^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. W. Reich	NDS 113, 157 (2012)	31-Dec-2010

Additional information 1.

Data set taken from the XUNDL data file compiled July 10, 2003, by M. Lee and B. Singh (McMaster University), with modifications and additions by the evaluator.

2003Gr13: Measured Eγ, Iγ from 12 isolated neutron resonances from a few eV to 1.1 keV utilizing time-of-flight. Target: 48.5 g of Gd_2O_3, 97.7% enrichment. γ radiation in the regions 3-7 MeV and 400-800 keV was studied using a Ge(Li) detector with resolution (FWHM)=6 keV at 7 MeV.

2000Po07: Measured secondary γ's from 12 isolated neutron resonances from 22.3 eV to 1.1 keV. Experimental conditions presumably similar to those of 2003Gr13. Several authors in common with 2003Gr13.

All data are from 2003Gr13, unless otherwise stated.

Other: 1977GrZL.

^{159}Gd Levels

E(level)	J$^\pi$‡	Comments
0.0	1/2$^-$,3/2$^-$	J$^\pi$: 3/2$^-$ in the Adopted Values.
50.7†		
67.8†		
508.3	1/2$^-$,3/2$^-$	J$^\pi$: 1/2$^-$ in the Adopted Values.
558.3	1/2$^-$,3/2$^-$	J$^\pi$: 3/2$^-$ in the Adopted Values.
601.9	1/2$^+$,3/2$^+$	J$^\pi$: 3/2$^+$ in the Adopted Values.
647.1	1/2$^+$,3/2$^+$	J$^\pi$: 5/2$^+$ in the Adopted Values.
732.6†		
744.9	1/2$^+$,3/2$^+$	J$^\pi$: 3/2$^+$ in the Adopted Values.
782.0	1/2$^+$,3/2$^+$	J$^\pi$: 1/2$^+$ in the Adopted Values.
860.0	1/2$^+$,3/2$^+$	
972.0	1/2$^+$,3/2$^+$	J$^\pi$: 1/2$^+$ in the Adopted Values.
975.5†		E(level): energy from 467.2+508. 2000Po07 give 973.7. It is possible that 975.5 and 972.0 are the same levels.
1003.3	1/2$^{(+)}$,3/2$^{(+)}$	J$^\pi$: 3/2$^+$ in the Adopted Values.
1061.3	1/2$^-$,3/2$^-$	
1079.5	1/2$^-$,3/2$^-$	
1110.8	1/2$^-$,3/2$^-$	J$^\pi$: 3/2$^-$ in the Adopted Values.
1128.6	1/2$^{(+)}$,3/2$^{(+)}$	
1139.7	1/2$^-$,3/2$^-$	
1146.1	1/2$^-$,3/2$^-$	J$^\pi$: 3/2$^-$ in the Adopted Values.
1399.3	1/2$^-$,3/2$^-$	
1416.9	1/2$^+$,3/2$^+$	
1429.6	1/2,3/2	
1447.8	1/2$^+$,3/2$^+$	
1468.6	1/2$^{(+)}$,3/2$^{(+)}$	
1478.3	1/2$^{(+)}$,3/2$^{(+)}$	
1504.4	1/2$^{(+)}$,3/2$^{(+)}$	
1521.3	1/2$^-$,3/2$^-$	J$^\pi$: 1/2$^-$ in the Adopted Values.
1557.1	1/2$^+$,3/2$^+$	
1561.3	1/2$^{(-)}$,3/2$^{(-)}$	
1577.0	1/2,3/2	
1582.3	1/2$^{(-)}$,3/2$^{(-)}$	
1594.6	1/2$^+$,3/2$^+$	
1602.6	1/2,3/2	J$^\pi$: 3/2$^-$ in the Adopted Values.
1615.1	1/2$^+$,3/2$^+$	
1635.0	1/2$^+$,3/2$^+$	

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

^{159}Gd Levels (continued)

E(level)	J^{π}‡	Comments
1641.6	$1/2^-,3/2^-$	
1669.8	$1/2^{(+)},3/2^{(+)}$	
1674.2	1/2,3/2	
1704.6	1/2,3/2	
1746.0	1/2,3/2	
1770.3	1/2,3/2	
1824.5	$1/2^-,3/2^-$	
1840.9	$1/2^-,3/2^-$	
1868.5	1/2,3/2	
1880.7	1/2,3/2	
1885.3	1/2,3/2	
1889.5	$1/2^+,3/2^+$	
1896.8	$1/2^{(+)},3/2^{(+)}$	
1918.5	1/2,3/2	
1926.0	$1/2^{(+)},3/2^{(+)}$	
1945.4	$1/2^-,3/2^-$	
1954.4	1/2,3/2	
1972.1	$1/2^{(-)},3/2^{(-)}$	
1981.6	$1/2^{(+)},3/2^{(+)}$	
2008.1	1/2,3/2	
2031.7	$1/2^{(-)},3/2^{(-)}$	
2038.3	$1/2^-,3/2^-$	
2053.0	$1/2^-,3/2^-$	
2072.6	$1/2^-,3/2^-$	
2086.2	$1/2^{(-)},3/2^{(-)}$	
2111.4	$1/2^{(-)},3/2^{(-)}$	
2121.9	$1/2^{(-)},3/2^{(-)}$	E(level): Listed as 2129.9 in the table (Table 1) of primary γ-ray data of 2003Gr13. Probably a misprint.
2134.3	$1/2^{(-)},3/2^{(-)}$	
2153.4	1/2,3/2	
2162.6	$1/2^-,3/2^-$	
2178.7	$1/2^-,3/2^-$	
2185.0	$1/2^{(-)},3/2^{(-)}$	
2190.8	$1/2^{(-)},3/2^{(-)}$	
2200.8	$1/2^{(-)},3/2^{(-)}$	
2206.6	1/2,3/2	
2222.4	$1/2^{(-)},3/2^{(-)}$	
2234.0	$1/2^{(-)},3/2^{(-)}$	
2256.1	1/2,3/2	
2259.8	1/2,3/2	
2280.9	$1/2^-,3/2^-$	
2288.0	$1/2^-,3/2^-$	
2314.3	$1/2^-,3/2^-$	
2335.4	1/2,3/2	
2347.0	$1/2^{(-)},3/2^{(-)}$	
2352.0	$1/2^-,3/2^-$	
2357.8	$1/2^{(-)},3/2^{(-)}$	
2377.6	$1/2^{(+)},3/2^{(+)}$	
2388.6	$1/2^{(-)},3/2^{(-)}$	
(S(n)+0.0223)	$1/2^+$	E(level): S(n)=5943.21 *8* (2009AuZZ), E(n)=22.3 eV.
(S(n)+0.1011)	$1/2^+$	E(level): S(n)=5943.21 *8* (2009AuZZ), E(n)=101.1 eV.
(S(n)+0.2427)	$1/2^+$	E(level): S(n)=5943.21 *8* (2009AuZZ), E(n)=242.7 eV.
(S(n)+0.2772)	$1/2^+$	E(level): S(n)=5943.21 *8* (2009AuZZ), E(n)=277.2 eV.
(S(n)+0.3448)	$1/2^+$	E(level): S(n)=5943.21 *8* (2009AuZZ), E(n)=344.8 eV.

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

^{159}Gd Levels (continued)

E(level)	Jπ‡	Comments
(S(n)+0.4091)	1/2+	E(level): S(n)=5943.21 *8* (2009AuZZ), E(n)=409.1 eV.
(S(n)+0.5033)	1/2+	E(level): S(n)=5943.21 *8* (2009AuZZ), E(n)=503.3 eV.
(S(n)+0.5885)	1/2+	E(level): S(n)=5943.21 *8* (2009AuZZ), E(n)=588.5 eV.
(S(n)+0.6929)	1/2+	E(level): S(n)=5943.21 *8* (2009AuZZ), E(n)=692.9 eV.
(S(n)+0.8473)	1/2+	E(level): S(n)=5943.21 *8* (2009AuZZ), E(n)=847.3 eV, (mixed with a weak 869.3-eV resonance).
(S(n)+0.9171)	1/2+	E(level): S(n)=5943.21 *8* (2009AuZZ), E(n)=917.1 eV.
(S(n)+1.0680)	1/2+	E(level): S(n)=5943.21 *8* (2009AuZZ), E(n)=1068.0 eV.

† From 2000Po07.
‡ All resonances are s-wave resonances and thus have $J^\pi=1/2^+$. For the final states, J^π's are from multipolarity assignments (2003Gr13).

γ(^{159}Gd)

Eγ‡	Iγ†a	Ei(level)	Jiπ	Ef	Jfπ	Mult.#	Comments
467.2@ *2*	1.70@ *6*	975.5		508.3	1/2−,3/2−		
507.7@ *4*	6.15@ *30*	508.3	1/2−,3/2−	0.0	1/2−,3/2−		
507.7@ *4*	3.61@ *20*	558.3	1/2−,3/2−	50.7			
x524.5@ *3*	0.87@ *4*						
x537.1@ *2*	1.62@ *3*						
551.0@ *2*	1.99@ *3*	601.9	1/2+,3/2+	50.7			
558.1@ *2*	3.47@ *9*	558.3	1/2−,3/2−	0.0	1/2−,3/2−		
601.8@ *1*	4.34@ *4*	601.9	1/2+,3/2+	0.0	1/2−,3/2−		
646.9@ *3*	0.50@ *20*	647.1	1/2+,3/2+	0.0	1/2−,3/2−		
677.4@ *3*	1.77@ *6*	744.9	1/2+,3/2+	67.8			
682.2@ *4*	0.40@ *10*	732.6		50.7			
x700.3@ *4*	0.90@ *20*						
715.2@ *2*	2.33@ *10*	782.0	1/2+,3/2+	67.8			
x742.4@ *5*	0.60@ *10*						
x747.5@ *6*	0.20@ *10*						
3554.4 *8*	0.64 *7*	(S(n)+0.0223)	1/2+	2388.6	1/2(−),3/2(−)	(E1)	
3554.4 *8*	1.1 *5*	(S(n)+0.1011)	1/2+	2388.6	1/2(−),3/2(−)	(E1)	
3554.4 *8*		(S(n)+0.2427)	1/2+	2388.6	1/2(−),3/2(−)		Iγ: −0.1 *2*.
3554.4 *8*	0.3 *4*	(S(n)+0.2772)	1/2+	2388.6	1/2(−),3/2(−)	(E1)	
3554.4 *8*		(S(n)+0.3448)	1/2+	2388.6	1/2(−),3/2(−)		Iγ: −0.1 *5*.
3554.4 *8*		(S(n)+0.4091)	1/2+	2388.6	1/2(−),3/2(−)		Iγ: −0.1 *4*.
3554.4 *8*		(S(n)+0.5033)	1/2+	2388.6	1/2(−),3/2(−)		Iγ: −0.3 *4*.
3554.4 *8*	0.7 *4*	(S(n)+0.5885)	1/2+	2388.6	1/2(−),3/2(−)	(E1)	
3554.4 *8*	0.4 *5*	(S(n)+0.6929)	1/2+	2388.6	1/2(−),3/2(−)	(E1)	
3554.4 *8*	0.0 *5*	(S(n)+0.8473)	1/2+	2388.6	1/2(−),3/2(−)	(E1)	
3554.4 *8*	1.1 *7*	(S(n)+0.9171)	1/2+	2388.6	1/2(−),3/2(−)	(E1)	
3554.4 *8*		(S(n)+1.0680)	1/2+	2388.6	1/2(−),3/2(−)		Iγ: −0.2 *6*.
3565.4 *8*	0.39 *6*	(S(n)+0.0223)	1/2+	2377.6	1/2(+),3/2(+)	(M1)	
3565.4 *8*	0.2 *5*	(S(n)+0.1011)	1/2+	2377.6	1/2(+),3/2(+)	(M1)	
3565.4 *8*		(S(n)+0.2427)	1/2+	2377.6	1/2(+),3/2(+)		Iγ: −0.1 *2*.
3565.4 *8*		(S(n)+0.2772)	1/2+	2377.6	1/2(+),3/2(+)		Iγ: −0.3 *4*.
3565.4 *8*		(S(n)+0.3448)	1/2+	2377.6	1/2(+),3/2(+)		Iγ: −0.6 *5*.
3565.4 *8*	0.3 *4*	(S(n)+0.4091)	1/2+	2377.6	1/2(+),3/2(+)	(M1)	

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
3565.4 *8*		(S(n)+0.5033)	1/2$^+$	2377.6	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.2 *4*.
3565.4 *8*		(S(n)+0.5885)	1/2$^+$	2377.6	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.2 *4*.
3565.4 *8*	0.5 *5*	(S(n)+0.6929)	1/2$^+$	2377.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
3565.4 *8*		(S(n)+0.8473)	1/2$^+$	2377.6	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.5 *5*.
3565.4 *8*		(S(n)+0.9171)	1/2$^+$	2377.6	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.2 *6*.
3565.4 *8*		(S(n)+1.0680)	1/2$^+$	2377.6	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −1.1 *6*.
3585.2 *5*	0.79 *7*	(S(n)+0.0223)	1/2$^+$	2357.8	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3585.2 *5*	0.0 *5*	(S(n)+0.1011)	1/2$^+$	2357.8	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3585.2 *5*	0.1 *2*	(S(n)+0.2427)	1/2$^+$	2357.8	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3585.2 *5*	0.5 *4*	(S(n)+0.2772)	1/2$^+$	2357.8	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3585.2 *5*		(S(n)+0.3448)	1/2$^+$	2357.8	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.4 *5*.
3585.2 *5*		(S(n)+0.4091)	1/2$^+$	2357.8	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.7 *4*.
3585.2 *5*		(S(n)+0.5033)	1/2$^+$	2357.8	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.1 *4*.
3585.2 *5*		(S(n)+0.5885)	1/2$^+$	2357.8	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.2 *4*.
3585.2 *5*	0.8 *5*	(S(n)+0.6929)	1/2$^+$	2357.8	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3585.2 *5*	0.3 *5*	(S(n)+0.8473)	1/2$^+$	2357.8	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3585.2 *5*	0.7 *7*	(S(n)+0.9171)	1/2$^+$	2357.8	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3585.2 *5*	0.9 *7*	(S(n)+1.0680)	1/2$^+$	2357.8	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3591.7 *17*	0.20 *7*	(S(n)+0.0223)	1/2$^+$	2352.0	1/2$^-$,3/2$^-$	E1	
3591.7 *17*		(S(n)+0.1011)	1/2$^+$	2352.0	1/2$^-$,3/2$^-$		I_γ: −0.4 *5*.
3591.7 *17*	1.2 *3*	(S(n)+0.2427)	1/2$^+$	2352.0	1/2$^-$,3/2$^-$	E1	
3591.7 *17*	0.3 *4*	(S(n)+0.2772)	1/2$^+$	2352.0	1/2$^-$,3/2$^-$	E1	
3591.7 *17*		(S(n)+0.3448)	1/2$^+$	2352.0	1/2$^-$,3/2$^-$		I_γ: −0.8 *5*.
3591.7 *17*	0.9 *5*	(S(n)+0.4091)	1/2$^+$	2352.0	1/2$^-$,3/2$^-$	E1	
3591.7 *17*	0.3 *4*	(S(n)+0.5033)	1/2$^+$	2352.0	1/2$^-$,3/2$^-$	E1	
3591.7 *17*	0.6 *4*	(S(n)+0.5885)	1/2$^+$	2352.0	1/2$^-$,3/2$^-$	E1	
3591.7 *17*	0.7 *5*	(S(n)+0.6929)	1/2$^+$	2352.0	1/2$^-$,3/2$^-$	E1	
3591.7 *17*		(S(n)+0.8473)	1/2$^+$	2352.0	1/2$^-$,3/2$^-$		I_γ: −0.2 *4*.
3591.7 *17*		(S(n)+0.9171)	1/2$^+$	2352.0	1/2$^-$,3/2$^-$		I_γ: −0.4 *6*.
3591.7 *17*		(S(n)+1.0680)	1/2$^+$	2352.0	1/2$^-$,3/2$^-$		I_γ: −0.6 *6*.
3596.0 *5*	0.86 *7*	(S(n)+0.0223)	1/2$^+$	2347.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3596.0 *5*	0.3 *5*	(S(n)+0.1011)	1/2$^+$	2347.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3596.0 *5*	0.0 *3*	(S(n)+0.2427)	1/2$^+$	2347.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3596.0 *5*	0.2 *4*	(S(n)+0.2772)	1/2$^+$	2347.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3596.0 *5*	0.0 *5*	(S(n)+0.3448)	1/2$^+$	2347.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3596.0 *5*	0.2 *5*	(S(n)+0.4091)	1/2$^+$	2347.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3596.0 *5*	0.2 *4*	(S(n)+0.5033)	1/2$^+$	2347.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3596.0 *5*	0.3 *4*	(S(n)+0.5885)	1/2$^+$	2347.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3596.0 *5*	0.1 *5*	(S(n)+0.6929)	1/2$^+$	2347.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3596.0 *5*	0.5 *5*	(S(n)+0.8473)	1/2$^+$	2347.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3596.0 *5*		(S(n)+0.9171)	1/2$^+$	2347.0	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.7 *7*.
3596.0 *5*	0.5 *6*	(S(n)+1.0680)	1/2$^+$	2347.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3607.6 *8*	0.41 *7*	(S(n)+0.0223)	1/2$^+$	2335.4	1/2,3/2		
3607.6 *8*	0.0 *5*	(S(n)+0.1011)	1/2$^+$	2335.4	1/2,3/2		
3607.6 *8*	0.4 *3*	(S(n)+0.2427)	1/2$^+$	2335.4	1/2,3/2		
3607.6 *8*	0.8 *4*	(S(n)+0.2772)	1/2$^+$	2335.4	1/2,3/2		
3607.6 *8*		(S(n)+0.3448)	1/2$^+$	2335.4	1/2,3/2		I_γ: −0.2 *5*.
3607.6 *8*	0.5 *5*	(S(n)+0.4091)	1/2$^+$	2335.4	1/2,3/2		
3607.6 *8*	0.1 *4*	(S(n)+0.5033)	1/2$^+$	2335.4	1/2,3/2		
3607.6 *8*	0.1 *4*	(S(n)+0.5885)	1/2$^+$	2335.4	1/2,3/2		
3607.6 *8*		(S(n)+0.6929)	1/2$^+$	2335.4	1/2,3/2		I_γ: −0.2 *5*.
3607.6 *8*		(S(n)+0.8473)	1/2$^+$	2335.4	1/2,3/2		I_γ: −0.7 *5*.
3607.6 *8*		(S(n)+0.9171)	1/2$^+$	2335.4	1/2,3/2		I_γ: −1.0 *6*.
3607.6 *8*		(S(n)+1.0680)	1/2$^+$	2335.4	1/2,3/2		I_γ: −0.2 *6*.
3628.7 *7*	0.56 *9*	(S(n)+0.0223)	1/2$^+$	2314.3	1/2$^-$,3/2$^-$	&	

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
3628.7 *7*		(S(n)+0.1011)	1/2$^+$	2314.3	1/2$^-$,3/2$^-$		I_γ: −0.1 *7*.
3628.7 *7*	0.7 *4*	(S(n)+0.2427)	1/2$^+$	2314.3	1/2$^-$,3/2$^-$	&	
3628.7 *7*	0.7 *8*	(S(n)+0.2772)	1/2$^+$	2314.3	1/2$^-$,3/2$^-$	&	
3628.7 *7*	0.4 *9*	(S(n)+0.3448)	1/2$^+$	2314.3	1/2$^-$,3/2$^-$	&	
3628.7 *7*	1.3 *8*	(S(n)+0.4091)	1/2$^+$	2314.3	1/2$^-$,3/2$^-$	&	
3628.7 *7*	1.8 *7*	(S(n)+0.5033)	1/2$^+$	2314.3	1/2$^-$,3/2$^-$	&	
3628.7 *7*	0.4 *7*	(S(n)+0.5885)	1/2$^+$	2314.3	1/2$^-$,3/2$^-$	&	
3628.7 *7*	0.5 *8*	(S(n)+0.6929)	1/2$^+$	2314.3	1/2$^-$,3/2$^-$	&	
3628.7 *7*	0.1 *9*	(S(n)+0.8473)	1/2$^+$	2314.3	1/2$^-$,3/2$^-$	&	
3628.7 *7*		(S(n)+0.9171)	1/2$^+$	2314.3	1/2$^-$,3/2$^-$		I_γ: −0.2 *11*.
3628.7 *7*		(S(n)+1.0680)	1/2$^+$	2314.3	1/2$^-$,3/2$^-$		I_γ: −0.2 *11*.
3655.0 *10*	0.25 *6*	(S(n)+0.0223)	1/2$^+$	2288.0	1/2$^-$,3/2$^-$	E1	
3655.0 *10*		(S(n)+0.1011)	1/2$^+$	2288.0	1/2$^-$,3/2$^-$		I_γ: −0.8 *5*.
3655.0 *10*	0.61 *19*	(S(n)+0.2427)	1/2$^+$	2288.0	1/2$^-$,3/2$^-$	E1	
3655.0 *10*	0.0 *4*	(S(n)+0.2772)	1/2$^+$	2288.0	1/2$^-$,3/2$^-$	E1	
3655.0 *10*	0.5 *5*	(S(n)+0.3448)	1/2$^+$	2288.0	1/2$^-$,3/2$^-$	E1	
3655.0 *10*	0.9 *4*	(S(n)+0.4091)	1/2$^+$	2288.0	1/2$^-$,3/2$^-$	E1	
3655.0 *10*	0.4 *4*	(S(n)+0.5033)	1/2$^+$	2288.0	1/2$^-$,3/2$^-$	E1	
3655.0 *10*		(S(n)+0.5885)	1/2$^+$	2288.0	1/2$^-$,3/2$^-$		I_γ: −0.1 *4*.
3655.0 *10*		(S(n)+0.6929)	1/2$^+$	2288.0	1/2$^-$,3/2$^-$		I_γ: −0.2 *4*.
3655.0 *10*	1.0 *5*	(S(n)+0.8473)	1/2$^+$	2288.0	1/2$^-$,3/2$^-$	E1	
3655.0 *10*		(S(n)+0.9171)	1/2$^+$	2288.0	1/2$^-$,3/2$^-$		I_γ: −0.2 *6*.
3655.0 *10*	0.8 *6*	(S(n)+1.0680)	1/2$^+$	2288.0	1/2$^-$,3/2$^-$	E1	
3662.1 *7*	0.54 *6*	(S(n)+0.0223)	1/2$^+$	2280.9	1/2$^-$,3/2$^-$	E1	
3662.1 *7*		(S(n)+0.1011)	1/2$^+$	2280.9	1/2$^-$,3/2$^-$		I_γ: −0.2 *5*.
3662.1 *7*	0.5 *2*	(S(n)+0.2427)	1/2$^+$	2280.9	1/2$^-$,3/2$^-$	E1	
3662.1 *7*	0.3 *4*	(S(n)+0.2772)	1/2$^+$	2280.9	1/2$^-$,3/2$^-$	E1	
3662.1 *7*	0.1 *5*	(S(n)+0.3448)	1/2$^+$	2280.9	1/2$^-$,3/2$^-$	E1	
3662.1 *7*	0.8 *4*	(S(n)+0.4091)	1/2$^+$	2280.9	1/2$^-$,3/2$^-$	E1	
3662.1 *7*	0.5 *4*	(S(n)+0.5033)	1/2$^+$	2280.9	1/2$^-$,3/2$^-$	E1	
3662.1 *7*		(S(n)+0.5885)	1/2$^+$	2280.9	1/2$^-$,3/2$^-$		I_γ: −0.1 *4*.
3662.1 *7*	0.6 *5*	(S(n)+0.6929)	1/2$^+$	2280.9	1/2$^-$,3/2$^-$	E1	
3662.1 *7*	0.5 *5*	(S(n)+0.8473)	1/2$^+$	2280.9	1/2$^-$,3/2$^-$	E1	
3662.1 *7*	0.7 *6*	(S(n)+0.9171)	1/2$^+$	2280.9	1/2$^-$,3/2$^-$	E1	
3662.1 *7*	0.5 *6*	(S(n)+1.0680)	1/2$^+$	2280.9	1/2$^-$,3/2$^-$	E1	
3683.2 *8*	0.27 *7*	(S(n)+0.0223)	1/2$^+$	2259.8	1/2,3/2		
3683.2 *8*	0.5 *5*	(S(n)+0.1011)	1/2$^+$	2259.8	1/2,3/2		
3683.2 *8*		(S(n)+0.2427)	1/2$^+$	2259.8	1/2,3/2		I_γ: −0.3 *3*.
3683.2 *8*	0.5 *5*	(S(n)+0.2772)	1/2$^+$	2259.8	1/2,3/2		
3683.2 *8*	0.2 *5*	(S(n)+0.3448)	1/2$^+$	2259.8	1/2,3/2		
3683.2 *8*		(S(n)+0.4091)	1/2$^+$	2259.8	1/2,3/2		I_γ: −0.2 *4*.
3683.2 *8*	0.6 *4*	(S(n)+0.5033)	1/2$^+$	2259.8	1/2,3/2		
3683.2 *8*	0.2 *4*	(S(n)+0.5885)	1/2$^+$	2259.8	1/2,3/2		
3683.2 *8*		(S(n)+0.6929)	1/2$^+$	2259.8	1/2,3/2		I_γ: −0.6 *5*.
3683.2 *8*		(S(n)+0.8473)	1/2$^+$	2259.8	1/2,3/2		I_γ: −0.8 *5*.
3683.2 *8*	0.3 *7*	(S(n)+0.9171)	1/2$^+$	2259.8	1/2,3/2		
3683.2 *8*	0.7 *7*	(S(n)+1.0680)	1/2$^+$	2259.8	1/2,3/2		
3686.9 *10*	0.00 *6*	(S(n)+0.0223)	1/2$^+$	2256.1	1/2,3/2		
3686.9 *10*	0.3 *5*	(S(n)+0.1011)	1/2$^+$	2256.1	1/2,3/2		
3686.9 *10*	0.4 *2*	(S(n)+0.2427)	1/2$^+$	2256.1	1/2,3/2		
3686.9 *10*		(S(n)+0.2772)	1/2$^+$	2256.1	1/2,3/2		I_γ: −0.1 *5*.
3686.9 *10*	0.6 *5*	(S(n)+0.3448)	1/2$^+$	2256.1	1/2,3/2		
3686.9 *10*	1.1 *5*	(S(n)+0.4091)	1/2$^+$	2256.1	1/2,3/2		
3686.9 *10*	0.1 *4*	(S(n)+0.5033)	1/2$^+$	2256.1	1/2,3/2		

