

$^{165}\text{Ho}(\gamma, \gamma')$ 2003No02

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen		NDS 194,460 (2024)	31-Oct-2022

2003No02: Used the Stuttgart Dynamitron photon beam. E=4 MeV. Measured $E\gamma$, $\gamma\gamma$, $\gamma(\theta)$ using three high-resolution Ge spectrometers. The resolution is much higher than that in the earlier works.

2003No02 list only B(M1) values and not B(E1) values, even though the parity of most levels is unknown. The authors seem to assume predominantly scissors mode (M1) population of levels.

Other:

1999Hu01, 1997En05, 1992Hu01, 1982Zu01, 1981Sc10: (γ, γ).

Additional information 1.

 ^{165}Ho Levels

E(level)	J^π	$((2J_f+1)/8)\Gamma_0^{\ddagger}$	Scattering σ (eVb)	Comments
0.0	7/2 ⁻ @			
94.7 I	9/2 ⁻ @			
209.5 I	11/2 ⁻ @			
1381 I		3.3×10^{-3} eV 3	6.7 7	B(M1) $\uparrow$ =0.109 11
1389 I		2.25×10^{-3} eV 27	4.5 5	B(M1) $\uparrow$ =0.073 9
1409 I		1.71×10^{-3} eV 26	3.3 5	B(M1) $\uparrow$ =0.053 8
1416 I		8.7×10^{-3} eV 7	16.7 12	B(M1) $\uparrow$ =0.265 20
1466 I	7/2,9/2	9.0×10^{-3} eV 7	12.7 10	B(M1) $\uparrow$ =0.245 18
1606 I		2.3×10^{-3} eV 3	3.4 5	B(M1) $\uparrow$ =0.047 7
1615 I		1.8×10^{-3} eV 3	2.7 5	B(M1) $\uparrow$ =0.038 7
1627 I		1.7×10^{-3} eV 3	2.5 4	B(M1) $\uparrow$ =0.035 6
1706 I	7/2,9/2	10.2×10^{-3} eV 8	11.3 9	B(M1) $\uparrow$ =0.178 14
1711 I		4.6×10^{-3} eV 5	6.0 6	B(M1) $\uparrow$ =0.079 8
1756 I		1.3×10^{-3} eV 3	1.6 4	B(M1) $\uparrow$ =0.020 5
1766 I		2.4×10^{-3} eV 6	2.9 7	B(M1) $\uparrow$ =0.037 9
1789 I		1.4×10^{-3} eV 3	1.7 4	B(M1) $\uparrow$ =0.021 5
1807 I		22.3×10^{-3} eV 19	26.3 22	B(M1) $\uparrow$ =0.33 3
1816 I		9.0×10^{-3} eV 8	10.4 9	B(M1) $\uparrow$ =0.129 11
1828 I	7/2,9/2	10.3×10^{-3} eV 8	9.6 8	B(M1) $\uparrow$ =0.145 11
1903 I	9/2	31.9×10^{-3} eV 25	2.0 4	B(M1) $\uparrow$ =0.40 3
1984 I		2.1×10^{-3} eV 5	2.1 5	B(M1) $\uparrow$ =0.023 5
2012 I		6.0×10^{-3} eV 6	5.7 6	B(M1) $\uparrow$ =0.064 6
2099 I		4.6×10^{-3} eV 5	4.0 4	B(M1) $\uparrow$ =0.043 5
2125 I	9/2	26.2×10^{-3} eV 19	18.9 15	B(M1) $\uparrow$ =0.236 17
2146 I		1.5×10^{-3} eV 4	1.3 3	B(M1) $\uparrow$ =0.013 3
2171 I		1.6×10^{-3} eV 5	1.3 4	B(M1) $\uparrow$ =0.014 4
2178 I		3.5×10^{-3} eV 5	2.9 4	B(M1) $\uparrow$ =0.030 4
2194 I		4.0×10^{-3} eV 5	3.2 4	B(M1) $\uparrow$ =0.033 4
2233 I		6.1×10^{-3} eV 6	4.7 5	B(M1) $\uparrow$ =0.048 5
2265 I		1.7×10^{-3} eV 4	1.2 3	B(M1) $\uparrow$ =0.012 3
2329 I		8.6×10^{-3} eV 8	6.1 6	B(M1) $\uparrow$ =0.059 6
2337 I		8.8×10^{-3} eV 9	6.2 6	B(M1) $\uparrow$ =0.059 6
2340 I		3.6×10^{-3} eV 6	2.5 4	B(M1) $\uparrow$ =0.024 4
2356 I	9/2	38.2×10^{-3} eV 27	22.6 18	B(M1) $\uparrow$ =0.252 18
2377 I		2.6×10^{-3} eV 4	1.8 3	B(M1) $\uparrow$ =0.017 3
2447 I		2.0×10^{-3} eV 4	1.3 3	B(M1) $\uparrow$ =0.012 3
2480 I		2.3×10^{-3} eV 4	1.5 3	B(M1) $\uparrow$ =0.013 2

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$^{165}\text{Ho}(\gamma, \gamma')$ **2003No02 (continued)** ^{165}Ho Levels (continued)

