Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	30-Sep-2020

Q(β^-)=−1364.7 *28*; S(n)=7418.86 *6*; S(p)=9597.1 *9*; Q(α)=−5726.88 *8* 2017Wa10
S(2n)=18572.64 *10*, S(2p)=17320.47 *8* (2017Wa10).
NMR study: 1997Va23, 1993Ta20, 1986Ja19, 1984Gu28, 1978Ko39.
Mass measurements: 1985El01, 1984ElZY.
Additional information 1.
Theoretical calculations: consult the NSR database at www.nndc.bnl.gov for 27 primary theory references dealing with nuclear structure calculations.

^{77}Se Levels

Cross Reference (XREF) Flags

A	^{77}As β^- decay (38.79 h)	G	^{76}Se(n,γ) E=377.0 eV	M	^{77}Se(n,n′γ)
B	^{77}Se IT decay (17.36 s)	H	^{76}Se(n,γ) E=862 eV	N	^{77}Se(d,d′)
C	^{77}Br ε decay (57.04 h)	I	^{76}Se(n,n),(n,γ):resonances	O	Coulomb excitation
D	^{74}Ge(α,nγ)	J	^{76}Se(d,p),(pol d,p)	P	^{78}Se(p,d)
E	^{76}Ge(α,3nγ)	K	^{76}Se(α,^{3}He)	Q	^{78}Se(d,t)
F	^{76}Se(n,γ) E=thermal	L	^{77}Se(γ,γ')	R	^{78}Se(^{3}He,α)

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	XREF	Comments
0.0[a]	1/2$^-$	stable	ABCDEFGH JKLMNOPQR	μ=+0.53356 *5* (1978Ko39,1953We51,2019StZV) Evaluated charge radius <r^2>$^{1/2}$=4.1395 fm *18* (2013An02). J$^\pi$: spin from NMR and microwave technique (1949St07,1950Ge05,1953We51, 1954Wa37,1954Da05). Spin and parity from L=1 and Ay(θ) in (pol d,p). μ: measured μ=+0.5350422 *6*, NMR method relative to ^{23}Na (1978Ko39,1953We51). Other: μ=0.53507424 *28* (1978Ko39, relative to ^{1}H). 2019StZV re-evaluated μ=+0.53356 *5* using NMR shielding constants in SeH_2 from 2013Ja18.
161.9223[e] *10*	7/2$^+$	17.36 s *5*	ABCDEF NO	%IT=100 $T_{1/2}$: weighted average of 17.31 s *8* (1986Ne05), 17.38 s *8* (1980Jo11), 17.38 s *9* (1967Yu01). Others: 17.4 s 8 (2009Mu15), 17.58 s 12 (1972Jo05), 17.5 s 2 (1968Ma12), 1967Ab08, 17.70 s 3 (1963Al32), 17.5 s 2 (1963Ka34), 1963Ve13, 18.83 s 4 (1962Ma38), 17.5 s 5 (1952Ru10), 17.5 s 18 (1951Ca23), 17.4 s 2 (1950Fl62), 17.5 s 10 (1949Gi04), 17.5 s 3 (1947Ar01). Values from 1972Jo05, 1963Al32 and 1962Ma38 are precise but systematically higher than a group of values centered around 17.4 s from many other measurements, thus not included in the averaging procedure. Weighted average of values from 1986Ne05, 1980Jo11, 1972Jo05, 1967Yu01 and 1963Al32 (uncertainty increased to 0.09) is 17.45 s 7 with reduced χ^2=3.3. High value from 1962Ma38 is an outlier. J$^\pi$: E3 γ to 1/2$^-$ (see ^{77}Se IT decay and ^{76}Se(n,γ)).
175.3059[d] *17*	9/2$^+$		A CDEF JK PQR	J$^\pi$: L=4 and Ay(θ) in (pol d,p).
238.9988[a] *12*	3/2$^-$	18 ps *4*	A CDEF J M O	J$^\pi$: ΔJ=1, M1+E2 γ to 1/2$^-$. $T_{1/2}$: from (α,nγ)(1990KuZS; RDDS method). Other: 25 ps *9* from B(E2) in Coulomb excitation.
249.7885[b] *12*	5/2$^-$	9.68 ns *6*	A CDEF JKLMNOPQR	μ=+1.118 *25* (1984Za080,2014StZZ) Q=+0.76 *5* (1983Un02,2008Py02,2016St14)

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Adopted Levels, Gammas (continued)

^{77}Se Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
				Jπ: E1 γ to 7/2+, ΔJ=2, E2 γ to 1/2−. $T_{1/2}$: from γγ(t) in ^{77}Br ε decay (1988Mo16; time-differential perturbed angular correlation technique). Others: 1984Za08 (9.56 ns 10), 1964En01, 1963Ly01. μ: DPAC method (1984Za08). Other: +1.20 *15* (1964En01). Q: DPAC method (1983Un02). Value of 1.1 *5* is re-evaluated to +0.76 *5* in 2008Py02 and 2016St14. Other: 1996Lo11, measured γγ(θ,H), deduced quadrupole interaction and electric field gradient. g-factor (1984Za08) and quadrupole coupling constants (1983Un02) measured by time differential perturbed angular correlation method.
301.1496[h] *12*	5/2+		A CDEF J M PQ	$T_{1/2}$: 1990KuZS reported $T_{1/2}$=7 ps to 35 ps from (α,nγ). This value is inconsistent with $T_{1/2}$>212 ps from B(E2)(W.u.)<300 (RUL) for 125.8γ, thus $T_{1/2}$ value is considered suspect. Jπ: L=2 and Ay(θ) in (pol d,p).
439.4517[a] *14*	5/2−	23.0 ps *13*	A CDEF JKLMNOPQR	μ=+1.02 *28* (1970RoZS,2014StZZ) XREF: Q(420). μ: IMPAC method (1970RoZS). $T_{1/2}$: from B(E2) in Coulomb excitation. Jπ: L=3 and Ay(θ) in (pol d,p).
520.6388[k] *15*	3/2−	4 ps *2*	A CDEF J L NOP R	XREF: N(530). Jπ: L=1 and Ay(θ) in (pol d,p); L(p,d)=1; excited in (γ,γ′) from 1/2− ^{77}Se g.s. In (^{3}He,α) (2007ScZX), cross section for a 522 level does not allow L=1, instead L=3 is favored implying 5/2−,7/2−, which is in disagreement with results form (pol d,p) and with L(d,p)=1 in 2007ScZX. Perhaps there is a different level populated in (^{3}He,α), although, the evaluator considers this as a less likely possibility at low-energy excitations, where the level density is not high. $T_{1/2}$: from (γ,γ′) (1995Kh02). Other; 7 ps +*7*−*5* from B(E2) in Coulomb excitation.
581.0106[c] *17*	7/2−	34 ps *6*	CDEF K M	$T_{1/2}$: from (α,nγ) (1990KuZS; RDDS method). Jπ: M1+E2 γ to 5/2−, ΔJ=2 γ to 3/2− and ΔJ=1 γ to 9/2+.
680.1035 *17*	5/2+		CD F JK M PQR	XREF: Q(700). Jπ: L=2 and Ay(θ) in (pol d,p).
796.151[h] *5*	7/2(+)	0.62 ps +*21*−*17*	DEF	Jπ: ΔJ=1, gammas to 5/2+ and 9/2+. $T_{1/2}$: from (α,nγ) (1990KuZR; DSAM).
808.185[a] *3*	7/2−	0.31 ps +*14*−*7*	DEF M	Jπ: ΔJ=1, M1+E2 γ to 5/2−; ΔJ=2 γ to 3/2−. $T_{1/2}$: from (α,nγ) (1990KuZR; DSAM).
817.8563 *20*	1/2−		CD F Jk P r	Jπ: L=1 and Ay(θ) in (pol d,p). The circular polarization measurement in ^{76}Se(n,γ) also supports 1/2−.
824.4310[k] *20*	(5/2)−	0.45 ps +*21*−*14*	CDEF kLMN Qr	XREF: N(840)Q(830). Jπ: M1+E2 gammas to 3/2− and 5/2−; γ to 7/2+. $T_{1/2}$: from (α,nγ) (1990KuZR; DSAM).
911.5317 *18*	(3/2)+		CD F J l	XREF: l(932). Jπ: M1(+E2) γ to 5/2+, γ to 1/2− and strong primary transition from 1/2+.
946.9823 *21*	1/2+		F J l	Jπ: L(pol d,p)=0.
970.04[e] *18*	(11/2+)	0.62 ps *21*	DE	$T_{1/2}$: from (α,nγ) (1990KuZR; DSAM). Jπ: ΔJ=2, (E2) γ to 7/2+; ΔJ=1 γ to 9/2+.
978.30[b] *10*	9/2−	0.69 ps +*35*−*21*	DE N	XREF: N(980). $T_{1/2}$: from (α,nγ) (1990KuZR; DSAM).

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Adopted Levels, Gammas (continued)

^{77}Se Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
				Jπ: ΔJ=2, E2 γ to 5/2⁻; γ to 9/2⁺.
999.2? *7*			O	
1005.1838 *20*	3/2⁻	0.14 ps *+28−7*	C F JKLM P R	XREF: K(993)L(1000)P(1012). Jπ: L=1 and Ay(θ) in (pol d,p). $T_{1/2}$: from (n,n′γ) (1991Ko45,DSAM).
1024.15[d] *16*	(13/2⁺)	0.35 ps *+14−10*	DE J	$T_{1/2}$: from (α,nγ) (1990KuZR; DSAM). Jπ: ΔJ=2, (E2) γ to 9/2⁺.
1051			K	
1089			K R	
1126.64[f] *13*	(11/2⁺)	0.76 ps *+35−21*	DE	$T_{1/2}$: from (α,nγ) (1990KuZR; DSAM). Jπ: ΔJ=(2), (E2) γ to 7/2⁺; ΔJ=1 γ to 9/2⁺.
1128.113 *4*	1/2⁺		F J	XREF: J(1133). Jπ: L(pol d,p)=0.
1132.457 *4*			D F	Jπ: gammas to 7/2⁺ and 9/2⁺ suggest 5/2⁺,7/2,9/2,11/2⁺.
1172.49[a] *16*	9/2⁻	0.38 ps *+14−10*	DE	Jπ: ΔJ=2, E2 γ to 5/2⁻; ΔJ=1 γ to 7/2⁻. $T_{1/2}$: from (α,nγ) (1990KuZR; DSAM).
1179.3 *7*	(5/2⁻,7/2⁻)	0.90 ps *+28−14*	D j P	XREF: P(1183). $T_{1/2}$: from (α,nγ) (1989KuZV; DSAM). Jπ: γ to 5/2⁻ in (α,nγ). L(p,d)=(3) for an 1183 level from 0⁺.
1186.9837 *22*	(3/2)		C F j l	Jπ: log *ft*=7.56 from 3/2⁻ and gammas to 1/2⁺, 1/2⁻, 5/2⁺, and 5/2⁻. L(d,p)=1,2 for an 1187 group may correspond to a doublet.
1193.1 *4*	(9/2⁺)	1.18 ps *21*	D l	$T_{1/2}$: from (α,nγ) (1989KuZV; DSAM). Jπ: ΔJ=(2) γ to 5/2⁺; γ to 7/2⁽⁺⁾.
1230.629 *5*	(5/2)⁻	>0.21 ps	C F M P R	$T_{1/2}$: from (n,n′γ) (1991Ko45,DSAM). Jπ: log *ft*=6.7 from 3/2⁻ in ^{77}Br ε decay and L(p,d)=3.
1252.963 *5*	5/2⁺	0.62 ps *+28−14*	D F JK	$T_{1/2}$: from (α,nγ) (1989KuZV; DSAM). Jπ: L=2 and Ay(θ) in (pol d,p).
1282.8[k] *4*	(7/2⁻)		E	
1351.58[c] *12*	(11/2⁻)	0.49 ps *+21−10*	DE	Jπ: ΔJ=2, (E2) γ to 7/2⁻; γ to 9/2⁻. $T_{1/2}$: from (α,nγ) (1990KuZR; DSAM).
1364.273 *4*	(3/2⁻)	>0.49 ps	F J M P	XREF: M(1367)P(1366). $T_{1/2}$: from (n,n′γ) (1991Ko45,DSAM). Jπ: primary γ from 1/2⁺ and γ to 7/2⁻. L(p,d)=(1) favors 3/2⁻; L(d,p)=1,2.
1402.485 *4*	(3/2⁻)		F N p	XREF: N(1400). Jπ: circular polarization in (n,γ) (1971Kn06).
1411.626 *4*	(3/2⁻)		F J p	Jπ: circular polarization in (n,γ) (1971Kn06).
1439 *5*	3/2⁺		J p R	Jπ: L=2 and Ay(θ) in (pol d,p).
1488.237 *4*	(3/2)⁻		F J P	XREF: P(1470). Jπ: L(p,d)=1; gammas to 7/2⁻ and 7/2⁽⁺⁾ favor 3/2⁻.
1511.023 *3*	(3/2)		F J	Jπ: gammas to 1/2⁺, 1/2⁻, 5/2⁺, and 5/2⁻; L(d,p)=1,2.
1522 *10*	5/2⁻,7/2⁻		K P R	XREF: K(1533)R(1525). E(level): from (p,d). Jπ: L(^{3}He,α)=3; L(p,d)=(3).
1607.702 *8*	3/2⁺,5/2⁺	>0.42 ps	F J LM	XREF: L(1600). $T_{1/2}$: from (n,n′γ) (1991Ko45,DSAM). Jπ: L(d,p)=2; gammas to 1/2⁺, 5/2⁺, and 5/2⁻.
1616.61[a] *21*	(11/2⁻)		DE	Jπ: ΔJ=2 γ to 7/2⁻; ΔJ=(1) γ to 9/2⁻.
1620.5[h] *7*	(11/2⁺)		E	
1623.145 *5*	(1/2⁻)	0.14 ps *+14−7*	F J M P	XREF: P(1627). $T_{1/2}$: from (n,n′γ) (1991Ko45,DSAM). Jπ: circular polarization in (n,γ) (1971Kn06).
1714.755 *8*	1/2⁻,3/2⁻		F J N P	XREF: N(1740)P(1717).

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Adopted Levels, Gammas (continued)

^{77}Se Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
				Jπ: L(d,p)=L(p,d)=1.
1721.94[g] *19*	(13/2+)		DE	Jπ: ΔJ=1 γ to (11/2+); ΔJ=(0) γ to (13/2+).
1817.638 *6*	1/2−	0.055 ps *+28−21*	F jk Mn p	$T_{1/2}$: from (n,n′γ) (1991Ko45,DSAM). Jπ: circular polarization in (n,γ) (1971Kn06).
1830.861 *12*	(1/2−,3/2)		F jk n p	Jπ: gammas to 1/2+, 1/2−, and 5/2−; L(d,p)=1 for 1818 and/or 1831 levels.
1886.52[b] *17*	13/2−	0.49 ps *+21−14*	DE	Jπ: ΔJ=2, E2 γ to 9/2−; γ to (11/2−). $T_{1/2}$: from (α,nγ) (1990KuZR; DSAM).
1888.64 *4*			F	Jπ: possible J^{π}=(3/2+,5/2,7/2,9/2+) from gammas to 5/2+ and 7/2+.
1916.065 *11*	(1/2+,3/2)		F K N P	XREF: K(1927)N(1950)P(1924). Jπ: gammas to 1/2+,1/2−, and 5/2+.
1998.6 *10*		0.31 ps *+10−7*	D	Jπ: γ to (11/2−) suggests (11/2,13/2,15/2−). $T_{1/2}$: from (α,nγ) (1990KuZR; DSAM).
2055.45[e] *22*	(15/2+)	0.24 ps *7*	DE	Jπ: ΔJ=2, (E2) γ to (11/2+) and ΔJ=1 γ to (13/2+). $T_{1/2}$: from (α,nγ) (1990KuZR; DSAM).
2057 *12*	5/2+		J N P	XREF: N(2040)P(2060). Jπ: L=2 and Ay(θ) in (pol d,p).
2092.09[a] *19*	(13/2−)	0.69 ps *14*	DE	Jπ: ΔJ=2, (E2) γ to 9/2− and γ to (11/2−). $T_{1/2}$: from (α,nγ) (1990KuZR; DSAM).
2103.38[d] *21*	(17/2+)	0.35 ps *+14−7*	DE	Jπ: ΔJ=2, (E2) γ to (13/2+). $T_{1/2}$: from (α,nγ) (1990KuZR; DSAM).
2142.54 *6*	(1/2,3/2,5/2−)		F P	XREF: P(2119). Jπ: γ to 1/2−.
2157 *12*	5/2+		J	Jπ: L=2 and Ay(θ) in (pol d,p).
2212.03 *3*	1/2−,3/2−		F N P	XREF: N(2200)P(2209). Jπ: L(p,d)=1.
2240.22[f] *22*	(15/2+)	0.97 ps *35*	DE	Jπ: ΔJ=2, (E2) γ to (11/2+) and ΔJ=1 γ to (13/2+). $T_{1/2}$: from (α,nγ) (1990KuZR; DSAM).
2248.929 *8*	3/2+,5/2+		F J	XREF: J(2251). Jπ: L(d,p)=2.
2264.18[c] *6*	(15/2−)	0.42 ps *+17−10*	DE	Jπ: ΔJ=2, (E2) γ to (11/2−) and γ to 13/2−. $T_{1/2}$: from (α,nγ) (1990KuZR; DSAM).
2264.43 *6*	(3/2−)		F P	XREF: P(2274). Jπ: primary transition from 1/2+; gammas to 1/2− and 7/2−.
2320.13 *9*	(1/2+,3/2,5/2+)		F P	XREF: P(2314). Jπ: primary transition from 1/2+ and γ to 5/2+.
2339.95 *4*	(3/2−,5/2+)		F N	XREF: N(2350). Jπ: primary γ from 1/2+; gammas to 5/2− and 7/2−.
2375.3 *3*	(3/2+,5/2+)		F	Jπ: primary γ from 1/2+ and γ to 7/2+.
2392.951 *23*	3/2−	0.10 ps *+6−3*	F H J M	XREF: J(2386). $T_{1/2}$: from (n,n′γ) (1991Ko45,DSAM). Jπ: circular polarization in (n,γ) (1971Kn06).
2455.456 *11*	(1/2+,3/2,5/2+)		F J P	XREF: J(2455)P(2456). Jπ: primary γ from 1/2+ and γ to 5/2+.
2491.94 *4*	(3/2+)		F J N P	XREF: J(2504)N(2480)P(2503). Jπ: gammas to 1/2− and 7/2+. L(d,p)=(2).
2551.94 *8*	(3/2−)		F	Jπ: γ to 7/2− and possible gammas to 1/2− and 1/2+.
2553.82 *9*	(1/2,3/2,5/2+)[#]		F	
2579.8[h] *10*	(15/2+)		E	
2584 *12*	(3/2+,5/2+)		J P	Jπ: L(d,p)=(2).

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Adopted Levels, Gammas (continued)

