Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111,1807 (2010)	15-Jun-2010

Q(β^-)=−4.51×10^3 *4*; S(n)=9062 *4*; S(p)=6326.4 *16*; Q(α)=1935.2 *12* 2012Wa38

Note: Current evaluation has used the following Q record −4510 509052 56315 41950 4 2003Au03,2009AuZZ.

See 1982Bu21, 1985Ne09, 1991Ki14, 1991Ma48, 2002Zi04, 2003Ba90 for recent hfs and isotope shift data (^{168}Yb, with low natural abundance, barely detected).

Calculations of α-decay halflife (>10^{24} y): see, e.g., 2002Fu04. This suggests that Yb is a viable material for a large-volume solar neutrino detector.

Search for hyperdeformation in ^{168}Yb (none found): 1997Wi19.

^{168}Yb Levels

Cross Reference (XREF) Flags

A	^{168}Lu ε decay (5.5 min)	E	^{168}Yb(d,d′)	I	^{186}W(N,4p15nγ)
B	^{168}Lu ε decay (6.7 min)	F	Coulomb excitation	J	^{171}Yb(^{3}He,α2nγ)
C	(HI,xnγ)	G	^{170}Yb(p,t)		
D	^{169}Tm(p,2nγ), (d,3nγ),	H	^{168}Tm β^- decay		

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	XREF	Comments
0.0[c]	0$^+$[b]	stable	ABCDEFGHI	<r^2>$^{1/2}$(charge)=5.268 *6* (2004An14). J$^\pi$: g.s. of even-even nuclide.
87.73[c] *1*	2$^+$[b]	1.49 ns *4*	ABCDEFGHI	J$^\pi$: E2 88γ to 0$^+$ g.s.. T$_{1/2}$: deduced from B(E2)↑=5.77 *4* in Coulomb excitation and adopted properties for 87.7γ. Other: 1.4 ns *5* ($\gamma\gamma$(t) in ^{168}Lu ε decay, 1973Ch28).
286.551[c] *21*	4$^+$[b]		ABCDEFG I	J$^\pi$: L(p,t)=4.
585.25[c] *5*	6$^+$[b]		ABCDEFG I	J$^\pi$: stretched E2 intraband 299γ to 4$^+$ 287.
970.03[c] *11*	8$^+$[b]		ABCD F I	J$^\pi$: stretched E2 intraband 385γ to 6$^+$ 585.
984.00[d] *5*	2$^+$	1.03 ps *10*	ABCDEFG	J$^\pi$: L=2 in ^{170}Yb(p,t); γ's to 0$^+$ and 4$^+$. T$_{1/2}$: deduced from B(E2)↑=0.128 *5* in Coulomb excitation and adopted properties for 984γ.
1067.15[d] *5*	(3)$^+$		ABCD G	J$^\pi$: E2 781γ to 4$^+$ 287; 980γ to 2$^+$ 88; band assignment.
1098[&] *5*			G	
1155.2[e] *8*	(0$^+$)		B DEF	J$^\pi$: E0 γ to 0$^+$; J^π uncertain due to questionable 1156γ placement.
1159.7	(1$^-$)		B G	J$^\pi$: 1159γ to 0$^+$ g.s.; 1072γ to 2$^+$ 88; the 1161-keV peak in ^{170}Yb(p,t) does not have an L=0 shape.
1171.38[d] *6*	(4)$^+$		AB DEFG	J$^\pi$: L=(4) in ^{170}Yb(p,t); E2 885γ to 4$^+$ 287; 586γ to 6$^+$ 585; 187γ to 2$^+$ 984.
1197?[f] *4*	0$^+$	1.3 ns *3*	D G	J$^\pi$: L=0 in ^{170}Yb(p,t). T$_{1/2}$: from n-ce(t) in ^{169}Tm(p,2nγ), (d,3nγ), ^{166}Er(α,2nγ) (1967Ke08).
1231.5? *3*	(1$^-$)		B G	J$^\pi$: 1231γ to 0$^+$ g.s.; the 1231-keV peak in ^{170}Yb(p,t) does not have an L=2 shape.
1233.1[e] *3*	2$^+$		B DEF	J$^\pi$: Coulomb excited with B(E2)↑=0.050 *5*.
1279.0[f] *4*	(2$^+$)		B G	J$^\pi$: L=(2) in ^{170}Yb(p,t); gammas to 0$^+$ and 2$^+$; band assignment.
1302.30[d] *8*	(5)$^+$		ABCD	J$^\pi$: E2 1016γ to 4$^+$ 287; 717γ to 6$^+$ 585; 236γ to (3)$^+$ 1067; band assignment.
1340[&] *7*	(0$^+$)		G	J$^\pi$: L=(0) in ^{170}Yb(p,t).
1390.12?[e] *3*	(4$^+$)		B DE	J$^\pi$: (E0+E2) 1103γ to 4$^+$ 287; 1302γ to 2$^+$ 88; 805γ? to 6$^+$ 585.
1407.86? *17*	(2$^-$)		B	J$^\pi$: 1320γ? to 2$^+$ 88; 176γ? to (1$^-$) 1232.

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Adopted Levels, Gammas (continued)

^{168}Yb Levels (continued)

