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Table of nuclear magnetic dipole and electric quadrupole moments ☆

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Abstract

The table is a compilation of experimental measurements of static magnetic dipole and electric quadrupole moments of ground states and excited states of atomic nuclei throughout the periodic table. To aid identification of the states, their excitation energy, half-life, spin, and parity are given, along with a brief indication of the method and any reference standard used in the particular measurement. The literature search covers the period to late 2004. Many of the entries prior to 1988 follow those in Raghavan [At. Data Nucl. Data Tables 42 (1989) 189].

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Contents

1. Introduction

The table comprises a listing of measured magnetic dipole and electric quadrupole moments of ground states and excited states of atomic nuclei. Results obtained by all experimental methods are included and the literature search covers the period approximately up to the end of November 2004. The table includes many listings from the most recent previous compilation [1], mainly without change, but amended where appropriate. To assist in definitive identification of the nuclear state involved, the table includes the energy (in keV), half-life, and spin/parity of the state, taken either from the authors or from recent compilations. The table follows its predecessors in listing also any reference isotope and state involved in extraction of the quoted moment from experiment. The method used in the experiment is given, although for all details of the method reference should be made to the original publication. References are given in Table 1 in the ENSDEF keyword format (as used in the NNDC Nuclear Data compilation) and a full listing of authors and journal references follows the table. A listing of abbreviations used to identify methods is given following the explanation of the table. Some comments on the results are made using abbreviations given in the table entry. The abbreviations used for these comments are also listed following the explanation below.

2. Policies followed in the compilation

2.1. Signs

Signs are given when the sign can be determined from experimental data. Where the sign is not given by the measurement, no sign is given in the table, although it can sometimes be inferred either from systematics or from the magnitude of the result.

2.2. Results and uncertainties

Experimental values and their associated errors are as given by the authors subject to a policy of limiting significant figures. Numerical errors with digits above 15 have been rounded to 2 and results have been rounded to give no more significant figures than the rounded error would allow. Thus, a published value 0.953(65) has been rounded to 0.95(7) and 0.25(16) rounded to 0.3(2).

2.3. Magnetic dipole moments

The fundamental reference is to the adopted proton moment +2.79284734(3) nuclear magnetons (nm), after diamagnetic correction, based on the most recent recommended values for physical constants [2]. This has been revised downward since the last compilation [1] by 0.018 ppm. Other subsidiary dipole moment standards are set using high precision experimental ratios of nuclear magnetic resonance frequencies for heavier stable nuclei (^{11}B, ^{14}N, ^{35}Cl, ^{45}Sc, and ^{111}Cd), and from optical pumping frequency for ^{199}Hg, compared to that of the proton or deuteron. References to these are given where they appear in the table.

Corrections for diamagnetism, Knight shift, paramagnetism, and hyperfine anomaly are noted by annotations "d, K, p," or "ha," respectively, after the entry when they have been taken into consideration by authors, either by explicit corrections or by allowance in quoted uncertainties.

The diamagnetic correction merits further comment. This correction is applicable under any circumstance that a magnetic field is applied to the nucleus under study and the nucleus is situated in a medium subject

to diamagnetism—that is all media other than vacuum. Diamagnetism describes the polarization of the medium whereby the field as experienced by the nucleus is reduced. This effect leads to a reduction in the magnetic dipole interaction energy and an apparent reduction in the nuclear magnetic dipole moment if the full applied magnetic field strength is used without correction.

Many experimental methods use "internal" or "transient" fields produced by electrons in the vicinity of the nucleus. Such internal fields are determined through their measured interaction energy with nuclei having known magnetic dipole moments. They are not subject to diamagnetic correction, although they do require correction for any hyperfine anomaly between the isotope used for calibrating the field and the isotope under study. However, if there is any additional external applied field used, then this component of the total field at the nucleus is subject to the diamagnetic correction.

Several previous tabulation compilers have apparently applied diamagnetic corrections and have included listings of diamagnetic correction factors due to Johnson and co-workers [3]. It should be stressed that the tabulated corrections apply only to neutral atoms, assumed spherical, and are not generally applicable, for example, to nuclei implanted into planar nonmagnetic foils and subject to applied magnetic fields. All post-1989 magnetic moment entries in the table are unmodified published values.

2.4. Electric quadrupole moments

These are listed in units of barns ($1\ \mathrm{b} = 10^{-28}\ \mathrm{m}^2$). Corrections relating to electric field gradient shielding caused by polarization of atomic electrons, normally known as Sternheimer corrections, are indicated by the annotation "st" after the entry. The Sternheimer correction, which can be positive (shielding) or negative (antishielding) and can be large, is difficult to calculate with high accuracy, even for different states of the same atom or ion. This is the cause of several apparently large discrepancies between reported, uncorrected, electric quadrupole moments listed in the table.

Where two values of Q are given based on CER experiments, the first represents the value assuming constructive interference between the matrix elements and the second assumes destructive interference.

Acknowledgments

The author acknowledges help and advice from many fellow scientists in the field of hyperfine interactions and nuclear moments during the preparation and checking of the table. The table could not have been produced without extensive assistance at various stages of production by staff of the National Nuclear Data Center, Brookhaven National Laboratory, in particular Charles Dunford, Tom Burrows, and David Winchell. The Nuclear Data Project at the Oak Ridge National Laboratory provided the library in which much of the work was done, with help from Murray Martin and Mary Ruth Lay. Computing assistance from Chiara Mazzocchi was very helpful at a vital stage. Finally, thanks are due to Richard A. Meyer who initiated the undertaking, and to Jirina Rikovska Stone for her unfailing assistance and encouragement.

References

[1] P. Raghavan, At. Data Nucl. Data Tables 42 (1989) 189.
[2] P.J. Mohr, B.N. Taylor, Rev. Mod. Phys. 72 (2000) 351.
[3] W.R. Johnson, Dietmar Kolb, K.-N. Huang, At. Data Nucl. Data Tables 28 (1983) 333 and references therein.

Explanation of Table

Table 1. Table of nuclear magetic dipole and electric quadrupole moments

Nucleus	Identifies the nucleus by mass number A and atomic number Z, with its chemical symbol. This is given once for each nucleus. Nuclei are grouped by element in increasing sequence of atomic number and by increasing mass number for each element.
E (level)	Gives the energy of the state on which the measurement is made, rounded to the nearest kilovolt, 0 being the ground state. Where placement of the level with respect to the ground state is unknown, this is denoted by the addition of an offset x or y.
$\tau_{1/2}$	Gives the half-life τ of the state: units: y, years; d, days; h, hours; m, minutes; s, seconds; ms, milliseconds (10^{-3} s); μs, microseconds (10^{-6} s); ns, nanoseconds (10^{-9} s); ps, picoseconds (10^{-12} s); and fs, femtoseconds (10^{-15} s).
I^{π}	Gives the spin (I) and parity (π) of the state. Uncertain values are given in brackets. Where the measurement was made on unresolved states, the average spin is given as I_{av}.
μ (nm)*	Gives the measured nuclear magnetic dipole moment μ in units of the nuclear magneton μ_{N} (nm). No sign is given if it was not determined by the experiment. The uncertainty in the result is given in brackets, subject to the policy declared in Section 1. Thus 1.432(8) means a value of 1.432 nm with uncertainty 0.008 nm and of unknown sign. In some cases, where the spin of the level is unknown, the nuclear g-factor, $g = \mu/I$, is given. Where several states were unresolved, the average g-factor is given as g_{avge}. An entry of the form g_{6+}/g_{2+} gives the ratio of the g-factors of two states in a band. For high spin bands in even–even nuclei in some cases the spin dependence of the g-factor is approximately given by $g(I) = g_0[1 + \alpha I^2]$, where I is the spin of the state and $g_0 \sim g_{2+}$. The fitted value of α is given.
Q (b)*	Gives the measured nuclear electric quadrupole moment Q in units of the barn (1 b = 10^{-28} m^2). No sign is given if it was not determined by the experiment. The uncertainty in the result is given in brackets, subject to the policy declared in Section 1. Thus +1.27(10) means a value of +1.27 b with an uncertainty of 0.10 b.
Ref. Std.	In this column any reference standard upon which the listed result depends is given. Often the reference state has been used to obtain the value of a static magnetic field or an electric field gradient which is then used to determine the quoted result. Any subsequent change in the value of the standard will affect the listed result.
Method	The method used in the measurement is briefly identified here. A list of abbreviations used follows this explanation. In view of the great proliferation of specialized methods, this method description is limited and, for detailed information, reference should be made to the original publication. Where there has been re-evaluation, by the tabulator or by subsequent referenced authors, of the original referenced result, usually associated with change to the reference standard, this is denoted by R.
Reference	The NSR keyword reference is given. A complete listing of references follows the table. In the few cases where no NSR keyword has been assigned, or it is not known, the same format has been used with the last two digits replaced by '99' and the reference included in the listing.

*Certain entries have additional annotations relating to whether or not specific corrections have been made. These annotations are discussed under the magnetic dipole moment and electric quadrupole moment sections of the policies given in Section 1. The abbreviations used are given below.

Abbreviations relating to corrections applied to measurements in the table

a	Requires no Sternheimer correction.
d	Corrected for diamagnetism.
e	No estimate of uncertainty given by authors.
K	Corrected for Knight shift.
p	Corrected for paramagnetism.
st	A Sternheimer shielding correction has been made by the authors.
#	This result uses an estimated hyperfine field with no error given.

Experimental methods

AB	Atomic beam magnetic resonance—thermal beam
AB/D	Atomic beam magnetic resonance (direct moment measurement)
ABLDF	Atomic beam with laser double resonance detection
ABLFS	Atomic beam with laser fluorescence spectroscopy
ABLS	Atomic beam laser spectroscopy
β-NMR	NMR of in-beam polarised nuclei with β asymmetry detection
β-NMR/OP	NMR of nuclei polarized by optical pumping with β asymmetry detection
β-NNQR	Nuclear quadrupole resonance with β detection
B(E2)	Value based on measured E2 transition probability
BFNO	Brute force nuclear orientation
BFNMR/ON	Nuclear magnetic resonance on Brute force oriented nuclei
CDPAC	Constant-delay perturbed angular correlation
CEAD	Integral perturbed angular distribution after Coulomb excitation
CER	Coulomb excitation reorientation
CERP	Precession of Coulomb excitation reorientation
CETD	TDPAD following Coulomb excitation
CFBLS	Collinear fast beam laser spectroscopy—accelerated beam
CFBLS/β-NMR	Collinear fast beam laser spectroscopy: NMR with β detection
CIAN	Coulomb interaction of aligned nuclei
CLS	Resonance cell laser spectroscopy
CRDTF	Coincident recoil distance transient field
ENDOR	Electron-nuclear double resonance
EPR	Electron paramagnetic resonance
ES	Electron scattering
FDPAC	Time differential perturbed angular correlation of fission fragments
IAPAD	Integral attenuation of perturbed angular distribution
IBSQB	Quantum beats after surface interaction at grazing incidence
IPAC	Integral perturbed angular correlation
IPAD	Integral perturbed angular distribution
IMPAC	Perturbed angular correlation after ion implantation
IMPAD	Perturbed angular distribution after ion implantation
Ka-X	Kaonic X-ray hyperfine structure
LEMS	Level mixing spectroscopy
LMR	Level Mixing resonance on oriented nuclei
LRDRS	Laser RF double resonance spectroscopy
LRFS	Laser resonance fluorescence spectroscopy
LRIMS	Laser resonance ionization mass spectroscopy
LRIS	Laser resonance ionization spectroscopy
LRS	Laser resonance spectroscopy
LRSRD	Laser resonance specroscopy with radioactive detection
MA	Microwave absorption in gases
MAPON	Multiple adiabatic passage NMR on oriented nuclei
MB	Molecular beam magnetic resonance
MCHF	Multiconfigurational Hartree–Fock calculated efg's used to extract Q
ME	Mossbauer effect
M/N	Maser/nuclear magnetic resonance frequency comparison
MS	Molecular spectroscopy
Mu-X	Muonic X-ray hyperfine structure
N	Nuclear magnetic resonance
NMR	Nuclear magnetic resonance
NMR/AC	Nuclear magnetic resonance detected using angular correlation
NMR/AD	Nuclear magnetic resonance detected using angular distribution
NMR/ME	Nuclear magnetic resonance detected using the Mossbauer effect
NMR/ON	Nuclear magnetic resonance on oriented nuclei
NMR/ON(β)	Nuclear magnetic resonance on oriented nuclei with β detection
NMR/ON(X)	Nuclear magnetic resonance on oriented nuclei with X-ray detection
NMR/OP	NMR detected using optically pumped ions
NMR/OP(β)	NMR using optically pumped ions with β detection
NO/CP	γ circular polarization measured from oriented nuclei
NO/ME	Mossbauer effect on oriented nuclei
NO/S	Static nuclear orientation with γ detection
NO/βS	Static nuclear orientation with β detection

NO/D	Dynamic nuclear orientation
O	Optical spectroscopy
OD	Optical double resonance
OGLS	Optogalvanic laser spectroscopy
OL	Optical level crossing
OP/β-NMR	Optical pumping with NMR using β detection
OP/RD	Optical pumping with radiative detection
PhPi	Pion photoproduction near threshold
Pi-X	Pionic X-ray hyperfine structure
PMR	Paramagnetic resonance
PPDAC	Perturbed polarization-directional angular correlations
PPR	Proton pick-up reaction: spectroscopic factors
Q	Quadrupole resonance
QI-NMR/ON	Quadrupole interaction resolved NMR on oriented nuclei
QIR	Quadrupole interaction deduced from relaxation time
R	Re-evaluated data, or (for revised reference standard) adjusted by tabulator
RENO	Reorientation nuclear orientation
RIGV	Recoil into gas or vacuum
RIV/D	Recoil into vacuum, differential method
SOPAD	Stroboscopic observation of perturbed angular distribution
TDPAC	Time dependent perturbed angular correlation
TDPAD	Time dependent perturbed angular distribution
TF	Transient field integral perturbed angular correlation
TFL	Tilted foil hyperfine field integral perturbed angular correlation
TFLD	Tilted foil time differential perturbed γ angular distribution
TIS	Trapped ion spectroscopy
TR/OLNO	Time resolved on-line nuclear orientation
XHFS	X-ray hyperfine shift

Table 1
Table of nuclear magnetic dipole and electric quadrupole moments. See page 78 for Explanation of Table

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{1}_{0}$n	0	10.6 m	$1/2^{+}$	−1.9130427(5) d			N, R	2000Mo36
$^{1}_{1}$H	0	Stable	$1/2^{+}$	+2.79284734(3) d			M/N, R	2000Mo36
$^{2}_{1}$H	0	Stable	1^{+}	+0.857438228(9) d		$^{1}_{1}$H	N, R	2000Mo36
					+0.00286(2) st		MB, R	1979Bi14
					0.0028(2)		CIAN	1985Ka05
$^{3}_{1}$H	0	12.33 y	$1/2^{+}$	+2.97896244(4)		$^{1}_{1}$H	N, R	1977Ne16
$^{3}_{2}$He	0	Stable	$1/2^{+}$	−2.12749772(3)		$^{1}_{1}$H	N, R	2000Mo36
$^{6}_{3}$Li	0	Stable	1^{+}	+0.8220473(6)			AB/D	1974Be50
				+0.822567(3)		$^{2}_{1}$H	N	1968Lu07
								1967Lu06
								1954Wa37
					−0.00082(2) a	$^{7}_{3}$Li	MB, R	1998Ce04
					−0.00083(8) st	$^{7}_{3}$Li	MB, R	1984Su09
$^{7}_{3}$Li	0	Stable	$3/2^{-}$	+3.256427(2)			AB/D	1974Be50
				+3.2564625(4)		$^{2}_{1}$H	N	1968Lu07
								1967Lu06
					−0.0406(8) a		MB, R	1998Ce04
					−0.0406 st		MB, R	1984Su09
					−0.0370(8)		CIAN	1985We08
					−0.041(6)		OD, OL	1975Or01
					−0.059(8)		OL	1978Na22
					−0.040(11)		CER	1984Ve03
								1984Ve08
					−0.0400(6)		CER	1991Vo06
					−0.0400(3)		CER	1991Vo06
					−0.0406(8)		R	1989Ba80
$^{8}_{3}$Li	0	842 ms	2^{+}	+1.65340(2)		$^{1}_{1}$H	β-NMR	1978Wi13
								1962Co08
					0.0317(4)	$^{7}_{3}$Li	β-NMR	1977Du06
					0.0287(7)	$^{7}_{3}$Li	CFBLS/β-NMR	1988Ar17
					0.0327(6)	$^{7}_{3}$Li	β-NQR	1992Mi18
					Sign positive	$^{6,7}_{3}$Li	NMR	1994Ja05
$^{9}_{3}$Li	0	178 ms	$3/2^{-}$	3.4391(6)		$^{1}_{1}$H	β-NMR	1983Co11
				3.434(5)		$^{8}_{3}$Li	CFBLS/β-NMR	1988Ar17
					0.0253(9)	$^{7}_{3}$Li	CFBLS/β-NMR	1988Ar17
					0.036(7) st	$^{7}_{3}$Li	β-NMR	1983Co11
$^{11}_{3}$Li	0	7.7 ms	$3/2^{-}$	3.668(3)		$^{8}_{3}$Li	CFBLS/β-NMR	1987Ar22
					−0.031(5)	$^{7}_{3}$Li	OP/β-NMR	1992Ma12
$^{7}_{4}$Be	0	53.3 d	$3/2^{-}$	−1.398(15)		$^{9}_{4}$Be	LRIS	1998KaZN
$^{9}_{4}$Be	0	Stable	$3/2^{-}$	−1.177432(3) d			R	1983It03
				−1.1778(9)			N, OP/RD	1976We17
				−1.17749(2)		$^{1}_{1}$H	N	1949Di25
								1951Al11
					+0.0529(4)		R	1991Su05
					+0.053(3) st		AB	1967Bl09
$^{11}_{4}$Be	0	13.8 s	$3/2^{-}$	−1.6814(13)		$^{8}_{3}$Li	β-NMR	1998KaZN
				−1.6816(8)		$^{8}_{3}$Li	β-NMR	1999Ge18
$^{8}_{5}$B	0	0.77 s	2^{+}	1.0355(3)			β-NMR	1973Mi01
				1.03579(5) d, K		$^{11}_{5}$B	β-NMR	1996OhZY
					0.063(5)	$^{11}_{5}$B	β-NMR	1990MaZA
					0.068(2)	$^{12}_{5}$B	β-NQR	1992Mi18
					0.0646(15)	$^{12}_{5}$B	β-NQR	1996OhZY
$^{10}_{5}$B	0	Stable	3^{+}	+1.80064478(6)		$^{2}_{1}$H	N, MB	1975Ep02
								1939Mi05
					+0.0847(6) st	$^{11}_{5}$B	AB, R	1970Ne21
	718	0.69 ns	1^{+}	+0.63(12)			IPAC	1972Av01
$^{11}_{5}$B	0	Stable	$3/2^{-}$	+2.6886489(10)		$^{10}_{5}$B	N, MB	1975Ep02
								1939Mi05
					+0.0407(3)		AB, R	1970Ne21
$^{12}_{5}$B	0	20.4 ms	1^{+}	+1.00272(11)			β-NMR	1990Mi16
				+1.00306(15)			β-NMR	1970Wi17
								1972Wi08

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				+1.000(3)			β-NMR	2003Zh32
					0.0132(3)	$^{11}_{5}$B	β-NQR	1993Oh05
					0.0134(14) st	$^{11}_{5}$B	β-NMR	1978Mi19
$^{13}_{5}$B	0	17.4 ms	$3/2^{-}$	+3.1778(5)			β-NMR	1971Wi09
					0.037(4)	$^{12}_{5}$B	β-NMR	1973Ha99
$^{14}_{5}$B	0	13.8 ms	2^{-}	1.185(5)		$^{12}_{5}$B	β-NMR	1995Ok04
					0.0298(8)	$^{12}_{5}$B	β-NMR	1996Iz01
$^{15}_{5}$B	0	10.3 ms	$3/2^{-}$	2.659(15)		$^{12}_{5}$B	β-NMR	1995Ok04
					0.0380(11)	$^{12}_{5}$B	β-NMR	1996Iz01
$^{17}_{5}$B	0	5.1 ms	$(3/2^{-})$	2.55(2)		$^{12}_{5}$B	β-NMR	1996Ue02
					0.0386(15)		β-NMR	2003Og03
$^{9}_{6}$C	0	126 ms	$3/2^{-}$	1.3914(5)			β-NMR	1995Ma48
				1.396(3)			β-NMR	1998Hu08
$^{11}_{6}$C	0	20.4 m	$3/2^{-}$	−0.964(1)		$^{13}_{6}$C	AB, R	1970Wo11
					0.032(2) st		AB, R	1969Sc34
$^{12}_{6}$C	4438	45 fs	2^{+}		+0.06(3)		CER	1983Ve01
$^{13}_{6}$C	0	Stable	$1/2^{-}$	+0.7024118(14)		$^{1}_{1}$H	N	1954Ro34
	3854	8.5 ps	$5/2^{+}$	1.40(4)			RIV/D	1981Ru04
$^{14}_{6}$C	6728	67 ps	3^{-}	0.82(2)			RIV/D	1974Al07
$^{15}_{6}$C	0	2.45 s	$1/2^{+}$	1.720(9)			β-NMR	2002As06
				1.32(7)			β-NMR	1988AsZY
	739	2.61 ns	$5/2^{+}$	1.76(3)			RIV/D	1980As01
				−1.92(15)			IPAC	1975Ha42
$^{17}_{6}$C	0	193 ms	$3/2^{+}$	0.758(4)			β-NMR	2002Og02
$^{12}_{7}$N	0	11.0 ms	1^{+}	0.4573(5) d			β-NMR	1968Su05
					+0.0098(9)	$^{14}_{7}$N	β-NMR	1998Mi10
					+0.049(6) or −0.010(6)		PhPi	1980Ra05
					0.0103(7)	$^{14}_{7}$N	β-NQR	1994OhZY
$^{13}_{7}$N	0	9.96 m	$1/2^{-}$	0.3222(4)		$^{14}_{7}$N	AB, R	1964Be24
$^{14}_{7}$N	0	Stable	1^{+}	+0.40376100(6)		$^{1}_{1}$H	N	1976Fu06
								1951Pr02
					+0.02001(10)		LRFS	1993Sc26
					+0.0193(8) st		IBSQB	1980Wi22
					0.0208 e, st		MA, R	1986Ha49
	5106	4.3 ps	2^{-}	1.32(8)			RIV/D	1978Mo27
	5832	12.5 ps	3^{-}	2.0(5)			RIGV	1973Be01
$^{15}_{7}$N	0	Stable	$1/2^{-}$	−0.28318884(5)		$^{14}_{7}$N	N	1962Ba63
	5270	1.73 ps	$5/2^{+}$	2.4(2)			RIV/D	1983Bi10
				+2.5(8)			IMPAC, R	1978Za13
$^{16}_{7}$N	0	7.13 s	2^{-}	1.9859(11) d		$^{12}_{7}$N	β-NMR	2001Ma42
					0.018(2)	$^{12}_{7}$N	β-NMR	2001Ma42
	293	91.3 ps	3^{-}	1.60(6)			RIV/D	1984Bi03
				1.50(8)			RIV/D	1989Ra99
	397	4.5 ps	1^{-}	−1.83(13)			RIV/D	1975As02
$^{17}_{7}$N	0	4.17 s	$1/2^{-}$	0.352(2)			β-NMR	1996Ue02
$^{18}_{7}$N	0	624 ms	1^{-}	(−)0.135(15)			LMR	1999Ne01
				0.3279(13)			β-NMR	1999Og03
					+0.027(4)		LMR	1999Ne01
					0.0123(12)	$^{12}_{7}$N	β-NMR	1999Og03
$^{19}_{7}$N	0	0.27 s	$1/2^{-}$	0.305(15)			β-NMR	2004Ka22
$^{13}_{8}$O	0	8.6 ms	$3/2^{-}$	1.3891(3) d, K		$^{1}_{1}$H	β-NMR	1996Ma38
					0.0110(13)	$^{17}_{8}$O	β-NQR	1999Ma46
$^{15}_{8}$O	0	122 s	$1/2^{-}$	0.71951(12) c			β-NMR	1993Ta28
				0.7189(8)		$^{17}_{8}$O	AB	1963Co17
	5241	2.25 ps	$5/2^{+}$	+0.65(7)			RIV/D, IMPAC	1978Be73
								1983Bi10
				<0.3 (2)			TF	1981De40
$^{16}_{8}$O	6130	18.4 ps	3^{-}	+1.668(12)			RIV/D	1984As03
							IMPAC	1977Ka02
$^{17}_{8}$O	0	Stable	$5/2^{+}$	−1.89379(9)		$^{2}_{1}$H	N	1951Al08
					−0.02578 e, st		EPR, R	1969Sc34
					−0.26(3) st		EPR, R	1957Ka01
$^{18}_{8}$O	1982	1.94 ps	2^{+}	−0.57(3)			RIV/D	1976As04
					Negative sign		IPAD	1975Fo03

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					−0.036(9)		CER, R	1983Gr28
					−0.02(3)		CER, R	1981Sp07
					−0.010(13) or +0.020(13)		CER	1977Vo07
					−0.07(3) or −0.05(3)		CER	1977Fl10
					−0.05(2) or −0.02(2)		CER	1979Fe06
	3555	18 ps	4^+	2.5(4)		$^{16}_{8}$O 6130	RIGV	1974Be63
$^{19}_{8}$O	0	27 s	$5/2^+$	1.53195(7) c		$^{17}_{8}$O	β-NMR	1999Mi16
					0.0037(4)	$^{17}_{8}$O	β-NMR	1999Mi16
	96	1.37 s	$3/2^+$	−0.72(9)			IPAC	1976Go09
$^{20}_{8}$O	1674	7.4 ps	2^+	0.70(3)			RIV/D	1980Ru01
				−0.78(8)			IMPAC	1976Ge01
								1975Be15
$^{17}_{9}$F	0	64.5 s	$5/2^+$	+4.7213(3)		$^{12}_{5}$B	β-NMR	1993Mi33
				+4.7223(12)			β-NMR	1966Su01
					0.058(4) st	$^{19}_{9}$F 197	β-NMR	1974Mi21
$^{18}_{9}$F	937	47 ps	3^+	+1.6(2)			IMPAC	1981St21
				+1.77(12)			RIV/D	1989Ra99
				1.7(2)			RIGV	1978Go99
	1121	153 ns	5^+	+2.86(3)			TDPAD	1967Sc09
					0.077(5) st	$^{19}_{9}$F 197	TDPAD	1989Ra99
$^{19}_{9}$F	0	Stable	$1/2^+$	+2.628868(8)		$^{1}_{1}$H	N	1952Li18
								1964Ba11
	197	88.5 ns	$5/2^+$	+3.607(8)			TDPAD	1969Bi18
				3.595(13)			RIV/D	1984As03
					0.121(5)	Calc efg	TDPAD	2002Zh23
					0.072(4) st		TDPAD, R	1982Mi99
					−0.12(2) st		TDPAD	1964Bu01
	1346	2.9 ps	$5/2^-$	0.67(11)			RIV/D	1983Bi03
$^{20}_{9}$F	0	11 s	2^+	+2.09335(9)			β-NMR	1996MiZW
				+2.0935(9)			β-NMR	1967Gu14
								1963Ts01
					0.042(3) st	$^{19}_{9}$F 197	β-NMR	1974St10
$^{21}_{9}$F	0	4.16 s	$5/2^+$	3.93(5)			β-NMR	1993Ok02
$^{17}_{10}$Ne	0	109 ms	$1/2^-$	(+)0.74(3)			β-NMR	2004Ba12
$^{19}_{10}$Ne	0	17.3 s	$1/2^+$	−1.88542(8)			β-NMR	1982Ma39
	238	17.7 ns	$5/2^+$	−0.740(8)		$^{19}_{9}$F 197	TDPAD	1969Bl02
$^{20}_{10}$Ne	1634	0.7 ps	2^+	+1.08(8)			RIV/D, R	1978Za13
								1975Ho15
					−0.23(3)		CER, R	1981Sp07
	4247	64 fs	4^+	+1.5(3)		$^{20}_{10}$Ne 1634	TF	2003Le01
				+0.5(6)		$^{20}_{10}$Ne 1634	TF	1986Tr08
							TF, R	1982Sp02
				+1.7(14)		$^{20}_{10}$Ne 1634	TF	1984Br15
							TF, R	1982Sp02
				−0.4(8)		$^{20}_{10}$Ne 1634	TF	1980Sp02
$^{21}_{10}$Ne	0	Stable	$3/2^+$	−0.661797(5)		$^{2}_{1}$H	MB	1957La08
					+0.103(8)		O, AB	1972Du06
								1958Gr65
	351	7.1 ps	$5/2^+$	0.49(4)			RIV/D	1978Ro10
				0.70(8)			RIV/D	1977Be30
				0.9(2)			RIV/D	1978An30
$^{22}_{10}$Ne	1275	3.6 ps	2^+	+0.65(2)			RIV/D	1977Ho01
							TFL	1986Ad99
					−0.19(4)		CER, R	1981Sp07
	3357	225 fs	4^+	+2.2(6)		$^{22}_{10}$Ne 1275	TFL	1984Ba10
$^{23}_{10}$Ne	0	37.6 s	$5/2^+$	−1.08(1)			AB	1968Do07
$^{20}_{11}$Na	0	0.446 s	2^+	+0.3694(2)		$^{23}_{11}$Na	OP/RD	1975Sc20
$^{21}_{11}$Na	0	22.5 s	$3/2^+$	+2.83630(10)		$^{23}_{11}$Na	AB	1965Am01
					+0.05(4)		ABLS	1982To05
	332	6.9 ps	$5/2^+$	3.7(3)			RIV/D	1977Be30
$^{22}_{11}$Na	0	2.60 y	3^+	+1.746(3)		$^{23}_{11}$Na	AB	1949Da01
					+0.185(11)		ABLS	1998Ga44
	583	243 ns	1^+	+0.535(10)			TDPAC	1966Su07

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				+0.523(11)		$^{19}_{9}$F 197	TDPAD	1989Ra99
	2212	15.2 ps	1^-	0.36(7)			RIV/D	1976Be06
$^{23}_{11}$Na	0	Stable	$3/2^+$	+2.217522(2)			AB/D	1974Be50
				+2.2176556(6)		$^{1}_{1}$H	N	1976Fu06
								1954Wa37
					+0.1045(10)		R	1999Ke12
					+0.109(3)		R	1992Su01
					+0.095(15)		CER	1992Vo09
					+0.104(1)		MS	1994Py02
					+0.101(2) a		Mu-X	1983Je09
							OL, R	1971St12
$^{24}_{11}$Na	0	15.0 h	4^+	+1.6903(8)			AB/D	1966Ch15
								1973CoZG
	427	20.2 ms	1^+	−1.931(3)			β-NMR	1980He08
								1979Mu13
$^{25}_{11}$Na	0	60 s	$5/2^+$	+3.683(4)		$^{23}_{11}$Na	OP/RD	1975De11
					−0.10(5)		ABLS	1982To05
$^{26}_{11}$Na	0	1.07 s	3^+	+2.851(2)		$^{23}_{11}$Na	ABLS	1978Hu12
					−0.0053(2)	$^{23}_{11}$Na	CFBLS/β-NMR	2000Ke09
					−0.08(5)		ABLS	1982To05
$^{27}_{11}$Na	0	0.29 s	$5/2^+$	+3.895(5)		$^{23}_{11}$Na	ABLS	1978Hu12
					−0.0072(3)	$^{23}_{11}$Na	CFBLS/β-NMR	2000Ke09
					−0.06(5)		ABLS	1982To05
					$Q/Q(_{11}\mathrm{Na}^{26}) = 1.39(4)$		CFBLS/β-NMR	1996Ke08
$^{28}_{11}$Na	0	30.5 ms	1^+	+2.426(5)		$^{23}_{11}$Na	ABLS	1978Hu12
					+0.0395(12)	$^{23}_{11}$Na	CFBLS/β-NMR	2000Ke09
					−0.02(4)		ABLS	1982To05
					$Q/Q(_{11}\mathrm{Na}^{26}) = -7.7(2)$		CFBLS/β-NMR	1996Ke08
$^{29}_{11}$Na	0	43 ms	$3/2^+$	+2.449(8)		$^{23}_{11}$Na	ABLS	1978Hu12
					+0.086(3)	$^{23}_{11}$Na	CFBLS/β-NMR	2000Ke09
					−0.03(5)		ABLS	1982To05
$^{30}_{11}$Na	0	53 ms	2^+	+2.083(10)		$^{23}_{11}$Na	ABLS	1978Hu12
$^{31}_{11}$Na	0	17 ms	$3/2^+$	+2.305(8)		$^{23}_{11}$Na	ABLS, R	1978Hu12
$^{23}_{12}$Mg	0	11.3 s	$3/2^+$	0.5364(3)			β-NMR	1993Fu06
					0.125(5)		β-NQR	1996MaZV
$^{24}_{12}$Mg	1369	1.45 ps	2^+	+1.02(4)			RIV/D	1975Ho15
							IMPAC	1974Eb02
					−0.29(3)		CER	1990Gr11
					−0.18(2)		CER, R	1981Sp07
					−0.178(13)		CER	1979Fe05
					−0.07(3)		ES, R	1981Ko06
	4123	38 fs	4^+	+1.6(12)		$^{24}_{12}$Mg 1369	TF	1983Sp01
	4238	73 fs	2^+	+1.2(4)		$^{24}_{12}$Mg 1369	TF	1983Sp01
	6010	55 fs	4^+	+2.0(16)		$^{24}_{12}$Mg 1369	TF	1984Sp03
$^{25}_{12}$Mg	0	Stable	$5/2^+$	−0.85545(8)		$^{14}_{7}$N	N	1951Ai11
					+0.199(2)		R	1991Su13
					+0.201(3) a		Mu-X	1982We04
$^{26}_{12}$Mg	1809	476 fs	2^+	+1.0(3)		$^{24}_{12}$Mg 1369	TF	1981Sp04
					−0.21(2)		CER	1991He09
					−0.14(3)		CER, R	1981Sp07
					−0.14(3) or −0.10(3)		CER	1982Sp05
					−0.11(6)		CER	1977Sc36
$^{25}_{13}$Al	0	7.18 s	$5/2^+$	3.6455(12)			β-NMR	1976Mi11
$^{26}_{13}$Al	0	7×10^5 y	5^+	+2.804(4)		$^{27}_{13}$Al	ABLS	1996Co04
					+0.27(3)	$^{27}_{13}$Al	ABLS	1997Le19
$^{27}_{13}$Al	0	Stable	$5/2^+$	+3.6415069(7)		$^{2}_{1}$H	N	1968Ep01
					+0.1466(10)		R	1999Ke07
					+0.1402(10)		R	1992Su01
					+0.150(6) a		Mu-X	1982We04
$^{28}_{13}$Al	0	2.24 m	3^+	3.242(5)			β-NMR	1981Mi14
					0.175(14)	$^{27}_{13}$Al	β-NMR	1978St31
	31	1.91 ns	2^+	+4.3(4)			IPAC	1972He22
$^{31}_{13}$Al	0	644 ms	$(5/2^+)$	(+)3.79(5)			LMR	2002Bo22
$^{27}_{14}$Si	0	4.1 s	$5/2^+$	(−)0.8652(4) d			β-NMR	1998MaZJ
				0.8654(3) d			β-NMR	1999MaZK

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				(−)0.8554(4)			β-NMR	1984Hu11
					0.063(14)	Calc efg	β-NMR	1999MaZK
					0.061(4)	Calc efg	β-NMR	1998MaZJ
$^{28}_{14}$Si	1779	0.49 ps	2^+	+1.1(2)			IMPAC	1975Eb01
					+0.16(3)		CER, R	1981Sp07
					+0.18(3)		CER	1980Ba40
					+0.16(3)		CER	1980Fe07
$^{29}_{14}$Si	0	Stable	$1/2^+$	−0.55529(3)		$^{2}_{1}$H	N	1953We51
$^{30}_{14}$Si	2235	0.25 ps	2^+	+0.8(2)			IMPAC, R	1978Za13
					−0.05(6)		CER, R	1981Sp07
					−0.05(6) or +0.01(6)		CER	1979Fe08
$^{32}_{14}$Si	1941	0.4 ps	2^+		−0.16(2) or −0.13(2)		CER	1982Ve09
$^{33}_{14}$Si	0	6.332 s	$(3/2^+)$	1.21(3)			β-NMR, OP/RD	1991Sh99
$^{29}_{15}$P	0	4.1 s	$1/2^+$	1.2349(3)			β-NMR	1971SuZI
$^{31}_{15}$P	0	Stable	$1/2^+$	+1.13160(3)		$^{23}_{11}$Na	N	1954Wa37
	1270	0.52 ps	$3/2^+$	+0.30(8)			IMPAC	1982Ho06
	2230	0.25 ps	$5/2^+$	+2.8(5)			IMPAC	1982Ho06
$^{32}_{15}$P	0	14.28 d	1^+	−0.2524(3)			ENDOR	1957Fe32
$^{31}_{16}$S	0	2.6 s	$1/2^+$	0.48793(8)			β-NMR	1976Mi16
$^{32}_{16}$S	2230	0.16 ps	2^+	+0.9(2)			TF	1979Za01
					−0.15(2)		CER, R	1981Sp07
					−0.16(2) or −0.13(2)		CER	1982Ve09
					−0.18(4) or −0.15(4)		CER	1981Da08
					−0.12(5)		CER	1980Ba40
	4459	0.144 ps	4^+	+1.6(6)		$^{32}_{16}$S 2230	TF	1988Si14
$^{33}_{16}$S	0	Stable	$3/2^+$	+0.6438212(14)		$^{2}_{1}$H	N	1973Lu06
								1951Dh01
					−0.064(10) st		MA	1954Bi40
					−0.084(8)		CFBLS	1986El09
					−0.678(13)		MCHF	1990Su19
$^{34}_{16}$S	2128	0.32 ps	2^+	+1.0(2)			IMPAC	1979Za01
					+0.04(3)		CER, R	1981Sp07
					+0.06(4)		CER	1980Ba40
$^{35}_{16}$S	0	87.4 d	$3/2^+$	+1.00(4) or +1.07(4)			MA	1954Bu05
					+0.0471(9)		MCHF	1990Su19
					+0.045(10)		MA	1954Bi40
$^{32}_{17}$Cl	0	298 ms	1^+	+1.114(6)			β-NMR	2000Ro30
$^{33}_{17}$Cl	0	2.52 s	$3/2^+$	+0.752(2)			β-NMR	1986Ro20
$^{35}_{17}$Cl	0	Stable	$3/2^+$	+0.8218743(4)		$^{2}_{1}$H	N	1972Bl07
					0.0850(11)		R	2004Al08
					0.0819(11) a		R	2000Ha64
					−0.817(8) a		R	1993Su36
					−0.08249(2) st		AB, R	1972St38
					−0.076(5)		CFBLS	1986El09
$^{36}_{17}$Cl	0	3.0×10^5 y	2^+	+1.28547(5)		$^{2}_{1}$H	N	1955So10
					−0.0180(4) st	$^{35}_{17}$Cl	MA, R	1972St38
$^{37}_{17}$Cl	0	Stable	$3/2^+$	+0.6841236(4)		$^{2}_{1}$H	N	1972Bl07
					−0.0644(7) a		R	1993Su36
					−0.06493(2) st		AB, R	1972St38
					−0.068(10)		CFBLS	1986El09
$^{38}_{17}$Cl	0	37.3 m	2^-	2.05(2)			β-NMR	1972La22
$^{33}_{18}$Ar	0	0.174 s	$1/2^+$	−0.723(6)		$^{37}_{18}$Ar	CFBLS/β-NMR	1996Kl04
$^{35}_{18}$Ar	0	1.78 s	$3/2^+$	(+)0.6322(2)			β-NMR	2002Ma41
				+0.633(7)		$^{37}_{18}$Ar	CFBLS/β-NMR	1996Kl04
				+0.633(2)			NO/D	1965Ca04
					−0.084(15)	$^{37}_{18}$Ar	CFBLS/β-NMR	1996Kl04
$^{36}_{18}$Ar	1970	0.28 ps	2^+		+0.11(6)		CER	1971Na06
$^{37}_{18}$Ar	0	35.0 d	$3/2^+$	+1.145(5)		$^{85}_{36}$Kr	N, OP/RD	1988PiZY
							O	1965Ro13
					+0.076(9)		CFBLS/β-NMR	1996Kl04
	1611	4.6 ns	$7/2^-$	−1.33(5)			TDPAD	1971Ra22
$^{39}_{18}$Ar	0	269 y	$7/2^-$	−1.588(15)		$^{37}_{18}$Ar	CFBLS/β-NMR	1996Kl04
				−1.3(3)			O	1967Tr12
					−0.12(3)	$^{37}_{18}$Ar	CFBLS/β-NMR	1996Kl04

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Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{40}_{18}$Ar	1461	1.12 ps	2^+	−0.2(2)			TF	1992Cu04
					+0.01(4)		CER	1970Na05
$^{35}_{19}$K	0	178 ms	$3/2^+$	(+) 0.36(3)			β-NMR	1998Sc19
$^{36}_{19}$K	0	0.34 s	2^+	(+)0.548(1)		$^{39}_{19}$K	OP/RD	1975Sc20
$^{37}_{19}$K	0	1.23 s	$3/2^+$	+0.20321(6)			OP/RD	1971Vo03
	1379	10.5 ns	$5/2,7/2^-$	$g = +1.5(1)$			TDPAD	1971Ra22
$^{38}_{19}$K	0	7.61 m	3^+	+1.371(6)		$^{39}_{19}$K	AB, R	1982To02
	3458	22.1 μs	7^+	+3.836(14)			TDPAD	1974Io01
$^{39}_{19}$K	0	Stable	$3/2^+$	+0.39147(3)			ABLS	1993Du08
				+0.3914662(3)			AB/D	1974Be50
				+0.39150731(12)		$^{2}_{1}$H	N	1974Sa24
								1974Sa25
					+0.585(6) a		R	1998Ke05
					+0.060(2) a		R	1993Su36
					+0.049(4) st		OL, R	1971St12
	2814	48 ps	$7/2^-$	4.0(4)		$^{41}_{19}$K 1294	RIGV	1981Le19
	3598	37 ps	$9/2^-$	2.4(2)		$^{41}_{19}$K 1294	RIGV	1981Le19
	8030	14 ps	$19/2^-$	+3.3(3)		$^{41}_{20}$Ca 3830	TF	1992Pa01
$^{40}_{19}$K	0	1.3×10^9 y	4^-	−1.298100(3)		$^{2}_{1}$H	N	1974Sa24
				−1.2982(4)			AB/D	1952Ei09
					−0.073(1) a	$^{39}_{19}$K	R	1998Ke05
					−0.075(2) a	$^{39}_{19}$K	R	1993Su36
					−0.061(5) st	$^{39}_{19}$K	Q, OL	1972Jo09
								1971St12
	30	4.30 ns	3^-	−1.29(9)		$^{19}_{9}$F 197	TDPAD	1974Br12
	2543	1 ns	7^+	+4.1(7)			IMPAD	1976Bo21
				+4.4(11)		$^{41}_{19}$K 1294	RIGV	1981Le19
$^{41}_{19}$K	0	Stable	$3/2^+$	+0.2148701(2)			AB/D	1974Be50
				+0.21489274(12)		$^{2}_{1}$H	N	1974Sa24
								1974Sa25
					+0.0711(7) a		R	1998Ke05
					+0.073(2) a		R	1993Su36
					+0.060(5) st		MB, R	1971St12
	1294	7.42 ns	$7/2^-$	+4.42(5)		$^{19}_{9}$F 197	TDPAD	1969Bi07
	2528	152 ps	$11/2^+$	4.5(10)		$^{41}_{19}$K 1294	RIGV	1981Le19
	2774	55 ps	$13/2^+$	3.0(5)		$^{41}_{19}$K 1294	RIGV	1981Le19
	4983	73 ps	$19/2^-$	7(3)		$^{41}_{19}$K 1294	RIGV	1981Le19
$^{42}_{19}$K	0	12.36 h	2^-	−1.1425(6)			AB/D	1969Ch20
								1973CoZG
$^{43}_{19}$K	0	22.3 h	$3/2^+$	+0.1633(8)		$^{39}_{19}$K	ABLS, R	1982To02
								1982Du06
	738	202 ns	$7/2^-$	+4.43(5)			TDPAD	1983Ra37
$^{44}_{19}$K	0	22.1 m	2^-	−0.856(4)		$^{39}_{19}$K	ABLS, R	1982To02
								1982Du06
$^{45}_{19}$K	0	20 m	$3/2^+$	+0.1734(8)		$^{39}_{19}$K	AB, R	1982To02
$^{46}_{19}$K	0	115 s	2^-	−1.051(6)		$^{39}_{19}$K	ABLS	1982To02
$^{47}_{19}$K	0	17.5 s	$1/2^+$	+1.933(9)		$^{39}_{19}$K	ABLS	1982To02
$^{39}_{20}$Ca	0	0.86 s	$3/2^+$	1.02168(12)			β-NMR	1976Mi05
					0.036(7)		β-NMR	1999MaZI
					0.040(6)	Calc efg	β-NMR	1999MaZK
$^{40}_{20}$Ca	3737	47 ps	3^-	+1.6(3)			TFL RIGV,R	1979Ni04
								1976Ja16
				+1.6(3)		$^{42}_{20}$Ca 4492	IMPAC	1987Ma25
	4492	295 ps	5^-	+2.6(5)			IPAD	1974He13
$^{41}_{20}$Ca	0	1.0×10^5 y	$7/2^-$	−1.594781(9)		$^{2}_{1}$H	N	1962Br30
				−1.5942(7)		$^{43}_{20}$Ca	ABLDF	1983Ar25
				−1.61(2)		$^{43}_{20}$Ca	ABLFS	1982An15
					−0.090(2) st	$^{43}_{20}$Ca	R	2002Mi37
					−0.066(2) a		R	1993Su36
					−0.080(8) st	$^{43}_{20}$Ca	ABLDF	1983Ar25
	3830	3.1 ns	$15/2^+$	+2.18(15)			TDPAD	1975Yo05
$^{42}_{20}$Ca	1525	1.1 ps	2^+	+0.08(12)			TF	2003Sc21
					−0.19(8)		CER	1973To07

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
	3189	5.3 ns	6^+	−2.49(9)			TDPAD	1975Yo02
	3189	5.3 ns	6^+	−2.49(9)			TDPAD	1975Yo02
$^{43}_{20}$Ca	0	Stable	$7/2^-$	−1.3173(6)		$^{23}_{11}$Na	OP/RD	1972Ol01
				−1.317643(7)		$^{2}_{1}$H	N	1973Lu08
					−0.055(1)		R	2002Mi37
					−0.0408(8) a		R	1993Su36
					−0.043(9)		CFBLS	1991Si14
					−0.049(5)		ABLDF, R	1983Ar25
								1979Gr05
								1982Ay02
								1984Sa10
								1982Ku12
$^{44}_{20}$Ca	1157	2.9 ps	2^+	+0.24(10)			TF	2003TA05
				+0.34(6)			TF	2003Sc21
				−0.6(2)		$^{43}_{20}$Ca 3737	TFL, RIV/D	1979Ni04
					+0.24(10)		TF	2003Ta10
					−0.14(7)		CER	1973To07
$^{45}_{20}$Ca	0	165 d	$7/2^-$	−1.3274(14)		$^{43}_{20}$Ca	ABLFS, R	1983Ar25
								1981Ar15
								1980Be13
				−1.316(16)		$^{43}_{20}$Ca	ABLFS	1982An15
					+0.046(14)	$^{43}_{20}$Ca	ABLFS, R	1983Ar25
								1980Be13
$^{46}_{20}$Ca	1346	4.6 ps	2^+	−0.4(2)		$^{50}_{22}$Ti 1554	TF	2003SP04
$^{47}_{20}$Ca	0	4.5 d	$7/2^-$	−1.38(3)		$^{43}_{20}$Ca	ABLFS	1982An15
					+0.021(4)	$^{43}_{20}$Ca	ABLFS	1982An15
$^{41}_{21}$Sc	0	0.59 s	$7/2^-$	+5.431(2) d		$^{12}_{5}$B	β-NMR	1990Mi16
					−0.156(3) st	$^{45}_{21}$Sc	R	2002Mi37
					0.120(6)	$^{45}_{21}$Sc	β-NMR	1990Mi19
					0.166(8)	$^{45}_{21}$Sc	β-NQR	1993Mi09
$^{43}_{21}$Sc	0	3.89 h	$7/2^-$	+4.62(4)		$^{45}_{21}$Sc	AB	1966Co13
					−0.26(6)	$^{45}_{21}$Sc	AB	1966Co13
	152	438 μs	$3/2^+$	+0.348(6)			TDPAD	1977Mi10
	3123	473 ns	$19/2^-$	+3.122(7)			TDPAD	1978Ha07
					0.199(14)	$^{45}_{21}$Sc	TDPAD	1981Da06
$^{44}_{21}$Sc	0	3.93 h	2^+	+2.56(3)		$^{45}_{21}$Sc	AB, R	1966Co13
					+0.10(5)	$^{45}_{21}$Sc	R	1966Co13
	68	153 ns	1^-	+0.342(6)			TDPAC	1967Ri06
					0.21(2)	$^{45}_{21}$Sc	TDPAC	1973Ha61
	235	6.1 ns	2^-	+0.68(10)		$^{19}_{9}$F 197	TDPAD	1975Br12
	271	2.44 d	6^+	+3.88(1)		$^{45}_{21}$Sc	AB, R	1966Co13
					−0.19(2)	$^{45}_{21}$Sc	R	1966Co13
	350	3.2 ns	4^+	+3.6(5)			IPAD	1975Ch37
$^{45}_{21}$Sc	0	Stable	$7/2^-$	+4.756487(2)		$^{2}_{1}$H	N	1969Lu01
								1951Pr02
					−0.156(3) st	$^{45}_{21}$Sc	NMR	2002Mi37
					−0.220(2)	Calc efg	MS	2000Ke12
					−0.22(1)		ABLDF	1976Er01
					−0.216(9)		AB	1971Ch25
$^{46}_{21}$Sc	0	83.81 d	4^+	+3.03(2)		$^{45}_{21}$Sc	AB	1962Pe21
					+0.119(6)	$^{45}_{21}$Sc	AB	1962Pe21
$^{47}_{21}$Sc	0	3.42 d	$7/2^-$	+5.34(2)		$^{45}_{21}$Sc	AB	1966Co13
					−0.22(3)	$^{45}_{21}$Sc	AB	1966Co13
	767	247 ns	$3/2^+$	0.35(5)			TDPAD	1968Fo02
$^{43}_{22}$Ti	0	0.50 s	$7/2^-$	0.85(2)			β-NMR	1993Ma67
	3066	560 ns	$19/2^-$	+7.22(1)			TDPAD	1978Ha07
					0.30(7) st	$^{47}_{22}$Ti	TDPAD	1981Da06
$^{44}_{22}$Ti	1083	2.7 ps	2^+	+1.0(3)			TF	2003Sc19
$^{45}_{22}$Ti	0	3.09 h	$7/2^-$	0.095(2)		$^{47,49}_{22}$Ti	AB	1966Co19
					0.015(15)	$^{47,49}_{22}$Ti	AB	1966Co19
	40	11.3 ns	$5/2^-$	−0.133(10)			TDPAD	1975Br15
				−0.08(3)			TDPAD	1977St12
	329	1.10 ns	$3/2^+$	+1.1(3)			IPAD, R	1977Bu10
$^{46}_{22}$Ti	889	5.36 ps	2^+	+0.99(5)			TF	2000Er06

