

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 113,2391 (2012)	1-Sep-2012

$Q(\beta^-) = -3030.16$; $S(n) = 7547.810$; $S(p) = 8754.49$; $Q(\alpha) = -3205.76$ [2012Wa38](#)

Note: Current evaluation has used the following Q record $-3030.167545.7158751.915-3204.017$ [2011AuZZ](#).

For empirical systematics of high-spin states in odd-tin isotopes, see [1978HaZP](#), [1979Ha12](#); for low-spin states in odd-tin isotopes, see [1976Ma09](#).

 ^{115}Sn LevelsCross Reference (XREF) Flags

A	Coulomb excitation	G	^{115}Sb ε decay (32.1 min)	M	$^{116}\text{Sn}(^3\text{He}, \alpha)$
B	$^{112}\text{Cd}(\alpha, n\gamma)$	H	^{115}Sn IT decay (159 μs)	N	$(\text{HI}, xn\gamma)$
C	$^{114}\text{Sn}(d, p)$	I	$^{116}\text{Cd}(\alpha, 5n\gamma)$	O	$^{114}\text{Sn}(n, \gamma)$ E=res
D	$^{115}\text{In}(p, n\gamma)$	J	$^{116}\text{Sn}(d, t)$, (pol d, t)	P	$^{117}\text{Sn}(p, t)$
E	$^{115}\text{In} \beta^-$ decay (4.41×10^{14} y)	K	$^{116}\text{Sn}(p, d)$	Q	$^{116}\text{Sn}(d, t)$ IAR
F	$^{115}\text{In} \beta^-$ decay (4.486 h)	L	$^{113}\text{Cd}(\alpha, 2n\gamma)$	R	$^{116}\text{Sn}(p, d)$ IAR

E(level) [†]	J ^π [‡]	T _{1/2}	XREF	Comments
0.0	1/2 ⁺	stable	ABCDEFGHIJKLMN	$\mu = -0.918837$ (1989Ra17) J ^π : L=0 (d,p),(d,t),(p,d),(p,t). T _{1/2} : if B(E2)=0.0140 8, $\delta(497\gamma) = +0.21$ 2. J ^π : M1+E2 decay to g.s. %IT=100
497.334 22	3/2 ⁺	11 ps 2	ABCD FGHIJKLMN	$\mu = +0.68310$; Q=0.26 (1989Ra17 , 1975Iv02 , 1976Be59) T _{1/2} : from $\gamma\gamma(t)$ (1967Iv05). J ^π : E2 decay to 3/2 ⁺ state; L=4 (d,p),(d,t),(p,d),(p,t), ($^3\text{He}, \alpha$). %IT=100
612.81 ^e 4	7/2 ⁺	3.26 μs 8	ABCD GHIJKLMN P	$\mu = -1.37811$; Q=0.38 6 (1989Ra17 , 1975Iv02 , 1975Ri03) See 1973Ri14 for near-constant μ measurements of 11/2 ⁻ isomers in odd-mass tin, cadmium, tellurium isotopes. T _{1/2} : from $\gamma(t)$ pulsed beam (1964Iv01). Others: 165 μs 15 (1958Du80), 155 μs 10 (1964Br27), 166 μs 10 (1966Mc06). J ^π : L=5 (d,p),(d,t),(p,d),(p,t); M2 decay to 7/2 ⁺ state. T _{1/2} : from B(E2)=0.0227 10 and $I\gamma(986\gamma)$ -branching=24.7%; other: 1.25 ps 28 Doppler-broadened 986 γ peak.
713.64 ^b 12	11/2 ⁻	159 μs 1	BCD HIJKLMN P	J ^π : L=2 (d,p),(d,t),(p,d),(p,t); J=5/2 from (pol d, t). T _{1/2} : Doppler-broadened 1280 γ peak (1977Da12); others: 0.53 ps 5 if B(E2)=0.0444, $I\gamma(1280\gamma)$ -branching=86%, $\delta(1280\gamma) = -2.2$; 0.6 ps +4-3 (1999Lo04). J ^π : M1+E2 decay to 1/2 ⁺ state. T _{1/2} : from B(E2)=0.0607 and $I\gamma(1417\gamma)$ -branching=72%:0.97 ps < (1999Lo04). J ^π : L=2 (d,t),(p,d),(p,t); J=5/2 from (pol d, t); J ^π : (M1) decay to 1/2 ⁺ state, γ to 7/2 ⁺ . Doublet L=2 (d,p),(d,t),(p,t). T _{1/2} : from 1999Lo04 . XREF: j(1639)K(1652).
986.56 4	5/2 ⁺	1.97 ps 10	ABCD G JKLMNOP	
1280.28 5	3/2 ⁺	0.44 ps 9	ABCD G JKLM OP	
1416.90 6	5/2 ⁺	0.35 ps 4	AB D G JKLM OP	
1633.76 10	3/2 ⁽⁺⁾	0.97 ps +35-14	BcD G j LM O	
1643.52 23	(7/2 ⁻ , 9/2 ⁺)		BcD jKL P	

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Adopted Levels, Gammas (continued)

^{115}Sn Levels (continued)				
E(level) [†]	J ^π	T _{1/2}	XREF	Comments
1643.73 16	(7/2 ⁻)		N	J ^π : L=2 in (d,t). J=3/2 from (pol d,t).
1734.06 11	5/2 ⁺		B D G JKLM O	XREF: K(1753).
1785.92 15	(9/2 to 13/2) ⁻	0.69 ps +21-14	B D L N	J ^π : L=2 (d,t),(p,d); J dependence of (p,d) angular distribution.
1805 10	(11/2 ⁺ , 13/2 ⁺)		J M	J ^π : M1+E2 γ to 11/2 ⁻ .
1824.93 21	(3/2 ⁺ , 5/2 ⁺)		B D G L	T _{1/2} : from 1999Lo04.
1857.40 10	7/2 ⁺	0.35 ps 7	B D G JKLMN	J ^π : L=6 (³ He,α).
				J ^π : from γ decays to 1/2 ⁺ and 7/2 ⁺ states.
				XREF: K(1840).
				J ^π : from L=4 (d,t),(p,d) and E2 transition to 3/2 ⁺ state; J=7/2 from (pol d,t). 1857 γ to 1/2 ⁺ g.s. in (α,nγ) is not compatible, suggesting γ is misplaced in (α,nγ).
1945.76 13	11/2 ⁻ , 13/2 ⁻	1.3 ps +4-3	D J LMN	T _{1/2} : from 1999Lo04.
1974.0 5	1/2 ⁺		BCD JKL P	J ^π : L=5 (d,t),(³ He,α).
				T _{1/2} : from 1999Lo04.
				XREF: J(1964)K(1980).
				J ^π : if L=0 (p,d),(p,t) at 1980 keV and L=(0) (d,p) at 1970 keV correspond.
1993.9 5	3/2 ⁺ , 5/2 ⁺		J LM	J ^π : L=2 (d,t),(³ He,α).
1996.53 ^e 17	(11/2 ⁺)	1.04 ps +21-14	L N	J ^π : E2 γ to 7/2 ⁺ .
				T _{1/2} : from 1999Lo04.
2025.48 ^b 13	(15/2 ⁻)	1.0 ps +4-3	D I L N	J ^π : E2 γ decay to 11/2 ⁻ state, γ(θ), γ-ray excit.
2060.15 21	5/2 ⁺		BCD G JKLM	T _{1/2} : from 1999Lo04.
2076.94 11	(1/2 ⁺)		CD j	J ^π : L=2 (p,d),(d,t); J=5/2 from (pol d,t).
				XREF: C(2070).
2084.27 14	(9/2 ⁺)	0.90 ps +28-14	B D j L N	J ^π : L=(0) (d,p).
				J ^π : (E2) γ to 5/2 ⁺ and γ to 7/2 ⁺ .
2155.77 13	(7/2 ⁺)		B D J LMN	T _{1/2} : from 1999Lo04.
2164.76 22	(3/2 ⁺ , 5/2 ⁺)		BCD L	J ^π : L=(4) (d,t); 1658γ decay to 3/2 ⁺ state.
				XREF: C(2170).
2193.16 20	(3/2 ⁺ , 5/2 ⁺)		B D G L	J ^π : L=(2) (d,p).
				J ^π : deexcites to 1/2 ⁺ , 7/2 ⁺ states.
				Doublet L=2 (d,p),(d,t),(p,d).
2196.6 4			D L	
2207.48 14	5/2 ⁺	1.0 ps 4	B D J LMN	J ^π : L=2 (d,t), M1 γ to 7/2 ⁺ .
				T _{1/2} : from 1999Lo04.
2230.27 23	(3/2, 5/2 ⁺)		B D G	J ^π : deexcites to 1/2 ⁺ and 5/2 ⁺ states; log ft=6.2 via J(initial)=5/2 ⁺ .
2265 5	1/2 ⁻ , 3/2 ⁻		JK	J ^π : L=1 (d,t).
2302 5	(5/2 ⁻ , 7/2 ⁻)		J M	J ^π : L=(3) (d,t).
2313.82 19	3/2 ⁺ , 5/2 ⁺		D J	XREF: J(2322).
				J ^π : L=2 (d,t).
2347.43 ^a 14	(11/2 ⁻)		D L N	
2352.16 18	(1/2 ⁺ , 3/2, 5/2 ⁺)		D jkL	XREF: j(2355).
				J ^π : L=2 (d,t).
2365.20 12	(3/2 ⁺ , 5/2 ⁺)		B D G jkL N	J ^π : L=2 (d,t).
2371 5	7/2 ⁺ , 9/2 ⁺		J M	J ^π : L=4 (d,t).
2440.22 9	(7/2 ⁺)		D L N	
2447.7 3	(1/2 ⁻ , 3/2 ⁻)		D M	XREF: M(2450).
				J ^π : L=(1) (³ He,α).
2486.7 9	7/2 ⁺ , 9/2 ⁺		D M	J ^π : L=4 (³ He,α).
2510 10	5/2 ⁺		C JK	J ^π : L=2 (p,d),(d,p),(d,t).

