

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	J. Katakura	NDS 112, 495 (2011)	1-Jan-2010

$Q(\beta^-) = -1644.2$ 22; $S(n) = 9542.8$ 19; $S(p) = 5600.85$ 7; $Q(\alpha) = -1663.5$ 25 [2012Wa38](#)

Note: Current evaluation has used the following Q record.

$Q(\beta^-) = -1644.5$ 22; $S(n) = 9542.8$ 19; $S(p) = 5600.85$ 7; $Q(\alpha) = -1665.8$ 19 [2009AuZZ](#)

 ^{125}I LevelsCross Reference (XREF) Flags

A	$^{123}\text{Sb}(\alpha, 2n\gamma), ^{122}\text{Sn}(^6\text{Li}, 3n\gamma)$	D	$^{124}\text{Te}(^3\text{He}, d)$
B	$^{124}\text{Te}(\alpha, t)$	E	^{125}Xe ε decay
C	$^{124}\text{Te}(p, p), (p, p')$ IAR		

E(level) [†]	J ^π	T _{1/2} [@]	XREF	Comments
0.0 ^b	5/2 ⁺	59.407 d 10	AB DE	$\mu\varepsilon = 100$ $\mu = 2.821$ 5 (1979Sc13); $Q = -0.776$ 17 (1958Fl39) J^π : Microwave spectroscopy $J = 5/2$ (1976Fu06) $L = 2$ in ($^3\text{He}, d$), (α, t). $T_{1/2}$: Weighted average of 59.37 d 6 (1991Al05), 59.416 d 10 (1990Wo03), 59.38 d 3 (1990De09), 59.39 d 2 (1989Sc17), and 59.40 d 5 (1989Si19) Others: 59.156 d 20 (1980Ho17), 59.47 d 21 (1982HoZF), 59.83 d 11 (1965An07), 59.89 d 18 (1968La10), 60.18 d 17 (1972Em01), 60.0 d 5 (1951Fr21), 57.4 d 2 (1960Ma36), 58.76 d 13 (1966Ri14). μ : From nuclear magnetic resonance on oriented nuclei. See also 2005St24 compilation. Q : From microwave absorption. See also 2005St24 compilation.
113.544 ^a 7	7/2 ⁺	0.61 ns 2	AB DE	J^π : $L = 4$ in ($^3\text{He}, d$), (α, t); $M1 + E2$ γ to 5/2 ⁺ . $T_{1/2}$: From $X\gamma(t)$ in ^{125}Xe ε decay.
188.416 4	3/2 ⁺	0.344 ns 9	AB DE	$\mu = +1.06$ 7 (1973Ka37) J^π : $L = 2$ in ($^3\text{He}, d$), (α, t); $M1 + E2$ γ from 1/2 ⁺ . $T_{1/2}$: From $X\gamma(t)$ in ^{125}Xe ε decay. μ : From integral perturbed angular correlation. See also 2005St24 compilation.
243.382 4	1/2 ⁺	0.230 ns 10	B DE	J^π : $L = 0$ in ($^3\text{He}, d$), (α, t); $E2$ γ to 5/2 ⁺ .
372.066 13	3/2 ⁺		AB DE	J^π : $L = 2$ in ($^3\text{He}, d$), (α, t); $\log ft = 9.05$ from 1/2 ⁽⁺⁾ .
453.792 9	3/2 ⁺		E	J^π : $M1$ γ to 5/2 ⁺ ; $\log ft = 6.812$ from 1/2 ⁽⁺⁾ .
536.10 ^{&} 13	7/2 ⁺		AB	J^π : $L = 4$ in (α, t); $M1 + E2$ γ to 5/2 ⁺ .
595.56 ^b 11	9/2 ⁺		A	J^π : $M1 + E2$ γ to 7/2 ⁺ , $\gamma(\theta)$ in $^{123}\text{Sb}(\alpha, 2n\gamma), ^{122}\text{Sn}(^6\text{Li}, 3n\gamma)$.
625 4	(⁺)		B	J^π : $L = (2, 4)$ in (α, t).
704.31 11	9/2 ⁺		A	J^π : Stretched $E2$ γ to 5/2 ⁺ .
768.10 ^a 13	11/2 ⁺		A	J^π : Stretched $E2$ γ to 7/2 ⁺ .
935.7 ^e 3	9/2 ⁽⁺⁾	0.2 ns 1	AB	J^π : $\gamma(\theta)$ in $^{123}\text{Sb}(\alpha, 2n\gamma), ^{122}\text{Sn}(^6\text{Li}, 3n\gamma)$; $L = (4, 2)$ in $^{124}\text{Te}(\alpha, t)$.
1007.450 16	3/2 ⁺		B DE	J^π : $L = 2$ in ($^3\text{He}, d$), (α, t); $\log ft = 7.382$ from 1/2 ⁽⁺⁾ .
1066 3	3/2 ⁺ , 5/2 ⁺		D	J^π : $L = 2$ in ($^3\text{He}, d$).
1082.8 8			E	J^π : γ to 3/2 ⁺ .
1084.86 ^d 14	(11/2) ⁻	≤0.2 ns	AB D	J^π : $L = (0) + (5)$ for $E = 1087$ keV in ($^3\text{He}, d$); $E1 + M2$ γ to 9/2 ⁺ .
1089.904 12	(1/2) ⁺		B DE	J^π : $L = (0) + (5)$ for $E = 1087$ keV in ($^3\text{He}, d$), (α, t); $M1$ γ to 1/2 ⁺ .
1150 5			D	
1173.07 ^{&} 19	11/2 ⁺		A	J^π : Stretched $E2$ γ to 7/2 ⁺ .
1180.872 13	3/2 ⁺		E	J^π : $E2 + M1$ γ to 1/2 ⁺ ; $\log ft = 6.626$ from 1/2 ⁽⁺⁾ .
1198 3	3/2 ⁺ , 5/2 ⁺		B D	J^π : $L = 2$ in ($^3\text{He}, d$), (α, t).
1203.72 ^b 17	13/2 ⁺		A	J^π : Stretched $E2$ γ to 9/2 ⁺ .

