Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 185, 2 (2022)	23-Aug-2022

Q(β^-)=−3639 *4*; S(n)=6929 *3*; S(p)=6119 *10*; Q(α)=3099 *3* 2021Wa16
Q(ε)=1314 *4*, S(2n)=15913 *3*, S(2p)=10439 *3* (2021Wa16).
^{149}Gd produced and identified by 1951Ho30, 1957Sh46, 1958An35, and 1958Pa16, followed by later studies of its decay.
Additional information 1.
Theoretical studies: consult the NSR database at www.nndc.bnl.gov/nsr/ for 62 references for structure and ten for radioactive decay listed under 'document records' which can be accessed through web retrieval of the ENSDF database at www.nndc.bnl.gov/ensdf/.

^{149}Gd Levels

Band assignments are from (^{30}Si,5nγ). See 1993Fl03 in that dataset for 5 additional SD bands.
1993Fl03 assign eight SD bands to ^{149}Gd, but more recent results (1995DeZZ) assign the last two SD bands (labeled g and h by 1993Fl03) to ^{148}Gd, instead. Additional bands are from 1998By02.

Cross Reference (XREF) Flags

A	^{149}Tb ε decay (4.12 h)	D	^{124}Sn(^{30}Si,5nγ)
B	^{149}Tb ε decay (4.17 min)	E	^{147}Sm(α,2nγ)
C	^{153}Dy α decay (6.4 h)	F	^{150}Sm(α,5nγ)

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	XREF	Comments
0.0[a]	7/2$^-$	9.28 d *10*	ABCDEF	%ε+%β^+=100; %α=4.3×10^{-4} *10* μ=0.88 *4* (1987Kr11,2019StZV) J$^\pi$: spin from atomic beam (1972Ek05); parity from shell model configuration=$\nu f^3_{7/2}$ and systematics of neighboring odd-A isotones. T$_{1/2}$: weighted average of 9.25 d *10* (1968Ch30), 9.5 d *3* (1962Pr06), 9.3 d *3* (1957Sh46). Others: 9.0 d *10* (1960To10), 10.3 h (1958Pa16), 10 h *1* (1958An35), 9 h *1* (1951Ho30). μ: from $\gamma(\theta$,H,t) (1987Kr11, also 1992KrZO). Others: 0.97 *6* (1987Be33), 1.06 *16* (1986Va16). %α: weighted average of 4.0×10^{-4} *12* (1966Wi12) and 4.6×10^{-4} *15* (1965Si06). α-decay energy=3018 *5* (1967Go32), 3000 *150* (1960To10).
164.986 *15*	5/2$^-$	1.7 ns *1*	ABC EF	μ=−0.9 *2* (1977VaZJ,2020StZV) J$^\pi$: M1+E2 164.98γ to 7/2$^-$; 652.12γ M1+E2 from 3/2$^-$. T$_{1/2}$: from ceγ(t) in ^{149}Tb ε (4.12 h) (1971VaZV). Other: 1.35 ns *30* (1969Ba64). μ: from IPAC and differential PAC (1977VaZJ,1977GrZF); there are some discrepancies concerning the hyperfine fields used.
352.234 *15*	3/2$^-$	0.43 ns *5*	A E	J$^\pi$: E2 352.24γ to 7/2$^-$, M1+E2 187.22γ to 5/2$^-$; log *ft*=8.0 from 1/2$^+$. J=5/2 is not allowed by $\gamma\gamma(\theta)$ and ce data in ^{149}Tb ε (4.12 h). T$_{1/2}$: from ceγ(t) in ^{149}Tb ε (4.12 h) (1971VaZV).
775.32[a] *9*	11/2$^-$		DEF	J$^\pi$: ΔJ=2, E2 775.3γ to 7/2$^-$; member of a sequence.
795.94[b] *8*	9/2$^-$		AB DEF	J$^\pi$: allowed ε feeding from 11/2$^-$ in ^{149}Tb ε (4.17 min); ΔJ=1, M1+E2 795.9γ to 7/2$^-$.
817.099 *18*	3/2$^-$		A E	J$^\pi$: E2 817.1γ to 7/2$^-$; M1(+E2) 464.85γ to 3/2$^-$. J=5/2 is not allowed by $\gamma\gamma(\theta)$ and ce in ^{149}Tb ε.
873.51[c] *10*	11/2$^+$	1.6 ns *6*	DEF	J$^\pi$: ΔJ=1, E1 77.6γ to 9/2$^-$, E1 98.2γ to 11/2$^-$; member of a sequence. T$_{1/2}$: from centroid shift method in (α,5nγ) (1981Pi09).
955.98[c] *10*	(13/2$^+$)		DEF	J$^\pi$: (M1) 82.5γ to 11/2$^+$; ΔJ=1, (E1) 180.6γ to 11/2$^-$; no γ to 7/2$^-$; member of a sequence.

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Adopted Levels, Gammas (continued)

^{149}Gd Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
1026.836 *22*	3/2$^+$	A E	XREF: E(?). Jπ: 674.61γ E1 to 3/2$^-$, 861.86γ E1(+M2) to 5/2$^-$; ε feeding from 1/2$^+$ parent rules out 5/2$^+$.
1085.43 *14*	(5/2$^-$,7/2,9/2$^-$)	A E	Jπ: 920.5γ to 5/2$^-$; 289.4γ to 9/2$^-$. Very weak possible ε feeding (log *ft*=9.0) from 1/2$^+$ parent favors 5/2$^-$; but dipole γ to 9/2$^-$ favors 7/2,9/2$^-$.
1124.90 *3*	1/2$^+$,3/2$^+$,5/2$^+$	A	Jπ: E1 772.65γ to 3/2$^-$, M1 98.1γ to 3/2$^+$.
1144.08 *5*	(5/2)$^+$	A	Jπ: E1 979.09γ to 5/2$^-$, 791.8γ to 3/2$^-$, 117.2γ to 3/2$^+$; 1144.09γ D or E2 to 7/2$^-$. But log *ft*=8.5 from 1/2$^+$ parent favors 3/2$^+$ over 5/2$^+$.
1167.12 *5*	(3/2$^+$)	A	Jπ: (M2) 1167.10γ to 7/2$^-$, 1002.1γ to 5/2$^-$. But note that mult(1167γ)=(M2) would become unlikely if this level has a $T_{1/2}$<0.32 ns which would only allow mult=D or E2 for this transition based on RUL and the branching, limiting *Jπ*(1167) most likely to be (3/2$^-$,5/2).
1205.666 *17*	(1/2)$^-$	A	Jπ: M1+E2 388.57γ and 853.43 to 3/2$^-$; γγ(θ) and ce data support 1/2, but J=3/2 is not completely ruled out.
1348.72 *9*	(1/2$^-$,3/2,5/2$^-$)	A	Jπ: ε feeding from 1/2$^+$ parent; 1183.7γ to 5/2$^-$.
1402.90 *6*	(5/2$^-$)	A	Jπ: 1402.91γ to 7/2$^-$, 606.7γ to 9/2$^-$; 252.3γ from (3/2)$^+$ and 1422.1γ from (1/2,3/2)$^-$ level.
1484.01[a] *11*	15/2$^-$	DEF	Jπ: ΔJ=2, E2 708.7γ to 11/2$^-$; ΔJ=1, E1 528.0γ to (13/2)$^+$.
1487.59 *6*	(1/2,3/2)$^-$	A	Jπ: ε feeding from 1/2$^+$ parent; M1(+E2) 1135.3γ to 3/2$^-$.
1544.13 *5*	(3/2$^-$,5/2$^-$)	A	Jπ: weak ε feeding from 1/2$^+$ parent; 1191.89γ to 3/2$^-$, 1544.1γ to 7/2$^-$.
1557.38 *6*	(1/2$^-$,3/2)	A	Jπ: ε feeding from 1/2$^+$ parent; 1392.3γ to 5/2$^-$.
1597.30 *9*	(1/2,3/2,5/2$^-$)	A	Jπ: ε feeding (log *ft*=8.3) from 1/2$^+$ parent.
1609.16[b] *14*	13/2$^{(-)}$	DEF	Jπ: ΔJ=2 813.2γ to 9/2$^-$; ΔJ=1 833.9γ to 11/2$^-$.
1614.04 *5*	3/2$^+$	A	Jπ: E1 1449.10γ to 5/2$^-$; ε feeding from 1/2$^+$ parent.
1655.19 *6*	(3/2)$^+$	A	Jπ: E1 1302.92γ to 3/2$^-$, 1490.3γ to 5/2$^-$; ε feeding from 1/2$^+$ parent.
1739.97[c] *17*	(17/2)$^+$	DEF	Jπ: ΔJ=2, E2 784.0γ to (13/2)$^+$; member of a sequence.
1750.59 *9*	(3/2$^-$,5/2$^-$)	A	Jπ: ε feeding (log *ft*=8.0) from 1/2$^+$ parent; 723.8γ to 3/2$^+$, 1398.3γ to 3/2$^-$, probable 1751.0γ to 7/2$^-$;
1751.1? *2*	(15/2$^+$)	E	Jπ: ΔJ=2 877.8γ to 11/2$^+$.
1772.83 *4*	(3/2$^+$,1/2$^+$)	A	Jπ: (E1) 955.71γ to 3/2$^-$; ε feeding from 1/2$^+$ parent. Possible 1772.8γ to 7/2$^-$ disfavors 1/2$^+$.
1844.31 *7*	(1/2$^-$,3/2,5/2$^-$)	A	Jπ: ε feeding from 1/2$^+$ parent; 1679.3γ to 5/2$^-$.
1992.49 *4*	3/2$^-$	A	Jπ: 1175.4γ M1 to 3/2$^-$, 1827.5γ M1(+E2) to 5/2$^-$; strong ε feeding from 1/2$^+$ parent.
1999.66? *24*	(15/2$^+$)	E	Jπ: ΔJ=1, E1 390.5γ to (13/2$^-$).
2058.19 *13*	(17/2)$^-$	DEF	Jπ: ΔJ=1, M1 574.2γ to (15/2)$^-$; ΔJ=(2) 449.0γ to (13/2$^-$).
2088.47 *8*	(1/2$^-$,3/2,5/2$^-$)	A	Jπ: ε feeding from 1/2$^+$ parent; 1923.4γ to 5/2$^-$.
2126.62 *22*	(1/2$^-$,3/2,5/2$^-$)	A	Jπ: ε feeding from 1/2$^+$ parent; 723.7γ to (5/2$^-$).
2158.35 *4*	(3/2)$^+$	A	Jπ: ε feeding from 1/2$^+$ parent; E1 1341.19γ to 3/2$^-$, 1993.3γ to 5/2$^-$.
2199.90 *8*	(1/2$^-$,3/2,5/2$^-$)	A	Jπ: weak ε feeding from 1/2$^+$ parent; 2034.8γ to 5/2$^-$, 994.3γ to (1/2)$^-$.
2231.79[b] *16*	(17/2$^-$)	DEF	Jπ: ΔJ=(2) 622.7γ to (13/2$^-$); 747.8γ, ΔJ=1 to (15/2)$^-$.
2261.53 *8*	(3/2,1/2$^-$)	A	Jπ: ε feeding from 1/2$^+$ parent; 2096.5γ to 5/2$^-$. Possible 2261.5γ to 7/2$^-$ disfavors 1/2$^-$.
2300.72 *6*	(1/2$^-$,3/2)	A	Jπ: ε feeding from 1/2$^+$ parent; 2135.7γ to 5/2$^-$.
2314.10 *22*	(1/2$^-$,3/2,5/2$^-$)	A	Jπ: weak ε feeding from 1/2$^+$ parent; 2149.1γ to 5/2$^-$.
2383.66 *16*	(19/2)$^-$	DEF	Jπ: ΔJ=1, E1 643.7γ to (17/2)$^+$; ΔJ=(2) 899.5γ to (15/2)$^-$.
2401.37[c] *18*	(21/2)$^+$	DEF	Jπ: ΔJ=2, E2 661.4γ to (17/2)$^+$.
2482.72 *14*	(1/2$^+$,3/2,5/2$^-$)	A	Jπ: weak ε feeding from 1/2$^+$; 1277.0γ to (1/2)$^-$, 1338.6γ to (5/2)$^+$.
2503.72 *17*	(1/2$^-$,3/2,5/2$^-$)	A	Jπ: ε feeding from 1/2$^+$ parent; 2338.7γ to 5/2$^-$.
2514.6? *3*	(19/2$^+$)	E	Jπ: ΔJ=(2) 763γ to (15/2$^+$).
2524.09[b] *18*	(21/2)$^-$	DEF	Jπ: ΔJ=2, E2 466.0γ to (17/2)$^-$.
2569.75 *18*	(1/2,3/2,5/2$^-$)	A	Jπ: weak ε feeding from 1/2$^+$ parent; 1363.8γ to (1/2)$^-$.
2590.05 *8*	(1/2$^-$,3/2)	A	Jπ: ε feeding from 1/2$^+$ parent; 1187.1γ to (5/2$^-$).
2599.29 *8*	(1/2$^-$,3/2)	A	Jπ: ε feeding from 1/2$^+$ parent; 2434.5γ to 5/2$^-$.
2613.22 *14*	(1/2$^-$,3/2)	A	Jπ: ε feeding from 1/2$^+$ parent; 2448.2γ to 5/2$^-$.
2683.46 *8*	(1/2$^+$,3/2)	A	Jπ: ε feeding from 1/2$^+$ parent; 1539.6γ to (5/2)$^+$.

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Adopted Levels, Gammas (continued)

^{149}Gd Levels (continued)

E(level)†	J^{π}‡	$T_{1/2}$	XREF	Comments
2703.30 *19*	(1/2⁻,3/2,5/2⁻)		A	J^{π}: weak ε feeding from 1/2⁺ parent; 2538.3γ to 5/2⁻, 1497.6γ to (1/2)⁻.
2757.21 *9*	(1/2,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent.
2767.95 *25*	(1/2⁺,3/2,5/2⁻)		A	J^{π}: weak ε feeding from 1/2⁺ parent; 1623.8γ to (5/2)⁺.
2808.57 *16*	(1/2,3/2,5/2⁻)		A	J^{π}: weak ε feeding from 1/2⁺ parent.
2824.98 *7*	(1/2,3/2)⁻		A	J^{π}: ε feeding from 1/2⁺ parent; E2(+M1) 2007.9γ to 3/2⁻.
2830.6 *3*	(1/2,3/2,5/2⁻)		A	J^{π}: weak ε feeding from 1/2⁺ parent; 2338.7γ to 5/2⁻.
2856.7 *5*	(21/2,23/2,25/2⁺)		EF	J^{π}: 455.3γ to (21/2)⁺ suggests 21/2, 23/2, 25/2⁺. γ(θ) in (α,2nγ) and (α,5nγ) suggest (23/2⁺) or (21/2).
2861.84 *14*	(1/2⁻,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent; 2696.8γ to 5/2⁻.
2913.07 *9*	(1/2,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent.
2918.21 *22*	(1/2⁻,3/2,5/2⁻)		A	J^{π}: weak ε feeding from 1/2⁺ parent; 2753.2γ to 5/2⁻.
2922.73 *18*	(1/2,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent.
2961.50 *22*	(5/2⁻,3/2,1/2⁻)		A	J^{π}: weak ε feeding from 1/2⁺ parent; 2796.5γ to 5/2⁻, 1755.8γ to (1/2)⁻. Possible 2961.4γ to 7/2⁻ disfavors 1/2 and 3/2⁺.
2977.72 *12*	(1/2⁻,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent; 2812.7γ to 5/2⁻.
2999.66 *6*	(3/2)		A	J^{π}: ε feeding from 1/2⁺ parent; 2834.7γ to 5/2⁻, 1794.1γ to (5/2)⁺.
3003.43 *14*	(1/2⁻,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent; 2838.4γ to 5/2⁻.
3021.18 *11*	(3/2)		A	J^{π}: ε feeding from 1/2⁺ parent; 2856.0γ to 5/2⁻, 1877.1γ to (5/2)⁺.
3057.0 *4*	(1/2⁻,3/2)		A	J^{π}: weak ε feeding from 1/2⁺ parent; 2892.0γ to 5/2⁻.
3070.82 *22*	(1/2⁻,3/2)		A	J^{π}: weak ε feeding from 1/2⁺ parent; 2905.8γ to 5/2⁻.
3079.8 *3*	(1/2,3/2)		A	J^{π}: weak ε feeding from 1/2⁺ parent.
3084.7 *3*	(23/2⁺)		F	J^{π}: ΔJ=1 683.3γ to (21/2)⁺ could be M1+E2.
3099.77 *10*	(1/2⁻,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent; 2935.1γ to 5/2⁻.
3124.05 *10*	(1/2,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent. Probable 2959.0γ to 5/2⁻ disfavors 1/2⁺.
3134.55 *22*	(23/2⁻)		DEF	J^{π}: ΔJ=2 750.7γ to (19/2)⁻, 733.1γ D to (21/2)⁺.
3149.35 *18*	(1/2,3/2)		A	J^{π}: weak ε feeding from 1/2⁺ parent; 1943.7γ to (1/2)⁻.
3175.62 *10*	(1/2⁻,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent; 3010.6γ to 5/2⁻.
3201.41 *12*	(3/2,1/2⁻)		A	J^{π}: weak ε feeding from 1/2⁺ parent; 3036.4γ to 5/2⁻. Possible 3201.2γ to 7/2⁻ disfavors 1/2 and 3/2⁺.
3206.44 *10*	(3/2)		A	J^{π}: ε feeding from 1/2⁺ parent; 3041.4γ to 5/2⁻, 2062.3γ to (5/2)⁺.
3227.74 *21*	(23/2⁺)		DEF	J^{π}: ΔJ=1, E1 703.6γ to (21/2)⁻. Configuration=$\nu h_{9/2}$⊗(7⁻ in ^{148}Gd) (1981Pi09).
3231.13 *18*	(1/2⁻,3/2)		A	J^{π}: weak ε feeding from 1/2⁺ parent; 3066.1γ to 5/2⁻.
3258.38 *18*	(1/2,3/2)		A	J^{π}: weak ε feeding from 1/2⁺ parent.
3272.95 *18*	(1/2,3/2)		A	J^{π}: weak ε feeding from 1/2⁺ parent.
3294.56 *20*	(25/2⁺)		DEF	J^{π}: ΔJ=2 893.2γ to (21/2)⁺.
3294.9 *3*	(1/2,3/2)		A	J^{π}: weak ε feeding from 1/2⁺ parent.
3313.58 *10*	(3/2⁻)		A	J^{π}: possible allowed ε feeding from 1/2⁺ parent favors positive parity, but 2961.3γ (M1,E2) to 3/2⁻ favors negative parity; 3148.5γ to 5/2⁻ disfavors 1/2⁺.
3319.04 *20*	(1/2⁻,3/2)		A	J^{π}: weak ε feeding from 1/2⁺ parent; 3154.0γ to 5/2⁻.
3340.63 *18*	(1/2⁺,3/2)		A	J^{π}: weak ε feeding from 1/2⁺ parent; 2196.5γ to (5/2)⁺, 2135.0γ to (1/2)⁻.
3365.23 *14*	(3/2)		A	J^{π}: ε feeding from 1/2⁺ parent; 3200.2γ to 5/2⁻, 2221.1γ to (5/2)⁺.
3384.7 *3*	(1/2,3/2)		A	J^{π}: weakε feeding from 1/2⁺ parent.
3387.32 *21*	(27/2⁺)	6.0 ns *5*	DEF	J^{π}: ΔJ=2, E2 159.6γ to (23/2⁺). $T_{1/2}$: from γγ(t) and γ(t) in (α,5nγ) (1981Pi09). Configuration=$\nu h_{9/2}$⊗(9⁻ in ^{148}Gd) (1981Pi09). Search for α decay (Eα=6-16 MeV) proved negative (1980Vr01).
3403.43 *14*	(1/2⁻,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent; 3238.4γ to 5/2⁻.
3418.82 *16*	(1/2⁻,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent; 3254.5γ to 5/2⁻.
3431.26 *24*	(1/2⁻,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent; 3266.4γ to 5/2⁻.
3442.84 *18*	(1/2,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent.
3466.84 *18*	(1/2⁻,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent; 3301.8γ to 5/2⁻.
3473.24 *18*	(1/2⁻,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent; 3308.2γ to 5/2⁻.
3486.1 *3*	(1/2,3/2)		A	J^{π}: ε feeding from 1/2⁺ parent.

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Adopted Levels, Gammas (continued)

^{149}Gd Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
3499.65 *22*	(1/2⁻,3/2)		A	Jπ: ε feeding from 1/2⁺ parent; 3335.0γ to 5/2⁻.
3516.2 *4*	(1/2,3/2)		A	Jπ: ε feeding from 1/2⁺ parent.
3535.13 *16*	(3/2⁺)		A	Jπ: probable allowed ε feeding from 1/2⁺ parent; 3370.1γ to 5/2⁻.
3543.9 *4*	(1/2⁻,3/2)		A	Jπ: ε feeding from 1/2⁺ parent; 3378.9γ to 5/2⁻.
3611.73 *19*	(25/2)⁻		D F	Jπ: ΔJ=2, E2 1087.7γ to (21/2)⁻; 383.7γ D to (23/2⁺).
3632.35 *21*	(27/2⁻)	0.7 ns	D F	Jπ: ΔJ=(2) 497.3γ to (23/2⁻); 337.8γ D to (25/2⁺). Other: 27/2⁺ in (α,5nγ) (1981Pi09). $T_{1/2}$: quoted by 1991Fl02 from 1983BaZZ in (^{30}Si,5nγ).
3765.5 *4*	(29/2)		F	Jπ: ΔJ=1 378γ to (27/2⁺).
4054.7[d] *3*	(29/2⁻)		D	Jπ: ΔJ=1 422.5γ to (27/2⁻).
4324.0? *3*	(29/2⁻)		F	Jπ: ΔJ=2, 712.3γ to (25/2)⁻.
4340.4 *3*	(31/2⁻)		D	Jπ: ΔJ=(2), 708.0γ to (27/2⁻); ΔJ=1 285.6γ to (29/2⁻).
4343.0 *4*	(29/2⁺)		D	Jπ: ΔJ=1 955.6γ (27/2⁺); Member of a possible positive parity sequence.
4571.8? *5*	(31/2)		F	Jπ: ΔJ=(1) γ to (29/2⁻).
4719.7[e] *4*	(33/2⁺)		D	Jπ: ΔJ=(2), 376.6γ to (29/2⁺); 379.4γ D to (31/2⁻).
4801.8[d] *4*	(33/2⁻)		D	Jπ: ΔJ=(2), 747.4γ to (29/2⁻); ΔJ=1, 461.0γ to (31/2⁻).
5052.6 *4*	(35/2⁻)		D	Jπ: ΔJ=(2), 712.3γ to (31/2⁻); ΔJ=1, 250.8γ to (33/2⁻).
5300.8[d] *4*	(37/2⁻)		D	Jπ: ΔJ=(2), 498.8γ to (33/2⁻); ΔJ=1 248.0γ to (35/2⁻).
5462.9[e] *4*	(37/2⁺)		D	Jπ: ΔJ=(2), 743.2γ to (33/2⁺); ΔJ=1 410.5γ to (35/2⁻).
5634.2[d] *4*	(41/2⁻)		D	Jπ: ΔJ=(2), 333.2γ to (37/2⁻).
5739.4 *4*	(39/2⁻)		D	Jπ: ΔJ=1, D+Q 438.4γ to (37/2⁻).
6099.3[e] *4*	(41/2⁺)		D	Jπ: ΔJ=(2), 636.6γ to (37/2⁺).
6265.4 *5*	(45/2⁻)		D	Jπ: 631.3γ to (41/2⁻); Jπ=45/2⁻ in 1995Fl01 and 1999Fi12.
6299.8? *10*	(43/2⁻)		D	Jπ: 667γ to (41/2⁻); Jπ=43/2⁻ in 1995Fl01.
6470.7[e] *5*	(45/2⁺)		D	Jπ: ΔJ=(2), γ to (41/2⁺); γ to (45/2⁻).
6504? *1*	(47/2⁻)		D	Jπ: 240γ to (45/2⁻); Jπ=47/2⁻ in 1995Fl01.
6656.9[f] *6*	(49/2⁺)	3.3 ns *4*	D	Jπ: ΔJ=(2), (E2) γ to (45/2⁺). $T_{1/2}$: from recoil-shadow anisotropy method (2001Gu31) in (^{30}Si,5nγ).
6786.5? *10*	(47/2⁺)		D	Jπ: 317γ to (45/2⁺); Jπ=47/2⁺ in 1995Fl01.
7071.7? *10*	(51/2⁺)		D	Jπ: 416γ to (49/2⁺); Jπ=51/2⁺ in 1995Fl01.
7742.0 *12*	(51/2)		D	Jπ: 1085γ to (49/2⁺); J=51/2 in 1999Fi12.
7822.0[f] *6*	(53/2⁺)		D	Jπ: ΔJ=(2) γ to (49/2⁺).
7824.9 *6*	(51/2⁻)		D	Jπ: ΔJ=1 γ to (49/2⁺); possible member of a negative parity sequence with configuration= $\nu 2f_{7/2}\otimes\nu i^2_{13/2}\otimes\pi d^{-2}_{5/2}\otimes\pi h^2_{11/2}$ (1991Fl02).
7997.1 *7*	(53/2⁻)		D	Jπ: ΔJ=1, (M1(+E2)) γ to (51/2⁻). Configuration= $\nu h_{9/2}\otimes\nu i^2_{13/2}\otimes\pi d^{-2}_{5/2}\otimes\pi h^2_{11/2}$ (1991Fl02).
8218.1 *6*	(53/2⁺)		D	Jπ: ΔJ=(2) γ to (49/2⁺).
8433.8 *6*	(55/2⁺)		D	Jπ: ΔJ=1, 215.4γ to (53/2⁺); ΔJ=(1), (D+Q) γ to (53/2⁺).
8459.0 *12*	(51/2⁻)		D	Jπ: 1802γ to (49/2⁺); Jπ=51/2⁻ in 1999Fi12.
8465.8 *11*	(47/2⁻)		D	Jπ: 1995γ to (45/2⁺); Jπ=47/2⁻ in 1999Fi12.
8557.5[f] *6*	(57/2⁺)		D	Jπ: ΔJ=(2), 735.8γ to (53/2⁺); ΔJ=1, 123.3γ to (55/2⁺).
8658.0 *12*	(51/2⁻)		D	Jπ: 2001γ to (49/2⁺); Jπ=51/2⁻ in 1999Fi12.
8940.9[g] *7*	(57/2⁻)		D	Jπ: ΔJ=(2) γ to (53/2⁻); ΔJ=1, dipole γ to (55/2⁺).
9055.8 *11*	(49/2⁺)		D	Jπ: 2585γ to (45/2⁺); Jπ=49/2⁺ in 1999Fi12.
9273.6 *7*	(57/2⁻)		D	Jπ: ΔJ=(2) γ to (53/2⁻).
9326.4 *7*	(59/2⁺)		D	Jπ: ΔJ=1 γ to (57/2⁺).
9438.5[h] *7*	(59/2⁺)		D	Jπ: ΔJ=1 γs to (57/2⁺) and (57/2⁻).
9502.2[g] *7*	(61/2⁻)		D	Jπ: ΔJ=(2) γ to (57/2⁻); ΔJ=1, dipole γ to (59/2⁺).
10362.4[h] *7*	(63/2⁺)		D	Jπ: ΔJ=(2) γ to (59/2⁺); γ to (61/2⁻).
10510.5 *7*	(63/2⁺)		D	Jπ: γ to (61/2); Jπ=63/2⁺ in 1995Fl01.
10602.4[g] *7*	(65/2⁻)		D	Jπ: ΔJ=(2) γ to (61/2⁻).
10626.0[i] *15*	(47/2⁻)		D	Jπ: from 1990Ha31, 1995Fl01 and 1999Fi12 and 1995Fl01, based on assigned