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¹¹⁵Sn Levels (continued)Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued) ^{115}Sn Levels (continued)

E(level) [†]	J ^π [‡]	T _{1/2}	XREF	Comments
3471.98 ^f 14	19/2 ⁻		N	
3500 20	7/2 ⁺ , 9/2 ⁺		J M	XREF: M(3490).
				J ^π : L=4 in (d,t), (³ He,α).
3509.75 ^b 14	21/2 ⁺		I L N	J ^π : E1 γ decay to 19/2 ⁻ E2 γ to 17/2 ⁺ .
3526.25 [@] 18	(17/2 ⁺)		N	
3533.29 ^e 15	(19/2 ⁺)		N	
3550 20	3/2 ⁺ , 5/2 ⁺		J	J ^π : L=2 (d,t).
3590 20			J	
3645 20	3/2 ⁺ , 5/2 ⁺		J	J ^π : L=2 (d,t).
3666.5 2	9/2 ⁺		J M	J ^π =9/2 ⁺ from (pol d,t).
3666.6 ^b 2	23/2 ⁺		I L N	J ^π : M1 transition to 21/2 ⁺ state. No γ to J ^π <21/2 ⁺ .
3690 20			J	
3710 20	(7/2 ⁺ , 9/2 ⁺)		J M	J ^π : L=(4) (d,t) (³ He,α).
3745.07 15	(21/2 ⁻)		N	
3839.49 ^b 14	(25/2 ⁺)		I L N	J ^π : deexcites to 21/2 ⁺ , (23/2 ⁺) states. No γ to J ^π <23/2 ⁺ .
3842.1 4			D	
3859.36 [#] 17	(19/2 ⁺)		N	
3879.22 ^{&} 13	21/2 ⁻	0.8 ps +4-2	L N	T _{1/2} : from 1999Lo04.
3890.25 ^e 20			N	
3959.95 15	(23/2 ⁺)		L N	
4029.8 4			L N	
4047.16 ^f 14	23/2 ⁻		N	
4060.18 ^a 13	(23/2 ⁻)	>1.0 ps	L N	T _{1/2} : from 1999Lo04.
4132.02 15			N	
4163.0 4			I	
4242.95 [@] 20	(21/2 ⁺)		N	
4272.25 ^b 16	(27/2 ⁺)		I L N	J ^π : M1 transition to (25/2 ⁺) state. No γ to J ^π <25/2 ⁺ .
4611.26 [#] 20	(23/2 ⁺)		N	
4635.8 5			N	
4687.95 ^{&} 15	25/2 ⁻		N	
4865.89 ^f 14	27/2 ⁻		N	
4889.20 ^a 14	(27/2 ⁻)		N	
5031.19 20			N	
5060.95 [@] 23	(25/2 ⁺)		N	
5092.90 25			N	
5225.61 25			N	
5330.86 16	29/2 ⁺		N	
5417.87 [#] 22	(27/2 ⁺)		N	
5434.48 17	29/2 ⁺		N	
5458.4 3	(27/2 ⁺)		N	
5599.76 19	(29/2)		N	
5629.54 ^{&} 16	29/2 ⁻		N	
5659.86 19			N	
5749.0 ^b 2	(31/2 ⁺)		N	
5810.19 ^f 15	31/2 ⁻		N	
5812.83 ^a 16	(31/2 ⁻)		N	
5911.49 17	(31/2 ⁺)		N	
5966.2 [@] 4	(29/2 ⁺)		N	
6073.6 5			N	
6268.6 [#] 3	(31/2 ⁺)		N	

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Adopted Levels, Gammas (continued) ^{115}Sn Levels (continued)

E(level) [†]	J ^π [‡]	XREF	Comments
6286.64 18	(33/2)	N	
6357.25 ^c 17	(31/2 ⁻)	N	
6461.3 3		N	
6575.65 ^c 16	(33/2 ⁻)	N	
6685.2 ^{&} 3	33/2 ⁻	N	
6719.33 ^f 17	35/2 ⁻	N	
6830.63 ^a 18	(35/2 ⁻)	N	
6949.60 ^c 17	(35/2 ⁻)	N	
7157.2 [#] 5	(35/2 ⁺)	N	
7248.65 ^c 18	(37/2 ⁻)	N	
7683.62 ^c 20	(39/2 ⁻)	N	
7826.3 ^{&} 11	(37/2 ⁻)	N	
7922.6 ^a 3	(39/2 ⁻)	N	
8163.2 [#] 11	(39/2 ⁺)	N	
9069.6 ^a 11	(43/2 ⁻)	N	
13250	9/2 ⁺	QR	J ^π : IAR, analog of ^{115}In 9/2 ⁺ , g.s.
13600	1/2 ⁻	QR	J ^π : IAR, analog of ^{115}In 1/2 ⁻ , 336 level.
13850	3/2 ⁻	QR	J ^π : IAR, analog of ^{115}In 3/2 ⁻ , 597 level.
x		N	
5748+x ^d	(33/2)	N	Additional information 1.
6002.0+x ^d 5	(35/2)	N	
6328.8+x ^d 6	(37/2)	N	
6711.1+x ^d 6	(39/2)	N	
7204.2+x ^d 7	(41/2)	N	
7830.2+x ^d 9	(43/2)	N	

[†] From least-squares fit to γ energies.[‡] Without comments are from γ decay patterns and band structure.# Band(A): band 1 with $\Delta J=2$.@ Band(B): band 2 with $\Delta J=2$.

& Band(C): band 3.

^a Band(D): band 4, decoupled rotational band with $\Delta J=2$.^b Band(E): band 5, yrast band.^c Band(F): band 6.^d Band(G): band 7.^e Band(H): band 8.^f Band(I): band 9, possible rotational character with $\Delta J=2$.

Adopted Levels, Gammas (continued)

$\gamma(^{115}\text{Sn})$									
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\ddagger$	E_f	J_f^π	Mult. @	$\delta^\&$	α^a	Comments
497.334	$3/2^+$	497.358 24	100	0.0	$1/2^+$	M1+E2	+0.21 2		B(M1)(W.u.)=0.016 3; B(E2)(W.u.)=2.1 6 δ : Others: +0.20 4 in $(\alpha, 2n\gamma)$, +0.16 1 from ε decay. Mult.: from $\alpha(K)\text{exp}$ in $(\alpha, n\gamma)$.
612.81	$7/2^+$	115.46 4	100	497.334	$3/2^+$	E2		0.958	$\alpha(K)=0.721$ 11; $\alpha(L)=0.191$ 3; $\alpha(M)=0.0387$ 6; $\alpha(N+..)=0.00722$ 11 $\alpha(N)=0.00689$ 10; $\alpha(O)=0.000326$ 5 B(E2)(W.u.)=0.130 4 Mult.: from $\alpha(K)\text{exp}$ in $(\alpha, n\gamma)$.
713.64	$11/2^-$	100.70 21	100	612.81	$7/2^+$	M2		5.61 9	$\alpha(K)=4.55$ 8; $\alpha(L)=0.849$ 14; $\alpha(M)=0.173$ 3; $\alpha(N+..)=0.0348$ 6 $\alpha(N)=0.0323$ 6; $\alpha(O)=0.00249$ 4 B(M2)(W.u.)=0.119 4 Mult.: from $\alpha(K)\text{exp}$ in $(\alpha, n\gamma)$.
986.56	$5/2^+$	373.75 17	7.1 [#] 10	612.81	$7/2^+$	M1+E2	-0.27 6	0.01640 24	$\alpha(K)=0.01421$ 20; $\alpha(L)=0.00177$ 3; $\alpha(M)=0.000346$ 6; $\alpha(N+..)=7.08 \times 10^{-5}$ 11 $\alpha(N)=6.51 \times 10^{-5}$ 11; $\alpha(O)=5.63 \times 10^{-6}$ 8 B(M1)(W.u.)=0.0100 16; B(E2)(W.u.)=4.0 18 Mult.: from $\alpha(K)\text{exp}$ in $(\alpha, n\gamma)$.
		489.27 5	100 [#] 6	497.334	$3/2^+$	M1+E2	+0.040 23		B(M1)(W.u.)=0.067 7; B(E2)(W.u.)=0.3 3 Mult.: from $\alpha(K)\text{exp}$ in $(\alpha, n\gamma)$.
		986.52 7	35 [#] 3	0.0	$1/2^+$	E2			δ : Others: +0.1 in $(\alpha, 2n\gamma)$. B(E2)(W.u.)=2.3 3 Mult.: from $\gamma(\theta)$ in (Coul. Ex.).
1280.28	$3/2^+$	293.60 21	3.5 5	986.56	$5/2^+$	M1+E2	+0.23 +25-16	0.0306 12	$\alpha(K)=0.0265$ 9; $\alpha(L)=0.00333$ 24; $\alpha(M)=0.00065$ 5; $\alpha(N+..)=0.000133$ 9 $\alpha(N)=0.000123$ 9; $\alpha(O)=1.06 \times 10^{-5}$ 4 B(M1)(W.u.)=0.057 16; B(E2)(W.u.)=3.E+1 +6-3 Mult.: from $\gamma(\theta)$ in (Coul. Ex.).
		668.11 22	3.5 8	612.81	$7/2^+$				
		782.99 6	9.0 8	497.334	$3/2^+$	M1+E2	+0.8 +8-5		B(M1)(W.u.)=0.005 4; B(E2)(W.u.)=4 +5-4 Mult.: from $\gamma(\theta)$ in (Coul. Ex.).
		1279.99 12	100 2	0.0	$1/2^+$	M1+E2	-2.2 2		B(M1)(W.u.)=0.0035 9; B(E2)(W.u.)=8.0 17 Mult.: from $\gamma(\theta)$ in (Coul. Ex.). δ : others: -2.2 +5-8 in $(\alpha, 2n\gamma)$.
1416.90	$5/2^+$	136.70 11	1.7 7	1280.28	$3/2^+$	M1+E2	+0.17 15	0.243 20	B(E2)(W.u.)=6.7 7. From B(E2) and E2(s.p.) estimate. $\alpha(K)=0.208$ 14; $\alpha(L)=0.028$ 5; $\alpha(M)=0.0054$ 9; $\alpha(N+..)=0.00110$ 17 $\alpha(N)=0.00102$ 16; $\alpha(O)=8.5 \times 10^{-5}$ 7 B(M1)(W.u.)=0.30 13; B(E2)(W.u.)=4.E+2 7 Mult.: from $\gamma(\theta)$ in (Coul. Ex.).
		430.28 21	0.8 6	986.56	$5/2^+$	M1+E2		0.01146 17	$\alpha(K)=0.00986$ 18; $\alpha(L)=0.00129$ 8; $\alpha(M)=0.000254$ 16;