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Adopted Levels, Gammas (continued) ^{125}I Levels (continued)

E(level) [†]	J ^π	T _{1/2} [@]	XREF	Comments
1252 4	7/2 ⁺ , 9/2 ⁺		B D	J ^π : L=4 in (³ He,d), (α,t).
1263.95 3	(1/2, 3/2)		E	J ^π : γ's to 3/2 ⁺ and 1/2 ⁺ ; log ft=7.511 from 1/2 ⁽⁺⁾ .
1269.9 ^e 4	11/2 ⁽⁺⁾		A	J ^π : γ(θ) in ¹²³ Sb(α,2nγ), ¹²² Sn(⁶ Li,3nγ); M1+E2 γ to 9/2 ⁽⁺⁾ .
1289 3			D	
1332.0 6			A	
1337 3	3/2 ⁺ , 5/2 ⁺		B D	J ^π : L=2 in (³ He,d), (α,t).
1365 6			B	
1381.635 22	1/2 ⁺ , 3/2 ⁺		DE	J ^π : L=(0)+(2) in (³ He,d); log ft=6.56 from 1/2 ⁽⁺⁾ , M1,E2 γ to 1/2 ⁺ .
1392 6	3/2 ⁺ , 5/2 ⁺ , (1/2 ⁺)		B	J ^π : L=2+(0) in (α,t).
1442.80 5	3/2 ⁺		B DE	J ^π : L=2 in (³ He,d), L=2+(0) in (α,t); log ft=7.341 from 1/2 ⁽⁺⁾ .
1481 3			D	
1512 3			D	
1543 5			D	
1554.44 ^a 20	15/2		A	J ^π : γ(θ) in ¹²³ Sb(α,2nγ), ¹²² Sn(⁶ Li,3nγ).
1562.43 10	1/2, 3/2		E	J ^π : Log ft=7.13 from 1/2 ⁽⁺⁾ .
1580 5	(1/2 ⁺)		D	J ^π : L=(0) in (³ He,d).
1610 5	(1/2 ⁺)		D	J ^π : L=(0) in (³ He,d).
1616.7 ^e 4	13/2 ⁽⁺⁾		A	J ^π : γ(θ) in ¹²³ Sb(α,2nγ), ¹²² Sn(⁶ Li,3nγ); M1+E2 γ to 11/2 ⁽⁺⁾ .
1663 4	3/2 ⁺ , 5/2 ⁺		B D	J ^π : L=2 in (³ He,d).
1664.55 ^d 22	(15/2) ⁻		A	J ^π : Stretched E2 γ to (11/2) ⁻ .
1690 5	1/2 ⁺		B D	J ^π : L=0 in (³ He,d).
1733 4	7/2 ⁺ , 9/2 ⁺		B D	J ^π : L=4 in (³ He,d).
1778 4	⁺		B D	J ^π : L=0 in (³ He,d) (1977Li10), L=2 in (³ He,d) (1979Sz05).
1827 6	⁺		B D	J ^π : L=2 in (³ He,d) (1977Li10), L=4+(2) in (³ He,d) (1979Sz05).
1868.7 6			A	J ^π : γ to (11/2) ⁻ .
1870.9 ^{&} 3	15/2		A	J ^π : γ(θ) in ¹²³ Sb(α,2nγ), ¹²² Sn(⁶ Li,3nγ).
1887.93 ^b 22	17/2 ⁺		A	J ^π : Stretched E2 γ to 13/2 ⁺ .
1916 5	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
1938 4	3/2 ⁺ , 5/2 ⁺		B D	J ^π : L=2 in (³ He,d).
1978 5	3/2 ⁺ , 5/2 ⁺		D	J ^π : L=2 in (³ He,d).
1997.4 ^e 5	(15/2)		A	J ^π : γ's to 11/2 ⁽⁺⁾ and 13/2 ⁽⁺⁾ ; No γ to J<11/2.
2031 5	3/2 ⁺ , 5/2 ⁺		D	J ^π : L=2 in (³ He,d).
2069 5	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
2142 5	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
2183 5	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
2221.7 6			A	
2231 5	(3/2 ⁺ , 5/2 ⁺)		D	J ^π : L=(2) in (³ He,d).
2278.1 ^d 3	(19/2) ⁻		A	J ^π : Stretched E2 γ to (15/2) ⁻ .
2302 5	(3/2 ⁺ , 5/2 ⁺)		D	J ^π : L=(2) in (³ He,d).
2350.52 ^c 24	(17/2)	1.6 ns 3	A	J ^π : γ(θ) in ¹²³ Sb(α,2nγ), ¹²² Sn(⁶ Li,3nγ).
2354 5	(3/2 ⁺ , 5/2 ⁺)		D	J ^π : L=(2) in (³ He,d).
2397.0 ^e 6			A	
2399 5	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
2438 5	3/2 ⁺ , 5/2 ⁺		D	J ^π : L=2 in (³ He,d).
2462.9 4			A	
2472 5	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
2502.3 ^a 3	19/2		A	J ^π : γ(θ) in ¹²³ Sb(α,2nγ), ¹²² Sn(⁶ Li,3nγ).
2517 8	3/2 ⁺ , 5/2 ⁺		D	J ^π : L=2 in (³ He,d).
2553 8	(3/2 ⁺ , 5/2 ⁺)		D	J ^π : L=(2) in (³ He,d).
2554.78 ^c 25	19/2		A	J ^π : γ(θ) in ¹²³ Sb(α,2nγ), ¹²² Sn(⁶ Li,3nγ).
2589 8			D	
2624.2 6			A	
2654 5	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
2694 8	1/2 ⁺		D	J ^π : L=0 in (³ He,d).

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Adopted Levels, Gammas (continued) ^{125}I Levels (continued)

E(level) [†]	J ^π	T _{1/2} [@]	XREF	Comments
2713.3 ^{&} 6			A	
2731 8	3/2 ⁺ , 5/2 ⁺		D	J ^π : L=2 in (³ He,d).
2737.9 ^b 4	21/2		A	J ^π : γ(θ) in ¹²³ Sb(α,2nγ), ¹²² Sn(⁶ Li,3nγ).
2783.9 ^d 4	(23/2 ⁻)		A	J ^π : Stretched (E2) γ to (19/2) ⁻ .
2790.9 ^c 3	(21/2)	0.3 ns 1	A	J ^π : (M1) γ to 19/2; Band structure.
2796 8			D	
2815.0 ^e 8			A	
2838 8			D	
2884 8			D	
2916.1 6			A	
2919.1 6			A	
2932 8	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
2982 8	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
3026 8			D	
3060 8	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
3060.2 4			A	
3073.4? 11			A	
3098.9 ^c 3	(23/2)		A	J ^π : M1+E2 γ to (21/2); Band structure.
3100 8			D	
3149 8	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
3158.8 6			A	
3195 10			D	
3241 10			D	
3258.9? ^e 16			A	
3259.5 4			A	
3284 10			D	
3293.4 4			A	
3302.9 7			A	
3312 10			D	
3343 10			D	
3375 10			D	
3413 10			D	
3447 10			D	
3458.8 7			A	
3474 10			D	
3496.9 ^c 5			A	
3500 10			D	
3547 10			D	
3585 10	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
3621 10	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
3654 10			D	
3674.5 ^d 5	27/2		A	J ^π : γ(θ) in ¹²³ Sb(α,2nγ), ¹²² Sn(⁶ Li,3nγ).
3685 10			D	
3728 10	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
3768 10			D	
3775.3? 14			A	
3800 10			D	
3829 10	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
3859 10	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
3867.9 ^b 7			A	
3894 10	1/2 ⁺		D	J ^π : L=0 in (³ He,d).
3930 10			D	
3964 10			D	
4006 10			D	
4042 10			D	