E(level)[†]	Jπ[‡]	T$_{1/2}$[#]	XREF	Comments
1425.45[c] 22	10$^+$[b]		CD I	Jπ: stretched E2 intraband 455γ to 8$^+$ 970.
1433[@] 6			E	
1445.13[d] 9	(6)$^+$		A D	Jπ: M1+E2 860γ to 6$^+$ 585; 1159γ? to 4$^+$ 287; band assignment.
1451.76[a] 5	(3)$^+$		ABC	Jπ: E2 385γ to (3)$^+$ 1067; 1364γ to 2$^+$ 88; band assignment.
1472.6 5	(4$^+$)		B	Jπ: 888γ to 6$^+$ 585; 300γ to (4)$^+$ 1171; 406γ? to (3)$^+$ 1067.
1479.99 14	3$^-$		B EF	Jπ: from consistent B(E3) values at two different scattering angles in Coulomb excitation; supported by relative cross sections in ^{168}Yb(d,d′), 1392γ to 2$^+$ 88 and 1193γ to 4$^+$ 287.
1480[&f] 5	(4$^+$)		G	Jπ: L=(4) in ^{170}Yb(p,t); 4$^+$ consistent with band assignment.
1543?[g] 4	(0$^+$)	≤1.1 ns	De G	Jπ: E0 1543γ? to 0$^+$ g.s.. T$_{1/2}$: from n-ce(t) in ^{169}Tm(p,2nγ), (d,3nγ), ^{166}Er(α,2nγ) (1967Ke08).
1551.33[a] 5	(4)$^+$		ABC e	Jπ: 1464γ to 2$^+$ 88; 249γ to (5)$^+$ 1302; E2(+M1) 854γ from (3)$^+$ 2405; band assignment.
1595[@] 6	3$^-$		EF	Jπ: from consistent B(E3) values at two different scattering angles in Coulomb excitation and relative cross sections in (d,d′). Level may also Be populated in ε decay; see comment on 1597.9 level.
1597.89? 7	(−)		AB	Level and deexciting transitions are not well characterized; there may be another level involved (possibly 1595 level) and, if so, which γ's deexcite which level is unclear. Jπ: (M2) 1013γ to 6$^+$ 585; (E1) 1311γ to 4$^+$ 287; 1510γ to 2$^+$.
1604.5[g] 6	(2$^+$)		B G	Jπ: L=(2) in ^{170}Yb(p,t); 1605γ to 0$^+$ g.s..
1618.5[d] 3	(7$^+$)		CD	Jπ: tentatively assigned as 7$^+$ member of K^π=0$^+$ β-vibration band in ^{169}Tm(p,2nγ), (d,3nγ); 1034γ to 6$^+$ 585; 316γ to (5)$^+$ 1302.
1650.66 9	(2,3,4)$^-$		A	Jπ: E1 584γ to (3)$^+$.
1674.21[a] 8	(5$^+$)		ABC	Jπ: 223γ to (3)$^+$ 1452; 1089γ to 6$^+$ 585; band assignment.
1698[&] 5			G	
1725[&g] 6	(4$^+$)		E G	Jπ: L=(4) in ^{170}Yb(p,t); band assignment.
1730.48 25	(1,2$^+$)		B	Jπ: 1730γ to 0$^+$ g.s.; 1642γ to 2$^+$ 88.
1770.18 8	5$^-$		A G	Jπ: E1 1185γ to 6$^+$ 585; E1 1483γ to 4$^+$ 286.
1793[&] 5			G	
1819.04[a] 8	(6$^+$)		A C	Jπ: (M1+E2) 1234γ to 6$^+$; 1533γ to 4$^+$ 287; band assignment.
1842.17[i] 11	(6$^-$)		A C	Jπ: E1 540γ to (5)$^+$ 1302; 397γ to (6)$^+$ 1445; band assignment.
1860[@] 6			E G	
1904[&h] 5	(0$^+$)		G	Jπ: L=(0) in ^{170}Yb(p,t).
1917.8? 4			B	Jπ: 1631γ? to 4$^+$ 287.
1936.0[c] 5	12$^+$[b]		C I	
1945.4[m] 11	(11)		C	Jπ: 520γ to 10$^+$ 1425; band assignment.
1972.7	(5,6$^+$)		A e	Jπ: fed from 6$^{(-)}$ in ε decay (5.5 min); 1388γ to 6$^+$ 585; 1686γ to 4$^+$ 287.
1972.86[h]	(2$^+$)		B e G	Jπ: 375γ to (2$^+$) 1598; 522γ to (3)$^+$ 1452; L(p,t)=(2) for E(level)=1973 5. This second E≈1973 level is proposed to accommodate L(p,t) and inconsistent branching in 5.5-min and 6.7-min ε decays.
1986.6[a]	(7$^+$)		C	
1993 5			e G	
1998.74 6	(5)$^-$	82 ns 5	A e	Jπ: M1 157γ to (6$^-$) 1842; 1712γ to 4$^+$ 287.
2002.9[d]	(9$^+$)		C	
2011.39 7	(2$^+$,3,4$^+$)		B	Jπ: 1725γ to 4$^+$ 287; 1027γ to 2$^+$ 984.
2055.88 4	(2$^+$,3$^+$,4$^+$)		B E	Jπ: (M1,E2) 1072γ to 2$^+$ 984; 675γ to (4$^+$) 1390.
2065.09 22	(2$^+$,3,4$^+$)		B	Jπ: 1978γ to 2$^+$ 88; 675γ to (4$^+$) 1390.
2092[&] 7			G	

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Adopted Levels, Gammas (continued)

