^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109, 1103 (2008)	1-Mar-2008

Other measurements: 1958Sk59, 1959Dr75, 1959Jo33, 1960Al27, 1961Es02, 1961Kr01, 1963Gi03, 1963Or02, 1973He15, 1973PrZI, 1979Bo08, 1988Ba79, 1989Du03, 2003ChZS, 2007ChZX.

Includes (pol n,γ) E=0.065 eV.

J^π(target)=7/2$^-$.

σ_n=61.2 *11* (2006MuZX). abundance(^{165}Ho)=100%.

2007ChZX: provides an evaluation of experimental data including new Eγ and elemental cross section measurements using Ge(Li) detector for 148 primary and 73 secondary transitions (herein referred to As 'Budapest data', and taken from the EGAF section of the CD that is part of this publication). supersedes 2003ChZS.

2000Pr03: three-crystal pair spectrometer, FWHM≈5.5 keV At 6.5 MeV; calibration based on S(n) and pattern of primary transitions to several well-established low-lying levels; measured Eγ, $\gamma\gamma$ coin; deduced band structure.

1984Ke15: >99.9% Ho target; Ge detector inside quadrisected NaI(Tl) annulus (FWHM=3.1-4.5 keV for Eγ=4000-6200); measured Eγ, Iγ for 270 transitions with Eγ>4050; ^{14}N(n,γ) reaction used for calibration.

1979Bo08: (pol n,γ); polarized E=0.065 eV neutrons and polarized single-crystal ^{165}Ho target; measured $\gamma(\theta)$ for 15 primary gammas; deduced J.

1967Mo05: 99.8% Ho target; measured primary Eγ, Iγ using Ge(Li) detector As two-escape pair spectrometer (FWHM=8.0 keV; Eγ=5000-6200); measured secondary Eγ, Iγ using Riso curved-crystal spectrometer (Eγ=30-750) or Iγ using Ge(Li) detector (Eγ=70-550); measured conversion electrons (E=29-500) using Elephant spectrometer At Munich (FWHM=0.6% At 100 keV, 0.3% At 200 keV; thick source) and the Studsvik β^- spectrometer (FWHM=0.2%; thin source).

The level scheme includes refinements made by 2000Pr03 to the schemes proposed by 1967Mo05 and others, In which γ placements were based on the Ritz principle (somewhat unreliable At this level density); $\gamma\gamma$ coin data from 2000Pr03 led to the placement or relocation of many transitions and the elucidation of a number of additional bands.

^{166}Ho Levels

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	E(level)[†]	J$^\pi$[‡]	T$_{1/2}$
0.0[b]	0$^-$[y]	26.824[z] h *12*	430.031[k] *4*	2$^+$[1]	≤0.2[#] ns
5.969[c] *12*	7$^-$	1.20×10^3[z] y *18*	431.239[s] *6*	5$^-$	
54.2391[b] *7*	2$^-$		453.771[d] *4*	6$^+$	
82.4707[b] *20*	1$^-$		464.501[l] *6*	2$^+$	
137.729[c] *13*	8$^-$		470.841[g] *3*	5$^+$	
171.0738[b] *12*	3$^-$		475.680[q] *7*	3$^-$	≤0.2[#] ns
180.467[b] *3*	4$^-$		481.846[k] *4*	3$^+$[2]	≤0.2[#] ns
190.9021[d] *20*	3$^+$[@]		514.362[e] *7*	7$^+$	
260.6625[d] *23*	4$^+$[@]	≤0.5[#] ns	521.982[l] *6*	3$^+$	
263.7876[e] *24*	5$^+$	≤0.5[#] ns	529.816[s] *8*	6$^-$	
286.96[c] *13*	9$^-$		543.672[j] *4*	2$^-$	
295.085[f] *9*	6$^+$	1.10[#] ns *15*	547.934[k] *5*	4$^+$	
329.774[b] *4*	5$^-$		557.65[b] *7*	7$^-$	
348.257[d] *3*	5$^+$		558.571[o] *4*	4$^+$[@]	
371.985[g] *3*	4$^+$[@]	≤0.2[#] ns	562.890[q] *7*	4$^-$	
373.092[q] *8*	1$^-$	≤0.2[#] ns	567.624[i] *7*	1$^+$	
377.806[b] *4*	6$^-$		577.208[d] *7*	7$^+$	
379.547[e] *4*	6$^+$		588.083[g] *7*	6$^+$	
416.086[q] *6*	2$^-$	≤0.2[#] ns	592.501[m] *9*	3$^+$	
423.651[f] *10*	7$^+$		595.726[h] *15*	1$^-$	
426.025[l] *6*	1$^+$		597.015[j] *4*	3$^-$	

Continued on next page (footnotes at end of table)

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

^{166}Ho Levels (continued)

E(level)†	Jπ‡	Comments
598.448[l] 6	4+	
605.047[i] 7	2+	
628.418[h] 13	2−	
634.314[k] 6	5+	
638.235[r] 9	4−	
644.29[s] 6	7−	
654.818[o] 14	5+	
657.995[q] 11	5−	
659.01[t] 4	0−	
662.169[i] 8	3+	
668.005[j] 6	4−	
671.746[m] 12	4+	
683.805[h] 5	3−	
693.388 17	(2+)	Additional information 1.
693.638[l] 7	5+	
704.962[r] 14	3−	
719.370[n] 11	4+3	
721.98[v] 15	6+	
723.239[g] 19	7+	
725.68[t] 4	2−	
732.513[k] 16	6+	
736.430[i] 9	4+	
742.02[h] 3	4−	
757.707[j] 18	5−	
760.345[u] 7	3−	
769.78[m] 4	5+	
771.94[o] 8	6+	
774.522[t] 16	1−	
788.618[q] 11	6−	
792.789[r] 12	4−	
806.56[n] 5	5+	
807.011[l] 8	6+	
815.139[p] 10	3+@	
824.62 4	3−	Additional information 2.
832.197[i] 9	5+	
837.717[u] 8	4−	
848.46[v] 21	7+	
868.24[t] 14	4−	
870.13 5	(−)	Additional information 3.
876.37 22		Additional information 4.
881.040[t] 20	3−@	
883.94[m] 5	6+	
885.345 20	(3+)	Additional information 5.
891.124[p] 12	4+	
905.544[w] 10	2+@	
910.49?[n] 4	(6+)	
925.0[x] 5	5+	
935.12[u] 4	5−	
942.524[i] 15	6+	
945.86 5		Additional information 6.

Continued on next page (footnotes at end of table)

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

^{166}Ho Levels (continued)

E(level)†	Jπ‡	E(level)†	E(level)†	E(level)†	Jπ‡
951.1 *3*		1355.02 *5*	1657.5 *3*	1972.9 *8*	
961.08[w] *6*	3+	1362.73 *11*	1661.57 *21*	1975.5 *4*	
977.2 *7*		1367.31 *16*	1666.15 *9*	1978.33 *18*	
979.8 *10*		1371.4 *10*	1671.64 *8*	1985.98 *12*	
985.20[p] *8*	5+	1376.81 *6*	1676.69 *12*	1995.37 *16*	
1004.84 *5*		1380.15 *19*	1681.2 *5*	1998.94 *20*	
1010.68 *18*		1387.75 *5*	1683.5 *4*	2004.89 *10*	
1016.23 *15*		1391.93 *11*	1687.3 *5*	2010.77 *13*	
1019.2 *5*		1396.77 *7*	1695.01 *7*	2015.07 *21*	
1023.4 *23*		1401.77 *11*	1704.31 *8*	2017.6 *4*	
1026.1 *5*		1405.8 *3*	1710.6 *3*	2023.0 *3*	
1030.38[w] *3*	4+	1415.80 *4*	1713.24 *23*	2025.63 *19*	
1054.87 *22*		1421.48 *13*	1716.65 *20*	2029.8 *3*	
1061.788 *22*	2,4[@]	1429.80 *7*	1723.8 *6*	2032.05 *23*	
1087.91 *4*	3[@]	1433.64 *12*	1731.10 *11*	2037.44 *17*	
1097.45[p] *5*	6+	1448.92 *5*	1742.26 *12*	2040.4 *3*	
1114.67 *3*	3,(5)[@]	1458.8 *5*	1752.4 *3*	2051.3 *4*	
1121.41 *7*		1461.6 *4*	1756.8 *6*	2054.4 *3*	
1131.0 *3*		1463.91 *14*	1759.6 *3*	2056.7 *5*	
1134.97 *11*		1467.3 *5*	1763.59 *9*	2058.7 *3*	
1137.79 *12*		1471.7 *4*	1769.46 *18*	2062.1 *5*	
1141.3 *3*		1474.4 *6*	1776.76 *7*	2065.20 *15*	
1146.7 *4*		1478.49 *13*	1785.5 *3*	2072.60 *20*	
1154.84 *4*		1487.15 *13*	1794.18 *15*	2075.3 *5*	
1161.35 *3*	4[@]	1494.59 *18*	1798.8 *4*	2077.77 *21*	
1174.9 *5*		1498.1 *4*	1805.5 *3*	2087.76 *18*	
1190.13 *4*		1505.5 *3*	1816.98 *9*	2090.96 *20*	
1199.4 *13*		1510.60 *7*	1823.86 *10*	2094.4 *4*	
1202.11 *14*		1521.2 *4*	1829.53 *24*	2098.37 *15*	
1208.61 *9*		1526.86 *17*	1835.60 *16*	2103.7 *4*	
1214.93 *23*		1532.12 *6*	1838.6 *11*	2105.7 *6*	
1217.2 *3*		1537.62 *11*	1842.99 *9*	2109.2 *6*	
1221.61 *13*		1540.9 *5*	1851.1 *3*	2111.7 *4*	
1230.04 *4*		1544.4 *10*	1854.98 *13*	2115.82 *23*	
1234.86 *12*		1547.49 *12*	1859.34 *11*	2118.7 *5*	
1240.70 *6*		1552.95 *13*	1864.8 *6*	2122.5 *3*	
1244.24 *7*		1558.90 *17*	1870.3 *4*	2127.47 *18*	
1248.19 *10*		1561.0 *4*	1876.86 *9*	2131.19 *16*	
1252.69 *14*		1566.5 *5*	1882.99 *18*	2137.2 *4*	
1256.87 *12*		1570.75 *7*	1890.85 *11*	2139.3 *5*	
1263.84 *4*		1576.89 *12*	1895.28 *11*	2145.43 *17*	
1271.44 *19*		1588.79 *13*	1898.96 *15*	2148.5 *3*	
1289.29 *11*		1592.47 *18*	1907.67 *11*	2151.68 *16*	
1293.79 *7*		1599.98 *9*	1914.0 *4*	2157.34 *14*	
1298.45 *7*		1603.81 *15*	1916.3 *6*	2161.1 *3*	
1301.07 *9*		1606.25 *24*	1919.32 *15*	2163.80 *24*	
1304.81 *13*		1614.0 *4*	1928.17 *10*	2167.7 *4*	
1310.54 *15*		1616.0 *3*	1933.09 *16*	2169.8 *4*	
1318.0 *3*		1620.3 *3*	1938.88 *10*	2172.1 *5*	
1322.0 *3*		1628.1 *4*	1945.97 *16*	2180.0 *3*	
1327.55 *21*		1629.9 *3*	1950.87 *12*	2182.92 *22*	
1332.1 *6*		1635.51 *9*	1954.3 *7*	2193.20 *15*	
1338.75 *6*		1638.97 *16*	1957.52 *21*	(6243.714[&] *8*)	3−,4−[a]
1343.06 *8*		1644.49 *15*	1960.67 *14*		
1349.93 *5*		1655.0 *5*	1969.8 *3*		

Continued on next page (footnotes at end of table)

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

^{166}Ho Levels (continued)

† From least-squares fit to Eγ, excluding data for multiply placed transitions and for the 48.303γ and 232.286γ, both of which fit their placements particularly poorly. However, it should Be noted that 28 of the remaining 570 Eγ data deviate by At least 3σ from the least-squares prediction and, of those, 12 deviate by At least 5σ. The latter are noted In comments on the relevant G.
‡ Recommended value from 2000Pr03, unless otherwise noted; based on transition multipolarity and deduced band structure.
# From 1978Sc10.
@ Spin from the angular distribution measurements of the primary γ feeding level (1979Bo08).
& From least-squares fit to Eγ (cf. S(n)=6243.64 *2* In 2003Au03).
[a] s-wave capture on $J^\pi=7/2^-$ target.
[b] Band(A): $K^\pi=0^-$, (π 7/2[523])-(ν 7/2[633]) band.
[c] Band(B): $K^\pi=7^-$, (π 7/2[523])+(ν 7/2[633]) band.
[d] Band(C): $K^\pi=3^+$, (π 7/2[523])-(ν 1/2[521]) band.
[e] Band(D): $K^\pi=5^+$ band. Configuration: (π 3/2[411]+ν 7/2[633])+(π 7/2[523]+ν 3/2[521]).
[f] Band(E): $K^\pi=6^+$, (π 7/2[523])+(ν 5/2[512]) band.
[g] Band(F): $K^\pi=4^+$, (π 7/2[523])+(ν 1/2[521]) band.
[h] Band(G): $K^\pi=1^-$, (π 1/2[411])+(ν 1/2[521]) band.
[i] Band(H): $K^\pi=1^+$, (π 7/2[523])-(ν 5/2[523]) band.
[j] Band(I): $K^\pi=2^-$, (π 7/2[523])-(ν 7/2[633])+Q_{22} band.
[k] Band(J): $K^\pi=2^+$ band. Configuration: (π 3/2[411]-ν 7/2[633])+(π 7/2[523]-ν 3/2[521]).
[l] Band(K): $K^\pi=1^+$, (π 7/2[523])-(ν 5/2[512]) band.
[m] Band(L): $K^\pi=3^+$, (π 1/2[411])-(ν 7/2[633]) band.
[n] Band(M): $K^\pi=4^+$, (π 1/2[411])+(ν 7/2[633]) band.
[o] Band(N): $K^\pi=4^+$, (π 7/2[523])+(ν 1/2[510]) band.
[p] Band(O): $K^\pi=3^+$, (π 7/2[523])-(ν 1/2[510]) band.
[q] Band(P): $K^\pi=1^-$, (π 3/2[411])-(ν 1/2[521]) band.
[r] Band(Q): $K^\pi=2^-$, (π 3/2[411])+(ν 1/2[521]) band.
[s] Band(R): $K^\pi=5^-$, (π 7/2[523])+(ν 7/2[633])-Q_{22} band.
[t] Band(S): $K^\pi=0^-$, (π 1/2[411])-(ν 1/2[521]) band.
[u] Band(T): $K^\pi=3^-$ band. Configuration (π 1/2[541])-(ν 7/2[633]) or (π 1/2[411])+(ν 5/2[512]).
[v] Band(U): $K^\pi=6^+$, (π 7/2[523])+(ν 5/2[523]) band.
[w] Band(V): $K^\pi=2^+$, (π 7/2[523])-(ν 3/2[521]) band.
[x] Band(W): $K^\pi=5^+$, (π 7/2[523])+(ν 3/2[521]) band.
[y] From Adopted Levels.
[z] From Adopted Levels.
[1] 2 or possibly 4 from 5812$\gamma(\theta)$, not 4 from 5812γ circular polarization (1979Bo08).
[2] J=3,4 from 5761$\gamma(\theta)$ (1979Bo08).
[3] 4 or possibly 3 from 5523$\gamma(\theta)$ (1979Bo08).

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

γ(^{166}Ho)

Iγ normalization: from 1967Mo05. If, instead, one obtained Iγ normalization by requiring that Σ (I(γ+ce) to g.s.)=100, a value of 1.02 *9* would be obtained, in excellent agreement with the normalization recommended by 1967Mo05. The ratio R=Iγ(2007ChZX, 'Budapest data')/Iγ(1967Mo05) varies widely but, if cases where the intensities differ by At least a factor of 3 are removed from consideration, the average value of R is 0.93 for secondary lines and 1.10 for primary transitions. Some, but not all, of the inconsistencies May stem from the poorer energy resolution of the 2007ChZX measurement or from the presence of unidentified impurities. For the strong 116.8γ, 136.7γ, 5181γ, 5212γ and 5813γ, Iγ(2007ChZX)/Iγ(1967Mo05) is 0.83 *9*, 0.85 *10*, 0.95 *9*, 1.04 *11* and 0.93 *8*, respectively. with the adopted normalization, the total observed primary γ intensity is 16%.

E$_\gamma$[†]	I$_\gamma$[†d]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[‡]	α[e]	I$_{(\gamma+ce)}$[d]	Comments
(3.1)		263.7876	5$^+$	260.6625	4$^+$			4.1 *7*	E$_\gamma$: from level energy difference; transition expected but not observed (see 1978Ba78). I$_{(\gamma+ce)}$: from I(γ+ce) imbalance At 264 level.
(9.393)		180.467	4$^-$	171.0738	3$^-$			12.3 *10*	E$_\gamma$: from level energy difference; transition expected but not observed (see 1978Ba78). I$_{(\gamma+ce)}$: from I(γ+ce) imbalance At 180 level.
10.43[&] *2*	0.052[a] *9*	190.9021	3$^+$	180.467	4$^-$	[E1]	27.2		α(L)=21.0 *4*; α(M)=5.02 *8*; α(N+..)=1.158 *18* α(N)=1.059 *16*; α(O)=0.0972 *15*; α(P)=0.00186 *3*
(16.97)		671.746	4$^+$	654.818	5$^+$				
(18.483)		348.257	5$^+$	329.774	5$^-$				E$_\gamma$: from level energy difference; γ expected but not observed.
19.840[&] *6*	1.09[a] *9*	190.9021	3$^+$	171.0738	3$^-$	E1	4.79		α(L)=3.74 *6*; α(M)=0.847 *12*; α(N+..)=0.206 *3* α(N)=0.185 *3*; α(O)=0.0204 *3*; α(P)=0.000514 *8* Mult.: from Adopted Gammas.
28.242[&] *9*	0.040[a] *3*	82.4707	1$^-$	54.2391	2$^-$	M1	16.99		α(L)=13.27 *19*; α(M)=2.93 *5*; α(N+..)=0.785 *11* α(N)=0.681 *10*; α(O)=0.0987 *14*; α(P)=0.00551 *8* Mult.: from Adopted Gammas.
[x]37.42[&] *4*	0.014[a] *3*								placement from 605 and 672 levels rejected In 2000Pr03.
38.493 *6*	0.34 *2*	464.501	2$^+$	426.025	1$^+$	M1(+E2)	9.×10^1 *8*		α(L)=7.E1 7; α(M)=16 *15*; α(N+..)=4 *4* α(N)=4 *4*; α(O)=0.4 *4*; α(P)=0.0013 *10* I$_\gamma$: from 1989Du03. Other: 0.30 *9* (1967Mo05). Mult.: from α(L1)exp=4.6 *27* (1967Mo05) using Iγ value of 1989Du03. other Eγ: 38.492 *8* (1989Du03).
(42.994)		416.086	2$^-$	373.092	1$^-$				E$_\gamma$: from level energy difference; γ expected but not observed.
46.232[c] *4*	0.12 *2*	634.314	5$^+$	588.083	6$^+$				I$_\gamma$: from 1989Du03. Other: 0.02 (1967Mo05).
48.0315 *7*	0.17 *3*	377.806	6$^-$	329.774	5$^-$				
48.303[c#b] *4*	0.03	464.501	2$^+$	416.086	2$^-$				
51.8155 *7*	0.23 *3*	481.846	3$^+$	430.031	2$^+$	[M1]	2.83		
53.3434 *7*	0.090 *14*	597.015	3$^-$	543.672	2$^-$				
54.2392 *7*	2.50 *25*	54.2391	2$^-$	0.0	0$^-$	E2	31.3		α(L)=24.0 *4*; α(M)=5.81 *9*; α(N+..)=1.457 *21* α(N)=1.305 *19*; α(O)=0.1519 *22*; α(P)=0.0001670 *24* Mult.: from L12:L3:M:N=20:20:14:2 (1973PrZI); α(L12)exp=7.8

γ(^{166}Ho) (continued)

E_γ[†]	I_γ[†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[e]	Comments
								31, α(L3)exp=7.8 *31*, α(M)exp=5.9 *29*, α(N)exp=0.8 *5* (1973PrZI). α(L3)exp=14 *5*, L2:L3:M:N=125 *38*:138 *41*:54 *16*:16 *5* (1967Mo05).
57.190[@] *10*	0.16	719.370	4+	662.169	3+			
[x]57.469 *10*	0.07							placement from 725 level rejected In 2000Pr03.
57.517 *8*	0.32 *6*	521.982	3+	464.501	2+			
[x]57.83[#] *2*	0.02							
(59.594)		475.680	3−	416.086	2−			E_γ: from level energy difference; γ expected but not observed.
66.103 *7*	0.20 *4*	547.934	4+	481.846	3+			other: Eγ=66.31 *8*, Iγ=0.18 *3* ('Budapest data', 2007ChZX).
69.7604 *14*	2.8 *3*	260.6625	4+	190.9021	3+	M1	7.37	α(K)=6.19 *9*; α(L)=0.926 *13*; α(M)=0.205 *3*; α(N+..)=0.0548 *8* α(N)=0.0475 *7*; α(O)=0.00690 *10*; α(P)=0.000386 *6* L12:M:N=5:<1:<1 (1973PrZI); α(L12)exp=1.9 *10* (1973PrZI); α(L1)exp=0.47 *20* from 1967Mo05 and 0.80 *15* quoted by 1967Mo05 from other work. Additional information 10. other: Eγ=69.79 *4*, Iγ=1.76 *10* ('Budapest data', 2007ChZX).
70.988 *10*	0.18 *4*	668.005	4−	597.015	3−			
72.8859 *15*	0.20 *4*	263.7876	5+	190.9021	3+	E2	9.62	α(K)=2.05 *3*; α(L)=5.81 *9*; α(M)=1.405 *20*; α(N+..)=0.353 *5* α(N)=0.316 *5*; α(O)=0.0371 *6*; α(P)=9.27×10^{-5} *13* Mult.: from α(L2)exp=2.8 *15*, α(L3)exp=4.5 *24* (1967Mo05) one obtains mult=E2(+M1), δ>1.6. The level scheme requires ΔJ=2. E1+M2 would require δ>1.2 and thus is excluded by RUL. other: Eγ=72.89 *7*, Iγ=0.27 *5* ('Budapest data', 2007ChZX).
74.261[c] *16*	0.09 *3*	736.430	4+	662.169	3+			placement from 979 level rejected In 2000Pr03. other: Eγ=74.93 *6*, Iγ=0.50 *5* ('Budapest data', 2007ChZX); discrepant data suggest presence of an impurity and/or a multiplet In that study.
75.753 *16*	0.070 *21*	634.314	5+	558.571	4+			
75.985 *8*	0.070 *21*	891.124	4+	815.139	3+			
76.4663[c] *14*	0.34 *3*	598.448	4+	521.982	3+			placement from 947 level rejected In 2000Pr03.
76.7258[c] *14*	0.19 *3*	558.571	4+	481.846	3+			other: Eγ=76.69 *6*, Iγ=0.53 *5* ('Budapest data', 2007ChZX); possibly an unresolved doublet. placement from 1023 level rejected In 2000Pr03.
[x]78.871 *12*	0.05							
82.470 *2*	0.97 *10*	82.4707	1−	0.0	0−	M1	4.55	α(K)=3.82 *6*; α(L)=0.569 *8*; α(M)=0.1257 *18*; α(N+..)=0.0337 *5* α(N)=0.0292 *4*; α(O)=0.00424 *6*; α(P)=0.000237 *4* Additional information 7. Mult.: from α(L1)exp=1.0 *5* (1973PrZI); α(K)exp=2.8 *14*, α(L1)exp=0.5 *3* (1967Mo05). other: Eγ=82.49 *5*, Iγ=0.68 *5* ('Budapest data', 2007ChZX).
83.049[f c] *14*	0.050[f] *15*	558.571	4+	475.680	3−			placement from 1087 level rejected In 2000Pr03.
83.049[f c] *14*	0.050[f] *15*	605.047	2+	521.982	3+			placement from 1087 level rejected In 2000Pr03.
84.468[c] *10*	0.13 *3*	379.547	6+	295.085	6+			other Eγ: 84.68 *7*, Iγ=0.229 *26* ('Budapest data', 2007ChZX); possibly for unresolved doublet. placement from 348 level rejected In 2000Pr03.

$^{166}_{67}Ho_{99}$-6

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

γ(^{166}Ho) (continued)

E_γ [†]	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[e]	Comments
84.742 *14*	0.040 *12*	628.418	2⁻	543.672	2⁻			
86.359 *11*	0.100 *25*	634.314	5⁺	547.934	4⁺			
86.765[c] *11*	0.100 *25*	683.805	3⁻	597.015	3⁻			placement from 1097 level rejected In 2000Pr03.
87.193 *15*	0.040 *12*	562.890	4⁻	475.680	3⁻			
87.5946 *16*	1.24 *12*	348.257	5⁺	260.6625	4⁺	M1(+E2)	4.2 *5*	α(K)=2.3 *9*; α(L)=1.5 *10*; α(M)=0.35 *25*; α(N+..)=0.09 *6* α(N)=0.08 *6*; α(O)=0.010 *6*; α(P)=0.00013 *7* K:L1:M=100 *30*:21 *10*:9 *5* and α(K)exp=3.0 *10* (1967Mo05). other: Eγ=87.47 *4*, Iγ=1.14 *6* ('Budapest data', 2007ChZX).
88.60 *3*	0.03	171.0738	3⁻	82.4707	1⁻	[E2]	4.466	
89.599 *13*	0.100 *15*	260.6625	4⁺	171.0738	3⁻	[E1]	0.424	α(K)=0.352 *5*; α(L)=0.0564 *8*; α(M)=0.01245 *18*; α(N+..)=0.00323 *5* α(N)=0.00283 *4*; α(O)=0.000380 *6*; α(P)=1.580×10^{-5} *23*
90.720[c] *15*	0.04	774.522	1⁻	683.805	3⁻			other: Eγ=90.8 *7*, Iγ=0.026 *23* ('Budapest data', 2007ChZX).
91.286[c] *13*	0.070 *18*	470.841	5⁺	379.547	6⁺			placement from 1115 level rejected In 2000Pr03.
91.407 *13*	0.090 *18*	464.501	2⁺	373.092	1⁻			
92.355[c] *13*	0.050 *10*	760.345	3⁻	668.005	4⁻			
[x]92.819[#] *15*	0.05							
94.529 *11*	0.040 *12*	662.169	3⁺	567.624	1⁺			
94.643[b] *11*	0.20 *3*	638.235	4⁻	543.672	2⁻			other: Eγ=94.87 *9*, Iγ=0.25 *4* ('Budapest data', 2007ChZX).
95.190[c] *3*	0.25 *4*	693.638	5⁺	598.448	4⁺			
95.767 *3*	0.090 *10*	832.197	5⁺	736.430	4⁺			
95.953[c] *2*	0.120 *12*	521.982	3⁺	426.025	1⁺			other: Eγ=95.78 *11*, Iγ=0.18 *3* ('Budapest data', 2007ChZX).
96.265 *20*	0.020 *6*	654.818	5⁺	558.571	4⁺			
96.381 *20*	0.020 *6*	693.388	(2⁺)	597.015	3⁻			
97.253[f c] *20*	0.015[f]	725.68	2⁻	628.418	2⁻			
97.253[f c] *20*	0.015[f]	935.12	5⁻	837.717	4⁻			
98.200[c] *15*	0.030 *8*	732.513	6⁺	634.314	5⁺			placement from 1023 level rejected In 2000Pr03.
98.572[c] *16*	0.040 *8*	529.816	6⁻	431.239	5⁻			placement from 905 level rejected In 2000Pr03.
98.8572 *15*	0.56 *6*	470.841	5⁺	371.985	4⁺	M1,E2	2.82 *13*	α(K)=1.7 *6*; α(L)=0.9 *6*; α(M)=0.21 *14*; α(N+..)=0.05 *4* α(N)=0.05 *3*; α(O)=0.006 *4*; α(P)=9.E−5 *5* α(L12)exp<2 (1973PrZI); α(L12)exp=0.6 *4* (1967Mo05). other: Eγ=98.86 *5*, Iγ=0.43 *3* ('Budapest data', 2007ChZX).
[x]99.293[#] *14*	0.015							
99.584[f c] *16*	0.020[f] *5*	704.962	3⁻	605.047	2⁺			
99.584[f] *16*	0.020[f] *5*	757.707	5⁻	657.995	5⁻			
102.55 *4*	0.016	475.680	3⁻	373.092	1⁻	[E2]	2.57	
103.116 *15*	0.052 *8*	567.624	1⁺	464.501	2⁺			
[x]104.295 *15*	0.049 *7*							
105.517 *4*	0.52 *5*	453.771	6⁺	348.257	5⁺	M1(+E2)	2.27 *5*	α(K)=1.4 *5*; α(L)=0.7 *4*; α(M)=0.16 *10*; α(N+..)=0.040 *24* α(N)=0.035 *21*; α(O)=0.0044 *23*; α(P)=8.E−5 *4* K/L12=9 *6* and α(K)exp=2.6 *10* (1967Mo05). other: Eγ=105.54 *5*, Iγ=0.377 *26* ('Budapest data', 2007ChZX).