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Adopted Levels, Gammas (continued) ^{125}I Levels (continued)

E(level) [†]	J ^π	XREF	Comments
4082 [‡] 10		D	
13092 [‡] 20	1/2 ⁺ #	C	IAR of g.s. 1/2 ⁺ in ^{125}Te .
13127 [‡] 20	3/2 ⁺ #	C	IAR of 35 keV, 3/2 ⁺ state in ^{125}Te .
13752 [‡] 20	(5/2) ⁺ #	C	IAR of 671 keV, 5/2 ⁺ state in ^{125}Te .
13830 [‡] 20	(5/2 ⁺)#	C	IAR of 729 keV 3/2 ⁺ state in ^{125}Te .
14123? [‡] 20	#	C	
14230 [‡] 20	#	C	
14341 [‡] 20	#	C	
14631 [‡] 20	(1/2 ⁺)#	C	
14911 [‡] 20	(7/2) ⁻ #	C	IAR of 1820 keV, (5/2 ⁻ , 7/2 ⁻) state in ^{125}Te .
15025 [‡] 20	(3/2) ⁻ #	C	
15069 [‡] 20	7/2 ⁻ #	C	
15115 [‡] 20	(1/2) ⁻ #	C	
15183 [‡] 20	7/2 ⁻ #	C	
15354 [‡] 20	3/2 ⁻ #	C	
15601? [‡] 20	#	C	
15811 [‡] 20	#	C	
15968? [‡] 20	#	C	
16138? [‡] 20	#	C	

[†] E(levels) with uncertainty ≤ 1 keV are from a least-squares fit to $E\gamma$'s observed in ^{125}Xe ε decay and $^{123}\text{Sb}(\alpha, 2n\gamma)$, $^{122}\text{Sn}(^6\text{Li}, 3n\gamma)$; E(levels) with uncertainty=4-10 keV are from $^{124}\text{Te}(^3\text{He}, d)$, $^{124}\text{Te}(\alpha, t)$; and E(levels) with uncertainty > 10 keV are from $^{124}\text{Te}(p, p)$ IAR with $S(p)=5600.85$ 7.

[‡] Analog resonance.

From $^{124}\text{Te}(p, p)$.

@ From $^{123}\text{Sb}(\alpha, 2n\gamma)$, $^{122}\text{Sn}(^6\text{Li}, 3n\gamma)$, unless otherwise noted.

& Band(A): 7/2⁺ band.

^a Band(B): $\pi d_{5/2}$, $\alpha=-1/2$ yrast band (2001Sh02).

^b Band(C): $\pi d_{5/2}$, $\alpha=+1/2$ yrast band (2001Sh02).

^c Band(D): Probable 3-qp band. $\pi h_{11/2} \nu g_{7/2} \nu h_{11/2}$ (2001Sh02).

^d Band(E): Probable $\pi h_{11/2}$ 1/2[550] band (2001Sh02).

^e Band(F): Probable $\pi g_{9/2}$ 9/2[404] band (2001Sh02).

Adopted Levels, Gammas (continued)