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
3686.9 *10*		(S(n)+0.5885)	$1/2^+$	2256.1	1/2,3/2		I_γ: −0.2 *4*.
3686.9 *10*	0.4 *5*	(S(n)+0.6929)	$1/2^+$	2256.1	1/2,3/2		
3686.9 *10*	0.6 *5*	(S(n)+0.8473)	$1/2^+$	2256.1	1/2,3/2		
3686.9 *10*	0.3 *7*	(S(n)+0.9171)	$1/2^+$	2256.1	1/2,3/2		
3686.9 *10*	0.5 *7*	(S(n)+1.0680)	$1/2^+$	2256.1	1/2,3/2		
3709.0 *10*	0.21 *6*	(S(n)+0.0223)	$1/2^+$	2234.0	$1/2^{(-)},3/2^{(-)}$	(E1)	
3709.0 *10*		(S(n)+0.1011)	$1/2^+$	2234.0	$1/2^{(-)},3/2^{(-)}$		I_γ: −0.2 *4*.
3709.0 *10*	0.36 *18*	(S(n)+0.2427)	$1/2^+$	2234.0	$1/2^{(-)},3/2^{(-)}$	(E1)	
3709.0 *10*	0.3 *4*	(S(n)+0.2772)	$1/2^+$	2234.0	$1/2^{(-)},3/2^{(-)}$	(E1)	
3709.0 *10*	0.6 *4*	(S(n)+0.3448)	$1/2^+$	2234.0	$1/2^{(-)},3/2^{(-)}$	(E1)	
3709.0 *10*	0.2 *4*	(S(n)+0.4091)	$1/2^+$	2234.0	$1/2^{(-)},3/2^{(-)}$	(E1)	
3709.0 *10*	0.1 *3*	(S(n)+0.5033)	$1/2^+$	2234.0	$1/2^{(-)},3/2^{(-)}$	(E1)	
3709.0 *10*	0.1 *3*	(S(n)+0.5885)	$1/2^+$	2234.0	$1/2^{(-)},3/2^{(-)}$	(E1)	
3709.0 *10*	0.1 *4*	(S(n)+0.6929)	$1/2^+$	2234.0	$1/2^{(-)},3/2^{(-)}$	(E1)	
3709.0 *10*	0.2 *4*	(S(n)+0.8473)	$1/2^+$	2234.0	$1/2^{(-)},3/2^{(-)}$	(E1)	
3709.0 *10*	0.7 *6*	(S(n)+0.9171)	$1/2^+$	2234.0	$1/2^{(-)},3/2^{(-)}$	(E1)	
3709.0 *10*	0.9 *6*	(S(n)+1.0680)	$1/2^+$	2234.0	$1/2^{(-)},3/2^{(-)}$	(E1)	
3720.6 *8*	0.37 *6*	(S(n)+0.0223)	$1/2^+$	2222.4	$1/2^{(-)},3/2^{(-)}$	(E1)	
3720.6 *8*	0.4 *4*	(S(n)+0.1011)	$1/2^+$	2222.4	$1/2^{(-)},3/2^{(-)}$	(E1)	
3720.6 *8*	0.32 *18*	(S(n)+0.2427)	$1/2^+$	2222.4	$1/2^{(-)},3/2^{(-)}$	(E1)	
3720.6 *8*	0.5 *4*	(S(n)+0.2772)	$1/2^+$	2222.4	$1/2^{(-)},3/2^{(-)}$	(E1)	
3720.6 *8*	0.2 *4*	(S(n)+0.3448)	$1/2^+$	2222.4	$1/2^{(-)},3/2^{(-)}$	(E1)	
3720.6 *8*		(S(n)+0.4091)	$1/2^+$	2222.4	$1/2^{(-)},3/2^{(-)}$		I_γ: −0.1 *4*.
3720.6 *8*	0.3 *3*	(S(n)+0.5033)	$1/2^+$	2222.4	$1/2^{(-)},3/2^{(-)}$	(E1)	
3720.6 *8*	0.4 *4*	(S(n)+0.5885)	$1/2^+$	2222.4	$1/2^{(-)},3/2^{(-)}$	(E1)	
3720.6 *8*	0.1 *4*	(S(n)+0.6929)	$1/2^+$	2222.4	$1/2^{(-)},3/2^{(-)}$	(E1)	
3720.6 *8*	0.1 *4*	(S(n)+0.8473)	$1/2^+$	2222.4	$1/2^{(-)},3/2^{(-)}$	(E1)	
3720.6 *8*	0.2 *6*	(S(n)+0.9171)	$1/2^+$	2222.4	$1/2^{(-)},3/2^{(-)}$	(E1)	
3720.6 *8*	1.1 *6*	(S(n)+1.0680)	$1/2^+$	2222.4	$1/2^{(-)},3/2^{(-)}$	(E1)	
3736.4 *16*	0.00 *5*	(S(n)+0.0223)	$1/2^+$	2206.6	1/2,3/2		
3736.4 *16*		(S(n)+0.1011)	$1/2^+$	2206.6	1/2,3/2		I_γ: −0.2 *4*.
3736.4 *16*		(S(n)+0.2427)	$1/2^+$	2206.6	1/2,3/2		I_γ: −0.12 *17*.
3736.4 *16*		(S(n)+0.2772)	$1/2^+$	2206.6	1/2,3/2		I_γ: −0.2 *4*.
3736.4 *16*	0.3 *4*	(S(n)+0.3448)	$1/2^+$	2206.6	1/2,3/2		
3736.4 *16*	0.9 *4*	(S(n)+0.4091)	$1/2^+$	2206.6	1/2,3/2		
3736.4 *16*	0.9 *4*	(S(n)+0.5033)	$1/2^+$	2206.6	1/2,3/2		
3736.4 *16*	0.1 *3*	(S(n)+0.5885)	$1/2^+$	2206.6	1/2,3/2		
3736.4 *16*	0.0 *4*	(S(n)+0.6929)	$1/2^+$	2206.6	1/2,3/2		
3736.4 *16*	0.3 *5*	(S(n)+0.8473)	$1/2^+$	2206.6	1/2,3/2		
3736.4 *16*	0.7 *6*	(S(n)+0.9171)	$1/2^+$	2206.6	1/2,3/2		
3736.4 *16*	0.4 *6*	(S(n)+1.0680)	$1/2^+$	2206.6	1/2,3/2		
3742.2 *10*	0.24 *5*	(S(n)+0.0223)	$1/2^+$	2200.8	$1/2^{(-)},3/2^{(-)}$	(E1)	
3742.2 *10*	0.8 *4*	(S(n)+0.1011)	$1/2^+$	2200.8	$1/2^{(-)},3/2^{(-)}$	(E1)	
3742.2 *10*	0.28 *17*	(S(n)+0.2427)	$1/2^+$	2200.8	$1/2^{(-)},3/2^{(-)}$	(E1)	
3742.2 *10*		(S(n)+0.2772)	$1/2^+$	2200.8	$1/2^{(-)},3/2^{(-)}$		I_γ: −0.4 *4*.
3742.2 *10*	0.4 *4*	(S(n)+0.3448)	$1/2^+$	2200.8	$1/2^{(-)},3/2^{(-)}$	(E1)	
3742.2 *10*	0.1 *4*	(S(n)+0.4091)	$1/2^+$	2200.8	$1/2^{(-)},3/2^{(-)}$	(E1)	
3742.2 *10*	0.0 *3*	(S(n)+0.5033)	$1/2^+$	2200.8	$1/2^{(-)},3/2^{(-)}$	(E1)	
3742.2 *10*	0.6 *3*	(S(n)+0.5885)	$1/2^+$	2200.8	$1/2^{(-)},3/2^{(-)}$	(E1)	
3742.2 *10*	0.3 *4*	(S(n)+0.6929)	$1/2^+$	2200.8	$1/2^{(-)},3/2^{(-)}$	(E1)	
3742.2 *10*	0.3 *4*	(S(n)+0.8473)	$1/2^+$	2200.8	$1/2^{(-)},3/2^{(-)}$	(E1)	
3742.2 *10*		(S(n)+0.9171)	$1/2^+$	2200.8	$1/2^{(-)},3/2^{(-)}$		I_γ: −0.1 *6*.
3742.2 *10*	0.6 *6*	(S(n)+1.0680)	$1/2^+$	2200.8	$1/2^{(-)},3/2^{(-)}$	(E1)	
3752.2 *14*	0.18 *5*	(S(n)+0.0223)	$1/2^+$	2190.8	$1/2^{(-)},3/2^{(-)}$	(E1)	
3752.2 *14*		(S(n)+0.1011)	$1/2^+$	2190.8	$1/2^{(-)},3/2^{(-)}$		I_γ: −0.1 *4*.

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
3752.2 *14*	0.51 *18*	(S(n)+0.2427)	$1/2^+$	2190.8	$1/2^{(-)},3/2^{(-)}$	(E1)	

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
3752.2 *14*		(S(n)+0.2772)	1/2$^+$	2190.8	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.3 *4*.
3752.2 *14*	1.2 *4*	(S(n)+0.3448)	1/2$^+$	2190.8	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3752.2 *14*	0.0 *4*	(S(n)+0.4091)	1/2$^+$	2190.8	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3752.2 *14*	0.7 *4*	(S(n)+0.5033)	1/2$^+$	2190.8	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3752.2 *14*	0.3 *3*	(S(n)+0.5885)	1/2$^+$	2190.8	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3752.2 *14*		(S(n)+0.6929)	1/2$^+$	2190.8	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.2 *4*.
3752.2 *14*	0.4 *4*	(S(n)+0.8473)	1/2$^+$	2190.8	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3752.2 *14*	0.6 *6*	(S(n)+0.9171)	1/2$^+$	2190.8	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3752.2 *14*		(S(n)+1.0680)	1/2$^+$	2190.8	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.2 *5*.
3758.0 *10*	0.14 *5*	(S(n)+0.0223)	1/2$^+$	2185.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3758.0 *10*	0.1 *4*	(S(n)+0.1011)	1/2$^+$	2185.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3758.0 *10*	0.31 *17*	(S(n)+0.2427)	1/2$^+$	2185.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3758.0 *10*	1.1 *4*	(S(n)+0.2772)	1/2$^+$	2185.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3758.0 *10*	0.3 *4*	(S(n)+0.3448)	1/2$^+$	2185.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3758.0 *10*	0.4 *4*	(S(n)+0.4091)	1/2$^+$	2185.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3758.0 *10*	0.4 *3*	(S(n)+0.5033)	1/2$^+$	2185.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3758.0 *10*	1.1 *4*	(S(n)+0.5885)	1/2$^+$	2185.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3758.0 *10*	0.3 *4*	(S(n)+0.6929)	1/2$^+$	2185.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3758.0 *10*		(S(n)+0.8473)	1/2$^+$	2185.0	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.1 *4*.
3758.0 *10*	0.2 *6*	(S(n)+0.9171)	1/2$^+$	2185.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3758.0 *10*	0.2 *5*	(S(n)+1.0680)	1/2$^+$	2185.0	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3764.3 *10*	0.36 *6*	(S(n)+0.0223)	1/2$^+$	2178.7	1/2$^-$,3/2$^-$	E1	
3764.3 *10*	0.7 *4*	(S(n)+0.1011)	1/2$^+$	2178.7	1/2$^-$,3/2$^-$	E1	
3764.3 *10*	0.77 *18*	(S(n)+0.2427)	1/2$^+$	2178.7	1/2$^-$,3/2$^-$	E1	
3764.3 *10*		(S(n)+0.2772)	1/2$^+$	2178.7	1/2$^-$,3/2$^-$		I_γ: −0.5 *4*.
3764.3 *10*	0.1 *4*	(S(n)+0.3448)	1/2$^+$	2178.7	1/2$^-$,3/2$^-$	E1	
3764.3 *10*		(S(n)+0.4091)	1/2$^+$	2178.7	1/2$^-$,3/2$^-$		I_γ: −0.1 *4*.
3764.3 *10*	0.4 *3*	(S(n)+0.5033)	1/2$^+$	2178.7	1/2$^-$,3/2$^-$	E1	
3764.3 *10*	0.9 *4*	(S(n)+0.5885)	1/2$^+$	2178.7	1/2$^-$,3/2$^-$	E1	
3764.3 *10*	0.8 *17*	(S(n)+0.6929)	1/2$^+$	2178.7	1/2$^-$,3/2$^-$	E1	
3764.3 *10*	0.3 *4*	(S(n)+0.8473)	1/2$^+$	2178.7	1/2$^-$,3/2$^-$	E1	
3764.3 *10*		(S(n)+0.9171)	1/2$^+$	2178.7	1/2$^-$,3/2$^-$		I_γ: −0.6 *5*.
3764.3 *10*	0.6 *6*	(S(n)+1.0680)	1/2$^+$	2178.7	1/2$^-$,3/2$^-$	E1	
3780.4 *10*	0.24 *6*	(S(n)+0.0223)	1/2$^+$	2162.6	1/2$^-$,3/2$^-$	E1	
3780.4 *10*	1.1 *4*	(S(n)+0.1011)	1/2$^+$	2162.6	1/2$^-$,3/2$^-$	E1	
3780.4 *10*	0.33 *18*	(S(n)+0.2427)	1/2$^+$	2162.6	1/2$^-$,3/2$^-$	E1	
3780.4 *10*	0.5 *4*	(S(n)+0.2772)	1/2$^+$	2162.6	1/2$^-$,3/2$^-$	E1	
3780.4 *10*	0.8 *4*	(S(n)+0.3448)	1/2$^+$	2162.6	1/2$^-$,3/2$^-$	E1	
3780.4 *10*	0.2 *4*	(S(n)+0.4091)	1/2$^+$	2162.6	1/2$^-$,3/2$^-$	E1	
3780.4 *10*	0.3 *3*	(S(n)+0.5033)	1/2$^+$	2162.6	1/2$^-$,3/2$^-$	E1	
3780.4 *10*	0.3 *4*	(S(n)+0.5885)	1/2$^+$	2162.6	1/2$^-$,3/2$^-$	E1	
3780.4 *10*	0.1 *4*	(S(n)+0.6929)	1/2$^+$	2162.6	1/2$^-$,3/2$^-$	E1	
3780.4 *10*	0.8 *5*	(S(n)+0.8473)	1/2$^+$	2162.6	1/2$^-$,3/2$^-$	E1	
3780.4 *10*		(S(n)+0.9171)	1/2$^+$	2162.6	1/2$^-$,3/2$^-$		I_γ: −0.1 *6*.
3780.4 *10*	0.1 *6*	(S(n)+1.0680)	1/2$^+$	2162.6	1/2$^-$,3/2$^-$	E1	
3789.6 *10*	0.29 *5*	(S(n)+0.0223)	1/2$^+$	2153.4	1/2,3/2		
3789.6 *10*	0.1 *4*	(S(n)+0.1011)	1/2$^+$	2153.4	1/2,3/2		
3789.6 *10*	0.17 *17*	(S(n)+0.2427)	1/2$^+$	2153.4	1/2,3/2		
3789.6 *10*		(S(n)+0.2772)	1/2$^+$	2153.4	1/2,3/2		I_γ: −0.1 *4*.
3789.6 *10*	0.6 *4*	(S(n)+0.3448)	1/2$^+$	2153.4	1/2,3/2		
3789.6 *10*	0.2 *4*	(S(n)+0.4091)	1/2$^+$	2153.4	1/2,3/2		
3789.6 *10*	0.3 *3*	(S(n)+0.5033)	1/2$^+$	2153.4	1/2,3/2		
3789.6 *10*	0.5 *3*	(S(n)+0.5885)	1/2$^+$	2153.4	1/2,3/2		
3789.6 *10*		(S(n)+0.6929)	1/2$^+$	2153.4	1/2,3/2		I_γ: −0.1 *4*.
3789.6 *10*	0.0 *4*	(S(n)+0.8473)	1/2$^+$	2153.4	1/2,3/2		
3789.6 *10*	1.0 *6*	(S(n)+0.9171)	1/2$^+$	2153.4	1/2,3/2		

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
3789.6 *10*		(S(n)+1.0680)	1/2$^+$	2153.4	1/2,3/2		I_γ: −0.2 *5*.
3808.7 *17*	0.15 *5*	(S(n)+0.0223)	1/2$^+$	2134.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3808.7 *17*		(S(n)+0.1011)	1/2$^+$	2134.3	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.2 *4*.
3808.7 *17*	0.00 *16*	(S(n)+0.2427)	1/2$^+$	2134.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3808.7 *17*	0.0 *4*	(S(n)+0.2772)	1/2$^+$	2134.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3808.7 *17*	0.3 *4*	(S(n)+0.3448)	1/2$^+$	2134.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3808.7 *17*	0.5 *4*	(S(n)+0.4091)	1/2$^+$	2134.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3808.7 *17*	0.6 *3*	(S(n)+0.5033)	1/2$^+$	2134.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3808.7 *17*	0.5 *3*	(S(n)+0.5885)	1/2$^+$	2134.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3808.7 *17*	0.1 *4*	(S(n)+0.6929)	1/2$^+$	2134.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3808.7 *17*	1.0 *4*	(S(n)+0.8473)	1/2$^+$	2134.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3808.7 *17*	0.7 *6*	(S(n)+0.9171)	1/2$^+$	2134.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3808.7 *17*	0.1 *5*	(S(n)+1.0680)	1/2$^+$	2134.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3821.1 *17*		(S(n)+0.0223)	1/2$^+$	2121.9	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.05 *5*.
3821.1 *17*	0.3 *4*	(S(n)+0.1011)	1/2$^+$	2121.9	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3821.1 *17*	0.13 *17*	(S(n)+0.2427)	1/2$^+$	2121.9	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3821.1 *17*	0.4 *4*	(S(n)+0.2772)	1/2$^+$	2121.9	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3821.1 *17*	0.3 *4*	(S(n)+0.3448)	1/2$^+$	2121.9	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3821.1 *17*	0.2 *4*	(S(n)+0.4091)	1/2$^+$	2121.9	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3821.1 *17*	0.3 *3*	(S(n)+0.5033)	1/2$^+$	2121.9	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3821.1 *17*	0.3 *3*	(S(n)+0.5885)	1/2$^+$	2121.9	1/2$^{(-)}$,3/2$^{(-)}$		
3821.1 *17*	1.2 *4*	(S(n)+0.6929)	1/2$^+$	2121.9	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3821.1 *17*	0.6 *4*	(S(n)+0.8473)	1/2$^+$	2121.9	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3821.1 *17*		(S(n)+0.9171)	1/2$^+$	2121.9	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.7 *5*.
3821.1 *17*	0.2 *5*	(S(n)+1.0680)	1/2$^+$	2121.9	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3831.6 *7*	0.48 *5*	(S(n)+0.0223)	1/2$^+$	2111.4	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3831.6 *7*	0.3 *4*	(S(n)+0.1011)	1/2$^+$	2111.4	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3831.6 *7*		(S(n)+0.2427)	1/2$^+$	2111.4	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.09 *16*.
3831.6 *7*	0.6 *4*	(S(n)+0.2772)	1/2$^+$	2111.4	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3831.6 *7*		(S(n)+0.3448)	1/2$^+$	2111.4	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.7 *4*.
3831.6 *7*	0.1 *4*	(S(n)+0.4091)	1/2$^+$	2111.4	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3831.6 *7*		(S(n)+0.5033)	1/2$^+$	2111.4	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.2 *3*.
3831.6 *7*	0.7 *3*	(S(n)+0.5885)	1/2$^+$	2111.4	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3831.6 *7*	0.5 *4*	(S(n)+0.6929)	1/2$^+$	2111.4	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3831.6 *7*		(S(n)+0.8473)	1/2$^+$	2111.4	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.3 *4*.
3831.6 *7*	0.6 *6*	(S(n)+0.9171)	1/2$^+$	2111.4	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3831.6 *7*	0.6 *5*	(S(n)+1.0680)	1/2$^+$	2111.4	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3856.8 *17*	0.16 *5*	(S(n)+0.0223)	1/2$^+$	2086.2	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3856.8 *17*	0.2 *4*	(S(n)+0.1011)	1/2$^+$	2086.2	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3856.8 *17*		(S(n)+0.2427)	1/2$^+$	2086.2	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.11 *16*.
3856.8 *17*	0.6 *4*	(S(n)+0.2772)	1/2$^+$	2086.2	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3856.8 *17*		(S(n)+0.3448)	1/2$^+$	2086.2	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.2 *4*.
3856.8 *17*	0.0 *4*	(S(n)+0.4091)	1/2$^+$	2086.2	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3856.8 *17*	0.0 *3*	(S(n)+0.5033)	1/2$^+$	2086.2	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3856.8 *17*	0.3 *3*	(S(n)+0.5885)	1/2$^+$	2086.2	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3856.8 *17*	1.4 *4*	(S(n)+0.6929)	1/2$^+$	2086.2	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3856.8 *17*		(S(n)+0.8473)	1/2$^+$	2086.2	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.3 *4*.
3856.8 *17*	1.0 *6*	(S(n)+0.9171)	1/2$^+$	2086.2	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3856.8 *17*	0.0 *5*	(S(n)+1.0680)	1/2$^+$	2086.2	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3870.4 *4*	0.97 *5*	(S(n)+0.0223)	1/2$^+$	2072.6	1/2$^-$,3/2$^-$	&	
3870.4 *4*	0.3 *4*	(S(n)+0.1011)	1/2$^+$	2072.6	1/2$^-$,3/2$^-$	&	
3870.4 *4*	0.17 *16*	(S(n)+0.2427)	1/2$^+$	2072.6	1/2$^-$,3/2$^-$	&	
3870.4 *4*	0.1 *3*	(S(n)+0.2772)	1/2$^+$	2072.6	1/2$^-$,3/2$^-$	&	

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
3870.4 *4*	0.4 *4*	(S(n)+0.3448)	$1/2^+$	2072.6	$1/2^-,3/2^-$	&	

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
3870.4 *4*	0.5 *4*	(S(n)+0.4091)	1/2$^+$	2072.6	1/2$^-$,3/2$^-$	&	
3870.4 *4*	0.1 *3*	(S(n)+0.5033)	1/2$^+$	2072.6	1/2$^-$,3/2$^-$	&	
3870.4 *4*	0.5 *3*	(S(n)+0.5885)	1/2$^+$	2072.6	1/2$^-$,3/2$^-$	&	
3870.4 *4*	0.4 *4*	(S(n)+0.6929)	1/2$^+$	2072.6	1/2$^-$,3/2$^-$	&	
3870.4 *4*	0.4 *4*	(S(n)+0.8473)	1/2$^+$	2072.6	1/2$^-$,3/2$^-$	&	
3870.4 *4*	1.7 *6*	(S(n)+0.9171)	1/2$^+$	2072.6	1/2$^-$,3/2$^-$	&	
3870.4 *4*	0.5 *5*	(S(n)+1.0680)	1/2$^+$	2072.6	1/2$^-$,3/2$^-$	&	
3890.0 *25*	0.31 *5*	(S(n)+0.0223)	1/2$^+$	2053.0	1/2$^-$,3/2$^-$	E1	
3890.0 *25*		(S(n)+0.1011)	1/2$^+$	2053.0	1/2$^-$,3/2$^-$		I_γ: −0.4 *4*.
3890.0 *25*	0.00 *15*	(S(n)+0.2427)	1/2$^+$	2053.0	1/2$^-$,3/2$^-$	E1	
3890.0 *25*	0.5 *3*	(S(n)+0.2772)	1/2$^+$	2053.0	1/2$^-$,3/2$^-$	E1	
3890.0 *25*	0.8 *4*	(S(n)+0.3448)	1/2$^+$	2053.0	1/2$^-$,3/2$^-$	E1	
3890.0 *25*	0.1 *4*	(S(n)+0.4091)	1/2$^+$	2053.0	1/2$^-$,3/2$^-$	E1	
3890.0 *25*		(S(n)+0.5033)	1/2$^+$	2053.0	1/2$^-$,3/2$^-$		I_γ: −0.2 *3*.
3890.0 *25*	0.7 *2*	(S(n)+0.5885)	1/2$^+$	2053.0	1/2$^-$,3/2$^-$	E1	
3890.0 *25*	0.6 *4*	(S(n)+0.6929)	1/2$^+$	2053.0	1/2$^-$,3/2$^-$	E1	
3890.0 *25*	1.1 *4*	(S(n)+0.8473)	1/2$^+$	2053.0	1/2$^-$,3/2$^-$	E1	
3890.0 *25*		(S(n)+0.9171)	1/2$^+$	2053.0	1/2$^-$,3/2$^-$		I_γ: −0.4 *5*.
3890.0 *25*	0.2 *5*	(S(n)+1.0680)	1/2$^+$	2053.0	1/2$^-$,3/2$^-$	E1	
3904.7 *17*	0.14 *5*	(S(n)+0.0223)	1/2$^+$	2038.3	1/2$^-$,3/2$^-$	E1	
3904.7 *17*		(S(n)+0.1011)	1/2$^+$	2038.3	1/2$^-$,3/2$^-$		I_γ: −0.5 *4*.
3904.7 *17*	0.63 *16*	(S(n)+0.2427)	1/2$^+$	2038.3	1/2$^-$,3/2$^-$	E1	
3904.7 *17*	1.0 *4*	(S(n)+0.2772)	1/2$^+$	2038.3	1/2$^-$,3/2$^-$	E1	
3904.7 *17*	1.5 *4*	(S(n)+0.3448)	1/2$^+$	2038.3	1/2$^-$,3/2$^-$	E1	
3904.7 *17*	0.6 *4*	(S(n)+0.4091)	1/2$^+$	2038.3	1/2$^-$,3/2$^-$	E1	
3904.7 *17*	0.0 *3*	(S(n)+0.5033)	1/2$^+$	2038.3	1/2$^-$,3/2$^-$	E1	
3904.7 *17*	0.7 *3*	(S(n)+0.5885)	1/2$^+$	2038.3	1/2$^-$,3/2$^-$	E1	
3904.7 *17*		(S(n)+0.6929)	1/2$^+$	2038.3	1/2$^-$,3/2$^-$		I_γ: −0.6 *4*.
3904.7 *17*	0.4 *4*	(S(n)+0.8473)	1/2$^+$	2038.3	1/2$^-$,3/2$^-$	E1	
3904.7 *17*	0.1 *5*	(S(n)+0.9171)	1/2$^+$	2038.3	1/2$^-$,3/2$^-$	E1	
3904.7 *17*	0.8 *5*	(S(n)+1.0680)	1/2$^+$	2038.3	1/2$^-$,3/2$^-$	E1	
3911.3 *17*	0.04 *5*	(S(n)+0.0223)	1/2$^+$	2031.7	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3911.3 *17*		(S(n)+0.1011)	1/2$^+$	2031.7	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.5 *4*.
3911.3 *17*	0.76 *17*	(S(n)+0.2427)	1/2$^+$	2031.7	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3911.3 *17*	0.1 *3*	(S(n)+0.2772)	1/2$^+$	2031.7	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3911.3 *17*		(S(n)+0.3448)	1/2$^+$	2031.7	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.2 *4*.
3911.3 *17*	0.9 *4*	(S(n)+0.4091)	1/2$^+$	2031.7	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3911.3 *17*	0.4 *3*	(S(n)+0.5033)	1/2$^+$	2031.7	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3911.3 *17*	0.4 *3*	(S(n)+0.5885)	1/2$^+$	2031.7	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3911.3 *17*	0.4 *4*	(S(n)+0.6929)	1/2$^+$	2031.7	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3911.3 *17*	0.4 *4*	(S(n)+0.8473)	1/2$^+$	2031.7	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3911.3 *17*		(S(n)+0.9171)	1/2$^+$	2031.7	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.3 *5*.
3911.3 *17*	0.1 *5*	(S(n)+1.0680)	1/2$^+$	2031.7	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3934.0 *25*	0.6 *4*	(S(n)+0.3448)	1/2$^+$	2008.1	1/2,3/2		
3934.9 *25*	0.02 *5*	(S(n)+0.0223)	1/2$^+$	2008.1	1/2,3/2		
3934.9 *25*	0.5 *4*	(S(n)+0.1011)	1/2$^+$	2008.1	1/2,3/2		
3934.9 *25*	0.52 *16*	(S(n)+0.2427)	1/2$^+$	2008.1	1/2,3/2		
3934.9 *25*	0.1 *3*	(S(n)+0.2772)	1/2$^+$	2008.1	1/2,3/2		
3934.9 *25*		(S(n)+0.4091)	1/2$^+$	2008.1	1/2,3/2		I_γ: −0.4 *3*.
3934.9 *25*	0.1 *3*	(S(n)+0.5033)	1/2$^+$	2008.1	1/2,3/2		
3934.9 *25*	0.0 *3*	(S(n)+0.5885)	1/2$^+$	2008.1	1/2,3/2		
3934.9 *25*	0.5 *5*	(S(n)+0.6929)	1/2$^+$	2008.1	1/2,3/2		
3934.9 *25*	0.8 *5*	(S(n)+0.8473)	1/2$^+$	2008.1	1/2,3/2		
3934.9 *25*	0.1 *5*	(S(n)+0.9171)	1/2$^+$	2008.1	1/2,3/2		