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Adopted Levels, Gammas (continued)

^{149}Gd Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
			configurations and decay to normal-deformed levels. 1993Ra07 suggest 47/2, 51/2 based on theoretical analysis.
10851.1 *7*	(63/2⁻)	D	Jπ: ΔJ=1, dipole γ to (61/2⁻).
10930.9[g] *7*	(65/2⁻)	D	Jπ: ΔJ=(2) γ to (61/2⁻); γ to (63/2⁺).
11012.0 *7*	(65/2⁻)	D	Jπ: ΔJ=1 γs to (63/2⁺) and (63/2⁻).
11200.3[h] *7*	(67/2⁺)	D	Jπ: ΔJ=(2) γ to (63/2⁺); ΔJ=1 γs to (65/2⁻).
11243.8[i] *15*	(51/2⁻)	D	
11712.2 *7*	(67/2⁻)	D	Jπ: ΔJ=1, dipole γ to (65/2⁻).
11908.0[i] *15*	(55/2⁻)	D	
12268.8 *7*	(69/2⁺)	D	Jπ: ΔJ=(1) γ to (67/2⁺). Other: (67/2) in 1991Fl02.
12384.3 *7*	(69/2⁻)	D	Jπ: ΔJ=(2) γ to (65/2⁻); ΔJ=1, dipole γs to (67/2⁺) and (67/2⁻).
12469.5 *8*	(69/2⁻)	D	Jπ: ΔJ=(2) γ to (65/2⁻).
12581.1 *8*	(71/2⁻)	D	Jπ: ΔJ=(2) γ to (67/2⁻).
12619.8[i] *15*	(59/2⁻)	D	
12752.5 *7*	(71/2⁺)	D	Jπ: ΔJ=(2) γ to (67/2⁺).
12967.7 *7*	(71/2⁺)	D	Jπ: ΔJ=(2) γ to (67/2⁺); ΔJ=1, 583.1γ to (69/2⁻).
13189.7 *8*	(75/2⁻)	D	Jπ: ΔJ=(2), (E2) γ to (71/2⁻).
13279.1 *8*	(73/2⁻)	D	Jπ: ΔJ=1, dipole γ to (71/2⁺).
13379.5[i] *15*	(63/2⁻)	D	
13567.7 *8*	(75/2⁻)	D	Jπ: ΔJ=1, dipole γ to (73/2⁻). Configuration= $\nu d_{3/2}^{-3} \otimes \nu f_{7/2}^{2} \otimes \nu h_{9/2} \otimes \nu i_{13/2}^{2} \otimes \pi d_{5/2}^{-3} \otimes \pi h_{11/2}^{3}$ (1991Fl02).
14109.2 *8*	(77/2⁻)	D	Jπ: ΔJ=1 γs to (75/2⁻).
14187.6[i] *15*	(67/2⁻)	D	
15044.7[i] *15*	(71/2⁻)	D	
15163.9 *9*	(81/2⁻)	D	Jπ: ΔJ=(2) γ to (77/2⁻).
15951.4[i] *15*	(75/2⁻)	D	
15997.4 *9*	(85/2⁻)	D	Jπ: γ to (81/2⁻); *J*π=85/2⁻ in 1995Fl01.
16908.5[i] *15*	(79/2⁻)	D	
17917.2[i] *16*	(83/2⁻)	D	
18977.9[i] *16*	(87/2⁻)	D	
20091.7[i] *16*	(91/2⁻)	D	
21258.9[i] *16*	(95/2⁻)	D	
22480.7[i] *16*	(99/2⁻)	D	
23757.2[i] *16*	(103/2⁻)	D	
25089.2[i] *16*	(107/2⁻)	D	
26476.8[i] *16*	(111/2⁻)	D	
27921.1[i] *16*	(115/2⁻)	D	
29421.6[i] *16*	(119/2⁻)	D	
30979.4[i] *16*	(123/2⁻)	D	
32595.1[i] *16*	(127/2⁻)	D	
34267.2[i] *17*	(131/2⁻)	D	
35997.1[i] *19*	(135/2⁻)	D	
x[#j]	(63/2⁺)	D	Jπ: from 1993Cu06 and 1995Fl01 based on assigned configurations.
858.5+x[j] *3*	(67/2⁺)	D	
1746.7+x[j] *4*	(71/2⁺)[&]	D	
2624.8+x[j] *5*	(75/2⁺)	D	
3525.8+x[j] *5*	(79/2⁺)	D	
4468.1+x[j] *5*	(83/2⁺)	D	
5455.0+x[j] *5*	(87/2⁺)	D	
6488.0+x[j] *5*	(91/2⁺)	D	
7569.3+x[j] *5*	(95/2⁺)	D	

Adopted Levels, Gammas (continued)

^{149}Gd Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
8699.7+x[j] 5	(99/2+)	D	

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Adopted Levels, Gammas (continued)

^{149}Gd Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
9880.6+x[j] 5	(103/2+)	D	
11113.1+x[j] 5	(107/2+)	D	
12398.9+x[j] 5	(111/2+)	D	
13738.6+x[j] 6	(115/2+)	D	
15133.4+x[j] 6	(119/2+)	D	
16584.0+x[j] 6	(123/2+)	D	
18090.7+x[j] 7	(127/2+)	D	
19654.7+x[j] 8	(131/2+)	D	
21275.0+x[j] 10	(135/2+)	D	
y[k]	J1≈(57/2+)	D	Jπ: from 1995Fl01 based on assigned configuration.
649.8+y[k] 4	J1+2	D	
1349.6+y[k] 5	J1+4	D	
2098.2+y[k] 5	J1+6	D	
2897.4+y[k] 6	J1+8	D	
3751.5+y[k] 6	J1+10[@]	D	
4647.5+y[k] 6	J1+12	D	
5600.8+y[k] 7	J1+14	D	
6605.7+y[k] 7	J1+16	D	
7662.4+y[k] 7	J1+18	D	
8772.5+y[k] 8	J1+20	D	
9935.7+y[k] 8	J1+22	D	
11151.2+y[k] 8	J1+24	D	
12420.0+y[k] 8	J1+26	D	
13742.9+y[k] 9	J1+28	D	
15119.7+y[k] 9	J1+30	D	
16550.6+y[k] 9	J1+32	D	
18036.2+y[k] 10	J1+34	D	
19576.4+y[k] 11	J1+36	D	
21170.8+y[k] 13	J1+38	D	
22818.2+y[k] 16	J1+40	D	
z[l]	J2≈(63/2+)	D	Jπ: from 1995Fl01 based on assigned configuration.
725.6+z[l] 4	J2+2	D	
1497.5+z[l] 5	J2+4	D	
2315.1+z[l] 5	J2+6	D	
3180.0+z[l] 6	J2+8	D	
4092.1+z[l] 6	J2+10	D	
5052.8+z[l] 6	J2+12	D	
6058.3+z[l] 7	J2+14	D	
7114.5+z[l] 7	J2+16	D	
8218.2+z[l] 7	J2+18	D	
9369.7+z[l] 8	J2+20	D	
10568.7+z[l] 8	J2+22	D	
11815.7+z[l] 8	J2+24	D	
13110.0+z[l] 8	J2+26	D	
14451.6+z[l] 9	J2+28	D	
15839.7+z[l] 9	J2+30	D	
17274.6+z[l] 10	J2+32	D	

Adopted Levels, Gammas (continued)

^{149}Gd Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
18757.1+z[l] 11	J2+34	D	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{149}Gd Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
20285.7+z[l] 13	J2+36	D	
21860.7+z[l] 17	J2+38	D	
u[m]	J3≈(63/2−)	D	Jπ: from 1995Fl01 based on assigned configuration.
755.7+u[m] 4	J3+2	D	
1560.6+u[m] 5	J3+4	D	
2415.6+u[m] 6	J3+6	D	
3323.6+u[m] 7	J3+8	D	
4283.9+u[m] 7	J3+10	D	
5299.5+u[m] 8	J3+12	D	
6369.4+u[m] 8	J3+14	D	
7495.5+u[m] 9	J3+16	D	
8678.9+u[m] 9	J3+18	D	
9919.8+u[m] 10	J3+20	D	
11219.1+u[m] 10	J3+22	D	
12576.8+u[m] 11	J3+24	D	
13993.9+u[m] 11	J3+26	D	
15469.7+u[m] 12	J3+28	D	
17004.3+u[m] 13	J3+30	D	
18599.3+u[m] 17	J3+32	D	
v[n]	J4≈(57/2−)	D	Jπ: from 1995Fl01 based on assigned configuration.
688.1+v[n] 5	J4+2	D	
1420.7+v[n] 6	J4+4	D	
2200.9+v[n] 6	J4+6	D	
3030.7+v[n] 6	J4+8	D	
3911.7+v[n] 7	J4+10	D	
4845.2+v[n] 7	J4+12	D	
5832.3+v[n] 7	J4+14	D	
6874.3+v[n] 8	J4+16	D	
7971.8+v[n] 8	J4+18	D	
9126.1+v[n] 8	J4+20	D	
10338.1+v[n] 9	J4+22	D	
11608.6+v[n] 9	J4+24	D	
12937.5+v[n] 11	J4+26	D	
14325.9+v[n] 12	J4+28	D	
15772.5+v[n] 12	J4+30	D	
17278.5+v[n] 14	J4+32	D	
18843.7+v[n] 15	J4+34	D	
20469.7+v[n] 18	J4+36	D	
22155.7+v[n] 21	J4+38	D	
w[o]	J5	D	
802.9+w[o] 3	J5+2	D	
1655.1+w[o] 5	J5+4	D	
2557.1+w[o] 6	J5+6	D	
3509.2+w[o] 7	J5+8	D	
4513.0+w[o] 8	J5+10	D	
5562.7+w[o] 9	J5+12	D	
6667.9+w[o] 10	J5+14	D	
7825.1+w[o] 10	J5+16	D	
9034.4+w[o] 11	J5+18	D	
10296.7+w[o] 11	J5+20	D	
11612.4+w[o] 11	J5+22	D	

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Adopted Levels, Gammas (continued)

^{149}Gd Levels (continued)

E(level)[†]	Jπ[‡]	XREF	E(level)[†]	Jπ[‡]	XREF	E(level)[†]	Jπ[‡]	XREF
12982.0+w[o] *12*	J5+24	D	13243.4+t[q] *12*	J7+24	D	13513.0+b[s] *13*	J9+24	D
14404.8+w[o] *13*	J5+26	D	14683.7+t[q] *12*	J7+26	D	15020.6+b[s] *14*	J9+26	D
15882.3+w[o] *14*	J5+28	D	16178.3+t[q] *13*	J7+28	D	16586.6+b[s] *18*	J9+28	D
17415.0+w[o] *14*	J5+30	D	17732.2+t[q] *14*	J7+30	D	c[t]	J10	D
19000.8+w[o] *16*	J5+32	D	19346.7+t[q] *15*	J7+32	D	855.1+c[t] *10*	J10+2	D
20642.0+w[o] *19*	J5+34	D	a[r]	J8	D	1757.5+c[t] *12*	J10+4	D
s[p]	J6	D	747.6+a[r] *6*	J8+2	D	2713.6+c[t] *14*	J10+6	D
877.8+s[p] *4*	J6+2	D	1544.3+a[r] *8*	J8+4	D	3726.2+c[t] *14*	J10+8	D
1809.8+s[p] *5*	J6+4	D	2391.6+a[r] *9*	J8+6	D	4795.8+c[t] *15*	J10+10	D
2795.3+s[p] *6*	J6+6	D	3290.1+a[r] *10*	J8+8	D	5921.9+c[t] *16*	J10+12	D
3833.6+s[p] *7*	J6+8	D	4240.3+a[r] *11*	J8+10	D	7103.5+c[t] *17*	J10+14	D
4924.6+s[p] *7*	J6+10	D	5242.8+a[r] *12*	J8+12	D	8337.5+c[t] *18*	J10+16	D
6067.1+s[p] *8*	J6+12	D	6305.6+a[r] *12*	J8+14	D	9620.0+c[t] *19*	J10+18	D
7260.4+s[p] *8*	J6+14	D	7422.7+a[r] *13*	J8+16	D	10947.1+c[t] *20*	J10+20	D
8503.3+s[p] *9*	J6+16	D	8595.5+a[r] *14*	J8+18	D	12321.0+c[t] *22*	J10+22	D
9795.2+s[p] *9*	J6+18	D	9826.8+a[r] *14*	J8+20	D	13741.3+c[t] *24*	J10+24	D
11133.3+s[p] *10*	J6+20	D	11115.2+a[r] *15*	J8+22	D	15213.0+c[t] *25*	J10+26	D
12519.5+s[p] *10*	J6+22	D	12462.0+a[r] *16*	J8+24	D	16739+c[t] *3*	J10+28	D
13949.5+s[p] *11*	J6+24	D	13869.3+a[r] *16*	J8+26	D	18322+c[t] *3*	J10+30	D
15421.8+s[p] *12*	J6+26	D	15332.6+a[r] *17*	J8+28	D	19961+c[t] *4*	J10+32	D
16934.9+s[p] *14*	J6+28	D	16864.4+a[r] *20*	J8+30	D	d[u]	J11	D
18484.3+s[p] *16*	J6+30	D	18452.6+a[r] *24*	J8+32	D	850.3+d[u] *10*	J11+2	D
t[q]	J7	D	b[s]	J9	D	1741.5+d[u] *15*	J11+4	D
874.1+t[q] *3*	J7+2	D	827.6+b[s] *5*	J9+2	D	2677.2+d[u] *17*	J11+6	D
1798.7+t[q] *4*	J7+4	D	1697.3+b[s] *7*	J9+4	D	3663.7+d[u] *19*	J11+8	D
2771.3+t[q] *6*	J7+6	D	2621.5+b[s] *7*	J9+6	D	4701.7+d[u] *21*	J11+10	D
3797.2+t[q] *8*	J7+8	D	3596.9+b[s] *8*	J9+8	D	5792.5+d[u] *23*	J11+12	D
4813.6+t[q] *8*	J7+10	D	4627.3+b[s] *9*	J9+10	D	6935.4+d[u] *24*	J11+14	D
5851.5+t[q] *9*	J7+12	D	5715.8+b[s] *9*	J9+12	D	8131+d[u] *3*	J11+16	D
6941.4+t[q] *9*	J7+14	D	6864.0+b[s] *10*	J9+14	D	9382+d[u] *3*	J11+18	D
8087.0+t[q] *10*	J7+16	D	8073.3+b[s] *11*	J9+16	D	10688+d[u] *3*	J11+20	D
9289.4+t[q] *10*	J7+18	D	9343.3+b[s] *12*	J9+18	D	12049+d[u] *4*	J11+22	D
10549.4+t[q] *11*	J7+20	D	10673.9+b[s] *12*	J9+20	D	13467+d[u] *4*	J11+24	D
11867.8+t[q] *11*	J7+22	D	12064.0+b[s] *13*	J9+22	D	14941+d[u] *4*	J11+26	D

† From a least-squares fit to γ-ray energies, assuming ΔEγ=0.3 keV, when not given.

‡ For levels populated in ^{124}Sn(^{30}Si,5nγ) and (α,xnγ) reactions, J^{π} values have been deduced primarily from γ(θ) data in 1991Fl02. In a few cases ce data and γ(lin pol) data give strong arguments for J^{π} values. Following assumptions have been made in such assignments: ascending spins are assumed as the excitation energy increases which is generally supported by deexcitation pattern of levels. ΔJ=2, quadrupole transitions are assumed as E2 and ΔJ=1 transitions with Q/D admixture are assumed as M1+E2 from RUL for E2 and M2, when no long lifetime for levels is indicated from γγ-coin data. Above 5 MeV excitation, only one J value is given but γ(θ) data used to assign these J^{π} values do not seem to give unique results. Arguments based on sequence assignments, model calculations, etc., seem to have been used by 1991Fl02 and 1995Fl01 in (^{30}Si,5nγ).

The energies of the first four transitions show a backbend in this band. This has been ascribed to the alignment of a neutron pair (1995Fl01).

@ J≈(77/2) from 1993Ra07. J=73/2 is also suggested by 1993Ra07.

& 1993Ra07 suggest 67/2, 71/2 based on theoretical analysis.

a Band(A): Band built on $\nu 2f^3_{7/2}$. Assignment from 1981Pi09.

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Adopted Levels, Gammas (continued)

^{149}Gd Levels (continued)

[b] Band(B): Band built on $\nu h_{9/2}\otimes\nu 2f^2_{7/2}$. Assignment from 1981Pi09.

[c] Seq.(U): Sequence built on $\nu f^3_{7/2}\otimes(3^-$ in ^{148}Gd). Assignment from 1981Pi09. This structure is probably mixed with $\nu i_{13/2}$. 1979RaZZ assign this as a structure based only on the $i_{13/2}$ neutron state.

[d] Band(C): Multi-quasiparticle structure #1. Configuration=$\nu 2f^2_{7/2}\otimes\nu h_{9/2}\otimes\pi d^{-2}_{5/2}\otimes\pi h^2_{11/2}$ (1991Fl02).

[e] Band(D): Multi-quasiparticle structure #2. Configuration= $\nu 2f^2_{7/2}\otimes\nu i_{13/2}\otimes\pi d^{-2}_{5/2}\otimes\pi h^2_{11/2}$ (1991Fl02).

[f] Band(E): Multi-quasiparticle structure #3. Configuration= $\nu 2f_{7/2}\otimes\nu h_{9/2}\otimes\nu i_{13/2}\otimes\pi d^{-2}_{5/2}\otimes\pi h^2_{11/2}$ (1991Fl02).

[g] Band(F): Multi-quasiparticle structure #4. Configuration= $\nu 2f_{7/2}\otimes\nu h_{9/2}\otimes\nu i_{13/2}\otimes\pi d^{-3}_{5/2}\otimes\pi h^3_{11/2}$ (1991Fl02).

[h] Band(G): Multi-quasiparticle structure #5. Configuration=$\nu 2f_{7/2}\otimes\nu h_{9/2}\otimes\nu i_{13/2}\otimes\pi d^{-2}_{5/2}\otimes\pi g^{-1}_{7/2}\otimes\pi h^3_{11/2}$ (1991Fl02).

[i] Band(H): SD-1 band; (π,α)=(-,−1/2). Q(intrinsic)=14.9 *+4−3* (1998Kh09), 15.0 *2* (1996Sa15), 17 *2* (1988Ha02) (from DSAM). Band assignment from 1999Fi12, 1995Fl01, 1993Fl03, 1990Ha31 and 1988Ha02. Percent population=2.5 (1990Ha31), 1.8 (1995Fl01). See also 1992Vi03, 1990Ha25, 1989Ta12, 1988Ta20, 1988Ha02. Configuration=$\pi 6^2\otimes\nu 7^1$ (1993Cu06). Evidence for a ΔJ=4 rotational sequence, associated with an invariance under 90° rotation (1993Fl07). Weak linking transitions have been reported by 1999Fi12. Percentage intensities (1999Fi12) leaking the SD-1 band are: 19% *1* from the (47/2) member, 69% *2* from the (49/2) member and 12% *2* from the (51/2) member of this band. This leaking intensity feeds the following weakly-deformed states in the first potential well: 23% *5* to 5633 level, 9% *3* to 6098 level, 12% *5* to 6470 level, 8% *2* to 6504 level, 23% *5* to 6656 level, 9% *2* to 6787 level, 6% *2* to 7072 level, 5% *1* to 7741 level, 3% *1* to 8458 level and 0.5% *3* to 8657 level (1999Fi12).

[j] Band(I): SD-2 band; (π,α)=(+,−1/2). Band assignment from 1995Fl01, 1993Fl03, 1990Ha31 and 1988Ha02. Percent population=1.0 (1990Ha31), 0.45 (1995Fl01). Q(intrinsic)=15.6 *3* (1996Sa15) (DSAM). Configuration=$\pi 6^2\otimes\nu 7^2\otimes(\nu 1/2[651],\alpha=+1/2)^{-1}$ (1995Fl01,1993Cu06). Energies of first four γ rays show a backbend in this SD band.

[k] Band(J): SD-3 band; (π,α)=(+,+1/2). Band assignment from 1995Fl01, 1993Fl03, 1990Ha31 and 1988Ha02. Percent population=0.3 (1990Ha31), 0.22 (1995Fl01). Q(intrinsic)=15.2 *5* (1996Sa15) (DSAM). Configuration=$\pi 6)^3\otimes(\pi 1/2[301],\alpha=-1/2)^{-1}\otimes\nu 7^1$ (1995Fl01,1993Cu06).

[l] Band(K): SD-4 band; (π,α)=(+,−1/2). Percent population=0.25 (1995Fl01). Q(intrinsic)=17.5 *6* (1996Sa15) (DSAM). Configuration= $\pi 6^4\otimes\pi 1/2[301]^{-2}\otimes\nu 7^2\otimes(\nu 1/2[411],\alpha=+1/2)^{-1}$ (1995Fl01).

[m] Band(L): SD-5 band; (π,α)=(-,−1/2). Band assignment from 1995Fl01, 1994De33 and 1993Fl03. Percent population=0.14 (1995Fl01). Configuration= $\pi 6^2\otimes\nu 7)^1\otimes(\nu 1/2[651],\alpha=+1/2)^{-1}\otimes(\nu 5/2[402],\alpha=+1/2)$ (1995Fl01). SD-5 and SD-6 are signature partners.

[n] Band(M): SD-6 band; (π,α)=(-,+1/2). Band assignment from 1995Fl01, 1994De33 and 1993Fl03. Percent population=0.14 (1995Fl01). Configuration= $\pi 6^2\otimes\nu 7^1\otimes(\nu 1/2[651],\alpha=+1/2)^{-1}\otimes(\nu 5/2[402],\alpha=-1/2)$ (1995Fl01).

[o] Band(N): SD-7 band. Percent population is between 5 and 10% of SD-1 band (1998By02) Configuration=$\pi 6^3\otimes(\pi 1/2[301],\alpha=+1/2)^{-1}\otimes\nu 7^1$ (1998By02).

[p] Band(O): SD-8 band. Percent population is between 5 and 10% of SD-1 band (1998By02). Configuration=$\pi 6^4\otimes\pi 1/2[301]^{-2}\otimes\nu 7^1$ (1998By02).

[q] Band(P): SD-9 band. Percent population is between 5 and 10% of SD-1 band (1998By02). Configuration=$\pi 6^2\otimes\nu 7^1\otimes(\nu 1/2[651],\alpha=+1/2)^{-1}\otimes(\nu 9/2[514],\alpha=+1/2)$ (1998By02).

[r] Band(Q): SD-10 band. Percent population is between 5 and 10% of SD-1 band (1998By02). Configuration= $\pi 6^2\otimes\nu 7^1\otimes(\nu 1/2[651],\alpha=+1/2)^{-1}\otimes(\nu 9/2[514],\alpha=-1/2)$ (1998By02).

[s] Band(R): SD-11 band. Percent population is between 5 and 10% of SD-1 band (1998By02). Configuration= $\pi 6^2\otimes\nu 7^1\otimes(\nu 1/2[651],\alpha=+1/2)^{-1}\otimes(\nu 3/2[521],\alpha=-1/2)$ (1998By02).

[t] Band(S): SD-12 band. Percent population is between 5 and 10% of SD-1 band (1998By02). Configuration= $\pi 6^2\otimes\nu 7^1\otimes\nu 1/2[651]^{-2}\otimes(\nu 9/2[514]^2$ or $\nu 5/2[402]^2)$ (1998By02).

[u] Band(T): SD-13 band. Percent population is between 5 and 10% of SD-1 band (1998By02). Configuration= $\pi 6^2\otimes\nu 7^1\otimes(\nu 5/2[642],\alpha=+1/2)^{-1}\otimes(\nu 9/2[514]$ or $\nu 5/2[402])$ (1998By02).

