Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Alexandru Negret, Balraj Singh	NDS 114, 841 (2013)	30-Jun-2013

Q(β^-)=−3062 *4*; S(n)=8027.60 *7*; S(p)=8598.4 *17*; Q(α)=−4687.9 *8* 2012Wa38
S(2n)=20085 *7*, S(2p)=15449.90 *9* (2012Wa38).

^{75}Se produced and identified by 1947Fr08 in neutron capture by ^{74}Se. In 1946 Manhattan project (classified) reports, there is reference to 125-d activity of ^{75}Se.

Other reactions: ^{76}Se(n,2n): E=14.7 MeV (1967Mi07), E=14.5 MeV (1982Fa08), E=14.6 MeV (1987Zh06), E=13-16.6 MeV (1989Ho20), ^{75}As(p,n) E=3-4.5 MeV, ^{75}As(d,2n) E=5-5.6 MeV (1988Mu21).

Mass measurement: 1985El01.

Additional information 1.

Nuclear structure calculations: 1995Al14, 1987Me09, 1985Na12, 1978La13, 1976Br21.

^{75}Se Levels

Cross Reference (XREF) Flags

A	^{75}Br ε decay (96.7 min)	F	^{74}Se(n,γ) E=27.1 eV	K	^{76}Se(p,d)
B	^{48}Ti(^{30}Si,2pnγ)	G	^{74}Se(n,γ) E=271.5 eV	L	^{76}Se(d,t)
C	^{59}Co(^{19}F,2pnγ)	H	^{74}Se(n,γ),(n,n):resonances	M	^{76}Se(^{3}He,α)
D	^{72}Ge(α,nγ),^{73}Ge(α,2nγ)	I	^{74}Se(d,p)		
E	^{74}Se(n,γ) E=thermal:placed γ	J	^{75}As(p,nγ),(p,n)		

E(level)	J$^\pi$	T$_{1/2}$ †	XREF	Comments
0.0 [c]	5/2$^+$	119.78 d *5*	ABCDE IJKLM	%ε=100 μ=0.683 *10* (2001St31,2011StZZ) Q=1.1 *2* (1955Aa06,1989Ra17,2011StZZ) J$^\pi$: measured using microwave method (1955Aa06). Parity from L=2 in (d,p), (p,d) and (d,t). T$_{1/2}$: LWM or NRM weighted average of 119.78 d *7* (revised value in 2012Fi12 from 119.809 d *66* in 2002Un02; earlier value from NIST 119.80 d *7*, 1982HoZJ), 119.0 d *5* (1994Iw04), 119.76 d *5* (1980Sc07), 119.779 d *4* (1980Ho17), 120.4 d *2* (1960Ea02), 119.9 d *6* (1957Wr37). The uncertainty of 0.004 d given by 1980Ho17 gets increased to 0.04 in the LWM and NRM procedures by adjusting relative weight to 50%. Reduced χ^2=2.5 in LWM and 1.7 in NRM. Others: 120 d *15* (2012Ba12), 115.0 d *117* (2002He19), 120 d *1* (1976MaZW), 118.45 d *25* (1975La16, not included since authors retracted their result), 128 d (1950Co58), 125 d *5* (Gest and Glendenin, NNES 9, 1924 (1950)), 127 d *7* (1948Co07), 115 d *5* (1947Fr08). μ: NMR on oriented nuclei (2001St31). Other: 0.67 *4* (1974Ca23). Q: Microwave absorption in gases (1955Aa06). Other: 1988Wh03, measured $\gamma(\theta)$, anisotropy and deduced electric field gradient.
112.3876 [d] *12*	7/2$^+$	0.69 ns *12*	ABCDE J L	J$^\pi$: ΔJ=1, M1+E2 γ to 5/2$^+$ and bandhead. T$_{1/2}$: from (p,nγ) in 1974Ag05.
133.040 [c] *3*	9/2$^+$	5.3 ns *6*	BCDE IJKLM	J$^\pi$: L=4 in (d,p), (p,d) and (d,t), 133γ to 5/2$^+$ is E2, and $\gamma(\theta)$ in (α,nγ). T$_{1/2}$: from (p,nγ) in 1974Ag05.
286.5714 [f] *21*	3/2$^-$	1.29 ns *15*	ABCDE JKLM	J$^\pi$: L=1 in (d,p), (p,d) and (d,t), 287γ to 5/2$^+$ is E1. T$_{1/2}$: from average of 1.23 ns *15* (^{75}Br ε decay), and 1.35 ns *15* (^{75}As(p,nγ)).
293.106 *3*	1/2$^-$	30.0 ns *4*	A DEFG IJ	XREF: I(291). J$^\pi$: L=1 in (d,p) gives 1/2$^-$,3/2$^-$ and $\gamma(\theta)$ in 1991Sa22 ruled out 3/2.

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Adopted Levels, Gammas (continued)

^{75}Se Levels (continued)

E(level)	J^π	$T_{1/2}$[†]	XREF	Comments
				$T_{1/2}$: from ^{75}As(p,nγ) (1968Ri14). Others: 1972Co06, 1974Ag05.
427.8853[e] *21*	$5/2^-$		ABCDE IJKLM	J^π: L=3 in (d,p), (p,d) and (d,t), M1+E2 γ to $3/2^-$.
585.9510 *23*	$3/2^-$		A DE IJKLM	J^π: L=1 in (d,p), (p,d) and (d,t), γ to $5/2^+$.
610.716 *3*	$1/2^+$		DE IJ L	J^π: L=0 in (d,p) and (d,t).
628.4310 *22*	$5/2^+$		DE IJKL	J^π: L=2 in (d,p), (p,d) and (d,t), M1(+E2) γ to $7/2^+$.
663.9569 *23*	$5/2^-$		A DE IJKLM	J^π: L=3 in (d,p), (p,d) and (d,t), γ to $1/2^-$.
747.6502[f] *25*	$7/2^-$		ABCDE J LM	J^π: ΔJ=2, E2 γ to $3/2^-$ and γ(θ) in (α,nγ).
761.14 *20*			D I	XREF: I(757).
777.3231 *25*	$5/2^-$		A DE IJKL	E(level): level uncertain in (d,p). J^π: L=3 in (p,d), (d,t) and M1+E2 γ to $3/2^-$.
789.989 *6*	$7/2^{(+)}$		DE J	J^π: ΔJ=1, (M1+E2) γ to $5/2^+$ and γ to $9/2^+$.
814.32[d] *11*	$11/2^+$		BCD	J^π: ΔJ=1 γ to $9/2^+$; ΔJ=2 γ to $7/2^+$ and band assignment.
839.893 *3*	$3/2^+$		DE J	J^π: M1 γ's to $1/2^+$ and $5/2^+$.
859.537 *3*	$3/2^-$		A DE IJKLM	J^π: L=1 in (d,p), (p,d), (d,t), M1(+E2) γ to $5/2^-$.
895.274 *3*	$1/2^-,3/2^-$		A DE G IJKL	J^π: L=1 in (d,p), (p,d), (d,t).
934.10[c] *9*	$13/2^+$		BCD M	J^π: ΔJ=2, (E2) γ to $9/2^+$ and γ(θ) in (α,nγ).
953.297 *10*	$5/2^+,7/2$		DE J	J^π: γ's to $5/2^+$, $5/2^-$ and $9/2^+$.
962.644 *3*	$3/2^-$		A DE G IJKL	J^π: L=1 in (d,p), (p,d), (d,t) and γ(θ) of 962γ in (α,nγ).
1003.846 *6*	$5/2^+$	0.054 ps *+29−18*	A E IJ LM	XREF: M(993). J^π: L=2 in (d,p), (d,t) and γ to $9/2^+$.
1020.470 *9*	$1/2^-,3/2^-$		A DEF IJ L	E(level): level is uncertain in (d,p). J^π: L=1 in (d,t).
1047.187 *8*	$5/2^-,7/2^-$	0.11 ps *+10−3*	DE IJKLM	E(level): level is uncertain in (d,p). J^π: L=3 in (p,d), (d,t).
1066.39 *20*			D	
1073.825 *3*	$5/2^-$	0.073 ps *+45−24*	A DE J L	J^π: L=3 in (d,t), log *ft*=6.3 from $3/2^-$.
1078.67[e] *7*	$9/2^-$		BCD	J^π: ΔJ=1 γ to $7/2^-$; ΔJ=2 γ to $5/2^-$ and band assignment.
1087.12 *17*			D	
1088.15 *22*	(7/2)	0.2 ps *+10−1*	J	J^π: γ's to $9/2^+$ and $5/2^+$ suggest $5/2^+,7/2,9/2^+$ and γ(θ) in (p,nγ) supports 7/2.
1144.460 *18*	$3/2^+,5/2^+$	0.09 ps *+6−3*	A DE J L	J^π: L(d,t)=2.
1162.3 *3*	$(7/2^+,9/2^+)$		D L	J^π: L=(4) in (d,t).
1181.86 *18*	$5/2^-,7/2^-$		D K M	E(level): on the basis of energies the groups in (p,d) and (^{3}He,α) can correspond to 1184.188 level also, however if L(d,p)=(1) for an 1187 group suggests that level in (p,d) and (^{3}He,α) is different from that in (d,p). J^π: L(p,d)=3. Also L(^{3}He,α)=(3).
1184.189 *5*	1/2,3/2,5/2		A E IJ L	XREF: I(1187?). J^π: log *ft*=6.3 from $3/2^-$. L(d,p)=(1) for an uncertain level suggests $(1/2^-,3/2^-)$. L(d,t)=(1+4) suggests a doublet with $J^\pi=1/2^-,3/2^-$ and $7/2^+,9/2^+$. See also comments for 1181.85 level.
1189.2? *3*			J	
1198.535 *4*	$5/2^+$	0.13 ps *+17−6*	A DEF J	J^π: primary γ from $1/2^+$ res; γ(θ) in (p,nγ).
1245.245 *7*	$3/2^-$	0.25 ps *+69−10*	A E IJKL	J^π: L=1 in (d,p), (p,d), (d,t); γ to $5/2^+$.
1259.94 *24*		0.044 ps *+18−12*	J	J^π: γ to $5/2^+$ suggests $1/2^+$ to $9/2^+$.
1301.707 *17*	5/2,7/2	0.14 ps *+10−5*	DE J	J^π: γ's to $5/2^+$, $5/2^-$ and $7/2^+$ suggest $3/2^+$, 5/2, 7/2, but γ(θ) in (p,nγ) favors J=5/2,7/2.
1369 *15*	$(7/2^+,9/2^+)$		K M	J^π: L=(4) in (p,d).
1374.513 *18*	1/2,3/2,5/2		A DE	J^π: log *ft*=7.0 from $3/2^-$.
1380.36 *21*			A J	
1406.69 *20*	$(5/2^-,7/2^-)$		JK	J^π: L=(3) in (p,d).
1431.96 *6*			DE	J^π: γ's to $5/2^-$ and $7/2^-$ suggest $3/2^-$, 5/2, 7/2, 9/2.
1433 *5*	$1/2^+$		I	J^π: L=0 in (d,p).

