Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	N. Nica and B. Singh	NDS 181, 1 (2022)	9-Mar-2022

Q(β^-)=−4614 *8*; S(n)=7342 *4*; S(p)=5528 *6*; Q(α)=1735.3 *20* 2021Wa16
S(2n)=18573 *20*, S(2p)=9283.5 *13* (2021Wa16).

^{147}Gd Levels

Two hyperdeformed bands were reported (1995La18) from particle-$\gamma\gamma$ coin. But in later higher statistics work (1996La23) the existence of these bands was disproved.

Cross Reference (XREF) Flags

A	^{147}Gd IT decay (516 ns)	F	^{147}Sm(^{3}He,3nγ)
B	^{147}Tb ε decay (1.64 h)	G	^{147}Sm(α,4nγ)
C	^{147}Tb ε decay (1.83 min)	H	^{148}Sm(α,5nγ)
D	^{151}Dy α decay (17.9 min)	I	(HI,xnγ)
E	^{144}Sm(α,nγ)		

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	XREF	Comments
0.0	7/2$^-$	38.06 h *12*	ABCDEFGHI	%ε+%β^+=100 (1979VyZY) μ=1.02 *9* (2019StZV) T$_{1/2}$: 38.06 h *12* (1969Ch32, γ-decay curves). Others: 38.5 h *5* (1966Av02), 35 h *1* (1958An36), 21.7 h *25* (1963Fr02), 29 h (1957Sh46); see also 1960Bo34. J$^\pi$: J=7/2 from 1972Ek05 (atomic beam). π is inferred from μ which is consistent with the N=83 neutron being in the f$_{7/2}$ shell-model state. μ: by static nuclear orientation with γ detection (1987Kr11).
997.11 *10*	13/2$^+$	21.4 ns *11*	A C EFGH	μ=+0.49 *2* (2020StZV); Q=−0.70 *8* (2016St14) J$^\pi$: E3 γ to 7/2$^-$ compatible with 1/2$^+$,13/2$^+$. $\gamma(\theta)$(aligned) in IT decay (516 ns) establishes 13/2$^+$. μ: by time-dependent perturbed angular distribution (1987Da27); other: μ=−0.24 *7* (adopted by 2005St24 based on 1979Ha15); see also (HI,xnγ): moments dataset. Q: by time-dependent perturbed angular distribution and tilted foil time differential perturbed γ angular distribution (1982Ha22,1985Da20); see also (HI,xnγ): moments dataset. T$_{1/2}$: weighted average of 20.5 *15* (1983Ko42) and 22.2 *15* (1979Ha15). Others: 22 ns *3* (1975Kl01), 24 ns *5* (1977Ha04).
1152.57 *3*	3/2$^-$	≤0.2[c] ns	B EF	J$^\pi$: E2 γ to 7/2$^-$, g.s.; log *ft*=7.1 from (1/2$^+$) of ^{147}Tb g.s.
1235.6 *7*			E	J$^\pi$: (9/2,11/2) suggested by 1977Ha04 (^{144}Sm(α,nγ)) with no explicit arguments.
1292.46 *3*	1/2$^+$	≤0.2[c] ns	B EF	J$^\pi$: E1 γ to 3/2$^-$, 1152; log *ft*=7.0 from (1/2$^+$) of ^{147}Tb g.s.. Possible configuration=(ν s$_{1/2}$)$^{-1}$.
1347.0 *7*	(11/2,13/2)		E	
1397.00 *10*	9/2$^-$	0.35[d] ps *21*	C EF	J$^\pi$: from M1+E2 γ to g.s.; ε (log *ft*=4.3) from 11/2$^-$ state in ^{147}Tb.
1412.19 *4*	3/2$^+$	≤0.35[c] ns	B EF	J$^\pi$: M1+E2 γ to 1/2$^+$, 1292; log *ft*=7.0 from (1/2$^+$) of ^{147}Tb g.s.. Configuration=(ν d$_{3/2}$)$^{-1}$.
1509.1 *9*			E	
1594.1 *5*	(11/2,13/2)[&]		E	
1627.87 *5*	5/2$^+$[@]		B	
1628.2[f] *3*	7/2$^+$	0.42[d] ps *21*	C F	J$^\pi$: E1 γ to 7/2$^-$, $\gamma(\theta)$ and excit in ^{147}Sm(^{3}He,3nγ).

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Adopted Levels, Gammas (continued)

^{147}Gd Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$	XREF	Comments
1643.0[f] *3*	9/2+		C F	Jπ: E1 γ to 7/2−, γ(θ) and excitation function in ^{147}Sm(^{3}He,3nγ).
1699.53[f] *4*	3/2+[@]		B EF	
1701.61[f] *23*	11/2+		C F	Jπ: M1 γ to 13/2+, 15/2 excluded by excitation function (^{147}Sm(^{3}He,3nγ), 1982Pi07).
1759.85[f] *5*	1/2+[@]		B F	
1775.7 *8*	(11/2,13/2)[&]		E	
1797.2 *4*	9/2−	0.14[d] ps *7*	C F	Jπ: M1+E2 γ to 7/2+, log *ft*=4.8 from 11/2-state in ^{147}Tb. Conversion data allow both E2 and M1+E2, so that 11/2 could be assigned, but γ(θ)(^{147}Sm(^{3}He,3nγ), 1983Ko42) confirms 9/2.
1847.12 *4*	1/2−[@]		B F	
1944.2 *6*	11/2−		C	Jπ: E2 γ to 7/2−, γ to 13/2+.
1947.58 *6*	5/2−[@]		B	
2028.9[#] *8*	15/2(+)		E	Jπ: from (M1+E2) γ to 13/2+, 11/2 excluded by excitation function and 13/2+ excluded by strong negative A_2 in γ(θ) in ^{144}Sm(α,nγ) (1977Ha04).
2078.4 *10*	(9/2,11/2)		C	Jπ: 9/2,11/2,13/2 from log *ft*≈6.8 from the 11/2-state in ^{147}Tb. 13/2 less likely from γ to 7/2− g.s.
2233.19 *4*	(5/2)−[@]		B	
2329.02 *10*	(5/2,7/2)[@]		B	
2385.6 *8*	(13/2)−		C EF	Jπ: from E1 γ to 13/2+, γ(θ) (^{147}Sm(^{3}He,3nγ), 1983Ko42) compatible with 13/2 to 13/2 transition.
2438.03 *5*	(3/2,5/2)−[@]		B	
2438.91 *23*	(15/2)−		F	Jπ: from E1 γ to 13/2+, γ(θ) (^{147}Sm(^{3}He,3nγ), 1983Ko42) compatible with 15/2 to 13/2 transition.
2488.19 *13*	17/2+		A EFGH	Jπ: from stretched E2 γ to 13/2+ and excitation function in (^{3}He,3nγ) (1983Ko42) which excludes 9/2.
2489.8 *4*			F	Jπ: assigned J=(13/2) from γ to 11/2 in (^{3}He,3nγ).
2572.24 *13*	19/2−	0.37 ns *8*	A F H	Jπ: from E3 γ to 13/2+, γ to 17/2+. $T_{1/2}$: from (^{3}He,3nγ) studies of (1982Kl04).
2611.71 *6*	(1/2,3/2)+[@]		B	
2625.9 *10*			F	
2735.7 *9*			F	
2736.38 *15*	5/2−[@]		B	
2760.42 *14*	21/2+	4.5 ns *3*	A EFGH	μ=+7.6 *12* (2020StZV). Jπ: from stretched E2 γ to 17/2+, γ to 19/2−. μ: by time-dependent perturbed angular distribution (1979Ha15); see also (HI,xnγ): moments dataset. $T_{1/2}$: average of 4.6 ns *3* (1983Ko42) and 4.4 ns *3* (1979Kl04). Other: 5 ns *1* (1979Ha15).
2763.79 *16*	(19/2)+		F	Jπ: from M1 γ to 17/2+; excitation function excludes 15/2 and makes 19/2 more likely than 17/2 (^{147}Sm(^{3}He,3nγ), 1983Ko42).
2808.34 *18*			B	
2862.18 *11*	5/2+[@]		B	
2871.68 *11*			B	
2877.98 *7*	(1/2,3/2)+[@]		B	
2941.6 *5*			F	
2942.6 *3*			F	
2947.42 *10*	(3/2,5/2)+[@]		B	
2961.9 *11*			F	
2971.6 *6*	9/2−,11/2−		C	Jπ: γ to 7/2−, log *ft*≈=5.4 via 11/2− parent.
3005.3 *7*	9/2−,11/2−		C	Jπ: γ to 7/2−, log *ft*≈5.2 via 11/2− parent.

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Adopted Levels, Gammas (continued)

^{147}Gd Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
3038.15 *15*	23/2+[b]		A EF H	Jπ: from M1+E2 γ to 21/2+, and a two-dipole cascade in parallel with an M2, both from a 27/2− level.
3082.5 *5*			F	
3119.04 *20*	(3/2,5/2)[@]		B	
3121.74 *10*			B	
3124.5 *3*	(3/2,5/2)−[@]		B	
3169.9 *5*			F	
3171.50 *17*	(1/2,3/2)+[@]		B	
3186.34 *15*	23/2+[ab]		A F	Additional information 1. Jπ: M1 γ to 21/2+, dipole from 25/2− in IT decay (516 ns). 1983Ko42 in (^{3}He,3nγ) interpret this level as a configuration=((π $h_{11/2}$)(π $d_{5/2}$)$^{-1}$(ν $f_{7/2}$))23/2+ state calculated with standard shell-model methods.
3194.9 *12*	(9/2,11/2,13/2)		C	Jπ: from log *ft*≈6.1 from the 11/2-state in ^{147}Tb.
3204.8 *6*	9/2−,11/2−		C	Jπ: γ to 7/2−, log *ft*≈5.1 via 11/2− parent.
3227.9 *5*			F	
3319.86 *22*			B	
3322.7 *10*	9/2−,11/2−		C	Jπ: γ to 7/2−, log *ft*≈5.4 via 11/2− parent.
3325.92 *9*			B	
3360.0 *5*			F	
3398.93 *15*	25/2+[b]		A EF H	Jπ: from M1+E2 γ to 23/2+ and E2 γ to 21/2+.
3510.10 *16*	(23/2−)		A	Jπ: γ from 27/2− and γ to 19/2−.
3574.19 *25*			B	
3581.87 *15*	27/2−	26.8 ns *7*	A F H	μ=+11.3 *2* (2020StZV); Q=−1.21 *9* (2016St14) Jπ: from stretched E1 to 25/2+. μ: by time-dependent perturbed angular distribution (1979Ha15); other: +11.9 *3* (1979Fa01); see also (HI,xnγ): moments dataset. Q: by time-dependent perturbed angular distribution and tilted foil time differential perturbed γ angular distribution (1982Ha22,1985Da20); see also (HI,xnγ): moments dataset. $T_{1/2}$: from 1979Ha15. Other: 27 ns *2* (1979Kl04).
3691.88 *16*	25/2−[a]		A H	E(level): 1982Ba46 reverse the order of the 378-654 keV cascade and place a level at 3417 keV with J^π=25/2+, based on an M1 378.5-keV decay to a 23/2+ level. The evaluator prefers the scheme of 1982Br13 because they are able to fit two more branches from that level into the decay scheme. Jπ: from M1 γ to 27/2−, D γ to 23/2+.
3715.45 *10*	(1/2,3/2)−[@]		B	
3833.38 *5*	(1/2+)[@]		B	
3853.29 *8*	(3/2)[@]		B	
3872.8 *10*	13/2,11/2		C	Jπ: 9/2,11/2,13/2 from log *ft*=5.2 via 11/2− parent; 9/2 less likely from no γ to 7/2−.
3891.73 *19*	(1/2+,3/2−)[@]		B	
3927.21 *17*			B	
3967.78 *9*			B	
3998.79 *10*			B	
4006.86 *16*	(27/2−)[a]		A	Jπ: from (M1+E2) γ from 29/2− and (M1) γ to 25/2−.
4051.94 *9*	(1/2,3/2)[@]		B	
4070.24 *16*	27/2−[a]		A H	Jπ: from M1 γ to 25/2−.
4073.58 *9*			B	
4117.6?			B	
4132.35 *15*	(1/2,3/2)[@]		B	
4144.49 *6*	(1/2−)[@]		B	

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Adopted Levels, Gammas (continued)

^{147}Gd Levels (continued)

E(level)[†]	Jπ[‡]	XREF		Comments
4176.66 *8*	(1/2,3/2)[@]	B		
4201.27 *6*	(1/2)[@]	B		
4211.49 *17*	(27/2$^-$)	A		Jπ: γ's to 25/2$^+$ and 25/2$^-$ and γ from 31/2$^-$.
4229.93 *16*	29/2$^-$[a]	A	H	Jπ: from M1 γ to 27/2$^-$.
4249.72 *17*	(1/2,3/2)[@]	B		
4280.38 *11*	(1/2,3/2)[@]	B		
4299.72 *10*	(1/2)[@]	B		
4338.09 *18*	(27/2$^-$)	A		Jπ: from γ from 31/2$^-$ and γ's to 25/2$^+$ and 25/2$^-$.
4369.9 *5*	(1/2,3/2)[@]	B		
4431.4?	(1/2)[@]	B		
4450.88 *16*	29/2$^-$[a]	A	H	Jπ: from M1+E2 γ to 27/2$^-$.
4533.59 *16*	29/2$^-$[a]	A		Jπ: from E2 γ from 33/2$^-$ and γ to 27/2$^-$.
4617.99 *16*	29/2$^+$[a]	A	H	Jπ: from E1 γ to 27/2$^-$ and γ to 25$^+$.
4843.95 *16*	31/2$^-$[a]	A		Jπ: from M1+E2 γ to 29/2$^-$.
4948.77 *16*	31/2$^+$[a]	A	H	Jπ: from M1 γ to 29/2$^+$.
4971.85 *16*	31/2$^-$[a]	A	H	Jπ: from E2 γ to 27/2$^-$.
5029.23 *16*	33/2$^+$[a]	A		Jπ: from M1 γ to 31/2$^+$.
5118.22 *17*	(29/2$^-$)	A		Jπ: from γ's from 33/2$^-$ and to 25/2$^-$.
5265.13 *16*	31/2$^-$[a]	A	H	Jπ: from E2 γ to 27/2$^-$ and M1 γ to 29/2$^-$.
5272.38 *16*	(29/2$^+$,31/2)	A		Jπ: from γ from 33/2$^+$ and γ's to 29/2$^+$ and 29/2$^-$.
5382.26 *16*	33/2$^-$[a]	A	H	Jπ: from M1 γ to 31/2$^-$, E2 γ to 29/2$^-$.
5439.28 *17*	(31/2$^-$)	A		Jπ: (25/2$^-$,27/2,29/2,31/2$^-$) from γ's to 27/2$^-$ and 29/2$^-$; 31/2$^-$ more likely for generally increasing J with excitation energy.
5583.12 *16*	35/2$^-$[a]	A	H	Jπ: from M1 γ to 33/2$^-$ and E2 γ to 31/2$^-$.
5622.38 *17*	(33/2)	A		Jπ: (29/2$^+$,31/2,33/2) from γ's to 31/2$^+$, 31/2$^-$ and 33/2$^+$; 33/2 more likely for generally increasing J with excitation energy.
5652.70 *16*	(33/2$^-$)	A		Jπ: (29/2$^+$,31/2,33/2$^-$) from γ's to 29/2$^-$ and 33/2$^+$; 33/2$^-$ more likely for generally increasing J with excitation energy.
5742.45 *16*	(33/2$^+$)	A		Jπ: (29/2$^+$,31/2,33/2$^+$) from γ's to 29/2$^+$ and 33/2$^+$; 33/2$^+$ more likely for generally increasing J with excitation energy.
5767.58 *16*	(35/2$^-$)	A		Jπ: (31/2,33/2,35/2$^-$) from γ's to 31/2$^-$, 33/2$^+$ and 33/2$^-$; 35/2$^-$ more likely for generally increasing J with excitation energy.
5771.11 *23*		A		
5923.15 *16*	37/2$^-$[a]	A	H	Jπ: from M1 γ to 35/2$^-$.
5959.56 *17*	35/2$^-$	A		Jπ: (29/2$^-$,31/2,33/2,35/2$^-$) from γ's to 31/2$^-$ and 33/2$^-$; 35/2$^-$ more likely for generally increasing J with excitation energy.
6012.94 *16*	35/2$^+$[a]	A		Jπ: from E2 γ to 31/2$^+$.
6081.62 *17*	(35/2$^-$)	A		Jπ: (29/2$^-$,31/2,33/2,35/2$^-$) from γ's to 31/2$^-$ and 33/2$^-$; 35/2$^-$ more likely for generally increasing J with excitation energy.
6181.41 *16*	(35/2$^+$)	A		Jπ: (31/2$^+$,33/2,35/2$^+$) from γ's to 31/2$^+$ and 35/2$^+$; 35/2$^+$ more likely for generally increasing J with excitation energy.
6316.00 *16*	(37/2$^+$)[a]	A		Jπ: from (E2) γ to 33/2$^+$.
6322.31 *17*	(35/2$^+$)	A		Jπ: (29/2$^+$,31/2,33/2,35/2$^+$) from γ's to 31/2$^+$ and 33/2$^+$; 35/2$^+$ more likely for generally increasing J with excitation energy.
6373.37 *18*	(37/2)	A		Jπ: (33/2,35/2,37/2) from γ's to 35/2$^+$ and 35/2$^-$; 35/2 more likely for generally increasing J with excitation energy.
6464.05 *16*	(37/2$^+$)[a]	A		Jπ: from (M1) γ from 39/2$^+$.
6471.58 *16*	39/2$^-$	A	H	Jπ: from M1 γ to 37/2$^-$.
6568.03 *16*	(37/2$^+$)	A		Jπ: (33/2$^-$,35/2,37/2$^+$) from γ's to 35/2$^+$, 35/2$^-$, 37/2$^-$ and 33/2$^+$; 37/2$^+$ more likely for generally increasing J with excitation energy.
6621.46 *16*	39/2$^+$[a]	A		Jπ: from E1 γ to 37/2$^-$.
6658.35 *17*	(39/2$^-$)	A		Jπ: (33/2$^-$,35/2,37/2,39/2$^-$) from γ's to 35/2$^-$ and 37/2$^-$; 39/2$^-$ more likely for generally increasing J with excitation energy.
6697.42 *16*	(37/2$^+$)	A		Jπ: (33/2,35/2,37/2$^+$) from γ's to 35/2$^+$, 35/2$^-$ and 33/2$^+$; 39/2$^+$ more likely for

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Adopted Levels, Gammas (continued)

^{147}Gd Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
			generally increasing J with excitation energy.
6721.37 *17*	(39/2⁻)	A	Jπ: (33/2⁻,35/2,37/2,39/2⁻) from γ's to 35/2⁻ and 37/2⁻; 39/2⁻ more likely for generally increasing J with excitation energy.
6723.33 *17*	(39/2⁻)	A	Jπ: (33/2⁻,35/2,37/2,39/2⁻) from γ's to 35/2⁻ and 37/2⁻; 39/2⁻ more likely for generally increasing J with excitation energy.
6833.72 *17*	(37/2)	A	Jπ: (33/2⁺,35/2,37/2) from γ's to 35/2⁺, 35/2⁻ and 37/2⁺; 37/2 more likely for generally increasing J with excitation energy.
6838.74 *16*	39/2⁺[a]	A	Jπ: from E1 γ to 37/2⁻.
6894.83 *16*	(39/2)	A	Jπ: (35/2⁻,37/2,39/2) from γ's to 37/2⁺, 37/2⁻ and 39/2⁻; 39/2 more likely for generally increasing J with excitation energy.
6906.95 *16*	41/2⁺[a]	A	Jπ: from M1 γ to 39/2⁺.
6936.96 *16*	(39/2⁺)	A	Jπ: (35/2⁻,37/2,39/2⁺) from γ's to 35/2⁺ and 39/2⁻; 39/2⁺ more likely for generally increasing J with excitation energy.
7018.33 *21*		A	
7035.48 *16*	41/2⁺[a]	A	Jπ: from M1+E2 γ to 39/2⁺.
7124.59 *17*		A	
7126.90 *17*	(39/2⁻,41/2⁻)	A	Jπ: (39/2⁻,41/2⁻) from γ's from 43/2⁻ and to 37/2⁻.
7182.97 *17*	(39/2⁺)	A	Jπ: (33/2⁺,35/2,37/2,39/2⁺) from γ's to (35/2⁺) and (37/2⁺); 39/2⁺ more likely for generally increasing J with excitation energy.
7212.81 *16*	(41/2)	A	Jπ: (37/2,39/2,41/2) from γ's to 39/2⁺ and 39/2⁻; 41/2 more likely for generally increasing J with excitation energy.
7275.59 *17*		A	
7307.85 *17*	(39/2⁻,41/2⁺)	A	Jπ: (39/2⁻,41/2⁺) from γ's from 43/2⁻ and to 37/2⁺.
7352.64 *17*	41/2⁺	A	
7386.28 *17*	(37/2⁻)	A	Jπ: (31/2⁻,33/2,35/2,37/2⁻) from γ's to 35/2⁻ and 33/2⁻; 37/2⁻ more likely for generally increasing J with excitation energy.
7389.54 *17*	43/2⁺	A	Jπ: from M1+E2 γ to 41/2⁺.
7396.31 *16*	(41/2⁺)	A	Jπ: (37/2,39/2,41/2⁺) from γ's to 39/2⁺, 39/2⁻ and (37/2⁺); 41/2⁺ more likely for generally increasing J with excitation energy.
7531.08 *17*	(41/2)	A	Jπ: (37/2,39/2⁻,41/2) from γ's from 43/2⁻, to 39/2⁺ and 39/2⁻; 41/2 more likely for generally increasing J with excitation energy.
7596.23 *16*	(39/2⁻)	A	Jπ: (37/2⁺,39/2⁻) from γ's to 41/2⁺ and 35/2⁻; 39/2⁻ more likely for generally increasing J with excitation energy.
7619.93 *17*	(41/2⁺)	A	Jπ: (37/2⁺,39/2,41/2⁺) from γ's to 41/2⁺ and 37/2⁺; 41/2⁺ more likely for generally increasing J with excitation energy.
7646.11 *17*	39/2⁻[a]	A	Jπ: from M1 γ from 41/2⁺.
7666.44 *17*	39/2⁻,41/2⁻[a]	A	Jπ: 39/2⁻,41/2⁻,43/2⁻ from M1 γ from 41/2⁻; 43/2⁻ less likely for generally decreasing J with decreasing excitation energy.
7669.82 *17*	(39/2⁻)[a]	A	Jπ: from (M1) γ from 41/2⁻.
7692.24 *19*	(41/2)	A	Jπ: (37/2,39/2,41/2) from γ's to 39/2⁺ and 39/2⁻; 41/2 more likely for generally increasing J with excitation energy.
7706.06 *17*	39/2⁻[a]	A	Jπ: from M1 γ from 41/2⁻.
7718.70 *17*	39/2⁻[a]	A	Jπ: from M1 γ from 41/2⁻.
7768.82 *19*	(39/2⁻)[a]	A	Jπ: from (M1) γ from 41/2⁻.
7772.08 *17*	(43/2)	A	Jπ: (41/2⁺,43/2,45/2⁺) from γ's from 45/2⁺ and to 41/2⁺; 43/2 more likely for generally increasing J with excitation energy.
7800.50 *17*	39/2⁻[a]	A	Jπ: from M1 γ from 41/2⁻.
7801.56 *16*	41/2⁻[a]	A	Jπ: 41/2⁻,43/2⁻ from D γ from 43/2⁻ and M1 γ from 41/2⁻; 43/2⁻ less likely from γ's to 37/2⁺ and 37/2⁻.
7825.85 *16*	41/2⁻,39/2⁻[a]	A	Jπ: from M1 γ from 41/2⁻.
7874.18 *16*	41/2⁻	A	Jπ: from E2 γ to 37/2⁻ and E1 γ to 41/2⁺.
7903.71 *17*	(39/2⁻,41/2⁻)	A	Jπ: (39/2⁻,41/2⁻) from γ's from 43/2⁻ and to 37/2⁻.
7917.24 *18*	(39/2⁻,41/2⁻)	A	Jπ: (39/2⁻,41/2⁻) from γ's from 43/2⁻ and to 37/2⁻.
7964.13 *16*	43/2⁻[a]	A	Jπ: from E1 γ to 41/2⁺.
7994.43 *16*	43/2⁻[a]	A	Jπ: from E1 γ to 41/2⁺.
8097.31 *17*	(43/2)	A	Jπ: (39/2,41/2,43/2) from γ's to 41/2⁺ and 41/2⁻; 43/2 more likely for generally

