^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10

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Full Evaluation	N. Nica	NDS 141, 1 (2017)	1-Feb-2017

$J^\pi(^{157}Gd)=3/2^-$.

Data are primarily from 1978Gr14 for thermal capture and from 1970Bo29 and 1994GrZZ for resonance-averaged capture. In thermal capture, measured primary and secondary γ′s Eγ, Iγ, Ece, Ice, γγ-coin with Ge(Li), curved-crystal spectrometer, and magnetic spectrometers. Precise flat-crystal spectrometer measurements for 19 γ rays were made by 1999Bo10 along with level lifetime measurements. 1978Gr14 report ≈ 90 primary and 800 secondary γ′s.

1994Al41 report a large number of 2 γ cascades whose energies sum to that of the thermal-neutron capture state, or to this value minus the energy of the 1st or 2nd excited level. New γ′s placed from previously known levels are included and flagged, and new intermediate levels and their decay γ′s are included and flagged. In several cases the authors list a level that is fed by a primary γ whose energy is less than that of the following secondary γ; these levels are not included here.

2015Va20 use the same two-step cascade (TSC) method as 1994Al41 (with improvements) where the two cascading γ rays span in between the thermal-neutron capture state to the g.s. and first four excited states and assign J^π values to sixteen levels with either no previous assignment or reassigning them, which are adopted below.

Others: 1960Kn01, 1960Wa09 (2 γ′s), 1961Sc19 (4 γ′s), 1962Gr33 (≈ 100 γ′s and ce data), 1968Be71, 1968SpZZ (7 levels), 1970As03, 1970Be81, 1970Da25, 1970Ei04, 1970Fr03, 1970Mi09, 1970Pa20 (ce for 29 γ′s), 1971Pa35, 1973Wh04 (37 γ′s), 1974Sh03, 1991AlZU, 1992AlZL, and 1994Ca05 (for the number of degrees of freedom and average neutron width from neutron resonance data), 2015KrZZ (γ strength function from two-step cascade).

α: Additional information 1.
δ: Additional information 2.

^{158}Gd Levels

E(level)[†‡]	J^π[#]	$T_{1/2}$	Comments
0.0[j]	0^+		
79.5128[j] 15	2^+		
261.4568[j] 16	4^+		
539.021[j] 7	6^+		
977.1453[k] 19	1^-	1.43[y] ps +19−80	
1023.6974[k] 22	2^-	>3.5[y] ps	
1041.6376[k] 19	3^-	0.35[y] ps +4−15	
1158.9678[k] 22	4^-	3.3[y] ps +5−23	
1176.479[k] 5	5^-	0.32[y] ps +4−17	
1187.143[l] 3	2^+	0.61[y] ps	$T_{1/2}$: normalized by 1999Bo10 to literature value from Coulomb excitation.
1196.165[m] 8	0^+	5.5[y] ps +7−43	
1259.8691[m] 18	2^+	3.6[y] ps	$T_{1/2}$: normalized by 1999Bo10 to literature value from Coulomb excitation.
1263.514[n] 3	1^-	<0.033[y] ps	
1265.518[l] 3	3^+	1.11[y] ps +13−72	
1358.467[l] 3	4^+	0.69[y] ps +10−4	
1371.938[k] 5	6^-		
1380.626[o] 6	4^+		
1402.936[n] 3	3^-	<0.048[y] ps	
1406.6995[m] 24	4^+	1.11[y] ps +19−74	
1452.352[p] 6	0^+	1.04[y] ps +16−90	
1481.421[l] 4	5^+		
1499.096[o] 5	5^+		
1517.4761[p] 20	2^+	0.90[y] ps +12−71	
1576.930[be] 16	0^+		
1636.292[q] 4	4^-		
1639.34?[n] 9	5^-		

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^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10 (continued)

^{158}Gd Levels (continued)

E(level)[†‡]	Jπ[#]	T1/2	E(level)[†‡]	Jπ[#]
1667.372[p] 6	4+		2566.8 6	(+)
1716.801[q] 5	5−		2594.6[d] 8	(+)[g]
1743.145[r] 14	0+		2601.2 7	(+)
1791.792[r] 9	2+		2631.0 3	(+)
1793.569[s] 7	2−	6.3[y] ps 9−60	2644.1 8	
1814.139[q] 7	6−		2656.9 4	
1847.88[t] 3	1+		2672.1 15	
1856.315[u] 15	1−		2687.1 3	(+)
1861.277[s] 7	3−		2698.7 3	2+,3[h]
1894.597[t] 25	2+		2723.7[&] 10	
1894.612[u] 8	2−		2751.5 5	
1901.593[r] 16	4+		2758.5 3	(+)
1916.933? 6	−		2782.3 3	(+)
1920.258 6	4+		2794.9?[be] 8	
1930.200[w] 24	1+		2802.0[a]	
1941.26[t] 3	3+		2823.7 6	
1952.424? 25	0+		2830.4 7	(+)[g]
1953.761[s] 23	4−		2844.8 5	
1957.9[x] 7	0+		2854.7[a] 9	
1964.104[w] 24	2+		2858.0[&] 15	
1978.035[u] 8	3−		2879.03 20	2+,3[h]
2017.879?[v] 11	5+		2896.1 6	
2023.838 13	1+		2909.8 3	(+)
2033.921[w] 17	3+		2913.4 7	
2035.69[x] 4	(2+)		2934.7 10	
2049.009 22	2−		2959.7 8	
2083.635 24	2+		2981.5 10	
2089.251 8	2+		2986.1 4	(+)[g]
2120.24 4	(2,3)+		2997.7 4	(+)
2153.174 9	(2,3)+		3008.3[a] 9	
2215.515 22	(1,2)+		3012.05 15	2+,3+[h]
2221.63 5	(1,2)−		3029.1 4	
2249.61 5	3+		3045.6[f] 15	(+)
2260.158 18	1,2+[h]		3060.3 4	2+,3[gh]
2269.255 14	1+		3063.7[a] 19	
2275.9[be]	2,3+[h]		3066.9 4	(+)[g]
2276.04 20			3080.0[&] 6	
2282.9 4			3118.5[&] 15	
2322.2[a] 10	2+,3[h]		3141.5 7	
2327.44[c] 25	1,2+[h]		3149.9 7	(+)
2344.48 15	2+,3+[h]		3171.2 6	
2355.09 15	1+,2+[h]		3195.5 6	
2369.6[@] 15			3200.8 6	2+,3[h]
2394.61 15	(+)		3228.6 7	
2433.1[@] 8			3234.5[&] 5	
2450.5[@] 5			3247.2 4	
2480.5[&] 14			3258.2[&] 6	
2485.6[&] 7			3263.9 6	
2501.0 3	(+)		3271.4 8	
2534.1 3	(+)		3288.0 5	
2538.9[&] 10			3292.0[a]	

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^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10 (continued)

^{158}Gd Levels (continued)

E(level)[†‡]	Jπ[#]	E(level)[†‡]	Jπ[#]	E(level)[†‡]	Jπ[#]	E(level)[†‡]	Jπ[#]
3351.9 *7*	1,2,3⁻[h]	3600.5[a] *10*		3750.1? *15*		4110.7 *8*	(+)
3411.7 *4*		3626.9 *5*	(+)[g]	3794.6 *10*	(+)	4139.6 *4*	(+)
3436.4 *4*	(+)	3632.7 *7*	1+,2+,3+[gh]	3846.7 *4*	(+)	4161.5 *8*	(+)
3446.0 *6*	1,2,3[h]	3647.5 *8*		3878.8 *4*	(+)	4236.9 *6*	
3448.8 *4*	(+)	3655.4 *8*	1,2+[h]	3923.3[a] *11*		(7937.1[i] *5*)	2⁻,(1⁻)
3534.8 *5*	(+)	3661.6 *6*		3948.0 *6*			
3570.9[a] *12*		3663.3 *10*	[h]	3965.1 *7*			
3592.4 *5*	(−)	3702.6[a] *12*		4015.8? *8*			

[†] Below 2270 keV, from least-squares fit to γ energies of 1999Bo10 and those of 1978Gr14 after they are scaled up by 36 *12* ppm (1999Bo10). Above 2270 keV, mostly from measured primary γ energies from thermal-neutron capture (1978Gr14) and resonance-averaged, 2-keV and 24-keV, n capture (1994GrZZ). A few level energies in this region are from the γγ coincidence of 1994Al41. The thermal-neutron capture-state energy is 7937.1 *5*.

[‡] All of the levels reported from the thermal-n capture of 1978Gr14 are included here. For levels reported only in the unpublished resonance-averaged n capture (1994GrZZ), they are only included if they are reported in both 2-keV and 24-keV n capture, and they are identified here by a comment. A few levels are from the γγ coincidences of 1994Al41.

[#] From ^{158}Gd Adopted Levels, except for the capture state. For levels above 2270 keV, the parity assignments are from the γ multipolarities and the assumption that the thermal-n capture state has $J^{\pi}=1^-,2^-$ (s-wave capture). See ^{158}Gd Adopted Levels for band parameters and configurations.

[@] Level questionable in thermal-n capture (1978Gr14), but verified in resonance-averaged n capture (1994GrZZ).

[&] From resonance-averaged n capture (1994GrZZ) only.

[a] From 1994Al41.

[b] From (p,t) study of 2002Le34.

[c] Resonance-averaged data suggest there may be an additional level at about 2320 keV.

[d] Resonance-averaged data suggest this may represent two levels at about 2592 and 2597 keV.

[e] Level questionable in thermal-n capture (1978Gr14). In resonance-averaged n capture, levels are reported at 2797 from 24-keV n capture and 2801 from 2-keV n capture.

[f] Resonance-averaged data suggest this may represent two levels at about 3041 and 3050 keV.

[g] E1 γ from 2⁻,(1⁻) upper level.

[h] J^{π} from 2015Va20 based on the following assumptions: (i) neutron capturing state $J^{\pi}=2^-$; (ii) primary transitions are of dipole character; (iii) multipolarities of secondary transitions are E1,M1, or E2; and (iv) provided that a pair of distinct, well-isolated lines with energies $E\gamma_1 < E\gamma_2$ is positioned in the spectrum symmetrically with respect to its midpoint, the pair is attributed to a TSC proceeding via intermediate level with energy $E_i=E\gamma_1+E_f$.

[i] According to 1978Gr14 quoting 1973Mu14 the thermal-neutron capture state results primarily from and is dominated by a single compound nucleus resonance at 0.0314 eV and $J^{\pi}=2^-$.

[j] Band(A): Ground-state rotational band.

[k] Band(B): K=1⁻ octupole-vibrational band.

[l] Band(C): K=2⁺ γ-vibrational band.

[m] Band(D): K=0⁺.

[n] Band(E): K=0⁻ octupole-vibrational band.

[o] Band(F): K=4⁺.

[p] Band(G): K=0⁺.

[q] Band(H): K=4⁻.

[r] Band(I): K=0⁺.

[s] Band(J): K=2⁻ octupole-vibrational band.

[t] Band(K): K=1⁺.

[u] Band(L): K=1⁻.

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^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10 (continued)

^{158}Gd Levels (continued)

[v] Band(M): K=4$^+$.
[w] Band(N): K=1$^+$.
[x] Band(O): K=0$^+$.
[y] From 1999Bo10. By comparison of measured values in 1999Bo10 with literature, 1999Bo10 deduce that a normalization of 0.88 times the maximum half-life determined from extreme feeding assumptions brings their measurement in agreement with literature for both the 1187 and 1260 keV levels. The values for 0.88 times maximum $T_{1/2}$ are adopted here, and the uncertainty taken to encompass the full range of minimum and maximum T1−/2 values deduced from extreme feeding assumptions.

γ(^{158}Gd)

E_γ[†‡#]	I_γ[@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	α	Comments
79.5132 *17*	1037 *73*	79.5128	2$^+$	0.0	0$^+$	E2	5.93	α(K)=2.02 *3*; α(L)=3.02 *5*; α(M)=0.714 *10*; α(N)=0.1591 *23*; α(O)=0.0207 *3*; α(P)=9.93×10^{-5} *14* α(K)exp=2.09 *21* (1978Gr14).
[x]80.4956 *20*	1.7 *3*					E2	5.66	
97.357[l] *3*	0.34 *6*	1814.139	6$^-$	1716.801	5$^-$			
[x]99.836 *7*	0.09 *3*							
100.787[l] *4*	0.13 *3*	1481.421	5$^+$	1380.626	4$^+$			
101.042 *3*	0.49 *7*	1894.612	2$^-$	1793.569	2$^-$			α(K)exp<3.21 (1978Gr14).
114.544 *4*	0.43 *6*	1517.4761	2$^+$	1402.936	3$^-$			α(K)exp<2.44 (1978Gr14).
[x]116.665 *6*	0.12 *3*							
116.758 *4*	0.28 *4*	1978.035	3$^-$	1861.277	3$^-$			
117.335 *4*	1.90 *23*	1158.9678	4$^-$	1041.6376	3$^-$	(E2)	1.408	α(K)=0.751 *11*; α(L)=0.508 *8*; α(M)=0.1192 *17*; α(N)=0.0266 *4*; α(O)=0.00352 *5* α(P)=3.81×10^{-5} *6* α(K)exp=0.608 *71* (1978Gr14).
118.464 *10*	0.15 *4*	1499.096	5$^+$	1380.626	4$^+$			
[x]120.748 *4*	0.092 *16*							
[x]122.159 *20*	0.06 *3*							
122.943 *10*	0.053 *19*	1481.421	5$^+$	1358.467	4$^+$			
[x]124.679 *14*	0.030 *18*							
[x]124.841 *11*	0.040 *18*							
[x]131.818 *8*	0.066 *20*							
[x]134.307 *5*	0.27 *3*							
134.848 *6*	0.071 *14*	1176.479	5$^-$	1041.6376	3$^-$			
135.263 *4*	10.6 *12*	1158.9678	4$^-$	1023.6974	2$^-$	E2	0.850	α(K)=0.499 *7*; α(L)=0.271 *4*; α(M)=0.0634 *9*; α(N)=0.01418 *20*; α(O)=0.00189 *3* α(P)=2.61×10^{-5} *4* α(K)exp=0.445 *19* (1978Gr14).
137.195 *3*	1.71 *22*	1636.292	4$^-$	1499.096	5$^+$			α(K)exp=0.387 *52* (1978Gr14). Mult.: α_K(exp) value allows M1,E2 or E1+M2; from the J^{π}'s E1+M2 is required and then δ=0.25 *+8−12*.
[x]139.270 *3*	0.38 *4*							
139.434[l] *3*	0.127 *15*	1402.936	3$^-$	1263.514	1$^-$			
[x]139.93 *5*	0.075 *13*							
141.182 *10*	0.042 *15*	1406.6995	4$^+$	1265.518	3$^+$			
[x]142.483 *12*	0.045 *9*							
[x]142.794 *20*	0.021 *15*							
143.065 *6*	0.064 *16*	1402.936	3$^-$	1259.8691	2$^+$			
[x]143.988 *4*	0.100 *14*							
[x]145.7866 *18*	0.43 *4*							
146.831 *5*	0.48 *5*	1406.6995	4$^+$	1259.8691	2$^+$			
[x]149.227 *17*	0.037 *17*							

From ENSDF

$^{158}_{64}$Gd$_{94}$-5

γ(^{158}Gd) (continued)

E_γ [†‡#]	I_γ [@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	α	Comments
149.907 *9*	0.061 *15*	1667.372	4+	1517.4761	2+			
[x]150.595 *22*	0.015 *4*							
[x]151.932 *7*	0.135 *18*							
[x]153.482 *4*	0.114 *14*							
154.874 *4*	4.0 *4*	1636.292	4−	1481.421	5+	E1	0.0898	α(K)=0.0759 *11*; α(L)=0.01095 *16*; α(M)=0.00237 *4*; α(N)=0.000538 *8*; α(O)=8.02×10^{-5} *12* α(P)=4.50×10^{-6} *7* α(K)exp<0.105 (1978Gr14).
158.986 *20*	0.056 *17*	1517.4761	2+	1358.467	4+			
160.654[l] *6*	0.042 *10*	1952.424?	0+	1791.792	2+			
[x]164.105 *17*	0.05 *3*							
[x]167.396 *5*	0.050 *7*							
171.328 *5*	0.267 *24*	1358.467	4+	1187.143	2+			
[x]172.622 *12*	0.022 *11*							
177.844 *10*	0.041 *14*	1814.139	6−	1636.292	4−			
181.943[c] *1*	1.95×10^3 *18*	261.4568	4+	79.5128	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=0.213 *13* (1978Gr14).
184.491 *13*	0.029 *12*	1978.035	3−	1793.569	2−			
[x]185.865 *8*	0.060 *12*							
188.845 *5*	1.00 *8*	1452.352	0+	1263.514	1−			α(K)exp=0.131 *31* (1978Gr14). Mult.: α_K(exp) is consistent with E1+M2 with δ=0.24 *7*, but J^π's require pure E1.
[x]189.126 *11*	0.056 *10*							
[x]192.977 *6*	0.180 *16*							
[x]193.278 *15*	0.031 *11*							
[x]193.815 *6*	0.071 *10*							
[x]194.882 *6*	0.097 *13*							
195.461 *6*	0.27 *2*	1371.938	6−	1176.479	5−			
[x]196.929 *10*	0.030 *9*							
[x]197.375 *12*	0.026 *10*							
[x]197.725 *14*	0.024 *11*							
[x]198.119 *6*	0.093 *10*							
[x]198.399 *6*	0.259 *23*							
[x]198.932 *6*	0.169 *17*							
200.118 *6*	1.43 *11*	1916.933?	−	1716.801	5−	E2,M1	0.25 *4*	α(K)=0.20 *5*; α(L)=0.043 *9*; α(M)=0.0098 *23*; α(N)=0.0022 *5*; α(O)=0.00032 *6* α(P)=1.34×10^{-5} *46* α(K)exp=0.213 *22* (1978Gr14).
[x]200.906 *20*	0.029 *12*							
203.467 *9*	0.163 *16*	1920.258	4+	1716.801	5−			
[x]203.536 *14*	0.102 *25*							

From ENSDF

$^{158}_{64}$Gd$_{94}$-6

^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10 (continued)

γ(^{158}Gd) (continued)

E_γ[†‡#]	I_γ[@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	α	Comments
203.718 *14*	0.031 *12*	2017.879?	5$^+$	1814.139	6$^-$			
^{x}204.118 *6*	1.99 *16*					E1	0.0430	
^{x}205.445 *6*	0.49 *4*					M1,E2	0.23 *4*	
^{x}208.897 *9*	0.067 *13*							
^{x}209.012 *7*	0.094 *13*							
^{x}209.444 *11*	0.029 *10*							
^{x}210.391 *20*	0.021 *11*							
^{x}211.054 *7*	0.075 *11*					M1,E2	0.22 *3*	
^{x}212.849 *17*	0.09 *3*							
212.979 *5*	2.95 *21*	1371.938	6$^-$	1158.9678	4$^-$	E2	0.180	α(K)=0.1279 *18*; α(L)=0.0406 *6*; α(M)=0.00934 *13*; α(N)=0.00210 *3*; α(O)=0.000290 *4* α(P)=7.45×10^{-6} *11* α(K)exp=0.133 *21* (1978Gr14).
^{x}214.026 *25*	0.044 *20*							
^{x}215.311 *6*	0.127 *10*							
215.898 *5*	0.50 *3*	1481.421	5$^+$	1265.518	3$^+$			α(K)exp=1.08 *50* (1978Gr14).
217.703 *5*	3.07 *25*	1716.801	5$^-$	1499.096	5$^+$	E1	0.0363	α(K)=0.0308 *5*; α(L)=0.00434 *6*; α(M)=0.000938 *14*; α(N)=0.000214 *3*; α(O)=3.22×10^{-5} *5* α(P)=1.90×10^{-6} *3* α(K)exp=0.0239 *41* (1978Gr14).
218.221 *5*	10.9 *9*	1259.8691	2$^+$	1041.6376	3$^-$	E1	0.0361	α(K)=0.0306 *5*; α(L)=0.00431 *6*; α(M)=0.000932 *13*; α(N)=0.000212 *3*; α(O)=3.20×10^{-5} *5* α(P)=1.89×10^{-6} *3* α(K)exp=0.0212 *22* (1978Gr14).
^{x}218.825 *6*	0.51 *5*							
219.023 *7*	0.100 *12*	1196.165	0$^+$	977.1453	1$^-$			
219.547 *8*	0.097 *14*	1406.6995	4$^+$	1187.143	2$^+$			
^{x}220.595 *12*	0.029 *10*							
^{x}221.631 *9*	0.049 *10*							
^{x}222.299 *15*	0.034 *12*							
^{x}223.975 *15*	0.061 *15*							
^{x}224.183 *14*	0.058 *12*							
^{x}225.006 *17*	0.025 *6*							
225.659[l] *7*	0.27 *3*	1743.145	0$^+$	1517.4761	2$^+$			
226.242 *9*	0.052 *10*	2260.158	1,2$^+$	2033.921	3$^+$			
^{x}226.490 *20*	0.064 *23*							
^{x}226.576 *12*	0.080 *16*							
227.973 *8*	0.202 *20*	2089.251	2$^+$	1861.277	3$^-$			
^{x}228.118 *11*	0.042 *8*							
^{x}229.180 *25*	0.021 *13*							
229.598 *6*	0.32 *3*	1636.292	4$^-$	1406.6995	4$^+$			
^{x}229.903 *7*	0.212 *21*							
230.233 *7*	5.5 *4*	1406.6995	4$^+$	1176.479	5$^-$			

γ(^{158}Gd) (continued)

E_γ [†‡#]	I_γ [@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	α	Comments
231.989 *13*	0.033 *10*	2023.838	1^+	1791.792	2^+			
^{x}233.232 *10*	0.055 *9*							
^{x}233.576 *6*	0.46 *4*							
^{x}235.125 *7*	0.28 *3*							
235.379 *6*	5.7 *4*	1716.801	5^-	1481.421	5^+	E1	0.0296	α(K)=0.0251 *4*; α(L)=0.00353 *5*; α(M)=0.000762 *11*; α(N)=0.0001737 *25*; α(O)=2.62×10^{-5} *4* α(P)=1.564×10^{-6} *22* α(K)exp=0.0220 *21* (1978Gr14).
236.176 *6*	0.89 *6*	1259.8691	2^+	1023.6974	2^-			
^{x}236.909 *17*	0.033 *13*							
^{x}237.383 *9*	0.056 *10*							
^{x}239.889 *10*	0.047 *8*							
240.324[d] *11*	0.037 *7*	2275.9	$2,3^+$	2035.69	(2^+)			
^{x}241.306 *17*	0.037 *7*							
^{x}241.454 *12*	0.046 *7*							
^{x}242.139 *6*	0.197 *16*							
^{x}244.742 *17*	0.058 *23*							
245.417 *6*	0.68 *5*	2269.255	1^+	2023.838	1^+	M1,E2	0.14 *3*	α(K)=0.11 *3*; α(L)=0.0215 *19*; α(M)=0.0048 *6*; α(N)=0.00109 *11*; α(O)=0.000160 *8* α(P)=7.6×10^{-6} *27* α(K)exp=0.120 *21* (1978Gr14).
247.716 *6*	0.276 *22*	1406.6995	4^+	1158.9678	4^-			
^{x}248.017 *10*	0.049 *7*							
^{x}250.949 *17*	0.040 *12*							
^{x}251.407 *20*	0.062 *7*							
^{x}251.928 *6*	0.40 *3*							
^{x}252.305 *9*	0.063 *9*							
253.952 *6*	2.93 *21*	1517.4761	2^+	1263.514	1^-	E1	0.0243	α(K)=0.0207 *3*; α(L)=0.00289 *4*; α(M)=0.000623 *9*; α(N)=0.0001423 *20*; α(O)=2.15×10^{-5} *3* α(P)=1.296×10^{-6} *19* α(K)exp=0.0121 *26* (1978Gr14).
^{x}254.325 *8*	0.085 *10*							
255.672 *6*	93 *7*	1636.292	4^-	1380.626	4^+	E1	0.0239	α(K)=0.0203 *3*; α(L)=0.00284 *4*; α(M)=0.000613 *9*; α(N)=0.0001398 *20*; α(O)=2.12×10^{-5} *3* α(P)=1.274×10^{-6} *18* α(K)exp=0.0197 *12* (1978Gr14).
^{x}256.549 *7*	0.124 *11*							
^{x}257.269 *17*	0.028 *7*							
^{x}258.629 *12*	0.045 *8*							
^{x}260.66 *3*	0.025 *11*							
^{x}261.012 *7*	0.154 *12*							
^{x}262.925 *20*	0.035 *9*							
^{x}263.888 *14*	0.040 *12*							