Adopted Levels, Gammas (continued)

$\gamma(^{115}\text{Sn})$ (continued)								
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\ddagger$	E_f	J_f^π	Mult. @	$\delta\&$	Comments
								$\alpha(\text{N}+.)=5.12\times 10^{-5}$ 25 $\alpha(\text{N})=4.7\times 10^{-5}$ 3; $\alpha(\text{O})=3.88\times 10^{-6}$ 8 $\text{B}(\text{M1})(\text{W.u.})\approx 0.003574$; $\text{B}(\text{E2})(\text{W.u.})\approx 4.518$ Mult.: from $\gamma(\theta)$ in (Coul. Ex.). δ : $0<\delta<+2.2$ from $A_2=0.40$ 23.
1416.90	5/2 ⁺	804.04 18 919.71 10	7.1 10 25.8 10	612.81 497.334	7/2 ⁺ 3/2 ⁺	M1+E2	+0.17 3	$\text{B}(\text{M1})(\text{W.u.})=0.0149$ 19; $\text{B}(\text{E2})(\text{W.u.})=0.39$ 15 Mult.: from $\alpha(\text{K})\text{exp}$ in $(\alpha, n\gamma)$. $\text{B}(\text{E2})(\text{W.u.})=6.3$ 8 Mult.: from $\alpha(\text{K})\text{exp}$ in $(\alpha, n\gamma)$.
		1416.78 9	100 3	0.0	1/2 ⁺	E2		
1633.76	3/2 ⁽⁺⁾	353.2 6 1021.08 20 1136.45 15 1633.72 18	3.0 [#] 19 8.5 [#] 15 8.5 [#] 15 100 [#] 7	1280.28 612.81 497.334 0.0	3/2 ⁺ 7/2 ⁺ 3/2 ⁺ 1/2 ⁺	M1+E2	-0.75	$\text{B}(\text{M1})(\text{W.u.})=0.0028$ 11; $\text{B}(\text{E2})(\text{W.u.})=0.45$ 17 δ , Mult.: from $(\alpha, 2n\gamma)$.
1643.52	(7/2 ⁻ , 9/2 ⁺)	657.10 30	100	986.56	5/2 ⁺			
1643.73	(7/2 ⁻)	930.1 2	100	713.64	11/2 ⁻			
1734.06	5/2 ⁺	453.9 4 747.66 18 1121.29 19 1236.52 18 1734.0 7	20 [#] 8 25 [#] 10 100 [#] 17 100 [#] 33 10 [#] 5	1280.28 986.56 612.81 497.334 0.0	3/2 ⁺ 5/2 ⁺ 7/2 ⁺ 3/2 ⁺ 1/2 ⁺	E2, M1 (E2)		Mult.: from $\alpha(\text{K})\text{exp}$ in $(\alpha, n\gamma)$.
1785.92	(9/2 to 13/2) ⁻	369.5 7 1072.20 20	2.2 6 100	1416.90 713.64	5/2 ⁺ 11/2 ⁻	M1+E2	-1.6 2	$\text{B}(\text{M1})(\text{W.u.})=0.007$ 3; $\text{B}(\text{E2})(\text{W.u.})=12$ 4 δ , Mult.: from $(\alpha, 2n\gamma)$.
1824.93	(3/2 ⁺ , 5/2 ⁺)	1211.6 7 1327.5 3 1825.1 3	17 5 49 4 100 7	612.81 497.334 0.0	7/2 ⁺ 3/2 ⁺ 1/2 ⁺			
1857.40	7/2 ⁺	1244.5 1 1360.31 17	21.4 21 100 4	612.81 497.334	7/2 ⁺ 3/2 ⁺	E2		$\text{B}(\text{E2})(\text{W.u.})=7.7$ 16 Mult.: from $\gamma(\theta)$ in $(\alpha, 2n\gamma)$.
		1857.0 7 1231.9 1	15 3 100	0.0 713.64	1/2 ⁺ 11/2 ⁻	M1		$\text{B}(\text{M1})(\text{W.u.})=0.009$ 3 Mult.: from $\gamma(\theta)$ in $(\alpha, 2n\gamma)$.
1945.76	11/2 ⁻ , 13/2 ⁻							
1974.0	1/2 ⁺	1476.7 5 1973.8 10	100 [#] 10 21 [#] 8	497.334 0.0	3/2 ⁺ 1/2 ⁺			
1993.9	3/2 ⁺ , 5/2 ⁺	360.1 5	100	1633.76	3/2 ⁽⁺⁾			
1996.53	(11/2 ⁺)	1383.6 2	100	612.81	7/2 ⁺	E2		$\text{B}(\text{E2})(\text{W.u.})=3.2$ 7 Mult.: from $\gamma(\theta)$ in $(\alpha, 2n\gamma)$.

Adopted Levels, Gammas (continued) $\gamma(^{115}\text{Sn})$ (continued)

$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\ddagger$	E_f	J_f^π	Mult. [@]	Comments
2025.48	(15/2 ⁻)	1311.5 1	100	713.64	11/2 ⁻	E2	B(E2)(W.u.)=4.4 18 Mult.: from $\gamma(\theta)$ in $(\alpha, 2n\gamma)$.
2060.15	5/2 ⁺	1562.64 24	100 7	497.334	3/2 ⁺	(E2)	
		2060.6 4	32 11	0.0	1/2 ⁺		
2076.94	(1/2 ⁺)	1579.6 1	100	497.334	3/2 ⁺		
2084.27	(9/2 ⁺)	803.7 5	11 [#] 3	1280.28	3/2 ⁺		
		1097.70 20	100 [#] 9	986.56	5/2 ⁺	(E2)	B(E2)(W.u.)=5.3 18 Mult.: from $\gamma(\theta)$ in $(\alpha, 2n\gamma)$.
		1471.7 6	65 [#] 6	612.81	7/2 ⁺		
		1587.3 3	50 [#] 4	497.334	3/2 ⁺		
2155.77	(7/2 ⁺)	1169.2 2	55 6	986.56	5/2 ⁺		
		1543.00 20	85 9	612.81	7/2 ⁺		
		1658.5 4	100 10	497.334	3/2 ⁺		
2164.76	(3/2 ⁺ , 5/2 ⁺)	306.6 9	15 4	1857.40	7/2 ⁺		
		521.3 2	30 4	1643.52	(7/2 ⁻ , 9/2 ⁺)		
		1178.4 4	22 7	986.56	5/2 ⁺		
		1667.1 4	100 7	497.334	3/2 ⁺		
2193.16	(3/2 ⁺ , 5/2 ⁺)	1206.8 7	43 13	986.56	5/2 ⁺		
		1579.8 3	10 3	612.81	7/2 ⁺		
		1696.1 3	100 13	497.334	3/2 ⁺		
		2194.0 6	21 3	0.0	1/2 ⁺		
2196.6		780.0 4	67 11	1416.90	5/2 ⁺		
		1209.5 6	100 17	986.56	5/2 ⁺		
2207.48	5/2 ⁺	574.5 7	13 [#] 3	1633.76	3/2 ⁽⁺⁾		
		790.9 4	12 [#] 4	1416.90	5/2 ⁺		
		1221.10 20	84 [#] 8	986.56	5/2 ⁺		
		1594.5 5	100 [#] 9	612.81	7/2 ⁺	M1	B(M1)(W.u.)=0.0026 11 Mult.: from $\alpha(\text{K})\text{exp}$ in $(\alpha, n\gamma)$.
2230.27	(3/2, 5/2 ⁺)	1244.0 3	38 9	986.56	5/2 ⁺		
		1732.6 4	38 12	497.334	3/2 ⁺		
		2229.8 6	100 8	0.0	1/2 ⁺		
2313.82	3/2 ⁺ , 5/2 ⁺	896.7 6	17 7	1416.90	5/2 ⁺		
		1816.5 2	100 17	497.334	3/2 ⁺		
2347.43	(11/2 ⁻)	401.5 3	12 2	1945.76	11/2 ⁻ , 13/2 ⁻		
		561.5 1	44 11	1785.92	(9/2 to 13/2) ⁻		
		703.7 1	36 8	1643.73	(7/2 ⁻)		E_γ : Not seen in $(\alpha, 2n\gamma)$.
		1634.0 2	100 11	713.64	11/2 ⁻		
2352.16	(1/2 ⁺ , 3/2, 5/2 ⁺)	618.4 5	49 9	1734.06	5/2 ⁺		
		1854.8 2	100 18	497.334	3/2 ⁺		
		2352.0 6	13 9	0.0	1/2 ⁺		

