

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS	110,507 (2009)	1-Oct-2008

$Q(\beta^-) = -5068$ 20; $S(n) = 10444$ 12; $S(p) = 3315$ 3; $Q(\alpha) = 106$ 15 [2012Wa38](#)

Note: Current evaluation has used the following Q record -5071 1910448 113315.4 27100 14 [2003Au03](#).

$Q(\beta^-)$: -5070 80 in [1991AlZY](#).

[1993HuZV](#), [1992Le09](#): measured isotope shift.

 ^{145}Eu LevelsCross Reference (XREF) Flags

A	^{145}Gd ε decay (23.0 min)	E	^{142}Nd ($^6\text{Li}, 3n\gamma$)	I	^{144}Sm (d,n γ), (t,2n γ)
B	^{145}Gd ε decay (85 s)	F	^{144}Sm (p,p), (p,p'), (pol p,p')	J	^{144}Sm (α ,t)
C	^{149}Tb α decay (4.118 h)	G	^{144}Sm (^3He ,d)	K	^{144}Sm (^7Li , ^6He)
D	^{149}Tb α decay (4.16 min)	H	^{144}Sm (α ,p2n γ)	L	(HI,xn γ)

E(level) [†]	J π &	T _{1/2}	XREF	Comments
0.0	5/2 ⁺	5.93 d 4	A B C D E F G H I J K L	$\% \varepsilon + \% \beta^+ = 100$ $\mu = +3.993$ 7 (2005St24 , 1993HuZU) $Q = +0.29$ 2 (1989Ra17 , 1985Ah02) T _{1/2} : from 1980Ho33 , 1970Ch09 . Others: 5.93 d 10 (1967Hi05), 5.95 d 10 1963Fr02 ; see also 1963We04 , 1965De29 , 1967Ob03 . J π : atomic beam (1976Fu06), L=2 in (^3He ,d). μ : Other: +3.993 7 (1989Ra17 , 1985Ah02), 3.2 5 (1985Va21 , 1983Va02 , 1983Kr19). $Q/Q(^{153}\text{Eu}) = 0.1168$ 9 (1993HuZU). J π : L=4 in (^3He ,d), M1 γ to 5/2 ⁺ . $\langle r^2 \rangle = 4.980$ fm ² 12, $\text{davr}q(^{143}\text{Eu}, ^{145}\text{Eu}) = -0.026$ 5, $\text{davr}q(^{147}\text{Eu}, ^{145}\text{Eu}) = 0.250$ 14, $\text{davr}q(^{144}\text{Eu}, ^{145}\text{Eu}) = -0.048$ 6, $\text{davr}q(^{146}\text{Eu}, ^{145}\text{Eu}) = 0.114$ 7 (2000Ga58) measured isotopic shift. $\mu = +7.46$ 5 (2005St24 , 1989Ra17 , 1980KI07 , 1979KI02) T _{1/2} : from IT decay (1975Fr18). J π : L=5 in (^3He ,d), γ to 7/2 ⁺ is M2.
329.92 7	7/2 ⁺		A B C E G H I J K L	J π : L=0 in (^3He ,d). $\mu = +7.46$ 5 (2005St24 , 1989Ra17 , 1980KI07 , 1979KI02) T _{1/2} : from IT decay (1975Fr18). J π : L=5 in (^3He ,d), γ to 7/2 ⁺ is M2.
716.0 3	11/2 ⁻	490 ns 30	B E G H I J K L	J π : L=2 in (^3He ,d), log $ft = 6.74$ via 1/2 ⁺ parent. J π : γ to 7/2 ⁺ is E1, γ to 11/2 ⁻ is M1.
808.33 5	1/2 ⁺		A G I K	J π : L=0 in (^3He ,d).
1041.71 6	3/2 ⁺		A G I J K	J π : L=2 in (^3He ,d), log $ft = 6.74$ via 1/2 ⁺ parent.
1368	9/2 ⁻		I L	J π : γ to 7/2 ⁺ is E1, γ to 11/2 ⁻ is M1.
1459.7 1			A	
1500	7/2 ⁻		I	J π : γ to 5/2 ⁺ is E1, $\gamma(\theta)$.
1567.12 7	3/2 ⁽⁻⁾ , 5/2 ⁽⁻⁾		A I	J π : γ to 5/2 ⁺ is (E1).
1599? 8	(7/2) ⁺		G	J π : L=4 in (^3He ,d).
1600.26 6	3/2 ⁻		A I	J π : γ to 5/2 ⁺ is E1; no γ to 7/2 ⁺ .
1601.2 4	11/2 ⁻		E H I J L	J π : γ to 11/2 ⁻ is $\Delta J = 0$, M1+E2.
1745	7/2 ⁻ , 5/2 ⁻		I J	J π : E1 γ 's to 5/2 ⁺ and 7/2 ⁺ .
1758.03 6	3/2 ⁺		A G I J K	J π : γ to 7/2 ⁺ ; log $ft = 5.76$ via 1/2 ⁺ parent.
1761.32 8	3/2 ⁻		A I	J π : γ to 1/2 ⁺ is E1, γ to 7/2 ⁺ .
1765.8 1	5/2 ⁻		A I	J π : from $\gamma(\theta)$ in 1986RuZX , γ to 7/2 ⁺ is E1.
1792	11/2 ⁻		I	
1828.5 4	(9/2 ⁻)		E I	
1844.6 4	13/2 ⁻		E H I L	J π : γ to 11/2 ⁻ is $\Delta J = 1$ M1+E2, excit.
1845.32 9	(5/2) ⁺		A G I J K	J π : L=2 in (^3He ,d), no ε decay via 1/2 ⁺ parent (log $ft > 8.2$).
1880.62 5	3/2 ⁺ , 1/2 ⁺		A I	J π : log $ft = 5.7$ via 1/2 ⁺ , γ to 5/2 ⁺ is E2.
1915.5 2	3/2 ⁺		A I	J π : γ to 5/2 ⁺ is M1, log $ft = 8.0$ from 1/2 ⁺ .
2027.8 1	(1/2 ⁺ , 3/2 ⁺)		A	J π : γ to 1/2 ⁺ . log $ft = 8.0$ from 1/2 ⁺ .

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Adopted Levels, Gammas (continued) ^{145}Eu Levels (continued)

E(level) [†]	J ^π &	T _{1/2}	XREF			Comments
2042.9 1	(1/2 ⁺ , 3/2 ⁺)		A			J ^π : γ to 1/2 ⁺ . log ft=8.0 from 1/2 ⁺ .
2048.8 1	3/2 ⁺ [‡]		A	I		
2054.1 1			A			
2079.1 1			A			
2114.3 1	3/2 ⁺ , 5/2 ⁺		A	G IJ		J ^π : L=2 in (³ He,d); log ft=7.6 from 1/2 ⁺ .
2117	9/2 ⁻ , 11/2 ⁻			I		J ^π : γ to 11/2 ⁻ is M1, E2. No γ to 5/2 ⁺ .
2149.6 1			A			
2188.4 1			A			
2195	(9/2) ⁺			I		J ^π : γ to 7/2 ⁺ is M1.
2203.4 1	3/2 ⁺ [‡]		A	IJ		
2237	9/2 ⁺ , (7/2 ⁺)			I		
2244.4 5	15/2 ⁺		E	HI L		J ^π : γ to 13/2 ⁻ is ΔJ=1 E1, excit.
2284.1 4	15/2 ⁻		E	HI L		J ^π : γ to 11/2 ⁻ is ΔJ=2 E2, excit.
2295	(11/2) ⁺			I		
2314	(13/2) ⁻			Ij L		
2318.68 8	5/2 ⁺ [‡]		A	Ij		
2321.72 7	3/2 ⁻ [#]		A	I		
2327.3 6			A			
2349.0 1			A			
2352	(11/2, 13/2) ⁻			I		J ^π : γ to 11/2 ⁻ is M1, no γ to 7/2 ⁺ .
2400	(13/2 ⁺)			I		
2402.25 9			A	j		
2416.8 1			A	j		
2422.3 1			A	Ij		
2423	5/2 ⁺ , 7/2 ⁺ , 9/2 ⁺			Ij		
2463.5 1			A	I		
2487.2 2	3/2 ⁺ [‡]		A	G j		J ^π : L=2 in (³ He,d).
2494.88 8	1/2 ⁺		A	G j		J ^π : if identical with 2480 12 level with L=0 in (³ He,d).
2504.41 9			A			
2507	5/2 ⁺ , 7/2 ⁺ , 9/2 ⁺			I		
2525.2 2			A			
2544.9 7			A			
2562.5 2	3/2 ⁺ [‡]		A			
2573.6 4	15/2 ⁻		E	HI L		J ^π : γ to 11/2 ⁻ is ΔJ=2 E2, excit.
2585.7 1	(3/2 ⁺) [#]		A			
2606.1 2			A			
2617	(9/2 ⁺)			I		
2642.2 1	3/2 ⁺ [‡]		A			
2684	(9/2, 11/2) ⁻			Ij		
2690	13/2 ⁺ , (11/2, 9/2) ⁺			Ij		
2699.7 1			A	j		
2726	(15/2) ⁻			I L		
2742.7 1			A			
2747				I		
2754.1 1			A			
2779.9 1			A	J		
2813.5 5	17/2 ⁻		E	HI L		J ^π : γ to 15/2 ⁻ is ΔJ=1 M1+E2, γ to 13/2 ⁻ is ΔJ=2 E2.
2819.1 1			A			
2836.4 6	19/2 ⁻	5.5 ns 5	E	HI L		T _{1/2} : from (α, p2nγ) (1979Ha48). J ^π : γ to 15/2 ⁻ is ΔJ=2 E2, excit.
2838.7 1			A			
2859.2 1			A			
2862.7 6	19/2 ⁻		E	HI L		J ^π : γ to 15/2 ⁻ is ΔJ=2 E2, excit.
2897	13/2 ⁺			I		

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Adopted Levels, Gammas (continued) ^{145}Eu Levels (continued)

E(level) [†]	J ^π &	XREF			Comments
2911.1 7	21/2 ⁻	A	E	HI L	J ^π : γ to 19/2 ⁻ is ΔJ=1 M1, excit.
2918.9 1		A			
2925	(13/2) ⁻			I	
2939	9/2 ⁺ , 11/2 ⁺ , 13/2 ⁺			I	
2971.8 1		A			
2988.1 4		A			
3001.5 2		A			
3026	(17/2) ⁻			I	
3062.14 8	(3/2 ⁺) [#]	A			
3092.0 2		A			
3101.1 2		A			
3119	(9/2, 13/2) ⁺			I	
3176.3 2		A			
3183.0 8	23/2 ⁻		E	HI L	J ^π : γ to 21/2 is ΔJ=1 M1+E2.
3187	(15/2, 17/2)			I	
3199.1 2		A			
3220.6 1		A			
3228.7 10		A		j	
3238.0 3		A		j	
3253.6? 3		A			
3261.1 2		A			
3267.2 3		A			
3280.9 2		A			
3312.5 2		A			
3343.5 3		A			
3349	(19/2) ⁻			I	
3383 2	3/2 ⁺ [‡]	A		J	
3389.1? 4		A			
3397.6 2		A			
3408.9 2	3/2 ⁺ [‡]	A			
3411.6 2		A			
3412	(21/2)			I	
3444.2 2	3/2 ⁺ [‡]	A			
3449	(15/2, 17/2) ⁻			I	
3451.6 20		A			
3507.4? 20	3/2 ⁺ [‡]	A			
3520.0? 7	(3/2 ⁺) [#]	A			
3525.6? 7		A			
3547.1? 5		A			
3561.9 30		A			
3578.4? 4		A		j	
3598.6? 3		A		j	
3620.2 4	3/2 ⁺ [‡]	A			
3628.3 2	3/2 ⁺ [‡]	A			
3643.8 3		A			
3675.7 2		A			
3705.4 2		A			
3738.9 20		A			
3747.2 3	(3/2 ⁺) [#]	A			
3768.9? 4		A			
3838.0 16	(23/2)			L	
3847.9 2		A			
3879.8 20		A			
3888.9 4		A			

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Adopted Levels, Gammas (continued) ^{145}Eu Levels (continued)

E(level) [†]	J ^π &	XREF	Comments
3920.7 5		A	
3931.7 6		A	
3939.3 7		A	
3944.6 30		A	
3949.8 4		A	
3962.9 5	3/2 ⁺ [‡]	A	
3976.3 9	25/2 ⁺	E HI L	J ^π : γ to 23/2 ⁻ is ΔJ=1 E1, yield.
3988.9 30		A	
4003.9 30		A	
4014.1 3	3/2 ⁺ [‡]	A	
4021.6 4		A	
4023.8 9		A	
4044.5 3		A	
4047.9 30		A	
4051.7 1	(3/2 ⁺) [#]	A	
4069.9 1	(3/2 ⁺) [#]	A	
4122.8 10	27/2 ⁺	E HI L	J ^π : γ to 25/2 ⁺ is ΔJ=1 M1+E2, yield.
4131.4 3	3/2 ⁺ [‡]	A	
4156.7 3		A	
4184.0 1		A	
4230.1 16	(25/2 ⁺)	L	
4258.6 2	3/2 ⁺ [‡]	A	
4275.9 1	(3/2 ⁺) [#]	A	
4281.8 3	3/2 ⁺ [‡]	A	
4308.6 1	3/2 ⁺ [‡]	A	
4364 25	(9/2 ⁻ , 11/2 ⁻)	J	J ^π : L=(5) in (α,t).
4364.8 3		A	
4380.7 17	(25/2 ⁺)	L	
4390.7 2		A	
4410.1 1	3/2 ⁺ [‡]	A	
4424.0? 4		A	
4428.3 1	(3/2 ⁺) [#]	A	
4432.0? 4		A	
4436.1 1	3/2 ⁺ [‡]	A	
4454.4 9	(3/2 ⁺) [#]	A	
4463.8 6		A	
4472.8 3		A	
4496.6 1	(3/2 ⁺ , 1/2 ⁺)	A	
4502.8 1	(3/2 ⁺ , 1/2 ⁺)	A	
4517.9 4	3/2 ⁺ [‡]	A	
4536.0 15	23/2 ⁻	L	
4536.9 5		A	
4547.2 1	3/2 ⁺ [‡]	A	
4555.4 1	(3/2 ⁺) [#]	A	
4566.4 1		A	
4577.9? 9		A	
4593.0 2	(3/2 ⁺) [#]	A	
4594.5 17	27/2 ⁺	L	
4634.6 2	(3/2 ⁺)	A	
4645.6 9	3/2 ⁺ [‡]	A	
4648.0 15	25/2 ⁻	L	

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Adopted Levels, Gammas (continued) ^{145}Eu Levels (continued)

E(level) [†]	J ^π &	XREF	Comments
4656.3 9		A	
4663.8 2		A	
4685.4 6		A	
4700.3 3	3/2 ⁺ ‡	A	
4709.9 4	3/2 ⁺ ‡	A	
4821 25		J	
4930 25		J	
4967.1 16	27/2	L	
5149 25		J	
5152.2	29/2 ⁺	H L	J ^π : γ to 27/2 is ΔJ=1 d, yield.
5325.0 16	29/2 ⁺	J L	
5421.5 16	29/2 ⁺	J L	XREF: J(5431).
5595.3 17	31/2 ⁺	L	
5656.1 17	29/2	L	
5682.6 18	31/2	L	
5706.2 17	29/2	L	
5718.6 17	31/2 ⁺	L	
5761.9 17	31/2 ⁺	L	
5851.2 16	29/2 ⁺	L	
5874.8 17	33/2 ⁺	L	
5.9×10 ³ 1	(9/2) ⁻	G J	
5936.7 18	31/2 ⁺	L	
5990.2 17	33/2 ⁺	L	
6137.6 18	33/2 ⁺	L	
6179.7 17	33/2 ⁺	L	
6196.4 17	31/2 ⁽⁺⁾	L	
6197.2 17	35/2 ⁺	L	
6207.3 18	31/2	L	
6336.6 17	33/2	L	
6461.3 17	33/2 ⁽⁺⁾	L	
6479.6 17	35/2	L	
6518.2 18	(37/2 ⁺)	L	
6766.5 17	37/2	L	
7144.8 17	35/2	L	
7247.4 19		L	
7292 2	37/2	L	
7292.5 19	35/2 ⁽⁺⁾	L	
7332.5 19	39/2	L	
7415.8 18	37/2	L	
7429.6 18	35/2 ⁽⁺⁾	L	
7482.6 17	39/2	L	
7534.6 18	35/2 ⁽⁺⁾	L	
7592.8 18	37/2 ⁽⁺⁾	L	
7.6×10 ³ 4	(13/2) ⁺	J	
7762.6 18	41/2	L	
7783.5 18	37/2 ⁽⁺⁾	L	
7801.7 17	39/2 ⁽⁺⁾	L	
7904.6 19	41/2	L	
7913.8 19	(37/2)	L	
8034.7 18	(39/2)	L	
8151.6 19	43/2	L	
8267.6 18	39/2 ⁽⁺⁾	L	
8425.6 21	43/2	L	
8507.6 22	45/2	L	

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Adopted Levels, Gammas (continued)

^{145}Eu Levels (continued)				
E(level) [†]	J ^{π&}	T _{1/2}	XREF	Comments
8527.6 21	43/2		L	
8527.7 18	(41/2)	3.7 ns 4	L	T _{1/2} : from 1997Je02. E; 1997Je02 suggest this to be the same as 8527.62 level.
8685.7 19			L	
8822.6 22	45/2		L	
8881.7 19	(43/2)		L	
8931.7 19	(43/2)		L	
9129.4 20	(45/2)		L	
9340	7/2 ^{-@}		F	
9559.7 19	(45/2)		L	
9651.8 19	(45/2)		L	
9768.9 20	(47/2)		L	
9775.6 24	49/2		L	
9886.4 23	(49/2)		L	
9939.7 22	(47/2)		L	
10120.3 21	(49/2)		L	
10210	3/2 ^{-@}		F	
10422.4 21	(49/2)		L	
10509.4 25	(53/2)		L	
10744.6 21	(49/2)		L	
10780	9/2 ^{-@}		F	
10894.0 20	(51/2)		L	
10940	1/2 ^{-@}		F	
10983.2 21	(51/2)		L	
11000	5/2 ^{-@}		F	
11027.4 21	(51/2)		L	
11140	9/2 ^{-@}		F	
11155.5 20	(53/2)		L	
11220	7/2 ^{-@}		F	
11234.2 21	(55/2)		L	
11320	3/2 ^{-@}		F	
11340	5/2 ^{-@}		F	
11490	3/2 ^{-@}		F	
11500	1/2 ^{-@}		F	
11640?	(3/2 ^{-@})		F	
11690	5/2 ^{-@}		F	
11780	5/2 ^{-@}		F	
12040	7/2 ^{-@}		F	
12160?	(5/2 ^{-@})		F	
12350?	(5/2 ^{-@})		F	
12430	1/2 ^{-@}		F	
12490	3/2 ^{-@}		F	

[†] Deduced by evaluators from least-squares fit to adopted γ -ray energies, unless otherwise specified.