$^{166}_{67}Ho_{99}$-7

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

γ(^{166}Ho) (continued)

E_γ[†]	I_γ[†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[e]	Comments
[x]106.869 *4*	0.160 *24*							placement from 655 level rejected In 2000Pr03. other: Eγ=107.07 *19*, Iγ=0.108 *24* ('Budapest data', 2007ChZX).
[x]107.181 *16*	0.040 *8*							
107.71[b] *3*	0.030 *8*	704.962	3^-	597.015	3^-			
108.199 *2*	0.85 *9*	371.985	4^+	263.7876	5^+	M1(+E2)	2.09 *4*	α(K)=1.3 *5*; α(L)=0.6 *4*; α(M)=0.14 *9*; α(N+..)=0.036 *21* α(N)=0.032 *19*; α(O)=0.0040 *21*; α(P)=7.E−5 *4* α(L12)exp=0.26 *14* (1967Mo05). other: Eγ=108.22 *5*, Iγ=0.64 *5* ('Budapest data', 2007ChZX).
109.241[c] *12*	0.030 *6*	704.962	3^-	595.726	1^-			
109.887 *18*	0.020 *5*	481.846	3^+	371.985	4^+	[M1]	1.99	
110.327[c] *12*	0.040 *8*	942.524	6^+	832.197	5^+			placement from 658 level rejected In 2000Pr03.
111.324 *2*	0.63 *6*	371.985	4^+	260.6625	4^+	M1(+E2)	1.91	α(K)=1.2 *4*; α(L)=0.5 *3*; α(M)=0.12 *8*; α(N+..)=0.032 *18* α(N)=0.028 *16*; α(O)=0.0035 *18*; α(P)=7.E−5 *4* Mult.: α(K)exp=1.8 *8*, K:L12=178 *71*:36 *18* (1967Mo05). other: Eγ=111.30 *4*, Iγ=0.47 *3* ('Budapest data', 2007ChZX).
[x]112.869 *12*	0.020 *6*							placement from 832 level rejected In 2000Pr03.
113.17[c#] *2*	0.02	671.746	4^+	558.571	4^+			
113.373[c] *3*	0.120 *18*	807.011	6^+	693.638	5^+			
113.644[f] *4*	0.150[f] *23*	543.672	2^-	430.031	2^+			other: Eγ=113.63 *6*, Iγ=0.198 *23* ('Budapest data', 2007ChZX).
113.644[fc] *4*	0.15[f] *2*	742.02	4^-	628.418	2^-			
114.50[fc] *3*	0.01[f]	644.29	7^-	529.816	6^-			
114.50[fc] *3*	0.01[f]	883.94	6^+	769.78	5^+			
115.167 *4*	0.090 *14*	597.015	3^-	481.846	3^+			
115.51[c] *3*	0.01	774.522	1^-	659.01	0^-			placement from 885 level rejected In 2000Pr03.
115.759[c] *3*	0.34 *5*	379.547	6^+	263.7876	5^+			
116.197[c] *13*	0.060 *15*	638.235	4^-	521.982	3^+			
116.835 *1*	15.8 *16*	171.0738	3^-	54.2391	2^-	M1	1.673	α(K)=1.406 *20*; α(L)=0.209 *3*; α(M)=0.0460 *7*; α(N+..)=0.01233 *18* α(N)=0.01069 *15*; α(O)=0.001555 *22*; α(P)=8.71×10^{-5} *13* K:L1:M:N=100 *15*:15 *2*:4.7 *14*:1.6 *5* (1967Mo05); K:L1:L2:L3=100 *15*:13 *2*:1.7 *5*:<0.9 (1967Mo05, thin source); K:L12:M:N=24:5:2:<1 (1973PrZI). α(K)exp=1.5 *4*, α(L12)exp=0.29 *15*, α(M)exp=0.13 *6*, α(N)exp<0.06 (1973PrZI). Additional information 8. other: Eγ=116.84 *4*, Iγ=13.0 *6* ('Budapest data', 2007ChZX).
117.264[f] *3*	0.20[f] *2*	588.083	6^+	470.841	5^+			
117.264[fc] *3*	0.200[f] *20*	771.94	6^+	654.818	5^+			
[x]118.41 *3*	0.02							placement from 925 level rejected In 2000Pr03.
118.49 *2*	0.03	662.169	3^+	543.672	2^-			
[x]118.78 *5*	0.02							
120.06[c] *2*	0.020 *6*	595.726	1^-	475.680	3^-			placement from 668 level rejected In 2000Pr03.
120.36[c#b] *3*	0.01	668.005	4^-	547.934	4^+			

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

γ(^{166}Ho) (continued)

E_γ †	I_γ †d	E_i(level)	J_i^π	E_f	J_f^π	Mult.‡	α e	Comments
121.48c 3	0.01	597.015	3−	475.680	3−			
122.577c 4	0.090 18	470.841	5+	348.257	5+			placement from 598 level rejected In 2000Pr03.
x122.89 2	0.01							
123.437 5	0.100 15	577.208	7+	453.771	6+			other: Eγ=123.25 19, Iγ=0.11 3 ('Budapest data', 2007ChZX).
123.81 2	0.01	671.746	4+	547.934	4+			
124.350 15	0.040 8	668.005	4−	543.672	2−			
126.228 3	1.06 11	180.467	4−	54.2391	2−	E2	1.200	α(K)=0.601 9; α(L)=0.460 7; α(M)=0.1105 16; α(N+..)=0.0280 4 α(N)=0.0249 4; α(O)=0.00300 5; α(P)=2.56×10^{-5} 4 K:L2:L3=100 30:29 14:29 14; α(K)exp=0.74 24 (1967Mo05). other: Eγ=126.21 5, Iγ=0.89 6 ('Budapest data', 2007ChZX).
128.566c 5	0.140 21	423.651	7+	295.085	6+			
129.353 7	0.080 16	605.047	2+	475.680	3−			other: Eγ=129.19 16; Iγ=0.15 3 ('Budapest data', 2007ChZX).
130.641c 16	0.01	788.618	6−	657.995	5−			
131.41 3	0.01	736.430	4+	605.047	2+			other: Eγ=131.27 4, Iγ=0.15 4 ('Budapest data', 2007ChZX); discrepancy suggests presence of an impurity In this study.
131.759 5	0.140 21	137.729	8−	5.969	7−			
132.472c 17	0.03	597.015	3−	464.501	2+			other: Eγ=132.35 18, Iγ=0.17 3 ('Budapest data', 2007ChZX); May not have resolved a close doublet.
134.00c# 3	0.01	598.448	4+	464.501	2+			other: Eγ=133.89 15; Iγ=0.19 3 ('Budapest data', 2007ChZX); May Be a multiplet, but Iγ suggests the presence of an impurity As well In this study.
134.34 3	0.020 6	588.083	6+	453.771	6+			see comment on 134.0γ.
134.815c 6	0.060 15	514.362	7+	379.547	6+			placement from 693 level rejected In 2000Pr03. see comment on 134.0γ.
135.15c 2	0.040 12	723.239	7+	588.083	6+			
135.883 4	0.100 15	683.805	3−	547.934	4+			
136.662 2	27.5 28	190.9021	3+	54.2391	2−	E1	0.1378	α(K)=0.1155 17; α(L)=0.01749 25; α(M)=0.00385 6; α(N+..)=0.001007 14 α(N)=0.000880 13; α(O)=0.0001210 17; α(P)=5.50×10^{-6} 8 K:L12:M:N=4:1:<1:<1 (1973PrZI); K:L12=9.8 12:1.1 2 (1967Mo05); α(K)exp=0.16 6, α(L12)exp=0.039 23 (1973PrZI). Additional information 9. other: Eγ=136.67 4, Iγ=23.3 11 ('Budapest data', 2007ChZX).
x137.09# 3	0.01							
137.51ch 2	0.020 6	567.624	1+	430.031	2+			
137.99c 4	0.007	736.430	4+	598.448	4+			placement from 558 level rejected In 2000Pr03. other: Eγ=138.85 22, Iγ=0.11 4 ('Budapest data', 2007ChZX); discrepancy suggests presence of an impurity In this study.
140.117c 5	0.35 4	683.805	3−	543.672	2−	M1+(E2)	0.91 9	α(K)exp=0.86 28 (1967Mo05) α(K)=0.64 20; α(L)=0.21 9; α(M)=0.048 21; α(N+..)=0.012 6 α(N)=0.011 5; α(O)=0.0014 5; α(P)=3.6×10^{-5} 17 placement from 662 level rejected In 2000Pr03. other: Eγ=140.14 7, Iγ=0.43 5 ('Budapest data', 2007ChZX).
140.544 10	0.090 10	605.047	2+	464.501	2+			

$^{166}_{67}Ho_{99}$-9

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

γ(^{166}Ho) (continued)

E_γ [†]	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[e]	Comments
141.599 *7*	0.130 *13*	567.624	1^+	426.025	1^+			other: Eγ=141.55 *14*; Iγ=0.15 *3* ('Budapest data', 2007ChZX).
x143.41 *2*	0.015 *5*							placement from 815 level rejected In 2000Pr03.
145.00 *3*	0.02	742.02	4^-	597.015	3^-			
145.228[c] *7*	0.140 *10*	905.544	2^+	760.345	3^-			other: Eγ=145.27 *12*; Iγ=0.093 *18* ('Budapest data', 2007ChZX).
146.808 *8*	0.095 *14*	562.890	4^-	416.086	2^-			other: Eγ=146.61 *16*, Iγ=0.061 *16* ('Budapest data', 2007ChZX).
149.307 *3*	4.2 *4*	329.774	5^-	180.467	4^-	(M1)	0.835	α(K)=0.702 *10*; α(L)=0.1037 *15*; α(M)=0.0229 *4*; α(N+..)=0.00614 *9* α(N)=0.00532 *8*; α(O)=0.000774 *11*; α(P)=4.34×10^{-5} *6* K:L12:M:N=5:1:<1:<1 (1973PrZI); K:L1=66 *10*:9.5 *24* (1967Mo05); α(K)exp=1.2 *5*, α(L12)exp=0.2 *1* (1973PrZI). α(K)exp=0.68 *19* and 0.66 *12* (thin source) (1967Mo05). other: Eγ=149.32 *4*, Iγ=3.62 *19* ('Budapest data', 2007ChZX). Additional information 11.
150.268[c] *8*	0.110 *17*	529.816	6^-	379.547	6^+			
151.533 *9*	0.080 *12*	567.624	1^+	416.086	2^-			other: Eγ=151.19 *19*, Iγ=0.053 *14* ('Budapest data', 2007ChZX).
152.45 *3*	0.016 *5*	634.314	5^+	481.846	3^+			
152.71 *3*	0.025 *5*	628.418	2^-	475.680	3^-			
x153.32 *4*	0.006							
154.71[cb] *3*	0.025 *5*	792.789	4^-	638.235	4^-			placement from 891 level rejected In 2000Pr03.
155.42[fc] *3*	0.025[f] *5*	732.513	6^+	577.208	7^+			placement from 925 level rejected In 2000Pr03.
155.42[fc] *3*	0.025[f] *5*	881.040	3^-	725.68	2^-			placement from 925 level rejected In 2000Pr03.
x156.20 *3*	0.014							
x156.45 *3*	0.014							placement from 634 level rejected In 2000Pr03.
157.344 *8*	0.21 *3*	348.257	5^+	190.9021	3^+			other: Eγ=157.38 *7*, Iγ=0.167 *18* ('Budapest data', 2007ChZX).
x157.95 *5*	0.014							placement from 725 level rejected In 2000Pr03.
158.702 *9*	0.060 *12*	329.774	5^-	171.0738	3^-			
x159.38 *2*	0.050 *10*							
159.89[c] *3*	0.010 *3*	423.651	7^+	263.7876	5^+			placement from 885 level rejected In 2000Pr03.
160.63 *2*	0.040 *8*	757.707	5^-	597.015	3^-			
161.42[cb] *2*	0.030 *6*	704.962	3^-	543.672	2^-			other: Eγ=161.14 *10*, Iγ=0.114 *14* ('Budapest data', 2007ChZX); inconsistent data May indicate presence of an impurity.
162.452 *10*	0.065 *13*	592.501	3^+	430.031	2^+			
163.352[c] *7*	0.51 *5*	760.345	3^-	597.015	3^-			placement from 791 level rejected In 2000Pr03. other: Eγ=163.30 *5*, Iγ=0.359 *24* ('Budapest data', 2007ChZX).
164.57[c] *4*	0.020 *6*	883.94	6^+	719.370	4^+			
166.983 *5*	0.170 *17*	597.015	3^-	430.031	2^+			
167.450[c] *5*	0.95 *10*	431.239	5^-	263.7876	5^+	E1		α(K)exp<0.19 (1967Mo05). placement from 638 level rejected In 2000Pr03. other: Eγ=167.40 *4*, Iγ=0.89 *5* ('Budapest data', 2007ChZX).
x168.49 *3*	0.040 *12*							
169.45[c] *3*	0.02	430.031	2^+	260.6625	4^+			
169.712[c] *5*	0.240 *24*	837.717	4^-	668.005	4^-			placement from 825 level rejected In 2000Pr03. other: Eγ=169.70 *7*, Iγ=0.242 *23* ('Budapest data', 2007ChZX).

$^{166}_{67}Ho_{99}$-10

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

γ(^{166}Ho) (continued)

E_γ [†]	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[e]	Comments
170.09[f] 3	0.01[f]	832.197	5+	662.169	3+			
170.09[fc] 3	0.01[f]	985.20	5+	815.139	3+			
170.584 15	0.050 10	543.672	2−	373.092	1−			
171.67[c] 3	0.030 6	693.638	5+	521.982	3+			placement from 947 level rejected In 2000Pr03. other: Eγ=171.2 4, Iγ=0.042 15 ('Budapest data', 2007ChZX).
173.47[c] 12	0.02	638.235	4−	464.501	2+			placement from 736 level rejected In 2000Pr03.
174.77[c] 4	0.02	935.12	5−	760.345	3−			
175.73 4	0.030 9	470.841	5+	295.085	6+			see comment on 176.0γ.
175.98 2	0.070 14	547.934	4+	371.985	4+			other: Eγ=175.75 14; Iγ=0.085 18 ('Budapest data', 2007ChZX); May include the 175.7γ.
[x]177.71 4	0.01							
179.032 6	0.25 4	605.047	2+	426.025	1+	(M1,E2)	0.43 8	α(K)=0.32 10; α(L)=0.082 20; α(M)=0.019 6; α(N+..)=0.0049 13 α(N)=0.0043 12; α(O)=0.00057 11; α(P)=1.8×10^{-5} 8 α(K)exp=0.32 21, 0.60 20 (1967Mo05). other data: Eγ=179.28 7, Iγ=0.354 26 ('Budapest data', 2007ChZX).
179.882[g] 4	0.15[g] 5	557.65	7−	377.806	6−			α(K)exp=0.32 21, 0.60 20 (1967Mo05), mult=M1,E2 for doublet. I_γ: from γγ coin (2000Pr03); Iγ=0.25 4 for doublet.
179.882[gc] 4	0.10[g] 3	595.726	1−	416.086	2−			α(K)exp=0.32 21, 0.60 20 (1967Mo05), mult=M1,E2 for doublet. I_γ: from γγ coin (2000Pr03); Iγ=0.25 4 for doublet.
180.545 5	0.20 3	634.314	5+	453.771	6+	(M1,E2)	0.42 8	α(K)exp=0.40 17 (1967Mo05) α(K)=0.31 10; α(L)=0.079 19; α(M)=0.018 5; α(N+..)=0.0048 12 α(N)=0.0042 11; α(O)=0.00055 10; α(P)=1.8×10^{-5} 8
181.086[g] 5	1.17[g] 13	371.985	4+	190.9021	3+	(M1)	0.487	α(K)=0.409 6; α(L)=0.0603 9; α(M)=0.01330 19; α(N+..)=0.00357 5 α(N)=0.00309 5; α(O)=0.000450 7; α(P)=2.53×10^{-5} 4 α(K)exp=0.8 3 (1973PrZI), 0.42 14 and 0.43 10 (thin source) (1967Mo05) for doublet dominated by this transition. I_γ: 1.27 13 for doublet minus Iγ=0.10 3 (γγ coin, 2000Pr03) from 597 level. Additional information 12. other: Eγ=180.96 5; Iγ=1.51 8 ('Budapest data', 2007ChZX); probably includes 180.5γ.
181.086[gc] 5	0.10[g] 3	597.015	3−	416.086	2−			I_γ: from γγ coin (2000Pr03).
182.04[c] 4	0.02	725.68	2−	543.672	2−			
182.302 16	0.100 15	657.995	5−	475.680	3−	[E2]	0.3329	
[x]183.11[#] 6	0.01							
183.96 4	0.050 15	654.818	5+	470.841	5+			
[x]184.23 2	0.150 15							other: Eγ=184.04 21; Iγ=0.056 19 ('Budapest data', 2007ChZX).
186.147 6	0.120 18	668.005	4−	481.846	3+			
186.582 6	0.28 3	558.571	4+	371.985	4+	E2,M1	0.38 7	α(K)exp=0.24 18 (1967Mo05) α(K)=0.29 9; α(L)=0.071 15; α(M)=0.016 4; α(N+..)=0.0042 10 α(N)=0.0037 9; α(O)=0.00049 8; α(P)=1.6×10^{-5} 7 other: Eγ=186.53 6 Iγ=0.32 4 ('Budapest data', 2007ChZX).
187.93 5	0.01	945.86		757.707	5−			

$^{166}_{67}Ho_{99}$-11

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

γ(^{166}Ho) (continued)

E_γ[†]	I_γ[†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[e]	Comments
188.98 *3*	0.070 *14*	605.047	2^+	416.086	2^-			other: Eγ=189.02 *18* Iγ=0.071 *26* ('Budapest data', 2007ChZX).
189.89 *5*	0.01	671.746	4^+	481.846	3^+			
191.12[ch] *3*	0.030 *6*	910.49?	(6^+)	719.370	4^+			
191.961 *11*	0.130 *20*	885.345	(3^+)	693.388	(2^+)			
192.33 *2*	0.070 *14*	668.005	4^-	475.680	3^-			
193.107 *6*	0.190 *19*	453.771	6^+	260.6625	4^+			other: Eγ=192.62 *8*, Iγ=0.23 *3* ('Budapest data', 2007ChZX); probably unresolved doublet (193.1γ+192.3γ).
194.529 *10*	0.130 *20*	567.624	1^+	373.092	1^-			other: Eγ=194.51 *13*, Iγ=0.13 *3* ('Budapest data', 2007ChZX).
195.687[cb] *14*	0.080 *12*	792.789	4^-	597.015	3^-			
197.11 *5*	0.03	668.005	4^-	470.841	5^+			
197.339 *8*	0.32 *5*	377.806	6^-	180.467	4^-	(E2)	0.255	α(K)exp=0.26 *17* (1967Mo05) α(K)=0.1669 *24*; α(L)=0.0679 *10*; α(M)=0.01606 *23*; α(N+..)=0.00410 *6* α(N)=0.00364 *6*; α(O)=0.000454 *7*; α(P)=7.88×10^{-6} *11* other: Eγ=197.58 *5*, Iγ=0.55 *5* ('Budapest data', 2007ChZX); probably a 197.7γ+197.3γ+197.1γ unresolved multiplet.
197.677[c] *10*	0.20 *3*	662.169	3^+	464.501	2^+			
198.31[fc] *5*	0.03[f]	628.418	2^-	430.031	2^+			
198.31[fc] *5*	0.03[f]	742.02	4^-	543.672	2^-			
[x]199.12 *5*	0.040 *12*							placement from 757 level rejected In 2000Pr03.
199.710 *8*	0.80 *8*	547.934	4^+	348.257	5^+	(M1)	0.371	α(K)=0.312 *5*; α(L)=0.0459 *7*; α(M)=0.01012 *15*; α(N+..)=0.00271 *4* α(N)=0.00235 *4*; α(O)=0.000342 *5*; α(P)=1.93×10^{-5} *3* α(K)exp=1.3 *8* (1973PrZI); α(K)exp=0.26 *11* (1967Mo05). other: Eγ=199.66 *5*, Iγ=0.77 *5* ('Budapest data', 2007ChZX).
201.08 *3*	0.040 *8*	654.818	5^+	453.771	6^+			
201.95[fc] *3*	0.050[f] *10*	373.092	1^-	171.0738	3^-			other: Eγ=201.93 *22*, Iγ=0.060 *24* ('Budapest data', 2007ChZX).
201.95[fc] *3*	0.050[f] *10*	683.805	3^-	481.846	3^+			
[x]205.03 *8*	0.02							
206.15[fc] *2*	0.050[f] *8*	925.0	5^+	719.370	4^+			other data: Eγ=206.52 *24*, Iγ=0.071 *16* ('Budapest data', 2007ChZX).
206.15[fc] *2*	0.050[f] *8*	942.524	6^+	736.430	4^+			see comment on 206γ from 925 level.
207.04 *2*	0.040 *6*	470.841	5^+	263.7876	5^+			
208.34[c] *4*	0.065 *10*	638.235	4^-	430.031	2^+			placement from 876 level rejected In 2000Pr03. other: Eγ=208.48 *12*, Iγ=0.129 *18* ('Budapest data', 2007ChZX); probably for unresolved 208.3γ+208.9γ doublet.
208.90[c] *4*	0.030 *6*	723.239	7^+	514.362	7^+			indicated As multiply-placed (2000Pr03), but No other placement was identified.
209.69 *4*	0.020 *6*	757.707	5^-	547.934	4^+			
210.300 *6*	0.30 *5*	558.571	4^+	348.257	5^+	M1(+E2)	0.26 *6*	α(K)exp=0.40 *23* (1967Mo05) α(K)=0.20 *7*; α(L)=0.046 *7*; α(M)=0.0106 *18*; α(N+..)=0.0028 *4* α(N)=0.0024 *4*; α(O)=0.00032 *3*; α(P)=1.2×10^{-5} *5* other: Eγ=210.36 *6*, Iγ=0.290 *24* ('Budapest data', 2007ChZX).
[x]211.06 *6*	0.030 *6*							

$^{166}_{67}Ho_{99}$-12

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

γ(^{166}Ho) (continued)

E_γ †	I_γ †d	E_i(level)	J_i^π	E_f	J_f^π	Mult.‡	α e	Comments
211.53 6	0.01	693.388	(2+)	481.846	3+			
212.30 f 6	0.040 f 8	628.418	2−	416.086	2−			other: Eγ=212.4 3, Iγ=0.029 15 ('Budapest data', 2007ChZX).
212.30 f c 6	0.040 f 8	883.94	6+	671.746	4+			
213.04 c 6	0.01	644.29	7−	431.239	5−			placement from 683 level rejected In 2000Pr03.
214.442 9	0.22 3	736.430	4+	521.982	3+	M1(+E2)		Mult.: α(K)exp=0.40 25 (1967Mo05). other: Eγ=214.46 8, Iγ=0.171 19 ('Budapest data', 2007ChZX).
215.44 c# 9	0.01	985.20	5+	769.78	5+			
216.16 5	0.020 6	588.083	6+	371.985	4+			
216.85 c 6	0.04	760.345	3−	543.672	2−			placement from 815 level rejected In 2000Pr03. other: Eγ=216.79 25, Iγ=0.045 14 ('Budapest data', 2007ChZX). May include 216.1γ.
217.23 6	0.04	885.345	(3+)	668.005	4−			
218.00 6	0.04	671.746	4+	453.771	6+			
x219.02 6	0.060 18							placement from 961 level rejected In 2000Pr03. other: Eγ=218.95 14, Iγ=0.084 16 ('Budapest data', 2007ChZX).
219.44 c 6	0.080 20	683.805	3−	464.501	2+			
221.174 9	3.9 4	481.846	3+	260.6625	4+	(M1)	0.280	α(K)=0.236 4; α(L)=0.0346 5; α(M)=0.00763 11; α(N+..)=0.00204 3 α(N)=0.001772 25; α(O)=0.000258 4; α(P)=1.454×10^{-5} 21 Additional information 14. α(K)exp=0.21 3, K:L12=21.0 25:3.6 7 (1967Mo05, thin source). other: Eγ=221.18 4, Iγ=3.30 18 ('Budapest data', 2007ChZX).
222.634 7	0.220 22	815.139	3+	592.501	3+			other: Eγ=222.66 10, Iγ=0.201 23 ('Budapest data', 2007ChZX).
224.01 15	0.01	597.015	3−	373.092	1−			
225.722 c 9	0.070 14	788.618	6−	562.890	4−			placement from 951 level rejected In 2000Pr03. other: Eγ=225.81 22, Iγ=0.050 18 ('Budapest data', 2007ChZX).
227.88 7	0.02	557.65	7−	329.774	5−			
x228.53 7	0.050 15							
229.00 f 7	0.050 f 15	577.208	7+	348.257	5+			
229.00 f c 7	0.050 f 15	704.962	3−	475.680	3−			
230.11 c 5	0.030 6	792.789	4−	562.890	4−			placement from 807 level rejected In 2000Pr03.
x230.89 8	0.030 6							
231.957 14	0.24 5	605.047	2+	373.092	1−			Eγ=232.02 15, Iγ=0.37 8 ('Budapest data', 2007ChZX); possibly for a 232.0γ+232.3γ doublet.
232.286 cb 9	0.27 5	662.169	3+	430.031	2+			placement from 658 level rejected In 2000Pr03. see comment on 232.0γ.
233.112 14	0.63 6	562.890	4−	329.774	5−	M1	0.243	α(K)=0.204 3; α(L)=0.0299 5; α(M)=0.00660 10; α(N+..)=0.001769 25 α(N)=0.001533 22; α(O)=0.000223 4; α(P)=1.259×10^{-5} 18 Mult.: from α(K)exp=0.30 5 (1988Ba79). Other: 0.26 9 (1967Mo05). other: Eγ=233.15 14, Iγ=0.61 6 ('Budapest data', 2007ChZX).
233.79 c 5	0.120 24	832.197	5+	598.448	4+			
234.79 c 5	0.05	529.816	6−	295.085	6+			