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Adopted Levels, Gammas (continued)

^{75}Se Levels (continued)

E(level)	Jπ	$T_{1/2}$ †	XREF	Comments
1439.0 *4*	(7/2+)#	0.037 ps *+13−8*	J	$T_{1/2}$: this value is inconsistent with δ(E2/M1)=−1.5 *3* which gives B(E2)(W.u.) much larger than RUL=300.
1454.676 *18*			DE	
1456.64 *22*	(5/2−)#	0.19 ps *+18−7*	J M	
1484 *15*	5/2−,7/2−		K	Jπ: L=3 in (p,d).
1487.53[f] *9*	(11/2−)#		BCD	
1491.45 *13*	(7/2−)#	0.10 ps *+6−3*	J	Jπ: γ to 3/2− suggests negative parity, not positive as proposed in 1991Sa22.
1550.12 *20*	(7/2+,9/2+)#	0.064 ps *+21−17*	J	
1551 *5*	3/2+,5/2+		I	Jπ: L=2 in (d,p).
1560.890 *14*	(5/2,7/2−)	0.083 ps *+31−21*	A E J	Jπ: γ rays to 7/2−, 7/2+ and 3/2− suggest 5/2, 7/2−. log *ft*=6.1 from 3/2− supports 5/2 while γ(θ) in (p,nγ) supports 7/2.
1589.533 *13*	5/2+	0.050 ps *+15−8*	EF IJK	Jπ: L=2 in (d,p) and γ to 9/2+.
1603 *5*	(3/2+,5/2+)		I	Jπ: L=(2) in (d,p).
1628.43 *23*	(13/2+)		CD	Jπ: γ's to 9/2+, 11/2+, 13/2+ suggest 9/2+, 11/2, 13/2+ and γγ(θ) in 1992Jo04 supports Jπ=13/2+.
1652.76 *8*	5/2+	0.026 ps *+14−7*	E IJ	Jπ: γ's to 5/2−, 5/2+ and 1/2+ suggest 3/2, 5/2+ and γ(θ) in (p,nγ) supports J=5/2.
1667.77 *18*	(5/2−)#	0.037 ps *+18−12*	J M	
1673.37 *8*	(1/2−,3/2−)		E I K	Jπ: L=(1) in (p,d).
1740.96[d] *13*	(15/2+)@	0.25[a] ps *5*	BCD J	
1764 *10*	(5/2−,7/2−)		JK M	E(level): from (p,n). E(p,d)=1768 *20*. Jπ: L=(3) in (p,d).
1784 *5*	1/2+		I	Jπ: L=0 in (d,p).
1802.08 *8*	3/2+,5/2+		DEF I	XREF: I(1808). Jπ: L=2 in (d,p).
1810.71 *9*	1/2−,3/2−		E JK	Jπ: L=1 in (p,d).
1894.98 *8*			E	
1905.21[e] *10*	(13/2−)@		BCD J M	
1910.84[c] *21*	(17/2+)@	0.30[a] ps *6*	BC	
1912.3 *20*			D	E(level),Jπ: γ to 13/2+ suggests 9/2+ to 17/2+. This level must be different from 1913, L=(1) level in (p,d).
1913 *20*	(1/2−,3/2−)		K	Jπ: L=(1) in (p,d).
1943.35 *10*			E J	E(level): from (n,γ). E(p,n)=1947 *10*.
1958.35 *15*			E	
1986.04 *8*	1/2,3/2,5/2+‡		EF JK	XREF: J(1976)K(1980). E(level): from (n,γ).
2030.37 *12*	3/2+,5/2+		E IJK	XREF: J(2032)K(2037). E(level): from (n,γ). E(p,n)=2032 *10*. Jπ: L=2 in (d,p).
2072 *10*			J	
2093 *10*			J	
2119 *10*			IJ	E(level): average of E(d,p) 2121 *10* and E(p,n)=2117 *10*.
2159 *10*			J	
2166.70 *10*	1/2,3/2,5/2+‡		EF	
2235 *10*			JK	E(level): from (p,n). E(p,d)=2232 *25*.
2242.10 *16*			E I	E(level): from (n,γ). L=0+2 for E(d,p)=2246 *10*.
2271.20 *15*			E J	XREF: J(2266). E(level): from (n,γ).
2297 *10*	(−)		JK	XREF: K(2288). Jπ: L(p,d)=(1+3) suggests a doublet with Jπ=(1/2−,3/2−) and (5/2−,7/2−).

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Adopted Levels, Gammas (continued)

^{75}Se Levels (continued)

E(level)	J^π	$T_{1/2}$ †	XREF	Comments
2349 *10*	$(3/2^+,5/2^+)$		I	J^π: L=(2) in (d,p).
2390.93[f] *12*	$(15/2^-)$@		BCD K	XREF: K(2380).
2437 *10*	$3/2^+,5/2^+$		I	J^π: L=2 in (d,p).
2456.44 *6*	$3/2^+,5/2^+$		EF I K	XREF: I(2473)K(2463). E(level): from (n,γ). J^π: L=2 in (d,p).
2519 *10*			I	
2565.39 *6*	$1/2^+$		EF I	XREF: I(2575). E(level): from (n,γ). J^π: L=0 in (d,p).
2573 *25*	$1/2^-,3/2^-$		K	J^π: L=1 in (p,d).
2595.77 *25*	$(17/2^+)$@		C	
2597.77 *9*	1/2,3/2,5/2$^+$‡		EF	
2631.80 *9*	$1/2^+$		EF I	E(level): from (n,γ). E(d,p)=2628 *10*. J^π: L=0 in (d,p).
2670 *25*			K	
2713 *10*	$3/2^+,5/2^+$		I K	E(level): from (d,p). E(p,d)=2714 *25*. J^π: L(d,p)=2.
2737.42 *8*	1/2,3/2,5/2$^+$‡		EF I	E(level): from (n,γ). E(d,p)=2745 *10*.
2766.03[d] *23*	$(19/2^+)$@	0.18[a] ps *3*	BCD	
2782.09 *10*			E I	E(level): from (n,γ). E(d,p)=2800 *10*.
2824 *10*	$1/2^+$		I	J^π: L(d,p)=0.
2840.42[g] *12*	$(17/2^-)$@	0.43[ab] ps *20*	BC	
2871.71[e] *14*	$(17/2^-)$@	0.48[ab] ps *21*	BC	
2887.19 *7*			E K	E(level): from (n,γ). E(p,d)=2883 *25*.
2932 *10*			I	
2940.93 *12*	$3/2^+,5/2^+$		E I	XREF: I(2963). E(level): from (n,γ). J^π: L(d,p)=2.
3018.5[c] *3*	$(21/2^+)$@	0.23[a] ps *6*	BCD	
3020 *10*	$(3/2^+,5/2^+)$		I	J^π: L=(2) in (d,p).
3101 *10*	$3/2^+,5/2^+$		I	J^π: L=2 in (d,p).
3152.61 *8*	$3/2^+,5/2^+$		E I K	XREF: I(3140)K(3155). E(level): from (n,γ). J^π: L=2 in (d,p).
3170 *10*	$3/2^+,5/2^+$		I	J^π: L=2 in (d,p).
3182.32 *9*			E	
3210.43 *15*			E K	XREF: K(3221). E(level): from (n,γ).
3289.04[h] *23*	$(19/2^-)$@	0.62[ab] ps *19*	BC K	XREF: K(3288).
3290 *10*	$1/2^+$		I	J^π: L=0 in (d,p).
3305.92 *15*	$(19/2^-)$		B	
3333.10 *23*	$3/2^+,5/2^+$		E I	E(level): from (n,γ). E(d,p)=3335 *10*. J^π: L=2 in (d,p).
3340.11 *25*			E	
3432.1[f] *8*	$(19/2^-)$@		BC I K	XREF: I(3433)K(3434).
3457 *10*			I	
3483 *10*			I	
3619.37 *15*	$1/2^+$		E I	E(level): from (n,γ). E(d,p)=3617 *10*. J^π: L=0 in (d,p).
3646.42[g] *15*	$(21/2^-)$		B	
3746.4[d] *3*	$(23/2^+)$@	0.17[a] ps *3*	BC	
3767 *10*			I	

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Adopted Levels, Gammas (continued)

^{75}Se Levels (continued)

E(level)	J^π	$T_{1/2}$ †	XREF	Comments
3884.7[e] *20*	(21/2$^-$)		B	
3895 *10*			I	
3917 *10*	3/2$^+$,5/2$^+$		I	J^π: L=2 in (d,p).
4079 *10*			I	
4130 *10*			I	
4199.3[c] *4*	(25/2$^+$)@	0.10[a] ps *2*	BC	
4255 *10*			I	
4267.6[h] *10*	(23/2$^-$)		B	
4296 *10*			I	
4472.2[f] *13*	(23/2$^-$)		B	
4601 *10*			I	
4706.73[g] *25*	(25/2$^-$)		B	
4726 *10*	3/2$^+$,5/2$^+$		I	J^π: L=2 in (d,p).
4831.4[d] *5*	(27/2$^+$)@	0.32[ab] ps *6*	BC	
5037.5?[e] *23*	(25/2$^-$)		B	
5476.1[c] *5*	(29/2$^+$)@	0.11[ab] ps *2*	BC	
5585.9[f] *16*	(27/2$^-$)		B	
6059.4[g] *11*	(29/2$^-$)		B	
6172.6[d] *8*	(31/2$^+$)		B	
6870.7[c] *17*	(33/2$^+$)		B	
7649.7[g] *15*	(33/2$^-$)		B	
7756.0[d] *20*	(35/2$^+$)		B	
(8027.52 *10*)	1/2$^+$&		H	
(8027.54 *8*)	1/2$^+$&		H	
(8027.59 *4*)	1/2$^+$		E	E(level): S(n)=8027.60 *7* (2012Wa38).
8028.61 *7*	1/2$^+$&		H	
8028.96 *7*	1/2$^+$&		H	
8029.21 *7*	1/2$^+$&		H	
8029.31 *7*	1/2$^+$&		H	
8029.87 *8*	1/2$^+$&		H	
8034.72 *8*	1/2$^+$&		H	
8448.3[c] *25*	(37/2$^+$)		B	
10243[c] *4*	(41/2$^+$)		B	

† From DSA in (p,nγ) (1991Sa22), unless otherwise noted.
‡ Primary γ from 1/2$^+$ res.
# From 1991Sa22 on the basis of $\gamma(\theta)$ data in (p,nγ), parity is based on less likelihood of M2 transitions in this mass region.
@ From 1992Jo04 based on $\gamma\gamma(\theta)$ and probable band association.
& S-wave capture in ^{74}Se g.s.
[a] From DSAM in (^{19}F,2pnγ) (1992Jo04).
[b] Effective life time.
[c] Band(A): $\nu g_{9/2}$ 5/2[422], α=+1/2. First band crossing is due to a pair of $g_{9/2}$ protons and the second due to alignment of a pair of $g_{9/2}$ neutrons.
[d] Band(a): $\nu g_{9/2}$ 5/2[422], α=−1/2.
[e] Band(B): π=−, α=+1/2.
[f] Band(b): π=−, α=−1/2.

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Adopted Levels, Gammas (continued)

^{75}Se Levels (continued)

[g] Band(C): (ν1/2[431])(π3/2[312])(π1/2[440]), α=+1/2.
[h] Band(c): (ν1/2[431])(π3/2[312])(π1/2[440]), α=−1/2.

