.360	5.678	5.734		0^+	0^+
239	165	1645.68		6.89		3.70	33.19	1.18	17.86	−1.86	−16.42	6.172	6.380	5.682	5.738		0^+	$1/2^+$
240	166	1648.12		6.87		3.62	33.45	2.43	18.02	−1.84	−16.56	6.183	6.391	5.689	5.745		0^+	0^+
241	167	1649.30		6.84		3.62	33.69	1.18	18.13	−1.83	−16.67	6.198	6.408	5.694	5.750		0^+	$1/2^+$
242	168	1651.69		6.83		3.57	33.92	2.38	18.25	−1.81	−16.80	6.209	6.420	5.700	5.756		0^+	0^+
243	169	1652.82		6.80		3.52	34.20	1.14	18.38	−1.79	−16.93	6.223	6.435	5.707	5.763		0^+	$1/2^+$
244	170	1655.20		6.78		3.51	34.42	2.37	18.50	−1.78	−17.05	6.234	6.448	5.712	5.768		0^+	0^+
245	171	1656.28		6.76		3.45	34.78	1.08	18.67	−1.74	−17.21	6.247	6.461	5.722	5.777		0^+	$1/2^+$
246	172	1658.65		6.74		3.45	34.97	2.37	18.77	−1.74	−17.32	6.259	6.475	5.726	5.781		0^+	0^+
247	173	1659.65		6.72		3.38	35.39	1.01	18.97	−1.69	−17.51	6.270	6.485	5.737	5.793		0^+	$1/2^+$
248	174	1662.03		6.70		3.38	35.56	2.37	19.07	−1.70	−17.60	6.283	6.500	5.740	5.796		0^+	0^+
249	175	1662.95		6.68		3.30	35.98	0.92	19.30	−1.65	−17.82	6.293	6.508	5.754	5.809		0^+	$1/2^+$
250	176	1665.34		6.66		3.31	36.19	2.39	19.38	−1.66	−17.90	6.306	6.523	5.756	5.811		0^+	0^+
251	177	1666.18		6.64		3.23	36.52	0.84	19.57	−1.61	−18.14	6.316	6.530	5.771	5.827		0^+	$1/2^+$
252	178	1668.59		6.62		3.25	36.83	2.41	19.70	−1.62	−18.21	6.328	6.545	5.772	5.828		0^+	0^+
253	179	1669.40		6.60		3.22	37.13	0.81	19.85	−1.61	−18.35	6.340	6.558	5.780	5.835		0^+	$15/2^-$
254	180	1671.79		6.58		3.20	37.47	2.39	20.03	−1.58	−18.53	6.350	6.567	5.790	5.845		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
255	181	1672.61		6.56		3.20	37.78	0.82	20.19	−1.57	−18.67	6.362	6.579	5.797	5.852		0^+	$15/2^-$
256	182	1674.94		6.54		3.15	38.12	2.34	20.36	−1.54	−18.85	6.372	6.588	5.808	5.863		0^+	0^+
257	183	1675.77		6.52		3.17	38.43	0.83	20.52	−0.40	−18.99	6.384	6.600	5.816	5.871		0^+	$15/2^-$
258	184	1678.06		6.50		3.12	38.78	2.29	20.70	−2.30	−19.17	6.394	6.609	5.826	5.881		0^+	0^+
σ		13.21													0.014			
$Z = 75$ (Re)																		
158	83	1227.32		7.77			0.16		−1.34	−13.17	0.16	5.093	5.082	5.104	5.167		$1/2^+$	$9/2^-$
159	84	1238.47		7.79			0.75		−1.05	−10.11	−0.14	5.107	5.101	5.113	5.175		$1/2^+$	0^+
160	85	1247.38		7.80			1.39	8.92	−0.74	−10.02	−0.40	5.122	5.120	5.124	5.186		$3/2^+$	$9/2^-$
161	86	1258.35	1261.70	7.82	7.84	19.88	1.98	10.97	−0.45	−9.95	−0.70	5.136	5.139	5.132	5.194		$3/2^+$	0^+
162	87	1267.09		7.82		19.71	2.64	8.74	−0.12	−9.82	−1.02	5.151	5.157	5.143	5.205		$3/2^+$	$9/2^-$
163	88	1277.89	1282.96	7.84	7.87	19.54	3.22	10.80	0.17	−9.77	−1.31	5.164	5.175	5.152	5.214		$3/2^+$	0^+
164	89	1286.41	1292.54	7.84	7.88	19.31	3.86	8.52	0.48	−9.62	−1.63	5.179	5.193	5.163	5.224		$3/2^+$	$9/2^-$
165	90	1297.06	1303.74	7.86	7.90	19.17	4.44	10.65	0.77	−9.57	−1.92	5.193	5.211	5.171	5.233		$3/2^+$	0^+
166	91	1305.26	1313.06	7.86	7.91	18.86	5.04	8.20	1.07	−9.37	−2.22	5.207	5.228	5.181	5.242		$3/2^+$	$9/2^-$
167	92	1315.81		7.88		18.76	5.61	10.55	1.35	−9.35	−2.50	5.220	5.245	5.189	5.250		$3/2^+$	0^+
168	93	1323.81	1333.10	7.88	7.94	18.55	6.16	7.99	1.62	−9.28	−2.78	5.233	5.261	5.197	5.258		$3/2^+$	$7/2^-$
169	94	1334.08	1343.79	7.89	7.95	18.27	6.71	10.28	1.89	−9.10	−3.05	5.245	5.277	5.205	5.266		$3/2^+$	0^+
170	95	1341.94	1352.37	7.89	7.96	18.13	7.24	7.86	2.16	−8.99	−3.32	5.258	5.293	5.213	5.274		$3/2^+$	$7/2^-$
171	96	1351.84	1362.77	7.91	7.97	17.76	7.74	9.90	2.40	−8.85	−3.57	5.269	5.308	5.219	5.280		$3/2^+$	0^+
172	97	1359.47	1371.11	7.90	7.97	17.53	8.25	7.63	2.65	−8.69	−3.82	5.281	5.324	5.226	5.286		$3/2^+$	$7/2^-$
173	98	1369.12	1381.22	7.91	7.98	17.27	8.73	9.65	2.89	−8.61	−4.07	5.292	5.339	5.231	5.292		$3/2^+$	0^+
174	99	1376.39	1389.41	7.91	7.99	16.93	9.24	7.28	3.14	−8.38	−4.32	5.304	5.354	5.238	5.299		$3/2^+$	$7/2^-$
175	100	1385.88	1399.09	7.92	7.99	16.77	9.71	9.49	3.36	−8.34	−4.56	5.315	5.369	5.243	5.304		$3/2^+$	0^+
176	101	1392.65	1406.94	7.91	7.99	16.26	10.25	6.77	3.63	−8.07	−4.83	5.328	5.384	5.251	5.311		$3/2^+$	$7/2^-$
177	102	1402.09	1416.22	7.92	8.00	16.21	10.70	9.44	3.84	−8.07	−5.05	5.338	5.398	5.256	5.316		$3/2^+$	0^+
178	103	1408.62	1423.67	7.91	8.00	15.97	11.06	6.53	3.96	−8.02	−5.28	5.352	5.416	5.262	5.322		$11/2^-$	$5/2^-$
179	104	1417.79	1432.67	7.92	8.00	15.70	11.69	9.17	4.34	−7.85	−5.55	5.362	5.428	5.268	5.329		$3/2^+$	0^+
180	105	1424.20	1440.00	7.91	8.00	15.57	12.15	6.41	4.55	−7.79	−5.78	5.375	5.445	5.275	5.336		$3/2^+$	$5/2^-$
181	106	1433.09	1448.76	7.92	8.00	15.29	12.67	8.89	4.82	−7.66	−6.05	5.385	5.458	5.281	5.342		$3/2^+$	0^+
182	107	1439.39	1455.75	7.91	8.00	15.19	13.14	6.30	5.05	−7.60	−6.28	5.398	5.473	5.288	5.348		$3/2^+$	$5/2^-$
183	108	1448.05	1464.19	7.91	8.00	14.96	13.64	8.66	5.31	−7.51	−6.53	5.409	5.487	5.294	5.354		$3/2^+$	0^+
184	109	1454.25	1470.67	7.90	7.99	14.86	14.11	6.20	5.54	−7.45	−6.77	5.421	5.502	5.301	5.361		$3/2^+$	$5/2^-$
185	110	1462.74	1478.34	7.91	7.99	14.69	14.59	8.49	5.78	−7.38	−7.01	5.432	5.515	5.307	5.367	5.360	$3/2^+$	0^+
186	111	1468.83	1484.52	7.90	7.98	14.58	15.07	6.09	6.03	−7.31	−7.25	5.444	5.530	5.313	5.373		$3/2^+$	$5/2^-$
187	112	1477.19	1491.88	7.90	7.98	14.45	15.53	8.35	6.25	−7.26	−7.48	5.455	5.544	5.320	5.380	5.370	$3/2^+$	0^+
188	113	1483.19	1497.75	7.89	7.97	14.35	15.94	6.00	6.46	−7.24	−7.68	5.467	5.559	5.325	5.384		$3/2^+$	$3/2^-$
189	114	1491.42	1504.78	7.89	7.96	14.24	16.45	8.24	6.72	−7.14	−7.94	5.478	5.571	5.332	5.392		$3/2^+$	0^+
190	115	1497.42	1510.51	7.88	7.95	14.23	16.88	5.99	6.93	−7.12	−8.16	5.489	5.586	5.337	5.397		$3/2^+$	$3/2^-$
191	116	1505.46	1517.30	7.88	7.94	14.04	17.36	8.05	7.18	−7.04	−8.40	5.500	5.599	5.344	5.404		$3/2^+$	0^+
192	117	1511.46	1522.61	7.87	7.93	14.04	17.81	5.99	7.40	−7.02	−8.62	5.512	5.613	5.350	5.409		$3/2^+$	$3/2^-$
193	118	1519.32	1529.32	7.87	7.92	13.86	18.25	7.86	7.62	−6.93	−8.84	5.522	5.625	5.356	5.415		$3/2^+$	0^+
194	119	1525.31		7.86		13.86	18.62	6.00	7.86	−6.91	−9.07	5.534	5.639	5.362	5.421		$3/2^+$	$3/2^-$
195	120	1533.00		7.86		13.68	19.11	7.68	8.06	−6.83	−9.27	5.544	5.652	5.367	5.426		$3/2^+$	0^+
196	121	1539.10		7.85		13.78	19.62	6.10	8.31	−6.84	−9.49	5.555	5.665	5.372	5.432		$3/2^+$	$1/2^-$
197	122	1546.51		7.85		13.51	19.97	7.41	8.48	−6.73	−9.69	5.565	5.678	5.377	5.437		$3/2^+$	0^+
198	123	1552.60		7.84		13.51	20.42	6.10	8.70	−6.75	−9.91	5.576	5.690	5.383	5.442		$3/2^+$	$1/2^-$
199	124	1559.84		7.84		13.33	20.78	7.24	8.88	−6.62	−10.09	5.586	5.704	5.387	5.446		$3/2^+$	0^+
200	125	1566.05		7.83		13.44	21.26	6.21	9.11	−5.02	−10.33	5.596	5.715	5.392	5.451		$3/2^+$	$1/2^-$
201	126	1572.98		7.83		13.14	21.53	6.94	9.26	−4.53	−10.46	5.607	5.730	5.396	5.455		$3/2^+$	0^+
202	127	1574.58		7.79		8.54	21.82	1.60	9.40	−4.99	−10.61	5.622	5.749	5.401	5.460		$3/2^+$	$9/2^-$
203	128	1577.98		7.77		5.00	22.23	3.40	9.60	−2.56	−10.82	5.639	5.766	5.415	5.474		$3/2^+$	0^+
204	129	1579.54		7.74		4.96	22.52	1.56	9.74	−2.54	−10.97	5.654	5.784	5.421	5.480		$3/2^+$	$9/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
205	130	1582.95		7.72		4.96	22.92	3.41	9.94	−2.55	−11.18	5.670	5.801	5.435	5.493		$3/2^+$	0^+
206	131	1584.48		7.69		4.94	23.23	1.53	10.08	−2.53	−11.33	5.685	5.819	5.442	5.500		$3/2^+$	$9/2^-$
207	132	1587.89		7.67		4.94	23.62	3.41	10.28	−2.54	−11.53	5.700	5.836	5.454	5.513		$3/2^+$	0^+
208	133	1589.40		7.64		4.92	23.93	1.51	10.42	−2.52	−11.69	5.715	5.853	5.462	5.520		$3/2^+$	$9/2^-$
209	134	1592.81		7.62		4.92	24.30	3.41	10.61	−2.54	−11.88	5.731	5.870	5.474	5.532		$3/2^+$	0^+
210	135	1594.30		7.59		4.90	24.63	1.49	10.76	−2.52	−12.04	5.746	5.887	5.483	5.541		$3/2^+$	$9/2^-$
211	136	1597.71		7.57		4.91	24.98	3.42	10.94	−2.53	−12.22	5.761	5.903	5.494	5.552		$3/2^+$	0^+
212	137	1599.19		7.54		4.89	25.32	1.47	11.10	−2.51	−12.39	5.776	5.920	5.503	5.561		$3/2^+$	$9/2^-$
213	138	1602.61		7.52		4.89	25.66	3.42	11.26	−2.52	−12.57	5.790	5.936	5.513	5.571		$3/2^+$	0^+
214	139	1604.06		7.50		4.87	26.01	1.46	11.43	−2.50	−12.74	5.806	5.953	5.523	5.581		$3/2^+$	$9/2^-$
215	140	1607.48		7.48		4.88	26.33	3.42	11.59	−2.50	−12.90	5.820	5.968	5.532	5.590		$3/2^+$	0^+
216	141	1608.91		7.45		4.85	26.69	1.43	11.76	−2.48	−13.08	5.835	5.985	5.543	5.601		$3/2^+$	$9/2^-$
217	142	1612.33		7.43		4.85	26.98	3.42	11.90	−2.49	−13.22	5.848	6.000	5.548	5.605		$11/2^-$	0^+
218	143	1613.71		7.40		4.80	27.35	1.38	12.08	−2.44	−13.40	5.863	6.017	5.559	5.617		$11/2^-$	$9/2^-$
219	144	1617.15		7.38		4.82	27.63	3.44	12.23	−2.45	−13.54	5.876	6.032	5.566	5.623		$11/2^-$	0^+
220	145	1618.44		7.36		4.73	27.99	1.29	12.41	−2.38	−13.72	5.892	6.048	5.578	5.635		$11/2^-$	$9/2^-$
221	146	1621.88		7.34		4.73	28.25	3.44	12.55	−2.40	−13.86	5.904	6.063	5.583	5.640		$11/2^-$	0^+
222	147	1623.02		7.31		4.58	28.43	1.14	12.65	−2.29	−14.02	5.920	6.080	5.594	5.651		$11/2^-$	$9/2^-$
223	148	1626.48		7.29		4.60	28.83	3.46	12.84	−2.32	−14.15	5.932	6.095	5.599	5.655		$11/2^-$	0^+
224	149	1627.71		7.27		4.69	28.96	1.23	12.90	−2.34	−14.25	5.948	6.115	5.602	5.659		$11/2^-$	$9/2^-$
225	150	1630.92		7.25		4.44	29.36	3.21	13.11	−2.24	−14.42	5.960	6.127	5.612	5.669		$11/2^-$	0^+
226	151	1632.23		7.22		4.52	29.59	1.31	13.23	−2.24	−14.52	5.976	6.147	5.616	5.673		$11/2^-$	$9/2^-$
227	152	1635.20		7.20		4.28	29.85	2.97	13.36	−2.18	−14.67	5.988	6.159	5.625	5.681		$11/2^-$	0^+
228	153	1636.47		7.18		4.24	30.06	1.27	13.47	−2.16	−14.77	6.004	6.179	5.629	5.686		$11/2^-$	$9/2^-$
229	154	1639.37		7.16		4.17	30.32	2.90	13.60	−2.13	−14.91	6.016	6.192	5.636	5.693		$11/2^-$	0^+
230	155	1640.61		7.13		4.13	30.52	1.24	13.71	−2.11	−15.02	6.031	6.211	5.641	5.698		$11/2^-$	$9/2^-$
231	156	1643.45		7.11		4.08	30.77	2.84	13.84	−2.09	−15.15	6.043	6.224	5.648	5.704		$11/2^-$	0^+
232	157	1644.65		7.09		4.05	30.98	1.20	13.94	−2.07	−15.25	6.058	6.243	5.653	5.709		$11/2^-$	$9/2^-$
233	158	1647.47		7.07		4.02	31.21	2.81	14.07	−2.06	−15.38	6.070	6.256	5.659	5.715		$11/2^-$	0^+
234	159	1648.63		7.05		3.98	31.37	1.17	14.15	−2.04	−15.49	6.086	6.275	5.664	5.720		$11/2^-$	$9/2^-$
235	160	1651.44		7.03		3.97	31.66	2.80	14.29	−2.04	−15.61	6.097	6.288	5.669	5.725		$11/2^-$	0^+
236	161	1652.63		7.00		4.00	31.80	1.19	14.37	−2.05	−15.75	6.114	6.310	5.669	5.725		$1/2^+$	$1/2^+$
237	162	1655.37		6.98		3.93	32.10	2.74	14.52	−2.01	−15.84	6.124	6.319	5.680	5.736		$11/2^-$	0^+
238	163	1656.59		6.96		3.96	32.25	1.23	14.61	−2.02	−15.99	6.140	6.340	5.680	5.736		$1/2^+$	$1/2^+$
239	164	1659.26		6.94		3.89	32.55	2.66	14.75	−1.99	−16.07	6.151	6.350	5.691	5.747		$11/2^-$	0^+
240	165	1660.54		6.92		3.95	32.72	1.29	14.86	−1.99	−16.23	6.165	6.369	5.692	5.748		$1/2^+$	$1/2^+$
241	166	1663.11		6.90		3.85	33.00	2.57	14.99	−1.97	−16.31	6.177	6.380	5.702	5.758		$11/2^-$	0^+
242	167	1664.41		6.88		3.87	33.24	1.30	15.10	−1.96	−16.41	6.192	6.398	5.707	5.763		$11/2^-$	$1/2^+$
243	168	1666.92		6.86		3.81	33.48	2.51	15.23	−1.94	−16.55	6.202	6.409	5.713	5.769		$11/2^-$	0^+
244	169	1668.19		6.84		3.78	33.75	1.27	15.37	−1.92	−16.67	6.217	6.425	5.720	5.775		$11/2^-$	$1/2^+$
245	170	1670.68		6.82		3.76	33.98	2.49	15.48	−1.91	−16.80	6.227	6.436	5.725	5.781		$11/2^-$	0^+
246	171	1671.92		6.80		3.73	34.30	1.24	15.64	−1.89	−16.94	6.241	6.450	5.733	5.789		$11/2^-$	$1/2^+$
247	172	1674.39		6.78		3.71	34.52	2.48	15.74	−1.88	−17.06	6.252	6.463	5.738	5.794		$11/2^-$	0^+
248	173	1675.58		6.76		3.67	34.90	1.19	15.93	−1.84	−17.23	6.264	6.475	5.748	5.804		$11/2^-$	$1/2^+$
249	174	1678.05		6.74		3.66	35.09	2.47	16.02	−1.84	−17.34	6.276	6.489	5.752	5.807		$11/2^-$	0^+
250	175	1679.18		6.72		3.60	35.53	1.13	16.23	−1.80	−17.53	6.287	6.498	5.764	5.819		$11/2^-$	$1/2^+$
251	176	1681.65		6.70		3.60	35.69	2.47	16.31	−1.81	−17.63	6.299	6.513	5.767	5.822		$11/2^-$	0^+
252	177	1682.72		6.68		3.54	36.10	1.07	16.54	−1.76	−17.84	6.309	6.520	5.781	5.836		$11/2^-$	$1/2^+$
253	178	1685.20		6.66		3.55	36.31	2.48	16.61	−1.77	−17.93	6.322	6.536	5.782	5.837		$11/2^-$	0^+
254	179	1686.21		6.64		3.49	36.66	1.00	16.80	−1.73	−18.16	6.331	6.542	5.798	5.853		$11/2^-$	$1/2^+$
255	180	1688.70		6.62		3.50	36.95	2.50	16.91	−1.73	−18.23	6.344	6.558	5.799	5.854		$11/2^-$	0^+
256	181	1689.66		6.60		3.45	37.24	0.96	17.05	−1.72	−18.37	6.355	6.570	5.806	5.861		$11/2^-$	$15/2^-$
257	182	1692.16		6.58		3.46	37.58	2.50	17.22	−1.70	−18.54	6.366	6.579	5.816	5.871		$11/2^-$	0^+
258	183	1693.13		6.56		3.47	37.88	0.97	17.36	−0.66	−18.68	6.377	6.591	5.823	5.878		$11/2^-$	$15/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
259	184	1695.59		6.55		3.43	38.22	2.46	17.52	−0.12	−18.88	6.388	6.600	5.836	5.891		$11/2^-$	0^+
260	185	1694.53		6.52		1.40	38.24	−1.06	17.53	−0.53	−18.88	6.426	6.650	5.836	5.890		$3/2^+$	$3/2^-$
261	186	1693.86		6.49		−1.73	38.38	−0.67	17.62	0.81	−18.95	6.428	6.650	5.840	5.894		$11/2^-$	0^+
σ		12.88													0.009			
$Z = 76$ (Os)																		
160	84	1239.49		7.75			−0.02		1.03	−10.43	0.28	5.116	5.105	5.128	5.190		0^+	0^+
161	85	1248.75		7.76			0.62		1.36	−10.32	−0.03	5.131	5.124	5.138	5.200		0^+	$9/2^-$
162	86	1260.02		7.78			1.21	11.27	1.66	−10.25	−0.33	5.145	5.143	5.147	5.209		0^+	0^+
163	87	1269.07		7.79		20.32	1.85	9.05	1.97	−10.12	−0.64	5.160	5.161	5.157	5.219		0^+	$9/2^-$
164	88	1280.16	1284.71	7.81	7.83	20.14	2.43	11.09	2.27	−10.06	−0.93	5.173	5.179	5.166	5.228		0^+	0^+
165	89	1288.98		7.81		19.91	3.06	8.82	2.57	−9.91	−1.24	5.188	5.197	5.177	5.238		0^+	$9/2^-$
166	90	1299.93	1305.82	7.83	7.87	19.77	3.63	10.95	2.87	−9.86	−1.52	5.201	5.214	5.185	5.246		0^+	0^+
167	91	1308.42	1314.95	7.83	7.87	19.44	4.23	8.50	3.16	−9.65	−1.82	5.214	5.231	5.194	5.256		0^+	$9/2^-$
168	92	1319.26	1326.51	7.85	7.90	19.34	4.80	10.84	3.45	−9.63	−2.10	5.227	5.248	5.203	5.264		0^+	0^+
169	93	1327.54	1335.32	7.86	7.90	19.11	5.35	8.27	3.73	−9.56	−2.38	5.240	5.264	5.211	5.272		0^+	$7/2^-$
170	94	1338.09	1346.59	7.87	7.92	18.83	5.90	10.55	4.01	−9.37	−2.65	5.252	5.280	5.218	5.279		0^+	0^+
171	95	1346.22	1355.04	7.87	7.92	18.69	6.44	8.13	4.28	−9.26	−2.92	5.265	5.296	5.226	5.286		0^+	$7/2^-$
172	96	1356.39	1366.05	7.89	7.94	18.30	6.95	10.17	4.55	−9.12	−3.18	5.276	5.311	5.231	5.292		0^+	0^+
173	97	1364.29	1374.32	7.89	7.94	18.07	7.48	7.90	4.82	−8.96	−3.44	5.288	5.327	5.238	5.299		0^+	$7/2^-$
174	98	1374.20	1384.95	7.90	7.96	17.81	7.97	9.91	5.09	−8.87	−3.69	5.299	5.341	5.243	5.304		0^+	0^+
175	99	1381.75	1393.13	7.90	7.96	17.46	8.49	7.55	5.36	−8.64	−3.95	5.310	5.356	5.250	5.311		0^+	$7/2^-$
176	100	1391.50	1403.19	7.91	7.97	17.30	8.98	9.75	5.62	−8.60	−4.20	5.321	5.371	5.255	5.316		0^+	0^+
177	101	1398.53	1411.11	7.90	7.97	16.78	9.51	7.03	5.88	−8.32	−4.46	5.333	5.386	5.263	5.323		0^+	$7/2^-$
178	102	1408.23	1420.78	7.91	7.98	16.73	9.98	9.70	6.14	−8.32	−4.70	5.344	5.400	5.267	5.328		0^+	0^+
179	103	1414.98	1428.33	7.90	7.98	16.45	10.31	6.75	6.36	−8.28	−4.93	5.357	5.417	5.274	5.335		0^+	$5/2^-$
180	104	1424.44	1437.74	7.91	7.99	16.20	10.98	9.46	6.65	−8.09	−5.20	5.367	5.429	5.280	5.340		0^+	0^+
181	105	1431.10	1445.00	7.91	7.98	16.12	11.45	6.66	6.90	−8.03	−5.44	5.380	5.446	5.287	5.347		0^+	$5/2^-$
182	106	1440.23	1454.13	7.91	7.99	15.79	11.97	9.12	7.14	−7.91	−5.70	5.390	5.459	5.293	5.353		0^+	0^+
183	107	1446.78	1461.26	7.91	7.99	15.68	12.44	6.55	7.39	−7.84	−5.93	5.402	5.474	5.300	5.360		0^+	$5/2^-$
184	108	1455.68	1469.92	7.91	7.99	15.45	12.93	8.90	7.63	−7.75	−6.18	5.413	5.487	5.306	5.366	5.382	0^+	0^+
185	109	1462.12	1476.55	7.90	7.98	15.34	13.41	6.45	7.87	−7.68	−6.42	5.425	5.502	5.312	5.372		0^+	$5/2^-$
186	110	1470.84	1484.81	7.91	7.98	15.17	13.89	8.72	8.10	−7.61	−6.66	5.436	5.516	5.318	5.378	5.391	0^+	0^+
187	111	1477.18	1491.10	7.90	7.97	15.06	14.37	6.34	8.35	−7.54	−6.90	5.447	5.530	5.325	5.384	5.393	0^+	$5/2^-$
188	112	1485.76	1499.09	7.90	7.97	14.92	14.83	8.58	8.57	−7.48	−7.13	5.459	5.544	5.331	5.391	5.399	0^+	0^+
189	113	1491.99	1505.01	7.89	7.96	14.81	15.26	6.23	8.80	−7.41	−7.38	5.470	5.557	5.337	5.397	5.402	0^+	$5/2^-$
190	114	1500.46	1512.80	7.90	7.96	14.70	15.75	8.47	9.03	−7.37	−7.59	5.481	5.571	5.343	5.403	5.406	0^+	0^+
191	115	1506.65	1518.56	7.89	7.95	14.67	16.17	6.20	9.24	−7.35	−7.80	5.492	5.585	5.348	5.408		0^+	$3/2^-$
192	116	1514.95	1526.12	7.89	7.95	14.49	16.66	8.29	9.48	−7.25	−8.05	5.503	5.598	5.355	5.415	5.413	0^+	0^+
193	117	1521.15	1531.70	7.88	7.94	14.50	17.09	6.20	9.70	−7.24	−8.26	5.514	5.612	5.361	5.420		0^+	$3/2^-$
194	118	1529.24	1538.81	7.88	7.93	14.30	17.55	8.09	9.92	−7.14	−8.49	5.525	5.624	5.367	5.426		0^+	0^+
195	119	1535.46	1543.96	7.87	7.92	14.31	18.00	6.22	10.15	−7.13	−8.72	5.536	5.638	5.373	5.432		0^+	$3/2^-$
196	120	1543.35	1550.80	7.87	7.91	14.11	18.41	7.89	10.35	−7.04	−8.92	5.546	5.650	5.378	5.437		0^+	0^+
197	121	1549.58		7.87		14.12	18.79	6.23	10.48	−7.02	−9.15	5.557	5.663	5.384	5.443		0^+	$3/2^-$
198	122	1557.26		7.86		13.91	19.23	7.68	10.75	−6.93	−9.33	5.567	5.676	5.388	5.447		0^+	0^+
199	123	1563.57		7.86		14.00	19.67	6.31	10.97	−6.95	−9.54	5.578	5.689	5.393	5.452		0^+	$1/2^-$
200	124	1570.97		7.85		13.71	20.02	7.40	11.13	−6.81	−9.72	5.588	5.702	5.397	5.456		0^+	0^+
201	125	1577.40		7.85		13.83	20.46	6.43	11.36	−5.22	−9.94	5.598	5.714	5.402	5.461		0^+	$1/2^-$
202	126	1584.47		7.84		13.49	20.75	7.06	11.48	−4.94	−10.08	5.609	5.728	5.406	5.465		0^+	0^+
203	127	1586.24		7.81		8.84	21.06	1.77	11.66	−5.20	−10.24	5.624	5.747	5.411	5.470		0^+	$9/2^+$
204	128	1589.85		7.79		5.39	21.47	3.62	11.87	−2.75	−10.45	5.640	5.764	5.425	5.484		0^+	0^+
205	129	1591.64		7.76		5.40	21.84	1.79	12.10	−2.74	−10.65	5.657	5.782	5.439	5.497		0^+	$9/2^+$
206	130	1595.20		7.74		5.35	22.19	3.56	12.25	−2.73	−10.81	5.671	5.799	5.445	5.503		0^+	0^+
207	131	1596.91		7.71		5.27	22.51	1.71	12.43	−2.72	−10.98	5.686	5.817	5.452	5.510		0^+	$9/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
208	132	1600.52		7.69		5.32	22.90	3.61	12.63	−2.73	−11.18	5.701	5.833	5.465	5.523		0^+	0^+
209	133	1602.21		7.67		5.30	23.23	1.69	12.81	−2.71	−11.34	5.716	5.851	5.472	5.531		0^+	$9/2^+$
210	134	1605.81		7.65		5.29	23.61	3.60	13.00	−2.72	−11.54	5.731	5.867	5.484	5.542		0^+	0^+
211	135	1607.48		7.62		5.28	23.94	1.67	13.18	−2.70	−11.70	5.746	5.884	5.493	5.551		0^+	$9/2^+$
212	136	1611.08		7.60		5.28	24.31	3.60	13.37	−2.71	−11.89	5.761	5.900	5.504	5.562		0^+	0^+
213	137	1612.74		7.57		5.26	24.65	1.66	13.55	−2.69	−12.06	5.776	5.917	5.513	5.571		0^+	$9/2^+$
214	138	1616.34		7.55		5.26	25.00	3.60	13.74	−2.70	−12.24	5.790	5.932	5.523	5.581		0^+	0^+
215	139	1617.98		7.53		5.24	25.35	1.64	13.92	−2.67	−12.41	5.806	5.949	5.534	5.591		0^+	$9/2^+$
216	140	1621.58		7.51		5.23	25.68	3.59	14.09	−2.68	−12.58	5.819	5.964	5.543	5.600		0^+	0^+
217	141	1623.19		7.48		5.21	26.04	1.61	14.28	−2.65	−12.76	5.835	5.981	5.553	5.611		0^+	$9/2^+$
218	142	1626.77		7.46		5.20	26.35	3.58	14.44	−2.65	−12.91	5.848	5.996	5.561	5.618		0^+	0^+
219	143	1628.34		7.44		5.15	26.71	1.56	14.63	−2.61	−13.09	5.863	6.012	5.572	5.630		0^+	$9/2^+$
220	144	1631.91		7.42		5.14	26.99	3.57	14.76	−2.61	−13.24	5.876	6.027	5.579	5.636		0^+	0^+
221	145	1633.39		7.39		5.05	27.35	1.47	14.95	−2.54	−13.42	5.891	6.043	5.590	5.647		0^+	$9/2^+$
222	146	1636.95		7.37		5.04	27.62	3.57	15.07	−2.54	−13.55	5.904	6.058	5.596	5.653		0^+	0^+
223	147	1638.27		7.35		4.88	27.90	1.32	15.25	−2.43	−13.72	5.919	6.075	5.607	5.664		0^+	$9/2^+$
224	148	1641.85		7.33		4.89	28.20	3.58	15.36	−2.46	−13.85	5.931	6.089	5.611	5.668		0^+	0^+
225	149	1643.14		7.30		4.88	28.34	1.30	15.43	−2.48	−13.95	5.947	6.110	5.615	5.672		0^+	$5/2^+$
226	150	1646.55		7.29		4.70	28.74	3.40	15.63	−2.37	−14.12	5.959	6.121	5.625	5.682		0^+	0^+
227	151	1647.97		7.26		4.83	28.97	1.42	15.74	−2.37	−14.22	5.974	6.141	5.629	5.686		0^+	$5/2^+$
228	152	1651.08		7.24		4.53	29.24	3.11	15.88	−2.30	−14.38	5.986	6.153	5.638	5.694		0^+	0^+
229	153	1652.45		7.22		4.48	29.45	1.37	15.98	−2.29	−14.48	6.001	6.172	5.642	5.698		0^+	$5/2^+$
230	154	1655.48		7.20		4.40	29.72	3.03	16.12	−2.25	−14.63	6.013	6.185	5.650	5.706		0^+	0^+
231	155	1656.82		7.17		4.37	29.92	1.34	16.21	−2.23	−14.73	6.028	6.204	5.654	5.710		0^+	$5/2^+$
232	156	1659.80		7.15		4.31	30.18	2.98	16.35	−2.21	−14.87	6.040	6.217	5.661	5.717		0^+	0^+
233	157	1661.10		7.13		4.28	30.39	1.31	16.45	−2.19	−14.98	6.055	6.235	5.666	5.722		0^+	$5/2^+$
234	158	1664.05		7.11		4.25	30.64	2.94	16.58	−2.18	−15.11	6.067	6.248	5.672	5.729		0^+	0^+
235	159	1665.32		7.09		4.22	30.84	1.27	16.69	−2.15	−15.22	6.082	6.266	5.678	5.734		0^+	$5/2^+$
236	160	1668.24		7.07		4.20	31.10	2.92	16.81	−2.15	−15.35	6.094	6.279	5.683	5.739		0^+	0^+
237	161	1669.50		7.04		4.18	31.24	1.25	16.87	−2.17	−15.42	6.111	6.301	5.685	5.741		0^+	$1/2^+$
238	162	1672.40		7.03		4.16	31.56	2.90	17.04	−2.13	−15.58	6.120	6.310	5.695	5.750		0^+	0^+
239	163	1673.69		7.00		4.20	31.71	1.29	17.10	−2.14	−15.66	6.136	6.331	5.697	5.753		0^+	$1/2^+$
240	164	1676.52		6.99		4.12	32.02	2.83	17.27	−2.11	−15.82	6.146	6.339	5.706	5.761		0^+	0^+
241	165	1677.85		6.96		4.15	32.16	1.32	17.31	−2.11	−15.91	6.162	6.359	5.709	5.765		0^+	$1/2^+$
242	166	1680.61		6.94		4.09	32.49	2.76	17.50	−2.09	−16.06	6.172	6.369	5.717	5.773		0^+	0^+
243	167	1681.96		6.92		4.12	32.66	1.35	17.56	−2.09	−16.16	6.187	6.387	5.721	5.777		0^+	$1/2^+$
244	168	1684.66		6.90		4.05	32.97	2.70	17.75	−2.06	−16.31	6.197	6.397	5.728	5.784		0^+	0^+
245	169	1686.07		6.88		4.10	33.24	1.40	17.88	−2.06	−16.42	6.211	6.414	5.734	5.789		0^+	$1/2^+$
246	170	1688.68		6.86		4.02	33.48	2.61	18.00	−2.04	−16.56	6.222	6.425	5.740	5.796		0^+	0^+
247	171	1690.06		6.84		3.99	33.78	1.38	18.14	−2.03	−16.69	6.235	6.440	5.747	5.803		0^+	$1/2^+$
248	172	1692.66		6.83		3.98	34.01	2.60	18.26	−2.02	−16.82	6.246	6.452	5.753	5.808		0^+	0^+
249	173	1694.01		6.80		3.95	34.36	1.35	18.43	−2.00	−16.97	6.259	6.465	5.762	5.817		0^+	$1/2^+$
250	174	1696.60		6.79		3.94	34.57	2.59	18.55	−1.99	−17.09	6.270	6.478	5.766	5.821		0^+	0^+
251	175	1697.92		6.76		3.91	34.97	1.32	18.74	−1.96	−17.27	6.282	6.489	5.777	5.832		0^+	$1/2^+$
252	176	1700.49		6.75		3.90	35.15	2.57	18.84	−1.96	−17.37	6.293	6.503	5.780	5.835		0^+	0^+
253	177	1701.78		6.73		3.86	35.60	1.29	19.06	−1.93	−17.57	6.304	6.512	5.793	5.848		0^+	$1/2^+$
254	178	1704.35		6.71		3.86	35.76	2.57	19.15	−1.93	−17.66	6.316	6.526	5.795	5.850		0^+	0^+
255	179	1705.60		6.69		3.82	36.19	1.25	19.39	−1.89	−17.89	6.326	6.534	5.809	5.864		0^+	$1/2^+$
256	180	1708.17		6.67		3.82	36.38	2.57	19.47	−1.90	−17.96	6.339	6.549	5.810	5.865		0^+	0^+
257	181	1709.38		6.65		3.78	36.77	1.21	19.72	−1.86	−18.20	6.348	6.555	5.826	5.881		0^+	$1/2^+$
258	182	1711.95		6.64		3.78	37.01	2.57	19.79	−1.86	−18.27	6.361	6.571	5.826	5.881		0^+	0^+
259	183	1713.12		6.61		3.75	37.35	1.17	19.99	−0.95	−18.52	6.370	6.576	5.844	5.899		0^+	$1/2^+$
260	184	1715.70		6.60		3.75	37.64	2.58	20.11	−0.21	−18.57	6.382	6.592	5.843	5.898		0^+	0^+
261	185	1714.65		6.57		1.52		−1.06	20.12	−0.64	−18.58	6.420	6.642	5.843	5.897		0^+	$3/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
262	186	1714.07		6.54		−1.63		−0.58	20.21	0.77	−18.69	6.419	6.638	5.850	5.905		0^+	0^+
σ		11.32													0.009			
$Z = 77$ (Ir)																		
162	85	1247.51		7.70			0.13		−1.23	−10.62	0.22	5.140	5.128	5.153	5.215		$1/2^+$	$9/2^-$
163	86	1259.07		7.72			0.72		−0.95	−10.54	−0.08	5.153	5.146	5.162	5.223		$1/2^+$	0^+
164	87	1268.41		7.73			1.31	9.34	−0.66	−10.41	−0.39	5.168	5.164	5.172	5.233		$1/2^+$	$9/2^-$
165	88	1279.78		7.76		20.71	1.89	11.37	−0.38	−10.34	−0.69	5.181	5.182	5.180	5.241		$1/2^+$	0^+
166	89	1288.91		7.76		20.50	2.51	9.13	−0.07	−10.22	−0.92	5.195	5.199	5.191	5.252		$3/2^+$	$9/2^-$
167	90	1300.14	1304.75	7.79	7.81	20.36	3.08	11.23	0.21	−10.16	−1.21	5.208	5.216	5.199	5.260		$3/2^+$	0^+
168	91	1308.95	1314.46	7.79	7.82	20.04	3.69	8.81	0.53	−9.93	−1.51	5.222	5.233	5.209	5.270		$3/2^+$	$9/2^-$
169	92	1320.07	1325.89	7.81	7.85	19.93	4.26	11.12	0.81	−9.91	−1.79	5.235	5.249	5.217	5.278		$3/2^+$	0^+
170	93	1328.61		7.82		19.66	4.80	8.54	1.07	−9.84	−2.06	5.247	5.266	5.225	5.286		$3/2^+$	$7/2^-$
171	94	1339.43	1346.38	7.83	7.87	19.36	5.35	10.82	1.34	−9.63	−2.33	5.259	5.281	5.232	5.293		$3/2^+$	0^+
172	95	1347.82	1355.41	7.84	7.88	19.21	5.88	8.38	1.59	−9.50	−2.60	5.271	5.297	5.239	5.300		$3/2^+$	$7/2^-$
173	96	1358.22	1366.37	7.85	7.90	18.79	6.38	10.40	1.83	−9.36	−2.85	5.282	5.312	5.245	5.306		$3/2^+$	0^+
174	97	1366.35	1375.04	7.85	7.90	18.54	6.88	8.13	2.06	−9.20	−3.11	5.294	5.327	5.252	5.312		$3/2^+$	$7/2^-$
175	98	1376.49	1385.63	7.87	7.92	18.27	7.37	10.13	2.28	−9.10	−3.35	5.304	5.341	5.257	5.317		$3/2^+$	0^+
176	99	1384.27	1394.17	7.87	7.92	17.92	7.88	7.78	2.52	−8.88	−3.61	5.316	5.356	5.263	5.324		$3/2^+$	$7/2^-$
177	100	1394.24	1404.43	7.88	7.93	17.75	8.35	9.96	2.73	−8.84	−3.85	5.326	5.370	5.269	5.329		$3/2^+$	0^+
178	101	1401.54	1412.71	7.87	7.94	17.27	8.90	7.31	3.01	−8.58	−4.12	5.338	5.386	5.276	5.336		$3/2^+$	$7/2^-$
179	102	1411.44	1422.60	7.89	7.95	17.21	9.35	9.90	3.21	−8.57	−4.35	5.349	5.399	5.281	5.341		$3/2^+$	0^+
180	103	1418.35	1430.57	7.88	7.95	16.81	9.73	6.91	3.37	−8.52	−4.70	5.361	5.417	5.285	5.345		$1/2^+$	$5/2^-$
181	104	1428.15	1440.14	7.89	7.96	16.71	10.36	9.80	3.71	−8.35	−4.85	5.371	5.428	5.293	5.353		$3/2^+$	0^+
182	105	1435.02	1447.79	7.88	7.95	16.67	10.82	6.87	3.92	−8.30	−5.08	5.384	5.444	5.300	5.360	5.371	$3/2^+$	$5/2^-$
183	106	1444.44	1457.01	7.89	7.96	16.29	11.36	9.42	4.21	−8.16	−5.35	5.394	5.457	5.306	5.366	5.378	$3/2^+$	0^+
184	107	1451.21	1464.49	7.89	7.96	16.19	11.82	6.77	4.43	−8.10	−5.59	5.406	5.472	5.312	5.372	5.381	$3/2^+$	$5/2^-$
185	108	1460.39	1473.29	7.89	7.96	15.95	12.34	9.18	4.71	−8.00	−5.84	5.416	5.485	5.318	5.378	5.385	$3/2^+$	0^+
186	109	1467.07	1480.20	7.89	7.96	15.86	12.82	6.68	4.95	−7.94	−6.09	5.428	5.500	5.325	5.385	5.390	$3/2^+$	$5/2^-$
187	110	1476.05	1488.64	7.89	7.96	15.66	13.31	8.98	5.20	−7.86	−6.33	5.439	5.513	5.331	5.391	5.381	$3/2^+$	0^+
188	111	1482.63	1495.52	7.89	7.95	15.56	13.80	6.59	5.45	−7.79	−6.58	5.450	5.527	5.337	5.397	5.384	$3/2^+$	$5/2^-$
189	112	1491.45	1503.69	7.89	7.96	15.40	14.26	8.81	5.69	−7.73	−6.81	5.461	5.541	5.343	5.403	5.390	$3/2^+$	0^+
190	113	1497.94	1510.07	7.88	7.95	15.30	14.75	6.49	5.95	−7.66	−7.06	5.472	5.554	5.349	5.409		$3/2^+$	$5/2^-$
191	114	1506.62	1518.09	7.89	7.95	15.17	15.20	8.68	6.17	−7.61	−7.28	5.483	5.568	5.356	5.415	5.397	$3/2^+$	0^+
192	115	1513.02	1524.29	7.88	7.94	15.08	15.60	6.40	6.37	−7.60	−7.48	5.494	5.582	5.360	5.420		$3/2^+$	$3/2^-$
193	116	1521.58	1532.06	7.88	7.94	14.96	16.12	8.56	6.64	−7.49	−7.73	5.505	5.595	5.368	5.427	5.403	$3/2^+$	0^+
194	117	1528.00	1538.13	7.88	7.93	14.98	16.54	6.42	6.85	−7.48	−7.95	5.516	5.609	5.373	5.432		$3/2^+$	$3/2^-$
195	118	1536.34	1545.36	7.88	7.92	14.75	17.02	8.34	7.09	−7.37	−8.18	5.527	5.621	5.379	5.438		$3/2^+$	0^+
196	119	1542.78	1551.18	7.87	7.91	14.78	17.46	6.44	7.32	−7.37	−8.40	5.538	5.634	5.385	5.444		$3/2^+$	$3/2^-$
197	120	1550.88	1558.07	7.87	7.91	14.55	17.88	8.11	7.54	−7.25	−8.61	5.548	5.647	5.390	5.449		$3/2^+$	0^+
198	121	1557.35		7.87		14.57	18.25	6.46	7.77	−7.24	−8.84	5.559	5.660	5.396	5.455		$3/2^+$	$3/2^-$
199	122	1565.21	1570.35	7.87	7.89	14.33	18.70	7.86	7.95	−7.13	−9.02	5.569	5.673	5.400	5.459		$3/2^+$	0^+
200	123	1571.74		7.86		14.40	19.14	6.53	8.17	−7.16	−9.23	5.579	5.685	5.405	5.464		$3/2^+$	$1/2^-$
201	124	1579.31		7.86		14.10	19.47	7.56	8.33	−7.00	−9.40	5.589	5.698	5.409	5.467		$3/2^+$	0^+
202	125	1585.94		7.85		14.20	19.90	6.64	8.54	−5.40	−9.61	5.599	5.710	5.413	5.472		$3/2^+$	$1/2^-$
203	126	1593.15		7.85		13.84	20.17	7.21	8.68	−5.15	−9.75	5.610	5.725	5.416	5.475		$3/2^+$	0^+
204	127	1595.04		7.82		9.10	20.46	1.90	8.81	−5.38	−9.90	5.624	5.743	5.422	5.481		$3/2^+$	$9/2^+$
205	128	1598.88		7.80		5.73	20.89	3.83	9.02	−2.92	−10.12	5.641	5.760	5.437	5.495		$3/2^+$	0^+
206	129	1600.75		7.77		5.70	21.20	1.87	9.11	−2.91	−10.38	5.655	5.779	5.440	5.499		$1/2^+$	$9/2^+$
207	130	1604.56		7.75		5.69	21.61	3.81	9.36	−2.91	−10.49	5.672	5.795	5.457	5.515		$3/2^+$	0^+
208	131	1606.43		7.72		5.68	21.95	1.87	9.52	−2.90	−10.75	5.685	5.813	5.461	5.519		$1/2^+$	$9/2^+$
209	132	1610.22		7.70		5.66	22.33	3.79	9.71	−2.91	−10.95	5.701	5.830	5.473	5.532		$1/2^+$	0^+
210	133	1612.08		7.68		5.65	22.68	1.86	9.87	−2.89	−11.12	5.716	5.847	5.481	5.539		$1/2^+$	$9/2^+$
211	134	1615.86		7.66		5.64	23.06	3.78	10.06	−2.89	−11.32	5.731	5.863	5.493	5.551		$1/2^+$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
212	135	1617.71		7.63		5.63	23.41	1.84	10.22	−2.88	−11.49	5.745	5.880	5.501	5.559		$1/2^+$	$9/2^+$
213	136	1621.48		7.61		5.62	23.77	3.77	10.40	−2.88	−11.67	5.760	5.896	5.512	5.570		$1/2^+$	0^+
214	137	1623.31		7.59		5.60	24.12	1.82	10.56	−2.87	−11.85	5.775	5.913	5.522	5.579		$1/2^+$	$9/2^+$
215	138	1627.08		7.57		5.59	24.47	3.77	10.73	−2.87	−12.02	5.789	5.928	5.532	5.589		$1/2^+$	0^+
216	139	1628.88		7.54		5.58	24.82	1.81	10.90	−2.85	−12.20	5.804	5.945	5.541	5.599		$1/2^+$	$9/2^+$
217	140	1632.64		7.52		5.56	25.15	3.75	11.06	−2.85	−12.37	5.818	5.960	5.550	5.608		$1/2^+$	0^+
218	141	1634.42		7.50		5.53	25.51	1.78	11.23	−2.82	−12.55	5.833	5.976	5.561	5.618		$1/2^+$	$9/2^+$
219	142	1638.16		7.48		5.52	25.83	3.74	11.39	−2.81	−12.71	5.846	5.991	5.569	5.626		$1/2^+$	0^+
220	143	1639.89		7.45		5.47	26.18	1.73	11.55	−2.77	−12.89	5.861	6.007	5.580	5.637		$1/2^+$	$9/2^+$
221	144	1643.61		7.44		5.45	26.47	3.73	11.70	−2.77	−13.03	5.874	6.022	5.586	5.643		$1/2^+$	0^+
222	145	1645.25		7.41		5.36	26.81	1.63	11.86	−2.69	−13.21	5.889	6.038	5.597	5.654		$1/2^+$	$9/2^+$
223	146	1648.96		7.39		5.35	27.08	3.71	12.01	−2.70	−13.35	5.901	6.053	5.603	5.660		$1/2^+$	0^+
224	147	1650.43		7.37		5.18	27.41	1.47	12.16	−2.58	−13.52	5.916	6.069	5.613	5.670		$1/2^+$	$9/2^+$
225	148	1654.15		7.35		5.19	27.67	3.72	12.30	−2.61	−13.65	5.928	6.083	5.618	5.675		$1/2^+$	0^+
226	149	1655.59		7.33		5.16	27.88	1.43	12.44	−2.62	−13.74	5.944	6.103	5.622	5.679		$1/2^+$	$5/2^+$
227	150	1659.14		7.31		4.98	28.22	3.55	12.59	−2.51	−13.92	5.955	6.115	5.632	5.688		$1/2^+$	0^+
228	151	1660.69		7.28		5.11	28.46	1.56	12.72	−2.51	−14.02	5.971	6.134	5.636	5.692		$1/2^+$	$5/2^+$
229	152	1663.94		7.27		4.80	28.73	3.24	12.86	−2.43	−14.18	5.982	6.146	5.645	5.701		$1/2^+$	0^+
230	153	1665.43		7.24		4.74	28.96	1.50	12.99	−2.42	−14.28	5.997	6.165	5.649	5.705		$1/2^+$	$5/2^+$
231	154	1668.60		7.22		4.67	29.23	3.17	13.12	−2.38	−14.43	6.009	6.178	5.657	5.713		$1/2^+$	0^+
232	155	1670.06		7.20		4.63	29.46	1.46	13.24	−2.36	−14.54	6.024	6.197	5.661	5.718		$1/2^+$	$5/2^+$
233	156	1673.17		7.18		4.57	29.73	3.11	13.38	−2.34	−14.68	6.036	6.209	5.668	5.725		$1/2^+$	0^+
234	157	1674.60		7.16		4.54	29.95	1.43	13.50	−2.32	−14.78	6.051	6.227	5.673	5.730		$1/2^+$	$5/2^+$
235	158	1677.68		7.14		4.50	30.21	3.08	13.63	−2.31	−14.92	6.062	6.240	5.680	5.736		$1/2^+$	0^+
236	159	1679.07		7.11		4.47	30.44	1.39	13.75	−2.28	−15.03	6.077	6.258	5.685	5.741		$1/2^+$	$5/2^+$
237	160	1682.13		7.10		4.45	30.69	3.06	13.88	−2.28	−15.16	6.089	6.271	5.691	5.747		$1/2^+$	0^+
238	161	1683.52		7.07		4.45	30.85	1.39	13.98	−2.29	−15.23	6.105	6.292	5.694	5.750		$1/2^+$	$1/2^+$
239	162	1686.54		7.06		4.41	31.17	3.02	14.14	−2.26	−15.40	6.115	6.301	5.703	5.759		$1/2^+$	0^+
240	163	1687.96		7.03		4.44	31.29	1.42	14.19	−2.23	−15.48	6.131	6.321	5.706	5.762		$1/2^+$	$1/2^+$
241	164	1690.91		7.02		4.37	31.65	2.95	14.39	−2.24	−15.64	6.140	6.330	5.714	5.770		$1/2^+$	0^+
242	165	1692.35		6.99		4.39	31.73	1.44	14.42	−2.24	−15.73	6.156	6.350	5.718	5.774		$1/2^+$	$1/2^+$
243	166	1695.25		6.98		4.34	32.14	2.90	14.64	−2.22	−15.89	6.166	6.359	5.726	5.781		$1/2^+$	0^+
244	167	1696.72		6.95		4.37	32.31	1.47	14.76	−2.21	−15.99	6.180	6.377	5.730	5.786		$1/2^+$	$1/2^+$
245	168	1699.55		6.94		4.30	32.63	2.83	14.89	−2.19	−16.13	6.191	6.388	5.737	5.793		$1/2^+$	0^+
246	169	1701.06		6.91		4.34	32.87	1.51	14.99	−2.19	−16.25	6.205	6.404	5.743	5.798		$1/2^+$	$1/2^+$
247	170	1703.82		6.90		4.27	33.14	2.77	15.14	−2.17	−16.39	6.215	6.415	5.749	5.805		$1/2^+$	0^+
248	171	1705.30		6.88		4.24	33.38	1.48	15.24	−2.16	−16.52	6.228	6.430	5.756	5.811		$1/2^+$	$1/2^+$
249	172	1708.06		6.86		4.24	33.67	2.76	15.40	−2.15	−16.65	6.240	6.442	5.761	5.817		$1/2^+$	0^+
250	173	1709.51		6.84		4.21	33.93	1.45	15.50	−2.13	−16.81	6.252	6.455	5.769	5.825		$1/2^+$	$1/2^+$
251	174	1712.26		6.82		4.20	34.21	2.75	15.67	−2.12	−16.91	6.263	6.468	5.774	5.829		$1/2^+$	0^+
252	175	1713.67		6.80		4.16	34.49	1.41	15.75	−2.10	−17.10	6.275	6.479	5.784	5.839		$1/2^+$	$1/2^+$
253	176	1716.43		6.78		4.17	34.77	2.76	15.93	−2.10	−17.19	6.286	6.493	5.788	5.843		$1/2^+$	0^+
254	177	1717.79		6.76		4.12	35.07	1.36	16.01	−2.06	−17.40	6.297	6.502	5.799	5.853		$1/2^+$	$1/2^+$
255	178	1720.55		6.75		4.13	35.35	2.76	16.20	−2.07	−17.48	6.309	6.517	5.802	5.857		$1/2^+$	0^+
256	179	1721.86		6.73		4.07	35.66	1.31	16.27	−2.03	−17.71	6.319	6.524	5.814	5.869		$1/2^+$	$1/2^+$
257	180	1724.64		6.71		4.09	35.94	2.78	16.48	−2.04	−17.78	6.331	6.539	5.816	5.871		$1/2^+$	0^+
258	181	1725.98		6.69		4.11	36.32	1.33	16.60	−2.03	−17.88	6.343	6.546	5.838	5.892		$1/2^+$	$1/2^+$
259	182	1728.70		6.67		4.05	36.54	2.72	16.75	−2.00	−18.08	6.353	6.561	5.832	5.886		$1/2^+$	0^+
260	183	1730.06		6.65		4.09	36.93	1.36	16.94	−1.09	−18.20	6.365	6.568	5.854	5.909		$1/2^+$	$1/2^+$
261	184	1732.72		6.64		4.02	37.13	2.66	17.02	−0.37	−18.39	6.375	6.583	5.848	5.902		$1/2^+$	0^+
262	185	1731.70		6.61		1.64	37.17	−1.02	17.06	−0.92	−18.39	6.412	6.632	5.848	5.902		$1/2^+$	$3/2^-$
263	186	1731.22		6.58		−1.50	37.37	−0.48	17.15	0.70	−18.51	6.409	6.625	5.856	5.910		$1/2^+$	0^+
σ		10.35													0.013			

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
$Z = 78$ (Pt)																		
164	86	1259.89		7.68			−0.12		0.83	−10.85	0.37	5.162	5.150	5.176	5.237		0^+	0^+
165	87	1269.57		7.69			0.50		1.16	−10.72	0.06	5.176	5.168	5.186	5.247		0^+	$9/2^-$
166	88	1281.24		7.72			1.08	11.68	1.47	−10.66	−0.23	5.189	5.185	5.194	5.255		0^+	0^+
167	89	1290.68		7.73		21.11	1.70	9.43	1.77	−10.50	−0.53	5.204	5.203	5.204	5.265		0^+	$9/2^-$
168	90	1302.19	1306.02	7.75	7.77	20.95	2.27	11.52	2.05	−10.44	−0.81	5.216	5.220	5.212	5.273		0^+	0^+
169	91	1311.28		7.76		20.60	2.86	9.09	2.33	−10.21	−1.10	5.230	5.237	5.221	5.282		0^+	$9/2^-$
170	92	1322.68	1327.41	7.78	7.81	20.49	3.42	11.40	2.61	−10.19	−1.38	5.242	5.253	5.229	5.290		0^+	0^+
171	93	1331.51	1336.64	7.79	7.82	20.23	3.97	8.83	2.90	−10.12	−1.65	5.255	5.269	5.237	5.298		0^+	$7/2^-$
172	94	1342.61	1348.35	7.81	7.84	19.93	4.52	11.10	3.18	−9.91	−1.93	5.266	5.284	5.244	5.305		0^+	0^+
173	95	1351.29	1357.26	7.81	7.85	19.77	5.06	8.68	3.47	−9.79	−2.20	5.278	5.300	5.251	5.312		0^+	$7/2^-$
174	96	1361.97	1368.70	7.83	7.87	19.36	5.58	10.69	3.75	−9.64	−2.46	5.289	5.315	5.257	5.317		0^+	0^+
175	97	1370.40	1377.15	7.83	7.87	19.11	6.11	8.43	4.05	−9.48	−2.72	5.300	5.330	5.263	5.324		0^+	$7/2^-$
176	98	1380.82	1388.46	7.85	7.89	18.84	6.61	10.41	4.33	−9.38	−2.98	5.311	5.344	5.269	5.329		0^+	0^+
177	99	1388.88	1396.97	7.85	7.89	18.48	7.13	8.07	4.61	−9.15	−3.24	5.322	5.359	5.275	5.335		0^+	$7/2^-$
178	100	1399.13	1407.67	7.86	7.91	18.31	7.62	10.24	4.89	−9.11	−3.49	5.332	5.373	5.280	5.340	5.373	0^+	0^+
179	101	1406.69	1416.01	7.86	7.91	17.80	8.16	7.56	5.14	−8.83	−3.75	5.344	5.388	5.287	5.347	5.392	0^+	$7/2^-$
180	102	1416.87	1426.25	7.87	7.92	17.74	8.64	10.18	5.43	−8.83	−3.99	5.354	5.401	5.292	5.352	5.389	0^+	0^+
181	103	1424.02	1434.26	7.87	7.92	17.33	9.04	7.15	5.67	−8.79	−4.22	5.367	5.418	5.299	5.359	5.400	0^+	$5/2^-$
182	104	1434.08	1444.13	7.88	7.93	17.21	9.64	10.07	5.93	−8.59	−4.50	5.376	5.430	5.304	5.364	5.397	0^+	0^+
183	105	1441.22	1451.80	7.88	7.93	17.20	10.12	7.14	6.20	−8.54	−4.73	5.389	5.446	5.311	5.371	5.404	0^+	$5/2^-$
184	106	1450.87	1461.43	7.89	7.94	16.78	10.64	9.64	6.43	−8.40	−5.00	5.399	5.458	5.316	5.376	5.402	0^+	0^+
185	107	1457.90	1468.85	7.88	7.94	16.68	11.12	7.03	6.69	−8.34	−5.24	5.411	5.474	5.323	5.383	5.415	0^+	$5/2^-$
186	108	1467.30	1478.11	7.89	7.95	16.43	11.62	9.40	6.91	−8.23	−5.49	5.421	5.487	5.329	5.389	5.404	0^+	0^+
187	109	1474.23	1485.00	7.88	7.94	16.33	12.11	6.93	7.16	−8.17	−5.73	5.433	5.501	5.335	5.395	5.406	0^+	$5/2^-$
188	110	1483.43	1494.21	7.89	7.95	16.13	12.59	9.20	7.39	−8.09	−5.97	5.443	5.514	5.341	5.401	5.405	0^+	0^+
189	111	1490.26	1500.94	7.88	7.94	16.03	13.08	6.83	7.63	−8.02	−6.22	5.454	5.528	5.348	5.407	5.406	0^+	$5/2^-$
190	112	1499.30	1509.85	7.89	7.95	15.87	13.54	9.04	7.85	−7.95	−6.44	5.465	5.542	5.354	5.413	5.411	0^+	0^+
191	113	1506.03	1516.30	7.88	7.94	15.76	14.04	6.73	8.09	−7.88	−6.69	5.476	5.555	5.360	5.419	5.410	0^+	$5/2^-$
192	114	1514.93	1524.96	7.89	7.94	15.63	14.48	8.91	8.31	−7.83	−6.91	5.487	5.568	5.366	5.425	5.417	0^+	0^+
193	115	1521.54	1531.22	7.88	7.93	15.51	14.89	6.61	8.52	−7.75	−7.16	5.497	5.581	5.371	5.431	5.419	0^+	$5/2^-$
194	116	1530.34	1539.58	7.89	7.94	15.41	15.40	8.80	8.76	−7.71	−7.37	5.509	5.595	5.378	5.437	5.424	0^+	0^+
195	117	1536.96	1545.68	7.88	7.93	15.42	15.81	6.62	8.96	−7.70	−7.58	5.519	5.609	5.383	5.442	5.427	0^+	$3/2^-$
196	118	1545.53	1553.60	7.89	7.93	15.19	16.29	8.58	9.20	−7.58	−7.82	5.530	5.621	5.389	5.448	5.431	0^+	0^+
197	119	1552.18	1559.45	7.88	7.92	15.22	16.72	6.65	9.40	−7.58	−8.03	5.541	5.634	5.395	5.454		0^+	$3/2^-$
198	120	1560.50	1567.00	7.88	7.91	14.96	17.15	8.32	9.62	−7.45	−8.24	5.551	5.646	5.400	5.459	5.438	0^+	0^+
199	121	1567.18	1572.56	7.88	7.90	15.00	17.60	6.68	9.83	−7.44	−8.47	5.561	5.659	5.406	5.465		0^+	$3/2^-$
200	122	1575.21	1579.84	7.88	7.90	14.72	17.95	8.04	10.00	−7.32	−8.64	5.571	5.672	5.410	5.469		0^+	0^+
201	123	1581.97	1585.05	7.87	7.89	14.80	18.40	6.76	10.23	−7.34	−8.85	5.581	5.685	5.414	5.473		0^+	$1/2^-$
202	124	1589.67	1592.08	7.87	7.88	14.46	18.70	7.69	10.36	−7.18	−9.02	5.591	5.697	5.418	5.477		0^+	0^+
203	125	1596.50		7.86		14.52	19.09	6.83	10.56	−5.56	−9.22	5.601	5.710	5.422	5.481		0^+	$1/2^-$
204	126	1603.84		7.86		14.18	19.38	7.35	10.70	−5.53	−9.36	5.612	5.724	5.426	5.484		0^+	0^+
205	127	1605.94		7.83		9.44	19.70	2.10	10.90	−5.55	−9.53	5.626	5.742	5.431	5.490		0^+	$9/2^+$
206	128	1609.98		7.82		6.14	20.13	4.04	11.11	−3.12	−9.74	5.642	5.759	5.446	5.504		0^+	0^+
207	129	1612.04		7.79		6.10	20.40	2.06	11.29	−3.11	−9.91	5.657	5.777	5.452	5.511		0^+	$9/2^+$
208	130	1616.07		7.77		6.09	20.87	4.03	11.51	−3.11	−10.12	5.673	5.793	5.466	5.524		0^+	0^+
209	131	1618.11		7.74		6.07	21.20	2.04	11.68	−3.09	−10.29	5.687	5.811	5.473	5.531		0^+	$9/2^+$
210	132	1622.12		7.72		6.05	21.60	4.01	11.90	−3.09	−10.49	5.703	5.827	5.486	5.544		0^+	0^+
211	133	1624.14		7.70		6.03	21.94	2.03	12.06	−3.08	−10.66	5.717	5.844	5.494	5.552		0^+	$9/2^+$
212	134	1628.14		7.68		6.02	22.33	3.99	12.27	−3.08	−10.86	5.733	5.860	5.506	5.564		0^+	0^+
213	135	1630.15		7.65		6.01	22.67	2.02	12.45	−3.07	−11.03	5.747	5.877	5.515	5.573		0^+	$9/2^+$
214	136	1634.13		7.64		5.99	23.04	3.97	12.64	−3.06	−11.22	5.762	5.893	5.526	5.584		0^+	0^+
215	137	1636.13		7.61		5.98	23.39	2.01	12.83	−3.05	−11.39	5.777	5.910	5.536	5.593		0^+	$9/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
216	138	1640.09		7.59		5.96	23.75	3.95	13.01	−3.05	−11.57	5.791	5.925	5.546	5.603		0^+	0^+
217	139	1642.08		7.57		5.95	24.10	2.00	13.20	−3.03	−11.75	5.806	5.941	5.556	5.613		0^+	$9/2^+$
218	140	1646.01		7.55		5.92	24.44	3.93	13.37	−3.02	−11.92	5.819	5.956	5.565	5.622		0^+	0^+
219	141	1647.99		7.53		5.90	24.80	1.97	13.57	−2.99	−12.10	5.834	5.972	5.575	5.633		0^+	$9/2^+$
220	142	1651.89		7.51		5.87	25.11	3.90	13.73	−2.99	−12.26	5.847	5.987	5.583	5.640		0^+	0^+
221	143	1653.81		7.48		5.83	25.47	1.93	13.93	−2.94	−12.44	5.862	6.003	5.594	5.651		0^+	$9/2^+$
222	144	1657.68		7.47		5.80	25.77	3.87	14.07	−2.93	−12.59	5.875	6.018	5.601	5.658		0^+	0^+
223	145	1659.52		7.44		5.70	26.13	1.83	14.27	−2.86	−12.76	5.890	6.034	5.612	5.669		0^+	$9/2^+$
224	146	1663.36		7.43		5.68	26.40	3.84	14.39	−2.85	−12.90	5.902	6.048	5.618	5.674		0^+	0^+
225	147	1665.01		7.40		5.50	26.74	1.66	14.58	−2.73	−13.07	5.917	6.064	5.628	5.685		0^+	$9/2^+$
226	148	1668.85		7.38		5.49	27.00	3.83	14.70	−2.75	−13.21	5.929	6.079	5.633	5.689		0^+	0^+
227	149	1670.33		7.36		5.32	27.19	1.48	14.75	−2.77	−13.30	5.944	6.099	5.636	5.693		0^+	$5/2^+$
228	150	1674.11		7.34		5.26	27.56	3.77	14.97	−2.64	−13.49	5.955	6.109	5.647	5.703		0^+	0^+
229	151	1675.65		7.32		5.32	27.68	1.55	14.96	−2.64	−13.59	5.970	6.129	5.650	5.707		0^+	$5/2^+$
230	152	1679.16		7.30		5.05	28.08	3.50	15.22	−2.56	−13.76	5.982	6.140	5.660	5.716		0^+	0^+
231	153	1680.74		7.28		5.09	28.30	1.59	15.31	−2.55	−13.86	5.997	6.159	5.664	5.720		0^+	$5/2^+$
232	154	1684.06		7.26		4.91	28.58	3.32	15.46	−2.50	−14.02	6.008	6.171	5.672	5.729		0^+	0^+
233	155	1685.61		7.23		4.87	28.79	1.55	15.55	−2.49	−14.12	6.023	6.190	5.677	5.733		0^+	$5/2^+$
234	156	1688.87		7.22		4.81	29.07	3.26	15.70	−2.46	−14.28	6.034	6.202	5.684	5.740		0^+	0^+
235	157	1690.40		7.19		4.78	29.29	1.52	15.79	−2.44	−14.39	6.049	6.220	5.689	5.745		0^+	$5/2^+$
236	158	1693.61		7.18		4.74	29.56	3.21	15.93	−2.42	−14.53	6.060	6.232	5.696	5.752		0^+	0^+
237	159	1695.11		7.15		4.71	29.79	1.50	16.04	−2.41	−14.64	6.075	6.250	5.702	5.757		0^+	$5/2^+$
238	160	1698.29		7.14		4.68	30.05	3.18	16.16	−2.40	−14.78	6.086	6.262	5.708	5.764		0^+	0^+
239	161	1699.77		7.11		4.66	30.27	1.47	16.25	−2.38	−14.90	6.100	6.279	5.714	5.770		0^+	$5/2^+$
240	162	1702.94		7.10		4.64	30.53	3.17	16.40	−2.38	−15.03	6.112	6.292	5.720	5.775		0^+	0^+
241	163	1704.38		7.07		4.61	30.69	1.45	16.42	−2.36	−15.16	6.126	6.308	5.726	5.782		0^+	$5/2^+$
242	164	1707.54		7.06		4.61	31.02	3.16	16.63	−2.36	−15.28	6.137	6.321	5.731	5.787		0^+	0^+
243	165	1709.03		7.03		4.65	31.15	1.49	16.68	−2.37	−15.37	6.152	6.341	5.733	5.789		0^+	$1/2^+$
244	166	1712.12		7.02		4.58	31.51	3.09	16.88	−2.34	−15.53	6.162	6.349	5.743	5.798		0^+	0^+
245	167	1713.65		6.99		4.62	31.68	1.53	16.93	−2.35	−15.62	6.177	6.368	5.746	5.801		0^+	$1/2^+$
246	168	1716.67		6.98		4.55	32.01	3.03	17.12	−2.32	−15.78	6.186	6.377	5.754	5.810		0^+	0^+
247	169	1718.23		6.96		4.59	32.17	1.56	17.18	−2.33	−15.88	6.201	6.395	5.758	5.814		0^+	$1/2^+$
248	170	1721.20		6.94		4.53	32.52	2.96	17.38	−2.30	−16.04	6.211	6.404	5.766	5.821		0^+	0^+
249	171	1722.82		6.92		4.59	32.76	1.62	17.52	−2.31	−16.15	6.225	6.421	5.771	5.827		0^+	$1/2^+$
250	172	1725.70		6.90		4.50	33.04	2.88	17.64	−2.28	−16.30	6.235	6.431	5.778	5.833		0^+	0^+
251	173	1727.35		6.88		4.53	33.34	1.65	17.84	−2.28	−16.42	6.248	6.446	5.785	5.840		0^+	$1/2^+$
252	174	1730.17		6.87		4.48	33.58	2.83	17.91	−2.26	−16.56	6.258	6.457	5.791	5.846		0^+	0^+
253	175	1731.82		6.85		4.47	33.90	1.65	18.15	−2.26	−16.70	6.271	6.470	5.799	5.854		0^+	$1/2^+$
254	176	1734.62		6.83		4.45	34.13	2.80	18.20	−2.24	−16.83	6.282	6.483	5.803	5.858		0^+	0^+
255	177	1736.28		6.81		4.45	34.50	1.65	18.49	−2.23	−16.99	6.294	6.494	5.813	5.868		0^+	$1/2^+$
256	178	1739.05		6.79		4.42	34.70	2.77	18.49	−2.22	−17.10	6.305	6.507	5.816	5.871		0^+	0^+
257	179	1740.70		6.77		4.43	35.11	1.65	18.84	−2.20	−17.28	6.316	6.517	5.828	5.883		0^+	$1/2^+$
258	180	1743.45		6.76		4.40	35.28	2.74	18.80	−2.19	−17.38	6.327	6.531	5.830	5.885		0^+	0^+
259	181	1745.10		6.74		4.40	35.72	1.65	19.12	−2.18	−17.58	6.338	6.539	5.844	5.898		0^+	$1/2^+$
260	182	1747.82		6.72		4.37	35.87	2.72	19.12	−2.17	−17.66	6.349	6.554	5.844	5.899		0^+	0^+
261	183	1749.47		6.70		4.37	36.35	1.65	19.41	−1.37	−17.88	6.359	6.560	5.860	5.914		0^+	$1/2^+$
262	184	1752.17		6.69		4.35	36.46	2.69	19.45	−0.54	−17.95	6.371	6.576	5.859	5.913		0^+	0^+
263	185	1751.12		6.66		1.65	36.48	−1.04	19.42	−1.00	−17.96	6.408	6.626	5.858	5.913		0^+	$3/2^-$
264	186	1750.78		6.63		−1.39	36.71	−0.35	19.55	0.65	−18.09	6.403	6.615	5.868	5.922		0^+	0^+
σ		8.41													0.024			
$Z = 79$ (Au)																		
165	86	1258.52		7.63			−0.55		−1.37	−11.15	0.59	5.171	5.153	5.190	5.251		$1/2^+$	0^+
166	87	1268.49		7.64			0.08		−1.08	−11.01	0.28	5.185	5.171	5.200	5.261		$1/2^+$	$9/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
167	88	1280.45		7.67			0.67		−0.80	−10.94	−0.01	5.198	5.188	5.208	5.269		$1/2^+$	0^+
168	89	1290.16		7.68			1.25	9.72	−0.51	−10.78	−0.31	5.211	5.206	5.218	5.279		$1/2^+$	$9/2^-$
169	90	1301.95		7.70		21.50	1.81	11.79	−0.24	−10.72	−0.60	5.224	5.222	5.226	5.286		$1/2^+$	0^+
170	91	1311.31		7.71		21.15	2.36	9.36	0.03	−10.49	−0.89	5.237	5.239	5.234	5.295		$1/2^+$	$9/2^-$
171	92	1322.97	1325.96	7.74	7.75	21.02	2.90	11.67	0.29	−10.46	−1.17	5.249	5.255	5.242	5.303		$1/2^+$	0^+
172	93	1332.07	1335.83	7.74	7.77	20.76	3.45	9.09	0.55	−10.39	−1.45	5.261	5.271	5.249	5.310		$1/2^+$	$7/2^-$
173	94	1343.42	1347.35	7.77	7.79	20.45	3.99	11.36	0.81	−10.17	−1.72	5.273	5.287	5.256	5.317		$1/2^+$	0^+
174	95	1352.36		7.77		20.29	4.54	8.93	1.07	−10.05	−2.00	5.284	5.302	5.263	5.324		$1/2^+$	$7/2^-$
175	96	1363.30	1368.09	7.79	7.82	19.87	5.08	10.94	1.32	−9.90	−2.26	5.295	5.316	5.269	5.329		$1/2^+$	0^+
176	97	1371.98	1377.14	7.80	7.82	19.62	5.62	8.68	1.58	−9.73	−2.53	5.306	5.331	5.275	5.335		$1/2^+$	$7/2^-$
177	98	1382.64	1388.36	7.81	7.84	19.35	6.16	10.67	1.83	−9.64	−2.78	5.316	5.345	5.280	5.340		$1/2^+$	0^+
178	99	1390.96	1397.22	7.81	7.85	18.98	6.69	8.32	2.08	−9.40	−3.05	5.327	5.360	5.286	5.346		$1/2^+$	$7/2^-$
179	100	1401.45	1407.94	7.83	7.87	18.81	7.21	10.49	2.32	−9.36	−3.29	5.337	5.374	5.291	5.351		$1/2^+$	0^+
180	101	1409.25	1416.63	7.83	7.87	18.29	7.71	7.80	2.56	−9.08	−3.56	5.349	5.389	5.298	5.358		$1/2^+$	$7/2^-$
181	102	1419.68	1426.97	7.84	7.88	18.23	8.23	10.43	2.81	−9.07	−3.80	5.359	5.402	5.303	5.363		$1/2^+$	0^+
182	103	1427.04	1435.48	7.84	7.89	17.79	8.69	7.36	3.02	−9.03	−4.03	5.371	5.418	5.309	5.369		$1/2^+$	$5/2^-$
183	104	1437.36	1445.43	7.85	7.90	17.69	9.21	10.32	3.28	−8.83	−4.31	5.381	5.431	5.314	5.374	5.425	$1/2^+$	0^+
184	105	1444.72	1453.64	7.85	7.90	17.68	9.70	7.36	3.50	−8.78	−4.54	5.393	5.446	5.321	5.381	5.431	$1/2^+$	$5/2^-$
185	106	1454.61	1463.26	7.86	7.91	17.25	10.17	9.89	3.74	−8.63	−4.81	5.403	5.459	5.326	5.386	5.430	$1/2^+$	0^+
186	107	1461.86	1471.17	7.86	7.91	17.13	10.65	7.25	3.96	−8.57	−5.05	5.414	5.474	5.333	5.392	5.435	$1/2^+$	$5/2^-$
187	108	1471.50	1480.56	7.87	7.92	16.89	11.11	9.64	4.20	−8.47	−5.30	5.424	5.487	5.338	5.398	5.402	$1/2^+$	0^+
188	109	1478.64	1487.88	7.87	7.91	16.79	11.57	7.15	4.41	−8.40	−5.54	5.436	5.501	5.344	5.404	5.405	$1/2^+$	$5/2^-$
189	110	1488.08	1497.26	7.87	7.92	16.58	12.03	9.43	4.64	−8.32	−5.78	5.446	5.514	5.350	5.410	5.408	$1/2^+$	0^+
190	111	1495.12	1504.63	7.87	7.92	16.48	12.49	7.05	4.86	−8.25	−6.02	5.457	5.528	5.356	5.415	5.411	$1/2^+$	$5/2^-$
191	112	1504.39	1513.63	7.88	7.92	16.31	12.94	9.27	5.08	−8.18	−6.25	5.468	5.541	5.362	5.421	5.415	$1/2^+$	0^+
192	113	1511.36	1520.66	7.87	7.92	16.24	13.42	6.97	5.33	−8.14	−6.23	5.478	5.552	5.372	5.431	5.418	$1/2^+$	$5/2^-$
193	114	1520.48	1529.36	7.88	7.92	16.10	13.86	9.12	5.55	−8.07	−6.45	5.489	5.565	5.378	5.437	5.422	$1/2^+$	0^+
194	115	1527.38	1536.24	7.87	7.92	16.02	14.36	6.90	5.84	−8.00	−6.69	5.500	5.578	5.383	5.443	5.425	$1/2^+$	$5/2^-$
195	116	1536.37	1544.67	7.88	7.92	15.89	14.79	8.99	6.03	−7.95	−6.90	5.511	5.592	5.390	5.449	5.430	$1/2^+$	0^+
196	117	1543.18	1551.31	7.87	7.91	15.81	15.19	6.81	6.23	−7.95	−7.12	5.521	5.605	5.394	5.453	5.433	$1/2^+$	$3/2^-$
197	118	1552.03	1559.39	7.88	7.92	15.66	15.70	8.85	6.50	−7.81	−7.35	5.532	5.617	5.401	5.460	5.437	$1/2^+$	0^+
198	119	1558.89	1565.90	7.87	7.91	15.71	16.12	6.86	6.71	−7.82	−7.56	5.543	5.631	5.407	5.466	5.440	$1/2^+$	$1/2^-$
199	120	1567.44	1573.48	7.88	7.91	15.41	16.56	8.55	6.95	−7.67	−7.78	5.552	5.643	5.412	5.471	5.445	$1/2^+$	0^+
200	121	1574.35	1579.70	7.87	7.90	15.45	17.00	6.90	7.17	−7.66	−8.00	5.563	5.656	5.417	5.476		$1/2^+$	$3/2^-$
201	122	1582.56	1586.93	7.87	7.90	15.12	17.35	8.22	7.35	−7.56	−8.45	5.572	5.670	5.417	5.476		$1/2^+$	0^+
202	123	1589.49	1592.95	7.87	7.89	15.14	17.75	6.93	7.51	−7.59	−8.64	5.582	5.683	5.422	5.481		$1/2^+$	$1/2^-$
203	124	1597.50	1599.82	7.87	7.88	14.94	18.19	8.01	7.83	−7.40	−8.82	5.592	5.695	5.426	5.485		$1/2^+$	0^+
204	125	1604.59		7.87		15.10	18.65	7.10	8.10	−5.70	−9.01	5.602	5.707	5.431	5.489		$1/2^+$	$1/2^-$
205	126	1612.08		7.86		14.58	18.93	7.49	8.24	−5.70	−9.16	5.613	5.721	5.435	5.493		$1/2^+$	0^+
206	127	1614.35		7.84		9.75	19.30	2.27	8.41	−5.74	−9.33	5.627	5.740	5.440	5.499		$1/2^+$	$9/2^+$
207	128	1618.59		7.82		6.51	19.71	4.24	8.61	−3.31	−9.54	5.643	5.756	5.455	5.513		$1/2^+$	0^+
208	129	1620.82		7.79		6.48	20.08	2.23	8.78	−3.29	−9.71	5.657	5.774	5.461	5.520		$1/2^+$	$9/2^+$
209	130	1625.05		7.78		6.45	20.48	4.22	8.98	−3.29	−9.92	5.673	5.791	5.475	5.533		$1/2^+$	0^+
210	131	1627.26		7.75		6.43	20.83	2.21	9.15	−3.28	−10.09	5.688	5.808	5.482	5.540		$1/2^+$	$9/2^+$
211	132	1631.46		7.73		6.41	21.23	4.20	9.34	−3.28	−10.30	5.703	5.824	5.495	5.553		$1/2^+$	0^+
212	133	1633.65		7.71		6.40	21.57	2.20	9.51	−3.26	−10.47	5.717	5.841	5.503	5.561		$1/2^+$	$9/2^+$
213	134	1637.83		7.69		6.37	21.96	4.17	9.69	−3.26	−10.67	5.732	5.857	5.515	5.573		$1/2^+$	0^+
214	135	1640.01		7.66		6.36	22.31	2.19	9.86	−3.25	−10.84	5.747	5.874	5.523	5.581		$1/2^+$	$9/2^+$
215	136	1644.16		7.65		6.34	22.68	4.15	10.04	−3.24	−11.03	5.761	5.889	5.535	5.592		$1/2^+$	0^+
216	137	1646.34		7.62		6.33	23.04	2.18	10.21	−3.23	−11.21	5.776	5.906	5.544	5.601		$1/2^+$	$9/2^+$
217	138	1650.47		7.61		6.30	23.39	4.12	10.38	−3.22	−11.39	5.790	5.921	5.554	5.611		$1/2^+$	0^+
218	139	1652.63		7.58		6.29	23.75	2.17	10.55	−3.20	−11.57	5.805	5.937	5.564	5.621		$1/2^+$	$9/2^+$
219	140	1656.73		7.56		6.26	24.09	4.09	10.71	−3.19	−11.74	5.818	5.952	5.573	5.630		$1/2^+$	0^+
220	141	1658.87		7.54		6.23	24.45	2.14	10.88	−3.16	−11.92	5.833	5.968	5.583	5.640		$1/2^+$	$9/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
221	142	1662.93		7.52		6.20	24.77	4.06	11.04	−3.15	−12.08	5.846	5.983	5.591	5.648		$1/2^+$	0^+
222	143	1665.02		7.50		6.15	25.13	2.09	11.21	−3.10	−12.26	5.860	5.999	5.601	5.658		$1/2^+$	$9/2^+$
223	144	1669.04		7.48		6.12	25.43	4.02	11.36	−3.09	−12.41	5.873	6.013	5.608	5.665		$1/2^+$	0^+
224	145	1671.04		7.46		6.02	25.79	2.00	11.52	−3.01	−12.59	5.887	6.029	5.619	5.675		$1/2^+$	$9/2^+$
225	146	1675.03		7.44		5.99	26.07	3.99	11.67	−3.01	−12.73	5.900	6.043	5.624	5.681		$1/2^+$	0^+
226	147	1676.84		7.42		5.80	26.41	1.81	11.83	−2.88	−12.90	5.914	6.059	5.635	5.691		$1/2^+$	$9/2^+$
227	148	1680.82		7.40		5.79	26.67	3.98	11.97	−2.90	−13.04	5.926	6.073	5.640	5.696		$1/2^+$	0^+
228	149	1682.44		7.38		5.60	26.85	1.62	12.11	−2.92	−13.13	5.941	6.093	5.643	5.700		$1/2^+$	$5/2^+$
229	150	1686.36		7.36		5.54	27.23	3.92	12.26	−2.78	−13.32	5.952	6.104	5.654	5.710		$1/2^+$	0^+
230	151	1688.03		7.34		5.59	27.34	1.67	12.38	−2.78	−13.42	5.967	6.123	5.658	5.714		$1/2^+$	$5/2^+$
231	152	1691.69		7.32		5.33	27.75	3.66	12.53	−2.70	−13.60	5.978	6.134	5.667	5.723		$1/2^+$	0^+
232	153	1693.41		7.30		5.38	27.97	1.72	12.66	−2.69	−13.69	5.993	6.153	5.671	5.727		$1/2^+$	$5/2^+$
233	154	1696.86		7.28		5.17	28.26	3.45	12.80	−2.63	−13.86	6.005	6.165	5.679	5.735		$1/2^+$	0^+
234	155	1698.54		7.26		5.13	28.47	1.67	12.93	−2.62	−13.96	6.019	6.183	5.684	5.740		$1/2^+$	$5/2^+$
235	156	1701.94		7.24		5.07	28.76	3.40	13.06	−2.59	−14.12	6.030	6.195	5.692	5.747		$1/2^+$	0^+
236	157	1703.58		7.22		5.04	28.98	1.65	13.19	−2.58	−14.23	6.045	6.213	5.696	5.752		$1/2^+$	$5/2^+$
237	158	1706.93		7.20		5.00	29.25	3.35	13.32	−2.56	−14.37	6.056	6.225	5.704	5.759		$1/2^+$	0^+
238	159	1708.55		7.18		4.97	29.48	1.62	13.44	−2.54	−14.49	6.070	6.242	5.709	5.765		$1/2^+$	$5/2^+$
239	160	1711.87		7.16		4.94	29.74	3.32	13.58	−2.53	−14.63	6.082	6.255	5.716	5.771		$1/2^+$	0^+
240	161	1713.47		7.14		4.92	29.95	1.59	13.70	−2.51	−14.75	6.096	6.271	5.721	5.777		$1/2^+$	$5/2^+$
241	162	1716.77		7.12		4.90	30.23	3.30	13.84	−2.51	−14.88	6.107	6.284	5.727	5.783		$1/2^+$	0^+
242	163	1718.34		7.10		4.87	30.38	1.56	13.96	−2.49	−15.01	6.121	6.300	5.734	5.789		$1/2^+$	$5/2^+$
243	164	1721.64		7.08		4.86	30.73	3.30	14.09	−2.49	−15.13	6.132	6.312	5.739	5.795		$1/2^+$	0^+
244	165	1723.25		7.06		4.91	30.90	1.61	14.22	−2.48	−15.47	6.147	6.331	5.755	5.810		$1/2^+$	$1/2^+$
245	166	1726.47		7.05		4.83	31.22	3.22	14.35	−2.47	−15.38	6.157	6.341	5.751	5.806		$1/2^+$	0^+
246	167	1728.12		7.02		4.87	31.33	1.65	14.41	−2.46	−15.73	6.171	6.359	5.767	5.822		$1/2^+$	$1/2^+$
247	168	1731.27		7.01		4.81	31.73	3.15	14.60	−2.45	−15.64	6.181	6.368	5.763	5.818		$1/2^+$	0^+
248	169	1732.95		6.99		4.83	31.90	1.68	14.72	−2.46	−15.74	6.195	6.385	5.767	5.822		$1/2^+$	$1/2^+$
249	170	1736.06		6.97		4.78	32.24	3.10	14.86	−2.43	−15.89	6.205	6.395	5.774	5.830		$1/2^+$	0^+
250	171	1737.80		6.95		4.85	32.50	1.75	14.98	−2.44	−16.01	6.219	6.411	5.780	5.835		$1/2^+$	$1/2^+$
251	172	1740.81		6.94		4.76	32.76	3.01	15.12	−2.42	−16.15	6.229	6.422	5.786	5.841		$1/2^+$	0^+
252	173	1742.57		6.91		4.77	33.06	1.76	15.22	−2.41	−16.28	6.242	6.436	5.792	5.847		$1/2^+$	$1/2^+$
253	174	1745.55		6.90		4.73	33.29	2.98	15.38	−2.40	−16.41	6.252	6.448	5.798	5.853		$1/2^+$	0^+
254	175	1747.30		6.88		4.73	33.63	1.75	15.48	−2.39	−16.56	6.264	6.461	5.806	5.860		$1/2^+$	$1/2^+$
255	176	1750.26		6.86		4.71	33.83	2.96	15.64	−2.38	−16.67	6.275	6.473	5.811	5.866		$1/2^+$	0^+
256	177	1752.01		6.84		4.71	34.22	1.75	15.73	−2.36	−16.84	6.287	6.485	5.819	5.874		$1/2^+$	$1/2^+$
257	178	1754.95		6.83		4.69	34.40	2.94	15.90	−2.35	−16.94	6.298	6.498	5.823	5.878		$1/2^+$	0^+
258	179	1756.69		6.81		4.68	34.82	1.74	15.99	−2.34	−17.14	6.309	6.508	5.833	5.888		$1/2^+$	$1/2^+$
259	180	1759.61		6.79		4.67	34.97	2.93	16.17	−2.33	−17.22	6.321	6.522	5.836	5.891		$1/2^+$	0^+
260	181	1761.34		6.77		4.65	35.36	1.72	16.24	−2.31	−17.43	6.330	6.530	5.848	5.902		$1/2^+$	$1/2^+$
261	182	1764.26		6.76		4.64	35.56	2.92	16.44	−2.30	−17.50	6.343	6.545	5.850	5.904		$1/2^+$	0^+
262	183	1765.96		6.74		4.62	35.89	1.70	16.48	−1.38	−17.74	6.352	6.551	5.863	5.917		$1/2^+$	$1/2^+$
263	184	1768.87		6.73		4.62	36.15	2.92	16.71	−0.66	−17.78	6.364	6.567	5.864	5.918		$1/2^+$	0^+
264	185	1767.86		6.70		1.90	36.16	−1.01	16.74	−1.16	−17.78	6.401	6.617	5.864	5.918		$1/2^+$	$3/2^-$
265	186	1767.63		6.67		−1.24	36.41	−0.23	16.86	0.57	−17.92	6.395	6.604	5.874	5.928		$1/2^+$	0^+
σ		7.29													0.027			
$Z = 80$ (Hg)																		
169	89	1290.96		7.64			0.29		0.80	−11.07	0.23	5.220	5.210	5.231	5.292		0^+	$9/2^-$
170	90	1303.04		7.66			0.85		1.09	−11.01	−0.04	5.232	5.226	5.239	5.299		0^+	0^+
171	91	1312.69		7.68			1.41	9.65	1.39	−10.77	−0.32	5.245	5.243	5.247	5.308		0^+	$9/2^-$
172	92	1324.65	1326.78	7.70	7.71	21.61	1.97	11.96	1.67	−10.74	−0.58	5.257	5.259	5.255	5.315		0^+	0^+
173	93	1334.03		7.71		21.34	2.52	9.39	1.97	−10.67	−0.86	5.269	5.275	5.262	5.323		0^+	$7/2^-$
174	94	1345.68	1348.47	7.73	7.75	21.03	3.07	11.64	2.25	−10.45	−1.12	5.280	5.289	5.269	5.329		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
175	95	1354.90	1357.87	7.74	7.76	20.87	3.61	9.22	2.55	−10.33	−1.40	5.292	5.305	5.276	5.336		0^+	$7/2^-$
176	96	1366.12	1369.74	7.76	7.78	20.44	4.14	11.21	2.82	−10.17	−1.66	5.302	5.319	5.281	5.342		0^+	0^+
177	97	1375.08	1378.82	7.77	7.79	20.17	4.67	8.96	3.10	−10.00	−1.92	5.313	5.333	5.287	5.348		0^+	$7/2^-$
178	98	1386.00	1390.42	7.79	7.81	19.89	5.19	10.93	3.36	−9.90	−2.18	5.323	5.347	5.293	5.353		0^+	0^+
179	99	1394.59	1399.10	7.79	7.82	19.52	5.71	8.59	3.63	−9.67	−2.44	5.334	5.362	5.299	5.359		0^+	$7/2^-$
180	100	1405.34	1410.50	7.81	7.84	19.33	6.21	10.74	3.89	−9.62	−2.69	5.344	5.375	5.304	5.364		0^+	0^+
181	101	1413.43	1418.98	7.81	7.84	18.83	6.74	8.09	4.18	−9.35	−2.94	5.355	5.390	5.310	5.370	5.436	0^+	$7/2^-$
182	102	1424.10	1429.97	7.82	7.86	18.76	7.23	10.67	4.42	−9.34	−3.19	5.365	5.403	5.315	5.375	5.383	0^+	0^+
183	103	1431.76	1438.27	7.82	7.86	18.33	7.74	7.66	4.72	−9.26	−3.45	5.375	5.417	5.321	5.380	5.441	0^+	$13/2^+$
184	104	1442.32	1448.88	7.84	7.87	18.23	8.24	10.56	4.96	−9.10	−3.69	5.386	5.431	5.327	5.387	5.395	0^+	0^+
185	105	1449.95	1456.78	7.84	7.87	18.19	8.63	7.63	5.13	−9.05	−3.92	5.398	5.446	5.334	5.393	5.440	0^+	$5/2^-$
186	106	1460.11	1467.22	7.85	7.89	17.78	9.24	10.16	5.50	−8.90	−4.18	5.408	5.459	5.339	5.398	5.402	0^+	0^+
187	107	1467.62	1474.87	7.85	7.89	17.67	9.72	7.52	5.77	−8.84	−4.41	5.419	5.474	5.345	5.405	5.405	0^+	$5/2^-$
188	108	1477.52	1485.03	7.86	7.90	17.42	10.23	9.90	6.03	−8.72	−4.66	5.429	5.486	5.351	5.410	5.409	0^+	0^+
189	109	1484.95	1492.52	7.86	7.90	17.33	10.72	7.43	6.31	−8.66	−4.90	5.440	5.501	5.357	5.417	5.410	0^+	$5/2^-$
190	110	1494.63	1502.33	7.87	7.91	17.10	11.20	9.68	6.55	−8.57	−5.14	5.451	5.514	5.363	5.422	5.416	0^+	0^+
191	111	1501.96	1509.63	7.86	7.90	17.01	11.69	7.33	6.84	−8.50	−5.38	5.461	5.527	5.369	5.428	5.417	0^+	$5/2^-$
192	112	1511.46	1519.12	7.87	7.91	16.83	12.15	9.50	7.07	−8.43	−5.60	5.472	5.540	5.375	5.434	5.423	0^+	0^+
193	113	1518.68	1526.24	7.87	7.91	16.72	12.66	7.23	7.32	−8.36	−5.84	5.482	5.553	5.381	5.440	5.424	0^+	$5/2^-$
194	114	1528.03	1535.44	7.88	7.91	16.57	13.10	9.35	7.55	−8.29	−6.07	5.493	5.567	5.387	5.446	5.431	0^+	0^+
195	115	1535.14	1542.32	7.87	7.91	16.46	13.60	7.11	7.76	−8.21	−6.30	5.503	5.579	5.392	5.451	5.435	0^+	$5/2^-$
196	116	1544.37	1551.22	7.88	7.91	16.34	14.02	9.23	7.99	−8.16	−6.52	5.514	5.593	5.399	5.458	5.439	0^+	0^+
197	117	1551.39	1558.00	7.88	7.91	16.25	14.43	7.02	8.20	−8.17	−6.72	5.525	5.606	5.404	5.463	5.441	0^+	$1/2^-$
198	118	1560.46	1566.49	7.88	7.91	16.09	14.93	9.07	8.42	−8.02	−6.96	5.535	5.618	5.410	5.469	5.446	0^+	0^+
199	119	1567.54	1573.15	7.88	7.91	16.15	15.36	7.08	8.64	−8.03	−7.17	5.546	5.631	5.416	5.475	5.447	0^+	$1/2^-$
200	120	1576.28	1581.18	7.88	7.91	15.82	15.79	8.75	8.84	−7.87	−7.39	5.555	5.643	5.421	5.479	5.455	0^+	0^+
201	121	1583.39	1587.41	7.88	7.90	15.85	16.22	7.11	9.05	−7.86	−7.61	5.566	5.656	5.427	5.485	5.458	0^+	$1/2^-$
202	122	1591.78	1595.16	7.88	7.90	15.49	16.56	8.38	9.21	−7.70	−7.81	5.575	5.668	5.430	5.488	5.465	0^+	0^+
203	123	1598.86	1601.16	7.88	7.89	15.47	16.88	7.08	9.37	−7.64	−8.01	5.585	5.681	5.435	5.493	5.468	0^+	$3/2^-$
204	124	1606.94	1608.65	7.88	7.89	15.16	17.27	8.08	9.44	−7.54	−8.21	5.595	5.694	5.437	5.496	5.474	0^+	0^+
205	125	1614.15	1614.32	7.87	7.87	15.30	17.66	7.21	9.56	−5.86	−8.43	5.604	5.706	5.440	5.499	5.478	0^+	$1/2^-$
206	126	1621.79	1621.05	7.87	7.87	14.85	17.94	7.63	9.71	−5.96	−8.57	5.615	5.720	5.444	5.503	5.484	0^+	0^+
207	127	1624.23	1624.66	7.85	7.85	10.07	18.29	2.44	9.88	−5.92	−8.75	5.628	5.738	5.450	5.509		0^+	$9/2^+$
208	128	1628.70	1629.51	7.83	7.83	6.91	18.71	4.47	10.10	−3.51	−8.96	5.645	5.755	5.465	5.523		0^+	0^+
209	129	1631.10		7.80		6.87	19.06	2.41	10.28	−3.49	−9.13	5.659	5.772	5.472	5.530		0^+	$9/2^+$
210	130	1635.54		7.79		6.85	19.47	4.44	10.50	−3.48	−9.34	5.675	5.788	5.485	5.543		0^+	0^+
211	131	1637.93		7.76		6.83	19.82	2.39	10.67	−3.47	−9.52	5.689	5.806	5.493	5.551		0^+	$9/2^+$
212	132	1642.34		7.75		6.80	20.22	4.41	10.88	−3.47	−9.71	5.705	5.822	5.506	5.564		0^+	0^+
213	133	1644.71		7.72		6.79	20.57	2.37	11.06	−3.45	−9.89	5.719	5.839	5.514	5.572		0^+	$9/2^+$
214	134	1649.09		7.71		6.75	20.95	4.38	11.26	−3.45	−10.08	5.734	5.854	5.526	5.584		0^+	0^+
215	135	1651.46		7.68		6.75	21.31	2.37	11.45	−3.44	−10.26	5.748	5.871	5.535	5.592		0^+	$9/2^+$
216	136	1655.81		7.67		6.72	21.68	4.35	11.64	−3.43	−10.44	5.763	5.887	5.546	5.603		0^+	0^+
217	137	1658.17		7.64		6.71	22.04	2.36	11.83	−3.41	−10.62	5.777	5.903	5.555	5.613		0^+	$9/2^+$
218	138	1662.48		7.63		6.67	22.39	4.31	12.01	−3.40	−10.80	5.791	5.918	5.566	5.623		0^+	0^+
219	139	1664.83		7.60		6.66	22.75	2.35	12.20	−3.38	−10.97	5.806	5.934	5.575	5.632		0^+	$9/2^+$
220	140	1669.10		7.59		6.62	23.09	4.27	12.38	−3.37	−11.15	5.819	5.949	5.584	5.642		0^+	0^+
221	141	1671.43		7.56		6.60	23.45	2.33	12.57	−3.34	−11.32	5.834	5.965	5.595	5.652		0^+	$9/2^+$
222	142	1675.66		7.55		6.55	23.77	4.22	12.73	−3.32	−11.49	5.847	5.979	5.603	5.660		0^+	0^+
223	143	1677.94		7.52		6.51	24.13	2.29	12.92	−3.28	−11.66	5.861	5.995	5.613	5.670		0^+	$9/2^+$
224	144	1682.12		7.51		6.46	24.43	4.17	13.07	−3.26	−11.82	5.873	6.009	5.620	5.677		0^+	0^+
225	145	1684.30		7.49		6.36	24.79	2.19	13.26	−3.18	−11.99	5.888	6.025	5.631	5.687		0^+	$9/2^+$
226	146	1688.43		7.47		6.32	25.08	4.13	13.40	−3.17	−12.14	5.900	6.039	5.637	5.693		0^+	0^+
227	147	1690.43		7.45		6.12	25.41	1.99	13.59	−3.03	−12.30	5.914	6.055	5.647	5.703		0^+	$9/2^+$
228	148	1694.53		7.43		6.10	25.69	4.11	13.71	−3.05	−12.44	5.926	6.069	5.652	5.708		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
229	149	1696.22		7.41		5.80	25.87	1.69	13.76	−3.07	−12.55	5.941	6.088	5.655	5.711		0^+	$5/2^+$
230	150	1700.36		7.39		5.83	26.26	4.14	14.00	−2.92	−12.74	5.952	6.099	5.666	5.722		0^+	0^+
231	151	1702.08		7.37		5.86	26.43	1.71	14.05	−2.92	−12.85	5.966	6.118	5.669	5.725		0^+	$5/2^+$
232	152	1705.96		7.35		5.60	26.80	3.88	14.27	−2.83	−13.02	5.978	6.129	5.679	5.735		0^+	0^+
233	153	1707.78		7.33		5.70	27.04	1.82	14.37	−2.82	−13.13	5.992	6.147	5.683	5.739		0^+	$5/2^+$
234	154	1711.40		7.31		5.44	27.33	3.62	14.54	−2.77	−13.29	6.003	6.159	5.692	5.748		0^+	0^+
235	155	1713.17		7.29		5.39	27.56	1.77	14.63	−2.76	−13.41	6.017	6.177	5.696	5.752		0^+	$5/2^+$
236	156	1716.73		7.27		5.33	27.86	3.56	14.79	−2.72	−13.56	6.029	6.188	5.705	5.760		0^+	0^+
237	157	1718.47		7.25		5.31	28.08	1.75	14.89	−2.71	−13.68	6.043	6.206	5.709	5.765		0^+	$5/2^+$
238	158	1721.98		7.24		5.25	28.37	3.51	15.05	−2.69	−13.83	6.054	6.218	5.717	5.773		0^+	0^+
239	159	1723.71		7.21		5.24	28.60	1.73	15.16	−2.67	−13.95	6.068	6.235	5.722	5.778		0^+	$5/2^+$
240	160	1727.17		7.20		5.19	28.88	3.46	15.30	−2.66	−14.09	6.079	6.247	5.729	5.785		0^+	0^+
241	161	1728.89		7.17		5.18	29.12	1.71	15.42	−2.64	−14.21	6.093	6.263	5.735	5.790		0^+	$5/2^+$
242	162	1732.32		7.16		5.15	29.39	3.43	15.55	−2.64	−14.35	6.104	6.276	5.741	5.796		0^+	0^+
243	163	1734.02		7.14		5.13	29.64	1.70	15.68	−2.62	−14.47	6.118	6.291	5.747	5.803		0^+	$5/2^+$
244	164	1737.44		7.12		5.11	29.90	3.42	15.80	−2.62	−14.61	6.129	6.304	5.753	5.808		0^+	0^+
245	165	1739.12		7.10		5.09	30.09	1.68	15.87	−2.60	−14.74	6.142	6.319	5.760	5.815		0^+	$5/2^+$
246	166	1742.52		7.08		5.09	30.40	3.41	16.05	−2.60	−14.87	6.153	6.332	5.765	5.820		0^+	0^+
247	167	1744.24		7.06		5.12	30.57	1.72	16.12	−2.61	−14.98	6.167	6.350	5.767	5.822		0^+	$1/2^+$
248	168	1747.58		7.05		5.06	30.91	3.34	16.31	−2.58	−15.12	6.177	6.359	5.776	5.831		0^+	0^+
249	169	1749.34		7.03		5.10	31.11	1.76	16.39	−2.60	−15.24	6.191	6.377	5.780	5.835		0^+	$1/2^+$
250	170	1752.62		7.01		5.04	31.42	3.28	16.57	−2.56	−15.38	6.201	6.386	5.788	5.843		0^+	0^+
251	171	1754.43		6.99		5.08	31.61	1.80	16.62	−2.58	−15.50	6.215	6.403	5.792	5.847		0^+	$1/2^+$
252	172	1757.64		6.97		5.02	31.94	3.22	16.83	−2.55	−15.64	6.224	6.412	5.800	5.855		0^+	0^+
253	173	1759.50		6.95		5.08	32.16	1.86	16.93	−2.56	−15.75	6.238	6.428	5.805	5.860		0^+	$1/2^+$
254	174	1762.64		6.94		5.00	32.47	3.13	17.09	−2.53	−15.90	6.248	6.438	5.812	5.866		0^+	0^+
255	175	1764.57		6.92		5.06	32.75	1.93	17.27	−2.54	−16.01	6.260	6.453	5.818	5.873		0^+	$1/2^+$
256	176	1767.62		6.90		4.98	33.00	3.05	17.36	−2.51	−16.16	6.271	6.464	5.823	5.878		0^+	0^+
257	177	1769.56		6.89		5.00	33.29	1.94	17.55	−2.52	−16.28	6.283	6.477	5.831	5.886		0^+	$1/2^+$
258	178	1772.58		6.87		4.96	33.53	3.02	17.63	−2.49	−16.42	6.294	6.489	5.835	5.890		0^+	0^+
259	179	1774.55		6.85		4.99	33.85	1.97	17.87	−2.49	−16.54	6.305	6.500	5.845	5.899		0^+	$1/2^+$
260	180	1777.52		6.84		4.94	34.08	2.97	17.91	−2.47	−16.68	6.316	6.513	5.848	5.902		0^+	0^+
261	181	1779.53		6.82		4.97	34.43	2.00	18.19	−2.47	−16.81	6.327	6.523	5.859	5.913		0^+	$1/2^+$
262	182	1782.44		6.80		4.92	34.62	2.92	18.19	−2.45	−16.95	6.338	6.537	5.860	5.914		0^+	0^+
263	183	1784.48		6.79		4.95	35.01	2.04	18.52	−1.78	−17.08	6.348	6.545	5.873	5.927		0^+	$1/2^+$
264	184	1787.34		6.77		4.90	35.17	2.86	18.47	−0.87	−17.22	6.360	6.561	5.872	5.927		0^+	0^+
265	185	1786.32		6.74		1.84	34.30	−1.02	17.56	0.02	−17.24	6.410	6.629	5.872	5.926		0^+	$3/2^-$
266	186	1786.24		6.72		−1.10	35.46	−0.08	18.61	0.50	−17.38	6.390	6.596	5.883	5.937		0^+	0^+
σ		5.50													0.026			
$Z = 81$ (Tl)																		
172	91	1312.42		7.63			1.11		−0.27	−11.05	0.15	5.253	5.246	5.260	5.321		$1/2^+$	$9/2^-$
173	92	1324.64		7.66			1.67		−0.00	−11.02	−0.19	5.264	5.261	5.268	5.328		$1/2^+$	0^+
174	93	1334.30		7.67			2.24	9.66	0.27	−10.95	−0.52	5.276	5.277	5.275	5.335		$1/2^+$	$7/2^-$
175	94	1346.21		7.69		21.57	2.79	11.91	0.53	−10.72	−0.84	5.287	5.292	5.281	5.341		$1/2^+$	0^+
176	95	1355.70	1356.60	7.70	7.71	21.40	3.35	9.49	0.80	−10.59	−1.12	5.298	5.307	5.288	5.348		$1/2^+$	$7/2^-$
177	96	1367.18	1368.58	7.72	7.73	20.97	3.89	11.48	1.07	−10.44	−1.37	5.308	5.321	5.293	5.353		$1/2^+$	0^+
178	97	1376.40		7.73		20.70	4.43	9.22	1.33	−10.26	−1.64	5.319	5.335	5.299	5.359		$1/2^+$	$7/2^-$
179	98	1387.59	1389.68	7.75	7.76	20.40	4.94	11.18	1.58	−10.16	−1.89	5.329	5.349	5.304	5.364		$1/2^+$	0^+
180	99	1396.43	1398.73	7.76	7.77	20.03	5.47	8.84	1.84	−9.92	−2.12	5.339	5.363	5.310	5.370		$1/2^+$	$7/2^-$
181	100	1407.42	1410.34	7.78	7.79	19.84	5.97	10.99	2.09	−9.87	−2.38	5.349	5.376	5.315	5.375		$1/2^+$	0^+
182	101	1415.76	1418.92	7.78	7.80	19.33	6.51	8.33	2.33	−9.60	−2.59	5.360	5.391	5.321	5.381		$1/2^+$	$7/2^-$
183	102	1426.67	1430.27	7.80	7.82	19.25	6.99	10.91	2.58	−9.58	−2.85	5.370	5.404	5.326	5.386		$1/2^+$	0^+
184	103	1434.58	1438.63	7.80	7.82	18.82	7.54	7.90	2.82	−9.50	−3.07	5.380	5.417	5.331	5.391		$1/2^+$	$13/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
185	104	1445.38	1449.58	7.81	7.84	18.70	8.01	10.80	3.05	−9.34	−3.30	5.391	5.432	5.337	5.397		$1/2^+$	0^+
186	105	1453.23	1457.78	7.81	7.84	18.65	8.50	7.85	3.28	−9.29	−3.47	5.402	5.447	5.344	5.403		$1/2^+$	$5/2^-$
187	106	1463.63	1468.41	7.83	7.85	18.25	9.02	10.40	3.52	−9.13	−3.68	5.412	5.459	5.348	5.408		$1/2^+$	0^+
188	107	1471.36	1476.38	7.83	7.85	18.13	9.50	7.73	3.74	−9.08	−3.84	5.423	5.474	5.355	5.414	5.402	$1/2^+$	$5/2^-$
189	108	1481.50	1486.71	7.84	7.87	17.87	10.00	10.14	3.97	−8.95	−4.05	5.433	5.487	5.360	5.419		$1/2^+$	0^+
190	109	1489.14		7.84		17.78	10.49	7.64	4.19	−8.89	−4.26	5.444	5.501	5.366	5.425	5.412	$1/2^+$	$5/2^-$
191	110	1499.05	1504.53	7.85	7.88	17.55	10.97	9.91	4.42	−8.80	−4.57	5.454	5.514	5.372	5.431	5.417	$1/2^+$	0^+
192	111	1506.59	1512.20	7.85	7.88	17.45	11.46	7.54	4.63	−8.73	−4.69	5.464	5.527	5.377	5.436	5.419	$1/2^+$	$5/2^-$
193	112	1516.31	1521.87	7.86	7.88	17.26	11.92	9.72	4.85	−8.65	−5.08	5.475	5.540	5.383	5.442	5.424	$1/2^+$	0^+
194	113	1523.74	1529.40	7.85	7.88	17.16	12.38	7.43	5.06	−8.58	−5.26	5.485	5.553	5.388	5.448	5.426	$1/2^+$	$5/2^-$
195	114	1533.31	1538.69	7.86	7.89	17.00	12.83	9.57	5.28	−8.52	−5.62	5.496	5.566	5.394	5.453	5.433	$1/2^+$	0^+
196	115	1540.63	1546.10	7.86	7.89	16.89	13.25	7.32	5.49	−8.44	−5.82	5.505	5.579	5.399	5.458	5.433	$1/2^+$	$5/2^-$
197	116	1550.07	1555.02	7.87	7.89	16.76	13.70	9.45	5.71	−8.38	−6.08	5.516	5.592	5.406	5.465	5.439	$1/2^+$	0^+
198	117	1557.37	1562.25	7.87	7.89	16.74	14.18	7.29	5.98	−8.38	−6.30	5.526	5.605	5.411	5.469	5.440	$1/2^+$	$3/2^-$
199	118	1566.60	1570.88	7.87	7.89	16.52	14.56	9.23	6.14	−8.25	−6.53	5.536	5.617	5.417	5.475	5.448	$1/2^+$	0^+
200	119	1573.92	1577.94	7.87	7.89	16.55	15.02	7.32	6.38	−8.24	−6.74	5.547	5.630	5.422	5.480	5.449	$1/2^+$	$3/2^-$
201	120	1582.88	1586.15	7.88	7.89	16.28	15.43	8.96	6.59	−8.11	−6.99	5.557	5.642	5.427	5.486	5.457	$1/2^+$	0^+
202	121	1590.21	1593.02	7.87	7.89	16.30	15.87	7.34	6.82	−8.09	−7.20	5.567	5.655	5.432	5.491	5.460	$1/2^+$	$3/2^-$
203	122	1598.87	1600.87	7.88	7.89	16.00	16.31	8.66	7.10	−7.94	−7.43	5.576	5.667	5.437	5.495	5.467	$1/2^+$	0^+
204	123	1606.19	1607.53	7.87	7.88	15.97	16.70	7.32	7.33	−7.96	−7.64	5.586	5.680	5.441	5.500	5.470	$1/2^+$	$1/2^-$
205	124	1614.52	1615.07	7.88	7.88	15.65	17.02	8.34	7.58	−7.75	−7.83	5.596	5.692	5.446	5.504	5.476	$1/2^+$	0^+
206	125	1621.96	1621.58	7.87	7.87	15.77	17.36	7.44	7.81	−6.07	−7.80	5.606	5.704	5.450	5.508		$1/2^+$	$1/2^-$
207	126	1629.75	1628.43	7.87	7.87	15.22	17.67	7.79	7.96	−6.23	−7.97	5.616	5.718	5.454	5.512	5.485	$1/2^+$	0^+
208	127	1632.37	1632.22	7.85	7.85	10.41	18.02	2.62	8.14	−6.13	−8.12	5.630	5.736	5.460	5.518	5.495	$1/2^+$	$9/2^+$
209	128	1637.04	1637.17	7.83	7.83	7.29	18.45	4.67	8.34	−3.70	−8.30	5.646	5.752	5.474	5.532		$1/2^+$	0^+
210	129	1639.63	1640.85	7.81	7.81	7.26	18.81	2.59	8.53	−3.68	−8.39	5.662	5.770	5.487	5.545		$1/2^+$	$11/2^+$
211	130	1644.26	1645.76	7.79	7.80	7.22	19.22	4.63	8.72	−3.68	−8.63	5.676	5.786	5.494	5.552		$1/2^+$	0^+
212	131	1646.83		7.77		7.20	19.57	2.57	8.90	−3.66	−8.72	5.690	5.803	5.502	5.560		$1/2^+$	$9/2^+$
213	132	1651.43	1654.06	7.75	7.77	7.17	19.98	4.60	9.09	−3.65	−8.88	5.705	5.819	5.515	5.572		$1/2^+$	0^+
214	133	1653.98		7.73		7.15	20.33	2.55	9.27	−3.64	−8.99	5.719	5.836	5.523	5.580		$1/2^+$	$9/2^+$
215	134	1658.55		7.71		7.12	20.72	4.56	9.46	−3.63	−9.16	5.734	5.851	5.535	5.592		$1/2^+$	0^+
216	135	1661.09		7.69		7.11	21.08	2.54	9.63	−3.62	−9.25	5.748	5.868	5.543	5.601		$1/2^+$	$9/2^+$
217	136	1665.62		7.68		7.07	21.45	4.53	9.81	−3.61	−9.56	5.763	5.883	5.554	5.612		$1/2^+$	0^+
218	137	1668.16		7.65		7.06	21.81	2.54	9.99	−3.59	−9.58	5.777	5.899	5.564	5.621		$1/2^+$	$9/2^+$
219	138	1672.64		7.64		7.02	22.17	4.48	10.16	−3.58	−10.23	5.791	5.915	5.574	5.631		$1/2^+$	0^+
220	139	1675.17		7.61		7.01	22.53	2.53	10.34	−3.56	−10.35	5.805	5.930	5.584	5.641		$1/2^+$	$9/2^+$
221	140	1679.61		7.60		6.96	22.88	4.44	10.50	−3.54	−10.73	5.818	5.945	5.593	5.649		$1/2^+$	0^+
222	141	1682.11		7.58		6.94	23.24	2.50	10.68	−3.51	−10.91	5.833	5.961	5.603	5.659		$1/2^+$	$9/2^+$
223	142	1686.49		7.56		6.89	23.57	4.38	10.84	−3.49	−11.08	5.846	5.975	5.611	5.667		$1/2^+$	0^+
224	143	1688.96		7.54		6.85	23.94	2.47	11.02	−3.45	−11.17	5.860	5.991	5.621	5.677		$1/2^+$	$9/2^+$
225	144	1693.28		7.53		6.79	24.24	4.32	11.16	−3.43	−11.22	5.872	6.005	5.628	5.684		$1/2^+$	0^+
226	145	1695.64		7.50		6.67	24.60	2.36	11.33	−3.34	−11.32	5.886	6.020	5.638	5.694		$1/2^+$	$9/2^+$
227	146	1699.91		7.49		6.63	24.88	4.28	11.48	−3.33	−11.39	5.898	6.034	5.644	5.700		$1/2^+$	0^+
228	147	1702.07		7.47		6.43	25.23	2.15	11.64	−3.19	−11.84	5.912	6.050	5.654	5.710		$1/2^+$	$9/2^+$
229	148	1706.32		7.45		6.41	25.50	4.25	11.79	−3.20	−12.03	5.924	6.064	5.659	5.715		$1/2^+$	0^+
230	149	1708.13		7.43		6.06	25.69	1.81	11.93	−3.03	−12.20	5.938	6.080	5.668	5.724		$1/2^+$	$9/2^+$
231	150	1712.44		7.41		6.12	26.08	4.31	12.07	−3.07	−12.34	5.949	6.093	5.673	5.729		$1/2^+$	0^+
232	151	1714.27		7.39		6.14	26.24	1.83	12.19	−3.07	−12.41	5.964	6.112	5.677	5.733		$1/2^+$	$5/2^+$
233	152	1718.31		7.37		5.88	26.63	4.04	12.35	−2.97	−12.63	5.975	6.123	5.687	5.743		$1/2^+$	0^+
234	153	1720.25		7.35		5.97	26.84	1.93	12.47	−2.97	−12.72	5.989	6.141	5.691	5.747		$1/2^+$	$5/2^+$
235	154	1724.02		7.34		5.71	27.16	3.78	12.63	−2.90	−12.89	6.000	6.152	5.700	5.755		$1/2^+$	0^+
236	155	1725.92		7.31		5.67	27.38	1.90	12.75	−2.90	−12.96	6.014	6.170	5.704	5.760		$1/2^+$	$5/2^+$
237	156	1729.62		7.30		5.60	27.69	3.70	12.89	−2.86	−13.12	6.025	6.182	5.712	5.768		$1/2^+$	0^+
238	157	1731.49		7.28		5.57	27.91	1.87	13.02	−2.85	−13.18	6.039	6.199	5.717	5.773		$1/2^+$	$5/2^+$

