^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 160, 1 (2019)	21-Oct-2019

Additional information 1.

E(n)=thermal. Measured γ-ray spectrum from n capture in a 20-mg sample of enriched (99.3% ^{154}Gd) Gd_2O_3. Low-energy (30 keV to 1500 keV) γ's measured using the GAMS 1-3 curved-crystal spectrometers. γ's in the energy region from 1 to 2.5 MeV and from 1.5 to 8 MeV were studied using anti-Compton and pair-spectrometer detection systems. The conversion-electron spectrum was measured over the energy range 17 keV to 2 MeV using the magnetic spectrometer BILL. In a separate measurement, the γ-ray spectrum from 15 to 35 keV and below 200 keV was measured using a Si(Li) and a Ge(Li) detector, respectively. The sample for this experiment was ^{154}Gd with an admixture of ^{151}Eu for energy-calibration purposes.

E(n)=2, 24 keV. Primary capture-γ-ray spectra were measured using "energy-filtered" neutron-beam facilities producing neutron beams having mean energies of 2 and 24 keV. The samples used in these studies consisted of 35 grams of Gd_2O_3 enriched to 66.5% in ^{154}Gd. The detector was a 23-cm^3 intrinsic Ge detector having a resolution of 5.8 keV (FWHM) at 6.6 MeV.

^{155}Gd Levels

E(level)	J^π[†][‡]	Comments
0.0[e]	3/2$^-$[@]	
60.0110[e] 7	5/2$^-$	
86.5460[f] 6	5/2$^+$[a]	
105.3109[f] 7	3/2$^+$[#]	
107.5803[f] 11	9/2$^+$	
117.9986[f] 7	7/2$^+$	
146.0707[e] 9	7/2$^-$	
214.3512[f] 15	13/2$^+$	
230.1289[f] 18	11/2$^+$	
251.7062[e] 11	9/2$^-$	
266.6478[i] 8	5/2$^+$	
268.6235[g] 7	3/2$^+$[#]	
287.0043[h] 10	3/2$^-$[@]	
321.3808[h] 6	5/2$^-$	
326.0878[g] 9	5/2$^+$[a]	
350.4360[i] 10	7/2$^+$	
367.6338[j] 8	1/2$^+$[#]	
392.318[e] 4	11/2$^-$	
393.5329[h] 11	7/2$^-$	
423.4126[g] 18	7/2$^+$	J$^\pi$: 1986Sc25 also list J^π=(5/2$^+$) as a possibility.
427.2361[j] 7	3/2$^+$[#]	
450.5638[k] 9	3/2$^-$[@]	
451.3719[k] 8	1/2$^-$	
454.4748[l] 10	5/2$^-$	
485.976[h] 3	(9/2$^-$)	
488.7207[j] 8	5/2$^+$[a]	
553.372[l] 4	(7/2)$^-$	J$^\pi$: 1986Sc25 report J^π=5/2$^-$,7/2$^-$.
559.368[m] 4	1/2$^-$[@]	
581.4570[k] 20	5/2$^-$	
592.1429[n] 22	3/2$^-$[@]	
610.842[j] 3	7/2$^+$	
614.8561[m] 25	3/2$^-$[@]	

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^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

^{155}Gd Levels (continued)

E(level)	Jπ†‡	Comments
647.7930[n] 20	5/2⁻	
658.987[m] 5	5/2⁻	
720.6177[o] 17	1/2⁺,3/2⁺,(5/2⁺)[&]	
752.551[o] 4	5/2⁺	
786.899[m] 6	7/2⁻	
804.38[k] 5	(9/2⁻)	
815.7334[p] 24	(3/2)⁺[&]	Jπ: 1986Sc25 report J^π=3/2⁺,5/2⁺.
872.810[p] 4	(5/2)⁺[a]	Jπ: 1986Sc25 report J^π=(5/2⁺).
1002.955[q] 3	1/2⁻[@]	Jπ: 1986Sc25 report J^π=1/2⁻,3/2⁻.
1012.894[q] 4	3/2⁻[@]	Jπ: 1986Sc25 report J^π=(3/2⁻).
1028.037 20	1/2⁻,3/2,5/2⁻	Jπ: 1986Sc25 report J^π=3/2⁺,5/2⁻.
1035.222 3	1/2⁺,3/2⁺[&]	
1060.599[q] 3	(5/2⁻)	Jπ: 1986Sc25 report J^π=5/2⁻,7/2⁻.
1078.43 3	1/2⁻,3/2⁻[@]	
1086.848 4	3/2⁺[#]	
1104.795 4	(7/2⁻)	Jπ: 1986Sc25 report J^π=7/2⁻.
1129.842 4	3/2⁻[@]	Jπ: 1986Sc25 report J^π=1/2⁻,3/2⁻.
1147.0 4		Jπ: 1986Sc25 report J^π=1/2 to 5/2⁺.
1192.853 11	1/2⁺,3/2⁺[#]	
1197.613 16	3/2⁻,5/2,7/2	Jπ: 1986Sc25 report J^π=5/2⁻,7/2⁻.
1225.009 9	3/2⁻,5/2,7/2	Jπ: 1986Sc25 report J^π=5/2,7/2.
1230.3 3	3/2⁻[@]	
1246.9 4	(1/2⁻,3/2⁻)	
1284.2? 5		
1292.49 5	3/2⁺[#]	
1297.181 12	7/2⁺	Jπ: 1986Sc25 report J^π=5/2⁺,7/2⁺.
1332.09 10	1/2⁽⁺⁾,3/2⁽⁺⁾	Jπ: 1986Sc25 report J^π=1/2⁺,3/2⁺.
1343.316 14	3/2⁻,5/2,7/2⁻	Jπ: 1986Sc25 report J^π=5/2⁻,7/2⁻.
1359.852 16	3/2,5/2,7/2⁺	Jπ: 1986Sc25 report J^π=3/2⁺,5/2⁺.
1363.637 11	5/2,7/2⁺	Jπ: 1986Sc25 report J^π=5/2⁺.
1380.9 7		Jπ: 1986Sc25 report J^π=1/2,3/2,5/2⁺.
1387.7 8	1/2⁺,3/2⁺	
1398.6 4		Jπ: 1986Sc25 report J^π=1/2,3/2,5/2.
1425.0 5		Jπ: 1986Sc25 report J^π=1/2,3/2,5/2.
1434.31 4	1/2⁺,3/2⁺[#]	
1437.685 14		Jπ: from (d,p), (d,t), 1986Sc25 report J^π=5/2⁻,7/2⁻.
1456.3? 4		
1466.1 4		Jπ: 1986Sc25 report J^π=1/2,3/2,5/2.
1470.02 3	5/2⁺	
1474.44 5	1/2⁺,3/2⁺,5/2⁺	
1490.8? 4		
1517.077 12	3/2⁺,5/2⁺,7/2⁺	Jπ: 1986Sc25 do not assign a J^π value.
1551.3 8	(1/2⁺,3/2⁺)	
6435.24[bc] 18	1/2⁺[d]	

† From adopted values. Where these differ from those of 1986Sc25, this is pointed out.
‡ Listed assignments are those deduced by 1986Sc25 from their (n,γ), (d,p) and (d,t) measurements.
# Intensities of primary transitions in resonance-averaged n-capture indicate 1/2⁺,3/2⁺.
@ Intensities of primary transitions in resonance-averaged n-capture indicate 1/2⁻,3/2⁻.

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^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

^{155}Gd Levels (continued)

[&] Intensities of primary transitions in resonance-averaged n-capture indicate $1/2^+$,$3/2^+$,$5/2^+$.
[a] Intensities of primary transitions in resonance-averaged n-capture indicate $5/2^+$.
[b] Neutron capture "state".
[c] Neutron binding energy.
[d] Capture state is formed by s-wave (L=0) neutron capture on a doubly even target nucleus (J=0).
[e] Band(A): 3/2[521] band, g.s. band.
[f] Band(B): 3/2[651] band.
[g] Band(C): 3/2[402] band.
[h] Band(D): 3/2[532] band.
[i] Band(E): 5/2[642] band.
[j] Band(F): 1/2[400] band.
[k] Band(G): 1/2[530] band.
[l] Band(H): 5/2[523] band.
[m] Band(I): 1/2[521] band.
[n] Band(J): "beta vibration" built on the g.s. ($K^\pi=3/2^-$).
[o] Band(K): 1/2[660] band.
[p] Band(L): "beta vibration" ? built on the 3/2[651] band ($K^\pi=3/2^+$).
[q] Band(M): K-2 γ vibration built on the g.s. ($K^\pi=1/2^-$).

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

$\gamma(^{155}Gd)$

Iγ normalization: Measured Iγ values were converted to photons per 100 thermal-neutron captures under the assumption that the total intensity (γ+ce) feeding the g.s. is 93% *5* (1986Sc25).
Relative I(ce(K)) were normalized using 50 lines of known mult in ^{156}Gd and ^{155}Gd, using the measured Iγ and theoretical α values.

E_γ[†]	I_γ[b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	α[a]	Comments
10.4178 *12*		117.9986	7/2$^+$	107.5803	9/2$^+$	M1+E2	0.033 *+9−12*	3.4×10^2 *6*	α(L)=2.7×10^2 *5*; α(M)=59 *11* α(N)=13.5 *24*; α(O)=2.0 *3*; α(P)=0.0992 *14* E$_\gamma$: from level-energy difference. 1986Sc25 give Eγ=10.423 *3* for this γ and state that it is from 1975Ch04. 1975Ch04, however, report Eγ=10.489 *38*. δ: adopted value.
18.760 *4*	0.038 *14*	105.3109	3/2$^+$	86.5460	5/2$^+$	M1+E2	+0.274 *4*	362 *10*	α(L)=281 *8*; α(M)=65.0 *19* α(N)=14.4 *4*; α(O)=1.88 *6*; α(P)=0.01654 *24* α(M2)exp: 9 *4* (1986Sc25). δ: adopted value. 1986Sc25 report δ<0.32.
21.030 *10*	<0.005	107.5803	9/2$^+$	86.5460	5/2$^+$	E2		2.60×10^3	α(L)=2.02×10^3 *3*; α(M)=471 *7* α(N)=104.3 *15*; α(O)=13.26 *19*; α(P)=0.00392 *6* α(M2)exp: >76 (1986Sc25).
26.530 *23*	0.28 *10*	86.5460	5/2$^+$	60.0110	5/2$^-$	E1		1.95	α(L)=1.530 *22*; α(M)=0.336 *5* α(N)=0.0738 *11*; α(O)=0.00966 *14*; α(P)=0.000328 *5* α(L1)exp: 0.44 *20* (1986Sc25).
31.444 *7*	0.028 *14*	117.9986	7/2$^+$	86.5460	5/2$^+$	M1+E2	0.370 *14*	50 *3*	α(L)=39.1 *22*; α(M)=9.1 *6* α(N)=2.03 *12*; α(O)=0.267 *15*; α(P)=0.00335 *6* α(L2)exp: 15 *10* (1986Sc25). δ: adopted value, calculated by evaluator from α(L2)exp=15 *10* (1986Sc25).
40.101 *7*	0.45 *14*	1474.44	1/2$^+$,3/2$^+$,5/2$^+$	1434.31	1/2$^+$,3/2$^+$				
[x]40.122 *4*	0.078 *24*								
45.300 *1*	1.23 *14*	105.3109	3/2$^+$	60.0110	5/2$^-$	E1		0.436	α(L)=0.343 *5*; α(M)=0.0747 *11* α(N)=0.01665 *24*; α(O)=0.00231 *4*; α(P)=9.60×10^{-5} *14* α(L1)exp: 0.17 *3* (1986Sc25).

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ [†]	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	α[a]	Comments
[x]49.024 *1*	0.23 *3*								
[x]49.056 *1*	0.29 *4*					E2		39.5	α(L)=30.5 *5*; α(M)=7.21 *10* α(N)=1.603 *23*; α(O)=0.205 *3*; α(P)=0.000260 *4* α(L1)exp: 0.70 *15* (1986Sc25). α(L2)exp: 0.7 *4* (1986Sc25, possibly contaminated).
57.644 *1*	0.008 *5*	1060.599	(5/2$^-$)	1002.955	1/2$^-$				
57.989 *1*	0.32 *3*	117.9986	7/2$^+$	60.0110	5/2$^-$	E1		1.238	α(K)=1.020 *15*; α(L)=0.1712 *24*; α(M)=0.0372 *6* α(N)=0.00834 *12*; α(O)=0.001181 *17*; α(P)=5.30×10^{-5} *8* α(L1)exp: 164 *24* (1986Sc25).
59.602 *1*	0.020 *8*	427.2361	3/2$^+$	367.6338	1/2$^+$				
60.008 *2*	1.80 *20*	60.0110	5/2$^-$	0.0	3/2$^-$	M1+E2	−0.198 *8*	9.14	α(K)=7.25 *11*; α(L)=1.48 *4*; α(M)=0.329 *9* α(N)=0.0749 *20*; α(O)=0.0110 *3*; α(P)=0.000543 *8* α(L1)exp: 1.31 *21* (1986Sc25). δ: adopted value. 1986Sc25 report δ=0.215 *10*.
61.484 *1*	0.057 *10*	488.7207	5/2$^+$	427.2361	3/2$^+$	M1(+E2)	<1.0	10.2 *21*	α(K)=5.9 *10*; α(L)=3.3 *23*; α(M)=0.77 *56* α(N)=0.17 *13*; α(O)=0.023 *16*; α(P)=0.00043 *9* α(L1)exp: 0.9 *3* (1986Sc25). Mult.,δ: computed by the evaluator from α(L1)exp=0.9 *3*.
[x]79.517 *1*	0.057 *7*					M1(+E2)	<1.22	4.5 *7*	α(K)=2.9 *4*; α(L)=1.24 *76*; α(M)=0.29 *19* α(N)=0.064 *41*; α(O)=0.0088 *51*; α(P)=0.00020 *5* α(L2)exp: 0.72 *14* (1986Sc25).
82.933 *2*	0.015 *3*	450.5638	3/2$^-$	367.6338	1/2$^+$				
83.738 *1*	0.022 *3*	451.3719	1/2$^-$	367.6338	1/2$^+$				
86.059 *1*	1.23 *13*	146.0707	7/2$^-$	60.0110	5/2$^-$	M1+E2	−0.184 *23*	3.14	α(K)=2.59 *4*; α(L)=0.435 *16*; α(M)=0.096 *4* α(N)=0.0219 *9*; α(O)=0.00331 *11*; α(P)=0.000192 *3* α(K)exp: 0.123 *13* (1986Sc25). δ: adopted value. 1986Sc25 report δ=0.163 *23*.
86.547 *1*	27 *4*	86.5460	5/2$^+$	0.0	3/2$^-$	E1		0.431	α(K)=0.360 *5*; α(L)=0.0555 *8*; α(M)=0.01203 *17* α(N)=0.00271 *4*; α(O)=0.000394 *6*; α(P)=1.97×10^{-5} *3* α(K)exp: 0.39 *14* (1986Sc25).
99.010 *2*	0.038 *18*	367.6338	1/2$^+$	268.6235	3/2$^+$	M1,E2		2.3 *3*	α(K)=1.5 *3*; α(L)=0.67 *42*; α(M)=0.16 *11* α(N)=0.035 *23*; α(O)=0.0047 *28*; α(P)=9.5×10^{-5} *36* α(K)exp: 2.3 *11* (1986Sc25). Mult.: from α(K)exp=2.3 *11* (1986Sc25), mult=M1,E2 rather than mult=E1+M2, since, for this latter case, δ would be ≈0.4. This is too large for such a low-energy transition.
[x]101.034 *14*	0.017 *4*					E1		0.284	α(K)=0.238 *4*; α(L)=0.0359 *5*; α(M)=0.00778 *11* α(N)=0.001760 *25*; α(O)=0.000258 *4*; α(P)=1.334×10^{-5} *19* α(K)exp: <0.3 (1986Sc25).
101.148 *2*	0.18 *4*	427.2361	3/2$^+$	326.0878	5/2$^+$	M1,E2		2.18 *24*	α(K)=1.4 *3*; α(L)=0.61 *38*; α(M)=0.143 *91* α(N)=0.032 *21*; α(O)=0.0043 *25*; α(P)=8.9×10^{-5} *34* α(K)exp: 0.18 *4* (1986Sc25).
102.036 *11*	0.009 *4*	423.4126	7/2$^+$	321.3808	5/2$^-$	E1		0.277	α(K)=0.232 *4*; α(L)=0.0350 *5*; α(M)=0.00757 *11*

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ †	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult. ‡	α [a]	Comments
								α(N)=0.001712 *24*; α(O)=0.000251 *4*; α(P)=1.301×10^{-5} *19*
								α(K)exp: 0.<0.6 (1986Sc25).
104.327 *6*	0.018 *4*	1297.181	7/2$^+$	1192.853	1/2$^+$,3/2$^+$	(E1)	0.261	α(K)=0.219 *3*; α(L)=0.0328 *5*; α(M)=0.00711 *10*
								α(N)=0.001609 *23*; α(O)=0.000236 *4*; α(P)=1.230×10^{-5} *18*
								α(K)exp: <0.3 (1986Sc25).
								Mult.: placement requires no change in parity. Note that the mult is shown as questionable.
105.309 *1*	14.2 *16*	105.3109	3/2$^+$	0.0	3/2$^-$	E1	0.254	α(K)=0.213 *3*; α(L)=0.0320 *5*; α(M)=0.00693 *10*
								α(N)=0.001568 *22*; α(O)=0.000230 *4*; α(P)=1.201×10^{-5} *17*
								α(K)exp: 0.20 *4* (1986Sc25).
105.636 *1*	0.142 *17*	251.7062	9/2$^-$	146.0707	7/2$^-$	E2,M1	1.89 *17*	α(K)=1.23 *23*; α(L)=0.51 *31*; α(M)=0.119 *73*
								α(N)=0.027 *17*; α(O)=0.0036 *20*; α(P)=7.9×10^{-5} *30*
105.854 *1*	0.012 *3*	427.2361	3/2$^+$	321.3808	5/2$^-$			
106.771 *1*	0.029 *4*	214.3512	13/2$^+$	107.5803	9/2$^+$	E2,M1	1.82 *16*	α(K)=1.19 *22*; α(L)=0.49 *29*; α(M)=0.113 *70*
								α(N)=0.025 *16*; α(O)=0.0035 *19*; α(P)=7.7×10^{-5} *29*
								α(K)exp: 1.08 *24* (1986Sc25).
[x]111.663 *5*	0.004 *2*							α(K)exp: 6 *3* (1986Sc25).
								Mult.: the value α(K)exp=6 *3* for this transition suggests mult >M1,E2 or that there is an E0 component present.
112.131 *2*	0.025 *3*	230.1289	11/2$^+$	117.9986	7/2$^+$	E2,M1	1.55 *11*	α(K)=1.04 *19*; α(L)=0.40 *23*; α(M)=0.092 *54*
								α(N)=0.021 *12*; α(O)=0.0028 *15*; α(P)=6.7×10^{-5} *25*
								α(K)exp: 1.1 *3* (1986Sc25).
120.579 *2*	0.015 *2*	266.6478	5/2$^+$	146.0707	7/2$^-$	E1	0.1763	α(K)=0.1484 *21*; α(L)=0.0219 *3*; α(M)=0.00474 *7*
								α(N)=0.001075 *15*; α(O)=0.0001587 *23*; α(P)=8.52×10^{-6} *12*
								α(K)exp: <0.4 (1986Sc25).
[x]121.131 *4*	0.024 *6*					E1,E2		α(K)exp: 0.53 *19* (1986Sc25).
122.548 *1*	0.029 *3*	230.1289	11/2$^+$	107.5803	9/2$^+$	(M1,E2)	1.17 *5*	α(K)=0.81 *15*; α(L)=0.28 *14*; α(M)=0.064 *35*
								α(N)=0.0144 *76*; α(O)=0.00199 *93*; α(P)=5.2×10^{-5} *19*
								α(K)exp: 2.3 *4* (1986Sc25).
								Mult.: α(K)exp=2.3 *4* (1986Sc25). This value is too large for M1 or E2.
[x]122.819 *1*	0.027 *3*					E1	0.1678	α(K)=0.1413 *20*; α(L)=0.0208 *3*; α(M)=0.00451 *7*
								α(N)=0.001021 *15*; α(O)=0.0001509 *22*; α(P)=8.13×10^{-6} *12*
								α(K)exp: <0.21 (1986Sc25).
[x]123.078 *5*	0.009 *2*							α(K)exp: 1.5 *5* (1986Sc25).
124.476 *2*	0.069 *7*	450.5638	3/2$^-$	326.0878	5/2$^+$	E1	0.1618	α(K)=0.1363 *19*; α(L)=0.0201 *3*; α(M)=0.00434 *6*
								α(N)=0.000984 *14*; α(O)=0.0001454 *21*; α(P)=7.85×10^{-6} *11*
								α(K)exp: <0.08 *19* (1986Sc25).
126.887 *1*	0.064 *7*	1129.842	3/2$^-$	1002.955	1/2$^-$	E2	1.065	α(K)=0.601 *9*; α(L)=0.359 *5*; α(M)=0.0841 *12*
								α(N)=0.0188 *3*; α(O)=0.00250 *4*; α(P)=3.10×10^{-5} *5*
								α(K)exp: 0.56 *11* (1986Sc25).
129.182 *1*	0.024 *4*	450.5638	3/2$^-$	321.3808	5/2$^-$	(M1,E2)	0.985 *20*	α(K)=0.70 *13*; α(L)=0.22 *11*; α(M)=0.052 *26*
								α(N)=0.0116 *58*; α(O)=0.00161 *70*; α(P)=4.5×10^{-5} *16*