$^{166}_{67}Ho_{99}$-13

γ(^{166}Ho) (continued)

E_γ [†]	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[e]	Comments
235.80 *5*	0.060 *18*	870.13	(−)	634.314	5+			
236.31[f] *8*	0.030[f] *9*	662.169	3+	426.025	1+			
236.31[fc] *8*	0.030[f] *9*	891.124	4+	654.818	5+			
239.140 *11*	4.2 *4*	430.031	2+	190.9021	3+	M1	0.226	α(K)=0.191 *3*; α(L)=0.0279 *4*; α(M)=0.00615 *9*; α(N+..)=0.001649 *23* α(N)=0.001429 *20*; α(O)=0.000208 *3*; α(P)=1.174×10^{-5} *17* α(K)exp=0.18 *3* (1967Mo05, thin source); α(K)exp=0.33 *13* (1973PrZI); K:(L1+L2)= 17 *6*:3.0 *15* (1967Mo05). other: Eγ=239.13 *4*, Iγ=3.62 *19* ('Budapest data', 2007ChZX). Additional information 13.
241.76 *5*	0.050 *10*	671.746	4+	430.031	2+			other: Eγ=242.8 *3*, Iγ=0.060 *28* ('Budapest data', 2007ChZX); May Be a 242.9γ+241.8γ doublet, but Iγ is consistent with that for the 241.8γ alone whereas Eγ matches that for the stronger 242.9γ.
242.90[c] *2*	0.17 *3*	881.040	3−	638.235	4−			other: Eγ=242.8 *3*, Iγ=0.060 *28* ('Budapest data', 2007ChZX); May Be a 242.9γ+241.8γ doublet, but Iγ is closer to that from 1967Mo05 for the weaker 241.8γ alone.
245.007 *7*	1.04 *10*	416.086	2−	171.0738	3−	M1	0.212	α(K)=0.1785 *25*; α(L)=0.0261 *4*; α(M)=0.00576 *8*; α(N+..)=0.001543 *22* α(N)=0.001337 *19*; α(O)=0.000195 *3*; α(P)=1.099×10^{-5} *16* α(K)exp=0.17 *7* (1967Mo05); 0.18 *3* (1988Ba79). other: Eγ=245.00 *7*, Iγ=0.76 *8* ('Budapest data', 2007ChZX).
246.07 *2*	0.20 *4*	662.169	3+	416.086	2−			
247.68[c] *9*	0.030 *9*	769.78	5+	521.982	3+			
248.77[c] *9*	0.060 *12*	719.370	4+	470.841	5+			placement from 420 level rejected In 2000Pr03.
250.49 *9*	0.070 *14*	514.362	7+	263.7876	5+			placement from 905 level rejected In 2000Pr03.
253.78[c] *3*	0.120 *24*	683.805	3−	430.031	2+			other: Eγ=253.87 *18*, Iγ=0.090 *26* ('Budapest data', 2007ChZX).
255.37 *3*	0.090 *18*	628.418	2−	373.092	1−			
256.60 *2*	0.26 *4*	815.139	3+	558.571	4+	M1(+E2)		Mult.: α(K)exp=0.24 *17* (1967Mo05). other: Eγ=256.23 *24*, Iγ=0.148 *18* ('Budapest data', 2007ChZX).
257.81 *2*	0.26 *4*	263.7876	5+	5.969	7−	M2	0.844	α(K)exp=0.5 *3* (1967Mo05) α(K)=0.674 *10*; α(L)=0.1313 *19*; α(M)=0.0300 *5*; α(N+..)=0.00805 *12* α(N)=0.00699 *10*; α(O)=0.001001 *14*; α(P)=5.22×10^{-5} *8* other: Eγ=257.54 *12*, Iγ=0.29 *6* ('Budapest data', 2007ChZX).
260.75 *2*	0.160 *24*	736.430	4+	475.680	3−			other: Eγ=260.81 *12*, Iγ=0.124 *23* ('Budapest data', 2007ChZX).
261.31 *7*	0.040 *12*	521.982	3+	260.6625	4+			
[x]261.96 *7*	0.05							
[x]262.93[#] *9*	0.3							
263.36[c] *5*	0.120 *18*	558.571	4+	295.085	6+			placement from 693 level rejected In 2000Pr03. other: Eγ=263.14 *20*, Iγ=0.077 *21* ('Budapest data', 2007ChZX).
265.12[c] *5*	0.18 *4*	638.235	4−	373.092	1−			placement from 870 level rejected In 2000Pr03.
266.03 *5*	0.28 *6*	824.62	3−	558.571	4+			other: Eγ=265.76 *13*, Iγ=0.274 *23* ('Budapest data', 2007ChZX).
266.53[fc] *5*	0.24[f] *5*	529.816	6−	263.7876	5+			
266.53[fc] *5*	0.24[f] *5*	742.02	4−	475.680	3−			

$^{166}_{67}Ho_{99}$-14

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

γ(^{166}Ho) (continued)

E_γ [†]	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[e]	Comments
267.19[c] 5	0.28 6	815.139	3+	547.934	4+			placement from 597 level rejected In 2000Pr03. other: Eγ=267.14 13, Iγ=0.320 24 ('Budapest data', 2007ChZX).
267.82 9	0.110 22	683.805	3−	416.086	2−			
268.15[cb] 9	0.070 21	598.448	4+	329.774	5−			
[x]269.38 9	0.070 21							placement from 832 level rejected In 2000Pr03. other: Eγ=268.99 22, Iγ=0.087 16 ('Budapest data', 2007ChZX).
273.64 7	0.16 3	464.501	2+	190.9021	3+			other: Eγ=273.56 18, Iγ=0.10 3 ('Budapest data', 2007ChZX).
274.77 7	0.130 26	704.962	3−	430.031	2+			
[x]276.83 2	0.03							placement from 906 level rejected In 2000Pr03.
278.69[c] 10	0.060 18	732.513	6+	453.771	6+			placement from 705 level rejected In 2000Pr03.
279.79 10	0.030 9	470.841	5+	190.9021	3+			
280.99 10	0.030 9	286.96	9−	5.969	7−			placement from 825 level rejected In 2000Pr03.
282.80 8	0.060 18	654.818	5+	371.985	4+			
284.26 12	0.080 24	832.197	5+	547.934	4+			
285.81[fc] 8	0.060[f] 18	423.651	7+	137.729	8−			
285.81[fc] 8	0.060[f] 18	659.01	0−	373.092	1−			
287.24 3	0.170 26	547.934	4+	260.6625	4+			other: Eγ=287.11 15, Iγ=0.090 13 ('Budapest data', 2007ChZX).
288.60 7	0.12	704.962	3−	416.086	2−			
289.120 15	2.30 23	295.085	6+	5.969	7−	E1	0.0196	α(K)exp<0.03 (1967Mo05) α(K)=0.01655 24; α(L)=0.00237 4; α(M)=0.000520 8; α(N+..)=0.0001375 20 α(N)=0.0001197 17; α(O)=1.693×10^{-5} 24; α(P)=8.61×10^{-7} 12 other: Eγ=289.04 4, Iγ=1.87 10 ('Budapest data', 2007ChZX).
290.61 3	1.70 17	373.092	1−	82.4707	1−	M1	0.1337	α(K)=0.1127 16; α(L)=0.01640 23; α(M)=0.00361 5; α(N+..)=0.000969 14 α(N)=0.000839 12; α(O)=0.0001223 18; α(P)=6.91×10^{-6} 10 α(K)exp=0.10 4 (1967Mo05); 0.11 2 (1988Ba79). other: Eγ=290.61 4, Iγ=1.55 8 ('Budapest data', 2007ChZX).
291.04 8	0.12	481.846	3+	190.9021	3+			
293.42 8	0.070 14	464.501	2+	171.0738	3−			
295.99 8	0.040 12	668.005	4−	371.985	4+			
297.90 3	0.39 8	558.571	4+	260.6625	4+	M1(+E2)	0.10 3	α(K)exp=0.15 9 (1967Mo05) α(K)=0.08 3; α(L)=0.0145 9; α(M)=0.00328 11; α(N+..)=0.00087 5 α(N)=0.00076 3; α(O)=0.000104 10; α(P)=4.5×10^{-6} 20 other: Eγ=297.94 6, Iγ=0.303 23 ('Budapest data', 2007ChZX).
299.88 17	0.03	671.746	4+	371.985	4+			
304.60 2	2.60 26	475.680	3−	171.0738	3−	M1	0.1179	α(K)=0.0994 14; α(L)=0.01444 21; α(M)=0.00318 5; α(N+..)=0.000853 12 α(N)=0.000739 11; α(O)=0.0001077 15; α(P)=6.09×10^{-6} 9 α(K)exp <0.4 (1973PrZI), 0.09 3 (1967Mo05); 0.11 2 (1988Ba79). α(L12)exp=0.023 5 (1988Ba79). other: Eγ=304.63 4, Iγ=2.16 11 ('Budapest data', 2007ChZX).
305.36[c] 15	0.14 4	868.24	4−	562.890	4−			Eγ,Iγ: from low-energy γγ coin (2000Pr03).
306.49[c] 3	0.24 5	654.818	5+	348.257	5+			placement from 736 level rejected In 2000Pr03. other: Eγ=306.55 9, Iγ=0.177 16 ('Budapest data', 2007ChZX).

$^{166}_{67}Ho_{99}$-15

γ(^{166}Ho) (continued)

E_γ[†]	I_γ[†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[e]	Comments
[x]307.65[#] *15*	0.03							
309.59[c] *6*	0.10 *2*	725.68	2⁻	416.086	2⁻			placement from 867 level rejected In 2000Pr03. other: Eγ=310.78 *11*, Iγ=0.21 *3* ('Budapest data', 2007ChZX).
[x]310.89 *3*	0.30 *5*							
312.90 *8*	0.12 *4*	905.544	2⁺	592.501	3⁺			placement from 951 level rejected In 2000Pr03.
313.48[f] *6*	0.12[f] *4*	577.208	7⁺	263.7876	5⁺			other: Eγ=313.35 *9*, Iγ=0.114 *16* ('Budapest data', 2007ChZX).
313.48[fc] *6*	0.12[f] *4*	985.20	5⁺	671.746	4⁺			
316.10 *9*	0.09	769.78	5⁺	453.771	6⁺			other: Eγ=315.96 *15*, Iγ=0.110 *23* ('Budapest data', 2007ChZX).
317.28[cb] *3*	0.22 *3*	792.789	4⁻	475.680	3⁻			placement from 1011 level rejected In 2000Pr03. other: Eγ=317.18 *12*, Iγ=0.143 *22* ('Budapest data', 2007ChZX).
[x]321.62[#] *10*	0.09							
323.42 *7*	0.120 *24*	671.746	4⁺	348.257	5⁺			other: Eγ=323.19 *13*, Iγ=0.103 *16* ('Budapest data', 2007ChZX).
324.74 *7*	0.110 *22*	806.56	5⁺	481.846	3⁺			other: Eγ=324.69 *17*, Iγ=0.071 *14* ('Budapest data', 2007ChZX).
328.245 *15*	0.73 *7*	657.995	5⁻	329.774	5⁻			other: Eγ=328.19 *4*, Iγ=0.63 *4* ('Budapest data', 2007ChZX).
331.88 *3*	0.27 *4*	592.501	3⁺	260.6625	4⁺			other: Eγ=331.77 *9*, Iγ=0.193 *19* ('Budapest data', 2007ChZX).
333.62 *2*	1.60 *24*	416.086	2⁻	82.4707	1⁻	M1	0.0925	α(K)=0.0780 *11*; α(L)=0.01131 *16*; α(M)=0.00249 *4*; α(N+..)=0.000668 *10* α(N)=0.000579 *9*; α(O)=8.43×10^{-5} *12*; α(P)=4.78×10^{-6} *7* α(K)exp=0.08 *4* (1967Mo05); 0.11 *3* (1988Ba79). α(L12)exp=0.019 *6* (1988Ba79). other: Eγ=333.61 *4*, Iγ=1.67 *10* ('Budapest data', 2007ChZX).
335.61[c] *8*	0.62 *12*	806.56	5⁺	470.841	5⁺			placement from 684 level rejected In 2000Pr03. I_γ: Iγ=0.052 *18* for Eγ=335.89 *19* line ('Budapest data', 2007ChZX) but Iγ=0.62 *13* (crystal data) and 0.32 *8* (Ge(Li) data) In 1967Mo05. Unless there is a typographical error In Iγ from 2007ChZX, it seems likely that the 336γ branching adopted here is much too high.
338.20 *4*	0.150 *23*	668.005	4⁻	329.774	5⁻			other: Eγ=338.31 *10*, Iγ=0.106 *21* ('Budapest data', 2007ChZX).
341.57 *3*	0.064 *13*	521.982	3⁺	180.467	4⁻			I_γ: 0.064 *13* ('Budapest data' for Eγ=341.54 *19*, 2007ChZX) but 0.28 *6* (1967Mo05) suggests presence of contaminant In 1967Mo05 datum, so evaluator adopts the former datum.
343.51 *3*	0.39 *8*	426.025	1⁺	82.4707	1⁻	(E1)	0.01281	α(K)exp<0.038 α(K)=0.01085 *16*; α(L)=0.001538 *22*; α(M)=0.000337 *5*; α(N+..)=8.93×10^{-5} *13* α(N)=7.77×10^{-5} *11*; α(O)=1.104×10^{-5} *16*; α(P)=5.72×10^{-7} *8* other: Eγ=343.49 *5*; Iγ=0.327 *21* ('Budapest data', 2007ChZX).
[x]346.3 *3*	0.04							
347.24 *8*	0.20 *4*	719.370	4⁺	371.985	4⁺			other: Eγ=347.42 *7*, Iγ=0.132 *16* ('Budapest data', 2007ChZX).
350.61 *12*	0.070 *14*	815.139	3⁺	464.501	2⁺			other: Eγ=351.1 *3*, Iγ=0.048 *18* ('Budapest data', 2007ChZX).
352.28 *12*	0.130 *26*	725.68	2⁻	373.092	1⁻			other: Eγ=352.46 *12*, Iγ=0.119 *21* ('Budapest data', 2007ChZX).
357.04 *4*	0.29 *6*	547.934	4⁺	190.9021	3⁺			other: Eγ=357.11 *5*, Iγ=0.261 *19* ('Budapest data', 2007ChZX).
358.4[c] *3*	0.05	774.522	1⁻	416.086	2⁻			placement from 881 level rejected In 2000Pr03.
359.7 *2*	0.080 *24*	654.818	5⁺	295.085	6⁺			other: Eγ=359.64 *17*, Iγ=0.060 *15* ('Budapest data', 2007ChZX).
363.1 *3*	0.05	543.672	2⁻	180.467	4⁻			other: Eγ=362.4 *3*, Iγ=0.047 *14* ('Budapest data', 2007ChZX).
367.54 *16*	0.07	558.571	4⁺	190.9021	3⁺			
368.45[f] *16*	0.12[f] *3*	1061.788	2,4	693.638	5⁺			other: Eγ=368.26 *11*, Iγ=0.118 *19* ('Budapest data', 2007ChZX).

$^{166}_{67}Ho_{99}$-16

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

$\gamma(^{166}Ho)$ (continued)

E_γ[†]	I_γ[†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[e]	Comments
368.45[f] *16*	0.12[f] *3*	1087.91	3	719.370	4^+			
371.75[@] *3*	3.0 *3*	426.025	1^+	54.2391	2^-	E1	0.01060	α(K)exp<0.016 (1967Mo05) α(K)=0.00898 *13*; α(L)=0.001267 *18*; α(M)=0.000278 *4*; α(N+..)=7.36×10^{-5} *11* α(N)=6.40×10^{-5} *9*; α(O)=9.12×10^{-6} *13*; α(P)=4.77×10^{-7} *7* other: Eγ=371.74 *4*; Iγ=2.51 *13* ('Budapest data', 2007ChZX).
373.47[c] *7*	0.45 *7*	379.547	6^+	5.969	7^-			
376.91[f] *14*	0.120[f] *24*	547.934	4^+	171.0738	3^-			other: Eγ=376.89 *17*, Iγ=0.063 *18* ('Budapest data', 2007ChZX).
376.91[fc] *14*	0.120[f] *24*	792.789	4^-	416.086	2^-			
380.1 *2*	0.050 *15*	757.707	5^-	377.806	6^-			
382.8[c] *2*	0.05	562.890	4^-	180.467	4^-			
385.0 *2*	0.04	815.139	3^+	430.031	2^+			
386.6[c] *3*	0.048 *8*	757.707	5^-	371.985	4^+			Eγ,Iγ: from 2000Pr03. Eγ=386.3 *3*, Iγ=0.04 In 1967Mo05.
388.8[c] *3*	0.08 *3*	815.139	3^+	426.025	1^+			Eγ,Iγ: from $\gamma\gamma$ coin (2000Pr03).
390.0[c] *2*	0.18 *4*	769.78	5^+	379.547	6^+			placement from 1062 level rejected In 2000Pr03. other: Eγ=389.72 *16*; Iγ=0.12 *3* ('Budapest data', 2007ChZX).
391.89 *4*	1.13 *11*	562.890	4^-	171.0738	3^-	M1	0.0605	α(K)=0.0511 *8*; α(L)=0.00737 *11*; α(M)=0.001622 *23*; α(N+..)=0.000435 *6* α(N)=0.000377 *6*; α(O)=5.50×10^{-5} *8*; α(P)=3.12×10^{-6} *5* Mult.: from α(K)exp=0.08 *2* (1988Ba79). other: Eγ=391.86 *4*; Iγ=0.82 *8* ('Budapest data', 2007ChZX).
392.2[c] *5*	0.11 *3*	868.24	4^-	475.680	3^-			Eγ,Iγ: from low-energy $\gamma\gamma$ coin (2000Pr03).
394.5[ch] *2*	0.10	654.818	5^+	260.6625	4^+			placement from 870 level rejected In 2000Pr03. absent In 'Budapest data' In 2007ChZX so placement is shown here As questionable.
[x]398.6 *2*	0.09 *3*							placement from 881 level rejected In 2000Pr03. other: Eγ=398.83 *21*; Iγ=0.06 *5* ('Budapest data', 2007ChZX).
401.31[c] *10*	0.11 *3*	774.522	1^-	373.092	1^-			Eγ,Iγ: from $\gamma\gamma$ coin (2000Pr03).
401.56 *6*	2.1 *3*	592.501	3^+	190.9021	3^+	(M1,E2)	0.043 *15*	α(K)exp=0.030 *22* (1967Mo05) α(K)=0.035 *13*; α(L)=0.0059 *11*; α(M)=0.00132 *21*; α(N+..)=0.00035 *6* α(N)=0.00030 *5*; α(O)=4.3×10^{-5} *9*; α(P)=2.1×10^{-6} *9* other: Eγ=401.57 *4*; Iγ=1.72 *14* ('Budapest data', 2007ChZX).
404.7[c] *6*	0.05 *2*	881.040	3^-	475.680	3^-			Eγ,Iγ: from low-energy $\gamma\gamma$ coin (2000Pr03).
406.83[c] *16*	0.130 *26*	736.430	4^+	329.774	5^-			placement from 1062 level rejected In 2000Pr03. other: Eγ=406.53 *14*; Iγ=0.17 *3* ('Budapest data', 2007ChZX).
410.27 *2*	1.36 *27*	464.501	2^+	54.2391	2^-			other: Eγ=410.45 *4*, Iγ=1.98 *11* ('Budapest data', 2007ChZX); probably an unresolved doublet (410.3γ+411.1γ).
411.09 *3*	0.75 *23*	671.746	4^+	260.6625	4^+			
412.1[f] *2*	0.60[f] *12*	592.501	3^+	180.467	4^-			other: Eγ=412.27 *9*; Iγ=0.48 *5* ('Budapest data', 2007ChZX).
412.1[f] *2*	0.60[f] *12*	742.02	4^-	329.774	5^-			
[x]413.69 *15*	0.15							placement from 420 level rejected In 2000Pr03.

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

γ(^{166}Ho) (continued)

E_γ[†]	I_γ[†][d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[e]	Comments
								other: Eγ=414.24 *19*, Iγ=0.14 *3* ('Budapest data', 2007ChZX); it is unclear whether this is the γ reported In 1967Mo05.
416.47 *5*	0.80 *16*	597.015	3⁻	180.467	4⁻			other: Eγ=416.52 *6*; Iγ=0.68 *6* ('Budapest data', 2007ChZX).
418.08[c] *18*	0.20 *6*	598.448	4⁺	180.467	4⁻			
420.7 *6*	0.16 *5*	475.680	3⁻	54.2391	2⁻			E_γ,I_γ: from γγ coin (2000Pr03).
421.13[ch] *5*	0.70 *11*	769.78	5⁺	348.257	5⁺			absent In 'Budapest data' In 2007ChZX and far too strong to have been overlooked there if this were a ^{166}Ho line; not included In Adopted Gammas.
423.39[fc] *18*	0.16[f]	683.805	3⁻	260.6625	4⁺			placement from 905 level rejected In 2000Pr03.
								other: Eγ=423.52 *16*; Iγ=0.23 *5* ('Budapest data', 2007ChZX).
423.39[fc] *18*	0.16[f]	771.94	6⁺	348.257	5⁺			placement from 905 level rejected In 2000Pr03.
425.30[c] *3*	1.30 *26*	431.239	5⁻	5.969	7⁻			placement from 638 level rejected In 2000Pr03.
425.99 *3*	3.7 *6*	426.025	1⁺	0.0	0⁻	E1	0.00770	α(K)exp=0.0065 *18*
								α(K)=0.00653 *10*; α(L)=0.000914 *13*; α(M)=0.000200 *3*; α(N+..)=5.32×10^{-5} *8*
								α(N)=4.62×10^{-5} *7*; α(O)=6.61×10^{-6} *10*; α(P)=3.50×10^{-7} *5*
								other: Eγ=425.90 *4*; Iγ=4.64 *24* ('Budapest data', 2007ChZX).
425.99[c] *3*	0.24 *7*	597.015	3⁻	171.0738	3⁻			E_γ,I_γ: doublet; from γγ coin (2000Pr03).
426.89[c] *15*	0.13 *4*	721.98	6⁺	295.085	6⁺			E_γ,I_γ: from γγ coin (2000Pr03).
427.0 *2*	0.4	598.448	4⁺	171.0738	3⁻			
430.31[c] *18*	0.13	760.345	3⁻	329.774	5⁻			
[x]432.14 *18*	0.13							placement from 757 level rejected In 2000Pr03.
								other: Eγ=432.19 *18*; Iγ=0.095 *16* ('Budapest data', 2007ChZX).
433.9[c] *9*	0.015 *5*	806.56	5⁺	371.985	4⁺			E_γ,I_γ: from 2000Pr03.
433.92 *18*	0.17	605.047	2⁺	171.0738	3⁻			other: Eγ=433.05 *8*, Iγ=0.140 *19* ('Budapest data', 2007ChZX).
437.3 *3*	0.06	628.418	2⁻	190.9021	3⁺			other: Eγ=437.0 *3*, Iγ=0.045 *14* ('Budapest data', 2007ChZX).
[x]439.6 *3*	0.04							placement from 577 level rejected In 2000Pr03.
								other: Eγ=439.39 *7*, Iγ=0.195 *19* ('Budapest data', 2007ChZX); suggests presence of a contaminant.
[x]442.0 *3*	0.40 *12*							placement from 1031 level rejected In 2000Pr03.
								other: Eγ=442.05 *9*, Iγ=0.35 *5* ('Budapest data', 2007ChZX); possibly a 442.0γ+442.2γ doublet.
442.17 *8*	0.25 *7*	771.94	6⁺	329.774	5⁻			E_γ,I_γ: from γγ coin (2000Pr03).
								other: Eγ=442.05 *9*, Iγ=0.35 *5* ('Budapest data', 2007ChZX); possibly a 442.0γ+442.2γ doublet.
442.9 *3*	0.40 *12*	815.139	3⁺	371.985	4⁺			other: Eγ=443.22 *10*, Iγ=0.264 *19* ('Budapest data', 2007ChZX).
450.3 *3*	0.05	876.37		426.025	1⁺			
[x]454.96 *20*	0.3							
455.60 *6*	1.70 *26*	719.370	4⁺	263.7876	5⁺	M1(+E2)		Mult.: α(K)exp=0.030 *19* (1967Mo05).
								other: Eγ=455.53 *4*, Iγ=1.26 *6* ('Budapest data', 2007ChZX).
457.37 *7*	0.60 *12*	628.418	2⁻	171.0738	3⁻			other: Eγ=457.55 *9*, Iγ=0.34 *3* ('Budapest data', 2007ChZX).
458.74[c] *22*	0.09 *3*	788.618	6⁻	329.774	5⁻			E_γ,I_γ: from γγ coin (2000Pr03).
463.9 *3*	0.60 *12*	654.818	5⁺	190.9021	3⁺			other: Eγ=463.88 *6*, Iγ=0.39 *3* ('Budapest data', 2007ChZX).
467.3 *3*	0.30 *9*	638.235	4⁻	171.0738	3⁻			other: Eγ=467.36 *8*, Iγ=0.26 *3* ('Budapest data', 2007ChZX).