[‡] $\log ft < 8.0$ from 1/2⁺ parent, γ ray to 7/2⁺.

$\log ft < 8.0$ from 1/2⁺ parent, γ ray to possible 7/2⁺.

@ Analysis of IAR in (pol p,p').

& Authors presented assignments from 1986RuZX with incomplete or without arguments at all.

Adopted Levels, Gammas (continued)

E _i (level)	J ^π _i	E _γ	I _γ	E _f	J ^π _f	Mult.	γ(¹⁴⁵ Eu)	
							α [†]	Comments
329.92	7/2 ⁺	329.9 1	100	0.0	5/2 ⁺	M1	0.0684	α(K)=0.0581 9; α(L)=0.00810 12; α(M)=0.001746 25; α(N+..)=0.000470 7
716.0	11/2 ⁻	386.6 3	100 6	329.92	7/2 ⁺	M2	0.1651	α(N)=0.000400 6; α(O)=6.36×10 ⁻⁵ 9; α(P)=6.35×10 ⁻⁶ 9 B(M2)(W.u.)=0.183 19 α(K)=0.1362 20; α(L)=0.0226 4; α(M)=0.00497 7; α(N+..)=0.001338 19 α(N)=0.001141 17; α(O)=0.000180 3; α(P)=1.703×10 ⁻⁵ 25 Mult.: from 1979K102.
		716.0 3	28.0 15	0.0	5/2 ⁺	E3	0.01324	α(K)=0.01051 15; α(L)=0.00213 3; α(M)=0.000475 7; α(N+..)=0.0001252 18 α(N)=0.0001078 16; α(O)=1.632×10 ⁻⁵ 23; α(P)=1.138×10 ⁻⁶ 16 B(E3)(W.u.)=4.0 4
808.33	1/2 ⁺	808.4 1	100	0.0	5/2 ⁺	E2	0.00415 6	α(K)=0.00349 5; α(L)=0.000521 8; α(M)=0.0001131 16; α(N+..)=3.01×10 ⁻⁵ 5 α(N)=2.58×10 ⁻⁵ 4; α(O)=4.02×10 ⁻⁶ 6; α(P)=3.57×10 ⁻⁷ 5
1041.71	3/2 ⁺	1041.8 1	100	0.0	5/2 ⁺	M1	0.00385 6	α(K)=0.00329 5; α(L)=0.000441 7; α(M)=9.47×10 ⁻⁵ 14; α(N+..)=2.55×10 ⁻⁵ 4 α(N)=2.17×10 ⁻⁵ 3; α(O)=3.46×10 ⁻⁶ 5; α(P)=3.52×10 ⁻⁷ 5
1368	9/2 ⁻	651.7		716.0	11/2 ⁻	M1	0.01201	α(K)=0.01024 15; α(L)=0.001395 20; α(M)=0.000300 5; α(N+..)=8.07×10 ⁻⁵ 12 α(N)=6.87×10 ⁻⁵ 10; α(O)=1.094×10 ⁻⁵ 16; α(P)=1.106×10 ⁻⁶ 16
		1038.4		329.92	7/2 ⁺	E1	0.001009 15	α(K)=0.000867 13; α(L)=0.0001121 16; α(M)=2.39×10 ⁻⁵ 4; α(N+..)=6.42×10 ⁻⁶ α(N)=5.47×10 ⁻⁶ 8; α(O)=8.67×10 ⁻⁷ 13; α(P)=8.68×10 ⁻⁸ 13
1459.7		1129.8 1	30 4	329.92	7/2 ⁺			
		1459.6 3	100 11	0.0	5/2 ⁺			
1500	7/2 ⁻	1499.9		0.0	5/2 ⁺	E1	0.000732 11	α(K)=0.000453 7; α(L)=5.78×10 ⁻⁵ 8; α(M)=1.233×10 ⁻⁵ 18; α(N+..)=0.000210 3 α(N)=2.82×10 ⁻⁶ 4; α(O)=4.48×10 ⁻⁷ 7; α(P)=4.55×10 ⁻⁸ 7; α(IPF)=0.000206 3
1567.12	3/2 ⁽⁻⁾ , 5/2 ⁽⁻⁾	1567.2 1	100	0.0	5/2 ⁺	(E1)	0.000745 11	α(K)=0.000421 6; α(L)=5.36×10 ⁻⁵ 8; α(M)=1.143×10 ⁻⁵ 16; α(N+..)=0.000259 4 α(N)=2.61×10 ⁻⁶ 4; α(O)=4.16×10 ⁻⁷ 6; α(P)=4.23×10 ⁻⁸ 6; α(IPF)=0.000256 4
1600.26	3/2 ⁻	1600.1 1	100	0.0	5/2 ⁺	E1	0.000753 11	α(K)=0.000406 6; α(L)=5.18×10 ⁻⁵ 8; α(M)=1.104×10 ⁻⁵ 16; α(N+..)=0.000284 4 α(N)=2.52×10 ⁻⁶ 4; α(O)=4.01×10 ⁻⁷ 6; α(P)=4.08×10 ⁻⁸ 6; α(IPF)=0.000281 4
1601.2	11/2 ⁻	233.7 3		1368	9/2 ⁻			

Adopted Levels, Gammas (continued)

$\gamma(^{145}\text{Eu})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	$\alpha^\dagger$	Comments
1601.2	11/2 ⁻	885.2 3	100	716.0	11/2 ⁻	M1+E2	-2.5 +8-79	0.0037 3	$\alpha(\text{K})=0.0031$ 3; $\alpha(\text{L})=0.00045$ 3; $\alpha(\text{M})=9.8\times 10^{-5}$ 7; $\alpha(\text{N}+..)=2.61\times 10^{-5}$ 18 $\alpha(\text{N})=2.23\times 10^{-5}$ 16; $\alpha(\text{O})=3.50\times 10^{-6}$ 25; $\alpha(\text{P})=3.3\times 10^{-7}$ 3
1745	7/2 ⁻ , 5/2 ⁻	1415.9		329.92	7/2 ⁺	E1		0.000727 11	$\alpha(\text{K})=0.000499$ 7; $\alpha(\text{L})=6.39\times 10^{-5}$ 9; $\alpha(\text{M})=1.362\times 10^{-5}$ 19; $\alpha(\text{N}+..)=0.0001501$ $\alpha(\text{N})=3.11\times 10^{-6}$ 5; $\alpha(\text{O})=4.95\times 10^{-7}$ 7; $\alpha(\text{P})=5.01\times 10^{-8}$ 7; $\alpha(\text{IPF})=0.0001465$ 21
		1745.3		0.0	5/2 ⁺	E1		0.000798 12	$\alpha(\text{K})=0.000352$ 5; $\alpha(\text{L})=4.47\times 10^{-5}$ 7; $\alpha(\text{M})=9.54\times 10^{-6}$ 14; $\alpha(\text{N}+..)=0.000392$ 6 $\alpha(\text{N})=2.18\times 10^{-6}$ 3; $\alpha(\text{O})=3.47\times 10^{-7}$ 5; $\alpha(\text{P})=3.54\times 10^{-8}$ 5; $\alpha(\text{IPF})=0.000389$ 6
1758.03	3/2 ⁺	716.2 2 949.7 1	0.208 18 2.00 12	1041.71 808.33	3/2 ⁺ 1/2 ⁺	M1+E2		0.0039 10	$\alpha(\text{K})=0.0033$ 9; $\alpha(\text{L})=0.00045$ 10; $\alpha(\text{M})=9.8\times 10^{-5}$ 21; $\alpha(\text{N}+..)=2.6\times 10^{-5}$ 6 $\alpha(\text{N})=2.2\times 10^{-5}$ 5; $\alpha(\text{O})=3.5\times 10^{-6}$ 8; $\alpha(\text{P})=3.5\times 10^{-7}$ 10
1761.32	3/2 ⁻	1427.9 20 1757.9 1 719.9 1 952.6 3	0.35 9 100 6 7.0 7 100 6	329.92 0.0 1041.71 808.33	7/2 ⁺ 5/2 ⁺ 3/2 ⁺ 1/2 ⁺	E1		0.001187 17	$\alpha(\text{K})=0.001019$ 15; $\alpha(\text{L})=0.0001322$ 19; $\alpha(\text{M})=2.82\times 10^{-5}$ 4; $\alpha(\text{N}+..)=7.57\times 10^{-6}$ $\alpha(\text{N})=6.45\times 10^{-6}$ 9; $\alpha(\text{O})=1.022\times 10^{-6}$ 15; $\alpha(\text{P})=1.018\times 10^{-7}$ 15
1765.8	5/2 ⁻	1430.8 4 1436.2 2	4.1 8 100 7	329.92 329.92	7/2 ⁺ 7/2 ⁺	E1		0.000727 11	$\alpha(\text{K})=0.000487$ 7; $\alpha(\text{L})=6.23\times 10^{-5}$ 9; $\alpha(\text{M})=1.329\times 10^{-5}$ 19; $\alpha(\text{N}+..)=0.0001642$ $\alpha(\text{N})=3.04\times 10^{-6}$ 5; $\alpha(\text{O})=4.83\times 10^{-7}$ 7; $\alpha(\text{P})=4.90\times 10^{-8}$ 7; $\alpha(\text{IPF})=0.0001606$ 23 E_γ, I_γ : seen only in (p,3n γ), I_γ estimated by evaluator from ε -decay data of 1982Fi01 .
		1765.7	<17	0.0	5/2 ⁺				$\alpha(\text{K})=0.255$ 4; $\alpha(\text{L})=0.0361$ 5; $\alpha(\text{M})=0.00780$ 11; $\alpha(\text{N}+..)=0.00210$ 3 $\alpha(\text{N})=0.00179$ 3; $\alpha(\text{O})=0.000283$ 4; $\alpha(\text{P})=2.81\times 10^{-5}$ 4
1792	11/2 ⁻	190.4		1601.2	11/2 ⁻	M1		0.301	$\alpha(\text{K})=0.0025$ 6; $\alpha(\text{L})=0.00034$ 7; $\alpha(\text{M})=7.3\times 10^{-5}$ 15; $\alpha(\text{N}+..)=2.0\times 10^{-5}$ 4 $\alpha(\text{N})=1.7\times 10^{-5}$ 4; $\alpha(\text{O})=2.6\times 10^{-6}$ 6; $\alpha(\text{P})=2.6\times 10^{-7}$ 7
		1076.0		716.0	11/2 ⁻	M1,E2		0.0029 7	$\alpha(\text{K})=0.000453$ 7; $\alpha(\text{L})=5.79\times 10^{-5}$ 9; $\alpha(\text{M})=1.234\times 10^{-5}$ 18; $\alpha(\text{N}+..)=0.000209$ 3 $\alpha(\text{N})=2.82\times 10^{-6}$ 4; $\alpha(\text{O})=4.48\times 10^{-7}$ 7; $\alpha(\text{P})=4.55\times 10^{-8}$ 7; $\alpha(\text{IPF})=0.000206$ 3
1828.5	(9/2 ⁻)	1499.1 3	100	329.92	7/2 ⁺	E1		0.000732 11	

Adopted Levels, Gammas (continued)

$\gamma(^{145}\text{Eu})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	$\alpha^\dagger$	Comments
1844.6	13/2 ⁻	242.9 1128.6 3		1601.2 716.0	11/2 ⁻ 11/2 ⁻	M1+E2	+1.30 +15-25	0.00247 13	$\alpha(\text{K})=0.00210$ 11; $\alpha(\text{L})=0.000287$ 14; $\alpha(\text{M})=6.2\times 10^{-5}$ 3; $\alpha(\text{N}+..)=1.75\times 10^{-5}$ 8 $\alpha(\text{N})=1.41\times 10^{-5}$ 7; $\alpha(\text{O})=2.24\times 10^{-6}$ 11; $\alpha(\text{P})=2.20\times 10^{-7}$ 13; $\alpha(\text{IPF})=9.00\times 10^{-7}$ 18
1845.32	(5/2) ⁺	1845.4 1	100	0.0	5/2 ⁺	M1		0.001270 18	$\alpha(\text{K})=0.000879$ 13; $\alpha(\text{L})=0.0001159$ 17; $\alpha(\text{M})=2.48\times 10^{-5}$ 4; $\alpha(\text{N}+..)=0.000250$ $\alpha(\text{N})=5.69\times 10^{-6}$ 8; $\alpha(\text{O})=9.07\times 10^{-7}$ 13; $\alpha(\text{P})=9.33\times 10^{-8}$ 13; $\alpha(\text{IPF})=0.000243$ 4
1880.62	3/2 ⁺ , 1/2 ⁺	838.8 1 1072.3 1 1880.6 1	0.92 6 8.6 6 100 6	1041.71 808.33 0.0	3/2 ⁺ 1/2 ⁺ 5/2 ⁺	E2		0.000992 14	$\alpha(\text{K})=0.000651$ 10; $\alpha(\text{L})=8.59\times 10^{-5}$ 12; $\alpha(\text{M})=1.84\times 10^{-5}$ 3; $\alpha(\text{N}+..)=0.000237$ 4 $\alpha(\text{N})=4.21\times 10^{-6}$ 6; $\alpha(\text{O})=6.69\times 10^{-7}$ 10; $\alpha(\text{P})=6.71\times 10^{-8}$ 10; $\alpha(\text{IPF})=0.000232$ 4
1915.5	3/2 ⁺	1915.5 2	100	0.0	5/2 ⁺	M1		0.001224 18	$\alpha(\text{K})=0.000809$ 12; $\alpha(\text{L})=0.0001065$ 15; $\alpha(\text{M})=2.28\times 10^{-5}$ 4; $\alpha(\text{N}+..)=0.000286$ $\alpha(\text{N})=5.22\times 10^{-6}$ 8; $\alpha(\text{O})=8.34\times 10^{-7}$ 12; $\alpha(\text{P})=8.58\times 10^{-8}$ 12; $\alpha(\text{IPF})=0.000280$ 4
2027.8	(1/2 ⁺ , 3/2 ⁺)	1220.3 20 2027.8 1	10.8 27 100 7	808.33 0.0	1/2 ⁺ 5/2 ⁺				
2042.9	(1/2 ⁺ , 3/2 ⁺)	1234.4 20 2042.9 1	84 14 100 20	808.33 0.0	1/2 ⁺ 5/2 ⁺				
2048.8	3/2 ⁺	287.2 20 589.0 20 1719.1 2	0.7 1 1.4 3 100 7	1761.32 1459.7 329.92	3/2 ⁻ 7/2 ⁺	E2		0.001058 15	$\alpha(\text{K})=0.000768$ 11; $\alpha(\text{L})=0.0001022$ 15; $\alpha(\text{M})=2.19\times 10^{-5}$ 3; $\alpha(\text{N}+..)=0.000165$ $\alpha(\text{N})=5.01\times 10^{-6}$ 7; $\alpha(\text{O})=7.95\times 10^{-7}$ 12; $\alpha(\text{P})=7.92\times 10^{-8}$ 11; $\alpha(\text{IPF})=0.0001598$ 23
2054.1		2049.1 4 2054.1 1	14 2 100	0.0 0.0	5/2 ⁺ 5/2 ⁺				
2079.1		1750.1 [#] 20 2079.1 1	30 5 100 2	329.92 0.0	7/2 ⁺ 5/2 ⁺				
2114.3	3/2 ⁺ , 5/2 ⁺	514.0 [#] 20 1784.4 1	1.8 5 100 8	1600.26 329.92	3/2 ⁻ 7/2 ⁺	M1,E2		0.00117 15	$\alpha(\text{K})=0.00083$ 12; $\alpha(\text{L})=0.000110$ 15; $\alpha(\text{M})=2.4\times 10^{-5}$ 4; $\alpha(\text{N}+..)=0.000207$ 13 $\alpha(\text{N})=5.4\times 10^{-6}$ 8; $\alpha(\text{O})=8.6\times 10^{-7}$ 12; $\alpha(\text{P})=8.7\times 10^{-8}$ 14; $\alpha(\text{IPF})=0.000200$ 13
2117	9/2 ⁻ , 11/2 ⁻	1400.8	100	716.0	11/2 ⁻	M1,E2		0.0017 3	$\alpha(\text{K})=0.0014$ 3; $\alpha(\text{L})=0.00019$ 4; $\alpha(\text{M})=4.0\times 10^{-5}$ 7;