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				+1.0(3)			TF	1981Sh19
					−0.21(6)		CER	1975To06
	2010	1.64 ps	4^+	+2.3(7)			TF	2000Er06
$^{47}_{22}$Ti	0	Stable	$5/2^-$	−0.78848(1)		$^{39}_{19}$K	N	1965Dr03
								1953Je16
					+0.30(2)		LRFS	1990Ay01
					+0.29(1)		AB	1965Ch19
	159	210 ps	$7/2^-$	−1.9(6)		$^{45}_{22}$Ti 330	IPAD	1977Bu10
$^{48}_{22}$Ti	984	4.29 ps	2^+	+0.78(4)			TF	2000Er06
				+0.9(4)			TF	1981Sh19
					−0.177(8)		ES	1972Li12
	2296	0.8 ps	4^+	+2.2(5)			TF	2000Er06
$^{49}_{22}$Ti	0	Stable	$7/2^-$	−1.10417(1)		$^{39}_{19}$K	N	1965Dr03
								1953Je16
					0.247(11)		R	1999Bi11
					+0.24(1)		AB	1965Ch19
					0.324(3)		LRDRS	1992Be68
$^{50}_{22}$Ti	1554	1.12 ps	2^+	+2.89(15)			TF	2000Sp08
					+0.08(16)		CER	1975To06
					−0.02(9)		CER	1970Ha24
	3198	0.42 ns	6^+	+9.3(10)			IPAD	1976Bo25
$^{46}_{23}$V	802	1.02 ms	3^+	+1.64(3)			TDPAD	1982Si15
$^{48}_{23}$V	0	15.94 d	4^+	2.012(11)		$^{51}_{23}$V	NMR/ON	1980Bu11
	308	7.1 ns	2^+	+0.44(2)		$^{51}_{23}$V	TDPAC	1987Bi14
				+0.28(10)		$^{51}_{23}$V	IPAD	1978Ta17
$^{49}_{23}$V	0	330 d	$7/2^-$	4.47(5)		$^{51}_{23}$V	EPR	1957We17
	153	19.9 ns	$3/2^-$	+2.37(12)			TDPAD	1972Vi06
$^{50}_{23}$V	0	1.5×10^{17} y	6^+	+3.3456889(14)		$^{2}_{1}$H	N	1981Ha11
					0.21(4)	$^{51}_{23}$V	N	1982Bl03
					+0.21(4)	$^{51}_{23}$V	ABLDF	1979Er04
					0.21(4)	$^{51}_{23}$V	N	1981Lu04
$^{51}_{23}$V	0	Stable	$7/2^-$	+5.1487057(2)		$^{2}_{1}$H	N	1981Lu04
								1951Pr02
					−0.043(5)		LRFS	1989Un01
					−0.052(10)		AB	1967Ch09
								1967Ch10
					−0.033(10)		PPR	1973Cl10
	320	0.17 ns	$5/2^-$	+3.9(3)			CEAD	1968Ke09
$^{49}_{24}$Cr	0	41.9 m	$5/2^-$	0.476(3)		$^{53}_{24}$Cr	AB	1970Jo27
	4367	1.9 ps	$19/2^-$	+7.4(11)		$^{50}_{24}$Cr, $^{46}_{22}$Ti	TF	1993Pa22
$^{50}_{24}$Cr	783	9.1 ps	2^+	+1.24(6)			TF	2000Er06
				+1.3(2)			TF	1994Pa34
				+1.2(2)			IMPAC	1977Fa07
				+0.9(3)			TF	1987Pa28
					−0.36(7)		CER	1975To06
	1881	2.2 ps	4^+	+3.1(5)			TF	2000Er06
				+1.7(4)			TF	1994Pa34
	3164	1.2 ps	6^+	+3(1)			TF	1994Pa34
	4743	<4 ps	8^+	+4.3(7)			TF	1994Pa34
$^{51}_{24}$Cr	0	27.7 d	$7/2^-$	(−)0.934(5)		$^{53}_{24}$Cr	AB	1970Ad07
	749	7.25 ns	$3/2^-$	−0.86(12)		$^{19}_{9}$F 197	TDPAD	1974Ko10
$^{52}_{24}$Cr	1434	0.78 ps	2^+	+2.41(13)			TF	2000Er06
				+3.0(5)		$^{56}_{26}$Fe 847	TF	1987St07
				+3.2(22)			TF	1987Pa28
					−0.08(2)		ES	1973Pe99
$^{53}_{24}$Cr	0	Stable	$3/2^-$	−0.47454(3)		$^{14}_{7}$N	N	1953Al06
					−0.15(5) st		ABLDF	1982Er09
					+0.04(7)		CER	1973Th03
					−0.028(4) st		ENDOR	1974Ma35
$^{54}_{24}$Cr	835	8.0 ps	2^+	+1.68(11)			TF	2001Wa36
				+1.1(2)			IMPAC	1977Fa07
				+1.1(3)			TF	1987Pa28
					−0.21(8)		CER	1975To06
$^{51}_{25}$Mn	0	Stable	$5/2^-$	3.5683(13)		$^{55}_{25}$Mn	AB	1971Jo10

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					0.42(7) st	$^{55}_{25}$Mn	AB	1971Jo10
$^{52}_{25}$Mn	0	5.80 d	6^+	+3.0622(12)		$^{55}_{25}$Mn	AB	1966Ad03
				+3.0632(13)		$^{55}_{25}$Mn	NMR/ON	1970Ni11
					+0.50(7) st	$^{55}_{25}$Mn	NMR/ON	1970Ni11
	378	21.1 m	2^+	0.00768(8)		$^{55}_{25}$Mn	AB	1971Jo10
$^{53}_{25}$Mn	0	3.7×10^6 y	$7/2^-$	5.024(7)		$^{55}_{25}$Mn	EPR	1956Do45
	378	117 ps	$5/2^-$	+3.3(3)			IMPAC	1975Si08
$^{54}_{25}$Mn	0	312 d	3^+	+3.2819(13)		$^{55}_{25}$Mn	NMR/ON	1970Ni11
					+0.33(3) st	$^{55}_{25}$Mn	NMR/ON	1970Ni11
$^{55}_{25}$Mn	0	Stable	$5/2^-$	3.4532(13)			ENDOR	1971Sa16
				+3.46871790(9)		$^{2}_{1}$H	N	1974Lu08
					+0.33(1) st		ABLDF	1979De19
					+0.31(2) st		OL, R	1979De19
								1969Ha22
$^{56}_{25}$Mn	0	2.58 h	3^+	+3.2266(2)		$^{55}_{25}$Mn	AB, OP/RD	1961Ch05
$^{53}_{26}$Fe	741	64 ns	$3/2^-$	−0.386(15)			TDPAD	1989Ra99
$^{54}_{26}$Fe	1408	0.80 ps	2^+	+2.10(12)			TF	2000Sp08
				+2.1(3)			TF	1992SP02
				+3.4(8)		$^{56}_{26}$Fe 847	TF	1977Br23
				+2.2(4)			IMPAC	1977Fa07
				+2.9(6)			TF	1974Hu01
					−0.05(14)		CER	1981Le02
	2950	1.22 ns	6^+	8.2(2)			TDPAD	1971He21
	6527	367 ns	10^+	+7.28(1)			TDPAD	1983Ra03
					+0.30(4) st		TDPAD, TF	1984Ha07
					0.28(4)		TDPAD, R	1983Ra03
								1978Da09
$^{55}_{26}$Fe	931	8.3 ps	$5/2^-$	+2.7(12)			TDPAD	1973Ke03
	1317	2.1 ps	$7/2^-$	+2(2)			IPAD	1973Ke03
	1408	38.3 ps	$7/2^-$	−2.4(5)			TDPAD	1973Ke03
$^{56}_{26}$Fe	847	6.9 ps	2^+	1.22(16)			IMPAC IPAC, R	1977Br23
					−0.19(8)		CER	1981Le02
					−0.23(3)		CER	1971Th14
$^{57}_{26}$Fe	0	Stable	$1/2^-$	+0.09044(7)			ENDOR	1965Lo11
				+0.09062300(9)		$^{2}_{1}$H	N	1974Sa25
				+0.0907638(1)		$^{2}_{1}$H	N	1974Sa25
	14	98 ns	$3/2^-$	−0.1549(2)		$^{57}_{26}$Fe	ME	1965Pe15
								1962Pr10
					0.11		R	1998Ha40
					0.16(1)		R	1995Du17
					0.14(2)		R	1992Ru07
					+0.082(8) st		ME, R	1981Du12
					+0.209(5)		ME, R	1976St73
	136	8.80 ns	$5/2^-$	+0.935(10)			TDPAD	1979Fa07
	367	6.9 ps	$3/2^-$	<0.6			IMPAC	1969Sp05
$^{58}_{26}$Fe	811	6.7 ps	2^+	+0.9(3)		$^{56}_{26}$Fe 847	TF	1977Br23
				+0.9(2)				1969Si13
								1977Br23
					−0.27(5)		CER	1981Le02
$^{59}_{26}$Fe	0	44.6 d	$3/2^-$	−0.3358(4)			NMR/ON(β)	1996Oh02
				0.29(3)			NO/S	1976Kr10
$^{61}_{26}$Fe	861	250 ns	$(9/2^+)$	−1.031(9)		$^{54}_{26}$Fe 6527	TDPAD	2004Ma80
$^{55}_{27}$Co	0	17.5 h	$7/2^-$	+4.822(3)			NMR/ON	1973Ca06
$^{56}_{27}$Co	0	78.8 d	4^+	3.85(1)		$^{60}_{27}$Co	NMR/ON	1977St36
				3.99(6)		$^{60}_{27}$Co	NMR/ON	1986Ro28
					+0.25(9)	$^{58}_{27}$Co	NMR/ON	1988Ba87
$^{57}_{27}$Co	0	271 d	$7/2^-$	+4.720(10)		$^{60}_{27}$Co	NMR/ON	1972Ni01
				4.719(12)		$^{59}_{27}$Co	NMR/ME	1974La19
				4.78(6)		$^{60}_{27}$Co	NMR/ON	1986Ro28
					+0.52(9)	$^{59}_{27}$Co	NMR/ON	1972Ni01
	1378	19 ps	$3/2^-$	+3.0(6)		$^{60}_{27}$Co	IPAD	1970Va10
$^{58}_{27}$Co	0	70.8 d	2^+	+4.044(8)		$^{59}_{27}$Co	NMR/ON	1972Ni01
				+4.040(14)		$^{59}_{27}$Co	EPR	1957Do38

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Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					+0.22(3)	$^{59}_{27}$Co	NMR/ON	1972Ni01
	53	10.4 μs	4^+	+4.184(8)			SOP/RDAD	1970Be33
	111	0.18 ns	3^+	+2.2(4)			IPAD	1972Ha61
$^{59}_{27}$Co	0	Stable	$7/2^-$	+4.627(9)				1967Wa16
							N	1951Pr02
					+0.35(3)		LRFS	1990Gu28
					+0.41(1)		R	1993De41
					+0.40(4)		AB	1960Eh03
					+0.42(3) st		O	1969Mu11
	1292	555 ps	$3/2^-$	+2.54(12)			IPAC	1974Ba08
$^{60}_{27}$Co	0	5.271 y	5^+	+3.799(8)		$^{59}_{27}$Co	NMR/ON	1972Ni01
					+0.44(5)	$^{59}_{27}$Co	NMR/ON	1972Ni01
	59	10.5 m	2^+	+4.40(9)			AB	1969HuZY
					+0.3(4)		AB	1969HuZY
$^{57}_{28}$Ni	0	36 h	$3/2^-$	−0.7975(14)			NMR/ON(β)	1996Oh02
				0.88(6)			NO/S	1975Ro06
$^{58}_{28}$Ni	1454	0.88 ps	2^+	+0.076(17)			TF	2001KE02
				−0.1(3)			TF	1978Ha13
					−0.10(6)		CER	1974Le13
$^{59}_{28}$Ni	339	83 ps	$5/2^-$	+0.35(15)			IPAD	1974We05
$^{60}_{28}$Ni	1332	0.91 ps	2^+	+0.32(6)			TF	2001KE02
				+0.2(3)			TF	1978Ha13
					+0.03(5)		CER	1974Le13
					−0.10(2)		ES	1972Li12
$^{61}_{28}$Ni	0	Stable	$3/2^-$	−0.75002(4)		$^{17}_{8}$O	N, R	1964Dr02
								1976Fu06
					+0.162(15) st		AB	1968Ch10
	67	5.34 ns	$5/2^-$	+0.480(6)		$^{61}_{28}$Ni	ME	1971Go31
					−0.20(3) st	$^{61}_{28}$Ni	ME	1971Go31
					−0.08(7) st	$^{61}_{28}$Ni	ME	1976Ob01
$^{62}_{28}$Ni	1173	1.39 ps	2^+	+0.33(5)			TF	2001KE02
				+0.68(14)			TF	1988Sp04
				+0.6(2)			TF	1978Ha13
					+0.05(12)		CER, R	1974Le13
$^{63}_{28}$Ni	87	1.72 μs	$5/2^-$	+0.752(3)		$^{19}_{9}$F 197	TDPAD	1970Bi06
$^{64}_{28}$Ni	1346	1.09 ps	2^+	+0.37(6)			TF	2001KE02
				+0.9(3)			TF	1978Ha13
					+0.4(2)		CER	1971ChZK
$^{65}_{28}$Ni	0	2.520 h	$5/2^-$	0.69(6)			NO/S	1976Kr09
$^{67}_{28}$Ni	0	21 s	$1/2^-$	+0.601(5)			NMR/ON(β)	2000Ri14
	1007	13 μs	$9/2^+$	0.56(3)			TDPAD	2002Ge16
$^{59}_{29}$Cu	0	81.5 s	$3/2^-$	+1.891(9)			NMR/ON(β)	2004Go39
$^{60}_{29}$Cu	0	23.4 m	2^+	+1.219(3)		$^{63}_{29}$Cu	AB	1968Ph04
$^{61}_{29}$Cu	0	3.41 h	$3/2^-$	+2.14(4)		$^{63}_{29}$Cu	AB	1966Do01
$^{62}_{29}$Cu	0	9.73 m	1^+	−0.380(4)		$^{63}_{29}$Cu	AB	1968Ph04
	41	4.77 ns	2^+	+1.10(10)			TDPAC	1993Lo10
				+1.32(3)			TDPAD	1973Bl07
	390	11.1 ns	4^+	+2.67(16)			TDPAD	1973Bl07
$^{63}_{29}$Cu	0	Stable	$3/2^-$	2.227206(3)		$^{23}_{11}$Na	N	1978Lu08
				2.2273456(14)		$^{11}_{5}$B	N	1978Lu08
					−0.211(4) st	$^{65}_{29}$Cu	O, R	1986St16
					0.220(15) a		Mu-X	1982Ef01
	4498	4.08 ns	$17/2^+$	+1.56(10)		$^{62}_{29}$Cu 390	IPAD	1983Ka24
$^{64}_{29}$Cu	0	12.7 h	1^+	−0.217(2)		$^{63}_{29}$Cu	AB	1966Do01
	1594	20.4 ns	6^-	+1.06(3)			TDPAD	1972Bl16
$^{65}_{29}$Cu	0	Stable	$3/2^-$	2.3816(2)		$^{63}_{29}$Cu	N	1978Lu08
					−0.195(4) st		O, R	1972St38
	1115	0.29 ps	$5/2^-$	+4.5(9)			IPAD	1979Da20
$^{66}_{29}$Cu	0	5.1 m	1^+	−0.282(2)		$^{65}_{29}$Cu	AB	1969Cu09
	1154	0.60 μs	6^-	+1.038(3)			TDPAD	1972Bl16
$^{68}_{29}$Cu	0	31.1 s	1^+	+2.6(3)		$^{65}_{29}$Cu	LRIS	2004Gh13
	637	3.75 m	6^-	+1.3(6)		$^{65}_{29}$Cu	LRIS	2004Gh13
$^{69}_{29}$Cu	0	2.85 m	$3/2^-$	+2.84(1)			NMR/ON(β)	2000Ri14
	2714	0.36 μs	$13/2^+$	+1.46(16)			TDPAD	2002Ge16

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{70}_{29}$Cu	0	44.5 s	$(6 \text{ or } 3)^-$	(+)1.6(7) or 1.3(5)		$^{65}_{29}$Cu	LRIS	2004Gh13
	101	33 s	$(3 \text{ or } 6)^-$	(−)3.5(4) or 3.8(7)		$^{65}_{29}$Cu	LRIS	2004Gh13
	141	6.6 s	1^+	+1.9(2)		$^{65}_{29}$Cu	LRIS	2004Gh13
$^{71}_{29}$Cu	0	19.5 s	$3/2^-$	+2.28(3)			NMR/ON(β)	2002St99
$^{62}_{30}$Zn	954	2.9 ps	2^+	+0.7(2)			TF	2002Ke02
$^{63}_{30}$Zn	0	38.1 m	$3/2^-$	−0.28164(5)		$^{67}_{30}$Zn	OD	1969La05
					+0.29(3)	$^{67}_{30}$Zn	OD	1969La05
$^{64}_{30}$Zn	992	1.87 ps	2^+	+0.89(9)			TF	2002Ke02
				+0.9(2)			IMPAC	1979Fa06
					−0.124(12)		ES	1976Ne06
					−0.14(2)		ES, R	1981Ko06
					−0.32(6) or		CER	1988Sa32
					−0.26(6)			
	4635	0.1 ns	7^-	1.6(3)			RIGV	1983Ba69
$^{65}_{30}$Zn	0	244.1 d	$5/2^-$	+0.7690(2)		$^{67}_{30}$Zn	OD	1964By01
					−0.023(2)	$^{67}_{30}$Zn	OD	1964By01
					−0.3(2)	$^{67}_{30}$Zn	NO/S, R	1985Ha41
	115	0.45 ns	$3/2^-$	−0.8(2)		$^{67}_{30}$Zn 185	IPAD	1975We08
	207	0.15 ns	$3/2^-$	+0.7(3)		$^{67}_{30}$Zn 185	IPAD	1975We08
	1066	574 ps	$9/2^+$	1.1(2)		$^{67}_{30}$Zn 604	R/IPAD	1992Be51
								1975We08
				−1.7(5)		$^{67}_{30}$Zn 185	IPAD	1975We08
$^{66}_{30}$Zn	1039	1.68 ps	2^+	+0.80(8)			TF	2002Ke02
				+0.9(2)			IMPAC	1979Fa06
	4074	30 ps	6^-	0.9(2) h			RIGV	1983Ba69
					−0.81(13)		ES, R	1981Ko06
	4250	133 ps	7^-	1.0(2) h			RIGV	1983Ba69
$^{67}_{30}$Zn	0	Stable	$5/2^-$	+0.875479(9)		$^{1}_{1}$H	OP/RD, N	1967Sp04
				+0.8752049(11)		$^{37}_{17}$Cl	N	1973Ep02
					+0.150(15)		R	1969La05
	93	9.2 μs	$1/2^-$	+0.587(11)			ME	1988Ik02
	185	1.03 ns	$3/2^-$	+0.50(6)			IPAC	1969Bo41
	604	333 ns	$9/2^+$	−1.097(9)		$^{19}_{9}$F 197	TDPAD	1973Be56
					0.60(6)	$^{67}_{30}$Zn	TDPAD	
$^{68}_{30}$Zn	1077	1.61 ps	2^+	+0.87(9)			TF	2002Ke02
				+0.9(3)			IMPAC	1979Fa06
					−0.11(2)		ES, R	1981Ko06
$^{69}_{30}$Zn	439	13.72 h	$9/2^+$	1.157(2)		$^{65}_{30}$Zn	NMR/ON, R	1992Be51
								1989He05
					−0.51(5)	$^{67}_{30}$Zn	NO/S	1983Oe01
$^{70}_{30}$Zn	885	3.7 ps	2^+	+0.76(8)			TF	2002Ke02
				+0.60(14)			IMPAC	1979Fa06
					−0.23(2)		ES	1976Ne06
					−0.24(3)		ES, R	1981Ko06
$^{71}_{30}$Zn	158	3.94 h	$9/2^+$	1.052(6)		$^{65}_{30}$Zn	NMR/ON, R	1992Be51
								1989He05
$^{66}_{31}$Ga	66	23 ns	2^+	1.01(2)			TDPAD, R	1976Le03
	1464	57 ns	7^-	0.90(2)			TDPAD	1978Fi03
				+0.89(2)			TDPAD	1985Ra33
					0.78(4) st		TDPAD	1985Ra33
	3043	0.208 ns	9^+	4.2(9)			IPAC	1987Ba45
$^{67}_{31}$Ga	0	78.3 h	$3/2^-$	+1.8507(3)		$^{69,71}_{31}$Ga	AB	1968Eh02
					0.195(5) st	$^{69,71}_{31}$Ga	AB, R	1968Eh02
	359	49 ps	$5/2^-$	1.4(7)		$^{67}_{31}$Ga 3578	RIGV, R	1986Ba79
								1983Ba73
	3578	0.16 ns	$15/2^+$	−1.7(5)			IPAD	1986Ba79
$^{68}_{31}$Ga	0	68.1 m	1^+	0.01175(5)		$^{69,71}_{31}$Ga	AB	1962Eh02
					0.0277(14) st	$^{69,71}_{31}$Ga	AB, R	1972St38
	1230	64 ns	7^-	+0.74(2)			TDPAD	1978Fi03
				+0.72(2)			TDPAD	1985Ra33
					0.72(2) st	$^{69}_{31}$Ga	TDPAD	1985Ra33
$^{69}_{31}$Ga	0	Stable	$3/2^-$	+2.01659(5)		$^{23}_{11}$Na	N	1954Wa37
					+0.1650(8) a		R	1998Pe11

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Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					+0.173(3) a		R	1998To99
					+0.168(5) st		AB, R	1972St38
					0.17(3) st		ABLFS, R	1983Jo02
$^{70}_{31}$Ga	879	22.7 ns	4^-	−0.26(10)		$^{19}_{9}$F 197	TDPAD	1976Ta09
$^{71}_{31}$Ga	0	Stable	$3/2^-$	+2.56227(2)		$^{23}_{11}$Na	N	
					+0.1040(8)		R	1998Pe11
					+0.109(2)		R	1998To99
					+0.106(3) st		AB, R	1972St38
					0.10(2) st		ABLFS, R	1983Jo02
$^{72}_{31}$Ga	0	14.1 h	3^-	−0.13224(2)		$^{69,71}_{31}$Ga	AB	1962Eh02
					+0.52(1) st	$^{69,71}_{31}$Ga	AB, R	1972St38
$^{67}_{32}$Ge	752	111 ns	$9/2^+$	−0.849(12)		$^{69}_{32}$Ge 398	TDPAD	1991Le31
$^{68}_{32}$Ge	3696	0.48 ps	6^+	+2.4#		Estimate	TF	1986Ba64
	3883	132 ps	6^-	0.53(11)		$^{74}_{32}$Ge 596	RIGV	1982Ba42
	4054	118 ps	7^-	0.78(12)		$^{74}_{32}$Ge 596	RIGV	1982Ba42
	4838	1.04 ps	8^+	+0.8(3)		$^{68}_{32}$Ge 3696	TF	1986Ba64
	5050	0.49 ps	8^+	−2.2(11)		$^{68}_{32}$Ge 3696	TF	1986Ba64
$^{69}_{32}$Ge	0	39.0 h	$5/2^-$	0.735(7)		$^{73}_{32}$Ge	AB	1970Ol02
					0.024(5) st		AB	1970Ol02
	398	2.8 μs	$9/2^+$	−1.001(3)			SOP/RDAD	1970Ch05
$^{70}_{32}$Ge	1039	1.32 ps	2^+	+0.94(5)			TF	1984Pa20
				+0.8(2)			IMPAC	1977Fa07
				+0.7(2)			TF	1987La20
				+0.9(2)			IMPAC, R	1977Fa07
					+0.03(6) or +0.09(6)		CER	1980Le16
$^{71}_{32}$Ge	0	11.2 d	$1/2^-$	+0.547(5)		$^{73}_{32}$Ge	AB, R	1966Ch02
	175	79 ns	$5/2^-$	+1.018(10)		$^{19}_{9}$F 197	TDPAD	1968Mo12
	199	20.2 ms	$9/2^+$	−1.0413(7)			NMR/AC	1970Be29
					0.34(5)		QIR	1975Ri03
								1876Br41
$^{72}_{32}$Ge	834	3.29 ps	2^+	+0.80(7)			TF	1984Pa20
				+0.74(9)			TF	1987La20
				+0.7(2)			IMPAC, R	1977Fa07
					−0.13(6)		CER	1980Le16
$^{73}_{32}$Ge	0	Stable	$9/2^+$	−0.8794677(2)		$^{2}_{1}$H	N	1974Sa25
					−0.17(3)		AB, R	1966Ch02
								1970Ol02
	13	2.86.μs	$5/2^+$	1.08(3)			TDPAC	1993Co17
				−0.94(3)			TDPAC	1975Ha37
					0.70(8)	$^{69}_{32}$Ge 398	TDPAC	1993Co17
					−0.4(3)		ME	1983Pf02
$^{74}_{32}$Ge	596	12.5 ps	2^+	+0.87(4)			TF	1984Pa20
				+0.70(5)			TF	1987La20
				+0.7(2)			IMPAC, R	1977Fa07
					−0.25(6)		CER	1980Le16
	1204	4.9 ps	2^+	+0.8(2)			TF	1984Pa20
$^{75}_{32}$Ge	0	82.8 m	$1/2^-$	+0.510(5)		$^{73}_{32}$Ge	AB	1970Ol02
$^{76}_{32}$Ge	563	18.6 ps	2^+	+0.84(5)			TF	1984Pa20
				+0.67(8)			TF	1987La20
				+0.56(12)			IMPAC, R	1977Fa07
					−0.19(6)		CER	1980Le16
$^{68}_{33}$As	2159	37 ns	$(7,8)^-$	$\|g\| = 0.23(2)$			TDPAD	1986RaZU
$^{69}_{33}$As	0	15.2 m	$5/2^-$	+1.58(16)			NO/S	1988SeXX
				1.2(2)		$^{75}_{33}$As	AB	1980Ho02
	1307	1.35 ns	$9/2^+$	+4.7(6)			IPAD	1980Be32
				+6(2)			RIGV	1981Ki07
$^{70}_{33}$As	0	53 m	4^+	+2.1061(2)		$^{75}_{33}$As	AB	1980Ho02
					+0.09(2)	$^{75}_{33}$As	AB	1980Ho02
	888	5.34.ns	7^-	0.75(5)			IPAD	1991Ba43
$^{71}_{33}$As	0	65.3 h	$5/2^-$	(+)1.674(2)			NMR/ON	1976He06
				1.64(4)			AB	1980Ho02
					−0.017(10)	$^{72}_{33}$As	NO/S	1988Wh03
	1001	19.8 ns	$9/2^+$	+5.15(9)			TDPAD	1989Ra99
$^{72}_{33}$As	0	26 h	2^-	−2.1566(3)		$^{75}_{33}$As	AB	1980Ho02

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					−0.08(2)	$^{75}_{33}$As	AB	1980Ho02
	214	85 ns	3^+	+1.58(2)		$^{19}_{9}$F 197	TDPAD	1975Be32
	561	87 ns	(6^-)	−0.696(12)			TDPAD	1977Ra03
$^{73}_{33}$As	66	5.0 ns	$5/2^-$	+1.63(10)			TDPAC	1963Bo26
					0.356(12)	$^{75}_{33}$As	TDPAC	1992Sc21
	428	5.6 μs	$9/2^+$	+5.234(14)			SOP/RDAD	1970Be23
$^{74}_{33}$As	0	17.8 d	2^-	−1.597(3)		$^{75}_{33}$As	NMR/ON	1972Ka35
								1970Ch10
	259	26.8 ns	$(4)^+$	+3.24(4)		$^{19}_{9}$F 197	TDPAD, R	1976Ga23
$^{75}_{33}$As	0	Stable	$3/2^-$	+1.43948(7)		$^{2}_{1}$H	N	1953Ti01
								1952Je05
					0.314(6) a		Mu-X	1982Ef01
					+0.30(5)		O	1983Vo15
	265	11.9 ps	$3/2^-$	+1.0(2)			IPAC	1971BeWK
								1970Pi18
	280	273 ps	$5/2^-$	+0.92(2)			TDPAC	1989Mo14
					0.30(10)	$^{73}_{33}$As	TDPAC	1990Mo23
				+0.81(8)			IPAC	1971BeWK
								1970Pi18
$^{76}_{33}$As	0	26.3 h	2^-	(−)0.9028(10)		$^{75}_{33}$As	NMR/ON(β)	1999Oh01
				−0.906(5)		$^{75}_{33}$As	NO/D	1958Pi43
					7(8)		AB	1961Ch10
	46	1.80 μs	$(1)^+$	+0.559(5)		$^{19}_{9}$F 197	SOP/RDAD	1971BeWJ
$^{77}_{33}$As	0	38.8 h	$3/2^-$	+1.2946(13)		$^{75}_{33}$As	NMR/ON(β)	1999Oh01
	264	304 ps	$5/2^-$	+0.74(2)			TDPAC	1989Mo14
				+0.83(7)			IPAC	1973Ch42
					<0.75		TDPAC	1990Mo23
	476	116 μs	$9/2^+$	+5.525(9)			SOP/RDAD	1989Ra99
	632	60 ps	$5/2^+$	+2.5(4)			IPAC	1974Ch31
$^{73}_{34}$Se	0	7.1 h	$9/2^+$	0.892(13)			NMR/ON	*********
				0.85(7)			NMR/ON	1987Ni13
$^{74}_{34}$Se	635	7.07 ps	2^+	0.86(5)		$^{82}_{34}$Se 654	TF	1998Sp03
					−0.36(7)		CER	1978Le22
	1269	4.0 ps	2^+	1.1(2)		$^{82}_{34}$Se 654	TF	1998Sp03
	1363	1.86 ps	4^+	2.0(4)		$^{82}_{34}$Se 654	TF	1998Sp03
$^{75}_{34}$Se	0	118.5 d	$5/2^+$	0.683(10)			NMR/ON	
				0.67(4)			NMR/ON	1974Ca23
					1.1(2)		MA, R	1955Aa06
					$Q/Q(^{79}_{34}\text{Se(gs)}) = 1.2578(6)$		MA, R	1955Aa06
$^{76}_{34}$Se	559	12.3 ps	2^+	0.81(5)		$^{82}_{34}$Se 654	TF	1998Sp03
				+0.8(2)			IMPAC	1969He11
				+0.8(2)			IPAC	1967Mu10
					−0.34(7)		CER	1977Le11
	1216	3.4 ps	2^+	0.70(12)		$^{82}_{34}$Se 654	TF	1998Sp03
	1332	1.52 ps	4^+	2.6(4)		$^{82}_{34}$Se 654	TF	1998Sp03
$^{77}_{34}$Se	0	Stable	$1/2^-$	+0.5350422(6)		$^{23}_{11}$Na	N	1978Ko39
								1953We51
				0.5350743(3)		$^{1}_{1}$H	N	1978Ko39
	250	9.56 ns	$5/2^-$	+1.12(3)			TDPAC	1984Za08
					1.1(5)		TDPAC	1983Un02
	439	24 ps	$5/2^-$	+1.0(3)			IMPAC	1970RoZS
$^{78}_{34}$Se	614	9.7 ps	2^+	0.77(5)		$^{82}_{34}$Se 654	TF	1998Sp03
				+0.8(2)			IMPAC	1969He11
					−0.26(9)		CER	1977Le11
	1308	4.2 ps	2^+	0.7(2)		$^{82}_{34}$Se 654	TF	1998Sp03
	1503	1.05 ps	4^+	1.6(5)		$^{82}_{34}$Se 654	TF	1998Sp03
$^{79}_{34}$Se	0	$<6.5\times10^4$ y	$7/2^+$	−1.018(15)			MA	1953Ha50
					+0.8(2)		MA, R	1989Ra99
$^{80}_{34}$Se	666	8.6 ps	2^+	0.87(5)		$^{82}_{34}$Se 654	TF	1998Sp03
				+0.8(3)			IMPAC	1969He11
					−0.31(7)		CER	1977Le11
	1449	1.95 ps	2^+	0.7(2)		$^{82}_{34}$Se 654	TF	1998Sp03
	1701	0.66 ps	4^+	2.7(10)		$^{82}_{34}$Se 654	TF	1998Sp03

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{82}_{34}$Se	654	13.1 ps	2^+	0.99(6)			TF	1978Br38
				+0.9(3)			IMPAC	1969He11
					−0.22(7)		CER	1977Le11
	1735	0.96 ps	4^+	2.3(15)		$^{82}_{34}$Se 654	TF	1998Sp03
$^{72}_{35}$Br	0	79 s	(3^+)	0.60(10)			NO/S	1992Ba68
	101	10.1 s	(1^-)	>0.7			NO/S	1992Gr20
$^{73}_{35}$Br	241	34.7 ns	$3/2^-$	1.97(13)			TDPAD	1987He27
$^{74}_{35}$Br	14	46 m	$4^{(+)}$	1.820(12)			NMR/ON	1992Pr06
				1.68(18)			NO/S	1992Gr20
$^{75}_{35}$Br	0	97 m	$3/2^-$	+0.76(18)			NO/S, NO/βS	1992Gr20
								1992Ba68
$^{76}_{35}$Br	0	16.1 h	1^-	0.54821(2)		$^{79,81}_{35}$Br	AB	1960Li11
								1966Br03
					0.249 (6) st	$^{79}_{35}$Br	AB, R	2000Ha64
								1960Li11
								1966Br03
$^{77}_{35}$Br	0	57 h	$3/2^-$	0.9731(6)			NMR/ON	1993Oh09
				0.9738(5)			NMR/ON	1992Pr06
				0.92(5)			NO/S	1992Gr20
					+0.53(2) st	$^{82}_{35}$Br	MAPON	1998Se09
	130	9.3 ns	$5/2^+$	+3.30(3)			TDPAC	1991Gr15
$^{78}_{35}$Br	0	6.46 m	1^+	0.13(3)			NO/S	1992Pr06
	32	14.2 ns	$(2)^-$	−1.12(4)		$^{19}_{9}$F 197	TDPAD	1973Pl07
	181	119 μs	$4^{(+)}$	+4.114(12)			NMR/AC	1974FoYO
								1971Br31
$^{79}_{35}$Br	0	Stable	$3/2^-$	+2.106400(4)		$^{2}_{1}$H	N	1972Bl07
					0.318(5)		R	2004Al08
					+0.313(3)	Calc efg	R	2001Bi17
					+0.305(5) st		AB, R	2000Ha64
								1960Li11
					+0.331(4) st		AB, R	1998Se09
	217	47 ps	$5/2^-$	1.0(3)			TF	1994Sp05
	523	1.91 ps	$5/2^-$	2.8(8)			TF	1994Sp05
	761	1.50 ps	$7/2^-$	1.9(3)			TF	1994Sp05
$^{80}_{35}$Br	0	17.6 m	1^+	0.5140(6)		$^{79,81}_{35}$Br	AB	1964Wh05
					+0.182(5)		R	2001Bi17
					+0.181(4) st		AB, R	2000Ha64
								1960Li11
					+0.196(3) st		AB, R	1998Se09
	37	7.4 ns	2^-	−1.67(12)		$^{19}_{9}$F 197	TDPAD	1973Pl07
					0.163(7)		R	2001Bi17
					0.159(7) st	$^{80}_{35}$Br	TDPAC	2000Ha64
								1960Li11
					0.173(6) st		AB, R	1998Se09
	86	4.42 h	5^-	+1.3177(6)		$^{79,81}_{35}$Br	AB	1964Wh05
					+0.71(2)		R	2001Bi17
					+0.69(2) st		AB, R	2000Ha64
								1960Li11
					+0.751(10) st		AB, R	1998Se09
$^{81}_{35}$Br	0	Stable	$3/2^-$	+2.270562(4)		$^{2}_{1}$H	N	1972Bl07
					+0.266(4)		R	2004Al08
					+0.262(3)		R	2001Bi17
					+0.254(6) st		AB, R	2000Ha64
								1960Li11
					+0.276(4) st		AB, R	1998Se09
	276	9.7 ps	$5/2^-$	1.6(5)			TF	1996Ja09
	536	37 μs	$9/2^+$	5.70(5)			SOP/RDAD	1972Ch34
	767	0.54 ps	$5/2^-$	1.0(4)			TF	1996Ja09
	837	1.0 ps	$7/2^-$	1.4(4)			TF	1996Ja09
$^{82}_{35}$Br	0	35.3 h	5^-	+1.6270(5)		$^{79,81}_{35}$Br	AB	1959Ga12
					+0.69(2) st		AB, R	2000Ha64
								1960Li11
					+0.748(10) st		AB, R	1998Se09
$^{84}_{35}$Br	0	31.8 m	2^-	1.9(7)			NO/S	1992Pr06

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{75}_{36}$Kr	0	4.3 m	$5/2^+$	−0.531(4) d		$^{83}_{36}$Kr	CFBLS	1995Ke04
					+1.12(12)		CFBLS	1995Ke04
$^{76}_{36}$Kr	424	17 ps	2^+	+0.7(2)		$^{78}_{36}$Kr 455	TF	2004Ku11
$^{77}_{36}$Kr	0	74.4 m	$5/2^+$	−0.583(3) d		$^{83}_{36}$Kr	CFBLS	1995Ke04
					+0.94(10)		CFBLS	1995Ke04
$^{78}_{36}$Kr	455	17 ps	2^+	+0.86(2)			TF	2004Ku11
				+1.08(10)			TF	1981Wa16
	1119	2.3 ps	4^+	+1.8(3)			TF	2001Me20
	1148	3.7 ps	2^+	+1.1(2)			TF	2001Me20
$^{79}_{36}$Kr	0	35.04 h	$1/2^-$	+0.536(2) d		$^{83}_{36}$Kr	CFBLS	1995Ke04
	130	50 s	$7/2^+$	−0.786(2) d		$^{83}_{36}$Kr	CFBLS	1995Ke04
					+0.40(4)		CFBLS	1995Ke04
	147	77.7 ns	$5/2^-$	+1.124(10)		$^{19}_{9}$F 197	TDPAD	1968Bl04
					0.45(3)	$^{83}_{36}$Kr 9	TDPAD	1989Ra99
$^{80}_{36}$Kr	617	8.7 ps	2^+	+0.76(10)			TF	2001Me20
	1257	1.0 ps	4^+	+1.8(6)			TF	2001Me20
	1436	7.6 ps	2^+	+1.3(7)			TF	2001Me20
$^{81}_{36}$Kr	0	2.3 x 10^5 y	$7/2^+$	−0.908(2) d		$^{83}_{36}$Kr	CFBLS	1995Ke04
				−0.909(4)		$^{83}_{36}$Kr	LRFS	1993Ca41
					+0.644(4)	Calc efg	R	2001Ke15
					+0.64(7)		CFBLS	1995Ke04
					+0.629(13)		LRFS	1993Ca41
	190	13.1 s	$1/2^-$	+0.586(2) d		$^{83}_{36}$Kr	CFBLS	1995Ke04
$^{82}_{36}$Kr	777	4.5 ps	2^+	+0.80(3)			TF	2001Me20
	1821	0.7 ps	4^+	+1.2(8)			TF	2001Me20
$^{83}_{36}$Kr	0	Stable	$9/2^+$	−0.970669(3)			N, AB	1946Ke05
								1968Br16
					+0.259(1)	Calc efg	R	2001Ke15
					+0.26(3)		CFBLS	1995Ke04
					+0.253(5)		AB	1963Fa01
	9	147 ns	$7/2^+$	−0.943(2)		$^{83}_{36}$Kr	ME	1969Ca06
					+0.507(3)	Calc efg	R	2001Ke15
					+0.495(10)	$^{83}_{36}$Kr	ME	1977Ho99
	42	1.83 h	$1/2^-$	+0.591(2) d		$^{83}_{36}$Kr	CFBLS	1995Ke04
$^{84}_{36}$Kr	882	4.1 ps	2^+	+0.53(3)			TF	2001Me20
	3236	1.84 μs	8^+	−1.97(2)			TDPAD	1982Za04
	5373	45 ns	12^+	+2.04(12)			TDPAD	1985Ro22
				+2.0(2)			TDPAD	1990RO10
$^{85}_{36}$Kr	0	10.76 y	$9/2^+$	−1.005(2) d		$^{83}_{36}$Kr	CFBLS	1995Ke04
				1.005(2)		$^{83}_{36}$Kr	O	1955Ra13
								1981Th04
				−1.0055(4)		$^{83}_{36}$Kr	LRFS	1993Ca41
					+0.443(3)	Calc efg	R	2001Ke15
					+0.44(5)		CFBLS	1995Ke04
					+0.433(8)		LRFS	1993Ca41
	305	4.48 h	$1/2^-$	+0.633(2) d		$^{83}_{36}$Kr	CFBLS	1995Ke04
$^{86}_{36}$Kr	1565	0.30 ps	2^+	+2.2(3)			TF	2001Me20
$^{87}_{36}$Kr	0	76.3 m	$5/2^+$	−1.023(2) d		$^{83}_{36}$Kr	CFBLS	1995Ke04
					−0.30(3)		CFBLS	1995Ke04
$^{89}_{36}$Kr	0	3.15 m	$3/2^+$	−0.330(3) d		$^{83}_{36}$Kr	CFBLS	1995Ke04
					+0.16(2)		CFBLS	1995Ke04
$^{91}_{36}$Kr	0	8.57 s	$5/2^+$	−0.583(2) d		$^{83}_{36}$Kr	CFBLS	1995Ke04
					+0.30(3)		CFBLS	1995Ke04
$^{93}_{36}$Kr	0	1.286 s	$1/2^+$	−0.413(2) d		$^{83}_{36}$Kr	CFBLS	1995Ke04
$^{95}_{36}$Kr	0	0.78 s	$1/2^+$	−0.410(3) d		$^{83}_{36}$Kr	CFBLS	1995Ke04
$^{76}_{37}$Rb	0	39 s	$1^{(-)}$	−0.3726228(14)		$^{87}_{37}$Rb	ABLS	1986Du16
								1981Th04
					+0.38(15) st		ABLS	1981Th04
$^{77}_{37}$Rb	0	3.8 m	$3/2^-$	+0.6544680(16)		$^{87}_{37}$Rb	ABLS	1986Du16
								1981Th04
				+0.652(7)		$^{85}_{37}$Rb	AB	1978Ek04
					+0.70(4) st		ABLS	1981Th04
$^{78}_{37}$Rb	103	6.3 m	4^-	+2.549(2)		$^{87}_{37}$Rb	ABLS	1981Th04

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Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				+2.56(3)		$^{85}_{37}$Rb	AB	1978Ek04
					+0.81(4) st		ABLS	1981Th04
$^{79}_{37}$Rb	0	23 m	$5/2^+$	+3.3579(12)		$^{87}_{37}$Rb	ABLS	1981Th04
				+3.36(4)		$^{85}_{37}$Rb	AB	1978Ek04
					+0.10(2) st		ABLS	1981Th04
	97	18.6 ns	$9/2^+$	+5.03(7)			TDPAD	1994Io02
$^{80}_{37}$Rb	0	30 s	1^+	−0.0836(6)			OP/RD,R	1978Ek04
				−0.083(2)		$^{87}_{37}$Rb	ABLS	1981Th04
					+0.35(2) st		ABLS	1981Th04
	494	1.63 μs	6^+	+3.38(2)			TDPAD	1996Io01
				+3.36(6)			TDPAD	1996Io01
					0.51(5)		TDPAD	1989Ra17
$^{81}_{37}$Rb	0	4.58 h	$3/2^-$	+2.0595(14)		$^{87}_{37}$Rb	ABLS	1981Th04
					+0.40(2) st		ABLS	1981Th04
	86	32 m	$9/2^+$	+5.598(2)		$^{87}_{37}$Rb	ABLS	1981Th04
					−0.74(6) st		ABLS	1981Th04
$^{82}_{37}$Rb	0	1.25 m	1^+	+0.5545083(11)		$^{87}_{37}$Rb	ABLS	1986Du16
								1981Th04
				+0.554(6)			OP/RD, R	1978Ek04
					+0.19(7)		ABLS	1981Th04
	∼100	6.47 h	5^-	+1.5100082(2)		$^{87}_{37}$Rb	AB	1957Hu75
				+1.513(2)		$^{87}_{37}$Rb	ABLS	1981Th04
				+1.51(2)		$^{85}_{37}$Rb	AB, R	1978Ek04
					+1.0(1) st			
	191	12.3 ns	6^+	+4.02(5)			TDPAD	1996Io01
$^{83}_{37}$Rb	0	86.2 d	$5/2^-$	+1.4249(8)		$^{87}_{37}$Rb	ABLS	1981Th04
					+0.20(2) st		ABLS	1981Th04
$^{84}_{37}$Rb	0	33 d	2^-	−1.324116(2)		$^{87}_{37}$Rb	AB	
				−1.325(2)		$^{87}_{37}$Rb	ABLS	1981Th04
				−1.297(11)		$^{85}_{37}$Rb	OD, OL	1973Ac02
					−0.02(4) st		ABLS	1981Th04
					+0.005(13)		OD, OL	1973Ac02
	465	20.4 m	6^-	+0.212933(1)		$^{87}_{37}$Rb	ABLS	1986Du16
								1981Th04
					+0.6(3) st		ABLS	1981Th04
$^{85}_{37}$Rb	0	Stable	$5/2^-$	+1.35298(10)			ABLS	1993Du08
				+1.3533515(8)		$^{1}_{1}$H	N	1976Fu06
								1954Wa37
				+1.353028(3)			AB/D	1968Eh01
				+1.35302(2)			OP/RD	1968Wh01
				+1.357(1)		$^{87}_{37}$Rb	ABLS	1981Th04
					+0.277(1)		R	1999Ke12
					+0.286(1)		R	1999Ke12
					+0.23(4) st		ABLS	1981Th04
					+0.274(2) st		OD	1973Fe05
					+0.273(2) st	$^{87}_{37}$Rb	MB, R	1971St12
	514	1.02 μs	$9/2^+$	+6.043(5)		$^{85}_{37}$Rb	OP/RD	1991Ma21
				+6.046(10)		$^{85}_{37}$Rb	OP/RD	1984Sh24
				+6.16(5)			TDPAD, SOPAD	1974He22
					−0.7(2)	$^{85}_{37}$Rb	OP/RD	1991Ma21
	2826	12.5 ns	$19/2^-$	+1.3(4)			TDPAD	1990Ka26
$^{86}_{37}$Rb	0	18.65 d	2^-	−1.6920(14)			AB/D	1961Br16
				−1.698(2)		$^{87}_{37}$Rb	ABLS	1981Th04
					+0.19(3) st		ABLS	1981Th04
					+0.20(3) st		OD, OL	1973Ac02
	556	1.02 m	(6^-)	+1.815(1)		$^{87}_{37}$Rb	ABLS	1981Th04
					+0.37(10) st		ABLS	1981Th04
$^{87}_{37}$Rb	0	4.9×10^{10} y	$3/2^-$	+2.75131(12)			ABLS	1993Du08
				+2.751818(2)		$^{2}_{1}$H	N	1967Lu06
								1968Lu07
				+2.751235(3)			OP/RD	1968Wh01
					+0.134(1)		R	1999Ke12
					+0.138(1)		R	1999Ke12
					+0.132(1) st		OD	1973Fe05

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					+0.127(1) st		TDPAD, R	1971St12
					+0.13(2) st		ABLS	1981Th04
$^{88}_{37}$Rb	0	17.7 m	2^-	0.508(5)		$^{85}_{37}$Rb	AB	1968Va03
				0.50761(1)		$^{87}_{37}$Rb	AB, R	1979Ek02
				+0.512(3)		$^{87}_{37}$Rb	ABLS	1981Th04
					−0.01(10) st		ABLS	1981Th04
$^{89}_{37}$Rb	0	15.2 m	$3/2^-$	+2.3836(7)		$^{87}_{37}$Rb	ABLS	1981Th04
				+2.378(4)		$^{85}_{37}$Rb	AB	1979Ek02
				+2.377(5)		$^{87}_{37}$Rb	CFBLS	1979Kl03
					+0.14(3) st		ABLS	1981Th04
					0.16(3) st		CFBLS	1979Kl03
$^{90}_{37}$Rb	107	4.26 m	3^-	+1.6160(6)		$^{87}_{37}$Rb	ABLS	1981Th04
				+1.612(5)		$^{85}_{37}$Rb	AB	1979Ek02
					+0.20(5) st		ABLS	1981Th04
$^{91}_{37}$Rb	0	58 s	$3/2^{(-)}$	+2.1815(15)		$^{87}_{37}$Rb	ABLS	1981Th04
				+2.177(5)		$^{87}_{37}$Rb	CFBLS	1979Kl03
				+2.177(3)		$^{85}_{37}$Rb	AB	1979Ek02
					+0.15(3) st		ABLS	1981Th04
					0.14(3) st		CFBLS	1979Kl03
$^{93}_{37}$Rb	0	5.85 s	$5/2^-$	+1.410(2)		$^{87}_{37}$Rb	ABLS	1981Th04
				+1.400(6)		$^{85}_{37}$Rb	CFBLS	1979Kl03
					+0.18(4) st		ABLS	1981Th04
					0.27(6) st		CFBLS	1979Kl03
$^{94}_{37}$Rb	0	2.73 s	$3^{(-)}$	+1.498(2)		$^{87}_{37}$Rb	ABLS	1981Th04
					+0.16(5) st		ABLS	1981Th04
$^{95}_{37}$Rb	0	0.38 s	$5/2^-$	+1.334(3)		$^{87}_{37}$Rb	ABLS	1981Th04
					+0.21(7) st		ABLS	1981Th04
$^{96}_{37}$Rb	0	0.20 s	2^+	+1.466(2)		$^{87}_{37}$Rb	ABLS	1981Th04
					+0.25(6) st		ABLS	1981Th04
$^{97}_{37}$Rb	0	0.17 s	$3/2^-$	+1.841(2)		$^{87}_{37}$Rb	ABLS	1981Th04
					+0.58(4) st		ABLS	1981Th04
$^{77}_{38}$Sr	0	9 s	$5/2^+$	−0.348(4)		$^{87}_{38}$Sr	CFBLS	1992Li11
					+1.40(11) st	$^{87}_{38}$Sr	CFBLS	1992Li11
$^{79}_{38}$Sr	0	2.25 m	$(3/2^-)$	−0.474(4)		$^{87}_{38}$Sr	CFBLS	1990Bu12
					+0.708(6)		R	2002Ma09
					+0.73(6) st		CFBLS	1990Bu12
$^{81}_{38}$Sr	0	2.3 m	$1/2^-$	+0.543(4)		$^{87}_{38}$Sr	CFBLS	1990Bu12
				+0.542(4)		$^{87}_{38}$Sr	ABLFS	1987An02
$^{82}_{38}$Sr	2817	3.0 ps	5^-	+2(2)		$^{84}_{38}$Sr 793	TF	1989Ku11
	3243	—	8^+	+5.6(8)		$^{84}_{38}$Sr 793	TF	1989Ku11
	3623	—	8^+	+5.6(8)		$^{84}_{38}$Sr 793	TF	1989Ku11
	4424	0.9 ps	10^+	+11(5)		$^{84}_{38}$Sr 793	TF	1989Ku11
$^{83}_{38}$Sr	0	32.4 h	$7/2^+$	−0.829(2)		$^{87}_{38}$Sr	CFBLS	1990Bu12
				−0.8298(3)		$^{87}_{38}$Sr	ABLFS	1987An02
					+0.761(12)		R	2002Ma09
					+0.78(7) st	$^{87}_{38}$Sr	CFBLS	1990Bu12
					+0.82(5) st	$^{87}_{38}$Sr	ABLFS	1987An02
	259	5.0 s	$1/2^-$	+0.581(4)		$^{87}_{38}$Sr	CFBLS	1990Bu12
$^{84}_{38}$Sr	793	3.2 ps	2^+	+0.84(9)			TF	1988Ku01
	2769	9.5 ps	5^-	+8.0(10)		$^{84}_{38}$Sr 793	TF	1989Ku11
	3332	157 ps	8^+	−1(2)		$^{84}_{38}$Sr 793	TF	1989Ku11
				−1.1(6)		$^{84}_{38}$Sr 793	TFL	1981Br20
	3488	4.4 ps	7^-	+4.2(14)		$^{84}_{38}$Sr 793	TF	1989Ku11
	3680	3.3 ps	8^+	+7.2(8)		$^{84}_{38}$Sr 793	TF	1989Ku11
	4448	2.2 ps	10^+	+2.0(10)		$^{84}_{38}$Sr 793	TF	1989Ku11
	4534	1.66 ps	10^+	+8(2)		$^{84}_{38}$Sr 793	TF	1989Ku11
	4636	2.5 ps	9^-	0(4)		$^{84}_{38}$Sr 793	TF	1989Ku11
$^{85}_{38}$Sr	0	64.8 d	$9/2^+$	−1.000(2)		$^{87}_{38}$Sr	CFBLS	1990Bu12
				−1.0005(3)		$^{87}_{38}$Sr	ABLFS	1987An02
					+0.282(15)		R	2002Ma09
					+0.29(3) st	$^{87}_{38}$Sr	CFBLS	1990Bu12
	239	68 m	$1/2^-$	+0.600(4)		$^{87}_{38}$Sr	CFBLS	1990Bu12
				+0.599(2)		$^{87}_{38}$Sr	ABLFS	1987An02

