^{157}Gd(n,n′γ) 2003Bo25

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 132, 1 (2016)	4-Dec-2015

Data from this paper was originally compiled for the XUNDL database by M. Lee and B. Singh, McMaster University (Sept. 2003). Reaction studied with fast reactor neutrons; measured Eγ, Iγ, and γγ using Ge detectors.

^{157}Gd Levels

E(level)[†]	Jπ[‡]	Comments
0.0[#]	3/2⁻	
54.440[#] *25*	5/2⁻	
64.03[@] *3*	5/2⁺	
115.84[@] *3*	7/2⁺	
131.39[#] *3*	7/2⁻	
180.29[@] *4*	9/2⁺	
226.82[#] *3*	9/2⁻	
272.32[@] *4*	11/2⁺	
347.01[#] *4*	11/2⁻	
361.10[@] *10*	13/2⁺	
426.60[c] *5*	11/2⁻	
434.55[&] *3*	5/2⁻	
474.71[d] *3*	3/2⁺	
478.45[#] *5*	13/2⁻	
509.00[@] *12*	15/2⁺	
514.76[&] *4*	7/2⁻	
524.94[d] *3*	5/2⁺	
579.46[c] *9*	(13/2⁻)	
607.56[d] *4*	7/2⁺	Jπ: Assignment in Adopted Levels is 7/2,5/2⁺.
617.48[&] *4*	9/2⁻	
640.31[#] *9*	15/2⁻	
664.53[d] *5*	9/2⁺	
682.86[e] *4*	1/2⁺	
683.21[f] *5*	3/2⁺	
686.78[f] *4*	5/2⁺	Jπ: Assignment in Adopted Levels is 5/2⁺,7/2⁺.
701.36[a] *3*	1/2⁻	
729.16[a] *3*	3/2⁻	
741.80[f] *6*	9/2⁺	
751.60[e] *5*	3/2⁺	
762.73[g] *3*	3/2⁻	
771.37[f] *5*	7/2⁺	
788.48[a] *4*	5/2⁻	
793.67[h] *5*	1/2⁻	Jπ: Assignment in Adopted Levels is 1/2⁻,3/2⁻.
801.2[#] *5*	17/2⁻	
806.77[d] *12*	11/2⁺	
809.07[h] *4*	3/2⁻	
814.23[g] *5*	5/2⁻	
816.54[e] *6*	5/2⁺	
840.47[a] *7*	7/2⁻	

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^{157}Gd(n,n′γ) 2003Bo25 (continued)

^{157}Gd Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	Comments
887.91[h] *6*	5/2$^-$	
919.45[e] *5*	7/2$^+$	J$^{\pi}$: Assignment in Adopted Levels is 5/2$^+$,7/2,9/2$^-$.
1041.71 *15*		J$^{\pi}$: Assignment in Adopted Levels is 1/2$^-$,3/2$^-$.
1049.99 *7*	5/2,(7/2)	J$^{\pi}$: No assignment in Adopted Levels.
1059.75 *8*	5/2$^-$	J$^{\pi}$: Assignment in Adopted Levels is 3/2,5/2.
1231.53[b] *6*	7/2$^{(+)}$	J$^{\pi}$: Assignment in Adopted Levels is 5/2$^+$,7/2,9/2$^+$.
1247.53 *13*		J$^{\pi}$: Assignment in Adopted Levels is 1/2,3/2$^+$.

[†] From least-squares fit to Eγ′s by evaluator.
[‡] From authors; significant differences with assignments in Adopted Levels are noted.
[#] Band(A): ν3/2[521].
[@] Band(B): ν5/2[642].
[&] Band(C): ν5/2[523].
[a] Band(D): ν1/2[521].
[b] Band(E): ν7/2[633].
[c] Band(F): ν11/2[505].
[d] Band(G): ν3/2[402].
[e] Band(H): ν1/2[400].
[f] Band(I): ν3/2[651].
[g] Band(J): ν3/2[532].
[h] Band(K): ν1/2[530].

γ(^{157}Gd)

