

$^{156}\text{Gd}(n,\gamma)$ E=th 2003Bo25,1971Gr42

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For primary γ 's, E_γ and I_γ measured by 1971Gr42 and 2003Bo25, and for secondary γ 's E_γ and I_γ measured by 2003Bo25.

Data are from 2003Bo25, unless noted otherwise.

A dataset for the paper 2003Bo25 was originally compiled for the XUNDL database by M. Lee and B. Singh, McMaster University in October 2003.

 ^{157}Gd Levels

E(level) [†]	J ^π [‡]	Comments
0.0@	3/2 ⁻	
54.48@ 3	5/2 ⁻	
63.84@ 3	5/2 ⁺	
115.57& 4	7/2 ⁺	
131.45@ 10	7/2 ⁻	
180.15& 7	9/2 ⁺	
228.12@ 24	9/2 ⁻	
272.25& 21	11/2 ⁺	
434.40 ^a 4	5/2 ⁻	
474.59 ^d 3	3/2 ⁺	
514.69 ^a 7	7/2 ⁻	
524.76 ^d 4	5/2 ⁺	
566 [#] 1		
607.49 ^d 7	7/2 ⁺	J ^π : Assignment in Adopted Levels is 7/2,5/2 ⁺ .
682.83 ^e 4	1/2 ⁺	
683.05 ^f 5	3/2 ⁺	
686.53 ^f 5	5/2 ⁺	J ^π : Assignment in Adopted Levels is 5/2 ⁺ ,7/2 ⁺ .
696 [#] 2		
701.40 ^b 3	1/2 ⁻	
729.21 ^b 3	3/2 ⁻	
739 [#] 2		
751.25 ^e 4	3/2 ⁺	
762.73 ^g 3	3/2 ⁻	
771.40 ^f 11	7/2 ⁺	
788.53 ^b 5	5/2 ⁻	
793.65 ^h 4	1/2 ⁻	J ^π : Assignment in Adopted Levels is 1/2 ⁻ ,3/2 ⁻ .
809.11 ^h 3	3/2 ⁻	
814.04 ^g 4	5/2 ⁻	
816.25 ^e 5	5/2 ⁺	
827 [#] 1		
841.06 ^b 9	7/2 ⁻	
875 [#] 2		
919.96 ^e 9	7/2 ⁺	J ^π : Assignment in Adopted Levels is (1/2 ⁺ ,7/2,9/2 ⁻).
952 [#] 1		
974.1 4	(1/2,3/2) ⁺	
1041.26 5	(1/2,3/2) ⁻	
1049.98 5	5/2,(7/2)	J ^π : No assignment in Adopted Levels.
1059.70 10	5/2	J ^π : Assignment in Adopted Levels is 3/2,5/2.

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$^{156}\text{Gd}(\text{n},\gamma)$ E=th **2003Bo25,1971Gr42** (continued) ^{157}Gd Levels (continued)

E(level) [†]	J π [‡]	Comments
1063 [#] 1		
1093.0 4	(1/2,3/2) ⁺	
1156.6 4	(1/2,3/2) ⁺	J π : Assignment in Adopted Levels is 5/2 ⁺ .
1231.36 ^c 8	7/2 ⁽⁺⁾	J π : Assignment in Adopted Levels is 5/2 ⁺ , 7/2, 9/2 ⁺ .
1247.16 7	(1/2,3/2) ⁺	
1282.3 3	(1/2,3/2)	
1316.37 6	(1/2 ⁻ , 3/2 ⁻)	
1349.07 6	(1/2,3/2) ⁻	
1387.05 5	(1/2,3/2)	
1486.6 5	(1/2,3/2)	
1490.05 5	(1/2,3/2)	
1521.27 17	(1/2 ⁻ , 3/2 ⁻)	
1526.12 6	(1/2,3/2)	
1539.8 5	(1/2,3/2) ⁺	
1568.33 19	(1/2 ⁺ , 3/2 ⁺)	
1589.68 12	(1/2,3/2)	
1614.04 8	(1/2,3/2) ⁻	
1658.68 10	(1/2,3/2) ⁻	
1667.65 11	(1/2 ⁻ , 3/2 ⁻)	
1717.7 3	(1/2,3/2) ⁻	
1738.4 4	(1/2,3/2) ⁻	
1750.2 4	(1/2,3/2)	
1798.6 5	(1/2,3/2) ⁻	
1824.37 9	(1/2,3/2)	
1844.93 9	(1/2,3/2)	
1856.3 4	(1/2,3/2)	
1867.92 16	(1/2,3/2)	
1889.2 8	(1/2,3/2)	
1919.0 5	(1/2,3/2)	
1927.46 8	(1/2,3/2)	
1936.3 4	(1/2,3/2)	
1951.7 6	(1/2,3/2)	
1956.2 4	(1/2,3/2)	
1973.6 4	(1/2,3/2)	
1984.2 4	(1/2,3/2)	
1991.4 4	(1/2,3/2)	
1995.6 5	(1/2,3/2)	
2039.6 5	(1/2,3/2)	
2044.7 5	(1/2,3/2)	
2051.5 4	(1/2,3/2)	
(6359.86 5)	1/2 ⁺	E(level): from 2003Bo25 ; compared to 6359.86 15 from mass evaluation (2012Wa38). J π : from s-wave capture on 0 ⁺ state.

[†] From least-squares fit to E $_{\gamma}$'s with the capture-state energy fixed.

[‡] From authors (**2003Bo25**); significant differences from the the assignments in Adopted Levels are noted.

[#] From primary γ reported only by **1971Gr42**.

@ Band(A): $\nu 3/2[521]$.

& Band(B): $\nu 5/2[642]$.

^a Band(C): $\nu 5/2[523]$.

^b Band(D): $\nu 1/2[521]$.

^c Band(E): $\nu 7/2[633]$.

^d Band(F): $\nu 3/2[402]$.