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Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
239	158	1735.14		7.26		5.52	28.20	3.65	13.16	−2.82	−13.36	6.050	6.211	5.725	5.780		$1/2^+$	0^+
240	159	1736.99		7.24		5.50	28.44	1.85	13.28	−2.81	−13.41	6.064	6.227	5.730	5.786		$1/2^+$	$5/2^+$
241	160	1740.59		7.22		5.46	28.72	3.60	13.42	−2.79	−13.64	6.075	6.239	5.737	5.793		$1/2^+$	0^+
242	161	1742.43		7.20		5.44	28.96	1.84	13.54	−2.78	−13.70	6.089	6.256	5.743	5.798		$1/2^+$	$5/2^+$
243	162	1746.00		7.19		5.41	29.23	3.57	13.68	−2.77	−13.90	6.100	6.268	5.749	5.805		$1/2^+$	0^+
244	163	1747.82		7.16		5.39	29.49	1.82	13.80	−2.75	−13.98	6.113	6.283	5.755	5.811		$1/2^+$	$5/2^+$
245	164	1751.37		7.15		5.37	29.74	3.55	13.94	−2.75	−14.10	6.124	6.296	5.761	5.816		$1/2^+$	0^+
246	165	1753.18		7.13		5.35	29.93	1.80	14.06	−2.73	−14.23	6.137	6.311	5.768	5.823		$1/2^+$	$5/2^+$
247	166	1756.72		7.11		5.34	30.24	3.54	14.19	−2.73	−14.33	6.148	6.323	5.773	5.828		$1/2^+$	0^+
248	167	1758.54		7.09		5.36	30.42	1.82	14.30	−2.75	−14.30	6.163	6.342	5.777	5.832		$1/2^+$	$1/2^+$
249	168	1762.03		7.08		5.32	30.76	3.49	14.45	−2.71	−14.57	6.172	6.350	5.785	5.840		$1/2^+$	0^+
250	169	1763.90		7.06		5.37	30.95	1.87	14.56	−2.73	−14.56	6.186	6.368	5.789	5.844		$1/2^+$	$1/2^+$
251	170	1767.32		7.04		5.29	31.27	3.42	14.70	−2.69	−14.80	6.196	6.377	5.796	5.851		$1/2^+$	0^+
252	171	1769.24		7.02		5.34	31.44	1.92	14.81	−2.71	−14.84	6.209	6.394	5.801	5.856		$1/2^+$	$1/2^+$
253	172	1772.60		7.01		5.27	31.78	3.36	14.96	−2.68	−15.02	6.219	6.403	5.808	5.863		$1/2^+$	0^+
254	173	1774.56		6.99		5.32	31.99	1.96	15.05	−2.69	−15.08	6.232	6.419	5.813	5.868		$1/2^+$	$1/2^+$
255	174	1777.85		6.97		5.25	32.30	3.29	15.21	−2.66	−15.24	6.242	6.429	5.820	5.874		$1/2^+$	0^+
256	175	1779.90		6.95		5.35	32.60	2.05	15.34	−2.67	−15.35	6.255	6.444	5.825	5.880		$1/2^+$	$1/2^+$
257	176	1783.08		6.94		5.23	32.82	3.18	15.46	−2.64	−15.49	6.265	6.455	5.831	5.886		$1/2^+$	0^+
258	177	1785.15		6.92		5.24	33.14	2.06	15.58	−2.65	−15.64	6.277	6.468	5.838	5.892		$1/2^+$	$1/2^+$
259	178	1788.30		6.90		5.22	33.35	3.15	15.72	−2.62	−15.73	6.287	6.480	5.843	5.897		$1/2^+$	0^+
260	179	1790.39		6.89		5.24	33.70	2.09	15.83	−2.63	−15.93	6.299	6.491	5.850	5.905		$1/2^+$	$1/2^+$
261	180	1793.50		6.87		5.20	33.88	3.11	15.97	−2.60	−15.98	6.310	6.504	5.855	5.909		$1/2^+$	0^+
262	181	1795.61		6.85		5.22	34.27	2.11	16.08	−2.60	−16.23	6.320	6.514	5.863	5.918		$1/2^+$	$1/2^+$
263	182	1798.67		6.84		5.17	34.41	3.06	16.23	−2.58	−16.23	6.332	6.528	5.866	5.921		$1/2^+$	0^+
264	183	1800.81		6.82		5.20	34.85	2.14	16.33	−1.76	−16.51	6.341	6.536	5.877	5.931		$1/2^+$	$1/2^+$
265	184	1803.82		6.81		5.15	34.95	3.01	16.48	−0.96	−16.47	6.354	6.552	5.878	5.932		$1/2^+$	0^+
266	185	1802.82		6.78		2.01	34.96	−1.00	16.50	−1.55	−16.54	6.368	6.569	5.882	5.936		$1/2^+$	$11/2^-$
267	186	1802.88		6.75		−0.94	35.24	0.05	16.64	0.42	−16.63	6.383	6.586	5.889	5.943		$1/2^+$	0^+
σ		3.68													0.024			
$Z = 82$ (Pb)																		
180	98	1389.18	1390.61	7.72	7.73		3.17		1.59	−10.40	0.22	5.334	5.351	5.314	5.374		0^+	0^+
181	99	1398.25	1399.87	7.73	7.73		3.66		1.82	−10.15	−0.28	5.344	5.365	5.319	5.379		0^+	$7/2^-$
182	100	1409.49	1411.65	7.74	7.76		4.15	11.24	2.06	−10.10	−0.45	5.354	5.378	5.324	5.384	5.379	0^+	0^+
183	101	1418.03	1420.47	7.75	7.76	19.78	4.61	8.55	2.28	−9.82	−0.59	5.365	5.393	5.330	5.390	5.387	0^+	$7/2^-$
184	102	1429.20	1432.02	7.77	7.78	19.71	5.10	11.16	2.52	−9.81	−0.75	5.374	5.406	5.335	5.394	5.393	0^+	0^+
185	103	1437.30	1440.58	7.77	7.79	19.27	5.54	8.10	2.72	−9.73	−1.02	5.384	5.419	5.340	5.399	5.398	0^+	$13/2^+$
186	104	1448.35	1451.79	7.79	7.81	19.15	6.03	11.05	2.97	−9.56	−1.28	5.395	5.433	5.345	5.405	5.403	0^+	0^+
187	105	1456.40	1460.17	7.79	7.81	19.10	6.45	8.06	3.18	−9.51	−1.48	5.406	5.448	5.352	5.411	5.408	0^+	$5/2^-$
188	106	1467.04	1471.07	7.80	7.82	18.69	6.93	10.64	3.42	−9.35	−1.75	5.415	5.461	5.356	5.416	5.414	0^+	0^+
189	107	1474.97	1479.20	7.80	7.83	18.57	7.35	7.93	3.61	−9.30	−2.01	5.426	5.475	5.362	5.422	5.418	0^+	$5/2^-$
190	108	1485.36	1489.82	7.82	7.84	18.31	7.83	10.38	3.86	−9.18	−2.24	5.436	5.488	5.367	5.427	5.422	0^+	0^+
191	109	1493.19	1497.70	7.82	7.84	18.22	8.10	7.83	3.92	−9.12	−2.46	5.447	5.502	5.373	5.432	5.423	0^+	$5/2^-$
192	110	1503.34	1508.10	7.83	7.85	17.99	8.72	10.15	4.30	−9.02	−2.74	5.457	5.514	5.378	5.438	5.430	0^+	0^+
193	111	1511.08	1515.81	7.83	7.85	17.89	9.12	7.74	4.50	−8.96	−2.99	5.467	5.528	5.384	5.443	5.431	0^+	$5/2^-$
194	112	1521.05	1525.89	7.84	7.87	17.70	9.59	9.97	4.74	−8.88	−3.22	5.477	5.541	5.389	5.448	5.437	0^+	0^+
195	113	1528.69	1533.47	7.84	7.86	17.61	10.00	7.64	4.95	−8.81	−3.49	5.487	5.554	5.394	5.453	5.439	0^+	$5/2^-$
196	114	1538.50	1543.19	7.85	7.87	17.45	10.47	9.81	5.19	−8.74	−3.73	5.498	5.566	5.400	5.459	5.444	0^+	0^+
197	115	1546.10	1550.65	7.85	7.87	17.42	10.96	7.61	5.48	−8.71	−3.97	5.508	5.580	5.405	5.464	5.445	0^+	$3/2^-$
198	116	1555.71	1560.02	7.86	7.88	17.21	11.35	9.61	5.64	−8.62	−4.20	5.518	5.592	5.411	5.470	5.452	0^+	0^+
199	117	1563.29	1567.27	7.86	7.88	17.19	11.91	7.58	5.93	−8.59	−4.45	5.528	5.605	5.416	5.475	5.453	0^+	$3/2^-$
200	118	1572.71	1576.37	7.86	7.88	16.99	12.25	9.41	6.11	−8.49	−4.69	5.538	5.617	5.421	5.480	5.461	0^+	0^+
201	119	1580.27	1583.44	7.86	7.88	16.97	12.73	7.56	6.35	−8.46	−4.90	5.548	5.629	5.427	5.485	5.463	0^+	$3/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
202	120	1589.49	1592.19	7.87	7.88	16.78	13.20	9.22	6.61	−8.37	−5.16	5.557	5.641	5.432	5.490	5.471	0^+	0^+
203	121	1597.01	1599.11	7.87	7.88	16.75	13.62	7.53	6.80	−8.32	−5.36	5.567	5.654	5.437	5.496	5.473	0^+	$3/2^-$
204	122	1606.05	1607.51	7.87	7.88	16.56	14.27	9.03	7.18	−8.23	−5.64	5.577	5.666	5.441	5.500	5.480	0^+	0^+
205	123	1613.56	1614.24	7.87	7.87	16.54	14.70	7.51	7.37	−8.30	−5.82	5.587	5.679	5.446	5.505	5.483	0^+	$1/2^-$
206	124	1622.32	1622.33	7.88	7.88	16.27	15.38	8.76	7.80	−8.01	−6.16	5.596	5.690	5.451	5.509	5.490	0^+	0^+
207	125	1630.07	1629.06	7.87	7.87	16.51	15.91	7.75	8.11	−6.25	−6.37	5.606	5.703	5.455	5.514	5.494	0^+	$1/2^-$
208	126	1637.92	1636.43	7.87	7.87	15.60	16.13	7.85	8.17	−6.62	−6.50	5.617	5.717	5.460	5.518	5.501	0^+	0^+
209	127	1640.73	1640.37	7.85	7.85	10.66	16.50	2.82	8.36	−6.33	−6.65	5.630	5.734	5.466	5.524	5.510	0^+	$9/2^+$
210	128	1645.59	1645.55	7.84	7.84	7.68	16.90	4.86	8.55	−3.89	−6.88	5.647	5.751	5.480	5.538	5.521	0^+	0^+
211	129	1648.37	1649.39	7.81	7.82	7.64	17.27	2.78	8.74	−3.87	−7.11	5.662	5.768	5.492	5.550	5.529	0^+	$11/2^+$
212	130	1653.19	1654.52	7.80	7.80	7.60	17.65	4.82	8.93	−3.86	−7.30	5.676	5.784	5.500	5.558	5.540	0^+	0^+
213	131	1655.94	1658.24	7.77	7.79	7.57	18.01	2.75	9.11	−3.85	−7.46	5.690	5.801	5.507	5.565		0^+	$9/2^+$
214	132	1660.73	1663.29	7.76	7.77	7.53	18.39	4.78	9.30	−3.83	−7.70	5.705	5.817	5.520	5.578	5.558	0^+	0^+
215	133	1663.46		7.74		7.52	18.74	2.73	9.47	−3.82	−7.87	5.719	5.833	5.528	5.585		0^+	$9/2^+$
216	134	1668.20		7.72		7.47	19.11	4.74	9.65	−3.81	−8.11	5.733	5.849	5.539	5.597		0^+	0^+
217	135	1670.92		7.70		7.46	19.46	2.72	9.83	−3.80	−8.28	5.747	5.865	5.548	5.605		0^+	$9/2^+$
218	136	1675.62		7.69		7.42	19.82	4.70	10.00	−3.78	−8.51	5.762	5.880	5.559	5.616		0^+	0^+
219	137	1678.33		7.66		7.41	20.16	2.71	10.17	−3.77	−8.69	5.776	5.896	5.568	5.625		0^+	$9/2^+$
220	138	1682.98		7.65		7.36	20.50	4.65	10.34	−3.75	−8.90	5.789	5.911	5.578	5.635		0^+	0^+
221	139	1685.68		7.63		7.35	20.85	2.70	10.51	−3.73	−9.09	5.803	5.927	5.587	5.644		0^+	$9/2^+$
222	140	1690.28		7.61		7.30	21.18	4.60	10.68	−3.71	−9.28	5.817	5.942	5.596	5.653		0^+	0^+
223	141	1692.95		7.59		7.27	21.52	2.67	10.84	−3.68	−9.47	5.831	5.957	5.606	5.663		0^+	$9/2^+$
224	142	1697.50		7.58		7.22	21.85	4.55	11.01	−3.66	−9.65	5.843	5.972	5.614	5.670		0^+	0^+
225	143	1700.13		7.56		7.18	22.19	2.63	11.17	−3.61	−9.84	5.857	5.987	5.624	5.680		0^+	$9/2^+$
226	144	1704.61		7.54		7.11	22.49	4.48	11.33	−3.59	−10.01	5.869	6.001	5.630	5.687		0^+	0^+
227	145	1707.12		7.52		6.99	22.82	2.51	11.48	−3.50	−10.19	5.883	6.016	5.640	5.697		0^+	$9/2^+$
228	146	1711.56		7.51		6.95	23.13	4.44	11.65	−3.49	−10.35	5.895	6.030	5.646	5.703		0^+	0^+
229	147	1713.87		7.48		6.74	23.44	2.31	11.80	−3.34	−10.53	5.909	6.046	5.656	5.712		0^+	$9/2^+$
230	148	1718.28		7.47		6.72	23.74	4.41	11.96	−3.35	−10.68	5.920	6.059	5.661	5.717		0^+	0^+
231	149	1720.27		7.45		6.40	24.07	1.99	12.14	−3.37	−10.82	5.935	6.078	5.665	5.722		0^+	$5/2^+$
232	150	1724.70		7.43		6.42	24.33	4.43	12.26	−3.22	−11.00	5.946	6.089	5.675	5.731		0^+	0^+
233	151	1726.71		7.41		6.45	24.63	2.02	12.44	−3.22	−11.14	5.960	6.107	5.679	5.735		0^+	$5/2^+$
234	152	1730.87		7.40		6.17	24.91	4.16	12.55	−3.12	−11.31	5.971	6.118	5.688	5.744		0^+	0^+
235	153	1732.98		7.37		6.27	25.20	2.11	12.73	−3.11	−11.45	5.985	6.136	5.693	5.749		0^+	$5/2^+$
236	154	1736.87		7.36		6.00	25.47	3.89	12.85	−3.05	−11.62	5.996	6.147	5.701	5.757		0^+	0^+
237	155	1738.92		7.34		5.94	25.75	2.05	13.00	−3.04	−11.76	6.010	6.165	5.706	5.762		0^+	$5/2^+$
238	156	1742.76		7.32		5.89	26.03	3.84	13.14	−3.00	−11.92	6.021	6.177	5.714	5.769		0^+	0^+
239	157	1744.78		7.30		5.86	26.30	2.02	13.29	−2.99	−12.06	6.035	6.193	5.719	5.774		0^+	$5/2^+$
240	158	1748.56		7.29		5.80	26.58	3.78	13.42	−2.96	−12.22	6.046	6.205	5.726	5.781		0^+	0^+
241	159	1750.56		7.26		5.78	26.85	2.00	13.57	−2.95	−12.36	6.059	6.222	5.731	5.787		0^+	$5/2^+$
242	160	1754.30		7.25		5.74	27.13	3.74	13.71	−2.93	−12.52	6.070	6.234	5.738	5.793		0^+	0^+
243	161	1756.28		7.23		5.72	27.39	1.97	13.84	−2.92	−12.66	6.084	6.250	5.744	5.799		0^+	$5/2^+$
244	162	1759.99		7.21		5.69	27.67	3.72	13.99	−2.91	−12.81	6.095	6.262	5.750	5.805		0^+	0^+
245	163	1761.97		7.19		5.70	27.95	1.98	14.15	−2.92	−12.96	6.109	6.280	5.754	5.809		0^+	$1/2^+$
246	164	1765.64		7.18		5.65	28.21	3.67	14.27	−2.89	−13.10	6.119	6.290	5.762	5.817		0^+	0^+
247	165	1767.65		7.16		5.68	28.53	2.01	14.47	−2.89	−13.24	6.133	6.307	5.766	5.821		0^+	$1/2^+$
248	166	1771.26		7.14		5.62	28.74	3.61	14.55	−2.87	−13.39	6.143	6.317	5.774	5.829		0^+	0^+
249	167	1773.29		7.12		5.64	29.05	2.03	14.75	−2.87	−13.52	6.156	6.333	5.779	5.834		0^+	$1/2^+$
250	168	1776.85		7.11		5.59	29.27	3.56	14.82	−2.85	−13.67	6.166	6.344	5.785	5.840		0^+	0^+
251	169	1778.94		7.09		5.65	29.60	2.09	15.04	−2.85	−13.80	6.179	6.359	5.791	5.846		0^+	$1/2^+$
252	170	1782.42		7.07		5.56	29.80	3.48	15.10	−2.83	−13.96	6.190	6.370	5.797	5.852		0^+	0^+
253	171	1784.51		7.05		5.57	30.09	2.09	15.27	−2.83	−14.08	6.202	6.385	5.803	5.858		0^+	$1/2^+$
254	172	1787.96		7.04		5.54	30.32	3.45	15.36	−2.81	−14.24	6.213	6.397	5.809	5.863		0^+	0^+
255	173	1790.04		7.02		5.53	30.54	2.08	15.49	−2.80	−14.36	6.225	6.410	5.815	5.870		0^+	$1/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
256	174	1793.48		7.01		5.52	30.84	3.44	15.63	−2.79	−14.53	6.236	6.422	5.820	5.875		0^+	0^+
257	175	1795.55		6.99		5.51	30.98	2.07	15.65	−2.78	−14.63	6.247	6.434	5.828	5.882		0^+	$1/2^+$
258	176	1798.98		6.97		5.50	31.36	3.43	15.90	−2.77	−14.81	6.258	6.447	5.832	5.886		0^+	0^+
259	177	1801.07		6.95		5.52	31.51	2.09	15.93	−2.78	−14.98	6.270	6.460	5.838	5.893		0^+	$3/2^+$
260	178	1804.46		6.94		5.48	31.88	3.38	16.16	−2.75	−15.09	6.281	6.472	5.843	5.898		0^+	0^+
261	179	1806.57		6.92		5.50	32.02	2.12	16.19	−2.75	−15.28	6.291	6.483	5.851	5.905		0^+	$3/2^+$
262	180	1809.92		6.91		5.46	32.40	3.34	16.42	−2.73	−15.37	6.303	6.496	5.855	5.910		0^+	0^+
263	181	1812.05		6.89		5.47	32.52	2.13	16.44	−2.72	−15.58	6.313	6.506	5.863	5.917		0^+	$3/2^+$
264	182	1815.36		6.88		5.44	32.91	3.31	16.69	−2.71	−15.65	6.325	6.520	5.867	5.921		0^+	0^+
265	183	1817.50		6.86		5.45	33.02	2.14	16.69	−1.85	−15.89	6.334	6.529	5.876	5.930		0^+	$3/2^+$
266	184	1820.77		6.85		5.42	33.43	3.28	16.95	−1.18	−15.93	6.346	6.543	5.879	5.933		0^+	0^+
267	185	1819.86		6.82		2.37	33.54	−0.91	17.04	−1.59	−16.00	6.360	6.560	5.883	5.938		0^+	$11/2^-$
268	186	1820.01		6.79		−0.76	33.77	0.15	17.13	0.33	−16.10	6.375	6.577	5.890	5.944		0^+	0^+
σ		3.25													0.015			
$Z = 83$ (Bi)																		
179	96	1364.72		7.62			−2.46			−10.94	0.25	5.329	5.333	5.324	5.384		$9/2^-$	0^+
180	97	1374.44		7.64			−1.96			−10.76	0.03	5.339	5.347	5.330	5.389		$9/2^-$	$7/2^-$
181	98	1386.12		7.66			−1.47	11.68	−3.05	−10.65	−0.20	5.348	5.360	5.334	5.394		$9/2^-$	0^+
182	99	1395.46		7.67		21.02	−0.97	9.34	−2.79	−10.42	−0.46	5.358	5.374	5.340	5.399		$9/2^-$	$7/2^-$
183	100	1406.94		7.69		20.82	−0.48	11.49	−2.55	−10.36	−0.68	5.368	5.387	5.344	5.404		$9/2^-$	0^+
184	101	1415.79	1419.00	7.69	7.71	20.33	0.03	8.85	−2.24	−10.10	−0.87	5.378	5.401	5.350	5.409		$9/2^-$	$7/2^-$
185	102	1427.19		7.71		20.24	0.52	11.40	−2.01	−10.08	−1.09	5.387	5.414	5.354	5.414		$9/2^-$	0^+
186	103	1435.59	1439.46	7.72	7.74	19.80	1.01	8.40	−1.71	−10.00	−1.36	5.397	5.427	5.359	5.419		$9/2^-$	$13/2^-$
187	104	1446.89	1450.78	7.74	7.76	19.70	1.52	11.30	−1.46	−9.84	−1.56	5.407	5.441	5.365	5.424		$9/2^-$	0^+
188	105	1455.21	1459.66	7.74	7.76	19.62	1.99	8.32	−1.19	−9.79	−1.73	5.419	5.456	5.371	5.430		$9/2^-$	$5/2^-$
189	106	1466.14	1470.61	7.76	7.78	19.25	2.51	10.92	−0.90	−9.63	−1.95	5.428	5.468	5.376	5.435		$9/2^-$	0^+
190	107	1474.31	1479.21	7.76	7.79	19.10	2.95	8.17	−0.66	−9.58	−2.12	5.439	5.482	5.382	5.441		$9/2^-$	$5/2^-$
191	108	1485.00	1489.93	7.77	7.80	18.86	3.50	10.68	−0.36	−9.45	−2.39	5.448	5.495	5.386	5.445		$9/2^-$	0^+
192	109	1493.08	1498.29	7.78	7.80	18.77	3.95	8.08	−0.11	−9.39	−2.57	5.458	5.508	5.392	5.451		$9/2^-$	$5/2^-$
193	110	1503.52	1508.70	7.79	7.82	18.52	4.47	10.44	0.18	−9.28	−2.86	5.468	5.521	5.397	5.456		$9/2^-$	0^+
194	111	1511.52		7.79		18.44	4.93	8.00	0.44	−9.22	−3.03	5.478	5.534	5.402	5.461		$9/2^-$	$5/2^-$
195	112	1521.75	1527.00	7.80	7.83	18.23	5.44	10.23	0.70	−9.14	−3.32	5.488	5.547	5.408	5.467		$9/2^-$	0^+
196	113	1529.66	1535.05	7.80	7.83	18.14	5.92	7.91	0.97	−9.07	−3.50	5.498	5.560	5.413	5.472		$9/2^-$	$5/2^-$
197	114	1539.72	1544.80	7.82	7.84	17.97	6.40	10.06	1.22	−9.00	−3.79	5.508	5.572	5.419	5.477		$9/2^-$	0^+
198	115	1547.56	1552.56	7.82	7.84	17.90	6.93	7.84	1.46	−8.97	−4.12	5.518	5.585	5.423	5.482		$9/2^-$	$3/2^-$
199	116	1557.44	1562.06	7.83	7.85	17.72	7.36	9.88	1.72	−8.87	−4.22	5.528	5.597	5.429	5.488		$9/2^-$	0^+
200	117	1565.26	1569.70	7.83	7.85	17.71	7.90	7.83	1.97	−8.84	−4.53	5.538	5.610	5.434	5.493		$9/2^-$	$3/2^-$
201	118	1574.93	1578.82	7.84	7.85	17.49	8.33	9.66	2.22	−8.74	−4.65	5.547	5.622	5.439	5.498		$9/2^-$	0^+
202	119	1582.74	1586.21	7.84	7.85	17.48	8.83	7.82	2.48	−8.71	−4.94	5.557	5.635	5.445	5.503	5.484	$9/2^-$	$3/2^-$
203	120	1592.19	1595.07	7.84	7.86	17.26	9.32	9.45	2.70	−8.61	−5.09	5.567	5.647	5.449	5.508	5.491	$9/2^-$	0^+
204	121	1599.99	1602.26	7.84	7.85	17.25	9.77	7.80	2.97	−8.57	−5.38	5.577	5.659	5.455	5.513	5.493	$9/2^-$	$3/2^-$
205	122	1609.22	1610.75	7.85	7.86	17.02	10.34	9.23	3.17	−8.46	−5.79	5.586	5.670	5.459	5.517	5.501	$9/2^-$	0^+
206	123	1616.93	1617.79	7.85	7.85	16.94	10.74	7.71	3.37	−8.31	−6.08	5.596	5.682	5.465	5.523	5.503	$9/2^-$	$3/2^-$
207	124	1625.93	1625.88	7.85	7.85	16.71	11.40	9.00	3.61	−8.21	−6.45	5.605	5.694	5.468	5.526	5.510	$9/2^-$	0^+
208	125	1633.85	1632.77	7.86	7.85	16.93	11.89	7.93	3.79	−6.47	−6.67	5.615	5.707	5.473	5.531	5.515	$9/2^-$	$11/2^+$
209	126	1641.86	1640.23	7.86	7.85	15.93	12.11	8.00	3.94	−6.71	−6.81	5.626	5.721	5.477	5.536	5.521	$9/2^-$	0^+
210	127	1644.98	1644.83	7.83	7.83	11.13	12.61	3.12	4.25	−6.31	−6.99	5.642	5.739	5.490	5.548	5.530	$9/2^-$	$11/2^+$
211	128	1650.03	1649.97	7.82	7.82	8.18	12.99	5.06	4.44	−4.14	−7.10	5.655	5.755	5.498	5.556		$9/2^-$	0^+
212	129	1653.10	1654.30	7.80	7.80	8.13	13.48	3.07	4.73	−4.11	−7.21	5.671	5.772	5.510	5.568	5.549	$9/2^-$	$11/2^+$
213	130	1658.13	1659.49	7.78	7.79	8.09	13.86	5.02	4.93	−4.10	−7.41	5.685	5.788	5.519	5.576	5.559	$9/2^-$	0^+
214	131	1661.16	1663.53	7.76	7.77	8.05	14.33	3.03	5.22	−4.08	−7.52	5.700	5.805	5.531	5.588		$9/2^-$	$11/2^+$
215	132	1666.15	1668.75	7.75	7.76	8.02	14.71	4.99	5.42	−4.07	−7.72	5.714	5.821	5.539	5.597		$9/2^-$	0^+
216	133	1669.13	1672.60	7.73	7.74	7.97	15.15	2.98	5.67	−4.04	−7.90	5.729	5.837	5.550	5.608		$9/2^-$	$11/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
217	134	1674.10	1677.81	7.71	7.73	7.95	15.55	4.97	5.90	−4.04	−8.05	5.742	5.852	5.559	5.616		$9/2^-$	0^+
218	135	1677.03	1681.40	7.69	7.71	7.90	15.94	2.93	6.11	−4.00	−8.28	5.757	5.868	5.570	5.627		$9/2^-$	$11/2^+$
219	136	1681.98		7.68		7.88	16.36	4.95	6.36	−4.01	−8.42	5.770	5.884	5.579	5.636		$9/2^-$	0^+
220	137	1684.90		7.66		7.87	16.74	2.92	6.57	−4.00	−8.54	5.784	5.900	5.587	5.644		$9/2^-$	$9/2^+$
221	138	1689.79		7.65		7.81	17.15	4.89	6.81	−3.97	−8.91	5.797	5.914	5.597	5.654		$9/2^-$	0^+
222	139	1692.71		7.62		7.81	17.54	2.91	7.03	−3.95	−9.06	5.811	5.930	5.607	5.664		$9/2^-$	$9/2^+$
223	140	1697.52		7.61		7.73	17.92	4.82	7.24	−3.92	−9.26	5.824	5.945	5.616	5.672		$9/2^-$	0^+
224	141	1700.41		7.59		7.71	18.30	2.89	7.46	−3.89	−9.44	5.838	5.960	5.625	5.682		$9/2^-$	$9/2^+$
225	142	1705.15		7.58		7.63	18.66	4.74	7.65	−3.85	−9.58	5.851	5.974	5.633	5.689		$9/2^-$	0^+
226	143	1708.00		7.56		7.58	19.04	2.85	7.87	−3.80	−9.76	5.864	5.989	5.642	5.699		$9/2^-$	$9/2^+$
227	144	1712.64		7.54		7.49	19.36	4.65	8.03	−3.77	−9.90	5.876	6.003	5.649	5.705		$9/2^-$	0^+
228	145	1715.37		7.52		7.37	19.72	2.73	8.25	−3.68	−10.06	5.890	6.018	5.658	5.715		$9/2^-$	$9/2^+$
229	146	1719.96		7.51		7.31	20.05	4.58	8.40	−3.67	−10.20	5.901	6.032	5.664	5.721		$9/2^-$	0^+
230	147	1722.48		7.49		7.10	20.41	2.52	8.61	−3.52	−10.38	5.915	6.047	5.673	5.729		$9/2^-$	$9/2^+$
231	148	1727.02		7.48		7.06	20.70	4.55	8.75	−3.53	−10.53	5.926	6.060	5.679	5.735		$9/2^-$	0^+
232	149	1729.19		7.45		6.72	21.06	2.17	8.93	−3.35	−10.70	5.940	6.076	5.687	5.743		$9/2^-$	$9/2^+$
233	150	1733.79		7.44		6.76	21.35	4.59	9.09	−3.39	−10.85	5.951	6.089	5.692	5.748		$9/2^-$	0^+
234	151	1735.90		7.42		6.71	21.63	2.12	9.19	−3.39	−11.01	5.965	6.107	5.697	5.752		$9/2^-$	$5/2^+$
235	152	1740.29		7.41		6.51	21.98	4.39	9.43	−3.29	−11.15	5.975	6.118	5.706	5.761		$9/2^-$	0^+
236	153	1742.50		7.38		6.59	22.25	2.20	9.52	−3.28	−11.31	5.989	6.135	5.710	5.766		$9/2^-$	$5/2^+$
237	154	1746.63		7.37		6.33	22.60	4.13	9.75	−3.21	−11.45	6.000	6.147	5.719	5.774		$9/2^-$	0^+
238	155	1748.81		7.35		6.31	22.89	2.18	9.89	−3.21	−11.60	6.014	6.163	5.723	5.779		$9/2^-$	$5/2^+$
239	156	1752.83		7.33		6.21	23.21	4.03	10.08	−3.16	−11.74	6.025	6.175	5.731	5.787		$9/2^-$	0^+
240	157	1754.99		7.31		6.18	23.50	2.15	10.21	−3.15	−11.89	6.038	6.192	5.736	5.792		$9/2^-$	$5/2^+$
241	158	1758.95		7.30		6.12	23.82	3.97	10.39	−3.12	−12.03	6.049	6.203	5.744	5.799		$9/2^-$	0^+
242	159	1761.09		7.28		6.10	24.10	2.13	10.53	−3.11	−12.18	6.062	6.219	5.749	5.804		$9/2^-$	$5/2^+$
243	160	1765.01		7.26		6.05	24.41	3.92	10.71	−3.09	−12.33	6.073	6.231	5.756	5.811		$9/2^-$	0^+
244	161	1767.13		7.24		6.04	24.69	2.12	10.85	−3.08	−12.47	6.086	6.247	5.762	5.817		$9/2^-$	$5/2^+$
245	162	1771.01		7.23		6.00	25.01	3.88	11.02	−3.06	−12.62	6.097	6.259	5.768	5.823		$9/2^-$	0^+
246	163	1773.11		7.21		5.98	25.29	2.10	11.14	−3.05	−12.76	6.110	6.274	5.774	5.829		$9/2^-$	$5/2^+$
247	164	1776.97		7.19		5.96	25.60	3.86	11.32	−3.04	−12.91	6.121	6.286	5.780	5.835		$9/2^-$	0^+
248	165	1779.09		7.17		5.98	25.91	2.12	11.44	−3.05	−13.08	6.135	6.303	5.784	5.839		$9/2^-$	$1/2^+$
249	166	1782.89		7.16		5.93	26.18	3.81	11.63	−3.02	−13.19	6.144	6.313	5.792	5.847		$9/2^-$	0^+
250	167	1785.04		7.14		5.96	26.51	2.15	11.75	−3.03	−13.35	6.158	6.329	5.797	5.852		$9/2^-$	$1/2^+$
251	168	1788.79		7.13		5.90	26.76	3.75	11.94	−3.00	−13.48	6.168	6.340	5.804	5.859		$9/2^-$	0^+
252	169	1790.97		7.11		5.92	27.07	2.18	12.03	−3.01	−13.63	6.181	6.355	5.809	5.864		$9/2^-$	$1/2^+$
253	170	1794.66		7.09		5.87	27.34	3.69	12.24	−2.98	−13.76	6.191	6.366	5.815	5.870		$9/2^-$	0^+
254	171	1796.91		7.07		5.95	27.68	2.25	12.40	−2.99	−13.90	6.203	6.380	5.821	5.876		$9/2^-$	$1/2^+$
255	172	1800.51		7.06		5.85	27.91	3.60	12.55	−2.96	−14.05	6.214	6.392	5.827	5.882		$9/2^-$	0^+
256	173	1802.77		7.04		5.86	28.21	2.26	12.73	−2.96	−14.17	6.226	6.405	5.833	5.888		$9/2^-$	$1/2^+$
257	174	1806.34		7.03		5.83	28.49	3.57	12.86	−2.95	−14.33	6.236	6.417	5.838	5.893		$9/2^-$	0^+
258	175	1808.60		7.01		5.83	28.69	2.26	13.05	−2.94	−14.44	6.248	6.430	5.845	5.900		$9/2^-$	$1/2^+$
259	176	1812.14		7.00		5.81	29.06	3.55	13.17	−2.93	−14.60	6.259	6.442	5.850	5.904		$9/2^-$	0^+
260	177	1814.41		6.98		5.81	29.26	2.26	13.34	−2.94	−14.76	6.270	6.455	5.855	5.910		$9/2^-$	$3/2^+$
261	178	1817.93		6.97		5.79	29.63	3.52	13.47	−2.91	−14.88	6.281	6.467	5.861	5.915		$9/2^-$	0^+
262	179	1820.24		6.95		5.83	29.85	2.31	13.66	−2.92	−15.06	6.292	6.479	5.867	5.921		$9/2^-$	$3/2^+$
263	180	1823.70		6.93		5.77	30.20	3.46	13.78	−2.89	−15.15	6.303	6.492	5.872	5.926		$9/2^-$	0^+
264	181	1826.05		6.92		5.81	30.44	2.35	14.00	−2.89	−15.35	6.313	6.503	5.879	5.933		$9/2^-$	$3/2^+$
265	182	1829.44		6.90		5.75	30.77	3.40	14.09	−2.87	−15.42	6.325	6.517	5.883	5.937		$9/2^-$	0^+
266	183	1831.83		6.89		5.79	31.02	2.39	14.33	−1.88	−15.64	6.335	6.526	5.891	5.945		$9/2^-$	$3/2^+$
267	184	1835.17		6.87		5.73	31.35	3.34	14.40	−1.18	−15.68	6.347	6.541	5.893	5.947		$9/2^-$	0^+
268	185	1834.32		6.84		2.49	31.50	−0.85	14.46	−1.67	−15.76	6.360	6.557	5.898	5.952		$9/2^-$	$3/2^+$
269	186	1834.57		6.82		−0.60	31.69	0.25	14.56	0.25	−15.86	6.375	6.573	5.906	5.960		$9/2^-$	0^+
σ		3.37													0.018			

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
$Z = 84$ (Po)																		
190	106	1466.77	1472.40	7.72	7.75		−0.27		0.63	−9.90	0.42	5.440	5.475	5.394	5.453		0^+	0^+
191	107	1475.19	1480.97	7.72	7.75		0.22		0.88	−9.85	0.18	5.450	5.490	5.400	5.459		0^+	$5/2^-$
192	108	1486.17	1492.05	7.74	7.77		0.81	10.98	1.17	−9.71	−0.12	5.459	5.502	5.405	5.464	5.522	0^+	0^+
193	109	1494.50	1500.41	7.74	7.77	19.31	1.31	8.34	1.42	−9.66	−0.37	5.470	5.515	5.410	5.469		0^+	$5/2^-$
194	110	1505.22	1511.12	7.76	7.79	19.05	1.88	10.72	1.70	−9.54	−0.65	5.479	5.528	5.415	5.474	5.517	0^+	0^+
195	111	1513.48	1519.26	7.76	7.79	18.98	2.39	8.26	1.96	−9.49	−0.91	5.489	5.541	5.421	5.479		0^+	$5/2^-$
196	112	1523.97	1529.74	7.78	7.80	18.75	2.92	10.50	2.22	−9.39	−1.17	5.499	5.553	5.426	5.485	5.514	0^+	0^+
197	113	1532.14	1537.69	7.78	7.81	18.67	3.46	8.17	2.49	−9.33	−1.43	5.509	5.566	5.431	5.490		0^+	$5/2^-$
198	114	1542.45	1547.88	7.79	7.82	18.48	3.95	10.30	2.73	−9.25	−1.68	5.519	5.578	5.436	5.495	5.515	0^+	0^+
199	115	1550.53	1555.69	7.79	7.82	18.39	4.43	8.08	2.97	−9.18	−1.95	5.528	5.591	5.441	5.500		0^+	$5/2^-$
200	116	1560.67	1565.50	7.80	7.83	18.22	4.96	10.14	3.23	−9.11	−2.18	5.538	5.603	5.447	5.505	5.520	0^+	0^+
201	117	1568.74	1573.14	7.80	7.83	18.20	5.44	8.07	3.47	−9.09	−2.42	5.548	5.616	5.452	5.510		0^+	$3/2^-$
202	118	1578.65	1582.61	7.82	7.83	17.98	5.94	9.91	3.72	−8.97	−2.66	5.557	5.628	5.457	5.516	5.528	0^+	0^+
203	119	1586.71	1590.07	7.82	7.83	17.98	6.45	8.06	3.97	−8.95	−2.91	5.567	5.640	5.462	5.520		0^+	$3/2^-$
204	120	1596.39	1599.18	7.83	7.84	17.74	6.90	9.67	4.19	−8.83	−3.13	5.577	5.652	5.467	5.525	5.538	0^+	0^+
205	121	1604.44	1606.41	7.83	7.84	17.73	7.42	8.05	4.45	−8.80	−3.39	5.586	5.664	5.472	5.531	5.539	0^+	$3/2^-$
206	122	1613.86	1615.16	7.83	7.84	17.47	7.81	9.42	4.64	−8.68	−3.58	5.595	5.676	5.477	5.535	5.548	0^+	0^+
207	123	1621.83	1622.19	7.83	7.84	17.39	8.28	7.97	4.91	−8.51	−3.84	5.605	5.687	5.482	5.540	5.550	0^+	$3/2^-$
208	124	1630.99	1630.59	7.84	7.84	17.13	8.67	9.16	5.06	−8.40	−4.00	5.614	5.699	5.485	5.543	5.558	0^+	0^+
209	125	1639.09	1637.55	7.84	7.84	17.26	9.02	8.10	5.24	−6.69	−4.17	5.624	5.712	5.490	5.548	5.563	0^+	$1/2^-$
210	126	1647.25	1645.21	7.84	7.83	16.26	9.34	8.16	5.40	−6.86	−4.33	5.634	5.726	5.494	5.552	5.570	0^+	0^+
211	127	1650.68	1649.76	7.82	7.82	11.59	9.95	3.43	5.71	−6.54	−4.64	5.650	5.743	5.507	5.565		0^+	$11/2^+$
212	128	1655.95	1655.77	7.81	7.81	8.70	10.36	5.27	5.92	−4.39	−4.85	5.664	5.759	5.516	5.574		0^+	0^+
213	129	1659.33	1660.13	7.79	7.79	8.64	10.96	3.37	6.22	−4.36	−5.15	5.680	5.776	5.528	5.586		0^+	$11/2^+$
214	130	1664.56	1666.02	7.78	7.79	8.61	11.37	5.23	6.43	−4.35	−5.37	5.693	5.792	5.537	5.594		0^+	0^+
215	131	1667.88	1670.16	7.76	7.77	8.55	11.94	3.32	6.72	−4.32	−5.66	5.709	5.809	5.549	5.606		0^+	$11/2^+$
216	132	1673.08	1675.91	7.75	7.76	8.52	12.36	5.20	6.94	−4.32	−5.87	5.722	5.825	5.558	5.615	5.636	0^+	0^+
217	133	1676.35	1679.87	7.73	7.74	8.46	12.89	3.26	7.22	−4.28	−6.15	5.737	5.841	5.569	5.626		0^+	$11/2^+$
218	134	1681.52	1685.47	7.71	7.73	8.44	13.32	5.18	7.43	−4.28	−6.37	5.751	5.856	5.578	5.635	5.656	0^+	0^+
219	135	1684.72	1689.22	7.69	7.71	8.37	13.80	3.19	7.69	−4.23	−6.62	5.765	5.872	5.589	5.646		0^+	$11/2^+$
220	136	1689.89	1694.71	7.68	7.70	8.36	14.27	5.17	7.91	−4.23	−6.84	5.779	5.887	5.598	5.655		0^+	0^+
221	137	1693.02	1698.27	7.66	7.68	8.30	14.69	3.13	8.12	−4.23	−7.05	5.792	5.903	5.607	5.664		0^+	$9/2^+$
222	138	1698.16	1703.63	7.65	7.67	8.27	15.18	5.14	8.36	−4.18	−7.29	5.806	5.918	5.617	5.674		0^+	0^+
223	139	1701.29		7.63		8.27	15.61	3.13	8.58	−4.17	−7.51	5.820	5.933	5.626	5.683		0^+	$9/2^+$
224	140	1706.32		7.62		8.16	16.04	5.03	8.80	−4.12	−7.72	5.832	5.948	5.635	5.692		0^+	0^+
225	141	1709.43		7.60		8.14	16.48	3.11	9.02	−4.09	−7.94	5.846	5.963	5.644	5.701		0^+	$9/2^+$
226	142	1714.36		7.59		8.03	16.86	4.92	9.21	−4.05	−8.12	5.858	5.977	5.652	5.708		0^+	0^+
227	143	1717.42		7.57		7.99	17.29	3.06	9.42	−3.99	−8.33	5.872	5.992	5.661	5.717		0^+	$9/2^+$
228	144	1722.23		7.55		7.87	17.62	4.81	9.59	−3.95	−8.49	5.883	6.006	5.668	5.724		0^+	0^+
229	145	1725.18		7.53		7.76	18.06	2.95	9.80	−3.86	−8.69	5.897	6.020	5.676	5.732		0^+	$9/2^+$
230	146	1729.90		7.52		7.67	18.34	4.73	9.95	−3.84	−8.85	5.908	6.034	5.682	5.738		0^+	0^+
231	147	1732.63		7.50		7.45	18.76	2.72	10.15	−3.69	−9.05	5.921	6.049	5.691	5.747		0^+	$9/2^+$
232	148	1737.32		7.49		7.41	19.04	4.69	10.29	−3.70	−9.19	5.932	6.062	5.696	5.752		0^+	0^+
233	149	1739.70		7.47		7.07	19.44	2.39	10.51	−3.52	−9.40	5.945	6.077	5.705	5.760		0^+	$9/2^+$
234	150	1744.43		7.45		7.11	19.73	4.73	10.64	−3.56	−9.54	5.956	6.090	5.710	5.766		0^+	0^+
235	151	1746.65		7.43		6.95	19.94	2.22	10.74	−3.57	−9.64	5.970	6.108	5.714	5.769		0^+	$5/2^+$
236	152	1751.29		7.42		6.86	20.42	4.64	10.99	−3.46	−9.89	5.981	6.118	5.723	5.779		0^+	0^+
237	153	1753.53		7.40		6.88	20.55	2.24	11.03	−3.45	−10.00	5.994	6.135	5.727	5.783		0^+	$5/2^+$
238	154	1757.96		7.39		6.67	21.09	4.43	11.33	−3.38	−10.24	6.005	6.146	5.736	5.792		0^+	0^+
239	155	1760.29		7.37		6.76	21.37	2.33	11.48	−3.38	−10.35	6.018	6.163	5.741	5.796		0^+	$5/2^+$
240	156	1764.50		7.35		6.54	21.74	4.22	11.67	−3.32	−10.57	6.029	6.174	5.749	5.805		0^+	0^+
241	157	1766.79		7.33		6.50	22.01	2.29	11.80	−3.32	−10.70	6.042	6.191	5.754	5.810		0^+	$5/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
242	158	1770.95		7.32		6.45	22.39	4.16	12.00	−3.28	−10.90	6.053	6.202	5.762	5.817		0^+	0^+
243	159	1773.22		7.30		6.43	22.66	2.27	12.13	−3.27	−11.04	6.066	6.218	5.767	5.822		0^+	$5/2^+$
244	160	1777.33		7.28		6.38	23.03	4.11	12.32	−3.25	−11.23	6.077	6.230	5.775	5.830		0^+	0^+
245	161	1779.59		7.26		6.37	23.31	2.26	12.46	−3.24	−11.37	6.090	6.245	5.780	5.835		0^+	$5/2^+$
246	162	1783.65		7.25		6.32	23.65	4.06	12.64	−3.22	−11.55	6.100	6.257	5.787	5.842		0^+	0^+
247	163	1785.90		7.23		6.31	23.93	2.25	12.79	−3.21	−11.70	6.113	6.272	5.793	5.848		0^+	$5/2^+$
248	164	1789.92		7.22		6.27	24.28	4.02	12.95	−3.19	−11.86	6.124	6.284	5.799	5.854		0^+	0^+
249	165	1792.17		7.20		6.27	24.52	2.24	13.08	−3.18	−12.02	6.136	6.298	5.805	5.860		0^+	$5/2^+$
250	166	1796.16		7.18		6.24	24.90	3.99	13.27	−3.17	−12.17	6.147	6.310	5.811	5.866		0^+	0^+
251	167	1798.42		7.17		6.26	25.13	2.26	13.38	−3.19	−12.28	6.160	6.327	5.815	5.870		0^+	$1/2^+$
252	168	1802.37		7.15		6.21	25.51	3.95	13.58	−3.15	−12.48	6.170	6.337	5.823	5.878		0^+	0^+
253	169	1804.67		7.13		6.25	25.73	2.30	13.70	−3.17	−12.60	6.183	6.352	5.827	5.882		0^+	$1/2^+$
254	170	1808.55		7.12		6.18	26.13	3.88	13.89	−3.13	−12.79	6.193	6.362	5.835	5.889		0^+	0^+
255	171	1810.89		7.10		6.22	26.37	2.34	13.97	−3.15	−12.92	6.205	6.377	5.840	5.894		0^+	$1/2^+$
256	172	1814.70		7.09		6.16	26.74	3.82	14.19	−3.11	−13.09	6.216	6.388	5.846	5.901		0^+	0^+
257	173	1817.11		7.07		6.22	27.07	2.41	14.34	−3.12	−13.23	6.228	6.402	5.852	5.906		0^+	$1/2^+$
258	174	1820.84		7.06		6.13	27.36	3.73	14.50	−3.09	−13.39	6.238	6.414	5.857	5.912		0^+	0^+
259	175	1823.28		7.04		6.17	27.73	2.45	14.69	−3.10	−13.54	6.250	6.427	5.864	5.918		0^+	$1/2^+$
260	176	1826.95		7.03		6.11	27.97	3.66	14.80	−3.07	−13.68	6.260	6.439	5.869	5.923		0^+	0^+
261	177	1829.40		7.01		6.12	28.33	2.46	14.99	−3.08	−13.85	6.272	6.451	5.875	5.930		0^+	$1/2^+$
262	178	1833.03		7.00		6.09	28.57	3.63	15.10	−3.05	−13.97	6.282	6.464	5.879	5.934		0^+	0^+
263	179	1835.51		6.98		6.11	28.94	2.48	15.27	−3.07	−14.13	6.293	6.476	5.885	5.939		0^+	$3/2^+$
264	180	1839.09		6.97		6.06	29.17	3.58	15.39	−3.03	−14.24	6.304	6.489	5.890	5.944		0^+	0^+
265	181	1841.63		6.95		6.12	29.58	2.54	15.58	−3.05	−14.42	6.315	6.500	5.896	5.950		0^+	$3/2^+$
266	182	1845.12		6.94		6.03	29.76	3.49	15.67	−3.00	−14.51	6.326	6.514	5.900	5.954		0^+	0^+
267	183	1847.71		6.92		6.08	30.22	2.59	15.88	−2.06	−14.70	6.337	6.525	5.906	5.960		0^+	$3/2^+$
268	184	1851.11		6.91		5.99	30.34	3.40	15.94	−1.31	−14.76	6.349	6.539	5.909	5.963		0^+	0^+
269	185	1850.33		6.88		2.62	30.47	−0.78	16.01	−1.76	−14.83	6.362	6.556	5.914	5.967		0^+	$11/2^-$
270	186	1850.69		6.85		−0.42	30.68	0.36	16.12	0.16	−14.95	6.376	6.571	5.922	5.976		0^+	0^+
σ		3.99													0.024			
$Z = 85$ (At)																		
193	108	1485.17	1491.33	7.70	7.73		0.17	0.00	−1.00	−9.98	0.20	5.471	5.509	5.423	5.482		$9/2^-$	0^+
194	109	1493.75	1500.05	7.70	7.73		0.67	8.58	−0.75	−9.93	−0.04	5.481	5.522	5.429	5.487		$9/2^-$	$5/2^-$
195	110	1504.76	1510.88	7.72	7.75	19.59	1.24	11.01	−0.46	−9.81	−0.33	5.490	5.534	5.433	5.492		$9/2^-$	0^+
196	111	1513.28	1519.39	7.72	7.75	19.53	1.76	8.52	−0.20	−9.76	−0.58	5.500	5.547	5.439	5.497		$9/2^-$	$5/2^-$
197	112	1524.04	1529.89	7.74	7.77	19.28	2.29	10.76	0.07	−9.65	−0.85	5.510	5.560	5.444	5.502		$9/2^-$	0^+
198	113	1532.48		7.74		19.20	2.82	8.44	0.34	−9.59	−1.11	5.519	5.572	5.449	5.507		$9/2^-$	$5/2^-$
199	114	1543.04	1548.51	7.75	7.78	19.00	3.32	10.56	0.59	−9.50	−1.36	5.529	5.584	5.454	5.512		$9/2^-$	0^+
200	115	1551.39	1556.75	7.76	7.78	18.91	3.83	8.35	0.86	−9.44	−1.63	5.538	5.597	5.459	5.517		$9/2^-$	$5/2^-$
201	116	1561.76	1566.62	7.77	7.79	18.72	4.32	10.37	1.09	−9.36	−1.86	5.548	5.609	5.464	5.523		$9/2^-$	0^+
202	117	1570.06	1574.50	7.77	7.79	18.67	4.80	8.30	1.32	−9.34	−2.09	5.558	5.621	5.469	5.527		$9/2^-$	$3/2^-$
203	118	1580.23	1584.14	7.78	7.80	18.47	5.30	10.17	1.58	−9.21	−2.34	5.567	5.633	5.474	5.533		$9/2^-$	0^+
204	119	1588.53	1591.93	7.79	7.80	18.47	5.79	8.30	1.82	−9.19	−2.58	5.577	5.645	5.479	5.537		$9/2^-$	$3/2^-$
205	120	1598.43	1601.09	7.80	7.81	18.20	6.24	9.90	2.04	−9.06	−2.80	5.586	5.657	5.484	5.542		$9/2^-$	0^+
206	121	1606.73	1608.62	7.80	7.81	18.20	6.74	8.30	2.29	−9.03	−3.05	5.596	5.669	5.489	5.547		$9/2^-$	$3/2^-$
207	122	1616.34	1617.49	7.81	7.81	17.91	7.12	9.61	2.48	−8.89	−3.24	5.605	5.681	5.494	5.552		$9/2^-$	0^+
208	123	1624.57	1624.80	7.81	7.81	17.84	7.64	8.23	2.74	−8.71	−3.48	5.614	5.692	5.499	5.557		$9/2^-$	$3/2^-$
209	124	1633.88	1633.29	7.82	7.81	17.54	7.95	9.31	2.89	−8.59	−3.64	5.623	5.704	5.502	5.560		$9/2^-$	0^+
210	125	1642.14	1640.45	7.82	7.81	17.57	8.29	8.26	3.05	−8.25	−3.81	5.633	5.717	5.507	5.564		$9/2^-$	$1/2^-$
211	126	1650.46	1648.20	7.82	7.81	16.58	8.60	8.32	3.21	−7.16	−3.96	5.643	5.730	5.511	5.569		$9/2^-$	0^+
212	127	1654.20	1653.25	7.80	7.80	12.06	9.22	3.74	3.52	−7.47	−4.27	5.659	5.747	5.524	5.581		$9/2^-$	$11/2^+$
213	128	1659.70	1659.27	7.79	7.79	9.24	9.67	5.50	3.75	−4.65	−4.50	5.673	5.764	5.533	5.591		$9/2^-$	0^+
214	129	1663.37	1664.14	7.77	7.78	9.17	10.27	3.67	4.04	−4.62	−4.80	5.688	5.780	5.545	5.603		$9/2^-$	$11/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
215	130	1668.83	1670.09	7.76	7.77	9.13	10.70	5.46	4.27	−4.61	−5.03	5.702	5.796	5.555	5.612		$9/2^-$	0^+
216	131	1672.44	1674.65	7.74	7.75	9.07	11.28	3.61	4.56	−4.57	−5.32	5.717	5.813	5.567	5.624		$9/2^-$	$11/2^+$
217	132	1677.86	1680.58	7.73	7.74	9.03	11.71	5.42	4.78	−4.57	−5.55	5.731	5.828	5.576	5.633		$9/2^-$	0^+
218	133	1681.41	1684.95	7.71	7.73	8.97	12.28	3.55	5.06	−4.52	−5.83	5.746	5.845	5.587	5.644		$9/2^-$	$11/2^+$
219	134	1686.81	1690.72	7.70	7.72	8.95	12.71	5.40	5.29	−4.52	−6.05	5.759	5.860	5.596	5.653		$9/2^-$	0^+
220	135	1690.27	1694.81	7.68	7.70	8.86	13.24	3.46	5.55	−4.46	−6.32	5.774	5.876	5.608	5.664		$9/2^-$	$11/2^+$
221	136	1695.65	1700.48	7.67	7.69	8.84	13.67	5.38	5.76	−4.47	−6.54	5.787	5.891	5.616	5.673		$9/2^-$	0^+
222	137	1698.99	1704.38	7.65	7.68	8.72	14.09	3.34	5.97	−4.39	−6.78	5.801	5.906	5.627	5.683		$9/2^-$	$11/2^+$
223	138	1704.38	1709.98	7.64	7.67	8.73	14.59	5.39	6.22	−4.40	−7.00	5.814	5.921	5.636	5.692		$9/2^-$	0^+
224	139	1707.72	1713.77	7.62	7.65	8.73	15.01	3.34	6.43	−4.39	−7.21	5.827	5.936	5.645	5.701		$9/2^-$	$9/2^+$
225	140	1712.97		7.61		8.59	15.45	5.25	6.65	−4.32	−7.42	5.840	5.951	5.653	5.710		$9/2^-$	0^+
226	141	1716.29		7.59		8.57	15.88	3.32	6.86	−4.29	−7.63	5.853	5.966	5.662	5.719		$9/2^-$	$9/2^+$
227	142	1721.39		7.58		8.42	16.24	5.10	7.03	−4.23	−7.81	5.865	5.979	5.670	5.726		$9/2^-$	0^+
228	143	1724.64		7.56		8.35	16.65	3.25	7.23	−4.18	−8.01	5.878	5.994	5.678	5.734		$9/2^-$	$9/2^+$
229	144	1729.62		7.55		8.23	16.98	4.98	7.39	−4.13	−8.17	5.890	6.008	5.685	5.741		$9/2^-$	0^+
230	145	1732.76		7.53		8.12	17.39	3.14	7.59	−4.04	−8.36	5.903	6.022	5.693	5.749		$9/2^-$	$9/2^+$
231	146	1737.64		7.52		8.02	17.68	4.88	7.74	−4.01	−8.52	5.914	6.036	5.699	5.755		$9/2^-$	0^+
232	147	1740.55		7.50		7.79	18.07	2.91	7.92	−3.87	−8.71	5.927	6.050	5.707	5.763		$9/2^-$	$9/2^+$
233	148	1745.39		7.49		7.75	18.37	4.84	8.07	−3.87	−8.86	5.938	6.063	5.713	5.768		$9/2^-$	0^+
234	149	1747.99		7.47		7.44	18.80	2.60	8.29	−3.71	−9.08	5.950	6.078	5.721	5.776		$9/2^-$	$9/2^+$
235	150	1752.85		7.46		7.46	19.06	4.86	8.42	−3.74	−9.22	5.961	6.091	5.726	5.782		$9/2^-$	0^+
236	151	1755.18		7.44		7.19	19.28	2.33	8.53	−3.74	−9.35	5.975	6.107	5.733	5.788		$9/2^-$	$7/2^+$
237	152	1760.06		7.43		7.21	19.77	4.88	8.77	−3.63	−9.58	5.985	6.118	5.739	5.795		$9/2^-$	0^+
238	153	1762.40		7.41		7.22	19.90	2.34	8.87	−3.64	−9.68	5.998	6.135	5.743	5.799		$9/2^-$	$5/2^+$
239	154	1767.09		7.39		7.03	20.46	4.69	9.13	−3.55	−9.93	6.009	6.146	5.753	5.808		$9/2^-$	0^+
240	155	1769.53		7.37		7.13	20.72	2.44	9.24	−3.55	−10.05	6.022	6.162	5.757	5.812		$9/2^-$	$5/2^+$
241	156	1773.97		7.36		6.88	21.14	4.44	9.47	−3.49	−10.28	6.033	6.173	5.766	5.821		$9/2^-$	0^+
242	157	1776.40		7.34		6.87	21.41	2.43	9.61	−3.49	−10.40	6.046	6.189	5.770	5.826		$9/2^-$	$5/2^+$
243	158	1780.76		7.33		6.79	21.81	4.36	9.81	−3.45	−10.62	6.056	6.201	5.779	5.834		$9/2^-$	0^+
244	159	1783.17		7.31		6.77	22.08	2.41	9.95	−3.45	−10.75	6.069	6.216	5.784	5.839		$9/2^-$	$5/2^+$
245	160	1787.46		7.30		6.70	22.45	4.29	10.13	−3.41	−10.95	6.080	6.228	5.791	5.846		$9/2^-$	0^+
246	161	1789.87		7.28		6.70	22.74	2.41	10.28	−3.41	−11.09	6.092	6.243	5.797	5.852		$9/2^-$	$5/2^+$
247	162	1794.11		7.26		6.65	23.10	4.24	10.46	−3.38	−11.27	6.103	6.254	5.804	5.859		$9/2^-$	0^+
248	163	1796.51		7.24		6.64	23.40	2.40	10.61	−3.37	−11.42	6.115	6.269	5.809	5.864		$9/2^-$	$5/2^+$
249	164	1800.70		7.23		6.59	23.73	4.19	10.78	−3.35	−11.59	6.126	6.281	5.816	5.871		$9/2^-$	0^+
250	165	1803.10		7.21		6.59	24.01	2.40	10.93	−3.35	−11.75	6.138	6.295	5.822	5.877		$9/2^-$	$5/2^+$
251	166	1807.25		7.20		6.55	24.36	4.15	11.09	−3.33	−11.91	6.149	6.307	5.828	5.883		$9/2^-$	0^+
252	167	1809.65		7.18		6.55	24.61	2.40	11.23	−3.32	−12.07	6.161	6.321	5.834	5.889		$9/2^-$	$5/2^+$
253	168	1813.77		7.17		6.52	24.98	4.12	11.40	−3.31	−12.22	6.172	6.333	5.840	5.894		$9/2^-$	0^+
254	169	1816.19		7.15		6.54	25.22	2.42	11.52	−3.33	−12.33	6.184	6.349	5.844	5.898		$9/2^-$	$1/2^+$
255	170	1820.25		7.14		6.48	25.59	4.06	11.70	−3.29	−12.52	6.194	6.359	5.851	5.906		$9/2^-$	0^+
256	171	1822.72		7.12		6.53	25.81	2.47	11.83	−3.30	−12.65	6.207	6.374	5.856	5.910		$9/2^-$	$1/2^+$
257	172	1826.71		7.11		6.46	26.20	3.99	12.01	−3.26	−12.82	6.217	6.384	5.863	5.917		$9/2^-$	0^+
258	173	1829.23		7.09		6.51	26.46	2.52	12.12	−3.28	−12.96	6.229	6.399	5.868	5.922		$9/2^-$	$1/2^+$
259	174	1833.14		7.08		6.43	26.80	3.91	12.30	−3.24	−13.12	6.239	6.409	5.874	5.928		$9/2^-$	0^+
260	175	1835.76		7.06		6.53	27.16	2.62	12.48	−3.25	−13.27	6.250	6.423	5.879	5.934		$9/2^-$	$1/2^+$
261	176	1839.55		7.05		6.41	27.41	3.79	12.60	−3.22	−13.40	6.261	6.435	5.885	5.939		$9/2^-$	0^+
262	177	1842.17		7.03		6.41	27.76	2.62	12.77	−3.23	−13.57	6.272	6.447	5.891	5.945		$9/2^-$	$1/2^+$
263	178	1845.92		7.02		6.37	27.99	3.75	12.89	−3.19	−13.68	6.283	6.460	5.895	5.949		$9/2^-$	0^+
264	179	1848.56		7.00		6.39	28.32	2.64	13.05	−3.19	−13.85	6.294	6.472	5.902	5.956		$9/2^-$	$1/2^+$
265	180	1852.25		6.99		6.33	28.55	3.69	13.16	−3.16	−13.95	6.305	6.485	5.905	5.959		$9/2^-$	0^+
266	181	1854.95		6.97		6.39	28.90	2.70	13.32	−3.18	−14.11	6.315	6.497	5.910	5.964		$9/2^-$	$3/2^+$
267	182	1858.53		6.96		6.28	29.09	3.58	13.41	−3.13	−14.19	6.327	6.510	5.914	5.968		$9/2^-$	0^+
268	183	1861.29		6.95		6.34	29.46	2.76	13.58	−1.97	−14.35	6.337	6.522	5.919	5.973		$9/2^-$	$3/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
269	184	1864.75		6.93		6.22	29.58	3.46	13.64	−1.70	−14.41	6.349	6.537	5.922	5.976		$9/2^-$	0^+
270	185	1864.04		6.90		2.75	29.72	−0.71	13.71	−1.75	−14.48	6.363	6.553	5.927	5.981		$9/2^-$	$11/2^-$
271	186	1864.52		6.88		−0.23	29.95	0.48	13.83	0.06	−14.61	6.376	6.568	5.936	5.990		$9/2^-$	0^+
σ		3.69																
$Z = 86$ (Rn)																		
195	109	1494.52	1501.57	7.66	7.70			8.83	0.77	−10.20	0.26	5.493	5.529	5.446	5.505		0^+	$5/2^-$
196	110	1505.82	1512.73	7.68	7.72	20.13	0.60	11.30	1.06	−10.07	−0.03	5.502	5.541	5.451	5.509		0^+	0^+
197	111	1514.58	1521.29	7.69	7.72	20.06	1.10	8.76	1.30	−10.02	−0.28	5.511	5.554	5.456	5.514		0^+	$5/2^-$
198	112	1525.61	1532.07	7.71	7.74	19.79	1.64	11.03	1.57	−9.90	−0.55	5.521	5.566	5.461	5.519		0^+	0^+
199	113	1534.32	1540.42	7.71	7.74	19.74	2.18	8.71	1.84	−9.85	−0.81	5.530	5.578	5.466	5.524		0^+	$5/2^-$
200	114	1545.12	1550.99	7.73	7.75	19.51	2.67	10.80	2.08	−9.75	−1.06	5.540	5.591	5.471	5.529		0^+	0^+
201	115	1553.74	1559.13	7.73	7.76	19.42	3.21	8.62	2.35	−9.69	−1.33	5.549	5.603	5.476	5.534		0^+	$5/2^-$
202	116	1564.34	1569.40	7.74	7.77	19.22	3.67	10.60	2.58	−9.60	−1.55	5.558	5.615	5.481	5.539	5.552	0^+	0^+
203	117	1572.87	1577.36	7.75	7.77	19.13	4.13	8.53	2.81	−9.52	−1.82	5.567	5.626	5.486	5.544		0^+	$5/2^-$
204	118	1583.28	1587.25	7.76	7.78	18.94	4.63	10.41	3.05	−9.44	−2.03	5.577	5.639	5.491	5.549	5.557	0^+	0^+
205	119	1591.82	1595.05	7.76	7.78	18.95	5.11	8.54	3.29	−9.43	−2.26	5.586	5.651	5.496	5.554	5.557	0^+	$3/2^-$
206	120	1601.95	1604.53	7.78	7.79	18.67	5.56	10.13	3.52	−9.28	−2.48	5.596	5.662	5.501	5.559	5.564	0^+	0^+
207	121	1610.49	1612.12	7.78	7.79	18.67	6.05	8.54	3.76	−9.25	−2.72	5.605	5.674	5.506	5.564	5.565	0^+	$3/2^-$
208	122	1620.28	1621.21	7.79	7.79	18.33	6.42	9.79	3.94	−9.09	−2.91	5.614	5.686	5.510	5.568	5.573	0^+	0^+
209	123	1628.74	1628.55	7.79	7.79	18.25	6.91	8.46	4.17	−8.89	−3.14	5.623	5.697	5.515	5.573	5.574	0^+	$3/2^-$
210	124	1638.20	1637.30	7.80	7.80	17.92	7.21	9.46	4.32	−8.76	−3.30	5.631	5.708	5.518	5.576	5.581	0^+	0^+
211	125	1646.63	1644.52	7.80	7.79	17.89	7.54	8.43	4.49	−8.41	−3.46	5.641	5.721	5.523	5.581	5.585	0^+	$1/2^-$
212	126	1655.11	1652.50	7.81	7.79	16.91	7.86	8.48	4.65	−7.13	−3.62	5.651	5.735	5.527	5.585	5.592	0^+	0^+
213	127	1659.16	1657.61	7.79	7.78	12.53	8.48	4.05	4.96	−7.57	−3.92	5.667	5.752	5.540	5.597		0^+	$11/2^+$
214	128	1664.89	1664.30	7.78	7.78	9.78	8.94	5.73	5.19	−4.92	−4.16	5.681	5.768	5.550	5.607		0^+	0^+
215	129	1668.87	1669.22	7.76	7.76	9.71	9.54	3.98	5.50	−4.88	−4.47	5.697	5.785	5.562	5.619		0^+	$11/2^+$
216	130	1674.56	1675.87	7.75	7.76	9.67	10.00	5.69	5.73	−4.87	−4.70	5.710	5.801	5.571	5.629		0^+	0^+
217	131	1678.47	1680.54	7.73	7.74	9.60	10.59	3.91	6.03	−4.83	−5.00	5.726	5.817	5.584	5.641		0^+	$11/2^+$
218	132	1684.12	1687.05	7.73	7.74	9.56	11.04	5.65	6.26	−4.82	−5.23	5.739	5.832	5.593	5.650	5.654	0^+	0^+
219	133	1687.96	1691.51	7.71	7.72	9.49	11.61	3.84	6.55	−4.77	−5.52	5.754	5.849	5.605	5.662	5.665	0^+	$11/2^+$
220	134	1693.58	1697.80	7.70	7.72	9.46	12.06	5.62	6.77	−4.77	−5.75	5.767	5.864	5.614	5.671	5.673	0^+	0^+
221	135	1697.31	1702.01	7.68	7.70	9.35	12.59	3.73	7.04	−4.70	−6.02	5.782	5.880	5.625	5.682	5.683	0^+	$11/2^+$
222	136	1702.91	1708.18	7.67	7.69	9.33	13.02	5.60	7.26	−4.70	−6.24	5.795	5.894	5.635	5.691	5.692	0^+	0^+
223	137	1706.50	1712.23	7.65	7.68	9.19	13.48	3.59	7.51	−4.60	−6.48	5.809	5.910	5.645	5.701		0^+	$11/2^+$
224	138	1712.11	1718.25	7.64	7.67	9.20	13.95	5.61	7.73	−4.62	−6.70	5.822	5.924	5.654	5.710		0^+	0^+
225	139	1715.66	1722.23	7.63	7.65	9.16	14.37	3.55	7.94	−4.61	−6.91	5.835	5.940	5.663	5.719		0^+	$9/2^+$
226	140	1721.12	1728.09	7.62	7.65	9.01	14.80	5.46	8.15	−4.52	−7.12	5.848	5.954	5.671	5.727		0^+	0^+
227	141	1724.65	1732.03	7.60	7.63	8.99	15.22	3.53	8.36	−4.48	−7.33	5.861	5.969	5.680	5.736		0^+	$9/2^+$
228	142	1729.93	1737.73	7.59	7.62	8.81	15.57	5.28	8.54	−4.42	−7.50	5.873	5.982	5.687	5.743		0^+	0^+
229	143	1733.38	1741.69	7.57	7.61	8.73	15.97	3.45	8.74	−4.35	−7.69	5.885	5.997	5.695	5.751		0^+	$9/2^+$
230	144	1738.52		7.56		8.59	16.29	5.14	8.90	−4.30	−7.86	5.897	6.010	5.702	5.757		0^+	0^+
231	145	1741.84		7.54		8.46	16.67	3.32	9.08	−4.21	−8.04	5.909	6.024	5.709	5.765		0^+	$9/2^+$
232	146	1746.88		7.53		8.36	16.98	5.04	9.24	−4.18	−8.20	5.920	6.038	5.715	5.771		0^+	0^+
233	147	1749.98		7.51		8.14	17.35	3.10	9.43	−4.05	−8.38	5.932	6.052	5.723	5.778		0^+	$9/2^+$
234	148	1754.97		7.50		8.09	17.65	4.99	9.58	−4.05	−8.54	5.944	6.065	5.729	5.784		0^+	0^+
235	149	1757.78		7.48		7.80	18.08	2.81	9.79	−3.89	−8.75	5.956	6.079	5.736	5.792		0^+	$9/2^+$
236	150	1762.79		7.47		7.82	18.36	5.01	9.94	−3.92	−8.90	5.967	6.092	5.742	5.798		0^+	0^+
237	151	1765.29		7.45		7.51	18.64	2.50	10.11	−3.77	−9.13	5.980	6.106	5.750	5.806		0^+	$9/2^+$
238	152	1770.36		7.44		7.57	19.07	5.07	10.30	−3.81	−9.26	5.990	6.119	5.756	5.811		0^+	0^+
239	153	1772.84		7.42		7.55	19.31	2.48	10.44	−3.81	−9.41	6.003	6.134	5.762	5.818		0^+	$7/2^+$
240	154	1777.74		7.41		7.38	19.78	4.90	10.65	−3.73	−9.62	6.014	6.146	5.769	5.824		0^+	0^+
241	155	1780.23		7.39		7.39	19.94	2.49	10.70	−3.73	−9.74	6.026	6.162	5.773	5.828		0^+	$5/2^+$
242	156	1784.98		7.38		7.24	20.48	4.75	11.01	−3.67	−9.98	6.037	6.173	5.782	5.837		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
243	157	1787.56		7.36		7.33	20.77	2.58	11.16	−3.67	−10.10	6.050	6.189	5.787	5.842		0^+	$5/2^+$
244	158	1792.11		7.34		7.13	21.16	4.55	11.35	−3.62	−10.33	6.060	6.200	5.795	5.850		0^+	0^+
245	159	1794.66		7.33		7.10	21.44	2.55	11.49	−3.62	−10.46	6.073	6.215	5.800	5.855		0^+	$5/2^+$
246	160	1799.15		7.31		7.04	21.82	4.49	11.69	−3.57	−10.66	6.084	6.227	5.808	5.863		0^+	0^+
247	161	1801.70		7.29		7.04	22.11	2.55	11.83	−3.57	−10.80	6.096	6.241	5.813	5.868		0^+	$5/2^+$
248	162	1806.13		7.28		6.98	22.48	4.43	12.02	−3.54	−11.00	6.106	6.253	5.821	5.875		0^+	0^+
249	163	1808.67		7.26		6.97	22.77	2.54	12.16	−3.54	−11.14	6.119	6.267	5.826	5.881		0^+	$5/2^+$
250	164	1813.04		7.25		6.91	23.12	4.37	12.34	−3.51	−11.32	6.129	6.279	5.833	5.888		0^+	0^+
251	165	1815.60		7.23		6.93	23.43	2.56	12.50	−3.51	−11.47	6.141	6.293	5.839	5.893		0^+	$5/2^+$
252	166	1819.91		7.22		6.87	23.75	4.31	12.66	−3.48	−11.64	6.152	6.305	5.845	5.900		0^+	0^+
253	167	1822.47		7.20		6.87	24.05	2.56	12.82	−3.48	−11.80	6.164	6.319	5.851	5.906		0^+	$5/2^+$
254	168	1826.74		7.19		6.83	24.37	4.27	12.97	−3.46	−11.95	6.174	6.331	5.857	5.911		0^+	0^+
255	169	1829.31		7.17		6.84	24.64	2.57	13.12	−3.45	−12.12	6.186	6.344	5.864	5.918		0^+	$5/2^+$
256	170	1833.54		7.16		6.80	24.99	4.23	13.29	−3.43	−12.25	6.197	6.356	5.869	5.923		0^+	0^+
257	171	1836.12		7.14		6.81	25.23	2.58	13.40	−3.46	−12.37	6.209	6.371	5.873	5.927		0^+	$1/2^+$
258	172	1840.30		7.13		6.76	25.60	4.18	13.59	−3.41	−12.55	6.219	6.381	5.880	5.934		0^+	0^+
259	173	1842.94		7.12		6.82	25.83	2.64	13.71	−3.43	−12.67	6.231	6.396	5.884	5.939		0^+	$1/2^+$
260	174	1847.02		7.10		6.72	26.18	4.08	13.88	−3.38	−12.84	6.241	6.406	5.891	5.945		0^+	0^+
261	175	1849.72		7.09		6.78	26.44	2.70	13.96	−3.40	−12.98	6.252	6.420	5.896	5.950		0^+	$1/2^+$
262	176	1853.71		7.08		6.69	26.76	3.99	14.16	−3.36	−13.12	6.262	6.431	5.901	5.955		0^+	0^+
263	177	1856.52		7.06		6.80	27.12	2.81	14.35	−3.37	−13.27	6.274	6.444	5.907	5.961		0^+	$1/2^+$
264	178	1860.35		7.05		6.64	27.32	3.83	14.43	−3.32	−13.39	6.284	6.456	5.911	5.965		0^+	0^+
265	179	1863.17		7.03		6.65	27.66	2.82	14.61	−3.33	−13.54	6.295	6.469	5.917	5.971		0^+	$1/2^+$
266	180	1866.94		7.02		6.59	27.85	3.77	14.69	−3.28	−13.63	6.306	6.482	5.920	5.974		0^+	0^+
267	181	1869.79		7.00		6.62	28.16	2.85	14.84	−3.30	−13.78	6.317	6.494	5.925	5.979		0^+	$3/2^+$
268	182	1873.45		6.99		6.51	28.33	3.66	14.92	−3.24	−13.86	6.328	6.508	5.929	5.982		0^+	0^+
269	183	1876.34		6.98		6.55	28.63	2.89	15.05	−1.87	−13.99	6.339	6.520	5.933	5.987		0^+	$3/2^+$
270	184	1879.87		6.96		6.42	28.76	3.53	15.12	−1.77	−14.05	6.350	6.535	5.936	5.990		0^+	0^+
271	185	1879.22		6.93		2.88	28.89	−0.65	15.18	−1.94	−14.12	6.364	6.551	5.941	5.994		0^+	$11/2^-$
272	186	1879.85		6.91		−0.02	29.16	0.63	15.33	−0.04	−14.27	6.377	6.565	5.951	6.005		0^+	0^+
273	187	1879.22		6.88		0.00		−0.63		−0.03	−14.34	6.391	6.581	5.956	6.010		0^+	$11/2^-$
σ		4.77													0.005			
$Z = 87$ (Fr)																		
198	111	1513.77		7.65			0.49	9.01	−0.81	−10.29	0.04	5.523	5.561	5.473	5.532		$9/2^-$	$1/2^-$
199	112	1525.09	1531.37	7.66	7.70	20.33	1.05	11.32	−0.52	−10.16	−0.23	5.531	5.573	5.478	5.536		$9/2^-$	0^+
200	113	1534.05	1540.06	7.67	7.70	20.28	1.57	8.96	−0.27	−10.11	−0.49	5.541	5.585	5.483	5.541		$9/2^-$	$1/2^-$
201	114	1545.10	1550.67	7.69	7.71	20.01	2.06	11.05	−0.02	−10.00	−0.74	5.550	5.597	5.488	5.546		$9/2^-$	0^+
202	115	1554.00		7.69		19.95	2.61	8.90	0.26	−9.94	−1.01	5.559	5.609	5.493	5.551		$9/2^-$	$1/2^-$
203	116	1564.82	1569.54	7.71	7.73	19.72	3.06	10.82	0.48	−9.84	−1.23	5.569	5.621	5.498	5.556		$9/2^-$	0^+
204	117	1573.63	1577.88	7.71	7.73	19.63	3.57	8.81	0.76	−9.77	−1.50	5.577	5.632	5.502	5.560		$9/2^-$	$1/2^-$
205	118	1584.25	1587.87	7.73	7.75	19.43	4.02	10.62	0.97	−9.68	−1.70	5.587	5.645	5.508	5.566		$9/2^-$	0^+
206	119	1593.01	1595.87	7.73	7.75	19.38	4.48	8.76	1.19	−9.66	−1.93	5.596	5.657	5.513	5.570		$9/2^-$	$3/2^-$
207	120	1603.36	1605.54	7.75	7.76	19.11	4.93	10.35	1.41	−9.50	−2.15	5.605	5.668	5.518	5.576	5.572	$9/2^-$	0^+
208	121	1612.13	1613.44	7.75	7.76	19.12	5.40	8.77	1.64	−9.47	−2.38	5.615	5.680	5.523	5.580	5.573	$9/2^-$	$3/2^-$
209	122	1622.11	1622.61	7.76	7.76	18.75	5.77	9.98	1.83	−9.29	−2.56	5.623	5.691	5.527	5.585	5.598	$9/2^-$	0^+
210	123	1630.79	1630.24	7.77	7.76	18.66	6.22	8.68	2.05	−9.07	−2.78	5.632	5.702	5.531	5.589	5.582	$9/2^-$	$3/2^-$
211	124	1640.40	1639.12	7.77	7.77	18.29	6.52	9.61	2.20	−8.94	−2.93	5.640	5.713	5.535	5.592	5.558	$9/2^-$	0^+
212	125	1648.98	1646.57	7.78	7.77	18.19	6.84	8.58	2.35	−8.78	−3.09	5.650	5.726	5.539	5.597	5.592	$9/2^-$	$1/2^-$
213	126	1657.61	1654.68	7.78	7.77	17.21	7.15	8.63	2.50	−7.39	−3.25	5.660	5.739	5.544	5.601	5.598	$9/2^-$	0^+
214	127	1661.97	1660.16	7.77	7.76	12.99	7.77	4.36	2.81	−7.83	−3.55	5.676	5.756	5.556	5.613		$9/2^-$	$11/2^+$
215	128	1667.96	1666.95	7.76	7.75	10.35	8.26	5.99	3.07	−5.20	−3.81	5.690	5.772	5.566	5.623		$9/2^-$	0^+
216	129	1672.24	1672.37	7.74	7.74	10.27	8.87	4.28	3.37	−5.16	−4.11	5.705	5.789	5.578	5.635		$9/2^-$	$11/2^+$
217	130	1678.18	1679.10	7.73	7.74	10.22	9.35	5.94	3.62	−5.14	−4.36	5.719	5.805	5.588	5.645		$9/2^-$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
218	131	1682.39	1684.42	7.72	7.73	10.15	9.95	4.21	3.92	−5.10	−4.66	5.734	5.821	5.600	5.657		$9/2^-$	$11/2^+$
219	132	1688.28	1690.94	7.71	7.72	10.10	10.42	5.89	4.16	−5.09	−4.90	5.748	5.837	5.610	5.667		$9/2^-$	0^+
220	133	1692.41	1696.15	7.69	7.71	10.02	11.00	4.13	4.45	−5.03	−5.19	5.762	5.852	5.622	5.678	5.669	$9/2^-$	$11/2^+$
221	134	1698.26	1702.42	7.68	7.70	9.98	11.45	5.85	4.68	−5.02	−5.43	5.776	5.868	5.631	5.688	5.679	$9/2^-$	0^+
222	135	1702.28	1707.42	7.67	7.69	9.87	12.01	4.02	4.97	−4.94	−5.71	5.790	5.883	5.643	5.699	5.689	$9/2^-$	$11/2^+$
223	136	1708.11	1713.46	7.66	7.68	9.85	12.46	5.83	5.20	−4.94	−5.94	5.803	5.898	5.652	5.708	5.695	$9/2^-$	0^+
224	137	1711.95	1718.12	7.64	7.67	9.67	12.96	3.84	5.45	−4.82	−6.18	5.817	5.913	5.662	5.719	5.706	$9/2^-$	$11/2^+$
225	138	1717.77	1724.17	7.63	7.66	9.66	13.39	5.82	5.66	−4.84	−6.41	5.830	5.928	5.671	5.728	5.711	$9/2^-$	0^+
226	139	1721.53	1728.51	7.62	7.65	9.58	13.81	3.76	5.87	−4.83	−6.61	5.843	5.943	5.680	5.736	5.719	$9/2^-$	$9/2^+$
227	140	1727.20	1734.44	7.61	7.64	9.43	14.23	5.67	6.08	−4.72	−6.83	5.855	5.957	5.689	5.745	5.734	$9/2^-$	0^+
228	141	1730.92	1738.83	7.59	7.63	9.39	14.63	3.72	6.27	−4.67	−7.02	5.868	5.971	5.697	5.753	5.740	$9/2^-$	$9/2^+$
229	142	1736.38	1744.59	7.58	7.62	9.18	14.99	5.46	6.45	−4.59	−7.20	5.880	5.985	5.704	5.759		$9/2^-$	0^+
230	143	1740.00	1748.83	7.57	7.60	9.08	15.36	3.62	6.62	−4.53	−7.38	5.892	5.999	5.711	5.767		$9/2^-$	$9/2^+$
231	144	1745.31	1754.35	7.56	7.59	8.93	15.69	5.31	6.79	−4.47	−7.54	5.903	6.012	5.718	5.773		$9/2^-$	0^+
232	145	1748.80		7.54		8.80	16.04	3.49	6.96	−4.38	−7.72	5.915	6.026	5.725	5.781		$9/2^-$	$9/2^+$
233	146	1754.00		7.53		8.69	16.36	5.20	7.12	−4.35	−7.88	5.926	6.040	5.731	5.787		$9/2^-$	0^+
234	147	1757.27		7.51		8.47	16.72	3.27	7.29	−4.23	−8.06	5.938	6.053	5.738	5.794		$9/2^-$	$9/2^+$
235	148	1762.43		7.50		8.43	17.04	5.16	7.46	−4.22	−8.23	5.949	6.066	5.744	5.800		$9/2^-$	0^+
236	149	1765.45		7.48		8.18	17.46	3.02	7.67	−4.08	−8.43	5.961	6.080	5.752	5.807		$9/2^-$	$9/2^+$
237	150	1770.61		7.47		8.18	17.76	5.16	7.82	−4.10	−8.59	5.972	6.093	5.758	5.813		$9/2^-$	0^+
238	151	1773.34		7.45		7.89	18.16	2.73	8.05	−3.97	−8.81	5.984	6.107	5.765	5.821		$9/2^-$	$9/2^+$
239	152	1778.55		7.44		7.94	18.49	5.21	8.19	−4.00	−8.95	5.995	6.120	5.771	5.826		$9/2^-$	0^+
240	153	1781.20		7.42		7.86	18.80	2.65	8.36	−3.97	−9.17	6.006	6.132	5.778	5.833		$9/2^-$	$15/2^-$
241	154	1786.30		7.41		7.75	19.21	5.10	8.56	−3.91	−9.32	6.018	6.146	5.784	5.839		$9/2^-$	0^+
242	155	1788.92		7.39		7.72	19.39	2.62	8.69	−3.91	−9.47	6.031	6.161	5.791	5.846		$9/2^-$	$7/2^+$
243	156	1793.90		7.38		7.60	19.93	4.98	8.92	−3.85	−9.69	6.041	6.173	5.798	5.853		$9/2^-$	0^+
244	157	1796.58		7.36		7.66	20.18	2.68	9.02	−3.85	−9.81	6.053	6.188	5.802	5.857		$9/2^-$	$5/2^+$
245	158	1801.38		7.35		7.48	20.62	4.80	9.27	−3.79	−10.04	6.064	6.199	5.811	5.866		$9/2^-$	0^+
246	159	1804.08		7.33		7.50	20.91	2.70	9.42	−3.79	−10.17	6.076	6.214	5.815	5.870		$9/2^-$	$5/2^+$
247	160	1808.76		7.32		7.38	21.30	4.68	9.61	−3.75	−10.39	6.087	6.225	5.824	5.878		$9/2^-$	0^+
248	161	1811.45		7.30		7.37	21.58	2.69	9.75	−3.75	−10.52	6.099	6.240	5.829	5.883		$9/2^-$	$5/2^+$
249	162	1816.07		7.29		7.31	21.96	4.62	9.94	−3.71	−10.72	6.110	6.251	5.836	5.891		$9/2^-$	0^+
250	163	1818.77		7.28		7.32	22.26	2.70	10.10	−3.71	−10.87	6.121	6.266	5.842	5.896		$9/2^-$	$5/2^+$
251	164	1823.32		7.26		7.25	22.62	4.55	10.28	−3.67	−11.05	6.132	6.277	5.849	5.903		$9/2^-$	0^+
252	165	1826.03		7.25		7.26	22.93	2.71	10.43	−3.67	−11.20	6.144	6.291	5.854	5.909		$9/2^-$	$5/2^+$
253	166	1830.51		7.24		7.19	23.26	4.48	10.60	−3.64	−11.37	6.154	6.303	5.861	5.915		$9/2^-$	0^+
254	167	1833.23		7.22		7.20	23.58	2.72	10.76	−3.64	−11.53	6.166	6.316	5.867	5.921		$9/2^-$	$5/2^+$
255	168	1837.66		7.21		7.15	23.89	4.43	10.92	−3.61	−11.69	6.177	6.328	5.873	5.927		$9/2^-$	0^+
256	169	1840.39		7.19		7.16	24.20	2.73	11.08	−3.61	−11.85	6.188	6.341	5.879	5.933		$9/2^-$	$5/2^+$
257	170	1844.76		7.18		7.10	24.51	4.37	11.22	−3.59	−11.99	6.199	6.353	5.884	5.939		$9/2^-$	0^+
258	171	1847.50		7.16		7.11	24.78	2.74	11.38	−3.58	−12.16	6.210	6.366	5.891	5.945		$9/2^-$	$5/2^+$
259	172	1851.82		7.15		7.06	25.11	4.32	11.52	−3.56	−12.29	6.220	6.378	5.896	5.950		$9/2^-$	0^+
260	173	1854.59		7.13		7.09	25.36	2.77	11.65	−3.58	−12.41	6.232	6.393	5.900	5.954		$9/2^-$	$1/2^+$
261	174	1858.84		7.12		7.02	25.70	4.25	11.82	−3.53	−12.57	6.242	6.403	5.906	5.960		$9/2^-$	0^+
262	175	1861.67		7.11		7.08	25.91	2.83	11.95	−3.55	−12.70	6.253	6.417	5.911	5.965		$9/2^-$	$1/2^+$
263	176	1865.80		7.09		6.96	26.25	4.13	12.09	−3.49	−12.85	6.263	6.428	5.916	5.970		$9/2^-$	0^+
264	177	1868.69		7.08		7.02	26.52	2.89	12.17	−3.51	−12.98	6.275	6.441	5.921	5.975		$9/2^-$	$1/2^+$
265	178	1872.71		7.07		6.91	26.79	4.02	12.36	−3.45	−13.10	6.285	6.453	5.926	5.980		$9/2^-$	0^+
266	179	1875.67		7.05		6.98	27.11	2.96	12.50	−3.46	−13.24	6.296	6.466	5.931	5.985		$9/2^-$	$1/2^+$
267	180	1879.53		7.04		6.82	27.28	3.86	12.59	−3.40	−13.33	6.307	6.479	5.934	5.988		$9/2^-$	0^+
268	181	1882.52		7.02		6.85	27.57	2.99	12.73	−3.42	−13.46	6.317	6.491	5.939	5.993		$9/2^-$	$3/2^+$
269	182	1886.25		7.01		6.72	27.72	3.73	12.80	−3.34	−13.54	6.328	6.505	5.942	5.996		$9/2^-$	0^+
270	183	1889.27		7.00		6.75	27.98	3.02	12.93	−2.30	−13.65	6.339	6.518	5.946	5.999		$9/2^-$	$3/2^+$
271	184	1892.86		6.98		6.61	28.11	3.59	12.99	−2.05	−13.71	6.351	6.532	5.949	6.002		$9/2^-$	0^+

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Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
272	185	1892.28		6.96		3.01	28.24	−0.58	13.06	−2.08	−13.78	6.364	6.548	5.953	6.007		$9/2^-$	$11/2^-$
273	186	1893.06		6.93		0.20	28.54	0.78	13.21	−0.15	−13.95	6.378	6.562	5.965	6.018		$9/2^-$	0^+
274	187	1892.53		6.91		0.25		−0.53	13.31	−0.15	−14.03	6.391	6.578	5.970	6.024		$9/2^-$	$11/2^-$
275	188	1893.29		6.88		0.23		0.76	13.44	−0.18	−14.19	6.405	6.591	5.982	6.035		$9/2^-$	0^+
276	189	1892.71		6.86		0.18		−0.58	13.52	−0.17	−14.28	6.418	6.607	5.988	6.041		$9/2^-$	$11/2^-$
277	190	1893.56		6.84		0.27		0.85	13.67	−0.20	−14.43	6.432	6.620	5.999	6.052		$9/2^-$	0^+
278	191	1892.98		6.81		0.27		−0.58	13.76	−0.20	−14.53	6.445	6.635	6.006	6.059		$9/2^-$	$11/2^-$
279	192	1893.88		6.79		0.32		0.90	13.91	−0.23	−14.68	6.458	6.649	6.017	6.070		$9/2^-$	0^+
280	193	1893.31		6.76		0.33		−0.57	14.02	−0.23	−14.79	6.472	6.664	6.024	6.077		$9/2^-$	$11/2^-$
281	194	1894.25		6.74		0.37		0.94	14.15	−0.25	−14.94	6.485	6.677	6.035	6.088		$9/2^-$	0^+
282	195	1893.69		6.72		0.38		−0.56	14.27	−0.25	−15.05	6.498	6.691	6.043	6.096		$9/2^-$	$11/2^-$
283	196	1894.67		6.69		0.42		0.98	14.39	−0.28	−15.19	6.511	6.705	6.053	6.106		$9/2^-$	0^+
284	197	1894.12		6.67		0.43		−0.55	14.52	−0.28	−15.31	6.525	6.719	6.062	6.114		$9/2^-$	$11/2^-$
285	198	1895.15		6.65		0.48		1.03	14.64	−0.30	−15.44	6.537	6.732	6.071	6.124		$9/2^-$	0^+
286	199	1894.61		6.62		0.49		−0.54	14.74	−0.30	−15.57	6.551	6.746	6.081	6.133		$9/2^-$	$11/2^-$
287	200	1895.67		6.61		0.52		1.06	14.88	−0.32	−15.69	6.563	6.759	6.089	6.141		$9/2^-$	0^+
288	201	1895.14		6.58		0.53		−0.53	14.94	−0.32	−15.83	6.577	6.773	6.099	6.152		$9/2^-$	$11/2^-$
289	202	1896.24		6.56		0.57		1.10	15.12	−0.34	−15.93	6.589	6.787	6.107	6.159		$9/2^-$	0^+
290	203	1895.71		6.54		0.57		−0.53	15.14	−0.36	−15.95	6.614	6.820	6.107	6.160		$9/2^-$	$3/2^-$
291	204	1896.84		6.52		0.60		1.13	15.35	−0.35	−16.16	6.615	6.814	6.124	6.176		$9/2^-$	0^+
292	205	1896.36		6.49		0.65		−0.48	15.38	−0.37	−16.18	6.639	6.846	6.125	6.177		$9/2^-$	$3/2^-$
293	206	1897.46		6.48		0.62		1.10	15.58	−0.35	−16.38	6.641	6.841	6.140	6.192		$9/2^-$	0^+
294	207	1897.02		6.45		0.66		−0.44	15.60	−0.38	−16.40	6.664	6.872	6.141	6.193		$9/2^-$	$3/2^-$
295	208	1898.07		6.43		0.61		1.05	15.77	−0.35	−16.58	6.666	6.869	6.154	6.206		$9/2^-$	0^+
296	209	1897.68		6.41		0.66		−0.39	15.80	−0.37	−16.61	6.689	6.898	6.156	6.207		$9/2^-$	$3/2^-$
297	210	1898.67		6.39		0.60		0.99	15.96	−0.34	−16.77	6.692	6.898	6.167	6.219		$9/2^-$	0^+
298	211	1898.32		6.37		0.64		−0.35	15.98	−0.35	−16.79	6.714	6.926	6.169	6.221		$9/2^-$	$3/2^-$
299	212	1899.24		6.35		0.57		0.92	16.12	−0.32	−16.92	6.719	6.928	6.179	6.230		$9/2^-$	0^+
300	213	1898.93		6.33		0.61		−0.31	16.14	−0.33	−16.95	6.739	6.955	6.180	6.232		$9/2^-$	$3/2^-$
301	214	1899.78		6.31		0.54		0.85	16.26	−0.31	−17.07	6.746	6.959	6.188	6.240		$9/2^-$	0^+
302	215	1899.51		6.29		0.58		−0.27	16.27	−0.32	−17.10	6.765	6.985	6.190	6.242		$9/2^-$	$3/2^-$
303	216	1900.30		6.27		0.52		0.79	16.38	−0.30	−17.19	6.773	6.991	6.197	6.248		$9/2^-$	0^+
304	217	1900.08		6.25		0.57		−0.22	16.43	−0.31	−17.23	6.791	7.015	6.199	6.250		$9/2^-$	$3/2^-$
305	218	1900.82		6.23		0.52		0.74	16.50	−0.30	−17.32	6.800	7.023	6.205	6.256		$9/2^-$	0^+
306	219	1900.60		6.21		0.52		−0.22	16.55	−0.31	−17.35	6.818	7.046	6.207	6.259		$9/2^-$	$3/2^-$
307	220	1901.34		6.19		0.52		0.74	16.61	−0.31	−17.43	6.827	7.055	6.212	6.264		$9/2^-$	0^+
308	221	1901.13		6.17		0.53		−0.21	16.67	−0.31	−17.47	6.844	7.076	6.215	6.266		$9/2^-$	$3/2^-$
309	222	1901.88		6.15		0.54		0.75	16.72	−0.31	−17.55	6.854	7.087	6.220	6.271		$9/2^-$	0^+
310	223	1901.66		6.13		0.53		−0.22	16.77	−0.31	−17.59	6.870	7.106	6.223	6.274		$9/2^-$	$3/2^-$
311	224	1902.43		6.12		0.55		0.77	16.83	−0.32	−17.66	6.880	7.118	6.227	6.278		$9/2^-$	0^+
312	225	1902.21		6.10		0.55		−0.22	16.86	−0.32	−17.71	6.896	7.137	6.230	6.282		$9/2^-$	$3/2^-$
313	226	1902.99		6.08		0.56		0.78	16.93	−0.33	−17.77	6.907	7.149	6.234	6.285		$9/2^-$	0^+
314	227	1902.80		6.06		0.59		−0.19	16.97	−0.34	−17.80	6.924	7.170	6.236	6.287		$9/2^-$	$1/2^-$
315	228	1903.58		6.04		0.59		0.78	17.04	−0.33	−17.88	6.933	7.180	6.241	6.292		$9/2^-$	0^+
316	229	1903.40		6.02		0.60		−0.18	17.08	−0.34	−17.91	6.949	7.199	6.244	6.295		$9/2^-$	$1/2^-$
317	230	1904.18		6.01		0.60		0.78	17.15	−0.34	−17.99	6.959	7.210	6.248	6.299		$9/2^-$	0^+
318	231	1904.02		5.99		0.62		−0.16	17.20	−0.34	−18.03	6.974	7.228	6.251	6.302		$9/2^-$	$1/2^-$
319	232	1904.80		5.97		0.62		0.78	17.26	−0.34	−18.10	6.985	7.239	6.256	6.307		$9/2^-$	0^+
320	233	1904.64		5.95		0.62		−0.16	17.32	−0.34	−18.16	6.999	7.255	6.259	6.310		$9/2^-$	$1/2^-$
321	234	1905.43		5.94		0.63		0.79	17.37	−0.35	−18.22	7.010	7.268	6.263	6.314		$9/2^-$	0^+
322	235	1905.26		5.92		0.62		−0.17	17.44	−0.34	−18.28	7.023	7.282	6.268	6.318		$9/2^-$	$1/2^-$
323	236	1906.06		5.90		0.63		0.80	17.48	−0.34	−18.34	7.035	7.296	6.271	6.322		$9/2^-$	0^+
324	237	1905.86		5.88		0.60		−0.20	17.57	−0.32	−18.43	7.046	7.308	6.277	6.327		$9/2^-$	$1/2^-$
325	238	1906.68		5.87		0.62		0.82	17.61	−0.34	−18.48	7.059	7.323	6.280	6.330		$9/2^-$	0^+