^{77}Se Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
2611.20[a] *23*	(15/2⁻)		E	Jπ: ΔJ=2 γ to (11/2⁻).
2640.970 *24*	(3/2⁺,5/2⁺)		F J	Jπ: L(d,p)=(2) and primary γ from 1/2⁺.
2716.33 *6*	(3/2)		F J	XREF: J(2730). Jπ: primary γ from 1/2⁺; gammas to 5/2⁺ and (5/2)⁻.
2776.75 *4*	(1/2⁻,3/2)		F	Jπ: primary γ from 1/2⁺; gammas to 1/2⁻ and 5/2⁻.
2789.6[g] *3*	(17/2⁺)		E	Jπ: ΔJ=2 γ to (13/2⁺).
2809.13 *6*	(1/2,3/2)		F	Jπ: primary γ from 1/2⁺ and γ to 1/2⁻.
2815.48 *10*	(1/2⁻,3/2,5/2⁺)		F P	XREF: P(2813). Jπ: primary γ from 1/2⁺ and γ to 5/2⁻.
2818.3[i] *4*	(15/2⁻)		E	Jπ: ΔJ=(2) γ to (11/2⁻) and γ to (11/2⁻).
2853.09 *4*	(1/2⁻,3/2⁻)		F	Jπ: strong primary transition from 1/2⁺ capture state. Circular polarization in ^{76}Se(n,γ) (1971Kn06) favors 1/2⁻.
2864.47[b] *21*	(17/2⁻)	0.42 ps *+14−7*	DE	Jπ: ΔJ=2, (E2) γ to 13/2⁻. $T_{1/2}$: from (α,nγ) (1989KuZV; DSAM).
2869.2 *4*	(15/2⁻)		E	
2873.00 *7*	(3/2)		F P	XREF: P(2877). Jπ: primary γ from 1/2⁺; gammas to 1/2⁻, 5/2⁻, and 5/2⁺.
2891.94 *4*	(3/2⁻)	0.049 ps *+21−14*	F M	$T_{1/2}$: from (n,n′γ) (1991Ko45,DSAM). Jπ: (E1) primary γ from 1/2⁺ and γ to 5/2⁺.
2950	3/2⁺,5/2⁺		J	Jπ: L(d,p)=2.
2966.81 *17*	(17/2⁻)		E	Jπ: ΔJ=1 γ to (15/2⁻).
2982.93 *9*	(1/2,3/2)		F	Jπ: primary γ from 1/2⁺ and γ to 1/2⁻.
2994.13 *5*	(1/2,3/2,5/2⁺)[#]		F	
3014.69[j] *24*	(17/2⁻)		E	Jπ: ΔJ=2 γ to 13/2⁻.
3040.33 *8*	(3/2⁻,5/2⁺)		F	Jπ: primary γ from 1/2⁺; gammas to 5/2⁻ and 7/2⁻.
3051.19 *9*	(1/2⁺,3/2,5/2⁺)		F	Jπ: primary γ from 1/2⁺ and γ to 5/2⁺.
3063.92 *9*	(3/2,5/2⁺)		F	Jπ: primary γ from 1/2⁺; gammas to 5/2⁻ and 5/2⁺.
3071.93 *21*	(17/2⁻)		E	Jπ: ΔJ=2 γ to 13/2⁻; γ to (15/2⁻).
3107 *12*			J	
3132.06 *11*	(1/2,3/2,5/2⁺)[#]		F	
3147.5[a] *3*	(17/2⁻)		E	Jπ: ΔJ=2 γ to (13/2⁻).
3168.21 *18*	(3/2⁺,5/2⁺)		F J	XREF: J(3167). Jπ: L(d,p)=(2).
3191.58 *16*	(1/2⁺,3/2,5/2⁺)		F	Jπ: primary γ from 1/2⁺ and γ to 5/2⁺.
3201.4[i] *4*	(17/2⁻)		E	Jπ: ΔJ=1 gammas to (15/2⁻).
3232.82 *11*	(1/2,3/2)		F	Jπ: primary γ from 1/2⁺ and γ to 1/2⁻.
3243.94 *10*	(1/2⁻,3/2,5/2⁺)		F	Jπ: primary γ from 1/2⁺ and γ to 5/2⁻.
3245.57[e] *24*	(19/2⁺)		E	Jπ: ΔJ=1 γ to (17/2⁺).
3264.91[c] *20*	(19/2⁻)		E	Jπ: ΔJ=2 γ to (15/2⁻).
3268 *12*	(3/2⁺,5/2⁺)		J	Jπ: L(d,p)=(2).
3312.71 *14*	(1/2,3/2)		F	Jπ: primary γ from 1/2⁺; γ to 1/2⁻.
3327.04 *17*	(3/2⁻,5/2⁺)		F J	XREF: J(3324). Jπ: primary γ from 1/2⁺; γ to 7/2⁻. L(d,p)=(2) favors 5/2⁺.
3333.7[d] *3*	(21/2⁺)	0.28 ps *+14−7*	DE	Jπ: ΔJ=2, (E2) γ to (17/2⁺). $T_{1/2}$: from (α,nγ) (1989KuZV; DSAM).
3348.67 *14*	(1/2,3/2)		F	Jπ: primary γ from 1/2⁺; γ to 1/2⁻.
3354.30 *14*	(1/2,3/2)		F	Jπ: primary γ from 1/2⁺; γ to 1/2⁻.
3362.25 *11*	(1/2⁻,3/2,5/2⁺)		F	Jπ: primary γ from 1/2⁺; γ to 5/2⁻.
3395.99 *17*	(1/2,3/2,5/2⁺)[#]		F	
3403.98[j] *19*	(19/2⁻)		E	Jπ: ΔJ=1 gammas to (17/2⁻).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{77}Se Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF		Comments
3409.6[f] 4	(19/2+)		E		Jπ: ΔJ=2 γ to (15/2+).
3412.44 10	(1/2,3/2)		F		Jπ: primary γ from 1/2+ and γ to 1/2−.
3415.03 6	(1/2,3/2)		F		Jπ: primary γ from 1/2+ and γ to 1/2−.
3439.71[i] 20	(19/2−)		E		Jπ: ΔJ=1 γ to (17/2−).
3450.45 14	(3/2+,5/2+)		F	J	XREF: J(3441). Jπ: L(d,p)=(2).
3472.1 3	(19/2−)		E		Jπ: ΔJ=1 γ to (17/2−).
3472.84 14	(1/2,3/2,5/2+)[#]		F		
3480.52 11	(1/2,3/2,5/2+)[#]		F		
3517.91 10	(3/2+)		F	J	XREF: J(3530). Jπ: L(d,p)=(2), primary γ from 1/2+ and γ to 1/2−.
3545.64 12	(3/2+,5/2+)		F		Jπ: primary γ from 1/2+ and γ to 7/2+.
3552.43 15	(3/2−)		F		Jπ: primary γ from 1/2+; gammas to 1/2− and 7/2−.
3561.25 16	(1/2,3/2,5/2+)[#]		F		
3641.4?[a] 5	(19/2−)		E		
3642.23 16	(5/2+)		F		Jπ: primary γ from 1/2+ and γ to 9/2+.
3694.43 24	(3/2+,5/2+)		F	J	XREF: J(3690). Jπ: L(d,p)=(2).
3718.49 9	(1/2−,3/2,5/2+)		F		Jπ: primary γ from 1/2+ and γ to 5/2−.
3764.79[i] 18	(21/2−)		E		E(level): this level is associated with either or both of the two 3-qp bands, one based on 2818, (15/2−) and the other on 3015, (17/2−). Jπ: ΔJ=1 γ to (19/2−).
3772.37 14	(5/2+)		F	J	XREF: J(3780). Jπ: L(d,p)=(2) and γ to 7/2−.
3798.21 14	(3/2+,5/2+)		F		Jπ: primary γ from 1/2+ and γ to 7/2+.
3827.0 3	(1/2,3/2,5/2+)[#]		F		
3864.6 3	(21/2+)		E		Jπ: ΔJ=1 γ to (19/2+).
3868.61 11	(5/2+)		F	J	XREF: J(3860). Jπ: L(d,p)=(2) and γ to 9/2+.
3880.4[b] 4	(21/2−)		E		Jπ: ΔJ=2 γ to (17/2−) and γ to (19/2−).
3885.1[g] 4	(21/2+)		E		
3934.71 21	(3/2−,5/2+)		F		Jπ: primary γ from 1/2+ and γ to 7/2−.
3988.5 9	(21/2−)		E		
4068.49 15	(5/2+)		F	J	XREF: J(4070). Jπ: L(d,p)=(2) and γ to 7/2−.
4180.3[e] 3	(23/2+)		E		Jπ: ΔJ=1 γ to (21/2+).
4212.22 20	(1/2,3/2,5/2+)[#]		F		
4243.63 10			F	J	XREF: J(4234). Jπ: L=(d,p)=(2) and γ to 1/2− give 3/2+ but a transition to 7/2− favors 3/2− instead. It is possible that the levels populated in the two reactions are different.
4288.9 3	(1/2,3/2)		F	J	XREF: J(4272). Jπ: primary γ from 1/2+; γ to 1/2−.
4301.70[j] 23	(23/2−)		E		Jπ: ΔJ=2 γ to (19/2−); ΔJ=1 γ to (21/2−).
4321.1[i] 3	(23/2−)		E		Jπ: ΔJ=2 γ to (19/2−); γ to (21/2−).
4340	(3/2+,5/2+)			J	Jπ: L(d,p)=(2).
4391.9[c] 20	(23/2−)		E		
4430	(3/2+,5/2+)			J	Jπ: L(d,p)=(2).
4531.8 4	(23/2+)		E		
4625.8[d] 4	(25/2+)	0.21 ps +14−7	DE		Jπ: ΔJ=2, (E2) γ to (21/2+); γ to (23/2+). $T_{1/2}$: from (α,nγ)(1989KuZV; DSAM).
4640				J	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{77}Se Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
4670.5[f] 7	(23/2+)	E	
4750		J	
4846.9[i] 4	(25/2−)	E	
4862.3 4	(25/2+)	E	
5001.4[b] 21	(25/2−)	E	
5258.9[e] 5	(27/2+)	E	Jπ: ΔJ=1 γ to (25/2+).
5584[c] 3	(27/2−)	E	
5941.4[d] 15	(29/2+)	E	
6654.9[e] 21	(31/2+)	E	
(7418.868 16)	1/2+	F	E(level): from least-squares fit, in agreement with S(n)=7418.86 6 (2017Wa10). Jπ: s-wave capture in ^{76}Se g.s.
7419.23 6	1/2+@	G I	
7419.71 6	1/2+@	HI	
7419.77 6	1/2−,3/2−&	I	
7420.06 6	1/2−,3/2−&	I	
7420.20 6	1/2−,3/2−&	I	
7420.32 6	1/2−,3/2−&	I	
7420.48 6	1/2−,3/2−&	I	
7420.95 6	(1/2−,3/2−)&	I	
7421.40 6	1/2+@	I	
7421.99 6	1/2−,3/2−&	I	
7422.20 6	1/2+@	I	
7422.75 7	(1/2−,3/2−)&	I	
7423.11 7	1/2+@	I	
7423.83 6	(1/2+)@	I	
7424.18 8	1/2+@	I	
7425.22 8	1/2+@	I	
7425.92 9	1/2+@	I	
7427.23 14	1/2+@	I	
7428.94 13	1/2+@	I	
7430.03 21	1/2+@	I	
7431.97 26	1/2+@	I	

[†] From least-squares fit to Eγ data. All doubly placed γ rays were omitted in the fitting procedure, including the following γ rays which deviated by more than 5 standard deviations: 4963, 5170 and 5205 primary γ rays from the capture state and 678.68 weak γ from 2392 level. The resulting fit gives normalized χ^2=1.7 as compared to critical χ^2=1.2 with 11 γ rays deviating by 3-4 standard deviations as noted in comments. Other four γ rays which were omitted from the fit deviate by more than 5 standard deviations.

[‡] When deduced from γ(θ) and/or γγ(θ) (DCO) in (α,nγ) and (α,3nγ), ascending J^π is assumed as the excitation energy increases. When no arguments is given, J^π is based on possible band association and decay pattern. ΔJ=2 transitions are assumed as E2 and ΔJ=1 transitions with large admixture as M1+E2 rather than E1+M2. Many assignments appear in parentheses since DCO ratios alone do not seem to give unique ΔJ assignments.

[#] Primary γ from 1/2+.

[@] s-wave resonance in (n,n),(n,γ).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{77}Se Levels (continued)

& p-wave resonance in (n,n),(n,γ).
[a] Band(A): ν1/2[301], ΔJ=1, g.s. band.
[b] Band(B): ν5/2[303],α=+1/2.
[c] Band(C): ν5/2[303],α=−1/2.
[d] Band(D): Yrast, $\nu g_{9/2}$,α=+1/2. Crossing occurs near $21/2^+$ leading to configuration=$\nu g_{9/2}\otimes\pi g^2_{9/2}$ for the upbend (1997Jo02).
[e] Band(E): Yrast band, $\nu g_{9/2}$,α=−1/2. Crossing occurs near $21/2^+$ leading to configuration=$\nu g_{9/2}\otimes\pi g^2_{9/2}$ for the upbend (1997Jo02).
[f] Band(F): Band based on $(11/2^+)$,α=−1/2.
[g] Band(G): Band based on $(13/2^+)$ band,α=+1/2.
[h] Seq.(H): Sequence based on $5/2^+$. Possible ν5/2[422] as in ^{81}Sr (1997Jo02).
[i] Seq.(I): Possible 3-qp, ΔJ=1 sequence. Possible configuration=π[fp]$\otimes\pi g_{9/2}\otimes\nu g_{9/2}$ (1997Jo02).
[j] Seq.(J): Possible 3-qp, ΔJ=1 sequence. Possible configuration=π[fp]$\otimes\pi g_{9/2}\otimes\nu g_{9/2}$ (1997Jo02).
[k] Seq.(K): Possible sequence based on ν3/2[301].

Adopted Levels, Gammas (continued)

γ(^{77}Se)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ	α[&]	Comments
161.9223	7/2$^+$	161.9224 *11*	100	0.0	1/2$^-$	E3		0.881	B(E3)(W.u.)=0.0362 *6* α(K)=0.735 *11*; α(L)=0.1251 *18*; α(M)=0.0195 *3*; α(N)=0.001414 *20*
175.3059	9/2$^+$	13.38		161.9223	7/2$^+$				E_γ: from difference of level energies. Not directly observed.
238.9988	3/2$^-$	238.9963 *21*	100	0.0	1/2$^-$	M1+E2	+0.152 *4*	0.01080	B(M1)(W.u.)=0.087 *20*; B(E2)(W.u.)=46 *3* δ: from B(E2) and $T_{1/2}$. Sign(δ) from δ=+0.18 *3* from γ(θ) in Coul. ex.; others: +0.13 *4* (from ^{77}Br ε decay, 1974Br10), 0.25 *7* (from (n,γ), 1985To10).
249.7885	5/2$^-$	87.8671 *14*	47.5 *12*	161.9223	7/2$^+$	E1		0.1165	B(E1)(W.u.)=1.73×10^{-5} *6* α(K)=0.1037 *15*; α(L)=0.01101 *16*; α(M)=0.001698 *24*; α(N)=0.0001402 *20* δ: γγ(θ) in ^{77}Br ε decay gives δ=+0.09 *5* for E1+M2. The ce data in (n,γ) give δ=0.17 *3*; however, δ<0.010 is expected from RUL. I_γ: value from (α,3nγ) is not included in averaging since Iγ(88)/Iγ(250)=1.08 *4* in (α,3nγ) is higher by a factor of ≈2 as compared to values from several different studies.
		249.7862 *24*	100.0 *19*	0.0	1/2$^-$	E2		0.0284	B(E2)(W.u.)=1.98 *5* α(K)=0.0251 *4*; α(L)=0.00285 *4*; α(M)=0.000443 *7*; α(N)=3.62×10^{-5} *5*
301.1496	5/2$^+$	51.3620 *13*	6.0 *9*	249.7885	5/2$^-$	E1		0.570	α(K)=0.506 *7*; α(L)=0.0549 *8*; α(M)=0.00843 *12*; α(N)=0.000681 *10* δ: ce data in (n,γ) gives δ=0.11 *3* for E1+M2; however, from RUL, this δ would require $T_{1/2}$(301 level)>1 μs.
		62.1503 *10*	0.52 *6*	238.9988	3/2$^-$	[E1]		0.326	α(K)=0.289 *4*; α(L)=0.0311 *5*; α(M)=0.00478 *7*; α(N)=0.000390 *6*
		125.8437 *12*	10.8 *15*	175.3059	9/2$^+$	E2		0.354	α(K)=0.308 *5*; α(L)=0.0396 *6*; α(M)=0.00613 *9*; α(N)=0.000477 *7*
		139.2266 *15*	100.0 *17*	161.9223	7/2$^+$	M1+E2	0.75 *3*	0.114 *4*	α(K)=0.100 *4*; α(L)=0.0121 *5*; α(M)=0.00188 *7*; α(N)=0.000150 *6* δ: from ce data in (n,γ).
439.4517	5/2$^-$	189.663 *3*	0.65 *11*	249.7885	5/2$^-$				I_γ: from (n,γ). Iγ(189γ)/Iγ(439γ)=0.15 *7* in ε decay.
		200.4506 *23*	79.7 *15*	238.9988	3/2$^-$	M1+E2	+0.09 *3*	0.0165 *4*	B(M1)(W.u.)=0.051 *4*; B(E2)(W.u.)=14 *+10−7* α(K)=0.0146 *4*; α(L)=0.00158 *4*; α(M)=0.000246 *6*; α(N)=2.08×10^{-5} *5* δ: from γ(θ) in ^{74}Ge(α,nγ). Others: +0.07 *3* (1991Ko45) 0.12 *12* (1985To10), 0.05 *3* (1962Ro03), 0.00 *9* (1974Br10).
		277.523 *4*	1.27 *16*	161.9223	7/2$^+$	[E1]			B(E1)(W.u.)=5.3×10^{-6} *8* I_γ: from (n,γ). Iγ(277γ)/Iγ(439γ)=2.07 *16* in ε decay.
		439.453 *4*	100.0 *10*	0.0	1/2$^-$	E2			B(E2)(W.u.)=42.2 *25*
520.6388	3/2$^-$	81.1862 *20*	0.067 *8*	439.4517	5/2$^-$				
		270.847 *3*	1.44 *5*	249.7885	5/2$^-$	M1+E2	−0.30 *6*	0.0087 *5*	B(M1)(W.u.)=0.0033 *+33−11*; B(E2)(W.u.)=5.3 *+57−25*

$^{77}_{34}Se_{43}$-9

Adopted Levels, Gammas (continued)

γ(^{77}Se) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ	α[&]	Comments
									α(K)=0.0077 *4*; α(L)=0.00083 *5*; α(M)=0.000129 *8*; α(N)=1.09×10^{-5} *6*
520.6388	3/2$^-$	281.638 *3*	10.2 *2*	238.9988	3/2$^-$	M1+E2	+0.12 *4*	0.00699 *16*	B(M1)(W.u.)=0.022 *+22−7*; B(E2)(W.u.)=5.2 *+66−34* α(K)=0.00622 *15*; α(L)=0.000664 *16*; α(M)=0.0001034 *25*; α(N)=8.79×10^{-6} δ: from γγ(θ) in ^{77}Br ε decay. Other: 0.30 *9* (ce data in (n,γ)).
		520.639 *4*	100.0 *14*	0.0	1/2$^-$	M1+E2	+0.17 *7*		B(M1)(W.u.)=0.034 *+34−11*; B(E2)(W.u.)=4.8 *+64−41* δ: from γγ(θ) in ^{77}Br ε decay.
581.0106	7/2$^-$	141.558 *3*	3.8 *10*	439.4517	5/2$^-$	(M1)		0.0399	B(M1)(W.u.)=0.0060 *19* α(K)=0.0354 *5*; α(L)=0.00384 *6*; α(M)=0.000599 *9*; α(N)=5.07×10^{-5} *8* I_γ: from ε decay. Others: 3.4 *17* in (α,3nγ), 8.3 *26* in (α,nγ); 10.4 in (n,γ).
		279.849 *20*	1.6 *3*	301.1496	5/2$^+$	[E1]			B(E1)(W.u.)=5.5×10^{-6} *+12−8*
		331.2201 *26*	100.0 *10*	249.7885	5/2$^-$	M1+E2	1.00 *25*		B(M1)(W.u.)=0.0061 *+22−15*; B(E2)(W.u.)=74 *23* δ: from ce data in ^{76}Se(n,γ). Other: 1.0 *2* from γ(θ) in (n,n′γ) (1991Ko45).
		342.011 *3*	10.8 *9*	238.9988	3/2$^-$	[E2]			B(E2)(W.u.)=13.2 *+28−20*
		405.701 *10*	8.2 *6*	175.3059	9/2$^+$	[E1]			B(E1)(W.u.)=9.3×10^{-6} *+19−14*
		419.082 *5*	20.4 *12*	161.9223	7/2$^+$	[E1]			B(E1)(W.u.)=2.1×10^{-5} *4*
680.1035	5/2$^+$	99.5[c] *4*	0.9 *3*	581.0106	7/2$^-$				
		159.461 *3*	1.52 *7*	520.6388	3/2$^-$				
		240.642 *15*	0.34 *3*	439.4517	5/2$^-$				
		378.944 *5*	8.6 *6*	301.1496	5/2$^+$				
		430.305 *6*	1.22 *7*	249.7885	5/2$^-$				
		441.115 *8*	0.45 *9*	238.9988	3/2$^-$				
		504.795 *8*	9.4 *12*	175.3059	9/2$^+$				
		518.178 *6*	100 *9*	161.9223	7/2$^+$	M1			
796.151	7/2$^{(+)}$	494.992 *6*	100 *5*	301.1496	5/2$^+$				
		620.844[b] *6*	56[b] *2*	175.3059	9/2$^+$				I_γ: from (α,nγ) where the placement is from 796 level only.
		634.241 *8*	42 *3*	161.9223	7/2$^+$				
808.185	7/2$^-$	368.733 *3*	100 *6*	439.4517	5/2$^-$	M1+E2	+0.13 *5*	0.00361 *8*	B(M1)(W.u.)=0.91 *+37−28*; B(E2)(W.u.)=147 *+140−110* α(K)=0.00321 *7*; α(L)=0.000340 *8*; α(M)=5.30×10^{-5} *12*; α(N)=4.51×10^{-6} *10* δ: from γ(θ) in (α,nγ). Other: +0.10 *2* from γ(θ) in (n,n′γ) (1991Ko45).
		558.400 *14*	4.1 *7*	249.7885	5/2$^-$				
		569.181 *8*	100 *9*	238.9988	3/2$^-$	(E2)			I_γ: from (n,γ). Iγ(569γ)/Iγ(368γ)=0.85 *14* in (α,3nγ), 0.50 *4* in (α,nγ). B(E2)(W.u.)=800 *+200−300* is much larger than RUL=300. Either the branching or $T_{1/2}$(level) is incorrect.
		632.85 *8*	1.66 *18*	175.3059	9/2$^+$				

$^{77}_{34}Se_{43}$-10

Adopted Levels, Gammas (continued)

γ(^{77}Se) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ	α[&]	Comments
817.8563	1/2$^-$	297.2151 *25*	100 *3*	520.6388	3/2$^-$	M1+E2	−0.17 *3*		δ: from γγ(θ) in ^{77}Br ε decay. Other: 0.17 *13* (ce data in (n,γ)).
		378.402 *5*	1.47 *9*	439.4517	5/2$^-$				
		568.067 *5*	22 *4*	249.7885	5/2$^-$	E2			
		578.853 *7*	72 *3*	238.9988	3/2$^-$	M1+E2			δ: −0.16 *4* or +2.6 *3*.
		817.856 *8*	51 *3*	0.0	1/2$^-$	M1			
824.4310	(5/2)$^-$	144.5 *1*	0.37 *7*	680.1035	5/2$^+$	[E1]		0.0264	B(E1)(W.u.)=0.00033 *17* α(K)=0.0236 *4*; α(L)=0.00248 *4*; α(M)=0.000383 *6*; α(N)=3.21×10^{-5} *5* E_γ: seen only in ^{77}Br ε decay.
		243.414 *3*	2.9 *11*	581.0106	7/2$^-$				
		303.790 *4*	74 *4*	520.6388	3/2$^-$	M1			B(M1)(W.u.)=0.41 *+20−13*
		384.976 *5*	51 *5*	439.4517	5/2$^-$	M1+E2	+0.23 *6*		B(M1)(W.u.)=0.13 *+7−4*; B(E2)(W.u.)=62 *+45−34* δ: from γγ(θ) in ^{77}Br ε decay.
		523.277 *7*	2.7 *3*	301.1496	5/2$^+$	[E1]			B(E1)(W.u.)=5.0×10^{-5} *+24−17*
		574.643 *5*	75.4 *21*	249.7885	5/2$^-$	M1+E2	+0.33 *9*		B(M1)(W.u.)=0.06 *3*; B(E2)(W.u.)=24 *15* δ: from γγ(θ) in ^{77}Br ε decay.
		585.443 *8*	100.0 *21*	238.9988	3/2$^-$	M1+E2	−0.15 *5*		B(M1)(W.u.)=0.076 *+35−24*; B(E2)(W.u.)=7 *+6−4* δ: from γ(θ) in (n,n′γ).
		662.510 *7*	5.20 *17*	161.9223	7/2$^+$	[E1]			B(E1)(W.u.)=4.8×10^{-5} *+22−15*
		824.49 *11*	0.87 *17*	0.0	1/2$^-$	[E2]			B(E2)(W.u.)=0.47 *+24−18*
911.5317	(3/2)$^+$	231.4255 *20*	100 *5*	680.1035	5/2$^+$	M1(+E2)	<0.3	0.0122 *11*	δ: from ce data in ^{76}Se(n,γ).
		390.890 *6*	29 *3*	520.6388	3/2$^-$				
		472.075 *3*	11.9 *13*	439.4517	5/2$^-$				
		610.381 *5*	33.4 *24*	301.1496	5/2$^+$				
		661.719 *24*	0.68 *6*	249.7885	5/2$^-$				E_γ: only seen in (n,γ).
		749.610 *5*	41 *3*	161.9223	7/2$^+$				
		911.58 *3*	5.6 *12*	0.0	1/2$^-$				
946.9823	1/2$^+$	266.872 *4*	2.92 *16*	680.1035	5/2$^+$				
		426.333 *10*	2.59 *21*	520.6388	3/2$^-$				
		645.832 *4*	100 *5*	301.1496	5/2$^+$	(E2)			
		707.983 *6*	28.3 *12*	238.9988	3/2$^-$				
		785.052 *20*	3.43 *21*	161.9223	7/2$^+$	[M3]			
		946.970 *8*	73 *9*	0.0	1/2$^-$				
970.04	(11/2$^+$)	794.7 *3*	100 *6*	175.3059	9/2$^+$				
		808.1 *5*	27 *6*	161.9223	7/2$^+$	(E2)			B(E2)(W.u.)=29 *12*
978.30	9/2$^-$	397.2 *2*	17 *3*	581.0106	7/2$^-$				
		538.8 *8*	15 *3*	439.4517	5/2$^-$	[E2]			B(E2)(W.u.)=9.E+1 *5*
		728.5 *2*	100 *3*	249.7885	5/2$^-$	E2			B(E2)(W.u.)=1.3×10^2 *7*
		802.9 *2*	13 *4*	175.3059	9/2$^+$	[E1]			B(E1)(W.u.)=9.E−5 *6*
		816.3 *2*	12 *4*	161.9223	7/2$^+$	[E1]			B(E1)(W.u.)=8.E−5 *5*
999.2?		478[c]		520.6388	3/2$^-$				
		750[c]		249.7885	5/2$^-$				