E$_{\gamma}$	I$_{\gamma}$[†]	E$_i$(level)	J$_i^{\pi}$	E$_f$	J$_f^{\pi}$
77.2 *3*		131.39	7/2$^-$	54.440	5/2$^-$
91.96 *8*	27.6 *13*	272.32	11/2$^+$	180.29	9/2$^+$
95.47 *25*	28.3 *15*	226.82	9/2$^-$	131.39	7/2$^-$
116.28 *15*	4.4 *3*	180.29	9/2$^+$	64.03	5/2$^+$
120.12 *5*	18.2 *9*	347.01	11/2$^-$	226.82	9/2$^-$
131.42 *4*	26.3 *14*	131.39	7/2$^-$	0.0	3/2$^-$
147.93 *11*	5.4 *9*	509.00	15/2$^+$	361.10	13/2$^+$
152.86 *7*	10.6 *6*	579.46	(13/2$^-$)	426.60	11/2$^-$
156.50 *4*	16.0 *8*	272.32	11/2$^+$	115.84	7/2$^+$
161.55 *22*	2.6 *4*	686.78	5/2$^+$	524.94	5/2$^+$
172.37 *2*	42.2 *21*	226.82	9/2$^-$	54.440	5/2$^-$
180.84 *10*	30.0 *15*	361.10	13/2$^+$	180.29	9/2$^+$
208.18 *3*	23.8 *12*	682.86	1/2$^+$	474.71	3/2$^+$
215.63 *2*	29.3 *14*	347.01	11/2$^-$	131.39	7/2$^-$
226.5 *4*	2 *5*	741.80	9/2$^+$	514.76	7/2$^-$
236.62 *16*	8.0 *4*	509.00	15/2$^+$	272.32	11/2$^+$
238.49 *19*	3.1 *2*	762.73	3/2$^-$	524.94	5/2$^+$
246.31 *2*	32.4 *16*	426.60	11/2$^-$	180.29	9/2$^+$
251.63 *3*	15.1 *8*	478.45	13/2$^-$	226.82	9/2$^-$
284.44 *11*	4.3 *2*	809.07	3/2$^-$	524.94	5/2$^+$
288.06 *5*	7.9 *4*	762.73	3/2$^-$	474.71	3/2$^+$
293.30 *8*	4.9 *3*	640.31	15/2$^-$	347.01	11/2$^-$
[x]309.33 *13*	2.9 *2*				
318.72 *2*	31.4 *17*	434.55	5/2$^-$	115.84	7/2$^+$

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^{157}Gd(n,n′γ) 2003Bo25 (continued)

γ(^{157}Gd) (continued)

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π
322.7 *5*	≈0.7	801.2	17/2$^-$	478.45	13/2$^-$
328.8 *4*	≈0.8	762.73	3/2$^-$	434.55	5/2$^-$
334.16[‡] *12*	22.4[‡] *11*	809.07	3/2$^-$	474.71	3/2$^+$
339.16 *12*	3.7 *2*	814.23	5/2$^-$	474.71	3/2$^+$
344.37 *13*	3.4 *2*	524.94	5/2$^+$	180.29	9/2$^+$
345.16 *6*	8.8 *5*	617.48	9/2$^-$	272.32	11/2$^+$
358.93[@] *15*	2.6[@] *2*	474.71	3/2$^+$	115.84	7/2$^+$
358.93[@&] *15*	2.6[@] *2*	793.67	1/2$^-$	434.55	5/2$^-$
370.48 *2*	100 *5*	434.55	5/2$^-$	64.03	5/2$^+$
380.38[@] *6*	7.7[@] *12*	434.55	5/2$^-$	54.440	5/2$^-$
380.38[@] *6*	7.7[@] *12*	607.56	7/2$^+$	226.82	9/2$^-$
392.19 *4*	20.0 *10*	664.53	9/2$^+$	272.32	11/2$^+$
393.61 *16*	4.0 *20*	524.94	5/2$^+$	131.39	7/2$^-$
398.91 *3*	31.8 *16*	514.76	7/2$^-$	115.84	7/2$^+$
409.13 *3*	90 *5*	524.94	5/2$^+$	115.84	7/2$^+$
410.71 *3*	143 *7*	474.71	3/2$^+$	64.03	5/2$^+$
420.18 *7*	8.1 *4*	474.71	3/2$^+$	54.440	5/2$^-$
427.32 *3*	38.8 *19*	607.56	7/2$^+$	180.29	9/2$^+$
434.49 *12*	3.2 *2*	434.55	5/2$^-$	0.0	3/2$^-$
437.06 *6*	7.8 *4*	617.48	9/2$^-$	180.29	9/2$^+$
[x]442.03 *10*	3.9 *2*				
450.74 *3*	31.6 *16*	514.76	7/2$^-$	64.03	5/2$^+$
460.94 *3*	27.0 *14*	524.94	5/2$^+$	64.03	5/2$^+$
474.58 *6*	28.3 *14*	474.71	3/2$^+$	0.0	3/2$^-$
491.60 *7*	8.9 *6*	607.56	7/2$^+$	115.84	7/2$^+$
501.70 *4*	18.2 *12*	617.48	9/2$^-$	115.84	7/2$^+$
524.88 *6*	7.1 *4*	524.94	5/2$^+$	0.0	3/2$^-$
533.18 *14*	3.3 *19*	664.53	9/2$^+$	131.39	7/2$^-$
534.45 *11*	3.9 *14*	806.77	11/2$^+$	272.32	11/2$^+$
543.43 *12*	2.9 *3*	607.56	7/2$^+$	64.03	5/2$^+$
548.83 *12*	2.6 *3*	664.53	9/2$^+$	115.84	7/2$^+$
553.03 *7*	6.7 *4*	607.56	7/2$^+$	54.440	5/2$^-$
561.40 *5*	11.4 *6*	741.80	9/2$^+$	180.29	9/2$^+$
567.03 *15*	5.9 *7*	683.21	3/2$^+$	115.84	7/2$^+$
570.94 *4*	36.6 *19*	686.78	5/2$^+$	115.84	7/2$^+$
584.92[&] *21*	2.3 *2*	1059.75	5/2$^-$	474.71	3/2$^+$
591.07 *5*	14.3 *7*	771.37	7/2$^+$	180.29	9/2$^+$
[x]606.52 *7*	9.4 *5*				
[x]608.45 *5*	15.2 *10*				
613.20 *21*	2.8 *3*	840.47	7/2$^-$	226.82	9/2$^-$
615.40[&] *11*	7.1 *4*	1049.99	5/2,(7/2)	434.55	5/2$^-$
[x]617.47 *16*	7.7 *4*				
619.20 *4*	71 *4*	683.21	3/2$^+$	64.03	5/2$^+$
622.75 *5*	17.9 *9*	686.78	5/2$^+$	64.03	5/2$^+$
626.19 *7*	11.0 *6*	741.80	9/2$^+$	115.84	7/2$^+$
[x]633.00 *17*	1.8 *1*				
635.78 *18*	1.8 *1*	751.60	3/2$^+$	115.84	7/2$^+$
[x]637.35 *11*	3.5 *2*				
647.57[&] *17*	1.2 *2*	919.45	7/2$^+$	272.32	11/2$^+$
655.56 *5*	16.6 *8*	771.37	7/2$^+$	115.84	7/2$^+$
657.07 *4*	16.6 *9*	788.48	5/2$^-$	131.39	7/2$^-$
674.65 *4*	48.1 *24*	729.16	3/2$^-$	54.440	5/2$^-$
682.80 *5*	11.1 *6*	682.86	1/2$^+$	0.0	3/2$^-$
685.14[&] *10*	4.6 *2*	816.54	5/2$^+$	131.39	7/2$^-$