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ †	I_γ b	E_i(level)	J_i^π	E_f	J_f^π	Mult. ‡	δ ‡	α a	Comments
133.094 *3*	0.013 *2*	454.4748	5/2$^-$	321.3808	5/2$^-$				
138.285 *1*	0.067 *7*	488.7207	5/2$^+$	350.4360	7/2$^+$	E2,M1		0.793 *14*	α(K)=0.57 *11*; α(L)=0.172 *75*; α(M)=0.039 *19* α(N)=0.0089 *40*; α(O)=0.00124 *49*; α(P)=3.8×10^{-5} *13* α(K)exp: 0.57 *9* (1986Sc25).
140.610 *4*	0.010 *3*	392.318	11/2$^-$	251.7062	9/2$^-$				
141.826 *1*	0.094 *10*	393.5329	7/2$^-$	251.7062	9/2$^-$	E2,M1		0.732 *17*	α(K)=0.53 *10*; α(L)=0.156 *65*; α(M)=0.036 *16* α(N)=0.0080 *35*; α(O)=0.00112 *42*; α(P)=3.5×10^{-5} *12* α(K)exp: 0.52 *8* (1986Sc25).
146.071 *1*	0.41 *4*	146.0707	7/2$^-$	0.0	3/2$^-$	E2		0.649	α(K)=0.398 *6*; α(L)=0.194 *3*; α(M)=0.0453 *7* α(N)=0.01014 *15*; α(O)=0.001360 *19*; α(P)=2.12×10^{-5} *3* α(K)exp: <0.3 (1986Sc25). Mult.: from the adopted values. 1986Sc25 report mult=E2(+M1) with δ>3.
148.650 *1*	0.79 *8*	266.6478	5/2$^+$	117.9986	7/2$^+$	M1(+E2)	<0.33	0.651	α(K)=0.544 *12*; α(L)=0.084 *5*; α(M)=0.0184 *13* α(N)=0.0042 *3*; α(O)=0.00065 *4*; α(P)=4.01×10^{-5} *12* α(K)exp: 0.44 *7* (1986Sc25).
150.630 *2*	0.024 *3*	268.6235	3/2$^+$	117.9986	7/2$^+$				γ shown unplaced by 1986Sc25. The evaluator has placed this transition here, based on the deexcitation of this level as observed in the ^{155}Tb decay (1976Me10). α(K)exp: 0.42 *7* (1986Sc25).
x154.208 *1*	0.044 *5*								
156.766 *2*	0.056 *7*	423.4126	7/2$^+$	266.6478	5/2$^+$	E2,M1		0.54 *3*	α(K)=0.40 *8*; α(L)=0.106 *38*; α(M)=0.0241 *93* α(N)=0.0054 *21*; α(O)=7.7×10^{-4} *24*; α(P)=2.64×10^{-5} *90* α(K)exp: 0.35 *6* (1986Sc25).
157.225 *4*	0.012 *2*	1517.077	3/2$^+$,5/2$^+$,7/2$^+$	1359.852	3/2,5/2,7/2$^+$				
158.044 *4*	0.021 *3*	581.4570	5/2$^-$	423.4126	7/2$^+$				
158.612 *1*	0.058 *6*	427.2361	3/2$^+$	268.6235	3/2$^+$	E2		0.488	α(K)=0.311 *5*; α(L)=0.1366 *20*; α(M)=0.0318 *5* α(N)=0.00712 *10*; α(O)=0.000960 *14*; α(P)=1.693×10^{-5} *24* α(K)exp: 0.40 *6* (1986Sc25).
160.589 *2*	0.65 *7*	427.2361	3/2$^+$	266.6478	5/2$^+$	M1(+E2)	<0.33	0.523	α(K)=0.438 *10*; α(L)=0.067 *4*; α(M)=0.0147 *9* α(N)=0.00336 *19*; α(O)=0.000515 *22*; α(P)=3.23×10^{-5} *10* α(K)exp: 0.40 *6* (1986Sc25).
161.334 *1*	0.80 *8*	266.6478	5/2$^+$	105.3109	3/2$^+$	M1+E2	0.40 *10*	0.511	α(K)=0.419 *11*; α(L)=0.072 *5*; α(M)=0.0159 *10*

$^{155}_{64}Gd_{91}$-7

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ [†]	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	α[a]	Comments
									α(N)=0.00363 *23*; α(O)=0.00054 *3*; α(P)=3.04×10^{-5} *12* α(K)exp: 0.39 *6* (1986Sc25).
x162.631[d] *1*	0.104[d@] *14*								α(K)exp: 0.37 *6* (1986Sc25).
162.631[d] *1*	≈0.029[d@]	488.7207	5/2$^+$	326.0878	5/2$^+$				
163.311 *1*	4.1 *4*	268.6235	3/2$^+$	105.3109	3/2$^+$	M1(+E2)	<0.22	0.501 *8*	α(K)=0.421 *7*; α(L)=0.0622 *17*; α(M)=0.0136 *4* α(N)=0.00312 *9*; α(O)=0.000481 *11*; α(P)=3.12×10^{-5} *6* α(K)exp: 0.41 *6* (1986Sc25).
164.366 *2*	0.28 *3*	451.3719	1/2$^-$	287.0043	3/2$^-$	M1,E2		0.46 *4*	α(K)=0.35 *7*; α(L)=0.089 *29*; α(M)=0.0201 *72* α(N)=0.0046 *16*; α(O)=6.5×10^{-4} *19*; α(P)=2.32×10^{-5} *79* α(K)exp: 0.37 *6* (1986Sc25).
x168.387 *4*	0.012 *2*					M1,E2		0.43 *4*	α(K)=0.32 *7*; α(L)=0.081 *26*; α(M)=0.0184 *63* α(N)=0.0042 *14*; α(O)=5.9×10^{-4} *16*; α(P)=2.17×10^{-5} *74* α(K)exp: 0.49 *13* (1986Sc25).
x174.709 *6*	0.010 *4*								
175.310 *1*	0.47 *5*	321.3808	5/2$^-$	146.0707	7/2$^-$	M1,E2		0.38 *4*	α(K)=0.29 *6*; α(L)=0.070 *20*; α(M)=0.0158 *50* α(N)=0.0036 *11*; α(O)=0.00051 *13*; α(P)=1.94×10^{-5} *66* α(K)exp: 0.34 *5* (1986Sc25).
180.103 *1*	2.18 *22*	266.6478	5/2$^+$	86.5460	5/2$^+$	M1+E2	0.26 *4*	0.378	α(K)=0.316 *5*; α(L)=0.0484 *10*; α(M)=0.01059 *22* α(N)=0.00243 *5*; α(O)=0.000372 *7*; α(P)=2.33×10^{-5} *4* α(K)exp: 0.31 *5* (1986Sc25).
181.694 *1*	2.6 *3*	287.0043	3/2$^-$	105.3109	3/2$^+$	E1		0.0586	α(K)=0.0496 *7*; α(L)=0.00707 *10*; α(M)=0.001528 *22* α(N)=0.000348 *5*; α(O)=5.21×10^{-5} *8*; α(P)=3.00×10^{-6} *5* α(K)exp: 0.053 *8* (1986Sc25).
181.949 *3*	0.076 *14*	1474.44	1/2$^+$,3/2$^+$,5/2$^+$	1292.49	3/2$^+$	(E2)		0.305	α(K)=0.206 *3*; α(L)=0.0769 *11*; α(M)=0.01779 *25* α(N)=0.00400 *6*; α(O)=0.000545 *8*; α(P)=1.157×10^{-5} *17* α(K)exp: 0.15 *5* (1986Sc25). Mult.: α(K)exp=0.15 *5* allows mult=E1 or E2. From the level scheme, Δπ=no.
182.078 *1*	0.114 *13*	268.6235	3/2$^+$	86.5460	5/2$^+$	E2		0.304	α(K)=0.206 *3*; α(L)=0.0767 *11*; α(M)=0.01774 *25* α(N)=0.00398 *6*; α(O)=0.000543 *8*; α(P)=1.154×10^{-5} *17* α(K)exp: 0.23 *3* (1986Sc25).
182.748 *1*	0.161 *16*	451.3719	1/2$^-$	268.6235	3/2$^+$	E1		0.0577	α(K)=0.0488 *7*; α(L)=0.00696 *10*;

$^{155}_{64}Gd_{91}$-8

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ †	I_γ b	E_i(level)	J_i^π	E_f	J_f^π	Mult. ‡	δ ‡	α a	Comments
									α(M)=0.001505 *21* α(N)=0.000342 *5*; α(O)=5.13×10^{-5} *8*; α(P)=2.96×10^{-6} *5* α(K)exp: 0.042 *10* (1986Sc25).
183.605 *2*	0.041 *5*	610.842	7/2$^+$	427.2361	3/2$^+$				α(K)exp: 0.27 *6* (1986Sc25, possibly contaminated).
187.222 *2*	0.042 *4*	1002.955	1/2$^-$	815.7334	(3/2)$^+$	E1		0.0541	α(K)=0.0458 *7*; α(L)=0.00652 *10*; α(M)=0.001409 *20* α(N)=0.000321 *5*; α(O)=4.81×10^{-5} *7*; α(P)=2.78×10^{-6} *4* α(K)exp: <0.09 (1986Sc25).
187.434 *3*	0.032 *3*	610.842	7/2$^+$	423.4126	7/2$^+$	E2,M1		0.31 *4*	α(K)=0.24 *5*; α(L)=0.055 *14*; α(M)=0.0124 *34* α(N)=0.00280 *74*; α(O)=0.00040 *8*; α(P)=1.61×10^{-5} *55* α(K)exp: 0.24 *6* (1986Sc25).
x187.828 *3*	0.063 *7*								α(K)exp: 0.24 *6* (1986Sc25).
187.923 *1*	0.080 *9*	581.4570	5/2$^-$	393.5329	7/2$^-$				α(K)exp: 0.50 *8* (1986Sc25).
191.691 *7*	0.152 *22*	251.7062	9/2$^-$	60.0110	5/2$^-$				α(K)exp: 0.22 *4* (1986Sc25).
192.386 *3*	0.010 *2*	1297.181	7/2$^+$	1104.795	(7/2$^-$)				
193.319 *4*	0.017 *2*	647.7930	5/2$^-$	454.4748	5/2$^-$	M1,E2		0.28 *4*	α(K)=0.22 *5*; α(L)=0.049 *11*; α(M)=0.0110 *28* α(N)=0.0025 *6*; α(O)=0.00036 *7*; α(P)=1.48×10^{-5} *50* α(K)exp: 0.27 *6* (1986Sc25).
197.163 *4*	0.025 *3*	1012.894	3/2$^-$	815.7334	(3/2)$^+$				
200.459 *1*	1.33 *14*	287.0043	3/2$^-$	86.5460	5/2$^+$	E1		0.0451	α(K)=0.0382 *6*; α(L)=0.00542 *8*; α(M)=0.001171 *17* α(N)=0.000267 *4*; α(O)=4.01×10^{-5} *6*; α(P)=2.34×10^{-6} *4* α(K)exp: 0.028 *7* (1986Sc25).
203.382 *1*	0.34 *3*	321.3808	5/2$^-$	117.9986	7/2$^+$	E1		0.0434	α(K)=0.0368 *6*; α(L)=0.00521 *8*; α(M)=0.001126 *16* α(N)=0.000256 *4*; α(O)=3.86×10^{-5} *6*; α(P)=2.26×10^{-6} *4* α(K)exp: 0.031 *6* (1986Sc25).
x204.230 *5*	0.009 *2*								α(K)exp: 1.4 *4* (1986Sc25, possibly contaminated).
206.635 *3*	0.040 *5*	266.6478	5/2$^+$	60.0110	5/2$^-$	E1		0.0416	α(K)=0.0353 *5*; α(L)=0.00499 *7*; α(M)=0.001079 *16* α(N)=0.000246 *4*; α(O)=3.70×10^{-5} *6*; α(P)=2.17×10^{-6} *3* α(K)exp: <0.05 (1986Sc25).
208.089 *2*	0.64 *7*	326.0878	5/2$^+$	117.9986	7/2$^+$	M1(+E2)	<0.33	0.254 *5*	α(K)=0.213 *5*; α(L)=0.0317 *8*; α(M)=0.00690 *20* α(N)=0.00159 *5*; α(O)=0.000244 *6*; α(P)=1.57×10^{-5} *5* α(K)exp: 0.20 *3* (1986Sc25).
208.614 *3*	0.078 *9*	268.6235	3/2$^+$	60.0110	5/2$^-$	E1		0.0406	α(K)=0.0344 *5*; α(L)=0.00487 *7*; α(M)=0.001052 *15* α(N)=0.000240 *4*; α(O)=3.61×10^{-5} *5*; α(P)=2.12×10^{-6} *3* α(K)exp: <0.024 (1986Sc25).
216.069 *1*	1.23 *13*	321.3808	5/2$^-$	105.3109	3/2$^+$	E1		0.0370	α(K)=0.0314 *5*; α(L)=0.00443 *7*; α(M)=0.000957 *14* α(N)=0.000218 *3*; α(O)=3.29×10^{-5} *5*; α(P)=1.94×10^{-6} *3* α(K)exp: 0.029 *4* (1986Sc25).
218.508 *4*	0.022 *3*	326.0878	5/2$^+$	107.5803	9/2$^+$	(E2)		0.1656	α(K)=0.1183 *17*; α(L)=0.0367 *6*; α(M)=0.00843 *12* α(N)=0.00190 *3*; α(O)=0.000262 *4*; α(P)=6.93×10^{-6} *10* α(K)exp: 0.21 *7* (1986Sc25). Mult.: 1986Sc25 report mult=(M1,E2). Placement rules out M1.
219.487 *2*	0.048 *5*	1035.222	1/2$^+$,3/2$^+$	815.7334	(3/2)$^+$	M1,E2		0.19 *3*	α(K)=0.15 *4*; α(L)=0.031 *5*; α(M)=0.0070 *13*

$^{155}_{64}Gd_{91}$-9

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ [†]	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	α[a]	Comments
									α(N)=0.0016 *3*; α(O)=0.00023 *3*; α(P)=1.04×10^{-5} *36* α(K)exp: 0.16 *4* (1986Sc25).
220.099 *1*	0.27 *3*	488.7207	5/2$^+$	268.6235	3/2$^+$	M1,E2		0.19 *3*	α(K)=0.15 *4*; α(L)=0.031 *5*; α(M)=0.0070 *13* α(N)=0.0016 *3*; α(O)=0.000231 *25*; α(P)=1.03×10^{-5} *36* α(K)exp: 0.164 *25* (1986Sc25).
220.778 *2*	1.71 *18*	326.0878	5/2$^+$	105.3109	3/2$^+$	M1(+E2)	<0.33	0.216 *5*	α(K)=0.181 *5*; α(L)=0.0268 *6*; α(M)=0.00583 *15* α(N)=0.00134 *4*; α(O)=0.000207 *4*; α(P)=1.34×10^{-5} *4* α(K)exp: 0.18 *3* (1986Sc25).
222.069 *9*	0.030 *3*	488.7207	5/2$^+$	266.6478	5/2$^+$				
[x]226.510 *4*	0.070 *7*								α(K)exp: 0.11 *6* (1986Sc25).
226.991 *1*	0.92 *9*	287.0043	3/2$^-$	60.0110	5/2$^-$	M1(+E2)	<0.33	0.200 *4*	α(K)=0.168 *4*; α(L)=0.0247 *5*; α(M)=0.00539 *13* α(N)=0.00124 *3*; α(O)=0.000191 *4*; α(P)=1.24×10^{-5} *4* α(K)exp: 0.147 *21* (1986Sc25).
[x]229.607 *9*	0.085 *15*					E1		0.0316	α(K)=0.0268 *4*; α(L)=0.00377 *6*; α(M)=0.000814 *12* α(N)=0.000186 *3*; α(O)=2.80×10^{-5} *4*; α(P)=1.664×10^{-6} *24* α(K)exp: <0.020 (1986Sc25).
[x]230.005 *12*	0.09 *4*								α(K)exp: 0.6 *3* (1986Sc25).
231.033 *6*	0.008 *2*	581.4570	5/2$^-$	350.4360	7/2$^+$				
232.437 *1*	0.44 *4*	350.4360	7/2$^+$	117.9986	7/2$^+$	M1,E2		0.16 *3*	α(K)=0.13 *4*; α(L)=0.026 *3*; α(M)=0.0058 *9* α(N)=0.00131 *18*; α(O)=0.000192 *15*; α(P)=8.9×10^{-6} *31* α(K)exp: 0.145 *20* (1986Sc25).
234.270 *3*	0.032 *5*	485.976	(9/2$^-$)	251.7062	9/2$^-$	(E1)		0.0300	α(K)=0.0254 *4*; α(L)=0.00357 *5*; α(M)=0.000771 *11* α(N)=0.0001759 *25*; α(O)=2.66×10^{-5} *4*; α(P)=1.583×10^{-6} *23* α(K)exp: <0.06 *3* (1986Sc25). Mult.: note that the listed mult is not consistent with the proposed placement.
234.832 *1*	0.31 *5*	321.3808	5/2$^-$	86.5460	5/2$^+$	E1		0.0298	α(K)=0.0253 *4*; α(L)=0.00355 *5*; α(M)=0.000767 *11* α(N)=0.0001748 *25*; α(O)=2.64×10^{-5} *4*; α(P)=1.573×10^{-6} *22* α(K)exp: 0.025 *4* (1986Sc25).
238.524 *10*	0.024 *2*	1343.316	3/2$^-$,5/2,7/2$^-$	1104.795	(7/2$^-$)	M1,E2		0.15 *3*	α(K)=0.12 *3*; α(L)=0.0237 *24*; α(M)=0.0053 *7* α(N)=0.00120 *14*; α(O)=0.000176 *12*; α(P)=8.3×10^{-6} *29* α(K)exp: 0.18 *5* (1986Sc25).
239.540 *1*	0.69 *7*	326.0878	5/2$^+$	86.5460	5/2$^+$	M1(+E2)	<0.33	0.172 *4*	α(K)=0.145 *4*; α(L)=0.0213 *4*; α(M)=0.00463 *9* α(N)=0.001065 *20*; α(O)=0.000164 *3*; α(P)=1.07×10^{-5} *4* α(K)exp: 0.145 *20* (1986Sc25).
242.855 *1*	0.35 *3*	350.4360	7/2$^+$	107.5803	9/2$^+$	M1		0.1686	α(K)=0.1427 *20*; α(L)=0.0203 *3*; α(M)=0.00440 *7* α(N)=0.001013 *15*; α(O)=0.0001573 *22*; α(P)=1.057×10^{-5} *15* α(K)exp: 0.134 *20* (1986Sc25).
245.129 *3*	0.063 *6*	350.4360	7/2$^+$	105.3109	3/2$^+$	E2		0.1139	α(K)=0.0837 *12*; α(L)=0.0234 *4*; α(M)=0.00536 *8*