E(level)	J π #	$((2J_f+1)/8)\Gamma_0^{\ddagger}$	Scattering σ (eVb)	Comments
2492 <i>I</i>	7/2,9/2	4.8×10^{-3} eV 7	0.90 25	B(M1) $\uparrow$ =0.027 4
2509 <i>I</i>		1.7×10^{-3} eV 4	1.05 24	B(M1) $\uparrow$ =0.009 2
2519 <i>I</i>		11.8×10^{-3} eV 11	7.1 6	B(M1) $\uparrow$ =0.064 6
2538 <i>I</i>		9.2×10^{-3} eV 9	5.5 5	B(M1) $\uparrow$ =0.049 5
2551 <i>I</i>	7/2,9/2	24.3×10^{-3} eV 18	11.8 10	B(M1) $\uparrow$ =0.126 9
2561 <i>I</i>		8.5×10^{-3} eV 8	5.0 5	B(M1) $\uparrow$ =0.044 4
2571 <i>I</i>		5.0×10^{-3} eV 6	2.9 3	B(M1) $\uparrow$ =0.025 3
2580 <i>I</i>		3.1×10^{-3} eV 5	1.8 3	B(M1) $\uparrow$ =0.016 3
2592 <i>I</i>		5.9×10^{-3} eV 7	3.4 4	B(M1) $\uparrow$ =0.029 3
2596 <i>I</i>	7/2,9/2	21.7×10^{-3} eV 16	10.4 9	B(M1) $\uparrow$ =0.107 8
2601 <i>I</i>		8.8×10^{-3} eV 8	5.0 5	B(M1) $\uparrow$ =0.043 4
2632 <i>I</i>		2.1×10^{-3} eV 5	1.18 25	B(M1) $\uparrow$ =0.010 2
2652 <i>I</i>		9.6×10^{-3} eV 9	5.2 5	B(M1) $\uparrow$ =0.045 4
2656 <i>I</i>		6.9×10^{-3} eV 7	3.8 4	B(M1) $\uparrow$ =0.032 3
2663 <i>I</i>		6.1×10^{-3} eV 7	3.3 4	B(M1) $\uparrow$ =0.028 3
2666 <i>I</i>		6.1×10^{-3} eV 7	3.3 4	B(M1) $\uparrow$ =0.028 3
2672 <i>I</i>		6.0×10^{-3} eV 7	3.3 4	B(M1) $\uparrow$ =0.027 3
2675 <i>I</i>		2.8×10^{-3} eV 5	1.5 3	B(M1) $\uparrow$ =0.013 2
2683 <i>I</i>	9/2	7.1×10^{-3} eV 8	1.48 24	B(M1) $\uparrow$ =0.032 4
2689 <i>I</i>		6.0×10^{-3} eV 6	3.2 3	B(M1) $\uparrow$ =0.027 3
2752 <i>I</i>		5.5×10^{-3} eV 8	2.8 4	B(M1) $\uparrow$ =0.023 3
2768 <i>I</i>		1.8×10^{-3} eV 4	0.91 21	B(M1) $\uparrow$ =0.007 2
2806 <i>I</i>		2.5×10^{-3} eV 5	1.21 22	B(M1) $\uparrow$ =0.010 2
2816 <i>I</i>		10.9×10^{-3} eV 10	5.3 5	B(M1) $\uparrow$ =0.042 4
2820 <i>I</i>	7/2,9/2	22.5×10^{-3} eV 17	9.1 8	B(M1) $\uparrow$ =0.087 7
2836 <i>I</i>		5.2×10^{-3} eV 7	2.5 3	B(M1) $\uparrow$ =0.020 3
2839 <i>I</i>		16.4×10^{-3} eV 15	7.8 7	B(M1) $\uparrow$ =0.062 6
2855 <i>I</i>		5.0×10^{-3} eV 7	2.4 3	B(M1) $\uparrow$ =0.019 3
2858 <i>I</i>		10.9×10^{-3} eV 11	5.1 5	B(M1) $\uparrow$ =0.040 4
2878 <i>I</i>		2.0×10^{-3} eV 5	0.91 22	B(M1) $\uparrow$ =0.007 2
2896 <i>I</i>		10.0×10^{-3} eV 9	4.6 4	B(M1) $\uparrow$ =0.036 3
2913 <i>I</i>		6.2×10^{-3} eV 7	2.8 3	B(M1) $\uparrow$ =0.022 2
2917 <i>I</i>		2.2×10^{-3} eV 5	0.99 22	B(M1) $\uparrow$ =0.008 2
2921 <i>I</i>		2.3×10^{-3} eV 5	1.04 23	B(M1) $\uparrow$ =0.008 2
2951 <i>I</i>		2.8×10^{-3} eV 5	1.23 21	B(M1) $\uparrow$ =0.009 2
2958 <i>I</i>		3.2×10^{-3} eV 5	1.41 23	B(M1) $\uparrow$ =0.011 2
2963 <i>I</i>		11.8×10^{-3} eV 11	5.2 5	B(M1) $\uparrow$ =0.039 4
2973 <i>I</i>	7/2,9/2	9.4×10^{-3} eV 9	3.1 3	B(M1) $\uparrow$ =0.031 3
2991 <i>I</i>	9/2	17.5×10^{-3} eV 13	2.5 3	B(M1) $\uparrow$ =0.056 4
3002 <i>I</i>	7/2,9/2	17.7×10^{-3} eV 14	1.7 3	B(M1) $\uparrow$ =0.056 5
3035 <i>I</i>		2.8×10^{-3} eV 5	1.15 22	B(M1) $\uparrow$ =0.009 2
3077 <i>I</i>		11.7×10^{-3} eV 11	4.7 4	B(M1) $\uparrow$ =0.035 3
3086 <i>I</i>	7/2,9/2	31.6×10^{-3} eV 26	10.0 10	B(M1) $\uparrow$ =0.093 8 Γ : 24.9×10^{-3} eV 25 if decays also through 2991 γ . B(M1) $\uparrow$: 0.073 7 if decays also through 2991 γ .
3094 <i>I</i>	9/2	8.2×10^{-3} eV 9	1.34 23	B(M1) $\uparrow$ =0.024 3
3105 <i>I</i>		2.3×10^{-3} eV 5	0.92 19	B(M1) $\uparrow$ =0.007 1
3120 <i>I</i>		3.7×10^{-3} eV 6	1.47 22	B(M1) $\uparrow$ =0.011 2
3125 <i>I</i>	7/2	14.7×10^{-3} eV 14	4.0 4	B(M1) $\uparrow$ =0.042 4
3131 <i>I</i>		5.0×10^{-3} eV 8	2.0 3	B(M1) $\uparrow$ =0.014 2