^{168}Yb Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
2100.6[i]	(8⁻)		C	
2110.6	(5⁻,6⁻,7⁻)	0.34 ns *6*	A	Jπ: (E2) 112γ to (5)⁻ 1999; 1525γ to 6⁺ 585; analogy with the well-known 5⁻ and 6⁻ and 7⁻ levels (and depopulating γ′s) in ^{164}Er and their apparent counterparts in ^{168}Yb. B(E2)(W.u.)(112) seems too large for a pure E2 transition so J=7 may Be unlikely.
2122[@] *6*			E G	
2135.34 *12*	(3⁺,4⁺)		B	Jπ: 2048γ to 2⁺ 88; 832γ to (5⁺) 1302.
2158.56 *5*	(4⁺)		B	Jπ: 2071γ to 2⁺ 88; 1573γ to 6⁺ 585.
2160[&] *7*	(0⁺)		G	Jπ: L=(0) in ^{170}Yb(p,t).
2173[&] *12*			G	Level is near, but probably different from, the 2174 level; it is unlikely that an 8⁺ level would be excited in ^{170}Yb(p,t) (the g.s. band is observed only to 6⁺, with rapidly decreasing cross section) and no other member of the postulated $K^{\pi}=3^{+}$ band is populated in (p,t).
2174[a]	(8⁺)		C	
2180.28 *19*	4⁺		B G	
2203.84 *5*	(4)⁺	<0.14 ns	B	$T_{1/2}$: from 1220γ-x coin in ^{168}Lu ε decay (6.7 min). Jπ: 530γ to (5)⁺ 1674; E2(+M1) 1137γ to (3)⁺ 1067; 2116γ to 2⁺ 88. Likely configuration: $K^{\pi}=4^{+}$ (π 1/2[541])+(π 7/2[523]) (1999Ba65) based on allowed unhindered ε decay from (π 1/2[541])+(ν 5/2[523]) ^{168}Lu(6.7 min) and Gallagher′s rule.
2222.37 *20*	(⁻)	62 ns *8*	A	Jπ: 224γ to (5)⁻ 1999; analogy with the well-known 5⁻ and 6⁻ and 7⁻ levels (and depopulating γ′s) in ^{164}Er and their apparent counterparts in ^{168}Yb.
2256.03 *15*	(3⁺,4⁺)		B	Jπ: 2168γ to 2⁺ 99; 954γ to (5)⁺ 1302.
2292[&] *7*			G	
2327[&] *7*			G	
2364.5 *3*	(4⁺)		B G	Jπ: 2277γ to 2⁺ 88; 1780γ to 6⁺ 585.
2404.87 *4*	(3)⁺		B	Jπ: M1+E2 1421γ to 2⁺ 984; (E2) 731γ to (5⁺) 1764. configuration: Probably $K^{\pi}=3^{+}$ (π 1/2[541])+(π 5/2[532]) (1999Ba65).
2415.3 *4*	(3,4,5)		C	Jπ: 2129γ to 4⁺ 287; 1114γ to (5)⁺ 1302; fed from 3⁺ in ε decay.
2426.5[i]	(10⁻)		C	
2427.96 *23*	(2⁺,3⁺,4⁺)		B	Jπ: 2141γ to 4⁺ 287; 2341γ to 2⁺ 88; ε decay from 3⁺ ^{168}Lu(6.7 min) is probably allowed. configuration: Possibly $K^{\pi}=3^{+}$ (π 1/2[541])-(π 7/2[523]) (1999Ba65). If so, $J^{\pi}=(3^{+})$ can Be assigned.
2443.5[d]	(11⁺)		C	
2464[&] *12*			G	
2475.18 *19*	(2⁺,3,4⁺)		B	Jπ: 2188γ to 4⁺ 287; log *ft*=6.8 from 3⁺ in ε decay. Possible configuration: (π 1/2[541])-(π 5/2[532]) (1999Ba65), implying $J^{\pi}=(2^{+})$.
2488.5[c] *6*	14⁺[b]		C I	
2500[&] *12*			G	
2514.5[m] *15*	(13)		C	
2645.0? *8*			B	Jπ: 2358γ to 4⁺ 287.
2824.9[i]	(12⁻)		C	
2846.2[j]	(13⁻)		C	
2930.9[d]	(13⁺)		C	
3073.1[c] *7*	16⁺[b]		C	
3131.4[m] *18*	(15)		C	
3294.9[i]	(14⁻)		C	

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Adopted Levels, Gammas (continued)

^{168}Yb Levels (continued)

E(level)†	Jπ‡	XREF
3310.2[j]	(15⁻)	C
3447.1[d]	(15⁺)	C
3532.2[n] *10*	(15⁺)	C
3613.2[k] *10*	(15⁻)	C
3686.9[c] *8*	18⁺[b]	C
3797.5[m] *21*	(17)	C
3821.1[j]	(17⁻)	C
3827.5[i]	(16⁻)	C
3981.9[d]	(17⁺)	C
4092.2[n] *10*	(17⁺)	C
4133.8[l]	(18⁺)	C
4165.1[k]	(17⁻)	C
4336.9[c] *8*	20⁺[b]	C
4373.9[j]	(19⁻)	C
4410.0[i]	(18⁻)	C
4514.3[m] *23*	(19)	C
4579.5[d]	(19⁺)	C
4721.1[n] *11*	(19⁺)	C
4763[k]	(19⁻)	C
4786.1[l]	(20⁺)	C
4968.5[j]	(21⁻)	C
5032[i]	(20⁻)	C
5036.9[c]	22⁺[b]	C
5255.9[d]	(21⁺)	C
5287.1[m] *25*	(21)	C
5400.5[k]	(21⁻)	C
5404.6[n] *15*	(21⁺)	C
5511.1[l]	(22⁺)	C
5612.3[j]	(23⁻)	C
5686.9[i]	(22⁻)	C
5797.4[c]	24⁺[b]	C
6009.0[d]	(23⁺)	C
6080.6[k]	(23⁻)	C
6122[m] *3*	(23)	C
6143.3[n] *18*	(23⁺)	C
6276.0[l]	(24⁺)	C
6314.7[j]	(25⁻)	C
6391.9[i]	(24⁻)	C
6623.9[c]	26⁺[b]	C
6809.6[k]	(25⁻)	C
6835[d]	(25⁺)	C
6938.7[n] *21*	(25⁺)	C
7024[m] *3*	(25)	C
7072.5[l]	(26⁺)	C
7081.9[j]	(27⁻)	C
7156[i]	(26⁻)	C
7516.9[c]	28⁺[b]	C
7599.4[k]	(27⁻)	C
7727[d]	(27⁺)	C
7791.7[n] *23*	(27⁺)	C
7912[l]	(28⁺)	C
7917[j]	(29⁻)	C
7984[i]	(28⁻)	C
8453.4[k]	(29⁻)	C
8475.2[c]	30⁺[b]	C
8669[d]	(29⁺)	C
8697.7[n] *25*	(29⁺)	C
8801.3[l]	(30⁺)	C
8825.6[j]	(31⁻)	C
8880[i]	(30⁻)	C
9372.2[k]	(31⁻)	C
9496[c]	32⁺[b]	C
9748.3[l]	(32⁺)	C
9803[j]	(33⁻)	C
9841[i]	(32⁻)	C
10353[k]	(33⁻)	C
10575[c]	34⁺[b]	C
10760[l]	(34⁺)	C
10848[j]	(35⁻)	C
10861[i] *4*	(34⁻)	C
11388[k]	(35⁻)	C
11703[c]	36⁺[b]	C
11841[l]	(36⁺)	C
11931[i] *4*	(36⁻)	C
11959[j]	(37⁻)	C
12864[c]	(38⁺)[b]	C
12985[l]	(38⁺)	C
13023[i] *4*	(38⁻)	C
13128[j]	(39⁻)	C
14033[c] *4*	(40⁺)[b]	C
14138[i] *4*	(40⁻)	C
14190[l] *4*	(40)	C
14362[j]	(41⁻)	C
15228[c] *4*	(42⁺)[b]	C
15269[i] *4*	(42⁻)	C
15578[j]	(43⁻)	C
16457?[c] *4*	(44⁺)[b]	C
16846?[j] *4*	(45⁻)	C
0.0+x[o]	(20)	C
625.7+x[o]	(22)	C
1289.2+x[o]	(24)	C
2019.0+x[o]	(26)	C