$^{155}_{64}Gd_{91}$-10

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ[†]	I_γ[b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	α[a]	Comments
									α(N)=0.001208 *17*; α(O)=0.0001687 *24*; α(P)=5.03×10^{-6} *7* α(K)exp: 0.086 *19* (1986Sc25).
246.253 *9*	0.015 *2*	392.318	11/2$^-$	146.0707	7/2$^-$				
247.462 *4*	0.133 *12*	393.5329	7/2$^-$	146.0707	7/2$^-$				α(K)exp: 0.66 *9* (1986Sc25).
254.256 *6*	0.028 *2*	647.7930	5/2$^-$	393.5329	7/2$^-$				α(K)exp: 0.15 *4* (1986Sc25).
[x]257.900 *4*	0.022 *2*								α(K)exp: 0.40 *7* (1986Sc25).
258.830 *8*	0.011 *5*	1363.637	5/2,7/2$^+$	1104.795	(7/2$^-$)				
260.071 *3*	0.043 *4*	581.4570	5/2$^-$	321.3808	5/2$^-$	(M1,E2)		0.117 *23*	α(K)=0.094 *25*; α(L)=0.0178 *10*; α(M)=0.0040 *4* α(N)=0.00090 *7*; α(O)=0.000133 *3*; α(P)=6.5×10^{-6} *23* α(K)exp: 0.11 *3* (1986Sc25).
261.369 *1*	0.84 *8*	321.3808	5/2$^-$	60.0110	5/2$^-$	M1		0.1382	α(K)=0.1171 *17*; α(L)=0.01660 *24*; α(M)=0.00360 *5* α(N)=0.000829 *12*; α(O)=0.0001288 *18*; α(P)=8.66×10^{-6} *13* α(K)exp: 0.116 *16* (1986Sc25).
262.322 *2*	2.9 *3*	367.6338	1/2$^+$	105.3109	3/2$^+$	M1+E2	0.59 *16*	0.125 *5*	α(K)=0.104 *5*; α(L)=0.0169 *3*; α(M)=0.00371 *8* α(N)=0.000849 *17*; α(O)=0.0001284 *19*; α(P)=7.4×10^{-6} *5* α(K)exp: 0.106 *15* (1986Sc25).
263.884 *4*	0.056 *6*	350.4360	7/2$^+$	86.5460	5/2$^+$				α(K)exp: 0.107 *17* (1986Sc25).
266.068 *4*	0.081 *8*	326.0878	5/2$^+$	60.0110	5/2$^-$	E1		0.0216	α(K)=0.0183 *3*; α(L)=0.00256 *4*; α(M)=0.000552 *8* α(N)=0.0001260 *18*; α(O)=1.91×10^{-5} *3*; α(P)=1.155×10^{-6} *17* α(K)exp: <0.013 (1986Sc25).
268.625 *2*	0.54 *5*	268.6235	3/2$^+$	0.0	3/2$^-$	E1		0.0211	α(K)=0.0179 *3*; α(L)=0.00249 *4*; α(M)=0.000538 *8* α(N)=0.0001229 *18*; α(O)=1.86×10^{-5} *3*; α(P)=1.128×10^{-6} *16* α(K)exp: 0.0138 *22* (1986Sc25).
269.245 *4*	0.038 *3*	720.6177	1/2$^+$,3/2$^+$,(5/2$^+$)	451.3719	1/2$^-$				α(K)exp: 0.26 *5* (1986Sc25).
270.051 *5*	0.057 *6*	720.6177	1/2$^+$,3/2$^+$,(5/2$^+$)	450.5638	3/2$^-$	E1		0.0208	α(K)=0.01766 *25*; α(L)=0.00246 *4*; α(M)=0.000531 *8* α(N)=0.0001212 *17*; α(O)=1.84×10^{-5} *3*; α(P)=1.114×10^{-6} *16* α(K)exp: <0.018 (1986Sc25).
270.758 *3*	0.091 *9*	592.1429	3/2$^-$	321.3808	5/2$^-$	M1		0.1257	α(K)=0.1065 *15*; α(L)=0.01508 *22*; α(M)=0.00327 *5* α(N)=0.000753 *11*; α(O)=0.0001170 *17*; α(P)=7.88×10^{-6} *11* α(K)exp: 0.104 *15* (1986Sc25).
[x]271.114 *3*	0.035 *3*					M1,E2		0.104 *22*	α(K)=0.084 *22*; α(L)=0.0155 *6*; α(M)=0.00345 *20* α(N)=0.00079 *4*; α(O)=0.0001162 *17*; α(P)=5.8×10^{-6} *21* α(K)exp: 0.10 *3* (1986Sc25).

$^{155}_{64}Gd_{91}$-11

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ[†]	I_γ[b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	α[a]	Comments
272.354 *6*	0.028 *2*	559.368	1/2$^-$	287.0043	3/2$^-$	M1		0.1238	α(K)=0.1048 *15*; α(L)=0.01484 *21*; α(M)=0.00322 *5* α(N)=0.000741 *11*; α(O)=0.0001152 *17*; α(P)=7.75×10^{-6} *11* α(K)exp: 0.20 *3* (1986Sc25).
275.535 *6*	0.018 *2*	393.5329	7/2$^-$	117.9986	7/2$^+$				
276.84 *3*	0.014 *5*	1363.637	5/2,7/2$^+$	1086.848	3/2$^+$	(M1)		0.1185	α(K)=0.1003 *14*; α(L)=0.01420 *20*; α(M)=0.00308 *5* α(N)=0.000709 *10*; α(O)=0.0001102 *16*; α(P)=7.42×10^{-6} *11* α(K)exp: 0.22 *10* (1986Sc25).
277.361 *7*	0.027 *4*	423.4126	7/2$^+$	146.0707	7/2$^-$				
281.087 *2*	0.180 *17*	367.6338	1/2$^+$	86.5460	5/2$^+$	E2		0.0738	α(K)=0.0558 *8*; α(L)=0.01400 *20*; α(M)=0.00318 *5* α(N)=0.000719 *10*; α(O)=0.0001015 *15*; α(P)=3.44×10^{-6} *5* α(K)exp: 0.048 *8* (1986Sc25).
282.324 *8*	0.012 *1*	1002.955	1/2$^-$	720.6177	1/2$^+$,3/2$^+$,(5/2$^+$)				
284.745 *4*	0.048 *5*	610.842	7/2$^+$	326.0878	5/2$^+$	M1		0.1099	α(K)=0.0931 *13*; α(L)=0.01316 *19*; α(M)=0.00286 *4* α(N)=0.000657 *10*; α(O)=0.0001021 *15*; α(P)=6.88×10^{-6} *10* α(K)exp: 0.21 *3* (1986Sc25).
[x]285.947 *4*	0.109 *10*					(E2)		0.0699	α(K)=0.0530 *8*; α(L)=0.01314 *19*; α(M)=0.00298 *5* α(N)=0.000674 *10*; α(O)=9.54×10^{-5} *14*; α(P)=3.28×10^{-6} *5* α(K)exp: 0.057 *153* (1986Sc25).
286.999 *4*	1.61 *15*	287.0043	3/2$^-$	0.0	3/2$^-$	M1+E2	0.90 *+18−15*	0.090 *4*	α(K)=0.074 *4*; α(L)=0.01292 *19*; α(M)=0.00286 *5* α(N)=0.000653 *10*; α(O)=9.74×10^{-5} *15*; α(P)=5.2×10^{-6} *4* α(K)exp: 0.074 *10* (1986Sc25).
[x]288.030 *7*	0.020 *2*								
[x]289.047 *4*	0.030 *3*					M1		0.1055	α(K)=0.0894 *13*; α(L)=0.01264 *18*; α(M)=0.00274 *4* α(N)=0.000631 *9*; α(O)=9.81×10^{-5} *14*; α(P)=6.61×10^{-6} *10* α(K)exp: 0.101 *19* (1986Sc25).
292.265 *4*	0.024 *2*	1012.894	3/2$^-$	720.6177	1/2$^+$,3/2$^+$,(5/2$^+$)				
293.460 *8*	0.022 *3*	614.8561	3/2$^-$	321.3808	5/2$^-$	M1		0.1014	α(K)=0.0859 *12*; α(L)=0.01214 *17*; α(M)=0.00263 *4*

$^{155}_{64}Gd_{91}$-12

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ †	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.‡	α [a]	Comments
								α(N)=0.000606 *9*; α(O)=9.41×10^{-5} *14*; α(P)=6.34×10^{-6} *9* α(K)exp: 0.15 *3* (1986Sc25).
294.453 *10*	0.012 *2*	581.4570	5/2$^-$	287.0043	3/2$^-$	M1	0.1005	α(K)=0.0851 *12*; α(L)=0.01203 *17*; α(M)=0.00261 *4* α(N)=0.000600 *9*; α(O)=9.33×10^{-5} *13*; α(P)=6.29×10^{-6} *9* α(K)exp: 0.18 *4* (1986Sc25). Mult.: α(K)exp=0.18 *4* is somewhat larger than the α(K) values for M1 or E2.
300.926 *15*	0.017 *2*	786.899	7/2$^-$	485.976	(9/2$^-$)			
301.682 *9*	0.014 *4*	553.372	(7/2)$^-$	251.7062	9/2$^-$			α(K)exp: 0.07 *3* (1986Sc25).
301.986 *6*	0.021 *2*	752.551	5/2$^+$	450.5638	3/2$^-$			α(K)exp: 0.046 *15* (1986Sc25).
304.530 *18*	0.024 *2*	450.5638	3/2$^-$	146.0707	7/2$^-$			α(K)exp: 0.22 *4* (1986Sc25).
305.131 *9*	0.047 *4*	592.1429	3/2$^-$	287.0043	3/2$^-$	M1	0.0914	α(K)=0.0774 *11*; α(L)=0.01093 *16*; α(M)=0.00237 *4* α(N)=0.000546 *8*; α(O)=8.48×10^{-5} *12*; α(P)=5.72×10^{-6} *8* α(K)exp: 0.20 *4* (1986Sc25).
305.428 *8*	0.44 *4*	423.4126	7/2$^+$	117.9986	7/2$^+$	M1	0.0911	α(K)=0.0772 *11*; α(L)=0.01090 *16*; α(M)=0.00236 *4* α(N)=0.000544 *8*; α(O)=8.46×10^{-5} *12*; α(P)=5.70×10^{-6} *8* α(K)exp: 0.123 *21* (1986Sc25).
306.986 *3*	0.29 *3*	393.5329	7/2$^-$	86.5460	5/2$^+$	E1	0.01504	α(K)=0.01279 *18*; α(L)=0.001768 *25*; α(M)=0.000382 *6* α(N)=8.72×10^{-5} *13*; α(O)=1.326×10^{-5} *19*; α(P)=8.15×10^{-7} *12* α(K)exp: 0.008 *3* (1986Sc25).
[x]307.67 *5*	0.015 *4*							
312.824 *7*	0.010 *1*	581.4570	5/2$^-$	268.6235	3/2$^+$			
[x]313.47 *9*	0.005 *3*							
314.604 *8*	0.061 *6*	1035.222	1/2$^+$,3/2$^+$	720.6177	1/2$^+$,3/2$^+$,(5/2$^+$)	M1,(E2)	0.068 *17*	α(K)=0.056 *16*; α(L)=0.0097 *4*; α(M)=0.00214 *5* α(N)=0.000489 *15*; α(O)=7.3×10^{-5} *6*; α(P)=3.9×10^{-6} *14* α(K)exp: 0.065 *9* (1986Sc25).
315.845 *14*	0.102 *10*	423.4126	7/2$^+$	107.5803	9/2$^+$	M1,(E2)	0.067 *16*	α(K)=0.055 *16*; α(L)=0.0096 *5*; α(M)=0.00212 *6* α(N)=0.000483 *16*; α(O)=7.2×10^{-5} *6*; α(P)=3.9×10^{-6} *14* α(K)exp: 0.062 *9* (1986Sc25).
317.907 *8*	0.038 *12*	1104.795	(7/2$^-$)	786.899	7/2$^-$			
318.422 *21*	0.005 *4*	804.38	(9/2$^-$)	485.976	(9/2$^-$)			
[x]319.368 *21*	0.021 *4*							
[x]319.93 *7*	0.012 *4*							
321.383 *2*	0.142 *13*	321.3808	5/2$^-$	0.0	3/2$^-$	M1	0.0796	α(K)=0.0675 *10*; α(L)=0.00951 *14*; α(M)=0.00206 *3* α(N)=0.000475 *7*; α(O)=7.38×10^{-5} *11*; α(P)=4.98×10^{-6} *7* α(K)exp: 0.069 *10* (1986Sc25).
321.711 *5*	0.029 *4*	647.7930	5/2$^-$	326.0878	5/2$^+$			α(K)exp: 0.17 *3* (1986Sc25, possibly contaminated).
321.926 *3*	0.097 *9*	427.2361	3/2$^+$	105.3109	3/2$^+$			α(K)exp: 0.051 *8* (1986Sc25).
[x]322.62 *4*	0.009 *1*							
323.519 *4*	0.237 *22*	592.1429	3/2$^-$	268.6235	3/2$^+$	E1	0.01320	α(K)=0.01123 *16*; α(L)=0.001548 *22*; α(M)=0.000334 *5* α(N)=7.64×10^{-5} *11*; α(O)=1.162×10^{-5} *17*;

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ [†]	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	α [a]	Comments
								α(P)=7.19×10^{-7} *10* α(K)exp: 0.0141 *20* (1986Sc25).
325.488 *6*	0.049 *6*	592.1429	3/2$^-$	266.6478	5/2$^+$	(E1)	0.01300	α(K)=0.01106 *16*; α(L)=0.001525 *22*; α(M)=0.000329 *5* α(N)=7.52×10^{-5} *11*; α(O)=1.145×10^{-5} *16*; α(P)=7.09×10^{-7} *10* α(K)exp: <0.021 (1986Sc25).
[x]326.594 *21*	0.015 *2*							
327.871 *9*	0.022 *4*	614.8561	3/2$^-$	287.0043	3/2$^-$	(M1,E2)	0.061 *15*	α(K)=0.050 *15*; α(L)=0.0085 *5*; α(M)=0.00188 *8* α(N)=0.000430 *21*; α(O)=6.4×10^{-5} *6*; α(P)=3.5×10^{-6} *13* α(K)exp: 0.09 *3* (1986Sc25).
329.143 *9*	0.041 *4*	752.551	5/2$^+$	423.4126	7/2$^+$	M1	0.0748	α(K)=0.0634 *9*; α(L)=0.00892 *13*; α(M)=0.00193 *3* α(N)=0.000445 *7*; α(O)=6.92×10^{-5} *10*; α(P)=4.67×10^{-6} *7* α(K)exp: 0.097 *17* (1986Sc25).
[x]332.163 *18*	0.009 *2*							
332.909 *13*	0.035 *5*	1437.685		1104.795	(7/2$^-$)	M1,E2	0.058 *15*	α(K)=0.048 *14*; α(L)=0.0081 *6*; α(M)=0.00180 *9* α(N)=0.000411 *23*; α(O)=6.1×10^{-5} *6*; α(P)=3.4×10^{-6} *12* α(K)exp: 0.057 *15* (1986Sc25).
333.520 *6*	0.084 *8*	393.5329	7/2$^-$	60.0110	5/2$^-$	M1	0.0722	α(K)=0.0612 *9*; α(L)=0.00861 *12*; α(M)=0.00187 *3* α(N)=0.000430 *6*; α(O)=6.68×10^{-5} *10*; α(P)=4.51×10^{-6} *7* α(K)exp: 0.059 *8* (1986Sc25).
334.305 *7*	0.049 *5*	1086.848	3/2$^+$	752.551	5/2$^+$	M1	0.0718	α(K)=0.0608 *9*; α(L)=0.00856 *12*; α(M)=0.00186 *3* α(N)=0.000427 *6*; α(O)=6.64×10^{-5} *10*; α(P)=4.48×10^{-6} *7* α(K)exp: 0.073 *12* (1986Sc25).
335.637 *18*	0.025 *4*	1363.637	5/2,7/2$^+$	1028.037	1/2$^-$,3/2,5/2$^-$			
336.472 *2*	0.47 *4*	454.4748	5/2$^-$	117.9986	7/2$^+$	E1	0.01198	α(K)=0.01019 *15*; α(L)=0.001403 *20*; α(M)=0.000303 *5* α(N)=6.92×10^{-5} *10*; α(O)=1.054×10^{-5} *15*; α(P)=6.55×10^{-7} *10* α(K)exp: 0.010 *3* (1986Sc25).
336.864 *2*	0.43 *4*	423.4126	7/2$^+$	86.5460	5/2$^+$	M1	0.0703	α(K)=0.0596 *9*; α(L)=0.00839 *12*; α(M)=0.00182 *3* α(N)=0.000419 *6*; α(O)=6.51×10^{-5} *10*; α(P)=4.39×10^{-6} *7*
337.59 *4*	0.010 *5*	658.987	5/2$^-$	321.3808	5/2$^-$			
[x]338.675 *7*	0.039 *3*							α(K)exp: 0.24 *3* (1986Sc25, possibly contaminated).
340.690 *1*	0.73 *7*	427.2361	3/2$^+$	86.5460	5/2$^+$	M1	0.0683	α(K)=0.0579 *9*; α(L)=0.00814 *12*; α(M)=0.001765 *25* α(N)=0.000406 *6*; α(O)=6.31×10^{-5} *9*; α(P)=4.26×10^{-6} *6* α(K)exp: 0.057 *8* (1986Sc25).
[x]342.647[d] *4*	0.110[d&] *11*							
342.647[d] *4*	0.013[d&] *3*	488.7207	5/2$^+$	146.0707	7/2$^-$			α(K)exp: <0.009 (1986Sc25).
344.204 *6*	0.032 *3*	610.842	7/2$^+$	266.6478	5/2$^+$	M1	0.0664	α(K)=0.0563 *8*; α(L)=0.00792 *11*; α(M)=0.001717 *24* α(N)=0.000395 *6*; α(O)=6.14×10^{-5} *9*; α(P)=4.15×10^{-6} *6* α(K)exp: 0.080 *13* (1986Sc25).
346.059 *2*	0.82 *8*	451.3719	1/2$^-$	105.3109	3/2$^+$	E1	0.01118	α(K)=0.00952 *14*; α(L)=0.001308 *19*; α(M)=0.000282 *4*