From ENSDF

$^{158}_{64}$Gd$_{94}$-8

γ(^{158}Gd) (continued)

E_γ[†‡#]	I_γ[@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	α	Comments
264.430 *6*	0.64 *4*	1667.372	4^+	1402.936	3^-	E1	0.0219	α(K)=0.0186 *3*; α(L)=0.00260 *4*; α(M)=0.000561 *8*; α(N)=0.0001280 *18*; α(O)=1.94×10^{-5} *3* α(P)=1.173×10^{-6} *17* α(K)exp=0.0297 *50* (1978Gr14).
^{x}265.865 *20*	0.037 *11*							
^{x}266.533 *10*	0.073 *10*							
^{x}271.443 *20*	0.044 *13*							
^{x}272.82 *4*	0.031 *9*							
^{x}272.964 *12*	0.103 *13*							
^{x}276.034 *8*	0.142 *14*							
277.554 *8*	120 *11*	539.021	6^+	261.4568	4^+	E2	0.0767	α(K)=0.0579 *9*; α(L)=0.01467 *21*; α(M)=0.00333 *5*; α(N)=0.000753 *11*; α(O)=0.0001063 *15* α(P)=3.57×10^{-6} *5* α(K)exp=0.0545 *10* (1978Gr14).
277.834 *8*	4.7 *4*	1636.292	4^-	1358.467	4^+			
^{x}278.231 *20*	0.062 *16*							
^{x}278.790 *20*	0.054 *14*							
279.288[d] *14*	0.055 *9*	1856.315	1^-	1576.930	0^+			
280.653 *7*	0.72 *5*	1916.933?	$^-$	1636.292	4^-	E2	0.0741	α(K)=0.0560 *8*; α(L)=0.01408 *20*; α(M)=0.00320 *5*; α(N)=0.000723 *11*; α(O)=0.0001021 *15* α(P)=3.46×10^{-6} *5* α(K)exp=0.0491 *14* (1978Gr14).
^{x}280.822 *10*	0.135 *13*							
^{x}281.599 *9*	0.097 *10*							
282.726 *7*	8.1 *6*	1259.8691	2^+	977.1453	1^-	E1	0.0185	α(K)=0.01572 *22*; α(L)=0.00218 *3*; α(M)=0.000471 *7*; α(N)=0.0001077 *15* α(O)=1.634×10^{-5} *23*; α(P)=9.96×10^{-7} *14* α(K)exp=0.0136 *12* (1978Gr14).
283.965 *7*	1.10 *8*	1920.258	4^+	1636.292	4^-	E1	0.0183	α(K)=0.01555 *22*; α(L)=0.00216 *3*; α(M)=0.000466 *7*; α(N)=0.0001065 *15* α(O)=1.615×10^{-5} *23*; α(P)=9.85×10^{-7} *14* α(K)exp=0.0173 *12* (1978Gr14).
^{x}284.357 *13*	0.073 *11*							
^{x}285.660 *17*	0.048 *10*							
^{x}286.240 *8*	0.203 *18*							
^{x}286.87 *4*	0.047 *21*							
^{x}287.261 *15*	0.042 *11*							
^{x}288.000 *20*	0.09 *3*							
^{x}288.084 *20*	0.12 *3*							
^{x}289.331 *9*	0.183 *16*					M1	0.1053	
^{x}290.842 *17*	0.046 *9*							
^{x}291.753 *20*	0.099 *20*							
291.896 *8*	0.49 *3*	2153.174	$(2,3)^+$	1861.277	3^-	E1	0.01706	α(K)=0.01450 *21*; α(L)=0.00201 *3*; α(M)=0.000434 *6*; α(N)=9.92×10^{-5}

γ(^{158}Gd) (continued)

E_γ[†‡#]	I_γ[@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	α	Comments
								14; α(O)=1.506×10^{-5} *21* α(P)=9.21×10^{-7} *13* α(K)exp=0.0127 *70* (1978Gr14).
[x]292.511 *8*	0.201 *18*							
[x]295.146 *20*	0.047 *9*							
[x]295.484 *15*	0.083 *14*							
295.677 *8*	0.99 *7*	2089.251	2$^+$	1793.569	2$^-$	E1	0.01652	α(K)=0.01404 *20*; α(L)=0.00195 *3*; α(M)=0.000420 *6*; α(N)=9.60×10^{-5} *14*; α(O)=1.458×10^{-5} *21* α(P)=8.93×10^{-7} *13* α(K)exp=0.0222 *26* (1978Gr14).
[x]296.060 *8*	0.29 *2*							
[x]298.239 *15*	0.049 *10*							
[x]299.29 *3*	0.041 *12*							
[x]299.607 *9*	0.196 *18*							
301.125 *20*	0.16 *3*	2017.879?	5$^+$	1716.801	5$^-$			
[x]301.229 *17*	0.78 *9*					E2	0.0595	
[x]301.66 *3*	0.056 *20*							
[x]301.802 *9*	0.87 *6*					E2	0.0592	
[x]303.69 *3*	0.039 *14*							
[x]303.96 *5*	0.023 *14*							
[x]304.27 *3*	0.054 *14*							
[x]305.48 *4*	0.043 *17*							
[x]305.642 *20*	0.118 *20*							
306.089[l] *20*	0.054 *11*	2260.158	1,2$^+$	1952.424?	0$^+$			
[x]307.623 *14*	0.074 *11*							
[x]308.2 *4*	0.027 *12*							
[x]308.431 *16*	0.068 *12*					(M1)	0.0888	
[x]308.76 *3*	0.039 *14*							
[x]309.277 *9*	0.200 *18*							
310.10 *3*	0.034 *12*	1716.801	5$^-$	1406.6995	4$^+$			
[x]311.664 *9*	0.263 *21*					M1	0.0864	
[x]312.47 *3*	0.043 *13*							
[x]314.17 *3*	0.067 *17*					(M1)	0.0846	
[x]315.00 *3*	0.14 *6*							
315.043 *9*	0.42 *3*	1814.139	6$^-$	1499.096	5$^+$	E1	0.01410	α(K)=0.01199 *17*; α(L)=0.001656 *24*; α(M)=0.000357 *5*; α(N)=8.17×10^{-5} *12* α(O)=1.242×10^{-5} *18*; α(P)=7.66×10^{-7} *11* α(K)exp=0.0182 *42* (1978Gr14).
[x]315.733 *20*	0.050 *13*							
[x]316.827 *8*	0.76 *6*							
317.02[d] *3*	0.062 *16*	1576.930	0$^+$	1259.8691	2$^+$			
[x]317.52 *3*	0.059 *15*							
[x]318.343 *10*	0.236 *19*							
[x]319.38 *3*	0.043 *13*							

From ENSDF

$^{158}_{64}$Gd$_{94}$-10

γ(^{158}Gd) (continued)

E_γ †‡#	I_γ @i	E_i(level)	J^π_i	E_f	J^π_f	Mult.&	α	Comments
x319.857 *17*	0.102 *21*							
x320.01 *6*	0.026 *13*							
x320.364 *14*	0.092 *12*							
x321.887 *17*	0.081 *14*							
x322.136 *15*	0.088 *9*							
x322.564 *9*	0.40 *3*					M1	0.0789	
x323.801 *20*	0.051 *10*							
x325.783 *10*	0.243 *19*							
x328.284 *8*	1.95 *14*					M1	0.0753	
x328.869 *14*	0.095 *13*							
329.816l *9*	0.64 *5*	2260.158	1,2$^+$	1930.200	1$^+$	M1	0.0744	α(K)=0.0630 *9*; α(L)=0.00888 *13*; α(M)=0.00192 *3*; α(N)=0.000443 *7*; α(O)=6.88×10^{-5} *10* α(P)=4.65×10^{-6} *7* α(K)exp=0.0627 *22* (1978Gr14).
x330.276 *16*	0.079 *10*							
x331.21 *3*	0.076 *15*							
x331.960 *18*	0.090 *13*							
332.707 *9*	0.79 *6*	1814.139	6$^-$	1481.421	5$^+$	E1	0.01232	α(K)=0.01048 *15*; α(L)=0.001443 *21*; α(M)=0.000311 *5*; α(N)=7.12×10^{-5} *10* α(O)=1.084×10^{-5} *16*; α(P)=6.72×10^{-7} *10* α(K)exp=0.0112 *31* (1978Gr14).
x334.53 *3*	0.089 *22*							
x334.73 *3*	0.078 *19*							
x335.87 *3*	0.148 *22*							
336.167 *8*	9.4 *7*	1716.801	5$^-$	1380.626	4$^+$	E1	0.01201	α(K)=0.01022 *15*; α(L)=0.001406 *20*; α(M)=0.000303 *5*; α(N)=6.94×10^{-5} *10* α(O)=1.057×10^{-5} *15*; α(P)=6.56×10^{-7} *10* α(K)exp=0.00940 *10* (1978Gr14).
x337.35 *3*	0.074 *18*							
x337.77 *3*	0.050 *10*							
x338.980 *8*	6.7 *5*					E1	0.01176	
x341.728 *9*	9.3 *6*					M1	0.0677	
x342.152 *11*	0.61 *5*							
x343.212 *11*	0.271 *22*					M1	0.0670	
x343.89 *6*	0.025 *11*							
x345.036 *20*	0.145 *22*							
x345.24 *4*	0.11 *3*							
x345.790 *11*	0.37 *3*					E1	0.01120	
x346.56 *4*	0.7 *2*							
x347.464 *11*	0.291 *23*					M1,E2	0.052 *13*	
x348.261 *18*	0.093 *19*					(M1)	0.0644	
x349.113 *18*	0.15 *3*							
x349.438 *18*	0.114 *15*							
x349.71 *4*	0.054 *16*							
x350.87 *3*	0.084 *14*							
x351.07 *4*	0.052 *16*							

From ENSDF

γ(^{158}Gd) (continued)

E_γ [†‡#]	I_γ [@i]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [&]	α	Comments
[x]352.059 *15*	0.14 *5*					M1,E2	0.050 *13*	
[x]353.59 *6*	0.035 *17*							
[x]353.76 *7*	0.031 *19*							
[x]355.12 *5*	0.056 *20*							
[x]357.87 *4*	0.080 *20*							
358.336 *10*	0.66 *5*	1716.801	5^-	1358.467	4^+			
[x]359.162 *21*	0.14 *4*							
359.602 *11*	0.72 *6*	2153.174	$(2,3)^+$	1793.569	2^-			
[x]360.60 *5*	0.066 *23*							
[x]360.716 *21*	0.14 *3*							
[x]361.52 *4*	0.072 *18*							
[x]361.84 *5*	0.051 *21*							
[x]362.716 *21*	0.14 *3*							
[x]363.262 *14*	0.41 *5*					M1	0.0577	
[x]363.438 *13*	0.47 *6*					(M1)	0.0576	
365.063 *9*	16.7 *10*	1406.6995	4^+	1041.6376	3^-	E1	0.00982	α(K)=0.00836 *12*; α(L)=0.001146 *16*; α(M)=0.000247 *4*; α(N)=5.65×10^{-5} *8*; α(O)=8.63×10^{-6} *12* α(P)=5.40×10^{-7} *8* α(K)exp=0.00497 *21* (1978Gr14).
[x]367.638 *21*	0.136 *16*							
[x]368.84 *3*	0.097 *15*							
[x]370.12 *4*	0.072 *18*							
[x]370.44 *5*	0.074 *22*							
370.73 *4*	0.104 *21*	1636.292	4^-	1265.518	3^+			
[x]371.484 *18*	0.131 *17*					(M1)	0.0544	
[x]372.98 *3*	0.104 *21*							
[x]374.09 *3*	0.112 *16*							
[x]375.922 *21*	0.122 *13*					M1	0.0527	
[x]376.99 *5*	0.076 *23*							
[x]377.25 *5*	0.08 *3*							
[x]380.343 *15*	0.208 *23*					M1,E2	0.040 *11*	
381.35[d] *5*	0.054 *14*	2275.9	$2,3^+$	1894.597	2^+			
381.581 *18*	0.152 *15*	2017.879?	5^+	1636.292	4^-			
[x]382.65 *3*	0.087 *15*							
[x]382.983 *21*	0.177 *23*							
[x]383.07 *3*	0.156 *22*							
385.08 *3*	0.16 *3*	1791.792	2^+	1406.6995	4^+			
[x]386.347 *21*	0.157 *17*							
[x]386.835 *21*	0.220 *24*					M1,E2	0.039 *11*	
[x]387.07 *6*	0.09 *4*							
[x]387.788 *21*	0.119 *15*							
388.47[d] *5*	0.19 *5*	1576.930	0^+	1187.143	2^+			
388.827 *16*	2.98 *24*	1791.792	2^+	1402.936	3^-	E1	0.00844	α(K)=0.00719 *10*; α(L)=0.000982 *14*; α(M)=0.000212 *3*; α(N)=4.85×10^{-5}

From ENSDF

$^{158}_{64}Gd_{94}$-12

γ(^{158}Gd) (continued)

E_γ †‡#	I_γ @i	E_i(level)	J^π_i	E_f	J^π_f	Mult.&	α	Comments
								7; α(O)=7.40×10^{-6} *11* α(P)=4.66×10^{-7} *7* α(K)exp=0.0100 *13* (1978Gr14).
^{x}389.84 *3*	0.20 *3*							
^{x}391.988 *21*	0.203 *22*					M1	0.0473	
^{x}392.63 *4*	0.11 *3*							
^{x}394.62 *6*	0.09 *3*							
^{x}396.30 *4*	0.13 *5*							
^{x}396.541 *21*	0.35 *5*							
^{x}397.070 *21*	0.031 *5*							
^{x}397.88 *3*	0.130 *19*					M1,E2	0.0358 *98*	
398.86 *8*	0.09 *4*	2260.158	1,2$^+$	1861.277	3$^-$			
^{x}399.176 *15*	0.48 *4*							
^{x}402.164 *12*	0.62 *4*					M1	0.0443	
^{x}403.225 *21*	0.26 *3*					E2	0.0251	
^{x}407.93 *5*	0.122 *24*							
^{x}408.444 *13*	0.88 *7*							
^{x}408.765 *21*	1.02 *11*							
^{x}408.95 *3*	0.43 *7*							
^{x}410.08 *3*	0.31 *4*					E2	0.0239	
^{x}410.90 *6*	0.09 *3*							
^{x}412.30 *3*	0.33 *7*							
^{x}412.47 *3*	0.34 *7*					M1,E2	0.0325 *90*	
^{x}413.63 *3*	0.23 *3*							
^{x}414.70 *3*	0.33 *4*					E2	0.0232	
^{x}416.40 *5*	0.13 *3*							
^{x}417.07 *3*	0.22 *3*							
417.843 *11*	2.71 *16*	1916.933?	$^-$	1499.096	5$^+$	E1	0.00712	α(K)=0.00607 *9*; α(L)=0.000826 *12*; α(M)=0.0001781 *25*; α(N)=4.08×10^{-5} *6*; α(O)=6.24×10^{-6} *9* α(P)=3.95×10^{-7} *6* α(K)exp=0.00753 *16* (1978Gr14).
^{x}418.530 *18*	0.32 *4*					M1	0.0399	
^{x}419.96 *3*	0.26 *3*							
421.166 *12*	1.24 *9*	1920.258	4$^+$	1499.096	5$^+$	M1	0.0393	α(K)=0.0333 *5*; α(L)=0.00466 *7*; α(M)=0.001008 *15*; α(N)=0.000232 *4*; α(O)=3.61×10^{-5} *5* α(P)=2.45×10^{-6} *4* α(K)exp=0.0340 *10* (1978Gr14).
423.74 *3*	0.55 *7*	2215.515	(1,2)$^+$	1791.792	2$^+$	E2	0.0218	α(K)=0.01750 *25*; α(L)=0.00340 *5*; α(M)=0.000758 *11*; α(N)=0.0001724 *25* α(O)=2.52×10^{-5} *4*; α(P)=1.153×10^{-6} *17* α(K)exp=0.0185 *24* (1978Gr14).
^{x}424.69 *5*	0.28 *6*							
^{x}425.245 *21*	0.42 *5*							
^{x}426.53 *5*	0.21 *4*							

From ENSDF

$^{158}_{64}$Gd$_{94}$-13

γ(^{158}Gd) (continued)

E$_γ$ [†‡#]	I$_γ$ [@i]	E$_i$(level)	J^π_i	E$_f$	J^π_f	Mult. [&]	δ	α	Comments
[x]426.86 *3*	0.31 *4*								
[x]427.50 *3*	0.20 *3*								
[x]427.95 *7*	0.22 *7*					M1		0.0377	
428.23[d] *6*	0.23 *7*	2275.9	2,3$^+$	1847.88	1$^+$				
[x]428.90 *6*	0.14 *3*								
[x]429.89 *3*	0.35 *5*								
[x]430.36 *3*	0.29 *5*								
[x]431.23 *6*	0.19 *6*								
[x]432.07 *3*	0.16 *5*								
[x]432.315 *18*	0.26 *6*								
[x]432.759 *18*	0.21 *5*								
[x]433.233 *21*	0.087 *22*								
434.91[l] *11*	0.12 *6*	1952.424?	0$^+$	1517.4761	2$^+$				
435.515 *12*	4.9 *3*	1916.933?	$^-$	1481.421	5$^+$	E1		0.00646	α(K)=0.00551 *8*; α(L)=0.000748 *11*; α(M)=0.0001613 *23*; α(N)=3.69×10^{-5} *6*; α(O)=5.65×10^{-6} *8* α(P)=3.60×10^{-7} *5* α(K)exp=0.00210 *40* (1978Gr14).
[x]435.770 *18*	1.06 *11*					M1		0.0360	
[x]438.566 *21*	0.70 *10*								
438.825 *13*	2.40 *19*	1920.258	4$^+$	1481.421	5$^+$	E2+M1	1.1 *+18−6*	0.027 *6*	α(K)=0.022 *5*; α(L)=0.0036 *4*; α(M)=0.00078 *8*; α(N)=0.000179 *19*; α(O)=2.7×10^{-5} *4* α(P)=1.57×10^{-6} *40* α(K)exp=0.0224 *22* (1978Gr14).
[x]439.241 *13*	2.01 *14*					E2		0.0198	
[x]443.07 *20*	<0.1								
[x]444.01 *6*	0.26 *6*								
444.92[l] *5*	0.51[e] *13*	1847.88	1$^+$	1402.936	3$^-$			0.00616	α(K)exp=0.00850 *36* (1978Gr14).
[x]445.21 *9*	0.29 *10*								
[x]445.68 *3*	0.24 *3*					M1		0.0339	
[x]447.65 *15*	<0.1								
[x]448.93 *15*	<0.1								
[x]450.72 *5*	0.31 *6*								
[x]451.19 *10*	<0.1								
[x]453.177 *21*	0.48 *4*					E2		0.0182	
453.68[l] *4*	0.37 *11*	1856.315	1$^-$	1402.936	3$^-$				
[x]454.66 *4*	0.46 *12*								
[x]455.01 *7*	2.5 *6*								
[x]455.169 *15*	3.5 *3*								
[x]456.481 *16*	0.94 *8*					E2		0.01780	
[x]457.80 *4*	0.37 *5*					M1		0.0317	
[x]458.581 *18*	0.87 *7*					M1		0.0315	
[x]460.506 *14*	2.63 *18*					(E1)		0.00568	
[x]463.647 *21*	0.31 *4*					M1,E2		0.0239 *68*	

From ENSDF

$^{158}_{64}$Gd$_{94}$-14

γ(^{158}Gd) (continued)

E_γ [†‡#]	I_γ [@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [&]	α	Comments
[x]464.37 *6*	0.18 *4*							
466.53 *5*	0.15 *4*	2260.158	1,2$^+$	1793.569	2$^-$			
[x]468.44 *3*	0.36 *5*					M1	0.0299	
[x]469.37 *7*	0.13 *4*							
472.38[j] *3*	0.75[j] *13*	1953.761	4$^-$	1481.421	5$^+$			α(K)exp=0.00997 *53* (1978Gr14).
472.38[j] *3*	0.75[j] *13*	2215.515	(1,2)$^+$	1743.145	0$^+$			
[x]472.833 *15*	2.62 *18*					E2	0.01619	
475.218 *16*	1.53 *12*	1452.352	0$^+$	977.1453	1$^-$	E1	0.00529	α(K)=0.00451 *7*; α(L)=0.000610 *9*; α(M)=0.0001314 *19*; α(N)=3.01×10^{-5} *5*; α(O)=4.62×10^{-6} *7* α(P)=2.96×10^{-7} *5* α(K)exp=0.00356 *65* (1978Gr14).
475.839[c] *1*	4.8 *3*	1517.4761	2$^+$	1041.6376	3$^-$	E1	0.00527	α(K)=0.00450 *7*; α(L)=0.000608 *9*; α(M)=0.0001310 *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=0.00687 *16* (1978Gr14).
[x]476.22 *6*	0.57 *11*							
[x]476.74 *7*	0.32 *6*							
[x]477.44 *3*	0.65 *7*							
[x]477.811 *21*	0.74 *7*							
[x]479.09 *8*	0.37 *11*							
479.632 *14*	11.6 *7*	1743.145	0$^+$	1263.514	1$^-$	E1	0.00518	α(K)=0.00442 *7*; α(L)=0.000597 *9*; α(M)=0.0001286 *18*; α(N)=2.95×10^{-5} *5*; α(O)=4.52×10^{-6} *7* α(P)=2.90×10^{-7} *4* α(K)exp=0.00357 *9* (1978Gr14).
[x]480.63 *3*	0.64 *8*							
[x]482.403 *15*	2.56 *18*					M1(+E2)	0.0215 *62*	
[x]485.824 *21*	0.69 *6*							
[x]487.491 *16*	1.18 *8*					E2	0.01492	
490.863 *21*	0.88 *8*	1667.372	4$^+$	1176.479	5$^-$			
491.543[l] *21*	2.7 *4*	1894.597	2$^+$	1402.936	3$^-$			α(K)exp=0.0128 *12* (1978Gr14).
491.71 *3*	2.1 *3*	1894.612	2$^-$	1402.936	3$^-$			
[x]492.09 *6*	0.57 *10*							
[x]492.58 *3*	0.53 *5*					M1	0.0263	
493.793 *21*	0.89 *7*	1517.4761	2$^+$	1023.6974	2$^-$			
[x]494.24 *3*	0.69 *8*					M1	0.0260	
[x]496.26 *6*	0.33 *6*							
[x]496.89 *6*	0.25 *5*							
[x]498.46 *6*	0.7 *3*							
498.663 *16*	3.662 *22*	1901.593	4$^+$	1402.936	3$^-$	E1	0.00474	α(K)=0.00405 *6*; α(L)=0.000546 *8*; α(M)=0.0001176 *17*; α(N)=2.69×10^{-5} *4*; α(O)=4.13×10^{-6} *6* α(P)=2.66×10^{-7} *4* α(K)exp=0.00500 *17* (1978Gr14).
[x]500.07 *4*	0.78 *20*							

From ENSDF

$^{158}_{64}$Gd$_{94}$-15

γ(^{158}Gd) (continued)