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{86}_{38}$Sr	1077	1.46 ps	2^+	+0.55(10)			TF	1988Ku01
	2956	457 ns	8^+	−1.93(2)			TDPAD	1978Ha52
$^{87}_{38}$Sr	0	Stable	$9/2^+$	−1.0928(7)		$^{23}_{11}$Na	OP/RD	1972Ol01
				−1.0936030(13)		$^{2}_{1}$H	N	1974Sa25
					+0.33(2)		R	2002Ma09
					+0.34(2) st		AB	1977He21
	388	2.80 h	$1/2^-$	+0.624(4)		$^{87}_{38}$Sr	CFBLS	1990Bu12
				+0.788(9)		$^{87}_{38}$Sr	ABLFS	1987An02
$^{88}_{38}$Sr	1836	0.152 ps	2^+	+2.3(3)			TF	1988Ku01
$^{89}_{38}$Sr	0	50.5 d	$5/2^+$	−1.147(2)		$^{87}_{38}$Sr	CFBLS	1990Bu12
				−1.1481(8)		$^{87}_{38}$Sr	ABLFS	1987An02
					−0.271(9)		R	2002Ma09
					−0.28(3) st	$^{87}_{38}$Sr	CFBLS	1990Bu12
					−0.32(2) st	$^{87}_{38}$Sr	ABLFS	1987An02
$^{91}_{38}$Sr	0	9.5 h	$5/2^+$	−0.885(2)		$^{87}_{38}$Sr	CFBLS	1990Bu12
					+0.045(11)		R	2002Ma09
					+0.047(12)	$^{87}_{38}$Sr	CFBLS	1990Bu12
	94	88.9 ns	$3/2^+$	−0.35(2)			TDPAC	1993Wo07
				0.120(2)			TDPAC	1994Ka40
$^{93}_{38}$Sr	0	7.4 m	$5/2^+$	−0.793(2)		$^{87}_{38}$Sr	CFBLS	1990Bu12
					+0.258(11)		R	2002Ma09
					+0.26(3)	$^{87}_{38}$Sr	CFBLS	1990Bu12
$^{95}_{38}$Sr	0	10.3 m	$1/2^-$	−0.537(2)		$^{87}_{38}$Sr	CFBLS	1990Bu12
$^{97}_{38}$Sr	0	0.40 s	$1/2^-$	−0.498(2)		$^{87}_{38}$Sr	CFBLS	1990Bu12
$^{98}_{38}$Sr	144	2.8 ns	2^+	0.76(14)			IPAC	1989Wo05
$^{99}_{38}$Sr	0	0.269 s	$3/2^+$	−0.261(5)		$^{87}_{38}$Sr	CFBLS	1991Li05
					0.84(8)	$^{87}_{38}$Sr	CFBLS	1991Li05
$^{83}_{39}$Y	145	119 ps	$(7/2^+)$	+2.1(6)			IMPAD	1990Bh03
	595	5.4 ps	$(13/2^+)$	+8(3)			IMPAD	1990Bh03
				+4.4(7)			TF	1998LuZU
	1406	1.0 ps	$(17/2^+)$	+8(2)			TF	1998LuZU
	2371	0.6 ps	$(21/2^+)$	+11(2)			TF	1998LuZU
	2560	46 ps	$(17/2^-)$	+2.5(5)			IMPAD	1990Bh06
	3451		$(25/2^+)$	+7.0(12)			TF	1998LuZU
	4643		$(29/2^+)$	+8(2)			TF	1998LuZU
	5983		$(33/2^+)$	+8(2)			TF	1998LuZU
$^{85}_{39}$Y	20	4.9 h	$9/2^+$	6.2(5)		$^{87}_{39}$Y 381	NO/S	1988Be46
	266	170 ns	$5/2^-$	+1.36(2)			TDPAD	2000Io02
				+1.33(8)			TDPAD	1982RaZY
$^{86}_{39}$Y	0	14.5 h	4^-	<0.6		$^{87}_{39}$Y 381	NO/S	1988Be46
	218	46 m	8^+	4.8(3)		$^{87}_{39}$Y 381	NO/S	1988Be46
	243	28.5 ns	2^-	−1.06(6)			TDPAC	1968Tr11
	302	125 ns	7^-	−0.58(2)			TDPAD	2000Io02
$^{87}_{39}$Y	381	12.7 h	$9/2^+$	6.06(7)			NMR/ON	1991Hi04
				6.1 (+8/−2)			BFNO	1978Ma02
$^{88}_{39}$Y	675	14 ms	8^+	+4.87(5)			NMR/ON	1980Kl01
$^{89}_{39}$Y	0	Stable	$1/2^-$	−0.1374154(3)		$^{2}_{1}$H	N	1977Ha12
				−0.1374208(4)		$^{14}_{7}$N	N	1965Ba42
								1954Br09
	909	16.1 s	$9/2^+$	6.23(7)			NMR/ON	1991Hi04
				Positive sign			NMR/ON(β)	1996Oh03
$^{90}_{39}$Y	0	64.1 h	2^-	−1.630(8)		$^{89}_{39}$Y	AB	1962Pe01
					−0.155(3)		AB	1962Pe01
	203	250 ps	3^-	−0.85(7)			IPAC	1974Kl06
	682	3.19 h	7^+	5.1(5)		$^{87}_{39}$Y 381	NO/S	1988Be46
$^{91}_{39}$Y	0	58.5 d	$1/2^-$	0.1641(8)		$^{89}_{39}$Y	AB	1962Pe21
	556	49.7 m	$9/2^+$	5.96(4)			NMR/ON	1991Be18
				5.97(7)			NMR/ON	1991Hi04
$^{84}_{40}$Zr	540	14.1 ps	2^+	+0.5(7)			CRDTF	1999Te02
				1.0(2)			TF	1992Mo07
	1263	2.8 ps	4^+	+3(3)			CRDTF	1999Te02
				1.6(12)			TF	1992Mo07
	2136	1.8 ps	6^+	+1(3)			CRDTF	1999Te02
				11(7)			TF	1992Mo07

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
	3088	1.4 ps	8^+	12(5)			TF	1992Mo07
	4067	1.0 ps	10^+	5(8)			TF	1992Mo07
	5134	0.6 ps	12^+	11(8)			TF	1992Mo07
	6300	0.35 ps	14^+	18(7)			TF	1992Mo07
	—	—	8^+–14^+	avge $g = +0.87(10)$			TF	1992Mo07
$^{86}_{40}$Zr	—	—	$5,7,9^-$	avge $g = +0.5(2)$			TF	1995Mo02
	3298	62 ps	8^+	−0(3)			CRDTF	1999Te02
				+2(4)			CRDTF	1999Te02
				−0.2(7)			IMPAD	1995We03
				−8(5)			TF	1995Mo02
	3532	<4 ps	8^+	+15(12)			CRDTF	1999Te02
	—	—		+10(2)[avge 8+/10+]			TF	1995Mo02
								1992Mo07
	4326	2.1 ps	10^+	−7(11)			CRDTF	1999Te02
				−5(10)			TF	1995Mo02
								1992Mo07
	5396	2.6 ps	12^+	−20(9)			CRDTF	1999Te02
				−4(10)			TF	1995Mo02
								1992Mo07
	5524	—	12^+	+7(2)			TF	1995Mo02
								1992Mo07
	6321	5.2 ps	14^+	+30(8)			CRDTF	1999Te02
				+28(6)			CRDTF	1998Ju10
				+26(9)			TF	1995Mo02
								1992Mo07
$^{87}_{40}$Zr	0	1.68 h	$9/2^+$	−0.895(5)		$^{91}_{40}$Zr	CLS	2003Th03
					+0.42(5)	$^{91}_{40}$Zr	CLS	2003Th03
	336	14.0 s	$1/2^-$	+0.642(16)		$^{91}_{40}$Zr	CLS	2003Th03
$^{88}_{40}$Zr	2889	1.32 μs	8^+	−1.81(2)			TDPAD	1978Ha52
				−1.60(16)			TDPAD	1978Ki06
					+0.51(3)	$^{91}_{40}$Zr	TDPAD	1985Ra09
							TFLD	1986Be06
$^{89}_{40}$Zr	0	78.4 h	$9/2^+$	−1.046(11)		$^{91}_{40}$Zr	CLS	2003Th03
				−1.08(2)			NMR/ON(β)	1996Oh03
				−1.07(3)			NMR/ON	1997Hi06
					+0.28(10)	$^{91}_{40}$Zr	CLS	2003Th03
	588	4.16 m	$1/2^-$	+0.795(18)		$^{91}_{40}$Zr	CLS	2003Th03
	2995	5.2 ns	$21/2^+$	+9.4(4)			TDPAD	1988Ba11
$^{90}_{40}$Zr	2186	0.087 ps	2^+	+2.5(4)			TF	2000Ja11
	2319	0.8 s	5^-	6.25(13)			NMR/ON	1987Ed02
	2748	140 ps	3^-	+3.0(2)			TF	2000Ja11
	3589	134 ns	8^+	+10.84(6)			TDPAD	1977Ha49
								1978Ha52
					−0.51(3)	$^{91}_{40}$Zr	TDPAD	1985Ra09
							TFLD	1986Be06
$^{91}_{40}$Zr	0	Stable	$5/2^+$	−1.30362(2)		$^{2}_{1}$H	N	1957Br26
					−0.176(3)	Calc efg	MS	2000Ke03
					(−)0.257(13)		R	1993Yo99
					−0.206(10)		AB	1989Ra17
					−0.23(2) a		R	1998Bo35
	2287	29 ns	$15/2^-$	+5.25(8)			TDPAD	1976Ba02
	3167	3.6 μs	$21/2^+$	+9.82(8)		$^{90}_{40}$Zr 3589	TDPAD	1982RaZR
					(−)0.86(5)	$^{91}_{40}$Zr	TDPAD	1985Ra09
$^{92}_{40}$Zr	934	5.0 ps	2^+	−0.36(2)			TF	1999Ja13
				−0.06(10)			TF	1980Ha31
	1495	102 ps	4^+	−2.0(4)			TF	1999Ja13
$^{94}_{40}$Zr	918	7.7 ps	2^+	−0.66(3)			TF	1999Ja13
				−0.52(12)			TF	1980Ha31
				−0.10(10)		$^{110}_{48}$Cd 658	IMPAC	1978Ge19
	1470	500 ps	4^+	−3.2(16)			TF	1999Ja13
$^{95}_{40}$Zr	0	64.0 d	$5/2^+$	1.13(2)			NMR/ON	1991Be18
					+0.22(2)	$^{90}_{40}$Zr 2319	MAPON	1998Se01
						Q estimate		
					(+)0.29(5)			1992Be50

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{96}_{40}$Zr	1750	0.57 ps	2^+	+0.06(14)			TF	2003Ku11
	1897	68 ps	3^-	+2.9(5)			TF	2003Ku11
$^{97}_{40}$Zr	0	16.8 h	$1/2^+$	−0.937(5)		$^{91}_{40}$Zr	CLS	2003Th03
	1264	102 ns	$7/2^+$	+1.37(14)			TDPAC	1985Be20
$^{99}_{40}$Zr	0	16.8 h	$1/2^+$	−0.930(4)		$^{91}_{40}$Zr	CLS	2003Th03
	122	1.07 ns	$3/2^+$	+0.42(6)			IPAC	1995Wo01
$^{100}_{40}$Zr	213	0.61 ns	2^+	+0.60(6)			IPAC	2004Sm04
				0.52(12)			IPAC	1989Wo05
				0.44(10)			IPAC	1980Wo09
$^{101}_{40}$Zr	0	2.4 s	$3/2^+$	−0.272(8)		$^{91}_{40}$Zr	CLS	2003Th03
					+0.81(6)	$^{91}_{40}$Zr	CLS	2002Ca37
$^{102}_{40}$Zr	152	1.9 ns	2^+	+0.44(10)			IPAC	2004Sm04
$^{87}_{41}$Nb	2412	58 ps	$17/2^-$	+7.0(9)			IMPAD	1995We03
	2491	13.8 ps	$21/2^+$	+4.3(14)			IMPAD	1995We03
				+3.8(12)			CRDTF	1998Ju02
	2858	0.8 ps	$21/2^+$	−6(11)			CRDTF	1999Te02
	3217	0.6 ps	$23/2^+$	+16(9)			CRDTF	1999Te02
	3443	1.7 ps	$25/2^+$	+3(2)			CRDTF	1999Te02
	3739	—	$25/2^+$	+1(3)			CRDTF	1999Te02
	4127	3.0 ps	$25/2^-$	+6(5)			CRDTF	1999Te02
	5010	3.5 ps	$29/2^-$	+7(2)			CRDTF	1999Te02
				+8(3)			CRDTF	1998Ju02
$^{89}_{41}$Nb	0	2.0 h	$9/2^+$	6.216(5)			NMR/ON	1997Hi06
	2193	14 ns	$21/2^+$	+3.40(7)			TDPAD	1994Kr01
$^{90}_{41}$Nb	0	14.6 h	8^+	4.961(4)		$^{93}_{41}$Nb	NMR/ON	1981Ha24
					+0.046(7)	$^{95}_{41}$Nb est Q	MAPON	1998Se01
	122	66 μs	6^+	+3.72(2)			TDPAD	1975Ho16
	1881	477 ns	11^-	+8.78(3)			TDPAD	1978Ha52
$^{91}_{41}$Nb	1985	10 ns	$13/2^-$	+9.14(13)			TDPAD	1977ZaZW
	2037	3.4 μs	$17/2^-$	+10.82(14)			TDPAD	1977Ha49
				+10.81(15)			TDPAD	1979Pl05
	3467	0.9 ns	$21/2^+$	+12(2)			IPAD	1977Ba34
$^{92}_{41}$Nb	135	10.15 d	2^+	(+) 6.137(4)		$^{93}_{41}$Nb	NMR/ON	1981Ha24
	225	4.3 μs	2^-	−1.398(14)			SOPAD, TDPAD	1974Le05
	2203	167 ns	11^-	+9.7(3)			TDPAD	1977Br12
$^{93}_{41}$Nb	0	Stable	$9/2^+$	+6.1705(3)		$^{45}_{21}$Sc	N, O	1951Sh33, 1947Me27
					−0.32(2) a		Mu-X	1973Po15
					−0.37(2)		AB, R	1989Ra99
$^{95}_{41}$Nb	0	35.2 d	$9/2^+$	6.141(5)		$^{93}_{41}$Nb	NMR/ON	1986Ed01
				6.140(6)		$^{93}_{41}$Nb	NMR/ON	1985Oh08
				6.143(5)		$^{93}_{41}$Nb	NMR/ON	1981Ha24, 1977Ko31
				6.004(12)			BFNMR/ON	1989Ra99
					Q negative if Vzz (Nb$\underline{\text{Zr}}$) + ve			1992Be50
$^{96}_{41}$Nb	0	23.4 h	6^+	4.976(4)		$^{93}_{41}$Nb	NMR/ON	1986Ed01
				4.975(4)		$^{93}_{41}$Nb	NMR/ON	1985Oh08
$^{97}_{41}$Nb	0	72.1 m	$9/2^+$	6.153(5)			NMR/ON	1991Be18
				7.3(14)		$^{95}_{41}$Nb	NO/S	1976Kr01
$^{88}_{42}$Mo	—	—	$6,8^+$	avge $g = +0.5(3)$			IMPAD	1995We03
$^{89}_{42}$Mo	2584	9.5 ns	$21/2^+$	+8.3(4)		$^{90}_{42}$Mo 2875	TDPAD	1995We12
$^{90}_{42}$Mo	2594	16 ps	5^-	+5.5(14)			IMPAD	1994We09
	2875	1.1 μs	8^+	−1.391(14)			TDPAD	1978Ha52
					0.58(3)	$^{92}_{42}$Mo 2760	TDPAD	1985Ra09
	4842	39 ps	11^-	+4.6(14)			IMPAD	1994We09
	4556	526 ps	12^+	+6.0(7)			IMPAD	1994We09
$^{91}_{42}$Mo	2267	47 ns	$21/2^+$	+8.81(8)		$^{90}_{42}$Mo 2875	TDPAD	1983Ra08
				+8.97(9)			TDPAD	1977Ha49
	2279	38 ns	$17/2^-$	+4.51(6)		$^{90}_{42}$Mo 2875	TDPAD	1983Ra08
$^{92}_{42}$Mo	1509	0.38 ps	2^+	+2.3(3)			TF	2001Ma17
	2760	190 ns	8^+	+11.30(5)			TDPAD	1977Ha49
				+11.35(8)			TDPAD, R	1977Ku22
					Q (negative)		TDPAD	1991Ha04

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					0.34	B(E2) est	TDPAD	1985Ra09
	4486	9.2 ns	11^-	+13.9(3)			TDPAD	1977Ha49
				+14.17(13)			TDPAD, R	1977Ku22
$^{93}_{42}$Mo	2425	6.85 h	$21/2^+$	(+)9.93(8)		$^{95}_{42}$Mo	NMR/ON	1981Ha12
$^{94}_{42}$Mo	871	2.9 ps	2^+	+0.62(9)			TF	2001Ma17
					−0.13(8) or +0.01(8)		CER	1976Pa13
	2956	98 ns	8^+	+10.46(7)			TDPAD	1979LeZL
				+10.54(12)			TDPAD	1975Fa04
					0.47(1)	$^{92}_{42}$Mo 2760	TDPAD	1985Ra09
$^{95}_{42}$Mo	0	Stable	$5/2^+$	−0.9142(1)		$^{97}_{42}$Mo	N	1951Pr02
					−0.022(1)	$^{97}_{42}$Mo	AB	1989Ra17
					−0.015(4)		ABLDF	1978Du24
	204	0.75 ns	$3/2^+$	−0.404(12)			IPAC	1984Al11
				−0.378(15)			IPAC	1976Jo03
$^{96}_{42}$Mo	778	3.7 ps	2^+	+0.79(6)			TF	2001Ma17
					−0.20(8) or +0.04(8)		CER	1976Pa13
$^{97}_{42}$Mo	0	Stable	$5/2^+$	−0.9335(1)		$^{14}_{7}$N	N	1951Pr02
					+0.255(13)		AB, R	1989Ra17
					+0.17(4)		ABLDF	1978Du24
					0.27(10) a		Mu-X	1980Sc01
$^{98}_{42}$Mo	787	3.5 ps	2^+	+0.97(7)			TF	2001Ma17
				+0.7(4)			IMPAC	1969He11
					−0.26(9)		CER, R	1979Pa11
$^{99}_{42}$Mo	0	65.9 h	$1/2^+$	0.375(3)		$^{95}_{42}$Mo	AB	1978Ru04
	98	17 μs	$5/2^+$	−0.775(5)			TDPAD	1978Ra21
$^{100}_{42}$Mo	536	10.3 ps	2^+	+0.94(7)			TF	2001Ma17
				+0.7(4)			IMPAC	1969He11
					−0.42(9) or −0.10(9)		CER	1976Pa13
					−0.39(8) or −0.13(8)		CER	1977Na06
$^{102}_{42}$Mo	297	0.11 ns	2^+	0.84(14)			IPAC	1985Me13
				+0.8(4)			IPAC	2004Sm04
$^{104}_{42}$Mo	192	0.9 ns	2^+	+0.54(4)			IPAC	2004Sm04
				+0.50(4)			IPAC	2002Pa14
				0.4(2)			IPAC	1985Me13
$^{106}_{42}$Mo	172	1.25 ns	2^+	+0.42(4)			IPAC	2004Sm04
$^{107}_{42}$Mo	66	245 ns	Unknown	$g = -0.92(3)$			TDPAC	1976ChZD
$^{108}_{42}$Mo	193	0.50 ns	2^+	+1.0(6)			IPAC	2004Sm04
$^{92}_{43}$Tc	2002	3.2 ns	11^-	+8.9(3)			TDPAD	1996Tu03
$^{93}_{43}$Tc	0	2.75 h	$9/2^+$	6.32(6)			NMR/ON	1995Hi06
				6.26(10)			NMR/ON	1981Ha16
	2186	10.1 μs	$17/2^-$	+10.46(5)			TDPAD	1977Ha49
$^{94}_{43}$Tc	0	293 m	7^+	5.12(5)			NMR/ON	1995Hi06
				5.08(8)			NMR/ON	1981Ha16
				5.0(3)			NO/S	1977Be19
$^{95}_{43}$Tc	0	20.0 h	$9/2^+$	5.94(6)			NMR/ON	1995Hi06
				5.89(10)			NMR/ON	1981Ha16
				5.82(12)			NO/S	1977Wi10
$^{96}_{43}$Tc	0	4.28 d	7^+	5.09(5)			NMR/ON	1995Hi06
				+5.04(8)			NMR/ON	1981Ha16
				5.4(2)			NMR/ON	1975Sa18
	120	26 ns	$(2)^-$	−0.47(2)			TDPAD	1977BeWG
$^{99}_{43}$Tc	0	2.1×10^5 y	$9/2^+$	+5.6847(4)		$^{2}_{1}$H	N	1952Wa02
					−0.129(6)		AB	1989Ra17
	141	0.205 ns	$7/2^+$	+4.48(15)			IPAC	1993Al23
				3.6(9)		$^{99}_{43}$Tc	ME	1973Sh21
				+4.4(9)			IPAC	1969In07
	181	3.44 ns	$5/2^+$	3.48(4)			NMR/ON	1995Hi06
				+3.62(5)			IPAC	1993Al23
				+3.29(6)			TDPAC	1971Wi08
$^{108}_{43}$Tc	>153	100 ns		$g = +0.50(4)$			TDPAC	1976ChZD
$^{93}_{44}$Ru	2082	2.4 μs	$21/2^+$	+8.97(2)			TDPAD	1983Gr33
					(+)0.04(1)		TDPAD	1991Ha04
	2279	35 ns	$17/2^-$	+4.4(2)			TDPAD	1983Gr33

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{94}_{44}$Ru	2498	65 ns	6^+	+8.12(5)			TDPAD	1977Ha49
				+8.10(7)			TDPAD	1979LeZK
	2643	68 μs	8^+	+11.10(4)			TDPAD	1977Ha49
	4489	1.10 ns	11^-	14.1(1.7)			IMPAD	1999Ju04
	4716	34.3 ps	12^+	12.4(1.7)			IMPAD	1999Ju04
$^{95}_{44}$Ru	0	1.64 h	$5/2^+$	0.861(7)			NMR/ON	1991Hi17
	2285	3 ns	$17/2^+$	+6.98(14)			TDPAC	1976Le30
	2540	10 ns	$21/2^+$	+9.17(7)			TDPAD	1988Gr34
	3908	36 ps	$25/2^-$	11(4)			IMPAD	1999Ju04
	6211	9.5 ps	$29/2^+$	9(5)			IMPAD	1999Ju04
	7624	21 ps	$35/2^+$	7(2)			IMPAD	1999Ju04
$^{96}_{44}$Ru	833	2.7 ps	2^+		−0.13(9)		CER	1980La01
					−0.1(2)		CER	1977Ma41
					−0.2(3)		CERP	1978Fa08
$^{97}_{44}$Ru	0	2.88 d	$5/2^+$	(−)0.787(8)		$^{101}_{44}$Ru	NMR/ON	1985Ed06
								1980Le09
				0.73(5)		$^{101}_{44}$Ru	NO/S	1981Lu04
	2739	7.8 ns	$21/2^+$	+9.2(8)			TDPAD	1982Di18
$^{98}_{44}$Ru	653	5.9 ps	2^+	+0.8(6)			IMPAC	1974Hu01
					−0.20(9) or −0.01(9)		CER	1980La01
					−0.03(14)	$^{102}_{44}$Ru 475	CER	1977Ma41
$^{99}_{44}$Ru	0	Stable	$5/2^+$	−0.641(5)			AB/D	1977Bu04
				$g(^{99}_{44}\text{Ru})/g$		$^{101}_{44}$Ru	N	1982Br28
				$(^{101}_{44}\text{Ru})$				
				$= 0.8922344(4)$				
					+0.079(4)	$^{101}_{44}$Ru	AB, R	1977Bu04
								1989Ra17
	90	20.5 ns	$3/2^+$	−0.284(6)			TDPAC	1965Ma27
				−0.292(3)		$^{99}_{44}$Ru	ME	1989Ra99
					+0.231(12)	$^{99}_{44}$Ru	ME	1976Ki02
								1974Gi12
$^{100}_{44}$Ru	540	12 ps	2^+	+1.02(13)			IPAC	1966Au06
					−0.54(7) or −0.33(7)		CER	1998Hi01
					−0.43(7) or −0.20(7)		CER	1980La01
					−0.54(7) or −0.33(7)		CER	1980HiZV
					−0.40(12)		CERP	1978Fa08
					−0.13(7)	$^{102}_{44}$Ru 475	CER	1977Ma41
$^{101}_{44}$Ru	0	Stable	$5/2^+$	−0.719(6)			AB/D	1977Bu04
				−0.716(6)		$^{99}_{44}$Ru	N	1974Mu09
					+0.46(2)		AB, R	1977Bu04
	127	0.65 ns	$3/2^+$	−0.210(5)		$^{99}_{44}$Ru 90	TDPAC	1986Sc15
				−0.236(12)			IPAC	1984Al11
$^{102}_{44}$Ru	475	18 ps	2^+	+0.74(6)			IPAC	1972Jo06
					−0.64(5) or −0.33(4)		CER	1998Hi01
					−0.57(7) or −0.35(7)		CER	1980La01
					−0.68(8)		CER	1979Bo28
$^{103}_{44}$Ru	0	39.4 d	$3/2^+$	0.206(3)			NMR/ON	1990Hi02
				0.200(7)			NMR/ON	1983Kr01
				0.19(2)		$^{101}_{44}$Ru	NO/S	1981Mu18
				(−)0.23(6)		$^{101}_{44}$Ru	NO/S	1981Ha11
					(+)0.62(2)	$^{99}_{44}$Ru 90	NO/S	1986Gr26
								1983Ko49
$^{104}_{44}$Ru	358	58 ps	2^+	+0.82(10)			IMPAC, R	1974Hu01
					−0.62(8) or −0.05(7)		CER	1998Hi01
					−0.70(8) or −0.35(8)		CER	1980La01
					−0.8(2)		CERP	1978Fa08
					−0.66(5)	$^{102}_{44}$Ru 475	CER	1977Ma41
$^{105}_{44}$Ru	0	4.44 h	$3/2^+$	(−)0.32(+8/−20)		$^{101}_{44}$Ru	NO/S	1981Ha11
$^{106}_{44}$Ru	270	Est 0.20 ns	2^+	+0.6(2)			IPAC	2004Sm04
$^{108}_{44}$Ru	242	0.30 ns	2^+	+0.46(8)			IPAC	2004Sm04
$^{109}_{44}$Ru	>95	780 ns	Unknown	$g = -0.22(1)$			TDPAD	1976ChZD
$^{110}_{44}$Ru	241	0.30 ns	2^+	+0.88(14)			IPAC	2004Sm04
$^{112}_{44}$Ru	237	0.32 ns	2^+	+0.9(2)			IPAC	2004Sm04
$^{95}_{45}$Rh	2236	19 ns	$17/2^-$	+10.9(3)			TDPAD	1983Gr33

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{99}_{45}$Rh	65	4.7 h	$9/2^+$	5.62(6)			NMR/ON, R	1995Se20
				5.668(12)		$^{100}_{45}$Rh 75	NMR/ON	1985Ed06
				5.666(14)		$^{100}_{45}$Rh 75	NMR/ON	1986Ni02
$^{100}_{45}$Rh	75	215 ns	2^+	+4.324(8)			TDPAC	1966Ma54
	$112 + x$	140 ns	7^+	+4.69(14)			TDPAD	1990Bi03
				+4.8(4)			TDPAD	1986RaZU
$^{101}_{45}$Rh	157	4.34 d	$9/2^+$	5.43(6)			NMR/ON, R	1995Se20
				+5.475(12)			NMR/ON	1985Ed06
								1973Ka28
				5.472(14)			NMR/ON	1986Ni02
$^{102}_{45}$Rh	0	206 d	2^-	0.5(4)			NO/S	1975Sc09
	141	2.9 y	6^+	4.01(4)			NMR/ON, R	1995Se20
				4.040(9)			NMR/ON	1989Hi12
				4.044(12)			NMR/ON	1986Ni02
$^{103}_{45}$Rh	0	Stable	$1/2^-$	−0.8840(2)		$^{2}_{1}$H	N	1955So10
	40	56.1 m	$7/2^+$	4.50(5)			NMR/ON, R	1995Se20
				4.540(11)		$^{100}_{45}$Rh 75	NMR/ON	1985Ed06
								1977Ke10
	93	1.06 ns	$9/2^+$	+4.9(8)			IPAC	1973Ba52
	295	6.7 ps	$3/2^-$	+0.81(8)			TF	1989La14
				+0.69(12)			TF	1988Be45
					−0.3(2)		CERP	1976Ge19
	357	73 ps	$5/2^-$	+1.08(8)			TF	1989La14
				+0.9(2)			TF	1988Be45
				+1.09(5)			CEAD	1972Sz03
					−0.4(2)		CERP	1976Ge19
	848	1.9 ps	$7/2^-$	+2.0(6)			TF	1989La14
	920	5.6 ps	$9/2^-$	+2.8(5)			TF	1989La14
$^{104}_{45}$Rh	$215.5 + x$	47 ns	6^-	+2.00(6)			TDPAD	1990Bi03
$^{105}_{45}$Rh	0	35.4 h	$7/2^+$	4.41(5)			NMR/ON, R	1995Se20
				4.452(10)		$^{100}_{45}$Rh 75	NMR/ON	1985Ed06
								1981Ha19
				4.36(12)		$^{100}_{45}$Rh 75	NO/S	1977Wi10
$^{106}_{45}$Rh	0	29.8 s	1^+	2.575(7)			NMR/ON	1990Oh01
				3.09(9)		$^{100}_{45}$Rh 75	NO/S	1977Ru08
				Sign positive			β-NO/S	1992Ma54
$^{96}_{46}$Pd	2532	2.22 μs	8^+	+10.97(6)			TDPAD	1983Gr01
	7039	35 ns	(15^+)	(+)12.5(6)		$^{96}_{46}$Pd 2532	TDPAD	1989Al05
$^{101}_{46}$Pd	0	8.5 h	$5/2^+$	(−)0.66(2)		$^{106}_{46}$Pd	NMR/ON	1986Ni02
$^{102}_{46}$Pd	556	11.3 ps	2^+	+0.82(8)		$^{106}_{46}$Pd 512	TF	1980Br01
				+0.78(10)		$^{106}_{46}$Pd 512	TF	1985ThZX
					−0.20(15)		CERP	1977Fa11
					−0.2(2)		CER	1977La16
$^{103}_{46}$Pd	785	25 ns	$11/2^-$	−1.05(6)			TDPAD	1981KaZE
$^{104}_{46}$Pd	556	9.7 ps	2^+	+0.92(8)		$^{106}_{46}$Pd 512	TF	1980Br01
				+0.76(8)		$^{106}_{46}$Pd 512	TF	1985ThZX
				0.80(10)		$^{106}_{46}$Pd 512	RIGV	1979LaZL
					−0.46(11)		CERP	1977Fa11
$^{105}_{46}$Pd	0	Stable	$5/2^+$	−0.642(3)			N	1964Se13
					0.660(11) a		Mu-X	1978Vu01
					+0.65(3)		AB, R	1989Ra17
	280	67 ps	$3/2^+$	−0.074(13)		$^{105}_{46}$Pd 645	IPAC	1981Al19
	319	38 ps	$5/2^+$	+1.0(2)		$^{105}_{46}$Pd 645	IPAC	1981Al19
	645	126 ps	$7/2^-$	−1.49(9)			IPAC	1981Al19
$^{106}_{46}$Pd	512	12 ps	2^+	+0.80(4)			IPAC, R	1980Br01
					−0.56(8) or −0.41(8)		CER, R	1972Lu08
					−0.51(7)		ES	1973Ho05
	1128	3.1 ps	2^+	+0.60(12)			IPAC	1970Si20
								1968Bo15
								1968We16
$^{108}_{46}$Pd	434	23 ps	2^+	+0.72(6)		$^{106}_{46}$Pd 512	TF	1980Br01
				+0.76(6)			IMPAC, R	1974Hu01
				+0.64(6)		$^{106}_{46}$Pd 512	TF	1985ThZX

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Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				0.84(10)		$^{106}_{46}$Pd 512	RIGV	1979LaZL
					−0.58(4)		ES	1978Ar07
					−0.48(5)	$^{110}_{46}$Pd 374	CER	1977Ma41
					−0.51(6) or −0.30(6)		CER	1972Lu08
					−0.7(2)		CERP	1976Ha21
					−0.7(3)		ES, R	1981Ko06
$^{110}_{46}$Pd	374	46 ps	2^+	+0.62(6)		$^{106}_{46}$Pd 512	TF	1980Br01
				+0.62(6)			IMPAC, R	1974Hu01
				+0.70(6)		$^{106}_{46}$Pd 512	TF	1985ThZX
				0.74(6)		$^{106}_{46}$Pd 512	RIGV	1979LaZL
					−0.47(3)		ES	1976Li19
					−0.55(8) or −0.35(8)		CER, R	1972Lu08
$^{114}_{46}$Pd	333	0.20 ps	2^+	+0.18(10)			IPAC	2004Sm04
$^{116}_{46}$Pd	341	106 ps	2^+	+0.4(2)			IPAC	2004Sm04
$^{101}_{47}$Ag	0	11.4 m	$9/2^+$	5.7(4)		$^{110}_{47}$Ag 118	NO/S	1983Va09
$^{102}_{47}$Ag	0	13 m	5^+	4.6(7)		$^{110}_{47}$Ag 118	NO/S	1985Va06
								1983Va09
	9	7.7 m	2^+	4.1(3)		$^{107}_{47}$Ag	AB	1974Gr10
	181	3.5 ns	7^+	4.6(3)			IPAD	1989VoZR
$^{103}_{47}$Ag	0	1.10 h	$7/2^+$	+4.47(5)			AB/D	1970Wa35
$^{104}_{47}$Ag	0	69 m	5^+	3.917(8)		$^{110}_{47}$Ag 118	NMR/ON	1986Va27
	7	33 m	2^+	+3.7(2)		$^{107}_{47}$Ag	AB	1961Am02
				4.1(3)		$^{110}_{47}$Ag 118	NO/S	1989Ra99
	212	1.4 ns	7^+	4.8(3)			IPAD	1989VoZR
$^{105}_{47}$Ag	0	41.3 d	$1/2^-$	0.1014(10)		$^{107}_{47}$Ag	AB	1963Ew02
	25	7.2 m	$7/2^+$	+4.414(13)			CFBLS	1988DiZU
	1734	6.0 ns	$15/2^+$	+3.73(14)			TDPAD	1980Le05
				+3.8(2)			TDPAD	1985Ke09
				+4.4(5)			TDPAD	1979Ka05
$^{106}_{47}$Ag	0	24 m	1^+	+2.9(2)		$^{107}_{47}$Ag	AB	1974Gr10
	90	8.5 d	6^+	(+)3.705(4)		$^{110}_{47}$Ag 118	BFNMR/ON	2001Oh03
				(+)3.709(4)		$^{110}_{47}$Ag 118	NMR/ON	1984Ed02
				(+)3.82(8)		$^{110}_{47}$Ag 118	NO/S	1984Be53
					+1.11(11) st	$^{110}_{47}$Ag 118	NO/S	1984Be53
$^{107}_{47}$Ag	0	Stable	$1/2^-$	−0.11357(2)			AB/D	1973Bu24
				−0.11367965(15)		$^{2}_{1}$H	N	1974Sa25
	93	44.3 s	$7/2^+$	(+)4.398(5)		$^{109}_{47}$Ag 88	NMR/ON	1985Ed01
					0.98(11) st	$^{110}_{47}$Ag 118	LMR	1986Be01
	325	5.0 ps	$3/2^-$	+0.9(2)			TF	1986Ba14
				+0.94(14)		$^{108}_{46}$Pd 434	TF	1984Wo08
				+1.05(14)		$^{106}_{46}$Pd 512	TF	1984Ba72
	423	40.2 ps	$5/2^-$	+1.0(2)			TF	1986Ba14
				+0.93(15)		$^{108}_{46}$Pd 434	TF	1984Wo08
				+1.13(15)		$^{106}_{46}$Pd 512	TF	1984Ba72
$^{108}_{47}$Ag	0	2.4 m	1^+	2.6884(7)		$^{8}_{3}$Li	β-NMR	1976Wi03
	110	418 y	6^+	3.58(2)		$^{109}_{47}$Ag 88	O	1975Fi07
					+1.32(7) st		O, R	1984Be53
	215	46 ns	3^+	+3.888(15)		$^{19}_{9}$F 197	TDPAD, R	1974Be47
$^{109}_{47}$Ag	0	Stable	$1/2^-$	0.13056(2)		$^{107}_{47}$Ag	N	1954So05
				−0.1306906(2)		$^{2}_{1}$H	N	1974Sa25
	88	39.8 s	$7/2^+$	+4.400(6)		$^{110}_{47}$Ag 118	NMR/ON	1985Ed01
								1971St09
					(+)1.02(12)	$^{110}_{47}$Ag 118	LMR, R	1986Be01
								1984Be53
	311	5.9 ps	$3/2^-$	+0.99(15)			TF	1986Ba14
				+1.2(2)		$^{108}_{46}$Pd 434	TF	1984Wo08
				+1.2(2)		$^{106}_{46}$Pd 512	TF	1984Ba72
					−0.7(3)		CER	1972Th16
	415	35 ps	$5/2^-$	+0.73(15)			TF	1986Ba14
				+0.90(13)		$^{108}_{46}$Pd 434	TF	1984Wo08
				+0.90(15)		$^{106}_{46}$Pd 512	TF	1984Ba72
					−0.3(3)		CER	1972Th16
$^{110}_{47}$Ag	0	24.4 s	1^+	2.7271(8)		$^{108}_{47}$Ag	NMR/ON, AB	1976Wi03
					0.24(12)		QIR	1981Do17

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
	118	252 d	6^+	3.589(4)			BFNMR/ON	1992Hu09
				+3.607(4)			AB/D	1967Sc04
					+1.44(10) st		O, R	1984Be53
	119	37 ns	3^+	+3.77(3)		$^{19}_{9}$F 197	TDPAD	1974Be47
$^{111}_{47}$Ag	0	7.45 d	$1/2^-$	−0.146(2)		$^{109}_{47}$Ag	AB	1956Wo99
$^{112}_{47}$Ag	0	3.14 h	$2^{(-)}$	0.0547(5)		$^{109}_{47}$Ag	AB	1964Ch06
$^{113}_{47}$Ag	0	5.37 h	$1/2^-$	0.159(2)		$^{109}_{47}$Ag	AB	1964Ch06
$^{100}_{48}$Cd	2548	73 ns	8^+	9.9(5)			TDPAD	1992Al17
$^{102}_{48}$Cd	2718	56 ns	8^+	10.3(2)			TDPAD	1992Al17
					0.87(10)		TDPAD	1992Al17
$^{103}_{48}$Cd	0	7.3 m	$5/2^+$	−0.81(3)		$^{109}_{48}$Cd	CLS	1987Bu01
					−0.8(7)	$^{109}_{48}$Cd	CLS	1987Bu01
$^{105}_{48}$Cd	0	56 m	$5/2^+$	−0.7393(2)		$^{109}_{48}$Cd	OD	1969La06
					+0.43(4)	$^{109}_{48}$Cd	OD	1969La06
	2517	4.5 μs	$21/2^+$	+9.17(6)			SOPAD	1978Sp09
					(+)1.17(12)	$^{109}_{48}$Cd 463	TDPAD	1978Sp09
$^{106}_{48}$Cd	633	7.3 ps	2^+	+0.8(2)		$^{110}_{48}$Cd 658	TF	1980Br01
					−0.28(8)		CER	1976Es02
	4660	62 ns	12^+	+8.9(2)			TDPAD, R	1986Vo14
$^{107}_{48}$Cd	0	6.50 h	$5/2^+$	−0.6150554(11)		$^{111}_{48}$Cd	OP/RD, N, OD	1972Sp09
								1963By02
					+0.68(7)	$^{109}_{48}$Cd	OD, R	1969La06
	846	70 ns	$11/2^-$	−1.041(11)		$^{19}_{9}$F 197	TDPAD	1974Be17
				−1.11(2)			TDPAD	1976Le13
					(−)0.94(10)	$^{109}_{48}$Cd 463	TDPAD	1978Sp09
	2679	56 ns	$21/2^+$	+9.10(10)			TDPAD	1974Ha48
					+1.21(13)	$^{109}_{48}$Cd 463	TDPAD	1978Sp09
$^{108}_{48}$Cd	633	6.8 ps	2^+	+0.7(2)		$^{110}_{48}$Cd 658	TF	1980Br01
					−0.45(8)		CER	1976Es02
$^{109}_{48}$Cd	0	453 d	$5/2^+$	−0.8278461(15)		$^{111}_{48}$Cd	OP/RD, N, OD	1972Sp09
								1963By02
					+0.69(7)		OD, R	1969La06
	463	10.9 μs	$11/2^-$	−1.096(2)			SOP/RDAD	1989Ra99
					−0.92(9)	$^{111,3,5}_{48}$Cd 11/2− states	TDPAD	1978Sp09
$^{110}_{48}$Cd	658	5.0 ps	2^+	+0.57(11)			IPAC, R	1980Br01
				+0.56(10)		$^{111}_{48}$Cd 245	IPAC	1978Wa07
				0.62(14)		$^{106}_{46}$Pd 512	RIGV	1979LaZL
					−0.40(4)		ES	1977Gl13
					−0.39(6)	$^{114}_{48}$Cd 558	CER	1977Ma41
					−0.36(8)		CER	1976Es02
	3611	550 ps	10^+	−0.9(3)			IMPAD	1995Re15
$^{111}_{48}$Cd	0	Stable	$1/2^+$	−0.5948861(8)		$^{1}_{1}$H	OP/RD, N	1972Sp09
								1950Pr51
				0.595543(2)		$^{2}_{1}$H	N	
	245	84 ns	$5/2^+$	−0.766(3)			TDPAC	1974Be51
					+0.77(12) st	$^{117}_{49}$In 660	TDPAC	1973Ra02
								1976Ra09
					+0.80(10)	$^{115}_{48}$Cd 173	TDPAD	1983Er01
					+0.83(13)	$^{111}_{48}$Cd 396	TDPAD	1980He02
					(+)0.74(8)	$^{109}_{48}$Cd 463	TDPAD	1978Sp09
	342	27 ps	$3/2^+$	0.0(12)		$^{110}_{48}$Cd 658	TF	1988Be45
	396	48.6 m	$11/2^-$	−1.1051(4)		$^{109}_{48}$Cd	OD	1969La06
					−0.85(9)	$^{109}_{48}$Cd	OD	1969La06
	620	10 ps	$5/2^+$	+0.28(12)		$^{110}_{48}$Cd 658	TF	1988Be45
$^{112}_{48}$Cd	617	6.2 ps	2^+	+0.6(2)		$^{110}_{48}$Cd 658	TF	1980Br01
				0.72(12)		$^{106}_{46}$Pd 512	RIGV	1979LaZL
					−0.37(4)		ES	1977Gl13
					−0.39(8)	$^{114}_{48}$Cd 558	CER	1977Ma41
					−0.39(11)		CER	1976Es02
$^{113}_{48}$Cd	0	9×10^{15} y	$1/2^+$	−0.6223009(9)		$^{111}_{48}$Cd	OP/RD, N	1972Sp09
								1950Pr51
	264	14 y	$11/2^-$	−1.087784(2)		$^{111}_{48}$Cd	OP/RD, N	1969Ch07
					−0.71(7)	$^{109}_{48}$Cd	OD, R	1969La06

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
	298	32 ps	$3/2^+$	−0.4(8)			TF	1988Be45
	584	9 ps	$5/2^+$	+0.15(12)			TF	1988Be45
$^{114}_{48}$Cd	558	9.0 ps	2^+	+0.58(14)		$^{110}_{48}$Cd 658	TF	1980Br01
				0.60(8)		$^{106}_{46}$Pd 512	RIGV	1979LaZL
					−0.35(5)		CER	1972La25
								1976Es02
					−0.348(12)		ES	1981Ko06
					−0.38(4)		ES	1977Gl13
					−0.34(3)		ES	1976Li19
$^{115}_{48}$Cd	0	53.4 h	$1/2^+$	−0.6484259(12)		$^{111}_{48}$Cd	OP/RD, N	1969Ch07
	173	44.8 d	$11/2^-$	−1.0410343(15)		$^{111}_{48}$Cd	OP/RD, N	1969Ch07
					−0.54(5)	$^{113}_{48}$Cd 264	OL	1973Ge12
$^{116}_{48}$Cd	514	15 ps	2^+	+0.60(14)		$^{110}_{48}$Cd 658	TF	1980Br01
					−0.42(4)		ES	1977Gl13
					−0.42(8)		CER	1976Es02
					−0.64(12) or −0.46(12)		CER	1977Na06
$^{104}_{49}$In	0	1.7 m	5^+	+4.44(2)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.66(11) st	$^{115}_{49}$In	CFBLS	1987Eb02
$^{105}_{49}$In	0	5.07 m	$9/2^+$	+5.675(5)		$^{115}_{49}$In	CFBLS	1987Eb02
				4.8(4)			NO/S	1982Va21
					+0.83(5) st	$^{115}_{49}$In	CFBLS	1987Eb02
$^{106}_{49}$In	0	6.2 m	7^+	+4.916(7)		$^{115}_{49}$In	CFBLS	1987Eb02
				4.921(13)			NMR/ON	1986Va27
				4.87(15)			NO/S	1982Va21
					+0.97(6) st	$^{115}_{49}$In	CFBLS	1987Eb02
$^{107}_{49}$In	0	32.4 m	$9/2^+$	+5.585(8)		$^{115}_{49}$In	CFBLS	1987Eb02
				5.6(5)			NO/S	1982Va21
					+0.81(5) st	$^{115}_{49}$In	CFBLS	1987Eb02
$^{108}_{49}$In	0	58 m	7^+	+4.561(3)		$^{115}_{49}$In	CFBLS	1987Eb02
				4.557(7)			NMR/ON	1986Va27
				4.53(10)			NO/S	1982Va21
					+1.005(7) st	$^{115}_{49}$In	CFBLS	1987Eb02
	29	40 m	2^+	+4.935(5)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.467(14)	$^{115}_{49}$In	CFBLS	1987Eb02
$^{109}_{49}$In	0	4.2 h	$9/2^+$	+5.538(4)		$^{115}_{49}$In	CFBLS	1987Eb02
				+5.538(11)			NMR/ON	1981Ha26
					+0.84(3) st	$^{115}_{49}$In	CFBLS	1987Eb02
$^{110}_{49}$In	0*	69.1 m	2^+	+4.365(4)		$^{113}_{49}$In	AB	1968CaZX
					+0.35(2) st	$^{115}_{49}$In	AB, R	1968CaZX
	0*	4.9 h	7^+	+4.713(8)		$^{115}_{49}$In	CFBLS	1987Eb02
				4.719(13)			NMR/ON	1981Ha26
					+1.00(2)	$^{115}_{49}$In	CFBLS	1987Eb02
$^{111}_{49}$In	0	2.83 d	$9/2^+$	+5.503(7)		$^{115}_{49}$In	CFBLS	1987Eb02
				5.499(7)			BFNMR/ON	1982Nu01
				(+)5.504(10)			NMR/ON	1981Ha45
				+5.48(10)			NO/S	1980Ha26
					+0.80(2)	$^{115}_{49}$In	CFBLS	1987Eb02
	2717	14.8 ns	$21/2^+$	+5.3(2)			TDPAD	1980Le05
				+4.9(2)			TDPAD	1981Va15
$^{112}_{49}$In	0*	14.4 m	1^+	+2.82(3)		$^{113}_{49}$In	AB	1968CaZX
					+0.087(5)	$^{115}_{49}$In	AB, R	1968CaZX
	157	20.9 m	4^+	+5.227(4)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.714(10)	$^{115}_{49}$In	CFBLS	1987Eb02
	351	0.69 μs	7^+	+4.73(4)			TDPAD	1976Io04
					1.03(3)	$^{115}_{49}$In 660	TDPAD	1993Io02
	614	2.82 μs	8^-	+3.08(3)			TDPAD	1976Io04
					0.095(3)	$^{115}_{49}$In 660	TDPAD	1993Io02
					0.086(3) st	$^{115}_{49}$In 660	TDPAD	1976Io02
$^{113}_{49}$In	0	Stable	$9/2^+$	+5.5289(2)		$^{115}_{49}$In	N	1957Ri42
					+0.80(4) st	$^{115}_{49}$In	AB	1987Eb02
	392	99.5 m	$1/2^-$	−0.21074(2)		$^{115}_{49}$In	AB	1960Ch08
$^{114}_{49}$In	0	71.9 s	1^+	2.817(11)			NMR/ON	1982Nu02
	190	49.5 d	5^+	+4.653(5)		$^{115}_{49}$In	CFBLS	1987Eb02
				4.658(7)			NMR/ON	1979La20

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				4.66(3)			BFNO	1981Nu03
				+4.72(10)			NMR/ON	1983De54
					+0.739(12) st	$^{115}_{49}$In	CFBLS	1987Eb02
$^{115}_{49}$In	0	4.4×10^{14} y	$9/2^+$	+5.5408 (2)		$^{1}_{1}$H	N	1960Fl03
					+0.81(5) st		ABLFS, R	1984Be18
					0.8(2) st		ABLFS	1982Ji01
					0.83(10) a		Pi-X	1981Ba07
					0.58(9) a		Ka-X	1981Ba07
	336	4.49 h	$1/2^-$	−0.24398(5)		$^{115}_{49}$In	AB	1962Ca14
	829	5.78 ns	$3/2^+$	+0.74(13)			IPAC	1974Ba24
					−0.60(2) st		TDPAC	1975Ra30
								1973Ha61
$^{116}_{49}$In	0	14.1 s	1^+	2.7876(6)			NMR/ON	1972La22
								1971Wi12
					0.11(1) st	$^{115}_{49}$In	QIR	1982Gr17
					0.09(2)		NMR/ON	1971Wi12
	127	54.2 m	5^+	+4.435(15)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.802(12) st	$^{115}_{49}$In	CFBLS	1987Eb02
	290	2.18 s	8^-	+3.215(11)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.310(9) st	$^{115}_{49}$In	CFBLS	1987Eb02
$^{117}_{49}$In	0	42 m	$9/2^+$	+5.519(4)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.829(10) st	$^{115}_{49}$In	CFBLS	1987Eb02
	315	1.93 h	$1/2^-$	−0.25174(3)		$^{115}_{49}$In	AB	1962Ca14
	589	<10 ps	$3/2^-$	>0.84			IPAC, R	1986Bo36
								1985Al05
	660	53.6 ns	$3/2^+$	+0.938(10)			TDPAC	1976Pi18
				+0.910(10)			TDPAC	1983De54
					(−)0.59(1) st	$^{115}_{49}$In	TDPAC	1972Ra27
								1973Ha61
$^{118}_{49}$In	∼60	4.45 m	5^+	+4.231(9)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.796(8) st	$^{115}_{49}$In	CFBLS	1987Eb02
	∼200	8.5 s	8^-	+3.321(11)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.441(7) st	$^{115}_{49}$In	CFBLS	1987Eb02
$^{119}_{49}$In	0	2.4 m	$9/2^+$	+5.515(10)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.854(7) st	$^{115}_{49}$In	CFBLS	1987Eb02
	315	18 m	$1/2^-$	−0.319(5)		$^{115}_{49}$In	CFBLS	1987Eb02
	654	130 ns	$3/2^+$	+0.53(3)			TDPAD	1979Ha99
					0.60(2)	$^{115}_{49}$In	TDPAD	1979Ha99
$^{120}_{49}$In	(0)	44.4 s	5^+	+4.295(5)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.81(2) st	$^{115}_{49}$In	CFBLS	1987Eb02
	(0)	47.3 s	8^-	+3.692(4)		$^{115}_{49}$In	CFBLS	1987Eb02
					0.530(10) st	$^{115}_{49}$In	CFBLS	1987Eb02
$^{121}_{49}$In	0	23.1 s	$9/2^+$	+5.502(5)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.814(11) st	$^{115}_{49}$In	CFBLS	1987Eb02
	314	3.8 m	$1/2^-$	−0.355(4)		$^{115}_{49}$In	CFBLS	1987Eb02
$^{122}_{49}$In	$0 + x$	9.2 s	5^+	+4.318(5)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.81(2) st	$^{115}_{49}$In	CFBLS	1987Eb02
	∼220	10.5 s	8^-	+3.781(6)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.59(2) st	$^{115}_{49}$In	CFBLS	1987Eb02
$^{123}_{49}$In	0	6.68 s	$9/2^+$	+5.491(7)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.757(9) st	$^{115}_{49}$In	CFBLS	1987Eb02
	327	45.9 s	$1/2^-$	−0.400(4)		$^{115}_{49}$In	CFBLS	1987Eb02
$^{124}_{49}$In	0	3.09 s	3^+	+4.043(11)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.61(7) st	$^{115}_{49}$In	CFBLS	1987Eb02
	190	3.7 s	8^-	+3.888(9)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.664(9) st	$^{115}_{49}$In	CFBLS	1987Eb02
$^{125}_{49}$In	0	2.50 s	$9/2^+$	+5.502(9)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.71(4) st	$^{115}_{49}$In	CFBLS	1987Eb02
	360	12.2 s	$1/2^-$	−0.433(4)		$^{115}_{49}$In	CFBLS	1987Eb02
$^{126}_{49}$In	(0)	1.60 s	3^+	+4.034(11)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.49(5) st	$^{115}_{49}$In	CFBLS	1987Eb02
	(0)	1.64 s	8^-	+4.061(4)		$^{115}_{49}$In	CFBLS	1987Eb02
$^{127}_{49}$In	0	1.22 s	$9/2^+$	+5.522(8)		$^{115}_{49}$In	CFBLS	1987Eb02
					+0.59(3) st	$^{115}_{49}$In	CFBLS	1987Eb02