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
3934.9 *25*		(S(n)+1.0680)	1/2$^+$	2008.1	1/2,3/2		I_γ: −0.1 *5*.
3961.4 *10*	0.25 *5*	(S(n)+0.0223)	1/2$^+$	1981.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
3961.4 *10*	0.0 *4*	(S(n)+0.1011)	1/2$^+$	1981.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
3961.4 *10*	0.17 *16*	(S(n)+0.2427)	1/2$^+$	1981.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
3961.4 *10*	0.1 *4*	(S(n)+0.2772)	1/2$^+$	1981.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
3961.4 *10*	0.0 *4*	(S(n)+0.3448)	1/2$^+$	1981.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
3961.4 *10*		(S(n)+0.4091)	1/2$^+$	1981.6	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.2 *4*.
3961.4 *10*	0.4 *3*	(S(n)+0.5033)	1/2$^+$	1981.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
3961.4 *10*	0.1 *3*	(S(n)+0.5885)	1/2$^+$	1981.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
3961.4 *10*		(S(n)+0.6929)	1/2$^+$	1981.6	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.1 *4*.
3961.4 *10*	0.3 *5*	(S(n)+0.8473)	1/2$^+$	1981.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
3961.4 *10*		(S(n)+0.9171)	1/2$^+$	1981.6	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.4 *5*.
3961.4 *10*	0.1 *5*	(S(n)+1.0680)	1/2$^+$	1981.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
3970.9 *3*	1.09 *6*	(S(n)+0.0223)	1/2$^+$	1972.1	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3970.9 *3*	0.4 *4*	(S(n)+0.1011)	1/2$^+$	1972.1	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3970.9 *3*	0.08 *16*	(S(n)+0.2427)	1/2$^+$	1972.1	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3970.9 *3*	0.4 *4*	(S(n)+0.2772)	1/2$^+$	1972.1	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3970.9 *3*	0.4 *4*	(S(n)+0.3448)	1/2$^+$	1972.1	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3970.9 *3*		(S(n)+0.4091)	1/2$^+$	1972.1	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.2 *4*.
3970.9 *3*	1.0 *3*	(S(n)+0.5033)	1/2$^+$	1972.1	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3970.9 *3*	0.1 *3*	(S(n)+0.5885)	1/2$^+$	1972.1	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3970.9 *3*	0.3 *4*	(S(n)+0.6929)	1/2$^+$	1972.1	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3970.9 *3*		(S(n)+0.8473)	1/2$^+$	1972.1	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.3 *4*.
3970.9 *3*		(S(n)+0.9171)	1/2$^+$	1972.1	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.1 *5*.
3970.9 *3*	0.4 *5*	(S(n)+1.0680)	1/2$^+$	1972.1	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
3988.6 *5*	0.50 *5*	(S(n)+0.0223)	1/2$^+$	1954.4	1/2,3/2		
3988.6 *5*		(S(n)+0.1011)	1/2$^+$	1954.4	1/2,3/2		I_γ: −0.3 *4*.
3988.6 *5*		(S(n)+0.2427)	1/2$^+$	1954.4	1/2,3/2		I_γ: −0.03 *15*.
3988.6 *5*	0.3 *3*	(S(n)+0.2772)	1/2$^+$	1954.4	1/2,3/2		
3988.6 *5*	0.2 *4*	(S(n)+0.3448)	1/2$^+$	1954.4	1/2,3/2		
3988.6 *5*	0.2 *3*	(S(n)+0.4091)	1/2$^+$	1954.4	1/2,3/2		
3988.6 *5*		(S(n)+0.5033)	1/2$^+$	1954.4	1/2,3/2		I_γ: −0.1 *3*.
3988.6 *5*		(S(n)+0.5885)	1/2$^+$	1954.4	1/2,3/2		I_γ: −0.1 *3*.
3988.6 *5*		(S(n)+0.6929)	1/2$^+$	1954.4	1/2,3/2		I_γ: −0.2 *4*.
3988.6 *5*	0.6 *4*	(S(n)+0.8473)	1/2$^+$	1954.4	1/2,3/2		
3988.6 *5*		(S(n)+0.9171)	1/2$^+$	1954.4	1/2,3/2		I_γ: −0.1 *5*.
3988.6 *5*		(S(n)+1.0680)	1/2$^+$	1954.4	1/2,3/2		I_γ: −0.4 *5*.
3997.6 *8*		(S(n)+0.0223)	1/2$^+$	1945.4	1/2$^-$,3/2$^-$		I_γ: −0.05 *5*.
3997.6 *8*	0.9 *4*	(S(n)+0.1011)	1/2$^+$	1945.4	1/2$^-$,3/2$^-$	E1	
3997.6 *8*	0.18 *15*	(S(n)+0.2427)	1/2$^+$	1945.4	1/2$^-$,3/2$^-$	E1	
3997.6 *8*	1.1 *4*	(S(n)+0.2772)	1/2$^+$	1945.4	1/2$^-$,3/2$^-$	E1	
3997.6 *8*	0.6 *4*	(S(n)+0.3448)	1/2$^+$	1945.4	1/2$^-$,3/2$^-$	E1	
3997.6 *8*	0.3 *3*	(S(n)+0.4091)	1/2$^+$	1945.4	1/2$^-$,3/2$^-$	E1	
3997.6 *8*	0.7 *3*	(S(n)+0.5033)	1/2$^+$	1945.4	1/2$^-$,3/2$^-$	E1	
3997.6 *8*		(S(n)+0.5885)	1/2$^+$	1945.4	1/2$^-$,3/2$^-$		I_γ: −0.3 *3*.
3997.6 *8*	1.1 *4*	(S(n)+0.6929)	1/2$^+$	1945.4	1/2$^-$,3/2$^-$	E1	
3997.6 *8*	0.5 *4*	(S(n)+0.8473)	1/2$^+$	1945.4	1/2$^-$,3/2$^-$	E1	
3997.6 *8*	0.6 *5*	(S(n)+0.9171)	1/2$^+$	1945.4	1/2$^-$,3/2$^-$	E1	
3997.6 *8*		(S(n)+1.0680)	1/2$^+$	1945.4	1/2$^-$,3/2$^-$		I_γ: −0.3 *5*.
4017.0 *9*	0.28 *5*	(S(n)+0.0223)	1/2$^+$	1926.0	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4017.0 *9*	0.5 *4*	(S(n)+0.1011)	1/2$^+$	1926.0	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4017.0 *9*	0.08 *14*	(S(n)+0.2427)	1/2$^+$	1926.0	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4017.0 *9*		(S(n)+0.2772)	1/2$^+$	1926.0	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.2 *3*.
4017.0 *9*	0.3 *4*	(S(n)+0.3448)	1/2$^+$	1926.0	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4017.0 *9*	0.5 *3*	(S(n)+0.4091)	1/2$^+$	1926.0	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
4017.0 *9*	0.1 *3*	(S(n)+0.5033)	$1/2^+$	1926.0	$1/2^{(+)},3/2^{(+)}$	(M1)	

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
4017.0 *9*		(S(n)+0.5885)	1/2$^+$	1926.0	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.4 *3*.
4017.0 *9*	0.2 *3*	(S(n)+0.6929)	1/2$^+$	1926.0	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4017.0 *9*		(S(n)+0.8473)	1/2$^+$	1926.0	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.2 *4*.
4017.0 *9*		(S(n)+0.9171)	1/2$^+$	1926.0	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −1.2 *4*.
4017.0 *9*		(S(n)+1.0680)	1/2$^+$	1926.0	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.4 *5*.
4024.5 *10*	0.18 *4*	(S(n)+0.0223)	1/2$^+$	1918.5	1/2,3/2		
4024.5 *10*		(S(n)+0.1011)	1/2$^+$	1918.5	1/2,3/2		I_γ: −0.1 *3*.
4024.5 *10*		(S(n)+0.2427)	1/2$^+$	1918.5	1/2,3/2		I_γ: −0.26 *13*.
4024.5 *10*	0.3 *3*	(S(n)+0.2772)	1/2$^+$	1918.5	1/2,3/2		
4024.5 *10*		(S(n)+0.3448)	1/2$^+$	1918.5	1/2,3/2		I_γ: −0.2 *4*.
4024.5 *10*		(S(n)+0.4091)	1/2$^+$	1918.5	1/2,3/2		I_γ: −0.1 *3*.
4024.5 *10*	0.3 *3*	(S(n)+0.5033)	1/2$^+$	1918.5	1/2,3/2		
4024.5 *10*	0.3 *3*	(S(n)+0.5885)	1/2$^+$	1918.5	1/2,3/2		
4024.5 *10*		(S(n)+0.6929)	1/2$^+$	1918.5	1/2,3/2		I_γ: −0.1 *3*.
4024.5 *10*	0.2 *4*	(S(n)+0.8473)	1/2$^+$	1918.5	1/2,3/2		
4024.5 *10*	0.6 *5*	(S(n)+0.9171)	1/2$^+$	1918.5	1/2,3/2		
4024.5 *10*	0.8 *5*	(S(n)+1.0680)	1/2$^+$	1918.5	1/2,3/2		
4046.2 *30*	0.12 *4*	(S(n)+0.0223)	1/2$^+$	1896.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4046.2 *30*	0.1 *4*	(S(n)+0.1011)	1/2$^+$	1896.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4046.2 *30*		(S(n)+0.2427)	1/2$^+$	1896.8	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.19 *13*.
4046.2 *30*	0.1 *3*	(S(n)+0.2772)	1/2$^+$	1896.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4046.2 *30*	0.1 *4*	(S(n)+0.3448)	1/2$^+$	1896.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4046.2 *30*	0.3 *3*	(S(n)+0.4091)	1/2$^+$	1896.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4046.2 *30*	0.0 *3*	(S(n)+0.5033)	1/2$^+$	1896.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4046.2 *30*	0.2 *3*	(S(n)+0.5885)	1/2$^+$	1896.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4046.2 *30*		(S(n)+0.6929)	1/2$^+$	1896.8	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.3 *3*.
4046.2 *30*	0.5 *4*	(S(n)+0.8473)	1/2$^+$	1896.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4046.2 *30*		(S(n)+0.9171)	1/2$^+$	1896.8	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.7 *5*.
4046.2 *30*		(S(n)+1.0680)	1/2$^+$	1896.8	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.4 *5*.
4053.5 *20*	0.18 *5*	(S(n)+0.0223)	1/2$^+$	1889.5	1/2$^+$,3/2$^+$	M1	
4053.5 *20*		(S(n)+0.1011)	1/2$^+$	1889.5	1/2$^+$,3/2$^+$		I_γ: −0.3 *4*.
4053.5 *20*	0.10 *16*	(S(n)+0.2427)	1/2$^+$	1889.5	1/2$^+$,3/2$^+$	M1	
4053.5 *20*	0.1 *3*	(S(n)+0.2772)	1/2$^+$	1889.5	1/2$^+$,3/2$^+$	M1	
4053.5 *20*		(S(n)+0.3448)	1/2$^+$	1889.5	1/2$^+$,3/2$^+$		I_γ: −0.4 *4*.
4053.5 *20*		(S(n)+0.4091)	1/2$^+$	1889.5	1/2$^+$,3/2$^+$		I_γ: −0.3 *4*.
4053.5 *20*	0.3 *3*	(S(n)+0.5033)	1/2$^+$	1889.5	1/2$^+$,3/2$^+$	M1	
4053.5 *20*	0.1 *3*	(S(n)+0.5885)	1/2$^+$	1889.5	1/2$^+$,3/2$^+$	(M1)	
4053.5 *20*		(S(n)+0.6929)	1/2$^+$	1889.5	1/2$^+$,3/2$^+$		I_γ: −0.2 *4*.
4053.5 *20*	0.2 *4*	(S(n)+0.8473)	1/2$^+$	1889.5	1/2$^+$,3/2$^+$	M1	
4053.5 *20*		(S(n)+0.9171)	1/2$^+$	1889.5	1/2$^+$,3/2$^+$		I_γ: −0.3 *5*.
4053.5 *20*		(S(n)+1.0680)	1/2$^+$	1889.5	1/2$^+$,3/2$^+$		I_γ: −0.7 *5*.
4057.7 *15*		(S(n)+0.0223)	1/2$^+$	1885.3	1/2,3/2		I_γ: −0.01 *5*.
4057.7 *15*	0.4 *4*	(S(n)+0.1011)	1/2$^+$	1885.3	1/2,3/2		
4057.7 *15*	0.32 *17*	(S(n)+0.2427)	1/2$^+$	1885.3	1/2,3/2		
4057.7 *15*		(S(n)+0.2772)	1/2$^+$	1885.3	1/2,3/2		I_γ: −0.1 *4*.
4057.7 *15*	0.5 *5*	(S(n)+0.3448)	1/2$^+$	1885.3	1/2,3/2		
4057.7 *15*	1.1 *4*	(S(n)+0.4091)	1/2$^+$	1885.3	1/2,3/2		
4057.7 *15*		(S(n)+0.5033)	1/2$^+$	1885.3	1/2,3/2		I_γ: −0.1 *3*.
4057.7 *15*	0.2 *4*	(S(n)+0.5885)	1/2$^+$	1885.3	1/2,3/2		
4057.7 *15*	0.5 *4*	(S(n)+0.6929)	1/2$^+$	1885.3	1/2,3/2		
4057.7 *15*	0.2 *4*	(S(n)+0.8473)	1/2$^+$	1885.3	1/2,3/2		
4057.7 *15*	0.9 *6*	(S(n)+0.9171)	1/2$^+$	1885.3	1/2,3/2		
4057.7 *15*	0.2 *6*	(S(n)+1.0680)	1/2$^+$	1885.3	1/2,3/2		
4062.3 *10*	0.30 *5*	(S(n)+0.0223)	1/2$^+$	1880.7	1/2,3/2		
4062.3 *10*	0.0 *4*	(S(n)+0.1011)	1/2$^+$	1880.7	1/2,3/2		
4062.3 *10*	0.18 *15*	(S(n)+0.2427)	1/2$^+$	1880.7	1/2,3/2		

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

γ(^{159}Gd) (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
4062.3 *10*		(S(n)+0.2772)	$1/2^+$	1880.7	1/2,3/2		I_γ: −0.2 *3*.
4062.3 *10*	0.3 *4*	(S(n)+0.3448)	$1/2^+$	1880.7	1/2,3/2		
4062.3 *10*	1.0 *4*	(S(n)+0.4091)	$1/2^+$	1880.7	1/2,3/2		
4062.3 *10*	0.3 *3*	(S(n)+0.5033)	$1/2^+$	1880.7	1/2,3/2		
4062.3 *10*	0.1 *3*	(S(n)+0.5885)	$1/2^+$	1880.7	1/2,3/2		
4062.3 *10*		(S(n)+0.6929)	$1/2^+$	1880.7	1/2,3/2		I_γ: −0.2 *4*.
4062.3 *10*	0.7 *4*	(S(n)+0.8473)	$1/2^+$	1880.7	1/2,3/2		
4062.3 *10*	0.5 *5*	(S(n)+0.9171)	$1/2^+$	1880.7	1/2,3/2		
4062.3 *10*	0.1 *5*	(S(n)+1.0680)	$1/2^+$	1880.7	1/2,3/2		
4074.5 *3*	0.78 *5*	(S(n)+0.0223)	$1/2^+$	1868.5	1/2,3/2		
4074.5 *3*	0.5 *4*	(S(n)+0.1011)	$1/2^+$	1868.5	1/2,3/2		
4074.5 *3*	0.12 *13*	(S(n)+0.2427)	$1/2^+$	1868.5	1/2,3/2		
4074.5 *3*	0.0 *3*	(S(n)+0.2772)	$1/2^+$	1868.5	1/2,3/2		
4074.5 *3*	0.4 *4*	(S(n)+0.3448)	$1/2^+$	1868.5	1/2,3/2		
4074.5 *3*	0.1 *3*	(S(n)+0.4091)	$1/2^+$	1868.5	1/2,3/2		
4074.5 *3*	0.2 *3*	(S(n)+0.5033)	$1/2^+$	1868.5	1/2,3/2		
4074.5 *3*	0.1 *3*	(S(n)+0.5885)	$1/2^+$	1868.5	1/2,3/2		
4074.5 *3*	0.2 *3*	(S(n)+0.6929)	$1/2^+$	1868.5	1/2,3/2		
4074.5 *3*	0.8 *4*	(S(n)+0.8473)	$1/2^+$	1868.5	1/2,3/2		
4074.5 *3*	0.1 *5*	(S(n)+0.9171)	$1/2^+$	1868.5	1/2,3/2		
4074.5 *3*		(S(n)+1.0680)	$1/2^+$	1868.5	1/2,3/2		I_γ: −0.4 *5*.
4102.1 *15*	0.09 *4*	(S(n)+0.0223)	$1/2^+$	1840.9	$1/2^-$,$3/2^-$	E1	
4102.1 *15*	0.2 *4*	(S(n)+0.1011)	$1/2^+$	1840.9	$1/2^-$,$3/2^-$	E1	
4102.1 *15*	0.28 *14*	(S(n)+0.2427)	$1/2^+$	1840.9	$1/2^-$,$3/2^-$	E1	
4102.1 *15*	0.8 *3*	(S(n)+0.2772)	$1/2^+$	1840.9	$1/2^-$,$3/2^-$	E1	
4102.1 *15*		(S(n)+0.3448)	$1/2^+$	1840.9	$1/2^-$,$3/2^-$		I_γ: −0.2 *3*.
4102.1 *15*	0.7 *3*	(S(n)+0.4091)	$1/2^+$	1840.9	$1/2^-$,$3/2^-$	E1	
4102.1 *15*	0.3 *3*	(S(n)+0.5033)	$1/2^+$	1840.9	$1/2^-$,$3/2^-$	E1	
4102.1 *15*	0.2 *3*	(S(n)+0.5885)	$1/2^+$	1840.9	$1/2^-$,$3/2^-$	E1	
4102.1 *15*	0.0 *3*	(S(n)+0.6929)	$1/2^+$	1840.9	$1/2^-$,$3/2^-$	E1	
4102.1 *15*	0.3 *4*	(S(n)+0.8473)	$1/2^+$	1840.9	$1/2^-$,$3/2^-$	E1	
4102.1 *15*	0.8 *5*	(S(n)+0.9171)	$1/2^+$	1840.9	$1/2^-$,$3/2^-$	E1	
4102.1 *15*	0.4 *5*	(S(n)+1.0680)	$1/2^+$	1840.9	$1/2^-$,$3/2^-$	E1	
4118.5 *4*	0.44 *4*	(S(n)+0.0223)	$1/2^+$	1824.5	$1/2^-$,$3/2^-$	&	
4118.5 *4*	0.5 *4*	(S(n)+0.1011)	$1/2^+$	1824.5	$1/2^-$,$3/2^-$	&	
4118.5 *4*	0.52 *14*	(S(n)+0.2427)	$1/2^+$	1824.5	$1/2^-$,$3/2^-$	&	
4118.5 *4*	0.4 *3*	(S(n)+0.2772)	$1/2^+$	1824.5	$1/2^-$,$3/2^-$	&	
4118.5 *4*	0.1 *4*	(S(n)+0.3448)	$1/2^+$	1824.5	$1/2^-$,$3/2^-$	&	
4118.5 *4*	0.6 *3*	(S(n)+0.4091)	$1/2^+$	1824.5	$1/2^-$,$3/2^-$	&	
4118.5 *4*	0.5 *3*	(S(n)+0.5033)	$1/2^+$	1824.5	$1/2^-$,$3/2^-$	&	
4118.5 *4*	0.9 *3*	(S(n)+0.5885)	$1/2^+$	1824.5	$1/2^-$,$3/2^-$	&	
4118.5 *4*	0.5 *3*	(S(n)+0.6929)	$1/2^+$	1824.5	$1/2^-$,$3/2^-$	&	
4118.5 *4*	0.8 *4*	(S(n)+0.8473)	$1/2^+$	1824.5	$1/2^-$,$3/2^-$	&	
4118.5 *4*	2.5 *5*	(S(n)+0.9171)	$1/2^+$	1824.5	$1/2^-$,$3/2^-$	&	
4118.5 *4*	0.0 *4*	(S(n)+1.0680)	$1/2^+$	1824.5	$1/2^-$,$3/2^-$	&	
4172.7 *9*	0.16 *4*	(S(n)+0.0223)	$1/2^+$	1770.3	1/2,3/2		
4172.7 *9*	0.0 *3*	(S(n)+0.1011)	$1/2^+$	1770.3	1/2,3/2		
4172.7 *9*	0.08 *12*	(S(n)+0.2427)	$1/2^+$	1770.3	1/2,3/2		
4172.7 *9*		(S(n)+0.2772)	$1/2^+$	1770.3	1/2,3/2		I_γ: −0.1 *3*.
4172.7 *9*	0.0 *3*	(S(n)+0.3448)	$1/2^+$	1770.3	1/2,3/2		
4172.7 *9*	0.1 *3*	(S(n)+0.4091)	$1/2^+$	1770.3	1/2,3/2		
4172.7 *9*	0.2 *3*	(S(n)+0.5033)	$1/2^+$	1770.3	1/2,3/2		
4172.7 *9*	0.6 *3*	(S(n)+0.5885)	$1/2^+$	1770.3	1/2,3/2		

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
4172.7 *9*	0.4 *3*	(S(n)+0.6929)	1/2$^+$	1770.3	1/2,3/2		
4172.7 *9*	0.0 *3*	(S(n)+0.8473)	1/2$^+$	1770.3	1/2,3/2		
4172.7 *9*	0.1 *4*	(S(n)+0.9171)	1/2$^+$	1770.3	1/2,3/2		
4172.7 *9*	0.6 *4*	(S(n)+1.0680)	1/2$^+$	1770.3	1/2,3/2		
4197.0 *10*	0.13 *4*	(S(n)+0.0223)	1/2$^+$	1746.0	1/2,3/2		
4197.0 *10*		(S(n)+0.1011)	1/2$^+$	1746.0	1/2,3/2		I_γ: −0.4 *3*.
4197.0 *10*	0.10 *12*	(S(n)+0.2427)	1/2$^+$	1746.0	1/2,3/2		
4197.0 *10*	0.4 *3*	(S(n)+0.2772)	1/2$^+$	1746.0	1/2,3/2		
4197.0 *10*	0.1 *3*	(S(n)+0.3448)	1/2$^+$	1746.0	1/2,3/2		
4197.0 *10*	0.3 *3*	(S(n)+0.4091)	1/2$^+$	1746.0	1/2,3/2		
4197.0 *10*	0.2 *3*	(S(n)+0.5033)	1/2$^+$	1746.0	1/2,3/2		
4197.0 *10*	0.5 *3*	(S(n)+0.5885)	1/2$^+$	1746.0	1/2,3/2		
4197.0 *10*	0.7 *3*	(S(n)+0.6929)	1/2$^+$	1746.0	1/2,3/2		
4197.0 *10*	0.0 *3*	(S(n)+0.8473)	1/2$^+$	1746.0	1/2,3/2		
4197.0 *10*		(S(n)+0.9171)	1/2$^+$	1746.0	1/2,3/2		I_γ: −0.2 *4*.
4197.0 *10*		(S(n)+1.0680)	1/2$^+$	1746.0	1/2,3/2		I_γ: −0.4 *4*.
4238.4 *10*	0.15 *4*	(S(n)+0.0223)	1/2$^+$	1704.6	1/2,3/2		
4238.4 *10*	0.2 *3*	(S(n)+0.1011)	1/2$^+$	1704.6	1/2,3/2		
4238.4 *10*	0.04 *12*	(S(n)+0.2427)	1/2$^+$	1704.6	1/2,3/2		
4238.4 *10*		(S(n)+0.2772)	1/2$^+$	1704.6	1/2,3/2		I_γ: −0.1 *3*.
4238.4 *10*		(S(n)+0.3448)	1/2$^+$	1704.6	1/2,3/2		I_γ: −0.1 *3*.
4238.4 *10*	0.3 *3*	(S(n)+0.4091)	1/2$^+$	1704.6	1/2,3/2		
4238.4 *10*	0.0 *3*	(S(n)+0.5033)	1/2$^+$	1704.6	1/2,3/2		
4238.4 *10*	0.5 *3*	(S(n)+0.5885)	1/2$^+$	1704.6	1/2,3/2		
4238.4 *10*	0.4 *3*	(S(n)+0.6929)	1/2$^+$	1704.6	1/2,3/2		
4238.4 *10*		(S(n)+0.8473)	1/2$^+$	1704.6	1/2,3/2		I_γ: −0.3 *3*.
4238.4 *10*	0.8 *5*	(S(n)+0.9171)	1/2$^+$	1704.6	1/2,3/2		
4238.4 *10*		(S(n)+1.0680)	1/2$^+$	1704.6	1/2,3/2		I_γ: −0.3 *4*.
4268.8 *8*		(S(n)+0.0223)	1/2$^+$	1674.2	1/2,3/2		I_γ: −0.01 *4*.
4268.8 *8*	0.0 *3*	(S(n)+0.1011)	1/2$^+$	1674.2	1/2,3/2		
4268.8 *8*	0.62 *14*	(S(n)+0.2427)	1/2$^+$	1674.2	1/2,3/2		
4268.8 *8*	0.0 *3*	(S(n)+0.2772)	1/2$^+$	1674.2	1/2,3/2		
4268.8 *8*	0.1 *4*	(S(n)+0.3448)	1/2$^+$	1674.2	1/2,3/2		
4268.8 *8*		(S(n)+0.4091)	1/2$^+$	1674.2	1/2,3/2		I_γ: −0.1 *4*.
4268.8 *8*	0.4 *3*	(S(n)+0.5033)	1/2$^+$	1674.2	1/2,3/2		
4268.8 *8*	0.2 *3*	(S(n)+0.5885)	1/2$^+$	1674.2	1/2,3/2		
4268.8 *8*		(S(n)+0.6929)	1/2$^+$	1674.2	1/2,3/2		I_γ: −0.4 *3*.
4268.8 *8*	0.3 *3*	(S(n)+0.8473)	1/2$^+$	1674.2	1/2,3/2		
4268.8 *8*	0.7 *5*	(S(n)+0.9171)	1/2$^+$	1674.2	1/2,3/2		
4268.8 *8*	0.9 *5*	(S(n)+1.0680)	1/2$^+$	1674.2	1/2,3/2		
4273.2 *15*	0.13 *4*	(S(n)+0.0223)	1/2$^+$	1669.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4273.2 *15*		(S(n)+0.1011)	1/2$^+$	1669.8	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.4 *3*.
4273.2 *15*		(S(n)+0.2427)	1/2$^+$	1669.8	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.03 *13*.
4273.2 *15*	0.4 *3*	(S(n)+0.2772)	1/2$^+$	1669.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4273.2 *15*		(S(n)+0.3448)	1/2$^+$	1669.8	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.1 *3*.
4273.2 *15*	0.7 *3*	(S(n)+0.4091)	1/2$^+$	1669.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4273.2 *15*		(S(n)+0.5033)	1/2$^+$	1669.8	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.2 *3*.
4273.2 *15*	0.0 *3*	(S(n)+0.5885)	1/2$^+$	1669.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4273.2 *15*	0.1 *3*	(S(n)+0.6929)	1/2$^+$	1669.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4273.2 *15*	0.2 *3*	(S(n)+0.8473)	1/2$^+$	1669.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4273.2 *15*	0.2 *5*	(S(n)+0.9171)	1/2$^+$	1669.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4273.2 *15*	0.1 *5*	(S(n)+1.0680)	1/2$^+$	1669.8	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4301.4 *8*	0.19 *4*	(S(n)+0.0223)	1/2$^+$	1641.6	1/2$^-$,3/2$^-$	E1	
4301.4 *8*	0.0 *3*	(S(n)+0.1011)	1/2$^+$	1641.6	1/2$^-$,3/2$^-$	E1	
4301.4 *8*	0.18 *12*	(S(n)+0.2427)	1/2$^+$	1641.6	1/2$^-$,3/2$^-$	E1	
4301.4 *8*	0.8 *3*	(S(n)+0.2772)	1/2$^+$	1641.6	1/2$^-$,3/2$^-$	E1	