$^{166}_{67}Ho_{99}$-18

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

γ(^{166}Ho) (continued)

E_γ [†]	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[e]	Comments
472.2[c] *5*	0.14	662.169	3^+	190.9021	3^+			placement from 736 level rejected In 2000Pr03. other: Eγ=471.53 *15*, Iγ=0.068 *16* ('Budapest data', 2007ChZX).
475.8[f] *3*	0.15[f]	736.430	4^+	260.6625	4^+			other: Eγ=475.98 *17*, Iγ=0.081 *18* ('Budapest data', 2007ChZX).
475.8[fc] *3*	0.15[f]	905.544	2^+	430.031	2^+			
477.4 *3*	0.2	657.995	5^-	180.467	4^-			other: Eγ=477.70 *12*, Iγ=0.116 *18* ('Budapest data', 2007ChZX).
481.31[@] *8*	0.85 *17*	742.02	4^-	260.6625	4^+			
487.58 *6*	1.30 *20*	668.005	4^-	180.467	4^-	M1	0.0343	α(K)=0.0290 *4*; α(L)=0.00416 *6*; α(M)=0.000914 *13*; α(N+..)=0.000245 *4* α(N)=0.000212 *3*; α(O)=3.10×10^{-5} *5*; α(P)=1.765×10^{-6} *25* Mult.: from α(K)exp=0.03 *1* (1988Ba79). other: Eγ=487.45 *5*, Iγ=0.63 *4* ('Budapest data', 2007ChZX).
489.39 *5*	3.2 *3*	543.672	2^-	54.2391	2^-	E2+M1	0.025 *9*	α(K)=0.021 *8*; α(L)=0.0034 *8*; α(M)=0.00075 *16*; α(N+..)=0.00020 *5* α(N)=0.00017 *4*; α(O)=2.5×10^{-5} *6*; α(P)=1.2×10^{-6} *5* Mult.: from α(K)exp=0.019 *4* (1988Ba79). Other α(K)exp: 0.020 *13* (1967Mo05). other: Eγ=489.45 *4*, Iγ=1.85 *10* ('Budapest data', 2007ChZX).
496.9 *2*	0.3	668.005	4^-	171.0738	3^-			other: Eγ=497.14 *8*, Iγ=0.180 *19* ('Budapest data', 2007ChZX).
499.5[c@] *4*	0.1	760.345	3^-	260.6625	4^+			
[x]504.3 *2*	0.2							
506.8[c#] *3*	0.2	644.29	7^-	137.729	8^-			
508.4 *8*	0.28 *8*	562.890	4^-	54.2391	2^-			Eγ,Iγ: from γγ coin (2000Pr03). other: Eγ=508.83 *7*, Iγ=0.53 *4* ('Budapest data', 2007ChZX); possibly γ is complex In this study.
509.0 *2*	0.7	769.78	5^+	260.6625	4^+			placement from 905 level rejected In 2000Pr03.
512.7[gc] *3*	0.80[g] *16*	595.726	1^-	82.4707	1^-			Iγ=0.80 *16* for doublet; Iγ=0.03 from γγ coin (2000Pr03) for other placement. other: Eγ=512.76 *8*, Iγ=0.52 *4* ('Budapest data', 2007ChZX); presumably this also is for a doublet.
512.7[g] *3*	0.03[g]	693.638	5^+	180.467	4^-			I_γ: from γγ coin (2000Pr03). Iγ=0.80 *16* for doublet (1967Mo05).
524.2[c] *3*	0.50 *10*	529.816	6^-	5.969	7^-			other: Eγ=524.35 *6*, Iγ=0.42 *3* ('Budapest data', 2007ChZX). placement from 705 level rejected In 2000Pr03.
[x]530.1 *3*	0.4							
533.5 *3*	0.60 *18*	704.962	3^-	171.0738	3^-			other: Eγ=533.55 *6*, Iγ=0.49 *3* ('Budapest data', 2007ChZX).
534.9[c] *4*	0.3	961.08	3^+	426.025	1^+			placement from 725 level rejected In 2000Pr03. other: Eγ=535.89 *16*, Iγ=0.137 *23* ('Budapest data', 2007ChZX).
[x]538.4 *3*	0.3							placement from 593 level rejected In 2000Pr03. other: Eγ=538.32 *9*, Iγ=0.24 *3* ('Budapest data', 2007ChZX).
538.6[c] *4*	0.20 *6*	868.24	4^-	329.774	5^-			E_γ,I_γ: from low-energy γγ coin (2000Pr03).
542.8[c] *8*	0.006 *2*	961.08	3^+	416.086	2^-			E_γ,I_γ: from high-energy γγ coin (2000Pr03).
542.86 *20*	3.5 *9*	597.015	3^-	54.2391	2^-	E2+M1	0.019 *7*	α(K)=0.016 *6*; α(L)=0.0025 *7*; α(M)=0.00056 *13*; α(N+..)=0.00015 *4* α(N)=0.00013 *3*; α(O)=1.9×10^{-5} *5*; α(P)=1.0×10^{-6} *4* Mult.: from α(K)exp=0.011 *3* (1988Ba79). other: Eγ=542.74 *4*, Iγ=3.12 *21* ('Budapest data', 2007ChZX).
543.66 *20*	2.4 *6*	543.672	2^-	0.0	0^-	E2	0.01275	α(K)=0.01030 *15*; α(L)=0.00191 *3*; α(M)=0.000432 *6*; α(N+..)=0.0001135 *16*

$^{166}_{67}Ho_{99}$-19

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

$\gamma(^{166}Ho)$ (continued)

E_γ [†]	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π	Comments
						α(N)=9.93×10^{-5} *14*; α(O)=1.366×10^{-5} *20*; α(P)=5.77×10^{-7} *8* Mult.: from α(K)exp=0.012 *3* (1988Ba79). other: Eγ=543.69 *4*, Iγ=1.61 *8* ('Budapest data', 2007ChZX).
546.0[c] *5*	0.020 *6*	806.56	5$^+$	260.6625	4$^+$	E_γ,I_γ: from 2000Pr03.
[x]550.5 *3*	0.3					
553.37[c] *21*	0.07 *2*	848.46	7$^+$	295.085	6$^+$	E_γ,I_γ: from $\gamma\gamma$ coin (2000Pr03).
554.3[g] *4*	0.45[g] *14*	725.68	2$^-$	171.0738	3$^-$	I_γ: from $\gamma\gamma$ coin. Iγ=0.60 for doublet (1967Mo05). see comment on 554γ from 815 level.
554.3[g] *4*	0.15[g] *5*	815.139	3$^+$	260.6625	4$^+$	I_γ: from $\gamma\gamma$ coin; Iγ=0.60 for doublet (1967Mo05). the 'Budapest data' In 2007ChZX include two 555 keV transitions from the 815 level: Eγ=554.00 *16*, Iγ=0.31 *5* and Eγ=555.30 *20*, Iγ=0.21 *5*, but the latter energy does not fit placement.
564.8[c] *3*	0.2	736.430	4$^+$	171.0738	3$^-$	
570.0[c] *3*	0.2	760.345	3$^-$	190.9021	3$^+$	
577.0[f] *3*	0.70[f] *14*	757.707	5$^-$	180.467	4$^-$	other: Eγ=577.06 *6*, Iγ=0.327 *27* ('Budapest data', 2007ChZX).
577.0[fc] *3*	0.70[f] *14*	837.717	4$^-$	260.6625	4$^+$	
579.9[c] *7*	0.5 *3*	760.345	3$^-$	180.467	4$^-$	E_γ,I_γ: from 2000Pr03.
[x]585.6 *7*	0.40 *12*					placement from 757 level rejected In 2000Pr03. other: Eγ=585.93 *12*, Iγ=0.148 *21* ('Budapest data', 2007ChZX).
[x]589.4 *7*	0.30 *9*					
593.8[c] *7*	0.08	595.726	1$^-$	0.0	0$^-$	
600.8[c] *7*	0.024 *6*	1030.38	4$^+$	430.031	2$^+$	I_γ: from $\gamma\gamma$ coin (2000Pr03). Iγ=0.3 In 1967Mo05.
607.7 *7*	0.11	662.169	3$^+$	54.2391	2$^-$	other: Eγ=608.61 *25*, Iγ=0.055 *19* ('Budapest data', 2007ChZX).
612.0[c] *5*	0.3	792.789	4$^-$	180.467	4$^-$	
613.8 *4*	0.70 *21*	668.005	4$^-$	54.2391	2$^-$	other: Eγ=613.70 *5*, Iγ=0.53 *4* ('Budapest data', 2007ChZX).
[x]618.5 *7*	0.3					
624.0 *4*	0.60 *18*	815.139	3$^+$	190.9021	3$^+$	other: Eγ=624.13 *6*, Iγ=0.341 *26* ('Budapest data', 2007ChZX).
633.5 *4*	0.80 *24*	824.62	3$^-$	190.9021	3$^+$	other: Eγ=633.62 *5*, Iγ=0.58 *5* ('Budapest data', 2007ChZX).
643.1 *8*	0.40 *12*	725.68	2$^-$	82.4707	1$^-$	other: Eγ=643.03 *10*, Iγ=0.164 *23* ('Budapest data', 2007ChZX).
[x]653.4 *8*	0.2					
[x]658.9 *6*	0.60 *18*					
661.0[c] *6*	0.60 *18*	925.0	5$^+$	263.7876	5$^+$	
[x]681.7 *5*	0.40 *12*					
[x]689.7 *9*	0.80 *24*					placement from 881 level rejected In 2000Pr03. other: Eγ=689.51 *6*, Iγ=0.71 *5* ('Budapest data', 2007ChZX).
[x]699.4 *9*	0.50 *15*					
700.8[c] *3*	0.06 *2*	961.08	3$^+$	260.6625	4$^+$	E_γ,I_γ: from high-energy $\gamma\gamma$ coin (2000Pr03).
701.1[c] *5*	0.016 *5*	1030.38	4$^+$	329.774	5$^-$	E_γ,I_γ: from $\gamma\gamma$ coin (2000Pr03).
[x]708.9 *6*	0.3					
709.6 *6*	0.14 *4*	881.040	3$^-$	171.0738	3$^-$	E_γ,I_γ: from $\gamma\gamma$ coin (2000Pr03).
714.7[c] *2*	0.26 *8*	905.544	2$^+$	190.9021	3$^+$	E_γ,I_γ: from $\gamma\gamma$ coin (2000Pr03).
[x]715.3 *6*	0.60 *18*					
733.94[c] *21*	0.024 *7*	905.544	2$^+$	171.0738	3$^-$	E_γ,I_γ: from $\gamma\gamma$ coin (2000Pr03).

$^{166}_{67}Ho_{99}$-20

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

$\gamma(^{166}Ho)$ (continued)

E_γ †	I_γ †[d]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]734.4 *10*	0.3					placement from 925 level rejected In 2000Pr03. other: Eγ=734.45 *6*, Iγ=0.41 *3* ('Budapest data', 2007ChZX).
770.5[c] *4*	0.06 *2*	1030.38	4+	260.6625	4+	E_γ,I_γ: from high-energy γγ coin (2000Pr03).
798.6 *4*	0.26 *8*	881.040	3−	82.4707	1−	E_γ,I_γ: from high-energy γγ coin (2000Pr03).
827.1 *3*	0.19 *6*	881.040	3−	54.2391	2−	E_γ,I_γ: from high-energy γγ coin (2000Pr03).
839.9[c] *7*	0.13 *4*	1030.38	4+	190.9021	3+	E_γ,I_γ: from high-energy γγ coin (2000Pr03).
849.5[c] *7*	0.015 *5*	1030.38	4+	180.467	4−	E_γ,I_γ: from high-energy γγ coin (2000Pr03).
858.0[c] *5*	0.04 *1*	1030.38	4+	171.0738	3−	E_γ,I_γ: from γγ coin (2000Pr03).
4050.46 *15*	0.097 *6*	(6243.714)	3−,4−	2193.20		other: Eγ=4049.4 *5*, Iγ=0.193 *23* ('Budapest data', 2007ChZX).
4060.74 *22*	0.037 *3*	(6243.714)	3−,4−	2182.92		
4063.66 *25*	0.029 *3*	(6243.714)	3−,4−	2180.0		
4071.6 *5*	0.019 *4*	(6243.714)	3−,4−	2172.1		
4073.9 *4*	0.102 *9*	(6243.714)	3−,4−	2169.8		
4076.0 *4*	0.028 *5*	(6243.714)	3−,4−	2167.7		
4079.86 *24*	0.044 *3*	(6243.714)	3−,4−	2163.80		
4082.6 *3*	0.030 *3*	(6243.714)	3−,4−	2161.1		
4086.32 *14*	0.090 *5*	(6243.714)	3−,4−	2157.34		
4091.98 *16*	0.088 *5*	(6243.714)	3−,4−	2151.68		
4095.2 *3*	0.030 *3*	(6243.714)	3−,4−	2148.5		
4098.23 *17*	0.072 *4*	(6243.714)	3−,4−	2145.43		
4104.4 *5*	0.024 *5*	(6243.714)	3−,4−	2139.3		
4106.5 *4*	0.028 *5*	(6243.714)	3−,4−	2137.2		
4112.47 *16*	0.046 *3*	(6243.714)	3−,4−	2131.19		
4116.19 *18*	0.035 *2*	(6243.714)	3−,4−	2127.47		
4121.2 *3*	0.015 *2*	(6243.714)	3−,4−	2122.5		
4125.0 *5*	0.012 *2*	(6243.714)	3−,4−	2118.7		
4127.84 *23*	0.041 *3*	(6243.714)	3−,4−	2115.82		
4132.0 *4*	0.017 *3*	(6243.714)	3−,4−	2111.7		
4134.5 *6*	0.012 *3*	(6243.714)	3−,4−	2109.2		
4138.0 *6*	0.020 *5*	(6243.714)	3−,4−	2105.7		
4140.0 *4*	0.027 *5*	(6243.714)	3−,4−	2103.7		
4145.29 *15*	0.048 *3*	(6243.714)	3−,4−	2098.37		
4149.3 *4*	0.015 *2*	(6243.714)	3−,4−	2094.4		
4152.70 *20*	0.051 *3*	(6243.714)	3−,4−	2090.96		
4155.90 *18*	0.045 *3*	(6243.714)	3−,4−	2087.76		
4165.89 *21*	0.075 *5*	(6243.714)	3−,4−	2077.77		
4168.4 *5*	0.020 *4*	(6243.714)	3−,4−	2075.3		
4171.06 *20*	0.064 *4*	(6243.714)	3−,4−	2072.60		
4178.46 *15*	0.096 *6*	(6243.714)	3−,4−	2065.20		
4181.6 *5*	0.012 *2*	(6243.714)	3−,4−	2062.1		
4185.0 *3*	0.073 *7*	(6243.714)	3−,4−	2058.7		
4187.0 *5*	0.038 *7*	(6243.714)	3−,4−	2056.7		
4189.3 *3*	0.046 *5*	(6243.714)	3−,4−	2054.4		

$^{166}_{67}Ho_{99}$-21

γ(^{166}Ho) (continued)

E_γ †	I_γ †d	E_i(level)	J_i^π	E_f	Comments
4192.4 *4*	0.014 *2*	(6243.714)	3⁻,4⁻	2051.3	
4203.3 *3*	0.024 *2*	(6243.714)	3⁻,4⁻	2040.4	
4206.22 *17*	0.064 *4*	(6243.714)	3⁻,4⁻	2037.44	
4211.61 *23*	0.077 *6*	(6243.714)	3⁻,4⁻	2032.05	
4213.9 *3*	0.040 *6*	(6243.714)	3⁻,4⁻	2029.8	
4218.03 *19*	0.085 *5*	(6243.714)	3⁻,4⁻	2025.63	
4220.7 *3*	0.024 *3*	(6243.714)	3⁻,4⁻	2023.0	
4226.1 *4*	0.020 *3*	(6243.714)	3⁻,4⁻	2017.6	other: Eγ=4227.2 *5*, Iγ=0.058 *26* ('Budapest data', 2007ChZX); possibly a 4226γ+4229γ doublet.
4228.59 *21*	0.065 *5*	(6243.714)	3⁻,4⁻	2015.07	
4232.89 *13*	0.047 *3*	(6243.714)	3⁻,4⁻	2010.77	
4238.77 *10*	0.179 *10*	(6243.714)	3⁻,4⁻	2004.89	other: Eγ=4238.2 *3*, Iγ=0.14 *3* ('Budapest data', 2007ChZX).
4244.72 *20*	0.026 *2*	(6243.714)	3⁻,4⁻	1998.94	
4248.29 *16*	0.037 *2*	(6243.714)	3⁻,4⁻	1995.37	
4257.68 *12*	0.038 *2*	(6243.714)	3⁻,4⁻	1985.98	
4265.33 *18*	0.050 *3*	(6243.714)	3⁻,4⁻	1978.33	
4268.2 *4*	0.020 *3*	(6243.714)	3⁻,4⁻	1975.5	
4270.8 *8*	0.009 *3*	(6243.714)	3⁻,4⁻	1972.9	
4273.9 *3*	0.020 *2*	(6243.714)	3⁻,4⁻	1969.8	
4282.98 *14*	0.069 *4*	(6243.714)	3⁻,4⁻	1960.67	other: Eγ=4282.7 *5*, Iγ=0.064 *16* ('Budapest data', 2007ChZX).
4286.13 *21*	0.038 *3*	(6243.714)	3⁻,4⁻	1957.52	
4289.4 *7*	0.007 *2*	(6243.714)	3⁻,4⁻	1954.3	
4292.78 *12*	0.138 *8*	(6243.714)	3⁻,4⁻	1950.87	other: Eγ=4292.1 *3*, Iγ=0.100 *18* ('Budapest data', 2007ChZX).
4297.68 *16*	0.026 *2*	(6243.714)	3⁻,4⁻	1945.97	
4304.77 *10*	0.058 *3*	(6243.714)	3⁻,4⁻	1938.88	
4310.56 *16*	0.024 *2*	(6243.714)	3⁻,4⁻	1933.09	
4315.48 *10*	0.062 *4*	(6243.714)	3⁻,4⁻	1928.17	
4324.33 *15*	0.061 *4*	(6243.714)	3⁻,4⁻	1919.32	other: Eγ=4323.3 *4*, Iγ=0.074 *19* ('Budapest data', 2007ChZX).
4327.4 *6*	0.015 *3*	(6243.714)	3⁻,4⁻	1916.3	other: Eγ=4327.3 *5*, Iγ=0.055 *19* ('Budapest data', 2007ChZX).
4329.7 *4*	0.021 *3*	(6243.714)	3⁻,4⁻	1914.0	
4335.98 *11*	0.047 *3*	(6243.714)	3⁻,4⁻	1907.67	other: Eγ=4336.1 *4*, Iγ=0.061 *18* ('Budapest data', 2007ChZX).
4344.69 *15*	0.034 *2*	(6243.714)	3⁻,4⁻	1898.96	other: Eγ=4344.3 *6*, Iγ=0.058 *23* ('Budapest data', 2007ChZX).
4348.37 *11*	0.151 *8*	(6243.714)	3⁻,4⁻	1895.28	other: Eγ=4347.5 *3*, Iγ=0.135 *24* ('Budapest data', 2007ChZX).
4352.80 *11*	0.047 *3*	(6243.714)	3⁻,4⁻	1890.85	
4360.66 *18*	0.019 *2*	(6243.714)	3⁻,4⁻	1882.99	
4366.79 *9*	0.064 *4*	(6243.714)	3⁻,4⁻	1876.86	
4373.4 *4*	0.009 *1*	(6243.714)	3⁻,4⁻	1870.3	
4378.9 *6*	0.005 *1*	(6243.714)	3⁻,4⁻	1864.8	
4384.31 *11*	0.057 *3*	(6243.714)	3⁻,4⁻	1859.34	other: Eγ=4384.0 *20*, Iγ=0.06 *4* ('Budapest data', 2007ChZX).
4388.67 *13*	0.048 *3*	(6243.714)	3⁻,4⁻	1854.98	
4392.6 *3*	0.014 *1*	(6243.714)	3⁻,4⁻	1851.1	
4400.66 *9*	0.118 *7*	(6243.714)	3⁻,4⁻	1842.99	other: Eγ=4400.8 *6*, Iγ=0.08 *6* ('Budapest data', 2007ChZX).
4405.1 *11*	0.005 *2*	(6243.714)	3⁻,4⁻	1838.6	
4408.05 *16*	0.056 *4*	(6243.714)	3⁻,4⁻	1835.60	

$^{166}_{67}Ho_{99}$-22

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

$\gamma(^{166}Ho)$ (continued)

E_γ †	I_γ †d	E_i(level)	J_i^π	E_f	Comments
4414.12 *24*	0.017 *2*	(6243.714)	3$^-$,4$^-$	1829.53	
4419.79 *10*	0.063 *4*	(6243.714)	3$^-$,4$^-$	1823.86	
4426.67 *9*	0.073 *4*	(6243.714)	3$^-$,4$^-$	1816.98	
4438.2 *3*	0.011 *1*	(6243.714)	3$^-$,4$^-$	1805.5	
4444.9 *4*	0.009 *1*	(6243.714)	3$^-$,4$^-$	1798.8	
4449.47 *15*	0.027 *2*	(6243.714)	3$^-$,4$^-$	1794.18	
4458.1 *3*	0.011 *1*	(6243.714)	3$^-$,4$^-$	1785.5	
4466.89 *7*	0.150 *8*	(6243.714)	3$^-$,4$^-$	1776.76	other: Eγ=4467.0 *3*, Iγ=0.19 *3* ('Budapest data', 2007ChZX).
4474.19 *18*	0.018 *1*	(6243.714)	3$^-$,4$^-$	1769.46	
4480.06 *9*	0.082 *5*	(6243.714)	3$^-$,4$^-$	1763.59	other: Eγ=4479.8 *7*, Iγ=0.093 *23* ('Budapest data', 2007ChZX).
4484.0 *3*	0.020 *2*	(6243.714)	3$^-$,4$^-$	1759.6	
4486.8 *6*	0.009 *2*	(6243.714)	3$^-$,4$^-$	1756.8	
4491.2 *3*	0.011 *1*	(6243.714)	3$^-$,4$^-$	1752.4	
4501.39 *12*	0.028 *2*	(6243.714)	3$^-$,4$^-$	1742.26	
4512.55 *11*	0.035 *2*	(6243.714)	3$^-$,4$^-$	1731.10	
4519.8 *6*	0.004 *1*	(6243.714)	3$^-$,4$^-$	1723.8	
4527.00 *20*	0.021 *2*	(6243.714)	3$^-$,4$^-$	1716.65	
4530.41 *23*	0.035 *3*	(6243.714)	3$^-$,4$^-$	1713.24	
4533.0 *3*	0.019 *3*	(6243.714)	3$^-$,4$^-$	1710.6	
4539.34 *8*	0.054 *3*	(6243.714)	3$^-$,4$^-$	1704.31	
4548.64 *7*	0.073 *4*	(6243.714)	3$^-$,4$^-$	1695.01	other: Eγ=4548.3 *5*, Iγ=0.066 *19* ('Budapest data', 2007ChZX).
4556.3 *5*	0.007 *1*	(6243.714)	3$^-$,4$^-$	1687.3	
4560.1 *4*	0.019 *3*	(6243.714)	3$^-$,4$^-$	1683.5	
4562.4 *5*	0.014 *3*	(6243.714)	3$^-$,4$^-$	1681.2	
4566.96 *12*	0.032 *2*	(6243.714)	3$^-$,4$^-$	1676.69	
4572.01 *8*	0.064 *4*	(6243.714)	3$^-$,4$^-$	1671.64	
4577.50 *9*	0.055 *3*	(6243.714)	3$^-$,4$^-$	1666.15	
4582.08 *21*	0.018 *1*	(6243.714)	3$^-$,4$^-$	1661.57	
4586.1 *3*	0.024 *3*	(6243.714)	3$^-$,4$^-$	1657.5	
4588.6 *5*	0.011 *2*	(6243.714)	3$^-$,4$^-$	1655.0	
4599.16 *15*	0.020 *1*	(6243.714)	3$^-$,4$^-$	1644.49	
4604.68 *16*	0.028 *2*	(6243.714)	3$^-$,4$^-$	1638.97	
4608.14 *9*	0.087 *5*	(6243.714)	3$^-$,4$^-$	1635.51	other: Eγ=4608.0 *4*, Iγ=0.110 *21* ('Budapest data', 2007ChZX).
4613.7 *3*	0.047 *8*	(6243.714)	3$^-$,4$^-$	1629.9	
4615.5 *4*	0.027 *7*	(6243.714)	3$^-$,4$^-$	1628.1	other: Eγ=4615.2 *6*, Iγ=0.092 *21* ('Budapest data', 2007ChZX); possibly a 4614γ+4616γ doublet.
4623.3 *3*	0.011 *1*	(6243.714)	3$^-$,4$^-$	1620.3	
4627.62 *25*	0.052 *6*	(6243.714)	3$^-$,4$^-$	1616.0	other: Eγ=4627.5 *6*, Iγ=0.090 *23* ('Budapest data', 2007ChZX).
4629.6 *4*	0.021 *5*	(6243.714)	3$^-$,4$^-$	1614.0	
4637.39 *24*	0.029 *3*	(6243.714)	3$^-$,4$^-$	1606.25	
4639.83 *15*	0.085 *6*	(6243.714)	3$^-$,4$^-$	1603.81	other: Eγ=4638.2 *6*, Iγ=0.081 *23* ('Budapest data', 2007ChZX).
4643.66 *9*	0.062 *4*	(6243.714)	3$^-$,4$^-$	1599.98	other: Eγ=4643.8 *4*, Iγ=0.097 *19* ('Budapest data', 2007ChZX).
4651.17 *18*	0.022 *2*	(6243.714)	3$^-$,4$^-$	1592.47	
4654.85 *13*	0.031 *2*	(6243.714)	3$^-$,4$^-$	1588.79	

$^{166}_{67}Ho_{99}$-23

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

γ(^{166}Ho) (continued)