E_γ †‡#	I_γ @i	E_i(level)	J^π_i	E_f	J^π_f	Mult.&	α	Comments
502.789 *15*	16.0 *10*	1861.277	3⁻	1358.467	4⁺	E1	0.00465	α(K)=0.00397 *6*; α(L)=0.000536 *8*; α(M)=0.0001154 *17*; α(N)=2.64×10⁻⁵ *4*; α(O)=4.06×10⁻⁶ *6* α(P)=2.61×10⁻⁷ *4* α(K)exp=0.00374 *9* (1978Gr14).
ˣ505.019 *18*	1.46 *10*					M1	0.0247	
ˣ507.22 *3*	0.49 *6*					(M1)	0.0244	
ˣ508.81 *3*	1.04 *11*							
ˣ512.37 *5*	0.70 *14*							
ˣ515.17 *4*	0.34 *5*					M1	0.0234	
ˣ516.40 *14*	0.13 *6*							
518.80 *6*	1.4 *4*	2017.879?	5⁺	1499.096	5⁺	M1	0.0230	α(K)=0.0196 *3*; α(L)=0.00271 *4*; α(M)=0.000587 *9*; α(N)=0.0001352 *19*; α(O)=2.10×10⁻⁵ *3* α(P)=1.431×10⁻⁶ *20* α(K)exp=0.0248 *24* (1978Gr14).
ˣ518.96 *6*	1.1 *4*							
ˣ520.84 *6*	0.44 *9*							
ˣ523.534 *19*	3.46 *24*					E1	0.00425	
ˣ526.18 *10*	0.29 *10*							
528.041 *18*	27.3 *22*	1793.569	2⁻	1265.518	3⁺	E1	0.00417	α(K)=0.00356 *5*; α(L)=0.000479 *7*; α(M)=0.0001032 *15*; α(N)=2.36×10⁻⁵ *4*; α(O)=3.63×10⁻⁶ *5* α(P)=2.35×10⁻⁷ *4* α(K)exp=0.00310 *8* (1978Gr14).
528.231 *18*	10.6 *10*	1791.792	2⁺	1263.514	1⁻	E1	0.00417	α(K)=0.00356 *5*; α(L)=0.000479 *7*; α(M)=0.0001031 *15*; α(N)=2.36×10⁻⁵ *4*; α(O)=3.63×10⁻⁶ *5* α(P)=2.35×10⁻⁷ *4*
ˣ530.11 *4*	0.58 *8*							
531.906 *18*	2.44 *17*	1791.792	2⁺	1259.8691	2⁺	M1	0.0216	α(K)=0.0184 *3*; α(L)=0.00255 *4*; α(M)=0.000551 *8*; α(N)=0.0001268 *18*; α(O)=1.97×10⁻⁵ *3* α(P)=1.343×10⁻⁶ *19* α(K)exp=0.0167 *10* (1978Gr14).
ˣ532.88 *5*	0.46 *6*							
ˣ533.69 *4*	0.55 *6*							
ˣ536.463 *18*	3.9 *3*					M1	0.0212	
ˣ537.09 *6*	0.62 *16*							
ˣ537.56 *3*	1.15 *9*							
ˣ538.49 *11*	0.59 *21*					M1,E2	0.0162 *48*	
539.620 *18*	40 *2*	1920.258	4⁺	1380.626	4⁺	M1	0.0208	α(K)=0.01772 *25*; α(L)=0.00245 *4*; α(M)=0.000531 *8*; α(N)=0.0001222 *18*; α(O)=1.90×10⁻⁵ *3* α(P)=1.294×10⁻⁶ *19* α(K)exp=0.0176 *8* (1978Gr14).
540.35 *20*	0.5 *3*	1517.4761	2⁺	977.1453	1⁻			
ˣ541.38 *3*	0.70 *7*					M1,E2	0.0160 *47*	
ˣ542.94 *6*	0.64 *16*							

From ENSDF

γ(^{158}Gd) (continued)

E$_γ$[†‡#]	I$_γ$[@i]	E$_i$(level)	J^π_i	E$_f$	J^π_f	Mult.[&]	α	Comments
[x]543.58 *13*	0.22 *8*							
[x]546.03 *6*	1.51 *18*							
[x]547.58 *5*	0.39 *6*							
[x]550.35 *6*	0.26 *5*							
[x]551.42 *4*	0.54 *6*					M1	0.0197	
[x]553.53 *6*	0.9 *3*					M1	0.0195	
[x]555.61 *4*	0.79 *10*							
[x]556.77 *3*	0.78 *7*							
[x]560.35 *3*	1.09 *9*					(E2)	0.01040	
[x]561.53 *5*	1.02 *20*							
561.77 *4*	2.7 *3*	1920.258	4$^+$	1358.467	4$^+$	E2(+M1)	0.0146 *43*	α(K)=0.0122 *38*; α(L)=0.0018 *4*; α(M)=0.00040 *8*; α(N)=9.2×10^{-5} *19*; α(O)=1.4×10^{-5} *4* α(P)=8.7×10^{-7} *30*
[x]562.28 *9*	0.32 *8*							
[x]562.97 *12*	0.26 *10*							
[x]563.32 *5*	1.43 *20*							
[x]563.64 *7*	0.55 *19*							
[x]565.89 *5*	0.40 *5*					[h]		
[x]566.62 *5*	0.35 *5*							
[x]569.80 *4*	0.73 *7*							
[x]570.44 *3*	1.29 *10*							
[x]571.50 *4*	1.30 *13*							
571.80[j] *3*	1.86[j] *17*	2023.838	1$^+$	1452.352	0$^+$			α(K)exp=0.00818 *12* (1978Gr14).
571.80[j] *3*	1.86[j] *17*	2089.251	2$^+$	1517.4761	2$^+$			α(K)exp=0.00818 *12* (1978Gr14).
[x]574.20 *4*	0.41 *5*					M1	0.01783	
[x]578.17 *8*	0.24 *6*							
[x]582.82 *4*	0.79 *7*					M1	0.01717	
584.39[l] *4*	0.46 *5*	1847.88	1$^+$	1263.514	1$^-$			α(K)exp=0.00591 *71* (1978Gr14).
[x]585.93 *7*	0.82 *14*							
[x]586.44 *3*	4.0 *3*					E1	0.00332	
[x]587.45 *3*	1.22 *9*							
[x]588.06 *3*	2.40 *14*					E1	0.00330	
[x]588.93 *14*	0.21 *10*							
[x]590.05 *12*	0.12 *5*							
592.905 *21*	5.5 *3*	1856.315	1$^-$	1263.514	1$^-$	M1	0.01645	α(K)=0.01399 *20*; α(L)=0.00193 *3*; α(M)=0.000418 *6*; α(N)=9.61×10^{-5} *14*; α(O)=1.497×10^{-5} *21* α(P)=1.020×10^{-6} *15* α(K)exp=0.0121 *9* (1978Gr14).
595.11 *7*	0.79 *16*	1953.761	4$^-$	1358.467	4$^+$			
595.763 *21*	19.9 *12*	1861.277	3$^-$	1265.518	3$^+$	E1	0.00321	α(K)=0.00274 *4*; α(L)=0.000366 *6*; α(M)=7.89×10^{-5} *11*; α(N)=1.81×10^{-5} *3*; α(O)=2.78×10^{-6} *4* α(P)=1.82×10^{-7} *3* α(K)exp=0.00314 *9* (1978Gr14).

From ENSDF

$^{158}_{64}$Gd$_{94}$-17

γ(^{158}Gd) (continued)

E_γ [†‡#]	I_γ [@i]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [&]	α	Comments
[x]596.64 *5*	0.91 *11*							
[x]597.49 *5*	0.86 *15*					M1	0.01613	
600.08[d] *6*	0.60 *10*	1576.930	0^+	977.1453	1^-			
[x]600.85 *11*	0.29 *10*							
[x]601.33 *4*	1.41 *16*							
602.69[l] *11*	0.28 *10*	2120.24	$(2,3)^+$	1517.4761	2^+			
[x]604.33 *4*	1.09 *12*					(E1)	0.00311	
606.446 *21*	69 *4*	1793.569	2^-	1187.143	2^+	E1	0.00309	α(K)=0.00264 *4*; α(L)=0.000352 *5*; α(M)=7.59×10^{-5} *11*; α(N)=1.739×10^{-5} *25*; α(O)=2.68×10^{-6} *4* α(P)=1.750×10^{-7} *25*
[x]607.47 *8*	0.83 *21*							
[x]608.87 *7*	0.44 *9*							
[x]611.90 *4*	1.58 *19*					M1	0.01520	
[x]613.38 *4*	0.93 *8*					M1	0.01511	
[x]615.93 *14*	0.15 *7*							
[x]616.39 *17*	0.13 *6*							
[x]617.90 *10*	0.20 *6*							
[x]618.78 *9*	0.30 *6*							
619.52 *3*	3.07 *21*	1978.035	3^-	1358.467	4^+	E1	0.00295	α(K)=0.00252 *4*; α(L)=0.000337 *5*; α(M)=7.24×10^{-5} *11*; α(N)=1.660×10^{-5} *24*; α(O)=2.56×10^{-6} *4* α(P)=1.674×10^{-7} *24* α(K)exp=0.00266 *26* (1978Gr14).
[x]620.71 *8*	0.92 *23*							
[x]621.86 *4*	1.04 *9*					E2(+M1)	0.0113 *33*	
625.79 *6*	0.56 *10*	1667.372	4^+	1041.6376	3^-			
[x]627.20 *3*	4.8 *3*					M1	0.01429	
629.01[j] *4*	1.76[j] *21*	1894.612	2^-	1265.518	3^+			α(K)exp=0.00811 *19* (1978Gr14).
629.01[j] *4*	1.76[j] *21*	2035.69	(2^+)	1406.6995	4^+			α(K)exp=0.00811 *19* (1978Gr14).
630.92[l] *6*	2.3 *9*	1894.597	2^+	1263.514	1^-			
631.07 *3*	8.1 *5*	1894.612	2^-	1263.514	1^-			α(K)exp=0.00595 *12* (1978Gr14).
[x]632.30 *4*	1.59 *14*					E2	0.00771	
[x]633.34 *15*	0.24 *12*							
634.77[l] *5*	0.86[f] *17*	1793.569	2^-	1158.9678	4^-			
[x]635.69 *3*	3.9 *3*					E2	0.00761	
637.24 *5*	2.0 *7*	2017.879?	5^+	1380.626	4^+			
637.469 *21*	30.4 *18*	1176.479	5^-	539.021	6^+			α(K)exp=0.00235 *9* (1978Gr14).
646.08 *3*	7.8 *5*	2049.009	2^-	1402.936	3^-	M1	0.01327	α(K)=0.01129 *16*; α(L)=0.001554 *22*; α(M)=0.000336 *5*; α(N)=7.74×10^{-5} *11* α(O)=1.205×10^{-5} *17*; α(P)=8.22×10^{-7} *12* α(K)exp=0.0102 *9* (1978Gr14).
[x]647.43 *8*	0.56 *11*							
[x]653.07 *9*	0.78 *16*							

From ENSDF

$^{158}_{64}$Gd$_{94}$-18

γ(^{158}Gd) (continued)

E_γ [†‡#]	I_γ [@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [&]	α	Comments
x653.57 *9*	0.89 *15*							
x654.02 *9*	0.60 *15*							
654.67 *8*	0.57 *11*	1920.258	4^+	1265.518	3^+			
x660.43 *4*	3.4 *4*							
x660.86 *11*	0.9 *4*					M1,E2	0.0097 *29*	
x661.44 *8*	0.73 *12*							
x664.46 *4*	2.6 *3*					E1	0.00255	
x666.56 *4*	3.1 *3*					E2	0.00679	
x667.18 *7*	0.9 *3*							
669.29 *4*	7.3 *7*	1856.315	1^-	1187.143	2^+	E1	0.00251	α(K)=0.00214 *3*; α(L)=0.000285 *4*; α(M)=6.13×10^{-5} *9*; α(N)=1.407×10^{-5} *20*; α(O)=2.17×10^{-6} *3* α(P)=1.428×10^{-7} *20* α(K)exp=0.00196 *17* (1978Gr14).
x672.31 *3*	15.7 *9*					M1,E2	0.0093 *27*	
674.15 *3*	18.4 *11*	1861.277	3^-	1187.143	2^+	E1	0.00247	α(K)=0.00211 *3*; α(L)=0.000281 *4*; α(M)=6.04×10^{-5} *9*; α(N)=1.385×10^{-5} *20*; α(O)=2.14×10^{-6} *3* α(P)=1.407×10^{-7} *20* α(K)exp=0.00240 *9* (1978Gr14).
675.45 *3*	21.1 *13*	2033.921	3^+	1358.467	4^+	M1+E2	0.0092 *27*	α(K)=0.0078 *24*; α(L)=0.0011 *3*; α(M)=0.00025 *6*; α(N)=5.7×10^{-5} *13*; α(O)=8.7×10^{-6} *21* α(P)=5.6×10^{-7} *19* α(K)exp=0.00752 *10* (1978Gr14).
x675.74 *9*	1.5 *8*							
x678.78 *4*	2.88 *20*					E1	0.00244	
680.72 *3*	19.3 *12*	2083.635	2^+	1402.936	3^-	E1	0.00242	α(K)=0.00207 *3*; α(L)=0.000275 *4*; α(M)=5.92×10^{-5} *9*; α(N)=1.357×10^{-5} *19*; α(O)=2.09×10^{-6} *3* α(P)=1.379×10^{-7} *20* α(K)exp=0.00201 *9* (1978Gr14).
x682.64 *13*	0.52 *16*							
x684.40 *4*	4.7 *3*					E1	0.00239	
686.36 *4*	3.7 *3*	2089.251	2^+	1402.936	3^-	E1	0.00238	α(K)=0.00204 *3*; α(L)=0.000270 *4*; α(M)=5.82×10^{-5} *9*; α(N)=1.334×10^{-5} *19*; α(O)=2.06×10^{-6} *3* α(P)=1.356×10^{-7} *19* α(K)exp=0.00129 *36* (1978Gr14).
688.25 *5*	4.2 *5*	1953.761	4^-	1265.518	3^+	E1	0.00237	α(K)=0.00202 *3*; α(L)=0.000269 *4*; α(M)=5.78×10^{-5} *8*; α(N)=1.326×10^{-5} *19*; α(O)=2.05×10^{-6} *3* α(P)=1.349×10^{-7} *19* α(K)exp=0.00164 *9* (1978Gr14).
688.86 *3*	33.5 *20*	1952.424?	0^+	1263.514	1^-	E1	0.00236	α(K)=0.00202 *3*; α(L)=0.000268 *4*; α(M)=5.77×10^{-5} *8*; α(N)=1.323×10^{-5} *19*; α(O)=2.04×10^{-6} *3* α(P)=1.346×10^{-7} *19*
x691.13 *5*	1.84 *17*					E1	0.00235	
x692.15 *7*	0.93 *16*							

From ENSDF

$^{158}_{64}$Gd$_{94}$-19

γ(^{158}Gd) (continued)

E_γ †‡#	I_γ @i	E_i(level)	J^π_i	E_f	J^π_f	Mult.&	α	Comments
^{x}693.80 *6*	1.14 *13*							
^{x}694.67 *6*	1.08 *12*					E2	0.00616	
^{x}697.32 *20*	0.37 *22*							
697.89 *9*	0.92 *18*	2215.515	(1,2)$^+$	1517.4761	2$^+$			
698.60 *3*	11.5 *7*	1964.104	2$^+$	1265.518	3$^+$	E2+M1	0.0085 *25*	α(K)=0.0072 *22*; α(L)=0.00104 *24*; α(M)=0.00023 *5*; α(N)=5.2×10^{-5} *12*; α(O)=8.0×10^{-6} *20* α(P)=5.1×10^{-7} *17* α(K)exp=0.00822 *9* (1978Gr14).
^{x}700.61 *5*	1.88 *17*							
702.37 *5*	1.56 *14*	1861.277	3$^-$	1158.9678	4$^-$	M1(+E2)	0.0084 *24*	α(K)=0.0071 *21*; α(L)=0.00102 *24*; α(M)=0.00022 *5*; α(N)=5.1×10^{-5} *12*; α(O)=7.9×10^{-6} *19* α(P)=5.1×10^{-7} *17* α(K)exp=0.00872 *31* (1978Gr14).
^{x}704.93 *17*	0.52 *21*							
^{x}705.72 *17*	0.47 *21*							
707.55 *3*	16.4 *10*	1894.612	2$^-$	1187.143	2$^+$	E1	0.00224	α(K)=0.00191 *3*; α(L)=0.000254 *4*; α(M)=5.45×10^{-5} *8*; α(N)=1.251×10^{-5} *18*; α(O)=1.93×10^{-6} *3* α(P)=1.276×10^{-7} *18* α(K)exp=0.00232 *21* (1978Gr14).
^{x}708.60 *11*	1.5 *3*							
^{x}710.29 *9*	0.61 *10*							
^{x}711.06 *8*	1.24 *15*							
712.52 *5*	3.4 *3*	1978.035	3$^-$	1265.518	3$^+$			
713.52 *5*	3.3 *3*	2120.24	(2,3)$^+$	1406.6995	4$^+$			
714.48 *15*	0.63 *19*	1978.035	3$^-$	1263.514	1$^-$			
^{x}715.9 *3*	0.17 *5*							
^{x}721.47 *15*	0.7 *3*							
725.11 *8*	1.10 *16*	1901.593	4$^+$	1176.479	5$^-$			
^{x}727.36 *14*	0.56 *17*							
733.16 *9*	1.32 *20*	1920.258	4$^+$	1187.143	2$^+$			
^{x}734.31 *17*	0.7 *3*							
^{x}735.31 *4*	14.5 *9*							
^{x}736.56 *6*	2.6 *3*					M1,E2	0.0075 *22*	
^{x}741.99 *4*	7.6 *5*					E1	0.00203	
743.08 *3*	39.6 *24*	1930.200	1$^+$	1187.143	2$^+$	M1	0.00939	α(K)=0.00800 *12*; α(L)=0.001095 *16*; α(M)=0.000237 *4*; α(N)=5.45×10^{-5} *8*; α(O)=8.49×10^{-6} *12* α(P)=5.81×10^{-7} *9* α(K)exp=0.00888 *8* (1978Gr14).
^{x}744.94 *15*	1.5 *6*							
746.47 *6*	2.4 *4*	2153.174	(2,3)$^+$	1406.6995	4$^+$	E2	0.00522	α(K)=0.00435 *6*; α(L)=0.000676 *10*; α(M)=0.0001479 *21*; α(N)=3.38×10^{-5} *5*; α(O)=5.12×10^{-6} *8* α(P)=2.99×10^{-7} *5* α(K)exp=0.00482 *62* (1978Gr14).

From ENSDF

γ(^{158}Gd) (continued)

E_γ †‡#	I_γ @i	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	α	Comments
x749.03 *4*	8.0 *6*					E2	0.00517	
750.16 *4*	33.2 *20*	1791.792	2+	1041.6376	3−			α(K)exp=0.00309 *12* (1978Gr14). Mult.,δ: If J^π's are used to require γ be E1+M2, then δ=0.28 +3-5.
751.91 *4*	3.9 *3*	1793.569	2−	1041.6376	3−	M1(+E2)	0.0071 *20*	α(K)=0.0060 *18*; α(L)=0.00086 *20*; α(M)=0.00019 *5*; α(N)=4.3×10^{-5} *10*; α(O)=6.6×10^{-6} *17* α(P)=4.3×10^{-7} *14* α(K)exp=0.00677 *22* (1978Gr14).
x756.46 *20*	0.9 *4*							
x757.12 *7*	2.3 *3*					E1	0.00195	
x759.41 *5*	3.4 *14*							
x761.72 *17*	1.5 *5*							
x762.71 *5*	14.1 *8*					E1	0.00192	
763.98 *4*	8.4 *5*	2023.838	1+	1259.8691	2+	E2	0.00495	α(K)=0.00413 *6*; α(L)=0.000637 *9*; α(M)=0.0001394 *20*; α(N)=3.19×10^{-5} *5*; α(O)=4.84×10^{-6} *7* α(P)=2.84×10^{-7} *4* α(K)exp=0.00453 *31* (1978Gr14).
765.35 *5*	4.0 *3*	1952.424?	0+	1187.143	2+			
768.09 *5*	8.3 *14*	1791.792	2+	1023.6974	2−			
768.43 *5*	42 *5*	2033.921	3+	1265.518	3+	M1	0.00865	α(K)=0.00737 *11*; α(L)=0.001008 *15*; α(M)=0.000218 *3*; α(N)=5.01×10^{-5} *7*; α(O)=7.81×10^{-6} *11* α(P)=5.35×10^{-7} *8* α(K)exp=0.00760 *12* (1978Gr14).
769.88 *4*	11.0 *7*	1793.569	2−	1023.6974	2−	E2	0.00486	α(K)=0.00406 *6*; α(L)=0.000625 *9*; α(M)=0.0001368 *20*; α(N)=3.13×10^{-5} *5*; α(O)=4.74×10^{-6} *7* α(P)=2.80×10^{-7} *4* α(K)exp=0.00488 *31* (1978Gr14).
x771.80 *12*	1.4 *3*					M1	0.00856	
x772.92 *11*	2.1 *3*							
x774.49 *15*	1.1 *3*							
775.66 *20*	0.6 *3*	2035.69	(2+)	1259.8691	2+			
776.98 *5*	8.9 *8*	1964.104	2+	1187.143	2+	M1	0.00842	α(K)=0.00717 *10*; α(L)=0.000981 *14*; α(M)=0.000212 *3*; α(N)=4.88×10^{-5} *7*; α(O)=7.60×10^{-6} *11* α(P)=5.20×10^{-7} *8* α(K)exp=0.00825 *11* (1978Gr14).
x778.13 *9*	3.3 *6*							
x779.66 *6*	10.9 *19*							
780.17 *4*	266 *16*	1041.6376	3−	261.4568	4+	E1	0.00183	α(K)=0.001571 *22*; α(L)=0.000207 *3*; α(M)=4.46×10^{-5} *7*; α(N)=1.023×10^{-5} *15* α(O)=1.580×10^{-6} *23*; α(P)=1.050×10^{-7} *15* α(K)exp=0.00172 *8* (1978Gr14).
782.31 *4*	35.5 *21*	1941.26	3+	1158.9678	4−	E1	0.00182	α(K)=0.001562 *22*; α(L)=0.000206 *3*; α(M)=4.43×10^{-5} *7*; α(N)=1.017×10^{-5} *15*

From ENSDF

$^{158}_{64}$Gd$_{94}$-21

γ(^{158}Gd) (continued)

E_γ †‡#	I_γ @i	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	α	Comments
								α(O)=1.571×10^{-6} *22*; α(P)=1.045×10^{-7} *15* α(K)exp=0.00190 *12* (1978Gr14).
785.49 *4*	18.6 *11*	2049.009	2$^-$	1263.514	1$^-$	M1	0.00820	α(K)=0.00698 *10*; α(L)=0.000955 *14*; α(M)=0.000206 *3*; α(N)=4.75×10^{-5} *7*; α(O)=7.40×10^{-6} *11* α(P)=5.07×10^{-7} *7* α(K)exp=0.00841 *12* (1978Gr14).
[x]786.75 *13*	2.3 *6*							
790.89 *4*	8.3 *7*	1978.035	3$^-$	1187.143	2$^+$	E1	1.79×10^{-3}	α(K)=0.001529 *22*; α(L)=0.000202 *3*; α(M)=4.33×10^{-5} *6*; α(N)=9.95×10^{-6} *14* α(O)=1.537×10^{-6} *22*; α(P)=1.023×10^{-7} *15* α(K)exp=0.00213 *41* (1978Gr14).
794.73[j] *7*	3.1[j] *6*	1953.761	4$^-$	1158.9678	4$^-$			
794.73[j] *7*	3.1[j] *6*	2153.174	(2,3)$^+$	1358.467	4$^+$			
[x]795.25 *5*	9.7 *10*					M1	0.00796	
[x]796.63 *7*	2.4 *3*							
[x]804.01 *12*	0.90 *18*							
[x]808.30 *11*	1.16 *20*							
[x]810.10 *11*	1.18 *20*							
814.65 *4*	25.1 *15*	1791.792	2$^+$	977.1453	1$^-$	E1	1.68×10^{-3}	α(K)=0.001442 *21*; α(L)=0.000190 *3*; α(M)=4.08×10^{-5} *6*; α(N)=9.37×10^{-6} *14* α(O)=1.448×10^{-6} *21*; α(P)=9.65×10^{-8} *14* α(K)exp=0.00141 *31* (1978Gr14).
816.42 *4*	16.9[e] *10*	1793.569	2$^-$	977.1453	1$^-$			α(K)exp=0.00322 *21* (1978Gr14).
[x]818.03 *7*	2.9 *4*							
819.56[j] *5*	11.3[j] *14*	1358.467	4$^+$	539.021	6$^+$			
819.56[j] *5*	11.3[j] *14*	1861.277	3$^-$	1041.6376	3$^-$			
820.08 *4*	32.7 *20*	2083.635	2$^+$	1263.514	1$^-$			α(K)exp=0.00298 *11* (1978Gr14).
[x]822.7 *3*	1.4 *6*							
824.12 *4*	36.8 *22*	1847.88	1$^+$	1023.6974	2$^-$	E1	1.65×10^{-3}	α(K)=0.001410 *20*; α(L)=0.000186 *3*; α(M)=3.99×10^{-5} *6*; α(N)=9.15×10^{-6} *13* α(O)=1.415×10^{-6} *20*; α(P)=9.44×10^{-8} *14* α(K)exp=0.00183 *21* (1978Gr14).
825.70 *10*	3.3 *7*	2089.251	2$^+$	1263.514	1$^-$			
[x]827.11 *13*	1.8 *4*							
827.78 *5*	5.8 *5*	2023.838	1$^+$	1196.165	0$^+$			α(K)exp=0.00141 *41* (1978Gr14). Mult.: E1 assignment is inconsistent with J$^\pi$ assignment.
829.39 *8*	2.9 *3*	2089.251	2$^+$	1259.8691	2$^+$			
[x]830.53 *13*	2.1 *4*							
832.889 *10*	8.2[e] *6*	1371.938	6$^-$	539.021	6$^+$	[E1]	1.61×10^{-3}	α(K)=0.001381 *20*; α(L)=0.000182 *3*; α(M)=3.90×10^{-5} *6*; α(N)=8.96×10^{-6} *13* α(O)=1.386×10^{-6} *20*; α(P)=9.25×10^{-8} *13*
832.89 *5*	8.2[e] *6*	1856.315	1$^-$	1023.6974	2$^-$	(M1,E2)	0.0056 *16*	α(K)=0.0047 *14*; α(L)=0.00067 *16*; α(M)=0.00015 *4*;