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{147}Gd Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$	XREF		Comments
					increasing J with excitation energy.
8126.17 *17*	43/2+[a]		A		Jπ: from M1 γ from 45/2+.
8153.63 *17*	45/2+[a]		A		Jπ: from M1 γ to 43/2+.
8333.57 *16*	45/2+[a]		A		Jπ: from E1 γ to 43/2−.
8588.07 *17*	49/2+[a]	516 ns *20*	A	I	μ=+10.9 *2* (2020StZV) Q=−3.00 *18* (2016St14) $T_{1/2}$: weighted average of 510 ns *20* (1982Ha22) and 530 ns *30* (1979Ha15), 516 ns *17* (adopted with minimum experimental uncertainty). Others: 560 ns *60* (1978Br15), 550 ns (1982Ba46). Proposed configuration=$\pi(d_{5/2}^{-2}h_{11/2}^{2})_{10}\otimes \nu(h_{11/2}^{-1}i_{13/2}f_{7/2})_{29/2}$, with large oblate deformation. β_2=−0.19 (1982Ha22). μ: deduced by 2020StZV based on g factor measured by 1979Ha15. Q: absolute value measured by 1982Ha22; sign deduced by 1985Da20. Jπ: from stretched E2 γ to 45/2+.
9241.1 *8*	(51/2)			I	Jπ: from 1987Bo10, supported by γ from (55/2+) and γ to (49/2+).
9507.2 *8*	(51/2+)	<1[e] ps		I	Jπ: from M1+E2 γ to (49/2+).
9691.5 *8*	(53/2+)	3.1[e] ps *7*		I	Jπ: from E2 γ to (49/2+).
9879.9 *7*	(53/2−)	≈76[e] ps		I	Jπ: J=(53/2) from dipole to (51/2). Parity is from 1987Bo10.
10272.2 *11*	(55/2−)			I	Jπ: from (HI,xnγ), 1981Ha17 (no explicit arguments).
10487.9 *9*	(55/2+)			I	Jπ: M1+E2 γ to (53/2+).
10688.8 *10*	(57/2−)	10[e] ps *3*		I	Jπ: E2 γ to (53/2−).
10747.4 *10*	(57/2+)			I	Jπ: E2 γ to (53/2+).
10993.4 *10*	(59/2−)	0.80 ns *5*		I	μ=+11 *2* (2020StZV) Jπ: E1 γ to (57/2+). μ: by transient field integral perturbed angular correlation (1989Ha15); see also (HI,xnγ): moments dataset. $T_{1/2}$: 1984Sl03 give 0.8 ns.
11232.3 *12*	(61/2−)	17 ps *3*		I	Jπ: ΔJ=1, M1 γ to (59/2−), ΔJ=2, E2 γ to (57/2−).
11850.8 *14*	(65/2−)			I	Jπ: E2 γ to (61/2−).
11930.3 *13*	(61/2)			I	Jπ: D γ to (59/2−).
12208.7 *15*	(65/2−)	≈1.4 ps		I	Jπ: E2 γ to (61/2−).
12548.7 *15*	(65/2)			I	Jπ: E2 γ to (61/2).
13104.8 *18*	(69/2−)			I	Jπ: E2 γ to (65/2−).
13265.2 *15*	(67/2)			I	Jπ: D γ to (65/2−).
13416.7 *18*	(67/2)			I	Jπ: ΔJ=1, D γ to (65/2−).
13446.1 *21*				I	
13446.6 *16*	(69/2)			I	Jπ: E2 γ to (65/2).
14433.3 *19*	(71/2)			I	Jπ: M1+E2 γ to (69/2).
14793? *3*				I	
15174.9 *22*	(73/2)			I	Jπ: D γ to (71/2).
15390.4 *24*	(73/2)			I	Jπ: D γ to (73/2).
15691 *3*	(75/2)			I	Jπ: D γ to (73/2).
16777 *3*				I	
16937 *3*	(79/2)			I	Jπ: ΔJ=(2) γ to (75/2).
x[g]	J≈(55/2)			I	Additional information 2. Jπ: from 1993Ha19 and 1996Th06. 1993Ra07 suggest J=51/2, 55/2. A 663.9γ is shown by 1991Zu01 as the first transition in the SD band, but no evidence for such a line was found by 1993Ha19.
697.04+x[g] *5*	J+2			I	
1442.35+x[g] *8*	J+4			I	
2237.89+x[g] *10*	J+6			I	
3084.92+x[g] *12*	J+8			I	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{147}Gd Levels (continued)

E(level)†	Jπ‡	XREF	Comments
3984.87+x[g] 14	J+10	I	
4939.24+x[g] 16	J+12	I	
5948.79+x[g] 17	J+14	I	
7014.03+x[g] 18	J+16	I	
8135.07+x[g] 20	J+18	I	
9310.52+x[g] 21	J+20	I	
10538.97+x[g] 22	J+22	I	
11816.49+x[g] 24	J+24	I	
13139.6+x[g] 3	J+26	I	
14506.9+x[g] 3	J+28	I	
15920.6+x[g] 3	J+30	I	
17384.4+x[g] 4	J+32	I	
18900.7+x[g] 4	J+34	I	
20472.6+x[g] 5	J+36	I	
22100.4+x[g] 9	J+38	I	
y[h]	J1≈(61/2)	I	Additional information 3. Jπ: from 1993Ha19 and 1996Th06. Others: 57/2, 61/2 (1993Ra07); 57/2 (1995Xu01).
730.21+y[h] 12	J1+2	I	
1509.15+y[h] 15	J1+4	I	
2337.18+y[h] 17	J1+6	I	
3214.92+y[h] 18	J1+8	I	
4143.94+y[h] 20	J1+10	I	
5125.55+y[h] 21	J1+12	I	
6161.04+y[h] 23	J1+14	I	
7251.46+y[h] 24	J1+16	I	
8398.1+y[h] 3	J1+18	I	
9601.7+y[h] 3	J1+20	I	
10863.1+y[h] 3	J1+22	I	
12183.5+y[h] 3	J1+24	I	
13563.5+y[h] 4	J1+26	I	
15003.4+y[h] 4	J1+28	I	
16503.7+y[h] 4	J1+30	I	
18065.0+y[h] 5	J1+32	I	
19687.9+y[h] 6	J1+34	I	
z[i]	J2≈(51/2)	I	Additional information 4. Jπ: from 1996Th06.
704.8+z[i] 5	J2+2	I	
1457.9+z[i] 6	J2+4	I	
2261.7+z[i] 6	J2+6	I	
3118.7+z[i] 6	J2+8	I	
4029.4+z[i] 6	J2+10	I	
4995.8+z[i] 6	J2+12	I	
6018.5+z[i] 6	J2+14	I	
7098.7+z[i] 7	J2+16	I	
8236.3+z[i] 7	J2+18	I	
9431.6+z[i] 7	J2+20	I	
10684.6+z[i] 7	J2+22	I	
11995.3+z[i] 7	J2+24	I	

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Adopted Levels, Gammas (continued)

^{147}Gd Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF	Comments
13363.1+z[i] *8*	J2+26	I	
14786.3+z[i] *8*	J2+28	I	
16263.6+z[i] *8*	J2+30	I	
17786.3+z[i] *9*	J2+32	I	
19298.4+z?[i] *10*	J2+34	I	
u[j]	J3≈(61/2)	I	Additional information 5. J$^{\pi}$: from 1996Th06.
741.9+u[j] *4*	J3+2	I	
1527.4+u[j] *6*	J3+4	I	
2361.8+u[j] *7*	J3+6	I	
3245.5+u[j] *7*	J3+8	I	
4181.4+u[j] *8*	J3+10	I	
5170.0+u[j] *8*	J3+12	I	
6212.0+u[j] *8*	J3+14	I	
7308.9+u[j] *9*	J3+16	I	
8462.4+u[j] *9*	J3+18	I	
9671.9+u[j] *9*	J3+20	I	
10939.6+u[j] *9*	J3+22	I	
12265.7+u[j] *10*	J3+24	I	
13650.2+u[j] *10*	J3+26	I	
15093.8+u[j] *11*	J3+28	I	
16596.5+u[j] *12*	J3+30	I	
18159.9+u[j] *14*	J3+32	I	
v[k]	J4≈(71/2)	I	Additional information 6. J$^{\pi}$: from 1996Th06.
899.5+v[k] *4*	J4+2	I	
1850.6+v[k] *5*	J4+4	I	
2844.6+v[k] *6*	J4+6	I	
3880.7+v[k] *6*	J4+8	I	
4960.4+v[k] *7*	J4+10	I	
6086.0+v[k] *7*	J4+12	I	
7260.5+v[k] *7*	J4+14	I	
8483.6+v[k] *8*	J4+16	I	
9756.4+v[k] *9*	J4+18	I	
11079.5+v[k] *9*	J4+20	I	
12453.9+v[k] *10*	J4+22	I	
13881.9+v[k] *10*	J4+24	I	
15366.0+v[k] *12*	J4+26	I	
w[l]	J5	I	Additional information 7.
890.8+w[l] *9*	J5+2	I	
1832.6+w[l] *10*	J5+4	I	
2829.3+w[l] *10*	J5+6	I	
3875.8+w[l] *11*	J5+8	I	
4971.8+w[l] *11*	J5+10	I	
6115.0+w[l] *11*	J5+12	I	
7305.6+w[l] *11*	J5+14	I	
8543.1+w[l] *12*	J5+16	I	
9828.0+w[l] *12*	J5+18	I	

Adopted Levels, Gammas (continued)

^{147}Gd Levels (continued)

E(level)[†]	J^{π}[‡]	XREF	Comments
11162.3+w[l] *12*	J5+20	I	

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Adopted Levels, Gammas (continued)

^{147}Gd Levels (continued)

E(level)[†]	Jπ[‡]	XREF
12547.2+w[l] *13*	J5+22	I
13982.8+w[l] *13*	J5+24	I
15471.9+w[l] *14*	J5+26	I
17014.2+w[l] *15*	J5+28	I
18610.6+w[l] *18*	J5+30	I

[†] From least-squares fit to Eγ′s.

[‡] Based on measurements in ^{147}Tb ε decay (1.64 h), ^{147}Tb ε decay (1.83 min), ^{147}Sm(^{3}He,3nγ), ^{144}Sm(α,nγ), ^{147}Sm(α,4nγ) (first group), in IT decay (516 ns) (second group), and (HI,xnγ) (third group). The datasets in the first group contain levels from g.s. up to roughly the 27 ns isomer (27/2$^-$, 3582 keV). Most of the levels in the second group are situated in between the 27 ns and the 516 ns isomers (49/2$^+$, 8588 keV), while fewer data are reported in between g.s. and the 27 ns isomer. Finally, the third group contains the levels above the 516 ns isomer to highest excitation energy and spin (including the SD bands). In assigning J^π values for second and third groups two arguments were applied. Firstly, as the multipolarities were mostly measured by γ(θ), their stretched (rather than non-stretched) character was established. Secondly, the spin values increase with excitation energy. These arguments were (rather tacitly) applied by authors (there is a general good agreement between different groups) and considered here, too. Specific arguments are listed in comments.

[#] From (α,nγ) data only.

[@] Based on measured γ multipolarities and log *ft* values from (1/2$^+$) g.s. in ^{147}Tb ε decay (1.64 h) (1997Wa04).

[&] According to 1977Ha04 in (α,nγ) dataset the possible spin assignments for the 1594.1 and 1775.7 keV levels are proposed from the indication of the relative excitation functions of γ-rays deexciting these levels (fig. 7).

[a] From IT decay (516 ns) based on γ(θ) and α(K)exp (1982Br13) and α(exp) (2020Br06).

[b] Compatible with shell-model calculations in (^{3}He,3nγ) (1983Ko42).

[c] From ceγ(t) in ^{147}Tb ε decay (1.64 h) (1974Bu24).

[d] From (^{3}He,3nγ) (1983Ko42). $T_{1/2}$ deduced from Doppler-broadening of the 1397-, 1628-, and 1797-keV lines.

[e] From IT decay (516 ns) (1981Ha17).

[f] Member of configuration=((N,F7/2)(^{146}Gd 3$^-$)) particle-phonon septuplet.

[g] Band(A): SD-1 band (1996Th06,1993Ha19,1991Zu01). Possible configuration=$\pi 6^2 \nu 7^1 \nu 6^2$. The two neutrons are possibly in 5/2[642] α=+1/2 or −1/2 orbit (1994ViZV). Percent feeding=0.87 *19* (1993Ha19), 1.0 (1991Zu01) in (HI,xnγ) (^{122}Sn(^{30}Si,5nγ) E=155 MeV); 2.1 *3* (1992Fl02) in ^{76}Ge(^{76}Ge,5nγ); 1.42 *12* (1997Zh03) in ^{124}Sn(^{29}Si,6nγ) E=157 MeV. 1998Ni06 find that population in ^{76}Ge(^{76}Ge,5nγ) reaction is 4.6 *2* times higher than in ^{124}Sn(^{28}Si,5nγ) reaction.

[h] Band(B): SD-2 band (1996Th06,1993Ha19,1991Zu01). Possible configuration=$\pi 6^2 \nu 7^1 \nu 6^2$. The two neutrons are possibly in 5/2[642] α=+1/2 or −1/2 orbit (1994ViZV). Percent feeding=0.57 *15* (1993Ha19), 0.6 *2* (1991Zu01) in (HI,xnγ) (^{122}Sn(^{30}Si,5nγ) E=155 MeV); 0.77 *20* (1997Zh03) in ^{124}Sn(^{29}Si,6nγ) E=157 MeV. Band intensity=50% *5* of SD-1 band (1996Th06).

[i] Band(C): SD-3 band (1996Th06). Proposed (1996Th06) configuration: excitation of neutron from 1/2[770], α=−1/2 orbital to 1/2[651] α=−1/2. Band intensity=17% *5* of SD-1 band (1996Th06).

[j] Band(D): SD-4 band (1996Th06). Proposed (1996Th06) configuration: excitation of neutron from 1/2[411] α=+1/2 orbital to 1/2[651] α=−1/2. Band intensity=25% *5* of SD-1 band (1996Th06).

[k] Band(E): SD-5 band (1996Th06). Proposed (1996Th06) configuration: excitation of a neutron from 1/2[411] α=+1/2 orbital to 1/2[651] α=+1/2. Band intensity=11% *3* of SD-1 band (1996Th06).

[l] Band(F): SD-6 band (1996Th06). Possible configuration: excitation of a proton from 1/2[301] α=−1/2 to intruder $\pi 6^3$ orbital. Band intensity=8% *2* of SD-1 band (1996Th06).

Adopted Levels, Gammas (continued)

γ(^{147}Gd)

For unplaced γ′s see ^{147}Tb ε decay (1.64 h), ^{147}Sm(^{3}He,3nγ), and IT decay (516 ns) datasets.
Unless otherwise specified α(K)exp and coin data taken are from 1982Ba46 and α(exp) values are from 2020Br06.

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	δ	α[c]	Comments
997.11	13/2$^+$	997.1 *1*	100	0.0	7/2$^-$	E3		0.00596	B(E3)(W.u.)=44.9 *+24−22* α(K)=0.00488 *7*; α(L)=0.000839 *12*; α(M)=0.000186 *3* α(N)=4.25×10^{-5} *6*; α(O)=6.40×10^{-6} *9*; α(P)=3.56×10^{-7} *5* Mult.: from comparison to RUL and γ(θ) in (α,4nγ), (^{28}Si,5nγ), and (α,nγ), respectively. However, see individual data sets for uncertainties of this assignment. Evaluators accept E3 since its use in (^{3}He,3nγ) for normalization gives α(K)exp′s consistent with mults determined by γ(θ) (1983Ko42).
1152.57	3/2$^-$	1152.53 *3*	100	0.0	7/2$^-$	E2		0.00206	α(K)=0.001743 *25*; α(L)=0.000246 *4*; α(M)=5.33×10^{-5} *8* α(N)=1.223×10^{-5} *18*; α(O)=1.88×10^{-6} *3*; α(P)=1.208×10^{-7} *17*; α(IPF)=1.781×10^{-6} *25* Mult.: from α(L)exp in ^{147}Tb ε decay (1.64 h).
1235.6		1235.6	100	0.0	7/2$^-$				
1292.46	1/2$^+$	139.89 *3*	100 *3*	1152.57	3/2$^-$	E1		0.1181	α(K)=0.0996 *14*; α(L)=0.01450 *21*; α(M)=0.00314 *5* α(N)=0.000712 *10*; α(O)=0.0001058 *15*; α(P)=5.83×10^{-6} *9* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
		1292.51 *7*	3.67 *15*	0.0	7/2$^-$	E3		0.00327	α(K)=0.00272 *4*; α(L)=0.000424 *6*; α(M)=9.28×10^{-5} *13* α(N)=2.13×10^{-5} *3*; α(O)=3.25×10^{-6} *5*; α(P)=1.97×10^{-7} *3*; α(IPF)=5.92×10^{-6} *9* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
1347.0	(11/2,13/2)	111.5	100 *8*	1235.6					
		349.7	25 *4*	997.11	13/2$^+$				
1397.00	9/2$^-$	1397.0 *1*	100 *8*	0.0	7/2$^-$	M1		0.00213	α(K)exp=0.0016 *2* α(K)=0.001774 *25*; α(L)=0.000238 *4*; α(M)=5.13×10^{-5} *8* α(N)=1.182×10^{-5} *17*; α(O)=1.84×10^{-6} *3*; α(P)=1.275×10^{-7} *18*; α(IPF)=4.77×10^{-5} *7* B(M1)(W.u.)=0.023 *+24−9*
1412.19	3/2$^+$	119.73 *3*	100 *3*	1292.46	1/2$^+$	M1+E2	0.38 *+7−8*	1.217 *18*	α(K)=0.978 *20*; α(L)=0.187 *14*; α(M)=0.042 *4* α(N)=0.0095 *8*; α(O)=0.00140 *10*; α(P)=7.08×10^{-5} *20* Mult.: from α(K)exp, α(L)exp, and K/L ratio in ^{147}Tb ε decay (1.64 h).
		259.6 *1*	<5.33	1152.57	3/2$^-$				
1509.1		273.5	100	1235.6					
1594.1	(11/2,13/2)	85.0	100 *17*	1509.1					

$^{147}_{64}Gd_{83}$-11

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	δ	α[c]	Comments
1594.1	(11/2,13/2)	247.0	37 *7*	1347.0	(11/2,13/2)				
		597.0	<17	997.11	13/2$^+$				
		1594.1	34 *8*	0.0	7/2$^-$				
1627.87	5/2$^+$	1627.91 *6*	100	0.0	7/2$^-$	E1		7.81×10^{-4}	α(K)=0.000414 *6*; α(L)=5.31×10^{-5} *8*; α(M)=1.138×10^{-5} *16* α(N)=2.61×10^{-6} *4*; α(O)=4.07×10^{-7} *6*; α(P)=2.80×10^{-8} *4*; α(IPF)=0.000300 *5* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
1628.2	7/2$^+$	1628.3 *4*	100	0.0	7/2$^-$	E1		7.81×10^{-4}	α(K)exp=0.00054 *15* B(E1)(W.u.)=0.00013 *+11−5* α(K)=0.000414 *6*; α(L)=5.31×10^{-5} *8*; α(M)=1.138×10^{-5} *16* α(N)=2.61×10^{-6} *4*; α(O)=4.07×10^{-7} *6*; α(P)=2.79×10^{-8} *4*; α(IPF)=0.000300 *5*
1643.0	9/2$^+$	1643.0 *3*	100 *10*	0.0	7/2$^-$	E1		7.85×10^{-4}	α(K)exp=0.0004 *1* α(K)=0.000407 *6*; α(L)=5.23×10^{-5} *8*; α(M)=1.120×10^{-5} *16* α(N)=2.57×10^{-6} *4*; α(O)=4.00×10^{-7} *6*; α(P)=2.75×10^{-8} *4*; α(IPF)=0.000311 *5*
1699.53	3/2$^+$	287.4 *1*	9 *3*	1412.19	3/2$^+$				
		407.06 *3*	89 *3*	1292.46	1/2$^+$	M1		0.0429	α(K)=0.0364 *5*; α(L)=0.00509 *8*; α(M)=0.001102 *16* α(N)=0.000254 *4*; α(O)=3.95×10^{-5} *6*; α(P)=2.67×10^{-6} *4* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
		546.96 *3*	100 *3*	1152.57	3/2$^-$	E1		0.00386	α(K)=0.00330 *5*; α(L)=0.000443 *7*; α(M)=9.53×10^{-5} *14* α(N)=2.18×10^{-5} *3*; α(O)=3.36×10^{-6} *5*; α(P)=2.18×10^{-7} *3* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
1701.61	11/2$^+$	704.5 *2*	100 *9*	997.11	13/2$^+$	M1		0.01071	α(K)exp=0.0084 *10* α(K)=0.00912 *13*; α(L)=0.001251 *18*; α(M)=0.000270 *4* α(N)=6.23×10^{-5} *9*; α(O)=9.70×10^{-6} *14*; α(P)=6.63×10^{-7} *10* Mult.: from α(K)exp in (^{3}He,3nγ).
1759.85	1/2$^+$	347.65 *3*	100.0 *23*	1412.19	3/2$^+$	M1		0.0647	α(K)=0.0549 *8*; α(L)=0.00771 *11*; α(M)=0.001672 *24* α(N)=0.000385 *6*; α(O)=5.98×10^{-5} *9*; α(P)=4.04×10^{-6} *6* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
		467.4 *1*	5 *3*	1292.46	1/2$^+$				
1775.7	(11/2,13/2)	181.5	86 *14*	1594.1	(11/2,13/2)				
		428.5	100 *14*	1347.0	(11/2,13/2)				
		1775.6[e]	36 *14*	0.0	7/2$^-$				
1797.2	9/2$^-$	1797.1 *4*	100 *11*	0.0	7/2$^-$	M1+E2		0.00123 *17*	α(K)exp=0.00086 *20*

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
								α(K)=0.00087 *13*; α(L)=0.000116 *17*; α(M)=2.5×10^{-5} *4* α(N)=5.8×10^{-6} *9*; α(O)=9.0×10^{-7} *13*; α(P)=6.1×10^{-8} *10*; α(IPF)=0.000207 *15*
1847.12	1/2$^-$	434.96 *4*	1.64 *12*	1412.19	3/2$^+$			
		554.65 *3*	13.9 *3*	1292.46	1/2$^+$	E1	0.00374	α(K)=0.00320 *5*; α(L)=0.000429 *6*; α(M)=9.24×10^{-5} *13* α(N)=2.12×10^{-5} *3*; α(O)=3.26×10^{-6} *5*; α(P)=2.11×10^{-7} *3* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
		694.54 *3*	100.0 *22*	1152.57	3/2$^-$	M1	0.01110	α(K)=0.00944 *14*; α(L)=0.001296 *19*; α(M)=0.000280 *4* α(N)=6.45×10^{-5} *9*; α(O)=1.005×10^{-5} *14*; α(P)=6.87×10^{-7} *10* Mult.: from α(K)exp and α(L)exp in ^{147}Tb ε decay (1.64 h).
1944.2	11/2$^-$	947.1	20	997.11	13/2$^+$			
		1944.1	100	0.0	7/2$^-$	E2	1.02×10^{-3}	α(K)=0.000645 *9*; α(L)=8.58×10^{-5} *12*; α(M)=1.85×10^{-5} *3* α(N)=4.25×10^{-6} *6*; α(O)=6.60×10^{-7} *10*; α(P)=4.47×10^{-8} *7*; α(IPF)=0.000261 *4*
1947.58	5/2$^-$	1947.58 *6*	100	0.0	7/2$^-$	M1	1.27×10^{-3}	α(K)=0.000831 *12*; α(L)=0.0001104 *16*; α(M)=2.38×10^{-5} *4* α(N)=5.47×10^{-6} *8*; α(O)=8.55×10^{-7} *12*; α(P)=5.94×10^{-8} *9*; α(IPF)=0.000300 *5* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
2028.9	15/2$^{(+)}$	1031.8[@]	100	997.11	13/2$^+$	(M1+E2)	0.0034 *9*	α(K)=0.0029 *8*; α(L)=0.00040 *9*; α(M)=8.7×10^{-5} *19* α(N)=2.0×10^{-5} *5*; α(O)=3.1×10^{-6} *7*; α(P)=2.06×10^{-7} *56* Mult.: from γ(θ) in (α,nγ).
2078.4	(9/2,11/2)	2078.4	100	0.0	7/2$^-$			
2233.19	(5/2)$^-$	1080.5[e] *3*	8 *6*	1152.57	3/2$^-$			
		2233.17 *4*	100 *4*	0.0	7/2$^-$			
2329.02	(5/2,7/2)	2329.0 *1*	100	0.0	7/2$^-$			
2385.6	(13/2)$^-$	442.6	≈22	1944.2	11/2$^-$			
		609.6[@]	100 *10*	1775.7	(11/2,13/2)			
		1388.8	59 *7*	997.11	13/2$^+$	E1	7.56×10^{-4}	α(K)exp=0.0007 *2* α(K)=0.000541 *8*; α(L)=6.98×10^{-5} *10*; α(M)=1.496×10^{-5} *21* α(N)=3.44×10^{-6} *5*; α(O)=5.34×10^{-7} *8*; α(P)=3.65×10^{-8} *6*; α(IPF)=0.0001264 *18*
2438.03	(3/2,5/2)$^-$	1025.8 *1*	36 *3*	1412.19	3/2$^+$			
		1285.45 *7*	34.0 *19*	1152.57	3/2$^-$	M1,(E3)		Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
		2438.02 *6*	100 *4*	0.0	7/2$^-$			
2438.91	(15/2)$^-$	1441.8 *2*	100 *10*	997.11	13/2$^+$	E1	7.53×10^{-4}	α(K)exp=0.0005 *2* α(K)=0.000507 *8*; α(L)=6.54×10^{-5} *10*; α(M)=1.401×10^{-5} *20* α(N)=3.22×10^{-6} *5*; α(O)=5.00×10^{-7} *7*; α(P)=3.42×10^{-8} *5*; α(IPF)=0.0001629 *23*

$^{147}_{64}Gd_{83}$-13

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
2488.19	17/2$^+$	459.2	<2.4	2028.9	15/2$^{(+)}$	E2	0.01752	α(K)=0.01414 *20*; α(L)=0.00264 *4*; α(M)=0.000587 *9* α(N)=0.0001335 *19*; α(O)=1.96×10^{-5} *3*; α(P)=9.40×10^{-7} *14*
		894.3	10.7 *14*	1594.1	(11/2,13/2)	Q		
		1491.1 *1*	100	997.11	13/2$^+$	E2	1.31×10^{-3}	α(K)=0.001057 *15*; α(L)=0.0001440 *21*; α(M)=3.11×10^{-5} *5* α(N)=7.14×10^{-6} *10*; α(O)=1.105×10^{-6} *16*; α(P)=7.33×10^{-8} *11*; α(IPF)=7.12×10^{-5} *10* Mult.: from α(K)exp in (^{3}He,3nγ).
2489.8		788.2 *3*	100 *14*	1701.61	11/2$^+$			
2572.24	19/2$^-$	84.0 *1*	68 *3*	2488.19	17/2$^+$	[E1]	0.466	B(E1)(W.u.)=0.00038 *+10−7* α(K)=0.390 *6*; α(L)=0.0603 *9*; α(M)=0.01308 *19* α(N)=0.00295 *5*; α(O)=0.000428 *7*; α(P)=2.12×10^{-5} *3*
		1575.1 *1*	100 *3*	997.11	13/2$^+$	E3	0.00217	α(K)exp=0.0018 *4* B(E3)(W.u.)=53 *+15−10* α(K)=0.00179 *3*; α(L)=0.000263 *4*; α(M)=5.74×10^{-5} *8* α(N)=1.319×10^{-5} *19*; α(O)=2.03×10^{-6} *3*; α(P)=1.286×10^{-7} *18*; α(IPF)=4.55×10^{-5} *7*
2611.71	(1/2,3/2)$^+$	1199.53 *6*	100 *5*	1412.19	3/2$^+$			
		1319.2 *1*	58 *8*	1292.46	1/2$^+$	M1	0.00240	α(K)=0.00203 *3*; α(L)=0.000272 *4*; α(M)=5.87×10^{-5} *9* α(N)=1.353×10^{-5} *19*; α(O)=2.11×10^{-6} *3*; α(P)=1.458×10^{-7} *21*; α(IPF)=2.64×10^{-5} *4* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
2625.9		1628.8 *10*	100 *38*	997.11	13/2$^+$			
2735.7		350.1 *4*	100 *40*	2385.6	(13/2)$^-$			
2736.38	5/2$^-$	1324.3 *2*	62 *10*	1412.19	3/2$^+$	E1	7.69×10^{-4}	α(K)=0.000587 *9*; α(L)=7.59×10^{-5} *11*; α(M)=1.627×10^{-5} *23* α(N)=3.74×10^{-6} *6*; α(O)=5.81×10^{-7} *9*; α(P)=3.96×10^{-8} *6*; α(IPF)=8.56×10^{-5} *12* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
		1583.7 *2*	100 *14*	1152.57	3/2$^-$	(M1)	1.67×10^{-3}	α(K)=0.001329 *19*; α(L)=0.0001777 *25*; α(M)=3.83×10^{-5} *6* α(N)=8.81×10^{-6} *13*; α(O)=1.376×10^{-6} *20*; α(P)=9.53×10^{-8} *14*; α(IPF)=0.0001179 *17* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
2760.42	21/2$^+$	188.1 *1*	20.2 *11*	2572.24	19/2$^-$	[E1]	0.0534	B(E1)(W.u.)=1.27×10^{-6} *11* α(K)=0.0452 *7*; α(L)=0.00643 *9*; α(M)=0.001391 *20* α(N)=0.000317 *5*; α(O)=4.75×10^{-5} *7*; α(P)=2.75×10^{-6} *4* Mult.: D from γ(θ) in IT decay (516 ns) (1982Br13).
		272.3 *1*	100 *4*	2488.19	17/2$^+$	E2	0.0815	α(K)exp=0.074 *15* B(E2)(W.u.)=1.42 *10* α(K)=0.0612 *9*; α(L)=0.01575 *23*; α(M)=0.00358 *5* α(N)=0.000809 *12*; α(O)=0.0001140 *16*; α(P)=3.76×10^{-6} *6*
2763.79	(19/2)$^+$	275.6 *1*	100 *11*	2488.19	17/2$^+$	M1	0.1199	α(K)exp=0.12 *4*