E_γ †	I_γ †d	E_i(level)	J_i^π	E_f	Comments
4666.75 *12*	0.025 *2*	(6243.714)	3⁻,4⁻	1576.89	other: Eγ=4667.8 *4*, Iγ=0.053 *14* ('Budapest data', 2007ChZX); data suggest presence of a contaminant.
4672.89 *7*	0.102 *6*	(6243.714)	3⁻,4⁻	1570.75	other: Eγ=4672.7 *3*, Iγ=0.124 *19* ('Budapest data', 2007ChZX).
4677.1 *5*	0.007 *1*	(6243.714)	3⁻,4⁻	1566.5	
4682.6 *4*	0.024 *5*	(6243.714)	3⁻,4⁻	1561.0	
4684.74 *17*	0.088 *7*	(6243.714)	3⁻,4⁻	1558.90	other: Eγ=4684.6 *4*, Iγ=0.082 *16* ('Budapest data', 2007ChZX).
4690.69 *13*	0.025 *2*	(6243.714)	3⁻,4⁻	1552.95	
4696.15 *12*	0.059 *4*	(6243.714)	3⁻,4⁻	1547.49	other: Eγ=4695.4 *4*, Iγ=0.084 *18* ('Budapest data', 2007ChZX).
4699.2 *10*	0.005 *2*	(6243.714)	3⁻,4⁻	1544.4	
4702.7 *5*	0.009 *2*	(6243.714)	3⁻,4⁻	1540.9	other: Eγ=4702.9 *7*, Iγ=0.060 *16* ('Budapest data', 2007ChZX); data suggest presence of a contaminant.
4706.02 *11*	0.052 *3*	(6243.714)	3⁻,4⁻	1537.62	
4711.52 *6*	0.123 *7*	(6243.714)	3⁻,4⁻	1532.12	other: Eγ=4711.7 *4*, Iγ=0.098 *19* ('Budapest data', 2007ChZX).
4716.78 *17*	0.018 *1*	(6243.714)	3⁻,4⁻	1526.86	
4722.4 *4*	0.007 *1*	(6243.714)	3⁻,4⁻	1521.2	other: Eγ=4722.0 *12*, Iγ=0.006 *15* ('Budapest data', 2007ChZX).
4733.04 *7*	0.066 *4*	(6243.714)	3⁻,4⁻	1510.60	other: Eγ=4732.8 *4*, Iγ=0.071 *18* ('Budapest data', 2007ChZX).
4738.11 *26*	0.011 *1*	(6243.714)	3⁻,4⁻	1505.5	
4745.5 *4*	0.010 *1*	(6243.714)	3⁻,4⁻	1498.1	
4749.05 *18*	0.023 *2*	(6243.714)	3⁻,4⁻	1494.59	
4756.49 *13*	0.024 *2*	(6243.714)	3⁻,4⁻	1487.15	
4765.15 *13*	0.030 *2*	(6243.714)	3⁻,4⁻	1478.49	
4769.2 *6*	0.011 *2*	(6243.714)	3⁻,4⁻	1474.4	
4771.9 *4*	0.016 *2*	(6243.714)	3⁻,4⁻	1471.7	
4776.3 *5*	0.008 *1*	(6243.714)	3⁻,4⁻	1467.3	
4779.73 *14*	0.122 *8*	(6243.714)	3⁻,4⁻	1463.91	other: Eγ=4780.0 *4*, Iγ=0.130 *24* ('Budapest data', 2007ChZX).
4782.0 *4*	0.023 *5*	(6243.714)	3⁻,4⁻	1461.6	
4784.8 *5*	0.011 *2*	(6243.714)	3⁻,4⁻	1458.8	
4794.72 *5*	0.098 *5*	(6243.714)	3⁻,4⁻	1448.92	other: Eγ=4794.2 *4*, Iγ=0.103 *21* ('Budapest data', 2007ChZX).
4810.00 *12*	0.035 *2*	(6243.714)	3⁻,4⁻	1433.64	
4813.84 *7*	0.076 *4*	(6243.714)	3⁻,4⁻	1429.80	other: Eγ=4813.2 *7*, Iγ=0.095 *23* ('Budapest data', 2007ChZX).
4822.16 *13*	0.023 *2*	(6243.714)	3⁻,4⁻	1421.48	
4827.84 *4*	0.273 *15*	(6243.714)	3⁻,4⁻	1415.80	other: Eγ=4827.9 *5*, Iγ=0.21 *5* ('Budapest data', 2007ChZX).
4837.8 *3*	0.010 *1*	(6243.714)	3⁻,4⁻	1405.8	
4841.87 *11*	0.035 *2*	(6243.714)	3⁻,4⁻	1401.77	
4846.87 *7*	0.062 *4*	(6243.714)	3⁻,4⁻	1396.77	
4851.71 *11*	0.036 *2*	(6243.714)	3⁻,4⁻	1391.93	
4855.89 *5*	0.311 *17*	(6243.714)	3⁻,4⁻	1387.75	other: Eγ=4855.88 *20* Iγ=0.24 *3* ('Budapest data', 2007ChZX).
4863.49 *19*	0.023 *2*	(6243.714)	3⁻,4⁻	1380.15	other: Eγ=4863.6 *6*, Iγ=0.034 *16* ('Budapest data', 2007ChZX).
4866.83 *6*	0.180 *10*	(6243.714)	3⁻,4⁻	1376.81	other: Eγ=4867.38 *25* Iγ=0.134 *21* ('Budapest data', 2007ChZX).
4872.2 *10*	0.003 *1*	(6243.714)	3⁻,4⁻	1371.4	
4876.33 *16*	0.024 *2*	(6243.714)	3⁻,4⁻	1367.31	
4880.91 *11*	0.029 *2*	(6243.714)	3⁻,4⁻	1362.73	
4888.62 *5*	0.092 *5*	(6243.714)	3⁻,4⁻	1355.02	other: Eγ=4888.4 *4*, Iγ=0.101 *16* ('Budapest data', 2007ChZX).
4893.71 *5*	0.092 *5*	(6243.714)	3⁻,4⁻	1349.93	other: Eγ=4893.5 *4*, Iγ=0.097 *15* ('Budapest data', 2007ChZX).
4900.58 *8*	0.047 *3*	(6243.714)	3⁻,4⁻	1343.06	

$^{166}_{67}Ho_{99}$-24

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

γ(^{166}Ho) (continued)

E_γ †	I_γ †d	E_i(level)	J_i^π	E_f	J_f^π	Comments
4904.89 *6*	0.086 *5*	(6243.714)	3⁻,4⁻	1338.75		other: Eγ=4903.4 *3*, Iγ=0.150 *18* ('Budapest data', 2007ChZX); data suggest line May Be complex.
4911.5 *6*	0.005 *1*	(6243.714)	3⁻,4⁻	1332.1		
4916.09 *21*	0.015 *1*	(6243.714)	3⁻,4⁻	1327.55		other: Eγ=4916.7 *5*, Iγ=0.060 *18* ('Budapest data', 2007ChZX).
4921.59 *25*	0.014 *1*	(6243.714)	3⁻,4⁻	1322.0		
4925.6 *3*	0.011 *1*	(6243.714)	3⁻,4⁻	1318.0		
4933.10 *15*	0.019 *1*	(6243.714)	3⁻,4⁻	1310.54		
4938.83 *13*	0.031 *2*	(6243.714)	3⁻,4⁻	1304.81		
4942.56 *9*	0.124 *8*	(6243.714)	3⁻,4⁻	1301.07		
4945.18 *7*	0.405 *22*	(6243.714)	3⁻,4⁻	1298.45		
4949.84 *7*	0.068 *4*	(6243.714)	3⁻,4⁻	1293.79		
4954.34 *11*	0.030 *2*	(6243.714)	3⁻,4⁻	1289.29		
4972.19 *19*	0.014 *1*	(6243.714)	3⁻,4⁻	1271.44		
4979.79 *4*	0.097 *5*	(6243.714)	3⁻,4⁻	1263.84		
4986.76 *12*	0.028 *2*	(6243.714)	3⁻,4⁻	1256.87		
4990.94 *14*	0.026 *2*	(6243.714)	3⁻,4⁻	1252.69		
4995.44 *10*	0.043 *3*	(6243.714)	3⁻,4⁻	1248.19		other: Eγ=4995.1 *7*, Iγ=0.027 *16* ('Budapest data', 2007ChZX).
4999.39 *7*	0.087 *5*	(6243.714)	3⁻,4⁻	1244.24		other: Eγ=5000.7 *5*, Iγ=0.108 *21* ('Budapest data', 2007ChZX).
5002.93 *6*	0.089 *5*	(6243.714)	3⁻,4⁻	1240.70		
5008.77 *12*	0.024 *2*	(6243.714)	3⁻,4⁻	1234.86		
5013.59 *4*	0.147 *8*	(6243.714)	3⁻,4⁻	1230.04		other: Eγ=5013.7 *4*, Iγ=0.134 *23* ('Budapest data', 2007ChZX).
5022.02 *13*	0.023 *2*	(6243.714)	3⁻,4⁻	1221.61		
5026.4 *3*	0.026 *4*	(6243.714)	3⁻,4⁻	1217.2		
5028.70 *23*	0.033 *4*	(6243.714)	3⁻,4⁻	1214.93		
5035.02 *9*	0.032 *2*	(6243.714)	3⁻,4⁻	1208.61		
5041.52 *14*	0.045 *4*	(6243.714)	3⁻,4⁻	1202.11		other: Eγ=5040.6 *7*, Iγ=0.048 *18* ('Budapest data', 2007ChZX).
5044.2 *13*	0.004 *2*	(6243.714)	3⁻,4⁻	1199.4		
5053.50 *4*	0.113 *6*	(6243.714)	3⁻,4⁻	1190.13		other: Eγ=5053.4 *4*, Iγ=0.132 *24* ('Budapest data', 2007ChZX).
5068.7 *5*	0.004 *1*	(6243.714)	3⁻,4⁻	1174.9		
5082.28 *3*	0.332 *18*	(6243.714)	3⁻,4⁻	1161.35	4	other: Eγ=5081.3 *4*, Iγ=0.22 *4* ('Budapest data', 2007ChZX).
5088.79 *4*	0.074 *4*	(6243.714)	3⁻,4⁻	1154.84		
5096.9 *4*	0.007 *1*	(6243.714)	3⁻,4⁻	1146.7		
5102.3 *3*	0.014 *1*	(6243.714)	3⁻,4⁻	1141.3		
5105.84 *12*	0.061 *4*	(6243.714)	3⁻,4⁻	1137.79		
5108.66 *11*	0.62 *4*	(6243.714)	3⁻,4⁻	1134.97		strong transition, but not reported In 'Budapest data' In 2007ChZX.
5112.6 *3*	0.011 *1*	(6243.714)	3⁻,4⁻	1131.0		
5122.22 *7*	0.040 *2*	(6243.714)	3⁻,4⁻	1121.41		other: Eγ=5123.8 *5*, Iγ=0.055 *15* ('Budapest data', 2007ChZX).
5128.96 *3*	0.265 *14*	(6243.714)	3⁻,4⁻	1114.67	3,(5)	other: Eγ=5129.00 *25*, Iγ=0.28 *3* ('Budapest data', 2007ChZX).
5146.18 *5*	0.066 *4*	(6243.714)	3⁻,4⁻	1097.45	6⁺	other: Eγ=5146.2 *3*, Iγ=0.093 *16* ('Budapest data', 2007ChZX).
5155.71 *4*	0.088 *5*	(6243.714)	3⁻,4⁻	1087.91	3	other: Eγ=5154.9 *4*, Iγ=0.090 *14* ('Budapest data', 2007ChZX).
5181.84 *2*	0.429 *23*	(6243.714)	3⁻,4⁻	1061.788	2,4	other: Eγ=5181.40 *18* Iγ=0.41 *3* ('Budapest data', 2007ChZX).
5188.76 *22*	0.011 *1*	(6243.714)	3⁻,4⁻	1054.87		other: Eγ=5188.1 *6*, Iγ=0.027 *10* ('Budapest data', 2007ChZX).
5213.25 *3*	0.403 *22*	(6243.714)	3⁻,4⁻	1030.38	4⁺	other: Eγ=5212.79 *20* Iγ=0.42 *4* ('Budapest data', 2007ChZX).
5217.5 *5*	0.010 *2*	(6243.714)	3⁻,4⁻	1026.1		

$^{166}_{67}Ho_{99}$-25

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

$\gamma(^{166}Ho)$ (continued)

E_γ [†]	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π	Comments
5220.2 *23*	0.002 *2*	(6243.714)	3$^-$,4$^-$	1023.4		
5224.4 *5*	0.010 *2*	(6243.714)	3$^-$,4$^-$	1019.2		
5227.40 *15*	0.033 *3*	(6243.714)	3$^-$,4$^-$	1016.23		
5232.95 *18*	0.014 *1*	(6243.714)	3$^-$,4$^-$	1010.68		
5238.79 *5*	0.064 *4*	(6243.714)	3$^-$,4$^-$	1004.84		other: Eγ=5239.0 *3*, Iγ=0.093 *14* ('Budapest data', 2007ChZX).
5258.45 *14*	0.017 *1*	(6243.714)	3$^-$,4$^-$	985.20	5$^+$	
5263.8 *10*	0.006 *2*	(6243.714)	3$^-$,4$^-$	979.8		
5266.4 *7*	0.008 *2*	(6243.714)	3$^-$,4$^-$	977.2		
5282.54 *6*	0.046 *3*	(6243.714)	3$^-$,4$^-$	961.08	3$^+$	
5292.5 *3*	0.009 *1*	(6243.714)	3$^-$,4$^-$	951.1		
5296.86[b] *10*	0.031 *2*	(6243.714)	3$^-$,4$^-$	945.86		
5318.3 *7*	0.003 *1*	(6243.714)	3$^-$,4$^-$	925.0	5$^+$	
5338.30[b] *2*	0.182 *10*	(6243.714)	3$^-$,4$^-$	905.544	2$^+$	other: Eγ=5338.5 *3*, Iγ=0.177 *24* ('Budapest data', 2007ChZX).
5352.50 *4*	0.078 *4*	(6243.714)	3$^-$,4$^-$	891.124	4$^+$	other: Eγ=5352.9 *4*, Iγ=0.068 *16* ('Budapest data', 2007ChZX).
5358.18 *17*	0.016 *1*	(6243.714)	3$^-$,4$^-$	885.345	(3$^+$)	
5362.96[b] *4*	0.106 *6*	(6243.714)	3$^-$,4$^-$	881.040	3$^-$	other: Eγ=5362.6 *4*, Iγ=0.118 *19* ('Budapest data', 2007ChZX).
5367.2 *3*	0.009 *1*	(6243.714)	3$^-$,4$^-$	876.37		
5373.43 *9*	0.025 *2*	(6243.714)	3$^-$,4$^-$	870.13	($^-$)	
5411.40 *5*	0.056 *3*	(6243.714)	3$^-$,4$^-$	832.197	5$^+$	
5418.99 *5*	0.049 *3*	(6243.714)	3$^-$,4$^-$	824.62	3$^-$	other: Eγ=5419.0 *5*, Iγ=0.052 *18* ('Budapest data', 2007ChZX).
5428.47 *2*	0.420 *23*	(6243.714)	3$^-$,4$^-$	815.139	3$^+$	other: Eγ=5428.21 *20*, Iγ=0.36 *4* ('Budapest data', 2007ChZX).
5436.90 *12*	0.020 *1*	(6243.714)	3$^-$,4$^-$	806.56	5$^+$	
5451.6 *4*	0.013 *2*	(6243.714)	3$^-$,4$^-$	792.789	4$^-$	
5454.3 *15*	0.003 *2*	(6243.714)	3$^-$,4$^-$	788.618	6$^-$	
5473.82 *4*	0.062 *3*	(6243.714)	3$^-$,4$^-$	769.78	5$^+$	other: Eγ=5473.4 *4*, Iγ=0.061 *16* ('Budapest data', 2007ChZX).
5484.71[b] *11*	0.022 *1*	(6243.714)	3$^-$,4$^-$	757.707	5$^-$	
5501.55 *8*	0.031 *2*	(6243.714)	3$^-$,4$^-$	742.02	4$^-$	
5507.09 *21*	0.011 *1*	(6243.714)	3$^-$,4$^-$	736.430	4$^+$	
5517.6 *8*	0.004 *1*	(6243.714)	3$^-$,4$^-$	725.68	2$^-$	
5524.21 *2*	0.257 *14*	(6243.714)	3$^-$,4$^-$	719.370	4$^+$	other: Eγ=5524.16 *24*, Iγ=0.31 *3* ('Budapest data', 2007ChZX).
5538.7 *6*	0.005 *1*	(6243.714)	3$^-$,4$^-$	704.962	3$^-$	
5550.21 *4*	0.065 *4*	(6243.714)	3$^-$,4$^-$	693.388	(2$^+$)	other: Eγ=5549.0 *5*, Iγ=0.082 *16* ('Budapest data', 2007ChZX).
5559.73 *16*	0.015 *1*	(6243.714)	3$^-$,4$^-$	683.805	3$^-$	
5575.50 *6*	0.046 *3*	(6243.714)	3$^-$,4$^-$	668.005	4$^-$	
5581.52 *10*	0.039 *2*	(6243.714)	3$^-$,4$^-$	662.169	3$^+$	
5585.28 *17*	0.035 *3*	(6243.714)	3$^-$,4$^-$	657.995	5$^-$	
5588.2 *3*	0.015 *2*	(6243.714)	3$^-$,4$^-$	654.818	5$^+$	
5605.27 *8*	0.050 *3*	(6243.714)	3$^-$,4$^-$	638.235	4$^-$	
5609.3 *11*	0.008 *1*	(6243.714)	3$^-$,4$^-$	634.314	5$^+$	
5614.8 *5*	0.005 *1*	(6243.714)	3$^-$,4$^-$	628.418	2$^-$	
5638.7 *6*	0.005 *1*	(6243.714)	3$^-$,4$^-$	605.047	2$^+$	
5645.39 *5*	0.073 *4*	(6243.714)	3$^-$,4$^-$	598.448	4$^+$	

$^{166}_{67}Ho_{99}$-26

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

$\gamma(^{166}Ho)$ (continued)

E_γ †	I_γ †d	E_i(level)	J_i^π	E_f	J_f^π	Comments
5651.04 *4*	0.101 *6*	(6243.714)	3$^-$,4$^-$	592.501	3$^+$	
5680.50 *21*	0.040 *2*	(6243.714)	3$^-$,4$^-$	562.890	4$^-$	
5685.01 *4*	0.191 *10*	(6243.714)	3$^-$,4$^-$	558.571	4$^+$	other: Eγ=5684.5 *3*, Iγ=0.156 *21* ('Budapest data', 2007ChZX).
5695.47 *10*	0.043 *3*	(6243.714)	3$^-$,4$^-$	547.934	4$^+$	other: Eγ=5697.3 *6*, Iγ=0.061 *24* ('Budapest data', 2007ChZX); possibly a 5695γ+5700γ doublet.
5699.89 *15*	0.033 *2*	(6243.714)	3$^-$,4$^-$	543.672	2$^-$	
5721.62 *7*	0.038 *2*	(6243.714)	3$^-$,4$^-$	521.982	3$^+$	other: Eγ=5721.3 *3*, Iγ=0.047 *10* ('Budapest data', 2007ChZX).
5761.71 *3*	0.223 *12*	(6243.714)	3$^-$,4$^-$	481.846	3$^+$	other: Eγ=5761.9 *3*, Iγ=0.172 *21* ('Budapest data', 2007ChZX).
5767.92 *4*	0.124 *7*	(6243.714)	3$^-$,4$^-$	475.680	3$^-$	other: Eγ=5767.5 *8*, Iγ=0.060 *13* ('Budapest data', 2007ChZX).
5772.78 *4*	0.144 *8*	(6243.714)	3$^-$,4$^-$	470.841	5$^+$	other: Eγ=5772.8 *3*, Iγ=0.145 *19* ('Budapest data', 2007ChZX).
5779.02 *13*	0.029 *2*	(6243.714)	3$^-$,4$^-$	464.501	2$^+$	
5813.55 *2*	0.94 *5*	(6243.714)	3$^-$,4$^-$	430.031	2$^+$	other: Eγ=5813.43 *17*, Iγ=0.87 *6* ('Budapest data', 2007ChZX).
5823.5 *5*	0.006 *1*	(6243.714)	3$^-$,4$^-$	?		Eγ implies the existence of a level At 420.2, but No other evidence exists for such a level so it is not included In Adopted Levels.
5827.28 *15*	0.025 *2*	(6243.714)	3$^-$,4$^-$	416.086	2$^-$	
5871.54 *3*	0.372 *20*	(6243.714)	3$^-$,4$^-$	371.985	4$^+$	other: Eγ=5871.07 *21*, Iγ=0.36 *3* ('Budapest data', 2007ChZX).
5895.57 *24*	0.008 *1*	(6243.714)	3$^-$,4$^-$	348.257	5$^+$	
5914.0 *3*	0.006 *1*	(6243.714)	3$^-$,4$^-$	329.774	5$^-$	
5982.84 *3*	0.141 *8*	(6243.714)	3$^-$,4$^-$	260.6625	4$^+$	other: Eγ=5983.38 *23* Iγ=0.150 *18* ('Budapest data', 2007ChZX).
6052.66 *3*	0.374 *20*	(6243.714)	3$^-$,4$^-$	190.9021	3$^+$	other: Eγ=6052.31 *22* Iγ=0.30 *3* ('Budapest data', 2007ChZX).
6063.21 *16*	0.014 *1*	(6243.714)	3$^-$,4$^-$	180.467	4$^-$	
6072.46 *4*	0.063 *3*	(6243.714)	3$^-$,4$^-$	171.0738	3$^-$	other: Eγ=6072.7 *4*, Iγ=0.047 *13* ('Budapest data', 2007ChZX).
6189.33 *19*	0.006 *1*	(6243.714)	3$^-$,4$^-$	54.2391	2$^-$	

† Eγ data are from 1984Ke15 if E>4050, and E<4050 data are from 1967Mo05 (cryst.), except As noted. 1967Mo05 also report two separateGe(Li) detector measurements of Eγ and/or Iγ for a number of γ rays. Eγ data from 2007ChZX (Budapest data) are, In general, less precise and less extensive, but In reasonable agreement with the crystal data; Iγ data show poor to fair agreement with the crystal data. The evaluator gives the latter Eγ, Iγ data In comments; the possible existence of complex lines (due to poorer resolution or presence of impurities) makes it difficult to combine these data with the crystal data. The Eγ data of 1967Mo05 are from wavelength measurements and probably need to be increased by about 9 ppm to correspond to a scale on which Eγ(^{198}Au)=411.80205 *17*. Also, the uncertainties do not include an uncertainty of 0.3 ppm in the conversion of wavelength to energy (see, e.g., 2000He14).

‡ From conversion electron data (1967Mo05,1973PrZI), except As noted. The photon and electron intensity scales were normalized by 1967Mo05 assuming α(K)(116γ)=1.46, α(L1)(116)=0.18 (from M1 theory) and α(K)(137γ)=0.117 (from E1 theory); current theoretical values are 3.7% lower, 1.3% lower and 5.4% higher, respectively, but In view of the relatively much larger uncertainties In the experimental data, the evaluator has chosen not to renormalize those authors' values.

Questionable transition.

@ Line is complex (1967Mo05).

& From 1989Du03 (Si(Li)).

a From 1989Du03; a calibration uncertainty of 6% has been added In quadrature with the statistical uncertainty.

b Eγ deviates from least-squares prediction by At least 5σ.

$^{166}_{67}Ho_{99}$-27

γ(^{166}Ho) (continued)

[c] Placement from 2000Pr03.
[d] Intensity per 100 neutron captures.
[e] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[f] Multiply placed with undivided intensity.
[g] Multiply placed with intensity suitably divided.
[h] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

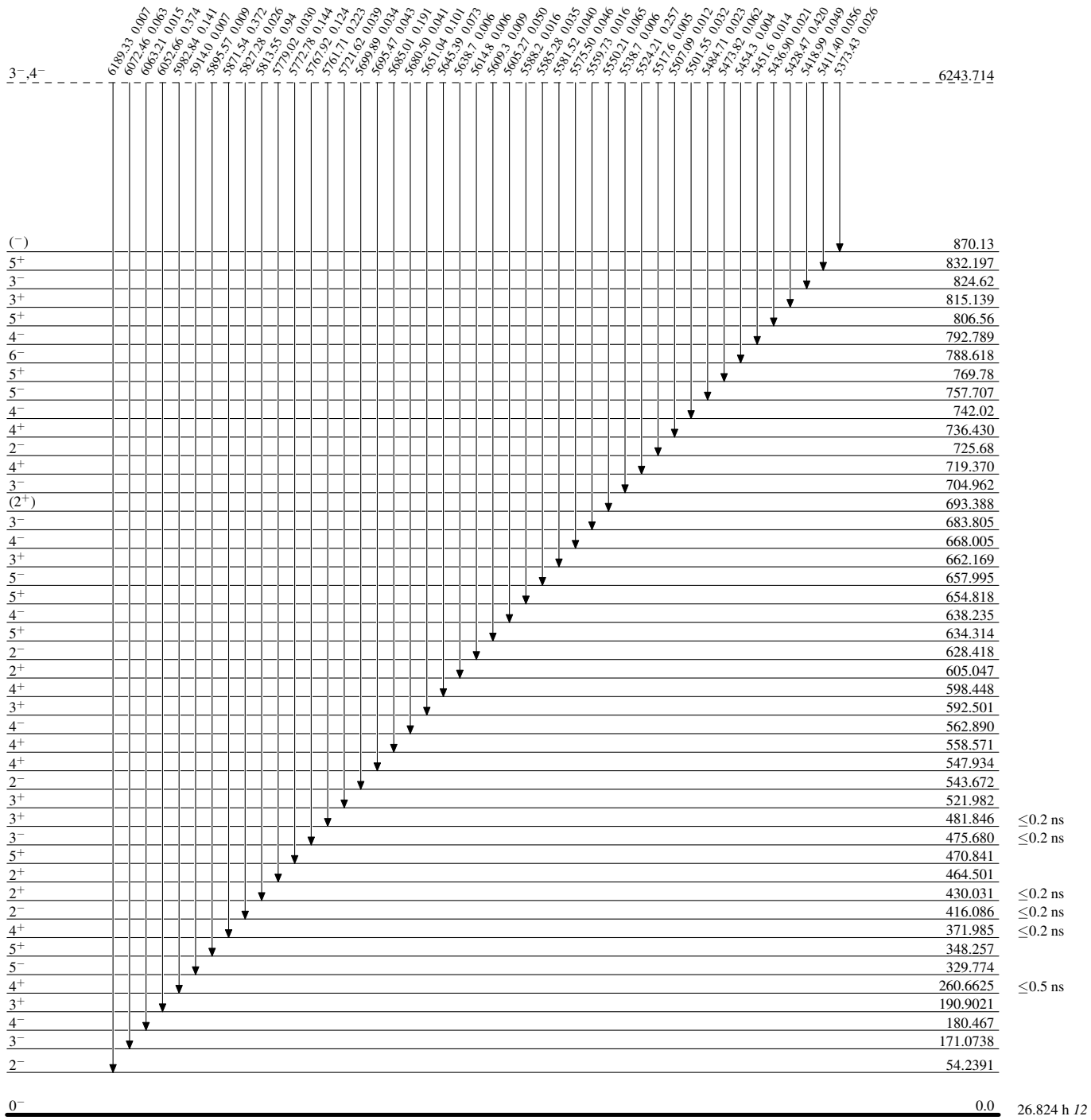
^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

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: Iγ per 100 thermal neutron captures In ^{165}Ho.