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Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
326	239	1906.44		5.85		0.58		−0.24	17.73	−0.31	−18.59	7.068	7.332	6.287	6.338		$9/2^-$	$1/2^-$
327	240	1907.28		5.83		0.60		0.84	17.76	−0.32	−18.63	7.082	7.348	6.289	6.340		$9/2^-$	0^+
328	241	1906.98		5.81		0.54		−0.30	17.92	−0.28	−18.79	7.090	7.354	6.299	6.350		$9/2^-$	$1/2^-$
329	242	1907.85		5.80		0.57		0.87	17.96	−0.30	−18.82	7.103	7.370	6.301	6.352		$9/2^-$	0^+
330	243	1907.47		5.78		0.49		−0.38	18.18	−0.26	−19.02	7.109	7.374	6.313	6.364		$9/2^-$	$1/2^-$
331	244	1908.37		5.77		0.52		0.90	18.20	−0.27	−19.05	7.123	7.390	6.315	6.365		$9/2^-$	0^+
332	245	1907.92		5.75		0.45		−0.45	18.34	−0.23	−19.28	7.128	7.391	6.329	6.380		$9/2^-$	$1/2^-$
333	246	1908.85		5.73		0.48		0.93	18.48	−0.25	−19.30	7.142	7.408	6.331	6.381		$9/2^-$	0^+
334	247	1908.40		5.71		0.48		−0.45	18.60	−0.26	−19.41	7.152	7.418	6.337	6.388		$9/2^-$	$17/2^+$
335	248	1909.30		5.70		0.45		0.90	18.76	−0.24	−19.58	7.160	7.424	6.348	6.398		$9/2^-$	0^+
336	249	1908.87		5.68		0.47		−0.43	18.88	−0.24	−19.69	7.170	7.434	6.355	6.405		$9/2^-$	$17/2^+$
337	250	1909.73		5.67		0.43		0.86	19.05	−0.23	−19.86	7.178	7.440	6.365	6.415		$9/2^-$	0^+
338	251	1909.32		5.65		0.45		−0.41	19.17	−0.23	−19.98	7.188	7.450	6.373	6.423		$9/2^-$	$17/2^+$
339	252	1910.15		5.63		0.42		0.83	19.32	−0.22	−20.14	7.196	7.456	6.383	6.433		$9/2^-$	0^+
340	253	1909.76		5.62		0.44		−0.39	19.45	−0.22	−20.26	7.206	7.465	6.391	6.441		$9/2^-$	$17/2^+$
341	254	1910.58		5.60		0.43		0.82	19.60	−0.22	−20.42	7.214	7.472	6.402	6.452		$9/2^-$	0^+
342	255	1910.22		5.59		0.46		−0.36	19.74	−0.22	−20.55	7.224	7.481	6.410	6.460		$9/2^-$	$17/2^+$
343	256	1911.03		5.57		0.45		0.81	19.88	−0.22	−20.71	7.232	7.487	6.421	6.471		$9/2^-$	0^+
344	257	1910.69		5.55		0.47		−0.34	20.00	0.88	−20.83	7.241	7.496	6.430	6.479		$9/2^-$	$17/2^+$
345	258	1911.51		5.54		0.48		0.82		−0.83	−20.98	7.250	7.503	6.440	6.490		$9/2^-$	0^+
σ		4.77													0.014			
$Z = 88$ (Ra)																		
200	112	1526.05		7.63			0.44		0.96	−10.41	0.06	5.542	5.579	5.495	5.553		0^+	0^+
201	113	1535.26		7.64			0.94	9.21	1.21	−10.37	−0.20	5.551	5.591	5.500	5.557		0^+	$5/2^-$
202	114	1546.57	1552.47	7.66	7.69	20.52	1.45	11.31	1.47	−10.24	−0.45	5.560	5.603	5.505	5.562		0^+	0^+
203	115	1555.73	1560.97	7.66	7.69	20.47	1.99	9.16	1.73	−10.19	−0.71	5.569	5.615	5.509	5.567		0^+	$5/2^-$
204	116	1566.78	1571.65	7.68	7.70	20.21	2.44	11.05	1.96	−10.07	−0.93	5.579	5.627	5.515	5.572		0^+	0^+
205	117	1575.86	1579.93	7.69	7.71	20.13	2.99	9.08	2.23	−10.00	−1.20	5.587	5.638	5.519	5.577		0^+	$5/2^-$
206	118	1586.67	1590.28	7.70	7.72	19.89	3.39	10.81	2.42	−9.90	−1.40	5.597	5.650	5.524	5.582		0^+	0^+
207	119	1595.66	1598.38	7.71	7.72	19.80	3.84	8.99	2.65	−9.89	−1.62	5.606	5.662	5.529	5.586		0^+	$3/2^-$
208	120	1606.22	1608.27	7.72	7.73	19.55	4.27	10.56	2.86	−9.71	−1.84	5.615	5.674	5.534	5.592	5.585	0^+	0^+
209	121	1615.21	1616.20	7.73	7.73	19.55	4.72	8.99	3.08	−9.68	−2.06	5.624	5.685	5.539	5.596	5.585	0^+	$3/2^-$
210	122	1625.37	1625.67	7.74	7.74	19.15	5.09	10.16	3.26	−9.48	−2.24	5.633	5.696	5.543	5.601	5.592	0^+	0^+
211	123	1634.26	1633.37	7.75	7.74	19.05	5.52	8.89	3.47	−9.24	−2.45	5.641	5.707	5.547	5.605	5.593	0^+	$3/2^-$
212	124	1644.02	1642.48	7.75	7.75	18.65	5.82	9.76	3.62	−9.10	−2.60	5.649	5.718	5.551	5.608	5.599	0^+	0^+
213	125	1652.77	1649.99	7.76	7.75	18.51	6.14	8.75	3.79	−8.64	−2.76	5.659	5.731	5.555	5.612	5.602	0^+	$1/2^-$
214	126	1661.55	1658.32	7.76	7.75	17.53	6.44	8.78	3.94	−7.49	−2.91	5.669	5.744	5.559	5.617	5.608	0^+	0^+
215	127	1666.21	1663.95	7.75	7.74	13.44	7.05	4.66	4.24	−7.86	−3.22	5.684	5.761	5.572	5.629		0^+	$11/2^+$
216	128	1672.46	1671.27	7.74	7.74	10.91	7.57	6.25	4.50	−5.47	−3.48	5.698	5.777	5.582	5.639		0^+	0^+
217	129	1677.05	1676.74	7.73	7.73	10.84	8.18	4.59	4.81	−5.43	−3.78	5.713	5.793	5.594	5.651		0^+	$11/2^+$
218	130	1683.24	1684.05	7.72	7.73	10.78	8.68	6.19	5.06	−5.41	−4.04	5.727	5.809	5.604	5.661		0^+	0^+
219	131	1687.75	1689.38	7.71	7.71	10.70	9.28	4.51	5.36	−5.36	−4.34	5.742	5.825	5.616	5.673		0^+	$11/2^+$
220	132	1693.89	1696.57	7.70	7.71	10.65	9.77	6.14	5.61	−5.35	−4.59	5.756	5.841	5.626	5.683	5.668	0^+	0^+
221	133	1698.32	1701.95	7.68	7.70	10.57	10.36	4.43	5.91	−5.29	−4.88	5.770	5.856	5.638	5.695	5.680	0^+	$11/2^+$
222	134	1704.41	1708.67	7.68	7.70	10.52	10.83	6.09	6.15	−5.28	−5.12	5.784	5.872	5.648	5.704	5.687	0^+	0^+
223	135	1708.71	1713.82	7.66	7.69	10.39	11.40	4.30	6.43	−5.19	−5.41	5.798	5.887	5.660	5.716	5.697	0^+	$11/2^+$
224	136	1714.77	1720.31	7.66	7.68	10.36	11.86	6.06	6.66	−5.19	−5.64	5.811	5.902	5.669	5.725	5.705	0^+	0^+
225	137	1718.86	1725.20	7.64	7.67	10.15	12.36	4.09	6.91	−5.04	−5.90	5.825	5.917	5.679	5.735	5.715	0^+	$11/2^+$
226	138	1724.91	1731.60	7.63	7.66	10.14	12.80	6.05	7.14	−5.06	−6.12	5.838	5.931	5.688	5.744	5.721	0^+	0^+
227	139	1728.87	1736.16	7.62	7.65	10.01	13.21	3.96	7.34	−5.05	−6.32	5.851	5.946	5.697	5.753	5.728	0^+	$9/2^+$
228	140	1734.76	1742.47	7.61	7.64	9.85	13.64	5.89	7.56	−4.91	−6.54	5.863	5.960	5.705	5.761	5.737	0^+	0^+
229	141	1738.67	1746.93	7.59	7.63	9.80	14.02	3.91	7.75	−4.86	−6.72	5.875	5.974	5.713	5.769	5.746	0^+	$9/2^+$
230	142	1744.30	1753.04	7.58	7.62	9.54	14.37	5.63	7.92	−4.77	−6.90	5.887	5.988	5.720	5.775	5.755	0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
231	143	1748.09	1757.41	7.57	7.61	9.42	14.71	3.79	8.09	−4.69	−7.07	5.899	6.002	5.727	5.783		0^+	$9/2^+$
232	144	1753.57	1763.20	7.56	7.60	9.27	15.05	5.48	8.26	−4.64	−7.24	5.910	6.015	5.733	5.789	5.771	0^+	0^+
233	145	1757.22	1767.45	7.54	7.59	9.13	15.38	3.65	8.42	−4.55	−7.41	5.921	6.029	5.740	5.796		0^+	$9/2^+$
234	146	1762.59	1772.95	7.53	7.58	9.02	15.71	5.37	8.59	−4.52	−7.58	5.932	6.042	5.746	5.802		0^+	0^+
235	147	1766.05		7.52		8.83	16.07	3.46	8.78	−4.41	−7.76	5.944	6.055	5.753	5.809		0^+	$9/2^+$
236	148	1771.37		7.51		8.78	16.40	5.32	8.94	−4.40	−7.93	5.955	6.068	5.760	5.815		0^+	0^+
237	149	1774.59		7.49		8.54	16.81	3.22	9.14	−4.27	−8.13	5.967	6.082	5.767	5.822		0^+	$9/2^+$
238	150	1779.91		7.48		8.54	17.12	5.32	9.30	−4.28	−8.29	5.978	6.094	5.773	5.828		0^+	0^+
239	151	1782.87		7.46		8.28	17.58	2.96	9.53	−4.16	−8.52	5.990	6.108	5.780	5.836		0^+	$9/2^+$
240	152	1788.22		7.45		8.31	17.86	5.35	9.67	−4.18	−8.66	6.000	6.121	5.786	5.841		0^+	0^+
241	153	1791.08		7.43		8.21	18.24	2.86	9.88	−4.15	−8.87	6.011	6.133	5.793	5.848		0^+	$15/2^-$
242	154	1796.34		7.42		8.12	18.60	5.26	10.04	−4.10	−9.03	6.023	6.147	5.800	5.855		0^+	0^+
243	155	1799.16		7.40		8.08	18.93	2.82	10.24	−4.06	−9.24	6.034	6.159	5.807	5.862		0^+	$15/2^-$
244	156	1804.31		7.39		7.97	19.33	5.15	10.41	−4.02	−9.40	6.046	6.173	5.813	5.868		0^+	0^+
245	157	1807.10		7.38		7.94	19.54	2.79	10.52	−4.02	−9.56	6.058	6.187	5.820	5.875		0^+	$7/2^+$
246	158	1812.15		7.37		7.84	20.04	5.05	10.77	−3.97	−9.77	6.068	6.199	5.826	5.881		0^+	0^+
247	159	1815.00		7.35		7.90	20.34	2.85	10.92	−3.97	−9.89	6.080	6.214	5.831	5.885		0^+	$5/2^+$
248	160	1819.89		7.34		7.74	20.74	4.89	11.13	−3.92	−10.12	6.091	6.225	5.839	5.894		0^+	0^+
249	161	1822.73		7.32		7.73	21.03	2.84	11.28	−3.92	−10.25	6.102	6.239	5.844	5.898		0^+	$5/2^+$
250	162	1827.54		7.31		7.65	21.41	4.81	11.47	−3.87	−10.46	6.113	6.250	5.852	5.907		0^+	0^+
251	163	1830.38		7.29		7.65	21.71	2.84	11.61	−3.88	−10.60	6.125	6.265	5.857	5.911		0^+	$5/2^+$
252	164	1835.12		7.28		7.58	22.08	4.74	11.80	−3.83	−10.79	6.135	6.276	5.865	5.919		0^+	0^+
253	165	1837.98		7.26		7.60	22.38	2.86	11.95	−3.84	−10.94	6.147	6.290	5.870	5.924		0^+	$5/2^+$
254	166	1842.64		7.25		7.52	22.73	4.66	12.13	−3.80	−11.12	6.157	6.301	5.877	5.931		0^+	0^+
255	167	1845.51		7.24		7.53	23.04	2.87	12.28	−3.80	−11.27	6.169	6.315	5.883	5.937		0^+	$5/2^+$
256	168	1850.10		7.23		7.46	23.36	4.59	12.44	−3.77	−11.43	6.179	6.326	5.889	5.943		0^+	0^+
257	169	1852.99		7.21		7.48	23.68	2.89	12.60	−3.77	−11.59	6.191	6.340	5.895	5.949		0^+	$5/2^+$
258	170	1857.51		7.20		7.41	23.97	4.52	12.75	−3.73	−11.73	6.201	6.351	5.900	5.954		0^+	0^+
259	171	1860.41		7.18		7.42	24.29	2.90	12.91	−3.73	−11.90	6.213	6.364	5.907	5.961		0^+	$5/2^+$
260	172	1864.86		7.17		7.35	24.56	4.45	13.04	−3.70	−12.03	6.223	6.376	5.911	5.965		0^+	0^+
261	173	1867.77		7.16		7.36	24.83	2.91	13.18	−3.69	−12.20	6.234	6.389	5.918	5.972		0^+	$5/2^+$
262	174	1872.16		7.15		7.30	25.14	4.39	13.32	−3.66	−12.31	6.244	6.401	5.922	5.976		0^+	0^+
263	175	1875.11		7.13		7.34	25.39	2.95	13.44	−3.69	−12.42	6.256	6.415	5.926	5.980		0^+	$1/2^+$
264	176	1879.39		7.12		7.23	25.68	4.28	13.59	−3.62	−12.57	6.265	6.426	5.932	5.985		0^+	0^+
265	177	1882.41		7.10		7.30	25.89	3.02	13.72	−3.64	−12.70	6.277	6.439	5.936	5.990		0^+	$1/2^+$
266	178	1886.55		7.09		7.16	26.20	4.14	13.84	−3.57	−12.81	6.287	6.451	5.941	5.994		0^+	0^+
267	179	1889.66		7.08		7.25	26.49	3.11	13.99	−3.57	−12.94	6.298	6.464	5.945	5.999		0^+	$1/2^+$
268	180	1893.59		7.07		7.04	26.65	3.93	14.06	−3.50	−13.03	6.308	6.477	5.949	6.002		0^+	0^+
269	181	1896.69		7.05		7.03	26.90	3.10	14.17	−3.51	−13.15	6.319	6.489	5.953	6.006		0^+	$3/2^+$
270	182	1900.49		7.04		6.90	27.04	3.80	14.24	−3.43	−13.22	6.330	6.503	5.955	6.009		0^+	0^+
271	183	1903.61		7.02		6.92	27.27	3.12	14.34	−2.24	−13.32	6.341	6.516	5.959	6.012		0^+	$3/2^+$
272	184	1907.26		7.01		6.77	27.39	3.65	14.40	−2.00	−13.38	6.352	6.530	5.962	6.015		0^+	0^+
273	185	1906.76		6.98		3.15	27.54	−0.50	14.48	−2.04	−13.45	6.365	6.546	5.966	6.020		0^+	$11/2^-$
274	186	1907.70		6.96		0.44	27.85	0.94	14.64	−0.27	−13.63	6.379	6.560	5.979	6.032		0^+	0^+
275	187	1907.24		6.94		0.48	28.02	−0.46	14.71	−0.27	−13.71	6.392	6.575	5.984	6.038		0^+	$11/2^-$
276	188	1908.18		6.91		0.48	28.33	0.94	14.89	−0.30	−13.89	6.406	6.588	5.997	6.050		0^+	0^+
277	189	1907.70		6.89		0.46	28.51	−0.48	14.99	−0.30	−13.98	6.419	6.604	6.003	6.056		0^+	$11/2^-$
278	190	1908.71		6.87		0.53	28.82	1.01	15.15	−0.33	−14.15	6.432	6.617	6.015	6.068		0^+	0^+
279	191	1908.23		6.84		0.53	29.01	−0.48	15.25	−0.33	−14.25	6.446	6.632	6.022	6.075		0^+	$11/2^-$
280	192	1909.29		6.82		0.58	29.32	1.06	15.41	−0.35	−14.41	6.459	6.645	6.034	6.087		0^+	0^+
281	193	1908.82		6.79		0.59	29.53	−0.47	15.51	−0.36	−14.52	6.472	6.660	6.041	6.094		0^+	$11/2^-$
282	194	1909.92		6.77		0.63	29.82	1.10	15.67	−0.38	−14.67	6.485	6.673	6.052	6.105		0^+	0^+
283	195	1909.47		6.75		0.65	30.05	−0.45	15.78	−0.39	−14.79	6.499	6.687	6.061	6.113		0^+	$11/2^-$
284	196	1910.60		6.73		0.68	30.32	1.13	15.93	−0.41	−14.94	6.512	6.700	6.071	6.124		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
285	197	1910.18		6.70		0.71	30.58	−0.42	16.06	−0.41	−15.06	6.525	6.714	6.080	6.133		0^+	$11/2^-$
286	198	1911.34		6.68		0.74	30.83	1.16	16.19	−0.43	−15.19	6.538	6.727	6.090	6.142		0^+	0^+
287	199	1910.93		6.66		0.75	31.06	−0.41	16.32	−0.43	−15.33	6.551	6.741	6.100	6.152		0^+	$11/2^-$
288	200	1912.11		6.64		0.77	31.32	1.18	16.44	−0.45	−15.44	6.564	6.754	6.108	6.160		0^+	0^+
289	201	1911.72		6.61		0.79	31.52	−0.39	16.58	−0.45	−15.58	6.577	6.768	6.118	6.170		0^+	$11/2^-$
290	202	1912.93		6.60		0.82	31.81	1.21	16.69	−0.46	−15.69	6.589	6.781	6.126	6.178		0^+	0^+
291	203	1912.54		6.57		0.82	31.97	−0.39	16.83	−0.45	−15.83	6.602	6.795	6.136	6.188		0^+	$11/2^-$
292	204	1913.76		6.55		0.83	32.27	1.22	16.92	−0.46	−15.92	6.614	6.808	6.143	6.195		0^+	0^+
293	205	1913.36		6.53		0.82	32.38	−0.40	17.00	−0.45	−16.06	6.628	6.821	6.153	6.205		0^+	$11/2^-$
294	206	1914.60		6.51		0.84	32.72	1.24	17.14	−0.46	−16.14	6.640	6.835	6.158	6.210		0^+	0^+
295	207	1914.18		6.49		0.82	32.76	−0.42	17.16	−0.48	−16.16	6.663	6.866	6.159	6.211		0^+	$3/2^-$
296	208	1915.42		6.47		0.82	33.12	1.24	17.35	−0.44	−16.34	6.665	6.863	6.173	6.225		0^+	0^+
297	209	1915.05		6.45		0.87	33.17	−0.37	17.37	−0.46	−16.36	6.687	6.892	6.174	6.225		0^+	$3/2^-$
298	210	1916.20		6.43		0.78	33.49	1.15	17.53	−0.42	−16.52	6.690	6.891	6.186	6.237		0^+	0^+
299	211	1915.87		6.41		0.82	33.53	−0.33	17.55	−0.44	−16.54	6.712	6.919	6.187	6.238		0^+	$3/2^-$
300	212	1916.92		6.39		0.72	33.80	1.05	17.68	−0.39	−16.68	6.716	6.920	6.197	6.248		0^+	0^+
301	213	1916.63		6.37		0.76	33.84	−0.29	17.70	−0.41	−16.70	6.737	6.947	6.198	6.249		0^+	$3/2^-$
302	214	1917.60		6.35		0.68	34.08	0.97	17.82	−0.38	−16.82	6.742	6.951	6.206	6.258		0^+	0^+
303	215	1917.35		6.33		0.72	34.11	−0.25	17.84	−0.39	−16.85	6.762	6.976	6.208	6.259		0^+	$3/2^-$
304	216	1918.25		6.31		0.65	34.33	0.90	17.95	−0.37	−16.95	6.769	6.982	6.215	6.266		0^+	0^+
305	217	1918.04		6.29		0.69	34.39	−0.21	17.96	−0.38	−16.99	6.788	7.006	6.217	6.268		0^+	$3/2^-$
306	218	1918.89		6.27		0.64	34.57	0.85	18.07	−0.36	−17.08	6.795	7.013	6.223	6.274		0^+	0^+
307	219	1918.72		6.25		0.68	34.67	−0.17	18.12	−0.37	−17.12	6.813	7.036	6.225	6.276		0^+	$3/2^-$
308	220	1919.53		6.23		0.64	34.80	0.81	18.19	−0.37	−17.21	6.822	7.044	6.231	6.282		0^+	0^+
309	221	1919.36		6.21		0.64	34.90	−0.17	18.23	−0.37	−17.24	6.839	7.066	6.233	6.284		0^+	$3/2^-$
310	222	1920.17		6.19		0.64	35.01	0.81	18.29	−0.37	−17.33	6.848	7.075	6.239	6.290		0^+	0^+
311	223	1920.00		6.17		0.64	35.11	−0.17	18.34	−0.37	−17.37	6.865	7.095	6.241	6.292		0^+	$3/2^-$
312	224	1920.83		6.16		0.66	35.23	0.83	18.40	−0.38	−17.45	6.874	7.105	6.246	6.297		0^+	0^+
313	225	1920.67		6.14		0.67	35.32	−0.16	18.46	−0.38	−17.49	6.890	7.125	6.249	6.300		0^+	$3/2^-$
314	226	1921.51		6.12		0.68	35.45	0.84	18.52	−0.38	−17.57	6.900	7.136	6.254	6.305		0^+	0^+
315	227	1921.35		6.10		0.68	35.52	−0.16	18.55	−0.40	−17.60	6.917	7.157	6.256	6.307		0^+	$1/2^-$
316	228	1922.21		6.08		0.70	35.67	0.86	18.63	−0.39	−17.69	6.926	7.165	6.261	6.312		0^+	0^+
317	229	1922.07		6.06		0.72	35.75	−0.14	18.67	−0.40	−17.72	6.942	7.186	6.264	6.314		0^+	$1/2^-$
318	230	1922.92		6.05		0.71	35.89	0.85	18.74	−0.40	−17.81	6.951	7.195	6.269	6.320		0^+	0^+
319	231	1922.80		6.03		0.73	35.98	−0.12	18.78	−0.40	−17.85	6.967	7.214	6.272	6.322		0^+	$1/2^-$
320	232	1923.66		6.01		0.74	36.12	0.86	18.86	−0.41	−17.93	6.976	7.223	6.277	6.328		0^+	0^+
321	233	1923.55		5.99		0.75	36.23	−0.11	18.91	−0.41	−17.98	6.991	7.241	6.280	6.331		0^+	$1/2^-$
322	234	1924.40		5.98		0.74	36.34	0.85	18.97	−0.41	−18.06	7.001	7.252	6.285	6.335		0^+	0^+
323	235	1924.30		5.96		0.75	36.48	−0.10	19.04	−0.41	−18.12	7.014	7.267	6.289	6.339		0^+	$1/2^-$
324	236	1925.16		5.94		0.76	36.58	0.86	19.10	−0.41	−18.19	7.025	7.279	6.293	6.344		0^+	0^+
325	237	1925.05		5.92		0.75	36.76	−0.11	19.19	−0.40	−18.27	7.037	7.292	6.298	6.349		0^+	$1/2^-$
326	238	1925.92		5.91		0.76	36.85	0.87	19.24	−0.41	−18.34	7.048	7.305	6.302	6.353		0^+	0^+
327	239	1925.80		5.89		0.75	37.09	−0.12	19.36	−0.40	−18.44	7.059	7.317	6.309	6.359		0^+	$1/2^-$
328	240	1926.69		5.87		0.77	37.17	0.89	19.41	−0.41	−18.50	7.071	7.330	6.312	6.363		0^+	0^+
329	241	1926.53		5.86		0.73	37.47	−0.16	19.55	−0.39	−18.63	7.081	7.339	6.320	6.371		0^+	$1/2^-$
330	242	1927.44		5.84		0.75	37.55	0.91	19.59	−0.40	−18.68	7.093	7.353	6.323	6.374		0^+	0^+
331	243	1927.24		5.82		0.71	37.95	−0.20	19.77	−0.38	−18.84	7.101	7.360	6.333	6.384		0^+	$1/2^-$
332	244	1928.18		5.81		0.74	38.01	0.94	19.81	−0.39	−18.89	7.114	7.375	6.336	6.386		0^+	0^+
333	245	1927.94		5.79		0.70	38.36	−0.24	20.02	−0.37	−19.08	7.121	7.379	6.348	6.398		0^+	$1/2^-$
334	246	1928.91		5.78		0.73	38.54	0.97	20.06	−0.38	−19.12	7.134	7.395	6.350	6.400		0^+	0^+
335	247	1928.63		5.76		0.69	38.83	−0.28	20.23	−0.36	−19.33	7.140	7.397	6.364	6.414		0^+	$1/2^-$
336	248	1929.62		5.74		0.71	39.08	0.99	20.32	−0.37	−19.36	7.153	7.413	6.365	6.415		0^+	0^+
337	249	1929.31		5.72		0.68	39.32	−0.31	20.44	−0.38	−19.46	7.164	7.424	6.371	6.421		0^+	$17/2^+$
338	250	1930.33		5.71		0.71	39.65	1.02	20.60	−0.36	−19.62	7.172	7.431	6.381	6.431		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
339	251	1930.04		5.69		0.73	39.89	−0.29	20.72	−0.37	−19.73	7.182	7.441	6.388	6.438		0^+	$17/2^+$
340	252	1931.04		5.68		0.71	40.21	1.00	20.89	−0.36	−19.89	7.191	7.447	6.398	6.448		0^+	0^+
341	253	1930.78		5.66		0.74	40.47	−0.26	21.02	−0.37	−20.00	7.201	7.457	6.405	6.455		0^+	$17/2^+$
342	254	1931.76		5.65		0.72	40.78	0.98	21.18	−0.36	−20.16	7.209	7.464	6.416	6.465		0^+	0^+
343	255	1931.52		5.63		0.74	41.04	−0.24	21.30	−0.36	−20.27	7.219	7.474	6.423	6.473		0^+	$17/2^+$
344	256	1932.49		5.62		0.73	41.34	0.97	21.46	−0.36	−20.43	7.227	7.480	6.434	6.483		0^+	0^+
345	257	1932.28		5.60		0.76	41.59	−0.21	21.59	0.93	−20.54	7.237	7.490	6.441	6.491		0^+	$17/2^+$
346	258	1933.25		5.59		0.76	41.90	0.97	21.75	−0.99	−20.70	7.245	7.497	6.452	6.501		0^+	0^+
σ		5.47													0.017			
$Z = 89$ (Ac)																		
202	113	1534.40		7.60			0.35	9.48	−0.86	−10.64	0.14	5.562	5.598	5.516	5.574		$9/2^-$	$5/2^-$
203	114	1545.96		7.62		21.04	0.86	11.56	−0.61	−10.49	−0.11	5.571	5.610	5.521	5.579		$9/2^-$	0^+
204	115	1555.39		7.62		20.99	1.39	9.43	−0.34	−10.44	−0.37	5.580	5.621	5.526	5.583		$9/2^-$	$5/2^-$
205	116	1566.66		7.64		20.70	1.84	11.27	−0.12	−10.31	−0.59	5.589	5.633	5.531	5.588		$9/2^-$	0^+
206	117	1576.00		7.65		20.61	2.37	9.34	0.14	−10.24	−0.86	5.598	5.645	5.535	5.593		$9/2^-$	$5/2^-$
207	118	1587.01	1589.99	7.67	7.68	20.35	2.76	11.01	0.34	−10.12	−1.05	5.607	5.657	5.541	5.598		$9/2^-$	0^+
208	119	1596.21	1598.45	7.67	7.68	20.21	3.20	9.20	0.55	−10.11	−1.27	5.616	5.668	5.545	5.602		$9/2^-$	$3/2^-$
209	120	1606.99	1608.43	7.69	7.70	19.98	3.63	10.78	0.77	−9.91	−1.48	5.625	5.680	5.550	5.608		$9/2^-$	0^+
210	121	1616.19	1616.56	7.70	7.70	19.98	4.06	9.20	0.98	−9.88	−1.69	5.634	5.691	5.555	5.612		$9/2^-$	$3/2^-$
211	122	1626.52	1626.21	7.71	7.71	19.53	4.41	10.33	1.15	−9.66	−1.86	5.642	5.702	5.559	5.617		$9/2^-$	0^+
212	123	1635.61	1634.22	7.72	7.71	19.42	4.82	9.09	1.35	−9.40	−2.06	5.651	5.713	5.563	5.621		$9/2^-$	$3/2^-$
213	124	1645.51	1643.41	7.73	7.72	18.99	5.11	9.90	1.49	−9.27	−2.21	5.658	5.724	5.567	5.624		$9/2^-$	0^+
214	125	1654.41	1651.19	7.73	7.72	18.80	5.43	8.90	1.64	−8.86	−2.36	5.668	5.736	5.571	5.628		$9/2^-$	$1/2^-$
215	126	1663.34	1659.67	7.74	7.72	17.83	5.73	8.93	1.79	−7.58	−2.52	5.678	5.749	5.575	5.632		$9/2^-$	0^+
216	127	1668.31	1665.63	7.72	7.71	13.90	6.34	4.97	2.10	−8.16	−2.82	5.693	5.765	5.587	5.644		$9/2^-$	$11/2^+$
217	128	1674.84	1673.14	7.72	7.71	11.50	6.88	6.53	2.38	−5.76	−3.10	5.707	5.781	5.598	5.655		$9/2^-$	0^+
218	129	1679.73	1679.08	7.71	7.70	11.42	7.49	4.89	2.68	−5.72	−3.40	5.722	5.798	5.610	5.666		$9/2^-$	$11/2^+$
219	130	1686.19	1686.42	7.70	7.70	11.35	8.01	6.46	2.95	−5.70	−3.67	5.736	5.813	5.620	5.677		$9/2^-$	0^+
220	131	1691.01	1692.32	7.69	7.69	11.28	8.62	4.82	3.26	−5.65	−3.97	5.750	5.829	5.632	5.689		$9/2^-$	$11/2^+$
221	132	1697.41	1699.61	7.68	7.69	11.22	9.13	6.40	3.52	−5.63	−4.23	5.764	5.845	5.642	5.699		$9/2^-$	0^+
222	133	1702.14	1705.58	7.67	7.68	11.13	9.73	4.73	3.82	−5.57	−4.53	5.779	5.861	5.654	5.710		$9/2^-$	$11/2^+$
223	134	1708.48	1712.45	7.66	7.68	11.07	10.22	6.34	4.07	−5.55	−4.78	5.792	5.876	5.664	5.720		$9/2^-$	0^+
224	135	1713.09	1718.11	7.65	7.67	10.95	10.81	4.61	4.38	−5.45	−5.08	5.806	5.891	5.676	5.732		$9/2^-$	$11/2^+$
225	136	1719.38	1724.78	7.64	7.67	10.90	11.27	6.29	4.61	−5.44	−5.32	5.820	5.906	5.685	5.741		$9/2^-$	0^+
226	137	1723.75	1730.18	7.63	7.66	10.66	11.80	4.37	4.89	−5.26	−5.58	5.833	5.921	5.696	5.752		$9/2^-$	$11/2^+$
227	138	1730.02	1736.71	7.62	7.65	10.64	12.25	6.27	5.11	−5.28	−5.81	5.846	5.935	5.705	5.761		$9/2^-$	0^+
228	139	1734.17	1741.73	7.61	7.64	10.42	12.64	4.15	5.30	−5.27	−6.01	5.859	5.950	5.714	5.769		$9/2^-$	$9/2^+$
229	140	1740.27	1748.00	7.60	7.63	10.25	13.07	6.10	5.51	−5.09	−6.22	5.870	5.963	5.721	5.777		$9/2^-$	0^+
230	141	1744.35	1752.94	7.58	7.62	10.18	13.43	4.08	5.68	−5.03	−6.39	5.883	5.977	5.729	5.785		$9/2^-$	$9/2^+$
231	142	1750.16	1759.08	7.58	7.61	9.89	13.78	5.81	5.86	−4.94	−6.57	5.893	5.990	5.735	5.791		$9/2^-$	0^+
232	143	1754.12	1763.76	7.56	7.60	9.77	14.12	3.96	6.03	−4.86	−6.74	5.905	6.004	5.742	5.798		$9/2^-$	$9/2^+$
233	144	1759.76	1769.68	7.55	7.60	9.60	14.45	5.64	6.19	−4.81	−6.91	5.916	6.017	5.749	5.804		$9/2^-$	0^+
234	145	1763.58	1774.22	7.54	7.58	9.46	14.78	3.82	6.36	−4.72	−7.08	5.928	6.031	5.755	5.811		$9/2^-$	$9/2^+$
235	146	1769.11	1779.77	7.53	7.57	9.35	15.11	5.53	6.52	−4.69	−7.25	5.938	6.044	5.762	5.817		$9/2^-$	0^+
236	147	1772.75	1783.98	7.51	7.56	9.17	15.48	3.64	6.70	−4.59	−7.43	5.950	6.057	5.768	5.824		$9/2^-$	$9/2^+$
237	148	1778.24		7.50		9.13	15.81	5.49	6.87	−4.58	−7.60	5.961	6.070	5.775	5.830		$9/2^-$	0^+
238	149	1781.67		7.49		8.92	16.22	3.43	7.08	−4.46	−7.81	5.972	6.083	5.782	5.837		$9/2^-$	$9/2^+$
239	150	1787.14		7.48		8.90	16.53	5.47	7.23	−4.47	−7.97	5.983	6.096	5.788	5.843		$9/2^-$	0^+
240	151	1790.34		7.46		8.67	17.00	3.20	7.47	−4.35	−8.20	5.995	6.109	5.795	5.850		$9/2^-$	$9/2^+$
241	152	1795.83		7.45		8.69	17.28	5.49	7.61	−4.37	−8.34	6.005	6.122	5.801	5.856		$9/2^-$	0^+
242	153	1798.91		7.43		8.57	17.71	3.08	7.83	−4.34	−8.55	6.016	6.134	5.808	5.863		$9/2^-$	$15/2^-$
243	154	1804.33		7.43		8.50	18.03	5.42	7.99	−4.29	−8.72	6.028	6.147	5.814	5.869		$9/2^-$	0^+
244	155	1807.36		7.41		8.45	18.44	3.03	8.20	−4.25	−8.93	6.039	6.160	5.821	5.876		$9/2^-$	$15/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
245	156	1812.68		7.40		8.35	18.78	5.32	8.37	−4.21	−9.10	6.050	6.173	5.828	5.882		$9/2^-$	0^+
246	157	1815.66		7.38		8.30	19.08	2.98	8.56	−4.18	−9.30	6.061	6.186	5.835	5.889		$9/2^-$	$15/2^-$
247	158	1820.89		7.37		8.21	19.51	5.23	8.74	−4.15	−9.47	6.072	6.199	5.841	5.895		$9/2^-$	0^+
248	159	1823.85		7.35		8.19	19.77	2.96	8.85	−4.15	−9.64	6.084	6.212	5.848	5.902		$9/2^-$	$7/2^+$
249	160	1828.98		7.35		8.09	20.22	5.13	9.09	−4.09	−9.83	6.094	6.224	5.854	5.908		$9/2^-$	0^+
250	161	1831.98		7.33		8.13	20.53	3.00	9.25	−4.10	−9.96	6.106	6.238	5.858	5.913		$9/2^-$	$5/2^+$
251	162	1836.98		7.32		8.00	20.91	5.00	9.44	−4.04	−10.18	6.116	6.249	5.867	5.921		$9/2^-$	0^+
252	163	1839.98		7.30		8.00	21.21	3.00	9.60	−4.05	−10.31	6.128	6.263	5.872	5.926		$9/2^-$	$5/2^+$
253	164	1844.90		7.29		7.92	21.58	4.92	9.78	−4.00	−10.51	6.138	6.275	5.879	5.934		$9/2^-$	0^+
254	165	1847.91		7.28		7.93	21.88	3.01	9.93	−4.01	−10.66	6.150	6.288	5.884	5.939		$9/2^-$	$5/2^+$
255	166	1852.75		7.27		7.85	22.24	4.84	10.11	−3.96	−10.84	6.160	6.300	5.892	5.946		$9/2^-$	0^+
256	167	1855.77		7.25		7.86	22.54	3.02	10.26	−3.97	−10.99	6.172	6.313	5.897	5.951		$9/2^-$	$5/2^+$
257	168	1860.53		7.24		7.78	22.87	4.76	10.43	−3.92	−11.16	6.182	6.325	5.904	5.958		$9/2^-$	0^+
258	169	1863.58		7.22		7.81	23.19	3.05	10.59	−3.93	−11.31	6.193	6.338	5.909	5.963		$9/2^-$	$5/2^+$
259	170	1868.24		7.21		7.71	23.48	4.66	10.73	−3.88	−11.46	6.204	6.349	5.915	5.969		$9/2^-$	0^+
260	171	1871.31		7.20		7.73	23.81	3.07	10.90	−3.88	−11.62	6.215	6.362	5.921	5.975		$9/2^-$	$5/2^+$
261	172	1875.89		7.19		7.65	24.07	4.58	11.03	−3.84	−11.75	6.225	6.374	5.926	5.980		$9/2^-$	0^+
262	173	1878.97		7.17		7.66	24.38	3.08	11.20	−3.84	−11.91	6.236	6.387	5.932	5.986		$9/2^-$	$5/2^+$
263	174	1883.47		7.16		7.58	24.63	4.50	11.31	−3.80	−12.02	6.246	6.399	5.936	5.990		$9/2^-$	0^+
264	175	1886.54		7.15		7.57	24.87	3.07	11.43	−3.78	−12.19	6.257	6.411	5.943	5.996		$9/2^-$	$5/2^+$
265	176	1890.96		7.14		7.49	25.16	4.42	11.57	−3.75	−12.27	6.267	6.424	5.946	5.999		$9/2^-$	0^+
266	177	1894.10		7.12		7.56	25.41	3.14	11.69	−3.77	−12.39	6.278	6.437	5.950	6.003		$9/2^-$	$1/2^+$
267	178	1898.35		7.11		7.39	25.64	4.25	11.80	−3.68	−12.50	6.288	6.449	5.954	6.008		$9/2^-$	0^+
268	179	1901.58		7.10		7.48	25.91	3.23	11.92	−3.69	−12.62	6.299	6.462	5.958	6.012		$9/2^-$	$1/2^+$
269	180	1905.60		7.08		7.25	26.07	4.02	12.01	−3.60	−12.71	6.309	6.474	5.962	6.015		$9/2^-$	0^+
270	181	1908.81		7.07		7.23	26.29	3.21	12.12	−3.60	−12.81	6.320	6.487	5.965	6.019		$9/2^-$	$3/2^+$
271	182	1912.68		7.06		7.08	26.43	3.87	12.19	−3.51	−12.88	6.331	6.501	5.968	6.022		$9/2^-$	0^+
272	183	1915.88		7.04		7.07	26.61	3.20	12.27	−2.39	−12.97	6.342	6.515	5.971	6.024		$9/2^-$	$3/2^+$
273	184	1919.60		7.03		6.92	26.74	3.72	12.34	−2.25	−13.03	6.353	6.528	5.974	6.027		$9/2^-$	0^+
274	185	1919.17		7.00		3.29	26.89	−0.43	12.41	−2.40	−13.11	6.366	6.544	5.979	6.032		$9/2^-$	$11/2^-$
275	186	1920.31		6.98		0.71	27.25	1.14	12.61	−0.41	−13.30	6.380	6.557	5.993	6.046		$9/2^-$	0^+
276	187	1919.87		6.96		0.70	27.34	−0.44	12.63	−0.41	−13.39	6.393	6.573	5.998	6.051		$9/2^-$	$11/2^-$
277	188	1921.05		6.94		0.74	27.76	1.18	12.87	−0.43	−13.58	6.407	6.586	6.012	6.065		$9/2^-$	0^+
278	189	1920.66		6.91		0.79	27.95	−0.39	12.96	−0.44	−13.67	6.420	6.601	6.018	6.071		$9/2^-$	$11/2^-$
279	190	1921.84		6.89		0.79	28.28	1.18	13.13	−0.46	−13.85	6.433	6.614	6.031	6.084		$9/2^-$	0^+
280	191	1921.46		6.86		0.80	28.48	−0.38	13.23	−0.47	−13.95	6.447	6.628	6.038	6.091		$9/2^-$	$11/2^-$
281	192	1922.69		6.84		0.85	28.81	1.23	13.40	−0.49	−14.13	6.460	6.641	6.050	6.103		$9/2^-$	0^+
282	193	1922.33		6.82		0.87	29.02	−0.36	13.51	−0.50	−14.24	6.473	6.656	6.058	6.111		$9/2^-$	$11/2^-$
283	194	1923.58		6.80		0.89	29.33	1.25	13.66	−0.51	−14.40	6.486	6.669	6.069	6.122		$9/2^-$	0^+
284	195	1923.25		6.77		0.92	29.56	−0.33	13.78	−0.52	−14.52	6.499	6.683	6.078	6.130		$9/2^-$	$11/2^-$
285	196	1924.53		6.75		0.95	29.86	1.28	13.93	−0.54	−14.67	6.512	6.696	6.089	6.141		$9/2^-$	0^+
286	197	1924.23		6.73		0.98	30.11	−0.30	14.05	−0.55	−14.80	6.525	6.710	6.098	6.150		$9/2^-$	$11/2^-$
287	198	1925.52		6.71		0.99	30.37	1.29	14.18	−0.56	−14.94	6.538	6.723	6.107	6.160		$9/2^-$	0^+
288	199	1925.25		6.68		1.02	30.64	−0.27	14.32	−0.56	−15.07	6.551	6.736	6.117	6.169		$9/2^-$	$11/2^-$
289	200	1926.55		6.67		1.03	30.88	1.30	14.44	−0.57	−15.19	6.564	6.749	6.126	6.178		$9/2^-$	0^+
290	201	1926.30		6.64		1.05	31.16	−0.25	14.58	−0.57	−15.33	6.577	6.763	6.136	6.188		$9/2^-$	$11/2^-$
291	202	1927.61		6.62		1.06	31.37	1.31	14.68	−0.58	−15.43	6.589	6.776	6.143	6.195		$9/2^-$	0^+
292	203	1927.36		6.60		1.06	31.65	−0.25	14.82	−0.57	−15.57	6.602	6.789	6.154	6.205		$9/2^-$	$11/2^-$
293	204	1928.67		6.58		1.06	31.83	1.31	14.91	−0.58	−15.67	6.614	6.802	6.160	6.212		$9/2^-$	0^+
294	205	1928.41		6.56		1.05	32.05	−0.26	15.05	−0.56	−15.80	6.627	6.816	6.170	6.222		$9/2^-$	$11/2^-$
295	206	1929.73		6.54		1.06	32.27	1.32	15.13	−0.56	−15.88	6.639	6.829	6.175	6.227		$9/2^-$	0^+
296	207	1929.42		6.52		1.01	32.40	−0.31	15.24	−0.52	−16.01	6.652	6.843	6.185	6.236		$9/2^-$	$11/2^-$
297	208	1930.74		6.50		1.01	32.67	1.32	15.32	−0.54	−16.08	6.663	6.856	6.189	6.241		$9/2^-$	0^+
298	209	1930.40		6.48		0.98	32.72	−0.34	15.35	−0.56	−16.10	6.686	6.886	6.190	6.242		$9/2^-$	$3/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
299	210	1931.70		6.46		0.96	33.03	1.30	15.50	−0.50	−16.26	6.688	6.884	6.202	6.253		$9/2^-$	0^+
300	211	1931.41		6.44		1.01	33.09	−0.29	15.54	−0.52	−16.30	6.704	6.903	6.205	6.256		$9/2^-$	$7/2^-$
301	212	1932.58		6.42		0.88	33.34	1.17	15.66	−0.47	−16.42	6.714	6.913	6.213	6.264		$9/2^-$	0^+
302	213	1932.32		6.40		0.91	33.39	−0.26	15.69	−0.49	−16.44	6.734	6.940	6.214	6.265		$9/2^-$	$3/2^-$
303	214	1933.40		6.38		0.82	33.62	1.08	15.80	−0.45	−16.57	6.739	6.943	6.222	6.274		$9/2^-$	0^+
304	215	1933.18		6.36		0.86	33.67	−0.22	15.83	−0.46	−16.59	6.759	6.968	6.224	6.275		$9/2^-$	$3/2^-$
305	216	1934.19		6.34		0.79	33.89	1.01	15.94	−0.44	−16.71	6.765	6.973	6.231	6.283		$9/2^-$	0^+
306	217	1934.00		6.32		0.82	33.92	−0.19	15.96	−0.45	−16.74	6.784	6.997	6.233	6.284		$9/2^-$	$3/2^-$
307	218	1934.96		6.30		0.77	34.14	0.96	16.07	−0.43	−16.85	6.791	7.003	6.240	6.291		$9/2^-$	0^+
308	219	1934.82		6.28		0.82	34.22	−0.14	16.10	−0.44	−16.88	6.809	7.026	6.242	6.293		$9/2^-$	$3/2^-$
309	220	1935.72		6.26		0.76	34.38	0.90	16.19	−0.43	−16.98	6.816	7.033	6.249	6.300		$9/2^-$	0^+
310	221	1935.60		6.24		0.78	34.47	−0.12	16.24	−0.44	−17.02	6.834	7.055	6.251	6.302		$9/2^-$	$3/2^-$
311	222	1936.49		6.23		0.77	34.61	0.89	16.32	−0.44	−17.11	6.842	7.063	6.257	6.308		$9/2^-$	0^+
312	223	1936.38		6.21		0.78	34.72	−0.11	16.38	−0.44	−17.15	6.859	7.084	6.259	6.310		$9/2^-$	$3/2^-$
313	224	1937.28		6.19		0.79	34.85	0.90	16.45	−0.44	−17.24	6.867	7.093	6.265	6.316		$9/2^-$	0^+
314	225	1937.16		6.17		0.78	34.95	−0.12	16.49	−0.45	−17.29	6.884	7.112	6.268	6.319		$9/2^-$	$3/2^-$
315	226	1938.08		6.15		0.80	35.09	0.92	16.57	−0.45	−17.37	6.893	7.122	6.273	6.324		$9/2^-$	0^+
316	227	1937.97		6.13		0.81	35.17	−0.11	16.62	−0.45	−17.43	6.908	7.140	6.277	6.327		$9/2^-$	$3/2^-$
317	228	1938.90		6.12		0.82	35.32	0.93	16.69	−0.46	−17.50	6.918	7.151	6.281	6.332		$9/2^-$	0^+
318	229	1938.80		6.10		0.83	35.40	−0.10	16.73	−0.46	−17.56	6.932	7.168	6.285	6.336		$9/2^-$	$3/2^-$
319	230	1939.75		6.08		0.85	35.57	0.95	16.83	−0.47	−17.64	6.942	7.179	6.289	6.340		$9/2^-$	0^+
320	231	1939.66		6.06		0.86	35.64	−0.09	16.86	−0.48	−17.68	6.959	7.199	6.292	6.343		$9/2^-$	$1/2^-$
321	232	1940.61		6.05		0.86	35.81	0.95	16.95	−0.48	−17.77	6.967	7.207	6.298	6.348		$9/2^-$	0^+
322	233	1940.55		6.03		0.89	35.91	−0.06	17.00	−0.48	−17.82	6.982	7.225	6.301	6.351		$9/2^-$	$1/2^-$
323	234	1941.49		6.01		0.88	36.06	0.94	17.09	−0.48	−17.91	6.991	7.234	6.306	6.357		$9/2^-$	0^+
324	235	1941.44		5.99		0.89	36.18	−0.05	17.14	−0.49	−17.97	7.005	7.251	6.310	6.361		$9/2^-$	$1/2^-$
325	236	1942.39		5.98		0.90	36.33	0.95	17.23	−0.49	−18.06	7.015	7.261	6.315	6.366		$9/2^-$	0^+
326	237	1942.35		5.96		0.91	36.49	−0.04	17.30	−0.49	−18.13	7.028	7.276	6.320	6.370		$9/2^-$	$1/2^-$
327	238	1943.30		5.94		0.91	36.62	0.95	17.38	−0.49	−18.21	7.038	7.287	6.325	6.375		$9/2^-$	0^+
328	239	1943.27		5.92		0.92	36.83	−0.00	17.47	−0.49	−18.30	7.050	7.300	6.330	6.381		$9/2^-$	$1/2^-$
329	240	1944.23		5.91		0.93	36.95	0.96	17.54	−0.50	−18.38	7.061	7.312	6.335	6.385		$9/2^-$	0^+
330	241	1944.19		5.89		0.92	37.21	−0.04	17.66	−0.49	−18.49	7.072	7.323	6.341	6.392		$9/2^-$	$1/2^-$
331	242	1945.16		5.88		0.93	37.31	0.97	17.72	−0.50	−18.55	7.083	7.335	6.345	6.396		$9/2^-$	0^+
332	243	1945.12		5.86		0.93	37.65	−0.04	17.88	−0.49	−18.69	7.093	7.345	6.353	6.404		$9/2^-$	$1/2^-$
333	244	1946.11		5.84		0.95	37.74	0.99	17.93	−0.50	−18.75	7.104	7.358	6.357	6.407		$9/2^-$	0^+
334	245	1946.04		5.83		0.92	38.12	−0.07	18.10	−0.49	−18.90	7.113	7.365	6.367	6.417		$9/2^-$	$1/2^-$
335	246	1947.05		5.81		0.94	38.20	1.01	18.14	−0.50	−18.95	7.125	7.379	6.369	6.419		$9/2^-$	0^+
336	247	1946.97		5.79		0.93	38.57	−0.08	18.34	−0.48	−19.13	7.133	7.385	6.381	6.431		$9/2^-$	$1/2^-$
337	248	1948.00		5.78		0.95	38.70	1.03	18.38	−0.50	−19.18	7.145	7.399	6.383	6.433		$9/2^-$	0^+
338	249	1947.91		5.76		0.94	39.04	−0.09	18.60	−0.48	−19.38	7.152	7.403	6.396	6.445		$9/2^-$	$1/2^-$
339	250	1948.96		5.75		0.96	39.23	1.05	18.63	−0.49	−19.41	7.165	7.419	6.397	6.447		$9/2^-$	0^+
340	251	1948.85		5.73		0.94	39.53	−0.11	18.81	−0.48	−19.63	7.171	7.421	6.411	6.461		$9/2^-$	$1/2^-$
341	252	1949.93		5.72		0.97	39.78	1.08	18.89	−0.49	−19.66	7.184	7.437	6.412	6.462		$9/2^-$	0^+
342	253	1949.80		5.70		0.95	40.04	−0.13	19.02	−0.48	−19.89	7.189	7.438	6.428	6.477		$9/2^-$	$1/2^-$
343	254	1950.91		5.69		0.98	40.33	1.11	19.15	−0.49	−19.91	7.202	7.454	6.428	6.478		$9/2^-$	0^+
344	255	1950.77		5.67		0.97	40.55	−0.14	19.25	−0.50	−20.01	7.212	7.465	6.434	6.484		$9/2^-$	$17/2^+$
345	256	1951.90		5.66		0.99	40.87	1.13	19.41	−0.49	−20.17	7.221	7.472	6.445	6.494		$9/2^-$	0^+
346	257	1951.80		5.64		1.03	41.11	−0.10	19.52	0.82	−20.27	7.231	7.482	6.451	6.501		$9/2^-$	$17/2^+$
347	258	1952.91		5.63		1.01	41.41	1.11	19.66	−1.13	−20.43	7.239	7.489	6.461	6.511		$9/2^-$	0^+
σ		5.89																
$Z = 90$ (Th)																		
204	114	1546.83		7.58			0.26		0.87	−10.74	0.19	5.581	5.616	5.537	5.594		0^+	0^+
205	115	1556.52		7.59			0.79	9.69	1.13	−10.69	−0.08	5.590	5.628	5.541	5.599		0^+	$5/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
206	116	1568.01		7.61		21.18	1.23	11.49	1.35	−10.54	−0.29	5.599	5.639	5.547	5.604		0^+	0^+
207	117	1577.62		7.62		21.10	1.76	9.61	1.62	−10.47	−0.56	5.608	5.651	5.551	5.608		0^+	$5/2^-$
208	118	1588.82	1591.74	7.64	7.65	20.81	2.15	11.20	1.81	−10.34	−0.74	5.617	5.663	5.557	5.614		0^+	0^+
209	119	1598.25	1599.96	7.65	7.66	20.63	2.59	9.43	2.04	−10.21	−0.99	5.625	5.673	5.561	5.618		0^+	$5/2^-$
210	120	1609.21	1610.51	7.66	7.67	20.39	2.99	10.96	2.22	−10.11	−1.16	5.635	5.685	5.566	5.624		0^+	0^+
211	121	1618.62	1618.73	7.67	7.67	20.37	3.41	9.41	2.43	−10.08	−1.37	5.643	5.697	5.571	5.628		0^+	$3/2^-$
212	122	1629.12	1628.61	7.68	7.68	19.91	3.75	10.50	2.60	−9.84	−1.53	5.652	5.707	5.575	5.632		0^+	0^+
213	123	1638.39	1636.66	7.69	7.68	19.77	4.13	9.27	2.78	−9.56	−1.72	5.660	5.718	5.579	5.636		0^+	$3/2^-$
214	124	1648.45	1646.14	7.70	7.69	19.33	4.43	10.06	2.94	−9.43	−1.87	5.667	5.729	5.582	5.639		0^+	0^+
215	125	1657.51	1654.00	7.71	7.69	19.12	4.74	9.06	3.10	−8.90	−2.03	5.677	5.741	5.586	5.643		0^+	$1/2^-$
	126	1666.59	1662.70	7.72	7.70	18.14	5.04	9.08	3.25	−7.96	−2.18	5.686	5.753	5.591	5.648		0^+	0^+
216																		
217	127	1671.87	1668.85	7.70	7.69	14.36	5.66	5.28	3.56	−8.21	−2.48	5.701	5.770	5.602	5.659		0^+	$11/2^+$
218	128	1678.66	1676.77	7.70	7.69	12.07	6.20	6.79	3.82	−6.04	−2.76	5.715	5.786	5.613	5.670		0^+	0^+
219	129	1683.86	1682.74	7.69	7.68	11.99	6.81	5.20	4.13	−6.00	−3.06	5.730	5.802	5.625	5.682		0^+	$11/2^+$
220	130	1690.58	1690.61	7.68	7.68	11.92	7.34	6.72	4.39	−5.98	−3.34	5.744	5.818	5.635	5.692		0^+	0^+
221	131	1695.70	1696.41	7.67	7.68	11.84	7.95	5.12	4.69	−5.93	−3.64	5.758	5.834	5.647	5.704		0^+	$11/2^+$
222	132	1702.36	1704.22	7.67	7.68	11.78	8.47	6.66	4.95	−5.90	−3.90	5.772	5.849	5.658	5.714		0^+	0^+
223	133	1707.39	1710.11	7.66	7.67	11.69	9.07	5.03	5.25	−5.84	−4.21	5.787	5.864	5.669	5.726		0^+	$11/2^+$
224	134	1713.99	1717.57	7.65	7.67	11.63	9.58	6.60	5.51	−5.82	−4.47	5.800	5.879	5.679	5.736		0^+	0^+
225	135	1718.90	1723.33	7.64	7.66	11.51	10.19	4.91	5.81	−5.72	−4.77	5.814	5.895	5.691	5.747		0^+	$11/2^+$
226	136	1725.44	1730.51	7.63	7.66	11.45	10.67	6.54	6.06	−5.70	−5.01	5.827	5.909	5.701	5.757	5.740	0^+	0^+
227	137	1730.08	1735.97	7.62	7.65	11.18	11.22	4.64	6.33	−5.48	−5.29	5.841	5.925	5.712	5.768	5.749	0^+	$11/2^+$
228	138	1736.58	1743.08	7.62	7.65	11.14	11.67	6.50	6.56	−5.50	−5.52	5.854	5.939	5.721	5.777	5.756	0^+	0^+
229	139	1740.92	1748.33	7.60	7.63	10.84	12.05	4.34	6.75	−5.49	−5.71	5.866	5.953	5.730	5.785	5.767	0^+	$9/2^+$
230	140	1747.23	1755.13	7.60	7.63	10.65	12.47	6.31	6.96	−5.27	−5.92	5.878	5.966	5.737	5.792		0^+	0^+
231	141	1751.48	1760.25	7.58	7.62	10.56	12.81	4.25	7.13	−5.20	−6.09	5.890	5.981	5.744	5.800	5.785	0^+	$9/2^+$
232	142	1757.46	1766.68	7.58	7.62	10.23	13.16	5.98	7.30	−5.11	−6.27	5.900	5.993	5.750	5.806		0^+	0^+
233	143	1761.58	1771.47	7.56	7.60	10.10	13.49	4.12	7.46	−5.03	−6.43	5.912	6.007	5.757	5.813		0^+	$9/2^+$
234	144	1767.40	1777.66	7.55	7.60	9.94	13.83	5.82	7.64	−4.98	−6.61	5.923	6.020	5.763	5.819		0^+	0^+
235	145	1771.37	1782.33	7.54	7.58	9.79	14.15	3.97	7.79	−4.90	−6.78	5.934	6.033	5.770	5.825		0^+	$9/2^+$
236	146	1777.10	1788.16	7.53	7.58	9.70	14.51	5.73	7.99	−4.87	−6.96	5.945	6.046	5.776	5.831		0^+	0^+
237	147	1780.92	1792.54	7.51	7.56	9.55	14.87	3.82	8.17	−4.77	−7.14	5.956	6.059	5.783	5.838		0^+	$9/2^+$
238	148	1786.58		7.51		9.48	15.21	5.66	8.34	−4.76	−7.31	5.967	6.072	5.789	5.844		0^+	0^+
239	149	1790.20		7.49		9.28	15.61	3.62	8.53	−4.66	−7.51	5.978	6.085	5.796	5.851		0^+	$9/2^+$
240	150	1795.84		7.48		9.26	15.93	5.64	8.70	−4.66	−7.68	5.989	6.098	5.802	5.857		0^+	0^+
241	151	1799.27		7.47		9.07	16.40	3.43	8.93	−4.55	−7.90	6.000	6.111	5.810	5.864		0^+	$9/2^+$
242	152	1804.91		7.46		9.07	16.69	5.64	9.08	−4.56	−8.06	6.010	6.123	5.815	5.870		0^+	0^+
243	153	1808.20		7.44		8.93	17.12	3.29	9.29	−4.53	−8.26	6.021	6.135	5.822	5.877		0^+	$15/2^-$
244	154	1813.79		7.43		8.88	17.45	5.59	9.46	−4.48	−8.44	6.032	6.148	5.829	5.883		0^+	0^+
245	155	1817.03		7.42		8.83	17.87	3.24	9.67	−4.44	−8.64	6.043	6.161	5.836	5.890		0^+	$15/2^-$
246	156	1822.52		7.41		8.73	18.21	5.49	9.84	−4.40	−8.82	6.054	6.174	5.842	5.897		0^+	0^+
247	157	1825.71		7.39		8.68	18.61	3.19	10.05	−4.36	−9.02	6.065	6.186	5.849	5.903		0^+	$15/2^-$
248	158	1831.10		7.38		8.58	18.95	5.39	10.21	−4.33	−9.19	6.076	6.199	5.855	5.910		0^+	0^+
249	159	1834.23		7.37		8.52	19.23	3.13	10.38	−4.29	−9.38	6.087	6.211	5.862	5.916		0^+	$15/2^-$
250	160	1839.56		7.36		8.46	19.67	5.33	10.58	−4.27	−9.56	6.098	6.224	5.869	5.923		0^+	0^+
251	161	1842.71		7.34		8.48	19.98	3.15	10.73	−4.27	−9.73	6.110	6.237	5.875	5.930		0^+	$7/2^+$
252	162	1847.92		7.33		8.36	20.38	5.21	10.94	−4.22	−9.91	6.120	6.249	5.881	5.936		0^+	0^+
253	163	1851.07		7.32		8.36	20.69	3.15	11.09	−4.21	−10.09	6.132	6.262	5.888	5.942		0^+	$7/2^+$
254	164	1856.18		7.31		8.26	21.06	5.11	11.28	−4.17	−10.25	6.142	6.274	5.894	5.948		0^+	0^+
255	165	1859.34		7.29		8.27	21.36	3.16	11.43	−4.15	−10.44	6.153	6.286	5.901	5.955		0^+	$7/2^+$
256	166	1864.36		7.28		8.18	21.72	5.02	11.61	−4.12	−10.58	6.164	6.299	5.906	5.960		0^+	0^+
257	167	1867.53		7.27		8.19	22.02	3.17	11.76	−4.13	−10.73	6.175	6.312	5.912	5.965		0^+	$5/2^+$
258	168	1872.45		7.26		8.09	22.35	4.92	11.92	−4.07	−10.90	6.185	6.324	5.918	5.972		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
259	169	1875.65		7.24		8.12	22.66	3.20	12.07	−4.08	−11.05	6.196	6.337	5.924	5.978		0^+	$5/2^+$
260	170	1880.47		7.23		8.02	22.96	4.82	12.23	−4.03	−11.19	6.207	6.348	5.930	5.984		0^+	0^+
261	171	1883.69		7.22		8.04	23.28	3.22	12.38	−4.03	−11.35	6.218	6.361	5.936	5.989		0^+	$5/2^+$
262	172	1888.40		7.21		7.93	23.54	4.71	12.51	−3.98	−11.48	6.228	6.373	5.941	5.994		0^+	0^+
263	173	1891.64		7.19		7.95	23.87	3.24	12.67	−3.97	−11.64	6.239	6.385	5.947	6.000		0^+	$5/2^+$
264	174	1896.24		7.18		7.84	24.08	4.60	12.77	−3.92	−11.74	6.249	6.397	5.951	6.004		0^+	0^+
265	175	1899.48		7.17		7.84	24.37	3.24	12.94	−3.90	−11.90	6.260	6.410	5.957	6.010		0^+	$5/2^+$
266	176	1903.98		7.16		7.74	24.59	4.50	13.02	−3.86	−11.98	6.269	6.422	5.960	6.013		0^+	0^+
267	177	1907.23		7.14		7.75	24.82	3.25	13.13	−3.89	−12.09	6.280	6.435	5.963	6.017		0^+	$1/2^+$
268	178	1911.58		7.13		7.60	25.03	4.35	13.23	−3.78	−12.20	6.290	6.447	5.968	6.021		0^+	0^+
269	179	1914.89		7.12		7.66	25.23	3.31	13.31	−3.79	−12.31	6.301	6.460	5.971	6.025		0^+	$1/2^+$
270	180	1919.02		7.11		7.44	25.43	4.13	13.42	−3.69	−12.39	6.311	6.473	5.975	6.028		0^+	0^+
271	181	1922.33		7.09		7.44	25.64	3.31	13.52	−3.68	−12.49	6.322	6.486	5.978	6.031		0^+	$3/2^+$
272	182	1926.27		7.08		7.25	25.78	3.94	13.59	−3.59	−12.56	6.333	6.499	5.981	6.034		0^+	0^+
273	183	1929.55		7.07		7.22	25.94	3.28	13.67	−2.62	−12.64	6.343	6.513	5.983	6.037		0^+	$3/2^+$
274	184	1933.34		7.06		7.07	26.08	3.79	13.74	−2.31	−12.70	6.354	6.527	5.986	6.040		0^+	0^+
275	185	1933.01		7.03		3.46	26.25	−0.33	13.84	−2.45	−12.89	6.369	6.541	6.000	6.053		0^+	$13/2^-$
276	186	1934.32		7.01		0.98	26.62	1.31	14.01	−0.55	−12.99	6.381	6.555	6.006	6.059		0^+	0^+
277	187	1934.02		6.98		1.01	26.78	−0.30	14.15	−0.56	−13.18	6.395	6.569	6.019	6.072		0^+	$13/2^-$
278	188	1935.35		6.96		1.03	27.17	1.33	14.30	−0.57	−13.28	6.408	6.583	6.026	6.079		0^+	0^+
279	189	1935.07		6.94		1.05	27.37	−0.28	14.41	−0.58	−13.46	6.422	6.597	6.039	6.091		0^+	$13/2^-$
280	190	1936.42		6.92		1.07	27.71	1.35	14.58	−0.60	−13.57	6.435	6.611	6.046	6.099		0^+	0^+
281	191	1936.17		6.89		1.10	27.94	−0.25	14.71	−0.61	−13.74	6.449	6.624	6.058	6.111		0^+	$13/2^-$
282	192	1937.55		6.87		1.13	28.26	1.38	14.86	−0.63	−13.86	6.461	6.638	6.066	6.119		0^+	0^+
283	193	1937.31		6.85		1.14	28.49	−0.24	14.98	−0.63	−14.02	6.475	6.652	6.078	6.130		0^+	$13/2^-$
284	194	1938.72		6.83		1.17	28.80	1.41	15.14	−0.65	−14.14	6.487	6.665	6.086	6.139		0^+	0^+
285	195	1938.52		6.80		1.21	29.05	−0.20	15.27	−0.67	−14.26	6.501	6.680	6.095	6.147		0^+	$11/2^-$
286	196	1939.95		6.78		1.23	29.35	1.43	15.42	−0.67	−14.42	6.513	6.692	6.106	6.158		0^+	0^+
287	197	1939.78		6.76		1.26	29.60	−0.17	15.55	−0.68	−14.54	6.527	6.706	6.115	6.167		0^+	$11/2^-$
288	198	1941.21		6.74		1.26	29.87	1.43	15.69	−0.69	−14.69	6.539	6.719	6.125	6.177		0^+	0^+
289	199	1941.07		6.72		1.29	30.14	−0.14	15.82	−0.70	−14.82	6.552	6.733	6.134	6.186		0^+	$11/2^-$
290	200	1942.50		6.70		1.29	30.39	1.43	15.95	−0.70	−14.94	6.564	6.745	6.143	6.195		0^+	0^+
291	201	1942.38		6.67		1.31	30.66	−0.12	16.08	−0.70	−15.08	6.578	6.759	6.153	6.205		0^+	$11/2^-$
292	202	1943.80		6.66		1.30	30.87	1.42	16.19	−0.70	−15.19	6.589	6.772	6.161	6.212		0^+	0^+
293	203	1943.69		6.63		1.31	31.15	−0.11	16.33	−0.69	−15.32	6.602	6.785	6.171	6.222		0^+	$11/2^-$
294	204	1945.10		6.62		1.30	31.34	1.41	16.43	−0.69	−15.41	6.614	6.798	6.177	6.228		0^+	0^+
295	205	1944.97		6.59		1.28	31.61	−0.13	16.56	−0.66	−15.54	6.627	6.812	6.186	6.238		0^+	$11/2^-$
296	206	1946.36		6.58		1.26	31.76	1.39	16.63	−0.66	−15.62	6.639	6.825	6.192	6.243		0^+	0^+
297	207	1946.18		6.55		1.21	32.00	−0.18	16.76	−0.62	−15.75	6.651	6.838	6.201	6.252		0^+	$11/2^-$
298	208	1947.58		6.54		1.22	32.16	1.40	16.84	−0.63	−15.82	6.663	6.851	6.205	6.257		0^+	0^+
299	209	1947.29		6.51		1.11	32.24	−0.29	16.89	−0.56	−15.93	6.676	6.866	6.213	6.265		0^+	$11/2^-$
300	210	1948.71		6.50		1.13	32.51	1.42	17.01	−0.59	−16.00	6.687	6.879	6.217	6.269		0^+	0^+
301	211	1948.44		6.47		1.15	32.57	−0.27	17.03	−0.61	−16.04	6.702	6.898	6.220	6.271		0^+	$7/2^-$
302	212	1949.75		6.46		1.04	32.83	1.31	17.17	−0.55	−16.16	6.712	6.907	6.228	6.280		0^+	0^+
303	213	1949.52		6.43		1.08	32.89	−0.23	17.20	−0.56	−16.21	6.727	6.926	6.231	6.283		0^+	$7/2^-$
304	214	1950.72		6.42		0.97	33.12	1.20	17.32	−0.52	−16.32	6.737	6.936	6.239	6.290		0^+	0^+
305	215	1950.52		6.40		1.00	33.17	−0.20	17.34	−0.54	−16.35	6.757	6.962	6.240	6.291		0^+	$3/2^-$
306	216	1951.65		6.38		0.93	33.40	1.13	17.46	−0.51	−16.47	6.762	6.965	6.248	6.299		0^+	0^+
307	217	1951.48		6.36		0.96	33.44	−0.17	17.48	−0.52	−16.50	6.781	6.990	6.249	6.300		0^+	$3/2^-$
308	218	1952.56		6.34		0.91	33.67	1.08	17.60	−0.50	−16.62	6.787	6.994	6.257	6.308		0^+	0^+
309	219	1952.42		6.32		0.94	33.70	−0.14	17.60	−0.51	−16.65	6.805	7.018	6.259	6.310		0^+	$3/2^-$
310	220	1953.46		6.30		0.90	33.93	1.04	17.74	−0.50	−16.77	6.812	7.023	6.266	6.317		0^+	0^+
311	221	1953.37		6.28		0.95	34.01	−0.09	17.77	−0.51	−16.80	6.830	7.046	6.268	6.319		0^+	$3/2^-$
312	222	1954.37		6.26		0.91	34.20	1.00	17.88	−0.50	−16.91	6.837	7.052	6.275	6.326		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
313	223	1954.30		6.24		0.93	34.30	−0.07	17.92	−0.51	−16.95	6.854	7.073	6.278	6.328		0^+	$3/2^-$
314	224	1955.29		6.23		0.92	34.46	0.99	18.01	−0.51	−17.06	6.862	7.081	6.284	6.335		0^+	0^+
315	225	1955.23		6.21		0.93	34.56	−0.06	18.07	−0.52	−17.10	6.878	7.101	6.287	6.337		0^+	$3/2^-$
316	226	1956.22		6.19		0.93	34.71	0.99	18.14	−0.52	−17.20	6.886	7.109	6.293	6.344		0^+	0^+
317	227	1956.17		6.17		0.94	34.82	−0.05	18.20	−0.52	−17.25	6.902	7.128	6.296	6.347		0^+	$3/2^-$
318	228	1957.18		6.15		0.96	34.97	1.01	18.28	−0.53	−17.34	6.911	7.137	6.302	6.352		0^+	0^+
319	229	1957.13		6.14		0.96	35.06	−0.05	18.33	−0.53	−17.40	6.926	7.155	6.305	6.356		0^+	$3/2^-$
320	230	1958.16		6.12		0.98	35.24	1.03	18.41	−0.54	−17.49	6.935	7.164	6.311	6.361		0^+	0^+
321	231	1958.12		6.10		0.99	35.32	−0.04	18.46	−0.54	−17.55	6.949	7.181	6.315	6.365		0^+	$3/2^-$
322	232	1959.16		6.08		1.00	35.50	1.04	18.55	−0.55	−17.64	6.959	7.191	6.319	6.370		0^+	0^+
323	233	1959.14		6.07		1.02	35.59	−0.02	18.59	−0.56	−17.68	6.974	7.211	6.322	6.372		0^+	$1/2^-$
324	234	1960.18		6.05		1.02	35.78	1.04	18.69	−0.56	−17.79	6.982	7.218	6.329	6.379		0^+	0^+
325	235	1960.19		6.03		1.05	35.89	0.01	18.75	−0.57	−17.84	6.997	7.236	6.332	6.382		0^+	$1/2^-$
326	236	1961.23		6.02		1.05	36.07	1.04	18.84	−0.57	−17.94	7.006	7.244	6.338	6.388		0^+	0^+
327	237	1961.26		6.00		1.07	36.21	0.03	18.91	−0.57	−18.00	7.020	7.261	6.342	6.392		0^+	$1/2^-$
328	238	1962.30		5.98		1.07	36.38	1.04	19.00	−0.57	−18.10	7.029	7.270	6.347	6.398		0^+	0^+
329	239	1962.35		5.96		1.09	36.55	0.05	19.08	−0.58	−18.17	7.042	7.285	6.352	6.402		0^+	$1/2^-$
330	240	1963.39		5.95		1.09	36.70	1.04	19.16	−0.58	−18.27	7.051	7.294	6.357	6.408		0^+	0^+
331	241	1963.46		5.93		1.11	36.93	0.07	19.27	−0.59	−18.35	7.063	7.308	6.363	6.413		0^+	$1/2^-$
332	242	1964.51		5.92		1.12	37.07	1.05	19.35	−0.59	−18.44	7.073	7.318	6.368	6.418		0^+	0^+
333	243	1964.58		5.90		1.12	37.34	0.07	19.46	−0.59	−18.55	7.085	7.330	6.374	6.424		0^+	$1/2^-$
334	244	1965.64		5.89		1.13	37.46	1.06	19.53	−0.60	−18.62	7.095	7.342	6.379	6.429		0^+	0^+
335	245	1965.72		5.87		1.14	37.78	0.08	19.68	−0.60	−18.75	7.105	7.352	6.386	6.436		0^+	$1/2^-$
336	246	1966.79		5.85		1.15	37.88	1.07	19.74	−0.60	−18.81	7.116	7.364	6.390	6.440		0^+	0^+
337	247	1966.87		5.84		1.15	38.24	0.08	19.90	−0.60	−18.96	7.126	7.372	6.399	6.449		0^+	$1/2^-$
338	248	1967.96		5.82		1.17	38.34	1.09	19.96	−0.61	−19.02	7.137	7.386	6.403	6.452		0^+	0^+
339	249	1968.05		5.81		1.18	38.74	0.09	20.14	−0.60	−19.18	7.145	7.392	6.413	6.463		0^+	$1/2^-$
340	250	1969.14		5.79		1.18	38.81	1.09	20.18	−0.61	−19.23	7.157	7.406	6.415	6.465		0^+	0^+
341	251	1969.23		5.77		1.18	39.19	0.09	20.38	−0.61	−19.41	7.165	7.411	6.427	6.477		0^+	$1/2^-$
342	252	1970.35		5.76		1.21	39.31	1.12	20.42	−0.61	−19.45	7.177	7.426	6.429	6.478		0^+	0^+
343	253	1970.44		5.74		1.21	39.66	0.09	20.64	−0.61	−19.65	7.184	7.430	6.442	6.491		0^+	$1/2^-$
344	254	1971.57		5.73		1.22	39.81	1.13	20.66	−0.62	−19.68	7.197	7.445	6.443	6.492		0^+	0^+
345	255	1971.68		5.72		1.24	40.16	0.11	20.91	−0.61	−19.89	7.203	7.448	6.457	6.506		0^+	$1/2^-$
346	256	1972.82		5.70		1.25	40.33	1.14	20.92	−0.62	−19.91	7.216	7.464	6.457	6.507		0^+	0^+
347	257	1972.93		5.69		1.25	40.65	0.11	21.13	0.59	−20.14	7.221	7.466	6.473	6.522		0^+	$1/2^-$
348	258	1974.09		5.67		1.27	40.84	1.16	21.18	−1.30	−20.15	7.235	7.482	6.473	6.522		0^+	0^+
σ		5.96													0.018			
$Z = 91$ (Pa)																		
	118	1588.46		7.60		21.23	1.45	11.37	−0.36	−10.55	0.12	5.628	5.669	5.573	5.630		$9/2^-$	0^+
209																		
210	119	1598.13		7.61		21.04	1.92	9.67	−0.12	−10.41	−0.11	5.636	5.680	5.577	5.634		$9/2^-$	$5/2^-$
211	120	1609.25		7.63		20.79	2.26	11.12	0.04	−10.30	−0.29	5.645	5.692	5.583	5.640		$9/2^-$	0^+
212	121	1618.84	1618.31	7.64	7.63	20.71	2.65	9.59	0.22	−10.26	−0.49	5.654	5.704	5.587	5.644		$9/2^-$	$3/2^-$
213	122	1629.51	1628.33	7.65	7.64	20.26	2.99	10.67	0.39	−10.01	−0.67	5.662	5.714	5.591	5.648		$9/2^-$	0^+
214	123	1638.94	1636.58	7.66	7.65	20.10	3.33	9.43	0.55	−9.72	−0.85	5.670	5.725	5.595	5.652		$9/2^-$	$3/2^-$
215	124	1649.14	1646.27	7.67	7.66	19.63	3.63	10.20	0.69	−9.58	−1.01	5.677	5.735	5.598	5.655		$9/2^-$	0^+
216	125	1658.34	1654.42	7.68	7.66	19.40	3.93	9.20	0.83	−9.48	−1.18	5.687	5.747	5.602	5.659		$9/2^-$	$1/2^-$
217	126	1667.56	1663.21	7.68	7.66	18.42	4.22	9.22	0.97	−8.19	−1.34	5.696	5.759	5.607	5.664		$9/2^-$	0^+
218	127	1673.17	1669.67	7.68	7.66	14.83	4.86	5.61	1.30	−8.61	−1.62	5.710	5.775	5.618	5.675		$9/2^-$	$11/2^+$
219	128	1680.26	1677.88	7.67	7.66	12.70	5.42	7.09	1.60	−6.36	−1.89	5.724	5.791	5.629	5.686		$9/2^-$	0^+
220	129	1685.78		7.66		12.61	6.05	5.52	1.92	−6.31	−2.17	5.739	5.807	5.641	5.697		$9/2^-$	$11/2^+$
221	130	1692.80	1692.19	7.66	7.66	12.54	6.61	7.02	2.22	−6.28	−2.43	5.753	5.823	5.651	5.708		$9/2^-$	0^+
222	131	1698.24		7.65		12.46	7.23	5.44	2.54	−6.23	−2.70	5.767	5.838	5.663	5.719		$9/2^-$	$11/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
223	132	1705.17	1706.39	7.65	7.65	12.37	7.76	6.93	2.81	−6.20	−2.96	5.781	5.854	5.673	5.729		$9/2^-$	0^+
224	133	1710.52	1712.92	7.64	7.65	12.28	8.38	5.35	3.13	−6.14	−3.23	5.795	5.869	5.685	5.741		$9/2^-$	$11/2^+$
225	134	1717.39	1720.51	7.63	7.65	12.22	8.91	6.87	3.40	−6.11	−3.48	5.808	5.884	5.695	5.751		$9/2^-$	0^+
226	135	1722.62	1726.89	7.62	7.64	12.10	9.53	5.23	3.72	−6.01	−3.74	5.822	5.899	5.707	5.763		$9/2^-$	$11/2^+$
227	136	1729.42	1734.16	7.62	7.64	12.03	10.04	6.80	3.98	−5.99	−4.01	5.835	5.914	5.717	5.772		$9/2^-$	0^+
228	137	1734.37	1740.15	7.61	7.63	11.75	10.62	4.95	4.29	−5.71	−4.27	5.850	5.929	5.728	5.784		$9/2^-$	$11/2^+$
229	138	1741.10	1747.24	7.60	7.63	11.68	11.08	6.73	4.52	−5.73	−4.66	5.862	5.943	5.737	5.793		$9/2^-$	0^+
230	139	1745.62	1753.04	7.59	7.62	11.25	11.45	4.52	4.70	−5.72	−4.62	5.874	5.957	5.745	5.801		$9/2^-$	$9/2^+$
231	140	1752.13	1759.85	7.58	7.62	11.03	11.86	6.51	4.90	−5.45	−5.03	5.885	5.970	5.752	5.807		$9/2^-$	0^+
232	141	1756.53	1765.41	7.57	7.61	10.91	12.18	4.40	5.05	−5.38	−5.18	5.897	5.984	5.759	5.814		$9/2^-$	$9/2^+$
233	142	1762.70	1771.93	7.57	7.60	10.57	12.54	6.17	5.24	−5.28	−5.35	5.907	5.997	5.765	5.820		$9/2^-$	0^+
234	143	1766.96	1777.15	7.55	7.59	10.43	12.84	4.26	5.38	−5.21	−5.49	5.919	6.010	5.772	5.827		$9/2^-$	$9/2^+$
235	144	1772.97	1783.28	7.54	7.59	10.27	13.21	6.01	5.57	−5.16	−5.67	5.929	6.023	5.778	5.833		$9/2^-$	0^+
236	145	1777.11	1788.30	7.53	7.58	10.15	13.53	4.14	5.74	−5.08	−5.80	5.940	6.036	5.785	5.840		$9/2^-$	$9/2^+$
237	146	1783.01	1794.18	7.52	7.57	10.04	13.90	5.90	5.91	−5.05	−5.98	5.951	6.049	5.791	5.846		$9/2^-$	0^+
238	147	1787.00	1798.89	7.51	7.56	9.89	14.25	3.99	6.08	−4.96	−6.17	5.962	6.062	5.798	5.853		$9/2^-$	$9/2^+$
239	148	1792.84		7.50		9.83	14.60	5.84	6.26	−4.95	−6.36	5.973	6.074	5.804	5.859		$9/2^-$	0^+
240	149	1796.67		7.49		9.67	15.00	3.83	6.47	−4.85	−6.59	5.984	6.087	5.811	5.866		$9/2^-$	$9/2^+$
241	150	1802.48		7.48		9.64	15.34	5.81	6.64	−4.85	−6.74	5.994	6.100	5.817	5.872		$9/2^-$	0^+
242	151	1806.13		7.46		9.46	15.79	3.65	6.86	−4.75	−6.99	6.006	6.112	5.824	5.879		$9/2^-$	$9/2^+$
243	152	1811.92		7.46		9.44	16.09	5.79	7.01	−4.76	−7.11	6.016	6.125	5.830	5.885		$9/2^-$	0^+
244	153	1815.42		7.44		9.29	16.51	3.50	7.22	−4.72	−7.30	6.027	6.137	5.837	5.891		$9/2^-$	$15/2^-$
245	154	1821.20		7.43		9.28	16.87	5.78	7.41	−4.67	−7.48	6.038	6.150	5.843	5.898		$9/2^-$	0^+
246	155	1824.65		7.42		9.23	17.29	3.45	7.62	−4.63	−7.67	6.048	6.162	5.850	5.904		$9/2^-$	$15/2^-$
247	156	1830.31		7.41		9.11	17.63	5.66	7.79	−4.59	−7.85	6.059	6.174	5.856	5.911		$9/2^-$	0^+
248	157	1833.70		7.39		9.05	18.04	3.39	7.99	−4.55	−8.04	6.070	6.187	5.863	5.917		$9/2^-$	$15/2^-$
249	158	1839.28		7.39		8.97	18.39	5.58	8.18	−4.52	−8.19	6.081	6.199	5.869	5.924		$9/2^-$	0^+
250	159	1842.61		7.37		8.91	18.76	3.33	8.38	−4.48	−8.37	6.091	6.211	5.876	5.930		$9/2^-$	$15/2^-$
251	160	1848.11		7.36		8.83	19.13	5.50	8.55	−4.45	−8.54	6.102	6.224	5.882	5.937		$9/2^-$	0^+
252	161	1851.43		7.35		8.82	19.45	3.32	8.72	−4.45	−8.71	6.114	6.237	5.889	5.943		$9/2^-$	$7/2^+$
253	162	1856.83		7.34		8.72	19.85	5.40	8.91	−4.39	−8.89	6.124	6.249	5.895	5.949		$9/2^-$	0^+
254	163	1860.17		7.32		8.74	20.19	3.34	9.10	−4.39	−9.06	6.135	6.261	5.902	5.956		$9/2^-$	$7/2^+$
255	164	1865.43		7.32		8.60	20.53	5.26	9.25	−4.34	−9.26	6.145	6.273	5.908	5.962		$9/2^-$	0^+
256	165	1868.78		7.30		8.61	20.87	3.35	9.44	−4.33	−9.39	6.156	6.286	5.915	5.969		$9/2^-$	$7/2^+$
257	166	1873.94		7.29		8.51	21.19	5.16	9.58	−4.28	−9.66	6.167	6.298	5.920	5.974		$9/2^-$	0^+
258	167	1877.28		7.28		8.50	21.51	3.34	9.75	−4.26	−9.75	6.178	6.310	5.927	5.981		$9/2^-$	$7/2^+$
259	168	1882.36		7.27		8.42	21.83	5.08	9.91	−4.23	−9.98	6.188	6.323	5.932	5.986		$9/2^-$	0^+
260	169	1885.71		7.25		8.43	22.13	3.35	10.06	−4.24	−10.07	6.199	6.335	5.937	5.991		$9/2^-$	$5/2^+$
261	170	1890.67		7.24		8.31	22.43	4.96	10.20	−4.17	−10.25	6.209	6.347	5.944	5.997		$9/2^-$	0^+
262	171	1894.05		7.23		8.34	22.74	3.38	10.36	−4.18	−10.46	6.220	6.360	5.949	6.003		$9/2^-$	$5/2^+$
263	172	1898.89		7.22		8.22	23.00	4.84	10.49	−4.12	−10.56	6.230	6.372	5.954	6.008		$9/2^-$	0^+
264	173	1902.28		7.21		8.23	23.31	3.39	10.64	−4.11	−10.71	6.241	6.384	5.960	6.013		$9/2^-$	$5/2^+$
265	174	1906.99		7.20		8.10	23.52	4.71	10.75	−4.05	−10.81	6.251	6.396	5.964	6.017		$9/2^-$	0^+
266	175	1910.37		7.18		8.09	23.83	3.38	10.89	−4.03	−10.95	6.262	6.409	5.970	6.023		$9/2^-$	$5/2^+$
267	176	1914.96		7.17		7.97	24.00	4.59	10.98	−3.98	−11.04	6.272	6.421	5.973	6.026		$9/2^-$	0^+
268	177	1918.32		7.16		7.95	24.22	3.36	11.09	−4.01	−11.24	6.282	6.434	5.976	6.029		$9/2^-$	$1/2^+$
269	178	1922.77		7.15		7.81	24.42	4.45	11.19	−3.89	−11.33	6.292	6.446	5.980	6.034		$9/2^-$	0^+
270	179	1926.19		7.13		7.87	24.61	3.42	11.30	−3.89	−11.41	6.303	6.459	5.984	6.037		$9/2^-$	$1/2^+$
271	180	1930.39		7.12		7.62	24.79	4.20	11.37	−3.78	−11.54	6.313	6.471	5.987	6.040		$9/2^-$	0^+
272	181	1933.79		7.11		7.60	24.98	3.40	11.46	−3.77	−11.62	6.323	6.485	5.990	6.043		$9/2^-$	$3/2^+$
273	182	1937.80		7.10		7.41	25.12	4.01	11.53	−3.67	−11.65	6.334	6.498	5.993	6.046		$9/2^-$	0^+
274	183	1941.16		7.08		7.37	25.28	3.36	11.61	−3.09	−11.87	6.345	6.512	5.996	6.049		$9/2^-$	$3/2^+$
275	184	1945.01		7.07		7.21	25.41	3.85	11.67	−2.47	−11.72	6.356	6.525	5.999	6.052		$9/2^-$	0^+
276	185	1944.87		7.05		3.71	25.70	−0.14	11.86	−3.01	−12.17	6.370	6.539	6.012	6.065		$9/2^-$	$13/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
277	186	1946.29		7.03		1.28	25.98	1.42	11.97	−0.70	−12.01	6.383	6.553	6.020	6.072		$9/2^-$	0^+
278	187	1946.17		7.00		1.30	26.30	−0.12	12.15	−0.71	−12.33	6.397	6.567	6.032	6.085		$9/2^-$	$13/2^-$
279	188	1947.61		6.98		1.32	26.56	1.44	12.26	−0.72	−12.33	6.410	6.581	6.040	6.093		$9/2^-$	0^+
280	189	1947.52		6.96		1.35	26.86	−0.09	12.45	−0.73	−12.47	6.424	6.595	6.053	6.106		$9/2^-$	$13/2^-$
281	190	1948.98		6.94		1.37	27.14	1.46	12.56	−0.75	−12.62	6.436	6.608	6.061	6.114		$9/2^-$	0^+
282	191	1948.91		6.91		1.39	27.45	−0.07	12.74	−0.75	−12.78	6.450	6.622	6.074	6.126		$9/2^-$	$13/2^-$
283	192	1950.40		6.89		1.42	27.71	1.49	12.85	−0.78	−12.90	6.463	6.635	6.082	6.134		$9/2^-$	0^+
284	193	1950.34		6.87		1.43	28.01	−0.06	13.03	−0.77	−13.05	6.476	6.649	6.094	6.146		$9/2^-$	$13/2^-$
285	194	1951.87		6.85		1.47	28.29	1.53	13.15	−0.80	−13.20	6.489	6.662	6.102	6.155		$9/2^-$	0^+
286	195	1951.80		6.82		1.46	28.55	−0.07	13.28	−0.79	−13.39	6.502	6.676	6.114	6.166		$9/2^-$	$13/2^-$
287	196	1953.37		6.81		1.50	28.84	1.57	13.42	−0.81	−13.55	6.515	6.689	6.122	6.174		$9/2^-$	0^+
288	197	1953.33		6.78		1.53	29.10	−0.04	13.55	−0.83	−13.60	6.528	6.703	6.131	6.183		$9/2^-$	$11/2^-$
289	198	1954.91		6.76		1.54	29.39	1.58	13.70	−0.82	−13.94	6.540	6.715	6.142	6.194		$9/2^-$	0^+
290	199	1954.90		6.74		1.57	29.65	−0.01	13.83	−0.83	−13.94	6.553	6.729	6.151	6.203		$9/2^-$	$11/2^-$
291	200	1956.45		6.72		1.54	29.90	1.55	13.95	−0.82	−14.23	6.565	6.742	6.160	6.212		$9/2^-$	0^+
292	201	1956.47		6.70		1.57	30.17	0.02	14.09	−0.83	−14.24	6.578	6.755	6.170	6.221		$9/2^-$	$11/2^-$
293	202	1957.99		6.68		1.54	30.38	1.52	14.19	−0.81	−14.47	6.590	6.768	6.177	6.228		$9/2^-$	0^+
294	203	1958.01		6.66		1.54	30.65	0.02	14.32	−0.80	−14.59	6.603	6.781	6.186	6.238		$9/2^-$	$11/2^-$
295	204	1959.51		6.64		1.52	30.84	1.50	14.41	−0.80	−14.70	6.614	6.794	6.192	6.244		$9/2^-$	0^+
296	205	1959.51		6.62		1.50	31.10	0.00	14.54	−0.77	−14.73	6.627	6.807	6.201	6.253		$9/2^-$	$11/2^-$
297	206	1960.98		6.60		1.47	31.25	1.47	14.62	−0.77	−14.67	6.638	6.820	6.207	6.258		$9/2^-$	0^+
298	207	1960.92		6.58		1.41	31.50	−0.06	14.74	−0.72	−14.84	6.651	6.834	6.215	6.266		$9/2^-$	$11/2^-$
299	208	1962.38		6.56		1.40	31.64	1.46	14.80	−0.73	−14.86	6.662	6.847	6.220	6.271		$9/2^-$	0^+
300	209	1962.20		6.54		1.28	31.80	−0.18	14.91	−0.66	−14.96	6.675	6.861	6.228	6.279		$9/2^-$	$11/2^-$
301	210	1963.69		6.52		1.31	31.99	1.49	14.98	−0.68	−15.30	6.686	6.873	6.232	6.283		$9/2^-$	0^+
302	211	1963.44		6.50		1.24	32.03	−0.25	15.00	−0.70	−15.30	6.701	6.893	6.235	6.286		$9/2^-$	$7/2^-$
303	212	1964.90		6.48		1.21	32.32	1.46	15.15	−0.64	−15.19	6.710	6.901	6.243	6.294		$9/2^-$	0^+
304	213	1964.73		6.46		1.29	32.41	−0.17	15.21	−0.65	−15.24	6.725	6.919	6.246	6.297		$9/2^-$	$7/2^-$
305	214	1966.03		6.45		1.13	32.63	1.30	15.31	−0.61	−15.65	6.734	6.929	6.254	6.305		$9/2^-$	0^+
306	215	1965.85		6.42		1.12	32.67	−0.18	15.33	−0.62	−15.39	6.754	6.955	6.255	6.306		$9/2^-$	$3/2^-$
307	216	1967.12		6.41		1.09	32.93	1.27	15.47	−0.59	−15.77	6.759	6.957	6.264	6.315		$9/2^-$	0^+
308	217	1966.97		6.39		1.12	32.97	−0.15	15.49	−0.60	−15.76	6.778	6.982	6.265	6.316		$9/2^-$	$3/2^-$
309	218	1968.18		6.37		1.06	33.22	1.21	15.62	−0.58	−15.85	6.783	6.985	6.274	6.325		$9/2^-$	0^+
310	219	1968.06		6.35		1.09	33.24	−0.12	15.64	−0.59	−15.86	6.802	7.009	6.275	6.326		$9/2^-$	$3/2^-$
311	220	1969.23		6.33		1.05	33.51	1.17	15.77	−0.58	−15.99	6.808	7.013	6.284	6.334		$9/2^-$	0^+
312	221	1969.16		6.31		1.10	33.56	−0.07	15.79	−0.59	−15.99	6.825	7.036	6.285	6.336		$9/2^-$	$3/2^-$
313	222	1970.29		6.29		1.06	33.80	1.13	15.92	−0.58	−15.98	6.832	7.041	6.293	6.344		$9/2^-$	0^+
314	223	1970.26		6.27		1.10	33.88	−0.03	15.96	−0.59	−16.14	6.849	7.063	6.295	6.346		$9/2^-$	$3/2^-$
315	224	1971.36		6.26		1.07	34.08	1.10	16.07	−0.59	−16.29	6.856	7.069	6.303	6.353		$9/2^-$	0^+
316	225	1971.36		6.24		1.10	34.20	0.00	16.13	−0.60	−16.20	6.873	7.089	6.305	6.356		$9/2^-$	$3/2^-$
317	226	1972.44		6.22		1.08	34.36	1.08	16.22	−0.60	−16.36	6.880	7.096	6.312	6.363		$9/2^-$	0^+
318	227	1972.45		6.20		1.09	34.48	0.01	16.28	−0.61	−16.40	6.896	7.115	6.315	6.365		$9/2^-$	$3/2^-$
319	228	1973.55		6.19		1.11	34.65	1.10	16.37	−0.61	−16.56	6.904	7.123	6.321	6.372		$9/2^-$	0^+
320	229	1973.57		6.17		1.12	34.77	0.02	16.44	−0.61	−16.58	6.919	7.141	6.325	6.375		$9/2^-$	$3/2^-$
321	230	1974.68		6.15		1.13	34.93	1.11	16.52	−0.62	−16.72	6.927	7.150	6.331	6.381		$9/2^-$	0^+
322	231	1974.71		6.13		1.14	35.05	0.03	16.59	−0.62	−16.76	6.942	7.167	6.335	6.385		$9/2^-$	$3/2^-$
323	232	1975.83		6.12		1.15	35.22	1.12	16.67	−0.63	−16.88	6.951	7.176	6.340	6.391		$9/2^-$	0^+
324	233	1975.88		6.10		1.17	35.33	0.05	16.74	−0.63	−16.94	6.965	7.192	6.345	6.395		$9/2^-$	$3/2^-$
325	234	1977.02		6.08		1.19	35.53	1.14	16.84	−0.64	−16.95	6.974	7.202	6.350	6.400		$9/2^-$	0^+
326	235	1977.07		6.06		1.19	35.63	0.05	16.88	−0.65	−17.08	6.989	7.221	6.353	6.403		$9/2^-$	$1/2^-$
327	236	1978.22		6.05		1.20	35.83	1.15	16.99	−0.65	−17.15	6.997	7.228	6.360	6.410		$9/2^-$	0^+
328	237	1978.31		6.03		1.24	35.96	0.09	17.05	−0.66	−17.20	7.011	7.245	6.363	6.413		$9/2^-$	$1/2^-$
329	238	1979.46		6.02		1.24	36.16	1.15	17.16	−0.66	−17.25	7.019	7.253	6.369	6.419		$9/2^-$	0^+
330	239	1979.58		6.00		1.27	36.31	0.12	17.23	−0.67	−17.37	7.033	7.269	6.373	6.423		$9/2^-$	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
331	240	1980.72		5.98		1.26	36.49	1.14	17.33	−0.67	−17.52	7.042	7.277	6.379	6.429		$9/2^-$	0^+
332	241	1980.87		5.97		1.29	36.68	0.15	17.41	−0.68	−17.51	7.055	7.292	6.384	6.433		$9/2^-$	$1/2^-$
333	242	1982.01		5.95		1.29	36.85	1.14	17.50	−0.68	−17.68	7.064	7.301	6.389	6.439		$9/2^-$	0^+
334	243	1982.18		5.93		1.31	37.06	0.17	17.60	−0.69	−17.77	7.076	7.315	6.394	6.444		$9/2^-$	$1/2^-$
335	244	1983.32		5.92		1.31	37.21	1.14	17.68	−0.69	−17.80	7.086	7.325	6.400	6.450		$9/2^-$	0^+
336	245	1983.52		5.90		1.34	37.48	0.20	17.80	−0.70	−17.81	7.097	7.337	6.406	6.456		$9/2^-$	$1/2^-$
337	246	1984.66		5.89		1.34	37.61	1.14	17.87	−0.70	−17.99	7.107	7.348	6.411	6.460		$9/2^-$	0^+
338	247	1984.88		5.87		1.36	37.91	0.22	18.01	−0.71	−17.97	7.118	7.359	6.417	6.467		$9/2^-$	$1/2^-$
339	248	1986.03		5.86		1.37	38.03	1.15	18.07	−0.71	−18.02	7.128	7.371	6.422	6.471		$9/2^-$	0^+
340	249	1986.27		5.84		1.39	38.36	0.24	18.22	−0.71	−18.16	7.138	7.380	6.429	6.479		$9/2^-$	$1/2^-$
341	250	1987.42		5.83		1.39	38.46	1.15	18.28	−0.72	−18.22	7.149	7.393	6.433	6.482		$9/2^-$	0^+
342	251	1987.68		5.81		1.41	38.83	0.26	18.45	−0.72	−18.34	7.158	7.400	6.442	6.491		$9/2^-$	$1/2^-$
343	252	1988.84		5.80		1.42	38.91	1.16	18.49	−0.72	−18.34	7.170	7.414	6.445	6.494		$9/2^-$	0^+
344	253	1989.11		5.78		1.43	39.31	0.27	18.67	−0.73	−18.47	7.177	7.420	6.455	6.504		$9/2^-$	$1/2^-$
345	254	1990.28		5.77		1.44	39.37	1.17	18.71	−0.73	−18.60	7.190	7.435	6.457	6.506		$9/2^-$	0^+
346	255	1990.57		5.75		1.46	39.80	0.29	18.89	−0.73	−18.64	7.197	7.439	6.468	6.517		$9/2^-$	$1/2^-$
347	256	1991.75		5.74		1.47	39.85	1.18	18.93	−0.74	−18.62	7.210	7.455	6.469	6.518		$9/2^-$	0^+
348	257	1992.06		5.72		1.49	40.26	0.31	19.13	0.51	−18.89	7.216	7.458	6.482	6.531		$9/2^-$	$1/2^-$
349	258	1993.24		5.71		1.49	40.33	1.18	19.15	−1.45	−18.77	7.229	7.475	6.482	6.531		$9/2^-$	0^+
σ		6.56																
$Z = 92$ (U)																		
211	119	1599.48		7.58			1.23	9.89	1.35	−10.60	0.14	5.646	5.687	5.592	5.649		0^+	$5/2^-$
212	120	1610.76		7.60		21.17	1.55	11.28	1.51	−10.49	−0.04	5.655	5.698	5.598	5.655		0^+	0^+
213	121	1620.54		7.61		21.06	1.92	9.78	1.70	−10.45	−0.25	5.663	5.709	5.602	5.659		0^+	$3/2^-$
214	122	1631.36		7.62		20.60	2.24	10.82	1.85	−10.18	−0.42	5.671	5.720	5.606	5.663		0^+	0^+
215	123	1640.97		7.63		20.43	2.58	9.61	2.03	−9.88	−0.61	5.679	5.730	5.610	5.667		0^+	$3/2^-$
216	124	1651.32		7.65		19.96	2.87	10.35	2.18	−9.74	−0.77	5.686	5.740	5.613	5.670		0^+	0^+
217	125	1660.67		7.65		19.70	3.16	9.35	2.33	−9.50	−0.94	5.695	5.751	5.617	5.674		0^+	$1/2^-$
218	126	1670.05	1665.66	7.66	7.64	18.73	3.46	9.38	2.49	−8.44	−1.11	5.704	5.763	5.621	5.678		0^+	0^+
219	127	1675.96	1672.36	7.65	7.64	15.29	4.09	5.91	2.79	−9.02	−1.38	5.718	5.780	5.633	5.689		0^+	$11/2^+$
220	128	1683.33		7.65		13.28	4.67	7.37	3.07	−6.64	−1.64	5.733	5.796	5.644	5.700		0^+	0^+
221	129	1689.16		7.64		13.20	5.30	5.83	3.38	−6.60	−1.90	5.747	5.812	5.655	5.712		0^+	$11/2^+$
222	130	1696.46		7.64		13.13	5.88	7.30	3.66	−6.57	−2.16	5.761	5.827	5.666	5.722		0^+	0^+
223	131	1702.21	1702.09	7.63	7.63	13.05	6.51	5.75	3.97	−6.52	−2.44	5.775	5.843	5.678	5.734		0^+	$11/2^+$
224	132	1709.42	1710.29	7.63	7.64	12.96	7.06	7.21	4.25	−6.49	−2.69	5.789	5.858	5.688	5.744		0^+	0^+
225	133	1715.08	1716.69	7.62	7.63	12.87	7.69	5.66	4.56	−6.42	−2.97	5.803	5.873	5.699	5.755		0^+	$11/2^+$
226	134	1722.21	1724.81	7.62	7.63	12.79	8.22	7.13	4.82	−6.40	−3.22	5.816	5.888	5.710	5.765		0^+	0^+
227	135	1727.75	1731.19	7.61	7.63	12.67	8.85	5.54	5.13	−6.30	−3.50	5.830	5.903	5.721	5.777		0^+	$11/2^+$
228	136	1734.81	1739.06	7.61	7.63	12.60	9.37	7.06	5.39	−6.26	−3.75	5.843	5.918	5.731	5.787		0^+	0^+
229	137	1740.08	1745.15	7.60	7.62	12.33	10.00	5.27	5.71	−5.94	−4.03	5.857	5.933	5.744	5.799		0^+	$11/2^+$
230	138	1747.05	1752.81	7.60	7.62	12.24	10.47	6.97	5.95	−5.96	−4.27	5.870	5.947	5.753	5.808	5.820	0^+	0^+
231	139	1751.74	1758.69	7.58	7.61	11.66	10.82	4.69	6.12	−5.95	−4.44	5.882	5.961	5.760	5.816	5.829	0^+	$9/2^+$
232	140	1758.45	1765.96	7.58	7.61	11.40	11.22	6.71	6.32	−5.63	−4.64	5.892	5.973	5.767	5.822	5.834	0^+	0^+
233	141	1763.00	1771.72	7.57	7.60	11.26	11.52	4.55	6.47	−5.55	−4.80	5.904	5.987	5.773	5.828	5.843	0^+	$9/2^+$
234	142	1769.36	1778.56	7.56	7.60	10.91	11.90	6.36	6.66	−5.46	−5.00	5.914	6.000	5.780	5.835		0^+	0^+
235	143	1773.79	1783.86	7.55	7.59	10.79	12.21	4.43	6.83	−5.39	−5.16	5.925	6.013	5.786	5.841	5.857	0^+	$9/2^+$
236	144	1779.99	1790.41	7.54	7.59	10.63	12.59	6.20	7.02	−5.33	−5.36	5.936	6.025	5.792	5.847		0^+	0^+
237	145	1784.28	1795.53	7.53	7.58	10.49	12.91	4.29	7.17	−5.26	−5.53	5.947	6.039	5.799	5.854		0^+	$9/2^+$
238	146	1790.39	1801.69	7.52	7.57	10.40	13.29	6.11	7.38	−5.23	−5.73	5.957	6.051	5.805	5.860		0^+	0^+
239	147	1794.54	1806.49	7.51	7.56	10.26	13.62	4.15	7.54	−5.15	−5.91	5.968	6.064	5.812	5.867		0^+	$9/2^+$
240	148	1800.58	1812.42	7.50	7.55	10.19	14.00	6.04	7.74	−5.13	−6.09	5.979	6.076	5.818	5.873		0^+	0^+
241	149	1804.60		7.49		10.06	14.40	4.02	7.93	−5.05	−6.28	5.990	6.089	5.825	5.879		0^+	$9/2^+$
242	150	1810.58		7.48		10.00	14.74	5.98	8.10	−5.04	−6.46	6.000	6.101	5.831	5.886		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
243	151	1814.45		7.47		9.85	15.18	3.87	8.32	−4.95	−6.67	6.011	6.114	5.838	5.892		0^+	$9/2^+$
244	152	1820.41		7.46		9.83	15.50	5.96	8.49	−4.95	−6.83	6.021	6.126	5.844	5.898		0^+	0^+
245	153	1824.11		7.45		9.66	15.91	3.70	8.69	−4.86	−7.05	6.032	6.139	5.851	5.905		0^+	$9/2^+$
246	154	1830.07		7.44		9.66	16.28	5.96	8.87	−4.86	−7.21	6.043	6.151	5.857	5.911		0^+	0^+
247	155	1833.72		7.42		9.61	16.69	3.65	9.07	−4.83	−7.40	6.053	6.163	5.864	5.918		0^+	$15/2^-$
248	156	1839.57		7.42		9.50	17.05	5.85	9.26	−4.78	−7.58	6.064	6.176	5.870	5.924		0^+	0^+
249	157	1843.16		7.40		9.44	17.45	3.59	9.46	−4.74	−7.77	6.074	6.188	5.877	5.931		0^+	$15/2^-$
250	158	1848.92		7.40		9.35	17.82	5.76	9.64	−4.71	−7.95	6.085	6.200	5.883	5.937		0^+	0^+
251	159	1852.44		7.38		9.28	18.21	3.52	9.83	−4.66	−8.13	6.096	6.212	5.890	5.944		0^+	$15/2^-$
252	160	1858.13		7.37		9.21	18.57	5.69	10.02	−4.64	−8.31	6.107	6.224	5.896	5.950		0^+	0^+
253	161	1861.62		7.36		9.18	18.91	3.49	10.19	−4.64	−8.48	6.118	6.237	5.903	5.957		0^+	$7/2^+$
254	162	1867.21		7.35		9.08	19.29	5.59	10.38	−4.57	−8.66	6.128	6.249	5.909	5.963		0^+	0^+
255	163	1870.73		7.34		9.11	19.66	3.52	10.56	−4.57	−8.83	6.139	6.261	5.916	5.970		0^+	$7/2^+$
256	164	1876.16		7.33		8.95	19.98	5.43	10.73	−4.50	−8.99	6.149	6.273	5.922	5.975		0^+	0^+
257	165	1879.70		7.31		8.97	20.36	3.54	10.92	−4.49	−9.18	6.160	6.285	5.928	5.982		0^+	$7/2^+$
258	166	1885.00		7.31		8.84	20.64	5.30	11.06	−4.44	−9.32	6.170	6.298	5.934	5.988		0^+	0^+
259	167	1888.53		7.29		8.83	21.00	3.53	11.25	−4.42	−9.50	6.181	6.310	5.941	5.994		0^+	$7/2^+$
260	168	1893.73		7.28		8.73	21.28	5.20	11.37	−4.38	−9.62	6.192	6.322	5.946	6.000		0^+	0^+
261	169	1897.23		7.27		8.70	21.58	3.50	11.52	−4.35	−9.80	6.202	6.334	5.952	6.006		0^+	$7/2^+$
262	170	1902.34		7.26		8.61	21.87	5.11	11.67	−4.31	−9.91	6.213	6.346	5.957	6.011		0^+	0^+
263	171	1905.86		7.25		8.63	22.17	3.52	11.81	−4.32	−10.05	6.223	6.359	5.963	6.016		0^+	$5/2^+$
264	172	1910.83		7.24		8.49	22.43	4.97	11.94	−4.24	−10.18	6.233	6.371	5.968	6.021		0^+	0^+
265	173	1914.37		7.22		8.51	22.73	3.54	12.09	−4.24	−10.32	6.244	6.383	5.973	6.027		0^+	$5/2^+$
266	174	1919.17		7.21		8.34	22.93	4.80	12.18	−4.17	−10.43	6.254	6.395	5.977	6.031		0^+	0^+
267	175	1922.70		7.20		8.33	23.22	3.53	12.33	−4.14	−10.57	6.265	6.408	5.983	6.036		0^+	$5/2^+$
268	176	1927.36		7.19		8.19	23.38	4.66	12.40	−4.08	−10.66	6.274	6.420	5.986	6.039		0^+	0^+
269	177	1930.82		7.18		8.12	23.59	3.46	12.50	−4.11	−10.76	6.285	6.433	5.989	6.042		0^+	$1/2^+$
270	178	1935.37		7.17		8.01	23.79	4.55	12.60	−3.98	−10.86	6.294	6.445	5.993	6.046		0^+	0^+
271	179	1938.88		7.15		8.06	23.99	3.51	12.69	−3.98	−10.96	6.305	6.458	5.996	6.049		0^+	$1/2^+$
272	180	1943.16		7.14		7.79	24.14	4.28	12.77	−3.86	−11.05	6.315	6.470	5.999	6.052		0^+	0^+
273	181	1946.64		7.13		7.76	24.31	3.48	12.85	−3.84	−11.14	6.325	6.484	6.002	6.055		0^+	$3/2^+$
274	182	1950.71		7.12		7.55	24.44	4.07	12.91	−3.74	−11.22	6.336	6.497	6.005	6.058		0^+	0^+
275	183	1954.14		7.11		7.50	24.59	3.43	12.98	−3.33	−11.30	6.347	6.510	6.008	6.061		0^+	$3/2^+$
276	184	1958.06		7.09		7.35	24.72	3.92	13.05	−2.62	−11.38	6.357	6.524	6.011	6.064		0^+	0^+
277	185	1958.12		7.07		3.98	25.11	0.06	13.25	−3.18	−11.56	6.372	6.538	6.024	6.077		0^+	$13/2^-$
278	186	1959.65		7.05		1.59	25.33	1.53	13.36	−0.85	−11.69	6.384	6.552	6.032	6.085		0^+	0^+
279	187	1959.72		7.02		1.60	25.70	0.07	13.55	−0.86	−11.87	6.398	6.565	6.045	6.098		0^+	$13/2^-$
280	188	1961.29		7.00		1.64	25.94	1.57	13.68	−0.88	−11.99	6.411	6.579	6.054	6.107		0^+	0^+
281	189	1961.38		6.98		1.66	26.31	0.09	13.86	−0.88	−12.17	6.425	6.593	6.067	6.119		0^+	$13/2^-$
282	190	1962.97		6.96		1.68	26.55	1.59	13.99	−0.90	−12.29	6.438	6.606	6.076	6.128		0^+	0^+
283	191	1963.08		6.94		1.70	26.91	0.11	14.17	−0.90	−12.47	6.452	6.620	6.088	6.141		0^+	$13/2^-$
284	192	1964.70		6.92		1.73	27.15	1.62	14.30	−0.93	−12.59	6.464	6.633	6.097	6.149		0^+	0^+
285	193	1964.81		6.89		1.73	27.50	0.11	14.47	−0.92	−12.76	6.478	6.647	6.109	6.161		0^+	$13/2^-$
286	194	1966.47		6.88		1.77	27.75	1.66	14.60	−0.94	−12.89	6.490	6.660	6.118	6.170		0^+	0^+
287	195	1966.57		6.85		1.76	28.05	0.10	14.77	−0.93	−13.05	6.504	6.673	6.130	6.182		0^+	$13/2^-$
288	196	1968.27		6.83		1.80	28.32	1.70	14.90	−0.96	−13.18	6.516	6.686	6.139	6.191		0^+	0^+
289	197	1968.35		6.81		1.78	28.57	0.08	15.02	−0.97	−13.30	6.529	6.700	6.148	6.199		0^+	$11/2^-$
290	198	1970.08		6.79		1.81	28.87	1.73	15.17	−0.96	−13.45	6.542	6.712	6.158	6.210		0^+	0^+
291	199	1970.21		6.77		1.86	29.14	0.13	15.31	−0.97	−13.58	6.555	6.726	6.168	6.219		0^+	$11/2^-$
292	200	1971.89		6.75		1.81	29.39	1.68	15.44	−0.95	−13.71	6.567	6.739	6.176	6.228		0^+	0^+
293	201	1972.04		6.73		1.83	29.66	0.15	15.57	−0.95	−13.84	6.579	6.752	6.186	6.237		0^+	$11/2^-$
294	202	1973.67		6.71		1.78	29.87	1.63	15.68	−0.93	−13.96	6.591	6.765	6.193	6.244		0^+	0^+
295	203	1973.82		6.69		1.78	30.13	0.15	15.81	−0.91	−14.07	6.604	6.778	6.202	6.253		0^+	$11/2^-$
296	204	1975.40		6.67		1.73	30.30	1.58	15.89	−0.90	−14.17	6.615	6.791	6.208	6.259		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
297	205	1975.52		6.65		1.70	30.55	0.12	16.01	−0.87	−14.29	6.627	6.804	6.216	6.267		0^+	$11/2^-$
298	206	1977.07		6.63		1.67	30.71	1.55	16.09	−0.86	−14.37	6.639	6.817	6.221	6.273		0^+	0^+
299	207	1977.12		6.61		1.60	30.94	0.05	16.20	−0.81	−14.49	6.651	6.830	6.229	6.280		0^+	$11/2^-$
300	208	1978.66		6.60		1.59	31.08	1.54	16.28	−0.82	−14.58	6.662	6.843	6.234	6.285		0^+	0^+
301	209	1978.59		6.57		1.47	31.30	−0.07	16.39	−0.75	−14.68	6.674	6.856	6.242	6.293		0^+	$11/2^-$
302	210	1980.15		6.56		1.49	31.44	1.56	16.46	−0.77	−14.77	6.685	6.869	6.246	6.297		0^+	0^+
303	211	1979.92		6.53		1.33	31.48	−0.23	16.48	−0.69	−14.86	6.698	6.883	6.253	6.304		0^+	$11/2^-$
304	212	1981.54		6.52		1.39	31.79	1.62	16.64	−0.72	−14.94	6.709	6.896	6.258	6.309		0^+	0^+
305	213	1981.40		6.50		1.48	31.88	−0.14	16.67	−0.74	−15.00	6.724	6.914	6.260	6.311		0^+	$7/2^-$
306	214	1982.84		6.48		1.30	32.12	1.44	16.81	−0.69	−15.13	6.733	6.923	6.269	6.320		0^+	0^+
307	215	1982.72		6.46		1.32	32.20	−0.12	16.87	−0.70	−15.18	6.747	6.941	6.272	6.323		0^+	$7/2^-$
308	216	1984.10		6.44		1.26	32.45	1.38	16.98	−0.67	−15.30	6.757	6.950	6.280	6.330		0^+	0^+
309	217	1983.97		6.42		1.25	32.49	−0.13	17.00	−0.68	−15.36	6.771	6.967	6.283	6.334		0^+	$7/2^-$
310	218	1985.32		6.40		1.22	32.76	1.35	17.14	−0.66	−15.47	6.781	6.977	6.290	6.341		0^+	0^+
311	219	1985.23		6.38		1.26	32.81	−0.09	17.17	−0.68	−15.50	6.799	7.001	6.292	6.342		0^+	$3/2^-$
312	220	1986.54		6.37		1.22	33.08	1.31	17.31	−0.66	−15.64	6.804	7.004	6.301	6.351		0^+	0^+
313	221	1986.48		6.35		1.25	33.11	−0.06	17.32	−0.68	−15.68	6.822	7.027	6.302	6.353		0^+	$3/2^-$
314	222	1987.76		6.33		1.22	33.39	1.28	17.47	−0.66	−15.81	6.828	7.031	6.311	6.362		0^+	0^+
315	223	1987.74		6.31		1.26	33.44	−0.02	17.48	−0.68	−15.85	6.845	7.053	6.313	6.363		0^+	$3/2^-$
316	224	1988.99		6.29		1.23	33.70	1.25	17.63	−0.67	−15.99	6.852	7.058	6.321	6.372		0^+	0^+
317	225	1989.02		6.27		1.28	33.79	0.03	17.66	−0.68	−16.03	6.868	7.079	6.323	6.374		0^+	$3/2^-$
318	226	1990.23		6.26		1.24	34.01	1.21	17.79	−0.68	−16.15	6.875	7.084	6.331	6.382		0^+	0^+
319	227	1990.30		6.24		1.28	34.13	0.07	17.85	−0.69	−16.19	6.891	7.104	6.334	6.384		0^+	$3/2^-$
320	228	1991.50		6.22		1.27	34.32	1.20	17.95	−0.69	−16.31	6.898	7.111	6.341	6.391		0^+	0^+
321	229	1991.58		6.20		1.28	34.45	0.08	18.01	−0.70	−16.36	6.913	7.129	6.344	6.394		0^+	$3/2^-$
322	230	1992.79		6.19		1.29	34.63	1.21	18.11	−0.70	−16.47	6.921	7.136	6.351	6.401		0^+	0^+
323	231	1992.89		6.17		1.31	34.77	0.10	18.18	−0.71	−16.53	6.936	7.154	6.355	6.405		0^+	$3/2^-$
324	232	1994.11		6.15		1.32	34.95	1.22	18.28	−0.71	−16.64	6.944	7.162	6.361	6.411		0^+	0^+
325	233	1994.22		6.14		1.33	35.08	0.11	18.34	−0.72	−16.70	6.958	7.179	6.365	6.415		0^+	$3/2^-$
326	234	1995.45		6.12		1.34	35.27	1.23	18.43	−0.72	−16.80	6.967	7.188	6.371	6.421		0^+	0^+
327	235	1995.59		6.10		1.37	35.40	0.14	18.52	−0.73	−16.87	6.980	7.203	6.375	6.425		0^+	$3/2^-$
328	236	1996.83		6.09		1.38	35.60	1.24	18.61	−0.73	−16.96	6.989	7.213	6.381	6.431		0^+	0^+
329	237	1996.98		6.07		1.39	35.72	0.15	18.67	−0.74	−17.04	7.002	7.227	6.386	6.436		0^+	$3/2^-$
330	238	1998.23		6.06		1.40	35.93	1.25	18.77	−0.75	−17.13	7.012	7.237	6.391	6.441		0^+	0^+
331	239	1998.40		6.04		1.42	36.05	0.17	18.82	−0.76	−17.18	7.026	7.255	6.394	6.444		0^+	$1/2^-$
332	240	1999.66		6.02		1.43	36.27	1.26	18.94	−0.76	−17.29	7.034	7.262	6.401	6.451		0^+	0^+
333	241	1999.87		6.01		1.47	36.41	0.21	19.00	−0.77	−17.35	7.048	7.278	6.404	6.454		0^+	$1/2^-$
334	242	2001.12		5.99		1.46	36.61	1.25	19.11	−0.77	−17.46	7.056	7.286	6.411	6.461		0^+	0^+
335	243	2001.37		5.97		1.50	36.79	0.25	19.19	−0.78	−17.53	7.069	7.301	6.415	6.465		0^+	$1/2^-$
336	244	2002.61		5.96		1.49	36.97	1.24	19.29	−0.78	−17.63	7.078	7.310	6.421	6.471		0^+	0^+
337	245	2002.90		5.94		1.53	37.18	0.29	19.38	−0.79	−17.71	7.090	7.324	6.426	6.475		0^+	$1/2^-$
338	246	2004.13		5.93		1.52	37.34	1.23	19.47	−0.79	−17.80	7.099	7.333	6.431	6.481		0^+	0^+
339	247	2004.45		5.91		1.55	37.58	0.32	19.57	−0.80	−17.88	7.111	7.346	6.436	6.486		0^+	$1/2^-$
340	248	2005.68		5.90		1.55	37.72	1.23	19.65	−0.80	−17.96	7.121	7.357	6.441	6.491		0^+	0^+
341	249	2006.04		5.88		1.59	37.99	0.36	19.77	−0.81	−18.06	7.131	7.368	6.447	6.497		0^+	$1/2^-$
342	250	2007.26		5.87		1.58	38.12	1.22	19.84	−0.81	−18.13	7.142	7.380	6.451	6.501		0^+	0^+
343	251	2007.65		5.85		1.61	38.42	0.39	19.97	−0.82	−18.24	7.152	7.390	6.458	6.508		0^+	$1/2^-$
344	252	2008.86		5.84		1.60	38.51	1.21	20.02	−0.82	−18.30	7.163	7.402	6.462	6.511		0^+	0^+
345	253	2009.29		5.82		1.64	38.85	0.43	20.18	−0.83	−18.42	7.172	7.411	6.470	6.519		0^+	$1/2^-$
346	254	2010.50		5.81		1.64	38.93	1.21	20.22	−0.83	−18.47	7.184	7.425	6.472	6.521		0^+	0^+
347	255	2010.96		5.80		1.67	39.28	0.46	20.39	−0.84	−18.60	7.192	7.432	6.481	6.530		0^+	$1/2^-$
348	256	2012.16		5.78		1.66	39.34	1.20	20.41	−0.83	−18.64	7.205	7.447	6.482	6.532		0^+	0^+
349	257	2012.66		5.77		1.70	39.73	0.50	20.60	0.40	−18.79	7.212	7.452	6.493	6.542		0^+	$1/2^-$
350	258	2013.85		5.75		1.69	39.76	1.19	20.61	−1.62	−18.81	7.225	7.469	6.493	6.542		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
σ		7.56													0.014			
$Z = 93$ (Np)																		
214	121	1618.71		7.56			−0.13	10.02	−1.83	−10.69	0.00	5.671	5.713	5.616	5.672		$7/2^-$	$3/2^-$
215	122	1629.77		7.58		21.08	0.26	11.06	−1.59	−10.40	−0.17	5.679	5.723	5.620	5.676		$7/2^-$	0^+
216	123	1639.59		7.59		20.88	0.65	9.82	−1.38	−10.10	−0.35	5.686	5.733	5.623	5.679		$7/2^-$	$3/2^-$
217	124	1650.15		7.60		20.38	1.01	10.56	−1.17	−9.96	−0.51	5.693	5.743	5.626	5.683		$7/2^-$	0^+
218	125	1659.73		7.61		20.14	1.39	9.58	−0.94	−9.77	−0.67	5.702	5.755	5.630	5.687		$7/2^-$	$1/2^-$
219	126	1669.32		7.62		19.17	1.76	9.59	−0.73	−8.78	−0.84	5.711	5.767	5.634	5.691		$7/2^-$	0^+
220	127	1675.44		7.62		15.71	2.27	6.12	−0.52	−9.15	−1.11	5.725	5.783	5.646	5.702		$7/2^-$	$11/2^+$
221	128	1683.02		7.62		13.70	2.76	7.58	−0.31	−6.85	−1.38	5.739	5.798	5.656	5.712		$7/2^-$	0^+
222	129	1689.04		7.61		13.60	3.26	6.02	−0.12	−6.76	−1.91	5.753	5.814	5.667	5.723		$7/2^-$	$11/2^+$
223	130	1696.52		7.61		13.50	3.72	7.48	0.06	−6.80	−1.65	5.767	5.830	5.677	5.734		$7/2^-$	0^+
224	131	1702.45		7.60		13.41	4.21	5.93	0.24	−6.70	−2.19	5.781	5.845	5.689	5.745		$7/2^-$	$11/2^+$
225	132	1709.89	1711.70	7.60	7.61	13.37	4.72	7.44	0.47	−6.75	−2.49	5.795	5.860	5.702	5.758		$13/2^+$	0^+
226	133	1715.82		7.59		13.37	5.30	5.93	0.74	−6.69	−2.75	5.809	5.875	5.714	5.769		$13/2^+$	$11/2^+$
227	134	1723.21	1726.87	7.59	7.61	13.32	5.82	7.39	1.00	−6.65	−3.02	5.822	5.890	5.724	5.780		$13/2^+$	0^+
228	135	1729.02	1733.91	7.58	7.60	13.20	6.40	5.81	1.27	−6.56	−3.28	5.836	5.905	5.736	5.791		$13/2^+$	$11/2^+$
229	136	1736.33	1741.79	7.58	7.61	13.12	6.91	7.31	1.52	−6.52	−3.53	5.849	5.919	5.746	5.801		$13/2^+$	0^+
230	137	1741.89	1748.41	7.57	7.60	12.87	7.52	5.56	1.81	−6.16	−3.87	5.864	5.934	5.758	5.814		$13/2^+$	$11/2^+$
231	138	1749.09	1756.09	7.57	7.60	12.76	7.99	7.20	2.04	−6.18	−4.19	5.876	5.948	5.767	5.822		$13/2^+$	0^+
232	139	1753.96		7.56		12.07	8.34	4.87	2.22	−6.17	−4.24	5.888	5.962	5.775	5.830		$13/2^+$	$9/2^+$
233	140	1760.85	1769.91	7.56	7.60	11.76	8.72	6.89	2.40	−5.80	−4.55	5.898	5.975	5.781	5.836		$13/2^+$	0^+
234	141	1765.56	1775.97	7.55	7.59	11.60	9.03	4.71	2.56	−5.73	−4.67	5.909	5.988	5.787	5.842		$13/2^+$	$9/2^+$
235	142	1772.12	1782.96	7.54	7.59	11.27	9.42	6.56	2.76	−5.64	−4.88	5.919	6.001	5.794	5.849		$13/2^+$	0^+
236	143	1776.70	1788.70	7.53	7.58	11.14	9.74	4.58	2.91	−5.57	−5.03	5.930	6.014	5.800	5.855		$13/2^+$	$9/2^+$
237	144	1783.10	1795.27	7.52	7.57	10.98	10.13	6.40	3.11	−5.51	−5.22	5.941	6.026	5.806	5.861		$13/2^+$	0^+
238	145	1787.56	1800.76	7.51	7.57	10.86	10.45	4.46	3.28	−5.44	−5.39	5.952	6.039	5.813	5.868		$13/2^+$	$9/2^+$
239	146	1793.85	1806.97	7.51	7.56	10.75	10.84	6.29	3.46	−5.41	−5.57	5.962	6.052	5.819	5.874		$13/2^+$	0^+
240	147	1798.20	1812.04	7.49	7.55	10.64	11.20	4.35	3.66	−5.33	−5.76	5.973	6.065	5.826	5.880		$13/2^+$	$9/2^+$
241	148	1804.40	1818.17	7.49	7.54	10.55	11.56	6.20	3.82	−5.31	−5.94	5.984	6.077	5.832	5.887		$13/2^+$	0^+
242	149	1808.62	1823.08	7.47	7.53	10.42	11.95	4.22	4.02	−5.24	−6.14	5.994	6.090	5.839	5.893		$13/2^+$	$9/2^+$
243	150	1814.77		7.47		10.37	12.29	6.15	4.19	−5.22	−6.32	6.005	6.102	5.845	5.899		$13/2^+$	0^+
244	151	1818.84		7.45		10.22	12.71	4.07	4.39	−5.14	−6.53	6.015	6.114	5.852	5.906		$13/2^+$	$9/2^+$
245	152	1824.96		7.45		10.19	13.04	6.12	4.55	−5.13	−6.69	6.026	6.126	5.858	5.912		$13/2^+$	0^+
246	153	1828.89		7.43		10.05	13.47	3.93	4.78	−5.05	−6.91	6.037	6.139	5.865	5.919		$13/2^+$	$9/2^+$
247	154	1835.00		7.43		10.04	13.80	6.11	4.93	−5.05	−7.05	6.047	6.151	5.871	5.925		$13/2^+$	0^+
248	155	1838.85		7.41		9.96	14.20	3.85	5.13	−5.01	−7.24	6.057	6.163	5.877	5.931		$13/2^+$	$15/2^-$
249	156	1844.87		7.41		9.87	14.56	6.02	5.30	−4.97	−7.42	6.068	6.175	5.884	5.938		$13/2^+$	0^+
250	157	1848.66		7.39		9.81	14.96	3.79	5.50	−4.92	−7.61	6.078	6.187	5.890	5.944		$13/2^+$	$15/2^-$
251	158	1854.59		7.39		9.72	15.31	5.93	5.67	−4.89	−7.79	6.089	6.199	5.897	5.951		$13/2^+$	0^+
252	159	1858.31		7.37		9.65	15.70	3.72	5.87	−4.84	−7.98	6.099	6.211	5.903	5.957		$13/2^+$	$15/2^-$
253	160	1864.17		7.37		9.58	16.06	5.86	6.04	−4.81	−8.16	6.110	6.223	5.910	5.964		$13/2^+$	0^+
254	161	1867.83		7.35		9.52	16.40	3.66	6.21	−4.82	−8.32	6.121	6.236	5.917	5.970		$13/2^+$	$7/2^+$
255	162	1873.60		7.35		9.43	16.77	5.77	6.39	−4.74	−8.51	6.131	6.247	5.923	5.976		$13/2^+$	0^+
256	163	1877.30		7.33		9.47	17.13	3.70	6.57	−4.74	−8.67	6.142	6.260	5.930	5.983		$13/2^+$	$7/2^+$
257	164	1882.90		7.33		9.30	17.47	5.60	6.74	−4.67	−8.86	6.152	6.272	5.935	5.989		$13/2^+$	0^+
258	165	1886.62		7.31		9.32	17.84	3.72	6.92	−4.66	−9.03	6.163	6.284	5.942	5.996		$13/2^+$	$7/2^+$
259	166	1892.06		7.31		9.16	18.12	5.44	7.06	−4.60	−9.23	6.173	6.296	5.948	6.001		$13/2^+$	0^+
260	167	1895.78		7.29		9.16	18.50	3.72	7.25	−4.58	−9.39	6.184	6.308	5.955	6.008		$13/2^+$	$7/2^+$
261	168	1901.09		7.28		9.03	18.73	5.31	7.36	−4.52	−9.53	6.194	6.320	5.960	6.013		$13/2^+$	0^+
262	169	1904.77		7.27		8.99	19.06	3.68	7.54	−4.49	−9.71	6.205	6.332	5.966	6.020		$13/2^+$	$7/2^+$
263	170	1909.99		7.26		8.90	19.32	5.22	7.65	−4.45	−9.82	6.215	6.345	5.971	6.025		$13/2^+$	0^+
264	171	1913.65		7.25		8.88	19.60	3.66	7.79	−4.46	−9.94	6.226	6.357	5.976	6.030		$13/2^+$	$5/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
265	172	1918.74		7.24		8.75	19.85	5.09	7.91	−4.37	−10.08	6.236	6.369	5.982	6.035		$13/2^+$	0^+
266	173	1922.41		7.23		8.76	20.13	3.67	8.04	−4.36	−10.21	6.247	6.382	5.987	6.040		$13/2^+$	$5/2^+$
267	174	1927.32		7.22		8.58	20.33	4.91	8.15	−4.28	−10.33	6.256	6.394	5.991	6.044		$13/2^+$	0^+
268	175	1930.97		7.21		8.56	20.60	3.65	8.27	−4.24	−10.45	6.267	6.406	5.996	6.049		$13/2^+$	$5/2^+$
269	176	1935.71		7.20		8.39	20.75	4.74	8.35	−4.18	−10.54	6.276	6.418	5.999	6.052		$13/2^+$	0^+
270	177	1939.27		7.18		8.30	20.95	3.56	8.45	−4.10	−10.65	6.287	6.431	6.004	6.057		$13/2^+$	$5/2^+$
271	178	1943.90		7.17		8.19	21.13	4.63	8.53	−4.07	−10.73	6.296	6.443	6.006	6.059		$13/2^+$	0^+
272	179	1947.51		7.16		8.24	21.32	3.61	8.63	−4.06	−10.83	6.306	6.455	6.009	6.062		$13/2^+$	$1/2^+$
273	180	1951.86		7.15		7.96	21.47	4.35	8.70	−3.94	−10.90	6.316	6.468	6.012	6.065		$13/2^+$	0^+
274	181	1955.42		7.14		7.91	21.63	3.56	8.78	−3.91	−10.99	6.327	6.481	6.015	6.068		$13/2^+$	$3/2^+$
275	182	1959.56		7.13		7.70	21.76	4.14	8.85	−3.81	−11.07	6.337	6.494	6.018	6.071		$13/2^+$	0^+
276	183	1963.06		7.11		7.64	21.90	3.50	8.92	−2.74	−11.15	6.348	6.508	6.020	6.073		$13/2^+$	$3/2^+$
277	184	1967.12		7.10		7.56	22.11	4.06	9.06	−2.71	−11.17	6.356	6.520	6.019	6.071		$7/2^-$	0^+
278	185	1967.32		7.08		4.26	22.45	0.20	9.20	−2.85	−11.35	6.370	6.534	6.031	6.084		$7/2^-$	$13/2^-$
279	186	1968.99		7.06		1.87	22.70	1.67	9.34	−0.99	−11.47	6.383	6.548	6.040	6.093		$7/2^-$	0^+
280	187	1969.21		7.03		1.89	23.04	0.22	9.49	−1.00	−11.64	6.397	6.562	6.053	6.105		$7/2^-$	$13/2^-$
281	188	1970.90		7.01		1.91	23.29	1.69	9.61	−1.02	−11.78	6.410	6.575	6.061	6.114		$7/2^-$	0^+
282	189	1971.16		6.99		1.95	23.64	0.26	9.78	−1.03	−12.03	6.426	6.590	6.081	6.133		$13/2^+$	$13/2^-$
283	190	1972.88		6.97		1.98	23.90	1.72	9.91	−1.05	−12.17	6.439	6.603	6.090	6.142		$13/2^+$	0^+
284	191	1973.16		6.95		2.00	24.25	0.28	10.08	−1.05	−12.33	6.453	6.617	6.103	6.155		$13/2^+$	$13/2^-$
285	192	1974.91		6.93		2.03	24.51	1.75	10.21	−1.07	−12.47	6.465	6.630	6.112	6.164		$13/2^+$	0^+
286	193	1975.19		6.91		2.03	24.85	0.28	10.38	−1.06	−12.65	6.479	6.643	6.125	6.177		$13/2^+$	$13/2^-$
287	194	1976.97		6.89		2.06	25.10	1.78	10.50	−1.09	−12.79	6.492	6.656	6.134	6.186		$13/2^+$	0^+
288	195	1977.23		6.87		2.04	25.43	0.26	10.66	−1.07	−12.95	6.505	6.670	6.146	6.197		$13/2^+$	$13/2^-$
289	196	1979.06		6.85		2.09	25.69	1.83	10.79	−1.09	−13.09	6.518	6.683	6.155	6.207		$13/2^+$	0^+
290	197	1979.27		6.83		2.04	25.94	0.21	10.92	−1.06	−13.31	6.531	6.696	6.165	6.217		$13/2^+$	$13/2^-$
291	198	1981.15		6.81		2.09	26.24	1.88	11.07	−1.09	−13.36	6.543	6.709	6.175	6.226		$13/2^+$	0^+
292	199	1981.40		6.79		2.13	26.50	0.25	11.19	−1.10	−13.51	6.556	6.722	6.184	6.235		$13/2^+$	$11/2^-$
293	200	1983.21		6.77		2.06	26.76	1.81	11.32	−1.07	−13.68	6.568	6.735	6.193	6.244		$13/2^+$	0^+
294	201	1983.49		6.75		2.09	27.02	0.28	11.45	−1.07	−13.79	6.580	6.748	6.202	6.253		$13/2^+$	$11/2^-$
295	202	1985.22		6.73		2.01	27.23	1.73	11.55	−1.04	−13.84	6.592	6.761	6.209	6.260		$13/2^+$	0^+
296	203	1985.49		6.71		2.00	27.48	0.27	11.67	−1.02	−13.99	6.604	6.774	6.217	6.269		$13/2^+$	$11/2^-$
297	204	1987.17		6.69		1.95	27.66	1.68	11.77	−1.00	−14.05	6.615	6.787	6.223	6.274		$13/2^+$	0^+
298	205	1987.40		6.67		1.91	27.89	0.23	11.88	−0.97	−14.16	6.628	6.800	6.231	6.282		$13/2^+$	$11/2^-$
299	206	1989.04		6.65		1.87	28.06	1.64	11.97	−0.96	−14.28	6.639	6.812	6.236	6.288		$13/2^+$	0^+
300	207	1989.20		6.63		1.80	28.28	0.16	12.08	−0.91	−14.35	6.651	6.826	6.244	6.295		$13/2^+$	$11/2^-$
301	208	1990.82		6.61		1.78	28.44	1.62	12.16	−0.91	−14.47	6.662	6.838	6.249	6.300		$13/2^+$	0^+
302	209	1990.86		6.59		1.66	28.66	0.04	12.27	−0.84	−14.56	6.674	6.852	6.256	6.307		$13/2^+$	$11/2^-$
303	210	1992.50		6.58		1.68	28.81	1.64	12.35	−0.86	−14.70	6.685	6.864	6.261	6.312		$13/2^+$	0^+
304	211	1992.38		6.55		1.52	28.94	−0.12	12.46	−0.78	−14.73	6.697	6.878	6.268	6.319		$13/2^+$	$11/2^-$
305	212	1994.07		6.54		1.57	29.17	1.69	12.53	−0.82	−14.82	6.708	6.890	6.273	6.324		$13/2^+$	0^+
306	213	1994.00		6.52		1.62	29.27	−0.07	12.60	−0.83	−14.79	6.719	6.907	6.266	6.317		$7/2^-$	$7/2^-$
307	214	1995.56		6.50		1.49	29.53	1.56	12.72	−0.78	−15.01	6.731	6.916	6.285	6.335		$13/2^+$	0^+
308	215	1995.52		6.48		1.52	29.67	−0.04	12.80	−0.79	−14.97	6.742	6.933	6.278	6.329		$7/2^-$	$7/2^-$
309	216	1996.99		6.46		1.43	29.87	1.47	12.89	−0.76	−15.19	6.755	6.943	6.296	6.347		$13/2^+$	0^+
310	217	1996.94		6.44		1.42	29.97	−0.05	12.97	−0.77	−15.15	6.766	6.960	6.289	6.340		$7/2^-$	$7/2^-$
311	218	1998.40		6.43		1.41	30.22	1.46	13.08	−0.75	−15.37	6.778	6.969	6.307	6.358		$13/2^+$	0^+
312	219	1998.35		6.40		1.41	30.29	−0.05	13.12	−0.75	−15.34	6.789	6.986	6.300	6.351		$7/2^-$	$7/2^-$
313	220	1999.79		6.39		1.39	30.56	1.44	13.25	−0.75	−15.56	6.801	6.995	6.318	6.369		$13/2^+$	0^+
314	221	1999.76		6.37		1.41	30.60	−0.03	13.28	−0.76	−15.50	6.816	7.019	6.309	6.360		$7/2^-$	$3/2^-$
315	222	2001.18		6.35		1.39	30.89	1.42	13.42	−0.75	−15.73	6.824	7.021	6.329	6.380		$13/2^+$	0^+
316	223	2001.19		6.33		1.43	30.93	0.01	13.45	−0.76	−15.67	6.839	7.045	6.320	6.370		$7/2^-$	$3/2^-$
317	224	2002.58		6.32		1.40	31.22	1.39	13.59	−0.76	−15.91	6.848	7.047	6.340	6.390		$13/2^+$	0^+
318	225	2002.63		6.30		1.44	31.27	0.05	13.61	−0.77	−15.84	6.862	7.070	6.330	6.381		$7/2^-$	$3/2^-$