$^{147}_{64}Gd_{83}$-14

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
								α(K)=0.1016 *15*; α(L)=0.01438 *21*; α(M)=0.00312 *5* α(N)=0.000718 *10*; α(O)=0.0001115 *16*; α(P)=7.51×10^{-6} *11* Mult.: from α(K)exp in (^{3}He,3nγ).
2808.34		1396.4 *4*	100 *9*	1412.19	3/2$^+$	(M1)	0.00213	α(K)=0.001776 *25*; α(L)=0.000238 *4*; α(M)=5.14×10^{-5} *8* α(N)=1.183×10^{-5} *17*; α(O)=1.85×10^{-6} *3*; α(P)=1.276×10^{-7} *18*; α(IPF)=4.75×10^{-5} *7* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
		1655.7 *2*	66 *6*	1152.57	3/2$^-$			
2862.18	5/2$^+$	1709.6[d] *1*	100[d]	1152.57	3/2$^-$	E1	8.04×10^{-4}	α(K)=0.000382 *6*; α(L)=4.89×10^{-5} *7*; α(M)=1.048×10^{-5} *15* α(N)=2.41×10^{-6} *4*; α(O)=3.75×10^{-7} *6*; α(P)=2.58×10^{-8} *4*; α(IPF)=0.000361 *5* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
2871.68		1243.5 *4*	100 *15*	1627.87	5/2$^+$			
		1579.2 *1*	95 *15*	1292.46	1/2$^+$			
		1718.5[e] *3*	85 *15*	1152.57	3/2$^-$			
2877.98	(1/2,3/2)$^+$	1117.8 *3*	52 *5*	1759.85	1/2$^+$			
		1178.6 *3*	13.4 *24*	1699.53	3/2$^+$			
		1465.75 *7*	100 *5*	1412.19	3/2$^+$	M1	0.00193	α(K)=0.001588 *23*; α(L)=0.000213 *3*; α(M)=4.59×10^{-5} *7* α(N)=1.056×10^{-5} *15*; α(O)=1.647×10^{-6} *23*; α(P)=1.140×10^{-7} *16*; α(IPF)=7.09×10^{-5} *10* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
		1585.6 *1*	37 *5*	1292.46	1/2$^+$	(M1)	1.67×10^{-3}	α(K)=0.001326 *19*; α(L)=0.0001772 *25*; α(M)=3.82×10^{-5} *6* α(N)=8.79×10^{-6} *13*; α(O)=1.372×10^{-6} *20*; α(P)=9.50×10^{-8} *14*; α(IPF)=0.0001188 *17* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
2941.6		453.4 *4*	100 *38*	2488.19	17/2$^+$			
2942.6		178.9 *4*	48 *14*	2763.79	(19/2)$^+$			
		182.2 *3*	100 *14*	2760.42	21/2$^+$			
2947.42	(3/2,5/2)$^+$	1319.8 *3*	41 *9*	1627.87	5/2$^+$	(M1)	0.00240	α(K)=0.00203 *3*; α(L)=0.000272 *4*; α(M)=5.87×10^{-5} *9* α(N)=1.351×10^{-5} *19*; α(O)=2.11×10^{-6} *3*; α(P)=1.456×10^{-7} *21*; α(IPF)=2.65×10^{-5} *4* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
		1535.2 *1*	100 *6*	1412.19	3/2$^+$	M1,E2	0.0015 *3*	α(K)=0.00121 *22*; α(L)=0.00016 *3*; α(M)=3.5×10^{-5} *6* α(N)=8.1×10^{-6} *14*; α(O)=1.26×10^{-6} *22*; α(P)=8.6×10^{-8} *17*; α(IPF)=9.2×10^{-5} *6* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
2961.9		472.1 *10*	100 *67*	2489.8				
2971.6	9/2$^-$,11/2$^-$	1027.7	50	1944.2	11/2$^-$			
		1574.2	17	1397.00	9/2$^-$			
		2971.5	100	0.0	7/2$^-$			
3005.3	9/2$^-$,11/2$^-$	927.3	40	2078.4	(9/2,11/2)			
		1362.5	23	1643.0	9/2$^+$			

$^{147}_{64}Gd_{83}$-15

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [†‡]	E_f	J_f^π	Mult.[#]	δ	α[c]	Comments
3005.3	9/2⁻,11/2⁻	1608.0	100	1397.00	9/2⁻				
		3005.6	100	0.0	7/2⁻				
3038.15	23/2⁺	277.8 *1*	100 *15*	2760.42	21/2⁺	M1+E2[a]	0.1	0.1170	α(K)=0.0990 *14*; α(L)=0.01408 *20*; α(M)=0.00305 *5* α(N)=0.000703 *10*; α(O)=0.0001091 *16*; α(P)=7.31×10^{-6} *11*
3082.5		318.7 *4*	100 *30*	2763.79	(19/2)⁺				
3119.04	(3/2,5/2)	1707.1[e] *2*	100 *13*	1412.19	3/2⁺	E1		8.03×10^{-4}	α(K)=0.000382 *6*; α(L)=4.90×10^{-5} *7*; α(M)=1.050×10^{-5} *15* α(N)=2.41×10^{-6} *4*; α(O)=3.76×10^{-7} *6*; α(P)=2.58×10^{-8} *4*; α(IPF)=0.000359 *5* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
		3119.0 *2*	90 *3*	0.0	7/2⁻				
3121.74		1709.6[d] *1*	100[d] *29*	1412.19	3/2⁺	E1		8.04×10^{-4}	α(K)=0.000382 *6*; α(L)=4.89×10^{-5} *7*; α(M)=1.048×10^{-5} *15* α(N)=2.41×10^{-6} *4*; α(O)=3.75×10^{-7} *6*; α(P)=2.58×10^{-8} *4*; α(IPF)=0.000361 *5* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
		1968.6 *3*	71 *29*	1152.57	3/2⁻				
3124.5	(3/2,5/2)⁻	1971.6[e] *5*	70 *17*	1152.57	3/2⁻				
		3124.5 *3*	100 *9*	0.0	7/2⁻				
3169.9		409.5 *4*	100 *38*	2760.42	21/2⁺				
3171.50	(1/2,3/2)⁺	1324.3 *2*		1847.12	1/2⁻				
		1411.8 *3*		1759.85	1/2⁺				
3186.34	23/2⁺	425.9 *1*	100	2760.42	21/2⁺	M1+E2		0.0298 *84*	α(K)=0.0248 *76*; α(L)=0.0039 *6*; α(M)=0.00086 *12* α(N)=0.00020 *3*; α(O)=3.0×10^{-5} *6*; α(P)=1.76×10^{-6} *62*
3194.9	(9/2,11/2,13/2)	1116.3	100	2078.4	(9/2,11/2)				
3204.8	9/2⁻,11/2⁻	1125.7	≈12	2078.4	(9/2,11/2)				
		1260.0	≈46	1944.2	11/2⁻				
		1407.0	19	1797.2	9/2⁻				
		1809.0	36	1397.00	9/2⁻				
		3204.8	100	0.0	7/2⁻				
3227.9		464.1 *4*	100 *43*	2763.79	(19/2)⁺				
3319.86		1907.5 *4*	38 *8*	1412.19	3/2⁺				
		2027.4 *3*	100 *8*	1292.46	1/2⁺				
		2167.5 *5*	41 *14*	1152.57	3/2⁻				
3322.7	9/2⁻,11/2⁻	3322.7	100	0.0	7/2⁻				
3325.92		2033.45 *8*	100 *7*	1292.46	1/2⁺				
		2173.2 *4*	30 *5*	1152.57	3/2⁻				
3360.0		321.8 *4*	100 *38*	3038.15	23/2⁺				

$^{147}_{64}Gd_{83}$-16

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	δ	α[c]	Comments
3398.93	25/2$^+$	212.6 *3*	0.19 *6*	3186.34	23/2$^+$				
		360.8 *1*	100 *4*	3038.15	23/2$^+$	M1+E2	0.18	0.0580	α(K)=0.0491 *7*; α(L)=0.00695 *10*; α(M)=0.001509 *22* α(N)=0.000347 *5*; α(O)=5.39×10^{-5} *8*; α(P)=3.61×10^{-6} *5*
		638.6 *1*	8 *3*	2760.42	21/2$^+$	E2		0.00753	α(K)=0.00623 *9*; α(L)=0.001015 *15*; α(M)=0.000223 *4* α(N)=5.10×10^{-5} *8*; α(O)=7.66×10^{-6} *11*; α(P)=4.25×10^{-7} *6*
3510.10	(23/2$^-$)	323.8 *1*	7.7 *17*	3186.34	23/2$^+$				
		471.9 *2*	20.9 *17*	3038.15	23/2$^+$				
		749.7 *3*	50 *5*	2760.42	21/2$^+$				
		937.9 *2*	100 *6*	2572.24	19/2$^-$				
3574.19		1136.1[e] *3*	27 *5*	2438.03	(3/2,5/2)$^-$				
		1727.4 *3*	23 *5*	1847.12	1/2$^-$				
		2421.0[d] *4*	100[d] *33*	1152.57	3/2$^-$				
3581.87	27/2$^-$	(71.8 *1*)	0.15 *3*	3510.10	(23/2$^-$)	[E2]		8.80	α(K)=2.47 *4*; α(L)=4.88 *8*; α(M)=1.156 *18* α(N)=0.257 *4*; α(O)=0.0333 *6*; α(P)=0.0001246 *18* B(E2)(W.u.)=0.27 *+6−5* E_γ,I_γ: unobserved transition required by the γγ-coincidence analysis, with intensity from estimated total transition intensities in IT decay (516 ns) (2020Br06).
		182.9 *1*	100 *3*	3398.93	25/2$^+$	E1[a]		0.0575	B(E1)(W.u.)=1.103×10^{-6} *31* α(K)=0.0487 *7*; α(L)=0.00694 *10*; α(M)=0.001501 *22* α(N)=0.000342 *5*; α(O)=5.12×10^{-5} *8*; α(P)=2.95×10^{-6} *5*
		395.5 *1*	1.9 *2*	3186.34	23/2$^+$	[M2]		0.1662	α(K)=0.1369 *20*; α(L)=0.0229 *4*; α(M)=0.00508 *8* α(N)=0.001172 *17*; α(O)=0.000180 *3*; α(P)=1.156×10^{-5} *17* B(M2)(W.u.)=0.061 *7*
		543.7[&] *1*	17.6 *9*	3038.15	23/2$^+$	M2		0.0631	B(M2)(W.u.)=0.115 *7* α(K)=0.0525 *8*; α(L)=0.00829 *12*; α(M)=0.00182 *3* α(N)=0.000421 *6*; α(O)=6.50×10^{-5} *10*; α(P)=4.24×10^{-6} *6* Mult.: assigned by 1979Kl04 from ΔJ^π and $T_{1/2}$.
		821.3[&] *1*	6.12 *3*	2760.42	21/2$^+$	[E3]		0.00966	B(E3)(W.u.)=6.39 *23* α(K)=0.00777 *11*; α(L)=0.001478 *21*; α(M)=0.000330 *5* α(N)=7.54×10^{-5} *11*; α(O)=1.122×10^{-5} *16*; α(P)=5.69×10^{-7} *8*
3691.88	25/2$^-$	110.0 *1*	53 *3*	3581.87	27/2$^-$	M1		1.533	α(K)=1.295 *19*; α(L)=0.187 *3*; α(M)=0.0406 *6* α(N)=0.00934 *14*; α(O)=0.001448 *21*; α(P)=9.65×10^{-5} *14*
		181.8 *2*	24 *7*	3510.10	(23/2$^-$)				
		293.0 *2*	10.1 *12*	3398.93	25/2$^+$				
		505.5 *1*		3186.34	23/2$^+$	D			
		653.8 *1*	100 *5*	3038.15	23/2$^+$	D			
3715.45	(1/2,3/2)$^-$	2422.8 *2*	7 *5*	1292.46	1/2$^+$				
		2562.9 *1*	100 *5*	1152.57	3/2$^-$				
3833.38	(1/2$^+$)	1986.2 *1*	3.9 *8*	1847.12	1/2$^-$				
		2205.54 *7*	12.8 *5*	1627.87	5/2$^+$				
		2421.0[d] *4*	12.3[d] *15*	1412.19	3/2$^+$				

$^{147}_{64}Gd_{83}$-17

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
3833.38	(1/2$^+$)	2680.77 *6*	100 *3*	1152.57	3/2$^-$			
3853.29	(3/2)	1415.4[e] *4*	41 *8*	2438.03	(3/2,5/2)$^-$	(M1)	0.00207	α(K)=0.001721 *25*; α(L)=0.000231 *4*; α(M)=4.98×10^{-5} *7* α(N)=1.146×10^{-5} *16*; α(O)=1.79×10^{-6} *3*; α(P)=1.236×10^{-7} *18*; α(IPF)=5.36×10^{-5} *8* Mult.: from α(K)exp in ^{147}Tb ε decay (1.64 h).
		2006.15 *8*	100 *4*	1847.12	1/2$^-$			
		2093.5 *3*	27 *6*	1759.85	1/2$^+$			
		2560.8 *2*	78 *12*	1292.46	1/2$^+$			
3872.8	13/2,11/2	2875.7	100	997.11	13/2$^+$			
3891.73	(1/2$^+$,3/2$^-$)	2044.6 *4*	45 *10*	1847.12	1/2$^-$			
		2131.9 *3*	100 *10*	1759.85	1/2$^+$			
		2193.1[e] *4*	40 *10*	1699.53	3/2$^+$			
		2263.8 *3*	75 *10*	1627.87	5/2$^+$			
		2738.9[e] *2*	70 *10*	1152.57	3/2$^-$			
3927.21		2165.8 *3*	100 *25*	1759.85	1/2$^+$			
		2775.3 *2*	75 *13*	1152.57	3/2$^-$			
3967.78		2815.19 *8*	100	1152.57	3/2$^-$			
3998.79		2586.6 *1*	75 *15*	1412.19	3/2$^+$			
		2706.2 *2*	100 *10*	1292.46	1/2$^+$			
4006.86	(27/2$^-$)	315.0 *1*	23.5 *9*	3691.88	25/2$^-$			
		424.9 *1*	100 *3*	3581.87	27/2$^-$	(M1)	0.0384	α(K)=0.0326 *5*; α(L)=0.00455 *7*; α(M)=0.000985 *14* α(N)=0.000227 *4*; α(O)=3.53×10^{-5} *5*; α(P)=2.39×10^{-6} *4*
4051.94	(1/2,3/2)	1243.5[e] *4*		2808.34				
		2639.7 *4*	16.5 *25*	1412.19	3/2$^+$			
		2759.45 *8*	100 *4*	1292.46	1/2$^+$			
4070.24	27/2$^-$	378.4 *1*	100 *3*	3691.88	25/2$^-$	M1	0.0518	α(K)=0.0440 *7*; α(L)=0.00617 *9*; α(M)=0.001336 *19* α(N)=0.000308 *5*; α(O)=4.78×10^{-5} *7*; α(P)=3.23×10^{-6} *5*
		488.4 *1*	4.4 *4*	3581.87	27/2$^-$			
		671.4 *1*	21.2 *9*	3398.93	25/2$^+$	D		
4073.58		2225.8 *3*	23 *5*	1847.12	1/2$^-$			
		2374.1 *1*	100 *10*	1699.53	3/2$^+$			
		2661.4 *2*	36 *5*	1412.19	3/2$^+$			
		2921.4[e] *2*	33 *8*	1152.57	3/2$^-$			
4117.6?		2418.2[e] *3*		1699.53	3/2$^+$			
		2489.6[e] *2*		1627.87	5/2$^+$			
4132.35	(1/2,3/2)	2432.6[e] *2*	35 *3*	1699.53	3/2$^+$			
		2719.9 *2*	18 *3*	1412.19	3/2$^+$			
		2840.1 *2*	100 *10*	1292.46	1/2$^+$			
		2979.5[e] *2*	22 *5*	1152.57	3/2$^-$			
4144.49	(1/2$^-$)	2197.1 *2*	38 *4*	1947.58	5/2$^-$			
		2444.4 *9*	55 *9*	1699.53	3/2$^+$			
		2732.3 *1*	64 *4*	1412.19	3/2$^+$			

$^{147}_{64}Gd_{83}$-18

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
4144.49	(1/2$^-$)	2852.00 *8*	100 *5*	1292.46	1/2$^+$			
		2991.8 *1*	75 *5*	1152.57	3/2$^-$			
4176.66	(1/2,3/2)	2764.4 *1*	72 *8*	1412.19	3/2$^+$			
		3024.1 *1*	100 *6*	1152.57	3/2$^-$			
4201.27	(1/2)	1968.5[e]		2233.19	(5/2)$^-$			
		2354.2 *9*	22 *6*	1847.12	1/2$^-$			
		2789.08 *8*	100 *6*	1412.19	3/2$^+$			
		2908.8 *1*	54 *4*	1292.46	1/2$^+$			
		3048.6 *1*	46.3 *19*	1152.57	3/2$^-$			
4211.49	(27/2$^-$)	519.5 *2*	30 *5*	3691.88	25/2$^-$			
		812.6 *2*	100 *6*	3398.93	25/2$^+$			
4229.93	29/2$^-$	159.7 *1*	100 *3*	4070.24	27/2$^-$	M1	0.534	α(K)=0.452 *7*; α(L)=0.0648 *10*; α(M)=0.01407 *20* α(N)=0.00324 *5*; α(O)=0.000503 *7*; α(P)=3.36×10^{-5} *5*
		223.0 *1*	33.3 *3*	4006.86	(27/2$^-$)	D		
		647.9 *2*	5.7 *8*	3581.87	27/2$^-$			
4249.72	(1/2,3/2)	2489.6[e] *2*	85 *12*	1759.85	1/2$^+$			
		2837.8 *3*	100 *15*	1412.19	3/2$^+$			
		2957.1 *2*	54 *12*	1292.46	1/2$^+$			
4280.38	(1/2,3/2)	2580.8 *1*	95 *14*	1699.53	3/2$^+$			
		3128.3 *4*	100 *10*	1152.57	3/2$^-$			
4299.72	(1/2)	3007.2 *1*	100 *8*	1292.46	1/2$^+$			
		3147.2 *2*	34 *5*	1152.57	3/2$^-$			
4338.09	(27/2$^-$)	646.2 *2*	77 *8*	3691.88	25/2$^-$			
		756.2 *2*	44 *8*	3581.87	27/2$^-$			
		939.3 *3*	100 *15*	3398.93	25/2$^+$			
4369.9	(1/2,3/2)	2610.0 *5*	75 *25*	1759.85	1/2$^+$			
		3217.5[e] *4*	100 *25*	1152.57	3/2$^-$			
4431.4?	(1/2)	3018.8[e] *4*	79 *14*	1412.19	3/2$^+$			
		3139.0[e] *3*	43 *7*	1292.46	1/2$^+$			
		3279.4[e] *2*	100 *14*	1152.57	3/2$^-$			
4450.88	29/2$^-$	380.7 *2*	3.0 *5*	4070.24	27/2$^-$			
		444.0 *1*	60 *2*	4006.86	(27/2$^-$)	(M1+E2)	0.0267 *76*	α(K)exp=0.017 *7* α(K)=0.0223 *69*; α(L)=0.0035 *6*; α(M)=0.00077 *12* α(N)=0.00018 *3*; α(O)=2.7×10^{-5} *5*; α(P)=1.58×10^{-6} *56*
		759.1 *2*	5.7 *5*	3691.88	25/2$^-$			
		868.9 *1*	100 *3*	3581.87	27/2$^-$	M1+E2	0.0051 *14*	α(K)exp=0.0048 *9* α(K)=0.0043 *12*; α(L)=0.00061 *14*; α(M)=0.00013 *3* α(N)=3.0×10^{-5} *7*; α(O)=4.7×10^{-6} *12*; α(P)=3.06×10^{-7} *91*
4533.59	29/2$^-$	303.5 *2*	9.8 *11*	4229.93	29/2$^-$			
		322.1 *1*	17.4 *21*	4211.49	(27/2$^-$)			
		463.4 *1*	100 *5*	4070.24	27/2$^-$			
		526.8 *1*	32.1 *21*	4006.86	(27/2$^-$)			

$^{147}_{64}Gd_{83}$-19

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
4533.59	29/2$^-$	951.7 *1*	39.0 *25*	3581.87	27/2$^-$			
4617.99	29/2$^+$	279.6 *3*	0.24 *8*	4338.09	(27/2$^-$)			
		406.5 *1*	2.45 *25*	4211.49	(27/2$^-$)			
		611.2 *1*	7.5 *3*	4006.86	(27/2$^-$)			
		1036.1 *1*	100 *3*	3581.87	27/2$^-$	E1	1.06×10^{-3}	α(K)exp=0.0007 *3* α(K)=0.000912 *13*; α(L)=0.0001189 *17*; α(M)=2.55×10^{-5} *4* α(N)=5.86×10^{-6} *9*; α(O)=9.08×10^{-7} *13*; α(P)=6.13×10^{-8} *9* Mult.: 1982Br13 assigned M1 on basis of a large negative A_2/A_0. 1982Ba46 obtained a smaller negative A_2/A_0 and an α(K)exp in agreement with E1.
		1219.1 *3*	0.78 *25*	3398.93	25/2$^+$			
4843.95	31/2$^-$	310.2 *3*	2.2 *6*	4533.59	29/2$^-$			
		393.1 *1*	62 *4*	4450.88	29/2$^-$			
		614.0 *2*	100	4229.93	29/2$^-$	M1+E2	0.0117 *34*	α(K)=0.0098 *30*; α(L)=0.0014 *4*; α(M)=0.00032 *7* α(N)=7.2×10^{-5} *16*; α(O)=1.1×10^{-5} *3*; α(P)=7.0×10^{-7} *24*
		836.7 *3*	11.3 *12*	4006.86	(27/2$^-$)			
		1261.9 *1*	84.7 *22*	3581.87	27/2$^-$			
4948.77	31/2$^+$	330.8 *1*	100.0 *3*	4617.99	29/2$^+$	M1	0.0738	α(K)exp=0.079 *17* α(exp)=0.07 *2* α(K)=0.0625 *9*; α(L)=0.00880 *13*; α(M)=0.00191 *3* α(N)=0.000439 *7*; α(O)=6.83×10^{-5} *10*; α(P)=4.61×10^{-6} *7*
		415.2 *1*	3.71 *25*	4533.59	29/2$^-$			
		498.0 *1*	9.7 *7*	4450.88	29/2$^-$			
4971.85	31/2$^-$	520.9 *2*	4.2 *6*	4450.88	29/2$^-$			
		742.0 *2*	6.7 *3*	4229.93	29/2$^-$			
		964.9 *2*	4.1 *7*	4006.86	(27/2$^-$)			
		1390.0 *1*	100 *3*	3581.87	27/2$^-$	E2	1.46×10^{-3}	α(K)exp=0. 0012 α(K)=0.001208 *17*; α(L)=0.0001660 *24*; α(M)=3.59×10^{-5} *5* α(N)=8.24×10^{-6} *12*; α(O)=1.273×10^{-6} *18*; α(P)=8.38×10^{-8} *12*; α(IPF)=4.06×10^{-5} *6*
5029.23	33/2$^+$	57.4 *3*	3.46 *23*	4971.85	31/2$^-$			
		80.4 *1*	100 *11*	4948.77	31/2$^+$	M1	3.77	α(exp)=4.1 *5* α(K)=3.18 *5*; α(L)=0.461 *7*; α(M)=0.1003 *15* α(N)=0.0231 *4*; α(O)=0.00357 *6*; α(P)=0.000238 *4*
		185.2 *3*	14.8 *21*	4843.95	31/2$^-$			
5118.22	(29/2$^-$)	1426.1 *3*	47 *10*	3691.88	25/2$^-$			
		1536.2 *2*	100 *10*	3581.87	27/2$^-$			
5265.13	31/2$^-$	146.8 *2*	1.28 *14*	5118.22	(29/2$^-$)			
		236.1 *2*	1.06 *18*	5029.23	33/2$^+$			
		293.0 *3*	0.46 *14*	4971.85	31/2$^-$			
		316.0 *2*	2.2 *4*	4948.77	31/2$^+$			
		421.2 *1*	7.40 *22*	4843.95	31/2$^-$	M1(+E2)	0.0308 *86*	α(K)exp=0.039 *15*