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^{157}Gd(n,n′γ) 2003Bo25 (continued)

γ(^{157}Gd) (continued)

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π
687.56 *4*	39.2 *19*	751.60	$3/2^+$	64.03	$5/2^+$
698.32 *10*	7.6 *4*	814.23	$5/2^-$	115.84	$7/2^+$
700.56 *19*	4.9 *3*	816.54	$5/2^+$	115.84	$7/2^+$
701.36 *3*	45.0 *23*	701.36	$1/2^-$	0.0	$3/2^-$
[x]703.98 *9*	7.3 *4*				
707.26 *11*	4.7 *3*	771.37	$7/2^+$	64.03	$5/2^+$
717.1 *3*	2.5 *3*	771.37	$7/2^+$	54.440	$5/2^-$
[x]719.77 *5*	9.1 *5*				
722.59[&] *12*	3.1 *2*	1247.53		524.94	$5/2^+$
[x]726.18 *23*	2.0 *1*				
729.23 *4*	22.4 *12*	729.16	$3/2^-$	0.0	$3/2^-$
734.05 *4*	30.6 *16*	788.48	$5/2^-$	54.440	$5/2^-$
739.20 *10*	5.3 *6*	793.67	$1/2^-$	54.440	$5/2^-$
750.32 *9*	16.7 *8*	814.23	$5/2^-$	64.03	$5/2^+$
752.55 *8*	11.3 *6*	816.54	$5/2^+$	64.03	$5/2^+$
754.59 *4*	30.1 *15*	809.07	$3/2^-$	54.440	$5/2^-$
759.88 *22*	2.6 *2*	814.23	$5/2^-$	54.440	$5/2^-$
762.70 *3*	39.1 *20*	762.73	$3/2^-$	0.0	$3/2^-$
[x]784.99 *8*	10.2 *6*				
785.90 *9*	8.6 *4*	840.47	$7/2^-$	54.440	$5/2^-$
788.48 *6*	11.0 *6*	788.48	$5/2^-$	0.0	$3/2^-$
[x]791.20 *21*	2.3 *2*				
793.67 *5*	15.1 *8*	793.67	$1/2^-$	0.0	$3/2^-$
[x]801.01 *8*	9.4 *5*				
803.35 *5*	8.6 *7*	919.45	$7/2^+$	115.84	$7/2^+$
809.12 *6*	7.0 *4*	809.07	$3/2^-$	0.0	$3/2^-$
814.29 *6*	7.9 *5*	814.23	$5/2^-$	0.0	$3/2^-$
816.50 *9*	5.4 *3*	816.54	$5/2^+$	0.0	$3/2^-$
[x]829.82 *13*	6.1 *9*				
833.19 *13*	7.8 *14*	887.91	$5/2^-$	54.440	$5/2^-$
[x]838.31 *16*	7.7 *5*				
840.68 *9*	14.2 *18*	840.47	$7/2^-$	0.0	$3/2^-$
[x]852.58 *24*	2.3 *7*				
865.22 *5*	10.8 *7*	919.45	$7/2^+$	54.440	$5/2^-$
887.97 *6*	7.1 *4*	887.91	$5/2^-$	0.0	$3/2^-$
[x]927.82 *22*	2.4 *2*				
[x]930.9 *4*	2.1 *4*				
934.17 *11*	8.2 *4*	1049.99	5/2,(7/2)	115.84	$7/2^+$
[x]948.6 *3*	2.2 *7*				
[x]982.7 *5*	1.4 *7*				
985.96 *8*	16.8 *9*	1049.99	5/2,(7/2)	64.03	$5/2^+$
[x]988.3 *4*	3.1 *2*				
996.13 *14*	6.3 *11*	1059.75	$5/2^-$	64.03	$5/2^+$
[x]997.28 *22*	3.4 *2*				
[x]1021.00 *25*	2.5 *1*				
[x]1036.04 *9*	8.2 *4*				
1041.71 *15*	8.1 *4*	1041.71		0.0	$3/2^-$
[x]1046.30 *22*	4.3 *3*				
[x]1048.70 *15*	5.0 *3*				
1051.24[#] *10*	7.1 *4*	1231.53	$7/2^{(+)}$	180.29	$9/2^+$
1059.53 *11*	5.2 *7*	1059.75	$5/2^-$	0.0	$3/2^-$
[x]1061.10 *11*	6.2 *9*				
[x]1112.46 *23*	3.7 *4*				
[x]1116.35 *4*	8.2 *15*				
[x]1149.4 *4*	1.4 *2*				
[x]1153.57 *15*	4.5 *6*				