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{108}_{50}$Sn	2365	7.3 ns	6^+	−0.24(12)			TFL	1983Ha37
	3561	71 ps	8^+	>0.8			TFL	1983Ha37
$^{109}_{50}$Sn	0	18.0 m	$5/2^+$	−1.079(6)		$^{119}_{50}$Sn	CFBLS	1987Eb01
					+0.31(10)		CFBLS	1987Eb01
$^{110}_{50}$Sn	2480	5.6 ns	6^+	+0.07(3)			TDPAD	1989Vo17
					0.34(4)		TDPAD	1989Vo17
	3767	1.15 ns	8^-	−2.4(12)			TDPAD	1989Vo17
$^{111}_{50}$Sn	0	35 m	$7/2^+$	+0.608(4)		$^{119}_{50}$Sn	CFBLS	1987Eb01
				+0.617(8)		$^{115,7,9}_{50}$Sn	ABLFS	1986An24
					+0.18(9)		CFBLS	1987Eb01
	979	9.2 ns	$11/2^-$	−1.26(11)			TDPAD	1974Br29
$^{112}_{50}$Sn	1257	0.35 ps	2^+	+0.7(3)			TF	1980Ha19
					−0.03(11)		CER	1975Gr30
	2550	13.7 ns	6^+	+0.53(3)			TDPAD	1983Le18
				+0.61(5)				1981Go17
				+0.2(2)				1981Va15
					0.25(2)	$^{113}_{50}$Sn 739	TDPAD	1975Vi03
					0.29(7)		TDPAD	1989Ra99
$^{113}_{50}$Sn	0	115 d	$1/2^+$	−0.8791(6)		$^{115,7,9}_{50}$Sn	ABLFS	1986An24
	739	82 ns	$11/2^-$	−1.30(2)			TDPAD	1981Go17
				−1.29(2)			TDPAD	1974Di18
					0.41(4)	$^{116}_{50}$Sn 3548	TDPAD	1975Di02
					0.48(5)	$^{118}_{50}$Sn 3108	TDPAD	1976Be59
$^{114}_{50}$Sn	1300	0.28 ps	2^+	>0			TF	1980Ha19
	3088	765 ns	7^-	−0.567(4)			TDPAD	1973IsZQ
					0.32(3)	$^{116}_{50}$Sn 3548	TDPAD	1975Di02
					0.36(4)	$^{118}_{50}$Sn 3108	TDPAD	1976Be59
$^{115}_{50}$Sn	0	Stable	$1/2^+$	−0.91883(7)		$^{23}_{11}$Na	N	1950Pr51
	613	3.26 ps	$7/2^+$	+0.683(10)			TDPAD	1975Iv02
					0.26(3)	$^{118}_{50}$Sn 3108	TDPAD	1976Be59
	714	159 μs	$11/2^-$	−1.378(11)			TDPAD	1975Iv02
				−1.369(4)			NMR/AC	1971Br03
					0.38(6)		QIR	1975Ri03
$^{116}_{50}$Sn	1294	0.36 ps	2^+	−0.3(2)			TF	1980Ha19
					−0.17(4)		ES	1976Li19
					+0.08(8)		CER	1975Gr30
								1970Kl06
	2366	370 ns	5^-	−0.376(3)			TDPAD	1973IsZQ
					0.26(3)	$^{116}_{50}$Sn 3548	TDPAD	1975Di02
					0.28(3)	$^{118}_{50}$Sn 3108	TDPAD	1976Be59
	3548	904 ns	10^+	−2.326(15)			TDPAD	1973IsZQ
					0.50(5)		Est from B(E2)	1975Di02
$^{117}_{50}$Sn	0	Stable	$1/2^+$	−1.00104(7)		$^{23}_{11}$Na	N	1950Pr51
	159	279 ps	$3/2^+$	+0.66(5)			IPAC	1986Bo31
	315	13.6 d	$11/2^-$	−1.3955(10)		$^{115,7,9}_{50}$Sn	ABLFS	1986An24
					−0.42(5)		ABLFS	1986An24
$^{118}_{50}$Sn	1230	0.46 ps	2^+	+0.04(20)			TF	1980Ha19
					−0.05(14)		CER	1975Gr30
	2321	21.7 ns	5^-	−0.30(3)			TDPAC	1964DeZZ
				−0.34(4)			IPAC	1962Bo16
					0.16(3)	$^{116}_{50}$Sn 3548	TDPAD	1975Di02
	2575	217 ns	7^-	−0.689(4)			TDPAD	1973IsZQ
					0.32(3)	$^{118}_{50}$Sn 3108	TDPAD	1976Be59
	3106	2.65 μs	10^+	−2.447(7)			TDPAD	1973IsZQ
					0.41(4)		Est from B(E2)	1976Be59
$^{119}_{50}$Sn	0	Stable	$1/2^+$	−1.04728(7)		$^{23}_{11}$Na	N	1950Pr51
	24	17.8 ns	$3/2^+$	+0.633(3)		$^{119}_{50}$Sn	ME	1973Cr01
				+0.682(3)			ME	1989Ra99
					0.128(7)		R	1997Sv03
					−0.109(8)		ME	1983Ha50
					0.094(11)	$^{116}_{50}$Sn 3548	TDPAD	1975Di02
					−0.065(5)		ME, R	1972Mi02

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					−0.061(3)		ME, R	1987Gr28
	90	293.1 d	$11/2^-$	−1.40(8)			ME	1972Gu09
					0.21(2)	$^{119}_{50}$Sn 24	ME, R	1975Di02
$^{120}_{50}$Sn	1171	0.64 ps	2^+	−0.28(14)			TF	1980Ha19
					+0.022(10)		CER	1992Vo09
					−0.05(10)		CER	1975Gr30
	2285	5.53 ns	5^-	−0.28(3)			TDPAC	1964DeZZ
				−0.37(5)			IPAC	1962Bo16
					0.033(4)	$^{119}_{50}$Sn 24	TDPAD	1975Di02
$^{121}_{50}$Sn	0	27.1 h	$3/2^+$	+0.6978(10)		$^{115,7,9}_{50}$Sn	ABLFS	1986An24
					−0.02(2)		ABLFS	1986An24
	6.3	55 y	$11/2^-$	−1.3877(9)		$^{119}_{50}$Sn	ABLFS	1986An24
					−0.14(3)		ABLFS	1986An24
$^{122}_{50}$Sn	1140	0.76 ps	2^+	−0.1(2)			TF	1980Ha19
					$-0.28 < Q < +0.14$		CER	1975Gr30
$^{123}_{50}$Sn	0	129 d	$11/2^-$	−1.3700(9)		$^{115,7,9}_{50}$Sn	ABLFS	1986An24
					+0.03(4)		ABLFS	1986An24
$^{124}_{50}$Sn	1132	0.97 ps	2^+	−0.3(2)			TF	1980Ha19
					0.0(2)		CER	1975Gr30
$^{125}_{50}$Sn	0	9.62 d	$11/2^-$	−1.348(2)		$^{115,7,9}_{50}$Sn	ABLFS	1986An24
				−1.348(6)			ABLFS	2004Le13
					+0.1(2)		ABLFS	2004Le13
					+0.1(2)		ABLFS	1986An24
	28	9.5 m	$3/2^+$	+0.764(3)			ABLFS	2004Le13
					+0.79(7)		ABLFS	2004Le13
$^{127}_{50}$Sn	0	2.1 h	$11/2^-$	−1.329(7)			ABLFS	2004Le13
					+0.30(13)		ABLFS	2004Le13
	5	4.13 m	$3/2^+$	+0.757(4)			ABLFS	2004Le13
					+0.60(6)		ABLFS	2004Le13
$^{129}_{50}$Sn	0	2.23 m	$3/2^+$	+0.754(6)			ABLFS	2004Le13
					+0.05(11)		ABLFS	2004Le13
	35	6.9 m	$11/2^-$	−1.297(5)			ABLFS	2004Le13
					+0.2(2)		ABLFS	2004Le13
$^{130}_{50}$Sn	1947	1.7 m	7^-	−0.381(3)			ABLFS	2004Le13
					−0.36(11)		ABLFS	2004Le13
$^{131}_{50}$Sn	0	56 s	$3/2^+$	+0.747(4)			ABLFS	2004Le13
					−0.04(8)		ABLFS	2004Le13
	242	58.4 s	$11/2^-$	−1.276(5)			ABLFS	2004Le13
					0.00(2)		ABLFS	2004Le13
$^{112}_{51}$Sb	796	536 ns	8^-	+2.192(8)			TDPAD	1976Ke07
					0.71(7) st	$^{121}_{51}$Sb	TDPAD	1982Ma29
$^{114}_{51}$Sb	0	3.49 m	3^+	1.72(8)			NO/S	1993Bo46
	496	219 μs	8^-	+2.265(5)			SOPAD, TDPAD	1976Ke07
								1976Br40
					0.66(11) st	$^{121}_{51}$Sb	QIR, R	1982Ma29
$^{115}_{51}$Sb	0	31.8 m	$5/2^+$	+3.46(1)		$^{121}_{51}$Sb	AB	1968Ja05
					−0.36(6) st	$^{121}_{51}$Sb	AB	1968Ja05
	1300	8.4 ns	$11/2^-$	+5.53(8)			TDPAD	1980Le05
				+5.8(6)			TDPAD	1979Fa03
				+5.3(6)			TDPAD	1978Ke04
	2796	152 ns	$19/2^-$	+2.54(4)			TDPAD, R	1980Le05

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				+2.73(4)			TDPAD	1979Fa03
				+2.76(5)			TDPAD	1979Sh03
				+2.68(6)			TDPAD	1979Ko02
					0.52(6) st	$^{121}_{51}$Sb	TDPAD	1983Se04
					0.49(14) st	$^{121}_{51}$Sb	TDPAD	1982Ma29
$^{116}_{51}$Sb	0	16 m	3^+	2.715(9)		$^{121,3}_{51}$Sb	NMR/ON	1986Gr16
	94	194 ns	1^+	+2.47(9)			TDPAD	1993Di06
	383	60.3 m	8^+	2.59(22)			NO/S	1993Bo46
	1844	11.9 ns	7^+	+4.69(10)			TDPAD	1992Io01
					1.67(39)	$^{112}_{51}$Sb 796	TDPAD	1992Io01
$^{117}_{51}$Sb	0	2.80 h	$5/2^+$	+3.43(6)		$^{121}_{51}$Sb	AB	1974Ek01
					0(2)	$^{121}_{51}$Sb	AB, R	1974Ek01
	1323	3.8 ns	$11/2^-$	+5.35(9)			TDPAD, R	1980Le05
				+5.6(4)			TDPAD	1978Ke04
	3131	340 μs	$(25/2)^+$	+1.500(9)			NMR/ON, TDPAD	1975Iv02
					0.75(9) st	$^{121}_{51}$Sb	QIR, R	1982Ma29
	3231	290 ns	$23/2^-$	+5.03(6)			TDPAD	1987Io01
					2.5(3) st	$^{112}_{51}$Sb 796	TDPAD	1988Io01
$^{118}_{51}$Sb	0	3.6 m	1^+	2.47(7)		$^{121}_{51}$Sb	AB	1968Ja05
	51	20.6 μs	$(3)^+$	+2.63(5)		$^{115}_{51}$Sn 714	TDPAD	1975Pl04
					0.57(14) st	$^{121}_{51}$Sb	QIR, R	1982Ma29
	212	5.0 h	8^-	2.32(4)		$^{122}_{51}$Sb	NMR/ON	1974Ca06
	270	13.4 ns	3^-	−3.76(9)			TDPAD	1985Di07
					0.25(5) st	$^{112}_{51}$Sb 796	TDPAD	1985Di07
	927	22.8 ns	7^+	+4.76(13)			TDPAD	1985Di07
					1.8(3) st	$^{112}_{51}$Sb 796	TDPAD	1988Io01
$^{119}_{51}$Sb	0	38.0 h	$5/2^+$	+3.45(1)		$^{121}_{51}$Sb	AB	1968Ja05
					−0.37(6) st	$^{121}_{51}$Sb	AB	1968Ja05
	2554	128 ns	$19/2^-$	+3.14(6)			TDPAC	1991Io02
					2.1(2)	$^{112}_{51}$Sb 796	TDPAC	1991Io02
$^{120}_{51}$Sb	*0*	15.9 m	1^+	2.3(2)		$^{121}_{51}$Sb	AB	1968Ja05
	0	5.76 d	8^-	2.34(1)		$^{122}_{51}$Sb	NMR/ON	1974Ca06
	78	247 ns	3^+	+2.584(6)			TDPAD	1976Io03
					0.41(4) st	$^{121}_{51}$Sb	TDPAD	1982Ma29
$^{121}_{51}$Sb	0	Stable	$5/2^+$	+3.3634(3)		$^{23}_{11}$Na	N	1951Pr02
					−0.36(4) st		O	1978Bu24
					−0.45(3) st		AB, R	1976De22
	37	3.5 ns	$7/2^+$	+2.518(7)		$^{121}_{51}$Sb	ME	1976La09
					−0.48(5) st	$^{121}_{51}$Sb	ME	1970St13
$^{122}_{51}$Sb	0	2.68 d	2^-	−1.90(2)		$^{121,3}_{51}$Sb	NO/D	1958Pi45
					+0.85(11) st	$^{121}_{51}$Sb	AB	1960Fe08
					+0.9(2)	$^{121}_{51}$Sb	NO/S	1985He16
	61	1.86 μs	3^+	+2.983(12)			SOPAD	1973He10
					+0.41(4) st	$^{121}_{51}$Sb	TDPAD	1982Ma29
	137	530 μs	5^+	+3.05(10)			TDPAD	1977Co18
$^{123}_{51}$Sb	0	Stable	$7/2^+$	+2.5498(2)		$^{2}_{1}$H	N	1951Pr02
					−0.49(5) st		O	1978Bu24
$^{124}_{51}$Sb	0	60.2 d	3^-	1.20(2)		$^{122}_{51}$Sb	NMR/ON	1974Ca06
					+1.9(4) st	$^{121}_{51}$Sb	NO/S	1985He16
	41	3.2 μs	3^+	+2.97(3)			TDPAD	1981Io04
	125	86 ns	6^-	+0.384(12)			TDPAD	1981Io04
$^{125}_{51}$Sb	0	2.7 y	$7/2^+$	+2.63(4)		$^{122}_{51}$Sb	NMR/ON	1974Ca06
$^{126}_{51}$Sb	0	12.4 d	$(8)^-$	1.28(7)			NO/S	1972Kr15
$^{127}_{51}$Sb	0	3.84 d	$7/2^+$	2.697(6)		$^{123}_{51}$Sb	NMR/ON	1996Li01
				2.59(12)			NO/S	1972Kr15
$^{128}_{51}$Sb	0	9.1 h	8^-	1.3(2)			NO/S	1972Kr15
$^{129}_{51}$Sb	0	4.4 h	$7/2^+$	2.79(2)		$^{123}_{51}$Sb	NMR/ON	1997St06
								1996Li01
$^{130}_{51}$Sb	0	6.3 m	(4^+)	3.09(1)		$^{123}_{51}$Sb	NMR/ON	2002Gi99
$^{131}_{51}$Sb	0	23 m	$7/2^+$	2.89(1)		$^{123}_{51}$Sb	NMR/ON	1997St06
$^{132}_{51}$Sb	0	2.8 m	(4^+)	3.18(1)		$^{123}_{51}$Sb	NMR/ON	2002Gi99
$^{133}_{51}$Sb	0	2.5 m	$7/2^+$	3.00(1)		$^{123}_{51}$Sb	NMR/ON	1997St06

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{115}_{52}$Te	280	7.5 μs	$11/2^-$	−0.954(5)			TDPAD	1977MiZL
				−1.02(4)			TDPAD	1972Va38
$^{117}_{52}$Te	274	19.1 ns	$5/2^+$	−0.787(12)			TDPAD	1981Io07
				−0.75(5)			TDPAD	1981Ha11
$^{119}_{52}$Te	0	16.1 h	$1/2^+$	0.25(5)			AB	1965Ad03
	300	4.68 d	$11/2^-$	0.894(6)		$^{125}_{52}$Te 36	NMR/ON	1987Ni11
	320	2.2 ns	$5/2^+$	−0.9(2)			IPAD	1989Ra99
$^{120}_{52}$Te	560	9.3 ps	2^+	+0.78(14)			TF	1985ThZX
				+0.58(6)			TF	1981Sh15
$^{121}_{52}$Te	294	154 d	$11/2^-$	0.895(10)		$^{125}_{52}$Te 36	NMR/ON	1987Ni11
	443	83.5 ns	$7/2^+$	+0.738(10)			TDPAD	1980Io01
				+0.774(11)			TDPAD	1989Ra99
				+0.63(7)			TDPAD	1981Ha11
$^{122}_{52}$Te	564	7.52 ps	2^+	+0.66(4)			TF	1988Du10
				+0.68(4)			TF	1985ThZX
				+0.72(4)			IPAC, R	1988Du10
				+0.66(6)			TF	1981Sh15
				+0.56(10)			TF	1985Gr17
					−0.57(5)		CER	1978Be10
					−0.50(5)		CER, R	1978Be10
$^{123}_{52}$Te	0	$>1\times10^{15}$ y	$1/2^+$	−0.7369478(8)		$^{125}_{52}$Te	N	1977Bu29
								1953We51
	159	0.2 ns	$3/2^+$	0.72(12)			IPAC	1970Ro13
	247	119.7 d	$11/2^-$	−0.927(8)		$^{125}_{52}$Te 36	NMR/ON	1987Ni11
	440	27 ps	$3/2^+$	+0.5(2)			TF	1988Be45
				+0.51(9)			IMPAC	1974Ro40
	489	30.7 ns	$7/2^+$	+0.787(14)			TDPAD	1981Io05
	506	18 ps	$5/2^+$	+0.1(2)			TF	1988Be45
				+0.10(6)			IMPAC	1974Ro40
$^{124}_{52}$Te	603	6.25 ps	2^+	+0.56(6)			IPAC, R	1988Du10
				+0.66(6)			TF	1985ThZX
				+0.62(8)			TF	1988Du10
				+0.52(6)			TF	1981Sh15
					−0.45(5)		CER	1974Ba45
								1974La05
								1975Kl07
$^{125}_{52}$Te	0	Stable	$1/2^+$	−0.8885051(4)		$^{2}_{1}$H	N	1977Bu29
				−0.8884509(10)		$^{23}_{11}$Na		1977Bu29
								1953We51
	36	1.48 ns	$3/2^+$	+0.605(4)		$^{125}_{52}$Te	ME	1975Bo51
					−0.31(2)	$^{129}_{53}$I	ME	1977La03
	145	58 d	$11/2^-$	−0.985(6)		$^{125}_{52}$Te 36	NMR/ON	1980Ge02
					−0.06(2)		NO/ME	1987Be36
	321	695 ps	$9/2^-$	−0.92(3)			IPAC	1970Cr07
					0.12(+5, −9)	$^{125}_{52}$Te 36	IPAC	1976Va28
	443	19 ps	$3/2^+$	+0.7(2)			TF	1988Be45
				+0.59(9)			IMPAC	1974Ro40
	463	13 ps	$5/2^+$	+0.50(12)			TF	1988Be45
				+0.8(2)			TF	1985Gr17
	526	<160 ps	$7/2^-$	<0			IPAC	1971Ro17
	672	1.3 ps	$5/2^+$	−0.6(7)			TF	1988Be45
$^{126}_{52}$Te	666	4.41 ps	2^+	+0.62(8)			TF	1988Du10
				+0.68(6)			TF	1985ThZX
				+0.38(6)			TF	1981Sh15
					−0.20(9)		CER	1975Ra24
	2975	10.6 ns	10^+	−1.52(9)			TDPAD	1983Go02
$^{127}_{52}$Te	0	9.4 h	$3/2^+$	0.635(4)		$^{125}_{52}$Te 36	NMR/ON	1979Ge04
	88	109 d	$11/2^-$	−1.041(6)		$^{125}_{52}$Te 36	NMR/ON	1980Ge02
	341	411 ps	$9/2^-$	−0.96(6)			IPAC	1974So03
				−0.98(15)			IPAC	1985De04
$^{128}_{52}$Te	743	3.2 ps	2^+	+0.50(6)			TF	1988Du10
				+0.70(8)			TF	1985ThZX
				+0.62(8)			TF	1981Sh15

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Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					−0.06(5)		CER	1978Be10
					−0.14(12)		CER, R	1978Be10
$^{129}_{52}$Te	0	69.5 m	$3/2^+$	0.702(4)		$^{125}_{52}$Te 36	NMR/ON	1979Ge04
					0.055(13)	$^{125}_{52}$Te 36	NO/ME	1987Be36
	106	33.5 d	$11/2^-$	−1.091(7)		$^{125}_{52}$Te 36	NMR/ON	1979Ge04
$^{130}_{52}$Te	840	2.3 ps	2^+	+0.58(10)			TF	1988Du10
				+0.66(16)			TF	1985Gr17
				+0.58(12)			TF	1981Sh15
					−0.15(10)		CER	1976Bo12
$^{131}_{52}$Te	0	25 m	$3/2^+$	0.696(9)		$^{125}_{52}$Te 36	NMR/ON	1979Ge04
	182	30 h	$11/2^-$	−1.04(4)			NO/S	1975Lh01
				(−)1.123(7)			NMR/ON	1998Wh05
$^{132}_{52}$Te	1775	145 ns	6^+	+4.7(5)			TDPAC	1986Fo02
$^{133}_{52}$Te	334	55.4 m	$11/2^-$	(−)1.129(7)			NMR/ON	1998Wh05
$^{134}_{52}$Te	1691	163 ns	6^+	+5.08(15)			FDPAC	1976Wo03
$^{135}_{52}$Te	1555	510 ns	$19/2^-$	−3.8(4)			FDPAC	1989Ra17
$^{117}_{53}$I	0	2.22 m	$(5/2)^+$	3.1(2)		$^{131,2}_{53}$I	NO/S	1986Gr06
$^{118}_{53}$I	0	13.7 m	2^-	2.0(2)		$^{131,2}_{53}$I	NO/S	1986Gr06
	104	8.5 m	(7^-)	4.2(2)		$^{131,2}_{53}$I	NO/S	1986Gr06
$^{119}_{53}$I	0	19 m	$5/2^+$	(+)2.9(1)		$^{131,2}_{53}$I	NO/S	1986Gr06
	307	35 ns	$9/2^+$	+5.40(14)			TDPAD	1982Da17
				+5.5(4)			TDPAD	1982Ga21
$^{120}_{53}$I	0	1.4 h	2^-	1.23(3)		$^{131,2}_{53}$I	NO/S	1986Gr06
	∼930	53 m	(7^-)	4.2(2)		$^{131,2}_{53}$I	NO/S	1986Gr06
$^{121}_{53}$I	0	2.1 h	$5/2^-$	2.3(1)		$^{131,2}_{53}$I	NO/S	1986Gr06
	2353	80 ns	$(21/2^+)$	+12.6(11)			TDPAD	1982Ha46
$^{122}_{53}$I	0	3.63 m	1^+	0.94(3)		$^{131,2}_{53}$I	NO/S	1986Gr06
				Positive sign			NO/S	1988As06
$^{123}_{53}$I	0	13.3 h	$5/2^+$	2.818(7)		$^{131}_{53}$I	NMR/ON	1979Sc13
	2660	29 ns	$21/2^+$	+10.9(9)			TDPAD	1989Ra17
$^{124}_{53}$I	0	4.18 d	2^-	1.446(4)			NMR/ON	1992Oh01
				1.14(8)		$^{131}_{53}$I	NO/S	1983De55
$^{125}_{53}$I	0	60.2 d	$5/2^+$	2.821(5)		$^{131}_{53}$I	NMR/ON	1979Sc13
					−0.776(17)	$^{127}_{53}$I	MA, R	1958Fl39
	188	0.35 ns	$3/2^+$	+1.06(7)			IPAC	1973Ka37
$^{126}_{53}$I	0	13.1 d	2^-	1.438(4)			NMR/ON	1992Oh01
	111	56 ns	Unknown	−2.24(2)			TDPAD	1989Ra17
$^{127}_{53}$I	0	Stable	$5/2^+$	+2.81327(8)		$^{1}_{1}$H	N, O	1951Ya03
								1939Sc16
					0.72(2)		R	2004Al08
					−0.710(10)		R	2001Bi17
					(−)0.689(15)		R	2000Ha64
					−0.789 e		AB/R	1976Fu06
	58	1.95 ns	$7/2^+$	+2.54(5)		$^{127}_{53}$I	ME	1972Wo13
					−0.636(9)		R	2001Bi17
					−0.62(2)	$^{127}_{53}$I	ME, R	1964Pe15
								2000Ha64
					−0.60(3)		ME	1987Gr28
	203	0.388 ns	$3/2^+$	+0.97(7)			IPAC, R	1976Le23
$^{128}_{53}$I	138	845 ns	4^-	−0.72(3)			R	1982Al10
$^{129}_{53}$I	0	1.6×10^7 y	$7/2^+$	+2.6210(3)		$^{2}_{1}$H	N	1951Wa12
					−0.498(7)		R	2001Bi17
					−0.482(10)	$^{127}_{53}$I	Q, MA, R	1953Li16
								2000Ha64
	28	16.8 ns	$5/2^+$	+2.805(3)		$^{129}_{53}$I	ME	1981De35
					−0.616(9)		R	2001Bi17
					−0.598(13)	$^{129}_{53}$I	ME, R	1972Ro41
								2000Ha64
					−0.42(2)		ME	1987Gr28
$^{130}_{53}$I	0	12.36 h	5^+	3.349(7)			NMR/ON	1992Oh01
	203	229 ns	*5*	−0.24(2)			TDPAD	1989Ra17
$^{131}_{53}$I	0	8.04 d	$7/2^+$	+2.742(1)		$^{127}_{53}$I	AB	1960Li13
					−0.35(2)	$^{127}_{53}$I	AB, R	1960Li13
								2000Ha64

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
	150	0.95 ns	$5/2^+$	+2.8(5)			IPAC	1967Ta07
	1797	5.9 ns	$(15/2)^-$	−1.2(4)			IPAC	1967Ta07
					0.65(4)	$^{129}_{53}$I 28	TDPAC, R	1973Ha61
								2000Ha64
$^{132}_{53}$I	0	2.28 h	4^+	3.088(7)		$^{127}_{53}$I	AB	1960Wh06
					0.08(1)	$^{127}_{53}$I	AB, R	1960Wh06
								2000Ha64
	50	0.95 ns	3^+	+2.2(3)			IPAC	1969Si06
					0.20(7)	$^{129}_{53}$I	IPAC, R	1979Oo01
								2000Ha64
	278	1.42 ns	1^+	+1.88(11)		$^{129}_{53}$I	TDPAC	1979Oo01
					(−)0.148(6)	$^{129}_{53}$I	TDPAC, R	1979Oo01
								2000Ha64
$^{133}_{53}$I	0	20.9 h	$7/2^+$	+2.856(5)		$^{127}_{53}$I	AB	1961Al20
					−0.24(1)	$^{127}_{53}$I	AB, R	1961Al20
								2000Ha64
$^{135}_{53}$I	0	6.57 h	$7/2^+$	(+)2.940(2)			NMR/ON	1998Wh04
$^{117}_{54}$Xe	0	1.02 m	$5/2^+$	−0.5938(15) d		$^{129}_{54}$Xe	CFBLS	1990NeZY
					+1.16(4)	$^{131}_{54}$Xe	CFBLS	1990NeZY
$^{119}_{54}$Xe	0	5.8 m	$5/2^+$	−0.6542(15) d		$^{129}_{54}$Xe	CFBLS	1990NeZY
				−0.59(6)			NO/S	1986ShZM
					+1.31(5)	$^{131}_{54}$Xe	CFBLS	1990NeZY
$^{121}_{54}$Xe	0	39 m	$5/2^+$	−0.701(3) d		$^{129}_{54}$Xe	CFBLS	1990NeZY
				−0.65(3)			NO/S	1986ShZM
					+1.33(5)	$^{131}_{54}$Xe	CFBLS	1990NeZY
$^{123}_{54}$Xe	0	2.00 h	$1/2^+$	−0.150(3) d		$^{129}_{54}$Xe	CFBLS	1990NeZY
	$180 + x$	5.2 μs	$7/2^{(-)}$	−0.902(7)			TDPAD	1982Ch25
					1.33(14)	$^{135}_{54}$Xe 296	TDPAD	1982Ch25
	$201 + x$	17 ns	$9/2^-$		1.1(5)	$^{133}_{54}$Xe $180 + x$	TDPAD	1982Ch25
$^{124}_{54}$Xe	354	56 ps	2^+	+0.46(4)		$^{132}_{54}$Xe 668	IMPAC	1975Go18
$^{125}_{54}$Xe	0	17.1 h	$1/2^+$	−0.269(3) d		$^{129}_{54}$Xe	CFBLS	1990NeZY
	253	57 s	$9/2^-$	−0.7453(8) d		$^{129}_{54}$Xe	CFBLS	1990NeZY
					+0.424(15)	$^{131}_{54}$Xe	CFBLS	1990NeZY
	296	140 ns	$7/2^+$	+0.93(4)			TDPAD	1983Al21
					1.40(15)		TDPAD	1983Al21
$^{126}_{54}$Xe	389	41.2 ps	2^+	+0.74(14)			IPAC	1977Ar19
				+0.54(8)		$^{132}_{54}$Xe 668	IMPAC	1975Go18
$^{127}_{54}$Xe	0	36.4 d	$1/2^+$	−0.5033(11) d		$^{129}_{54}$Xe	CFBLS	1990NeZY
				−0.5039(2)		$^{129,131}_{54}$Xe	LRS	1989Ra99
	297	1.15 m	$9/2^-$	−0.8844(10) d		$^{129}_{54}$Xe	CFBLS	1990NeZY
					+0.69(2)	$^{131}_{54}$Xe	CFBLS	1990NeZY
	342	37 ns	$7/2^+$	+0.85(3)			TDPAD	1984Lo07
$^{128}_{54}$Xe	443	21.4 ps	2^+	+0.82(14)		$^{126}_{54}$Xe 389	IMPAC	1977Ar19
				+0.62(6)		$^{132}_{54}$Xe 668	IMPAC	1975Go18
	2787	83 ns	8^-	−0.29(7)			TDPAD	1984Lo07
$^{129}_{54}$Xe	0	Stable	$1/2^+$	−0.777976(8)		$^{2}_{1}$H	N	1968Br12
	40	0.98 ns	$3/2^+$	+0.58(8)		$^{129}_{54}$Xe	ME	1974VaYZ
					−0.393(10)	$^{131}_{54}$Xe	R	2001Ke15
					−0.41(4)	$^{131}_{54}$Xe	ME	1964Pe06
	236	8.89 d	$11/2^-$	−0.8906(12) d		$^{129}_{54}$Xe	CFBLS	1990NeZY
				−0.891223(4)		$^{131}_{54}$Xe 164	N, OP/RD, NO/S	1986Ki16
								1974Si07
				0.8911(5)		$^{133}_{54}$Xe	NMR/ON	1987Ed01
					+0.64(2)	$^{131}_{54}$Xe	CFBLS	1990NeZY
$^{130}_{54}$Xe	538	9.7 ps	2^+	+0.67(2)			TF	2002Ja02
				+0.76(14)		$^{126}_{54}$Xe 389	IMPAC	1977Ar19
				+0.62(8)		$^{132}_{54}$Xe 668	IMPAC	1975Go18
	1122	4.6 ps	2^+	+0.9(2)			TF	2002Ja02
	1205	2.4 ps	4^+	+1.7(2)			TF	2002Ja02
	2972	5.17 ns	10^+	−2.05(14)			TDPAD	1983Go02
				−1.6(2)			IPAD	1985Ku15
$^{131}_{54}$Xe	0	Stable	$3/2^+$	+0.6915(2) d		$^{129}_{54}$Xe	CFBLS	1990NeZY
				+0.691862(4)		$^{2}_{1}$H	N	1968Br12
					−0.114(1)	Calc efg	R	2001Ke15

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Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					−0.117(6)	Calc efg	R, CFBLS	2000Pa02
					−0.116(4)		CFBLS	1989Bo03
					−0.120(12)		AB	1961Fa05
	164	11.8 d	$11/2^-$	−0.994(2) d		$^{129}_{54}$Xe	CFBLS	1990NeZY
				0.9940(5)		$^{133}_{54}$Xe	NMR/ON	1987Ed01
				−0.994048(6)			N, OP/RD, NO/S	1986Ki16
								1974Si07
					+0.73(3)	$^{131}_{54}$Xe	CFBLS	1990NeZY
$^{132}_{54}$Xe	668	4.7 ps	2^+	+0.63(2)			TF	2002Ja02
				+0.70(7)			TF, R	2002Ja02
				+0.74(10)		$^{126}_{54}$Xe 389	IMPAC	1977Ar19
				+0.78(10)			IPAC, R	1975Go18
	1298	3.0 ps	2^+	+0.2(4)			TF	2002Ja02
	1440	1.8 ps	4^+	+2.4(4)			TF	2002Ja02
	2214	90 ns	7^-	−0.06(3)			TDPAD	1986Vo14
					0.010(5)		TDPAD	1987Le31
	2753	8.4 ms	10^+	(−)1.95(5)			TDPAD	1976Ha50
$^{133}_{54}$Xe	0	5.24 d	$3/2^+$	+0.8129(5) d		$^{129}_{54}$Xe	CFBLS	1990NeZY
				+0.81340(7)		$^{131}_{54}$Xe 164	N, OP/RD	1986Ki16
				0.81(1)			NMR/ON	1989Ra99
				+0.8125(3)		$^{129,131}_{54}$Xe	LRS	1989Ra99
				+0.81(1)		$^{131}_{54}$Xe	O	1978Hu04
				0.80(10)			NO/S	1974Si07
					+0.142(5)	$^{131}_{54}$Xe	CFBLS	1990NeZY
					+0.145(14)	$^{131}_{54}$Xe	LRS	1989Ra99
					+0.12(4)	$^{131}_{54}$Xe	O	1978Hu04
	233	2.19 d	$11/2^-$	−1.0825(13) d		$^{129}_{54}$Xe	CFBLS	1990NeZY
					+0.77(3)	$^{131}_{54}$Xe	CFBLS	1990NeZY
$^{134}_{54}$Xe	847	1.9 ps	2^+	+0.708(14)			TF	2002Ja02
				1.1(2)		$^{132}_{54}$Xe 668	TF	1993Sp01
	1731	2.2 ps	4^+	+3.2(6)			TF	2002Ja02
$^{135}_{54}$Xe	0	9.10 h	$3/2^+$	+0.9032(7) d		$^{129}_{54}$Xe	CFBLS	1990NeZY
				0.9031(2)		$^{131}_{54}$Xe 164	N, OP/RD	1987CaZU
					+0.214(7)	$^{131}_{54}$Xe	CFBLS	1990NeZY
	527	15.3 m	$11/2^-$	−1.1036(14) d		$^{129}_{54}$Xe	CFBLS	1990NeZY
				1.1030(2)		$^{131}_{54}$Xe 164	N, OP/RD	1987CaZU
					+0.62(2)	$^{131}_{54}$Xe	CFBLS	1990NeZY
$^{136}_{54}$Xe	1313	0.36 ps	2^+	+1.53(9)			TF	2002Ja02
				+1.7(2)			TF, R	2002Ja02
								1993Sp01
	1694	1.32 ns	4^+	4.3(17)			TF	2002Ja02
				3.2(6)			IPAC	1985Be04
$^{137}_{54}$Xe	0	3.82 m	$7/2^-$	−0.968(8)		$^{129,131}_{54}$Xe	CFBLS	1989Bo03
					−0.48(2)	$^{131}_{54}$Xe	CFBLS	1989Bo03
$^{139}_{54}$Xe	0	39.7 s	$3/2^-$	−0.304(10)		$^{129,131}_{54}$Xe	CFBLS	1989Bo03
					+0.40(2)	$^{131}_{54}$Xe	CFBLS	1989Bo03
$^{141}_{54}$Xe	0	1.73 s	$5/2^+$	+0.010(4)		$^{129,131}_{54}$Xe	CFBLS	1989Bo03
					−0.58(2)	$^{131}_{54}$Xe	CFBLS	1989Bo03
$^{143}_{54}$Xe	0	0.30 s	$5/2^-$	−0.4599(14)		$^{129,131}_{54}$Xe	CFBLS	1989Bo03
					+0.93(3)	$^{131}_{54}$Xe	CFBLS	1989Bo03
$^{118}_{55}$Cs	(0)	14 s	2	+3.876(5)		$^{133}_{55}$Cs	ABLS	1987Co19
					+1.4(2) st		ABLS	1987Co19
	(0)	17 s	(6^-)	5.4(11)			NO/S	1987Sh12
$^{119}_{55}$Cs	(0)	36 s	$9/2^+$	+5.46(3)		$^{133}_{55}$Cs	ABLS	1987Co19
					+2.8(1) st		ABLS	1987Co19
	(0)	28 s	$3/2^+$	+0.838(5)		$^{133}_{55}$Cs	ABLS	1987Co19
					+0.9(1) st		ABLS	1987Co19
$^{120}_{55}$Cs	0	64 s	2^+	+3.87(2)		$^{133}_{55}$Cs	ABLS	1987Co19
					+1.45(2) st		ABLS	1987Co19
				+3.92(5)		$^{133}_{55}$Cs	AB	1978Ek03
$^{121}_{55}$Cs	0	2.27 m	$3/2^+$	+0.770(4)		$^{133}_{55}$Cs	ABLS	1987Co19
				0.79(2)		$^{133}_{55}$Cs	AB	1977Ek02
					+0.838(9) st		ABLS	1987Co19
	~36	2.02 m	$9/2^+$	+5.41(3)		$^{133}_{55}$Cs	ABLS	1987Co19

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					+2.69(5) st		ABLS	1987Co19
$^{122}_{55}$Cs	(0)	21 s	1^+	−0.1333(9)		$^{133}_{55}$Cs	ABLS	1987Co19
				0.133(2)		$^{133}_{55}$Cs	AB	1977Ek02
					−0.19(1) st		ABLS	1987Co19
	(0)	4.2 m	8^-	+5.41(3)		$^{133}_{55}$Cs	ABLS	1987Co19
					+3.29(8) st		ABLS	1987Co19
$^{123}_{55}$Cs	0	5.8 m	$1/2^+$	+1.377(7)		$^{133}_{55}$Cs	ABLS	1987Co19
				+1.39(2)		$^{133}_{55}$Cs	AB	1977Ek02
$^{124}_{55}$Cs	0	30.8 s	1^+	+0.673(3)		$^{133}_{55}$Cs	ABLS	1987Co19
				+0.674(7)		$^{133}_{55}$Cs	AB	1977Ek02
					−0.74(3) st		ABLS	1987Co19
$^{125}_{55}$Cs	0	45 m	$1/2^+$	+1.409(7)		$^{133}_{55}$Cs	ABLS	1987Co19
$^{126}_{55}$Cs	0	1.64 m	1^+	+0.777(4)		$^{133}_{55}$Cs	ABLS	1987Co19
				+0.779(8)		$^{133}_{55}$Cs	AB	1977Ek02
					−0.68(2) st		ABLS	1987Co19
$^{127}_{55}$Cs	0	6.2 h	$1/2^+$	+1.459(7)		$^{133}_{55}$Cs	ABLS	1987Co19
	66	24.9 ns	$5/2^{(+)}$	2.7(5)			TDPAC	1999Co22
					0.58(12)	$^{80}_{37}$Rb 561	TDPAC	1999Co22
$^{128}_{55}$Cs	0	3.62 m	1^+	+0.974(5)		$^{133}_{55}$Cs	ABLS	1987Co19
				+0.977(10)		$^{133}_{55}$Cs	AB	1977Ek02
					−0.570(8) st		ABLS	1987Co19
$^{129}_{55}$Cs	0	32.3 h	$1/2^+$	+1.491(8)		$^{133}_{55}$Cs	ABLS	1987Co19
	575	734 ns	$11/2^-$	+6.55(10)			TDPAD	1978De29
$^{130}_{55}$Cs	0	29.9 m	1^+	+1.460(7)		$^{133}_{55}$Cs	ABLS	1987Co19
				+1.466(15)		$^{133}_{55}$Cs	AB	1977Ek02
					−0.059(6) st		ABLS	1987Co19
	$0 + x$	3.7 m	$5^{(-)}$	+0.629(4)		$^{133}_{55}$Cs	ABLS	1987Co19
				+0.631(10)		$^{133}_{55}$Cs	AB	1977Ek02
					+1.45(5) st		ABLS	1987Co19
$^{131}_{55}$Cs	0	9.69 d	$5/2^+$	+3.53(2)		$^{133}_{55}$Cs	ABLS	1981Th06
				+3.543(2)			AB/D	1965Wo05
					−0.575(6) st		OL, OD, R	
					−0.67(4) st		ABLS	1981Th06
	134	8.7 ns	$5/2^+$	+1.86(8)			TDPAC	1973Ao99
					0.022(3)	$^{133}_{55}$Cs 81	TDPAC	2000De13
$^{132}_{55}$Cs	0	6.47 d	$2^{(-)}$	+2.222(7)			OL	1975Ac01
				+2.23(1)		$^{133}_{55}$Cs	ABLS	1981Th06
					+0.508(7) st		OL	1975Ac01
					+0.49(2) st		ABLS	1981Th06
$^{133}_{55}$Cs	0	Stable	$7/2^+$	+2.582025(3)		$^{83}_{37}$Rb	OP/RD	1973Wh01
				+2.5829128(15)		$^{2}_{1}$H	N	1968Lu07
								1967Lu06
					−0.00355(4)		R	2003Ge06
					−0.00371(14)		OL	1988Ta17
								1981Th06
					−0.009(4) st		ABLS	1981Th06
	81	6.31 ns	$5/2^+$	+3.45(2)		$^{133}_{55}$Cs	ME	1968Ca03
					−0.33(2) st	$^{133}_{55}$Cs	ME	1977Ca30
	161	190 ps	$5/2^+$	+2.0(2)			IPAC	1979Th02
$^{134}_{55}$Cs	0	2.06 y	4^+	+2.9937(9)		$^{133}_{55}$Cs	AB/D	1957St11
				+2.99(2)		$^{133}_{55}$Cs	ABLS	1981Th06
					+0.389(3) st		OD, R	1975Ac01
					+0.38(4) st		ABLS	1981Th06
	11	47 ns	5^+	+3.35(7)			TDPAC	1970DrZX
	139	2.90 h	8^-	+1.0978(2)		$^{133}_{55}$Cs	AB/D	1962Co14
				+1.111(6)		$^{133}_{55}$Cs	ABLS	1981Th06
					+0.98(8) st		ABLS	1981Th06
$^{135}_{55}$Cs	0	3×10^6 y	$7/2^+$	+2.7324(2)		$^{133}_{55}$Cs	AB/D	1957St11
				+2.73(1)		$^{133}_{55}$Cs	ABLS	1981Th06
					+0.050(2) st		OL, OD, R	1975Ac01
					+0.03(2) st		ABLS	1981Th06
	1633	53 m	$19/2^-$	+2.18(1)		$^{133}_{55}$Cs	ABLS	1981Th06
					+0.89(7)		ABLS	1981Th06

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{136}_{55}$Cs	0	13.2 d	5^+	+3.711(15)			OL	1975Ac01
				+3.71(2)		$^{133}_{55}$Cs	ABLS	1981Th06
					+0.225(10) st		OL	1975Ac01
					+0.17(6) st		ABLS	1981Th06
	$0+x$	19 s	8^-	+1.319(7)		$^{133}_{55}$Cs	ABLS	1981Th06
					+0.74(10)		ABLS	1981Th06
$^{137}_{55}$Cs	0	30.17 y	$7/2^+$	+2.8513(7)		$^{133}_{55}$Cs	AB/D	1957St11
				+2.838(7)		$^{133}_{55}$Cs	CFBLS	1978Sc27
				+2.84(1)		$^{133}_{55}$Cs	ABLS	1981Th06
					+0.051(1) st		OL, OD, R	1975Ac01
					+0.06(2) st		CFBLS	1978Sc27
					+0.03(4) st		ABLS	1981Th06
$^{138}_{55}$Cs	0	32.2 m	3^-	+0.700(4)		$^{133}_{55}$Cs	ABLS	1981Th06
				+0.701(7)		$^{133}_{55}$Cs	AB	1979Ek02
				+0.701(14)		$^{133}_{55}$Cs	CFBLS	1979Bo01
					+0.13(2) st		CFBLS	1979Bo01
					+0.12(2) st		ABLS	1981Th06
	80	2.9 m	6^-	+1.713(9)		$^{133}_{55}$Cs	ABLS	1981Th06
					−0.40(3)		ABLS	1981Th06
$^{139}_{55}$Cs	0	9.4 m	$7/2^+$	+2.696(4)		$^{133}_{55}$Cs	CFBLS	1979Bo01
				+2.70(1)		$^{133}_{55}$Cs	ABLS	1981Th06
				+2.70(3)		$^{133}_{55}$Cs	AB	1979Ek02
					−0.075(11) st		CFBLS	1979Bo01
					−0.06(3) st		ABLS	1981Th06
$^{140}_{55}$Cs	0	65 s	1^-	+0.1338953(5)		$^{133}_{55}$Cs	ABLS	1986Du16
				+0.134(1)		$^{133}_{55}$Cs	ABLS	1981Th06
				+0.134(2)		$^{133}_{55}$Cs	AB	1979Ek02
				+0.134(3)		$^{133}_{55}$Cs	CFBLS	1979Bo01
					−0.112(7) st		CFBLS	1979Bo01
					−0.10(2) st		ABLS	1981Th06
$^{141}_{55}$Cs	0	25.1 s	$7/2^+$	+2.438(10)		$^{133}_{55}$Cs	CFBLS	1979Bo01
				+2.42(3)		$^{133}_{55}$Cs	ABLS	1981Th06
				+2.41(1)		$^{133}_{55}$Cs	AB	1979Ek02
					−0.36(4) st		CFBLS	1979Bo01
					−0.45(7) st		ABLS	1981Th06
$^{143}_{55}$Cs	0	1.78 s	$3/2^+$	+0.870(4)		$^{133}_{55}$Cs	ABLS	1981Th06
					+0.47(3) st		ABLS	1981Th06
$^{144}_{55}$Cs	0	1.00 s	(1^-)	−0.546(3)		$^{133}_{55}$Cs	ABLS	1981Th06
					+0.30(1) st		ABLS	1981Th06
$^{145}_{55}$Cs	0	0.59 s	$3/2^+$	+0.784(4)		$^{133}_{55}$Cs	ABLS	1981Th06
					+0.62(6) st		ABLS	1981Th06
$^{146}_{55}$Cs	0	0.34 s	1^-	−0.515(2)		$^{133}_{55}$Cs	ABLS	1987Co19
					+0.22(3) st		ABLS	1987Co19
$^{121}_{56}$Ba	0	30 s	$5/2^{(+)}$	+0.660(1)		$^{135,7}_{56}$Ba	CFBLS	1988We14
					+1.79(12) st	$^{135,7}_{56}$Ba	CFBLS	1988We14
$^{123}_{56}$Ba	0	2.7 m	$5/2^+$	−0.680(1)		$^{135,7}_{56}$Ba	CFBLS	1988We14
				−0.69(2)		$^{135,7}_{56}$Ba	CFBLS	1983Mu12
					+1.49(12) st	$^{135,7}_{56}$Ba	CFBLS	1988We14
					+1.52(13)	$^{135,7}_{56}$Ba	CFBLS	1983Mu12
$^{125}_{56}$Ba	0	3.5 m	$1/2^+$	+0.177(12)		$^{135,7}_{56}$Ba	CFBLS	1983Mu12
	$0+x$		$5/2^+$	0.1736(10)		$^{135,7}_{56}$Ba	CFBLS	1992Da06
$^{127}_{56}$Ba	0	12.7 m	$1/2^{(+)}$	+0.0834(10)		$^{135,7}_{56}$Ba	CFBLS	1992Da06
				+0.089(12)		$^{135,7}_{56}$Ba	CFBLS	1983Mu12
	80	1.9 s	$7/2^{(-)}$	−0.7227(5)		$^{135,7}_{56}$Ba	CFBLS	1992Da06
					+1.62(13)	$^{135,7}_{56}$Ba	CFBLS	1992Da06
$^{129}_{56}$Ba	0	2.23 h	$1/2^+$	−0.40(2)		$^{135,7}_{56}$Ba	ABLFS, R	1983Mu12
								1979Be25
					+1.60(13) st	$^{135,7}_{56}$Ba	ABLFS, R	1983Mu12
								1979Be25
$^{130}_{56}$Ba	357	37 ps	2^+	+0.70(6)			TF	1980Br01
					−1.0(2) or −0.1(2)		CER	1989Bu07
					−0.86(8)		CER	1989Ra99
					−0.3(2)		CERP	1974Ne15
	2476	9.54 ms	8^-	−0.04(3)			CLS	2002Mo31

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					+2.8(3)		CLS	2002Mo31
$^{131}_{56}$Ba	0	11.8 d	$1/2^+$	0.708113(15)		$^{137}_{56}$Ba	TIS	1987Kn10
				−0.71(2)		$^{135,7}_{56}$Ba	ABLFS, R	1983Mu12
								1979Be25
	188	14.6 m	$9/2^-$	−0.87(2)		$^{135,7}_{56}$Ba	CFBLS	1983Mu12
					+1.46(13) st	$^{135,7}_{56}$Ba	CFBLS	1983Mu12
$^{132}_{56}$Ba	465	18 ps	2^+	+0.68(6)			TF	1980Br01
	3115	12.3 ns	10^+	−1.56(11)			IPAD	1995Ha26
				−1.59(5)			TDPAD	1996Da02
$^{133}_{56}$Ba	0	10.7 y	$1/2^+$	0.77167(2)		$^{137}_{56}$Ba	TIS	1987Kn10
				−0.769(3)		$^{135}_{56}$Ba	O	1976Ho13
				−0.777(14)		$^{135,7}_{56}$Ba	CFBLS	1983Mu12
	12	4.7 ns	$3/2^+$	+0.51(7)		$^{135}_{56}$Ba	XHFS	1981Gr18
	288	38.9 h	$11/2^-$	−0.91(5)		$^{135,7}_{56}$Ba	ABLFS, R	1983Mu12
								1979Be25
					+0.89(7) st	$^{135,7}_{56}$Ba	ABLFS, R	1983Mu12
								1979Be25
$^{134}_{56}$Ba	605	5.1 ps	2^+	+0.86(10)			TF	1980Br01
				+0.82(12)			IMPAC	1980Eb01
					[−0.32(6) or +0.09(6)]		CER	1989Bu07
					OR [−0.20(6) or +0.21(6)]			
					−0.34(16) or −0.13(16)		CER	1977Kl05
	2957	2.6 μs	10^+	−2.0(1)			TDPAD	1982BeZY
$^{135}_{56}$Ba	0	Stable	$3/2^+$	+0.83794(2)			OP/RD	1972Ol01
				0.838627(2)		$^{35}_{17}$Cl	N	1978Lu07
					+0.160(3) st		R	1988We07
					+0.15(2) st		OL, R	1983Mu12
								1976Ma28
					0.150(15)		CFBLS	1986Si03
					0.16(3) st		ABLFS	1979Ba74
					0.22(3)		ABLS, R	1982Gr14
								1979Gu09
					0.23(5)		ABLFS	1982Gr14
	268	28.7 h	$11/2^-$	−1.001(15)		$^{135,7}_{56}$Ba	ABLFS, R	1983Mu12
								1979Be25
					+0.98(8) st	$^{135,7}_{56}$Ba	ABLFS, R	1983Mu12
								1979Be25
$^{136}_{56}$Ba	819	1.93 ps	2^+	+0.69(10)			TF	1980Br01
					−0.19(6) or +0.07(7)		CER	1986Ro15
					+0.01(5) or +0.25(5)		CER	1984Be20
	2140	1.5 ns	5^-	−1.9(2)			IPAC	1979Oh03
$^{137}_{56}$Ba	0	Stable	$3/2^+$	+0.93737(2)			OP/RD	1972Ol01
				0.93734(2)		$^{135}_{56}$Ba	N	1978Lu07
					+0.245(4) st		R	1988We07
					+0.23(3) st		OL, R	1983Mu12
								1976Ma28
					0.246(2)		R	1986Si03
					0.23(2)		CFBLS	1986Si03
					0.34(4)		ABLS	1979Gu09
					0.35(8)		ABLFS	1982Gr14
	662	2.55 m	$11/2^-$	−0.99(3)		$^{135,7}_{56}$Ba	ABLFS, R	1983Mu12
					+0.78(9)	$^{135,7}_{56}$Ba	ABLFS, R	1983Mu12
$^{138}_{56}$Ba	1436	0.206 ps	2^+	+1.4(2)			TF	1987Ba65
					−0.14(6) or +0.08(6)		CER	1989Bu07
	1899	2.17 ns	4^+	3.2(6)			IPAC	1985Be04
	2091	0.8 μs	6^+	5.9(12)			TDPAD	1976Ik04
$^{139}_{56}$Ba	0	84.6 m	$7/2^-$	−0.973(5)		$^{135,7}_{56}$Ba	CFBLS	1988We07
				−0.98(2)		$^{135,7}_{56}$Ba	CFBLS	1983Mu12
					−0.573(13) st		CFBLS	1988We07
					−0.50(4) st	$^{135,7}_{56}$Ba	CFBLS	1983Mu12
$^{141}_{56}$Ba	0	18.7 m	$3/2^-$	−0.337(5)		$^{135,7}_{56}$Ba	CFBLS	1988We07
				−0.35(2)		$^{135,7}_{56}$Ba	CFBLS	1983Mu12
					+0.454(10) st		CFBLS	1988We07
					+0.43(4) st	$^{135,7}_{56}$Ba	CFBLS	1983Mu12