$^{147}_{64}Gd_{83}$-20

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [†‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
								α(K)=0.0256 *78*; α(L)=0.0041 *6*; α(M)=0.00089 *12* α(N)=0.00020 *3*; α(O)=3.1×10^{-5} *6*; α(P)=1.81×10^{-6} *64*
5265.13	31/2$^-$	647.2 *2*	2.8 *4*	4617.99	29/2$^+$			
		814.1 *1*	36.2 *8*	4450.88	29/2$^-$	M1	0.00751	α(K)exp=0.0063 *12* α(K)=0.00640 *9*; α(L)=0.000874 *13*; α(M)=0.000189 *3* α(N)=4.35×10^{-5} *6*; α(O)=6.77×10^{-6} *10*; α(P)=4.64×10^{-7} *7*
		927.2 *2*	3.9 *3*	4338.09	(27/2$^-$)			
		1053.6 *2*	3.3 *4*	4211.49	(27/2$^-$)			
		1195.0 *1*	5.0 *5*	4070.24	27/2$^-$			
		1258.2 *2*	3.8 *3*	4006.86	(27/2$^-$)			
		1683.3 *1*	100 *4*	3581.87	27/2$^-$	E2	1.13×10^{-3}	α(K)exp=0.0011 *4* α(K)=0.000842 *12*; α(L)=0.0001133 *16*; α(M)=2.44×10^{-5} *4* α(K)exp=0.0011 *4* α(N)=5.61×10^{-6} *8*; α(O)=8.70×10^{-7} *13*; α(P)=5.84×10^{-8} *9*; α(IPF)=0.0001439 *21*
5272.38	(29/2$^+$,31/2)	654.4 *1*	100 *7*	4617.99	29/2$^+$			
		821.4 *1*	82 *15*	4450.88	29/2$^-$			
5382.26	33/2$^-$	117.2 *1*	100 *4*	5265.13	31/2$^-$	M1	1.279	α(K)exp=1.3 *5* α(K)=1.081 *16*; α(L)=0.1557 *23*; α(M)=0.0338 *5* α(N)=0.00779 *11*; α(O)=0.001208 *18*; α(P)=8.06×10^{-5} *12*
		264.0 *1*	1.29 *17*	5118.22	(29/2$^-$)			
		352.9 *1*	14.8 *7*	5029.23	33/2$^+$			
		410.4 *1*	13.4 *6*	4971.85	31/2$^-$			
		433.6 *1*	4.7 *5*	4948.77	31/2$^+$			
		538.1 *2*	27	4843.95	31/2$^-$			
		848.7 *1*	24.7 *10*	4533.59	29/2$^-$	E2	0.00391	α(K)exp<0.0038 α(K)=0.00328 *5*; α(L)=0.000493 *7*; α(M)=0.0001075 *15* α(N)=2.46×10^{-5} *4*; α(O)=3.75×10^{-6} *6*; α(P)=2.27×10^{-7} *4*
		1152.2 *1*	55.3 *18*	4229.93	29/2$^-$	E2	0.00206	α(K)exp=0.0016 *6* α(K)=0.001744 *25*; α(L)=0.000246 *4*; α(M)=5.33×10^{-5} *8* α(N)=1.224×10^{-5} *18*; α(O)=1.88×10^{-6} *3*; α(P)=1.209×10^{-7} *17*; α(IPF)=1.76×10^{-6} *3*
5439.28	(31/2$^-$)	906.0 *3*	16 *11*	4533.59	29/2$^-$			
		1857.6 *1*	100 *11*	3581.87	27/2$^-$			
5583.12	35/2$^-$	200.7 *1*	100 *5*	5382.26	33/2$^-$	M1	0.284	α(K)exp=0.22 *6* α(K)=0.240 *4*; α(L)=0.0342 *5*; α(M)=0.00744 *11* α(N)=0.001712 *24*; α(O)=0.000266 *4*; α(P)=1.78×10^{-5} *3*
		317.9 *1*	2.0 *1*	5265.13	31/2$^-$			
		553.9 *1*	0.87 *6*	5029.23	33/2$^+$			
		611.4 *1*	12.0 *6*	4971.85	31/2$^-$	E2	0.00837	α(K)exp=0.0070 *15* α(K)=0.00691 *10*; α(L)=0.001143 *16*; α(M)=0.000252 *4* α(N)=5.75×10^{-5} *8*; α(O)=8.61×10^{-6} *12*; α(P)=4.70×10^{-7} *7*
5622.38	(33/2)	350.0 *1*	100 *9*	5272.38	(29/2$^+$,31/2)			

$^{147}_{64}Gd_{83}$-21

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [†‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
5622.38	(33/2)	593.0 *3*	29 *9*	5029.23	33/2$^+$			
		650.4 *4*	11 *6*	4971.85	31/2$^-$			
		673.6 *1*	89 *12*	4948.77	31/2$^+$			
		778.4 *2*	69 *9*	4843.95	31/2$^-$			
5652.70	(33/2$^-$)	213.3 *2*	11 *2*	5439.28	(31/2$^-$)			
		623.4 *3*	7 *3*	5029.23	33/2$^+$			
		680.8 *1*	31 *4*	4971.85	31/2$^-$			
		704.0 *3*	19 *3*	4948.77	31/2$^+$			
		808.8 *2*	13 *3*	4843.95	31/2$^-$			
		1422.8 *1*	100 *6*	4229.93	29/2$^-$			
5742.45	(33/2$^+$)	470.0 *1*	37 *3*	5272.38	(29/2$^+$,31/2)			
		713.4 *1*	15 *3*	5029.23	33/2$^+$			
		770.7 *3*	10 *5*	4971.85	31/2$^-$			
		793.8 *3*	10 *5*	4948.77	31/2$^+$			
		898.3 *1*	29 *5*	4843.95	31/2$^-$			
		1124.4 *1*	100 *7*	4617.99	29/2$^+$			
5767.58	(35/2$^-$)	385.4 *2*	40 *9*	5382.26	33/2$^-$			
		738.2 *3*	100 *7*	5029.23	33/2$^+$			
		795.7 *1*	95 *7*	4971.85	31/2$^-$			
		923.8 *3*	15 *9*	4843.95	31/2$^-$			
5771.11		799.3 *2*	100	4971.85	31/2$^-$			
5923.15	37/2$^-$	340.1 *1*	100 *7*	5583.12	35/2$^-$	M1	0.0686	α(K)exp≈0.029 α(exp)=0.07 *1* α(K)=0.0581 *9*; α(L)=0.00818 *12*; α(M)=0.001773 *25* α(N)=0.000408 *6*; α(O)=6.34×10^{-5} *9*; α(P)=4.28×10^{-6} *6*
		540.9 *1*	5.4 *2*	5382.26	33/2$^-$			
5959.56	35/2$^-$	306.9 *1*	56 *17*	5652.70	(33/2$^-$)			
		520.4 *1*	100 *11*	5439.28	(31/2$^-$)			
6012.94	35/2$^+$	245.8 *5*	1.1 *5*	5767.58	(35/2$^-$)			
		270.4 *1*	28.8 *23*	5742.45	(33/2$^+$)			
		360.2 *1*	23.9 *18*	5652.70	(33/2$^-$)			
		390.5 *1*	13.8 *5*	5622.38	(33/2)			
		430.0 *3*	0.7 *4*	5583.12	35/2$^-$			
		630.7 *2*	3.2 *7*	5382.26	33/2$^-$			
		983.8 *1*	91 *3*	5029.23	33/2$^+$			
		1064.3 *1*	100 *4*	4948.77	31/2$^+$	E2	0.00242	α(K)exp=0.0017 *7* α(K)=0.00205 *3*; α(L)=0.000293 *4*; α(M)=6.35×10^{-5} *9* α(N)=1.457×10^{-5} *21*; α(O)=2.24×10^{-6} *4*; α(P)=1.417×10^{-7} *20*
6081.62	(35/2$^-$)	428.7 *3*	28 *6*	5652.70	(33/2$^-$)			
		642.5 *1*	25 *6*	5439.28	(31/2$^-$)			
		699.0 *4*	21 *11*	5382.26	33/2$^-$			
		1109.7 *2*	25 *4*	4971.85	31/2$^-$			
		1237.6 *2*	100 *11*	4843.95	31/2$^-$			

$^{147}_{64}Gd_{83}$-22

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
6181.41	(35/2$^+$)	168.6 *2*	17 *4*	6012.94	35/2$^+$			
		410.4 *3*	12 *4*	5771.11				
		559.1 *3*	22 *4*	5622.38	(33/2)			
		1152.1 *1*	39 *8*	5029.23	33/2$^+$			
		1232.7 *1*	100 *9*	4948.77	31/2$^+$			
6316.00	(37/2$^+$)	303.1 *2*	5.1 *7*	6012.94	35/2$^+$			
		548.5 *2*	11.3 *17*	5767.58	(35/2$^-$)			
		733.2 *3*	5.1 *7*	5583.12	35/2$^-$			
		1286.7 *1*	100 *4*	5029.23	33/2$^+$	(E2)	1.67×10^{-3}	α(K)=0.001403 *20*; α(L)=0.000195 *3*; α(M)=4.21×10^{-5} *6* α(N)=9.67×10^{-6} *14*; α(O)=1.492×10^{-6} *21*; α(P)=9.73×10^{-8} *14*; α(IPF)=1.766×10^{-5} *25*
6322.31	(35/2$^+$)	700.0 *2*	40 *7*	5622.38	(33/2)			
		1293.0 *1*	100 *14*	5029.23	33/2$^+$			
		1373.5 *1*	35 *5*	4948.77	31/2$^+$			
6373.37	(37/2)	192.2 *3*	11 *3*	6181.41	(35/2$^+$)			
		291.9 *3*	11 *3*	6081.62	(35/2$^-$)			
		413.7 *2*	32 *8*	5959.56	35/2$^-$			
		605.8 *3*	45 *9*	5767.58	(35/2$^-$)			
		790.3 *2*	100 *10*	5583.12	35/2$^-$			
6464.05	(37/2$^+$)	282.6 *1*	29 *3*	6181.41	(35/2$^+$)			
		382.8 *3*	3.1 *10*	6081.62	(35/2$^-$)			
		504.6 *1*	6.9 *21*	5959.56	35/2$^-$			
		696.5 *1*	17.2 *10*	5767.58	(35/2$^-$)			
		880.8 *1*	14.5 *24*	5583.12	35/2$^-$			
		1434.7 *1*	100 *4*	5029.23	33/2$^+$			
6471.58	39/2$^-$	155.5 *3*	0.38 *13*	6316.00	(37/2$^+$)			
		548.2 *1*	100 *4*	5923.15	37/2$^-$	M1	0.0200	α(K)exp=0.017 *2* α(K)=0.01703 *24*; α(L)=0.00236 *4*; α(M)=0.000510 *8* α(N)=0.0001174 *17*; α(O)=1.83×10^{-5} *3*; α(P)=1.244×10^{-6} *18*
		703.9 *1*	2.2 *4*	5767.58	(35/2$^-$)			
		888.5 *1*	3.6 *2*	5583.12	35/2$^-$			
6568.03	(37/2$^+$)	554.8 *3*	3.1 *12*	6012.94	35/2$^+$			
		645.0 *1*	18.1 *24*	5923.15	37/2$^-$			
		800.5 *1*	9.1 *24*	5767.58	(35/2$^-$)			
		984.8 *1*	100 *7*	5583.12	35/2$^-$			
		1538.8 *1*	11.8 *16*	5029.23	33/2$^+$			
6621.46	39/2$^+$	157.5 *1*	7.8 *4*	6464.05	(37/2$^+$)	(M1)	0.555	α(exp)=0.6 *2* α(K)=0.470 *7*; α(L)=0.0674 *10*; α(M)=0.01463 *21* α(N)=0.00337 *5*; α(O)=0.000523 *8*; α(P)=3.49×10^{-5} *5*
		248.1 *2*	2.1 *4*	6373.37	(37/2)			
		299.1 *1*	3.6 *2*	6322.31	(35/2$^+$)			
		440.1 *1*	1.3 *2*	6181.41	(35/2$^+$)			
		608.5 *1*	74 *4*	6012.94	35/2$^+$	E2	0.00847	α(K)exp=0.007 *1*

$^{147}_{64}Gd_{83}$-23

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
								α(K)=0.00699 *10*; α(L)=0.001158 *17*; α(M)=0.000255 *4* α(N)=5.82×10^{-5} *9*; α(O)=8.72×10^{-6} *13*; α(P)=4.76×10^{-7} *7*
6621.46	39/2$^+$	698.3 *1*	100 *4*	5923.15	37/2$^-$	E1	0.00230	α(K)exp=0.0015 *5* α(K)=0.00197 *3*; α(L)=0.000261 *4*; α(M)=5.61×10^{-5} *8* α(N)=1.286×10^{-5} *18*; α(O)=1.98×10^{-6} *3*; α(P)=1.310×10^{-7} *19*
		853.9 *3*	0.53 *22*	5767.58	(35/2$^-$)			
		1038.3 *1*	1.8 *9*	5583.12	35/2$^-$			
6658.35	(39/2$^-$)	285.2 *3*	100 *13*	6373.37	(37/2)			
		576.9 *3*	34 *8*	6081.62	(35/2$^-$)			
		698.9 *1*	62.3 *19*	5959.56	35/2$^-$			
6697.42	(37/2$^+$)	375.0 *2*	10.7 *24*	6322.31	(35/2$^+$)			
		929.8 *1*	74 *7*	5767.58	(35/2$^-$)			
		1114.3 *1*	100 *5*	5583.12	35/2$^-$			
		1668.2 *1*	18 *4*	5029.23	33/2$^+$			
6721.37	(39/2$^-$)	798.0 *3*	41 *15*	5923.15	37/2$^-$			
		1138.2 *1*	100 *7*	5583.12	35/2$^-$			
6723.33	(39/2$^-$)	800.1 *1*	28 *8*	5923.15	37/2$^-$			
		1140.2 *1*	100 *8*	5583.12	35/2$^-$			
6833.72	(37/2)	518.1 *2*	35 *5*	6316.00	(37/2$^+$)			
		820.8 *1*	100 *7*	6012.94	35/2$^+$			
		1250.5 *4*	28 *12*	5583.12	35/2$^-$			
6838.74	39/2$^+$	374.8 *1*	15 *3*	6464.05	(37/2$^+$)			
		915.5 *1*	100 *3*	5923.15	37/2$^-$	E1	1.34×10^{-3}	α(K)exp<0.001 α(K)=0.001150 *17*; α(L)=0.0001508 *22*; α(M)=3.24×10^{-5} *5* α(N)=7.43×10^{-6} *11*; α(O)=1.151×10^{-6} *17*; α(P)=7.72×10^{-8} *11*
6894.83	(39/2)	173.4 *1*	2.8 *7*	6721.37	(39/2$^-$)			
		326.8 *1*	12.9 *13*	6568.03	(37/2$^+$)			
		423.2 *1*	11.2 *15*	6471.58	39/2$^-$			
		430.8 *1*	5.2 *9*	6464.05	(37/2$^+$)			
		578.7 *1*	4.3 *7*	6316.00	(37/2$^+$)			
		971.6 *1*	100 *4*	5923.15	37/2$^-$			
6906.95	41/2$^+$	(12.1)	0.024 *1*	6894.83	(39/2)			
		68.0 *1*	0.08 *2*	6838.74	39/2$^+$	M1	6.12	α(exp)=5 *2* α(K)=5.16 *8*; α(L)=0.751 *11*; α(M)=0.1633 *24* α(N)=0.0376 *6*; α(O)=0.00582 *9*; α(P)=0.000387 *6*
		248.4 *1*	0.50 *6*	6658.35	(39/2$^-$)			
		285.4 *1*	11.4 *4*	6621.46	39/2$^+$	M1	0.1092	α(K)exp=0.075 *16* α(exp)=0.10 *3* α(K)=0.0925 *13*; α(L)=0.01308 *19*; α(M)=0.00284 *4* α(N)=0.000653 *10*; α(O)=0.0001015 *15*; α(P)=6.84×10^{-6} *10*
		435.3 *1*	12.6 *6*	6471.58	39/2$^-$	(E1)	0.00647	α(K)exp=0.009 *4*

$^{147}_{64}Gd_{83}$-24

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
								α(K)=0.00552 *8*; α(L)=0.000749 *11*; α(M)=0.0001615 *23* α(N)=3.70×10^{-5} *6*; α(O)=5.66×10^{-6} *8*; α(P)=3.60×10^{-7} *5* α(K)exp: for 435.3γ+434.5γ.
6906.95	41/2$^+$	591.1 *1*	3.30 *13*	6316.00	(37/2$^+$)	(E2)	0.00909	α(K)exp=0.002 *3* α(K)=0.00749 *11*; α(L)=0.001255 *18*; α(M)=0.000277 *4* α(N)=6.32×10^{-5} *9*; α(O)=9.44×10^{-6} *14*; α(P)=5.09×10^{-7} *8*
6936.96	(39/2$^+$)	239.6 *1*	1.03 *7*	6697.42	(37/2$^+$)			
		369.0 *1*	3.02 *18*	6568.03	(37/2$^+$)			
		465.4 *1*	0.54 *6*	6471.58	39/2$^-$			
		472.7 *3*	0.03 *2*	6464.05	(37/2$^+$)			
		620.9 *1*	0.15 *2*	6316.00	(37/2$^+$)			
		924.1 *1*	0.71 *6*	6012.94	35/2$^+$			
		1013.8 *3*	0.20 *4*	5923.15	37/2$^-$			
7018.33		1095.1 *2*	100	5923.15	37/2$^-$			
7035.48	41/2$^+$	140.6 *1*	1.2 *2*	6894.83	(39/2)			
		196.6 *1*	3.5 *2*	6838.74	39/2$^+$			
		414.0 *1*	100 *4*	6621.46	39/2$^+$	M1+E2	0.0322 *89*	α(K)exp=0.033 *7* α(K)=0.0267 *82*; α(L)=0.0043 *6*; α(M)=0.00094 *12* α(N)=0.00021 *3*; α(O)=3.2×10^{-5} *6*; α(P)=1.89×10^{-6} *67*
		571.5 *1*	7.3 *7*	6464.05	(37/2$^+$)			
		719.4 *1*	2.7 *3*	6316.00	(37/2$^+$)			
7124.59		660.4 *1*	100	6464.05	(37/2$^+$)			
7126.90	(39/2$^-$,41/2$^-$)	403.5 *1*	25.7 *25*	6723.33	(39/2$^-$)			
		1203.7 *1*	100 *6*	5923.15	37/2$^-$			
7182.97	(39/2$^+$)	809.6 *2*	31 *4*	6373.37	(37/2)			
		860.7 *4*	11 *6*	6322.31	(35/2$^+$)			
		867.0 *1*	100 *8*	6316.00	(37/2$^+$)			
7212.81	(41/2)	317.8 *1*	24 *3*	6894.83	(39/2)			
		374.2 *1*	72 *5*	6838.74	39/2$^+$			
		741.3 *1*	100 *6*	6471.58	39/2$^-$			
7275.59		1352.6 *1*	100	5923.15	37/2$^-$			
7307.85	(39/2$^-$,41/2$^+$)	739.8 *4*	6.1 *20*	6568.03	(37/2$^+$)			
		843.5 *4*	8.8 *20*	6464.05	(37/2$^+$)			
		991.8 *1*	100 *6*	6316.00	(37/2$^+$)			
7352.64	41/2$^+$	514.0 *1*	100	6838.74	39/2$^+$			
7386.28	(37/2$^-$)	1803.2 *1*	100 *10*	5583.12	35/2$^-$			
		2004.2 *5*	20 *7*	5382.26	33/2$^-$			
7389.54	43/2$^+$	177.0 *3*	2.0 *6*	7212.81	(41/2)			
		354.0 *1*	7.9 *6*	7035.48	41/2$^+$			
		482.6 *1*	10.0 *2*	6906.95	41/2$^+$	M1+E2	0.0215 *62*	α(K)exp=0.017 α(K)=0.0180 *56*; α(L)=0.0028 *5*; α(M)=0.00061 *11* α(N)=0.000139 *25*; α(O)=2.1×10^{-5} *5*; α(P)=1.28×10^{-6} *45*
		768.3 *3*	0.09 *3*	6621.46	39/2$^+$			

$^{147}_{64}Gd_{83}$-25

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π
7396.31	(41/2$^+$)	459.5 *1*	24 *7*	6936.96	(39/2$^+$)
		501.5 *1*	53 *7*	6894.83	(39/2)
		557.6 *1*	34 *3*	6838.74	39/2$^+$
		675.0 *3*	8 *3*	6721.37	(39/2$^-$)
		698.8 *1*	32 *4*	6697.42	(37/2$^+$)
		738.0 *1*	15 *3*	6658.35	(39/2$^-$)
		924.7 *1*	100 *7*	6471.58	39/2$^-$
		1080.5 *3*	11 *3*	6316.00	(37/2$^+$)
7531.08	(41/2)	512.7 *3*	0.18 *3*	7018.33	
		636.3 *1*	0.81 *9*	6894.83	(39/2)
		692.3 *1*	0.84 *9*	6838.74	39/2$^+$
		909.6 *1*	0.86 *4*	6621.46	39/2$^+$
7596.23	(39/2$^-$)	560.9 *1*	29 *7*	7035.48	41/2$^+$
		702.0 *7*	19 *7*	6894.83	(39/2)
		762.7 *1*	40 *10*	6833.72	(37/2)
		1132.1 *1*	57 *14*	6464.05	(37/2$^+$)
		2013.0 *1*	100 *7*	5583.12	35/2$^-$
7619.93	(41/2$^+$)	312.0 *4*	12 *6*	7307.85	(39/2$^-$,41/2$^+$)
		584.5 *2*	64 *12*	7035.48	41/2$^+$
		781.3 *2*	100 *18*	6838.74	39/2$^+$
		998.5 *2*	42 *12*	6621.46	39/2$^+$
		1155.8 *1*	91 *18*	6464.05	(37/2$^+$)
7646.11	39/2$^-$	1723.0 *3*	0.08 *2*	5923.15	37/2$^-$
		2063.0 *1*	0.59 *3*	5583.12	35/2$^-$
7666.44	39/2$^-$,41/2$^-$	539.4 *3*	18 *6*	7126.90	(39/2$^-$,41/2$^-$)
		1007.8 *3*	6.3 *21*	6658.35	(39/2$^-$)
		1194.9 *1*	100 *6*	6471.58	39/2$^-$
7669.82	(39/2$^-$)	73.7 *3*	3.6 *12*	7596.23	(39/2$^-$)
		283.5 *1*	13.3 *24*	7386.28	(37/2$^-$)
		1011.4 *3*	11 *4*	6658.35	(39/2$^-$)
		1198.0 *3*	16 *4*	6471.58	39/2$^-$
		1709.8 *3*	10 *4*	5959.56	35/2$^-$
		2086.8 *1*	100 *4*	5583.12	35/2$^-$
7692.24	(41/2)	384.5 *3*	30 *10*	7307.85	(39/2$^-$,41/2$^+$)
		797.5 *2*	55 *15*	6894.83	(39/2)
		1070.6 *2*	100 *15*	6621.46	39/2$^+$
7706.06	39/2$^-$	1047.5 *2*	100 *27*	6658.35	(39/2$^-$)
		2122.9 *1*	41 *9*	5583.12	35/2$^-$
7718.70	39/2$^-$	1402.7 *3*	100 *11*	6316.00	(37/2$^+$)
		1795.2 *5*	78 *22*	5923.15	37/2$^-$
		2135.6 *1*	78 *22*	5583.12	35/2$^-$
7768.82	(39/2$^-$)	2185.7 *1*	100	5583.12	35/2$^-$
7772.08	(43/2)	419.7 *3*	15 *5*	7352.64	41/2$^+$

$^{147}_{64}Gd_{83}$-26

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
7772.08	(43/2)	736.6 *1*	100 *9*	7035.48	41/2$^+$			
		865.2 *3*	15 *4*	6906.95	41/2$^+$			
7800.50	39/2$^-$	1079.1 *2*	20 *9*	6721.37	(39/2$^-$)			
		1329.0 *3*	16 *4*	6471.58	39/2$^-$			
		1877.5 *1*	100 *6*	5923.15	37/2$^-$			
		2217.2 *1*	24 *4*	5583.12	35/2$^-$			
7801.56	41/2$^-$	109.0 *3*	2.6 *7*	7692.24	(41/2)			
		205.4 *3*	7.1 *10*	7596.23	(39/2$^-$)			
		526.1 *3*	6.0 *17*	7275.59				
		618.7 *1*	5.2 *7*	7182.97	(39/2$^+$)			
		674.8 *4*	1.9 *10*	7126.90	(39/2$^-$,41/2$^-$)			
		765.9 *1*	6.7 *7*	7035.48	41/2$^+$			
		864.6 *1*	45.2 *19*	6936.96	(39/2$^+$)			
		894.6 *1*	33 *3*	6906.95	41/2$^+$			
		906.7 *1*	51.2 *24*	6894.83	(39/2)			
		962.9 *1*	7.4 *14*	6838.74	39/2$^+$			
		967.6 *3*	13 *3*	6833.72	(37/2)			
		1104.3 *4*	13 *3*	6697.42	(37/2$^+$)			
		1180.2 *1*	100 *4*	6621.46	39/2$^+$			
7825.85	41/2$^-$,39/2$^-$	119.8 *3*	3.7 *18*	7706.06	39/2$^-$			
		229.7 *1*	22 *3*	7596.23	(39/2$^-$)			
		517.8 *1*	14.6 *18*	7307.85	(39/2$^-$,41/2$^+$)			
		550.3 *1*	11.0 *28*	7275.59				
		699.0 *3*	5.5 *18*	7126.90	(39/2$^-$,41/2$^-$)			
		701.1 *1*	3.7 *9*	7124.59				
		790.3 *1*	100 *3*	7035.48	41/2$^+$			
		888.7 *3*	13 *3*	6936.96	(39/2$^+$)			
		919.0 *3*	8.7 *18*	6906.95	41/2$^+$			
		987.3 *3*	4.6 *14*	6838.74	39/2$^+$			
		1102.4 *5*	3.2 *14*	6723.33	(39/2$^-$)			
		1167.9 *1*	13.2 *14*	6658.35	(39/2$^-$)			
		1204.5 *1*	34 *4*	6621.46	39/2$^+$			
		1354.0 *1*	6.8 *14*	6471.58	39/2$^-$			
		1902.7 *1*	40.6 *18*	5923.15	37/2$^-$			
7874.18	41/2$^-$	(48.3)	9.4 *13*	7825.85	41/2$^-$,39/2$^-$	M1	2.61	α(L)=2.05 *3*; α(M)=0.445 *7* α(N)=0.1023 *15*; α(O)=0.01584 *23*; α(P)=0.001051 *15*
		72.7 *1*	21 *5*	7801.56	41/2$^-$	M1	5.05	α(exp)=6 *2* α(K)=4.26 *7*; α(L)=0.618 *9*; α(M)=0.1344 *20* α(N)=0.0309 *5*; α(O)=0.00479 *7*; α(P)=0.000318 *5*
		73.7 *1*	2.7 *9*	7800.50	39/2$^-$	M1	4.85	α(exp)=5 *3* α(K)=4.09 *6*; α(L)=0.594 *9*; α(M)=0.1291 *19* α(N)=0.0297 *5*; α(O)=0.00460 *7*; α(P)=0.000306 *5*
		105.5 *3*	0.6 *3*	7768.82	(39/2$^-$)	(M1)	1.73 *3*	α(exp)=2.9 *14*