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Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
319	226	2004.00		6.28		1.42	31.56	1.37	13.77	−0.76	−16.07	6.870	7.073	6.351	6.401		$13/2^+$	0^+
320	227	2004.09		6.26		1.46	31.64	0.09	13.79	−0.78	−16.12	6.887	7.094	6.353	6.403		$13/2^+$	$3/2^-$
321	228	2005.43		6.25		1.43	31.88	1.34	13.93	−0.77	−16.25	6.893	7.099	6.361	6.411		$13/2^+$	0^+
322	229	2005.58		6.23		1.49	32.01	0.15	14.00	−0.79	−16.30	6.909	7.118	6.364	6.414		$13/2^+$	$3/2^-$
323	230	2006.89		6.21		1.46	32.21	1.31	14.10	−0.78	−16.41	6.916	7.124	6.372	6.422		$13/2^+$	0^+
324	231	2007.07		6.19		1.49	32.36	0.18	14.18	−0.80	−16.48	6.931	7.143	6.375	6.425		$13/2^+$	$3/2^-$
325	232	2008.38		6.18		1.49	32.55	1.31	14.27	−0.79	−16.58	6.938	7.149	6.382	6.432		$13/2^+$	0^+
326	233	2008.57		6.16		1.50	32.69	0.19	14.35	−0.81	−16.65	6.953	7.167	6.386	6.435		$13/2^+$	$3/2^-$
327	234	2009.89		6.15		1.51	32.87	1.32	14.44	−0.81	−16.75	6.961	7.174	6.392	6.442		$13/2^+$	0^+
328	235	2010.10		6.13		1.53	33.03	0.21	14.51	−0.82	−16.82	6.975	7.191	6.396	6.446		$13/2^+$	$3/2^-$
329	236	2011.44		6.11		1.55	33.22	1.34	14.61	−0.82	−16.93	6.983	7.199	6.403	6.452		$13/2^+$	0^+
330	237	2011.67		6.10		1.57	33.36	0.23	14.69	−0.83	−16.99	6.996	7.214	6.407	6.457		$13/2^+$	$3/2^-$
331	238	2013.01		6.08		1.57	33.55	1.34	14.78	−0.83	−17.09	7.005	7.223	6.413	6.462		$13/2^+$	0^+
332	239	2013.26		6.06		1.59	33.68	0.25	14.86	−0.84	−17.15	7.018	7.238	6.418	6.467		$13/2^+$	$3/2^-$
333	240	2014.61		6.05		1.60	33.89	1.35	14.95	−0.84	−17.24	7.027	7.248	6.423	6.472		$13/2^+$	0^+
334	241	2014.89		6.03		1.63	34.02	0.28	15.02	−0.85	−17.32	7.039	7.261	6.428	6.478		$13/2^+$	$3/2^-$
335	242	2016.24		6.02		1.63	34.23	1.35	15.12	−0.85	−17.41	7.049	7.272	6.433	6.482		$13/2^+$	0^+
336	243	2016.55		6.00		1.66	34.37	0.31	15.18	−0.87	−17.48	7.062	7.288	6.436	6.486		$13/2^+$	$1/2^-$
337	244	2017.90		5.99		1.66	34.58	1.35	15.29	−0.86	−17.58	7.071	7.296	6.442	6.492		$13/2^+$	0^+
338	245	2018.25		5.97		1.70	34.73	0.35	15.35	−0.88	−17.65	7.084	7.311	6.446	6.496		$13/2^+$	$1/2^-$
339	246	2019.58		5.96		1.68	34.92	1.33	15.45	−0.87	−17.74	7.092	7.320	6.452	6.501		$13/2^+$	0^+
340	247	2019.99		5.94		1.74	35.11	0.41	15.54	−0.89	−17.81	7.105	7.334	6.456	6.506		$13/2^+$	$1/2^-$
341	248	2021.30		5.93		1.72	35.27	1.31	15.62	−0.88	−17.91	7.114	7.343	6.462	6.511		$13/2^+$	0^+
342	249	2021.75		5.91		1.76	35.48	0.45	15.71	−0.90	−17.98	7.125	7.356	6.466	6.516		$13/2^+$	$1/2^-$
343	250	2023.05		5.90		1.75	35.63	1.30	15.79	−0.89	−18.06	7.135	7.367	6.471	6.520		$13/2^+$	0^+
344	251	2023.54		5.88		1.79	35.86	0.49	15.89	−0.91	−18.15	7.146	7.379	6.476	6.526		$13/2^+$	$1/2^-$
345	252	2024.82		5.87		1.77	35.98	1.28	15.96	−0.90	−18.22	7.157	7.391	6.480	6.529		$13/2^+$	0^+
346	253	2025.36		5.85		1.82	36.25	0.54	16.07	−0.92	−18.31	7.167	7.401	6.486	6.535		$13/2^+$	$1/2^-$
347	254	2026.61		5.84		1.79	36.33	1.25	16.11	−0.91	−18.38	7.178	7.415	6.489	6.538		$13/2^+$	0^+
348	255	2027.20		5.83		1.84	36.63	0.59	16.24	−0.93	−18.49	7.188	7.424	6.496	6.545		$13/2^+$	$1/2^-$
349	256	2028.43		5.81		1.82	36.68	1.23	16.27	−0.91	−18.53	7.200	7.438	6.497	6.546		$13/2^+$	0^+
350	257	2029.07		5.80		1.87	37.01	0.64	16.41	0.59	−18.65	7.208	7.446	6.505	6.554		$13/2^+$	$1/2^-$
351	258	2030.27		5.78		1.84	37.03	1.20	16.42	−1.77	−18.68	7.221	7.463	6.505	6.554		$13/2^+$	0^+
σ		10.30																
$Z = 94$ (Pu)																		
219	125	1661.10		7.58			0.43	9.73	1.37	−10.13	0.17	5.708	5.757	5.644	5.700		0^+	$1/2^-$
220	126	1670.87		7.59		19.50	0.82	9.77	1.55	−8.92	−0.02	5.717	5.768	5.647	5.704		0^+	0^+
221	127	1677.23		7.59		16.13	1.27	6.36	1.79	−9.34	−0.26	5.731	5.785	5.659	5.715		0^+	$11/2^+$
222	128	1685.06		7.59		14.19	1.73	7.83	2.04	−7.09	−0.48	5.745	5.800	5.669	5.726		0^+	0^+
223	129	1691.33		7.58		14.10	2.17	6.27	2.29	−7.04	−0.72	5.759	5.816	5.681	5.737		0^+	$11/2^+$
224	130	1699.07		7.59		14.01	2.61	7.74	2.55	−7.01	−0.94	5.773	5.831	5.691	5.747		0^+	0^+
225	131	1705.27		7.58		13.94	3.06	6.20	2.82	−6.96	−1.18	5.787	5.847	5.703	5.759		0^+	$11/2^+$
226	132	1712.94		7.58		13.87	3.52	7.67	3.05	−6.93	−1.40	5.800	5.862	5.713	5.769		0^+	0^+
227	133	1719.05		7.57		13.78	3.97	6.11	3.23	−6.87	−1.64	5.814	5.877	5.725	5.780		0^+	$11/2^+$
228	134	1726.64	1730.64	7.57	7.59	13.70	4.43	7.59	3.43	−6.85	−1.86	5.827	5.892	5.735	5.790		0^+	0^+
229	135	1732.66	1737.40	7.57	7.59	13.61	4.91	6.02	3.64	−6.75	−2.10	5.841	5.907	5.747	5.802		0^+	$11/2^+$
230	136	1740.17	1745.93	7.57	7.59	13.53	5.36	7.51	3.84	−6.72	−2.33	5.854	5.921	5.757	5.812		0^+	0^+
231	137	1745.94	1752.65	7.56	7.59	13.28	5.86	5.77	4.05	−6.36	−2.58	5.869	5.936	5.770	5.825		0^+	$11/2^+$
232	138	1753.34	1760.64	7.56	7.59	13.17	6.29	7.40	4.25	−6.38	−2.80	5.881	5.950	5.779	5.834		0^+	0^+
233	139	1758.41	1767.03	7.55	7.58	12.47	6.67	5.07	4.45	−6.37	−2.98	5.893	5.964	5.786	5.841	5.854	0^+	$9/2^+$
234	140	1765.50	1774.80	7.54	7.58	12.16	7.05	7.09	4.65	−6.00	−3.18	5.903	5.976	5.792	5.847	5.860	0^+	0^+
235	141	1770.41	1781.04	7.53	7.58	12.00	7.41	4.91	4.85	−5.92	−3.36	5.914	5.989	5.798	5.853	5.870	0^+	$9/2^+$
236	142	1777.16	1788.39	7.53	7.58	11.66	7.80	6.75	5.04	−5.83	−3.55	5.924	6.002	5.804	5.859	5.875	0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
237	143	1781.94	1794.27	7.52	7.57	11.53	8.15	4.78	5.24	−5.76	−3.73	5.935	6.015	5.810	5.865	5.882	0^+	$9/2^+$
238	144	1788.53	1801.27	7.51	7.57	11.37	8.54	6.59	5.43	−5.70	−3.93	5.945	6.027	5.817	5.872		0^+	0^+
239	145	1793.19	1806.91	7.50	7.56	11.25	8.91	4.66	5.63	−5.63	−4.11	5.956	6.040	5.823	5.878	5.895	0^+	$9/2^+$
240	146	1799.66	1813.45	7.50	7.56	11.13	9.27	6.47	5.81	−5.59	−4.30	5.966	6.052	5.829	5.884		0^+	0^+
241	147	1804.20	1818.69	7.49	7.55	11.01	9.66	4.54	6.00	−5.52	−4.48	5.977	6.065	5.836	5.890		0^+	$9/2^+$
242	148	1810.59	1825.00	7.48	7.54	10.93	10.01	6.39	6.19	−5.49	−4.67	5.987	6.077	5.842	5.896		0^+	0^+
243	149	1814.99	1830.03	7.47	7.53	10.79	10.39	4.40	6.37	−5.42	−4.86	5.998	6.090	5.848	5.903		0^+	$9/2^+$
244	150	1821.33	1836.05	7.46	7.52	10.74	10.75	6.34	6.56	−5.40	−5.04	6.008	6.102	5.855	5.909		0^+	0^+
245	151	1825.59	1840.75	7.45	7.51	10.60	11.14	4.26	6.75	−5.32	−5.23	6.019	6.114	5.861	5.916		0^+	$9/2^+$
246	152	1831.89	1846.61	7.45	7.51	10.56	11.48	6.30	6.93	−5.31	−5.40	6.029	6.126	5.867	5.922		0^+	0^+
247	153	1835.99		7.43		10.40	11.88	4.10	7.10	−5.22	−5.60	6.040	6.139	5.875	5.929		0^+	$9/2^+$
248	154	1842.28		7.43		10.39	12.21	6.29	7.28	−5.22	−5.77	6.050	6.151	5.880	5.934		0^+	0^+
249	155	1846.31		7.41		10.32	12.59	4.03	7.46	−5.18	−5.96	6.060	6.162	5.887	5.941		0^+	$15/2^-$
250	156	1852.50		7.41		10.22	12.93	6.19	7.63	−5.14	−6.13	6.070	6.175	5.893	5.947		0^+	0^+
251	157	1856.47		7.40		10.16	13.31	3.97	7.81	−5.09	−6.32	6.081	6.186	5.900	5.954		0^+	$15/2^-$
252	158	1862.57		7.39		10.07	13.65	6.10	7.98	−5.06	−6.49	6.091	6.199	5.907	5.960		0^+	0^+
253	159	1866.46		7.38		9.99	14.02	3.89	8.15	−5.00	−6.68	6.102	6.210	5.913	5.967		0^+	$15/2^-$
254	160	1872.48		7.37		9.91	14.35	6.02	8.31	−4.98	−6.85	6.112	6.223	5.920	5.973		0^+	0^+
255	161	1876.32		7.36		9.86	14.70	3.84	8.49	−4.99	−7.02	6.123	6.236	5.926	5.980		0^+	$7/2^+$
256	162	1882.25		7.35		9.77	15.04	5.93	8.65	−4.90	−7.19	6.133	6.247	5.933	5.986		0^+	0^+
257	163	1886.12		7.34		9.80	15.39	3.87	8.82	−4.90	−7.37	6.144	6.259	5.940	5.993		0^+	$7/2^+$
258	164	1891.87		7.33		9.62	15.71	5.75	8.97	−4.82	−7.53	6.154	6.271	5.945	5.999		0^+	0^+
259	165	1895.76		7.32		9.64	16.06	3.89	9.14	−4.81	−7.70	6.165	6.283	5.952	6.006		0^+	$7/2^+$
260	166	1901.35		7.31		9.48	16.35	5.59	9.29	−4.74	−7.85	6.175	6.295	5.958	6.011		0^+	0^+
261	167	1905.24		7.30		9.48	16.71	3.89	9.46	−4.72	−8.02	6.186	6.307	5.965	6.018		0^+	$7/2^+$
262	168	1910.69		7.29		9.34	16.96	5.45	9.60	−4.67	−8.15	6.196	6.319	5.970	6.023		0^+	0^+
263	169	1914.53		7.28		9.29	17.30	3.84	9.76	−4.63	−8.32	6.207	6.331	5.977	6.030		0^+	$7/2^+$
264	170	1919.87		7.27		9.18	17.53	5.34	9.88	−4.59	−8.44	6.217	6.343	5.982	6.035		0^+	0^+
265	171	1923.67		7.26		9.14	17.81	3.80	10.02	−4.60	−8.57	6.227	6.356	5.987	6.040		0^+	$5/2^+$
266	172	1928.90		7.25		9.03	18.07	5.23	10.16	−4.50	−8.70	6.237	6.368	5.992	6.045		0^+	0^+
267	173	1932.71		7.24		9.04	18.34	3.81	10.30	−4.49	−8.84	6.248	6.380	5.997	6.050		0^+	$5/2^+$
268	174	1937.74		7.23		8.84	18.57	5.03	10.42	−4.40	−8.95	6.258	6.392	6.001	6.054		0^+	0^+
269	175	1941.52		7.22		8.81	18.82	3.78	10.55	−4.36	−9.08	6.268	6.404	6.006	6.059		0^+	$5/2^+$
270	176	1946.37		7.21		8.63	19.01	4.85	10.66	−4.29	−9.17	6.277	6.416	6.009	6.062		0^+	0^+
271	177	1950.05		7.20		8.53	19.23	3.68	10.78	−4.21	−9.30	6.288	6.429	6.013	6.066		0^+	$5/2^+$
272	178	1954.79		7.19		8.42	19.42	4.74	10.89	−4.18	−9.38	6.297	6.440	6.015	6.068		0^+	0^+
273	179	1958.51		7.17		8.46	19.63	3.72	11.00	−4.18	−9.48	6.307	6.453	6.018	6.071		0^+	$1/2^+$
274	180	1962.98		7.16		8.19	19.82	4.47	11.12	−4.05	−9.58	6.317	6.466	6.021	6.074		0^+	0^+
275	181	1966.65		7.15		8.14	20.01	3.67	11.23	−4.02	−9.68	6.327	6.479	6.023	6.076		0^+	$3/2^+$
276	182	1970.91		7.14		7.93	20.20	4.26	11.35	−3.93	−9.77	6.337	6.492	6.026	6.079		0^+	0^+
277	183	1974.52		7.13		7.87	20.38	3.61	11.46	−3.29	−9.86	6.347	6.505	6.028	6.081		0^+	$3/2^+$
278	184	1978.64		7.12		7.73	20.58	4.12	11.52	−2.79	−9.96	6.357	6.518	6.031	6.084		0^+	0^+
279	185	1979.02		7.09		4.50	20.90	0.38	11.70	−3.18	−10.12	6.372	6.532	6.044	6.097		0^+	$13/2^-$
280	186	1980.83		7.07		2.19	21.18	1.81	11.84	−1.14	−10.26	6.384	6.545	6.053	6.106		0^+	0^+
281	187	1981.22		7.05		2.20	21.50	0.39	12.01	−1.15	−10.42	6.398	6.559	6.066	6.119		0^+	$13/2^-$
282	188	1983.05		7.03		2.22	21.76	1.83	12.15	−1.16	−10.56	6.411	6.573	6.075	6.128		0^+	0^+
283	189	1983.46		7.01		2.24	22.08	0.41	12.30	−1.17	−10.72	6.425	6.586	6.088	6.141		0^+	$13/2^-$
284	190	1985.32		6.99		2.27	22.35	1.86	12.44	−1.19	−10.86	6.438	6.600	6.098	6.150		0^+	0^+
285	191	1985.74		6.97		2.28	22.66	0.42	12.58	−1.18	−11.01	6.452	6.613	6.110	6.163		0^+	$13/2^-$
286	192	1987.62		6.95		2.30	22.92	1.88	12.71	−1.20	−11.15	6.464	6.626	6.120	6.172		0^+	0^+
287	193	1988.04		6.93		2.30	23.23	0.42	12.85	−1.19	−11.30	6.478	6.640	6.132	6.184		0^+	$13/2^-$
288	194	1989.96		6.91		2.34	23.49	1.92	12.99	−1.22	−11.43	6.490	6.653	6.141	6.193		0^+	0^+
289	195	1990.35		6.89		2.31	23.78	0.39	13.12	−1.19	−11.58	6.504	6.666	6.153	6.205		0^+	$13/2^-$
290	196	1992.31		6.87		2.35	24.04	1.96	13.25	−1.22	−11.71	6.516	6.679	6.162	6.214		0^+	0^+

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Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
291	197	1992.65		6.85		2.30	24.30	0.34	13.38	−1.18	−11.85	6.529	6.692	6.173	6.224		0^+	$13/2^-$
292	198	1994.66		6.83		2.35	24.58	2.01	13.51	−1.21	−11.98	6.541	6.705	6.182	6.234		0^+	0^+
293	199	1995.04		6.81		2.39	24.83	0.38	13.64	−1.22	−12.11	6.554	6.719	6.191	6.243		0^+	$11/2^-$
294	200	1996.97		6.79		2.31	25.08	1.93	13.76	−1.19	−12.24	6.566	6.731	6.200	6.251		0^+	0^+
295	201	1997.38		6.77		2.34	25.34	0.41	13.89	−1.18	−12.36	6.578	6.744	6.209	6.260		0^+	$11/2^-$
296	202	1999.23		6.75		2.26	25.56	1.85	14.01	−1.15	−12.48	6.590	6.757	6.216	6.267		0^+	0^+
297	203	1999.62		6.73		2.24	25.80	0.39	14.13	−1.14	−12.60	6.602	6.770	6.224	6.276		0^+	$11/2^-$
298	204	2001.41		6.72		2.18	26.01	1.79	14.24	−1.12	−12.70	6.613	6.782	6.230	6.281		0^+	0^+
299	205	2001.77		6.69		2.15	26.25	0.36	14.37	−1.08	−12.82	6.625	6.795	6.238	6.289		0^+	$11/2^-$
300	206	2003.51		6.68		2.10	26.44	1.74	14.47	−1.07	−12.92	6.636	6.808	6.243	6.294		0^+	0^+
301	207	2003.79		6.66		2.02	26.67	0.28	14.59	−1.02	−13.03	6.648	6.821	6.250	6.301		0^+	$11/2^-$
302	208	2005.52		6.64		2.01	26.86	1.73	14.70	−1.02	−13.13	6.659	6.833	6.255	6.306		0^+	0^+
303	209	2005.67		6.62		1.88	27.08	0.15	14.81	−0.94	−13.24	6.671	6.846	6.263	6.313		0^+	$11/2^-$
304	210	2007.41		6.60		1.89	27.26	1.74	14.91	−0.96	−13.34	6.681	6.858	6.267	6.318		0^+	0^+
305	211	2007.39		6.58		1.72	27.47	−0.02	15.01	−0.87	−13.44	6.694	6.872	6.275	6.325		0^+	$11/2^-$
306	212	2009.19		6.57		1.78	27.65	1.80	15.12	−0.91	−13.54	6.704	6.884	6.279	6.330		0^+	0^+
307	213	2009.13		6.54		1.74	27.73	−0.06	15.13	−0.92	−13.59	6.718	6.902	6.282	6.332		0^+	$7/2^-$
308	214	2010.87		6.53		1.68	28.03	1.74	15.31	−0.87	−13.73	6.727	6.910	6.291	6.342		0^+	0^+
309	215	2010.88		6.51		1.75	28.16	0.01	15.36	−0.88	−13.79	6.741	6.928	6.294	6.344		0^+	$7/2^-$
310	216	2012.48		6.49		1.61	28.38	1.60	15.49	−0.85	−13.92	6.750	6.936	6.303	6.353		0^+	0^+
311	217	2012.50		6.47		1.62	28.53	0.02	15.56	−0.86	−13.98	6.764	6.953	6.306	6.356		0^+	$7/2^-$
312	218	2014.06		6.46		1.58	28.74	1.56	15.66	−0.84	−14.11	6.774	6.962	6.314	6.365		0^+	0^+
313	219	2014.08		6.43		1.58	28.85	0.02	15.73	−0.84	−14.17	6.787	6.979	6.318	6.368		0^+	$7/2^-$
314	220	2015.63		6.42		1.57	29.09	1.55	15.84	−0.83	−14.29	6.797	6.988	6.326	6.376		0^+	0^+
315	221	2015.66		6.40		1.58	29.18	0.03	15.90	−0.84	−14.36	6.810	7.004	6.329	6.380		0^+	$7/2^-$
316	222	2017.19		6.38		1.56	29.43	1.53	16.01	−0.83	−14.47	6.819	7.014	6.337	6.387		0^+	0^+
317	223	2017.24		6.36		1.58	29.50	0.05	16.05	−0.84	−14.54	6.832	7.029	6.341	6.391		0^+	$7/2^-$
318	224	2018.76		6.35		1.57	29.77	1.52	16.18	−0.84	−14.65	6.842	7.039	6.348	6.398		0^+	0^+
319	225	2018.85		6.33		1.61	29.83	0.09	16.22	−0.85	−14.69	6.859	7.061	6.350	6.400		0^+	$3/2^-$
320	226	2020.35		6.31		1.59	30.12	1.50	16.35	−0.84	−14.83	6.865	7.065	6.359	6.409		0^+	0^+
321	227	2020.48		6.29		1.63	30.18	0.13	16.39	−0.86	−14.87	6.881	7.085	6.361	6.411		0^+	$3/2^-$
322	228	2021.95		6.28		1.60	30.45	1.47	16.52	−0.85	−15.00	6.888	7.090	6.370	6.420		0^+	0^+
323	229	2022.13		6.26		1.65	30.55	0.18	16.55	−0.87	−15.05	6.903	7.109	6.372	6.422		0^+	$3/2^-$
324	230	2023.57		6.25		1.62	30.78	1.44	16.68	−0.86	−15.17	6.910	7.115	6.380	6.430		0^+	0^+
325	231	2023.81		6.23		1.68	30.92	0.24	16.74	−0.88	−15.22	6.925	7.134	6.383	6.433		0^+	$3/2^-$
326	232	2025.22		6.21		1.65	31.11	1.41	16.84	−0.87	−15.34	6.932	7.140	6.391	6.441		0^+	0^+
327	233	2025.49		6.19		1.68	31.27	0.27	16.92	−0.89	−15.40	6.947	7.157	6.394	6.444		0^+	$3/2^-$
328	234	2026.90		6.18		1.68	31.45	1.41	17.01	−0.88	−15.51	6.954	7.164	6.401	6.451		0^+	0^+
329	235	2027.18		6.16		1.69	31.59	0.28	17.08	−0.90	−15.57	6.968	7.181	6.405	6.455		0^+	$3/2^-$
330	236	2028.60		6.15		1.70	31.77	1.42	17.16	−0.90	−15.68	6.976	7.189	6.412	6.461		0^+	0^+
331	237	2028.91		6.13		1.73	31.93	0.31	17.24	−0.91	−15.75	6.990	7.205	6.416	6.465		0^+	$3/2^-$
332	238	2030.33		6.12		1.73	32.10	1.42	17.32	−0.91	−15.84	6.998	7.213	6.422	6.472		0^+	0^+
333	239	2030.67		6.10		1.76	32.27	0.34	17.41	−0.92	−15.92	7.011	7.228	6.426	6.476		0^+	$3/2^-$
334	240	2032.10		6.08		1.77	32.44	1.43	17.49	−0.92	−16.01	7.020	7.237	6.432	6.482		0^+	0^+
335	241	2032.46		6.07		1.79	32.59	0.36	17.57	−0.93	−16.09	7.032	7.251	6.437	6.487		0^+	$3/2^-$
336	242	2033.88		6.05		1.78	32.76	1.42	17.64	−0.93	−16.17	7.042	7.261	6.442	6.491		0^+	0^+
337	243	2034.27		6.04		1.81	32.90	0.39	17.72	−0.94	−16.26	7.054	7.275	6.447	6.497		0^+	$3/2^-$
338	244	2035.70		6.02		1.82	33.09	1.43	17.80	−0.94	−16.33	7.063	7.285	6.452	6.501		0^+	0^+
339	245	2036.12		6.01		1.85	33.22	0.42	17.87	−0.96	−16.39	7.076	7.301	6.455	6.504		0^+	$1/2^-$
340	246	2037.54		5.99		1.84	33.41	1.42	17.96	−0.95	−16.49	7.085	7.309	6.461	6.510		0^+	0^+
341	247	2038.01		5.98		1.89	33.56	0.47	18.02	−0.97	−16.55	7.097	7.324	6.465	6.514		0^+	$1/2^-$
342	248	2039.41		5.96		1.87	33.73	1.40	18.11	−0.96	−16.64	7.106	7.333	6.470	6.520		0^+	0^+
343	249	2039.93		5.95		1.92	33.89	0.52	18.18	−0.98	−16.71	7.118	7.347	6.475	6.524		0^+	$1/2^-$
344	250	2041.31		5.93		1.90	34.05	1.38	18.26	−0.97	−16.79	7.128	7.357	6.479	6.528		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
345	251	2041.88		5.92		1.95	34.23	0.57	18.34	−0.99	−16.87	7.139	7.369	6.484	6.533		0^+	$1/2^-$
346	252	2043.23		5.91		1.92	34.37	1.35	18.41	−0.97	−16.94	7.149	7.381	6.488	6.537		0^+	0^+
347	253	2043.85		5.89		1.97	34.56	0.62	18.49	−0.99	−17.03	7.160	7.392	6.493	6.542		0^+	$1/2^-$
348	254	2045.17		5.88		1.94	34.67	1.32	18.56	−0.98	−17.08	7.171	7.405	6.496	6.545		0^+	0^+
349	255	2045.85		5.86		2.00	34.89	0.68	18.65	−1.00	−17.18	7.181	7.415	6.502	6.551		0^+	$1/2^-$
350	256	2047.13		5.85		1.96	34.97	1.28	18.70	−0.98	−17.22	7.192	7.429	6.504	6.553		0^+	0^+
351	257	2047.87		5.83		2.02	35.21	0.74	18.80	−0.05	−17.32	7.201	7.438	6.511	6.560		0^+	$1/2^-$
352	258	2049.11		5.82		1.98	35.26	1.24	18.84	−1.87	−17.35	7.214	7.454	6.511	6.560		0^+	0^+
σ		11.63													0.016			
$Z = 95$ (Am)																		
222	127	1675.95		7.55			0.51	6.57	−1.28	−9.56	0.09	5.738	5.787	5.671	5.727		$7/2^-$	$11/2^+$
223	128	1683.99		7.55		14.61	0.97	8.04	−1.07	−7.30	−0.14	5.752	5.803	5.682	5.738		$7/2^-$	0^+
224	129	1690.47		7.55		14.52	1.43	6.48	−0.86	−7.25	−0.38	5.766	5.818	5.693	5.749		$7/2^-$	$11/2^+$
225	130	1698.42		7.55		14.43	1.90	7.95	−0.65	−7.22	−0.61	5.779	5.834	5.703	5.759		$7/2^-$	0^+
226	131	1704.81		7.54		14.34	2.36	6.39	−0.46	−7.16	−0.84	5.793	5.849	5.714	5.770		$7/2^-$	$11/2^+$
227	132	1712.68		7.54		14.26	2.79	7.87	−0.26	−7.13	−1.07	5.806	5.864	5.724	5.780		$7/2^-$	0^+
228	133	1719.06		7.54		14.25	3.24	6.38	0.01	−7.14	−1.30	5.821	5.879	5.738	5.794		$13/2^+$	$11/2^+$
229	134	1726.90		7.54		14.22	3.69	7.84	0.26	−7.11	−1.52	5.834	5.894	5.749	5.804		$13/2^+$	0^+
230	135	1733.19		7.54		14.13	4.17	6.29	0.53	−7.02	−1.76	5.848	5.909	5.760	5.816		$13/2^+$	$11/2^+$
231	136	1740.95		7.54		14.05	4.62	7.76	0.78	−6.98	−1.98	5.861	5.923	5.771	5.826		$13/2^+$	0^+
232	137	1747.03		7.53		13.84	5.14	6.08	1.09	−6.59	−2.24	5.875	5.938	5.784	5.839		$13/2^+$	$11/2^+$
233	138	1754.66		7.53		13.71	5.57	7.63	1.32	−6.61	−2.46	5.887	5.952	5.793	5.848		$13/2^+$	0^+
234	139	1759.90		7.52		12.87	5.94	5.24	1.49	−6.60	−2.64	5.899	5.966	5.800	5.855		$13/2^+$	$9/2^+$
235	140	1767.18	1777.81	7.52	7.57	12.52	6.33	7.28	1.68	−6.18	−2.84	5.909	5.977	5.805	5.860	5.893	$13/2^+$	0^+
236	141	1772.24		7.51		12.34	6.68	5.06	1.83	−6.10	−3.02	5.919	5.991	5.812	5.866		$13/2^+$	$9/2^+$
237	142	1779.21		7.51		12.03	7.09	6.97	2.05	−6.01	−3.22	5.929	6.003	5.818	5.873	5.905	$13/2^+$	0^+
238	143	1784.14	1798.23	7.50	7.56	11.90	7.44	4.93	2.20	−5.94	−3.40	5.940	6.016	5.824	5.879		$13/2^+$	$9/2^+$
239	144	1790.93	1805.33	7.49	7.55	11.72	7.83	6.79	2.40	−5.88	−3.60	5.950	6.028	5.830	5.885		$13/2^+$	0^+
240	145	1795.77	1811.28	7.48	7.55	11.63	8.21	4.84	2.58	−5.82	−3.78	5.961	6.041	5.837	5.891		$13/2^+$	$9/2^+$
241	146	1802.43	1817.93	7.48	7.54	11.50	8.58	6.66	2.77	−5.77	−3.97	5.971	6.053	5.843	5.897		$13/2^+$	0^+
242	147	1807.14	1823.46	7.47	7.53	11.37	8.94	4.71	2.94	−5.71	−4.16	5.982	6.066	5.849	5.904		$13/2^+$	$9/2^+$
243	148	1813.72	1829.83	7.46	7.53	11.29	9.32	6.58	3.13	−5.68	−4.34	5.992	6.078	5.856	5.910		$13/2^+$	0^+
244	149	1818.31	1835.20	7.45	7.52	11.17	9.69	4.59	3.32	−5.61	−4.53	6.003	6.090	5.862	5.916		$13/2^+$	$9/2^+$
245	150	1824.83	1841.25	7.45	7.52	11.11	10.06	6.52	3.50	−5.59	−4.71	6.013	6.102	5.868	5.922		$13/2^+$	0^+
246	151	1829.29		7.44		10.98	10.45	4.46	3.70	−5.51	−4.91	6.023	6.115	5.875	5.929		$13/2^+$	$9/2^+$
247	152	1835.76		7.43		10.93	10.80	6.47	3.87	−5.50	−5.08	6.033	6.127	5.881	5.935		$13/2^+$	0^+
248	153	1840.08		7.42		10.79	11.19	4.32	4.09	−5.42	−5.28	6.044	6.139	5.888	5.942		$13/2^+$	$9/2^+$
249	154	1846.53		7.42		10.77	11.53	6.45	4.25	−5.41	−5.45	6.054	6.151	5.894	5.948		$13/2^+$	0^+
250	155	1850.76		7.40		10.68	11.91	4.23	4.45	−5.37	−5.64	6.064	6.162	5.900	5.954		$13/2^+$	$15/2^-$
251	156	1857.13		7.40		10.60	12.26	6.37	4.63	−5.33	−5.82	6.075	6.175	5.907	5.961		$13/2^+$	0^+
252	157	1861.29		7.39		10.53	12.63	4.16	4.82	−5.28	−6.00	6.085	6.186	5.913	5.967		$13/2^+$	$15/2^-$
253	158	1867.57		7.38		10.44	12.98	6.28	5.00	−5.24	−6.18	6.095	6.198	5.920	5.974		$13/2^+$	0^+
254	159	1871.66		7.37		10.37	13.35	4.09	5.20	−5.19	−6.36	6.105	6.210	5.926	5.980		$13/2^+$	$15/2^-$
255	160	1877.86		7.36		10.29	13.69	6.20	5.38	−5.16	−6.54	6.116	6.222	5.933	5.986		$13/2^+$	0^+
256	161	1881.87		7.35		10.21	14.04	4.01	5.55	−5.17	−6.70	6.127	6.235	5.940	5.993		$13/2^+$	$7/2^+$
257	162	1887.99		7.35		10.13	14.39	6.12	5.74	−5.07	−6.88	6.137	6.246	5.946	5.999		$13/2^+$	0^+
258	163	1892.04		7.33		10.17	14.74	4.05	5.92	−5.08	−7.06	6.147	6.258	5.953	6.006		$13/2^+$	$7/2^+$
259	164	1897.96		7.33		9.97	15.06	5.92	6.09	−4.99	−7.22	6.157	6.270	5.959	6.012		$13/2^+$	0^+
260	165	1902.04		7.32		10.00	15.42	4.08	6.28	−4.98	−7.40	6.168	6.282	5.966	6.019		$13/2^+$	$7/2^+$
261	166	1907.77		7.31		9.81	15.71	5.73	6.42	−4.90	−7.54	6.178	6.294	5.971	6.025		$13/2^+$	0^+
262	167	1911.84		7.30		9.80	16.06	4.07	6.60	−4.88	−7.72	6.189	6.306	5.978	6.031		$13/2^+$	$7/2^+$
263	168	1917.41		7.29		9.64	16.32	5.57	6.72	−4.81	−7.84	6.199	6.318	5.983	6.037		$13/2^+$	0^+
264	169	1921.43		7.28		9.59	16.66	4.02	6.90	−4.77	−8.01	6.210	6.330	5.990	6.043		$13/2^+$	$7/2^+$

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Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
265	170	1926.88		7.27		9.47	16.89	5.45	7.01	−4.72	−8.13	6.220	6.342	5.995	6.048		$13/2^+$	0^+
266	171	1930.82		7.26		9.39	17.17	3.94	7.15	−4.73	−8.26	6.230	6.355	6.000	6.053		$13/2^+$	$5/2^+$
267	172	1936.16		7.25		9.28	17.42	5.34	7.26	−4.62	−8.39	6.240	6.366	6.005	6.058		$13/2^+$	0^+
268	173	1940.11		7.24		9.29	17.70	3.95	7.40	−4.61	−8.53	6.251	6.379	6.010	6.063		$13/2^+$	$5/2^+$
269	174	1945.22		7.23		9.06	17.90	5.11	7.48	−4.51	−8.64	6.260	6.390	6.014	6.067		$13/2^+$	0^+
270	175	1949.13		7.22		9.02	18.16	3.91	7.61	−4.46	−8.77	6.270	6.403	6.019	6.072		$13/2^+$	$5/2^+$
271	176	1954.06		7.21		8.84	18.35	4.93	7.69	−4.39	−8.86	6.279	6.414	6.021	6.074		$13/2^+$	0^+
272	177	1957.85		7.20		8.72	18.58	3.79	7.80	−4.30	−8.97	6.290	6.427	6.025	6.078		$13/2^+$	$5/2^+$
273	178	1962.66		7.19		8.60	18.76	4.81	7.87	−4.27	−9.06	6.299	6.439	6.027	6.080		$13/2^+$	0^+
274	179	1966.46		7.18		8.61	18.95	3.80	7.95	−4.27	−9.16	6.308	6.451	6.030	6.083		$13/2^+$	$1/2^+$
275	180	1971.01		7.17		8.35	19.15	4.55	8.03	−4.13	−9.26	6.318	6.464	6.033	6.086		$13/2^+$	0^+
276	181	1974.77		7.15		8.31	19.35	3.76	8.12	−4.09	−9.37	6.328	6.477	6.036	6.089		$13/2^+$	$1/2^+$
277	182	1979.10		7.14		8.09	19.54	4.33	8.19	−4.01	−9.46	6.338	6.489	6.038	6.091		$13/2^+$	0^+
278	183	1982.80		7.13		8.03	19.74	3.70	8.28	−3.52	−9.57	6.347	6.502	6.038	6.091		$7/2^-$	$1/2^+$
279	184	1987.03		7.12		7.93	19.91	4.23	8.39	−3.00	−9.64	6.357	6.515	6.040	6.092		$7/2^-$	0^+
280	185	1987.56		7.10		4.76	20.24	0.53	8.54	−3.32	−9.80	6.371	6.529	6.052	6.105		$7/2^-$	$13/2^-$
281	186	1989.50		7.08		2.47	20.51	1.94	8.67	−1.28	−9.94	6.384	6.542	6.062	6.114		$7/2^-$	0^+
282	187	1990.05		7.06		2.49	20.84	0.55	8.83	−1.30	−10.12	6.400	6.557	6.079	6.131		$13/2^+$	$13/2^-$
283	188	1992.02		7.04		2.52	21.12	1.97	8.97	−1.32	−10.26	6.412	6.570	6.088	6.141		$13/2^+$	0^+
284	189	1992.61		7.02		2.56	21.45	0.59	9.15	−1.32	−10.42	6.426	6.584	6.101	6.154		$13/2^+$	$13/2^-$
285	190	1994.60		7.00		2.58	21.72	1.99	9.28	−1.34	−10.56	6.439	6.597	6.111	6.163		$13/2^+$	0^+
286	191	1995.19		6.98		2.58	22.03	0.59	9.45	−1.34	−10.72	6.453	6.610	6.124	6.176		$13/2^+$	$13/2^-$
287	192	1997.21		6.96		2.61	22.30	2.02	9.59	−1.36	−10.86	6.465	6.624	6.134	6.186		$13/2^+$	0^+
288	193	1997.80		6.94		2.61	22.61	0.59	9.76	−1.34	−11.01	6.479	6.637	6.146	6.198		$13/2^+$	$13/2^-$
289	194	1999.86		6.92		2.65	22.89	2.06	9.90	−1.37	−11.15	6.492	6.650	6.156	6.208		$13/2^+$	0^+
290	195	2000.42		6.90		2.62	23.19	0.56	10.07	−1.34	−11.30	6.505	6.663	6.168	6.220		$13/2^+$	$13/2^-$
291	196	2002.51		6.88		2.65	23.45	2.09	10.20	−1.36	−11.43	6.518	6.676	6.178	6.229		$13/2^+$	0^+
292	197	2003.00		6.86		2.58	23.73	0.49	10.35	−1.31	−11.57	6.531	6.689	6.188	6.240		$13/2^+$	$13/2^-$
293	198	2005.14		6.84		2.63	23.99	2.14	10.48	−1.34	−11.70	6.543	6.702	6.198	6.249		$13/2^+$	0^+
294	199	2005.65		6.82		2.65	24.25	0.51	10.61	−1.36	−11.83	6.555	6.715	6.207	6.258		$13/2^+$	$11/2^-$
295	200	2007.71		6.81		2.57	24.50	2.06	10.74	−1.31	−11.96	6.567	6.728	6.215	6.267		$13/2^+$	0^+
296	201	2008.24		6.78		2.59	24.75	0.53	10.86	−1.30	−12.09	6.580	6.741	6.224	6.275		$13/2^+$	$11/2^-$
297	202	2010.19		6.77		2.48	24.97	1.95	10.96	−1.26	−12.20	6.591	6.753	6.231	6.282		$13/2^+$	0^+
298	203	2010.71		6.75		2.47	25.22	0.52	11.09	−1.24	−12.32	6.603	6.766	6.239	6.290		$13/2^+$	$11/2^-$
299	204	2012.59		6.73		2.40	25.42	1.88	11.18	−1.22	−12.42	6.614	6.779	6.244	6.295		$13/2^+$	0^+
300	205	2013.06		6.71		2.35	25.66	0.47	11.29	−1.18	−12.54	6.625	6.792	6.252	6.303		$13/2^+$	$11/2^-$
301	206	2014.89		6.69		2.30	25.85	1.83	11.38	−1.17	−12.64	6.636	6.804	6.257	6.308		$13/2^+$	0^+
302	207	2015.28		6.67		2.22	26.08	0.39	11.49	−1.12	−12.75	6.648	6.817	6.264	6.315		$13/2^+$	$11/2^-$
303	208	2017.10		6.66		2.21	26.28	1.82	11.58	−1.12	−12.85	6.658	6.829	6.269	6.320		$13/2^+$	0^+
304	209	2017.36		6.64		2.08	26.50	0.26	11.69	−1.04	−12.97	6.670	6.842	6.276	6.327		$13/2^+$	$11/2^-$
305	210	2019.19		6.62		2.09	26.69	1.83	11.78	−1.06	−13.07	6.681	6.854	6.281	6.332		$13/2^+$	0^+
306	211	2019.28		6.60		1.92	26.90	0.09	11.89	−0.98	−13.18	6.693	6.867	6.289	6.339		$13/2^+$	$11/2^-$
307	212	2021.16		6.58		1.97	27.09	1.88	11.97	−1.01	−13.27	6.703	6.879	6.294	6.344		$13/2^+$	0^+
308	213	2021.13		6.56		1.85	27.13	−0.03	12.00	−1.03	−13.33	6.717	6.897	6.296	6.346		$13/2^+$	$7/2^-$
309	214	2023.04		6.55		1.88	27.48	1.91	12.17	−0.97	−13.48	6.726	6.905	6.306	6.357		$13/2^+$	0^+
310	215	2023.09		6.53		1.96	27.57	0.05	12.21	−0.99	−13.54	6.740	6.922	6.308	6.359		$13/2^+$	$7/2^-$
311	216	2024.86		6.51		1.82	27.87	1.77	12.38	−0.95	−13.67	6.749	6.930	6.318	6.369		$13/2^+$	0^+
312	217	2024.94		6.49		1.85	28.00	0.08	12.44	−0.96	−13.74	6.762	6.947	6.321	6.371		$13/2^+$	$7/2^-$
313	218	2026.64		6.47		1.78	28.24	1.70	12.58	−0.94	−13.87	6.772	6.955	6.330	6.381		$13/2^+$	0^+
314	219	2026.72		6.45		1.78	28.37	0.08	12.64	−0.95	−13.94	6.785	6.972	6.334	6.384		$13/2^+$	$7/2^-$
315	220	2028.40		6.44		1.76	28.61	1.68	12.77	−0.93	−14.06	6.794	6.980	6.342	6.393		$13/2^+$	0^+
316	221	2028.50		6.42		1.78	28.74	0.10	12.84	−0.94	−14.13	6.807	6.996	6.346	6.396		$13/2^+$	$7/2^-$
317	222	2030.16		6.40		1.76	28.98	1.66	12.97	−0.93	−14.25	6.817	7.006	6.354	6.404		$13/2^+$	0^+
318	223	2030.27		6.38		1.77	29.08	0.11	13.03	−0.94	−14.32	6.830	7.021	6.358	6.408		$13/2^+$	$7/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
319	224	2031.92		6.37		1.76	29.34	1.65	13.16	−0.93	−14.44	6.839	7.031	6.366	6.416		$13/2^+$	0^+
320	225	2032.05		6.35		1.78	29.42	0.13	13.20	−0.94	−14.51	6.852	7.045	6.370	6.420		$13/2^+$	$7/2^-$
321	226	2033.69		6.34		1.77	29.69	1.64	13.34	−0.94	−14.62	6.862	7.055	6.377	6.427		$13/2^+$	0^+
322	227	2033.84		6.32		1.79	29.75	0.15	13.36	−0.94	−14.70	6.874	7.070	6.382	6.432		$13/2^+$	$7/2^-$
323	228	2035.47		6.30		1.78	30.04	1.63	13.52	−0.94	−14.80	6.884	7.080	6.389	6.439		$13/2^+$	0^+
324	229	2035.67		6.28		1.83	30.09	0.20	13.54	−0.96	−14.84	6.899	7.100	6.391	6.441		$13/2^+$	$3/2^-$
325	230	2037.28		6.27		1.81	30.39	1.61	13.71	−0.95	−14.98	6.906	7.104	6.400	6.450		$13/2^+$	0^+
326	231	2037.53		6.25		1.86	30.46	0.25	13.72	−0.97	−15.03	6.921	7.123	6.402	6.452		$13/2^+$	$3/2^-$
327	232	2039.11		6.24		1.83	30.73	1.58	13.89	−0.96	−15.16	6.928	7.129	6.411	6.461		$13/2^+$	0^+
328	233	2039.42		6.22		1.89	30.85	0.31	13.93	−0.98	−15.21	6.943	7.147	6.413	6.463		$13/2^+$	$3/2^-$
329	234	2040.97		6.20		1.86	31.08	1.55	14.07	−0.97	−15.33	6.950	7.153	6.422	6.471		$13/2^+$	0^+
330	235	2041.33		6.19		1.91	31.23	0.36	14.15	−0.99	−15.39	6.964	7.170	6.425	6.474		$13/2^+$	$3/2^-$
331	236	2042.85		6.17		1.88	31.41	1.52	14.25	−0.98	−15.50	6.971	7.177	6.432	6.482		$13/2^+$	0^+
332	237	2043.24		6.15		1.91	31.57	0.39	14.33	−1.00	−15.56	6.985	7.194	6.436	6.485		$13/2^+$	$3/2^-$
333	238	2044.76		6.14		1.91	31.75	1.52	14.43	−0.99	−15.67	6.993	7.201	6.443	6.492		$13/2^+$	0^+
334	239	2045.17		6.12		1.93	31.91	0.41	14.50	−1.01	−15.74	7.006	7.217	6.446	6.496		$13/2^+$	$3/2^-$
335	240	2046.69		6.11		1.93	32.08	1.52	14.59	−1.00	−15.84	7.015	7.225	6.453	6.502		$13/2^+$	0^+
336	241	2047.13		6.09		1.96	32.24	0.44	14.67	−1.02	−15.91	7.027	7.240	6.457	6.506		$13/2^+$	$3/2^-$
337	242	2048.65		6.08		1.96	32.41	1.52	14.77	−1.01	−16.00	7.036	7.249	6.462	6.512		$13/2^+$	0^+
338	243	2049.12		6.06		1.99	32.57	0.47	14.85	−1.02	−16.07	7.048	7.263	6.467	6.516		$13/2^+$	$3/2^-$
339	244	2050.63		6.05		1.98	32.73	1.51	14.93	−1.02	−16.15	7.058	7.273	6.472	6.521		$13/2^+$	0^+
340	245	2051.14		6.03		2.02	32.89	0.51	15.02	−1.03	−16.24	7.069	7.286	6.477	6.526		$13/2^+$	$3/2^-$
341	246	2052.63		6.02		2.00	33.05	1.49	15.09	−1.03	−16.31	7.079	7.297	6.481	6.530		$13/2^+$	0^+
342	247	2053.17		6.00		2.03	33.18	0.54	15.16	−1.04	−16.40	7.091	7.310	6.486	6.536		$13/2^+$	$3/2^-$
343	248	2054.65		5.99		2.02	33.35	1.48	15.24	−1.03	−16.45	7.101	7.321	6.489	6.538		$13/2^+$	0^+
344	249	2055.24		5.97		2.07	33.49	0.59	15.31	−1.06	−16.52	7.113	7.336	6.493	6.542		$13/2^+$	$1/2^-$
345	250	2056.70		5.96		2.05	33.65	1.46	15.39	−1.04	−16.60	7.122	7.346	6.497	6.546		$13/2^+$	0^+
346	251	2057.34		5.95		2.10	33.80	0.64	15.46	−1.06	−16.66	7.134	7.360	6.501	6.550		$13/2^+$	$1/2^-$
347	252	2058.75		5.93		2.05	33.93	1.41	15.52	−1.04	−16.73	7.144	7.371	6.504	6.553		$13/2^+$	0^+
348	253	2059.46		5.92		2.12	34.10	0.71	15.61	−1.07	−16.80	7.155	7.383	6.509	6.558		$13/2^+$	$1/2^-$
349	254	2060.82		5.90		2.07	34.21	1.36	15.65	−1.04	−16.86	7.166	7.396	6.511	6.560		$13/2^+$	0^+
350	255	2061.59		5.89		2.13	34.39	0.77	15.74	−1.07	−16.94	7.176	7.407	6.516	6.565		$13/2^+$	$1/2^-$
351	256	2062.90		5.88		2.08	34.47	1.31	15.77	−1.04	−16.98	7.188	7.421	6.517	6.566		$13/2^+$	0^+
352	257	2063.74		5.86		2.15	34.67	0.84	15.87	−0.18	−17.07	7.198	7.432	6.522	6.571		$13/2^+$	$1/2^-$
353	258	2064.99		5.85		2.09	34.72	1.25	15.88	−2.02	−17.09	7.210	7.448	6.522	6.571		$13/2^+$	0^+
σ		15.20													0.003			
$Z = 96$ (Cm)																		
224	128	1685.15		7.52			0.09		1.16	−7.55	0.23	5.758	5.805	5.695	5.751		0^+	0^+
225	129	1691.89		7.52			0.56	6.74	1.42	−7.51	−0.01	5.772	5.821	5.706	5.762		0^+	$11/2^+$
226	130	1700.10		7.52		14.95	1.03	8.21	1.68	−7.47	−0.24	5.786	5.836	5.717	5.772		0^+	0^+
227	131	1706.77		7.52		14.88	1.50	6.67	1.96	−7.42	−0.47	5.800	5.851	5.728	5.784		0^+	$11/2^+$
228	132	1714.89		7.52		14.79	1.95	8.12	2.21	−7.39	−0.70	5.813	5.866	5.738	5.794		0^+	0^+
229	133	1721.48		7.52		14.71	2.43	6.59	2.42	−7.34	−0.93	5.826	5.881	5.750	5.805		0^+	$11/2^+$
230	134	1729.53		7.52		14.64	2.89	8.05	2.63	−7.31	−1.16	5.840	5.896	5.760	5.815		0^+	0^+
231	135	1736.02		7.52		14.54	3.36	6.49	2.83	−7.22	−1.40	5.853	5.911	5.772	5.827		0^+	$11/2^+$
232	136	1744.00		7.52		14.47	3.83	7.98	3.05	−7.19	−1.63	5.866	5.925	5.782	5.837		0^+	0^+
233	137	1750.30	1758.22	7.51	7.55	14.28	4.36	6.30	3.27	−6.79	−1.89	5.881	5.940	5.795	5.850		0^+	$11/2^+$
234	138	1758.14	1766.86	7.51	7.55	14.14	4.80	7.84	3.48	−6.81	−2.11	5.893	5.954	5.804	5.859		0^+	0^+
235	139	1763.57		7.50		13.27	5.16	5.43	3.67	−6.80	−2.29	5.904	5.967	5.811	5.866	5.829	0^+	$9/2^+$
236	140	1771.05	1781.87	7.50	7.55	12.91	5.55	7.48	3.87	−6.37	−2.49	5.914	5.979	5.817	5.871		0^+	0^+
237	141	1776.31	1788.55	7.49	7.55	12.74	5.90	5.26	4.07	−6.30	−2.67	5.924	5.992	5.822	5.877	5.843	0^+	$9/2^+$
238	142	1783.46	1796.42	7.49	7.55	12.41	6.30	7.15	4.25	−6.20	−2.87	5.934	6.005	5.829	5.883	5.848	0^+	0^+
239	143	1788.59	1802.79	7.48	7.54	12.28	6.65	5.13	4.45	−6.13	−3.05	5.945	6.017	5.835	5.889	5.856	0^+	$9/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
240	144	1795.58	1810.29	7.48	7.54	12.12	7.05	6.99	4.65	−6.07	−3.25	5.955	6.030	5.841	5.896		0^+	0^+
241	145	1800.60	1816.38	7.47	7.54	12.01	7.41	5.02	4.83	−6.00	−3.43	5.965	6.042	5.847	5.901	5.869	0^+	$9/2^+$
242	146	1807.46	1823.35	7.47	7.53	11.88	7.80	6.86	5.03	−5.96	−3.62	5.975	6.054	5.853	5.908		0^+	0^+
243	147	1812.36	1829.04	7.46	7.53	11.76	8.16	4.90	5.22	−5.89	−3.80	5.986	6.067	5.859	5.914		0^+	$9/2^+$
244	148	1819.13	1835.84	7.46	7.52	11.67	8.54	6.77	5.41	−5.86	−3.99	5.996	6.079	5.866	5.920		0^+	0^+
245	149	1823.91	1841.36	7.44	7.52	11.55	8.92	4.78	5.60	−5.79	−4.18	6.006	6.091	5.872	5.926		0^+	$9/2^+$
246	150	1830.61	1847.82	7.44	7.51	11.48	9.28	6.70	5.78	−5.77	−4.36	6.016	6.103	5.878	5.932		0^+	0^+
247	151	1835.26	1852.97	7.43	7.50	11.35	9.67	4.65	5.97	−5.69	−4.56	6.027	6.115	5.885	5.939		0^+	$9/2^+$
248	152	1841.91	1859.19	7.43	7.50	11.30	10.02	6.65	6.15	−5.68	−4.73	6.037	6.127	5.891	5.945		0^+	0^+
249	153	1846.42	1863.90	7.42	7.49	11.16	10.43	4.51	6.34	−5.60	−4.94	6.047	6.139	5.898	5.952		0^+	$9/2^+$
250	154	1853.04	1869.73	7.41	7.48	11.13	10.76	6.62	6.51	−5.59	−5.11	6.057	6.151	5.904	5.958		0^+	0^+
251	155	1857.45	1874.15	7.40	7.47	11.03	11.14	4.41	6.69	−5.55	−5.29	6.067	6.163	5.910	5.964		0^+	$15/2^-$
252	156	1864.00		7.40		10.96	11.50	6.55	6.87	−5.50	−5.47	6.078	6.175	5.917	5.970		0^+	0^+
253	157	1868.35		7.38		10.90	11.88	4.35	7.06	−5.45	−5.66	6.088	6.186	5.923	5.977		0^+	$15/2^-$
254	158	1874.80		7.38		10.80	12.23	6.45	7.23	−5.41	−5.84	6.098	6.198	5.930	5.983		0^+	0^+
255	159	1879.07		7.37		10.72	12.61	4.27	7.41	−5.36	−6.02	6.108	6.210	5.936	5.990		0^+	$15/2^-$
256	160	1885.44		7.36		10.64	12.96	6.37	7.58	−5.33	−6.20	6.119	6.222	5.943	5.996		0^+	0^+
257	161	1889.61		7.35		10.54	13.29	4.17	7.74	−5.34	−6.37	6.130	6.235	5.950	6.003		0^+	$7/2^+$
258	162	1895.91		7.35		10.47	13.66	6.30	7.92	−5.24	−6.55	6.139	6.245	5.956	6.009		0^+	0^+
259	163	1900.13		7.34		10.52	14.01	4.22	8.09	−5.25	−6.73	6.150	6.258	5.963	6.016		0^+	$7/2^+$
260	164	1906.21		7.33		10.30	14.34	6.08	8.25	−5.15	−6.89	6.160	6.269	5.969	6.022		0^+	0^+
261	165	1910.46		7.32		10.33	14.70	4.25	8.42	−5.14	−7.07	6.170	6.281	5.976	6.029		0^+	$7/2^+$
262	166	1916.34		7.31		10.13	14.99	5.88	8.57	−5.05	−7.22	6.181	6.293	5.981	6.035		0^+	0^+
263	167	1920.58		7.30		10.12	15.34	4.24	8.74	−5.03	−7.39	6.191	6.305	5.988	6.042		0^+	$7/2^+$
264	168	1926.28		7.30		9.94	15.59	5.70	8.87	−4.96	−7.52	6.201	6.317	5.994	6.047		0^+	0^+
265	169	1930.47		7.28		9.89	15.94	4.19	9.04	−4.91	−7.69	6.212	6.329	6.000	6.053		0^+	$7/2^+$
266	170	1936.04		7.28		9.76	16.17	5.57	9.16	−4.86	−7.81	6.222	6.341	6.005	6.058		0^+	0^+
267	171	1940.13		7.27		9.66	16.46	4.09	9.31	−4.87	−7.94	6.232	6.354	6.010	6.063		0^+	$5/2^+$
268	172	1945.60		7.26		9.56	16.70	5.47	9.44	−4.75	−8.07	6.242	6.365	6.016	6.068		0^+	0^+
269	173	1949.68		7.25		9.55	16.97	4.08	9.57	−4.74	−8.21	6.253	6.378	6.021	6.073		0^+	$5/2^+$
270	174	1954.92		7.24		9.32	17.18	5.24	9.70	−4.63	−8.31	6.262	6.389	6.024	6.077		0^+	0^+
271	175	1958.95		7.23		9.27	17.43	4.03	9.82	−4.58	−8.44	6.272	6.401	6.028	6.081		0^+	$5/2^+$
272	176	1963.98		7.22		9.06	17.61	5.03	9.92	−4.50	−8.53	6.281	6.413	6.031	6.084		0^+	0^+
273	177	1967.89		7.21		8.94	17.84	3.91	10.04	−4.41	−8.64	6.291	6.425	6.034	6.087		0^+	$5/2^+$
274	178	1972.81		7.20		8.83	18.02	4.92	10.15	−4.38	−8.73	6.300	6.437	6.036	6.089		0^+	0^+
275	179	1976.71		7.19		8.82	18.20	3.90	10.25	−4.39	−8.83	6.309	6.449	6.039	6.092		0^+	$1/2^+$
276	180	1981.39		7.18		8.58	18.41	4.68	10.38	−4.24	−8.93	6.319	6.462	6.042	6.095		0^+	0^+
277	181	1985.26		7.17		8.55	18.61	3.87	10.49	−4.20	−9.03	6.329	6.474	6.044	6.097		0^+	$1/2^+$
278	182	1989.70		7.16		8.31	18.79	4.44	10.60	−4.12	−9.12	6.338	6.487	6.047	6.100		0^+	0^+
279	183	1993.52		7.15		8.26	19.00	3.82	10.72	−3.42	−9.23	6.349	6.500	6.050	6.102		0^+	$1/2^+$
280	184	1997.80		7.14		8.10	19.16	4.28	10.77	−3.08	−9.31	6.358	6.513	6.051	6.104		0^+	0^+
281	185	1998.52		7.11		5.00	19.50	0.72	10.96	−3.41	−9.47	6.372	6.527	6.064	6.117		0^+	$13/2^-$
282	186	2000.60		7.09		2.80	19.77	2.08	11.10	−1.44	−9.62	6.385	6.540	6.074	6.127		0^+	0^+
283	187	2001.32		7.07		2.80	20.10	0.72	11.27	−1.44	−9.78	6.399	6.554	6.087	6.139		0^+	$13/2^-$
284	188	2003.43		7.05		2.83	20.38	2.11	11.41	−1.46	−9.92	6.412	6.567	6.097	6.149		0^+	0^+
285	189	2004.17		7.03		2.85	20.71	0.74	11.56	−1.46	−10.09	6.426	6.581	6.110	6.162		0^+	$13/2^-$
286	190	2006.30		7.02		2.87	20.98	2.13	11.70	−1.48	−10.23	6.439	6.594	6.119	6.171		0^+	0^+
287	191	2007.04		6.99		2.87	21.30	0.74	11.85	−1.47	−10.39	6.452	6.607	6.132	6.184		0^+	$13/2^-$
288	192	2009.20		6.98		2.90	21.58	2.16	11.99	−1.49	−10.53	6.465	6.621	6.142	6.194		0^+	0^+
289	193	2009.94		6.95		2.90	21.90	0.74	12.14	−1.48	−10.69	6.479	6.634	6.155	6.207		0^+	$13/2^-$
290	194	2012.12		6.94		2.92	22.16	2.18	12.26	−1.50	−10.82	6.491	6.647	6.164	6.216		0^+	0^+
291	195	2012.83		6.92		2.89	22.48	0.71	12.41	−1.47	−10.98	6.505	6.660	6.177	6.228		0^+	$13/2^-$
292	196	2015.05		6.90		2.93	22.74	2.22	12.54	−1.49	−11.11	6.517	6.673	6.186	6.238		0^+	0^+
293	197	2015.68		6.88		2.85	23.03	0.63	12.68	−1.44	−11.26	6.530	6.686	6.197	6.248		0^+	$13/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
294	198	2017.95		6.86		2.90	23.29	2.27	12.81	−1.47	−11.39	6.542	6.699	6.206	6.258		0^+	0^+
295	199	2018.59		6.84		2.91	23.55	0.64	12.94	−1.48	−11.52	6.555	6.712	6.215	6.267		0^+	$11/2^-$
296	200	2020.77		6.83		2.82	23.80	2.18	13.06	−1.43	−11.65	6.566	6.724	6.224	6.275		0^+	0^+
297	201	2021.43		6.81		2.84	24.05	0.66	13.19	−1.42	−11.77	6.579	6.738	6.232	6.284		0^+	$11/2^-$
298	202	2023.50		6.79		2.73	24.27	2.07	13.31	−1.38	−11.88	6.589	6.750	6.239	6.290		0^+	0^+
299	203	2024.14		6.77		2.71	24.52	0.64	13.43	−1.36	−12.00	6.601	6.763	6.247	6.298		0^+	$11/2^-$
300	204	2026.13		6.75		2.63	24.72	1.99	13.54	−1.33	−12.11	6.612	6.775	6.252	6.303		0^+	0^+
301	205	2026.72		6.73		2.58	24.95	0.59	13.66	−1.30	−12.22	6.624	6.788	6.259	6.310		0^+	$11/2^-$
302	206	2028.66		6.72		2.53	25.15	1.94	13.77	−1.28	−12.32	6.634	6.800	6.264	6.315		0^+	0^+
303	207	2029.17		6.70		2.45	25.38	0.51	13.89	−1.23	−12.44	6.646	6.813	6.271	6.322		0^+	$11/2^-$
304	208	2031.09		6.68		2.43	25.57	1.92	13.99	−1.23	−12.54	6.656	6.824	6.276	6.327		0^+	0^+
305	209	2031.47		6.66		2.30	25.80	0.38	14.11	−1.15	−12.65	6.668	6.837	6.283	6.334		0^+	$11/2^-$
306	210	2033.40		6.65		2.31	25.99	1.93	14.21	−1.17	−12.75	6.678	6.849	6.289	6.339		0^+	0^+
307	211	2033.60		6.62		2.13	26.21	0.20	14.32	−1.08	−12.87	6.690	6.862	6.296	6.347		0^+	$11/2^-$
308	212	2035.59		6.61		2.19	26.40	1.99	14.43	−1.11	−12.96	6.701	6.874	6.301	6.352		0^+	0^+
309	213	2035.62		6.59		2.02	26.49	0.03	14.49	−1.13	−13.02	6.714	6.892	6.303	6.353		0^+	$7/2^-$
310	214	2037.67		6.57		2.08	26.80	2.05	14.63	−1.07	−13.17	6.723	6.899	6.314	6.364		0^+	0^+
311	215	2037.77		6.55		2.15	26.89	0.10	14.68	−1.08	−13.23	6.737	6.916	6.316	6.366		0^+	$7/2^-$
312	216	2039.68		6.54		2.01	27.20	1.91	14.82	−1.04	−13.38	6.746	6.924	6.326	6.377		0^+	0^+
313	217	2039.84		6.52		2.07	27.34	0.16	14.90	−1.05	−13.44	6.759	6.941	6.329	6.379		0^+	$7/2^-$
314	218	2041.65		6.50		1.97	27.59	1.81	15.01	−1.03	−13.58	6.768	6.949	6.339	6.389		0^+	0^+
315	219	2041.81		6.48		1.97	27.73	0.16	15.09	−1.04	−13.65	6.781	6.965	6.342	6.392		0^+	$7/2^-$
316	220	2043.60		6.47		1.95	27.97	1.79	15.20	−1.02	−13.78	6.791	6.974	6.351	6.401		0^+	0^+
317	221	2043.77		6.45		1.96	28.11	0.17	15.27	−1.03	−13.85	6.804	6.990	6.355	6.405		0^+	$7/2^-$
318	222	2045.54		6.43		1.94	28.35	1.77	15.38	−1.02	−13.97	6.813	6.999	6.364	6.414		0^+	0^+
319	223	2045.73		6.41		1.96	28.49	0.19	15.46	−1.03	−14.05	6.826	7.014	6.367	6.417		0^+	$7/2^-$
320	224	2047.48		6.40		1.94	28.72	1.75	15.56	−1.02	−14.17	6.835	7.023	6.376	6.426		0^+	0^+
321	225	2047.69		6.38		1.96	28.84	0.21	15.64	−1.03	−14.24	6.848	7.038	6.380	6.430		0^+	$7/2^-$
322	226	2049.43		6.36		1.95	29.08	1.74	15.74	−1.02	−14.36	6.858	7.048	6.387	6.437		0^+	0^+
323	227	2049.67		6.35		1.98	29.19	0.24	15.83	−1.03	−14.44	6.870	7.062	6.392	6.442		0^+	$7/2^-$
324	228	2051.40		6.33		1.97	29.45	1.73	15.93	−1.03	−14.54	6.880	7.072	6.399	6.449		0^+	0^+
325	229	2051.66		6.31		1.99	29.53	0.26	15.99	−1.04	−14.63	6.892	7.086	6.404	6.454		0^+	$7/2^-$
326	230	2053.38		6.30		1.98	29.81	1.72	16.10	−1.04	−14.73	6.901	7.096	6.411	6.460		0^+	0^+
327	231	2053.66		6.28		2.00	29.85	0.28	16.13	−1.05	−14.82	6.913	7.110	6.416	6.466		0^+	$7/2^-$
328	232	2055.38		6.27		2.00	30.16	1.72	16.27	−1.05	−14.91	6.923	7.120	6.422	6.472		0^+	0^+
329	233	2055.72		6.25		2.06	30.23	0.34	16.30	−1.07	−14.95	6.938	7.139	6.424	6.474		0^+	$3/2^-$
330	234	2057.41		6.23		2.03	30.51	1.69	16.44	−1.06	−15.09	6.945	7.144	6.433	6.482		0^+	0^+
331	235	2057.81		6.22		2.09	30.63	0.40	16.48	−1.07	−15.14	6.959	7.162	6.435	6.485		0^+	$3/2^-$
332	236	2059.46		6.20		2.05	30.86	1.65	16.61	−1.06	−15.26	6.966	7.168	6.444	6.493		0^+	0^+
333	237	2059.92		6.19		2.11	31.01	0.46	16.68	−1.08	−15.32	6.980	7.185	6.446	6.496		0^+	$3/2^-$
334	238	2061.54		6.17		2.08	31.21	1.62	16.78	−1.07	−15.43	6.988	7.192	6.454	6.503		0^+	0^+
335	239	2062.03		6.16		2.11	31.36	0.49	16.86	−1.09	−15.49	7.001	7.208	6.457	6.507		0^+	$3/2^-$
336	240	2063.63		6.14		2.09	31.53	1.60	16.94	−1.08	−15.60	7.009	7.216	6.464	6.513		0^+	0^+
337	241	2064.15		6.13		2.12	31.69	0.52	17.02	−1.10	−15.66	7.022	7.231	6.468	6.517		0^+	$3/2^-$
338	242	2065.75		6.11		2.12	31.87	1.60	17.10	−1.09	−15.76	7.030	7.239	6.474	6.523		0^+	0^+
339	243	2066.31		6.10		2.16	32.04	0.56	17.19	−1.10	−15.83	7.043	7.254	6.478	6.527		0^+	$3/2^-$
340	244	2067.89		6.08		2.14	32.19	1.58	17.26	−1.09	−15.92	7.052	7.263	6.483	6.532		0^+	0^+
341	245	2068.48		6.07		2.17	32.36	0.59	17.34	−1.11	−15.99	7.064	7.277	6.488	6.537		0^+	$3/2^-$
342	246	2070.05		6.05		2.16	32.51	1.57	17.42	−1.10	−16.07	7.073	7.287	6.491	6.541		0^+	0^+
343	247	2070.67		6.04		2.19	32.66	0.62	17.50	−1.11	−16.15	7.085	7.300	6.497	6.546		0^+	$3/2^-$
344	248	2072.22		6.02		2.17	32.81	1.55	17.57	−1.10	−16.21	7.094	7.312	6.499	6.548		0^+	0^+
345	249	2072.87		6.01		2.20	32.94	0.65	17.63	−1.11	−16.30	7.106	7.324	6.505	6.554		0^+	$3/2^-$
346	250	2074.40		6.00		2.18	33.09	1.53	17.70	−1.11	−16.34	7.116	7.336	6.507	6.556		0^+	0^+
347	251	2075.10		5.98		2.23	33.22	0.70	17.76	−1.13	−16.41	7.128	7.351	6.510	6.559		0^+	$1/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
348	252	2076.59		5.97		2.19	33.36	1.49	17.84	−1.11	−16.47	7.138	7.362	6.513	6.562		0^+	0^+
349	253	2077.36		5.95		2.26	33.51	0.77	17.90	−1.13	−16.54	7.149	7.375	6.517	6.566		0^+	$1/2^-$
350	254	2078.79		5.94		2.20	33.62	1.43	17.97	−1.11	−16.59	7.159	7.387	6.519	6.568		0^+	0^+
351	255	2079.63		5.92		2.27	33.78	0.84	18.04	−1.14	−16.66	7.170	7.399	6.523	6.572		0^+	$1/2^-$
352	256	2080.99		5.91		2.20	33.86	1.36	18.09	−1.10	−16.70	7.182	7.413	6.524	6.573		0^+	0^+
353	257	2081.91		5.90		2.28	34.04	0.92	18.17	−0.30	−16.78	7.192	7.424	6.529	6.577		0^+	$1/2^-$
354	258	2083.19		5.88		2.20	34.08	1.28	18.20	−2.14	−16.81	7.204	7.440	6.529	6.577		0^+	0^+
σ		15.14													0.034			
$Z = 97$ (Bk)																		
227	130	1698.80		7.48			0.38		−1.30	−7.68	0.09	5.792	5.839	5.729	5.784		$7/2^-$	0^+
228	131	1705.67		7.48			0.86	6.87	−1.10	−7.63	−0.15	5.806	5.854	5.740	5.795		$7/2^-$	$11/2^+$
229	132	1714.00		7.48		15.20	1.32	8.33	−0.89	−7.60	−0.38	5.819	5.869	5.750	5.805		$7/2^-$	0^+
230	133	1720.84		7.48		15.17	1.78	6.84	−0.64	−7.59	−0.61	5.833	5.884	5.763	5.818		$13/2^+$	$11/2^+$
231	134	1729.14		7.49		15.14	2.24	8.30	−0.39	−7.56	−0.84	5.846	5.898	5.773	5.828		$13/2^+$	0^+
232	135	1735.91		7.48		15.07	2.72	6.77	−0.11	−7.48	−1.08	5.860	5.913	5.785	5.840		$13/2^+$	$11/2^+$
233	136	1744.13		7.49		14.99	3.18	8.22	0.13	−7.45	−1.30	5.872	5.927	5.795	5.850		$13/2^+$	0^+
234	137	1750.73		7.48		14.82	3.70	6.60	0.43	−7.02	−1.56	5.887	5.942	5.808	5.863		$13/2^+$	$11/2^+$
235	138	1758.82		7.48		14.69	4.16	8.09	0.68	−7.04	−1.78	5.899	5.956	5.818	5.873		$13/2^+$	0^+
236	139	1764.41		7.48		13.68	4.51	5.59	0.84	−7.03	−1.96	5.910	5.969	5.825	5.879		$13/2^+$	$9/2^+$
237	140	1772.09		7.48		13.27	4.91	7.68	1.04	−6.55	−2.17	5.919	5.981	5.830	5.884		$13/2^+$	0^+
238	141	1777.50		7.47		13.09	5.26	5.41	1.19	−6.48	−2.34	5.930	5.994	5.835	5.890		$13/2^+$	$9/2^+$
239	142	1784.87		7.47		12.78	5.66	7.37	1.41	−6.38	−2.55	5.940	6.006	5.842	5.896		$13/2^+$	0^+
240	143	1790.17		7.46		12.67	6.03	5.30	1.58	−6.32	−2.73	5.950	6.019	5.848	5.902		$13/2^+$	$9/2^+$
241	144	1797.36		7.46		12.49	6.43	7.19	1.78	−6.26	−2.93	5.960	6.031	5.854	5.909		$13/2^+$	0^+
242	145	1802.55		7.45		12.38	6.78	5.19	1.95	−6.19	−3.11	5.971	6.043	5.860	5.915		$13/2^+$	$9/2^+$
243	146	1809.61	1826.75	7.45	7.52	12.25	7.18	7.06	2.15	−6.15	−3.31	5.981	6.055	5.867	5.921		$13/2^+$	0^+
244	147	1814.69	1832.80	7.44	7.51	12.14	7.55	5.08	2.33	−6.08	−3.49	5.991	6.068	5.873	5.927		$13/2^+$	$9/2^+$
245	148	1821.65	1839.77	7.44	7.51	12.04	7.93	6.96	2.52	−6.05	−3.68	6.001	6.080	5.879	5.933		$13/2^+$	0^+
246	149	1826.62	1845.69	7.43	7.50	11.93	8.31	4.97	2.71	−5.98	−3.87	6.011	6.092	5.885	5.939		$13/2^+$	$9/2^+$
247	150	1833.50	1852.24	7.42	7.50	11.85	8.67	6.88	2.89	−5.95	−4.06	6.021	6.104	5.891	5.946		$13/2^+$	0^+
248	151	1838.35		7.41		11.73	9.06	4.85	3.09	−5.88	−4.25	6.032	6.116	5.898	5.952		$13/2^+$	$9/2^+$
249	152	1845.17	1864.02	7.41	7.49	11.67	9.41	6.82	3.26	−5.86	−4.43	6.042	6.128	5.904	5.958		$13/2^+$	0^+
250	153	1849.90	1868.99	7.40	7.48	11.55	9.82	4.73	3.48	−5.79	−4.63	6.052	6.140	5.911	5.965		$13/2^+$	$9/2^+$
251	154	1856.68	1874.78	7.40	7.47	11.51	10.15	6.78	3.64	−5.78	−4.80	6.062	6.151	5.917	5.971		$13/2^+$	0^+
252	155	1861.29		7.39		11.39	10.53	4.61	3.84	−5.73	−4.99	6.072	6.163	5.923	5.977		$13/2^+$	$15/2^-$
253	156	1868.03		7.38		11.35	10.90	6.74	4.03	−5.69	−5.17	6.082	6.175	5.930	5.983		$13/2^+$	0^+
254	157	1872.57		7.37		11.28	11.28	4.54	4.22	−5.64	−5.36	6.092	6.186	5.936	5.989		$13/2^+$	$15/2^-$
255	158	1879.21		7.37		11.18	11.64	6.64	4.41	−5.60	−5.54	6.102	6.198	5.942	5.996		$13/2^+$	0^+
256	159	1883.67		7.36		11.10	12.01	4.46	4.60	−5.54	−5.72	6.112	6.210	5.949	6.002		$13/2^+$	$15/2^-$
257	160	1890.22		7.35		11.01	12.36	6.55	4.78	−5.51	−5.90	6.122	6.221	5.955	6.009		$13/2^+$	0^+
258	161	1894.58		7.34		10.91	12.71	4.36	4.97	−5.44	−6.08	6.132	6.233	5.962	6.015		$13/2^+$	$15/2^-$
259	162	1901.07		7.34		10.85	13.08	6.49	5.16	−5.42	−6.26	6.143	6.245	5.968	6.022		$13/2^+$	0^+
260	163	1905.47		7.33		10.89	13.43	4.40	5.34	−5.43	−6.43	6.153	6.257	5.975	6.029		$13/2^+$	$7/2^+$
261	164	1911.72		7.32		10.65	13.76	6.25	5.51	−5.31	−6.60	6.163	6.268	5.981	6.035		$13/2^+$	0^+
262	165	1916.16		7.31		10.69	14.12	4.44	5.70	−5.31	−6.78	6.174	6.280	5.988	6.042		$13/2^+$	$7/2^+$
263	166	1922.17		7.31		10.45	14.40	6.01	5.83	−5.21	−6.92	6.184	6.292	5.994	6.047		$13/2^+$	0^+
264	167	1926.60		7.30		10.44	14.76	4.43	6.02	−5.18	−7.10	6.194	6.304	6.001	6.054		$13/2^+$	$7/2^+$
265	168	1932.42		7.29		10.25	15.01	5.82	6.14	−5.10	−7.22	6.205	6.316	6.006	6.059		$13/2^+$	0^+
266	169	1936.79		7.28		10.19	15.36	4.37	6.32	−5.05	−7.39	6.215	6.328	6.013	6.066		$13/2^+$	$7/2^+$
267	170	1942.45		7.28		10.03	15.57	5.66	6.41	−4.99	−7.50	6.225	6.340	6.018	6.071		$13/2^+$	0^+
268	171	1946.69		7.26		9.90	15.87	4.24	6.56	−5.01	−7.63	6.235	6.353	6.022	6.075		$13/2^+$	$5/2^+$
269	172	1952.27		7.26		9.82	16.11	5.58	6.67	−4.87	−7.77	6.245	6.364	6.028	6.081		$13/2^+$	0^+
270	173	1956.48		7.25		9.79	16.37	4.21	6.80	−4.86	−7.90	6.255	6.377	6.033	6.086		$13/2^+$	$5/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
271	174	1961.80		7.24		9.53	16.58	5.32	6.88	−4.73	−8.01	6.264	6.388	6.036	6.089		$13/2^+$	0^+
272	175	1965.95		7.23		9.47	16.82	4.15	7.00	−4.67	−8.13	6.274	6.400	6.041	6.093		$13/2^+$	$5/2^+$
273	176	1971.06		7.22		9.26	17.00	5.11	7.08	−4.60	−8.22	6.283	6.412	6.043	6.095		$13/2^+$	0^+
274	177	1975.07		7.21		9.12	17.22	4.01	7.18	−4.50	−8.33	6.293	6.424	6.046	6.099		$13/2^+$	$5/2^+$
275	178	1980.07		7.20		9.01	17.41	5.00	7.26	−4.47	−8.43	6.302	6.435	6.048	6.101		$13/2^+$	0^+
276	179	1984.05		7.19		8.98	17.59	3.98	7.34	−4.48	−8.52	6.311	6.448	6.050	6.103		$13/2^+$	$1/2^+$
277	180	1988.81		7.18		8.74	17.80	4.76	7.42	−4.33	−8.63	6.320	6.460	6.053	6.106		$13/2^+$	0^+
278	181	1992.77		7.17		8.72	18.00	3.96	7.51	−4.29	−8.73	6.330	6.473	6.056	6.108		$13/2^+$	$1/2^+$
279	182	1997.29		7.16		8.48	18.19	4.52	7.59	−4.20	−8.82	6.340	6.485	6.058	6.111		$13/2^+$	0^+
280	183	2001.20		7.15		8.43	18.40	3.91	7.68	−3.74	−8.93	6.350	6.498	6.061	6.114		$13/2^+$	$1/2^+$
281	184	2005.58		7.14		8.29	18.55	4.38	7.78	−3.19	−9.00	6.358	6.510	6.060	6.113		$7/2^-$	0^+
282	185	2006.44		7.12		5.24	18.88	0.86	7.92	−3.59	−9.17	6.372	6.524	6.073	6.125		$7/2^-$	$13/2^-$
283	186	2008.67		7.10		3.09	19.17	2.23	8.07	−1.60	−9.33	6.386	6.538	6.086	6.138		$13/2^+$	0^+
284	187	2009.57		7.08		3.13	19.52	0.90	8.25	−1.60	−9.49	6.400	6.551	6.099	6.151		$13/2^+$	$13/2^-$
285	188	2011.83		7.06		3.16	19.81	2.26	8.40	−1.62	−9.63	6.413	6.565	6.109	6.161		$13/2^+$	0^+
286	189	2012.74		7.04		3.17	20.13	0.91	8.57	−1.62	−9.80	6.427	6.578	6.122	6.174		$13/2^+$	$13/2^-$
287	190	2015.01		7.02		3.18	20.41	2.27	8.71	−1.64	−9.94	6.440	6.592	6.132	6.184		$13/2^+$	0^+
288	191	2015.93		7.00		3.19	20.74	0.92	8.89	−1.63	−10.10	6.454	6.605	6.145	6.197		$13/2^+$	$13/2^-$
289	192	2018.23		6.98		3.22	21.02	2.30	9.03	−1.65	−10.24	6.466	6.618	6.155	6.207		$13/2^+$	0^+
290	193	2019.14		6.96		3.21	21.34	0.91	9.20	−1.63	−10.40	6.480	6.631	6.168	6.220		$13/2^+$	$13/2^-$
291	194	2021.47		6.95		3.24	21.61	2.33	9.35	−1.65	−10.54	6.493	6.644	6.178	6.230		$13/2^+$	0^+
292	195	2022.35		6.93		3.21	21.93	0.88	9.52	−1.62	−10.70	6.506	6.658	6.191	6.242		$13/2^+$	$13/2^-$
293	196	2024.71		6.91		3.24	22.20	2.36	9.66	−1.64	−10.84	6.518	6.670	6.200	6.252		$13/2^+$	0^+
294	197	2025.49		6.89		3.14	22.49	0.78	9.81	−1.57	−10.98	6.531	6.683	6.211	6.263		$13/2^+$	$13/2^-$
295	198	2027.90		6.87		3.19	22.76	2.41	9.95	−1.60	−11.12	6.544	6.696	6.221	6.272		$13/2^+$	0^+
296	199	2028.67		6.85		3.18	23.02	0.77	10.08	−1.62	−11.25	6.556	6.709	6.230	6.281		$13/2^+$	$11/2^-$
297	200	2030.98		6.84		3.08	23.27	2.31	10.21	−1.55	−11.38	6.568	6.722	6.238	6.289		$13/2^+$	0^+
298	201	2031.76		6.82		3.09	23.52	0.78	10.33	−1.54	−11.50	6.580	6.735	6.246	6.297		$13/2^+$	$11/2^-$
299	202	2033.93		6.80		2.95	23.74	2.17	10.43	−1.49	−11.61	6.590	6.747	6.252	6.303		$13/2^+$	0^+
300	203	2034.68		6.78		2.92	23.97	0.75	10.54	−1.46	−11.73	6.602	6.760	6.260	6.311		$13/2^+$	$11/2^-$
301	204	2036.77		6.77		2.84	24.18	2.09	10.64	−1.44	−11.83	6.613	6.772	6.265	6.316		$13/2^+$	0^+
302	205	2037.46		6.75		2.78	24.40	0.69	10.74	−1.40	−11.95	6.624	6.784	6.272	6.323		$13/2^+$	$11/2^-$
303	206	2039.50		6.73		2.73	24.61	2.04	10.84	−1.39	−12.05	6.635	6.796	6.277	6.328		$13/2^+$	0^+
304	207	2040.12		6.71		2.66	24.84	0.62	10.95	−1.33	−12.17	6.646	6.809	6.284	6.335		$13/2^+$	$11/2^-$
305	208	2042.14		6.70		2.64	25.04	2.02	11.05	−1.33	−12.27	6.656	6.821	6.289	6.340		$13/2^+$	0^+
306	209	2042.62		6.68		2.50	25.26	0.48	11.15	−1.26	−12.39	6.668	6.833	6.296	6.347		$13/2^+$	$11/2^-$
307	210	2044.66		6.66		2.52	25.47	2.04	11.26	−1.27	−12.49	6.678	6.845	6.302	6.352		$13/2^+$	0^+
308	211	2044.98		6.64		2.36	25.70	0.32	11.38	−1.19	−12.61	6.690	6.858	6.309	6.360		$13/2^+$	$11/2^-$
309	212	2047.06		6.62		2.40	25.90	2.08	11.47	−1.22	−12.71	6.700	6.870	6.314	6.365		$13/2^+$	0^+
310	213	2047.21		6.60		2.23	26.08	0.15	11.59	−1.14	−12.83	6.712	6.883	6.323	6.373		$13/2^+$	$11/2^-$
311	214	2049.36		6.59		2.30	26.32	2.15	11.69	−1.18	−12.92	6.723	6.894	6.327	6.378		$13/2^+$	0^+
312	215	2049.48		6.57		2.27	26.39	0.12	11.71	−1.19	−12.98	6.736	6.911	6.329	6.380		$13/2^+$	$7/2^-$
313	216	2051.59		6.55		2.23	26.73	2.11	11.91	−1.15	−13.14	6.745	6.919	6.341	6.391		$13/2^+$	0^+
314	217	2051.79		6.53		2.31	26.85	0.20	11.95	−1.16	−13.20	6.758	6.935	6.343	6.393		$13/2^+$	$7/2^-$
315	218	2053.77		6.52		2.18	27.13	1.98	12.12	−1.13	−13.35	6.767	6.943	6.354	6.404		$13/2^+$	0^+
316	219	2054.01		6.50		2.22	27.29	0.24	12.20	−1.15	−13.41	6.780	6.959	6.357	6.407		$13/2^+$	$7/2^-$
317	220	2055.93		6.49		2.16	27.53	1.92	12.33	−1.12	−13.55	6.789	6.967	6.367	6.417		$13/2^+$	0^+
318	221	2056.18		6.47		2.17	27.68	0.25	12.41	−1.14	−13.62	6.802	6.983	6.370	6.420		$13/2^+$	$7/2^-$
319	222	2058.08		6.45		2.15	27.92	1.90	12.54	−1.12	−13.76	6.811	6.992	6.380	6.430		$13/2^+$	0^+
320	223	2058.35		6.43		2.17	28.08	0.27	12.62	−1.13	−13.83	6.824	7.007	6.383	6.433		$13/2^+$	$7/2^-$
321	224	2060.23		6.42		2.15	28.31	1.88	12.75	−1.12	−13.96	6.833	7.016	6.392	6.442		$13/2^+$	0^+
322	225	2060.52		6.40		2.17	28.47	0.29	12.83	−1.13	−14.03	6.846	7.030	6.396	6.446		$13/2^+$	$7/2^-$
323	226	2062.38		6.39		2.15	28.69	1.86	12.95	−1.12	−14.15	6.855	7.040	6.405	6.454		$13/2^+$	0^+
324	227	2062.70		6.37		2.18	28.86	0.32	13.03	−1.14	−14.23	6.867	7.054	6.409	6.459		$13/2^+$	$7/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
325	228	2064.55		6.35		2.17	29.08	1.85	13.15	−1.13	−14.35	6.877	7.064	6.417	6.467		$13/2^+$	0^+
326	229	2064.90		6.33		2.20	29.23	0.35	13.24	−1.14	−14.43	6.889	7.077	6.422	6.472		$13/2^+$	$7/2^-$
327	230	2066.73		6.32		2.18	29.45	1.83	13.35	−1.13	−14.54	6.899	7.087	6.429	6.478		$13/2^+$	0^+
328	231	2067.10		6.30		2.20	29.57	0.37	13.44	−1.14	−14.62	6.910	7.101	6.434	6.484		$13/2^+$	$7/2^-$
329	232	2068.93		6.29		2.20	29.82	1.83	13.55	−1.14	−14.72	6.920	7.111	6.441	6.490		$13/2^+$	0^+
330	233	2069.33		6.27		2.23	29.91	0.40	13.61	−1.15	−14.82	6.932	7.124	6.447	6.496		$13/2^+$	$7/2^-$
331	234	2071.14		6.26		2.21	30.17	1.81	13.73	−1.15	−14.90	6.942	7.135	6.452	6.501		$13/2^+$	0^+
332	235	2071.57		6.24		2.24	30.24	0.43	13.76	−1.16	−15.00	6.953	7.147	6.458	6.508		$13/2^+$	$7/2^-$
333	236	2073.38		6.23		2.24	30.53	1.81	13.92	−1.15	−15.08	6.963	7.158	6.463	6.512		$13/2^+$	0^+
334	237	2073.85		6.21		2.28	30.61	0.47	13.93	−1.18	−15.13	6.977	7.175	6.465	6.514		$13/2^+$	$3/2^-$
335	238	2075.63		6.20		2.25	30.87	1.78	14.09	−1.16	−15.26	6.984	7.182	6.473	6.523		$13/2^+$	0^+
336	239	2076.18		6.18		2.33	31.01	0.55	14.15	−1.18	−15.31	6.997	7.198	6.476	6.525		$13/2^+$	$3/2^-$
337	240	2077.90		6.17		2.27	31.21	1.72	14.27	−1.16	−15.42	7.005	7.205	6.483	6.533		$13/2^+$	0^+
338	241	2078.51		6.15		2.33	31.38	0.61	14.36	−1.19	−15.48	7.018	7.221	6.486	6.536		$13/2^+$	$3/2^-$
339	242	2080.19		6.14		2.29	31.54	1.68	14.44	−1.17	−15.58	7.026	7.229	6.493	6.542		$13/2^+$	0^+
340	243	2080.82		6.12		2.31	31.70	0.63	14.51	−1.19	−15.65	7.039	7.244	6.496	6.545		$13/2^+$	$3/2^-$
341	244	2082.48		6.11		2.29	31.85	1.66	14.59	−1.17	−15.73	7.048	7.253	6.501	6.550		$13/2^+$	0^+
342	245	2083.15		6.09		2.33	32.01	0.67	14.67	−1.19	−15.80	7.060	7.267	6.505	6.554		$13/2^+$	$3/2^-$
343	246	2084.78		6.08		2.30	32.15	1.63	14.73	−1.17	−15.88	7.069	7.278	6.509	6.558		$13/2^+$	0^+
344	247	2085.49		6.06		2.34	32.32	0.71	14.82	−1.18	−15.95	7.080	7.291	6.513	6.562		$13/2^+$	$3/2^-$
345	248	2087.09		6.05		2.31	32.44	1.60	14.87	−1.17	−16.01	7.090	7.302	6.516	6.565		$13/2^+$	0^+
346	249	2087.82		6.03		2.33	32.58	0.73	14.95	−1.18	−16.09	7.101	7.315	6.521	6.570		$13/2^+$	$3/2^-$
347	250	2089.39		6.02		2.30	32.69	1.57	14.99	−1.17	−16.14	7.112	7.327	6.522	6.571		$13/2^+$	0^+
348	251	2090.16		6.01		2.34	32.82	0.77	15.06	−1.19	−16.19	7.124	7.342	6.525	6.574		$13/2^+$	$1/2^-$
349	252	2091.70		5.99		2.31	32.95	1.54	15.11	−1.16	−16.25	7.133	7.353	6.528	6.577		$13/2^+$	0^+
350	253	2092.52		5.98		2.36	33.06	0.82	15.16	−1.19	−16.31	7.145	7.367	6.530	6.579		$13/2^+$	$1/2^-$
351	254	2094.00		5.97		2.30	33.18	1.48	15.21	−1.16	−16.36	7.155	7.379	6.532	6.581		$13/2^+$	0^+
352	255	2094.90		5.95		2.38	33.31	0.90	15.27	−1.19	−16.42	7.166	7.392	6.535	6.584		$13/2^+$	$1/2^-$
353	256	2096.29		5.94		2.29	33.39	1.39	15.30	−1.15	−16.46	7.178	7.406	6.536	6.585		$13/2^+$	0^+
354	257	2097.28		5.92		2.38	33.54	0.99	15.37	−0.43	−16.53	7.188	7.418	6.540	6.588		$13/2^+$	$1/2^-$
355	258	2098.57		5.91		2.28	33.58	1.29	15.38	−2.29	−16.56	7.200	7.434	6.540	6.588		$13/2^+$	0^+
σ		18.41																
$Z = 98$ (Cf)																		
229	131	1706.90		7.45			0.13	7.15	1.23	−7.89	0.18	5.812	5.857	5.753	5.808		0^+	$11/2^+$
230	132	1715.48		7.46		15.73	0.59	8.58	1.48	−7.86	−0.05	5.825	5.871	5.763	5.818		0^+	0^+
231	133	1722.55		7.46		15.65	1.07	7.07	1.71	−7.80	−0.28	5.839	5.886	5.774	5.829		0^+	$11/2^+$
232	134	1731.06		7.46		15.58	1.53	8.51	1.92	−7.77	−0.51	5.852	5.900	5.785	5.840		0^+	0^+
233	135	1738.03		7.46		15.48	2.01	6.97	2.12	−7.69	−0.75	5.865	5.915	5.796	5.851		0^+	$11/2^+$
234	136	1746.47		7.46		15.41	2.47	8.44	2.34	−7.66	−0.98	5.878	5.929	5.806	5.861		0^+	0^+
235	137	1753.29		7.46		15.26	2.99	6.82	2.56	−7.23	−1.23	5.893	5.944	5.820	5.874		0^+	$11/2^+$
236	138	1761.59		7.46		15.12	3.45	8.30	2.77	−7.25	−1.46	5.905	5.958	5.829	5.884		0^+	0^+
237	139	1767.38	1778.30	7.46	7.50	14.09	3.81	5.79	2.97	−7.23	−1.64	5.915	5.971	5.836	5.890		0^+	$9/2^+$
238	140	1775.26		7.46		13.67	4.21	7.88	3.17	−6.75	−1.85	5.925	5.983	5.841	5.895		0^+	0^+
239	141	1780.86		7.45		13.48	4.55	5.60	3.36	−6.68	−2.02	5.935	5.996	5.846	5.901		0^+	$9/2^+$
240	142	1788.43	1802.46	7.45	7.51	13.17	4.97	7.57	3.56	−6.58	−2.23	5.945	6.008	5.853	5.907		0^+	0^+
241	143	1793.92		7.44		13.06	5.33	5.49	3.75	−6.51	−2.41	5.955	6.020	5.858	5.913		0^+	$9/2^+$
242	144	1801.30	1817.20	7.44	7.51	12.87	5.72	7.38	3.94	−6.45	−2.61	5.965	6.032	5.865	5.919		0^+	0^+
243	145	1806.69		7.43		12.77	6.09	5.39	4.14	−6.38	−2.79	5.975	6.045	5.871	5.925		0^+	$9/2^+$
244	146	1813.94	1831.26	7.43	7.51	12.64	6.48	7.25	4.33	−6.33	−2.99	5.985	6.057	5.877	5.931		0^+	0^+
245	147	1819.21	1837.41	7.43	7.50	12.52	6.85	5.27	4.52	−6.27	−3.17	5.995	6.069	5.883	5.937		0^+	$9/2^+$
246	148	1826.35	1844.78	7.42	7.50	12.41	7.22	7.14	4.70	−6.23	−3.36	6.005	6.081	5.889	5.944		0^+	0^+
247	149	1831.51	1850.84	7.42	7.49	12.30	7.60	5.16	4.89	−6.17	−3.55	6.016	6.093	5.896	5.950		0^+	$9/2^+$
248	150	1838.58	1857.78	7.41	7.49	12.23	7.97	7.07	5.08	−6.14	−3.74	6.025	6.105	5.902	5.956		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
249	151	1843.62	1863.36	7.40	7.48	12.11	8.36	5.04	5.27	−6.07	−3.93	6.036	6.117	5.908	5.962		0^+	$9/2^+$
250	152	1850.63	1869.99	7.40	7.48	12.05	8.72	7.01	5.46	−6.05	−4.11	6.045	6.129	5.914	5.968		0^+	0^+
251	153	1855.55	1877.47	7.39	7.48	11.93	9.13	4.92	5.65	−5.97	−4.31	6.056	6.140	5.921	5.975		0^+	$9/2^+$
252	154	1862.50	1881.27	7.39	7.47	11.87	9.46	6.95	5.82	−5.96	−4.48	6.065	6.152	5.927	5.981		0^+	0^+
253	155	1867.30	1886.07	7.38	7.45	11.75	9.85	4.80	6.01	−5.91	−4.67	6.075	6.163	5.933	5.987		0^+	$15/2^-$
254	156	1874.21	1892.10	7.38	7.45	11.71	10.21	6.91	6.18	−5.87	−4.86	6.085	6.175	5.940	5.993		0^+	0^+
255	157	1878.94		7.37		11.64	10.59	4.73	6.37	−5.82	−5.04	6.095	6.187	5.946	5.999		0^+	$15/2^-$
256	158	1885.75		7.37		11.54	10.95	6.81	6.54	−5.78	−5.23	6.105	6.198	5.952	6.006		0^+	0^+
257	159	1890.40		7.36		11.46	11.33	4.65	6.73	−5.72	−5.41	6.115	6.210	5.959	6.012		0^+	$15/2^-$
258	160	1897.13		7.35		11.38	11.69	6.73	6.91	−5.69	−5.59	6.125	6.221	5.965	6.019		0^+	0^+
259	161	1901.66		7.34		11.26	12.05	4.53	7.08	−5.61	−5.77	6.135	6.233	5.972	6.025		0^+	$15/2^-$
260	162	1908.32		7.34		11.19	12.41	6.66	7.25	−5.58	−5.95	6.146	6.244	5.978	6.032		0^+	0^+
261	163	1912.89		7.33		11.23	12.76	4.57	7.42	−5.60	−6.13	6.156	6.257	5.985	6.039		0^+	$7/2^+$
262	164	1919.31		7.33		10.99	13.10	6.42	7.59	−5.48	−6.30	6.166	6.268	5.991	6.045		0^+	0^+
263	165	1923.93		7.32		11.04	13.47	4.62	7.77	−5.47	−6.48	6.176	6.280	5.998	6.051		0^+	$7/2^+$
264	166	1930.09		7.31		10.78	13.75	6.16	7.92	−5.36	−6.62	6.186	6.292	6.004	6.057		0^+	0^+
265	167	1934.69		7.30		10.76	14.11	4.60	8.09	−5.33	−6.80	6.197	6.303	6.011	6.064		0^+	$7/2^+$
266	168	1940.63		7.30		10.54	14.35	5.94	8.21	−5.25	−6.92	6.207	6.316	6.016	6.069		0^+	0^+
267	169	1945.17		7.29		10.48	14.70	4.54	8.38	−5.19	−7.09	6.218	6.328	6.023	6.076		0^+	$7/2^+$
268	170	1950.97		7.28		10.34	14.93	5.80	8.52	−5.13	−7.20	6.228	6.340	6.028	6.081		0^+	0^+
269	171	1955.35		7.27		10.18	15.22	4.38	8.66	−5.02	−7.36	6.238	6.352	6.034	6.087		0^+	$7/2^+$
270	172	1961.05		7.26		10.08	15.45	5.70	8.78	−5.00	−7.47	6.248	6.364	6.038	6.091		0^+	0^+
271	173	1965.41		7.25		10.06	15.73	4.36	8.93	−4.99	−7.60	6.258	6.376	6.043	6.096		0^+	$5/2^+$
272	174	1970.84		7.25		9.79	15.92	5.43	9.04	−4.84	−7.70	6.266	6.387	6.046	6.099		0^+	0^+
273	175	1975.11		7.23		9.70	16.16	4.27	9.16	−4.79	−7.82	6.276	6.399	6.050	6.103		0^+	$5/2^+$
274	176	1980.32		7.23		9.48	16.34	5.21	9.26	−4.71	−7.92	6.285	6.410	6.052	6.105		0^+	0^+
275	177	1984.45		7.22		9.34	16.56	4.13	9.38	−4.61	−8.03	6.294	6.423	6.055	6.108		0^+	$5/2^+$
276	178	1989.55		7.21		9.23	16.74	5.10	9.48	−4.58	−8.12	6.303	6.434	6.057	6.110		0^+	0^+
277	179	1993.64		7.20		9.19	16.93	4.09	9.59	−4.58	−8.22	6.312	6.446	6.060	6.113		0^+	$3/2^+$
278	180	1998.52		7.19		8.97	17.13	4.88	9.71	−4.44	−8.32	6.321	6.458	6.062	6.115		0^+	0^+
279	181	2002.60		7.18		8.96	17.34	4.08	9.83	−4.41	−8.42	6.331	6.471	6.065	6.117		0^+	$1/2^+$
280	182	2007.22		7.17		8.70	17.52	4.62	9.93	−4.31	−8.51	6.341	6.483	6.067	6.120		0^+	0^+
281	183	2011.25		7.16		8.65	17.73	4.03	10.05	−3.54	−8.62	6.350	6.496	6.070	6.122		0^+	$1/2^+$
282	184	2015.69		7.15		8.47	17.89	4.44	10.11	−3.29	−8.70	6.360	6.508	6.071	6.124		0^+	0^+
283	185	2016.74		7.13		5.49	18.22	1.05	10.30	−3.59	−8.86	6.374	6.522	6.084	6.137		0^+	$13/2^-$
284	186	2019.12		7.11		3.43	18.52	2.38	10.45	−1.75	−9.01	6.387	6.535	6.094	6.147		0^+	0^+
285	187	2020.17		7.09		3.43	18.85	1.05	10.60	−1.75	−9.18	6.401	6.549	6.107	6.159		0^+	$13/2^-$
286	188	2022.57		7.07		3.45	19.14	2.40	10.74	−1.76	−9.33	6.413	6.562	6.117	6.170		0^+	0^+
287	189	2023.63		7.05		3.46	19.46	1.06	10.89	−1.76	−9.49	6.427	6.576	6.130	6.182		0^+	$13/2^-$
288	190	2026.05		7.03		3.48	19.75	2.42	11.04	−1.78	−9.64	6.440	6.589	6.141	6.192		0^+	0^+
289	191	2027.12		7.01		3.49	20.08	1.07	11.19	−1.77	−9.80	6.454	6.602	6.154	6.205		0^+	$13/2^-$
290	192	2029.56		7.00		3.51	20.36	2.44	11.33	−1.79	−9.94	6.466	6.615	6.164	6.215		0^+	0^+
291	193	2030.63		6.98		3.51	20.69	1.07	11.49	−1.77	−10.11	6.480	6.629	6.177	6.228		0^+	$13/2^-$
292	194	2033.09		6.96		3.53	20.97	2.46	11.62	−1.79	−10.25	6.493	6.642	6.187	6.238		0^+	0^+
293	195	2034.12		6.94		3.49	21.29	1.03	11.77	−1.76	−10.41	6.506	6.655	6.200	6.251		0^+	$13/2^-$
294	196	2036.61		6.93		3.52	21.56	2.49	11.90	−1.78	−10.55	6.518	6.668	6.209	6.261		0^+	0^+
295	197	2037.54		6.91		3.42	21.86	0.93	12.05	−1.70	−10.69	6.531	6.681	6.221	6.272		0^+	$13/2^-$
296	198	2040.08		6.89		3.47	22.13	2.54	12.18	−1.73	−10.83	6.544	6.693	6.230	6.281		0^+	0^+
297	199	2040.98		6.87		3.44	22.39	0.90	12.31	−1.75	−10.96	6.556	6.706	6.239	6.290		0^+	$11/2^-$
298	200	2043.41		6.86		3.33	22.64	2.43	12.43	−1.67	−11.09	6.567	6.719	6.247	6.298		0^+	0^+
299	201	2044.32		6.84		3.34	22.89	0.91	12.56	−1.65	−11.21	6.579	6.732	6.255	6.306		0^+	$11/2^-$
300	202	2046.60		6.82		3.19	23.10	2.28	12.67	−1.60	−11.32	6.590	6.743	6.261	6.312		0^+	0^+
301	203	2047.48		6.80		3.16	23.34	0.88	12.80	−1.58	−11.44	6.601	6.756	6.268	6.319		0^+	$11/2^-$
302	204	2049.67		6.79		3.07	23.54	2.19	12.90	−1.55	−11.55	6.612	6.768	6.273	6.324		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
303	205	2050.49		6.77		3.01	23.77	0.82	13.03	−1.51	−11.66	6.623	6.781	6.280	6.331		0^+	$11/2^-$
304	206	2052.64		6.75		2.97	23.98	2.15	13.14	−1.50	−11.76	6.633	6.793	6.285	6.336		0^+	0^+
305	207	2053.37		6.73		2.88	24.20	0.73	13.25	−1.44	−11.88	6.645	6.805	6.292	6.342		0^+	$11/2^-$
306	208	2055.50		6.72		2.86	24.41	2.13	13.36	−1.44	−11.98	6.655	6.817	6.297	6.348		0^+	0^+
307	209	2056.11		6.70		2.74	24.64	0.61	13.49	−1.36	−12.10	6.666	6.829	6.304	6.355		0^+	$11/2^-$
308	210	2058.25		6.68		2.75	24.85	2.14	13.59	−1.38	−12.20	6.677	6.841	6.310	6.360		0^+	0^+
309	211	2058.68		6.66		2.57	25.08	0.43	13.70	−1.29	−12.32	6.688	6.854	6.317	6.368		0^+	$11/2^-$
310	212	2060.86		6.65		2.61	25.27	2.18	13.80	−1.32	−12.43	6.698	6.865	6.322	6.373		0^+	0^+
311	213	2061.13		6.63		2.45	25.51	0.27	13.92	−1.24	−12.55	6.710	6.878	6.331	6.381		0^+	$11/2^-$
312	214	2063.38		6.61		2.52	25.71	2.25	14.02	−1.28	−12.65	6.720	6.889	6.336	6.386		0^+	0^+
313	215	2063.57		6.59		2.44	25.80	0.19	14.09	−1.29	−12.74	6.732	6.903	6.342	6.392		0^+	$9/2^-$
314	216	2065.82		6.58		2.44	26.14	2.25	14.23	−1.25	−12.87	6.742	6.913	6.349	6.400		0^+	0^+
315	217	2066.07		6.56		2.50	26.23	0.25	14.28	−1.27	−12.93	6.755	6.930	6.351	6.402		0^+	$7/2^-$
316	218	2068.20		6.54		2.38	26.55	2.13	14.43	−1.23	−13.08	6.765	6.938	6.363	6.413		0^+	0^+
317	219	2068.53		6.53		2.46	26.72	0.33	14.52	−1.25	−13.15	6.777	6.953	6.365	6.415		0^+	$7/2^-$
318	220	2070.57		6.51		2.37	26.97	2.04	14.64	−1.22	−13.30	6.787	6.962	6.376	6.426		0^+	0^+
319	221	2070.90		6.49		2.37	27.13	0.33	14.72	−1.23	−13.37	6.799	6.977	6.379	6.429		0^+	$7/2^-$
320	222	2072.91		6.48		2.34	27.37	2.01	14.83	−1.22	−13.51	6.809	6.986	6.389	6.439		0^+	0^+
321	223	2073.26		6.46		2.36	27.53	0.35	14.91	−1.23	−13.58	6.821	7.001	6.393	6.443		0^+	$7/2^-$
322	224	2075.26		6.44		2.35	27.78	2.00	15.03	−1.22	−13.71	6.830	7.009	6.403	6.452		0^+	0^+
323	225	2075.63		6.43		2.37	27.94	0.37	15.11	−1.23	−13.79	6.842	7.024	6.406	6.456		0^+	$7/2^-$
324	226	2077.60		6.41		2.34	28.17	1.97	15.22	−1.22	−13.92	6.852	7.033	6.415	6.465		0^+	0^+
325	227	2078.01		6.39		2.38	28.34	0.41	15.31	−1.23	−14.00	6.864	7.047	6.420	6.469		0^+	$7/2^-$
326	228	2079.96		6.38		2.36	28.56	1.95	15.41	−1.22	−14.12	6.874	7.057	6.428	6.478		0^+	0^+
327	229	2080.39		6.36		2.38	28.73	0.43	15.49	−1.23	−14.20	6.886	7.070	6.433	6.482		0^+	$7/2^-$
328	230	2082.33		6.35		2.37	28.95	1.94	15.60	−1.22	−14.31	6.895	7.080	6.440	6.490		0^+	0^+
329	231	2082.79		6.33		2.40	29.13	0.46	15.69	−1.24	−14.40	6.907	7.094	6.446	6.495		0^+	$7/2^-$
330	232	2084.71		6.32		2.38	29.33	1.92	15.78	−1.23	−14.50	6.917	7.104	6.452	6.502		0^+	0^+
331	233	2085.21		6.30		2.42	29.49	0.50	15.88	−1.24	−14.60	6.928	7.117	6.458	6.508		0^+	$7/2^-$
332	234	2087.11		6.29		2.40	29.70	1.90	15.97	−1.23	−14.69	6.938	7.127	6.464	6.513		0^+	0^+
333	235	2087.64		6.27		2.43	29.83	0.53	16.07	−1.24	−14.79	6.949	7.139	6.470	6.520		0^+	$7/2^-$
334	236	2089.53		6.26		2.42	30.07	1.89	16.15	−1.24	−14.87	6.959	7.150	6.475	6.524		0^+	0^+
335	237	2090.08		6.24		2.44	30.16	0.55	16.23	−1.25	−14.97	6.970	7.162	6.482	6.531		0^+	$7/2^-$
336	238	2091.95		6.23		2.42	30.41	1.87	16.32	−1.24	−15.04	6.980	7.174	6.486	6.535		0^+	0^+
337	239	2092.53		6.21		2.45	30.50	0.58	16.35	−1.25	−15.15	6.991	7.186	6.493	6.542		0^+	$7/2^-$
338	240	2094.39		6.20		2.44	30.76	1.86	16.49	−1.24	−15.21	7.001	7.197	6.496	6.545		0^+	0^+
339	241	2095.03		6.18		2.50	30.88	0.64	16.52	−1.27	−15.26	7.014	7.213	6.498	6.547		0^+	$3/2^-$
340	242	2096.83		6.17		2.44	31.08	1.80	16.64	−1.24	−15.37	7.022	7.221	6.505	6.554		0^+	0^+
341	243	2097.54		6.15		2.51	31.23	0.71	16.72	−1.27	−15.43	7.034	7.236	6.508	6.557		0^+	$3/2^-$
342	244	2099.28		6.14		2.45	31.39	1.74	16.80	−1.24	−15.52	7.043	7.245	6.513	6.562		0^+	0^+
343	245	2100.02		6.12		2.48	31.54	0.74	16.87	−1.26	−15.58	7.055	7.259	6.516	6.565		0^+	$3/2^-$
344	246	2101.72		6.11		2.44	31.67	1.70	16.94	−1.24	−15.66	7.064	7.269	6.520	6.569		0^+	0^+
345	247	2102.49		6.09		2.47	31.82	0.77	17.00	−1.25	−15.72	7.076	7.283	6.524	6.573		0^+	$3/2^-$
346	248	2104.16		6.08		2.44	31.94	1.67	17.07	−1.23	−15.78	7.085	7.294	6.526	6.575		0^+	0^+
347	249	2104.96		6.07		2.47	32.09	0.80	17.14	−1.25	−15.85	7.097	7.307	6.530	6.579		0^+	$3/2^-$
348	250	2106.59		6.05		2.43	32.19	1.63	17.20	−1.23	−15.90	7.106	7.319	6.532	6.581		0^+	0^+
349	251	2107.42		6.04		2.46	32.32	0.83	17.26	−1.23	−15.97	7.118	7.332	6.536	6.584		0^+	$3/2^-$
350	252	2109.01		6.03		2.42	32.42	1.59	17.31	−1.22	−16.01	7.128	7.345	6.536	6.585		0^+	0^+
351	253	2109.89		6.01		2.47	32.53	0.88	17.37	−1.25	−16.06	7.140	7.360	6.539	6.587		0^+	$1/2^-$
352	254	2111.42		6.00		2.41	32.63	1.53	17.42	−1.21	−16.11	7.150	7.372	6.540	6.589		0^+	0^+
353	255	2112.38		5.98		2.49	32.75	0.96	17.48	−1.25	−16.17	7.161	7.385	6.543	6.591		0^+	$1/2^-$
354	256	2113.82		5.97		2.40	32.83	1.44	17.53	−1.20	−16.21	7.172	7.399	6.544	6.592		0^+	0^+
355	257	2114.87		5.96		2.49	32.96	1.05	17.59	−0.53	−16.27	7.183	7.411	6.546	6.595		0^+	$1/2^-$
356	258	2116.20		5.94		2.38	33.01	1.33	17.63	−2.41	−16.29	7.195	7.427	6.546	6.595		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
357	259	2114.96		5.92		0.09		−1.24		−0.35	−16.30	7.222	7.462	6.546	6.595		0^+	$1/2^+$
358	260	2113.74		5.90		−2.46		−1.22		1.26	−16.30	7.249	7.497	6.545	6.594		0^+	0^+
σ		17.83																
$Z = 99$ (Es)																		
232	133	1721.29		7.42			0.45	7.30	−1.26	−8.05	0.03	5.845	5.888	5.787	5.842		$13/2^+$	$11/2^+$
233	134	1730.05		7.43		16.06	0.91	8.76	−1.01	−8.02	−0.20	5.858	5.903	5.797	5.852		$13/2^+$	0^+
234	135	1737.29		7.42		16.00	1.38	7.24	−0.74	−7.95	−0.43	5.872	5.917	5.809	5.864		$13/2^+$	$11/2^+$
235	136	1745.98		7.43		15.93	1.85	8.69	−0.49	−7.91	−0.66	5.884	5.931	5.819	5.874		$13/2^+$	0^+
236	137	1753.08		7.43		15.79	2.35	7.10	−0.21	−7.47	−0.91	5.899	5.946	5.832	5.887		$13/2^+$	$11/2^+$
237	138	1761.65		7.43		15.67	2.83	8.57	0.06	−7.48	−1.14	5.911	5.960	5.842	5.897		$13/2^+$	0^+
238	139	1767.57		7.43		14.49	3.16	5.92	0.19	−7.47	−1.31	5.921	5.973	5.848	5.902		$13/2^+$	$9/2^+$
239	140	1775.68		7.43		14.03	3.59	8.11	0.42	−6.94	−1.53	5.931	5.985	5.853	5.908		$13/2^+$	0^+
240	141	1781.44		7.42		13.87	3.94	5.76	0.58	−6.87	−1.70	5.941	5.997	5.859	5.913		$13/2^+$	$9/2^+$
241	142	1789.24		7.42		13.56	4.37	7.80	0.81	−6.77	−1.92	5.951	6.009	5.866	5.920		$13/2^+$	0^+
242	143	1794.88		7.42		13.44	4.71	5.64	0.96	−6.71	−2.10	5.961	6.022	5.871	5.925		$13/2^+$	$9/2^+$
243	144	1802.49		7.42		13.25	5.13	7.61	1.19	−6.63	−2.30	5.971	6.034	5.878	5.932		$13/2^+$	0^+
244	145	1808.03		7.41		13.15	5.48	5.54	1.34	−6.58	−2.48	5.981	6.046	5.883	5.938		$13/2^+$	$9/2^+$
245	146	1815.50		7.41		13.01	5.89	7.47	1.56	−6.52	−2.68	5.991	6.058	5.890	5.944		$13/2^+$	0^+
246	147	1820.95		7.40		12.92	6.26	5.45	1.74	−6.46	−2.87	6.001	6.070	5.896	5.950		$13/2^+$	$9/2^+$
247	148	1828.29	1847.58	7.40	7.48	12.79	6.64	7.34	1.94	−6.42	−3.06	6.011	6.082	5.902	5.956		$13/2^+$	0^+
248	149	1833.64		7.39		12.69	7.02	5.35	2.13	−6.36	−3.25	6.021	6.094	5.908	5.962		$13/2^+$	$9/2^+$
249	150	1840.89		7.39		12.60	7.39	7.25	2.31	−6.33	−3.44	6.030	6.106	5.915	5.968		$13/2^+$	0^+
250	151	1846.13		7.38		12.49	7.78	5.24	2.51	−6.26	−3.63	6.041	6.118	5.921	5.975		$13/2^+$	$9/2^+$
251	152	1853.32	1873.93	7.38	7.47	12.43	8.15	7.19	2.69	−6.24	−3.81	6.050	6.129	5.927	5.981		$13/2^+$	0^+
252	153	1858.45	1879.22	7.37	7.46	12.32	8.55	5.13	2.90	−6.17	−4.01	6.060	6.141	5.934	5.987		$13/2^+$	$9/2^+$
253	154	1865.57	1885.58	7.37	7.45	12.25	8.89	7.12	3.07	−6.15	−4.18	6.070	6.153	5.939	5.993		$13/2^+$	0^+
254	155	1870.59	1890.67	7.36	7.44	12.14	9.30	5.02	3.29	−6.08	−4.39	6.080	6.164	5.947	6.000		$13/2^+$	$9/2^+$
255	156	1877.66	1896.64	7.36	7.44	12.09	9.63	7.07	3.45	−6.06	−4.56	6.090	6.176	5.952	6.006		$13/2^+$	0^+
256	157	1882.58		7.35		11.99	10.01	4.92	3.64	−6.01	−4.74	6.099	6.187	5.958	6.012		$13/2^+$	$15/2^-$
257	158	1889.59		7.35		11.93	10.38	7.01	3.84	−5.97	−4.93	6.110	6.198	5.965	6.018		$13/2^+$	0^+
258	159	1894.42		7.34		11.84	10.75	4.83	4.02	−5.91	−5.11	6.119	6.210	5.971	6.024		$13/2^+$	$15/2^-$
259	160	1901.34		7.34		11.75	11.12	6.92	4.21	−5.87	−5.29	6.129	6.221	5.978	6.031		$13/2^+$	0^+
260	161	1906.06		7.33		11.64	11.48	4.72	4.40	−5.79	−5.47	6.139	6.232	5.984	6.037		$13/2^+$	$15/2^-$
261	162	1912.91		7.33		11.57	11.84	6.85	4.59	−5.76	−5.65	6.149	6.244	5.991	6.044		$13/2^+$	0^+
262	163	1917.65		7.32		11.59	12.18	4.74	4.76	−5.79	−5.83	6.160	6.256	5.997	6.050		$13/2^+$	$7/2^+$
263	164	1924.26		7.32		11.35	12.54	6.61	4.95	−5.64	−6.00	6.169	6.267	6.003	6.056		$13/2^+$	0^+
264	165	1929.06		7.31		11.41	12.90	4.80	5.13	−5.64	−6.18	6.180	6.279	6.010	6.063		$13/2^+$	$7/2^+$
265	166	1935.35		7.30		11.09	13.18	6.29	5.26	−5.51	−6.32	6.190	6.291	6.016	6.069		$13/2^+$	0^+
266	167	1940.14		7.29		11.08	13.54	4.79	5.45	−5.48	−6.49	6.200	6.303	6.023	6.076		$13/2^+$	$7/2^+$
267	168	1946.19		7.29		10.84	13.77	6.05	5.56	−5.39	−6.62	6.210	6.315	6.028	6.081		$13/2^+$	0^+
268	169	1950.90		7.28		10.76	14.11	4.71	5.73	−5.33	−6.79	6.221	6.327	6.035	6.088		$13/2^+$	$7/2^+$
269	170	1956.79		7.27		10.60	14.34	5.89	5.82	−5.27	−6.90	6.231	6.339	6.040	6.093		$13/2^+$	0^+
270	171	1961.33		7.26		10.43	14.64	4.54	5.98	−5.14	−7.06	6.241	6.351	6.046	6.099		$13/2^+$	$7/2^+$
271	172	1967.14		7.26		10.35	14.87	5.81	6.09	−5.12	−7.17	6.251	6.363	6.050	6.103		$13/2^+$	0^+
272	173	1971.65		7.25		10.32	15.17	4.51	6.24	−5.11	−7.30	6.261	6.375	6.055	6.108		$13/2^+$	$5/2^+$
273	174	1977.13		7.24		9.99	15.33	5.48	6.29	−4.95	−7.40	6.269	6.386	6.058	6.110		$13/2^+$	0^+
274	175	1981.52		7.23		9.87	15.57	4.39	6.41	−4.88	−7.52	6.279	6.398	6.062	6.114		$13/2^+$	$5/2^+$
275	176	1986.81		7.22		9.68	15.75	5.29	6.49	−4.80	−7.61	6.287	6.409	6.063	6.116		$13/2^+$	0^+
276	177	1991.04		7.21		9.52	15.97	4.23	6.59	−4.70	−7.72	6.296	6.421	6.067	6.119		$13/2^+$	$5/2^+$
277	178	1996.22		7.21		9.41	16.15	5.18	6.67	−4.67	−7.82	6.305	6.433	6.068	6.121		$13/2^+$	0^+
278	179	2000.40		7.20		9.36	16.35	4.18	6.76	−4.67	−7.92	6.314	6.445	6.071	6.124		$13/2^+$	$3/2^+$
279	180	2005.35		7.19		9.13	16.54	4.95	6.83	−4.53	−8.02	6.323	6.457	6.073	6.126		$13/2^+$	0^+
280	181	2009.51		7.18		9.11	16.74	4.16	6.91	−4.50	−8.12	6.333	6.469	6.076	6.128		$13/2^+$	$1/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
281	182	2014.23		7.17		8.88	16.94	4.72	7.01	−4.40	−8.22	6.342	6.481	6.078	6.131		$13/2^+$	0^+
282	183	2018.35		7.16		8.84	17.15	4.12	7.10	−3.55	−8.33	6.352	6.494	6.081	6.133		$13/2^+$	$1/2^+$
283	184	2022.88		7.15		8.65	17.30	4.53	7.19	−3.39	−8.40	6.360	6.506	6.081	6.133		$7/2^-$	0^+
284	185	2024.09		7.13		5.74	17.65	1.21	7.35	−3.40	−8.57	6.375	6.520	6.095	6.147		$13/2^+$	$13/2^-$
285	186	2026.62		7.11		3.74	17.95	2.53	7.50	−1.91	−8.73	6.388	6.533	6.106	6.158		$13/2^+$	0^+
286	187	2027.85		7.09		3.76	18.28	1.23	7.68	−1.91	−8.89	6.402	6.547	6.118	6.170		$13/2^+$	$13/2^-$
287	188	2030.40		7.07		3.78	18.57	2.55	7.83	−1.93	−9.04	6.415	6.560	6.129	6.181		$13/2^+$	0^+
288	189	2031.64		7.05		3.79	18.90	1.24	8.01	−1.93	−9.20	6.428	6.574	6.142	6.194		$13/2^+$	$13/2^-$
289	190	2034.21		7.04		3.81	19.20	2.57	8.16	−1.94	−9.35	6.441	6.587	6.152	6.204		$13/2^+$	0^+
290	191	2035.46		7.02		3.82	19.53	1.25	8.34	−1.94	−9.51	6.455	6.600	6.165	6.217		$13/2^+$	$13/2^-$
291	192	2038.05		7.00		3.84	19.82	2.59	8.49	−1.95	−9.66	6.468	6.613	6.176	6.227		$13/2^+$	0^+
292	193	2039.29		6.98		3.83	20.15	1.24	8.66	−1.93	−9.82	6.481	6.626	6.189	6.241		$13/2^+$	$13/2^-$
293	194	2041.90		6.97		3.85	20.43	2.61	8.81	−1.95	−9.97	6.494	6.639	6.199	6.251		$13/2^+$	0^+
294	195	2043.10		6.95		3.81	20.75	1.20	8.98	−1.91	−10.13	6.508	6.653	6.213	6.264		$13/2^+$	$13/2^-$
295	196	2045.74		6.93		3.84	21.03	2.64	9.13	−1.93	−10.27	6.520	6.665	6.223	6.274		$13/2^+$	0^+
296	197	2046.83		6.91		3.73	21.34	1.09	9.29	−1.84	−10.42	6.533	6.678	6.234	6.285		$13/2^+$	$13/2^-$
297	198	2049.51		6.90		3.77	21.61	2.68	9.43	−1.87	−10.56	6.545	6.691	6.244	6.295		$13/2^+$	0^+
298	199	2050.54		6.88		3.71	21.87	1.03	9.56	−1.88	−10.69	6.557	6.704	6.252	6.303		$13/2^+$	$11/2^-$
299	200	2053.10		6.87		3.59	22.12	2.56	9.69	−1.78	−10.82	6.569	6.716	6.260	6.311		$13/2^+$	0^+
300	201	2054.12		6.85		3.58	22.36	1.02	9.80	−1.77	−10.94	6.580	6.729	6.268	6.319		$13/2^+$	$11/2^-$
301	202	2056.51		6.83		3.41	22.58	2.39	9.91	−1.71	−11.05	6.591	6.741	6.274	6.324		$13/2^+$	0^+
302	203	2057.49		6.81		3.37	22.81	0.98	10.01	−1.68	−11.16	6.602	6.754	6.280	6.331		$13/2^+$	$11/2^-$
303	204	2059.79		6.80		3.28	23.02	2.30	10.12	−1.66	−11.27	6.612	6.765	6.286	6.336		$13/2^+$	0^+
304	205	2060.71		6.78		3.22	23.25	0.92	10.22	−1.62	−11.39	6.624	6.778	6.292	6.343		$13/2^+$	$11/2^-$
305	206	2062.96		6.76		3.17	23.46	2.25	10.32	−1.61	−11.50	6.634	6.789	6.298	6.348		$13/2^+$	0^+
306	207	2063.80		6.74		3.09	23.68	0.84	10.43	−1.55	−11.61	6.645	6.802	6.304	6.354		$13/2^+$	$11/2^-$
307	208	2066.03		6.73		3.07	23.89	2.23	10.53	−1.55	−11.72	6.655	6.813	6.309	6.360		$13/2^+$	0^+
308	209	2066.75		6.71		2.95	24.13	0.72	10.64	−1.48	−11.83	6.666	6.826	6.316	6.367		$13/2^+$	$11/2^-$
309	210	2068.99		6.70		2.96	24.33	2.24	10.74	−1.49	−11.94	6.677	6.837	6.322	6.372		$13/2^+$	0^+
310	211	2069.55		6.68		2.80	24.57	0.56	10.87	−1.41	−12.06	6.688	6.850	6.330	6.380		$13/2^+$	$11/2^-$
311	212	2071.84		6.66		2.85	24.78	2.29	10.98	−1.44	−12.17	6.698	6.861	6.335	6.385		$13/2^+$	0^+
312	213	2072.24		6.64		2.69	25.03	0.40	11.11	−1.36	−12.30	6.710	6.874	6.344	6.394		$13/2^+$	$11/2^-$
313	214	2074.58		6.63		2.74	25.22	2.34	11.20	−1.40	−12.40	6.720	6.885	6.349	6.399		$13/2^+$	0^+
314	215	2074.91		6.61		2.67	25.43	0.33	11.34	−1.40	−12.53	6.731	6.896	6.357	6.407		$13/2^+$	$17/2^+$
315	216	2077.25		6.59		2.67	25.66	2.34	11.43	−1.37	−12.62	6.742	6.909	6.363	6.413		$13/2^+$	0^+
316	217	2077.59		6.57		2.68	25.80	0.34	11.52	−1.36	−12.75	6.753	6.920	6.371	6.421		$13/2^+$	$17/2^+$
317	218	2079.87		6.56		2.62	26.10	2.28	11.67	−1.35	−12.85	6.764	6.932	6.377	6.427		$13/2^+$	0^+
318	219	2080.23		6.54		2.64	26.22	0.36	11.70	−1.36	−12.91	6.776	6.948	6.379	6.429		$13/2^+$	$7/2^-$
319	220	2082.46		6.53		2.59	26.53	2.23	11.89	−1.33	−13.07	6.786	6.956	6.391	6.440		$13/2^+$	0^+
320	221	2082.88		6.51		2.65	26.70	0.42	11.98	−1.35	−13.13	6.798	6.971	6.393	6.443		$13/2^+$	$7/2^-$
321	222	2085.03		6.50		2.57	26.95	2.15	12.12	−1.33	−13.28	6.807	6.980	6.404	6.454		$13/2^+$	0^+
322	223	2085.46		6.48		2.58	27.11	0.43	12.20	−1.34	−13.35	6.819	6.995	6.407	6.457		$13/2^+$	$7/2^-$
323	224	2087.60		6.46		2.57	27.37	2.14	12.34	−1.32	−13.50	6.829	7.003	6.418	6.468		$13/2^+$	0^+
324	225	2088.05		6.44		2.59	27.53	0.45	12.42	−1.34	−13.57	6.841	7.018	6.421	6.471		$13/2^+$	$7/2^-$
325	226	2090.16		6.43		2.56	27.78	2.11	12.56	−1.32	−13.71	6.851	7.026	6.431	6.481		$13/2^+$	0^+
326	227	2090.65		6.41		2.60	27.95	0.49	12.64	−1.34	−13.78	6.862	7.041	6.435	6.485		$13/2^+$	$7/2^-$
327	228	2092.73		6.40		2.57	28.18	2.08	12.77	−1.32	−13.91	6.872	7.050	6.444	6.494		$13/2^+$	0^+
328	229	2093.25		6.38		2.60	28.35	0.52	12.86	−1.34	−13.99	6.884	7.063	6.449	6.498		$13/2^+$	$7/2^-$
329	230	2095.31		6.37		2.58	28.58	2.06	12.98	−1.33	−14.11	6.893	7.073	6.457	6.507		$13/2^+$	0^+
330	231	2095.87		6.35		2.62	28.77	0.56	13.08	−1.34	−14.20	6.905	7.086	6.462	6.511		$13/2^+$	$7/2^-$
331	232	2097.90		6.34		2.59	28.97	2.03	13.19	−1.33	−14.31	6.915	7.096	6.470	6.519		$13/2^+$	0^+
332	233	2098.49		6.32		2.62	29.16	0.59	13.28	−1.34	−14.40	6.926	7.109	6.475	6.524		$13/2^+$	$7/2^-$
333	234	2100.50		6.31		2.60	29.36	2.01	13.39	−1.33	−14.50	6.936	7.119	6.482	6.531		$13/2^+$	0^+
334	235	2101.12		6.29		2.63	29.55	0.62	13.48	−1.34	−14.59	6.947	7.132	6.488	6.537		$13/2^+$	$7/2^-$