Adopted Levels, Gammas (continued)

γ(^{75}Se)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ	α[c]	Comments
112.3876	7/2$^+$	112.3880 *12*	100	0.0	5/2$^+$	M1+E2	−0.31 *3*	0.115 *6*	α(K)=0.101 *5*; α(L)=0.0120 *6*; α(M)=0.00186 *10*; α(N)=0.000151 *8* B(M1)(W.u.)=0.018 *4*; B(E2)(W.u.)=1.9×10^2 *5* δ: from weighted average of 0.336 *27* (1984To11), 0.35 *7* (1974Su03), 0.24 *5* (1991Sa22), 0.27 *6* (1974Ag05). Other: <0.25 (1995BeZS) from ce data in ε decay.
133.040	9/2$^+$	20.9 *4*	14 *5*	112.3876	7/2$^+$	(M1(+E2))	<0.055	9.4 *10*	B(M1)(W.u.)=0.023 *11* I_γ: from (p,nγ). α: for Eγ=20.9 *4*, and mult=M1+E2, δ<0.055 from B(E2)(W.u.)<300. Mult.,δ: α(exp)=34 *13* from Ti(20.9)/Iγ(133)=3.8 *4* (1992Jo04) gives M1+E2, δ=0.35 *10*; but RUL=300 for E2 gives δ<0.055, which is adopted here. Other Ti(20.9)/Iγ(133)=2.3 (1976Sa07), 0.82 (1975Ze02) in (α,nγ) give lower values of δ.
		133.0405 *29*	100	0.0	5/2$^+$	E2		0.288	α(K)=0.251 *4*; α(L)=0.0318 *5*; α(M)=0.00492 *7*; α(N)=0.000385 *6* B(E2)(W.u.)=50 *12*
286.5714	3/2$^-$	155[d]	<0.1	133.040	9/2$^+$	[E3]		1.09	
		286.572 *5*	100 *8*	0.0	5/2$^+$	E1		0.00362 *5*	B(E1)(W.u.)=1.25×10^{-5} *21* α=0.00362 *5*; α(K)=0.00323 *5*; α(L)=0.000337 *5*; α(M)=5.24×10^{-5} *8*; α(N)=4.43×10^{-6} *7*
293.106	1/2$^-$	6.5 *1*	100	286.5714	3/2$^-$	[M1]		34.4 *17*	B(M1)(W.u.)=0.076 *6*
427.8853	5/2$^-$	141.3147 *22*	100 *4*	286.5714	3/2$^-$	M1+E2	−0.29 *4*	0.055 *4*	α(K)=0.048 *4*; α(L)=0.0055 *5*; α(M)=0.00086 *7*; α(N)=7.1×10^{-5} *6* δ: from weighted average of 0.26 *5* (n,γ) and 0.31 *6* (p,nγ). Others: −0.19 *19* (α,nγ), −0.11 *9* (p,nγ), <0.15 (1995BeZS) from ce data in ε decay.
		315.498 *5*	12.7 *14*	112.3876	7/2$^+$	(E1)		0.00277 *4*	α=0.00277 *4*; α(K)=0.00247 *4*; α(L)=0.000258 *4*; α(M)=4.01×10^{-5} *6*; α(N)=3.39×10^{-6} *5*
		427.883 *4*	57 *9*	0.0	5/2$^+$	E1		0.001230 *18*	α=0.001230 *18*; α(K)=0.001096 *16*; α(L)=0.0001142 *16*; α(M)=1.774×10^{-5} *25*
585.9510	3/2$^-$	292.844 *4*	100 *3*	293.106	1/2$^-$	M1+E2	+0.12 *8*	0.0063 *3*	α=0.0063 *3*; α(K)=0.00564 *23*; α(L)=0.00060 *3*; α(M)=9.4×10^{-5} *4*; α(N)=8.0×10^{-6} *4* δ: from γ(θ) in (α,nγ). Other: −0.07 *8* from ce in (p,nγ), <0.55 (1995BeZS) from ce data in ε decay.
		299.377 *3*	9.1 *4*	286.5714	3/2$^-$	M1(+E2)	0.4 *4*	0.0071 *23*	α=0.0071 *23*; α(K)=0.0063 *21*; α(L)=0.00068 *24*; α(M)=0.00011 *4*; α(N)=9.E−6 *3* δ: from ce data in (p,nγ). Other: M1,E2 (1995BeZS) from ce data in ε decay.
		585.944 *6*	5.74 *23*	0.0	5/2$^+$				
610.716	1/2$^+$	317.6101 *28*	10.2 *5*	293.106	1/2$^-$				

$^{75}_{34}Se_{41}$-7

Adopted Levels, Gammas (continued)

γ(^{75}Se) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult. [#]	δ	α [c]	Comments
610.716	1/2+	324.134 *12*	0.25 *3*	286.5714	3/2−				
		610.712 *6*	100 *7*	0.0	5/2+	(E2)		0.001520 *22*	α=0.001520 *22*; α(K)=0.001352 *19*; α(L)=0.0001442 *21*; α(M)=2.24×10^{-5} *4*; α(N)=1.89×10^{-6}
628.4310	5/2+	341.862 *4*	3.15 *20*	286.5714	3/2−				
		495.390 *5*	9.1 *5*	133.040	9/2+				
		516.042 *5*	100 *4*	112.3876	7/2+	M1		0.001613 *23*	α=0.001613 *23*; α(K)=0.001437 *21*; α(L)=0.0001509 *22*; α(M)=2.35×10^{-5} *4*; α(N)=2.01×10^{-6}
		628.428 *6*	27 *6*	0.0	5/2+	D+Q			δ: +0.07 *6* or +1.5 *3* in (p,nγ).
663.9569	5/2−	236.075 *4*	20.8 *7*	427.8853	5/2−	M1(+E2)	+0.07 *6*	0.0107 *4*	α(K)=0.0095 *3*; α(L)=0.00102 *4*; α(M)=0.000159 *5*; α(N)=1.35×10^{-5} *5* δ: from (p,nγ). Others: 0.32 *17* from ce data in (n,γ), 2.0 *5* in (p,nγ), 0.70 *35* (1995BeZS) from ce data in ε decay.
		370.852 *15*	0.42 *12*	293.106	1/2−	(E2)		0.00720 *10*	α=0.00720 *10*; α(K)=0.00638 *9*; α(L)=0.000701 *10*; α(M)=0.0001088 *16*; α(N)=9.06×10^{-6} *1*
		377.385 *4*	100 *1*	286.5714	3/2−	M1+E2	−0.75 *18*	0.0046 *4*	α=0.0046 *4*; α(K)=0.0041 *4*; α(L)=0.00044 *4*; α(M)=6.8×10^{-5} *7*; α(N)=5.8×10^{-6} *5* δ: from (p,nγ). Other: <1.1 (1995BeZS) from ce data in ε decay.
		551.568 *6*	5.8 *5*	112.3876	7/2+				
		663.98 *6*	1.7 *3*	0.0	5/2+				
747.6502	7/2−	83.6914 *26*	2.3 *8*	663.9569	5/2−				
		137.1[@d] *3*	3.62 *15*	610.716	1/2+	[E3]		1.86	Eγ: considered questionable placement by the evaluators.
		319.765 *3*	100 *3*	427.8853	5/2−	M1+E2	+1.38 *10*	0.0095 *3*	α=0.0095 *3*; α(K)=0.00845 *25*; α(L)=0.00093 *3*; α(M)=0.000145 *5*; α(N)=1.20×10^{-5} *4* δ: from (p,nγ). Other: 0.37 *20* in (n,γ).
		461.081 *5*	35.7 *14*	286.5714	3/2−	E2		0.00355 *5*	α=0.00355 *5*; α(K)=0.00315 *5*; α(L)=0.000341 *5*; α(M)=5.30×10^{-5} *8*; α(N)=4.44×10^{-6} *7*
		635.274 *11*	13.3 *11*	112.3876	7/2+				
		747.63 *3*	13.5 *7*	0.0	5/2+				
761.14		628.1 *2*	100	133.040	9/2+				
777.3231	5/2−	113.375 *4*	3.5 *9*	663.9569	5/2−				
		191.3710 *21*	30 *3*	585.9510	3/2−				
		349.434 *4*	89 *5*	427.8853	5/2−	M1+E2	+3.27 *9*	0.00839 *12*	α=0.00839 *12*; α(K)=0.00743 *11*; α(L)=0.000818 *12*; α(M)=0.0001271 *18*; α(N)=1.057×10^{-5} δ: from (p,nγ).
		484.212 *5*	87 *8*	293.106	1/2−	E2		0.00304 *5*	α=0.00304 *5*; α(K)=0.00270 *4*; α(L)=0.000292 *4*; α(M)=4.53×10^{-5} *7*; α(N)=3.80×10^{-6} *6*
		490.748 *4*	100 *3*	286.5714	3/2−	(M1+E2)		0.0024 *6*	δ: +0.08 *2* or +3.49 *9* in (p,nγ).
		777.350 *24*	6.3 *8*	0.0	5/2+				
789.989	7/2(+)	161.561 *10*	2.9 *7*	628.4310	5/2+				
		656.04 *14*	19 *10*	133.040	9/2+				Eγ: poor fit. Level-energy difference=656.9.

$^{75}_{34}Se_{41}$-8

Adopted Levels, Gammas (continued)

γ(^{75}Se) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ	α[c]	Comments
789.989	7/2(+)	677.597 *8*	78 *3*	112.3876	7/2+				
		789.995 *14*	100 *2*	0.0	5/2+	(M1+E2)	−0.84 *6*	0.000679 *11*	α=0.000679 *11*; α(K)=0.000605 *10*; α(L)=6.34×10^{-5} *10*; α(M)=9.86×10^{-6} *16*; α(N)=8.41×10^{-7} *1* δ: from (p,nγ).
814.32	11/2+	681.1[a] *2*	100 *7*	133.040	9/2+				
		701.77[&] *17*	35 *8*	112.3876	7/2+				
839.893	3/2+	211.4614 *20*	21.5 *10*	628.4310	5/2+	M1		0.01403	α(K)=0.01246 *18*; α(L)=0.001338 *19*; α(M)=0.000208 *3*; α(N)=1.771×10^{-5} *25*
		229.178 *4*	9.0 *3*	610.716	1/2+	M1		0.01143	α(K)=0.01016 *15*; α(L)=0.001088 *16*; α(M)=0.0001696 *24*; α(N)=1.442×10^{-5} *21*
		727.516 *12*	3.6 *3*	112.3876	7/2+				
		839.882 *11*	100 *3*	0.0	5/2+	M1		0.000549 *8*	α=0.000549 *8*; α(K)=0.000490 *7*; α(L)=5.09×10^{-5} *8*; α(M)=7.93×10^{-6} *12*; α(N)=6.79×10^{-7} *10*
859.537	3/2−	195.5812 *24*	2.4 *2*	663.9569	5/2−				Iγ: weighted average of 2.3 *7* (^{75}Br ε decay (96.7 min)), 2.45 *18* (^{75}As(p,nγ),(p,n)). From ^{75}Se(n,γ) Iγ=41 *2*.
		231.109 *5*	1.68 *21*	628.4310	5/2+				
		431.652 *4*	100 *3*	427.8853	5/2−	M1(+E2)	0.3 *3*	0.0027 *3*	α=0.0027 *3*; α(K)=0.0024 *3*; α(L)=0.00025 *3*; α(M)=3.9×10^{-5} *5*; α(N)=3.3×10^{-6} *4* δ: from (α,nγ). Other: 0.4 *4* in (p,nγ), >0.3 (1995BeZS) from ce data in ε decay.
		566.437 *8*	9.7 *10*	293.106	1/2−				
		572.968 *12*	58.1 *19*	286.5714	3/2−	E2		0.00183 *3*	α=0.00183 *3*; α(K)=0.001626 *23*; α(L)=0.0001740 *25*; α(M)=2.70×10^{-5} *4*; α(N)=2.28×10^{-6} *4*
		859.472 *24*	5.3 *7*	0.0	5/2+				
895.274	1/2−,3/2−	284.557 *5*	7.1 *7*	610.716	1/2+				
		309.323 *3*	6.2 *8*	585.9510	3/2−				
		467.389 *6*	12 *6*	427.8853	5/2−				
		608.698 *5*	100 *3*	286.5714	3/2−	M1(+E2)		0.00132 *22*	α=0.00132 *22*; α(K)=0.00118 *19*; α(L)=0.000125 *22*; α(M)=1.9×10^{-5} *4*; α(N)=1.6×10^{-6} *3*
934.10	13/2+	119.4[a] *2*	4 *1*	814.32	11/2+				
		801.14[&] *9*	100 *22*	133.040	9/2+	(E2)		0.000726 *11*	α=0.000726 *11*; α(K)=0.000646 *9*; α(L)=6.82×10^{-5} *10*; α(M)=1.061×10^{-5} *15*; α(N)=9.00×10^{-7} *1*
953.297	5/2+,7/2	175.973 *9*	17 *3*	777.3231	5/2−				
		525.0[@] *3*	2.3 *1*	427.8853	5/2−				
		819.9 *5*	33 *11*	133.040	9/2+				
		841.14 *23*	60 *33*	112.3876	7/2+				
		953.38 *9*	100 *11*	0.0	5/2+	(E2)		0.000471 *7*	α=0.000471 *7*; α(K)=0.000420 *6*; α(L)=4.40×10^{-5} *7*; α(M)=6.85×10^{-6} *10*; α(N)=5.83×10^{-7} *9*
962.644	3/2−	122.3[@] *3*	2.0 *2*	839.893	3/2+				
		298.6843 *29*	12.2 *8*	663.9569	5/2−				
		334.215 *5*	3.0 *2*	628.4310	5/2+				