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$^{156}\text{Gd}(n,\gamma)$ E=th 2003Bo25,1971Gr42 (continued) ^{157}Gd Levels (continued)^e Band(G): $\nu 1/2[400]$.^f Band(H): $\nu 3/2[651]$.^g Band(I): $\nu 3/2[532]$.^h Band(J): $\nu 1/2[530]$. $\gamma(^{157}\text{Gd})$

E_γ [†]	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
63.70 13	207 41	63.84	5/2 ⁺	0.0	3/2 ⁻
208.24 3	58.0 17	682.83	1/2 ⁺	474.59	3/2 ⁺
284.3 7	8 6	809.11	3/2 ⁻	524.76	5/2 ⁺
288.1 3	15.6 6	762.73	3/2 ⁻	474.59	3/2 ⁺
318.89 6	43 3	434.40	5/2 ⁻	115.57	7/2 ⁺
334.69 15	9.2 17	809.11	3/2 ⁻	474.59	3/2 ⁺
339.21 14	8.5 15	814.04	5/2 ⁻	474.59	3/2 ⁺
358.90 17		474.59	3/2 ⁺	115.57	7/2 ⁺
358.90 17	6.3 13	793.65	1/2 ⁻	434.40	5/2 ⁻
^x 366.5 3	4.6 14				
370.55 2	100 1	434.40	5/2 ⁻	63.84	5/2 ⁺
393.2 3	5.7 10	524.76	5/2 ⁺	131.45	7/2 ⁻
399.03 14	9.8 16	514.69	7/2 ⁻	115.57	7/2 ⁺
409.17 3	97.9 19	524.76	5/2 ⁺	115.57	7/2 ⁺
410.75 2	313 3	474.59	3/2 ⁺	63.84	5/2 ⁺
^x 412.46 9	17.6 17				
420.11 9	16.3 18	474.59	3/2 ⁺	54.48	5/2 ⁻
427.39 6	21.6 15	607.49	7/2 ⁺	180.15	9/2 ⁺
450.86 6	11.6 7	514.69	7/2 ⁻	63.84	5/2 ⁺
460.96 4	35.3 17	524.76	5/2 ⁺	63.84	5/2 ⁺
491.87 6	13.3 8	607.49	7/2 ⁺	115.57	7/2 ⁺
524.81 12	10.8 15	524.76	5/2 ⁺	0.0	3/2 ⁻
560.91 @ 5	19.3 8	1247.16	(1/2,3/2) ⁺	686.53	5/2 ⁺
567.12 16	10 3	683.05	3/2 ⁺	115.57	7/2 ⁺
570.96 4	46.5 9	686.53	5/2 ⁺	115.57	7/2 ⁺
584.92 @ 12	9.8 12	1059.70	5/2	474.59	3/2 ⁺
591.10 13	6.7 9	771.40	7/2 ⁺	180.15	9/2 ⁺
^x 606.54 7	9.0 5				
^x 608.45 5	17.0 7				
612.94 22	4.2 9	841.06	7/2 ⁻	228.12	9/2 ⁻
614.98 @ 10	9.0 9	1049.98	5/2,(7/2)	434.40	5/2 ⁻
^x 618.31 19	18 7				
619.21 4	170 5	683.05	3/2 ⁺	63.84	5/2 ⁺
^x 620.7 3	6.4 17				
622.70 5	25.8 10	686.53	5/2 ⁺	63.84	5/2 ⁺
625.31 25	3.2 8	1059.70	5/2	434.40	5/2 ⁻
628.78 11	5.4 6	683.05	3/2 ⁺	54.48	5/2 ⁻
^x 632.78 8	7.4 5				
635.84 9	7.7 7	751.25	3/2 ⁺	115.57	7/2 ⁺
^x 637.34 12	6.0 7				
647.75 @ 19	5.5 10	919.96	7/2 ⁺	272.25	11/2 ⁺
655.5 4	9 3	771.40	7/2 ⁺	115.57	7/2 ⁺
657.10 10	31 3	788.53	5/2 ⁻	131.45	7/2 ⁻
674.70 4	138 3	729.21	3/2 ⁻	54.48	5/2 ⁻
^x 676.4 3	9 3				
682.84 5	25.0 10	682.83	1/2 ⁺	0.0	3/2 ⁻

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$^{156}\text{Gd}(n,\gamma) \text{E=th}$ **2003Bo25,1971Gr42 (continued)** $\gamma(^{157}\text{Gd})$ (continued)

E_γ †	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
684.65 @ 20	5.1 9	816.25	5/2 ⁺	131.45	7/2 ⁻	
687.56 4	90.3 9	751.25	3/2 ⁺	63.84	5/2 ⁺	
^x 689.42 16	5.8 8					
696.62 @ 19	7.7 12	751.25	3/2 ⁺	54.48	5/2 ⁻	
698.30 9	15.1 12	814.04	5/2 ⁻	115.57	7/2 ⁺	
701.41 3	140 3	701.40	1/2 ⁻	0.0	3/2 ⁻	
^x 703.75 6	18.1 9					
707.85 16	5.1 8	771.40	7/2 ⁺	63.84	5/2 ⁺	
^x 719.74 16	6.8 11					
722.55 @ 10	14.7 13	1247.16	(1/2,3/2) ⁺	524.76	5/2 ⁺	
729.25 4	66.0 6	729.21	3/2 ⁻	0.0	3/2 ⁻	
734.05 4	38.8 8	788.53	5/2 ⁻	54.48	5/2 ⁻	
739.18 7	6.3 4	793.65	1/2 ⁻	54.48	5/2 ⁻	
^x 744.81 14	4.6 6					
^x 747.83 11	6.2 6					
750.16 5	19.5 6	814.04	5/2 ⁻	63.84	5/2 ⁺	
752.23 5	20.9 6	816.25	5/2 ⁺	63.84	5/2 ⁺	
754.62 3	100 10	809.11	3/2 ⁻	54.48	5/2 ⁻	
^x 756.95 5	15.4 6					
759.62 10	10.5 9	814.04	5/2 ⁻	54.48	5/2 ⁻	
762.73 3	88.9 9	762.73	3/2 ⁻	0.0	3/2 ⁻	
^x 765.29 11	8.6 8					
772.62 8	11.0 8	1247.16	(1/2,3/2) ⁺	474.59	3/2 ⁺	
^x 785.2 3	6.8 17					
^x 790.64 25	5.0 11					
793.65 4	75.8 15	793.65	1/2 ⁻	0.0	3/2 ⁻	
^x 795.6 4	5.7 16					
^x 801.14 13	9.1 11					
^x 805.65 11	4.6 4					
809.12 4	24.0 5	809.11	3/2 ⁻	0.0	3/2 ⁻	
814.19 6	9.1 4	814.04	5/2 ⁻	0.0	3/2 ⁻	
816.71 8	5.4 4	816.25	5/2 ⁺	0.0	3/2 ⁻	E_γ : level-energy difference=816.31.
^x 825.25 8	11.6 8					
^x 827.65 8	7.7 5					
^x 829.77 24	3.4 6					
^x 831.40 5	16.9 7					
^x 836.46 22	3.9 6					
^x 838.44 11	6.2 5					
841.06 9	10.9 9	841.06	7/2 ⁻	0.0	3/2 ⁻	
^x 862.56 8	7.6 5					
865.48 8	8.0 5	919.96	7/2 ⁺	54.48	5/2 ⁻	
^x 899.84 9	7.8 6					
^x 912.69 6	10.4 5					
^x 920.42 11	4.4 4					
^x 931.02 10	12.4 11					
934.44 3	145 2	1049.98	5/2,(7/2)	115.57	7/2 ⁺	
^x 982.85 5	49.4 2					
985.87 8	25.4 2	1049.98	5/2,(7/2)	63.84	5/2 ⁺	E_γ : level-energy difference=986.14.
^x 988.0 4	5.3 15					
^x 1021.57 9	6.8 5					
^x 1026.28 11	5.7 5					
^x 1028.47 9	7.6 5					
^x 1035.89 4	18.2 6					
1041.26 5	19.6 6	1041.26	(1/2,3/2) ⁻	0.0	3/2 ⁻	
1051.17 7	9.5 6	1231.36	7/2 ⁽⁺⁾	180.15	9/2 ⁺	