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ †	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult. ‡	α [a]	Comments
								α(N)=6.45×10^{-5} *9*; α(O)=9.84×10^{-6} *14*; α(P)=6.13×10^{-7} *9* α(K)exp: 0.0096 *13* (1986Sc25).
[x]349.113 *12*	0.016 *4*							
352.198 *10*	0.009 *1*	1225.009	3/2$^-$,5/2,7/2	872.810	(5/2)$^+$			
359.093 *18*	0.055 *5*	610.842	7/2$^+$	251.7062	9/2$^-$			α(K)exp: 0.038 *14* (1986Sc25). Mult.: from α(K)exp=0.038 *14*, mult=M1+E2. Placement in level scheme, however, indicates Δπ=yes.
361.256 *16*	0.009 *2*	815.7334	(3/2)$^+$	454.4748	5/2$^-$			
363.391 *12*	0.16 *4*	423.4126	7/2$^+$	60.0110	5/2$^-$	E1	0.00993	α(K)=0.00845 *12*; α(L)=0.001159 *17*; α(M)=0.000250 *4* α(N)=5.72×10^{-5} *8*; α(O)=8.72×10^{-6} *13*; α(P)=5.46×10^{-7} *8* α(K)exp: 0.013 *5* (1986Sc25).
364.019 *3*	1.18 *11*	450.5638	3/2$^-$	86.5460	5/2$^+$	E1	0.00989	α(K)=0.00842 *12*; α(L)=0.001154 *17*; α(M)=0.000249 *4* α(N)=5.69×10^{-5} *8*; α(O)=8.69×10^{-6} *13*; α(P)=5.44×10^{-7} *8* α(K)exp: 0.0089 *12* (1986Sc25).
364.374 *11*	0.029 *2*	815.7334	(3/2)$^+$	451.3719	1/2$^-$			
365.112 *11*	0.024 *4*	1012.894	3/2$^-$	647.7930	5/2$^-$	(M1)	0.0569	α(K)=0.0483 *7*; α(L)=0.00678 *10*; α(M)=0.001468 *21* α(N)=0.000338 *5*; α(O)=5.26×10^{-5} *8*; α(P)=3.55×10^{-6} *5* α(K)exp: 0.07 *3* (1986Sc25).
366.221 *15*	0.027 *2*	1086.848	3/2$^+$	720.6177	1/2$^+$,3/2$^+$,(5/2$^+$)			
[x]366.861 *16*	0.032 *3*							
367.225 *2*	0.88 *8*	427.2361	3/2$^+$	60.0110	5/2$^-$	E1	0.00968	α(K)=0.00824 *12*; α(L)=0.001130 *16*; α(M)=0.000244 *4* α(N)=5.57×10^{-5} *8*; α(O)=8.50×10^{-6} *12*; α(P)=5.33×10^{-7} *8* α(K)exp: 0.0088 *13* (1986Sc25).
367.638 *2*	0.37 *3*	367.6338	1/2$^+$	0.0	3/2$^-$	E1	0.00965	α(K)=0.00822 *12*; α(L)=0.001126 *16*; α(M)=0.000243 *4* α(N)=5.56×10^{-5} *8*; α(O)=8.48×10^{-6} *12*; α(P)=5.31×10^{-7} *8* α(K)exp: 0.0077 *20* (1986Sc25).
367.929 *1*	0.84 *8*	454.4748	5/2$^-$	86.5460	5/2$^+$	E1	0.00964	α(K)=0.00820 *12*; α(L)=0.001124 *16*; α(M)=0.000243 *4* α(N)=5.55×10^{-5} *8*; α(O)=8.46×10^{-6} *12*; α(P)=5.30×10^{-7} *8* α(K)exp: 0.0095 *15* (1986Sc25).
368.98 *8*	0.047 *13*	1028.037	1/2$^-$,3/2,5/2$^-$	658.987	5/2$^-$	(E1)	0.00957	α(K)=0.00815 *12*; α(L)=0.001116 *16*; α(M)=0.000241 *4* α(N)=5.51×10^{-5} *8*; α(O)=8.41×10^{-6} *12*; α(P)=5.27×10^{-7} *8* α(K)exp: <0.12 (1986Sc25).
[x]370.021 *9*	0.055 *5*					M1,E2	0.044 *12*	α(K)=0.036 *11*; α(L)=0.0059 *7*; α(M)=0.00130 *12* α(N)=0.00030 *3*; α(O)=4.5×10^{-5} *6*; α(P)=2.54×10^{-6} *90* α(K)exp: 0.035 *7* (1986Sc25).
370.721 *5*	0.36 *3*	488.7207	5/2$^+$	117.9986	7/2$^+$	M1	0.0547	α(K)=0.0464 *7*; α(L)=0.00651 *10*; α(M)=0.001410 *20*

$^{155}_{64}Gd_{91}$-15

γ(^{155}Gd) (continued)

E_γ †	I_γ b	E_i(level)	J_i^π	E_f	J_f^π	Mult. ‡	α a	Comments
								α(N)=0.000325 *5*; α(O)=5.05×10^{-5} *7*; α(P)=3.41×10^{-6} *5* α(K)exp: 0.047 *7* (1986Sc25).
371.78 *9*	0.009 *7*	658.987	5/2$^-$	287.0043	3/2$^-$			α(K)exp: 0.09 *7* (1986Sc25).
x372.928 *18*	0.022 *2*							
x377.330 *6*	0.038 *3*					(E1)	0.00907	α(K)=0.00772 *11*; α(L)=0.001057 *15*; α(M)=0.000228 *4* α(N)=5.21×10^{-5} *8*; α(O)=7.96×10^{-6} *12*; α(P)=5.00×10^{-7} *7* α(K)exp: <0.015 (1986Sc25).
379.165 *4*	0.063 *6*	647.7930	5/2$^-$	268.6235	3/2$^+$	E1	0.00896	α(K)=0.00763 *11*; α(L)=0.001044 *15*; α(M)=0.000225 *4* α(N)=5.15×10^{-5} *8*; α(O)=7.87×10^{-6} *11*; α(P)=4.94×10^{-7} *7* α(K)exp: <0.009 (1986Sc25).
x379.51 *6*	0.012 *3*							
383.414 *7*	0.041 *4*	488.7207	5/2$^+$	105.3109	3/2$^+$	M1,E2	0.040 *11*	α(K)=0.0327 *98*; α(L)=0.0053 *7*; α(M)=0.00117 *12* α(N)=0.00027 *3*; α(O)=4.0×10^{-5} *6*; α(P)=2.31×10^{-6} *82* α(K)exp: 0.035 *14* (1986Sc25).
x385.006 *20*	0.012 *1*							α(K)exp: 0.12 *3* (1986Sc25).
388.098 *3*	0.059 *6*	1002.955	1/2$^-$	614.8561	3/2$^-$	M1	0.0485	α(K)=0.0412 *6*; α(L)=0.00577 *8*; α(M)=0.001250 *18* α(N)=0.000288 *4*; α(O)=4.47×10^{-5} *7*; α(P)=3.03×10^{-6} *5* α(K)exp: 0.067 *9* (1986Sc25).
x388.62 *3*	0.014 *2*							
390.552 *1*	1.11 *11*	450.5638	3/2$^-$	60.0110	5/2$^-$	M1	0.0478	α(K)=0.0405 *6*; α(L)=0.00567 *8*; α(M)=0.001229 *18* α(N)=0.000283 *4*; α(O)=4.40×10^{-5} *7*; α(P)=2.98×10^{-6} *5* α(K)exp: 0.041 *6* (1986Sc25).
391.360 *2*	0.180 *17*	451.3719	1/2$^-$	60.0110	5/2$^-$	E2	0.0273	α(K)=0.0217 *3*; α(L)=0.00440 *7*; α(M)=0.000985 *14* α(N)=0.000224 *4*; α(O)=3.25×10^{-5} *5*; α(P)=1.416×10^{-6} *20* α(K)exp: 0.0180 *3* (1986Sc25).
393.57 *4*	0.010 *3*	393.5329	7/2$^-$	0.0	3/2$^-$			
394.474 *8*	0.038 *5*	454.4748	5/2$^-$	60.0110	5/2$^-$	M1,E2	0.037 *10*	α(K)=0.0304 *92*; α(L)=0.0049 *7*; α(M)=0.00108 *12* α(N)=0.00025 *3*; α(O)=3.7×10^{-5} *6*; α(P)=2.14×10^{-6} *76* α(K)exp: 0.039 *10* (1986Sc25).
396.095 *6*	0.027 *2*	647.7930	5/2$^-$	251.7062	9/2$^-$			
x400.636 *6*	0.061 *6*					E1	0.00786	α(K)=0.00670 *10*; α(L)=0.000914 *13*; α(M)=0.000197 *3* α(N)=4.51×10^{-5} *7*; α(O)=6.89×10^{-6} *10*; α(P)=4.35×10^{-7} *6* α(K)exp: <0.009 (1986Sc25).
402.173 *2*	0.133 *12*	488.7207	5/2$^+$	86.5460	5/2$^+$	M1	0.0442	α(K)=0.0376 *6*; α(L)=0.00525 *8*; α(M)=0.001138 *16* α(N)=0.000262 *4*; α(O)=4.07×10^{-5} *6*; α(P)=2.76×10^{-6} *4* α(K)exp: 0.044 *6* (1986Sc25).
x404.666 *21*	0.021 *2*					M1	0.0435	α(K)=0.0370 *6*; α(L)=0.00517 *8*; α(M)=0.001120 *16* α(N)=0.000258 *4*; α(O)=4.01×10^{-5} *6*; α(P)=2.71×10^{-6} *4* α(K)exp: 0.054 *12* (1986Sc25).
409.278 *17*	0.009 *2*	1225.009	3/2$^-$,5/2,7/2	815.7334	(3/2)$^+$			
x409.99 *3*	0.004 *1*							
410.73 *3*	0.044 *6*	1197.613	3/2$^-$,5/2,7/2	786.899	7/2$^-$			α(K)exp: <0.013 (1986Sc25). Mult.: α(K)exp<0.013 (compared with α(K)=0.0063 for E1 and

$^{155}_{64}Gd_{91}$-16

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ [†]	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	α [a]	Comments
								α(K)=0.0191 for E2) suggests mult=E1. The placement in the level scheme, however, requires Δπ=no.
[x]414.17 *4*	0.009 *1*							
418.336 *3*	0.058 *6*	872.810	$(5/2)^+$	454.4748	$5/2^-$	E1	0.00710	α(K)=0.00605 *9*; α(L)=0.000824 *12*; α(M)=0.0001775 *25* α(N)=4.06×10^{-5} *6*; α(O)=6.22×10^{-6} *9*; α(P)=3.94×10^{-7} *6* α(K)exp: 0.008 *3* (1986Sc25).
419.42 *3*	0.022 *5*	1078.43	$1/2^-,3/2^-$	658.987	$5/2^-$			
420.363 *11*	0.016 *4*	1035.222	$1/2^+,3/2^+$	614.8561	$3/2^-$			
424.761 *15*	0.018 *4*	1437.685		1012.894	$3/2^-$			α(K)exp: 0.014 *8* (1986Sc25).
[x]430.130 *24*	0.007 *2*							
[x]431.383 *16*	0.026 *6*							
433.604 *7*	0.025 *3*	720.6177	$1/2^+,3/2^+,(5/2^+)$	287.0043	$3/2^-$			
435.365 *5*	0.218 *20*	553.372	$(7/2)^-$	117.9986	$7/2^+$	E1	0.00647	α(K)=0.00551 *8*; α(L)=0.000749 *11*; α(M)=0.0001614 *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: 0.0051 *13* (1986Sc25).
[x]441.085 *23*	0.013 *8*							
445.054 *19*	0.020 *2*	1197.613	$3/2^-,5/2,7/2$	752.551	$5/2^+$			
445.804 *8*	0.062 *6*	1104.795	$(7/2^-)$	658.987	$5/2^-$			α(K)exp: 0.040 *6* (1986Sc25).
446.081 *4*	0.123 *11*	592.1429	$3/2^-$	146.0707	$7/2^-$			α(K)exp: 0.020 *3* (1986Sc25).
450.559 *3*	1.23 *12*	450.5638	$3/2^-$	0.0	$3/2^-$	M1	0.0330	α(K)=0.0280 *4*; α(L)=0.00391 *6*; α(M)=0.000846 *12* α(N)=0.000195 *3*; α(O)=3.03×10^{-5} *5*; α(P)=2.05×10^{-6} *3* α(K)exp: 0.028 *4* (1986Sc25).
451.370 *3*	1.14 *11*	451.3719	$1/2^-$	0.0	$3/2^-$	M1	0.0329	α(K)=0.0279 *4*; α(L)=0.00389 *6*; α(M)=0.000842 *12* α(N)=0.000194 *3*; α(O)=3.01×10^{-5} *5*; α(P)=2.04×10^{-6} *3* α(K)exp: 0.028 *4* (1986Sc25).
451.991 *3*	0.199 *19*	720.6177	$1/2^+,3/2^+,(5/2^+)$	268.6235	$3/2^+$	M1	0.0327	α(K)=0.0278 *4*; α(L)=0.00387 *6*; α(M)=0.000839 *12* α(N)=0.000193 *3*; α(O)=3.00×10^{-5} *5*; α(P)=2.04×10^{-6} *3* α(K)exp: 0.028 *4* (1986Sc25).
453.541 *18*	0.023 *5*	1012.894	$3/2^-$	559.368	$1/2^-$			
454.472 *3*	0.33 *3*	454.4748	$5/2^-$	0.0	$3/2^-$	M1	0.0323	α(K)=0.0274 *4*; α(L)=0.00382 *6*; α(M)=0.000827 *12* α(N)=0.000190 *3*; α(O)=2.96×10^{-5} *5*; α(P)=2.01×10^{-6} *3* α(K)exp: 0.029 *4* (1986Sc25).
[x]455.91 *6*	0.016 *4*							
461.57 *8*	0.066 *10*	1474.44	$1/2^+,3/2^+,5/2^+$	1012.894	$3/2^-$	E1	0.00565	α(K)=0.00482 *7*; α(L)=0.000653 *10*; α(M)=0.0001407 *20* α(N)=3.22×10^{-5} *5*; α(O)=4.94×10^{-6} *7*; α(P)=3.16×10^{-7} *5* α(K)exp: <0.007 (1986Sc25).
463.460 *4*	0.81 *8*	581.4570	$5/2^-$	117.9986	$7/2^+$	E1	0.00560	α(K)=0.00477 *7*; α(L)=0.000647 *9*; α(M)=0.0001393 *20* α(N)=3.19×10^{-5} *5*; α(O)=4.89×10^{-6} *7*; α(P)=3.13×10^{-7} *5* α(K)exp: 0.0048 *7* (1986Sc25).
466.824 *10*	0.035 *3*	553.372	$(7/2)^-$	86.5460	$5/2^+$			
468.70 *3*	0.017 *2*	1028.037	$1/2^-,3/2,5/2^-$	559.368	$1/2^-$			
470.890 *20*	0.015 *4*	1129.842	$3/2^-$	658.987	$5/2^-$			
[x]474.520 *18*	0.041 *4*					(E1)	0.00530	α(K)=0.00453 *7*; α(L)=0.000612 *9*; α(M)=0.0001319 *19*

$^{155}_{64}Gd_{91}$-17

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ [†]	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	α [a]	Comments
								α(N)=3.02×10^{-5} *5*; α(O)=4.63×10^{-6} *7*; α(P)=2.97×10^{-7} *5* α(K)exp: <0.012 (1986Sc25).
476.162 *9*	0.070 *7*	581.4570	5/2$^-$	105.3109	3/2$^+$	E1	0.00526	α(K)=0.00449 *7*; α(L)=0.000607 *9*; α(M)=0.0001308 *19* α(N)=3.00×10^{-5} *5*; α(O)=4.60×10^{-6} *7*; α(P)=2.95×10^{-7} *5* α(K)exp: <0.007 (1986Sc25).
476.80 *7*	0.085 *17*	1292.49	3/2$^+$	815.7334	(3/2)$^+$	(E1)	0.00525	α(K)=0.00448 *7*; α(L)=0.000605 *9*; α(M)=0.0001304 *19* α(N)=2.99×10^{-5} *5*; α(O)=4.58×10^{-6} *7*; α(P)=2.94×10^{-7} *5* α(K)exp: <0.006 (1986Sc25). Mult.: placement requires no change in parity. Note that the mult is shown as questionable.
[x]478.172 *12*	0.035 *3*							
[x]482.127 *18*	0.020 *4*					M1,E2	0.0216 *62*	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* α(K)exp: 0.034 *9* (1986Sc25).
486.852 *8*	0.39 *4*	592.1429	3/2$^-$	105.3109	3/2$^+$			α(K)exp: 0.0099 *16* (1986Sc25, possibly contaminated).
489.646 *10*	0.054 *5*	815.7334	(3/2)$^+$	326.0878	5/2$^+$	(M1,E2)	0.0207 *60*	α(K)=0.0173 *54*; α(L)=0.0027 *5*; α(M)=0.00058 *10* α(N)=0.000133 *24*; α(O)=2.0×10^{-5} *5*; α(P)=1.23×10^{-6} *43* α(K)exp: 0.024 *7* (1986Sc25).
[x]490.99 *3*	0.009 *6*							
493.374 *17*	0.018 *3*	553.372	(7/2)$^-$	60.0110	5/2$^-$			α(K)exp: 0.33 *7* (1986Sc25, possibly contaminated).
[x]494.08 *4*	0.032 *3*							
499.37 *5*	0.047 *6*	559.368	1/2$^-$	60.0110	5/2$^-$			
501.713 *7*	0.199 *19*	647.7930	5/2$^-$	146.0707	7/2$^-$	E2,M1	0.0194 *57*	α(K)=0.0163 *51*; α(L)=0.0025 *5*; α(M)=0.00054 *10* α(N)=0.000125 *23*; α(O)=1.9×10^{-5} *4*; α(P)=1.16×10^{-6} *41* α(K)exp: 0.015922 (1986Sc25).
505.590 *9*	0.85 *8*	592.1429	3/2$^-$	86.5460	5/2$^+$	E1	0.00460	α(K)=0.00392 *6*; α(L)=0.000529 *8*; α(M)=0.0001139 *16* α(N)=2.61×10^{-5} *4*; α(O)=4.01×10^{-6} *6*; α(P)=2.58×10^{-7} *4* α(K)exp: 0.0044 *9* (1986Sc25).
512.918 *7*	0.37 *3*	658.987	5/2$^-$	146.0707	7/2$^-$	M1	0.0237	α(K)=0.0201 *3*; α(L)=0.00279 *4*; α(M)=0.000605 *9* α(N)=0.0001392 *20*; α(O)=2.17×10^{-5} *3*; α(P)=1.473×10^{-6} *21* α(K)exp: 0.019 *3* (1986Sc25).
[x]516.91 *7*	0.012 *3*							
519.08 *4*	0.060 *8*	1078.43	1/2$^-$,3/2$^-$	559.368	1/2$^-$			
521.472 *10*	0.047 *7*	581.4570	5/2$^-$	60.0110	5/2$^-$	M1,E2	0.0176 *52*	α(K)=0.0148 *46*; α(L)=0.0022 *5*; α(M)=0.00049 *10* α(N)=0.000112 *22*; α(O)=1.7×10^{-5} *4*; α(P)=1.05×10^{-6} *37* α(K)exp: 0.17 *4* (1986Sc25).
524.197 *18*	0.066 *8*	1012.894	3/2$^-$	488.7207	5/2$^+$	E1	0.00424	α(K)=0.00362 *5*; α(L)=0.000487 *7*; α(M)=0.0001049 *15* α(N)=2.40×10^{-5} *4*; α(O)=3.69×10^{-6} *6*; α(P)=2.39×10^{-7} *4* α(K)exp: 0.0045 *18* (1986Sc25).
[x]524.862 *16*	0.044 *4*							
[x]528.20 *6*	0.029 *5*							
528.36 *3*	0.018 *4*	614.8561	3/2$^-$	86.5460	5/2$^+$			
529.793 *8*	0.218 *20*	647.7930	5/2$^-$	117.9986	7/2$^+$	E1	0.00414	α(K)=0.00354 *5*; α(L)=0.000476 *7*; α(M)=0.0001024 *15*