$^{75}_{34}Se_{41}$-9

Adopted Levels, Gammas (continued)

γ(^{75}Se) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ	α[c]	Comments
962.644	3/2⁻	376.696 *8*	3.5 *5*	585.9510	3/2⁻				
		534.758 *7*	14.0 *16*	427.8853	5/2⁻				
		669.535 *11*	11.4 *7*	293.106	1/2⁻				
		676.071 *6*	100 *3*	286.5714	3/2⁻				
		962.633 *14*	81 *3*	0.0	5/2⁺				
1003.846	5/2⁺	375.418 *6*	3.3 *5*	628.4310	5/2⁺				
		870.89 *8*	16 *7*	133.040	9/2⁺	[E2]			B(E2)(W.u.)=1.0×10^2 *4*
		891.462 *15*	100 *3*	112.3876	7/2⁺				
		1003.806 *14*	66 *11*	0.0	5/2⁺				
1020.470	1/2⁻,3/2⁻	409.8[@] *3*	3.4 *1*	610.716	1/2⁺				
		733.895 *8*	100 *3*	286.5714	3/2⁻	(M1)		0.000735 *11*	α=0.000735 *11*; α(K)=0.000655 *10*; α(L)=6.83×10^{-5} *10*; α(M)=1.063×10^{-5} *15*; α(N)=9.10×10^{-7}
1047.187	5/2⁻,7/2⁻	619.297 *7*	100 *4*	427.8853	5/2⁻	(M1+E2)			δ: +0.22 *7* or +2.36 *11* for J(1047)=7/2 in (p,nγ).
		760.63 *3*	52 *12*	286.5714	3/2⁻	(M1,E2)			δ: +0.78 *5* or +2.74 *10* for J(1047)=5/2 in (p,nγ).
		1048.0[@] *3*	48 *6*	0.0	5/2⁺	(E1(+M2))	+0.09 *2*		B(E1)(W.u.)=0.00072 *+26−35* δ: +0.09 *2* for J(1047)=7/2, >+23 for J(1047)=5/2 in (p,nγ); latter is not possible from RUL for M2.
1066.39		954.0 *2*	100	112.3876	7/2⁺				
1073.825	5/2⁻	284.6[@] *3*	0.77	789.989	7/2[(+)]	[E1]			B(E1)(W.u.)=0.0008 *+2−3*
		326.1748 *22*	29.5 *14*	747.6502	7/2⁻				
		487.873 *5*	34.3 *11*	585.9510	3/2⁻				
		645.925 *10*	12 *3*	427.8853	5/2⁻				
		780.707 *14*	25.5 *21*	293.106	1/2⁻	[E2]			B(E2)(W.u.)=1.6×10^2 *+9−6*
		961.439 *20*	100 *6*	112.3876	7/2⁺	[E1]			B(E1)(W.u.)=0.0027 *+13−10*
		1073.87 *4*	17.9 *18*	0.0	5/2⁺	[E1]			B(E1)(W.u.)=0.0003 *+2−1*
1078.67	9/2⁻	330.85[&] *14*	64 *17*	747.6502	7/2⁻				
		650.80[&] *9*	100 *5*	427.8853	5/2⁻				
		946.1[a] *2*	35 *5*	133.040	9/2⁺				
		966[ad]		112.3876	7/2⁺				
1087.12		954.0 *2*		133.040	9/2⁺				
		974.9 *3*		112.3876	7/2⁺				
1088.15	(7/2)	975.8 *3*	100 *3*	112.3876	7/2⁺	(D+Q)			δ: +0.06 *7* or +0.96 *10*.
		1088.1 *3*	8.0 *3*	0.0	5/2⁺				
1144.460	3/2⁺,5/2⁺	1032.3[@] *3*	3.1 *1*	112.3876	7/2⁺				
		1144.449 *18*	100 *3*	0.0	5/2⁺	(M1+E2)			δ: +0.07 *2* or +1.33 *15* in (p,nγ).
1162.3	(7/2⁺,9/2⁺)	1049.9 *3*	100	112.3876	7/2⁺				
1181.86	5/2⁻,7/2⁻	404.2 *3*	100 *47*	777.3231	5/2⁻				
		596.1 *3*		585.9510	3/2⁻				
		754.1 *3*	94 *47*	427.8853	5/2⁻				

$^{75}_{34}Se_{41}$-10

Adopted Levels, Gammas (continued)

γ(^{75}Se) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.#	δ	Comments
1184.189	1/2,3/2,5/2	324.650 *4*	14.6 *8*	859.537	3/2$^-$			I_γ: weighted average of 21 *9* (^{75}Br ε decay (96.7 min)), 14.5 *8* (^{74}Se(n,γ) E=thermal:placed γ). In ^{75}As(p,nγ) Iγ=46 *7*.
		598.246 *9*	38 *9*	585.9510	3/2$^-$			I_γ: weighted average of 65 *9* (^{75}Br ε decay (96.7 min)), 35 *3* (^{74}Se(n,γ) E=thermal:placed γ). In ^{75}As(p,nγ) Iγ=100 *3*.
		897.603 *11*	100 *5*	286.5714	3/2$^-$			I_γ: from ^{75}Br ε decay (96.7 min) and ^{74}Se(n,γ). In ^{75}As(p,nγ) Iγ=82 *3*.
1189.2?		761.2[d] *4*		427.8853	5/2$^-$			
		1076.9[d] *4*		112.3876	7/2$^+$			
1198.535	5/2$^+$	534.577 *4*	19 *6*	663.9569	5/2$^-$			
		770.644 *9*	52 *3*	427.8853	5/2$^-$	(E1(+M2))	<0.012	B(E1)(W.u.)>0.0022 *+19−12* δ: +0.11 *1* or +1.23 *11* in (p,nγ), but the latter value is not allowed by RUL for M2. The value of δ is further restricted to <0.012 from RUL=1 for M2.
		911.953 *14*	100 *3*	286.5714	3/2$^-$	(E1(+M2))	<0.014	B(E1)(W.u.)>0.0025 *+21−14* δ: −0.09 *2* or −2.50 *15* in (p,nγ), but the latter value is not allowed by RUL for M2. The value of δ is further restricted to <0.014 from RUL=1 for M2.
1245.245	3/2$^-$	659.295 *8*	19.3 *10*	585.9510	3/2$^-$			
		952.123 *12*	100 *3*	293.106	1/2$^-$			
		958.62 *4*	11.2 *21*	286.5714	3/2$^-$			
		1245.26 *3*	32 *4*	0.0	5/2$^+$	[E1]		B(E1)(W.u.)=0.00016 *+10−12*
1259.94		631.9 *4*	100 *4*	628.4310	5/2$^+$			
		1259.7 *3*	25.3 *9*	0.0	5/2$^+$			
1301.707	5/2,7/2	873.818 *17*	100 *5*	427.8853	5/2$^-$			
		1189.29 *6*	6.1 *22*	112.3876	7/2$^+$			
		1301.6[@] *5*	36.2 *13*	0.0	5/2$^+$			
1374.513	1/2,3/2,5/2	788.558 *17*	100	585.9510	3/2$^-$			
1380.36		1380.35 *21*	100	0.0	5/2$^+$			E_γ: weighted average of Eγ′s from ^{75}Br ε decay and (p,nγ).
1406.69	(5/2$^-$,7/2$^-$)	978.8 *2*	100	427.8853	5/2$^-$			
1431.96		684.27 *6*	69 *7*	747.6502	7/2$^-$			
		768.36 *21*	100 *45*	663.9569	5/2$^-$			
1439.0	(7/2$^+$)	650.2 *5*	100 *3*	789.989	7/2$^{(+)}$	(M1(+E2))	<0.3	B(M1)(W.u.)=1.6 *4* δ: −1.5 *3* is inconsistent with RUL=300, which allows δ<0.3. or there is problem with level lifetime.
		1437.7 *5*	37.9 *14*	0.0	5/2$^+$	(M1+E2)	+2.9 *10*	B(M1)(W.u.)=0.006 *+6−3*; B(E2)(W.u.)=33 *+11−8*
1454.676		868.720 *17*	100	585.9510	3/2$^-$			
1456.64	(5/2$^-$)	871.4 *3*	100 *3*	585.9510	3/2$^-$	(M1+E2)		δ: −0.20 *2* or −1.88 *9*.
		1455.9 *3*	13.1 *5*	0.0	5/2$^+$	[E1]		B(E1)(W.u.)=8×10^{-5} *4*
1487.53	(11/2$^-$)	408.89[&] *9*	44 *10*	1078.67	9/2$^-$			
		673[ad]		814.32	11/2$^+$			
		739.90[&] *17*	100 *10*	747.6502	7/2$^-$			
		1354.4[a] *4*	26 *11*	133.040	9/2$^+$			

Adopted Levels, Gammas (continued)

γ(^{75}Se) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ	Comments
1491.45	(7/2$^-$)	906.1 *3*	6.87 *24*	585.9510	3/2$^-$	[E2]		B(E2)(W.u.)=28 *+12−10*
		1063.9 *3*	8.19 *24*	427.8853	5/2$^-$			
		1359.3 *3*	5.42 *24*	133.040	9/2$^+$	(E1)		B(E1)(W.u.)=6.8×10^{-5} *+29−25* E_γ: poor fit. Level-energy difference=1358.4.
		1490.6 *2*	100 *3*	0.0	5/2$^+$	(E1)		B(E1)(W.u.)=0.0010 *4* E_γ: poor fit. Level-energy difference=1491.4. δ: −0.29 *4* or −1.60 *14*.
1550.12	(7/2$^+$,9/2$^+$)	921.5 *3*	68 *3*	628.4310	5/2$^+$			
		1437.7 *5*	100 *4*	112.3876	7/2$^+$			
		1550.3 *3*	74 *3*	0.0	5/2$^+$	(M1,E2)		δ: +1.20 *22* for J(1550)=7/2, +4.7 *1* for J=9/2.
1560.890	(5/2,7/2$^-$)	701.487 *16*	100 *4*	859.537	3/2$^-$			E_γ: poor fit. Level-energy difference=701.35.
		813.7[@] *5*	18.3 *6*	747.6502	7/2$^-$			
		974.610 *24*	37 *3*	585.9510	3/2$^-$			E_γ: poor fit. Level-energy difference=974.9. I_γ: from ^{74}Se(n,γ).
		1448.74 *10*	29 *1*	112.3876	7/2$^+$			I_γ: weighted average of 27 *3* (^{74}Se(n,γ) E=thermal:placed γ), 29.4 *11* (^{75}As(p,nγ),(p,n)).
		1560.74 *15*	8.8 *15*	0.0	5/2$^+$			I_γ: weighted average of 18.7 *20* (^{74}Se(n,γ) E=thermal:placed γ), 8.6 *3* (^{75}As(p,nγ),(p,n)).
1589.533	5/2$^+$	978.813 *12*	100 *14*	610.716	1/2$^+$	[E2]		B(E2)(W.u.)=5.1×10^2 *+10−12* Note that B(E2)(W.u.) is larger than RUL(IS)=300.
		1456.7[@] *3*	4.74 *13*	133.040	9/2$^+$	[E2]		B(E2)(W.u.)=3.3 *7*
		1476.7[@] *3*	14.1 *5*	112.3876	7/2$^+$			
		1588.9[@] *3*	12.4 *4*	0.0	5/2$^+$			
1628.43	(13/2$^+$)	694.2[a] *3*	56 *22*	934.10	13/2$^+$			
		814.6[&] *5*	100 *24*	814.32	11/2$^+$			
		1496[b] *3*	39 *19*	133.040	9/2$^+$			
1652.76	5/2$^+$	1042.1[@] *3*	57.6 *21*	610.716	1/2$^+$	(E2)		B(E2)(W.u.)=2.1×10^2 *+8−7* δ: +0.07 *3* or −4.0 *1* in (p,nγ).
		1066.9[@] *3*	46.6 *13*	585.9510	3/2$^-$	[E1]		B(E1)(W.u.)=0.0022 *8*
		1224.7[@] *3*	56.3 *21*	427.8853	5/2$^-$	(E1(+M2))	+0.04 *4*	B(E1)(W.u.)=0.0017 *+7−6* δ: +0.04 *4* or +1.60 *10* in (p,nγ); latter value of δ is not likely from RUL for M2.
		1652.4[@] *3*	100 *3*	0.0	5/2$^+$	(M1+E2)	+0.50 *8*	B(M1)(W.u.)=0.058 *21*; B(E2)(W.u.)=7 *+3−2*
1667.77	(5/2$^-$)	828.3 *3*	53 *3*	839.893	3/2$^+$	[E1]		B(E1)(W.u.)=0.0049 *+24−16*
		1038.9 *3*	42.4 *16*	628.4310	5/2$^+$	(E1(+M2))	+0.05 *3*	B(E1)(W.u.)=0.0020 *+9−7* δ: +0.05 *3* or +1.51 *7* in (p,nγ); latter value is not allowed by RUL.
		1381.2 *3*	100 *16*	286.5714	3/2$^-$	(M1+E2)	+0.74 *4*	B(M1)(W.u.)=0.07 *+4−2*; B(E2)(W.u.)=29 *+14−9*
1673.37	(1/2$^-$,3/2$^-$)	1380.25 *8*	100	293.106	1/2$^-$			
1740.96	(15/2$^+$)	806.9[a] *2*	100 *31*	934.10	13/2$^+$			E_γ: Eγ=810 shown in the level scheme of (α,2nγ) (1975Ze02).
		926.6[a] *1*	56 *13*	814.32	11/2$^+$	[E2]		B(E2)(W.u.)=63 *24*