$^{147}_{64}Gd_{83}$-27

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	E_γ [†]	I_γ [†‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
							α(K)=1.458 *24*; α(L)=0.210 *4*; α(M)=0.0457 *8* α(N)=0.01053 *17*; α(O)=0.00163 *3*; α(P)=0.0001088 *18*
7874.18	155.5 *1*	2.2 *5*	7718.70	39/2$^-$	M1	0.576	α(exp)=0.9 *3* α(K)=0.487 *7*; α(L)=0.0698 *10*; α(M)=0.01517 *22* α(N)=0.00349 *5*; α(O)=0.000542 *8*; α(P)=3.62×10^{-5} *6*
	168.2 *3*	0.59 *15*	7706.06	39/2$^-$	M1	0.462	α(exp)=0.6 *3* α(K)=0.391 *6*; α(L)=0.0560 *9*; α(M)=0.01217 *18* α(N)=0.00280 *5*; α(O)=0.000435 *7*; α(P)=2.91×10^{-5} *5*
	204.4 *1*	13.4 *13*	7669.82	(39/2$^-$)	(M1)	0.270	α(exp)=0.22 *6* α(K)=0.228 *4*; α(L)=0.0326 *5*; α(M)=0.00707 *10* α(N)=0.001627 *23*; α(O)=0.000253 *4*; α(P)=1.694×10^{-5} *24*
	207.7 *1*	12.2 *9*	7666.44	39/2$^-$,41/2$^-$	M1	0.258	α(exp)=0.38 *15* α(K)=0.218 *3*; α(L)=0.0312 *5*; α(M)=0.00676 *10* α(N)=0.001557 *22*; α(O)=0.000242 *4*; α(P)=1.621×10^{-5} *23*
	228.1 *1*	10.8 *9*	7646.11	39/2$^-$	M1	0.200	α(exp)=0.25 *7* α(K)=0.1692 *24*; α(L)=0.0241 *4*; α(M)=0.00522 *8* α(N)=0.001203 *17*; α(O)=0.000187 *3*; α(P)=1.254×10^{-5} *18*
	278.0 *1*	2.5 *13*	7596.23	(39/2$^-$)			
	488.0 *1*	2.8 *5*	7386.28	(37/2$^-$)			
	566.3 *1*	6.0 *5*	7307.85	(39/2$^-$,41/2$^+$)			
	598.7 *1*	3.8 *9*	7275.59				
	691.1 *1*	6.2 *5*	7182.97	(39/2$^+$)			
	747.2 *1*	25.5 *9*	7126.90	(39/2$^-$,41/2$^-$)			
	749.7 *5*	1.0 *3*	7124.59				
	838.7 *1*	71.3 *21*	7035.48	41/2$^+$	E1	1.59×10^{-3}	α(K)exp<0.002 α(K)=0.001362 *19*; α(L)=0.000179 *3*; α(M)=3.85×10^{-5} *6* α(N)=8.84×10^{-6} *13*; α(O)=1.367×10^{-6} *20*; α(P)=9.12×10^{-8} *13*
	855.8 *2*	2.9 *5*	7018.33				
	937.2 *1*	59 *3*	6936.96	(39/2$^+$)	E1	1.28×10^{-3}	α(K)exp<0.0012 α(K)=0.001100 *16*; α(L)=0.0001441 *21*; α(M)=3.09×10^{-5} *5* α(N)=7.10×10^{-6} *10*; α(O)=1.100×10^{-6} *16*; α(P)=7.39×10^{-8} *11*
	967.1 *1*	38.9 *25*	6906.95	41/2$^+$	E1	1.21×10^{-3}	α(K)exp<0.0018 α(K)=0.001037 *15*; α(L)=0.0001356 *19*; α(M)=2.91×10^{-5} *4* α(N)=6.68×10^{-6} *10*; α(O)=1.035×10^{-6} *15*; α(P)=6.96×10^{-8} *10*
	979.2 *1*	29.0 *19*	6894.83	(39/2)			
	1035.4 *1*	10.6 *10*	6838.74	39/2$^+$			
	1040.4 *1*	8.1 *13*	6833.72	(37/2)			
	1215.7 *3*	1.6 *6*	6658.35	(39/2$^-$)			
	1252.7 *1*	55.1 *19*	6621.46	39/2$^+$			
	1951.1 *1*	100 *4*	5923.15	37/2$^-$	E2	1.01×10^{-3}	α(K)=0.000641 *9*; α(L)=8.52×10^{-5} *12*; α(M)=1.83×10^{-5} *3* α(N)=4.22×10^{-6} *6*; α(O)=6.55×10^{-7} *10*; α(P)=4.44×10^{-8} *7*; α(IPF)=0.000264 *4*

$^{147}_{64}Gd_{83}$-28

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
7903.71	(39/2$^-$,41/2$^-$)	721.3 *5*	10 *5*	7182.97	(39/2$^+$)			
		1065.0 *3*	27 *7*	6838.74	39/2$^+$			
		1980.6 *1*	100 *7*	5923.15	37/2$^-$			
7917.24	(39/2$^-$,41/2$^-$)	247.3 *2*	52 *14*	7669.82	(39/2$^-$)			
		1994.1 *1*	100 *14*	5923.15	37/2$^-$			
7964.13	43/2$^-$	162.4 *3*	1.0 *5*	7801.56	41/2$^-$			
		297.8 *1*	2.6 *3*	7666.44	39/2$^-$,41/2$^-$			
		344.0 *3*	2.5 *3*	7619.93	(41/2$^+$)			
		433.1 *1*	13 *10*	7531.08	(41/2)			
		567.9 *1*	6.4 *5*	7396.31	(41/2$^+$)			
		574.5 *1*	12.2 *7*	7389.54	43/2$^+$			
		656.3 *1*	2.8 *3*	7307.85	(39/2$^-$,41/2$^+$)			
		751.3 *1*	6.3 *10*	7212.81	(41/2)			
		837.0 *4*	0.7 *3*	7126.90	(39/2$^-$,41/2$^-$)			
		928.6 *1*	26 *2*	7035.48	41/2$^+$			
		1057.1 *1*	100 *3*	6906.95	41/2$^+$	E1	1.02×10^{-3}	α(K)exp=0.0008 *9* α(K)=0.000879 *13*; α(L)=0.0001145 *16*; α(M)=2.46×10^{-5} *4* α(N)=5.64×10^{-6} *8*; α(O)=8.75×10^{-7} *13*; α(P)=5.91×10^{-8} *9*
7994.43	43/2$^-$	(30.4)	2.9 *4*	7964.13	43/2$^-$			
		(77.2 *3*)	0.18 *5*	7917.24	(39/2$^-$,41/2$^-$)			
		90.8 *1*	0.40 *9*	7903.71	(39/2$^-$,41/2$^-$)			
		120.2 *1*	100 *8*	7874.18	41/2$^-$	M1	1.191	α(exp)=1.05 *18* α(K)=1.006 *15*; α(L)=0.1449 *21*; α(M)=0.0315 *5* α(N)=0.00725 *11*; α(O)=0.001124 *16*; α(P)=7.50×10^{-5} *11*
		168.6 *1*	12 *5*	7825.85	41/2$^-$,39/2$^-$			
		192.9 *1*	14.5 *8*	7801.56	41/2$^-$	D		
		193.9 *5*	0.09 *5*	7800.50	39/2$^-$			
		288.3 *1*	0.8 *3*	7706.06	39/2$^-$			
		302.4 *3*	0.27 *14*	7692.24	(41/2)			
		327.9 *1*	2.8 *4*	7666.44	39/2$^-$,41/2$^-$			
		374.5 *1*	1.4 *3*	7619.93	(41/2$^+$)			
		463.3 *1*	7.1 *4*	7531.08	(41/2)			
		598.2 *1*	8.6 *5*	7396.31	(41/2$^+$)			
		605.0 *1*	12.9 *7*	7389.54	43/2$^+$			α(K)exp=0.006 *2*
		641.8 *1*	1.17 *18*	7352.64	41/2$^+$			
		686.7 *1*	2.47 *18*	7307.85	(39/2$^-$,41/2$^+$)			
		781.7 *1*	7.1 *4*	7212.81	(41/2)			
		867.4 *3*	7.1 *4*	7126.90	(39/2$^-$,41/2$^-$)			
		958.9 *1*	17.9 *9*	7035.48	41/2$^+$	E1	1.23×10^{-3}	α(K)exp<0.0019 α(K)=0.001054 *15*; α(L)=0.0001378 *20*; α(M)=2.96×10^{-5} *5* α(N)=6.79×10^{-6} *10*; α(O)=1.052×10^{-6} *15*; α(P)=7.08×10^{-8} *10*
		1087.4 *1*	16.2 *5*	6906.95	41/2$^+$	E1	9.73×10^{-4}	α(K)=0.000835 *12*; α(L)=0.0001086 *16*; α(M)=2.33×10^{-5} *4* α(N)=5.35×10^{-6} *8*; α(O)=8.30×10^{-7} *12*; α(P)=5.62×10^{-8} *8*

$^{147}_{64}Gd_{83}$-29

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
8097.31	(43/2)	884.7 *3*	14 *5*	7212.81	(41/2)			
		1061.9 *1*	100 *5*	7035.48	$41/2^+$			
		1190.2 *1*	32 *3*	6906.95	$41/2^+$			
8126.17	$43/2^+$	354.0 *3*	2.5 *13*	7772.08	(43/2)			
		773.6 *1*	26 *5*	7352.64	$41/2^+$			
		913.3 *1*	13.8 *13*	7212.81	(41/2)			
		1090.7 *1*	100.0 *25*	7035.48	$41/2^+$			
		1219.2 *1*	82.4 *25*	6906.95	$41/2^+$			
8153.63	$45/2^+$	381.5 *1*	9.8 *11*	7772.08	(43/2)			
		764.1 *1*	100 *3*	7389.54	$43/2^+$	M1	0.00877	α(K)exp=0.0067 *16* α(K)=0.00747 *11*; α(L)=0.001022 *15*; α(M)=0.000221 *3* α(N)=5.09×10^{-5} *8*; α(O)=7.92×10^{-6} *11*; α(P)=5.42×10^{-7} *8*
		1118.1 *1*	8.4 *7*	7035.48	$41/2^+$			
8333.57	$45/2^+$	179.8 *1*	0.18 *4*	8153.63	$45/2^+$			
		207.4 *1*	3.81 *14*	8126.17	$43/2^+$	M1	0.259	α(exp)=0.27 *6* (2020Br06) α(K)=0.219 *3*; α(L)=0.0313 *5*; α(M)=0.00679 *10* α(N)=0.001563 *22*; α(O)=0.000243 *4*; α(P)=1.628×10^{-5} *23*
		236.2 *1*	1.0 *3*	8097.31	(43/2)			
		339.2 *1*	100 *3*	7994.43	$43/2^-$	E1	0.01174	α(exp)<0.03 (2020Br06) α(K)=0.00999 *14*; α(L)=0.001375 *20*; α(M)=0.000297 *5* α(N)=6.78×10^{-5} *10*; α(O)=1.033×10^{-5} *15*; α(P)=6.42×10^{-7} *9*
		369.4 *1*	7.6 *3*	7964.13	$43/2^-$	E1	0.00954	α(K)exp<0.009 α(K)=0.00813 *12*; α(L)=0.001113 *16*; α(M)=0.000240 *4* α(N)=5.49×10^{-5} *8*; α(O)=8.38×10^{-6} *12*; α(P)=5.25×10^{-7} *8*
		561.6 *1*	0.31 *4*	7772.08	(43/2)			
		944.0 *1*	1.44 *5*	7389.54	$43/2^+$			
		1298.1 *1*	0.46 *5*	7035.48	$41/2^+$			
		1426.6 *1*	0.29 *3*	6906.95	$41/2^+$			
8588.07	$49/2^+$	254.4 *1*	100 *3*	8333.57	$45/2^+$	E2	0.1011	α(K)exp=0.075 *14* α(exp)=0.12 *3* B(E2)(W.u.)=0.0185 *7* α(K)=0.0749 *11*; α(L)=0.0203 *3*; α(M)=0.00464 *7* α(N)=0.001047 *15*; α(O)=0.0001467 *21*; α(P)=4.54×10^{-6} *7*
								α(exp)<0.03 (2020Br06) B(E2)(W.u.)=8.9×10^{-5} *+8−7*
		593.7 *1*	3.31 *13*	7994.43	$43/2^-$	E3	0.0237	α(K)exp=0.0016 *3* B(E3)(W.u.)=1.93 *12* α(K)=0.0180 *3*; α(L)=0.00436 *7*; α(M)=0.000993 *14* α(N)=0.000226 *4*; α(O)=3.27×10^{-5} *5*; α(P)=1.317×10^{-6} *19*
		623.8 *3*	0.16 *4*	7964.13	$43/2^-$	[E3]	0.0205	B(E3)(W.u.)=0.066 *+18−17*

$^{147}_{64}Gd_{83}$-30

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	δ	α[c]	Comments
									α(K)=0.01578 *23*; α(L)=0.00366 *6*; α(M)=0.000830 *12* α(N)=0.000189 *3*; α(O)=2.74×10^{-5} *4*; α(P)=1.153×10^{-6} *17*
9241.1	(51/2)	653.0	100	8588.07	49/2$^+$	D+(Q)	+0.09 *8*		
9507.2	(51/2$^+$)	919.1	100	8588.07	49/2$^+$	M1+E2	+0.65 *+16−12*	0.00491 *24*	α(K)=0.00418 *21*; α(L)=0.00058 *3*; α(M)=0.000125 *6* α(N)=2.87×10^{-5} *13*; α(O)=4.46×10^{-6} *20*; α(P)=3.00×10^{-7} *16*
9691.5	(53/2$^+$)	1103.4	100	8588.07	49/2$^+$	E2		0.00225	B(E2)(W.u.)=2.4 *+7−5* α(K)=0.00190 *3*; α(L)=0.000270 *4*; α(M)=5.86×10^{-5} *9* α(N)=1.345×10^{-5} *19*; α(O)=2.07×10^{-6} *3*; α(P)=1.318×10^{-7} *19*; α(IPF)=3.37×10^{-7} *5*
9879.9	(53/2$^-$)	188.5	100	9691.5	(53/2$^+$)	(E1)		0.0531	B(E1)(W.u.)=0.00028 *+33−11* α(K)=0.0450 *7*; α(L)=0.00640 *9*; α(M)=0.001383 *20* α(N)=0.000315 *5*; α(O)=4.72×10^{-5} *7*; α(P)=2.73×10^{-6} *4*
		372.7	60	9507.2	(51/2$^+$)	E1+(M2)	−0.05 *4*	0.0098 *11*	B(E1)(W.u.)=2.1×10^{-5} *+27−9* α(K)=0.0083 *9*; α(L)=0.00116 *15*; α(M)=0.00025 *4* α(N)=5.7×10^{-5} *8*; α(O)=8.7×10^{-6} *12*; α(P)=5.5×10^{-7} *8*
		638.8		9241.1	(51/2)				
		1291.9	7	8588.07	49/2$^+$	E3+M2		0.0046 *13*	α(K)=0.0039 *12*; α(L)=0.00056 *14*; α(M)=0.00012 *3* α(N)=2.8×10^{-5} *7*; α(O)=4.4×10^{-6} *12*; α(P)=2.85×10^{-7} *88*; α(IPF)=5.75×10^{-6} *16*
10272.2	(55/2$^-$)	580.4		9691.5	(53/2$^+$)				
10487.9	(55/2$^+$)	796.3	100	9691.5	(53/2$^+$)	M1+E2	+0.29 *4*	0.00766 *13*	α(K)=0.00652 *11*; α(L)=0.000896 *15*; α(M)=0.000194 *4* α(N)=4.46×10^{-5} *8*; α(O)=6.94×10^{-6} *12*; α(P)=4.72×10^{-7} *9*
		1246.9		9241.1	(51/2)				
10688.8	(57/2$^-$)	808.9	100	9879.9	(53/2$^-$)	E2		0.00435	B(E2)(W.u.)=3.5 *+15−8* α(K)=0.00364 *6*; α(L)=0.000553 *8*; α(M)=0.0001209 *17* α(N)=2.77×10^{-5} *4*; α(O)=4.20×10^{-6} *6*; α(P)=2.51×10^{-7} *4*
10747.4	(57/2$^+$)	259.6	33	10487.9	(55/2$^+$)	M1		0.1408	α(K)=0.1192 *17*; α(L)=0.01691 *24*; α(M)=0.00367 *6* α(N)=0.000844 *12*; α(O)=0.0001312 *19*; α(P)=8.82×10^{-6} *13*
		1056.1	100	9691.5	(53/2$^+$)	E2		0.00246	α(K)=0.00208 *3*; α(L)=0.000298 *5*; α(M)=6.46×10^{-5} *9* α(N)=1.482×10^{-5} *21*; α(O)=2.27×10^{-6} *4*; α(P)=1.440×10^{-7} *21*
10993.4	(59/2$^-$)	246.2	27	10747.4	(57/2$^+$)	E1		0.0264	B(E1)(W.u.)=4.02×10^{-6} *+26−24* α(K)=0.0224 *4*; α(L)=0.00313 *5*; α(M)=0.000676 *10* α(N)=0.0001543 *22*; α(O)=2.33×10^{-5} *4*; α(P)=1.399×10^{-6} *20*
		304.5	100	10688.8	(57/2$^-$)	M1+E2	+0.27 *4*	0.0895 *15*	B(M1)(W.u.)=6.65×10^{-4} *44*; B(E2)(W.u.)=0.29 *+9−8* α(K)=0.0756 *13*; α(L)=0.01095 *16*; α(M)=0.00238 *4* α(N)=0.000548 *8*; α(O)=8.46×10^{-5} *12*; α(P)=5.54×10^{-6} *10*
		721		10272.2	(55/2$^-$)				
11232.3	(61/2$^-$)	238.9	100	10993.4	(59/2$^-$)	M1		0.1762	B(M1)(W.u.)=0.072 *+16−11* α(K)=0.1492 *21*; α(L)=0.0212 *3*; α(M)=0.00460 *7* α(N)=0.001059 *15*; α(O)=0.0001645 *23*; α(P)=1.105×10^{-5} *16*
		543.6	14	10688.8	(57/2$^-$)	E2		0.01123	B(E2)(W.u.)=1.62 *+45−37*

$^{147}_{64}Gd_{83}$-31

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[#]	δ	α[c]	Comments
									α(K)=0.00919 *13*; α(L)=0.001591 *23*; α(M)=0.000352 *5* α(N)=8.03×10^{-5} *12*; α(O)=1.193×10^{-5} *17*; α(P)=6.21×10^{-7} *9*
11850.8	(65/2$^-$)	618.6	100	11232.3	(61/2$^-$)	E2		0.00813	α(K)=0.00672 *10*; α(L)=0.001107 *16*; α(M)=0.000244 *4* α(N)=5.57×10^{-5} *8*; α(O)=8.34×10^{-6} *12*; α(P)=4.58×10^{-7} *7*
11930.3	(61/2)	936.8	100	10993.4	(59/2$^-$)	D+(Q)	−0.07 *6*		
12208.7	(65/2$^-$)	976.4	100	11232.3	(61/2$^-$)	E2		0.00289	B(E2)(W.u.)=10 *+10−3* α(K)=0.00244 *4*; α(L)=0.000355 *5*; α(M)=7.72×10^{-5} *11* α(N)=1.770×10^{-5} *25*; α(O)=2.71×10^{-6} *4*; α(P)=1.690×10^{-7} *24*
12548.7	(65/2)	618.3	100	11930.3	(61/2)	E2		0.00814	α(K)=0.00672 *10*; α(L)=0.001108 *16*; α(M)=0.000244 *4* α(N)=5.57×10^{-5} *8*; α(O)=8.35×10^{-6} *12*; α(P)=4.58×10^{-7} *7*
13104.8	(69/2$^-$)	896.1	100	12208.7	(65/2$^-$)	E2		0.00348	α(K)=0.00292 *4*; α(L)=0.000433 *6*; α(M)=9.43×10^{-5} *14* α(N)=2.16×10^{-5} *3*; α(O)=3.30×10^{-6} *5*; α(P)=2.02×10^{-7} *3*
13265.2	(67/2)	716.3	36	12548.7	(65/2)				
		1414.5	100	11850.8	(65/2$^-$)	D			
13416.7	(67/2)	1208.0	100	12208.7	(65/2$^-$)	D			
13446.1		341.3		13104.8	(69/2$^-$)				
13446.6	(69/2)	181.3	100	13265.2	(67/2)	D			
		897.9	100	12548.7	(65/2)	E2		0.00346	α(K)=0.00291 *4*; α(L)=0.000431 *6*; α(M)=9.39×10^{-5} *14* α(N)=2.15×10^{-5} *3*; α(O)=3.28×10^{-6} *5*; α(P)=2.01×10^{-7} *3*
14433.3	(71/2)	986.7	100	13446.6	(69/2)	M1+E2	+0.55 *6*	0.00428 *10*	α(K)=0.00365 *9*; α(L)=0.000500 *11*; α(M)=0.0001080 *23* α(N)=2.49×10^{-5} *6*; α(O)=3.86×10^{-6} *9*; α(P)=2.62×10^{-7} *7*
15174.9	(73/2)	741.6	100	14433.3	(71/2)	D			
15390.4	(73/2)	215.5	50	15174.9	(73/2)	D+Q	+0.34 *+14−26*		
		597.4	100	14793?					
15691	(75/2)	300.3	100	15390.4	(73/2)	D			
16777		1086	100	15691	(75/2)				
16937	(79/2)	1246	100	15691	(75/2)	(Q)			
697.04+x	J+2	697.04 *5*	0.23 *10*	x	J≈(55/2)				I_γ: 0.79 *16* by 1991Zu01 in (HI,xnγ) is too high.