Adopted Levels, Gammas (continued)

$\gamma(^{115}\text{Sn})$ (continued)

$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\ddagger$	E_f	J_f^π	Mult. @	Comments
2365.20	(3/2 ⁺ ,5/2 ⁺)	948.6 4	38 [#] 5	1416.90	5/2 ⁺		
		1378.2 5	100 [#] 8	986.56	5/2 ⁺		
		1752.1 11	57 [#] 7	612.81	7/2 ⁺		
		1867.8 3		497.334	3/2 ⁺		E_γ : seen only in ε decay and (α , $n\gamma$).
		2364.8 5		0.0	1/2 ⁺		E_γ : seen only in ε decay.
2440.22	(7/2 ⁺)	232.5 7	14 7	2207.48	5/2 ⁺		
		1453.7 1	100 10	986.56	5/2 ⁺		
		2439.2 4	14 4	0.0	1/2 ⁺		
2447.7	(1/2 ⁻ ,3/2 ⁻)	814.1 4	100 17	1633.76	3/2 ⁽⁺⁾		
		1030.7 4	100 6	1416.90	5/2 ⁺		
2486.7	7/2 ⁺ ,9/2 ⁺	1989.3 2	100	497.334	3/2 ⁺		
2553.8	(3/2 ⁺ ,5/2 ⁺)	189.1 4	24 6	2365.20	(3/2 ⁺ ,5/2 ⁺)		
		1940.5 4	100 12	612.81	7/2 ⁺		
2592.35	(15/2 ⁻)	1878.9 2	100	713.64	11/2 ⁻		
2653.65	13/2 ⁻	306.0 6	7.4 18	2347.43	(11/2 ⁻)		
		628.2 2	54 5	2025.48	(15/2 ⁻)		
		867.7 6	100 10	1785.92	(9/2 to 13/2) ⁻		
		1940.0 6	47.2 18	713.64	11/2 ⁻		
2654.0	(11/2 ⁺)	213.7 1	11 3	2440.22	(7/2 ⁺)		
		288.7 1	13 3	2365.20	(3/2 ⁺ ,5/2 ⁺)		
		306.5 2	26 3	2347.43	(11/2 ⁻)		
		446.8 2	30 3	2207.48	5/2 ⁺		
		498.3 3	33 3	2155.77	(7/2 ⁺)		
		570.0 3	21 3	2084.27	(9/2 ⁺)		
		1940.9 2	100 14	713.64	11/2 ⁻		
2685.51	(17/2 ⁻)	660.3 5	62 3	2025.48	(15/2 ⁻)		
		739.5 2	100 4	1945.76	11/2 ⁻ ,13/2 ⁻		
2759.7		734.6 5	44 8	2025.48	(15/2 ⁻)		
		2045.9 3	100 24	713.64	11/2 ⁻		
2807.37	5/2 ⁺	861.8 3	100	1945.76	11/2 ⁻ ,13/2 ⁻		
2808.28	(15/2,17/2)	862.4 2	100	1945.76	11/2 ⁻ ,13/2 ⁻		
2843.35	15/2 ⁻	189.3 2	24 7	2653.65	13/2 ⁻		
		496.1 2	100 11	2347.43	(11/2 ⁻)		
		817.8 1	33 7	2025.48	(15/2 ⁻)	M1	B(M1)(W.u.)=0.010 4
		897.7 3	67 11	1945.76	11/2 ⁻ ,13/2 ⁻		
2912.85	(13/2 ⁺)	2200 1	100	713.64	11/2 ⁻		
2938.24	(17/2 ⁻)	253.1 3	43 12	2685.51	(17/2 ⁻)		
		346.1 2	20 10	2592.35	(15/2 ⁻)		
		912.8 5	65 22	2025.48	(15/2 ⁻)		
		992.2 2	100 18	1945.76	11/2 ⁻ ,13/2 ⁻		
2975.4	3/2 ⁺ ,5/2 ⁺	810.6 5	100	2164.76	(3/2 ⁺ ,5/2 ⁺)		

Adopted Levels, Gammas (continued)

$\gamma(^{115}\text{Sn})$ (continued)							
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\ddagger$	E_f	J_f^π	Mult. @	Comments
3004.09	19/2 ⁻	318.5 1	4.7 1	2685.51	(17/2 ⁻)	M1	B(M1)(W.u.)=0.05 3
		978.5 1	100 1	2025.48	(15/2 ⁻)	E2	B(E2)(W.u.)=29 17
3043.25	(15/2 ⁺)	1046.6 2	100	1996.53	(11/2 ⁺)		
3203.81	17/2 ⁻	360.1 5	39 3	2843.35	15/2 ⁻		
		550.1 1	100 3	2653.65	13/2 ⁻		
		559.4 3	11.2 19	2644.30	15/2 ⁻		
		1178.4 3	55 6	2025.48	(15/2 ⁻)		
		1257.8 2	21 3	1945.76	11/2 ⁻ ,13/2 ⁻		
3204.86	(15/2 ⁺)	292.0 2	2.7 11	2912.85	(13/2 ⁺)		
		550.9 1	100 2	2654.0	(11/2 ⁺)		
3206.0	(3/2 ⁺ ,5/2 ⁺)	2219.5 5	100 60	986.56	5/2 ⁺		
		2593.1 6	100 60	612.81	7/2 ⁺		
3220.17	17/2 ⁺	1194.9 2	100	2025.48	(15/2 ⁻)	E1	B(E1)(W.u.)=0.00014 5
3258.80	19/2 ⁻	254.5 5	9.5 15	3004.09	19/2 ⁻	M1	
		573.3 1	68 5	2685.51	(17/2 ⁻)	M1	
		1233.2 1	100.0 10	2025.48	(15/2 ⁻)	E2	
3318.66	19/2 ⁻	115.5 2	<0.2	3203.81	17/2 ⁻		
		475.4 1	5.0 3	2843.35	15/2 ⁻	(E2)	B(E2)(W.u.)=25 10
		674.4 2	3.0 5	2644.30	15/2 ⁻		
		726.0 5	2.0 5	2592.35	(15/2 ⁻)		
		1293.2 1	100 5	2025.48	(15/2 ⁻)	E2	B(E2)(W.u.)=3.3 13
3385.64	(19/2 ⁺)	165.4 1	20.3 8	3220.17	17/2 ⁺	M1	B(M1)(W.u.)=1.8 10
		576.6 5	7.3 20	2808.28	(15/2,17/2)		
		700.1 1	100 5	2685.51	(17/2 ⁻)		
3471.98	19/2 ⁻	628.5 1	47 5	2843.35	15/2 ⁻	(E2)	
		1446.8 2	100 3	2025.48	(15/2 ⁻)	E2	
3509.75	21/2 ⁺	124.1 1	0.7 1	3385.64	(19/2 ⁺)	M1	
		251.4 3	0.4 1	3258.80	19/2 ⁻		
		289.7 1	2.5 1	3220.17	17/2 ⁺	E2	
		505.6 1	100	3004.09	19/2 ⁻	E1	
3526.25	(17/2 ⁺)	321.3 3	6 3	3204.86	(15/2 ⁺)		
		613.4 1	100 14	2912.85	(13/2 ⁺)		
		682.9 2	20 5	2843.35	15/2 ⁻		
3533.29	(19/2 ⁺)	490.0 1	100 10	3043.25	(15/2 ⁺)		
		529.1 2	43 6	3004.09	19/2 ⁻		
		595.5 3	28 5	2938.24	(17/2 ⁻)		
		726.1 3	35 4	2808.28	(15/2,17/2)		
3666.6	23/2 ⁺	156.8 1	100	3509.75	21/2 ⁺	M1	
3745.07	(21/2 ⁻)	486.1 1	100 6	3258.80	19/2 ⁻	M1	
		806.4 4	14 3	2938.24	(17/2 ⁻)		
3839.49	(25/2 ⁺)	173.0 1	100 3	3666.6	23/2 ⁺	M1	
		329.7 1	2.3 2	3509.75	21/2 ⁺	E2	

Adopted Levels, Gammas (continued)