$^{75}_{34}Se_{41}$-12

Adopted Levels, Gammas (continued)

γ(^{75}Se) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
1802.08	3/2$^+$,5/2$^+$	724.4[b] *4*	100	1078.67	9/2$^-$	[M2,E3]		E_γ: high implied multipolarity suggests that this γ may deexcite a level different from the L=2 level in (d,p).
1810.71	1/2$^-$,3/2$^-$	1811.4 *10*	100	0.0	5/2$^+$			
1905.21	(13/2$^-$)	417.61[&] *10*	52 *19*	1487.53	(11/2$^-$)			
		826.50[&] *9*	100 *11*	1078.67	9/2$^-$			
1910.84	(17/2$^+$)	169.8 *3*	6 *3*	1740.96	(15/2$^+$)	[M1+E2]	0.07 *5*	
		976.8 *3*	100 *7*	934.10	13/2$^+$	[E2]		B(E2)(W.u.)=106 *24*
1912.3		978.2 *20*	100	934.10	13/2$^+$			
2271.20		2270.6 *6*	100	0.0	5/2$^+$			
2390.93	(15/2$^-$)	485.7[a] *7*	42 *8*	1905.21	(13/2$^-$)			
		903.5[a] *1*	100 *17*	1487.53	(11/2$^-$)			
2595.77	(17/2$^+$)	684.9 *2*	33 *17*	1910.84	(17/2$^+$)			
		967.4 *3*	100 *50*	1628.43	(13/2$^+$)			
2766.03	(19/2$^+$)	855.2[a] *1*	100 *11*	1910.84	(17/2$^+$)			
		1024.8[a] *7*	79 *21*	1740.96	(15/2$^+$)	[E2]		B(E2)(W.u.)=65 *23*
2840.42	(17/2$^-$)	449.6 *1*	43 *14*	2390.93	(15/2$^-$)			
		935.1 *1*	100 *14*	1905.21	(13/2$^-$)	[E2]		B(E2)(W.u.)=6×10^1 *3*
2871.71	(17/2$^-$)	966.5 *1*	100	1905.21	(13/2$^-$)			
3018.5	(21/2$^+$)	252.7[a] *5*	5.3 *26*	2766.03	(19/2$^+$)	[M1+E2]	0.018 *10*	
		1107.6[a] *2*	100 *5*	1910.84	(17/2$^+$)	[E2]		B(E2)(W.u.)=75 *21*
3289.04	(19/2$^-$)	898.1 *2*	100	2390.93	(15/2$^-$)	[E2]		B(E2)(W.u.)=8×10^1 *3*
3305.92	(19/2$^-$)	465.4 *1*	100	2840.42	(17/2$^-$)			
		915[d] *1*	12.5	2390.93	(15/2$^-$)			
3432.1	(19/2$^-$)	560.7 *10*	40	2871.71	(17/2$^-$)			
		1040.8 *10*	100	2390.93	(15/2$^-$)			
3646.42	(21/2$^-$)	340.4 *1*	100	3305.92	(19/2$^-$)			
		357.2 *10*	44	3289.04	(19/2$^-$)			
		774.6 *10*	22	2871.71	(17/2$^-$)			
		806.1 *1*	100	2840.42	(17/2$^-$)			
3746.4	(23/2$^+$)	727.9 *1*	100 *27*	3018.5	(21/2$^+$)			
		980.3 *4*	40 *20*	2766.03	(19/2$^+$)	[E2]		B(E2)(W.u.)=6×10^1 *4*
3884.7	(21/2$^-$)	1013.0 *20*	100	2871.71	(17/2$^-$)			
4199.3	(25/2$^+$)	453.2 *7*	17 *8*	3746.4	(23/2$^+$)			
		1180.7 *2*	100 *17*	3018.5	(21/2$^+$)	[E2]		B(E2)(W.u.)=1.1×10^2 *4*
4267.6	(23/2$^-$)	978.5 *10*	100	3289.04	(19/2$^-$)			
4472.2	(23/2$^-$)	1040.1 *10*	100	3432.1	(19/2$^-$)			
4706.73	(25/2$^-$)	439.0 *20*	40	4267.6	(23/2$^-$)			
		1060.3 *2*	100	3646.42	(21/2$^-$)			
4831.4	(27/2$^+$)	631.6 *4*	100 *62*	4199.3	(25/2$^+$)			
		1085.6 *5*	75 *25*	3746.4	(23/2$^+$)	[E2]		B(E2)(W.u.)=27 *15*
5037.5?	(25/2$^-$)	1152.8[d] *10*	100	3884.7	(21/2$^-$)			
5476.1	(29/2$^+$)	644.2 *10*	40	4831.4	(27/2$^+$)			

$^{75}_{34}Se_{41}$-13

Adopted Levels, Gammas (continued)

γ(^{75}Se) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult. [#]	Comments
5476.1	(29/2$^+$)	1276.9 *4*	100	4199.3	(25/2$^+$)	[E2]	B(E2)(W.u.)=58 *11*
5585.9	(27/2$^-$)	1113.7 *10*	100	4472.2	(23/2$^-$)		
6059.4	(29/2$^-$)	1352.7 *10*	100	4706.73	(25/2$^-$)		
6172.6	(31/2$^+$)	696.5 *10*	30	5476.1	(29/2$^+$)		
		1341.1 *10*	100	4831.4	(27/2$^+$)		
6870.7	(33/2$^+$)	1394.6 *16*	100	5476.1	(29/2$^+$)		
7649.7	(33/2$^-$)	1590.2 *10*	100	6059.4	(29/2$^-$)		
7756.0	(35/2$^+$)	1583.4 *18*	100	6172.6	(31/2$^+$)		
(8027.52)	1/2$^+$	7064.4 *4*	25.6 *23*	962.644	3/2$^-$		
		7131.3 *12*	23.3 *23*	895.274	1/2$^-$,3/2$^-$		
		7734.0 *1*	100 *11*	293.106	1/2$^-$		
(8027.54)	1/2$^+$	5289.8 *4*	4.9 *7*	2737.42	1/2,3/2,5/2$^+$		
		5396.3 *5*	4.9 *7*	2631.80	1/2$^+$		
		5430.5 *5*	9.9 *7*	2597.77	1/2,3/2,5/2$^+$		
		5462.3 *6*	6.3 *7*	2565.39	1/2$^+$		
		5570.4 *10*	9.2 *7*	2456.44	3/2$^+$,5/2$^+$		
		5861.0 *9*	5.6 *7*	2166.70	1/2,3/2,5/2$^+$		
		6041.2 *3*	4.2 *7*	1986.04	1/2,3/2,5/2$^+$		
		6223.9 *11*	9.2 *7*	1802.08	3/2$^+$,5/2$^+$		
		6437.5 *9*	23 *3*	1589.533	5/2$^+$		
		6828.3 *3*	9.9 *14*	1198.535	5/2$^+$		
		7006.7 *2*	9.9 *14*	1020.470	1/2$^-$,3/2$^-$		
		7734.0 *1*	100.0 *14*	293.106	1/2$^-$		
(8027.59)	1/2$^+$	4408.08 *14*	1.46 *11*	3619.37	1/2$^+$		
		4687.32 *24*	1.36 *16*	3340.11			
		4694.33 *22*	1.36 *16*	3333.10	3/2$^+$,5/2$^+$		
		4816.99 *14*	0.66 *5*	3210.43			
		4845.10 *8*	2.76 *16*	3182.32			
		4874.81 *7*	3.16 *16*	3152.61	3/2$^+$,5/2$^+$		
		5086.48 *11*	1.42 *10*	2940.93	3/2$^+$,5/2$^+$		
		5140.21 *6*	2.30 *11*	2887.19			
		5245.30 *9*	1.57 *8*	2782.09			
		5289.97 *7*	2.48 *12*	2737.42	1/2,3/2,5/2$^+$		
		5395.56 *8*	2.04 *10*	2631.80	1/2$^+$		
		5429.59 *8*	1.62 *9*	2597.77	1/2,3/2,5/2$^+$		
		5461.98 *5*	3.32 *16*	2565.39	1/2$^+$		
		5570.93 *5*	4.84 *24*	2456.44	3/2$^+$,5/2$^+$		
		5756.12 *15*	0.50 *3*	2271.20			
		5785.25 *15*	0.41 *2*	2242.10			
		5860.64 *9*	1.86 *9*	2166.70	1/2,3/2,5/2$^+$		
		5996.96 *11*	1.01 *6*	2030.37	3/2$^+$,5/2$^+$		
		6041.29 *7*	1.41 *4*	1986.04	1/2,3/2,5/2$^+$		
		6068.98 *14*	0.51 *3*	1958.35			

$^{75}_{34}Se_{41}$-14

Adopted Levels, Gammas (continued)

γ(^{75}Se) (continued)