$\gamma(^{125}\text{I})$

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. [‡]	$\delta^{\ddagger}$	$\alpha^{\dagger}$	Comments
113.544	7/2 ⁺	113.551 15	100	0.0	5/2 ⁺	M1+E2	-0.12 2	0.530	$\alpha(\text{K})=0.454$ 7; $\alpha(\text{L})=0.0614$ 14; $\alpha(\text{M})=0.0124$ 3; $\alpha(\text{N}+..)=0.00279$ 6 $\alpha(\text{N})=0.00250$ 6; $\alpha(\text{O})=0.000290$ 6 B(M1)(W.u.)=0.0159 6; B(E2)(W.u.)=12 4 δ : From L-subshell ratio of ce in ¹²⁵ Xe ε decay and $\gamma(\theta)$ in ¹²³ Sb(α ,2n γ), ¹²² Sn(⁶ Li,3n γ).
188.416	3/2 ⁺	74.875 7	0.22 3	113.544 7/2 ⁺	E2			4.92	$\alpha(\text{K})=2.88$ 4; $\alpha(\text{L})=1.627$ 23; $\alpha(\text{M})=0.346$ 5; $\alpha(\text{N}+..)=0.0724$ 11 $\alpha(\text{N})=0.0664$ 10; $\alpha(\text{O})=0.00600$ 9 B(E2)(W.u.)=35.6 12
		188.418 4	100	0.0	5/2 ⁺	M1+E2	+0.357 9	0.1354 20	$\alpha(\text{K})=0.1152$ 17; $\alpha(\text{L})=0.01625$ 25; $\alpha(\text{M})=0.00329$ 5; $\alpha(\text{N}+..)=0.000737$ 11 $\alpha(\text{N})=0.000662$ 10; $\alpha(\text{O})=7.53\times 10^{-5}$ 11 B(M1)(W.u.)=0.00739 20; B(E2)(W.u.)=18.4 10 δ : From ¹²⁵ Xe ε decay.
243.382	1/2 ⁺	54.968 4	22.6 6	188.416 3/2 ⁺	M1+E2		-0.022 8	4.20	$\alpha(\text{K})=3.60$ 5; $\alpha(\text{L})=0.479$ 8; $\alpha(\text{M})=0.0965$ 15; $\alpha(\text{N}+..)=0.0218$ 4 $\alpha(\text{N})=0.0195$ 3; $\alpha(\text{O})=0.00227$ 4 B(M1)(W.u.)=0.058 7; B(E2)(W.u.)=6 5 δ : From ¹²⁵ Xe ε decay.
		243.378 5	100.0 20	0.0	5/2 ⁺	E2		0.0799	B(E2)(W.u.)=34 8 $\alpha(\text{K})=0.0651$ 10; $\alpha(\text{L})=0.01185$ 17; $\alpha(\text{M})=0.00244$ 4; $\alpha(\text{N}+..)=0.000532$ 8 $\alpha(\text{N})=0.000481$ 7; $\alpha(\text{O})=5.04\times 10^{-5}$ 7
372.066	3/2 ⁺	258.36 8 372.081 14	7.9 10 100.0 22	113.544 7/2 ⁺ 0.0 5/2 ⁺	M1,E2			0.0209 6	$\alpha(\text{K})=0.0178$ 8; $\alpha(\text{L})=0.00249$ 16; $\alpha(\text{M})=0.00050$ 4; $\alpha(\text{N}+..)=0.000113$ 7 $\alpha(\text{N})=0.000101$ 6; $\alpha(\text{O})=1.15\times 10^{-5}$ 3
453.792	3/2 ⁺	210.418 21	1.60 10	243.382 1/2 ⁺	M1,E2			0.113 18	$\alpha(\text{K})=0.093$ 12; $\alpha(\text{L})=0.016$ 5; $\alpha(\text{M})=0.0032$ 11; $\alpha(\text{N}+..)=0.00070$ 22 $\alpha(\text{N})=0.00063$ 21; $\alpha(\text{O})=6.8\times 10^{-5}$ 18
		340.22 10	0.43 5	113.544 7/2 ⁺	E2			0.0269	$\alpha(\text{K})=0.0225$ 4; $\alpha(\text{L})=0.00357$ 6; $\alpha(\text{M})=0.000729$ 11; $\alpha(\text{N}+..)=0.0001607$ 23 $\alpha(\text{N})=0.0001449$ 21; $\alpha(\text{O})=1.574\times 10^{-5}$ 23
		453.796 11	100.0 21	0.0	5/2 ⁺	M1		0.01302	Mult.: M1,E2 from $\alpha(\text{K})$ in ¹²⁵ Xe ε decay and relevant levels. $\alpha(\text{K})=0.01126$ 16; $\alpha(\text{L})=0.001414$ 20; $\alpha(\text{M})=0.000284$ 4; $\alpha(\text{N}+..)=6.43\times 10^{-5}$ 9 $\alpha(\text{N})=5.75\times 10^{-5}$ 8; $\alpha(\text{O})=6.78\times 10^{-6}$ 10
536.10	7/2 ⁺	536.11 20	100	0.0	5/2 ⁺	M1+E2	-0.13 6	0.00860 13	$\alpha=0.00860$ 13; $\alpha(\text{K})=0.00744$ 11; $\alpha(\text{L})=0.000931$ 14; $\alpha(\text{M})=0.000187$ 3; $\alpha(\text{N}+..)=4.23\times 10^{-5}$ 6 $\alpha(\text{N})=3.79\times 10^{-5}$ 6; $\alpha(\text{O})=4.46\times 10^{-6}$ 7 δ : from ¹²³ Sb(α ,2n γ), ¹²² Sn(⁶ Li,3n γ).
595.56	9/2 ⁺	482.00 20	100	113.544 7/2 ⁺	M1+E2		-0.23 3	0.01112	$\alpha(\text{K})=0.00961$ 14; $\alpha(\text{L})=0.001212$ 17; $\alpha(\text{M})=0.000243$ 4;

Adopted Levels, Gammas (continued)

<u>$\gamma(^{125}\text{I})$ (continued)</u>									
<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.[‡]</u>	<u>$\delta^\ddagger$</u>	<u>$\alpha^\dagger$</u>	<u>Comments</u>
									$\alpha(\text{N}+..)=5.51\times 10^{-5}$ 8 $\alpha(\text{N})=4.93\times 10^{-5}$ 7; $\alpha(\text{O})=5.80\times 10^{-6}$ 9
595.56	9/2 ⁺	595.55 20	23	0.0	5/2 ⁺	Q			
704.31	9/2 ⁺	168.20 10	3	536.10	7/2 ⁺				
		590.84 20	20	113.544	7/2 ⁺	M1+E2	+0.15 +6-7	0.00678 10	$\alpha=0.00678$ 10; $\alpha(\text{K})=0.00587$ 9; $\alpha(\text{L})=0.000732$ 11; $\alpha(\text{M})=0.0001468$ 21; $\alpha(\text{N}+..)=3.33\times 10^{-5}$ 5 $\alpha(\text{N})=2.98\times 10^{-5}$ 5; $\alpha(\text{O})=3.51\times 10^{-6}$ 5 $\alpha=0.00347$ 5; $\alpha(\text{K})=0.00297$ 5; $\alpha(\text{L})=0.000396$ 6; $\alpha(\text{M})=7.97\times 10^{-5}$ 12; $\alpha(\text{N}+..)=1.79\times 10^{-5}$ 3 $\alpha(\text{N})=1.605\times 10^{-5}$ 23; $\alpha(\text{O})=1.84\times 10^{-6}$ 3
		704.26 20	100	0.0	5/2 ⁺	E2		0.00347 5	
768.10	11/2 ⁺	172.56 10	4	595.56	9/2 ⁺				
		654.52 20	100	113.544	7/2 ⁺	E2		0.00417 6	$\alpha=0.00417$ 6; $\alpha(\text{K})=0.00357$ 5; $\alpha(\text{L})=0.000481$ 7; $\alpha(\text{M})=9.70\times 10^{-5}$ 14; $\alpha(\text{N}+..)=2.17\times 10^{-5}$ 3 $\alpha(\text{N})=1.95\times 10^{-5}$ 3; $\alpha(\text{O})=2.23\times 10^{-6}$ 4
935.7	9/2 ⁽⁺⁾	822.2 3	100	113.544	7/2 ⁺	D+Q	+0.12 +5-3		
1007.450	3/2 ⁺	553.69 4	19.0 7	453.792	3/2 ⁺				
		635.382 & 23	≈74	372.066	3/2 ⁺	(M1,E2)		0.0051 7	$\alpha=0.0051$ 7; $\alpha(\text{K})=0.0044$ 6; $\alpha(\text{L})=0.00057$ 5; $\alpha(\text{M})=0.000114$ 10; $\alpha(\text{N}+..)=2.57\times 10^{-5}$ 23 $\alpha(\text{N})=2.30\times 10^{-5}$ 20; $\alpha(\text{O})=2.7\times 10^{-6}$ 3 I_γ : From $\gamma\gamma$ -coin.
		764.17 10	4.7 10	243.382	1/2 ⁺				
		819.02 4	15.1 7	188.416	3/2 ⁺				
		1007.431 25	100 2	0.0	5/2 ⁺	M1,E2		0.00173 22	$\alpha=0.00173$ 22; $\alpha(\text{K})=0.00150$ 20; $\alpha(\text{L})=0.000186$ 21; $\alpha(\text{M})=3.7\times 10^{-5}$ 5; $\alpha(\text{N}+..)=8.4\times 10^{-6}$ 10 $\alpha(\text{N})=7.5\times 10^{-6}$ 9; $\alpha(\text{O})=8.9\times 10^{-7}$ 11
1082.8		894.4 8	100	188.416	3/2 ⁺				
1084.86	(11/2) ⁻	380.56 10	100	704.31	9/2 ⁺	E1(+M2)	+0.04 +3-2	0.00552 25	$\alpha=0.00552$ 25; $\alpha(\text{K})=0.00478$ 21; $\alpha(\text{L})=0.00059$ 3; $\alpha(\text{M})=0.000119$ 6; $\alpha(\text{N}+..)=2.67\times 10^{-5}$ 14 $\alpha(\text{N})=2.39\times 10^{-5}$ 13; $\alpha(\text{O})=2.77\times 10^{-6}$ 15 $\text{B}(\text{E}1)(\text{W.u.})>2.3\times 10^{-5}$?
1089.904	(1/2) ⁺	489.3 3	3	595.56	9/2 ⁺				
		636.110 & 17	≈10	453.792	3/2 ⁺	(M1,E2)		0.0051 7	$\alpha=0.0051$ 7; $\alpha(\text{K})=0.0044$ 6; $\alpha(\text{L})=0.00057$ 5; $\alpha(\text{M})=0.000114$ 10; $\alpha(\text{N}+..)=2.57\times 10^{-5}$ 23 $\alpha(\text{N})=2.30\times 10^{-5}$ 20; $\alpha(\text{O})=2.7\times 10^{-6}$ 3 I_γ : From $\gamma\gamma$ -coin.
		717.90 6	1.21 10	372.066	3/2 ⁺				
		846.511 18	100 3	243.382	1/2 ⁺	M1		0.00290 4	$\alpha=0.00290$ 4; $\alpha(\text{K})=0.00252$ 4; $\alpha(\text{L})=0.000310$ 5; $\alpha(\text{M})=6.21\times 10^{-5}$ 9; $\alpha(\text{N}+..)=1.408\times 10^{-5}$ 20 $\alpha(\text{N})=1.259\times 10^{-5}$ 18; $\alpha(\text{O})=1.488\times 10^{-6}$ 21 $\alpha=0.0022$ 3; $\alpha(\text{K})=0.0019$ 3; $\alpha(\text{L})=0.00024$ 3; $\alpha(\text{M})=4.8\times 10^{-5}$ 6; $\alpha(\text{N}+..)=1.09\times 10^{-5}$ 13 $\alpha(\text{N})=9.8\times 10^{-6}$ 12; $\alpha(\text{O})=1.14\times 10^{-6}$ 15
		901.51 3	52.1 12	188.416	3/2 ⁺	M1,E2		0.0022 3	