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Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{142}_{56}$Ba	359	66 ps	2^+	0.85(10)			IPAC, R	1988Wo03
								1986Gi14
$^{143}_{56}$Ba	0	14.5 s	$5/2^{(+)}$	+0.443(11)		$^{135,7}_{56}$Ba	CFBLS	1988We07
				+0.45(2)		$^{135,7}_{56}$Ba	CFBLS	1983Mu12
					−0.88(2) st		CFBLS	1988We07
					−0.81(7) st	$^{135,7}_{56}$Ba	CFBLS	1983Mu12
	117	2.6 ns	$9/2^-$	+0.5(3)		$^{144}_{56}$Ba 199	IMPAC	1999Sm05
$^{144}_{56}$Ba	199	0.70 ns	2^+	0.68(10)			IPAC	1983Wo05
$^{145}_{56}$Ba	0	4.31 s	$5/2^{(-)}$	−0.285(7)		$^{135,7}_{56}$Ba	CFBLS	1988We07
				−0.27(4)		$^{135,7}_{56}$Ba	CFBLS	1983Mu12
					+1.22(2) st		CFBLS	1988We07
					+ 1.15(10) st	$^{135,7}_{56}$Ba	CFBLS	1983Mu12
	113	(0.21) ns	$7/2^-$	−1.4(10)		$^{144}_{56}$Ba 199	IMPAC	1999Sm05
$^{146}_{56}$Ba	181	0.85 ns	2^+	0.56(14)			IPAC	1983Wo05
				+0.4(2)		$^{144}_{56}$Ba 199	IMPAC	1999Sm05
$^{133}_{57}$La	536	60 ns	$11/2^-$	7.5(5)			TDPAC	1979BuZW
$^{135}_{57}$La	0	19.5 h	5/2+	+3.70(9)		$^{139}_{57}$La	CFBLS	2003Il03
					−0.4(4)	$^{139}_{57}$La	CFBLS	2003Il03
	2737	50 ns	$(27/2)^+$	0.0(2)			TDPAD	1976Le29
$^{137}_{57}$La	0	6×10^4 y	$7/2^+$	+2.700(15)		$^{139}_{57}$La	CFBLS	2003Il03
				+2.695(6)		$^{139}_{57}$La	O	1972Fi19
					+0.21(3)	$^{139}_{57}$La	CFBLS	2003Il03
					+0.24(7) st	$^{139}_{57}$La	O	1972Fi19
	10	89 ns	$5/2^+$		+0.24(7) st	$^{137}_{57}$La	ME	1978Ge20
	1870	365 ns	$19/2^-$	+2.34(6)			TDPAD	1982KiZV
$^{138}_{57}$La	0	1.1×10^{11} y	5^+	+3.713646(7)		$^{139}_{57}$La	N	1977Kr12
								1955So31
					+0.45(2) st	$^{139}_{57}$La	ABLDF	1979Ch39
					0.43(2) st	$^{139}_{57}$La	QIR	1977Kr12
	73	116 ns	3^+	+2.89(5)		$^{19}_{9}$F 197	TDPAD	1979Bo11
$^{139}_{57}$La	0	Stable	$7/2^+$	+2.7830455(9)		$^{2}_{1}$H	N, O	1977Kr12
					+0.20(1) st		CFBLS, R	1982Ba08
								1982Ho02
$^{140}_{57}$La	0	40.3 h	3^-	+0.730(15)		$^{139}_{57}$La	AB	1969HuZY
					+0.094(10) st	$^{139}_{57}$La	NO/S, AB	1971Ch02
$^{126}_{58}$Ce	2887	8 ps	10^+	∼+10			IPAD	1987IsZS
	3317	4 ps	12^+	∼+12			IPAD	1987IsZS
$^{129}_{58}$Ce	108	60 ns	$9/2^-$	−0.83(5)			TDPAD	1998Io01
					1.32(13)	$^{138}_{58}$Ce 3538	TDPAD	1998Io01
$^{130}_{58}$Ce	2454	109 ns	7^-		1.8(2)		TDPAD	1999Io02
$^{131}_{58}$Ce	162	88 ns	$9/2^-$	−0.85(3)			TDPAD	1998Io01
					0.92(10)	$^{138}_{58}$Ce 3538	TDPAD	1998Io01
$^{134}_{58}$Ce	3209	308 ns	10^+	−1.87(2)			TDPAD, R	1984Be68
				−1.9(1)			TDPAD	1980Go14
					+ 1.32(12)	$^{138}_{58}$Ce 3538	TDPAD, TF	1983Da29
								1986Da22
					$Q/Q(^{138}_{58}\text{Ce}\ 3538)$ = 1.71(16)			1983Da29
	3719	5.5 ps	10^+	−3(3)			IMPAD	1982Ze04
$^{135}_{58}$Ce	2126	8.2 ns	$19/2^+$	−0.66(10)			IPAD	1982Ze01
$^{136}_{58}$Ce	3095	2.2 μs	10^+	−1.80(2)			TDPAD	1980Ba68
				−1.80(3)			TDPAD	1982Ri09
					$Q/Q(^{138}_{58}\text{Ce}\ 3538)$ = 1.45(14)		TDPAD	1983Da29
$^{137}_{58}$Ce	0	9.0 h	$3/2^+$	0.96(4)			NMR/ON	1991Mu06
				0.90(15)			NO/S	1963Ha07
	254	34.4 h	$11/2^-$	1.01(4)			NMR/ON	1991Mu06
				0.70(3)			NO/S	1966Bl17
				0.96(9)			NO/S	1961Ha05
$^{138}_{58}$Ce	3538	82 ns	10^+	−1.70(3)			TDPAD	1980Ba68
				−1.76(10)			TDPAD	1980Me11
$^{139}_{58}$Ce	0	137.6 d	$3/2^+$	1.06(4)			NMR/ON	1991Mu06
				1.0(2)			NO/S	1963Ha07
				0.85(15)			NO/S	1962Gr17

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
	2632	70 ns	$19/2^-$	+3.99(6)			TDPAD	1980Ba68
				+3.85(8)			TDPAD	1984Vo12
$^{140}_{58}$Ce	1596	90 fs	2^+	+1.9(2)			TF	1991Ba38
	2084	3.4 ns	4^+	4.06(15)			TDPAC, IPAC	1965Le16
				3.8(4)			TDPAC	1964Sc16
				4.44(16)			TDPAC	1963Ko07
				4.6(3)			TDPAC	1963Ka03
					0.35(7) st	$^{139}_{57}$La	TDPAC	1973Kl99
	3715	23 ns	10^+	+10.3(4)		$^{139}_{58}$Ce 2632	TDPAD	1988Ka04
$^{141}_{58}$Ce	0	32.5 d	$7/2^-$	1.09(4)			NMR/ON	1983Va36
				0.89(1)			EPR	1957Ke13
				0.89(9)			NO/S	1962Gr17
				1.3(2)			NO/S	1963Ha07
$^{142}_{58}$Ce	641	5.7 ps	2^+	+0.42(10)			TF	1991Ba38
					−0.16(5) or −0.37(5)		CER	1988Ve08
								1989Sp07
$^{143}_{58}$Ce	0	33 h	$3/2^-$	0.43(1)			NMR/ON	2002Ta01
				1.0(3)			NO/S	1963Ha07
$^{146}_{58}$Ce	259	0.25 ns	2^+	0.48(10)			IPAC	1986Gi05
				+0.9(7)		$^{148}_{58}$Ce 158	IMPAC	1999Sm05
$^{148}_{58}$Ce	158	1.01 ns	2^+	0.74(12)			IPAC	1986Gi05
$^{150}_{58}$Ce	306	(0.18) ns	4^+	+3.2(16)		$^{148}_{58}$Ce 158	IMPAC	1999Sm05
$^{136}_{59}$Pr	595	90 ns	6^+	+3.42(11)			TDPAD	1993Ba42
$^{139}_{59}$Pr	822	45 ns	$11/2^-$	+6.6(5)			TDPAD	1979Ke07
				+7.2(6)			TDPAD	1982Ri09
$^{141}_{59}$Pr	0	Stable	$5/2^+$	+4.2754(5)		$^{19}_{9}$F	OD	1982Ma31
								1984Ma12
					−0.077(6) st		R	1994Ii01
					−0.059(4)		AB	
	145	1.85 ns	$7/2^+$	+2.95(9)		$^{141}_{59}$Pr	ME, R	1976St73
	1118	4.6 ns	$11/2^-$	+6.2(4)			TDPAD	1984Go12
				+7.2(4)			TDPAD	1974Ej01
	1797	1.0 ns	$15/2^+$	+8(2)			IPAD	1984Go12
$^{142}_{59}$Pr	0	19.2 h	2^-	+0.234(1)			AB, R	1973AnZO
								1970HiZW
					+0.030(9)		AB	1962Ca10
	4	14.6 m	5^-	2.2(1)			AB	1973AnZO
$^{143}_{59}$Pr	0	13.57 d	$7/2^+$	+2.701(4)		$^{141}_{59}$Pr	CFBLS	1994Ii01
					+0.77(16) st	$^{141}_{59}$Pr	CFBLS	1994Ii01
	57	4.2 ns	$5/2^+$	+3.4(1)			TDPAC	1977Ne12
$^{144}_{59}$Pr	80	0.12 ns	1^-	−1.2(4)			IPAC	1975Ba32
$^{133}_{60}$Nd	SD band	—	$37/2^+$ to $45/2^+$	g(average) = 0.31(8)			TF	1995Me08
$^{134}_{60}$Nd	295	64 ps	2^+	+1.2(4)		$^{146}_{60}$Nd 454	IMPAD	1987Bi13
	2817	9.0 ps	10^+	∼0			IPAD	1989OgZY
$^{135}_{60}$Nd	0	12.4 m	$9/2^-$	−0.78(3)		$^{143}_{60}$Nd	LRIMS	1992Le09
					+1.9(5) st	$^{143}_{60}$Nd	LRIMS	1992Le09
	199	35 ps	$11/2^-$	−0.5(3)		$^{146}_{60}$Nd 454	IMPAD	1987Bi13
$^{136}_{60}$Nd	3298	51.3 ps	10^+	+11(4)		$^{146}_{60}$Nd 454	IMPAD	1987Bi13
	3688	18.7 ps	12^+	+14(5)		$^{146}_{60}$Nd 454	IMPAD	1987Bi13
$^{137}_{60}$Nd	0	38 m	$1/2^+$	−0.633(5)		$^{143}_{60}$Nd	LRIMS	1992Le09
$^{138}_{60}$Nd	3172	330 ns	10^+	−1.74(4)			TDPAD	1982Ri09
$^{139}_{60}$Nd	0	30 m	$3/2^+$	+0.907(7)		$^{143}_{60}$Nd	LRIMS	1992Le09
					+0.28(9) st	$^{143}_{60}$Nd	LRIMS	1992Le09
$^{140}_{60}$Nd	3622	22 ns	10^+	−1.92(12)			TDPAD	1980Me11
				−1.6(2)			TDPAD	1982SiZP
$^{141}_{60}$Nd	0	2.49 h	$3/2^+$	+1.012(9)		$^{143}_{60}$Nd	LRIMS	1992Le09
					+0.32(13) st	$^{143}_{60}$Nd	LRIMS	1992Le09
$^{142}_{60}$Nd	1576	110 fs	2^+	+1.69(15)			TF	1991Ba38
$^{143}_{60}$Nd	0	Stable	$7/2^-$	−1.065(5)			AB/D	1965Sm04
					−0.61(2) st		ABLS	1992Au04
					−0.59(3) st		AB, R	1992Le09
					−0.56(6) st		AB	1972Ch54
					−0.48(2)		AB	

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
	1229	6.79 ns	$13/2^+$	+0.38(3) p			IPAD	1994KA23
	2911	482 ps	$21/2^+$	+7.2(13) p			IPAD	1994KA23
$^{144}_{60}$Nd	697	3.1 ps	2^+	+0.418(14)			TF	2001Ho02
				+0.32(4)			TF	1990St18
				+0.33(8)		$^{152}_{62}$Sm 122	TF	1987Be08
				+0.30(4)		$^{148}_{60}$Nd 302	TF/IMPAC, R	1978Ka36
					−0.15(6) or −0.28(6)		CER	1989Sp07
					−0.18(12)		CER	1971Cr01
								1970Ge08
	1314	7.4 ps	4^+	+0.52(14)			TF	2001Ho02
				+0.8(8)			IPAC	1967Jo11
	1791	(Est 40 ps)	6^+	−3.4(13)			TF	2001Ho02
$^{145}_{60}$Nd	0	Stable	$7/2^-$	−0.656(4)			AB/D	1965Sm04
					−0.314(12) st		ABLS	1992Au04
					−0.29(3) st		AB	1972Ch54
					−0.253(10)		AB	1965Sm04
	73	0.72 ns	$5/2^-$	−0.320(4)		$^{145}_{60}$Nd	ME	1970Ka36
$^{146}_{60}$Nd	454	21.6 ps	2^+	+0.578(16)			TF	2001Ho02
				0.60(4)			TF	1999BeZR
				0.58(2)			TF	1990St18
				+0.63(10)		$^{152}_{62}$Sm 122	TF	1987Be08
				+0.50(8)		$^{148}_{60}$Nd 302	TF/IMPAC, R	1978Ka36
					−0.78(9)		CER	1970Ge08
	1043	4 ps	4^+	+0.77(10)			TF	2001Ho02
$^{147}_{60}$Nd	0	11.0 d	$5/2^-$	0.578(3)		$^{143}_{60}$Nd	EPR	1957Ke13
				0.554(10)		$^{145}_{60}$Nd	AB	1970PiZR
					0.9(3)	$^{145}_{60}$Nd	AB	1970PiZR
$^{148}_{60}$Nd	302	78 ps	2^+	+0.73(3)			TF	2001Ho02
				0.70(4)			TF	1990St18
				+0.83(9)		$^{152}_{62}$Sm 122	TF	1987Be08
				+0.64(8)			TF, IMPAC, CEAD, R	1978Ka36
					−1.46(13)		CER	1970Ge08
	752	7.0 ps	4^+	+1.4(2)			TF	2001Ho02
	1280	(Est 4.6 ps)	6^+	+1.6(3)			TF	2001Ho02
	3621	330 ns	10^+	−1.75(9)			TDPAD	1989Ra99
$^{149}_{60}$Nd	0	1.73 h	$5/2^-$	0.351(10)		$^{145}_{60}$Nd	AB	1970PiZR
					1.3(3)	$^{145}_{60}$Nd	AB	1970PiZR
$^{150}_{60}$Nd	130	1492 ps	2^+	0.9(2)			TF	1999BeZR
				0.76(10)			TF	1990St18
				+0.84(8)		$^{152}_{62}$Sm 122	TF	1987Be08
				0.64(2)			RIGV	1970Be36
					−2.0(5)		CER, R	1970Ge08
	381	63 ps	4^+	+1.8(3)			TF	2001Ho02
				1.76(16)			TF	1990St18
				+1.3(2)			IMPAC	1972Ku10
	720	12 ps	6^+	+2.1(4)			TF	2001Ho02
	1130	4 ps	8^+	+4.5(10)			TF	2001Ho02
	1599	(Est 3.6 ps)	10^+	+1(2)			TF	2001Ho02
$^{138}_{61}$Pm	0	3.5 m	(3^+)	3.2(9)			NO/S	1992Si22
$^{143}_{61}$Pm	0	265 d	$5/2^+$	3.8(5)			NO/S	1963Gr10
	960	22 ns	$11/2^-$	+6.8(4)			TDPAD	1984Go12
				+6.3(5)		$^{19}_{9}$F 197	TDPAD	1980Pr02
	1898	10.2 ns	$15/2^+$	+7.7(4)			TDPAD	1984Go12
				+7.5(5)		$^{19}_{9}$F 197	TDPAD	1980Pr02
$^{144}_{61}$Pm	0	349 d	5^-	1.69(14)			NO/S	1961Sh02
$^{145}_{61}$Pm	0	17.7 y	$5/2^+$	+3.80(16)		$^{147}_{61}$Pr	CFBLS	1992Al03
					+0.21(8)	$^{147}_{61}$Pr	CFBLS	1992Al03
$^{147}_{61}$Pm	0	2.623 y	$7/2^+$	+2.58(7)			O	1966Re04
					+0.7(2)		O	1966Re04
					0.59(16)		AB, R	1966Re04
	91	2.5 ns	$5/2^+$	+3.22(16)		$^{147}_{61}$Pr	ME	1970Ba39
				3.55(10)		$^{147}_{61}$Pr	ME	1970Ba39
$^{148}_{61}$Pm	0	5.37 d	1^-	+2.1(2)			AB	1965Al10

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				1.8(2)			NO/S	1963Gr10
					+0.2(2)		AB	1965Al10
	137	41.3 d	6^-	1.8(2)			NO/S	1963Gr10
$^{149}_{61}$Pm	0	53.1 h	$7/2^+$	3.3(5)			NO/S	1960Ch15
								1963Gr10
	114	2.54 ns	$5/2^+$	+2.13(15)			IPAC	1989Ra17
				2.0(2)			TDPAC	1970Se11
	189	3.24 ns	$3/2^+$	+1.09(15)			IPAC	1989Ra17
				2.3(6)			TDPAC	1970Se11
	211	80 ps	$5/2^+$	+2.2(4)			IPAC	1989Ra17
	270	2.64 ns	$7/2^-$	+2.19(11)			IPAC	1989Ra17
				3.6(2)			TDPAC	1970Se11
$^{151}_{61}$Pm	0	28.4 h	$5/2^+$	1.8(2)			AB	1963Bu14
					1.9(3)		AB	1963Bu14
	256	0.90 ns	$3/2^+$	1.8(2)			IPAC	1977Se06
$^{138}_{62}$Sm	2903	0.55 ns	10^+	~10			IPAD	1989OgZY
$^{139}_{62}$Sm	0	2.57 m	$1/2^+$	−0.53(2)		$^{145,7,9}_{62}$Sm	LRIMS	1992Le09
	457	10.7 s	$11/2^-$	1.1(2)		$^{141}_{62}$Sm 176	NO/S	1992Si22
$^{140}_{62}$Sm	3172	19.4 ns	10^+	−1.8(2)			TDPAD	1988Ba22
					1.7(5)	$^{154}_{62}$Sm 82	TDPAD	1985Be23
	3210	5.2 ns	10^+	+12.7(9)			TDPAD	1988Ba22
$^{141}_{62}$Sm	0	10.2 m	$1/2^+$	−0.74(2)		$^{145,7,9}_{62}$Sm	LRIMS	1992Le09
	176	22.6 m	$11/2^-$	−0.84(2)		$^{145,7,9}_{62}$Sm	LRIMS	1992Le09
					+1.6(5) st	$^{145,7,9}_{62}$Sm	LRIMS	1992Le09
$^{142}_{62}$Sm	2372	170 ns	7^-		+1.1(3)	$^{154}_{62}$Sm 82	TDPAD, TF	1985Be23
								1986Da22
$^{143}_{62}$Sm	0	8.83 m	$3/2^+$	+1.01(2)		$^{145,7,9}_{62}$Sm	LRIMS	1992Le09
					+0.4(2)	$^{145,7,9}_{62}$Sm	LRIMS	1992Le09
$^{144}_{62}$Sm	1660	85 fs	2^+	+1.5(2)			TF	1991Ba38
	1810	25 ps	3^-	+2.3(3)		$^{148}_{62}$Sm 550	TF	1990Ba41
$^{145}_{62}$Sm	0	340 d	$7/2^-$	−1.11(6)		$^{147,9}_{62}$Sm	LRIMS	1992Le09
				−1.123(11)		$^{147}_{62}$Sm	LRFS	1990En01
				0.92(6)		$^{147}_{62}$Sm	NO/S	1969Ka21
					−0.6(2)	$^{147,9}_{62}$Sm	LRIMS	1992Le09
					−0.60(7)	$^{147}_{62}$Sm	LRFS	1990En01
$^{147}_{62}$Sm	0	1.1×10^{11} y	$7/2^-$	−0.812(2)			LRFS	1990En01
				−0.8148(7)			AB	1966Wo05
					−0.27(3)		LRFS	1990En01
					−0.261(7)		AB, R	1992Le09
								1972Ch55
					−0.26(3) a		Mu-X	1981Ba28
					$Q/Q_{\text{ref}} = -3.4601(6)$	$^{149}_{62}$Sm	AB	1972Ch55
	121	0.78 ns	$5/2^-$	−0.45(3)		$^{147}_{62}$Sm	ME	1971Pa04
					−0.5(2)	$^{147}_{62}$Sm	ME	1971Pa04
	197	1.35 ns	$3/2^-$	−0.27(6)			IPAC	1989Ra17
$^{148}_{62}$Sm	550	7.3 ps	2^+	+0.51(4)		$^{150}_{62}$Sm 334	TF	1987Ba65
				+0.61(7)		$^{152}_{62}$Sm 122	TF	1987Be08
					−1.0(3)		CER	1973Cl99
$^{149}_{62}$Sm	0	$>2 \times 10^{15}$ y	$7/2^-$	−0.6677(11)		$^{147}_{62}$Sm	LRFS	1990En01
				−0.6717(7)		$^{147}_{62}$Sm	AB	1966Wo05
				−0.6708(10)		$^{147}_{62}$Sm	CFBLS	1985Al06
								1986Al33
					+0.078(8)	$^{147}_{62}$Sm	LRFS	1990En01
					+0.075(2)		AB, R	1992Le09
								1972Ch55
					+0.075(8)	$^{147}_{62}$Sm	AB	1966Wo05
					+0.07(2)	$^{147}_{62}$Sm	CFBLS	1985Al06
								1986Al33
					0.09(2) a		Mu-X	1981Ba28
	23	7.6 ns	$5/2^-$	−0.6238(8)		$^{149}_{62}$Sm	ME	1970EiZY
					+1.01(9) a		Mu-X	1981Ba28
$^{150}_{62}$Sm	334	49 ps	2^+	+0.77(5)		$^{152}_{62}$Sm 122	TF	1987Be08
				+0.82(6)		$^{152}_{62}$Sm 122	TF	1987By02

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Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					−1.3(2)	$^{152}_{62}$Sm 122	CER	1973Cl**
					−1.3(2)		CERP	1973Gr06
	773	6.6 ps	4^+	+2.6(3)		$^{150}_{62}$Sm 334	TF	1993Va10
				+1.4(2)		$^{152}_{62}$Sm 122	TF	1987By02
	1046	0.73 ps	2^+	+0.7(2)		$^{152}_{62}$Sm 122	TF	1987By02
	1194	1.27 ps	2^+	+0.83(14)		$^{152}_{62}$Sm 122	TF	1987By02
	1279	(1.4 ps)	6^+	+2.6(8)		$^{150}_{62}$Sm 334	TF	1993Va10
				+2.3(5)		$^{152}_{62}$Sm 122	TF	1987By02
$^{151}_{62}$Sm	0	90 y	$5/2^-$	−0.3611(13)		$^{147}_{62}$Sm	LRFS	1990En01
				−0.363(2)		$^{147}_{62}$Sm	CFBLS	1985Al06
								1986Al33
				0.368(3)		$^{147}_{62}$Sm	CFBLS	1985Dy01
				−0.3630(5)		$^{147}_{62}$Sm	CFBLS	1981Do07
					+0.71(7)	$^{147}_{62}$Sm	LRFS	1990En01
					+0.65(15)	$^{147}_{62}$Sm	CFBLS	1985Al06
								1986Al33
					0.67(7)	$^{147}_{62}$Sm	CFBLS	1985Dy01
					+0.67(7)	$^{147}_{62}$Sm	CFBLS	1981Do07
	92	77 ns	$9/2^+$	−0.95(5)			TDPAC	1974Dr03
	105	0.48 ns	$3/2^-$	+0.31(11)			IPAC	1971Be23
	168	0.38 ns	$5/2^+$	+1.8(5)			IPAC, R	1974Dr03
$^{152}_{62}$Sm	122	1.40 ns	2^+	+0.80(6)			IPAC	1992De29
				+0.84(5)		$^{149}_{62}$Sm	ME	1967At04
					−1.666(16) a		Mu-X	1979Po05
					−1.702(17) a		Mu-X	1978Ya11
	366	56.6 ps	4^+	+1.7(2)		$^{152}_{62}$Sm 122	TF	1987By02
				+1.22(15)			IMPAC	1972Ku10
	707	10.1 ps	6^+	+2.4(3)		$^{152}_{62}$Sm 122	TF	1987By02
	810	7.2 ps	2^+	+0.8(2)		$^{152}_{62}$Sm 122	TF	1987By02
	1086	0.85 ps	2^+	+0.8(2)		$^{152}_{62}$Sm 122	TF	1987By02
	1125	3.3 ps	8^+	+2.8(5)		$^{152}_{62}$Sm 122	TF	1987By02
	1609	1.38 ps	10^+	+4(2)		$^{152}_{62}$Sm 122	TF	1987By02
	gsb		$<10^+$	$g(0) = +0.38(3)$			TF	1982An10
				$\alpha \times 10^3 = 0.4(2)$				
$^{153}_{62}$Sm	0	46.8 h	$3/2^+$	−0.021(3)		$^{147}_{62}$Sm	LRFS	1990En01
				−0.0257(14)		$^{147}_{62}$Sm	ABLFS	1984Ea02
				−0.0216(1)			AB	1976Fu06
					+1.30(12)	$^{147}_{62}$Sm	LRFS	1990En01
					+1.26(13)	$^{147}_{62}$Sm	ABLFS	1984Ea02
$^{154}_{62}$Sm	82	3.01 ns	2^+	+0.78(4)		$^{147}_{62}$Sm	ME	1969Wh04
					−1.87(4) a		Mu-X	1979Po05
	267	165 ps	4^+	+1.35(15)			IMPAC	1972Ku10
	544	22.7 ps	6^+	+1.9(3)			IMPAC	1972Ku10
	gsb		$<10^+$	$g(0) = +0.39(3)$			TF	1982An10
				$\alpha \times 10^3 = -1.3(15)$				
$^{155}_{62}$Sm	0	22.4 m	$3/2^-$		1.13(13)	$^{153}_{62}$Sm	AB	1976Fu06
$^{138}_{63}$Eu	0	12.1 s	(6^-)	5.3(7)		$^{142}_{63}$Eu	NO/S	1992Si22
$^{139}_{63}$Eu	0	17.9 s	$(11/2^-)$	6.1(8)		$^{142}_{63}$Eu	NO/S	1992Si22
$^{140}_{63}$Eu	$0 + x$	1.54 s	$1^{(+)}$	+1.365(13)		$^{151}_{63}$Eu	CFBLS	1985Ah02
					+0.31(4)	$^{153}_{63}$Eu	CFBLS	1985Ah02
$^{141}_{63}$Eu	0	40 s	$5/2^+$	+3.494(8)		$^{151}_{63}$Eu	CFBLS	1985Ah02
					+0.85(4)	$^{153}_{63}$Eu	CFBLS	1985Ah02
$^{142}_{63}$Eu	0	2.4 s	1^+	+1.54(2)		$^{151}_{63}$Eu	CFBLS	1985Ah02
					+0.12(5)	$^{153}_{63}$Eu	CFBLS	1985Ah02
	180	73 s	8^-	+2.978(11)		$^{151}_{63}$Eu	CFBLS	1985Ah02
					+1.41(6)	$^{153}_{63}$Eu	CFBLS	1985Ah02
	$282 + x$	6.2 ns	8^+	(+)4.1(2)			TDPAD	1993Bi13
$^{143}_{63}$Eu	0	2.6 m	$5/2^+$	+3.673(8)		$^{151}_{63}$Eu	CFBLS	1985Ah02
					+0.51(3)	$^{153}_{63}$Eu	CFBLS	1985Ah02
$^{144}_{63}$Eu	0	10 s	1^+	+1.893(13)		$^{151}_{63}$Eu	CFBLS	1985Ah02
					+0.10(3)	$^{153}_{63}$Eu	CFBLS	1985Ah02
$^{145}_{63}$Eu	0	5.93 d	$5/2^+$	+3.999(3)		$^{151}_{63}$Eu	CFBLS	1993HuZU
				+3.993(7)		$^{151}_{63}$Eu	CFBLS	1985Ah02
				3.2(5)			NO/S	1983Kr18

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					$Q/Q(^{153}_{63}\mathrm{Eu}) = 0.1168(9)$	$^{151}_{63}$Eu	CFBLS	1993HuZU
					+0.29(2)	$^{151}_{63}$Eu	CFBLS	1985Ah02
	716	0.49 μs	$11/2^-$	+7.46(4)		$^{19}_{9}$F 197	TDPAD	1980Kl07
$^{146}_{63}$Eu	0	4.59 d	4^-	+1.421(8)		$^{151}_{63}$Eu	CFBLS	1993HuZU
				+1.425(11)		$^{151}_{63}$Eu	CFBLS	1985Ah02
				1.3(2)			NO/S	1985Va21
				1.7(3)			NO/S	1983Kr18
					$Q/Q(^{153}_{63}\mathrm{Eu}) = -0.074(2)$	$^{151}_{63}$Eu	CFBLS	1993HuZU
					−0.18(6)	$^{151}_{63}$Eu	CFBLS	1985Ah02
$^{147}_{63}$Eu	0	24.1 d	$5/2^+$	+3.736(6)		$^{151}_{63}$Eu	CFBLS	1993HuZU
				+3.725(7)		$^{151}_{63}$Eu	CFBLS	1986Al33
				+3.724(8)		$^{151}_{63}$Eu	CFBLS	1985Ah02
				4.0(9)			NO/S	1985Va21
				3.1(4)			NO/S	1983Kr18
				3.7(5)			NO/S	1979Er13
					$Q/Q(^{153}_{63}\mathrm{Eu}) = 0.218(2)$	$^{153}_{63}$Eu	CFBLS	1993HuZU
					+0.49(3)	$^{151}_{63}$Eu	CFBLS	1986Al33
					+0.55(3)	$^{151}_{63}$Eu	CFBLS	1985Ah02
	635	765 ns	$11/2^-$	+7.05(3)			TDPAD	1980Ba67
				+7.04(6)		$^{19}_{9}$F 197	TDPAD	1980Kl07
$^{148}_{63}$Eu	0	54.5 d	5^-	+2.340(10)		$^{151}_{63}$Eu	CFBLS	1985Ah02
				2.2(4)			NO/S	1985Va21
				2.1(3)			NO/S	1983Kr18
					+0.35(6)	$^{151}_{63}$Eu	CFBLS	1985Ah02
	720	235 ns	9^+	+6.12(5)			TDPAD	1980Ba67
$^{149}_{63}$Eu	0	93.1 d	$5/2^+$	+3.576(10)		$^{151}_{63}$Eu	CFBLS	1986Al33
				+3.565(6)		$^{151}_{63}$Eu	CFBLS	1985Ah02
				2.5(5)			NO/S	1983Kr18
					+0.70(8)	$^{151}_{63}$Eu	CFBLS	1986Al33
					+0.75(2)	$^{151}_{63}$Eu	CFBLS	1985Ah02
	497	2.43 μs	$11/2^-$	+7.0(3)		$^{19}_{9}$F 197	TDPAD	1980Kl07
$^{150}_{63}$Eu	0	35.8 y	$5^{(-)}$	+2.708(11)		$^{151}_{63}$Eu	CFBLS	1985Ah02
					+1.13(5)	$^{151}_{63}$Eu	CFBLS	1985Ah02
$^{151}_{63}$Eu	0	Stable	$5/2^+$	+3.4717(6)			AB/D	1965Ev08
					$Q/Q(^{153}_{63}\mathrm{Eu}) = 0.3918(2)$	$^{153}_{63}$Eu	CFBLS	1993HuZU
					$Q/Q(^{153}_{63}\mathrm{Eu}) = 0.39191(12)$	$^{153}_{63}$Eu	CFBLS	1993Mo04
					$Q/Q(^{153}_{63}\mathrm{Eu}) = 0.393(9)$	$^{153}_{63}$Eu	O	1965Wi09
					0.83 e, st		ABLDF	1987Se12
					+0.95(3)	$^{153}_{63}$Eu	CFBLS	1985Ah02
					+0.903(10) a		Mu-X, O	1984Ta04
								1965Wi09
					1.53(5)		ABLFS	1981Br17
					1.32(13)		CFBLS	1981Ar25
	22	9.5 ns	$7/2^+$	+2.591(2)		$^{151}_{63}$Eu	ME	1972Cr09
					1.28(2) a		Mu-X	1984Ta05
					+1.19(2)	$^{151}_{63}$Eu	ME, R	1976St73
$^{152}_{63}$Eu	0	13.54 y	3^-	−1.9401(8)		$^{151}_{63}$Eu	CFBLS	1993HuZU
				−1.950(12)		$^{151}_{63}$Eu	CFBLS	1986Al33
				−1.96(6)		$^{151}_{63}$Eu	CFBLS	1985Ah02
				−1.9414(13)		$^{151}_{63}$Eu	AB, O, R	1963Al06
								1970He09
								1971He18
					$Q/Q_{\mathrm{ref}} = 1.1822(5)$	$^{153}_{63}$Eu	CFBLS	1993HuZU
					+2.71(3)	$^{151}_{63}$Eu	CFBLS	1986Al33
					+2.5(2)	$^{151}_{63}$Eu	CFBLS	1985Ah02
$^{153}_{63}$Eu	0	Stable	$5/2^+$	+1.5324(3)		$^{151}_{63}$Eu	CFBLS	1993HuZU
				+1.56(4)		$^{151}_{63}$Eu	CFBLS	1986Al33
				+1.538(13)		$^{151}_{63}$Eu	CFBLS	1985Ah02
				+1.5330(8)			AB/D	1965Ev08
					2.22 e, st		ABLDF	1987Se12
					+2.28(9)	$^{151}_{63}$Eu	CFBLS	1986Al33
					+2.41(2) a		Mu-X, O	1984Ta04
								1965Wi09

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					3.92(12)		ABLFS	1981Br17
					3.6(4)		CFBLS	1981Ar25
	83	0.80 ns	$7/2^+$	+1.81(6)		$^{153}_{63}$Eu	ME	1969Ri02
					0.44(2) a		Mu-X	1984Ta04
	97	180 ps	$5/2^-$	+3.2(2) or −0.5(2)		$^{153}_{63}$Eu	ME	1966At01
	103	3.9 ns	$3/2^+$	+2.048(6)		$^{153}_{63}$Eu	ME, IPAC	1972Cr09
								1975Si07
					1.254(13)	$^{153}_{63}$Eu	ME	1973Ar19
$^{154}_{63}$Eu	0	8.6 y	3^-	−2.005(6)		$^{153}_{63}$Eu	EPR	1957Ab05
				−2.02(5)		$^{151}_{63}$Eu	CFBLS	1986Al33
					+2.84(10)	$^{151}_{63}$Eu	CFBLS	1986Al33
					+3.4(3)	$^{152}_{63}$Eu	NO/S, O, R	1962Ju06
								1970He09
								1971He18
$^{155}_{63}$Eu	0	4.68 y	$5/2^+$	+1.520(2)		$^{153}_{63}$Eu	ABLFS	2000Ga35
				+1.52(2)		$^{151,3}_{63}$Eu	CFBLS	1990Al34
				1.519(10)		$^{153}_{63}$Eu	ABLFS	1986Al33
				+1.56(10)		$^{151}_{63}$Eu	CFBLS	1990Al34
					+2.49(2)	$^{153}_{63}$Eu	ABLFS	2000Ga35
					2.51(6)	$^{153}_{63}$Eu	ABLFS	1999Ga36
					+2.5(3)	$^{151,3}_{63}$Eu	CFBLS	1990Al34
					+2.3(2)	$^{151}_{63}$Eu	CFBLS	1986Al33
	104	0.104 ns	$5/2^-$	+9.6(10)			IPAC	1971Be23
$^{157}_{63}$Eu	0	15.2 h	$5/2^+$	+1.50(2)		$^{151,3}_{63}$Eu	CFBLS	1990Al34
					+2.6(3)	$^{151,3}_{63}$Eu	CFBLS	1990Al34
$^{158}_{63}$Eu	0	45.9 m	$1^{(-)}$	+1.44(2)		$^{151,3}_{63}$Eu	CFBLS	1990Al34
					+0.66(14)	$^{151,3}_{63}$Eu	CFBLS	1990Al34
$^{159}_{63}$Eu	0	18.1 m	$5/2^+$	+1.38(2)		$^{151,3}_{63}$Eu	CFBLS	1990Al34
					+2.7(3)	$^{151,3}_{63}$Eu	CFBLS	1990Al34
$^{144}_{64}$Gd	3433	130 ns	10^+	+12.76(14)			TDPAD	1979Ha15
					−1.46(6)		TDPAD, TFLD	1982Ha22
								1985Da20
$^{146}_{64}$Gd	1580	1.1 ns	3^-	+2.1(9)			TDPAD	1979Ke03
	2982	6.7 ns	7^-	+9.0(2)			TDPAD	1979Ha15
				+8.3(4)			TDPAD	1979Ke03
				+7.9(6)			TDPAD	1979Fa01
	8916	4.1 ns	(19^+)	+12(2)			TDPAD	1979Ha15
$^{147}_{64}$Gd	0	38.1 h	$7/2^-$	1.02(9)			NO/S	1987Kr11
				1.2(2)			NO/S	1986Va16
	997	22.2 ns	$13/2^+$	+0.49(2)			TDPAD	1987Da27
				−0.24(7)			TDPAD	1979Ha15
					−0.73(7)		TDPAD, TFLD	1982Ha22
								1985Da20
	2760	4.4 ns	$21/2^+$	+7.6(12)			TDPAD	1979Ha15
	3582	27 ns	$27/2^-$	+11.3(2)			TDPAD	1979Ha15
				+11.9(3)			TDPAD	1979Fa01
					−1.26(8)		TDPAD, TFLD	1982Ha22
								1985Da20
	8587	510 ns	$49/2^+$	+10.9(2)			TDPAD	1979Ha15
					−3.24(18)		TDPAD, TFLD	1982Ha22
								1985Da20
	10993	0.8 ns	$59/2^-$	+11(2)			TF	1989Ha15
$^{148}_{64}$Gd	2695	16.5 ns	9^-	−0.16(2)			TDPAD	1987Da27
				−0.25(8)			TDPAD	1979Ha15
					1.01(5)		TDPAD	1982Ha22
$^{149}_{64}$Gd	0	9.4 d	$7/2^-$	0.88(4)			NO/S	1987Kr11
				0.97(6)			NO/S	1987Be33
				1.1(2)			NO/S	1986Va16
	165	1.7 ns	$5/2^-$	−0.9(2)			IPAC, TDPAC	1977GrZF
$^{151}_{64}$Gd	0	120 d	$7/2^-$	0.77(6)			NO/S	1987Be33
	109	3.0 ns	$5/2^-$	−1.08(13)			IPAC, TDPAC	1977GrZF
				−1.2(2)			IPAC	1976Ba26
	395	0.31 ns	$3/2^-$	−2.5(8)			IPAC	1977GrZF
$^{152}_{64}$Gd	344	28.6 ps	2^+	+0.96(8)		$^{156}_{64}$Gd 89	RIGV, R	1974Ar23

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				+0.90(8)		$^{152}_{62}$Sm 122	TF	1987Be08
	755	6.1 ps	4^+	(+)2.0(5)		$^{152}_{64}$Gd 344	TF	1999Ma06
$^{153}_{64}$Gd	0	241.6 d	$3/2^-$	0.38(8)			NO/S	198Va16
	110	1.97 ns	$5/2^-$	+0.40(15)			IPAC, TDPAC	1977GrZF
	129	2.50 ns	$3/2^-$	+0.37(7)			IPAC	1977Ba63
$^{154}_{64}$Gd	123	1.17 ns	2^+	+0.96(6)		$^{156}_{64}$Gd 89	RIGV, R	1974Ar23
				+0.86(6)		$^{156}_{64}$Gd 89	TDPAC	1970Wa26
					−1.82(4) a		Mu-X	1983La08
$^{155}_{64}$Gd	0	Stable	$3/2^-$	−0.2572(4)			ENDOR	1978Va24
				−0.2591(5)			AB/D	1969Un02
					+1.27(5) st		ABLS	1990Ji06
					1.27(3) a		Mu-X	1983La08
					+1.30(2) a		Mu-X, AB	1982Ta01
	60	0.19 ns	$5/2^-$		−0.44(2) a		Mu-X	1983La08
	87	6.35 ns	$5/2^+$	−0.525(2)		$^{155}_{64}$Gd	ME	1978Co23
				−0.518(5)		$^{155}_{64}$Gd	ME	1977Va21
				−0.533(4)		$^{155}_{64}$Gd	ME	1973Ar03
					+0.13(3)	$^{155}_{64}$Gd	ME	1978Co23
					+0.111(7)	$^{155}_{64}$Gd	ME	1977Va21
					+0.113(8)	$^{155}_{64}$Gd	ME	1973Ar03
	105	1.18 ns	$3/2^+$	+0.143(5)		$^{155}_{64}$Gd	ME	1978Co23
					+0.96(3)	$^{155}_{64}$Gd	ME	1978Co23
					+1.30(4)	$^{155}_{64}$Gd	ME	1974Ar23
	146	101 ps	$7/2^-$	+0.4(4)		$^{156}_{64}$Gd	TF	1998St28
	252	58 ps	$9/2^-$	+1.2(3)		$^{156}_{64}$Gd	TF	1998St28
	392	23 ps	$11/2^-$	+1.5(3)		$^{156}_{64}$Gd	TF	1998St28
	534	14.6 ps	$13/2^-$	+1.9(3)		$^{156}_{64}$Gd	TF	1998St28
	730	5.8 ps	$15/2^-$	+2.6(5)		$^{156}_{64}$Gd	TF	1998St28
	897	4.9 ps	$17/2^-$	+2.2(9)		$^{156}_{64}$Gd	TF	1998St28
	1142	2.4 ps	$19/2^-$	+2.9(10)		$^{156}_{64}$Gd	TF	1998St28
$^{156}_{64}$Gd	89	2.21 ns	2^+	+0.82(14)		$^{158}_{64}$Gd 261	TF	1991St01
				+0.774(8)		$^{155}_{64}$Gd	ME	1974Ar23
					−1.93(4) a		Mu-X	1983La08
					−1.96(4)	$^{155}_{64}$Gd	ME	1974Ar23
	288	112 ps	4^+	+1.68(12)		$^{156}_{64}$Gd 89	TF	1992Br07
				+1.76(16)		$^{156}_{64}$Gd 89	TF	1990Ba39
				+1.31(8)		B_{hf}Gd(Fe)	IPAC	1990Sc10
				+1.63(15)		$^{158}_{64}$Gd 261	TF	1991St01
				+1.55(14)		$^{156}_{64}$Gd 89	TF	1991St01
				+1.24(8)			IPAC	1988Al33
	585	16 ps	6^+	+2.4(2)		$^{156}_{64}$Gd 89	TF	1992Br07
				+2.3(4)		$^{158}_{64}$Gd 261	TF	1991St01
				+2.2(4)		$^{156}_{64}$Gd 89	TF	1991St01
				+1.5(13)			IPAC	1988Al33
	965	4.3 ps	8^+	+2.7(3)		$^{156}_{64}$Gd 89	TF	1992Br07
	1511	190 ps	4^+	+3.24(11)			IPAC	1988Al33
	gsb		$<10^+$	$g(10+)/g(2+) = 0.89(12)$			TF	1983Ha24
				$\alpha \times 10^3 = -1.1(12)$				
$^{157}_{64}$Gd	0	Stable	$3/2^-$	−0.3398(7)		$^{155}_{64}$Gd	AB/D, ENDOR	1969Un02
								1969Ba15
				−0.3373(6)			ENDOR	1978Va24
					+1.36(6) st		ABLS	1990Ji06
					+1.35(3) a		Mu-X	1983La08
					+1.36(2) a		Mu-X, O	1982Ta01
								1959Ka10
					1.34(7) st		O	1979Cl04
					+1.38(2)	$^{155}_{64}$Gd	AB	1969Un02
	55	0.13 ns	$5/2^-$		−0.46(2) a		Mu-X	1983La08
	64	0.46 μs	$5/2^+$	−0.464(11)		$^{157}_{64}$Gd	ME, R	1974Ar23
					+2.45(5)	$^{157}_{64}$Gd	ME	1974Ar23
$^{158}_{64}$Gd	80	2.52 ns	2^+	+0.78(6)		$^{158}_{64}$Gd 261	TF	1992Br07
				+0.762(8)			ME, R	1988Al33
				+0.9(2)		$^{158}_{64}$Gd 261	TF	1991St01

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Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				+0.8(2)		$^{156}_{64}$Gd 89	TF	1991St01
					−2.01(4) a		Mu-X	1983La08
					−1.96(4)	$^{157}_{64}$Gd	ME	1974Ar23
	261	148 ps	4^+	+1.60(12)		$^{158}_{64}$Gd 261	TF	1990Ba39
				+1.4(2)		$^{156}_{64}$Gd 89	TF	1990Ba39
				+1.55(12)		$^{156}_{64}$Gd 89	TF	1991St01
				+1.64(6)			IPAC	1988Al33
	539	16 ps	6^+	+2.5(2)		$^{158}_{64}$Gd 261	TF	1992Br07
				2.4(3)		$^{158}_{64}$Gd 261	TF	1991St01
				2.3(3)		$^{156}_{64}$Gd 89	TF	1991St01
	904	5.1	8^+	3.4(4)		$^{158}_{64}$Gd 261	TF	1992Br07
	gsb		$<10^+$	$g(10+)/g(2+)$ = 0.83(11)			TF	1983Ha24
				$\alpha \times 10^3 = -1.7(11)$				
$^{159}_{64}$Gd	0	18.6 h	$3/2^-$	−0.44(3)			NO/S	1971Kr19
$^{160}_{64}$Gd	75	2.70 ns	2^+	+.72(4)		$^{156}_{64}$Gd 89	RIGV, R	1974Ar23
					−2.08(4) a		Mu-X	1983La08
	248		4^+	1.6(2)		$^{158}_{64}$Gd 261	TF	1991St01
				1.5(2)		$^{156}_{64}$Gd 89	TF	1991St01
	515		6^+	2.4(3)		$^{158}_{64}$Gd 261	TF	1991St01
				2.3(3)		$^{156}_{64}$Gd 89	TF	1991St01
	gsb		$<10^+$	$g(10+)/g(2+)$ = 0.93(13)			TF	1983Ha24
				$\alpha \times 10^3 = -0.7(12)$				
$^{147}_{65}$Tb	0	1.7 h	$1/2^+$	+1.70(5)		$^{159}_{65}$Tb	CFBLS	1990Al36
$^{148}_{65}$Tb	0	60 m	2^-	−1.75(2)		$^{159}_{65}$Tb	CFBLS	1990Al36
					−0.3(2)	$^{159}_{65}$Tb	CFBLS	1990Al36
$^{149}_{65}$Tb	0	4.12 h	$1/2^+$	+1.35(2)		$^{159}_{65}$Tb	CFBLS	1990Al36
	2518	2.4 ns	$(27/2)^+$	4.9(12)			IPAD	1990Ad02
$^{150}_{65}$Tb	$0+x$	3.48 h	$2^{(-)}$	−0.90(2)		$^{159}_{65}$Tb	CFBLS	1990Al36
					0.00(13)	$^{159}_{65}$Tb	CFBLS	1990Al36
$^{151}_{65}$Tb	0	17.6 h	$1/2(^+)$	+0.919(6)		$^{159}_{65}$Tb	CFBLS	1990Al36
$^{152}_{65}$Tb	0	17.5 h	2^-	−0.58(2)		$^{159}_{65}$Tb	CFBLS	1990Al36
					+0.34(13)	$^{159}_{65}$Tb	CFBLS	1990Al36
					+0.5(16)	$^{159}_{65}$Tb	NO/S	1983Be03
$^{153}_{65}$Tb	0	2.34 d	$5/2^+$	+3.44(2)		$^{159}_{65}$Tb	CFBLS	1990Al36
				3.5(7)		$^{159}_{65}$Tb	NO/S	1983Be03
					+1.08(14)	$^{159}_{65}$Tb	CFBLS	1990Al36
$^{154}_{65}$Tb	$0+x$	9.4 h	3^-	+1.6(2)		$^{159}_{65}$Tb	CFBLS	1990Al36
				1.8(4)		$^{159}_{65}$Tb	NO/S	1983Be03
					+2.9(15)	$^{159}_{65}$Tb	NO/S	1983Be03
	$0+y$	22.7 h	7^-	0.9(3)		est	NO/S	1983Be03
$^{155}_{65}$Tb	0	5.32 d	$3/2^+$	+2.01(2)		$^{159}_{65}$Tb	CFBLS	1990Al36
				2.0(2)		$^{159}_{65}$Tb	NO/S	1979Du08
					+1.41(6)	$^{159}_{65}$Tb	CFBLS	1990Al36
$^{156}_{65}$Tb	0	5.35 d	3^-	1.7(2)		$^{159}_{65}$Tb	NO/S	1983Be03
				1.9(3)		$^{159}_{65}$Tb	NO/S	1979Du08
				1.4(2)			NO/S	1962Lo01
					+2.3(8)	$^{159}_{65}$Tb	NO/S	1983Be03
					+3.0(9)	$^{159}_{65}$Tb	NO/S	1979Du08
					+1.4(5)	$^{159}_{65}$Tb	NO/S	1962Lo01
$^{157}_{65}$Tb	0	99 y	$3/2^+$	+2.01(2)		$^{159}_{65}$Tb	CFBLS	1990Al36
				2.0(1)		$^{159}_{65}$Tb	EPR	1968Ea04
					+1.40(8)	$^{159}_{65}$Tb	CFBLS	1990Al36
$^{158}_{65}$Tb	0	150 y	3^-	+1.758(7)		$^{159}_{65}$Tb	EPR	1968Ea04
					+2.7(5) st		NO/S, EPR	1968Ea04
$^{159}_{65}$Tb	0	Stable	$3/2^+$	+2.014(4)			EPR, ENDOR	1965Ba49
					+1.432(8) a		Mu-X, AB	1984Ta04
								1970Ch26
	58	53.5 ps	$5/2^-$	3.9(2)			IPAC	
					1.62(9) or 2.32(13)	$^{159}_{65}$Tb	ME	1966At05
$^{160}_{65}$Tb	0	72.1 d	3^-	1.790(7)		$^{159}_{65}$Tb	NMR/ON	1987Ma42
				+1.702(8)		$^{159}_{65}$Tb	EPR	1968Ea04
				1.5(6)		$^{159}_{65}$Tb	NO/S	1983Be03

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					3.85(5)	$^{159}_{65}$Tb	NMR/ON	1987Ma42
					3.56(10)	$^{159}_{65}$Tb	NMR/ON	1986Ro07
$^{161}_{65}$Tb	0	6.9 d	$3/2^+$	2.2(1)		$^{159}_{65}$Tb	NO/S	1983Ri15
					+1.2(6)	$^{159}_{65}$Tb	NO/S	1983Ri15
$^{147}_{66}$Dy	0	~1.3 m	$(1/2^+)$	−0.915(9)			CFBLS	1989Ra99
	751	59 s	$(11/2^-)$	−0.655(10)		$^{163}_{66}$Dy	CFBLS	1989Ra99
					+0.67(10)	$^{163}_{66}$Dy	CFBLS	1989Ra99
$^{149}_{66}$Dy	0	4.23 m	$7/2^-$	−0.119(7)		$^{163}_{66}$Dy	CFBLS	1989Ra99
					−0.62(5)	$^{163}_{66}$Dy	CFBLS	1989Ra99
	8522	28 ns	(49/2)	+10.0(1.5)		$^{152}_{66}$Dy6129	TDPAD	2003Wa28
$^{151}_{66}$Dy	0	17 m	$7/2^-$	−0.945(7)			CFBLS	1989Ra99
					−0.30(5)	$^{163}_{66}$Dy	CFBLS	1989Ra99
$^{152}_{66}$Dy	6129	9.9 ns	21^-	+11.6(12)			TDPAD	1979Me01
			31–56	avge $g = 0.21(1)$			TF	1991Ha16
$^{153}_{66}$Dy	0	6.3 h	$7/2^-$	−0.782(6)		$^{163}_{66}$Dy	CFBLS	1989Ra99
				−0.715(6)		$^{163}_{66}$Dy	AB	1972Ro36
					−0.02(5)	$^{163}_{66}$Dy	CFBLS	1989Ra99
					−0.15(9)	$^{163}_{66}$Dy	AB	1972Ro36
$^{154}_{66}$Dy	Yrast band		2^+	0.72(8)		Calculated	Theory	1993Bi05
								1993Bi09
	Yrast band		4^+	1.6(2), $g/g(2+) = 1.1(2)$		$^{164}_{66}$Dy	IPAD	1993Bi05
						Yrast band 2+		1993Bi09
	Yrast band		6^+–8^+	$g/g(2+) = 1.0(3)$		$^{164}_{66}$Dy	IPAD	1993Bi05
						Yrast band 2+		1993Bi09
	Yrast band		10^+–14^+	$g/g(2+) = 0.5(4)$		$^{164}_{66}$Dy	IPAD	1993Bi05
						Yrast band 2+		1993Bi09
	Yrast band		16^+–20^+	$g/g(2+) = 0.3(4)$		$^{164}_{66}$Dy	IPAD	1993Bi05
						Yrast band 2+		1993Bi09
	Yrast band		22^+–30^+	$g/g(2+) = 0.8(4)$		$^{164}_{66}$Dy	IPAD	1993Bi05
						Yrast band 2+		1993Bi09
	Yrast band		32^+–36^+	$g/g(2+) = 1.2(3)$		$^{164}_{66}$Dy	IPAD	1993Bi05
						Yrast band 2+		1993Bi09
	Cont.	Short	$I(\text{av}) = 26$	$g(\text{av}) = +0.39(5)$			TF	1984Ha39
$^{155}_{66}$Dy	0	10.0 h	$3/2^-$	−0.385(4)		$^{163}_{66}$Dy	CFBLS	1989Ra99
				−0.339(2)		$^{163}_{66}$Dy	AB	1972Ro36
					+1.04(3)	$^{163}_{66}$Dy	CFBLS	1989Ra99
					+0.967(14)	$^{163}_{66}$Dy	AB	1972Ro36
$^{156}_{66}$Dy	138	0.82 ns	2^+	+0.78(8)			R	1984Ha39
	Cont.	Short	$I(\text{av}) = 19$	$g(\text{av}) = +0.11(4)$			TF	1985Ta02
				$g(\text{av}) = +0.12(3)$			TF	1985Ta02
			$I(\text{av}) = 21$	$g(\text{av}) = +0.14(6)$			TF	1985Ta02
			$I(\text{av}) = 23$	$g(\text{av}) = +0.20(3)$			TF	1985Ta02
				$g(\text{av}) = +0.21(7)$			TF	1985Ta02
			$I(\text{av}) = 23$	$g(\text{av}) = +0.21(3)$			TF	1984Ha39
$^{157}_{66}$Dy	0	8.1 h	$3/2^-$	−0.301(2)		$^{163}_{66}$Dy	CFBLS	1989Ra99
				−0.302(2)		$^{163}_{66}$Dy	AB	1972Ro36
					+1.30(2)	$^{163}_{66}$Dy	CFBLS	1989Ra99
					+1.30(1)	$^{163}_{66}$Dy	AB	1972Ro36
$^{158}_{66}$Dy	99	1.66 ns	2^+	+0.72(5)			IPAC	1993Al09
	317	73 ps	4^+	+1.33(10)			IPAC	1997Al04
				+1.36(8)			IPAC	1993Al09
				+1.4(2)			IMPAC	1983Se09
				+1.4(2)			IMPAD	1973Ka25
	638	10.8 ps	6^+	+1.42(13)			IPAC	1997Al04
				+1.2(2)			IPAC	1993Al09
	1044	2.9 ps	8^+	+2.5(7)			IPAC	1997Al04
				+1.7(9)			IPAC	1993Al09
				+3.3(10)			TF	1983Se09
	>1044		$I(\text{av}) = 14$	$g(\text{av}) = +0.04(11)$			TF	1983Se09
	gs band		$<16^+$	$\alpha \times 10^3 = -1.5(13)$			TF	1980An27
$^{159}_{66}$Dy	0	144 d	$3/2^-$	−0.354(3)		$^{163}_{66}$Dy	CFBLS	1989Ra99
					+1.37(2)	$^{163}_{66}$Dy	CFBLS	1989Ra99
$^{160}_{66}$Dy	87	1.96 ns	2^+	+0.74(2)			TDPAC	1973Ka25