From ENSDF

$^{158}_{64}$Gd$_{94}$-22

γ(^{158}Gd) (continued)

E_γ [†‡#]	I_γ [@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [&]	α	Comments
								α(N)=3.3×10^{-5} *8*; α(O)=5.2×10^{-6} *13* α(P)=3.4×10^{-7} *11* α(K)exp=0.00431 *31* (1978Gr14). Mult.: From α_K(exp) for doubly-placed 832 γ if component from 1371 level is an E1.
[x]835.88 *7*	3.2 *3*							
[x]837.18 *7*	5.9 *5*							
[x]838.31 *10*	2.5 *3*					M1,E2	0.0055 *15*	
[x]843.22 *10*	2.0 *4*							
846.81 *5*	8.4 *6*	2033.921	3$^+$	1187.143	2$^+$	E2+M1	0.0054 *15*	α(K)=0.0046 *13*; α(L)=0.00064 *15*; α(M)=0.00014 *4*; α(N)=3.2×10^{-5} *8*; α(O)=5.0×10^{-6} *12* α(P)=3.25×10^{-7} *97* α(K)exp=0.00478 *21* (1978Gr14).
[x]847.77 *20*	2.1 *10*							
[x]848.31 *6*	3.1 *3*					(M1)	0.00680	
[x]851.33 *6*	7.1 *5*					M1	0.00674	
852.89[j] *4*	57[j] *3*	1894.597	2$^+$	1041.6376	3$^-$			α(K)exp=0.00258 *12* (1978Gr14).
852.89[j] *4*	57[j] *3*	1894.612	2$^-$	1041.6376	3$^-$			α(K)exp=0.00258 *12* (1978Gr14).
[x]853.29 *12*	4.7 *19*							
[x]855.80 *15*	1.4 *3*							
[x]858.33 *6*	5.3 *4*							
859.85 *6*	10.4 *9*	1901.593	4$^+$	1041.6376	3$^-$	(E1)	1.51×10^{-3}	α(K)=0.001298 *19*; α(L)=0.0001705 *24*; α(M)=3.66×10^{-5} *6*; α(N)=8.41×10^{-6} *12* α(O)=1.301×10^{-6} *19*; α(P)=8.70×10^{-8} *13* α(K)exp=0.00203 *51* (1978Gr14).
860.40 *6*	6.3 *8*	2120.24	(2,3)$^+$	1259.8691	2$^+$			α(K)exp=0.00151 *42* (1978Gr14). Mult.: E1 assignment is inconsistent with J^π assignment.
[x]861.31 *12*	1.8 *3*							
[x]863.04 *6*	3.5 *3*							
[x]866.02 *6*	22.3 *13*					M1	0.00647	
867.75 *5*	23.9 *14*	1406.6995	4$^+$	539.021	6$^+$	E2	0.00373	α(K)=0.00313 *5*; α(L)=0.000467 *7*; α(M)=0.0001019 *15*; α(N)=2.33×10^{-5} *4*; α(O)=3.56×10^{-6} *5* α(P)=2.16×10^{-7} *3* α(K)exp=0.00302 *21* (1978Gr14).
[x]870.20 *6*	23.1 *18*							
870.89 *5*	36 *5*	1847.88	1$^+$	977.1453	1$^-$			I_γ: from I_γ(870)/I_γ(824)=0.98 *12* in ^{158}Eu β- decay.
870.89[j] *5*	61[j] *8*	1894.597	2$^+$	1023.6974	2$^-$			I_γ: 97 *6* for multiplet.
870.89[j] *5*	61[j] *8*	1894.612	2$^-$	1023.6974	2$^-$			α(K)exp=0.00341 *7* (1978Gr14). I_γ: 97 *6* for multiplet.
[x]872.03 *13*	3.7 *11*							
875.00 *4*	46 *3*	2033.921	3$^+$	1158.9678	4$^-$	E1	1.46×10^{-3}	α(K)=0.001255 *18*; α(L)=0.0001647 *23*; α(M)=3.54×10^{-5} *5*; α(N)=8.12×10^{-6} *12*

γ(^{158}Gd) (continued)

E_γ [†‡#]	I_γ [@i]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [&]	α	Comments
								α(O)=1.257×10^{-6} *18*; α(P)=8.41×10^{-8} *12* α(K)exp=0.00123 *16* (1978Gr14).
879.32 *5*	37.4 *22*	1856.315	1$^-$	977.1453	1$^-$	M1	0.00623	α(K)=0.00531 *8*; α(L)=0.000723 *11*; α(M)=0.0001562 *22*; α(N)=3.60×10^{-5} *5*; α(O)=5.60×10^{-6} *8* α(P)=3.84×10^{-7} *6* α(K)exp=0.00580 *9* (1978Gr14).
^{x}880.49 *20*	2.0 *10*							
884.18 *6*	7.5 *6*	1861.277	3$^-$	977.1453	1$^-$	E2	0.00358	α(K)=0.00301 *5*; α(L)=0.000447 *7*; α(M)=9.74×10^{-5} *14*; α(N)=2.23×10^{-5} *4*; α(O)=3.40×10^{-6} *5* α(P)=2.08×10^{-7} *3* α(K)exp=0.00290 *41* (1978Gr14).
^{x}886.12 *6*	5.2 *5*							
887.74 *5*	18.7 *11*	2153.174	(2,3)$^+$	1265.518	3$^+$			α(K)exp=0.00101 *9* (1978Gr14).
891.24 *7*	6.3 *6*	2249.61	3$^+$	1358.467	4$^+$			
893.30 *7*	4.7 *5*	2153.174	(2,3)$^+$	1259.8691	2$^+$			α(K)exp=0.00188 *32* (1978Gr14).
^{x}896.99 *9*	13.4 *23*							
897.506[c] *2*	348 *49*	1158.9678	4$^-$	261.4568	4$^+$	E1	1.39×10^{-3}	α(K)=0.001195 *17*; α(L)=0.0001567 *22*; α(M)=3.37×10^{-5} *5*; α(N)=7.73×10^{-6} *11* α(O)=1.196×10^{-6} *17*; α(P)=8.01×10^{-8} *12* I_γ: 660 *40* for multiplet.
897.62 *5*	312 *28*	977.1453	1$^-$	79.5128	2$^+$	E1	1.39×10^{-3}	α(K)=0.001195 *17*; α(L)=0.0001567 *22*; α(M)=3.37×10^{-5} *5*; α(N)=7.73×10^{-6} *11* α(O)=1.196×10^{-6} *17*; α(P)=8.01×10^{-8} *12* α(K)exp=0.00114 *8* (1978Gr14). I_γ: calculated from I_γ(897)/I_γ(977) in ^{158}Eu β- decay.
899.69 *9*	9.1 *18*	1941.26	3$^+$	1041.6376	3$^-$			
902.07 *6*	14.7 *15*	2089.251	2$^+$	1187.143	2$^+$			
^{x}902.63 *6*	41 *3*							
906.49 *5*	17.4 *10*	1930.200	1$^+$	1023.6974	2$^-$	E1	1.37×10^{-3}	α(K)=0.001172 *17*; α(L)=0.0001537 *22*; α(M)=3.30×10^{-5} *5*; α(N)=7.58×10^{-6} *11* α(O)=1.173×10^{-6} *17*; α(P)=7.87×10^{-8} *11* α(K)exp=0.00152 *21* (1978Gr14).
^{x}909.57 *8*	7.7 *8*							
^{x}910.22 *14*	2.6 *8*							
^{x}913.4 *3*	3.2 *11*							
915.03 *5*	114 *7*	1176.479	5$^-$	261.4568	4$^+$	E1	1.34×10^{-3}	α(K)=0.001152 *17*; α(L)=0.0001509 *22*; α(M)=3.24×10^{-5} *5*; α(N)=7.44×10^{-6} *11* α(O)=1.152×10^{-6} *17*; α(P)=7.73×10^{-8} *11* α(K)exp=0.00118 *16* (1978Gr14).
917.50[j] *5*	74[j] *4*	1894.597	2$^+$	977.1453	1$^-$			α(K)exp=0.00123 *16* (1978Gr14).
917.50[j] *5*	74[j] *4*	1894.612	2$^-$	977.1453	1$^-$			
917.50[j] *5*	74[j] *4*	1941.26	3$^+$	1023.6974	2$^-$			α(K)exp=0.00123 *16* (1978Gr14).

From ENSDF

γ(^{158}Gd) (continued)

E_γ [†‡#]	I_γ [@i]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [&]	α	Comments
[x]918.21 *11*	7.2 *14*							
[x]920.26 *20*	2.4 *5*							
[x]922.53[k] *6*	6.4[k] *28*							
922.53[k] *56*	19.3[k] *24*	1964.104	2+	1041.6376	3−			I_γ: from I_γ ratios in ^{158}Eu β- decay.
[x]923.72 *17*	1.8 *4*							
925.65 *7*	9.0 *8*	1187.143	2+	261.4568	4+	(E2)	0.00324	α(K)=0.00273 *4*; α(L)=0.000401 *6*; α(M)=8.74×10^{-5} *13*; α(N)=2.00×10^{-5} *3*; α(O)=3.06×10^{-6} *5* α(P)=1.89×10^{-7} *3* α(K)exp=0.00340 *31* (1978Gr14).
[x]930.51 *7*	4.2 *4*							
936.30 *6*	9.3 *7*	1978.035	3−	1041.6376	3−			α(K)exp=0.00205 *41* (1978Gr14).
[x]938.53 *11*	3.5 *5*					(M1)	0.00532	
940.31 *14*	6 *3*	1964.104	2+	1023.6974	2−			
[x]941.20 *10*	8.8 *18*					M1,E2	0.0042 *11*	
942.34 *7*	15.2 *23*	1481.421	5+	539.021	6+	M1,E2	0.0042 *11*	α(K)=0.00356 *94*; α(L)=0.00050 *12*; α(M)=0.000108 *24*; α(N)=2.5×10^{-5} *6*; α(O)=3.8×10^{-6} *9* α(P)=2.53×10^{-7} *72* α(K)exp=0.00380 *52* (1978Gr14).
944.181[c] *2*	910 *55*	1023.6974	2−	79.5128	2+	E1	1.27×10^{-3}	α(K)=0.001085 *16*; α(L)=0.0001420 *20*; α(M)=3.05×10^{-5} *5*; α(N)=7.00×10^{-6} *10* α(O)=1.084×10^{-6} *16*; α(P)=7.28×10^{-8} *11* α(K)exp=0.000963 *8* (1978Gr14).
[x]944.65 *9*	43 *11*							
[x]948.25 *9*	5.0 *6*					M1,E2	0.0041 *11*	
952.96 *6*	20.5 *14*	1930.200	1+	977.1453	1−	(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=0.00172 *41* (1978Gr14).
954.31 *6*	17.9 *13*	1978.035	3−	1023.6974	2−	(E2)	0.00304	α(K)=0.00256 *4*; α(L)=0.000374 *6*; α(M)=8.14×10^{-5} *12*; α(N)=1.87×10^{-5} *3*; α(O)=2.85×10^{-6} *4* α(P)=1.772×10^{-7} *25* α(K)exp=0.00217 *31* (1978Gr14).
956.07 *6*	14.6 *10*	2221.63	(1,2)−	1265.518	3+			
960.03 *7*	15.0 *16*	1499.096	5+	539.021	6+			
962.122[c] *2*	580 *35*	1041.6376	3−	79.5128	2+	E1	1.22×10^{-3}	α(K)=0.001047 *15*; α(L)=0.0001369 *20*; α(M)=2.94×10^{-5} *5*; α(N)=6.75×10^{-6} *10* α(O)=1.046×10^{-6} *15*; α(P)=7.03×10^{-8} *10* α(K)exp=0.00114 *8* (1978Gr14).
965.97 *7*	10.3 *9*	2153.174	(2,3)+	1187.143	2+	M1,E2	0.0040 *10*	α(K)=0.00337 *87*; α(L)=0.00047 *11*; α(M)=0.000102 *23*; α(N)=2.3×10^{-5} *6*; α(O)=3.6×10^{-6} *9* α(P)=2.39×10^{-7} *67*
[x]968.2 *8*	3.0 *12*							

From ENSDF

$^{158}_{64}$Gd$_{94}$-25

γ(^{158}Gd) (continued)

E_γ [†‡#]	I_γ [@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [&]	α	Comments
[x]972.61 *17*	3.5 *10*							
975.43 *8*	13.9 *18*	1952.424?	0^+	977.1453	1^-			α(K)exp=0.00175 *58* (1978Gr14).
977.144[c] *2*	411 *6*	977.1453	1^-	0.0	0^+	E1	1.19×10^{-3}	α(K)=0.001017 *15*; α(L)=0.0001329 *19*; α(M)=2.85×10^{-5} *4*; α(N)=6.55×10^{-6} *10* α(O)=1.015×10^{-6} *15*; α(P)=6.83×10^{-8} *10* α(K)exp=0.00113 *8* (1978Gr14).
[x]979.4 *4*	4.4 *15*							
[x]982.75 *11*	5.2 *8*							
984.02 *8*	12.0 *11*	2249.61	3^+	1265.518	3^+			α(K)exp=0.00130 *51* (1978Gr14).
986.87 *6*	17.6 *12*	1964.104	2^+	977.1453	1^-	E1	1.16×10^{-3}	α(K)=0.000998 *14*; α(L)=0.0001304 *19*; α(M)=2.80×10^{-5} *4*; α(N)=6.43×10^{-6} *9* α(O)=9.96×10^{-7} *14*; α(P)=6.71×10^{-8} *10* α(K)exp=0.000773 *50* (1978Gr14).
[x]992.69 *8*	11.7 *9*					M1	0.00465	
994.57 *9*	11.1 *11*	2260.158	$1,2^+$	1265.518	3^+	M1,E2	0.0037 *10*	α(K)=0.00315 *81*; α(L)=0.00044 *10*; α(M)=9.5×10^{-5} *21*; α(N)=2.2×10^{-5} *5*; α(O)=3.4×10^{-6} *8* α(P)=2.24×10^{-7} *62* α(K)exp=0.00316 *27* (1978Gr14).
998.409[c] *2*	158 *9*	1259.8691	2^+	261.4568	4^+	E2	0.00276	α(K)=0.00233 *4*; α(L)=0.000338 *5*; α(M)=7.34×10^{-5} *11*; α(N)=1.682×10^{-5} *24*; α(O)=2.58×10^{-6} *4* α(P)=1.614×10^{-7} *23* α(K)exp=0.00266 *12* (1978Gr14).
1000.82 *7*	25.1 *18*	1978.035	3^-	977.1453	1^-	E2	0.00275	α(K)=0.00232 *4*; α(L)=0.000336 *5*; α(M)=7.30×10^{-5} *11*; α(N)=1.673×10^{-5} *24*; α(O)=2.56×10^{-6} *4* α(P)=1.606×10^{-7} *23* α(K)exp=0.00284 *31* (1978Gr14).
[x]1002.66 *10*	14.2 *17*							
1004.04 *8*	118 *9*	1265.518	3^+	261.4568	4^+	E2(+M1)	0.0036 *9*	α(K)=0.00308 *78*; α(L)=0.00043 *10*; α(M)=9.3×10^{-5} *21*; α(N)=2.1×10^{-5} *5*; α(O)=3.3×10^{-6} *8* α(P)=2.19×10^{-7} *60* α(K)exp=0.00263 *11* (1978Gr14).
1005.82 *9*	11.3 *12*	2269.255	1^+	1263.514	1^-			
1007.29 *7*	29.4 *21*	2049.009	2^-	1041.6376	3^-	M1	0.00449	α(K)=0.00383 *6*; α(L)=0.000519 *8*; α(M)=0.0001121 *16*; α(N)=2.58×10^{-5} *4*; α(O)=4.02×10^{-6} *6* α(P)=2.77×10^{-7} *4* α(K)exp=0.00421 *14* (1978Gr14).
1010.20 *5*	58 *3*	2033.921	3^+	1023.6974	2^-	E1	1.11×10^{-3}	α(K)=0.000956 *14*; α(L)=0.0001247 *18*; α(M)=2.68×10^{-5} *4*; α(N)=6.15×10^{-6} *9* α(O)=9.53×10^{-7} *14*; α(P)=6.42×10^{-8} *9* α(K)exp=0.00116 *16* (1978Gr14).
[x]1014.02 *10*	5.9 *6*					E2	0.00267	
[x]1018.71 *10*	4.9 *5*							

From ENSDF

$^{158}_{64}$Gd$_{94}$-26

γ(^{158}Gd) (continued)

E_γ[†‡#]	I_γ[@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	α	Comments
[x]1021.22 *12*	3.7 *4*					E2	0.00263	
[x]1023.38 *17*	2.9 *7*							
1025.33 *7*	15.2 *11*	2049.009	2⁻	1023.6974	2⁻	M1	0.00431	α(K)=0.00367 *6*; α(L)=0.000498 *7*; α(M)=0.0001074 *15*; α(N)=2.47×10^{-5} *4*; α(O)=3.86×10^{-6} *6* α(P)=2.65×10^{-7} *4* α(K)exp=0.00344 *31* (1978Gr14).
1028.32 *8*	11.0 *9*	2215.515	(1,2)⁺	1187.143	2⁺	M1	0.00428	α(K)=0.00365 *6*; α(L)=0.000494 *7*; α(M)=0.0001067 *15*; α(N)=2.46×10^{-5} *4*; α(O)=3.83×10^{-6} *6* α(P)=2.63×10^{-7} *4* α(K)exp=0.00371 *22* (1978Gr14).
[x]1030.09 *20*	4.7 *14*							
[x]1030.8 *4*	1.4 *6*							
1034.51 *6*	37.2 *22*	2221.63	(1,2)⁻	1187.143	2⁺	E1	1.07×10^{-3}	α(K)=0.000915 *13*; α(L)=0.0001193 *17*; α(M)=2.56×10^{-5} *4*; α(N)=5.88×10^{-6} *9* α(O)=9.11×10^{-7} *13*; α(P)=6.15×10^{-8} *9* α(K)exp=0.00119 *16* (1978Gr14).
[x]1035.95 *14*	7.8 *13*					M1,E2	0.0034 *9*	
[x]1037.2 *3*	4.4 *18*							
[x]1040.02 *15*	3.4 *5*							
[x]1042.12 *8*	13.1 *10*							
[x]1045.58 *20*	3.5 *7*							
1047.40[l] *13*	5.5 *6*	2089.251	2⁺	1041.6376	3⁻			α(K)exp=0.00136 *61* (1978Gr14).
[x]1049.66 *10*	6.2 *6*							
[x]1051.72 *10*	8.1 *7*							
[x]1053.34 *10*	8.4 *8*							
[x]1056.29 *14*	4.6 *7*							
[x]1060.28 *11*	6.1 *7*					M1,E2	0.0032 *8*	
[x]1061.68 *20*	5.6 *20*							
1062.38 *9*	14.9 *13*	2249.61	3⁺	1187.143	2⁺			α(K)exp=0.00186 *19* (1978Gr14). Mult.: α_K(exp) for 1061.68 + 1062.38 is consistent with mult(1061) and mult(1062) of E1 and E2 or M1 and E1 with the assigned J^π's consistent with the latter combination.
[x]1068.8 *3*	1.6 *4*							
[x]1071.44 *17*	5.4 *11*							
1072.66 *17*	8.2 *11*	2260.158	1,2⁺	1187.143	2⁺			α(K)exp=0.00182 *52* (1978Gr14).
[x]1074.19 *20*	3.9 *7*							
[x]1077.12 *20*	2.3 *6*							
[x]1079.02 *12*	6.4 *7*							
[x]1080.99 *9*	22.0 *15*							
[x]1082.36 *17*	5.6 *8*							
1088.9[d] *3*	5.1 *10*	2275.9	2,3⁺	1187.143	2⁺	E2	0.00231	α(K)=0.00195 *3*; α(L)=0.000278 *4*; α(M)=6.04×10^{-5} *9*; α(N)=1.385×10^{-5} *20*; α(O)=2.13×10^{-6} *3*

From ENSDF

$^{158}_{64}$Gd$_{94}$-27

γ(^{158}Gd) (continued)

E_γ[†‡#]	I_γ[@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	α	Comments
								α(P)=1.354×10^{-7} *19* α(K)exp=0.00520 *36* (1978Gr14).
[x]1090.60 *20*	6.6 *16*							
[x]1091.74 *13*	11.3 *16*					M1,E2	0.0030 *7*	
[x]1094.37 *9*	17.6 *16*							
1097.007[c] *3*	191 *11*	1358.467	4$^+$	261.4568	4$^+$	E2	0.00227	α(K)=0.00192 *3*; α(L)=0.000274 *4*; α(M)=5.94×10^{-5} *9*; α(N)=1.362×10^{-5} *19*; α(O)=2.09×10^{-6} *3* α(P)=1.334×10^{-7} *19* α(K)exp=0.00205 *8* (1978Gr14).
1100.29 *13*	8.0 *11*	1639.34?	5$^-$	539.021	6$^+$			α(K)exp=0.00136 *42* (1978Gr14).
[x]1105.6 *3*	6.9 *24*							
1107.67 *7*	480 *34*	1187.143	2$^+$	79.5128	2$^+$	E2	0.00223	α(K)=0.00189 *3*; α(L)=0.000268 *4*; α(M)=5.81×10^{-5} *9*; α(N)=1.334×10^{-5} *19*; α(O)=2.05×10^{-6} *3* α(P)=1.308×10^{-7} *19* α(K)exp=0.00199 *8* (1978Gr14).
[x]1108.23 *9*	48 *10*							
1111.86[l] *20*	5.6 *14*	2089.251	2$^+$	977.1453	1$^-$			
1116.52 *5*	121 *7*	1196.165	0$^+$	79.5128	2$^+$	E2	0.00219	α(K)=0.00186 *3*; α(L)=0.000263 *4*; α(M)=5.71×10^{-5} *8*; α(N)=1.311×10^{-5} *19*; α(O)=2.01×10^{-6} *3* α(P)=1.287×10^{-7} *18* α(K)exp=0.00180 *9* (1978Gr14).
1119.20 *6*	332 *20*	1380.626	4$^+$	261.4568	4$^+$	E2	0.00218	α(K)=0.00185 *3*; α(L)=0.000262 *4*; α(M)=5.68×10^{-5} *8*; α(N)=1.304×10^{-5} *19*; α(O)=2.00×10^{-6} *3* α(P)=1.281×10^{-7} *18* α(K)exp=0.00194 *8* (1978Gr14).
[x]1126.01 *9*	13.6 *12*					E1	9.17×10^{-4}	
1129.20 *13*	16.8 *18*	1667.372	4$^+$	539.021	6$^+$			α(K)exp=0.00138 *32* (1978Gr14).
[x]1130.75 *10*	19.2 *17*							
[x]1134.7 *3*	4.2 *15*							
[x]1136.13 *15*	6.9 *12*							
[x]1139.64 *17*	11.0 *19*					M1,E2	0.0027 *7*	
1141.477[c] *3*	154 *9*	1402.936	3$^-$	261.4568	4$^+$	E1	8.97×10^{-4}	α(K)=0.000764 *11*; α(L)=9.93×10^{-5} *14*; α(M)=2.13×10^{-5} *3*; α(N)=4.89×10^{-6} *7*; α(O)=7.59×10^{-7} *11* α(P)=5.15×10^{-8} *8* α(K)exp=0.000840 *12* (1978Gr14).
1145.26 *11*	23 *3*	1406.6995	4$^+$	261.4568	4$^+$	E2	0.00208	α(K)=0.001765 *25*; α(L)=0.000249 *4*; α(M)=5.40×10^{-5} *8*; α(N)=1.240×10^{-5} *18*; α(O)=1.91×10^{-6} *3* α(P)=1.224×10^{-7} *18* α(K)exp=0.00183 *32* (1978Gr14).
[x]1146.82 *14*	13.9 *17*					M1,E2	0.0027 *7*	
[x]1149.7 *7*	2.3 *8*							
[x]1156.80 *14*	6.9 *7*							