Adopted Levels, Gammas (continued)

<u>$\gamma(^{125}\text{I})$ (continued)</u>									
<u>E_i(level)</u>	<u>J^{π}_i</u>	<u>E_{γ}</u>	<u>I_{γ}</u>	<u>E_f</u>	<u>J^{π}_f</u>	<u>Mult.[‡]</u>	<u>$\delta^{\ddagger}$</u>	<u>$\alpha^{\dagger}$</u>	<u>Comments</u>
1089.904	(1/2) ⁺	1089.86 4	5.87 19	0.0	5/2 ⁺				
1173.07	11/2 ⁺	468.7 3	10	704.31	9/2 ⁺				
		577.3 5	21	595.56	9/2 ⁺				
		637.03 20	100	536.10	7/2 ⁺	E2		0.00447 7	$\alpha=0.00447$ 7; $\alpha(\text{K})=0.00382$ 6; $\alpha(\text{L})=0.000517$ 8; $\alpha(\text{M})=0.0001044$ 15; $\alpha(\text{N}+..)=2.34\times 10^{-5}$ 4 $\alpha(\text{N})=2.10\times 10^{-5}$ 3; $\alpha(\text{O})=2.39\times 10^{-6}$ 4
1180.872	3/2 ⁺	727.096 23	8.03 24	453.792	3/2 ⁺	M1,E2		0.0037 5	$\alpha=0.0037$ 5; $\alpha(\text{K})=0.0032$ 5; $\alpha(\text{L})=0.00040$ 4; $\alpha(\text{M})=8.1\times 10^{-5}$ 8; $\alpha(\text{N}+..)=1.83\times 10^{-5}$ 19 $\alpha(\text{N})=1.64\times 10^{-5}$ 17; $\alpha(\text{O})=1.91\times 10^{-6}$ 22
		809.18 13	1.02 16	372.066	3/2 ⁺				
		937.494 23	22.1 5	243.382	1/2 ⁺	E2(+M1)		0.0020 3	$\alpha=0.0020$ 3; $\alpha(\text{K})=0.00176$ 24; $\alpha(\text{L})=0.000219$ 25; $\alpha(\text{M})=4.4\times 10^{-5}$ 5; $\alpha(\text{N}+..)=1.00\times 10^{-5}$ 12 $\alpha(\text{N})=8.9\times 10^{-6}$ 11; $\alpha(\text{O})=1.04\times 10^{-6}$ 13
		992.43 3	14.9 3	188.416	3/2 ⁺				
		1180.838 25	100.0 24	0.0	5/2 ⁺	M1,E2		0.00122 15	$\alpha=0.00122$ 15; $\alpha(\text{K})=0.00106$ 13; $\alpha(\text{L})=0.000130$ 15; $\alpha(\text{M})=2.6\times 10^{-5}$ 3; $\alpha(\text{N}+..)=1.02\times 10^{-5}$ 5 $\alpha(\text{N})=5.3\times 10^{-6}$ 6; $\alpha(\text{O})=6.2\times 10^{-7}$ 8; $\alpha(\text{IPF})=4.34\times 10^{-6}$ 21
1203.72	13/2 ⁺	435.55 20	32	768.10	11/2 ⁺	M1+E2	-0.34 +7-11	0.01425 23	$\alpha(\text{K})=0.01229$ 21; $\alpha(\text{L})=0.001570$ 22; $\alpha(\text{M})=0.000316$ 5; $\alpha(\text{N}+..)=7.13\times 10^{-5}$ 10 $\alpha(\text{N})=6.39\times 10^{-5}$ 9; $\alpha(\text{O})=7.48\times 10^{-6}$ 11
		608.12 20	100	595.56	9/2 ⁺	E2		0.00504 7	$\alpha=0.00504$ 7; $\alpha(\text{K})=0.00430$ 6; $\alpha(\text{L})=0.000588$ 9; $\alpha(\text{M})=0.0001188$ 17; $\alpha(\text{N}+..)=2.66\times 10^{-5}$ 4 $\alpha(\text{N})=2.39\times 10^{-5}$ 4; $\alpha(\text{O})=2.71\times 10^{-6}$ 4
1263.95	(1/2,3/2)	1020.55 5	38.6 9	243.382	1/2 ⁺				
		1075.54 3	100 3	188.416	3/2 ⁺				
1269.9	11/2 ⁽⁺⁾	334.10 10	100	935.7	9/2 ⁽⁺⁾	M1+E2	+0.14 1	0.0283	$\alpha(\text{K})=0.0244$ 4; $\alpha(\text{L})=0.00311$ 5; $\alpha(\text{M})=0.000625$ 9; $\alpha(\text{N}+..)=0.0001414$ 20 $\alpha(\text{N})=0.0001266$ 18; $\alpha(\text{O})=1.486\times 10^{-5}$ 21
1332.0		795.9 5	100	536.10	7/2 ⁺				
1381.635	1/2 ⁺ ,3/2 ⁺	1138.23 3	100 3	243.382	1/2 ⁺	M1,E2		0.00132 16	$\alpha=0.00132$ 16; $\alpha(\text{K})=0.00114$ 14; $\alpha(\text{L})=0.000141$ 16; $\alpha(\text{M})=2.8\times 10^{-5}$ 3; $\alpha(\text{N}+..)=7.9\times 10^{-6}$ 7 $\alpha(\text{N})=5.7\times 10^{-6}$ 7; $\alpha(\text{O})=6.7\times 10^{-7}$ 8; $\alpha(\text{IPF})=1.47\times 10^{-6}$ 8 Mult.: From ¹²⁵ Xe ε decay.
		1193.23 3	22.1 5	188.416	3/2 ⁺				
		1381.0 8	0.50 7	0.0	5/2 ⁺				
1442.80	3/2 ⁺	1070.85 10	100 6	372.066	3/2 ⁺				
		1199.67 14	22.4 24	243.382	1/2 ⁺				
		1254.35 12	9 3	188.416	3/2 ⁺				
		1442.70 6	39 3	0.0	5/2 ⁺				
1554.44	15/2	350 ^{@a} 1		1203.72	13/2 ⁺				