$\gamma(^{115}\text{Sn})$ (continued)							Comments
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\ddagger$	E_f	J_f^π	Mult. @	
3842.1		2425.2 4	100	1416.90	5/2 ⁺		
3859.36	(19/2 ⁺)	654.5 1	100	3204.86	(15/2 ⁺)		
3879.22	21/2 ⁻	407.3 5	4.0 12	3471.98	19/2 ⁻		
		560.6 1	32 3	3318.66	19/2 ⁻	M1	B(M1)(W.u.)=0.037 19
		675.4 1	100 4	3203.81	17/2 ⁻	E2	B(E2)(W.u.)=1.1×10 ² 6
3890.25		357.2 2	100	3533.29	(19/2 ⁺)		
3959.95	(23/2 ⁺)	426.5 2	28.7 18	3533.29	(19/2 ⁺)		
		450.3 1	45 4	3509.75	21/2 ⁺	M1	
		574.3 1	100 6	3385.64	(19/2 ⁺)	E2	
4029.8		644.2 3	100	3385.64	(19/2 ⁺)		
4047.16	23/2 ⁻	167.9 4	3.6 12	3879.22	21/2 ⁻		
		301.9 1	46 3	3745.07	(21/2 ⁻)		
		574.4 4	14 4	3471.98	19/2 ⁻	(E2)	
		728.7 1	100 8	3318.66	19/2 ⁻	E2	
		1043.4 2	84 9	3004.09	19/2 ⁻	E2	
4060.18	(23/2 ⁻)	181.0 1	3.4 3	3879.22	21/2 ⁻		
		588.2 1	6.5 5	3471.98	19/2 ⁻	(E2)	B(E2)(W.u.)<12
		741.6 1	100 4	3318.66	19/2 ⁻	E2	B(E2)(W.u.)<56
		801.4 2	4.6 5	3258.80	19/2 ⁻		
		1055.9 1	21.8 11	3004.09	19/2 ⁻	E2	B(E2)(W.u.)<2.1
4132.02		242.0 2	18 5	3890.25			
		292.5 1	39 5	3839.49	(25/2 ⁺)		
		465.8 3	26 5	3666.6	23/2 ⁺		
		622.2 3	89 11	3509.75	21/2 ⁺		
		746.0 2	100 11	3385.64	(19/2 ⁺)		
4163.0		323.5 3	100	3839.49	(25/2 ⁺)		
4242.95	(21/2 ⁺)	716.7 1	100	3526.25	(17/2 ⁺)		
4272.25	(27/2 ⁺)	432.6 1	100	3839.49	(25/2 ⁺)	M1	
4611.26	(23/2 ⁺)	751.9 1	100	3859.36	(19/2 ⁺)		
4635.8		969.3 4	100	3666.6	23/2 ⁺		
4687.95	25/2 ⁻	627.7 2	21.4 19	4060.18	(23/2 ⁻)		
		808.7 4	100 5	3879.22	21/2 ⁻	E2	
4865.89	27/2 ⁻	177.6 2	1.8 2	4687.95	25/2 ⁻		
		805.8 1	100 5	4060.18	(23/2 ⁻)	E2	
		818.6 3	5.5 12	4047.16	23/2 ⁻	(E2)	
		1026.4 1	15.7 12	3839.49	(25/2 ⁺)	(E1)	
4889.20	(27/2 ⁻)	201.3 1	3.8 4	4687.95	25/2 ⁻		
		828.9 1	100 5	4060.18	(23/2 ⁻)	E2	
		842.2 2	10.4 11	4047.16	23/2 ⁻	(E2)	
5031.19		899.0 2	64 11	4132.02			
		1071.4 2	100 11	3959.95	(23/2 ⁺)		
5060.95	(25/2 ⁺)	818.0 1	100	4242.95	(21/2 ⁺)		

Adopted Levels, Gammas (continued)

$\gamma(^{115}\text{Sn})$ (continued)

$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\ddagger$	E_f	J_f^π	Mult. [@]	$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\ddagger$	E_f	J_f^π	Mult. [@]
5092.90		1253.4 2	100	3839.49	(25/2 ⁺)		6357.25	(31/2 ⁻)	1026.4 1	100	5330.86	29/2 ⁺	(E1)
5225.61		1559.1 2	100	3666.6	23/2 ⁺	E2	6461.3		549.8 2	100	5911.49	(31/2 ⁺)	
5330.86	29/2 ⁺	1058.3 1	44 3	4272.25	(27/2 ⁺)	M1	6575.65	(33/2 ⁻)	218.4 1	50 3	6357.25	(31/2 ⁻)	M1
		1491.5 1	100 5	3839.49	(25/2 ⁺)	E2			762.8 3	18 5	5812.83	(31/2 ⁻)	
5417.87	(27/2 ⁺)	806.6 1	100	4611.26	(23/2 ⁺)				765.5 1	100 8	5810.19	31/2 ⁻	
5434.48	29/2 ⁺	1161.8 3	11.2 18	4272.25	(27/2 ⁺)	(M1)	6685.2	33/2 ⁻	1055.7 2	100	5629.54	29/2 ⁻	
		1595.0 1	100 5	3839.49	(25/2 ⁺)	E2	6719.33	35/2 ⁻	906.4 2	17.0 22	5812.83	(31/2 ⁻)	(E2)
5458.4	(27/2 ⁺)	847.1 2	100	4611.26	(23/2 ⁺)				909.1 1	100 5	5810.19	31/2 ⁻	E2
5599.76	(29/2)	1327.5 1	100	4272.25	(27/2 ⁺)	M1	6830.63	(35/2 ⁻)	1017.8 1	100 8	5812.83	(31/2 ⁻)	E2
5629.54	29/2 ⁻	941.6 1	100	4687.95	25/2 ⁻				1020.3 4	21 8	5810.19	31/2 ⁻	
5659.86		1387.6 1	100	4272.25	(27/2 ⁺)	M1	6949.60	(35/2 ⁻)	374.0 1	100 6	6575.65	(33/2 ⁻)	M1
5749.0	(31/2 ⁺)	417.4 4	5.2 17	5330.86	29/2 ⁺				1136.5 6	14.8 4	5812.83	(31/2 ⁻)	(E2)
		1476.7 1	100 4	4272.25	(27/2 ⁺)	E2			1140 1	4 4	5810.19	31/2 ⁻	(E2)
5810.19	31/2 ⁻	180.7 3	1.0 3	5629.54	29/2 ⁻		7157.2	(35/2 ⁺)	888.6 3	100	6268.6	(31/2 ⁺)	
		921.0 1	51 3	4889.20	(27/2 ⁻)	E2	7248.65	(37/2 ⁻)	299.1 1	44 3	6949.60	(35/2 ⁻)	M1
		944.3 1	100 4	4865.89	27/2 ⁻	E2			529.3 1	100 6	6719.33	35/2 ⁻	
5812.83	(31/2 ⁻)	183.3 1	1.5 3	5629.54	29/2 ⁻		7683.62	(39/2 ⁻)	435.0 1	100 11	7248.65	(37/2 ⁻)	M1
		923.6 1	100 5	4889.20	(27/2 ⁻)	E2			963.9 4	67 17	6719.33	35/2 ⁻	(E2)
		946.9 4	1.9 5	4865.89	27/2 ⁻		7826.3	(37/2 ⁻)	1141 1	100 2	6685.2	33/2 ⁻	
5911.49	(31/2 ⁺)	476.9 2	78 7	5434.48	29/2 ⁺		7922.6	(39/2 ⁻)	1092.0 2	100	6830.63	(35/2 ⁻)	E2
		580.1 2	81 19	5330.86	29/2 ⁺		8163.2	(39/2 ⁺)	1006 1	100	7157.2	(35/2 ⁺)	
		1639.4 1	100 7	4272.25	(27/2 ⁺)	E2	9069.6	(43/2 ⁻)	1147 1	100	7922.6	(39/2 ⁻)	(E2)
5966.2	(29/2 ⁺)	905.2 3	100	5060.95	(25/2 ⁺)		6002.0+x	(35/2)	254.0 5	100	5748+x	(33/2)	
6073.6		1801.3 4	100	4272.25	(27/2 ⁺)		6328.8+x	(37/2)	326.8 2	100	6002.0+x	(35/2)	
6268.6	(31/2 ⁺)	850.7 2	100	5417.87	(27/2 ⁺)		6711.1+x	(39/2)	382.3 2	100	6328.8+x	(37/2)	
6286.64	(33/2)	375.2 2	33 5	5911.49	(31/2 ⁺)		7204.2+x	(41/2)	493.1 3	100	6711.1+x	(39/2)	
		537.7 1	76 24	5749.0	(31/2 ⁺)		7830.2+x	(43/2)	626.0 5	100	7204.2+x	(41/2)	
		852.2 2	100 14	5434.48	29/2 ⁺								

[†] Average from all decay, ($\alpha, n\gamma$), ($p, n\gamma$).

[‡] Average from all decay, ($\alpha, n\gamma$), ($p, n\gamma$), but when the data include large inconsistencies, evaluator has taken data from ($p, n\gamma$) (Most recent).

From ($p, n\gamma$).

@ From DCO ratios in ($HI, x n\gamma$), otherwise noted.