γ(^{149}Gd)

E$_i$(level)	J^π_i	E$_γ$[†]	I$_γ$[†]	E$_f$	J^π_f	Mult.[‡]	δ[&]	α[a]	Comments
164.986	5/2$^-$	164.98 *2*	100	0.0	7/2$^-$	M1+E2[@]	−0.93 *2*	0.459 *6*	B(M1)(W.u.)=0.00106 *7*; B(E2)(W.u.)=18.5 *12* E$_γ$: others: 165.0 *1* from ^{149}Tb ε decay (4.17 min), 164.9 *2* from (α,2nγ), and 165.1 *3* from (α,5nγ). δ: value from L-subshell ratios and sign from γγ(θ) in ^{149}Tb ε decay (4.12 h). Other: −0.12 *7* from γ(θ) in (α,2nγ).
352.234	3/2$^-$	187.22 *2*	14.6 *2*	164.986	5/2$^-$	M1+E2[@]	+0.85 *+19−16*	0.316 *8*	B(M1)(W.u.)=0.00054 *+12−11*; B(E2)(W.u.)=6.1 *+18−15* E$_γ$: other: 187.6 *2* from (α,2nγ). δ: other: −1.5 *+15−28* from γ(θ) in (α,2nγ).
		352.24 *2*	100 *3*	0.0	7/2$^-$	E2[@]		0.0371 *5*	B(E2)(W.u.)=4.2 *+6−5*
775.32	11/2$^-$	775.3 *1*	100	0.0	7/2$^-$	E2		0.00478 *7*	E$_γ$: weighted average of 775.1 *2* from (α,2nγ) and 775.3 *1* from (α,5nγ).
795.94	9/2$^-$	630.8 *2*	≈15	164.986	5/2$^-$	(Q)			E$_γ$: weighted average of 630.7 *3* from ^{149}Tb ε decay (4.17 min), 630.9 *2* from (α,2nγ), and 630.4 *5* from (α,5nγ). I$_γ$: from (α,5nγ). Iγ≈3 or <20 in ^{149}Tb ε (4.17 min). This γ is contributed by impurities in both cases. γ not reported in ^{149}Tb ε (4.12 h) and ^{124}Sn(^{30}Si,5nγ). Mult.: from γ(θ) for a mixed line in (α,5nγ).
		795.9 *1*	100 *6*	0.0	7/2$^-$	M1+E2	+0.18 *2*	0.00783 *11*	E$_γ$: weighted average of 796.0 *1* from ^{149}Tb ε decay (4.17 min), 795.7 *2* from (α,2nγ), and 795.9 *1* from (α,5nγ). Mult.: M1+E2 from γ(θ) and pol in (α,5nγ); ΔJ=1, D+Q γ(θ) in (^{30}Si,5nγ) and (α,2nγ). δ: from γ(θ) in ^{124}Sn(^{30}Si,5nγ) (1991Fl02). Other: +0.19 *1* from γ(θ) in (α,2nγ) (1979RaZZ).
817.099	3/2$^-$	464.85 *2*	34.8 *5*	352.234	3/2$^-$	M1(+E2)[@]	−0.10 *14*	0.0303 *7*	
		652.12 *2*	100 *1*	164.986	5/2$^-$	M1+E2[@]	−0.57 *5*	0.01154 *25*	
		817.1 *2*	71.4 *11*	0.0	7/2$^-$	E2[@]		0.00425 *6*	δ(E2/M1)>4 from ce data in ^{149}Tb ε decay (4.12 h).
873.51	11/2$^+$	77.6 *1*	100.0 *8*	795.94	9/2$^-$	E1[#]		0.576 *8*	B(E1)(W.u.)=0.00014 *+9−4* I$_γ$: from (^{30}Si,5nγ). Other: 100 *6* from (α,5nγ). Mult.: γ(θ) from (α,5nγ) gives ΔJ=1.
		98.2 *1*	44.8 *4*	775.32	11/2$^-$	E1[#]		0.307 *4*	B(E1)(W.u.)=3.2×10^{-5} *+19−9* E$_γ$: weighted average of 98.0 *2* from (α,2nγ) and 98.2 *1* from (α,5nγ). I$_γ$: from (^{30}Si,5nγ). Others: 100 *3* from (α,2nγ) and 100 *6* from (α,5nγ) are in disagreement.
		873.1[c] *2*	9.3 *4*	0.0	7/2$^-$	(M2)		0.01645 *23*	B(M2)(W.u.)=0.056 *+34−16* E$_γ$,I$_γ$: from (α,2nγ) only.

Adopted Levels, Gammas (continued)

$\gamma(^{149}Gd)$ (continued)

E_i(level)	J^{π}_i	E_γ[†]	I_γ[†]	E_f	J^{π}_f	Mult.[‡]	δ[&]	α[a]	Comments
955.98	(13/2+)	82.5 *1*	43.4 *5*	873.51	11/2+	(M1)[#]		3.50 *5*	E_γ: from (α,5nγ). I_γ: from ^{124}Sn(^{30}Si,5nγ). Other: 79 *4* in (α,5nγ) is discrepant.
		180.6 *1*	100.0 *6*	775.32	11/2−	(E1)[#]		0.0595 *8*	E_γ: weighted average of 180.5 *2* from (α,2nγ) and 180.6 *1* from (α,5nγ). I_γ: from (^{30}Si,5nγ). Other: 100 *5* from (α,5nγ). Mult.: $\gamma(\theta)$ from (α,5nγ) and (α,2nγ) gives ΔJ=1.
1026.836	3/2+	674.61 *6*	9.1 *3*	352.234	3/2−	E1[@]		2.47×10^{-3} *4*	
		861.86 *2*	100.0 *14*	164.986	5/2−	E1(+M2)[@]	−0.05 *6*	0.00155 *15*	
1085.43	(5/2−,7/2,9/2−)	289.4 *2*	100 *25*	795.94	9/2−	D			E_γ: weighted average of 289.3 *3* from ^{149}Tb ε decay (4.12 h) and 289.4 *2* from (α,2nγ). Mult.: from $\gamma(\theta)$ in (α,2nγ).
		920.5	38 *13*	164.986	5/2−				
		1085.5	75 *38*	0.0	7/2−				
1124.90	1/2+,3/2+,5/2+	98.1 *2*	9.3 *11*	1026.836	3/2+	M1[@]		2.127 *32*	
		307.79 *7*	16.5 *11*	817.099	3/2−				
		772.65 *3*	100 *2*	352.234	3/2−	E1[@]		1.87×10^{-3} *3*	
1144.08	(5/2)+	117.2	3.6 *18*	1026.836	3/2+				
		791.8	13 *6*	352.234	3/2−				
		979.09 *6*	100 *6*	164.986	5/2−	E1[@]		1.18×10^{-3} *2*	
		1144.09 *9*	59 *6*	0.0	7/2−	D,E2[@]			
1167.12	(3/2+)	1002.1	58 *4*	164.986	5/2−				
		1167.10 *7*	100 *6*	0.0	7/2−	(M2)[@]		0.00762 *11*	Mult.: from ce data in ^{149}Tb ε decay, however, this mult would become unlikely if the 1167 level has a $T_{1/2}$<0.32 ns, which would only allow mult=D or E2 for this transition based on RUL and the branching ratios.
1205.666	(1/2)−	388.57 *2*	100.0 *7*	817.099	3/2−	M1+E2[@]	−0.21 *9*	0.0475 *11*	
		853.43 *1*	84.1 *12*	352.234	3/2−	E2+M1[@]	−8 *+6−23*	0.0039 *5*	
		1040.65 *4*	7.9 *3*	164.986	5/2−	(E2)[@]		2.53×10^{-3} *4*	δ: α(K)exp gives δ(E2/M1)=1.5 *+14−5* but ΔJ^{π} requires E2.
		1205.6[c]	≤0.1	0.0	7/2−	[M3]		0.01350 *19*	
1348.72	(1/2−,3/2,5/2−)	321.9	14 *7*	1026.836	3/2+				
		996.5 *1*	100 *7*	352.234	3/2−				
		1183.7 *2*	57 *14*	164.986	5/2−				

$^{149}_{64}Gd_{85}$-13

Adopted Levels, Gammas (continued)

γ(^{149}Gd) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ[&]	α[a]	Comments
1402.90	(5/2⁻)	317.4	14 4	1085.43	(5/2⁻,7/2,9/2⁻)				
		606.7	4 2	795.94	9/2⁻				
		1402.91 9	100 6	0.0	7/2⁻				
1484.01	15/2⁻	528.0 1	44 2	955.98	(13/2⁺)	E1		0.00417 6	E_γ: weighted average of 527.9 2 from (α,2nγ) and 528.0 1 from (α,5nγ). Mult.: from ce and γ(θ) in (α,2nγ) and γ(θ) in (α,5nγ), ΔJ=1.
		708.7 1	100 1	775.32	11/2⁻	E2		0.00588 8	E_γ: weighted average of 708.5 2 from (α,2nγ) and 708.8 1 from (α,5nγ). Mult.: from γ(θ,pol) in (α,5nγ), ΔJ=2.
1487.59	(1/2,3/2)⁻	670.4	5.2 15	817.099	3/2⁻				
		1135.3 1	100 3	352.234	3/2⁻	M1(+E2)[@]	<0.7	0.00317 21	
		1322.7 1	7.5 7	164.986	5/2⁻				
1544.13	(3/2⁻,5/2⁻)	1191.89 8	100 7	352.234	3/2⁻				
		1379.1 1	100 5	164.986	5/2⁻				
		1544.1 2	21 5	0.0	7/2⁻				
1557.38	(1/2⁻,3/2)	390.3	29 7	1167.12	(3/2⁺)				
		413.3 1	31 2	1144.08	(5/2)⁺				
		432.5 2	18 5	1124.90	1/2⁺,3/2⁺,5/2⁺				
		740.2 1	100 5	817.099	3/2⁻				
		1205.20 8	96 9	352.234	3/2⁻				
		1392.3 3	13 5	164.986	5/2⁻				
1597.30	(1/2,3/2,5/2⁻)	472.4 1	100 15	1124.90	1/2⁺,3/2⁺,5/2⁺				
		780.2	9 2	817.099	3/2⁻				
		1245.1	12 4	352.234	3/2⁻				
1609.16	13/2⁽⁻⁾	813.2 2	100.0 12	795.94	9/2⁻	Q			E_γ: weighted average of 813.0 2 from (α,2nγ) and 813.3 2 from (α,5nγ). I_γ: from (α,2nγ). Others: 100.0 13 from (^{30}Si,5nγ) and 100 11 from (α,5nγ).
		833.9 2	41.7 12	775.32	11/2⁻	D+Q	−2.1 21		E_γ: weighted average of 833.7 2 from (α,2nγ) and 834.2 3 from (α,5nγ). I_γ: from (α,2nγ). Others: 99 3 from (^{30}Si,5nγ) and 77 8 from (α,5nγ) in disagreement. δ: from γ(θ) in (α,2nγ), with ΔJ=1.
1614.04	3/2⁺	446.7 6	2.8 19	1167.12	(3/2⁺)				
		469.9	0.9 6	1144.08	(5/2)⁺				
		587.2	5.7 19	1026.836	3/2⁺				
		796.9	1.9 10	817.099	3/2⁻				
		1261.7 2	12.3 19	352.234	3/2⁻				
		1449.10 8	100 4	164.986	5/2⁻	E1[@]		0.000753 11	α=0.000753 11
1655.19	(3/2)⁺	252.3 1	11.0 22	1402.90	(5/2⁻)				
		449.6	7.7 22	1205.666	(1/2)⁻				

From ENSDF

$^{149}_{64}Gd_{85}$-14

γ(^{149}Gd) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ[&]	α[a]	Comments
1655.19	(3/2)$^+$	488.1 *2*	11.0 *22*	1167.12	(3/2$^+$)				
		628.4 *2*	9.9 *22*	1026.836	3/2$^+$				
		838.1 *2*	8.8 *11*	817.099	3/2$^-$				
		1302.92 *8*	100 *3*	352.234	3/2$^-$	E1[@]		0.000777 *11*	α=0.000777 *11*
		1490.3 *2*	22 *3*	164.986	5/2$^-$				
1739.97	(17/2)$^+$	784.0 *2*	100	955.98	(13/2$^+$)	E2		0.00467 *7*	E_γ: weighted average of 783.8 *2* from (α,2nγ) and 784.3 *3* from (α,5nγ).
1750.59	(3/2$^-$,5/2$^-$)	347.7	79 *11*	1402.90	(5/2$^-$)				
		625.7[c] *3*	11 *11*	1124.90	1/2$^+$,3/2$^+$,5/2$^+$				
		723.8	63 *11*	1026.836	3/2$^+$				
		1398.3 *3*	32 *10*	352.234	3/2$^-$				
		1585.6 *1*	100 *5*	164.986	5/2$^-$				
		1751.0[c] *4*	21 *11*	0.0	7/2$^-$				
1751.1?	(15/2$^+$)	877.8[c] *2*	100	873.51	11/2$^+$	Q			
1772.83	(3/2$^+$,1/2$^+$)	648.0 *1*	100 *9*	1124.90	1/2$^+$,3/2$^+$,5/2$^+$				
		746.0 *1*	49 *3*	1026.836	3/2$^+$				
		955.71 *5*	77 *5*	817.099	3/2$^-$	(E1)[@]		1.24×10^{-3} *2*	
		1420.6 *1*	15 *2*	352.234	3/2$^-$				
		1772.8[c]	3 *3*	0.0	7/2$^-$				
1844.31	(1/2$^-$,3/2,5/2$^-$)	677.2 *1*	100 *10*	1167.12	(3/2$^+$)				
		817.5	35 *10*	1026.836	3/2$^+$				
		1027.2 *2*	10 *5*	817.099	3/2$^-$				
		1492.2 *3*	60 *10*	352.234	3/2$^-$				
		1679.3 *1*	90 *10*	164.986	5/2$^-$				
1992.49	3/2$^-$	219.7	0.32 *16*	1772.83	(3/2$^+$,1/2$^+$)				
		378.5 *1*	3.8 *6*	1614.04	3/2$^+$				
		448.5	1.4 *3*	1544.13	(3/2$^-$,5/2$^-$)				
		786.8 *1*	4.1 *3*	1205.666	(1/2)$^-$				
		825.4	1.9 *6*	1167.12	(3/2$^+$)				
		867.6	1.2 *3*	1124.90	1/2$^+$,3/2$^+$,5/2$^+$				
		965.63 *5*	16.2 *8*	1026.836	3/2$^+$				
		1175.4	100 *4*	817.099	3/2$^-$	M1[@]		0.00312 *4*	
		1640.26 *6*	97.3 *3*	352.234	3/2$^-$	E2(+M1)[@]	>1	0.00127 *11*	
		1827.5	33.5 *16*	164.986	5/2$^-$	M1(+E2)[@]	<1	0.00128 *8*	
		1992.5[c]	0.5 *5*	0.0	7/2$^-$				
1999.66?	(15/2$^+$)	390.5 *2*	100	1609.16	13/2$^{(-)}$	E1		0.00835 *12*	Mult.: from ce and $\gamma(\theta)$ in (α,2nγ), with ΔJ=1.
2058.19	(17/2)$^-$	449.0 *2*	18 *2*	1609.16	13/2$^{(-)}$	(Q)		0.019	I_γ: unweighted average of 20.6 *6* from (^{30}Si,5nγ), 16.1 *4* from (α,2nγ), and 18.3 *18* from (α,5nγ).
		574.2 *1*	100 *1*	1484.01	15/2$^-$	M1		0.01783 *25*	Mult.: from ce and $\gamma(\theta)$ in (α,2nγ) and $\gamma(\theta$,pol) in (α,5nγ), with ΔJ=1.

$^{149}_{64}$Gd$_{85}$-15

Adopted Levels, Gammas (continued)

γ(^{149}Gd) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	α[a]	Comments
2088.47	(1/2⁻,3/2,5/2⁻)	685.6	31 12	1402.90	(5/2⁻)			
		944.4 2	71 29	1144.08	(5/2)⁺			
		963.6	57 29	1124.90	1/2⁺,3/2⁺,5/2⁺			
		1061.6 1	100 14	1026.836	3/2⁺			
		1736.3 2	93 13	352.234	3/2⁻			
		1923.4	16 9	164.986	5/2⁻			
2126.62	(1/2⁻,3/2,5/2⁻)	723.7	100 25	1402.90	(5/2⁻)			
		1001.7[c]	≤38	1124.90	1/2⁺,3/2⁺,5/2⁺			
		1774.4	75 25	352.234	3/2⁻			
2158.35	(3/2)⁺	544.3	1.2 4	1614.04	3/2⁺			
		614.2 1	7.3 8	1544.13	(3/2⁻,5/2⁻)			
		670.8	3.5 8	1487.59	(1/2,3/2)⁻			
		952.7 1	6.9 8	1205.666	(1/2)⁻			
		1033.4	10.8 19	1124.90	1/2⁺,3/2⁺,5/2⁺	(M1)[@]	0.00423 6	
		1131.65 7	34.2 12	1026.836	3/2⁺	(M1)[@]	0.00341 5	
		1341.19 6	100 4	817.099	3/2⁻	E1[@]	0.000765 11	α=0.000765 11
		1806.0 1	19.2 12	352.234	3/2⁻			
		1993.3	2.3 8	164.986	5/2⁻			
2199.90	(1/2⁻,3/2,5/2⁻)	797.0	11 5	1402.90	(5/2⁻)			
		994.3	21 5	1205.666	(1/2)⁻			
		1032.8	53 16	1167.12	(3/2⁺)			
		1055.8	74 21	1144.08	(5/2)⁺			
		1075.0 1	42 5	1124.90	1/2⁺,3/2⁺,5/2⁺			
		1847.7	47 5	352.234	3/2⁻			
		2034.8	100 16	164.986	5/2⁻			
2231.79	(17/2⁻)	622.7 2	71 2	1609.16	13/2$^{(-)}$	(Q)		E_γ: weighted average of 622.7 2 from (α,2nγ) and 622.6 3 from (α,5nγ). I_γ: from (α,2nγ). Other: 93 4 for a mixed line.
		747.8 2	100 2	1484.01	15/2⁻	D		E_γ: weighted average of 747.9 2 from (α,2nγ) and 747.5 5 from (α,5nγ). I_γ: from (α,2nγ). Other: 100 4 in (^{30}Si,5nγ).
2261.53	(3/2,1/2⁻)	774.0	7 4	1487.59	(1/2,3/2)⁻			
		858.6	32 8	1402.90	(5/2⁻)			
		1094.3 3	12 4	1167.12	(3/2⁺)			
		1117.5	48 8	1144.08	(5/2)⁺			
		1136.6	12 8	1124.90	1/2⁺,3/2⁺,5/2⁺			
		1234.7 2	30 5	1026.836	3/2⁺			
		1444.4	36 8	817.099	3/2⁻			
		1909.3 1	100 8	352.234	3/2⁻			
		2096.5	16 4	164.986	5/2⁻			
		2261.5[c]	12 12	0.0	7/2⁻			
2300.72	(1/2⁻,3/2)	686.66 8	48 5	1614.04	3/2⁺			

$\gamma(^{149}Gd)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ[&]	α[a]	Comments
2300.72	(1/2⁻,3/2)	1175.8	46 *7*	1124.90	1/2⁺,3/2⁺,5/2⁺				
		1273.9	3.5 *17*	1026.836	3/2⁺				
		1483.6 *1*	59 *7*	817.099	3/2⁻				
		1948.5 *1*	100 *5*	352.234	3/2⁻				
		2135.7 *2*	26 *5*	164.986	5/2⁻				
2314.10	(1/2⁻,3/2,5/2⁻)	1497.0	100 *25*	817.099	3/2⁻				
		2149.1	75 *25*	164.986	5/2⁻				
2383.66	(19/2)⁻	325.4 *2*	67 *1*	2058.19	(17/2)⁻	D+Q	−0.09 *5*		E_γ: weighted average of 325.3 *2* from (α,2nγ) and 325.5 *3* from (α,5nγ). I_γ: from (^{30}Si,5nγ). Others: 56 *6* in (α,5nγ); 33 *1* in (α,2nγ) seems discrepant. Mult.,δ: from D+Q from $\gamma(\theta)$ in (^{30}Si,5nγ). Other: δ=−1.9 *+6−9* from $\gamma(\theta)$ in (α,2nγ).
		643.7 *2*	100 *2*	1739.97	(17/2)⁺	E1		0.00272 *4*	E_γ: weighted average of 643.6 *2* from (α,2nγ) and 643.7 *2* from (α,5nγ). I_γ: from (^{30}Si,5nγ). Others: 100 *10* in (α,5nγ), 100 *2* in (α,2nγ). Mult.: from ce and $\gamma(\theta)$ in (α,2nγ) with ΔJ=1.
		899.5 *2*	77 *2*	1484.01	15/2⁻	(Q)			E_γ: weighted average of 899.4 *2* from (α,2nγ) and 899.6 *2* from (α,5nγ). I_γ: from (^{30}Si,5nγ). Others: 99 *10* in (α,5nγ); 54 *3* in (α,2nγ) seems discrepant. Mult.: (Q) from $\gamma(\theta)$ in (α,5nγ).
2401.37	(21/2)⁺	661.4 *1*	100	1739.97	(17/2)⁺	E2		0.00692 *10*	E_γ: weighted average of 661.3 *2* from (α,2nγ) and 661.4 *1* from (α,5nγ). Mult.: from $\gamma(\theta$,pol) in (α,5nγ).
2482.72	(1/2⁺,3/2,5/2⁻)	1277.0	29 *14*	1205.666	(1/2)⁻				
		1338.6	36 *14*	1144.08	(5/2)⁺				
		1357.8	9 *6*	1124.90	1/2⁺,3/2⁺,5/2⁺				
		2130.5 *2*	100 *14*	352.234	3/2⁻				
2503.72	(1/2⁻,3/2,5/2⁻)	2151.5	22 *11*	352.234	3/2⁻				
		2338.7 *2*	100 *22*	164.986	5/2⁻				
2514.6?	(19/2⁺)	763.4[c] *2*	100	1751.1?	(15/2⁺)	(Q)			
2524.09	(21/2)⁻	292.4 *2*	20 *2*	2231.79	(17/2⁻)	Q			E_γ: weighted average of 292.3 *2* from (α,2nγ) and 292.5 *3* from (α,5nγ). I_γ: unweighted average of 21.3 *4* from (^{30}Si,5nγ), 16.1 *4* from (α,2nγ), and 22.1 *24* from (α,5nγ).
		466.0 *2*	100 *1*	2058.19	(17/2)⁻	E2		0.01683 *24*	
2569.75	(1/2,3/2,5/2⁻)	1363.8	35 *9*	1205.666	(1/2)⁻				
		1402.4	13 *6*	1167.12	(3/2⁺)				
		1543.4 *3*	100 *25*	1026.836	3/2⁺				
2590.05	(1/2⁻,3/2)	1045.9	24 *12*	1544.13	(3/2⁻,5/2⁻)				

$^{149}_{64}Gd_{85}$-17

γ(^{149}Gd) (continued)

E_i(level)	J^π_i	E_γ †	I_γ †	E_f	J^π_f
2590.05	(1/2$^-$,3/2)	1102.5	18 6	1487.59	(1/2,3/2)$^-$
		1187.1	29 18	1402.90	(5/2$^-$)
		1384.4	12 6	1205.666	(1/2)$^-$
		1465.1	7 4	1124.90	1/2$^+$,3/2$^+$,5/2$^+$
		1563.2	8 5	1026.836	3/2$^+$
		1772.9	35 12	817.099	3/2$^-$
		2237.8 1	100 12	352.234	3/2$^-$
2599.29	(1/2$^-$,3/2)	1055.1	12 4	1544.13	(3/2$^-$,5/2$^-$)
		1111.7	6 3	1487.59	(1/2,3/2)$^-$
		1474.3	8 4	1124.90	1/2$^+$,3/2$^+$,5/2$^+$
		1572.4	6 3	1026.836	3/2$^+$
		1782.2 1	100 8	817.099	3/2$^-$
		2247.0 2	68 8	352.234	3/2$^-$
		2434.5 4	20 4	164.986	5/2$^-$
2613.22	(1/2$^-$,3/2)	620.7	50 12	1992.49	3/2$^-$
		1488.3	44 12	1124.90	1/2$^+$,3/2$^+$,5/2$^+$
		1586.4	25 6	1026.836	3/2$^+$
		2261.0	100 12	352.234	3/2$^-$
		2448.2	81 12	164.986	5/2$^-$
2683.46	(1/2$^+$,3/2)	1069.6	14 5	1614.04	3/2$^+$
		1139.5	19 5	1544.13	(3/2$^-$,5/2$^-$)
		1477.7 2	38 10	1205.666	(1/2)$^-$
		1539.6 4	29 10	1144.08	(5/2)$^+$
		1558.5 1	52 10	1124.90	1/2$^+$,3/2$^+$,5/2$^+$
		1656.8	100 10	1026.836	3/2$^+$
2703.30	(1/2$^-$,3/2,5/2$^-$)	1497.6	36 14	1205.666	(1/2)$^-$
		1536.2	60 20	1167.12	(3/2$^+$)
		2538.3 4	100 40	164.986	5/2$^-$
2757.21	(1/2,3/2)	1269.7	5 3	1487.59	(1/2,3/2)$^-$
		1632.3	9 3	1124.90	1/2$^+$,3/2$^+$,5/2$^+$
		1730.4	7	1026.836	3/2$^+$
		1940.1 1	100 9	817.099	3/2$^-$
		2404.9 2	31 6	352.234	3/2$^-$
2767.95	(1/2$^+$,3/2,5/2$^-$)	1623.8	67 30	1144.08	(5/2)$^+$
		2415.8 4	100 33	352.234	3/2$^-$
2808.57	(1/2,3/2,5/2$^-$)	1320.9	26 12	1487.59	(1/2,3/2)$^-$
		1641.3	32 16	1167.12	(3/2$^+$)
		1991.8	80 40	817.099	3/2$^-$
		2456.2	100 20	352.234	3/2$^-$
2824.98	(1/2,3/2)$^-$	1280.8 1	11 1	1544.13	(3/2$^-$,5/2$^-$)
		1337.5	3 1	1487.59	(1/2,3/2)$^-$
		1422.1	6 2	1402.90	(5/2$^-$)
		1798.2	18 2	1026.836	3/2$^+$