$^{77}_{34}Se_{43}$-11

Adopted Levels, Gammas (continued)

γ(^{77}Se) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ	α[&]	Comments
1005.1838	3/2$^-$	180.746 *4*	16.7 *6*	824.4310	(5/2)$^-$	M1		0.0210	B(M1)(W.u.)=1.6 *+16−12*
		187.323 *4*	3.51 *14*	817.8563	1/2$^-$				
		325.079 *3*	1.27 *9*	680.1035	5/2$^+$	[E1]			B(E1)(W.u.)=0.0004 *+4−3*
		424.178 *11*	1.17 *11*	581.0106	7/2$^-$	[E2]			B(E2)(W.u.)=70 *+61−44*
		484.545 *8*	59.5 *21*	520.6388	3/2$^-$	M1+E2	+0.27 *4*		B(M1)(W.u.)=0.28 *+28−20*; B(E2)(W.u.)=116 *+121−88* δ: from γγ(θ) in ^{77}Br ε decay.
		565.732 *5*	24.9 *17*	439.4517	5/2$^-$				
		704.056 *14*	1.09 *11*	301.1496	5/2$^+$	[E1]			B(E1)(W.u.)=3.1×10^{-5} *+31−22*
		755.397 *6*	100.0 *18*	249.7885	5/2$^-$	M1+E2	+0.30 *1*		B(M1)(W.u.)=0.12 *+12−9*; B(E2)(W.u.)=26 *+26−19* δ: from γγ(θ) in ^{77}Br ε decay. Other: +0.4 *1* from γ(θ) in (n,n′γ) (1991Ko45).
		766.171 *13*	2.58 *15*	238.9988	3/2$^-$				
		843.23 *20*	0.9 *5*	161.9223	7/2$^+$	[M2]			B(M2)(W.u.)=115 *+132−104* B(M2)(W.u.): value exceeds RUL=1 for M2.
		1005.193 *11*	55.3 *15*	0.0	1/2$^-$	(M1(+E2))	0.00 *5*		B(M1)(W.u.)=0.032 *+32−23* δ: from γ(θ) in (n,n′γ).
1024.15	(13/2$^+$)	848.8 *2*	100	175.3059	9/2$^+$	(E2)			B(E2)(W.u.)=1.9×10^2 *8*
1126.64	(11/2$^+$)	951.3 *2*	100 *21*	175.3059	9/2$^+$				
		964.7 *2*	71 *21*	161.9223	7/2$^+$	(E2)			B(E2)(W.u.)=19 *11*
1128.113	1/2$^+$	181.117 *17*	2.4 *10*	946.9823	1/2$^+$				
		216.561 *13*	1.8 *3*	911.5317	(3/2)$^+$				
		607.471 *5*	100 *5*	520.6388	3/2$^-$				
		826.97 *10*	2.9 *5*	301.1496	5/2$^+$				
		878.91[@] *14*	5.7 *7*	249.7885	5/2$^-$	[M2]			E_γ: level-energy difference=878.32.
		888.764[@c] *22*	52 *10*	238.9988	3/2$^-$				E_γ: level-energy difference=889.114.
		1128.106 *11*	84 *10*	0.0	1/2$^-$				
1132.457		452.352 *3*	16.3 *17*	680.1035	5/2$^+$				
		831.304 *10*	100 *8*	301.1496	5/2$^+$				
		957.129 *24*	42 *3*	175.3059	9/2$^+$				
		970.54 *4*	31 *3*	161.9223	7/2$^+$				
1172.49	9/2$^-$	364.2 *4*	21.5 *25*	808.185	7/2$^-$				
		733.1 *3*	100.0 *12*	439.4517	5/2$^-$	E2		0.00092 *1*	B(E2)(W.u.)=3.0×10^2 *11* α(K)=0.000816 *12*; α(L)=8.63×10^{-5} *13*; α(M)=1.343×10^{-5} *19*; α(N)=1.138×10^{-6}
1179.3	(5/2$^-$,7/2$^-$)	739.8 *7*	100	439.4517	5/2$^-$				E_γ: (α,3nγ) results suggest that 739.8γ is doublet in (α,nγ).
1186.9837	(3/2)	239.9981 *23*	9.0 *10*	946.9823	1/2$^+$				
		275.446 *4*	1.84 *15*	911.5317	(3/2)$^+$				
		362.542[c] *4*	1.25 *6*	824.4310	(5/2)$^-$				
		506.896 *8*	1.8 *4*	680.1035	5/2$^+$				
		666.346 *6*	7.7 *4*	520.6388	3/2$^-$				
		747.540 *8*	4.9 *4*	439.4517	5/2$^-$				

Adopted Levels, Gammas (continued)

γ(^{77}Se) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult. [#]	δ	Comments
1186.9837	(3/2)	885.832 *7*	100 *12*	301.1496	$5/2^+$			
		937.15 *6*	1.59 *15*	249.7885	$5/2^-$			
		948.03 *6*	4.1 *5*	238.9988	$3/2^-$			
		1186.992 *21*	19.4 *20*	0.0	$1/2^-$			
1193.1	$(9/2^+)$	397.1 *4*	43 *8*	796.151	$7/2^{(+)}$			
		891.3 *9*	100 *8*	301.1496	$5/2^+$	[E2]		B(E2)(W.u.)=31 *7*
1230.629	$(5/2)^-$	649.622 *6*	19.3 *23*	581.0106	$7/2^-$			γ not seen in ^{77}Br ε decay.
		791.160 *7*	50 *4*	439.4517	$5/2^-$			
		929.492 *14*	20 *3*	301.1496	$5/2^+$	[E1]		B(E1)(W.u.)<0.00021
		980.8 *4*	17 *3*	249.7885	$5/2^-$			E_γ,I_γ: from ^{77}Br ε decay. In (n,γ) Iγ(980γ)/Iγ(991γ)=37 *7* for a doublet.
		991.627 *19*	100 *5*	238.9988	$3/2^-$	E2+M1	+6.0 *4*	B(M1)(W.u.)<0.0016; B(E2)(W.u.)<67 δ: from $\gamma(\theta)$ in (n,n′γ).
		1230.5 *2*	4.2 *10*	0.0	$1/2^-$	[E2]		B(E2)(W.u.)<0.98 E_γ,I_γ: from ^{77}Br ε decay. In (n,γ) Iγ(1230γ)/Iγ(991γ)=18 *2* for a doublet.
1252.963	$5/2^+$	572.855 *7*	23.4 *20*	680.1035	$5/2^+$			
		671.953 *7*	11.0 *12*	581.0106	$7/2^-$	[E1]		B(E1)(W.u.)=0.00015 *7*
		732.336 *17*	14.2 *10*	520.6388	$3/2^-$	[E1]		B(E1)(W.u.)=0.00015 *7*
		951.752 *24*	100 *16*	301.1496	$5/2^+$			
1282.8	$(7/2^-)$	474.8 *5*	42 *25*	808.185	$7/2^-$			
		843.2 *5*	100 *58*	439.4517	$5/2^-$			
1351.58	$(11/2^-)$	179.3 *3*	2.1 *10*	1172.49	$9/2^-$			
		373.0 *3*	8 *3*	978.30	$9/2^-$			
		543.4 *3*	5 *3*	808.185	$7/2^-$	(E2)		B(E2)(W.u.)=5.E+1 *4*
		770.5 *2*	100 *4*	581.0106	$7/2^-$	(E2)		B(E2)(W.u.)=1.9×10^2 *9*
1364.273	$(3/2^-)$	177.289 *13*	2.8 *4*	1186.9837	(3/2)			
		452.735 *5*	2.5 *3*	911.5317	$(3/2)^+$			
		556.089 *22*	3.1 *4*	808.185	$7/2^-$			
		684.169 *9*	12.5 *7*	680.1035	$5/2^+$			
		843.665 *21*	28 *3*	520.6388	$3/2^-$			
		1063.120 *12*	100 *10*	301.1496	$5/2^+$			
		1115.24[@c] *24*	10.7 *20*	249.7885	$5/2^-$			E_γ: 1117.05 in (n,n′γ).
1402.485	$(3/2^-)$	274.370 *5*	2.05 *12*	1128.113	$1/2^+$			
		397.291 *6*	26.3 *13*	1005.1838	$3/2^-$			
		455.503 *6*	4.8 *6*	946.9823	$1/2^+$			
		490.96 *7*	0.59 *5*	911.5317	$(3/2)^+$			
		584.631 *14*	3.5 *3*	817.8563	$1/2^-$			
		606.32 *4*	0.78 *11*	796.151	$7/2^{(+)}$	[M2]		
		881.844 *8*	29 *3*	520.6388	$3/2^-$			
		963.041 *18*	15 *3*	439.4517	$5/2^-$			
		1163.481 *9*	100 *13*	238.9988	$3/2^-$			
		1402.466 *25*	42 *3*	0.0	$1/2^-$			

$^{77}_{34}Se_{43}$-13

Adopted Levels, Gammas (continued)

γ(^{77}Se) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult. [#]
1411.626	(3/2$^-$)	283.501 *24*	0.22 *4*	1128.113	1/2$^+$	
		406.49 *3*	0.26 *3*	1005.1838	3/2$^-$	
		464.635 *15*	0.30 *3*	946.9823	1/2$^+$	
		587.192 *7*	3.9 *4*	824.4310	(5/2)$^-$	
		593.74 *5*	6.5 *6*	817.8563	1/2$^-$	
		603.41 *3*	2.21 *19*	808.185	7/2$^-$	
		615.8 *3*	0.27 *20*	796.151	7/2$^{(+)}$	
		731.52 *6*	1.52 *13*	680.1035	5/2$^+$	
		830.600 *9*	14.7 *13*	581.0106	7/2$^-$	
		890.983 *9*	59 *8*	520.6388	3/2$^-$	
		972.26 *5*	5.9 *9*	439.4517	5/2$^-$	
		1110.3[c] *4*	4.7 *6*	301.1496	5/2$^+$	
		1161.843 *12*	67 *9*	249.7885	5/2$^-$	
		1172.614 *18*	50 *7*	238.9988	3/2$^-$	
		1411.628 *18*	100 *12*	0.0	1/2$^-$	
1488.237	(3/2)$^-$	360.109 *13*	3.6 *3*	1128.113	1/2$^+$	
		483.051 *5*	77 *11*	1005.1838	3/2$^-$	
		576.73 *17*	1.3 *3*	911.5317	(3/2)$^+$	
		663.803 *8*	26.9 *17*	824.4310	(5/2)$^-$	
		670.369 *18*	30.4 *17*	817.8563	1/2$^-$	
		679.90 *14*	1.3 *4*	808.185	7/2$^-$	
		692.12 *15*	1.6 *5*	796.151	7/2$^{(+)}$	[M2]
		808.113 *15*	40.4 *22*	680.1035	5/2$^+$	
		967.611 *15*	92 *11*	520.6388	3/2$^-$	
		1048.787 *23*	67 *11*	439.4517	5/2$^-$	
		1249.28 *3*	92 *6*	238.9988	3/2$^-$	
		1488.18 *15*	100 *17*	0.0	1/2$^-$	
1511.023	(3/2)	324.035 *4*	4.02 *25*	1186.9837	(3/2)	
		505.839 *5*	26 *4*	1005.1838	3/2$^-$	
		564.050 *10*	12.5 *18*	946.9823	1/2$^+$	
		599.493 *10*	39 *3*	911.5317	(3/2)$^+$	
		686.565 *15*	11.5 *6*	824.4310	(5/2)$^-$	
		693.156 *14*	7.5 *5*	817.8563	1/2$^-$	
		715.07 *15*	0.88 *20*	796.151	7/2$^{(+)}$	
		930.619[c] *25*	18.8 *13*	581.0106	7/2$^-$	
		990.405 *22*	100 *10*	520.6388	3/2$^-$	
		1071.596 *18*	58 *8*	439.4517	5/2$^-$	
		1209.93 *21*	8.2 *15*	301.1496	5/2$^+$	
		1261.28 *15*	14.0 *25*	249.7885	5/2$^-$	
		1272.07 *8*	59 *4*	238.9988	3/2$^-$	
		1349.85[c] *3*	7.3 *13*	161.9223	7/2$^+$	
		1510.72[c] *11*	40 *5*	0.0	1/2$^-$	
1607.702	3/2$^+$,5/2$^+$	660.75 *4*	2.49 *17*	946.9823	1/2$^+$	

$^{77}_{34}Se_{43}$-14

Adopted Levels, Gammas (continued)

γ(^{77}Se) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	Comments
1607.702	3/2$^+$,5/2$^+$	696.164 *17*	2.70 *18*	911.5317	(3/2)$^+$		
		783.31 *5*	1.71 *17*	824.4310	(5/2)$^-$		
		799.54 *5*	3.2 *3*	808.185	7/2$^-$		
		811.58 *4*	1.77 *14*	796.151	7/2$^{(+)}$		
		927.578 *12*	10.6 *13*	680.1035	5/2$^+$		
		1026.21[c] *7*	5.8 *5*	581.0106	7/2$^-$		
		1168.32 *8*	8.0 *11*	439.4517	5/2$^-$		
		1306.557 *19*	100 *12*	301.1496	5/2$^+$		
		1368.72 *18*	7.1 *11*	238.9988	3/2$^-$		
1616.61	(11/2$^-$)	443.9 *3*	22 *10*	1172.49	9/2$^-$		
		808.4 *4*	100 *22*	808.185	7/2$^-$		
1620.5	(11/2$^+$)	824.3 *7*	100	796.151	7/2$^{(+)}$		
1623.145	(1/2$^-$)	676.173 *14*	2.50 *14*	946.9823	1/2$^+$	[E1]	B(E1)(W.u.)=0.00012 *+12−6*
		711.604 *6*	14.9 *7*	911.5317	(3/2)$^+$	[E1]	B(E1)(W.u.)=0.0006 *+6−3*
		798.84 *20*	0.46 *14*	824.4310	(5/2)$^-$	[E2]	B(E2)(W.u.)=1.6 *+17−8*
		805.284 *11*	7.5 *5*	817.8563	1/2$^-$		
		1183.7 *6*	1.5 *6*	439.4517	5/2$^-$	[E2]	B(E2)(W.u.)=0.7 *+7−4*
		1372.99[c] *8*	10.7 *10*	249.7885	5/2$^-$	[E2]	B(E2)(W.u.)=2.4 *+24−12*
		1384.160 *20*	100 *8*	238.9988	3/2$^-$		
		1623.15 *15*	50 *5*	0.0	1/2$^-$		
1714.755	1/2$^-$,3/2$^-$	527.79 *3*	1.21 *19*	1186.9837	(3/2)		
		709.558 *15*	7.1 *5*	1005.1838	3/2$^-$		
		803.25 *6*	3.8 *6*	911.5317	(3/2)$^+$		
		890.32 *3*	20.6 *17*	824.4310	(5/2)$^-$		
		896.910 *14*	33 *3*	817.8563	1/2$^-$		
		1194.080 *16*	69 *8*	520.6388	3/2$^-$		
		1275.28 *25*	7 *3*	439.4517	5/2$^-$		
		1475.78 *3*	92 *6*	238.9988	3/2$^-$		
		1714.79 *6*	100 *8*	0.0	1/2$^-$		
1721.94	(13/2$^+$)	595.3 *3*	21 *6*	1126.64	(11/2$^+$)		
		697.8 *2*	16 *6*	1024.15	(13/2$^+$)		
		751.9 *3*	100 *9*	970.04	(11/2$^+$)		
1817.638	1/2$^-$	329.398 *5*	0.45 *7*	1488.237	(3/2)$^-$		
		630.47 *13*	0.091 *15*	1186.9837	(3/2)		
		689.529 *18*	1.28 *7*	1128.113	1/2$^+$	[E1]	B(E1)(W.u.)=0.00018 *10*
		812.43 *3*	0.97 *6*	1005.1838	3/2$^-$		
		993.22 *6*	0.91 *17*	824.4310	(5/2)$^-$	[E2]	B(E2)(W.u.)=3.4 *19*
		999.75 *5*	2.06 *20*	817.8563	1/2$^-$		
		1009.6[c] *5*	0.76 *23*	808.185	7/2$^-$	[M3]	Placement in (n,γ) is considered unlikely (by evaluator) since deduced B(M3)(W.u.) is much greater than allowed by RUL.
		1297.001 *19*	100 *9*	520.6388	3/2$^-$		
		1378.190 *25*	21.2 *18*	439.4517	5/2$^-$	[E2]	B(E2)(W.u.)=15 *8*
		1568.44[c] *6*	9.4 *12*	249.7885	5/2$^-$	[E2]	

$^{77}_{34}Se_{43}$-15

Adopted Levels, Gammas (continued)

γ(^{77}Se) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult. [#]	Comments
1817.638	1/2$^-$	1578.63 *8*	17.9 *12*	238.9988	3/2$^-$	[M1+E2]	B(M1)(W.u.)=0.0058 *+23−30*, B(E2)(W.u.)=3.1 *+12−16* for δ=1.
		1641.96[c] *14*	2.9 *4*	175.3059	9/2$^+$	[M4]	Placement in (n,γ) considered unlikely (by evaluator) due to B(M4)(W.u.) much greater than RUL.
1830.861	(1/2$^-$,3/2)	319.837 *11*	6.5 *14*	1511.023	(3/2)		
		826.05 *20*	17 *5*	1005.1838	3/2$^-$		
		883.76 *18*	41 *17*	946.9823	1/2$^+$		
		1310.07 *22*	100 *18*	520.6388	3/2$^-$		
		1391.40 *11*	92 *11*	439.4517	5/2$^-$		
		1581.0 *6*	65 *18*	249.7885	5/2$^-$		
		1830.99[a] *15*	<277[a]	0.0	1/2$^-$		
1886.52	13/2$^-$	535.3[c] *5*	3.2 *16*	1351.58	(11/2$^-$)		
		908.1 *2*	100 *5*	978.30	9/2$^-$	E2	B(E2)(W.u.)=9.E+1 *4*
		916.4 *5*	8 *3*	970.04	(11/2$^+$)	[E1]	B(E1)(W.u.)=7.E−5 *4*
1888.64		1208.45 *4*	96 *9*	680.1035	5/2$^+$		
		1587.52 *15*	69 *9*	301.1496	5/2$^+$		
		1727.21[@] *16*	100 *13*	161.9223	7/2$^+$		E_γ: level-energy difference=1726.69.
1916.065	(1/2$^+$,3/2)	405.053 *17*	2.2 *3*	1511.023	(3/2)		
		427.84 *3*	1.14 *17*	1488.237	(3/2)$^-$		
		513.553 *15*	3.3 *4*	1402.485	(3/2$^-$)		
		969.02 *7*	7.7 *9*	946.9823	1/2$^+$		
		1091.069[c] *22*	106 *11*	824.4310	(5/2)$^-$		
		1395.7 *3*	100 *5*	520.6388	3/2$^-$		
		1615.2[a] *4*	<19[a]	301.1496	5/2$^+$		
		1677.07 *6*	94 *14*	238.9988	3/2$^-$		
		1916.23 *7*	91 *14*	0.0	1/2$^-$		
1998.6		647	100	1351.58	(11/2$^-$)		
2055.45	(15/2$^+$)	1031.3 *3*	100 *25*	1024.15	(13/2$^+$)		
		1085.4 *3*	92 *25*	970.04	(11/2$^+$)	(E2)	B(E2)(W.u.)=39 *17*
2092.09	(13/2$^-$)	475.2[c] *4*	5 *3*	1616.61	(11/2$^-$)		
		740.4 *4*	10 *5*	1351.58	(11/2$^-$)		
		919.6 *3*	100 *6*	1172.49	9/2$^-$	(E2)	B(E2)(W.u.)=56 *13*
2103.38	(17/2$^+$)	1079.2 *2*	100	1024.15	(13/2$^+$)	(E2)	B(E2)(W.u.)=57 *23*
2142.54	(1/2,3/2,5/2$^-$)	1137.41 *10*	8.8 *10*	1005.1838	3/2$^-$		
		2142.68 *12*	100 *7*	0.0	1/2$^-$		
2212.03	1/2$^-$,3/2$^-$	724.19[c] *3*	12.4 *14*	1488.237	(3/2)$^-$		
		1025.02 *3*	100 *8*	1186.9837	(3/2)		
		1083.66[c] *3*	86 *13*	1128.113	1/2$^+$		
		1387.76 *10*	74 *6*	824.4310	(5/2)$^-$		
		1692.15[c] *13*	93 *13*	520.6388	3/2$^-$		
		2211.79[a] *12*	<414[a]	0.0	1/2$^-$		
2240.22	(15/2$^+$)	1113.6 *2*	100 *7*	1126.64	(11/2$^+$)	(E2)	B(E2)(W.u.)=14 *6*
		1215.9 *5*	22 *7*	1024.15	(13/2$^+$)		

$^{77}_{34}Se_{43}$-16

Adopted Levels, Gammas (continued)