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Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
335	236	2103.10		6.28		2.60	29.72	1.98	13.57	−1.33	−14.68	6.957	7.142	6.493	6.542		$13/2^+$	0^+
336	237	2103.76		6.26		2.64	29.91	0.66	13.68	−1.34	−14.78	6.968	7.155	6.499	6.549		$13/2^+$	$7/2^-$
337	238	2105.71		6.25		2.61	30.08	1.95	13.76	−1.33	−14.85	6.978	7.166	6.503	6.552		$13/2^+$	0^+
338	239	2106.40		6.23		2.64	30.22	0.69	13.87	−1.34	−14.96	6.989	7.177	6.510	6.559		$13/2^+$	$7/2^-$
339	240	2108.32		6.22		2.61	30.42	1.92	13.93	−1.32	−15.02	6.998	7.189	6.513	6.562		$13/2^+$	0^+
340	241	2109.02		6.20		2.62	30.51	0.70	13.99	−1.33	−15.12	7.009	7.201	6.520	6.569		$13/2^+$	$7/2^-$
341	242	2110.92		6.19		2.60	30.73	1.90	14.09	−1.32	−15.17	7.019	7.213	6.522	6.571		$13/2^+$	0^+
342	243	2111.65		6.17		2.63	30.83	0.73	14.11	−1.34	−15.23	7.032	7.228	6.524	6.573		$13/2^+$	$3/2^-$
343	244	2113.50		6.16		2.58	31.02	1.85	14.22	−1.31	−15.32	7.040	7.237	6.529	6.578		$13/2^+$	0^+
344	245	2114.32		6.15		2.67	31.17	0.82	14.30	−1.33	−15.37	7.052	7.252	6.532	6.581		$13/2^+$	$3/2^-$
345	246	2116.08		6.13		2.58	31.30	1.76	14.36	−1.30	−15.45	7.061	7.261	6.536	6.584		$13/2^+$	0^+
346	247	2116.92		6.12		2.60	31.43	0.84	14.43	−1.32	−15.51	7.072	7.275	6.538	6.587		$13/2^+$	$3/2^-$
347	248	2118.63		6.11		2.55	31.54	1.71	14.47	−1.29	−15.57	7.082	7.286	6.541	6.590		$13/2^+$	0^+
348	249	2119.50		6.09		2.58	31.68	0.87	14.54	−1.30	−15.63	7.093	7.300	6.544	6.593		$13/2^+$	$3/2^-$
349	250	2121.16		6.08		2.53	31.77	1.66	14.57	−1.28	−15.68	7.103	7.312	6.545	6.594		$13/2^+$	0^+
350	251	2122.05		6.06		2.55	31.89	0.89	14.63	−1.29	−15.74	7.114	7.325	6.548	6.597		$13/2^+$	$3/2^-$
351	252	2123.68		6.05		2.52	31.98	1.63	14.67	−1.27	−15.78	7.124	7.338	6.549	6.598		$13/2^+$	0^+
352	253	2124.60		6.04		2.55	32.08	0.92	14.71	−1.30	−15.83	7.136	7.353	6.551	6.599		$13/2^+$	$1/2^-$
353	254	2126.17		6.02		2.49	32.17	1.57	14.75	−1.26	−15.87	7.146	7.365	6.552	6.601		$13/2^+$	0^+
354	255	2127.18		6.01		2.58	32.28	1.01	14.80	−1.29	−15.92	7.158	7.379	6.554	6.603		$13/2^+$	$1/2^-$
355	256	2128.65		6.00		2.48	32.36	1.47	14.83	−1.24	−15.96	7.168	7.392	6.555	6.603		$13/2^+$	0^+
356	257	2129.76		5.98		2.58	32.48	1.11	14.89	−0.12	−16.02	7.179	7.405	6.557	6.605		$13/2^+$	$1/2^-$
357	258	2131.10		5.97		2.45	32.53	1.34	14.90	−0.03	−16.05	7.191	7.420	6.557	6.605		$13/2^+$	0^+
358	259	2129.86		5.95		0.10		−1.24	14.90	−0.07	−16.05	7.218	7.456	6.556	6.605		$13/2^+$	$1/2^+$
359	260	2128.65		5.93		−2.45		−1.21	14.91	1.25	−16.05	7.245	7.491	6.556	6.605		$13/2^+$	0^+
σ		19.97																
$Z = 100$ (Fm)																		
234	134	1731.30		7.40			0.24		1.25	−8.24	0.11	5.864	5.905	5.809	5.864		0^+	0^+
235	135	1738.76		7.40			0.73	7.46	1.47	−8.16	−0.13	5.878	5.920	5.820	5.875		0^+	$11/2^+$
236	136	1747.66		7.41		16.36	1.19	8.90	1.68	−8.13	−0.36	5.890	5.934	5.830	5.885		0^+	0^+
237	137	1754.98		7.41		16.22	1.69	7.32	1.90	−7.68	−0.60	5.904	5.949	5.843	5.898		0^+	$11/2^+$
238	138	1763.77		7.41		16.11	2.18	8.79	2.12	−7.68	−0.84	5.917	5.962	5.854	5.908		0^+	0^+
239	139	1769.88		7.41		14.90	2.50	6.11	2.31	−7.67	−1.01	5.927	5.975	5.859	5.913		0^+	$9/2^+$
240	140	1778.19		7.41		14.42	2.93	8.31	2.51	−7.13	−1.22	5.936	5.987	5.864	5.919		0^+	0^+
241	141	1784.14		7.40		14.26	3.28	5.95	2.70	−7.07	−1.40	5.946	5.999	5.870	5.924		0^+	$9/2^+$
242	142	1792.14		7.41		13.95	3.71	8.00	2.90	−6.96	−1.61	5.956	6.011	5.876	5.931		0^+	0^+
243	143	1797.98		7.40		13.84	4.06	5.84	3.10	−6.90	−1.79	5.966	6.024	5.882	5.936		0^+	$9/2^+$
244	144	1805.78		7.40		13.64	4.48	7.80	3.29	−6.83	−2.00	5.976	6.036	5.889	5.943		0^+	0^+
245	145	1811.53		7.39		13.55	4.84	5.75	3.50	−6.77	−2.18	5.986	6.048	5.894	5.948		0^+	$9/2^+$
246	146	1819.18	1837.12	7.40	7.47	13.40	5.24	7.65	3.68	−6.71	−2.38	5.996	6.060	5.901	5.955		0^+	0^+
247	147	1824.82		7.39		13.29	5.61	5.64	3.87	−6.65	−2.57	6.005	6.072	5.906	5.960		0^+	$9/2^+$
248	148	1832.35	1851.56	7.39	7.47	13.17	6.00	7.53	4.06	−6.61	−2.76	6.015	6.083	5.913	5.967		0^+	0^+
249	149	1837.89	1858.00	7.38	7.46	13.07	6.38	5.54	4.25	−6.55	−2.95	6.025	6.095	5.919	5.973		0^+	$9/2^+$
250	150	1845.33	1865.52	7.38	7.46	12.98	6.75	7.44	4.44	−6.51	−3.14	6.035	6.107	5.925	5.979		0^+	0^+
251	151	1850.76	1871.71	7.37	7.46	12.87	7.14	5.43	4.63	−6.45	−3.33	6.045	6.119	5.931	5.985		0^+	$9/2^+$
252	152	1858.13	1878.92	7.37	7.46	12.80	7.50	7.37	4.81	−6.42	−3.51	6.054	6.130	5.937	5.991		0^+	0^+
253	153	1863.45	1884.46	7.37	7.45	12.69	7.90	5.32	5.00	−6.35	−3.72	6.065	6.142	5.944	5.998		0^+	$9/2^+$
254	154	1870.75	1890.97	7.37	7.44	12.62	8.25	7.30	5.18	−6.33	−3.89	6.074	6.153	5.950	6.003		0^+	0^+
255	155	1875.96	1896.15	7.36	7.44	12.51	8.66	5.21	5.37	−6.26	−4.10	6.084	6.165	5.957	6.010		0^+	$9/2^+$
256	156	1883.21	1902.54	7.36	7.43	12.46	9.00	7.25	5.55	−6.24	−4.26	6.094	6.176	5.962	6.016		0^+	0^+
257	157	1888.32	1907.50	7.35	7.42	12.36	9.38	5.11	5.74	−6.19	−4.45	6.103	6.187	5.968	6.021		0^+	$15/2^-$
258	158	1895.50		7.35		12.29	9.75	7.18	5.91	−6.15	−4.63	6.113	6.199	5.975	6.028		0^+	0^+
259	159	1900.52		7.34		12.20	10.12	5.02	6.10	−6.08	−4.82	6.122	6.210	5.981	6.034		0^+	$15/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
260	160	1907.62		7.34		12.12	10.49	7.10	6.28	−6.05	−5.00	6.133	6.222	5.988	6.041		0^+	0^+
261	161	1912.52		7.33		12.00	10.86	4.90	6.46	−5.96	−5.18	6.142	6.233	5.993	6.047		0^+	$15/2^-$
262	162	1919.54		7.33		11.92	11.22	7.02	6.63	−5.94	−5.36	6.152	6.244	6.000	6.054		0^+	0^+
263	163	1924.46		7.32		11.94	11.57	4.92	6.81	−5.96	−5.54	6.163	6.256	6.007	6.060		0^+	$7/2^+$
264	164	1931.24		7.32		11.70	11.93	6.78	6.98	−5.81	−5.71	6.172	6.267	6.013	6.066		0^+	0^+
265	165	1936.21		7.31		11.75	12.28	4.97	7.15	−5.81	−5.89	6.183	6.279	6.020	6.073		0^+	$7/2^+$
266	166	1942.65		7.30		11.41	12.56	6.44	7.30	−5.67	−6.03	6.193	6.291	6.026	6.079		0^+	0^+
267	167	1947.61		7.29		11.40	12.92	4.96	7.47	−5.63	−6.21	6.203	6.303	6.033	6.085		0^+	$7/2^+$
268	168	1953.79		7.29		11.14	13.16	6.18	7.60	−5.54	−6.33	6.213	6.315	6.038	6.091		0^+	0^+
269	169	1958.66		7.28		11.05	13.49	4.87	7.76	−5.47	−6.50	6.224	6.327	6.045	6.098		0^+	$7/2^+$
270	170	1964.69		7.28		10.90	13.72	6.03	7.90	−5.41	−6.61	6.234	6.339	6.050	6.102		0^+	0^+
271	171	1969.38		7.27		10.72	14.03	4.69	8.05	−5.27	−6.77	6.244	6.351	6.056	6.108		0^+	$7/2^+$
272	172	1975.31		7.26		10.62	14.26	5.93	8.17	−5.25	−6.88	6.253	6.363	6.060	6.113		0^+	0^+
273	173	1979.90		7.25		10.52	14.49	4.59	8.25	−5.24	−7.01	6.263	6.375	6.065	6.117		0^+	$5/2^+$
274	174	1985.55		7.25		10.24	14.71	5.65	8.42	−5.06	−7.11	6.272	6.386	6.068	6.120		0^+	0^+
275	175	1990.05		7.24		10.15	14.94	4.50	8.53	−4.99	−7.23	6.281	6.398	6.071	6.123		0^+	$5/2^+$
276	176	1995.44		7.23		9.89	15.12	5.39	8.63	−4.91	−7.32	6.289	6.408	6.073	6.125		0^+	0^+
277	177	1999.79		7.22		9.74	15.34	4.35	8.75	−4.81	−7.43	6.298	6.420	6.076	6.128		0^+	$5/2^+$
278	178	2005.07		7.21		9.63	15.52	5.28	8.85	−4.78	−7.52	6.306	6.431	6.078	6.130		0^+	0^+
279	179	2009.36		7.20		9.57	15.72	4.29	8.96	−4.78	−7.63	6.316	6.443	6.080	6.133		0^+	$3/2^+$
280	180	2014.43		7.19		9.36	15.91	5.07	9.08	−4.63	−7.72	6.325	6.455	6.082	6.135		0^+	0^+
281	181	2018.69		7.18		9.33	16.09	4.26	9.18	−4.58	−7.82	6.334	6.467	6.085	6.137		0^+	$3/2^+$
282	182	2023.52		7.18		9.09	16.30	4.83	9.29	−4.50	−7.92	6.343	6.479	6.087	6.139		0^+	0^+
283	183	2027.76		7.17		9.07	16.51	4.24	9.41	−3.66	−8.03	6.353	6.492	6.090	6.142		0^+	$1/2^+$
284	184	2032.37		7.16		8.85	16.68	4.61	9.49	−3.47	−8.11	6.362	6.504	6.091	6.144		0^+	0^+
285	185	2033.75		7.14		5.99	17.01	1.38	9.66	−3.46	−8.27	6.376	6.518	6.104	6.156		0^+	$13/2^-$
286	186	2036.43		7.12		4.06	17.31	2.68	9.81	−2.06	−8.43	6.389	6.531	6.114	6.167		0^+	0^+
287	187	2037.82		7.10		4.07	17.65	1.39	9.97	−2.06	−8.59	6.402	6.545	6.127	6.179		0^+	$13/2^-$
288	188	2040.52		7.09		4.09	17.95	2.70	10.12	−2.08	−8.75	6.415	6.558	6.138	6.190		0^+	0^+
289	189	2041.91		7.07		4.09	18.28	1.39	10.27	−2.07	−8.91	6.429	6.572	6.151	6.202		0^+	$13/2^-$
290	190	2044.63		7.05		4.11	18.58	2.72	10.42	−2.09	−9.06	6.442	6.585	6.161	6.213		0^+	0^+
291	191	2046.03		7.03		4.12	18.91	1.40	10.57	−2.08	−9.23	6.455	6.598	6.174	6.226		0^+	$13/2^-$
292	192	2048.76		7.02		4.13	19.20	2.73	10.71	−2.10	−9.38	6.468	6.611	6.185	6.236		0^+	0^+
293	193	2050.16		7.00		4.13	19.53	1.40	10.87	−2.08	−9.54	6.482	6.624	6.198	6.249		0^+	$13/2^-$
294	194	2052.92		6.98		4.16	19.83	2.76	11.02	−2.10	−9.69	6.494	6.637	6.208	6.260		0^+	0^+
295	195	2054.28		6.96		4.12	20.16	1.36	11.18	−2.06	−9.85	6.508	6.650	6.222	6.273		0^+	$13/2^-$
296	196	2057.06		6.95		4.14	20.45	2.78	11.32	−2.07	−9.99	6.520	6.663	6.232	6.283		0^+	0^+
297	197	2058.29		6.93		4.01	20.75	1.23	11.46	−1.97	−10.15	6.534	6.676	6.244	6.295		0^+	$13/2^-$
298	198	2061.10		6.92		4.04	21.02	2.81	11.59	−2.00	−10.29	6.546	6.688	6.253	6.304		0^+	0^+
299	199	2062.28		6.90		3.99	21.30	1.18	11.74	−2.02	−10.41	6.558	6.702	6.262	6.313		0^+	$11/2^-$
300	200	2064.95		6.88		3.85	21.54	2.67	11.85	−1.90	−10.54	6.569	6.713	6.270	6.320		0^+	0^+
301	201	2066.09		6.86		3.81	21.77	1.14	11.97	−1.88	−10.66	6.580	6.726	6.277	6.328		0^+	$11/2^-$
302	202	2068.59		6.85		3.64	21.99	2.50	12.08	−1.83	−10.77	6.591	6.738	6.282	6.333		0^+	0^+
303	203	2069.69		6.83		3.60	22.21	1.10	12.20	−1.80	−10.89	6.602	6.751	6.289	6.339		0^+	$11/2^-$
304	204	2072.10		6.82		3.51	22.43	2.41	12.31	−1.77	−11.00	6.612	6.762	6.294	6.345		0^+	0^+
305	205	2073.14		6.80		3.45	22.65	1.04	12.43	−1.73	−11.11	6.623	6.775	6.300	6.351		0^+	$11/2^-$
306	206	2075.51		6.78		3.41	22.87	2.37	12.55	−1.72	−11.22	6.633	6.786	6.306	6.356		0^+	0^+
307	207	2076.46		6.76		3.32	23.09	0.95	12.66	−1.66	−11.33	6.644	6.799	6.312	6.363		0^+	$11/2^-$
308	208	2078.81		6.75		3.30	23.31	2.35	12.78	−1.66	−11.45	6.654	6.810	6.318	6.368		0^+	0^+
309	209	2079.65		6.73		3.19	23.54	0.84	12.90	−1.59	−11.56	6.665	6.822	6.324	6.375		0^+	$11/2^-$
310	210	2082.00		6.72		3.19	23.75	2.35	13.01	−1.61	−11.67	6.675	6.834	6.330	6.381		0^+	0^+
311	211	2082.68		6.70		3.03	24.00	0.68	13.13	−1.52	−11.80	6.687	6.846	6.338	6.388		0^+	$11/2^-$
312	212	2085.07		6.68		3.07	24.21	2.39	13.23	−1.55	−11.90	6.697	6.857	6.343	6.394		0^+	0^+
313	213	2085.60		6.66		2.92	24.47	0.53	13.36	−1.47	−12.04	6.709	6.869	6.352	6.402		0^+	$11/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
314	214	2088.04		6.65		2.97	24.66	2.44	13.46	−1.51	−12.14	6.718	6.881	6.357	6.407		0^+	0^+
315	215	2088.51		6.63		2.91	24.94	0.47	13.60	−1.50	−12.27	6.729	6.892	6.366	6.416		0^+	$17/2^+$
316	216	2090.94		6.62		2.90	25.12	2.43	13.69	−1.47	−12.37	6.740	6.904	6.372	6.422		0^+	0^+
317	217	2091.40		6.60		2.89	25.33	0.46	13.81	−1.47	−12.50	6.751	6.915	6.380	6.430		0^+	$17/2^+$
318	218	2093.78		6.58		2.84	25.58	2.38	13.91	−1.45	−12.60	6.762	6.928	6.386	6.436		0^+	0^+
319	219	2094.24		6.57		2.84	25.71	0.46	14.01	−1.45	−12.73	6.773	6.939	6.394	6.444		0^+	$17/2^+$
320	220	2096.58		6.55		2.80	26.01	2.34	14.12	−1.44	−12.83	6.784	6.951	6.400	6.450		0^+	0^+
321	221	2097.06		6.53		2.82	26.16	0.48	14.18	−1.45	−12.93	6.795	6.963	6.407	6.457		0^+	$9/2^-$
322	222	2099.37		6.52		2.79	26.46	2.31	14.34	−1.43	−13.05	6.805	6.974	6.414	6.464		0^+	0^+
323	223	2099.88		6.50		2.82	26.62	0.51	14.42	−1.45	−13.12	6.817	6.989	6.417	6.467		0^+	$7/2^-$
324	224	2102.14		6.49		2.77	26.88	2.26	14.54	−1.42	−13.27	6.827	6.998	6.428	6.478		0^+	0^+
325	225	2102.68		6.47		2.80	27.05	0.54	14.63	−1.44	−13.34	6.839	7.012	6.432	6.481		0^+	$7/2^-$
326	226	2104.91		6.46		2.77	27.31	2.23	14.75	−1.42	−13.48	6.848	7.021	6.442	6.492		0^+	0^+
327	227	2105.48		6.44		2.80	27.47	0.57	14.83	−1.44	−13.56	6.860	7.035	6.446	6.495		0^+	$7/2^-$
328	228	2107.68		6.43		2.77	27.72	2.20	14.95	−1.42	−13.69	6.870	7.044	6.456	6.505		0^+	0^+
329	229	2108.29		6.41		2.81	27.90	0.61	15.04	−1.44	−13.77	6.881	7.057	6.460	6.509		0^+	$7/2^-$
330	230	2110.46		6.40		2.78	28.13	2.17	15.15	−1.42	−13.90	6.891	7.067	6.469	6.518		0^+	0^+
331	231	2111.10		6.38		2.81	28.31	0.64	15.23	−1.44	−13.98	6.902	7.080	6.473	6.523		0^+	$7/2^-$
332	232	2113.24		6.37		2.78	28.53	2.14	15.34	−1.42	−14.10	6.912	7.090	6.481	6.531		0^+	0^+
333	233	2113.92		6.35		2.82	28.71	0.68	15.43	−1.44	−14.19	6.923	7.103	6.487	6.536		0^+	$7/2^-$
334	234	2116.03		6.34		2.79	28.92	2.11	15.53	−1.42	−14.29	6.933	7.113	6.494	6.543		0^+	0^+
335	235	2116.75		6.32		2.83	29.11	0.72	15.63	−1.43	−14.39	6.944	7.125	6.499	6.548		0^+	$7/2^-$
336	236	2118.82		6.31		2.79	29.29	2.07	15.72	−1.42	−14.48	6.954	7.136	6.505	6.554		0^+	0^+
337	237	2119.57		6.29		2.82	29.49	0.75	15.81	−1.43	−14.58	6.965	7.148	6.511	6.560		0^+	$7/2^-$
338	238	2121.60		6.28		2.78	29.65	2.03	15.89	−1.41	−14.65	6.975	7.159	6.516	6.565		0^+	0^+
339	239	2122.39		6.26		2.82	29.86	0.79	15.99	−1.42	−14.75	6.986	7.171	6.522	6.571		0^+	$7/2^-$
340	240	2124.37		6.25		2.77	29.98	1.98	16.05	−1.40	−14.82	6.995	7.182	6.525	6.574		0^+	0^+
341	241	2125.18		6.23		2.79	30.15	0.81	16.16	−1.40	−14.92	7.006	7.194	6.532	6.581		0^+	$7/2^-$
342	242	2127.12		6.22		2.75	30.29	1.94	16.20	−1.39	−14.97	7.016	7.206	6.533	6.582		0^+	0^+
343	243	2127.93		6.20		2.75	30.39	0.81	16.28	−1.38	−15.07	7.027	7.218	6.540	6.589		0^+	$7/2^-$
344	244	2129.85		6.19		2.73	30.57	1.92	16.35	−1.38	−15.10	7.036	7.230	6.540	6.589		0^+	0^+
345	245	2130.70		6.18		2.77	30.68	0.85	16.38	−1.40	−15.15	7.048	7.245	6.542	6.591		0^+	$3/2^-$
346	246	2132.55		6.16		2.70	30.83	1.85	16.47	−1.36	−15.23	7.057	7.254	6.546	6.594		0^+	0^+
347	247	2133.46		6.15		2.76	30.97	0.91	16.54	−1.38	−15.28	7.069	7.269	6.548	6.597		0^+	$3/2^-$
348	248	2135.22		6.14		2.67	31.06	1.76	16.59	−1.35	−15.34	7.078	7.280	6.550	6.599		0^+	0^+
349	249	2136.15		6.12		2.69	31.19	0.93	16.65	−1.36	−15.40	7.089	7.293	6.553	6.601		0^+	$3/2^-$
350	250	2137.87		6.11		2.65	31.28	1.72	16.71	−1.33	−15.45	7.099	7.305	6.554	6.603		0^+	0^+
351	251	2138.82		6.09		2.67	31.40	0.95	16.77	−1.34	−15.50	7.110	7.319	6.557	6.605		0^+	$3/2^-$
352	252	2140.49		6.08		2.62	31.48	1.67	16.81	−1.32	−15.54	7.120	7.331	6.557	6.606		0^+	0^+
353	253	2141.46		6.07		2.64	31.57	0.97	16.86	−1.35	−15.59	7.132	7.346	6.559	6.607		0^+	$1/2^-$
354	254	2143.09		6.05		2.60	31.67	1.63	16.92	−1.31	−15.63	7.142	7.358	6.560	6.609		0^+	0^+
355	255	2144.14		6.04		2.68	31.76	1.05	16.96	−1.35	−15.68	7.153	7.372	6.561	6.610		0^+	$1/2^-$
356	256	2145.66		6.03		2.57	31.84	1.52	17.01	−1.29	−15.72	7.163	7.385	6.562	6.611		0^+	0^+
357	257	2146.82		6.01		2.68	31.95	1.16	17.06	0.00	−15.77	7.174	7.398	6.564	6.612		0^+	$1/2^-$
358	258	2148.20		6.00		2.54	32.00	1.38	17.10	−0.10	−15.80	7.186	7.414	6.564	6.612		0^+	0^+
359	259	2146.96		5.98		0.14	32.00	−1.24	17.10	−0.66	−15.80	7.213	7.449	6.563	6.612		0^+	$1/2^+$
360	260	2145.75		5.96		−2.45	32.01	−1.21	17.10	1.23	−15.82	7.235	7.477	6.565	6.613		0^+	0^+
σ		19.94																
$Z = 101$ (Md)																		
235	134	1729.70		7.36			−0.35		−1.60	−8.48	0.42	5.871	5.908	5.821	5.876		$13/2^+$	0^+
236	135	1737.41		7.36			0.12	7.71	−1.35	−8.41	0.19	5.884	5.922	5.832	5.887		$13/2^+$	$11/2^+$
237	136	1746.56		7.37		16.86	0.58	9.15	−1.10	−8.38	−0.04	5.896	5.936	5.843	5.897		$13/2^+$	0^+
238	137	1754.15		7.37		16.74	1.07	7.59	−0.83	−7.91	−0.28	5.910	5.951	5.855	5.909		$13/2^+$	$11/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
239	138	1763.19		7.38		16.63	1.54	9.04	−0.58	−7.92	−0.51	5.923	5.964	5.866	5.920		$13/2^+$	0^+
240	139	1769.45		7.37		15.30	1.88	6.26	−0.43	−7.90	−0.69	5.932	5.977	5.871	5.925		$13/2^+$	$9/2^+$
241	140	1778.00		7.38		14.81	2.32	8.55	−0.19	−7.33	−0.90	5.942	5.989	5.877	5.931		$13/2^+$	0^+
242	141	1784.11		7.37		14.66	2.67	6.11	−0.03	−7.27	−1.08	5.952	6.001	5.882	5.936		$13/2^+$	$9/2^+$
243	142	1792.35		7.38		14.35	3.11	8.24	0.21	−7.15	−1.30	5.962	6.013	5.889	5.943		$13/2^+$	0^+
244	143	1798.35		7.37		14.24	3.47	6.00	0.37	−7.10	−1.48	5.971	6.025	5.894	5.948		$13/2^+$	$9/2^+$
245	144	1806.38		7.37		14.03	3.89	8.03	0.60	−7.02	−1.69	5.981	6.037	5.901	5.955		$13/2^+$	0^+
246	145	1812.29		7.37		13.94	4.26	5.91	0.76	−6.96	−1.87	5.991	6.049	5.906	5.960		$13/2^+$	$9/2^+$
247	146	1820.15		7.37		13.77	4.65	7.86	0.97	−6.90	−2.07	6.001	6.061	5.913	5.967		$13/2^+$	0^+
248	147	1825.97		7.36		13.68	5.02	5.82	1.15	−6.85	−2.26	6.011	6.073	5.919	5.973		$13/2^+$	$9/2^+$
249	148	1833.71		7.36		13.56	5.42	7.74	1.36	−6.80	−2.46	6.021	6.085	5.925	5.979		$13/2^+$	0^+
250	149	1839.43		7.36		13.46	5.79	5.72	1.54	−6.74	−2.65	6.030	6.097	5.931	5.985		$13/2^+$	$9/2^+$
251	150	1847.07	1867.92	7.36	7.44	13.36	6.18	7.64	1.74	−6.70	−2.83	6.040	6.108	5.937	5.991		$13/2^+$	0^+
252	151	1852.70		7.35		13.27	6.57	5.63	1.94	−6.64	−3.03	6.050	6.120	5.944	5.997		$13/2^+$	$9/2^+$
253	152	1860.24		7.35		13.17	6.92	7.54	2.11	−6.61	−3.21	6.059	6.131	5.950	6.003		$13/2^+$	0^+
254	153	1865.78		7.35		13.08	7.33	5.54	2.33	−6.55	−3.41	6.069	6.143	5.956	6.010		$13/2^+$	$9/2^+$
255	154	1873.25	1894.32	7.35	7.43	13.01	7.68	7.47	2.50	−6.52	−3.59	6.079	6.154	5.962	6.015		$13/2^+$	0^+
256	155	1878.69		7.34		12.91	8.10	5.44	2.73	−6.46	−3.79	6.089	6.166	5.969	6.022		$13/2^+$	$9/2^+$
257	156	1886.09	1906.31	7.34	7.42	12.84	8.43	7.40	2.88	−6.43	−3.96	6.098	6.177	5.974	6.028		$13/2^+$	0^+
258	157	1891.42	1911.69	7.33	7.41	12.73	8.84	5.33	3.10	−6.36	−4.17	6.108	6.188	5.982	6.035		$13/2^+$	$9/2^+$
259	158	1898.76		7.33		12.67	9.17	7.34	3.26	−6.34	−4.33	6.117	6.199	5.987	6.040		$13/2^+$	0^+
260	159	1903.97		7.32		12.55	9.55	5.21	3.45	−6.26	−4.55	6.128	6.211	5.995	6.048		$13/2^+$	$9/2^+$
261	160	1911.26		7.32		12.50	9.92	7.29	3.64	−6.24	−4.70	6.137	6.222	5.999	6.052		$13/2^+$	0^+
262	161	1916.34		7.31		12.37	10.28	5.08	3.82	−6.15	−4.88	6.146	6.233	6.005	6.058		$13/2^+$	$15/2^-$
263	162	1923.56		7.31		12.30	10.65	7.22	4.02	−6.12	−5.06	6.156	6.244	6.012	6.065		$13/2^+$	0^+
264	163	1928.64		7.31		12.30	10.99	5.08	4.18	−6.15	−5.23	6.166	6.256	6.019	6.072		$13/2^+$	$7/2^+$
265	164	1935.60		7.30		12.04	11.34	6.96	4.36	−5.97	−5.41	6.176	6.267	6.025	6.078		$13/2^+$	0^+
266	165	1940.76		7.30		12.12	11.70	5.16	4.55	−5.98	−5.58	6.186	6.279	6.031	6.084		$13/2^+$	$7/2^+$
267	166	1947.33		7.29		11.73	11.98	6.57	4.68	−5.82	−5.72	6.196	6.290	6.037	6.090		$13/2^+$	0^+
268	167	1952.46		7.29		11.70	12.32	5.13	4.85	−5.77	−5.90	6.206	6.302	6.044	6.097		$13/2^+$	$7/2^+$
269	168	1958.76		7.28		11.43	12.57	6.30	4.97	−5.68	−6.02	6.216	6.315	6.049	6.102		$13/2^+$	0^+
270	169	1963.79		7.27		11.33	12.89	5.03	5.13	−5.61	−6.18	6.227	6.327	6.056	6.109		$13/2^+$	$7/2^+$
271	170	1969.93		7.27		11.17	13.14	6.14	5.24	−5.54	−6.31	6.237	6.339	6.061	6.114		$13/2^+$	0^+
272	171	1974.77		7.26		10.98	13.44	4.84	5.39	−5.39	−6.46	6.247	6.351	6.067	6.120		$13/2^+$	$7/2^+$
273	172	1980.81		7.26		10.88	13.67	6.04	5.50	−5.37	−6.58	6.257	6.363	6.072	6.124		$13/2^+$	0^+
274	173	1985.49		7.25		10.72	13.84	4.68	5.59	−5.36	−6.70	6.266	6.374	6.076	6.129		$13/2^+$	$5/2^+$
275	174	1991.25		7.24		10.44	14.12	5.76	5.70	−5.16	−6.80	6.274	6.385	6.079	6.131		$13/2^+$	0^+
276	175	1995.86		7.23		10.37	14.34	4.61	5.81	−5.08	−6.92	6.283	6.397	6.082	6.134		$13/2^+$	$5/2^+$
277	176	2001.34		7.23		10.09	14.53	5.48	5.90	−5.01	−7.01	6.291	6.408	6.084	6.136		$13/2^+$	0^+
278	177	2005.78		7.22		9.92	14.74	4.44	5.99	−4.90	−7.12	6.300	6.419	6.086	6.139		$13/2^+$	$5/2^+$
279	178	2011.15		7.21		9.81	14.93	5.37	6.08	−4.87	−7.22	6.309	6.430	6.088	6.141		$13/2^+$	0^+
280	179	2015.54		7.20		9.76	15.14	4.39	6.18	−4.87	−7.33	6.318	6.442	6.091	6.143		$13/2^+$	$3/2^+$
281	180	2020.69		7.19		9.54	15.34	5.15	6.26	−4.73	−7.43	6.326	6.454	6.093	6.145		$13/2^+$	0^+
282	181	2025.04		7.18		9.50	15.53	4.35	6.35	−4.68	−7.53	6.335	6.466	6.095	6.147		$13/2^+$	$3/2^+$
283	182	2029.96		7.17		9.27	15.73	4.92	6.44	−4.59	−7.63	6.345	6.478	6.098	6.150		$13/2^+$	0^+
284	183	2034.30		7.16		9.26	15.95	4.34	6.54	−3.74	−7.74	6.354	6.490	6.100	6.152		$13/2^+$	$1/2^+$
285	184	2038.99		7.15		9.03	16.11	4.69	6.62	−3.60	−7.82	6.363	6.502	6.102	6.154		$13/2^+$	0^+
286	185	2040.54		7.13		6.24	16.45	1.55	6.79	−3.63	−7.99	6.377	6.516	6.114	6.166		$13/2^+$	$13/2^-$
287	186	2043.38		7.12		4.39	16.76	2.84	6.95	−2.22	−8.14	6.390	6.529	6.125	6.177		$13/2^+$	0^+
288	187	2044.94		7.10		4.40	17.09	1.56	7.12	−2.23	−8.31	6.404	6.543	6.138	6.190		$13/2^+$	$13/2^-$
289	188	2047.79		7.09		4.41	17.39	2.85	7.27	−2.24	−8.46	6.417	6.556	6.148	6.200		$13/2^+$	0^+
290	189	2049.36		7.07		4.42	17.72	1.57	7.45	−2.24	−8.62	6.430	6.569	6.161	6.213		$13/2^+$	$13/2^-$
291	190	2052.23		7.05		4.44	18.02	2.87	7.60	−2.25	−8.78	6.443	6.583	6.172	6.224		$13/2^+$	0^+
292	191	2053.81		7.03		4.45	18.35	1.58	7.78	−2.25	−8.94	6.457	6.596	6.185	6.237		$13/2^+$	$13/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
293	192	2056.70		7.02		4.47	18.65	2.89	7.94	−2.26	−9.09	6.469	6.609	6.196	6.247		$13/2^+$	0^+
294	193	2058.27		7.00		4.46	18.98	1.57	8.11	−2.24	−9.26	6.483	6.622	6.209	6.261		$13/2^+$	$13/2^-$
295	194	2061.18		6.99		4.48	19.28	2.91	8.26	−2.26	−9.40	6.496	6.635	6.220	6.271		$13/2^+$	0^+
296	195	2062.72		6.97		4.45	19.62	1.54	8.44	−2.22	−9.57	6.510	6.648	6.233	6.285		$13/2^+$	$13/2^-$
297	196	2065.65		6.96		4.47	19.91	2.93	8.59	−2.23	−9.71	6.522	6.661	6.244	6.295		$13/2^+$	0^+
298	197	2067.05		6.94		4.33	20.22	1.40	8.76	−2.11	−9.87	6.535	6.674	6.256	6.307		$13/2^+$	$13/2^-$
299	198	2070.01		6.92		4.36	20.50	2.96	8.91	−2.14	−10.01	6.547	6.686	6.266	6.317		$13/2^+$	0^+
300	199	2071.35		6.90		4.30	20.81	1.34	9.07	−2.16	−10.14	6.559	6.699	6.274	6.325		$13/2^+$	$11/2^-$
301	200	2074.10		6.89		4.09	21.00	2.75	9.15	−2.02	−10.26	6.570	6.711	6.282	6.332		$13/2^+$	0^+
302	201	2075.36		6.87		4.01	21.24	1.26	9.27	−1.99	−10.38	6.581	6.724	6.288	6.339		$13/2^+$	$11/2^-$
303	202	2077.96		6.86		3.86	21.45	2.60	9.37	−1.94	−10.50	6.592	6.735	6.294	6.345		$13/2^+$	0^+
304	203	2079.17		6.84		3.81	21.68	1.21	9.48	−1.91	−10.61	6.603	6.748	6.300	6.351		$13/2^+$	$11/2^-$
305	204	2081.69		6.83		3.73	21.90	2.52	9.59	−1.88	−10.72	6.613	6.759	6.306	6.356		$13/2^+$	0^+
306	205	2082.83		6.81		3.66	22.12	1.14	9.69	−1.84	−10.84	6.623	6.772	6.312	6.362		$13/2^+$	$11/2^-$
307	206	2085.31		6.79		3.62	22.35	2.48	9.80	−1.83	−10.95	6.634	6.783	6.317	6.368		$13/2^+$	0^+
308	207	2086.37		6.77		3.54	22.57	1.06	9.91	−1.78	−11.06	6.644	6.795	6.323	6.374		$13/2^+$	$11/2^-$
309	208	2088.83		6.76		3.52	22.80	2.46	10.02	−1.78	−11.18	6.655	6.807	6.329	6.380		$13/2^+$	0^+
310	209	2089.78		6.74		3.41	23.03	0.95	10.13	−1.71	−11.30	6.665	6.819	6.336	6.386		$13/2^+$	$11/2^-$
311	210	2092.24		6.73		3.41	23.25	2.46	10.24	−1.72	−11.41	6.676	6.830	6.342	6.392		$13/2^+$	0^+
312	211	2093.06		6.71		3.28	23.51	0.82	10.38	−1.65	−11.54	6.687	6.842	6.350	6.400		$13/2^+$	$11/2^-$
313	212	2095.55		6.70		3.31	23.71	2.49	10.48	−1.67	−11.65	6.697	6.854	6.355	6.405		$13/2^+$	0^+
314	213	2096.22		6.68		3.16	23.98	0.67	10.62	−1.60	−11.78	6.708	6.866	6.364	6.414		$13/2^+$	$11/2^-$
315	214	2098.76		6.66		3.21	24.18	2.54	10.72	−1.63	−11.88	6.718	6.877	6.369	6.419		$13/2^+$	0^+
316	215	2099.37		6.64		3.15	24.46	0.61	10.86	−1.62	−12.02	6.729	6.888	6.377	6.427		$13/2^+$	$17/2^+$
317	216	2101.90		6.63		3.14	24.65	2.53	10.96	−1.60	−12.12	6.740	6.900	6.384	6.434		$13/2^+$	0^+
318	217	2102.50		6.61		3.13	24.91	0.60	11.10	−1.59	−12.25	6.751	6.911	6.392	6.442		$13/2^+$	$17/2^+$
319	218	2104.98		6.60		3.08	25.11	2.48	11.20	−1.57	−12.35	6.761	6.923	6.398	6.448		$13/2^+$	0^+
320	219	2105.58		6.58		3.08	25.35	0.60	11.34	−1.57	−12.48	6.772	6.934	6.407	6.456		$13/2^+$	$17/2^+$
321	220	2108.03		6.57		3.05	25.57	2.45	11.45	−1.56	−12.59	6.783	6.946	6.413	6.463		$13/2^+$	0^+
322	221	2108.63		6.55		3.05	25.75	0.60	11.57	−1.55	−12.71	6.794	6.957	6.421	6.471		$13/2^+$	$17/2^+$
323	222	2111.05		6.54		3.02	26.02	2.42	11.68	−1.55	−12.81	6.805	6.969	6.428	6.477		$13/2^+$	0^+
324	223	2111.68		6.52		3.05	26.22	0.63	11.80	−1.56	−12.93	6.816	6.981	6.435	6.485		$13/2^+$	$9/2^-$
325	224	2114.05		6.50		3.00	26.45	2.37	11.91	−1.54	−13.04	6.826	6.992	6.442	6.492		$13/2^+$	0^+
326	225	2114.71		6.49		3.03	26.66	0.66	12.03	−1.55	−13.15	6.837	7.004	6.450	6.500		$13/2^+$	$9/2^-$
327	226	2117.06		6.47		3.01	26.90	2.35	12.15	−1.53	−13.26	6.847	7.015	6.456	6.506		$13/2^+$	0^+
328	227	2117.74		6.46		3.03	27.09	0.68	12.26	−1.54	−13.38	6.858	7.027	6.465	6.514		$13/2^+$	$9/2^-$
329	228	2120.05		6.44		2.99	27.32	2.31	12.37	−1.53	−13.47	6.869	7.038	6.470	6.520		$13/2^+$	0^+
330	229	2120.76		6.43		3.02	27.51	0.71	12.47	−1.53	−13.60	6.880	7.049	6.479	6.528		$13/2^+$	$9/2^-$
331	230	2123.05		6.41		3.00	27.74	2.29	12.59	−1.53	−13.68	6.890	7.061	6.484	6.533		$13/2^+$	0^+
332	231	2123.78		6.40		3.02	27.91	0.73	12.68	−1.55	−13.76	6.901	7.074	6.488	6.537		$13/2^+$	$7/2^-$
333	232	2126.04		6.38		2.99	28.14	2.26	12.80	−1.52	−13.88	6.911	7.084	6.497	6.546		$13/2^+$	0^+
334	233	2126.82		6.37		3.04	28.33	0.78	12.90	−1.54	−13.97	6.922	7.096	6.502	6.551		$13/2^+$	$7/2^-$
335	234	2129.04		6.36		3.00	28.54	2.22	13.01	−1.52	−14.08	6.932	7.106	6.510	6.559		$13/2^+$	0^+
336	235	2129.85		6.34		3.03	28.73	0.81	13.10	−1.54	−14.17	6.943	7.119	6.515	6.564		$13/2^+$	$7/2^-$
337	236	2132.02		6.33		2.98	28.92	2.17	13.20	−1.51	−14.27	6.953	7.129	6.521	6.570		$13/2^+$	0^+
338	237	2132.88		6.31		3.03	29.12	0.86	13.31	−1.52	−14.36	6.964	7.141	6.527	6.576		$13/2^+$	$7/2^-$
339	238	2134.98		6.30		2.96	29.27	2.10	13.38	−1.50	−14.44	6.973	7.152	6.532	6.581		$13/2^+$	0^+
340	239	2135.87		6.28		2.99	29.47	0.89	13.48	−1.50	−14.54	6.984	7.164	6.538	6.587		$13/2^+$	$7/2^-$
341	240	2137.91		6.27		2.93	29.59	2.04	13.54	−1.48	−14.60	6.994	7.176	6.541	6.589		$13/2^+$	0^+
342	241	2138.82		6.25		2.95	29.80	0.91	13.64	−1.48	−14.70	7.004	7.187	6.547	6.596		$13/2^+$	$7/2^-$
343	242	2140.81		6.24		2.90	29.89	1.99	13.69	−1.46	−14.74	7.014	7.199	6.548	6.597		$13/2^+$	0^+
344	243	2141.71		6.23		2.89	30.06	0.90	13.78	−1.45	−14.84	7.025	7.211	6.554	6.603		$13/2^+$	$7/2^-$
345	244	2143.66		6.21		2.85	30.16	1.95	13.81	−1.44	−14.87	7.034	7.223	6.554	6.603		$13/2^+$	0^+
346	245	2144.54		6.20		2.83	30.22	0.88	13.84	−1.46	−14.94	7.045	7.236	6.558	6.606		$13/2^+$	$5/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
347	246	2146.47		6.19		2.81	30.39	1.93	13.92	−1.42	−14.99	7.054	7.248	6.559	6.607		$13/2^+$	0^+
348	247	2147.45		6.17		2.91	30.53	0.98	13.99	−1.44	−15.04	7.066	7.262	6.560	6.609		$13/2^+$	$3/2^-$
349	248	2149.24		6.16		2.77	30.61	1.79	14.02	−1.40	−15.10	7.075	7.273	6.562	6.611		$13/2^+$	0^+
350	249	2150.23		6.14		2.78	30.73	0.99	14.08	−1.41	−15.15	7.086	7.287	6.564	6.613		$13/2^+$	$3/2^-$
351	250	2151.98		6.13		2.74	30.82	1.75	14.11	−1.38	−15.20	7.096	7.299	6.566	6.614		$13/2^+$	0^+
352	251	2152.99		6.12		2.76	30.94	1.01	14.17	−1.39	−15.26	7.107	7.312	6.568	6.616		$13/2^+$	$3/2^-$
353	252	2154.68		6.10		2.70	31.00	1.69	14.19	−1.36	−15.30	7.117	7.325	6.568	6.617		$13/2^+$	0^+
354	253	2155.71		6.09		2.72	31.11	1.03	14.25	−1.37	−15.35	7.128	7.338	6.570	6.619		$13/2^+$	$3/2^-$
355	254	2157.36		6.08		2.68	31.19	1.65	14.27	−1.35	−15.39	7.138	7.352	6.570	6.619		$13/2^+$	0^+
356	255	2158.46		6.06		2.75	31.28	1.10	14.32	−1.39	−15.43	7.149	7.366	6.572	6.620		$13/2^+$	$1/2^-$
357	256	2160.01		6.05		2.65	31.36	1.55	14.35	−1.33	−15.47	7.160	7.379	6.572	6.621		$13/2^+$	0^+
358	257	2161.21		6.04		2.75	31.45	1.20	14.39	−0.33	−15.52	7.171	7.392	6.574	6.622		$13/2^+$	$1/2^-$
359	258	2162.61		6.02		2.60	31.51	1.40	14.41	−0.20	−15.55	7.183	7.408	6.573	6.622		$13/2^+$	0^+
360	259	2161.38		6.00		0.17	31.52	−1.23	14.42	−0.73	−15.55	7.210	7.443	6.573	6.622		$13/2^+$	$1/2^+$
361	260	2160.20		5.98		−2.41	31.55	−1.18	14.45	1.19	−15.61	7.221	7.456	6.579	6.627		$13/2^+$	0^+
σ		20.61																
$Z = 102$ (No)																		
239	137	1755.43		7.34			0.45	7.82	1.28	−8.11	0.01	5.916	5.953	5.866	5.920		0^+	$11/2^+$
240	138	1764.69		7.35		17.08	0.92	9.26	1.50	−8.13	−0.22	5.929	5.967	5.877	5.931		0^+	0^+
241	139	1771.14		7.35		15.71	1.26	6.45	1.69	−8.11	−0.39	5.938	5.979	5.882	5.936		0^+	$9/2^+$
242	140	1779.90		7.35		15.21	1.71	8.76	1.90	−7.53	−0.61	5.948	5.991	5.888	5.942		0^+	0^+
243	141	1786.20		7.35		15.06	2.06	6.30	2.09	−7.46	−0.79	5.957	6.003	5.893	5.947		0^+	$9/2^+$
244	142	1794.64		7.36		14.74	2.50	8.44	2.29	−7.35	−1.01	5.967	6.015	5.900	5.954		0^+	0^+
245	143	1800.84		7.35		14.64	2.86	6.20	2.49	−7.29	−1.19	5.977	6.027	5.905	5.959		0^+	$9/2^+$
246	144	1809.06		7.35		14.42	3.28	8.22	2.68	−7.21	−1.40	5.987	6.039	5.912	5.966		0^+	0^+
247	145	1815.16		7.35		14.32	3.63	6.10	2.87	−7.16	−1.58	5.996	6.051	5.917	5.971		0^+	$9/2^+$
248	146	1823.22		7.35		14.16	4.04	8.06	3.07	−7.09	−1.79	6.006	6.063	5.924	5.978		0^+	0^+
249	147	1829.23		7.35		14.07	4.41	6.01	3.26	−7.04	−1.97	6.016	6.075	5.929	5.983		0^+	$9/2^+$
250	148	1837.16		7.35		13.94	4.81	7.93	3.45	−6.99	−2.17	6.025	6.086	5.936	5.989		0^+	0^+
251	149	1843.08		7.34		13.85	5.19	5.92	3.65	−6.93	−2.36	6.035	6.098	5.942	5.995		0^+	$9/2^+$
252	150	1850.90	1871.30	7.34	7.43	13.74	5.57	7.82	3.83	−6.89	−2.55	6.045	6.109	5.948	6.001		0^+	0^+
253	151	1856.72	1877.88	7.34	7.42	13.64	5.96	5.82	4.02	−6.83	−2.74	6.054	6.121	5.954	6.008		0^+	$9/2^+$
254	152	1864.45	1885.59	7.34	7.42	13.55	6.32	7.73	4.21	−6.79	−2.93	6.064	6.132	5.960	6.013		0^+	0^+
255	153	1870.18	1891.58	7.33	7.42	13.46	6.73	5.73	4.40	−6.74	−3.13	6.074	6.144	5.967	6.020		0^+	$9/2^+$
256	154	1877.83	1898.63	7.34	7.42	13.38	7.08	7.65	4.58	−6.70	−3.30	6.083	6.155	5.972	6.025		0^+	0^+
257	155	1883.46	1904.28	7.33	7.41	13.28	7.50	5.63	4.77	−6.64	−3.51	6.093	6.167	5.979	6.032		0^+	$9/2^+$
258	156	1891.04		7.33		13.21	7.83	7.58	4.95	−6.61	−3.68	6.102	6.178	5.984	6.038		0^+	0^+
259	157	1896.57		7.32		13.11	8.25	5.53	5.15	−6.54	−3.89	6.112	6.189	5.992	6.045		0^+	$9/2^+$
260	158	1904.08		7.32		13.04	8.58	7.51	5.32	−6.52	−4.05	6.121	6.200	5.997	6.050		0^+	0^+
261	159	1909.49		7.32		12.92	8.97	5.41	5.52	−6.44	−4.27	6.131	6.211	6.005	6.058		0^+	$9/2^+$
262	160	1916.94		7.32		12.86	9.32	7.45	5.68	−6.41	−4.42	6.140	6.222	6.009	6.062		0^+	0^+
263	161	1922.21		7.31		12.72	9.69	5.27	5.87	−6.31	−4.64	6.150	6.233	6.017	6.070		0^+	$9/2^+$
264	162	1929.60		7.31		12.66	10.06	7.39	6.04	−6.29	−4.78	6.159	6.244	6.022	6.075		0^+	0^+
265	163	1934.86		7.30		12.65	10.40	5.26	6.22	−6.33	−4.95	6.170	6.257	6.028	6.081		0^+	$7/2^+$
266	164	1942.00		7.30		12.40	10.76	7.14	6.40	−6.14	−5.13	6.179	6.267	6.034	6.087		0^+	0^+
267	165	1947.33		7.29		12.47	11.12	5.33	6.57	−6.14	−5.31	6.189	6.279	6.041	6.094		0^+	$7/2^+$
268	166	1954.04		7.29		12.04	11.39	6.71	6.71	−5.97	−5.45	6.199	6.291	6.047	6.099		0^+	0^+
269	167	1959.34		7.28		12.01	11.73	5.30	6.88	−5.92	−5.61	6.209	6.302	6.053	6.106		0^+	$7/2^+$
270	168	1965.77		7.28		11.73	11.98	6.43	7.01	−5.82	−5.74	6.219	6.315	6.059	6.111		0^+	0^+
271	169	1970.96		7.27		11.62	12.30	5.19	7.17	−5.75	−5.90	6.230	6.327	6.066	6.118		0^+	$7/2^+$
272	170	1977.23		7.27		11.46	12.54	6.27	7.30	−5.69	−6.03	6.240	6.339	6.071	6.123		0^+	0^+
273	171	1982.24		7.26		11.28	12.86	5.01	7.47	−5.51	−6.18	6.250	6.351	6.077	6.130		0^+	$7/2^+$
274	172	1988.39		7.26		11.16	13.08	6.15	7.58	−5.49	−6.30	6.259	6.362	6.082	6.134		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
275	173	1993.22		7.25		10.98	13.32	4.83	7.73	−5.49	−6.43	6.269	6.374	6.086	6.138		0^+	$5/2^+$
276	174	1999.08		7.24		10.69	13.53	5.86	7.83	−5.27	−6.53	6.277	6.385	6.088	6.140		0^+	0^+
277	175	2003.80		7.23		10.58	13.75	4.72	7.94	−5.19	−6.64	6.286	6.396	6.091	6.143		0^+	$5/2^+$
278	176	2009.38		7.23		10.30	13.94	5.58	8.04	−5.12	−6.73	6.294	6.407	6.093	6.145		0^+	0^+
279	177	2013.93		7.22		10.13	14.14	4.55	8.15	−5.01	−6.84	6.302	6.419	6.096	6.148		0^+	$5/2^+$
280	178	2019.41		7.21		10.03	14.34	5.48	8.26	−4.98	−6.94	6.310	6.429	6.097	6.150		0^+	0^+
281	179	2023.91		7.20		9.98	14.55	4.50	8.37	−4.98	−7.04	6.319	6.441	6.100	6.152		0^+	$3/2^+$
282	180	2029.16		7.20		9.75	14.73	5.25	8.47	−4.83	−7.14	6.328	6.452	6.102	6.154		0^+	0^+
283	181	2033.62		7.19		9.71	14.93	4.46	8.58	−4.78	−7.24	6.337	6.464	6.104	6.156		0^+	$3/2^+$
284	182	2038.65		7.18		9.49	15.13	5.03	8.69	−4.70	−7.34	6.346	6.476	6.107	6.159		0^+	0^+
285	183	2043.10		7.17		9.48	15.34	4.45	8.80	−3.82	−7.45	6.355	6.489	6.109	6.161		0^+	$1/2^+$
286	184	2047.87		7.16		9.22	15.50	4.77	8.88	−3.71	−7.53	6.364	6.501	6.111	6.163		0^+	0^+
287	185	2049.59		7.14		6.49	15.84	1.72	9.05	−3.62	−7.70	6.378	6.514	6.123	6.175		0^+	$13/2^-$
288	186	2052.58		7.13		4.71	16.15	2.99	9.20	−2.38	−7.86	6.391	6.527	6.134	6.186		0^+	0^+
289	187	2054.30		7.11		4.71	16.48	1.72	9.36	−2.38	−8.02	6.405	6.541	6.147	6.198		0^+	$13/2^-$
290	188	2057.31		7.09		4.73	16.79	3.01	9.52	−2.39	−8.18	6.417	6.554	6.157	6.209		0^+	0^+
291	189	2059.04		7.08		4.74	17.13	1.73	9.68	−2.39	−8.34	6.431	6.568	6.170	6.222		0^+	$13/2^-$
292	190	2062.06		7.06		4.75	17.43	3.02	9.83	−2.40	−8.50	6.444	6.581	6.181	6.233		0^+	0^+
293	191	2063.80		7.04		4.76	17.77	1.74	9.99	−2.40	−8.66	6.458	6.594	6.194	6.245		0^+	$13/2^-$
294	192	2066.83		7.03		4.77	18.07	3.03	10.13	−2.41	−8.82	6.470	6.607	6.205	6.256		0^+	0^+
295	193	2068.57		7.01		4.77	18.41	1.74	10.30	−2.39	−8.98	6.484	6.620	6.218	6.269		0^+	$13/2^-$
296	194	2071.62		7.00		4.79	18.70	3.05	10.44	−2.41	−9.13	6.496	6.633	6.229	6.280		0^+	0^+
297	195	2073.32		6.98		4.75	19.04	1.70	10.60	−2.36	−9.30	6.510	6.646	6.243	6.294		0^+	$13/2^-$
298	196	2076.39		6.97		4.77	19.33	3.07	10.74	−2.38	−9.45	6.523	6.659	6.253	6.304		0^+	0^+
299	197	2077.95		6.95		4.63	19.66	1.56	10.90	−2.24	−9.60	6.536	6.672	6.266	6.317		0^+	$13/2^-$
300	198	2081.05		6.94		4.66	19.95	3.10	11.04	−2.28	−9.75	6.548	6.684	6.276	6.326		0^+	0^+
301	199	2082.48		6.92		4.53	20.20	1.43	11.13	−2.29	−9.87	6.560	6.697	6.284	6.334		0^+	$11/2^-$
302	200	2085.39		6.91		4.34	20.44	2.91	11.29	−2.14	−10.00	6.571	6.709	6.291	6.341		0^+	0^+
303	201	2086.77		6.89		4.29	20.68	1.38	11.41	−2.11	−10.12	6.582	6.721	6.297	6.348		0^+	$11/2^-$
304	202	2089.49		6.87		4.10	20.90	2.72	11.53	−2.05	−10.23	6.592	6.733	6.303	6.353		0^+	0^+
305	203	2090.81		6.86		4.04	21.12	1.32	11.64	−2.02	−10.34	6.603	6.745	6.309	6.359		0^+	$11/2^-$
306	204	2093.45		6.84		3.96	21.35	2.64	11.76	−2.00	−10.46	6.613	6.757	6.314	6.365		0^+	0^+
307	205	2094.71		6.82		3.90	21.57	1.26	11.88	−1.95	−10.57	6.623	6.769	6.320	6.371		0^+	$11/2^-$
308	206	2097.30		6.81		3.85	21.79	2.59	11.99	−1.94	−10.69	6.633	6.780	6.326	6.376		0^+	0^+
309	207	2098.48		6.79		3.77	22.02	1.18	12.11	−1.89	−10.80	6.644	6.792	6.332	6.382		0^+	$11/2^-$
310	208	2101.05		6.78		3.75	22.24	2.57	12.22	−1.89	−10.92	6.654	6.804	6.338	6.388		0^+	0^+
311	209	2102.12		6.76		3.64	22.47	1.07	12.34	−1.83	−11.04	6.665	6.816	6.345	6.395		0^+	$11/2^-$
312	210	2104.70		6.75		3.65	22.70	2.58	12.46	−1.84	−11.15	6.675	6.827	6.350	6.401		0^+	0^+
313	211	2105.64		6.73		3.52	22.96	0.94	12.58	−1.77	−11.28	6.686	6.839	6.358	6.408		0^+	$11/2^-$
314	212	2108.25		6.71		3.55	23.18	2.61	12.70	−1.79	−11.39	6.696	6.850	6.364	6.414		0^+	0^+
315	213	2109.04		6.70		3.40	23.44	0.79	12.82	−1.72	−11.53	6.707	6.862	6.373	6.423		0^+	$11/2^-$
316	214	2111.69		6.68		3.44	23.65	2.65	12.93	−1.74	−11.63	6.717	6.873	6.378	6.428		0^+	0^+
317	215	2112.43		6.66		3.39	23.92	0.74	13.06	−1.74	−11.77	6.728	6.884	6.386	6.436		0^+	$17/2^+$
318	216	2115.06		6.65		3.37	24.12	2.63	13.16	−1.71	−11.88	6.739	6.896	6.393	6.443		0^+	0^+
319	217	2115.80		6.63		3.37	24.40	0.74	13.30	−1.70	−12.01	6.749	6.907	6.401	6.451		0^+	$17/2^+$
320	218	2118.38		6.62		3.32	24.60	2.58	13.40	−1.69	−12.12	6.760	6.919	6.408	6.458		0^+	0^+
321	219	2119.11		6.60		3.31	24.87	0.73	13.53	−1.68	−12.25	6.771	6.930	6.416	6.466		0^+	$17/2^+$
322	220	2121.66		6.59		3.28	25.08	2.55	13.63	−1.67	−12.35	6.782	6.942	6.423	6.472		0^+	0^+
323	221	2122.38		6.57		3.27	25.32	0.72	13.75	−1.66	−12.48	6.792	6.953	6.431	6.480		0^+	$17/2^+$
324	222	2124.90		6.56		3.24	25.53	2.52	13.85	−1.65	−12.59	6.803	6.965	6.438	6.487		0^+	0^+
325	223	2125.64		6.54		3.26	25.76	0.74	13.96	−1.67	−12.70	6.814	6.977	6.445	6.495		0^+	$9/2^-$
326	224	2128.13		6.53		3.23	25.99	2.49	14.08	−1.65	−12.82	6.824	6.987	6.452	6.502		0^+	0^+
327	225	2128.90		6.51		3.26	26.22	0.77	14.19	−1.66	−12.93	6.836	6.999	6.460	6.510		0^+	$9/2^-$
328	226	2131.35		6.50		3.22	26.44	2.45	14.29	−1.64	−13.04	6.846	7.010	6.467	6.516		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
329	227	2132.15		6.48		3.25	26.67	0.80	14.41	−1.65	−13.16	6.857	7.021	6.475	6.524		0^+	$9/2^-$
330	228	2134.56		6.47		3.21	26.88	2.41	14.51	−1.63	−13.26	6.867	7.033	6.481	6.530		0^+	0^+
331	229	2135.39		6.45		3.24	27.10	0.83	14.63	−1.64	−13.39	6.878	7.044	6.490	6.539		0^+	$9/2^-$
332	230	2137.76		6.44		3.20	27.30	2.37	14.71	−1.63	−13.47	6.888	7.055	6.495	6.544		0^+	0^+
333	231	2138.61		6.42		3.22	27.51	0.85	14.83	−1.63	−13.60	6.899	7.066	6.504	6.553		0^+	$9/2^-$
334	232	2140.96		6.41		3.20	27.72	2.35	14.92	−1.62	−13.68	6.909	7.078	6.508	6.557		0^+	0^+
335	233	2141.82		6.39		3.21	27.90	0.86	15.00	−1.64	−13.76	6.920	7.091	6.513	6.562		0^+	$7/2^-$
336	234	2144.15		6.38		3.19	28.12	2.33	15.11	−1.61	−13.88	6.930	7.101	6.521	6.570		0^+	0^+
337	235	2145.05		6.37		3.23	28.30	0.90	15.20	−1.63	−13.97	6.941	7.113	6.526	6.575		0^+	$7/2^-$
338	236	2147.32		6.35		3.17	28.50	2.27	15.30	−1.60	−14.07	6.951	7.124	6.533	6.582		0^+	0^+
339	237	2148.27		6.34		3.22	28.70	0.95	15.39	−1.61	−14.16	6.961	7.136	6.539	6.587		0^+	$7/2^-$
340	238	2150.45		6.32		3.13	28.85	2.18	15.47	−1.58	−14.24	6.971	7.146	6.543	6.592		0^+	0^+
341	239	2151.44		6.31		3.17	29.05	0.99	15.57	−1.59	−14.34	6.982	7.158	6.549	6.598		0^+	$7/2^-$
342	240	2153.54		6.30		3.09	29.17	2.10	15.63	−1.55	−14.40	6.991	7.170	6.552	6.600		0^+	0^+
343	241	2154.54		6.28		3.10	29.36	1.00	15.72	−1.55	−14.49	7.002	7.182	6.558	6.606		0^+	$7/2^-$
344	242	2156.58		6.27		3.04	29.46	2.04	15.77	−1.53	−14.53	7.011	7.193	6.559	6.607		0^+	0^+
345	243	2157.57		6.25		3.03	29.64	0.99	15.86	−1.51	−14.62	7.022	7.206	6.564	6.612		0^+	$7/2^-$
346	244	2159.56		6.24		2.98	29.71	1.99	15.90	−1.50	−14.66	7.031	7.218	6.564	6.612		0^+	0^+
347	245	2160.51		6.23		2.94	29.81	0.95	15.97	−1.47	−14.74	7.042	7.230	6.568	6.617		0^+	$7/2^-$
348	246	2162.49		6.21		2.93	29.94	1.98	16.02	−1.47	−14.77	7.051	7.242	6.568	6.616		0^+	0^+
349	247	2163.47		6.20		2.96	30.01	0.98	16.02	−1.49	−14.84	7.062	7.255	6.571	6.619		0^+	$5/2^-$
350	248	2165.37		6.19		2.88	30.15	1.90	16.13	−1.45	−14.88	7.071	7.267	6.571	6.620		0^+	0^+
351	249	2166.41		6.17		2.94	30.26	1.04	16.18	−1.47	−14.93	7.083	7.281	6.573	6.621		0^+	$3/2^-$
352	250	2168.20		6.16		2.83	30.33	1.79	16.22	−1.43	−14.97	7.092	7.293	6.574	6.622		0^+	0^+
353	251	2169.27		6.15		2.86	30.45	1.07	16.28	−1.44	−15.03	7.103	7.306	6.576	6.624		0^+	$3/2^-$
354	252	2171.01		6.13		2.81	30.52	1.74	16.33	−1.41	−15.07	7.113	7.319	6.576	6.625		0^+	0^+
355	253	2172.09		6.12		2.82	30.63	1.08	16.38	−1.41	−15.12	7.124	7.332	6.578	6.627		0^+	$3/2^-$
356	254	2173.78		6.11		2.77	30.69	1.69	16.42	−1.39	−15.15	7.134	7.345	6.578	6.627		0^+	0^+
357	255	2174.92		6.09		2.83	30.78	1.14	16.46	−1.43	−15.20	7.145	7.360	6.579	6.628		0^+	$1/2^-$
358	256	2176.52		6.08		2.74	30.86	1.60	16.51	−1.37	−15.24	7.156	7.373	6.580	6.628		0^+	0^+
359	257	2177.77		6.07		2.85	30.95	1.25	16.56	−0.22	−15.28	7.166	7.386	6.581	6.629		0^+	$1/2^-$
360	258	2179.20		6.05		2.68	31.00	1.43	16.59	−0.20	−15.31	7.178	7.401	6.581	6.629		0^+	0^+
361	259	2177.96		6.03		0.19	31.00	−1.24	16.58	−0.57	−15.31	7.205	7.437	6.580	6.629		0^+	$1/2^+$
362	260	2176.86		6.01		−2.34	31.11	−1.10	16.66	1.14	−15.41	7.209	7.437	6.590	6.638		0^+	0^+
σ		20.96																
$Z = 103$ (Lr)																		
241	138	1763.48		7.32			0.29		−1.21	−8.36	0.11	5.935	5.969	5.888	5.942		$13/2^+$	0^+
242	139	1770.16		7.31			0.71	6.68	−0.98	−8.38	−0.11	5.945	5.981	5.895	5.949		$13/2^+$	$15/2^-$
243	140	1779.09		7.32		15.61	1.09	8.93	−0.81	−7.73	−0.29	5.953	5.993	5.899	5.953		$13/2^+$	0^+
244	141	1785.55		7.32		15.39	1.44	6.46	−0.65	−7.66	−0.47	5.963	6.005	5.904	5.958		$13/2^+$	$9/2^+$
245	142	1794.23		7.32		15.14	1.88	8.68	−0.41	−7.55	−0.69	5.973	6.017	5.911	5.965		$13/2^+$	0^+
246	143	1800.59		7.32		15.04	2.24	6.36	−0.25	−7.49	−0.87	5.982	6.029	5.916	5.970		$13/2^+$	$9/2^+$
247	144	1809.05		7.32		14.82	2.67	8.46	−0.01	−7.41	−1.08	5.992	6.041	5.923	5.977		$13/2^+$	0^+
248	145	1815.33		7.32		14.74	3.04	6.28	0.17	−7.35	−1.26	6.001	6.053	5.929	5.982		$13/2^+$	$9/2^+$
249	146	1823.61		7.32		14.56	3.46	8.28	0.39	−7.29	−1.47	6.011	6.064	5.936	5.989		$13/2^+$	0^+
250	147	1829.79		7.32		14.46	3.82	6.18	0.56	−7.24	−1.65	6.021	6.076	5.941	5.995		$13/2^+$	$9/2^+$
251	148	1837.94		7.32		14.33	4.23	8.15	0.78	−7.18	−1.85	6.031	6.088	5.948	6.001		$13/2^+$	0^+
252	149	1844.04		7.32		14.25	4.61	6.10	0.96	−7.13	−2.04	6.040	6.099	5.953	6.007		$13/2^+$	$9/2^+$
253	150	1852.06		7.32		14.12	4.99	8.02	1.16	−7.08	−2.24	6.050	6.111	5.960	6.013		$13/2^+$	0^+
254	151	1858.08		7.32		14.04	5.38	6.02	1.36	−7.03	−2.43	6.059	6.122	5.966	6.019		$13/2^+$	$9/2^+$
255	152	1865.99	1887.66	7.32	7.40	13.93	5.75	7.91	1.54	−6.98	−2.61	6.069	6.133	5.972	6.025		$13/2^+$	0^+
256	153	1871.93	1893.93	7.31	7.40	13.85	6.15	5.94	1.75	−6.93	−2.81	6.078	6.145	5.978	6.032		$13/2^+$	$9/2^+$
257	154	1879.75		7.31		13.76	6.50	7.82	1.92	−6.89	−2.99	6.088	6.156	5.984	6.037		$13/2^+$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
258	155	1885.60		7.31		13.67	6.91	5.85	2.14	−6.84	−3.19	6.097	6.167	5.991	6.044		$13/2^+$	$9/2^+$
259	156	1893.34		7.31		13.59	7.25	7.74	2.30	−6.80	−3.36	6.107	6.178	5.996	6.049		$13/2^+$	0^+
260	157	1899.10		7.30		13.50	7.68	5.76	2.53	−6.74	−3.57	6.116	6.190	6.003	6.056		$13/2^+$	$9/2^+$
261	158	1906.75		7.31		13.41	7.99	7.65	2.67	−6.71	−3.73	6.125	6.201	6.008	6.061		$13/2^+$	0^+
262	159	1912.41		7.30		13.31	8.44	5.66	2.92	−6.63	−3.95	6.135	6.212	6.016	6.069		$13/2^+$	$9/2^+$
263	160	1919.99		7.30		13.24	8.73	7.58	3.05	−6.60	−4.10	6.144	6.222	6.020	6.073		$13/2^+$	0^+
264	161	1925.52		7.29		13.11	9.18	5.53	3.31	−6.50	−4.32	6.154	6.233	6.028	6.081		$13/2^+$	$9/2^+$
265	162	1933.02		7.29		13.03	9.46	7.50	3.42	−6.47	−4.46	6.163	6.244	6.033	6.086		$13/2^+$	0^+
266	163	1938.44		7.29		12.92	9.80	5.42	3.58	−6.51	−4.63	6.173	6.257	6.039	6.092		$13/2^+$	$7/2^+$
267	164	1945.77		7.29		12.75	10.17	7.33	3.77	−6.30	−4.81	6.182	6.267	6.045	6.098		$13/2^+$	0^+
268	165	1951.28		7.28		12.84	10.52	5.51	3.95	−6.31	−4.98	6.192	6.278	6.052	6.104		$13/2^+$	$7/2^+$
269	166	1958.12		7.28		12.35	10.79	6.84	4.08	−6.11	−5.12	6.202	6.290	6.057	6.110		$13/2^+$	0^+
270	167	1963.58		7.27		12.30	11.12	5.46	4.24	−6.06	−5.29	6.212	6.302	6.064	6.116		$13/2^+$	$7/2^+$
271	168	1970.12		7.27		12.00	11.36	6.54	4.35	−5.96	−5.42	6.223	6.315	6.069	6.122		$13/2^+$	0^+
272	169	1975.48		7.26		11.90	11.69	5.36	4.52	−5.89	−5.58	6.233	6.327	6.076	6.129		$13/2^+$	$7/2^+$
273	170	1981.86		7.26		11.74	11.93	6.38	4.63	−5.83	−5.71	6.243	6.339	6.081	6.134		$13/2^+$	0^+
274	171	1987.02		7.25		11.54	12.25	5.16	4.78	−5.63	−5.86	6.253	6.351	6.088	6.140		$13/2^+$	$7/2^+$
275	172	1993.29		7.25		11.43	12.48	6.27	4.90	−5.62	−5.99	6.263	6.362	6.092	6.145		$13/2^+$	0^+
276	173	1998.24		7.24		11.22	12.75	4.95	5.02	−5.61	−6.11	6.272	6.374	6.097	6.149		$13/2^+$	$5/2^+$
277	174	2004.18		7.24		10.89	12.93	5.94	5.10	−5.37	−6.21	6.280	6.384	6.098	6.151		$13/2^+$	0^+
278	175	2009.01		7.23		10.77	13.15	4.83	5.21	−5.29	−6.32	6.288	6.396	6.101	6.153		$13/2^+$	$5/2^+$
279	176	2014.68		7.22		10.50	13.34	5.67	5.30	−5.22	−6.42	6.296	6.406	6.103	6.155		$13/2^+$	0^+
280	177	2019.33		7.21		10.32	13.55	4.65	5.40	−5.11	−6.53	6.305	6.418	6.106	6.158		$13/2^+$	$5/2^+$
281	178	2024.90		7.21		10.22	13.75	5.57	5.49	−5.08	−6.63	6.313	6.428	6.108	6.160		$13/2^+$	0^+
282	179	2029.50		7.20		10.17	13.96	4.60	5.59	−5.08	−6.74	6.321	6.440	6.110	6.162		$13/2^+$	$3/2^+$
283	180	2034.85		7.19		9.95	14.16	5.35	5.69	−4.93	−6.84	6.330	6.451	6.112	6.164		$13/2^+$	0^+
284	181	2039.41		7.18		9.91	14.37	4.56	5.79	−4.88	−6.95	6.339	6.463	6.114	6.166		$13/2^+$	$3/2^+$
285	182	2044.53		7.17		9.68	14.57	5.12	5.88	−4.79	−7.05	6.348	6.475	6.117	6.169		$13/2^+$	0^+
286	183	2049.08		7.16		9.67	14.78	4.55	5.98	−3.94	−7.16	6.357	6.487	6.119	6.171		$13/2^+$	$1/2^+$
287	184	2053.94		7.16		9.41	14.95	4.86	6.07	−3.88	−7.24	6.366	6.499	6.120	6.173		$13/2^+$	0^+
288	185	2055.82		7.14		6.74	15.28	1.88	6.23	−3.92	−7.41	6.379	6.512	6.133	6.185		$13/2^+$	$13/2^-$
289	186	2058.98		7.12		5.04	15.60	3.16	6.40	−2.54	−7.57	6.392	6.526	6.144	6.196		$13/2^+$	0^+
290	187	2060.87		7.11		5.05	15.93	1.89	6.57	−2.55	−7.73	6.406	6.539	6.156	6.208		$13/2^+$	$13/2^-$
291	188	2064.03		7.09		5.05	16.24	3.16	6.72	−2.56	−7.89	6.419	6.552	6.167	6.219		$13/2^+$	0^+
292	189	2065.94		7.08		5.07	16.58	1.91	6.90	−2.55	−8.05	6.432	6.566	6.180	6.232		$13/2^+$	$13/2^-$
293	190	2069.11		7.06		5.08	16.88	3.17	7.05	−2.57	−8.21	6.445	6.579	6.191	6.243		$13/2^+$	0^+
294	191	2071.02		7.04		5.08	17.21	1.91	7.22	−2.56	−8.37	6.459	6.592	6.204	6.255		$13/2^+$	$13/2^-$
295	192	2074.22		7.03		5.11	17.52	3.20	7.39	−2.57	−8.53	6.471	6.605	6.215	6.266		$13/2^+$	0^+
296	193	2076.12		7.01		5.10	17.85	1.90	7.55	−2.56	−8.69	6.485	6.618	6.228	6.280		$13/2^+$	$13/2^-$
297	194	2079.33		7.00		5.11	18.15	3.21	7.71	−2.57	−8.84	6.498	6.631	6.239	6.290		$13/2^+$	0^+
298	195	2081.21		6.98		5.09	18.49	1.88	7.89	−2.53	−9.01	6.512	6.644	6.253	6.304		$13/2^+$	$13/2^-$
299	196	2084.43		6.97		5.10	18.78	3.22	8.04	−2.54	−9.16	6.524	6.657	6.264	6.315		$13/2^+$	0^+
300	197	2086.17		6.95		4.96	19.12	1.74	8.22	−2.38	−9.32	6.538	6.670	6.277	6.328		$13/2^+$	$13/2^-$
301	198	2089.41		6.94		4.98	19.40	3.24	8.36	−2.42	−9.46	6.550	6.682	6.287	6.338		$13/2^+$	0^+
302	199	2090.92		6.92		4.75	19.57	1.51	8.44	−2.43	−9.58	6.561	6.695	6.295	6.346		$13/2^+$	$11/2^-$
303	200	2093.99		6.91		4.58	19.89	3.07	8.60	−2.25	−9.71	6.572	6.707	6.302	6.352		$13/2^+$	0^+
304	201	2095.48		6.89		4.56	20.12	1.49	8.71	−2.22	−9.83	6.583	6.719	6.308	6.358		$13/2^+$	$11/2^-$
305	202	2098.31		6.88		4.32	20.35	2.83	8.82	−2.17	−9.95	6.593	6.730	6.313	6.364		$13/2^+$	0^+
306	203	2099.74		6.86		4.26	20.57	1.43	8.93	−2.13	−10.06	6.603	6.743	6.319	6.370		$13/2^+$	$11/2^-$
307	204	2102.49		6.85		4.18	20.80	2.75	9.04	−2.11	−10.18	6.613	6.754	6.325	6.375		$13/2^+$	0^+
308	205	2103.86		6.83		4.12	21.03	1.37	9.15	−2.07	−10.29	6.624	6.766	6.331	6.381		$13/2^+$	$11/2^-$
309	206	2106.57		6.82		4.08	21.26	2.71	9.27	−2.06	−10.41	6.634	6.778	6.337	6.387		$13/2^+$	0^+
310	207	2107.86		6.80		4.00	21.49	1.29	9.38	−2.01	−10.53	6.644	6.790	6.343	6.393		$13/2^+$	$11/2^-$
311	208	2110.55		6.79		3.98	21.72	2.69	9.50	−2.01	−10.65	6.654	6.801	6.349	6.399		$13/2^+$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
312	209	2111.74		6.77		3.88	21.96	1.19	9.62	−1.95	−10.77	6.665	6.813	6.355	6.405		$13/2^+$	$11/2^-$
313	210	2114.43		6.76		3.88	22.19	2.69	9.73	−1.96	−10.88	6.675	6.824	6.361	6.411		$13/2^+$	0^+
314	211	2115.50		6.74		3.76	22.44	1.07	9.86	−1.89	−11.01	6.686	6.836	6.369	6.419		$13/2^+$	$11/2^-$
315	212	2118.22		6.72		3.79	22.67	2.72	9.97	−1.91	−11.12	6.696	6.847	6.375	6.425		$13/2^+$	0^+
316	213	2119.16		6.71		3.66	22.94	0.94	10.12	−1.84	−11.26	6.707	6.858	6.384	6.434		$13/2^+$	$11/2^-$
317	214	2121.91		6.69		3.69	23.15	2.75	10.22	−1.87	−11.37	6.717	6.869	6.389	6.439		$13/2^+$	0^+
318	215	2122.79		6.68		3.63	23.42	0.88	10.36	−1.86	−11.50	6.728	6.881	6.397	6.447		$13/2^+$	$17/2^+$
319	216	2125.54		6.66		3.63	23.64	2.75	10.48	−1.84	−11.61	6.738	6.892	6.404	6.454		$13/2^+$	0^+
320	217	2126.41		6.65		3.62	23.91	0.87	10.61	−1.83	−11.75	6.749	6.903	6.412	6.462		$13/2^+$	$17/2^+$
321	218	2129.10		6.63		3.56	24.12	2.69	10.72	−1.81	−11.86	6.760	6.915	6.419	6.469		$13/2^+$	0^+
322	219	2129.97		6.61		3.56	24.39	0.87	10.86	−1.80	−11.99	6.770	6.926	6.427	6.477		$13/2^+$	$17/2^+$
323	220	2132.63		6.60		3.53	24.60	2.66	10.97	−1.79	−12.10	6.781	6.938	6.434	6.484		$13/2^+$	0^+
324	221	2133.49		6.58		3.52	24.86	0.86	11.11	−1.78	−12.23	6.792	6.949	6.443	6.492		$13/2^+$	$17/2^+$
325	222	2136.12		6.57		3.49	25.07	2.63	11.22	−1.77	−12.33	6.802	6.960	6.450	6.499		$13/2^+$	0^+
326	223	2136.97		6.56		3.48	25.29	0.85	11.33	−1.79	−12.45	6.814	6.972	6.457	6.507		$13/2^+$	$9/2^-$
327	224	2139.59		6.54		3.47	25.54	2.62	11.46	−1.76	−12.57	6.824	6.983	6.465	6.514		$13/2^+$	0^+
328	225	2140.49		6.53		3.52	25.78	0.90	11.59	−1.78	−12.68	6.835	6.994	6.473	6.522		$13/2^+$	$9/2^-$
329	226	2143.04		6.51		3.45	25.98	2.55	11.69	−1.75	−12.79	6.845	7.005	6.480	6.529		$13/2^+$	0^+
330	227	2143.98		6.50		3.49	26.24	0.94	11.83	−1.76	−12.92	6.856	7.017	6.488	6.537		$13/2^+$	$9/2^-$
331	228	2146.49		6.48		3.45	26.44	2.51	11.93	−1.74	−13.02	6.866	7.028	6.494	6.543		$13/2^+$	0^+
332	229	2147.45		6.47		3.47	26.69	0.96	12.06	−1.75	−13.14	6.877	7.039	6.503	6.552		$13/2^+$	$9/2^-$
333	230	2149.92		6.46		3.43	26.87	2.47	12.16	−1.73	−13.23	6.887	7.050	6.508	6.557		$13/2^+$	0^+
334	231	2150.91		6.44		3.46	27.13	0.99	12.30	−1.74	−13.36	6.898	7.061	6.517	6.566		$13/2^+$	$9/2^-$
335	232	2153.33		6.43		3.41	27.29	2.42	12.37	−1.72	−13.44	6.908	7.073	6.522	6.571		$13/2^+$	0^+
336	233	2154.33		6.41		3.42	27.51	1.00	12.51	−1.72	−13.57	6.919	7.084	6.531	6.580		$13/2^+$	$9/2^-$
337	234	2156.73		6.40		3.40	27.69	2.40	12.58	−1.71	−13.64	6.929	7.095	6.535	6.584		$13/2^+$	0^+
338	235	2157.72		6.38		3.39	27.87	0.99	12.67	−1.73	−13.72	6.940	7.108	6.540	6.588		$13/2^+$	$7/2^-$
339	236	2160.09		6.37		3.36	28.07	2.37	12.77	−1.69	−13.82	6.950	7.118	6.547	6.596		$13/2^+$	0^+
340	237	2161.13		6.36		3.41	28.25	1.04	12.86	−1.71	−13.91	6.960	7.130	6.552	6.601		$13/2^+$	$7/2^-$
341	238	2163.40		6.34		3.31	28.42	2.27	12.95	−1.66	−14.00	6.970	7.141	6.557	6.606		$13/2^+$	0^+
342	239	2164.48		6.33		3.35	28.61	1.08	13.04	−1.67	−14.09	6.981	7.153	6.563	6.611		$13/2^+$	$7/2^-$
343	240	2166.64		6.32		3.24	28.73	2.16	13.10	−1.62	−14.15	6.990	7.164	6.565	6.614		$13/2^+$	0^+
344	241	2167.73		6.30		3.25	28.91	1.09	13.19	−1.62	−14.23	7.000	7.176	6.571	6.619		$13/2^+$	$7/2^-$
345	242	2169.80		6.29		3.16	28.99	2.07	13.22	−1.59	−14.28	7.010	7.188	6.571	6.619		$13/2^+$	0^+
346	243	2170.87		6.27		3.14	29.16	1.07	13.30	−1.57	−14.36	7.020	7.200	6.576	6.624		$13/2^+$	$7/2^-$
347	244	2172.89		6.26		3.09	29.23	2.02	13.33	−1.56	−14.40	7.029	7.212	6.575	6.624		$13/2^+$	0^+
348	245	2173.91		6.25		3.04	29.37	1.02	13.40	−1.52	−14.47	7.040	7.225	6.579	6.628		$13/2^+$	$7/2^-$
349	246	2175.92		6.23		3.03	29.45	2.01	13.43	−1.53	−14.51	7.049	7.237	6.579	6.627		$13/2^+$	0^+
350	247	2176.97		6.22		3.06	29.52	1.05	13.50	−1.54	−14.57	7.059	7.249	6.581	6.630		$13/2^+$	$5/2^-$
351	248	2178.90		6.21		2.98	29.66	1.93	13.53	−1.50	−14.62	7.069	7.262	6.582	6.630		$13/2^+$	0^+
352	249	2180.00		6.19		3.03	29.77	1.10	13.59	−1.52	−14.66	7.080	7.276	6.583	6.631		$13/2^+$	$3/2^-$
353	250	2181.83		6.18		2.93	29.85	1.83	13.63	−1.48	−14.72	7.089	7.287	6.584	6.632		$13/2^+$	0^+
354	251	2182.94		6.17		2.94	29.95	1.11	13.67	−1.49	−14.77	7.100	7.301	6.585	6.634		$13/2^+$	$3/2^-$
355	252	2184.72		6.15		2.89	30.04	1.78	13.71	−1.46	−14.81	7.110	7.313	6.586	6.634		$13/2^+$	0^+
356	253	2185.85		6.14		2.91	30.14	1.13	13.76	−1.46	−14.86	7.120	7.326	6.588	6.636		$13/2^+$	$3/2^-$
357	254	2187.57		6.13		2.85	30.21	1.72	13.79	−1.44	−14.90	7.131	7.339	6.588	6.636		$13/2^+$	0^+
358	255	2188.75		6.11		2.90	30.29	1.18	13.83	−1.48	−14.94	7.142	7.354	6.589	6.637		$13/2^+$	$1/2^-$
359	256	2190.39		6.10		2.82	30.38	1.64	13.87	−1.41	−14.98	7.152	7.366	6.589	6.637		$13/2^+$	0^+
360	257	2191.67		6.09		2.92	30.46	1.28	13.90	−0.40	−15.03	7.163	7.380	6.590	6.638		$13/2^+$	$1/2^-$
361	258	2193.13		6.08		2.74	30.52	1.46	13.93	−0.21	−15.05	7.175	7.395	6.590	6.638		$13/2^+$	0^+
362	259	2191.89		6.05		0.22	30.51	−1.24	13.93	−0.15	−15.06	7.201	7.431	6.589	6.638		$13/2^+$	$1/2^+$
363	260	2190.90		6.04		−2.23	30.70	−0.99	14.04	1.08	−15.18	7.200	7.424	6.602	6.650		$13/2^+$	0^+
σ		21.84																