Adopted Levels, Gammas (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	$\gamma(^{145}\text{Eu})$ (continued)		Comments
						Mult.	$\alpha^\dagger$	
								$\alpha(\text{N}+..)=5.7\times 10^{-5}$ 5 $\alpha(\text{N})=9.1\times 10^{-6}$ 16; $\alpha(\text{O})=1.5\times 10^{-6}$ 3; $\alpha(\text{P})=1.5\times 10^{-7}$ 3; $\alpha(\text{IPF})=4.62\times 10^{-5}$ 23
2149.6		2149.6 1	100	0.0	5/2 ⁺			
2188.4		1380.1 1	100 29	808.33	1/2 ⁺			
		2187.8 3	26 11	0.0	5/2 ⁺			
2195	(9/2) ⁺	1865.4		329.92	7/2 ⁺	M1	0.001255 18	$\alpha(\text{K})=0.000858$ 12; $\alpha(\text{L})=0.0001131$ 16; $\alpha(\text{M})=2.42\times 10^{-5}$ 4; $\alpha(\text{N}+..)=0.000260$ $\alpha(\text{N})=5.55\times 10^{-6}$ 8; $\alpha(\text{O})=8.85\times 10^{-7}$ 13; $\alpha(\text{P})=9.11\times 10^{-8}$ 13; $\alpha(\text{IPF})=0.000253$ 4
		2194.9		0.0	5/2 ⁺			
2203.4	3/2 ⁺	1872.6 20	24 3	329.92	7/2 ⁺			
		2203.4 1	100 7	0.0	5/2 ⁺			
2237	9/2 ⁺ , (7/2 ⁺)	1907.0	100	329.92	7/2 ⁺	M1	0.001229 18	$\alpha(\text{K})=0.000817$ 12; $\alpha(\text{L})=0.0001075$ 15; $\alpha(\text{M})=2.30\times 10^{-5}$ 4; $\alpha(\text{N}+..)=0.000281$ $\alpha(\text{N})=5.28\times 10^{-6}$ 8; $\alpha(\text{O})=8.42\times 10^{-7}$ 12; $\alpha(\text{P})=8.66\times 10^{-8}$ 13; $\alpha(\text{IPF})=0.000275$ 4
2244.4	15/2 ⁺	399.8 3	100	1844.6	13/2 ⁻	E1	0.00757 11	$\alpha(\text{K})=0.00646$ 10; $\alpha(\text{L})=0.000874$ 13; $\alpha(\text{M})=0.000187$ 3; $\alpha(\text{N}+..)=5.00\times 10^{-5}$ 7 $\alpha(\text{N})=4.27\times 10^{-5}$ 6; $\alpha(\text{O})=6.68\times 10^{-6}$ 10; $\alpha(\text{P})=6.26\times 10^{-7}$ 9
2284.1	15/2 ⁻	1568.1 3	100	716.0	11/2 ⁻	E2	0.001167 17	$\alpha(\text{K})=0.000913$ 13; $\alpha(\text{L})=0.0001225$ 18; $\alpha(\text{M})=2.63\times 10^{-5}$ 4; $\alpha(\text{N}+..)=0.000106$ $\alpha(\text{N})=6.01\times 10^{-6}$ 9; $\alpha(\text{O})=9.52\times 10^{-7}$ 14; $\alpha(\text{P})=9.41\times 10^{-8}$ 14; $\alpha(\text{IPF})=9.89\times 10^{-5}$ 14
2295	(11/2) ⁺	1965.0	100	329.92	7/2 ⁺	E2	0.000973 14	$\alpha(\text{K})=0.000601$ 9; $\alpha(\text{L})=7.91\times 10^{-5}$ 11; $\alpha(\text{M})=1.692\times 10^{-5}$ 24; $\alpha(\text{N}+..)=0.000276$ $\alpha(\text{N})=3.87\times 10^{-6}$ 6; $\alpha(\text{O})=6.15\times 10^{-7}$ 9; $\alpha(\text{P})=6.19\times 10^{-8}$ 9; $\alpha(\text{IPF})=0.000271$ 4
2314	(13/2) ⁻	1597.6	100	716.0	11/2 ⁻	M1,E2	0.00134 21	$\alpha(\text{K})=0.00105$ 17; $\alpha(\text{L})=0.000140$ 22; $\alpha(\text{M})=3.0\times 10^{-5}$ 5; $\alpha(\text{N}+..)=0.000124$ 8 $\alpha(\text{N})=6.9\times 10^{-6}$ 11; $\alpha(\text{O})=1.09\times 10^{-6}$ 18; $\alpha(\text{P})=1.10\times 10^{-7}$ 20; $\alpha(\text{IPF})=0.000116$ 7
2318.68	5/2 ⁺	751.0 20	17 3	1567.12	3/2 ⁽⁻⁾ , 5/2 ⁽⁻⁾			
		1988.5 1	100 11	329.92	7/2 ⁺	M1	0.001188 17	$\alpha(\text{K})=0.000744$ 11; $\alpha(\text{L})=9.78\times 10^{-5}$ 14; $\alpha(\text{M})=2.09\times 10^{-5}$ 3; $\alpha(\text{N}+..)=0.000325$ 5 $\alpha(\text{N})=4.80\times 10^{-6}$ 7; $\alpha(\text{O})=7.66\times 10^{-7}$ 11; $\alpha(\text{P})=7.89\times 10^{-8}$ 11; $\alpha(\text{IPF})=0.000319$ 5
		2318.9 1	58 4	0.0	5/2 ⁺			
2321.72	3/2 ⁻	722.0 [#] 20	6 2	1600.26	3/2 ⁻			
		754.6 2	10 2	1567.12	3/2 ⁽⁻⁾ , 5/2 ⁽⁻⁾			

Adopted Levels, Gammas (continued)

$\gamma(^{145}\text{Eu})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	$\alpha^\dagger$	Comments
2321.72	3/2 ⁻	1513.4 2	100 6	808.33	1/2 ⁺	(E1)	0.000734 11	$\alpha(\text{K})=0.000446$ 7; $\alpha(\text{L})=5.69\times 10^{-5}$ 8; $\alpha(\text{M})=1.214\times 10^{-5}$ 17; $\alpha(\text{N}+..)=0.000219$ 3 $\alpha(\text{N})=2.78\times 10^{-6}$ 4; $\alpha(\text{O})=4.41\times 10^{-7}$ 7; $\alpha(\text{P})=4.48\times 10^{-8}$ 7; $\alpha(\text{IPF})=0.000216$ 3
2327.3		2322.0 4	34 4	0.0	5/2 ⁺			
2349.0		2327.3 7	100	0.0	5/2 ⁺			
2352	(11/2,13/2) ⁻	2349.0 1	100	0.0	5/2 ⁺			
		1635.9	100	716.0	11/2 ⁻	M1	0.001488 21	$\alpha(\text{K})=0.001154$ 17; $\alpha(\text{L})=0.0001527$ 22; $\alpha(\text{M})=3.27\times 10^{-5}$ 5; $\alpha(\text{N}+..)=0.000148$ $\alpha(\text{N})=7.49\times 10^{-6}$ 11; $\alpha(\text{O})=1.196\times 10^{-6}$ 17; $\alpha(\text{P})=1.228\times 10^{-7}$ 18; $\alpha(\text{IPF})=0.0001398$ 20
2400	(13/2 ⁺)	1683.5	100	716.0	11/2 ⁻	E1	0.000777 11	$\alpha(\text{K})=0.000373$ 6; $\alpha(\text{L})=4.75\times 10^{-5}$ 7; $\alpha(\text{M})=1.013\times 10^{-5}$ 15; $\alpha(\text{N}+..)=0.000346$ 5 $\alpha(\text{N})=2.32\times 10^{-6}$ 4; $\alpha(\text{O})=3.68\times 10^{-7}$ 6; $\alpha(\text{P})=3.76\times 10^{-8}$ 6; $\alpha(\text{IPF})=0.000343$ 5
2402.25		1593.8 1	100	808.33	1/2 ⁺			
2416.8		305.5 30	2.1 6	2114.3	3/2 ⁺ ,5/2 ⁺			
		2416.8 1	100 6	0.0	5/2 ⁺			
2422.3		310.1 30	0.8 2	2114.3	3/2 ⁺ ,5/2 ⁺			
		854.1 20	26 4	1567.12	3/2 ⁽⁻⁾ ,5/2 ⁽⁻⁾			
		1381.0 20	42 6	1041.71	3/2 ⁺			
		1613.9 1	100 8	808.33	1/2 ⁺			
2423	5/2 ⁺ ,7/2 ⁺ ,9/2 ⁺	2092.9	100	329.92	7/2 ⁺	M1,E2	0.00105 10	$\alpha(\text{K})=0.00060$ 7; $\alpha(\text{L})=7.9\times 10^{-5}$ 9; $\alpha(\text{M})=1.68\times 10^{-5}$ 19; $\alpha(\text{N}+..)=0.000359$ 23 $\alpha(\text{N})=3.9\times 10^{-6}$ 5; $\alpha(\text{O})=6.1\times 10^{-7}$ 7; $\alpha(\text{P})=6.3\times 10^{-8}$ 8; $\alpha(\text{IPF})=0.000354$ 23
2463.5		1421.7 1	100 14	1041.71	3/2 ⁺			
		2463.3 8	100 14	0.0	5/2 ⁺			
2487.2	3/2 ⁺	1678.6 2	100 15	808.33	1/2 ⁺			
		2157.9 20	62 8	329.92	7/2 ⁺			
		2487.8 3	69 13	0.0	5/2 ⁺			
2494.88	1/2 ⁺	1686.6 1	8 1	808.33	1/2 ⁺			
		2494.8 1	100 6	0.0	5/2 ⁺			
2504.41		1696.4 1	43 7	808.33	1/2 ⁺			
		2504.3 1	100 7	0.0	5/2 ⁺			
2507	5/2 ⁺ ,7/2 ⁺ ,9/2 ⁺	2177.8	100	329.92	7/2 ⁺	M1,E2	0.00104 9	$\alpha(\text{K})=0.00055$ 6; $\alpha(\text{L})=7.2\times 10^{-5}$ 8; $\alpha(\text{M})=1.55\times 10^{-5}$ 16; $\alpha(\text{N}+..)=0.00040$ 3 $\alpha(\text{N})=3.6\times 10^{-6}$ 4; $\alpha(\text{O})=5.7\times 10^{-7}$ 6; $\alpha(\text{P})=5.8\times 10^{-8}$ 7; $\alpha(\text{IPF})=0.00040$ 3
2525.2		2195.2 2	100	329.92	7/2 ⁺			
2544.9		2544.9 7	100	0.0	5/2 ⁺			

Adopted Levels, Gammas (continued)

$\gamma(^{145}\text{Eu})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	$\alpha^\dagger$	Comments
2562.5	3/2 ⁺	646.0 20	44 1	1915.5	3/2 ⁺			
		961.0# 20	74 1	1600.26	3/2 ⁻			
		2232.6 2	81 2	329.92	7/2 ⁺			
		2562.7 7	100 2	0.0	5/2 ⁺			
2573.6	15/2 ⁻	260		2314	(13/2) ⁻			
		329.2 3	50 12	2244.4	15/2 ⁺			
		972.0 3	100 6	1601.2	11/2 ⁻	E2	0.00278 4	$\alpha(\text{K})=0.00235$ 4; $\alpha(\text{L})=0.000337$ 5; $\alpha(\text{M})=7.29\times 10^{-5}$ 11; $\alpha(\text{N}+..)=1.95\times 10^{-5}$ 3
		1858.0 3	78 6	716.0	11/2 ⁻	E2	0.000999 14	$\alpha(\text{N})=1.663\times 10^{-5}$ 24; $\alpha(\text{O})=2.61\times 10^{-6}$ 4; $\alpha(\text{P})=2.42\times 10^{-7}$ 4 $\alpha(\text{K})=0.000665$ 10; $\alpha(\text{L})=8.80\times 10^{-5}$ 13; $\alpha(\text{M})=1.88\times 10^{-5}$ 3; $\alpha(\text{N}+..)=0.000227$ 4 $\alpha(\text{N})=4.31\times 10^{-6}$ 6; $\alpha(\text{O})=6.84\times 10^{-7}$ 10; $\alpha(\text{P})=6.86\times 10^{-8}$ 10; $\alpha(\text{IPF})=0.000222$ 4
2585.7	(3/2 ⁺)	984.0# 20	10 2	1600.26	3/2 ⁻			
		2585.7 1	100 6	0.0	5/2 ⁺			
2606.1		2606.1 2	100	0.0	5/2 ⁺			
2617	(9/2 ⁺)	1900.2 1	100	716.0	11/2 ⁻	(E1)	0.000860 12	$\alpha(\text{K})=0.000307$ 5; $\alpha(\text{L})=3.89\times 10^{-5}$ 6; $\alpha(\text{M})=8.28\times 10^{-6}$ 12; $\alpha(\text{N}+..)=0.000507$ 7 $\alpha(\text{N})=1.89\times 10^{-6}$ 3; $\alpha(\text{O})=3.02\times 10^{-7}$ 5; $\alpha(\text{P})=3.08\times 10^{-8}$ 5; $\alpha(\text{IPF})=0.000504$ 7
2642.2	3/2 ⁺	1598.6 20	4.5 5	1041.71	3/2 ⁺			
		2313.0 20	2.7 4	329.92	7/2 ⁺			
		2642.2 1	100 6	0.0	5/2 ⁺			
2684	(9/2,11/2) ⁻	1968.2	100	716.0	11/2 ⁻	M1	0.001197 17	$\alpha(\text{K})=0.000761$ 11; $\alpha(\text{L})=0.0001001$ 14; $\alpha(\text{M})=2.14\times 10^{-5}$ 3; $\alpha(\text{N}+..)=0.000314$ $\alpha(\text{N})=4.91\times 10^{-6}$ 7; $\alpha(\text{O})=7.84\times 10^{-7}$ 11; $\alpha(\text{P})=8.07\times 10^{-8}$ 12; $\alpha(\text{IPF})=0.000308$ 5
2690	13/2 ⁺ , (11/2,9/2) ⁺	897.7		1792	11/2 ⁻			
		1088.5		1601.2	11/2 ⁻	(E1)	0.000925 13	$\alpha(\text{K})=0.000795$ 12; $\alpha(\text{L})=0.0001026$ 15; $\alpha(\text{M})=2.19\times 10^{-5}$ 3; $\alpha(\text{N}+..)=5.88\times 10^{-6}$ $\alpha(\text{N})=5.01\times 10^{-6}$ 7; $\alpha(\text{O})=7.94\times 10^{-7}$ 12; $\alpha(\text{P})=7.96\times 10^{-8}$ 12
2699.7		818.0 20	28 3	1880.62	3/2 ⁺ , 1/2 ⁺			
		1658.0 1	88 5	1041.71	3/2 ⁺			
		1891.0 2	100 5	808.33	1/2 ⁺			
		2700.9 9	4.9 9	0.0	5/2 ⁺			
2726	(15/2) ⁻	412.7		2314	(13/2) ⁻			
		881.4		1844.6	13/2 ⁻	M1,E2	0.0046 12	$\alpha(\text{K})=0.0039$ 10; $\alpha(\text{L})=0.00054$ 12; $\alpha(\text{M})=0.00012$ 3; $\alpha(\text{N}+..)=3.1\times 10^{-5}$ 7 $\alpha(\text{N})=2.7\times 10^{-5}$ 6; $\alpha(\text{O})=4.2\times 10^{-6}$ 10; $\alpha(\text{P})=4.1\times 10^{-7}$ 12

Adopted Levels, Gammas (continued)