$^{147}_{64}Gd_{83}$-32

Adopted Levels, Gammas (continued)

$\gamma(^{147}Gd)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ †‡	E_f	J_f^π	Comments
1442.35+x	J+4	745.31 *6*	0.77 *10*	697.04+x	J+2	
2237.89+x	J+6	795.53 *6*	0.90 *10*	1442.35+x	J+4	
3084.92+x	J+8	847.03 *6*	0.93 *8*	2237.89+x	J+6	
3984.87+x	J+10	899.95 *7*	1.06 *8*	3084.92+x	J+8	
4939.24+x	J+12	954.36 *7*	1.05 *10*	3984.87+x	J+10	
5948.79+x	J+14	1009.55 *7*	1.05 *10*	4939.24+x	J+12	
7014.03+x	J+16	1065.24 *6*	0.89 *10*	5948.79+x	J+14	
8135.07+x	J+18	1121.03 *7*	1.01 *10*	7014.03+x	J+16	
9310.52+x	J+20	1175.45 *8*	1.03 *10*	8135.07+x	J+18	
10538.97+x	J+22	1228.44 *7*	0.73 *7*	9310.52+x	J+20	
11816.49+x	J+24	1277.52 *9*	0.79 *8*	10538.97+x	J+22	
13139.6+x	J+26	1323.14 *9*	0.70 *7*	11816.49+x	J+24	
14506.9+x	J+28	1367.21 *11*	0.49 *8*	13139.6+x	J+26	
15920.6+x	J+30	1413.74 *11*	0.41 *8*	14506.9+x	J+28	I_γ: 0.13 *7* (1991Zu01, (HI,xnγ)).
17384.4+x	J+32	1463.77 *16*	0.38 *8*	15920.6+x	J+30	
18900.7+x	J+34	1516.33 *23*	0.20 *10*	17384.4+x	J+32	
20472.6+x	J+36	1571.9 *3*		18900.7+x	J+34	
22100.4+x	J+38	1627.8 *7*		20472.6+x	J+36	
730.21+y	J1+2	730.21 *12*	0.40 *15*	y	J1≈(61/2)	
1509.15+y	J1+4	778.94 *8*	0.52 *15*	730.21+y	J1+2	
2337.18+y	J1+6	828.02 *8*	0.92 *15*	1509.15+y	J1+4	
3214.92+y	J1+8	877.74 *7*	1.21 *20*	2337.18+y	J1+6	
4143.94+y	J1+10	929.02 *7*	0.87 *15*	3214.92+y	J1+8	
5125.55+y	J1+12	981.60 *8*	0.79 *15*	4143.94+y	J1+10	
6161.04+y	J1+14	1035.49 *8*	1.18 *20*	5125.55+y	J1+12	
7251.46+y	J1+16	1090.42 *8*	1.01 *20*	6161.04+y	J1+14	
8398.1+y	J1+18	1146.67 *8*	1.02 *20*	7251.46+y	J1+16	
9601.7+y	J1+20	1203.52 *9*	0.80 *15*	8398.1+y	J1+18	
10863.1+y	J1+22	1261.38 *9*	0.84 *15*	9601.7+y	J1+20	
12183.5+y	J1+24	1320.44 *10*	0.79 *17*	10863.1+y	J1+22	
13563.5+y	J1+26	1380.04 *12*	0.54 *20*	12183.5+y	J1+24	
15003.4+y	J1+28	1439.81 *13*	0.31 *20*	13563.5+y	J1+26	
16503.7+y	J1+30	1500.33 *16*	0.38 *20*	15003.4+y	J1+28	
18065.0+y	J1+32	1561.34 *24*	0.17 *10*	16503.7+y	J1+30	
19687.9+y	J1+34	1622.8 *4*		18065.0+y	J1+32	
704.8+z	J2+2	704.8 *5*		z	J2≈(51/2)	
1457.9+z	J2+4	753.1 *2*		704.8+z	J2+2	
2261.7+z	J2+6	803.8 *2*		1457.9+z	J2+4	
3118.7+z	J2+8	857.0 *1*		2261.7+z	J2+6	
4029.4+z	J2+10	910.7 *1*		3118.7+z	J2+8	
4995.8+z	J2+12	966.4 *1*		4029.4+z	J2+10	
6018.5+z	J2+14	1022.7 *1*		4995.8+z	J2+12	
7098.7+z	J2+16	1080.2 *1*		6018.5+z	J2+14	
8236.3+z	J2+18	1137.6 *1*		7098.7+z	J2+16	

$^{147}_{64}Gd_{83}$-33

Adopted Levels, Gammas (continued)

γ(^{147}Gd) (continued)

E_i(level)	J_i^π	E_γ †	E_f	J_f^π	E_i(level)	J_i^π	E_γ †	E_f	J_f^π
9431.6+z	J2+20	1195.3 *1*	8236.3+z	J2+18	2844.6+v	J4+6	994.0 *2*	1850.6+v	J4+4
10684.6+z	J2+22	1253.0 *2*	9431.6+z	J2+20	3880.7+v	J4+8	1036.1 *2*	2844.6+v	J4+6
11995.3+z	J2+24	1310.7 *2*	10684.6+z	J2+22	4960.4+v	J4+10	1079.7 *3*	3880.7+v	J4+8
13363.1+z	J2+26	1367.7 *2*	11995.3+z	J2+24	6086.0+v	J4+12	1125.6 *2*	4960.4+v	J4+10
14786.3+z	J2+28	1423.2 *2*	13363.1+z	J2+26	7260.5+v	J4+14	1174.5 *2*	6086.0+v	J4+12
16263.6+z	J2+30	1477.3 *3*	14786.3+z	J2+28	8483.6+v	J4+16	1223.1 *3*	7260.5+v	J4+14
17786.3+z	J2+32	1522.7 *3*	16263.6+z	J2+30	9756.4+v	J4+18	1272.8 *3*	8483.6+v	J4+16
19298.4+z?	J2+34	1512.2*be* *7*	17786.3+z	J2+32	11079.5+v	J4+20	1323.1 *3*	9756.4+v	J4+18
741.9+u	J3+2	741.9 *4*	u	J3≈(61/2)	12453.9+v	J4+22	1374.3 *3*	11079.5+v	J4+20
1527.4+u	J3+4	785.5 *4*	741.9+u	J3+2	13881.9+v	J4+24	1428.0 *4*	12453.9+v	J4+22
2361.8+u	J3+6	834.4 *3*	1527.4+u	J3+4	15366.0+v	J4+26	1484.1 *6*	13881.9+v	J4+24
3245.5+u	J3+8	883.7 *3*	2361.8+u	J3+6	890.8+w	J5+2	890.8 *9*	w	J5
4181.4+u	J3+10	935.9 *2*	3245.5+u	J3+8	1832.6+w	J5+4	941.8 *3*	890.8+w	J5+2
5170.0+u	J3+12	988.6 *2*	4181.4+u	J3+10	2829.3+w	J5+6	996.7 *2*	1832.6+w	J5+4
6212.0+u	J3+14	1042.0 *2*	5170.0+u	J3+12	3875.8+w	J5+8	1046.5 *3*	2829.3+w	J5+6
7308.9+u	J3+16	1096.9 *2*	6212.0+u	J3+14	4971.8+w	J5+10	1096.0 *2*	3875.8+w	J5+8
8462.4+u	J3+18	1153.5 *2*	7308.9+u	J3+16	6115.0+w	J5+12	1143.2 *2*	4971.8+w	J5+10
9671.9+u	J3+20	1209.5 *2*	8462.4+u	J3+18	7305.6+w	J5+14	1190.6 *2*	6115.0+w	J5+12
10939.6+u	J3+22	1267.7 *2*	9671.9+u	J3+20	8543.1+w	J5+16	1237.5 *3*	7305.6+w	J5+14
12265.7+u	J3+24	1326.1 *3*	10939.6+u	J3+22	9828.0+w	J5+18	1284.9 *3*	8543.1+w	J5+16
13650.2+u	J3+26	1384.4 *3*	12265.7+u	J3+24	11162.3+w	J5+20	1334.3 *3*	9828.0+w	J5+18
15093.8+u	J3+28	1443.6 *3*	13650.2+u	J3+26	12547.2+w	J5+22	1384.8 *3*	11162.3+w	J5+20
16596.5+u	J3+30	1502.7 *5*	15093.8+u	J3+28	13982.8+w	J5+24	1435.6 *4*	12547.2+w	J5+22
18159.9+u	J3+32	1563.4 *7*	16596.5+u	J3+30	15471.9+w	J5+26	1489.1 *4*	13982.8+w	J5+24
899.5+v	J4+2	899.5 *4*	v	J4≈(71/2)	17014.2+w	J5+28	1542.3 *6*	15471.9+w	J5+26
1850.6+v	J4+4	951.1 *3*	899.5+v	J4+2	18610.6+w	J5+30	1596.4 *10*	17014.2+w	J5+28

† E_γ's and I_γ's of the γ rays placed in the decay scheme are as follows: below 3582-keV level, from (^{3}He,3nγ) data set, unless otherwise noted; above 8587-keV level, from (HI,xnγ) data set; in between, from IT decay (516 ns) data set.

‡ Relative photon branching ratio for each level, normalized to 100 for the most intense transition. For SD bands values are relative intensities within each band.

Multipolarities of γ rays originating from levels up to and including 2765 keV are determined from γ(θ) and α(K)exp measurements in (^{3}He,3nγ), unless otherwise noted. Between levels 2770-8587 keV, multipolarities are obtained from γ(θ) in (^{28}Si,5nγ), α(K)exp in (^{16}O,4nγ) and α(exp) in ^{76}Ge(^{76}Ge,5n) and are reported in the IT decay (516 ns) data set. Between 9000 and 11000 keV, multipolarities are from γ(θ) and $T_{1/2}$ and are reported in the (HI,xnγ) data set. From 11930 keV and up, multipolarities are from γ(θ) in (HI,xnγ).

@ From (α,nγ) data only.

& From 1982Br13 and 2020Br06 in IT decay (516 ns).

a From γ(θ) in IT decay (516 ns) (1979Kl04).

b Indicates a backbend.

c Additional information 8.

$^{147}_{64}Gd_{83}$-34

$\gamma(^{147}Gd)$ (continued)

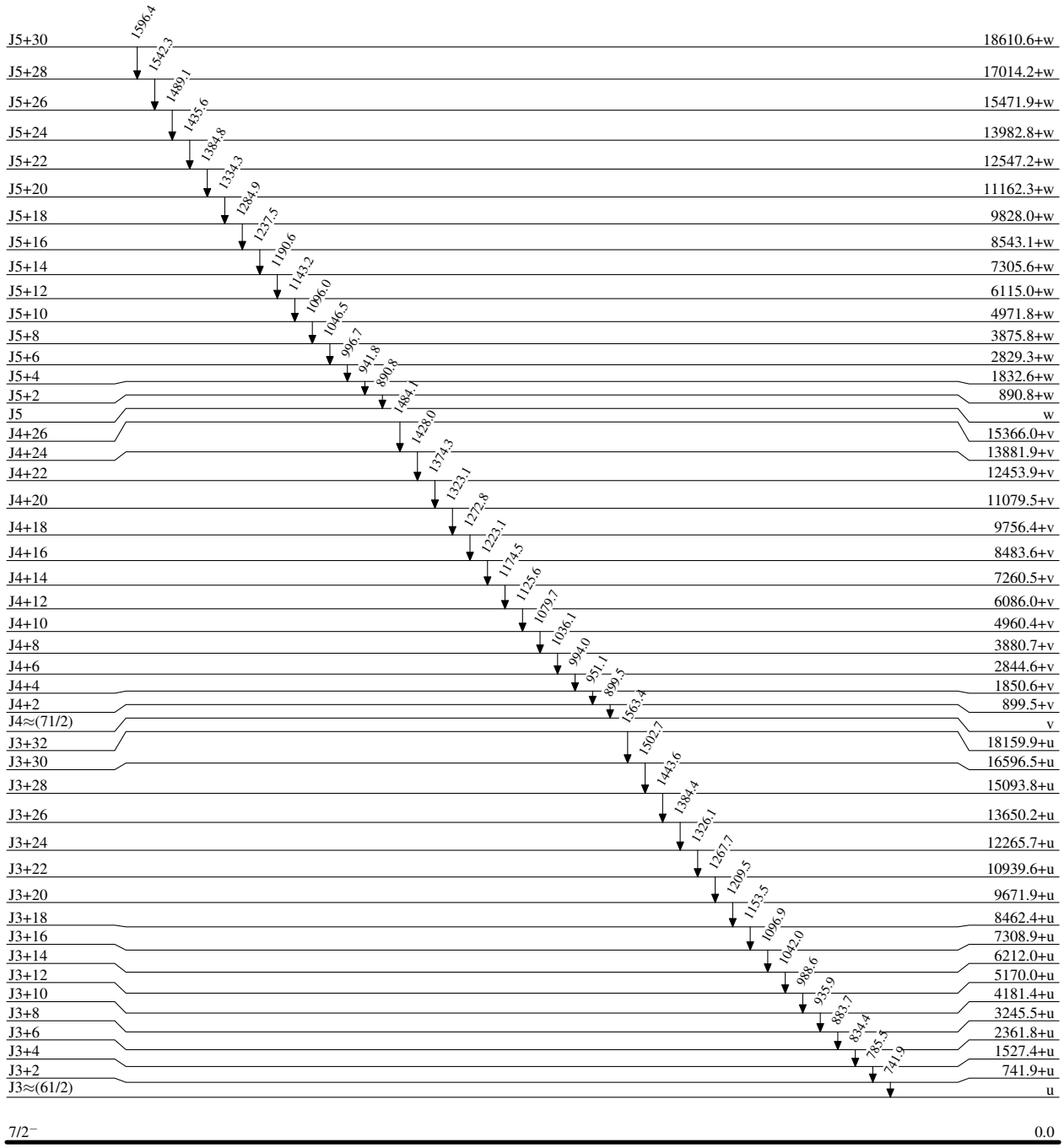
[d] Multiply placed with intensity suitably divided.
[e] Placement of transition in the level scheme is uncertain.

$^{147}_{64}Gd_{83}$-35

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{147}_{64}Gd_{83}$

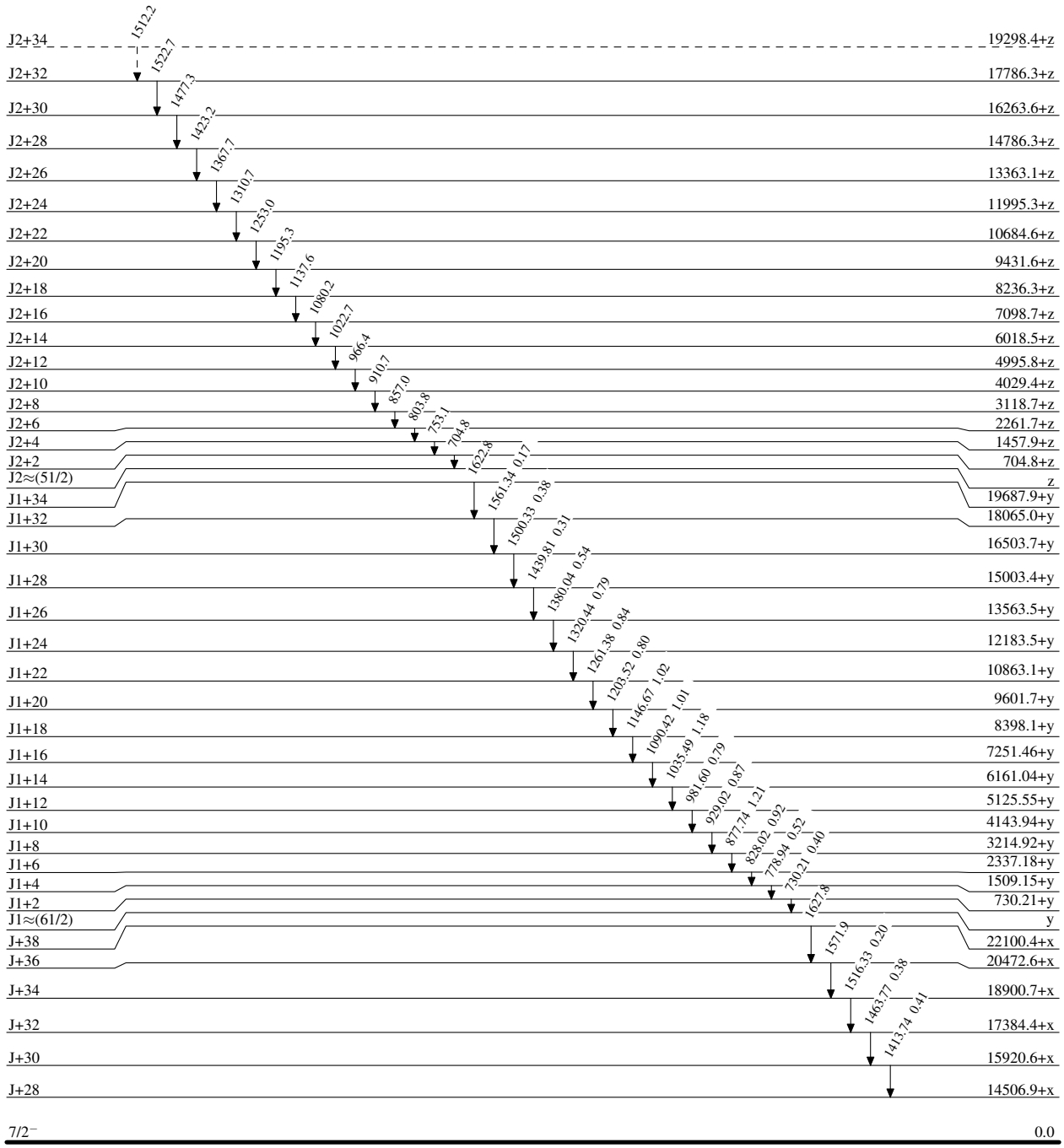
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

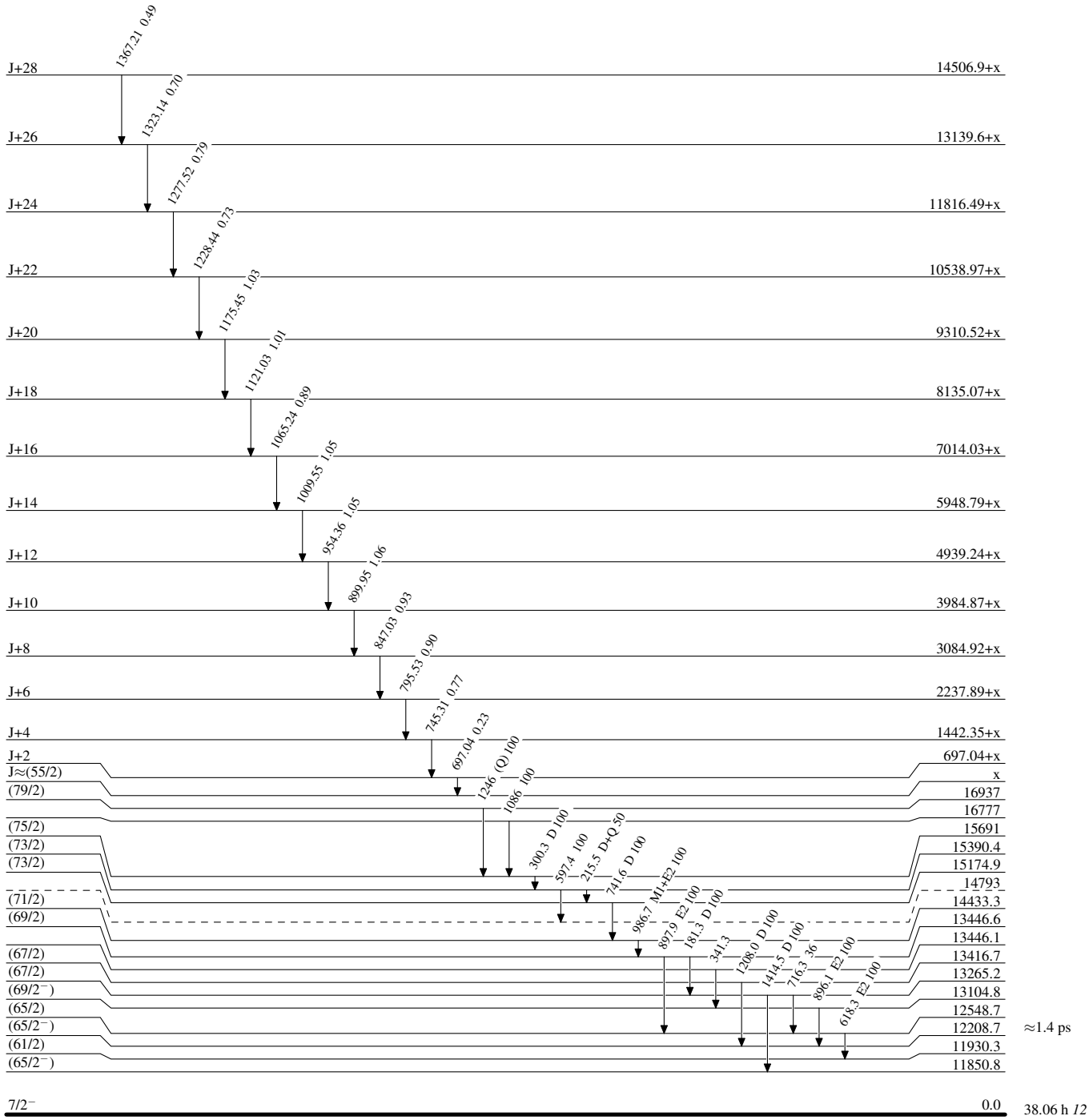


$^{147}_{64}Gd_{83}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

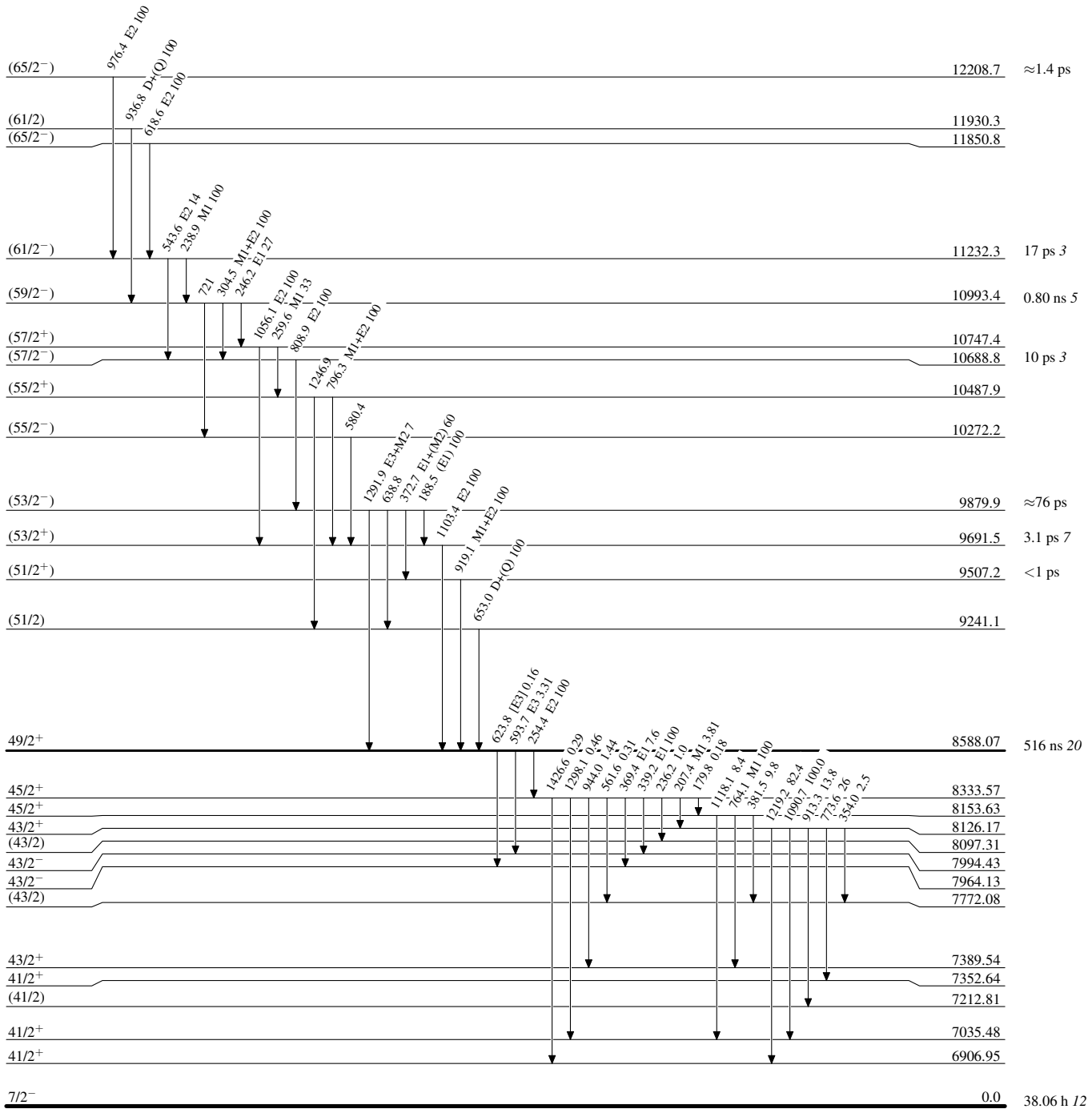


$^{147}_{64}Gd_{83}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{147}_{64}Gd_{83}$

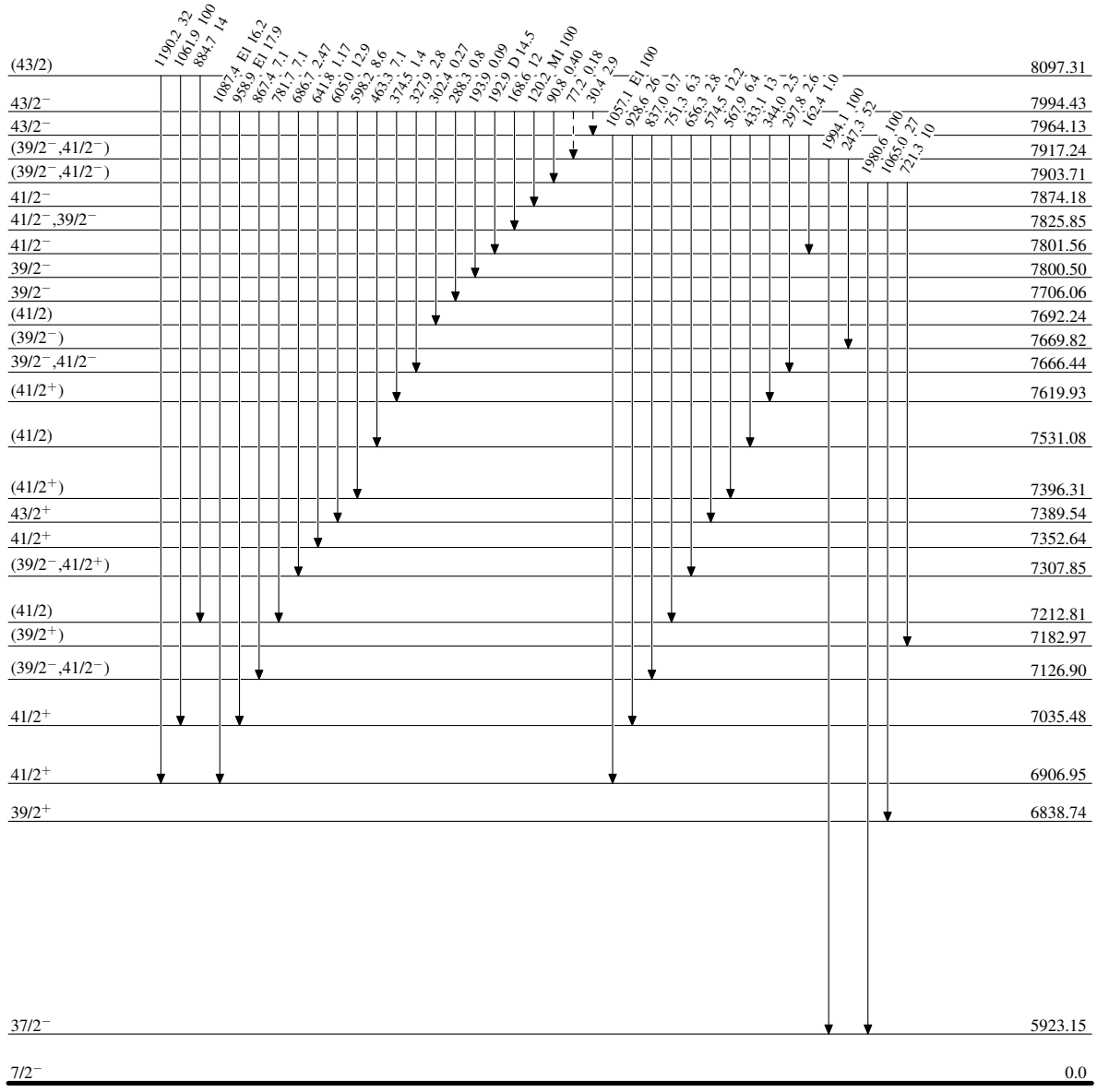
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{147}_{64}Gd_{83}$