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$^{156}\text{Gd}(n,\gamma)$ E=th **2003Bo25,1971Gr42** (continued) $\gamma(^{157}\text{Gd})$ (continued)

E_γ †	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
1059.69 10	10.6 11	1059.70	5/2	0.0	3/2 ⁻
^x 1073.80 9	11.4 8				
^x 1086.49 11	12.3 15				
^x 1109.90 18	16.6 20				
^x 1112.2 5	5.6 18				
^x 1121.68 9	6.7 5				
^x 1125.05 9	6.8 5				
^x 1131.99 6	11.7 5				
1167.57 9	8.7 6	1231.36	7/2 ⁽⁺⁾	63.84	5/2 ⁺
^x 1207.37 9	11.2 7				
^x 1209.79 19	4.3 6				
^x 1218.76 6	12.1 5				
1247.10 10	10.7 8	1247.16	(1/2,3/2) ⁺	0.0	3/2 ⁻
^x 1268.6 3	16 [‡] 4				
^x 1283.22 5	36.5 [‡] 11				
1285.20 6	23.6 [‡] 9	1349.07	(1/2,3/2) ⁻	63.84	5/2 ⁺
^x 1305.06 11	6.5 [‡] 5				
^x 1310.3 4	3.6 [‡] 10				
1316.38 6	23.2 [‡] 7	1316.37	(1/2 ⁻ ,3/2 ⁻)	0.0	3/2 ⁻
^x 1318.93 22	4.4 [‡] 7				
1330.22 6	29.2 [‡] 9	1844.93	(1/2,3/2)	514.69	7/2 ⁻
1349.18 13	12.6 [‡] 11	1349.07	(1/2,3/2) ⁻	0.0	3/2 ⁻
^x 1351.3 4	6.8 [‡] 12				
^x 1364.36 10	5.3 [‡] 4				
^x 1368.64 6	16.3 [‡] 5				
1387.05 5	34.9 [‡] 7	1387.05	(1/2,3/2)	0.0	3/2 ⁻
^x 1389.78 14	9.2 [‡] 7				
^x 1395.48 13	4.9 [‡] 5				
^x 1402.34 11	7.5 [‡] 5				
^x 1423.61 24	5.7 [‡] 7				
^x 1425.68 24	4.1 [‡] 7				
^x 1431.1 5	10 [‡] 3				
1435.59 9	8.6 [‡] 5	1490.05	(1/2,3/2)	54.48	5/2 ⁻
^x 1448.01 10	7.5 [‡] 5				
1457.44 17	3.9 [‡] 5	1521.27	(1/2 ⁻ ,3/2 ⁻)	63.84	5/2 ⁺
^x 1460.57 11	7.1 [‡] 5				
^x 1466.66 16	8.4 [‡] 8				
^x 1468.44 15	8.4 [‡] 9				
^x 1472.29 14	4.8 [‡] 5				
1482.56 20	5.5 [‡] 8	1614.04	(1/2,3/2) ⁻	131.45	7/2 ⁻
1490.03 6	22.1 [‡] 7	1490.05	(1/2,3/2)	0.0	3/2 ⁻
1498.55 10	7.5 [‡] 5	1614.04	(1/2,3/2) ⁻	115.57	7/2 ⁺
^x 1514.49 21	3.1 [‡] 5				
^x 1523.28 10	13.7 [‡] 7				
1526.11 6	25.1 [‡] 5	1526.12	(1/2,3/2)	0.0	3/2 ⁻
^x 1549.01 20	6.0 [‡] 9				
^x 1553.33 16	7.3 [‡] 9				

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$^{156}\text{Gd}(n,\gamma)$ E=th **2003Bo25,1971Gr42** (continued) $\gamma(^{157}\text{Gd})$ (continued)