Adopted Levels, Gammas (continued)

γ(^{149}Gd) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ[&]	α[a]	Comments
2824.98	(1/2,3/2)⁻	2007.9 *1*	100 *3*	817.099	3/2⁻	E2(+M1)[@]	>2	1.03×10^{-3} *3*	
		2472.7 *2*	13 *2*	352.234	3/2⁻				
2830.6	(1/2,3/2,5/2⁻)	2478.3	100	352.234	3/2⁻				
2856.7	(21/2,23/2,25/2⁺)	455.3 *4*	100	2401.37	(21/2)⁺				E_γ: unweighted average of 455.7 *2* from (α,2nγ) and 454.9 *2* from (α,5nγ). Mult.: δ(Q/D)=−1.3 +*10*−*13* for ΔJ=1 in (α,2nγ), but (Q), ΔJ=2 from (α,5nγ). However, A_2 and A_4 in (α,2nγ) and (α,5nγ) are similar and consistent, also with ΔJ=2 or 0.
2861.84	(1/2⁻,3/2)	1656.2	40 *20*	1205.666	(1/2)⁻				
		1694.7	60 *40*	1167.12	(3/2⁺)				
		1835.0	50 *16*	1026.836	3/2⁺				
		2044.7	34 *16*	817.099	3/2⁻				
		2696.8	100 *40*	164.986	5/2⁻				
2913.07	(1/2,3/2)	1368.9	15 *3*	1544.13	(3/2⁻,5/2⁻)				
		1425.6 *3*	21 *6*	1487.59	(1/2,3/2)⁻				
		1707.5 *3*	9 *3*	1205.666	(1/2)⁻				
		1788.1	9 *3*	1124.90	1/2⁺,3/2⁺,5/2⁺				
		2560.8 *1*	100 *6*	352.234	3/2⁻				
2918.21	(1/2⁻,3/2,5/2⁻)	1515.3	100 *50*	1402.90	(5/2⁻)				
		2753.2	60 *20*	164.986	5/2⁻				
2922.73	(1/2,3/2)	1755.6	23 *20*	1167.12	(3/2⁺)				
		1895.9	7 *4*	1026.836	3/2⁺				
		2105.6 *3*	100 *20*	817.099	3/2⁻				
2961.50	(5/2⁻,3/2,1/2⁻)	1755.8	77 *30*	1205.666	(1/2)⁻				
		2796.5	100 *33*	164.986	5/2⁻				
		2961.4[c]	<100	0.0	7/2⁻				
2977.72	(1/2⁻,3/2)	1574.8	86 *28*	1402.90	(5/2⁻)				
		1810.6 *2*	100 *14*	1167.12	(3/2⁺)				
		1852.8	28 *14*	1124.90	1/2⁺,3/2⁺,5/2⁺				
		1950.9	23 *11*	1026.836	3/2⁺				
		2160.6	33 *13*	817.099	3/2⁻				
		2812.7	57 *14*	164.986	5/2⁻				
2999.66	(3/2)	1344.5	4.2 *21*	1655.19	(3/2)⁺				
		1402.4	1.9 *11*	1597.30	(1/2,3/2,5/2⁻)				
		1512.1 *2*	19 *4*	1487.59	(1/2,3/2)⁻				
		1651.0	1.7 *11*	1348.72	(1/2⁻,3/2,5/2⁻)				
		1794.1	3.5 *17*	1205.666	(1/2)⁻				
		1855.6	6 *4*	1144.08	(5/2)⁺				
		1874.6 *1*	63 *4*	1124.90	1/2⁺,3/2⁺,5/2⁺				
		1972.9 *2*	38 *4*	1026.836	3/2⁺				
		2182.6 *1*	100 *6*	817.099	3/2⁻				

γ(^{149}Gd) (continued)

E_i(level)	J_i^π	E_γ†	I_γ†	E_f	J_f^π	Mult.‡	Comments
2999.66	(3/2)	2647.6	48 *2*	352.234	3/2⁻		
		2834.7	6 *2*	164.986	5/2⁻		
3003.43	(1/2⁻,3/2)	1797.8	25 *13*	1205.666	(1/2)⁻		
		1878.5	100 *25*	1124.90	1/2⁺,3/2⁺,5/2⁺		
		1976.6	38 *25*	1026.836	3/2⁺		
		2186.3	38 *25*	817.099	3/2⁻		
		2838.4	38 *25*	164.986	5/2⁻		
3021.18	(3/2)	1366.0	13 *7*	1655.19	(3/2)⁺		
		1877.1	20 *13*	1144.08	(5/2)⁺		
		1896.3	17 *6*	1124.90	1/2⁺,3/2⁺,5/2⁺		
		1994.4	20 *7*	1026.836	3/2⁺		
		2204.1	20 *7*	817.099	3/2⁻		
		2669.1	100 *13*	352.234	3/2⁻		
		2856.0 *2*	60 *13*	164.986	5/2⁻		
3057.0	(1/2⁻,3/2)	2892.0 *4*	100	164.986	5/2⁻		
3070.82	(1/2⁻,3/2)	2253.7	100 *27*	817.099	3/2⁻		
		2905.8	66 *24*	164.986	5/2⁻		
3079.8	(1/2,3/2)	1912.7 *3*	100	1167.12	(3/2⁺)		
3084.7	(23/2⁺)	683.3 *2*	100	2401.37	(21/2)⁺	D+Q	Mult.: $\gamma(\theta)$ in (α,5nγ) suggests ΔJ=1 transition with large δ value which would indicate mult=M1+E2.
3099.77	(1/2⁻,3/2)	2073.0	7 *2*	1026.836	3/2⁺		
		2282.6 *1*	100 *7*	817.099	3/2⁻		
		2935.1 *3*	26 *5*	164.986	5/2⁻		
3124.05	(1/2,3/2)	1918.4	8 *4*	1205.666	(1/2)⁻		
		2097.1	27 *7*	1026.836	3/2⁺		
		2771.8 *1*	100 *13*	352.234	3/2⁻		
		2959.0[c]	≤20	164.986	5/2⁻		
3134.55	(23/2⁻)	733.1 *4*	51 *1*	2401.37	(21/2)⁺	D	E_γ: from (α,5nγ). I_γ: from (^{30}Si,5nγ). Other: 61 *7* from (α,5nγ).
		750.7 *2*	100 *1*	2383.66	(19/2)⁻	Q	E_γ: weighted average of 750.7 *2* from (α,2nγ) and 750.8 *5* from (α,5nγ). I_γ: from (^{30}Si,5nγ). Other: 100 *10* from (α,5nγ).
3149.35	(1/2,3/2)	1943.7	12 *8*	1205.666	(1/2)⁻		
		2024.4	32 *18*	1124.90	1/2⁺,3/2⁺,5/2⁺		
		2797.1	100 *20*	352.234	3/2⁻		
3175.62	(1/2⁻,3/2)	1772.7	20 *10*	1402.90	(5/2⁻)		
		1826.9	10 *4*	1348.72	(1/2⁻,3/2,5/2⁻)		
		1970.0	40 *10*	1205.666	(1/2)⁻		
		2008.5	30 *20*	1167.12	(3/2⁺)		
		2050.7 *4*	50 *20*	1124.90	1/2⁺,3/2⁺,5/2⁺		
		2148.8	40 *10*	1026.836	3/2⁺		
		2358.5	8 *5*	817.099	3/2⁻		
		2823.3 *2*	90 *20*	352.234	3/2⁻		
		3010.6 *3*	100 *20*	164.986	5/2⁻		

Adopted Levels, Gammas (continued)

$\gamma(^{149}Gd)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	α[a]	Comments
3201.41	(3/2,1/2⁻)	1657.3	48 18	1544.13	(3/2⁻,5/2⁻)			
		1798.5	60 40	1402.90	(5/2⁻)			
		2034.3	100 60	1167.12	(3/2⁺)			
		2076.4	80 20	1124.90	1/2⁺,3/2⁺,5/2⁺			
		2384.3	32 12	817.099	3/2⁻			
		2849.2	36 14	352.234	3/2⁻			
		3036.4 5	60 20	164.986	5/2⁻			
		3201.2[c]	<40	0.0	7/2⁻			
3206.44	(3/2)	1592.4	100 40	1614.04	3/2⁺			
		1662.3	40 20	1544.13	(3/2⁻,5/2⁻)			
		1718.9	20 12	1487.59	(1/2,3/2)⁻			
		1803.5	34 18	1402.90	(5/2⁻)			
		2000.8	40 20	1205.666	(1/2)⁻			
		2062.3	22 14	1144.08	(5/2)⁺			
		2179.6	100 20	1026.836	3/2⁺			
		2389.3 3	100 20	817.099	3/2⁻			
		2854.2	60 20	352.234	3/2⁻			
		3041.4	40 20	164.986	5/2⁻			
3227.74	(23/2⁺)	703.6 2	100 2	2524.09	(21/2)⁻	E1	2.26×10^{-3} 3	E_γ: weighted average of 703.5 2 from (α,2nγ) and 703.6 2 from (α,5nγ). I_γ: from (^{30}Si,5nγ). Other: 100 10 in (α,5nγ). Mult.: from ce and γ(θ) in (α,2nγ) and γ(θ,pol) in (α,5nγ) with ΔJ=1.
		826.4 4	15 2	2401.37	(21/2)⁺	(D+Q)		E_γ: from (α,5nγ). I_γ: weighted average of 13.9 17 from (^{30}Si,5nγ) and 15.8 19 from (α,5nγ).
3231.13	(1/2⁻,3/2)	2414.0	11 7	817.099	3/2⁻			
		2878.9 3	100 28	352.234	3/2⁻			
		3066.1	13 7	164.986	5/2⁻			
3258.38	(1/2,3/2)	2231.5	100 25	1026.836	3/2⁺			
		2441.3	63 29	817.099	3/2⁻			
		2906.1	58 29	352.234	3/2⁻			
3272.95	(1/2,3/2)	2246.1	47 23	1026.836	3/2⁺			
		2455.8	100 33	817.099	3/2⁻			
		2920.7	33 20	352.234	3/2⁻			
3294.56	(25/2⁺)	893.2 1	100	2401.37	(21/2)⁺	Q		E_γ: weighted average of 893.0 2 from (α,2nγ) and 893.2 1 from (α,5nγ).
3294.9	(1/2,3/2)	2942.6	100	352.234	3/2⁻			
3313.58	(3/2⁻)	1699.5	3 1	1614.04	3/2⁺			
		1769.4	2 1	1544.13	(3/2⁻,5/2⁻)			
		1826.0	10 2	1487.59	(1/2,3/2)⁻			
		2108.2 3	10 2	1205.666	(1/2)⁻			
		2188.6	3 1	1124.90	1/2⁺,3/2⁺,5/2⁺			

γ(^{149}Gd) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	α[a]	Comments
3313.58	(3/2−)	2496.4 *2*	12 *2*	817.099	3/2−			
		2961.3	100 *4*	352.234	3/2−	(M1,E2)[@]	0.00116 *7*	
		3148.5	1.7 *6*	164.986	5/2−			
3319.04	(1/2−,3/2)	1916.1	100 *50*	1402.90	(5/2−)			
		2966.8	55 *18*	352.234	3/2−			
		3154.0 *5*	68 *18*	164.986	5/2−			
3340.63	(1/2+,3/2)	2135.0	67 *33*	1205.666	(1/2)−			
		2196.5	100 *33*	1144.08	(5/2)+			
		2523.5	90 *33*	817.099	3/2−			
3365.23	(3/2)	1877.7	8 *4*	1487.59	(1/2,3/2)−			
		2221.1	4.0 *24*	1144.08	(5/2)+			
		2548.1	12 *4*	817.099	3/2−			
		3200.2 *2*	100 *8*	164.986	5/2−			
3384.7	(1/2,3/2)	3032.4	100	352.234	3/2−			
3387.32	(27/2+)	159.6 *1*	100 *5*	3227.74	(23/2+)	E2	0.478 *7*	B(E2)(W.u.)=11.8 +*11*−*9* E_γ: weighted average of 159.4 *2* from (α,2nγ) and 159.6 *1* from (α,5nγ). Mult.: Q, ΔJ=2 from γ(θ) in (α,2nγ) and (α,5nγ).
		863.0 *4*	16 *1*	2524.09	(21/2)−	(E3)	0.00851 *12*	B(E3)(W.u.)=42.0 +*50*−*42* E_γ: reported in (α,5nγ) only.
3403.43	(1/2−,3/2)	1859.3	100 *33*	1544.13	(3/2−,5/2−)			
		1915.8	100 *33*	1487.59	(1/2,3/2)−			
		2586.3	100 *33*	817.099	3/2−			
		3051.2	60 *25*	352.234	3/2−			
		3238.4	50 *17*	164.986	5/2−			
3418.82	(1/2−,3/2)	1931.0	55 *27*	1487.59	(1/2,3/2)−			
		2212.9	100 *32*	1205.666	(1/2)−			
		3066.3	73 *32*	352.234	3/2−			
		3254.5	68 *32*	164.986	5/2−			
3431.26	(1/2−,3/2)	3078.9	100 *33*	352.234	3/2−			
		3266.4 *4*	53 *13*	164.986	5/2−			
3442.84	(1/2,3/2)	2317.9	100 *37*	1124.90	1/2+,3/2+,5/2+			
		2625.7	53 *26*	817.099	3/2−			
		3090.6	42 *21*	352.234	3/2−			
3466.84	(1/2−,3/2)	2440.0	58 *33*	1026.836	3/2+			
		2649.7	83 *42*	817.099	3/2−			
		3301.8	100 *50*	164.986	5/2−			
3473.24	(1/2−,3/2)	2446.4	14 *8*	1026.836	3/2+			
		2656.1	20 *3*	817.099	3/2−			
		3308.2 *3*	100 *22*	164.986	5/2−			
3486.1	(1/2,3/2)	2319.0	59 *1*	1167.12	(3/2+)			
		3133.9 *5*	100 *1*	352.234	3/2−			
3499.65	(1/2−,3/2)	3147.0	90 *40*	352.234	3/2−			

$\gamma(^{149}Gd)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ[&]	α[a]	Comments
3499.65	(1/2⁻,3/2)	3335.0	100 *30*	164.986	5/2⁻				
3516.2	(1/2,3/2)	3163.9 *4*	100	352.234	3/2⁻				
3535.13	(3/2⁺)	2508.3	18 *10*	1026.836	3/2⁺				
		2718.0	18 *10*	817.099	3/2⁻				
		3182.8 *4*	100 *25*	352.234	3/2⁻				
		3370.1	20 *10*	164.986	5/2⁻				
3543.9	(1/2⁻,3/2)	3378.9 *4*	100	164.986	5/2⁻				
3611.73	(25/2)⁻	383.7	12.3 *4*	3227.74	(23/2⁺)	D			
		1087.7 *1*	100.0 *11*	2524.09	(21/2)⁻	E2		2.31×10^{-3} *3*	
3632.35	(27/2⁻)	(21)		3611.73	(25/2)⁻				
		245.1 *2*	41.9 *3*	3387.32	(27/2⁺)	(E1)		0.0267 *4*	B(E1)(W.u.)=4.88×10^{-6} Mult.: D from $\gamma(\theta)$ in (α,5nγ) and (^{30}Si,5nγ).
		337.8 *2*	55.4 *12*	3294.56	(25/2⁺)	(E1)		0.01186 *17*	B(E1)(W.u.)=2.47×10^{-6} Mult.: D from $\gamma(\theta)$ in (α,5nγ) and (^{30}Si,5nγ).
		497.3	100.0 *21*	3134.55	(23/2⁻)	(E2)		0.01415 *20*	B(E2)(W.u.)=0.283 E_γ: reported in (^{30}Si,5nγ) only.
3765.5	(29/2)	378.2 *3*	100	3387.32	(27/2⁺)	D			
4054.7	(29/2⁻)	422.5	100	3632.35	(27/2⁻)	D			
4324.0?	(29/2⁻)	712.3[c] *2*	100	3611.73	(25/2)⁻	Q			
4340.4	(31/2⁻)	285.6	22 *1*	4054.7	(29/2⁻)	D			
		708.0	100 *3*	3632.35	(27/2⁻)	(Q)			
4343.0	(29/2⁺)	955.6	100	3387.32	(27/2⁺)	D+Q			
4571.8?	(31/2)	248.1[c] *3*	100	4324.0?	(29/2⁻)	(D)			
4719.7	(33/2⁺)	376.6	5.7 *4*	4343.0	(29/2⁺)	(Q)			
		379.4	100 *1*	4340.4	(31/2⁻)	D			
4801.8	(33/2⁻)	461.0	10.6 *4*	4340.4	(31/2⁻)	D+Q			
		747.4	100 *4*	4054.7	(29/2⁻)	(Q)			
5052.6	(35/2⁻)	250.8	18.2 *11*	4801.8	(33/2⁻)	D+Q			
		712.3	100.0 *5*	4340.4	(31/2⁻)	(Q)			
5300.8	(37/2⁻)	248.0	69.3 *3*	5052.6	(35/2⁻)	D			
		498.8	100 *5*	4801.8	(33/2⁻)	(Q)			
5462.9	(37/2⁺)	410.5	22.2 *4*	5052.6	(35/2⁻)	D			
		743.2	100.0 *8*	4719.7	(33/2⁺)	(Q)			
5634.2	(41/2⁻)	333.2	100	5300.8	(37/2⁻)	(Q)			
5739.4	(39/2⁻)	105	10	5634.2	(41/2⁻)				
		438.4	100	5300.8	(37/2⁻)	D+Q	+0.16 *2*		
		687	52	5052.6	(35/2⁻)				
6099.3	(41/2⁺)	359.6	28.9 *2*	5739.4	(39/2⁻)	D			
		636.6	100 *2*	5462.9	(37/2⁺)	(Q)			
6265.4	(45/2⁻)	631.3	100	5634.2	(41/2⁻)				
6299.8?	(43/2⁻)	667[c]	100	5634.2	(41/2⁻)				
6470.7	(45/2⁺)	205.4	4.9 *5*	6265.4	(45/2⁻)				
		371.4	100 *1*	6099.3	(41/2⁺)	(Q)			

$\gamma(^{149}Gd)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.‡	δ&	α[a]	Comments
6504?	(47/2−)	240[c]	100	6265.4	(45/2−)				
6656.9	(49/2+)	186.2	100	6470.7	(45/2+)	(E2)		0.282 *4*	B(E2)(W.u.)=12.7 *+18−14*
6786.5?	(47/2+)	317[c]	100	6470.7	(45/2+)				
7071.7?	(51/2+)	416[c]	100	6656.9	(49/2+)				
7742.0	(51/2)	1085 *1*		6656.9	(49/2+)				
7822.0	(53/2+)	1165.3	100	6656.9	(49/2+)	(Q)			
7824.9	(51/2−)	1168.0	100	6656.9	(49/2+)	D			
7997.1	(53/2−)	172.2	100	7824.9	(51/2−)	(M1(+E2))#	−0.02 *2*	0.433 *6*	
8218.1	(53/2+)	1560.9	100	6656.9	(49/2+)	(Q)			
8433.8	(55/2+)	215.4[b]	13[b] *1*	8218.1	(53/2+)	D			
		611.8	100 *1*	7822.0	(53/2+)	(D+Q)			
8459.0	(51/2−)	1802 *1*		6656.9	(49/2+)				I_γ: 0.005 *2* relative to Iγ(857)=1.0 in SD-1 band.
8465.8	(47/2−)	1995 *1*		6470.7	(45/2+)				I_γ: 0.006 *3* relative to Iγ(857)=1.0 in SD-1 band.
8557.5	(57/2+)	123.3	31 *1*	8433.8	(55/2+)	D			
		735.8	100 *1*	7822.0	(53/2+)	(Q)			
8658.0	(51/2−)	2001 *1*		6656.9	(49/2+)				I_γ: 0.005 *3* relative to Iγ(857)=1.0 in SD-1 band.
8940.9	(57/2−)	507.1	8.2 *2*	8433.8	(55/2+)	D			
		943.8	100 *1*	7997.1	(53/2−)	(Q)			
9055.8	(49/2+)	2585 *1*		6470.7	(45/2+)				I_γ: 0.005 *2* relative to Iγ(857)=1.0 in SD-1 band.
9273.6	(57/2−)	1276.4	100	7997.1	(53/2−)	(Q)			
9326.4	(59/2+)	768.7	100	8557.5	(57/2+)	D+Q			
9438.5	(59/2+)	164.9	25 *1*	9273.6	(57/2−)	D+Q			
		881.1	100 *2*	8557.5	(57/2+)	D+Q			
9502.2	(61/2−)	175.6	12.5 *2*	9326.4	(59/2+)	D			
		561.4	100 *1*	8940.9	(57/2−)	(Q)			
10362.4	(63/2+)	860.1	45 *1*	9502.2	(61/2−)				
		924.0	100 *4*	9438.5	(59/2+)	(Q)			
10510.5	(63/2+)	1008.3	100	9502.2	(61/2−)				
10602.4	(65/2−)	1100.5	100	9502.2	(61/2−)	(Q)			
10851.1	(63/2−)	1348.7	100	9502.2	(61/2−)	D			
10930.9	(65/2−)	568.3	100 *4*	10362.4	(63/2+)				
		1428.7	81 *4*	9502.2	(61/2−)	(Q)			
11012.0	(65/2−)	160.7	48 *2*	10851.1	(63/2−)	D			
		501.4	100 *4*	10510.5	(63/2+)	D			
11200.3	(67/2+)	269.3	18 *1*	10930.9	(65/2−)	D			
		598.1	100 *1*	10602.4	(65/2−)	D			
		838.0	50 *2*	10362.4	(63/2+)	(Q)			
11243.8	(51/2−)	617.8 *1*	0.16 *3*	10626.0	(47/2−)				
		2188 *1*	0.024 *6*	9055.8	(49/2+)				
		2778[c] *2*	<0.005	8465.8	(47/2−)				
		2785[c] *2*	<0.005	8459.0	(51/2−)				
11712.2	(67/2−)	1109.9	100	10602.4	(65/2−)	D			
11908.0	(55/2−)	664.2 *1*	0.68 *7*	11243.8	(51/2−)				

Adopted Levels, Gammas (continued)

$\gamma(^{149}Gd)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]
12268.8	(69/2+)	1068.6	100	11200.3	(67/2+)	(D+Q)
12384.3	(69/2−)	672.1	100 *5*	11712.2	(67/2−)	D
		1183.9	78 *8*	11200.3	(67/2+)	D
		1372.0	55 *8*	11012.0	(65/2−)	(Q)
12469.5	(69/2−)	1867.1	100	10602.4	(65/2−)	(Q)
12581.1	(71/2−)	868.9	100	11712.2	(67/2−)	(Q)
12619.8	(59/2−)	711.8 *1*		11908.0	(55/2−)	
12752.5	(71/2+)	1552.4	100	11200.3	(67/2+)	(Q)
12967.7	(71/2+)	215.4[b]	39[b] *7*	12752.5	(71/2+)	
		583.1	100 *6*	12384.3	(69/2−)	D
		698.9	90 *4*	12268.8	(69/2+)	(D+Q)
		1767.4	59 *4*	11200.3	(67/2+)	(Q)
13189.7	(75/2−)	608.6	100	12581.1	(71/2−)	(Q)
13279.1	(73/2−)	311.4	100	12967.7	(71/2+)	D
13379.5	(63/2−)	759.7 *1*	0.88 *9*	12619.8	(59/2−)	
13567.7	(75/2−)	288.6	100	13279.1	(73/2−)	D
14109.2	(77/2−)	541.4	100 *4*	13567.7	(75/2−)	D
		919.5	74 *4*	13189.7	(75/2−)	D
14187.6	(67/2−)	808.1 *1*	0.96 *10*	13379.5	(63/2−)	
15044.7	(71/2−)	857.1 *1*	1.00	14187.6	(67/2−)	
15163.9	(81/2−)	1054.7	100	14109.2	(77/2−)	(Q)
15951.4	(75/2−)	906.7 *1*	1.05 *10*	15044.7	(71/2−)	
15997.4	(85/2−)	834.1[c]	100	15163.9	(81/2−)	
16908.5	(79/2−)	957.1 *1*	0.98 *10*	15951.4	(75/2−)	
17917.2	(83/2−)	1008.7 *1*	0.95 *10*	16908.5	(79/2−)	
18977.9	(87/2−)	1060.7 *1*	0.90 *9*	17917.2	(83/2−)	
20091.7	(91/2−)	1113.8 *1*	0.83 *8*	18977.9	(87/2−)	
21258.9	(95/2−)	1167.2 *2*		20091.7	(91/2−)	
22480.7	(99/2−)	1221.8 *1*	0.80 *8*	21258.9	(95/2−)	
23757.2	(103/2−)	1276.5 *1*	0.72 *7*	22480.7	(99/2−)	
25089.2	(107/2−)	1332.0 *1*	0.60 *6*	23757.2	(103/2−)	
26476.8	(111/2−)	1387.6 *1*	0.51 *5*	25089.2	(107/2−)	
27921.1	(115/2−)	1444.2 *1*	0.38 *5*	26476.8	(111/2−)	
29421.6	(119/2−)	1500.5 *2*	0.28 *4*	27921.1	(115/2−)	
30979.4	(123/2−)	1557.8 *2*	0.19 *3*	29421.6	(119/2−)	
32595.1	(127/2−)	1615.7 *3*	0.10 *2*	30979.4	(123/2−)	
34267.2	(131/2−)	1672.1 *4*	0.06 *2*	32595.1	(127/2−)	
35997.1	(135/2−)	1729.9 *8*	0.03 *1*	34267.2	(131/2−)	
858.5+x	(67/2+)	858.5 *3*		x	(63/2+)	
1746.7+x	(71/2+)	888.2 *2*		858.5+x	(67/2+)	
2624.8+x	(75/2+)	878.1 *2*	0.40 *6*	1746.7+x	(71/2+)	
3525.8+x	(79/2+)	901.0 *1*	0.44 *6*	2624.8+x	(75/2+)	
4468.1+x	(83/2+)	942.3 *1*		3525.8+x	(79/2+)	