γ(^{77}Se) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.#	Comments
2248.929	3/2$^+$,5/2$^+$	737.903 *7*	100 *6*	1511.023	(3/2)		
		884.43 *15*	31 *8*	1364.273	(3/2$^-$)		
		1301.25[c] *14*	63 *7*	946.9823	1/2$^+$		
		2009.09[c] *11*	106 *18*	238.9988	3/2$^-$		
2264.18	(15/2$^-$)	377.3 *5*	3.2 *24*	1886.52	13/2$^-$		
		912.4 *3*	100 *6*	1351.58	(11/2$^-$)	(E2)	B(E2)(W.u.)=1.1×10^2 *5*
2264.43	(3/2$^-$)	776.48 *17*	1.2 *3*	1488.237	(3/2)$^-$		
		1317.83[c] *6*	38 *3*	946.9823	1/2$^+$		
		1446.33 *13*	33 *6*	817.8563	1/2$^-$		
		1456.2 *3*	16 *3*	808.185	7/2$^-$		
		1963.41 *10*	100 *10*	301.1496	5/2$^+$		
		2088.4 *8*	37 *14*	175.3059	9/2$^+$	[E3]	
2320.13	(1/2$^+$,3/2,5/2$^+$)	1408.7 *3*	100 *12*	911.5317	(3/2)$^+$		E_γ: possibly contaminated by ^{27}Al(n,γ) line.
		2018.88 *25*	45 *17*	301.1496	5/2$^+$		
2339.95	(3/2$^-$,5/2$^+$)	975.55 *7*	18.4 *9*	1364.273	(3/2$^-$)		
		1392.97 *6*	100 *6*	946.9823	1/2$^+$		
		1759.6 *4*	53 *17*	581.0106	7/2$^-$		
		2090.7 *13*	48 *31*	249.7885	5/2$^-$		
2375.3	(3/2$^+$,5/2$^+$)	2211.79[ac] *12*	100[a]	161.9223	7/2$^+$		
2392.951	3/2$^-$	678.68[@] *7*	0.7 *4*	1714.755	1/2$^-$,3/2$^-$		E_γ: level-energy difference=678.19.
		980.986[c] *21*	23.7 *24*	1411.626	(3/2$^-$)		
		1139.98 *3*	19 *3*	1252.963	5/2$^+$	[E1]	B(E1)(W.u.)=0.00018 *12*
		1584.6 *7*	43 *7*	808.185	7/2$^-$	[E2]	B(E2)(W.u.)=5 *3*
		1712.99 *6*	49 *6*	680.1035	5/2$^+$	[E1]	B(E1)(W.u.)=0.00014 *9*
		1872.23 *5*	100 *13*	520.6388	3/2$^-$		
		2391.6[c] *3*	26 *3*	0.0	1/2$^-$		
2455.456	(1/2$^+$,3/2,5/2$^+$)	740.697 *7*	100 *7*	1714.755	1/2$^-$,3/2$^-$		
		1450.74[c] *4*	234 *58*	1005.1838	3/2$^-$		
		1774.1 *6*	58 *29*	680.1035	5/2$^+$		
2491.94	(3/2$^+$)	1003.66 *5*	87 *20*	1488.237	(3/2)$^-$		
		1672.3 *9*	65 *41*	817.8563	1/2$^-$		
		2189.06[c] *15*	244 *25*	301.1496	5/2$^+$		
		2329.16[@] *21*	100 *18*	161.9223	7/2$^+$		E_γ: level-energy difference=2329.99.
2551.94	(3/2$^-$)	733.9[c] *3*	2.2 *9*	1817.638	1/2$^-$		
		1321.31 *8*	42 *3*	1230.629	(5/2)$^-$		
		1363.9 *8*	7 *4*	1186.9837	(3/2)		
		1604.22[c] *14*	46 *6*	946.9823	1/2$^+$		
		1742.91[c] *12*	54 *7*	808.185	7/2$^-$		
		1970.92 *20*	100 *12*	581.0106	7/2$^-$		
2553.82	(1/2,3/2,5/2$^+$)	1142.0 *3*	31 *8*	1411.626	(3/2$^-$)		
		1367.07 *13*	100 *10*	1186.9837	(3/2)		
		1606.79 *18*	74 *10*	946.9823	1/2$^+$		

$^{77}_{34}Se_{43}$-17

Adopted Levels, Gammas (continued)

γ(^{77}Se) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.[#]	Comments
2579.8	(15/2$^+$)	959.3 *7*	100	1620.5	(11/2$^+$)		
2611.20	(15/2$^-$)	994.5 *2*	100	1616.61	(11/2$^-$)		
2640.970	(3/2$^+$,5/2$^+$)	1238.492 *24*	79 *10*	1402.485	(3/2$^-$)		
		1635.22[c] *13*	57 *7*	1005.1838	3/2$^-$		
		1729.32 *14*	100 *13*	911.5317	(3/2)$^+$		
2716.33	(3/2)	1227.82 *21*	8.2 *14*	1488.237	(3/2)$^-$		
		1485.2 *3*	10.2 *18*	1230.629	(5/2)$^-$		
		1529.51 *7*	100 *16*	1186.9837	(3/2)		
		2415.0 *4*	37 *6*	301.1496	5/2$^+$		
2776.75	(1/2$^-$,3/2)	959.10 *4*	37 *4*	1817.638	1/2$^-$		
		1365.32 *11*	87 *9*	1411.626	(3/2$^-$)		
		1771.3 *4*	100 *33*	1005.1838	3/2$^-$		
		1960.4[c] *3*	92 *25*	817.8563	1/2$^-$		
		2526.6 *9*	100 *25*	249.7885	5/2$^-$		
		2776.1[c] *3*	150 *50*	0.0	1/2$^-$		
2789.6	(17/2$^+$)	1067.7 *2*	100	1721.94	(13/2$^+$)		
2809.13	(1/2,3/2)	1803.89 *11*	37 *4*	1005.1838	3/2$^-$		
		2809.05 *15*	100 *6*	0.0	1/2$^-$		
2815.48	(1/2$^-$,3/2,5/2$^+$)	2565.56 *20*	100	249.7885	5/2$^-$		
2818.3	(15/2$^-$)	1201.6 *4*	100 *50*	1616.61	(11/2$^-$)		
		1466.8 *8*	18 *14*	1351.58	(11/2$^-$)		
2853.09	(1/2$^-$,3/2$^-$)	1230.89[c] *14*	<12	1623.145	(1/2$^-$)		
		1847.89 *5*	94 *10*	1005.1838	3/2$^-$		
		2027.7 *5*	17 *4*	824.4310	(5/2)$^-$		
		2034.87 *19*	91 *7*	817.8563	1/2$^-$		
		2613.54 *22*	100 *7*	238.9988	3/2$^-$		
2864.47	(17/2$^-$)	977.6 *4*	100	1886.52	13/2$^-$	(E2)	B(E2)(W.u.)=8.E+1 *3*
2869.2	(15/2$^-$)	777.1 *5*	100 *60*	2092.09	(13/2$^-$)		
		1253.6[c] *5*	50 *30*	1616.61	(11/2$^-$)		
2873.00	(3/2)	1461.03 *18*	17.9 *25*	1411.626	(3/2$^-$)		
		1619.83 *14*	26 *3*	1252.963	5/2$^+$		
		1745.4 *3*	11.0 *22*	1128.113	1/2$^+$		
		2623.2 *3*	30 *4*	249.7885	5/2$^-$		
		2873.00 *17*	100 *6*	0.0	1/2$^-$		
2891.94	(3/2$^-$)	1284.28 *4*	36 *3*	1607.702	3/2$^+$,5/2$^+$		
		1489.8 *3*	13 *3*	1402.485	(3/2$^-$)		
		1980.06 *19*	57 *7*	911.5317	(3/2)$^+$	[E1]	B(E1)(W.u.)=0.00019 *9*
		2073.67 *13*	83 *7*	817.8563	1/2$^-$		
		2590.64 *22*	100 *10*	301.1496	5/2$^+$	[E1]	B(E1)(W.u.)=0.00015 *7*
2966.81	(17/2$^-$)	102.7 *7*	33 *17*	2864.47	(17/2$^-$)		
		355.5 *4*	29 *17*	2611.20	(15/2$^-$)		
		702.6 *2*	46 *17*	2264.18	(15/2$^-$)		
		874.8 *5*	100 *29*	2092.09	(13/2$^-$)		

$^{77}_{34}Se_{43}$-18

Adopted Levels, Gammas (continued)

γ(^{77}Se) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	Comments
2982.93	(1/2,3/2)	2982.72 *19*	100	0.0	1/2$^-$		
2994.13	(1/2,3/2,5/2$^+$)	620.844[bc] *5*	92[b] *6*	2375.3	(3/2$^+$,5/2$^+$)		I_γ: intensity division is based on results from (α,nγ) for placement of 620.8γ from 796 level. E_γ: level-energy difference=618.83; placement questioned by the evaluator, based on energy mismatch by 2 keV.
		1105.45 *4*	49 *6*	1888.64			
		1506.96[c] *6*	196 *20*	1488.237	(3/2)$^-$		
		2755.13 *19*	100 *10*	238.9988	3/2$^-$		
3014.69	(17/2$^-$)	922.2 *5*	11 *7*	2092.09	(13/2$^-$)		
		1128.1 *5*	100 *12*	1886.52	13/2$^-$		
3040.33	(3/2$^-$,5/2$^+$)	2359.8 *6*	41 *9*	680.1035	5/2$^+$		
		2458.9 *3*	40 *6*	581.0106	7/2$^-$		
		2600.36 *19*	100 *9*	439.4517	5/2$^-$		
3051.19	(1/2$^+$,3/2,5/2$^+$)	1336.73 *18*	24 *3*	1714.755	1/2$^-$,3/2$^-$		
		1538.77[c] *24*	65 *9*	1511.023	(3/2)		
		2139.6 *3*	50 *9*	911.5317	(3/2)$^+$		
		2750.78[@] *22*	100 *12*	301.1496	5/2$^+$		E_γ: level-energy difference=2749.99.
3063.92	(3/2,5/2$^+$)	2762.43 *19*	100 *10*	301.1496	5/2$^+$		
		2815.26[c] *19*	90 *10*	249.7885	5/2$^-$		
3071.93	(17/2$^-$)	808.0 *8*	41 *27*	2264.18	(15/2$^-$)		
		979.9 *2*	100 *19*	2092.09	(13/2$^-$)		
		1185.6 *5*	19 *11*	1886.52	13/2$^-$		
3132.06	(1/2,3/2,5/2$^+$)	1417.95[a] *6*	<110[a]	1714.755	1/2$^-$,3/2$^-$		E_γ: level-energy difference=1417.31.
		1945.05 *11*	100 *33*	1186.9837	(3/2)		
		2307.50[a] *21*	<67[a]	824.4310	(5/2)$^-$		
3147.5	(17/2$^-$)	1055.3 *3*	100	2092.09	(13/2$^-$)		
3168.21	(3/2$^+$,5/2$^+$)	2256.3 *6*	100	911.5317	(3/2)$^+$		
3191.58	(1/2$^+$,3/2,5/2$^+$)	1939.21 *22*	100 *13*	1252.963	5/2$^+$		
		2952.2[a] *4*	<116[a]	238.9988	3/2$^-$		
3201.4	(17/2$^-$)	332.2 *5*	100 *57*	2869.2	(15/2$^-$)		
		383.1 *5*	71 *43*	2818.3	(15/2$^-$)		
3232.82	(1/2,3/2)	3233.1 *6*	100	0.0	1/2$^-$		
3243.94	(1/2$^-$,3/2,5/2$^+$)	2994.01 *20*	100	249.7885	5/2$^-$		
3245.57	(19/2$^+$)	1142.2 *2*	100 *14*	2103.38	(17/2$^+$)		
		1190.1 *2*	93 *19*	2055.45	(15/2$^+$)		
3264.91	(19/2$^-$)	1001.0 *3*	100	2264.18	(15/2$^-$)		
3312.71	(1/2,3/2)	2125.2 *3*	100 *21*	1186.9837	(3/2)		
		2185.5 *6*	28 *11*	1128.113	1/2$^+$		
		2307.50[a] *21*	<95[a]	1005.1838	3/2$^-$		
		2494.6 *14*	28 *10*	817.8563	1/2$^-$		
3327.04	(3/2$^-$,5/2$^+$)	2745.0[@] *3*	100	581.0106	7/2$^-$		E_γ: level-energy difference=2745.98.
3333.7	(21/2$^+$)	1230.3 *2*	100	2103.38	(17/2$^+$)	(E2)	B(E2)(W.u.)=37 *19*

Adopted Levels, Gammas (continued)

γ(^{77}Se) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.#	Comments
3348.67	(1/2,3/2)	1531.62 *24*	45 *7*	1817.638	1/2$^-$		
		1837.52[a] *16*	<62[a]	1511.023	(3/2)		
		2161.22 *18*	100 *14*	1186.9837	(3/2)		
3354.30	(1/2,3/2)	3114.0 *10*	100 *42*	238.9988	3/2$^-$		
		3354.00[a] *21*	<203[a]	0.0	1/2$^-$		
3362.25	(1/2$^-$,3/2,5/2$^+$)	1852.4 *4*	27 *7*	1511.023	(3/2)		
		2132.3 *3*	58 *8*	1230.629	(5/2)$^-$		
		2922.75 *22*	100 *10*	439.4517	5/2$^-$		
3395.99	(1/2,3/2,5/2$^+$)	1790.24[c] *5*	100	1607.702	3/2$^+$,5/2$^+$		
3403.98	(19/2$^-$)	202.5 *4*	19 *10*	3201.4	(17/2$^-$)		
		389.2 *2*	100 *23*	3014.69	(17/2$^-$)		
		437.0 *6*	35 *16*	2966.81	(17/2$^-$)		
		539.6 *3*	71 *16*	2864.47	(17/2$^-$)		
		1140.0 *5*	23 *10*	2264.18	(15/2$^-$)		
3409.6	(19/2$^+$)	1169.4 *3*	100	2240.22	(15/2$^+$)		
3412.44	(1/2,3/2)	1594.35 *22*	33 *5*	1817.638	1/2$^-$		
		1697.84 *12*	55 *7*	1714.755	1/2$^-$,3/2$^-$		
		3412.1 *3*	100 *11*	0.0	1/2$^-$		
3415.03	(1/2,3/2)	1075.02 *6*	40 *5*	2339.95	(3/2$^-$,5/2$^+$)		
		1150.63 *6*	40 *3*	2264.43	(3/2$^-$)		
		3415.0 *3*	100 *10*	0.0	1/2$^-$		
3439.71	(19/2$^-$)	238.4 *9*	100 *67*	3201.4	(17/2$^-$)		
		293 *1*	53 *27*	3147.5	(17/2$^-$)		
		425.3 *8*	53 *27*	3014.69	(17/2$^-$)		
		473.0 *5*	73 *40*	2966.81	(17/2$^-$)		
		575.0 *2*	100 *33*	2864.47	(17/2$^-$)		
		1336.1 *7*	80 *47*	2103.38	(17/2$^+$)		
3450.45	(3/2$^+$,5/2$^+$)	3211.7 *4*	100	238.9988	3/2$^-$		
3472.1	(19/2$^-$)	399.6[c] *6*	36 *21*	3071.93	(17/2$^-$)		
		607.6 *6*	100 *36*	2864.47	(17/2$^-$)		
		860.7 *3*	79 *43*	2611.20	(15/2$^-$)		
		1208.8 *8*	79 *43*	2264.18	(15/2$^-$)		
3472.84	(1/2,3/2,5/2$^+$)	2952.2[a] *4*	100[a]	520.6388	3/2$^-$		
3480.52	(1/2,3/2,5/2$^+$)	2249.0 *3*	100 *9*	1230.629	(5/2)$^-$		
		2960.36 *19*	63 *5*	520.6388	3/2$^-$		
		3241.01 *22*	81 *6*	238.9988	3/2$^-$		
3517.91	(3/2$^+$)	2265.5 *4*	51 *9*	1252.963	5/2$^+$		
		2710.4 *3*	30 *4*	808.185	7/2$^-$	[M2]	
		3217.8 *4*	40 *5*	301.1496	5/2$^+$		
		3517.26[@] *15*	100 *6*	0.0	1/2$^-$		E_γ: level-energy difference=3517.83.
3545.64	(3/2$^+$,5/2$^+$)	1830.99[a] *15*	<51[a]	1714.755	1/2$^-$,3/2$^-$		
		2417.4 *3*	100 *14*	1128.113	1/2$^+$		
		3106.4 *3*	32 *4*	439.4517	5/2$^-$		

Adopted Levels, Gammas (continued)

γ(^{77}Se) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Comments
3545.64	(3/2$^+$,5/2$^+$)	3383.1 *3*	72 *8*	161.9223	7/2$^+$	
3552.43	(3/2$^-$)	1837.52[a] *16*	<105[a]	1714.755	1/2$^-$,3/2$^-$	
		2970.8 *5*	100 *23*	581.0106	7/2$^-$	
		3251.9[a] *3*	<99[a]	301.1496	5/2$^+$	
3561.25	(1/2,3/2,5/2$^+$)	1417.95[a] *6*	<54[a]	2142.54	(1/2,3/2,5/2$^-$)	E_γ: level-energy difference=1418.71.
		2649.9 *5*	47 *11*	911.5317	(3/2)$^+$	
		3040.52 *16*	100 *6*	520.6388	3/2$^-$	
3641.4?	(19/2$^-$)	1031[c] *2*	100	2611.20	(15/2$^-$)	
3642.23	(5/2$^+$)	3340.4 *7*	50 *7*	301.1496	5/2$^+$	
		3466.87 *16*	100 *6*	175.3059	9/2$^+$	
3694.43	(3/2$^+$,5/2$^+$)	3014.0 *4*	100	680.1035	5/2$^+$	
3718.49	(1/2$^-$,3/2,5/2$^+$)	2111.11 *25*	81 *9*	1607.702	3/2$^+$,5/2$^+$	
		2894.13 *11*	81 *13*	824.4310	(5/2)$^-$	
		3279.4 *9*	100 *22*	439.4517	5/2$^-$	
3764.79	(21/2$^-$)	292.7 *4*	58 *42*	3472.1	(19/2$^-$)	
		324.9 *2*	75 *25*	3439.71	(19/2$^-$)	
		360.8 *2*	78 *25*	3403.98	(19/2$^-$)	
		499.8 *2*	22 *11*	3264.91	(19/2$^-$)	
		616.9 *5*	22 *11*	3147.5	(17/2$^-$)	
		693.1 *3*	14 *8*	3071.93	(17/2$^-$)	
		900.5 *6*	100 *28*	2864.47	(17/2$^-$)	
3772.37	(5/2$^+$)	2964.66 *18*	100 *8*	808.185	7/2$^-$	
		3251.9[a] *3*	<56[a]	520.6388	3/2$^-$	
3798.21	(3/2$^+$,5/2$^+$)	2886.7 *3*	55 *7*	911.5317	(3/2)$^+$	
		3560.5 *15*	13 *4*	238.9988	3/2$^-$	
		3636.35 *17*	100 *6*	161.9223	7/2$^+$	
3827.0	(1/2,3/2,5/2$^+$)	1615.2[a] *4*	100[a]	2212.03	1/2$^-$,3/2$^-$	
3864.6	(21/2$^+$)	530.9 *2*	100 *31*	3333.7	(21/2$^+$)	
		619.0 *4*	25 *14*	3245.57	(19/2$^+$)	
3868.61	(5/2$^+$)	3045.03[@] *24*	36 *4*	824.4310	(5/2)$^-$	E_γ: level-energy difference=3044.12.
		3630.7[c] *3*	56 *4*	238.9988	3/2$^-$	
		3692.97 *15*	100 *6*	175.3059	9/2$^+$	
3880.4	(21/2$^-$)	476.2 *4*	18 *11*	3403.98	(19/2$^-$)	
		1016.1 *4*	100 *47*	2864.47	(17/2$^-$)	
3885.1	(21/2$^+$)	1095.5 *4*	85 *46*	2789.6	(17/2$^+$)	
		1781.7 *4*	100 *38*	2103.38	(17/2$^+$)	
3934.71	(3/2$^-$,5/2$^+$)	2989.7[@c] *4*	32 *6*	946.9823	1/2$^+$	
		3110.21 *21*	100 *8*	824.4310	(5/2)$^-$	
		3354.00[a] *21*	<90[a]	581.0106	7/2$^-$	
3988.5	(21/2$^-$)	973.8 *8*	100	3014.69	(17/2$^-$)	
4068.49	(5/2$^+$)	3260.3 *3*	82 *14*	808.185	7/2$^-$	
		3487.38 *19*	100 *7*	581.0106	7/2$^-$	
		3828.0 *7*	18 *4*	238.9988	3/2$^-$	

$^{77}_{34}Se_{43}$-21

Adopted Levels, Gammas (continued)

γ(^{77}Se) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.[#]	Comments
4180.3	(23/2$^+$)	315.6 *2*	18 *10*	3864.6	(21/2$^+$)		
		846.8 *9*	100 *50*	3333.7	(21/2$^+$)		
		934.8 *3*	22 *10*	3245.57	(19/2$^+$)		
4212.22	(1/2,3/2,5/2$^+$)	3266.1 *17*	100	946.9823	1/2$^+$		
4243.63		3296.95 *25*	100 *10*	946.9823	1/2$^+$		
		3434.9 *3*	39 *4*	808.185	7/2$^-$		
		4243.48 *14*	82 *5*	0.0	1/2$^-$		
4288.9	(1/2,3/2)	3159.7 *15*	67 *34*	1128.113	1/2$^+$		
		3283.0 *23*	100 *53*	1005.1838	3/2$^-$		
		4288.18[a] *15*	<147[a]	0.0	1/2$^-$		
4301.70	(23/2$^-$)	536.7 *2*	100 *22*	3764.79	(21/2$^-$)		
		1037.0 *2*	87 *22*	3264.91	(19/2$^-$)		
4321.1	(23/2$^-$)	556.3 *3*	100 *26*	3764.79	(21/2$^-$)		
		1056.1 *3*	68 *26*	3264.91	(19/2$^-$)		
4391.9	(23/2$^-$)	1127 *2*	100	3264.91	(19/2$^-$)		
4531.8	(23/2$^+$)	1198.1 *3*	100 *50*	3333.7	(21/2$^+$)		
		1286.3[c] *4*	38 *25*	3245.57	(19/2$^+$)		
4625.8	(25/2$^+$)	445.3 *7*	9 *6*	4180.3	(23/2$^+$)		
		1292.1 *3*	100 *43*	3333.7	(21/2$^+$)	(E2)	B(E2)(W.u.)=4.E+1 *4*
4670.5	(23/2$^+$)	1260.9 *6*	100	3409.6	(19/2$^+$)		
4846.9	(25/2$^-$)	525.9 *3*	100 *42*	4321.1	(23/2$^-$)		
		1082.1 *9*	67 *33*	3764.79	(21/2$^-$)		
4862.3	(25/2$^+$)	236.4 *3*	29 *15*	4625.8	(25/2$^+$)		
		682.0 *3*	100 *20*	4180.3	(23/2$^+$)		
		997.8[c] *7*	12 *7*	3864.6	(21/2$^+$)		
		1528.5 *4*	24 *15*	3333.7	(21/2$^+$)		
5001.4	(25/2$^-$)	1121 *2*	100	3880.4	(21/2$^-$)		
5258.9	(27/2$^+$)	633.0 *3*	100 *25*	4625.8	(25/2$^+$)		
		1078.8 *7*	31 *19*	4180.3	(23/2$^+$)		
5584	(27/2$^-$)	1192 *2*	100	4391.9	(23/2$^-$)		
5941.4	(29/2$^+$)	682 *2*	48 *33*	5258.9	(27/2$^+$)		
		1316 *2*	100 *43*	4625.8	(25/2$^+$)		
6654.9	(31/2$^+$)	1396 *2*	100	5258.9	(27/2$^+$)		
(7418.868)	1/2$^+$	3129.8 *3*	1.07 *19*	4288.9	(1/2,3/2)		
		3175.15 *17*	2.34 *19*	4243.63			
		3206.59 *20*	4.2 *3*	4212.22	(1/2,3/2,5/2$^+$)		
		3349.9 *4*	2.8 *4*	4068.49	(5/2$^+$)		
		3550.37 *20*	6.6 *4*	3868.61	(5/2$^+$)		
		3591.8 *3*	2.6 *3*	3827.0	(1/2,3/2,5/2$^+$)		
		3621.2 *3*	4.3 *4*	3798.21	(3/2$^+$,5/2$^+$)		
		3647.21[@] *22*	2.8 *3*	3772.37	(5/2$^+$)		E_γ: level-energy difference=3646.41.
		3700.62 *14*	5.3 *3*	3718.49	(1/2$^-$,3/2,5/2$^+$)		
		3724.2 *3*	1.04 *15*	3694.43	(3/2$^+$,5/2$^+$)		