E_γ †	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
$^{x1565.4\ 4}$	3.1^{+8}_{-6}					
$^{x1569.71\ 18}$	4.3^{+6}_{-6}					
$^{x1573.15\ 22}$	4.4^{+6}_{-6}					
$^{x1575.5\ 3}$	3.0^{+6}_{-6}					
$^{x1579.3\ 4}$	3.1^{+7}_{-7}					
$^{x1582.22\ 18}$	6.5^{+8}_{-8}					
$1589.67\ 12$	16.7^{+10}_{-10}	1589.68	(1/2,3/2)	0.0	3/2 ⁻	
$^{x1592.51\ 21}$	8.1^{+11}_{-11}					
$1604.20\ 10$	6.8^{+4}_{-4}	1658.68	(1/2,3/2) ⁻	54.48	5/2 ⁻	
$1613.83\ 16$	9.3^{+11}_{-11}	1614.04	(1/2,3/2) ⁻	0.0	3/2 ⁻	
$^{x1617.71\ 17}$	7.2^{+9}_{-9}					
$^{x1619.78\ 19}$	7.1^{+8}_{-8}					
$^{x1626.31\ 14}$	5.8^{+5}_{-5}					
$^{x1637.64\ 10}$	8.5^{+5}_{-5}					
$^{x1642.31\ 13}$	5.8^{+5}_{-5}					
$^{x1647.13\ 3}$	2.9^{+6}_{-6}					
$^{x1649.31\ 18}$	6.8^{+9}_{-9}					
$^{x1649.78\ 20}$	4.5^{+6}_{-6}					
E_γ, I_γ : In 2003Bo25 , the two 1649 entries are out of order, so the intensities may be associated with the wrong energy.						
$^{x1653.7\ 3}$	4.0^{+9}_{-9}					
$^{x1656.7\ 4}$	4.4^{+11}_{-11}					
$1658.9\ 3$	6.2^{+11}_{-11}	1658.68	(1/2,3/2) ⁻	0.0	3/2 ⁻	
$^{x1662.6\ 4}$	3.3^{+9}_{-9}					
$1665.6\ 6$	3.9^{+14}_{-14}	1844.93	(1/2,3/2)	180.15	9/2 ⁺	
$1667.57\ 11$	21.1^{+15}_{-15}	1667.65	(1/2 ⁻ ,3/2 ⁻)	0.0	3/2 ⁻	
$^{x1696.1\ 3}$	10.5^{+16}_{-16}					
$^{x1705.3\ 4}$	7.4^{+19}_{-19}					
$^{x1718.79\ 16}$	6.4^{+6}_{-6}					
$^{x1729.7\ 3}$	4.1^{+9}_{-9}					
$^{x1742.55\ 21}$	5.3^{+6}_{-6}					
$^{x1744.67\ 20}$	5.1^{+6}_{-6}					
$^{x1748.13\ 23}$	3.3^{+5}_{-5}					
$^{x1750.70\ 14}$	5.7^{+5}_{-5}					
$1760.55\ 9$	13.4^{+5}_{-5}	1824.37	(1/2,3/2)	63.84	5/2 ⁺	
$^{x1789.4\ 3}$	3.4^{+6}_{-6}					
$^{x1799.16\ 10}$	10.0^{+6}_{-6}					
$1804.1\ 3$	3.7^{+6}_{-6}	1867.92	(1/2,3/2)	63.84	5/2 ⁺	
$1811.8\ 4$	7^{+3}_{-3}	1927.46	(1/2,3/2)	115.57	7/2 ⁺	
$^{x1855.94\ 15}$	7.1^{+6}_{-6}					
$^{x1859.02\ 22}$	4.5^{+6}_{-6}					
$1867.90\ 18$	6.1^{+7}_{-7}	1867.92	(1/2,3/2)	0.0	3/2 ⁻	
$^{x1876.71\ 19}$	5.3^{+6}_{-6}					
$^{x1891.65\ 14}$	8.5^{+7}_{-7}					
$^{x1897.4\ 3}$	3.5^{+7}_{-7}					
$^{x1900.57\ 21}$	6.3^{+7}_{-7}					

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$^{156}\text{Gd}(n,\gamma)$ E=th **2003Bo25,1971Gr42** (continued) $\gamma(^{157}\text{Gd})$ (continued)

E_γ †	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
1927.45 8	14.3 $^{+3}_{-4}$ 4	1927.46	(1/2,3/2)	0.0	3/2 ⁻
^x 1973.79 18	6.2 $^{+3}_{-4}$ 6				
^x 1976.71 22	5.4 $^{+3}_{-4}$ 6				
^x 1980.0 3	3.0 $^{+3}_{-4}$ 6				
^x 1983.66 12	9.2 $^{+3}_{-4}$ 6				
^x 1990.0 6	4.0 $^{+3}_{-4}$ 11				
^x 1993.26 3	5.5 $^{+3}_{-4}$ 9				
^x 1995.7 7	2.3 $^{+3}_{-4}$ 9				
^x 1998.8 3	8.1 $^{+3}_{-4}$ 19				
^x 2006.5 3	3.6 $^{+3}_{-4}$ 6				
^x 2009.2 4	3.8 $^{+3}_{-4}$ 6				
^x 2011.8 5	2.2 $^{+3}_{-4}$ 6				
^x 2034.85 16	6.0 $^{+3}_{-4}$ 5				
^x 2043.63 23	4.3 $^{+3}_{-4}$ 6				
^x 2056.2 3	2.7 $^{+3}_{-4}$ 6				
^x 2063.48 24	5.1 $^{+3}_{-4}$ 7				
^x 2072.90 9	16.3 $^{+3}_{-4}$ 7				
^x 2132.9 4	6.5 $^{+3}_{-4}$ 11				
^x 2135.33 3	7.9 $^{+3}_{-4}$ 11				
^x 2155.76 19	9.8 $^{+3}_{-4}$ 11				
4308.3 4	3.7 $^{+3}_{-4}$ 4	(6359.86)	1/2 ⁺	2051.5	(1/2,3/2)
4315.1 5	3.0 $^{+3}_{-4}$ 5	(6359.86)	1/2 ⁺	2044.7	(1/2,3/2)
4320.2 5	7.1 $^{+3}_{-4}$ 16	(6359.86)	1/2 ⁺	2039.6	(1/2,3/2)
4364.2 5	6.3 $^{+3}_{-4}$ 8	(6359.86)	1/2 ⁺	1995.6	(1/2,3/2)
4368.4 4	3.5 $^{+3}_{-4}$ 3	(6359.86)	1/2 ⁺	1991.4	(1/2,3/2)
4375.6 4	5.8 $^{+3}_{-4}$ 5	(6359.86)	1/2 ⁺	1984.2	(1/2,3/2)
4386.2 4	4.5 $^{+3}_{-4}$ 4	(6359.86)	1/2 ⁺	1973.6	(1/2,3/2)
4403.6 4	3.7 $^{+3}_{-4}$ 3	(6359.86)	1/2 ⁺	1956.2	(1/2,3/2)
4408.1 6	1.4 $^{+3}_{-4}$ 2	(6359.86)	1/2 ⁺	1951.7	(1/2,3/2)
4423.5 4	3.8 $^{+3}_{-4}$ 2	(6359.86)	1/2 ⁺	1936.3	(1/2,3/2)
4440.8 5	7.0 $^{+3}_{-4}$ 9	(6359.86)	1/2 ⁺	1919.0	(1/2,3/2)
4470.6 8	1.4 $^{+3}_{-4}$ 4	(6359.86)	1/2 ⁺	1889.2	(1/2,3/2)
4503.5 4	46 3	(6359.86)	1/2 ⁺	1856.3	(1/2,3/2)
4514.7 6	17 3	(6359.86)	1/2 ⁺	1844.93	(1/2,3/2)
4535.8 3	159 3	(6359.86)	1/2 ⁺	1824.37	(1/2,3/2)
4561.2 5	37 4	(6359.86)	1/2 ⁺	1798.6	(1/2,3/2) ⁻
4609.6 4	76 9	(6359.86)	1/2 ⁺	1750.2	(1/2,3/2)
4621.4 4	188 13	(6359.86)	1/2 ⁺	1738.4	(1/2,3/2) ⁻
4642.1 3	80 3	(6359.86)	1/2 ⁺	1717.7	(1/2,3/2) ⁻
4691.6 3	96 4	(6359.86)	1/2 ⁺	1667.65	(1/2 ⁻ ,3/2 ⁻)
4701.7 4	44 4	(6359.86)	1/2 ⁺	1658.68	(1/2,3/2) ⁻
4745.8 3	302 6	(6359.86)	1/2 ⁺	1614.04	(1/2,3/2) ⁻
4770.1 5	35 54	(6359.86)	1/2 ⁺	1589.68	(1/2,3/2)
4791.46 19	42 4	(6359.86)	1/2 ⁺	1568.33	(1/2 ⁺ ,3/2 ⁺)
4820.0 5	15 3	(6359.86)	1/2 ⁺	1539.8	(1/2,3/2) ⁺
4833.5 3	173 5	(6359.86)	1/2 ⁺	1526.12	(1/2,3/2)
4839.0 8	21 5	(6359.86)	1/2 ⁺	1521.27	(1/2 ⁻ ,3/2 ⁻)
4869.2 6	17 3	(6359.86)	1/2 ⁺	1490.05	(1/2,3/2)

