^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. M. Baglin[1], E. A. Mccutchan[2], S. Basunia[1]	NDS 153, 1 (2018)	1-Oct-2018

This dataset contains (n,γ) E=thermal data obtained from measurements of two-photon cascades only; for all other (n,γ) E=thermal data, please see the (n,γ) E=0-136 eV dataset.

1996Va23: E(n)=thermal; Ge(Li) and HPGe detectors, FWHM=3-4 keV at E=1332, time resolution 10-12 ns; measured Eγ, (high-energy γ)-(low-energy γ) coin, I($\gamma\gamma$ coin) for two-photon cascades from capture state.

1996Va23 and 1996Ho12 have several authors in common and report on the same two-photon cascade experiment. Apparently 1996Ho12 present only a subset of the data reported in 1996Va23; however, both Eγ and Iγ data differ slightly from one paper to the other. The order in which these papers were submitted for publication is unclear, so the evaluator has chosen to present the data from the much more extensive listing in 1996Va23. The differences between the two sets of data are almost never of statistical significance.

Others: 2001Va11 (level density and strength function deductions from two-photon cascade data); 1999Bo14.

^{170}Tm Levels

E(level)[†]	Comments
0.0	
38.7[‡]	
114.5[‡]	
149.7[‡]	
183.20[‡]	
204.4[‡]	
219.7[‡]	
237.2[‡]	
270.5[‡]	
349.7[‡]	
447.1[‡]	
589.7 *6*	
594.2 *4*	
604.0 *5*	
637.9?[‡]	E(level): added by evaluator. Although 1996Va23 do not include this level and the spread of Eγ(primary) values suggests that only the 648.6 level is significantly populated by the relevant primary γ, many γ's which feed a level in the vicinity of 640 keV have Eγ values intermediate between those expected for transitions to the 648.6 and 637.9 levels.
648.6 *3*	
693.4 *4*	
703.7 *4*	E(level): from 1996Ho12.
709.3 *5*	E(level): corresponds to the adopted level at 708.37-keV.
733.7 *4*	
760.4 *8*	
781.9 *4*	
821.3 *4*	
832.6 *5*	
850.2 *19*	
854.1 *11*	
856.4 *20*	
861.9 *15*	E(level): unresolved triplet (860.5+862.8+863.4 levels).
868.0 *8*	
907.3 *8*	
964.8 *10*	E(level): reported in 1996Ho12 only.
978.6 *5*	
1057.3 *9*	

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^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12 (continued)

^{170}Tm Levels (continued)

E(level)†	E(level)†	E(level)†	E(level)†	Jπ
1072.7 *4*	1515.1 *20*	2101.0 *17*	2625.7 *7*	
1087.8 *10*	1518.1 *10*	2116.3 *10*	2634.6 *16*	
1103.1 *11*	1536.2 *5*	2134.6 *15*	2671.9 *7*	
1139.2 *4*	1549.1 *13*	2145.4 *8*	2702.3 *19*	
1141.9 *5*	1586.7 *25*	2161.1 *21*	2721.3 *15*	
1148.0 *6*	1590.3 *5*	2168.1 *7*	2727.4 *5*	
1168.2 *4*	1603.5 *14*	2192.0 *23*	2767.9 *5*	
1178.6 *7*	1609.3 *11*	2258.2 *20*	2778.6 *15*	
1182.3 *15*	1639.2 *5*	2264.9 *7*	2802.4 *5*	
1192.8 *4*	1646.3 *11*	2272.4 *5*	2807.8 *14*	
1200.7 *15*	1658.7 *12*	2281.5 *5*	2813.6 *15*	
1210.3 *7*	1669.2 *4*	2283.1 *11*	2846.2 *5*	
1232.4 *4*	1704.8 *4*	2289.8 *12*	2867.0 *13*	
1238.0 *4*	1726.7 *15*	2307.4 *13*	2874.5 *5*	
1265.6 *14*	1733.7 *4*	2340.8 *7*	2881.0 *5*	
1280.9 *7*	1747.7 *11*	2347.1 *15*	2911.9 *21*	
1298.3 *19*	1758.4 *4*	2364.8 *13*	2925.4 *6*	
1309.3 *17*	1768.7 *12*	2388.2 *5*	2952.7 *5*	
1317.0 *4*	1818.1 *14*	2439.1 *19*	2995.9 *6*	
1334.9 *5*	1823.2 *6*	2458.3 *4*	3030.8 *13*	
1353.5 *5*	1855.0 *5*	2478.0 *7*	3099.4 *9*	
1360.4 *27*	1859.3 *15*	2482.0 *5*	3206.9 *7*	
1376.6 *4*	1870.6 *8*	2528.5 *6*	3215.9 *9*	
1382.2 *9*	1909.8 *5*	2534.5 *2*	3272.7 *6*	
1394.8 *14*	1921.3 *14*	2536.3 *20*	3470.8 *5*	
1413.1 *19*	1932.7 *12*	2540.5 *6*	3491.5 *11*	
1432.4 *4*	1951.0 *8*	2553.9 *20*	3557.3 *7*	
1437.2 *11*	1979.0 *14*	2573.2 *7*	3623.7 *6*	
1442.0 *4*	2013.4 *17*	2587.6 *9*	3630.0 *6*	
1443.2 *14*	2039.5 *13*	2592.3 *18*	3760.5 *11*	
1468.1 *16*	2072.8 *9*	2598.9 *21*	3806.2 *6*	
1478.0 *10*	2084.1 *14*	2606.8 *17*	3864.1 *20*	
1502.2 *4*	2098.0 *12*	2618.3 *13*	(6591.96# *17*)	0$^+$,1$^+$@

† From 1996Va23. In many cases, E(level) values based on a least-squares fit to Eγ have significantly smaller and apparently less realistic uncertainties; also, it should be noted that an extraordinarily large number of Eγ data differ by at least 4σ from the least-squares adjusted values.

‡ Rounded-off value from Adopted Levels.

S(n) from 2017Wa10.

@ L=0 neutron capture by J$^\pi$=1/2$^+$ target.

γ(^{170}Tm)

E$_\gamma$‡	I$_{\gamma1\gamma2}$†	E$_i$(level)	E$_f$	Comments
324.5 *5*	1.6 *4*	594.2	270.5	
352.7 *2*	2.6 *4*	589.7	237.2	
369.7 *4*	1.4 *3*	589.7	219.7	
384.1 *1*	9.6 *11*	733.7	349.7	
410.3 *6*	1.1 *4*	760.4	349.7	E$_\gamma$: possibly the 409γ from $\gamma\gamma$ coin in fig. 5 of 1996Ho12 which deexcites the adopted 758.3 level.
411.3 *1*	14.9 *9*	648.6	237.2	

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^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12 (continued)

$\gamma(^{170}Tm)$ (continued)

E_γ[‡]	$I_{\gamma1\gamma2}$[†]	E_i(level)	E_f	Comments
428.6[@] *3*	2.5 *5*	648.6	219.7	
439.1 *3*	1.7 *4*	589.7	149.7	
444.3 *4*	1.5 *3*	594.2	149.7	
455.9 *1*	4.0 *5*	693.4	237.2	
476.1 *4*	0.7 *2*	589.7	114.5	E_γ: presumably the 475γ from $\gamma\gamma$ coin in fig. 5 of 1996Ho12.
496.6 *2*	2.6 *4*	733.7	237.2	
499.1 *2*	4.7 *6*	648.6	149.7	
510.0[&a] *3*	4.6 *7*	856.4	349.7	E_γ: not reported in 1996Ho12; also, Eγ fits placement poorly, so evaluator shows placement as tentative.
510.8 *4*	3.2 *7*	693.4	183.20	E_γ: presumably the 510γ from $\gamma\gamma$ coin in fig. 5 of 1996Ho12.
532.6[@] *7*	0.5 *2*	648.6	114.5	E_γ: presumably the 533γ from $\gamma\gamma$ coin in fig. 5 of 1996Ho12.
550.5 *3*	2.3 *4*	821.3	270.5	E_γ: presumably the 552γ from $\gamma\gamma$ coin in fig. 5 of 1996Ho12.
551.4 *1*	8.0 *5*	589.7	38.7	
562.4 *5*	0.6 *2*	781.9	219.7	
565.3 *7*	0.3 *1*	604.0	38.7	
584.1 *7*	0.4 *1*	821.3	237.2	
588.8[#] *5*	0.8[#] *2*	1192.8	604.0	
589.0[#] *4*	1.3[#] *3*	703.7	114.5	
589.7 *1*	6.8 *4*	589.7	0.0	
594.0 *3*	1.1 *2*	594.2	0.0	
594.4 *4*	1.0 *3*	709.3	114.5	
594.8 *8*	0.5 *2*	1200.7	604.0	
595.2 *5*	0.6 *2*	832.6	237.2	
604.1 *7*	0.2 *1*	604.0	0.0	E_γ: other: 603.7 *6* in 1996Ho12.
609.8 *8*	0.6 *2*	760.4	149.7	E_γ: not reported in 1996Ho12.
609.9 *2*	1.5 *2*	648.6	38.7	
610.6 *5*	0.9 *3*	1200.7	589.7	
613.4 *5*	0.6 *1*	850.2	237.2	
618.1 *7*	0.7 *3*	1210.3	594.2	E_γ: not reported in 1996Ho12.
618.7[&] *3*	1.1 *2*	856.4	237.2	
626.2 *6*	0.3 *1*	861.9	237.2	E_γ: deexcites 863.4 component of triplet of levels. E_γ: presumably the 626γ from $\gamma\gamma$ coin in fig. 5 of 1996Ho12.
632.0 *3*	1.8 *4*	781.9	149.7	
632.5 *5*	1.1 *3*	850.2	219.7	
636.9 *5*	1.5 *3*	856.4	219.7	E_γ: other: 640.6 *5* in 1996Ho12.
637.9 *1*	3.3 *3*	907.3	270.5	
641.0[&] *5*	1.3 *3*	861.9	219.7	E_γ: deexcites 860.5 component of triplet of levels.
643.9 *7*	0.4 *2*	850.2	204.4	
646.8 *6*	0.5 *2*	760.4	114.5	
647.5 *7*	0.5 *2*	868.0	219.7	
648.7[&] *1*	1.9 *2*	648.6	0.0	
649.9 *7*	1.2 *4*	832.6	183.20	
650.5 *7*	0.2 *1*	1298.3	648.6	
653.3 *5*	1.2 *2*	856.4	204.4	
655 *3*	0.4 *5*	1103.1	447.1	E_γ: other: 650.3 *6* (1996Ho12). $I_{\gamma1\gamma2}$: other: 0.9 *3* (1996Ho12).
658.4 *1*	6.2 *4*	861.9	204.4	E_γ: deexcites 862.8 and 863.4 components of triplet of levels. E_γ: presumably the 658γ from $\gamma\gamma$ coin in fig. 5 of 1996Ho12.
659.0[&] *4*	0.9 *2*	1265.6	604.0	E_γ: not reported in 1996Ho12.
662.9 *9*	0.8 *3*	1309.3	648.6	
663.8[&] *7*	1.1 *4*	850.2	183.20	
693.1 *2*	0.7 *1*	693.4	0.0	
694.5[#] *6*	0.6[#] *2*	964.8	270.5	
702.4 *5*	1.0 *3*	850.2	149.7	

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^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12 (continued)

$\gamma(^{170}Tm)$ (continued)

E_γ[‡]	$I_{\gamma 1\gamma 2}$[†]	E_i(level)	E_f	Comments
703.2 *7*	0.7 *3*	907.3	204.4	
703.8 *5*	0.2 *1*	703.7	0.0	E_γ: placement taken from 1996Ho12; γ unplaced in 1996Va23.
704.8 *9*	0.4 *2*	1309.3	604.0	
707.2 *4*	0.7 *2*	821.3	114.5	
708.3 *5*	0.8 *2*	978.6	270.5	E_γ: 707.8 *6* in 1996Ho12.
709.1 *3*	1.8 *4*	856.4	149.7	
709.8 *7*	0.2 *1*	709.3	0.0	E_γ: presumably the 709γ from $\gamma\gamma$ coin in fig. 5 of 1996Ho12.
720.3 *8*	0.6 *3*	1309.3	589.7	
720.7[&] *9*	0.8 *3*	1360.4	637.9?	E_γ: 711.6 expected for γ to 648.6 level, 722.5 for γ to known 637.9 level.
724.4 *8*	1.1 *4*	907.3	183.20	
734.8 *6*	0.7 *2*	850.2	114.5	
739.6 *1*	5.8 *5*	854.1	114.5	
744.7[&] *7*	0.6 *2*	861.9	114.5	E_γ: deexcites 860.5 component of triplet of levels. E_γ: presumably the 745γ from $\gamma\gamma$ coin in fig. 5 of 1996Ho12.
788.0 *6*	0.6 *2*	1057.3	270.5	
789.0 *5*	1.5 *4*	1139.2	349.7	
814.3[#] *4*	1.1[#] *3*	964.8	149.7	
815.4 *1*	10.6 *5*	854.1	38.7	E_γ: 0 uncertainty given in 1996Va23; evaluator has increased this to 0.1 keV.
824.1 *5*	0.4 *1*	861.9	38.7	E_γ: deexcites 862.8 component of triplet of levels.
834.6[&] *6*	0.6 *2*	1437.2	604.0	
835.7 *2*	2.2 *3*	1072.7	237.2	
851.8 *8*	0.6 *3*	1087.8	237.2	
854.0[#] *3*	1.3[#] *2*	1072.7	219.7	
854.2 *1*	14.3 *6*	854.1	0.0	E_γ: 0 uncertainty given in 1996Va23; evaluator has increased this to 0.1 keV.
864.0 *7*	0.5 *2*	978.6	114.5	E_γ: presumably the 865γ from $\gamma\gamma$ coin in fig. 5 of 1996Ho12.
866.9 *4*	1.6 *4*	1317.0	447.1	
866.9[&] *7*	0.5 *2*	1468.1	604.0	
867.2 *5*	0.4 *1*	1103.1	237.2	
867.3[&] *5*	0.3 *1*	907.3	38.7	E_γ: presumably the 868γ from $\gamma\gamma$ coin in fig. 5 of 1996Ho12.
867.3 *6*	0.5 *1*	1087.8	219.7	
868.2 *1*	2.6 *3*	1072.7	204.4	E_γ: possibly deexcites the known 1070.98 level.
868.8 *7*	0.2 *1*	868.0	0.0	
869.2 *5*	3.0 *7*	1139.2	270.5	
872.6 *10*	0.3 *2*	1478.0	604.0	
873.3 *3*	2.9 *5*	1057.3	183.20	
876.9 *8*	1.4 *5*	1148.0	270.5	
902.5 *3*	0.8 *2*	1139.2	237.2	
908.5 *10*	1.1 *5*	1178.6	270.5	
909.8 *10*	0.4 *2*	1515.1	604.0	
923.2 *8*	0.8 *3*	1515.1	589.7	
928.2 *2*	1.6 *3*	1148.0	219.7	
928.6 *7*	1.0 *3*	1518.1	589.7	
931.2 *1*	2.6 *3*	1168.2	237.2	
932.1 *6*	0.6 *2*	1536.2	604.0	
939.9 *6*	0.4 *1*	1178.6	237.2	
944.1 *4*	0.8 *2*	1148.0	204.4	
944.4 *6*	0.5 *1*	1182.3	237.2	
955.1 *6*	0.3 *1*	1192.8	237.2	
958.3 *8*	0.5 *2*	1072.7	114.5	
959.0 *4*	0.8 *2*	1178.6	219.7	
963.6 *2*	1.5 *2*	1168.2	204.4	
973.4 *4*	0.7 *2*	1192.8	219.7	
975.1 *7*	0.5 *2*	1178.6	204.4	
979.9 *9*	0.3 *1*	1182.3	204.4	
987.0 *6*	0.6 *2*	1103.1	114.5	