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Adopted Levels, Gammas (continued)

^{168}Yb Levels (continued)

E(level)[†]	Jπ[‡]	XREF	E(level)[†]	Jπ[‡]	XREF
2802.1+x[o]	(28)	C	368.6+y[p] *15*	J+2	C
3644.5+x[o]	(30)	C	584.1+y[p] *18*	J+3	C
4548.9+x[o]	(32)	C	820.2+y[p] *19*	J+4	C
5514.4+x[o]	(34)	C	1075.4+y[p] *19*	J+5	C
6542+x[o]	(36)	C	1349.8+y[p] *20*	J+6	C
7629+x[o]	(38)	C	1642.3+y[p] *21*	J+7	C
8772+x[o]	(40)	C	1952.2+y[p] *21*	J+8	C
0.0+y[p]	J	C	2279.3+y[p] *22*	J+9	C
173.8+y[p] *10*	J+1	C	2616.7+y?[p] *24*	J+10	C

[†] From least-squares fit to Eγ, assigning 1 keV uncertainty to data for which the authors gave no uncertainty, except where noted.
[‡] Values given without further comment are based on band structure deduced in (HI,xnγ) reactions.
[#] From γγ(t) in ^{168}Lu ε decay, except where noted.
[@] From ^{168}Yb(d,d′).
[&] From ^{170}Yb(p,t).
[a] Band(A): $K^\pi=(3)^+$ band. A=12.6, B=−8.9 (J=3, 4, 5, 6 levels). Likely configuration: $K^\pi=3^+$ (π 7/2[404])-(π 1/2[411]) (1999Ba65).
[b] Smooth progression of level energies within g.s. band, established $J^\pi=0^+$ for g.s. and multipolarity of E2 for the J=2 to J=0 88γ enable assignment of definite J^π to J≤20 band members.
[c] Band(B): $K^\pi=0^+$ g.s. band. A=14.7, B=−17.9 (J=0, 2, 4, 6 levels).
[d] Band(C): $K^\pi=2^+$ γ-vibration band. A=13.7, B=−17.6 (J=2, 3, 4, 5 levels).
[e] Band(D): $K^\pi=(0^+)$ β^-vibration band. A=11.7 (J=0, 2, 4 levels).
[f] Band(E): $K^\pi=0^+$ band. A=14.2 (J=0, 2, 4 levels).
[g] Band(F): $K^\pi=0^+$ band. A=9.1 (J=0, 2, 4 levels).
[h] Band(G): $K^\pi=(0^+)$ band.
[i] Band(H): π=−, α=0 band. High-excitation band (feeds into 2^+ γ-vibration band).
[j] Band(I): π=−, α=1 band 2. High-excitation band feeding into g.s. band.
[k] Band(J): π=−, α=1 band 1. High-excitation band feeding into g.s. band.
[l] Band(K): α=(0) band. High-excitation band feeding into g.s. band. Tentative π=+ for this band is taken from 1993Ol02.
[m] Band(L): α=1 band. High-excitation band. Note that 1993Ol02 suggest J values that are two units higher.
[n] Band(M): π=(+), α=1 band. High-excitation band.
[o] Band(N): α=0 band. Feeds into g.s. band, but connecting transitions unknown. J assignments for this band are taken from 1993Ol02.
[p] Band(O): M1 band (1994Ol04).

Adopted Levels, Gammas (continued)

γ(^{168}Yb)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	α[c]	Comments
87.73	2+	87.733 *9*	100	0.0	0+	E2	5.35	B(E2)(W.u.)=209 *7* E_γ: weighted average from β^- decay, (p,2nγ), ε decay (5.5 min) and ε decay (6.7 min).
286.551	4+	198.84 *3*	100	87.73	2+	E2	0.274	E_γ: weighted average from (p,2nγ), ε decay (5.5 min) and ε decay (6.7 min).
585.25	6+	298.74 *4*	100	286.551	4+	E2	0.0749	E_γ: weighted average from (p,2nγ), ε decay (5.5 min) and ε decay (6.7 min). Mult.: from K/L in (p,2nγ).
970.03	8+	384.75 *10*	100	585.25	6+	E2	0.0359	E_γ: from (p,2nγ); doublet in ε decay (5.5 min). Mult.: from K/L in (p,2nγ).
984.00	2+	697.6 *4*	0.93 *25*	286.551	4+			B(E2)(W.u.)≈1.8
		896.261 *24*	100	87.73	2+	E2	0.00465	B(E2)(W.u.)=9.2 *10*
		983.99 *4*	86[#] *7*	0.0	0+	(E2)	0.00383	B(E2)(W.u.)=5.0 *7*
1067.15	(3)+	84.0 *6*	0.19 *11*	984.00	2+	[M1,E2]	6.0 *5*	
		780.61 *5*	20.7[#] *18*	286.551	4+	E2	0.00625	
		979.379 *24*	100[#] *7*	87.73	2+	(E2)	0.00387	
1155.2	(0+)	1066.8 *9*	100	87.73	2+			
		1156[g] *3*		0.0	0+	E0		E_γ: from (p,2nγ).
1159.7	(1−)	1071.9[g] *10*	<100	87.73	2+			
		1159.2[g] *7*	<20	0.0	0+			
1171.38	(4)+	104.8 *9*	0.10 *8*	1067.15	(3)+	[M1,E2]	2.82 *17*	
		187.34 *19*	0.51 *13*	984.00	2+	[E2]	0.335	
		586.4 *9*	0.40 *24*	585.25	6+			
		884.807 *24*	100[#] *7*	286.551	4+	E2	0.00478	
		1083.58 *3*	48[#] *3*	87.73	2+	(E2)	0.00315	
1197?	0+	1197[g] *4*		0.0	0+	E0[&]		
1231.5?	(1−)	1231.3[g] *4*	100	0.0	0+			
1233.1	2+	74.0[g] *5*	<13	1159.7	(1−)			
		166.3 *5*	7 *3*	1067.15	(3)+			
		1144.9 *6*	20 *10*	87.73	2+	(E0+E2)		ρ^2=0.030 *7* (1999Wo07).
		1233.46[f] *7*	10×10[1][f] *10*	0.0	0+	[E2]	0.00245	B(E2)(W.u.)=1.8 *2* B(E2)(W.u.) deduced from B(E2)↑=0.050 *5* for 1233.2 level (Coulomb excitation, 1982Ro07) and B(E2)(single particle)=0.0275.
1279.0	(2+)	1191.2 *8*	100 *31*	87.73	2+			
		1279.0 *4*	46 *23*	0.0	0+			
1302.30	(5)+	130.90 *6*	11.4 *20*	1171.38	(4)+	[M1,E2]	1.37 *20*	
		235.6 *5*	2.0 *14*	1067.15	(3)+	[E2]	0.1571 *25*	
		717.28 *20*	20.2[#] *22*	585.25	6+			
		1015.86 *7*	100[#] *8*	286.551	4+	E2	0.00359	