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^{157}Gd(n,n′γ) 2003Bo25 (continued)

γ(^{157}Gd) (continued)

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π
[x]1156.2 *3*	1.9 *4*				
[x]1158.91 *15*	3.9 *5*				
1167.26 *6*	12.0 *11*	1231.53	$7/2^{(+)}$	64.03	$5/2^+$
[x]1207.63 *24*	5.0 *6*				
[x]1218.66 *18*	7.2 *5*				

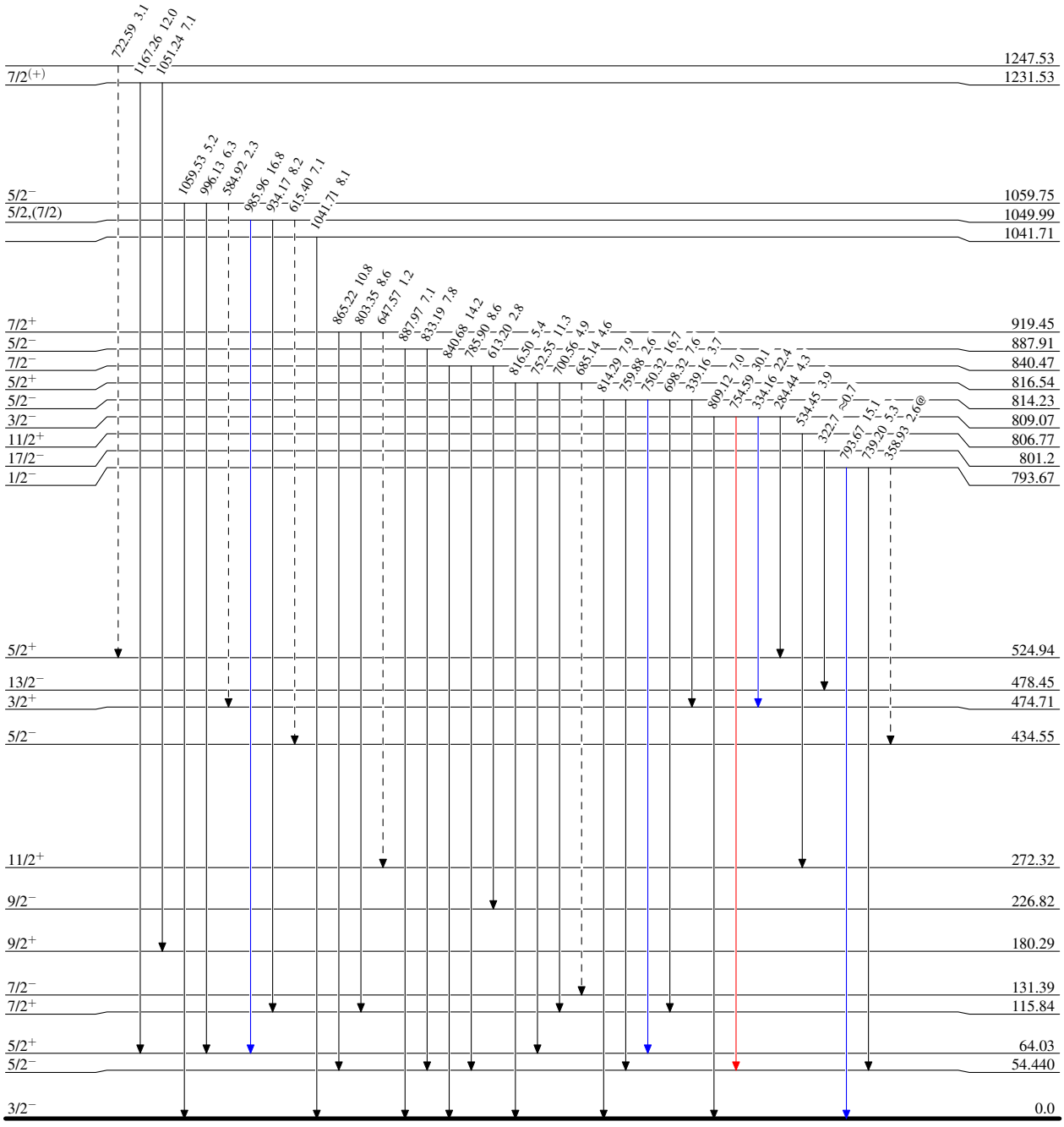
[†] Relative intensities.
[‡] Authors indicate double placement, but do not specify a second one.
[#] From level-energy difference; authors give 1051.88 *10* which may indicate peak is a doublet.
[@] Multiply placed with intensity suitably divided.
[&] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