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^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12 (continued)

$\gamma(^{170}Tm)$ (continued)

E_γ ‡	$I_{\gamma1\gamma2}$ †	E_i(level)	E_f	E_γ ‡	$I_{\gamma1\gamma2}$ †	E_i(level)	E_f
996.3 *6*	2.0 *7*	1265.6	270.5	1220.2 *8*	0.4 *2*	1334.9	114.5
998.0 *5*	1.5 *3*	1586.7	589.7	1223.2 *2*	3.3 *3*	1443.2	219.7
1000.5 *11*	0.7 *4*	1646.3	648.6	1226.8& *10*	0.7 *1*	1870.6	648.6
1000.9 *2*	1.4 *2*	1238.0	237.2	1227.3 *5*	0.9 *2*	1376.6	149.7
1013.7 *8*	0.8 *3*	1603.5	589.7	1228.0 *3*	0.6 *1*	1265.6	38.7
1016.0& *7*	1.1 *4*	1658.7	648.6	1229.9 *3*	0.8 *2*	1468.1	237.2
1018.4 *3*	1.3 *2*	1238.0	219.7	1232.5 *5*	0.3 *1*	1232.4	0.0
1019.4 *7*	0.8 *3*	1609.3	589.7	1237.8 *4*	0.6 *1*	1442.0	204.4
1020.3 *2*	3.1 *4*	1468.1	447.1	1237.8 *4*	0.6 *1*	1443.2	204.4
1027.1 *4*	1.1 *2*	1141.9	114.5	1247.3 *5*	0.6 *1*	1468.1	219.7
1043.0 *8*	0.4 *2*	1646.3	604.0	1257.9 *7*	0.4 *1*	1859.3	604.0
1043.1 *3*	1.5 *3*	1192.8	149.7	1259.1 *6*	0.4 *1*	1478.0	219.7
1061.0 *7*	0.6 *2*	1413.1	349.7	1265.7 *6*	0.3 *1*	1502.2	237.2
1061.7 *5*	0.5 *1*	1280.9	219.7	1265.7 *7*	0.4 *1*	1870.6	604.0
1062.3 *2*	1.8 *2*	1265.6	204.4	1266.2 *1*	1.0 *1*	1265.6	0.0
1064.3 *3*	1.3 *3*	1178.6	114.5	1276.2& *7*	0.5 *2*	1515.1	237.2
1078.9 *2*	2.5 *4*	1669.2	589.7	1279.3 *5*	1.4 *3*	1726.7	447.1
1079.1 *2*	1.2 *2*	1298.3	219.7	1279.4& *6*	1.1 *3*	1921.3	648.6
1081.0& *4*	1.3 *3*	1265.6	183.20	1280.1 *2*	1.9 *2*	1518.1	237.2
1082.8 *1*	7.8 *5*	1432.4	349.7	1280.6 *7*	0.5 *2*	1394.8	114.5
1093.7 *6*	0.7 *2*	1443.2	349.7	1281.0 *8*	0.7 *3*	1870.6	589.7
1093.9 *5*	0.5 *1*	1298.3	204.4	1282.2 *5*	0.5 *1*	1502.2	219.7
1095.4 *6*	0.6 *2*	1210.3	114.5	1285.9 *16*	0.5 *3*	1932.7	648.6
1103.3 *6*	0.2 *1*	1103.1	0.0	1291.9 *6*	0.6 *2*	1443.2	149.7
1117.2 *7*	0.6 *2*	1468.1	349.7	1297.3 *2*	1.0 *2*	1502.2	204.4
1130.5 *7*	0.6 *2*	1280.9	149.7	1298.0 *3*	0.9 *2*	1515.1	219.7
1134.2 *5*	0.7 *2*	1353.5	219.7	1298.1& *6*	0.5 *2*	1413.1	114.5
1138.9 *3*	1.3 *2*	1360.4	219.7	1300.7& *4*	0.2 *1*	1298.3	0.0
1139.1 *6*	0.4 *1*	1376.6	237.2	1315.5& *4*	0.7 *1*	1921.3	604.0
1140.2 *1*	3.3 *3*	1178.6	38.7	1316.8 *8*	0.3 *1*	1536.2	219.7
1140.3 *6*	1.2 *4*	1586.7	447.1	1316.9 *6*	0.2	1317.0	0.0
1142.1 *7*	0.2 *1*	1141.9	0.0	1317.8 *9*	0.9 *3*	1768.7	447.1
1157.2 *5*	0.3 *1*	1394.8	237.2	1318.0 *1*	5.1 *5*	1468.1	149.7
1167.9 *6*	0.9 *2*	1317.0	149.7	1321.9 *8*	0.2 *1*	1360.4	38.7
1168.3 *3*	1.5 *3*	1518.1	349.7	1327.6 *10*	0.4 *2*	1478.0	149.7
1172.1 *3*	0.9 *2*	1210.3	38.7	1335.0 *5*	0.2	1334.9	0.0
1177.9& *4*	0.5 *1*	1394.8	219.7	1342.3 *9*	0.2 *1*	1382.2	38.7
1178.1 *5*	0.7 *2*	1413.1	237.2	1354.7 *5*	0.3 *1*	1394.8	38.7
1178.2 *4*	0.7 *2*	1382.2	204.4	1367.5 *1*	2.0 *2*	1603.5	237.2
1178.7 *8*	0.7 *3*	1768.7	589.7	1378.7& *5*	0.4 *1*	1586.7	204.4
1178.8 *1*	4.9 *3*	1178.6	0.0	1393.8 *3*	0.3 *1*	1394.8	0.0
1179.2& *4*	1.5 *3*	1360.4	183.20	1397.3& *10*	0.3 *2*	1515.1	114.5
1183.2 *4*	1.1 *2*	1298.3	114.5	1404.8 *6*	0.2 *1*	1443.2	38.7
1193.2 *6*	0.2 *1*	1192.8	0.0	1412.6 *5*	1.5 *4*	1859.3	447.1
1193.5 *4*	0.5 *1*	1232.4	38.7	1432.0 *4*	0.4 *1*	1669.2	237.2
1198.8 *2*	2.7 *3*	1437.2	237.2	1438.7 *4*	0.7 *1*	1658.7	219.7
1203.4 *6*	0.8 *2*	1353.5	149.7	1455.3 *3*	1.6 *2*	1726.7	270.5
1208.3& *3*	2.0 *3*	1360.4	149.7	1464.9 *2*	1.8 *2*	1669.2	204.4
1208.8 *9*	0.4 *2*	1443.2	237.2	1470.6 *6*	0.6 *2*	1586.7	114.5
1210.9& *2*	1.6 *2*	1210.3	0.0	1471.5 *9*	0.9 *4*	1921.3	447.1
1210.9 *7*	2.4 *9*	1855.0	648.6	1501.5 *7*	1.1 *4*	1951.0	447.1
1211.4 *6*	0.8 *2*	1394.8	183.20	1508.7 *4*	0.9 *2*	1859.3	349.7
1212.7 *2*	1.5 *2*	1432.4	219.7	1509.1 *5*	0.3 *1*	1549.1	38.7
1214.0& *5*	3.5 *9*	1859.3	648.6	1509.2 *6*	0.4 *1*	1747.7	237.2
1217.8 *10*	0.4 *1*	1437.2	219.7	1516.3 *11*	0.1	1515.1	0.0

Continued on next page (footnotes at end of table)

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12 (continued)

$\gamma(^{170}Tm)$ (continued)

E_γ‡	$I_{\gamma1\gamma2}$†	E_i(level)	E_f	E_γ‡	$I_{\gamma1\gamma2}$†	E_i(level)	E_f
1520.7 *6*	0.6 *2*	1669.2	149.7	1805.7& *7*	0.3 *1*	2013.4	204.4
1520.7 *6*	0.4 *1*	1726.7	204.4	1806.4 *4*	1.0 *2*	1921.3	114.5
1524.7 *6*	0.5 *2*	1639.2	114.5	1819.3 *4*	0.6 *1*	2039.5	219.7
1533.6& *7*	0.4 *1*	2134.6	604.0	1819.9 *3*	0.8 *1*	1859.3	38.7
1547.5& *5*	1.2 *3*	2192.0	648.6	1830.1 *9*	0.6 *2*	2013.4	183.20
1548 *3*	0.1 *1*	1586.7	38.7	1830.5 *3*	1.8 *3*	2101.0	270.5
1550.4 *3*	0.3 *1*	1549.1	0.0	1833.9 *5*	1.6 *4*	2283.1	447.1
1551.7 *8*	0.3 *1*	1590.3	38.7	1833.9 *3*	1.0 *3*	2439.1	604.0
1563.0& *3*	0.4 *1*	1603.5	38.7	1847.4 *7*	0.3 *1*	2084.1	237.2
1571.7 *2*	2.9 *3*	1921.3	349.7	1854.8 *11*	0.3 *2*	2458.3	604.0
1582.0 *3*	0.8 *1*	1818.1	237.2	1857.7 *7*	1.1 *3*	2307.4	447.1
1582.8 *8*	0.5 *2*	1932.7	349.7	1859.0 *3*	0.6 *1*	1859.3	0.0
1590.2 *5*	0.2 *1*	1590.3	0.0	1863.1 *6*	1.0 *3*	2134.6	270.5
1590.8 *4*	0.7 *1*	2192.0	604.0	1864.9 *4*	0.5 *1*	2101.0	237.2
1600.5 *7*	0.2 *1*	1639.2	38.7	1871.1 *7*	0.3 *1*	1909.8	38.7
1602.9 *4*	0.6 *1*	1823.2	219.7	1892.1 *6*	1.3 *4*	2340.8	447.1
1608.3 *7*	0.1	1609.3	0.0	1892.6 *5*	1.3 *3*	2161.1	270.5
1610.4 *8*	0.7 *3*	2258.2	648.6	1894.3 *4*	0.5 *1*	1932.7	38.7
1611.9 *7*	0.3 *1*	1818.1	204.4	1896.9 *7*	0.4 *1*	2101.0	204.4
1618.5 *6*	0.2 *1*	1658.7	38.7	1897.8 *6*	0.4 *1*	2116.3	219.7
1619.4 *7*	0.9 *3*	2264.9	648.6	1898.2 *5*	1.3 *3*	2168.1	270.5
1623.3 *2*	1.5 *2*	1859.3	237.2	1899.0 *9*	0.3 *1*	2134.6	237.2
1633.1 *5*	0.4 *1*	1870.6	237.2	1900.2 *4*	1.2 *2*	2013.4	114.5
1638.5 *4*	0.5 *1*	1859.3	219.7	1909.8 *3*	0.4 *1*	1909.8	0.0
1643.7 *7*	0.5 *2*	1758.4	114.5	1912.0 *6*	0.5 *1*	2116.3	204.4
1659.3 *2*	0.6 *1*	1658.7	0.0	1914.8 *6*	0.5 *1*	2134.6	219.7
1664.4 *5*	0.6 *1*	2264.9	604.0	1932.1 *6*	0.6 *1*	2536.3	604.0
1666.0 *5*	0.3 *1*	1704.8	38.7	1933.0 *5*	0.2 *1*	1932.7	0.0
1666.3 *6*	0.5 *1*	1870.6	204.4	1933.4 *7*	0.7 *2*	2283.1	349.7
1668.5 *5*	0.6 *1*	2272.4	604.0	1940.5 *5*	0.6 *2*	1979.0	38.7
1669.3 *5*	0.2 *1*	1669.2	0.0	1946.6 *8*	0.7 *3*	2536.3	589.7
1671.6 *5*	1.1 *2*	1855.0	183.20	1948.9& *9*	0.8 *3*	2592.3	648.6
1674.2 *6*	0.8 *2*	1823.2	149.7	1949.9 *8*	0.6 *2*	2098.0	149.7
1679.0 *11*	0.7 *3*	1951.0	270.5	1951.4 *5*	0.2 *1*	1951.0	0.0
1680.6& *5*	0.6 *1*	2283.1	604.0	1954.6& *8*	0.9 *3*	2598.9	648.6
1688.1 *8*	0.2 *1*	1726.7	38.7	1955.9 *4*	0.6 *1*	2161.1	204.4
1695.2 *3*	0.5 *1*	1733.7	38.7	1964.1 *2*	1.9 *2*	2168.1	204.4
1705.0 *4*	0.3 *1*	1704.8	0.0	1965.1 *7*	0.9 *3*	2553.9	589.7
1708.1 *5*	1.0 *2*	1859.3	149.7	1965.3 *6*	0.7 *2*	2116.3	149.7
1710.3 *3*	0.7 *1*	1747.7	38.7	1972.1 *7*	1.0 *3*	2618.3	648.6
1710.7 *8*	0.9 *3*	1979.0	270.5	1975.2 *8*	0.2 *1*	2013.4	38.7
1718.9 *6*	1.2 *3*	2364.8	648.6	1977.7 *6*	0.2 *1*	1979.0	0.0
1719.8 *5*	0.4 *1*	1758.4	38.7	1995.8 *7*	0.8 *3*	2587.6	589.7
1722.0 *7*	0.6 *2*	2072.8	349.7	1996.1 *9*	0.4 *2*	2598.9	604.0
1731.3 *5*	0.4 *1*	1951.0	219.7	2001.1 *5*	0.7 *2*	2606.8	604.0
1733.5 *3*	0.5 *1*	1733.7	0.0	2011.8 *9*	0.1 *1*	2013.4	0.0
1741.9 *8*	0.5 *2*	2347.1	604.0	2016.9 *9*	0.6 *2*	2364.8	349.7
1744.5 *6*	0.6 *2*	1859.3	114.5	2019.3 *5*	0.9 *2*	2134.6	114.5
1747.5 *4*	0.4 *1*	1747.7	0.0	2019.9 *8*	0.2 *1*	2258.2	237.2
1747.5 *6*	0.7 *2*	2098.0	349.7	2022.2 *1*	3.6 *3*	2625.7	604.0
1749.2 *5*	1.0 *3*	2340.8	589.7	2027.5 *8*	0.9 *3*	2671.9	648.6
1758.4 *5*	0.3 *1*	1758.4	0.0	2030.3 *5*	0.7 *1*	2634.6	604.0
1767.3 *9*	0.6 *2*	1951.0	183.20	2039.2 *7*	0.3 *1*	2258.2	219.7
1777.6 *6*	0.3 *1*	2013.4	237.2	2041.3 *12*	0.1 *1*	2039.5	0.0
1796.1& *11*	0.7 *3*	2439.1	648.6	2044.9 *6*	0.2 *1*	2281.5	237.2