Adopted Levels, Gammas (continued)

$\gamma(^{125}\text{I})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. [‡]	$\delta^\ddagger$	$\alpha^\ddagger$	Comments
1554.44	15/2	786.43 20	100	768.10	11/2 ⁺	Q			
1562.43	1/2,3/2	1108.71 12	100 21	453.792	3/2 ⁺				
		1318.91 16	44 10	243.382	1/2 ⁺				
		1562.4 3	42 6	0.0	5/2 ⁺				
1616.7	13/2 ⁽⁺⁾	346.78 10	100	1269.9	11/2 ⁽⁺⁾	M1+E2	+0.11 4	0.0257	$\alpha(\text{K})=0.0222$ 4; $\alpha(\text{L})=0.00282$ 4; $\alpha(\text{M})=0.000566$ 8; $\alpha(\text{N}+..)=0.0001281$ 19 $\alpha(\text{N})=0.0001147$ 17; $\alpha(\text{O})=1.347\times 10^{-5}$ 19
1664.55	(15/2) ⁻	681.5 3	38	935.7	9/2 ⁽⁺⁾	E2		0.00572 8	$\alpha=0.00572$ 8; $\alpha(\text{K})=0.00488$ 7; $\alpha(\text{L})=0.000673$ 10; $\alpha(\text{M})=0.0001360$ 19; $\alpha(\text{N}+..)=3.04\times 10^{-5}$ 5 $\alpha(\text{N})=2.73\times 10^{-5}$ 4; $\alpha(\text{O})=3.09\times 10^{-6}$ 5
		579.70 20	100	1084.86	(11/2) ⁻				
1868.7		783.8 5	100	1084.86	(11/2) ⁻	Q			
1870.9	15/2	697.81 20	100	1173.07	11/2 ⁺				
1887.93	17/2 ⁺	333.6 5	8	1554.44	15/2	E2		0.00373 6	$\alpha=0.00373$ 6; $\alpha(\text{K})=0.00319$ 5; $\alpha(\text{L})=0.000427$ 6; $\alpha(\text{M})=8.61\times 10^{-5}$ 12; $\alpha(\text{N}+..)=1.93\times 10^{-5}$ 3 $\alpha(\text{N})=1.732\times 10^{-5}$ 25; $\alpha(\text{O})=1.98\times 10^{-6}$ 3
		684.10 20	100	1203.72	13/2 ⁺				
1997.4	(15/2)	380.6 3	100	1616.7	13/2 ⁽⁺⁾	E2			
		728 1	33	1269.9	11/2 ⁽⁺⁾				
2221.7		1018.0 5	100	1203.72	13/2 ⁺			0.00492 7	$\alpha=0.00492$ 7; $\alpha(\text{K})=0.00421$ 6; $\alpha(\text{L})=0.000574$ 8; $\alpha(\text{M})=0.0001158$ 17; $\alpha(\text{N}+..)=2.59\times 10^{-5}$ 4 $\alpha(\text{N})=2.33\times 10^{-5}$ 4; $\alpha(\text{O})=2.65\times 10^{-6}$ 4
2278.1	(19/2) ⁻	613.59 20	100	1664.55	(15/2) ⁻				
2350.52	(17/2)	686.0 3	100	1664.55	(15/2) ⁻	Q			
		796.1 3	100	1554.44	15/2				
2397.0		399.6 3	100	1997.4	(15/2)				
2462.9		594 @ a 1		1868.7					
2502.3	19/2	798.3 3	100	1664.55	(15/2) ⁻	Q			
		614.2 3	25	1887.93	17/2 ⁺				
		948.0 3	100	1554.44	15/2				
2554.78	19/2	204.26 10	100	2350.52	(17/2)				
						M1+E2	-0.23 +4-3	0.1052 16	$\alpha(\text{K})=0.0902$ 14; $\alpha(\text{L})=0.01204$ 25; $\alpha(\text{M})=0.00243$ 6; $\alpha(\text{N}+..)=0.000547$ 11 $\alpha(\text{N})=0.000491$ 10; $\alpha(\text{O})=5.68\times 10^{-5}$ 11
2624.2		666.8 3	43	1887.93	17/2 ⁺	D+Q	-0.19 +23-33		
2713.3		736.3 5	100	1887.93	17/2 ⁺				
2737.9	21/2	842.4 5	100	1870.9	15/2	Q			
2783.9	(23/2) ⁻	850.0 3	100	1887.93	17/2 ⁺				
		505.71 20	100	2278.1	(19/2) ⁻	(E2)		0.00829 12	$\alpha=0.00829$ 12; $\alpha(\text{K})=0.00705$ 10; $\alpha(\text{L})=0.001001$ 14; $\alpha(\text{M})=0.000203$ 3; $\alpha(\text{N}+..)=4.52\times 10^{-5}$ 7 $\alpha(\text{N})=4.06\times 10^{-5}$ 6; $\alpha(\text{O})=4.56\times 10^{-6}$ 7
2790.9	(21/2)	236.08 10	100	2554.78	19/2	(M1)		0.0697	$\alpha(\text{K})=0.0601$ 9; $\alpha(\text{L})=0.00771$ 11; $\alpha(\text{M})=0.001552$ 22; $\alpha(\text{N}+..)=0.000351$ 5