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
$Z = 104$ (Rf)																		
243	139	1771.27		7.29			0.13	6.89	1.11	−8.57	0.17	5.950	5.984	5.906	5.960		0^+	$15/2^-$
244	140	1780.40		7.30		16.02	0.50	9.13	1.31	−7.93	−0.01	5.959	5.995	5.910	5.964		0^+	0^+
245	141	1787.06		7.29		15.79	0.86	6.66	1.51	−7.84	−0.23	5.969	6.007	5.917	5.971		0^+	$15/2^-$
246	142	1795.94		7.30		15.54	1.30	8.88	1.71	−7.74	−0.41	5.978	6.019	5.922	5.976		0^+	0^+
247	143	1802.50		7.30		15.44	1.66	6.56	1.91	−7.69	−0.59	5.988	6.031	5.927	5.981		0^+	$9/2^+$
248	144	1811.15		7.30		15.21	2.09	8.65	2.10	−7.60	−0.80	5.997	6.043	5.934	5.988		0^+	0^+
249	145	1817.61		7.30		15.11	2.45	6.46	2.28	−7.55	−0.98	6.007	6.055	5.939	5.993		0^+	$9/2^+$
250	146	1826.10		7.30		14.95	2.88	8.49	2.49	−7.48	−1.19	6.017	6.066	5.946	6.000		0^+	0^+
251	147	1832.47		7.30		14.86	3.24	6.37	2.68	−7.43	−1.38	6.026	6.078	5.952	6.005		0^+	$9/2^+$
252	148	1840.81		7.30		14.71	3.65	8.34	2.87	−7.37	−1.58	6.036	6.089	5.958	6.012		0^+	0^+
253	149	1847.10		7.30		14.63	4.02	6.29	3.06	−7.32	−1.77	6.045	6.101	5.964	6.017		0^+	$9/2^+$
254	150	1855.31		7.30		14.50	4.41	8.21	3.25	−7.27	−1.96	6.054	6.112	5.970	6.024		0^+	0^+
255	151	1861.52		7.30		14.42	4.80	6.21	3.44	−7.22	−2.15	6.064	6.124	5.976	6.029		0^+	$9/2^+$
256	152	1869.62	1890.67	7.30	7.39	14.31	5.17	8.10	3.63	−7.17	−2.34	6.073	6.135	5.982	6.035		0^+	0^+
257	153	1875.75	1897.10	7.30	7.38	14.23	5.57	6.13	3.82	−7.12	−2.54	6.083	6.146	5.989	6.042		0^+	$9/2^+$
258	154	1883.75	1904.69	7.30	7.38	14.13	5.92	8.00	4.00	−7.08	−2.72	6.092	6.157	5.994	6.047		0^+	0^+
259	155	1889.80		7.30		14.05	6.34	6.05	4.20	−7.02	−2.92	6.102	6.168	6.001	6.054		0^+	$9/2^+$
260	156	1897.71		7.30		13.96	6.67	7.91	4.37	−6.98	−3.09	6.111	6.179	6.006	6.059		0^+	0^+
261	157	1903.68	1923.93	7.29	7.37	13.88	7.11	5.97	4.58	−6.92	−3.30	6.120	6.191	6.013	6.066		0^+	$9/2^+$
262	158	1911.50		7.30		13.79	7.42	7.82	4.75	−6.89	−3.46	6.129	6.201	6.018	6.071		0^+	0^+
263	159	1917.36		7.29		13.68	7.87	5.86	4.95	−6.81	−3.68	6.139	6.212	6.026	6.079		0^+	$9/2^+$
264	160	1925.10		7.29		13.60	8.16	7.74	5.11	−6.78	−3.83	6.148	6.223	6.030	6.083		0^+	0^+
265	161	1930.84		7.29		13.48	8.63	5.74	5.32	−6.68	−4.05	6.158	6.234	6.038	6.091		0^+	$9/2^+$
266	162	1938.50		7.29		13.40	8.90	7.66	5.48	−6.65	−4.19	6.166	6.245	6.042	6.095		0^+	0^+
267	163	1944.08		7.28		13.24	9.22	5.58	5.64	−6.69	−4.36	6.177	6.257	6.049	6.101		0^+	$7/2^+$
268	164	1951.59		7.28		13.09	9.59	7.51	5.82	−6.47	−4.54	6.185	6.267	6.054	6.107		0^+	0^+
269	165	1957.27		7.28		13.19	9.94	5.68	5.99	−6.47	−4.71	6.195	6.279	6.061	6.113		0^+	$7/2^+$
270	166	1964.26		7.28		12.67	10.22	6.99	6.14	−6.26	−4.85	6.205	6.291	6.067	6.119		0^+	0^+
271	167	1969.88		7.27		12.61	10.54	5.62	6.30	−6.21	−5.02	6.216	6.303	6.073	6.126		0^+	$7/2^+$
272	168	1976.56		7.27		12.30	10.79	6.68	6.44	−6.11	−5.14	6.226	6.315	6.079	6.131		0^+	0^+
273	169	1982.08		7.26		12.20	11.12	5.52	6.60	−6.04	−5.31	6.236	6.327	6.085	6.138		0^+	$7/2^+$
274	170	1988.59		7.26		12.03	11.36	6.51	6.73	−5.97	−5.44	6.246	6.339	6.091	6.143		0^+	0^+
275	171	1993.92		7.25		11.84	11.68	5.33	6.90	−5.76	−5.60	6.256	6.351	6.098	6.150		0^+	$7/2^+$
276	172	2000.31		7.25		11.72	11.92	6.39	7.02	−5.75	−5.72	6.266	6.362	6.102	6.154		0^+	0^+
277	173	2005.40		7.24		11.48	12.18	5.09	7.16	−5.74	−5.85	6.275	6.374	6.106	6.159		0^+	$5/2^+$
278	174	2011.43		7.24		11.12	12.35	6.03	7.25	−5.48	−5.94	6.282	6.384	6.108	6.160		0^+	0^+
279	175	2016.37		7.23		10.97	12.57	4.94	7.36	−5.39	−6.05	6.291	6.395	6.110	6.163		0^+	$5/2^+$
280	176	2022.14		7.22		10.71	12.76	5.77	7.46	−5.32	−6.15	6.298	6.406	6.112	6.164		0^+	0^+
281	177	2026.91		7.21		10.54	12.98	4.77	7.58	−5.21	−6.26	6.307	6.417	6.115	6.167		0^+	$5/2^+$
282	178	2032.58		7.21		10.44	13.17	5.67	7.68	−5.18	−6.36	6.315	6.428	6.117	6.169		0^+	0^+
283	179	2037.29		7.20		10.38	13.38	4.71	7.79	−5.18	−6.46	6.323	6.439	6.119	6.171		0^+	$3/2^+$
284	180	2042.74		7.19		10.16	13.58	5.45	7.89	−5.04	−6.57	6.332	6.450	6.121	6.173		0^+	0^+
285	181	2047.40		7.18		10.11	13.78	4.66	7.99	−4.98	−6.67	6.340	6.462	6.123	6.175		0^+	$3/2^+$
286	182	2052.63		7.18		9.89	13.98	5.23	8.10	−4.90	−6.77	6.349	6.474	6.126	6.178		0^+	0^+
287	183	2057.30		7.17		9.90	14.20	4.67	8.22	−3.96	−6.88	6.358	6.486	6.128	6.180		0^+	$1/2^+$
288	184	2062.23		7.16		9.60	14.36	4.93	8.29	−3.93	−6.96	6.367	6.497	6.130	6.182		0^+	0^+
289	185	2064.29		7.14		6.99	14.70	2.06	8.47	−3.81	−7.13	6.381	6.511	6.142	6.194		0^+	$13/2^-$
290	186	2067.60		7.13		5.37	15.02	3.31	8.62	−2.70	−7.29	6.394	6.524	6.153	6.205		0^+	0^+
291	187	2069.65		7.11		5.36	15.35	2.05	8.78	−2.70	−7.46	6.407	6.538	6.166	6.217		0^+	$13/2^-$
292	188	2072.98		7.10		5.38	15.67	3.33	8.95	−2.71	−7.61	6.420	6.551	6.177	6.228		0^+	0^+
293	189	2075.04		7.08		5.39	16.00	2.06	9.10	−2.71	−7.78	6.434	6.564	6.189	6.241		0^+	$13/2^-$
294	190	2078.37		7.07		5.39	16.31	3.33	9.26	−2.72	−7.94	6.446	6.577	6.200	6.252		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
295	191	2080.44		7.05		5.40	16.64	2.07	9.42	−2.72	−8.10	6.460	6.590	6.213	6.264		0^+	$13/2^-$
296	192	2083.79		7.04		5.42	16.96	3.35	9.57	−2.73	−8.26	6.473	6.603	6.224	6.275		0^+	0^+
297	193	2085.86		7.02		5.42	17.29	2.07	9.74	−2.71	−8.42	6.486	6.616	6.237	6.288		0^+	$13/2^-$
298	194	2089.22		7.01		5.43	17.60	3.36	9.89	−2.72	−8.58	6.499	6.629	6.248	6.299		0^+	0^+
299	195	2091.26		6.99		5.40	17.94	2.04	10.05	−2.68	−8.74	6.513	6.642	6.262	6.313		0^+	$13/2^-$
300	196	2094.63		6.98		5.41	18.24	3.37	10.20	−2.69	−8.89	6.525	6.655	6.273	6.324		0^+	0^+
301	197	2096.53		6.97		5.27	18.58	1.90	10.36	−2.52	−9.06	6.539	6.668	6.287	6.337		0^+	$13/2^-$
302	198	2099.91		6.95		5.28	18.86	3.38	10.50	−2.55	−9.20	6.551	6.680	6.297	6.347		0^+	0^+
303	199	2101.55		6.94		5.02	19.07	1.64	10.63	−2.57	−9.33	6.562	6.693	6.304	6.355		0^+	$11/2^-$
304	200	2104.74		6.92		4.83	19.35	3.19	10.75	−2.37	−9.45	6.572	6.705	6.311	6.361		0^+	0^+
305	201	2106.35		6.91		4.80	19.58	1.61	10.87	−2.34	−9.57	6.583	6.717	6.317	6.367		0^+	$11/2^-$
306	202	2109.30		6.89		4.56	19.81	2.95	10.99	−2.28	−9.69	6.593	6.728	6.322	6.373		0^+	0^+
307	203	2110.84		6.88		4.49	20.03	1.54	11.10	−2.25	−9.80	6.604	6.740	6.328	6.378		0^+	$11/2^-$
308	204	2113.72		6.86		4.42	20.27	2.88	11.23	−2.22	−9.92	6.614	6.752	6.334	6.384		0^+	0^+
309	205	2115.20		6.85		4.36	20.49	1.48	11.34	−2.19	−10.04	6.624	6.764	6.339	6.390		0^+	$11/2^-$
310	206	2118.03		6.83		4.31	20.73	2.83	11.46	−2.17	−10.16	6.634	6.775	6.345	6.396		0^+	0^+
311	207	2119.43		6.81		4.23	20.95	1.40	11.57	−2.13	−10.27	6.644	6.787	6.351	6.401		0^+	$11/2^-$
312	208	2122.25		6.80		4.22	21.20	2.82	11.70	−2.13	−10.39	6.654	6.798	6.358	6.408		0^+	0^+
313	209	2123.56		6.78		4.13	21.44	1.31	11.82	−2.07	−10.52	6.665	6.810	6.364	6.414		0^+	$11/2^-$
314	210	2126.37		6.77		4.12	21.67	2.81	11.94	−2.08	−10.63	6.675	6.821	6.370	6.420		0^+	0^+
315	211	2127.57		6.75		4.01	21.93	1.20	12.07	−2.01	−10.76	6.686	6.833	6.378	6.428		0^+	$11/2^-$
316	212	2130.40		6.74		4.03	22.15	2.83	12.18	−2.03	−10.88	6.696	6.844	6.384	6.434		0^+	0^+
317	213	2131.47		6.72		3.90	22.43	1.07	12.31	−1.97	−11.02	6.707	6.855	6.393	6.443		0^+	$11/2^-$
318	214	2134.34		6.71		3.94	22.65	2.87	12.43	−1.99	−11.13	6.717	6.866	6.398	6.448		0^+	0^+
319	215	2135.35		6.69		3.88	22.92	1.01	12.56	−1.98	−11.26	6.727	6.877	6.406	6.456		0^+	$17/2^+$
320	216	2138.20		6.68		3.86	23.14	2.85	12.66	−1.96	−11.38	6.738	6.889	6.413	6.463		0^+	0^+
321	217	2139.21		6.66		3.86	23.41	1.01	12.80	−1.95	−11.51	6.748	6.900	6.421	6.471		0^+	$17/2^+$
322	218	2142.01		6.65		3.81	23.63	2.80	12.91	−1.93	−11.62	6.759	6.911	6.428	6.478		0^+	0^+
323	219	2143.01		6.63		3.80	23.90	1.00	13.04	−1.92	−11.76	6.770	6.922	6.437	6.486		0^+	$17/2^+$
324	220	2145.78		6.62		3.77	24.12	2.77	13.15	−1.91	−11.87	6.780	6.934	6.444	6.493		0^+	0^+
325	221	2146.77		6.61		3.76	24.39	0.99	13.28	−1.89	−12.00	6.791	6.945	6.452	6.501		0^+	$17/2^+$
326	222	2149.51		6.59		3.73	24.61	2.74	13.39	−1.89	−12.11	6.801	6.956	6.459	6.509		0^+	0^+
327	223	2150.48		6.58		3.71	24.84	0.97	13.51	−1.87	−12.24	6.812	6.967	6.467	6.517		0^+	$17/2^+$
328	224	2153.21		6.56		3.70	25.08	2.73	13.62	−1.87	−12.35	6.823	6.978	6.475	6.524		0^+	0^+
329	225	2154.22		6.55		3.74	25.32	1.01	13.73	−1.89	−12.47	6.834	6.990	6.483	6.532		0^+	$9/2^-$
330	226	2156.89		6.54		3.68	25.54	2.67	13.85	−1.86	−12.58	6.844	7.001	6.490	6.539		0^+	0^+
331	227	2157.95		6.52		3.73	25.80	1.06	13.97	−1.88	−12.70	6.855	7.012	6.498	6.547		0^+	$9/2^-$
332	228	2160.56		6.51		3.67	26.00	2.61	14.07	−1.85	−12.81	6.865	7.023	6.504	6.553		0^+	0^+
333	229	2161.65		6.49		3.70	26.26	1.09	14.20	−1.86	−12.93	6.876	7.034	6.513	6.562		0^+	$9/2^-$
334	230	2164.20		6.48		3.64	26.44	2.55	14.28	−1.84	−13.02	6.886	7.046	6.519	6.568		0^+	0^+
335	231	2165.32		6.46		3.67	26.71	1.12	14.41	−1.84	−13.15	6.897	7.057	6.528	6.577		0^+	$9/2^-$
336	232	2167.82		6.45		3.62	26.86	2.50	14.49	−1.82	−13.23	6.907	7.068	6.533	6.581		0^+	0^+
337	233	2168.96		6.44		3.64	27.14	1.14	14.63	−1.82	−13.36	6.918	7.079	6.542	6.591		0^+	$9/2^-$
338	234	2171.42		6.42		3.60	27.27	2.46	14.69	−1.80	−13.43	6.928	7.091	6.546	6.594		0^+	0^+
339	235	2172.54		6.41		3.58	27.49	1.12	14.82	−1.78	−13.56	6.938	7.102	6.555	6.603		0^+	$9/2^-$
340	236	2174.97		6.40		3.55	27.65	2.43	14.88	−1.77	−13.62	6.948	7.113	6.558	6.606		0^+	0^+
341	237	2176.10		6.38		3.56	27.83	1.13	14.97	−1.80	−13.71	6.959	7.126	6.563	6.611		0^+	$7/2^-$
342	238	2178.45		6.37		3.48	28.00	2.35	15.05	−1.74	−13.79	6.968	7.136	6.568	6.616		0^+	0^+
343	239	2179.62		6.35		3.52	28.18	1.17	15.14	−1.75	−13.88	6.979	7.148	6.573	6.622		0^+	$7/2^-$
344	240	2181.83		6.34		3.38	28.29	2.21	15.19	−1.69	−13.94	6.988	7.160	6.575	6.624		0^+	0^+
345	241	2183.01		6.33		3.39	28.47	1.18	15.28	−1.68	−14.02	6.999	7.172	6.580	6.629		0^+	$7/2^-$
346	242	2185.12		6.32		3.29	28.54	2.11	15.32	−1.65	−14.06	7.007	7.183	6.580	6.629		0^+	0^+
347	243	2186.27		6.30		3.26	28.70	1.15	15.40	−1.63	−14.14	7.018	7.195	6.584	6.633		0^+	$7/2^-$
348	244	2188.33		6.29		3.21	28.77	2.06	15.44	−1.61	−14.18	7.027	7.207	6.584	6.633		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
349	245	2189.42		6.27		3.15	28.91	1.09	15.51	−1.58	−14.25	7.037	7.220	6.588	6.636		0^+	$7/2^-$
350	246	2191.47		6.26		3.14	28.98	2.05	15.55	−1.58	−14.29	7.046	7.231	6.587	6.636		0^+	0^+
351	247	2192.58		6.25		3.16	29.11	1.11	15.61	−1.59	−14.35	7.056	7.244	6.589	6.638		0^+	$5/2^-$
352	248	2194.55		6.23		3.08	29.18	1.97	15.65	−1.55	−14.39	7.066	7.256	6.590	6.638		0^+	0^+
353	249	2195.71		6.22		3.13	29.30	1.16	15.71	−1.57	−14.44	7.077	7.270	6.591	6.639		0^+	$3/2^-$
354	250	2197.58		6.21		3.03	29.38	1.87	15.75	−1.52	−14.49	7.086	7.281	6.592	6.640		0^+	0^+
355	251	2198.74		6.19		3.03	29.47	1.16	15.80	−1.54	−14.54	7.097	7.295	6.593	6.642		0^+	$3/2^-$
356	252	2200.56		6.18		2.98	29.55	1.82	15.84	−1.50	−14.58	7.106	7.307	6.594	6.642		0^+	0^+
357	253	2201.75		6.17		3.01	29.66	1.19	15.90	−1.51	−14.63	7.117	7.321	6.595	6.644		0^+	$3/2^-$
358	254	2203.51		6.16		2.95	29.73	1.76	15.94	−1.48	−14.67	7.127	7.334	6.595	6.644		0^+	0^+
359	255	2204.73		6.14		2.98	29.81	1.22	15.98	−1.52	−14.71	7.138	7.348	6.596	6.645		0^+	$1/2^-$
360	256	2206.41		6.13		2.90	29.89	1.68	16.02	−1.45	−14.75	7.148	7.361	6.597	6.645		0^+	0^+
361	257	2207.73		6.12		3.00	29.96	1.32	16.06	−0.28	−14.79	7.159	7.374	6.597	6.646		0^+	$1/2^-$
362	258	2209.22		6.10		2.81	30.02	1.49	16.09	−0.29	−14.82	7.171	7.389	6.597	6.646		0^+	0^+
363	259	2207.99		6.08		0.26	30.03	−1.23	16.10	−0.49	−14.82	7.197	7.425	6.597	6.645		0^+	$1/2^+$
364	260	2207.13		6.06		−2.09	30.27	−0.86	16.23	1.01	−14.96	7.195	7.415	6.611	6.659		0^+	0^+
σ		20.90																
$Z = 105$ (Db)																		
245	140	1778.98		7.26			−0.11		−1.42	−8.13	0.26	5.965	5.997	5.921	5.975		$7/2^-$	0^+
246	141	1785.86		7.26			0.31	6.88	−1.20	−8.04	0.04	5.975	6.009	5.928	5.982		$7/2^-$	$15/2^-$
247	142	1794.92		7.27		15.94	0.69	9.06	−1.02	−7.94	−0.14	5.984	6.021	5.933	5.987		$7/2^-$	0^+
248	143	1801.65		7.26		15.79	1.06	6.73	−0.85	−7.87	−0.36	5.994	6.033	5.940	5.993		$7/2^-$	$15/2^-$
249	144	1810.52		7.27		15.60	1.47	8.87	−0.63	−7.80	−0.54	6.003	6.044	5.945	5.999		$7/2^-$	0^+
250	145	1817.17		7.27		15.52	1.84	6.65	−0.44	−7.75	−0.72	6.012	6.056	5.950	6.004		$7/2^-$	$9/2^+$
251	146	1825.86		7.27		15.34	2.25	8.69	−0.24	−7.67	−0.93	6.022	6.068	5.957	6.011		$7/2^-$	0^+
252	147	1832.41		7.27		15.24	2.62	6.55	−0.06	−7.62	−1.12	6.031	6.079	5.962	6.016		$7/2^-$	$9/2^+$
253	148	1840.96		7.28		15.10	3.02	8.55	0.15	−7.56	−1.24	6.041	6.091	5.969	6.023		$13/2^+$	0^+
254	149	1847.44		7.27		15.03	3.40	6.48	0.34	−7.51	−1.43	6.050	6.102	5.975	6.028		$13/2^+$	$9/2^+$
255	150	1855.85		7.28		14.89	3.79	8.41	0.54	−7.46	−1.62	6.059	6.113	5.981	6.034		$13/2^+$	0^+
256	151	1862.25		7.27		14.81	4.17	6.40	0.73	−7.41	−1.81	6.069	6.125	5.987	6.040		$13/2^+$	$9/2^+$
257	152	1870.54		7.28		14.69	4.55	8.29	0.92	−7.36	−2.00	6.078	6.136	5.993	6.046		$13/2^+$	0^+
258	153	1876.88		7.27		14.63	4.95	6.34	1.13	−7.31	−2.19	6.087	6.147	5.999	6.052		$13/2^+$	$9/2^+$
259	154	1885.06	1906.33	7.28	7.36	14.52	5.31	8.18	1.31	−7.27	−2.37	6.097	6.158	6.005	6.058		$13/2^+$	0^+
260	155	1891.31		7.27		14.43	5.71	6.25	1.51	−7.21	−2.57	6.106	6.169	6.012	6.065		$13/2^+$	$9/2^+$
261	156	1899.39		7.28		14.33	6.05	8.08	1.68	−7.17	−2.75	6.115	6.180	6.017	6.070		$13/2^+$	0^+
262	157	1905.57		7.27		14.26	6.47	6.18	1.89	−7.11	−2.95	6.125	6.191	6.024	6.077		$13/2^+$	$9/2^+$
263	158	1913.55		7.28		14.16	6.80	7.98	2.05	−7.07	−3.11	6.133	6.202	6.029	6.081		$13/2^+$	0^+
264	159	1919.64		7.27		14.07	7.23	6.09	2.28	−7.00	−3.32	6.143	6.213	6.036	6.089		$13/2^+$	$9/2^+$
265	160	1927.52		7.27		13.97	7.53	7.88	2.42	−6.96	−3.48	6.152	6.224	6.040	6.093		$13/2^+$	0^+
266	161	1933.48		7.27		13.84	7.96	5.96	2.64	−6.87	−3.69	6.161	6.234	6.048	6.101		$13/2^+$	$9/2^+$
267	162	1941.28		7.27		13.76	8.26	7.80	2.78	−6.83	−3.84	6.170	6.245	6.052	6.105		$13/2^+$	0^+
268	163	1947.02		7.26		13.54	8.58	5.74	2.94	−6.88	−4.01	6.180	6.257	6.059	6.111		$13/2^+$	$7/2^+$
269	164	1954.72		7.27		13.44	8.95	7.70	3.13	−6.63	−4.19	6.189	6.267	6.064	6.117		$13/2^+$	0^+
270	165	1960.57		7.26		13.55	9.29	5.85	3.30	−6.63	−4.36	6.198	6.278	6.070	6.123		$13/2^+$	$7/2^+$
271	166	1967.69		7.26		12.97	9.57	7.12	3.43	−6.41	−4.50	6.208	6.291	6.076	6.129		$13/2^+$	0^+
272	167	1973.47		7.26		12.90	9.89	5.78	3.59	−6.35	−4.67	6.219	6.303	6.083	6.135		$13/2^+$	$7/2^+$
273	168	1980.27		7.25		12.58	10.15	6.80	3.71	−6.26	−4.80	6.229	6.315	6.088	6.141		$13/2^+$	0^+
274	169	1985.94		7.25		12.47	10.46	5.67	3.86	−6.18	−4.96	6.239	6.327	6.095	6.147		$13/2^+$	$7/2^+$
275	170	1992.59		7.25		12.32	10.73	6.65	4.00	−6.11	−5.10	6.249	6.339	6.101	6.153		$13/2^+$	0^+
276	171	1998.08		7.24		12.14	11.06	5.49	4.16	−5.89	−5.26	6.260	6.351	6.108	6.160		$13/2^+$	$7/2^+$
277	172	2004.59		7.24		12.00	11.30	6.51	4.28	−5.87	−5.39	6.269	6.362	6.112	6.164		$13/2^+$	0^+
278	173	2009.80		7.23		11.72	11.56	5.21	4.40	−5.87	−5.52	6.278	6.374	6.116	6.168		$13/2^+$	$5/2^+$
279	174	2015.92		7.23		11.33	11.74	6.12	4.49	−5.58	−5.62	6.285	6.384	6.117	6.170		$13/2^+$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
280	175	2020.97		7.22		11.17	11.96	5.05	4.60	−5.50	−5.73	6.293	6.395	6.120	6.172		$13/2^+$	$5/2^+$
281	176	2026.84		7.21		10.92	12.16	5.87	4.70	−5.43	−5.83	6.301	6.405	6.122	6.174		$13/2^+$	0^+
282	177	2031.71		7.20		10.74	12.38	4.87	4.80	−5.32	−5.94	6.309	6.416	6.124	6.176		$13/2^+$	$5/2^+$
283	178	2037.48		7.20		10.64	12.58	5.77	4.90	−5.29	−6.05	6.317	6.427	6.126	6.178		$13/2^+$	0^+
284	179	2042.29		7.19		10.58	12.79	4.81	5.00	−5.28	−6.16	6.325	6.438	6.128	6.180		$13/2^+$	$3/2^+$
285	180	2047.85		7.19		10.37	13.00	5.56	5.11	−5.14	−6.26	6.334	6.449	6.131	6.183		$13/2^+$	0^+
286	181	2052.61		7.18		10.32	13.20	4.76	5.21	−5.08	−6.37	6.342	6.461	6.133	6.185		$13/2^+$	$3/2^+$
287	182	2057.95		7.17		10.10	13.42	5.34	5.32	−5.00	−6.47	6.351	6.472	6.135	6.187		$13/2^+$	0^+
288	183	2062.72		7.16		10.11	13.64	4.77	5.42	−4.22	−6.58	6.360	6.484	6.137	6.189		$13/2^+$	$1/2^+$
289	184	2067.74		7.15		9.79	13.80	5.02	5.51	−4.07	−6.67	6.368	6.496	6.139	6.191		$13/2^+$	0^+
290	185	2069.96		7.14		7.24	14.14	2.22	5.67	−4.15	−6.84	6.382	6.509	6.151	6.203		$13/2^+$	$13/2^-$
291	186	2073.43		7.13		5.69	14.45	3.47	5.83	−2.87	−7.00	6.395	6.522	6.162	6.214		$13/2^+$	0^+
292	187	2075.66		7.11		5.70	14.79	2.23	6.01	−2.87	−7.16	6.408	6.536	6.175	6.226		$13/2^+$	$13/2^-$
293	188	2079.14		7.10		5.71	15.11	3.48	6.16	−2.88	−7.32	6.421	6.549	6.186	6.237		$13/2^+$	0^+
294	189	2081.37		7.08		5.71	15.43	2.23	6.33	−2.87	−7.48	6.435	6.562	6.199	6.250		$13/2^+$	$13/2^-$
295	190	2084.86		7.07		5.72	15.75	3.49	6.49	−2.88	−7.64	6.448	6.575	6.210	6.261		$13/2^+$	0^+
296	191	2087.10		7.05		5.73	16.08	2.24	6.66	−2.88	−7.80	6.461	6.589	6.222	6.274		$13/2^+$	$13/2^-$
297	192	2090.60		7.04		5.74	16.38	3.50	6.81	−2.89	−7.96	6.474	6.601	6.234	6.285		$13/2^+$	0^+
298	193	2092.84		7.02		5.74	16.72	2.24	6.98	−2.87	−8.12	6.487	6.615	6.247	6.298		$13/2^+$	$13/2^-$
299	194	2096.35		7.01		5.75	17.02	3.51	7.13	−2.88	−8.27	6.500	6.627	6.258	6.309		$13/2^+$	0^+
300	195	2098.57		7.00		5.73	17.36	2.22	7.31	−2.84	−8.44	6.514	6.640	6.271	6.322		$13/2^+$	$13/2^-$
301	196	2102.09		6.98		5.74	17.66	3.52	7.46	−2.85	−8.59	6.526	6.653	6.283	6.333		$13/2^+$	0^+
302	197	2104.17		6.97		5.60	18.00	2.08	7.64	−2.66	−8.75	6.540	6.666	6.297	6.347		$13/2^+$	$13/2^-$
303	198	2107.70		6.96		5.61	18.29	3.53	7.79	−2.70	−8.90	6.552	6.679	6.307	6.357		$13/2^+$	0^+
304	199	2109.46		6.94		5.29	18.54	1.76	7.91	−2.71	−9.02	6.563	6.691	6.314	6.365		$13/2^+$	$11/2^-$
305	200	2112.77		6.93		5.07	18.78	3.31	8.03	−2.49	−9.15	6.573	6.702	6.320	6.371		$13/2^+$	0^+
306	201	2114.48		6.91		5.02	19.00	1.71	8.13	−2.45	−9.26	6.584	6.715	6.326	6.376		$13/2^+$	$11/2^-$
307	202	2117.56		6.90		4.79	19.25	3.08	8.26	−2.40	−9.39	6.594	6.726	6.332	6.382		$13/2^+$	0^+
308	203	2119.21		6.88		4.73	19.47	1.65	8.37	−2.37	−9.50	6.604	6.738	6.337	6.387		$13/2^+$	$11/2^-$
309	204	2122.21		6.87		4.65	19.72	3.00	8.49	−2.34	−9.63	6.614	6.749	6.343	6.394		$13/2^+$	0^+
310	205	2123.80		6.85		4.59	19.94	1.59	8.60	−2.30	−9.74	6.624	6.761	6.349	6.399		$13/2^+$	$11/2^-$
311	206	2126.75		6.84		4.54	20.18	2.95	8.72	−2.29	−9.87	6.634	6.772	6.355	6.405		$13/2^+$	0^+
312	207	2128.27		6.82		4.47	20.41	1.52	8.84	−2.25	−9.99	6.645	6.784	6.361	6.411		$13/2^+$	$11/2^-$
313	208	2131.20		6.81		4.45	20.65	2.93	8.95	−2.25	−10.11	6.655	6.795	6.367	6.417		$13/2^+$	0^+
314	209	2132.64		6.79		4.37	20.90	1.44	9.08	−2.19	−10.23	6.665	6.807	6.374	6.424		$13/2^+$	$11/2^-$
315	210	2135.49		6.78		4.29	21.06	2.85	9.12	−2.20	−10.38	6.675	6.818	6.381	6.430		$7/2^-$	0^+
316	211	2136.90		6.76		4.26	21.40	1.41	9.33	−2.14	−10.48	6.686	6.829	6.388	6.438		$13/2^+$	$11/2^-$
317	212	2139.84		6.75		4.35	21.62	2.94	9.44	−2.16	−10.60	6.696	6.840	6.394	6.444		$13/2^+$	0^+
318	213	2141.06		6.73		4.16	21.90	1.22	9.59	−2.10	−10.74	6.707	6.852	6.402	6.452		$13/2^+$	$11/2^-$
319	214	2144.04		6.72		4.20	22.13	2.98	9.70	−2.12	−10.85	6.717	6.863	6.408	6.458		$13/2^+$	0^+
320	215	2145.19		6.70		4.13	22.40	1.15	9.84	−2.11	−10.98	6.727	6.874	6.416	6.466		$13/2^+$	$17/2^+$
321	216	2148.16		6.69		4.12	22.62	2.97	9.96	−2.08	−11.10	6.738	6.885	6.423	6.473		$13/2^+$	0^+
322	217	2149.30		6.67		4.11	22.89	1.14	10.09	−2.07	−11.23	6.748	6.896	6.431	6.481		$13/2^+$	$17/2^+$
323	218	2152.22		6.66		4.06	23.12	2.92	10.21	−2.05	−11.35	6.759	6.908	6.438	6.488		$13/2^+$	0^+
324	219	2153.36		6.65		4.06	23.39	1.14	10.35	−2.04	−11.48	6.769	6.918	6.446	6.496		$13/2^+$	$17/2^+$
325	220	2156.24		6.63		4.02	23.61	2.88	10.46	−2.03	−11.59	6.780	6.930	6.454	6.503		$13/2^+$	0^+
326	221	2157.36		6.62		4.00	23.87	1.12	10.59	−2.02	−11.72	6.790	6.941	6.462	6.511		$13/2^+$	$17/2^+$
327	222	2160.21		6.61		3.97	24.09	2.85	10.70	−2.01	−11.83	6.801	6.952	6.470	6.519		$13/2^+$	0^+
328	223	2161.32		6.59		3.96	24.35	1.11	10.84	−1.99	−11.96	6.811	6.963	6.477	6.527		$13/2^+$	$17/2^+$
329	224	2164.16		6.58		3.95	24.57	2.84	10.95	−1.99	−12.07	6.822	6.974	6.485	6.534		$13/2^+$	0^+
330	225	2165.29		6.56		3.97	24.80	1.13	11.07	−2.01	−12.19	6.833	6.986	6.493	6.542		$13/2^+$	$9/2^-$
331	226	2168.08		6.55		3.92	25.04	2.79	11.19	−1.98	−12.30	6.843	6.996	6.500	6.549		$13/2^+$	0^+
332	227	2169.27		6.53		3.98	25.29	1.19	11.32	−1.99	−12.42	6.854	7.008	6.509	6.558		$13/2^+$	$9/2^-$
333	228	2171.98		6.52		3.90	25.49	2.71	11.42	−1.96	−12.52	6.864	7.019	6.515	6.564		$13/2^+$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
334	229	2173.20		6.51		3.93	25.75	1.22	11.55	−1.97	−12.65	6.875	7.030	6.524	6.573		$13/2^+$	$9/2^-$
335	230	2175.85		6.50		3.87	25.93	2.65	11.65	−1.95	−12.74	6.885	7.041	6.530	6.579		$13/2^+$	0^+
336	231	2177.10		6.48		3.90	26.19	1.25	11.78	−1.95	−12.87	6.896	7.052	6.539	6.588		$13/2^+$	$9/2^-$
337	232	2179.69		6.47		3.84	26.36	2.59	11.87	−1.93	−12.95	6.906	7.064	6.544	6.592		$13/2^+$	0^+
338	233	2180.95		6.45		3.85	26.62	1.26	11.99	−1.92	−13.07	6.917	7.074	6.553	6.602		$13/2^+$	$9/2^-$
339	234	2183.48		6.44		3.79	26.75	2.53	12.06	−1.90	−13.14	6.927	7.086	6.557	6.606		$13/2^+$	0^+
340	235	2184.73		6.43		3.78	27.01	1.25	12.19	−1.88	−13.27	6.937	7.097	6.566	6.614		$13/2^+$	$9/2^-$
341	236	2187.22		6.41		3.74	27.13	2.49	12.25	−1.86	−13.33	6.947	7.109	6.569	6.618		$13/2^+$	0^+
342	237	2188.45		6.40		3.72	27.32	1.23	12.35	−1.89	−13.41	6.957	7.121	6.573	6.622		$13/2^+$	$7/2^-$
343	238	2190.88		6.39		3.66	27.48	2.43	12.43	−1.81	−13.50	6.967	7.132	6.579	6.627		$13/2^+$	0^+
344	239	2192.13		6.37		3.68	27.65	1.25	12.51	−1.82	−13.58	6.978	7.144	6.584	6.632		$13/2^+$	$7/2^-$
345	240	2194.40		6.36		3.52	27.76	2.27	12.57	−1.76	−13.64	6.987	7.155	6.586	6.634		$13/2^+$	0^+
346	241	2195.66		6.35		3.53	27.93	1.26	12.65	−1.75	−13.72	6.997	7.167	6.590	6.639		$13/2^+$	$7/2^-$
347	242	2197.81		6.33		3.41	28.01	2.15	12.69	−1.71	−13.77	7.006	7.178	6.590	6.639		$13/2^+$	0^+
348	243	2199.03		6.32		3.37	28.16	1.22	12.76	−1.68	−13.85	7.016	7.191	6.594	6.642		$13/2^+$	$7/2^-$
349	244	2201.13		6.31		3.32	28.24	2.10	12.80	−1.67	−13.89	7.025	7.202	6.593	6.642		$13/2^+$	0^+
350	245	2202.29		6.29		3.26	28.38	1.16	12.87	−1.63	−13.96	7.035	7.215	6.596	6.645		$13/2^+$	$7/2^-$
351	246	2204.37		6.28		3.24	28.45	2.08	12.90	−1.64	−14.01	7.044	7.226	6.596	6.644		$13/2^+$	0^+
352	247	2205.55		6.27		3.26	28.58	1.18	12.97	−1.65	−14.07	7.054	7.239	6.598	6.647		$13/2^+$	$5/2^-$
353	248	2207.56		6.25		3.19	28.66	2.01	13.01	−1.60	−14.11	7.063	7.251	6.599	6.647		$13/2^+$	0^+
354	249	2208.75		6.24		3.20	28.75	1.19	13.04	−1.60	−14.17	7.073	7.263	6.600	6.649		$13/2^+$	$5/2^-$
355	250	2210.68		6.23		3.12	28.85	1.93	13.10	−1.57	−14.22	7.083	7.276	6.601	6.649		$13/2^+$	0^+
356	251	2211.90		6.21		3.15	28.96	1.22	13.16	−1.59	−14.27	7.094	7.290	6.602	6.650		$13/2^+$	$3/2^-$
357	252	2213.76		6.20		3.08	29.04	1.86	13.20	−1.55	−14.32	7.103	7.302	6.602	6.651		$13/2^+$	0^+
358	253	2215.00		6.19		3.10	29.15	1.24	13.25	−1.55	−14.37	7.114	7.315	6.604	6.652		$13/2^+$	$3/2^-$
359	254	2216.79		6.17		3.03	29.22	1.79	13.28	−1.52	−14.41	7.124	7.328	6.604	6.652		$13/2^+$	0^+
360	255	2218.05		6.16		3.05	29.30	1.26	13.32	−1.56	−14.45	7.135	7.342	6.605	6.653		$13/2^+$	$1/2^-$
361	256	2219.77		6.15		2.98	29.38	1.72	13.36	−1.49	−14.49	7.145	7.355	6.605	6.653		$13/2^+$	0^+
362	257	2221.14		6.14		3.09	29.47	1.37	13.41	−0.44	−14.53	7.156	7.368	6.606	6.654		$13/2^+$	$1/2^-$
363	258	2222.65		6.12		2.88	29.52	1.51	13.43	−0.43	−14.56	7.167	7.383	6.606	6.654		$13/2^+$	0^+
364	259	2221.43		6.10		0.29	29.54	−1.22	13.44	−0.46	−14.56	7.194	7.419	6.605	6.654		$13/2^+$	$1/2^+$
365	260	2220.71		6.08		−1.94	29.81	−0.72	13.58	0.93	−14.72	7.190	7.408	6.621	6.669		$13/2^+$	0^+
σ		21.27																
$Z = 106$ (Sg)																		
248	142	1796.04		7.24			0.10		1.12	−8.14	0.20	5.989	6.023	5.944	5.997		0^+	0^+
249	143	1802.99		7.24			0.49	6.95	1.34	−8.07	−0.01	5.999	6.035	5.950	6.004		0^+	$15/2^-$
250	144	1812.05		7.25		16.01	0.90	9.06	1.53	−7.99	−0.19	6.008	6.047	5.956	6.009		0^+	0^+
251	145	1818.88		7.25		15.89	1.27	6.83	1.71	−7.93	−0.40	6.018	6.058	5.962	6.016		0^+	$15/2^-$
252	146	1827.78		7.25		15.73	1.68	8.90	1.92	−7.87	−0.59	6.027	6.070	5.968	6.021		0^+	0^+
253	147	1834.52		7.25		15.64	2.05	6.74	2.11	−7.82	−0.77	6.036	6.081	5.973	6.026		0^+	$9/2^+$
254	148	1843.28		7.26		15.50	2.47	8.76	2.32	−7.75	−0.97	6.046	6.093	5.980	6.033		0^+	0^+
255	149	1849.94		7.25		15.42	2.84	6.66	2.50	−7.71	−1.16	6.055	6.104	5.985	6.038		0^+	$9/2^+$
256	150	1858.55		7.26		15.27	3.24	8.61	2.70	−7.65	−1.36	6.064	6.115	5.992	6.045		0^+	0^+
257	151	1865.15		7.26		15.21	3.63	6.60	2.90	−7.60	−1.55	6.074	6.127	5.997	6.050		0^+	$9/2^+$
258	152	1873.63		7.26		15.08	4.01	8.48	3.09	−7.55	−1.74	6.083	6.138	6.003	6.057		0^+	0^+
259	153	1880.15		7.26		15.00	4.40	6.52	3.27	−7.50	−1.93	6.092	6.149	6.010	6.063		0^+	$9/2^+$
260	154	1888.52	1909.07	7.26	7.34	14.89	4.77	8.37	3.46	−7.45	−2.11	6.101	6.160	6.015	6.068		0^+	0^+
261	155	1894.97	1915.68	7.26	7.34	14.82	5.17	6.45	3.66	−7.40	−2.31	6.111	6.171	6.022	6.075		0^+	$9/2^+$
262	156	1903.22	1923.39	7.26	7.34	14.70	5.51	8.25	3.83	−7.35	−2.48	6.119	6.182	6.027	6.080		0^+	0^+
263	157	1909.60		7.26		14.63	5.92	6.38	4.03	−7.30	−2.69	6.129	6.192	6.034	6.087		0^+	$9/2^+$
264	158	1917.75		7.26		14.53	6.25	8.15	4.20	−7.25	−2.85	6.138	6.203	6.039	6.091		0^+	0^+
265	159	1924.04		7.26		14.44	6.68	6.29	4.40	−7.19	−3.06	6.147	6.214	6.046	6.098		0^+	$9/2^+$
266	160	1932.09		7.26		14.34	6.99	8.05	4.57	−7.14	−3.22	6.156	6.225	6.050	6.103		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
267	161	1938.26		7.26		14.22	7.42	6.17	4.78	−7.05	−3.42	6.165	6.235	6.057	6.110		0^+	$9/2^+$
268	162	1946.20		7.26		14.11	7.70	7.94	4.92	−7.01	−3.58	6.174	6.246	6.062	6.114		0^+	0^+
269	163	1952.13		7.26		13.87	8.05	5.93	5.11	−6.80	−3.78	6.183	6.257	6.069	6.122		0^+	$9/2^+$
270	164	1960.00		7.26		13.80	8.41	7.87	5.28	−6.79	−3.93	6.192	6.267	6.073	6.126		0^+	0^+
271	165	1966.02		7.25		13.89	8.75	6.02	5.45	−6.80	−4.10	6.202	6.279	6.080	6.132		0^+	$7/2^+$
272	166	1973.27		7.25		13.27	9.01	7.25	5.58	−6.56	−4.24	6.212	6.291	6.086	6.138		0^+	0^+
273	167	1979.21		7.25		13.19	9.33	5.94	5.74	−6.50	−4.40	6.222	6.303	6.092	6.144		0^+	$7/2^+$
274	168	1986.16		7.25		12.89	9.60	6.95	5.89	−6.40	−4.54	6.232	6.315	6.098	6.150		0^+	0^+
275	169	1991.99		7.24		12.78	9.91	5.83	6.05	−6.33	−4.70	6.242	6.327	6.104	6.156		0^+	$7/2^+$
276	170	1998.77		7.24		12.61	10.18	6.78	6.18	−6.26	−4.84	6.252	6.339	6.110	6.162		0^+	0^+
277	171	2004.43		7.24		12.44	10.51	5.66	6.35	−6.02	−5.00	6.263	6.351	6.117	6.169		0^+	$7/2^+$
278	172	2011.07		7.23		12.30	10.76	6.64	6.48	−6.00	−5.13	6.272	6.363	6.122	6.174		0^+	0^+
279	173	2016.41		7.23		11.98	11.01	5.34	6.61	−5.99	−5.26	6.281	6.374	6.126	6.178		0^+	$5/2^+$
280	174	2022.62		7.22		11.55	11.19	6.21	6.70	−5.69	−5.35	6.288	6.384	6.127	6.179		0^+	0^+
281	175	2027.77		7.22		11.36	11.40	5.15	6.80	−5.60	−5.46	6.296	6.395	6.129	6.181		0^+	$5/2^+$
282	176	2033.75		7.21		11.13	11.61	5.98	6.91	−5.53	−5.57	6.303	6.405	6.131	6.183		0^+	0^+
283	177	2038.73		7.20		10.96	11.82	4.98	7.02	−5.42	−5.68	6.312	6.416	6.133	6.185		0^+	$5/2^+$
284	178	2044.60		7.20		10.85	12.02	5.87	7.12	−5.39	−5.78	6.319	6.426	6.135	6.187		0^+	0^+
285	179	2049.52		7.19		10.79	12.23	4.92	7.23	−5.39	−5.89	6.328	6.438	6.138	6.189		0^+	$3/2^+$
286	180	2055.18		7.19		10.58	12.44	5.66	7.33	−5.25	−5.99	6.336	6.448	6.140	6.192		0^+	0^+
287	181	2060.05		7.18		10.53	12.65	4.87	7.44	−5.18	−6.10	6.344	6.460	6.142	6.194		0^+	$3/2^+$
288	182	2065.48		7.17		10.30	12.85	5.43	7.53	−5.10	−6.20	6.353	6.471	6.144	6.196		0^+	0^+
289	183	2070.36		7.16		10.31	13.06	4.88	7.64	−4.46	−6.31	6.362	6.483	6.147	6.199		0^+	$1/2^+$
290	184	2075.46		7.16		9.98	13.23	5.10	7.72	−4.17	−6.39	6.370	6.495	6.148	6.200		0^+	0^+
291	185	2077.85		7.14		7.49	13.56	2.39	7.89	−4.44	−6.56	6.384	6.508	6.161	6.212		0^+	$13/2^-$
292	186	2081.49		7.13		6.03	13.89	3.64	8.06	−3.03	−6.72	6.397	6.521	6.172	6.223		0^+	0^+
293	187	2083.88		7.11		6.03	14.23	2.39	8.22	−3.03	−6.89	6.410	6.535	6.184	6.236		0^+	$13/2^-$
294	188	2087.52		7.10		6.03	14.54	3.64	8.38	−3.04	−7.05	6.423	6.548	6.195	6.247		0^+	0^+
295	189	2089.92		7.08		6.04	14.88	2.40	8.55	−3.03	−7.22	6.436	6.561	6.208	6.259		0^+	$13/2^-$
296	190	2093.56		7.07		6.04	15.19	3.64	8.70	−3.04	−7.37	6.449	6.574	6.219	6.270		0^+	0^+
297	191	2095.97		7.06		6.05	15.53	2.41	8.87	−3.04	−7.54	6.462	6.587	6.231	6.283		0^+	$13/2^-$
298	192	2099.63		7.05		6.07	15.84	3.66	9.03	−3.05	−7.70	6.475	6.600	6.243	6.294		0^+	0^+
299	193	2102.03		7.03		6.06	16.17	2.40	9.19	−3.03	−7.86	6.489	6.613	6.256	6.307		0^+	$13/2^-$
300	194	2105.70		7.02		6.07	16.48	3.67	9.35	−3.04	−8.02	6.501	6.626	6.267	6.318		0^+	0^+
301	195	2108.08		7.00		6.05	16.82	2.38	9.51	−3.00	−8.18	6.515	6.639	6.280	6.331		0^+	$13/2^-$
302	196	2111.76		6.99		6.06	17.13	3.68	9.67	−3.01	−8.33	6.527	6.651	6.291	6.342		0^+	0^+
303	197	2114.01		6.98		5.93	17.48	2.25	9.84	−2.80	−8.50	6.541	6.665	6.306	6.357		0^+	$13/2^-$
304	198	2117.68		6.97		5.92	17.77	3.67	9.98	−2.84	−8.65	6.553	6.677	6.316	6.367		0^+	0^+
305	199	2119.57		6.95		5.56	18.02	1.89	10.11	−2.85	−8.77	6.565	6.690	6.323	6.374		0^+	$11/2^-$
306	200	2123.00		6.94		5.32	18.26	3.43	10.23	−2.61	−8.90	6.574	6.701	6.329	6.379		0^+	0^+
307	201	2124.83		6.92		5.26	18.48	1.83	10.35	−2.57	−9.01	6.585	6.713	6.335	6.385		0^+	$11/2^-$
308	202	2128.03		6.91		5.03	18.73	3.20	10.47	−2.52	−9.14	6.594	6.724	6.341	6.391		0^+	0^+
309	203	2129.79		6.89		4.96	18.95	1.76	10.58	−2.49	−9.25	6.605	6.736	6.346	6.396		0^+	$11/2^-$
310	204	2132.92		6.88		4.89	19.20	3.13	10.71	−2.46	−9.38	6.615	6.747	6.352	6.402		0^+	0^+
311	205	2134.62		6.86		4.83	19.42	1.70	10.82	−2.42	−9.50	6.625	6.759	6.358	6.408		0^+	$11/2^-$
312	206	2137.70		6.85		4.78	19.67	3.08	10.95	−2.41	−9.62	6.635	6.770	6.364	6.414		0^+	0^+
313	207	2139.34		6.83		4.72	19.91	1.64	11.07	−2.37	−9.74	6.645	6.782	6.370	6.420		0^+	$11/2^-$
314	208	2142.39		6.82		4.69	20.14	3.05	11.19	−2.37	−9.87	6.655	6.793	6.376	6.426		0^+	0^+
315	209	2143.95		6.81		4.61	20.39	1.56	11.31	−2.32	−9.99	6.665	6.804	6.383	6.433		0^+	$11/2^-$
316	210	2147.00		6.79		4.61	20.63	3.05	11.51	−2.32	−10.11	6.675	6.815	6.389	6.439		0^+	0^+
317	211	2148.46		6.78		4.51	20.89	1.46	11.56	−2.27	−10.24	6.686	6.827	6.397	6.447		0^+	$11/2^-$
318	212	2151.52		6.77		4.52	21.12	3.06	11.68	−2.28	−10.36	6.696	6.838	6.403	6.453		0^+	0^+
319	213	2152.88		6.75		4.42	21.41	1.36	11.82	−2.22	−10.50	6.707	6.849	6.412	6.461		0^+	$11/2^-$
320	214	2155.97		6.74		4.45	21.63	3.09	11.93	−2.24	−10.61	6.717	6.860	6.417	6.467		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
321	215	2157.25		6.72		4.37	21.90	1.28	12.06	−2.23	−10.75	6.727	6.871	6.425	6.475		0^+	$17/2^+$
322	216	2160.34		6.71		4.37	22.14	3.09	12.18	−2.21	−10.86	6.737	6.882	6.432	6.482		0^+	0^+
323	217	2161.62		6.69		4.37	22.41	1.28	12.32	−2.20	−11.00	6.748	6.893	6.440	6.490		0^+	$17/2^+$
324	218	2164.66		6.68		4.32	22.65	3.04	12.44	−2.18	−11.12	6.758	6.904	6.448	6.497		0^+	0^+
325	219	2165.93		6.66		4.31	22.92	1.27	12.57	−2.16	−11.25	6.769	6.915	6.456	6.505		0^+	$17/2^+$
326	220	2168.92		6.65		4.26	23.14	2.99	12.68	−2.15	−11.37	6.779	6.926	6.463	6.512		0^+	0^+
327	221	2170.18		6.64		4.25	23.41	1.26	12.82	−2.14	−11.50	6.790	6.937	6.471	6.520		0^+	$17/2^+$
328	222	2173.15		6.63		4.23	23.64	2.97	12.94	−2.13	−11.61	6.800	6.948	6.479	6.528		0^+	0^+
329	223	2174.38		6.61		4.20	23.90	1.23	13.06	−2.11	−11.74	6.811	6.959	6.487	6.536		0^+	$17/2^+$
330	224	2177.34		6.60		4.19	24.13	2.96	13.18	−2.11	−11.86	6.821	6.970	6.494	6.544		0^+	0^+
331	225	2178.59		6.58		4.21	24.37	1.25	13.30	−2.13	−11.97	6.832	6.982	6.502	6.551		0^+	$9/2^-$
332	226	2181.49		6.57		4.15	24.60	2.90	13.41	−2.09	−12.09	6.842	6.993	6.510	6.559		0^+	0^+
333	227	2182.80		6.55		4.21	24.85	1.31	13.53	−2.11	−12.21	6.853	7.004	6.518	6.567		0^+	$9/2^-$
334	228	2185.62		6.54		4.13	25.06	2.82	13.64	−2.07	−12.32	6.863	7.015	6.525	6.574		0^+	0^+
335	229	2186.97		6.53		4.17	25.32	1.35	13.77	−2.08	−12.44	6.874	7.026	6.534	6.583		0^+	$9/2^-$
336	230	2189.71		6.52		4.09	25.51	2.74	13.86	−2.05	−12.53	6.884	7.037	6.540	6.588		0^+	0^+
337	231	2191.09		6.50		4.12	25.77	1.38	13.99	−2.05	−12.66	6.895	7.048	6.549	6.597		0^+	$9/2^-$
338	232	2193.75		6.49		4.04	25.93	2.66	14.06	−2.03	−12.74	6.905	7.060	6.553	6.602		0^+	0^+
339	233	2195.15		6.48		4.06	26.19	1.40	14.20	−2.02	−12.87	6.916	7.070	6.563	6.611		0^+	$9/2^-$
340	234	2197.75		6.46		4.00	26.33	2.60	14.27	−1.99	−12.94	6.926	7.082	6.567	6.615		0^+	0^+
341	235	2199.13		6.45		3.98	26.59	1.38	14.40	−1.97	−13.06	6.936	7.093	6.576	6.624		0^+	$9/2^-$
342	236	2201.68		6.44		3.93	26.71	2.55	14.46	−1.95	−13.13	6.946	7.105	6.579	6.627		0^+	0^+
343	237	2203.00		6.42		3.87	26.90	1.32	14.55	−1.98	−13.20	6.956	7.117	6.583	6.631		0^+	$7/2^-$
344	238	2205.50		6.41		3.82	27.05	2.50	14.62	−1.89	−13.29	6.966	7.128	6.589	6.637		0^+	0^+
345	239	2206.84		6.40		3.84	27.22	1.34	14.71	−1.90	−13.38	6.976	7.140	6.594	6.642		0^+	$7/2^-$
346	240	2209.16		6.38		3.66	27.33	2.32	14.76	−1.82	−13.43	6.985	7.151	6.595	6.644		0^+	0^+
347	241	2210.49		6.37		3.65	27.48	1.33	14.83	−1.80	−13.51	6.995	7.163	6.599	6.647		0^+	$7/2^-$
348	242	2212.68		6.36		3.52	27.56	2.19	14.87	−1.77	−13.56	7.004	7.174	6.599	6.647		0^+	0^+
349	243	2213.97		6.34		3.48	27.70	1.29	14.94	−1.74	−13.63	7.014	7.186	6.602	6.650		0^+	$7/2^-$
350	244	2216.11		6.33		3.43	27.78	2.14	14.98	−1.72	−13.67	7.023	7.198	6.602	6.650		0^+	0^+
351	245	2217.33		6.32		3.36	27.91	1.22	15.04	−1.68	−13.74	7.033	7.210	6.604	6.653		0^+	$7/2^-$
352	246	2219.46		6.31		3.35	27.99	2.13	15.09	−1.69	−13.79	7.041	7.222	6.604	6.653		0^+	0^+
353	247	2220.70		6.29		3.37	28.12	1.24	15.15	−1.70	−13.85	7.051	7.234	6.606	6.654		0^+	$5/2^-$
354	248	2222.75		6.28		3.29	28.20	2.05	15.19	−1.65	−13.89	7.061	7.246	6.607	6.655		0^+	0^+
355	249	2224.00		6.26		3.30	28.29	1.25	15.25	−1.65	−13.95	7.071	7.259	6.608	6.656		0^+	$5/2^-$
356	250	2225.97		6.25		3.22	28.39	1.97	15.29	−1.62	−14.00	7.080	7.271	6.609	6.657		0^+	0^+
357	251	2227.24		6.24		3.24	28.50	1.27	15.34	−1.64	−14.04	7.091	7.285	6.610	6.658		0^+	$3/2^-$
358	252	2229.14		6.23		3.17	28.58	1.90	15.38	−1.59	−14.09	7.100	7.296	6.610	6.659		0^+	0^+
359	253	2230.43		6.21		3.19	28.68	1.29	15.43	−1.60	−14.14	7.111	7.310	6.612	6.660		0^+	$3/2^-$
360	254	2232.26		6.20		3.12	28.75	1.83	15.47	−1.56	−14.18	7.120	7.322	6.612	6.660		0^+	0^+
361	255	2233.56		6.19		3.13	28.83	1.30	15.51	−1.60	−14.22	7.131	7.336	6.612	6.661		0^+	$1/2^-$
362	256	2235.32		6.17		3.06	28.91	1.76	15.55	−1.52	−14.26	7.141	7.349	6.613	6.661		0^+	0^+
363	257	2236.73		6.16		3.17	29.00	1.41	15.59	−0.46	−14.30	7.152	7.363	6.613	6.661		0^+	$1/2^-$
364	258	2238.27		6.15		2.95	29.05	1.54	15.62	−0.50	−14.33	7.164	7.378	6.613	6.661		0^+	0^+
365	259	2237.05		6.13		0.32	29.06	−1.22	15.62	−0.49	−14.34	7.190	7.413	6.613	6.661		0^+	$1/2^+$
366	260	2236.49		6.11		−1.78	29.36	−0.56	15.78	0.86	−14.50	7.186	7.401	6.629	6.678		0^+	0^+
σ		20.48																
$Z = 107$ (Bh)																		
251	144	1810.93		7.21			0.41		−1.12	−8.20	0.08	6.014	6.048	5.967	6.020		$7/2^-$	0^+
252	145	1817.98		7.21			0.81	7.05	−0.90	−8.13	−0.13	6.023	6.060	5.973	6.027		$7/2^-$	$15/2^-$
253	146	1827.03		7.22		16.10	1.17	9.05	−0.75	−8.07	−0.32	6.032	6.071	5.979	6.032		$7/2^-$	0^+
254	147	1834.00		7.22		16.02	1.59	6.97	−0.52	−8.00	−0.53	6.042	6.083	5.985	6.038		$7/2^-$	$15/2^-$
255	148	1842.95		7.23		15.92	1.99	8.95	−0.33	−7.95	−0.71	6.051	6.094	5.991	6.044		$7/2^-$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
256	149	1849.80		7.23		15.80	2.36	6.85	−0.14	−7.90	−0.90	6.060	6.105	5.996	6.049		$7/2^-$	$9/2^+$
257	150	1858.61		7.23		15.66	2.76	8.81	0.06	−7.84	−1.09	6.069	6.116	6.003	6.056		$7/2^-$	0^+
258	151	1865.39		7.23		15.59	3.14	6.78	0.24	−7.80	−1.29	6.078	6.128	6.008	6.061		$7/2^-$	$9/2^+$
259	152	1874.07		7.24		15.46	3.53	8.68	0.44	−7.74	−1.48	6.088	6.139	6.014	6.067		$7/2^-$	0^+
260	153	1880.79		7.23		15.40	3.91	6.72	0.64	−7.69	−1.67	6.097	6.150	6.020	6.073		$7/2^-$	$9/2^+$
261	154	1889.33		7.24		15.26	4.27	8.54	0.81	−7.64	−1.85	6.106	6.161	6.026	6.079		$7/2^-$	0^+
262	155	1895.98		7.24		15.19	4.67	6.65	1.01	−7.59	−2.05	6.115	6.171	6.032	6.085		$7/2^-$	$9/2^+$
263	156	1904.40		7.24		15.07	5.01	8.42	1.18	−7.54	−2.22	6.124	6.182	6.037	6.090		$7/2^-$	0^+
264	157	1910.99		7.24		15.01	5.42	6.59	1.39	−7.49	−2.43	6.133	6.193	6.044	6.097		$7/2^-$	$9/2^+$
265	158	1919.29		7.24		14.89	5.74	8.30	1.54	−7.44	−2.59	6.142	6.204	6.049	6.102		$7/2^-$	0^+
266	159	1925.80		7.24		14.81	6.16	6.51	1.76	−7.37	−2.80	6.151	6.214	6.056	6.108		$7/2^-$	$9/2^+$
267	160	1933.99		7.24		14.70	6.47	8.19	1.90	−7.32	−2.96	6.159	6.225	6.060	6.113		$7/2^-$	0^+
268	161	1940.37		7.24		14.57	6.89	6.38	2.11	−7.23	−3.16	6.169	6.235	6.067	6.120		$7/2^-$	$9/2^+$
269	162	1948.47		7.24		14.48	7.19	8.10	2.27	−7.19	−3.32	6.177	6.246	6.071	6.124		$7/2^-$	0^+
270	163	1954.60		7.24		14.23	7.58	6.13	2.47	−6.96	−3.52	6.187	6.256	6.079	6.131		$7/2^-$	$9/2^+$
271	164	1962.60		7.24		14.13	7.88	8.00	2.60	−6.96	−3.66	6.195	6.267	6.083	6.135		$7/2^-$	0^+
272	165	1968.80		7.24		14.20	8.23	6.20	2.78	−6.96	−3.84	6.205	6.279	6.089	6.141		$7/2^-$	$7/2^+$
273	166	1976.17		7.24		13.57	8.48	7.37	2.90	−6.71	−3.97	6.215	6.291	6.095	6.147		$7/2^-$	0^+
274	167	1982.27		7.23		13.47	8.80	6.10	3.06	−6.64	−4.13	6.225	6.303	6.101	6.154		$7/2^-$	$7/2^+$
275	168	1989.34		7.23		13.17	9.07	7.07	3.18	−6.55	−4.27	6.235	6.315	6.107	6.159		$7/2^-$	0^+
276	169	1995.33		7.23		13.06	9.39	5.99	3.34	−6.48	−4.43	6.245	6.327	6.114	6.166		$7/2^-$	$7/2^+$
277	170	2002.24		7.23		12.90	9.65	6.91	3.47	−6.41	−4.57	6.255	6.339	6.120	6.172		$7/2^-$	0^+
278	171	2008.07		7.22		12.74	9.99	5.83	3.64	−6.15	−4.74	6.266	6.352	6.127	6.179		$7/2^-$	$7/2^+$
279	172	2014.83		7.22		12.59	10.24	6.76	3.76	−6.13	−4.86	6.275	6.363	6.132	6.184		$7/2^-$	0^+
280	173	2020.29		7.22		12.22	10.49	5.46	3.88	−6.12	−4.99	6.284	6.374	6.135	6.187		$7/2^-$	$5/2^+$
281	174	2026.59		7.21		11.76	10.67	6.30	3.97	−5.79	−5.08	6.291	6.383	6.137	6.188		$7/2^-$	0^+
282	175	2031.85		7.21		11.56	10.88	5.26	4.08	−5.70	−5.19	6.298	6.394	6.139	6.191		$7/2^-$	$5/2^+$
283	176	2037.92		7.20		11.33	11.08	6.07	4.17	−5.63	−5.29	6.306	6.404	6.141	6.193		$7/2^-$	0^+
284	177	2043.00		7.19		11.15	11.29	5.08	4.27	−5.52	−5.40	6.314	6.415	6.143	6.195		$7/2^-$	$5/2^+$
285	178	2048.98		7.19		11.06	11.50	5.98	4.38	−5.49	−5.50	6.322	6.426	6.145	6.197		$7/2^-$	0^+
286	179	2053.99		7.18		10.99	11.70	5.01	4.47	−5.48	−5.60	6.330	6.437	6.148	6.199		$7/2^-$	$3/2^+$
287	180	2059.75		7.18		10.77	11.90	5.76	4.57	−5.34	−5.71	6.338	6.448	6.150	6.202		$7/2^-$	0^+
288	181	2064.71		7.17		10.72	12.10	4.96	4.66	−5.27	−5.81	6.347	6.459	6.152	6.204		$7/2^-$	$3/2^+$
289	182	2070.24		7.16		10.49	12.29	5.53	4.76	−5.19	−5.91	6.355	6.470	6.155	6.206		$7/2^-$	0^+
290	183	2075.21		7.16		10.50	12.49	4.97	4.85	−4.51	−6.01	6.364	6.482	6.157	6.209		$7/2^-$	$1/2^+$
291	184	2080.40		7.15		10.16	12.66	5.19	4.94	−4.28	−6.09	6.372	6.493	6.157	6.209		$13/2^+$	0^+
292	185	2082.96		7.13		7.75	13.00	2.56	5.11	−4.69	−6.26	6.385	6.507	6.169	6.221		$13/2^+$	$13/2^-$
293	186	2086.76		7.12		6.36	13.33	3.80	5.27	−3.19	−6.42	6.398	6.520	6.181	6.232		$13/2^+$	0^+
294	187	2089.32		7.11		6.36	13.66	2.56	5.44	−3.20	−6.60	6.412	6.533	6.194	6.246		$7/2^-$	$13/2^-$
295	188	2093.12		7.10		6.36	13.98	3.80	5.60	−3.21	−6.76	6.425	6.546	6.205	6.257		$7/2^-$	0^+
296	189	2095.69		7.08		6.37	14.32	2.57	5.77	−3.20	−6.93	6.438	6.559	6.218	6.269		$7/2^-$	$13/2^-$
297	190	2099.50		7.07		6.38	14.64	3.81	5.94	−3.21	−7.09	6.451	6.572	6.229	6.280		$7/2^-$	0^+
298	191	2102.07		7.05		6.38	14.97	2.57	6.10	−3.21	−7.26	6.464	6.585	6.241	6.292		$7/2^-$	$13/2^-$
299	192	2105.89		7.04		6.39	15.29	3.82	6.26	−3.22	−7.42	6.477	6.598	6.253	6.304		$7/2^-$	0^+
300	193	2108.46		7.03		6.39	15.62	2.57	6.43	−3.20	−7.58	6.490	6.611	6.265	6.316		$7/2^-$	$13/2^-$
301	194	2112.28		7.02		6.39	15.93	3.82	6.58	−3.21	−7.74	6.503	6.624	6.277	6.327		$7/2^-$	0^+
302	195	2114.84		7.00		6.38	16.27	2.56	6.76	−3.17	−7.91	6.516	6.637	6.290	6.341		$7/2^-$	$13/2^-$
303	196	2118.67		6.99		6.39	16.58	3.83	6.91	−3.17	−8.06	6.529	6.650	6.301	6.352		$7/2^-$	0^+
304	197	2121.10		6.98		6.26	16.93	2.43	7.09	−2.94	−8.24	6.543	6.663	6.316	6.367		$7/2^-$	$13/2^-$
305	198	2124.92		6.97		6.25	17.22	3.82	7.24	−2.98	−8.38	6.555	6.675	6.326	6.377		$7/2^-$	0^+
306	199	2126.92		6.95		5.82	17.46	2.00	7.35	−2.99	−8.50	6.566	6.688	6.333	6.384		$7/2^-$	$11/2^-$
307	200	2130.47		6.94		5.55	17.70	3.55	7.47	−2.73	−8.63	6.575	6.699	6.339	6.389		$7/2^-$	0^+
308	201	2132.41		6.92		5.49	17.93	1.94	7.58	−2.69	−8.75	6.586	6.711	6.344	6.394		$7/2^-$	$11/2^-$
309	202	2135.73		6.91		5.26	18.17	3.32	7.70	−2.64	−8.88	6.596	6.722	6.350	6.401		$7/2^-$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
310	203	2137.61		6.90		5.20	18.40	1.88	7.82	−2.61	−8.99	6.606	6.734	6.356	6.406		$7/2^-$	$11/2^-$
311	204	2140.85		6.88		5.12	18.64	3.24	7.93	−2.58	−9.12	6.616	6.745	6.362	6.413		$7/2^-$	0^+
312	205	2142.67		6.87		5.06	18.87	1.82	8.05	−2.55	−9.24	6.626	6.757	6.368	6.418		$7/2^-$	$11/2^-$
313	206	2145.87		6.86		5.02	19.12	3.20	8.17	−2.53	−9.37	6.636	6.768	6.375	6.425		$7/2^-$	0^+
314	207	2147.63		6.84		4.96	19.36	1.76	8.29	−2.49	−9.48	6.646	6.779	6.380	6.430		$7/2^-$	$11/2^-$
315	208	2150.80		6.83		4.93	19.60	3.17	8.41	−2.49	−9.61	6.656	6.790	6.387	6.437		$7/2^-$	0^+
316	209	2152.48		6.81		4.85	19.84	1.68	8.53	−2.44	−9.73	6.666	6.802	6.393	6.443		$7/2^-$	$11/2^-$
317	210	2155.65		6.80		4.85	20.16	3.17	8.65	−2.45	−9.86	6.676	6.813	6.400	6.450		$7/2^-$	0^+
318	211	2157.25		6.78		4.77	20.35	1.60	8.79	−2.40	−9.99	6.687	6.824	6.407	6.457		$7/2^-$	$11/2^-$
319	212	2160.43		6.77		4.78	20.59	3.18	8.91	−2.41	−10.11	6.696	6.835	6.414	6.463		$7/2^-$	0^+
320	213	2161.93		6.76		4.68	20.87	1.50	9.05	−2.36	−10.25	6.707	6.846	6.422	6.472		$7/2^-$	$11/2^-$
321	214	2165.12		6.74		4.69	21.08	3.19	9.15	−2.37	−10.36	6.717	6.857	6.428	6.477		$7/2^-$	0^+
322	215	2166.54		6.73		4.61	21.35	1.42	9.29	−2.36	−10.50	6.727	6.868	6.435	6.485		$7/2^-$	$17/2^+$
323	216	2169.75		6.72		4.63	21.59	3.21	9.41	−2.34	−10.62	6.738	6.879	6.443	6.492		$7/2^-$	0^+
324	217	2171.17		6.70		4.63	21.87	1.42	9.55	−2.33	−10.75	6.748	6.890	6.450	6.500		$7/2^-$	$17/2^+$
325	218	2174.32		6.69		4.57	22.10	3.15	9.66	−2.31	−10.88	6.758	6.901	6.458	6.507		$7/2^-$	0^+
326	219	2175.73		6.67		4.56	22.37	1.41	9.80	−2.29	−11.01	6.768	6.912	6.466	6.515		$7/2^-$	$17/2^+$
327	220	2178.84		6.66		4.52	22.60	3.11	9.92	−2.28	−11.13	6.779	6.923	6.473	6.523		$7/2^-$	0^+
328	221	2180.23		6.65		4.50	22.87	1.39	10.05	−2.26	−11.26	6.789	6.934	6.481	6.530		$7/2^-$	$17/2^+$
329	222	2183.32		6.64		4.48	23.11	3.09	10.17	−2.26	−11.38	6.800	6.945	6.489	6.538		$7/2^-$	0^+
330	223	2184.68		6.62		4.45	23.36	1.36	10.30	−2.24	−11.51	6.810	6.955	6.497	6.546		$7/2^-$	$17/2^+$
331	224	2187.76		6.61		4.44	23.60	3.08	10.42	−2.23	−11.63	6.821	6.967	6.505	6.554		$7/2^-$	0^+
332	225	2189.12		6.59		4.44	23.83	1.36	10.53	−2.26	−11.74	6.831	6.978	6.512	6.561		$7/2^-$	$9/2^-$
333	226	2192.15		6.58		4.39	24.07	3.03	10.66	−2.21	−11.87	6.841	6.989	6.520	6.569		$7/2^-$	0^+
334	227	2193.58		6.57		4.46	24.31	1.43	10.78	−2.23	−11.99	6.852	7.000	6.528	6.577		$7/2^-$	$9/2^-$
335	228	2196.50		6.56		4.35	24.52	2.92	10.88	−2.19	−12.09	6.862	7.011	6.535	6.584		$7/2^-$	0^+
336	229	2197.98		6.54		4.40	24.78	1.48	11.01	−2.20	−12.22	6.873	7.022	6.543	6.592		$7/2^-$	$9/2^-$
337	230	2200.81		6.53		4.31	24.96	2.83	11.10	−2.16	−12.31	6.883	7.033	6.549	6.598		$7/2^-$	0^+
338	231	2202.32		6.52		4.34	25.22	1.51	11.23	−2.16	−12.44	6.894	7.044	6.558	6.607		$7/2^-$	$9/2^-$
339	232	2205.06		6.50		4.25	25.37	2.74	11.31	−2.13	−12.52	6.904	7.055	6.563	6.612		$7/2^-$	0^+
340	233	2206.58		6.49		4.26	25.63	1.52	11.43	−2.12	−12.64	6.915	7.066	6.572	6.621		$7/2^-$	$9/2^-$
341	234	2209.25		6.48		4.19	25.77	2.67	11.50	−2.09	−12.72	6.924	7.078	6.576	6.625		$7/2^-$	0^+
342	235	2210.75		6.46		4.17	26.02	1.50	11.62	−2.06	−12.84	6.935	7.089	6.585	6.633		$7/2^-$	$9/2^-$
343	236	2213.37		6.45		4.12	26.15	2.62	11.69	−2.04	−12.90	6.945	7.101	6.589	6.637		$7/2^-$	0^+
344	237	2214.77		6.44		4.02	26.32	1.40	11.77	−1.96	−13.01	6.955	7.112	6.596	6.644		$7/2^-$	$9/2^-$
345	238	2217.36		6.43		3.99	26.48	2.59	11.86	−1.97	−13.07	6.965	7.123	6.599	6.647		$7/2^-$	0^+
346	239	2218.79		6.41		4.02	26.66	1.43	11.95	−1.98	−13.15	6.975	7.135	6.603	6.651		$7/2^-$	$7/2^-$
347	240	2221.15		6.40		3.79	26.75	2.36	11.99	−1.88	−13.21	6.984	7.146	6.604	6.653		$7/2^-$	0^+
348	241	2222.56		6.39		3.77	26.90	1.41	12.07	−1.86	−13.28	6.994	7.158	6.608	6.656		$7/2^-$	$7/2^-$
349	242	2224.80		6.37		3.65	26.99	2.24	12.12	−1.83	−13.33	7.002	7.170	6.608	6.656		$7/2^-$	0^+
350	243	2226.15		6.36		3.59	27.12	1.35	12.18	−1.80	−13.39	7.012	7.182	6.611	6.659		$7/2^-$	$7/2^-$
351	244	2228.34		6.35		3.54	27.21	2.19	12.23	−1.78	−13.44	7.021	7.193	6.611	6.659		$7/2^-$	0^+
352	245	2229.63		6.33		3.48	27.34	1.29	12.30	−1.74	−13.50	7.031	7.205	6.613	6.661		$7/2^-$	$7/2^-$
353	246	2231.81		6.32		3.47	27.44	2.18	12.35	−1.74	−13.55	7.039	7.217	6.613	6.661		$7/2^-$	0^+
354	247	2233.10		6.31		3.47	27.55	1.29	12.40	−1.75	−13.61	7.049	7.229	6.615	6.663		$7/2^-$	$5/2^-$
355	248	2235.20		6.30		3.39	27.64	2.10	12.45	−1.71	−13.66	7.058	7.241	6.615	6.664		$7/2^-$	0^+
356	249	2236.50		6.28		3.40	27.75	1.30	12.50	−1.70	−13.71	7.068	7.253	6.617	6.665		$7/2^-$	$5/2^-$
357	250	2238.53		6.27		3.33	27.85	2.03	12.56	−1.68	−13.71	7.077	7.266	6.616	6.664		$13/2^+$	0^+
358	251	2239.86		6.26		3.36	27.96	1.33	12.62	−1.70	−13.76	7.088	7.279	6.617	6.665		$13/2^+$	$3/2^-$
359	252	2241.81		6.24		3.28	28.05	1.95	12.67	−1.65	−13.81	7.097	7.291	6.618	6.666		$13/2^+$	0^+
360	253	2243.15		6.23		3.29	28.15	1.34	12.72	−1.65	−13.86	7.107	7.304	6.619	6.667		$13/2^+$	$3/2^-$
361	254	2245.03		6.22		3.22	28.24	1.88	12.77	−1.61	−13.91	7.117	7.317	6.619	6.667		$13/2^+$	0^+
362	255	2246.37		6.21		3.22	28.32	1.34	12.81	−1.65	−13.95	7.128	7.331	6.620	6.668		$13/2^+$	$1/2^-$
363	256	2248.17		6.19		3.14	28.40	1.80	12.85	−1.56	−13.99	7.138	7.343	6.620	6.668		$13/2^+$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
364	257	2249.62		6.18		3.25	28.48	1.45	12.89	−0.94	−14.03	7.149	7.357	6.621	6.669		$13/2^+$	$1/2^-$
365	258	2251.19		6.17		3.02	28.54	1.57	12.92	−0.66	−14.06	7.160	7.372	6.621	6.669		$13/2^+$	0^+
366	259	2249.98		6.15		0.36	28.55	−1.21	12.93	−0.68	−14.07	7.186	7.407	6.621	6.669		$13/2^+$	$1/2^+$
367	260	2249.58		6.13		−1.61	28.87	−0.40	13.09	0.77	−14.24	7.182	7.395	6.638	6.686		$13/2^+$	0^+
σ																		
$Z = 108$ (Hs)																		
254	146	1828.24		7.20			0.46		1.21	−8.26	0.05	6.037	6.074	5.988	6.041		0^+	0^+
255	147	1835.37		7.20			0.85	7.13	1.37	−8.19	−0.15	6.047	6.085	5.994	6.047		0^+	$15/2^-$
256	148	1844.51		7.21		16.27	1.23	9.14	1.56	−8.14	−0.34	6.056	6.096	6.000	6.053		0^+	0^+
257	149	1851.56		7.20		16.19	1.62	7.05	1.76	−8.09	−0.53	6.065	6.107	6.005	6.058		0^+	$9/2^+$
258	150	1860.56		7.21		16.05	2.01	9.00	1.95	−8.03	−0.72	6.074	6.119	6.011	6.064		0^+	0^+
259	151	1867.54		7.21		15.98	2.39	6.98	2.15	−7.98	−0.91	6.083	6.130	6.017	6.070		0^+	$9/2^+$
260	152	1876.40		7.22		15.84	2.77	8.86	2.33	−7.92	−1.10	6.092	6.141	6.023	6.076		0^+	0^+
261	153	1883.31		7.22		15.77	3.16	6.91	2.52	−7.88	−1.28	6.101	6.151	6.029	6.082		0^+	$9/2^+$
262	154	1892.03		7.22		15.63	3.51	8.72	2.70	−7.82	−1.47	6.110	6.162	6.034	6.087		0^+	0^+
263	155	1898.88		7.22		15.57	3.91	6.85	2.90	−7.77	−1.66	6.119	6.173	6.041	6.093		0^+	$9/2^+$
264	156	1907.48	1926.77	7.23	7.30	15.45	4.26	8.60	3.08	−7.72	−1.84	6.128	6.184	6.046	6.098		0^+	0^+
265	157	1914.26	1933.50	7.22	7.30	15.38	4.66	6.78	3.27	−7.67	−2.03	6.137	6.194	6.052	6.105		0^+	$9/2^+$
266	158	1922.75	1941.34	7.23	7.30	15.27	5.00	8.49	3.46	−7.62	−2.21	6.145	6.205	6.057	6.110		0^+	0^+
267	159	1929.43		7.23		15.17	5.39	6.68	3.63	−7.55	−2.39	6.155	6.216	6.064	6.116		0^+	$9/2^+$
268	160	1937.81		7.23		15.06	5.72	8.38	3.82	−7.51	−2.57	6.163	6.226	6.068	6.121		0^+	0^+
269	161	1944.38		7.23		14.95	6.12	6.57	4.01	−7.41	−2.76	6.172	6.236	6.075	6.127		0^+	$9/2^+$
270	162	1952.65		7.23		14.84	6.45	8.27	4.18	−7.36	−2.93	6.180	6.247	6.079	6.132		0^+	0^+
271	163	1958.97		7.23		14.59	6.84	6.32	4.37	−7.13	−3.12	6.190	6.257	6.086	6.139		0^+	$9/2^+$
272	164	1967.15		7.23		14.50	7.15	8.18	4.55	−7.12	−3.29	6.198	6.268	6.091	6.143		0^+	0^+
273	165	1973.52		7.23		14.55	7.50	6.37	4.72	−7.13	−3.46	6.208	6.279	6.097	6.149		0^+	$7/2^+$
274	166	1981.05		7.23		13.90	7.78	7.53	4.88	−6.86	−3.61	6.218	6.292	6.103	6.155		0^+	0^+
275	167	1987.31		7.23		13.79	8.10	6.26	5.04	−6.80	−3.77	6.228	6.304	6.109	6.161		0^+	$7/2^+$
276	168	1994.53		7.23		13.48	8.37	7.22	5.19	−6.70	−3.92	6.238	6.316	6.115	6.168		0^+	0^+
277	169	2000.68		7.22		13.37	8.69	6.15	5.35	−6.63	−4.08	6.248	6.328	6.122	6.174		0^+	$7/2^+$
278	170	2007.75		7.22		13.22	8.98	7.07	5.51	−6.56	−4.22	6.258	6.340	6.128	6.180		0^+	0^+
279	171	2013.75		7.22		13.07	9.32	6.00	5.68	−6.29	−4.40	6.269	6.352	6.135	6.187		0^+	$7/2^+$
280	172	2020.65		7.22		12.90	9.58	6.90	5.82	−6.27	−4.53	6.278	6.363	6.140	6.192		0^+	0^+
281	173	2026.23		7.21		12.48	9.82	5.58	5.94	−6.25	−4.66	6.286	6.374	6.143	6.195		0^+	$5/2^+$
282	174	2032.64		7.21		11.99	10.02	6.41	6.05	−5.91	−4.76	6.293	6.384	6.145	6.197		0^+	0^+
283	175	2038.01		7.20		11.78	10.24	5.37	6.16	−5.82	−4.87	6.301	6.394	6.147	6.199		0^+	$5/2^+$
284	176	2044.20		7.20		11.56	10.45	6.19	6.28	−5.75	−4.98	6.308	6.404	6.149	6.201		0^+	0^+
285	177	2049.39		7.19		11.38	10.66	5.19	6.39	−5.64	−5.09	6.316	6.415	6.151	6.203		0^+	$5/2^+$
286	178	2055.48		7.19		11.28	10.88	6.09	6.50	−5.61	−5.20	6.324	6.425	6.154	6.205		0^+	0^+
287	179	2060.61		7.18		11.22	11.09	5.13	6.62	−5.60	−5.31	6.332	6.436	6.156	6.207		0^+	$3/2^+$
288	180	2066.49		7.18		11.01	11.31	5.88	6.74	−5.46	−5.42	6.340	6.447	6.158	6.210		0^+	0^+
289	181	2071.56		7.17		10.95	11.51	5.07	6.85	−5.39	−5.52	6.348	6.458	6.160	6.212		0^+	$3/2^+$
290	182	2077.21		7.16		10.72	11.73	5.65	6.97	−5.31	−5.63	6.357	6.469	6.163	6.214		0^+	0^+
291	183	2082.29		7.16		10.73	11.93	5.08	7.08	−5.04	−5.74	6.365	6.481	6.165	6.217		0^+	$1/2^+$
292	184	2087.57		7.15		10.36	12.11	5.28	7.17	−4.40	−5.82	6.374	6.492	6.167	6.218		0^+	0^+
293	185	2090.30		7.13		8.01	12.45	2.73	7.34	−4.74	−5.99	6.387	6.506	6.179	6.230		0^+	$13/2^-$
294	186	2094.26		7.12		6.69	12.77	3.96	7.50	−3.36	−6.16	6.400	6.519	6.190	6.241		0^+	0^+
295	187	2096.99		7.11		6.69	13.11	2.73	7.67	−3.36	−6.32	6.413	6.532	6.202	6.253		0^+	$13/2^-$
296	188	2100.95		7.10		6.69	13.43	3.96	7.83	−3.36	−6.48	6.426	6.545	6.213	6.264		0^+	0^+
297	189	2103.68		7.08		6.69	13.76	2.73	7.99	−3.36	−6.65	6.439	6.558	6.225	6.277		0^+	$13/2^-$
298	190	2107.64		7.07		6.69	14.08	3.96	8.14	−3.37	−6.81	6.452	6.571	6.237	6.288		0^+	0^+
299	191	2110.38		7.06		6.70	14.41	2.74	8.31	−3.36	−6.97	6.465	6.584	6.249	6.300		0^+	$13/2^-$
300	192	2114.35		7.05		6.71	14.72	3.97	8.46	−3.37	−7.13	6.478	6.597	6.260	6.311		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
301	193	2117.08		7.03		6.70	15.05	2.73	8.62	−3.35	−7.29	6.491	6.610	6.273	6.324		0^+	$13/2^-$
302	194	2121.06		7.02		6.71	15.36	3.98	8.78	−3.36	−7.44	6.504	6.623	6.284	6.335		0^+	0^+
303	195	2123.78		7.01		6.70	15.70	2.72	8.94	−3.32	−7.61	6.517	6.636	6.297	6.348		0^+	$13/2^-$
304	196	2127.76		7.00		6.70	16.00	3.98	9.09	−3.32	−7.76	6.530	6.648	6.309	6.359		0^+	0^+
305	197	2130.37		6.98		6.59	16.36	2.61	9.27	−3.08	−7.92	6.544	6.662	6.324	6.374		0^+	$13/2^-$
306	198	2134.32		6.97		6.56	16.64	3.95	9.40	−3.12	−8.07	6.556	6.674	6.334	6.384		0^+	0^+
307	199	2136.46		6.96		6.09	16.89	2.14	9.54	−3.13	−8.19	6.567	6.686	6.341	6.391		0^+	$11/2^-$
308	200	2140.13		6.95		5.81	17.13	3.67	9.66	−2.85	−8.32	6.576	6.697	6.346	6.396		0^+	0^+
309	201	2142.19		6.93		5.73	17.36	2.06	9.78	−2.82	−8.44	6.586	6.709	6.351	6.401		0^+	$11/2^-$
310	202	2145.65		6.92		5.52	17.62	3.46	9.92	−2.76	−8.57	6.596	6.720	6.358	6.408		0^+	0^+
311	203	2147.65		6.91		5.46	17.86	2.00	10.04	−2.73	−8.69	6.606	6.732	6.363	6.413		0^+	$11/2^-$
312	204	2151.03		6.89		5.38	18.11	3.38	10.18	−2.71	−8.82	6.616	6.743	6.370	6.420		0^+	0^+
313	205	2152.97		6.88		5.32	18.35	1.94	10.30	−2.67	−8.94	6.626	6.754	6.375	6.425		0^+	$11/2^-$
314	206	2156.30		6.87		5.27	18.60	3.33	10.43	−2.66	−9.07	6.636	6.765	6.382	6.432		0^+	0^+
315	207	2158.17		6.85		5.20	18.83	1.87	10.54	−2.62	−9.19	6.646	6.777	6.387	6.437		0^+	$11/2^-$
316	208	2161.48		6.84		5.18	19.09	3.31	10.68	−2.61	−9.32	6.656	6.788	6.394	6.444		0^+	0^+
317	209	2163.29		6.82		5.12	19.34	1.81	10.81	−2.57	−9.45	6.666	6.799	6.401	6.450		0^+	$11/2^-$
318	210	2166.58		6.81		5.10	19.58	3.29	10.93	−2.57	−9.57	6.676	6.810	6.407	6.457		0^+	0^+
319	211	2168.31		6.80		5.02	19.85	1.73	11.06	−2.52	−9.70	6.686	6.821	6.414	6.464		0^+	$11/2^-$
320	212	2171.61		6.79		5.03	20.09	3.30	11.18	−2.53	−9.83	6.696	6.832	6.421	6.470		0^+	0^+
321	213	2173.25		6.77		4.94	20.37	1.64	11.32	−2.48	−9.96	6.707	6.843	6.429	6.479		0^+	$11/2^-$
322	214	2176.56		6.76		4.95	20.59	3.31	11.44	−2.50	−10.08	6.716	6.854	6.435	6.484		0^+	0^+
323	215	2178.12		6.74		4.87	20.87	1.56	11.58	−2.49	−10.21	6.727	6.865	6.442	6.492		0^+	$17/2^+$
324	216	2181.44		6.73		4.88	21.10	3.32	11.69	−2.46	−10.33	6.737	6.876	6.450	6.499		0^+	0^+
325	217	2183.00		6.72		4.88	21.38	1.56	11.83	−2.45	−10.47	6.747	6.887	6.457	6.507		0^+	$17/2^+$
326	218	2186.27		6.71		4.83	21.61	3.27	11.95	−2.43	−10.59	6.758	6.898	6.465	6.514		0^+	0^+
327	219	2187.81		6.69		4.81	21.88	1.54	12.08	−2.42	−10.72	6.768	6.909	6.473	6.522		0^+	$17/2^+$
328	220	2191.04		6.68		4.77	22.12	3.23	12.20	−2.40	−10.84	6.778	6.920	6.480	6.530		0^+	0^+
329	221	2192.56		6.66		4.75	22.38	1.52	12.33	−2.38	−10.97	6.788	6.930	6.488	6.537		0^+	$17/2^+$
330	222	2195.77		6.65		4.73	22.62	3.21	12.45	−2.38	−11.09	6.799	6.941	6.496	6.545		0^+	0^+
331	223	2197.26		6.64		4.70	22.88	1.49	12.58	−2.35	−11.21	6.809	6.952	6.504	6.553		0^+	$17/2^+$
332	224	2200.45		6.63		4.68	23.11	3.19	12.69	−2.35	−11.33	6.820	6.963	6.512	6.561		0^+	0^+
333	225	2201.93		6.61		4.67	23.34	1.48	12.81	−2.38	−11.44	6.830	6.975	6.519	6.568		0^+	$9/2^-$
334	226	2205.08		6.60		4.63	23.59	3.15	12.93	−2.32	−11.56	6.840	6.985	6.527	6.576		0^+	0^+
335	227	2206.63		6.59		4.70	23.83	1.55	13.05	−2.34	−11.68	6.851	6.996	6.535	6.584		0^+	$9/2^-$
336	228	2209.66		6.58		4.58	24.04	3.03	13.16	−2.29	−11.78	6.861	7.007	6.542	6.591		0^+	0^+
337	229	2211.26		6.56		4.63	24.29	1.60	13.28	−2.31	−11.90	6.872	7.018	6.551	6.599		0^+	$9/2^-$
338	230	2214.18		6.55		4.52	24.47	2.92	13.37	−2.26	−12.00	6.882	7.029	6.557	6.605		0^+	0^+
339	231	2215.82		6.54		4.56	24.73	1.64	13.50	−2.26	−12.12	6.892	7.040	6.565	6.614		0^+	$9/2^-$
340	232	2218.64		6.53		4.46	24.89	2.82	13.58	−2.22	−12.20	6.902	7.052	6.570	6.619		0^+	0^+
341	233	2220.28		6.51		4.46	25.13	1.64	13.70	−2.21	−12.31	6.913	7.063	6.579	6.627		0^+	$9/2^-$
342	234	2223.03		6.50		4.39	25.28	2.75	13.78	−2.18	−12.39	6.923	7.074	6.583	6.632		0^+	0^+
343	235	2224.64		6.49		4.36	25.51	1.61	13.89	−2.15	−12.50	6.934	7.085	6.592	6.640		0^+	$9/2^-$
344	236	2227.33		6.47		4.30	25.65	2.69	13.96	−2.13	−12.57	6.943	7.097	6.596	6.644		0^+	0^+
345	237	2228.84		6.46		4.20	25.84	1.51	14.07	−2.04	−12.68	6.954	7.108	6.603	6.651		0^+	$9/2^-$
346	238	2231.49		6.45		4.16	25.99	2.65	14.13	−2.04	−12.74	6.963	7.120	6.606	6.654		0^+	0^+
347	239	2233.02		6.44		4.18	26.18	1.53	14.23	−2.05	−12.83	6.974	7.132	6.610	6.659		0^+	$7/2^-$
348	240	2235.42		6.42		3.93	26.26	2.40	14.27	−1.95	−12.89	6.982	7.143	6.611	6.660		0^+	0^+
349	241	2236.90		6.41		3.88	26.41	1.48	14.34	−1.92	−12.96	6.992	7.154	6.615	6.663		0^+	$7/2^-$
350	242	2239.19		6.40		3.77	26.51	2.29	14.39	−1.89	−13.02	7.000	7.166	6.614	6.663		0^+	0^+
351	243	2240.61		6.38		3.71	26.64	1.42	14.46	−1.85	−13.09	7.010	7.178	6.617	6.665		0^+	$7/2^-$
352	244	2242.85		6.37		3.66	26.74	2.24	14.51	−1.84	−13.14	7.018	7.189	6.617	6.665		0^+	0^+
353	245	2244.20		6.36		3.59	26.87	1.35	14.57	−1.80	−13.21	7.028	7.201	6.619	6.667		0^+	$7/2^-$
354	246	2246.43		6.35		3.58	26.97	2.23	14.62	−1.80	−13.26	7.037	7.212	6.619	6.668		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
355	247	2247.79		6.33		3.59	27.09	1.36	14.69	−1.81	−13.33	7.047	7.225	6.621	6.669		0^+	$5/2^-$
356	248	2249.94		6.32		3.51	27.19	2.15	14.74	−1.76	−13.38	7.056	7.236	6.622	6.670		0^+	0^+
357	249	2251.30		6.31		3.51	27.30	1.36	14.80	−1.75	−13.44	7.065	7.249	6.623	6.671		0^+	$5/2^-$
358	250	2253.37		6.29		3.43	27.40	2.07	14.84	−1.72	−13.49	7.075	7.261	6.624	6.672		0^+	0^+
359	251	2254.76		6.28		3.46	27.52	1.39	14.90	−1.74	−13.54	7.085	7.274	6.625	6.673		0^+	$3/2^-$
360	252	2256.74		6.27		3.37	27.60	1.98	14.93	−1.69	−13.59	7.094	7.286	6.626	6.674		0^+	0^+
361	253	2258.13		6.26		3.37	27.70	1.39	14.98	−1.70	−13.65	7.105	7.299	6.627	6.675		0^+	$3/2^-$
362	254	2260.04		6.24		3.30	27.78	1.91	15.01	−1.65	−13.69	7.114	7.312	6.627	6.675		0^+	0^+
363	255	2261.42		6.23		3.29	27.86	1.38	15.05	−1.68	−13.73	7.125	7.326	6.628	6.676		0^+	$1/2^-$
364	256	2263.26		6.22		3.22	27.94	1.84	15.09	−1.60	−13.77	7.135	7.338	6.628	6.676		0^+	0^+
365	257	2264.74		6.20		3.32	28.01	1.48	15.12	−0.94	−13.81	7.146	7.352	6.628	6.677		0^+	$1/2^-$
366	258	2266.35		6.19		3.09	28.08	1.61	15.16	−0.69	−13.84	7.157	7.367	6.629	6.677		0^+	0^+
367	259	2265.13		6.17		0.39	28.08	−1.22	15.15	−0.76	−13.84	7.183	7.402	6.628	6.676		0^+	$1/2^+$
368	260	2264.91		6.15		−1.44	28.42	−0.22	15.33	0.69	−14.02	7.179	7.389	6.647	6.695		0^+	0^+
σ		18.96																
$Z = 109$ (Mt)																		
256	147	1834.34		7.17			0.34	7.34	−1.03	−8.39	0.16	6.052	6.086	6.005	6.058		$7/2^-$	$15/2^-$
257	148	1843.66		7.17		16.66	0.71	9.32	−0.85	−8.33	−0.04	6.061	6.098	6.010	6.063		$7/2^-$	0^+
258	149	1850.89		7.17		16.55	1.09	7.23	−0.67	−8.29	−0.23	6.070	6.109	6.015	6.068		$7/2^-$	$9/2^+$
259	150	1860.09		7.18		16.43	1.48	9.20	−0.47	−8.22	−0.41	6.079	6.120	6.022	6.075		$7/2^-$	0^+
260	151	1867.26		7.18		16.37	1.87	7.17	−0.28	−8.18	−0.60	6.088	6.131	6.027	6.080		$7/2^-$	$9/2^+$
261	152	1876.31		7.19		16.22	2.24	9.05	−0.09	−8.11	−0.79	6.097	6.142	6.033	6.086		$7/2^-$	0^+
262	153	1883.41		7.19		16.15	2.62	7.10	0.10	−8.07	−0.98	6.105	6.152	6.039	6.092		$7/2^-$	$9/2^+$
263	154	1892.32		7.20		16.01	2.99	8.91	0.29	−8.01	−1.16	6.114	6.163	6.044	6.097		$7/2^-$	0^+
264	155	1899.36		7.19		15.95	3.38	7.04	0.48	−7.96	−1.35	6.123	6.174	6.050	6.103		$7/2^-$	$9/2^+$
265	156	1908.14		7.20		15.82	3.74	8.78	0.66	−7.91	−1.53	6.132	6.185	6.056	6.108		$7/2^-$	0^+
266	157	1915.10		7.20		15.74	4.11	6.96	0.84	−7.85	−1.71	6.141	6.195	6.062	6.114		$7/2^-$	$9/2^+$
267	158	1923.76		7.21		15.62	4.47	8.66	1.01	−7.80	−1.90	6.149	6.206	6.067	6.119		$7/2^-$	0^+
268	159	1930.64		7.20		15.54	4.84	6.88	1.21	−7.74	−2.08	6.158	6.216	6.073	6.125		$7/2^-$	$9/2^+$
269	160	1939.19		7.21		15.43	5.20	8.55	1.38	−7.69	−2.27	6.167	6.227	6.078	6.130		$7/2^-$	0^+
270	161	1945.95		7.21		15.31	5.58	6.76	1.57	−7.59	−2.44	6.176	6.237	6.084	6.136		$7/2^-$	$9/2^+$
271	162	1954.39		7.21		15.20	5.92	8.44	1.74	−7.54	−2.63	6.184	6.247	6.089	6.141		$7/2^-$	0^+
272	163	1960.91		7.21		14.96	6.31	6.52	1.94	−7.29	−2.81	6.193	6.257	6.095	6.147		$7/2^-$	$9/2^+$
273	164	1969.23		7.21		14.84	6.63	8.32	2.08	−7.29	−2.99	6.201	6.268	6.100	6.152		$7/2^-$	0^+
274	165	1975.77		7.21		14.86	6.97	6.54	2.25	−7.29	−3.16	6.211	6.279	6.106	6.158		$7/2^-$	$7/2^+$
275	166	1983.42		7.21		14.19	7.25	7.65	2.37	−7.01	−3.31	6.221	6.292	6.112	6.164		$7/2^-$	0^+
276	167	1989.83		7.21		14.06	7.56	6.41	2.52	−6.94	−3.47	6.231	6.304	6.119	6.171		$7/2^-$	$7/2^+$
277	168	1997.19		7.21		13.77	7.85	7.36	2.66	−6.85	−3.62	6.241	6.316	6.125	6.177		$7/2^-$	0^+
278	169	2003.49		7.21		13.66	8.16	6.30	2.81	−6.78	−3.78	6.252	6.328	6.131	6.183		$7/2^-$	$7/2^+$
279	170	2010.69		7.21		13.50	8.45	7.20	2.94	−6.71	−3.93	6.261	6.340	6.137	6.189		$7/2^-$	0^+
280	171	2016.85		7.20		13.36	8.78	6.16	3.10	−6.41	−4.10	6.272	6.352	6.145	6.197		$7/2^-$	$7/2^+$
281	172	2023.90		7.20		13.21	9.07	7.05	3.25	−6.40	−4.25	6.282	6.364	6.150	6.202		$7/2^-$	0^+
282	173	2029.58		7.20		12.73	9.29	5.68	3.35	−6.38	−4.37	6.289	6.374	6.153	6.205		$7/2^-$	$5/2^+$
283	174	2036.08		7.19		12.18	9.49	6.50	3.44	−6.01	−4.47	6.296	6.383	6.154	6.206		$7/2^-$	0^+
284	175	2041.55		7.19		11.97	9.70	5.47	3.54	−5.92	−4.58	6.304	6.394	6.157	6.209		$7/2^-$	$5/2^+$
285	176	2047.84		7.19		11.76	9.92	6.29	3.64	−5.85	−4.69	6.311	6.404	6.159	6.211		$7/2^-$	0^+
286	177	2053.13		7.18		11.58	10.13	5.29	3.74	−5.74	−4.80	6.319	6.415	6.161	6.213		$7/2^-$	$5/2^+$
287	178	2059.31		7.18		11.47	10.33	6.18	3.83	−5.71	−4.90	6.327	6.425	6.164	6.215		$7/2^-$	0^+
288	179	2064.54		7.17		11.41	10.55	5.23	3.93	−5.69	−5.01	6.335	6.436	6.166	6.217		$7/2^-$	$3/2^+$
289	180	2070.51		7.16		11.20	10.76	5.97	4.02	−5.55	−5.12	6.343	6.446	6.168	6.220		$7/2^-$	0^+
290	181	2075.67		7.16		11.13	10.96	5.16	4.11	−5.48	−5.22	6.351	6.457	6.170	6.222		$7/2^-$	$3/2^+$
291	182	2081.41		7.15		10.90	11.17	5.74	4.20	−5.39	−5.33	6.359	6.468	6.173	6.225		$7/2^-$	0^+
292	183	2086.58		7.15		10.91	11.37	5.17	4.29	−5.17	−5.43	6.368	6.480	6.175	6.227		$7/2^-$	$1/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
293	184	2091.93		7.14		10.52	11.53	5.35	4.36	−4.51	−5.52	6.376	6.491	6.177	6.229		$7/2^-$	0^+
294	185	2094.84		7.13		8.26	11.88	2.91	4.54	−4.81	−5.69	6.389	6.504	6.189	6.241		$7/2^-$	$13/2^-$
295	186	2098.97		7.12		7.04	12.21	4.13	4.71	−3.54	−5.85	6.402	6.517	6.200	6.252		$7/2^-$	0^+
296	187	2101.87		7.10		7.03	12.55	2.90	4.88	−3.53	−6.02	6.415	6.531	6.212	6.264		$7/2^-$	$13/2^-$
297	188	2106.00		7.09		7.03	12.88	4.13	5.05	−3.54	−6.18	6.428	6.544	6.224	6.275		$7/2^-$	0^+
298	189	2108.90		7.08		7.03	13.21	2.90	5.22	−3.53	−6.35	6.441	6.557	6.236	6.287		$7/2^-$	$13/2^-$
299	190	2113.03		7.07		7.03	13.53	4.13	5.39	−3.54	−6.51	6.454	6.570	6.247	6.298		$7/2^-$	0^+
300	191	2115.94		7.05		7.04	13.87	2.91	5.56	−3.53	−6.68	6.467	6.583	6.259	6.310		$7/2^-$	$13/2^-$
301	192	2120.07		7.04		7.04	14.18	4.13	5.72	−3.54	−6.84	6.480	6.595	6.270	6.321		$7/2^-$	0^+
302	193	2122.98		7.03		7.04	14.52	2.91	5.90	−3.52	−7.00	6.493	6.608	6.283	6.334		$7/2^-$	$13/2^-$
303	194	2127.12		7.02		7.05	14.84	4.14	6.06	−3.53	−7.16	6.505	6.621	6.294	6.345		$7/2^-$	0^+
304	195	2130.01		7.01		7.03	15.17	2.89	6.23	−3.49	−7.32	6.519	6.634	6.307	6.358		$7/2^-$	$13/2^-$
305	196	2134.15		7.00		7.03	15.48	4.14	6.39	−3.49	−7.47	6.531	6.647	6.318	6.369		$7/2^-$	0^+
306	197	2136.94		6.98		6.93	15.84	2.79	6.57	−3.23	−7.64	6.546	6.660	6.334	6.384		$7/2^-$	$13/2^-$
307	198	2141.05		6.97		6.90	16.13	4.11	6.73	−3.27	−7.78	6.557	6.672	6.344	6.394		$7/2^-$	0^+
308	199	2143.30		6.96		6.36	16.38	2.25	6.84	−3.28	−7.91	6.568	6.684	6.350	6.401		$7/2^-$	$11/2^-$
309	200	2147.09		6.95		6.04	16.62	3.79	6.96	−2.97	−8.04	6.577	6.695	6.355	6.406		$7/2^-$	0^+
310	201	2149.26		6.93		5.96	16.85	2.17	7.07	−2.94	−8.16	6.587	6.707	6.361	6.411		$7/2^-$	$11/2^-$
311	202	2152.85		6.92		5.76	17.12	3.59	7.20	−2.89	−8.29	6.597	6.718	6.367	6.417		$7/2^-$	0^+
312	203	2154.95		6.91		5.69	17.34	2.10	7.30	−2.85	−8.41	6.607	6.730	6.373	6.423		$7/2^-$	$11/2^-$
313	204	2158.46		6.90		5.61	17.61	3.51	7.43	−2.83	−8.55	6.617	6.741	6.380	6.430		$7/2^-$	0^+
314	205	2160.51		6.88		5.56	17.84	2.05	7.54	−2.80	−8.67	6.627	6.752	6.385	6.435		$7/2^-$	$11/2^-$
315	206	2163.97		6.87		5.51	18.10	3.46	7.67	−2.78	−8.80	6.637	6.763	6.392	6.442		$7/2^-$	0^+
316	207	2165.97		6.85		5.46	18.34	2.00	7.80	−2.75	−8.92	6.647	6.775	6.398	6.448		$7/2^-$	$11/2^-$
317	208	2169.40		6.84		5.43	18.60	3.43	7.92	−2.74	−9.05	6.657	6.785	6.405	6.454		$7/2^-$	0^+
318	209	2171.33		6.83		5.36	18.85	1.93	8.04	−2.70	−9.18	6.667	6.797	6.411	6.461		$7/2^-$	$11/2^-$
319	210	2174.75		6.82		5.35	19.10	3.42	8.17	−2.70	−9.30	6.677	6.808	6.418	6.467		$7/2^-$	0^+
320	211	2176.61		6.80		5.28	19.36	1.86	8.30	−2.66	−9.44	6.687	6.819	6.425	6.475		$7/2^-$	$11/2^-$
321	212	2180.03		6.79		5.28	19.60	3.42	8.42	−2.66	−9.56	6.697	6.830	6.431	6.481		$7/2^-$	0^+
322	213	2181.81		6.78		5.20	19.88	1.78	8.56	−2.62	−9.69	6.708	6.841	6.439	6.489		$7/2^-$	$11/2^-$
323	214	2185.24		6.77		5.21	20.12	3.43	8.68	−2.63	−9.81	6.717	6.851	6.445	6.495		$7/2^-$	0^+
324	215	2186.94		6.75		5.13	20.40	1.70	8.82	−2.58	−9.95	6.728	6.863	6.454	6.504		$7/2^-$	$11/2^-$
325	216	2190.38		6.74		5.14	20.63	3.44	8.94	−2.59	−10.07	6.737	6.873	6.460	6.509		$7/2^-$	0^+
326	217	2192.07		6.72		5.13	20.90	1.69	9.07	−2.58	−10.20	6.747	6.884	6.467	6.517		$7/2^-$	$17/2^+$
327	218	2195.47		6.71		5.09	21.15	3.40	9.20	−2.56	−10.32	6.758	6.895	6.475	6.524		$7/2^-$	0^+
328	219	2197.14		6.70		5.07	21.41	1.67	9.33	−2.55	−10.45	6.768	6.905	6.482	6.532		$7/2^-$	$17/2^+$
329	220	2200.50		6.69		5.03	21.66	3.36	9.46	−2.53	−10.58	6.778	6.916	6.490	6.539		$7/2^-$	0^+
330	221	2202.16		6.67		5.02	21.93	1.66	9.60	−2.51	−10.71	6.788	6.927	6.498	6.547		$7/2^-$	$17/2^+$
331	222	2205.48		6.66		4.98	22.16	3.32	9.71	−2.50	−10.82	6.799	6.938	6.506	6.555		$7/2^-$	0^+
332	223	2207.11		6.65		4.95	22.43	1.63	9.85	−2.48	−10.95	6.809	6.949	6.513	6.562		$7/2^-$	$17/2^+$
333	224	2210.41		6.64		4.93	22.65	3.30	9.96	−2.47	−11.07	6.819	6.960	6.521	6.570		$7/2^-$	0^+
334	225	2212.00		6.62		4.89	22.88	1.59	10.07	−2.50	−11.18	6.830	6.971	6.528	6.577		$7/2^-$	$9/2^-$
335	226	2215.29		6.61		4.88	23.14	3.29	10.21	−2.44	−11.30	6.840	6.981	6.536	6.585		$7/2^-$	0^+
336	227	2216.95		6.60		4.95	23.37	1.66	10.32	−2.47	−11.41	6.850	6.992	6.544	6.593		$7/2^-$	$9/2^-$
337	228	2220.10		6.59		4.81	23.60	3.15	10.44	−2.41	−11.52	6.860	7.003	6.551	6.600		$7/2^-$	0^+
338	229	2221.82		6.57		4.87	23.84	1.72	10.56	−2.42	−11.64	6.871	7.014	6.559	6.608		$7/2^-$	$9/2^-$
339	230	2224.83		6.56		4.73	24.02	3.01	10.65	−2.37	−11.73	6.881	7.025	6.565	6.614		$7/2^-$	0^+
340	231	2226.59		6.55		4.77	24.27	1.76	10.77	−2.37	−11.85	6.891	7.036	6.574	6.622		$7/2^-$	$9/2^-$
341	232	2229.49		6.54		4.66	24.43	2.90	10.85	−2.32	−11.93	6.901	7.048	6.579	6.627		$7/2^-$	0^+
342	233	2231.25		6.52		4.66	24.67	1.76	10.97	−2.31	−12.05	6.912	7.059	6.587	6.636		$7/2^-$	$9/2^-$
343	234	2234.07		6.51		4.58	24.82	2.82	11.04	−2.28	−12.12	6.922	7.070	6.592	6.640		$7/2^-$	0^+
344	235	2235.80		6.50		4.55	25.05	1.73	11.16	−2.25	−12.23	6.933	7.081	6.600	6.648		$7/2^-$	$9/2^-$
345	236	2238.55		6.49		4.48	25.18	2.75	11.22	−2.22	−12.31	6.942	7.093	6.604	6.652		$7/2^-$	0^+
346	237	2240.17		6.47		4.37	25.40	1.62	11.33	−2.12	−12.41	6.953	7.104	6.612	6.660		$7/2^-$	$9/2^-$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
347	238	2242.88		6.46		4.33	25.52	2.71	11.39	−2.12	−12.48	6.962	7.116	6.615	6.663		$7/2^-$	0^+
348	239	2244.46		6.45		4.29	25.67	1.58	11.44	−2.13	−12.56	6.972	7.128	6.619	6.667		$7/2^-$	$7/2^-$
349	240	2246.95		6.44		4.07	25.80	2.49	11.53	−2.01	−12.63	6.981	7.139	6.620	6.668		$7/2^-$	0^+
350	241	2248.50		6.42		4.04	25.94	1.55	11.60	−1.98	−12.70	6.990	7.150	6.623	6.671		$7/2^-$	$7/2^-$
351	242	2250.84		6.41		3.89	26.04	2.34	11.65	−1.95	−12.76	6.999	7.161	6.623	6.671		$7/2^-$	0^+
352	243	2252.33		6.40		3.83	26.18	1.49	11.72	−1.91	−12.83	7.008	7.173	6.625	6.673		$7/2^-$	$7/2^-$
353	244	2254.62		6.39		3.78	26.28	2.29	11.77	−1.90	−12.88	7.017	7.185	6.625	6.673		$7/2^-$	0^+
354	245	2256.03		6.37		3.70	26.40	1.41	11.83	−1.85	−12.95	7.026	7.197	6.627	6.676		$7/2^-$	$7/2^-$
355	246	2258.31		6.36		3.69	26.50	2.28	11.88	−1.86	−13.01	7.035	7.208	6.628	6.676		$7/2^-$	0^+
356	247	2259.73		6.35		3.70	26.63	1.42	11.94	−1.86	−13.07	7.045	7.220	6.630	6.678		$7/2^-$	$5/2^-$
357	248	2261.92		6.34		3.61	26.72	2.19	11.98	−1.81	−13.12	7.054	7.232	6.630	6.678		$7/2^-$	0^+
358	249	2263.34		6.32		3.61	26.84	1.42	12.04	−1.80	−13.18	7.063	7.244	6.632	6.680		$7/2^-$	$5/2^-$
359	250	2265.46		6.31		3.54	26.93	2.12	12.09	−1.77	−13.23	7.073	7.256	6.633	6.681		$7/2^-$	0^+
360	251	2266.87		6.30		3.53	27.01	1.41	12.11	−1.79	−13.28	7.083	7.270	6.634	6.682		$7/2^-$	$3/2^-$
361	252	2268.92		6.29		3.46	27.11	2.05	12.18	−1.73	−13.34	7.092	7.281	6.635	6.683		$7/2^-$	0^+
362	253	2270.35		6.27		3.48	27.20	1.43	12.22	−1.74	−13.39	7.102	7.294	6.636	6.684		$7/2^-$	$3/2^-$
363	254	2272.30		6.26		3.38	27.27	1.95	12.26	−1.69	−13.43	7.112	7.307	6.636	6.684		$7/2^-$	0^+
364	255	2273.73		6.25		3.38	27.36	1.43	12.31	−1.66	−13.48	7.122	7.320	6.637	6.685		$7/2^-$	$3/2^-$
365	256	2275.59		6.23		3.29	27.42	1.86	12.33	−1.63	−13.51	7.133	7.333	6.637	6.685		$7/2^-$	0^+
366	257	2277.10		6.22		3.37	27.48	1.51	12.36	−0.85	−13.55	7.143	7.347	6.638	6.686		$7/2^-$	$1/2^-$
367	258	2278.74		6.21		3.15	27.55	1.64	12.39	−0.72	−13.55	7.153	7.361	6.635	6.683		$13/2^+$	0^+
368	259	2277.54		6.19		0.44	27.56	−1.20	12.41	−0.93	−13.66	7.165	7.371	6.648	6.696		$13/2^+$	$15/2^+$
369	260	2277.47		6.17		−1.27	27.89	−0.07	12.56	0.59	−13.74	7.175	7.383	6.654	6.702		$13/2^+$	0^+
σ																		
$Z = 110$ (Ds)																		
259	149	1851.88		7.15			0.32	7.43	0.99	−8.47	0.13	6.074	6.111	6.023	6.076		0^+	$9/2^+$
260	150	1861.25		7.16		16.80	0.69	9.37	1.16	−8.41	−0.05	6.083	6.122	6.029	6.082		0^+	0^+
261	151	1868.60		7.16		16.72	1.06	7.35	1.34	−8.36	−0.24	6.092	6.133	6.035	6.087		0^+	$9/2^+$
262	152	1877.83		7.17		16.58	1.43	9.23	1.52	−8.30	−0.42	6.100	6.144	6.040	6.093		0^+	0^+
263	153	1885.12		7.17		16.52	1.81	7.29	1.71	−8.25	−0.61	6.109	6.154	6.046	6.099		0^+	$9/2^+$
264	154	1894.22		7.18		16.39	2.19	9.10	1.90	−8.19	−0.80	6.118	6.165	6.051	6.104		0^+	0^+
265	155	1901.43		7.18		16.31	2.55	7.21	2.07	−8.14	−0.98	6.127	6.176	6.057	6.110		0^+	$9/2^+$
266	156	1910.41		7.18		16.19	2.93	8.98	2.27	−8.09	−1.17	6.135	6.186	6.062	6.115		0^+	0^+
267	157	1917.54		7.18		16.11	3.28	7.13	2.44	−8.03	−1.34	6.144	6.197	6.068	6.121		0^+	$9/2^+$
268	158	1926.40		7.19		15.99	3.65	8.86	2.64	−7.98	−1.53	6.153	6.207	6.073	6.126		0^+	0^+
269	159	1933.45	1950.29	7.19	7.25	15.91	4.02	7.05	2.81	−7.92	−1.70	6.162	6.218	6.079	6.132		0^+	$9/2^+$
270	160	1942.20	1958.52	7.19	7.25	15.80	4.39	8.75	3.01	−7.87	−1.90	6.170	6.228	6.084	6.137		0^+	0^+
271	161	1949.13		7.19		15.68	4.75	6.93	3.18	−7.77	−2.07	6.179	6.238	6.090	6.143		0^+	$9/2^+$
272	162	1957.78		7.20		15.58	5.13	8.65	3.39	−7.72	−2.26	6.187	6.248	6.095	6.147		0^+	0^+
273	163	1964.45		7.20		15.32	5.48	6.67	3.54	−7.47	−2.43	6.196	6.259	6.101	6.154		0^+	$9/2^+$
274	164	1972.99		7.20		15.21	5.84	8.54	3.76	−7.46	−2.62	6.204	6.269	6.106	6.158		0^+	0^+
275	165	1979.71		7.20		15.26	6.19	6.72	3.94	−7.47	−2.80	6.214	6.280	6.112	6.164		0^+	$7/2^+$
276	166	1987.53		7.20		14.54	6.48	7.82	4.11	−7.18	−2.95	6.224	6.293	6.119	6.171		0^+	0^+
277	167	1994.12		7.20		14.41	6.81	6.59	4.29	−7.11	−3.12	6.234	6.305	6.125	6.177		0^+	$7/2^+$
278	168	2001.64		7.20		14.11	7.11	7.52	4.45	−7.01	−3.27	6.244	6.317	6.132	6.184		0^+	0^+
279	169	2008.12		7.20		14.00	7.44	6.48	4.63	−6.95	−3.44	6.254	6.329	6.138	6.190		0^+	$7/2^+$
280	170	2015.48		7.20		13.84	7.73	7.36	4.79	−6.88	−3.59	6.264	6.340	6.145	6.196		0^+	0^+
281	171	2021.83		7.20		13.71	8.08	6.35	4.98	−6.57	−3.77	6.275	6.352	6.152	6.204		0^+	$7/2^+$
282	172	2029.04		7.20		13.56	8.39	7.21	5.14	−6.55	−3.92	6.285	6.364	6.158	6.210		0^+	0^+
283	173	2034.84		7.19		13.01	8.61	5.80	5.26	−6.53	−4.04	6.292	6.374	6.160	6.212		0^+	$5/2^+$
284	174	2041.46		7.19		12.42	8.82	6.62	5.38	−6.13	−4.15	6.299	6.384	6.162	6.214		0^+	0^+
285	175	2047.06		7.18		12.22	9.05	5.60	5.51	−6.04	−4.27	6.306	6.394	6.164	6.216		0^+	$5/2^+$
286	176	2053.47		7.18		12.01	9.27	6.41	5.63	−5.97	−4.38	6.314	6.404	6.166	6.218		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
287	177	2058.89		7.17		11.83	9.50	5.42	5.76	−5.86	−4.49	6.321	6.414	6.169	6.220		0^+	$5/2^+$
288	178	2065.20		7.17		11.73	9.72	6.31	5.89	−5.83	−4.61	6.329	6.424	6.171	6.223		0^+	0^+
289	179	2070.55		7.16		11.66	9.94	5.35	6.01	−5.81	−4.72	6.337	6.435	6.173	6.225		0^+	$3/2^+$
290	180	2076.65		7.16		11.45	10.16	6.10	6.14	−5.68	−4.83	6.345	6.446	6.176	6.227		0^+	0^+
291	181	2081.93		7.15		11.38	10.37	5.28	6.26	−5.60	−4.94	6.353	6.457	6.178	6.229		0^+	$3/2^+$
292	182	2087.80		7.15		11.15	10.59	5.87	6.39	−5.52	−5.05	6.361	6.468	6.181	6.232		0^+	0^+
293	183	2093.09		7.14		11.16	10.80	5.29	6.51	−5.25	−5.16	6.369	6.479	6.183	6.234		0^+	$1/2^+$
294	184	2098.55		7.14		10.75	10.98	5.46	6.62	−4.64	−5.25	6.377	6.490	6.185	6.236		0^+	0^+
295	185	2101.62		7.12		8.53	11.32	3.07	6.78	−4.92	−5.41	6.391	6.503	6.196	6.248		0^+	$13/2^-$
296	186	2105.90		7.11		7.35	11.64	4.28	6.93	−3.69	−5.58	6.403	6.516	6.208	6.259		0^+	0^+
297	187	2108.96		7.10		7.34	11.97	3.06	7.09	−3.68	−5.74	6.417	6.530	6.219	6.271		0^+	$13/2^-$
298	188	2113.25		7.09		7.35	12.30	4.29	7.25	−3.69	−5.90	6.429	6.543	6.231	6.282		0^+	0^+
299	189	2116.31		7.08		7.35	12.63	3.06	7.41	−3.68	−6.07	6.442	6.556	6.242	6.294		0^+	$13/2^-$
300	190	2120.59		7.07		7.34	12.95	4.28	7.56	−3.69	−6.23	6.455	6.568	6.254	6.305		0^+	0^+
301	191	2123.65		7.06		7.34	13.27	3.06	7.71	−3.68	−6.39	6.468	6.582	6.266	6.317		0^+	$13/2^-$
302	192	2127.93		7.05		7.34	13.58	4.28	7.86	−3.68	−6.54	6.480	6.594	6.277	6.328		0^+	0^+
303	193	2130.99		7.03		7.34	13.91	3.06	8.01	−3.67	−6.70	6.494	6.607	6.289	6.340		0^+	$13/2^-$
304	194	2135.28		7.02		7.35	14.22	4.29	8.16	−3.67	−6.85	6.506	6.620	6.300	6.351		0^+	0^+
305	195	2138.31		7.01		7.32	14.53	3.03	8.30	−3.64	−7.01	6.519	6.633	6.313	6.364		0^+	$13/2^-$
306	196	2142.60		7.00		7.32	14.84	4.29	8.45	−3.63	−7.16	6.532	6.645	6.324	6.375		0^+	0^+
307	197	2145.54		6.99		7.23	15.17	2.94	8.60	−3.37	−7.32	6.546	6.658	6.339	6.390		0^+	$13/2^-$
308	198	2149.78		6.98		7.18	15.46	4.24	8.73	−3.40	−7.46	6.558	6.671	6.349	6.399		0^+	0^+
309	199	2152.18		6.96		6.64	15.72	2.40	8.88	−3.41	−7.59	6.568	6.683	6.356	6.406		0^+	$11/2^-$
310	200	2156.10		6.96		6.32	15.97	3.92	9.01	−3.11	−7.72	6.577	6.693	6.361	6.411		0^+	0^+
311	201	2158.40		6.94		6.22	16.21	2.30	9.14	−3.07	−7.85	6.587	6.705	6.366	6.416		0^+	$11/2^-$
312	202	2162.12		6.93		6.02	16.47	3.72	9.27	−3.02	−7.98	6.597	6.716	6.373	6.423		0^+	0^+
313	203	2164.36		6.91		5.96	16.71	2.24	9.41	−2.99	−8.11	6.607	6.728	6.378	6.428		0^+	$11/2^-$
314	204	2168.01		6.90		5.89	16.98	3.65	9.55	−2.96	−8.24	6.617	6.739	6.385	6.435		0^+	0^+
315	205	2170.19		6.89		5.83	17.22	2.18	9.68	−2.92	−8.37	6.627	6.750	6.391	6.441		0^+	$11/2^-$
316	206	2173.78		6.88		5.77	17.48	3.59	9.81	−2.91	−8.50	6.637	6.761	6.397	6.447		0^+	0^+
317	207	2175.91		6.86		5.72	17.74	2.13	9.94	−2.87	−8.62	6.647	6.772	6.403	6.453		0^+	$11/2^-$
318	208	2179.47		6.85		5.69	17.99	3.56	10.07	−2.87	−8.75	6.657	6.783	6.410	6.460		0^+	0^+
319	209	2181.53		6.84		5.62	18.24	2.06	10.20	−2.83	−8.88	6.667	6.795	6.417	6.466		0^+	$11/2^-$
320	210	2185.07		6.83		5.60	18.49	3.54	10.32	−2.83	−9.01	6.676	6.805	6.423	6.473		0^+	0^+
321	211	2187.06		6.81		5.53	18.75	1.99	10.45	−2.78	−9.14	6.687	6.816	6.430	6.480		0^+	$11/2^-$
322	212	2190.61		6.80		5.54	19.00	3.55	10.58	−2.79	−9.26	6.696	6.827	6.437	6.486		0^+	0^+
323	213	2192.52		6.79		5.46	19.27	1.91	10.71	−2.74	−9.40	6.707	6.838	6.444	6.494		0^+	$11/2^-$
324	214	2196.07		6.78		5.46	19.51	3.55	10.83	−2.75	−9.52	6.716	6.849	6.451	6.500		0^+	0^+
325	215	2197.90		6.76		5.38	19.78	1.83	10.96	−2.70	−9.65	6.727	6.860	6.459	6.509		0^+	$11/2^-$
326	216	2201.46		6.75		5.39	20.02	3.56	11.08	−2.72	−9.77	6.736	6.870	6.465	6.514		0^+	0^+
327	217	2203.28		6.74		5.38	20.28	1.82	11.21	−2.70	−9.90	6.746	6.881	6.472	6.522		0^+	$17/2^+$
328	218	2206.80		6.73		5.34	20.53	3.52	11.33	−2.68	−10.02	6.757	6.892	6.480	6.529		0^+	0^+
329	219	2208.60		6.71		5.32	20.79	1.80	11.46	−2.67	−10.15	6.767	6.902	6.487	6.536		0^+	$17/2^+$
330	220	2212.07		6.70		5.27	21.03	3.47	11.57	−2.65	−10.27	6.777	6.913	6.495	6.544		0^+	0^+
331	221	2213.86		6.69		5.26	21.30	1.79	11.70	−2.63	−10.40	6.787	6.924	6.503	6.552		0^+	$17/2^+$
332	222	2217.29		6.68		5.22	21.52	3.43	11.81	−2.62	−10.52	6.797	6.935	6.510	6.559		0^+	0^+
333	223	2219.04		6.66		5.18	21.78	1.75	11.93	−2.59	−10.64	6.807	6.945	6.518	6.567		0^+	$17/2^+$
334	224	2222.46		6.65		5.17	22.01	3.42	12.05	−2.58	−10.76	6.817	6.956	6.526	6.575		0^+	0^+
335	225	2224.16		6.64		5.12	22.23	1.70	12.16	−2.55	−10.88	6.828	6.967	6.533	6.582		0^+	$17/2^+$
336	226	2227.56		6.63		5.10	22.48	3.40	12.27	−2.55	−10.99	6.838	6.978	6.541	6.590		0^+	0^+
337	227	2229.33		6.62		5.17	22.70	1.77	12.38	−2.57	−11.10	6.848	6.989	6.549	6.597		0^+	$9/2^-$
338	228	2232.59		6.61		5.03	22.93	3.26	12.49	−2.51	−11.21	6.858	7.000	6.556	6.604		0^+	0^+
339	229	2234.42		6.59		5.09	23.16	1.83	12.60	−2.52	−11.32	6.869	7.011	6.564	6.612		0^+	$9/2^-$
340	230	2237.53		6.58		4.94	23.35	3.11	12.70	−2.46	−11.41	6.879	7.022	6.570	6.618		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
341	231	2239.39		6.57		4.97	23.57	1.86	12.80	−2.46	−11.53	6.889	7.033	6.578	6.626		0^+	$9/2^-$
342	232	2242.38		6.56		4.85	23.74	2.99	12.89	−2.42	−11.61	6.899	7.044	6.583	6.632		0^+	0^+
343	233	2244.24		6.54		4.85	23.96	1.86	12.99	−2.40	−11.72	6.910	7.055	6.591	6.640		0^+	$9/2^-$
344	234	2247.14		6.53		4.76	24.11	2.90	13.07	−2.37	−11.80	6.920	7.067	6.596	6.644		0^+	0^+
345	235	2248.98		6.52		4.74	24.34	1.84	13.18	−2.33	−11.90	6.930	7.078	6.604	6.653		0^+	$9/2^-$
346	236	2251.81		6.51		4.67	24.48	2.83	13.26	−2.31	−11.98	6.940	7.089	6.608	6.657		0^+	0^+
347	237	2253.53		6.49		4.55	24.69	1.72	13.36	−2.20	−12.08	6.951	7.101	6.616	6.664		0^+	$9/2^-$
348	238	2256.32		6.48		4.51	24.83	2.79	13.44	−2.20	−12.16	6.960	7.112	6.619	6.667		0^+	0^+
349	239	2257.96		6.47		4.43	24.94	1.64	13.50	−2.21	−12.24	6.970	7.124	6.623	6.672		0^+	$7/2^-$
350	240	2260.54		6.46		4.22	25.12	2.58	13.59	−2.08	−12.31	6.978	7.135	6.624	6.672		0^+	0^+
351	241	2262.16		6.44		4.20	25.26	1.62	13.66	−2.06	−12.38	6.988	7.146	6.627	6.675		0^+	$7/2^-$
352	242	2264.57		6.43		4.03	25.38	2.41	13.73	−2.02	−12.45	6.996	7.157	6.627	6.675		0^+	0^+
353	243	2266.14		6.42		3.98	25.53	1.57	13.81	−1.98	−12.52	7.006	7.169	6.630	6.678		0^+	$7/2^-$
354	244	2268.49		6.41		3.92	25.64	2.35	13.87	−1.97	−12.59	7.014	7.180	6.630	6.678		0^+	0^+
355	245	2269.98		6.39		3.84	25.78	1.49	13.95	−1.92	−12.66	7.024	7.193	6.632	6.680		0^+	$7/2^-$
356	246	2272.32		6.38		3.83	25.89	2.34	14.01	−1.92	−12.72	7.032	7.204	6.633	6.681		0^+	0^+
357	247	2273.81		6.37		3.83	26.02	1.49	14.08	−1.93	−12.79	7.042	7.216	6.635	6.683		0^+	$5/2^-$
358	248	2276.07		6.36		3.75	26.13	2.26	14.15	−1.88	−12.85	7.051	7.227	6.635	6.683		0^+	0^+
359	249	2277.57		6.34		3.76	26.27	1.50	14.23	−1.87	−12.91	7.060	7.239	6.637	6.685		0^+	$5/2^-$
360	250	2279.74		6.33		3.67	26.37	2.17	14.28	−1.84	−12.97	7.069	7.251	6.638	6.686		0^+	0^+
361	251	2281.20		6.32		3.63	26.44	1.46	14.33	−1.80	−13.03	7.079	7.264	6.639	6.687		0^+	$5/2^-$
362	252	2283.33		6.31		3.59	26.59	2.13	14.41	−1.79	−13.08	7.089	7.276	6.640	6.688		0^+	0^+
363	253	2284.82		6.29		3.62	26.69	1.49	14.47	−1.80	−13.13	7.099	7.289	6.641	6.689		0^+	$3/2^-$
364	254	2286.82		6.28		3.49	26.78	2.00	14.52	−1.74	−13.18	7.108	7.301	6.642	6.690		0^+	0^+
365	255	2288.30		6.27		3.48	26.88	1.48	14.57	−1.71	−13.23	7.119	7.315	6.642	6.690		0^+	$3/2^-$
366	256	2290.20		6.26		3.38	26.94	1.90	14.61	−1.68	−13.26	7.129	7.328	6.643	6.691		0^+	0^+
367	257	2291.76		6.24		3.46	27.02	1.56	14.66	−0.97	−13.30	7.139	7.341	6.643	6.691		0^+	$1/2^-$
368	258	2293.44		6.23		3.24	27.09	1.68	14.70	−0.80	−13.34	7.150	7.356	6.643	6.691		0^+	0^+
369	259	2292.36		6.21		0.60	27.23	−1.08	14.82	−0.83	−13.45	7.162	7.366	6.656	6.704		0^+	$15/2^+$
370	260	2292.36		6.20		−1.08	27.45	0.00	14.89	0.50	−13.53	7.173	7.378	6.663	6.711		0^+	0^+
σ		16.49																
$Z = 111$ (Rg)																		
262	151	1867.69		7.13			0.43	7.54	−0.91	−8.55	0.12	6.096	6.134	6.044	6.097		$7/2^-$	$9/2^+$
263	152	1877.11		7.14		16.96	0.80	9.42	−0.72	−8.49	−0.07	6.105	6.145	6.050	6.102		$7/2^-$	0^+
264	153	1884.58		7.14		16.89	1.17	7.47	−0.54	−8.44	−0.25	6.113	6.155	6.055	6.108		$7/2^-$	$9/2^+$
265	154	1893.86		7.15		16.75	1.54	9.28	−0.36	−8.38	−0.44	6.122	6.166	6.061	6.113		$7/2^-$	0^+
266	155	1901.26		7.15		16.68	1.90	7.40	−0.17	−8.33	−0.61	6.131	6.177	6.066	6.119		$7/2^-$	$9/2^+$
267	156	1910.42		7.16		16.56	2.28	9.16	0.01	−8.28	−0.81	6.139	6.187	6.071	6.124		$7/2^-$	0^+
268	157	1917.73		7.16		16.47	2.63	7.31	0.19	−8.22	−0.98	6.148	6.198	6.077	6.129		$7/2^-$	$9/2^+$
269	158	1926.78		7.16		16.36	3.02	9.05	0.38	−8.17	−1.17	6.156	6.208	6.082	6.135		$7/2^-$	0^+
270	159	1934.00		7.16		16.27	3.36	7.22	0.55	−8.10	−1.34	6.165	6.218	6.088	6.140		$7/2^-$	$9/2^+$
271	160	1942.94		7.17		16.16	3.75	8.94	0.74	−8.05	−1.54	6.173	6.228	6.093	6.145		$7/2^-$	0^+
272	161	1950.04		7.17		16.04	4.09	7.10	0.91	−7.96	−1.70	6.182	6.238	6.099	6.151		$7/2^-$	$9/2^+$
273	162	1958.87		7.18		15.93	4.48	8.83	1.09	−7.91	−1.90	6.190	6.249	6.104	6.156		$7/2^-$	0^+
274	163	1965.73		7.17		15.69	4.82	6.86	1.28	−7.64	−2.06	6.199	6.259	6.109	6.161		$7/2^-$	$9/2^+$
275	164	1974.45		7.18		15.58	5.22	8.72	1.46	−7.63	−2.26	6.207	6.269	6.114	6.167		$7/2^-$	0^+
276	165	1981.34		7.18		15.61	5.57	6.89	1.63	−7.64	−2.44	6.216	6.280	6.120	6.173		$7/2^-$	$7/2^+$
277	166	1989.29		7.18		14.84	5.87	7.95	1.76	−7.33	−2.60	6.227	6.293	6.127	6.179		$7/2^-$	0^+
278	167	1996.04		7.18		14.70	6.21	6.75	1.92	−7.26	−2.77	6.237	6.305	6.134	6.186		$7/2^-$	$7/2^+$
279	168	2003.70		7.18		14.41	6.51	7.66	2.06	−7.17	−2.93	6.247	6.317	6.141	6.193		$7/2^-$	0^+
280	169	2010.33		7.18		14.29	6.84	6.63	2.21	−7.10	−3.10	6.257	6.329	6.147	6.199		$7/2^-$	$7/2^+$
281	170	2017.84		7.18		14.14	7.15	7.51	2.36	−7.03	−3.26	6.267	6.340	6.154	6.205		$7/2^-$	0^+
282	171	2024.35		7.18		14.02	7.50	6.51	2.52	−6.71	−3.44	6.278	6.353	6.161	6.213		$7/2^-$	$7/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
283	172	2031.70		7.18		13.86	7.80	7.35	2.66	−6.68	−3.60	6.288	6.364	6.167	6.219		$7/2^-$	0^+
284	173	2037.61		7.17		13.26	8.03	5.91	2.77	−6.69	−3.71	6.295	6.374	6.169	6.221		$7/2^-$	$5/2^+$
285	174	2044.33		7.17		12.63	8.25	6.72	2.87	−6.24	−3.82	6.302	6.384	6.171	6.223		$7/2^-$	0^+
286	175	2050.03		7.17		12.42	8.48	5.70	2.97	−6.14	−3.94	6.309	6.394	6.174	6.225		$7/2^-$	$5/2^+$
287	176	2056.54		7.17		12.21	8.70	6.51	3.07	−6.07	−4.05	6.317	6.404	6.176	6.228		$7/2^-$	0^+
288	177	2062.06		7.16		12.03	8.93	5.52	3.17	−5.96	−4.17	6.324	6.414	6.179	6.230		$7/2^-$	$5/2^+$
289	178	2068.46		7.16		11.92	9.15	6.40	3.26	−5.93	−4.28	6.332	6.424	6.181	6.233		$7/2^-$	0^+
290	179	2073.90		7.15		11.84	9.36	5.44	3.35	−5.90	−4.39	6.340	6.435	6.183	6.235		$7/2^-$	$3/2^+$
291	180	2080.09		7.15		11.63	9.58	6.19	3.44	−5.77	−4.50	6.348	6.445	6.186	6.238		$7/2^-$	0^+
292	181	2085.45		7.14		11.55	9.78	5.36	3.52	−5.68	−4.61	6.356	6.456	6.188	6.240		$7/2^-$	$3/2^+$
293	182	2091.41		7.14		11.32	10.00	5.96	3.61	−5.60	−4.72	6.364	6.467	6.191	6.243		$7/2^-$	0^+
294	183	2096.78		7.13		11.33	10.20	5.37	3.69	−5.57	−4.82	6.372	6.478	6.193	6.245		$7/2^-$	$1/2^+$
295	184	2102.31		7.13		10.90	10.38	5.53	3.76	−4.76	−4.91	6.380	6.489	6.195	6.247		$7/2^-$	0^+
296	185	2105.55		7.11		8.77	10.71	3.24	3.93	−5.03	−5.08	6.393	6.502	6.207	6.258		$7/2^-$	$13/2^-$
297	186	2110.02		7.10		7.71	11.05	4.47	4.12	−3.87	−5.25	6.406	6.515	6.218	6.270		$7/2^-$	0^+
298	187	2113.26		7.09		7.71	11.39	3.24	4.30	−3.87	−5.41	6.419	6.529	6.230	6.281		$7/2^-$	$13/2^-$
299	188	2117.71		7.08		7.69	11.71	4.45	4.46	−3.87	−5.58	6.432	6.541	6.241	6.292		$7/2^-$	0^+
300	189	2120.95		7.07		7.69	12.05	3.24	4.64	−3.86	−5.74	6.445	6.555	6.253	6.304		$7/2^-$	$13/2^-$
301	190	2125.40		7.06		7.69	12.37	4.45	4.81	−3.86	−5.90	6.457	6.567	6.264	6.315		$7/2^-$	0^+
302	191	2128.64		7.05		7.69	12.70	3.24	4.99	−3.85	−6.06	6.470	6.580	6.276	6.327		$7/2^-$	$13/2^-$
303	192	2133.08		7.04		7.68	13.01	4.44	5.15	−3.86	−6.22	6.482	6.593	6.287	6.337		$7/2^-$	0^+
304	193	2136.31		7.03		7.67	13.33	3.23	5.32	−3.84	−6.37	6.495	6.606	6.299	6.350		$7/2^-$	$13/2^-$
305	194	2140.76		7.02		7.68	13.64	4.45	5.48	−3.84	−6.53	6.508	6.618	6.310	6.360		$7/2^-$	0^+
306	195	2143.97		7.01		7.66	13.96	3.21	5.66	−3.81	−6.68	6.521	6.631	6.322	6.373		$7/2^-$	$13/2^-$
307	196	2148.41		7.00		7.65	14.26	4.44	5.81	−3.80	−6.83	6.533	6.644	6.333	6.384		$7/2^-$	0^+
308	197	2151.54		6.99		7.57	14.60	3.13	6.00	−3.52	−6.98	6.547	6.657	6.348	6.398		$7/2^-$	$13/2^-$
309	198	2155.92		6.98		7.51	14.87	4.38	6.14	−3.55	−7.12	6.559	6.669	6.358	6.408		$7/2^-$	0^+
310	199	2158.44		6.96		6.90	15.14	2.52	6.26	−3.56	−7.26	6.570	6.681	6.365	6.415		$7/2^-$	$11/2^-$
311	200	2162.48		6.95		6.56	15.39	4.04	6.38	−3.23	−7.39	6.578	6.691	6.370	6.420		$7/2^-$	0^+
312	201	2164.90		6.94		6.46	15.64	2.42	6.50	−3.20	−7.52	6.589	6.703	6.375	6.425		$7/2^-$	$11/2^-$
313	202	2168.76		6.93		6.28	15.91	3.86	6.64	−3.14	−7.66	6.598	6.714	6.382	6.432		$7/2^-$	0^+
314	203	2171.11		6.91		6.21	16.16	2.35	6.75	−3.11	−7.78	6.608	6.726	6.388	6.438		$7/2^-$	$11/2^-$
315	204	2174.88		6.90		6.12	16.42	3.77	6.87	−3.08	−7.92	6.618	6.737	6.395	6.444		$7/2^-$	0^+
316	205	2177.18		6.89		6.07	16.67	2.30	6.99	−3.05	−8.05	6.628	6.748	6.400	6.450		$7/2^-$	$11/2^-$
317	206	2180.91		6.88		6.03	16.94	3.73	7.13	−3.04	−8.18	6.638	6.759	6.407	6.457		$7/2^-$	0^+
318	207	2183.15		6.87		5.97	17.18	2.24	7.24	−3.00	−8.31	6.648	6.770	6.413	6.463		$7/2^-$	$11/2^-$
319	208	2186.84		6.86		5.93	17.44	3.69	7.37	−3.00	−8.44	6.658	6.781	6.420	6.470		$7/2^-$	0^+
320	209	2189.03		6.84		5.88	17.70	2.19	7.50	−2.96	−8.57	6.668	6.792	6.426	6.476		$7/2^-$	$11/2^-$
321	210	2192.70		6.83		5.86	17.95	3.67	7.63	−2.96	−8.70	6.677	6.803	6.433	6.483		$7/2^-$	0^+
322	211	2194.82		6.82		5.79	18.21	2.12	7.76	−2.92	−8.83	6.687	6.814	6.440	6.490		$7/2^-$	$11/2^-$
323	212	2198.49		6.81		5.79	18.46	3.67	7.88	−2.92	−8.95	6.697	6.825	6.446	6.496		$7/2^-$	0^+
324	213	2200.54		6.79		5.72	18.73	2.05	8.02	−2.88	−9.09	6.707	6.836	6.454	6.503		$7/2^-$	$11/2^-$
325	214	2204.21		6.78		5.72	18.97	3.67	8.14	−2.88	−9.21	6.717	6.846	6.460	6.510		$7/2^-$	0^+
326	215	2206.19		6.77		5.65	19.25	1.98	8.29	−2.84	−9.34	6.727	6.857	6.469	6.518		$7/2^-$	$11/2^-$
327	216	2209.87		6.76		5.66	19.49	3.68	8.41	−2.85	−9.46	6.737	6.868	6.474	6.524		$7/2^-$	0^+
328	217	2211.82		6.74		5.63	19.75	1.95	8.54	−2.84	−9.60	6.747	6.878	6.482	6.531		$7/2^-$	$17/2^+$
329	218	2215.46		6.73		5.59	19.99	3.64	8.66	−2.82	−9.72	6.757	6.889	6.489	6.538		$7/2^-$	0^+
330	219	2217.40		6.72		5.58	20.26	1.94	8.80	−2.80	−9.85	6.767	6.900	6.496	6.545		$7/2^-$	$17/2^+$
331	220	2220.99		6.71		5.53	20.49	3.59	8.92	−2.78	−9.96	6.777	6.910	6.504	6.553		$7/2^-$	0^+
332	221	2222.91		6.70		5.51	20.75	1.92	9.05	−2.76	−10.09	6.787	6.921	6.511	6.560		$7/2^-$	$17/2^+$
333	222	2226.47		6.69		5.48	20.99	3.56	9.18	−2.75	−10.21	6.797	6.932	6.519	6.568		$7/2^-$	0^+
334	223	2228.35		6.67		5.44	21.24	1.88	9.31	−2.72	−10.33	6.807	6.942	6.526	6.575		$7/2^-$	$17/2^+$
335	224	2231.88		6.66		5.41	21.47	3.53	9.42	−2.71	−10.45	6.817	6.953	6.534	6.582		$7/2^-$	0^+
336	225	2233.70		6.65		5.35	21.70	1.82	9.54	−2.67	−10.57	6.827	6.963	6.541	6.590		$7/2^-$	$17/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
337	226	2237.22		6.64		5.34	21.93	3.52	9.66	−2.67	−10.67	6.837	6.974	6.549	6.597		$7/2^-$	0^+
338	227	2239.10		6.62		5.40	22.15	1.88	9.77	−2.70	−10.78	6.847	6.985	6.556	6.605		$7/2^-$	$9/2^-$
339	228	2242.47		6.61		5.25	22.37	3.37	9.88	−2.62	−10.89	6.857	6.996	6.563	6.612		$7/2^-$	0^+
340	229	2244.42		6.60		5.32	22.60	1.95	10.00	−2.63	−11.00	6.868	7.007	6.571	6.619		$7/2^-$	$9/2^-$
341	230	2247.62		6.59		5.15	22.79	3.20	10.09	−2.57	−11.10	6.878	7.018	6.577	6.625		$7/2^-$	0^+
342	231	2249.60		6.58		5.18	23.01	1.98	10.21	−2.57	−11.21	6.888	7.029	6.585	6.633		$7/2^-$	$9/2^-$
343	232	2252.67		6.57		5.05	23.18	3.07	10.29	−2.52	−11.29	6.898	7.040	6.590	6.638		$7/2^-$	0^+
344	233	2254.64		6.55		5.04	23.39	1.97	10.40	−2.50	−11.40	6.908	7.052	6.598	6.646		$7/2^-$	$9/2^-$
345	234	2257.62		6.54		4.95	23.55	2.98	10.48	−2.46	−11.48	6.918	7.063	6.603	6.651		$7/2^-$	0^+
346	235	2259.56		6.53		4.92	23.76	1.94	10.58	−2.43	−11.59	6.929	7.074	6.611	6.659		$7/2^-$	$9/2^-$
347	236	2262.47		6.52		4.85	23.92	2.91	10.66	−2.40	−11.67	6.939	7.086	6.615	6.663		$7/2^-$	0^+
348	237	2264.30		6.51		4.74	24.13	1.83	10.77	−2.28	−11.77	6.949	7.097	6.623	6.671		$7/2^-$	$9/2^-$
349	238	2267.16		6.50		4.69	24.28	2.86	10.84	−2.29	−11.85	6.959	7.108	6.626	6.675		$7/2^-$	0^+
350	239	2268.89		6.48		4.59	24.43	1.73	10.93	−2.30	−11.93	6.969	7.120	6.631	6.679		$7/2^-$	$7/2^-$
351	240	2271.53		6.47		4.37	24.58	2.64	10.99	−2.15	−12.00	6.977	7.131	6.631	6.680		$7/2^-$	0^+
352	241	2273.22		6.46		4.33	24.72	1.69	11.06	−2.12	−12.08	6.986	7.143	6.634	6.682		$7/2^-$	$7/2^-$
353	242	2275.69		6.45		4.16	24.85	2.47	11.12	−2.08	−12.15	6.995	7.154	6.635	6.683		$7/2^-$	0^+
354	243	2277.32		6.43		4.10	24.99	1.63	11.18	−2.04	−12.22	7.004	7.165	6.637	6.685		$7/2^-$	$7/2^-$
355	244	2279.73		6.42		4.04	25.11	2.41	11.24	−2.03	−12.29	7.012	7.176	6.638	6.686		$7/2^-$	0^+
356	245	2281.29		6.41		3.97	25.26	1.56	11.31	−1.98	−12.36	7.022	7.188	6.640	6.688		$7/2^-$	$7/2^-$
357	246	2283.68		6.40		3.95	25.37	2.39	11.36	−1.98	−12.43	7.030	7.199	6.641	6.689		$7/2^-$	0^+
358	247	2285.24		6.38		3.95	25.51	1.56	11.43	−1.98	−12.50	7.040	7.211	6.642	6.690		$7/2^-$	$5/2^-$
359	248	2287.55		6.37		3.87	25.63	2.31	11.48	−1.93	−12.56	7.049	7.223	6.644	6.692		$7/2^-$	0^+
360	249	2289.10		6.36		3.86	25.76	1.55	11.53	−1.92	−12.63	7.058	7.235	6.645	6.693		$7/2^-$	$5/2^-$
361	250	2291.32		6.35		3.77	25.86	2.22	11.58	−1.89	−12.68	7.068	7.247	6.646	6.694		$7/2^-$	0^+
362	251	2292.83		6.33		3.73	25.96	1.51	11.63	−1.85	−12.74	7.077	7.259	6.648	6.696		$7/2^-$	$5/2^-$
363	252	2295.00		6.32		3.68	26.08	2.17	11.67	−1.84	−12.80	7.087	7.271	6.649	6.697		$7/2^-$	0^+
364	253	2296.55		6.31		3.72	26.20	1.55	11.73	−1.85	−12.85	7.097	7.284	6.650	6.698		$7/2^-$	$3/2^-$
365	254	2298.57		6.30		3.57	26.27	2.02	11.75	−1.78	−12.90	7.106	7.297	6.651	6.699		$7/2^-$	0^+
366	255	2300.09		6.28		3.54	26.36	1.52	11.79	−1.74	−12.95	7.117	7.310	6.652	6.699		$7/2^-$	$3/2^-$
367	256	2302.02		6.27		3.45	26.43	1.93	11.82	−1.71	−12.98	7.127	7.323	6.652	6.700		$7/2^-$	0^+
368	257	2303.61		6.26		3.52	26.51	1.59	11.85	−1.19	−13.02	7.137	7.337	6.652	6.700		$7/2^-$	$1/2^-$
369	258	2305.30		6.25		3.28	26.56	1.69	11.86	−0.91	−13.05	7.148	7.351	6.653	6.701		$7/2^-$	0^+
370	259	2304.34		6.23		0.73	26.80	−0.96	11.98	−1.04	−13.16	7.160	7.362	6.665	6.713		$7/2^-$	$15/2^+$
371	260	2304.42		6.21		−0.88	26.95	0.08	12.06	0.40	−13.25	7.170	7.373	6.673	6.721		$7/2^-$	0^+
σ																		
$Z = 112$ (Cn)																		
265	153	1885.57		7.12			0.45	7.65	0.99	−8.62	0.08	6.117	6.158	6.062	6.114		0^+	$9/2^+$
266	154	1895.04		7.12		17.12	0.82	9.47	1.18	−8.57	−0.11	6.126	6.168	6.067	6.120		0^+	0^+
267	155	1902.60		7.13		17.03	1.17	7.56	1.34	−8.51	−0.28	6.134	6.179	6.073	6.125		0^+	$9/2^+$
268	156	1911.97		7.13		16.93	1.56	9.37	1.55	−8.46	−0.48	6.143	6.189	6.078	6.130		0^+	0^+
269	157	1919.44		7.14		16.84	1.90	7.47	1.71	−8.40	−0.64	6.151	6.199	6.084	6.136		0^+	$9/2^+$
270	158	1928.70		7.14		16.73	2.30	9.26	1.92	−8.35	−0.84	6.160	6.210	6.089	6.141		0^+	0^+
271	159	1936.07		7.14		16.63	2.62	7.37	2.07	−8.28	−1.00	6.168	6.220	6.094	6.147		0^+	$9/2^+$
272	160	1945.23		7.15		16.53	3.03	9.16	2.29	−8.23	−1.21	6.176	6.230	6.099	6.152		0^+	0^+
273	161	1952.47		7.15		16.40	3.34	7.24	2.43	−8.13	−1.36	6.185	6.240	6.105	6.157		0^+	$9/2^+$
274	162	1961.53		7.16		16.30	3.75	9.06	2.66	−8.09	−1.57	6.193	6.250	6.110	6.162		0^+	0^+
275	163	1968.52		7.16		16.05	4.07	6.99	2.79	−7.82	−1.71	6.202	6.260	6.116	6.168		0^+	$9/2^+$
276	164	1977.47		7.16		15.94	4.48	8.95	3.02	−7.81	−1.92	6.210	6.270	6.121	6.173		0^+	0^+
277	165	1984.55		7.16		16.03	4.84	7.08	3.21	−7.82	−2.10	6.219	6.281	6.127	6.179		0^+	$7/2^+$
278	166	1992.67		7.17		15.20	5.14	8.12	3.38	−7.51	−2.26	6.230	6.294	6.134	6.186		0^+	0^+
279	167	1999.60		7.17		15.05	5.48	6.93	3.56	−7.44	−2.44	6.240	6.306	6.140	6.192		0^+	$7/2^+$
280	168	2007.44		7.17		14.77	5.80	7.84	3.74	−7.34	−2.60	6.250	6.318	6.147	6.199		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
281	169	2014.26		7.17		14.66	6.14	6.82	3.93	−7.27	−2.77	6.260	6.330	6.154	6.206		0^+	$7/2^+$
282	170	2021.94		7.17		14.50	6.46	7.68	4.10	−7.20	−2.94	6.270	6.341	6.160	6.212		0^+	0^+
283	171	2028.64		7.17		14.38	6.81	6.70	4.29	−6.93	−3.12	6.280	6.353	6.167	6.219		0^+	$7/2^+$
284	172	2036.17		7.17		14.23	7.13	7.53	4.47	−6.83	−3.28	6.290	6.365	6.174	6.225		0^+	0^+
285	173	2042.21		7.17		13.57	7.37	6.04	4.60	−6.83	−3.40	6.297	6.374	6.176	6.228		0^+	$5/2^+$
286	174	2049.06		7.16		12.89	7.60	6.85	4.73	−6.37	−3.52	6.304	6.384	6.178	6.230		0^+	0^+
287	175	2054.89		7.16		12.68	7.83	5.83	4.86	−6.27	−3.64	6.312	6.394	6.180	6.232		0^+	$5/2^+$
288	176	2061.54		7.16		12.48	8.07	6.65	5.00	−6.21	−3.75	6.319	6.404	6.183	6.235		0^+	0^+
289	177	2067.19		7.15		12.30	8.30	5.65	5.13	−6.10	−3.87	6.326	6.414	6.185	6.237		0^+	$5/2^+$
290	178	2073.73		7.15		12.19	8.53	6.54	5.27	−6.06	−3.99	6.334	6.424	6.188	6.239		0^+	0^+
291	179	2079.31		7.15		12.12	8.76	5.58	5.41	−6.04	−4.10	6.342	6.435	6.190	6.242		0^+	$3/2^+$
292	180	2085.63		7.14		11.90	8.98	6.32	5.54	−5.91	−4.22	6.349	6.445	6.193	6.244		0^+	0^+
293	181	2091.13		7.14		11.82	9.20	5.50	5.68	−5.82	−4.33	6.357	6.456	6.195	6.246		0^+	$3/2^+$
294	182	2097.23		7.13		11.60	9.43	6.10	5.82	−5.73	−4.44	6.366	6.466	6.198	6.249		0^+	0^+
295	183	2102.73		7.13		11.60	9.64	5.50	5.95	−5.51	−4.55	6.374	6.477	6.200	6.252		0^+	$1/2^+$
296	184	2108.37		7.12		11.14	9.82	5.64	6.06	−4.89	−4.64	6.382	6.488	6.202	6.254		0^+	0^+
297	185	2111.77		7.11		9.04	10.15	3.40	6.22	−5.13	−4.81	6.395	6.502	6.214	6.265		0^+	$13/2^-$
298	186	2116.39		7.10		8.02	10.49	4.62	6.37	−4.02	−4.97	6.407	6.515	6.225	6.276		0^+	0^+
299	187	2119.78		7.09		8.01	10.82	3.39	6.52	−4.01	−5.14	6.420	6.528	6.236	6.287		0^+	$13/2^-$
300	188	2124.38		7.08		7.99	11.13	4.60	6.67	−4.01	−5.30	6.433	6.541	6.247	6.298		0^+	0^+
301	189	2127.76		7.07		7.98	11.45	3.38	6.81	−4.00	−5.46	6.445	6.554	6.259	6.310		0^+	$13/2^-$
302	190	2132.36		7.06		7.98	11.77	4.60	6.96	−4.01	−5.61	6.458	6.566	6.270	6.321		0^+	0^+
303	191	2135.74		7.05		7.98	12.09	3.38	7.10	−3.99	−5.77	6.471	6.579	6.282	6.332		0^+	$13/2^-$
304	192	2140.33		7.04		7.97	12.40	4.59	7.25	−4.00	−5.92	6.483	6.592	6.292	6.343		0^+	0^+
305	193	2143.70		7.03		7.96	12.71	3.37	7.39	−3.98	−6.07	6.496	6.605	6.304	6.355		0^+	$13/2^-$
306	194	2148.29		7.02		7.96	13.01	4.59	7.53	−3.98	−6.22	6.508	6.617	6.315	6.366		0^+	0^+
307	195	2151.63		7.01		7.93	13.32	3.34	7.66	−3.94	−6.37	6.521	6.630	6.328	6.378		0^+	$13/2^-$
308	196	2156.21		7.00		7.92	13.61	4.58	7.80	−3.93	−6.52	6.533	6.642	6.338	6.389		0^+	0^+
309	197	2159.46		6.99		7.83	13.92	3.25	7.92	−3.65	−6.66	6.547	6.656	6.353	6.403		0^+	$13/2^-$
310	198	2163.99		6.98		7.78	14.21	4.53	8.07	−3.68	−6.80	6.559	6.668	6.362	6.413		0^+	0^+
311	199	2166.65		6.97		7.19	14.47	2.66	8.21	−3.69	−6.94	6.570	6.680	6.369	6.419		0^+	$11/2^-$
312	200	2170.83		6.96		6.84	14.73	4.18	8.35	−3.37	−7.08	6.578	6.690	6.374	6.424		0^+	0^+
313	201	2173.39		6.94		6.74	14.99	2.56	8.49	−3.33	−7.21	6.588	6.702	6.380	6.430		0^+	$11/2^-$
314	202	2177.38		6.93		6.55	15.26	3.99	8.62	−3.28	−7.35	6.598	6.712	6.386	6.436		0^+	0^+
315	203	2179.88		6.92		6.49	15.52	2.50	8.77	−3.25	−7.48	6.608	6.724	6.392	6.442		0^+	$11/2^-$
316	204	2183.79		6.91		6.41	15.78	3.91	8.91	−3.22	−7.61	6.618	6.735	6.399	6.449		0^+	0^+
317	205	2186.23		6.90		6.35	16.04	2.44	9.05	−3.19	−7.75	6.628	6.746	6.405	6.454		0^+	$11/2^-$
318	206	2190.08		6.89		6.29	16.30	3.85	9.17	−3.17	−7.88	6.637	6.757	6.411	6.461		0^+	0^+
319	207	2192.47		6.87		6.24	16.56	2.39	9.32	−3.13	−8.01	6.647	6.768	6.417	6.467		0^+	$11/2^-$
320	208	2196.29		6.86		6.21	16.82	3.82	9.45	−3.12	−8.14	6.657	6.779	6.424	6.474		0^+	0^+
321	209	2198.61		6.85		6.14	17.08	2.32	9.58	−3.09	−8.27	6.667	6.790	6.430	6.480		0^+	$11/2^-$
322	210	2202.41		6.84		6.12	17.34	3.80	9.71	−3.08	−8.40	6.676	6.801	6.437	6.486		0^+	0^+
323	211	2204.66		6.83		6.05	17.60	2.25	9.84	−3.04	−8.53	6.686	6.812	6.444	6.493		0^+	$11/2^-$
324	212	2208.45		6.82		6.04	17.84	3.79	9.96	−3.04	−8.66	6.696	6.822	6.450	6.500		0^+	0^+
325	213	2210.63		6.80		5.97	18.11	2.18	10.09	−3.00	−8.79	6.706	6.833	6.458	6.507		0^+	$11/2^-$
326	214	2214.42		6.79		5.97	18.35	3.79	10.21	−3.01	−8.92	6.716	6.844	6.464	6.513		0^+	0^+
327	215	2216.52		6.78		5.89	18.62	2.10	10.33	−2.96	−9.05	6.726	6.855	6.472	6.521		0^+	$11/2^-$
328	216	2220.33		6.77		5.91	18.87	3.81	10.46	−2.97	−9.17	6.735	6.865	6.478	6.527		0^+	0^+
329	217	2222.41		6.76		5.89	19.13	2.08	10.59	−2.95	−9.30	6.745	6.876	6.485	6.534		0^+	$17/2^+$
330	218	2226.16		6.75		5.83	19.36	3.75	10.70	−2.93	−9.42	6.755	6.886	6.492	6.542		0^+	0^+
331	219	2228.23		6.73		5.82	19.63	2.07	10.83	−2.91	−9.55	6.765	6.897	6.500	6.549		0^+	$17/2^+$
332	220	2231.94		6.72		5.78	19.87	3.71	10.95	−2.90	−9.67	6.775	6.908	6.507	6.556		0^+	0^+
333	221	2233.98		6.71		5.75	20.12	2.04	11.07	−2.87	−9.80	6.785	6.918	6.514	6.563		0^+	$17/2^+$
334	222	2237.64		6.70		5.70	20.35	3.66	11.17	−2.86	−9.91	6.795	6.929	6.522	6.571		0^+	0^+