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$^{165}\text{Ho}(\gamma, \gamma')$ **2003No02 (continued)** ^{165}Ho Levels (continued)

E(level)	J^π	$((2J_f+1)/8)\Gamma_0^{\ddagger}$	Scattering σ (eVb)	Comments
3134 <i>I</i>		2.5×10^{-3} eV 6	0.98 25	B(M1) $\uparrow$ =0.007 2
3144 <i>I</i>		6.3×10^{-3} eV 9	2.4 4	B(M1) $\uparrow$ =0.017 3
3147 <i>I</i>		3.9×10^{-3} eV 9	1.5 3	B(M1) $\uparrow$ =0.011 3
3167 <i>I</i>		3.3×10^{-3} eV 6	1.25 22	B(M1) $\uparrow$ =0.009 2
3183 <i>I</i>	(9/2)	6.8×10^{-3} eV 8	2.6 3	B(M1) $\uparrow$ =0.018 2
				Γ : 16.8×10^{-3} eV 13 if decays also through 2973 γ .
				B(M1) $\uparrow$: 0.045 4 if decays also through 2973 γ .
3187 <i>I</i>		6.2×10^{-3} eV 8	2.4 3	B(M1) $\uparrow$ =0.017 2
3191 <i>I</i>	9/2	13.9×10^{-3} eV 16	2.2 3	B(M1) $\uparrow$ =0.037 4
3213 <i>I</i>		1.9×10^{-3} eV 5	0.71 18	B(M1) $\uparrow$ =0.005 1
3220 <i>I</i>		2.7×10^{-3} eV 6	1.00 23	B(M1) $\uparrow$ =0.007 2
3237 <i>I</i>	9/2	7.4×10^{-3} eV 10	0.78 20	B(M1) $\uparrow$ =0.019 3
3247 <i>I</i>		15.4×10^{-3} eV 14	5.6 5	B(M1) $\uparrow$ =0.039 4
3259 <i>I</i>		2.0×10^{-3} eV 6	0.73 22	B(M1) $\uparrow$ =0.005 2
3287 <i>I</i>		1.6×10^{-3} eV 6	0.55 21	B(M1) $\uparrow$ =0.004 1
3313 <i>I</i>		2.1×10^{-3} eV 5	0.72 18	B(M1) $\uparrow$ =0.005 1
3329 <i>I</i>		4.1×10^{-3} eV 10	1.4 4	B(M1) $\uparrow$ =0.010 2
3352 <i>I</i>		2.4×10^{-3} eV 6	0.83 20	B(M1) $\uparrow$ =0.006 1
3358 <i>I</i>	9/2	4.4×10^{-3} eV 9	0.64 18	B(M1) $\uparrow$ =0.010 2
3371 <i>I</i>		1.9×10^{-3} eV 6	0.65 19	B(M1) $\uparrow$ =0.004 1
3400 <i>I</i>		2.1×10^{-3} eV 6	0.69 19	B(M1) $\uparrow$ =0.005 1
3407 <i>I</i>		4.7×10^{-3} eV 7	1.56 23	B(M1) $\uparrow$ =0.010 2
3418 <i>I</i>		6.5×10^{-3} eV 14	2.2 5	B(M1) $\uparrow$ =0.014 3
3423 <i>I</i>		5.9×10^{-3} eV 9	1.9 3	B(M1) $\uparrow$ =0.013 2
3427 <i>I</i>		4.5×10^{-3} eV 8	1.5 3	B(M1) $\uparrow$ =0.010 2
3439 <i>I</i>		2.2×10^{-3} eV 7	0.72 21	B(M1) $\uparrow$ =0.005 1
3455 <i>I</i>		2.8×10^{-3} eV 6	0.91 21	B(M1) $\uparrow$ =0.006 1
3468 <i>I</i>		3.6×10^{-3} eV 7	1.15 23	B(M1) $\uparrow$ =0.007 2
3472 <i>I</i>	7/2,9/2	11.4×10^{-3} eV 12	2.6 3	B(M1) $\uparrow$ =0.024 3
3478 <i>I</i>		3.1×10^{-3} eV 7	0.97 21	B(M1) $\uparrow$ =0.006 1
3503 <i>I</i>		4.2×10^{-3} eV 7	1.30 23	B(M1) $\uparrow$ =0.008 2
3509 <i>I</i>	7/2,9/2	11.5×10^{-3} eV 18	1.00 22	B(M1) $\uparrow$ =0.023 4
3513 <i>I</i>		8.0×10^{-3} eV 10	2.5 3	B(M1) $\uparrow$ =0.016 2
3525 <i>I</i>		2.5×10^{-3} eV 6	0.76 19	B(M1) $\uparrow$ =0.005 1
3544 <i>I</i>		2.6×10^{-3} eV 7	0.80 21	B(M1) $\uparrow$ =0.005 1
3549 <i>I</i>		2.6×10^{-3} eV 7	0.80 20	B(M1) $\uparrow$ =0.005 1
3559 <i>I</i>		4.2×10^{-3} eV 8	1.28 25	B(M1) $\uparrow$ =0.008 2
3589 <i>I</i>		5.3×10^{-3} eV 9	1.59 25	B(M1) $\uparrow$ =0.010 2
3598 <i>I</i>		3.7×10^{-3} eV 8	1.10 22	B(M1) $\uparrow$ =0.007 1
3604 <i>I</i>		4.0×10^{-3} eV 13	1.2 4	B(M1) $\uparrow$ =0.008 2
3651 <i>I</i>		2.1×10^{-3} eV 7	0.61 21	B(M1) $\uparrow$ =0.004 1
3679 <i>I</i>		5.9×10^{-3} eV 10	1.7 3	B(M1) $\uparrow$ =0.010 2
3702 <i>I</i>	9/2	12.7×10^{-3} eV 20	1.4 3	B(M1) $\uparrow$ =0.022 3
3728 <i>I</i>		5.1×10^{-3} eV 13	1.4 4	B(M1) $\uparrow$ =0.009 2
3735 <i>I</i>	7/2,9/2	13.5×10^{-3} eV 16	2.7 4	B(M1) $\uparrow$ =0.022 3
3756 <i>I</i>		4.0×10^{-3} eV 9	1.10 25	B(M1) $\uparrow$ =0.007 2
3762 <i>I</i>		3.7×10^{-3} eV 12	1.0 3	B(M1) $\uparrow$ =0.006 2
3773 <i>I</i>		7.5×10^{-3} eV 12	2.0 3	B(M1) $\uparrow$ =0.012 2
3779 <i>I</i>		4.8×10^{-3} eV 10	1.3 3	B(M1) $\uparrow$ =0.008 2
3809 <i>I</i>	7/2,9/2	7.9×10^{-3} eV 17	0.8 3	B(M1) $\uparrow$ =0.012 3