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				+0.70(3)			TDPAC	1984Si07
					1.8(4)		TDPAC	1970Wa25
	284	101 ps	4^+	+1.60(12)			IPAC	1997Al04
				+1.40(8)			IPAC	1996Al02
	581	18.6 ps	6^+	+2.11(10)			TF	1999Br43
				+1.45(12)			IPAC	1997Al04
	966	1.34 ps	2^+	+0.80(5)			TF	1999Br43
				+0.63(2)			IPAC	1995Al22
				+0.34(9)			IPAC	1969Si01
								1975Kh03
	967	3.8 ps	8^+	+2.7(2)			TF	1999Br43
				+2.4(8)			IPAC	1997Al04
	1429	1.56 ps	10^+	+3.1(3)			TF	1999Br43
	1951	0.89 ps	12^+	+3.6(7)			TF	1999Br43
	gs band		$<16^+$	$\alpha \times 10^3 = -1.5(16)$			TF	1980An27
$^{161}_{66}$Dy	0	Stable	$5/2^+$	−0.480(3)		$^{163}_{66}$Dy	AB	1974Fe05
				−0.481(5)			AB/D	1974Fe05
					+2.51(2)	$^{163}_{66}$Dy	AB	1974Fe05
					2.47(3) a		Mu-X	1977Po15
	26	29 ns	$5/2^-$	+0.594(3)		$^{161}_{66}$Dy	ME, R	1976St73
					+2.51(2)	$^{161}_{66}$Dy	ME, R	1976St73
	44	0.78 ns	$7/2^+$	−0.141(5)		$^{161}_{66}$Dy	ME	1973Sy01
					+0.53(13)	$^{161}_{66}$Dy	ME	1973Sy01
	75	3.2 ns	$3/2^-$	−0.403(4)		$^{161}_{66}$Dy	ME, R	1976St73
					+1.45(6)	$^{161}_{66}$Dy	ME, R	1976St73
$^{162}_{66}$Dy	81	2.25 ns	2^+	+0.69(3)			RIGV	1970Be36
								1973Ka25
	266	133 ps	4^+	+1.14(12)			IPAC	1997Al04
	549	19 ps	6^+	+2.18(11)			TF	1999Br43
				+1.8(2)			IPAC	1997Al04
	888	2.0 ps	2^+	+0.92(6)			TF	1999Br43
	921	4.5 ps	8^+	+3.05(16)			TF	1999Br43
				+3.4(10)			IPAC	1997Al04
	1375	1.6 ps	10^+	+3.6(4)			TF	1999Br43
$^{163}_{66}$Dy	0	Stable	$5/2^-$	+0.673(4)			AB/D	1974Fe05
					2.318(6)		AB	1974Fe05
					+2.65(2) a		Mu-X, O	1984Ta04
								1973Mu06
$^{164}_{66}$Dy	73	2.39 ns	2^+	+0.68(2)		$^{161}_{66}$Dy	ME	1968Mu01
				+0.73(3)			RIGV	1970Be36
					−2.08(15)	$^{161}_{66}$Dy	ME	1968Mu01
	242	0.20 ns	4^+	+1.00(12)		$^{162}_{66}$Dy 81	IPAC	1997AL25
				+1.5(5)		$^{164}_{66}$Dy 73	TF	1989Do12
	501	26.6 ps	6^+	+1.95(10)			TF	1999Br43
				+1.6(3)		$^{162}_{66}$Dy 81	IPAC	1997AL25
				+1.7(5)			IMPAC	1983Se09
	762	4.6 ps	2^+	+0.76(5)			TF	1999Br43
				+0.6(2)		$^{164}_{66}$Dy 73	TF	1989Do12
	844	7.2 ps	8^+	+2.48(16)			TF	1999Br43
				+2.2(7)		$^{164}_{66}$Dy 73	TF	1989Do12
	1261	2.3 ps	10^+	+3.1(4)			TF	1999Br43
				+3.5(13)		$^{164}_{66}$Dy 73	TF	1989Do12
$^{165}_{66}$Dy	0	2.33 h	$7/2^+$	−0.520(5)		$^{163}_{66}$Dy	AB	1968Ra03
					−3.49(7)	$^{163}_{66}$Dy	AB	1968Ra03
$^{152}_{67}$Ho	0	161.8 s	2^-	−1.02(2)		$^{165}_{67}$Ho	LRIMS	1989Al27
					+0.1(2) st	$^{165}_{67}$Ho	LRIMS	1989Al27
	160	49.5 s	9^+	+5.94(5)		$^{165}_{67}$Ho	LRIMS	1989Al27
					−1.3(8) st	$^{165}_{67}$Ho	LRIMS	1989Al27
$^{153}_{67}$Ho	0	2.0 m	$11/2^-$	+6.81(5)		$^{165}_{67}$Ho	LRIMS	1989Al27
					−1.1(5) st	$^{165}_{67}$Ho	LRIMS	1989Al27
	68	9.3 m	$1/2^+$	+1.19(1)		$^{165}_{67}$Ho	LRIMS	1989Al27
$^{154}_{67}$Ho	0	11.76 m	2^-	−0.643(6)		$^{165}_{67}$Ho	LRIMS	1989Al27
					+0.19(10) st	$^{165}_{67}$Ho	LRIMS	1989Al27
	320	3.10 m	8^+	+5.65(6)		$^{165}_{67}$Ho	LRIMS	1989Al27

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					−1.0(5) st	$^{165}_{67}$Ho	LRIMS	1989Al27
$^{155}_{67}$Ho	0	48 m	$5/2^+$	+3.51(3)		$^{165}_{67}$Ho	LRIMS	1989Al27
					+1.52(10) st	$^{165}_{67}$Ho	LRIMS	1989Al27
$^{156}_{67}$Ho	0	56 m	$4^{(+)}$	+2.99(3)		$^{165}_{67}$Ho	LRIMS	1989Al27
					+2.3(2) st	$^{165}_{67}$Ho	LRIMS	1989Al27
$^{157}_{67}$Ho	0	12.6 m	$7/2^-$	+4.35(3)		$^{165}_{67}$Ho	LRIMS	1989Al27
					+2.97(13) st	$^{165}_{67}$Ho	LRIMS	1989Al27
$^{158}_{67}$Ho	0	11.3 m	5^+	+3.77(3)		$^{165}_{67}$Ho	LRIMS	1989Al27
					+4.1(4) st	$^{165}_{67}$Ho	LRIMS	1989Al27
	67.2	28 m	2^-	+2.44(3)		$^{165}_{67}$Ho	LRIMS	1989Al27
					+1.6(2) st	$^{165}_{67}$Ho	LRIMS	1989Al27
$^{159}_{67}$Ho	0	35.05 m	$7/2^-$	+4.28(3)		$^{165}_{67}$Ho	LRIMS	1989Al27
					3.19(13) st	$^{165}_{67}$Ho	LRIMS	1989Al27
$^{160}_{67}$Ho	0	25.6 m	5^+	+3.71(3)		$^{165}_{67}$Ho	LRIMS	1989Al27
					+4.0(2) st	$^{165}_{67}$Ho	LRIMS	1989Al27
	60	5.02 h	2^-	+2.52(3)		$^{165}_{67}$Ho	LRIMS	1989Al27
						$^{165}_{67}$Ho	LRIMS	1989Al27
$^{161}_{67}$Ho	0	2.48 h	$7/2^-$	+4.25(3)		$^{165}_{67}$Ho	LRIMS	1989Al27
					3.22(11) st	$^{165}_{67}$Ho	LRIMS	1989Al27
$^{162}_{67}$Ho	106	67 m	6^-	+3.60(4)		$^{165}_{67}$Ho	LRIMS	1989Al27
					3.9(7) st	$^{165}_{67}$Ho	LRIMS	1989Al27
$^{163}_{67}$Ho	0	4570 y	$7/2^-$	+4.23(4)		$^{165}_{67}$Ho	LRIMS	1989Al27
					3.6(6) st	$^{165}_{67}$Ho	LRIMS	1989Al27
$^{165}_{67}$Ho	0	Stable	$7/2^-$	+4.17(3)			AB/D, R	1974Da11
					3.58(2) a		Pi-X	1983Ol03
					+2.716(9)		ABLS	1982Bu13
					3.60(2) a		Pi-X	1981Ba07
					3.41(8) a		Ka-X	1981Ba07
					3.53(8) a		Pi-X	1978Eb01
					+3.49(3) a		Mu-X, AB	1976Po05
								1974Da10
	95	22 ps	$9/2^-$	4.1(2)		$^{165}_{67}$Ho	ME	1972Ge21
					3.43(4) a		Mu-X	1976Po05
$^{166}_{67}$Ho	6	1200 y	$(7)^-$	3.60(16)			NO/S	1981Kr12
				3.65(13)		$^{165}_{67}$Ho	NO/S	1981Ma43
				3.60(5)			NO/S	1980Al34
					−3(3)	$^{165}_{67}$Ho	NO/S	1981Ma43
	54	3.4 ns	2^-	+0.068(10)			IPAC	1979Ba40
$^{152}_{68}$Er	2184	1.8 ns	8^+	−0.6(6)			IPAD	1984AdZT
	4521	1.2 ns	16^+	+5(2)			IPAD	1984AdZT
$^{153}_{68}$Er	0	37.1 s	$(7/2^-)$	−0.934(5)		$^{167}_{68}$Er	CFBLS	1989Ra99
					−0.42(2)	$^{167}_{68}$Er	CFBLS	1989Ra99
$^{154}_{68}$Er	$3016 + x$	39 ns	11^-	+0.169(13)			TDPAD	1984Ra11
				+0.19(3)			TDPAD	1983Ng02
$^{155}_{68}$Er	0	5.3 m	$7/2^-$	−0.669(4)		$^{167}_{68}$Er	CFBLS	1989Ra99
					−0.27(2)	$^{167}_{68}$Er	CFBLS	1989Ra99
	563	30 ns	$13/2^+$	−0.55(3)			TDPAD	1984Ra11
$^{156}_{68}$Er	345	33 ps	2^+	0.80(12)			RIGV	1970No01
$^{157}_{68}$Er	0	25 m	$3/2^-$	−0.412(3)		$^{167}_{68}$Er	CFBLS	1989Ra99
					+0.92(2)	$^{167}_{68}$Er	CFBLS	1989Ra99
	$266 + x$	54 ps	$17/2^+$	0.4(4)			IAPAD	1974Na08
$^{158}_{68}$Er	192	0.30 ns	2^+	0.72(11)			RIGV	1970No01
$^{159}_{68}$Er	0	36 m	$3/2^-$	−0.304(2)		$^{167}_{68}$Er	CFBLS	1989Ra99
					+1.17(1)	$^{167}_{68}$Er	CFBLS	1989Ra99
	784	8.2 ps	$21/2^+$	<0.74			RIGV	1980Sp03
$^{160}_{68}$Er	390	34 ps	4^+	1.28(19)			RIGV	1970No01
$^{161}_{68}$Er	0	3.21 h	$3/2^-$	−0.365(3)		$^{167}_{68}$Er	CFBLS	1989Ra99
				−0.369(3)		$^{167}_{68}$Er	AB	1972Ek03
					+1.35(2)	$^{167}_{68}$Er	CFBLS	1989Ra99
					+1.361(14)	$^{167}_{68}$Er	AB	1972Ek03
$^{162}_{68}$Er	102	1.3 ns	2^+		< 0		CER	1981Hu02
	901	1.24 ps	2^+		1.8(6)		CER	1983Hu01
$^{163}_{68}$Er	0	75.1 m	$5/2^-$	+0.557(4)		$^{167}_{68}$Er	CFBLS	1989Ra99
					+2.55(3)	$^{167}_{68}$Er	CFBLS	1989Ra99

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Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{164}_{68}$Er	92	1.48 ns	2^+	0.697(15)		$^{166}_{68}$Er 81	ME	1968Mu01
					<0		CER	1981Hu02
	299	86 ps	4^+	+1.46(15)		$^{166}_{68}$Er 81	IPAC	1997AL25
				+1.36(8)			TF	1996Br09
	614		6^+	+1.88(9)			TF	1996Br09
	860	1.9 ps	2^+	+0.81(6)			TF	1996Br09
					2.4(3)		CER	1983Hu01
	1025	2.6 ps	8^+	+2.72(13)			TF	1996Br09
	1518	1.0 ps	10^+	+3.2(3)			TF	1996Br09
$^{165}_{68}$Er	0	10.36 h	$5/2^-$	+0.643(3)		$^{167}_{68}$Er	CFBLS	1989Ra99
					+2.71(3)	$^{167}_{68}$Er	CFBLS	1989Ra99
	243	0.31 ns	$3/2^-$	+0.6(2)				1978EgZY
$^{166}_{68}$Er	81	1.85 ns	2^+	+0.649(10)		$^{167}_{68}$Er	ME	1981Ho31
				+0.632(10)		$^{167}_{68}$Er	ME	1968Mu01
								1964Do09
					−2.7(9)		CER	1970McZQ
					−2.9(10)		CER	1970Ka45
					−1.9(4) st		ME	1965Hu01
	265	118 ps	4^+	+1.14(8)			TF	1996Br09
				+1.26(6)		$^{166}_{68}$Er 81	IPAC	1985Al22
					−2.7(9)		CER	1969McZS
	545	16.8 ps	6^+	+1.72(9)			TF	1996Br09
				+1.6(2)		$^{166}_{68}$Er 265	TF	1986Do13
				+1.55(7)		$^{166}_{68}$Er 81	IPAC	1985Al22
	786	4.6 ps	2^+	+0.74(5)			TF	1996Br09
				+0.56(9)		$^{166}_{68}$Er 265	TF	1986Do13
					2.2(2)		CER	1983Hu01
					2.1(4)		CER	1977Mc11
					2.0(3)		CER	1970McZQ
	911	4.2 ps	8^+	+2.2(2)			TF	1996Br09
				+1.9(3)		$^{166}_{68}$Er 265	TF	1986Do13
				+2.1(4)		$^{166}_{68}$Er 81	IPAC	1985Al22
	1216	3.9 ps	6^+	+1.5(2)		$^{166}_{68}$Er 81	IPAC	1985Al22
	1350	1.7 ps	10^+	+2.8(4)			TF	1996Br09
				+2.0(8)		$^{166}_{68}$Er 265	TF	1986Do13
$^{167}_{68}$Er	0	Stable	$7/2^+$	−0.56385(12)			AB/D	1984Fo02
				−0.565(2)			AB	1965Sm04
					+3.57(3) a		Mu-X	1984Ta04
					+2.827(12)		AB	1965Sm04
$^{168}_{68}$Er	80	1.86 ns	2^+	+0.62(6)			IPAC	1980Fu03
				+0.658(14)		$^{166}_{68}$Er 81	ME	1968Mu01
	264	121 ps	4^+	+1.17(12)			TF	1996Br09
				+1.26(16)		$^{166}_{68}$Er 265	IMPAC	1968De28
					−2.2(10)		CER	1970McZQ
	549	16.8 ps	6^+	+1.81(12)			TF	1996Br09
				+2.0(3)		$^{168}_{68}$Er 264	TF	1989Do12
	821	2.9 ps	2^+	+0.77(4)			TF	1996Br09
				+0.72(14)		$^{168}_{68}$Er 549	TF	1989Do12
					2.3(2)		CER	1983Hu01
	928	3.4 ps	8^+	+2.4(2)			TF	1996Br09
				+2.7(5)		$^{168}_{68}$Er 549	TF	1989Do12
	1094	112.5 ns	4^-	+0.96(4)			TDPAC	1980Fu03
	1396	1.4 ps	10^+	+3.1(4)			TF	1996Br09
				+3.2(8)		$^{168}_{68}$Er 549	TF	1989Do12
$^{169}_{68}$Er	0	9.40 d	$1/2^-$	+0.52(3)			AB/D	1963Do09
				+0.4850(2)		$^{167}_{68}$Er	AB	1963Do09
								1965Sm04
$^{170}_{68}$Er	79	1.90 ns	2^+	0.633(13)		$^{166}_{68}$Er 81	ME	1969Wi04
					−1.9(2)		CER	1973Lu02
	260	∼135 ps	4^+	+1.09(15)		$^{166}_{68}$Er 265	IMPAC	1968De28
					−2.2(10)		CER	1970McZQ
	934	1.7 ps	2^+		2.0(3)		CER	1983Hu01
$^{171}_{68}$Er	0	7.52 h	$5/2^-$	0.659(10)		$^{167}_{68}$Er	AB	1964Bu09
					2.86(9)	$^{167}_{68}$Er	AB	1964Bu09

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{153}_{69}$Tm	0	1.48 s	$(11/2^-)$	6.93(11)		$^{169}_{69}$Tm	LRIS	2000Ba16
					+0.5(10)	$^{169}_{69}$Tm	LRIS	2000Ba16
$^{154}_{69}$Tm	0	8.1 s	(2^-)	−1.14(2)		$^{169}_{69}$Tm	LRIS	2000Ba16
					+0.4(9)	$^{169}_{69}$Tm	LRIS	2000Ba16
	$0+x$	3.30 s	(9^+)	+5.91(5)		$^{169}_{69}$Tm	LRIS	2000Ba16
					−0.2(4)	$^{169}_{69}$Tm	LRIS	2000Ba16
$^{156}_{69}$Tm	0	1.3 m	2^-	+0.40(3)		$^{169}_{69}$Tm	LRIMS	1989Ra17
					−0.48(11) st	$^{170}_{69}$Tm	LRIMS	1989Ra17
$^{157}_{69}$Tm	0	3.6 m	$1/2^+$	+0.476(15)		$^{169}_{69}$Tm	LRIMS	1988Al04
$^{158}_{69}$Tm	0	4.3 m	2^-	+0.04(2)		$^{169}_{69}$Tm	LRIMS	1988Al04
					+0.74(11) st	$^{170}_{69}$Tm	LRIMS	1988Al04
$^{159}_{69}$Tm	0	9.0 m	$5/2^+$	+3.42(3)		$^{169}_{69}$Tm	LRIMS	1988Al04
					+1.93(7) st	$^{170}_{69}$Tm	LRIMS	1988Al04
$^{160}_{69}$Tm	0	9.4 m	1^-	+0.16(2)		$^{169}_{69}$Tm	LRIMS	1988Al04
					+0.58(4) st	$^{170}_{69}$Tm	LRIMS	1988Al04
$^{161}_{69}$Tm	0	38 m	$7/2^+$	+2.40(2)		$^{169}_{69}$Tm	LRIMS	1988Al04
					+2.90(7) st	$^{170}_{69}$Tm	LRIMS	1988Al04
$^{162}_{69}$Tm	0	21 m	1^-	+0.068(8)		$^{169}_{69}$Tm	LRIMS	1988Al04
					+0.69(3) st	$^{170}_{69}$Tm	LRIMS	1988Al04
$^{163}_{69}$Tm	0	1.8 h	$1/2^+$	−0.082(1)		$^{169}_{69}$Tm	AB, LRIMS	1967Dy01
								1988Al04
$^{164}_{69}$Tm	0	2.0 m	1^+	+2.38(3)		$^{169}_{69}$Tm	LRIMS	1988Al04
					+0.71(5) st	$^{170}_{69}$Tm	LRIMS	1988Al04
$^{165}_{69}$Tm	0	30.06 h	$1/2^+$	−0.139(2)		$^{169}_{69}$Tm	AB, LRIMS	1988Al04
								1968Sc26
$^{166}_{69}$Tm	0	7.7 h	2^+	+0.092(1)		$^{169}_{69}$Tm	AB, LRIMS	1988Al04
								1972Ad14
					+2.14(3) st	$^{170}_{69}$Tm	LRIMS	1988Al04
$^{167}_{69}$Tm	0	9.25 d	$1/2^+$	−0.197(2)		$^{169}_{69}$Tm	AB, R, LRIMS	1973Ek01
								1988Al04
$^{168}_{69}$Tm	0	85 d	3^+	+0.227(11)		$^{169}_{69}$Tm	LRIMS	1988Al04
					+3.23(7) st	$^{170}_{69}$Tm	LRIMS	1988Al04
$^{169}_{69}$Tm	0	Stable	$1/2^+$	−0.2310(15) d			AB	1967Gi04
				−0.229(3)			AB/D	1962Ri11
				0.24(1)			PMR	1961Ha37
				−0.21(2)			O	1955Li49
	8	3.9 ns	$3/2^+$	+0.515(5)		$^{169}_{69}$Tm	ME	1976Wi99
				+0.513(5)		$^{169}_{69}$Tm	ME	1980JM99
					−1.2(1) st		ME	1973Lu02
	118	62 ps	$5/2^+$	+0.76(5)			IPAC	1969Gu01
								1968Ka14
	139	302 ps	$7/2^+$	+1.34(5)			IPAC	1969Gu01
								1968Ka14
	316	660 ns	$7/2^+$	+0.156(8)			TDPAC	1972Ni03
	332	19 ps	$9/2^+$	+1.56(9)		$^{169}_{69}$Tm 118, 139	TF	1999Ro03
	368	42 ps	$11/2^+$	+2.28(14)		$^{169}_{69}$Tm 118, 139	TF	1999Ro03
	379	48 ns	$7/2^-$	+3.04(14)			TDPAC	1997De02
	637	5.6 ps	$13/2^+$	+2.37(14)		$^{169}_{69}$Tm 118, 139	TF	1999Ro03
	691	8.4 ps	$15/2^+$	+3.2(3)		$^{169}_{69}$Tm 118, 139	TF	1999Ro03
	1028	2.0 ps	$17/2^+$	+3.2(3)		$^{169}_{69}$Tm 118, 139	TF	1999Ro03
	1104	2.0 ps	$19/2^+$	+4.2(8)		$^{169}_{69}$Tm 118, 139	TF	1999Ro03
$^{170}_{69}$Tm	0	128.6 d	1^+	+0.246(2)		$^{169}_{69}$Tm	ABLS	1988Dy02
				+0.247(5)		$^{169}_{69}$Tm	AB, R	1960Ca15
								1967Gi04
								1973Ek01
					+0.72(5) st	$^{169}_{69}$Tm	ABLS	1988Dy02
					+0.74(2) st		AB, R, LRIMS	1973Ek01
								1988Al04
					0.63(5)		AB/R	1960Ca15
								1973Ek01
$^{171}_{69}$Tm	0	1.92 y	$1/2^+$	−0.228(4)		$^{169}_{69}$Tm	AB, R	1967Gi04
								1964Bu09
	117	55 ps	$5/2^+$	+0.8(4)			IPAC	1968Ka14
	129	415 ps	$7/2^+$	+1.27(12)			IPAC	1968Ka14
	636	1.26 ns	$7/2^+$	+1.2(2)			IPAC	1978Ba03

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{155}_{70}$Yb	0	1.59 s	$(7/2^-)$	−0.91(2)			LRIS	1998Ba08
				−0.84(8)			LRIMS	1992Al25
					−0.5(3)		LRIS	1998Ba08
					−1.2(10)		LRIMS	1992Al25
$^{157}_{70}$Yb	0	38.6 s	$7/2^-$	−0.639(8)		$^{171}_{70}$Yb	CFBLS	1992Ku21
	$494 + x$	45 ns	$13/2^+$	−0.75(8)			TDPAD	1984Ra11
$^{158}_{70}$Yb	Band		30–38	(+)0.20(7)			TF	1988KlZX
$^{159}_{70}$Yb	0	1.58 m	$5/2^{(-)}$	−0.368(8)		$^{171}_{70}$Yb	CFBLS	1992Ku21
				−0.366(8)		$^{173}_{70}$Yb	CFBLS	1983Ne13
					−0.22(2)	$^{173}_{70}$Yb	CFBLS	1983Ne13
$^{160}_{70}$Yb	Band		$\sim 4^+$	+1.9(10)			IPAC	1990Lu02
	Band		14^+	−3(4)			IPAC	1990Lu02
	Band		34–42	0.12(7)			TF	1988KlZX
$^{161}_{70}$Yb	0	4.2 m	$3/2^-$	−0.327(8)		$^{173}_{70}$Yb	CFBLS	1983Ne13
					+1.03(2)	$^{173}_{70}$Yb	CFBLS	1983Ne13
$^{162}_{70}$Yb	Cont.		20–32	$g(\mathrm{av}) = 0.24(5)$			TF	1984Ma10
$^{163}_{70}$Yb	0	11.0 m	$3/2^-$	−0.374(8)		$^{173}_{70}$Yb	CFBLS	1983Ne13
					+1.24(2)	$^{173}_{70}$Yb	CFBLS	1983Ne13
$^{164}_{70}$Yb	123	0.88 ns	2^+	+0.64(10)			IPAC	2004Be13
$^{165}_{70}$Yb	0	9.9 m	$5/2^-$	+0.478(8)		$^{173}_{70}$Yb	CFBLS	1983Ne13
					+2.48(4)	$^{173}_{70}$Yb	CFBLS	1983Ne13
$^{167}_{70}$Yb	0	17.5 m	$5/2^-$	+0.623(8)		$^{173}_{70}$Yb	CFBLS	1983Ne13
					+2.70(4)	$^{173}_{70}$Yb	CFBLS	1983Ne13
$^{169}_{70}$Yb	0	32.0 d	$7/2^+$	−0.635(8)		$^{173}_{70}$Yb	CFBLS	1983Ne13
				−0.633(16)		$^{173}_{70}$Yb	O, R	1983Ne13
					+3.54(6)	$^{173}_{70}$Yb	CFBLS	1983Ne13
					+3.52(7)	$^{173}_{70}$Yb	O, R	1983Ne13
	24	46 s	$1/2^-$	+0.507(8)		$^{173}_{70}$Yb	CFBLS	1983Ne13
$^{170}_{70}$Yb	84	1.57 ns	2^+	+0.674(8)		$^{171}_{70}$Yb	ME	1968Mu01
								1965Hu03
					2.1(4)	$^{172}_{70}$Yb 79	ME	1971Pl03
	gs band		$<12^+$	$\alpha \times 10^3 = -0.5(15)$		$^{169}_{69}$Tm	TF	1979Wa15
	gs band		$<18^+$	$\alpha \times 10^3 = -2.4(15)$			TF	1980An27
$^{171}_{70}$Yb	0	Stable	$1/2^-$	+0.49367(1)		$^{23}_{11}$Na	OP/RD	1972Ol01
				+0.4949(4)		$^{35}_{17}$Cl	N	1964Go06
	67	0.81 ns	$3/2^-$	0.350(2)		$^{171}_{70}$Yb	ME	1966He09
								1966Gu07
					1.6(3)	$^{170}_{70}$Yb 84	ME	1971Pl03
	76	1.64 ns	$5/2^-$	+1.015(5)		$^{171}_{70}$Yb	ME	1970He25
					2.2(4)	$^{170}_{70}$Yb 84	ME	1971Pl03
	231	(Est 136 ps)	$7/2^-$	0.83(5)			TF	2000ST06
	247	(Est 135 ps)	$9/2^-$	1.53(7)			TF	2000ST06
	487	(Est 21 ps)	$11/2^-$	1.54(8)			TF	2000ST06
	509	(Est 21 ps)	$13/2^-$	2.31(12)			TF	2000ST06
	833	(Est 5.1 ps)	$15/2^-$	2.10(14)			TF	2000ST06
	860	(Est 5.1 ps)	$17/2^-$	2.83(15)			TF	2000ST06
	1263	(Est 1.8 ps)	$19/2^-$	2.5(3)			TF	2000ST06
	1293	(Est 1.8 ps)	$(21/2^-)$	3.0(3)			TF	2000ST06
$^{172}_{70}$Yb	260	0.122 ns	4^+		−2.3(12)		CER	1970McZQ
$^{173}_{70}$Yb	0	Stable	$5/2^-$	−0.648(3)		$^{171}_{70}$Yb	CFBLS	1992Ku21
				−0.67989(3)		$^{23}_{11}$Na	OP/RD	1972Ol01
				0.68002(3)		$^{35}_{17}$Cl	N	1964Go06
					+2.80(4) a		Mu-X, O	1975Ze04
								1964Ro11
	79	44 ps	$7/2^-$	−0.20(7)			IPAC	1983Ca99
	179	24 ps	$9/2^-$	+0.3(4)			IPAC	1983Ca99
	351	471 ps	$7/2^+$	−0.5(5)			IPAC	1983Ca99
$^{174}_{70}$Yb	77	1.79 ns	2^+	+0.676(8)			ME	1971He03
					2.1(3)	$^{170}_{70}$Yb 84	ME	1971Pl03
								1971He03
	253	144 ps	4^+		−1.8(12)		CER	1970McZQ
	gs band	$<12^+$		$\alpha \times 10^3 = +0.3(15)$		$^{169}_{69}$Tm	TF	1979Wa15
	gs band	$<16^+$		$\alpha \times 10^3 = -1.3(10)$			TF	1980An27
$^{175}_{70}$Yb	0	4.18 d	$7/2^-$	0.768(8)		$^{171}_{70}$Yb	CFBLS	1992Ku21

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				0.58(8)			NO/S	1974Be19
				0.40(5)			NO/S	1972Kr18
$^{176}_{70}$Yb	82	1.8 ns	2^+	+0.68(3)		$^{171}_{70}$Yb 67	ME, CETD	1967Ec02
								1966Ti01
					2.2(4)	$^{170}_{70}$Yb 84	ME	1967Ec01
	272	0.11 ns	4^+		−0.9(12)		CER	1970McZQ
$^{161}_{71}$Lu	0	77 s	$1/2^{(+)}$	+0.223(3)		$^{175}_{71}$Lu	CFBLS	1998Ge13
$^{162}_{71}$Lu	0	1.37 m	1^-	+0.0553(11)		$^{175}_{71}$Lu	CFBLS	1998Ge13
					+0.519(8)	$^{175}_{71}$Lu	CFBLS	1998Ge13
$^{163}_{71}$Lu	0	238 s	$1/2^{(+)}$	+0.0769(10)		$^{175}_{71}$Lu	CFBLS	1998Ge13
$^{164}_{71}$Lu	0	3.14 m	1^-	+0.0591(11)		$^{175}_{71}$Lu	CFBLS	1998Ge13
					+0.608(7)	$^{175}_{71}$Lu	CFBLS	1998Ge13
$^{165}_{71}$Lu	0	10.74 m	$1/2^{(+)}$	−0.0245(3)		$^{175}_{71}$Lu	CFBLS	1998Ge13
$^{166}_{71}$Lu	0	2.65 m	6^-	+2.912(12)		$^{175}_{71}$Lu	CFBLS	1998Ge13
					+4.33(4)	$^{175}_{71}$Lu	CFBLS	1998Ge13
	34	1.41 m	3^-	+0.189(5)		$^{175}_{71}$Lu	CFBLS	1998Ge13
					+2.72(2)	$^{175}_{71}$Lu	CFBLS	1998Ge13
$^{167}_{71}$Lu	0	51.5 m	$7/2^+$	+2.325(4)		$^{175}_{71}$Lu	CFBLS	1998Ge13
					+3.28(2)	$^{175}_{71}$Lu	CFBLS	1998Ge13
	x	>60 s	$1/2^{(+)}$	−0.0999(13)		$^{175}_{71}$Lu	CFBLS	1998Ge13
$^{168}_{71}$Lu	0	5.5 m	6^-	+3.02(3)		$^{175}_{71}$Lu	CFBLS	1998Ge13
					+4.77(6)	$^{175}_{71}$Lu	CFBLS	1998Ge13
	220	6.7 m	3^+	+1.221(5)		$^{175}_{71}$Lu	CFBLS	1998Ge13
					+2.43(2)	$^{175}_{71}$Lu	CFBLS	1998Ge13
$^{169}_{71}$Lu	0	34.1 h	$7/2^+$	2.295(4)		$^{175}_{71}$Lu	CFBLS	1998Ge13
				2.297(13)		$^{177}_{71}$Lu	NMR/ON	1996Ko26
					3.48(3)	$^{175}_{71}$Lu	CFBLS	1998Ge13
					3.42(12)	$^{177}_{71}$Lu	NMR/ON	1996Ko26
$^{171}_{71}$Lu	0	8.24 d	$7/2^+$	+2.293(4)		$^{175}_{71}$Lu	CFBLS	1998Ge13
				2.305(12)		$^{177}_{71}$Lu	NMR/ON	1996Ko26
				2.03(10)		$^{177}_{71}$Lu	NO/S	1976Kr04
					+3.53(3)	$^{175}_{71}$Lu	CFBLS	1998Ge13
					3.38(4)	$^{177}_{71}$Lu	NMR/ON	1996Ko26
	71	79 s	$1/2^-$	+0.585(7)		$^{175}_{71}$Lu	CFBLS	1998Ge13
$^{172}_{71}$Lu	0	6.70 d	4^-	+2.900(10)		$^{175}_{71}$Lu	CFBLS	1998Ge13
				2.893(15)		$^{177}_{71}$Lu	NMR/ON	1996Ko26
				2.25(10)		$^{177}_{71}$Lu	NO/S	1976Kr04
					+3.80(4)	$^{175}_{71}$Lu	CFBLS	1998Ge13
					3.79(6)	$^{177}_{71}$Lu	NMR/ON	1996Ko26
	42	3.7 m	1^-	+1.98(4)		$^{175}_{71}$Lu	CFBLS	1998Ge13
					+0.76(3)	$^{175}_{71}$Lu	CFBLS	1998Ge13
$^{173}_{71}$Lu	0	1.37 y	$7/2^+$	+2.281(2)		$^{175}_{71}$Lu	CFBLS	1998Ge13
				2.280(12)		$^{177}_{71}$Lu	NMR/ON	1996Ko26
				2.34(9)		$^{177}_{71}$Lu	NO/S	1975Kr11
					+3.53(2)	$^{175}_{71}$Lu	CFBLS	1998Ge13
					3.56(4)	$^{177}_{71}$Lu	NMR/ON	1996Ko26
$^{174}_{71}$Lu	0	3.3 y	1^-	+1.988(5)		$^{175}_{71}$Lu	CFBLS	1998Ge13
				1.9(3)		$^{173}_{71}$Lu	NO/S	1975Kr11
					+0.773(5)	$^{175}_{71}$Lu	CFBLS	1998Ge13
	171	142 d	6^-	+1.492(16)		$^{175}_{71}$Lu	CFBLS	1998Ge13
				1.497(10)			NMR/ON	1991Hi19
					+4.80(5)	$^{175}_{71}$Lu	CFBLS	1998Ge13
$^{175}_{71}$Lu	0	Stable	$7/2^+$	+2.2323(11)			AB/D	1985Br09
				+2.2327(11)			N, OP/RD	1975Mu15
				+2.23799(6)		$^{2}_{1}$H	N, AB	1962Re02
								1962Ri04
					+3.49(2) a		Mu-X	1979De29
					3.62(9) a		Pi-X	1983Ol03
	114	100 ps	$9/2^+$	+2.01(15)			IPAC, R	1969Wa30
	251	42 ps	$11/2^+$	+2.0(7)			IPAC	1966De08
$^{176}_{71}$Lu	0	3.6×10^{10} y	7^-	+3.162(12)		$^{175}_{71}$Lu	CFBLS	1998Ge13
				+3.169(5)			AB/D	1985Br09
					+4.92(5)	$^{175}_{71}$Lu	CFBLS	1998Ge13

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Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					+4.92(3)	$^{175}_{71}$Lu	AB	1985Br09
								1962Sp03
					+4.97(3)	$^{175}_{71}$Lu	AB	1962Sp03
					5.07(7) a		Pi-X	1983Ol03
	127	3.68 h	1^-	+0.311(7)		$^{175}_{71}$Lu	CFBLS	1998Ge13
				+0.3185(6)		$^{175}_{71}$Lu	AB, R	1998Ge13
				+0.318(3)		$^{175}_{71}$Lu	AB, R	1975Mu15
					−1.450(12)	$^{175}_{71}$Lu	CFBLS	1998Ge13
					−1.47(1)	$^{175}_{71}$Lu	AB	1965Wh03
$^{177}_{71}$Lu	0	6.71 d	$7/2^+$	+2.239(7)		$^{175}_{71}$Lu	CFBLS	1998Ge13
				+2.239(11)		$^{175}_{71}$Lu	AB, R	1975Mu15
				+2.2384(14)			AB,R	1998Ge13
					+3.39(3)	$^{175}_{71}$Lu	CFBLS	1998Ge13
					+3.39(2)	$^{175}_{71}$Lu	AB	1962Pe07
	122	116 ps	$9/2^+$	+2.2(8)			IPAC	1973Il02
	150	120 ns	$9/2^-$	+5.5(3)			TDPAC	1977Ne11
	970	160 d	$23/2^-$	+2.308(11)		$^{175}_{71}$Lu	CFBLS	1998Ge13
				2.337(13)		$^{177}_{71}$Lu	NMR/ON	1996Ko26
				2.93(7)		$^{177}_{71}$Lu	NO/S	1974Kr12
								1975Sc16
					+5.71(5)	$^{175}_{71}$Lu	CFBLS	1998Ge13
					5.2(5)	$^{177}_{71}$Lu	NMR/ON	1996Ko26
					4.2(7)	$^{175}_{71}$Lu	NO/S	1983Oe01
$^{178}_{71}$Lu	0	28.4 m	1^+	−1.377(9)		$^{175}_{71}$Lu	CFBLS	1998Ge13
					+0.708(10)	$^{175}_{71}$Lu	CFBLS	1998Ge13
	120	23.1 m	9^-	+4.834(9)		$^{175}_{71}$Lu	CFBLS	1998Ge13
					+5.39(5)	$^{175}_{71}$Lu	CFBLS	1998Ge13
$^{179}_{71}$Lu	0	4.59 h	$7/2^+$	+2.375(12)		$^{175}_{71}$Lu	CFBLS	1998Ge13
					+3.32(3)	$^{175}_{71}$Lu	CFBLS	1998Ge13
$^{162}_{72}$Hf	>Yrast	—	—	Average $g = +0.21(4)$			TF	1998We02
$^{163}_{72}$Hf	>Yrast	—	—	Average $g = +0.18(6)$			TF	1998We02
$^{164}_{72}$Hf	>Yrast	—	—	Average $g = +0.23(3)$			TF	1998We02
$^{165}_{72}$Hf	>Yrast	—	—	Average $g = +0.14(3)$			TF	1996We01
$^{166}_{72}$Hf	>Yrast	—	—	Average $g = +0.19(4)$			TF	1996We01
$^{168}_{72}$Hf	>1213	∼1 ps	$>6^+$	Average $g = +0.07(4)$			IMPAC	1975Sk01
$^{171}_{72}$Hf	0	12.1 h	$7/2^+$	−0.674(12)			CFBLS	2000Ye02
					+3.46(3)		CFBLS	2000Ye02
	22	29.5 s	$1/2^-$	+0.526(16)			CFBLS	2000Ye02
$^{172}_{72}$Hf	>1037	∼0.5 ps	$>6^+$	Average $g = +0.14(4)$			IMPAC	1975Sk01
	1685	4.8 ns	(6^+)	+5.6(6)			TDPAD	1980Wa23
	2006	163 ns	(8^-)	+7.96(7)			TDPAD	1980Wa23
$^{173}_{72}$Hf	0	23.6 h	$1/2^-$	+0.502(7)		$^{177,9}_{72}$Hf	CFBLS	1999Le11
	1984	19.5 ns	$23/2^-$	+6.6(2)			TDPAD	1980Wa23
$^{174}_{72}$Hf	1549	138 ns	(6^+)	+5.42(5)			TDPAD	1980Wa23
$^{175}_{72}$Hf	0	70 d	$5/2^-$	−0.677(9)			LRS	2002Ni99
				−0.62(3)			LRS	1997Ji02
				0.54(3)		$^{178}_{72}$Hf 93	NMR/ON	1986He10
				0.58(3)		$^{180}_{72}$Hf 93	NMR/ON	1986He10
					+2.72(2)		LRS	2002Ni99
					+2.6(2)		LRS	1997Ji02
					+2.8(4)	$^{178}_{72}$Hf 93	NO/S	1973Ka31
$^{176}_{72}$Hf	88	1.47 ns	2^+	+0.63(6)		$^{180}_{72}$Hf 93	IPAC	1996Al20
				+0.54(4)			CEAD	1968Be04
					−2.10(2) a		Mu-X	1984Ta10
	219	87.9 ps	4^+	+1.34(15)			IPAC	1996Al20
$^{177}_{72}$Hf	0	Stable	$7/2^-$	+0.7935(6)			AB/D	1973Bu25
								1973Bu07
					+3.37(3) a		Mu-X	1984Ta04
					+3.36(3)	$^{179}_{72}$Hf	AB	1973Bu25
	113	530 ps	$9/2^-$	+1.03(3) d			IPAC	1996Al20
		583 ps	$9/2^-$	+0.91(2)			IPAC	1991De24
		490 ps	$9/2^-$	+1.08(4)			IPAC, R	1975Hu15
					1.30(2) a		Mu-X	1984Ta10
	250	97 ps	$11/2^-$	+1.5(5)		$^{177}_{72}$Hf 113	IPAC	1968Br15

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
	321	0.67(2) ns	$9/2^+$	−0.73(9)			IPAC	1969Hu06
$^{178}_{72}$Hf	93	1.47 ns	2^+	+0.48(3)			CEAD	1968Be04
				+0.60(4)			IPAC	1962Ka14
					−2.02(2) a		Mu-X	1984Ta10
	1147	4 s	8^-	3(2)			BFNO	1989Ra17
	1554	77 ns	6^+	+5.84(5)			TDPAD	1980Wa23
				+5.89(9)			TDPAD	1978Fa17
	2446	31 y	16^+	+8.16(4)		$^{177}_{72}$Hf	CFBLS	1994Bo15
					+6.00(7)	$^{177}_{72}$Hf	CFBLS	1994Bo15
$^{179}_{72}$Hf	0	Stable	$9/2^+$	−0.6409(13)			AB/D	1973Bu25
					+3.79(3) a		Mu-X, AB	1984Ta04
								1973Bu25
					+3.93(5) a		Pi-X	1983Ol03
					+5.3(5)		AB, R	1977Bu23
	123	37 ps	$11/2^+$		1.88(3) a		Mu-X	1984Ta10
	1106	25.1 d	$25/2^-$	7.4(3)		$^{177}_{72}$Hf 113	NO/S	1975Hu15
$^{180}_{72}$Hf	93	1.53 ns	2^+	+0.61(3)			IPAC	1996Al20
				+0.51(8)		$^{178}_{72}$Hf 93	ME	1972JhZZ
				+0.53(3)			CEAD	1968Be04
				+0.77(7)			IPAC	1961Bo25
					−2.00(2) a		Mu-X	1984Ta10
	309	75.3 ps	4^+	+1.4(2)			IPAC	1996Al20
				+2.0(4)			IPAC	1961Bo25
	641	9.0 ps	6^+	+2.0(4)			IPAC	1996Al20
	1142	5.5 h	8^-	+8.7(10)		$^{180}_{72}$Hf 93	ME	1971Ko29
				9.0(9)			NO/S	1976Kr11
					+4.6(3)	$^{178}_{72}$Hf 93	NO/S	1973Ka31
$^{171}_{73}$Ta	184	45 ns	$9/2^-$		(+)3.1(2)	$^{181}_{73}$Ta	TDPAD	1995Do32
$^{173}_{73}$Ta	0	3.14 h	$5/2^-$	1.70(3)			NMR/ON	1991Ko25
					(−)1.9(2)	$^{181}_{73}$Ta 482	NO/S	1983Ed01
$^{175}_{73}$Ta	0	10.5 h	$7/2^+$	2.27(5)		$^{181}_{73}$Ta	NMR/ON	1984Oh07
				2.27(5)		$^{181}_{73}$Ta	NMR/ON	1984Ed01
					(+)3.6(4)	$^{181}_{73}$Ta 482	NO/S	1983Ed01
$^{177}_{73}$Ta	0	56.6 h	$7/2^+$	2.25(5)		$^{181}_{73}$Ta	NMR/ON	1984Oh07
				2.25(5)		$^{181}_{73}$Ta	NMR/ON	1984Ed01
	70	73 ns	$5/2^+$	+4.8(5)			PPDAC	1976Ao02
								1974Ao01
	186	2.78 μs	$5/2^-$	+2.05(13)			TDPAC	1978Be67
	1355	5.0 μs	$21/2^-$	+0.080(14)			IPAD	1982Ao04
$^{178}_{73}$Ta	$0+x$	9.3 m	1^+	2.740(12)		$^{181}_{73}$Ta 482	NMR/ON	1987Ni05
				+2.8(2)		$^{181}_{73}$Ta	NO/S	1978Ru05
					+0.65(6)		NO/S	1983Ha49
$^{179}_{73}$Ta	0	1.82 y	$7/2^+$	+2.289(9)		$^{181}_{73}$Ta	LRS	1996Wa02
					+3.37(4)	$^{181}_{73}$Ta	LRS	1996Wa02
$^{180}_{73}$Ta	75	$>1.2\times10^{15}$ y	9^-	+4.825(11)			LRS	1994Wa34
				4.77(5)		$^{181}_{73}$Ta	ABLFS	1980Bu09
					+4.95(2)		LRS	1994Wa34
$^{181}_{73}$Ta	0	Stable	$7/2^+$	+2.3705(7)			N	1973Er17
								1960Be23
					+3.17(2) a		Pi-X	1983Ol03
					+3.28(6) a		Mu-X	1981Ko11
					+3.35(2) a		Pi-X	1981Ba07
					+3.35(11) a		Ka-X	1981Ba07
					+3.30(6) a		Pi-X	1978Be31
					3.18(3) a		Mu-X	1977Po02
					3.44(6) a		Mu-X	1976Mc03
	6	6.05 μs	$9/2^-$	+5.28(9)		$^{181}_{73}$Ta	ME	1970Ka16
								1968Sa07
				+5.47(2)		$^{181}_{73}$Ta	ME	1978Sa25
				+5.3(2)		$^{181}_{73}$Ta	ME	1978We18
					+3.71(7)	$^{181}_{73}$Ta	ME	1983Ei02
	136	40 ps	$9/2^+$	+2.6(7)		$^{182}_{73}$Ta	IPAC	1983Ak02
	482	10.8 ns	$5/2^+$	+3.29(3)			TDPAC, CDPAC	1964Ag02
								1963Ma10

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					+2.35(6)	$^{181}_{73}$Ta	TDPAC	
	717	3.0 ps	$15/2^+$	+2(2)			TF	1996HaZT
	965	1.93 ps	$17/2^+$	+4(2)			TF	1996HaZT
	1239	1.12.ps	$19/2^+$	+4(5)			TF	1996HaZT
$^{182}_{73}$Ta	0	115 d	3^-	3.02(3)		$^{183}_{73}$Ta	NMR/ON	1980Al27
				(+)3.02(6)		$^{181}_{73}$Ta	NMR/ON	1980De22
					+2.6(3)		NO/S	1991Fa12
$^{183}_{73}$Ta	0	5.1 d	$7/2^+$	(+)2.36(3)		$^{181}_{73}$Ta	NMR/ON	1984Ed01
								1980Al27
$^{168}_{74}$W	199	213 ps	2^+	+0.50(10)			IMPAD	1986Bi11
	562	12 ps	4^+	+1.4(8)			IMPAD	1986Bi11
	2272	61 ps	12^+	−2.5(8)			IMPAD	1986Bi11
$^{175}_{74}$W	235	216 ns	$7/2^+$	−0.65(2)			TDPAD	2000Io03
$^{176}_{74}$W	3746	41 ns	14^+	+6.7(2)			TDPAD	2000Io03
					$5.2 < Q < 6.8$		TDPAD	2002Io01
$^{179}_{74}$W	3348	750 ns	$35/2^-$		$3.2 < Q < 5.1$	Calc efg	LEMS	2001Ba04
					$2.3 < Q < 8.0$		LEMS	1999Vy01
					<7		LEMS	1997Ne04
$^{180}_{74}$W	104	1.22 ns	2^+	0.51(3)		$^{180}_{74}$W 100	ME	1973Zi02
					2.1(4)	$^{180}_{74}$W 100	ME	1973Zi02
								1972He01
$^{182}_{74}$W	100	1.37 ns	2^+	0.52(2)		$^{184}_{74}$W 111	ME	1968Pe06
				+0.528(12)		$^{183}_{74}$W	CEAD	1972Ca12
					−2.1(4)		CER	1977RuZV
	329	64 ps	4^+	+0.9(2)			IPAC	1972Be94
	1289	1.12 ns	2^-	+1.7(2)			IPAC	1973Se14
	1374	78 ps	3^-	1.0(3)			IPAC	1972He10
				2.2(3)		$^{180}_{74}$W 100	IPAC	1973Se14
$^{183}_{74}$W	0	Stable	$1/2^-$	+0.11778476(9)		$^{2}_{1}$H	N	1974Sa25
	47	184 ps	$3/2^-$	−0.1(1)			ME	1967Ag02
					1.8(4)	$^{180}_{74}$W 100	ME	1967Ag02
	99	0.71 ns	$5/2^-$	+0.91(4)		$^{183}_{74}$W	ME, R, CEAD	1968Pe06
								1967Gi03
					2.0(3)	$^{180}_{74}$W 100	ME	1967Ag02
								1974Ge17
	207	—	$7/2^-$	0.4(2)		$^{184}_{74}$W 111	TF	1992La02
	309	—	$9/2^-$	1.53(14)		$^{184}_{74}$W 111	TF	1992La02
	475	—	$11/2^-$	1.1(2)		$^{184}_{74}$W 111	TF	1992La02
	551	—	$9/2^-$	2.2(9)		$^{184}_{74}$W 111	TF	1992La02
	631	10 ps	$13/2^-$	2.6(3)		$^{184}_{74}$W 111	TF	1992La02
	1062	3.0 ps	$17/2^-$	2.6(7)		$^{184}_{74}$W 111	TF	1992La02
$^{184}_{74}$W	111	1.25 ns	2^+	+0.578(14)			IPAC	1984Al06
				+0.576(14)			CEAD	1972Ca12
					−1.9(2)		CER	1977RuZV
	364	46 ps	4^+	+1.17(9)		$^{184}_{74}$W 111	IPAC, R	1984Al06
	748	5.5 ps	6^+	+1.9(2)		$^{184}_{74}$W 364	TF	1985St18
				+1.8(3)		$^{184}_{74}$W 111	IPAC, R	1984Al06
	904	1.73 ps	2^+	+0.24(8)		$^{184}_{74}$W 364	TF	1985St18
					+0.1(4)		CER	1977Ob02
	1252	1.32 ps	8^+	+2.9(6)		$^{184}_{74}$W 364	TF	1985St18
$^{186}_{74}$W	123	1.05 ns	2^+	0.62(3)			TF	1991St04
				+0.62(2)		$^{180}_{74}$W 100	ME, RIGV	1968Pe06
								1970Be36
					−1.6(3)		CER	1977RuZV
	396	36 ps	4^+	+1.28(10)		$^{186}_{74}$W 123	TF	1985St07
					−2.6(13)		CER	1970McZQ
	737	4.4 ps	2^+	+0.39(8)		$^{186}_{74}$W 123	TF	1985St07
					1.2(3)		CER	1977Ob02
					+1.3(3)		CER	1977Mc11
					0.7(4)		CER	1970McZQ
	809	3.5 ps	6^+	+1.9(4)		$^{186}_{74}$W 123	TF	1985St07
$^{187}_{74}$W	0	23.9 h	$3/2^-$	0.621(15)			NMR/ON	1987Oh10
$^{179}_{75}$Re	0	19.7 m	$(5/2)^+$	2.8(4)			NO/S	1992Bo39
$^{180}_{75}$Re	0	2.4 m	$(1)^-$	1.6(2)			NO/S	1992Bo39