From ENSDF

$^{158}_{64}$Gd$_{94}$-28

γ(^{158}Gd) (continued)

E_γ[†‡#]	I_γ[@i]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	α	Comments
^{x}1159.21 *13*	9.1 *8*							
^{x}1161.28 *17*	4.9 *7*							
^{x}1166.88 *12*	12.7 *11*					M1	0.00317	
^{x}1172.40 *17*	9.7 *13*							
^{x}1174.8 *4*	4.7 *12*							
^{x}1177.83 *17*	10.3 *18*							
1180.35 *9*	63 *5*	1259.8691	2$^+$	79.5128	2$^+$	M1	0.00309	α(K)=0.00263 *4*; α(L)=0.000355 *5*; α(M)=7.65×10^{-5} *11*; α(N)=1.762×10^{-5} *25*; α(O)=2.75×10^{-6} *4* α(P)=1.90×10^{-7} *3* α(K)exp=0.00278 *13* (1978Gr14).
1184.01 *8*	263 *16*	1263.514	1$^-$	79.5128	2$^+$			α(K)exp=0.00163 *31* (1978Gr14). Mult.: α_K(exp) (1978Gr14) implies E2, but that is inconsistent with E1 for γ to ground state.
1186.002[c] *3*	455 *27*	1265.518	3$^+$	79.5128	2$^+$	E2	0.00195	α(K)=0.001646 *23*; α(L)=0.000231 *4*; α(M)=5.01×10^{-5} *7*; α(N)=1.150×10^{-5} *16* α(O)=1.770×10^{-6} *25*; α(P)=1.142×10^{-7} *16* α(K)exp=0.00161 *31* (1978Gr14).
1187.136[c] *3*	401 *24*	1187.143	2$^+$	0.0	0$^+$	E2	0.00194	α(K)=0.001643 *23*; α(L)=0.000231 *4*; α(M)=5.00×10^{-5} *7*; α(N)=1.147×10^{-5} *16* α(O)=1.766×10^{-6} *25*; α(P)=1.140×10^{-7} *16* α(K)exp=0.00157 *31* (1978Gr14)0.00157 *31*.
^{x}1195.3 *3*	6.7 *13*							
^{x}1197.15 *20*	7.6 *13*					M1	0.00299	
^{x}1204.7 *3*	6.9 *10*							
^{x}1207.12 *20*	5.8 *10*					M1,E2	0.0024 *6*	
^{x}1209.0 *3*	4.7 *9*					(M1)	0.00292	
^{x}1215.5 *3*	10.0 *13*					M1,E2	0.0024 *6*	
1218.67 *20*	14 *3*	2260.158	1,2$^+$	1041.6376	3$^-$			α(K)exp=0.00100 *45* (1978Gr14).
1219.91 *8*	67 *4*	1481.421	5$^+$	261.4568	4$^+$	E2	0.00184	α(K)=0.001557 *22*; α(L)=0.000218 *3*; α(M)=4.72×10^{-5} *7*; α(N)=1.083×10^{-5} *16* α(O)=1.668×10^{-6} *24*; α(P)=1.080×10^{-7} *16* α(K)exp=0.00171 *12* (1978Gr14).
^{x}1222.67 *20*	5.2 *9*							
^{x}1226.42 *20*	7.6 *11*					M1	0.00283	
^{x}1229.06 *17*	7.2 *12*							
^{x}1233.78 *15*	13.9 *17*					E1	8.14×10^{-4}	
1236.2 *3*	10.6 *21*	2260.158	1,2$^+$	1023.6974	2$^-$			
1237.56 *9*	58 *3*	1499.096	5$^+$	261.4568	4$^+$	E2(+M1)	0.0023 *5*	α(K)=0.0019 *5*; α(L)=0.00026 *6*; α(M)=5.7×10^{-5} *12*; α(N)=1.3×10^{-5} *3*; α(O)=2.0×10^{-6} *5* α(P)=1.4×10^{-7} *4* α(K)exp=0.00183 *16* (1978Gr14).
^{x}1241.2 *3*	6.0 *12*							
^{x}1244.62 *13*	10.6 *11*					M1,E2	0.0023 *5*	

$^{158}_{64}$Gd$_{94}$-29

γ(^{158}Gd) (continued)

E_γ [†‡#]	I_γ [@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [&]	α	Comments
[x]1249.4 *4*	4.6 *9*							
1256.02 *10*	29.4 *24*	1517.4761	2+	261.4568	4+	E2	1.74×10^{-3}	α(K)=0.001470 *21*; α(L)=0.000205 *3*; α(M)=4.43×10^{-5} *7*; α(N)=1.018×10^{-5} *15* α(O)=1.569×10^{-6} *22*; α(P)=1.020×10^{-7} *15* α(K)exp=0.00130 *22* (1978Gr14).
1259.865[c] *3*	114 *7*	1259.8691	2+	0.0	0+	E2	1.73×10^{-3}	α(K)=0.001462 *21*; α(L)=0.000203 *3*; α(M)=4.40×10^{-5} *7*; α(N)=1.011×10^{-5} *15* α(O)=1.559×10^{-6} *22*; α(P)=1.014×10^{-7} *15* α(K)exp=0.00147 *12* (1978Gr14).
1263.509[c] *3*	175 *11*	1263.514	1−	0.0	0+	E1	7.97×10^{-4}	α(K)=0.000638 *9*; α(L)=8.25×10^{-5} *12*; α(M)=1.770×10^{-5} *25*; α(N)=4.07×10^{-6} *6*; α(O)=6.31×10^{-7} *9* α(P)=4.30×10^{-8} *6* α(K)exp=0.000688 *12* (1978Gr14).
[x]1264.5 *3*	30 *10*					E1	7.96×10^{-4}	
[x]1270.33 *13*	17.4 *14*					E1	7.93×10^{-4}	
[x]1274.9 *4*	5.2 *13*							
1278.96 *7*	62 *4*	1358.467	4+	79.5128	2+	E2	1.69×10^{-3}	α(K)=0.001419 *20*; α(L)=0.000197 *3*; α(M)=4.27×10^{-5} *6*; α(N)=9.79×10^{-6} *14* α(O)=1.511×10^{-6} *22*; α(P)=9.84×10^{-8} *14* α(K)exp=0.00150 *12* (1978Gr14).
[x]1283.9 *3*	9.0 *13*					E2	1.68×10^{-3}	
[x]1289.6 *3*	6.6 *13*					M1,E2	0.0021 *5*	
[x]1294.6 *3*	9.4 *16*					E1	7.81×10^{-4}	
[x]1296.7 *5*	6 *2*							
1300.90 *12*	68 *6*	1380.626	4+	79.5128	2+	E2	1.64×10^{-3}	α(K)=0.001373 *20*; α(L)=0.000190 *3*; α(M)=4.12×10^{-5} *6*; α(N)=9.45×10^{-6} *14* α(O)=1.458×10^{-6} *21*; α(P)=9.52×10^{-8} *14* α(K)exp=0.00125 *13* (1978Gr14).
[x]1302.2 *3*	11 *3*							
1303.1[b]		2344.48	2+,3+	1041.6376	3−			
[x]1307.55 *20*	12.8 *15*					E1	7.75×10^{-4}	
[x]1312.10 *17*	14.7 *15*					E1	7.74×10^{-4}	
[x]1314.87 *20*	10.1 *13*					E1	7.73×10^{-4}	
[x]1320.5 *5*	7 *3*							
1323.44 *5*	181 *11*	1402.936	3−	79.5128	2+	E1	7.70×10^{-4}	α(K)=0.000588 *9*; α(L)=7.60×10^{-5} *11*; α(M)=1.629×10^{-5} *23*; α(N)=3.74×10^{-6} *6*; α(O)=5.81×10^{-7} *9* α(P)=3.97×10^{-8} *6* α(K)exp=0.000579 *12* (1978Gr14).
1327.184[c] *3*	84 *5*	1406.6995	4+	79.5128	2+	E2	1.58×10^{-3}	α(K)=0.001321 *19*; α(L)=0.000183 *3*; α(M)=3.95×10^{-5} *6*; α(N)=9.06×10^{-6} *13* α(O)=1.399×10^{-6} *20*; α(P)=9.16×10^{-8} *13* α(K)exp=0.00113 *12* (1978Gr14).

From ENSDF

$^{158}_{64}$Gd$_{94}$-30

γ(^{158}Gd) (continued)

E_γ[†‡#]	I_γ[@i]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	α	$I_{(\gamma+ce)}$[i]	Comments
[x]1329.6 *3*	16 *3*					M1	0.00236		
[x]1331.34 *20*	20 *3*								
[x]1347.90 *13*	26 *2*					M1	0.00229		
[x]1353.41 *17*	15.4 *14*					M1,E2	0.0019 *4*		
[x]1360.9 *3*	7.0 *12*								
[x]1371.33 *13*	36 *4*					E1	7.58×10^{-4}		
1372.95 *14*	52 *5*	1452.352	0^+	79.5128	2^+	E2	1.49×10^{-3}		α(K)=0.001237 *18*; α(L)=0.0001702 *24*; α(M)=3.68×10^{-5} *6*; α(N)=8.45×10^{-6} *12* α(O)=1.305×10^{-6} *19*; α(P)=8.58×10^{-8} *12* α(K)exp=0.00131 *18* (1978Gr14).
1377.90 *12*	23.5 *21*	1639.34?	5^-	261.4568	4^+	(E1)	7.57×10^{-4}		α(K)=0.000548 *8*; α(L)=7.07×10^{-5} *10*; α(M)=1.517×10^{-5} *22*; α(N)=3.48×10^{-6} *5*; α(O)=5.41×10^{-7} *8* α(P)=3.70×10^{-8} *6* α(K)exp=0.000752 *31* (1978Gr14).
1377.9[b]		2355.09	$1^+,2^+$	977.1453	1^-				
1381.1 *6*	7 *3*	1920.258	4^+	539.021	6^+				
[x]1393.1 *3*	16 *5*								
[x]1399.9 *11*	2.7 *14*								
1405.91 *15*	24.5 *20*	1667.372	4^+	261.4568	4^+	(M1)	0.00210		α(K)=0.001748 *25*; α(L)=0.000234 *4*; α(M)=5.06×10^{-5} *7*; α(N)=1.164×10^{-5} *17*; α(O)=1.82×10^{-6} *3* α(P)=1.256×10^{-7} *18* α(K)exp=0.00513 *13* (1978Gr14). Mult.: α_K(exp) is larger than α_K(M1) so γ may include E0 component.
[x]1408.0 *6*	7 *3*								
[x]1419.7 *5*	11 *5*								
[x]1423.0 *4*	9 *2*								
[x]1428.2 *4*	9 *3*								
[x]1433.9 *4*	18 *6*					M1	0.00202		
1437.960[c] *3*	86 *5*	1517.4761	2^+	79.5128	2^+				α(K)exp=0.00659 *9* (1978Gr14). Mult.: α_K(exp) is greater than α_K(M1), so multipolarity may be E0+M1,E2.
[x]1440.3 *5*	18 *6*								
1452.36 *20*		1452.352	0^+	0.0	0^+	E0		0.157 *16*	α(K)exp > 0.0231 (1978Gr14). I_γ: < 6 (measured 1978Gr14). $I_{(\gamma+ce)}$: calculated from Ice(K)=0.138 *14* (1978Gr14) and L/K=0.136 (1969Ha61).
[x]1453.2 *6*	10 *3*								
[x]1456.2 *5*	14 *4*					E1	7.54×10^{-4}		
[x]1459.2 *6*	12 *3*								
[x]1462.5 *3*	18 *3*								
[x]1465.9 *6*	10 *3*								
[x]1469.7 *6*	9 *3*								

From ENSDF

$^{158}_{64}$Gd$_{94}$-31

γ(^{158}Gd) (continued)

E_γ [†‡#]	I_γ [@i]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [&]	α	Comments
^{x}1474.5 *7*	9 *3*							
^{x}1477.4 *9*	7 *3*							
^{x}1492.0 *5*	13 *3*							
^{x}1499.6 *3*	11.0 *15*							
^{x}1505.5 *7*	8 *3*							
^{x}1509.6 *4*	14.9 *22*							
1517.49 *11*	73 *5*	1517.4761	2^+	0.0	0^+	E2	1.28×10^{-3}	α(K)=0.001022 *15*; α(L)=0.0001391 *20*; α(M)=3.00×10^{-5} *5*; α(N)=6.89×10^{-6} *10* α(O)=1.067×10^{-6} *15*; α(P)=7.09×10^{-8} *10* α(K)exp=0.00102 *17* (1978Gr14).
^{x}1522.4 *5*	8.8 *22*							
1530.12 *15*	30.8 *25*	1791.792	2^+	261.4568	4^+	(E2)	1.27×10^{-3}	α(K)=0.001006 *14*; α(L)=0.0001368 *20*; α(M)=2.95×10^{-5} *5*; α(N)=6.78×10^{-6} *10* α(O)=1.050×10^{-6} *15*; α(P)=6.98×10^{-8} *10* α(K)exp=0.000861 *26* (1978Gr14).
^{x}1536.1 *5*	6.8 *14*							
^{x}1540.6 *5*	7.7 *15*							
^{x}1543.9 *9*	5.1 *20*							
^{x}1551.8 *6*	5.8 *17*					M1,E2	0.00149 *25*	
^{x}1555.1 *9*	4.8 *19*							
^{x}1558.7 *5*	8.3 *17*							
^{x}1563.9 *3*	19.4 *21*					E1	7.66×10^{-4}	
^{x}1584.6 *5*	9 *3*							
1588.21 *15*	35[e] *3*	1667.372	4^+	79.5128	2^+			α(K)exp=0.000560 *26* (1978Gr14).
^{x}1595.6 *9*	4.6 *16*							
^{x}1635.7 *5*	11.7 *23*							
1640.0 *5*	17 *3*	1901.593	4^+	261.4568	4^+			α(K)exp=0.000819 *43* (1978Gr14).
^{x}1644.9 *4*	20 *3*							
^{x}1651.6 *6*	9.6 *24*							
1658.0 *7*	13 *3*	1920.258	4^+	261.4568	4^+			α(K)exp=0.000648 *56* (1978Gr14).
1663.77 *20*	41 *4*	1743.145	0^+	79.5128	2^+			α(K)exp=0.000332 *41* (1978Gr14). Mult.: E1 from α_K(exp), but E2 from J^π's.
^{x}1674.3 *4*	18.5 *24*							
^{x}1683.3 *5*	10.3 *21*							
1691.7 *7*	25 *3*	1953.761	4^-	261.4568	4^+			
^{x}1708.3 *6*	16 *3*							
1712.8 *6*	15[e] *3*	1791.792	2^+	79.5128	2^+			
1712.8 *6*	15[e] *3*	1793.569	2^-	79.5128	2^+			
^{x}1724.0 *6*	13 *3*							
^{x}1737.7 *5*	18 *3*							
^{x}1753.46 *10*	8 *3*							
^{x}1759.3 *12*	7 *3*							
1774.82[l] *4*	38 *4*	2035.69	(2^+)	261.4568	4^+			

From ENSDF

$^{158}_{64}$Gd$_{94}$-32

γ(^{158}Gd) (continued)

$E_γ$[†‡#]	$I_γ$[@i]	E_i(level)	$J^π_i$	E_f	$J^π_f$
1782.1 *5*	27 *4*	1861.277	3⁻	79.5128	2⁺
[x]1786.0 *5*	24 *4*				
[x]1795.5 *6*	23 *4*				
[x]1800.5 *7*	18 *4*				
1815.2[j] *5*	26[j] *4*	1894.597	2⁺	79.5128	2⁺
1815.2[j] *5*	26[j] *4*	1894.612	2⁻	79.5128	2⁺
[x]1834.9 *5*	28 *4*				
1857.1 *4*	56 *6*	1856.315	1⁻	0.0	0⁺
[x]1864.8 *6*	31 *5*				
[x]1870.1 *10*	15 *4*				
1878.4 *7*	23 *5*	1957.9	0⁺	79.5128	2⁺
1883.1[l] *11*	23 *8*	1964.104	2⁺	79.5128	2⁺
[x]1888.3 *7*	61 *9*				
[x]1903.0 *14*	10 *4*				
[x]1910.7 *5*	17 *3*				
1943.5 *5*	51[e] *6*	2023.838	1⁺	79.5128	2⁺
1955.5[a]		2215.515	(1,2)⁺	261.4568	4⁺
1956.0 *6*	81 *8*	2035.69	(2⁺)	79.5128	2⁺
1965.0[a]		1964.104	2⁺	0.0	0⁺
1970.3[b]		3012.05	2⁺,3⁺	1041.6376	3⁻
[x]1971.0 *5*	45 *6*				
[x]1988.7 *6*	23 *5*				
[x]2014.7 *5*	49 *5*				
2016.2[a]		2276.04		261.4568	4⁺
2023.9 *6*	33 *5*	2023.838	1⁺	0.0	0⁺
2040.7 *6*	38 *6*	2120.24	(2,3)⁺	79.5128	2⁺
[x]2059.3 *11*	22 *6*				
2061.3[a]		2322.2	2⁺,3	261.4568	4⁺
2072.7[a] *25*		2153.174	(2,3)⁺	79.5128	2⁺
2134.6[a]		2215.515	(1,2)⁺	79.5128	2⁺
2180.4 *3*	45 *13*	2260.158	1,2⁺	79.5128	2⁺
2195.4[a]		2276.04		79.5128	2⁺
2204.4[a]		2282.9		79.5128	2⁺
2212.4[a]		2215.515	(1,2)⁺	0.0	0⁺
2242.2[a]		2322.2	2⁺,3	79.5128	2⁺
2259.4[a]		2260.158	1,2⁺	0.0	0⁺
2266.4[a]		2344.48	2⁺,3⁺	79.5128	2⁺
2314.4[a]		2394.61	(⁺)	79.5128	2⁺
2327.3[b]		2327.44	1,2⁺	0.0	0⁺
2374.7[b]		3351.9	1,2,3⁻	977.1453	1⁻
2374.7[b]		3446.0	1,2,3		
2383.1[a]		2644.1		261.4568	4⁺
2420.6[a]		2501.0	(⁺)	79.5128	2⁺
2440.2[a]		2698.7	2⁺,3	261.4568	4⁺
2459.3[a]		2538.9		79.5128	2⁺
2514.9[a]		2594.6	(⁺)	79.5128	2⁺
2522.2[a]		2601.2	(⁺)	79.5128	2⁺
2577.7[a]		2656.9		79.5128	2⁺
2616.6[a]		2879.03	2⁺,3	261.4568	4⁺
2618.1[a]		2698.7	2⁺,3	79.5128	2⁺
2656.8[a]		2656.9		0.0	0⁺
2670.9[a]		2751.5		79.5128	2⁺
2680.0[a]		2758.5	(⁺)	79.5128	2⁺
2703.5[a]		2782.3	(⁺)	79.5128	2⁺
2746.0[a]		3008.3		261.4568	4⁺
2798.5[b]		3060.3	2⁺,3	261.4568	4⁺
2799.8[a]		2879.03	2⁺,3	79.5128	2⁺
2802.2[a]		2802.0		0.0	0⁺
2805.1[a]		3063.7		261.4568	4⁺
2828.6[a]		2830.4	(⁺)	0.0	0⁺
2854.5[a]		2854.7		0.0	0⁺
2878.1[a]		2879.03	2⁺,3	0.0	0⁺
2918.5[a]		2997.7	(⁺)	79.5128	2⁺
2929.2[a]		3008.3		79.5128	2⁺
2939.3[b]		3200.8	2⁺,3	261.4568	4⁺
2950.2[a]		3029.1		79.5128	2⁺
2961.9[a]		2959.7		0.0	0⁺
2982.8[a]		3063.7		79.5128	2⁺
3062.0[a]		3141.5		79.5128	2⁺
3064.7[a]		3063.7		0.0	0⁺
3072.7[a]		3149.9	(⁺)	79.5128	2⁺
3291.6[a]		3292.0		0.0	0⁺
3439.8[a]		3702.6		261.4568	4⁺
3492.7[a]		3570.9		79.5128	2⁺
3521.0[a]		3600.5		79.5128	2⁺
3553.2[b]		3632.7	1⁺,2⁺,3⁺	79.5128	2⁺
3570.1[a]		3570.9		0.0	0⁺
3580.6[a]		3661.6		79.5128	2⁺
3583.8[b]		3663.3		79.5128	2⁺
3600.6[a]		3600.5		0.0	0⁺
3623.7[a]		3702.6		79.5128	2⁺
3655.4[b]	100	3655.4	1,2⁺	0.0	0⁺

From ENSDF

γ(^{158}Gd) (continued)

$E_γ$[†‡#]	$I_γ$[@i]	E_i(level)	$J^π_i$	E_f	$J^π_f$	Mult.[&]	α	Comments
3658.9[a]		3661.6		0.0	0^+			
3700.2 *6*	28 *4*	(7937.1)	2^-,(1^-)	4236.9				
3775.8 *8*	18 *3*	(7937.1)	2^-,(1^-)	4161.5	($^+$)	E1	1.68×10^{-3}	α(K)=0.0001138 *16*; α(L)=1.434×10^{-5} *20*; α(M)=3.07×10^{-6} *5*; α(N)=7.05×10^{-7} *10* α(O)=1.100×10^{-7} *16*; α(P)=7.69×10^{-9} *11*
3797.7 *4*	28 *4*	(7937.1)	2^-,(1^-)	4139.6	($^+$)	E1	1.69×10^{-3}	α(K)=0.0001129 *16*; α(L)=1.422×10^{-5} *20*; α(M)=3.04×10^{-6} *5*; α(N)=6.99×10^{-7} *10* α(O)=1.091×10^{-7} *16*; α(P)=7.62×10^{-9} *11*
3826.5 *8*	21 *9*	(7937.1)	2^-,(1^-)	4110.7	($^+$)	E1	1.70×10^{-3}	α(K)=0.0001117 *16*; α(L)=1.406×10^{-5} *20*; α(M)=3.01×10^{-6} *5*; α(N)=6.91×10^{-7} *10* α(O)=1.079×10^{-7} *16*; α(P)=7.54×10^{-9} *11*
3842.9[a]		3923.3		79.5128	2^+			
3921.3[l] *8*	11 *3*	(7937.1)	2^-,(1^-)	4015.8?				
3924.7[a]		3923.3		0.0	0^+			
3972.1 *7*	14 *4*	(7937.1)	2^-,(1^-)	3965.1				
3989.2 *6*	29 *4*	(7937.1)	2^-,(1^-)	3948.0				
4012.8[a]		(7937.1)	2^-,(1^-)	3923.3				
4058.4 *4*	23 *4*	(7937.1)	2^-,(1^-)	3878.8	($^+$)	E1	1.78×10^{-3}	α(K)=0.0001028 *15*; α(L)=1.293×10^{-5} *19*; α(M)=2.76×10^{-6} *4*; α(N)=6.36×10^{-7} *9* α(O)=9.92×10^{-8} *14*; α(P)=6.94×10^{-9} *10*
4090.6 *4*	28 *6*	(7937.1)	2^-,(1^-)	3846.7	($^+$)	E1	0.00179	α(K)=0.0001017 *15*; α(L)=1.279×10^{-5} *18*; α(M)=2.73×10^{-6} *4*; α(N)=6.29×10^{-7} *9* α(O)=9.81×10^{-8} *14*; α(P)=6.86×10^{-9} *10*
4142.6 *10*	18 *5*	(7937.1)	2^-,(1^-)	3794.6	($^+$)	E1	0.00181	α(K)=9.99×10^{-5} *14*; α(L)=1.256×10^{-5} *18*; α(M)=2.69×10^{-6} *4*; α(N)=6.17×10^{-7} *9*; α(O)=9.64×10^{-8} *14* α(P)=6.74×10^{-9} *10*
4187.3[l] *15*	7 *3*	(7937.1)	2^-,(1^-)	3750.1?				
4234.2[a]		(7937.1)	2^-,(1^-)	3702.6				
4273.9[b]		(7937.1)	2^-,(1^-)	3663.3				
4275.7 *7*	17 *4*	(7937.1)	2^-,(1^-)	3661.6				
4281.8[b]		(7937.1)	2^-,(1^-)	3655.4	1,2^+			
4289.7 *8*	18 *4*	(7937.1)	2^-,(1^-)	3647.5				
4304.5 *8*	19 *4*	(7937.1)	2^-,(1^-)	3632.7	1^+,2^+,3^+	E1	0.00187	α(K)=9.47×10^{-5} *14*; α(L)=1.190×10^{-5} *17*; α(M)=2.54×10^{-6} *4*; α(N)=5.85×10^{-7} *9*; α(O)=9.13×10^{-8} *13* α(P)=6.39×10^{-9} *9*
4310.3 *6*	22.0 *24*	(7937.1)	2^-,(1^-)	3626.9	($^+$)	E1	0.00187	α(K)=9.45×10^{-5} *14*; α(L)=1.188×10^{-5} *17*; α(M)=2.54×10^{-6} *4*; α(N)=5.84×10^{-7} *9*; α(O)=9.12×10^{-8} *13* α(P)=6.38×10^{-9} *9*
4336.9[a]		(7937.1)	2^-,(1^-)	3600.5				
4344.8 *6*	15 *3*	(7937.1)	2^-,(1^-)	3592.4	($^-$)	M1,E2	0.00153 *9*	α(K)=0.000154 *5*; α(L)=1.99×10^{-5} *5*; α(M)=4.26×10^{-6} *10*;