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$^{165}\text{Ho}(\gamma, \gamma')$ **2003No02 (continued)** ^{165}Ho Levels (continued)

E(level)	$((2J_f+1)/8)\Gamma_0^\ddagger$	Scattering σ (eVb)	Comments
3818 <i>I</i>	4.3×10^{-3} eV <i>11</i>	1.1 <i>3</i>	B(M1) $\uparrow=0.007$ <i>2</i>
3839 <i>I</i>	3.9×10^{-3} eV <i>11</i>	1.0 <i>3</i>	B(M1) $\uparrow=0.006$ <i>2</i>
3843 <i>I</i>	4.1×10^{-3} eV <i>12</i>	1.1 <i>3</i>	B(M1) $\uparrow=0.006$ <i>2</i>
3858 <i>I</i>	4.6×10^{-3} eV <i>11</i>	1.2 <i>3</i>	B(M1) $\uparrow=0.007$ <i>2</i>
3891 <i>I</i>	5.3×10^{-3} eV <i>15</i>	1.3 <i>4</i>	B(M1) $\uparrow=0.008$ <i>2</i>
3895 <i>I</i>	4.2×10^{-3} eV <i>14</i>	1.1 <i>4</i>	B(M1) $\uparrow=0.006$ <i>2</i>
3900 <i>I</i>	6.3×10^{-3} eV <i>14</i>	1.6 <i>4</i>	B(M1) $\uparrow=0.009$ <i>2</i>
3918 <i>I</i>	7.0×10^{-3} eV <i>16</i>	1.7 <i>4</i>	B(M1) $\uparrow=0.010$ <i>2</i>
3974 <i>I</i>	6.1×10^{-3} eV <i>18</i>	1.5 <i>4</i>	B(M1) $\uparrow=0.008$ <i>2</i>
3999 <i>I</i>	8.0×10^{-3} eV <i>20</i>	1.9 <i>5</i>	B(M1) $\uparrow=0.011$ <i>3</i>
4060.6 † <i>8</i>	12.7×10^{-3} eV <i>1</i>	2.9 <i>9</i>	B(M1) $\uparrow=0.016$ <i>5</i>
4109.5 † <i>8</i>	5.5×10^{-3} eV <i>1</i>	1.3 <i>6</i>	B(M1) $\uparrow=0.007$ <i>3</i>

 † From 1999Hu01. ‡ J_f =spin of excited state.

Above 210 keV, the assignments are from dipole excitation from $7/2^-$ ^{165}Ho g.s., and decay branching(s) to g.s., $7/2^-$ and 94.7, 9/2 $^-$ or 209.5, 11/2 $^-$ levels. For levels where no J^π values are given, these are limited to (5/2,7/2,9/2) from dipole excitation in (γ, γ') from $7/2^-$ g.s. of ^{165}Ho . All assignments from (γ, γ') are given in parentheses in the Adopted Levels.

@ From the Adopted Levels.