$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Legend

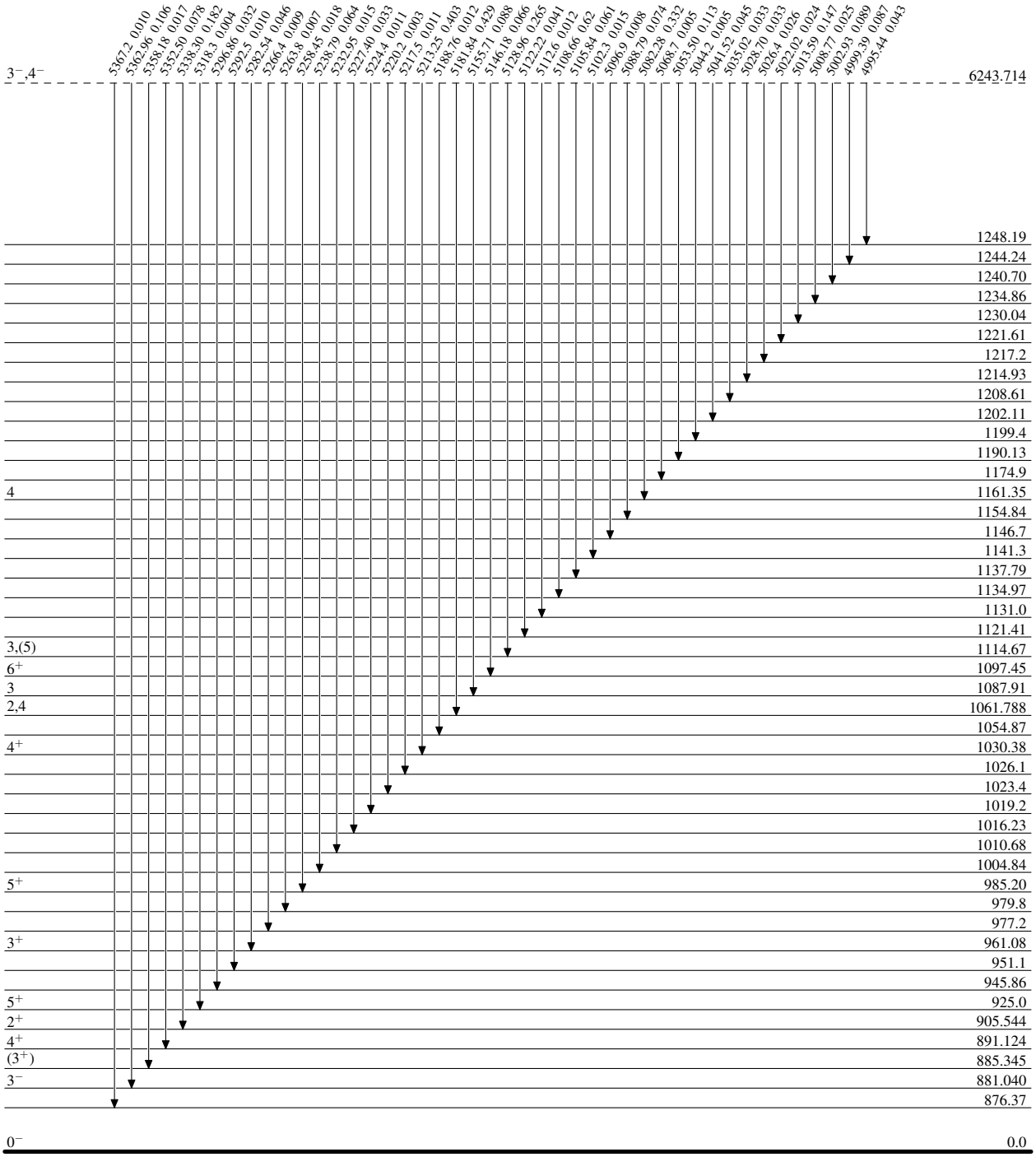
$I_\gamma < 2\% \times I_\gamma^{max}$

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

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

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.



$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Legend

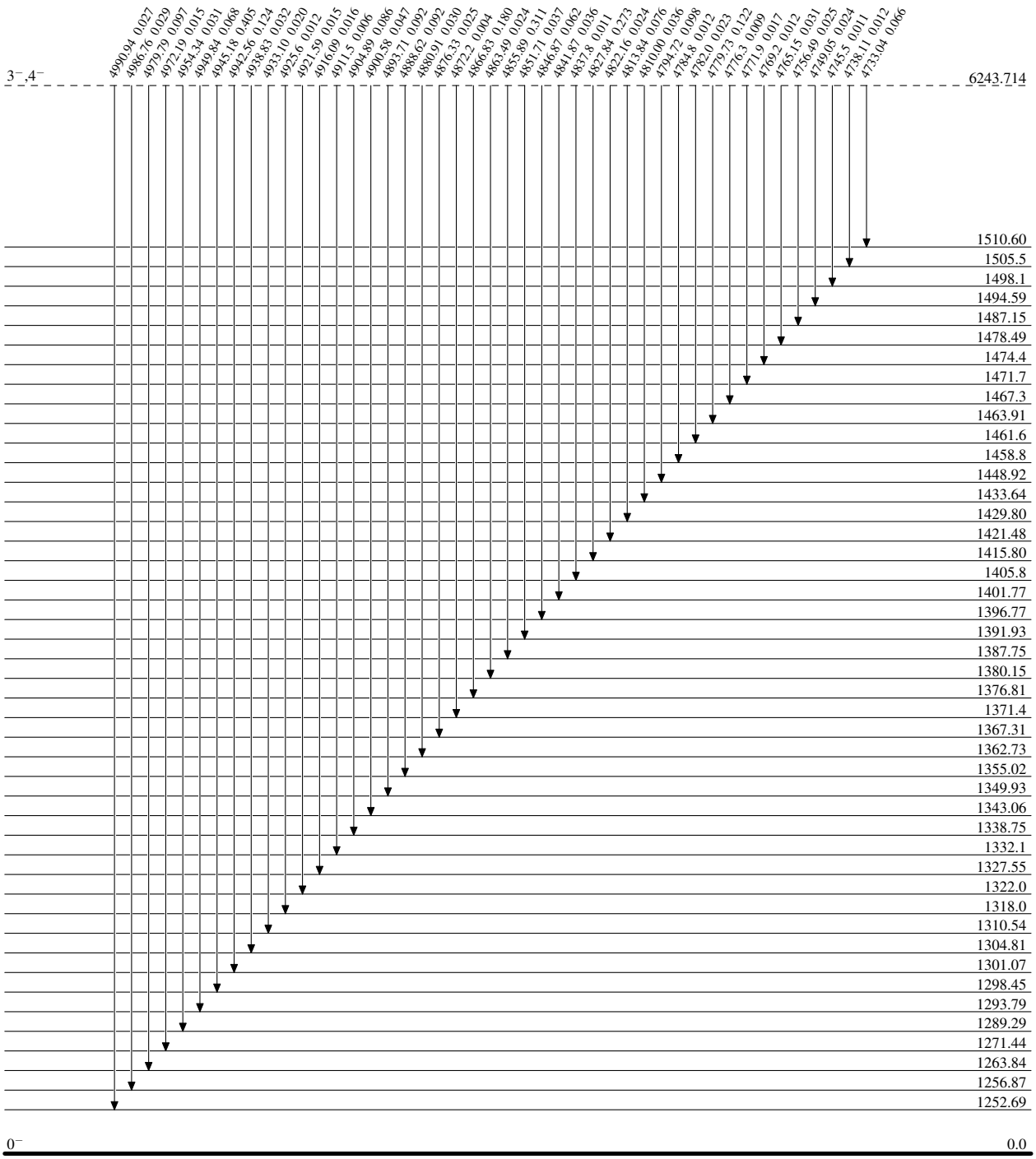
$I_\gamma < 2\% \times I_\gamma^{max}$

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

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

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.

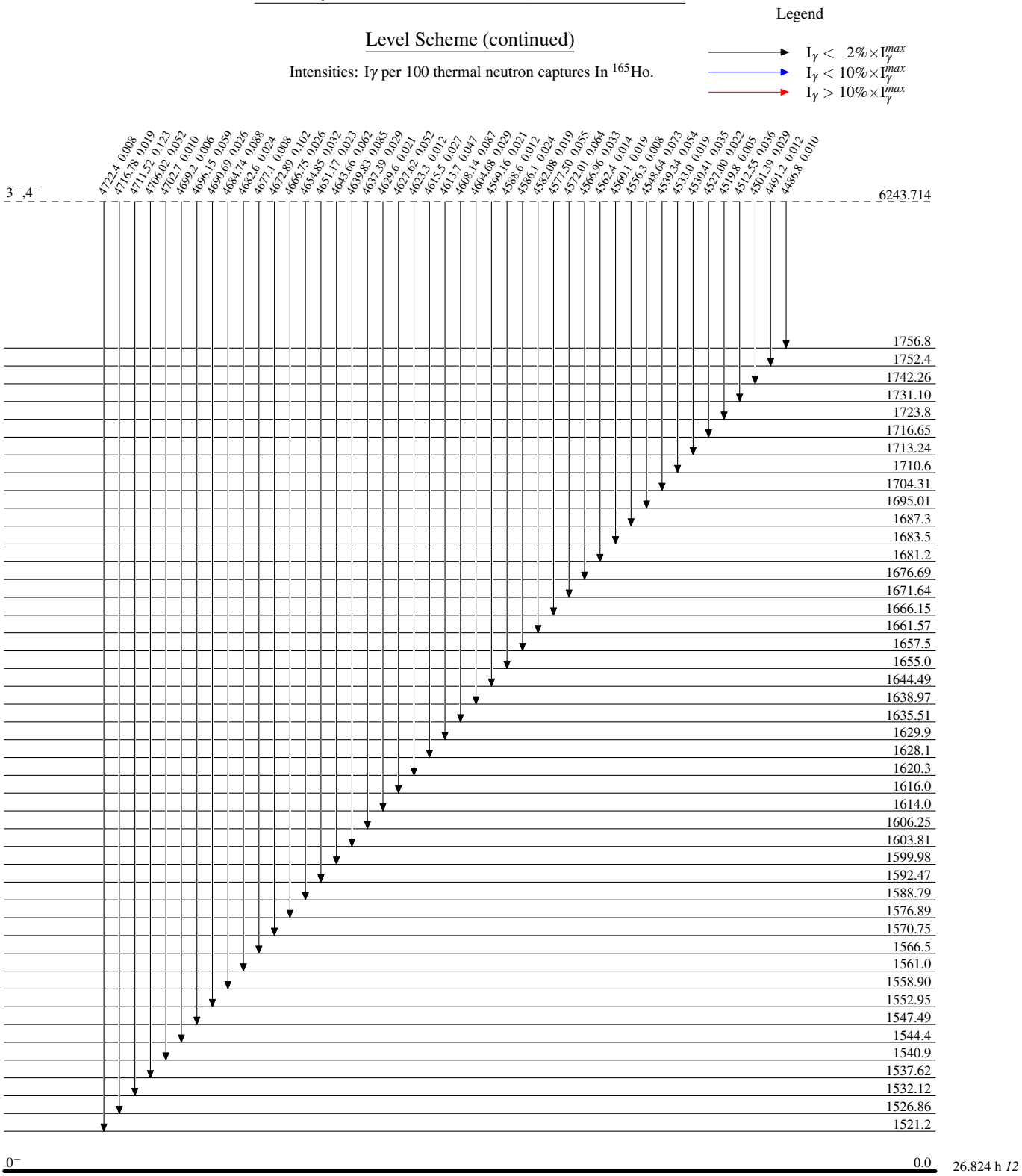


$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.



$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Legend

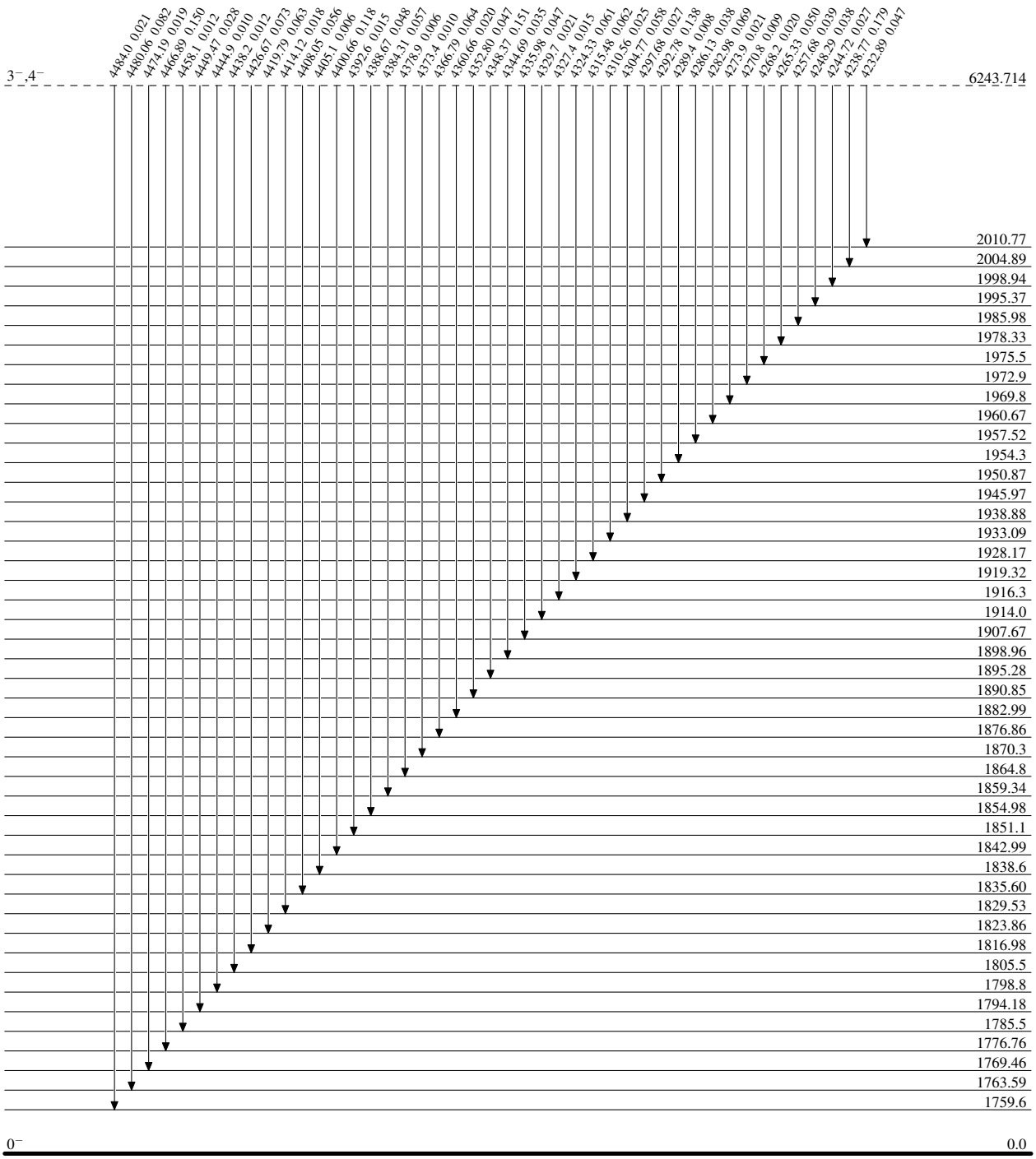
$I_\gamma < 2\% \times I_\gamma^{max}$

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

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

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.



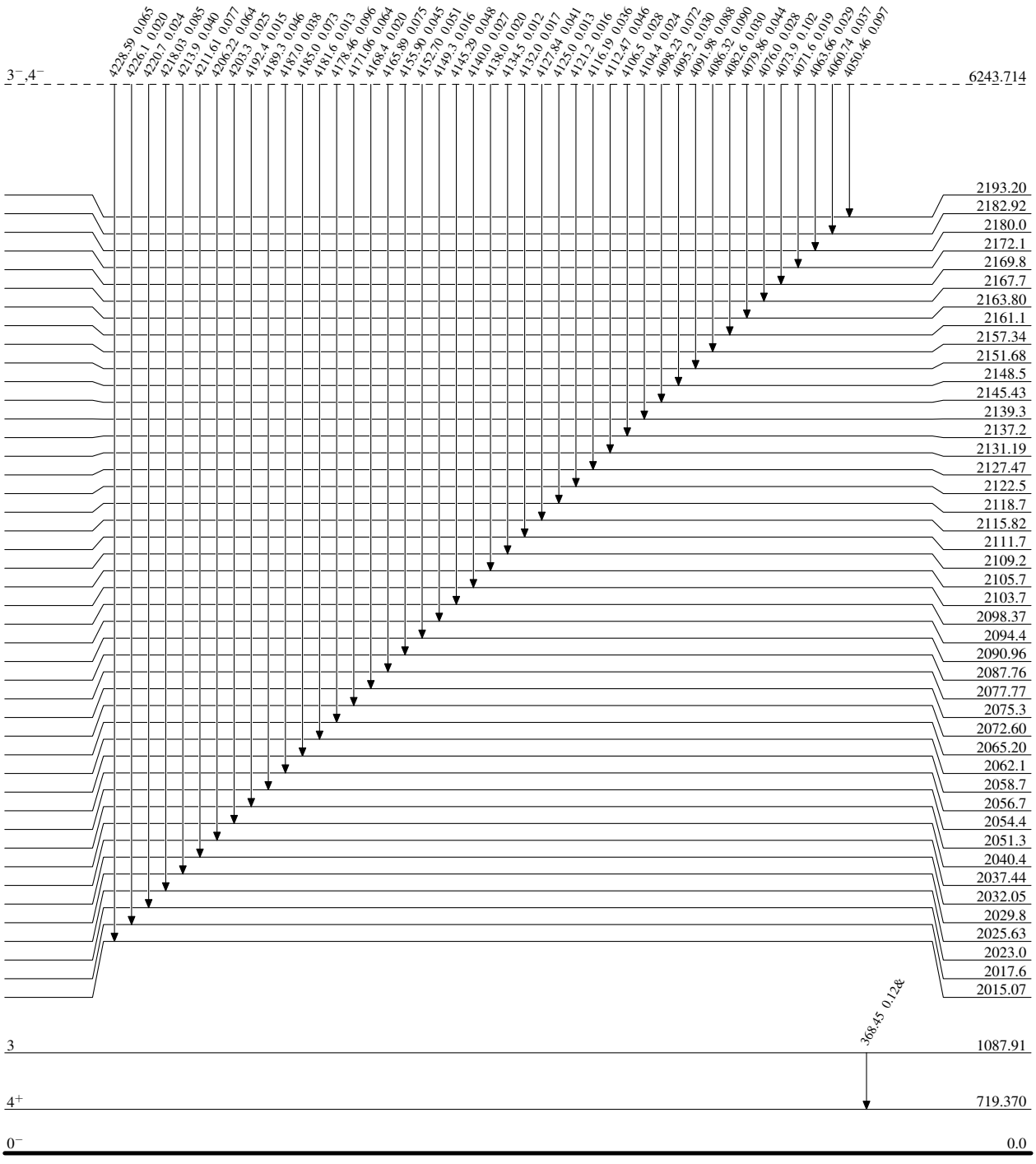
$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.
& Multiply placed: undivided intensity given

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



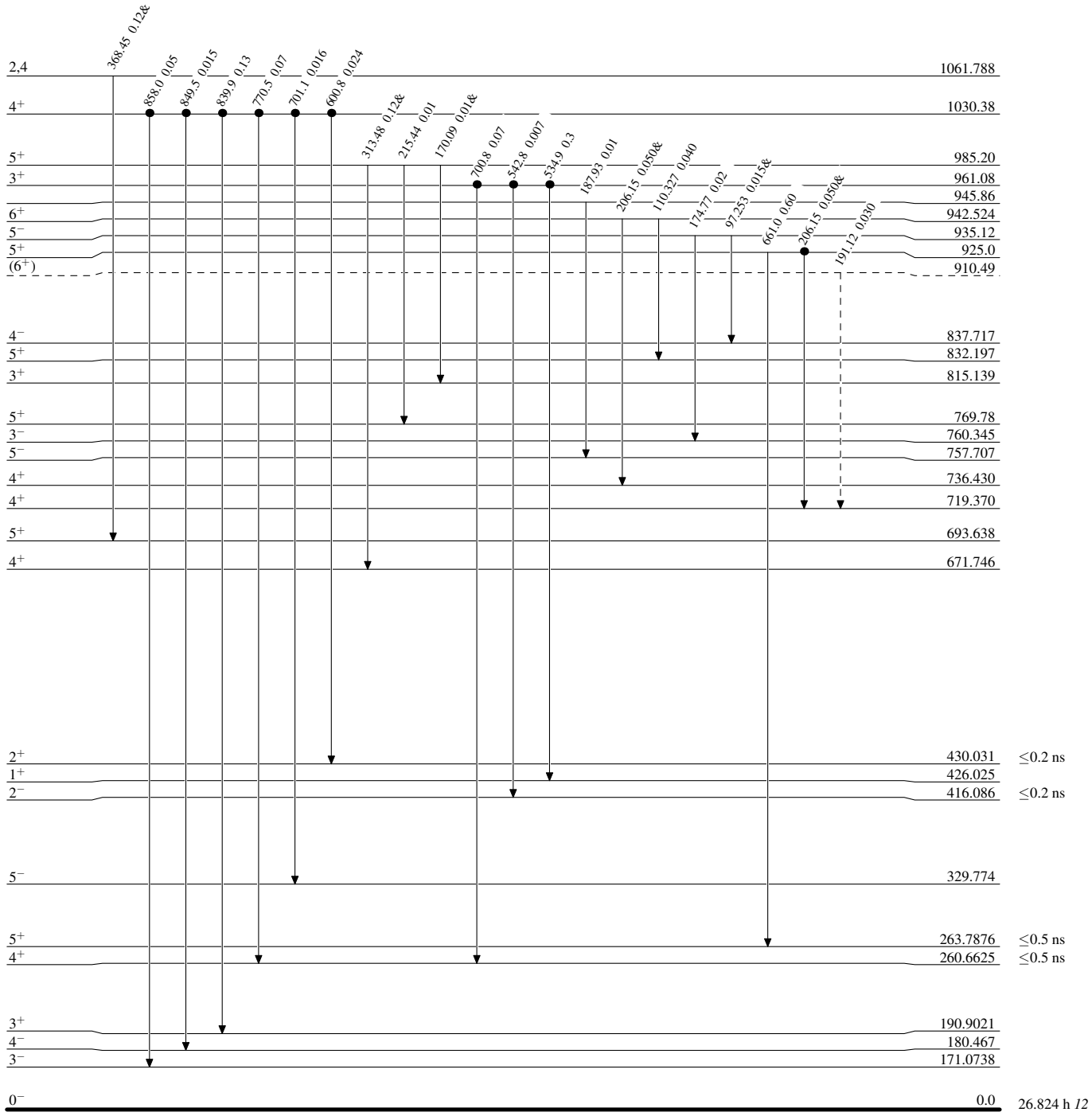
$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.
& Multiply placed: undivided intensity given

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

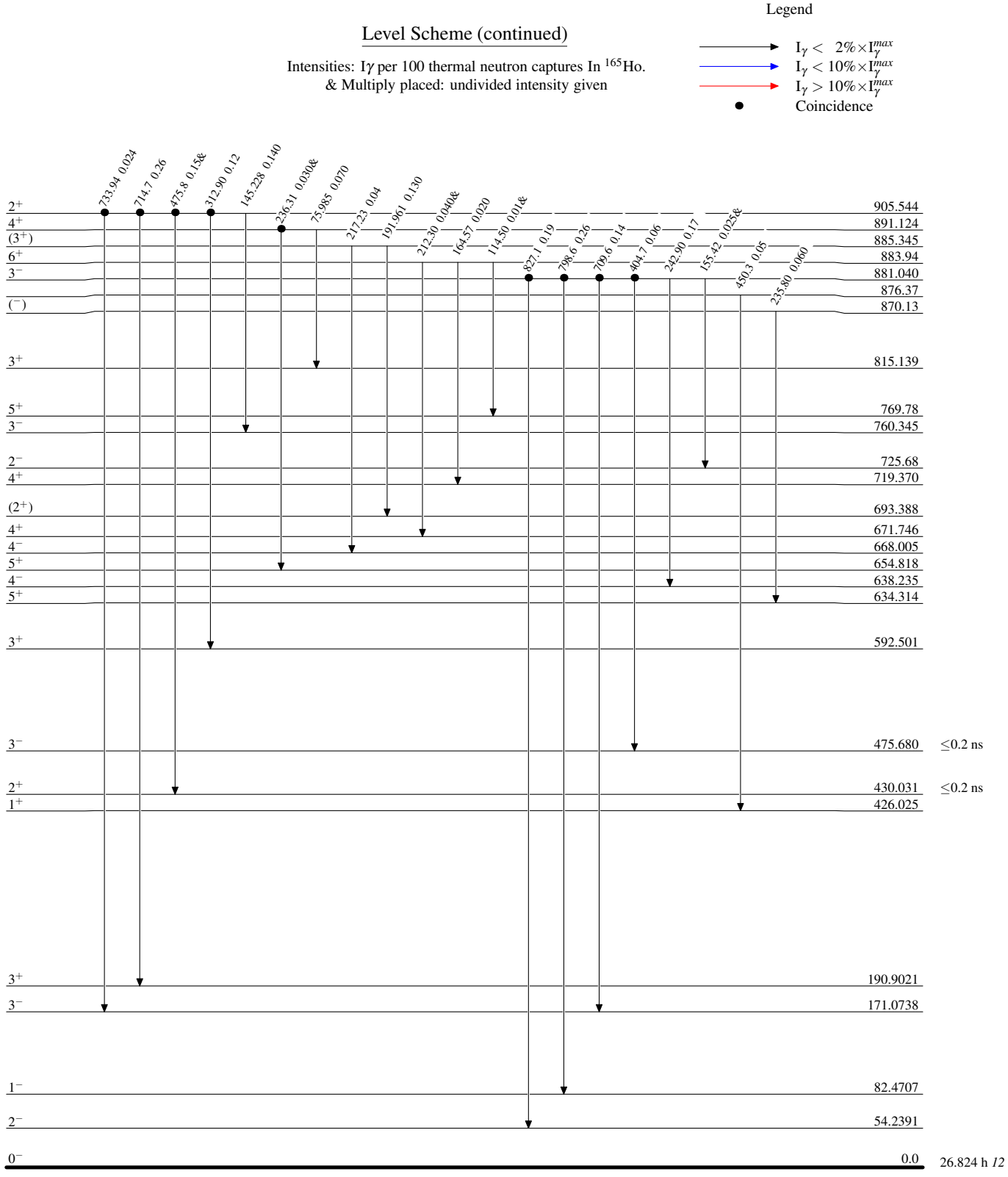


$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.
& Multiply placed: undivided intensity given