From ENSDF

$^{158}_{64}$Gd$_{94}$-34

^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10 (continued)

γ(^{158}Gd) (continued)

Eγ[†‡#]	Iγ[@i]	Ei(level)	J^π_i	Ef	J^π_f	Mult.[&]	α	Comments
								α(N)=9.81×10^{-7} *23*; α(O)=1.53×10^{-7} *4* α(P)=1.072×10^{-8} *24*
4367.4[a]		(7937.1)	2$^-$,(1$^-$)	3570.9				
4402.4 *6*	13 *3*	(7937.1)	2$^-$,(1$^-$)	3534.8	($^+$)	E1	0.00190	α(K)=9.18×10^{-5} *13*; α(L)=1.153×10^{-5} *17*; α(M)=2.46×10^{-6} *4*; α(N)=5.67×10^{-7} *8*; α(O)=8.85×10^{-8} *13* α(P)=6.20×10^{-9} *9*
4488.4 *5*	19 *3*	(7937.1)	2$^-$,(1$^-$)	3448.8	($^+$)	E1	0.00193	α(K)=8.94×10^{-5} *13*; α(L)=1.122×10^{-5} *16*; α(M)=2.40×10^{-6} *4*; α(N)=5.52×10^{-7} *8*; α(O)=8.61×10^{-8} *12* α(P)=6.03×10^{-9} *9*
4491.2[b]		(7937.1)	2$^-$,(1$^-$)	3446.0	1,2,3			
4500.8 *5*	16 *3*	(7937.1)	2$^-$,(1$^-$)	3436.4	($^+$)	E1	0.00194	α(K)=8.90×10^{-5} *13*; α(L)=1.118×10^{-5} *16*; α(M)=2.39×10^{-6} *4*; α(N)=5.49×10^{-7} *8*; α(O)=8.58×10^{-8} *12* α(P)=6.01×10^{-9} *9*
4525.5 *5*	14 *3*	(7937.1)	2$^-$,(1$^-$)	3411.7				
4585.3 *8*	10.6 *21*	(7937.1)	2$^-$,(1$^-$)	3351.9	1,2,3$^-$			
4649.2 *6*	11.8 *18*	(7937.1)	2$^-$,(1$^-$)	3288.0				
4665.8 *8*	8.8 *15*	(7937.1)	2$^-$,(1$^-$)	3271.4				
4673.3 *7*	13.8 *21*	(7937.1)	2$^-$,(1$^-$)	3263.9				
4690.0 *5*	10.9 *18*	(7937.1)	2$^-$,(1$^-$)	3247.2				
4708.6 *8*	10 *3*	(7937.1)	2$^-$,(1$^-$)	3228.6				
4736.4 *7*	12.4 *24*	(7937.1)	2$^-$,(1$^-$)	3200.8	2$^+$,3			
4741.7 *6*	16.2 *24*	(7937.1)	2$^-$,(1$^-$)	3195.5				
4766.0 *7*	8.8 *18*	(7937.1)	2$^-$,(1$^-$)	3171.2				
4787.3 *8*	13 *3*	(7937.1)	2$^-$,(1$^-$)	3149.9	($^+$)	E1	0.00203	α(K)=8.18×10^{-5} *12*; α(L)=1.027×10^{-5} *15*; α(M)=2.19×10^{-6} *3*; α(N)=5.04×10^{-7} *7*; α(O)=7.88×10^{-8} *11* α(P)=5.52×10^{-9} *8*
4795.7 *8*	12.1 *24*	(7937.1)	2$^-$,(1$^-$)	3141.5				
4870.3 *6*	16.5 *24*	(7937.1)	2$^-$,(1$^-$)	3066.9	($^+$)	E1	0.00205	α(K)=7.99×10^{-5} *12*; α(L)=1.003×10^{-5} *14*; α(M)=2.14×10^{-6} *3*; α(N)=4.93×10^{-7} *7*; α(O)=7.69×10^{-8} *11* α(P)=5.39×10^{-9} *8*
4876.9 *6*	23 *4*	(7937.1)	2$^-$,(1$^-$)	3060.3	2$^+$,3	E1	0.00205	α(K)=7.98×10^{-5} *12*; α(L)=1.001×10^{-5} *14*; α(M)=2.14×10^{-6} *3*; α(N)=4.92×10^{-7} *7*; α(O)=7.68×10^{-8} *11* α(P)=5.38×10^{-9} *8*
4891.6 *15*	11 *6*	(7937.1)	2$^-$,(1$^-$)	3045.6	($^+$)			
4908.2 *6*	9.4 *15*	(7937.1)	2$^-$,(1$^-$)	3029.1				
4925.2 *5*	72 *7*	(7937.1)	2$^-$,(1$^-$)	3012.05	2$^+$,3$^+$	E1	0.00207	α(K)=7.87×10^{-5} *11*; α(L)=9.87×10^{-6} *14*; α(M)=2.11×10^{-6} *3*; α(N)=4.85×10^{-7} *7*; α(O)=7.58×10^{-8} *11* α(P)=5.31×10^{-9} *8*
4928.6[a]		(7937.1)	2$^-$,(1$^-$)	3008.3				
4939.5 *6*	20 *3*	(7937.1)	2$^-$,(1$^-$)	2997.7	($^+$)	E1	0.00207	α(K)=7.84×10^{-5} *11*; α(L)=9.83×10^{-6} *14*; α(M)=2.10×10^{-6} *3*; α(N)=4.83×10^{-7} *7*; α(O)=7.55×10^{-8} *11* α(P)=5.29×10^{-9} *8*

γ(^{158}Gd) (continued)

E_γ [†‡#]	I_γ [@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [&]	α	Comments
4951.1 *6*	12.4 *18*	(7937.1)	2⁻,(1⁻)	2986.1	(⁺)	E1	0.00207	α(K)=7.81×10^{-5} *11*; α(L)=9.80×10^{-6} *14*; α(M)=2.09×10^{-6} *3*; α(N)=4.82×10^{-7} *7*; α(O)=7.52×10^{-8} *11* α(P)=5.27×10^{-9} *8*
4955.6 *9*	7.4 *24*	(7937.1)	2⁻,(1⁻)	2981.5				
4975.6[a]		(7937.1)	2⁻,(1⁻)	2959.7				
5002.5 *11*	8.8 *15*	(7937.1)	2⁻,(1⁻)	2934.7				
5027.5 *5*	14.4 *21*	(7937.1)	2⁻,(1⁻)	2909.8	(⁺)	E1	0.00209	α(K)=7.65×10^{-5} *11*; α(L)=9.60×10^{-6} *14*; α(M)=2.05×10^{-6} *3*; α(N)=4.72×10^{-7} *7*; α(O)=7.36×10^{-8} *11* α(P)=5.16×10^{-9} *8*
5041.1 *8*	8.8 *18*	(7937.1)	2⁻,(1⁻)	2896.1				
5058.2 *5*	32 *3*	(7937.1)	2⁻,(1⁻)	2879.03	2⁺,3	E1	0.00210	α(K)=7.59×10^{-5} *11*; α(L)=9.52×10^{-6} *14*; α(M)=2.03×10^{-6} *3*; α(N)=4.68×10^{-7} *7*; α(O)=7.30×10^{-8} *11* α(P)=5.12×10^{-9} *8*
5082.9[a]		(7937.1)	2⁻,(1⁻)	2854.7				
5092.4 *7*	8.2 *18*	(7937.1)	2⁻,(1⁻)	2844.8				
5106.9 *8*	9.7 *21*	(7937.1)	2⁻,(1⁻)	2830.4	(⁺)	E1	0.00211	α(K)=7.49×10^{-5} *11*; α(L)=9.40×10^{-6} *14*; α(M)=2.01×10^{-6} *3*; α(N)=4.62×10^{-7} *7*; α(O)=7.21×10^{-8} *10* α(P)=5.05×10^{-9} *7*
5113.6 *7*	9.1 *18*	(7937.1)	2⁻,(1⁻)	2823.7				
5135.2[a]		(7937.1)	2⁻,(1⁻)	2802.0				
5142.4[l] *9*	5.0 *12*	(7937.1)	2⁻,(1⁻)	2794.9?				
5154.9 *5*	19.7 *21*	(7937.1)	2⁻,(1⁻)	2782.3	(⁺)	E1	0.00213	α(K)=7.40×10^{-5} *11*; α(L)=9.28×10^{-6} *13*; α(M)=1.98×10^{-6} *3*; α(N)=4.56×10^{-7} *7*; α(O)=7.12×10^{-8} *10* α(P)=4.99×10^{-9} *7*
5178.7 *5*	36 *4*	(7937.1)	2⁻,(1⁻)	2758.5	(⁺)	E1	0.00213	α(K)=7.35×10^{-5} *11*; α(L)=9.22×10^{-6} *13*; α(M)=1.97×10^{-6} *3*; α(N)=4.53×10^{-7} *7*; α(O)=7.07×10^{-8} *10* α(P)=4.96×10^{-9} *7*
5185.7 *7*	10.3 *15*	(7937.1)	2⁻,(1⁻)	2751.5				
5238.6 *5*	24.1 *24*	(7937.1)	2⁻,(1⁻)	2698.7	2⁺,3	E1	0.00215	α(K)=7.24×10^{-5} *11*; α(L)=9.08×10^{-6} *13*; α(M)=1.94×10^{-6} *3*; α(N)=4.46×10^{-7} *7*; α(O)=6.96×10^{-8} *10* α(P)=4.88×10^{-9} *7*
5250.2 *5*	29 *3*	(7937.1)	2⁻,(1⁻)	2687.1	(⁺)	E1	0.00215	α(K)=7.22×10^{-5} *11*; α(L)=9.05×10^{-6} *13*; α(M)=1.93×10^{-6} *3*; α(N)=4.45×10^{-7} *7*; α(O)=6.94×10^{-8} *10* α(P)=4.87×10^{-9} *7*
5265.1 *15*	5.9 *18*	(7937.1)	2⁻,(1⁻)	2672.1				
5280.4 *6*	9.7 *15*	(7937.1)	2⁻,(1⁻)	2656.9				
5293.1 *9*	4.4 *12*	(7937.1)	2⁻,(1⁻)	2644.1				
5306.2 *5*	14.4 *21*	(7937.1)	2⁻,(1⁻)	2631.0	(⁺)	E1	0.00217	α(K)=7.12×10^{-5} *10*; α(L)=8.92×10^{-6} *13*; α(M)=1.91×10^{-6} *3*; α(N)=4.38×10^{-7} *7*; α(O)=6.84×10^{-8} *10* α(P)=4.80×10^{-9} *7*
5336.1 *8*	9.4 *24*	(7937.1)	2⁻,(1⁻)	2601.2	(⁺)	E1	0.00218	α(K)=7.06×10^{-5} *10*; α(L)=8.85×10^{-6} *13*; α(M)=1.89×10^{-6} *3*; α(N)=4.35×10^{-7} *6*;

From ENSDF

γ(^{158}Gd) (continued)

E_γ [†‡#]	I_γ [@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [&]	α	Comments
								α(O)=6.79×10^{-8} *10* α(P)=4.76×10^{-9} *7*
5342.6 *9*	7.6 *21*	(7937.1)	2$^-$,(1$^-$)	2594.6	($^+$)	E1	0.00218	α(K)=7.05×10^{-5} *10*; α(L)=8.84×10^{-6} *13*; α(M)=1.89×10^{-6} *3*; α(N)=4.34×10^{-7} *6*; α(O)=6.78×10^{-8} *10* α(P)=4.75×10^{-9} *7*
5370.4 *8*	6.8 *9*	(7937.1)	2$^-$,(1$^-$)	2566.8	($^+$)	E1	0.00219	α(K)=7.00×10^{-5} *10*; α(L)=8.78×10^{-6} *13*; α(M)=1.87×10^{-6} *3*; α(N)=4.31×10^{-7} *6*; α(O)=6.73×10^{-8} *10* α(P)=4.72×10^{-9} *7*
5398.5[a]		(7937.1)	2$^-$,(1$^-$)	2538.9				
5403.2 *5*	40 *4*	(7937.1)	2$^-$,(1$^-$)	2534.1	($^+$)	E1	0.00220	α(K)=6.95×10^{-5} *10*; α(L)=8.70×10^{-6} *13*; α(M)=1.86×10^{-6} *3*; α(N)=4.28×10^{-7} *6*; α(O)=6.68×10^{-8} *10* α(P)=4.68×10^{-9} *7*
5436.4 *5*	21.5 *21*	(7937.1)	2$^-$,(1$^-$)	2501.0	($^+$)	E1	0.00221	α(K)=6.89×10^{-5} *10*; α(L)=8.63×10^{-6} *12*; α(M)=1.84×10^{-6} *3*; α(N)=4.24×10^{-7} *6*; α(O)=6.62×10^{-8} *10* α(P)=4.64×10^{-9} *7*
5486.7[l] *7*	6.2 *24*	(7937.1)	2$^-$,(1$^-$)	2450.5				
5504.1[l] *9*	5.0 *12*	(7937.1)	2$^-$,(1$^-$)	2433.1				
5542.6 *5*	34 *3*	(7937.1)	2$^-$,(1$^-$)	2394.61	($^+$)	E1	0.00224	α(K)=6.71×10^{-5} *10*; α(L)=8.41×10^{-6} *12*; α(M)=1.80×10^{-6} *3*; α(N)=4.13×10^{-7} *6*; α(O)=6.45×10^{-8} *9* α(P)=4.52×10^{-9} *7*
5567.6[l] *15*	2.6 *15*	(7937.1)	2$^-$,(1$^-$)	2369.6				
5582.1 *5*	50 *5*	(7937.1)	2$^-$,(1$^-$)	2355.09	1$^+$,2$^+$	E1	0.00225	α(K)=6.65×10^{-5} *10*; α(L)=8.33×10^{-6} *12*; α(M)=1.780×10^{-6} *25*; α(N)=4.09×10^{-7} *6*; α(O)=6.39×10^{-8} *9* α(P)=4.48×10^{-9} *7*
5592.7 *5*	30 *3*	(7937.1)	2$^-$,(1$^-$)	2344.48	2$^+$,3$^+$	E1	0.00225	α(K)=6.63×10^{-5} *10*; α(L)=8.31×10^{-6} *12*; α(M)=1.775×10^{-6} *25*; α(N)=4.08×10^{-7} *6*; α(O)=6.37×10^{-8} *9* α(P)=4.47×10^{-9} *7*
5609.8 *5*	23.5 *24*	(7937.1)	2$^-$,(1$^-$)	2327.44	1,2$^+$	E1	0.00225	α(K)=6.61×10^{-5} *10*; α(L)=8.27×10^{-6} *12*; α(M)=1.768×10^{-6} *25*; α(N)=4.06×10^{-7} *6*; α(O)=6.35×10^{-8} *9* α(P)=4.45×10^{-9} *7*
5615.6[a]		(7937.1)	2$^-$,(1$^-$)	2322.2	2$^+$,3			
5654.2 *6*	15.0 *15*	(7937.1)	2$^-$,(1$^-$)	2282.9				
5661.1 *5*	37 *4*	(7937.1)	2$^-$,(1$^-$)	2275.9	2,3$^+$			
5668.7 *6*	10.6 *15*	(7937.1)	2$^-$,(1$^-$)	2269.255	1$^+$			
5676.7 *5*	39 *4*	(7937.1)	2$^-$,(1$^-$)	2260.158	1,2$^+$	E1	0.00227	α(K)=6.50×10^{-5} *10*; α(L)=8.14×10^{-6} *12*; α(M)=1.740×10^{-6} *25*; α(N)=4.00×10^{-7} *6*; α(O)=6.25×10^{-8} *9* α(P)=4.38×10^{-9} *7*
5687.9 *8*	4.7 *24*	(7937.1)	2$^-$,(1$^-$)	2249.61	3$^+$			
5714.3 *7*	8.5 *12*	(7937.1)	2$^-$,(1$^-$)	2221.63	(1,2)$^-$			
5721.7 *6*	7.6 *12*	(7937.1)	2$^-$,(1$^-$)	2215.515	(1,2)$^+$			
5783.8 *5*	31 *3*	(7937.1)	2$^-$,(1$^-$)	2153.174	(2,3)$^+$	E1	0.00231	α(K)=6.35×10^{-5} *9*; α(L)=7.94×10^{-6} *12*; α(M)=1.697×10^{-6} *24*;

From ENSDF

$^{158}_{64}$Gd$_{94}$-37

γ(^{158}Gd) (continued)

E_γ[†‡#]	I_γ[@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	α	Comments
								α(N)=3.90×10^{-7} *6*; α(O)=6.09×10^{-8} *9* α(P)=4.28×10^{-9} *6*
5816.2[l] *8*	5.3 *15*	(7937.1)	2$^-$,(1$^-$)	2120.24	(2,3)$^+$			
5845.4 *8*	4.4 *12*	(7937.1)	2$^-$,(1$^-$)	2089.251	2$^+$			
5853.1 *6*	7.6 *12*	(7937.1)	2$^-$,(1$^-$)	2083.635	2$^+$			
5891.8[l] *13*	6.2 *18*	(7937.1)	2$^-$,(1$^-$)	2049.009	2$^-$			
5903.2 *5*	150 *11*	(7937.1)	2$^-$,(1$^-$)	2033.921	3$^+$	E1	0.00233	α(K)=6.18×10^{-5} *9*; α(L)=7.73×10^{-6} *11*; α(M)=1.651×10^{-6} *24*; α(N)=3.80×10^{-7} *6*; α(O)=5.93×10^{-8} *9* α(P)=4.16×10^{-9} *6*
5912.5[l] *9*	8.2 *18*	(7937.1)	2$^-$,(1$^-$)	2023.838	1$^+$			
5972.5[a]		(7937.1)	2$^-$,(1$^-$)	1964.104	2$^+$			
5981.8[a]		(7937.1)	2$^-$,(1$^-$)	1957.9	0$^+$			
5995.5 *5*	16.5 *18*	(7937.1)	2$^-$,(1$^-$)	1941.26	3$^+$			
6006.4 *5*	7.9 *9*	(7937.1)	2$^-$,(1$^-$)	1930.200	1$^+$			
6042.6[j] *5*	10.9[j] *12*	(7937.1)	2$^-$,(1$^-$)	1894.612	2$^-$			
6042.6[j] *5*	10.9[j] *12*	(7937.1)	2$^-$,(1$^-$)	1894.597	2$^+$			
6073.1 *13*	3.5 *12*	(7937.1)	2$^-$,(1$^-$)	1861.277	3$^-$			
6079.6 *9*	4.1 *12*	(7937.1)	2$^-$,(1$^-$)	1856.315	1$^-$			
6144.9 *5*	18.8 *18*	(7937.1)	2$^-$,(1$^-$)	1791.792	2$^+$	E1		
6420.1 *5*	38 *4*	(7937.1)	2$^-$,(1$^-$)	1517.4761	2$^+$	E1		
6671.6 *5*	23.8 *12*	(7937.1)	2$^-$,(1$^-$)	1265.518	3$^+$	E1		
6750.0 *5*	294	(7937.1)	2$^-$,(1$^-$)	1187.143	2$^+$	E1		
6757.9[a]		(7937.1)	2$^-$,(1$^-$)	1176.479	5$^-$			
6913.6 *5*	15.9 *12*	(7937.1)	2$^-$,(1$^-$)	1023.6974	2$^-$	M1[g]		
6959.9 *7*	2.6 *4*	(7937.1)	2$^-$,(1$^-$)	977.1453	1$^-$	M1[g]		
7857.4 *7*	1.76 *18*	(7937.1)	2$^-$,(1$^-$)	79.5128	2$^+$			

[†] The secondary γ-ray energies below 2200 keV are based on those in table 4 of 1978Gr14 which are from the curved-crystal spectrometer measurements, unless otherwise noted as from 1994Al41 or 1999Bo10. The values of 1978Gr14 have been multiplied by 1.000035 *12* as determined by 1999Bo10 to convert them to the current absolute energy scale. Since the values in 1978Gr14 do not include the systematic uncertainty in the 79.5104 keV reference line, the systematic uncertainty is only included once. The values from 1994Al41 are as published and have no uncertainties.

[‡] The secondary γ-ray energies above 2200 keV are from 1994Al41.

[#] The energies of the primary γ rays are mostly from table 1 of 1978Gr14 along with a few from 1994Al41.

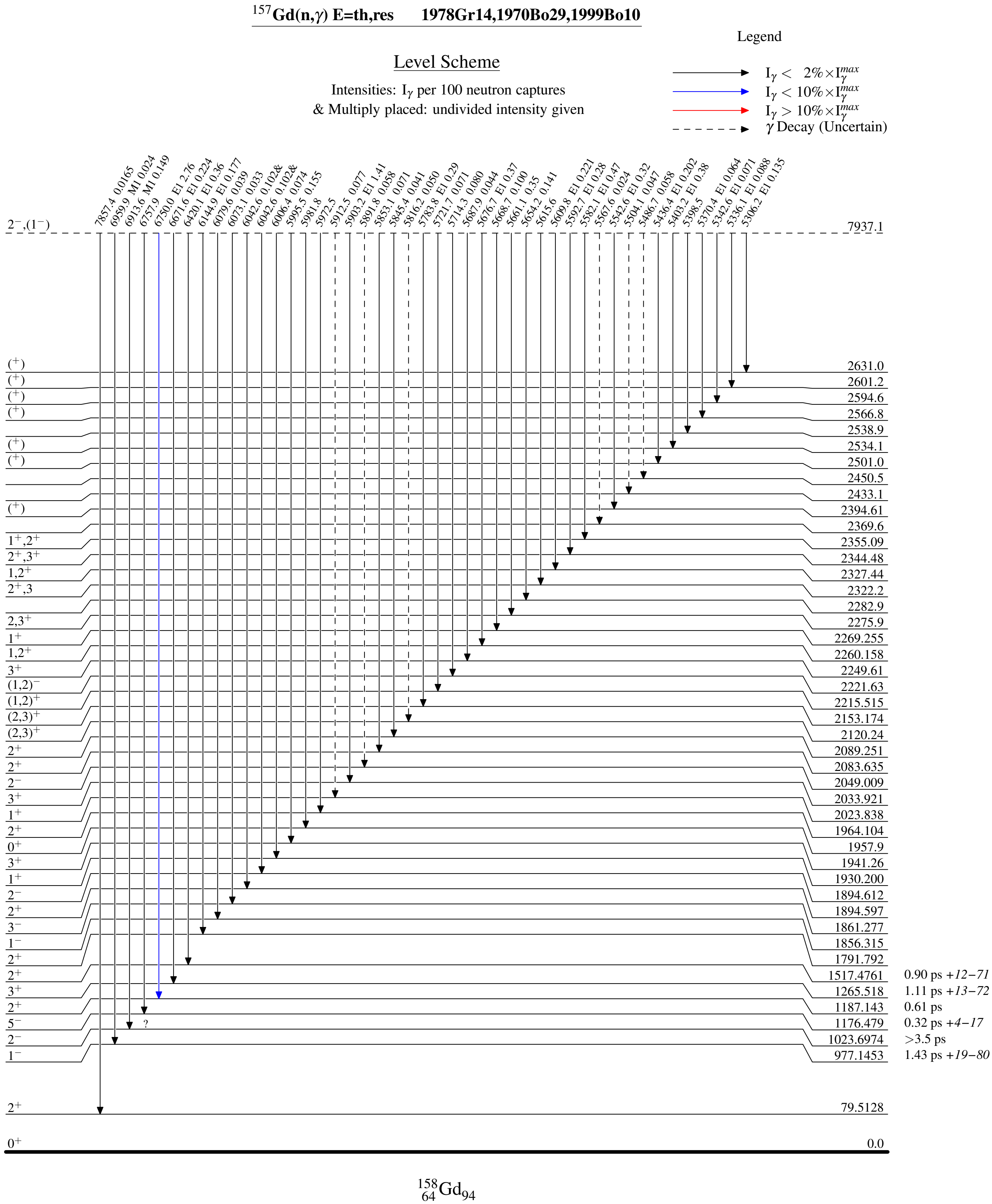
[@] From 1978Gr14 for thermal-n capture. Other values are given by 1994Al41.