$\gamma(^{145}\text{Eu})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	$\alpha^\dagger$	Comments
2742.7		1934.8 [#] 20	42 8	808.33	1/2 ⁺				
		2742.7 1	100 6	0.0	5/2 ⁺				
2747		2030.2	100	716.0	11/2 ⁻				
2754.1		2754.1 1	100	0.0	5/2 ⁺				
2779.9		933.7 20	18.3 4	1845.32	(5/2) ⁺				
		1014.2 2	100 8	1765.8	5/2 ⁻				
		2779.9 1	58 7	0.0	5/2 ⁺				
2813.5	17/2 ⁻	239.5 3	100 6	2573.6	15/2 ⁻	M1+E2	-3.49 +41-52	0.1221 20	$\alpha(\text{K})=0.0917$ 17; $\alpha(\text{L})=0.0236$ 4; $\alpha(\text{M})=0.00534$ 9; $\alpha(\text{N}+..)=0.001382$ 22 $\alpha(\text{N})=0.001200$ 19; $\alpha(\text{O})=0.000174$ 3; $\alpha(\text{P})=8.38\times 10^{-6}$ 19
		500 [‡]		2314	(13/2) ⁻				
		530.2 3	22 4	2284.1	15/2 ⁻	M1+E2	-0.44 +8-7	0.0187 5	$\alpha(\text{K})=0.0159$ 5; $\alpha(\text{L})=0.00223$ 5; $\alpha(\text{M})=0.000481$ 10; $\alpha(\text{N}+..)=0.000129$ 3 $\alpha(\text{N})=0.0001101$ 23; $\alpha(\text{O})=1.74\times 10^{-5}$ 4; $\alpha(\text{P})=1.71\times 10^{-6}$ 5
		569.3 3	16 4	2244.4	15/2 ⁺	E1		0.00338 5	$\alpha(\text{K})=0.00289$ 4; $\alpha(\text{L})=0.000384$ 6; $\alpha(\text{M})=8.23\times 10^{-5}$ 12; $\alpha(\text{N}+..)=2.20\times 10^{-5}$ 3
		968.5 3	90 6	1844.6	13/2 ⁻	E2		0.00280 4	$\alpha(\text{N})=1.88\times 10^{-5}$ 3; $\alpha(\text{O})=2.95\times 10^{-6}$ 5; $\alpha(\text{P})=2.85\times 10^{-7}$ 4 $\alpha(\text{K})=0.00237$ 4; $\alpha(\text{L})=0.000340$ 5; $\alpha(\text{M})=7.35\times 10^{-5}$ 11; $\alpha(\text{N}+..)=1.96\times 10^{-5}$ 3 $\alpha(\text{N})=1.677\times 10^{-5}$ 24; $\alpha(\text{O})=2.63\times 10^{-6}$ 4; $\alpha(\text{P})=2.43\times 10^{-7}$ 4
2819.1		973.8 20	100	1845.32	(5/2) ⁺				
2836.4	19/2 ⁻	22.5 2	≈25	2813.5	17/2 ⁻	M1		22.7 7	$\text{B}(\text{M1})(\text{W.u.})=0.012$ $\alpha(\text{L})=17.8$ 6; $\alpha(\text{M})=3.86$ 12; $\alpha(\text{N}+..)=1.04$ 4 $\alpha(\text{N})=0.88$ 3; $\alpha(\text{O})=0.139$ 5; $\alpha(\text{P})=0.0137$ 5
		262.5 3	33 7	2573.6	15/2 ⁻	E2		0.0885	$\alpha(\text{K})=0.0668$ 10; $\alpha(\text{L})=0.01693$ 25; $\alpha(\text{M})=0.00383$ 6; $\alpha(\text{N}+..)=0.000990$ 15 $\alpha(\text{N})=0.000859$ 13; $\alpha(\text{O})=0.0001247$ 19; $\alpha(\text{P})=6.05\times 10^{-6}$ 9 $\text{B}(\text{E2})(\text{W.u.})=0.08$ 4
		552.7 3	100 14	2284.1	15/2 ⁻	E2		0.01031	$\alpha(\text{K})=0.00849$ 12; $\alpha(\text{L})=0.001427$ 21; $\alpha(\text{M})=0.000313$ 5; $\alpha(\text{N}+..)=8.28\times 10^{-5}$ 12 $\alpha(\text{N})=7.11\times 10^{-5}$ 10; $\alpha(\text{O})=1.088\times 10^{-5}$ 16; $\alpha(\text{P})=8.52\times 10^{-7}$ 12 $\text{B}(\text{E2})(\text{W.u.})=0.006$ 3
2838.7		992.5 20	2.9 12	1845.32	(5/2) ⁺				
		1082.4 20	8.5 15	1758.03	3/2 ⁺				
		2838.7 1	100 6	0.0	5/2 ⁺				
2859.2		1013.9 20	100	1845.32	(5/2) ⁺				

Adopted Levels, Gammas (continued)

$\gamma(^{145}\text{Eu})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	$\alpha^\dagger$	Comments
2862.7	19/2 ⁻	578.6 3	100	2284.1	15/2 ⁻	E2	0.00918 13	$\alpha(\text{K})=0.00758$ 11; $\alpha(\text{L})=0.001253$ 18; $\alpha(\text{M})=0.000275$ 4; $\alpha(\text{N}+..)=7.27\times 10^{-5}$ 11
2897	13/2 ⁺	613.6	100	2284.1	15/2 ⁻	E1	0.00288 4	$\alpha(\text{N})=6.24\times 10^{-5}$ 9; $\alpha(\text{O})=9.57\times 10^{-6}$ 14; $\alpha(\text{P})=7.64\times 10^{-7}$ 11
		652.3		2244.4	15/2 ⁺			$\alpha(\text{K})=0.00246$ 4; $\alpha(\text{L})=0.000326$ 5; $\alpha(\text{M})=6.98\times 10^{-5}$ 10;
		1293.7		1601.2	11/2 ⁻	E1	0.000749 11	$\alpha(\text{N}+..)=1.87\times 10^{-5}$ 3 $\alpha(\text{N})=1.592\times 10^{-5}$ 23; $\alpha(\text{O})=2.51\times 10^{-6}$ 4; $\alpha(\text{P})=2.43\times 10^{-7}$ 4
2911.1	21/2 ⁻	49 [‡] 74.7 3	100	2862.7 2836.4	19/2 ⁻ 19/2 ⁻	M1	4.28 8	$\alpha(\text{K})=0.000584$ 9; $\alpha(\text{L})=7.49\times 10^{-5}$ 11; $\alpha(\text{M})=1.598\times 10^{-5}$ 23; $\alpha(\text{N}+..)=7.43\times 10^{-5}$ 1
2918.9		2110.6 1 2918.6 2	100 9 38 3	808.33 0.0	1/2 ⁺ 5/2 ⁺			$\alpha(\text{N})=3.65\times 10^{-6}$ 6; $\alpha(\text{O})=5.80\times 10^{-7}$ 9; $\alpha(\text{P})=5.86\times 10^{-8}$ 9; $\alpha(\text{IPF})=7.00\times 10^{-5}$ 10
2925	(13/2) ⁻	680.3		2244.4	15/2 ⁺	E1	0.00231 4	$\alpha(\text{K})=3.61$ 7; $\alpha(\text{L})=0.519$ 10; $\alpha(\text{M})=0.1123$ 21; $\alpha(\text{N}+..)=0.0302$ 6 $\alpha(\text{N})=0.0257$ 5; $\alpha(\text{O})=0.00407$ 8; $\alpha(\text{P})=0.000401$ 8
2939	9/2 ⁺ , 11/2 ⁺ , 13/2 ⁺	1080.4 1336.9		1844.6 1601.2	13/2 ⁻ 11/2 ⁻	E1	0.000735 11	$\alpha(\text{K})=0.00198$ 3; $\alpha(\text{L})=0.000261$ 4; $\alpha(\text{M})=5.59\times 10^{-5}$ 8; $\alpha(\text{N}+..)=1.496\times 10^{-5}$ 21 $\alpha(\text{N})=1.275\times 10^{-5}$ 18; $\alpha(\text{O})=2.01\times 10^{-6}$ 3; $\alpha(\text{P})=1.97\times 10^{-7}$ 3
2971.8		1215.0 20 2163.4 1 2971.9 4	39 6 100 10 18 4	1758.03 808.33 0.0	3/2 ⁺ 1/2 ⁺ 5/2 ⁺			$\alpha(\text{K})=0.000551$ 8; $\alpha(\text{L})=7.06\times 10^{-5}$ 10; $\alpha(\text{M})=1.507\times 10^{-5}$ 21; $\alpha(\text{N}+..)=9.84\times 10^{-5}$ 1
2988.1		2988.1 4	100	0.0	5/2 ⁺			$\alpha(\text{N})=3.44\times 10^{-6}$ 5; $\alpha(\text{O})=5.47\times 10^{-7}$ 8; $\alpha(\text{P})=5.53\times 10^{-8}$ 8; $\alpha(\text{IPF})=9.44\times 10^{-5}$ 14
3001.5		2192.0 20 3001.5 2	62 15 100 11	808.33 0.0	1/2 ⁺ 5/2 ⁺			
3026	(17/2) ⁻	1181.0	100	1844.6	13/2 ⁻	E2	0.00186 3	$\alpha(\text{K})=0.001579$ 23; $\alpha(\text{L})=0.000219$ 3; $\alpha(\text{M})=4.73\times 10^{-5}$ 7; $\alpha(\text{N}+..)=1.643\times 10^{-5}$ 23
3062.14	(3/2 ⁺)	1181.5 1 1461.6 1 2021.7 20 2253.9 2 3063.1 2	26 5 100 7 38 3 28 3 24 2	1880.62 1600.26 1041.71 808.33 0.0	3/2 ⁺ , 1/2 ⁺ 3/2 ⁻ 3/2 ⁺ 1/2 ⁺ 5/2 ⁺			$\alpha(\text{N})=1.079\times 10^{-5}$ 16; $\alpha(\text{O})=1.701\times 10^{-6}$ 24; $\alpha(\text{P})=1.628\times 10^{-7}$ 23; $\alpha(\text{IPF})=3.77\times 10^{-6}$ 6

Adopted Levels, Gammas (continued)

$\gamma(^{145}\text{Eu})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	$\alpha^\dagger$	Comments
3092.0		3092.0 2	100	0.0	5/2 ⁺				
3101.1		2292.0 4	31 19	808.33	1/2 ⁺				
		3101.2 2	100 6	0.0	5/2 ⁺				
3119	(9/2,13/2) ⁺	1326.6	100	1792	11/2 ⁻	E1		0.000738 11	$\alpha(\text{K})=0.000559$ 8; $\alpha(\text{L})=7.16\times 10^{-5}$ 10; $\alpha(\text{M})=1.528\times 10^{-5}$ 22; $\alpha(\text{N}+..)=9.23\times 10^{-5}$ 1 $\alpha(\text{N})=3.49\times 10^{-6}$ 5; $\alpha(\text{O})=5.55\times 10^{-7}$ 8; $\alpha(\text{P})=5.61\times 10^{-8}$ 8; $\alpha(\text{IPF})=8.82\times 10^{-5}$ 13
3176.3		1576.0 20	46 11	1600.26	3/2 ⁻				
		3176.3 2	100 9	0.0	5/2 ⁺				
3183.0	23/2 ⁻	271.9 3	100	2911.1	21/2 ⁻	M1+E2	-1.96 +16-18	0.0864 17	$\alpha(\text{K})=0.0677$ 15; $\alpha(\text{L})=0.01459$ 22; $\alpha(\text{M})=0.00326$ 5; $\alpha(\text{N}+..)=0.000851$ 13 $\alpha(\text{N})=0.000736$ 11; $\alpha(\text{O})=0.0001090$ 16; $\alpha(\text{P})=6.55\times 10^{-6}$ 18
3187	(15/2,17/2)	941.6	100	2244.4	15/2 ⁺				
3199.1		1599.0 20	100 26	1600.26	3/2 ⁻				
		2390.9 2	82 21	808.33	1/2 ⁺				
		3198.3 [#] 4	44 8	0.0	5/2 ⁺				
3220.6		1620.3 1	100 60	1600.26	3/2 ⁻				
		3220.7 3	35 2	0.0	5/2 ⁺				
3228.7		1462.9 20	100	1765.8	5/2 ⁻				
3238.0		2429.6 1	100 9	808.33	1/2 ⁺				
		3239.4 [#] 7	30 4	0.0	5/2 ⁺				
3253.6?		3253.6 [#] 3	100	0.0	5/2 ⁺				
3261.1		3261.1 2	100	0.0	5/2 ⁺				
3267.2		2458.9 1	29 4	808.33	1/2 ⁺				
		3266.0 20	100 17	0.0	5/2 ⁺				
3280.9		2239.7 3	30 13	1041.71	3/2 ⁺				
		3280.7 2	100 9	0.0	5/2 ⁺				
3312.5		3312.5 2	100	0.0	5/2 ⁺				
3343.5		3343.5 3	100	0.0	5/2 ⁺				
3349	(19/2) ⁻	486.6	100	2862.7	19/2 ⁻	M1		0.0250	$\alpha(\text{K})=0.0213$ 3; $\alpha(\text{L})=0.00293$ 5; $\alpha(\text{M})=0.000630$ 9; $\alpha(\text{N}+..)=0.0001697$ 24 $\alpha(\text{N})=0.0001444$ 21; $\alpha(\text{O})=2.30\times 10^{-5}$ 4; $\alpha(\text{P})=2.31\times 10^{-6}$ 4
3383	3/2 ⁺	3053 2	100	329.92	7/2 ⁺				
3389.1?		3389.1 [#] 4	100	0.0	5/2 ⁺				
3397.6		2589.2 2	100	808.33	1/2 ⁺				
3408.9	3/2 ⁺	3079.0 2	100 7	329.92	7/2 ⁺				
		3408.3 [#] 20	56 7	0.0	5/2 ⁺				
3411.6		2603.2 2	100	808.33	1/2 ⁺				

Adopted Levels, Gammas (continued)

$\gamma(^{145}\text{Eu})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	$\alpha^\dagger$	Comments
3412	(21/2)	550.1	100	2862.7	19/2 ⁻			
3444.2	3/2 ⁺	3114.2	2 100	329.92	7/2 ⁺			
3449	(15/2,17/2) ⁻	1204.5	100	2244.4	15/2 ⁺	E1	0.000798	12 $\alpha(\text{K})=0.000662$ 10; $\alpha(\text{L})=8.52\times 10^{-5}$ 12; $\alpha(\text{M})=1.82\times 10^{-5}$ 3; $\alpha(\text{N}+..)=3.22\times 10^{-5}$ 5 $\alpha(\text{N})=4.15\times 10^{-6}$ 6; $\alpha(\text{O})=6.59\times 10^{-7}$ 10; $\alpha(\text{P})=6.64\times 10^{-8}$ 10; $\alpha(\text{IPF})=2.73\times 10^{-5}$ 4
3451.6		2409.9	20 100	1041.71	3/2 ⁺			
3507.4?	3/2 ⁺	3177.4 [#]	20 100	329.92	7/2 ⁺			
3520.0?	(3/2 ⁺)	3188.0 [#]	20 100 25	329.92	7/2 ⁺			
		3520.9 [#]	7 11.3 13	0.0	5/2 ⁺			
3525.6?		3525.6 [#]	7 100	0.0	5/2 ⁺			
3547.1?		1466.6 [#]	20 100 28	2079.1				
		3547.1 [#]	5 86 14	0.0	5/2 ⁺			
3561.9		1796.1	20 100	1765.8	5/2 ⁻			
3578.4?		3578.4 [#]	4 100	0.0	5/2 ⁺			
3598.6?		3598.6 [#]	3 100	0.0	5/2 ⁺			
3620.2	3/2 ⁺	3290.4	4 50 13	329.92	7/2 ⁺			
		3619.8	7 100 10	0.0	5/2 ⁺			
3628.3	3/2 ⁺	1513.2	20 81 24	2114.3	3/2 ⁺ , 5/2 ⁺			
		2819.8	2 100 10	808.33	1/2 ⁺			
		3299.2	4 33 14	329.92	7/2 ⁺			
3643.8		3643.8	3 100	0.0	5/2 ⁺			
3675.7		2633.1	20 39 5	1041.71	3/2 ⁺			
		2867.4	2 100 10	808.33	1/2 ⁺			
3705.4		1648.9	20 29 10	2054.1				
		2896.9	2 100 6	808.33	1/2 ⁺			
		3705.8	3 38.6 24	0.0	5/2 ⁺			
3738.9		1858.3	20 100	1880.62	3/2 ⁺ , 1/2 ⁺			
3747.2	(3/2 ⁺)	2149.0	20 100 21	1600.26	3/2 ⁻			
		3746.9	3 50 11	0.0	5/2 ⁺			
3768.9?		1366.1 [#]	20 100 13	2402.25				
		1441.5	20 20 9	2327.3				
		3769.0	4 20 6	0.0	5/2 ⁺			
3838.0	(23/2)	927		2911.1	21/2 ⁻			
3847.9		2087.2	20 100 18	1761.32	3/2 ⁻			
		3039.5	2 78 12	808.33	1/2 ⁺			
		3848.0 [#]	4 13.2 13	0.0	5/2 ⁺			
3879.8		1416.3	20 100	2463.5				

Adopted Levels, Gammas (continued)