Continued on next page (footnotes at end of table)

$^{156}\text{Gd}(\text{n},\gamma)$ E=th **2003Bo25,1971Gr42** (continued) $\gamma(^{157}\text{Gd})$ (continued)

$E_\gamma^\dagger$	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
4873.2 5	21 3	(6359.86)	1/2 ⁺	1486.6	(1/2,3/2)	
4973.0 3	195 6	(6359.86)	1/2 ⁺	1387.05	(1/2,3/2)	
5010.8 3	72 4	(6359.86)	1/2 ⁺	1349.07	(1/2,3/2) ⁻	
5043.90 3I	38 3	(6359.86)	1/2 ⁺	1316.37	(1/2 ⁻ ,3/2 ⁻)	
5077.5 3	43 3	(6359.86)	1/2 ⁺	1282.3	(1/2,3/2)	
5112.8 3	63 4	(6359.86)	1/2 ⁺	1247.16	(1/2,3/2) ⁺	
5203.2 4	17 2	(6359.86)	1/2 ⁺	1156.6	(1/2,3/2) ⁺	
5266.8 4	32 4	(6359.86)	1/2 ⁺	1093.0	(1/2,3/2) ⁺	
5297 [#] 1		(6359.86)	1/2 ⁺	1063		
5318.4 3	28 2	(6359.86)	1/2 ⁺	1041.26	(1/2,3/2) ⁻	
5385.7 4	15 2	(6359.86)	1/2 ⁺	974.1	(1/2,3/2) ⁺	I_γ : possible contamination from ^{159}Gd .
5408 [#] 1		(6359.86)	1/2 ⁺	952		
5485 [#] 2		(6359.86)	1/2 ⁺	875		
5533 [#] 1		(6359.86)	1/2 ⁺	827		
5550.77 16	364 7	(6359.86)	1/2 ⁺	809.11	3/2 ⁻	
5566.29 16	554 11	(6359.86)	1/2 ⁺	793.65	1/2 ⁻	
5597.24 19	202 12	(6359.86)	1/2 ⁺	762.73	3/2 ⁻	
5609.04 7	19 5	(6359.86)	1/2 ⁺	751.25	3/2 ⁺	
5621 [#] 2		(6359.86)	1/2 ⁺	739		
5630.67 15	185 4	(6359.86)	1/2 ⁺	729.21	3/2 ⁻	
5659.5 3	37 4	(6359.86)	1/2 ⁺	701.40	1/2 ⁻	E_γ : level-energy difference=5658.41.
5664 [#] 2		(6359.86)	1/2 ⁺	696		
5677.10 17	102 4	(6359.86)	1/2 ⁺	682.83	1/2 ⁺	
5794 [#] 1		(6359.86)	1/2 ⁺	566		
5835.4 4	12 2	(6359.86)	1/2 ⁺	524.76	5/2 ⁺	
5885.33 16	121 4	(6359.86)	1/2 ⁺	474.59	3/2 ⁺	
6295.54 22	42 2	(6359.86)	1/2 ⁺	63.84	5/2 ⁺	
6359.82 14	1860 40	(6359.86)	1/2 ⁺	0.0	3/2 ⁻	