[&] Assignments are based on α_K(exp) and K/L of 1978Gr14, except as noted otherwise; others: 1962Gr33, 1970Pa20. For the secondary γ′s the relative γ and ce intensities were normalized so that α_K(exp) are the E2 theoretical values for the 79, 181, and 277 γ′s. Multipolarities for these γ′s were determined from the ground-state rotational band structure as well as the K/L ratios (1978Gr14). For the primary γ′s, this normalization is based on the assumption that the 6750 γ is pure E1, which is consistent with the J^π′s of its initial and final levels.

$^{158}_{64}$Gd$_{94}$-38

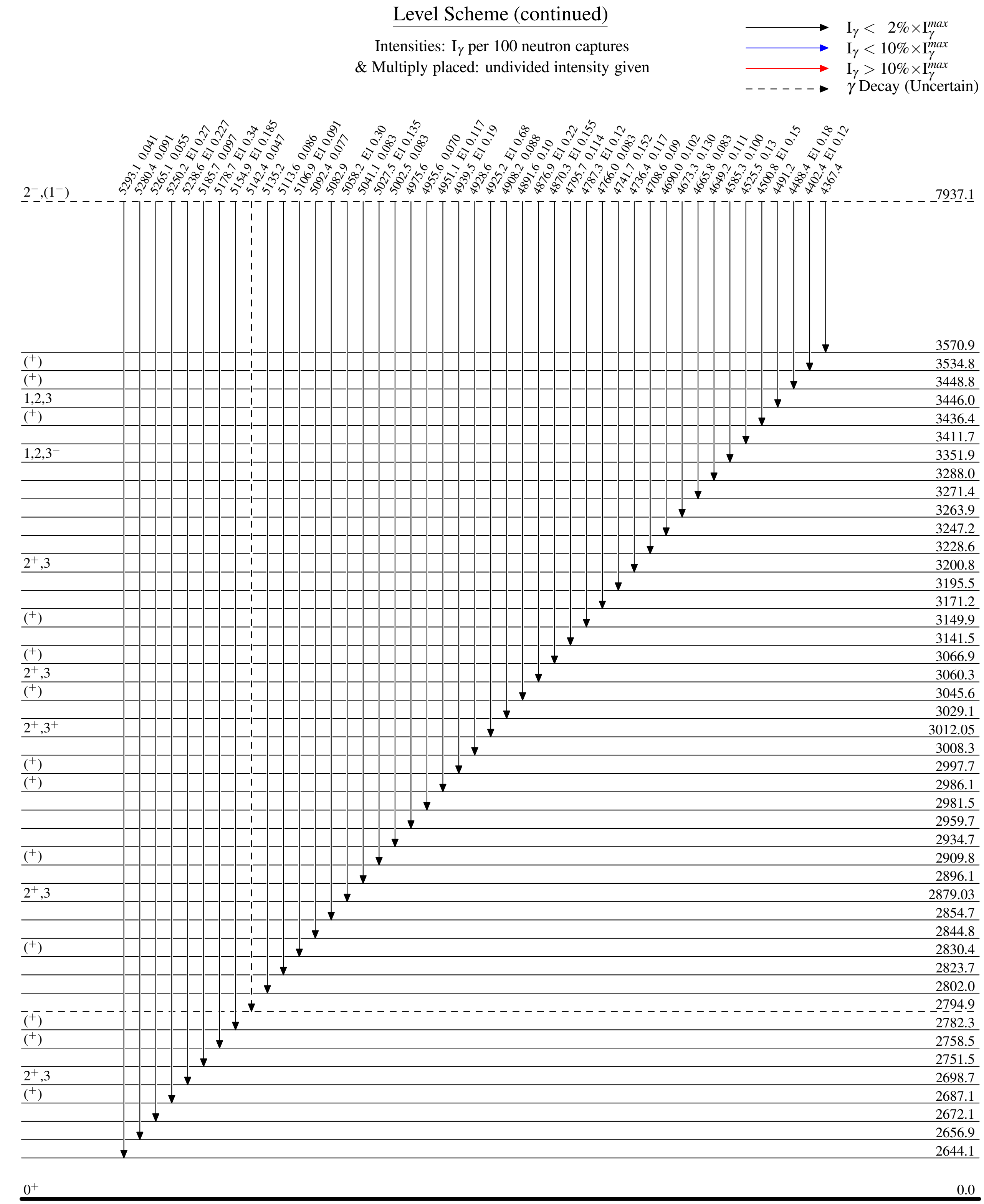
γ(^{158}Gd) (continued)

[a] From 1994Al41.
[b] From 2015Va20 (ΔE of Adopted Levels).
[c] From 1999Bo10.
[d] Energy from 1978Gr14, but placement from 2002Le34.
[e] Component of an unresolved multiplet; only part of I_γ can be ascribed to this placement.
[f] 1978Gr14 suggest that, because of poor energy agreement, only part of I_γ be ascribed to this placement.
[g] E2,M1 from α_K(exp) (1978Gr14) and M1 from averaged-resonance capture data (1970Bo29 as reanalyzed in 1978Gr14).
[h] α_K(exp) is larger than α_K(M1).
[i] For intensity per 100 neutron captures, multiply by 0.0094.
[j] Multiply placed with undivided intensity.
[k] Multiply placed with intensity suitably divided.
[l] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.



^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10
Level Scheme
Intensities: I_γ per 100 neutron captures
& Multiply placed: undivided intensity given
Legend
I_γ < 2%×I_γ^{max}
I_γ < 10%×I_γ^{max}
I_γ > 10%×I_γ^{max}
γ Decay (Uncertain)
7857.4 0.0165
6959.9 M1 0.024
6913.6 M1 0.149
6757.9
6750.0 E1 2.76
6671.6 E1 0.224
6420.1 E1 0.36
6144.9 E1 0.177
6079.6 0.039
6073.1 0.033
6042.6 0.102&
6042.6 0.102&
6006.4 0.074
5995.5 0.155
5981.8
5972.5
5912.5 0.077
5903.2 E1 1.41
5891.8 0.058
5853.1 0.071
5845.4 0.041
5816.2 0.050
5783.8 E1 0.29
5721.7 0.071
5714.3 0.080
5687.9 0.044
5676.7 E1 0.37
5668.7 0.100
5661.1 0.35
5654.2 0.141
5615.6
5609.8 E1 0.221
5592.7 E1 0.28
5582.1 E1 0.47
5567.6 0.024
5542.6 E1 0.32
5504.1 0.047
5486.7 0.058
5436.4 E1 0.202
5403.2 E1 0.38
5398.5
5370.4 E1 0.064
5342.6 E1 0.071
5336.1 E1 0.088
5306.2 E1 0.135
2⁻,(1⁻) 7937.1
(+) 2631.0
(+) 2601.2
(+) 2594.6
(+) 2566.8
2538.9
(+) 2534.1
(+) 2501.0
2450.5
2433.1
(+) 2394.61
2369.6
1+,2+ 2355.09
2+,3+ 2344.48
1,2+ 2327.44
2+,3 2322.2
2282.9
2,3+ 2275.9
1+ 2269.255
1,2+ 2260.158
3+ 2249.61
(1,2)⁻ 2221.63
(1,2)+ 2215.515
(2,3)+ 2153.174
(2,3)+ 2120.24
2+ 2089.251
2+ 2083.635
2⁻ 2049.009
3+ 2033.921
1+ 2023.838
2+ 1964.104
0+ 1957.9
3+ 1941.26
1+ 1930.200
2⁻ 1894.612
2+ 1894.597
3⁻ 1861.277
1⁻ 1856.315
2+ 1791.792
2+ 1517.4761 0.90 ps +12−71
3+ 1265.518 1.11 ps +13−72
2+ 1187.143 0.61 ps
5⁻ 1176.479 0.32 ps +4−17
2⁻ 1023.6974 >3.5 ps
1⁻ 977.1453 1.43 ps +19−80
?
2+ 79.5128
0+ 0.0
$^{158}_{64}$Gd$_{94}$

^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10

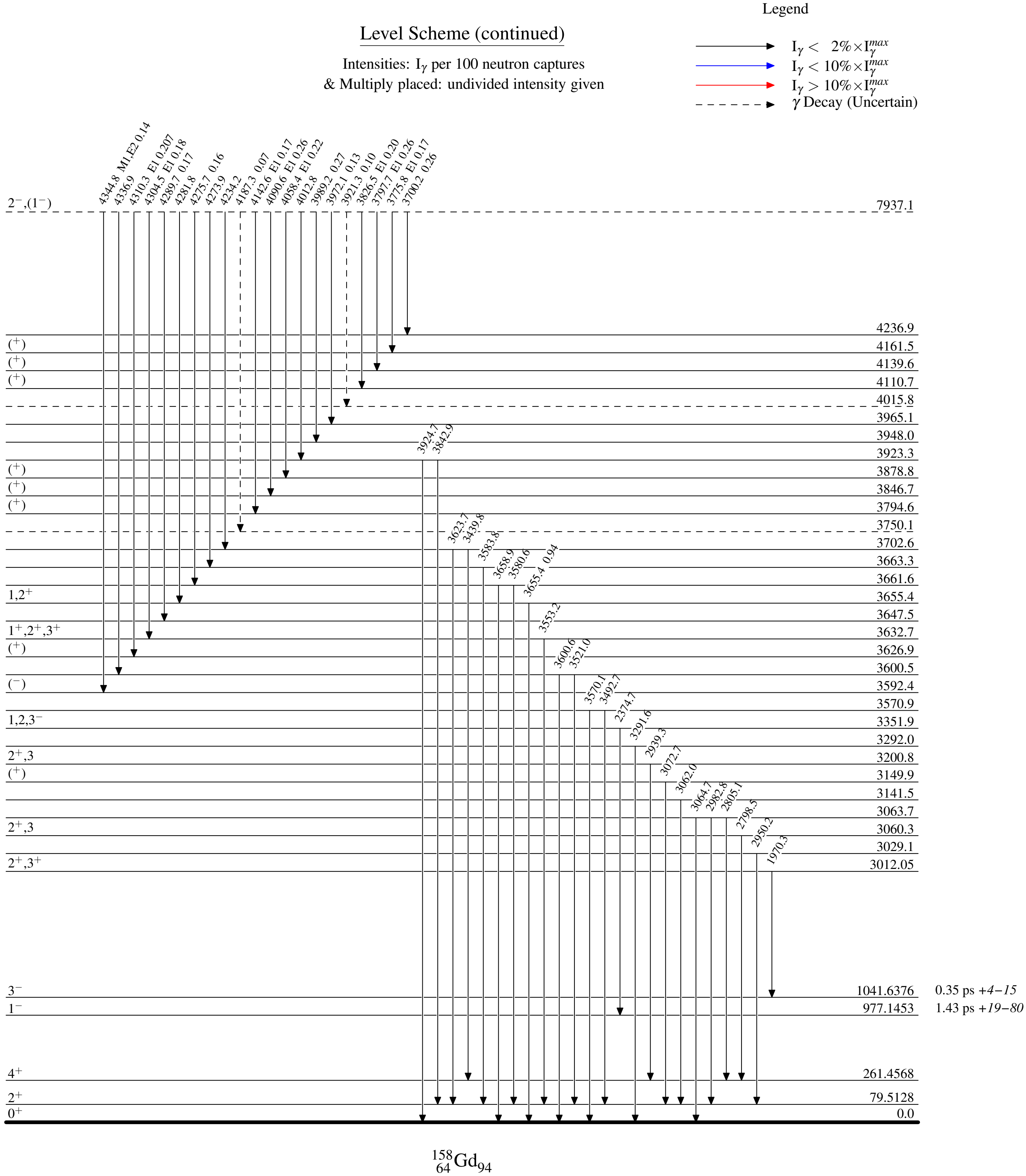


$^{158}_{64}Gd_{94}$

^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10

Level Scheme (continued)

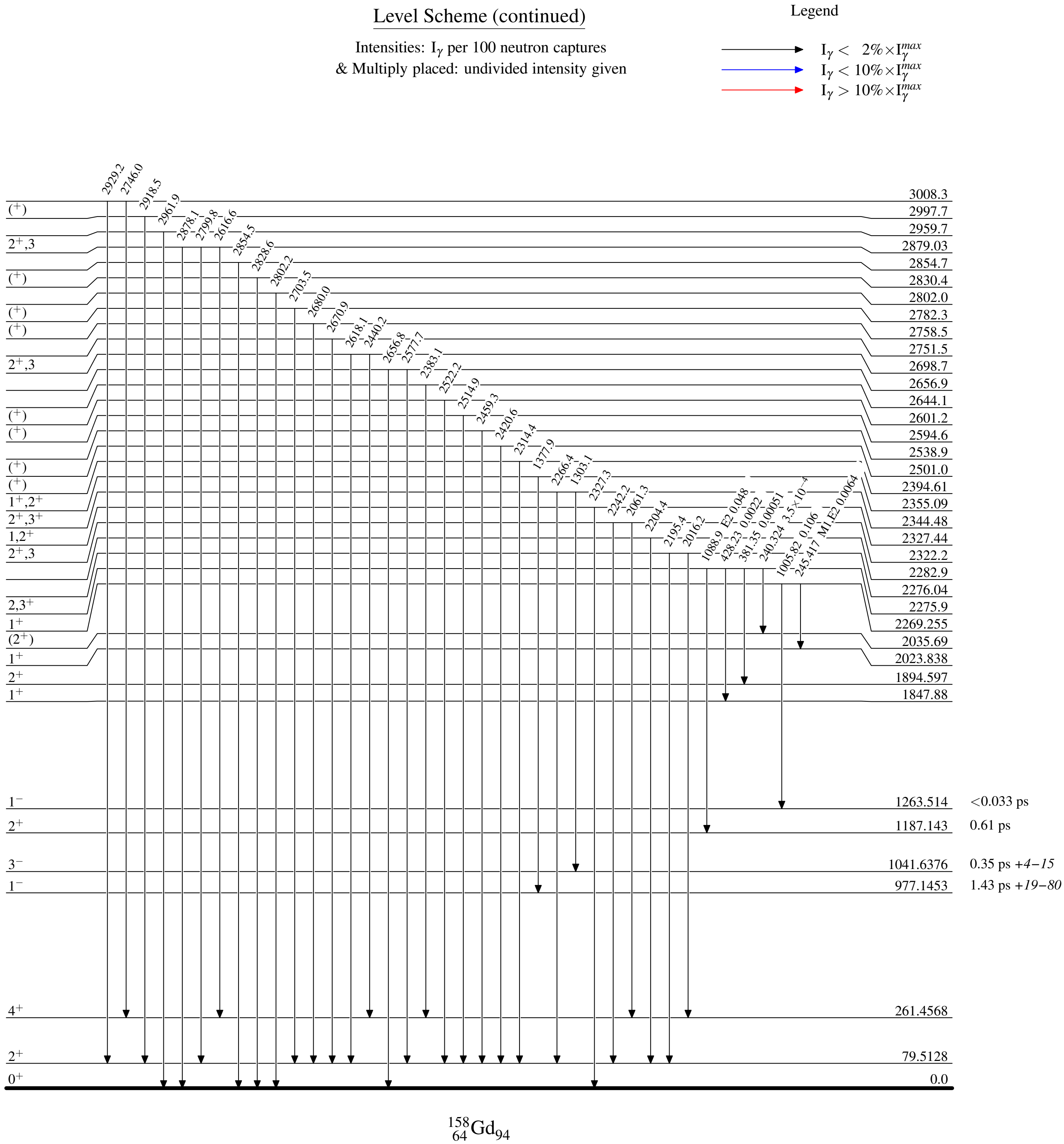
Intensities: I_γ per 100 neutron captures
& Multiply placed: undivided intensity given



^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10

Level Scheme (continued)

Intensities: I_γ per 100 neutron captures
& Multiply placed: undivided intensity given

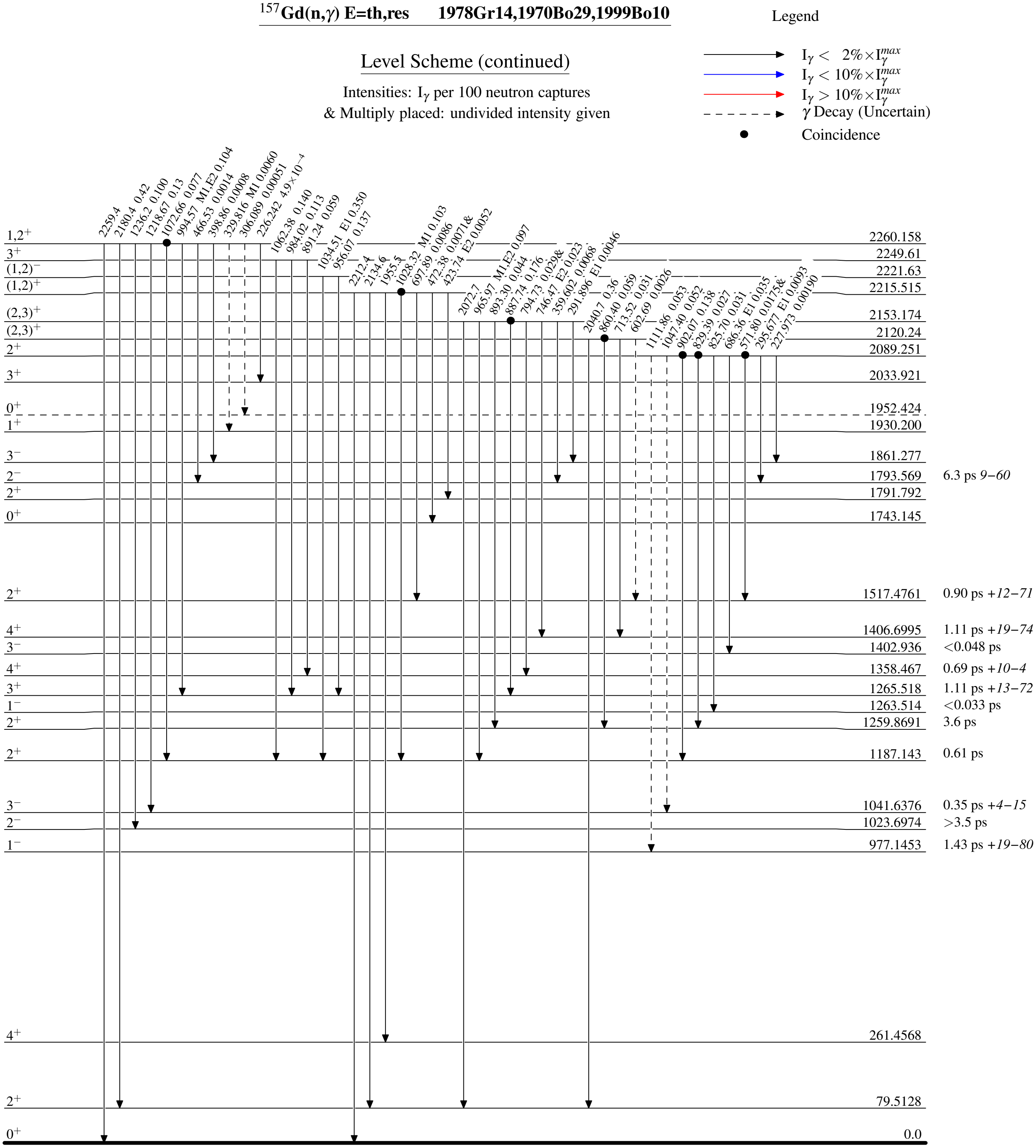


^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10

Level Scheme (continued)

Intensities: I_γ per 100 neutron captures

& Multiply placed: undivided intensity given



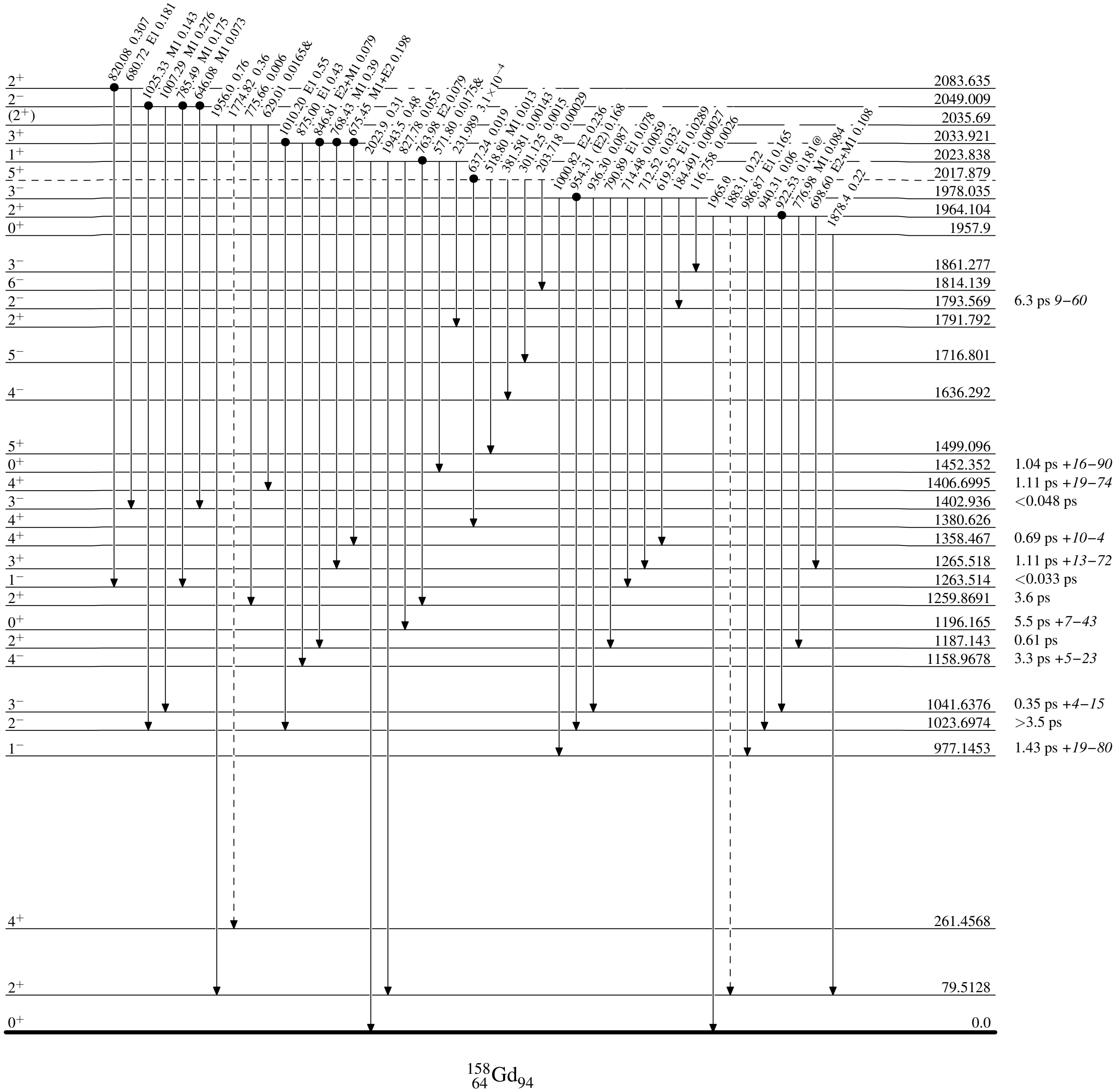
$^{158}_{64}Gd_{94}$

^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10

Level Scheme (continued)

Intensities: I_γ per 100 neutron captures
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)
Coincidence