$^{149}_{64}Gd_{85}$-25

Adopted Levels, Gammas (continued)

$\gamma(^{149}Gd)$ (continued)

E_i(level)	J^{π}_i	E_γ†	I_γ†	E_f	J^{π}_f
5455.0+x	(87/2+)	986.9 1		4468.1+x	(83/2+)
6488.0+x	(91/2+)	1033.0 1	0.86 12	5455.0+x	(87/2+)
7569.3+x	(95/2+)	1081.3 1		6488.0+x	(91/2+)
8699.7+x	(99/2+)	1130.4 1	1.00 14	7569.3+x	(95/2+)
9880.6+x	(103/2+)	1180.9 1	1.02 14	8699.7+x	(99/2+)
11113.1+x	(107/2+)	1232.5 1	0.58 10	9880.6+x	(103/2+)
12398.9+x	(111/2+)	1285.8 1	0.66 10	11113.1+x	(107/2+)
13738.6+x	(115/2+)	1339.6 1	0.56 10	12398.9+x	(111/2+)
15133.4+x	(119/2+)	1394.8 2	0.52 10	13738.6+x	(115/2+)
16584.0+x	(123/2+)	1450.6 2	0.42 8	15133.4+x	(119/2+)
18090.7+x	(127/2+)	1506.7 3	0.26 6	16584.0+x	(123/2+)
19654.7+x	(131/2+)	1564.0 3		18090.7+x	(127/2+)
21275.0+x	(135/2+)	1620.3 7		19654.7+x	(131/2+)
649.8+y	J1+2	649.8 4		y	J1≈(57/2+)
1349.6+y	J1+4	699.8 2		649.8+y	J1+2
2098.2+y	J1+6	748.6 2		1349.6+y	J1+4
2897.4+y	J1+8	799.2 2		2098.2+y	J1+6
3751.5+y	J1+10	854.1 2		2897.4+y	J1+8
4647.5+y	J1+12	896.0 2	0.64 16	3751.5+y	J1+10
5600.8+y	J1+14	953.3 2		4647.5+y	J1+12
6605.7+y	J1+16	1004.9 2	0.64 16	5600.8+y	J1+14
7662.4+y	J1+18	1056.7 2	0.64 16	6605.7+y	J1+16
8772.5+y	J1+20	1110.1 2	0.80 16	7662.4+y	J1+18
9935.7+y	J1+22	1163.2 2	0.96 16	8772.5+y	J1+20
11151.2+y	J1+24	1215.5 2	0.96 16	9935.7+y	J1+22
12420.0+y	J1+26	1268.8 2	0.96 16	11151.2+y	J1+24
13742.9+y	J1+28	1322.8 2	1.20 24	12420.0+y	J1+26
15119.7+y	J1+30	1376.8 2	1.12 24	13742.9+y	J1+28
16550.6+y	J1+32	1430.9 3	0.56 16	15119.7+y	J1+30
18036.2+y	J1+34	1485.6 4	0.56 16	16550.6+y	J1+32
19576.4+y	J1+36	1540.2 5		18036.2+y	J1+34
21170.8+y	J1+38	1594.4 7		19576.4+y	J1+36
22818.2+y	J1+40	1647.4 9		21170.8+y	J1+38
725.6+z	J2+2	725.6 4		z	J2≈(63/2+)
1497.5+z	J2+4	771.9 2		725.6+z	J2+2
2315.1+z	J2+6	817.6 2		1497.5+z	J2+4
3180.0+z	J2+8	864.9 2		2315.1+z	J2+6
4092.1+z	J2+10	912.1 2		3180.0+z	J2+8
5052.8+z	J2+12	960.7 2		4092.1+z	J2+10
6058.3+z	J2+14	1005.5 2		5052.8+z	J2+12
7114.5+z	J2+16	1056.2 2		6058.3+z	J2+14
8218.2+z	J2+18	1103.7 2		7114.5+z	J2+16
9369.7+z	J2+20	1151.5 2		8218.2+z	J2+18
10568.7+z	J2+22	1199.0 2		9369.7+z	J2+20
11815.7+z	J2+24	1247.0 2	1.00 5	10568.7+z	J2+22
13110.0+z	J2+26	1294.3 2	0.87 5	11815.7+z	J2+24
14451.6+z	J2+28	1341.5 3	0.72 5	13110.0+z	J2+26
15839.7+z	J2+30	1388.1 3	0.62 5	14451.6+z	J2+28
17274.6+z	J2+32	1434.9 3	0.42 5	15839.7+z	J2+30
18757.1+z	J2+34	1482.5 4	0.22 5	17274.6+z	J2+32
20285.7+z	J2+36	1528.6 8	0.12 5	18757.1+z	J2+34
21860.7+z	J2+38	1575.0 10		20285.7+z	J2+36
755.7+u	J3+2	755.7 4		u	J3≈(63/2−)
1560.6+u	J3+4	804.9 3		755.7+u	J3+2
2415.6+u	J3+6	855.0 3		1560.6+u	J3+4
3323.6+u	J3+8	908.0 2		2415.6+u	J3+6
4283.9+u	J3+10	960.3 2		3323.6+u	J3+8
5299.5+u	J3+12	1015.6 3		4283.9+u	J3+10
6369.4+u	J3+14	1069.9 3		5299.5+u	J3+12
7495.5+u	J3+16	1126.1 3		6369.4+u	J3+14
8678.9+u	J3+18	1183.4 3		7495.5+u	J3+16
9919.8+u	J3+20	1240.9 3		8678.9+u	J3+18
11219.1+u	J3+22	1299.3 3		9919.8+u	J3+20
12576.8+u	J3+24	1357.7 3		11219.1+u	J3+22
13993.9+u	J3+26	1417.0 4		12576.8+u	J3+24
15469.7+u	J3+28	1475.8 4		13993.9+u	J3+26
17004.3+u	J3+30	1534.6 5		15469.7+u	J3+28
18599.3+u	J3+32	1595.0 10		17004.3+u	J3+30
688.1+v	J4+2	688.1 5		v	J4≈(57/2−)
1420.7+v	J4+4	732.6 2		688.1+v	J4+2
2200.9+v	J4+6	780.2 2		1420.7+v	J4+4
3030.7+v	J4+8	829.8 2		2200.9+v	J4+6
3911.7+v	J4+10	881.0 2		3030.7+v	J4+8
4845.2+v	J4+12	933.5 2		3911.7+v	J4+10
5832.3+v	J4+14	987.1 2		4845.2+v	J4+12
6874.3+v	J4+16	1042.0 2		5832.3+v	J4+14
7971.8+v	J4+18	1097.5 2		6874.3+v	J4+16
9126.1+v	J4+20	1154.3 2		7971.8+v	J4+18
10338.1+v	J4+22	1212.0 3		9126.1+v	J4+20
11608.6+v	J4+24	1270.5 3		10338.1+v	J4+22
12937.5+v	J4+26	1328.9 5		11608.6+v	J4+24
14325.9+v	J4+28	1388.3 5		12937.5+v	J4+26
15772.5+v	J4+30	1446.6 4		14325.9+v	J4+28
17278.5+v	J4+32	1506.0 6		15772.5+v	J4+30
18843.7+v	J4+34	1565.2 6		17278.5+v	J4+32
20469.7+v	J4+36	1626.0 10		18843.7+v	J4+34
22155.7+v	J4+38	1686.0 10		20469.7+v	J4+36
802.9+w	J5+2	802.9 3		w	J5

$^{149}_{64}Gd_{85}$-26

$\gamma(^{149}Gd)$ (continued)

E_i(level)	J^π_i	E_γ†	E_f	J^π_f	E_i(level)	J^π_i	E_γ†	E_f	J^π_f
1655.1+w	J5+4	852.2 *4*	802.9+w	J5+2	16178.3+t	J7+28	1494.6 *4*	14683.7+t	J7+26
2557.1+w	J5+6	902.0 *3*	1655.1+w	J5+4	17732.2+t	J7+30	1553.9 *4*	16178.3+t	J7+28
3509.2+w	J5+8	952.1 *2*	2557.1+w	J5+6	19346.7+t	J7+32	1614.5 *7*	17732.2+t	J7+30
4513.0+w	J5+10	1003.8 *4*	3509.2+w	J5+8	747.6+a	J8+2	747.6 *6*	a	J8
5562.7+w	J5+12	1049.7 *4*	4513.0+w	J5+10	1544.3+a	J8+4	796.7 *5*	747.6+a	J8+2
6667.9+w	J5+14	1105.2 *4*	5562.7+w	J5+12	2391.6+a	J8+6	847.3 *4*	1544.3+a	J8+4
7825.1+w	J5+16	1157.2 *3*	6667.9+w	J5+14	3290.1+a	J8+8	898.5 *4*	2391.6+a	J8+6
9034.4+w	J5+18	1209.3 *3*	7825.1+w	J5+16	4240.3+a	J8+10	950.2 *4*	3290.1+a	J8+8
10296.7+w	J5+20	1262.3 *3*	9034.4+w	J5+18	5242.8+a	J8+12	1002.5 *4*	4240.3+a	J8+10
11612.4+w	J5+22	1315.7 *3*	10296.7+w	J5+20	6305.6+a	J8+14	1062.8 *4*	5242.8+a	J8+12
12982.0+w	J5+24	1369.5 *3*	11612.4+w	J5+22	7422.7+a	J8+16	1117.1 *4*	6305.6+a	J8+14
14404.8+w	J5+26	1422.8 *4*	12982.0+w	J5+24	8595.5+a	J8+18	1172.8 *4*	7422.7+a	J8+16
15882.3+w	J5+28	1477.5 *5*	14404.8+w	J5+26	9826.8+a	J8+20	1231.3 *5*	8595.5+a	J8+18
17415.0+w	J5+30	1532.7 *5*	15882.3+w	J5+28	11115.2+a	J8+22	1288.4 *4*	9826.8+a	J8+20
19000.8+w	J5+32	1585.8 *6*	17415.0+w	J5+30	12462.0+a	J8+24	1346.8 *4*	11115.2+a	J8+22
20642.0+w	J5+34	1641.2 *11*	19000.8+w	J5+32	13869.3+a	J8+26	1407.2 *5*	12462.0+a	J8+24
877.8+s	J6+2	877.8 *4*	s	J6	15332.6+a	J8+28	1463.3 *6*	13869.3+a	J8+26
1809.8+s	J6+4	932.0 *3*	877.8+s	J6+2	16864.4+a	J8+30	1531.8 *10*	15332.6+a	J8+28
2795.3+s	J6+6	985.5 *3*	1809.8+s	J6+4	18452.6+a	J8+32	1588.2 *13*	16864.4+a	J8+30
3833.6+s	J6+8	1038.3 *3*	2795.3+s	J6+6	827.6+b	J9+2	827.6 *5*	b	J9
4924.6+s	J6+10	1091.0 *2*	3833.6+s	J6+8	1697.3+b	J9+4	869.7 *4*	827.6+b	J9+2
6067.1+s	J6+12	1142.5 *2*	4924.6+s	J6+10	2621.5+b	J9+6	924.2 *3*	1697.3+b	J9+4
7260.4+s	J6+14	1193.3 *3*	6067.1+s	J6+12	3596.9+b	J9+8	975.4 *3*	2621.5+b	J9+6
8503.3+s	J6+16	1242.9 *3*	7260.4+s	J6+14	4627.3+b	J9+10	1030.4 *3*	3596.9+b	J9+8
9795.2+s	J6+18	1291.9 *3*	8503.3+s	J6+16	5715.8+b	J9+12	1088.5 *3*	4627.3+b	J9+10
11133.3+s	J6+20	1338.1 *3*	9795.2+s	J6+18	6864.0+b	J9+14	1148.2 *4*	5715.8+b	J9+12
12519.5+s	J6+22	1386.1 *3*	11133.3+s	J6+20	8073.3+b	J9+16	1209.3 *4*	6864.0+b	J9+14
13949.5+s	J6+24	1430.0 *4*	12519.5+s	J6+22	9343.3+b	J9+18	1270.0 *4*	8073.3+b	J9+16
15421.8+s	J6+26	1472.3 *5*	13949.5+s	J6+24	10673.9+b	J9+20	1330.6 *4*	9343.3+b	J9+18
16934.9+s	J6+28	1513.1 *6*	15421.8+s	J6+26	12064.0+b	J9+22	1390.1 *3*	10673.9+b	J9+20
18484.3+s	J6+30	1549.4 *8*	16934.9+s	J6+28	13513.0+b	J9+24	1448.9 *4*	12064.0+b	J9+22
874.1+t	J7+2	874.1 *3*	t	J7	15020.6+b	J9+26	1507.6 *5*	13513.0+b	J9+24
1798.7+t	J7+4	924.6 *2*	874.1+t	J7+2	16586.6+b	J9+28	1566.0 *11*	15020.6+b	J9+26
2771.3+t	J7+6	972.6 *4*	1798.7+t	J7+4	855.1+c	J10+2	855.1 *10*	c	J10
3797.2+t	J7+8	1025.9 *5*	2771.3+t	J7+6	1757.5+c	J10+4	902.4 *6*	855.1+c	J10+2
4813.6+t	J7+10	1016.4 *3*	3797.2+t	J7+8	2713.6+c	J10+6	956.1 *6*	1757.5+c	J10+4
5851.5+t	J7+12	1037.9 *3*	4813.6+t	J7+10	3726.2+c	J10+8	1012.6 *5*	2713.6+c	J10+6
6941.4+t	J7+14	1089.9 *3*	5851.5+t	J7+12	4795.8+c	J10+10	1069.6 *5*	3726.2+c	J10+8
8087.0+t	J7+16	1145.6 *3*	6941.4+t	J7+14	5921.9+c	J10+12	1126.1 *5*	4795.8+c	J10+10
9289.4+t	J7+18	1202.4 *3*	8087.0+t	J7+16	7103.5+c	J10+14	1181.6 *5*	5921.9+c	J10+12
10549.4+t	J7+20	1260.0 *3*	9289.4+t	J7+18	8337.5+c	J10+16	1234.0 *6*	7103.5+c	J10+14
11867.8+t	J7+22	1318.4 *3*	10549.4+t	J7+20	9620.0+c	J10+18	1282.5 *6*	8337.5+c	J10+16
13243.4+t	J7+24	1375.5 *3*	11867.8+t	J7+22	10947.1+c	J10+20	1327.1 *7*	9620.0+c	J10+18
14683.7+t	J7+26	1440.3 *4*	13243.4+t	J7+24	12321.0+c	J10+22	1373.8 *8*	10947.1+c	J10+20

Adopted Levels, Gammas (continued)

$\gamma(^{149}Gd)$ (continued)

E_i(level)	J^π_i	E_γ†	E_f	J^π_f	E_i(level)	J^π_i	E_γ†	E_f	J^π_f
13741.3+c	J10+24	1420.3 *10*	12321.0+c	J10+22	4701.7+d	J11+10	1038.0 *8*	3663.7+d	J11+8
15213.0+c	J10+26	1471.7 *8*	13741.3+c	J10+24	5792.5+d	J11+12	1090.8 *8*	4701.7+d	J11+10
16739+c	J10+28	1525.6 *8*	15213.0+c	J10+26	6935.4+d	J11+14	1142.9 *8*	5792.5+d	J11+12
18322+c	J10+30	1583.1 *12*	16739+c	J10+28	8131+d	J11+16	1195.2 *9*	6935.4+d	J11+14
19961+c	J10+32	1639.2 *13*	18322+c	J10+30	9382+d	J11+18	1251.1 *10*	8131+d	J11+16
850.3+d	J11+2	850.3 *10*	d	J11	10688+d	J11+20	1306.7 *7*	9382+d	J11+18
1741.5+d	J11+4	891.2 *10*	850.3+d	J11+2	12049+d	J11+22	1360.6 *15*	10688+d	J11+20
2677.2+d	J11+6	935.7 *9*	1741.5+d	J11+4	13467+d	J11+24	1418.0 *13*	12049+d	J11+22
3663.7+d	J11+8	986.5 *9*	2677.2+d	J11+6	14941+d	J11+26	1474.0 *15*	13467+d	J11+24

† From ^{149}Tb ε decay (4.12 h) for low spin levels (J≤9/2) and from $^{124}Sn(^{30}Si,5n\gamma)$, $(\alpha,5n\gamma)$ or $(\alpha,2n\gamma)$ for high-spin levels with weighted averages taken where multiple values of similar precisions are available. All γ rays from levels above 5000 and for SD-band levels are from $^{124}Sn(^{30}Si,5n\gamma)$. Quoted values of intensities are photon branching ratios. For SD bands populated in $(^{30}Si,5n\gamma)$, values are relative γ-ray intensities within each band, normalized to ≈1 for one of the most intense γ rays in that band.

‡ Unless otherwise stated, assignments are from $\gamma(\theta$,pol) in $(\alpha,5n\gamma)$, $\gamma(\theta)$ and ce in $(\alpha,2n\gamma)$, and $\gamma(\theta)$ in $(^{30}Si,5n\gamma)$. From RUL for E2 and M2, mult=Q is most likely E2. In many cases 1991Fl02 in $(^{30}Si,5n\gamma)$ give unique multipolarity assignments, but their $\gamma(\theta)$ which give only A_2 values cannot distinguish between different possible assignments.

\# From intensity balance in $(^{30}Si,5n\gamma)$.

@ From ce and/or $\gamma\gamma(\theta)$ data in ^{149}Tb ε (4.12 h).

& From ce and/or $\gamma\gamma(\theta)$ data in ^{149}Tb ε (4.12 h), unless otherwise stated.

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

[b] Multiply placed with intensity suitably divided.

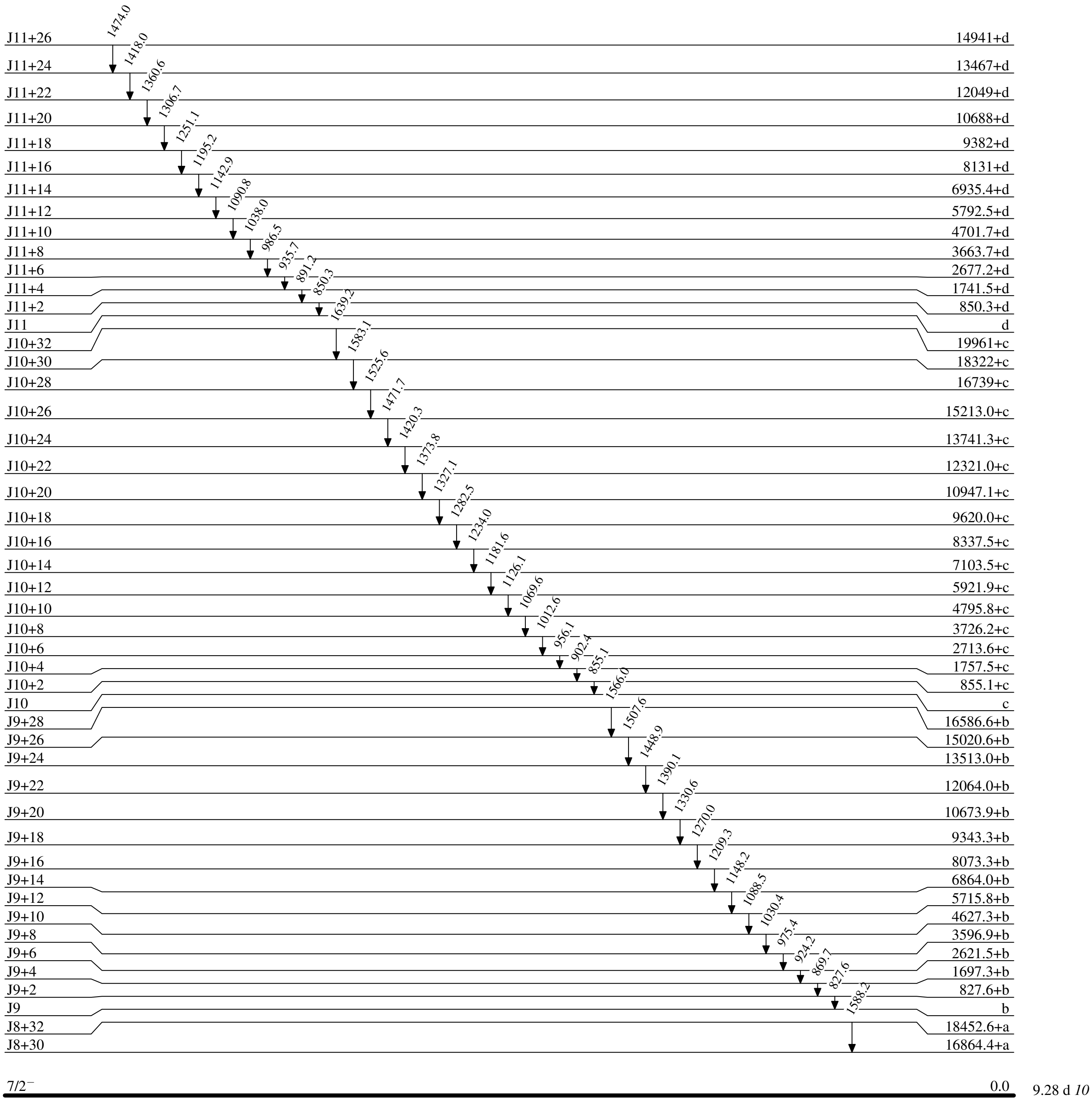
[c] Placement of transition in the level scheme is uncertain.

$^{149}_{64}Gd_{85}$-28

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

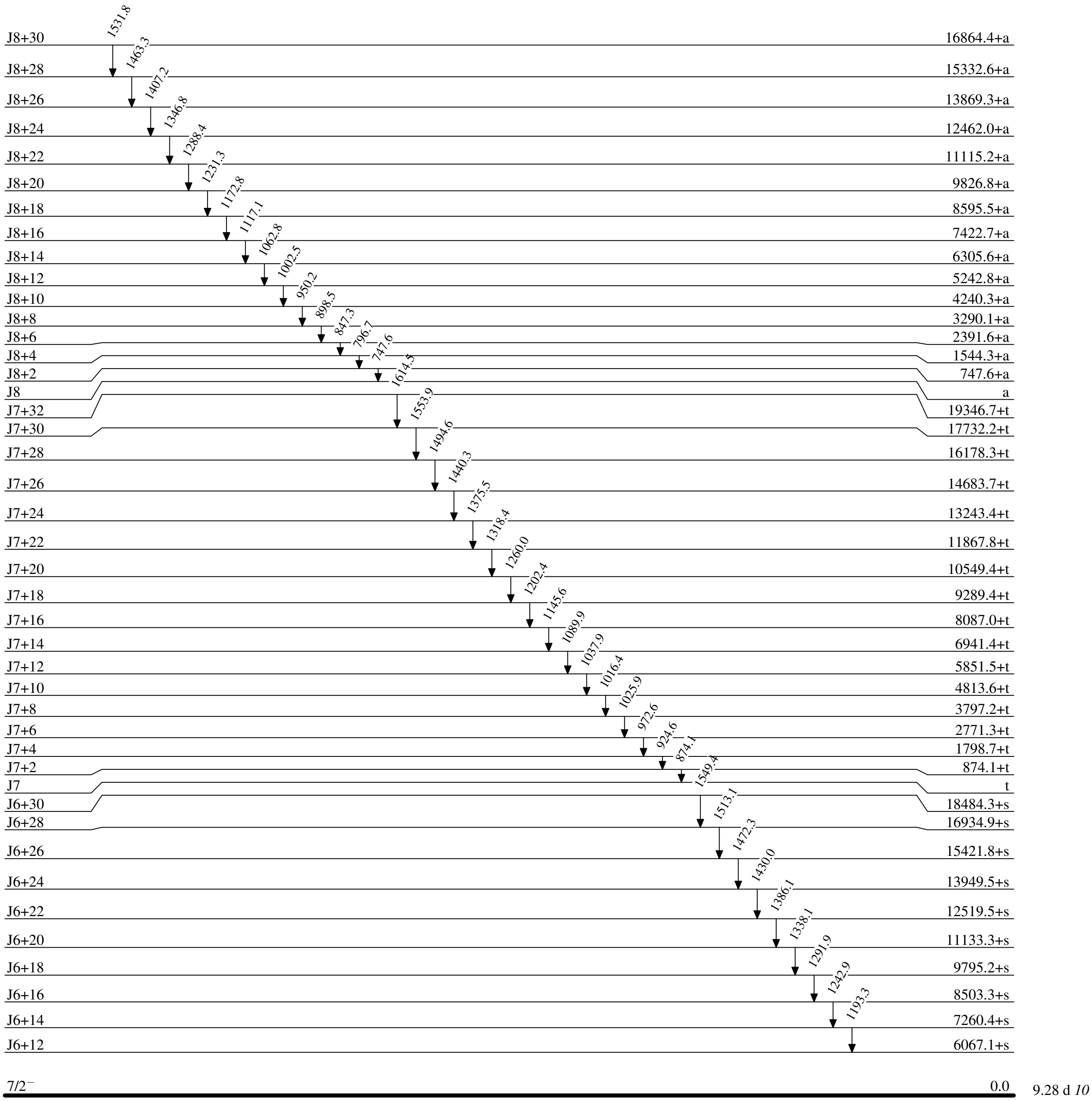


$^{149}_{64}Gd_{85}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

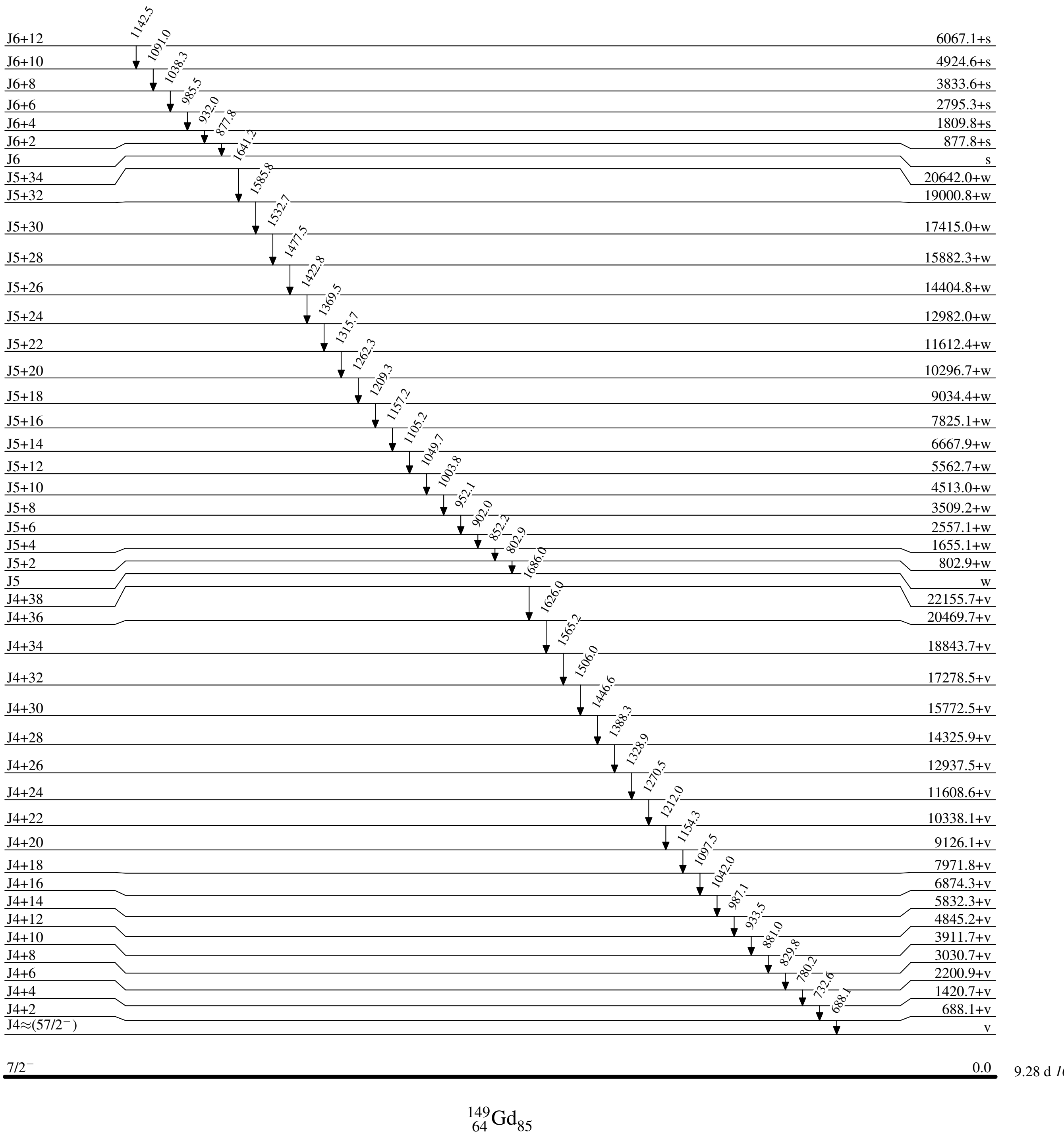


$^{149}_{64}Gd_{85}$

Adopted Levels, Gammas

Level Scheme (continued)