E_i(level)	E_γ [†]	I_γ [‡]	E_f	J^π_f	E_i(level)	J^π_i	E_γ [†]	I_γ [‡]	E_f	J^π_f
(8027.59)	6083.98 *9*	1.79 *9*	1943.35		(8027.59)	$1/2^+$	7064.64 *11*	3.12 *16*	962.644	$3/2^-$
	6132.34 *7*	1.56 *8*	1894.98				7131.98 *14*	0.90 *4*	895.274	$1/2^-$,$3/2^-$
	6216.61 *8*	1.80 *9*	1810.71	$1/2^-$,$3/2^-$			7167.58 *19*	1.43 *9*	859.537	$3/2^-$
	6225.27 *7*	5.08 *24*	1802.08	$3/2^+$,$5/2^+$			7187.5 *5*	0.15 *9*	839.893	$3/2^+$
	6374.51 *8*	0.94 *11*	1652.76	$5/2^+$			7398.64 *16*	0.92 *5*	628.4310	$5/2^+$
	6437.80 *7*	10.9 *6*	1589.533	$5/2^+$			7417 *2*	2.8 *9*	610.716	$1/2^+$
	6594.8 *7*	0.17 *3*	1431.96				7441.24 *16*	2.01 *10*	585.9510	$3/2^-$
	6782.0 *8*	0.08 *2*	1245.245	$3/2^-$			7734.12 *28*	100 *5*	293.106	$1/2^-$
	6828.72 *9*	3.20 *16*	1198.535	$5/2^+$			7740.6 *11*	3.6 *12*	286.5714	$3/2^-$
	6843.11 *11*	1.02 *5*	1184.189	1/2,3/2,5/2			8027.2 *3*	0.28 *2*	0.0	$5/2^+$
	6882.65 *20*	0.25 *2*	1144.460	$3/2^+$,$5/2^+$	8448.3	$(37/2^+)$	1577.5 *18*	100	6870.7	$(33/2^+)$
	7006.74 *11*	5.5 *3*	1020.470	$1/2^-$,$3/2^-$	10243	$(41/2^+)$	1795.0 *20*	100	8448.3	$(37/2^+)$

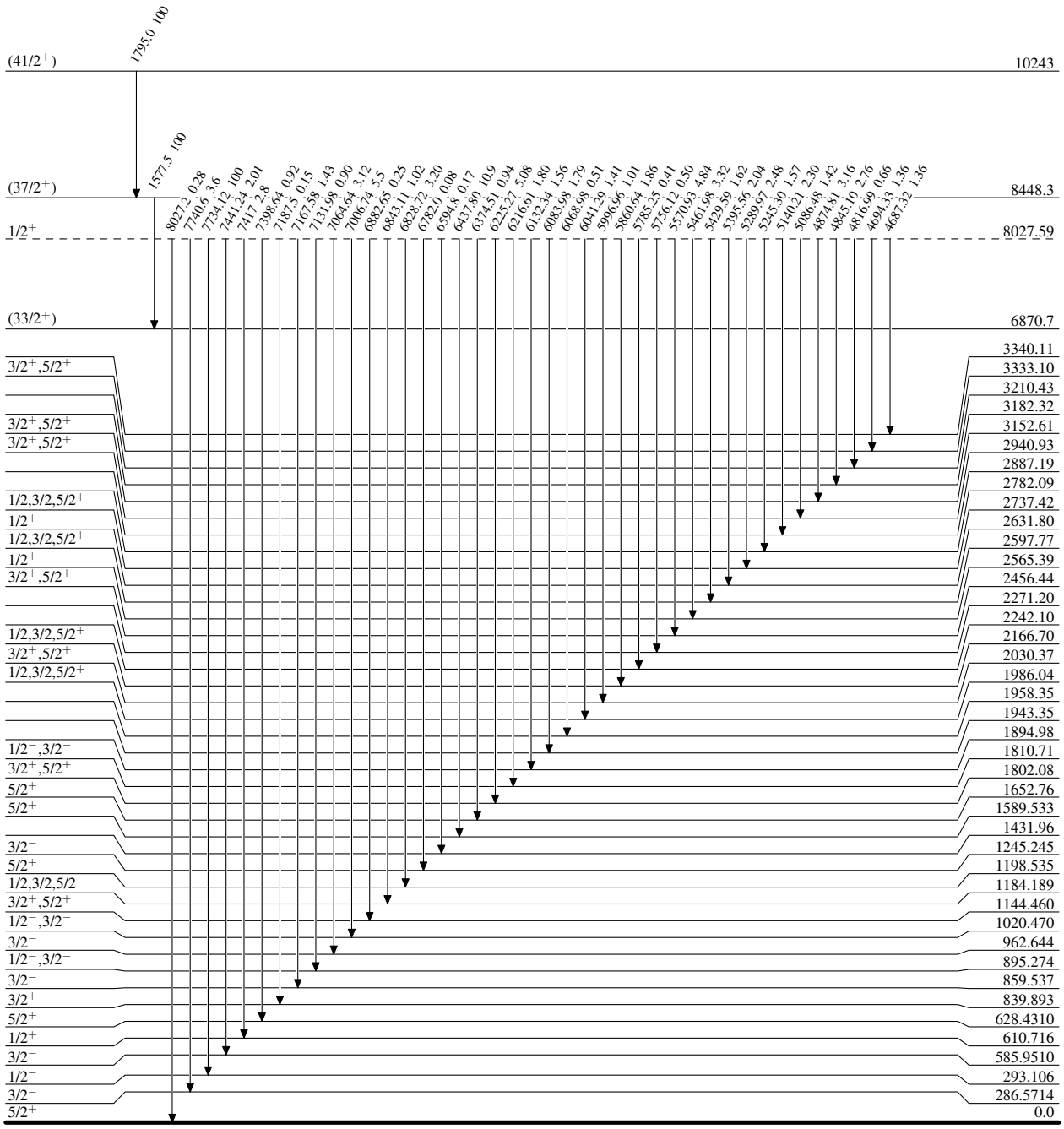
† From ^{74}Se(n,γ) when level populated in this reaction. In other cases values are generally from individual data sets.
‡ Weighted average of available values from different studies.
# From ce data in ^{75}Br ε decay, ^{74}Se(n,γ) and ^{72}Ge(α,nγ).
@ From (p,nγ).
& Weighted average of (α,nγ) and (^{19}F,2pnγ).
a From (^{19}F,2pnγ).
b From (α,nγ).
c Additional information 2.
d Placement of transition in the level scheme is uncertain.

$^{75}_{34}Se_{41}$-15

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



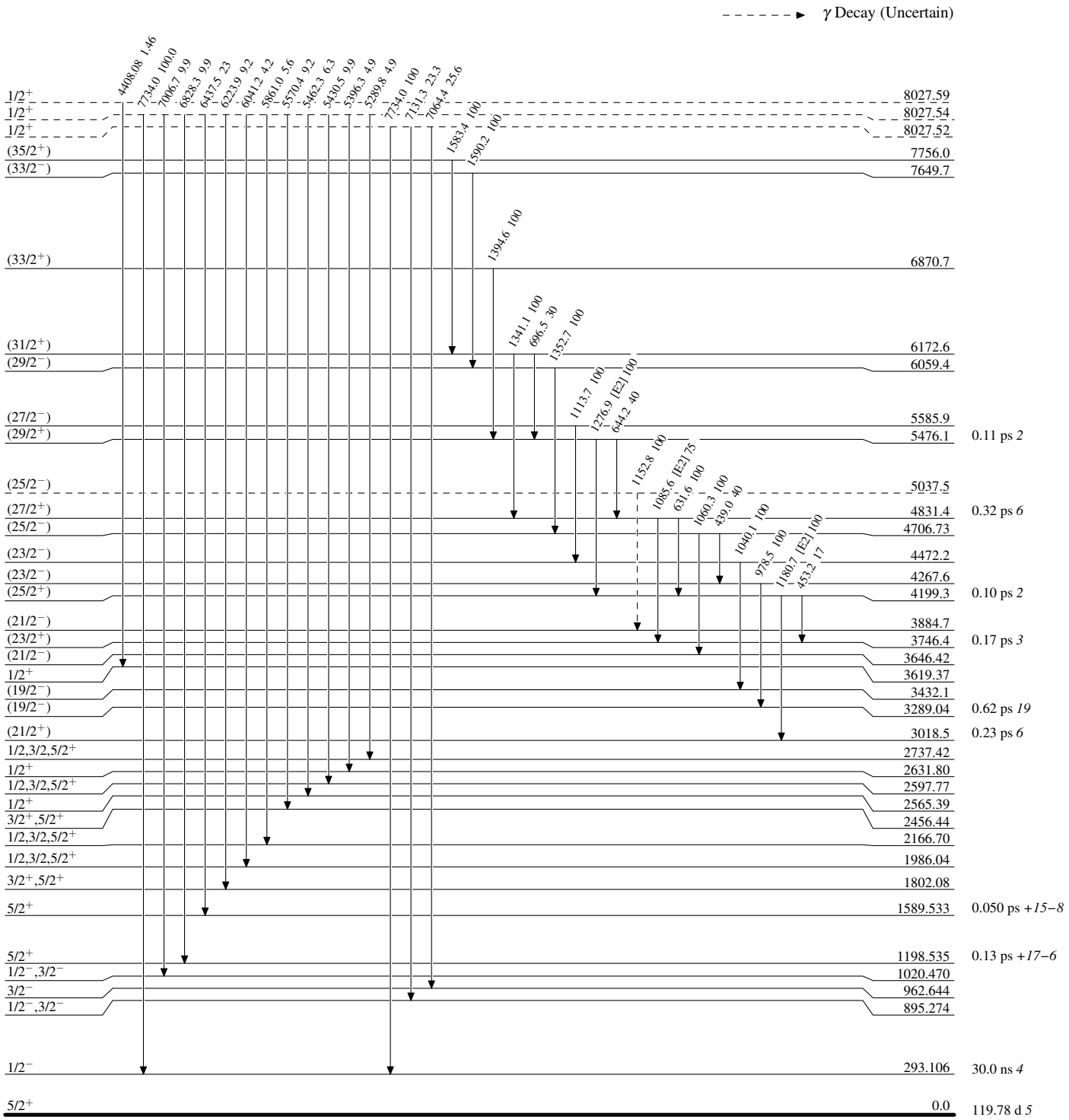
$^{75}_{34}Se_{41}$

Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{75}_{34}Se_{41}$

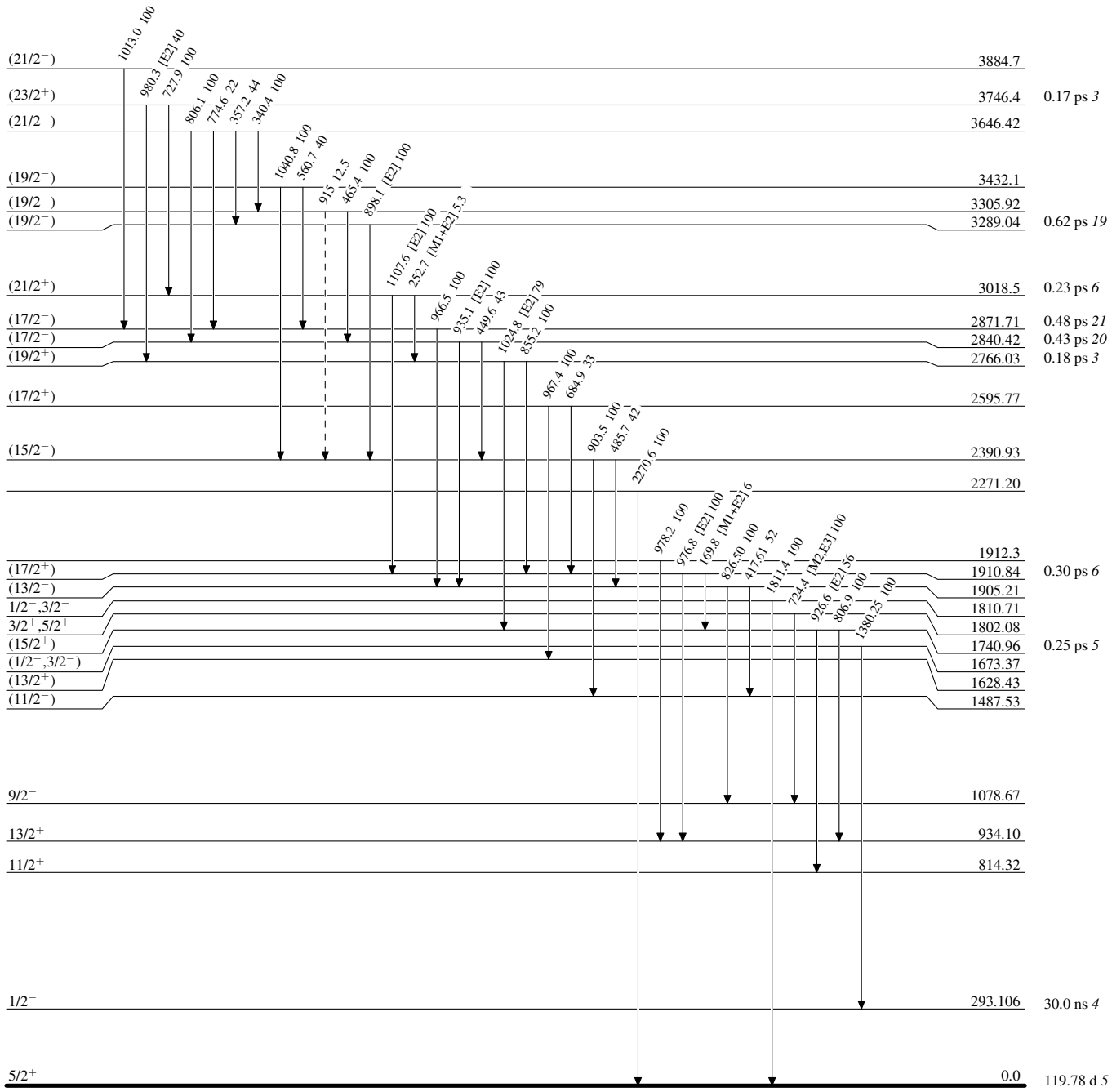
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