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^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12 (continued)

$\gamma(^{170}Tm)$ (continued)

E_γ ‡	$I_{\gamma1\gamma2}$ †	E_i(level)	E_f	E_γ ‡	$I_{\gamma1\gamma2}$ †	E_i(level)	E_f
2061.4 *5*	0.5 *1*	2281.5	219.7	2401.3 *10*	0.7 *3*	2671.9	270.5
2062.9 *6*	0.3 *1*	2101.0	38.7	2413.2 *5*	0.4 *1*	2618.3	204.4
2067.9 *7*	0.4 *1*	2272.4	204.4	2414.7 *9*	0.4 *2*	2528.5	114.5
2071.7 *7*	0.4 *1*	2289.8	219.7	2419.6 *3*	0.7 *1*	2458.3	38.7
2071.9 *8*	0.2 *1*	2307.4	237.2	2420.4 *7*	0.4 *1*	2625.7	204.4
2073.4 *6*	0.2 *1*	2072.8	0.0	2425.5 *9*	0.5 *2*	3030.8	604.0
2082.2 *13*	0.1 *1*	2084.1	0.0	2441.1 *9*	0.9 *3*	3030.8	589.7
2084.9 *8*	1.0 *3*	2536.3	447.1	2442.6 *6*	1.0 *2*	2592.3	149.7
2089.4 *8*	0.7 *2*	2439.1	349.7	2442.9 *13*	0.1	2439.1	0.0
2095.5 *4*	0.5 *1*	2134.6	38.7	2443.4 *5*	0.4 *1*	2482.0	38.7
2097.5 *9*	0.1 *1*	2101.0	0.0	2455.7 *10*	0.9 *4*	3099.4	648.6
2103.2 *7*	0.3 *1*	2340.8	237.2	2456.7 *6*	1.1 *3*	2727.4	270.5
2107.3 *7*	0.3 *1*	2145.4	38.7	2457.6 *10*	0.6 *2*	2807.8	349.7
2110.5 *6*	1.0 *2*	2258.2	149.7	2457.9 *9*	0.5 *2*	2606.8	149.7
2144.5 *8*	0.2 *1*	2145.4	0.0	2458.1 *3*	0.5 *1*	2458.3	0.0
2152.0 *8*	1.0 *3*	2598.9	447.1	2474.8& *8*	0.4 *2*	2592.3	114.5
2158.0 *10*	0.2 *1*	2161.1	0.0	2477.6 *6*	0.4 *1*	2478.0	0.0
2163.4 *9*	0.9 *3*	2807.8	648.6	2479.8 *8*	0.6 *2*	2702.3	219.7
2167.1 *5*	0.3 *1*	2168.1	0.0	2481.9 *10*	0.2 *1*	2482.0	0.0
2168.4 *5*	0.7 *2*	2388.2	219.7	2481.9 *6*	0.6 *2*	2598.9	114.5
2169.0 *7*	1.1 *3*	2618.3	447.1	2482.4 *9*	0.2 *1*	2721.3	237.2
2176.9 *6*	1.1 *3*	2767.9	589.7	2491.6 *7*	0.5 *2*	2606.8	114.5
2189.1& *5*	0.2 *1*	2192.0	0.0	2506.0& *5*	0.7 *1*	2618.3	114.5
2208.6 *7*	0.9 *3*	2478.0	270.5	2509.4 *10*	0.8 *3*	2778.6	270.5
2219.3 *9*	0.8 *3*	2807.8	589.7	2518.0 *7*	0.4 *1*	2721.3	204.4
2223.2& *6*	1.3 *3*	2867.0	648.6	2522.3 *10*	0.3 *1*	2634.6	114.5
2244.3 *4*	0.6 *1*	2283.1	38.7	2533.4 *8*	0.2 *1*	2573.2	38.7
2249.2 *6*	1.0 *3*	2598.9	349.7	2533.8& *3*	0.6 *1*	2536.3	0.0
2250.8 *7*	0.3 *1*	2289.8	38.7	2541.2 *7*	0.2 *1*	2540.5	0.0
2254.9 *10*	0.8 *3*	2846.2	589.7	2542.1 *9*	1.2 *4*	2813.6	270.5
2267.3 *8*	0.3 *1*	2307.4	38.7	2550.2 *8*	0.2 *1*	2587.6	38.7
2269.6 *7*	1.0 *3*	2540.5	270.5	2554.4 *5*	0.8 *2*	2702.3	149.7
2281.0 *8*	0.9 *3*	2925.4	648.6	2564.4& *6*	0.3 *1*	2598.9	38.7
2281.3 *4*	0.4 *1*	2283.1	0.0	2570.7 *6*	1.4 *4*	3215.9	648.6
2288.5 *7*	0.2 *1*	2289.8	0.0	2584.6 *6*	1.2 *4*	2767.9	183.20
2289.3 *4*	1.1 *2*	2439.1	149.7	2587.2 *7*	0.5 *2*	2702.3	114.5
2294.4 *7*	1.0 *3*	2478.0	183.20	2587.3 *7*	0.2 *1*	2587.6	0.0
2302.2& *5*	0.3 *1*	2536.3	237.2	2588.0 *6*	0.5 *2*	2807.8	219.7
2310.1 *9*	0.2 *1*	2347.1	38.7	2594.9& *8*	0.9 *3*	2867.0	270.5
2321.6 *8*	0.9 *3*	2592.3	270.5	2596 *3*	0.4 *6*	2813.6	219.7
2323.7 *5*	0.5 *1*	2528.5	204.4	2596.8 *4*	0.3 *1*	2598.9	0.0
2326.7 *6*	0.4 *1*	2364.8	38.7	2603.0 *6*	0.9 *3*	2952.7	349.7
2328.0 *4*	1.9 *4*	2598.9	270.5	2604.6 *8*	0.9 *3*	2874.5	270.5
2331.7 *6*	0.4 *1*	2553.9	219.7	2607.5 *7*	0.2 *1*	2606.8	0.0
2335.9 *7*	0.3 *1*	2573.2	237.2	2613.1 *6*	0.6 *2*	2727.4	114.5
2339.7 *9*	0.8 *3*	2606.8	270.5	2617.1 *8*	0.2 *1*	2618.3	0.0
2347.6 *5*	1.2 *3*	2618.3	270.5	2626.0 *9*	0.9 *4*	3215.9	589.7
2349.9 *5*	0.5 *1*	2553.9	204.4	2645.7 *9*	0.6 *2*	2995.9	349.7
2355.9& *7*	1.3 *4*	2807.8	447.1	2648.9 *9*	1.1 *5*	3099.4	447.1
2366.2 *13*	0.8 *4*	2813.6	447.1	2654.7 *9*	0.8 *3*	2925.4	270.5
2369.3 *5*	0.5 *1*	2573.2	204.4	2664.3 *16*	0.4 *3*	2813.6	149.7
2375.3 *8*	0.3 *1*	2592.3	219.7	2665.5 *8*	0.6 *2*	2778.6	114.5
2388.4 *9*	0.1	2388.2	0.0	2672.3 *9*	0.3 *1*	2911.9	237.2
2393.3 *2*	1.2 *2*	2598.9	204.4	2676.6 *8*	0.5 *2*	2881.0	204.4
2395.9 *10*	0.2 *1*	2634.6	237.2	2681.5 *8*	1.1 *4*	3272.7	589.7

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^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12 (continued)

$\gamma(^{170}Tm)$ (continued)

E_γ [‡]	$I_{\gamma1\gamma2}$ [†]	E_i(level)	J_i^π	E_f	Comments
2715.5 *6*	0.4 *1*	2952.7		237.2	
2729.8		(6591.96)	$0^+,1^+$	3864.1	Additional information 1.
2763.7 *8*	0.3 *1*	2802.4		38.7	
2773.8 *4*	0.7 *2*	2813.6		38.7	
2776.9 *7*	0.2 *1*	2778.6		0.0	
2787.5		(6591.96)	$0^+,1^+$	3806.2	Additional information 2.
2802.5 *6*	0.2 *1*	2802.4		0.0	
2808.4 *4*	0.4 *1*	2807.8		0.0	
2814.5 *4*	0.3 *1*	2813.6		0.0	
2833.0		(6591.96)	$0^+,1^+$	3760.5	Additional information 3.
2846.3 *3*	0.5 *1*	2846.2		0.0	
2847.8 *9*	1.0 *4*	3491.5		648.6	
2874.2 *5*	0.3 *1*	2874.5		0.0	
2881.0 *5*	0.4 *1*	2881.0		0.0	
2913.6 *7*	0.2 *1*	2911.9		0.0	
2963.9		(6591.96)	$0^+,1^+$	3630.0	Additional information 4.
2970.1		(6591.96)	$0^+,1^+$	3623.7	Additional information 5.
2996.3 *8*	0.2 *1*	2995.9		0.0	
3036.6		(6591.96)	$0^+,1^+$	3557.3	Additional information 6.
3068.5 *9*	0.4 *2*	3272.7		204.4	
3092.0 *9*	0.5 *2*	3206.9		114.5	
3102.4		(6591.96)	$0^+,1^+$	3491.5	Additional information 7.
3117.3 *7*	1.2 *4*	3760.5		648.6	
3123.1		(6591.96)	$0^+,1^+$	3470.8	Additional information 8.
3168.5 *9*	0.4 *1*	3206.9		38.7	
3207.1 *10*	0.8 *3*	3557.3		349.7	
3253.2 *9*	0.4 *2*	3491.5		237.2	
3266.9 *6*	1.0 *2*	3470.8		204.4	
3272.7 *10*	0.9 *4*	3864.1		589.7	
3274.4 *8*	0.9 *3*	3623.7		349.7	
3321.1		(6591.96)	$0^+,1^+$	3272.7	Additional information 9.
3377.1		(6591.96)	$0^+,1^+$	3215.9	Additional information 10.
3386.9		(6591.96)	$0^+,1^+$	3206.9	Additional information 11.
3392.9 *7*	0.3 *1*	3630.0		237.2	
3419.0 *8*	0.5 *2*	3623.7		204.4	
3432.2 *7*	0.4 *1*	3470.8		38.7	
3456.8 *11*	0.7 *3*	3806.2		349.7	
3494.4		(6591.96)	$0^+,1^+$	3099.4	Additional information 12.
3519.0 *9*	0.4 *1*	3557.3		38.7	
3541.2 *8*	0.6 *2*	3760.5		219.7	
3563.0		(6591.96)	$0^+,1^+$	3030.8	Additional information 13.
3591.0 *10*	0.3 *1*	3630.0		38.7	
3598.0		(6591.96)	$0^+,1^+$	2995.9	Additional information 14.
3623.7[&] *8*	0.3 *1*	3864.1		237.2	
3641.1		(6591.96)	$0^+,1^+$	2952.7	Additional information 15.
3646.3 *10*	0.4 *2*	3864.1		219.7	
3668.4		(6591.96)	$0^+,1^+$	2925.4	Additional information 16.
3682.0 *4*	2.4 *5*	3864.1		183.20	
3682.3		(6591.96)	$0^+,1^+$	2911.9	Additional information 17.
3712.8		(6591.96)	$0^+,1^+$	2881.0	Additional information 18.
3719.2		(6591.96)	$0^+,1^+$	2874.5	Additional information 19.
3727.3		(6591.96)	$0^+,1^+$	2867.0	Additional information 20.
3747.7		(6591.96)	$0^+,1^+$	2846.2	Additional information 21.
3779.6		(6591.96)	$0^+,1^+$	2813.6	Additional information 22.
3785.9		(6591.96)	$0^+,1^+$	2807.8	Additional information 23.
3791.4		(6591.96)	$0^+,1^+$	2802.4	Additional information 24.