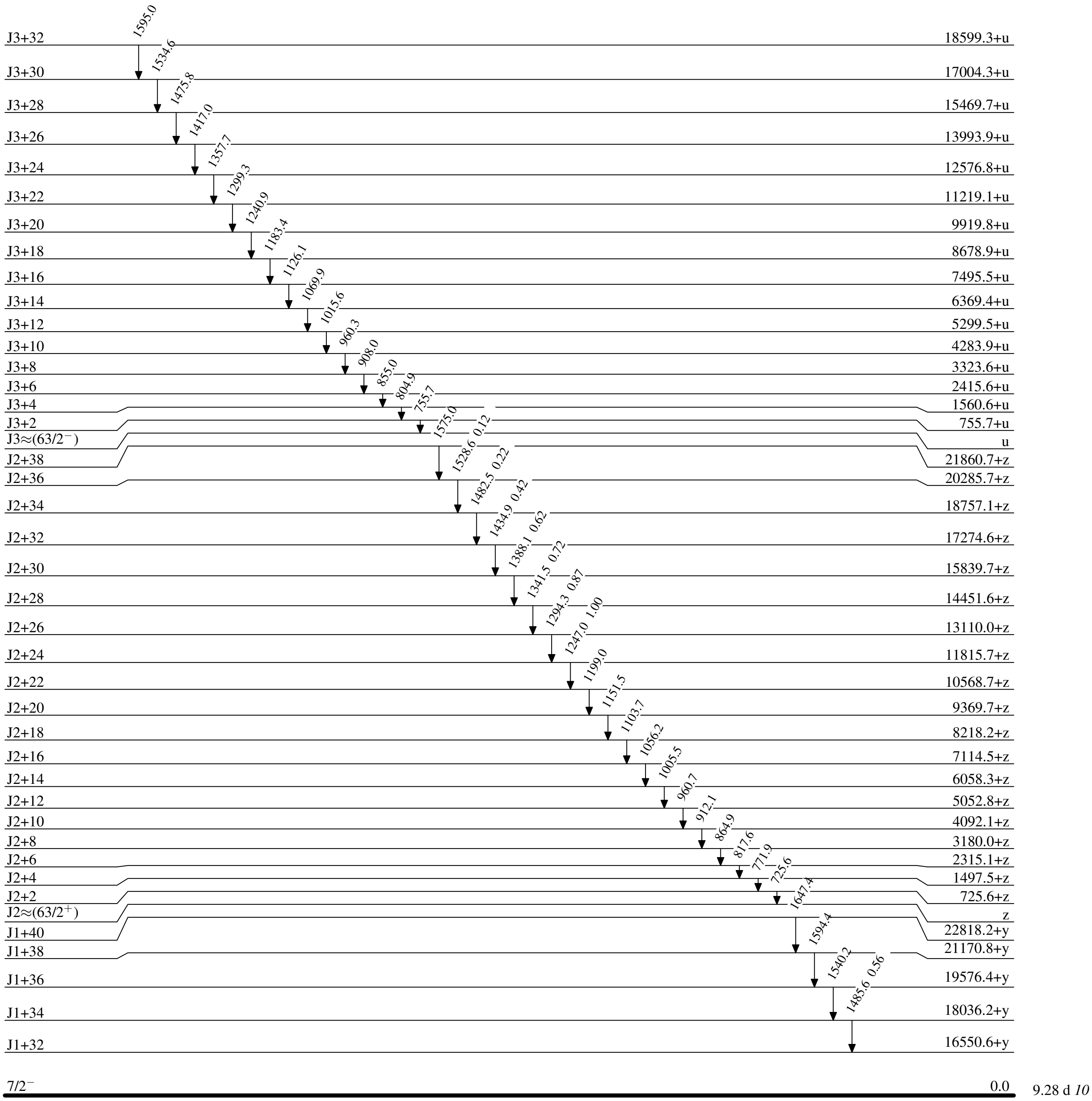
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

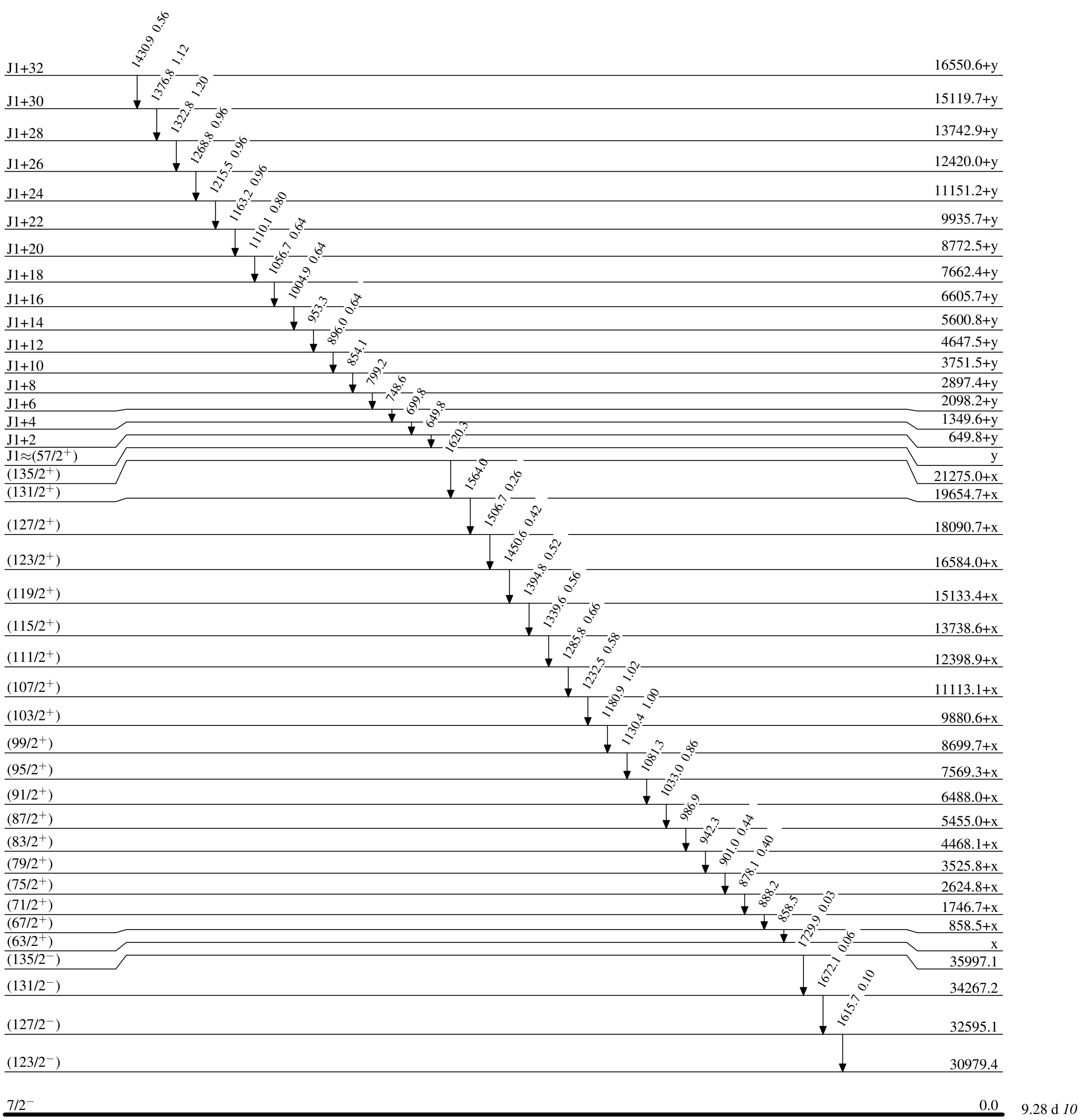


$^{149}_{64}\mathrm{Gd}_{85}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{149}_{64}Gd_{85}$

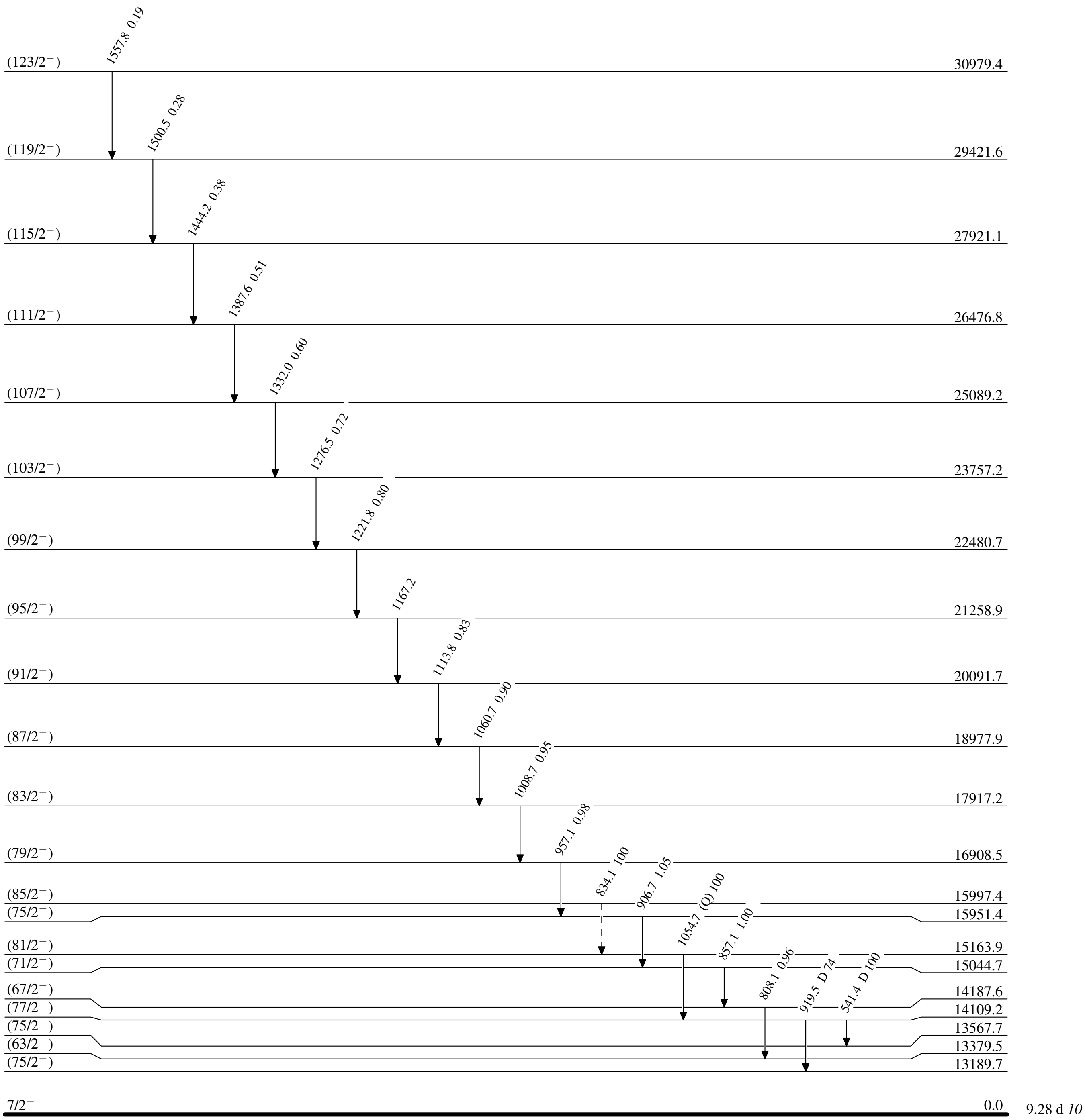
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

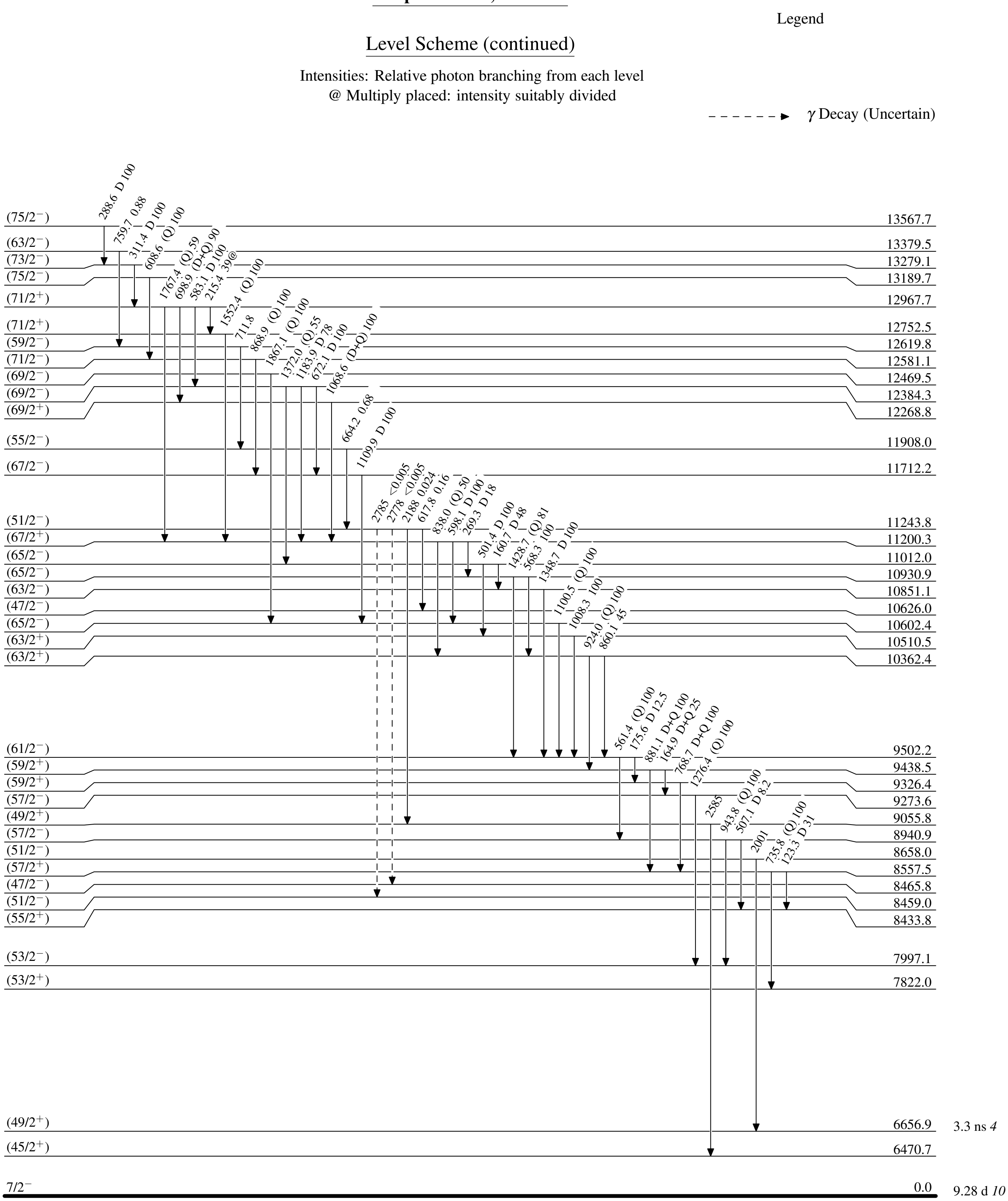


$^{149}_{64}Gd_{85}$

Adopted Levels, Gammas

Level Scheme (continued)

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

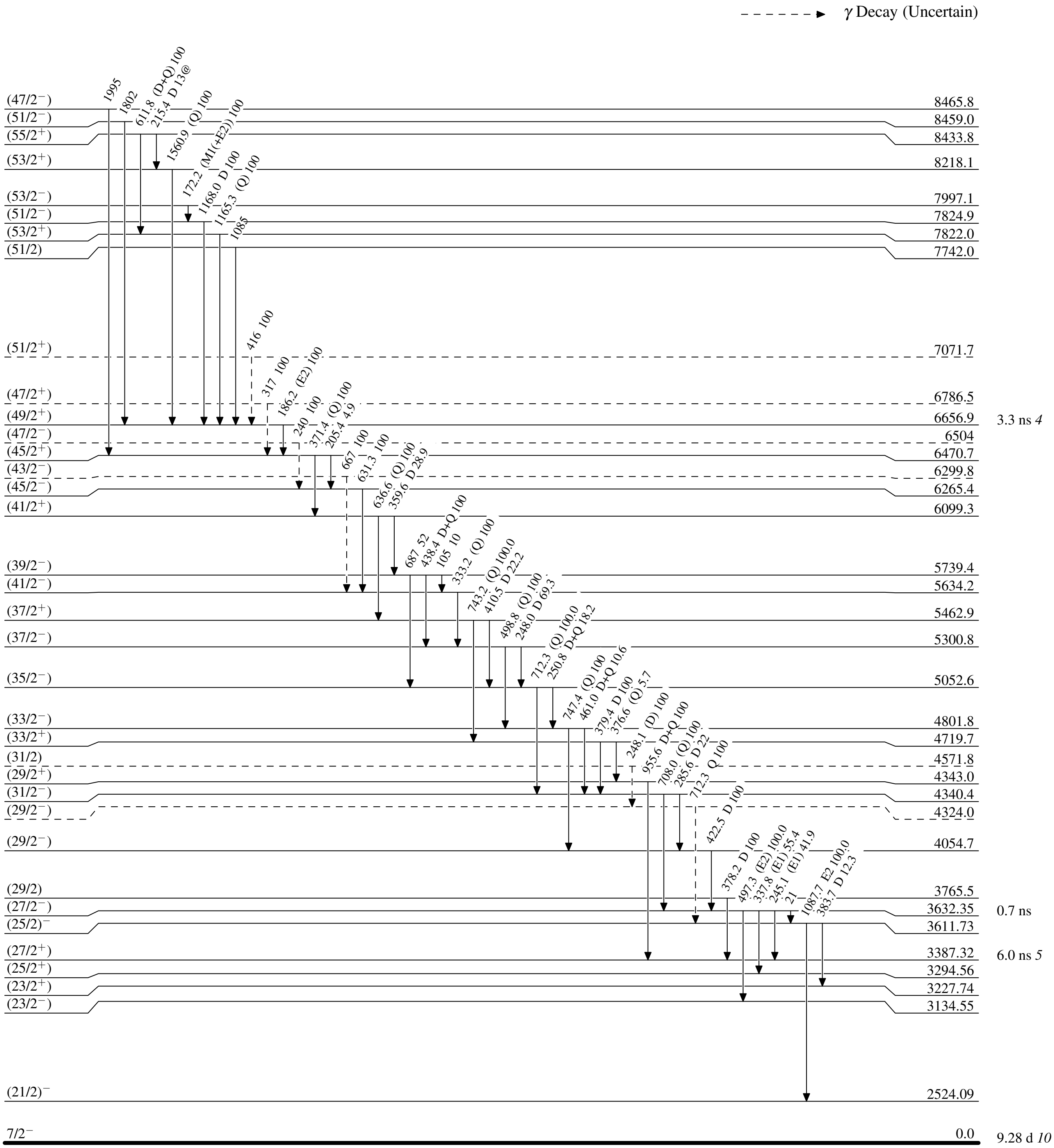


$^{149}_{64}Gd_{85}$

Adopted Levels, Gammas

Level Scheme (continued)

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



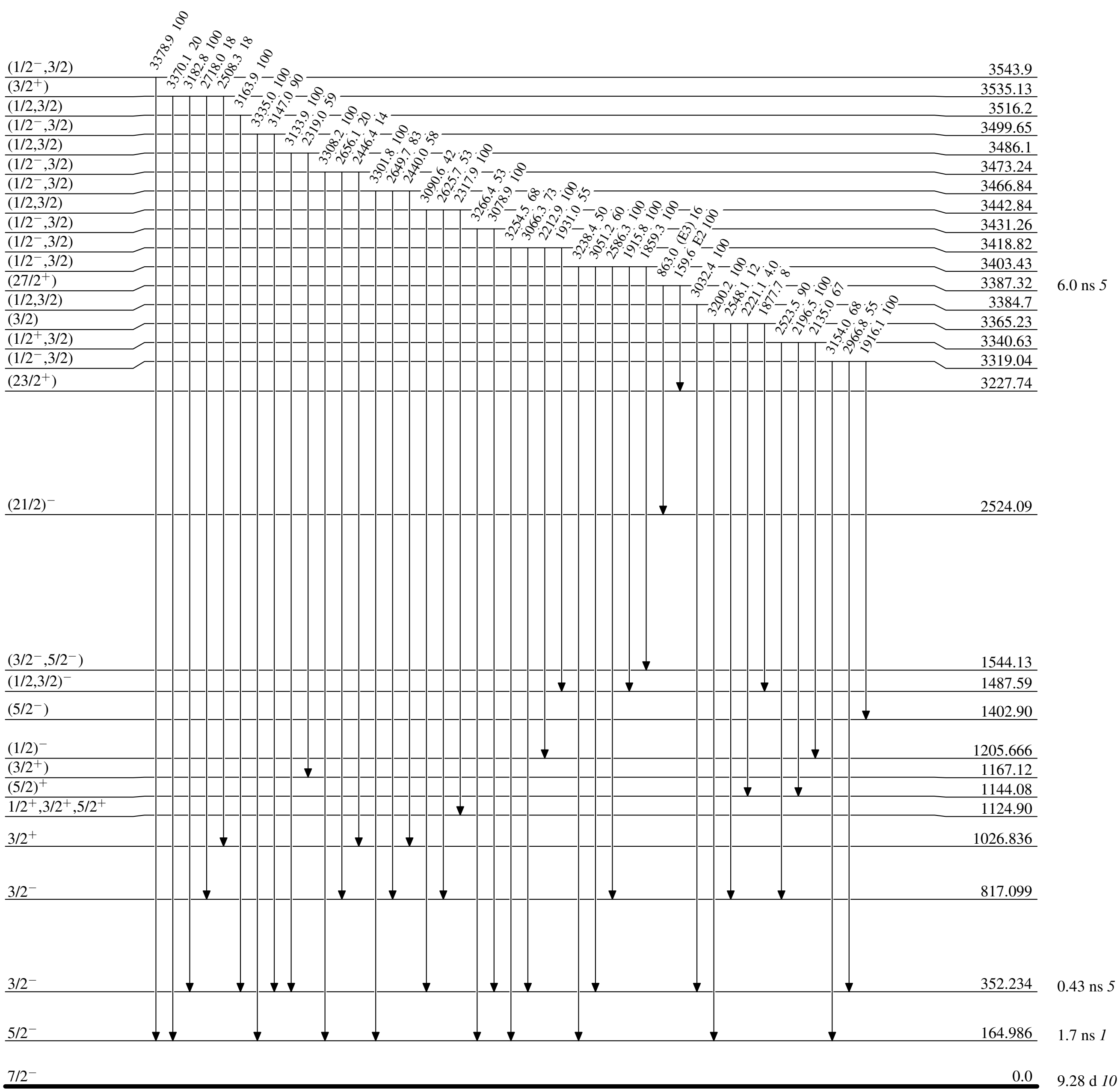
$^{149}_{64}Gd_{85}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