Adopted Levels, Gammas (continued)

$\gamma(^{125}\text{I})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. [‡]	$\delta^\ddagger$	$\alpha^\dagger$	Comments
									$\alpha(\text{N})=0.000314\ 5$; $\alpha(\text{O})=3.69\times 10^{-5}\ 6$ $\text{B}(\text{M1})(\text{W.u.})=0.0052\ 18$
2815.0		418.0 5	100	2397.0					
2916.1		1028.2 5	100	1887.93	17/2 ⁺				
2919.1		294.88 10	100	2624.2					
3060.2		322.24 10	100	2737.9	21/2	(M1)		0.0310	$\alpha(\text{K})=0.0268\ 4$; $\alpha(\text{L})=0.00340\ 5$; $\alpha(\text{M})=0.000684\ 10$; $\alpha(\text{N}+..)=0.0001548\ 22$ $\alpha(\text{N})=0.0001385\ 20$; $\alpha(\text{O})=1.628\times 10^{-5}\ 23$
3073.4?		610.5 ^{@a} 10		2462.9					
3098.9	(23/2)	308.00 10	100	2790.9	(21/2)	M1+E2	-0.31 +12-10	0.0350	$\alpha(\text{K})=0.0301\ 5$; $\alpha(\text{L})=0.00393\ 9$; $\alpha(\text{M})=0.000792\ 19$; $\alpha(\text{N}+..)=0.000179\ 4$ $\alpha(\text{N})=0.000160\ 4$; $\alpha(\text{O})=1.86\times 10^{-5}\ 4$
3158.8		242.68 10	100	2916.1		M1,E2		0.073 8	$\alpha(\text{K})=0.061\ 5$; $\alpha(\text{L})=0.0096\ 24$; $\alpha(\text{M})=0.0020\ 5$; $\alpha(\text{N}+..)=0.00043\ 11$ $\alpha(\text{N})=0.00039\ 10$; $\alpha(\text{O})=4.3\times 10^{-5}\ 9$
3258.9?		444 ^a 1	100	2815.0					
3259.5		199.32 10	100	3060.2		M1,E2		0.134 24	$\alpha(\text{K})=0.110\ 16$; $\alpha(\text{L})=0.019\ 7$; $\alpha(\text{M})=0.0039\ 14$; $\alpha(\text{N}+..)=0.0008\ 3$ $\alpha(\text{N})=0.0008\ 3$; $\alpha(\text{O})=8.2\times 10^{-5}\ 24$
3293.4		194.3 [#] 3		3098.9	(23/2)				
		502.7 3	100	2790.9	(21/2)				
3302.9		840.0 5	100	2462.9					
3458.8		300.0 3	100	3158.8					
3496.9		398.0 3	100	3098.9	(23/2)	M1,E2		0.0174 8	$\alpha(\text{K})=0.0148\ 9$; $\alpha(\text{L})=0.00204\ 8$; $\alpha(\text{M})=0.000413\ 19$; $\alpha(\text{N}+..)=9.2\times 10^{-5}\ 3$ $\alpha(\text{N})=8.3\times 10^{-5}\ 3$; $\alpha(\text{O})=9.45\times 10^{-6}\ 14$
3674.5	27/2	890.6 3	100	2783.9	(23/2 ⁻)	Q			
3775.3?		278.0 ^a 3	100	3496.9					
3867.9		1130.0 5	100	2737.9	21/2				

[†] Additional information 1.

[‡] From ¹²³Sb(α ,2n γ), ¹²²Sn(⁶Li,3n γ), unless otherwise noted.

[#] Observed in coincidence only in (α ,2n γ); no I_γ value was given (1977Ha36).