$^{155}_{64}Gd_{91}$-18

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ [†]	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	α [a]	Comments
								α(N)=2.35×10^{-5} *4*; α(O)=3.61×10^{-6} *5*; α(P)=2.33×10^{-7} *4* α(K)exp: <0.0022 (1986Sc25).
532.129 *8*	0.74 *7*	592.1429	3/2$^-$	60.0110	5/2$^-$	E2	0.01186	α(K)=0.00970 *14*; α(L)=0.001693 *24*; α(M)=0.000375 *6* α(N)=8.54×10^{-5} *12*; α(O)=1.268×10^{-5} *18*; α(P)=6.54×10^{-7} *10* α(K)exp: 0.0098 *17* (1986Sc25).
535.199 *9*	0.070 *7*	786.899	7/2$^-$	251.7062	9/2$^-$			α(K)exp: 0.018 *4* (1986Sc25, possibly contaminated).
537.65 *9*	0.076 *25*	1129.842	3/2$^-$	592.1429	3/2$^-$			α(K)exp: 0.014 *5* (1986Sc25, possibly contaminated).
540.94 *3*	0.020 *5*	658.987	5/2$^-$	117.9986	7/2$^+$			
542.474 *17*	0.049 *7*	647.7930	5/2$^-$	105.3109	3/2$^+$			
547.05 *3*	0.123 *11*	815.7334	(3/2)$^+$	268.6235	3/2$^+$	M1,E2	0.0156 *46*	α(K)=0.0131 *41*; α(L)=0.0020 *4*; α(M)=0.00043 *9* α(N)=9.8×10^{-5} *20*; α(O)=1.5×10^{-5} *4*; α(P)=9.3×10^{-7} *32* α(K)exp: 0.014 *3* (1986Sc25).
548.54 *3*	0.041 *5*	1002.955	1/2$^-$	454.4748	5/2$^-$			α(K)exp: 0.015 *4* (1986Sc25).
549.09 *4*	0.028 *15*	815.7334	(3/2)$^+$	266.6478	5/2$^+$			
551.415[c] *12*	0.035[c] *3*	872.810	(5/2)$^+$	321.3808	5/2$^-$			
551.415[c] *12*	0.035[c] *3*	1104.795	(7/2$^-$)	553.372	(7/2)$^-$			
554.843 *3*	2.56 *24*	614.8561	3/2$^-$	60.0110	5/2$^-$	M1	0.0194	α(K)=0.01652 *24*; α(L)=0.00229 *4*; α(M)=0.000495 *7* α(N)=0.0001138 *16*; α(O)=1.772×10^{-5} *25*; α(P)=1.206×10^{-6} *17* α(K)exp: 0.0144 *22* (1986Sc25).
559.374 *4*	2.28 *21*	559.368	1/2$^-$	0.0	3/2$^-$	M1	0.0190	α(K)=0.01619 *23*; α(L)=0.00224 *4*; α(M)=0.000484 *7* α(N)=0.0001115 *16*; α(O)=1.736×10^{-5} *25*; α(P)=1.182×10^{-6} *17* α(K)exp: 0.0140 *21* (1986Sc25).
562.27 *12*	0.022 *5*	1012.894	3/2$^-$	450.5638	3/2$^-$			
x563.44 *4*	0.060 *9*							α(K)exp: 0.024 *5* (1986Sc25, possibly contaminated).
570.54 *5*	0.027 *6*	1129.842	3/2$^-$	559.368	1/2$^-$			
574.03 *8*	0.022 *3*	804.38	(9/2$^-$)	230.1289	11/2$^+$			α(K)exp: 0.037 *12* (1986Sc25).
577.53 *3*	0.043 *5*	1028.037	1/2$^-$,3/2,5/2$^-$	450.5638	3/2$^-$			
581.430 *12*	0.161 *16*	581.4570	5/2$^-$	0.0	3/2$^-$	E2	0.00948	α(K)=0.00779 *11*; α(L)=0.001314 *19*; α(M)=0.000290 *4* α(N)=6.62×10^{-5} *10*; α(O)=9.88×10^{-6} *14*; α(P)=5.29×10^{-7} *8* α(K)exp: 0.0085 *14* (1986Sc25).
587.78 *3*	0.097 *9*	647.7930	5/2$^-$	60.0110	5/2$^-$	E0+E2,M1	0.0130 *38*	α(K)=0.0109 *34*; α(L)=0.0016 *4*; α(M)=0.00035 *8* α(N)=8.1×10^{-5} *17*; α(O)=1.2×10^{-5} *3*; α(P)=7.8×10^{-7} *27* α(K)exp: 0.19 *3* (1986Sc25).
592.137 *7*	0.37 *3*	592.1429	3/2$^-$	0.0	3/2$^-$	E0+E2,M1	0.0128 *38*	α(K)=0.0107 *33*; α(L)=0.0016 *4*; α(M)=0.00035 *8* α(N)=8.0×10^{-5} *17*; α(O)=1.2×10^{-5} *3*; α(P)=7.7×10^{-7} *26* α(K)exp: 0.150 *21* (1986Sc25).
598.974 *6*	0.61 *6*	658.987	5/2$^-$	60.0110	5/2$^-$	M1,E2	0.0124 *37*	α(K)=0.0104 *32*; α(L)=0.0015 *4*; α(M)=0.00034 *7* α(N)=7.7×10^{-5} *17*; α(O)=1.2×10^{-5} *3*; α(P)=7.4×10^{-7} *25* α(K)exp: 0.0109 *15* (1986Sc25).
614.854 *3*	2.37 *22*	614.8561	3/2$^-$	0.0	3/2$^-$			α(K)exp: 0.0132 *21* (1986Sc25).

$^{155}_{64}Gd_{91}$-19

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ [†]	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[a]	Comments
615.302 *3*	1.61 *15*	720.6177	1/2$^+$,3/2$^+$,(5/2$^+$)	105.3109	3/2$^+$	M1	0.01499	α(K)=0.01275 *18*; α(L)=0.001758 *25*; α(M)=0.000380 *6* α(N)=8.75×10^{-5} *13*; α(O)=1.363×10^{-5} *19*; α(P)=9.29×10^{-7} *13* α(K)exp: 0.0153 *21* (1986Sc25).
[x]619.13 *5*	0.114 *19*					E2,E1		α(K)exp: 0.0048 *17* (1986Sc25).
634.053 *22*	0.20 *3*	720.6177	1/2$^+$,3/2$^+$,(5/2$^+$)	86.5460	5/2$^+$			α(K)exp: 0.043 *9* (1986Sc25).
634.543 *11*	0.54 *5*	752.551	5/2$^+$	117.9986	7/2$^+$			α(K)exp: 0.0088 *12* (1986Sc25).
635.446 *19*	0.066 *18*	1086.848	3/2$^+$	451.3719	1/2$^-$			
640.848 *23*	0.142 *23*	786.899	7/2$^-$	146.0707	7/2$^-$			α(K)exp: 0.019 *7* (1986Sc25, possibly contaminated).
[x]642.67 *4*	0.038 *11*							
[x]643.67 *3*	0.063 *9*							
[x]645.223 *12*	0.114 *16*					(E1)	0.00271	α(K)=0.00231 *4*; α(L)=0.000308 *5*; α(M)=6.63×10^{-5} *10* α(N)=1.521×10^{-5} *22*; α(O)=2.34×10^{-6} *4*; α(P)=1.539×10^{-7} *22* α(K)exp: <0.0024 (1986Sc25).
647.258 *20*	0.11 *5*	752.551	5/2$^+$	105.3109	3/2$^+$			α(K)exp: 0.025 *12* (1986Sc25, possibly contaminated).
647.796 *7*	0.33 *4*	647.7930	5/2$^-$	0.0	3/2$^-$			α(K)exp: 0.0085 *14* (1986Sc25, possibly contaminated).
[x]651.98 *5*	0.050 *9*							
[x]653.42 *4*	0.017 *10*							α(K)exp: 0.021 *14* (1986Sc25).
666.012 *9*	0.47 *4*	752.551	5/2$^+$	86.5460	5/2$^+$	M1,(E2)	0.0096 *28*	α(K)=0.0081 *25*; α(L)=0.0012 *3*; α(M)=0.00026 *6* α(N)=5.9×10^{-5} *13*; α(O)=9.0×10^{-6} *22*; α(P)=5.7×10^{-7} *19* α(K)exp: 0.0101 *15* (1986Sc25).
667.613 *20*	0.095 *11*	1035.222	1/2$^+$,3/2$^+$	367.6338	1/2$^+$	M1,E2	0.0095 *28*	α(K)=0.0080 *24*; α(L)=0.0012 *3*; α(M)=0.00025 *6* α(N)=5.8×10^{-5} *13*; α(O)=9.0×10^{-6} *22*; α(P)=5.7×10^{-7} *19* α(K)exp: 0.041 *9* (1986Sc25).
[x]668.48 *14*	0.046 *6*					M1(+E0)		
679.49[c] *11*	0.029[c] *3*	786.899	7/2$^-$	107.5803	9/2$^+$			
679.49[c] *11*	0.029[c] *3*	1129.842	3/2$^-$	450.5638	3/2$^-$			
681.31 *6*	0.045 *5*	1104.795	(7/2$^-$)	423.4126	7/2$^+$			
692.46 *4*	0.114 *14*	752.551	5/2$^+$	60.0110	5/2$^-$	(E1)	0.00234	α(K)=0.00200 *3*; α(L)=0.000265 *4*; α(M)=5.71×10^{-5} *8* α(N)=1.309×10^{-5} *19*; α(O)=2.02×10^{-6} *3*; α(P)=1.332×10^{-7} *19* α(K)exp: <0.002 (1986Sc25).
[x]693.53 *7*	0.055 *5*							
695.40 *6*	0.07 *3*	1343.316	3/2$^-$,5/2,7/2$^-$	647.7930	5/2$^-$			
701.31 *4*	0.047 *18*	1517.077	3/2$^+$,5/2$^+$,7/2$^+$	815.7334	(3/2)$^+$			
[x]701.58 *5*	0.057 *10*							
703.93 *11*	0.09 *4*	1192.853	1/2$^+$,3/2$^+$	488.7207	5/2$^+$			α(K)exp: 0.004 *3* (1986Sc25, possibly contaminated).
710.422 *10*	0.66 *12*	815.7334	(3/2)$^+$	105.3109	3/2$^+$			α(K)exp: 0.0080 *16* (1986Sc25, possibly contaminated).
[x]711.59 *5*	0.100 *9*							
712.32 *10*	0.104 *14*	1359.852	3/2,5/2,7/2$^+$	647.7930	5/2$^-$			
715.81 *4*	0.22 *3*	1363.637	5/2,7/2$^+$	647.7930	5/2$^-$			α(K)exp: 0.0080 *17* (1986Sc25, possibly contaminated).
719.35 *15*	0.049 *8*	1086.848	3/2$^+$	367.6338	1/2$^+$			

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ †	I_γ b	E_i(level)	J_i^π	E_f	J_f^π	Mult. ‡	α a	Comments
725.82 *4*	0.180 *17*	1012.894	3/2⁻	287.0043	3/2⁻	E2	0.00556	α(K)=0.00464 *7*; α(L)=0.000725 *11*; α(M)=0.0001590 *23* α(N)=3.64×10⁻⁵ *5*; α(O)=5.50×10⁻⁶ *8*; α(P)=3.18×10⁻⁷ *5* α(K)exp: 0.180 *10* (1986Sc25).
x726.11 *3*	0.16 *4*							
729.165 *17*	0.91 *9*	815.7334	(3/2)⁺	86.5460	5/2⁺	M1	0.00984	α(K)=0.00838 *12*; α(L)=0.001148 *16*; α(M)=0.000248 *4* α(N)=5.71×10⁻⁵ *8*; α(O)=8.90×10⁻⁶ *13*; α(P)=6.09×10⁻⁷ *9* α(K)exp: 0.0073 *11* (1986Sc25).
x731.91 *11*	0.40 *4*					E1	0.00209	α(K)=0.00179 *3*; α(L)=0.000236 *4*; α(M)=5.08×10⁻⁵ *8* α(N)=1.166×10⁻⁵ *17*; α(O)=1.80×10⁻⁶ *3*; α(P)=1.192×10⁻⁷ *17* α(K)exp: <0.0007 (1986Sc25).
734.79 *20*	0.40 *4*	1002.955	1/2⁻	268.6235	3/2⁺	E1	0.00207	α(K)=0.001772 *25*; α(L)=0.000234 *4*; α(M)=5.04×10⁻⁵ *7* α(N)=1.156×10⁻⁵ *17*; α(O)=1.79×10⁻⁶ *3*; α(P)=1.183×10⁻⁷ *17* α(K)exp: <0.0013 (1986Sc25).
x738.48 *3*	0.047 *22*							
739.2 *3*	0.025 *6*	1060.599	(5/2⁻)	321.3808	5/2⁻			
x740.75 *20*	0.076 *11*							
741.74 *22*	0.057 *14*	1230.3	3/2⁻	488.7207	5/2⁺			
744.290 *22*	0.20 *3*	1012.894	3/2⁻	268.6235	3/2⁺	(E1)	0.00202	α(K)=0.001726 *25*; α(L)=0.000228 *4*; α(M)=4.91×10⁻⁵ *7* α(N)=1.126×10⁻⁵ *16*; α(O)=1.739×10⁻⁶ *25*; α(P)=1.153×10⁻⁷ *17* α(K)exp: 0.0015 (1986Sc25).
752.57 *10*	0.038 *14*	752.551	5/2⁺	0.0	3/2⁻			
765.68 *11*	0.123 *16*	1192.853	1/2⁺,3/2⁺	427.2361	3/2⁺	(E2,M1)	0.0068 *19*	α(K)=0.0058 *17*; α(L)=0.00083 *20*; α(M)=0.00018 *4* α(N)=4.1×10⁻⁵ *10*; α(O)=6.3×10⁻⁶ *16*; α(P)=4.1×10⁻⁷ *13* α(K)exp: 0.0054 *15* (1986Sc25).
767.456 *24*	0.27 *3*	872.810	(5/2)⁺	105.3109	3/2⁺	(E2,E1)	0.0034 *15*	α(K)exp: 0.0035 *8* (1986Sc25).
768.62 *3*	0.13 *3*	1035.222	1/2⁺,3/2⁺	266.6478	5/2⁺	(M1,E2)	0.0068 *19*	α(K)=0.0057 *17*; α(L)=0.00082 *19*; α(M)=0.00018 *4* α(N)=4.1×10⁻⁵ *10*; α(O)=6.3×10⁻⁶ *16*; α(P)=4.1×10⁻⁷ *13* α(K)exp: 0.0066 *18* (1986Sc25).
x769.71 *13*	0.152 *17*							
772.76 *8*	0.14 *5*	1332.09	1/2⁽⁺⁾,3/2⁽⁺⁾	559.368	1/2⁻			
x780.89 *7*	0.29 *3*					(E1)	0.00183	α(K)=0.001568 *22*; α(L)=0.000207 *3*; α(M)=4.45×10⁻⁵ *7* α(N)=1.021×10⁻⁵ *15*; α(O)=1.577×10⁻⁶ *22*; α(P)=1.048×10⁻⁷ *15* α(K)exp: <0.0010 (1986Sc25).
x782.38 *5*	0.171 *19*					E1,E2		α(K)exp: 0.0021 *8* (1986Sc25).
x787.80 *7*	0.09 *5*							
791.70 *14*	0.095 *11*	1078.43	1/2⁻,3/2⁻	287.0043	3/2⁻			
x795.20 *23*	0.114 *16*							
808.38 *3*	0.16 *3*	1297.181	7/2⁺	488.7207	5/2⁺	E2,M1	0.0060 *17*	α(K)=0.0051 *15*; α(L)=0.00072 *17*; α(M)=0.00016 *4* α(N)=3.6×10⁻⁵ *9*; α(O)=5.6×10⁻⁶ *14*; α(P)=3.6×10⁻⁷ *11* α(K)exp: 0.0047 *10* (1986Sc25).
817.93 *14*	0.171 *17*	1104.795	(7/2⁻)	287.0043	3/2⁻			
820.07 *11*	0.133 *16*	1086.848	3/2⁺	266.6478	5/2⁺			
831.41 *6*	0.13 *3*	1225.009	3/2⁻,5/2,7/2	393.5329	7/2⁻			

$^{155}_{64}Gd_{91}$-21

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ [†]	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	α[a]	Comments
[x]835.61 *23*	0.057 *14*								
837.97[c] *23*	0.025[c] *6*	1104.795	(7/2$^-$)	266.6478	5/2$^+$				α(K)exp: 0.013 *5* (1986Sc25). Mult.: α(K)exp=0.013 *5* for this doubly placed transition suggests that mult cannot be E1 for both placements. Since the other placement is consistent with E1, this argument would suggest that J^π is not 7/2$^-$ for this level.
837.97[c] *23*	0.025[c] *6*	1292.49	3/2$^+$	454.4748	5/2$^-$				
[x]839.57 *10*	0.123 *18*								
[x]851.65 *4*	0.15 *3*								
[x]856.52 *7*	0.095 *11*								
860.9 *3*	0.032 *6*	1129.842	3/2$^-$	268.6235	3/2$^+$				
869.37[c] *14*	0.066[c] *13*	1292.49	3/2$^+$	423.4126	7/2$^+$				
869.37[c] *14*	0.066[c] *13*	1517.077	3/2$^+$,5/2$^+$,7/2$^+$	647.7930	5/2$^-$				
873.07 *17*	0.085 *10*	872.810	(5/2)$^+$	0.0	3/2$^-$				
[x]881.45 *21*	0.070 *9*								α(K)exp: 0.0063 *19* (1986Sc25).
[x]887.6 *4*	0.035 *7*								
907.62 *3*	0.67 *8*	1012.894	3/2$^-$	105.3109	3/2$^+$	(E1)		1.36×10^{-3}	α(K)=0.001170 *17*; α(L)=0.0001533 *22*; α(M)=3.29×10^{-5} *5* α(N)=7.56×10^{-6} *11*; α(O)=1.170×10^{-6} *17*; α(P)=7.85×10^{-8} *11* α(K)exp: 0.67 *8* (1986Sc25).
926.30 *20*	0.57 *12*	1012.894	3/2$^-$	86.5460	5/2$^+$				α(K)exp: 0.0015 *4* (1986Sc25, possibly contaminated).
953.00 *5*	0.180 *20*	1012.894	3/2$^-$	60.0110	5/2$^-$	(E1)		1.24×10^{-3}	α(K)=0.001066 *15*; α(L)=0.0001395 *20*; α(M)=3.00×10^{-5} *5* α(N)=6.88×10^{-6} *10*; α(O)=1.065×10^{-6} *15*; α(P)=7.16×10^{-8} *10* α(K)exp: <0.0016 (1986Sc25). Mult.: note that the placement does not allow mult=E1.
[x]955.7 *3*	0.095 *14*								α(K)exp: 0.0035 *14* (1986Sc25).
981.6[c] *3*	0.21[c] *3*	1086.848	3/2$^+$	105.3109	3/2$^+$				α(K)exp: 0.0017 *6* (1986Sc25, possibly contaminated).
981.6[c] *3*	0.21[c] *3*	1470.02	5/2$^+$	488.7207	5/2$^+$				
982.91 *13*	0.35 *4*	1434.31	1/2$^+$,3/2$^+$	451.3719	1/2$^-$	E1		1.17×10^{-3}	α(K)=0.001006 *14*; α(L)=0.0001314 *19*; α(M)=2.82×10^{-5} *4* α(N)=6.48×10^{-6} *9*; α(O)=1.004×10^{-6} *14*; α(P)=6.76×10^{-8} *10* α(K)exp: <0.0008 (1986Sc25).
986.4 *3*	0.28 *4*	1104.795	(7/2$^-$)	117.9986	7/2$^+$	E1		1.17×10^{-3}	α(K)=0.000999 *14*; α(L)=0.0001305 *19*; α(M)=2.80×10^{-5} *4* α(N)=6.44×10^{-6} *9*; α(O)=9.97×10^{-7} *14*; α(P)=6.71×10^{-8} *10* α(K)exp: <0.0010 (1986Sc25).
[x]991.42 *11*	0.12 *3*								
997.39 *21*	0.095 *12*	1104.795	(7/2$^-$)	107.5803	9/2$^+$				