@ Multiply placed: intensity suitably divided



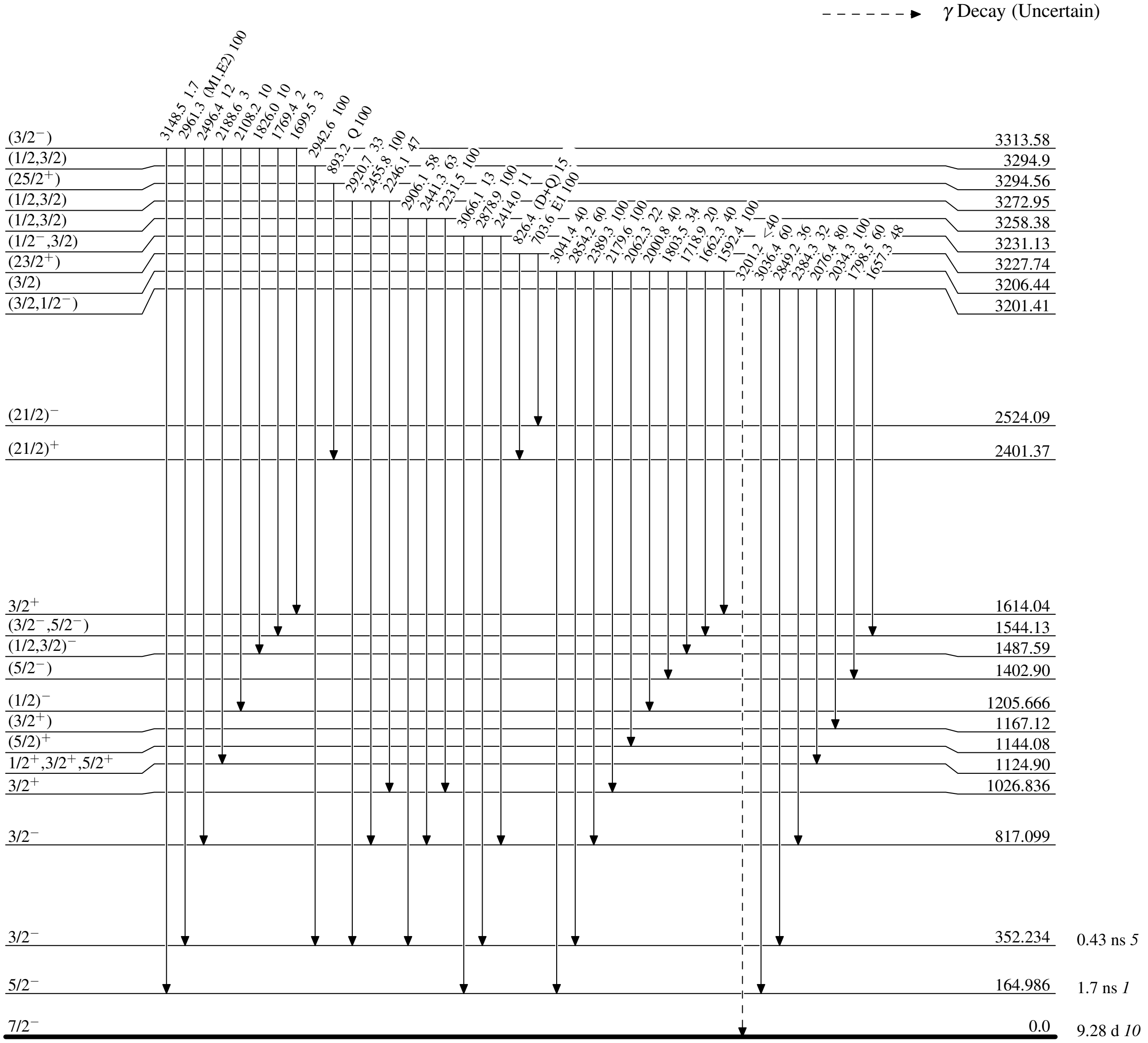
$^{149}_{64}Gd_{85}$

Adopted Levels, Gammas

Level Scheme (continued)

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

Legend



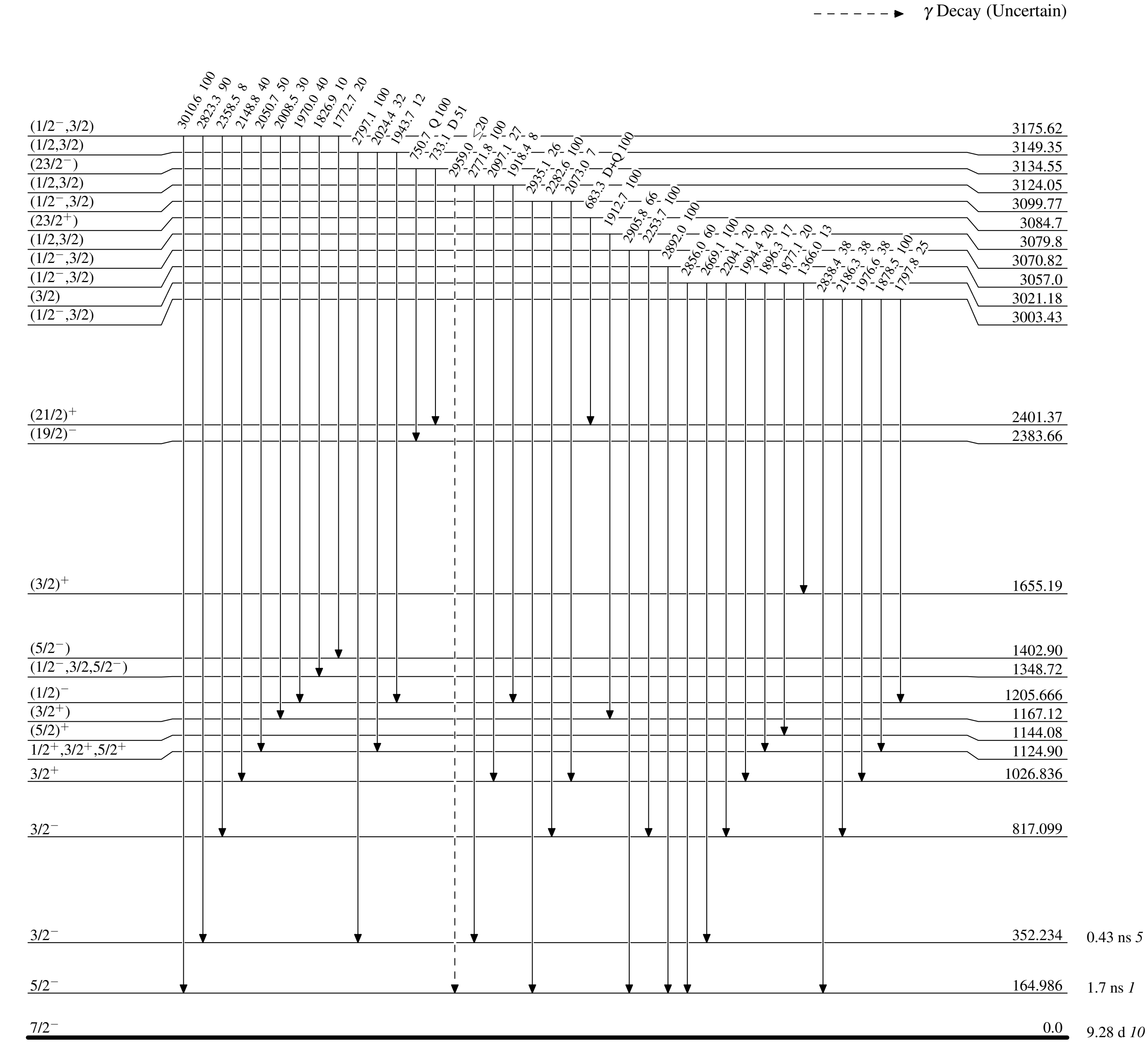
$^{149}_{64}Gd_{85}$

Adopted Levels, Gammas

Level Scheme (continued)

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

Legend



$^{149}_{64}Gd_{85}$

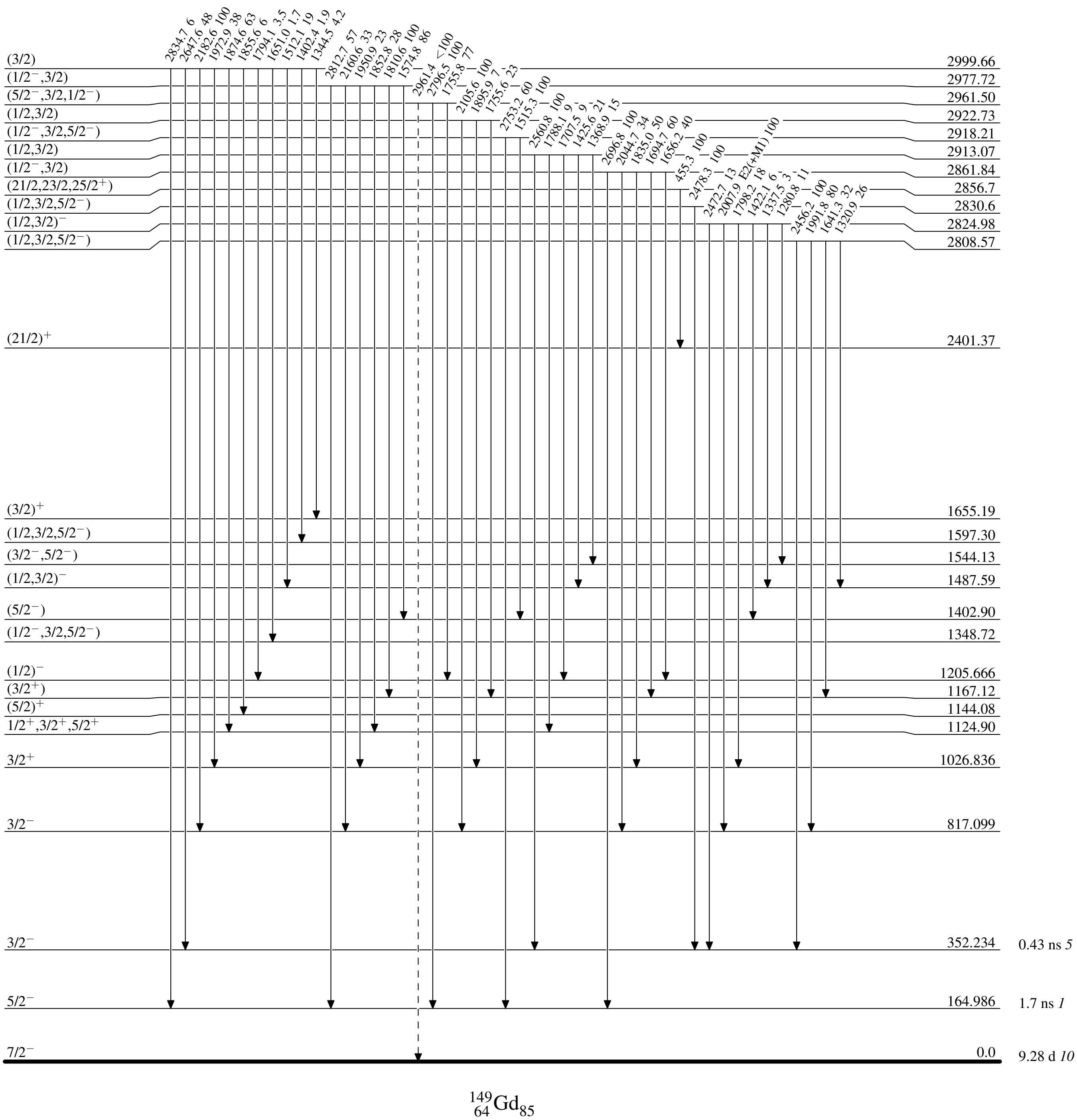
Adopted Levels, Gammas

Level Scheme (continued)

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

Legend

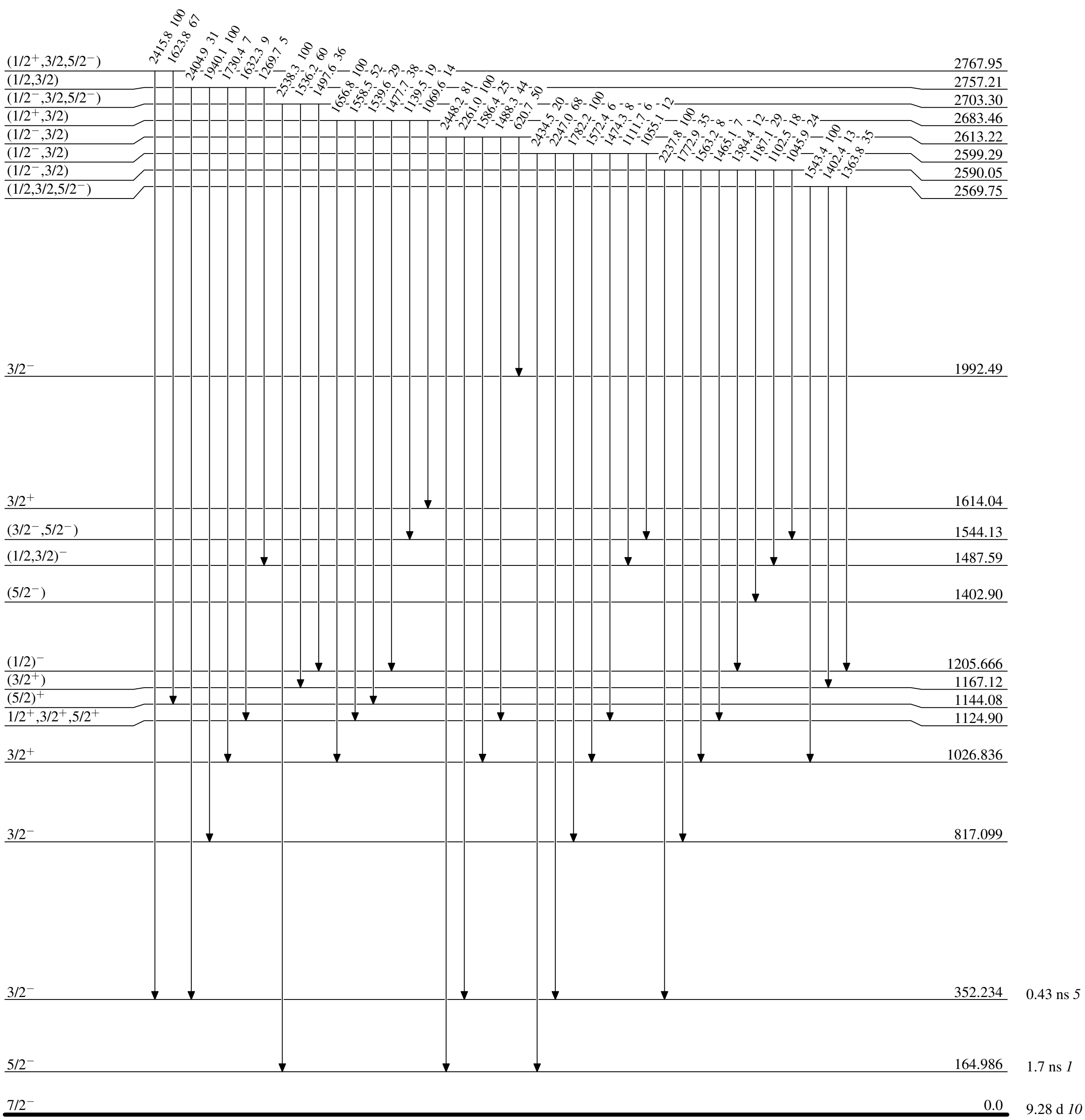
γ Decay (Uncertain)



Adopted Levels, Gammas

Level Scheme (continued)

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



$^{149}_{64}Gd_{85}$

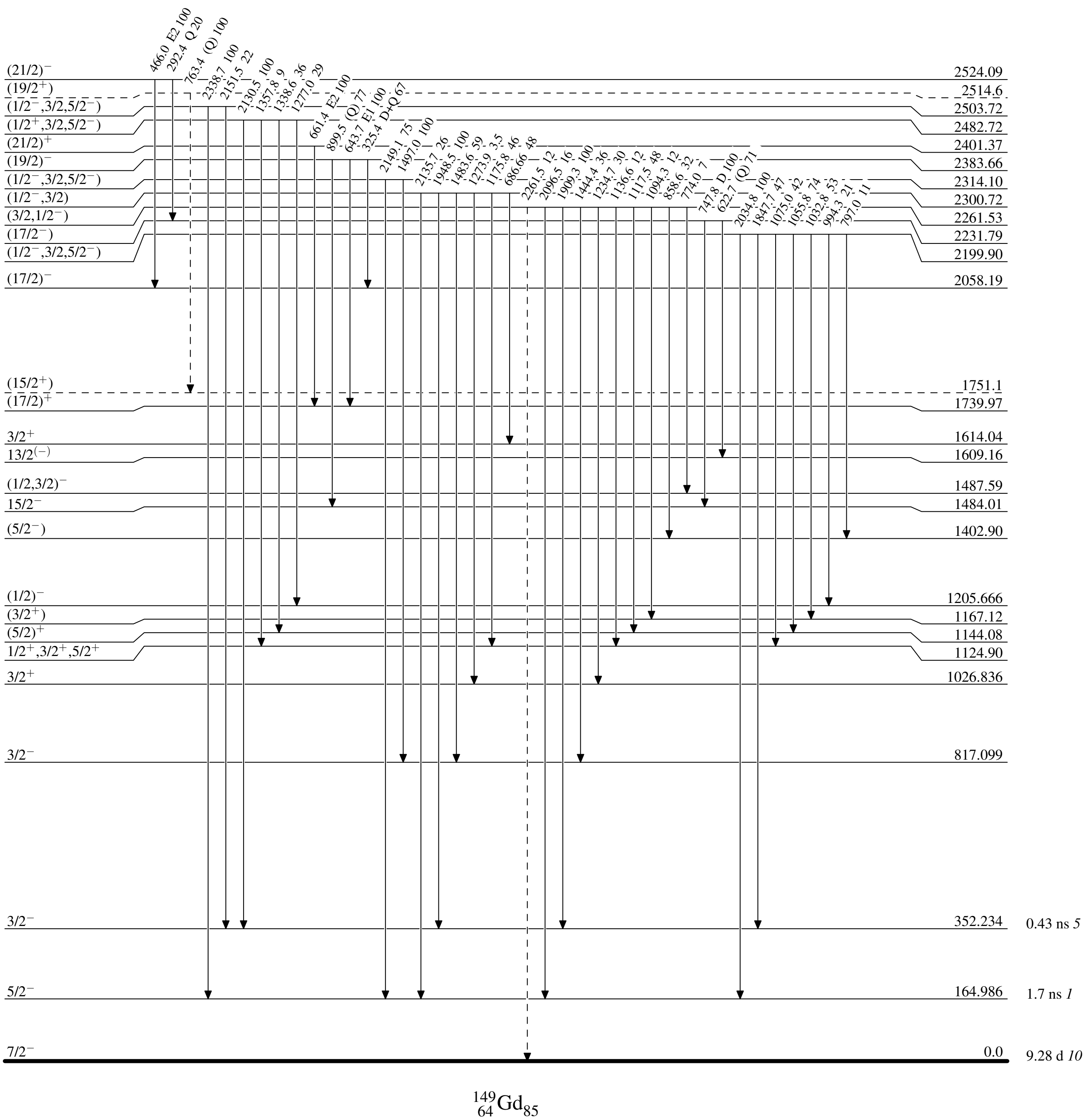
Adopted Levels, Gammas

Level Scheme (continued)

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

Legend

γ Decay (Uncertain)



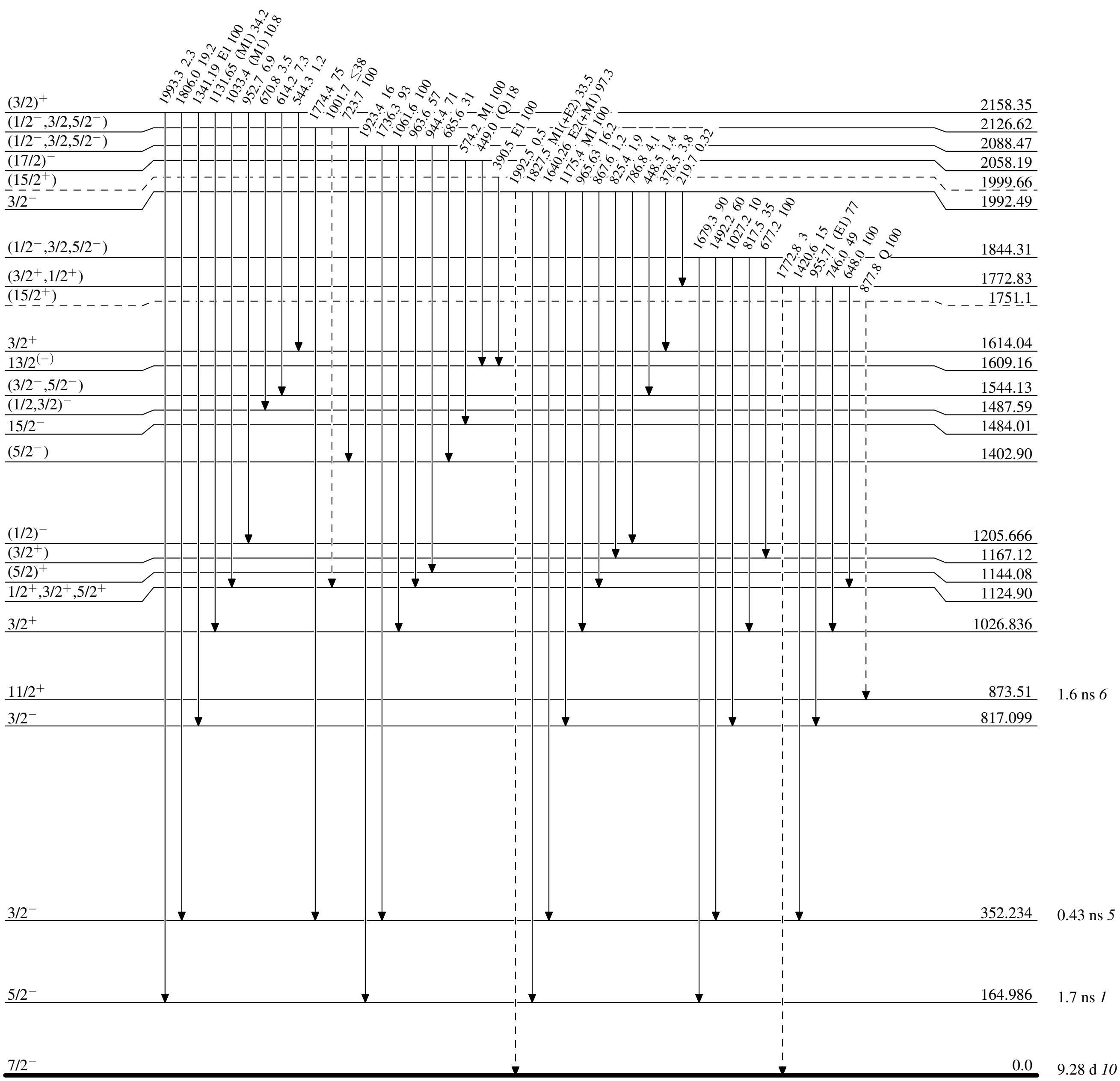
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

- - - - - ▸ γ Decay (Uncertain)