 $\gamma(^{165}\text{Ho})$

$E_i(\text{level})$	J_i^π	E_γ	$I_\gamma^\dagger$	E_f	J_f^π	$E_i(\text{level})$	J_i^π	E_γ	$I_\gamma^\dagger$	E_f	J_f^π
1381		1381 <i>I</i>		0.0	$7/2^-$	2178		2178 <i>I</i>		0.0	$7/2^-$
1389		1389 <i>I</i>		0.0	$7/2^-$	2194		2194 <i>I</i>		0.0	$7/2^-$
1409		1409 <i>I</i>		0.0	$7/2^-$	2233		2233 <i>I</i>		0.0	$7/2^-$
1416		1416 <i>I</i>		0.0	$7/2^-$	2265		2265 <i>I</i>		0.0	$7/2^-$
1466	$7/2, 9/2$	1371 <i>I</i>	26 <i>5</i>	94.7	$9/2^-$	2329		2329 <i>I</i>		0.0	$7/2^-$
		1466 <i>I</i>	100	0.0	$7/2^-$	2337		2337 <i>I</i>		0.0	$7/2^-$
1606		1606 <i>I</i>		0.0	$7/2^-$	2340		2340 <i>I</i>		0.0	$7/2^-$
1615		1615 <i>I</i>		0.0	$7/2^-$	2356	$9/2$	2261 <i>I</i>	17 <i>3</i>	94.7	$9/2^-$
1627		1627 <i>I</i>		0.0	$7/2^-$			2356 <i>I</i>	100	0.0	$7/2^-$
1706	$7/2, 9/2$	1611 <i>I</i>	19 <i>5</i>	94.7	$9/2^-$	2377		2377 <i>I</i>		0.0	$7/2^-$
		1706 <i>I</i>	100	0.0	$7/2^-$	2447		2447 <i>I</i>		0.0	$7/2^-$
1711		1711 <i>I</i>		0.0	$7/2^-$	2480		2480 <i>I</i>		0.0	$7/2^-$
1756		1756 <i>I</i>		0.0	$7/2^-$	2492	$7/2, 9/2$	2397 <i>I</i>	2.3×10^2 <i>8</i>	94.7	$9/2^-$
1766		1766 <i>I</i>		0.0	$7/2^-$			2492 <i>I</i>	100	0.0	$7/2^-$
1789		1789 <i>I</i>		0.0	$7/2^-$	2509		2509 <i>I</i>		0.0	$7/2^-$
1807		1807 <i>I</i>		0.0	$7/2^-$	2519		2519 <i>I</i>		0.0	$7/2^-$
1816		1816 <i>I</i>		0.0	$7/2^-$	2538		2538 <i>I</i>		0.0	$7/2^-$
1828	$7/2, 9/2$	1733 <i>I</i>	24 <i>5</i>	94.7	$9/2^-$	2551	$7/2, 9/2$	2456 <i>I</i>	21 <i>4</i>	94.7	$9/2^-$
		1828 <i>I</i>	100	0.0	$7/2^-$			2551 <i>I</i>	100	0.0	$7/2^-$
1903	$9/2$	1808 <i>I</i>	1.6×10^3 <i>3</i>	94.7	$9/2^-$	2561		2561 <i>I</i>		0.0	$7/2^-$
		1903 <i>I</i>	100	0.0	$7/2^-$	2571		2571 <i>I</i>		0.0	$7/2^-$
1984		1984 <i>I</i>		0.0	$7/2^-$	2580		2580 <i>I</i>		0.0	$7/2^-$
2012		2012 <i>I</i>		0.0	$7/2^-$	2592		2592 <i>I</i>		0.0	$7/2^-$
2099		2099 <i>I</i>		0.0	$7/2^-$	2596	$7/2, 9/2$	2501 <i>I</i>	19 <i>4</i>	94.7	$9/2^-$
2125	$9/2$	2030 <i>I</i>	18 <i>3</i>	94.7	$9/2^-$			2596 <i>I</i>	100	0.0	$7/2^-$
		2125 <i>I</i>	100	0.0	$7/2^-$	2601		2601 <i>I</i>		0.0	$7/2^-$
2146		2146 <i>I</i>		0.0	$7/2^-$	2632		2632 <i>I</i>		0.0	$7/2^-$
2171		2171 <i>I</i>		0.0	$7/2^-$	2652		2652 <i>I</i>		0.0	$7/2^-$

Continued on next page (footnotes at end of table)

$^{165}\text{Ho}(\gamma, \gamma')$ 2003No02 (continued)					
$\gamma(^{165}\text{Ho})$ (continued)					
$E_i(\text{level})$	J_i^π	E_γ	$I_\gamma^\dagger$	E_f	J_f^π
2656		2656 <i>I</i>		0.0	7/2 ⁻
2663		2663 <i>I</i>		0.0	7/2 ⁻
2666		2666 <i>I</i>		0.0	7/2 ⁻
2672		2672 <i>I</i>		0.0	7/2 ⁻
2675		2675 <i>I</i>		0.0	7/2 ⁻
2683	9/2	2588 <i>I</i>	158 36	94.7	9/2 ⁻
		2683 <i>I</i>	100	0.0	7/2 ⁻
2689		2689 <i>I</i>		0.0	7/2 ⁻
2752		2752 <i>I</i>		0.0	7/2 ⁻
2768		2768 <i>I</i>		0.0	7/2 ⁻
2806		2806 <i>I</i>		0.0	7/2 ⁻
2816		2816 <i>I</i>		0.0	7/2 ⁻
2820	7/2,9/2	2725 <i>I</i>	19 4	94.7	9/2 ⁻
		2820 <i>I</i>	100	0.0	7/2 ⁻
2836		2836 <i>I</i>		0.0	7/2 ⁻
2839		2839 <i>I</i>		0.0	7/2 ⁻
2855		2855 <i>I</i>		0.0	7/2 ⁻
2858		2858 <i>I</i>		0.0	7/2 ⁻
2878		2878 [#] <i>I</i>		0.0	7/2 ⁻
2896		2896 [#] <i>I</i>		0.0	7/2 ⁻
2913		2913 <i>I</i>		0.0	7/2 ⁻
2917		2917 <i>I</i>		0.0	7/2 ⁻
2921		2921 <i>I</i>		0.0	7/2 ⁻
2951		2951 <i>I</i>		0.0	7/2 ⁻
2958		2958 <i>I</i>		0.0	7/2 ⁻
2963		2963 <i>I</i>		0.0	7/2 ⁻
2973	7/2,9/2	2878 [#] <i>I</i>	32 8	94.7	9/2 ⁻
		2973 [#] <i>I</i>	100	0.0	7/2 ⁻
2991	9/2	2896 [#] <i>I</i>	201 29	94.7	9/2 ⁻
		2991 [#] <i>I</i>	100	0.0	7/2 ⁻
3002	7/2,9/2	2907 <i>I</i>	3.5×10 ² 7	94.7	9/2 ⁻
		3002 <i>I</i>	100	0.0	7/2 ⁻
3035		3035 <i>I</i>		0.0	7/2 ⁻
3077		3077 <i>I</i>		0.0	7/2 ⁻
3086	7/2,9/2	2991 [#] <i>I</i>	27 4	94.7	9/2 ⁻
		3086 <i>I</i>	100	0.0	7/2 ⁻
3094	9/2	2884 <i>I</i>	145 34	209.5	11/2 ⁻
		3094 <i>I</i>	100	0.0	7/2 ⁻
3105		3105 <i>I</i>		0.0	7/2 ⁻
3120		3120 <i>I</i>		0.0	7/2 ⁻
3125	7/2	3030 <i>I</i>	45 12	94.7	9/2 ⁻
		3125 <i>I</i>	100	0.0	7/2 ⁻
3131		3131 <i>I</i>		0.0	7/2 ⁻
3134		3134 <i>I</i>		0.0	7/2 ⁻
3144		3144 <i>I</i>		0.0	7/2 ⁻
3147		3147 <i>I</i>		0.0	7/2 ⁻
3167		3167 <i>I</i>		0.0	7/2 ⁻
3183	(9/2)	2973 [#] <i>I</i>	147 23	209.5	11/2 ⁻
		3183 <i>I</i>	100	0.0	7/2 ⁻
3187		3187 <i>I</i>		0.0	7/2 ⁻
3191	9/2	2981 <i>I</i>	137 29	209.5	11/2 ⁻
		3191 <i>I</i>	100	0.0	7/2 ⁻
3213		3213 <i>I</i>		0.0	7/2 ⁻