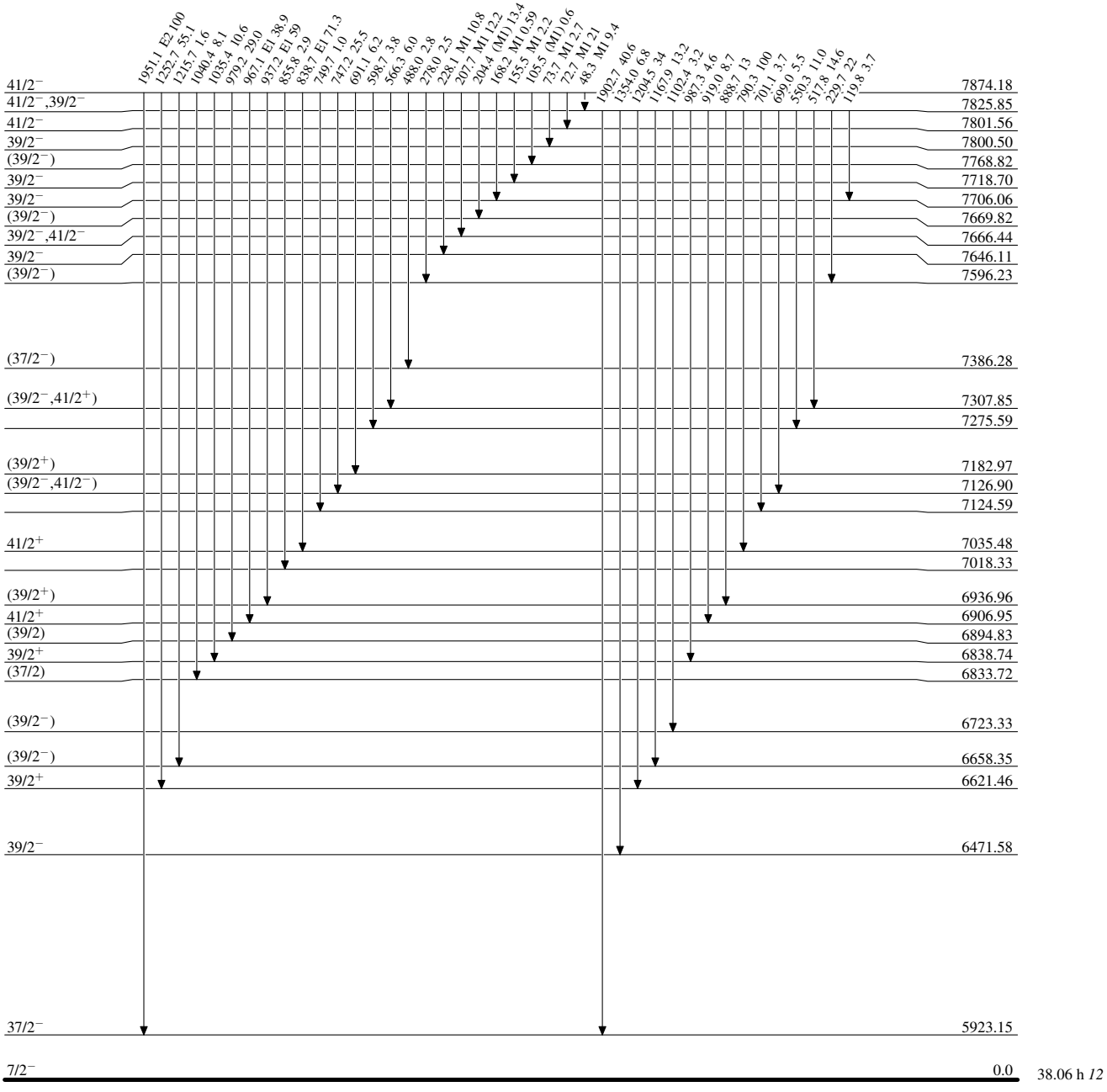
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

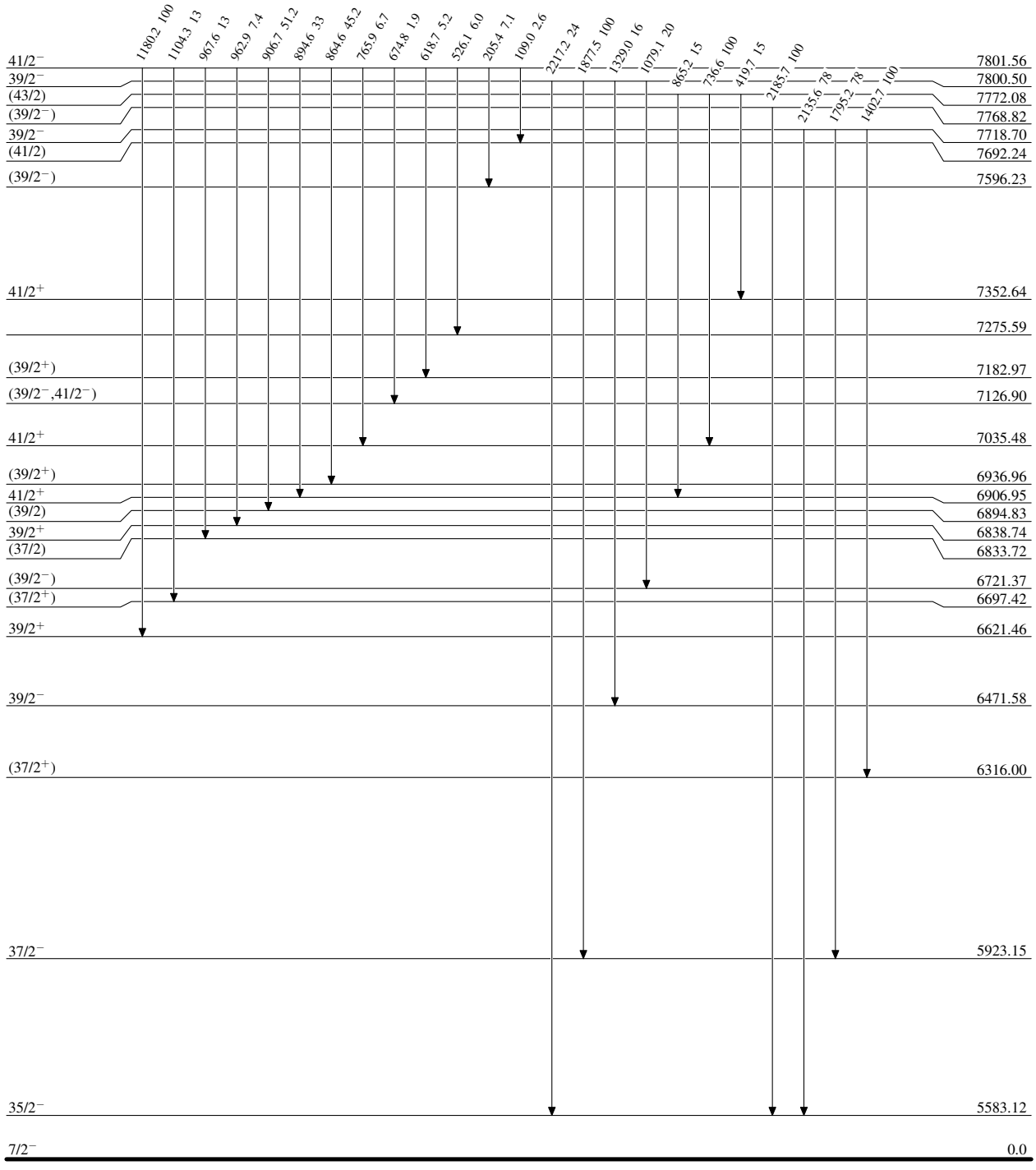


$^{147}_{64}Gd_{83}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

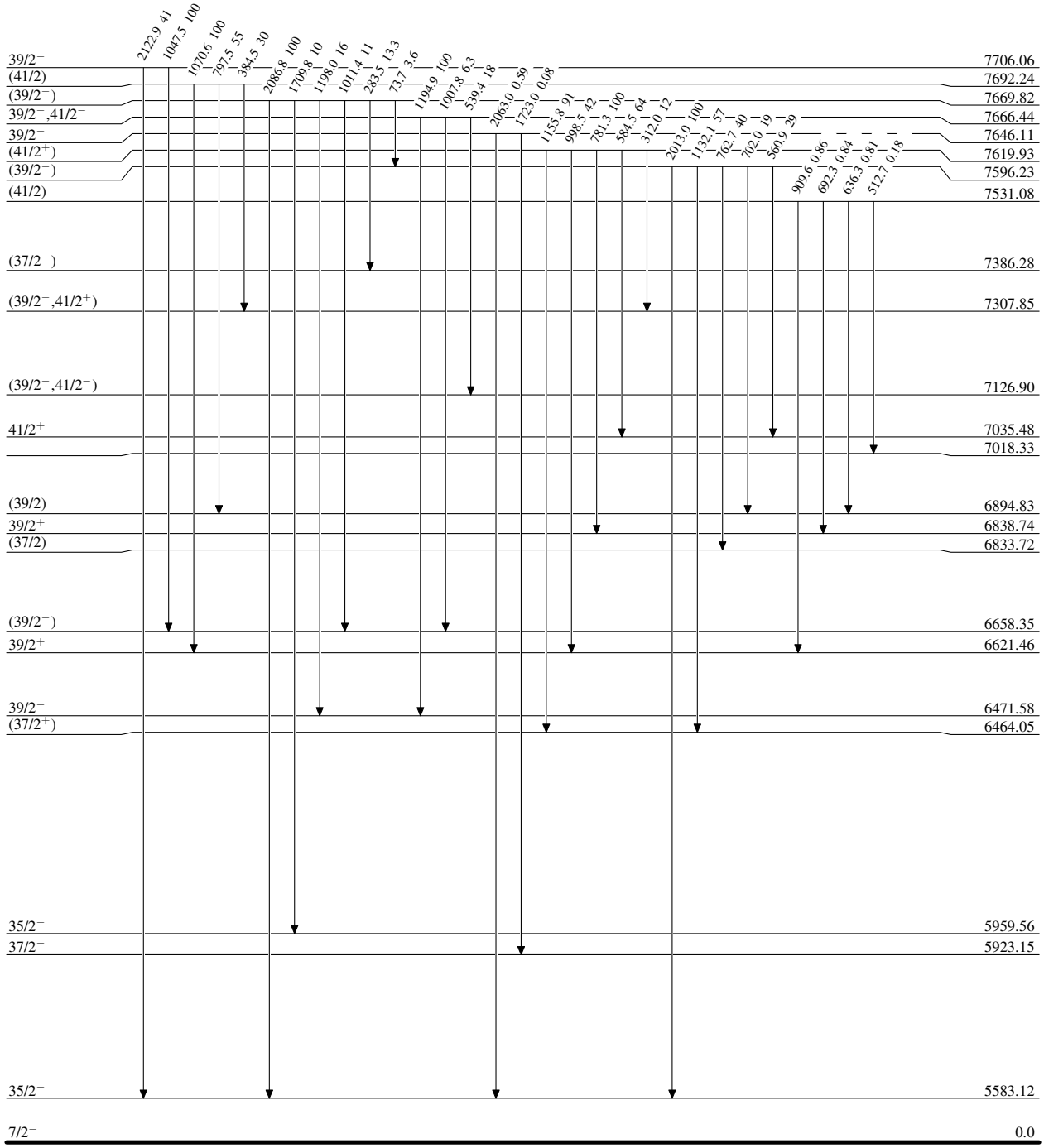


$^{147}_{64}Gd_{83}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

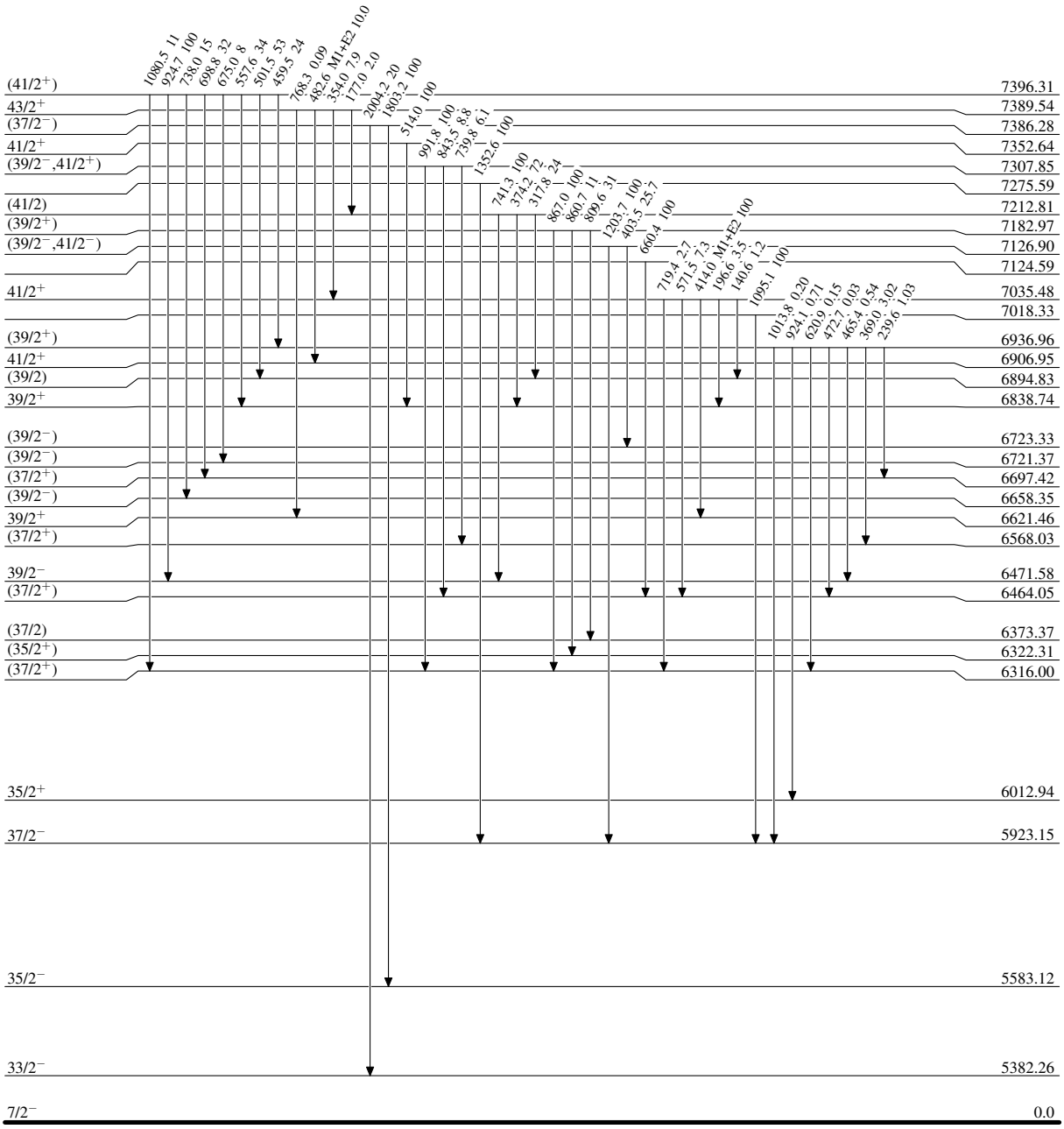


$^{147}_{64}Gd_{83}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{147}_{64}Gd_{83}$

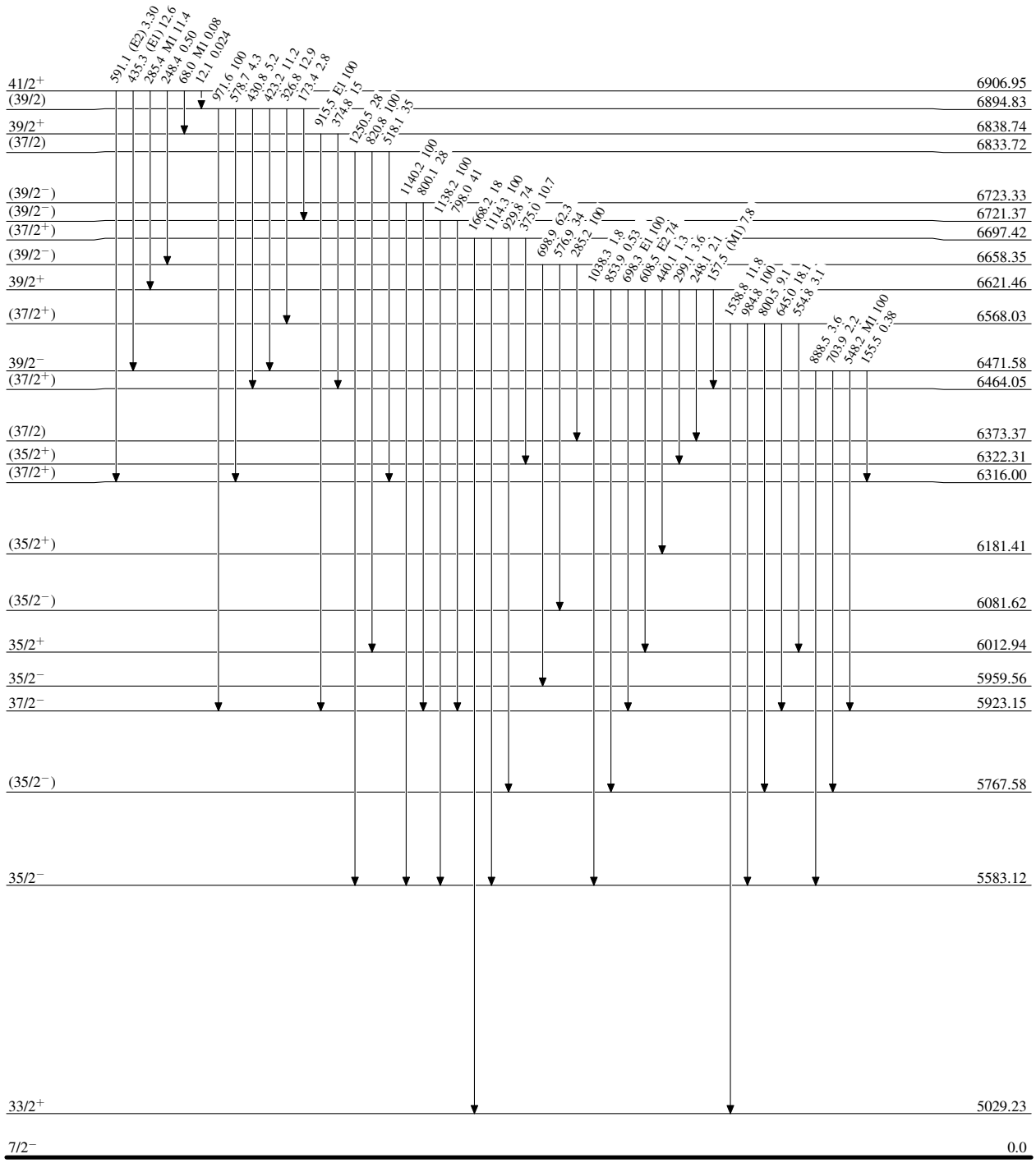
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

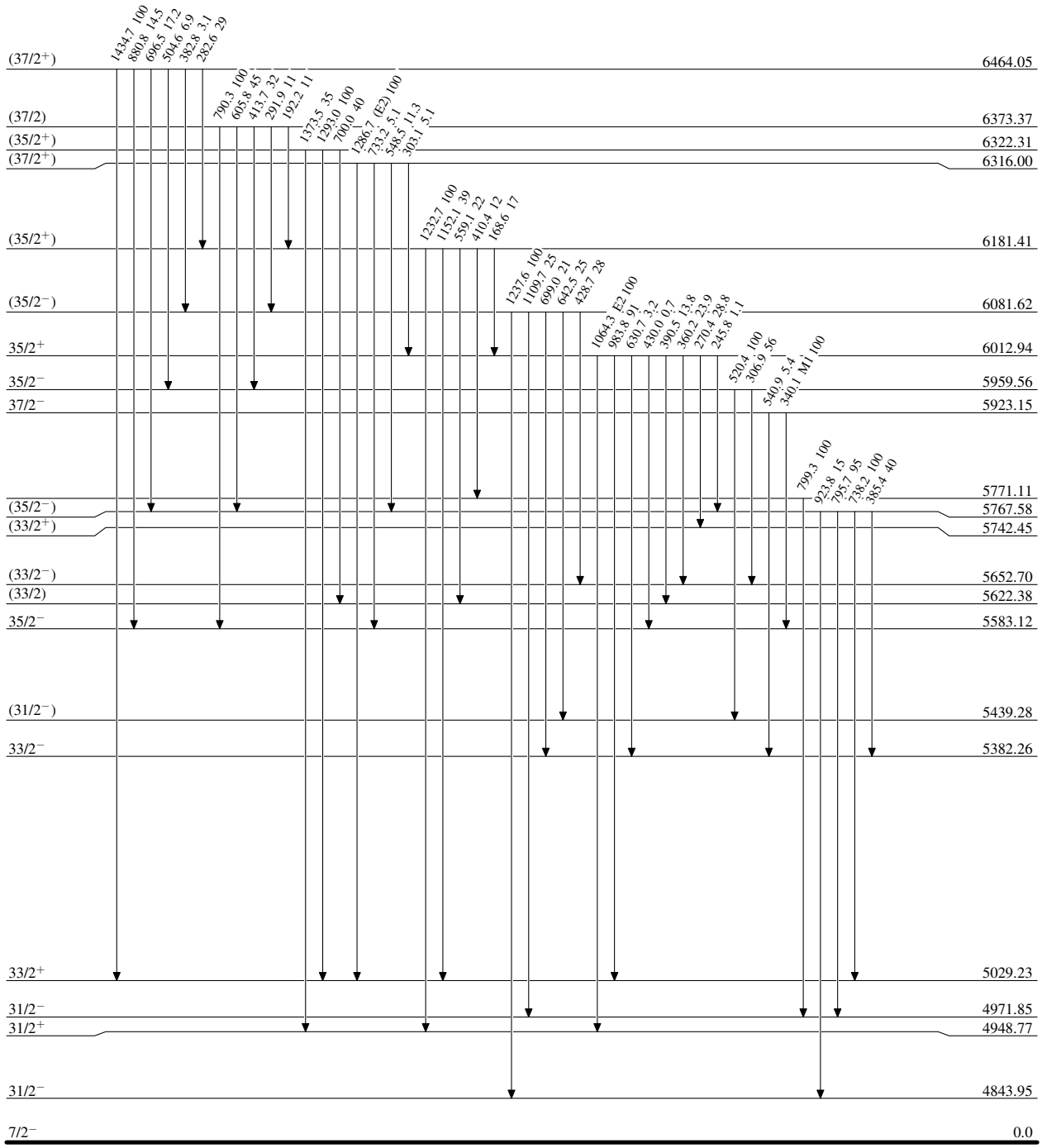


$^{147}_{64}Gd_{83}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

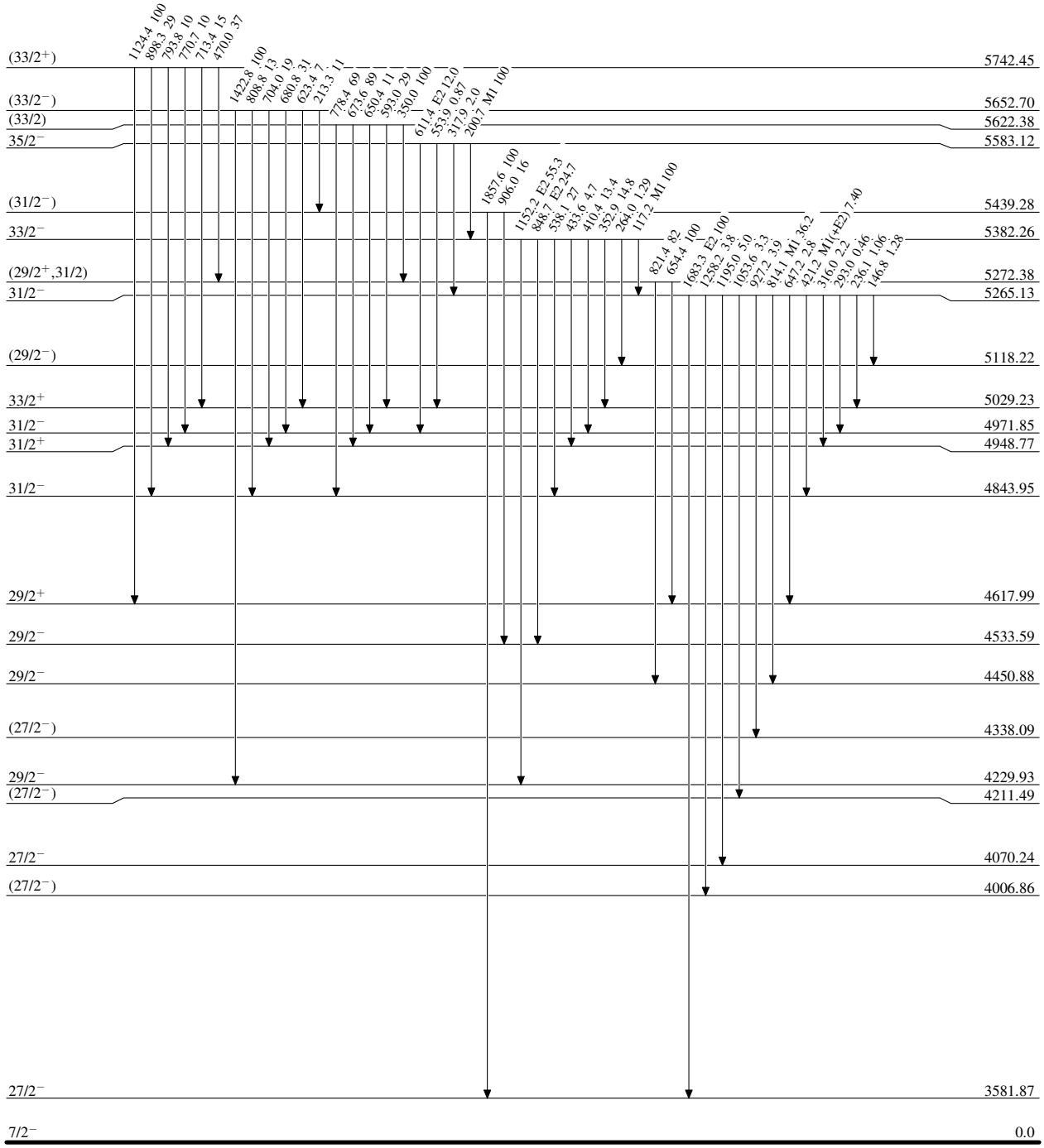


$^{147}_{64}Gd_{83}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{147}_{64}Gd_{83}$