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Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
335	223	2239.65		6.69		5.67	20.61	2.01	11.30	−2.83	−10.04	6.805	6.939	6.529	6.578		0^+	$17/2^+$
336	224	2243.28		6.68		5.64	20.82	3.63	11.40	−2.82	−10.15	6.815	6.950	6.537	6.586		0^+	0^+
337	225	2245.23		6.66		5.58	21.07	1.95	11.53	−2.77	−10.27	6.825	6.960	6.544	6.593		0^+	$17/2^+$
338	226	2248.84		6.65		5.56	21.28	3.61	11.62	−2.77	−10.38	6.835	6.971	6.552	6.601		0^+	0^+
339	227	2250.84		6.64		5.61	21.51	2.00	11.74	−2.80	−10.48	6.845	6.982	6.559	6.608		0^+	$9/2^-$
340	228	2254.31		6.63		5.47	21.72	3.47	11.84	−2.72	−10.59	6.855	6.993	6.566	6.615		0^+	0^+
341	229	2256.37		6.62		5.53	21.95	2.06	11.95	−2.73	−10.70	6.866	7.004	6.574	6.623		0^+	$9/2^-$
342	230	2259.66		6.61		5.35	22.13	3.29	12.04	−2.66	−10.80	6.875	7.015	6.580	6.629		0^+	0^+
343	231	2261.75		6.59		5.38	22.36	2.09	12.15	−2.66	−10.91	6.886	7.026	6.588	6.637		0^+	$9/2^-$
344	232	2264.90		6.58		5.24	22.52	3.15	12.23	−2.61	−10.99	6.896	7.037	6.593	6.642		0^+	0^+
345	233	2266.98		6.57		5.23	22.74	2.08	12.34	−2.59	−11.10	6.906	7.048	6.601	6.650		0^+	$9/2^-$
346	234	2270.04		6.56		5.14	22.90	3.06	12.42	−2.55	−11.18	6.916	7.060	6.606	6.655		0^+	0^+
347	235	2272.08		6.55		5.10	23.10	2.04	12.52	−2.52	−11.29	6.927	7.071	6.614	6.662		0^+	$9/2^-$
348	236	2275.07		6.54		5.03	23.26	2.99	12.60	−2.49	−11.37	6.937	7.082	6.619	6.667		0^+	0^+
349	237	2277.00		6.52		4.92	23.47	1.93	12.70	−2.36	−11.47	6.947	7.094	6.627	6.675		0^+	$9/2^-$
350	238	2279.94		6.51		4.87	23.62	2.94	12.78	−2.37	−11.55	6.957	7.105	6.630	6.678		0^+	0^+
351	239	2281.76		6.50		4.76	23.80	1.82	12.87	−2.38	−11.64	6.966	7.117	6.634	6.682		0^+	$7/2^-$
352	240	2284.47		6.49		4.53	23.93	2.71	12.94	−2.23	−11.71	6.974	7.127	6.635	6.683		0^+	0^+
353	241	2286.25		6.48		4.49	24.09	1.78	13.03	−2.20	−11.79	6.984	7.139	6.638	6.686		0^+	$7/2^-$
354	242	2288.79		6.47		4.32	24.22	2.54	13.10	−2.16	−11.86	6.992	7.150	6.638	6.686		0^+	0^+
355	243	2290.50		6.45		4.25	24.36	1.71	13.18	−2.12	−11.93	7.001	7.161	6.641	6.689		0^+	$7/2^-$
356	244	2292.99		6.44		4.20	24.50	2.49	13.26	−2.11	−12.00	7.010	7.172	6.641	6.689		0^+	0^+
357	245	2294.63		6.43		4.13	24.65	1.64	13.34	−2.06	−12.08	7.019	7.184	6.644	6.692		0^+	$7/2^-$
358	246	2297.11		6.42		4.12	24.79	2.48	13.43	−2.06	−12.15	7.027	7.195	6.644	6.692		0^+	0^+
359	247	2298.74		6.40		4.11	24.93	1.63	13.50	−2.06	−12.22	7.037	7.207	6.646	6.694		0^+	$5/2^-$
360	248	2301.12		6.39		4.01	25.05	2.38	13.57	−2.01	−12.29	7.046	7.218	6.648	6.696		0^+	0^+
361	249	2302.76		6.38		4.02	25.19	1.64	13.66	−2.00	−12.36	7.055	7.230	6.649	6.697		0^+	$5/2^-$
362	250	2305.05		6.37		3.93	25.31	2.29	13.73	−1.96	−12.42	7.064	7.242	6.651	6.699		0^+	0^+
363	251	2306.63		6.35		3.87	25.43	1.58	13.80	−1.91	−12.48	7.074	7.254	6.652	6.700		0^+	$5/2^-$
364	252	2308.87		6.34		3.82	25.54	2.24	13.87	−1.90	−12.54	7.083	7.266	6.653	6.701		0^+	0^+
365	253	2310.50		6.33		3.87	25.68	1.63	13.95	−1.91	−12.60	7.093	7.279	6.654	6.702		0^+	$3/2^-$
366	254	2312.57		6.32		3.70	25.75	2.07	14.00	−1.83	−12.65	7.103	7.291	6.655	6.703		0^+	0^+
367	255	2314.15		6.31		3.65	25.85	1.58	14.06	−1.79	−12.70	7.113	7.305	6.656	6.704		0^+	$3/2^-$
368	256	2316.12		6.29		3.55	25.92	1.97	14.10	−1.76	−12.73	7.123	7.318	6.656	6.704		0^+	0^+
369	257	2317.76		6.28		3.61	26.00	1.64	14.15	−1.16	−12.77	7.133	7.331	6.657	6.704		0^+	$1/2^-$
370	258	2319.51		6.27		3.39	26.07	1.75	14.21	−0.93	−12.81	7.144	7.345	6.657	6.705		0^+	0^+
371	259	2318.65		6.25		0.89	26.29	−0.86	14.31	−0.86	−12.92	7.156	7.356	6.670	6.717		0^+	$15/2^+$
372	260	2318.82		6.23		−0.69	26.46	0.17	14.40	0.31	−13.01	7.166	7.367	6.678	6.725		0^+	0^+
σ																		
$Z = 113$ (Nh)																		
269	156	1911.19		7.10		17.30	0.77	9.55	−0.78	−8.65	0.03	6.147	6.190	6.087	6.139		$7/2^-$	0^+
270	157	1918.84		7.11		17.20	1.11	7.65	−0.60	−8.58	−0.14	6.155	6.200	6.092	6.144		$7/2^-$	$9/2^+$
271	158	1928.28		7.12		17.09	1.50	9.44	−0.42	−8.54	−0.34	6.164	6.211	6.097	6.149		$7/2^-$	0^+
272	159	1935.83		7.12		16.99	1.83	7.55	−0.24	−8.46	−0.50	6.172	6.221	6.102	6.155		$7/2^-$	$9/2^+$
273	160	1945.18		7.13		16.90	2.24	9.35	−0.05	−8.42	−0.71	6.180	6.231	6.108	6.160		$7/2^-$	0^+
274	161	1952.59		7.13		16.76	2.55	7.41	0.12	−8.31	−0.86	6.188	6.241	6.113	6.165		$7/2^-$	$9/2^+$
275	162	1961.84		7.13		16.66	2.97	9.25	0.31	−8.27	−1.07	6.197	6.251	6.118	6.170		$7/2^-$	0^+
276	163	1968.99		7.13		16.40	3.26	7.15	0.47	−7.99	−1.21	6.205	6.261	6.123	6.175		$7/2^-$	$9/2^+$
277	164	1978.14		7.14		16.30	3.69	9.15	0.67	−7.98	−1.44	6.213	6.271	6.129	6.181		$7/2^-$	0^+
278	165	1985.39		7.14		16.40	4.05	7.25	0.84	−7.99	−1.62	6.222	6.282	6.135	6.187		$7/2^-$	$7/2^+$
279	166	1993.67		7.15		15.53	4.38	8.28	1.00	−7.67	−1.80	6.233	6.295	6.142	6.194		$7/2^-$	0^+
280	167	2000.77		7.15		15.38	4.73	7.10	1.17	−7.60	−1.99	6.243	6.306	6.149	6.201		$7/2^-$	$7/2^+$
281	168	2008.76		7.15		15.09	5.06	7.99	1.32	−7.51	−2.16	6.253	6.318	6.156	6.207		$7/2^-$	0^+