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
4301.4 *8*	1.0 *3*	(S(n)+0.3448)	1/2$^+$	1641.6	1/2$^-$,3/2$^-$	E1	
4301.4 *8*	0.3 *3*	(S(n)+0.4091)	1/2$^+$	1641.6	1/2$^-$,3/2$^-$	E1	
4301.4 *8*	0.0 *2*	(S(n)+0.5033)	1/2$^+$	1641.6	1/2$^-$,3/2$^-$	E1	
4301.4 *8*		(S(n)+0.5885)	1/2$^+$	1641.6	1/2$^-$,3/2$^-$		I_γ: −0.3 *2*.
4301.4 *8*	0.3 *3*	(S(n)+0.6929)	1/2$^+$	1641.6	1/2$^-$,3/2$^-$	E1	
4301.4 *8*	0.5 *3*	(S(n)+0.8473)	1/2$^+$	1641.6	1/2$^-$,3/2$^-$	E1	
4301.4 *8*	0.6 *5*	(S(n)+0.9171)	1/2$^+$	1641.6	1/2$^-$,3/2$^-$	E1	
4301.4 *8*	0.4 *4*	(S(n)+1.0680)	1/2$^+$	1641.6	1/2$^-$,3/2$^-$	E1	
4308.0 *10*	0.18 *4*	(S(n)+0.0223)	1/2$^+$	1635.0	1/2$^+$,3/2$^+$	M1	
4308.0 *10*		(S(n)+0.1011)	1/2$^+$	1635.0	1/2$^+$,3/2$^+$		I_γ: −0.4 *3*.
4308.0 *10*	0.02 *12*	(S(n)+0.2427)	1/2$^+$	1635.0	1/2$^+$,3/2$^+$	M1	
4308.0 *10*		(S(n)+0.2772)	1/2$^+$	1635.0	1/2$^+$,3/2$^+$		I_γ: −0.1 *3*.
4308.0 *10*	0.1 *3*	(S(n)+0.3448)	1/2$^+$	1635.0	1/2$^+$,3/2$^+$	M1	
4308.0 *10*	0.1 *3*	(S(n)+0.4091)	1/2$^+$	1635.0	1/2$^+$,3/2$^+$	M1	
4308.0 *10*	0.0 *2*	(S(n)+0.5033)	1/2$^+$	1635.0	1/2$^+$,3/2$^+$	M1	
4308.0 *10*		(S(n)+0.5885)	1/2$^+$	1635.0	1/2$^+$,3/2$^+$		I_γ: −0.1 *2*.
4308.0 *10*		(S(n)+0.6929)	1/2$^+$	1635.0	1/2$^+$,3/2$^+$		I_γ: −0.3 *3*.
4308.0 *10*	0.1 *3*	(S(n)+0.8473)	1/2$^+$	1635.0	1/2$^+$,3/2$^+$	M1	
4308.0 *10*	0.1 *4*	(S(n)+0.9171)	1/2$^+$	1635.0	1/2$^+$,3/2$^+$	M1	
4308.0 *10*	0.7 *4*	(S(n)+1.0680)	1/2$^+$	1635.0	1/2$^+$,3/2$^+$	M1	
4327.9 *6*	0.27 *4*	(S(n)+0.0223)	1/2$^+$	1615.1	1/2$^+$,3/2$^+$	M1	
4327.9 *6*		(S(n)+0.1011)	1/2$^+$	1615.1	1/2$^+$,3/2$^+$		I_γ: −0.3 *3*.
4327.9 *6*	0.10 *12*	(S(n)+0.2427)	1/2$^+$	1615.1	1/2$^+$,3/2$^+$	M1	
4327.9 *6*		(S(n)+0.2772)	1/2$^+$	1615.1	1/2$^+$,3/2$^+$		I_γ: −0.1 *3*.
4327.9 *6*		(S(n)+0.3448)	1/2$^+$	1615.1	1/2$^+$,3/2$^+$		I_γ: −0.2 *3*.
4327.9 *6*	0.2 *3*	(S(n)+0.4091)	1/2$^+$	1615.1	1/2$^+$,3/2$^+$	M1	
4327.9 *6*		(S(n)+0.5033)	1/2$^+$	1615.1	1/2$^+$,3/2$^+$		I_γ: −0.3 *2*.
4327.9 *6*	0.1 *2*	(S(n)+0.5885)	1/2$^+$	1615.1	1/2$^+$,3/2$^+$	M1	
4327.9 *6*		(S(n)+0.6929)	1/2$^+$	1615.1	1/2$^+$,3/2$^+$		I_γ: −0.3 *3*.
4327.9 *6*		(S(n)+0.8473)	1/2$^+$	1615.1	1/2$^+$,3/2$^+$		I_γ: −0.1 *3*.
4327.9 *6*		(S(n)+0.9171)	1/2$^+$	1615.1	1/2$^+$,3/2$^+$		I_γ: −0.2 *4*.
4327.9 *6*	0.3 *4*	(S(n)+1.0680)	1/2$^+$	1615.1	1/2$^+$,3/2$^+$	M1	
4340.4 *15*	0.32 *7*	(S(n)+0.0223)	1/2$^+$	1602.6	1/2,3/2		
4340.4 *15*	0.1 *5*	(S(n)+0.1011)	1/2$^+$	1602.6	1/2,3/2		
4340.4 *15*	0.2 *2*	(S(n)+0.2427)	1/2$^+$	1602.6	1/2,3/2		
4340.4 *15*	0.8 *5*	(S(n)+0.2772)	1/2$^+$	1602.6	1/2,3/2		
4340.4 *15*		(S(n)+0.3448)	1/2$^+$	1602.6	1/2,3/2		I_γ: −0.2 *6*.
4340.4 *15*	0.4 *5*	(S(n)+0.4091)	1/2$^+$	1602.6	1/2,3/2		
4340.4 *15*	0.3 *4*	(S(n)+0.5033)	1/2$^+$	1602.6	1/2,3/2		
4340.4 *15*	0.4 *5*	(S(n)+0.5885)	1/2$^+$	1602.6	1/2,3/2		
4340.4 *15*		(S(n)+0.6929)	1/2$^+$	1602.6	1/2,3/2		I_γ: −0.4 *5*.
4340.4 *15*	1.8 *6*	(S(n)+0.8473)	1/2$^+$	1602.6	1/2,3/2		
4340.4 *15*		(S(n)+0.9171)	1/2$^+$	1602.6	1/2,3/2		I_γ: −0.5 *7*.
4340.4 *15*	0.7 *7*	(S(n)+1.0680)	1/2$^+$	1602.6	1/2,3/2		
4348.4 *15*	0.15 *4*	(S(n)+0.0223)	1/2$^+$	1594.6	1/2$^+$,3/2$^+$	M1	
4348.4 *15*	0.2 *3*	(S(n)+0.1011)	1/2$^+$	1594.6	1/2$^+$,3/2$^+$	M1	
4348.4 *15*	0.08 *12*	(S(n)+0.2427)	1/2$^+$	1594.6	1/2$^+$,3/2$^+$	M1	
4348.4 *15*	0.0 *3*	(S(n)+0.2772)	1/2$^+$	1594.6	1/2$^+$,3/2$^+$	M1	
4348.4 *15*	0.1 *3*	(S(n)+0.3448)	1/2$^+$	1594.6	1/2$^+$,3/2$^+$	M1	
4348.4 *15*	0.0 *3*	(S(n)+0.4091)	1/2$^+$	1594.6	1/2$^+$,3/2$^+$	M1	
4348.4 *15*		(S(n)+0.5033)	1/2$^+$	1594.6	1/2$^+$,3/2$^+$		I_γ: −0.3 *2*.
4348.4 *15*	0.2 *2*	(S(n)+0.5885)	1/2$^+$	1594.6	1/2$^+$,3/2$^+$	M1	
4348.4 *15*	0.1 *3*	(S(n)+0.6929)	1/2$^+$	1594.6	1/2$^+$,3/2$^+$	M1	
4348.4 *15*		(S(n)+0.8473)	1/2$^+$	1594.6	1/2$^+$,3/2$^+$		I_γ: −0.1 *3*.
4348.4 *15*	0.1 *4*	(S(n)+0.9171)	1/2$^+$	1594.6	1/2$^+$,3/2$^+$		
4348.4 *15*	0.4 *4*	(S(n)+1.0680)	1/2$^+$	1594.6	1/2$^+$,3/2$^+$	M1	

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
4360.7 *9*	0.32 *4*	(S(n)+0.0223)	1/2$^+$	1582.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4360.7 *9*	0.3 *3*	(S(n)+0.1011)	1/2$^+$	1582.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4360.7 *9*	0.49 *12*	(S(n)+0.2427)	1/2$^+$	1582.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4360.7 *9*	0.5 *3*	(S(n)+0.2772)	1/2$^+$	1582.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4360.7 *9*	0.2 *3*	(S(n)+0.3448)	1/2$^+$	1582.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4360.7 *9*	0.2 *3*	(S(n)+0.4091)	1/2$^+$	1582.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4360.7 *9*	0.2 *2*	(S(n)+0.5033)	1/2$^+$	1582.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4360.7 *9*	0.5 *3*	(S(n)+0.5885)	1/2$^+$	1582.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4360.7 *9*		(S(n)+0.6929)	1/2$^+$	1582.3	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.3 *3*.
4360.7 *9*	0.3 *3*	(S(n)+0.8473)	1/2$^+$	1582.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4360.7 *9*	0.1 *4*	(S(n)+0.9171)	1/2$^+$	1582.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4360.7 *9*	0.6 *4*	(S(n)+1.0680)	1/2$^+$	1582.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4366.0 *14*	0.16 *4*	(S(n)+0.0223)	1/2$^+$	1577.0	1/2,3/2		
4366.0 *14*		(S(n)+0.1011)	1/2$^+$	1577.0	1/2,3/2		I_γ: −0.1 *3*.
4366.0 *14*	0.06 *12*	(S(n)+0.2427)	1/2$^+$	1577.0	1/2,3/2		
4366.0 *14*	0.0 *3*	(S(n)+0.2772)	1/2$^+$	1577.0	1/2,3/2		
4366.0 *14*	0.7 *3*	(S(n)+0.3448)	1/2$^+$	1577.0	1/2,3/2		
4366.0 *14*	0.4 *3*	(S(n)+0.4091)	1/2$^+$	1577.0	1/2,3/2		
4366.0 *14*	0.0 *2*	(S(n)+0.5033)	1/2$^+$	1577.0	1/2,3/2		
4366.0 *14*	0.1 *2*	(S(n)+0.5885)	1/2$^+$	1577.0	1/2,3/2		
4366.0 *14*	0.2 *3*	(S(n)+0.6929)	1/2$^+$	1577.0	1/2,3/2		
4366.0 *14*	0.4 *3*	(S(n)+0.8473)	1/2$^+$	1577.0	1/2,3/2		
4366.0 *14*	0.2 *4*	(S(n)+0.9171)	1/2$^+$	1577.0	1/2,3/2		
4366.0 *14*	0.5 *4*	(S(n)+1.0680)	1/2$^+$	1577.0	1/2,3/2		
4381.7 *5*	0.24 *4*	(S(n)+0.0223)	1/2$^+$	1561.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4381.7 *5*	0.6 *3*	(S(n)+0.1011)	1/2$^+$	1561.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4381.7 *5*	0.07 *13*	(S(n)+0.2427)	1/2$^+$	1561.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4381.7 *5*	1.6 *4*	(S(n)+0.2772)	1/2$^+$	1561.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4381.7 *5*	0.2 *3*	(S(n)+0.3448)	1/2$^+$	1561.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4381.7 *5*	0.4 *3*	(S(n)+0.4091)	1/2$^+$	1561.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4381.7 *5*	0.4 *3*	(S(n)+0.5033)	1/2$^+$	1561.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4381.7 *5*		(S(n)+0.5885)	1/2$^+$	1561.3	1/2$^{(-)}$,3/2$^{(-)}$		I_γ: −0.1 *3*.
4381.7 *5*	0.5 *3*	(S(n)+0.6929)	1/2$^+$	1561.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4381.7 *5*	0.3 *3*	(S(n)+0.8473)	1/2$^+$	1561.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4381.7 *5*	0.7 *5*	(S(n)+0.9171)	1/2$^+$	1561.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4381.7 *5*	0.1 *5*	(S(n)+1.0680)	1/2$^+$	1561.3	1/2$^{(-)}$,3/2$^{(-)}$	(E1)	
4385.9 *10*	0.00 *4*	(S(n)+0.0223)	1/2$^+$	1557.1	1/2$^+$,3/2$^+$	M1	
4385.9 *10*		(S(n)+0.1011)	1/2$^+$	1557.1	1/2$^+$,3/2$^+$		I_γ: −0.3 *3*.
4385.9 *10*	0.32 *13*	(S(n)+0.2427)	1/2$^+$	1557.1	1/2$^+$,3/2$^+$	M1	
4385.9 *10*	0.0 *3*	(S(n)+0.2772)	1/2$^+$	1557.1	1/2$^+$,3/2$^+$	M1	
4385.9 *10*	0.6 *4*	(S(n)+0.3448)	1/2$^+$	1557.1	1/2$^+$,3/2$^+$	M1	
4385.9 *10*		(S(n)+0.4091)	1/2$^+$	1557.1	1/2$^+$,3/2$^+$		I_γ: −0.2 *3*.
4385.9 *10*		(S(n)+0.5033)	1/2$^+$	1557.1	1/2$^+$,3/2$^+$		I_γ: −0.2 *3*.
4385.9 *10*	0.1 *3*	(S(n)+0.5885)	1/2$^+$	1557.1	1/2$^+$,3/2$^+$	M1	
4385.9 *10*		(S(n)+0.6929)	1/2$^+$	1557.1	1/2$^+$,3/2$^+$		I_γ: −0.2 *3*.
4385.9 *10*		(S(n)+0.8473)	1/2$^+$	1557.1	1/2$^+$,3/2$^+$		I_γ: −0.2 *3*.
4385.9 *10*		(S(n)+0.9171)	1/2$^+$	1557.1	1/2$^+$,3/2$^+$		I_γ: −0.2 *5*.
4385.9 *10*	0.1 *4*	(S(n)+1.0680)	1/2$^+$	1557.1	1/2$^+$,3/2$^+$	M1	
4421.7 *5*	0.33 *3*	(S(n)+0.0223)	1/2$^+$	1521.3	1/2$^-$,3/2$^-$	E1	
4421.7 *5*	0.7 *3*	(S(n)+0.1011)	1/2$^+$	1521.3	1/2$^-$,3/2$^-$	E1	
4421.7 *5*		(S(n)+0.2427)	1/2$^+$	1521.3	1/2$^-$,3/2$^-$		I_γ: −0.01 *11*.
4421.7 *5*	0.1 *2*	(S(n)+0.2772)	1/2$^+$	1521.3	1/2$^-$,3/2$^-$	E1	
4421.7 *5*	2.2 *4*	(S(n)+0.3448)	1/2$^+$	1521.3	1/2$^-$,3/2$^-$	E1	
4421.7 *5*	0.4 *3*	(S(n)+0.4091)	1/2$^+$	1521.3	1/2$^-$,3/2$^-$	E1	
4421.7 *5*	0.0 *2*	(S(n)+0.5033)	1/2$^+$	1521.3	1/2$^-$,3/2$^-$	E1	
4421.7 *5*	0.6 *2*	(S(n)+0.5885)	1/2$^+$	1521.3	1/2$^-$,3/2$^-$	E1	

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
4421.7 *5*	0.9 *3*	(S(n)+0.6929)	1/2$^+$	1521.3	1/2$^-$,3/2$^-$	E1	
4421.7 *5*	0.3 *3*	(S(n)+0.8473)	1/2$^+$	1521.3	1/2$^-$,3/2$^-$	E1	
4421.7 *5*	0.5 *4*	(S(n)+0.9171)	1/2$^+$	1521.3	1/2$^-$,3/2$^-$	E1	
4421.7 *5*	0.7 *4*	(S(n)+1.0680)	1/2$^+$	1521.3	1/2$^-$,3/2$^-$	E1	
4438.6 *8*	0.14 *3*	(S(n)+0.0223)	1/2$^+$	1504.4	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4438.6 *8*	0.5 *3*	(S(n)+0.1011)	1/2$^+$	1504.4	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4438.6 *8*		(S(n)+0.2427)	1/2$^+$	1504.4	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.01 *10*.
4438.6 *8*	0.0 *2*	(S(n)+0.2772)	1/2$^+$	1504.4	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4438.6 *8*	0.8 *3*	(S(n)+0.3448)	1/2$^+$	1504.4	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4438.6 *8*		(S(n)+0.4091)	1/2$^+$	1504.4	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.1 *2*.
4438.6 *8*	0.06 *19*	(S(n)+0.5033)	1/2$^+$	1504.4	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4438.6 *8*	0.09 *19*	(S(n)+0.5885)	1/2$^+$	1504.4	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4438.6 *8*	0.2 *3*	(S(n)+0.6929)	1/2$^+$	1504.4	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4438.6 *8*	0.2 *3*	(S(n)+0.8473)	1/2$^+$	1504.4	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4438.6 *8*	0.2 *4*	(S(n)+0.9171)	1/2$^+$	1504.4	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4438.6 *8*	0.1 *4*	(S(n)+1.0680)	1/2$^+$	1504.4	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4464.7 *3*	0.47 *3*	(S(n)+0.0223)	1/2$^+$	1478.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4464.7 *3*	0.5 *3*	(S(n)+0.1011)	1/2$^+$	1478.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4464.7 *3*	0.09 *10*	(S(n)+0.2427)	1/2$^+$	1478.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4464.7 *3*	0.0 *2*	(S(n)+0.2772)	1/2$^+$	1478.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4464.7 *3*	0.3 *3*	(S(n)+0.3448)	1/2$^+$	1478.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4464.7 *3*	0.4 *3*	(S(n)+0.4091)	1/2$^+$	1478.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4464.7 *3*	0.06 *19*	(S(n)+0.5033)	1/2$^+$	1478.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4464.7 *3*	0.4 *2*	(S(n)+0.5885)	1/2$^+$	1478.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4464.7 *3*		(S(n)+0.6929)	1/2$^+$	1478.3	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.3 *3*.
4464.7 *3*		(S(n)+0.8473)	1/2$^+$	1478.3	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.1 *3*.
4464.7 *3*	0.1 *4*	(S(n)+0.9171)	1/2$^+$	1478.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4464.7 *3*	0.7 *4*	(S(n)+1.0680)	1/2$^+$	1478.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4474.4 *12*	0.15 *3*	(S(n)+0.0223)	1/2$^+$	1468.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4474.4 *12*	0.0 *3*	(S(n)+0.1011)	1/2$^+$	1468.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4474.4 *12*	0.09 *10*	(S(n)+0.2427)	1/2$^+$	1468.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4474.4 *12*	0.0 *2*	(S(n)+0.2772)	1/2$^+$	1468.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4474.4 *12*		(S(n)+0.3448)	1/2$^+$	1468.6	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.4 *3*.
4474.4 *12*		(S(n)+0.4091)	1/2$^+$	1468.6	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.1 *2*.
4474.4 *12*	0.09 *19*	(S(n)+0.5033)	1/2$^+$	1468.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4474.4 *12*	0.01 *19*	(S(n)+0.5885)	1/2$^+$	1468.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4474.4 *12*	0.6 *3*	(S(n)+0.6929)	1/2$^+$	1468.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4474.4 *12*	0.1 *3*	(S(n)+0.8473)	1/2$^+$	1468.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4474.4 *12*	0.4 *4*	(S(n)+0.9171)	1/2$^+$	1468.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4474.4 *12*	0.7 *4*	(S(n)+1.0680)	1/2$^+$	1468.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4495.2 *13*	0.12 *3*	(S(n)+0.0223)	1/2$^+$	1447.8	1/2$^+$,3/2$^+$	M1	
4495.2 *13*	0.2 *2*	(S(n)+0.1011)	1/2$^+$	1447.8	1/2$^+$,3/2$^+$	M1	
4495.2 *13*		(S(n)+0.2427)	1/2$^+$	1447.8	1/2$^+$,3/2$^+$		I_γ: −0.20 *10*.
4495.2 *13*	0.1 *2*	(S(n)+0.2772)	1/2$^+$	1447.8	1/2$^+$,3/2$^+$	M1	
4495.2 *13*		(S(n)+0.3448)	1/2$^+$	1447.8	1/2$^+$,3/2$^+$		I_γ: −0.3 *3*.
4495.2 *13*		(S(n)+0.4091)	1/2$^+$	1447.8	1/2$^+$,3/2$^+$		I_γ: −0.4 *2*.
4495.2 *13*	0.08 *19*	(S(n)+0.5033)	1/2$^+$	1447.8	1/2$^+$,3/2$^+$	M1	
4495.2 *13*	0.3 *2*	(S(n)+0.5885)	1/2$^+$	1447.8	1/2$^+$,3/2$^+$	M1	
4495.2 *13*	0.3 *3*	(S(n)+0.6929)	1/2$^+$	1447.8	1/2$^+$,3/2$^+$	M1	
4495.2 *13*		(S(n)+0.8473)	1/2$^+$	1447.8	1/2$^+$,3/2$^+$		I_γ: −0.5 *3*.
4495.2 *13*		(S(n)+0.9171)	1/2$^+$	1447.8	1/2$^+$,3/2$^+$		I_γ: −0.1 *4*.
4495.2 *13*		(S(n)+1.0680)	1/2$^+$	1447.8	1/2$^+$,3/2$^+$		I_γ: −0.4 *4*.
4513.4 *12*	0.13 *3*	(S(n)+0.0223)	1/2$^+$	1429.6	1/2,3/2		
4513.4 *12*	0.6 *3*	(S(n)+0.1011)	1/2$^+$	1429.6	1/2,3/2		
4513.4 *12*	0.30 *11*	(S(n)+0.2427)	1/2$^+$	1429.6	1/2,3/2		

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
4513.4 *12*	0.1 *2*	(S(n)+0.2772)	$1/2^+$	1429.6	1/2,3/2		

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
4513.4 *12*		(S(n)+0.3448)	1/2$^+$	1429.6	1/2,3/2		
4513.4 *12*	0.2 *3*	(S(n)+0.4091)	1/2$^+$	1429.6	1/2,3/2		
4513.4 *12*	0.3 *2*	(S(n)+0.5033)	1/2$^+$	1429.6	1/2,3/2		
4513.4 *12*	0.6 *2*	(S(n)+0.5885)	1/2$^+$	1429.6	1/2,3/2		
4513.4 *12*	0.0 *3*	(S(n)+0.6929)	1/2$^+$	1429.6	1/2,3/2		
4513.4 *12*	0.8 *3*	(S(n)+0.8473)	1/2$^+$	1429.6	1/2,3/2		
4513.4 *12*	0.0 *4*	(S(n)+0.9171)	1/2$^+$	1429.6	1/2,3/2		
4513.4 *12*		(S(n)+1.0680)	1/2$^+$	1429.6	1/2,3/2		I_γ: −0.2 *4*.
4526.1 *13*	0.14 *3*	(S(n)+0.0223)	1/2$^+$	1416.9	1/2$^+$,3/2$^+$	M1	
4526.1 *13*	0.4 *3*	(S(n)+0.1011)	1/2$^+$	1416.9	1/2$^+$,3/2$^+$	M1	
4526.1 *13*	0.17 *10*	(S(n)+0.2427)	1/2$^+$	1416.9	1/2$^+$,3/2$^+$	M1	
4526.1 *13*	0.2 *2*	(S(n)+0.2772)	1/2$^+$	1416.9	1/2$^+$,3/2$^+$	M1	
4526.1 *13*	0.1 *3*	(S(n)+0.3448)	1/2$^+$	1416.9	1/2$^+$,3/2$^+$	M1	
4526.1 *13*	0.1 *2*	(S(n)+0.4091)	1/2$^+$	1416.9	1/2$^+$,3/2$^+$	M1	
4526.1 *13*		(S(n)+0.5033)	1/2$^+$	1416.9	1/2$^+$,3/2$^+$		I_γ: −0.36 *18*.
4526.1 *13*	0.16 *19*	(S(n)+0.5885)	1/2$^+$	1416.9	1/2$^+$,3/2$^+$	M1	
4526.1 *13*		(S(n)+0.6929)	1/2$^+$	1416.9	1/2$^+$,3/2$^+$		I_γ: −0.1 *2*.
4526.1 *13*	0.1 *2*	(S(n)+0.8473)	1/2$^+$	1416.9	1/2$^+$,3/2$^+$	M1	
4526.1 *13*		(S(n)+0.9171)	1/2$^+$	1416.9	1/2$^+$,3/2$^+$		I_γ: −0.2 *4*.
4526.1 *13*		(S(n)+1.0680)	1/2$^+$	1416.9	1/2$^+$,3/2$^+$		I_γ: −0.2 *4*.
4543.7 *11*	0.21 *3*	(S(n)+0.0223)	1/2$^+$	1399.3	1/2$^-$,3/2$^-$	E1	
4543.7 *11*	0.4 *3*	(S(n)+0.1011)	1/2$^+$	1399.3	1/2$^-$,3/2$^-$	E1	
4543.7 *11*	0.44 *11*	(S(n)+0.2427)	1/2$^+$	1399.3	1/2$^-$,3/2$^-$	E1	
4543.7 *11*	0.3 *2*	(S(n)+0.2772)	1/2$^+$	1399.3	1/2$^-$,3/2$^-$	E1	
4543.7 *11*	0.4 *3*	(S(n)+0.3448)	1/2$^+$	1399.3	1/2$^-$,3/2$^-$	E1	
4543.7 *11*		(S(n)+0.4091)	1/2$^+$	1399.3	1/2$^-$,3/2$^-$		I_γ: −0.1 *2*.
4543.7 *11*	0.7 *2*	(S(n)+0.5033)	1/2$^+$	1399.3	1/2$^-$,3/2$^-$	E1	
4543.7 *11*	0.05 *19*	(S(n)+0.5885)	1/2$^+$	1399.3	1/2$^-$,3/2$^-$	E1	
4543.7 *11*	1.4 *3*	(S(n)+0.6929)	1/2$^+$	1399.3	1/2$^-$,3/2$^-$	E1	
4543.7 *11*	0.0 *3*	(S(n)+0.8473)	1/2$^+$	1399.3	1/2$^-$,3/2$^-$	E1	
4543.7 *11*	0.7 *4*	(S(n)+0.9171)	1/2$^+$	1399.3	1/2$^-$,3/2$^-$	E1	
4543.7 *11*	0.7 *4*	(S(n)+1.0680)	1/2$^+$	1399.3	1/2$^-$,3/2$^-$	E1	
4796.9 *2*	1.02 *3*	(S(n)+0.0223)	1/2$^+$	1146.1	1/2$^-$,3/2$^-$	E1	
4796.9 *2*	0.4 *2*	(S(n)+0.1011)	1/2$^+$	1146.1	1/2$^-$,3/2$^-$	E1	
4796.9 *2*	0.09 *9*	(S(n)+0.2427)	1/2$^+$	1146.1	1/2$^-$,3/2$^-$	E1	
4796.9 *2*	1.7 *3*	(S(n)+0.2772)	1/2$^+$	1146.1	1/2$^-$,3/2$^-$	E1	
4796.9 *2*		(S(n)+0.3448)	1/2$^+$	1146.1	1/2$^-$,3/2$^-$		I_γ: −0.6 *2*.
4796.9 *2*	0.7 *2*	(S(n)+0.4091)	1/2$^+$	1146.1	1/2$^-$,3/2$^-$	E1	
4796.9 *2*	1.5 *2*	(S(n)+0.5033)	1/2$^+$	1146.1	1/2$^-$,3/2$^-$	E1	
4796.9 *2*	0.11 *17*	(S(n)+0.5885)	1/2$^+$	1146.1	1/2$^-$,3/2$^-$	E1	
4796.9 *2*	0.3 *2*	(S(n)+0.6929)	1/2$^+$	1146.1	1/2$^-$,3/2$^-$	E1	
4796.9 *2*	0.7 *3*	(S(n)+0.8473)	1/2$^+$	1146.1	1/2$^-$,3/2$^-$	E1	
4796.9 *2*	0.3 *4*	(S(n)+0.9171)	1/2$^+$	1146.1	1/2$^-$,3/2$^-$	E1	
4796.9 *2*		(S(n)+1.0680)	1/2$^+$	1146.1	1/2$^-$,3/2$^-$		I_γ: −0.3 *3*.
4803.3 *2*	0.90 *3*	(S(n)+0.0223)	1/2$^+$	1139.7	1/2$^-$,3/2$^-$	E1	
4803.3 *2*	0.8 *3*	(S(n)+0.1011)	1/2$^+$	1139.7	1/2$^-$,3/2$^-$	E1	
4803.3 *2*	0.13 *9*	(S(n)+0.2427)	1/2$^+$	1139.7	1/2$^-$,3/2$^-$	E1	
4803.3 *2*	0.06 *18*	(S(n)+0.2772)	1/2$^+$	1139.7	1/2$^-$,3/2$^-$	E1	
4803.3 *2*	0.1 *2*	(S(n)+0.3448)	1/2$^+$	1139.7	1/2$^-$,3/2$^-$	E1	
4803.3 *2*	0.3 *2*	(S(n)+0.4091)	1/2$^+$	1139.7	1/2$^-$,3/2$^-$	E1	
4803.3 *2*	1.0 *2*	(S(n)+0.5033)	1/2$^+$	1139.7	1/2$^-$,3/2$^-$	E1	
4803.3 *2*	1.4 *2*	(S(n)+0.5885)	1/2$^+$	1139.7	1/2$^-$,3/2$^-$	E1	
4803.3 *2*	0.6 *2*	(S(n)+0.6929)	1/2$^+$	1139.7	1/2$^-$,3/2$^-$	E1	
4803.3 *2*	0.0 *2*	(S(n)+0.8473)	1/2$^+$	1139.7	1/2$^-$,3/2$^-$	E1	
4803.3 *2*	0.9 *4*	(S(n)+0.9171)	1/2$^+$	1139.7	1/2$^-$,3/2$^-$	E1	
4803.3 *2*	0.3 *3*	(S(n)+1.0680)	1/2$^+$	1139.7	1/2$^-$,3/2$^-$	E1	