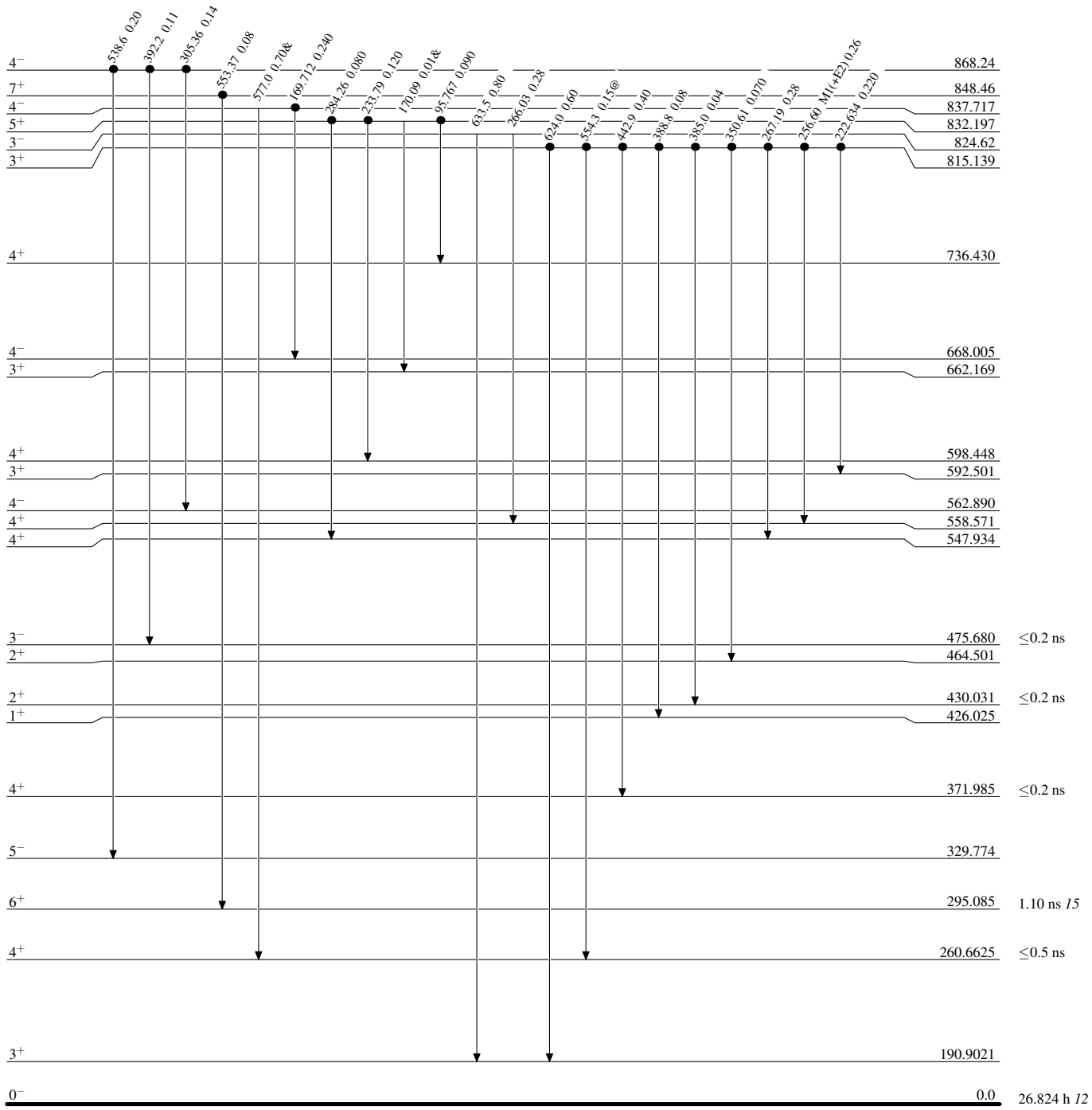
$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

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

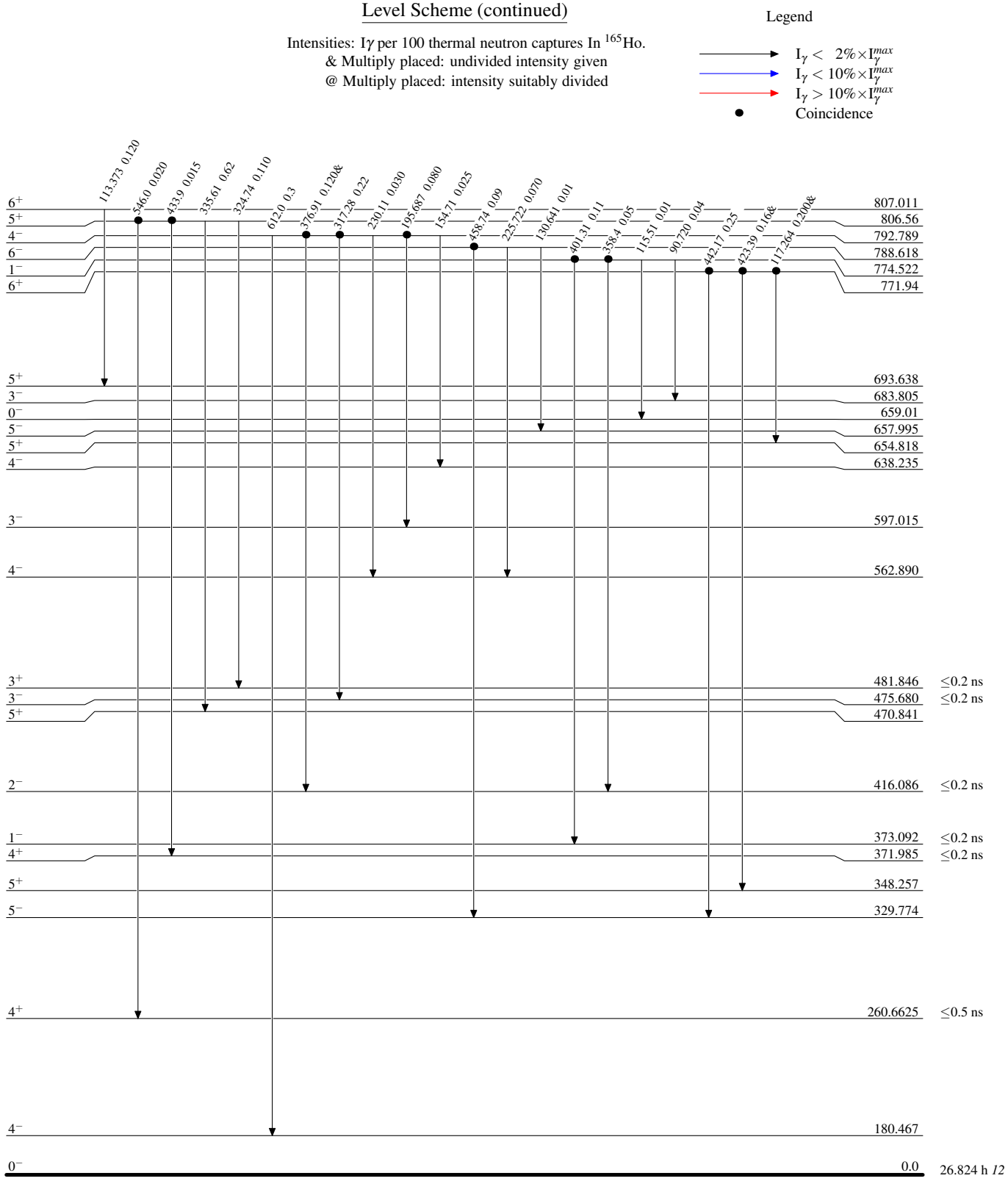


$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

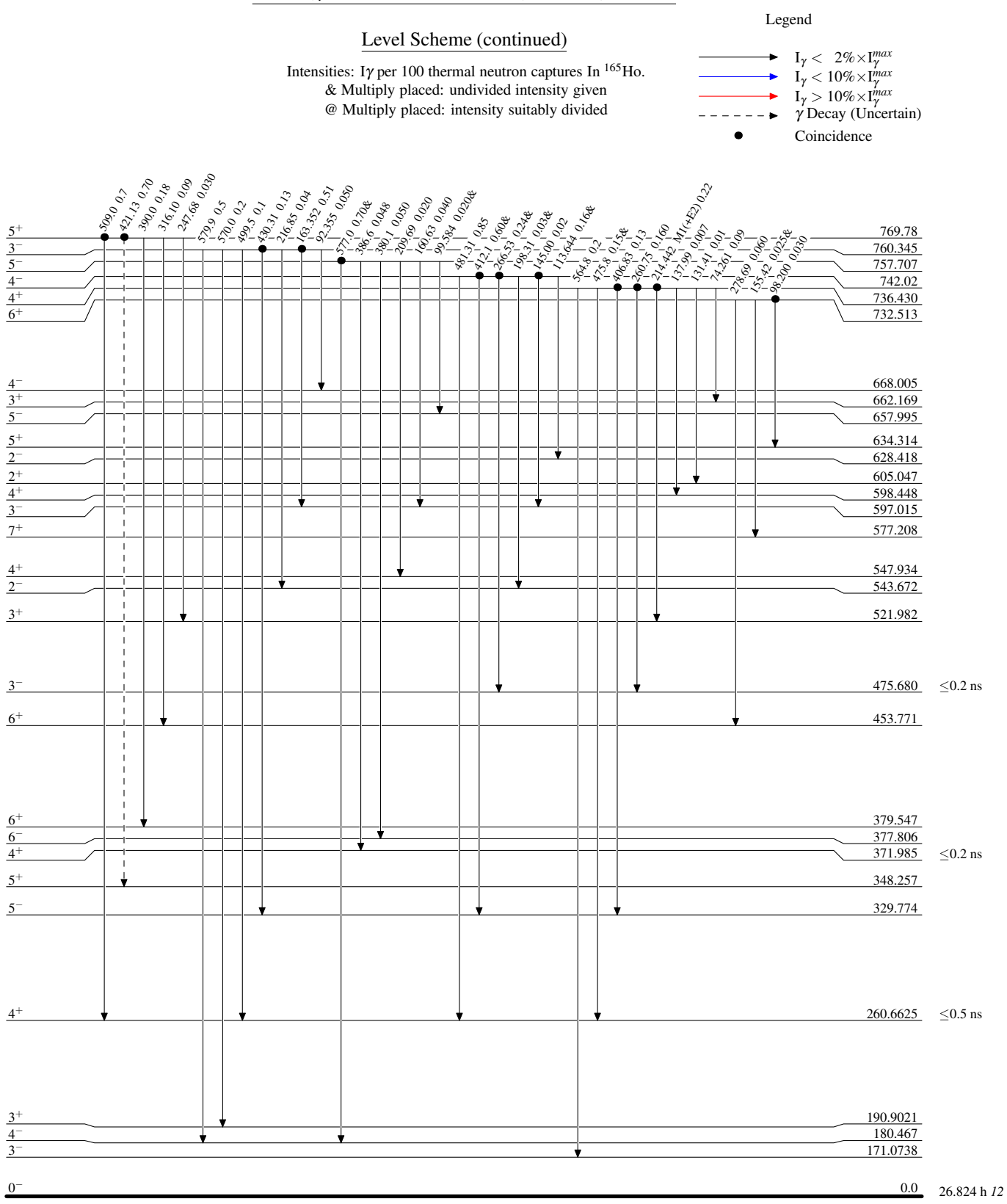


$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

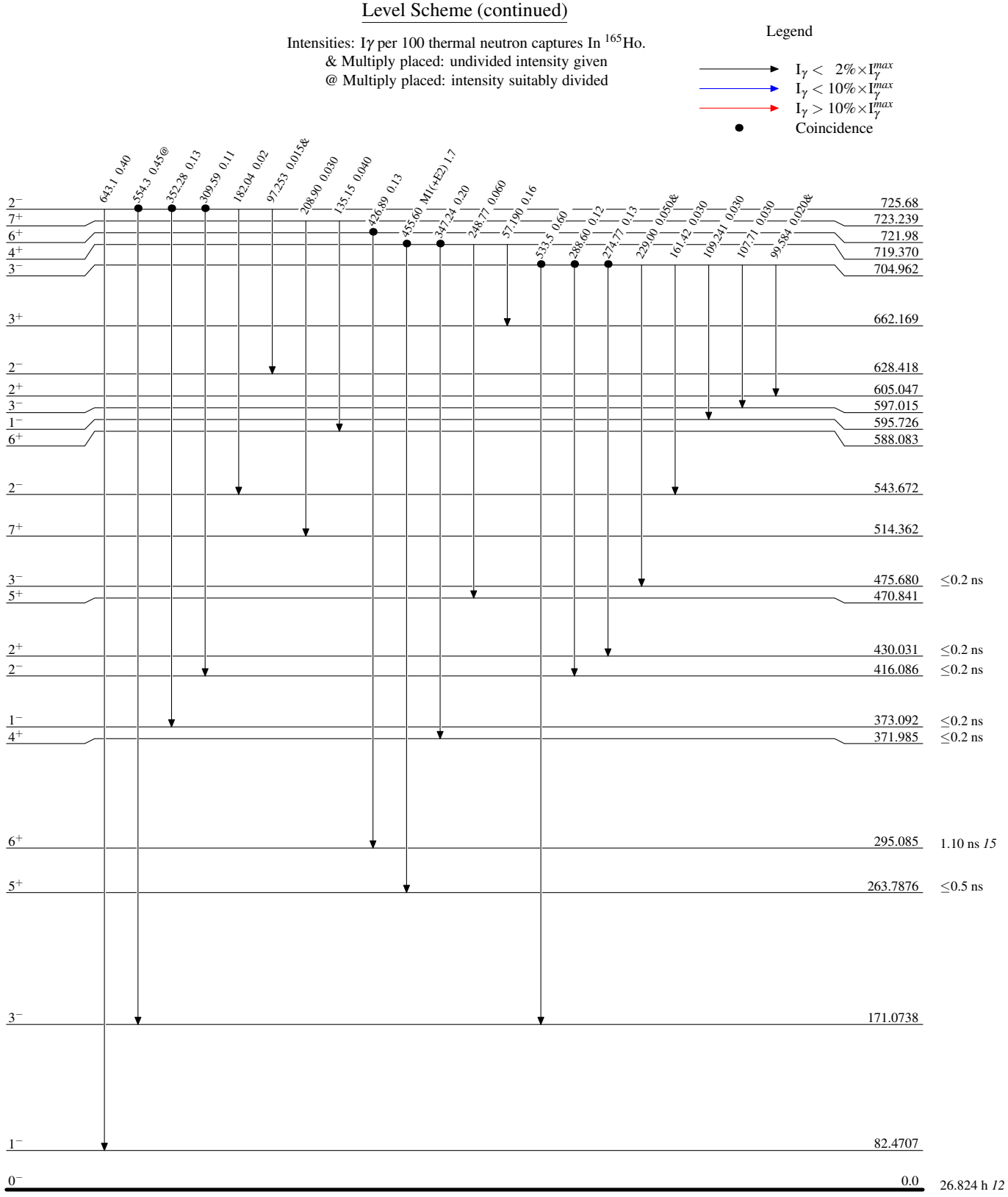


$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

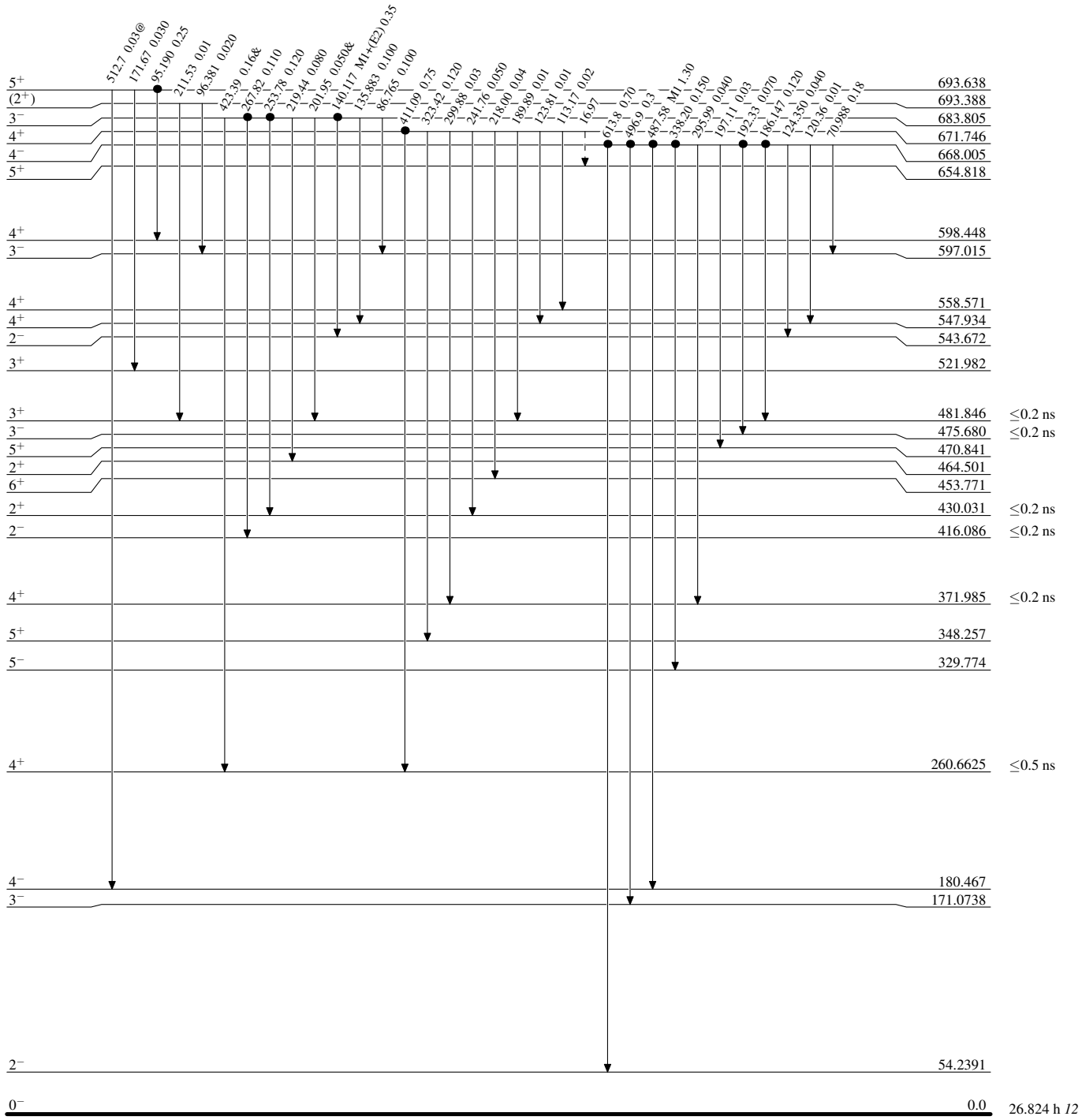


^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

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



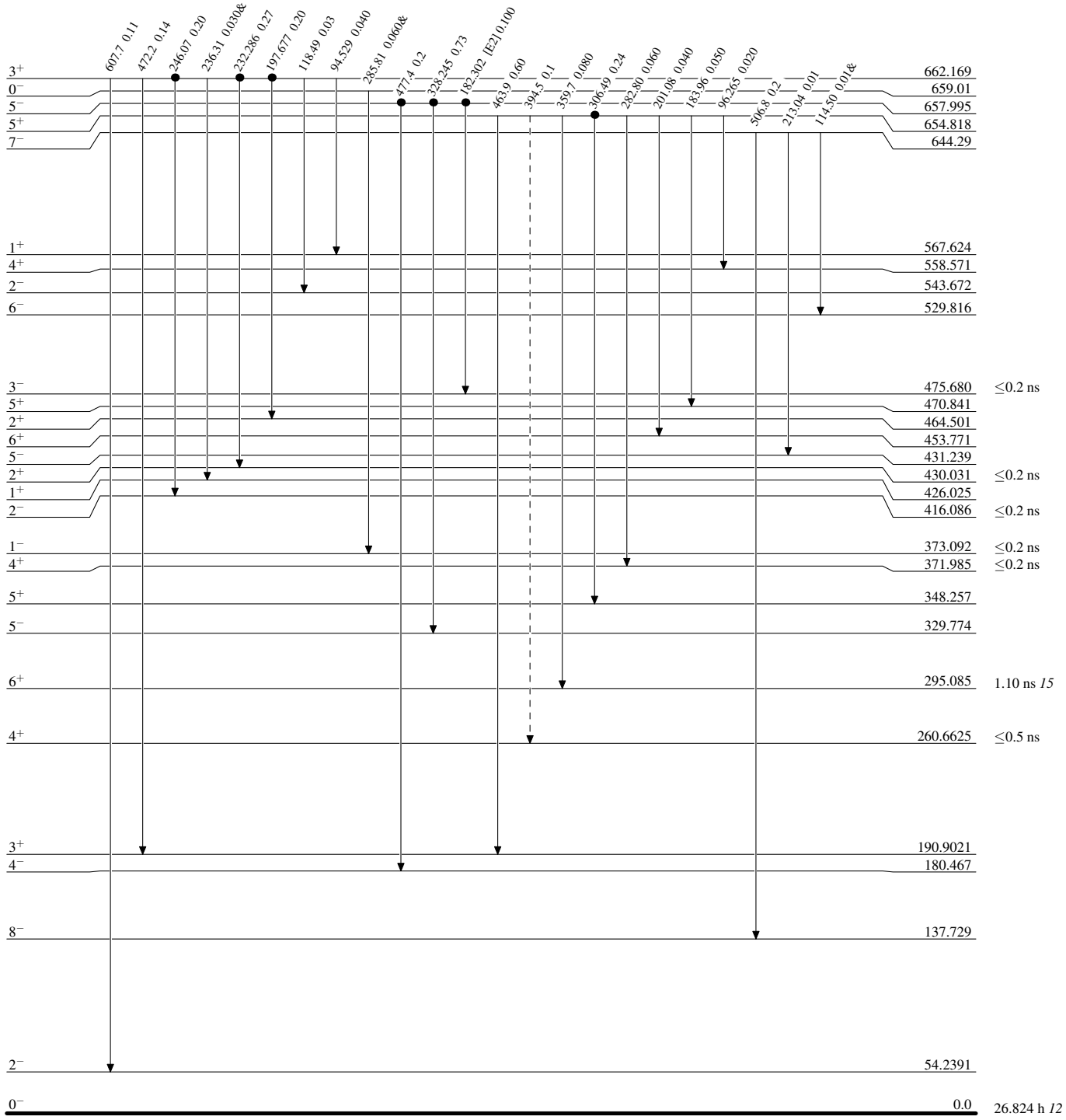
$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

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

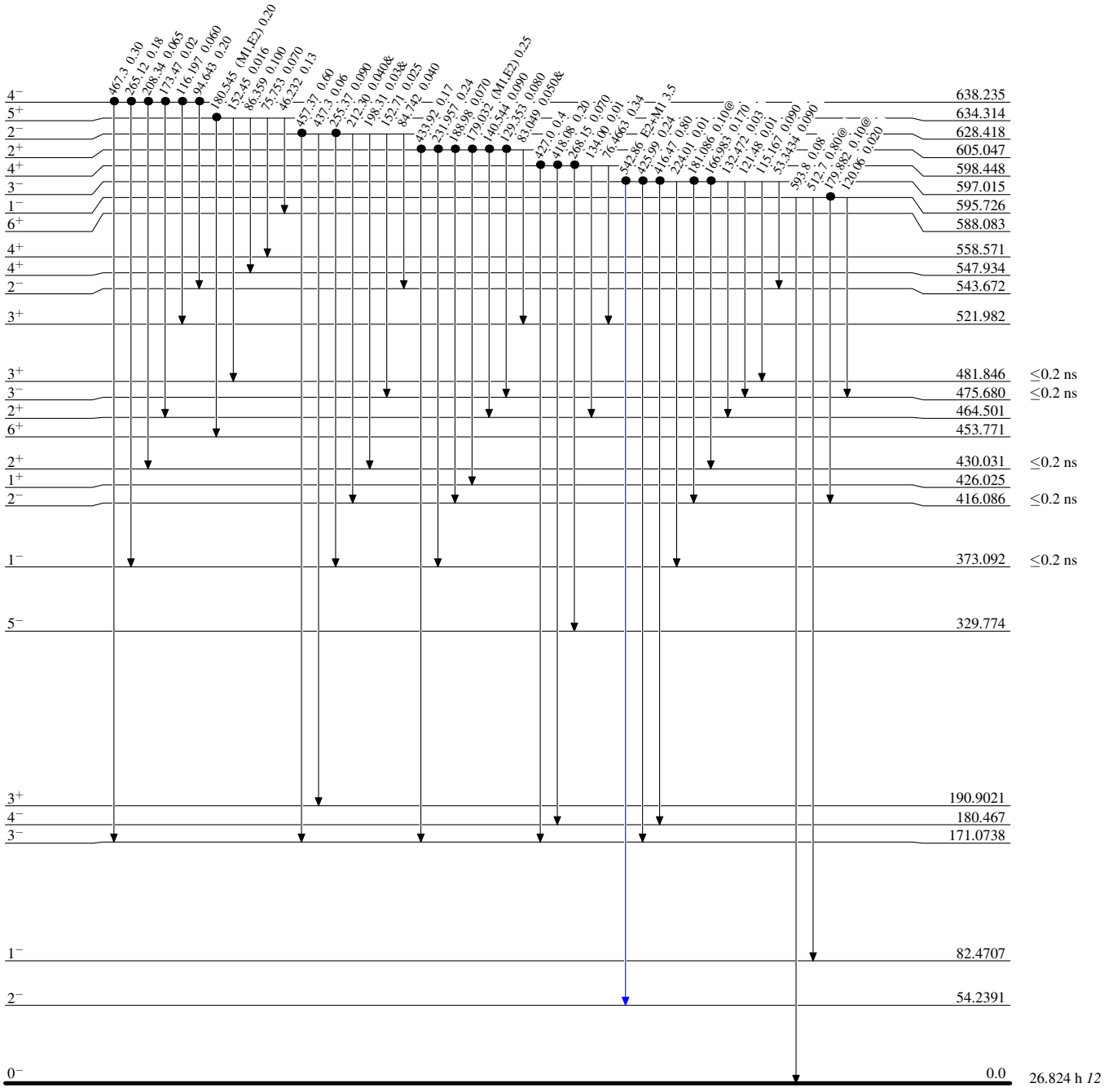


^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

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



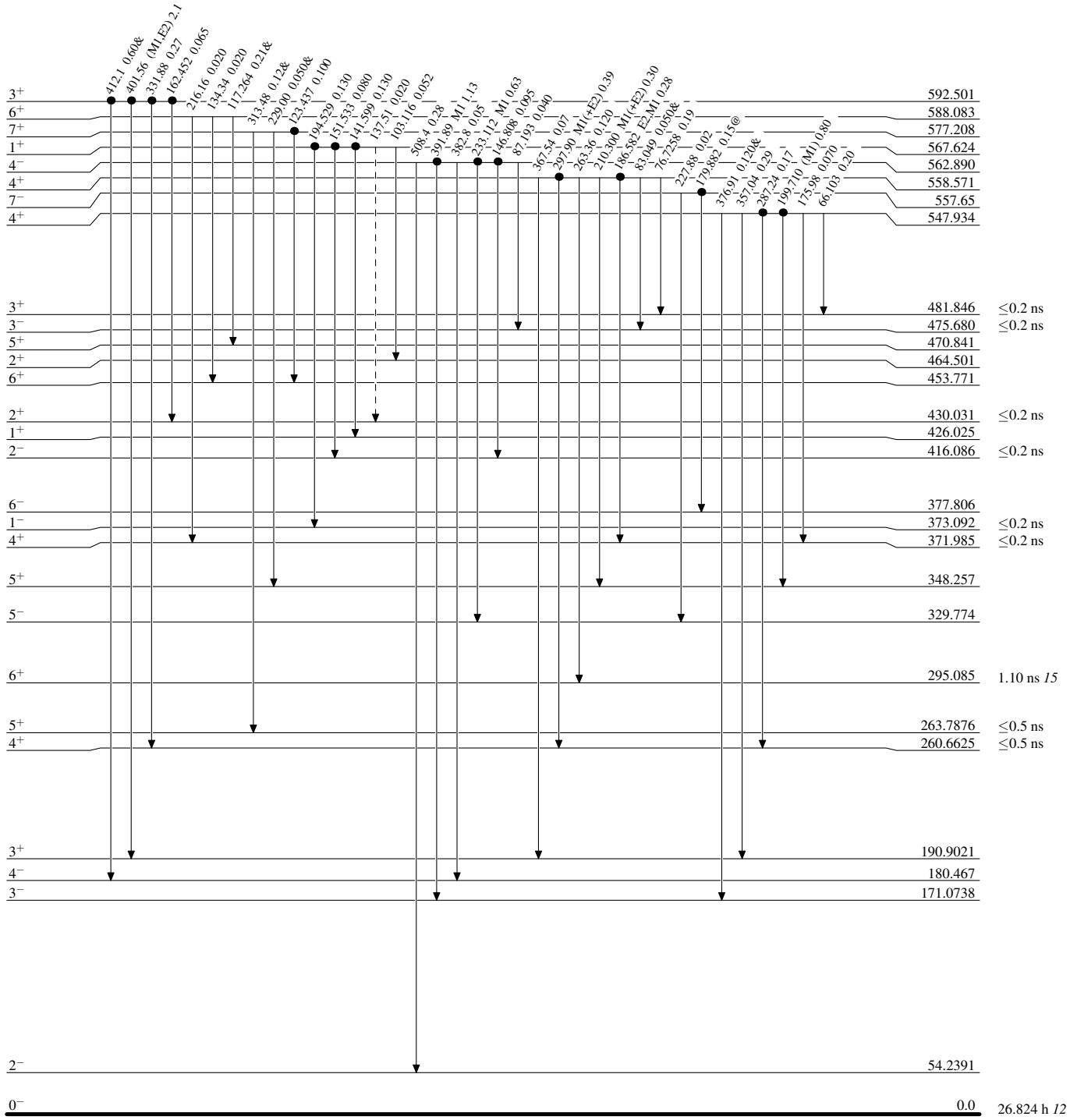
$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