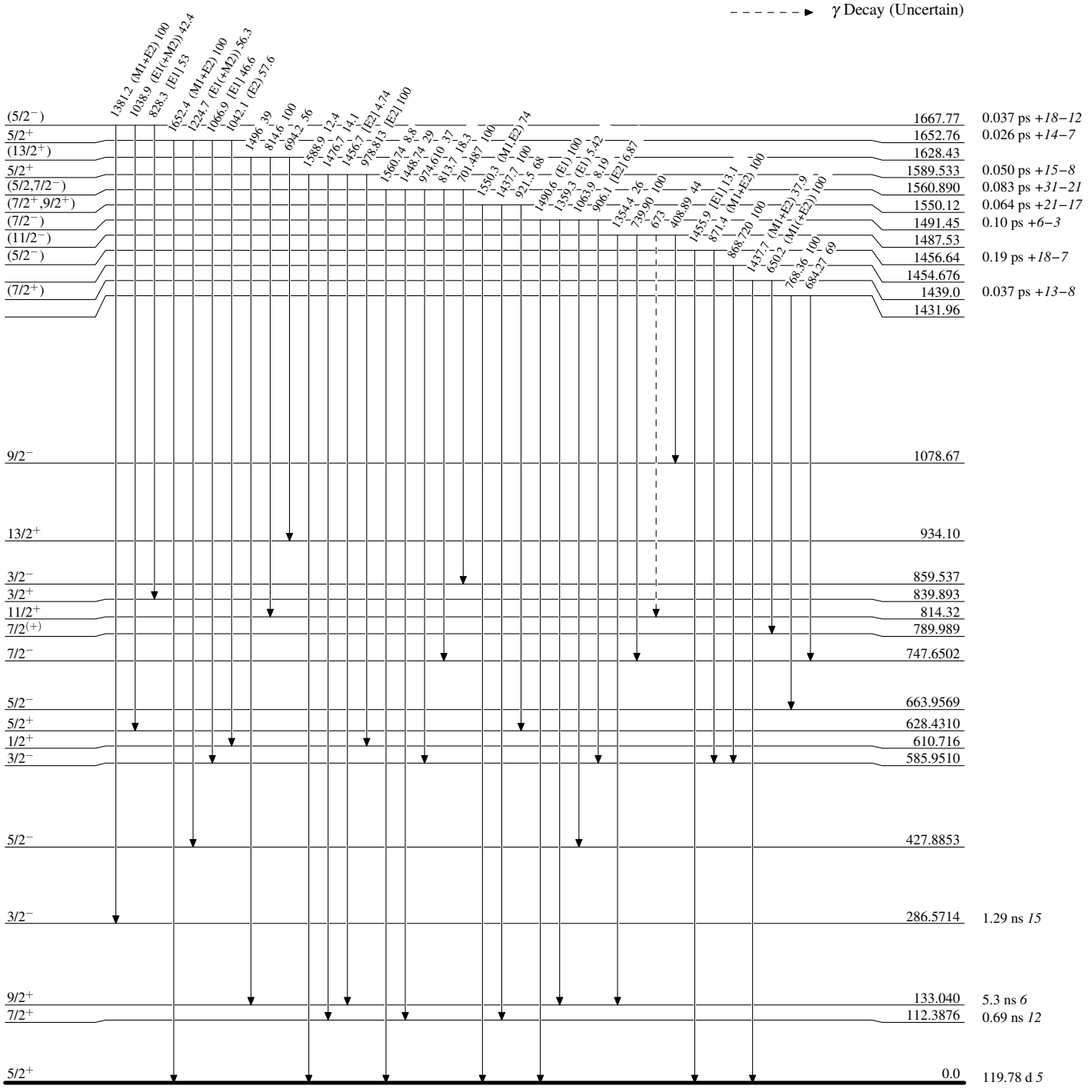
$^{75}_{34}Se_{41}$

Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{75}_{34}Se_{41}$

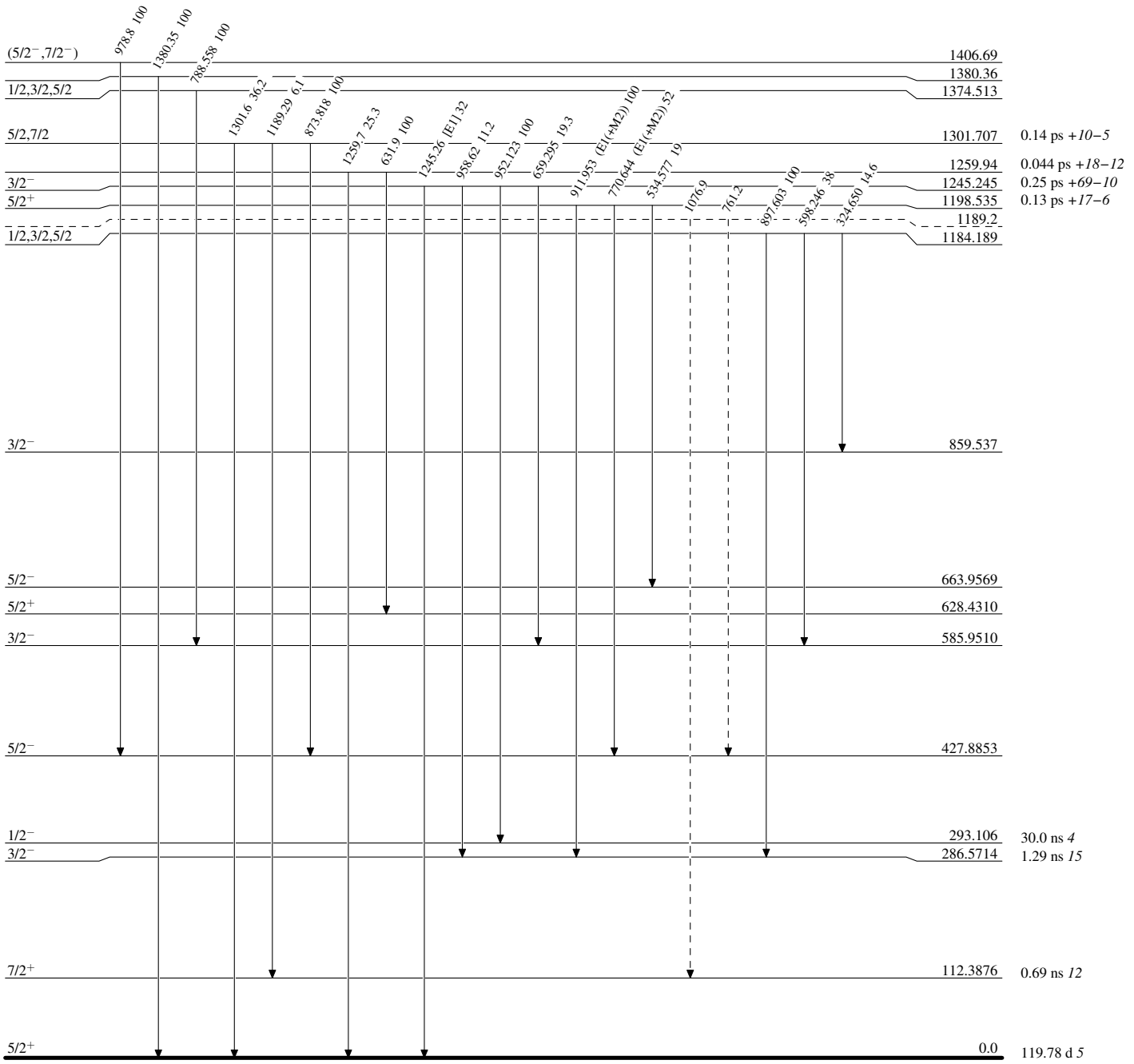
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{75}_{34}Se_{41}$

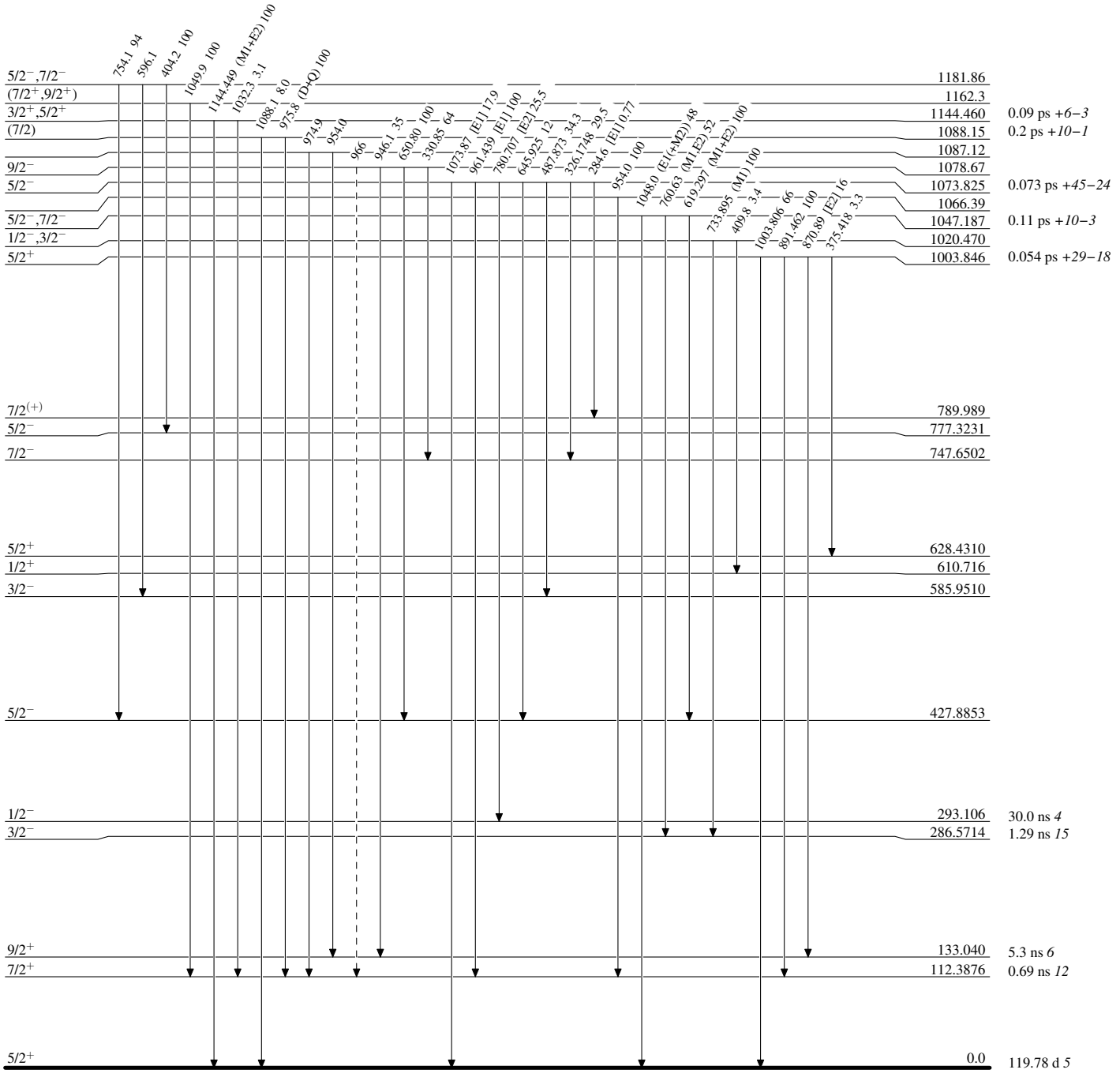
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