$^{155}_{64}Gd_{91}$-22

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ [†]	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[a]	Comments
1000.56 *7*	0.17 *3*	1060.599	(5/2$^-$)	60.0110	5/2$^-$	(E1,E2)	0.0019 *8*	α(K)exp: 0.0016 *9* (1986Sc25). Mult.: note that the proposed placement would make mult=E1 unlikely.
1002.97 *3*	0.34 *4*	1002.955	1/2$^-$	0.0	3/2$^-$			
x1005.80 *4*	0.48 *5*					E1	1.12×10^{-3}	α(K)=0.000964 *14*; α(L)=0.0001258 *18*; α(M)=2.70×10^{-5} *4* α(N)=6.20×10^{-6} *9*; α(O)=9.61×10^{-7} *14*; α(P)=6.48×10^{-8} *9* α(K)exp: <0.006 (1986Sc25). Mult.: inferred by the evaluator assuming that the α(K)exp value (<0.006) listed by 1986Sc25 is a misprint and should be <0.0006.
1013.06 *7*	0.28 *5*	1012.894	3/2$^-$	0.0	3/2$^-$			
1015.54 *3*	0.34 *4*	1470.02	5/2$^+$	454.4748	5/2$^-$			
1016.95 *20*	0.21 *3*	1343.316	3/2$^-$,5/2,7/2$^-$	326.0878	5/2$^+$			
1022.29 *21*	0.19 *3*	1343.316	3/2$^-$,5/2,7/2$^-$	321.3808	5/2$^-$			
x1031.65 *18*	0.29 *4*							
1035.29 *7*	0.28 *6*	1035.222	1/2$^+$,3/2$^+$	0.0	3/2$^-$			
1043.45 *6*	0.26 *7*	1129.842	3/2$^-$	86.5460	5/2$^+$			
1056.32 *18*	0.114 *24*	1343.316	3/2$^-$,5/2,7/2$^-$	287.0043	3/2$^-$			
x1059.2 *3*	0.25 *5*							
1060.75 *14*	0.237 *22*	1060.599	(5/2$^-$)	0.0	3/2$^-$			
1062.8 *3*	0.57 *10*	1517.077	3/2$^+$,5/2$^+$,7/2$^+$	454.4748	5/2$^-$	E1	1.01×10^{-3}	α(K)=0.000870 *13*; α(L)=0.0001134 *16*; α(M)=2.43×10^{-5} *4* α(N)=5.59×10^{-6} *8*; α(O)=8.66×10^{-7} *13*; α(P)=5.85×10^{-8} *9* α(K)exp: <0.0005 (1986Sc25).
1069.97 *7*	0.41 *4*	1129.842	3/2$^-$	60.0110	5/2$^-$	E2	0.00239	α(K)=0.00202 *3*; α(L)=0.000289 *4*; α(M)=6.28×10^{-5} *9* α(N)=1.440×10^{-5} *21*; α(O)=2.21×10^{-6} *3*; α(P)=1.402×10^{-7} *20* α(K)exp: 0.0018 *3* (1986Sc25).
1082.6 *6*	0.13 *3*	1230.3	3/2$^-$	146.0707	7/2$^-$			α(K)exp: 0.029 *8* (1986Sc25, possibly contaminated).
x1095.9 *3*	0.152 *20*							
1105.1 *3*	0.190 *25*	1104.795	(7/2$^-$)	0.0	3/2$^-$			
x1110.01 *19*	0.33 *4*							
1110.91 *20*	0.24 *4*	1197.613	3/2$^-$,5/2,7/2	86.5460	5/2$^+$			
1111.87 *21*	0.15 *7*	1437.685		326.0878	5/2$^+$			
x1125.91 *23*	0.24 *4*							
1137.66 *12*	0.228 *21*	1197.613	3/2$^-$,5/2,7/2	60.0110	5/2$^-$	E2(+M1)	0.0027 *7*	α(K)=0.0023 *6*; α(L)=0.00032 *7*; α(M)=6.9×10^{-5} *15* α(N)=1.6×10^{-5} *4*; α(O)=2.5×10^{-6} *6*; α(P)=1.65×10^{-7} *42*; α(IPF)=1.20×10^{-6} *7* α(K)exp: 0.00080 *16* (1986Sc25). Mult.: deduced by the evaluator from α(K)exp=0.0019 *6*.
x1146.41 *4*	0.64 *7*					E1	8.91×10^{-4}	α(K)=0.000758 *11*; α(L)=9.85×10^{-5} *14*; α(M)=2.11×10^{-5} *3*

$^{155}_{64}Gd_{91}$-23

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

$\gamma(^{155}Gd)$ (continued)

E_γ †	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult. ‡	α [a]	Comments
								α(N)=4.85×10^{-6} *7*; α(O)=7.53×10^{-7} *11*; α(P)=5.11×10^{-8} *8*; α(IPF)=7.89×10^{-6} *11*
1150.4[c] *3*	0.30[c] *5*	1297.181	7/2$^+$	146.0707	7/2$^-$			
1150.4[c] *3*	0.30[c] *5*	1437.685		287.0043	3/2$^-$			
[x]1163.34 *21*	0.51 *8*					(E1)	8.73×10^{-4}	α(K)=0.000739 *11*; α(L)=9.59×10^{-5} *14*; α(M)=2.06×10^{-5} *3* α(N)=4.72×10^{-6} *7*; α(O)=7.33×10^{-7} *11*; α(P)=4.98×10^{-8} *7*; α(IPF)=1.200×10^{-5} *18* α(K)exp: <0.005 (1986Sc25). Mult.: it is assumed by the evaluator that the α(K)exp value (<0.005) listed by 1986Sc25 is a misprint and should be <0.0005.
[x]1166.8 *5*	0.43 *10*							
1183.2 *4*	0.47 *8*	1470.02	5/2$^+$	287.0043	3/2$^-$	(E1)	8.53×10^{-4}	α(K)=0.000717 *10*; α(L)=9.29×10^{-5} *13*; α(M)=1.99×10^{-5} *3* α(N)=4.58×10^{-6} *7*; α(O)=7.11×10^{-7} *10*; α(P)=4.83×10^{-8} *7*; α(IPF)=1.83×10^{-5} *3* α(K)exp: <0.0006 (1986Sc25).
[x]1192.18 *11*	0.47 *9*					E1	8.45×10^{-4}	α(K)=0.000707 *10*; α(L)=9.17×10^{-5} *13*; α(M)=1.97×10^{-5} *3* α(N)=4.52×10^{-6} *7*; α(O)=7.01×10^{-7} *10*; α(P)=4.76×10^{-8} *7*; α(IPF)=2.17×10^{-5} *3* α(K)exp: <0.0006 (1986Sc25).
[x]1205.30 *16*	0.23 *5*							
[x]1213.07 *20*	0.21 *3*							
[x]1234.4 *5*	0.21 *5*							
1245.51[c] *20*	0.33[c] *4*	1332.09	1/2$^{(+)}$,3/2$^{(+)}$	86.5460	5/2$^+$			α(K)exp: 0.0016 *4* (1986Sc25, doubly placed γ).
1245.51[c] *20*	0.33[c] *4*	1363.637	5/2,7/2$^+$	117.9986	7/2$^+$			α: α(K)exp=0.0016 *4* for this doubly placed γ.
[x]1246.68 *13*	0.41 *4*							
[x]1253.1 *3*	0.26 *3*							
1254.4 *3*	0.199 *24*	1359.852	3/2,5/2,7/2$^+$	105.3109	3/2$^+$			
1257.6 *5*	0.32 *5*	1363.637	5/2,7/2$^+$	105.3109	3/2$^+$			α(K)exp: 0.0026 *5* (1986Sc25, possibly contaminated).
[x]1262.09 *8*	0.38 *18*							
[x]1263.63 *22*	0.34 *4*							α(K)exp: 0.0009 *4* (1986Sc25, possibly contaminated).
1273.50 *17*	0.40 *6*	1359.852	3/2,5/2,7/2$^+$	86.5460	5/2$^+$			α(K)exp: 0.0010 *3* (1986Sc25, possibly contaminated).
1283.28 *16*	0.32 *4*	1343.316	3/2$^-$,5/2,7/2$^-$	60.0110	5/2$^-$			
[x]1293.01 *15*	0.35 *5*							α(K)exp: 0.0011 *4* (1986Sc25).
[x]1300.9 *3*	0.18 *3*							
[x]1304.9 *5*	0.11 *3*							
[x]1309.9 *4*	0.14 *3*							
[x]1326.2 *4*	0.114 *23*							
1331.66 *18*	0.50 *8*	1332.09	1/2$^{(+)}$,3/2$^{(+)}$	0.0	3/2$^-$	(E1)	7.67×10^{-4}	α(K)=0.000582 *9*; α(L)=7.51×10^{-5} *11*; α(M)=1.611×10^{-5} *23* α(N)=3.70×10^{-6} *6*; α(O)=5.75×10^{-7} *8*; α(P)=3.92×10^{-8} *6*; α(IPF)=8.99×10^{-5} *13* α(K)exp: <0.0006 (1986Sc25).
[x]1338.9 *4*	0.21 *4*							

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ [†]	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[a]	Comments
[x]1341.8 *3*	0.27 *5*							
1347.8 *10*	0.09 *6*	1434.31	1/2$^+$,3/2$^+$	86.5460	5/2$^+$			
1350.2 *8*	0.12 *6*	1437.685		86.5460	5/2$^+$			
1351.3 *5*	0.22 *4*	1470.02	5/2$^+$	117.9986	7/2$^+$			
[x]1358.2 *3*	0.20 *4*							
1362.5 *3*	0.32 *5*	1470.02	5/2$^+$	107.5803	9/2$^+$			
[x]1385.1 *4*	0.25 *5*							
1388.7 *4*	0.24 *5*	1474.44	1/2$^+$,3/2$^+$,5/2$^+$	86.5460	5/2$^+$			
1409.75 *24*	0.33 *5*	1470.02	5/2$^+$	60.0110	5/2$^-$			
[x]1415.41 *15*	0.44 *6*							
[x]1426.48 *23*	0.35 *5*							
1431.0 *4*	0.21 *4*	1517.077	3/2$^+$,5/2$^+$,7/2$^+$	86.5460	5/2$^+$			
[x]1435.6 *3*	0.22 *4*							
[x]1441.1 *3*	0.21 *3*							
[x]1446.0 *4*	0.21 *4*							
[x]1454.48 *20*	0.28 *4*							
[x]1467.26 *23*	0.26 *4*							
[x]1473.08 *24*	0.36 *6*							
[x]1476.99 *22*	0.58 *8*					(E1)	7.55×10^{-4}	α(K)=0.000487 *7*; α(L)=6.27×10^{-5} *9*; α(M)=1.344×10^{-5} *19* α(N)=3.09×10^{-6} *5*; α(O)=4.80×10^{-7} *7*; α(P)=3.29×10^{-8} *5*; α(IPF)=0.000188 *3* α(K)exp: <0.0005 (1986Sc25).
[x]1484.4 *3*	0.33 *5*							
[x]1490.7 *3*	0.25 *4*							
[x]1494.4 *3*	0.28 *5*							
[x]1500.21 *24*	0.25 *4*							
[x]1513.08 *18*	0.31 *5*							
4918.7	0.38 *5*	6435.24	1/2$^+$	1517.077	3/2$^+$,5/2$^+$,7/2$^+$			
4944.3[#]	1.9 *2*	6435.24	1/2$^+$	1490.8?				
4960.6[#]	0.14 *2*	6435.24	1/2$^+$	1474.44	1/2$^+$,3/2$^+$,5/2$^+$			
4969.0[#]	0.21 *3*	6435.24	1/2$^+$	1466.1				
4978.8[#]	0.39 *5*	6435.24	1/2$^+$	1456.3?				
5010.1[#]	0.11 *2*	6435.24	1/2$^+$	1425.0				
5036.5	0.14 *2*	6435.24	1/2$^+$	1398.6				
5054.2[#]	0.09 *2*	6435.24	1/2$^+$	1380.9				
5075.5	0.19 *3*	6435.24	1/2$^+$	1359.852	3/2,5/2,7/2$^+$			
5102.4	0.18 *3*	6435.24	1/2$^+$	1332.09	1/2$^{(+)}$,3/2$^{(+)}$			
5142.8	0.24 *3*	6435.24	1/2$^+$	1292.49	3/2$^+$			
5150.9[#]	0.14 *2*	6435.24	1/2$^+$	1284.2?				
5188.2[#]	0.14 *2*	6435.24	1/2$^+$	1246.9	(1/2$^-$,3/2$^-$)			
5204.9	0.090 *14*	6435.24	1/2$^+$	1230.3	3/2$^-$			

$^{155}_{64}Gd_{91}$-25

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

γ(^{155}Gd) (continued)

E_γ †	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	E_γ †	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π
5242.1	0.44 *5*	6435.24	1/2$^+$	1192.853	1/2$^+$,3/2$^+$	5876.0	0.69 *8*	6435.24	1/2$^+$	559.368	1/2$^-$
5288.1 [#]	0.17	6435.24	1/2$^+$	1147.0		5946.5	0.030 *8*	6435.24	1/2$^+$	488.7207	5/2$^+$
5305.2	0.53 *6*	6435.24	1/2$^+$	1129.842	3/2$^-$	5984.5	1.7 *2*	6435.24	1/2$^+$	450.5638	3/2$^-$
5399.5	0.11 *2*	6435.24	1/2$^+$	1035.222	1/2$^+$,3/2$^+$	6067.8	0.15 *2*	6435.24	1/2$^+$	367.6338	1/2$^+$
5422.1	1.9 *2*	6435.24	1/2$^+$	1012.894	3/2$^-$	6148.6	0.30 *4*	6435.24	1/2$^+$	287.0043	3/2$^-$
5432.2	0.41 *5*	6435.24	1/2$^+$	1002.955	1/2$^-$	6168.6	0.050 *9*	6435.24	1/2$^+$	266.6478	5/2$^+$
5820.3	4.6 *5*	6435.24	1/2$^+$	614.8561	3/2$^-$	6329.9	0.64 *8*	6435.24	1/2$^+$	105.3109	3/2$^+$
5843.0	1.8 *2*	6435.24	1/2$^+$	592.1429	3/2$^-$	6436.0	0.20 *3*	6435.24	1/2$^+$	0.0	3/2$^-$

† The listed ΔE values are statistical only. A systematic uncertainty of 10 ppm should be added in quadrature to obtain the total uncertainty.
‡ Deduced by 1986Sc25 from comparison of theoretical α with those calculated from the measured Ice and Iγ values, unless otherwise indicated.
# Computed by the evaluator from the level-energy differences.
@ 1986Sc25 report Iγ=0.133 *14* for this γ. However, from the γ branching from this level, as seen in the ^{155}Tb ε decay, one computes Iγ≈0.029. The excess intensity in this (n,γ) peak is shown as being unplaced in the level scheme.
& 1986Sc25 report Iγ=0.123 *11* for this γ. From the γ branching of this level, as seen in the ^{155}Tb decay, one computes Iγ=0.013 *3*. The excess intensity in this (n,γ) peak is shown here as being unplaced in the level scheme.
[a] Additional information 2.
[b] Intensity per 100 neutron captures.
[c] Multiply placed with undivided intensity.
[d] Multiply placed with intensity suitably divided.
[x] γ ray not placed in level scheme.