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
4814.4 *3*	0.44 *3*	(S(n)+0.0223)	1/2$^+$	1128.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4814.4 *3*		(S(n)+0.1011)	1/2$^+$	1128.6	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.3 *2*.
4814.4 *3*	0.05 *8*	(S(n)+0.2427)	1/2$^+$	1128.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4814.4 *3*	0.25 *17*	(S(n)+0.2772)	1/2$^+$	1128.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4814.4 *3*	0.0 *2*	(S(n)+0.3448)	1/2$^+$	1128.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4814.4 *3*	0.9 *2*	(S(n)+0.4091)	1/2$^+$	1128.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4814.4 *3*	0.22 *16*	(S(n)+0.5033)	1/2$^+$	1128.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4814.4 *3*	0.25 *17*	(S(n)+0.5885)	1/2$^+$	1128.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4814.4 *3*	0.11 *18*	(S(n)+0.6929)	1/2$^+$	1128.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4814.4 *3*		(S(n)+0.8473)	1/2$^+$	1128.6	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.4 *2*.
4814.4 *3*	0.2 *3*	(S(n)+0.9171)	1/2$^+$	1128.6	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4814.4 *3*		(S(n)+1.0680)	1/2$^+$	1128.6	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.1 *3*.
4832.2 *3*	0.31 *3*	(S(n)+0.0223)	1/2$^+$	1110.8	1/2$^-$,3/2$^-$	E1	
4832.2 *3*	0.3 *2*	(S(n)+0.1011)	1/2$^+$	1110.8	1/2$^-$,3/2$^-$	E1	
4832.2 *3*	0.88 *10*	(S(n)+0.2427)	1/2$^+$	1110.8	1/2$^-$,3/2$^-$	E1	
4832.2 *3*	0.36 *17*	(S(n)+0.2772)	1/2$^+$	1110.8	1/2$^-$,3/2$^-$	E1	
4832.2 *3*	0.0 *2*	(S(n)+0.3448)	1/2$^+$	1110.8	1/2$^-$,3/2$^-$	E1	
4832.2 *3*	1.3 *4*	(S(n)+0.4091)	1/2$^+$	1110.8	1/2$^-$,3/2$^-$	E1	
4832.2 *3*	0.61 *18*	(S(n)+0.5033)	1/2$^+$	1110.8	1/2$^-$,3/2$^-$	E1	
4832.2 *3*	0.18 *16*	(S(n)+0.5885)	1/2$^+$	1110.8	1/2$^-$,3/2$^-$	E1	
4832.2 *3*	0.21 *18*	(S(n)+0.6929)	1/2$^+$	1110.8	1/2$^-$,3/2$^-$	E1	
4832.2 *3*		(S(n)+0.8473)	1/2$^+$	1110.8	1/2$^-$,3/2$^-$		I_γ: −0.2 *2*.
4832.2 *3*	0.2 *4*	(S(n)+0.9171)	1/2$^+$	1110.8	1/2$^-$,3/2$^-$	E1	
4832.2 *3*	2.3 *4*	(S(n)+1.0680)	1/2$^+$	1110.8	1/2$^-$,3/2$^-$	E1	
4863.5 *2*	2.96 *4*	(S(n)+0.0223)	1/2$^+$	1079.5	1/2$^-$,3/2$^-$	E1	
4863.5 *2*	0.1 *2*	(S(n)+0.1011)	1/2$^+$	1079.5	1/2$^-$,3/2$^-$	E1	
4863.5 *2*	0.79 *10*	(S(n)+0.2427)	1/2$^+$	1079.5	1/2$^-$,3/2$^-$	E1	
4863.5 *2*	0.9 *2*	(S(n)+0.2772)	1/2$^+$	1079.5	1/2$^-$,3/2$^-$	E1	
4863.5 *2*	2.74 *4*	(S(n)+0.3448)	1/2$^+$	1079.5	1/2$^-$,3/2$^-$	E1	
4863.5 *2*		(S(n)+0.4091)	1/2$^+$	1079.5	1/2$^-$,3/2$^-$		I_γ: −0.23 *18*.
4863.5 *2*	0.09 *16*	(S(n)+0.5033)	1/2$^+$	1079.5	1/2$^-$,3/2$^-$	E1	
4863.5 *2*	0.59 *18*	(S(n)+0.5885)	1/2$^+$	1079.5	1/2$^-$,3/2$^-$	E1	
4863.5 *2*	0.21 *19*	(S(n)+0.6929)	1/2$^+$	1079.5	1/2$^-$,3/2$^-$	E1	
4863.5 *2*	1.3 *3*	(S(n)+0.8473)	1/2$^+$	1079.5	1/2$^-$,3/2$^-$	E1	
4863.5 *2*		(S(n)+0.9171)	1/2$^+$	1079.5	1/2$^-$,3/2$^-$		I_γ: −0.2 *3*.
4863.5 *2*	0.5 *3*	(S(n)+1.0680)	1/2$^+$	1079.5	1/2$^-$,3/2$^-$	E1	
4881.7 *3*	0.16 *3*	(S(n)+0.0223)	1/2$^+$	1061.3	1/2$^-$,3/2$^-$	E1	
4881.7 *3*	1.7 *3*	(S(n)+0.1011)	1/2$^+$	1061.3	1/2$^-$,3/2$^-$	E1	
4881.7 *3*	0.21 *8*	(S(n)+0.2427)	1/2$^+$	1061.3	1/2$^-$,3/2$^-$	E1	
4881.7 *3*	0.23 *18*	(S(n)+0.2772)	1/2$^+$	1061.3	1/2$^-$,3/2$^-$	E1	
4881.7 *3*	0.9 *3*	(S(n)+0.3448)	1/2$^+$	1061.3	1/2$^-$,3/2$^-$	E1	
4881.7 *3*	3.3 *4*	(S(n)+0.4091)	1/2$^+$	1061.3	1/2$^-$,3/2$^-$	E1	
4881.7 *3*	0.13 *16*	(S(n)+0.5033)	1/2$^+$	1061.3	1/2$^-$,3/2$^-$	E1	
4881.7 *3*	0.04 *16*	(S(n)+0.5885)	1/2$^+$	1061.3	1/2$^-$,3/2$^-$	E1	
4881.7 *3*	0.34 *19*	(S(n)+0.6929)	1/2$^+$	1061.3	1/2$^-$,3/2$^-$	E1	
4881.7 *3*	2.7 *4*	(S(n)+0.8473)	1/2$^+$	1061.3	1/2$^-$,3/2$^-$	E1	
4881.7 *3*	1.7 *4*	(S(n)+0.9171)	1/2$^+$	1061.3	1/2$^-$,3/2$^-$	E1	
4881.7 *3*	0.6 *4*	(S(n)+1.0680)	1/2$^+$	1061.3	1/2$^-$,3/2$^-$	E1	
4939.7 *10*	0.03 *3*	(S(n)+0.0223)	1/2$^+$	1003.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4939.7 *10*	0.1 *2*	(S(n)+0.1011)	1/2$^+$	1003.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4939.7 *10*	0.13 *8*	(S(n)+0.2427)	1/2$^+$	1003.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4939.7 *10*		(S(n)+0.2772)	1/2$^+$	1003.3	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.05 *17*.
4939.7 *10*	0.1 *2*	(S(n)+0.3448)	1/2$^+$	1003.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4939.7 *10*	0.3 *2*	(S(n)+0.4091)	1/2$^+$	1003.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4939.7 *10*	0.36 *17*	(S(n)+0.5033)	1/2$^+$	1003.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4939.7 *10*	0.03 *16*	(S(n)+0.5885)	1/2$^+$	1003.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
4939.7 *10*		(S(n)+0.6929)	1/2$^+$	1003.3	1/2$^{(+)}$,3/2$^{(+)}$		I_γ: −0.18 *17*.
4939.7 *10*	0.5 *3*	(S(n)+0.8473)	1/2$^+$	1003.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4939.7 *10*	0.6 *4*	(S(n)+0.9171)	1/2$^+$	1003.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4939.7 *10*	0.8 *4*	(S(n)+1.0680)	1/2$^+$	1003.3	1/2$^{(+)}$,3/2$^{(+)}$	(M1)	
4971.0 *13*		(S(n)+0.0223)	1/2$^+$	972.0	1/2$^+$,3/2$^+$		I_γ: −0.04 *3*.
4971.0 *13*	0.2 *3*	(S(n)+0.1011)	1/2$^+$	972.0	1/2$^+$,3/2$^+$	M1	
4971.0 *13*		(S(n)+0.2427)	1/2$^+$	972.0	1/2$^+$,3/2$^+$		I_γ: −0.13 *10*.
4971.0 *13*	0.3 *3*	(S(n)+0.2772)	1/2$^+$	972.0	1/2$^+$,3/2$^+$	M1	
4971.0 *13*	0.1 *3*	(S(n)+0.3448)	1/2$^+$	972.0	1/2$^+$,3/2$^+$	M1	
4971.0 *13*	0.2 *3*	(S(n)+0.4091)	1/2$^+$	972.0	1/2$^+$,3/2$^+$	M1	
4971.0 *13*	0.2 *2*	(S(n)+0.5033)	1/2$^+$	972.0	1/2$^+$,3/2$^+$	M1	
4971.0 *13*		(S(n)+0.5885)	1/2$^+$	972.0	1/2$^+$,3/2$^+$		I_γ: −0.1 *2*.
4971.0 *13*	0.1 *3*	(S(n)+0.6929)	1/2$^+$	972.0	1/2$^+$,3/2$^+$	M1	
4971.0 *13*	0.2 *3*	(S(n)+0.8473)	1/2$^+$	972.0	1/2$^+$,3/2$^+$	M1	
4971.0 *13*	0.8 *5*	(S(n)+0.9171)	1/2$^+$	972.0	1/2$^+$,3/2$^+$	M1	
4971.0 *13*	0.2 *4*	(S(n)+1.0680)	1/2$^+$	972.0	1/2$^+$,3/2$^+$	M1	
5083.0 *6*	0.13 *2*	(S(n)+0.0223)	1/2$^+$	860.0	1/2$^+$,3/2$^+$	M1	
5083.0 *6*	0.3 *2*	(S(n)+0.1011)	1/2$^+$	860.0	1/2$^+$,3/2$^+$	M1	
5083.0 *6*	0.32 *8*	(S(n)+0.2427)	1/2$^+$	860.0	1/2$^+$,3/2$^+$	M1	
5083.0 *6*		(S(n)+0.2772)	1/2$^+$	860.0	1/2$^+$,3/2$^+$		I_γ: −0.25 *15*.
5083.0 *6*	0.2 *2*	(S(n)+0.3448)	1/2$^+$	860.0	1/2$^+$,3/2$^+$	M1	
5083.0 *6*	0.30 *19*	(S(n)+0.4091)	1/2$^+$	860.0	1/2$^+$,3/2$^+$	M1	
5083.0 *6*		(S(n)+0.5033)	1/2$^+$	860.0	1/2$^+$,3/2$^+$		I_γ: −0.05 *14*.
5083.0 *6*		(S(n)+0.5885)	1/2$^+$	860.0	1/2$^+$,3/2$^+$		I_γ: −0.01 *14*.
5083.0 *6*		(S(n)+0.6929)	1/2$^+$	860.0	1/2$^+$,3/2$^+$		I_γ: −0.18 *16*.
5083.0 *6*	0.3 *2*	(S(n)+0.8473)	1/2$^+$	860.0	1/2$^+$,3/2$^+$	M1	
5083.0 *6*	0.1 *3*	(S(n)+0.9171)	1/2$^+$	860.0	1/2$^+$,3/2$^+$	M1	
5083.0 *6*	1.0 *4*	(S(n)+1.0680)	1/2$^+$	860.0	1/2$^+$,3/2$^+$	M1	
5161.0 *5*		(S(n)+0.0223)	1/2$^+$	782.0	1/2$^+$,3/2$^+$		I_γ: −0.06 *2*.
5161.0 *5*	0.3 *2*	(S(n)+0.1011)	1/2$^+$	782.0	1/2$^+$,3/2$^+$	M1	
5161.0 *5*	0.05 *7*	(S(n)+0.2427)	1/2$^+$	782.0	1/2$^+$,3/2$^+$	M1	
5161.0 *5*	0.31 *17*	(S(n)+0.2772)	1/2$^+$	782.0	1/2$^+$,3/2$^+$	M1	
5161.0 *5*	0.4 *2*	(S(n)+0.3448)	1/2$^+$	782.0	1/2$^+$,3/2$^+$	M1	
5161.0 *5*	0.34 *19*	(S(n)+0.4091)	1/2$^+$	782.0	1/2$^+$,3/2$^+$	M1	
5161.0 *5*	0.25 *15*	(S(n)+0.5033)	1/2$^+$	782.0	1/2$^+$,3/2$^+$	M1	
5161.0 *5*	0.16 *15*	(S(n)+0.5885)	1/2$^+$	782.0	1/2$^+$,3/2$^+$	M1	
5161.0 *5*		(S(n)+0.6929)	1/2$^+$	782.0	1/2$^+$,3/2$^+$		I_γ: −0.12 *16*.
5161.0 *5*	0.1 *2*	(S(n)+0.8473)	1/2$^+$	782.0	1/2$^+$,3/2$^+$	M1	
5161.0 *5*	0.2 *3*	(S(n)+0.9171)	1/2$^+$	782.0	1/2$^+$,3/2$^+$	M1	
5161.0 *5*	1.4 *4*	(S(n)+1.0680)	1/2$^+$	782.0	1/2$^+$,3/2$^+$	M1	
5198.1 *2*	0.54 *3*	(S(n)+0.0223)	1/2$^+$	744.9	1/2$^+$,3/2$^+$	M1	
5198.1 *2*	0.2 *2*	(S(n)+0.1011)	1/2$^+$	744.9	1/2$^+$,3/2$^+$	M1	
5198.1 *2*		(S(n)+0.2427)	1/2$^+$	744.9	1/2$^+$,3/2$^+$		I_γ: −0.02 *7*.
5198.1 *2*	0.38 *16*	(S(n)+0.2772)	1/2$^+$	744.9	1/2$^+$,3/2$^+$	M1	
5198.1 *2*		(S(n)+0.3448)	1/2$^+$	744.9	1/2$^+$,3/2$^+$		I_γ: −0.12 *19*.
5198.1 *2*		(S(n)+0.4091)	1/2$^+$	744.9	1/2$^+$,3/2$^+$		I_γ: −0.07 *16*.
5198.1 *2*		(S(n)+0.5033)	1/2$^+$	744.9	1/2$^+$,3/2$^+$		I_γ: −0.23 *13*.
5198.1 *2*	0.11 *14*	(S(n)+0.5885)	1/2$^+$	744.9	1/2$^+$,3/2$^+$	M1	
5198.1 *2*	0.08 *16*	(S(n)+0.6929)	1/2$^+$	744.9	1/2$^+$,3/2$^+$	M1	
5198.1 *2*	0.14 *19*	(S(n)+0.8473)	1/2$^+$	744.9	1/2$^+$,3/2$^+$	M1	
5198.1 *2*	0.2 *3*	(S(n)+0.9171)	1/2$^+$	744.9	1/2$^+$,3/2$^+$	M1	
5198.1 *2*	0.3 *3*	(S(n)+1.0680)	1/2$^+$	744.9	1/2$^+$,3/2$^+$	M1	
5295.9 *5*	0.15 *2*	(S(n)+0.0223)	1/2$^+$	647.1	1/2$^+$,3/2$^+$	M1	
5295.9 *5*	0.4 *2*	(S(n)+0.1011)	1/2$^+$	647.1	1/2$^+$,3/2$^+$	M1	
5295.9 *5*		(S(n)+0.2427)	1/2$^+$	647.1	1/2$^+$,3/2$^+$		I_γ: −0.13 *7*.
5295.9 *5*		(S(n)+0.2772)	1/2$^+$	647.1	1/2$^+$,3/2$^+$		I_γ: −0.13 *15*.

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^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

E_γ[‡]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
5295.9 *5*	0.3 *2*	(S(n)+0.3448)	1/2$^+$	647.1	1/2$^+$,3/2$^+$	M1	
5295.9 *5*	0.35 *18*	(S(n)+0.4091)	1/2$^+$	647.1	1/2$^+$,3/2$^+$	M1	
5295.9 *5*		(S(n)+0.5033)	1/2$^+$	647.1	1/2$^+$,3/2$^+$		I_γ: −0.05 *14*.
5295.9 *5*		(S(n)+0.5885)	1/2$^+$	647.1	1/2$^+$,3/2$^+$		I_γ: −0.12 *14*.
5295.9 *5*	0.09 *16*	(S(n)+0.6929)	1/2$^+$	647.1	1/2$^+$,3/2$^+$	M1	
5295.9 *5*	0.09 *18*	(S(n)+0.8473)	1/2$^+$	647.1	1/2$^+$,3/2$^+$	M1	
5295.9 *5*	0.4 *3*	(S(n)+0.9171)	1/2$^+$	647.1	1/2$^+$,3/2$^+$	M1	
5295.9 *5*		(S(n)+1.0680)	1/2$^+$	647.1	1/2$^+$,3/2$^+$		I_γ: −0.1 *3*.
5341.1 *3*	0.31 *3*	(S(n)+0.0223)	1/2$^+$	601.9	1/2$^+$,3/2$^+$	M1	
5341.1 *3*	0.0 *2*	(S(n)+0.1011)	1/2$^+$	601.9	1/2$^+$,3/2$^+$	M1	
5341.1 *3*	0.10 *7*	(S(n)+0.2427)	1/2$^+$	601.9	1/2$^+$,3/2$^+$	M1	
5341.1 *3*		(S(n)+0.2772)	1/2$^+$	601.9	1/2$^+$,3/2$^+$		I_γ: −0.08 *15*.
5341.1 *3*	0.13 *19*	(S(n)+0.3448)	1/2$^+$	601.9	1/2$^+$,3/2$^+$	M1	
5341.1 *3*	0.13 *18*	(S(n)+0.4091)	1/2$^+$	601.9	1/2$^+$,3/2$^+$	M1	
5341.1 *3*		(S(n)+0.5033)	1/2$^+$	601.9	1/2$^+$,3/2$^+$		I_γ: −0.11 *13*.
5341.1 *3*	0.12 *14*	(S(n)+0.5885)	1/2$^+$	601.9	1/2$^+$,3/2$^+$	M1	
5341.1 *3*	0.00 *16*	(S(n)+0.6929)	1/2$^+$	601.9	1/2$^+$,3/2$^+$	M1	
5341.1 *3*	0.08 *18*	(S(n)+0.8473)	1/2$^+$	601.9	1/2$^+$,3/2$^+$	M1	
5341.1 *3*	0.0 *3*	(S(n)+0.9171)	1/2$^+$	601.9	1/2$^+$,3/2$^+$	M1	
5341.1 *3*	0.2 *3*	(S(n)+1.0680)	1/2$^+$	601.9	1/2$^+$,3/2$^+$	M1	
5384.7 *2*	0.04 *2*	(S(n)+0.0223)	1/2$^+$	558.3	1/2$^-$,3/2$^-$	E1	
5384.7 *2*	13.8 *9*	(S(n)+0.1011)	1/2$^+$	558.3	1/2$^-$,3/2$^-$	E1	
5384.7 *2*	0.35 *7*	(S(n)+0.2427)	1/2$^+$	558.3	1/2$^-$,3/2$^-$	E1	
5384.7 *2*	10.1 *7*	(S(n)+0.2772)	1/2$^+$	558.3	1/2$^-$,3/2$^-$	E1	
5384.7 *2*	0.5 *2*	(S(n)+0.3448)	1/2$^+$	558.3	1/2$^-$,3/2$^-$	E1	
5384.7 *2*	1.2 *2*	(S(n)+0.4091)	1/2$^+$	558.3	1/2$^-$,3/2$^-$	E1	
5384.7 *2*	0.79 *16*	(S(n)+0.5033)	1/2$^+$	558.3	1/2$^-$,3/2$^-$	E1	
5384.7 *2*	2.6 *3*	(S(n)+0.5885)	1/2$^+$	558.3	1/2$^-$,3/2$^-$	E1	
5384.7 *2*	4.6 *4*	(S(n)+0.6929)	1/2$^+$	558.3	1/2$^-$,3/2$^-$	E1	
5384.7 *2*	3.6 *4*	(S(n)+0.8473)	1/2$^+$	558.3	1/2$^-$,3/2$^-$	E1	
5384.7 *2*	0.7 *3*	(S(n)+0.9171)	1/2$^+$	558.3	1/2$^-$,3/2$^-$	E1	
5384.7 *2*	1.9 *4*	(S(n)+1.0680)	1/2$^+$	558.3	1/2$^-$,3/2$^-$	E1	
5434.7 *2*	0.16 *3*	(S(n)+0.0223)	1/2$^+$	508.3	1/2$^-$,3/2$^-$	E1	
5434.7 *2*	0.2 *2*	(S(n)+0.1011)	1/2$^+$	508.3	1/2$^-$,3/2$^-$	E1	
5434.7 *2*	2.55 *15*	(S(n)+0.2427)	1/2$^+$	508.3	1/2$^-$,3/2$^-$	E1	
5434.7 *2*	0.4 *2*	(S(n)+0.2772)	1/2$^+$	508.3	1/2$^-$,3/2$^-$	E1	
5434.7 *2*	2.8 *4*	(S(n)+0.3448)	1/2$^+$	508.3	1/2$^-$,3/2$^-$	E1	
5434.7 *2*	5.1 *4*	(S(n)+0.4091)	1/2$^+$	508.3	1/2$^-$,3/2$^-$	E1	
5434.7 *2*	2.3 *3*	(S(n)+0.5033)	1/2$^+$	508.3	1/2$^-$,3/2$^-$	E1	
5434.7 *2*	0.41 *17*	(S(n)+0.5885)	1/2$^+$	508.3	1/2$^-$,3/2$^-$	E1	
5434.7 *2*	0.4 *2*	(S(n)+0.6929)	1/2$^+$	508.3	1/2$^-$,3/2$^-$	E1	
5434.7 *2*	0.4 *2*	(S(n)+0.8473)	1/2$^+$	508.3	1/2$^-$,3/2$^-$	E1	
5434.7 *2*	0.4 *3*	(S(n)+0.9171)	1/2$^+$	508.3	1/2$^-$,3/2$^-$	E1	
5434.7 *2*	0.5 *3*	(S(n)+1.0680)	1/2$^+$	508.3	1/2$^-$,3/2$^-$	E1	
5943.0 *2*	10.00 *7*	(S(n)+0.0223)	1/2$^+$	0.0	1/2$^-$,3/2$^-$	E1	
5943.0 *2*	0.9 *2*	(S(n)+0.1011)	1/2$^+$	0.0	1/2$^-$,3/2$^-$	E1	
5943.0 *2*	1.13 *10*	(S(n)+0.2427)	1/2$^+$	0.0	1/2$^-$,3/2$^-$	E1	
5943.0 *2*	0.8 *2*	(S(n)+0.2772)	1/2$^+$	0.0	1/2$^-$,3/2$^-$	E1	
5943.0 *2*	3.7 *4*	(S(n)+0.3448)	1/2$^+$	0.0	1/2$^-$,3/2$^-$	E1	
5943.0 *2*	0.32 *17*	(S(n)+0.4091)	1/2$^+$	0.0	1/2$^-$,3/2$^-$	E1	
5943.0 *2*	1.04 *17*	(S(n)+0.5033)	1/2$^+$	0.0	1/2$^-$,3/2$^-$	E1	
5943.0 *2*	3.0 *3*	(S(n)+0.5885)	1/2$^+$	0.0	1/2$^-$,3/2$^-$	E1	
5943.0 *2*	0.52 *16*	(S(n)+0.6929)	1/2$^+$	0.0	1/2$^-$,3/2$^-$	E1	
5943.0 *2*	1.8 *3*	(S(n)+0.8473)	1/2$^+$	0.0	1/2$^-$,3/2$^-$	E1	
5943.0 *2*	8.5 *8*	(S(n)+0.9171)	1/2$^+$	0.0	1/2$^-$,3/2$^-$	E1	
5943.0 *2*		(S(n)+1.0680)	1/2$^+$	0.0	1/2$^-$,3/2$^-$		I_γ: −0.1 *3*.

Continued on next page (footnotes at end of table)

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07 (continued)

$\gamma(^{159}Gd)$ (continued)

† Negative values are a result of experimental analysis of peaks where the uncertainties are larger than the peak areas. The stated uncertainties are statistical only. Transitions with negative intensities or which overlap zero should be treated as uncertain.
‡ Primary γ's are from 2003Gr13 and secondary γ's are from 2000Po07.
# From γ strength functions calculated from intensities and energies.
@ From 2000Po07. Intensity is per 100 neutron captures and averaged over 12 resonances.
& Possible doublet or a non-statistical (large) fluctuation.
a Intensity per 100 neutron captures.
x γ ray not placed in level scheme.

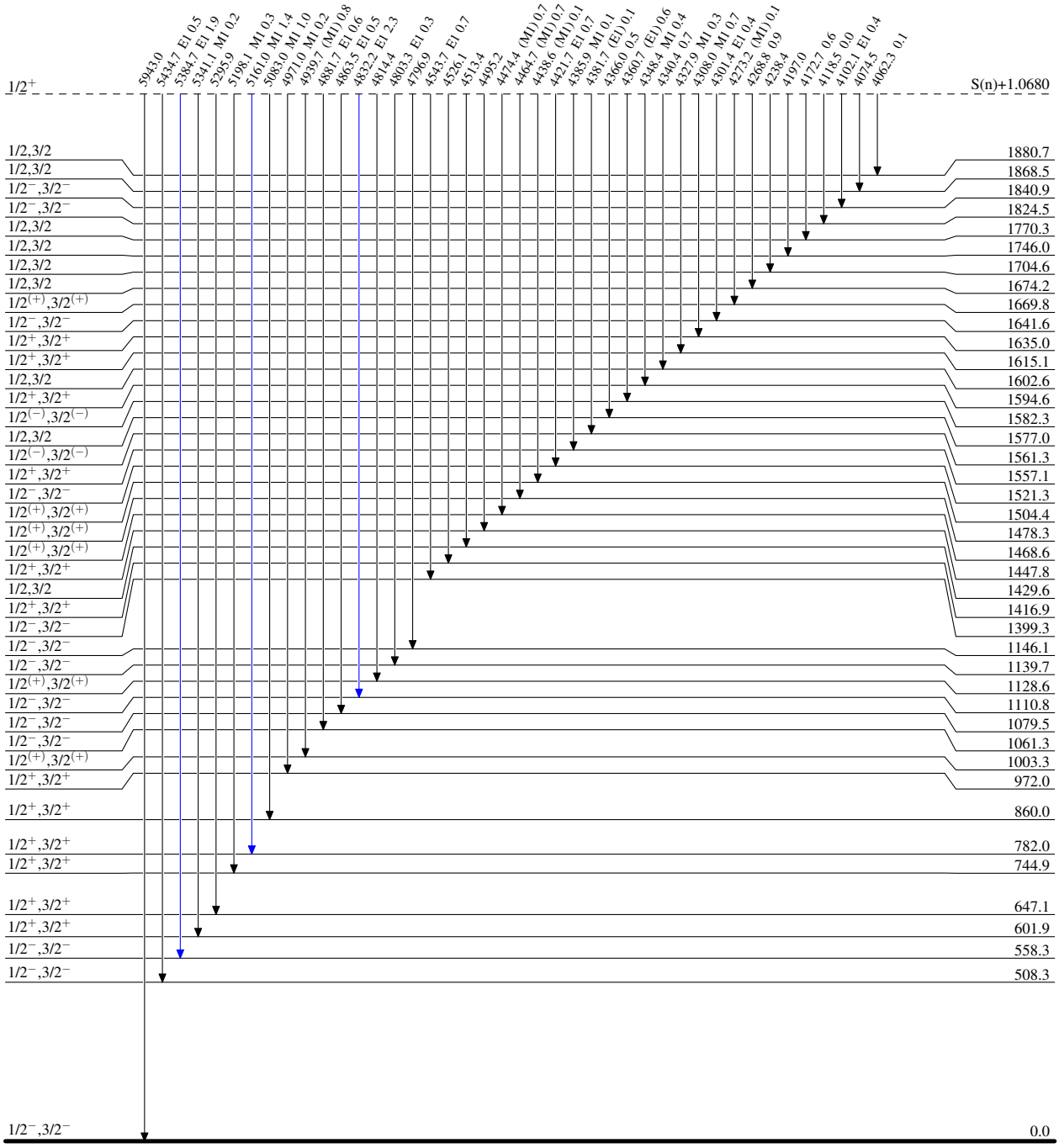
^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Legend

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

Level Scheme

Intensities: Intensities are per 100 n captures.