$^{168}_{70}Yb_{98}$-6

Adopted Levels, Gammas (continued)

γ(^{168}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	α[c]	Comments
1390.12?	(4$^+$)	405.9[e] *5*	<26[e]	984.00	2$^+$			
		804.90[g] *16*	49 *13*	585.25	6$^+$			
		1102.9[g] *3*	100 *21*	286.551	4$^+$	(E0+E2)		
		1302.4 *3*	84 *21*	87.73	2$^+$			
1407.86?	(2$^-$)	176.3[g] *3*	7 *3*	1231.5?	(1$^-$)			
		1320.12[g] *18*	100 *20*	87.73	2$^+$			
1425.45	10$^+$	455.4 *2*	100	970.03	8$^+$	E2[&]	0.0227	
1445.13	(6)$^+$	860.0 *2*	100 *15*	585.25	6$^+$	M1+E2	0.008 *3*	
		1158.5 *3*	26 *4*	286.551	4$^+$			
1451.76	(3)$^+$	280.5 *3*	1.7 *4*	1171.38	(4)$^+$	[M1,E2]	0.14 *5*	
		384.80 *7*	30 *5*	1067.15	(3)$^+$	E2	0.0359	
		467.90 *5*	26[#] *3*	984.00	2$^+$	M1,E2	0.035 *14*	
		1165.21 *16*	22[#] *4*	286.551	4$^+$			
		1363.90 *4*	100[#] *9*	87.73	2$^+$			
1472.6	(4$^+$)	300.2 *8*	29 *16*	1171.38	(4)$^+$			
		405.9[e] *5*	<55[e]	1067.15	(3)$^+$			
		887.6 *5*	100 *44*	585.25	6$^+$			
1479.99	3$^-$	27.1 *5*	10 *5*	1451.76	(3)$^+$	[E1]	2.23 *13*	
		89.6 *4*	9 *3*	1390.12?	(4$^+$)	[E1]	0.456 *9*	
		1193.4 *3*	64 *12*	286.551	4$^+$			
		1392.19 *13*	100 *18*	87.73	2$^+$			
		(1480)		0.0	0$^+$	E3		B(E3)(W.u.)=19 *3* E_γ: from level energy difference; γ unobserved but must exist. B(E3)(W.u.),Mult.: From observed B(E3)↑=0.22 *4* in Coulomb excitation.
1543?	(0$^+$)	1543[g] *5*		0.0	0$^+$	E0[&]		
1551.33	(4)$^+$	99.60 *3*	18[#] *3*	1451.76	(3)$^+$	[M1,E2]	3.34 *10*	
		248.7 *3*	3.2 *10*	1302.30	(5)$^+$			
		380.11 *6*	33[#] *4*	1171.38	(4)$^+$	[M1,E2]	0.060 *24*	
		484.32[e] *18*	<13.1[e]	1067.15	(3)$^+$			
		567.41 *15*	16 *3*	984.00	2$^+$			
		1264.68 *5*	100[#] *8*	286.551	4$^+$			
		1463.47 *10*	72[#] *9*	87.73	2$^+$			
1595	3$^-$	(1595)		0.0	0$^+$	E3		B(E3)(W.u.)=7.7 *17* E_γ: from level energy difference; γ unobserved but must exist. B(E3)(W.u.),Mult.: From observed B(E3)↑=0.09 *2* in Coulomb excitation.
1597.89?	(−)	530.1[e] *7*	<28[e]	1067.15	(3)$^+$			
		1012.9 *3*	10 *4*	585.25	6$^+$	(M2)	0.01728	I_γ: from ε decay (6.7 min). Other Iγ: 22 *3* in ε decay (5.5 min).
		1311.27 *11*	100 *15*	286.551	4$^+$	(E1)	9.91×10^{-4}	

$^{168}_{70}Yb_{98}$-7

Adopted Levels, Gammas (continued)