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{181}_{75}$Re	0	19.9 h	$5/2^+$	3.19(7)		$^{185,7}_{75}$Re	NMR/ON	1981Ha22
	357	76 ns	$5/2^-$	+2.03(10)			TDPAC	1978Be67
$^{182}_{75}$Re	0	64.0 h	7^+	2.84(6)		$^{185,7}_{75}$Re	NMR/ON	1981Ha22
				2.83(6)		$^{185,7}_{75}$Re	NO/S	1980Sp01
					+4.1(3)	$^{187}_{75}$Re	NO/S	1983Ha49
	$0 + x$	12.7 h	2^+	3.26(10)			NMR/ON	1987Oh10
				3.2(3)		$^{185,7}_{75}$Re	NO/S	1980Sp01
					+1.8(2)	$^{187}_{75}$Re	NO/S, R	1985Ha41
								1981Er01
	236	570 ns	2^-	+2.15(8)			TDPAC	1978Be67
	2256	82 ns	16^-	+3.82(13)			TDPAD	1988Ja02
$^{183}_{75}$Re	0	70.0 d	$5/2^+$	3.168(15)		$^{186}_{75}$Re	NMR/ON	1987Oh10
				+3.160(13)		$^{186}_{75}$Re	NMR/ON, R	1987Oh10
								1981Ru11
					+2.3(2)	$^{187}_{75}$Re	NO/S	1983Ha49
					+2.1(2)	$^{187}_{75}$Re	NO/S, R	1985Ha41
								1981Er01
	497	7 ns	$9/2^-$	+5.14(11)		$^{19}_{9}$F 197	TDPAD	1980Za09
					(+)3.8(3)	$^{187}_{75}$Re	TDPAC	1978Ne14
$^{184}_{75}$Re	0	38.0 d	3^-	(+)2.53(5)		$^{185,7}_{75}$Re	NMR/ON	1981Ha22
					+2.9(2)	$^{187}_{75}$Re	NO/S	1983Ha49
					+3.1(3)	$^{187}_{75}$Re	NO/S	1981Er01
	188	169 d	8^+	(+)2.88(10)			NO/S	1973Hu06
								1973Kr01
$^{185}_{75}$Re	0	Stable	$5/2^+$	+3.1871(3)		$^{23}_{11}$Na	N	1951All1
					+2.18(2) a		Pi-X, O	1981Ko11
								1966Ku07
					2.21(4) a		Mu-X	1981Ko11
					2.19(2)	$^{187}_{75}$Re	Q	1978Se09
	125	10.2 ps	$7/2^+$	+2.1(8)			PAC	1989Ra17
$^{186}_{75}$Re	0	90.6 h	1^-	+1.739(3)			AB/D	1965Ar01
					+0.618(6)	$^{187}_{75}$Re	AB	1981Bu13
								1965Ar01
					+0.60(6)	$^{187}_{75}$Re	NO/S	1983Ha49
					+0.54(9)	$^{187}_{75}$Re	NO/S, R	1985Ha41
								1983Oe01
	314	23.1 ns	3^+	+2.18(6)		$^{19}_{9}$F 197	TDPAD	1980Za09
	330	17.8 ns	5^+	+4.62(11)		$^{19}_{9}$F 197	TDPAD	1980Za09
$^{187}_{75}$Re	0	4×10^{10} y	$5/2^+$	+3.2197(3)		$^{23}_{11}$Na	N	1951All1
					+2.07(2) a		Pi-X, O	1981Ko11
								1966Ku07
					2.09(4) a		Mu-X	1981Ko11
	134	9.9 ps	$7/2^+$	+1.9(9)			PAC	1989Ra17
	206	555 ns	$9/2^-$	+5.11(9)			TDPAC	1978Be67
				+5.02(5)			TDPAC	1963Ko19
								1971Ni01
								1963Wa16
					3.04(5)	$^{187}_{75}$Re	TDPAC	
$^{188}_{75}$Re	0	16.9 h	1^-	+1.788(5)			AB/D	1965Ar01
					+0.572(6)	$^{187}_{75}$Re	AB	1981Bu13
					+0.36(16)	$^{187}_{75}$Re	NO/S	1983Oe01
$^{182}_{76}$Os	7049	150 ns	$25^{(+)}$	+10.6(2)			TDPAD	1989All9
					4.2(2)		TDPAD	1991Br25
$^{183}_{76}$Os	0	13.0 h	$9/2^+$	(−)0.794(14)			NMR/ON	1980Ha24
					+3.1(3)	$^{186}_{76}$Os 137	NO/S	1985Ha41
$^{184}_{76}$Os	120	1.18 ns	2^+		−2.4(11)		CER	1972La16
$^{186}_{76}$Os	137	830 ps	2^+	+0.56(2)			ME, CEAD	1970Wa06
				+0.52(3)			TF	1982Le02
					−1.63(4) a		Mu-X	1981Ho22
					−1.61(5)	$^{188}_{76}$Os 155	ME	1972Wa24
					−1.2(2)		CER	1979RuZP
	1775	10.4 ns	7^-	−0.22(14)			TDPAD	1984Go06
$^{187}_{76}$Os	0	Stable	$1/2^-$	+0.06465189(6)		$^{2}_{1}$H	N	1974Sa25
				+0.0665(6)		$^{189}_{76}$Os	O	1962Jp99

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{188}_{76}$Os	155	710 ps	2^+	+0.58(2)			IMPAC, R	1985St05
				0.61(3)			ME	1970Wa06
				+0.60(3)			TF	1982Le02
					−1.46(4) a		Mu-X	1981Ho22
					−1.33(10)		CER	1979RuZP
					−1.2(3)		CER	1980Ba42
	478	19 ps	4^+	+1.43(14)		$^{188}_{76}$Os 155	TF	1985St05
	633	6.3 ps	2^+	+0.78(7)		$^{188}_{76}$Os 155	TF	1985St05
					+1.0(3)		CER	1980Ba42
	940	2.3 ps	6^+	+2.5(4)		$^{188}_{76}$Os 155	TF	1985St05
	966	5.2 ps	4^+	+1.6(5)		$^{188}_{76}$Os 155	TF	1985St05
	1771	13.9 ps	7^-	−0.17(11)			TDPAD	1984Go06
	2121		(3^-)		1.69(9) a		Mu-X	1979Ho23
$^{189}_{76}$Os	0	Stable	$3/2^-$	+0.659933(4)		$^{1}_{1}$H	N	1954Lo36
					+0.98(6)		LRFS	2002Kr01
					+0.86(3)	$^{188}_{76}$Os 155	ME	1972Wa24
	36	0.50 ns	$1/2^-$	+0.23(3)		$^{189}_{76}$Os	ME	1969Wa02
	70	1.63 ns	$5/2^-$	+0.988(6)		$^{189}_{76}$Os	ME, IPAC	1972Wa24
								1968Pe09
					−0.63(2)	$^{189}_{76}$Os	ME	1972Wa24
	95	0.23 ns	$3/2^-$	−0.32(5)			IPAC	1989Ra17
$^{190}_{76}$Os	187	366 ps	2^+	+0.69(3)			TF	1992St06
				+0.70(2)			IMPAC, R	1985St05
					−1.18(3) a		Mu-X	1981Ho22
					−1.26(8)	$^{188}_{76}$Os 155	ME	1972Wa24
					1.00(10)		CER	1979RuZP
					−1.0(3)	$^{188}_{76}$Os 155	CER	1980Ba42
	548	14 ps	4^+	+1.6(2)		$^{190}_{76}$Os 187	TF	1985St05
	558	12.5 ps	2^+	+0.69(9)		$^{190}_{76}$Os 187	TF	1985St05
					+0.9(4)		CER	1980Ba42
	1705	9.9 m	10^-	−0.56(+8, −12)			RENO	1987Be54
$^{191}_{76}$Os	0	15.4 d	$9/2^-$	+0.96(3)			NMR/ON(β)	1996Oh03
					+2.5(2)	$^{186}_{76}$Os 137	NO/S, ME	1979Er09
								1979Er14
$^{192}_{76}$Os	206	289 ps	2^+	+0.79(2)			IMPAC, R	1985St05
					−0.96(3) a		Mu-X	1981Ho22
					−0.8(2)		CER	1983Ch35
					−0.60(13)		CER	1979RuZP
					−0.9(2)		CER	1988Li22
	489	30.1 ps	2^+	+0.58(4)		$^{192}_{76}$Os 206	TF	1985St05
								1983Bo13
					−0.8(3)	$^{188}_{76}$Os 155	CER	1980Ba42
	580	13.4 ps	4^+	+1.56(12)		$^{192}_{76}$Os 206	TF	1985St05
								1983Bo13
	910	18 ps	4^+	+1.7(4)		$^{192}_{76}$Os 206	TF	1985St05
$^{193}_{76}$Os	0	30.5 h	$3/2^-$	0.730(2)			NMR/ON	1989Ed01
				Sign positive			NO/CP	1991Sc28
				+0.75(3)			NO/ME, R	1985Be03
				0.78(7)			NO/S, R	1984Gh01
					+0.47(6)	$^{186}_{76}$Os 137	R, NO/S	1985Be03
								1979Er09
$^{180}_{77}$Ir	0	1.5 m	Unknown	2.2(2) [$I = 3$]			NO/S	1992Bo39
				2.39(13) [$I = 4$]			NO/S	1992Bo39
				2.5(2) [$I = 5$]			NO/S	1992Bo39
				2.6(2) [$I = 6$]			NO/S	1992Bo39
				2.6(2) [$I = 7$]			NO/S	1992Bo39
$^{182}_{77}$Ir	0	15 m	Unknown	1.91(9) [$I = 2$]			NO/S	1992Bo39
				2.10(9) [$I = 3$]			NO/S	1992Bo39
				2.21(8) [$I = 4$]			NO/S	1992Bo39
				2.28(8) [$I = 5$]			NO/S	1992Bo39
				2.08(15) [$I = 5$]			NO/S	1992Bo39
				2.33(8) [$I = 6$]			NO/S	1992Bo39
				2.37(8) [$I = 7$]			NO/S	1992Bo39
$^{183}_{77}$Ir	0	55 m	$5/2^-$, $7/2^-$	2.36(8) [$I = 5/2$]			NO/S	1992Bo39

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				2.63(9) [$I = 7/2$]			NO/S	1992Bo39
				2.2(6) [$I = 5/2$]			NO/S	1992Bo39
				2.1(3) [$I = 7/2$]			NO/S	1992Ro21
$^{184}_{77}$Ir	0	3.14 h	5^-	0.696(5)			NMR/ON	1988Oh02
				0.8(2)			NO/S	1981Sp06
					+2.41(3)	$^{189}_{77}$Ir	NMR/ON	1996Se15
					+2.0(3)	$^{189}_{77}$Ir	NO/S	1982Al34
					+2.1(4)	$^{189}_{77}$Ir	NO/S	1981Ha33
$^{185}_{77}$Ir	0	14.4 h	$5/2^-$	2.605(13)			NMR/ON	1988Oh02
				2.601(14)			NMR/ON	1986De02
				2.5(2)			NO/S	1985Va07
				2.6(2)			NO/S	1981Sp06
					−2.06(14)	$^{193}_{77}$Ir	NMR/ON	1988Oh02
					−1.9(3)	$^{193}_{77}$Ir	NMR/ON	1986De02
					−2.5(3)	$^{193}_{77}$Ir	NO/S	1982Al34
					−1.9(3)	$^{193}_{77}$Ir	NO/S	1981Ha33
$^{186}_{77}$Ir	0	16.64 h	5^+	3.88(5)			NO/S	1982Al11
				3.80(+12, −2)			NMR/ON	1980Ha49
				3.78(5)			NMR/ON	1981Sp06
					−2.55(3)	$^{189}_{77}$Ir	NMR/ON	1996Se15
					−2.5(2)	$^{189}_{77}$Ir	NO/S	1980Mu07
					−2.3(2)	$^{189}_{77}$Ir	NO/S, ME	1979Er06
					−2.89(10)	$^{189}_{77}$Ir	NMR/ON	1980Ha49
	x		$2^{(-)}$	0.638(8)			NMR/ON	1990Ed01
					+1.46(2)	$^{189}_{77}$Ir	NMR/ON	1996Se15
$^{187}_{77}$Ir	0	10.5 h	$3/2^+$		+0.941(11)	$^{189}_{77}$Ir	NMR/ON	1996Se15
	434	152 ns	$11/2^-$	+6.21(5)			TDPAD	1977Ha99
					3.1(3)	$^{193}_{77}$Ir	TDPAD	1977Ha99
$^{188}_{77}$Ir	0	40.5 h	$1^{(-)}$	0.302(10)		$^{193}_{77}$Ir	NMR/ON, NO/S	1985Ed02
					+0.484(6)	$^{189}_{77}$Ir	NMR/ON	1996Se15
					+0.54(2)	$^{193}_{77}$Ir	NMR/ON	1985Ed02
					+0.49(3)	$^{193}_{77}$Ir	NMR/ON	1988Oh05
$^{189}_{77}$Ir	0	13.1 d	$3/2^+$	0.13(+8, −4)		$^{188}_{77}$Ir	NO/S	1980Be27
					+0.878(10)		NMR/ON	1996Se15
					+0.79(6)	$^{188}_{77}$Ir	NO/S	1992Ka49
					+1.0(2)	$^{192}_{77}$Ir	NO/S	1985Ha41
$^{190}_{77}$Ir	0	11.8 d	$(4)^+$	0.04(1)			NO/S	1983Al15
					+2.85(14)	$^{189}_{77}$Ir	NO/S	1980Mu07
					+2.7(2)	$^{192}_{77}$Ir	NO/S	1985Ha41
$^{191}_{77}$Ir	0	Stable	$3/2^+$	+0.1507(6)			AB/D	1984Bu15
				+0.1461(6)			N	1968Na01
					+0.816(9) a		Mu-X, O	1984Ta04
								1952Mu40
					+0.8(2) st		AB	1978Bu17
	82	3.8 ns	$1/2^+$	+0.600(6)		$^{191}_{77}$Ir	ME, R	1983Wa31
	129	123 ps	$5/2^+$	+0.81(6)			TF	2000Be07
				+0.86(6)		$^{198}_{78}$Pt 407	TF	1996St22
				+0.45(2)			IMPAC, TF, R	1986Ko20
				+0.48(4)			IPAD, ME	1980Da24
	171	4.9 s	$11/2^-$	6.03(4)			NMR/ON	1974Kr06
								1971Es03
				Sign positive			NO/CP	1991Sc28
				Sign positive			NMR/ON(β)	1996Oh03
	179	39 ps	$3/2^+$	+1.4(4)			IPAC	1973Il02
	343	20 ps	$7/2^+$	+1.40(6)			TF	2000Be07
				+1.35(11)		$^{198}_{78}$Pt 407	TF	1996St22
				+1.7(3)		$^{191}_{77}$Ir 129	TF, IMPAC	1986Ko20
	503	9.6 ps	$9/2^+$	+2.4(2)		$^{198}_{78}$Pt 407	TF	1996St22
				+3.1(11)		$^{191}_{77}$Ir 129	TF	1986Ko20
	686	2.7 ps	$7/2^+$	+0.8(3)		$^{198}_{78}$Pt 407	TF	1996St22
				+0.5(7)		$^{191}_{77}$Ir 129	TF	1986Ko20
	832	2.8 ps	$11/2^+$	+3.4(9)		$^{198}_{78}$Pt 407	TF	1996St22
$^{192}_{77}$Ir	0	74.2 d	4^-	1.924(10)		$^{193}_{77}$Ir	NMR/ON	1980Ha25

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Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				Sign positive			NO/CP	1991Sc28
					+2.15(6)	$^{189}_{77}$Ir	R	1996Se15
					+2.28(6)	$^{193}_{77}$Ir	NMR/ON, R	1985Ed02
								1980Ha25
					+2.0(2)	$^{193}_{77}$Ir	NO/S ME	1986Gr26
					+2.4(1)	$^{193}_{77}$Ir	NO/S	1985Ha41
$^{193}_{77}$Ir	0	Stable	$3/2^+$	+0.1637(6)			AB/D	1984Bu15
				+0.1591(6)			N	1968Na01
					+0.751(9) a		Mu-X, O	1984Ta04
								1952Mu40
					+0.7(2) st		AB	1978Bu17
	73	6.2 ns	$1/2^+$	+0.519(2)		$^{193}_{77}$Ir	ME	1969Pe05
	139	88 ps	$5/2^+$	+0.89(4)			TF	2000Be07
				+0.93(5)		$^{198}_{78}$Pt 407	TF	1996St22
				+0.53(3)			TF, IMPAC, R	1986Ko20
	180	55 ps	$3/2^+$	+1.1(4)			IPAC	1973Il02
	358	19.8 ps	$7/2^+$	+1.54(6)			TF	2000Be07
				+1.55(6)		$^{198}_{78}$Pt 407	TF	1996St22
				+1.7(3)		$^{193}_{77}$Ir 139	TF, IMPAC	1986Ko20
	522	12.7 ps	$9/2^+$	+2.2((2)		$^{198}_{78}$Pt 407	TF	1996St22
				+3.8(11)		$^{193}_{77}$Ir 139	TF	1986Ko20
	621	4.6 ps	$7/2^+$	+1.16(14)		$^{198}_{78}$Pt 407	TF	1996St22
				+0.5(4)		$^{193}_{77}$Ir 139	TF	1986Ko20
	857	5.1 ps	$11/2^+$	+2.7(7)		$^{198}_{78}$Pt 407	TF	1996St22
$^{194}_{77}$Ir	0	19.4 h	1^-	+0.39(1)		$^{193}_{77}$Ir	NMR/ON, NO/CP	1982Ha28
								1991Sc28
					+0.339(12)	$^{193}_{77}$Ir	NMR/ON, R	1985Ed02
								1982Ha28
$^{179}_{78}$Pt	0	21.2 s	$1/2^-$	+0.43(3)		$^{195}_{78}$Pt	LRIMS	1999Le52
$^{180}_{78}$Pt	153	370 ps	2^+	0.64(12)			IPAC	1998Br33
	(−)	(−)	6^+–10^+	g(average) = +0.40(8)			TF	2002Ro12
$^{181}_{78}$Pt	0	51 s	$1/2^-$	+0.48(2)		$^{195}_{78}$Pt	LRIMS	1999Le52
$^{182}_{78}$Pt	(−)	(−)	6^+–12^+	g(average) = +0.36(5)			TF	2002Ro12
$^{183}_{78}$Pt	0	6.5 m	$1/2^-$	+0.502(5)		$^{195}_{78}$Pt	LRIMS	1999Le52
				+0.51(3)			LRIMS	1990Hi08
				+0.52(3)			LRIMS	1992Hi07
	35	43 s	$7/2^-$	+0.782(14)		$^{195}_{78}$Pt	LRIMS	1999Le52
				0.96(8)			NO/S	1992Ro21
				1.03(8)			NO/S	1992St16
					+3.4(3) st		LRIMS	1999Le52
$^{184}_{78}$Pt	163	376 ps	2^+	+0.56(6)			IPAC	1996St12
	(−)	(−)	6^+–14^+	g(average) = +0.37(5)			TF	2002Ro12
$^{185}_{78}$Pt	0	70.9 m	$9/2^+$	−0.723(11)		$^{195}_{78}$Pt	LRIMS	1999Le52
				0.774(14)			NMR/ON	1990Ed01
				−0.83(1)		$^{195}_{78}$Pt	LRIMS	1989Du01
					+3.7(2) st		LRIMS	1999Le52
					+4.3(5)		LRIMS	1989Du01
					3.4(5)	$^{189}_{78}$Pt	NO/S	1990Ed01
					+4.4(3)	$^{191}_{78}$Pt	QI-NMR/ON	1998Hi08
					+4.5(1)	$^{191}_{78}$Pt	NMR/ON	1993HaZU
	103	33 m	$1/2^-$	+0.503(5)		$^{195}_{78}$Pt	LRIMS	1999Le52
				+0.540(9)		$^{195}_{78}$Pt	LRIMS	1992Hi07
$^{186}_{78}$Pt	192	260 ps	2^+	+0.54(6)			IPAC	1996St12
$^{187}_{78}$Pt	0	2.35 h	$3/2^-$	0.408(8)			NMR/ON	1990Ed01
				−0.399(8)		$^{195}_{78}$Pt	LRIMS	2000SaZZ
								1989Du01
				−0.43(2)		$^{195}_{78}$Pt	LRIMS	1992Hi07
					−0.98(5) st	$^{195}_{78}$Pt	LRIMS	2000SaZQ
					−1.13(5)		LRIMS	1989Du01
					−1.3(3)	$^{189}_{78}$Pt	NO/S	1990Ed01
					−1.00(7) st		LRIMS	1992Hi07
$^{188}_{78}$Pt	266	64 ps	2^+	+0.58(8)			IPAC	1996St12
$^{189}_{78}$Pt	0	10.9 h	$3/2^-$	−0.422(7)		$^{195}_{78}$Pt	LRIMS	2000SaZZ
								1989Du01

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				−0.440(8)		$^{195}_{78}$Pt	LRIMS	1992Hi07
				0.439(9)		$^{195}_{78}$Pt	NMR/ON	1985Ed05
				0.433(9)		$^{195}_{78}$Pt	NMR/ON	1985Oh05
				0.42(3)		$^{195}_{78}$Pt	NO/S	1980Be27
					−0.87(8) st	$^{195}_{78}$Pt	LRIMS	2000SaZQ
					−1.03(5)		LRIMS	1989Du01
					−1.21(6)	$^{191}_{78}$Pt	QI-NMR/ON	1998Hi08
					−1.27(3)	$^{191}_{78}$Pt	NMR/ON	1993HaZU
					−1.1(2) st		LRIMS	1992Hi07
$^{190}_{78}$Pt	296	60 ps	2^+	+0.57(3)		$^{194}_{78}$Pt 328,$^{196}_{78}$Pt 356	TF	1995An15
	2297	69 ns	10^-	+0.09(8)			IPAC	2001Ko41
$^{191}_{78}$Pt	0	2.9 d	$3/2^-$	−0.501(5)		$^{195}_{78}$Pt	LRIMS	1989Du01
				−0.494(8)		$^{195}_{78}$Pt	LRIMS	1992Hi07
				0.500(10)		$^{195}_{78}$Pt	NMR/ON	1985Ed05
				0.499(10)		$^{195}_{78}$Pt	NMR/ON	1985Oh05
				0.506(11)		$^{195}_{78}$Pt	NMR/ON, NO/S	1981La25
				−0.46(+14, −4)		$^{195}_{78}$Pt	NO/S, NO/ME	1980Be27
								1987Be36
					−0.78(10) st	$^{195}_{78}$Pt	LRIMS	2000SaZQ
					−0.98(5)		LRIMS	1989Du01
					−0.78(10) st		LRIMS	1992Hi07
$^{192}_{78}$Pt	317	43.7 ps	2^+	+0.57(3)			TDPAC	1992Al21
								1992Bo20
				+0.64(3)		$^{194}_{78}$Pt 328,$^{196}_{78}$Pt 356	TF	1992Br03
				+0.60(2)		$^{194}_{78}$Pt 328,$^{196}_{78}$Pt 356	TF	1995An15
				+0.57(4)			IPAC	1975Ka42
					+0.6(2)		CER	1987Gy01
					+0.62(6)		CER	
	612	26.5 ps	2^+	+0.56(9)		$^{194}_{78}$Pt 328,$^{196}_{78}$Pt 356	TF	1992Br03
				+0.72(14)			IPAC	1975Ka42
	785	4.2 ps	4^+	+1.12(12)		$^{194}_{78}$Pt 328,$^{196}_{78}$Pt 356	TF	1992Br03
				1.6(11)			IPAC	1969Ke11
	2172	404 ns	10^-	+0.10(6)			IPAC	2001Ko41
$^{193}_{78}$Pt	0	50 y	$1/2^-$	+0.603(8)		$^{195}_{78}$Pt	LRIMS	1992Hi07
	150	4.3 d	$13/2^+$	(−)0.753(15)		$^{195}_{78}$Pt	NMR/ON(X)	1986Sc04
$^{194}_{78}$Pt	328	41.8 ps	2^+	+0.60(3)			TF	1995An15
				+0.59(4)			TF	1991St04
				+0.406(12)			TF	1982Le02
				+0.60(3)			IPAC	1975Ka42
					+0.48(14)		CER	1986Gy04
					0.1(2)		CER	1983Ch35
					+0.63(6)		CER	1978Ba38
	622	35 ps	2^+	+0.56(11)		$^{194}_{78}$Pt 328,$^{196}_{78}$Pt 356	TF	1992Br03
				+0.69(6)			IPAC	1975Ka42
					−0.5(5)		CER	1983Ch35
	811	3.7 ps	4^+	+1.12(12)		$^{194}_{78}$Pt 328,$^{196}_{78}$Pt 356	TF	1992Br03
					+0.5(10)		CER	1983Ch35
$^{195}_{78}$Pt	0	Stable	$1/2^-$	+0.60952(6)		$^{23}_{11}$Na	N	1951Pr02
	99	0.17 ns	$3/2^-$	−0.62(6)		$^{195}_{78}$Pt	ME	1967Ag01
	130	0.62 ns	$5/2^-$	+0.90(6)		$^{195}_{78}$Pt	ME	1974Ru03
								1972Wo06
	211	49 ps	$3/2^-$	+0.16(3)			CEAD	1972Va16
	239	70 ps	$5/2^-$	+0.64(9)			TF	1994La02
				+0.52(5)			IMPAC	
	259	4.02 d	$13/2^+$	0.606(15)		$^{195}_{78}$Pt	NMR/ON	1972Ba22
				Sign negative			NO/CP	1991Sc28
					+1.4(6)		NO/S	1985Ed05
								1985Ed03
	389	9 ps	$5/2^-$	+0.39(10)			TF	1994La02
	455	>10 ps	$5/2^-$	+1.6(6)			TF	1994La02
	508	9.7 ps	$7/2^-$	+0.55(8)			TF	1994La02
	544	>2.8 ps	$5/2^-$	+1.5(4)			TF	1994La02
	563	14 ps	$9/2^-$	+1.55(12)			TF	1994La02

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
	613	6 ps	$7/2^-$	+1.4(4)			TF	1994La02
	667	(16 ps)	$9/2^-$	+1.52(16)			TF	1994La02
	679	>2.8 ps	$7/2^-$	+1.2(3)			TF	1994La02
$^{196}_{78}$Pt	356	34 ps	2^+	+0.59(5)			TF	1991St04
				+0.60(5)		$^{194}_{78}$Pt 328	TF	1993Ta07
				+0.43(4)			TF	1982Le02
				+0.69(3)			IPAC	1981Ka23
				+0.63(6)		$^{194}_{78}$Pt 328	TF	1979Ha06
					+0.62(8)		CER	1992Li14
					+0.66(12)		CER	1986Gy04
	689	36.8 ps	2^+	+0.54(9)			R	1992Br03
				+0.75(15)		$^{196}_{78}$Pt 356	TF	1981St24
					−0.39(16)		CER	1992Li14
	877	3.6 ps	4^+	+1.38(16)		$^{194}_{78}$Pt 328, $^{196}_{78}$Pt 356	TF	1992Br03
				+1.5(3)		$^{196}_{78}$Pt 356	TF	1981St24
					+1.03(12)		CER	1992Li14
	1526	0.98 ps	6^+		−0.18(26)		CER	1992Li14
$^{197}_{78}$Pt	0	18.3 h	$1/2^-$	0.51(2)			AB	1976Fu06
	53	16.6 ns	$5/2^-$	+0.85(3)			TDPAC	1982So05
$^{198}_{78}$Pt	407	22.3 ps	2^+	+0.63(2)		$^{194}_{78}$Pt 328, $^{196}_{78}$Pt 356	TF	1995An15
				+0.70(6)		$^{194}_{78}$Pt 328	TF	1993Ta07
				+0.59(7)			TF	1991St04
				+0.69(6)		$^{194}_{78}$Pt 356	TF	1981St13
				+0.62(10)		$^{196}_{78}$Pt 328	TF	1979Ha06
					+0.42(12) or +0.54(12)		CER	1986Gy04
	775	27 ps	2^+	+0.61(11)			R	1992Br03
				+0.72(13)		$^{196}_{78}$Pt 356	TF	1981St13
	985	3.3 ps	4^+	+1.2(2)			R	1992Br03
				+1.4(3)		$^{196}_{78}$Pt 356	TF	1981St13
$^{182}_{79}$Au	0	21 s	Unknown	1.30(10) [$I=2$]			TR/OLNO	1992Ro21
				1.62(15) [$I=3$]			TR/OLNO	1992Ro21
				1.9(2) [$I=4$]			TR/OLNO	1992Ro21
$^{183}_{79}$Au	0	42 s	$5/2^-$	+1.97(2)			LRIMS	1988Kr18
$^{184}_{79}$Au	0	21 s	5	+2.07(2)			LRIS	1997Le22
					+4.7(3)		LRIS	1997Le22
		49 s	2	+1.44(2)			LRIS	1997Le22
					+1.90(16)		LRIS	1997Le22
$^{185}_{79}$Au	0	4.2 m	$5/2^-$	+2.17(2)			LRIMS	1989Wa11 1987Wa06
				+1.98(2)			LRIMS	1992Ki30
				2.22(14)			NO/S	1985Va07
					−1.10(10)		LRIMS	1992Ki30
$^{186}_{79}$Au	0	10.7 m	3^-	−1.28(3)			LRIMS	1990Sa21
				1.28(2)			NMR/ON	1988Sc19
				−1.26(3)			LRIMS	1989Wa11 1987Wa06
				1.07(13)			NO/S	1985Va07
					+3.10(6)		LRIMS	1992Ki30
					+3.14(16)	$^{193}_{79}$Au	NMR/ON	1993Hi10
$^{187}_{79}$Au	0	8.4 m	$1/2^+$	+0.535(15)			LRIMS	1989Wa11 1987Wa06
				+0.531(12)			LRIMS	1990Sa21
				0.72(7)			AB	1980Ek04
	2670 + D	102 ns	$31/2^-$ or $35/2^-$	$g=0.25(3)$			TDPAD	1997Pe26
$^{188}_{79}$Au	0	8.8 m	1^-	−0.07(3)			LRIMS	1989Wa11 1987Wa06
				0.07(2)			AB	1980Ek04
$^{189}_{79}$Au	0	28.7 m	$1/2^+$	+0.494(14)			LRIMS	1989Wa11 1987Wa06
	247	4.6 m	$11/2^-$	+6.19(2)			LRIMS	1989Wa11

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
								1987Wa06
				6.17(15)		$^{195}_{79}$Au 319	NO/S, NMR/ON	1986Va35
	2553	242 ns	$31/2^+$	6.5(3)			TDPAD	1997Pe26
$^{190}_{79}$Au	0	42.8 m	1^-	−0.065(7)			LRIMS	1990Sa21
				−0.07(3)			LRIMS	1989Wa11
				−0.07(2)			AB, R, CLS	1980Ek04
								1985St10
$^{191}_{79}$Au	0	3.18 h	$3/2^+$	+0.1369(9)			LRIMS	1994Pa37
				+0.137(1)			AB, R	1980Ek04
					+0.72(2)		LRIMS	1994Pa37
	266	0.9 s	$11/2^-$	6.6(6)			NO/S	1985Va07
	2446	890 ps	$27/2^-$	$\ll 20$			IPAD	1985Ko13
	2489	400 ns	$31/2^+$	6.5(6)			TDPAD	1997Pe26
$^{192}_{79}$Au	0	5.0 h	1^-	−0.0107(15)			LRIMS	1994Pa37
				−0.008(2)			LRIMS	1990Sa21
				0.01(2)			AB, R	1980Ek04
					−0.228(8)		LRIMS	1994Pa37
$^{193}_{79}$Au	0	17.65 h	$3/2^+$	0.1396(6)			NMR/ON	1993Hi10
				+0.1396(5)			LRIMS	1994Pa37
				+0.140(1)			AB, R	1980Ek04
					+0.66(2)		LRIMS	1994Pa37
	290	3.9 s	$11/2^-$	6.18(9)		$^{195}_{79}$Au 319	NMR/ON	1983Ha10
				6.17(9)			NMR/ON	1983Li21
					+1.98(6)		MAPON	1996Se06
	1947	12 ns	$21/2^+$	+6.48(11)			TDPAD, R	1989Ra17
	2378	790 ps	$27/2^-$	<9.45			IPAD	1985Ko13
	2477	3.5 ns	$31/2^-$	5(3)			IPAD	1985Ko13
	2701	1.8 ns	$35/2^-$	2(2)			IPAD	1985Ko13
$^{194}_{79}$Au	0	39.5 h	1^-	+0.0763(13)			LRIMS	1994Pa37
				+0.079(3)			LRIMS	1990Sa21
				0.08(2)			AB, R	1980Ek04
					−0.240(9)	$^{197}_{79}$Au	LRIMS	1994Pa37
$^{195}_{79}$Au	0	183 d	$3/2^+$	0.1487(6)			NMR/ON	1993Hi10
				+0.145(5)			LRIMS	1990Sa21
				+0.149(1)			AB, R	1980Ek04
					+0.61(2)	$^{193}_{79}$Au	NMR/ON	1993Hi10
	319	30.6 s	$11/2^-$	6.18(9)			NMR/ON	1981Ha27
				6.17(9)			NMR/ON	1983Li21
					+1.87(6)		MAPON	1996Se06
					+1.41(10)	$^{197}_{79}$Au	NO/S, ME	1983Be68
								1983Pe22
$^{196}_{79}$Au	0	6.18 d	2^-	+0.580(15)			LRIMS	1990Sa21
				+0.5914(14)			AB/D	1970Sc02
				0.5906(5)		$^{198}_{79}$Au	NMR/ON	1987Oh11
					0.81(7)	$^{197}_{79}$Au	NMR/ON, N	1987Oh11
								1984Ri15
	596	9.7 h	12^-	5.72(8)			NMR/ON	1982Ha04
$^{197}_{79}$Au	0	Stable	$3/2^+$	+0.145746(9)			AB/D	1967Da04
				+0.148158(8)		$^{2}_{1}$H	N	1967Na13
								1968Na01
					+0.547(16) a		Mu-X, O	1974Po12
					0.594(10)		AB	1967Bl16
								1966Ch03
	77	1.91 ns	$1/2^+$	+0.420(3)		$^{197}_{79}$Au	ME	1968Co17
	279	20.4 ps	$5/2^+$	+0.53(5)			TF	1986Ba19
				+0.74(6)			TF	1988St09
	409	7.8 s	$11/2^-$	(+)5.98(9)			NMR/ON	1984Ha12
				6.4(4)			NO/S	1983Li21
					+1.68(5)		MAPON	1996Se06
					+1.4(2)	$^{197}_{79}$Au	NO/S, ME	1983Be68
								1983Pe22
	503	1.8 ps	$5/2^+$	+3.0(5)			TF	1988St09
	548	4.6 ps	$7/2^+$	+0.53(7)			TF	1988St16

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Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
				+0.84(7)			TF	1988St09
	737	1.1 ps	$7/2^+$	+1.7(5)			TF	1988St16
	855	2.7 ps	$9/2^+$	+1.5(5)			TF	1988St16
	1231	0.93 ps	$11/2^+$	+2.0(10)			TF	1988St16
$^{198}_{79}$Au	0	2.696 d	2^-	+0.64(2)			LRIMS	1990Sa21
				+0.5934(4)			AB/D	1967Va16
					+0.64(2)	$^{193}_{79}$Au	NMR/ON	1993Hi10
					+0.68(2)	$^{197}_{79}$Au	NMR/ON	1988Ed01
					0.88(8)	$^{197}_{79}$Au	N	1985Ka16
					0.76(4)	$^{197}_{79}$Au	N, NMR/ON	1984Ha03
					+0.69(4)	$^{199}_{79}$Au	NO/S, NMR/ON	1983He26
								1984Ha03
					+0.46(2)	$^{197}_{79}$Au	ME, NO/S	1983Pe22
								1983He26
	312	123 ns	5^+	−1.11(2)			TDPAD, R	1989Ra17
	812	2.30 d	12^-	(+)5.85(9)			NMR/ON	1984Ha12
$^{199}_{79}$Au	0	3.14 d	$3/2^+$	+0.261(2)			LRIMS	1990Sa21
				+0.2715(7)			AB/D	1967Va16
					+0.510(16)	$^{193}_{79}$Au	NMR/ON	1993Hi10
					0.64(6)	$^{197}_{79}$Au	N, NMR/ON	1985Ka16
								1982Ha39
					0.55(3)	$^{197}_{79}$Au	N, NMR/ON	1982Ha39
					+0.37(1)	$^{197}_{79}$Au	ME, NO/S	1983Pe22
								1983He26
$^{200}_{79}$Au	962	18.7 h	12^-	5.90(9)			NMR/ON	1984Ha45
$^{181}_{80}$Hg	0	3.6 s	$1/2^{(-)}$	+0.5071(7)			β-NMR/OP	1976Bo09
$^{183}_{80}$Hg	0	8.8 s	$1/2^-$	+0.524(5)			β-NMR/OP	1976Bo09
$^{185}_{80}$Hg	0	55 s	$1/2^-$	+0.509(4)			β-NMR/OP	1986Ul02
	99.3	27 s	$13/2^+$	−1.017(9)		$^{193}_{80}$Hg 141	CLS	1986Ul02
					+0.2(3) st	$^{201}_{80}$Hg	β-NMR/OP	1986Ul02
$^{187}_{80}$Hg	0	2.4 m	$13/2^+$	−1.044(11)		$^{193}_{80}$Hg 141	CLS	1979Da06
					+0.5(3) st	$^{201}_{80}$Hg	β-NMR/OP	1986Ul02
	134	1.9 m	$3/2^-$	−0.594(4)			β-NMR/OP	1986Ul02
					−0.8(3) st	$^{201}_{80}$Hg	β-NMR/OP	1986Ul02
$^{188}_{80}$Hg	2724	135 ns	12^+	−2.02(12)			TDPAD	1983Se20
					0.91(11)		TDPAD	1984Dr09
$^{189}_{80}$Hg	0	7.6 m	$3/2^-$	−0.6086(8)			β-NMR/OP	1986Ul02
					−0.8(4)	$^{201}_{80}$Hg	β-NMR/OP	1986Ul02
	$0+x$	8.6 m	$13/2^+$	−1.058(6)		$^{193}_{80}$Hg 141	CLS	1979Da06
					+0.7(3) st	$^{201}_{80}$Hg	β-NMR/OP	1986Ul02
$^{190}_{80}$Hg	2621	21 ns	12^+	−2.5(2)			TDPAD	1980Hj01
					1.17(14)	$^{199}_{80}$Hg 158	TDPAD	1984Dr09
$^{191}_{80}$Hg	0	49 m	$3/2^-$	−0.618(11)		$^{201}_{80}$Hg	β-NMR/OP	1986Ul02
					−0.8(3) st	$^{201}_{80}$Hg	β-NMR/OP	1986Ul02
	140	50.8 m	$13/2^+$	−1.068(5)		$^{193}_{80}$Hg 141	CLS	1979Da06
					+0.6(3) st	$^{201}_{80}$Hg	β-NMR/OP	1986Ul02
$^{193}_{80}$Hg	0	3.80 h	$3/2^-$	−0.6276(2)		$^{199}_{80}$Hg	NMR/OP	1971Mo24
					−0.7(4) st	$^{201}_{80}$Hg	β-NMR/OP	1986Ul02
	141	11.8 h	$13/2^+$	−1.058430(3)		$^{199}_{80}$Hg	NMR/OP	1973Re04
					+0.92(10) st	$^{201}_{80}$Hg	β-NMR/OP	1986Ul02
	Band	ABC		g(average) = 0.188(14)			TF	1998We23
	Band	ABCDF +	ABF	g(average) = 0.20(2)			TF	1998We23
	Band	ABCDE +	ABE	g(average) = 0.175(14)			TF	1998We23
$^{194}_{80}$Hg	2424/2476	2.9 and 8.1 ns	10^+ and 12^+	g(average) = −0.24(4)			IPAD	1980Kr21
	Yrast	Superdef	Band 1	g(average) = 0.36(10)			TF	1998Ma71
	Yrast	Superdef	Band 2	g(average) = 0.4(2)			TF	1998Ma71
	Yrast	Superdef	Band 3	g(average) = 0.7(3)			TF	1998Ma71

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
	Band	ABCD +	AB	g(average) = 0.25(2)			TF	1998We23
	Band	ABCE +	AE	g(average) = 0.26(3)			TF	1998We23
	Band	ABCF +	AF	g(average) = 0.27(2)			TF	1998We23
$^{195}_{80}$Hg	0	9.9 h	$1/2^-$	+0.5414749(14)		$^{199}_{80}$Hg	NMR/OP	1973Re04
	176	41.6 h	$13/2^+$	−1.044647(3)		$^{199}_{80}$Hg	NMR/OP	1973Re04
					+1.08(11) st	$^{201}_{80}$Hg	β-NMR/OP	1986Ul02
$^{196}_{80}$Hg	1841	5.2 ns	7^-	−0.29(13)			TDPAD, IPAD	1984Go06
	2342	5.1 ns	10^+	−1.8(9)			IPAD	1980Kr21
	2439	3.5 ns	12^+	−2.2(11)			IPAD	1980Kr21
$^{197}_{80}$Hg	0	64.1 h	$1/2^-$	+0.5273744(9) d		$^{199}_{80}$Hg	NMR/OP	1973Re04
	134	8.1 ns	$5/2^-$	+0.855(15)		$^{199}_{80}$Hg 158	TDPAC	1977Kr11
					−0.081(6)	$^{199}_{80}$Hg 158	TDPAC, PPDAC	1980He05
								1981Kr16
					0.080(10)	$^{197}_{80}$Hg 299	TDPAD, R	1980He05
	299	23.8 h	$13/2^+$	−1.027684(3) d		$^{199}_{80}$Hg	NMR/OP	1973Re04
					+1.24(14) st	$^{201}_{80}$Hg	β-NMR/OP	1986Ul02
$^{198}_{80}$Hg	412	23 ps	2^+	+0.76(6)		$^{199}_{80}$Hg 158	TF	1995Br34
				+1.0(2)		$^{199}_{80}$Hg 158	IMPAC, R	1986Ko02
				0.70(14)			RIGV, R	1977Kr11
					+0.68(12) or +0.84(12)		CER, R	1984Fe08
					+0.7(2) or +0.8(2)		CER	1979Bo16
					+0.5(2) a		Mu-X	1979Ha08
	1048	1.8 ps	4^+	+1.6(2)		$^{199}_{80}$Hg 158	TF	1995Br34
	1684	7.1 ns	7^-	−0.22(11)			TDPAD, IPAD	1984Go06
$^{199}_{80}$Hg	0	Stable	$1/2^-$	+0.5058855(9)		$^{2}_{1}$H	NMR/OP	1961Ca21
	158	2.45 ns	$5/2^-$	+0.88(3)			TDPAC	1977Kr11
				+0.91(9)			IPAC	1977Kr11
				+0.60(15)		$^{198}_{80}$Hg 412	TF	1986Ko02
					+0.8(4)		ME, R	1985La21
								1979Wu12
					+0.85(12) a		Mu-X	1983Gu02
					+0.95(7) a		Mu-X	1979Ha08
					0.70(9) st	$^{201}_{80}$Hg	TDPAC, Q	1973Ha61
	208	69 ps	$3/2^-$	−0.56(9)		$^{199}_{80}$Hg 158	TF	1990Ba40
				−0.29(15)		$^{198}_{80}$Hg 412	TF	1986Ko02
				−0.47(8)			IMPAC	1986Ko02
					+0.50(12) a		Mu-X	1983Gu02
					+0.62(15) a		Mu-X	1979Ha08
	414	97 ps	$5/2^-$	+0.80(9)		$^{199}_{80}$Hg 158	TF	1990Ba40
				−0.7(3)		$^{198}_{80}$Hg 412	TF	1986Ko02
	532	42.6 m	$13/2^+$	−1.014703(3)		$^{199}_{80}$Hg	β-NMR/OP	1973Re04
					+1.2(5) st	$^{201}_{80}$Hg	β-NMR/OP	1986Ul02
$^{200}_{80}$Hg	368	46.6 ps	2^+	+0.65(5)		$^{199}_{80}$Hg 158	TF	1995Br34
				+0.6(2)		$^{198}_{80}$Hg	IMPAC, R	1986Ko02
				+0.58(12)		$^{198}_{80}$Hg 412	TF	1986Ko02
				+0.52(10)			IMPAC	1986Ko02
				0.80(14)			RIGV, R	1977Kr11
					+1.0(2) or +1.1(2)		CER	1980Sp05
					+0.96(11) or +1.11(11)		CER	1979Bo16
					+2.6(14) a		Mu-X	1979Ha08
					+0.1(6) a		Mu-X	1983Gu02
	947	3.2 ps	4^+	1.02(17)		$^{199}_{80}$Hg 158	TF	1995Br34
$^{201}_{80}$Hg	0	Stable	$3/2^-$	−0.5602257(14)		$^{199}_{80}$Hg	NMR/OP	1973Re04
				−0.560226(3)		$^{1}_{1}$H	NMR/OP	1961Ca21
					0.35(4)	Calculated Q of $^{206}_{80}$Hg 2102	B(E2)	2001Fo08
					+0.38(4) st		AB, R	1986Ul02

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					0.39(5)		Mu-X	1979Ha08
					or 0.27(4) a			
					0.41(4)		O	1965Mu15
					0.46(4)		AB	1960Mc11
					+0.53(4)	$^{199}_{80}$Hg 158	TDPAC, Q	1975Ed01
	32	~0.1 ns	$3/2^-$		0.3(15) or 0.1(3) a		Mu-X	1979Ha08
$^{202}_{80}$Hg	440	27.3 ps	2^+	+0.78(6)		$^{199}_{80}$Hg 158	TF	1995Br34
				+0.9(2)		$^{198}_{80}$Hg 412	TF	1986Ko02
				+1.0(3)		$^{198}_{80}$Hg 412	IMPAC, R	1986Ko02
				1.0(2)			RIGV, R	1977Kr11
					+0.87(13) or +1.01(13)		CER	1980Sp05
					+0.17(14) or +0.32(14)		CER	1979Bo16
	1120	2.0 ps	4^+	1.36(27)		$^{199}_{80}$Hg 158	TF	1995Br34
$^{203}_{80}$Hg	0	46.8 d	$5/2^-$	+0.84895(13)		$^{201}_{80}$Hg	β-NMR/OP	1970Ki05
								1964Re03
					+0.34(4) st	$^{201}_{80}$Hg	β-NMR/OP	1986Ul02
$^{204}_{80}$Hg	437	40.2 ps	2^+	+0.9(2)		$^{198}_{80}$Hg 412	TF	1986Ko02
				+0.8(2)		$^{198}_{80}$Hg 412	IMPAC, R	1986Ko02
					+0.4(2)		CER	1981Es03
					+0.2(2) or +0.4(2)		CER	1979Bo16
					+0(2) a		Mu-X	1979Ha08
$^{205}_{80}$Hg	0	5.2 m	$1/2^-$	+0.60089(10)		$^{199}_{80}$Hg	β-NMR/OP	1975Ro10
$^{206}_{80}$Hg	2102	2.15 μs	5^-	+5.45(5)			TDPAD	1982Be38
					0.74(15)	$^{199}_{80}$Hg 158	TDPAD	1984Ma43
$^{187}_{81}$Tl	0	51 s	$(1/2^+)$	1.55(6)		$^{205}_{81}$Tl	CFBLS	1993ScZW
	335	15.6 s	$(9/2^-)$	(+)3.79(2)		$^{205}_{81}$Tl	CFBLS	1993ScZW
					−2.43(5)		CFBLS	1993ScZW
$^{188}_{81}$Tl	$0 + x$	71 s	7^+	+0.483(8)		$^{203,5}_{81}$Tl	CFBLS	1992Me07
					+0.129(4)	$^{203,5}_{81}$Tl	CFBLS	1992Me07
$^{189}_{81}$Tl	281	1.4 m	$9/2^-$	+3.878(6)		$^{203,5}_{81}$Tl	CFBLS	1987Bo44
					−2.29(4)		CFBLS	1987Bo44
$^{190}_{81}$Tl	$0 + x$	2.6 m	2^-	+0.254(2)		$^{203,5}_{81}$Tl	CFBLS	1992Me07
					−0.329(9)	$^{203,5}_{81}$Tl	CFBLS	1992Me07
	$0 + y$	3.7 m	7^+	+0.487(8)		$^{203,5}_{81}$Tl	CFBLS	1992Me07
				+0.495(4)		$^{203,5}_{81}$Tl	CFBLS	1987Bo44
					+0.285(14)	$^{203,5}_{81}$Tl	CFBLS	1992Me07
$^{191}_{81}$Tl	0	2.2 m	$1/2^+$	+1.588(4)		$^{203,5}_{81}$Tl	CFBLS	1992Me07
	299	5.2 m	$9/2^-$	+3.880(7)		$^{203,5}_{81}$Tl	CFBLS	1992Me07
				+3.903(5)		$^{203,5}_{81}$Tl	CFBLS	1987Bo44
					−2.23(2)	$^{203,5}_{81}$Tl	CFBLS	1992Me07
					−2.28(3)		CFBLS	1987Bo44
$^{192}_{81}$Tl	$0 + x$	9.6 m	2^-	+0.200(3)		$^{203,5}_{81}$Tl	CFBLS	1992Me07
					−0.328(11)			
	$0 + y$	10.8 m	7^+	+0.502(8)		$^{203,5}_{81}$Tl	CFBLS	1992Me07
				+0.518(4)		$^{203,5}_{81}$Tl	CFBLS	1987Bo44
					+0.46(2)			
	$251 + x$	296 ns	8^-	+1.66(4)		$^{19}_{9}$F 197	TDPAD	1982Da17
					0.44(7)		TDPAD	1982Sc27
$^{193}_{81}$Tl	0	21.6 m	$1/2^+$	+1.591(2)		$^{203,5}_{81}$Tl	CFBLS	1987Bo44
	365	2.11m	$9/2^-$	+3.948(4)		$^{203,5}_{81}$Tl	CFBLS	1987Bo44
					−2.20(2)		CFBLS	1987Bo44
$^{194}_{81}$Tl	0	34 m	2^-	+0.140(3)		$^{203,5}_{81}$Tl	CFBLS	1992Me07
				0.14(1)		$^{203}_{81}$Tl	AB	1976Ek03
								1984Be40
					−0.282(7)	$^{203,5}_{81}$Tl	CFBLS	1992Me07
	$0 + y$	32.8 m	7^+	+0.530(8)		$^{203,5}_{81}$Tl	CFBLS	1992Me07
				+0.540(5)		$^{203,5}_{81}$Tl	CFBLS	1987Bo44
					+0.607(16)	$^{203,5}_{81}$Tl	CFBLS	1992Me07
					0.62(1)		CFBLS	1986BoZZ
$^{195}_{81}$Tl	0	1.16 h	$1/2^+$	+1.58(4)		$^{205}_{81}$Tl	O	1969Go21
				+1.59(9)			AB/D, R	1984Be40
$^{196}_{81}$Tl	0	1.84 h	2^-	+0.072(3)		$^{203,5}_{81}$Tl	CFBLS	1992Me07
				0.07(1)		$^{203}_{81}$Tl	AB	1976Ek03
								1984Be40