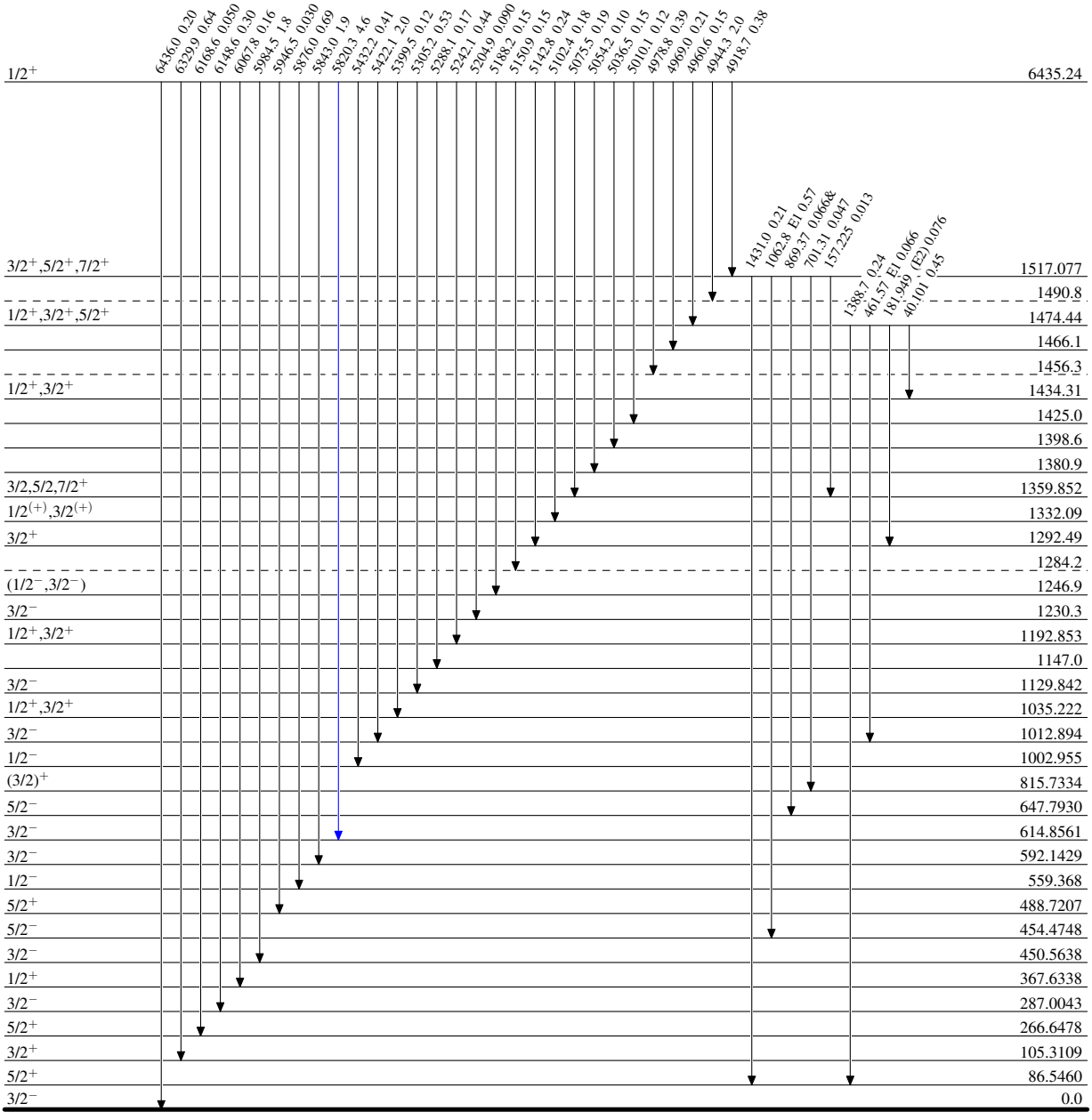
$^{155}_{64}Gd_{91}$-26

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25

Level Scheme

Intensities: Iγ per 100 N captures
& Multiply placed: undivided intensity given

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



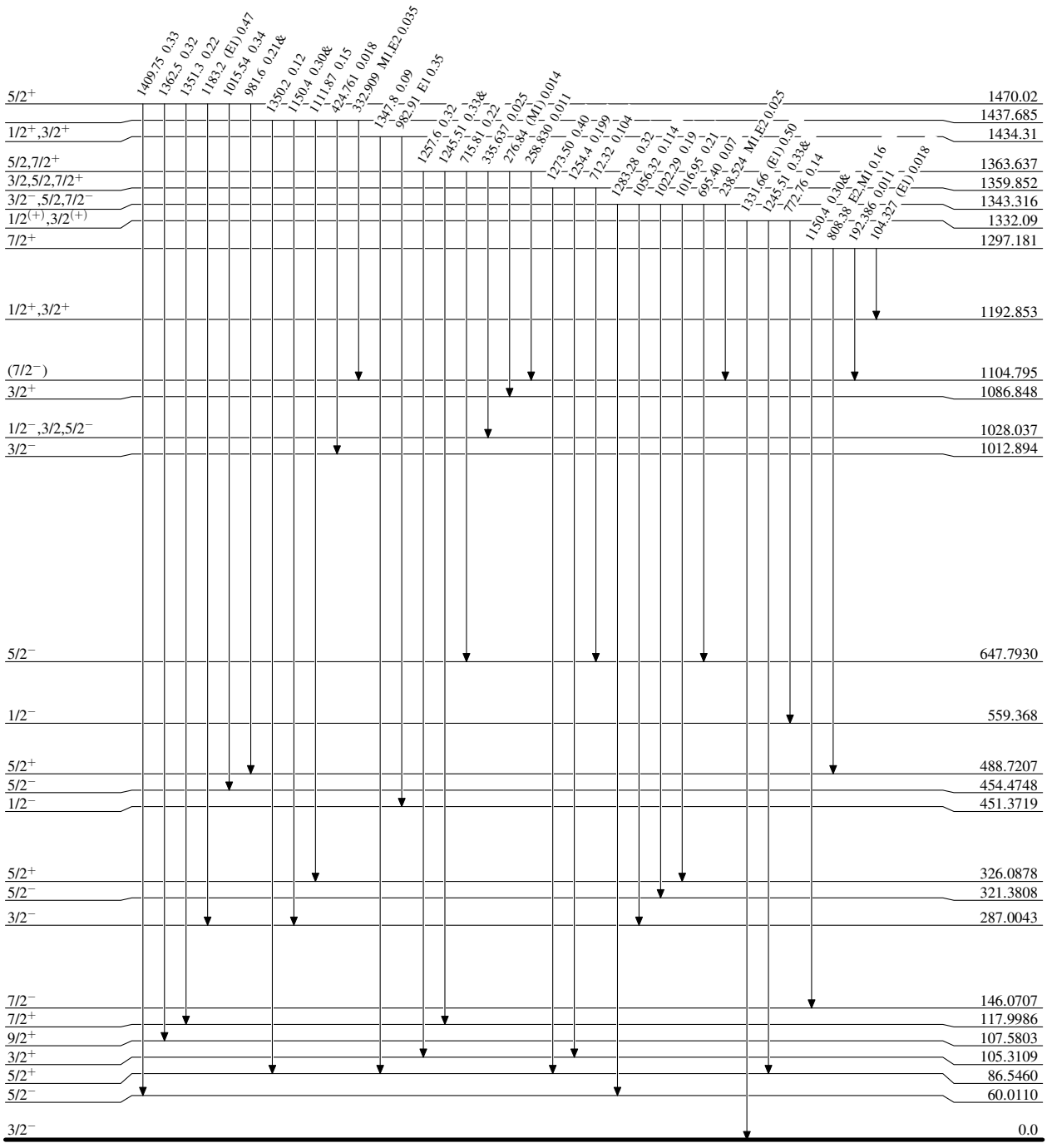
$^{155}_{64}Gd_{91}$

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25

Level Scheme (continued)

Intensities: Iγ per 100 N captures
& Multiply placed: undivided intensity given

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



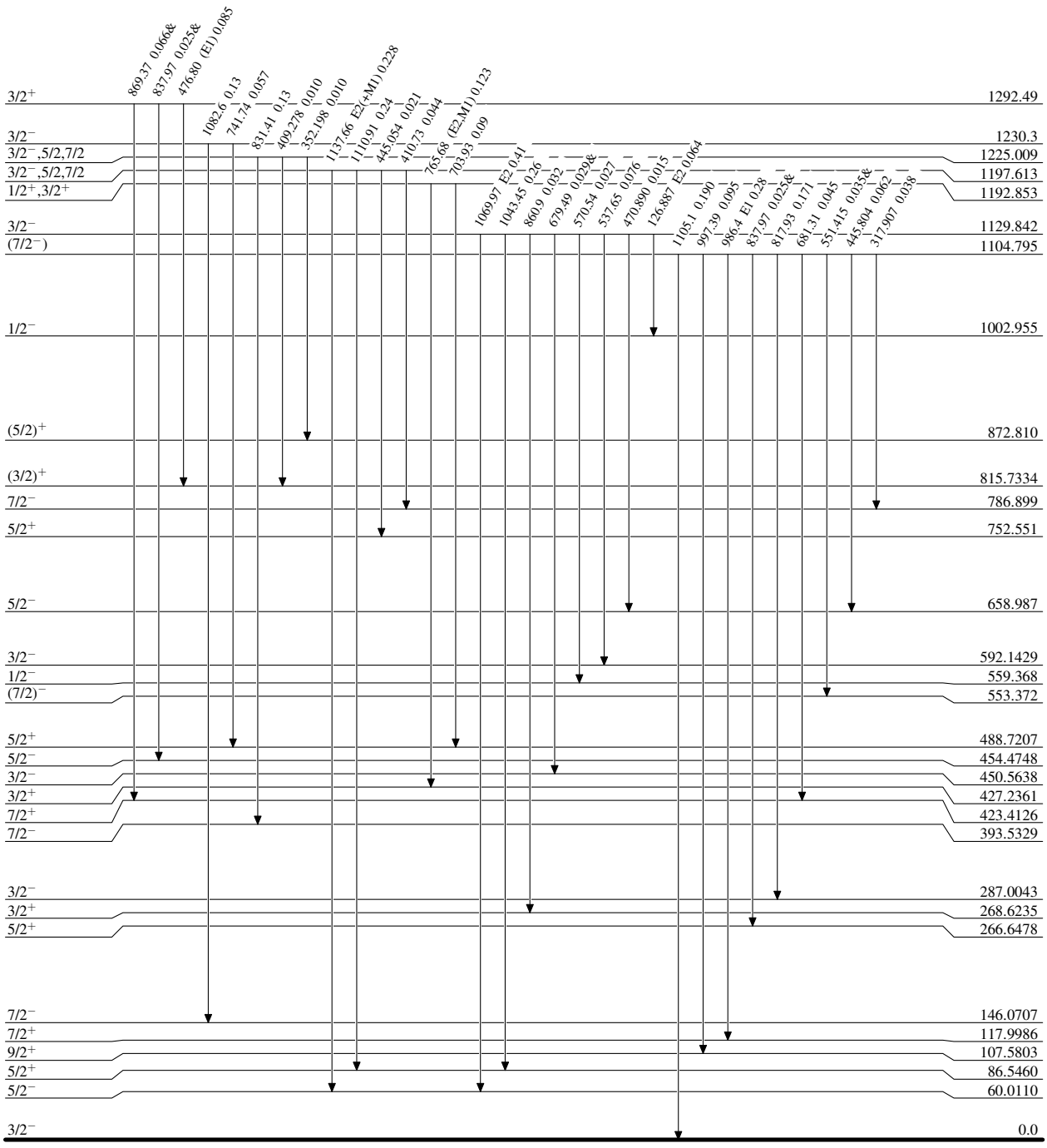
$^{155}_{64}Gd_{91}$

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25

Level Scheme (continued)

Intensities: Iγ per 100 N captures
& Multiply placed: undivided intensity given

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



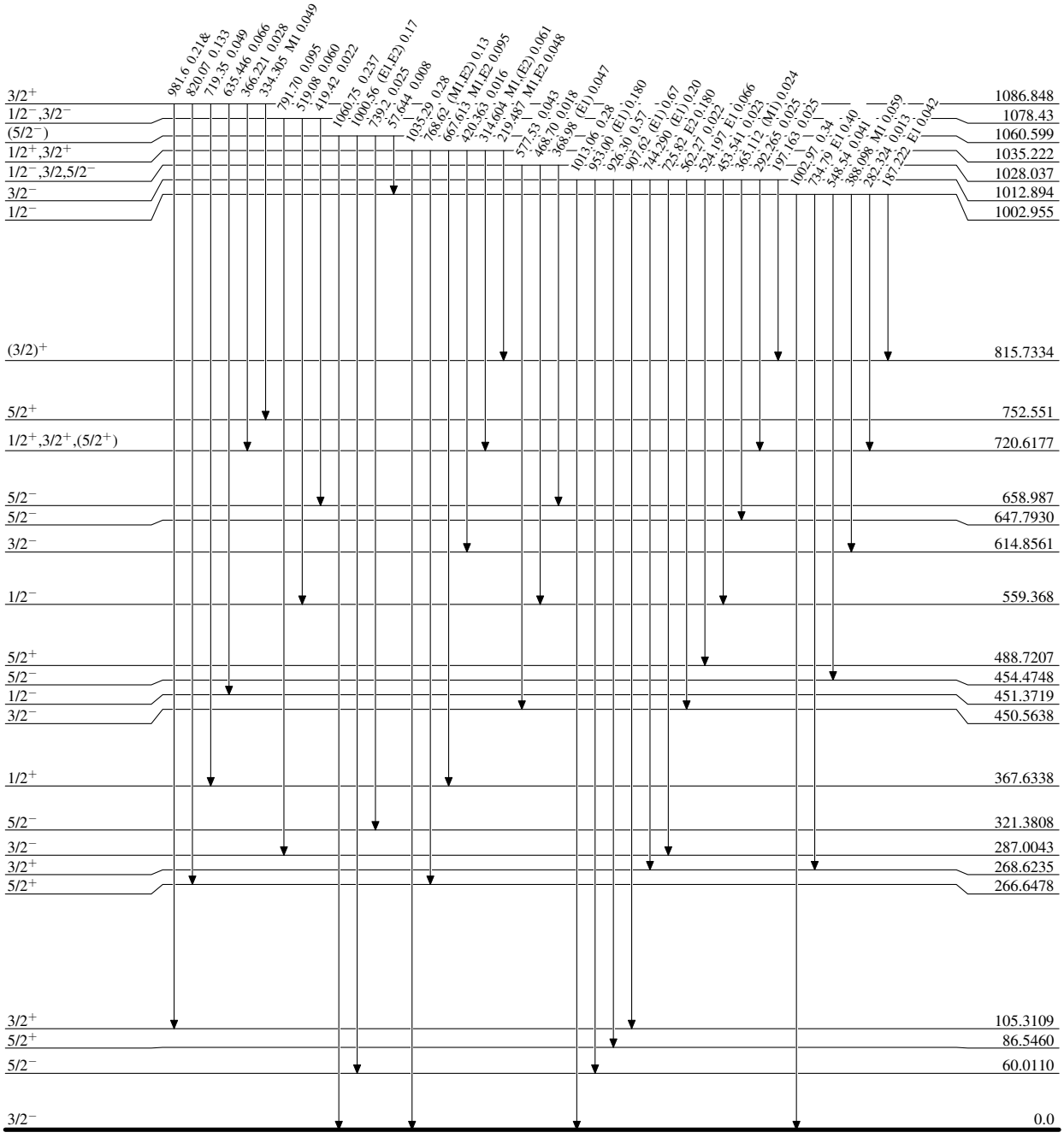
$^{155}_{64}Gd_{91}$

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25

Level Scheme (continued)

Intensities: Iγ per 100 N captures
& Multiply placed: undivided intensity given

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



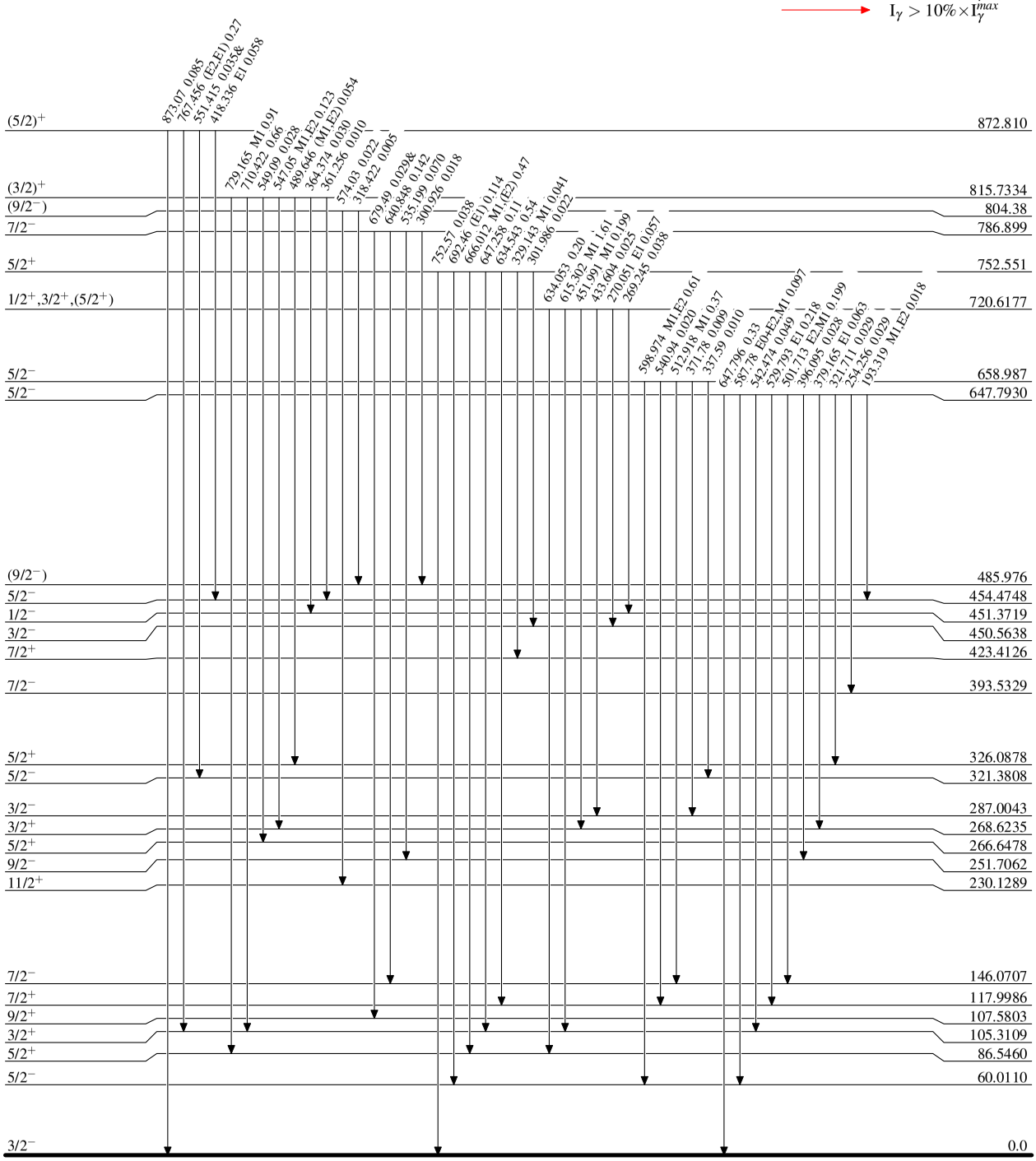
$^{155}_{64}Gd_{91}$

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25

Level Scheme (continued)

Intensities: Iγ per 100 N captures
& Multiply placed: undivided intensity given

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



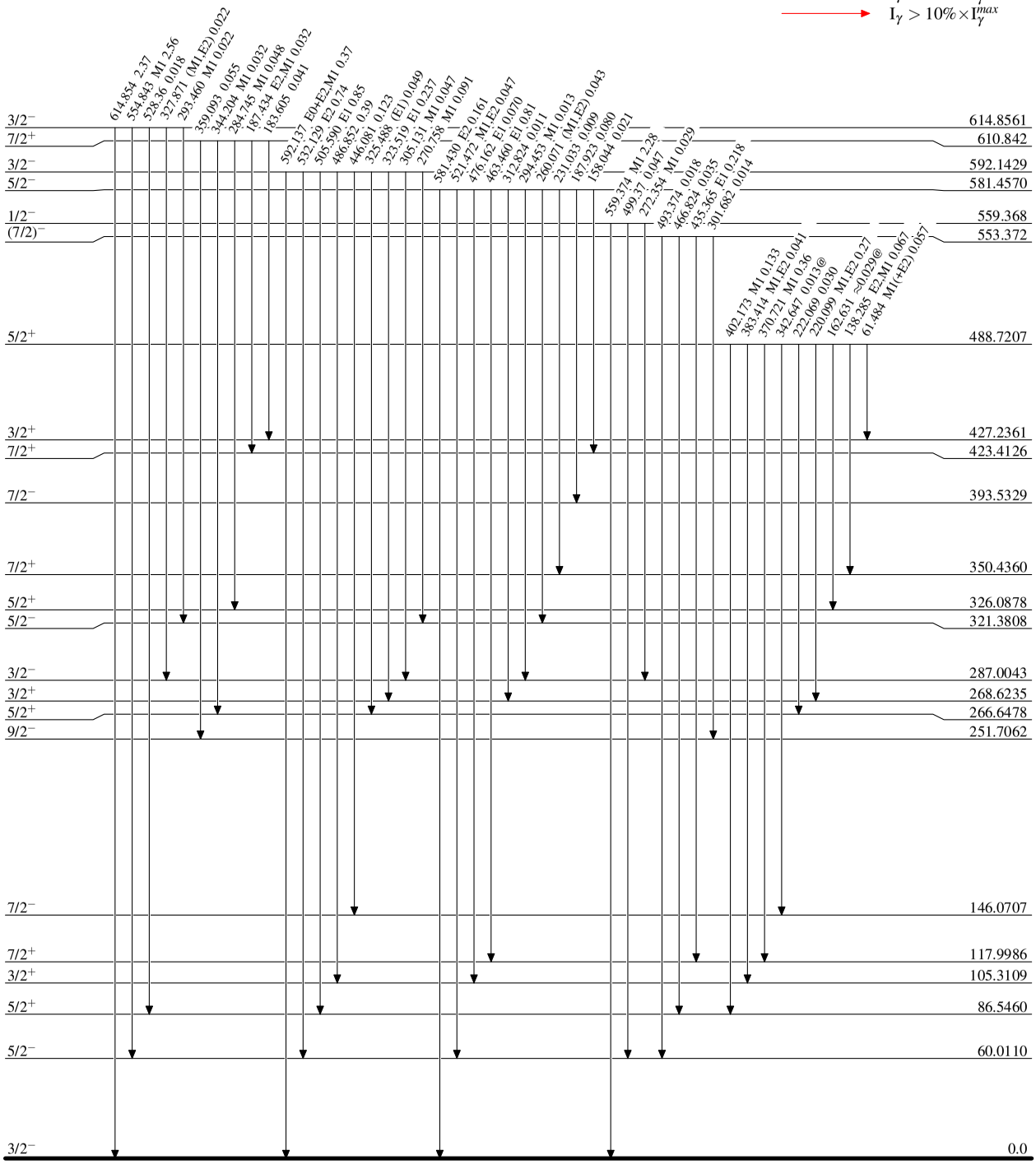
$^{155}_{64}Gd_{91}$

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25

Level Scheme (continued)

Intensities: Iγ per 100 N captures
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