γ(^{168}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	α[c]	Comments
1597.89?	(⁻)	1510.00 *13*	92 *15*	87.73	2^+			I_γ: from ε decay (6.7 min). Other Iγ: 13 *3* in ε decay (5.5 min).
1604.5	(2^+)	1516.7 *6*	100 *30*	87.73	2^+			
		1605.2 *20*	24 *12*	0.0	0^+			
1618.5	(7^+)	316		1302.30	$(5)^+$			
		1033.7 *3*		585.25	6^+	[a]		Mult.: D(+Q) from γ(θ) for doubly-placed γ in (p,2nγ).
1650.66	$(2,3,4)^-$	348.3[dg] *2*		1302.30	$(5)^+$			E_γ: from ε decay (5.5 min) for doublet, little of whose Iγ belongs with this placement.
		479.4 *4*	31[#] *6*	1171.38	$(4)^+$			
		583.50 *21*	100[#] *12*	1067.15	$(3)^+$	E1	0.00435	
1674.21	(5^+)	122.95 *6*	18 *3*	1551.33	$(4)^+$	[M1,E2]	1.67 *20*	
		222.55 *17*	13 *3*	1451.76	$(3)^+$	[E2]	0.189	
		371.8[g] *4*	20 *3*	1302.30	$(5)^+$			E_γ,I_γ: from ε decay (5.5 min). Placement shown as tentative because similar Eγ is placed instead from 2428 level in ε decay (6.7 min), and γ is absent in (HI,xnγ).
		1089.0 *10*	4 *4*	585.25	6^+			Other Iγ: 33 *6* in ε decay (5.5 min), but line may Be complex there. γ is absent in (HI,xnγ).
		1387.43 *12*	100 *16*	286.551	4^+			I_γ: from ε decay (6.7 min). Eγ also fits a 1973 to 585 placement (see 1972Ch44), but 1999Ba65, in ε decay (6.7 min), placed it from 1674 level only, even though they observed a 1973 level; I(123γ)/I(1387γ)=0.14 *3* and 0.18 *4* in the respective studies, allows a single placement, but this placement alone is not consistent with γγ coin data (1970Ch28) in 5.5-min decay.
1730.48	$(1,2^+)$	497.40 *20*	100 *50*	1233.1	2^+			
		1642.1 *12*	55 *21*	87.73	2^+			
		1730.8[g] *6*	75 *38*	0.0	0^+			
1770.18	5^-	1184.94 *8*	64 *6*	585.25	6^+	E1	1.12×10^{-3}	
		1483.65 *8*	100 *13*	286.551	4^+	E1	9.26×10^{-4}	
1819.04	(6^+)	145.1 *3*	52 *9*	1674.21	(5^+)			
		268[g]	[@]	1551.33	$(4)^+$			
		374.2 *5*	53 *10*	1445.13	$(6)^+$			
		1233.5 *2*	100 *55*	585.25	6^+	[M1,E2]	0.0034 *10*	
		1533.3 *5*	32 *10*	286.551	4^+			
1842.17	(6^-)	397.2 *6*	16 *3*	1445.13	$(6)^+$			
		539.8 *2*	100 *11*	1302.30	$(5)^+$	E1	0.00413	
1917.8?		1631.2[g] *4*	100	286.551	4^+			
1936.0	12^+	510.5 *5*	100	1425.45	10^+	(E2)[a]	0.01692	
1945.4	(11)	520 *1*	100	1425.45	10^+			
1972.7	$(5,6^+)$	1387.5 *2*	<80	585.25	6^+			E_γ,I_γ: from ε decay (5.5 min); data are for doubly-placed γ, Iγ suitably divided.
		1686.0 *5*	100 *20*	286.551	4^+			

Adopted Levels, Gammas (continued)

γ(^{168}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	α[c]	Comments
1972.86	(2$^+$)	375.0 *4*	100 *36*	1597.89?	(−)			
		521.7 *7*	57 *32*	1451.76	(3)$^+$			Absent in ε decay (5.5 min).
		1686.3[g] *3*	38 *38*	286.551	4$^+$			
1986.6	(7$^+$)	166	63[@]	1819.04	(6$^+$)			
		311	100[@]	1674.21	(5$^+$)			
1998.74	(5)$^-$	156.6 *2*	44 *6*	1842.17	(6$^-$)	M1	0.943	B(M1)(W.u.)=6.5×10^{-6} *13*
		179.6 *2*	36 *4*	1819.04	(6$^+$)	(E1)	0.0733	B(E1)(W.u.)=3.5×10^{-8} *6*
		228.6 *2*	100 *10*	1770.18	5$^-$	(M1)	0.329	B(M1)(W.u.)=4.7×10^{-6} *8*
		324.7 *2*	43 *4*	1674.21	(5$^+$)	(E1+M2)	0.26 *24*	
		348.3[d] *2*	≈94	1650.66	(2,3,4)$^-$	E2	0.0476	
		401.1 *3*	37 *4*	1597.89?	(−)	M1	0.0727	B(M1)(W.u.)=3.2×10^{-7} *6*
		1413.5 *3*	23.4 *26*	585.25	6$^+$			
		1712.0 *5*	≈2.9	286.551	4$^+$			
2002.9	(9$^+$)	384.3	100.0 *10*	1618.5	(7$^+$)	(E2)[a]	0.0360	
		1033 *1*	8.51 *18*	970.03	8$^+$	(M1+E2)[a]	0.0050 *16*	
2011.39	(2$^+$,3,4$^+$)	621.6 *8*	14 *7*	1390.12?	(4$^+$)			
		944.42 *25*	64 *21*	1067.15	(3)$^+$			
		1027.44 *20*	100 *21*	984.00	2$^+$			
		1724.6 *7*	30 *9*	286.551	4$^+$			
2055.88	(2$^+$,3$^+$,4$^+$)	884.8 *5*	6 *3*	1171.38	(4)$^+$			
		988.96 *18*	40 *7*	1067.15	(3)$^+$			
		1071.94 *5*	100 *16*	984.00	2$^+$	(M1,E2)	0.0046 *15*	
		1967.7 *14*	3.8 *19*	87.73	2$^+$			
2065.09	(2$^+$,3,4$^+$)	53.2[g] *5*	<110	2011.39	(2$^+$,3,4$^+$)			
		147.08[e] *8*	68[e] *28*	1917.8?				
		674.6[e] *5*	100[e] *44*	1390.12?	(4$^+$)			
		998.7 *7*	67 *3*	1067.15	(3)$^+$			
		1977.6 *9*	77 *23*	87.73	2$^+$			
2100.6	(8$^-$)	258 *1*	100 *35*	1842.17	(6$^-$)			
		482.2 *10*		1618.5	(7$^+$)			
2110.6	(5$^-$,6$^-$,7$^-$)	112.4	≈100	1998.74	(5)$^-$	(E2)	2.06	B(E2)(W.u.)≈540
		1525.1 *5*	9.2 *20*	585.25	6$^+$			
2135.34	(3$^+$,4$^+$)	683.4 *6*	13 *4*	1451.76	(3)$^+$			
		832.1 *3*	26 *9*	1302.30	(5)$^+$			
		964.19 *15*	100 *17*	1171.38	(4)$^+$			
		1068.0 *9*	28 *17*	1067.15	(3)$^+$			
		1151.0 *9*	10 *4*	984.00	2$^+$			
		1848.74 *25*	62 *11*	286.551	4$^+$			
		2047.6 *4*	40 *9*	87.73	2$^+$			
2158.56	(4$^+$)	147.08[e] *8*	<10[e]	2011.39	(2$^+$,3,4$^+$)			