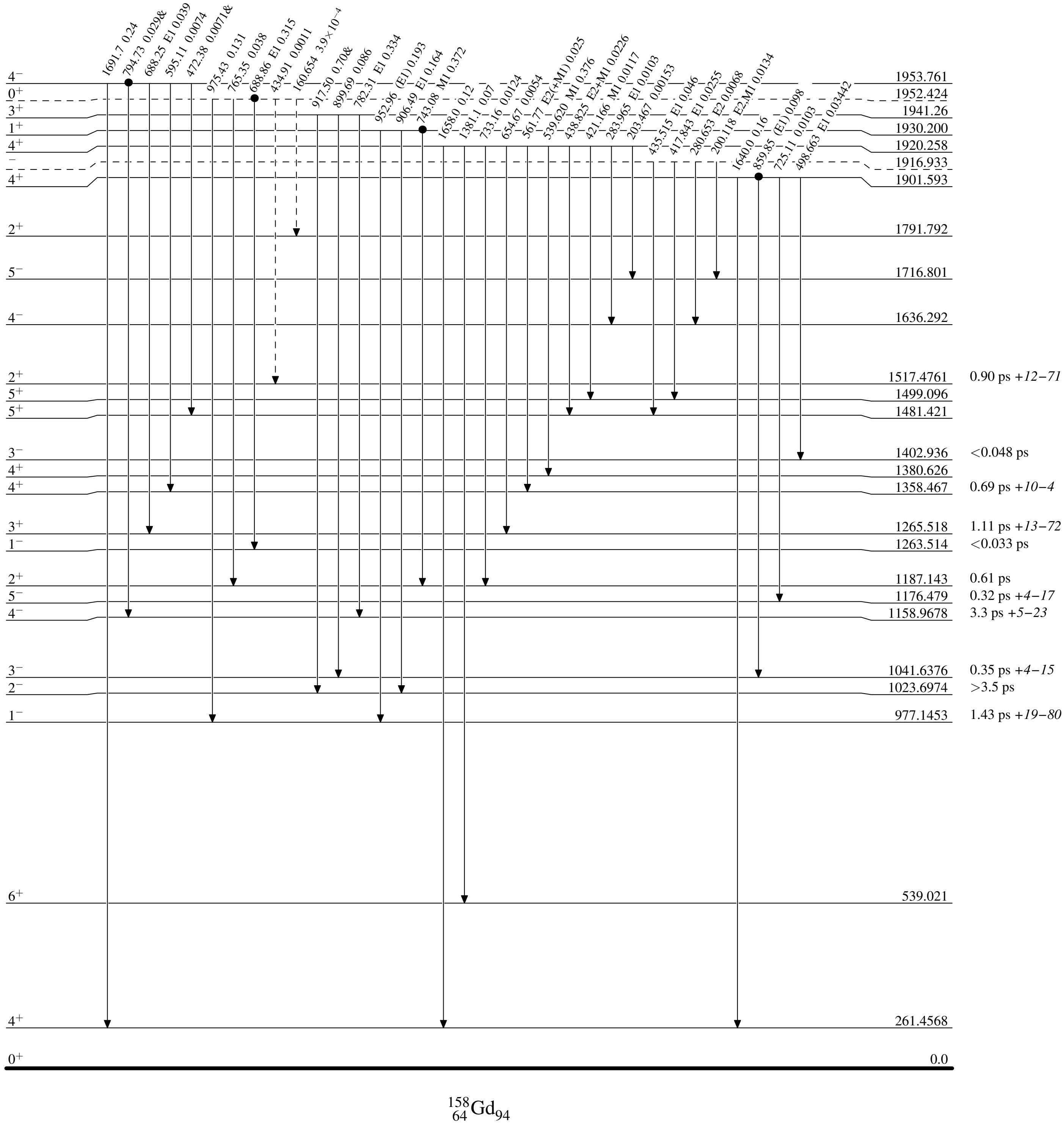
^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10

Level Scheme (continued)

Intensities: I_γ per 100 neutron captures
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

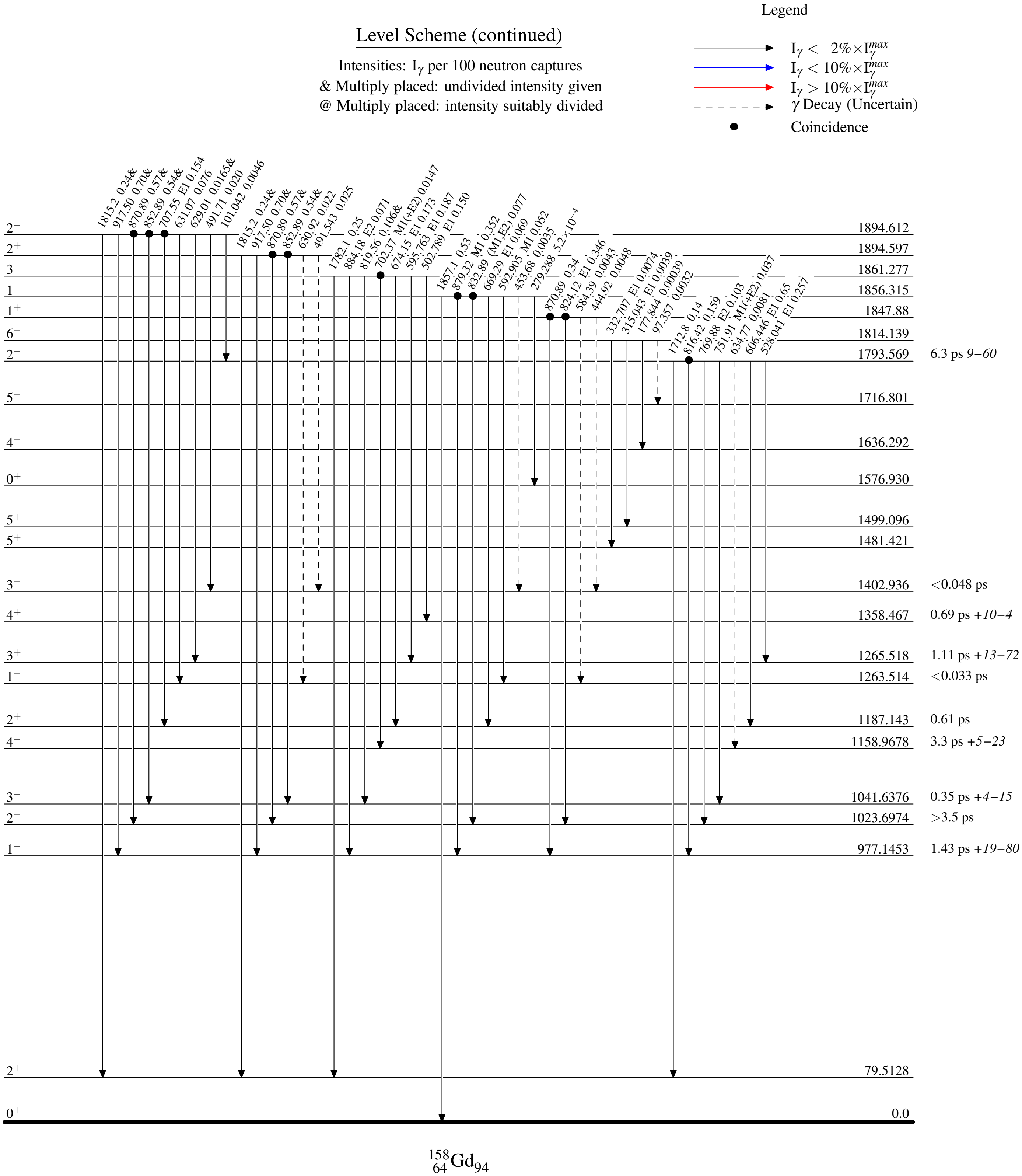
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)
- Coincidence



^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10

Level Scheme (continued)

Intensities: I_γ per 100 neutron captures
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



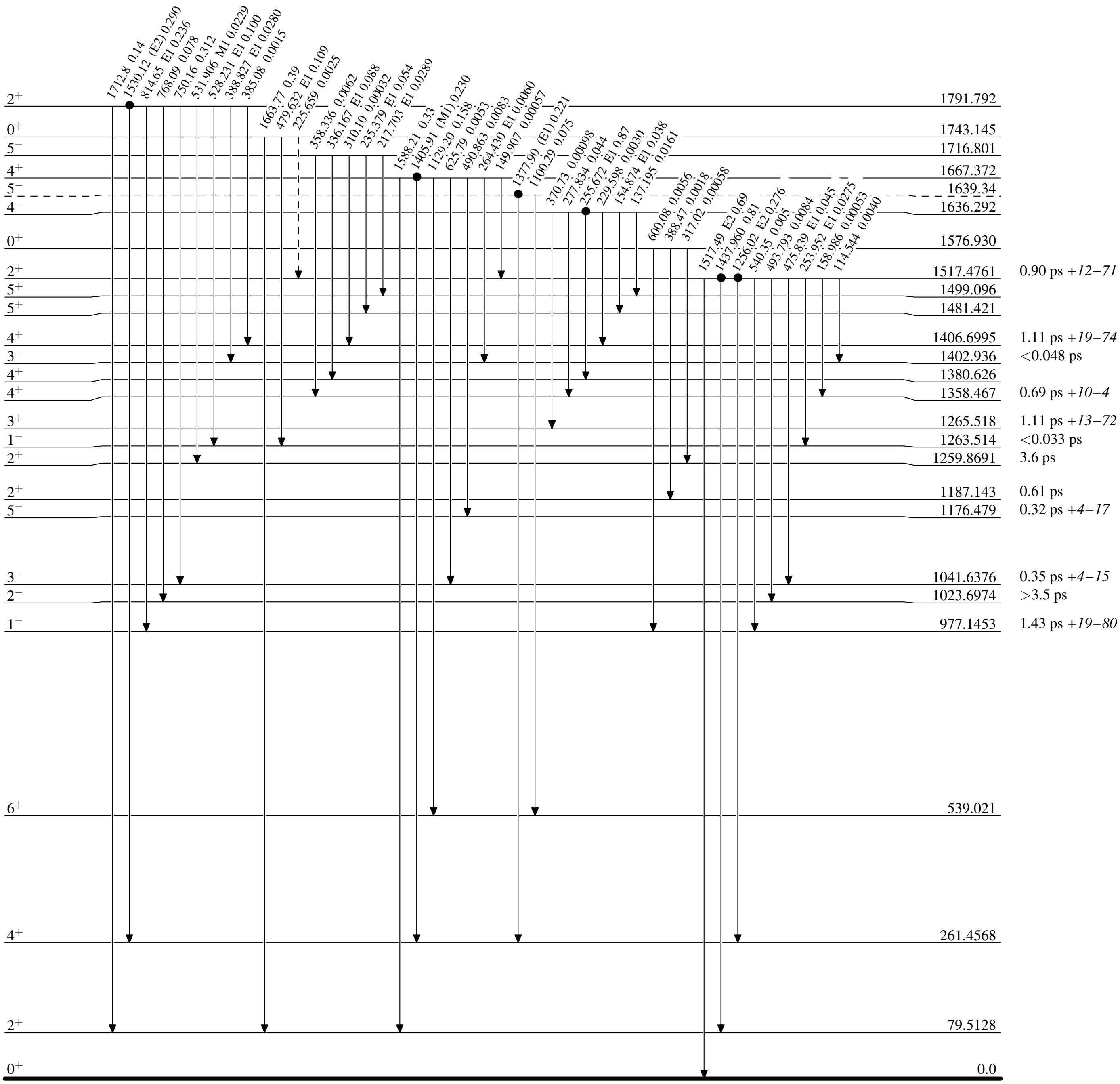
^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10

Level Scheme (continued)

Intensities: I_γ per 100 neutron captures
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)
- Coincidence

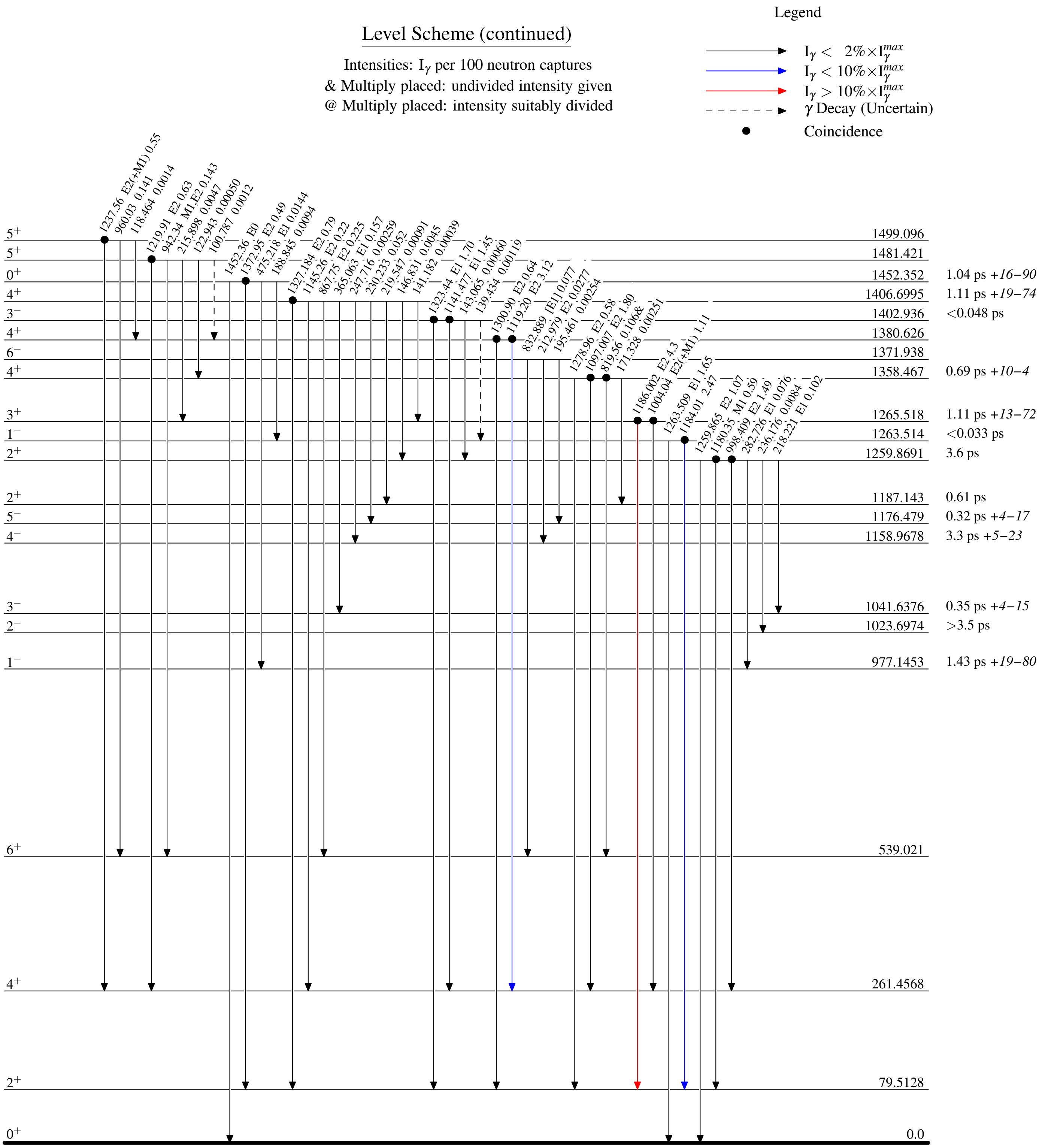


$^{158}_{64}Gd_{94}$

^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10

Level Scheme (continued)

Intensities: I_γ per 100 neutron captures
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



$^{158}_{64}Gd_{94}$

^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10

Level Scheme (continued)

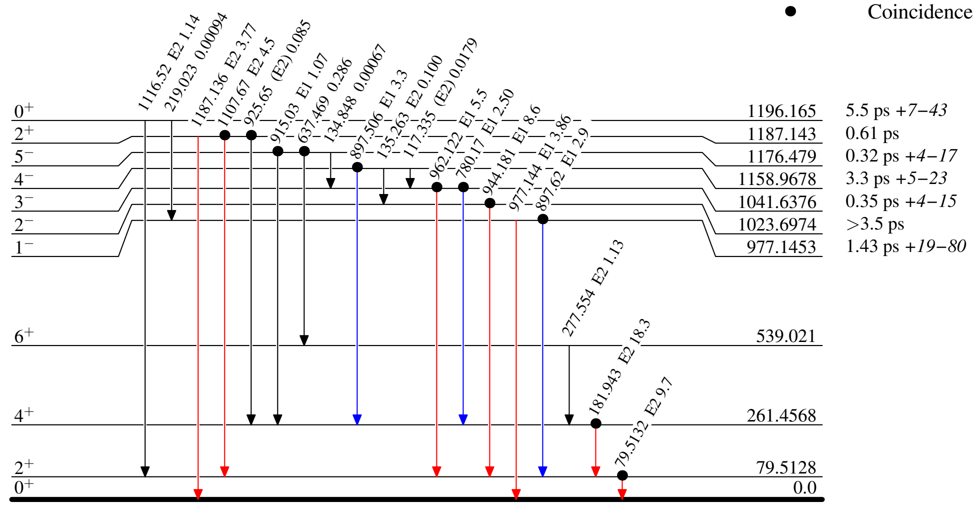
Intensities: I_γ per 100 neutron captures

& Multiply placed: undivided intensity given

@ Multiply placed: intensity suitably divided

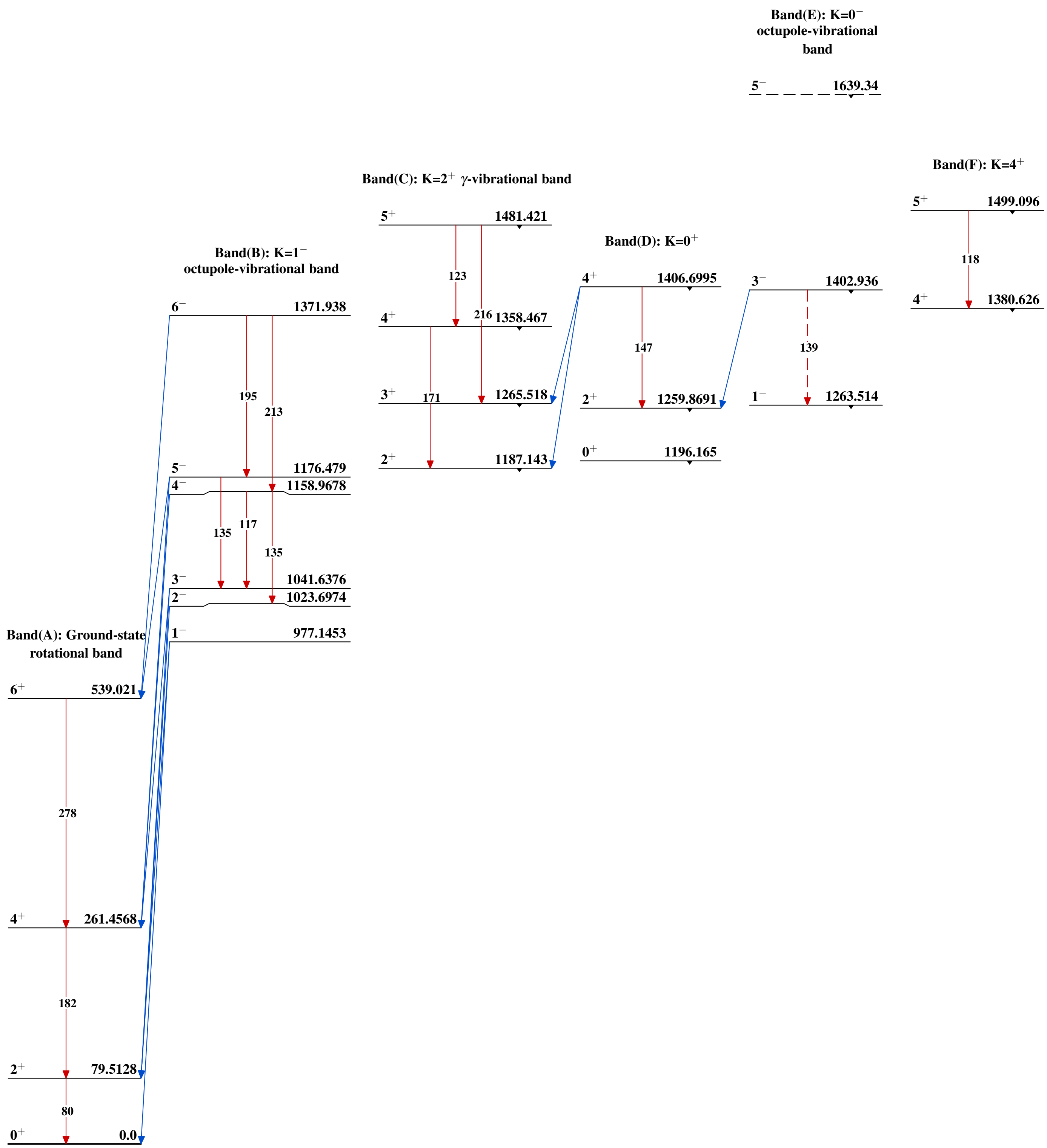
Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$ (black arrow)
- $I_\gamma < 10\% \times I_\gamma^{max}$ (blue arrow)
- $I_\gamma > 10\% \times I_\gamma^{max}$ (red arrow)
- ● Coincidence



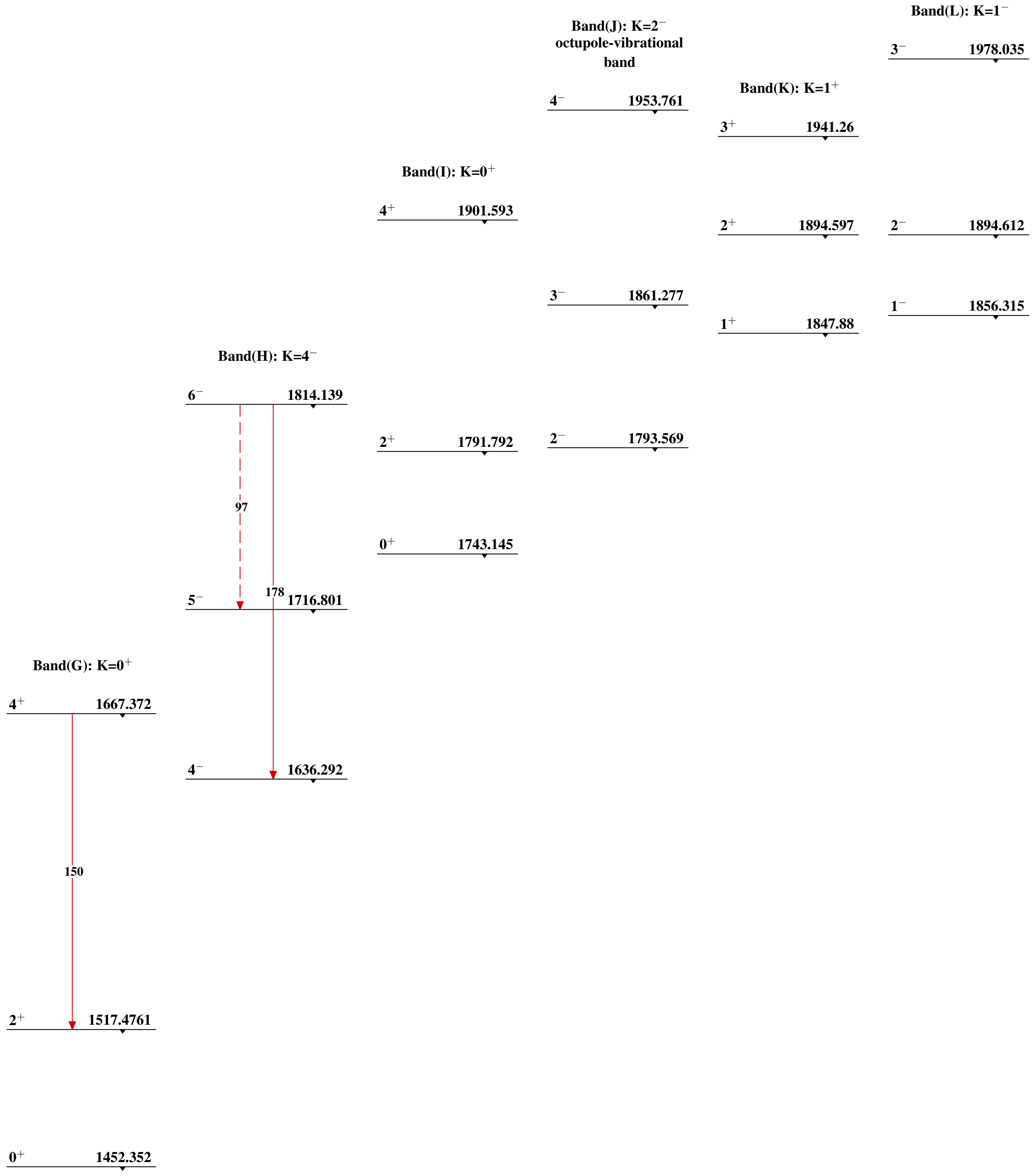
$^{158}_{64}Gd_{94}$

^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10



$^{158}_{64}Gd_{94}$

$^{157}Gd(n,\gamma)$ E=th,res 1978Gr14,1970Bo29,1999Bo10 (continued)



$^{158}_{64}Gd_{94}$

^{157}Gd(n,γ) E=th,res 1978Gr14,1970Bo29,1999Bo10 (continued)