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



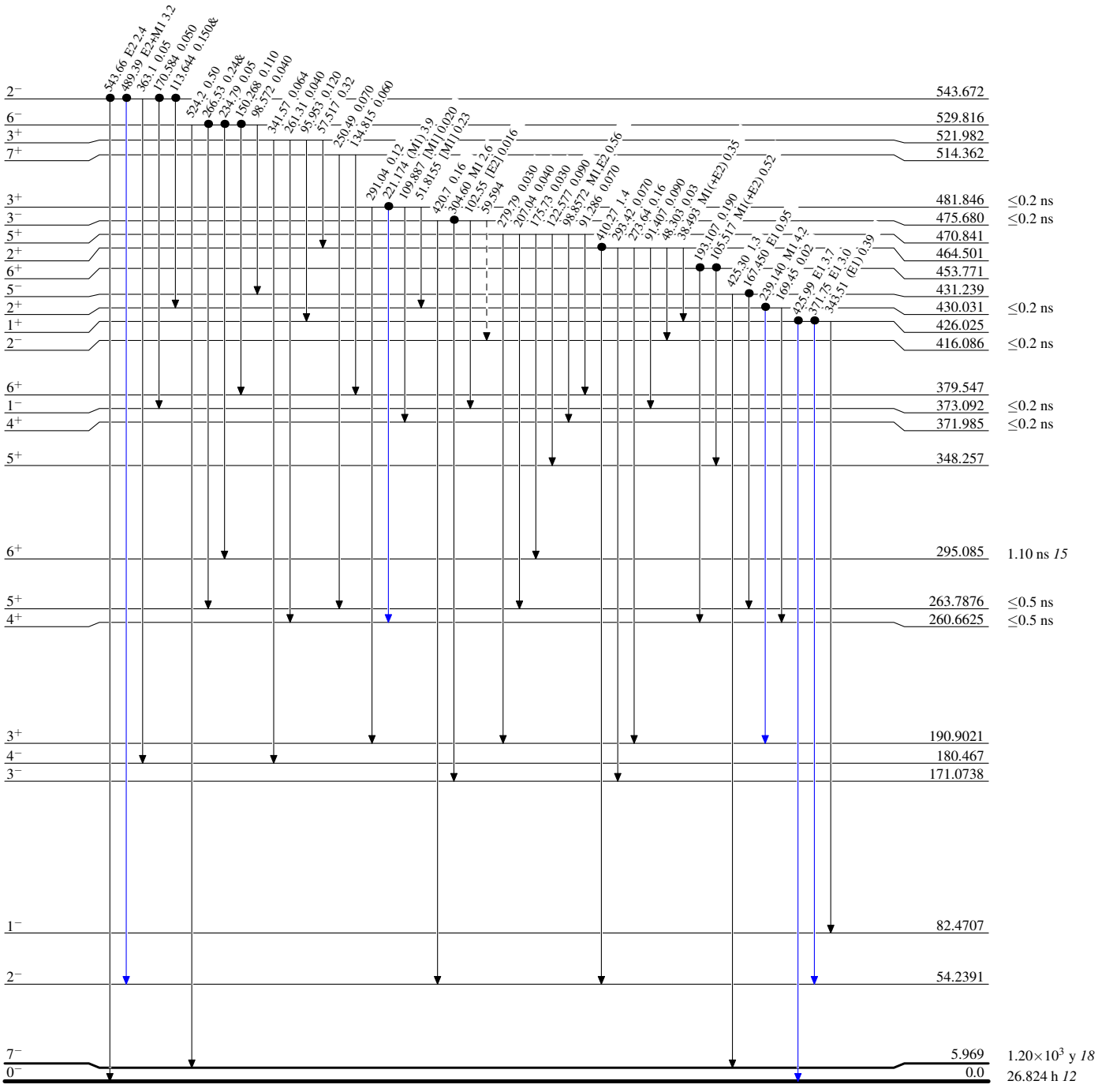
$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

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

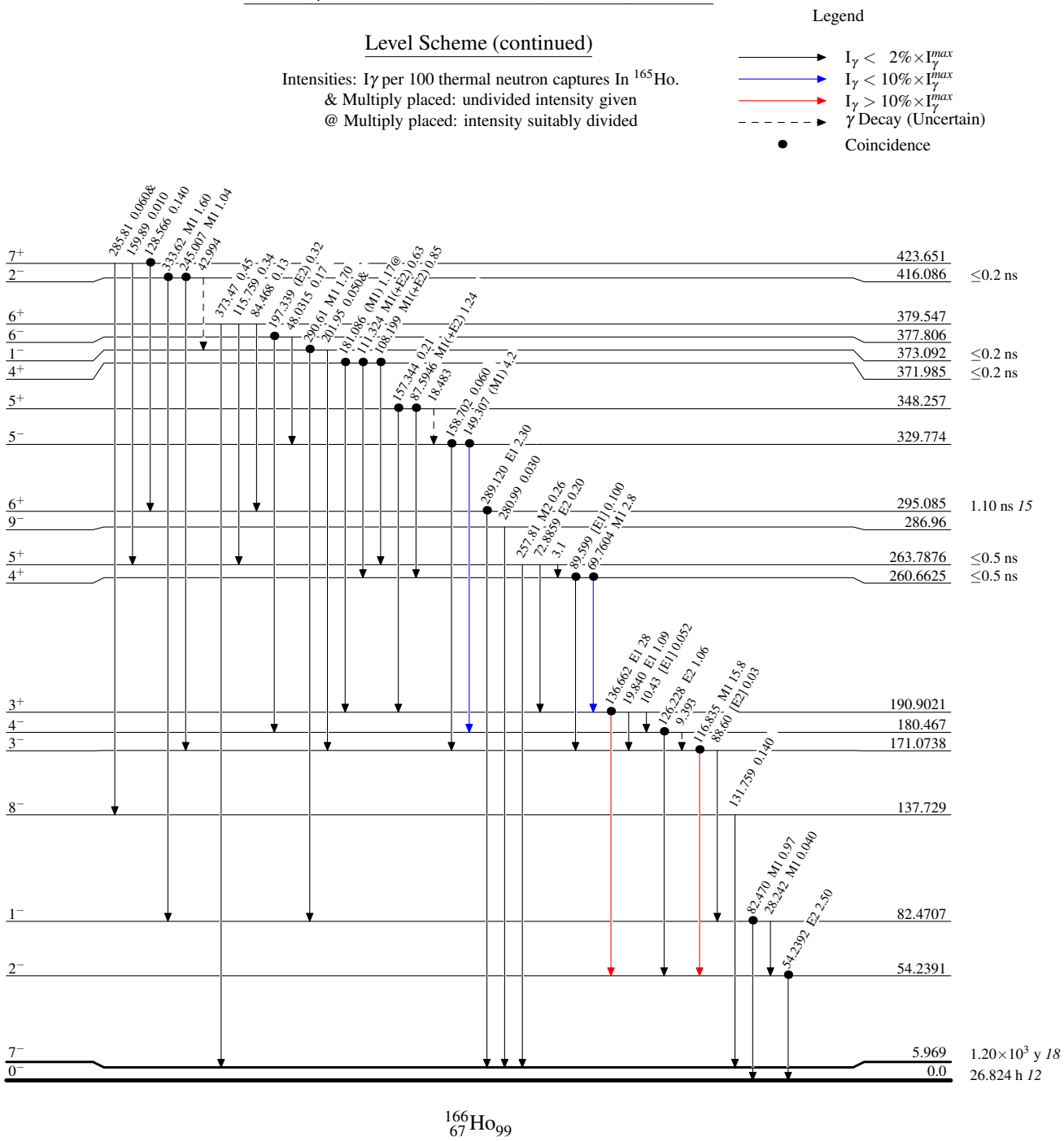


$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

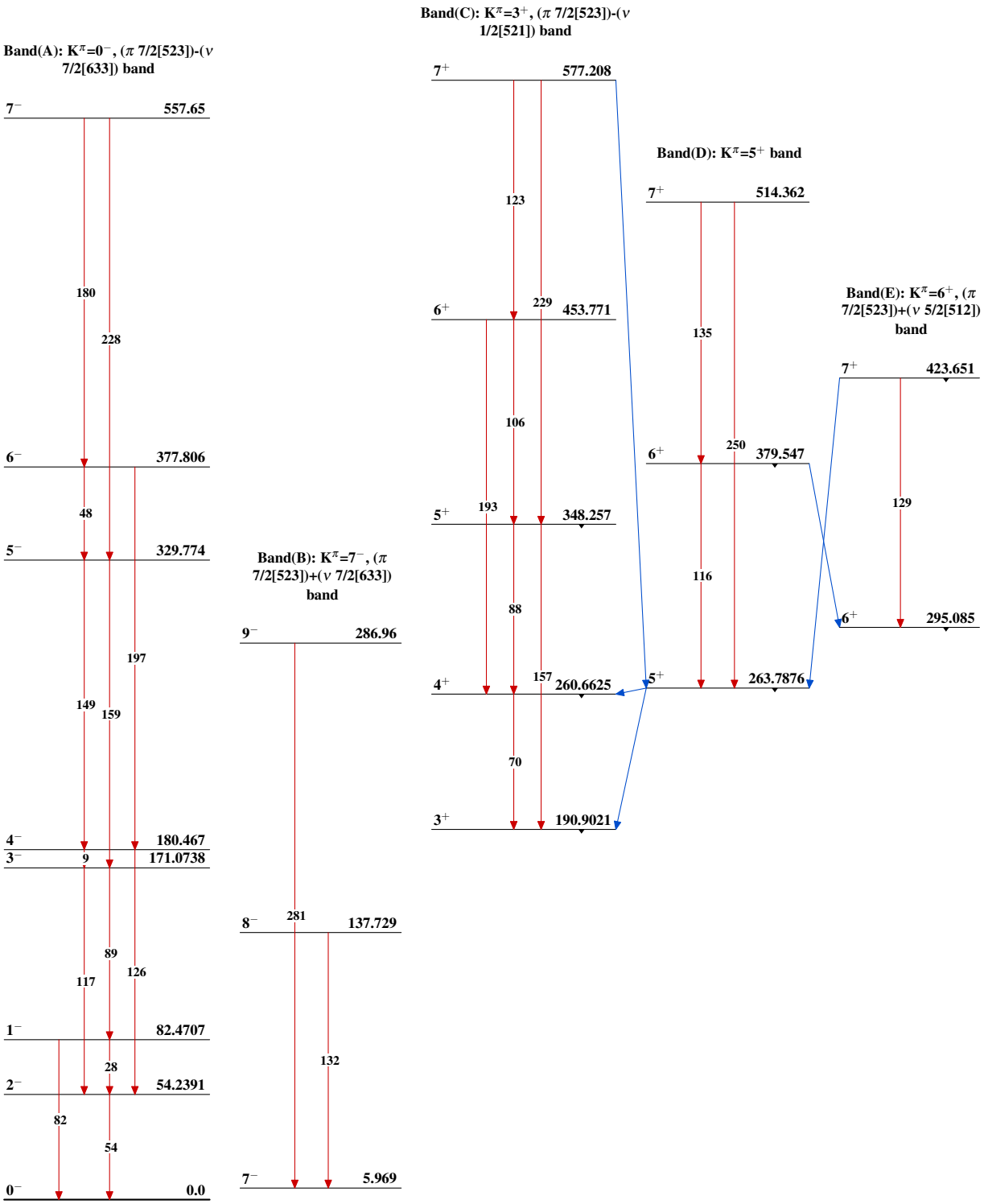
Level Scheme (continued)

Intensities: Iγ per 100 thermal neutron captures In ^{165}Ho.
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

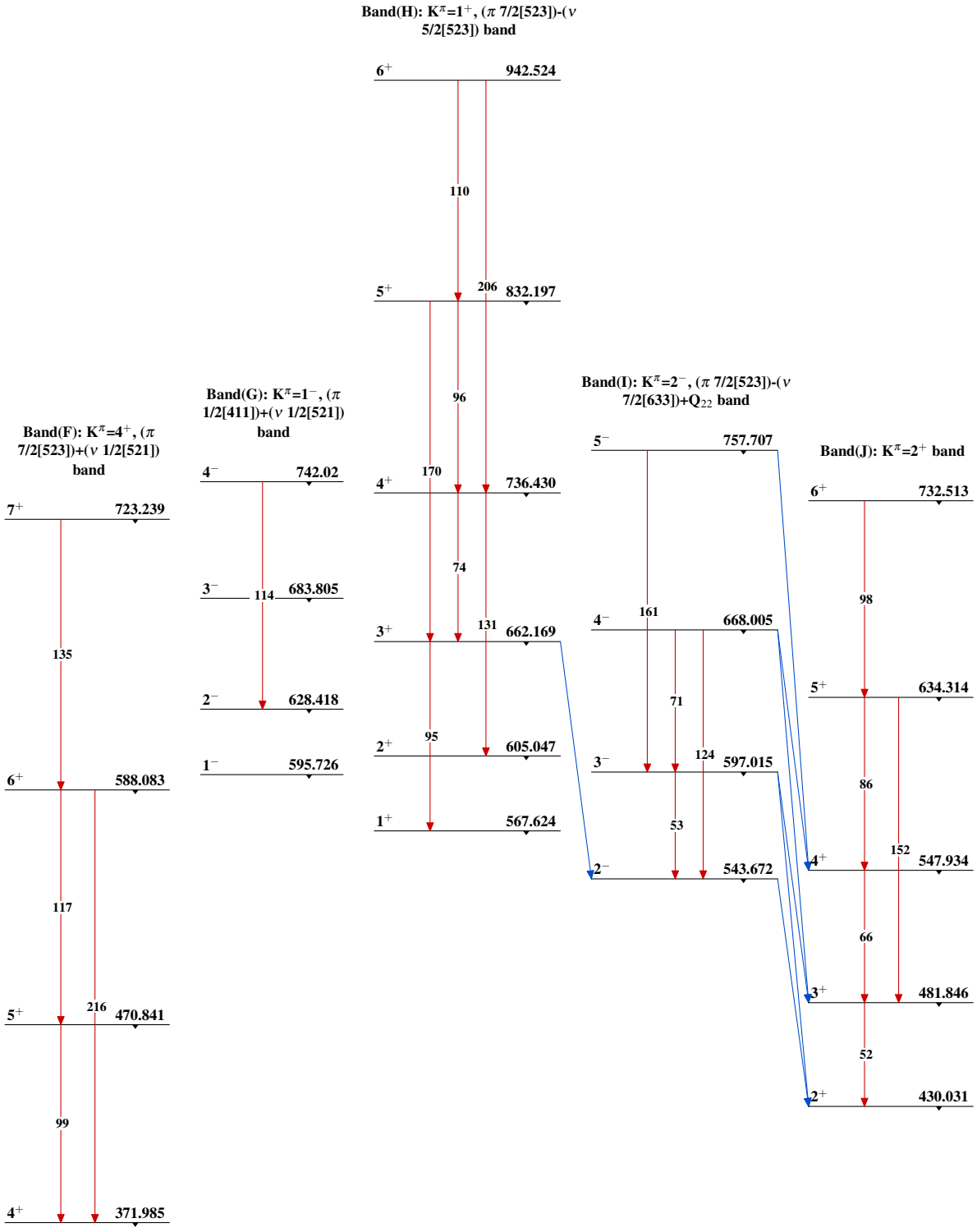


$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03

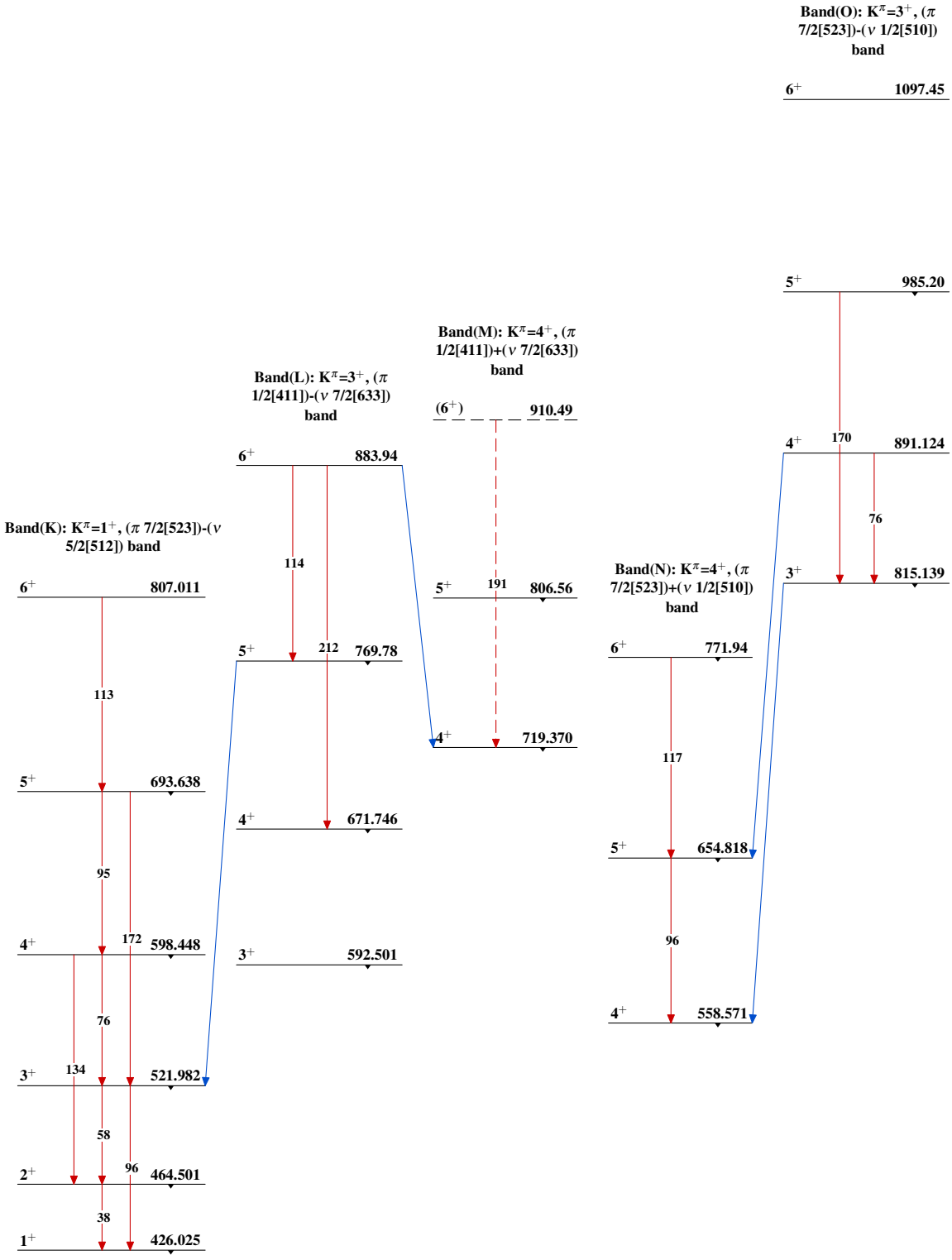


^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)



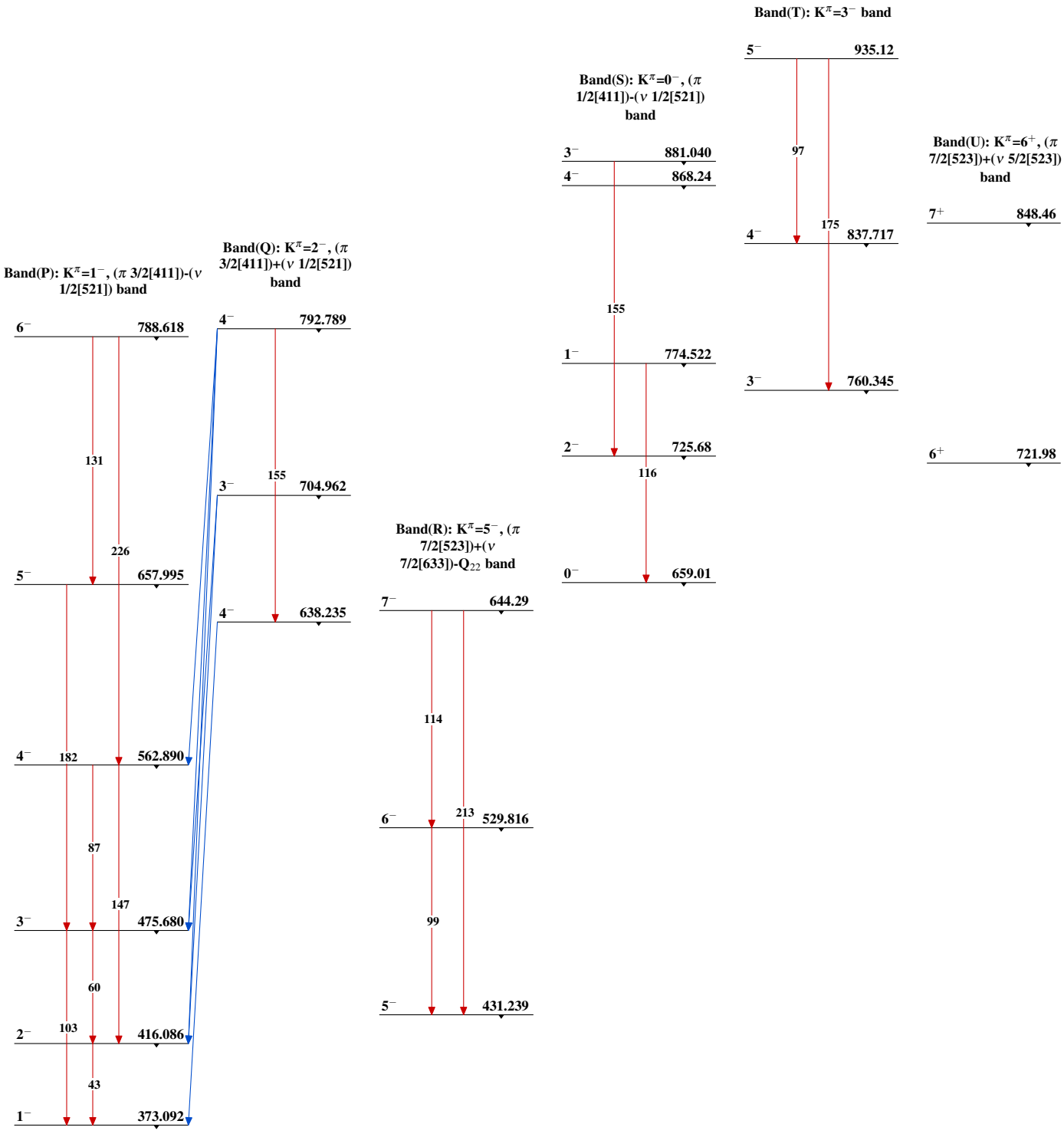
$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)



$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)



$^{166}_{67}Ho_{99}$

^{165}Ho(n,γ) E=thermal 1967Mo05,1984Ke15,2000Pr03 (continued)

Band(V): $K^{\pi}=2^{+}$, (π 7/2[523])-(ν 3/2[521]) band

4^{+} 1030.38

3^{+} 961.08

Band(W): $K^{\pi}=5^{+}$, (π 7/2[523])+(ν 3/2[521]) band

5^{+} 925.0

2^{+} 905.544

$^{166}_{67}Ho_{99}$