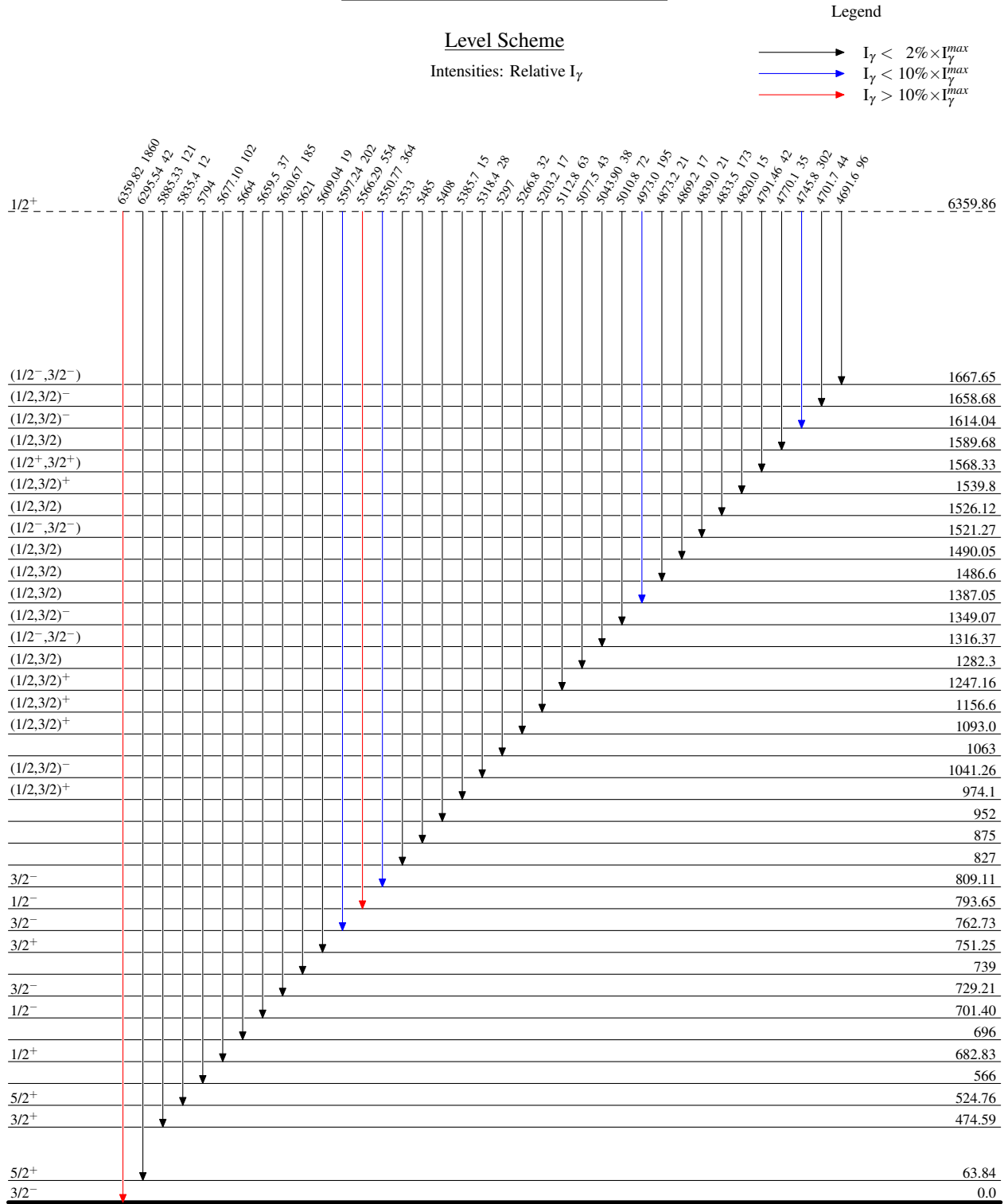
[†] Although **2003Bo25** state that their primary γ energies have been recoil corrected, a subsequent communication from **2003Bo25** indicates they were not recoil corrected.

[‡] Uncertainty is statistical only (**2003Bo25**).

[#] From **1971Gr42** only.

@ Placement of transition in the level scheme is uncertain.

^x γ ray not placed in level scheme.

$^{156}\text{Gd}(n,\gamma) \text{E=th}$ 2003Bo25,1971Gr42

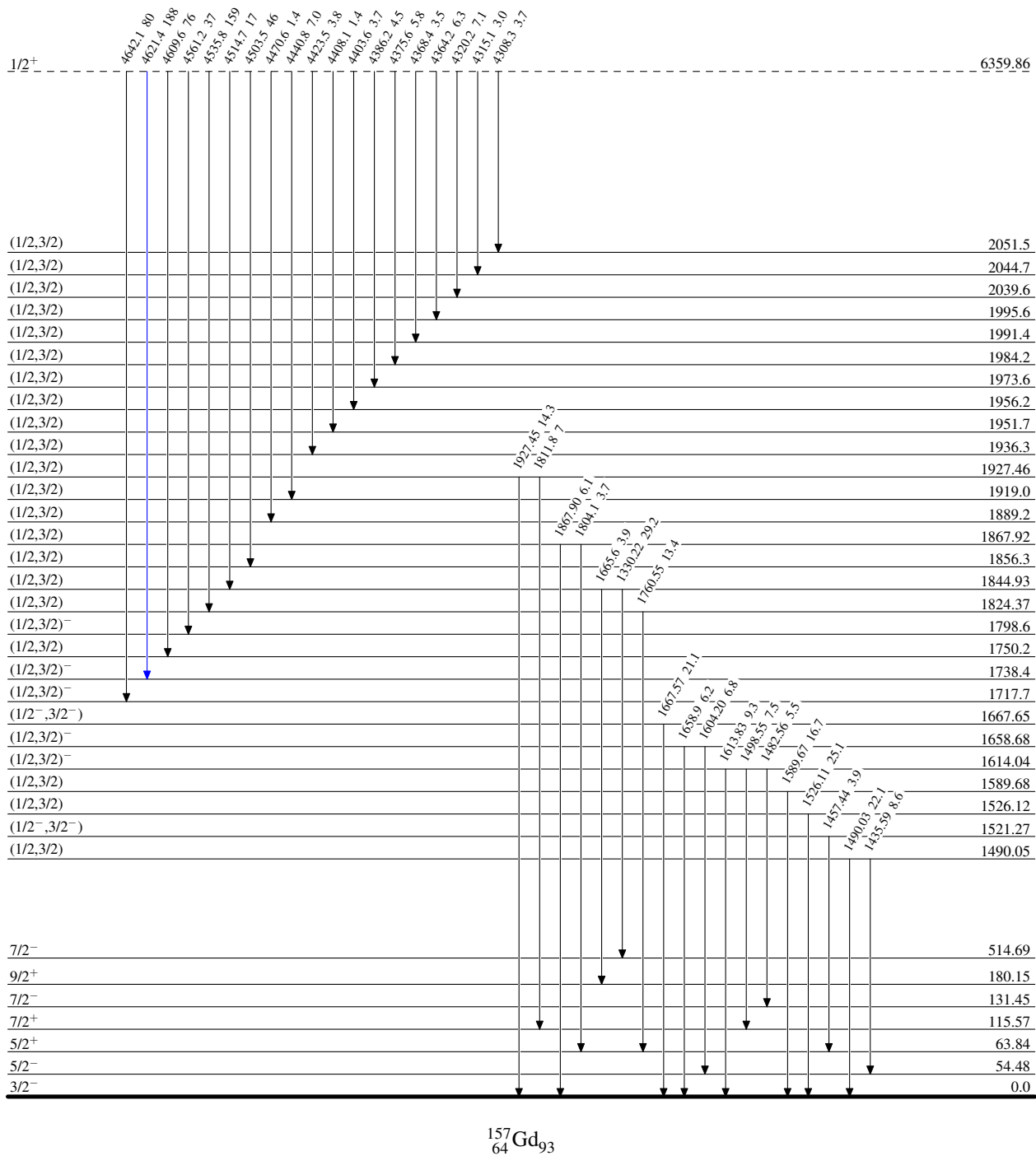
$^{156}\text{Gd}(n,\gamma) \text{E=th}$ 2003Bo25,1971Gr42

Level Scheme (continued)