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					−0.178(14)	$^{203,5}_{81}$Tl	CFBLS	1992Me07
	394	1.41 h	7^+	+0.549(8)		$^{203,5}_{81}$Tl	CFBLS	1992Me07
					+0.76(2)	$^{203,5}_{81}$Tl	CFBLS	1992Me07
$^{197}_{81}$Tl	0	2.84 h	$1/2^+$	+1.58(2)		$^{205}_{81}$Tl	O	1966Da15
				+1.59(9)			AB/D, R	1984Be40
$^{198}_{81}$Tl	0	5.3 h	2^-	0.00(1)		$^{203}_{81}$Tl	AB	1976Ek03
								1984Be40
	544	1.87 h	7^+	+0.641(10)		$^{203}_{81}$Tl	AB	1983Bu04
$^{199}_{81}$Tl	0	7.4 h	$1/2^+$	+1.60(2)		$^{205}_{81}$Tl	O	1966Da15
				+1.58(7)			AB/D, R	1984Be40
$^{200}_{81}$Tl	0	26.1 h	2^-	0.04(1)		$^{203}_{81}$Tl	AB	1976Ek03
								1984Be40
$^{201}_{81}$Tl	0	73 h	$1/2^+$	+1.605(2)		$^{203,5}_{81}$Tl	CFBLS	1987Bo44
				+1.60(7)			AB/D, R	1984Be40
$^{202}_{81}$Tl	0	12.2 d	2^-	0.06(1)		$^{203}_{81}$Tl	AB	1976Ek03
								1984Be40
	950	572 μs	7^+	+0.90(4)			TDPAD	1974Ha06
$^{203}_{81}$Tl	0	Stable	$1/2^+$	+1.62225787(12)		$^{1}_{1}$H	N	1950Pr51
				+1.6231(13)		$^{203}_{81}$Tl	CFBLS	1987Bo44
	279	281 ps	$3/2^+$	0.0(2)		$^{194}_{78}$Pt 328	TF	1979Ha06
				+0.16(5)			IPAC	1965Ka02
	681	0.88 ps	$5/2^+$	+2.6(11)		$^{194}_{78}$Pt 328	TF	1979Ha06
$^{204}_{81}$Tl	0	3.78 y	2^-	0.09(1)			AB	1976Ek03
	1104	63 μs	$(7)^+$	+1.187(6)			TDPAD	1972Ma59
$^{205}_{81}$Tl	0	Stable	$1/2^+$	+1.63821461(12)		$^{1}_{1}$H	N	1950Pr51
	204	1.5 ns	$3/2^+$	−0.8(5)			TF	1984HaXX
				+0.02(12)		$^{194}_{78}$Pt 328	TF	1979Ha06
				0.41(5)			Mu-X	1972Ch07
					0.74(15) a		Mu-X	1972Ch07
	619	1.0 ps	$5/2^+$	+2.0(3)			TF	1984HaXX
				+2.2(7)		$^{194}_{78}$Pt 328	TF	1979Ha06
	2623	Short	$(5/2)^-$	0.71(15)			Mu-X	1972Ch07
					−0.5(2) a		Mu-X	1972Ch07
	3291	2.56 μs	$25/2^+$	+6.80(10)			TDPAD	1982Ma05
$^{206}_{81}$Tl	1405	78 ns	$(5)^+$	+4.27(6)			TDPAD	1976Ha44
$^{207}_{81}$Tl	0	4.77 m	$1/2^+$	+1.876(5)		$^{205}_{81}$Tl	CFBLS	1985Ne06
$^{208}_{81}$Tl	0	3.05 m	$5^{(+)}$	+0.292(13)		$^{205}_{81}$Tl	LRSRD	1992La23
$^{185}_{82}$Pb	$0+x$	4.3(2) s	$[13/2^+]$	−1.19(3)		$^{197,9}_{82}$Pb	LRIS	2002An15
	$0+y$	6.3(4) s	$[3/2^-]$	−1.10(4)		$^{191-9}_{82}$Pb	LRIS	2002An15
$^{191}_{82}$Pb	138	2.18 m	$13/2^+$	−1.172(7)		$^{207}_{82}$Pb	CFBLS	1991Du07
					+0.085(5)	$^{207}_{82}$Pb	CFBLS	1991Du07
$^{192}_{82}$Pb	$2581+d$	1.07 μs	12^+	2.08(2)			TDPAD	1983St15
$^{193}_{82}$Pb	100	5.8 m	$13/2^+$	−1.150(7)		$^{207}_{82}$Pb	CFBLS	1991Du07
					+0.195(10)	$^{207}_{82}$Pb	CFBLS	1991Du07
	$1586+x$	22 ns	$(21/2^-)$	−0.62(12)			TDPAD	2004Io01
					0.22(2)	$^{206}_{82}$Pb 4027	TDPAD	2004Ba31
	$2584+x$	9 ns	$(29/2^-)$	+9.9(4)			TDPAD	1997Ch33
					2.8(3)	$^{206}_{82}$Pb 4027	TDPAD	2004Ba31
	$2613+x$	135 ns	$(33/2^+)$	−2.82(15)			TDPAD	2004Io01
					0.45(4)	$^{206}_{82}$Pb 4027	TDPAD	2004Ba31
$^{194}_{82}$Pb	2407	18 ns	9^-	−0.38(14)		$^{194}_{82}$Pb 2628	TDPAD	2004Vy01
				−0.6(4)			TDPAD	1985St16
	2628	350 ns	12^+	−2.076(12)			TDPAD	1989Ra17
				−2.00(2)			TDPAD	1985St16
				−1.90(7)			TDPAD	1977Ro15
					0.49(3)	$^{206}_{82}$Pb 4027	TDPAD	1985St16
	2933	122 ns	11^-	+11.3(2)		$^{194}_{82}$Pb 2628	TDPAD	2004Vy01
					4.5(9)	$^{196}_{82}$Pb 2694	LEMS	2002Vy01
$^{195}_{82}$Pb	203	15.0 m	$13/2^+$	−1.128(7)		$^{207}_{82}$Pb	CFBLS	1991Du07
				−1.1318(13)		$^{207}_{82}$Pb	CFBLS	1987Di06
					+0.306(15)	$^{207}_{82}$Pb	CFBLS	1991Du07
					+0.29(10)		CFBLS	1987Di06
	$2699+x$	95 ns	$33/2^+$	−2.57(10)			TDPAD	1985St16
				−3.1(3)			TDPAD	1983RaZW

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{196}_{82}$Pb	1797	185 ns	5^-	+0.490(15)			TDPAD	1985St16
	2307	51 ns	9^-	−0.33(9)		$^{194}_{82}$Pb 2628	TDPAD	2004Vy01
	2694	269 ns	12^+	−1.92(2)			TDPAD	1983St15
				−1.88(8)			TDPAD	1977Ro15
					0.65(5)	$^{206}_{82}$Pb 4027	TDPAD	1981Zy02
	3191	72 ns	11^-	+11.4(6)		$^{194}_{82}$Pb 2628	TDPAD	2004Vy01
				10.6(9)			TDPAD	1987Pe13
					(−)3.4(7)		LEMS	2001Ba86
								2002Vy02
$^{197}_{82}$Pb	0	8 m	$3/2^-$	−1.075(2)		$^{207}_{82}$Pb	ABLFS	1986An06
					−0.08(17) st		ABLFS	1986An06
	319	43 m	$13/2^+$	−1.098(11)		$^{207}_{82}$Pb	CFBLS	1991Du07
				−1.105(3)		$^{207}_{82}$Pb	ABLFS	1986An06
					+0.38(2)	$^{207}_{82}$Pb	CFBLS	1991Du07
					+0.5(3) st		ABLFS	1986An06
	1913	470 ns	$21/2^-$	−0.531(6)			TDPAD	1985St16
	3168	55 ns	$(33/2^+)$	−2.51(10)			TDPAD	1985St16
$^{198}_{82}$Pb	1823	49 ns	5^-	+0.38(3)			TDPAD	1985St16
	2141	4.19 μs	(8^-)	−0.377(6)			TDPAD	1987Ca23
				−0.376(16)			TDPAD	1985St16
	2820	212 ns	12^+	−1.86(2)			TDPAD	1983St15
				−1.73(13)			TDPAD	1977Ro15
					0.75(5)	$^{206}_{82}$Pb 4027	TDPAD	1981Zy02
$^{199}_{82}$Pb	0	1.5 h	$3/2^-$	−1.0742(12)		$^{207}_{82}$Pb	ABLFS	1986An06
					+0.08(9) st		ABLFS	1986An06
	2579	10.6 μs	$29/2^-$	−1.076(3)			TDPAD	1988Ro08
				−1.07(7)			TDPAD	1985St16
	3509	71 ns	$(33/2)^+$	−2.39(15)			TDPAD	1988Ro08
				−2.51(5)			TDPAD	1985St16
$^{200}_{82}$Pb	2154	44 ns	7^-	−0.21(10)			TDPAD	1985St16
					0.32(2)	$^{206}_{82}$Pb 4027	TDPAD	1989Ra17
	2183	480 ns	9^-	−0.258(9)			TDPAD	1974Lu03
								1975Yo04
				−0.25(4)			TDPAD	1985St16
					0.40(2)	$^{206}_{82}$Pb 4027	TDPAD	1989Ra17
	3006	152 ns	12^+	−1.849(12)			TDPAD	1988Ro08
				−1.836(7)			TDPAD	1987Fa15
				−1.81(2)			TDPAD	1983St15
					0.79(3)	$^{206}_{82}$Pb 4027	TDPAD	1979Ma37
	5078	77 ns	19^-	−1.79(13)			TDPAD	1987Fa15
$^{201}_{82}$Pb	0	9.33 h	$5/2^-$	+0.6753(5)		$^{207}_{82}$Pb	ABLFS	1986An06
					−0.01(4) st		ABLFS	1986An06
	2719	63 ns	$25/2^-$	−0.79(4)			TDPAD	1988Ro08
					0.46(2)	$^{206}_{82}$Pb 4027	TDPAD	1989Ra17
	$2719 + x$	508 ns	$29/2^-$	−1.011(6)			TDPAD	1988Ro08
	$4639 + x$	43 ns	$41/2^{(+)}$	−3.7(8)			TDPAD	1988Ro08
$^{202}_{82}$Pb	1384	1.97 ns	4^+	+0.008(16)			IPAC	1977Th02
	2170	3.62 h	9^-	−0.2276(7)		$^{207}_{82}$Pb	ABLFS	1986An06
					+0.58(9) st		ABLFS	1986An06
	2208	65 ns	7^-		0.28(2)	$^{206}_{82}$Pb 4027	TDPAD	1989Ra17
	$4091 + x$	110 ns	16^+	−0.67(16)			TDPAD	1986Ja13
	$5242 + y$	107 ns	19^-	−1.88(6)			TDPAD	1987Ja08
								1987Fa15
$^{203}_{82}$Pb	0	51.9 h	$5/2^-$	+0.6864(5)		$^{207}_{82}$Pb	ABLFS	1986An06
				+0.677(12)		$^{207}_{82}$Pb	O	1987Mo99
					+0.10(5) st		ABLFS	1986An06
					−0.5(13)		O	1987Mo99
	1921	56 ns	$21/2^+$	−0.64(2)			TDPAD	1986Ja21
					0.85(3)	$^{206}_{82}$Pb 4027	TDPAD	1989Ra17
	$2923 + x$	122 ns	$25/2^-$	−0.74(4)			TDPAD	1988Ro08
$^{204}_{82}$Pb	899	2.94 ps	2^+	<0.02			RIGV, R	1986Bi13
					+0.23(9)		CER	1978Jo04
	1274	280 ns	4^+	+0.225(4)			TDPAD, TDPAC	1974Lu03
								1963Sa19

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					0.44(2)	$^{206}_{82}$Pb 4027	TDPAD	1989Ra17
					0.62(14) st	$^{140}_{58}$Ce 2048	TDPAC	1974He16
$^{205}_{82}$Pb	0	1.5×10^7 y	$5/2^-$	+0.7117(4)		$^{207}_{82}$Pb	ABLFS	1986An06
				+0.709(5)		$^{207}_{82}$Pb	O	1987Ba85
					+0.23(4) st		ABLFS	1986An06
					0.2(4)		O	1987Ba85
	1014	5.55 ms	$13/2^+$	−0.98(4)			TDPAD	1971Ma59
					0.30(5)		QIR	1975Ri03
								1974DaYM
	3196	217 ns	$25/2^-$	−0.845(14)			TDPAD	1976Li09
					0.63(3)	$^{206}_{82}$Pb 4027	TDPAD	1989Ra17
	5161	63 ns	$33/2^+$	−2.44(8)			TDPAD	1983St15
$^{206}_{82}$Pb	803	8.4 ps	2^+	<0.03			RIV/D, R	1986Bi13
					+0.05(9)		CER	1978Jo04
	2200	123 μs	7^-	−0.152(3)			SOPAD	1972Ma24
					0.33(5)		QIR	1975Ri03
								1974DaYM
	2384	29 ps	6^-	+0.8(4)			IPAC	1970Za03
	4027	185 ns	12^+	−1.80(2)			TDPAD	1983St15
					0.51(2)	B(E2)	TDPAD	1979Ma37
$^{207}_{82}$Pb	0	Stable	$1/2^-$	+0.592583(9)		$^{2}_{1}$H	N	1971Lu06
								1950Pr51
				0.58219(2)		$^{199}_{80}$Hg	OP/RD	1969Gi04
	570	129 ps	$5/2^-$	+0.80(3)			IPAC	1973Ao01
$^{208}_{82}$Pb	2615	15 ps	3^-	+1.9(2)			IPAC	1973Ao01
								1969Bo12
					−0.34(15)		CER	1984Ve07
								1983Sp02
	3198	297 ps	5^-	+0.11(4)		$^{208}_{82}$Pb 2615	IPAC	1969Bo01
	4086	0.74 fs	2^+		−0.7(3)		CER	1984Ve07
$^{209}_{82}$Pb	0	3.25 h	$9/2^+$	−1.4735(16)		$^{207}_{82}$Pb	ABLFS	1986An06
					−0.3(2) st		ABLFS	1986An06
$^{210}_{82}$Pb	1195	49 ns	6^+	−1.87(9)			TDPAD	1983De34
	1272	201 ns	8^+	−2.50(6)			TDPAD	1983De34
$^{211}_{82}$Pb	0	36.1 m	$9/2^+$	−1.4037(8)		$^{207}_{82}$Pb	ABLFS	1986An06
					+0.09(6) st		ABLFS	1986An06
$^{199}_{83}$Bi	0	11.8 h	$9/2^-$	4.6(4)			NO/S	1988Wo12
$^{201}_{83}$Bi	0	108 m	$9/2^-$	4.8(3)			NO/S	1988Wo12
$^{202}_{83}$Bi	0	1.72 h	5^+	4.9(3)			NO/S	1988Wo12
			(5^+)	+4.259(14)		$^{209}_{83}$Bi	LRFS	1996Ca02
			(5^+)		−1.00(9)	$^{209}_{83}$Bi	R	2001Bi99
			(5^+)		−0.72(8)	$^{209}_{83}$Bi	LRFS	1996Ca02
			(6^+)	+4.325(13)		$^{209}_{83}$Bi	LRFS	1996Ca02
			(6^+)		−1.21(9)	$^{209}_{83}$Bi	R	2001Bi99
			(6^+)		−0.87(9)	$^{209}_{83}$Bi	LRFS	1996Ca02
	615	3.04 μs	10^-	+2.54(1)			TDPAD	1989Ra17
				2.56(3)			TDPAD	1982Hu07
								1985No09
				2.43(14)			TDPAD	1980Kl06
					0.106(13)	$^{209}_{83}$Bi	TDPAD	1987Ma65
								1987VaZH
					0.07(3)	$^{204}_{82}$Pb	IPAD	1981Th03
	2607	310 ns	17^+	+2.07(3)			TDPAD	1989Ra17
				2.06(5)			TDPAD	1982Hu07
					0.35(3)	$^{209}_{83}$Bi	TDPAD	1987Ma65
								1987VaZH
					>1.0		IPAD	1981Th03
$^{203}_{83}$Bi	0	11.8 h	$9/2^-$	+4.017(13)		$^{209}_{83}$Bi	LRFS	1996Ca02
				+4.62(3)		$^{209}_{83}$Bi	AB	1959Li50
								1970Hu05
					−0.93(7)	$^{209}_{83}$Bi	R	2001Bi99
					−0.67(7)	$^{209}_{83}$Bi	LRFS	1996Ca02
					−0.68(6)	$^{209}_{83}$Bi	AB	1959Li50
								1970Hu05

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
	1991	90 ns	$(21/2^+)$	2.79(4)			TDPAD	1982Hu07
	2042	194 ns	$(25/2^+)$	3.33(5)			TDPAD	1982Hu07
$^{204}_{83}$Bi	0	11.22 h	6^+	+4.322(15)		$^{209}_{83}$Bi	LRFS	1996Ca02
				4.5(2)			NO/S	1988Wo12
				+4.28(2)		$^{209}_{83}$Bi	AB	1959Li50
								1970Hu05
					−0.7(2)	$^{209}_{83}$Bi	R	2001Bi99
					−0.49(15)	$^{209}_{83}$Bi	LRFS	1996Ca02
					−0.43(4)	$^{209}_{83}$Bi	AB	1959Li50
								1970Hu05
	806	13.0 ms	10^-	2.59(4)			NMR/AC	1974Ho40
				2.4(2)			TDPAD	1980Kl06
								1985No09
					0.0630(12)	$^{202}_{83}$Bi 615	LEMS	1991Sc14
$^{205}_{83}$Bi	0	15.3 d	$9/2^-$	+4.065(7)		$^{209}_{83}$Bi	LRFS	1997Ki15
				+4.16(10)		$^{209}_{83}$Bi	O, AB	1975Ma08
								1959Li50
					−0.81(3)	$^{209}_{83}$Bi	R	2001Bi99
					−0.59(4)	$^{209}_{83}$Bi	LRFS	1997Ki15
	2064	100 ns	$21/2^+$	2.70(4)			TDPAD	1982Hu07
	2138	223 ns	$25/2^+$	3.21(5)			TDPAD	1982Hu07
$^{206}_{83}$Bi	0	6.243 d	6^+	+4.361(8)		$^{209}_{83}$Bi	LRFS	1997Ki15
				+4.60(4)		$^{209}_{83}$Bi	AB	1959Li50
					−0.54(4)	$^{209}_{83}$Bi	R	2001Bi99
					−0.39(4)	$^{209}_{83}$Bi	LRFS	1997Ki15
					−0.20(4)	$^{209}_{83}$Bi	AB	1959Li50
								1970Hu05
	1045	0.89 ms	(10^-)	2.644(14)			NMR/AC	1973Sc21
								1985No09
					0.049(9)	$^{202}_{83}$Bi 615	LEMS	1991Sc14
$^{207}_{83}$Bi	0	32.2 y	$9/2^-$	4.0915(9)		$^{209}_{83}$Bi	LRFS	2000Pe30
				4.081(9)		$^{209}_{83}$Bi	O	1985Ba21
					−0.76(2)	$^{209}_{83}$Bi	R	2001Bi99
					−0.55(4)	$^{209}_{83}$Bi	LRFS	2000Pe30
					−0.60(11)	$^{209}_{83}$Bi	O	1985Ba21
	2101	182 μs	$21/2^+$	+3.43(2)			TDPAD	1989Ra99
				+3.41(6)			SOPAD	1972Ma24
					0.044(8)	$^{202}_{83}$Bi 615	LEMS	1991Sc14
$^{208}_{83}$Bi	0	3.7×10^5 y	5^+	+4.578(13)		$^{209}_{83}$Bi	LRFS	2000Pe30
					−0.70(8)	$^{209}_{83}$Bi	R	2001Bi99
					−0.51(7)	$^{209}_{83}$Bi	LRFS	2000Pe30
	1571	2.53 ms	10^-	2.672(14)			NMR/AD	1974Hu11
								1985No09
				2.633(14)			TDPAD	1975WhZX
$^{209}_{83}$Bi	0	Stable	$9/2^-$	+4.1103(5) d			R	1996Ba94
				+4.1106(2)		$^{2}_{1}$H	N	1953Ti01
								1951Pr02
					−0.516(15)		R	2001Bi99
					−0.37(3) a		Mu-X	1972Le07
					−0.55(1)		AB	1983De07
					−0.77(1) st		AB	1983De07
					−0.40(5)		R	1974Ho40
					−0.39(3)		O	1967Di04
								1970Ge10
					−0.50(8) a		Pi-X	1978Be24
					−0.5(2) a		Pi-X	1981Ba07
	2563	14 fs	$(9/2)^+$	3.5(7)			Mu-X	1972Le07
					+0.11(5) a		Mu-X	1972Le07
	2741	12 ps	$15/2^+$	6.2(12)			Mu-X	1972Le07
					0.0(4) a		Mu-X	1972Le07
	2986	18 ns	$19/2^+$	3.50(8)			TDPAD	1978Be17
$^{210}_{83}$Bi	0	5.01 d	1^-	−0.04451(6)		$^{209}_{83}$Bi	AB, NO/S	1962Al02
								1973Na99
					+0.190(6)	$^{209}_{83}$Bi	R	2001Bi99

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					+0.136(1)	$^{209}_{83}$Bi	AB	1962Al02
								1970Hu05
	271	3.0×10^6 y	9^-	+2.73(4)		$^{209}_{83}$Bi	LRFS	1997Ki15
					−0.66(7)	$^{209}_{83}$Bi	R	2001Bi99
					−0.47(6)	$^{209}_{83}$Bi	LRFS	1997Ki15
	433	56.8 ns	7^-	+2.11(5)			TDPAD	1972Ba65
	439	37 ns	5^-	+1.53(5)			TDPAD	1972Ba65
$_{83}$Bi^{211}	405	315 ps	$7/2^-$	+4.5(7)			IPAC	1965Ag03
$_{83}$Bi^{212}	0	60.6 m	$1^{(-)}$	+0.32(4)		$^{209}_{83}$Bi	LRFS	1997Ki15
				0.41(5)			NO/S	1992Li25
					+0.1(4)	$^{209}_{83}$Bi	R	2001Bi99
					+0.1(3)	$^{209}_{83}$Bi	LRFS	1997Ki15
$_{83}$Bi^{213}	0	45.6 m	$9/2^-$	+3.716(7)		$^{209}_{83}$Bi	LRFS	1997KI15
				3.89(9)			NO/S	1992Li25
					−0.83(5)	$^{209}_{83}$Bi	R	2001Bi99
					−0.60(5)	$^{209}_{83}$Bi	LRFS	1997Ki15
$^{198}_{84}$Po	1854	29 ns	8^+	+7.3(2)			TDPAD	1986Ma31
	2566	200 ns	11^-	+12.1(6)			TDPAD	1986Ma31
	$2692 + x$	750 ns	12^+	−1.86(4)			TDPAD	1986Ma31
$^{199}_{84}$Po	310	4.2 m	$13/2^+$	0.99(7)			NO/S	1991Wo04
$^{200}_{84}$Po	1774	61 ns	8^+	+7.44(16)			TDPAD	1986Ma31
					1.38(7)	$^{210}_{84}$Po 1557	TDPAD, R	1987Ma65
	2596	100 ns	11^-	+11.9(2)			TDPAD	1986Ma31
	2830	270 ns	12^+	−1.79(2)			TDPAD	1986Ma31
$^{201}_{84}$Po	0	15.3 m	$3/2^-$	0.94(8)			NO/S	1991Wo04
	425	8.9 m	$13/2^+$	1.00(7)			NO/S	1991Wo04
$^{202}_{84}$Po	1712	110 ns	8^+	7.45(12)			TDPAD	1976Ha56
					1.21(16)		LEMS	1997Ne06
	2625	85 ns	11^-	11.9(4)			TDPAD	1976Ha56
$^{203}_{84}$Po	0	36.7 m	$5/2^-$	0.74(6)			NO/S	1991Wo04
				(+)0.74(3)			NO/S	1987VaZH
$^{204}_{84}$Po	1639	158 ns	8^+	+7.38(10)			SOPAD	1973Br14
					1.14(5)	$^{210}_{84}$Po 1557	TDPAD	1987Ma65
	3565	12 ns	15^-	5.6(6)		$^{208}_{84}$Po 1528	TDPAD	1982Ha16
								1983He09
$^{205}_{84}$Po	0	1.66 h	$5/2^-$	+0.76(6)		$^{207}_{84}$Po	NMR/ON	1983He09
	880	640 μs	$13/2^+$	−0.95(5)			TDPAD	1974BrXD
$^{206}_{84}$Po	1586	212 ns	8^+	+7.34(7)			SOPAD, TDPAD	1973Na18
								1973Br14
					1.02(4)	$^{210}_{84}$Po 1557	TDPAD	1987Ma65
$^{207}_{84}$Po	0	5.79 h	$5/2^-$	+0.79(6)			NMR/ON	1983He09
	1115	47 μs	$13/2^+$	−0.910(14)			TDPAD	1973Ri06
	2380	43 ns	$25/2^+$	5.41(4)			TDPAD	1985Ro07
$^{208}_{84}$Po	1524	4.3 ns	6^+	+5.3(6)			TDPAD, R	1982Ha16
								1983He09
	1528	380 ns	8^+	+7.37(5)			SOPAD, TDPAD	1976Ha56
					0.90(4)	$^{210}_{84}$Po 1557	TDPAD	1987Ma65
	2703	8.0 ns	11^-	12.11(14)			TDPAD	1985Ro07
$^{209}_{84}$Po	0	102 y	$1/2^-$	0.68(8)			O	1966Ch99
	1418	24.4 ns	$(13/2)^-$	6.13(9)			TDPAD	1976Ha56
	1473	98.1 ns	$(17/2^-)$	7.75(5)			TDPAD	1976Ha56
								1974Na02
					(−)0.39(8)	$^{210}_{84}$Po 1557	TDPAD	1983Da01
	4266	118 ns	$31/2^-$	+9.68(8)		$^{208}_{84}$Po 1528	TDPAD	1976Re12
$^{210}_{84}$Po	1473	43 ns	6^+	5.48(5)			TDPAD	1976Ha56
	1557	96 ns	8^+	+7.35(5)			TDPAD	1976Ha56
					(−)0.57(2)	Est. from B(E2)	Not measured	1987Ma65
								1983Da01
	2849	20.1 ns	11^-	+12.20(9)			TDPAD	1976Ha56
								1976Re12
					−0.86(11)	$^{210}_{84}$Po 1557	TDPAD	1991Be03
					−0.8(2)	$^{210}_{84}$Po 1557	TDPAD	1983Da01
	4372	51 ns	13^-	6.8(2)			TDPAD	1985Be22

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Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					−0.90(7)	$^{210}_{84}$Po 1557	TDPAD	1991Be03
					(−)0.62(11)	$^{210}_{84}$Po 1557	TDPAD	1983Da01
	5058	265 ns	16^{+}	9.84(8)			TDPAD	1985Be22
					−1.30(2)	$^{210}_{84}$Po 1557	TDPAD	1991Be03
					1.34(8)	$^{210}_{84}$Po 1557	TDPAD	1986MaZP
$^{211}_{84}$Po	1065	16 ns	$15/2^{-}$	−0.38(15)			IPAD	1973Fa99
$^{207}_{85}$At	2117	108 ns	$25/2^{+}$	+3.75(13)		$^{210}_{84}$Po 1557	TDPAD	1978Sj01
								1981Sj01
$^{208}_{85}$At	1090	48 ns	10^{-}	+2.69(3)			TDPAD	1985No09
	2276	1.5 μs	16^{-}		1.7(3)	g calculated	LEMS	1991Sc15
$^{209}_{85}$At	1428	26 ns	$21/2^{-}$	+10.0(2)			TDPAD	1976Sj01
					0.78(8)	$^{211}_{85}$At 2641	TDPAD	1983Ma08
	2429	890 ns	$29/2^{+}$	15.38(14)			TDPAD	1987Ma65
					1.50(15)	$^{211}_{85}$At 2641	LEMS	1991Sc15
					1.50(15)	$^{211}_{85}$At 2641	TDPAD	1983Ma08
$^{210}_{85}$At	1363	28.4 ns	11^{+}	+9.8(3)			TDPAD	1975ReZU
					0.65(8)	$^{211}_{85}$At 2641	TDPAD	1983Ma08
	2550	480 ns	15^{-}	+15.68(2)			TDPAD	1989Ra17
				15.48(15)			TDPAD	1987Ma65
				15.57(15)			TDPAD, R	1978Ra03
					1.22(12)	$^{211}_{85}$At 2641	LEMS	1991Sc15
					1.22(12)	$^{211}_{85}$At 2641	TDPAD	1983Ma08
	4028	5.9 μs	19^{+}	13.26(13)			TDPAD	1987Ma65
				14.0(5)		$^{210}_{85}$At 2550	TDPAD	1978Ra03
					2.2(3)	$^{211}_{85}$At 2641	LEMS	1991Sc15
$^{211}_{85}$At	1417	35.1 ns	$21/2^{-}$	+9.56(9)			TDPAD	1976Ha62
								1975In01
					0.53(5)	B(E2)	R	1983Ma08
	2641	50.8 ns	$29/2^{+}$	+15.31(13)			TDPAD	1976Ha62
								1975In01
					1.00(5)		R	1995Ba66
					1.0(2)	$^{211}_{85}$At 1417	TDPAD	1983Ma08
	4816	4.2 μs	$39/2^{-}$	13.46(14)			TDPAD	1985Be22
					1.9(3)	$^{211}_{85}$At 2641	LEMS	1991Sc15
$^{212}_{85}$At	888	19.4 ns	11^{+}	5.94(11)			TDPAD	1994By01
				5.95(12)			TDPAD	1979Sj01
	1616	37 ns	15^{-}	9.46(8)			TDPAD	1994By01
				9.33(15)			TDPAD	1979Sj01
$^{217}_{85}$At	0	32 ms	$9/2^{-}$	3.8(2)			NO/S	1992Li26
$^{203}_{86}$Rn	361	28 s	$(13/2^{+})$	−0.960(11)		$^{209}_{86}$Rn	CFBLS	1987Bo29
					+1.28(13)		CFBLS	1985Ne99
$^{205}_{86}$Rn	0	2.83 m	$5/2^{-}$	+0.802(9)		$^{209}_{86}$Rn	CFBLS	1987Bo29
					+0.062(6)		CFBLS	1985Ne99
$^{206}_{86}$Rn	1922	13.5 ns	8^{+}	6.6(4)			TDPAD	1981Ma28
	2476	65 ns	(10^{-})	11.20(10)			TDPAD	1981Ma28
$^{207}_{86}$Rn	0	9.3 m	$5/2^{-}$	+0.816(9)		$^{209}_{86}$Rn	CFBLS	1987Bo29
					+0.22(2)		CFBLS	1985Ne99
	899	180 μs	$13/2^{+}$	−0.903(3)			TDPAD	1981Ma28
$^{208}_{86}$Rn	1826	490 ns	8^{+}	6.98(8)			TDPAD	1981Ma28
					0.39(5)	$^{212}_{86}$Rn 1694	TDPAD	1986Be40
	2615	22 ns	10^{-}	10.77(10)			TDPAD	1981Ma28
$^{209}_{86}$Rn	0	29 m	$5/2^{-}$	(+)0.8388(4)		$^{129}_{52}$Xe 236	N, OP/RD	1988Ki03
					+0.31(3)		CFBLS	1985Ne99
$^{210}_{86}$Rn	$1665 + x$	644 ns	(8^{+})	7.18(6)			TDPAD	1986Po01
				7.06(8)			TDPAD	1981Ma28
					0.31(4)	$^{212}_{86}$Rn 1694	TDPAD	1986Be40
	$2563 + x$	64 ns	$(11)^{-}$	12.16(11)			TDPAD	1981Ma28
	$3248 + x$	72 ns	$(14)^{+}$	14.92(10)			TDPAD	1986Po01
				14.6(3)			TDPAD	1981Ma28
	$3812 + x$	1.05 μs	$(17)^{-}$	17.88(9)			TDPAD	1986Po01
				17.7(2)			TDPAD	1981Ma28
					0.86(10)	$^{212}_{86}$Rn 1694	TDPAD	1986Be40
	$4993 + \delta$	12.3 ns	$(20)^{+}$	22.3(1)			TDPAD	1986Po01
	$6468 + \delta$	1.04 μs	$(22)^{+}$	15.42(15)			TDPAD	1986Po01

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
	$7310+\delta$	34 ns	$(25)^-$	18.3(2)			TDPAD	1986Po01
$^{211}_{86}$Rn	0	14.6 h	$1/2^-$	+0.601(7)		$^{209}_{86}$Rn	CFBLS	1988Ki03
	$1578+x$	596 ns	$17/2^-$	+7.75(8)			TDPAD	1985Po06
					0.18(2)	$^{212}_{86}$Rn 1694	TDPAD	1985Da14
	$3926+x$	40 ns	$35/2^+$	+17.8(2)			TDPAD	1985Po06
	$5246+y$	14 ns	$43/2^-$	+15.9(4)			TDPAD	1985Po06
	$6100+y$	29 ns	$49/2^+$	+18.8(2)			TDPAD	1985Po06
	$8855+y$	201 ns	$63/2^-$	+19.6(2)			TDPAD	1985Po06
					1.5(2)	$^{212}_{86}$Rn 1694	TDPAD	1985Da14
$^{212}_{86}$Rn	1502	8.8 ns	4^+	4.0(2)			TDPAD	1988St17
	1640	118 ns	6^+	5.45(5)			TDPAD	1988St17
	1694	0.91 μs	8^+	+7.15(2)			TDPAD, SOPAD	1979Ho06
								1978Ha50
				7.16(6)			TDPAD	1988St17
					(−)0.17(2)	B(E2)	TDPAD, R	1985Da13
	3358	7.4 ns	14^+	15.0(4)			TDPAD	1988St17
	4067	29 ns	17^-	17.9(2)			TDPAD	1988St17
				17.9(3)			TDPAD	1979Ho06
								1977Ho17
	$6167+x$	104 ns	22^+	15.8(2)			TDPAD	1988St17
				15.8(2)			TDPAD	1979Ho06
								1977Ho17
	$7135+x$	18 ns	25^-	17.8(5)			TDPAD	1979Ho06
								1977Ho17
	$7871+x$	14 ns	27^-	17.0(8)			TDPAD	1979Ho06
								1977Ho17
	$8571+x$	154 ns	30^+	19.71(9)			TDPAD	1979Ho06
								1977Ho17
$^{213}_{86}$Rn	1664	29 ns	$21/2^+$	4.73(11)			TDPAD	1988St10
	$1664+x$	1 μs	$25/2^+$	7.3(3)			TDPAD	1976McZD
				7.6(3)			TDPAD	1988St10
	$2187+x$	1.36 μs	$31/2^-$	9.90(8)			TDPAD	1988St10
	$3029+x$	26 ns	$37/2^+$	13.67(13)			TDPAD	1988St10
	$3494+x$	28 ns	$43/2^-$	15.59(15)			TDPAD	1988St10
	$4506+x$	12 ns	$49/2^+$	19.9(3)			TDPAD	1988St10
	$5929+y$	164 ns	$(55/2^+)$	16.61(14)			TDPAD	1988St10
$^{219}_{86}$Rn	0	3.96 s	$5/2^+$	−0.442(5)		$^{209}_{86}$Rn	CFBLS, R	1988Ki03
					+0.93(9)		CFBLS, R	1988NeZZ
					+1.15(12)		CFBLS	1985Ne99
$^{221}_{86}$Rn	0	25 m	$(7/2^+)$	−0.020(1)		$^{209}_{86}$Rn	CFBLS	1988Ki03
					−0.38(4)		CFBLS, R	1988NeZZ
					−0.47(5)		CFBLS	1985Ne99
$^{222}_{86}$Rn	186	0.32 ns	2^+	+0.92(14)			IPAC	1970Or02
$^{223}_{86}$Rn	0	23.2 m	7/2	−0.776(8)		$^{209}_{86}$Rn	CFBLS	1988Ki03
					+0.80(8)		CFBLS	1988NeZZ
$^{225}_{86}$Rn	0	4.5 m	$7/2^-$	−0.696(8)		$^{209}_{86}$Rn	CFBLS	1988Ki03
					+0.84(8)		CFBLS	1988NeZZ
$^{207}_{87}$Fr	0	14.8 s	$9/2^-$	+3.89(8)		$^{211}_{87}$Fr	ABLS	1985Co24
					−0.16(5) st		ABLS	1985Co24
$^{208}_{87}$Fr	0	58.6 s	7^+	+4.75(10)		$^{211}_{87}$Fr	ABLS	1985Co24
								1986Ek02
					0.00(4)		ABLS	1985Co24
$^{209}_{87}$Fr	0	50 s	$9/2^-$	+3.95(8)		$^{211}_{87}$Fr	ABLS	1985Co24
								1986Ek02
					−0.24(2) st		ABLS	1985Co24
$^{210}_{87}$Fr	0	3.2 m	6^+	+4.40(9)		$^{211}_{87}$Fr	ABLS	1985Co24
					+0.19(2) st		ABLS	1985Co24
$^{211}_{87}$Fr	0	3.1 m	$9/2^-$	+4.00(8)			AB/D	1986Ek02
					−0.19(3) st		ABLS	1985Co24
	2423	146 ns	$29/2^+$	15.37(15)			TDPAD	1986By01
					−1.1(2)	$^{213}_{87}$Fr 2538	LEMS	1991Ha02
	4657	123 ns	$45/2^-$	24.3(2)			TDPAD	1986By01
					−2.0(6)	$^{213}_{87}$Fr 2538	LEMS	1991Ha02

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{212}_{87}$Fr	0	19.3 m	5^+	+4.62(9)		$^{211}_{87}$Fr	CFBLS	1987Du13
				+4.62(9)		$^{211}_{87}$Fr	ABLS	1985Co24
					−0.10(1) st		ABLS	1985Co24
	1551	27 μs	11^+	9.89(4)			SOPAD	1977Be56
	2492	604 ns	(15^-)	+15.65(12)			TDPAD	1989By01
				15.60(15)			TDPAD	1986By01
					0.84(13)	$^{213}_{87}$Fr 2538	TDPAD	1990By03
					−0.80(12)	$^{213}_{87}$Fr 2538	LEMS	1991Ha02
	4834	4.2 ns	22^+	22(4)			TDPAD	1986By01
	5854	312 ns	(27^-)	21.9(3)			TDPAD	1986By01
					1.7(3)	$^{213}_{87}$Fr 2538	TDPAD	1990By03
					−1.5(3)	$^{213}_{87}$Fr 2538	LEMS	1991Ha02
$^{213}_{87}$Fr	0	34.7 s	$9/2^-$	+4.02(8)		$^{211}_{87}$Fr	CFBLS	1987Du13
				+4.02(8)		$^{211}_{87}$Fr	ABLS	1985Co24
								1986Ek02
					−0.14(2) st		ABLS	1985Co24
	1411	18 ns	$17/2^-$	7.5(14)			TDPAD	1986By01
	1590	499 ns	$21/2^-$	9.4(2)			TDPAD	1986By01
				9.32(3)			TDPAD, R	1977Be56
								1978Ha50
	2538	243 ns	$29/2^+$	+15.30(7)			TDPAD	1989By01
				15.23(14)			TDPAD	1986By01
				15.22(3)			TDPAD	1977Be56
								1978Ha50
	4993	13 ns	$45/2^-$	23.2(7)			TDPAD	1986By01
				22.3(6)			TDPAD	1979Ho06
	8095	3.1 μs	$65/2^-$	+22.6(2)		$^{213}_{87}$Fr 2538	TDPAD	1989By01
					−2.2(5)	$^{213}_{87}$Fr 2538	LEMS	1991Ha02
$^{214}_{87}$Fr	640	103 ns	11^+	+5.62(7) K, d		$^{213}_{87}$Fr 2538	TDPAD	1994By01
					0.8(2)	$^{213}_{87}$Fr 2538	LEMS	1995Ne06
	1663 or 1734	11 or 10 ns	14^- or 15^-	+8.5(4) K, d		$^{213}_{87}$Fr 2538	TDPAD	1994By01
	$4318 + D$	8 ns	27^-	+19.7(8) K, d		$^{213}_{87}$Fr 2538	TDPAD	1994By01
	$6477 + D'$	108 ns	33^+	+22(3)		$^{213}_{87}$Fr 2538	TDPAD	1994By01
			32^+ or 33^+		2.2(5)	$^{213}_{87}$Fr 2538	LEMS	1995Ne06
$^{215}_{87}$Fr	~1500	4 ns	$(21/2) \pm 1$	$g = 0.33(10)$			TDPAD	1984De16
	2016	4.7 ns	$29/2^+$	7(3)			TDPAD	1984De16
	2251	5.3 ns	$33/2^+$	8(2)			TDPAD	1984De16
	3068	14.6 ns	$39/2^-$	9.2(2)			TDPAD	1984De16
$^{220}_{87}$Fr	0	27.4 s	1^+	−0.67(1)		$^{211}_{87}$Fr	CFBLS	1987Du13
				−0.67(1)		$^{211}_{87}$Fr	ABLS	1985Co24
					+0.47(3) st		ABLS, R	1985Co24
								1987Co19
$^{221}_{87}$Fr	0	4.8 m	$5/2^-$	+1.58(3)		$^{211}_{87}$Fr	CFBLS	1987Du13
				+1.58(3)		$^{211}_{87}$Fr	ABLS	1985Co24
					−0.98(6) st		ABLS, R	1985Co24
								1987Co19
$^{222}_{87}$Fr	0	14.2 m	2^-	+0.63(1)		$^{211}_{87}$Fr	ABLS	1985Co24
					+0.51(4) st	$^{211}_{87}$Fr	ABLS	1985Co24
$^{223}_{87}$Fr	0	21.8 m	$3/2^{(-)}$	+1.17(2)		$^{211}_{87}$Fr	ABLS	1985Co24
					+1.17(1)	$^{211}_{87}$Fr	ABLS	1985Co24
$^{224}_{87}$Fr	0	3.3 m	$1^{(-)}$	+0.40(1)		$^{211}_{87}$Fr	ABLS	1985Co24
					+0.517(4) st	$^{211}_{87}$Fr	ABLS	1985Co24
$^{225}_{87}$Fr	0	3.9 m	$3/2^-$	+1.07(2)		$^{211}_{87}$Fr	ABLS	1985Co24
					+1.32(5) st		ABLS, R	1985Co24
								1987Co19
$^{226}_{87}$Fr	0	48 s	1	+0.0712(14)		$^{211}_{87}$Fr	ABLS	1986Du16
				+0.071(2)		$^{211}_{87}$Fr	ABLS	1985Co24
					−1.35(2) st		ABLS	1985Co24
$^{227}_{87}$Fr	0	2.4 m	$1/2^+$	+1.50(3)		$^{211}_{87}$Fr	ABLS	1985Co24
$^{228}_{87}$Fr	0	39 s	2^-	−0.76(2)		$^{211}_{87}$Fr	ABLS	1985Co24
					+2.38(5) st	$^{211}_{87}$Fr	ABLS	1985Co24
$^{209}_{88}$Ra	0	4.7 s	$5/2^-$	+0.865(13)		$^{213,225}_{88}$Ra	CFBLS, R	1988Ah02
								1987Ar20
					+0.40(4) st	$^{221,3}_{88}$Ra	CFBLS	1989Ne03

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					+0.38(4) st		CFBLS	1988Ah02
								1987We03
$^{211}_{88}$Ra	0	13 s	$5/2^-$	+0.878(4)		$^{213,225}_{88}$Ra	CFBLS, R	1988Ah02
								1987Ar20
					+0.48(4) st	$^{221,3}_{88}$Ra	CFBLS	1989Ne03
					+0.46(5) st		CFBLS, R	1988Ah02
								1987We03
$^{212}_{88}$Ra	1958	10.9 μs	8^+	7.10(7)			SOPAD	1986Ko01
					$Q/Q_{\text{ref}} = 1.5(4)$	$^{214}_{88}$Ra 1864	LEMS	1993Ne04
	2613	0.85 μs	11^-	12.0(2)			SOPAD	1986Ko01
$^{213}_{88}$Ra	0	2.7 m	$1/2^-$	+0.613(2)		$^{137}_{56}$Ba	CFBLS	1987Ar20
								1988Ah02
	1770	2.1 ms	$(17/2^-)$	7.4(4)		$^{214}_{88}$Ra 1864	LEMS	1994Ne01
					$Q/Q_{\text{ref}} = 1.21(8)$	$^{214}_{88}$Ra 1864	LEMS	1993Ne04
$^{214}_{88}$Ra	1865	67 μs	8^+	7.08(3)			SOPAD	1977Be56
								1978Ha50
	2683	295 ns	11^-	11.98(8)			TDPAD	1992St09
				11.94(11)			TDPAD	1979Ho06
	3478	279 ns	14^+	14.29(6)			TDPAD	1992St09
				14.31(13)			TDPAD	1979Ho06
	4147	225 ns	17^-	17.36(5)			TDPAD	1992St09
				17.48(12)			TDPAD	1979Ho06
	6577	128 ns	(25^-)	16.5(3)			TDPAD	1992St09
$^{215}_{88}$Ra	$3757 + x$	800 ns	$(43/2^-)$	15.78 (15)			SOPAD	1989Ra99
				15.61(6)			TDPAD	1998St24
	$4567 + x$	15 ns	$(49/2^+)$	18.9(2)			TDPAD	1998St24
$^{216}_{88}$Ra	1508	0.5 ns	6^+	$g(\text{average}) = 0.1(3)$			TDPAD	1990Sc29
	1711	1.7 ns	8^+	$g(\text{average}) = 0.1(3)$			TDPAD	1990Sc29
				+3(3)			IPAD	1984AdZT
	2026	0.6 ns	10^+	+1(3)			TDPAD	1990Sc29
	2679	0.8 ns	13^-	−1(3)			TDPAD	1990Sc29
	3763	5.3 ns	19^-	+9.3(10)			TDPAD	1990Sc29
				+9.7(6)			TDPAD	1985Ad09
	5170	6.6 ns	25^-	+18(5)			TDPAD	1990Sc29
			25^- or 24^+	$g = 0.63(6)$			TDPAD	1985Ad09
$^{221}_{88}$Ra	0	30 s	$5/2^-$	−0.180(2)		$^{213,225}_{88}$Ra	CFBLS, R	1988Ah02
								1987Ar20
					+1.98(11) st		CFBLS	1989Ne03
					+1.9(2) st		CFBLS, R	1988Ah02
								1987We03
$^{223}_{88}$Ra	0	11.44 d	$3/2^+$	+0.271(2)		$^{213,225}_{88}$Ra	CFBLS, R	1988Ah02
								1987Ar20
					+1.25(7) st		CFBLS	1989Ne03
					+1.19(12) st		CFBLS, R	1988Ah02
								1987We03
	50	0.63 ns	$3/2^-$	+0.43(6)			IPAC	1970Le13
$^{224}_{88}$Ra	84	0.74 ns	2^+	+0.9(2)			IPAC	1973He13
$^{225}_{88}$Ra	0	14.8 d	$1/2^-$	−0.7338(15)		$^{137}_{56}$Ba	CFBLS	1987Ar20
								1988Ah02
$^{227}_{88}$Ra	0	42.2 m	$3/2^+$	−0.404(2)		$^{213,225}_{88}$Ra	CFBLS, R	1988Ah02
								1987Ar20
					+1.58(11) st	$^{221,3}_{88}$Ra	CFBLS	1989Ne03
					+1.50(15) st		CFBLS, R	1988Ah02
								1987We03
$^{229}_{88}$Ra	0	4.0 m	$5/2^{(+)}$	+0.503(3)		$^{213,225}_{88}$Ra	CFBLS, R	1988Ah02
								1987Ar20
					+3.1(2) st	$^{221,3}_{88}$Ra	CFBLS	1989Ne03
					+3.0(3) st		CFBLS, R	1988Ah02
								1987We03
$^{215}_{89}$Ac	1621	30 ns	$17/2^-$	7.82(16)			TDPAD	1983De08
	1796	185 ns	$21/2^-$	9.7(2)			TDPAD	1983De08
	$2438 + x$	335 ns	$29/2^+$	15.1(3)			TDPAD	1983De08
$^{217}_{89}$Ac	0	69 ns	$9/2^-$	+3.83(5)			TDPAD	1985De14
	2013	740 ns	$29/2^+$	+5.03(7)			TDPAD	1985De14

(*continued on next page*)

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
$^{227}_{89}$Ac	0	21.77 y	$3/2^-$	+1.1(1)			O	1955Fr26
					+1.7(2)		O	1955Fr26
$^{229}_{90}$Th	0	7340 y	$5/2^+$	+0.46(4)		$^{239}_{94}$Pu	O	1974Ge06
					+4.3(9)		O	1974Ge06
$^{232}_{90}$Th	gs band			g(18–24) > g(10–16), g(average) = 0.28(2)			TF	1982Ha03
$^{228}_{91}$Pa	0	22 h	(3^+)	3.5(5)			NO/S	1989He07
$^{230}_{91}$Pa	0	17.4 d	(2^-)	2.0(2)			NO/S	1989He07
$^{231}_{91}$Pa	0	3.3×10^4 y	$3/2^-$	2.01(2)			ENDOR	1961Ax01
	84	44 ns	$5/2^+$		+0.7(2)	Est Q^{231}_{91}Pa	ME	1978Fr28
$^{233}_{91}$Pa	0	27.0 d	$3/2^-$	4.0(7)			NO/S	1989Ra99
				+3.4(8)			AB	1961Ma42
					−3.0(4)	Estimate efg	AB	1961Ma42
$^{233}_{92}$U	0	1.6×10^5 y	$5/2^+$	$\mu/\mu_{\rm ref} = 1.5604(14)$		$^{235}_{92}$U	ABLS	1990Ga28
				0.59(5)		$^{235}_{92}$U	EPR	1983Lu10
					$Q/Q_{\rm ref} = 0.746(2)$	$^{235}_{92}$U	ABLS	1990Ga28
					3.663(8) a		Mu-X	1984Zu02
	40	50 ps	$7/2^+$		0.64(3) a		Mu-X	1984Zu02
$^{235}_{92}$U	0	7.0×10^8 y	$7/2^-$	−0.38(3)			CFBLS	1983Ni08
				−0.34(3)			EPR	1983Lu10
				−0.46(3)			ABLDF	
					4.936(6) a		Mu-X	1984Zu02
					4.55(9) a		Mu-X	1973JP99
	46	<60 ps	$9/2^-$		1.87(3) a		Mu-X	1984Zu02
$^{238}_{92}$U	gs band			g(18–14) > g(10–16), g(average) = 0.37(2)			TF	1982Ha03
$^{237}_{93}$Np	0	2.1×10^6 y	$5/2^+$	+3.14(4)			EPR, R	1970Le29
				∼+2.9			ME	1968St03
					+3.866(6) a		Mu-X, Pi-X, ME	1987De10
								1969Du09
	60	68 ns	$5/2^-$	+1.68(3)		$^{237}_{93}$Np	ME	1968Du02
								1970Le29
				+1.95(15)			TDPAC	1967Gu08
					+3.85(4)	$^{237}_{93}$Np	ME	1968Pi02
$^{239}_{93}$Np	75	1.40 ns	$5/2^-$	+2.0(3)		$^{237}_{93}$Np 60	IPAC	1967Gu08
$^{237}_{94}$Pu	∼2300	85 ns	(3/2)	−0.68(5)			TDPAD	1982Ra04
	∼2600	1.1 μs		$g = +0.14(2)$			TDPAD	1974Ka06
$^{239}_{94}$Pu	0	2.4×10^4 y	$1/2^+$	+0.203(4)			AB/D	1965Fa02
	8	36 ps	$3/2^+$		−2.319(7) a		Mu-X	1986Zu01
	57	101 ps	$5/2^+$		−3.345(13)			1986Zu01
	76	83 ps	$7/2^+$		−3.83(3)			1986Zu01
	285	1.12 ns	$5/2^+$	−1.3(3)			IPAC	1974Pa03
$^{241}_{94}$Pu	0	14.4 y	$5/2^+$	−0.683(15)		$^{239}_{94}$Pu	O	1969Ge04
					+6(2)		O	1964Ch10
$^{239}_{95}$Am	∼2500	163 ns	$(7/2^+)$	(+)2.6(2)			TDPAD	1985Ra28
$^{241}_{95}$Am	0	432.7 y	$5/2^-$	+1.58(1)			ABLS	1990Iz01
				+1.61(3)			AB/D	1966Ar04
					+3.8(1.2)		R	1989De26
					+3.14(5)		ABLS	1990Iz01
					+4.2(13)		R	1988Be30
$^{242}_{95}$Am	0	16.0 h	1^-	+0.3879(15)			AB/D	1966Ar04
					−2.4(7)	$^{241}_{95}$Am	AB	1966Ar04
								1961Ma27
	49	152 y	5^-	+1.00(5)		$^{241}_{95}$Am	ABLFS	1988Be30
					+7(2)	$^{241}_{95}$Am	ABLFS	1988Be30
	2200	14 ms	Unknown	−1.14(8) [$I = 2$]			LRSRD	1996Ba52
				−1.14(8) [$I = 3$]			LRSRD	1996Ba52
$^{243}_{95}$Am	0	7370 y	$5/2^-$	+1.503(14)		$^{241}_{95}$Am	ABLS	1990Iz01
				+1.61(4)		$^{241}_{95}$Am	O	1966Ar04
								1956Ma31
					+2.86(3)		ABLS	1990Iz01

Table 1 (*continued*)

Nucleus	E (level)	$\tau_{1/2}$	I^{π}	μ (nm)*	Q (b)	Ref. Std.	Method	Reference
					+4.2(13)	$^{241}_{95}$Am	O	1956Ma31
	84	2.3 ns	$5/2^+$	+2.9(2)		$^{243}_{95}$Am	ME	1986Sa10
					4.1(12)	$^{243}_{95}$Am	ME	1989Ra99
$^{243}_{96}$Cm	0	28.5 y	$5/2^+$	0.40(8)		$^{241}_{95}$Am	EPR	1973Ab03
$^{245}_{96}$Cm	0	8500 y	$7/2^+$	0.5(1)		$^{241}_{95}$Am	EPR	1970Ab03
$^{247}_{96}$Cm	0	1.6×10^7y	$9/2^-$	0.36(7)		$^{241}_{95}$Am	EPR	1972Bo67
$^{249}_{97}$Bk	0	320 d	$7/2^+$	2.0(4)		$^{241}_{95}$Am	EPR	1972Bo67
$^{253}_{99}$Es	0	20.4 d	$7/2^+$	+4.10(7)			AB/D	1975Go05
					6.7(8) st		AB	1975Go05
$^{255}_{99}$Es	78	39.3 h	2^+	2.90(7)		$^{253}_{99}$Es	AB	1975Go05
					3.7(5) st	$^{253}_{99}$Es	AB	1975Go05

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