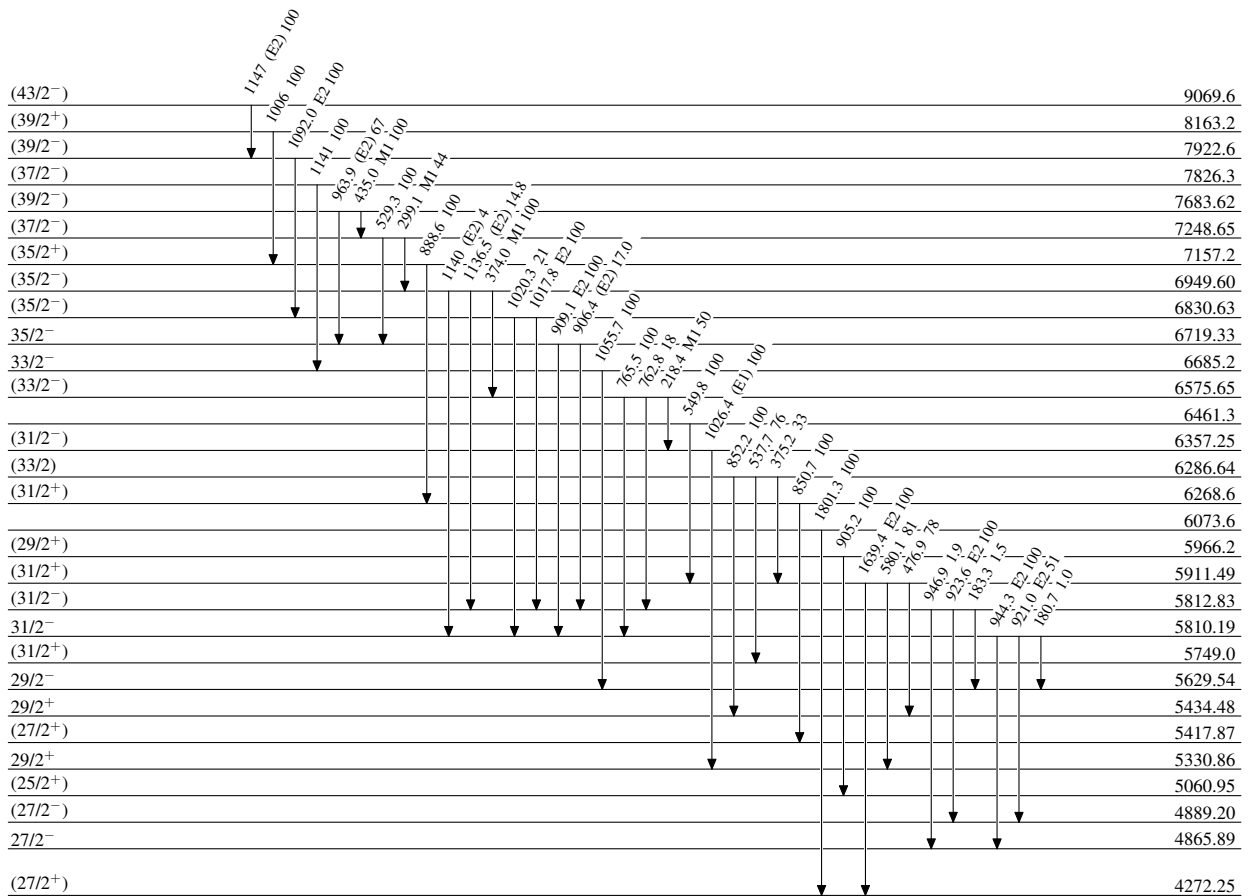
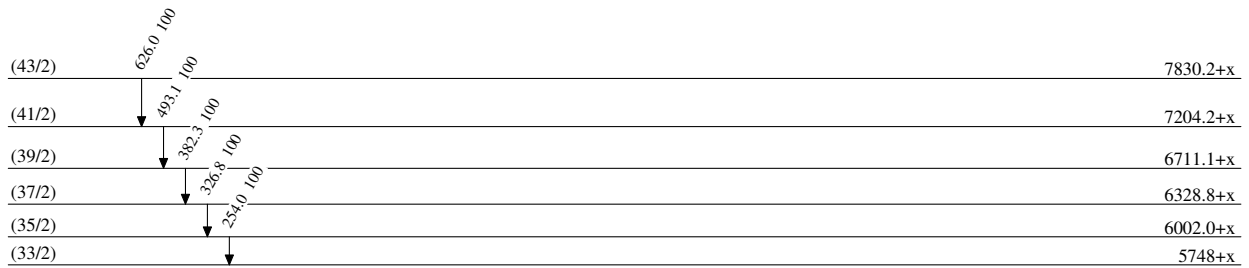
& From $\gamma(\theta)$ in Coul. ex., except as noted.

^a Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ -ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.

Adopted Levels, Gammas

Level Scheme

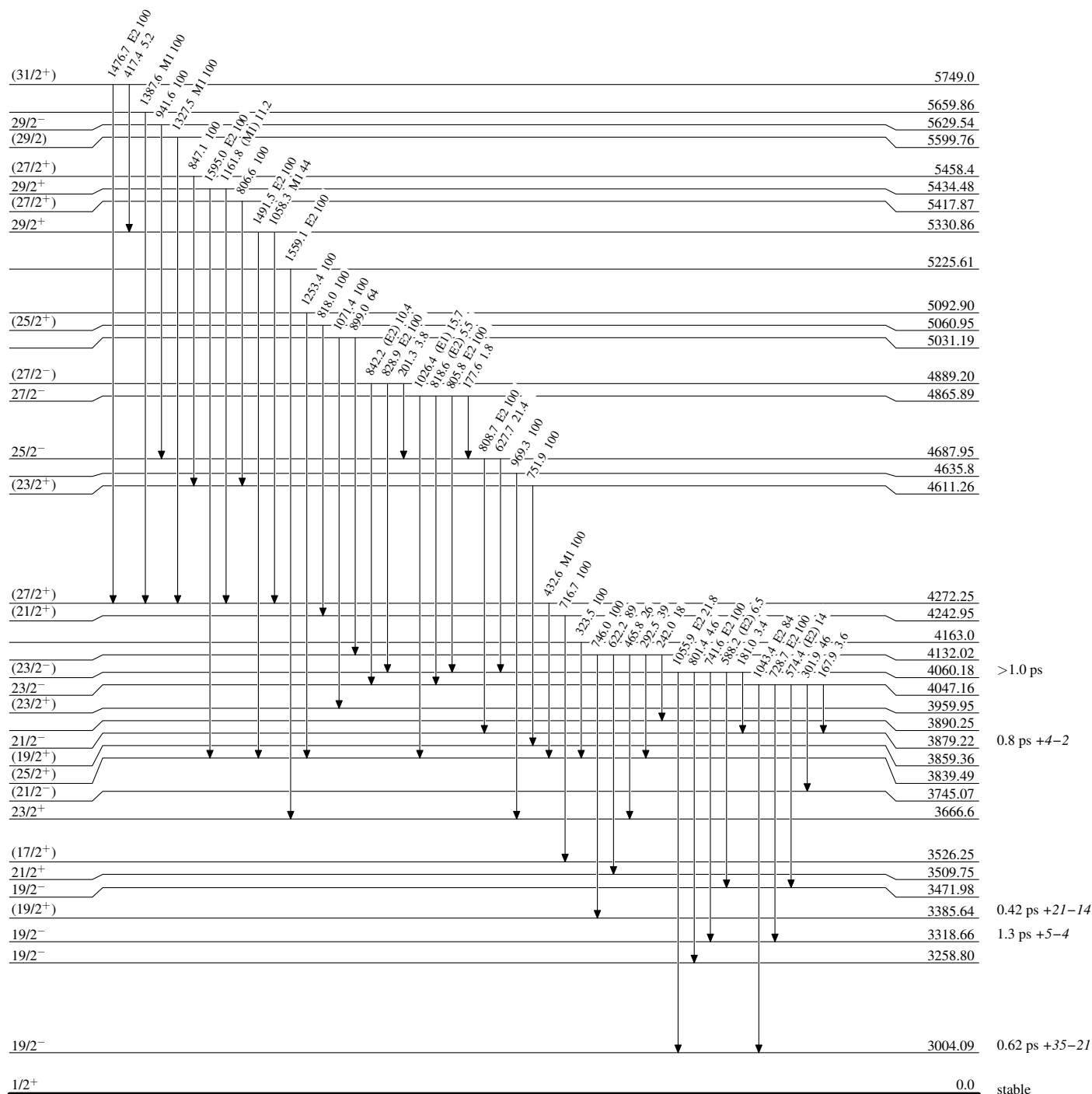
Intensities: Relative photon branching from each level