$\gamma(^{145}\text{Eu})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	$\alpha^\dagger$	Comments
3888.9		1561.9 20	64 27	2327.3					
		3888.8 [#] 4	100 14	0.0	5/2 ⁺				
3920.7		2040.9 20	100 29	1880.62	3/2 ⁺ , 1/2 ⁺				
		2073.9 20	26 10	1845.32	(5/2) ⁺				
		3920.8 [#] 5	13 3	0.0	5/2 ⁺				
3931.7		1467.6 20	100 43	2463.5					
		3931.8 [#] 6	100 29	0.0	5/2 ⁺				
3939.3		2056.7 20	100 25	1880.62	3/2 ⁺ , 1/2 ⁺				
		3940.2 [#] 7	8.8 25	0.0	5/2 ⁺				
3944.6		2064.0 20	100	1880.62	3/2 ⁺ , 1/2 ⁺				
3949.8		2907.2 7	100 23	1041.71	3/2 ⁺				
		3141.3 [#] 7	89 9	808.33	1/2 ⁺				
		3950.7 [#] 7	26 6	0.0	5/2 ⁺				
3962.9	3/2 ⁺	2083.9 20	100 26	1880.62	3/2 ⁺ , 1/2 ⁺				
		3632.7 3	56 7	329.92	7/2 ⁺				
		3962.9 5	78 15	0.0	5/2 ⁺				
3976.3	25/2 ⁺	793.3 3	100	3183.0	23/2 ⁻	E1		0.001693 24	$\alpha(\text{K})=0.001452$ 21; $\alpha(\text{L})=0.000190$ 3; $\alpha(\text{M})=4.06\times 10^{-5}$ 6; $\alpha(\text{N}+..)=1.088\times 10^{-5}$ 1 $\alpha(\text{N})=9.27\times 10^{-6}$ 13; $\alpha(\text{O})=1.466\times 10^{-6}$ 21; $\alpha(\text{P})=1.446\times 10^{-7}$ 21
3988.9		2947.2 20	100	1041.71	3/2 ⁺				
4003.9		2158.6 20	100	1845.32	(5/2) ⁺				
4014.1	3/2 ⁺	3684.3 3	100 7	329.92	7/2 ⁺				
		4012.3 9	6.0 9	0.0	5/2 ⁺				
4021.6		4021.6 4	100	0.0	5/2 ⁺				
4023.8		4023.8 9	100	0.0	5/2 ⁺				
4044.5		2283.5 3	100 12	1761.32	3/2 ⁻				
		4043.8 4	92 15	0.0	5/2 ⁺				
4047.9		1999.0 20	100	2048.8	3/2 ⁺				
4051.7	(3/2 ⁺)	2293.5 2	67 20	1758.03	3/2 ⁺				
		2451.9 2	100 20	1600.26	3/2 ⁻				
		3009.7 [#] 2	34 3	1041.71	3/2 ⁺				
		3243.2 [#] 7	13 3	808.33	1/2 ⁺				
		4051.2 9	8.7 13	0.0	5/2 ⁺				
4069.9	(3/2 ⁺)	2469.6 1	100 16	1600.26	3/2 ⁻				
		4068.9 6	19 3	0.0	5/2 ⁺				
4122.8	27/2 ⁺	146.5 3	100	3976.3	25/2 ⁺	M1+E2	-2.6 +8-14	0.623 10	$\alpha(\text{K})=0.410$ 16; $\alpha(\text{L})=0.165$ 12; $\alpha(\text{M})=0.038$ 3; $\alpha(\text{N}+..)=0.0097$ 7 $\alpha(\text{N})=0.0085$ 6; $\alpha(\text{O})=0.00119$ 8; $\alpha(\text{P})=3.5\times 10^{-5}$ 3

Adopted Levels, Gammas (continued)

$\gamma(^{145}\text{Eu})$ (continued)

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$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π
4131.4	3/2 ⁺	3324.9 20	7.8 26	808.33	1/2 ⁺	4390.7		2276.1 [#] 6	11.5 39	2114.3	3/2 ⁺ ,5/2 ⁺
		3801.3 3	100 9	329.92	7/2 ⁺			2508.0 20	44 13	1880.62	3/2 ⁺ ,1/2 ⁺
4156.7		3348.4 3	100 13	808.33	1/2 ⁺			2624.7 [#] 2	33 12	1765.8	5/2 ⁻
		4155.0 [#] 15	26 4	0.0	5/2 ⁺			3582.9 3	79 6	808.33	1/2 ⁺
4184.0		2302.0 20	7.8 26	1880.62	3/2 ⁺ ,1/2 ⁺			4390.7 5	42 4	0.0	5/2 ⁺
		2422.9 1	39 4	1761.32	3/2 ⁻	4410.1	3/2 ⁺	2091.4 [#] 2	82 17	2318.68	5/2 ⁺
		2425.6 1	100 7	1758.03	3/2 ⁺			2360.9 [#] 4	37 8	2048.8	3/2 ⁺
		3376.9 7	12 3	808.33	1/2 ⁺			2809.9 2	57 10	1600.26	3/2 ⁻
		4184.6 4	11.5 10	0.0	5/2 ⁺			2842.9 2	100 8	1567.12	3/2 ⁽⁻⁾ ,5/2 ⁽⁻⁾
4230.1	(25/2 ⁺)	1047		3183.0	23/2 ⁻			3601.5 3	85 7	808.33	1/2 ⁺
4258.6	3/2 ⁺	2144.2 [#] 3	10.9 15	2114.3	3/2 ⁺ ,5/2 ⁺			4081.2 [#] 4	45 5	329.92	7/2 ⁺
		2413.3 2	100 6	1845.32	(5/2 ⁺)			4409.8 5	55 3	0.0	5/2 ⁺
		2691.0 9	6.2 12	1567.12	3/2 ⁽⁻⁾ ,5/2 ⁽⁻⁾	4424.0?		2662.7 [#] 2	100	1761.32	3/2 ⁻
		3217.2 [#] 6	4.1 6	1041.71	3/2 ⁺	4428.3	(3/2 ⁺)	2670.0 20	45 10	1758.03	3/2 ⁺
		3928.8 4	14.4 9	329.92	7/2 ⁺			2828.2 1	100 7	1600.26	3/2 ⁻
		4258.4 9	10.9 12	0.0	5/2 ⁺			2860.9 2	31 5	1567.12	3/2 ⁽⁻⁾ ,5/2 ⁽⁻⁾
4275.9	(3/2 ⁺)	1576.0 20	13.6 43	2699.7				4427.8 5	15 1	0.0	5/2 ⁺
		2227.0 1	100 9	2048.8	3/2 ⁺	4432.0?		2670.7 [#] 2	100	1761.32	3/2 ⁻
		2396.5 4	25 4	1880.62	3/2 ⁺ ,1/2 ⁺	4436.1	3/2 ⁺	2387.3 [#] 2	27 7	2048.8	3/2 ⁺
		2509.2 20	13 5	1765.8	5/2 ⁻			2554.8 7	31 6	1880.62	3/2 ⁺ ,1/2 ⁺
		2675.2 3	46 7	1600.26	3/2 ⁻			2677.9 2	43 5	1758.03	3/2 ⁺
		4275.9 9	59 6	0.0	5/2 ⁺			2836.0 2	100 10	1600.26	3/2 ⁻
4281.8	3/2 ⁺	1755.0 20	26 6	2525.2				3394.5 3	9 1	1041.71	3/2 ⁺
		2077.9 20	37 8	2203.4	3/2 ⁺			3626.2 9	13 2	808.33	1/2 ⁺
		2202.0 20	35 8	2079.1				4107.0 5	4.0 5	329.92	7/2 ⁺
		2521.5 20	22 11	1761.32	3/2 ⁻	4454.4	(3/2 ⁺)	2573.9 1	100 8	1880.62	3/2 ⁺ ,1/2 ⁺
		2714.4 5	44 3	1567.12	3/2 ⁽⁻⁾ ,5/2 ⁽⁻⁾			2609.6 2	50 8	1845.32	(5/2 ⁺)
		3473.9 5	100 6	808.33	1/2 ⁺			2697.2 9	78 20	1758.03	3/2 ⁺
		3953.3 20	8.4 17	329.92	7/2 ⁺			2853.2 2	47 5	1600.26	3/2 ⁻
		4281.7 9	39 4	0.0	5/2 ⁺			3413.1 3	58 3	1041.71	3/2 ⁺
4308.6	3/2 ⁺	1782.9 20	46 13	2525.2				3645.8 3	75 6	808.33	1/2 ⁺
		1844.0 [#] 20	9 4	2463.5				4453.8 7	26 4	0.0	5/2 ⁺
		2539.0 20	13 6	1765.8	5/2 ⁻	4463.8		3656.2 7	100 50	808.33	1/2 ⁺
		2708.5 1	82 8	1600.26	3/2 ⁻			4463.1 6	50 25	0.0	5/2 ⁺
		3977.9 5	53 6	329.92	7/2 ⁺	4472.8		2591.3 20	46 23	1880.62	3/2 ⁺ ,1/2 ⁺
		4307.3 4	100 6	0.0	5/2 ⁺			3664.1 4	100 15	808.33	1/2 ⁺
4364.8		3556.5 [#] 3	55 13	808.33	1/2 ⁺			4473.3 [#] 5	54 8	0.0	5/2 ⁺
		4364.5 5	100 6	0.0	5/2 ⁺	4496.6	(3/2 ⁺ ,1/2 ⁺)	2738.7 1	50 4	1758.03	3/2 ⁺
4380.7	(25/2 ⁺)	1198		3183.0	23/2 ⁻			3454.3 3	11.1 37	1041.71	3/2 ⁺
4390.7		2203.0 20	100 25	2188.4				3687.7 3	100 7	808.33	1/2 ⁺

Adopted Levels, Gammas (continued)

$\gamma(^{145}\text{Eu})$ (continued)

<u>E_i(level)</u>	<u>J_i^{π}</u>	<u>E_{γ}</u>	<u>I_{γ}</u>	<u>E_f</u>	<u>J_f^{π}</u>
4502.8	(3/2 ⁺ , 1/2 ⁺)	2100.4 1	100 6	2402.25	
		2181.2 [#] 1	51 4	2321.72	3/2 ⁻
		2453.0 [#] 20	9.3 29	2048.8	3/2 ⁺
		2622.1 1	25 5	1880.62	3/2 ⁺ , 1/2 ⁺
		3460.9 3	34 4	1041.71	3/2 ⁺
		3694.3 3	22 2	808.33	1/2 ⁺
		4502.6 6	16 2	0.0	5/2 ⁺
4517.9	3/2 ⁺	4188.2 4	100 12	329.92	7/2 ⁺
		4517.5 [#] 5	32 4	0.0	5/2 ⁺
4536.0	23/2 ⁻	1353		3183.0	23/2 ⁻
		1625		2911.1	21/2 ⁻
4536.9		4536.9 5	100	0.0	5/2 ⁺
4547.2	3/2 ⁺	2083.7 1	100 8	2463.5	
		2789.5 2	70 8	1758.03	3/2 ⁺
		2947.1 3	99 10	1600.26	3/2 ⁻
		2980.1 [#] 3	28 7	1567.12	3/2 ⁽⁻⁾ , 5/2 ⁽⁻⁾
		3505.3 4	31 4	1041.71	3/2 ⁺
		3738.7 [#] 3	24 2	808.33	1/2 ⁺
		4217.2 4	13 2	329.92	7/2 ⁺
		4547.1 5	15 1	0.0	5/2 ⁺
4555.4	(3/2 ⁺)	2797.4 2	69 11	1758.03	3/2 ⁺
		2955.4 2	76 17	1600.26	3/2 ⁻
		3512.8 3	100 19	1041.71	3/2 ⁺
		4554.5 6	31 2	0.0	5/2 ⁺
4566.4		2800.7 2	63 16	1765.8	5/2 ⁻
		2804.9 2	100 15	1761.32	3/2 ⁻
		3757.7 4	15 2	808.33	1/2 ⁺
		4566.6 5	31 3	0.0	5/2 ⁺
4577.9?		4577.8 [#] 9	100	0.0	5/2 ⁺
4593.0	(3/2 ⁺)	2992.9 [#] 3	46 11	1600.26	3/2 ⁻
		3550.7 3	100 9	1041.71	3/2 ⁺
		3785.4 6	25 4	808.33	1/2 ⁺
		4593.4 [#] 6	7.0 18	0.0	5/2 ⁺
4594.5	27/2 ⁺	618		3976.3	25/2 ⁺
4634.6	(3/2 ⁺)	3034.0 3	100 11	1600.26	3/2 ⁻
		3826.8 [#] 4	32 7	808.33	1/2 ⁺
		4634.9 [#] 9	18 4	0.0	5/2 ⁺
4645.6	3/2 ⁺	2597.3 [#] 2	28 3	2048.8	3/2 ⁺
		2764.8 1	51 4	1880.62	3/2 ⁺ , 1/2 ⁺

Adopted Levels, Gammas (continued)

							$\gamma(^{145}\text{Eu})$ (continued)				
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	$E_i(\text{level})$	J_i^π	E_γ	E_f	J_f^π
4645.6	3/2 ⁺	2884.1 2	77 6	1761.32	3/2 ⁻		5851.2	29/2 ⁺	145	5706.2	29/2
		2887.9 6	32 3	1758.03	3/2 ⁺				430	5421.5	29/2 ⁺
		3604.2 3	100 6	1041.71	3/2 ⁺				526	5325.0	29/2 ⁺
		4316.3 4	29 2	329.92	7/2 ⁺				884	4967.1	27/2
		4645.7 5	33 2	0.0	5/2 ⁺				1257	4594.5	27/2 ⁺
4648.0	25/2 ⁻	112		4536.0	23/2 ⁻				1728	4122.8	27/2 ⁺
		418		4230.1	(25/2 ⁺)		5874.8	33/2 ⁺	113	5761.9	31/2 ⁺
		810		3838.0	(23/2)				156	5718.6	31/2 ⁺
		1465		3183.0	23/2 ⁻				550	5325.0	29/2 ⁺
		1737		2911.1	21/2 ⁻				722	5152.2	29/2 ⁺
4656.3		4656.2 9	100	0.0	5/2 ⁺		5936.7	31/2 ⁺	1814	4122.8	27/2 ⁺
4663.8		2902.3 2	100 10	1761.32	3/2 ⁻		5990.2	33/2 ⁺	228	5761.9	31/2 ⁺
		3623.1 7	34 14	1041.71	3/2 ⁺				395	5595.3	31/2 ⁺
		4663.8 9	17 3	0.0	5/2 ⁺				569	5421.5	29/2 ⁺
4685.4		4685.3 6	100	0.0	5/2 ⁺				665	5325.0	29/2 ⁺
4700.3	3/2 ⁺	2175.8 20	100 31	2525.2					838	5152.2	29/2 ⁺
		3891.7 4	59 9	808.33	1/2 ⁺		6137.6	33/2 ⁺	985	5152.2	29/2 ⁺
		4370.7 [#] 6	19 3	329.92	7/2 ⁺		6179.7	33/2 ⁺	305	5874.8	33/2 ⁺
		4699.6 9	6.3 31	0.0	5/2 ⁺				418	5761.9	31/2 ⁺
4709.9	3/2 ⁺	1788.5 20	100 13	2918.9					461	5718.6	31/2 ⁺
		2831.0 20	32 11	1880.62	3/2 ⁺ , 1/2 ⁺				584	5595.3	31/2 ⁺
		3901.7 4	37 4	808.33	1/2 ⁺		6196.4	31/2 ⁽⁺⁾	260	5936.7	31/2 ⁺
		4379.9 7	16 3	329.92	7/2 ⁺				345	5851.2	29/2 ⁺
4967.1	27/2	319		4648.0	25/2 ⁻				478	5718.6	31/2 ⁺
5152.2	29/2 ⁺	558		4594.5	27/2 ⁺				490	5706.2	29/2
		1029.4 3	100	4122.8	27/2 ⁺	D			540	5656.1	29/2
5325.0	29/2 ⁺	1095		4230.1	(25/2 ⁺)		6197.2	35/2 ⁺	207	5990.2	33/2 ⁺
		1348		3976.3	25/2 ⁺				322	5874.8	33/2 ⁺
5421.5	29/2 ⁺	1041		4380.7	(25/2 ⁺)				602	5595.3	31/2 ⁺
		1191		4230.1	(25/2 ⁺)		6207.3	31/2	356	5851.2	29/2 ⁺
		1299		4122.8	27/2 ⁺		6336.6	33/2	462	5874.8	33/2 ⁺
		1445		3976.3	25/2 ⁺				654	5682.6	31/2
5595.3	31/2 ⁺	1001		4594.5	27/2 ⁺				741	5595.3	31/2 ⁺
		1472		4122.8	27/2 ⁺		6461.3	33/2 ⁽⁺⁾	254	6207.3	31/2
5656.1	29/2	689		4967.1	27/2				265	6196.4	31/2 ⁽⁺⁾
		1533		4122.8	27/2 ⁺		6479.6	35/2	143	6336.6	33/2
5682.6	31/2	530		5152.2	29/2 ⁺				282	6197.2	35/2 ⁺
5706.2	29/2	1583		4122.8	27/2 ⁺				300	6179.7	33/2 ⁺
5718.6	31/2 ⁺	1124		4594.5	27/2 ⁺				342	6137.6	33/2 ⁺
		1596		4122.8	27/2 ⁺				490	5990.2	33/2 ⁺
5761.9	31/2 ⁺	1639		4122.8	27/2 ⁺				605	5874.8	33/2 ⁺

Adopted Levels, Gammas (continued)