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^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12 (continued)

$\gamma(^{170}Tm)$ (continued)

E_γ[‡]	$I_{\gamma 1\gamma 2}$[†]	E_i(level)	J_i^π	E_f	Comments
3806.1 *6*	0.2 *1*	3806.2		0.0	
3814.9		(6591.96)	$0^+,1^+$	2778.6	Additional information 25.
3826.0		(6591.96)	$0^+,1^+$	2767.9	Additional information 26.
3866.4		(6591.96)	$0^+,1^+$	2727.4	Additional information 27.
3872.9		(6591.96)	$0^+,1^+$	2721.3	Additional information 28.
3892.0		(6591.96)	$0^+,1^+$	2702.3	Additional information 29.
3921.9		(6591.96)	$0^+,1^+$	2671.9	Additional information 30.
3959.1		(6591.96)	$0^+,1^+$	2634.6	Additional information 31.
3967.3		(6591.96)	$0^+,1^+$	2625.7	Additional information 32.
3976.4		(6591.96)	$0^+,1^+$	2618.3	Additional information 33.
3986.5		(6591.96)	$0^+,1^+$	2606.8	Additional information 34.
3994.6		(6591.96)	$0^+,1^+$	2598.9	Additional information 35.
4001.4		(6591.96)	$0^+,1^+$	2592.3	Additional information 36.
4006.1		(6591.96)	$0^+,1^+$	2587.6	Additional information 37.
4020.8		(6591.96)	$0^+,1^+$	2573.2	Additional information 38.
4039.9		(6591.96)	$0^+,1^+$	2553.9	Additional information 39.
4053.2		(6591.96)	$0^+,1^+$	2540.5	Additional information 40.
4057.5		(6591.96)	$0^+,1^+$	2534.5	
4065.1		(6591.96)	$0^+,1^+$	2528.5	Additional information 41.
4111.9		(6591.96)	$0^+,1^+$	2482.0	Additional information 42.
4115.7		(6591.96)	$0^+,1^+$	2478.0	Additional information 43.
4135.4		(6591.96)	$0^+,1^+$	2458.3	Additional information 44.
4153.9		(6591.96)	$0^+,1^+$	2439.1	Additional information 45.
4205.6		(6591.96)	$0^+,1^+$	2388.2	Additional information 46.
4228.7		(6591.96)	$0^+,1^+$	2364.8	Additional information 47.
4246.5		(6591.96)	$0^+,1^+$	2347.1	Additional information 48.
4253.0		(6591.96)	$0^+,1^+$	2340.8	Additional information 49.
4286.3		(6591.96)	$0^+,1^+$	2307.4	Additional information 50.
4304.0		(6591.96)	$0^+,1^+$	2289.8	Additional information 51.
4310.7		(6591.96)	$0^+,1^+$	2283.1	
4312.3		(6591.96)	$0^+,1^+$	2281.5	
4321.4		(6591.96)	$0^+,1^+$	2272.4	Additional information 52.
4329.1		(6591.96)	$0^+,1^+$	2264.9	Additional information 53.
4336.1		(6591.96)	$0^+,1^+$	2258.2	Additional information 54.
4401.8		(6591.96)	$0^+,1^+$	2192.0	Additional information 55.
4425.8		(6591.96)	$0^+,1^+$	2168.1	Additional information 56.
4433.4		(6591.96)	$0^+,1^+$	2161.1	Additional information 57.
4448.6		(6591.96)	$0^+,1^+$	2145.4	Additional information 58.
4458.8		(6591.96)	$0^+,1^+$	2134.6	Additional information 59.
4477.5		(6591.96)	$0^+,1^+$	2116.3	Additional information 60.
4493.1		(6591.96)	$0^+,1^+$	2101.0	
4495.5		(6591.96)	$0^+,1^+$	2098.0	
4510.4		(6591.96)	$0^+,1^+$	2084.1	Additional information 61.
4521.3		(6591.96)	$0^+,1^+$	2072.8	Additional information 62.
4553.6		(6591.96)	$0^+,1^+$	2039.5	Additional information 63.
4580.7		(6591.96)	$0^+,1^+$	2013.4	Additional information 64.
4614.5		(6591.96)	$0^+,1^+$	1979.0	Additional information 65.
4643.1		(6591.96)	$0^+,1^+$	1951.0	Additional information 66.
4661.6		(6591.96)	$0^+,1^+$	1932.7	Additional information 67.
4672.4		(6591.96)	$0^+,1^+$	1921.3	Additional information 68.
4684.0		(6591.96)	$0^+,1^+$	1909.8	Additional information 69.
4723.0		(6591.96)	$0^+,1^+$	1870.6	Additional information 70.
4734.4		(6591.96)	$0^+,1^+$	1859.3	Additional information 71.
4738.7		(6591.96)	$0^+,1^+$	1855.0	Additional information 72.
4770.6		(6591.96)	$0^+,1^+$	1823.2	Additional information 73.
4776.0		(6591.96)	$0^+,1^+$	1818.1	Additional information 74.

Continued on next page (footnotes at end of table)

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12 (continued)

$\gamma(^{170}Tm)$ (continued)

E_γ ‡	E_i(level)	J_i^π	E_f	Comments
4825.2	(6591.96)	$0^+,1^+$	1768.7	Additional information 75.
4835.4	(6591.96)	$0^+,1^+$	1758.4	Additional information 76.
4846.2	(6591.96)	$0^+,1^+$	1747.7	Additional information 77.
4860.1	(6591.96)	$0^+,1^+$	1733.7	Additional information 78.
4867.2	(6591.96)	$0^+,1^+$	1726.7	Additional information 79.
4889.0	(6591.96)	$0^+,1^+$	1704.8	Additional information 80.
4924.2	(6591.96)	$0^+,1^+$	1669.2	Additional information 81.
4935.0	(6591.96)	$0^+,1^+$	1658.7	Additional information 82.
4947.8	(6591.96)	$0^+,1^+$	1646.3	Additional information 83.
4954.6	(6591.96)	$0^+,1^+$	1639.2	Additional information 84.
4984.5	(6591.96)	$0^+,1^+$	1609.3	Additional information 85.
4990.1	(6591.96)	$0^+,1^+$	1603.5	Additional information 86.
5003.6	(6591.96)	$0^+,1^+$	1590.3	
5007.0	(6591.96)	$0^+,1^+$	1586.7	Additional information 87.
5044.7	(6591.96)	$0^+,1^+$	1549.1	Additional information 88.
5057.5	(6591.96)	$0^+,1^+$	1536.2	Additional information 89.
5075.5	(6591.96)	$0^+,1^+$	1518.1	
5079.3	(6591.96)	$0^+,1^+$	1515.1	Additional information 90.
5091.6	(6591.96)	$0^+,1^+$	1502.2	Additional information 91.
5116.5	(6591.96)	$0^+,1^+$	1478.0	Additional information 92.
5125.6	(6591.96)	$0^+,1^+$	1468.1	Additional information 93.
5150.3	(6591.96)	$0^+,1^+$	1443.2	
5151.9	(6591.96)	$0^+,1^+$	1442.0	
5156.5	(6591.96)	$0^+,1^+$	1437.2	Additional information 94.
5161.4	(6591.96)	$0^+,1^+$	1432.4	Additional information 95.
5181.0	(6591.96)	$0^+,1^+$	1413.1	Additional information 96.
5199.0	(6591.96)	$0^+,1^+$	1394.8	Additional information 97.
5212.0	(6591.96)	$0^+,1^+$	1382.2	Additional information 98.
5217.3	(6591.96)	$0^+,1^+$	1376.6	Additional information 99.
5232.9	(6591.96)	$0^+,1^+$	1360.4	Additional information 100.
5240.4	(6591.96)	$0^+,1^+$	1353.5	Additional information 101.
5259.0	(6591.96)	$0^+,1^+$	1334.9	Additional information 102.
5276.8	(6591.96)	$0^+,1^+$	1317.0	Additional information 103.
5284.6	(6591.96)	$0^+,1^+$	1309.3	Additional information 104.
5295.7	(6591.96)	$0^+,1^+$	1298.3	Additional information 105.
5313.0	(6591.96)	$0^+,1^+$	1280.9	Additional information 106.
5328.2	(6591.96)	$0^+,1^+$	1265.6	Additional information 107.
5355.8	(6591.96)	$0^+,1^+$	1238.0	Additional information 108.
5361.5	(6591.96)	$0^+,1^+$	1232.4	Additional information 109.
5383.7	(6591.96)	$0^+,1^+$	1210.3	Additional information 110.
5393.6	(6591.96)	$0^+,1^+$	1200.7	Additional information 111.
5401.0	(6591.96)	$0^+,1^+$	1192.8	Additional information 112.
5410.9	(6591.96)	$0^+,1^+$	1182.3	Additional information 113.
5415.1	(6591.96)	$0^+,1^+$	1178.6	Additional information 114.
5425.7	(6591.96)	$0^+,1^+$	1168.2	Additional information 115.
5445.9	(6591.96)	$0^+,1^+$	1148.0	Additional information 116.
5451.9	(6591.96)	$0^+,1^+$	1139.2	Additional information 117.
5454.6	(6591.96)	$0^+,1^+$		Additional information 118.
5490.5	(6591.96)	$0^+,1^+$	1103.1	Additional information 119.
5505.8	(6591.96)	$0^+,1^+$	1087.8	Additional information 120.
5521.0	(6591.96)	$0^+,1^+$	1072.7	Additional information 121.
5536.4	(6591.96)	$0^+,1^+$	1057.3	Additional information 122.
5615.2	(6591.96)	$0^+,1^+$	978.6	Additional information 123.
5686.4	(6591.96)	$0^+,1^+$	907.3	Additional information 124.
5725.8	(6591.96)	$0^+,1^+$	868.0	Additional information 125.
5732.0	(6591.96)	$0^+,1^+$	861.9	Additional information 126.

Continued on next page (footnotes at end of table)

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12 (continued)

$\gamma(^{170}Tm)$ (continued)

E_γ ‡	E_i(level)	J_i^π	E_f	Comments
5737.4	(6591.96)	$0^+,1^+$	854.1	
5743.9	(6591.96)	$0^+,1^+$	850.2	Additional information 127.
5761.1	(6591.96)	$0^+,1^+$	832.6	Additional information 128.
5772.6	(6591.96)	$0^+,1^+$	821.3	Additional information 129.
5811.9	(6591.96)	$0^+,1^+$	781.9	Additional information 130.
5833.6	(6591.96)	$0^+,1^+$	760.4	Additional information 131.
5860.1	(6591.96)	$0^+,1^+$	733.7	Additional information 132.
5884.4	(6591.96)	$0^+,1^+$	709.3	Additional information 133.
5890.0	(6591.96)	$0^+,1^+$	703.7	Additional information 134.
5900.4	(6591.96)	$0^+,1^+$	693.4	Additional information 135.
5945.5	(6591.96)	$0^+,1^+$	648.6	
5989.8	(6591.96)	$0^+,1^+$	604.0	Additional information 136.
5999.5	(6591.96)	$0^+,1^+$	594.2	Additional information 137.
6004.1	(6591.96)	$0^+,1^+$	589.7	Additional information 138.

† 1996Va23 report (high-energy γ)-(low-energy γ) coincidence photon intensities, normalized so the area of the experimental distribution in the interval 520<Eγ<(E(cascade)−520) is 100% for each two-photon energy-sum gated spectrum. Data were reported for 14 strong energy sums, corresponding to two-photon cascades terminating at the g.s. and the 39, 115, 150, 183, 204, 220, 237, 271, 350, 447, 590, 604 and 638?+649+650 levels. For completeness, these sum spectrum intensities are shown here under the label $I_{\gamma1\gamma2}$ opposite the relevant γ_2 energy. Note that, due to experimental conditions, these intensities are only lower limits if Eγ<520 for one of the coincident gammas (1996Ho12); this affects a number of transitions deexciting levels with E≤760.

‡ From 1996Va23. Eγ values for many secondary γ-rays differ significantly (≥4σ) from the least-squares adjusted values of level energy diferences; such cases are noted. The Eγ values given for the primary γ-rays are the average of all values listed in 1996Va23. The authors do not give uncertainties for these; it should be noted, however, that in the worst cases, there can be a 6 keV spread in the values averaged. Data for unplaced γ-rays are not included here; please see 1996Va23 for those (≈80 γ-ray pairs).

From 1996Ho12. Not reported in 1996Va23.

@ 1996Va23 place a 428.6γ and a 532.6γ from an otherwise unknown E=647.9 *6* level, but 1996Ho12 place them from the adopted 648.75 level which is known to be deexcited by a 429.0γ.