^{157}Gd(n,n′γ) 2003Bo25

Level Scheme

Intensities: Type not specified
@ 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)



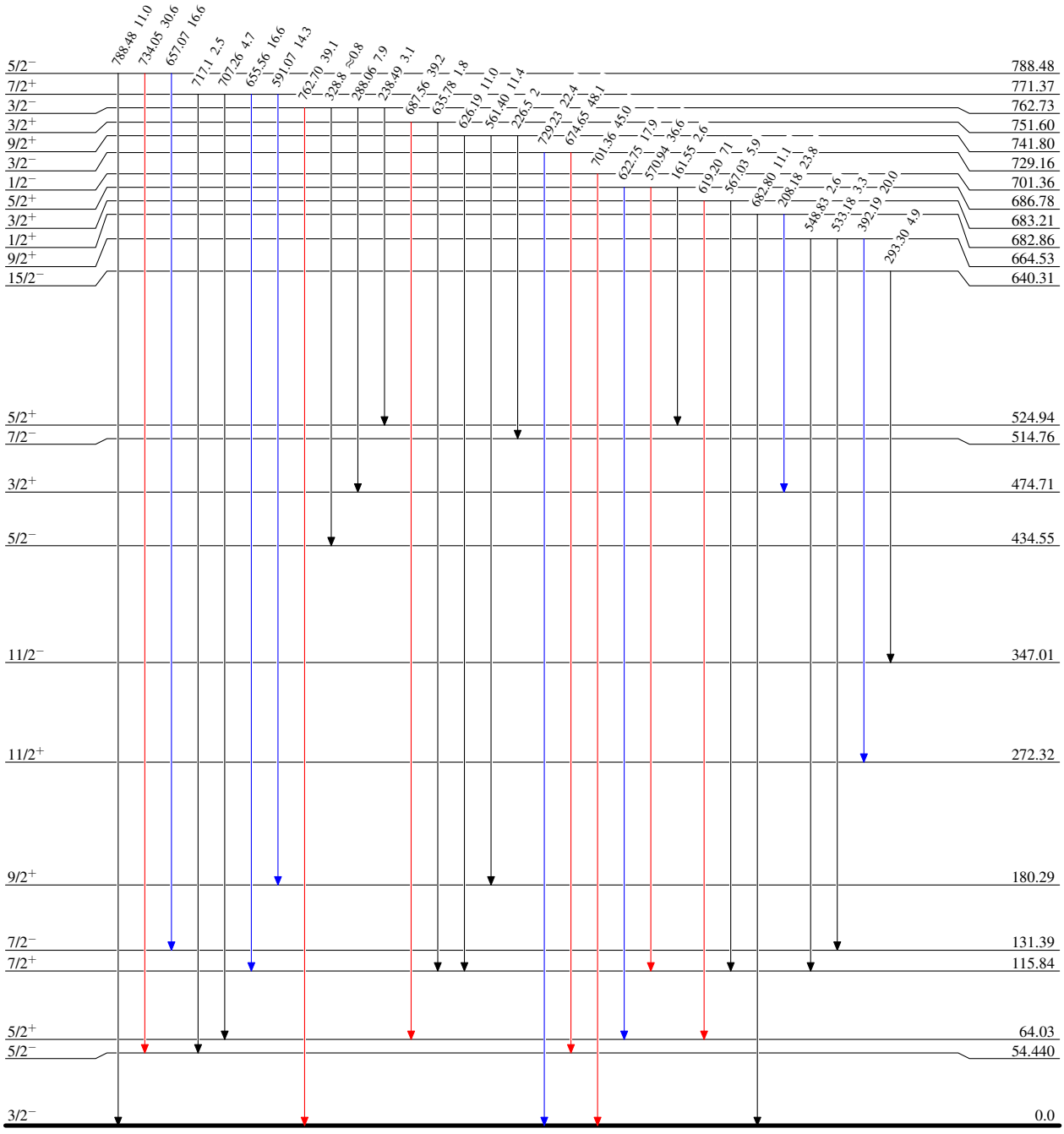
$^{157}_{64}Gd_{93}$

^{157}Gd(n,n′γ) 2003Bo25

Level Scheme (continued)