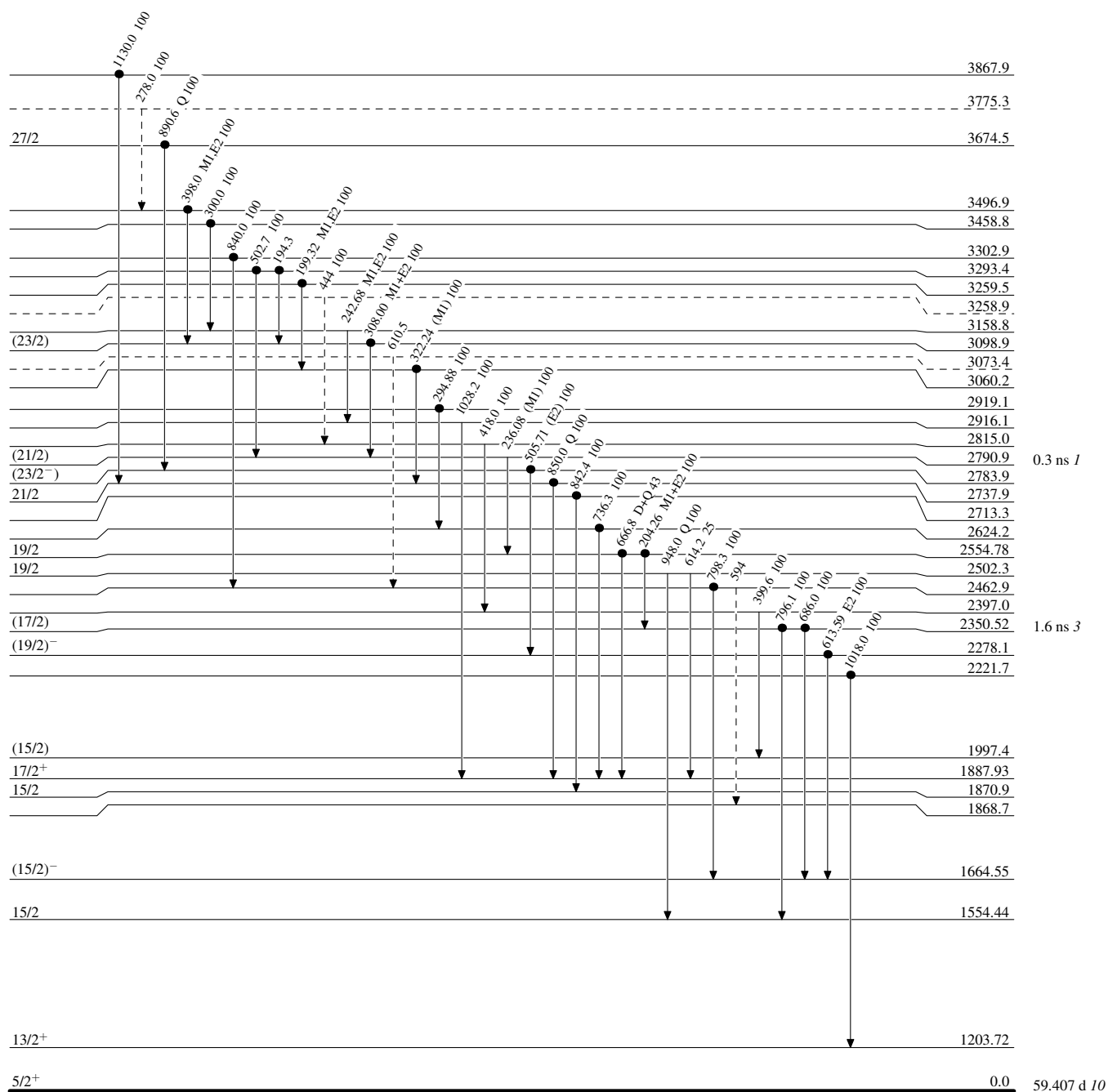
[@] Weak transition observed in coincidence only (1999Sh19).

& Multiply placed.

^a Placement of transition in the level scheme is uncertain.

Legend

- Coincidence



Adopted Levels, Gammas

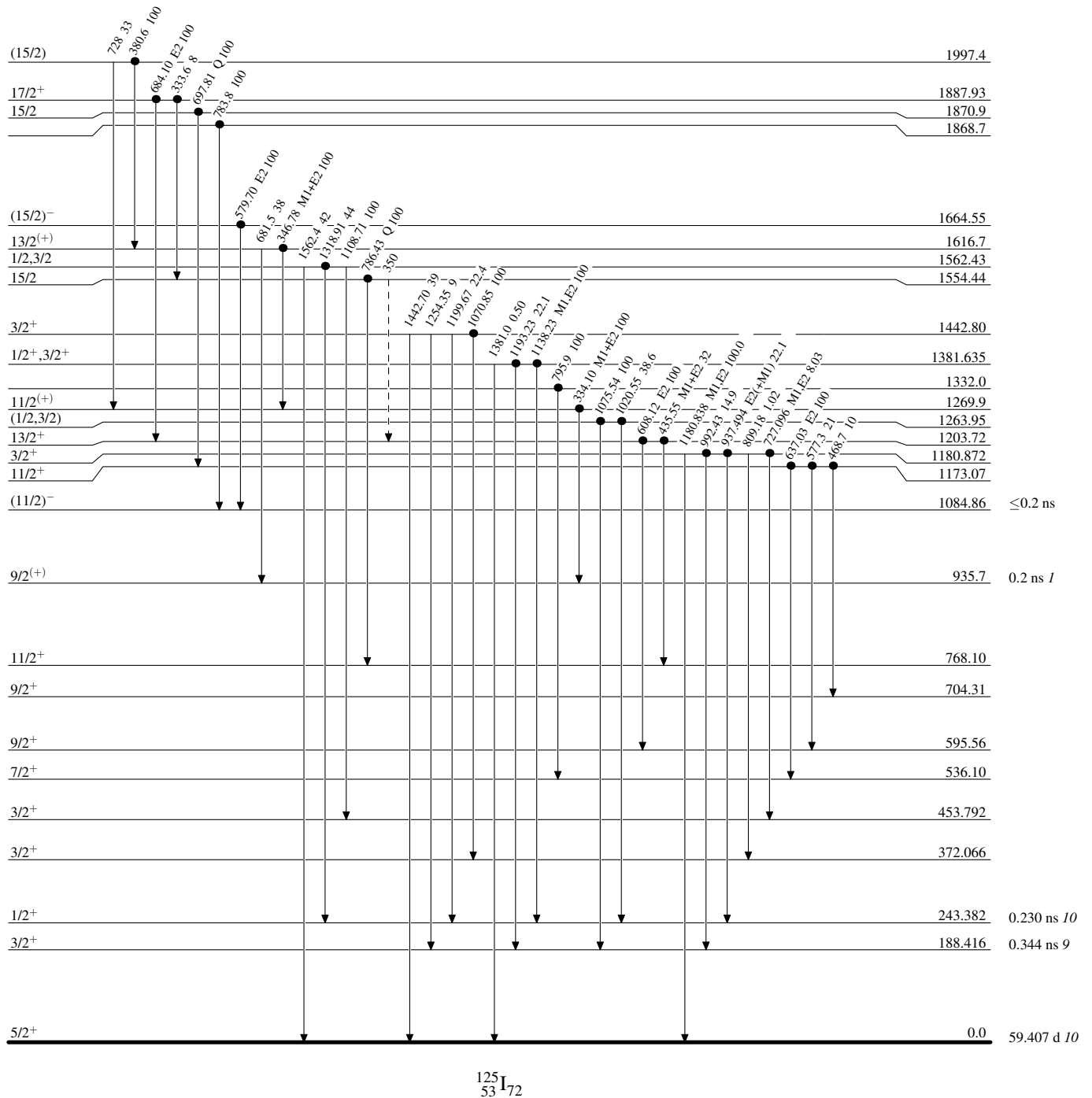
Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

-----► γ Decay (Uncertain)

● Coincidence



Adopted Levels, Gammas