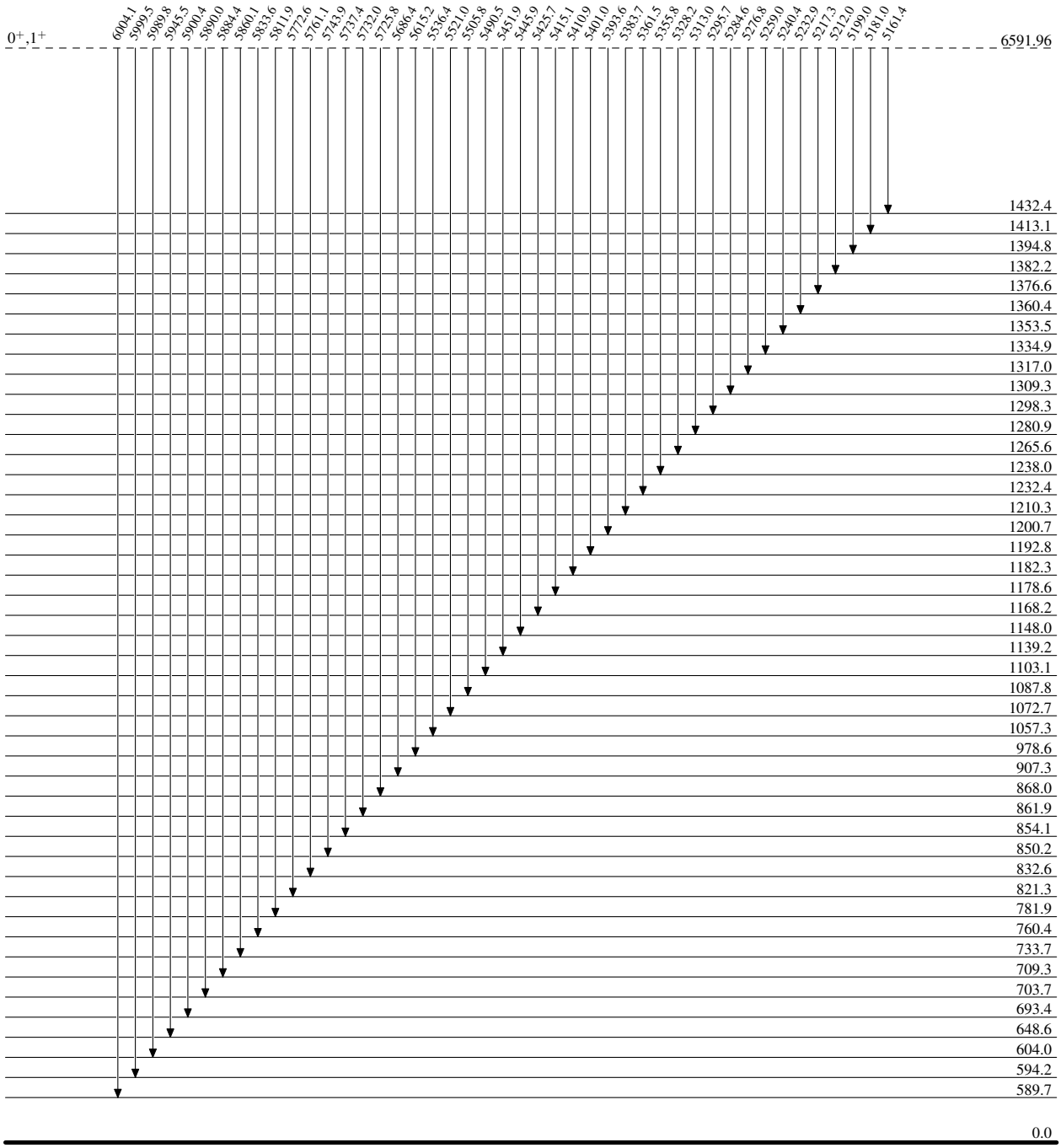
& Value differs by at least 4σ from that expected based on least-squares adjusted level energies. Possibly the precision of Eγ data has been overestimated for some secondary transitions. Almost certainly, some closely-spaced intermediate or final levels involved in the cascades have not been resolved; for example, a large number of transitions to E(level)≈640 keV may be unresolved doublets comprised of γ-rays feeding the adopted 648.7 and 637.9 levels.

a Placement of transition in the level scheme is uncertain.

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12

Level Scheme

Intensities: Relative coin intensity, $I_{\gamma 1 \gamma 2}$

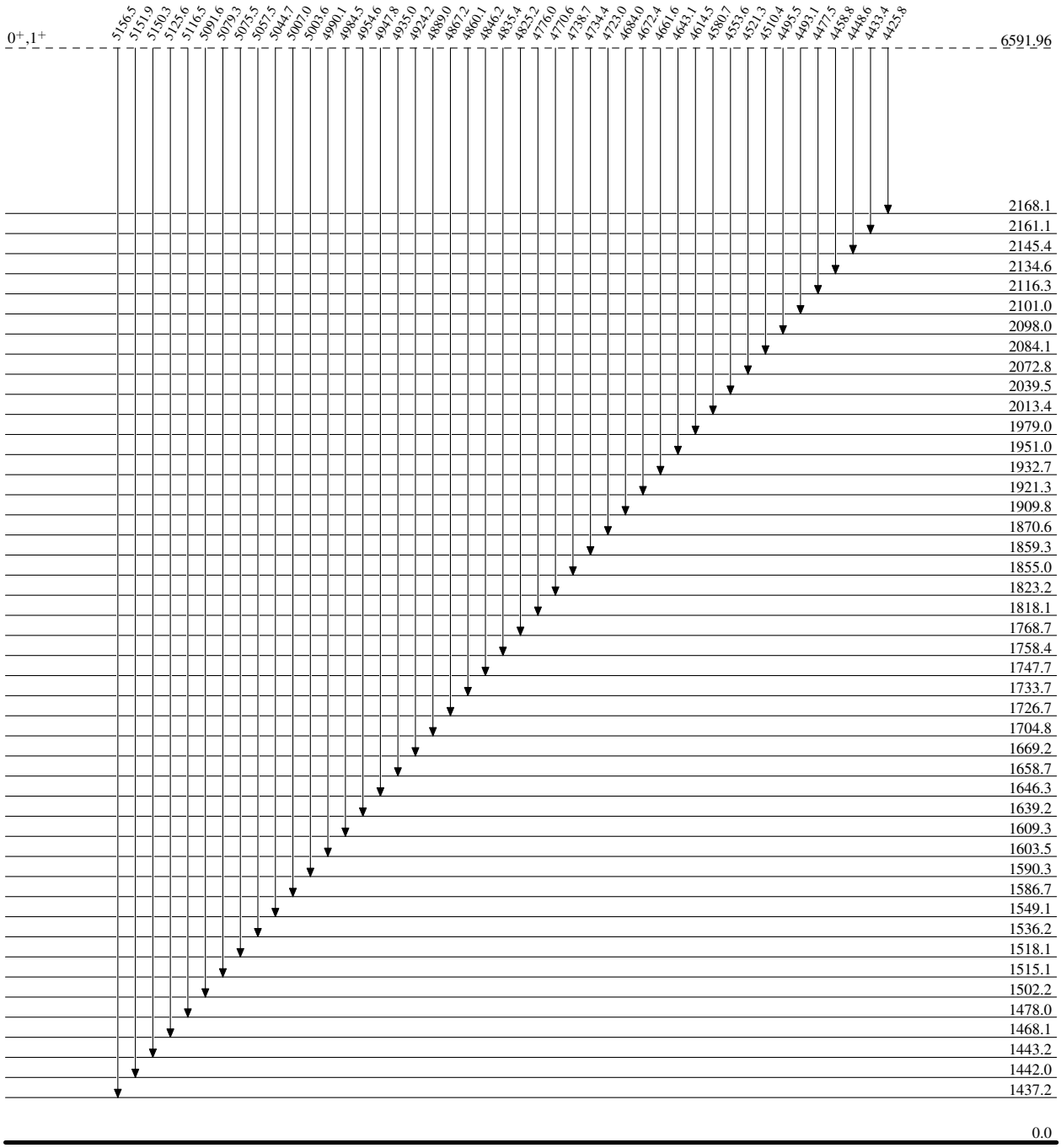


$^{170}_{69}Tm_{101}$

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12

Level Scheme (continued)

Intensities: Relative coin intensity, $I_{\gamma 1 \gamma 2}$

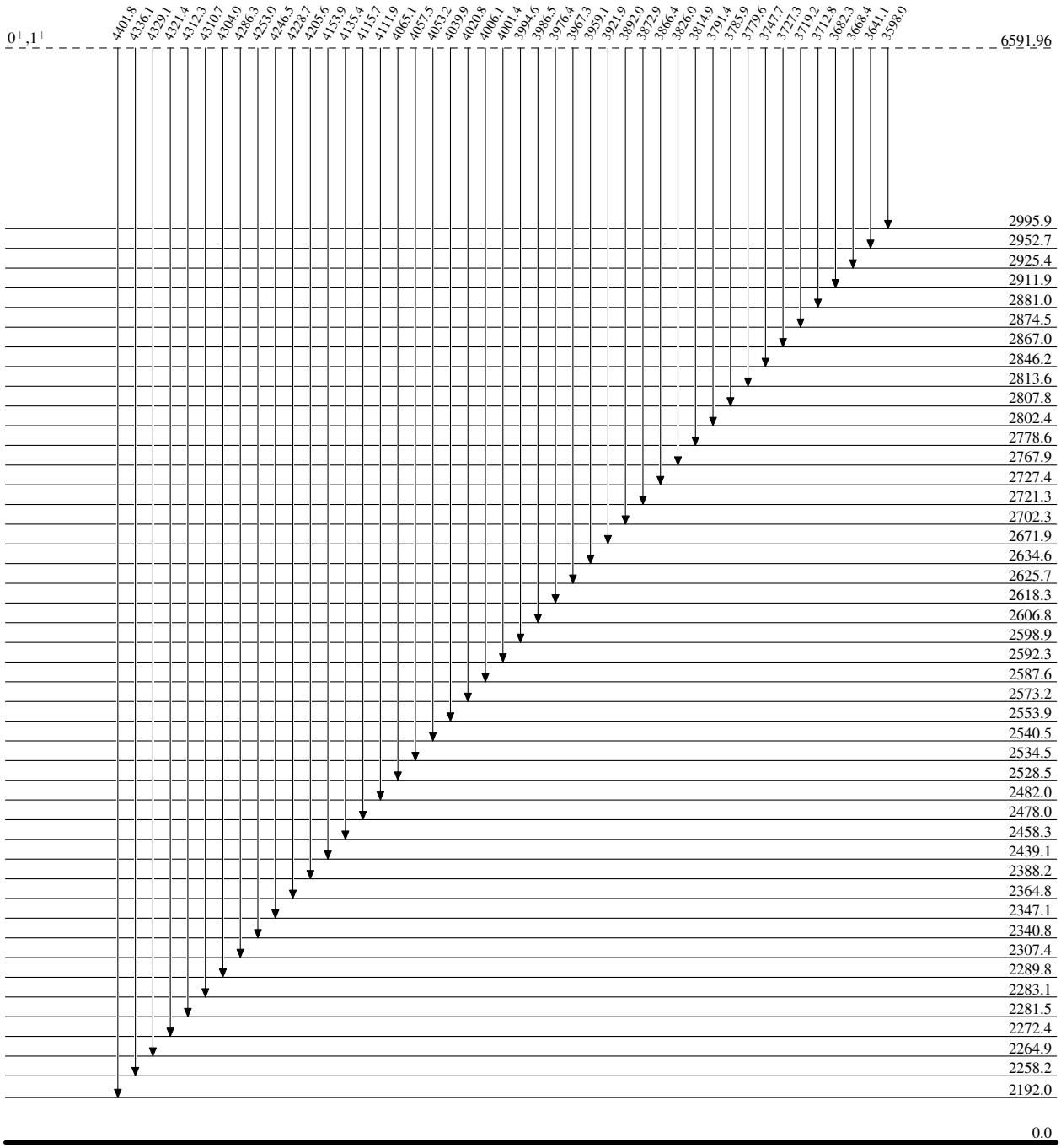


$^{170}_{69}Tm_{101}$

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12

Level Scheme (continued)

Intensities: Relative coin intensity, $I_{\gamma 1 \gamma 2}$



$^{170}_{69}Tm_{101}$

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12

Level Scheme (continued)

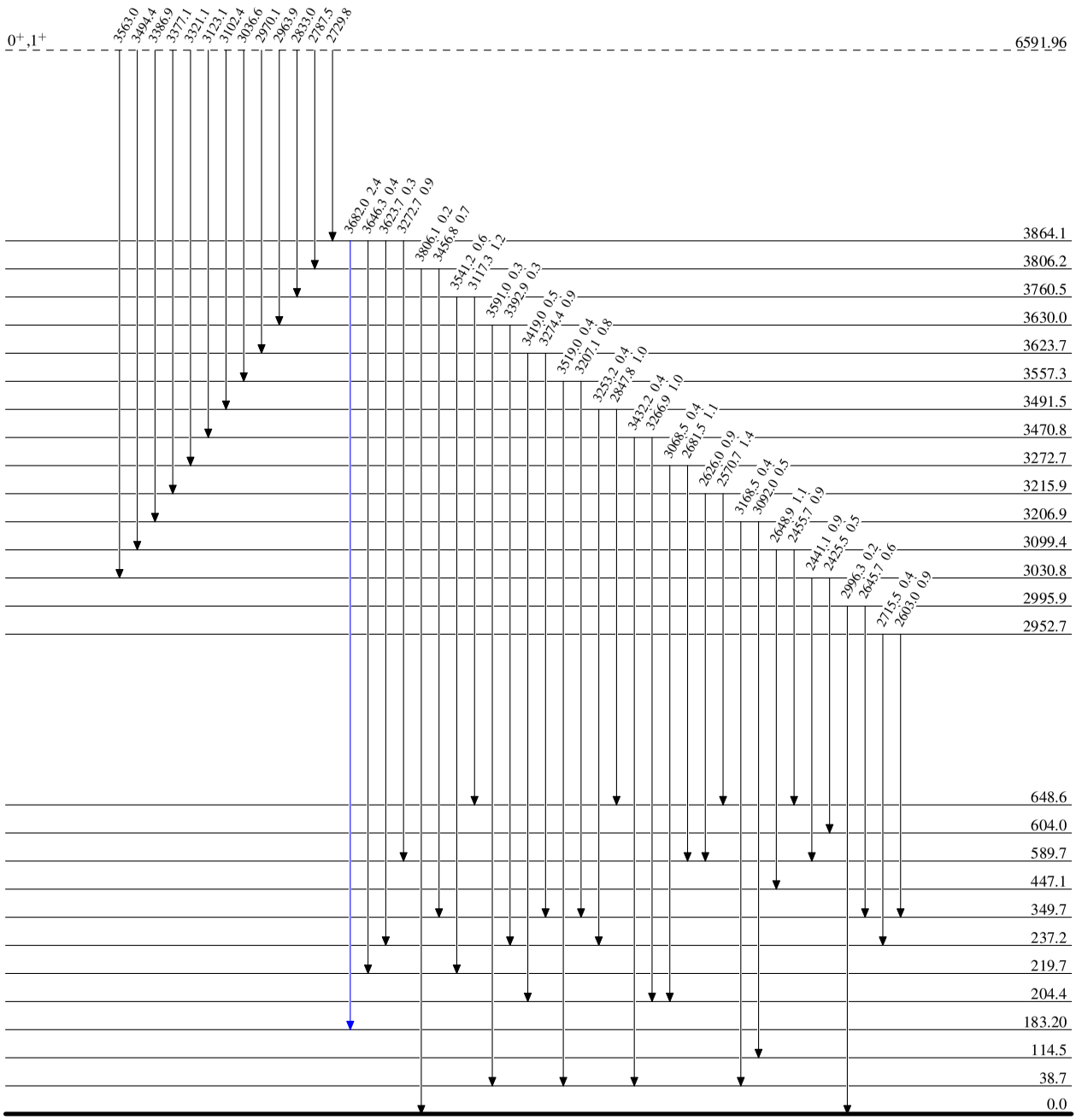
Intensities: Relative coin intensity, $I_{\gamma 1 \gamma 2}$