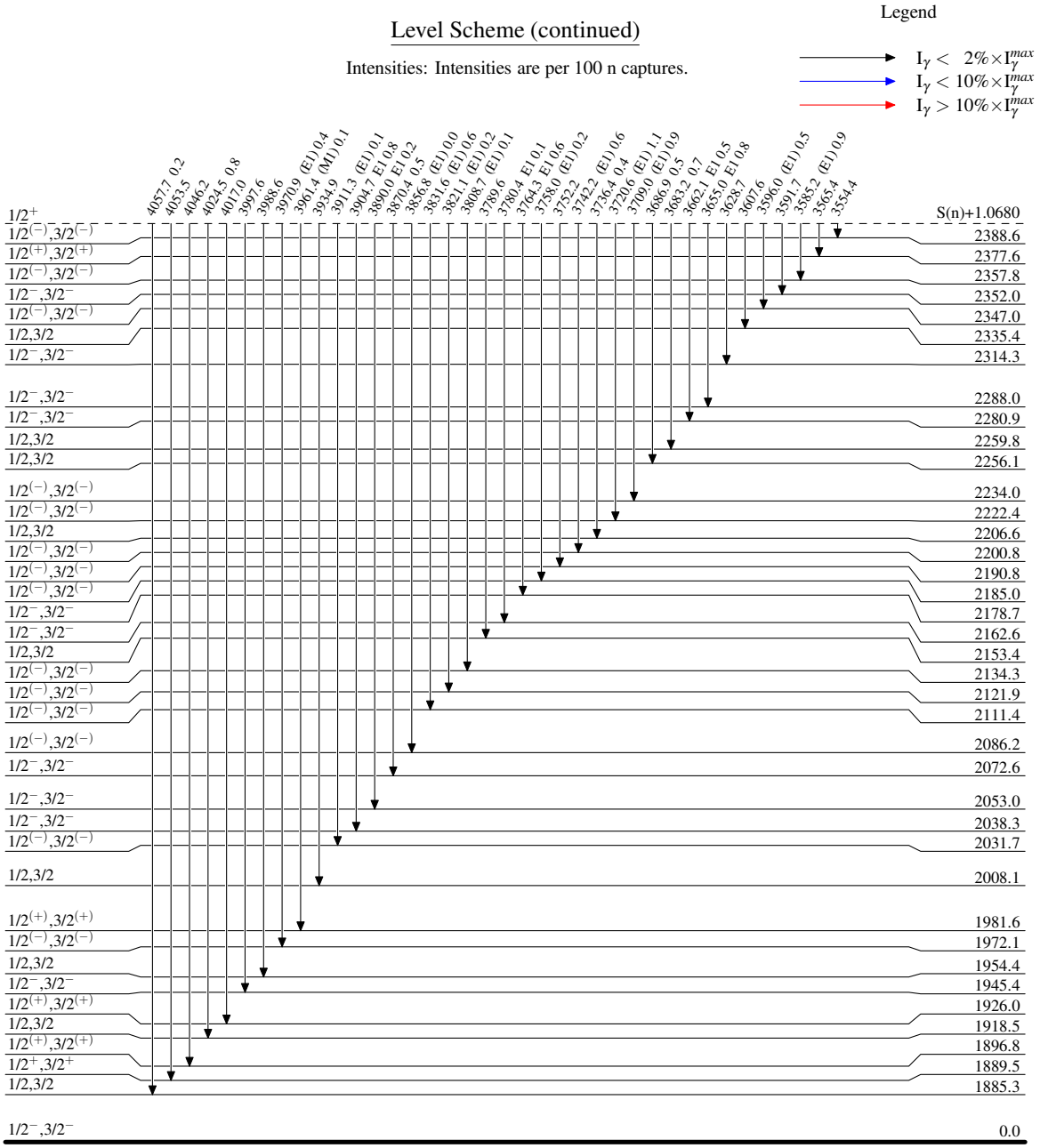


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

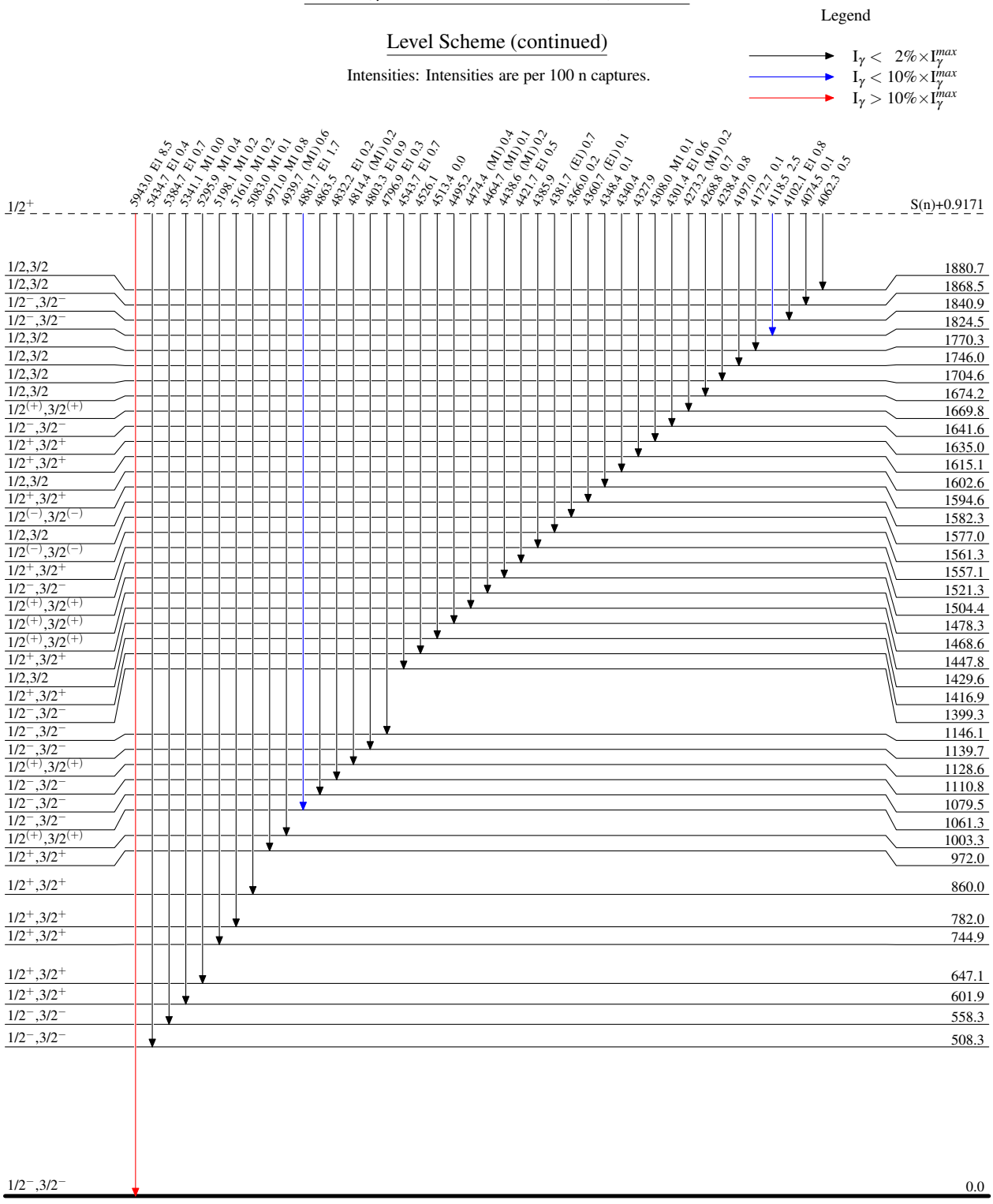


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

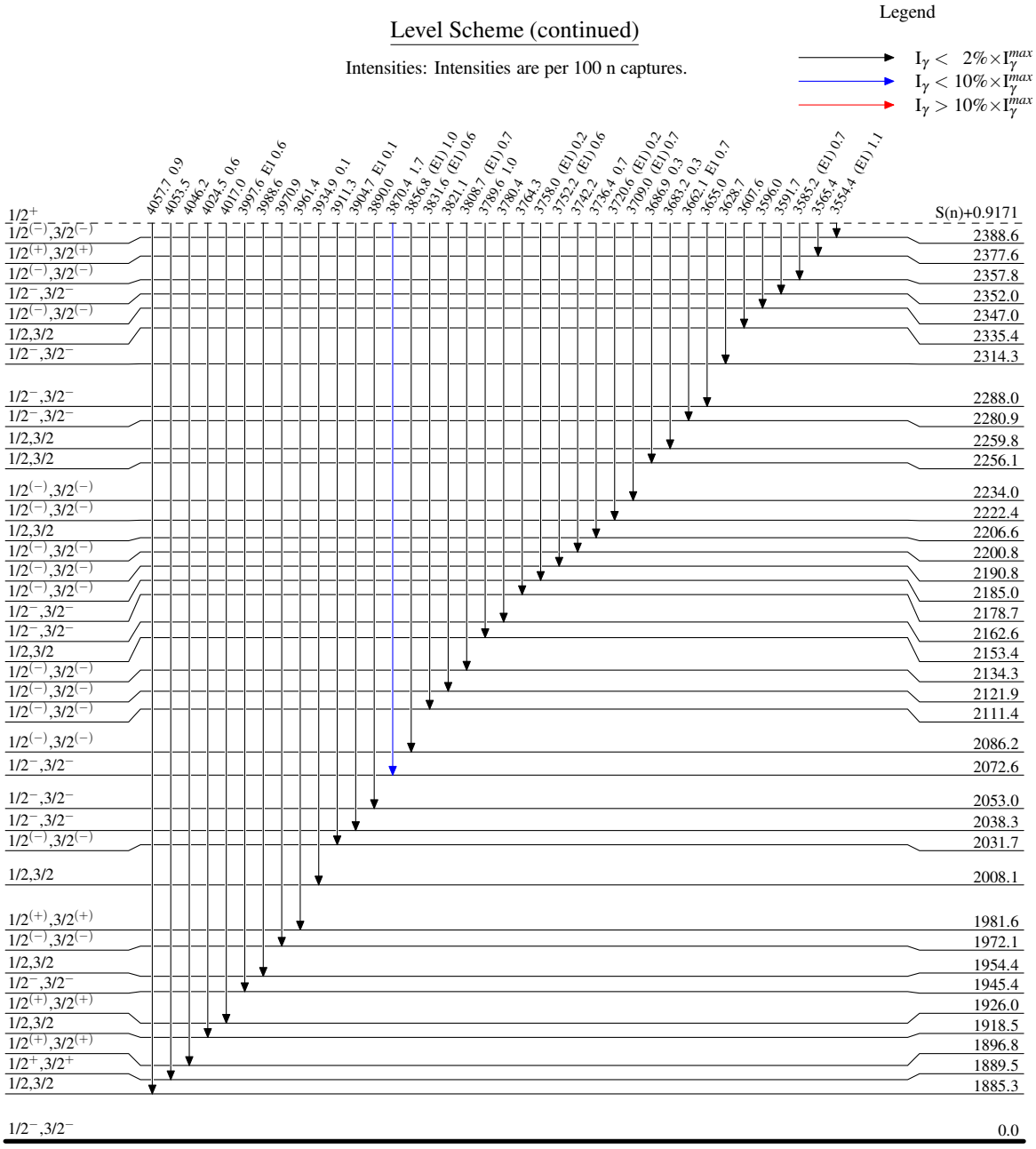


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.



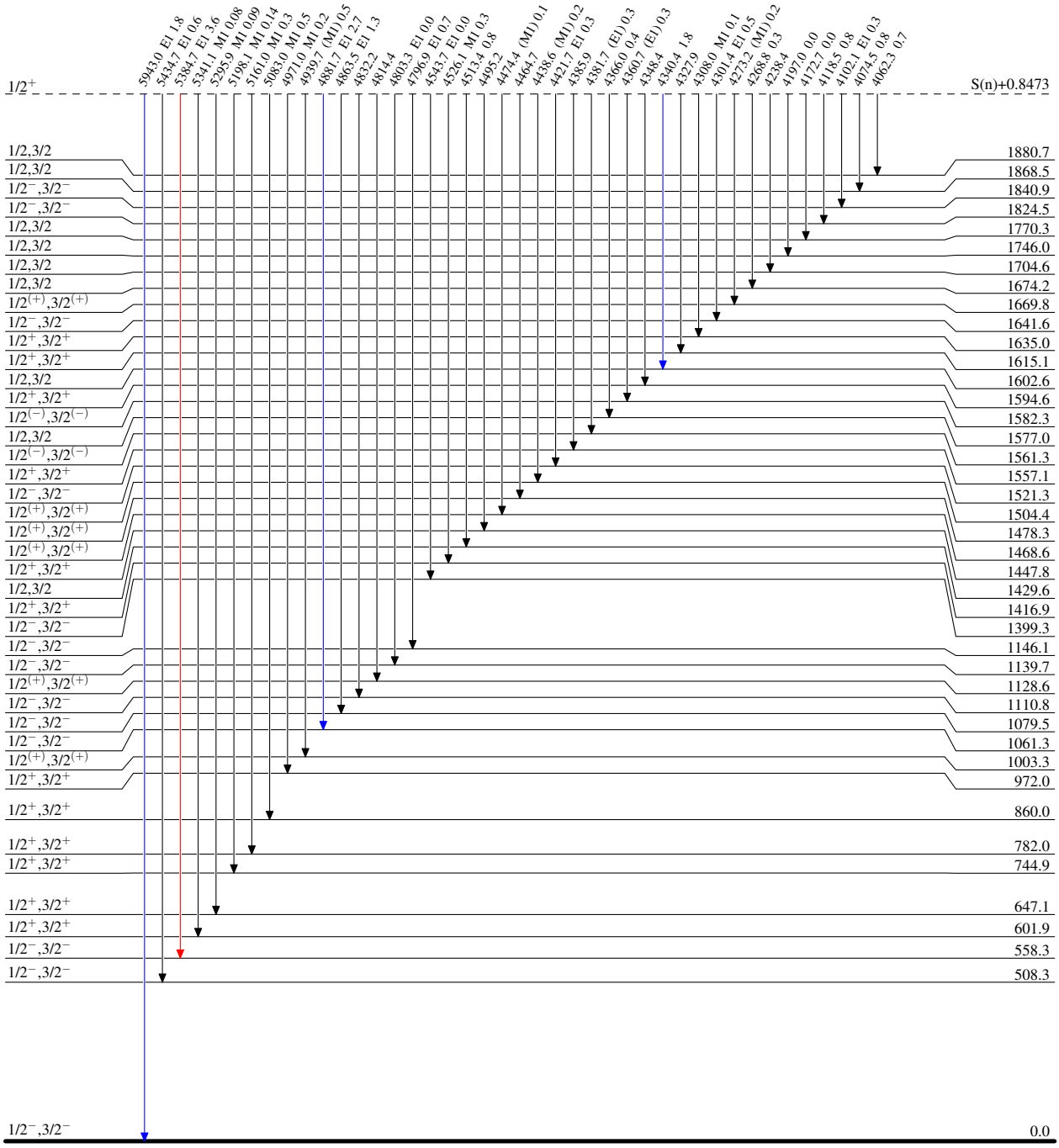
$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

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

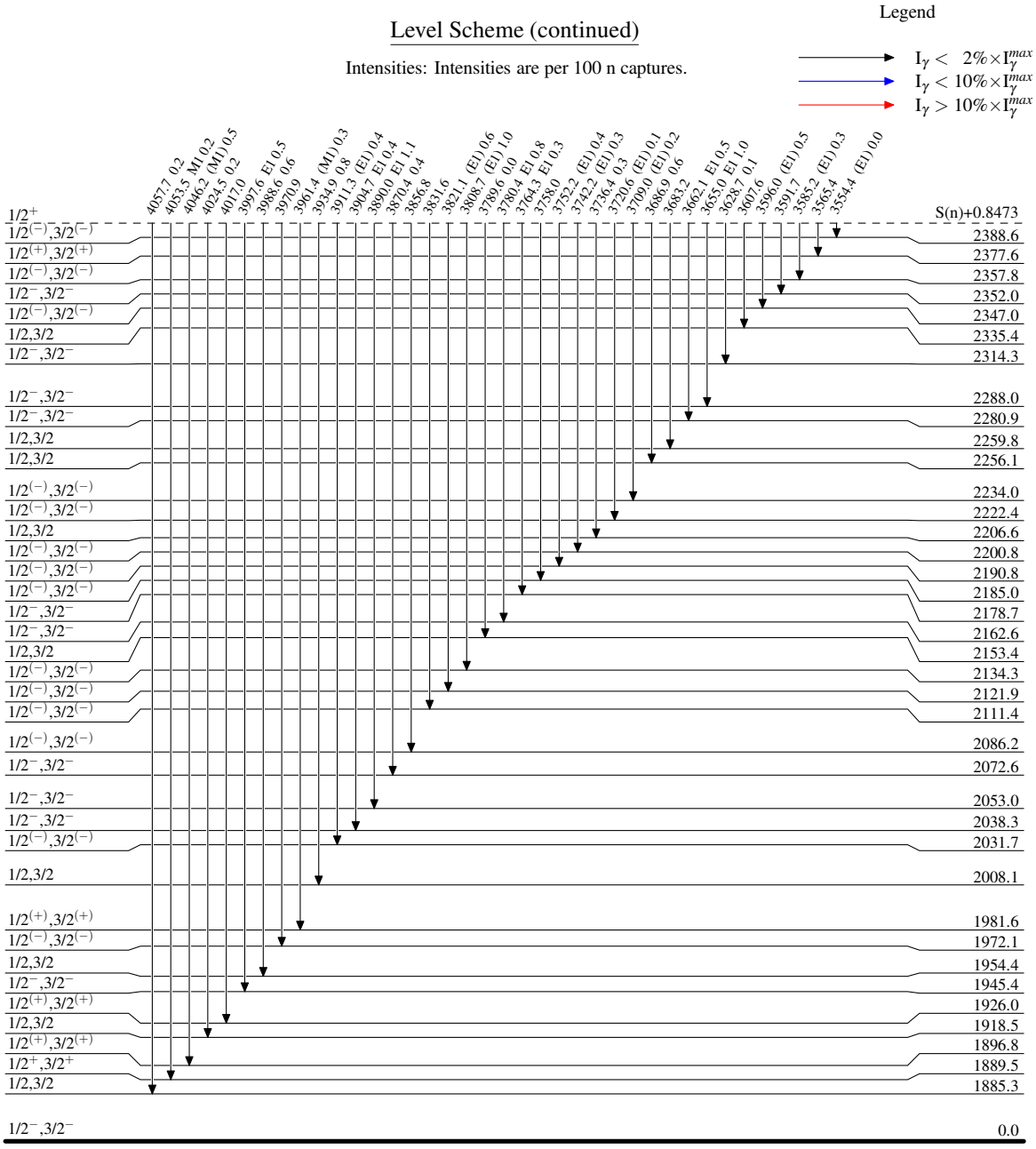


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

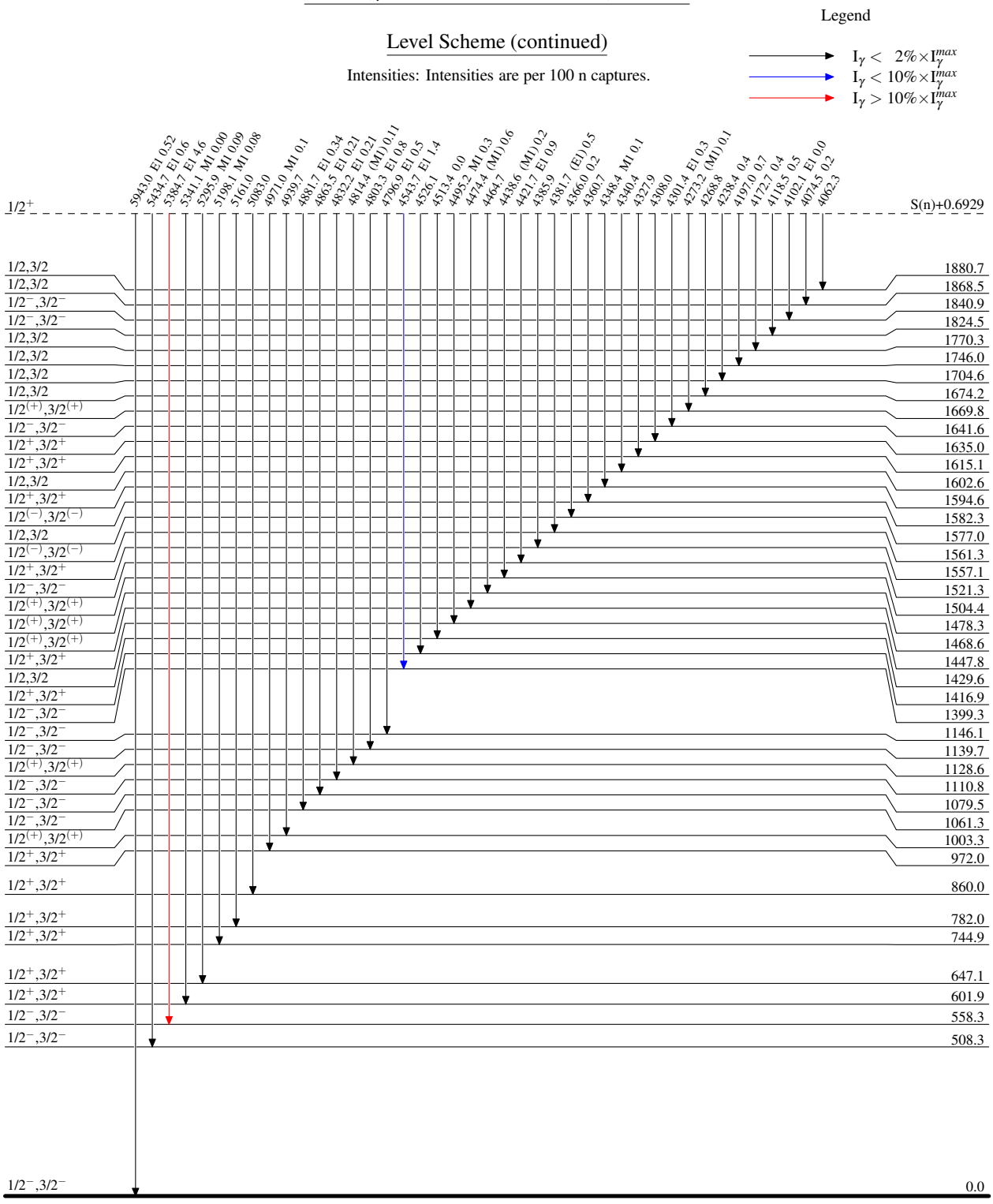


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

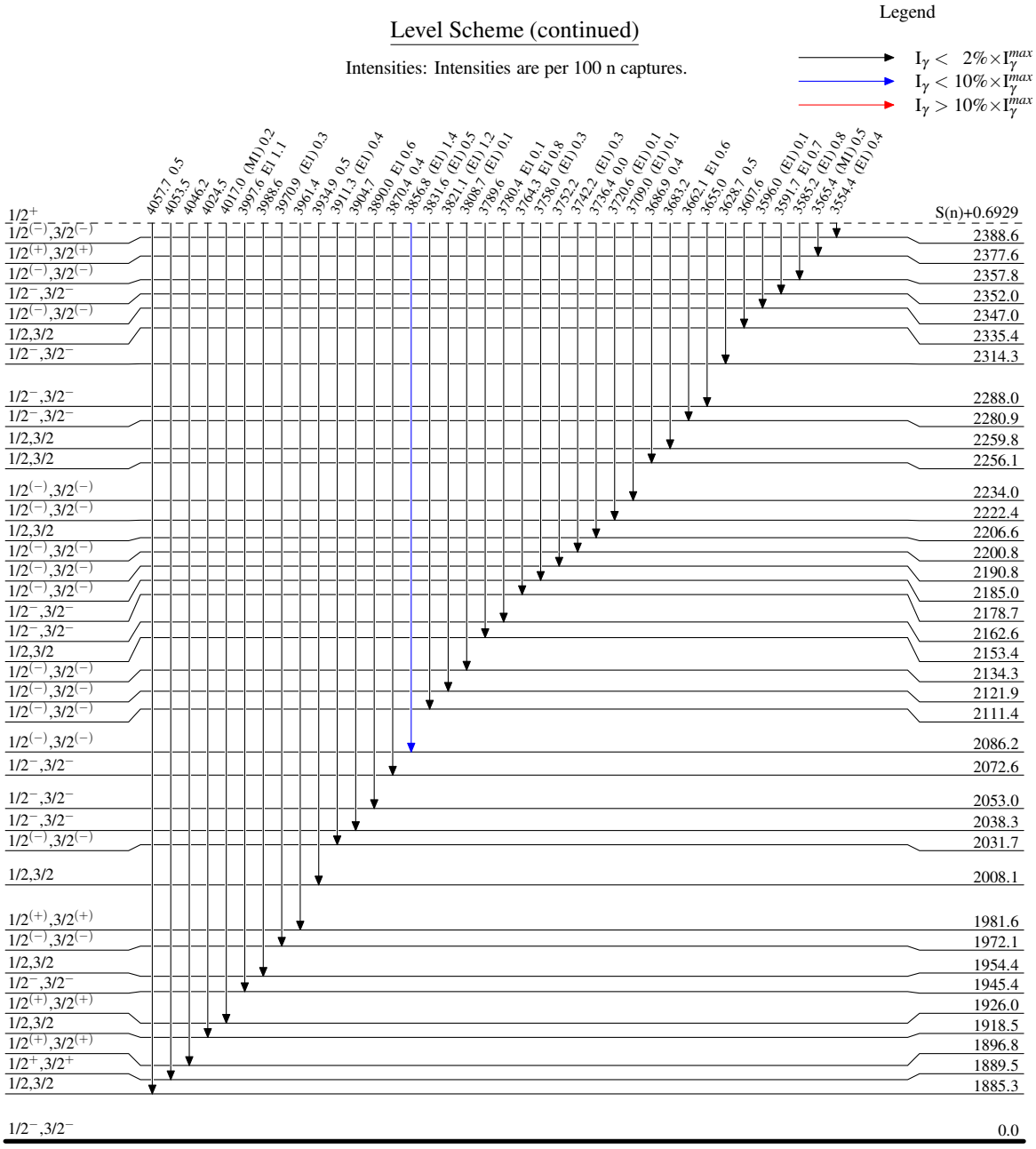


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.



$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

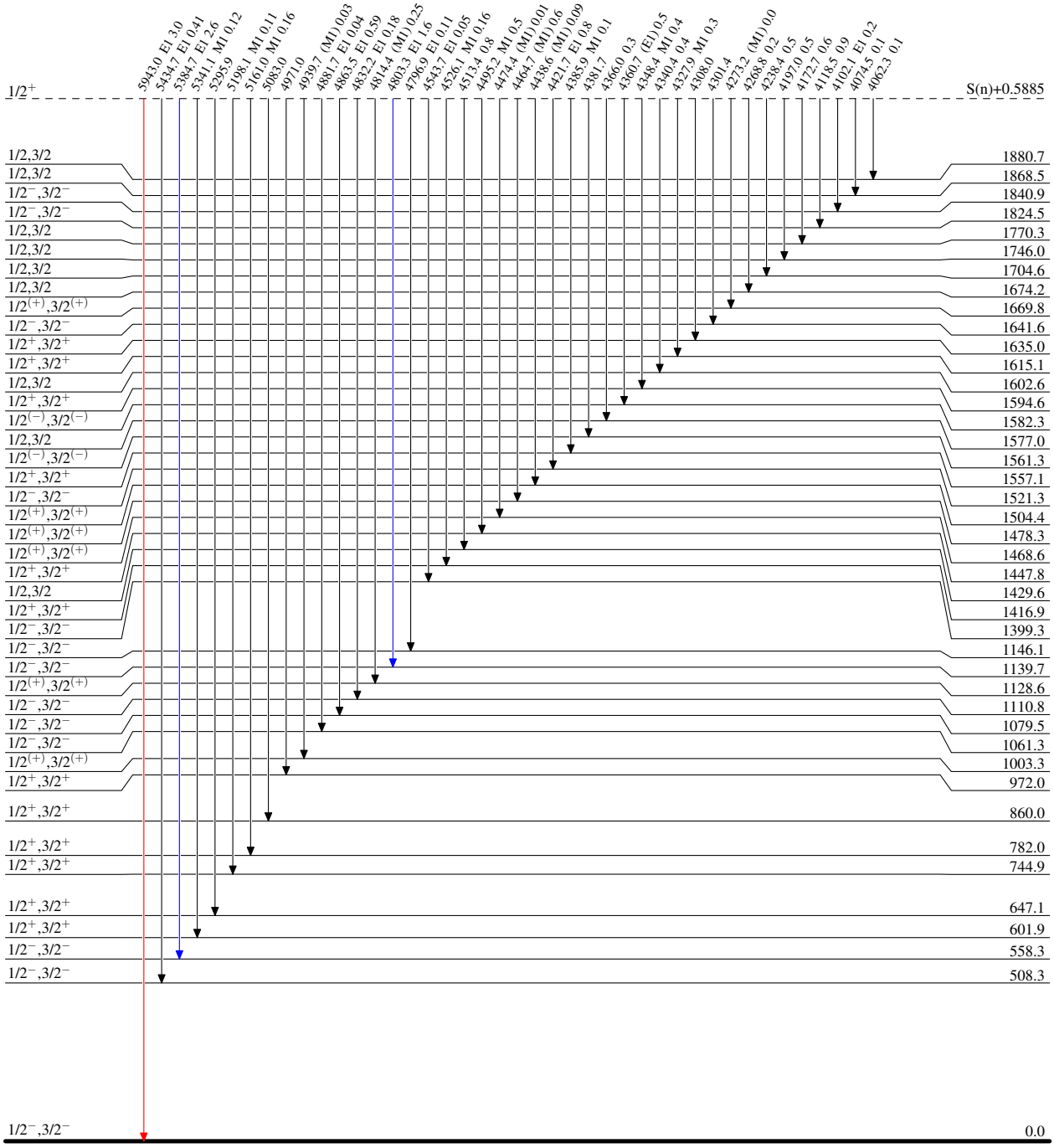
Intensities: Intensities are per 100 n captures.