$^{77}_{34}Se_{43}$-22

Adopted Levels, Gammas (continued)

γ(^{77}Se) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	Comments
(7418.868)	1/2$^+$	3777.4 *5*	2.2 *5*	3642.23	(5/2$^+$)		
		3859.01[c] *19*	5.2 *4*	3561.25	(1/2,3/2,5/2$^+$)		
		3866.28 *15*	3.57 *21*	3552.43	(3/2$^-$)		
		3873.03 *15*	3.91 *23*	3545.64	(3/2$^+$,5/2$^+$)		
		3900.67 *17*	8.9 *7*	3517.91	(3/2$^+$)		
		3938.11 *19*	2.83 *11*	3480.52	(1/2,3/2,5/2$^+$)		
		3945.92 *14*	5.1 *3*	3472.84	(1/2,3/2,5/2$^+$)		
		3968.35 *14*	6.0 *3*	3450.45	(3/2$^+$,5/2$^+$)		
		4003.6 *3*	3.5 *4*	3415.03	(1/2,3/2)		
		4006.3 *3*	2.1 *3*	3412.44	(1/2,3/2)		
		4022.76 *17*	3.47 *23*	3395.99	(1/2,3/2,5/2$^+$)		
		4056.77 *13*	4.6 *3*	3362.25	(1/2$^-$,3/2,5/2$^+$)		
		4064.43 *14*	3.53 *21*	3354.30	(1/2,3/2)		
		4069.6 *4*	0.61 *9*	3348.67	(1/2,3/2)		
		4091.27 *20*	1.73 *15*	3327.04	(3/2$^-$,5/2$^+$)		
		4105.88 *15*	2.60 *17*	3312.71	(1/2,3/2)		
		4174.78 *11*	5.7 *3*	3243.94	(1/2$^-$,3/2,5/2$^+$)		
		4185.94 *11*	6.5 *3*	3232.82	(1/2,3/2)		
		4227.79 *22*	2.26 *19*	3191.58	(1/2$^+$,3/2,5/2$^+$)		
		4250.50 *18*	1.62 *12*	3168.21	(3/2$^+$,5/2$^+$)		
		4288.18[ac] *15*	<2.3[a]	3132.06	(1/2,3/2,5/2$^+$)		
		4354.73 *10*	6.3 *3*	3063.92	(3/2,5/2$^+$)		
		4367.91[@] *12*	3.55 *21*	3051.19	(1/2$^+$,3/2,5/2$^+$)		E_γ: level-energy difference=4367.54.
		4378.25 *9*	13.3 *7*	3040.33	(3/2$^-$,5/2$^+$)		
		4424.22 *13*	2.60 *17*	2994.13	(1/2,3/2,5/2$^+$)		
		4435.76 *10*	5.0 *3*	2982.93	(1/2,3/2)		
		4526.81 *9*	17.3 *10*	2891.94	(3/2$^-$)	(E1)	
		4545.64 *9*	7.5 *4*	2873.00	(3/2)		
		4565.50 *8*	23.4 *13*	2853.09	(1/2$^-$,3/2$^-$)	(E1)	
		4603.21 *11*	3.18 *19*	2815.48	(1/2$^-$,3/2,5/2$^+$)		
		4609.56 *8*	9.2 *5*	2809.13	(1/2,3/2)		
		4642.07 *10*	4.3 *3*	2776.75	(1/2$^-$,3/2)		
		4702.82[@] *13*	3.47 *23*	2716.33	(3/2)		E_γ: level-energy difference=4702.39.
		4778.11[@] *12*	2.00 *14*	2640.970	(3/2$^+$,5/2$^+$)		E_γ: level-energy difference=4778.75.
		4865.11 *14*	1.32 *10*	2553.82	(1/2,3/2,5/2$^+$)		
		4926.58 *7*	7.6 *4*	2491.94	(3/2$^+$)		
		4962.62[@] *11*	5.9 *4*	2455.456	(1/2$^+$,3/2,5/2$^+$)		E_γ: level-energy difference=4963.25.
		5025.85 *7*	23.6 *13*	2392.951	3/2$^-$	(E1)	
		5043.4 *3*	1.13 *13*	2375.3	(3/2$^+$,5/2$^+$)		
		5078.72 *9*	5.2 *3*	2339.95	(3/2$^-$,5/2$^+$)		
		5098.56 *9*	4.8 *3*	2320.13	(1/2$^+$,3/2,5/2$^+$)		
		5154.47 *6*	8.4 *4*	2264.43	(3/2$^-$)		

$^{77}_{34}Se_{43}$-23

Adopted Levels, Gammas (continued)

$\gamma(^{77}Se)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	Comments
(7418.868)	1/2+	5170.33[@] *7*	4.7 *3*	2248.929	3/2+,5/2+		E_γ: level-energy difference=5169.76.
		5205.47[@] *8*	6.7 *4*	2212.03	1/2−,3/2−		E_γ: level-energy difference=5206.66.
		5276.25 *8*	3.67 *20*	2142.54	(1/2,3/2,5/2−)		
		5502.47 *9*	2.46 *15*	1916.065	(1/2+,3/2)		
		5587.82 *24*	1.74 *18*	1830.861	(1/2−,3/2)		
		5600.99 *6*	48.7 *25*	1817.638	1/2−	(E1)	
		5703.92 *8*	4.34 *24*	1714.755	1/2−,3/2−		
		5795.46 *6*	19.9 *11*	1623.145	(1/2−)		
		5810.67 *14*	1.05 *10*	1607.702	3/2+,5/2+		
		5907.54 *9*	3.19 *18*	1511.023	(3/2)		
		5930.31 *16*	1.18 *10*	1488.237	(3/2)−		
		6006.97 *6*	46.2 *23*	1411.626	(3/2−)	(E1)	
		6016.16 *7*	16.0 *9*	1402.485	(3/2−)		
		6054.59 *15*	1.32 *11*	1364.273	(3/2−)		
		6231.57 *7*	15.9 *9*	1186.9837	(3/2)		
		6290.87 *22*	0.81 *7*	1128.113	1/2+		
		6413.40 *7*	30.1 *16*	1005.1838	3/2−	(E1)	
		6507.02 *11*	2.70 *16*	911.5317	(3/2)+		
		6600.73 *8*	100 *5*	817.8563	1/2−	(E1)	
		6897.90 *18*	0.87 *6*	520.6388	3/2−		
		7179.49 *16*	41.3 *21*	238.9988	3/2−	(E1)	
		7418.47 *22*	59 *3*	0.0	1/2−	(E1)	
7419.23	1/2+	7418.5 *2*	100	0.0	1/2−		
7419.71	1/2+	5025.8 *2*	8.3 *11*	2392.951	3/2−		
		7418.5 *2*	100 *11*	0.0	1/2−		

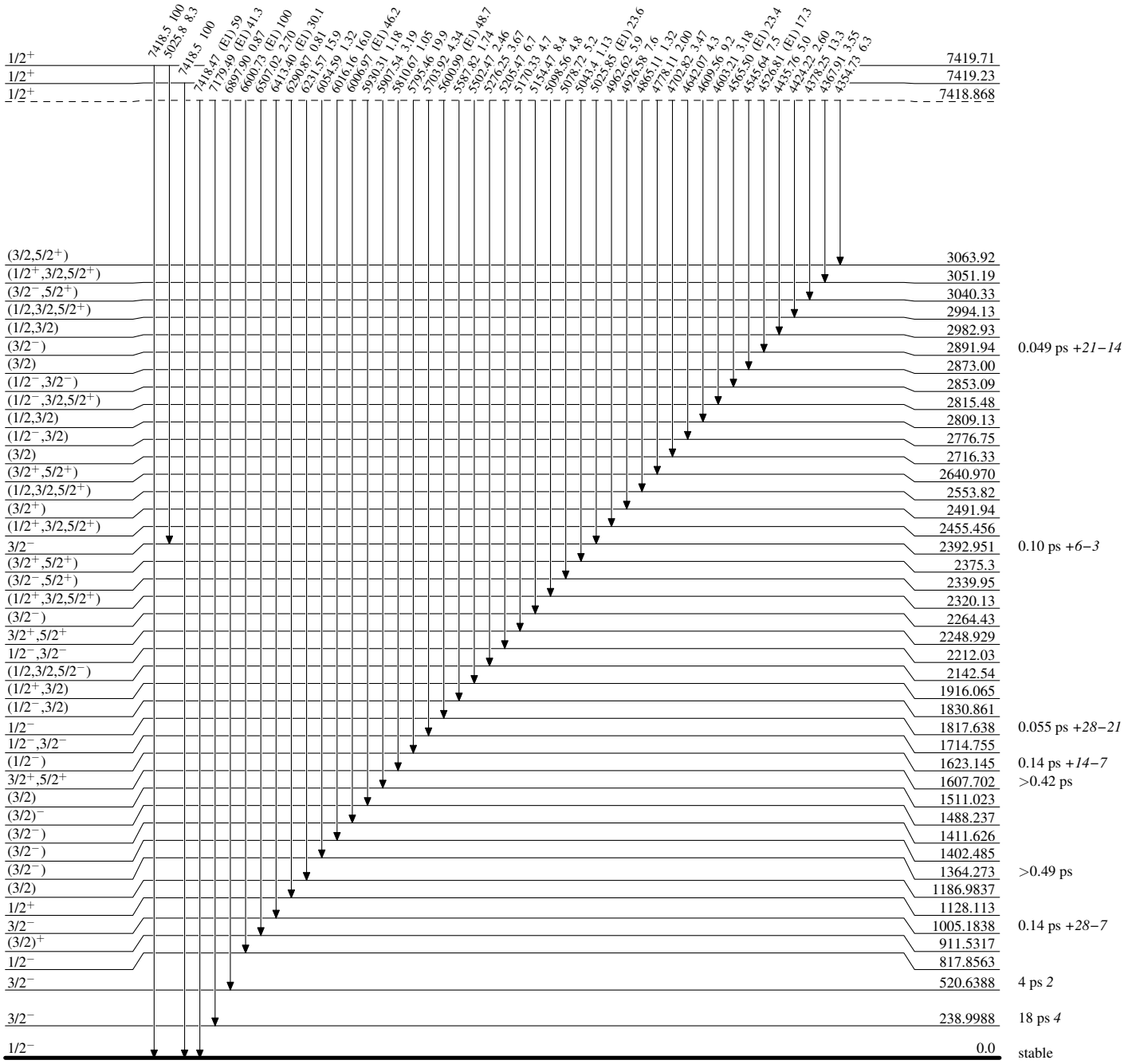
[†] From $^{76}Se(n,\gamma)$ when level populated in this reaction. In other cases values are generally from individual data sets.
[‡] Weighted average of available values from different studies.
[#] From ce data in ^{77}Br ε decay and $^{76}Se(n,\gamma)$.
[@] Poor energy fit, deviates by 3-4 standard deviations.
[&] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[a] Multiply placed with undivided intensity.
[b] Multiply placed with intensity suitably divided.
[c] Placement of transition in the level scheme is uncertain.

$^{77}_{34}Se_{43}$-24

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{77}_{34}Se_{43}$

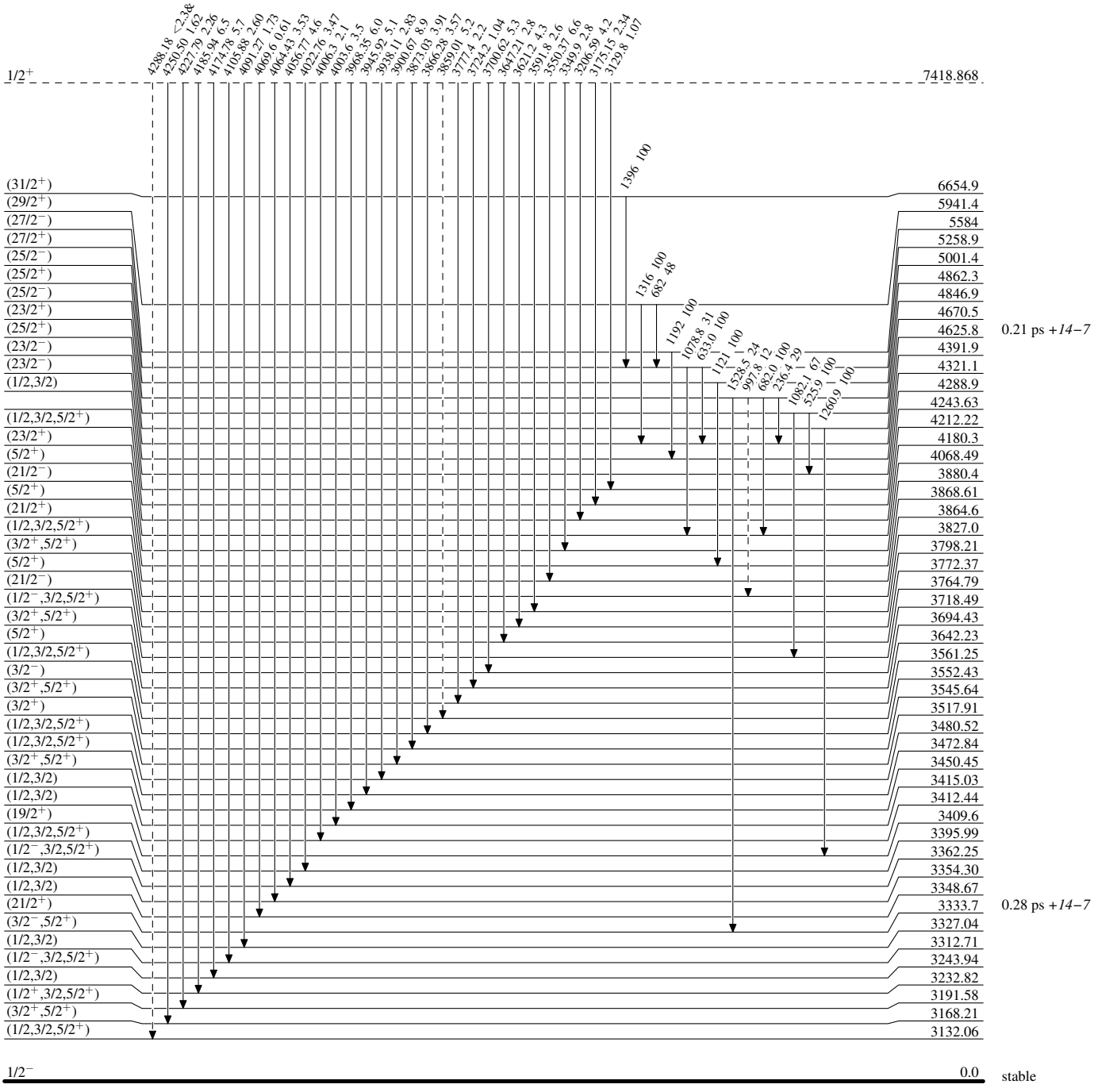
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

γ Decay (Uncertain)



$^{77}_{34}Se_{43}$

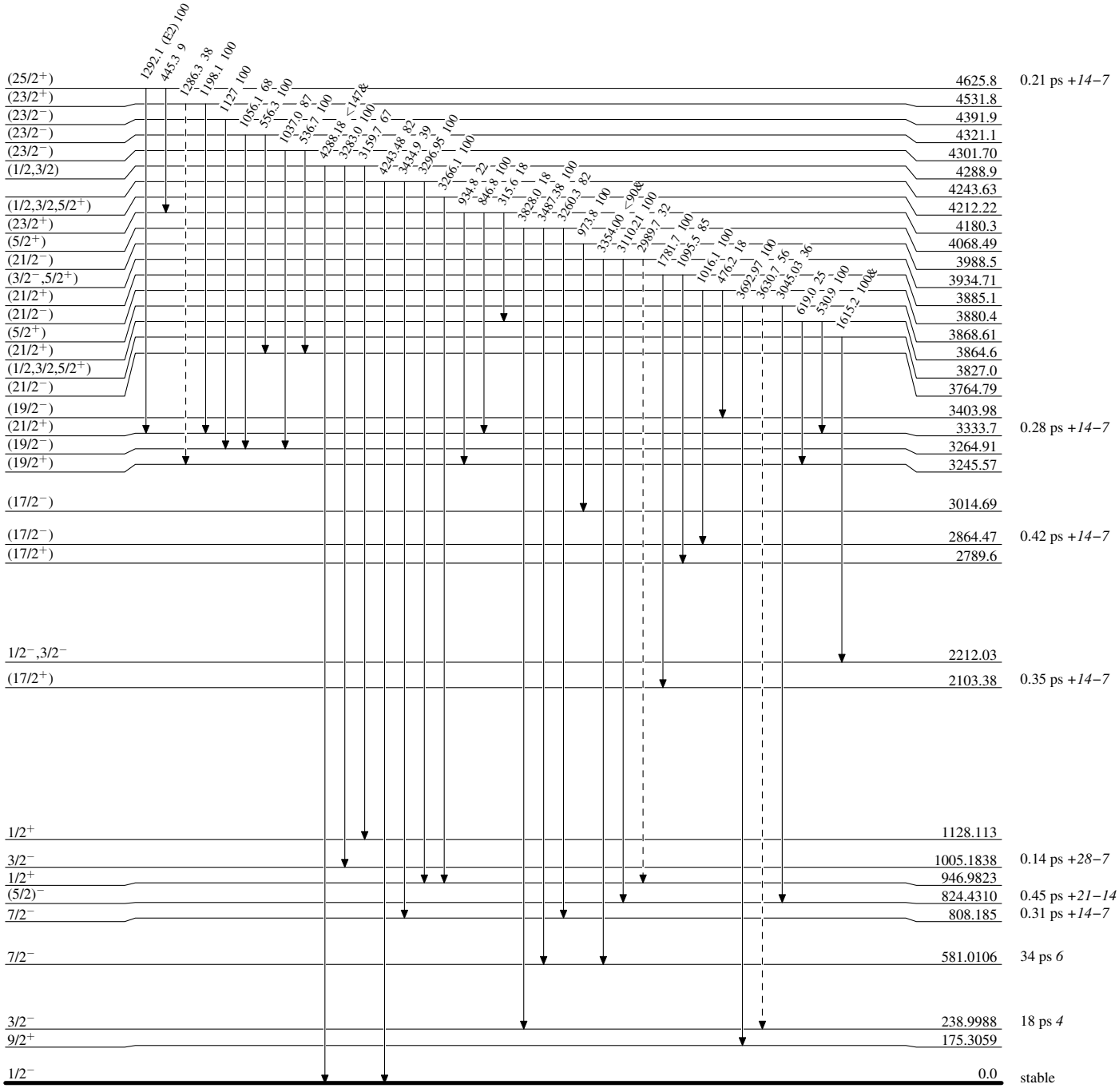
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

– – – – – – ► γ Decay (Uncertain)



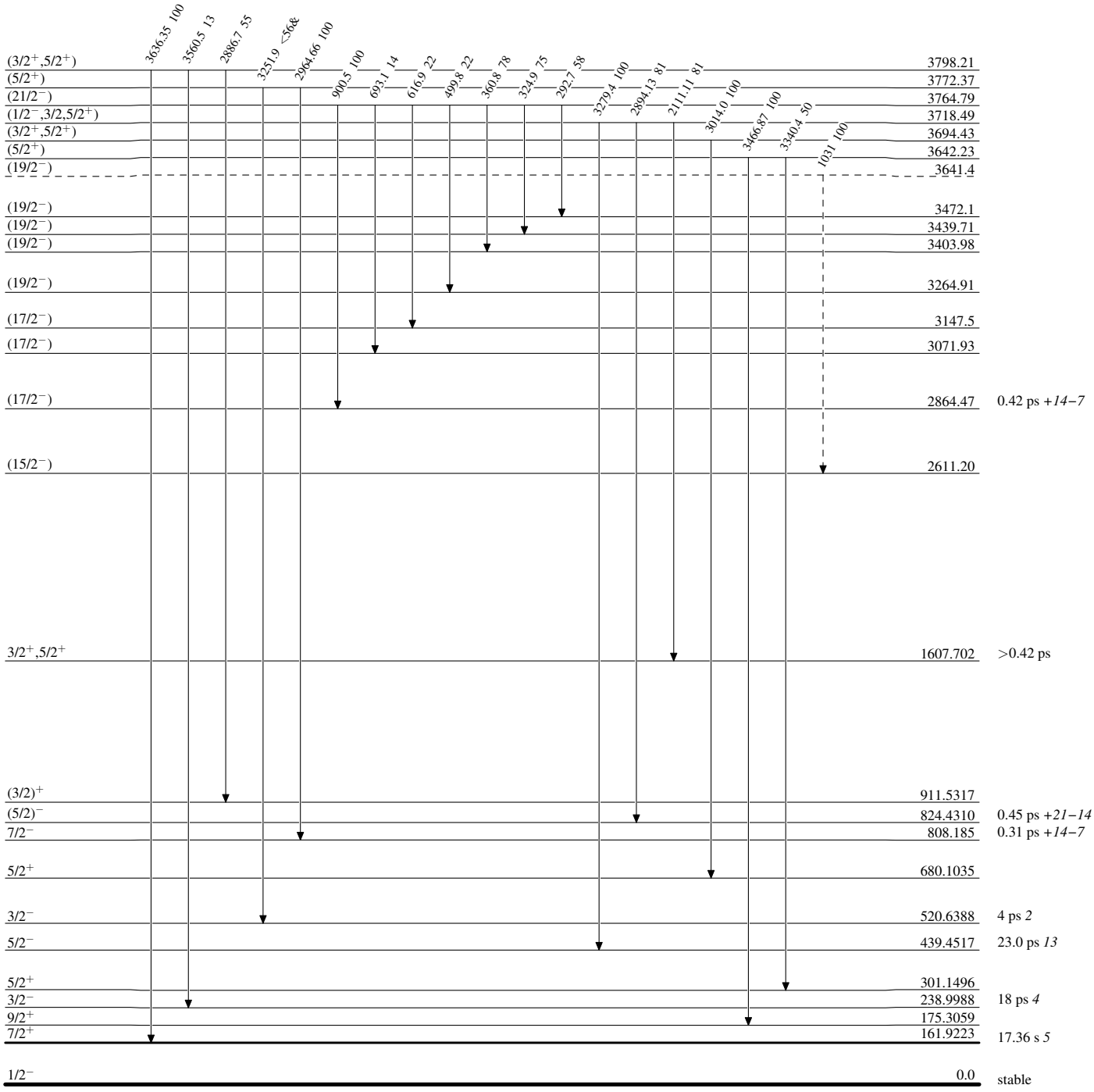
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