$^{168}_{70}Yb_{98}$-9

Adopted Levels, Gammas (continued)

γ(^{168}Yb) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.†	δ†	α[c]	Comments
2158.56	(4$^+$)	484.32[e] *18*	<23[e]	1674.21	(5$^+$)				
		560.0 *5*	5.4 *26*	1597.89?	(−)				
		607.22 *9*	100 *16*	1551.33	(4)$^+$				
		706.83 *17*	36 *7*	1451.76	(3)$^+$				
		768.4 *7*	7.3 *27*	1390.12?	(4$^+$)				
		856.3 *10*	9 *4*	1302.30	(5)$^+$				
		987.34 *15*	96 *16*	1171.38	(4)$^+$				
		1091.58 *19*	35 *8*	1067.15	(3)$^+$				
		1573.0 *20*	6 *6*	585.25	6$^+$				
		1871.8 *4*	22 *5*	286.551	4$^+$				
		2070.9 *4*	24 *5*	87.73	2$^+$				
2174	(8$^+$)	189[g]	100	1986.6	(7$^+$)				
2180.28	4$^+$	449.7 *4*	34 *12*	1730.48	(1,2$^+$)				
		1113.6[e] *8*	<47[e]	1067.15	(3)$^+$				
		1594.2 *4*	74 *16*	585.25	6$^+$				
		1894.1 *10*	19 *11*	286.551	4$^+$				
		2093.1 *4*	100 *21*	87.73	2$^+$				
2203.84	(4)$^+$	68.0[g] *5*	<0.4	2135.34	(3$^+$,4$^+$)				
		148.16 *4*	5.0 *8*	2055.88	(2$^+$,3$^+$,4$^+$)	[M1,E2]		0.93 *18*	
		231.3 *5*	0.20 *11*	1972.86	(2$^+$)				
		473.6 *4*	0.9 *3*	1730.48	(1,2$^+$)				
		530.1[e] *7*	<2.0[e]	1674.21	(5$^+$)				
		605.8 *3*	2.0 *6*	1597.89?	(−)				
		652.75 *9*	6.2 *11*	1551.33	(4)$^+$				
		723.4 *7*	0.58 *27*	1479.99	3$^-$				
		752.33 *8*	9.8 *16*	1451.76	(3)$^+$				
		901.6 *10*	9.1 *16*	1302.30	(5)$^+$				
		1032.61 *4*	68 *10*	1171.38	(4)$^+$	M1,E2		0.0050 *16*	
		1136.83 *4*	100 *15*	1067.15	(3)$^+$	E2(+M1)	≥1.0		
		1219.94 *5*	82 *13*	984.00	2$^+$	E2		0.00250	B(E2)(W.u.)>0.0070
		1619.0 *10*	<0.5	585.25	6$^+$				
		1917.28 *10*	12.0 *19*	286.551	4$^+$				
		2116.24 *20*	13.9 *26*	87.73	2$^+$				
2222.37	(−)	111.4	≈100	2110.6	(5$^-$,6$^-$,7$^-$)	[M1]		2.48	
		223.59 *19*	≤82	1998.74	(5)$^-$	[E2]		0.186	B(E2)(W.u.)=0.03 *+4−3*
2256.03	(3$^+$,4$^+$)	191.24 *23*	9.3 *26*	2065.09	(2$^+$,3,4$^+$)				
		200.2[g] *8*	64 *23*	2055.88	(2$^+$,3$^+$,4$^+$)	[M1,E2]		0.37 *11*	
		283.5 *5*	4.0 *21*	1972.86	(2$^+$)				
		659.0 *5*	9 *5*	1597.89?	(−)				
		953.3[e] *3*	<47[e]	1302.30	(5)$^+$				
		1084.9 *4*	15 *8*	1171.38	(4)$^+$				

$^{168}_{70}Yb_{98}$-10

Adopted Levels, Gammas (continued)