Intensities: Type not specified
@ Multiply placed: intensity suitably divided

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



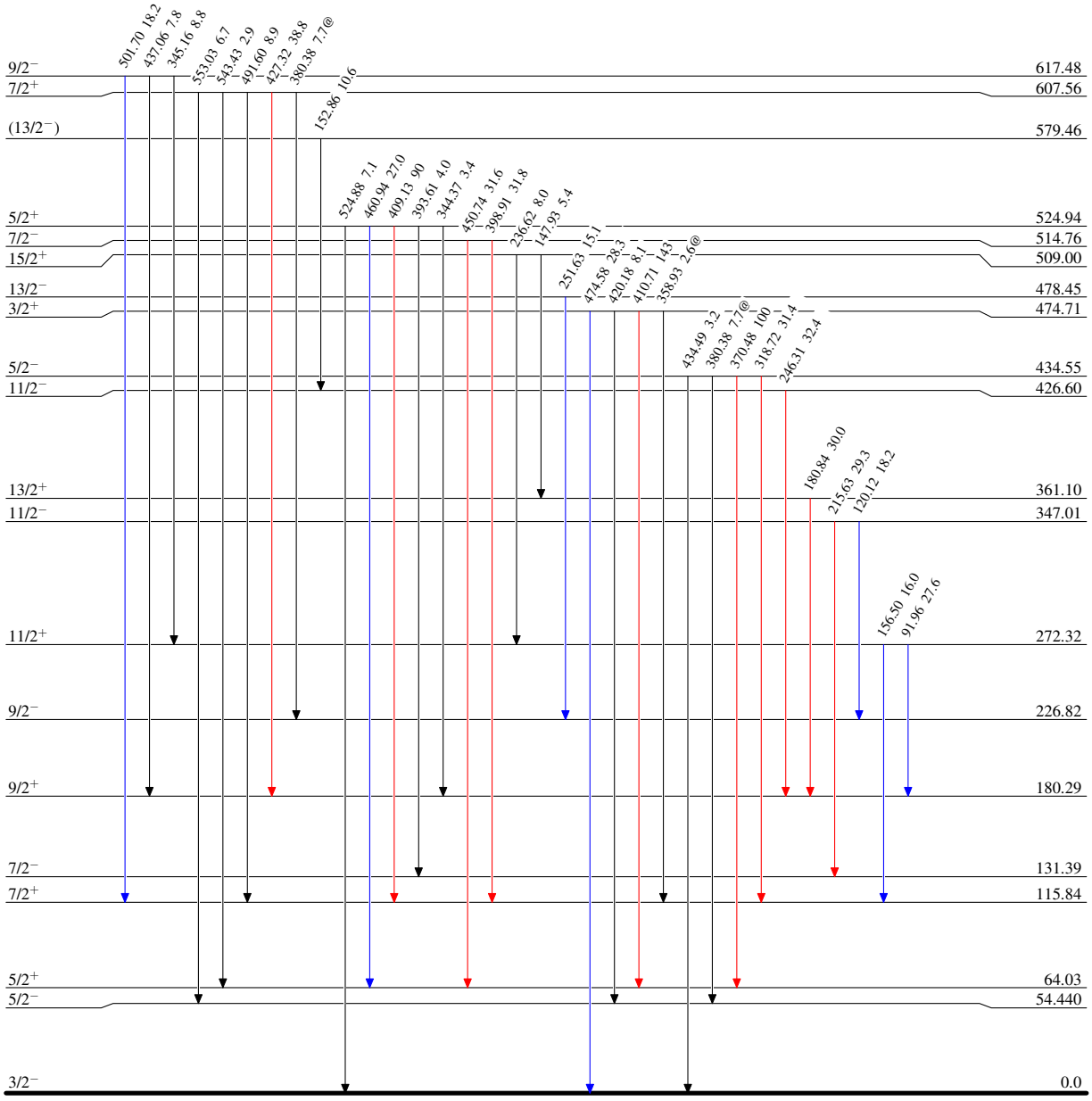
$^{157}_{64}Gd_{93}$

^{157}Gd(n,n′γ) 2003Bo25

Level Scheme (continued)

Intensities: Type not specified
@ Multiply placed: intensity suitably divided