Intensities: Relative I_γ

Legend

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

 $^{157}_{64}\text{Gd}_{93}$

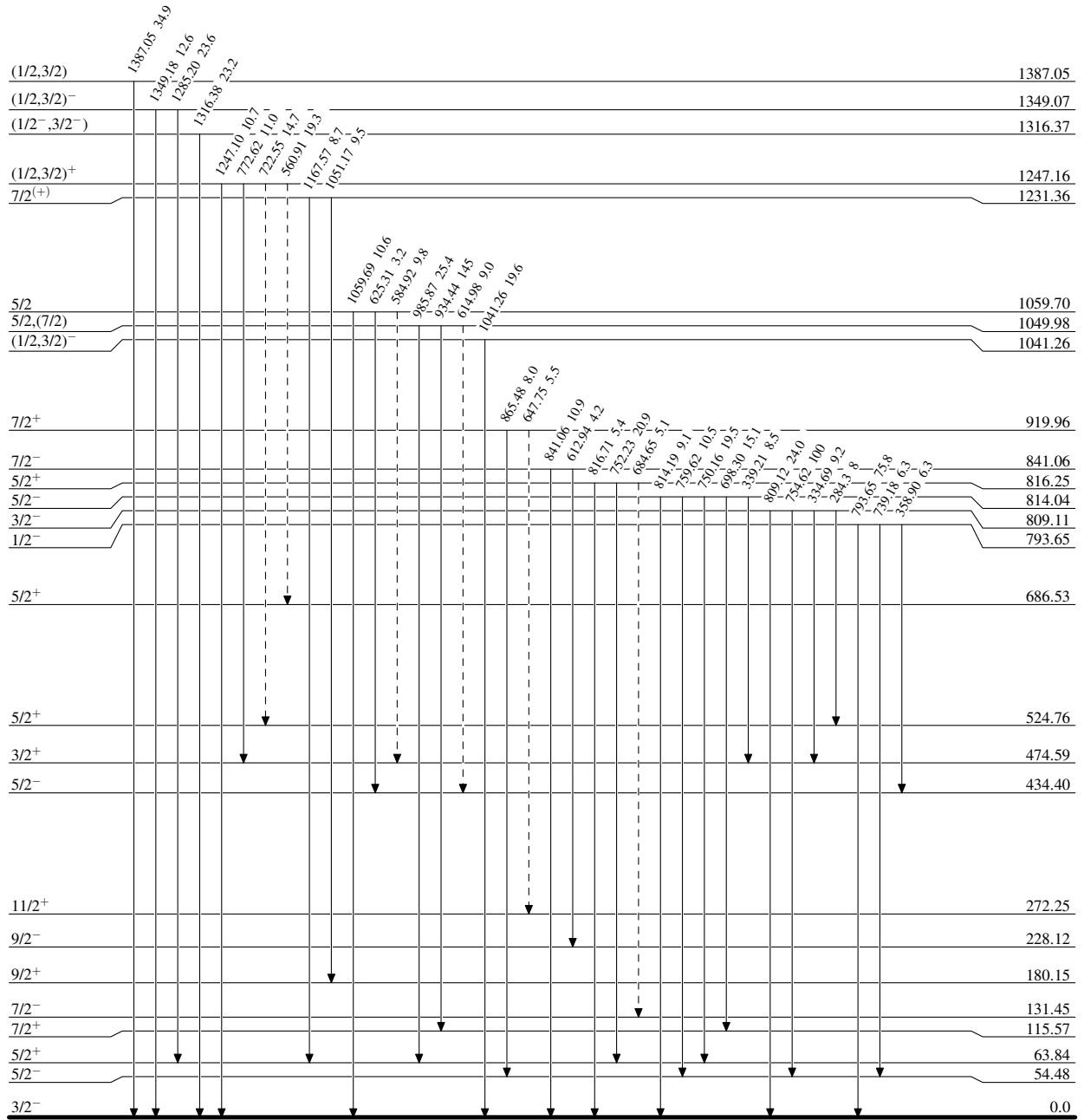
$^{156}\text{Gd}(n,\gamma) \text{E=th}$ 2003Bo25,1971Gr42

Legend

Level Scheme (continued)

Intensities: Relative I_γ

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

 $^{157}_{64}\text{Gd}_{93}$

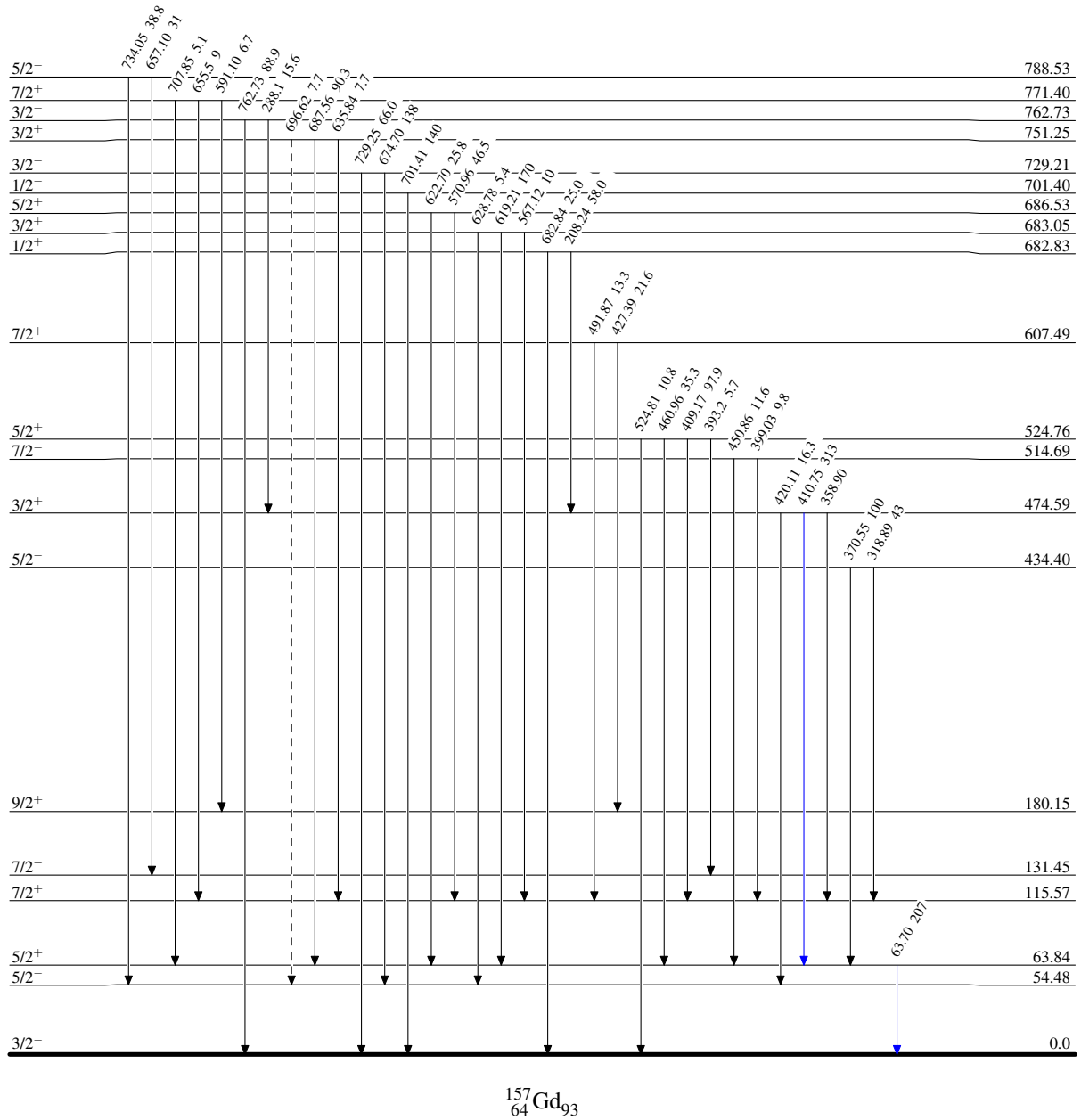
$^{156}\text{Gd}(n,\gamma) \text{E=th}$ 2003Bo25,1971Gr42