Continued on next page (footnotes at end of table)

$^{165}\text{Ho}(\gamma, \gamma')$ **2003No02 (continued)** $\gamma(^{165}\text{Ho})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	$I_\gamma^\dagger$	E_f	J_f^π
3220		3220 <i>I</i>		0.0	$7/2^-$
3237	9/2	3027 <i>I</i>	2.5×10^2 8	209.5	$11/2^-$
		3237 <i>I</i>	100	0.0	$7/2^-$
3247		3247 <i>I</i>		0.0	$7/2^-$
3259		3259 <i>I</i>		0.0	$7/2^-$
3287		3287 <i>I</i>		0.0	$7/2^-$
3313		3313 <i>I</i>		0.0	$7/2^-$
3329		3329 <i>I</i>		0.0	$7/2^-$
3352		3352 <i>I</i>		0.0	$7/2^-$
3358	9/2	3263 <i>I</i>	1.4×10^2 5	94.7	$9/2^-$
		3358 <i>I</i>	100	0.0	$7/2^-$
3371		3371 <i>I</i>		0.0	$7/2^-$
3400		3400 <i>I</i>		0.0	$7/2^-$
3407		3407 <i>I</i>		0.0	$7/2^-$
3418		3418 <i>I</i>		0.0	$7/2^-$
3423		3423 <i>I</i>		0.0	$7/2^-$
3427		3427 <i>I</i>		0.0	$7/2^-$
3439		3439 <i>I</i>		0.0	$7/2^-$
3455		3455 <i>I</i>		0.0	$7/2^-$
3468		3468 <i>I</i>		0.0	$7/2^-$
3472	7/2,9/2	3377 <i>I</i>	38 9	94.7	$9/2^-$
		3472 <i>I</i>	100	0.0	$7/2^-$
3478		3478 <i>I</i>		0.0	$7/2^-$
3503		3503 <i>I</i>		0.0	$7/2^-$
3509	7/2,9/2	3414 <i>I</i>	2.6×10^2 8	94.7	$9/2^-$
		3509 <i>I</i>	100	0.0	$7/2^-$
3513		3513 <i>I</i>		0.0	$7/2^-$
3525		3525 <i>I</i>		0.0	$7/2^-$
3544		3544 <i>I</i>		0.0	$7/2^-$
3549		3549 <i>I</i>		0.0	$7/2^-$
3559		3559 <i>I</i>		0.0	$7/2^-$
3589		3589 <i>I</i>		0.0	$7/2^-$
3598		3598 <i>I</i>		0.0	$7/2^-$
3604		3604 <i>I</i>		0.0	$7/2^-$
3651		3651 <i>I</i>		0.0	$7/2^-$
3679		3679 <i>I</i>		0.0	$7/2^-$
3702	9/2	3607 <i>I</i>	147 43	94.7	$9/2^-$
		3702 <i>I</i>	100	0.0	$7/2^-$
3728		3728 <i>I</i>		0.0	$7/2^-$
3735	7/2,9/2	3640 <i>I</i>	39 11	94.7	$9/2^-$
		3735 <i>I</i>	100	0.0	$7/2^-$
3756		3756 <i>I</i>		0.0	$7/2^-$
3762		3762 <i>I</i>		0.0	$7/2^-$
3773		3773 <i>I</i>		0.0	$7/2^-$
3779		3779 <i>I</i>		0.0	$7/2^-$
3809	7/2,9/2	3714 <i>I</i>	1.8×10^2 9	94.7	$9/2^-$
		3809 <i>I</i>	100	0.0	$7/2^-$
3818		3818 <i>I</i>		0.0	$7/2^-$
3839		3839 <i>I</i>		0.0	$7/2^-$
3843		3843 <i>I</i>		0.0	$7/2^-$
3858		3858 <i>I</i>		0.0	$7/2^-$
3891		3891 <i>I</i>		0.0	$7/2^-$
3895		3895 <i>I</i>		0.0	$7/2^-$
3900		3900 <i>I</i>		0.0	$7/2^-$
3918		3918 <i>I</i>		0.0	$7/2^-$

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$^{165}\text{Ho}(\gamma, \gamma')$ **2003No02 (continued)** $\gamma(^{165}\text{Ho})$ (continued)

<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ</u>	<u>E_f</u>	<u>J_f^π</u>
3974		3974 <i>I</i>	0.0	7/2 ⁻
3999		3999 <i>I</i>	0.0	7/2 ⁻
4060.6		4060.6 <i>I</i>	0.0	7/2 ⁻
4109.5		4109.5 <i>I</i>	0.0	7/2 ⁻

[†] Deduced (by evaluators) from reduced branching ratios $R_{\text{expt}} = [I\gamma_1/E\gamma_1^3]/[I\gamma_2/E\gamma_2^3]$ given by [2003No02](#), where $\gamma_1 = \gamma$ to 94.7, 9/2⁻ or 209.5, 11/2⁻ state; $\gamma_2 = \gamma$ to ground state.