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



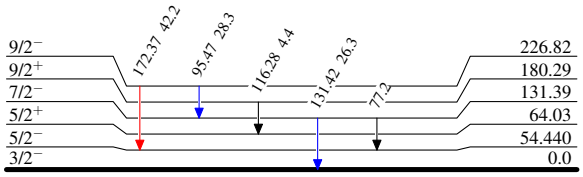
$^{157}_{64}Gd_{93}$

^{157}Gd(n,n′γ) 2003Bo25

Level Scheme (continued)

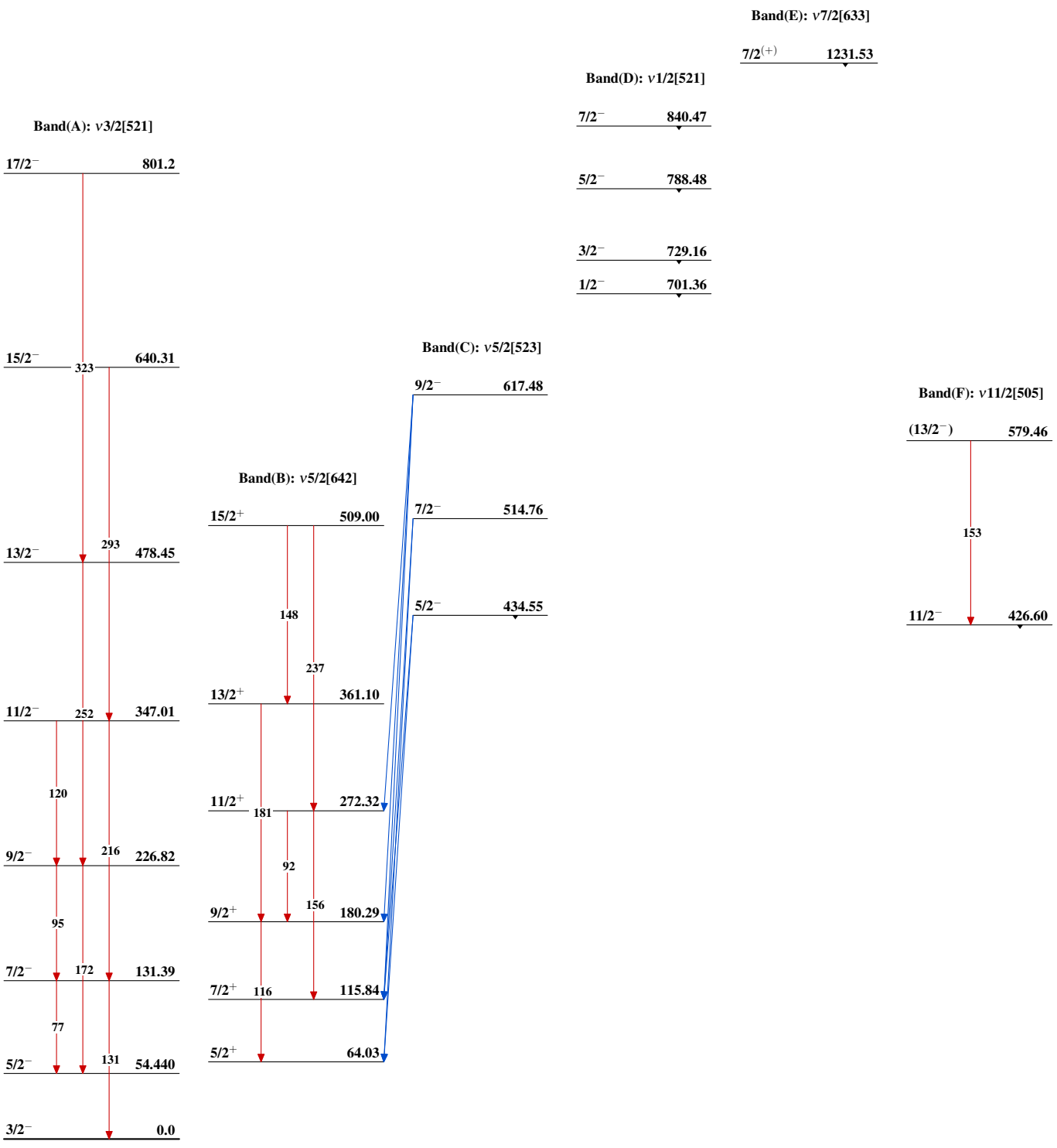
Intensities: Type not specified
@ Multiply placed: intensity suitably divided