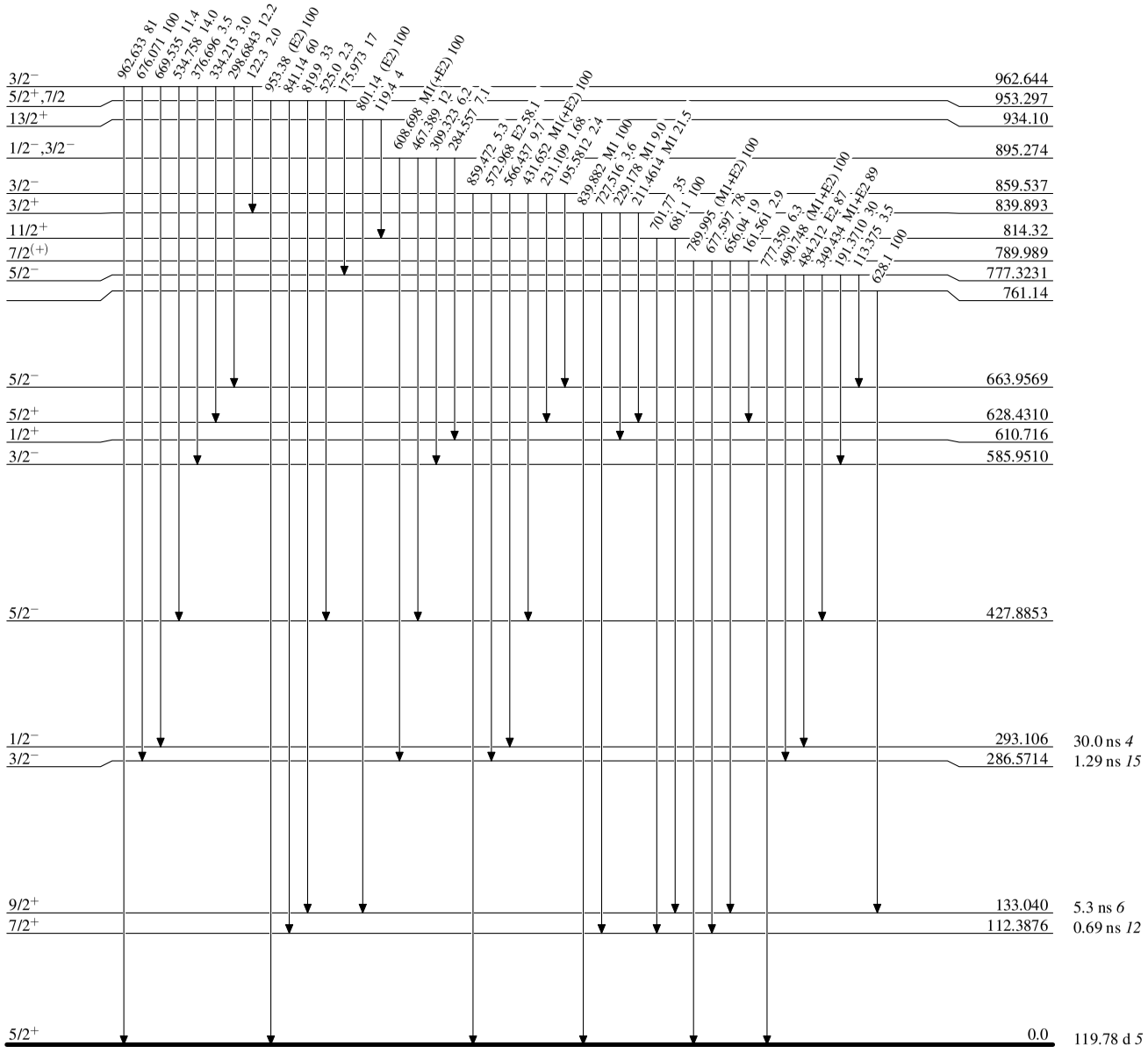


$^{75}_{34}Se_{41}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{75}_{34}Se_{41}$

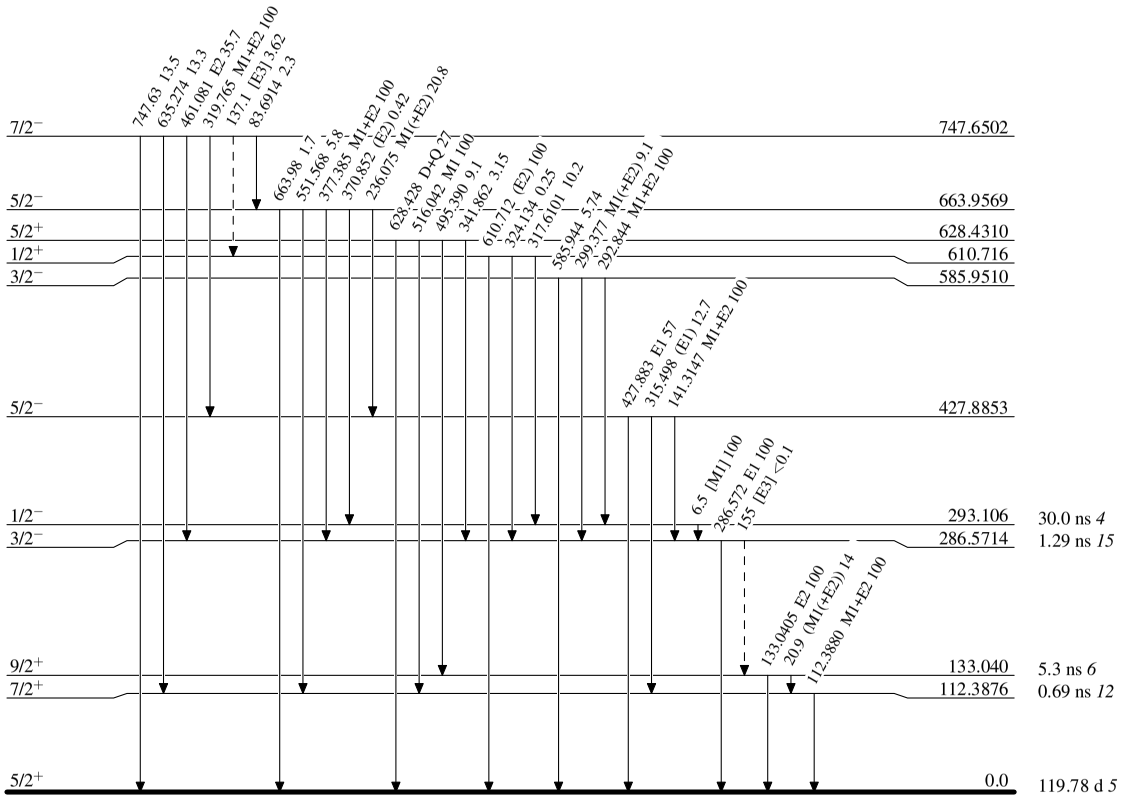
Adopted Levels, Gammas

Legend

Level Scheme (continued)

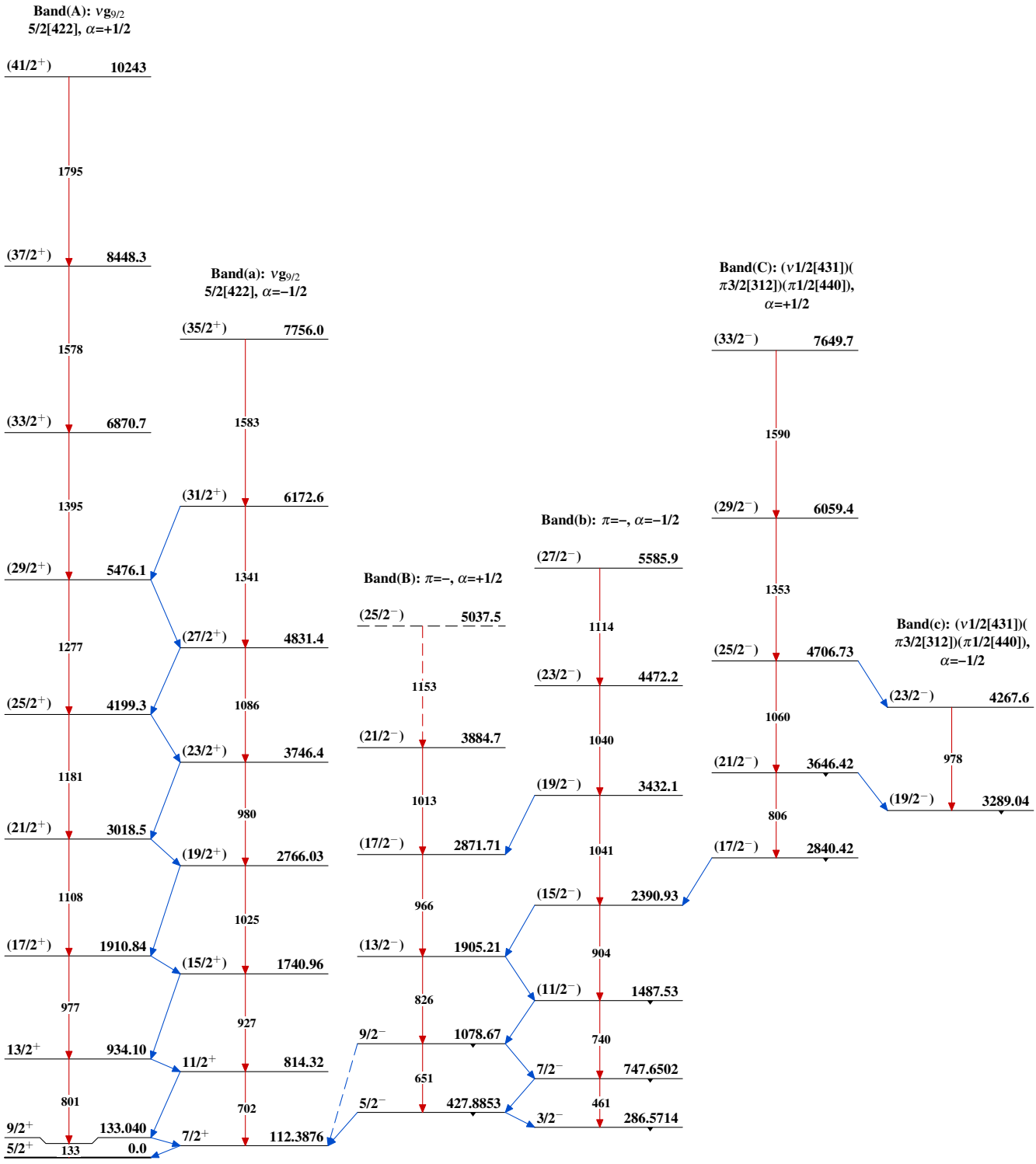
Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{75}_{34}Se_{41}$

Adopted Levels, Gammas



$^{75}_{34}Se_{41}$