$\gamma(^{145}\text{Eu})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	E_f	J_f^π	$E_i(\text{level})$	J_i^π	E_γ	E_f	J_f^π	$E_i(\text{level})$	J_i^π	E_γ	E_f	J_f^π
6518.2	(37/2 ⁺)	528	5990.2	33/2 ⁺	7801.7	39/2 ⁽⁺⁾	372	7429.6	35/2 ⁽⁺⁾	8931.7	(43/2)	404	8527.7	(41/2)
6766.5	37/2	287	6479.6	35/2			386	7415.8	37/2	9129.4	(45/2)	248	8881.7	(43/2)
		569	6197.2	35/2 ⁺			1035	6766.5	37/2	9559.7	(45/2)	628	8931.7	(43/2)
7144.8	35/2	808	6336.6	33/2			1605	6197.2	35/2 ⁺			678	8881.7	(43/2)
		948	6197.2	35/2 ⁺	7904.6	41/2	422	7482.6	39/2	9651.8	(45/2)	720	8931.7	(43/2)
		1270	5874.8	33/2 ⁺			572	7332.5	39/2			770	8881.7	(43/2)
7247.4		786	6461.3	33/2 ⁽⁺⁾	7913.8	(37/2)	321	7592.8	37/2 ⁽⁺⁾			1124	8527.7	(41/2)
7292	37/2	148	7144.8	35/2	8034.7	(39/2)	233	7801.7	39/2 ⁽⁺⁾	9768.9	(47/2)	117	9651.8	(45/2)
		774	6518.2	(37/2 ⁺)			442	7592.8	37/2 ⁽⁺⁾			209	9559.7	(45/2)
		813	6479.6	35/2	8151.6	43/2	247	7904.6	41/2	9775.6	49/2	1268	8507.6	45/2
		1095	6197.2	35/2 ⁺			389	7762.6	41/2	9886.4	(49/2)	757	9129.4	(45/2)
7292.5	35/2 ⁽⁺⁾	831	6461.3	33/2 ⁽⁺⁾	8267.6	39/2 ⁽⁺⁾	484	7783.5	37/2 ⁽⁺⁾	9939.7	(47/2)	1008	8931.7	(43/2)
7332.5	39/2	566	6766.5	37/2			675	7592.8	37/2 ⁽⁺⁾	10120.3	(49/2)	991	9129.4	(45/2)
7415.8	37/2	898	6518.2	(37/2 ⁺)			838	7429.6	35/2 ⁽⁺⁾	10422.4	(49/2)	302	10120.3	(49/2)
		936	6479.6	35/2			975	7292.5	35/2 ⁽⁺⁾			1293	9129.4	(45/2)
7429.6	35/2 ⁽⁺⁾	1233	6196.4	31/2 ⁽⁺⁾	8425.6	43/2	663	7762.6	41/2	10509.4	(53/2)	623	9886.4	(49/2)
7482.6	39/2	190	7292.5	35/2 ⁽⁺⁾	8507.6	45/2	356	8151.6	43/2	10744.6	(49/2)	1185	9559.7	(45/2)
		716	6766.5	37/2	8527.6	43/2	623	7904.6	41/2	10894.0	(51/2)	774	10120.3	(49/2)
7534.6	35/2 ⁽⁺⁾	1338	6196.4	31/2 ⁽⁺⁾	8527.7	(41/2)	260	8267.6	39/2 ⁽⁺⁾			1125	9768.9	(47/2)
7592.8	37/2 ⁽⁺⁾	1132	6461.3	33/2 ⁽⁺⁾			493	8034.7	(39/2)	10983.2	(51/2)	1214	9768.9	(47/2)
7762.6	41/2	280	7482.6	39/2			614	7913.8	(37/2)	11027.4	(51/2)	907	10120.3	(49/2)
7783.5	37/2 ⁽⁺⁾	536	7247.4				726	7801.7	39/2 ⁽⁺⁾	11155.5	(53/2)	128	11027.4	(51/2)
		1322	6461.3	33/2 ⁽⁺⁾			765	7762.6	41/2			172	10983.2	(51/2)
7801.7	39/2 ⁽⁺⁾	(18)	7783.5	37/2 ⁽⁺⁾	8685.7		651	8034.7	(39/2)			262	10894.0	(51/2)
		209	7592.8	37/2 ⁽⁺⁾	8822.6	45/2	671	8151.6	43/2			411	10744.6	(49/2)
		267	7534.6	35/2 ⁽⁺⁾	8881.7	(43/2)	196	8685.7		11234.2	(55/2)	79	11155.5	(53/2)
		319	7482.6	39/2			354	8527.7	(41/2)			340	10894.0	(51/2)

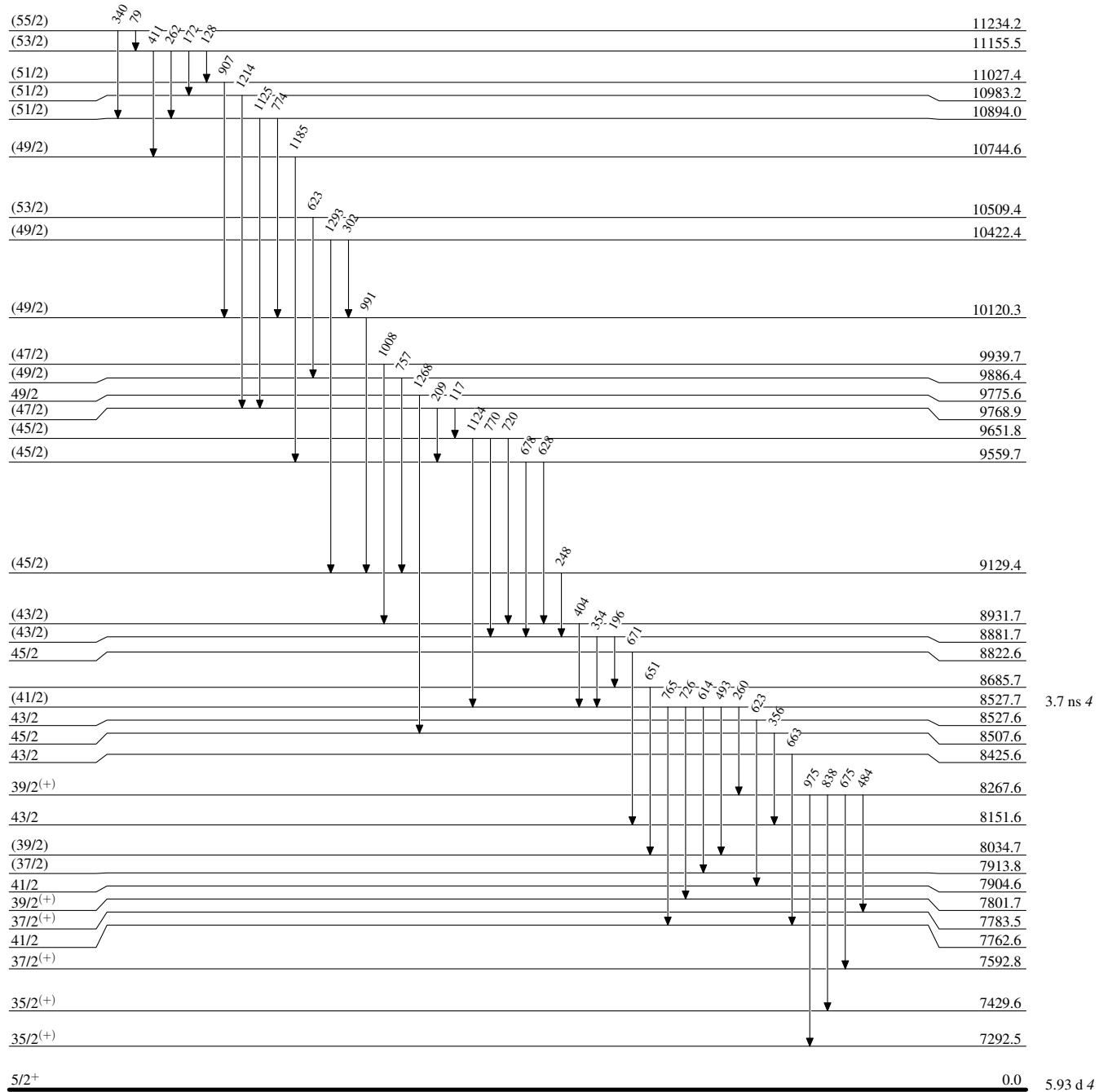
[†] Additional information 1.

[‡] From 1996Pi12 in (HI,xn γ).

[#] Placement of transition in the level scheme is uncertain.

Adopted Levels, GammasLevel Scheme

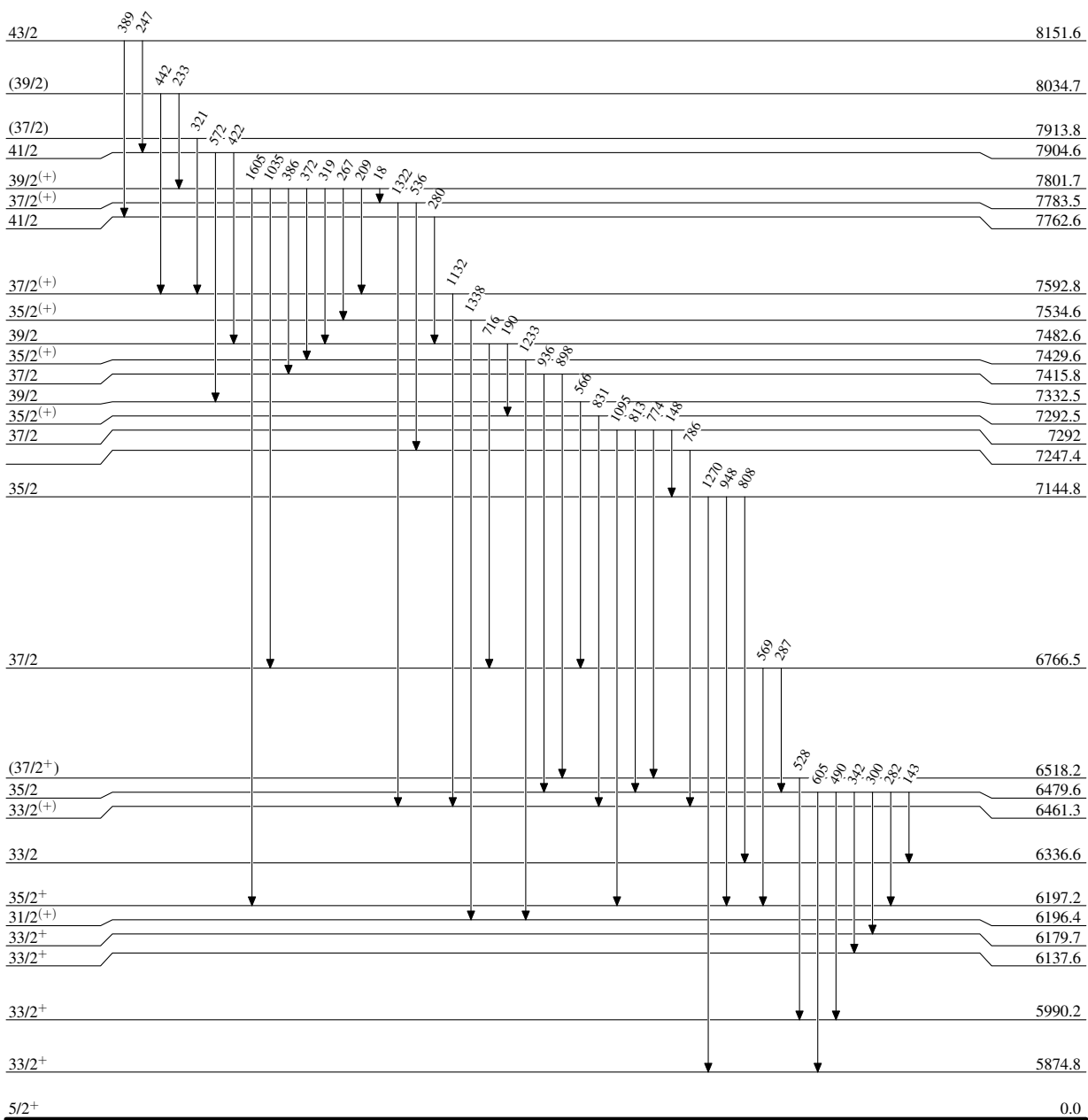
Intensities: Relative photon branching from each level



Legend

Intensities: Relative photon branching from each level

-----► γ Decay (Uncertain)