Legend

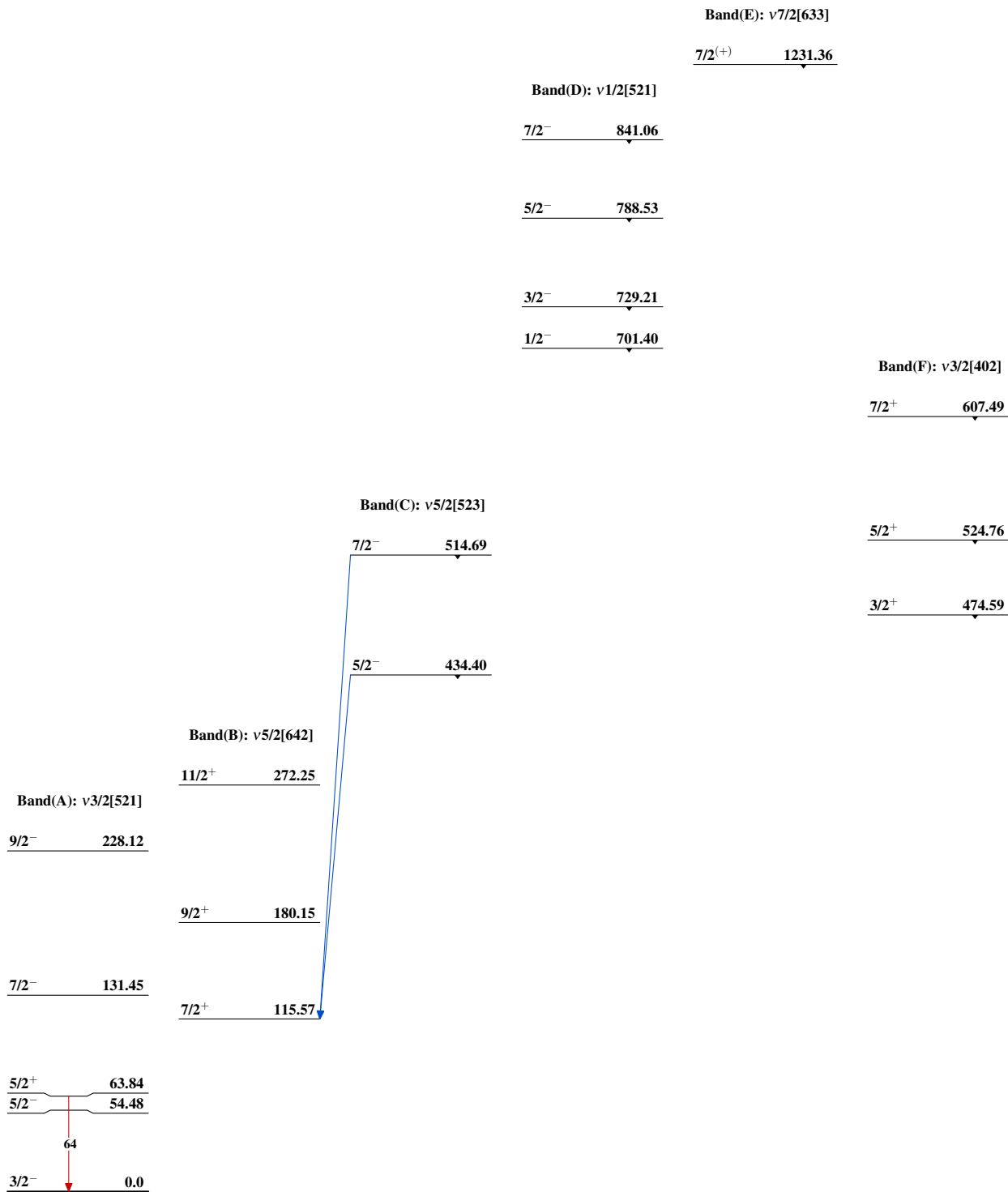
Level Scheme (continued)

Intensities: Relative I_γ

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

 $^{157}_{64}\text{Gd}_{93}$

$^{156}\text{Gd}(n,\gamma)$ E=th 2003Bo25,1971Gr42



$^{156}\text{Gd}(\text{n},\gamma)$ E=th 2003Bo25,1971Gr42 (continued)

Band(G): $\nu 1/2[400]$

$7/2^+$ 919.96

Band(I): $\nu 3/2[532]$

$5/2^-$ 814.04

Band(J): $\nu 1/2[530]$

$3/2^-$ 809.11

$1/2^-$ 793.65

Band(H): $\nu 3/2[651]$

$7/2^+$ 771.40

$3/2^-$ 762.73

$3/2^+$ 751.25

$1/2^+$ 682.83

$5/2^+$ 686.53
 $3/2^+$ 683.05

$^{157}_{64}\text{Gd}_{93}$