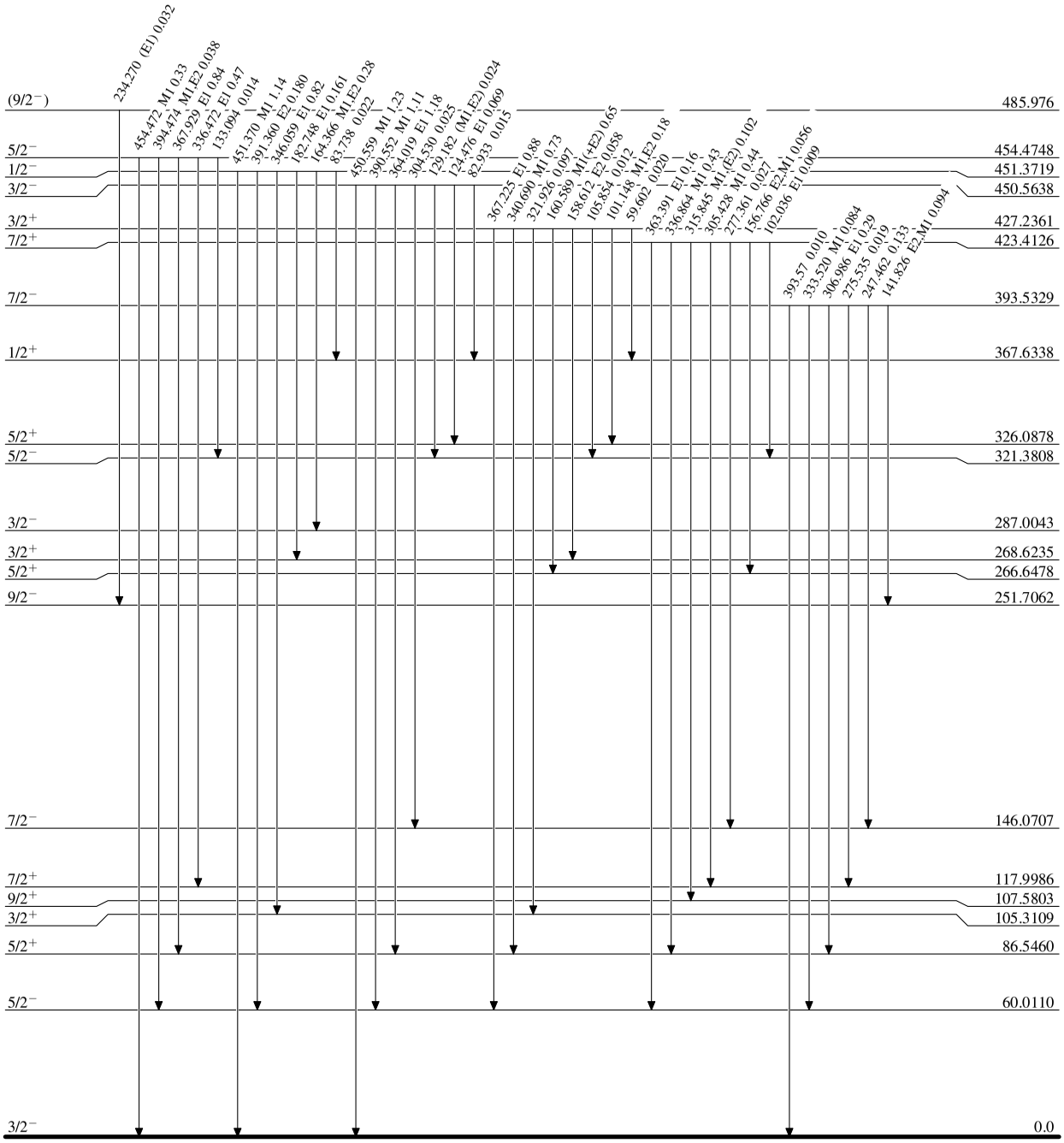
$^{155}_{64}Gd_{91}$

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25

Level Scheme (continued)

Intensities: Iγ per 100 N captures
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



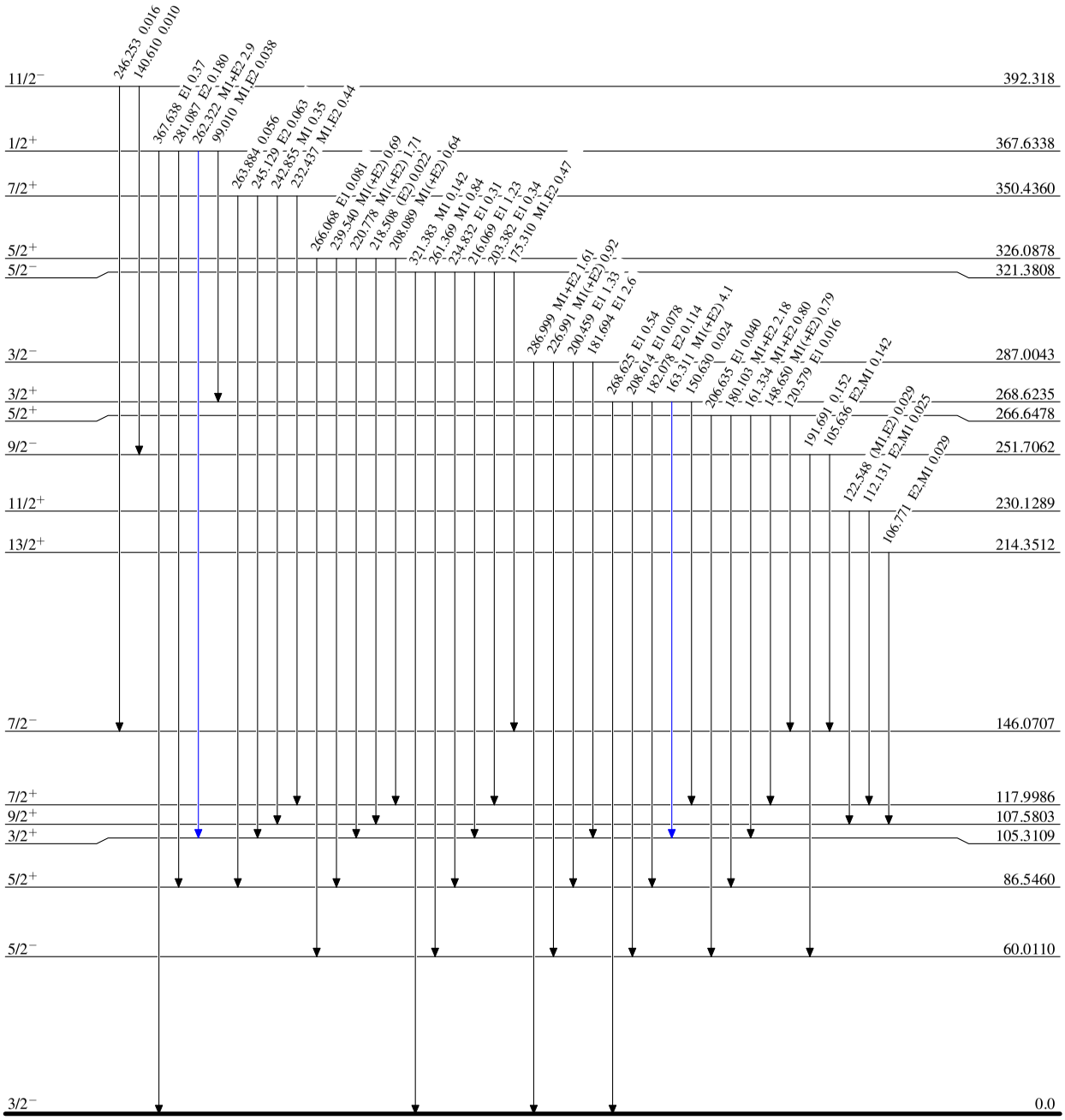
$^{155}_{64}Gd_{91}$

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25

Level Scheme (continued)

Intensities: Iγ per 100 N captures
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



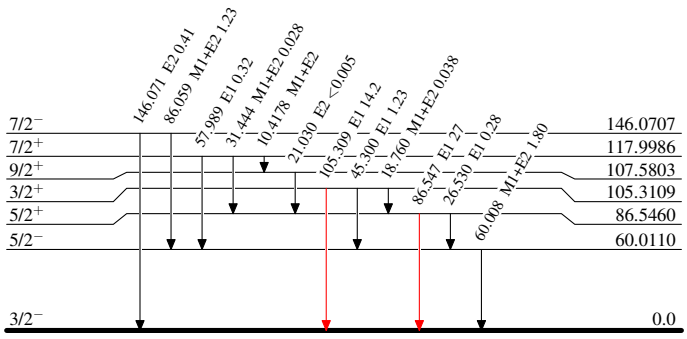
$^{155}_{64}Gd_{91}$

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25

Level Scheme (continued)

Intensities: Iγ per 100 N captures
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

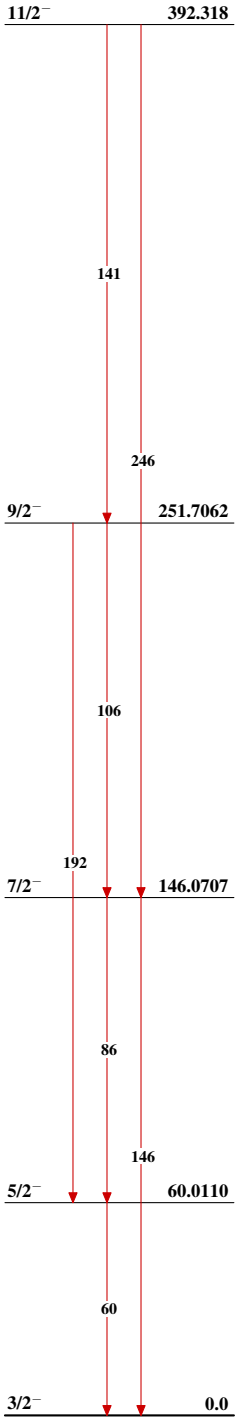
Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



$^{155}_{64}Gd_{91}$

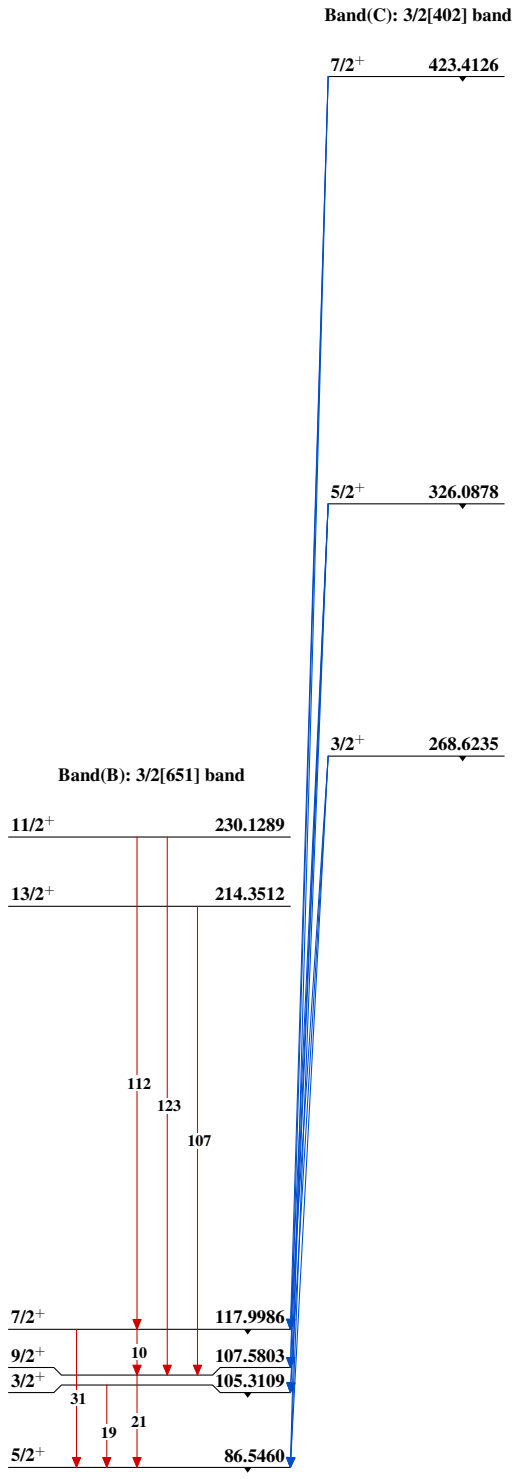
^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25

Band(A): 3/2[521] band, g.s. band



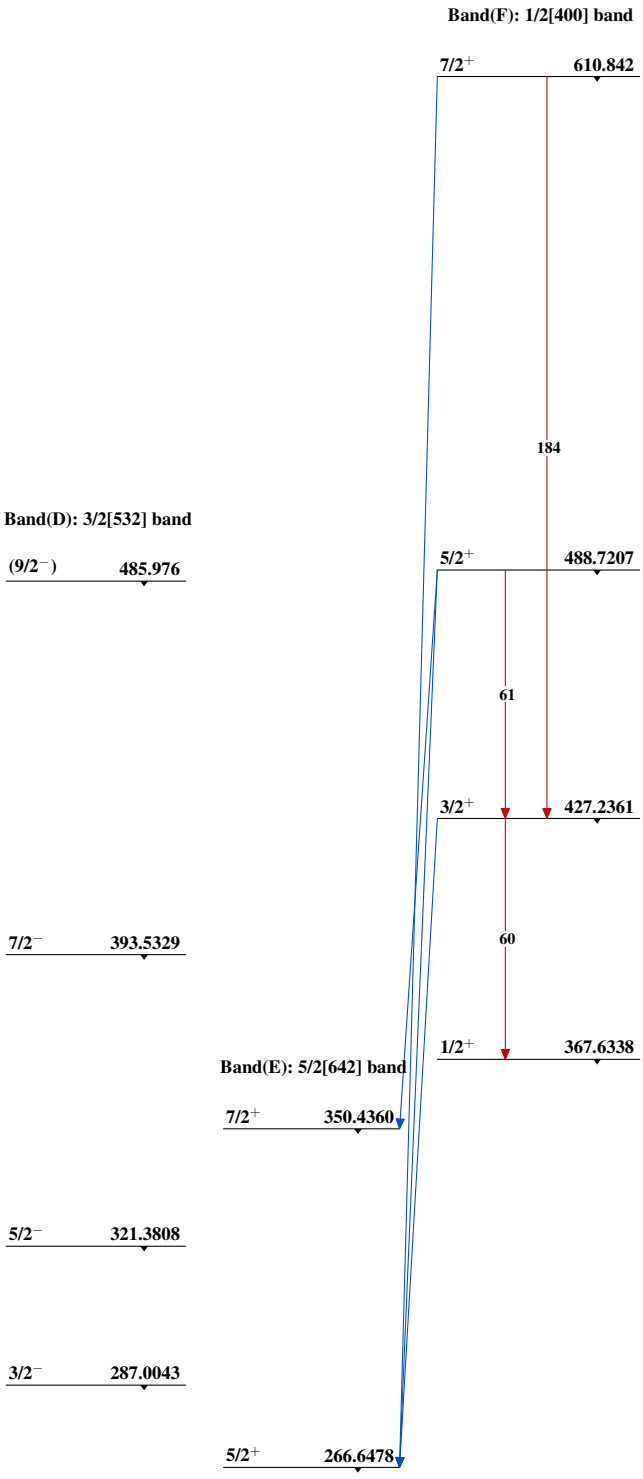
$^{155}_{64}Gd_{91}$

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)



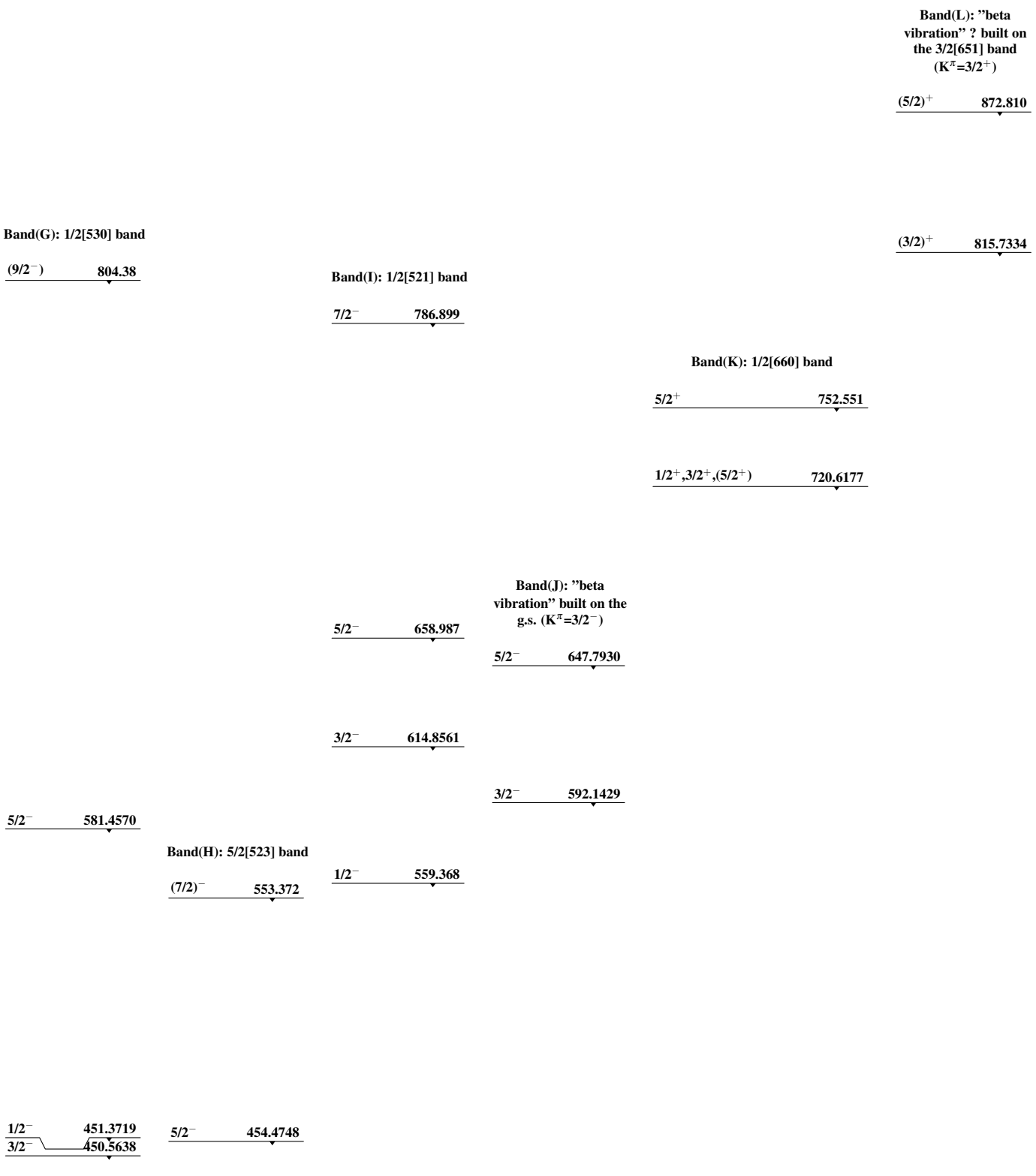
$^{155}_{64}Gd_{91}$

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)

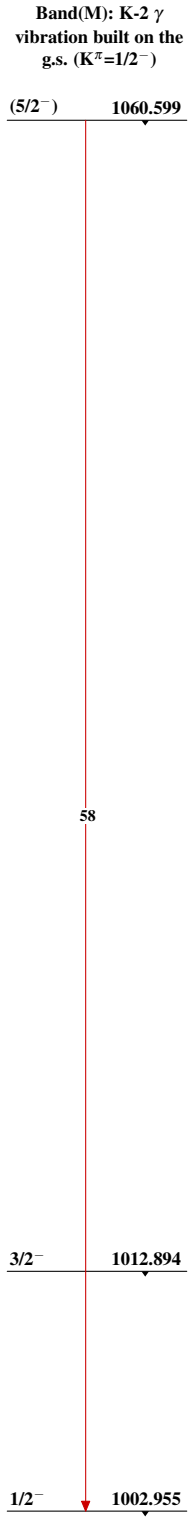


$^{155}_{64}Gd_{91}$

^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)



^{154}Gd(n,γ) E=th,2,24 keV 1986Sc25 (continued)



$^{155}_{64}Gd_{91}$