γ Decay (Uncertain)

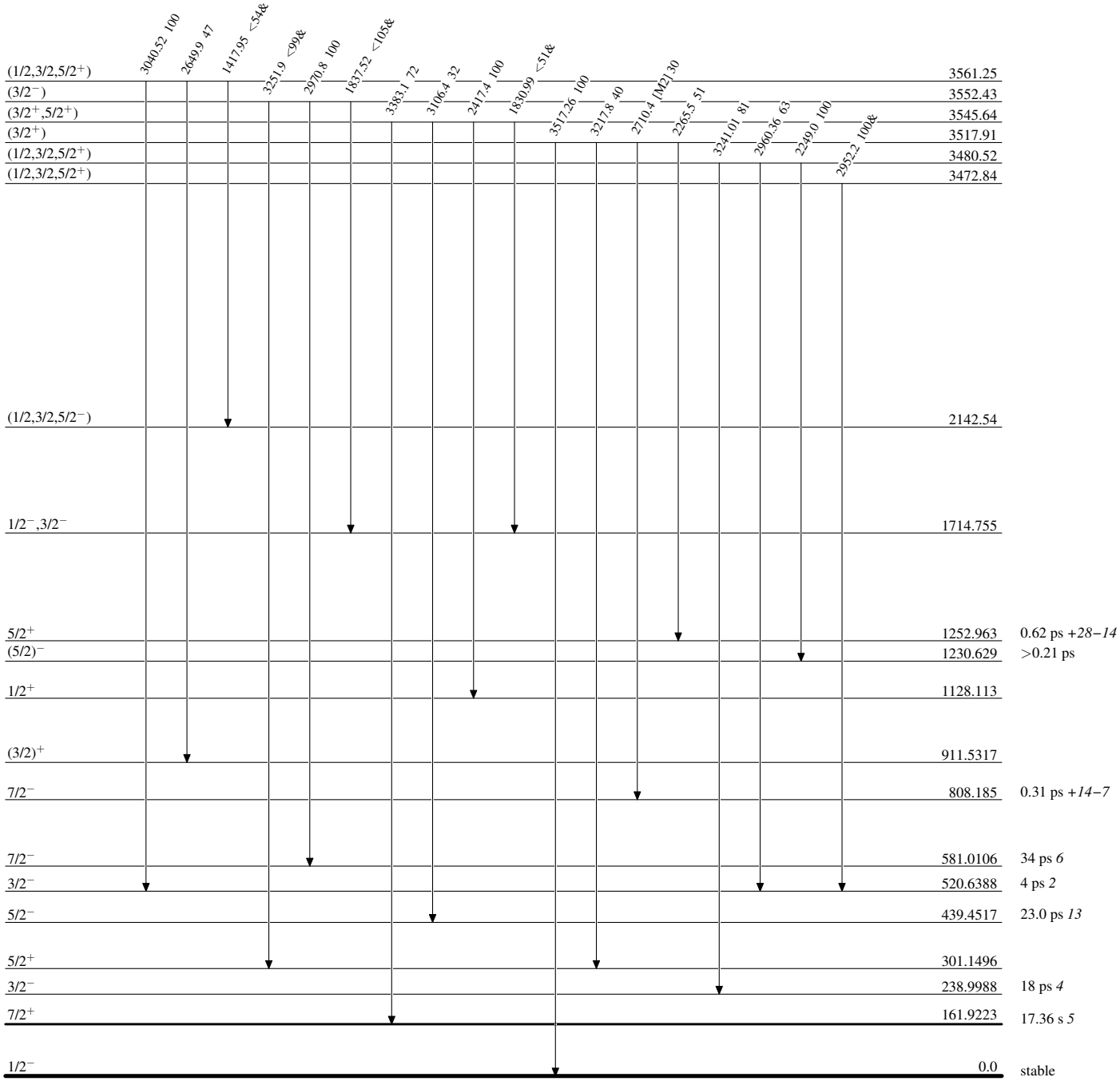


$^{77}_{34}Se_{43}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



$^{77}_{34}Se_{43}$

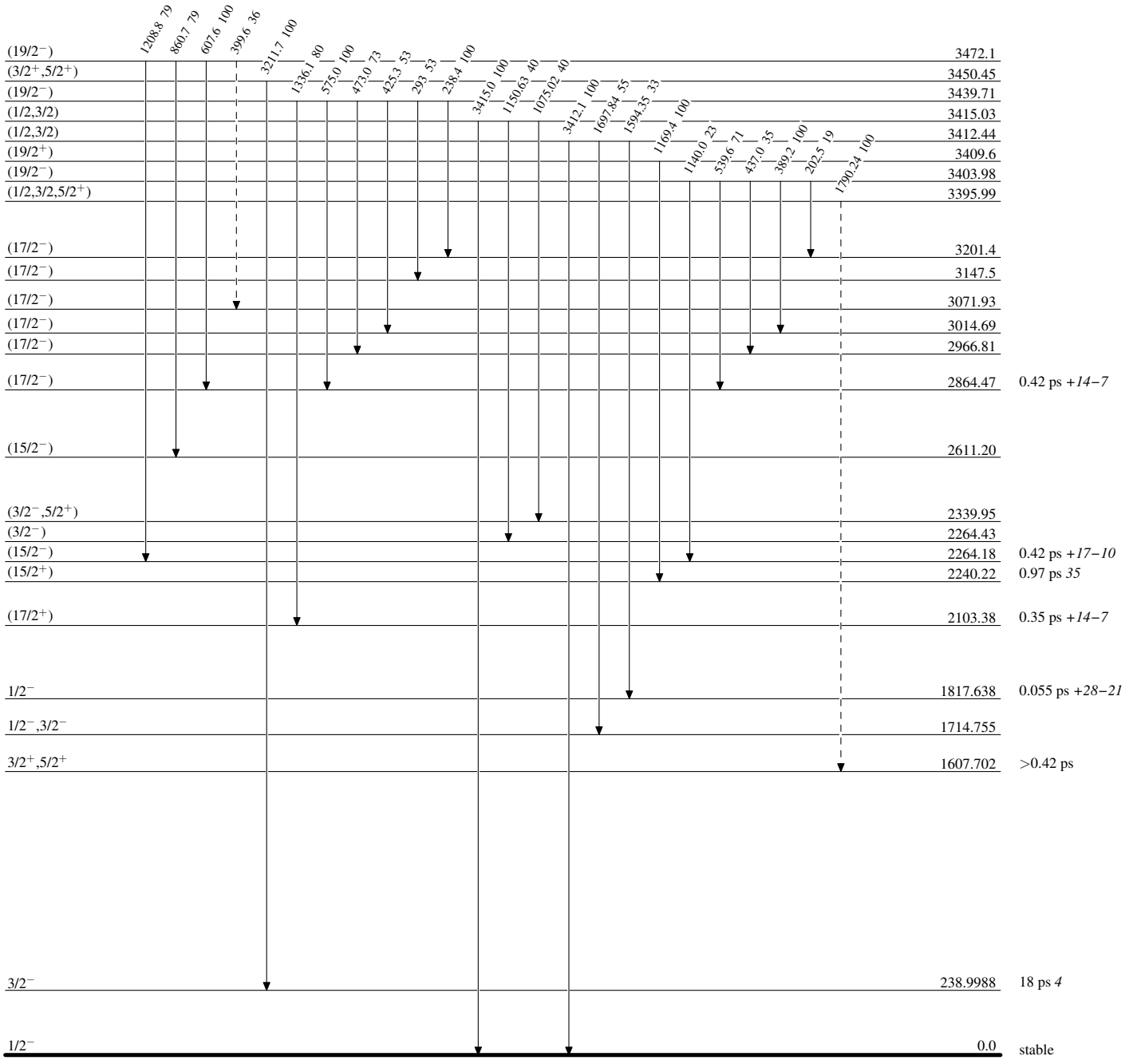
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

- - - - - - ► γ Decay (Uncertain)

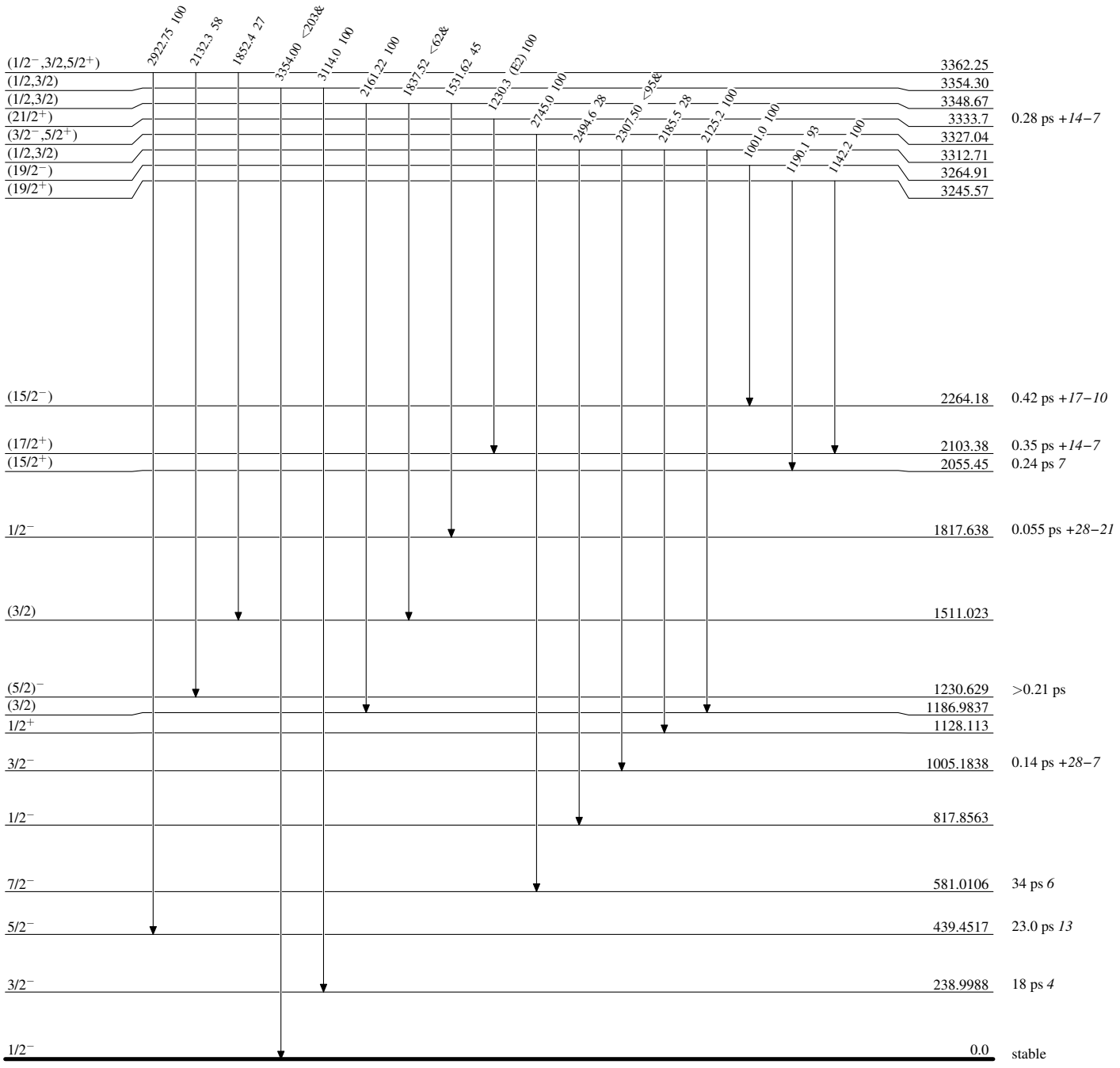


$^{77}_{34}Se_{43}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

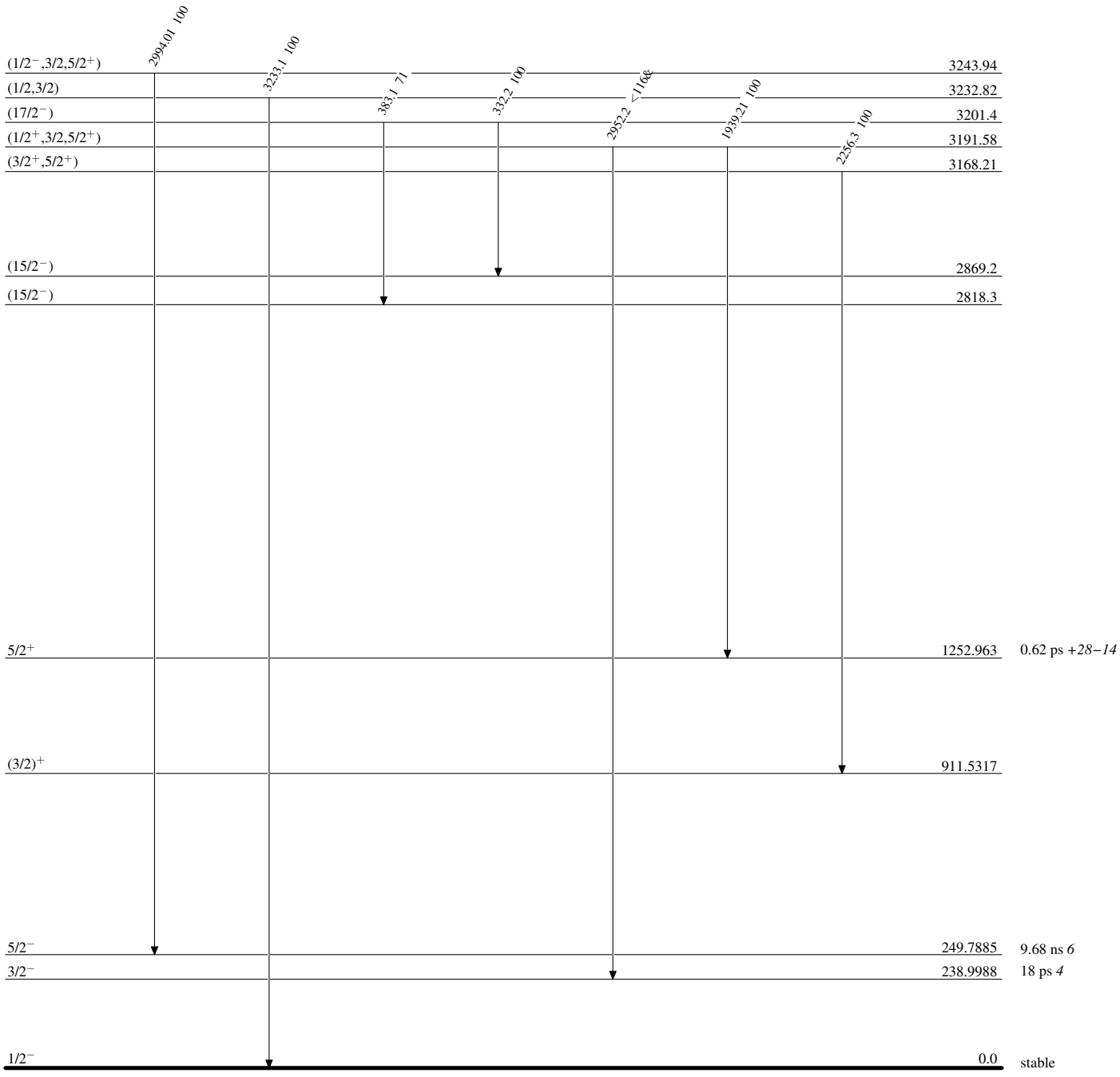


$^{77}_{34}Se_{43}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

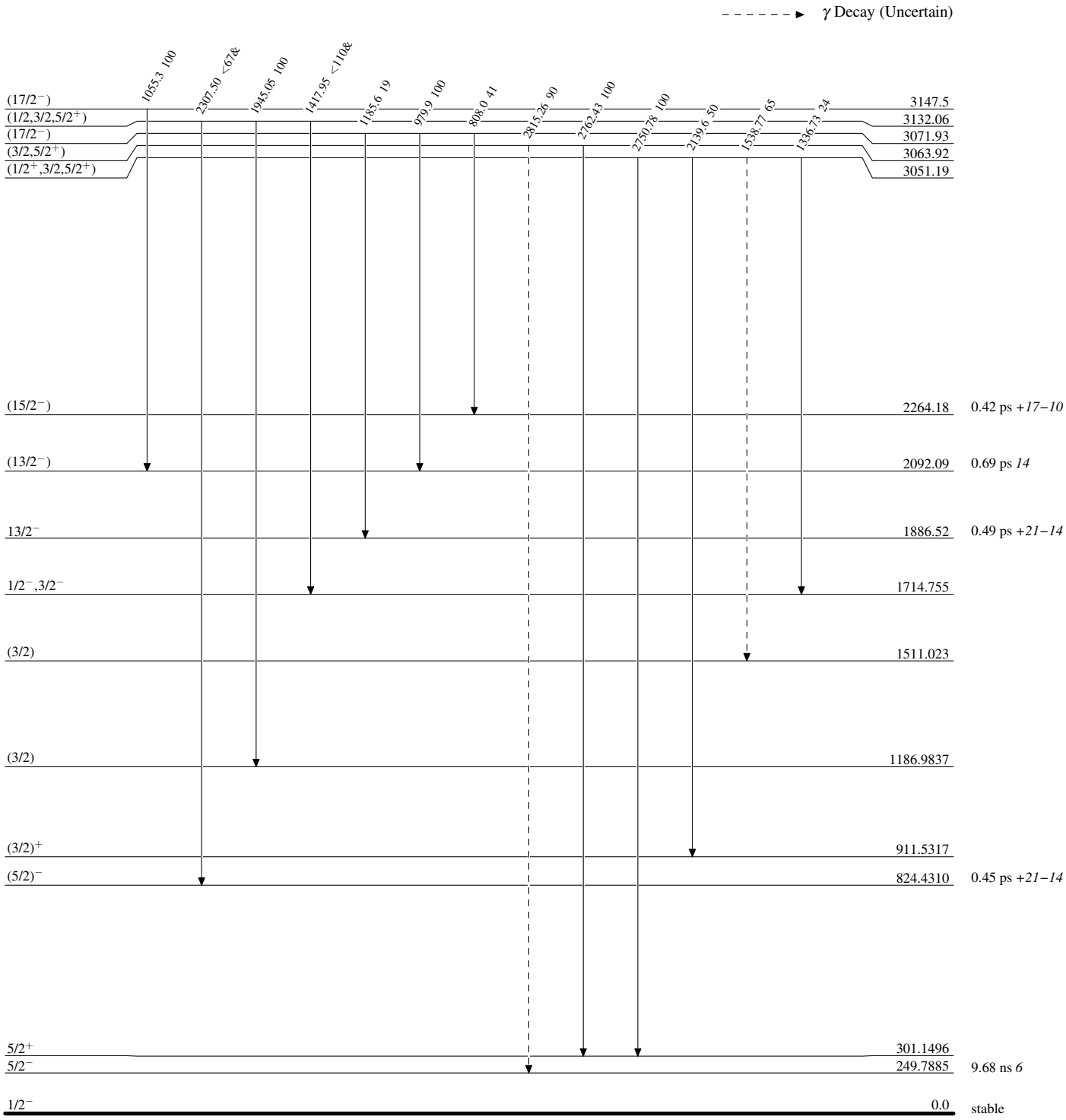


$^{77}_{34}Se_{43}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



$^{77}_{34}Se_{43}$

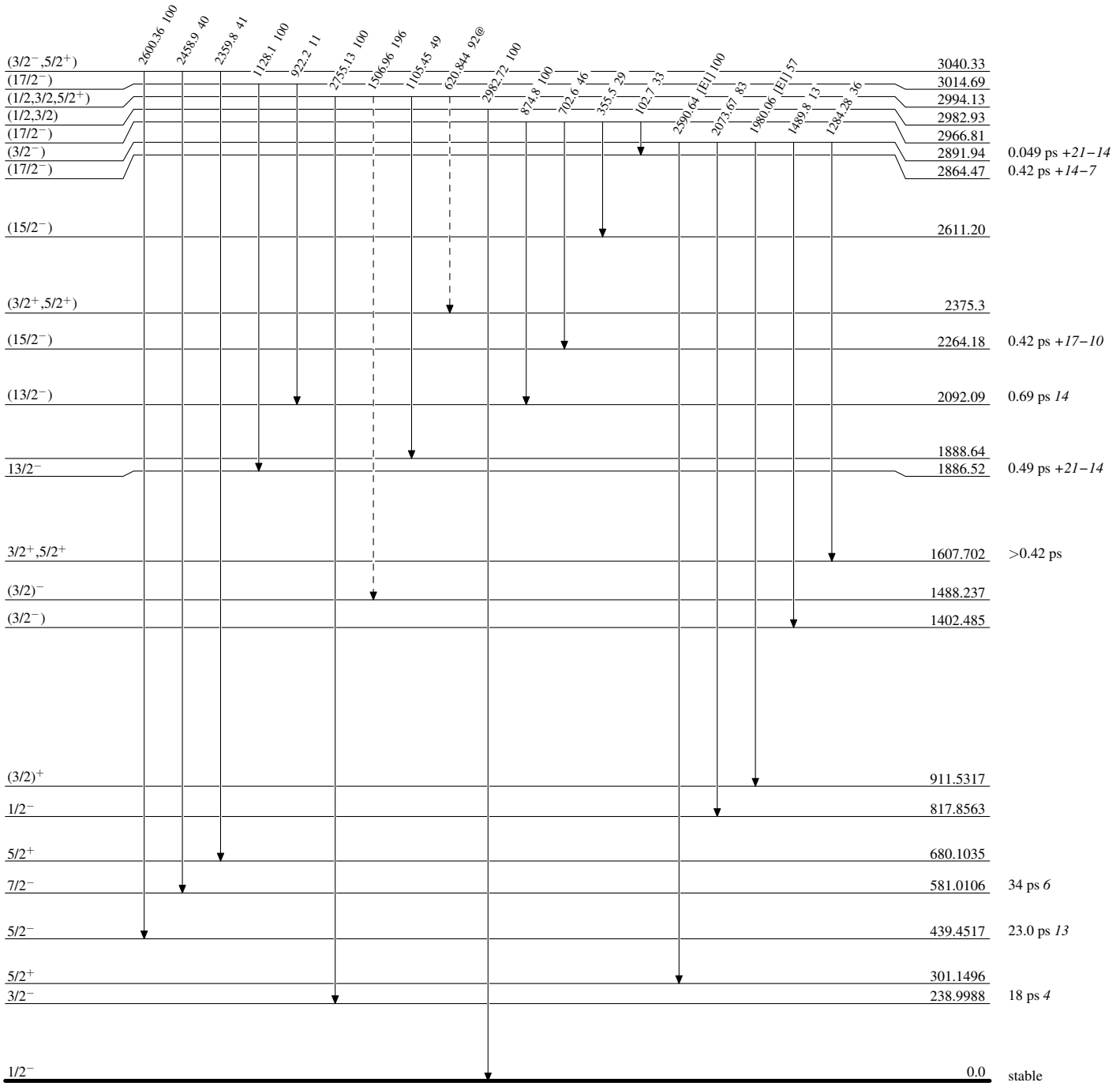
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