Legend

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

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

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

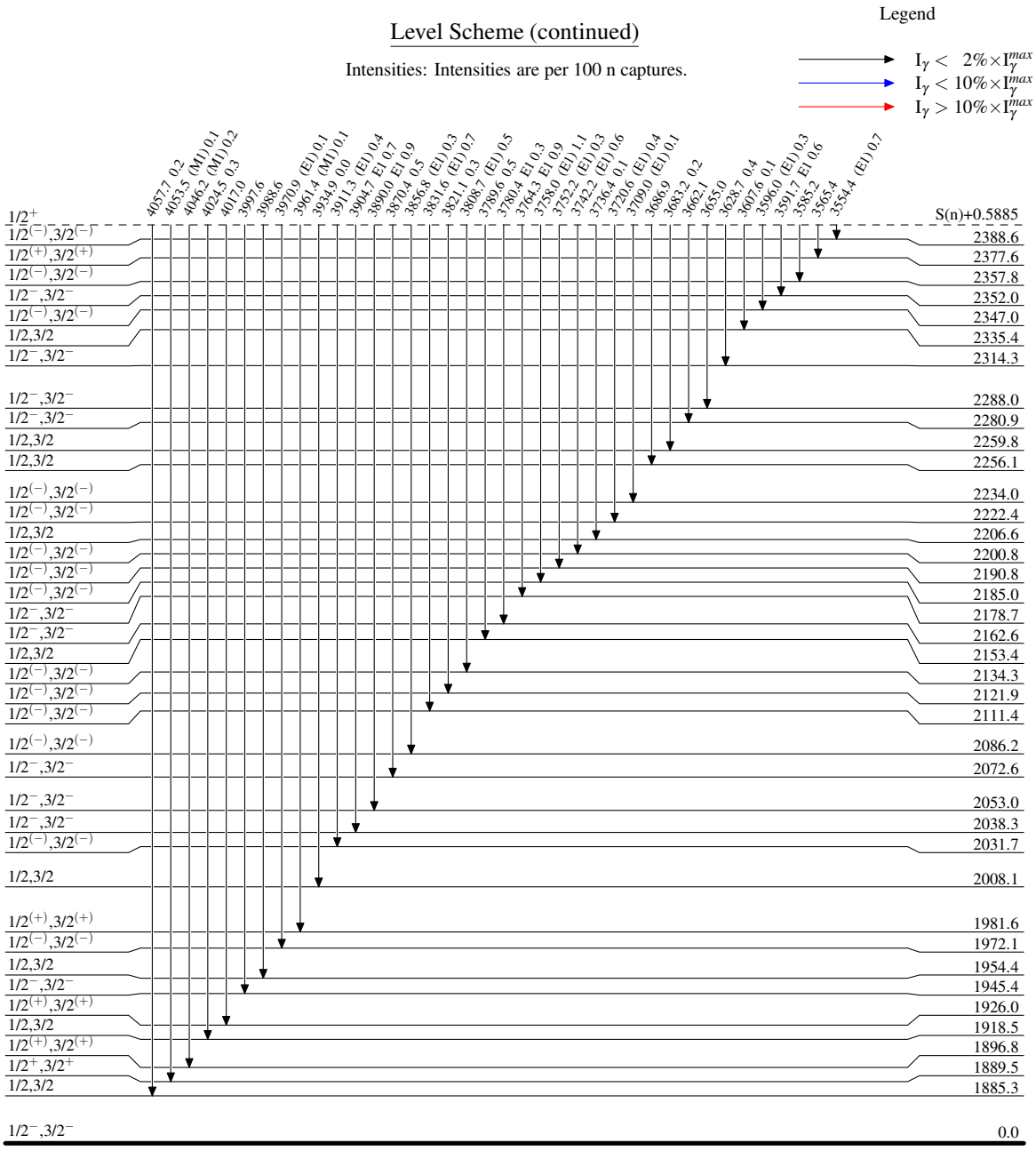


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

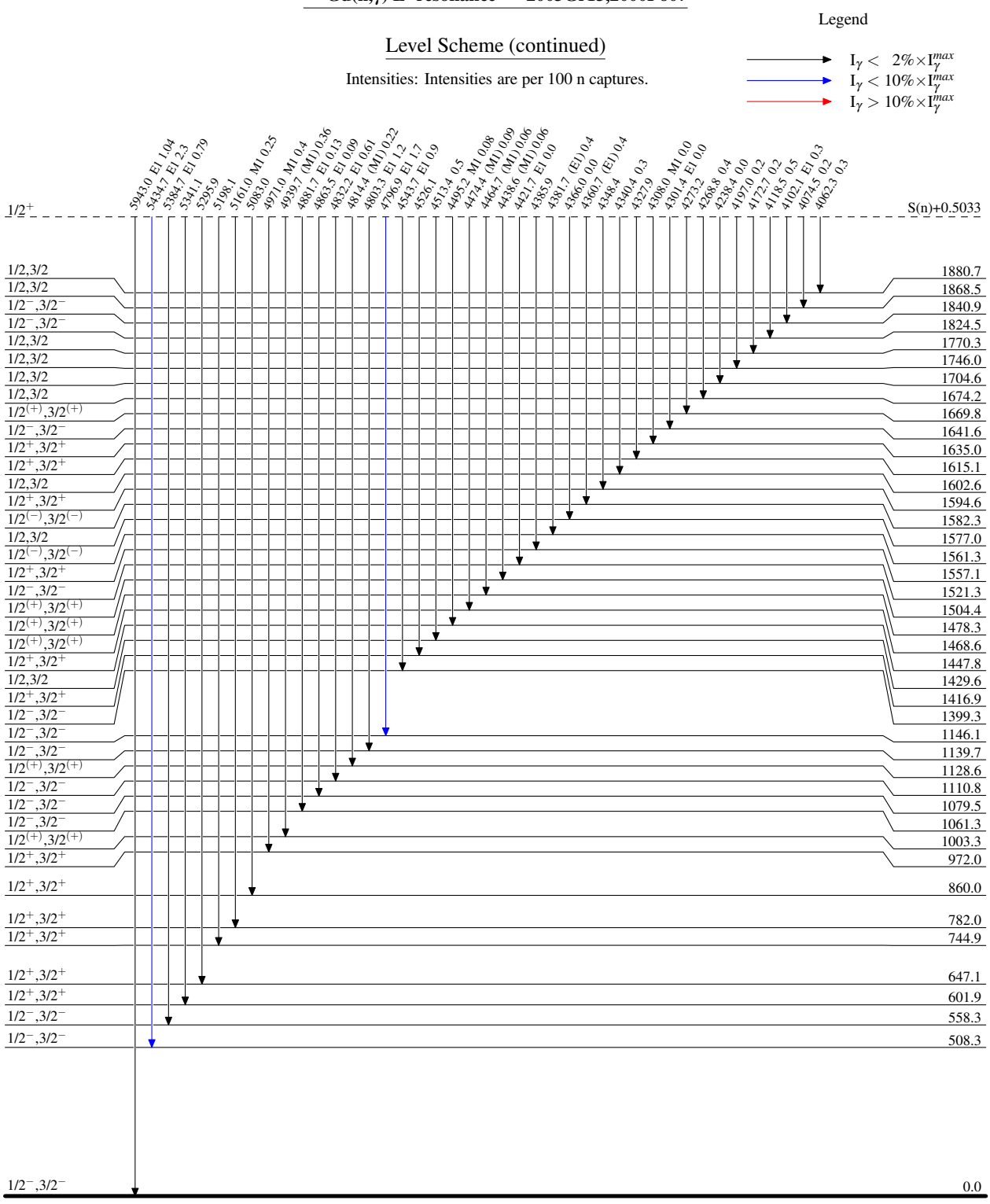


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

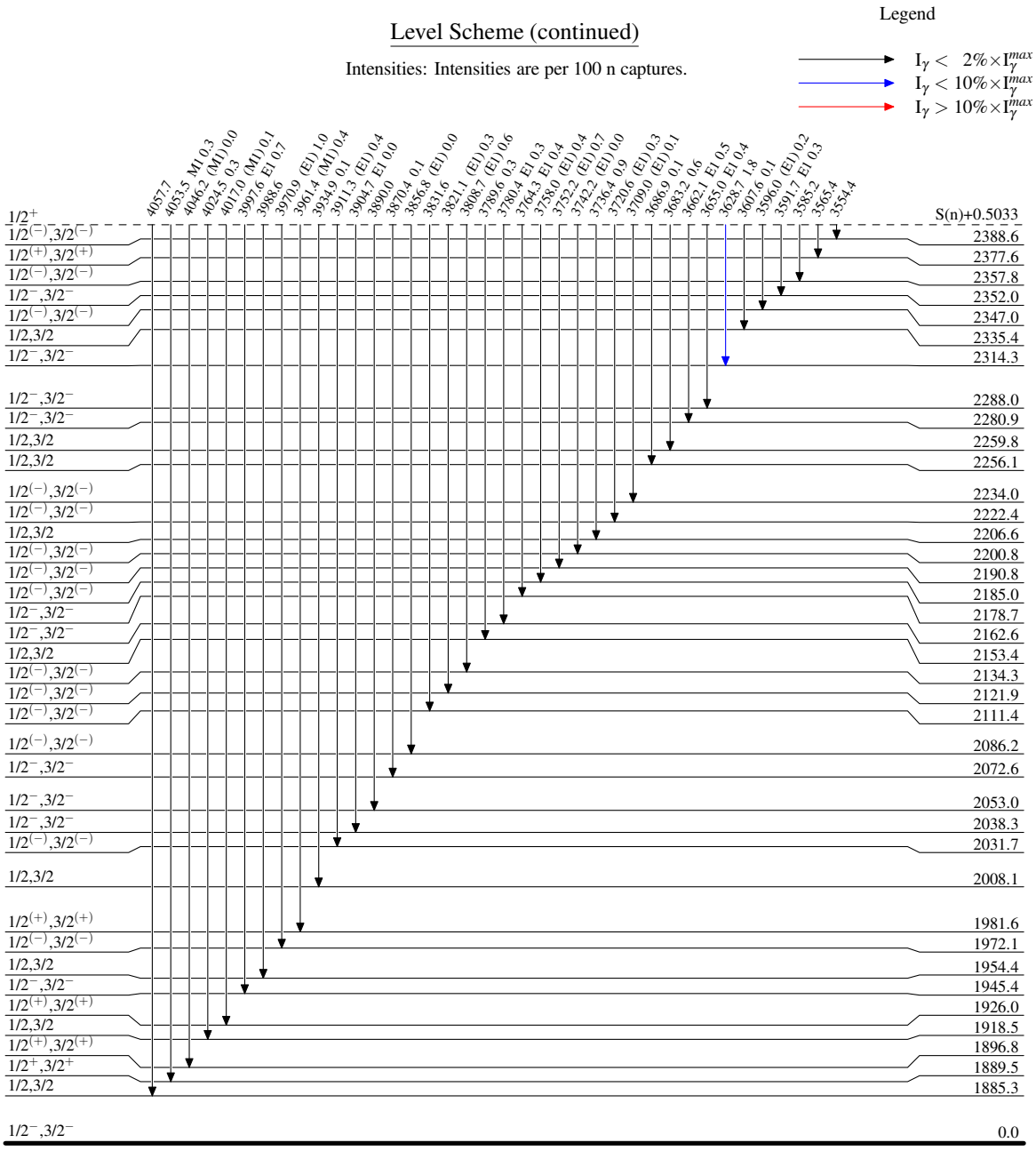


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.



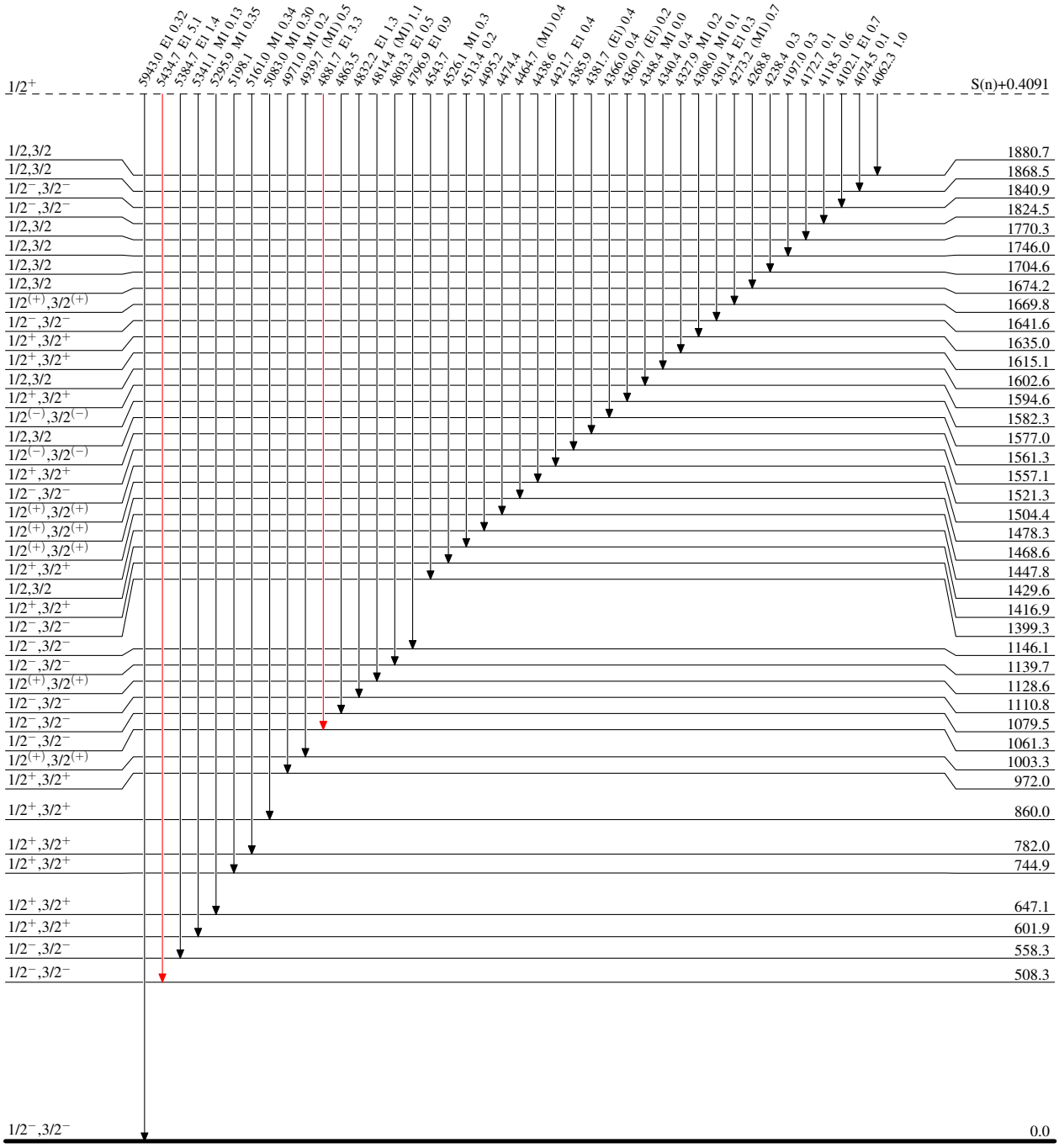
$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