1/2⁺ 0.0 stable

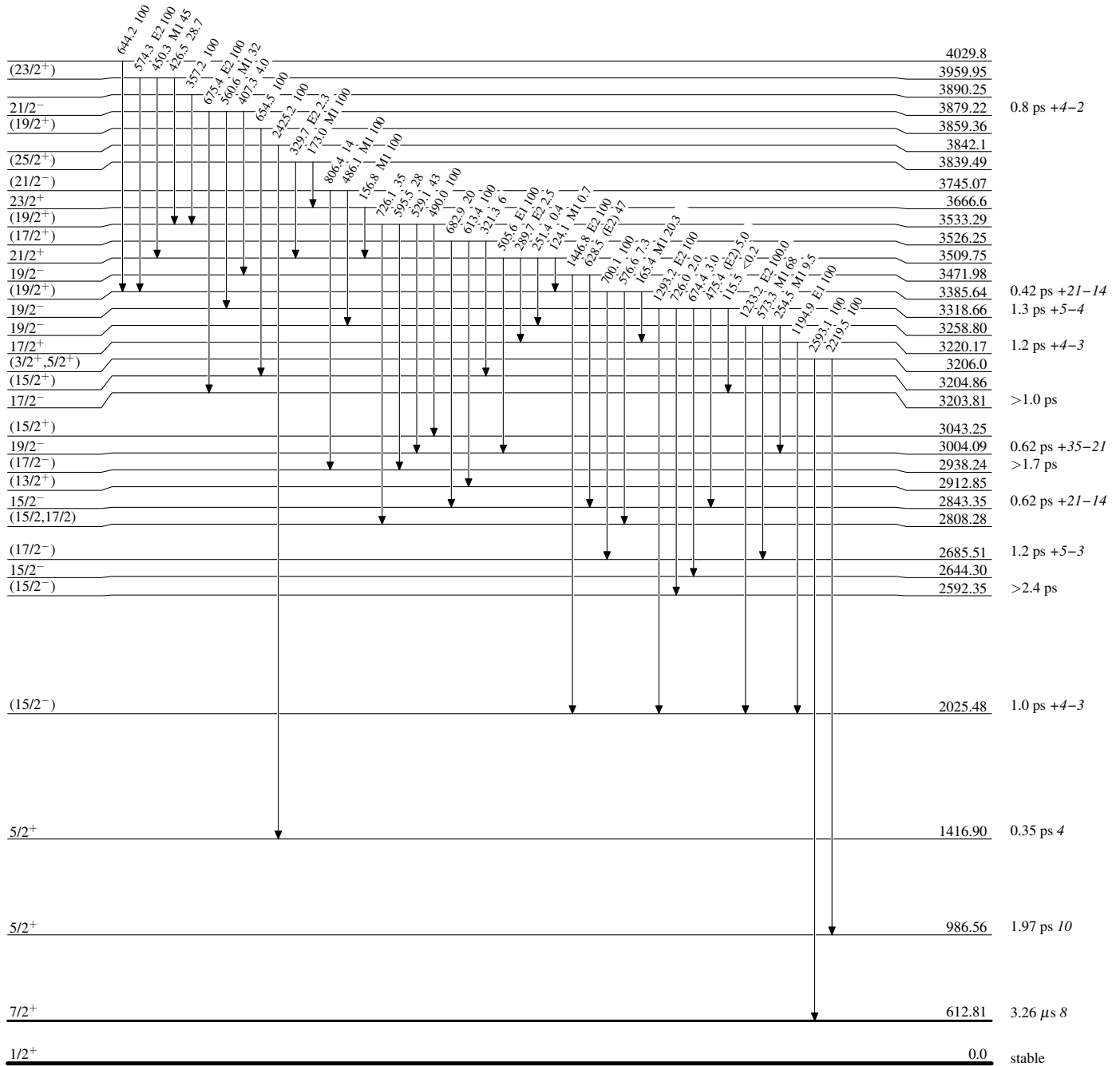
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level



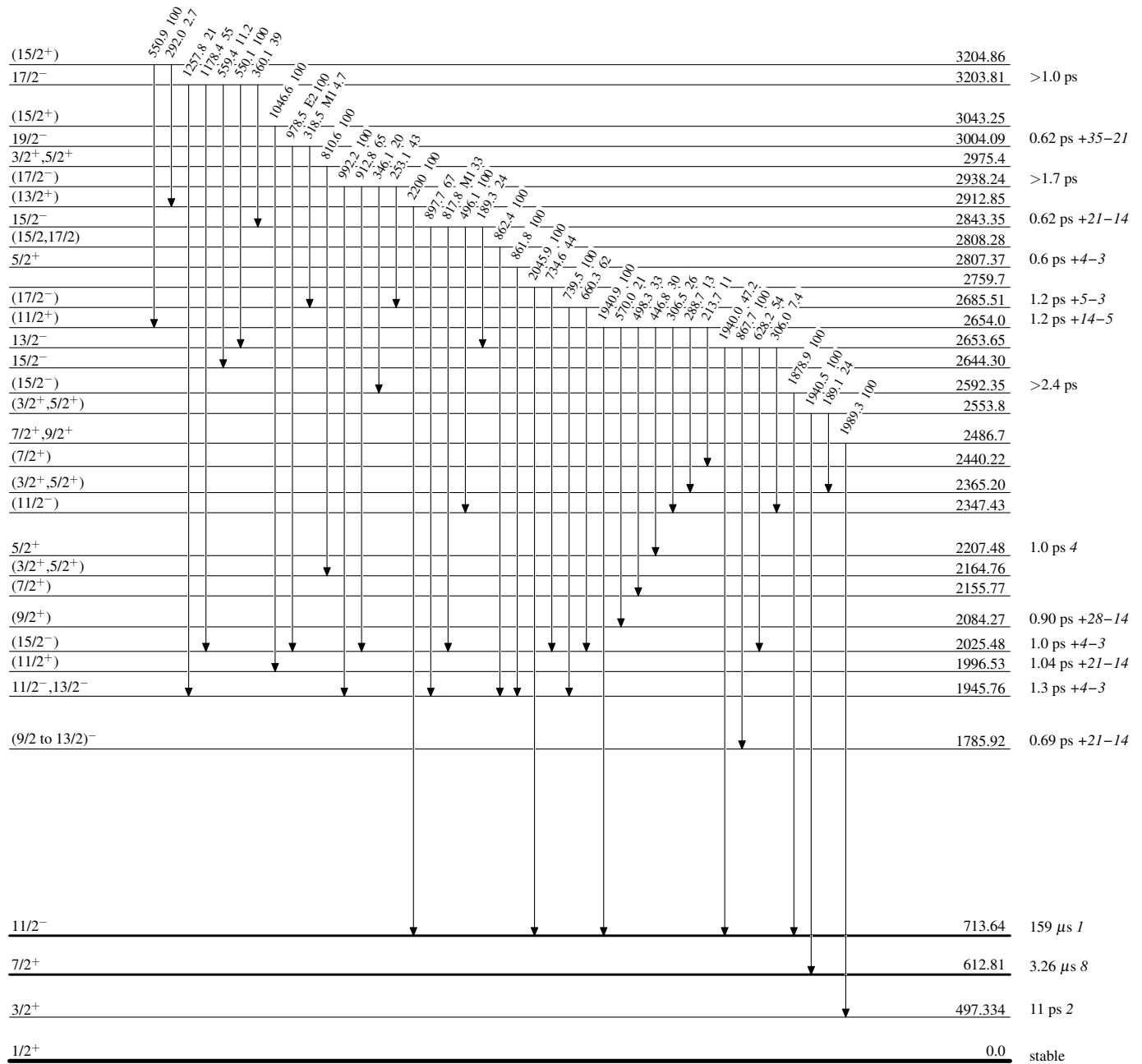
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level



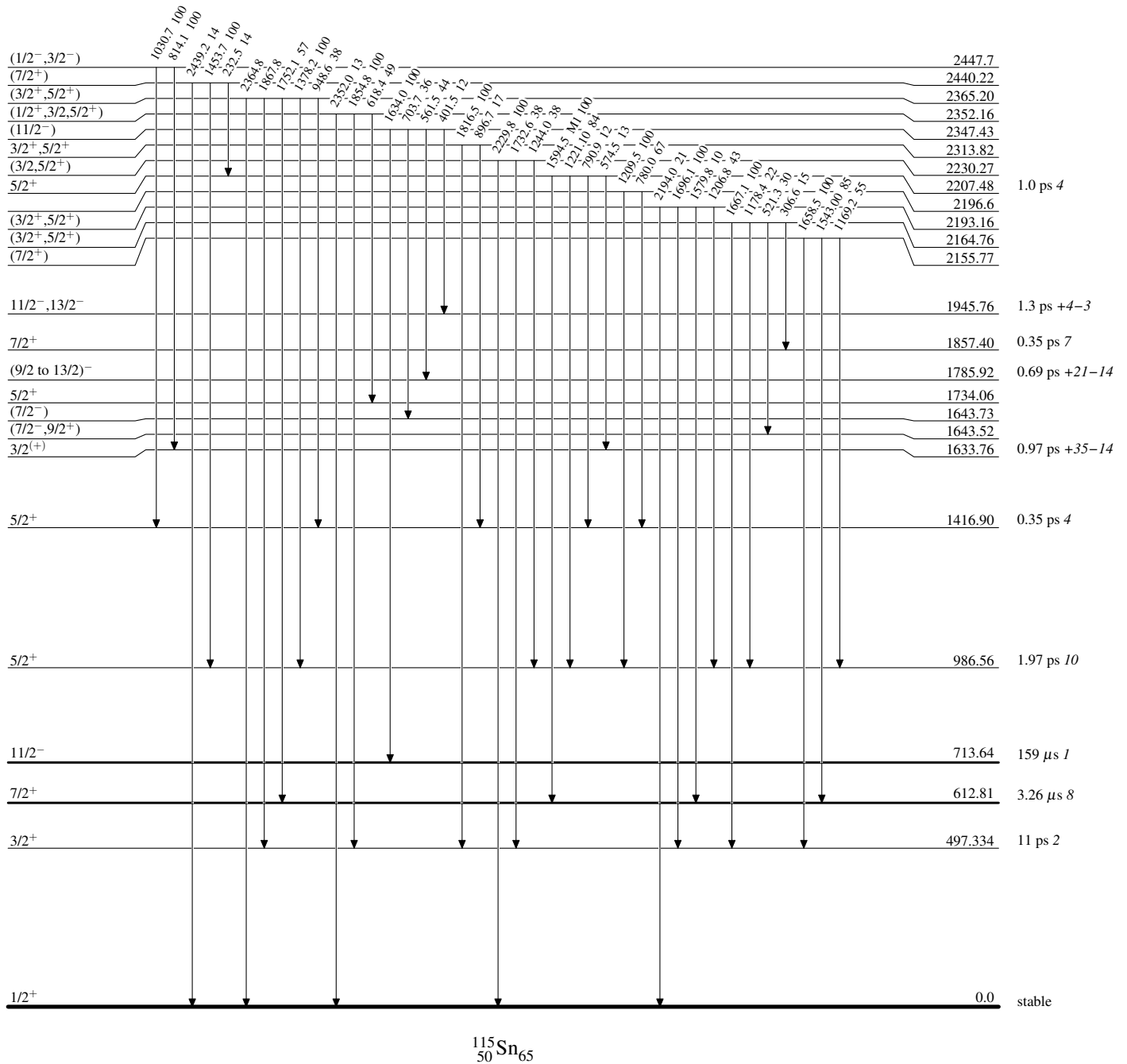
Adopted Levels, GammasLevel Scheme (continued)