- - - - - - ► γ Decay (Uncertain)



$^{77}_{34}Se_{43}$

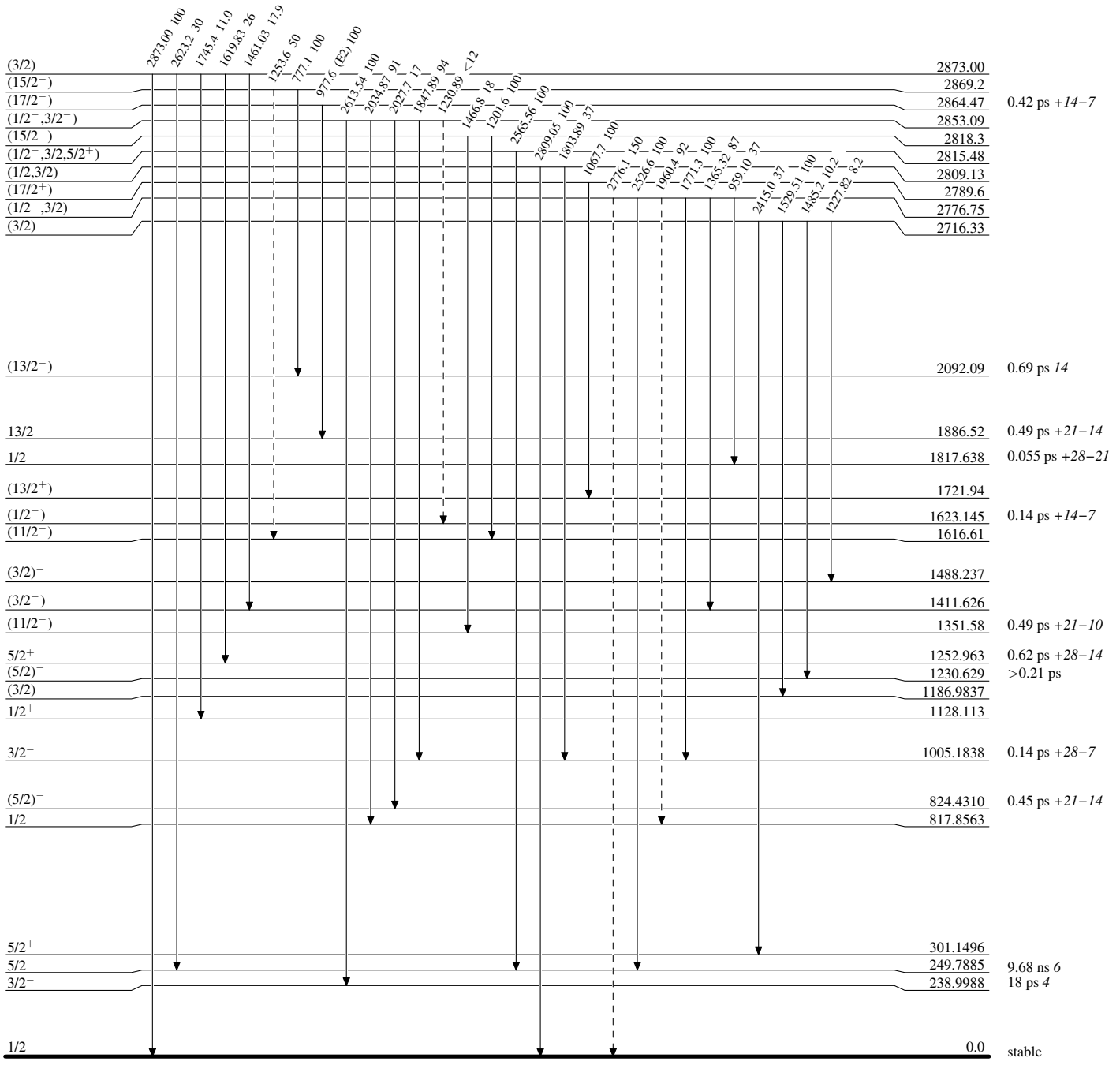
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

- - - - - - ► γ Decay (Uncertain)



$^{77}_{34}Se_{43}$

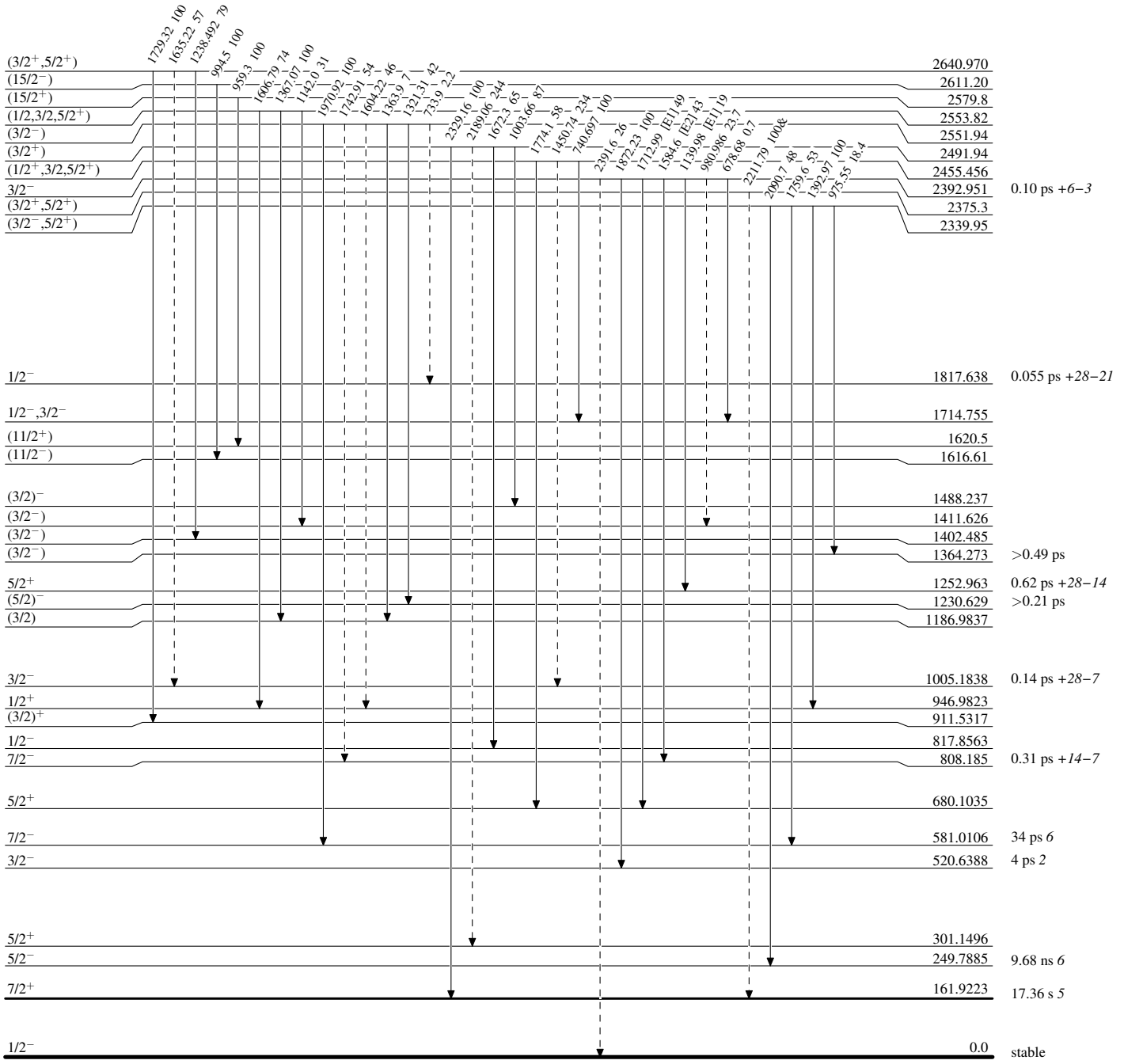
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

- - - - - - ► γ Decay (Uncertain)



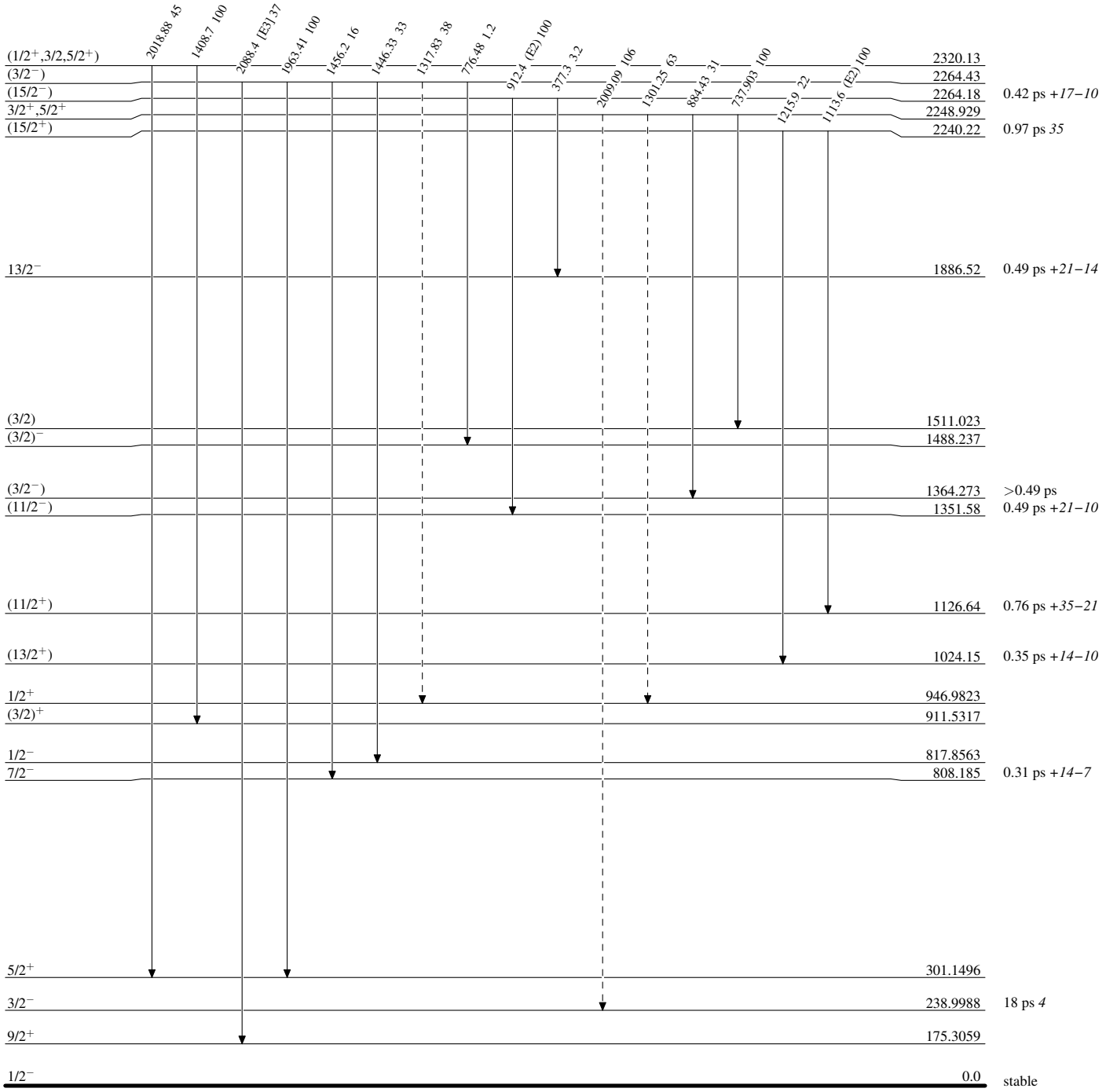
$^{77}_{34}Se_{43}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend
- - - - - - ► γ Decay (Uncertain)



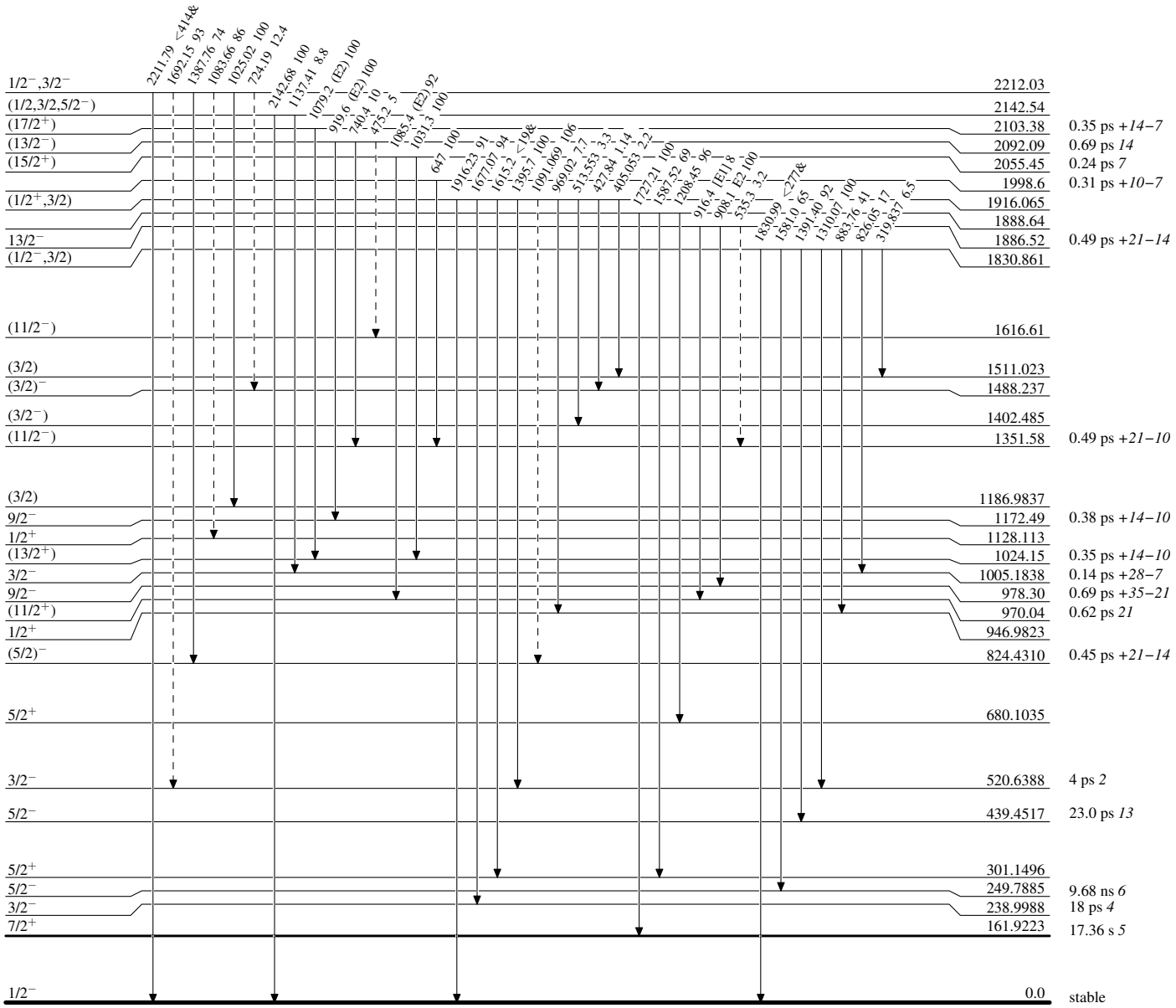
$^{77}_{34}Se_{43}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend
- - - - - - ► γ Decay (Uncertain)



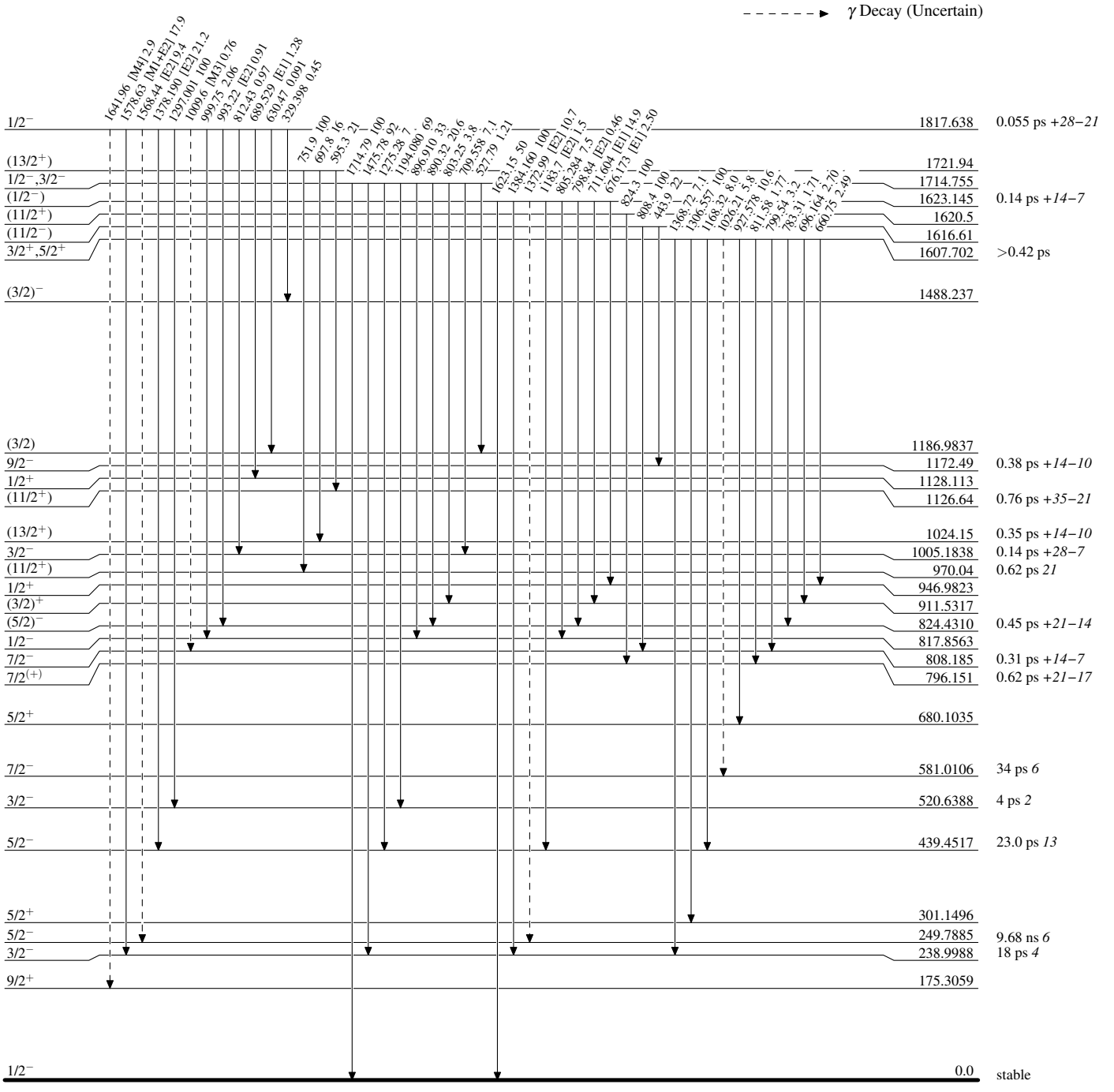
$^{77}_{34}Se_{43}$

Adopted Levels, Gammas

Level Scheme (continued)