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



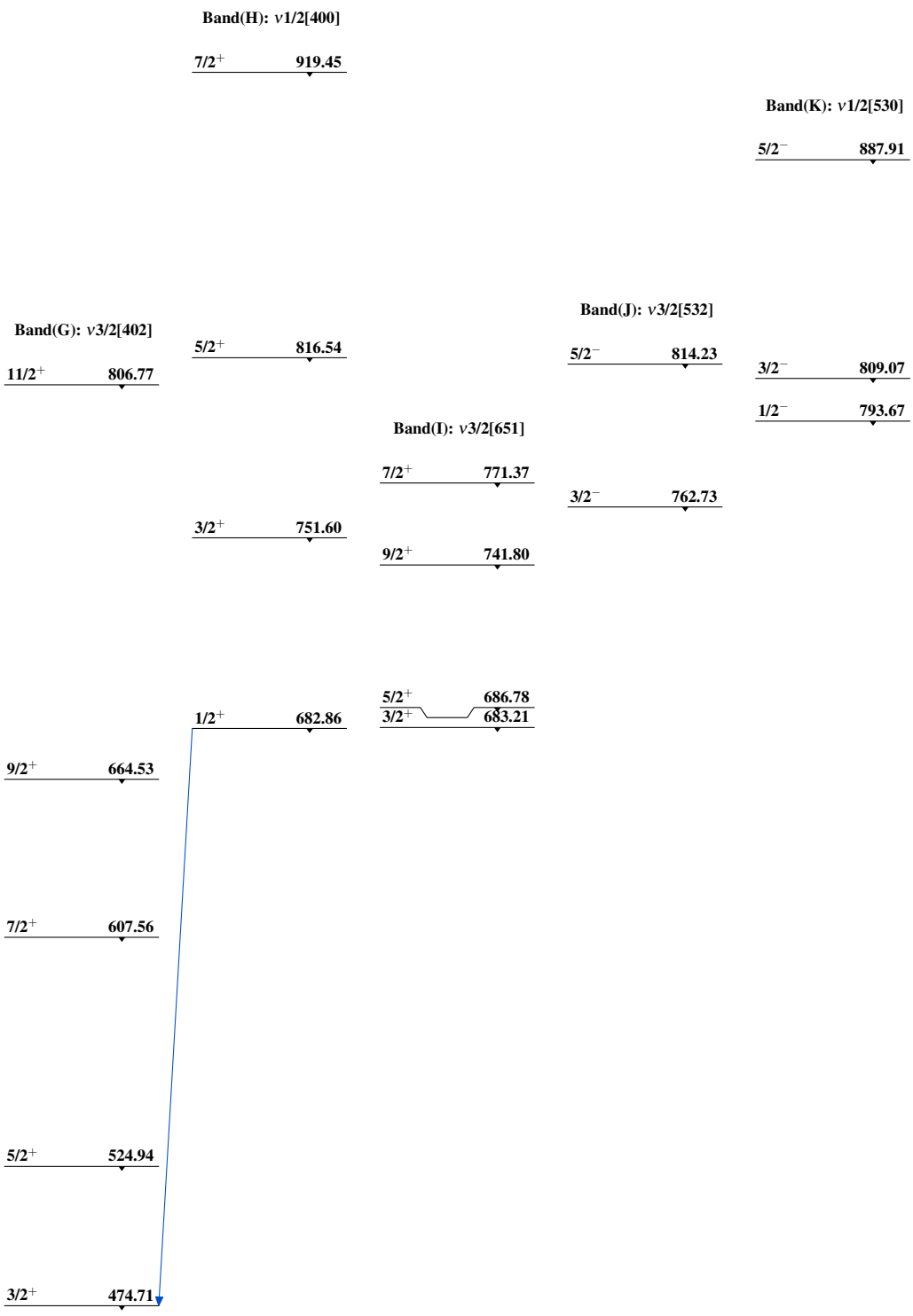
$^{157}_{64}Gd_{93}$

^{157}Gd(n,n′γ) 2003Bo25



$^{157}_{64}Gd_{93}$

^{157}Gd(n,n′γ) 2003Bo25 (continued)



$^{157}_{64}Gd_{93}$