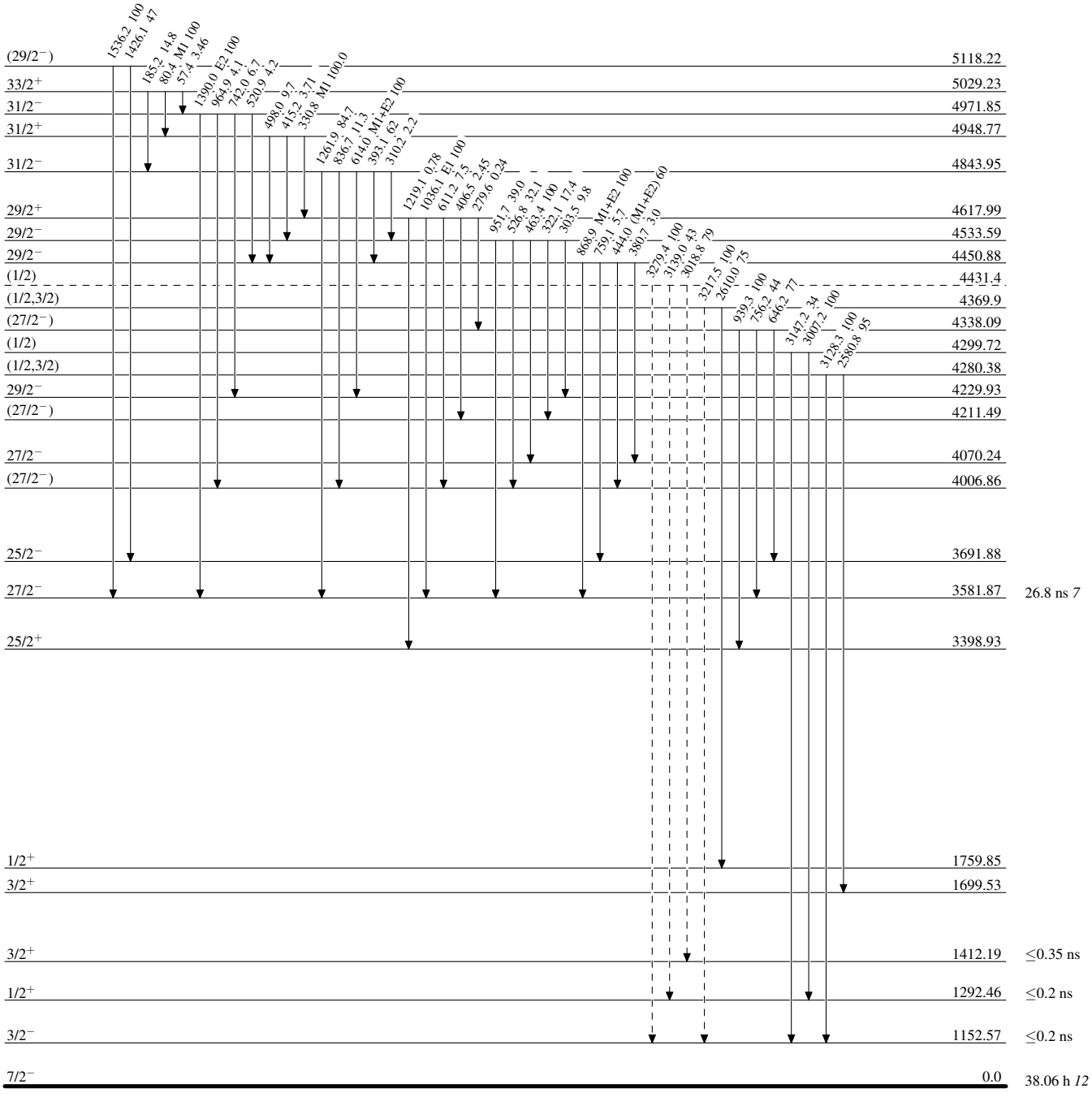
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{147}_{64}Gd_{83}$

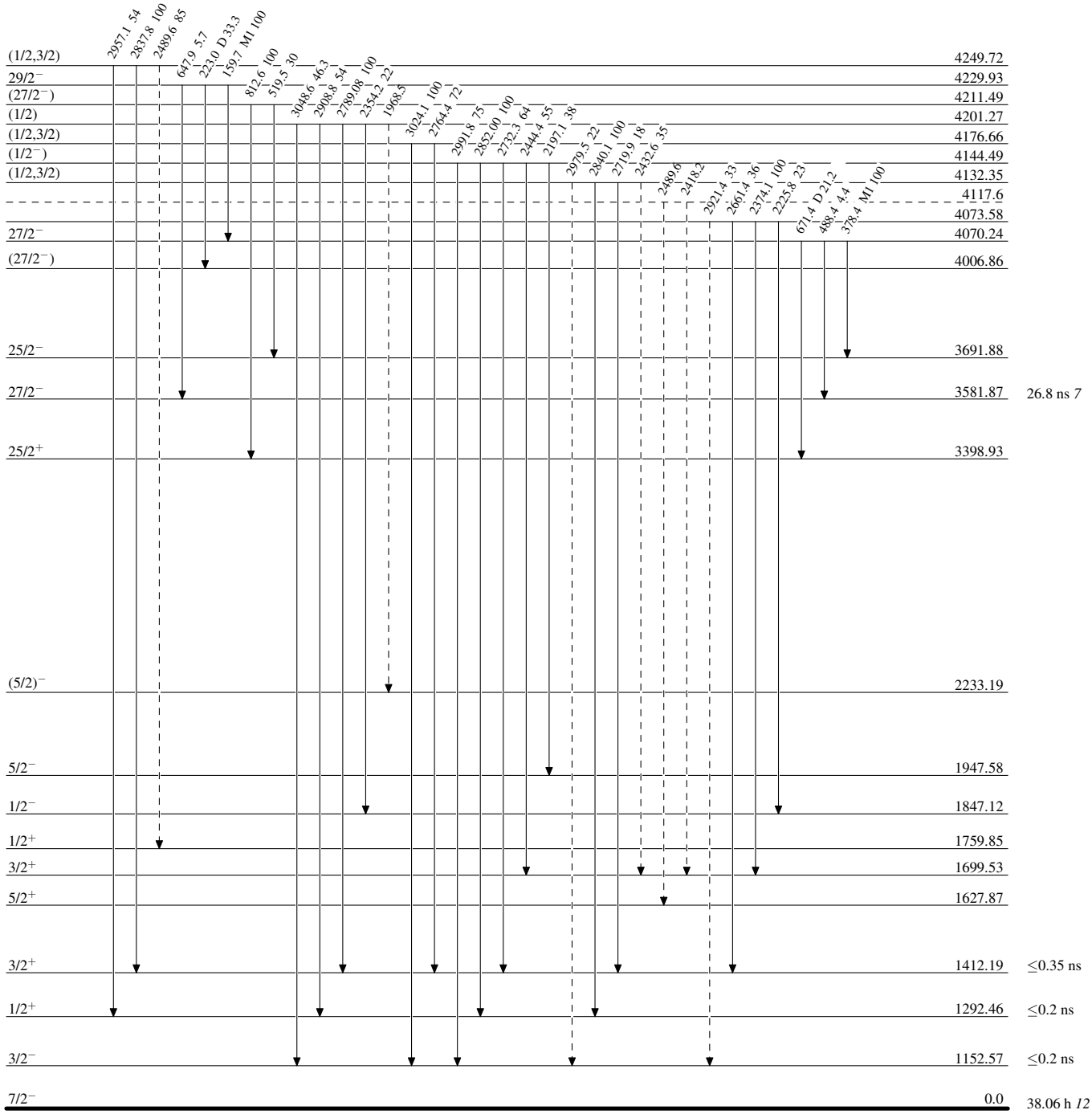
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{147}_{64}Gd_{83}$

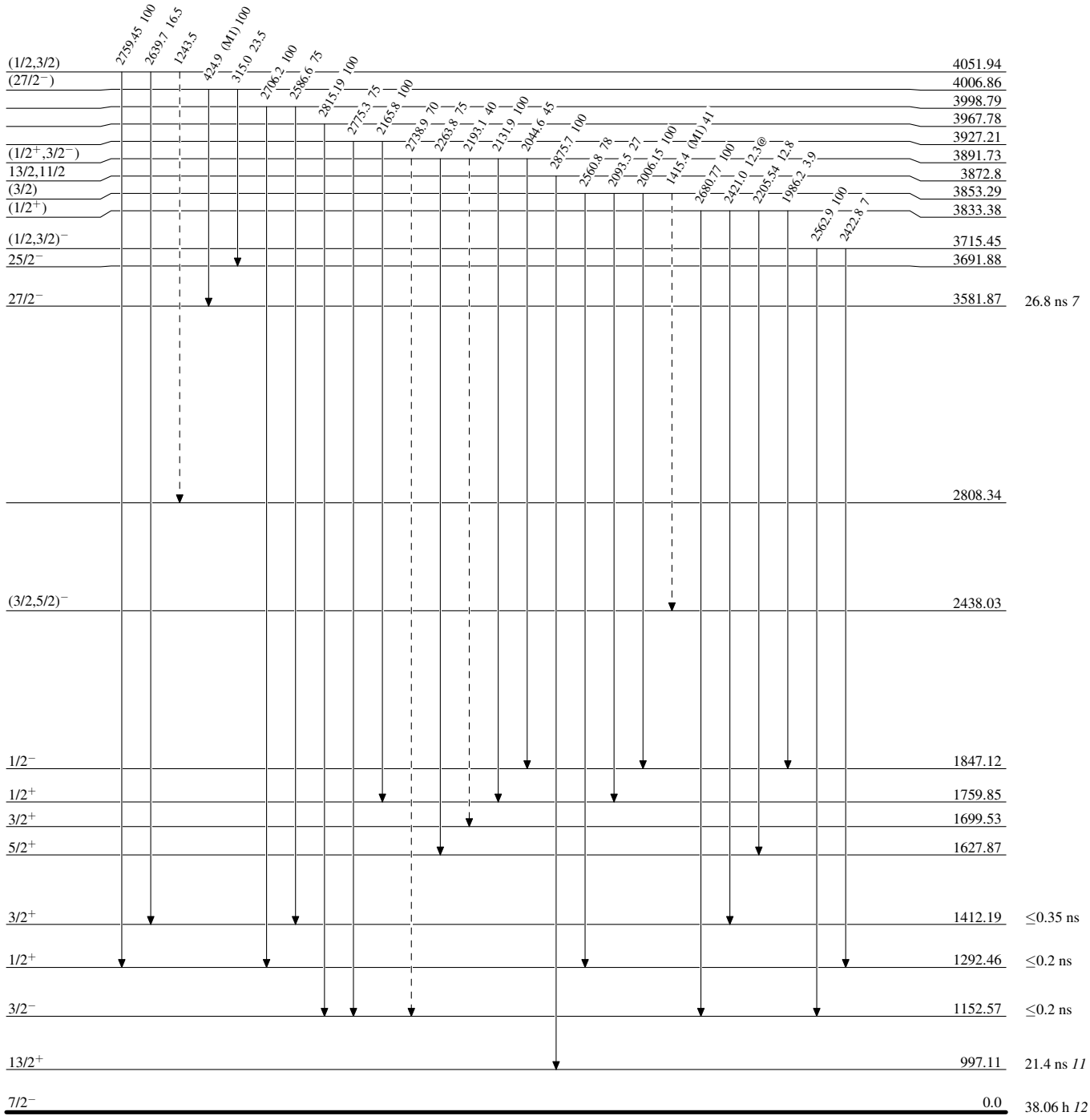
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)



$^{147}_{64}Gd_{83}$

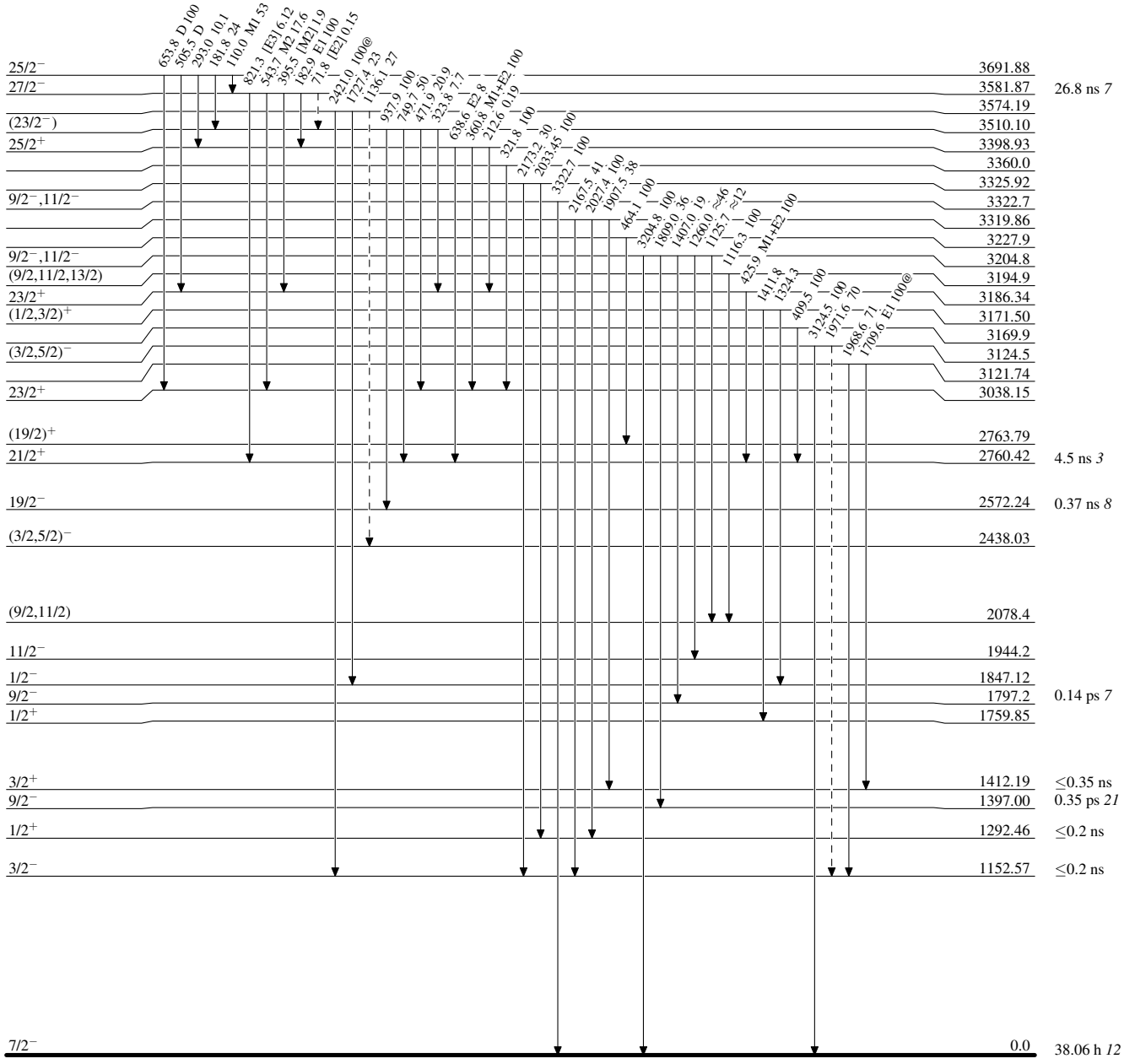
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

- - - - - - ► γ Decay (Uncertain)



$^{147}_{64}Gd_{83}$

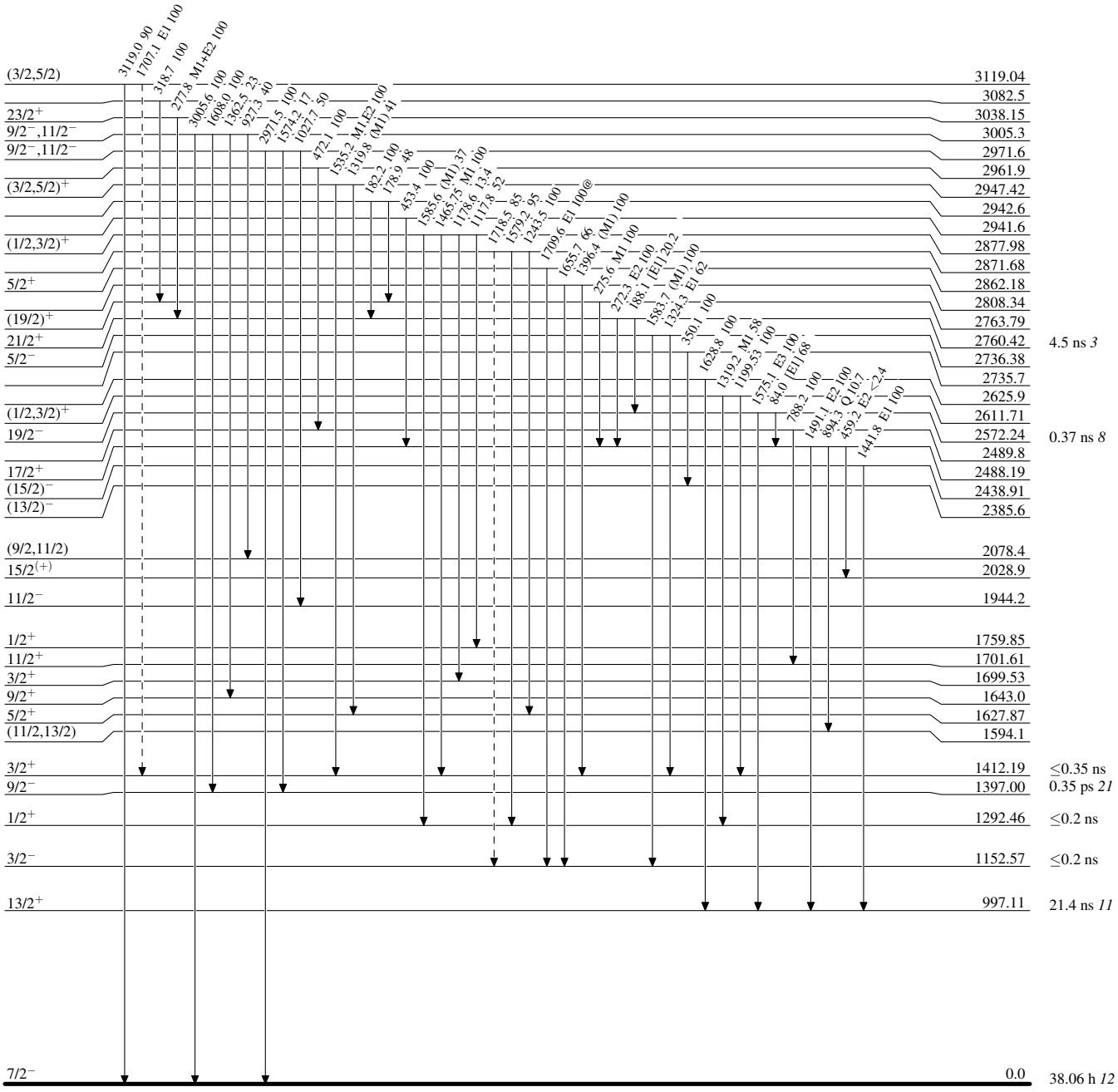
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

- - - - - - ► γ Decay (Uncertain)



$^{147}_{64}Gd_{83}$

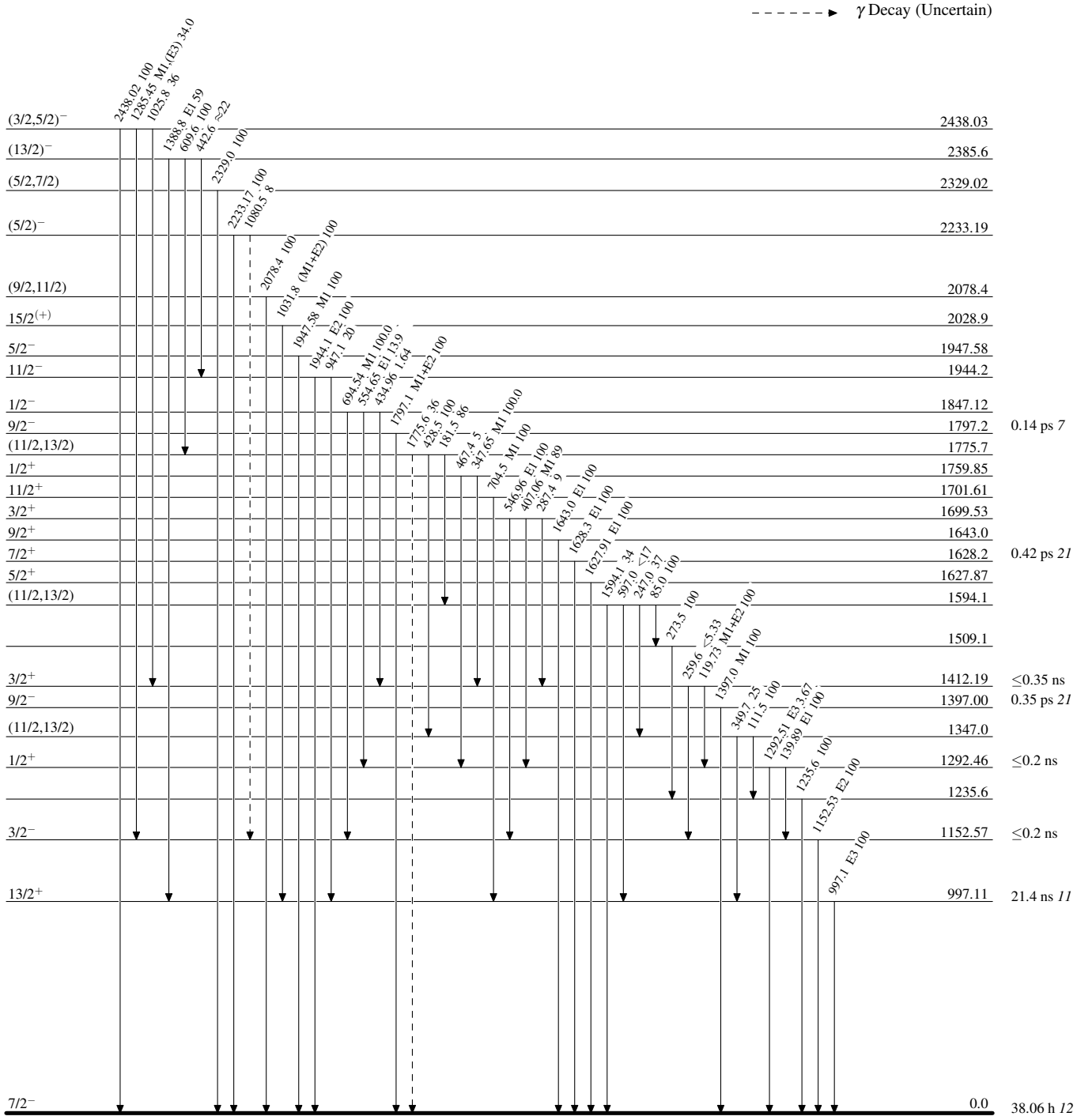
Adopted Levels, Gammas

Legend

Level Scheme (continued)

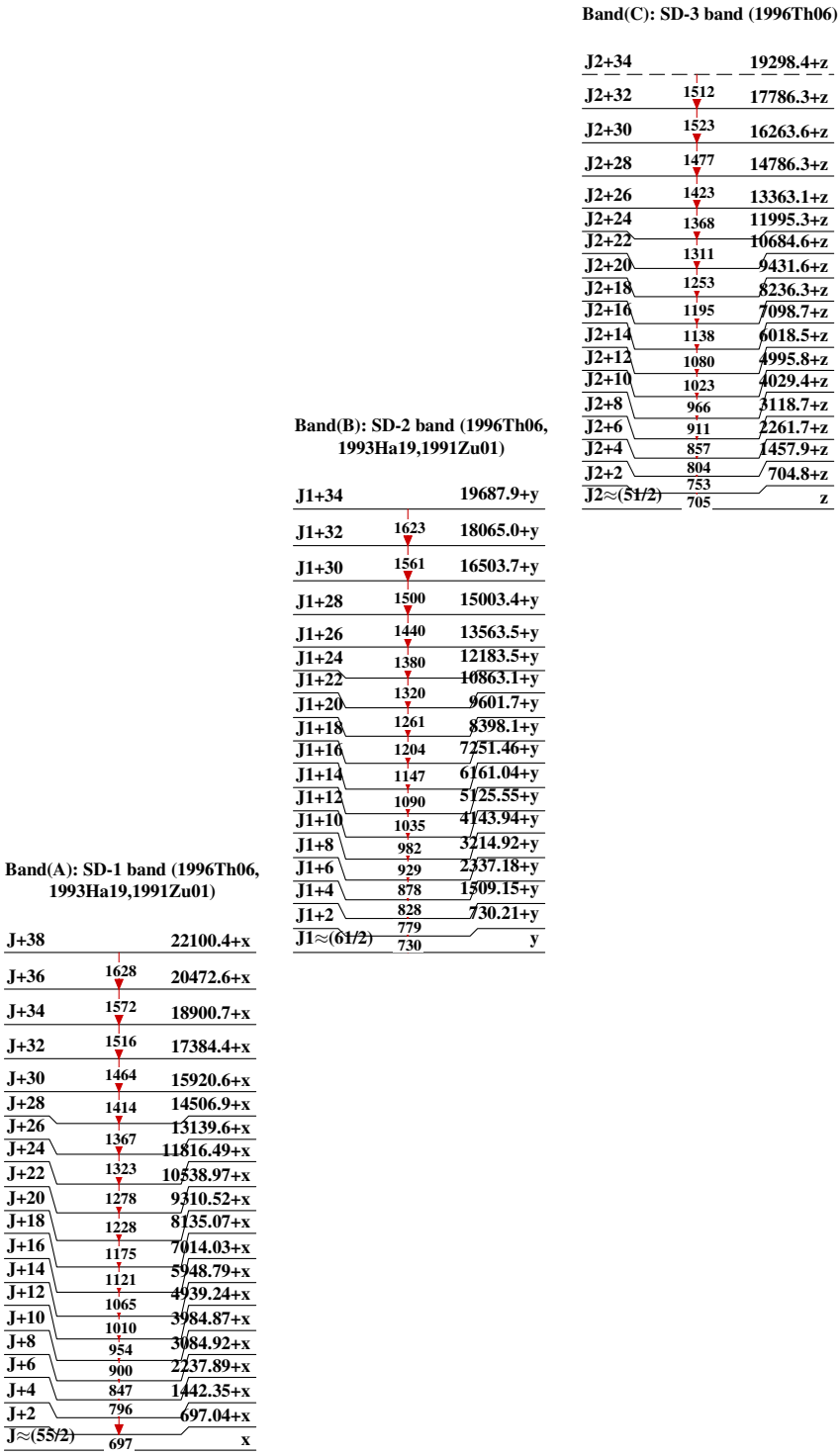
Intensities: Relative photon branching from each level
@ Multiply placed: intensity suitably divided

γ Decay (Uncertain)



$^{147}_{64}Gd_{83}$

Adopted Levels, Gammas



$^{147}_{64}Gd_{83}$

Adopted Levels, Gammas (continued)