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Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
282	169	2015.78		7.15		15.01	5.45	7.02	1.52	−7.46	−2.57	6.264	6.331	6.162	6.214		$5/2^-$	$7/2^+$
283	170	2023.59		7.15		14.83	5.75	7.81	1.65	−7.37	−2.53	6.273	6.342	6.169	6.221		$7/2^-$	0^+
284	171	2030.46		7.15		14.68	6.11	6.87	1.82	−7.09	−2.72	6.284	6.354	6.176	6.228		$7/2^-$	$7/2^+$
285	172	2038.16		7.15		14.57	6.46	7.70	1.99	−6.98	−3.07	6.293	6.366	6.182	6.234		$5/2^-$	0^+
286	173	2044.31		7.15		13.85	6.70	6.15	2.10	−7.06	−3.20	6.300	6.375	6.184	6.236		$5/2^-$	$5/2^+$
287	174	2051.27		7.15		13.11	6.94	6.96	2.21	−6.48	−3.32	6.307	6.385	6.187	6.238		$5/2^-$	0^+
288	175	2057.22		7.14		12.91	7.19	5.95	2.33	−6.38	−3.44	6.315	6.395	6.189	6.240		$5/2^-$	$5/2^+$
289	176	2063.98		7.14		12.71	7.44	6.76	2.44	−6.32	−3.56	6.322	6.404	6.192	6.243		$5/2^-$	0^+
290	177	2069.74		7.14		12.52	7.68	5.76	2.55	−6.21	−3.68	6.330	6.415	6.194	6.245		$5/2^-$	$5/2^+$
291	178	2076.39		7.14		12.41	7.93	6.65	2.66	−6.17	−3.80	6.337	6.424	6.197	6.248		$5/2^-$	0^+
292	179	2082.09		7.13		12.35	8.19	5.70	2.78	−6.14	−3.91	6.345	6.435	6.199	6.250		$5/2^-$	$3/2^+$
293	180	2088.53		7.13		12.14	8.44	6.44	2.90	−6.02	−4.03	6.352	6.445	6.202	6.253		$5/2^-$	0^+
294	181	2094.14		7.12		12.05	8.69	5.61	3.01	−5.93	−4.14	6.360	6.456	6.204	6.255		$5/2^-$	$3/2^+$
295	182	2100.35		7.12		11.82	8.94	6.21	3.12	−5.84	−4.26	6.368	6.466	6.207	6.258		$5/2^-$	0^+
296	183	2105.96		7.11		11.82	9.18	5.61	3.23	−5.81	−4.37	6.376	6.477	6.209	6.260		$5/2^-$	$1/2^+$
297	184	2111.68		7.11		11.33	9.37	5.72	3.31	−5.01	−4.46	6.384	6.488	6.211	6.262		$5/2^-$	0^+
298	185	2115.25		7.10		9.29	9.70	3.57	3.48	−5.28	−4.62	6.397	6.501	6.222	6.274		$5/2^-$	$13/2^-$
299	186	2120.03		7.09		8.35	10.01	4.78	3.64	−4.18	−4.79	6.410	6.514	6.233	6.285		$5/2^-$	0^+
300	187	2123.59		7.08		8.34	10.33	3.56	3.81	−4.17	−4.95	6.422	6.527	6.245	6.296		$5/2^-$	$13/2^-$
301	188	2128.36		7.07		8.33	10.65	4.77	3.98	−4.17	−5.11	6.435	6.540	6.256	6.307		$5/2^-$	0^+
302	189	2131.90		7.06		8.31	10.95	3.54	4.14	−4.16	−5.27	6.448	6.553	6.267	6.318		$5/2^-$	$13/2^-$
303	190	2136.64		7.05		8.28	11.24	4.74	4.28	−4.16	−5.43	6.460	6.566	6.278	6.329		$5/2^-$	0^+
304	191	2140.12		7.04		8.22	11.48	3.48	4.38	−4.14	−5.58	6.473	6.579	6.289	6.340		$5/2^-$	$13/2^-$
305	192	2144.84		7.03		8.20	11.76	4.72	4.51	−4.15	−5.73	6.485	6.591	6.300	6.351		$5/2^-$	0^+
306	193	2148.32		7.02		8.20	12.01	3.48	4.62	−4.15	−5.64	6.498	6.604	6.314	6.364		$7/2^-$	$13/2^-$
307	194	2153.07		7.01		8.23	12.31	4.75	4.78	−4.15	−5.79	6.510	6.616	6.324	6.375		$7/2^-$	0^+
308	195	2156.57		7.00		8.25	12.60	3.50	4.94	−4.10	−5.93	6.523	6.629	6.336	6.387		$7/2^-$	$13/2^-$
309	196	2161.31		6.99		8.24	12.90	4.74	5.10	−4.10	−6.08	6.535	6.641	6.347	6.397		$7/2^-$	0^+
310	197	2164.71		6.98		8.14	13.17	3.40	5.25	−3.80	−6.21	6.549	6.654	6.361	6.411		$7/2^-$	$13/2^-$
311	198	2169.38		6.98		8.07	13.46	4.67	5.39	−3.83	−6.35	6.560	6.666	6.370	6.421		$7/2^-$	0^+
312	199	2172.17		6.96		7.46	13.73	2.79	5.52	−3.84	−6.50	6.571	6.678	6.377	6.427		$7/2^-$	$11/2^-$
313	200	2176.49		6.95		7.11	14.01	4.32	5.66	−3.51	−6.64	6.580	6.689	6.382	6.432		$7/2^-$	0^+
314	201	2179.23		6.94		7.06	14.33	2.74	5.84	−3.48	−7.01	6.589	6.701	6.386	6.436		$5/2^-$	$11/2^-$
315	202	2183.34		6.93		6.85	14.58	4.11	5.96	−3.42	−7.15	6.599	6.711	6.393	6.443		$5/2^-$	0^+
316	203	2185.95		6.92		6.72	14.84	2.61	6.07	−3.39	−7.28	6.609	6.723	6.399	6.448		$5/2^-$	$11/2^-$
317	204	2189.98		6.91		6.64	15.10	4.03	6.19	−3.36	−7.41	6.618	6.733	6.405	6.455		$5/2^-$	0^+
318	205	2192.55		6.89		6.60	15.37	2.57	6.32	−3.33	−7.55	6.628	6.745	6.411	6.461		$5/2^-$	$11/2^-$
319	206	2196.54		6.89		6.56	15.63	3.99	6.46	−3.31	−7.68	6.638	6.755	6.418	6.467		$5/2^-$	0^+
320	207	2199.05		6.87		6.50	15.90	2.51	6.58	−3.27	−7.81	6.648	6.767	6.424	6.473		$5/2^-$	$11/2^-$
321	208	2203.00		6.86		6.46	16.16	3.95	6.71	−3.26	−7.94	6.657	6.777	6.430	6.480		$5/2^-$	0^+
322	209	2205.46		6.85		6.41	16.43	2.46	6.85	−3.22	−8.07	6.667	6.788	6.437	6.486		$5/2^-$	$11/2^-$
323	210	2209.39		6.84		6.39	16.69	3.93	6.98	−3.22	−8.20	6.677	6.799	6.443	6.493		$5/2^-$	0^+
324	211	2211.78		6.83		6.32	16.96	2.39	7.12	−3.18	−8.33	6.687	6.810	6.450	6.500		$5/2^-$	$11/2^-$
325	212	2215.70		6.82		6.31	17.21	3.92	7.25	−3.18	−8.46	6.696	6.820	6.456	6.506		$5/2^-$	0^+
326	213	2218.01		6.80		6.23	17.47	2.31	7.38	−3.13	−8.59	6.706	6.831	6.464	6.513		$5/2^-$	$11/2^-$
327	214	2221.93		6.79		6.23	17.72	3.92	7.51	−3.14	−8.71	6.716	6.842	6.470	6.519		$5/2^-$	0^+
328	215	2224.15		6.78		6.14	17.96	2.22	7.63	−3.09	−8.84	6.726	6.852	6.478	6.527		$5/2^-$	$11/2^-$
329	216	2228.09		6.77		6.16	18.22	3.94	7.76	−3.10	−8.96	6.735	6.863	6.484	6.533		$5/2^-$	0^+
330	217	2230.30		6.76		6.15	18.48	2.21	7.89	−3.08	−9.09	6.745	6.873	6.491	6.540		$5/2^-$	$17/2^+$
331	218	2234.18		6.75		6.09	18.72	3.88	8.02	−3.07	−9.05	6.755	6.884	6.500	6.549		$7/2^-$	0^+
332	219	2236.38		6.74		6.08	18.98	2.20	8.15	−3.05	−9.18	6.765	6.894	6.507	6.556		$7/2^-$	$17/2^+$
333	220	2240.20		6.73		6.02	19.21	3.82	8.26	−3.03	−9.29	6.775	6.905	6.515	6.563		$7/2^-$	0^+
334	221	2242.38		6.71		6.00	19.47	2.18	8.40	−3.00	−9.42	6.785	6.915	6.522	6.571		$7/2^-$	$17/2^+$
335	222	2246.16		6.70		5.96	19.69	3.78	8.52	−2.99	−9.54	6.795	6.926	6.529	6.578		$7/2^-$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
336	223	2248.30		6.69		5.92	19.95	2.14	8.65	−2.95	−9.66	6.804	6.936	6.536	6.585		$7/2^-$	$17/2^+$
337	224	2252.05		6.68		5.89	20.17	3.75	8.77	−2.94	−9.77	6.814	6.947	6.544	6.592		$7/2^-$	0^+
338	225	2254.12		6.67		5.82	20.42	2.07	8.89	−2.89	−9.90	6.824	6.957	6.551	6.600		$7/2^-$	$17/2^+$
339	226	2257.85		6.66		5.80	20.63	3.73	9.01	−2.89	−10.00	6.834	6.968	6.558	6.607		$7/2^-$	0^+
340	227	2259.95		6.65		5.83	20.85	2.10	9.11	−2.92	−10.11	6.844	6.979	6.566	6.614		$7/2^-$	$9/2^-$
341	228	2263.54		6.64		5.69	21.07	3.59	9.23	−2.83	−10.22	6.854	6.989	6.573	6.621		$7/2^-$	0^+
342	229	2265.71		6.62		5.76	21.29	2.17	9.34	−2.85	−10.34	6.864	7.000	6.580	6.629		$7/2^-$	$9/2^-$
343	230	2269.10		6.62		5.56	21.48	3.39	9.44	−2.77	−10.43	6.874	7.011	6.586	6.635		$7/2^-$	0^+
344	231	2271.29		6.60		5.58	21.69	2.19	9.54	−2.76	−10.54	6.885	7.022	6.594	6.642		$7/2^-$	$9/2^-$
345	232	2274.53		6.59		5.43	21.86	3.24	9.63	−2.71	−10.63	6.895	7.034	6.599	6.648		$7/2^-$	0^+
346	233	2276.72		6.58		5.43	22.08	2.19	9.74	−2.69	−10.74	6.905	7.045	6.607	6.655		$7/2^-$	$9/2^-$
347	234	2279.87		6.57		5.34	22.25	3.15	9.83	−2.65	−10.83	6.915	7.056	6.612	6.660		$7/2^-$	0^+
348	235	2282.02		6.56		5.30	22.46	2.15	9.94	−2.62	−10.93	6.925	7.068	6.620	6.668		$7/2^-$	$9/2^-$
349	236	2285.10		6.55		5.23	22.63	3.08	10.03	−2.59	−11.02	6.935	7.079	6.625	6.673		$7/2^-$	0^+
350	237	2287.13		6.53		5.11	22.83	2.03	10.13	−2.45	−11.12	6.946	7.090	6.633	6.681		$7/2^-$	$9/2^-$
351	238	2290.15		6.52		5.05	22.99	3.02	10.21	−2.46	−11.21	6.955	7.102	6.637	6.685		$7/2^-$	0^+
352	239	2292.06		6.51		4.93	23.17	1.91	10.30	−2.47	−11.29	6.965	7.113	6.641	6.689		$7/2^-$	$7/2^-$
353	240	2294.83		6.50		4.68	23.30	2.77	10.36	−2.30	−11.36	6.973	7.124	6.641	6.689		$7/2^-$	0^+
354	241	2296.68		6.49		4.62	23.46	1.85	10.43	−2.27	−11.44	6.982	7.135	6.644	6.692		$7/2^-$	$7/2^-$
355	242	2299.29		6.48		4.46	23.60	2.61	10.50	−2.23	−11.52	6.990	7.146	6.645	6.693		$7/2^-$	0^+
356	243	2301.07		6.46		4.39	23.75	1.78	10.57	−2.19	−11.59	7.000	7.158	6.647	6.695		$7/2^-$	$7/2^-$
357	244	2303.63		6.45		4.34	23.90	2.56	10.64	−2.17	−11.66	7.008	7.169	6.648	6.696		$7/2^-$	0^+
358	245	2305.34		6.44		4.27	24.05	1.71	10.71	−2.13	−11.74	7.017	7.180	6.651	6.698		$7/2^-$	$7/2^-$
359	246	2307.87		6.43		4.24	24.19	2.53	10.76	−2.13	−11.94	7.025	7.191	6.650	6.698		$5/2^-$	0^+
360	247	2309.58		6.42		4.24	24.34	1.71	10.84	−2.13	−12.01	7.035	7.203	6.652	6.700		$5/2^-$	$5/2^-$
361	248	2312.04		6.40		4.17	24.49	2.46	10.92	−2.08	−12.08	7.043	7.214	6.654	6.702		$5/2^-$	0^+
362	249	2313.74		6.39		4.16	24.64	1.70	10.98	−2.07	−12.16	7.053	7.226	6.656	6.703		$5/2^-$	$5/2^-$
363	250	2316.10		6.38		4.06	24.78	2.36	11.05	−2.03	−12.22	7.062	7.238	6.657	6.705		$5/2^-$	0^+
364	251	2317.75		6.37		4.01	24.92	1.65	11.12	−1.97	−12.29	7.071	7.250	6.658	6.706		$5/2^-$	$5/2^-$
365	252	2320.06		6.36		3.96	25.06	2.31	11.19	−1.96	−12.35	7.081	7.261	6.660	6.708		$5/2^-$	0^+
366	253	2321.73		6.34		3.98	25.18	1.67	11.23	−1.97	−12.41	7.091	7.274	6.661	6.709		$5/2^-$	$3/2^-$
367	254	2323.86		6.33		3.80	25.29	2.13	11.29	−1.88	−12.46	7.100	7.286	6.662	6.710		$5/2^-$	0^+
368	255	2325.49		6.32		3.76	25.40	1.63	11.34	−1.83	−12.51	7.110	7.300	6.662	6.710		$5/2^-$	$3/2^-$
369	256	2327.49		6.31		3.63	25.47	2.00	11.37	−1.80	−12.54	7.120	7.313	6.663	6.711		$5/2^-$	0^+
370	257	2329.17		6.30		3.68	25.56	1.68	11.41	−1.33	−12.58	7.130	7.326	6.663	6.711		$5/2^-$	$1/2^-$
371	258	2330.95		6.28		3.46	25.65	1.78	11.44	−1.04	−12.62	7.141	7.340	6.664	6.712		$5/2^-$	0^+
372	259	2330.19		6.26		1.02	25.85	−0.76	11.54	−1.06	−12.73	7.153	7.351	6.676	6.724		$5/2^-$	$15/2^+$
373	260	2330.45		6.25		−0.50	26.03	0.26	11.63	0.21	−12.82	7.163	7.362	6.685	6.732		$5/2^-$	0^+
σ																		
$Z = 114$ (Fl)																		
271	157	1919.91		7.08			0.47	7.80	1.07	−8.76	0.13	6.159	6.202	6.099	6.151		0^+	$9/2^+$
272	158	1929.57		7.09		17.46	0.87	9.66	1.29	−8.71	−0.08	6.167	6.212	6.104	6.156		0^+	0^+
273	159	1937.25		7.10		17.34	1.18	7.68	1.42	−8.63	−0.23	6.176	6.223	6.109	6.161		0^+	$9/2^+$
274	160	1946.83		7.11		17.26	1.60	9.58	1.65	−8.59	−0.44	6.184	6.233	6.114	6.166		0^+	0^+
275	161	1954.36		7.11		17.11	1.89	7.53	1.77	−8.48	−0.58	6.192	6.243	6.120	6.172		0^+	$9/2^+$
276	162	1963.85		7.12		17.02	2.32	9.49	2.01	−8.44	−0.80	6.200	6.252	6.125	6.177		0^+	0^+
277	163	1971.11		7.12		16.75	2.59	7.26	2.12	−8.50	−0.99	6.210	6.264	6.131	6.183		0^+	$7/2^+$
278	164	1980.50		7.12		16.65	3.03	9.39	2.36	−8.16	−1.15	6.217	6.272	6.135	6.187		0^+	0^+
279	165	1987.94		7.13		16.83	3.39	7.44	2.55	−8.17	−1.34	6.226	6.283	6.141	6.193		0^+	$7/2^+$
280	166	1996.40		7.13		15.90	3.73	8.46	2.73	−7.85	−1.52	6.236	6.296	6.149	6.200		0^+	0^+
281	167	2003.69		7.13		15.75	4.09	7.29	2.92	−7.78	−1.70	6.246	6.308	6.155	6.207		0^+	$7/2^+$
282	168	2011.87		7.13		15.47	4.43	8.18	3.11	−7.69	−1.88	6.256	6.319	6.162	6.214		0^+	0^+
283	169	2019.05		7.13		15.36	4.79	7.18	3.27	−7.62	−2.07	6.266	6.331	6.169	6.220		0^+	$7/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
284	170	2027.07		7.14		15.20	5.13	8.02	3.48	−7.55	−2.24	6.276	6.343	6.175	6.227		0^+	0^+
285	171	2034.13		7.14		15.08	5.49	7.06	3.67	−7.26	−2.43	6.286	6.354	6.182	6.234		0^+	$7/2^+$
286	172	2042.01		7.14		14.94	5.84	7.88	3.85	−7.13	−2.61	6.296	6.366	6.189	6.241		0^+	0^+
287	173	2048.28		7.14		14.15	6.07	6.27	3.97	−7.21	−2.73	6.303	6.375	6.191	6.243		0^+	$5/2^+$
288	174	2055.37		7.14		13.36	6.31	7.09	4.10	−6.61	−2.84	6.310	6.385	6.194	6.245		0^+	0^+
289	175	2061.44		7.13		13.16	6.55	6.07	4.22	−6.51	−2.96	6.317	6.395	6.196	6.248		0^+	$5/2^+$
290	176	2068.32		7.13		12.95	6.78	6.88	4.34	−6.44	−3.08	6.324	6.404	6.199	6.250		0^+	0^+
291	177	2074.21		7.13		12.77	7.02	5.89	4.47	−6.34	−3.20	6.332	6.415	6.202	6.253		0^+	$5/2^+$
292	178	2080.98		7.13		12.66	7.25	6.77	4.59	−6.30	−3.31	6.339	6.424	6.204	6.256		0^+	0^+
293	179	2086.79		7.12		12.58	7.48	5.81	4.70	−6.27	−3.43	6.347	6.435	6.207	6.258		0^+	$3/2^+$
294	180	2093.35		7.12		12.37	7.72	6.56	4.82	−6.14	−3.54	6.355	6.445	6.209	6.261		0^+	0^+
295	181	2099.08		7.12		12.29	7.95	5.73	4.94	−6.04	−3.66	6.362	6.455	6.212	6.263		0^+	$3/2^+$
296	182	2105.41		7.11		12.06	8.18	6.33	5.06	−5.96	−3.78	6.370	6.466	6.215	6.266		0^+	0^+
297	183	2111.13		7.11		12.05	8.40	5.72	5.17	−5.93	−3.89	6.378	6.477	6.217	6.268		0^+	$1/2^+$
298	184	2116.96		7.10		11.55	8.59	5.83	5.28	−5.13	−3.98	6.386	6.487	6.219	6.271		0^+	0^+
299	185	2120.68		7.09		9.55	8.91	3.72	5.43	−5.40	−4.14	6.399	6.500	6.231	6.282		0^+	$13/2^-$
300	186	2125.63		7.09		8.67	9.24	4.95	5.60	−4.34	−4.30	6.411	6.513	6.241	6.293		0^+	0^+
301	187	2129.34		7.07		8.66	9.56	3.71	5.75	−4.33	−4.46	6.424	6.526	6.253	6.304		0^+	$13/2^-$
302	188	2134.26		7.07		8.63	9.88	4.92	5.90	−4.33	−4.62	6.436	6.539	6.263	6.314		0^+	0^+
303	189	2137.95		7.06		8.61	10.19	3.69	6.05	−4.32	−4.77	6.449	6.552	6.275	6.325		0^+	$13/2^-$
304	190	2142.86		7.05		8.60	10.50	4.91	6.22	−4.32	−4.93	6.461	6.565	6.285	6.336		0^+	0^+
305	191	2146.54		7.04		8.59	10.80	3.68	6.42	−4.30	−5.08	6.474	6.577	6.297	6.347		0^+	$13/2^-$
306	192	2151.44		7.03		8.58	11.11	4.90	6.60	−4.30	−5.23	6.486	6.590	6.307	6.358		0^+	0^+
307	193	2155.10		7.02		8.56	11.40	3.66	6.78	−4.28	−5.37	6.499	6.603	6.319	6.369		0^+	$13/2^-$
308	194	2159.99		7.01		8.55	11.70	4.89	6.92	−4.27	−5.52	6.511	6.615	6.329	6.379		0^+	0^+
309	195	2163.62		7.00		8.52	11.99	3.63	7.05	−4.23	−5.66	6.523	6.628	6.341	6.391		0^+	$13/2^-$
310	196	2168.48		7.00		8.49	12.27	4.86	7.17	−4.22	−5.80	6.535	6.640	6.351	6.401		0^+	0^+
311	197	2172.01		6.98		8.39	12.55	3.53	7.30	−3.93	−5.93	6.549	6.653	6.365	6.415		0^+	$13/2^-$
312	198	2176.81		6.98		8.33	12.82	4.80	7.43	−3.96	−6.07	6.560	6.665	6.374	6.424		0^+	0^+
313	199	2179.76		6.96		7.75	13.11	2.95	7.59	−3.97	−6.22	6.571	6.677	6.381	6.431		0^+	$11/2^-$
314	200	2184.21		6.96		7.40	13.38	4.45	7.72	−3.65	−6.36	6.580	6.687	6.386	6.436		0^+	0^+
315	201	2187.06		6.94		7.30	13.67	2.85	7.83	−3.61	−6.51	6.589	6.699	6.392	6.442		0^+	$11/2^-$
316	202	2191.32		6.93		7.11	13.94	4.26	7.98	−3.55	−6.65	6.599	6.710	6.398	6.448		0^+	0^+
317	203	2194.09		6.92		7.03	14.21	2.77	8.14	−3.52	−6.79	6.609	6.721	6.404	6.454		0^+	$11/2^-$
318	204	2198.27		6.91		6.95	14.48	4.18	8.29	−3.49	−6.93	6.618	6.732	6.411	6.461		0^+	0^+
319	205	2200.98		6.90		6.89	14.75	2.71	8.43	−3.46	−7.07	6.628	6.743	6.417	6.466		0^+	$11/2^-$
320	206	2205.10		6.89		6.83	15.02	4.12	8.56	−3.44	−7.20	6.638	6.753	6.423	6.473		0^+	0^+
321	207	2207.76		6.88		6.78	15.29	2.66	8.71	−3.40	−7.34	6.648	6.765	6.429	6.479		0^+	$11/2^-$
322	208	2211.84		6.87		6.74	15.55	4.08	8.84	−3.39	−7.47	6.657	6.775	6.436	6.486		0^+	0^+
323	209	2214.43		6.86		6.67	15.82	2.59	8.97	−3.35	−7.61	6.667	6.786	6.442	6.492		0^+	$11/2^-$
324	210	2218.49		6.85		6.65	16.08	4.06	9.10	−3.35	−7.74	6.676	6.797	6.449	6.498		0^+	0^+
325	211	2221.00		6.83		6.57	16.34	2.51	9.22	−3.30	−7.88	6.686	6.808	6.456	6.505		0^+	$11/2^-$
326	212	2225.05		6.83		6.56	16.60	4.05	9.35	−3.30	−8.01	6.696	6.818	6.462	6.511		0^+	0^+
327	213	2227.49		6.81		6.49	16.86	2.44	9.48	−3.26	−8.14	6.706	6.829	6.469	6.519		0^+	$11/2^-$
328	214	2231.54		6.80		6.49	17.12	4.05	9.61	−3.26	−8.27	6.715	6.839	6.475	6.525		0^+	0^+
329	215	2233.90		6.79		6.41	17.38	2.36	9.75	−3.25	−8.40	6.725	6.850	6.482	6.531		0^+	$17/2^+$
330	216	2237.95		6.78		6.41	17.62	4.05	9.86	−3.22	−8.53	6.734	6.860	6.489	6.538		0^+	0^+
331	217	2240.30		6.77		6.40	17.89	2.35	10.00	−3.21	−8.66	6.744	6.871	6.496	6.545		0^+	$17/2^+$
332	218	2244.29		6.76		6.34	18.13	3.99	10.11	−3.18	−8.78	6.754	6.881	6.503	6.552		0^+	0^+
333	219	2246.62		6.75		6.32	18.39	2.33	10.24	−3.16	−8.91	6.763	6.892	6.510	6.559		0^+	$17/2^+$
334	220	2250.56		6.74		6.27	18.62	3.94	10.36	−3.14	−9.02	6.773	6.902	6.518	6.566		0^+	0^+
335	221	2252.86		6.72		6.24	18.88	2.30	10.48	−3.11	−9.15	6.783	6.912	6.525	6.574		0^+	$17/2^+$
336	222	2256.75		6.72		6.19	19.11	3.89	10.59	−3.10	−9.27	6.793	6.923	6.532	6.581		0^+	0^+
337	223	2259.01		6.70		6.15	19.36	2.26	10.71	−3.06	−9.39	6.802	6.933	6.539	6.588		0^+	$17/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
338	224	2262.86		6.69		6.11	19.58	3.85	10.81	−3.05	−9.50	6.813	6.944	6.547	6.595		0^+	0^+
339	225	2265.05		6.68		6.04	19.82	2.19	10.93	−3.00	−9.63	6.822	6.954	6.554	6.603		0^+	$17/2^+$
340	226	2268.88		6.67		6.02	20.04	3.83	11.03	−3.00	−9.73	6.832	6.965	6.561	6.610		0^+	0^+
341	227	2271.09		6.66		6.04	20.25	2.21	11.14	−3.03	−9.84	6.843	6.976	6.569	6.617		0^+	$9/2^-$
342	228	2274.78		6.65		5.90	20.47	3.69	11.24	−2.93	−9.95	6.852	6.986	6.576	6.624		0^+	0^+
343	229	2277.06		6.64		5.97	20.69	2.28	11.35	−2.95	−10.07	6.862	6.997	6.583	6.632		0^+	$9/2^-$
344	230	2280.54		6.63		5.76	20.88	3.48	11.44	−2.86	−10.16	6.872	7.008	6.590	6.638		0^+	0^+
345	231	2282.84		6.62		5.78	21.09	2.30	11.55	−2.86	−10.27	6.883	7.019	6.597	6.646		0^+	$9/2^-$
346	232	2286.17		6.61		5.63	21.27	3.33	11.64	−2.80	−10.36	6.893	7.031	6.603	6.651		0^+	0^+
347	233	2288.46		6.59		5.62	21.48	2.29	11.74	−2.78	−10.47	6.903	7.042	6.610	6.659		0^+	$9/2^-$
348	234	2291.69		6.59		5.52	21.65	3.23	11.82	−2.74	−10.55	6.913	7.053	6.616	6.664		0^+	0^+
349	235	2293.94		6.57		5.48	21.86	2.25	11.92	−2.71	−10.66	6.923	7.065	6.623	6.671		0^+	$9/2^-$
350	236	2297.10		6.56		5.41	22.03	3.16	12.00	−2.68	−10.75	6.933	7.076	6.628	6.676		0^+	0^+
351	237	2299.24		6.55		5.30	22.24	2.14	12.11	−2.54	−10.85	6.944	7.087	6.636	6.684		0^+	$9/2^-$
352	238	2302.34		6.54		5.24	22.40	3.10	12.19	−2.54	−10.93	6.953	7.098	6.640	6.688		0^+	0^+
353	239	2304.34		6.53		5.10	22.58	2.00	12.28	−2.55	−11.02	6.963	7.110	6.644	6.692		0^+	$7/2^-$
354	240	2307.19		6.52		4.85	22.72	2.85	12.36	−2.38	−11.10	6.971	7.120	6.645	6.693		0^+	0^+
355	241	2309.12		6.50		4.78	22.87	1.93	12.44	−2.35	−11.17	6.980	7.132	6.647	6.695		0^+	$7/2^-$
356	242	2311.81		6.49		4.62	23.02	2.69	12.52	−2.31	−11.25	6.988	7.142	6.648	6.696		0^+	0^+
357	243	2313.68		6.48		4.56	23.18	1.87	12.61	−2.27	−11.33	6.997	7.154	6.651	6.699		0^+	$7/2^-$
358	244	2316.32		6.47		4.51	23.33	2.64	12.69	−2.26	−11.40	7.005	7.165	6.652	6.700		0^+	0^+
359	245	2318.11		6.46		4.43	23.48	1.79	12.77	−2.21	−11.48	7.015	7.176	6.654	6.702		0^+	$7/2^-$
360	246	2320.73		6.45		4.41	23.62	2.62	12.86	−2.21	−11.55	7.023	7.187	6.655	6.703		0^+	0^+
361	247	2322.52		6.43		4.41	23.78	1.79	12.94	−2.21	−11.63	7.032	7.199	6.657	6.705		0^+	$5/2^-$
362	248	2325.04		6.42		4.31	23.92	2.52	13.00	−2.15	−11.70	7.041	7.210	6.659	6.707		0^+	0^+
363	249	2326.82		6.41		4.30	24.06	1.78	13.08	−2.14	−11.77	7.050	7.222	6.661	6.709		0^+	$5/2^-$
364	250	2329.24		6.40		4.20	24.19	2.42	13.14	−2.10	−11.84	7.059	7.233	6.662	6.710		0^+	0^+
365	251	2330.96		6.39		4.14	24.33	1.72	13.21	−2.03	−11.91	7.069	7.245	6.664	6.712		0^+	$5/2^-$
366	252	2333.33		6.38		4.09	24.46	2.37	13.27	−2.02	−11.98	7.078	7.257	6.665	6.713		0^+	0^+
367	253	2335.05		6.36		4.09	24.55	1.72	13.32	−2.03	−12.04	7.088	7.270	6.667	6.715		0^+	$3/2^-$
368	254	2337.24		6.35		3.91	24.67	2.19	13.38	−1.93	−12.08	7.097	7.282	6.667	6.715		0^+	0^+
369	255	2338.92		6.34		3.87	24.77	1.68	13.43	−1.87	−12.13	7.107	7.295	6.668	6.716		0^+	$3/2^-$
370	256	2340.97		6.33		3.73	24.85	2.05	13.48	−1.84	−12.17	7.117	7.308	6.669	6.717		0^+	0^+
371	257	2342.69		6.31		3.77	24.93	1.72	13.52	−1.37	−12.22	7.127	7.321	6.669	6.717		0^+	$1/2^-$
372	258	2344.51		6.30		3.54	25.00	1.82	13.56	−1.12	−12.26	7.138	7.335	6.670	6.718		0^+	0^+
373	259	2343.87		6.28		1.18	25.22	−0.64	13.68	−1.07	−12.37	7.150	7.346	6.682	6.730		0^+	$15/2^+$
374	260	2344.22		6.27		−0.29	25.40	0.35	13.77	0.11	−12.46	7.160	7.357	6.691	6.739		0^+	0^+
σ																		
$Z = 115$ (Mc)																		
273	158	1928.59		7.06			0.31		−0.98	−8.90	0.15	6.171	6.214	6.112	6.164		$5/2^-$	0^+
274	159	1936.43		7.07			0.60	7.84	−0.82	−8.83	−0.04	6.179	6.224	6.117	6.169		$5/2^-$	$15/2^-$
275	160	1946.23		7.08		17.64	1.05	9.80	−0.60	−8.77	−0.20	6.187	6.234	6.122	6.174		$5/2^-$	0^+
276	161	1954.00		7.08		17.57	1.41	7.77	−0.36	−8.68	−0.40	6.195	6.243	6.127	6.179		$5/2^-$	$15/2^-$
277	162	1963.73		7.09		17.50	1.89	9.73	−0.12	−8.62	−0.56	6.204	6.254	6.132	6.184		$5/2^-$	0^+
278	163	1971.18		7.09		17.18	2.19	7.45	0.07	−8.36	−0.75	6.211	6.263	6.137	6.188		$5/2^-$	$15/2^-$
279	164	1980.68		7.10		16.95	2.54	9.50	0.18	−8.34	−0.91	6.220	6.274	6.143	6.195		$5/2^-$	0^+
280	165	1988.27		7.10		17.09	2.88	7.59	0.33	−8.35	−1.09	6.229	6.285	6.149	6.200		$5/2^-$	$7/2^+$
281	166	1996.89		7.11		16.21	3.22	8.62	0.49	−8.04	−1.27	6.240	6.297	6.156	6.208		$5/2^-$	0^+
282	167	2004.36		7.11		16.09	3.59	7.47	0.67	−7.97	−1.46	6.249	6.309	6.163	6.214		$5/2^-$	$7/2^+$
283	168	2012.72		7.11		15.83	3.96	8.36	0.85	−7.87	−1.64	6.260	6.320	6.170	6.221		$5/2^-$	0^+
284	169	2020.08		7.11		15.72	4.30	7.36	1.03	−7.81	−1.83	6.269	6.332	6.176	6.228		$5/2^-$	$7/2^+$
285	170	2028.27		7.12		15.55	4.68	8.19	1.20	−7.74	−2.00	6.279	6.343	6.183	6.235		$5/2^-$	0^+
286	171	2035.53		7.12		15.45	5.07	7.26	1.40	−7.39	−2.19	6.289	6.355	6.190	6.242		$5/2^-$	$7/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
287	172	2043.58		7.12		15.31	5.42	8.05	1.57	−7.28	−2.38	6.299	6.366	6.197	6.248		$5/2^-$	0^+
288	173	2049.96		7.12		14.43	5.65	6.38	1.68	−7.42	−2.49	6.306	6.376	6.199	6.250		$5/2^-$	$5/2^+$
289	174	2057.17		7.12		13.59	5.90	7.21	1.80	−6.73	−2.61	6.313	6.385	6.202	6.253		$5/2^-$	0^+
290	175	2063.36		7.12		13.40	6.14	6.19	1.92	−6.63	−2.73	6.320	6.395	6.204	6.256		$5/2^-$	$5/2^+$
291	176	2070.36		7.11		13.19	6.38	7.00	2.04	−6.56	−2.85	6.327	6.405	6.207	6.258		$5/2^-$	0^+
292	177	2076.37		7.11		13.01	6.63	6.01	2.16	−6.45	−2.97	6.335	6.415	6.210	6.261		$5/2^-$	$5/2^+$
293	178	2083.25		7.11		12.89	6.86	6.88	2.27	−6.41	−3.08	6.342	6.424	6.212	6.264		$5/2^-$	0^+
294	179	2089.17		7.11		12.80	7.08	5.92	2.38	−6.38	−3.20	6.350	6.435	6.215	6.266		$5/2^-$	$3/2^+$
295	180	2095.85		7.10		12.60	7.32	6.68	2.50	−6.25	−3.32	6.357	6.445	6.218	6.269		$5/2^-$	0^+
296	181	2101.68		7.10		12.51	7.54	5.83	2.60	−6.15	−3.43	6.365	6.455	6.220	6.271		$5/2^-$	$3/2^+$
297	182	2108.13		7.10		12.28	7.78	6.45	2.72	−6.07	−3.55	6.373	6.466	6.223	6.275		$5/2^-$	0^+
298	183	2113.96		7.09		12.28	8.00	5.83	2.83	−6.01	−3.66	6.381	6.476	6.226	6.277		$5/2^-$	$1/2^+$
299	184	2119.87		7.09		11.74	8.19	5.91	2.91	−5.25	−3.75	6.388	6.487	6.228	6.279		$5/2^-$	0^+
300	185	2123.75		7.08		9.79	8.50	3.88	3.07	−5.49	−3.91	6.401	6.500	6.239	6.290		$5/2^-$	$13/2^-$
301	186	2128.85		7.07		8.98	8.82	5.10	3.22	−4.50	−4.08	6.414	6.513	6.250	6.301		$5/2^-$	0^+
302	187	2132.71		7.06		8.96	9.12	3.86	3.37	−4.49	−4.23	6.426	6.526	6.261	6.312		$5/2^-$	$13/2^-$
303	188	2137.79		7.06		8.94	9.43	5.08	3.53	−4.48	−4.39	6.438	6.538	6.271	6.322		$5/2^-$	0^+
304	189	2141.63		7.04		8.92	9.73	3.84	3.68	−4.47	−4.54	6.451	6.551	6.282	6.333		$5/2^-$	$13/2^-$
305	190	2146.68		7.04		8.89	10.04	5.05	3.82	−4.47	−4.69	6.463	6.564	6.293	6.344		$5/2^-$	0^+
306	191	2150.51		7.03		8.88	10.39	3.83	3.97	−4.45	−4.84	6.476	6.577	6.304	6.355		$5/2^-$	$13/2^-$
307	192	2155.55		7.02		8.87	10.71	5.04	4.11	−4.45	−4.99	6.488	6.589	6.314	6.365		$5/2^-$	0^+
308	193	2159.35		7.01		8.84	11.03	3.80	4.25	−4.42	−5.13	6.500	6.602	6.326	6.376		$5/2^-$	$13/2^-$
309	194	2164.37		7.00		8.82	11.30	5.02	4.38	−4.42	−5.27	6.512	6.614	6.336	6.386		$5/2^-$	0^+
310	195	2168.14		6.99		8.79	11.57	3.77	4.52	−4.37	−5.41	6.525	6.627	6.347	6.398		$5/2^-$	$13/2^-$
311	196	2173.13		6.99		8.76	11.82	4.99	4.65	−4.36	−5.55	6.536	6.639	6.358	6.408		$5/2^-$	0^+
312	197	2176.78		6.98		8.64	12.07	3.65	4.77	−4.07	−5.68	6.550	6.652	6.371	6.421		$5/2^-$	$13/2^-$
313	198	2181.71		6.97		8.58	12.33	4.93	4.90	−4.10	−5.82	6.561	6.664	6.380	6.430		$5/2^-$	0^+
314	199	2184.81		6.96		8.03	12.64	3.10	5.05	−4.11	−5.97	6.572	6.676	6.387	6.437		$5/2^-$	$11/2^-$
315	200	2189.40		6.95		7.69	12.91	4.59	5.19	−3.80	−6.11	6.580	6.686	6.392	6.442		$5/2^-$	0^+
316	201	2192.40		6.94		7.59	13.17	3.00	5.34	−3.76	−6.26	6.590	6.697	6.398	6.448		$5/2^-$	$11/2^-$
317	202	2196.79		6.93		7.39	13.45	4.39	5.47	−3.70	−6.40	6.599	6.708	6.404	6.454		$5/2^-$	0^+
318	203	2199.72		6.92		7.32	13.77	2.93	5.63	−3.66	−6.54	6.609	6.719	6.410	6.460		$5/2^-$	$11/2^-$
319	204	2204.03		6.91		7.24	14.05	4.31	5.76	−3.63	−6.68	6.619	6.730	6.417	6.466		$5/2^-$	0^+
320	205	2206.89		6.90		7.17	14.34	2.86	5.91	−3.60	−6.82	6.628	6.741	6.423	6.472		$5/2^-$	$11/2^-$
321	206	2211.14		6.89		7.11	14.60	4.25	6.04	−3.58	−6.96	6.638	6.752	6.429	6.479		$5/2^-$	0^+
322	207	2213.93		6.88		7.04	14.88	2.79	6.17	−3.54	−7.10	6.648	6.763	6.435	6.485		$5/2^-$	$11/2^-$
323	208	2218.15		6.87		7.01	15.15	4.22	6.31	−3.53	−7.23	6.657	6.773	6.442	6.491		$5/2^-$	0^+
324	209	2220.87		6.85		6.94	15.41	2.72	6.44	−3.49	−7.37	6.667	6.784	6.448	6.497		$5/2^-$	$11/2^-$
325	210	2225.06		6.85		6.91	15.67	4.19	6.57	−3.48	−7.50	6.676	6.795	6.454	6.504		$5/2^-$	0^+
326	211	2227.71		6.83		6.84	15.93	2.65	6.71	−3.44	−7.64	6.686	6.805	6.461	6.510		$5/2^-$	$11/2^-$
327	212	2231.89		6.83		6.83	16.19	4.18	6.84	−3.44	−7.77	6.695	6.816	6.467	6.517		$5/2^-$	0^+
328	213	2234.46		6.81		6.75	16.45	2.57	6.97	−3.39	−7.90	6.705	6.827	6.475	6.524		$5/2^-$	$11/2^-$
329	214	2238.64		6.80		6.75	16.71	4.18	7.10	−3.39	−8.03	6.715	6.837	6.481	6.530		$5/2^-$	0^+
330	215	2241.13		6.79		6.67	16.98	2.49	7.23	−3.38	−8.16	6.724	6.847	6.487	6.537		$5/2^-$	$17/2^+$
331	216	2245.30		6.78		6.66	17.21	4.17	7.35	−3.35	−8.29	6.734	6.858	6.494	6.543		$5/2^-$	0^+
332	217	2247.78		6.77		6.65	17.48	2.48	7.48	−3.33	−8.42	6.743	6.868	6.501	6.550		$5/2^-$	$17/2^+$
333	218	2251.89		6.76		6.59	17.71	4.11	7.60	−3.31	−8.54	6.753	6.879	6.508	6.557		$5/2^-$	0^+
334	219	2254.34		6.75		6.56	17.96	2.45	7.72	−3.29	−8.67	6.762	6.889	6.515	6.564		$5/2^-$	$17/2^+$
335	220	2258.39		6.74		6.50	18.19	4.05	7.83	−3.26	−8.78	6.772	6.899	6.522	6.571		$5/2^-$	0^+
336	221	2260.82		6.73		6.48	18.44	2.43	7.96	−3.24	−8.91	6.782	6.909	6.529	6.578		$5/2^-$	$17/2^+$
337	222	2264.82		6.72		6.43	18.66	4.00	8.07	−3.22	−9.02	6.792	6.920	6.537	6.585		$5/2^-$	0^+
338	223	2267.20		6.71		6.38	18.90	2.38	8.19	−3.18	−9.15	6.801	6.930	6.544	6.593		$5/2^-$	$17/2^+$
339	224	2271.16		6.70		6.34	19.11	3.96	8.30	−3.17	−9.26	6.811	6.941	6.551	6.600		$5/2^-$	0^+
340	225	2273.47		6.69		6.27	19.35	2.31	8.42	−3.11	−9.38	6.821	6.951	6.558	6.607		$5/2^-$	$17/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
341	226	2277.40		6.68		6.24	19.55	3.93	8.52	−3.11	−9.48	6.831	6.962	6.566	6.614		$5/2^-$	0^+
342	227	2279.72		6.67		6.25	19.77	2.32	8.63	−3.14	−9.59	6.841	6.973	6.573	6.621		$5/2^-$	$9/2^-$
343	228	2283.51		6.66		6.11	19.97	3.79	8.73	−3.04	−9.70	6.850	6.983	6.580	6.628		$5/2^-$	0^+
344	229	2285.90		6.65		6.18	20.19	2.39	8.84	−3.05	−9.81	6.861	6.994	6.588	6.636		$5/2^-$	$9/2^-$
345	230	2289.47		6.64		5.96	20.37	3.57	8.93	−2.96	−9.91	6.871	7.005	6.594	6.642		$5/2^-$	0^+
346	231	2291.88		6.62		5.98	20.59	2.41	9.04	−2.96	−10.01	6.881	7.016	6.601	6.649		$5/2^-$	$9/2^-$
347	232	2295.30		6.61		5.83	20.77	3.42	9.13	−2.90	−10.10	6.891	7.027	6.607	6.655		$5/2^-$	0^+
348	233	2297.69		6.60		5.81	20.97	2.39	9.23	−2.88	−10.21	6.901	7.038	6.614	6.663		$5/2^-$	$9/2^-$
349	234	2301.01		6.59		5.71	21.14	3.32	9.32	−2.85	−10.30	6.911	7.050	6.620	6.668		$5/2^-$	0^+
350	235	2303.37		6.58		5.68	21.35	2.36	9.43	−2.81	−10.40	6.922	7.061	6.627	6.676		$5/2^-$	$9/2^-$
351	236	2306.62		6.57		5.61	21.52	3.25	9.52	−2.78	−10.49	6.931	7.072	6.633	6.681		$5/2^-$	0^+
352	237	2308.87		6.56		5.50	21.74	2.25	9.63	−2.63	−10.59	6.942	7.084	6.641	6.689		$5/2^-$	$9/2^-$
353	238	2312.06		6.55		5.44	21.91	3.19	9.72	−2.63	−10.68	6.951	7.095	6.645	6.693		$5/2^-$	0^+
354	239	2314.14		6.54		5.27	22.08	2.08	9.80	−2.64	−10.77	6.961	7.106	6.649	6.697		$5/2^-$	$7/2^-$
355	240	2317.07		6.53		5.01	22.24	2.93	9.88	−2.46	−10.84	6.969	7.117	6.650	6.697		$5/2^-$	0^+
356	241	2319.08		6.51		4.94	22.40	2.01	9.96	−2.43	−10.92	6.978	7.128	6.652	6.700		$5/2^-$	$7/2^-$
357	242	2321.85		6.50		4.78	22.56	2.77	10.04	−2.39	−11.00	6.986	7.139	6.653	6.701		$5/2^-$	0^+
358	243	2323.80		6.49		4.72	22.73	1.95	10.12	−2.35	−11.08	6.995	7.150	6.655	6.703		$5/2^-$	$7/2^-$
359	244	2326.51		6.48		4.66	22.88	2.71	10.19	−2.33	−11.16	7.003	7.161	6.657	6.705		$5/2^-$	0^+
360	245	2328.39		6.47		4.59	23.05	1.88	10.28	−2.29	−11.24	7.012	7.172	6.659	6.707		$5/2^-$	$7/2^-$
361	246	2331.08		6.46		4.57	23.21	2.69	10.35	−2.28	−11.31	7.021	7.183	6.660	6.708		$5/2^-$	0^+
362	247	2332.95		6.44		4.56	23.37	1.87	10.43	−2.28	−11.39	7.030	7.195	6.663	6.710		$5/2^-$	$5/2^-$
363	248	2335.55		6.43		4.47	23.51	2.60	10.51	−2.23	−11.47	7.039	7.206	6.664	6.712		$5/2^-$	0^+
364	249	2337.41		6.42		4.46	23.67	1.86	10.59	−2.21	−11.55	7.048	7.217	6.666	6.714		$5/2^-$	$5/2^-$
365	250	2339.91		6.41		4.36	23.81	2.50	10.67	−2.17	−11.62	7.057	7.229	6.668	6.716		$5/2^-$	0^+
366	251	2341.71		6.40		4.30	23.96	1.80	10.75	−2.10	−11.69	7.066	7.241	6.670	6.718		$5/2^-$	$5/2^-$
367	252	2344.14		6.39		4.23	24.08	2.43	10.81	−2.09	−11.76	7.075	7.252	6.671	6.719		$5/2^-$	0^+
368	253	2345.92		6.37		4.21	24.19	1.78	10.87	−2.10	−11.82	7.085	7.265	6.673	6.721		$5/2^-$	$3/2^-$
369	254	2348.16		6.36		4.02	24.30	2.24	10.92	−1.97	−11.87	7.094	7.277	6.674	6.721		$5/2^-$	0^+
370	255	2349.88		6.35		3.96	24.39	1.72	10.96	−1.91	−11.92	7.105	7.290	6.674	6.722		$5/2^-$	$3/2^-$
371	256	2351.97		6.34		3.81	24.48	2.09	11.00	−1.88	−11.96	7.114	7.303	6.675	6.723		$5/2^-$	0^+
372	257	2353.72		6.33		3.84	24.55	1.75	11.03	−1.46	−12.00	7.124	7.316	6.676	6.723		$5/2^-$	$1/2^-$
373	258	2355.58		6.32		3.61	24.63	1.86	11.07	−1.15	−12.04	7.135	7.330	6.677	6.724		$5/2^-$	0^+
374	259	2355.04		6.30		1.32	24.85	−0.54	11.17	−1.26	−12.15	7.147	7.341	6.689	6.736		$5/2^-$	$15/2^+$
375	260	2355.49		6.28		−0.09	25.04	0.45	11.27	0.01	−12.24	7.157	7.351	6.698	6.745		$5/2^-$	0^+
376	261	2355.00		6.26		−0.04	25.25	−0.49		−0.02	−12.35	7.169	7.362	6.710	6.757		$5/2^-$	$15/2^+$
σ																		
$Z = 116$ (Lv)																		
278	162	1964.55		7.07			0.70		0.82	−8.80	0.02	6.209	6.257	6.141	6.192		0^+	0^+
279	163	1972.21		7.07			1.10	7.66	1.03	−8.85	−0.18	6.218	6.269	6.147	6.199		0^+	$7/2^+$
280	164	1981.91		7.08		17.36	1.41	9.70	1.23	−8.53	−0.34	6.225	6.277	6.151	6.203		0^+	0^+
281	165	1989.72		7.08		17.51	1.78	7.81	1.45	−8.53	−0.53	6.234	6.288	6.157	6.209		0^+	$7/2^+$
282	166	1998.58		7.09		16.67	2.18	8.86	1.69	−8.23	−0.73	6.244	6.300	6.164	6.216		0^+	0^+
283	167	2006.26		7.09		16.54	2.57	7.68	1.90	−8.17	−0.92	6.254	6.311	6.171	6.222		0^+	$7/2^+$
284	168	2014.81		7.09		16.23	2.94	8.55	2.09	−8.07	−1.12	6.264	6.323	6.178	6.229		0^+	0^+
285	169	2022.38		7.10		16.12	3.33	7.57	2.30	−8.00	−1.32	6.273	6.334	6.184	6.236		0^+	$7/2^+$
286	170	2030.77		7.10		15.96	3.70	8.39	2.50	−7.93	−1.51	6.283	6.345	6.191	6.242		0^+	0^+
287	171	2038.23		7.10		15.85	4.10	7.46	2.70	−7.79	−1.72	6.293	6.357	6.198	6.249		0^+	$7/2^+$
288	172	2046.48		7.11		15.71	4.47	8.25	2.90	−7.43	−1.91	6.302	6.368	6.204	6.256		0^+	0^+
289	173	2052.97		7.10		14.74	4.69	6.49	3.01	−7.70	−2.02	6.309	6.377	6.207	6.258		0^+	$5/2^+$
290	174	2060.29		7.10		13.81	4.92	7.32	3.12	−6.84	−2.13	6.316	6.387	6.209	6.261		0^+	0^+
291	175	2066.59		7.10		13.62	5.15	6.30	3.23	−6.75	−2.24	6.324	6.397	6.212	6.263		0^+	$5/2^+$
292	176	2073.71		7.10		13.42	5.39	7.12	3.35	−6.67	−2.35	6.331	6.406	6.215	6.266		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
293	177	2079.83		7.10		13.24	5.62	6.12	3.46	−6.57	−2.47	6.338	6.416	6.218	6.269		0^+	$5/2^+$
294	178	2086.83		7.10		13.12	5.85	7.00	3.58	−6.53	−2.58	6.346	6.426	6.220	6.272		0^+	0^+
295	179	2092.87		7.09		13.04	6.08	6.04	3.70	−6.49	−2.69	6.353	6.436	6.223	6.274		0^+	$3/2^+$
296	180	2099.66		7.09		12.83	6.31	6.79	3.81	−6.37	−2.81	6.361	6.446	6.226	6.277		0^+	0^+
297	181	2105.61		7.09		12.74	6.53	5.95	3.93	−6.27	−2.92	6.368	6.456	6.228	6.279		0^+	$3/2^+$
298	182	2112.18		7.09		12.52	6.77	6.57	4.05	−6.18	−3.04	6.376	6.467	6.231	6.283		0^+	0^+
299	183	2118.12		7.08		12.51	6.99	5.94	4.16	−6.14	−3.15	6.384	6.477	6.234	6.285		0^+	$1/2^+$
300	184	2124.14		7.08		11.96	7.18	6.02	4.27	−5.38	−3.25	6.391	6.488	6.236	6.287		0^+	0^+
301	185	2128.19		7.07		10.07	7.51	4.05	4.44	−5.61	−3.40	6.404	6.501	6.247	6.298		0^+	$13/2^-$
302	186	2133.45		7.06		9.31	7.82	5.26	4.60	−4.66	−3.56	6.416	6.513	6.258	6.309		0^+	0^+
303	187	2137.47		7.05		9.28	8.13	4.02	4.76	−4.64	−3.71	6.429	6.526	6.268	6.319		0^+	$13/2^-$
304	188	2142.69		7.05		9.24	8.43	5.22	4.90	−4.64	−3.87	6.441	6.539	6.279	6.330		0^+	0^+
305	189	2146.69		7.04		9.22	8.74	4.00	5.06	−4.62	−4.01	6.453	6.552	6.290	6.340		0^+	$13/2^-$
306	190	2151.90		7.03		9.21	9.04	5.21	5.22	−4.62	−4.16	6.465	6.564	6.300	6.351		0^+	0^+
307	191	2155.88		7.02		9.19	9.34	3.98	5.37	−4.60	−4.31	6.478	6.577	6.311	6.361		0^+	$13/2^-$
308	192	2161.06		7.02		9.16	9.62	5.18	5.51	−4.59	−4.45	6.490	6.590	6.321	6.372		0^+	0^+
309	193	2165.01		7.01		9.13	9.91	3.95	5.66	−4.56	−4.59	6.502	6.602	6.332	6.383		0^+	$13/2^-$
310	194	2170.18		7.00		9.12	10.19	5.17	5.81	−4.56	−4.74	6.514	6.614	6.342	6.393		0^+	0^+
311	195	2174.09		6.99		9.08	10.47	3.91	5.95	−4.51	−4.87	6.526	6.627	6.354	6.404		0^+	$13/2^-$
312	196	2179.23		6.98		9.05	10.75	5.14	6.10	−4.50	−5.01	6.538	6.639	6.364	6.414		0^+	0^+
313	197	2183.01		6.97		8.92	11.00	3.78	6.23	−4.22	−5.14	6.552	6.652	6.377	6.427		0^+	$13/2^-$
314	198	2188.09		6.97		8.86	11.28	5.08	6.38	−4.24	−5.28	6.563	6.664	6.386	6.436		0^+	0^+
315	199	2191.35		6.96		8.34	11.59	3.26	6.54	−4.25	−5.44	6.573	6.676	6.393	6.443		0^+	$11/2^-$
316	200	2196.09		6.95		8.00	11.88	4.74	6.69	−3.94	−5.58	6.582	6.686	6.398	6.448		0^+	0^+
317	201	2199.25		6.94		7.90	12.19	3.16	6.85	−3.90	−5.74	6.591	6.697	6.404	6.454		0^+	$11/2^-$
318	202	2203.78		6.93		7.69	12.46	4.53	6.99	−3.84	−5.89	6.601	6.708	6.410	6.460		0^+	0^+
319	203	2206.86		6.92		7.61	12.77	3.08	7.14	−3.81	−6.04	6.610	6.719	6.416	6.465		0^+	$11/2^-$
320	204	2211.31		6.91		7.53	13.04	4.45	7.28	−3.78	−6.18	6.620	6.730	6.422	6.472		0^+	0^+
321	205	2214.32		6.90		7.46	13.34	3.01	7.43	−3.74	−6.33	6.629	6.741	6.428	6.478		0^+	$11/2^-$
322	206	2218.71		6.89		7.40	13.61	4.39	7.57	−3.72	−6.47	6.639	6.751	6.435	6.484		0^+	0^+
323	207	2221.66		6.88		7.34	13.90	2.95	7.73	−3.68	−6.62	6.648	6.762	6.441	6.490		0^+	$11/2^-$
324	208	2226.01		6.87		7.30	14.17	4.35	7.86	−3.67	−6.76	6.658	6.772	6.447	6.496		0^+	0^+
325	209	2228.88		6.86		7.22	14.45	2.87	8.01	−3.62	−6.90	6.667	6.783	6.453	6.503		0^+	$11/2^-$
326	210	2233.20		6.85		7.19	14.71	4.32	8.14	−3.62	−7.04	6.677	6.794	6.460	6.509		0^+	0^+
327	211	2236.00		6.84		7.12	15.00	2.80	8.29	−3.57	−7.17	6.686	6.804	6.466	6.516		0^+	$11/2^-$
328	212	2240.31		6.83		7.11	15.26	4.31	8.42	−3.57	−7.31	6.696	6.815	6.473	6.522		0^+	0^+
329	213	2243.01		6.82		7.01	15.52	2.70	8.55	−3.52	−7.44	6.706	6.825	6.480	6.529		0^+	$11/2^-$
330	214	2247.33		6.81		7.02	15.79	4.32	8.69	−3.52	−7.58	6.715	6.836	6.486	6.535		0^+	0^+
331	215	2249.95		6.80		6.94	16.05	2.62	8.82	−3.51	−7.71	6.724	6.846	6.492	6.542		0^+	$17/2^+$
332	216	2254.26		6.79		6.93	16.31	4.31	8.96	−3.48	−7.84	6.734	6.856	6.499	6.548		0^+	0^+
333	217	2256.87		6.78		6.92	16.57	2.61	9.09	−3.46	−7.97	6.743	6.867	6.506	6.555		0^+	$17/2^+$
334	218	2261.10		6.77		6.84	16.81	4.23	9.21	−3.43	−8.09	6.753	6.877	6.513	6.562		0^+	0^+
335	219	2263.69		6.76		6.82	17.07	2.59	9.35	−3.41	−8.23	6.762	6.887	6.520	6.569		0^+	$17/2^+$
336	220	2267.86		6.75		6.76	17.30	4.17	9.47	−3.39	−8.34	6.772	6.898	6.527	6.576		0^+	0^+
337	221	2270.42		6.74		6.73	17.56	2.56	9.60	−3.36	−8.47	6.781	6.908	6.534	6.583		0^+	$17/2^+$
338	222	2274.54		6.73		6.68	17.79	4.12	9.72	−3.34	−8.59	6.791	6.918	6.541	6.590		0^+	0^+
339	223	2277.05		6.72		6.63	18.04	2.51	9.85	−3.30	−8.72	6.801	6.928	6.549	6.597		0^+	$17/2^+$
340	224	2281.12		6.71		6.58	18.26	4.07	9.96	−3.29	−8.83	6.811	6.939	6.556	6.605		0^+	0^+
341	225	2283.57		6.70		6.52	18.52	2.45	10.10	−3.23	−8.95	6.820	6.949	6.563	6.612		0^+	$17/2^+$
342	226	2287.61		6.69		6.49	18.73	4.04	10.21	−3.22	−9.06	6.830	6.960	6.571	6.619		0^+	0^+
343	227	2290.04		6.68		6.47	18.95	2.43	10.32	−3.26	−9.17	6.840	6.971	6.578	6.626		0^+	$9/2^-$
344	228	2293.95		6.67		6.34	19.17	3.91	10.44	−3.15	−9.29	6.850	6.981	6.585	6.633		0^+	0^+
345	229	2296.46		6.66		6.42	19.40	2.51	10.56	−3.16	−9.40	6.860	6.992	6.592	6.641		0^+	$9/2^-$
346	230	2300.13		6.65		6.18	19.59	3.67	10.66	−3.07	−9.50	6.870	7.003	6.599	6.647		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
347	231	2302.65		6.64		6.19	19.81	2.52	10.77	−3.06	−9.61	6.880	7.014	6.606	6.654		0^+	$9/2^-$
348	232	2306.16		6.63		6.03	19.99	3.51	10.86	−3.00	−9.71	6.890	7.025	6.612	6.660		0^+	0^+
349	233	2308.66		6.62		6.01	20.20	2.50	10.97	−2.98	−9.81	6.900	7.036	6.619	6.667		0^+	$9/2^-$
350	234	2312.07		6.61		5.91	20.38	3.41	11.06	−2.94	−9.91	6.910	7.048	6.625	6.673		0^+	0^+
351	235	2314.54		6.59		5.88	20.60	2.47	11.17	−2.91	−10.02	6.921	7.059	6.632	6.680		0^+	$9/2^-$
352	236	2317.88		6.58		5.81	20.78	3.34	11.26	−2.88	−10.11	6.931	7.070	6.638	6.686		0^+	0^+
353	237	2320.24		6.57		5.70	21.00	2.36	11.37	−2.71	−10.22	6.941	7.081	6.646	6.694		0^+	$9/2^-$
354	238	2323.52		6.56		5.64	21.18	3.28	11.46	−2.72	−10.31	6.951	7.092	6.650	6.698		0^+	0^+
355	239	2325.69		6.55		5.45	21.35	2.17	11.55	−2.73	−10.39	6.960	7.104	6.655	6.702		0^+	$7/2^-$
356	240	2328.67		6.54		5.15	21.48	2.98	11.60	−2.54	−10.46	6.968	7.114	6.654	6.702		0^+	0^+
357	241	2330.77		6.53		5.08	21.65	2.10	11.69	−2.50	−10.54	6.977	7.125	6.657	6.705		0^+	$7/2^-$
358	242	2333.61		6.52		4.94	21.80	2.84	11.76	−2.46	−10.62	6.985	7.136	6.658	6.706		0^+	0^+
359	243	2335.64		6.51		4.87	21.96	2.03	11.84	−2.43	−10.70	6.994	7.147	6.660	6.708		0^+	$7/2^-$
360	244	2338.42		6.50		4.81	22.10	2.78	11.91	−2.41	−10.77	7.002	7.158	6.662	6.710		0^+	0^+
361	245	2340.38		6.48		4.74	22.27	1.96	11.99	−2.36	−10.85	7.011	7.169	6.664	6.712		0^+	$7/2^-$
362	246	2343.13		6.47		4.71	22.40	2.75	12.05	−2.36	−10.92	7.019	7.180	6.665	6.713		0^+	0^+
363	247	2345.08		6.46		4.70	22.56	1.95	12.13	−2.36	−11.00	7.028	7.192	6.668	6.715		0^+	$5/2^-$
364	248	2347.75		6.45		4.62	22.71	2.67	12.20	−2.30	−11.08	7.037	7.202	6.669	6.717		0^+	0^+
365	249	2349.69		6.44		4.61	22.87	1.94	12.28	−2.29	−11.15	7.046	7.214	6.671	6.719		0^+	$5/2^-$
366	250	2352.26		6.43		4.51	23.02	2.57	12.35	−2.24	−11.23	7.055	7.225	6.673	6.721		0^+	0^+
367	251	2354.13		6.41		4.44	23.17	1.87	12.42	−2.16	−11.30	7.064	7.237	6.675	6.723		0^+	$5/2^-$
368	252	2356.63		6.40		4.37	23.30	2.50	12.49	−2.15	−11.37	7.073	7.249	6.677	6.725		0^+	0^+
369	253	2358.48		6.39		4.35	23.43	1.85	12.56	−2.16	−11.44	7.083	7.261	6.678	6.726		0^+	$3/2^-$
370	254	2360.76		6.38		4.13	23.52	2.28	12.60	−2.02	−11.48	7.092	7.273	6.679	6.727		0^+	0^+
371	255	2362.53		6.37		4.05	23.61	1.77	12.65	−1.96	−11.53	7.102	7.286	6.680	6.728		0^+	$3/2^-$
372	256	2364.66		6.36		3.90	23.69	2.13	12.69	−1.93	−11.57	7.112	7.299	6.681	6.728		0^+	0^+
373	257	2366.47		6.34		3.94	23.78	1.81	12.75	−1.53	−11.61	7.122	7.312	6.681	6.729		0^+	$1/2^-$
374	258	2368.38		6.33		3.72	23.87	1.91	12.80	−1.28	−11.66	7.132	7.326	6.682	6.730		0^+	0^+
375	259	2367.95		6.31		1.48	24.08	−0.43	12.91	−1.39	−11.77	7.144	7.336	6.694	6.742		0^+	$15/2^+$
376	260	2368.50		6.30		0.12	24.28	0.55	13.01	−0.10	−11.87	7.155	7.347	6.703	6.751		0^+	0^+
377	261	2368.12		6.28		0.17		−0.38	13.12	−0.12	−11.97	7.166	7.358	6.715	6.763		0^+	$15/2^+$
378	262	2368.72		6.27		0.22		0.60	13.23	−0.15	−12.07	7.177	7.368	6.725	6.772		0^+	0^+
379	263	2368.40		6.25		0.28		−0.32	13.34	−0.17	−12.18	7.189	7.379	6.737	6.785		0^+	$15/2^+$
380	264	2369.05		6.23		0.33		0.65	13.45	−0.20	−12.28	7.199	7.389	6.747	6.794		0^+	0^+
381	265	2368.78		6.22		0.38		−0.27	13.56	−0.23	−12.38	7.211	7.400	6.759	6.807		0^+	$15/2^+$
382	266	2369.48		6.20		0.43		0.70	13.66	−0.26	−12.48	7.222	7.410	6.769	6.816		0^+	0^+
383	267	2369.26		6.19		0.48		−0.22	13.77	−0.27	−12.58	7.234	7.421	6.782	6.829		0^+	$15/2^+$
384	268	2370.01		6.17		0.53		0.75	13.87	−0.31	−12.68	7.244	7.432	6.792	6.839		0^+	0^+
385	269	2369.83		6.16		0.57		−0.18	13.99	−0.32	−12.78	7.256	7.442	6.805	6.852		0^+	$15/2^+$
386	270	2370.64		6.14		0.63		0.81	14.09	−0.35	−12.88	7.267	7.453	6.815	6.862		0^+	0^+
387	271	2370.49		6.13		0.66		−0.15	14.21	−0.35	−12.98	7.279	7.463	6.829	6.876		0^+	$15/2^+$
388	272	2371.35		6.11		0.71		0.86	14.31	−0.38	−13.08	7.290	7.474	6.839	6.886		0^+	0^+
389	273	2371.18		6.10		0.69		−0.17	14.42	−0.34	−13.18	7.302	7.485	6.852	6.899		0^+	$15/2^+$
390	274	2372.09		6.08		0.74		0.91	14.51	−0.38	−13.27	7.312	7.495	6.862	6.909		0^+	0^+
391	275	2371.97		6.07		0.79		−0.12	14.63	−0.41	−13.37	7.323	7.506	6.872	6.918		0^+	$13/2^+$
392	276	2372.75		6.05		0.66		0.78	14.69	−0.33	−13.45	7.333	7.516	6.878	6.924		0^+	0^+
393	277	2372.63		6.04		0.66		−0.12	14.78	−0.32	−13.54	7.343	7.527	6.885	6.932		0^+	$13/2^+$
394	278	2373.31		6.02		0.56		0.68	14.84	−0.30	−13.61	7.352	7.537	6.889	6.935		0^+	0^+
395	279	2373.18		6.01		0.55		−0.13	14.92	−0.29	−13.70	7.362	7.547	6.895	6.942		0^+	$13/2^+$
396	280	2373.82		5.99		0.51		0.64	14.99	−0.28	−13.77	7.370	7.557	6.899	6.946		0^+	0^+
397	281	2373.70		5.98		0.52		−0.12	15.08	−0.27	−13.86	7.380	7.567	6.905	6.951		0^+	$13/2^+$
398	282	2374.32		5.97		0.50		0.62	15.15	−0.27	−13.93	7.389	7.577	6.909	6.955		0^+	0^+
399	283	2374.18		5.95		0.48		−0.14	15.22	−0.26	−14.01	7.398	7.588	6.914	6.961		0^+	$13/2^+$
400	284	2374.79		5.94		0.47		0.61	15.30	−0.26	−14.09	7.407	7.598	6.919	6.965		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
401	285	2374.64		5.92		0.46		−0.15	15.37	−0.24	−14.17	7.416	7.608	6.924	6.970		0^+	$13/2^+$
402	286	2375.24		5.91		0.45		0.60	15.45	−0.24	−14.25	7.425	7.617	6.928	6.974		0^+	0^+
403	287	2375.07		5.89		0.43		−0.17	15.53	−0.47	−14.33	7.434	7.627	6.932	6.978		0^+	$13/2^+$
404	288	2375.64		5.88		0.40		0.57	15.61	−0.04	−14.41	7.442	7.637	6.936	6.982		0^+	0^+
405	289	2374.91		5.86		−0.16		−0.73		−0.07	−14.51	7.452	7.646	6.946	6.992		0^+	$19/2^-$
406	290	2374.96		5.85		−0.68		0.05		0.32	−14.54	7.463	7.659	6.949	6.995		0^+	0^+
σ																		
$Z = 117$ (Ts)																		
281	164	1981.41		7.05			0.73		−0.50	−8.72	0.01	6.230	6.279	6.159	6.211		$5/2^-$	0^+
282	165	1989.41		7.05			1.14	8.00	−0.31	−8.72	−0.18	6.238	6.290	6.165	6.216		$5/2^-$	$7/2^+$
283	166	1998.47		7.06		17.06	1.58	9.06	−0.11	−8.43	−0.39	6.248	6.302	6.172	6.224		$5/2^-$	0^+
284	167	2006.34		7.06		16.93	1.98	7.87	0.08	−8.37	−0.59	6.258	6.313	6.178	6.230		$5/2^-$	$7/2^+$
285	168	2015.09		7.07		16.62	2.37	8.75	0.28	−8.26	−0.79	6.268	6.324	6.185	6.237		$5/2^-$	0^+
286	169	2022.86		7.07		16.52	2.78	7.77	0.48	−8.20	−1.00	6.277	6.335	6.192	6.243		$5/2^-$	$7/2^+$
287	170	2031.44		7.08		16.35	3.17	8.58	0.67	−8.13	−1.20	6.287	6.346	6.199	6.250		$5/2^-$	0^+
288	171	2039.10		7.08		16.24	3.57	7.66	0.87	−7.93	−1.41	6.296	6.358	6.205	6.256		$5/2^-$	$7/2^+$
289	172	2047.54		7.08		16.10	3.96	8.44	1.06	−7.59	−1.61	6.306	6.369	6.212	6.263		$5/2^-$	0^+
290	173	2054.14		7.08		15.04	4.18	6.60	1.17	−7.89	−1.71	6.313	6.378	6.214	6.266		$5/2^-$	$5/2^+$
291	174	2061.58		7.08		14.04	4.41	7.44	1.29	−6.95	−1.82	6.320	6.388	6.217	6.269		$5/2^-$	0^+
292	175	2067.99		7.08		13.85	4.63	6.41	1.40	−6.86	−1.93	6.327	6.397	6.220	6.271		$5/2^-$	$5/2^+$
293	176	2075.22		7.08		13.64	4.86	7.23	1.51	−6.79	−2.04	6.334	6.407	6.223	6.274		$5/2^-$	0^+
294	177	2081.45		7.08		13.46	5.08	6.23	1.62	−6.69	−2.15	6.342	6.417	6.226	6.277		$5/2^-$	$5/2^+$
295	178	2088.56		7.08		13.34	5.31	7.11	1.73	−6.64	−2.26	6.349	6.427	6.229	6.280		$5/2^-$	0^+
296	179	2094.70		7.08		13.25	5.53	6.14	1.83	−6.60	−2.37	6.356	6.437	6.231	6.282		$5/2^-$	$3/2^+$
297	180	2101.61		7.08		13.05	5.76	6.91	1.95	−6.49	−2.48	6.364	6.447	6.234	6.285		$5/2^-$	0^+
298	181	2107.66		7.07		12.96	5.98	6.05	2.05	−6.38	−2.59	6.371	6.457	6.237	6.288		$5/2^-$	$3/2^+$
299	182	2114.35		7.07		12.74	6.22	6.69	2.17	−6.29	−2.71	6.379	6.467	6.240	6.291		$5/2^-$	0^+
300	183	2120.40		7.07		12.74	6.44	6.05	2.28	−6.22	−2.82	6.387	6.477	6.242	6.293		$5/2^-$	$1/2^+$
301	184	2126.50		7.06		12.15	6.63	6.10	2.36	−5.49	−2.91	6.394	6.488	6.244	6.295		$5/2^-$	0^+
302	185	2130.70		7.06		10.30	6.95	4.20	2.51	−5.68	−3.07	6.407	6.501	6.255	6.306		$5/2^-$	$13/2^-$
303	186	2136.11		7.05		9.61	7.26	5.41	2.66	−4.81	−3.22	6.419	6.514	6.266	6.317		$5/2^-$	0^+
304	187	2140.27		7.04		9.57	7.56	4.16	2.80	−4.80	−3.37	6.431	6.526	6.276	6.327		$5/2^-$	$13/2^-$
305	188	2145.65		7.03		9.54	7.86	5.38	2.96	−4.79	−3.52	6.443	6.539	6.287	6.337		$5/2^-$	0^+
306	189	2149.79		7.03		9.52	8.16	4.14	3.10	−4.77	−3.66	6.456	6.552	6.297	6.348		$5/2^-$	$13/2^-$
307	190	2155.14		7.02		9.49	8.46	5.35	3.24	−4.76	−3.81	6.468	6.564	6.308	6.358		$5/2^-$	0^+
308	191	2159.26		7.01		9.47	8.75	4.12	3.38	−4.74	−3.95	6.480	6.577	6.318	6.369		$5/2^-$	$13/2^-$
309	192	2164.58		7.01		9.44	9.03	5.32	3.52	−4.73	−4.10	6.492	6.589	6.328	6.379		$5/2^-$	0^+
310	193	2168.66		7.00		9.40	9.31	4.08	3.65	−4.70	−4.23	6.504	6.602	6.339	6.389		$5/2^-$	$13/2^-$
311	194	2173.97		6.99		9.39	9.60	5.31	3.79	−4.69	−4.37	6.516	6.614	6.349	6.399		$5/2^-$	0^+
312	195	2177.99		6.98		9.33	9.85	4.02	3.90	−4.64	−4.50	6.528	6.627	6.360	6.410		$5/2^-$	$13/2^-$
313	196	2183.27		6.98		9.30	10.14	5.28	4.04	−4.63	−4.64	6.540	6.639	6.370	6.420		$5/2^-$	0^+
314	197	2187.15		6.97		9.16	10.37	3.88	4.14	−4.36	−4.76	6.553	6.652	6.382	6.432		$5/2^-$	$13/2^-$
315	198	2192.36		6.96		9.09	10.65	5.21	4.27	−4.39	−4.91	6.563	6.663	6.391	6.441		$5/2^-$	0^+
316	199	2195.78		6.95		8.63	10.97	3.42	4.43	−4.39	−5.07	6.574	6.675	6.398	6.448		$5/2^-$	$11/2^-$
317	200	2200.68		6.94		8.32	11.28	4.90	4.59	−4.10	−5.22	6.582	6.685	6.403	6.453		$5/2^-$	0^+
318	201	2204.00		6.93		8.22	11.60	3.32	4.75	−4.06	−5.39	6.592	6.696	6.409	6.459		$5/2^-$	$11/2^-$
319	202	2208.68		6.92		8.00	11.89	4.68	4.90	−4.00	−5.53	6.601	6.707	6.415	6.465		$5/2^-$	0^+
320	203	2211.92		6.91		7.92	12.20	3.24	5.06	−3.96	−5.69	6.611	6.718	6.421	6.471		$5/2^-$	$11/2^-$
321	204	2216.51		6.91		7.83	12.48	4.59	5.20	−3.93	−5.84	6.620	6.728	6.428	6.477		$5/2^-$	0^+
322	205	2219.67		6.89		7.75	12.78	3.16	5.35	−3.89	−5.99	6.630	6.739	6.434	6.483		$5/2^-$	$11/2^-$
323	206	2224.20		6.89		7.69	13.06	4.53	5.49	−3.86	−6.14	6.639	6.750	6.440	6.489		$5/2^-$	0^+
324	207	2227.29		6.87		7.62	13.36	3.09	5.63	−3.82	−6.29	6.649	6.760	6.446	6.495		$5/2^-$	$11/2^-$
325	208	2231.78		6.87		7.58	13.63	4.49	5.77	−3.81	−6.43	6.658	6.771	6.452	6.502		$5/2^-$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
326	209	2234.79		6.86		7.50	13.92	3.01	5.91	−3.76	−6.58	6.667	6.782	6.458	6.508		$5/2^-$	$11/2^-$
327	210	2239.26		6.85		7.48	14.20	4.47	6.06	−3.76	−6.72	6.677	6.792	6.465	6.514		$5/2^-$	0^+
328	211	2242.18		6.84		7.39	14.47	2.92	6.18	−3.71	−6.85	6.686	6.802	6.471	6.521		$5/2^-$	$11/2^-$
329	212	2246.63		6.83		7.37	14.74	4.45	6.32	−3.71	−6.99	6.695	6.813	6.478	6.527		$5/2^-$	0^+
330	213	2249.46		6.82		7.28	15.00	2.83	6.45	−3.65	−7.12	6.705	6.823	6.485	6.534		$5/2^-$	$11/2^-$
331	214	2253.91		6.81		7.28	15.27	4.45	6.58	−3.66	−7.26	6.714	6.833	6.491	6.540		$5/2^-$	0^+
332	215	2256.67		6.80		7.21	15.54	2.76	6.72	−3.64	−7.40	6.724	6.844	6.497	6.546		$5/2^-$	$17/2^+$
333	216	2261.09		6.79		7.18	15.79	4.42	6.83	−3.61	−7.53	6.733	6.854	6.504	6.553		$5/2^-$	0^+
334	217	2263.84		6.78		7.17	16.06	2.75	6.97	−3.59	−7.66	6.742	6.864	6.511	6.559		$5/2^-$	$17/2^+$
335	218	2268.19		6.77		7.10	16.30	4.35	7.09	−3.56	−7.78	6.752	6.875	6.518	6.566		$5/2^-$	0^+
336	219	2270.91		6.76		7.07	16.57	2.72	7.22	−3.54	−7.91	6.761	6.885	6.524	6.573		$5/2^-$	$17/2^+$
337	220	2275.18		6.75		6.99	16.79	4.27	7.32	−3.51	−8.03	6.771	6.895	6.531	6.580		$5/2^-$	0^+
338	221	2277.87		6.74		6.96	17.05	2.69	7.45	−3.48	−8.16	6.780	6.905	6.538	6.587		$5/2^-$	$17/2^+$
339	222	2282.09		6.73		6.91	17.27	4.22	7.55	−3.46	−8.27	6.790	6.915	6.545	6.594		$5/2^-$	0^+
340	223	2284.73		6.72		6.86	17.53	2.64	7.68	−3.42	−8.40	6.799	6.925	6.552	6.601		$5/2^-$	$17/2^+$
341	224	2288.90		6.71		6.81	17.74	4.17	7.78	−3.40	−8.51	6.809	6.936	6.560	6.608		$5/2^-$	0^+
342	225	2291.47		6.70		6.74	18.00	2.57	7.90	−3.34	−8.63	6.819	6.946	6.567	6.615		$5/2^-$	$17/2^+$
343	226	2295.60		6.69		6.70	18.20	4.13	7.99	−3.33	−8.74	6.828	6.957	6.574	6.623		$5/2^-$	0^+
344	227	2298.14		6.68		6.67	18.42	2.54	8.10	−3.37	−8.85	6.839	6.968	6.581	6.630		$5/2^-$	$9/2^-$
345	228	2302.15		6.67		6.55	18.64	4.01	8.20	−3.25	−8.97	6.848	6.978	6.588	6.637		$5/2^-$	0^+
346	229	2304.77		6.66		6.63	18.87	2.62	8.31	−3.27	−9.08	6.858	6.988	6.596	6.644		$5/2^-$	$9/2^-$
347	230	2308.53		6.65		6.38	19.06	3.76	8.40	−3.17	−9.18	6.868	6.999	6.602	6.650		$5/2^-$	0^+
348	231	2311.16		6.64		6.39	19.28	2.63	8.51	−3.16	−9.29	6.878	7.010	6.609	6.658		$5/2^-$	$9/2^-$
349	232	2314.76		6.63		6.23	19.46	3.60	8.60	−3.10	−9.39	6.888	7.022	6.615	6.663		$5/2^-$	0^+
350	233	2317.37		6.62		6.21	19.68	2.61	8.71	−3.08	−9.50	6.898	7.033	6.623	6.671		$5/2^-$	$9/2^-$
351	234	2320.87		6.61		6.11	19.86	3.50	8.80	−3.05	−9.59	6.908	7.044	6.628	6.676		$5/2^-$	0^+
352	235	2323.44		6.60		6.07	20.07	2.57	8.90	−3.01	−9.70	6.919	7.055	6.636	6.684		$5/2^-$	$9/2^-$
353	236	2326.88		6.59		6.01	20.26	3.44	9.00	−2.98	−9.80	6.929	7.067	6.641	6.689		$5/2^-$	0^+
354	237	2329.35		6.58		5.91	20.48	2.47	9.11	−2.81	−9.91	6.939	7.078	6.650	6.698		$5/2^-$	$9/2^-$
355	238	2332.72		6.57		5.84	20.66	3.37	9.20	−2.82	−10.00	6.949	7.089	6.654	6.702		$5/2^-$	0^+
356	239	2334.98		6.56		5.63	20.84	2.26	9.29	−2.82	−10.09	6.958	7.100	6.659	6.707		$5/2^-$	$7/2^-$
357	240	2338.04		6.55		5.32	20.97	3.06	9.37	−2.62	−10.16	6.965	7.110	6.658	6.706		$5/2^-$	0^+
358	241	2340.22		6.54		5.24	21.14	2.18	9.45	−2.59	−10.24	6.974	7.122	6.661	6.709		$5/2^-$	$7/2^-$
359	242	2343.14		6.53		5.10	21.29	2.92	9.53	−2.55	−10.32	6.982	7.132	6.662	6.710		$5/2^-$	0^+
360	243	2345.25		6.51		5.03	21.45	2.11	9.61	−2.51	−10.40	6.991	7.143	6.665	6.712		$5/2^-$	$7/2^-$
361	244	2348.12		6.50		4.98	21.61	2.87	9.70	−2.49	−10.47	7.000	7.154	6.666	6.714		$5/2^-$	0^+
362	245	2350.16		6.49		4.91	21.77	2.04	9.78	−2.45	−10.55	7.009	7.165	6.668	6.716		$5/2^-$	$7/2^-$
363	246	2353.00		6.48		4.88	21.92	2.84	9.87	−2.44	−10.63	7.017	7.176	6.670	6.718		$5/2^-$	0^+
364	247	2355.03		6.47		4.87	22.08	2.03	9.95	−2.44	−10.71	7.026	7.187	6.672	6.720		$5/2^-$	$5/2^-$
365	248	2357.78		6.46		4.78	22.23	2.75	10.03	−2.39	−10.79	7.034	7.198	6.674	6.722		$5/2^-$	0^+
366	249	2359.81		6.45		4.78	22.40	2.03	10.12	−2.37	−10.87	7.044	7.210	6.676	6.724		$5/2^-$	$5/2^-$
367	250	2362.46		6.44		4.68	22.55	2.65	10.20	−2.33	−10.94	7.052	7.221	6.678	6.726		$5/2^-$	0^+
368	251	2364.42		6.43		4.61	22.71	1.96	10.29	−2.23	−11.02	7.062	7.232	6.680	6.728		$5/2^-$	$5/2^-$
369	252	2366.99		6.41		4.53	22.85	2.57	10.36	−2.22	−11.10	7.071	7.244	6.682	6.730		$5/2^-$	0^+
370	253	2368.90		6.40		4.48	22.98	1.91	10.42	−2.23	−11.16	7.080	7.256	6.684	6.731		$5/2^-$	$3/2^-$
371	254	2371.22		6.39		4.23	23.06	2.32	10.46	−2.07	−11.20	7.089	7.268	6.685	6.732		$5/2^-$	0^+
372	255	2373.04		6.38		4.14	23.16	1.82	10.51	−2.00	−11.25	7.099	7.281	6.685	6.733		$5/2^-$	$3/2^-$
373	256	2375.20		6.37		3.98	23.23	2.16	10.54	−1.96	−11.29	7.109	7.294	6.686	6.734		$5/2^-$	0^+
374	257	2377.04		6.36		4.00	23.32	1.84	10.57	−1.80	−11.33	7.119	7.307	6.687	6.735		$5/2^-$	$1/2^-$
375	258	2378.98		6.34		3.78	23.40	1.94	10.60	−1.31	−11.37	7.129	7.321	6.688	6.736		$5/2^-$	0^+
376	259	2378.66		6.33		1.62	23.62	−0.32	10.71	−1.61	−11.48	7.141	7.331	6.700	6.748		$5/2^-$	$15/2^+$
377	260	2379.30		6.31		0.32	23.81	0.64	10.80	−0.20	−11.58	7.152	7.342	6.709	6.757		$5/2^-$	0^+
378	261	2379.02		6.29		0.36	24.02	−0.28	10.90	−0.22	−11.68	7.163	7.353	6.721	6.769		$5/2^-$	$15/2^+$
379	262	2379.71		6.28		0.41	24.22	0.69	10.99	−0.25	−11.78	7.174	7.363	6.731	6.778		$5/2^-$	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
380	263	2379.48		6.26		0.46	24.42	−0.23	11.08	−0.27	−11.89	7.185	7.374	6.743	6.790		$5/2^-$	$15/2^+$
381	264	2380.22		6.25		0.51	24.62	0.74	11.17	−0.30	−11.99	7.196	7.384	6.753	6.800		$5/2^-$	0^+
382	265	2380.04		6.23		0.56	24.82	−0.18	11.26	−0.32	−12.09	7.208	7.395	6.765	6.812		$5/2^-$	$15/2^+$
383	266	2380.83		6.22		0.61	25.01	0.79	11.35	−0.35	−12.19	7.218	7.405	6.775	6.822		$5/2^-$	0^+
384	267	2380.70		6.20		0.66	25.21	−0.13	11.44	−0.37	−12.29	7.230	7.416	6.787	6.834		$5/2^-$	$15/2^+$
385	268	2381.54		6.19		0.71	25.40	0.84	11.53	−0.40	−12.39	7.241	7.426	6.797	6.844		$5/2^-$	0^+
386	269	2381.46		6.17		0.76	25.62	−0.08	11.63	−0.41	−12.49	7.253	7.437	6.810	6.857		$5/2^-$	$15/2^+$
387	270	2382.35		6.16		0.81	25.80	0.89	11.71	−0.44	−12.58	7.263	7.447	6.820	6.867		$5/2^-$	0^+
388	271	2382.29		6.14		0.83	26.01	−0.06	11.80	−0.44	−12.68	7.275	7.458	6.833	6.880		$5/2^-$	$15/2^+$
389	272	2383.23		6.13		0.88	26.19	0.94	11.88	−0.47	−12.78	7.286	7.469	6.844	6.890		$5/2^-$	0^+
390	273	2383.15		6.11		0.86	26.39	−0.08	11.97	−0.43	−12.88	7.298	7.479	6.856	6.903		$5/2^-$	$15/2^+$
391	274	2384.14		6.10		0.91	26.56	0.99	12.05	−0.47	−12.98	7.309	7.490	6.866	6.913		$5/2^-$	0^+
392	275	2384.11		6.08		0.96	26.77	−0.03	12.14	−0.50	−13.07	7.320	7.500	6.876	6.922		$5/2^-$	$13/2^+$
393	276	2384.97		6.07		0.83	26.91	0.86	12.22	−0.41	−13.15	7.329	7.511	6.882	6.929		$5/2^-$	0^+
394	277	2384.94		6.05		0.83	27.09	−0.03	12.31	−0.41	−13.24	7.339	7.521	6.889	6.936		$5/2^-$	$13/2^+$
395	278	2385.70		6.04		0.73	27.23	0.76	12.39	−0.38	−13.32	7.348	7.531	6.893	6.940		$5/2^-$	0^+
396	279	2385.66		6.02		0.72	27.40	−0.04	12.48	−0.38	−13.41	7.358	7.541	6.899	6.946		$5/2^-$	$13/2^+$
397	280	2386.39		6.01		0.69	27.56	0.73	12.57	−0.37	−13.49	7.366	7.551	6.904	6.950		$5/2^-$	0^+
398	281	2386.34		6.00		0.68	27.72	−0.05	12.64	−0.36	−13.57	7.376	7.562	6.909	6.955		$5/2^-$	$13/2^+$
399	282	2387.04		5.98		0.65	27.87	0.70	12.72	−0.36	−13.65	7.385	7.572	6.914	6.960		$5/2^-$	0^+
400	283	2387.00		5.97		0.66	28.04	−0.04	12.82	−0.35	−13.73	7.394	7.582	6.919	6.965		$5/2^-$	$13/2^+$
401	284	2387.68		5.95		0.64	28.19	0.68	12.89	−0.34	−13.81	7.403	7.592	6.923	6.969		$5/2^-$	0^+
402	285	2387.63		5.94		0.63	28.36	−0.05	12.99	−0.33	−13.90	7.412	7.602	6.928	6.974		$5/2^-$	$13/2^+$
403	286	2388.30		5.93		0.62	28.51	0.67	13.06	−0.32	−13.98	7.421	7.612	6.933	6.979		$5/2^-$	0^+
404	287	2388.23		5.91		0.60	28.69	−0.07	13.16	−0.06	−14.06	7.430	7.621	6.937	6.983		$5/2^-$	$13/2^+$
405	288	2388.88		5.90		0.58	28.85	0.65	13.24	−0.12	−14.14	7.438	7.631	6.941	6.987		$5/2^-$	0^+
406	289	2388.23		5.88		0.00		−0.65	13.32	−0.12	−14.24	7.448	7.640	6.951	6.997		$5/2^-$	$19/2^-$
407	290	2388.28		5.87		−0.60		0.05	13.32	0.27	−14.28	7.459	7.653	6.955	7.001		$5/2^-$	0^+
σ																		
$Z = 118$ (Og)																		
284	166	1999.23		7.04			0.65		0.76	−8.64	0.02	6.253	6.305	6.180	6.232		0^+	0^+
285	167	2007.31		7.04			1.05	8.08	0.97	−8.57	−0.18	6.263	6.316	6.187	6.238		0^+	$7/2^+$
286	168	2016.27		7.05		17.04	1.46	8.96	1.18	−8.47	−0.39	6.272	6.327	6.194	6.245		0^+	0^+
287	169	2024.25		7.05		16.94	1.87	7.98	1.39	−8.41	−0.60	6.282	6.338	6.200	6.251		0^+	$7/2^+$
288	170	2033.04		7.06		16.77	2.27	8.79	1.60	−8.33	−0.80	6.291	6.349	6.206	6.258		0^+	0^+
289	171	2040.91		7.06		16.66	2.68	7.87	1.81	−8.01	−1.01	6.300	6.360	6.213	6.264		0^+	$7/2^+$
290	172	2049.57		7.07		16.53	3.09	8.66	2.03	−7.75	−1.21	6.310	6.371	6.219	6.271		0^+	0^+
291	173	2056.26		7.07		15.35	3.29	6.69	2.12	−8.00	−1.31	6.317	6.380	6.222	6.273		0^+	$5/2^+$
292	174	2063.81		7.07		14.24	3.52	7.55	2.23	−7.06	−1.42	6.324	6.390	6.225	6.276		0^+	0^+
293	175	2070.33		7.07		14.07	3.74	6.52	2.34	−6.97	−1.53	6.331	6.399	6.228	6.279		0^+	$5/2^+$
294	176	2077.67		7.07		13.86	3.96	7.34	2.45	−6.90	−1.64	6.338	6.409	6.231	6.282		0^+	0^+
295	177	2084.01		7.06		13.68	4.18	6.34	2.56	−6.80	−1.75	6.345	6.419	6.234	6.285		0^+	$5/2^+$
296	178	2091.23		7.06		13.56	4.40	7.22	2.67	−6.75	−1.85	6.353	6.428	6.237	6.288		0^+	0^+
297	179	2097.48		7.06		13.47	4.61	6.25	2.78	−6.71	−1.96	6.360	6.438	6.239	6.290		0^+	$3/2^+$
298	180	2104.51		7.06		13.28	4.85	7.03	2.90	−6.60	−2.07	6.368	6.448	6.242	6.293		0^+	0^+
299	181	2110.67		7.06		13.19	5.06	6.16	3.01	−6.50	−2.18	6.375	6.458	6.245	6.296		0^+	$3/2^+$
300	182	2117.48		7.06		12.97	5.30	6.81	3.13	−6.41	−2.30	6.383	6.469	6.248	6.299		0^+	0^+
301	183	2123.64		7.06		12.97	5.52	6.16	3.24	−6.37	−2.41	6.390	6.479	6.250	6.301		0^+	$1/2^+$
302	184	2129.86		7.05		12.38	5.72	6.22	3.36	−5.62	−2.51	6.398	6.489	6.252	6.303		0^+	0^+
303	185	2134.21		7.04		10.57	6.02	4.35	3.51	−5.78	−2.66	6.410	6.502	6.263	6.314		0^+	$13/2^-$
304	186	2139.78		7.04		9.92	6.33	5.57	3.67	−4.97	−2.81	6.422	6.515	6.273	6.324		0^+	0^+
305	187	2144.09		7.03		9.88	6.62	4.31	3.82	−4.95	−2.96	6.434	6.528	6.284	6.335		0^+	$13/2^-$
306	188	2149.63		7.02		9.85	6.94	5.54	3.98	−4.93	−3.11	6.446	6.540	6.294	6.345		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
307	189	2153.91		7.02		9.82	7.22	4.28	4.12	−4.92	−3.25	6.459	6.553	6.305	6.355		0^+	$13/2^-$
308	190	2159.42		7.01		9.79	7.52	5.51	4.28	−4.91	−3.40	6.470	6.565	6.315	6.365		0^+	0^+
309	191	2163.67		7.00		9.76	7.79	4.25	4.41	−4.88	−3.54	6.483	6.578	6.325	6.376		0^+	$13/2^-$
310	192	2169.15		7.00		9.73	8.09	5.48	4.57	−4.88	−3.68	6.494	6.590	6.335	6.385		0^+	0^+
311	193	2173.37		6.99		9.70	8.36	4.22	4.71	−4.84	−3.82	6.506	6.603	6.346	6.396		0^+	$13/2^-$
312	194	2178.82		6.98		9.67	8.64	5.45	4.85	−4.84	−3.96	6.518	6.615	6.356	6.406		0^+	0^+
313	195	2182.99		6.97		9.62	8.90	4.17	5.00	−4.78	−4.09	6.530	6.628	6.367	6.417		0^+	$13/2^-$
314	196	2188.41		6.97		9.59	9.18	5.42	5.14	−4.77	−4.23	6.542	6.640	6.376	6.426		0^+	0^+
315	197	2192.42		6.96		9.43	9.41	4.01	5.27	−4.51	−4.35	6.555	6.652	6.389	6.439		0^+	$13/2^-$
316	198	2197.79		6.96		9.38	9.70	5.37	5.43	−4.53	−4.50	6.566	6.664	6.397	6.447		0^+	0^+
317	199	2201.37		6.94		8.95	10.02	3.58	5.59	−4.54	−4.66	6.576	6.676	6.405	6.454		0^+	$11/2^-$
318	200	2206.42		6.94		8.63	10.33	5.05	5.74	−4.25	−4.81	6.585	6.686	6.410	6.459		0^+	0^+
319	201	2209.90		6.93		8.53	10.65	3.48	5.90	−4.21	−4.97	6.594	6.697	6.416	6.465		0^+	$11/2^-$
320	202	2214.73		6.92		8.31	10.95	4.83	6.05	−4.15	−5.12	6.603	6.707	6.421	6.471		0^+	0^+
321	203	2218.13		6.91		8.23	11.27	3.40	6.21	−4.11	−5.28	6.613	6.718	6.427	6.477		0^+	$11/2^-$
322	204	2222.86		6.90		8.13	11.55	4.73	6.35	−4.07	−5.43	6.622	6.728	6.433	6.483		0^+	0^+
323	205	2226.19		6.89		8.06	11.87	3.33	6.52	−4.03	−5.58	6.631	6.739	6.439	6.489		0^+	$11/2^-$
324	206	2230.86		6.89		8.00	12.15	4.67	6.66	−4.01	−5.73	6.640	6.750	6.446	6.495		0^+	0^+
325	207	2234.11		6.87		7.92	12.45	3.25	6.82	−3.97	−5.88	6.650	6.760	6.451	6.501		0^+	$11/2^-$
326	208	2238.74		6.87		7.88	12.73	4.63	6.96	−3.95	−6.02	6.659	6.771	6.458	6.507		0^+	0^+
327	209	2241.90		6.86		7.79	13.02	3.16	7.11	−3.91	−6.17	6.668	6.781	6.464	6.513		0^+	$11/2^-$
328	210	2246.51		6.85		7.77	13.31	4.61	7.25	−3.90	−6.31	6.678	6.791	6.470	6.519		0^+	0^+
329	211	2249.57		6.84		7.67	13.57	3.06	7.39	−3.84	−6.45	6.687	6.802	6.477	6.526		0^+	$11/2^-$
330	212	2254.17		6.83		7.66	13.86	4.60	7.54	−3.85	−6.59	6.696	6.812	6.483	6.532		0^+	0^+
331	213	2257.13		6.82		7.56	14.12	2.96	7.67	−3.79	−6.72	6.706	6.823	6.490	6.539		0^+	$11/2^-$
332	214	2261.72		6.81		7.55	14.39	4.59	7.81	−3.79	−6.86	6.715	6.833	6.496	6.545		0^+	0^+
333	215	2264.62		6.80		7.49	14.67	2.90	7.95	−3.78	−7.00	6.724	6.843	6.502	6.551		0^+	$17/2^+$
334	216	2269.18		6.79		7.46	14.92	4.56	8.09	−3.74	−7.12	6.734	6.853	6.509	6.558		0^+	0^+
335	217	2272.06		6.78		7.44	15.19	2.88	8.22	−3.72	−7.26	6.743	6.863	6.516	6.565		0^+	$17/2^+$
336	218	2276.53		6.78		7.35	15.43	4.47	8.34	−3.69	−7.38	6.753	6.874	6.523	6.572		0^+	0^+
337	219	2279.39		6.76		7.33	15.70	2.86	8.48	−3.66	−7.51	6.762	6.884	6.529	6.578		0^+	$17/2^+$
338	220	2283.79		6.76		7.26	15.93	4.40	8.61	−3.63	−7.63	6.771	6.894	6.537	6.585		0^+	0^+
339	221	2286.62		6.75		7.23	16.20	2.83	8.75	−3.60	−7.76	6.781	6.904	6.543	6.592		0^+	$17/2^+$
340	222	2290.96		6.74		7.17	16.42	4.34	8.87	−3.58	−7.88	6.790	6.915	6.551	6.599		0^+	0^+
341	223	2293.73		6.73		7.11	16.68	2.77	9.00	−3.54	−8.00	6.800	6.924	6.558	6.606		0^+	$17/2^+$
342	224	2298.02		6.72		7.06	16.90	4.29	9.12	−3.52	−8.12	6.810	6.935	6.565	6.614		0^+	0^+
343	225	2300.72		6.71		6.99	17.15	2.70	9.25	−3.47	−8.24	6.819	6.945	6.572	6.621		0^+	$17/2^+$
344	226	2304.97		6.70		6.95	17.36	4.25	9.37	−3.46	−8.35	6.829	6.955	6.580	6.628		0^+	0^+
345	227	2307.64		6.69		6.92	17.60	2.67	9.50	−3.49	−8.47	6.839	6.967	6.587	6.635		0^+	$9/2^-$
346	228	2311.78		6.68		6.81	17.83	4.14	9.63	−3.37	−8.58	6.849	6.977	6.594	6.643		0^+	0^+
347	229	2314.52		6.67		6.88	18.06	2.74	9.75	−3.38	−8.70	6.859	6.987	6.602	6.650		0^+	$9/2^-$
348	230	2318.39		6.66		6.61	18.26	3.87	9.86	−3.28	−8.80	6.868	6.998	6.608	6.656		0^+	0^+
349	231	2321.14		6.65		6.62	18.49	2.75	9.98	−3.27	−8.92	6.879	7.009	6.615	6.664		0^+	$9/2^-$
350	232	2324.83		6.64		6.44	18.67	3.69	10.07	−3.21	−9.02	6.889	7.021	6.621	6.669		0^+	0^+
351	233	2327.56		6.63		6.42	18.90	2.73	10.19	−3.19	−9.13	6.899	7.032	6.629	6.677		0^+	$9/2^-$
352	234	2331.15		6.62		6.32	19.08	3.59	10.28	−3.15	−9.23	6.909	7.043	6.634	6.682		0^+	0^+
353	235	2333.84		6.61		6.28	19.30	2.69	10.40	−3.12	−9.34	6.919	7.054	6.642	6.690		0^+	$9/2^-$
354	236	2337.37		6.60		6.22	19.49	3.53	10.49	−3.08	−9.43	6.929	7.065	6.647	6.695		0^+	0^+
355	237	2339.98		6.59		6.14	19.74	2.61	10.63	−2.90	−9.56	6.940	7.077	6.657	6.705		0^+	$9/2^-$
356	238	2343.43		6.58		6.06	19.91	3.45	10.71	−2.90	−9.65	6.949	7.087	6.661	6.709		0^+	0^+
357	239	2345.77		6.57		5.79	20.08	2.34	10.79	−2.91	−9.73	6.958	7.099	6.665	6.712		0^+	$7/2^-$
358	240	2348.89		6.56		5.46	20.22	3.12	10.85	−2.69	−9.80	6.965	7.109	6.664	6.712		0^+	0^+
359	241	2351.14		6.55		5.37	20.37	2.25	10.92	−2.65	−9.87	6.974	7.120	6.667	6.714		0^+	$7/2^-$
360	242	2354.13		6.54		5.24	20.52	2.99	10.99	−2.62	−9.95	6.982	7.130	6.668	6.716		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
361	243	2356.31		6.53		5.17	20.67	2.18	11.06	−2.58	−10.03	6.991	7.141	6.670	6.718		0^+	$7/2^-$
362	244	2359.25		6.52		5.12	20.83	2.94	11.13	−2.56	−10.10	6.999	7.152	6.672	6.719		0^+	0^+
363	245	2361.36		6.51		5.05	20.98	2.11	11.20	−2.52	−10.18	7.008	7.163	6.674	6.722		0^+	$7/2^-$
364	246	2364.27		6.50		5.02	21.14	2.91	11.27	−2.51	−10.26	7.016	7.174	6.676	6.723		0^+	0^+
365	247	2366.38		6.48		5.02	21.30	2.11	11.35	−2.51	−10.34	7.025	7.185	6.678	6.725		0^+	$5/2^-$
366	248	2369.20		6.47		4.93	21.45	2.82	11.42	−2.46	−10.41	7.033	7.196	6.680	6.727		0^+	0^+
367	249	2371.30		6.46		4.92	21.61	2.10	11.49	−2.44	−10.49	7.042	7.207	6.682	6.729		0^+	$5/2^-$
368	250	2374.03		6.45		4.83	21.77	2.73	11.57	−2.40	−10.57	7.051	7.218	6.684	6.731		0^+	0^+
369	251	2376.06		6.44		4.76	21.93	2.03	11.64	−2.30	−10.65	7.060	7.230	6.686	6.734		0^+	$5/2^-$
370	252	2378.70		6.43		4.67	22.07	2.64	11.71	−2.28	−10.73	7.069	7.241	6.688	6.735		0^+	0^+
371	253	2380.68		6.42		4.62	22.20	1.98	11.78	−2.30	−10.79	7.079	7.253	6.689	6.737		0^+	$3/2^-$
372	254	2383.04		6.41		4.34	22.28	2.36	11.82	−2.12	−10.83	7.088	7.265	6.690	6.738		0^+	0^+
373	255	2384.91		6.39		4.23	22.38	1.87	11.87	−2.05	−10.87	7.098	7.278	6.691	6.738		0^+	$3/2^-$
374	256	2387.12		6.38		4.08	22.46	2.21	11.92	−2.02	−10.92	7.107	7.290	6.692	6.739		0^+	0^+
375	257	2389.01		6.37		4.10	22.54	1.89	11.97	−1.82	−10.96	7.117	7.304	6.692	6.740		0^+	$1/2^-$
376	258	2391.01		6.36		3.89	22.63	2.00	12.03	−1.27	−11.01	7.127	7.317	6.693	6.741		0^+	0^+
377	259	2390.79		6.34		1.78	22.84	−0.22	12.13	−1.57	−11.11	7.139	7.328	6.705	6.753		0^+	$15/2^+$
378	260	2391.54		6.33		0.53	23.04	0.75	12.24	−0.31	−11.22	7.149	7.338	6.715	6.762		0^+	0^+
379	261	2391.38		6.31		0.59	23.26	−0.16	12.36	−0.33	−11.32	7.161	7.349	6.727	6.774		0^+	$15/2^+$
380	262	2392.17		6.30		0.63	23.45	0.79	12.46	−0.36	−11.42	7.172	7.359	6.736	6.784		0^+	0^+
381	263	2392.06		6.28		0.68	23.66	−0.11	12.58	−0.38	−11.53	7.183	7.370	6.748	6.796		0^+	$15/2^+$
382	264	2392.91		6.26		0.74	23.86	0.85	12.69	−0.41	−11.63	7.194	7.380	6.758	6.805		0^+	0^+
383	265	2392.85		6.25		0.79	24.07	−0.06	12.81	−0.43	−11.74	7.206	7.391	6.770	6.818		0^+	$15/2^+$
384	266	2393.74		6.23		0.83	24.26	0.89	12.91	−0.46	−11.84	7.216	7.402	6.780	6.827		0^+	0^+
385	267	2393.73		6.22		0.88	24.47	−0.01	13.03	−0.48	−11.94	7.228	7.412	6.793	6.840		0^+	$15/2^+$
386	268	2394.68		6.20		0.94	24.67	0.95	13.14	−0.51	−12.04	7.239	7.423	6.803	6.850		0^+	0^+
387	269	2394.71		6.19		0.98	24.88	0.03	13.25	−0.52	−12.15	7.251	7.433	6.816	6.863		0^+	$15/2^+$
388	270	2395.71		6.17		1.03	25.07	1.00	13.36	−0.55	−12.25	7.262	7.444	6.827	6.873		0^+	0^+
389	271	2395.77		6.16		1.06	25.28	0.06	13.48	−0.55	−12.35	7.274	7.455	6.840	6.887		0^+	$15/2^+$
390	272	2396.82		6.15		1.11	25.47	1.05	13.59	−0.58	−12.45	7.285	7.465	6.851	6.897		0^+	0^+
391	273	2396.86		6.13		1.09	25.68	0.04	13.71	−0.53	−12.56	7.297	7.476	6.865	6.911		0^+	$15/2^+$
392	274	2397.96		6.12		1.14	25.87	1.10	13.82	−0.57	−12.66	7.308	7.486	6.875	6.921		0^+	0^+
393	275	2398.01		6.10		1.15	26.04	0.05	13.90	−0.60	−12.76	7.319	7.497	6.885	6.931		0^+	$13/2^+$
394	276	2398.97		6.09		1.01	26.22	0.96	14.00	−0.49	−12.84	7.328	7.507	6.889	6.936		0^+	0^+
395	277	2399.02		6.07		1.01	26.39	0.05	14.08	−0.48	−12.93	7.337	7.518	6.896	6.942		0^+	$13/2^+$
396	278	2399.85		6.06		0.88	26.54	0.83	14.15	−0.46	−13.00	7.346	7.527	6.900	6.946		0^+	0^+
397	279	2399.90		6.05		0.88	26.72	0.05	14.24	−0.45	−13.09	7.355	7.538	6.905	6.951		0^+	$13/2^+$
398	280	2400.69		6.03		0.84	26.87	0.79	14.30	−0.44	−13.17	7.364	7.548	6.909	6.956		0^+	0^+
399	281	2400.74		6.02		0.84	27.04	0.05	14.40	−0.44	−13.25	7.373	7.558	6.915	6.961		0^+	$13/2^+$
400	282	2401.51		6.00		0.82	27.19	0.77	14.47	−0.43	−13.33	7.382	7.568	6.919	6.965		0^+	0^+
401	283	2401.55		5.99		0.81	27.37	0.04	14.55	−0.42	−13.42	7.391	7.578	6.924	6.970		0^+	$13/2^+$
402	284	2402.31		5.98		0.80	27.52	0.76	14.63	−0.42	−13.50	7.400	7.587	6.928	6.974		0^+	0^+
403	285	2402.35		5.96		0.80	27.71	0.04	14.72	−0.41	−13.58	7.409	7.597	6.933	6.979		0^+	$13/2^+$
404	286	2403.09		5.95		0.78	27.85	0.74	14.79	−0.40	−13.66	7.418	7.607	6.937	6.983		0^+	0^+
405	287	2403.11		5.93		0.76	28.04	0.02	14.88	−0.20	−13.75	7.426	7.617	6.941	6.987		0^+	$13/2^+$
406	288	2403.84		5.92		0.75	28.20	0.73	14.96	−0.20	−13.83	7.435	7.626	6.946	6.992		0^+	0^+
407	289	2403.30		5.90		0.19	28.39	−0.54	15.07	−0.22	−13.92	7.445	7.635	6.955	7.001		0^+	$19/2^-$
408	290	2403.33		5.89		−0.51	28.37	0.03	15.05	0.23	−13.98	7.455	7.647	6.961	7.007		0^+	0^+
σ																		
$Z = 119$																		
288	169	2024.10		7.03			1.24	8.18	−0.15	−8.62	0.08	6.285	6.340	6.208	6.259		$5/2^-$	$7/2^+$
289	170	2033.10		7.03		17.18	1.66	9.00	0.06	−8.54	−0.19	6.295	6.350	6.214	6.266		$5/2^-$	0^+
290	171	2041.18		7.04		17.08	2.08	8.08	0.27	−8.43	−0.41	6.304	6.361	6.221	6.272		$5/2^-$	$7/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
291	172	2050.04		7.04		16.94	2.50	8.86	0.47	−7.92	−0.47	6.313	6.372	6.227	6.278		$5/2^-$	0^+
292	173	2056.83		7.04		15.65	2.69	6.79	0.57	−8.23	−0.67	6.320	6.381	6.230	6.281		$5/2^-$	$5/2^+$
293	174	2064.49		7.05		14.45	2.91	7.66	0.68	−7.17	−0.82	6.327	6.391	6.233	6.284		$5/2^-$	0^+
294	175	2071.10		7.04		14.27	3.11	6.61	0.77	−7.08	−0.96	6.334	6.401	6.236	6.287		$5/2^-$	$5/2^+$
295	176	2078.55		7.05		14.06	3.33	7.45	0.88	−7.00	−0.98	6.342	6.410	6.239	6.290		$5/2^-$	0^+
296	177	2085.00		7.04		13.90	3.55	6.45	0.99	−6.90	−1.15	6.349	6.420	6.242	6.293		$5/2^-$	$5/2^+$
297	178	2092.31		7.04		13.76	3.75	7.31	1.08	−6.85	−1.24	6.356	6.430	6.245	6.296		$5/2^-$	0^+
298	179	2098.66		7.04		13.66	3.96	6.35	1.18	−6.80	−1.40	6.364	6.440	6.248	6.299		$5/2^-$	$3/2^+$
299	180	2105.79		7.04		13.48	4.18	7.13	1.28	−6.70	−1.49	6.371	6.449	6.251	6.302		$5/2^-$	0^+
300	181	2112.03		7.04		13.37	4.37	6.24	1.36	−6.59	−1.54	6.378	6.459	6.253	6.304		$5/2^-$	$3/2^+$
301	182	2118.96		7.04		13.17	4.61	6.93	1.48	−6.50	−1.65	6.386	6.470	6.256	6.307		$5/2^-$	0^+
302	183	2125.21		7.04		13.18	4.81	6.25	1.57	−6.45	−1.76	6.394	6.480	6.259	6.310		$5/2^-$	$1/2^+$
303	184	2131.48		7.03		12.52	4.98	6.27	1.62	−5.72	−1.93	6.401	6.490	6.261	6.312		$5/2^-$	0^+
304	185	2135.97		7.03		10.76	5.27	4.49	1.76	−5.84	−2.07	6.413	6.503	6.271	6.322		$5/2^-$	$13/2^-$
305	186	2141.70		7.02		10.22	5.59	5.73	1.92	−5.12	−2.22	6.425	6.515	6.282	6.332		$5/2^-$	0^+
306	187	2146.15		7.01		10.18	5.88	4.45	2.06	−5.10	−2.36	6.437	6.528	6.292	6.343		$5/2^-$	$13/2^-$
307	188	2151.83		7.01		10.13	6.18	5.68	2.20	−5.08	−2.51	6.449	6.541	6.302	6.353		$5/2^-$	0^+
308	189	2156.24		7.00		10.09	6.45	4.41	2.33	−5.06	−2.65	6.461	6.553	6.312	6.363		$5/2^-$	$13/2^-$
309	190	2161.89		7.00		10.06	6.75	5.65	2.47	−5.05	−2.79	6.473	6.566	6.322	6.372		$5/2^-$	0^+
310	191	2166.27		6.99		10.03	7.01	4.38	2.60	−5.02	−2.93	6.485	6.578	6.332	6.383		$5/2^-$	$13/2^-$
311	192	2171.88		6.98		9.99	7.30	5.61	2.73	−5.01	−3.07	6.496	6.590	6.342	6.392		$5/2^-$	0^+
312	193	2176.22		6.98		9.95	7.56	4.34	2.85	−4.98	−3.20	6.508	6.603	6.352	6.403		$5/2^-$	$13/2^-$
313	194	2181.80		6.97		9.92	7.83	5.58	2.98	−4.97	−3.34	6.520	6.615	6.362	6.412		$5/2^-$	0^+
314	195	2186.07		6.96		9.85	8.08	4.27	3.08	−4.91	−3.48	6.532	6.627	6.373	6.423		$5/2^-$	$13/2^-$
315	196	2191.62		6.96		9.82	8.35	5.55	3.21	−4.89	−3.62	6.543	6.639	6.382	6.432		$5/2^-$	0^+
316	197	2195.72		6.95		9.65	8.57	4.10	3.30	−4.65	−3.76	6.556	6.652	6.394	6.444		$5/2^-$	$13/2^-$
317	198	2201.23		6.94		9.61	8.87	5.51	3.44	−4.68	−3.90	6.567	6.663	6.402	6.452		$5/2^-$	0^+
318	199	2204.97		6.93		9.25	9.19	3.74	3.60	−4.68	−4.05	6.577	6.675	6.409	6.459		$5/2^-$	$11/2^-$
319	200	2210.19		6.93		8.96	9.51	5.22	3.77	−4.42	−4.19	6.585	6.685	6.415	6.464		$5/2^-$	0^+
320	201	2213.85		6.92		8.88	9.85	3.66	3.95	−4.38	−4.34	6.595	6.696	6.421	6.470		$5/2^-$	$11/2^-$
321	202	2218.84		6.91		8.65	10.16	4.99	4.11	−4.32	−4.48	6.604	6.706	6.426	6.476		$5/2^-$	0^+
322	203	2222.41		6.90		8.56	10.49	3.57	4.28	−4.28	−4.63	6.613	6.717	6.432	6.482		$5/2^-$	$11/2^-$
323	204	2227.30		6.90		8.46	10.79	4.89	4.44	−4.24	−4.77	6.622	6.727	6.438	6.488		$5/2^-$	0^+
324	205	2230.80		6.89		8.39	11.13	3.50	4.61	−4.20	−4.91	6.632	6.738	6.444	6.493		$5/2^-$	$11/2^-$
325	206	2235.62		6.88		8.32	11.42	4.82	4.76	−4.17	−5.05	6.641	6.748	6.450	6.499		$5/2^-$	0^+
326	207	2239.03		6.87		8.23	11.74	3.41	4.92	−4.12	−5.19	6.650	6.759	6.456	6.505		$5/2^-$	$11/2^-$
327	208	2243.81		6.86		8.19	12.03	4.78	5.07	−4.11	−5.33	6.659	6.769	6.462	6.511		$5/2^-$	0^+
328	209	2247.12		6.85		8.09	12.33	3.31	5.22	−4.05	−5.47	6.668	6.780	6.468	6.518		$5/2^-$	$11/2^-$
329	210	2251.87		6.84		8.06	12.61	4.75	5.36	−4.05	−5.61	6.677	6.790	6.474	6.524		$5/2^-$	0^+
330	211	2255.08		6.83		7.96	12.90	3.21	5.51	−3.99	−5.74	6.687	6.800	6.481	6.530		$5/2^-$	$11/2^-$
331	212	2259.82		6.83		7.95	13.19	4.74	5.65	−3.99	−5.88	6.696	6.810	6.487	6.536		$5/2^-$	0^+
332	213	2262.90		6.82		7.82	13.44	3.08	5.77	−3.92	−6.01	6.705	6.821	6.494	6.543		$5/2^-$	$11/2^-$
333	214	2267.64		6.81		7.82	13.73	4.74	5.92	−3.93	−6.15	6.714	6.831	6.500	6.549		$5/2^-$	0^+
334	215	2270.68		6.80		7.78	14.01	3.04	6.06	−3.91	−6.28	6.723	6.841	6.506	6.555		$5/2^-$	$17/2^+$
335	216	2275.35		6.79		7.71	14.26	4.67	6.17	−3.87	−6.41	6.733	6.851	6.513	6.562		$5/2^-$	0^+
336	217	2278.36		6.78		7.68	14.52	3.01	6.30	−3.85	−6.55	6.742	6.861	6.519	6.568		$5/2^-$	$17/2^+$
337	218	2282.94		6.77		7.59	14.75	4.58	6.41	−3.81	−6.68	6.751	6.871	6.526	6.575		$5/2^-$	0^+
338	219	2285.93		6.76		7.57	15.02	2.99	6.54	−3.78	−6.82	6.760	6.881	6.533	6.581		$5/2^-$	$17/2^+$
339	220	2290.43		6.76		7.49	15.25	4.50	6.64	−3.75	−6.95	6.770	6.891	6.539	6.588		$5/2^-$	0^+
340	221	2293.37		6.75		7.44	15.50	2.94	6.75	−3.72	−7.08	6.779	6.901	6.546	6.595		$5/2^-$	$17/2^+$
341	222	2297.80		6.74		7.37	15.71	4.43	6.84	−3.69	−7.21	6.789	6.911	6.553	6.602		$5/2^-$	0^+
342	223	2300.69		6.73		7.32	15.96	2.89	6.96	−3.65	−7.36	6.798	6.921	6.560	6.609		$5/2^-$	$17/2^+$
343	224	2305.07		6.72		7.27	16.17	4.38	7.05	−3.63	−7.49	6.808	6.932	6.568	6.616		$5/2^-$	0^+
344	225	2307.88		6.71		7.19	16.41	2.81	7.16	−3.58	−7.64	6.817	6.942	6.575	6.624		$5/2^-$	$17/2^+$

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Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
345	226	2312.22		6.70		7.15	16.62	4.34	7.25	−3.56	−7.77	6.827	6.953	6.583	6.631		$5/2^-$	0^+
346	227	2314.99		6.69		7.11	16.85	2.77	7.35	−3.60	−7.89	6.837	6.964	6.590	6.638		$5/2^-$	$9/2^-$
347	228	2319.23		6.68		7.01	17.08	4.24	7.45	−3.48	−8.03	6.847	6.974	6.598	6.646		$5/2^-$	0^+
348	229	2322.08		6.67		7.09	17.31	2.85	7.56	−3.49	−8.16	6.857	6.984	6.605	6.654		$5/2^-$	$9/2^-$
349	230	2326.05		6.66		6.82	17.52	3.97	7.66	−3.39	−8.26	6.867	6.996	6.612	6.660		$5/2^-$	0^+
350	231	2328.91		6.65		6.83	17.75	2.86	7.77	−3.37	−8.39	6.877	7.006	6.619	6.667		$5/2^-$	$9/2^-$
351	232	2332.70		6.65		6.65	17.94	3.79	7.87	−3.31	−8.48	6.887	7.018	6.625	6.673		$5/2^-$	0^+
352	233	2335.53		6.64		6.62	18.16	2.83	7.97	−3.29	−8.60	6.897	7.029	6.632	6.680		$5/2^-$	$9/2^-$
353	234	2339.23		6.63		6.53	18.36	3.70	8.08	−3.26	−8.69	6.907	7.040	6.638	6.686		$5/2^-$	0^+
354	235	2342.03		6.62		6.50	18.59	2.80	8.19	−3.22	−8.81	6.917	7.051	6.645	6.693		$5/2^-$	$9/2^-$
355	236	2345.65		6.61		6.42	18.77	3.62	8.28	−3.19	−8.90	6.927	7.062	6.651	6.699		$5/2^-$	0^+
356	237	2348.38		6.60		6.35	19.03	2.73	8.40	−2.99	−9.03	6.938	7.073	6.660	6.708		$5/2^-$	$9/2^-$
357	238	2351.93		6.59		6.28	19.21	3.55	8.50	−3.00	−9.11	6.947	7.084	6.665	6.713		$5/2^-$	0^+
358	239	2354.35		6.58		5.97	19.37	2.42	8.58	−3.01	−9.19	6.956	7.095	6.668	6.716		$5/2^-$	$7/2^-$
359	240	2357.55		6.57		5.62	19.51	3.20	8.66	−2.78	−9.24	6.963	7.105	6.668	6.716		$5/2^-$	0^+
360	241	2359.89		6.56		5.54	19.67	2.34	8.75	−2.74	−9.31	6.972	7.116	6.670	6.718		$5/2^-$	$7/2^-$
361	242	2362.96		6.55		5.41	19.82	3.07	8.83	−2.70	−9.38	6.980	7.126	6.671	6.719		$5/2^-$	0^+
362	243	2365.23		6.53		5.34	19.98	2.27	8.92	−2.67	−9.45	6.988	7.137	6.674	6.721		$5/2^-$	$7/2^-$
363	244	2368.26		6.52		5.30	20.14	3.03	9.01	−2.65	−9.51	6.996	7.148	6.675	6.723		$5/2^-$	0^+
364	245	2370.46		6.51		5.23	20.30	2.20	9.10	−2.61	−9.58	7.005	7.159	6.677	6.725		$5/2^-$	$7/2^-$
365	246	2373.46		6.50		5.20	20.46	3.00	9.19	−2.60	−9.65	7.013	7.169	6.679	6.727		$5/2^-$	0^+
366	247	2375.66		6.49		5.20	20.63	2.20	9.28	−2.60	−9.72	7.022	7.181	6.681	6.729		$5/2^-$	$5/2^-$
367	248	2378.57		6.48		5.11	20.79	2.91	9.37	−2.55	−9.79	7.031	7.191	6.683	6.731		$5/2^-$	0^+
368	249	2380.76		6.47		5.10	20.95	2.19	9.46	−2.54	−9.86	7.039	7.202	6.685	6.733		$5/2^-$	$5/2^-$
369	250	2383.58		6.46		5.01	21.12	2.82	9.55	−2.49	−9.93	7.048	7.213	6.687	6.735		$5/2^-$	0^+
370	251	2385.72		6.45		4.96	21.30	2.14	9.66	−2.37	−10.00	7.057	7.225	6.690	6.737		$5/2^-$	$5/2^-$
371	252	2388.45		6.44		4.87	21.46	2.73	9.75	−2.36	−10.12	7.066	7.236	6.692	6.740		$5/2^-$	0^+
372	253	2390.48		6.43		4.76	21.58	2.03	9.80	−2.35	−10.13	7.075	7.248	6.693	6.741		$5/2^-$	$3/2^-$
373	254	2392.86		6.42		4.41	21.64	2.38	9.82	−2.15	−10.18	7.085	7.260	6.694	6.742		$5/2^-$	0^+
374	255	2394.76		6.40		4.28	21.72	1.90	9.85	−2.08	−10.24	7.094	7.273	6.695	6.743		$5/2^-$	$3/2^-$
375	256	2396.99		6.39		4.13	21.79	2.23	9.87	−2.04	−10.31	7.104	7.286	6.697	6.744		$5/2^-$	0^+
376	257	2398.90		6.38		4.14	21.86	1.91	9.89	−1.96	−10.38	7.114	7.299	6.698	6.745		$5/2^-$	$1/2^-$
377	258	2400.92		6.37		3.93	21.94	2.02	9.91	−1.39	−10.45	7.124	7.312	6.699	6.746		$5/2^-$	0^+
378	259	2400.80		6.35		1.90	22.14	−0.12	10.01	−1.38	−10.56	7.136	7.323	6.710	6.758		$5/2^-$	$15/2^+$
379	260	2401.65		6.34		0.73	22.35	0.85	10.11	−0.41	−10.67	7.146	7.333	6.720	6.767		$5/2^-$	0^+
380	261	2401.57		6.32		0.77	22.55	−0.08	10.19	−0.43	−10.79	7.158	7.344	6.732	6.779		$5/2^-$	$15/2^+$
381	262	2402.46		6.31		0.81	22.75	0.89	10.29	−0.46	−10.89	7.169	7.355	6.741	6.789		$5/2^-$	0^+
382	263	2402.44		6.29		0.87	22.96	−0.02	10.38	−0.48	−11.01	7.180	7.365	6.753	6.801		$5/2^-$	$15/2^+$
383	264	2403.38		6.28		0.92	23.16	0.94	10.47	−0.51	−11.12	7.191	7.376	6.763	6.810		$5/2^-$	0^+
384	265	2403.41		6.26		0.97	23.37	0.03	10.56	−0.53	−11.24	7.203	7.386	6.776	6.823		$5/2^-$	$15/2^+$
385	266	2404.40		6.25		1.02	23.57	0.99	10.66	−0.56	−11.34	7.213	7.397	6.786	6.833		$5/2^-$	0^+
386	267	2404.48		6.23		1.07	23.78	0.08	10.75	−0.58	−11.47	7.225	7.408	6.798	6.845		$5/2^-$	$15/2^+$
387	268	2405.51		6.22		1.11	23.97	1.03	10.83	−0.61	−11.57	7.236	7.418	6.808	6.855		$5/2^-$	0^+
388	269	2405.64		6.20		1.16	24.18	0.13	10.93	−0.62	−11.70	7.248	7.429	6.822	6.868		$5/2^-$	$15/2^+$
389	270	2406.73		6.19		1.22	24.38	1.09	11.02	−0.65	−11.81	7.259	7.439	6.832	6.879		$5/2^-$	0^+
390	271	2406.89		6.17		1.25	24.60	0.16	11.12	−0.65	−11.93	7.271	7.450	6.846	6.893		$5/2^-$	$15/2^+$
391	272	2408.03		6.16		1.30	24.80	1.14	11.21	−0.68	−12.04	7.282	7.461	6.857	6.903		$5/2^-$	0^+
392	273	2408.17		6.14		1.28	25.02	0.14	11.31	−0.63	−12.17	7.295	7.472	6.871	6.917		$5/2^-$	$15/2^+$
393	274	2409.36		6.13		1.33	25.22	1.19	11.40	−0.66	−12.28	7.305	7.482	6.881	6.928		$5/2^-$	0^+
394	275	2409.50		6.12		1.33	25.39	0.14	11.49	−0.69	−12.38	7.316	7.493	6.891	6.937		$5/2^-$	$13/2^+$
395	276	2410.53		6.10		1.17	25.56	1.03	11.56	−0.58	−12.45	7.325	7.503	6.895	6.941		$5/2^-$	0^+
396	277	2410.68		6.09		1.18	25.74	0.15	11.66	−0.57	−12.54	7.335	7.513	6.901	6.948		$5/2^-$	$13/2^+$
397	278	2411.59		6.07		1.06	25.89	0.91	11.74	−0.55	−12.61	7.343	7.523	6.905	6.951		$5/2^-$	0^+
398	279	2411.72		6.06		1.04	26.06	0.13	11.82	−0.54	−12.69	7.352	7.533	6.911	6.957		$5/2^-$	$13/2^+$

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
399	280	2412.60		6.05		1.01	26.21	0.88	11.91	−0.53	−12.76	7.361	7.543	6.915	6.961		$5/2^-$	0^+
400	281	2412.73		6.03		1.01	26.39	0.13	11.99	−0.52	−12.84	7.370	7.553	6.920	6.966		$5/2^-$	$13/2^+$
401	282	2413.59		6.02		0.99	26.55	0.86	12.08	−0.52	−12.91	7.379	7.562	6.924	6.970		$5/2^-$	0^+
402	283	2413.72		6.00		0.99	26.72	0.13	12.17	−0.51	−12.98	7.388	7.572	6.929	6.975		$5/2^-$	$13/2^+$
403	284	2414.56		5.99		0.97	26.88	0.84	12.25	−0.51	−13.06	7.397	7.582	6.934	6.980		$5/2^-$	0^+
404	285	2414.68		5.98		0.96	27.05	0.12	12.33	−0.49	−13.13	7.405	7.592	6.938	6.984		$5/2^-$	$13/2^+$
405	286	2415.51		5.96		0.95	27.21	0.83	12.42	−0.49	−13.20	7.414	7.602	6.943	6.988		$5/2^-$	0^+
406	287	2415.62		5.95		0.94	27.39	0.11	12.51	−0.06	−13.27	7.423	7.611	6.946	6.992		$5/2^-$	$13/2^+$
407	288	2416.44		5.94		0.93	27.56	0.82	12.60	−0.27	−13.34	7.431	7.621	6.951	6.997		$5/2^-$	0^+
408	289	2415.99		5.92		0.37	27.76	−0.45	12.69	−0.28	−13.46	7.441	7.630	6.960	7.006		$5/2^-$	$19/2^-$
409	290	2416.00		5.91		−0.44	27.72	0.01	12.67	0.18	−13.54	7.451	7.641	6.967	7.013		$5/2^-$	0^+
σ																		
$Z = 120$																		
293	173	2058.19		7.02			1.93	6.89	1.36	−8.22	0.06	6.324	6.383	6.237	6.289		0^+	$5/2^+$
294	174	2065.96		7.03		14.66	2.15	7.77	1.47	−7.27	−0.09	6.331	6.393	6.241	6.292		0^+	0^+
295	175	2072.68		7.03		14.49	2.35	6.72	1.58	−7.18	−0.24	6.338	6.403	6.244	6.295		0^+	$5/2^+$
296	176	2080.23		7.03		14.27	2.56	7.55	1.68	−7.10	−0.43	6.346	6.412	6.247	6.298		0^+	0^+
297	177	2086.79		7.03		14.11	2.78	6.56	1.79	−7.01	−0.56	6.353	6.422	6.250	6.301		0^+	$5/2^+$
298	178	2094.20		7.03		13.97	2.97	7.41	1.89	−6.96	−0.71	6.360	6.431	6.253	6.304		0^+	0^+
299	179	2100.65		7.03		13.86	3.17	6.45	1.99	−6.90	−0.88	6.367	6.441	6.256	6.307		0^+	$3/2^+$
300	180	2107.90		7.03		13.70	3.39	7.25	2.11	−6.81	−1.03	6.375	6.451	6.259	6.310		0^+	0^+
301	181	2114.23		7.02		13.58	3.56	6.33	2.20	−6.70	−1.19	6.382	6.461	6.261	6.312		0^+	$3/2^+$
302	182	2121.29		7.02		13.39	3.81	7.06	2.33	−6.62	−1.32	6.390	6.471	6.264	6.315		0^+	0^+
303	183	2127.64		7.02		13.41	4.00	6.35	2.43	−6.56	−1.47	6.397	6.481	6.267	6.317		0^+	$1/2^+$
304	184	2134.05		7.02		12.76	4.19	6.41	2.57	−5.83	−1.62	6.404	6.491	6.268	6.319		0^+	0^+
305	185	2138.69		7.01		11.05	4.48	4.64	2.72	−5.95	−1.76	6.416	6.504	6.279	6.330		0^+	$13/2^-$
306	186	2144.57		7.01		10.52	4.79	5.88	2.87	−5.27	−1.91	6.428	6.516	6.289	6.340		0^+	0^+
307	187	2149.17		7.00		10.48	5.08	4.60	3.02	−5.24	−2.05	6.440	6.529	6.299	6.350		0^+	$13/2^-$
308	188	2155.00		7.00		10.43	5.37	5.83	3.17	−5.23	−2.20	6.452	6.541	6.309	6.360		0^+	0^+
309	189	2159.56		6.99		10.39	5.65	4.56	3.32	−5.20	−2.34	6.464	6.554	6.319	6.370		0^+	$13/2^-$
310	190	2165.36		6.99		10.36	5.94	5.80	3.47	−5.19	−2.48	6.476	6.566	6.329	6.379		0^+	0^+
311	191	2169.88		6.98		10.32	6.21	4.52	3.61	−5.16	−2.62	6.487	6.579	6.339	6.389		0^+	$13/2^-$
312	192	2175.64		6.97		10.28	6.49	5.76	3.76	−5.15	−2.77	6.499	6.591	6.349	6.399		0^+	0^+
313	193	2180.12		6.97		10.24	6.75	4.48	3.90	−5.12	−2.90	6.511	6.604	6.359	6.409		0^+	$13/2^-$
314	194	2185.86		6.96		10.22	7.04	5.74	4.06	−5.11	−3.05	6.522	6.616	6.369	6.419		0^+	0^+
315	195	2190.28		6.95		10.16	7.29	4.42	4.21	−5.05	−3.19	6.535	6.628	6.380	6.430		0^+	$13/2^-$
316	196	2195.98		6.95		10.12	7.57	5.70	4.36	−5.04	−3.33	6.546	6.640	6.389	6.439		0^+	0^+
317	197	2200.23		6.94		9.95	7.81	4.25	4.51	−4.80	−3.47	6.559	6.653	6.401	6.451		0^+	$13/2^-$
318	198	2205.89		6.94		9.91	8.10	5.66	4.66	−4.82	−3.62	6.569	6.665	6.409	6.459		0^+	0^+
319	199	2209.77		6.93		9.54	8.40	3.88	4.80	−4.83	−3.77	6.580	6.676	6.416	6.466		0^+	$11/2^-$
320	200	2215.15		6.92		9.26	8.73	5.38	4.96	−4.57	−3.91	6.588	6.686	6.422	6.471		0^+	0^+
321	201	2218.95		6.91		9.18	9.05	3.80	5.10	−4.52	−4.06	6.597	6.697	6.427	6.477		0^+	$11/2^-$
322	202	2224.09		6.91		8.94	9.36	5.14	5.25	−4.46	−4.20	6.606	6.707	6.433	6.483		0^+	0^+
323	203	2227.81		6.90		8.86	9.68	3.72	5.40	−4.42	−4.35	6.615	6.718	6.439	6.488		0^+	$11/2^-$
324	204	2232.84		6.89		8.75	9.98	5.03	5.54	−4.38	−4.49	6.624	6.728	6.445	6.494		0^+	0^+
325	205	2236.49		6.88		8.68	10.30	3.65	5.69	−4.34	−4.63	6.633	6.738	6.450	6.500		0^+	$11/2^-$
326	206	2241.45		6.88		8.61	10.59	4.96	5.83	−4.32	−4.77	6.642	6.749	6.456	6.506		0^+	0^+
327	207	2245.02		6.87		8.53	10.91	3.57	5.99	−4.27	−4.91	6.651	6.759	6.462	6.511		0^+	$11/2^-$
328	208	2249.94		6.86		8.49	11.20	4.92	6.13	−4.25	−5.05	6.660	6.769	6.468	6.517		0^+	0^+
329	209	2253.40		6.85		8.38	11.50	3.46	6.28	−4.20	−5.19	6.670	6.779	6.474	6.523		0^+	$11/2^-$
330	210	2258.29		6.84		8.35	11.78	4.89	6.42	−4.19	−5.32	6.679	6.790	6.480	6.529		0^+	0^+
331	211	2261.64		6.83		8.24	12.07	3.35	6.56	−4.12	−5.46	6.688	6.800	6.486	6.535		0^+	$11/2^-$
332	212	2266.53		6.83		8.24	12.36	4.89	6.71	−4.13	−5.60	6.697	6.810	6.492	6.541		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
333	213	2269.74		6.82		8.10	12.61	3.21	6.84	−4.05	−5.73	6.706	6.820	6.499	6.548		0^+	$11/2^-$
334	214	2274.63		6.81		8.10	12.91	4.89	6.99	−4.06	−5.87	6.715	6.830	6.505	6.554		0^+	0^+
335	215	2277.81		6.80		8.07	13.19	3.18	7.13	−4.04	−6.00	6.724	6.840	6.511	6.560		0^+	$17/2^+$
336	216	2282.60		6.79		7.97	13.42	4.79	7.25	−4.00	−6.14	6.734	6.850	6.518	6.567		0^+	0^+
337	217	2285.76		6.78		7.95	13.70	3.16	7.40	−3.98	−6.27	6.743	6.860	6.525	6.573		0^+	$17/2^+$
338	218	2290.46		6.78		7.86	13.93	4.70	7.52	−3.94	−6.41	6.752	6.871	6.532	6.581		0^+	0^+
339	219	2293.59		6.77		7.83	14.20	3.13	7.66	−3.91	−6.55	6.762	6.881	6.539	6.587		0^+	$17/2^+$
340	220	2298.21		6.76		7.75	14.42	4.62	7.78	−3.88	−6.68	6.771	6.891	6.546	6.595		0^+	0^+
341	221	2301.30		6.75		7.71	14.68	3.09	7.93	−3.85	−6.83	6.781	6.901	6.553	6.602		0^+	$17/2^+$
342	222	2305.86		6.74		7.65	14.90	4.56	8.06	−3.83	−6.96	6.790	6.912	6.561	6.609		0^+	0^+
343	223	2308.90		6.73		7.60	15.17	3.04	8.21	−3.79	−7.11	6.800	6.921	6.568	6.616		0^+	$17/2^+$
344	224	2313.41		6.73		7.55	15.39	4.51	8.34	−3.77	−7.24	6.810	6.932	6.576	6.624		0^+	0^+
345	225	2316.38		6.71		7.48	15.66	2.97	8.50	−3.71	−7.39	6.819	6.942	6.583	6.631		0^+	$17/2^+$
346	226	2320.86		6.71		7.45	15.89	4.48	8.64	−3.70	−7.52	6.829	6.953	6.591	6.639		0^+	0^+
347	227	2323.75		6.70		7.37	16.11	2.89	8.76	−3.74	−7.64	6.840	6.964	6.598	6.646		0^+	$9/2^-$
348	228	2328.14		6.69		7.28	16.36	4.39	8.91	−3.60	−7.79	6.849	6.974	6.606	6.654		0^+	0^+
349	229	2331.13		6.68		7.38	16.61	2.99	9.05	−3.62	−7.92	6.859	6.985	6.614	6.662		0^+	$9/2^-$
350	230	2335.20		6.67		7.06	16.81	4.07	9.15	−3.49	−8.02	6.869	6.996	6.620	6.668		0^+	0^+
351	231	2338.18		6.66		7.05	17.04	2.98	9.27	−3.48	−8.14	6.879	7.007	6.627	6.675		0^+	$9/2^-$
352	232	2342.07		6.65		6.87	17.24	3.89	9.37	−3.42	−8.23	6.889	7.018	6.633	6.681		0^+	0^+
353	233	2345.02		6.64		6.84	17.46	2.95	9.49	−3.40	−8.35	6.899	7.029	6.640	6.688		0^+	$9/2^-$
354	234	2348.81		6.64		6.74	17.66	3.79	9.58	−3.36	−8.44	6.909	7.040	6.646	6.694		0^+	0^+
355	235	2351.73		6.62		6.71	17.89	2.92	9.70	−3.33	−8.56	6.919	7.051	6.653	6.701		0^+	$9/2^-$
356	236	2355.46		6.62		6.65	18.09	3.73	9.81	−3.30	−8.65	6.929	7.062	6.659	6.707		0^+	0^+
357	237	2358.31		6.61		6.58	18.33	2.85	9.93	−3.09	−8.78	6.939	7.073	6.668	6.716		0^+	$9/2^-$
358	238	2361.96		6.60		6.50	18.53	3.65	10.03	−3.09	−8.87	6.949	7.084	6.674	6.722		0^+	0^+
359	239	2364.44		6.59		6.13	18.67	2.48	10.09	−3.09	−8.94	6.957	7.095	6.676	6.723		0^+	$7/2^-$
360	240	2367.69		6.58		5.73	18.80	3.25	10.14	−2.84	−9.00	6.965	7.105	6.676	6.723		0^+	0^+
361	241	2370.09		6.57		5.65	18.95	2.40	10.20	−2.80	−9.07	6.973	7.115	6.678	6.725		0^+	$7/2^-$
362	242	2373.23		6.56		5.54	19.10	3.14	10.27	−2.77	−9.13	6.981	7.126	6.679	6.727		0^+	0^+
363	243	2375.57		6.54		5.48	19.26	2.34	10.34	−2.73	−9.20	6.989	7.137	6.681	6.729		0^+	$7/2^-$
364	244	2378.65		6.53		5.42	19.40	3.08	10.39	−2.72	−9.27	6.997	7.147	6.683	6.730		0^+	0^+
365	245	2380.93		6.52		5.36	19.57	2.28	10.47	−2.68	−9.34	7.006	7.158	6.685	6.733		0^+	$7/2^-$
366	246	2383.98		6.51		5.33	19.71	3.05	10.52	−2.67	−9.41	7.014	7.168	6.686	6.734		0^+	0^+
367	247	2386.25		6.50		5.32	19.87	2.27	10.59	−2.66	−9.48	7.023	7.179	6.688	6.736		0^+	$5/2^-$
368	248	2389.23		6.49		5.25	20.03	2.98	10.66	−2.62	−9.55	7.031	7.190	6.690	6.738		0^+	0^+
369	249	2391.49		6.48		5.24	20.19	2.26	10.73	−2.60	−9.62	7.040	7.201	6.692	6.740		0^+	$5/2^-$
370	250	2394.38		6.47		5.15	20.35	2.89	10.80	−2.56	−9.68	7.048	7.212	6.694	6.742		0^+	0^+
371	251	2396.59		6.46		5.10	20.53	2.21	10.87	−2.43	−9.75	7.057	7.223	6.696	6.744		0^+	$5/2^-$
372	252	2399.38		6.45		5.00	20.68	2.79	10.93	−2.42	−9.82	7.066	7.234	6.698	6.746		0^+	0^+
373	253	2401.47		6.44		4.88	20.79	2.09	10.99	−2.42	−9.88	7.075	7.246	6.699	6.747		0^+	$3/2^-$
374	254	2403.91		6.43		4.53	20.87	2.44	11.05	−2.21	−9.93	7.084	7.258	6.701	6.748		0^+	0^+
375	255	2405.86		6.42		4.39	20.95	1.95	11.10	−2.14	−9.99	7.094	7.271	6.702	6.749		0^+	$3/2^-$
376	256	2408.16		6.40		4.25	21.04	2.30	11.17	−2.11	−10.06	7.103	7.283	6.703	6.750		0^+	0^+
377	257	2410.14		6.39		4.28	21.13	1.98	11.24	−1.53	−10.12	7.113	7.296	6.703	6.751		0^+	$1/2^-$
378	258	2412.23		6.38		4.07	21.22	2.09	11.31	−1.47	−10.19	7.123	7.309	6.704	6.752		0^+	0^+
379	259	2412.24		6.36		2.10	21.45	0.01	11.44	−1.37	−10.31	7.134	7.320	6.716	6.764		0^+	$15/2^+$
380	260	2413.19		6.35		0.96	21.65	0.95	11.54	−0.52	−10.42	7.145	7.330	6.726	6.773		0^+	0^+
381	261	2413.24		6.33		1.00	21.86	0.05	11.67	−0.54	−10.54	7.156	7.341	6.738	6.785		0^+	$15/2^+$
382	262	2414.24		6.32		1.05	22.07	1.00	11.78	−0.57	−10.64	7.167	7.351	6.748	6.795		0^+	0^+
383	263	2414.35		6.30		1.11	22.29	0.11	11.91	−0.59	−10.76	7.179	7.362	6.760	6.807		0^+	$15/2^+$
384	264	2415.40		6.29		1.16	22.49	1.05	12.02	−0.62	−10.87	7.190	7.372	6.770	6.817		0^+	0^+
385	265	2415.55		6.27		1.20	22.70	0.15	12.14	−0.64	−10.99	7.201	7.383	6.782	6.829		0^+	$15/2^+$
386	266	2416.65		6.26		1.25	22.91	1.10	12.25	−0.67	−11.10	7.212	7.394	6.792	6.839		0^+	0^+

(*continued on next page*)

Table 1 (*continued*)

A	N	$E_b^{Cal.}$ (MeV)	$E_b^{Exp.}$ (MeV)	$E_b^{Cal.}/A$ (MeV)	$E_b^{Exp.}/A$ (MeV)	S_{2n} (MeV)	S_{2p} (MeV)	S_n (MeV)	S_p (MeV)	λ_n (MeV)	λ_p (MeV)	R_m (fm)	R_n (fm)	R_p (fm)	$R_c^{Cal.}$ (fm)	$R_c^{Exp.}$ (fm)	$j^\pi(P)$	$j^\pi(N)$
387	267	2416.86		6.25		1.31	23.13	0.21	12.38	−0.69	−11.22	7.224	7.405	6.805	6.852		0^+	$15/2^+$
388	268	2418.01		6.23		1.36	23.33	1.15	12.50	−0.72	−11.34	7.235	7.415	6.816	6.863		0^+	0^+
389	269	2418.27		6.22		1.41	23.56	0.26	12.63	−0.74	−11.46	7.247	7.426	6.829	6.876		0^+	$15/2^+$
390	270	2419.47		6.20		1.46	23.76	1.20	12.74	−0.77	−11.57	7.258	7.437	6.840	6.886		0^+	0^+
391	271	2419.77		6.19		1.50	24.00	0.30	12.88	−0.77	−11.70	7.271	7.448	6.854	6.901		0^+	$15/2^+$
392	272	2421.02		6.18		1.55	24.20	1.25	12.99	−0.80	−11.81	7.282	7.458	6.865	6.911		0^+	0^+
393	273	2421.31		6.16		1.54	24.45	0.29	13.14	−0.73	−11.94	7.295	7.470	6.881	6.928		0^+	$15/2^+$
394	274	2422.62		6.15		1.60	24.66	1.31	13.26	−0.77	−12.05	7.306	7.480	6.892	6.938		0^+	0^+
395	275	2422.87		6.13		1.56	24.86	0.25	13.37	−0.80	−12.15	7.317	7.491	6.901	6.948		0^+	$13/2^+$
396	276	2423.94		6.12		1.32	24.97	1.07	13.41	−0.65	−12.21	7.324	7.500	6.903	6.949		0^+	0^+
397	277	2424.17		6.11		1.30	25.15	0.23	13.49	−0.64	−12.30	7.334	7.510	6.908	6.955		0^+	$13/2^+$
398	278	2425.15		6.09		1.21	25.30	0.98	13.56	−0.62	−12.37	7.342	7.520	6.912	6.958		0^+	0^+
399	279	2425.37		6.08		1.20	25.47	0.22	13.65	−0.61	−12.45	7.351	7.530	6.917	6.963		0^+	$13/2^+$
400	280	2426.31		6.07		1.16	25.62	0.94	13.71	−0.60	−12.52	7.360	7.540	6.921	6.967		0^+	0^+
401	281	2426.53		6.05		1.16	25.79	0.22	13.80	−0.60	−12.60	7.369	7.550	6.926	6.972		0^+	$13/2^+$
402	282	2427.46		6.04		1.15	25.95	0.93	13.87	−0.60	−12.67	7.377	7.559	6.930	6.976		0^+	0^+
403	283	2427.67		6.02		1.14	26.12	0.21	13.95	−0.59	−12.75	7.386	7.569	6.935	6.981		0^+	$13/2^+$
404	284	2428.59		6.01		1.13	26.28	0.92	14.03	−0.59	−12.82	7.395	7.579	6.939	6.985		0^+	0^+
405	285	2428.79		6.00		1.12	26.44	0.20	14.11	−0.57	−12.90	7.403	7.588	6.944	6.990		0^+	$13/2^+$
406	286	2429.70		5.98		1.11	26.61	0.91	14.19	−0.57	−12.97	7.412	7.598	6.948	6.994		0^+	0^+
407	287	2429.90		5.97		1.11	26.79	0.20	14.28	−0.20	−13.04	7.420	7.607	6.952	6.998		0^+	$13/2^+$
408	288	2430.79		5.96		1.09	26.95	0.89	14.35	−0.36	−13.11	7.429	7.617	6.956	7.002		0^+	0^+
409	289	2430.45		5.94		0.55	27.15	−0.34	14.46	−0.41	−13.23	7.438	7.626	6.966	7.011		0^+	$19/2^-$
410	290	2430.45		5.93		−0.34	27.12	0.00	14.45	0.13	−13.32	7.448	7.636	6.974	7.020		0^+	0^+
σ																		