Legend

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



$^{77}_{34}Se_{43}$

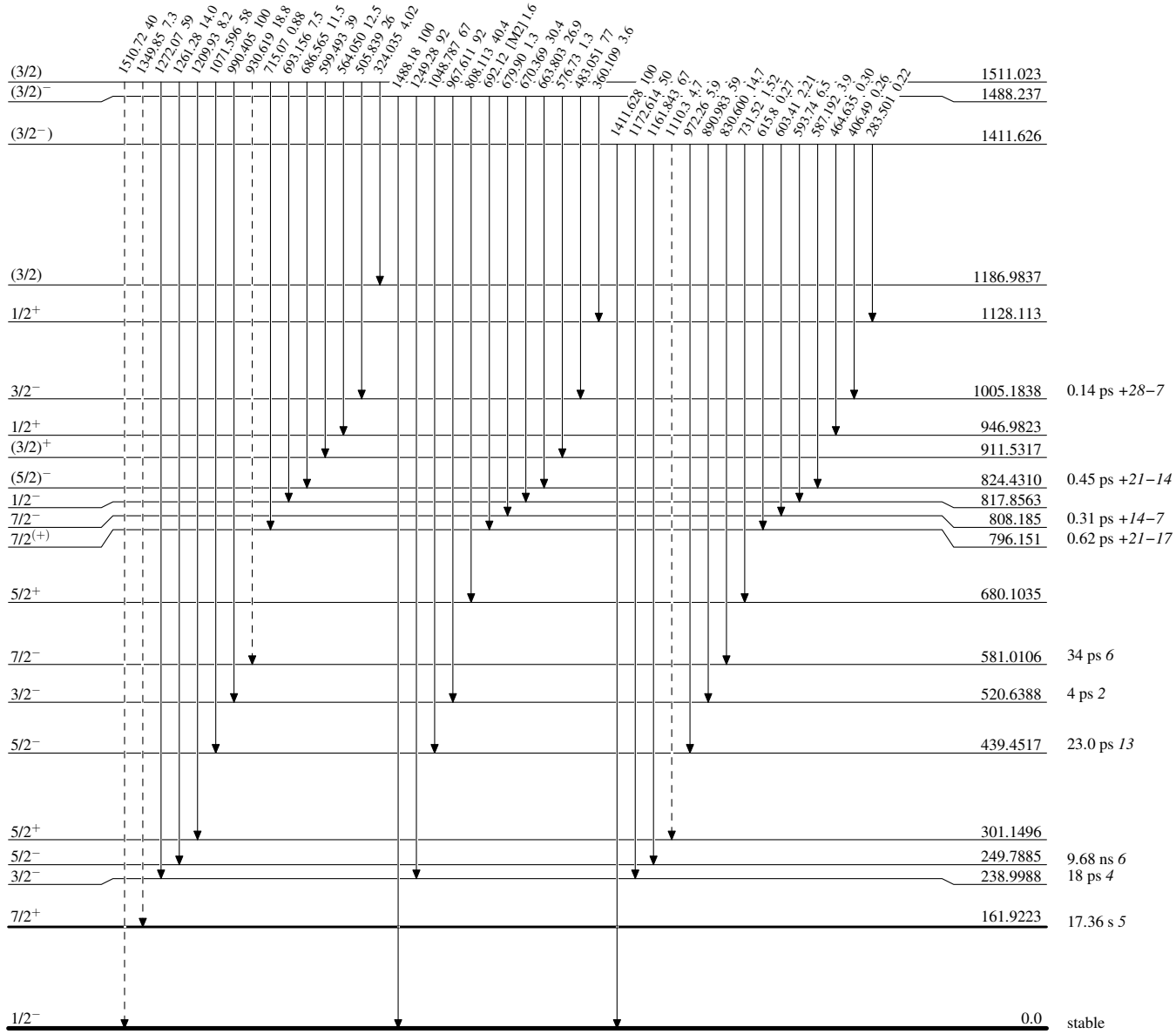
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

γ Decay (Uncertain)



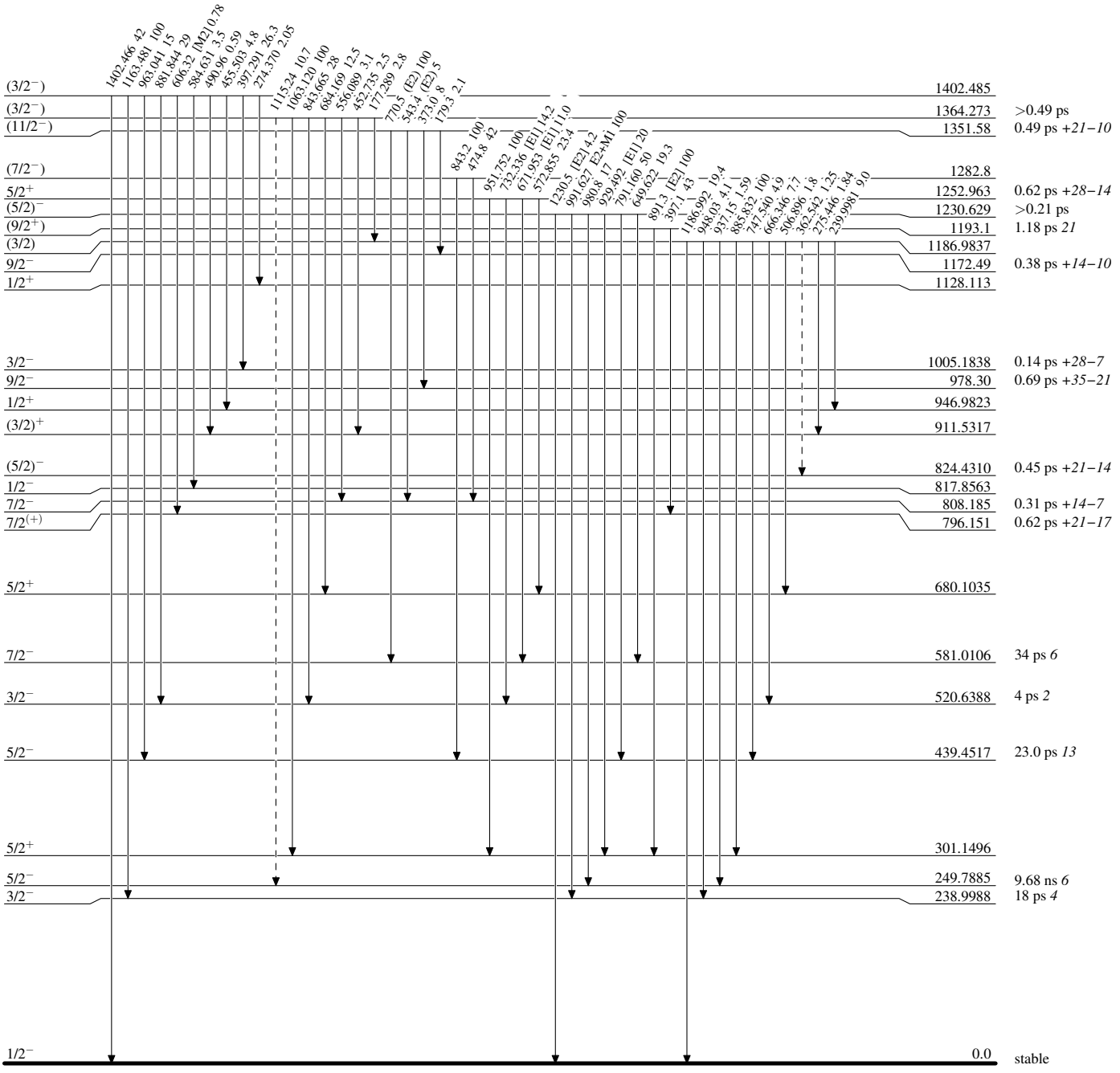
$^{77}_{34}Se_{43}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend: ------► γ Decay (Uncertain)



$^{77}_{34}Se_{43}$

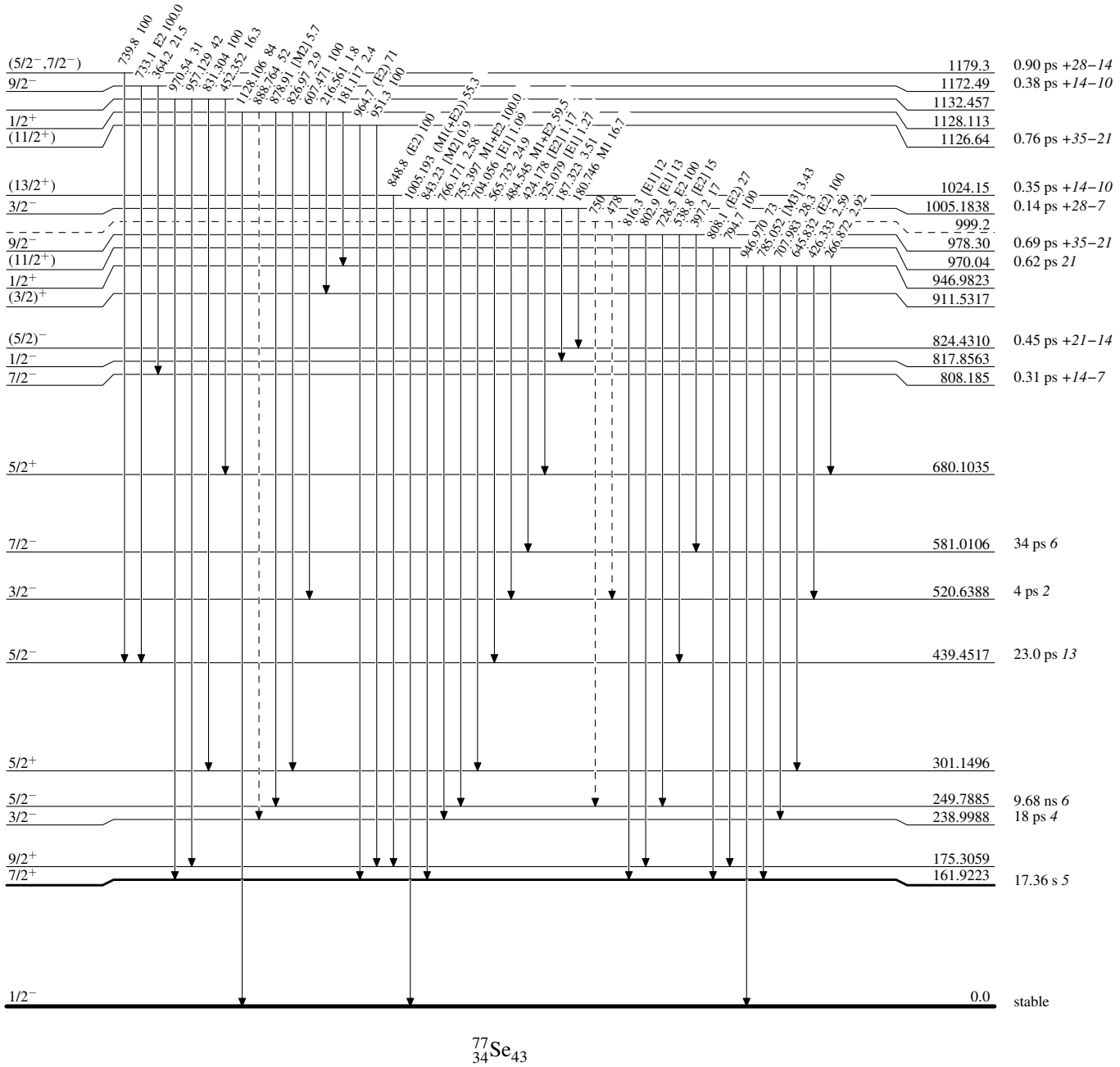
Adopted Levels, Gammas

Level Scheme (continued)

Legend

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

γ Decay (Uncertain)



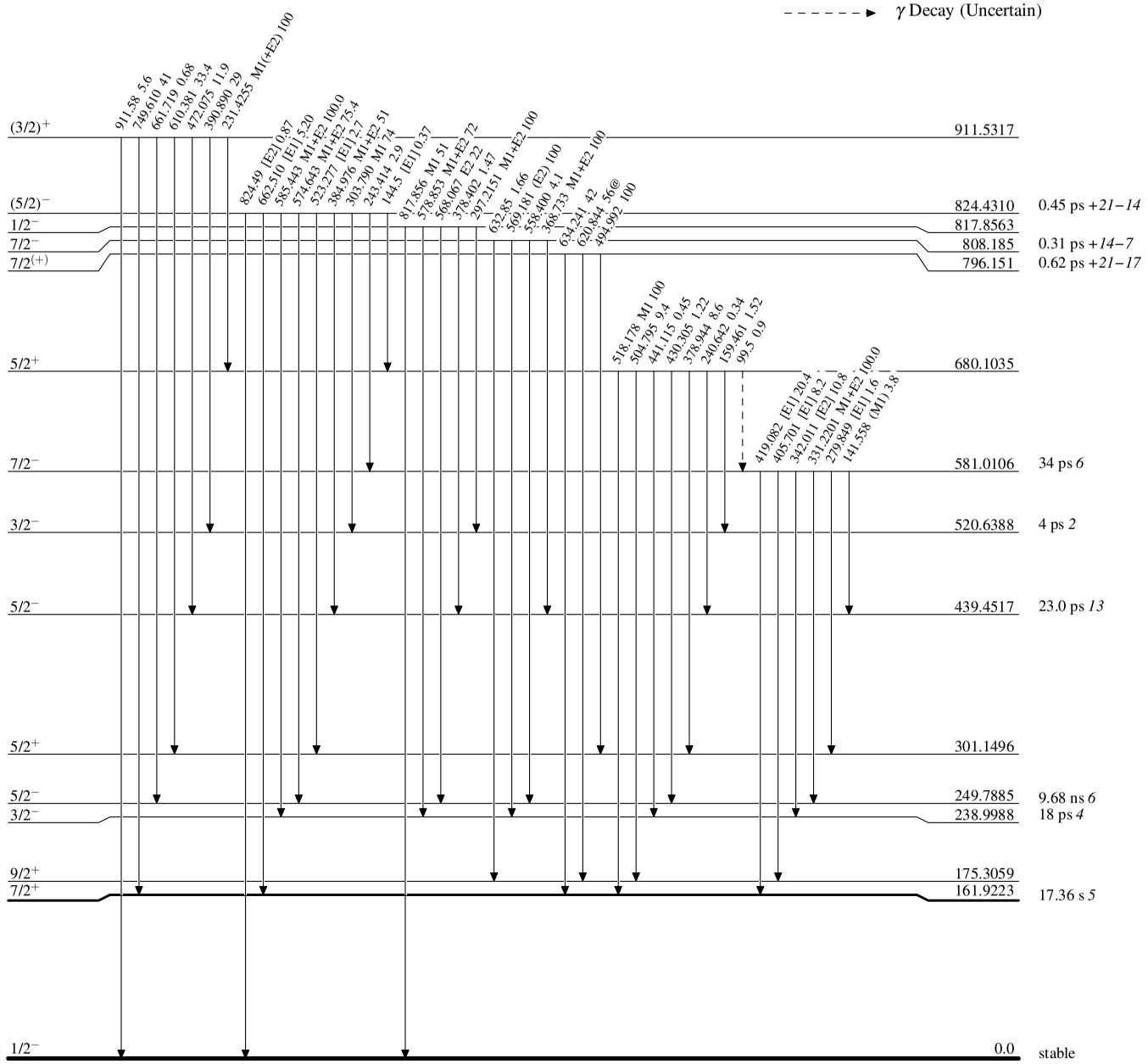
$^{77}_{34}Se_{43}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend
- - - - - - ► γ Decay (Uncertain)

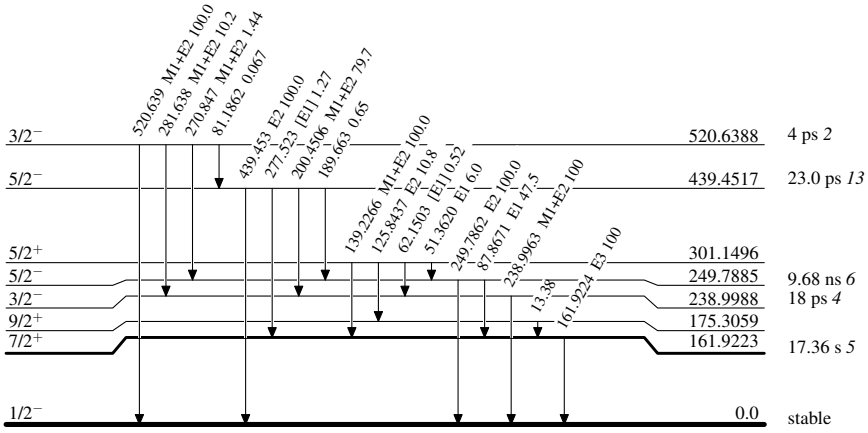


$^{77}_{34}Se_{43}$

Adopted Levels, Gammas

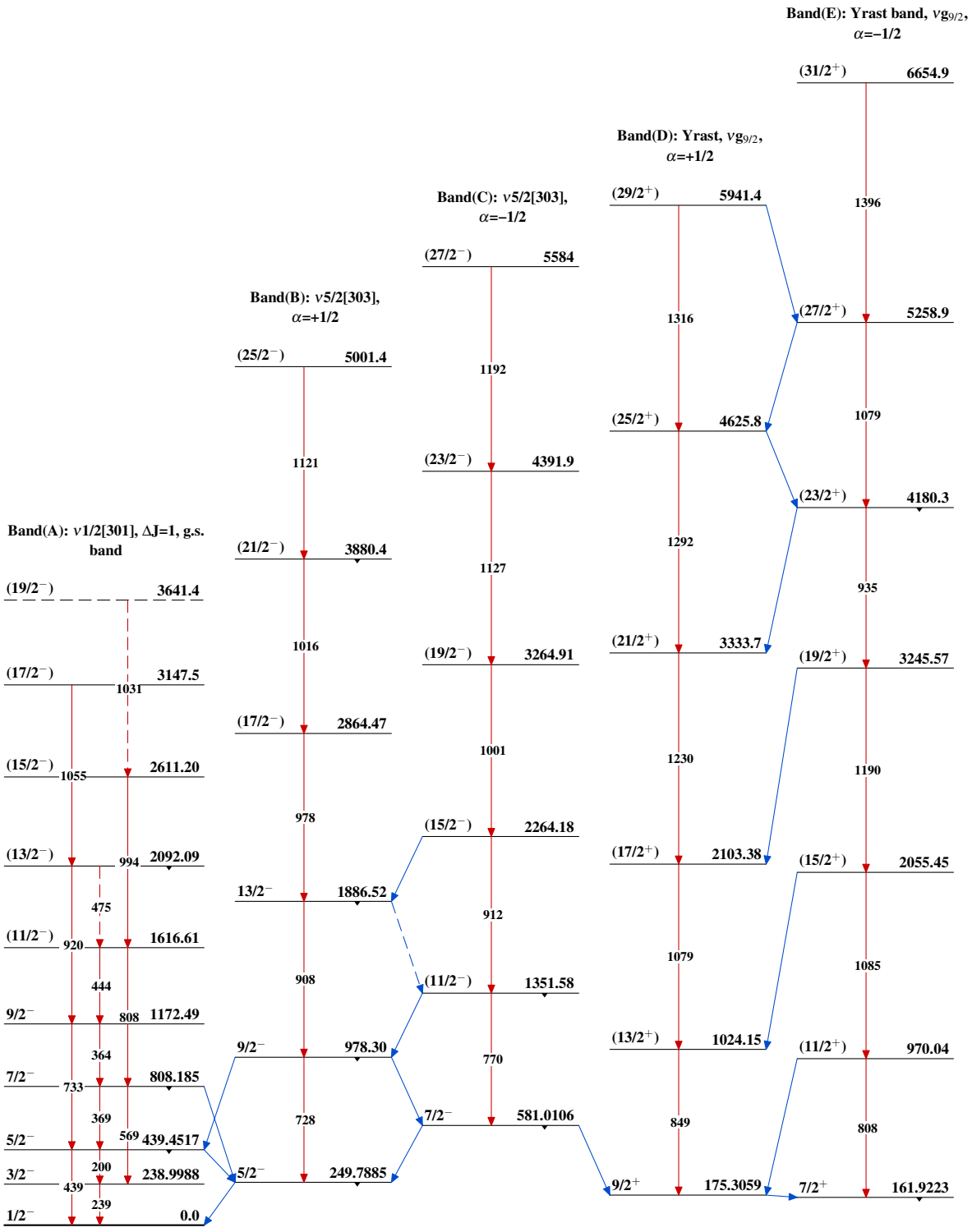
Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



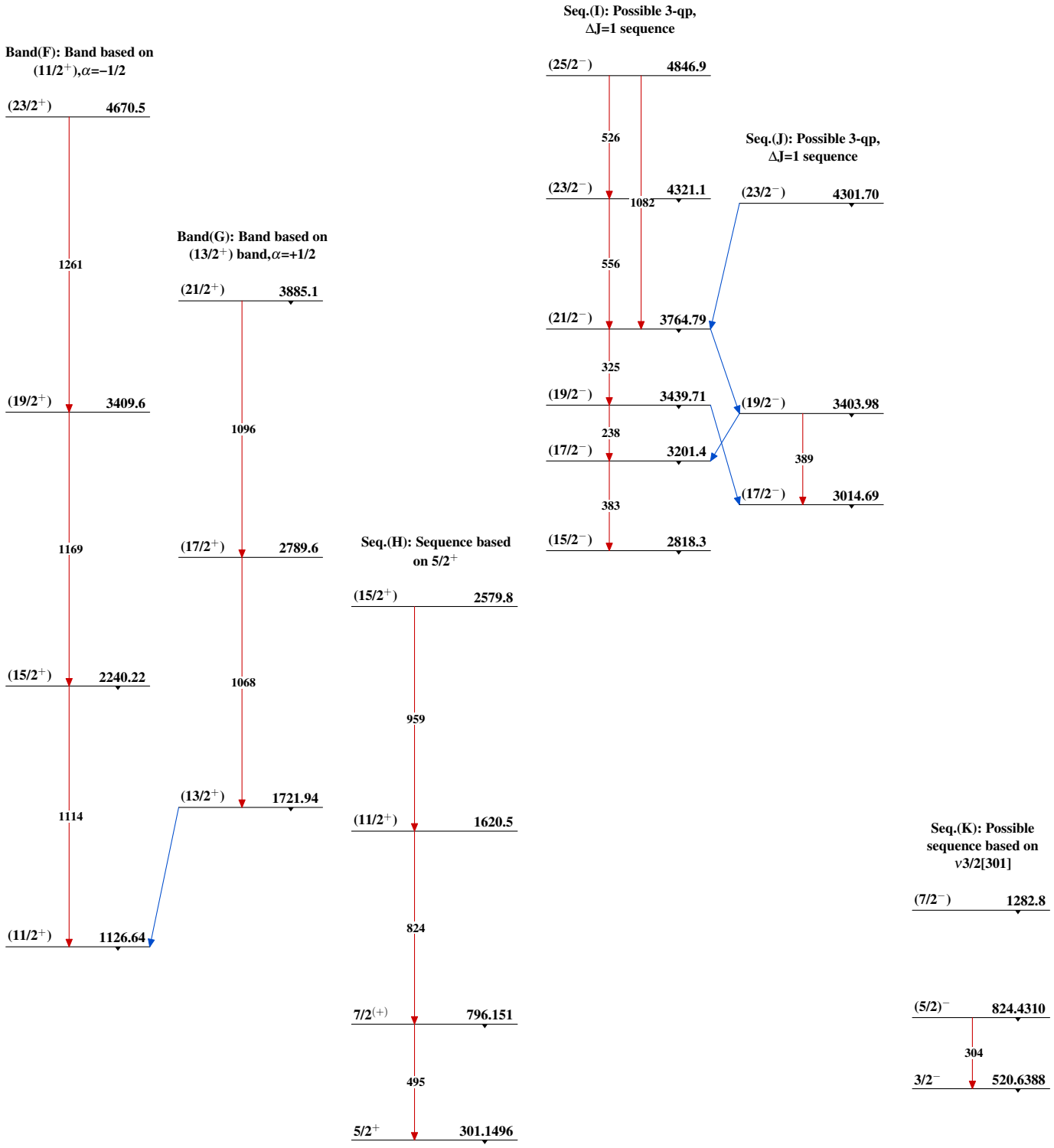
$^{77}_{34}Se_{43}$

Adopted Levels, Gammas



$^{77}_{34}Se_{43}$

Adopted Levels, Gammas (continued)



$^{77}_{34}Se_{43}$