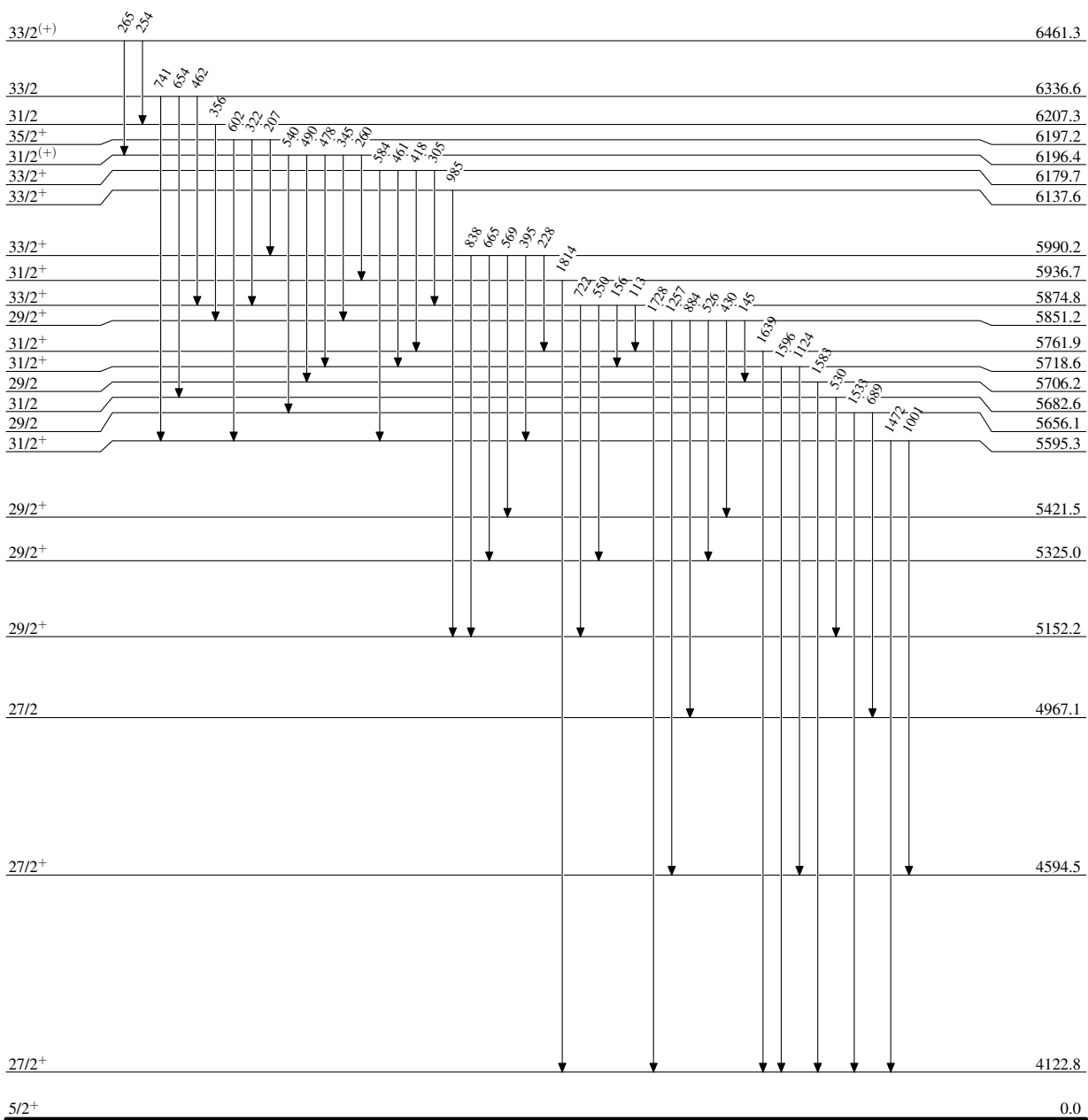


5.93 d 4

 $^{145}_{63}\text{Eu}_{82}$

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

Intensities: Relative photon branching from each level



Legend

Intensities: Relative photon branching from each level

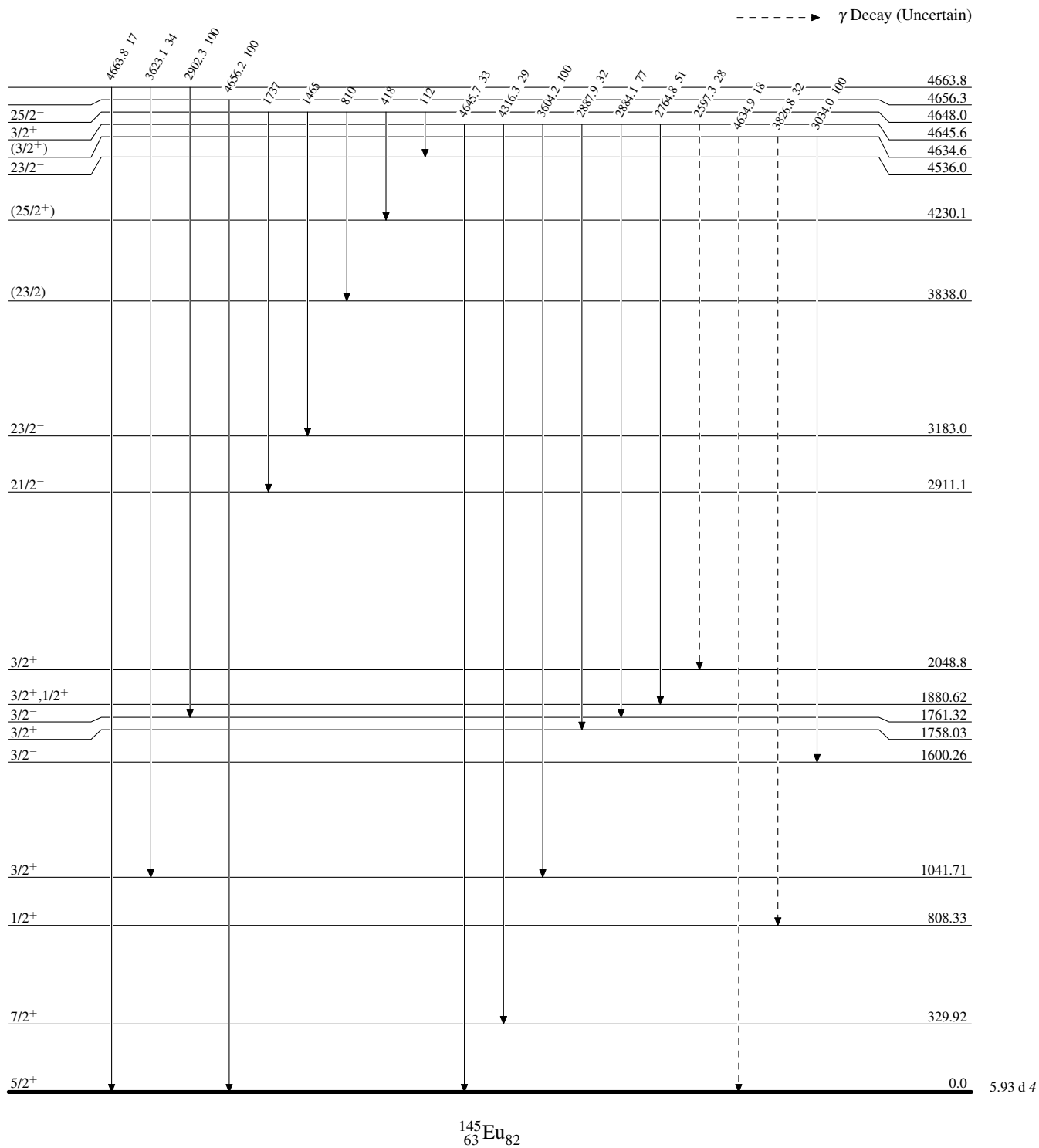
-----► γ Decay (Uncertain)



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

Legend

Intensities: Relative photon branching from each level



Legend

Intensities: Relative photon branching from each level

-----► γ Decay (Uncertain)

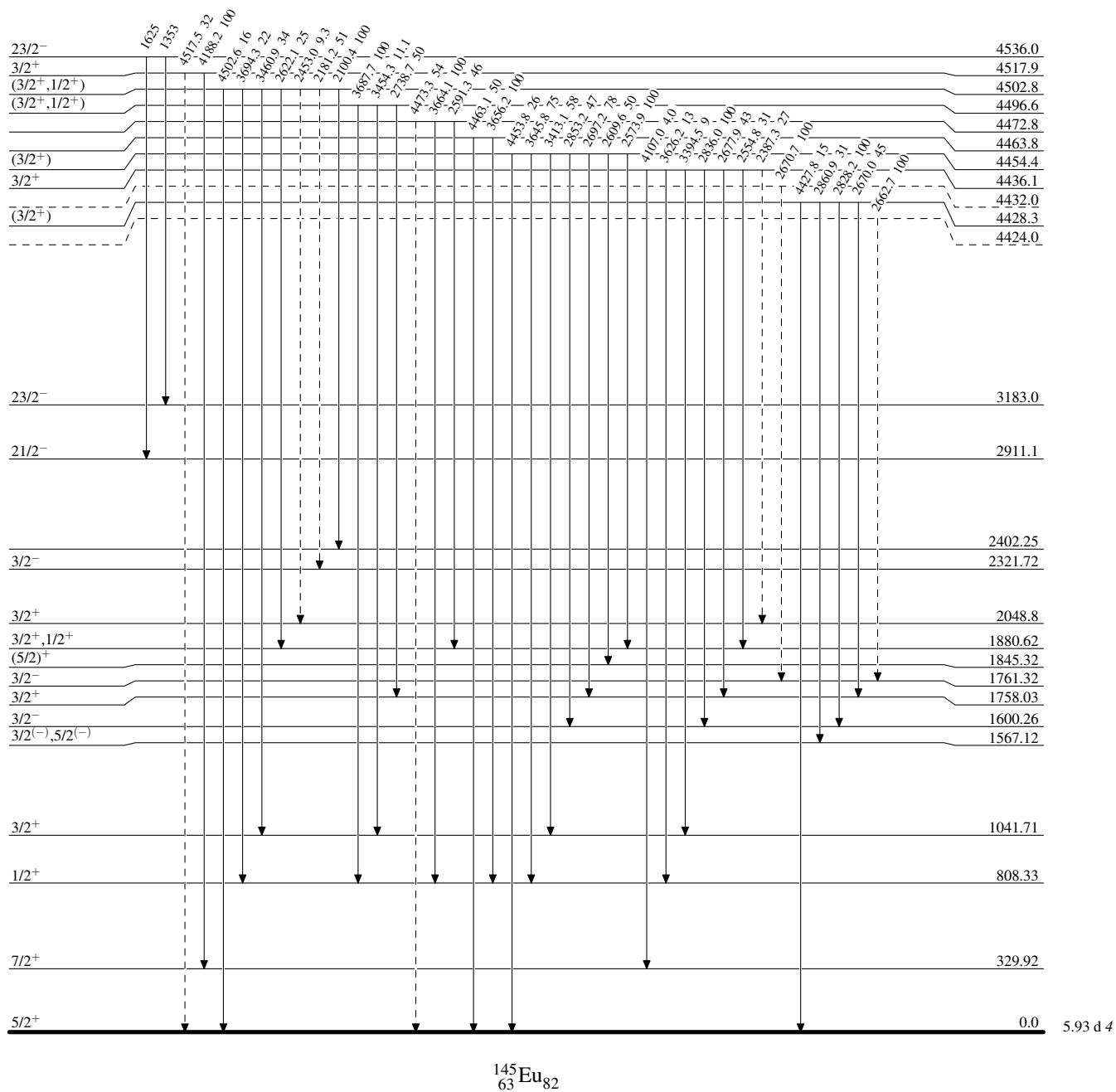


Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

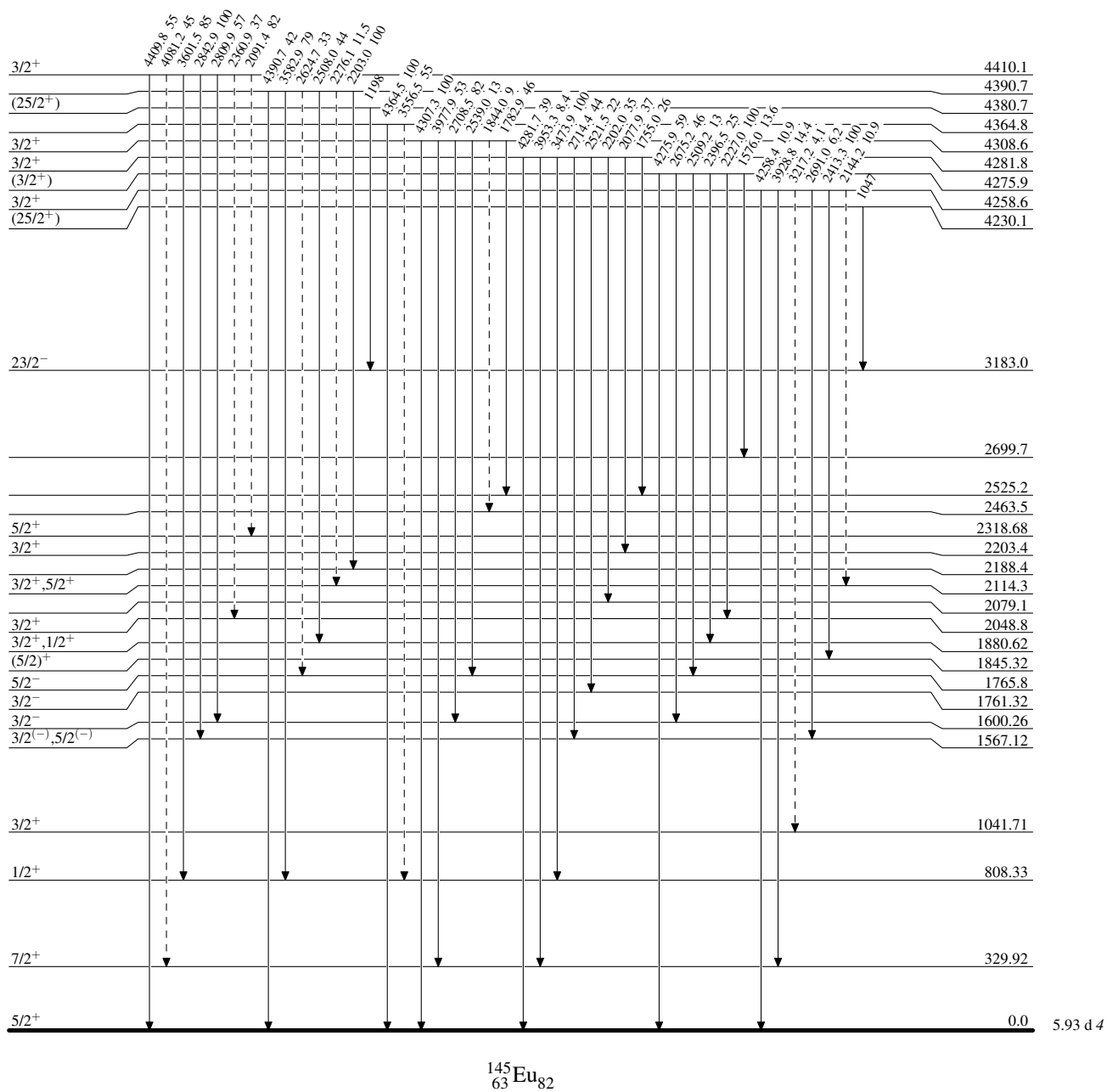
-----► γ Decay (Uncertain)

Adopted Levels, Gammas

Legend

Level Scheme (continued)

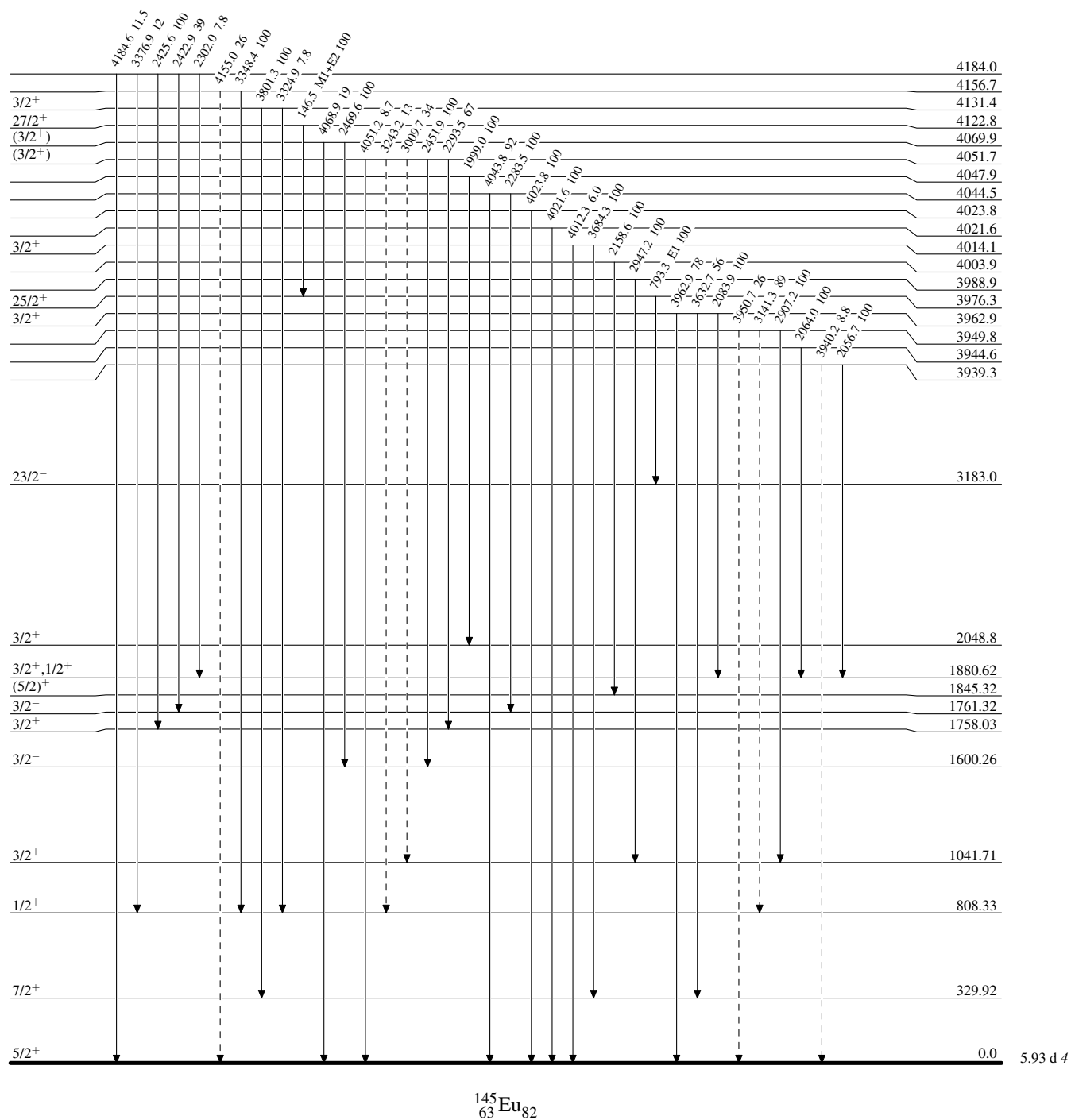
Intensities: Relative photon branching from each level

-----► γ Decay (Uncertain)

Legend

Intensities: Relative photon branching from each level

-----► γ Decay (Uncertain)