Legend

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

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

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



$^{170}_{69}Tm_{101}$

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12

Level Scheme (continued)

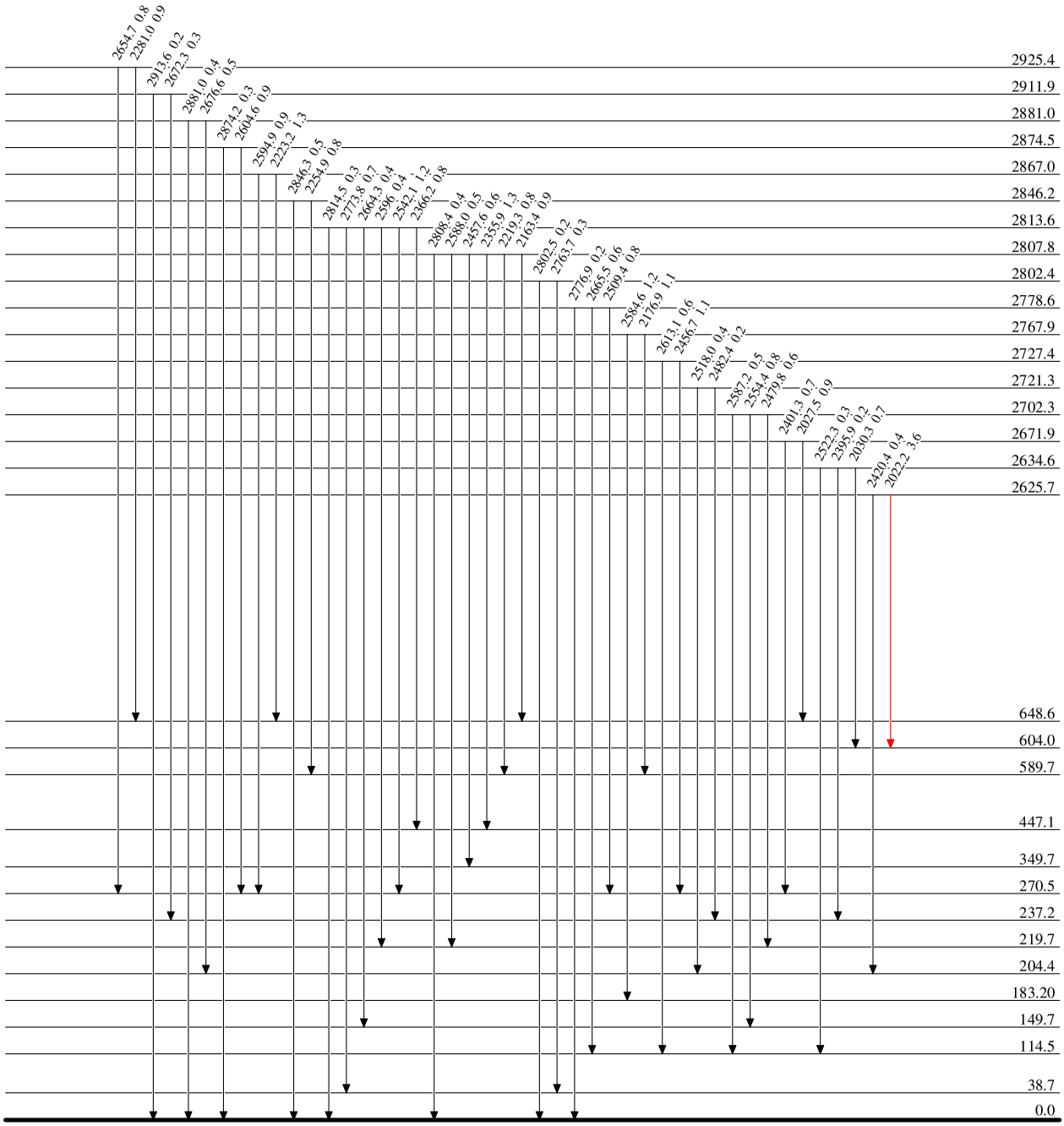
Intensities: Relative coin intensity, $I_{\gamma 1 \gamma 2}$

Legend

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

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

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



$^{170}_{69}Tm_{101}$

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12

Level Scheme (continued)

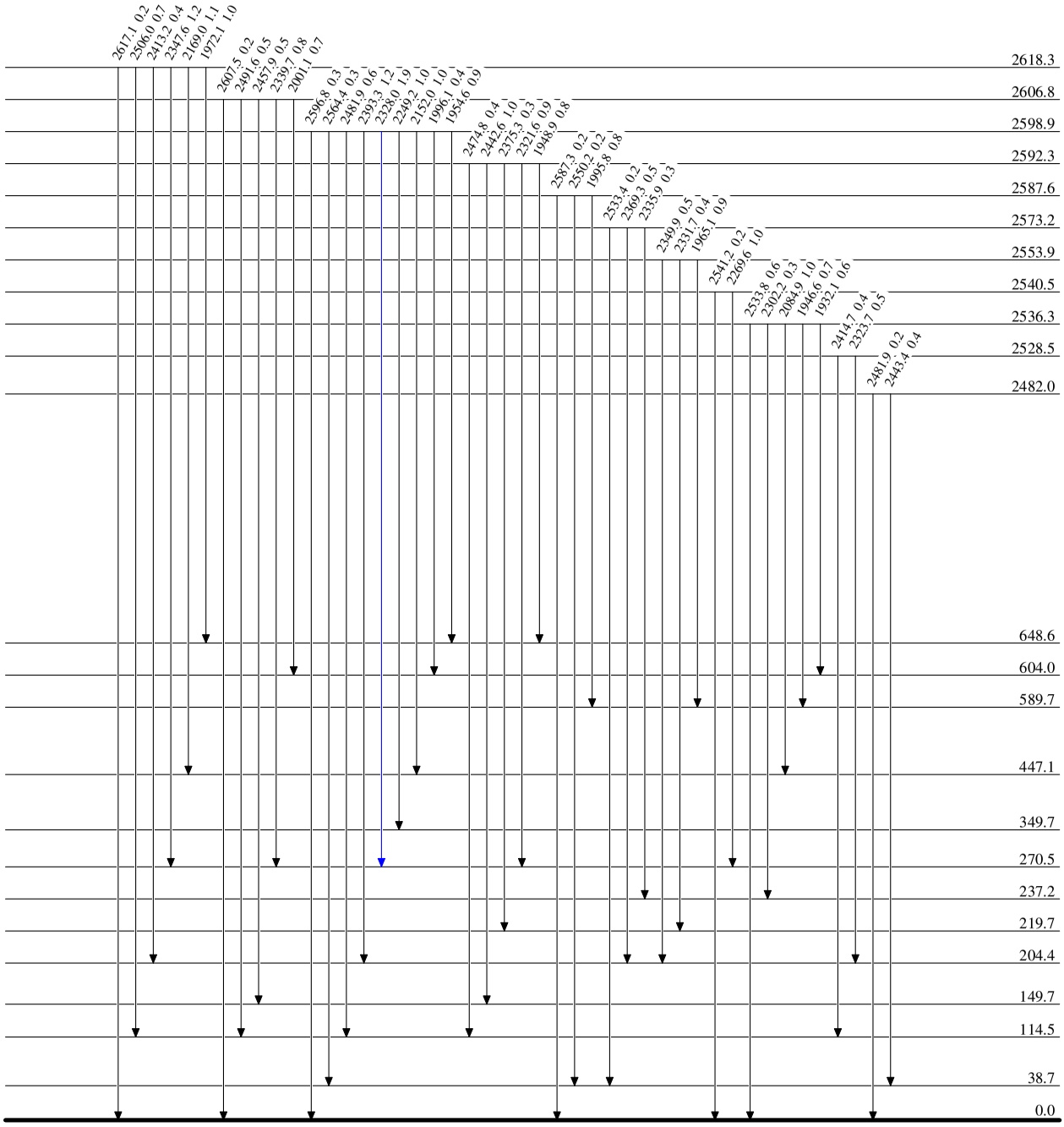
Intensities: Relative coin intensity, $I_{\gamma 1 \gamma 2}$

Legend

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

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

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



$^{170}_{69}Tm_{101}$

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12

Level Scheme (continued)

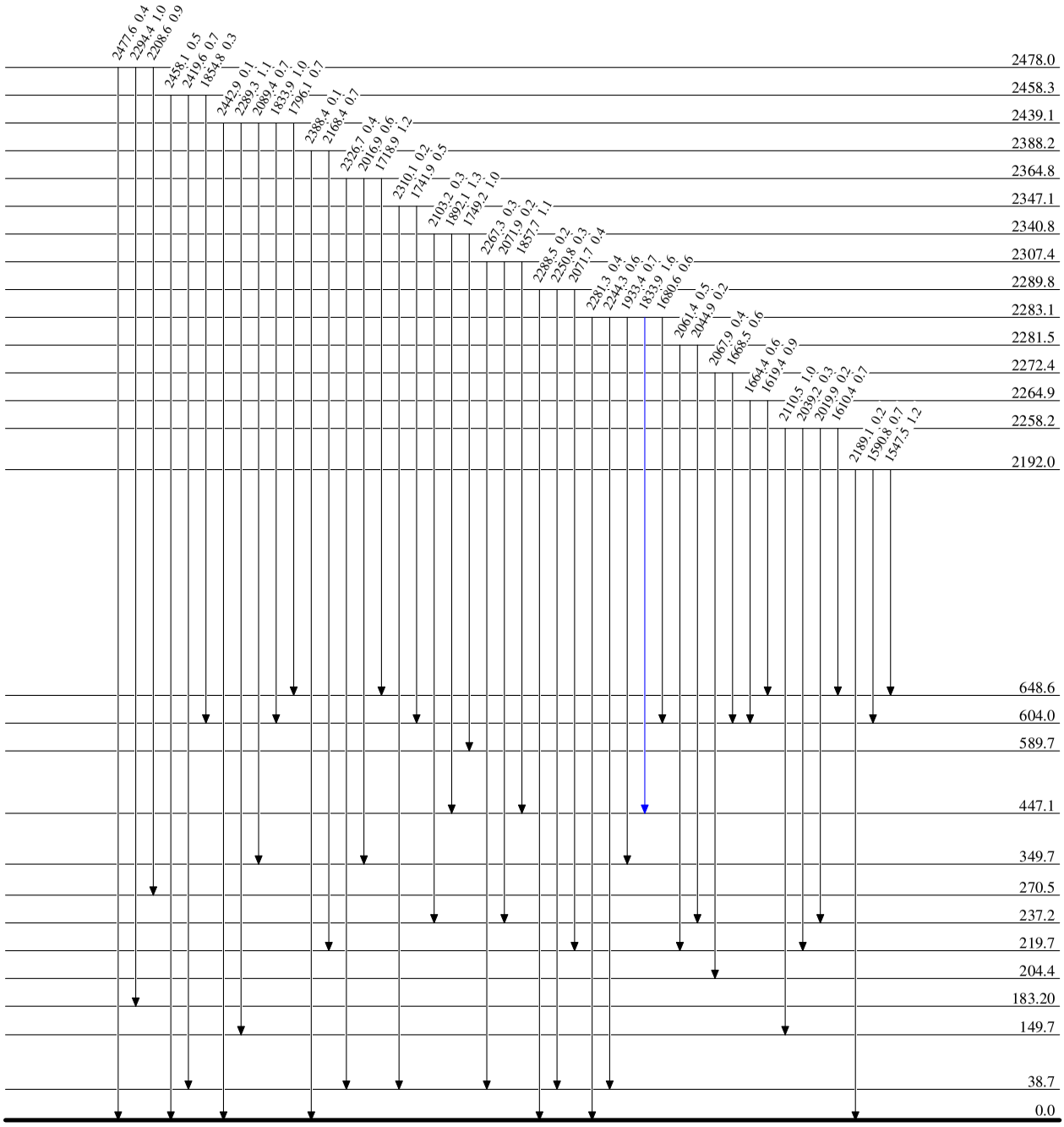
Intensities: Relative coin intensity, $I_{\gamma 1 \gamma 2}$

Legend

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

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

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



$^{170}_{69}Tm_{101}$

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12

Level Scheme (continued)