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

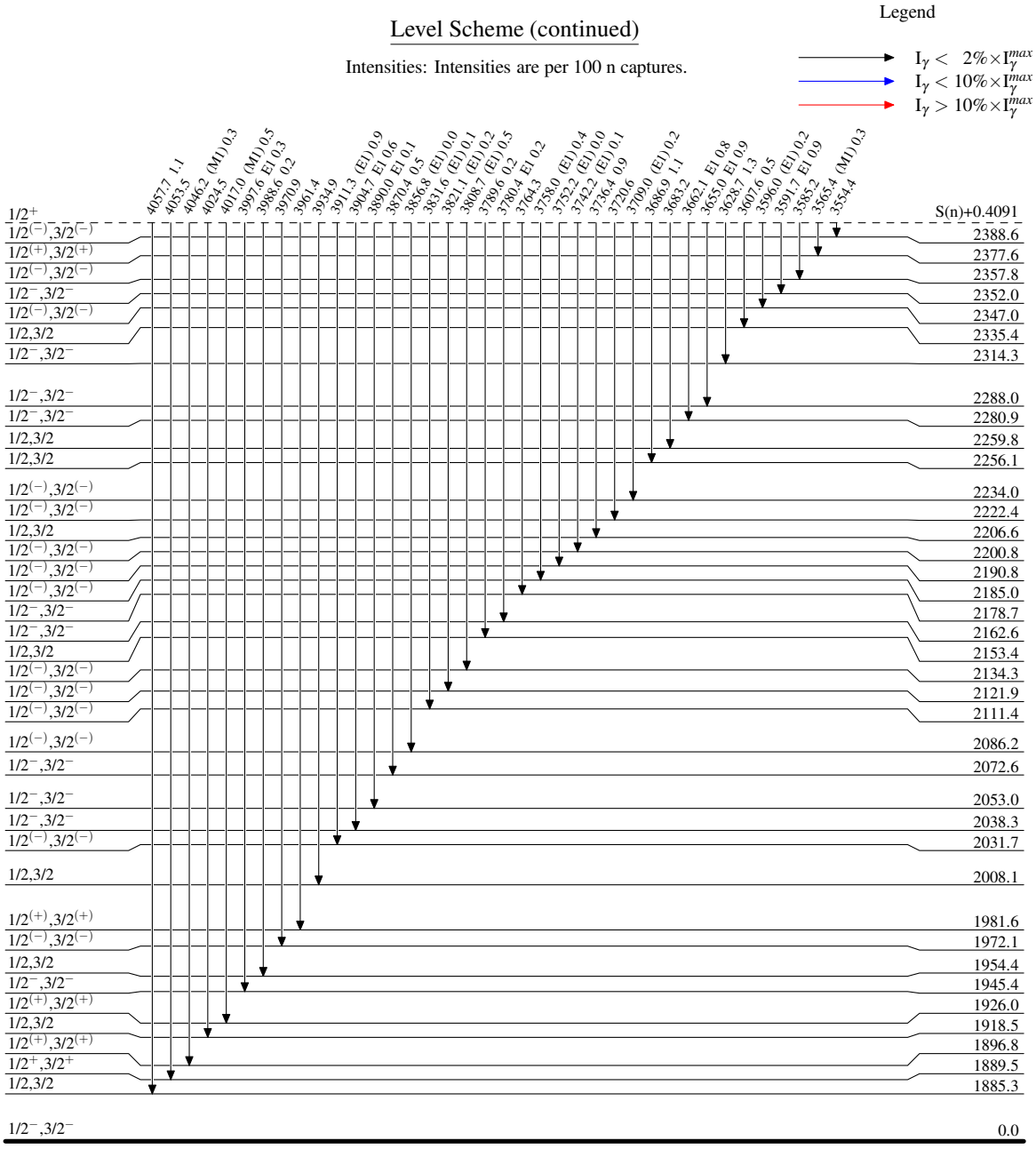


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

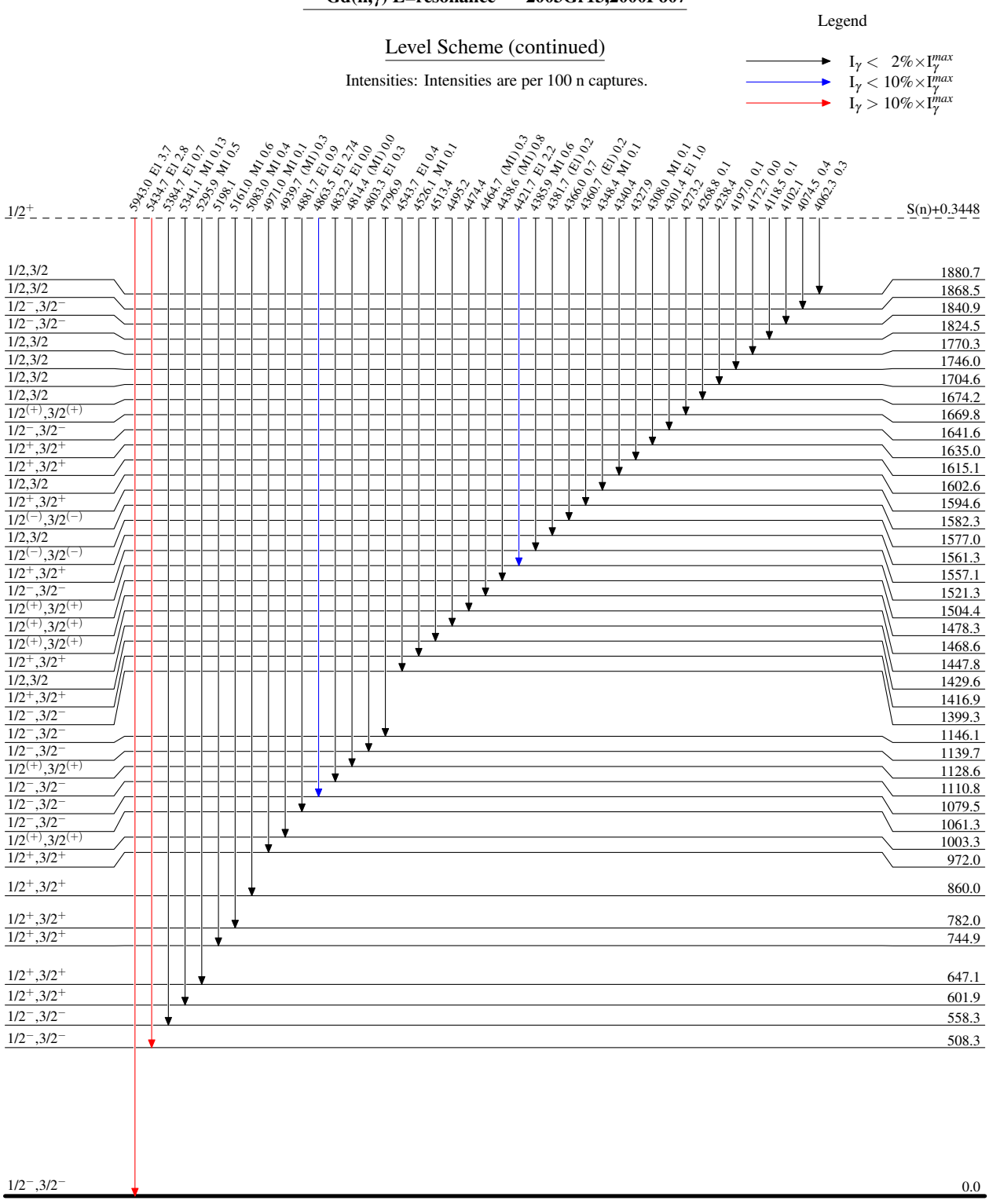


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

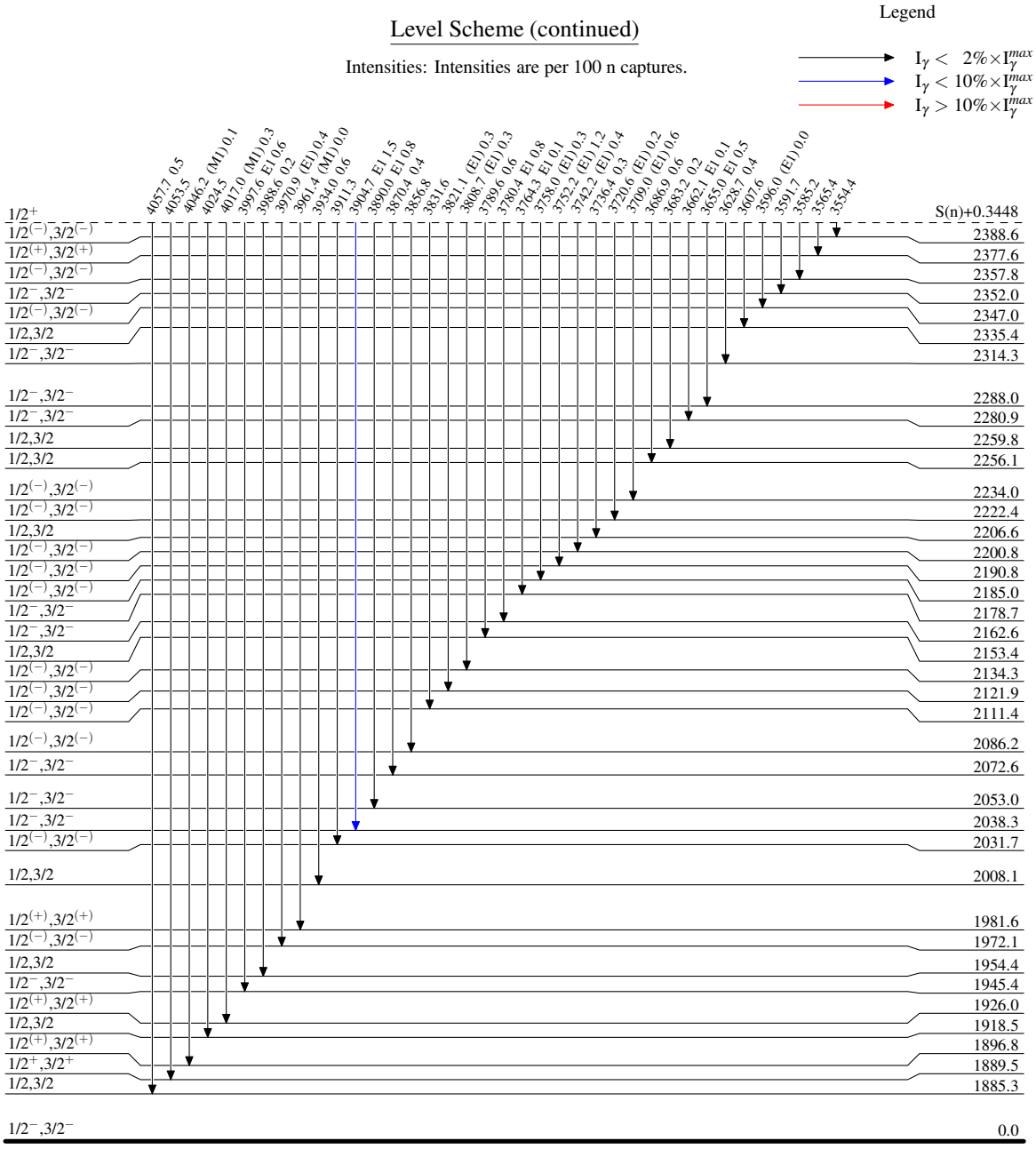


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

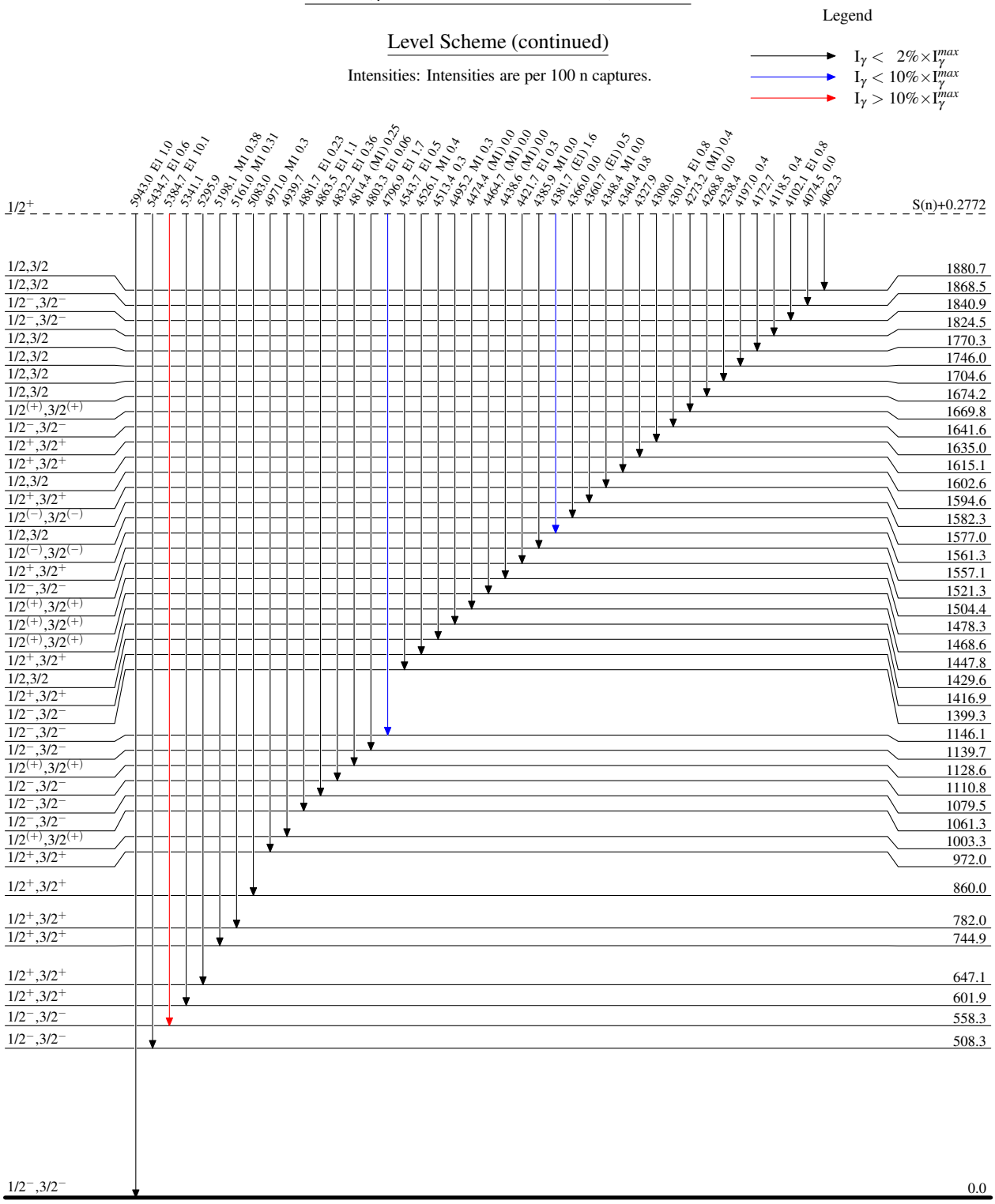


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

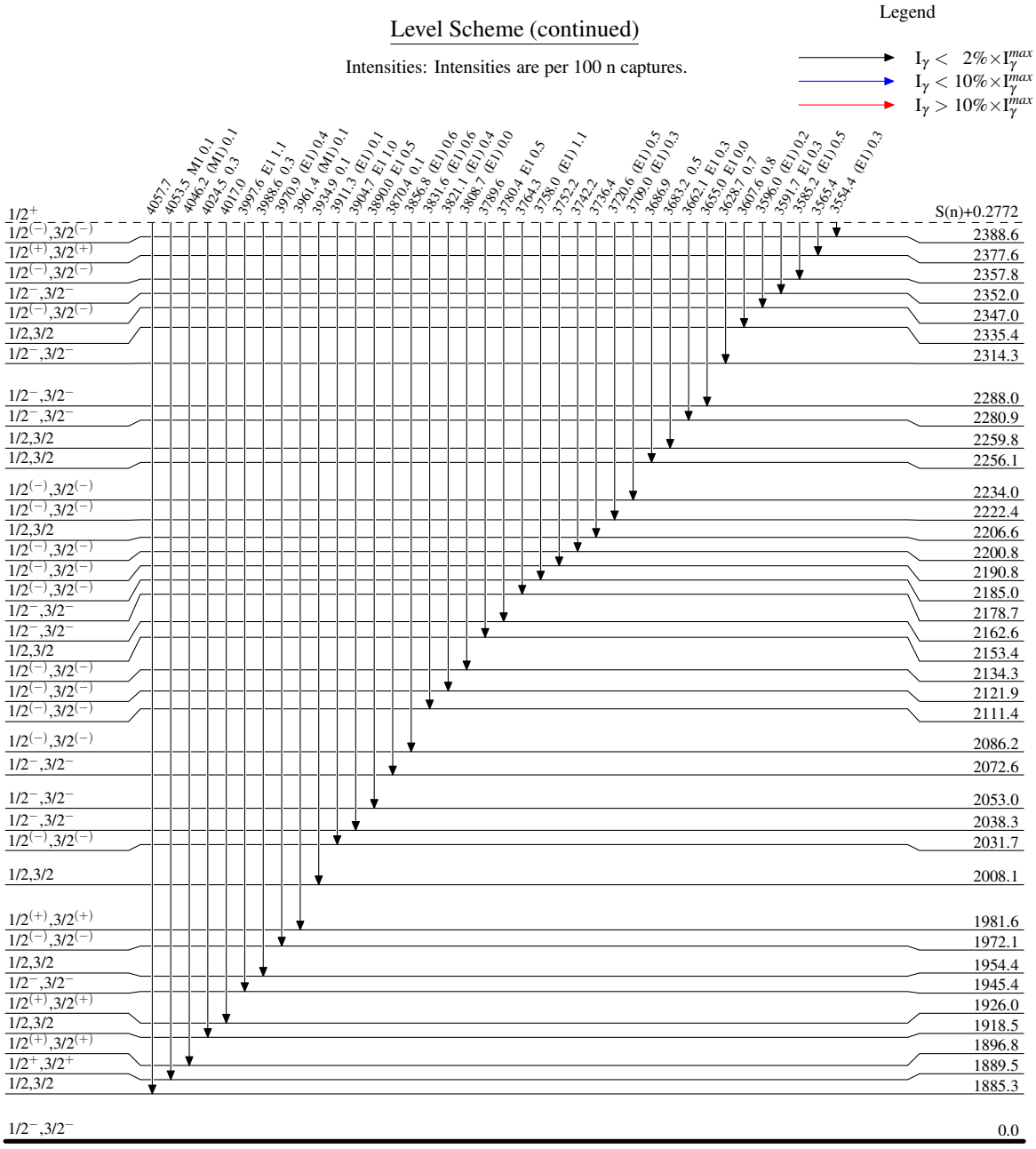


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

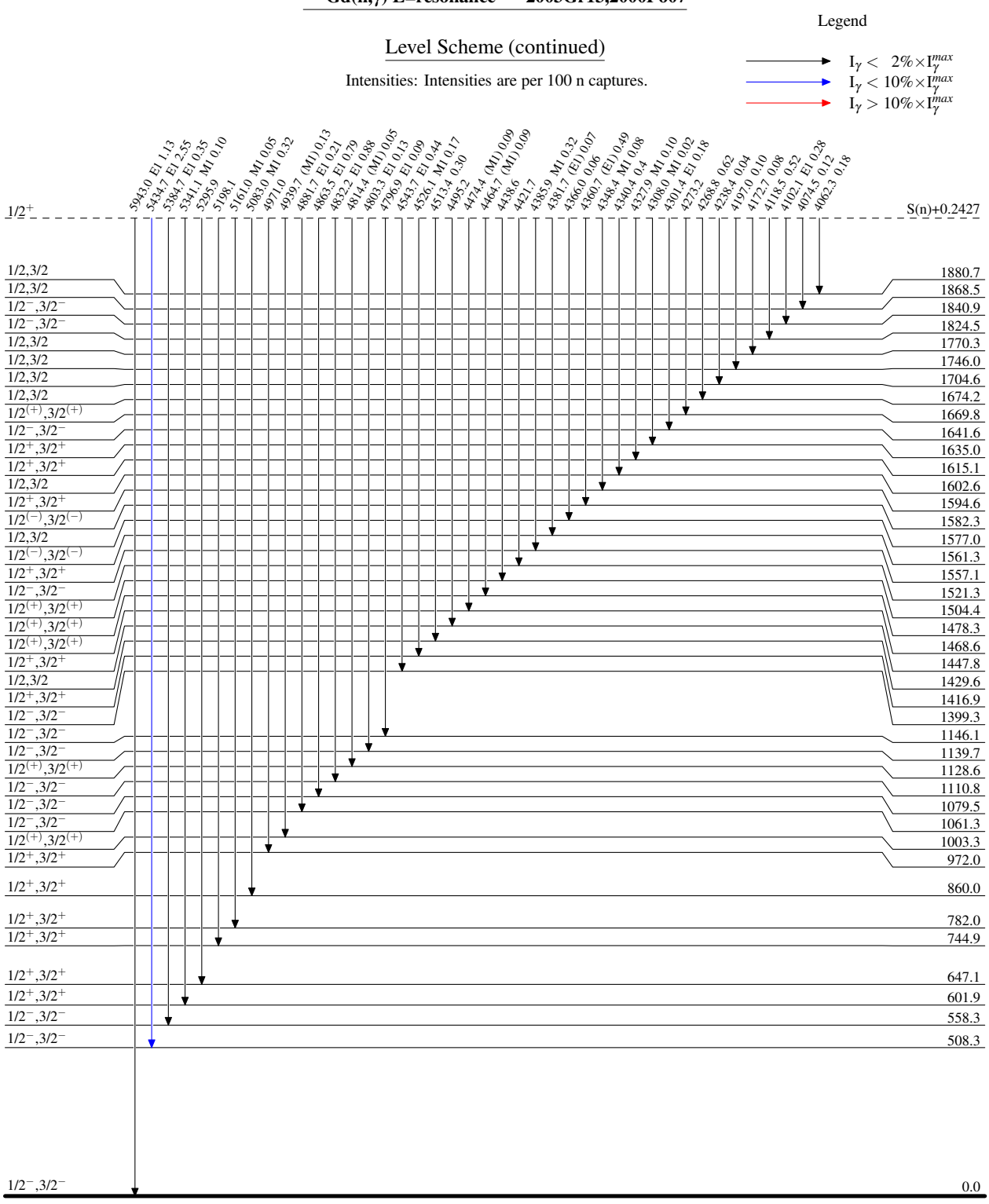


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

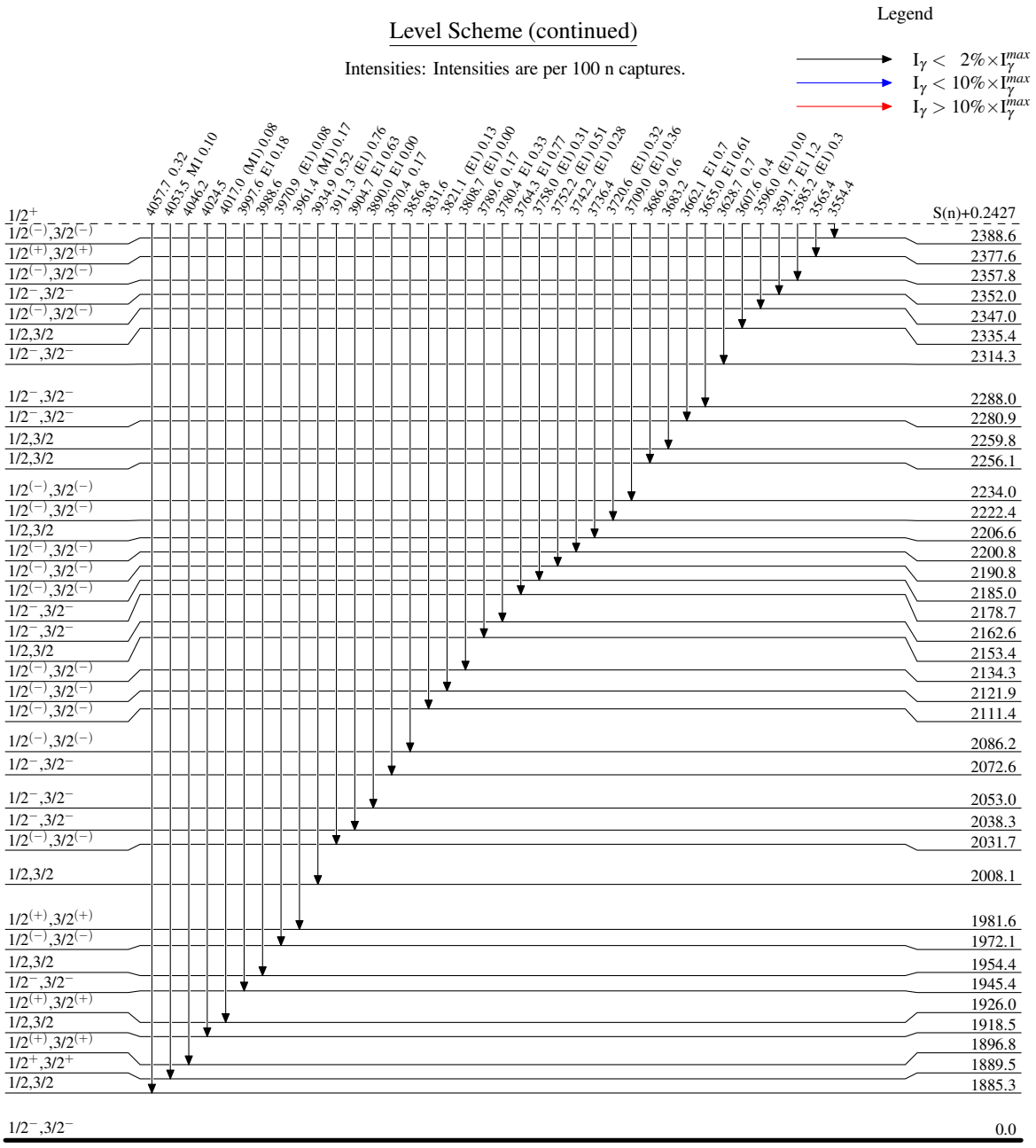


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.



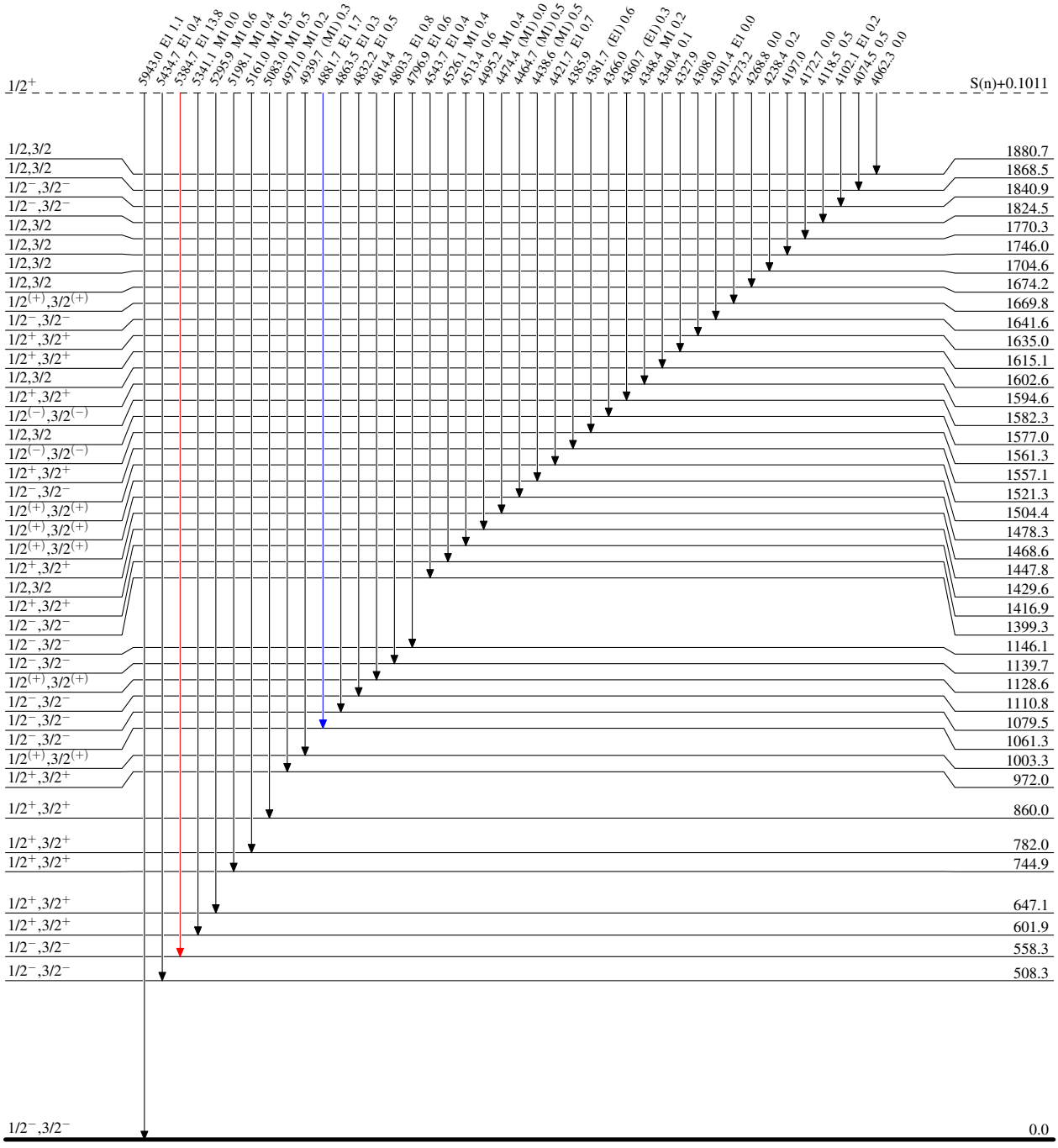
$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

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

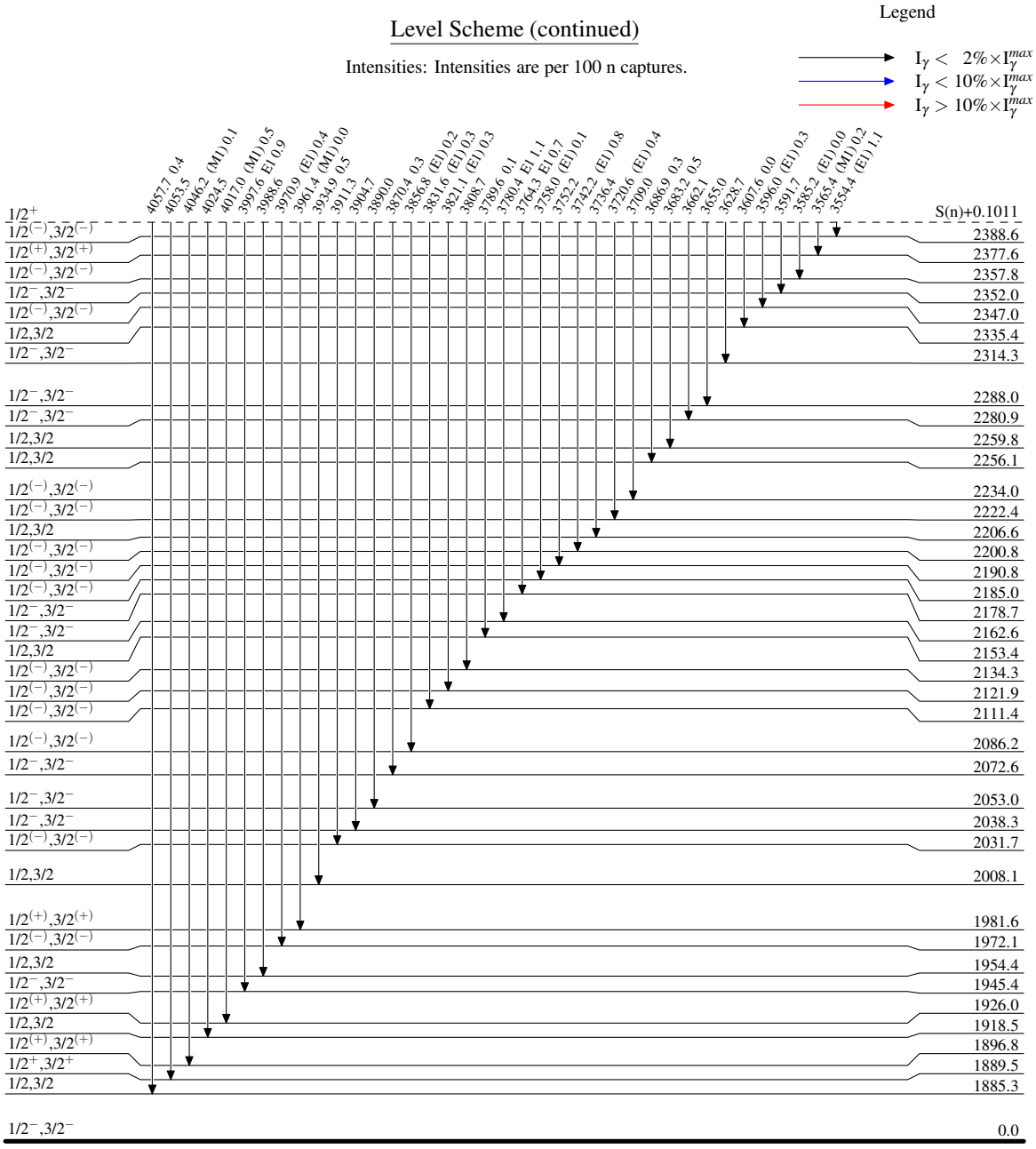


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

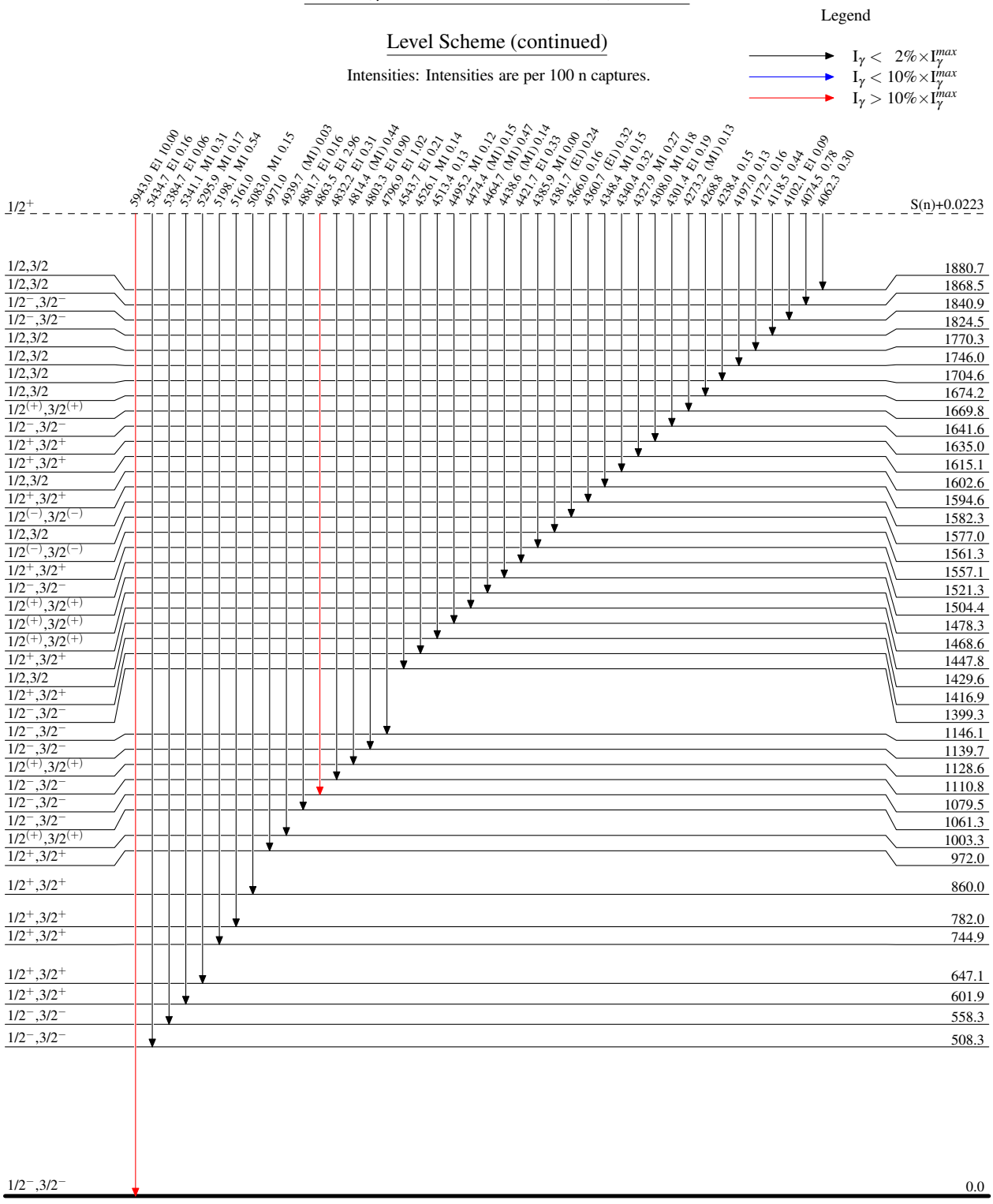


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

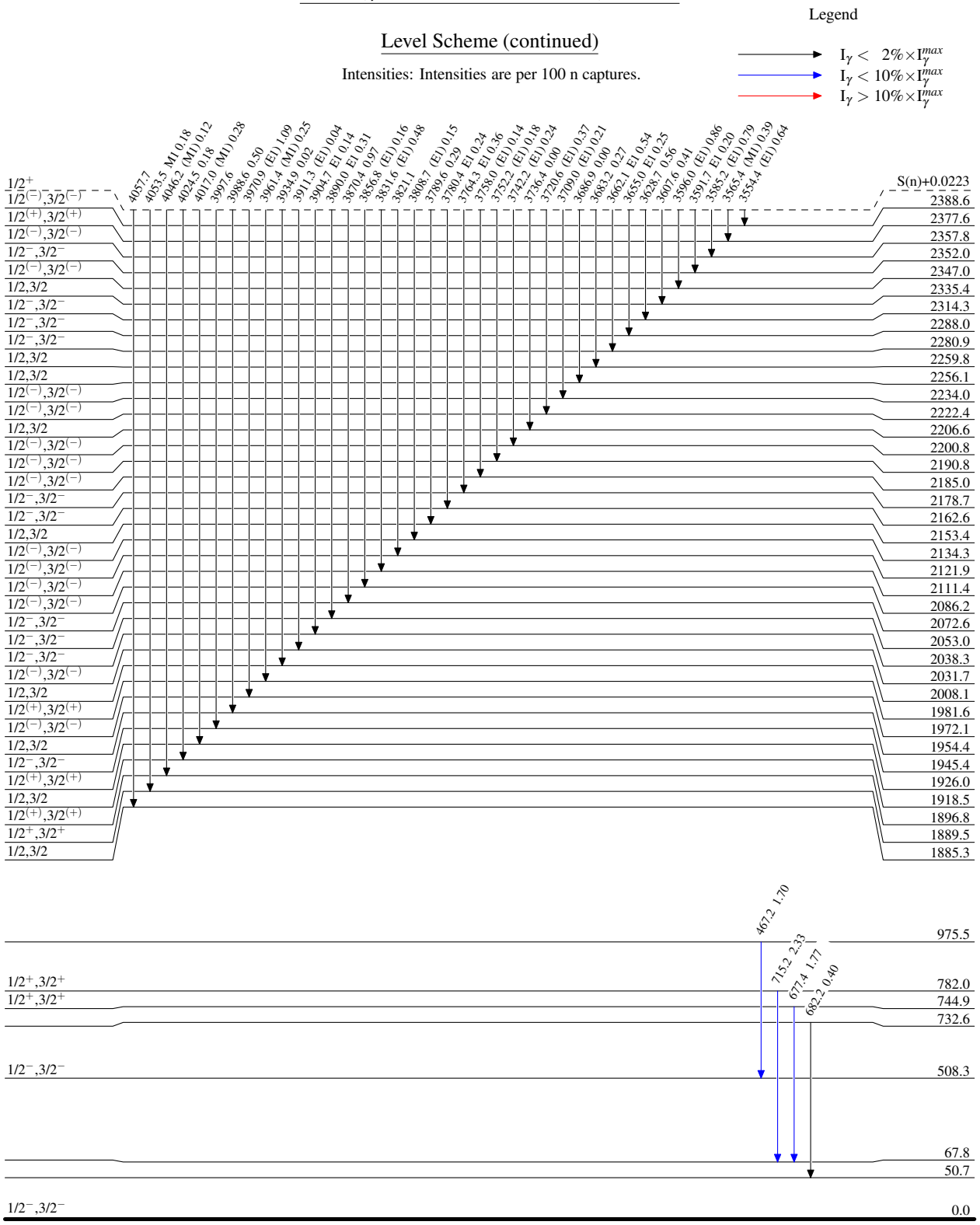


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.



$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=resonance 2003Gr13,2000Po07

Level Scheme (continued)

Intensities: Intensities are per 100 n captures.

Legend

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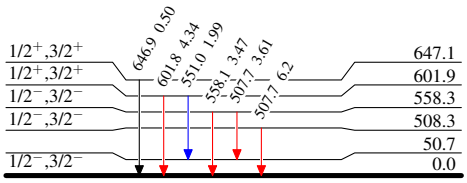

$^{159}_{64}Gd_{95}$