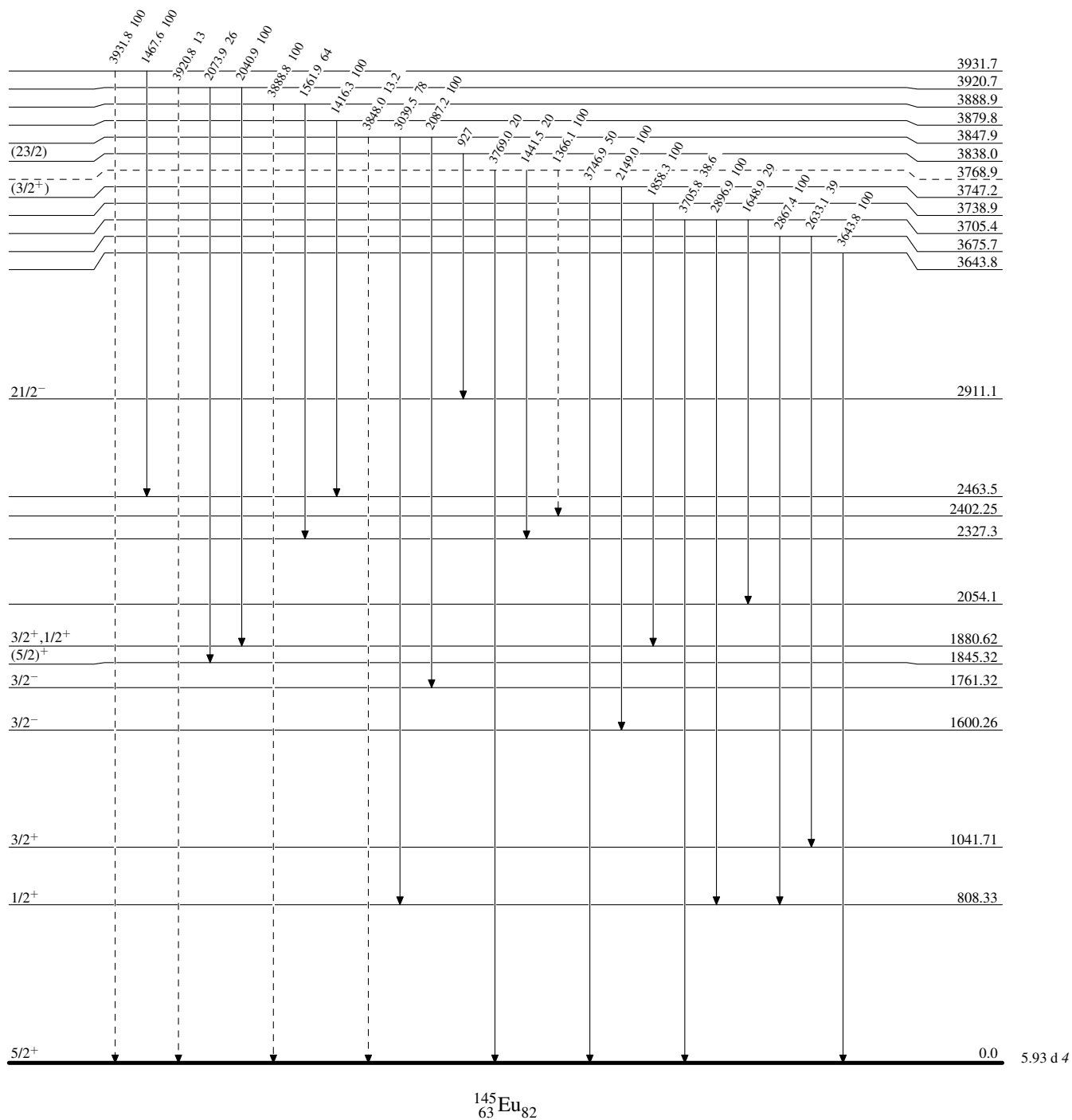


Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

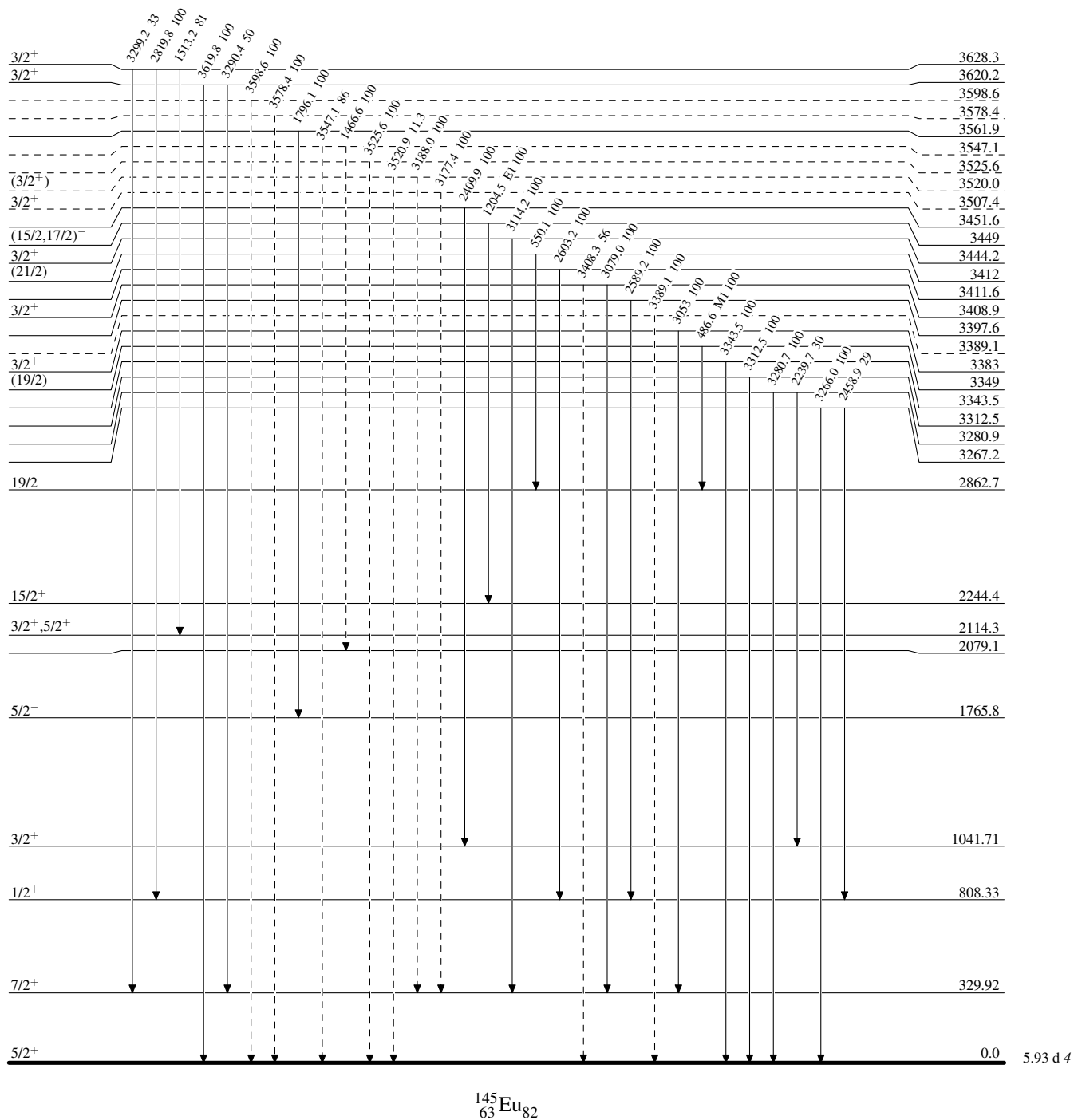
-----► γ Decay (Uncertain)

Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

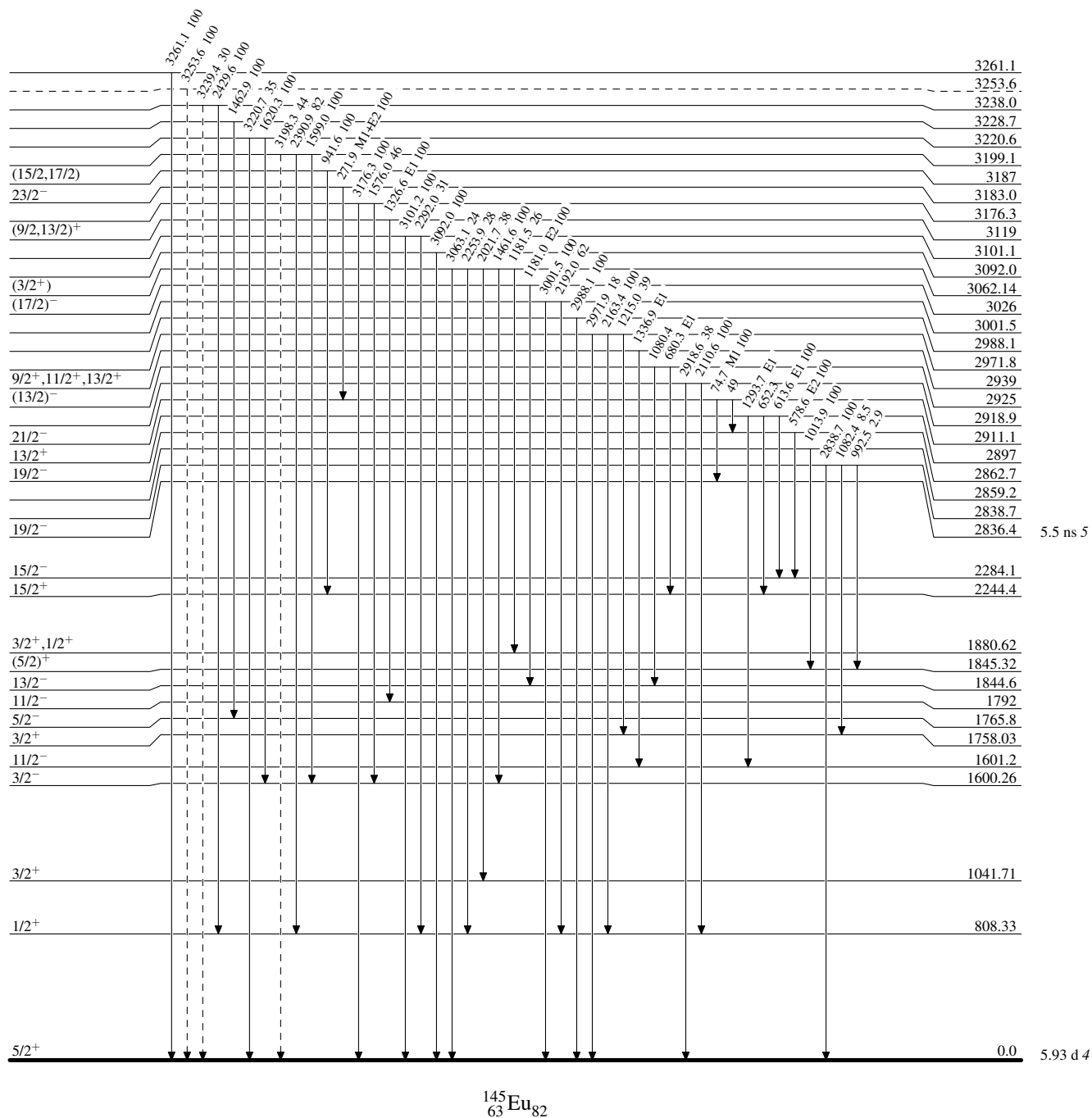
-----► γ Decay (Uncertain)

Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

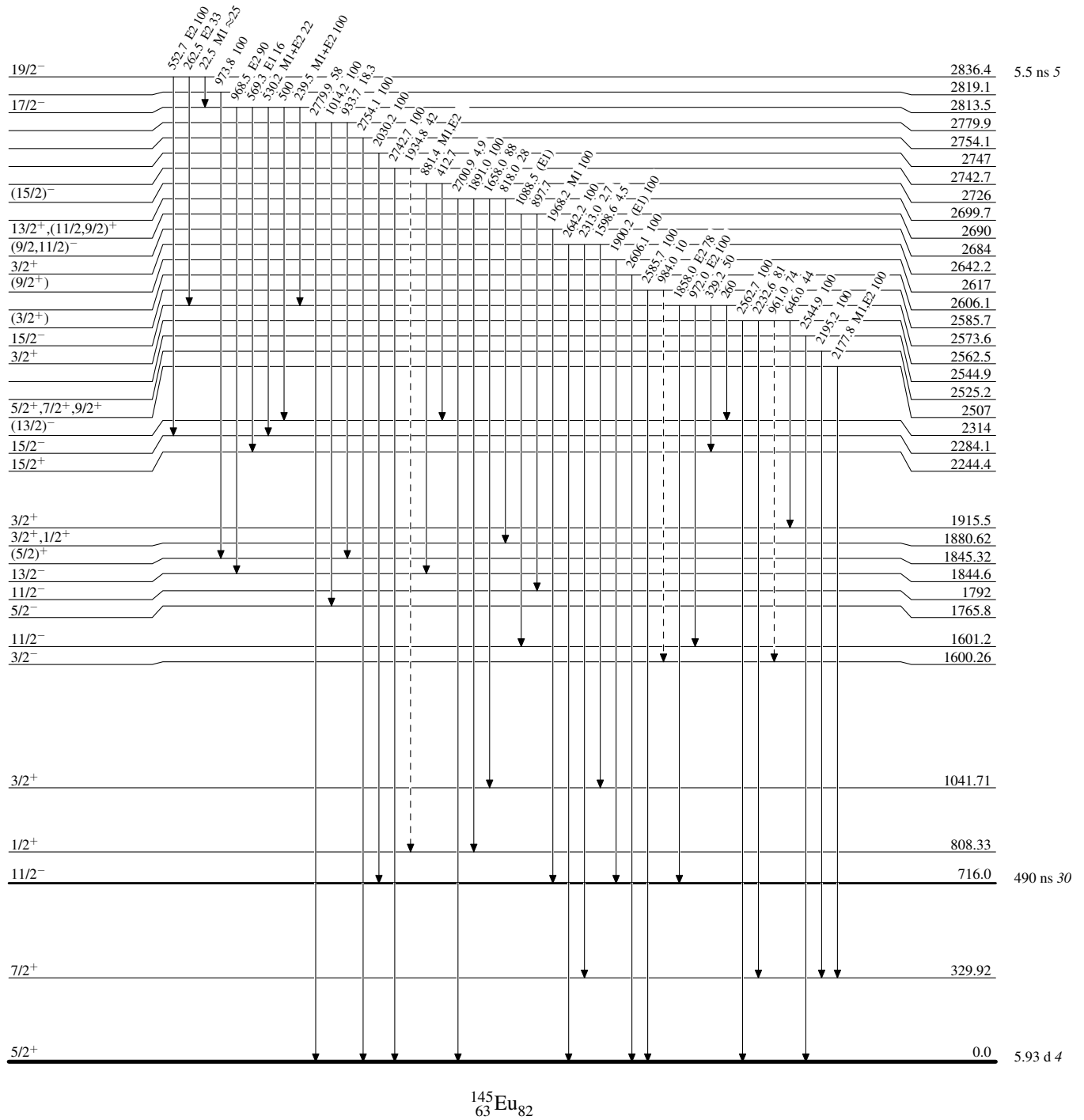
-----► γ Decay (Uncertain)

Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

-----► γ Decay (Uncertain)

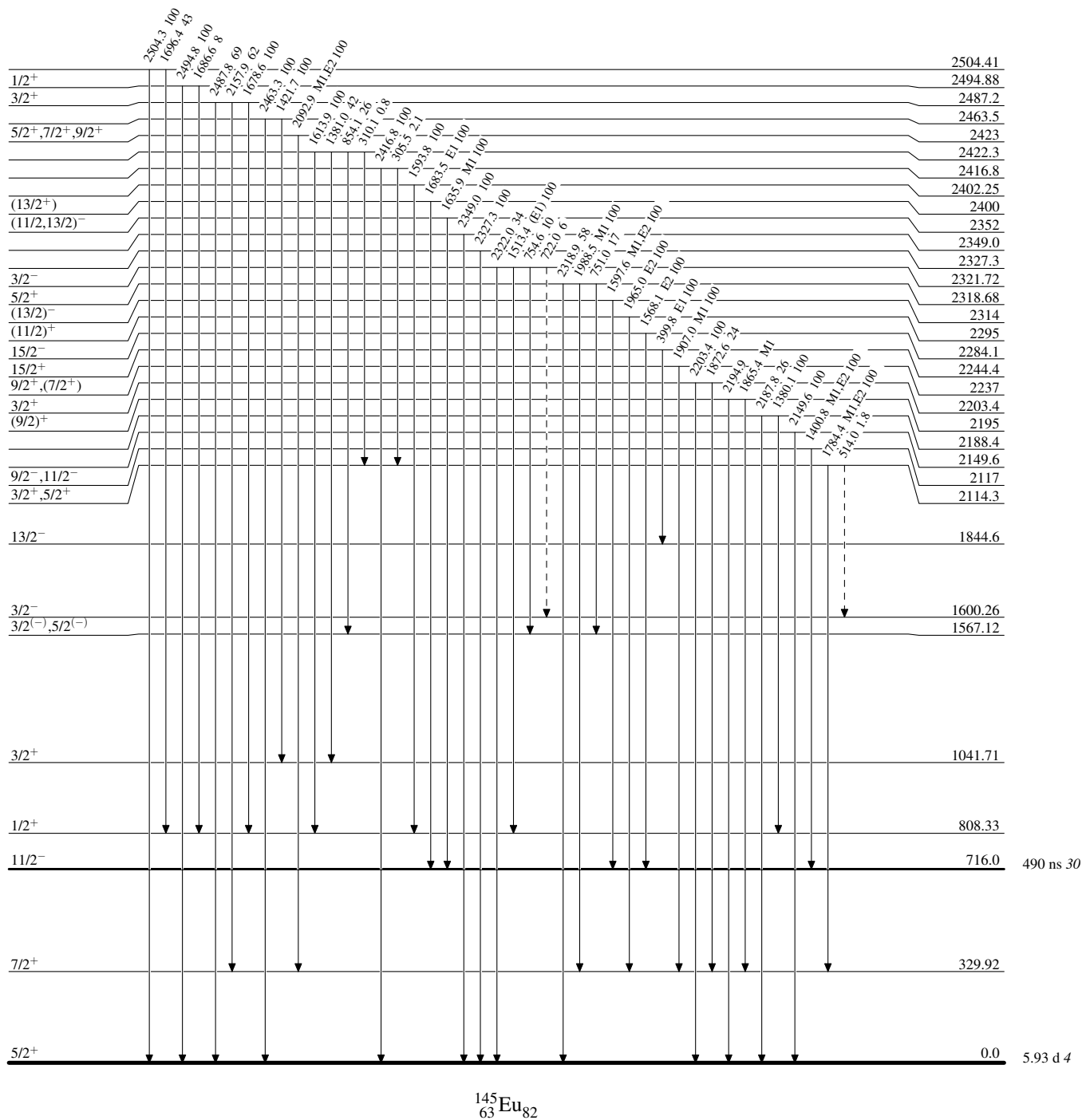
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

-----► γ Decay (Uncertain)



Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

-----► γ Decay (Uncertain)