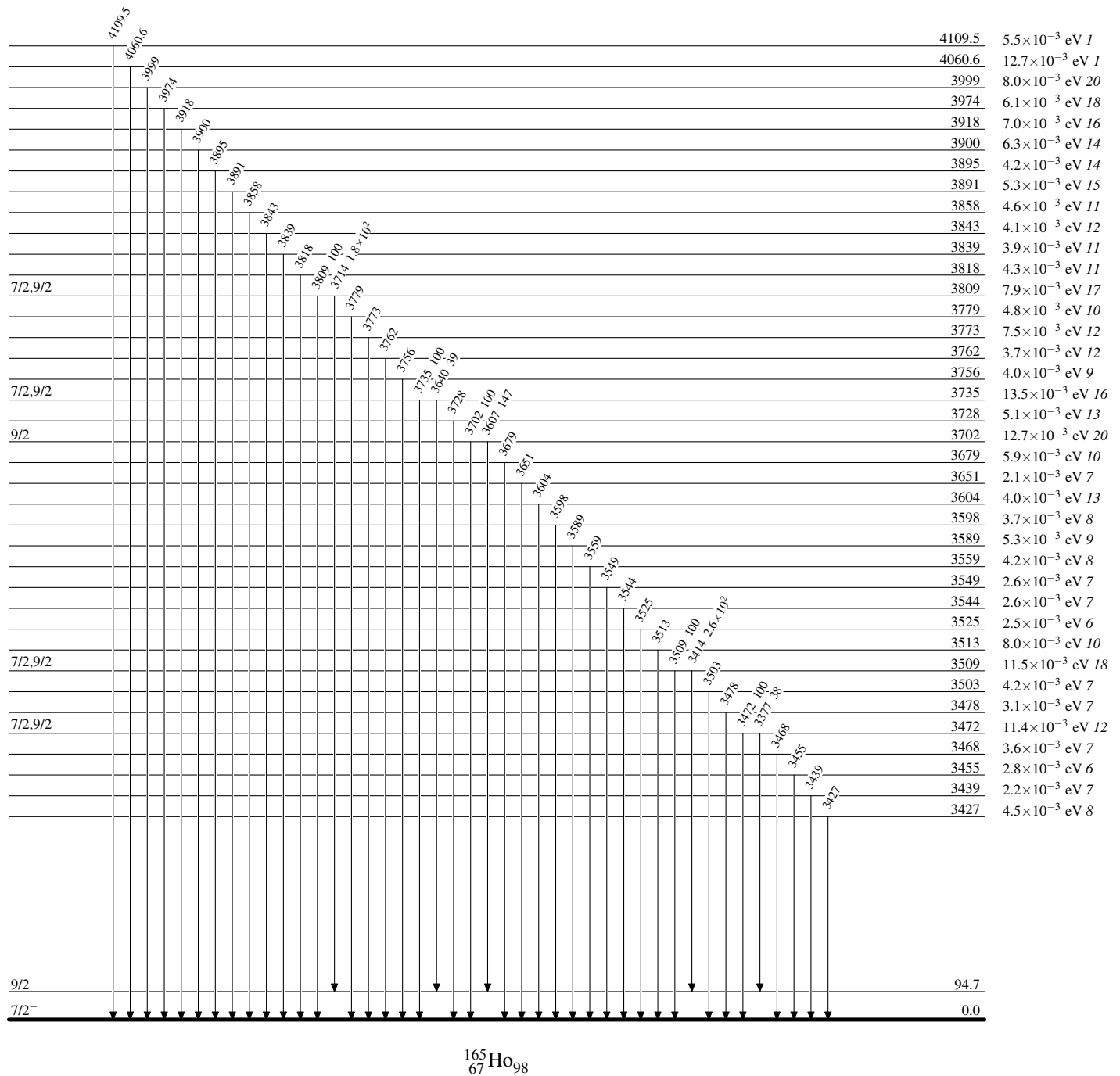
[‡] Alternative interpretation or placement is possible.

Multiply placed.

$^{165}\text{Ho}(\gamma, \gamma')$ 2003No02

Level Scheme

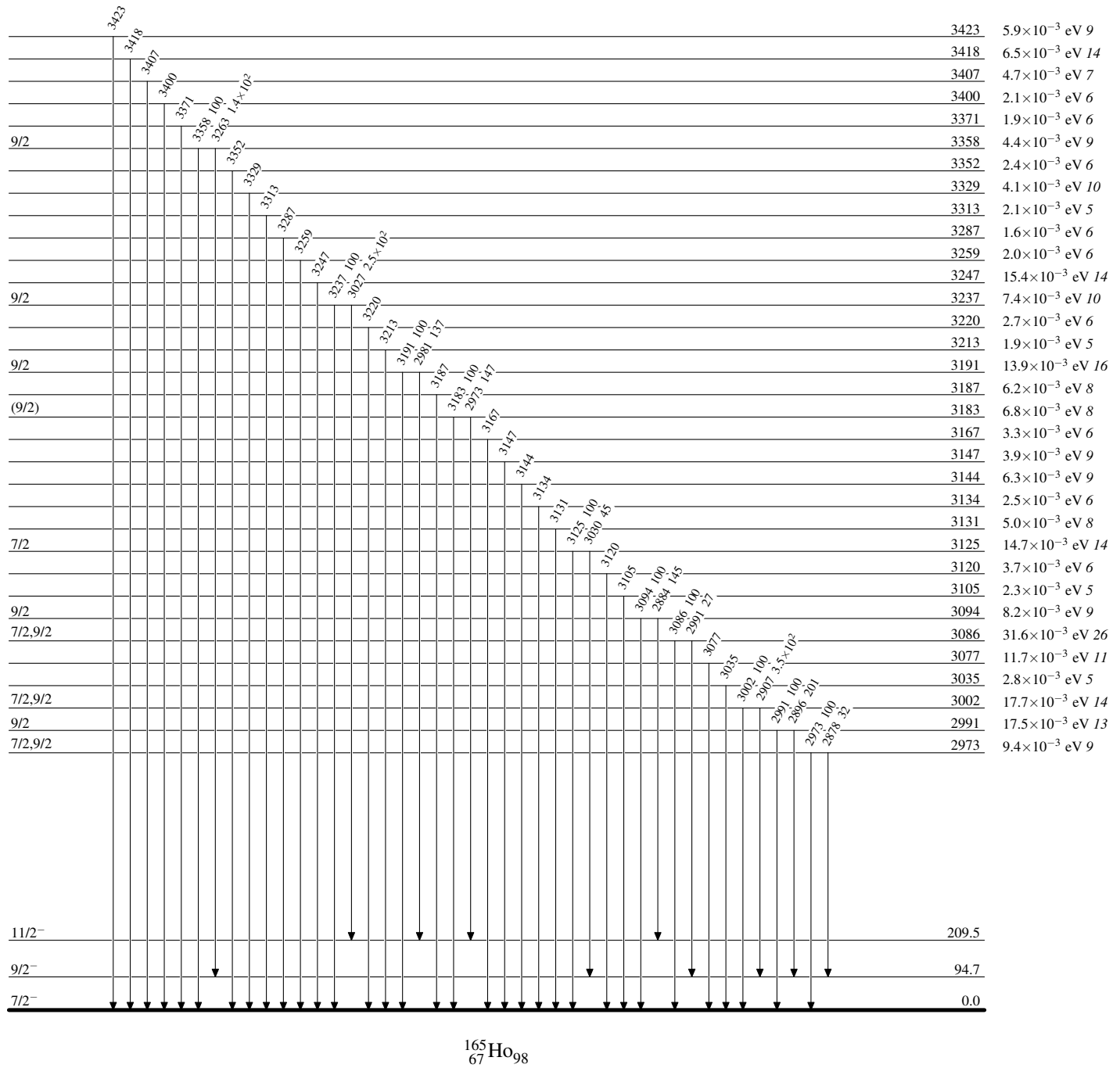
Intensities: Relative photon branching from each level