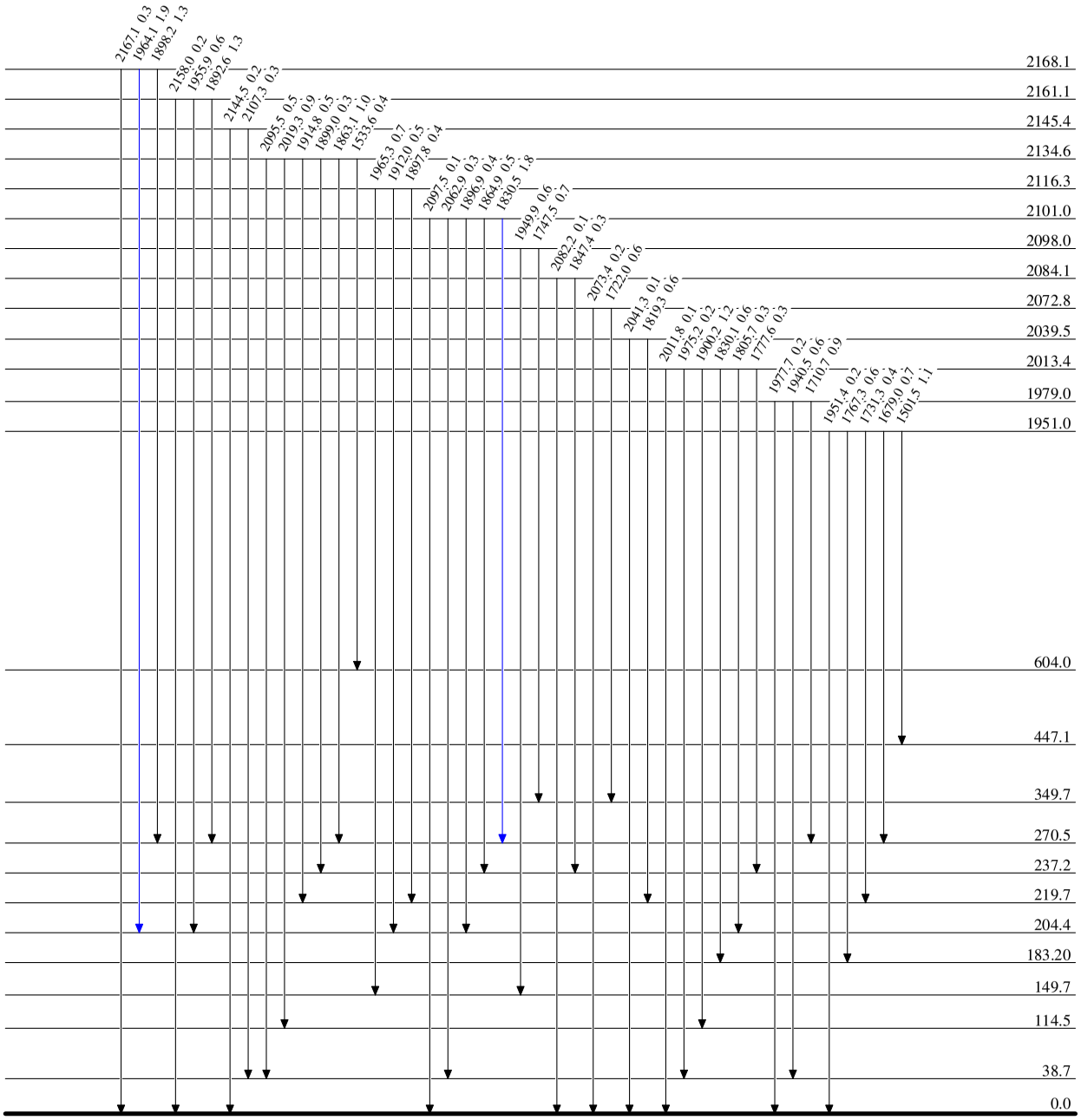
Intensities: Relative coin intensity, $I_{\gamma 1 \gamma 2}$

Legend

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

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

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



$^{170}_{69}Tm_{101}$

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12

Level Scheme (continued)

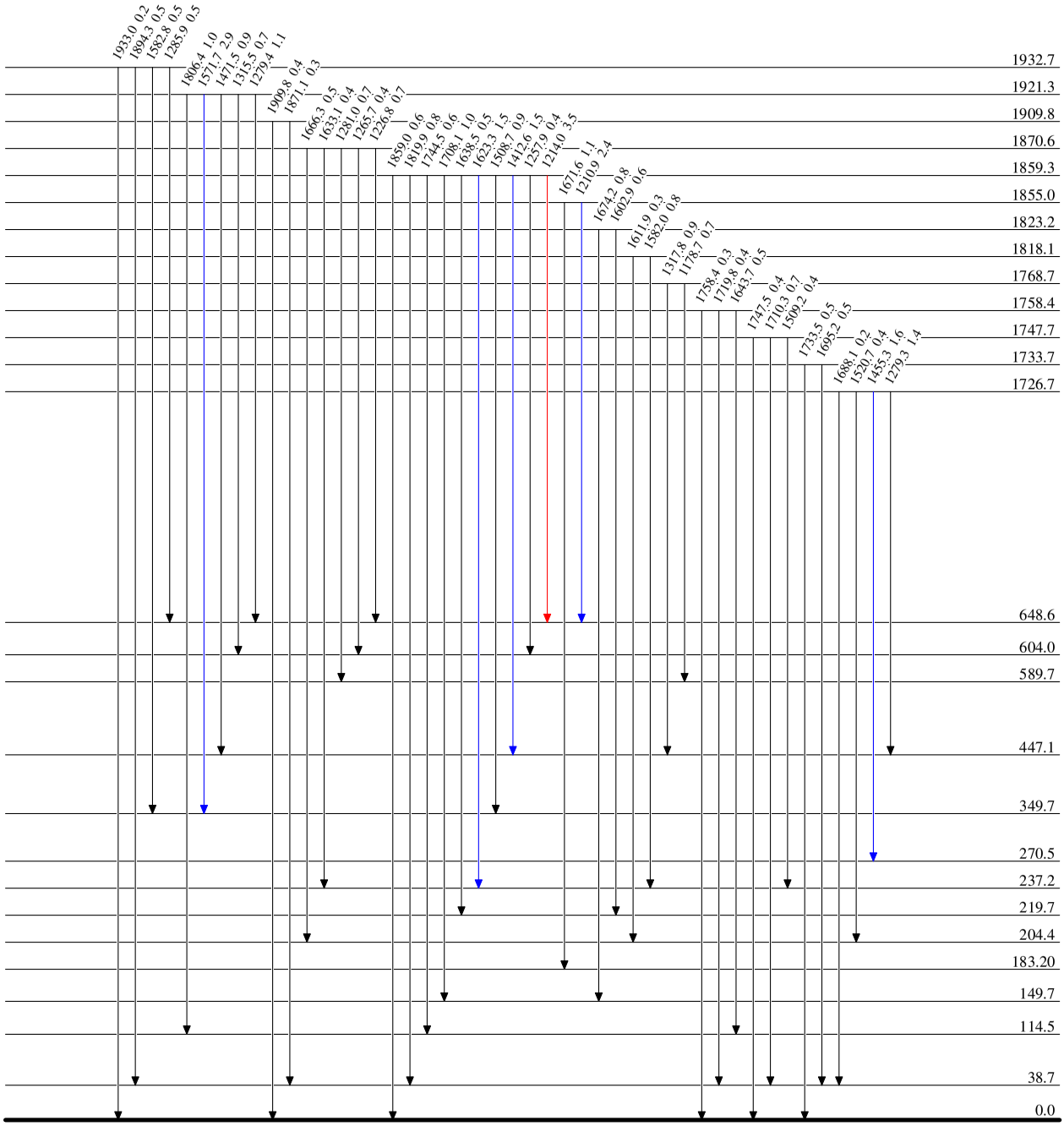
Intensities: Relative coin intensity, $I_{\gamma 1 \gamma 2}$

Legend

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

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

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



$^{170}_{69}Tm_{101}$

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12

Level Scheme (continued)

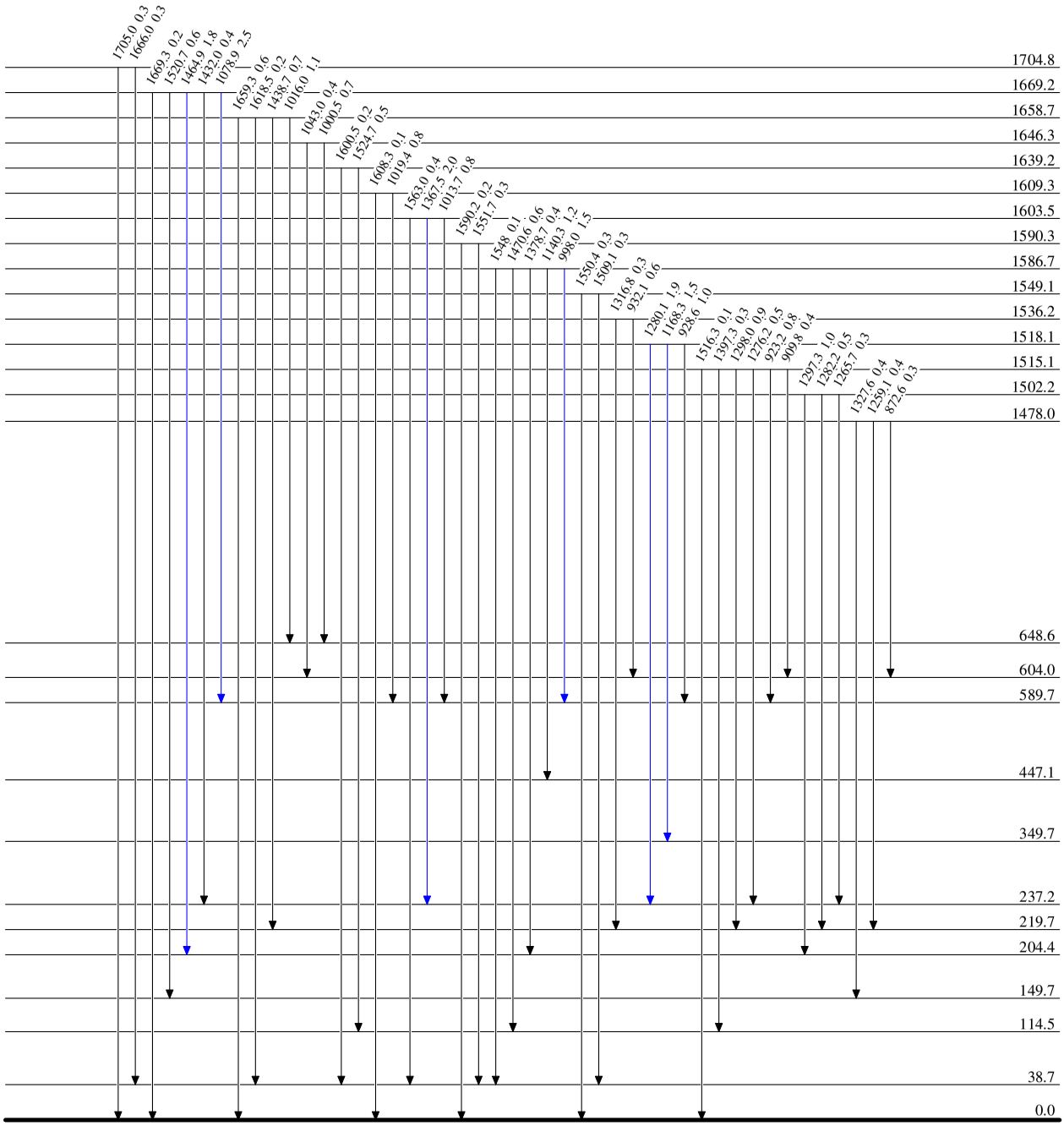
Intensities: Relative coin intensity, $I_{\gamma 1 \gamma 2}$

Legend

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

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

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



$^{170}_{69}Tm_{101}$

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12

Level Scheme (continued)

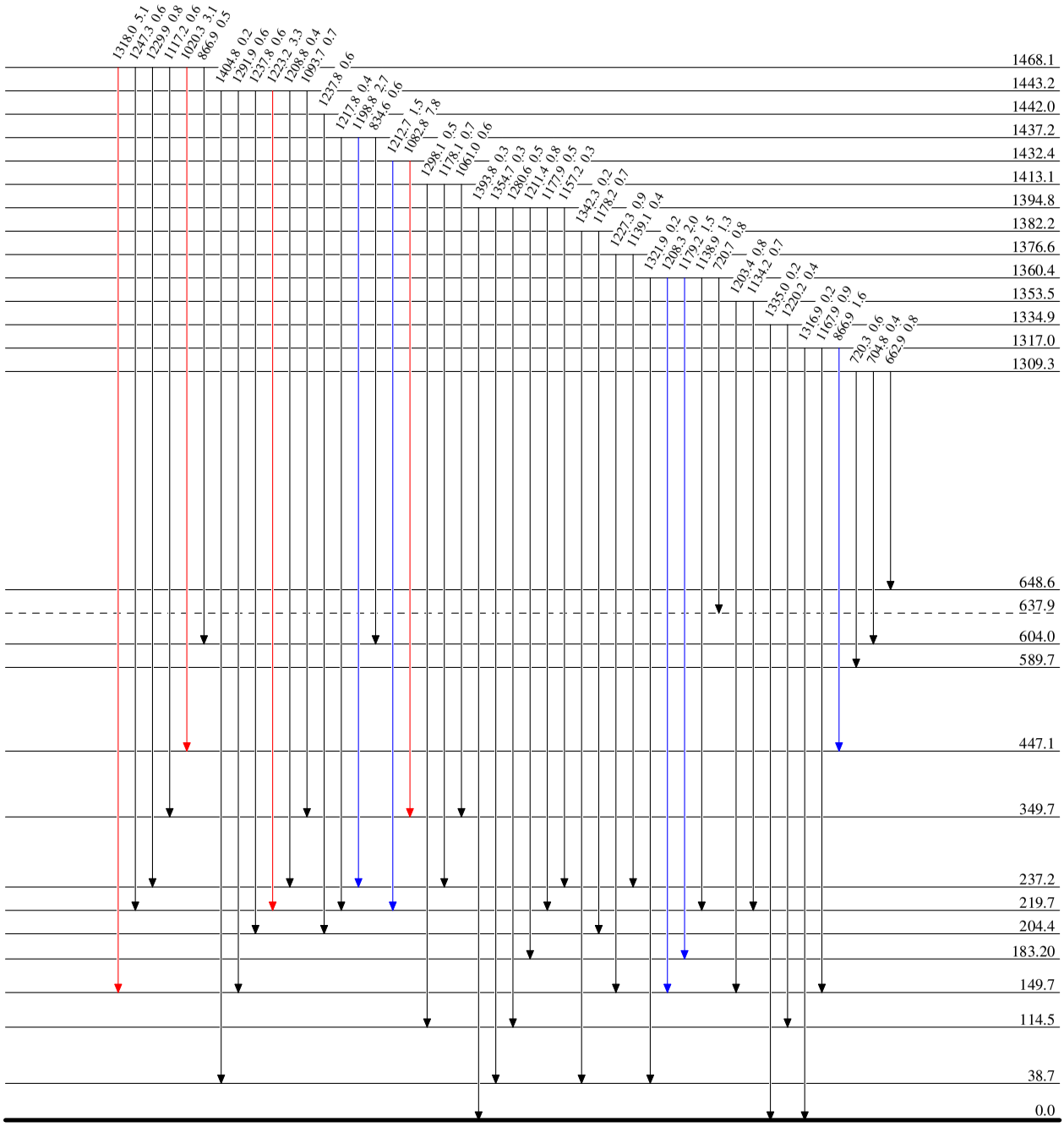
Intensities: Relative coin intensity, $I_{\gamma 1 \gamma 2}$