Intensities: Relative photon branching from each level



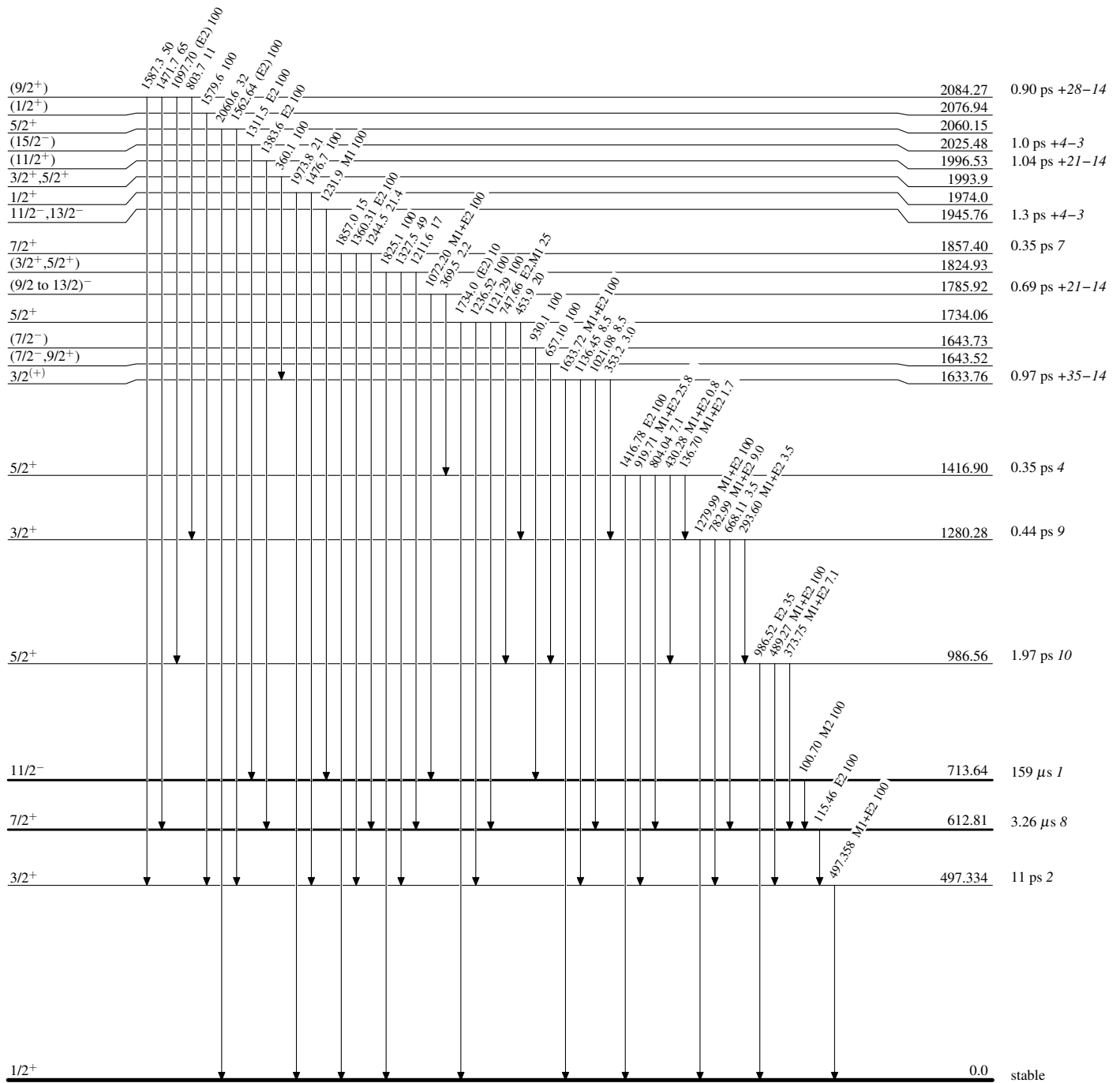
Adopted Levels, Gammas**Level Scheme (continued)**

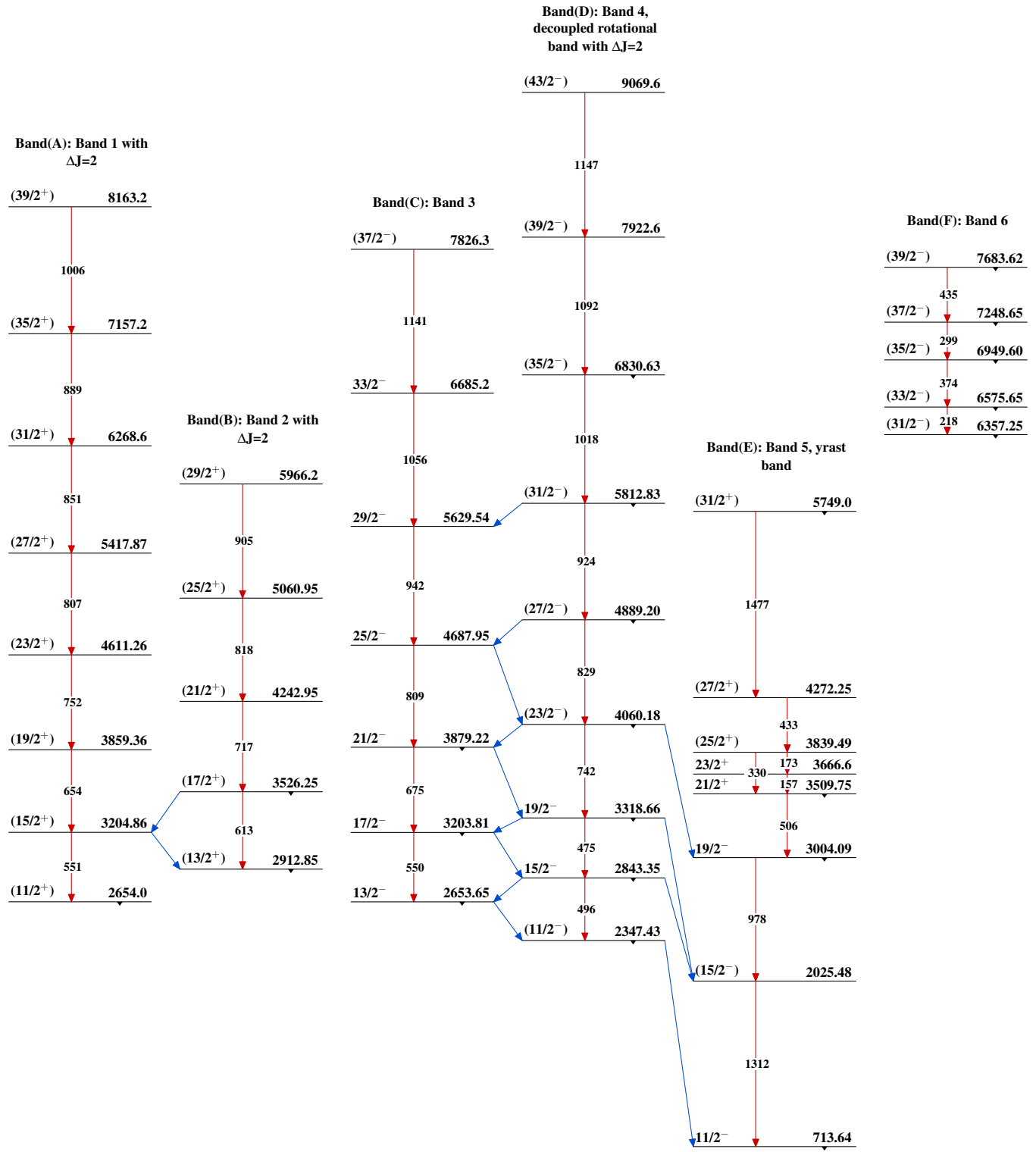
Intensities: Relative photon branching from each level

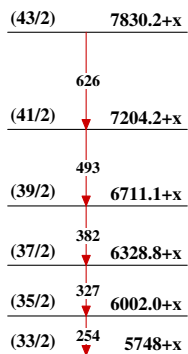
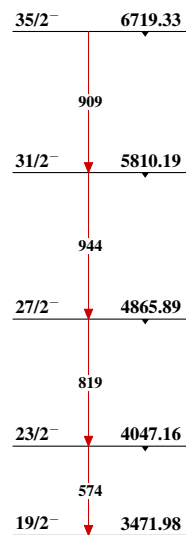
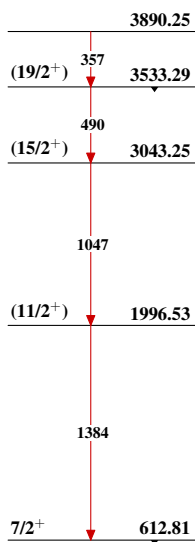


Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Adopted Levels, Gammas (continued)**Band(G): Band 7****Band(I): Band 9,
possible rotational
character with $\Delta J=2$** **Band(H): Band 8** $^{115}_{50}\text{Sn}_{65}$