$^{165}\text{Ho}(\gamma, \gamma')$ 2003No02

Level Scheme (continued)

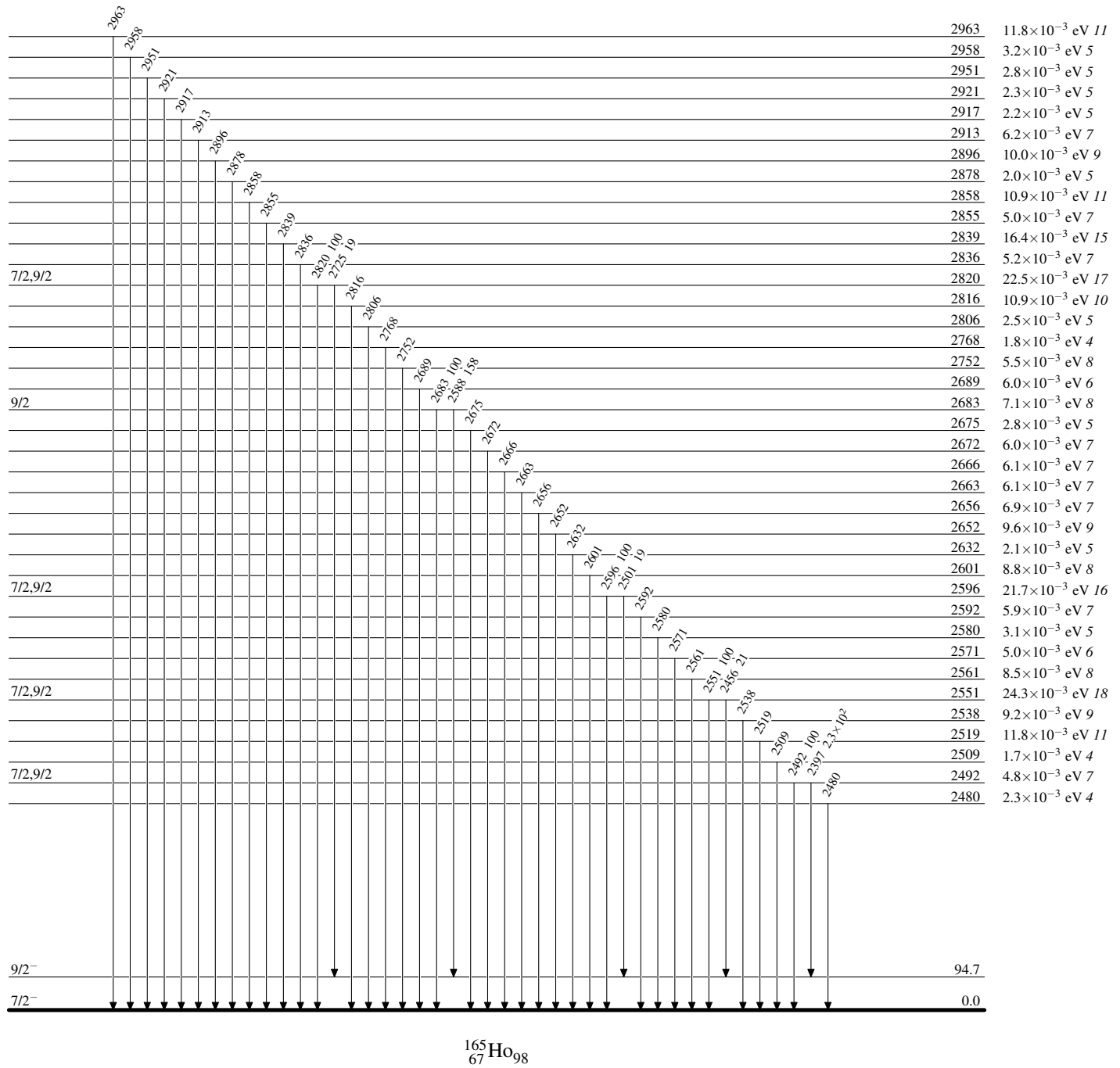
Intensities: Relative photon branching from each level



$^{165}\text{Ho}(\gamma, \gamma')$ 2003No02

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{165}\text{Ho}(\gamma, \gamma')$ 2003No02

Level Scheme (continued)

Intensities: Relative photon branching from each level