Legend

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

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

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



$^{170}_{69}Tm_{101}$

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12

Level Scheme (continued)

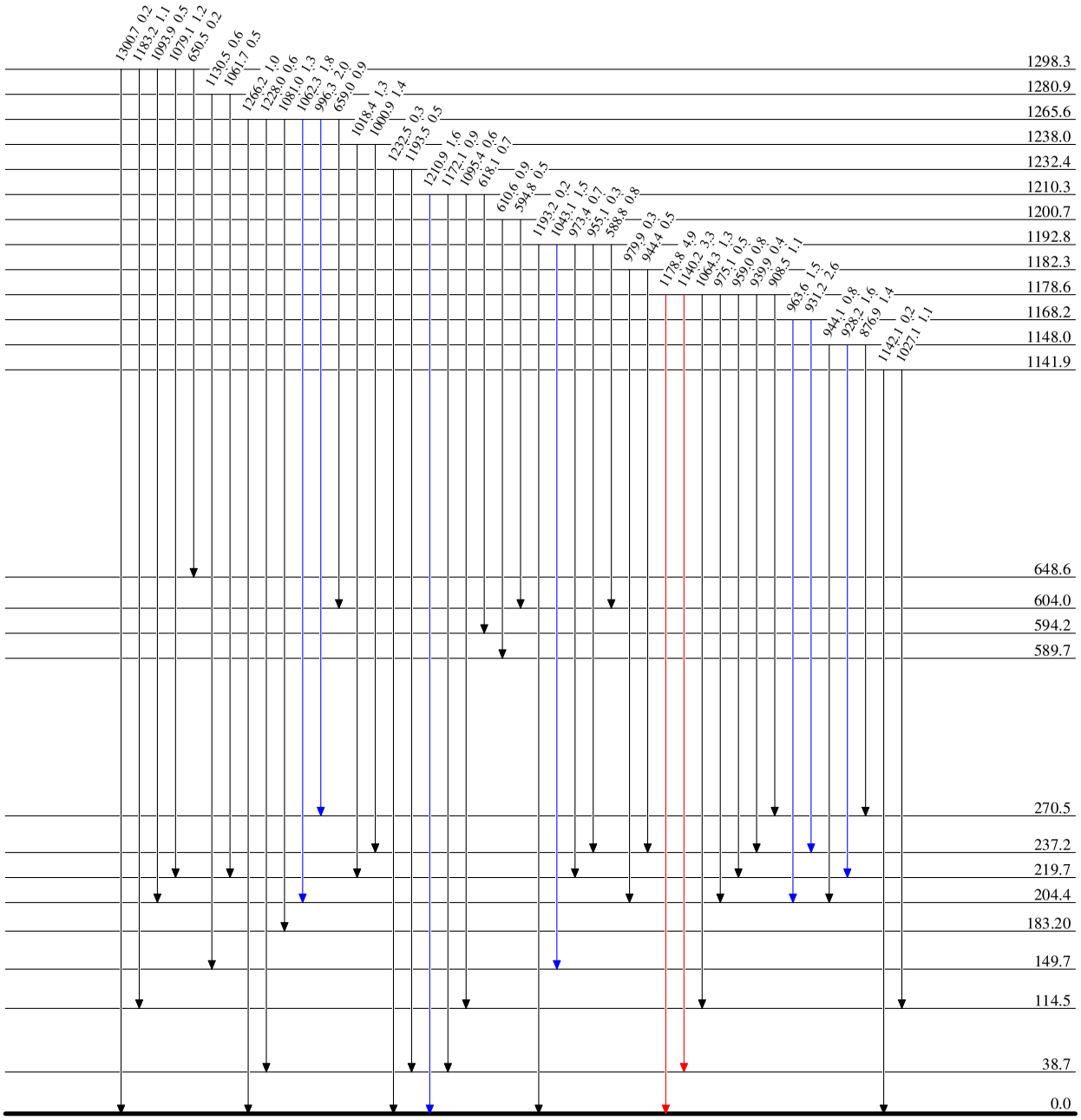
Intensities: Relative coin intensity, $I_{\gamma 1 \gamma 2}$

Legend

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

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

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



$^{170}_{69}Tm_{101}$

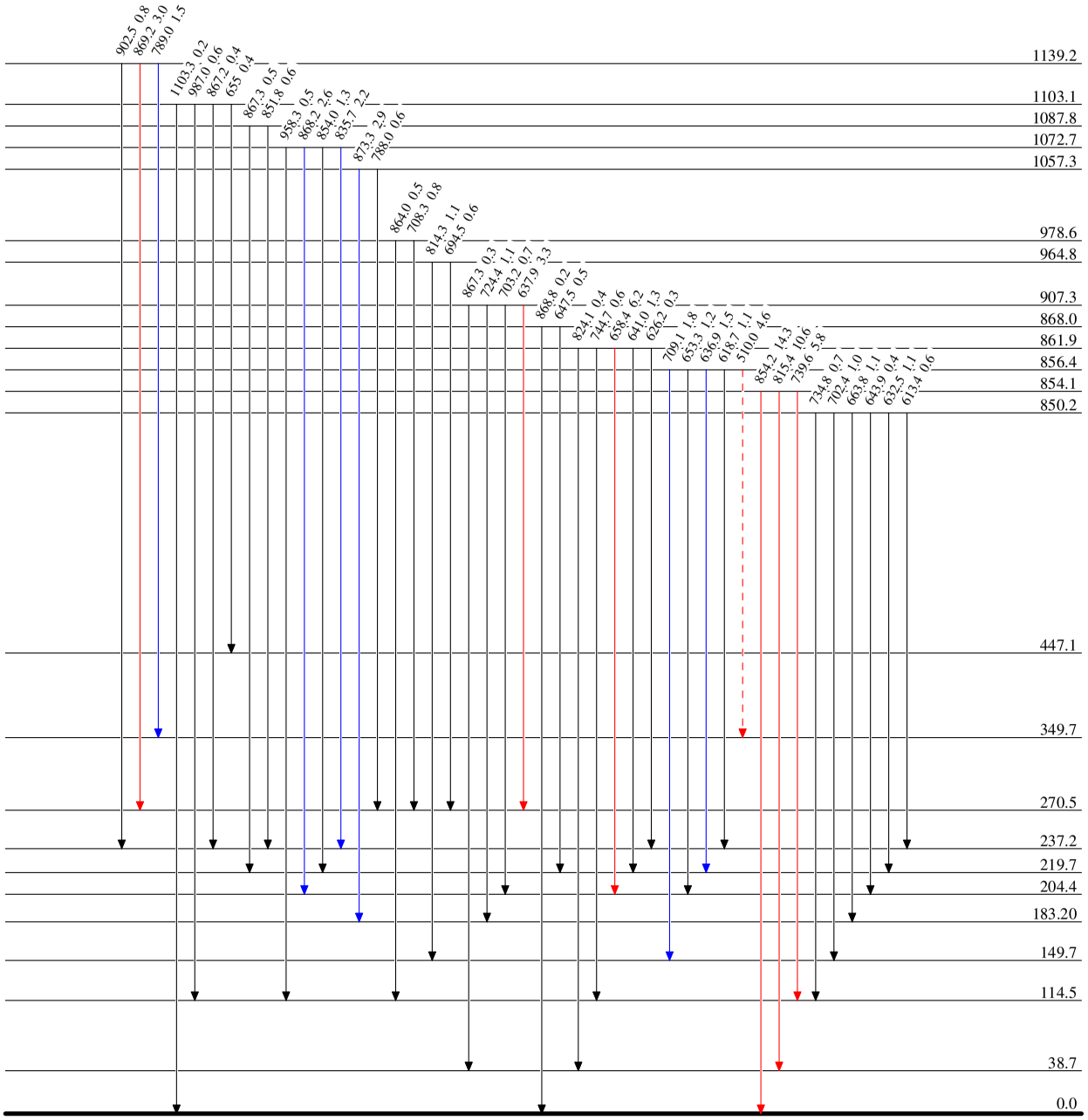
^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12

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)

Level Scheme (continued)

Intensities: Relative coin intensity, $I_{\gamma 1 \gamma 2}$

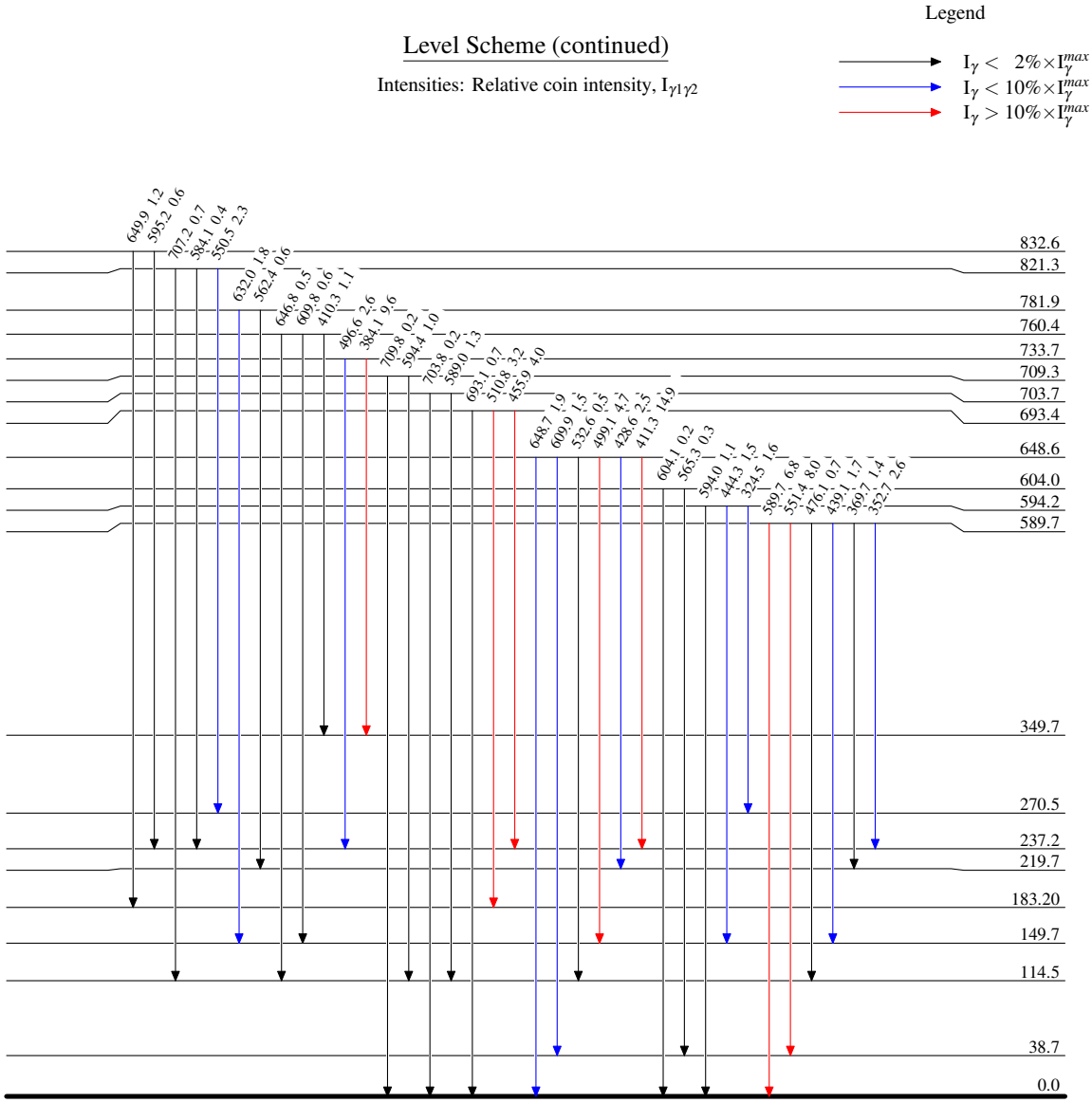


$^{170}_{69}Tm_{101}$

^{169}Tm(n,γ) E=thermal: γ coin 1996Va23,1996Ho12

Level Scheme (continued)

Intensities: Relative coin intensity, $I_{\gamma 1 \gamma 2}$



$^{170}_{69}Tm_{101}$