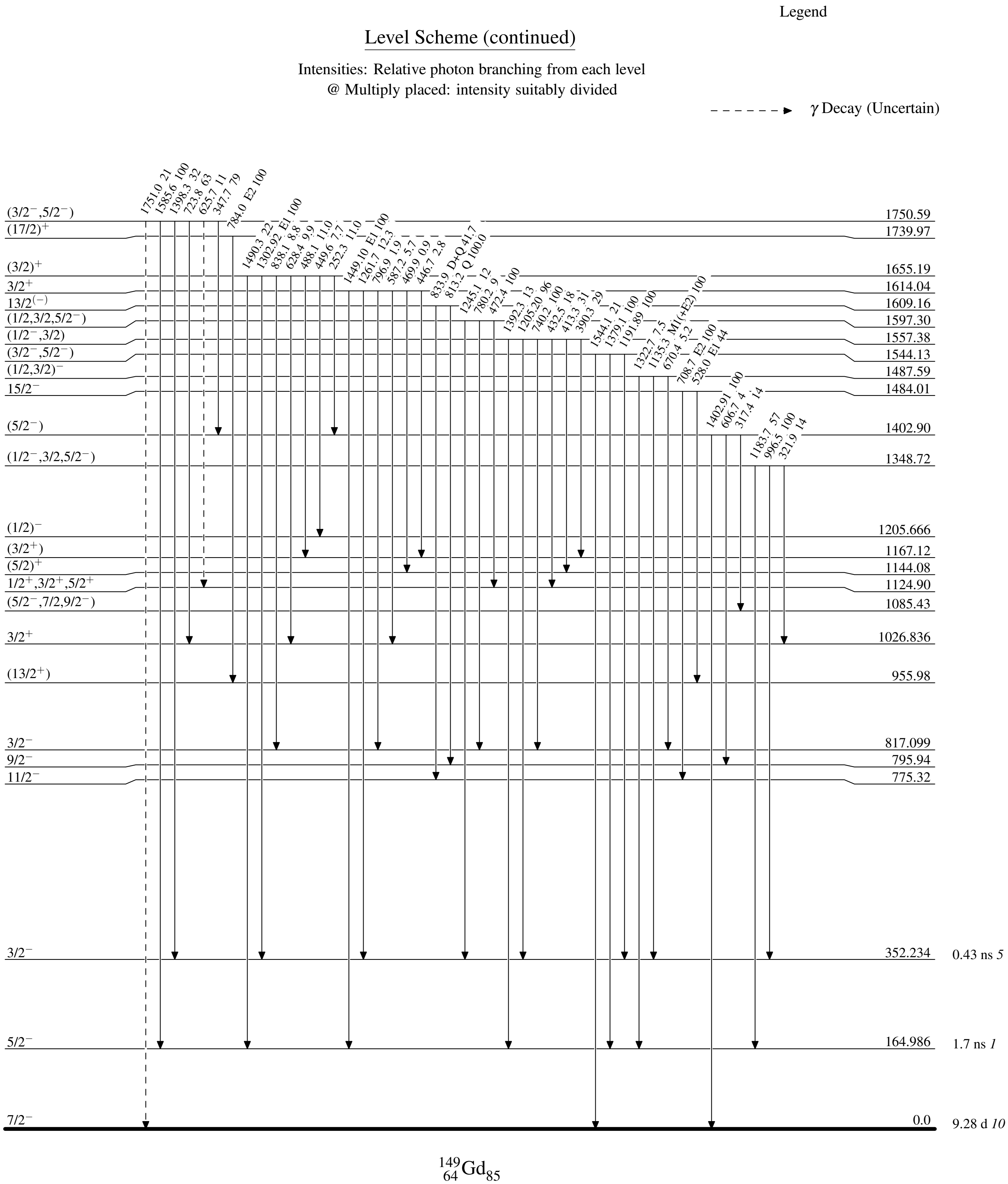


$^{149}_{64}Gd_{85}$

Adopted Levels, Gammas

Level Scheme (continued)

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



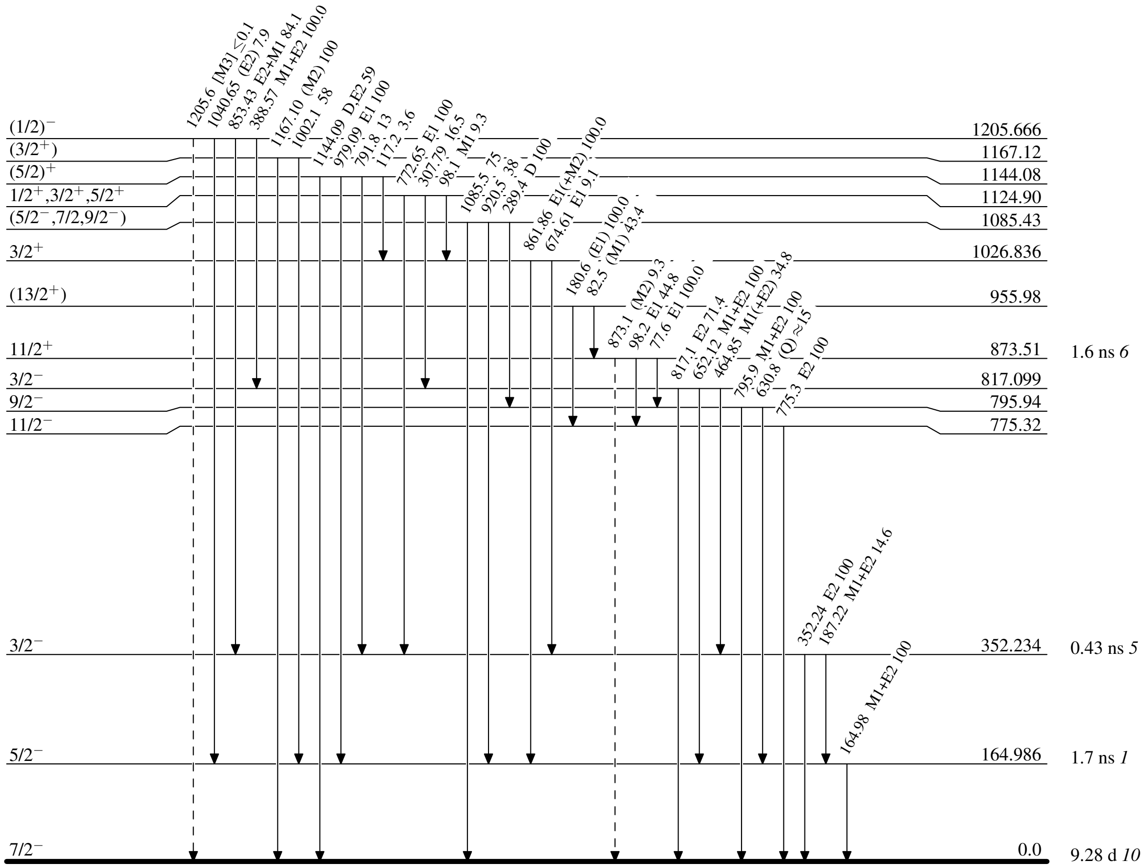
Adopted Levels, Gammas

Legend

Level Scheme (continued)

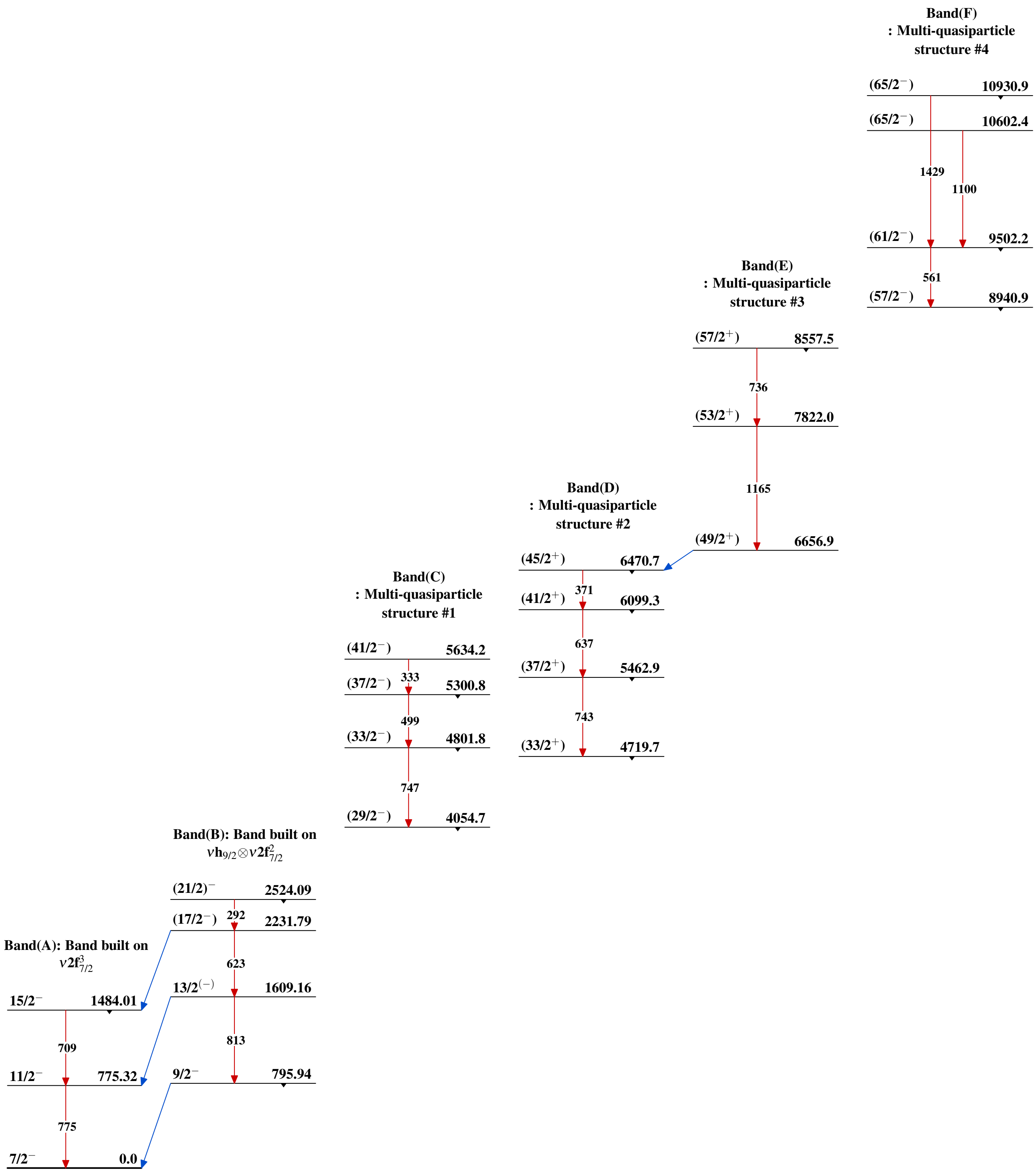
Intensities: Relative photon branching from each level
@ Multiply placed: intensity suitably divided

γ Decay (Uncertain)



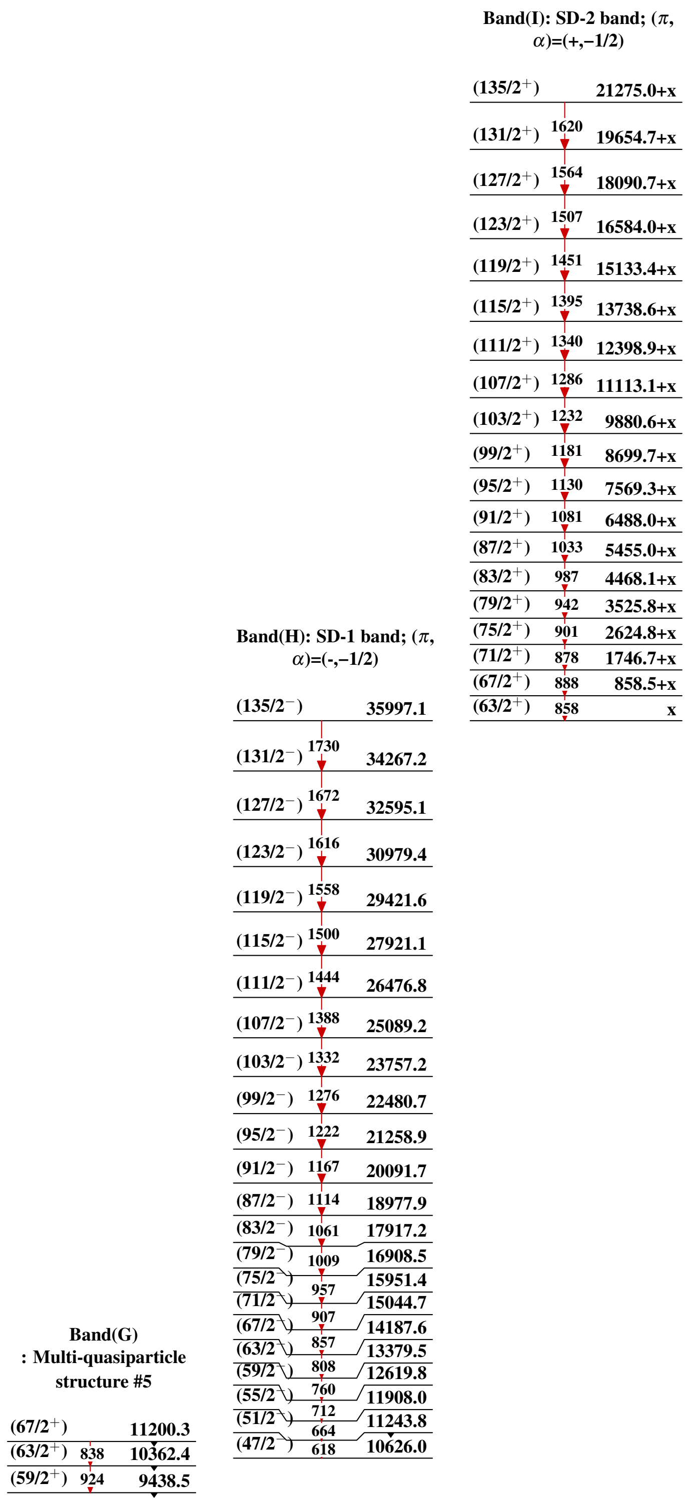
$^{149}_{64}Gd_{85}$

Adopted Levels, Gammas



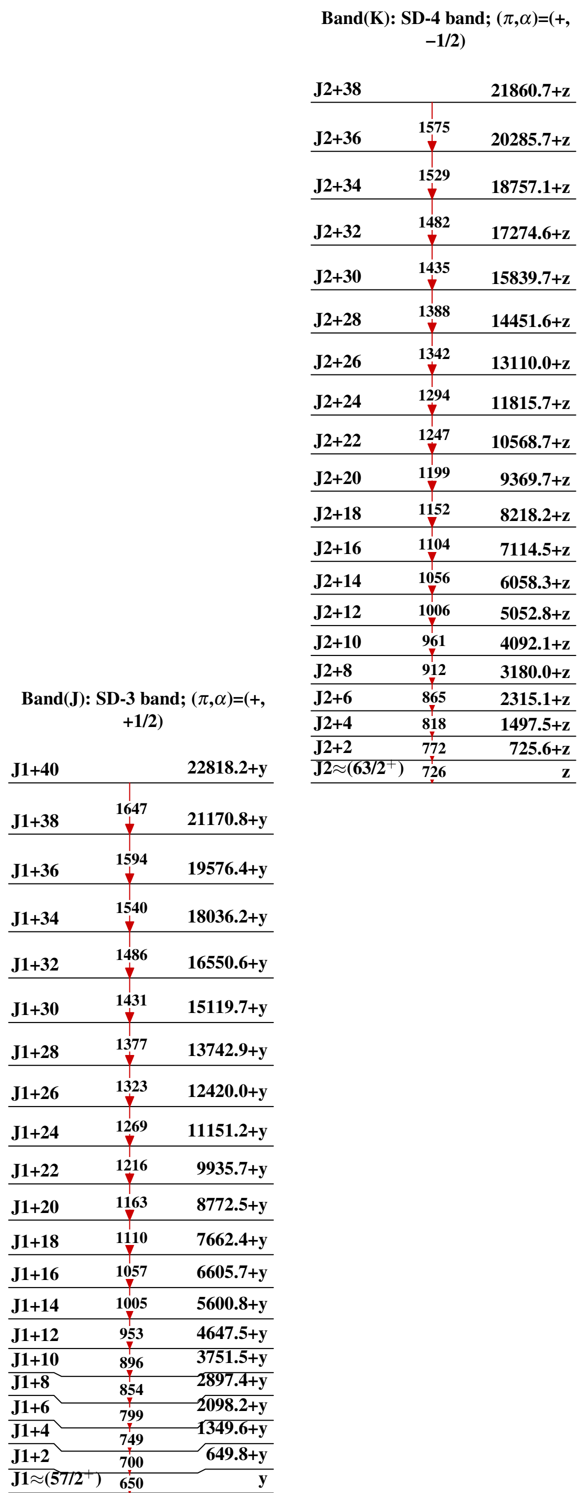
$^{149}_{64}Gd_{85}$

Adopted Levels, Gammas (continued)



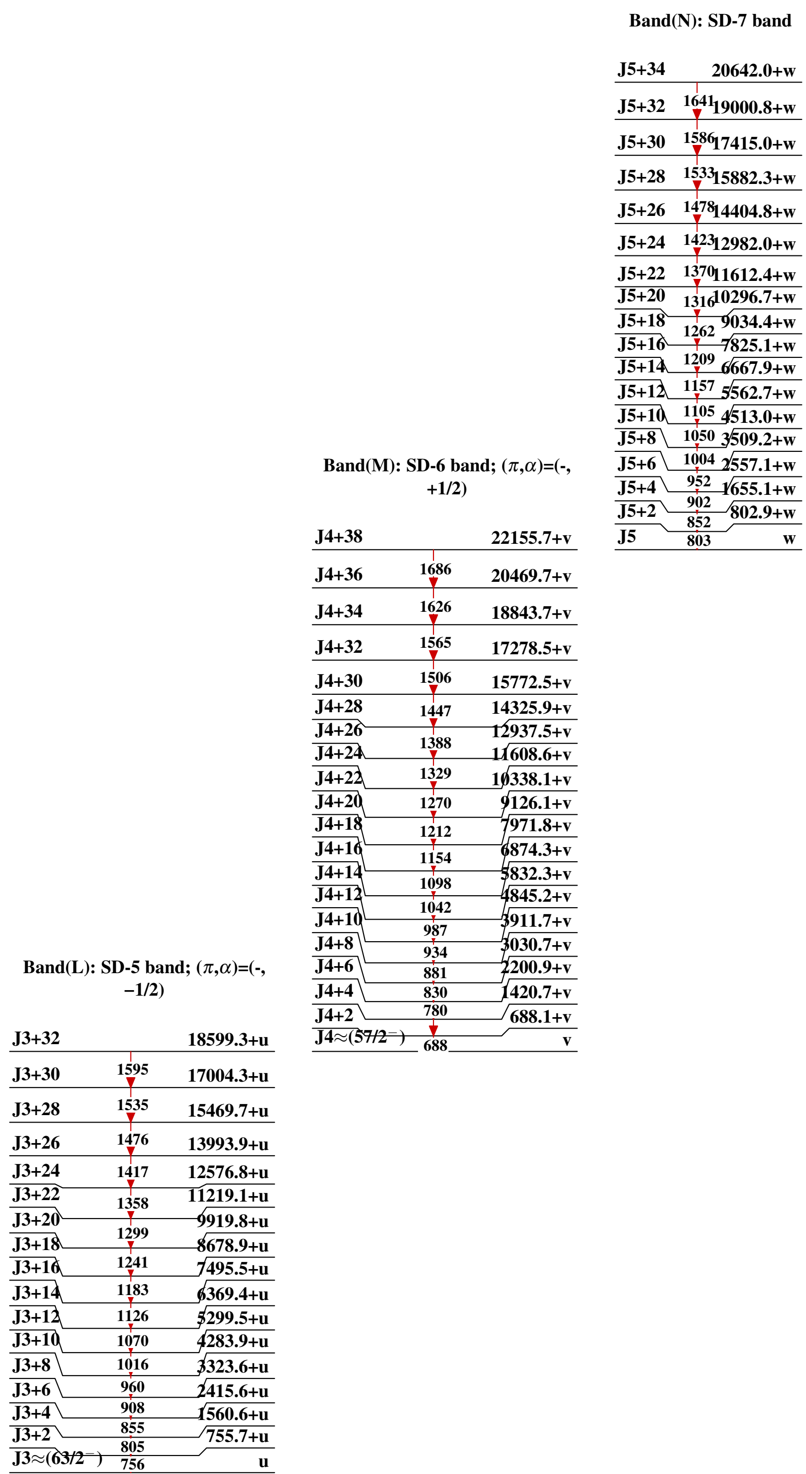
$^{149}_{64}Gd_{85}$

Adopted Levels, Gammas (continued)



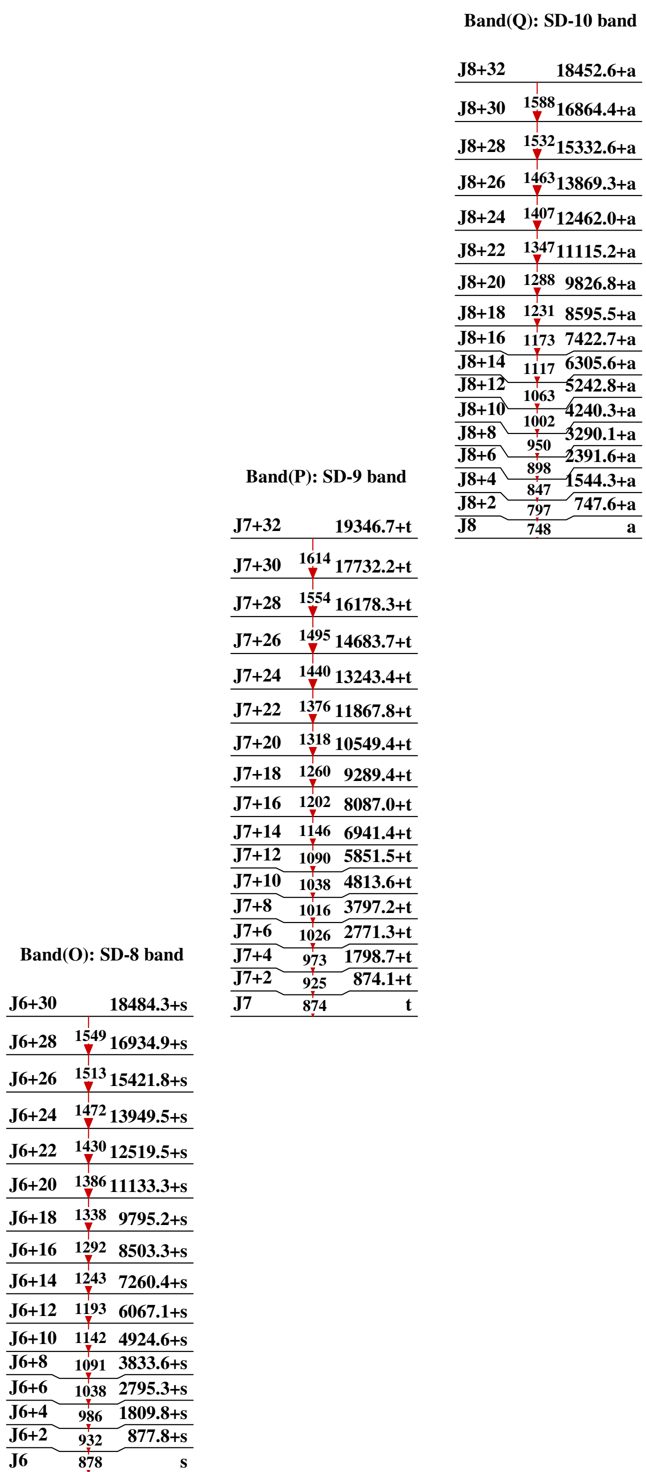
$^{149}_{64}Gd_{85}$

Adopted Levels, Gammas (continued)



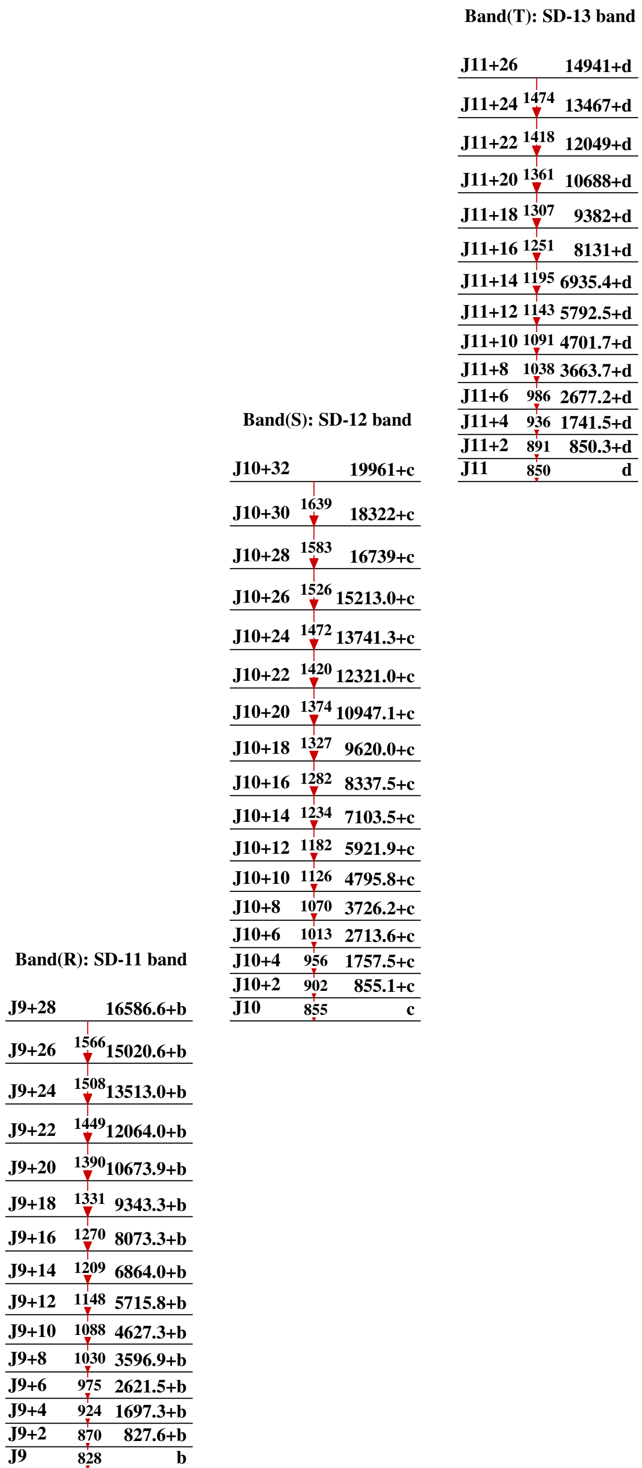
$^{149}_{64}Gd_{85}$

Adopted Levels, Gammas (continued)



$^{149}_{64}Gd_{85}$

Adopted Levels, Gammas (continued)



$^{149}_{64}Gd_{85}$

Adopted Levels, Gammas (continued)