γ(^{168}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[c]
2256.03	(3$^+$,4$^+$)	1188.31 *21*	15 *13*	1067.15	(3)$^+$			
		1969.5 *5*	100 *21*	286.551	4$^+$			
		2168.4 *5*	19 *6*	87.73	2$^+$			
2364.5	(4$^+$)	1380.0 *6*	47 *18*	984.00	2$^+$			
		1779.5 *8*	26 *11*	585.25	6$^+$			
		2276.8 *4*	100 *24*	87.73	2$^+$			
2404.87	(3)$^+$	201.01 *15*	18 *3*	2203.84	(4)$^+$	[M1,E2]		0.37 *11*
		246.33 *4*	8.4 *13*	2158.56	(4$^+$)	[M1,E2]		0.20 *7*
		269.48[e] *11*	<2.4[e]	2135.34	(3$^+$,4$^+$)			
		339.2 *4*	0.8 *3*	2065.09	(2$^+$,3,4$^+$)			
		348.99 *4*	15.3 *24*	2055.88	(2$^+$,3$^+$,4$^+$)	[E2]		0.0473
		393.50 *7*	8.2 *13*	2011.39	(2$^+$,3,4$^+$)	[M1,E2]		0.055 *22*
		674.6[e] *5*	<2.2[e]	1730.48	(1,2$^+$)			
		730.73 *7*	15.3 *24*	1674.21	(5$^+$)	(E2)		0.00723
		806.95 *11*	7.7 *18*	1597.89?	(−)			
		853.57 *4*	44 *6*	1551.33	(4)$^+$	E2(+M1)		0.008 *3*
		924.93 *24*	3.7 *8*	1479.99	3$^-$			
		953.3[e] *3*	<4.0[e]	1451.76	(3)$^+$			
		1233.46[f] *7*	27[f] *4*	1171.38	(4)$^+$	(M1,E2)		0.0034 *10*
		1337.65 *5*	40 *6*	1067.15	(3)$^+$	E2		0.00211
		1420.79 *5*	100 *16*	984.00	2$^+$	M1+E2		0.0025 *6*
		2118.1 *10*	2.3 *13*	286.551	4$^+$			
		2317.18 *24*	4.4 *10*	87.73	2$^+$			
2415.3	(3,4,5)	1113.6[e] *8*	<56[e]	1302.30	(5)$^+$			
		2128.7 *4*	100 *19*	286.551	4$^+$			
2426.5	(10$^-$)	325.8 *10*	100[b] *22*	2100.6	(8$^-$)	(E2)[a]		0.0578 *10*
		423.7 *10*	83[b] *5*	2002.9	(9$^+$)	(E1+M2)[a]		0.11 *11*
2427.96	(2$^+$,3$^+$,4$^+$)	24.0 *5*	6 *3*	2404.87	(3)$^+$	[M1(+E2)]	<0.38	1.8×10^2 *14*
		224.15 *17*	4.29 *9*	2203.84	(4)$^+$	[M1,E2]		0.27 *9*
		269.48[e] *11*	<6.9[e]	2158.56	(4$^+$)			
		372.17 *18*	6.2 *14*	2055.88	(2$^+$,3$^+$,4$^+$)			
		830.3 *4*	8.1 *19*	1597.89?	(−)			
		947.85 *12*	11 *5*	1479.99	3$^-$			
		1256.36 *12*	23 *4*	1171.38	(4)$^+$	[M1,E2]		0.0032 *9*
		1360.7 *6*	6.2 *14*	1067.15	(3)$^+$			
		1445.5[g] *6*	3.8 *14*	984.00	2$^+$			
		2141.39 *8*	100 *14*	286.551	4$^+$			
		2340.6 *11*	2.9 *14*	87.73	2$^+$			
2443.5	(11$^+$)	440.4	86 *6*	2002.9	(9$^+$)			
		1018 *1*	100 *3*	1425.45	10$^+$	(M1+E2)[a]		0.0052 *7*

$^{168}_{70}Yb_{98}$-11

Adopted Levels, Gammas (continued)

γ(^{168}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	α[c]
2475.18	(2⁺,3,4⁺)	271.4 *3*	13 *6*	2203.84	(4)⁺	[M1,E2]	0.15 *6*
		294.90 *9*	100 *20*	2180.28	4⁺		
		2187.9 *7*	43 *11*	286.551	4⁺		
2488.5	14⁺	552.6 *3*	100	1936.0	12⁺	(E2)[a]	0.01389
2514.5	(13)	569.1	100	1945.4	(11)		
2645.0?		2358.4[g] *8*	100	286.551	4⁺		
2824.9	(12⁻)	381.3 *10*	100	2443.5	(11⁺)		
		398.6 *10*	79 *5*	2426.5	(10⁻)	(E2)[a]	0.0325
2846.2	(13⁻)	910.4 *10*	100	1936.0	12⁺	(E1+M2)[a]	0.012 *11*
2930.9	(13⁺)	487.3	91 *5*	2443.5	(11⁺)	(E2)[a]	0.0190
		995 *1*	100.0 *23*	1936.0	12⁺		
3073.1	16⁺	584.5 *3*	100	2488.5	14⁺	(E2)[a]	0.01212
3131.4	(15)	616.9	100	2514.5	(13)		
3294.9	(14⁻)	470.0 *10*	100	2824.9	(12⁻)	(E2)[a]	0.0209
3310.2	(15⁻)	464.0 *10*	93 *6*	2846.2	(13⁻)		
		821.6 *10*	100 *11*	2488.5	14⁺	(E1+M2)[a]	0.016 *15*
3447.1	(15⁺)	516.2	100	2930.9	(13⁺)	(E2)[a]	0.01645
3532.2	(15⁺)	1044 *1*	100	2488.5	14⁺		
3613.2	(15⁻)	1125 *1*	100	2488.5	14⁺		
3686.9	18⁺	613.8 *4*	100	3073.1	16⁺	(E2)[a]	0.01079
3797.5	(17)	666.1	100	3131.4	(15)		
3821.1	(17⁻)	511.0 *10*		3310.2	(15⁻)	(E2)[a]	0.0169
		747.9 *10*		3073.1	16⁺	(E1+M2)[a]	0.021 *19*
3827.5	(16⁻)	532.6 *10*	100	3294.9	(14⁻)	(E2)[a]	0.01522
3981.9	(17⁺)	534.8	100	3447.1	(15⁺)	(E2)[a]	0.01506
4092.2	(17⁺)	560.4	100 *27*	3532.2	(15⁺)		
		1019 *1*		3073.1	16⁺		
4133.8	(18⁺)	447 *1*		3686.9	18⁺		
		1060 *1*	100 *20*	3073.1	16⁺		
4165.1	(17⁻)	552.0 *5*	100.0 *10*	3613.2	(15⁻)		
		1092[g] *1*	2.9 *4*	3073.1	16⁺		
4336.9	20⁺	650.0 *3*	100	3686.9	18⁺	(E2)[a]	0.00943
4373.9	(19⁻)	552.8 *10*	100.0 *10*	3821.1	(17⁻)	(E2)[a]	0.01388
		686.8 *10*	5.3 *6*	3686.9	18⁺	(E1+M2)[a]	0.027 *24*
4410.0	(18⁻)	582.5 *10*	100	3827.5	(16⁻)	(E2)[a]	0.01222
4514.3	(19)	716.8		3797.5	(17)		
4579.5	(19⁺)	597.6	100	3981.9	(17⁺)	(E2)[a]	0.01149
4721.1	(19⁺)	629.1	100 *15*	4092.2	(17⁺)		
		1034 *1*	68 *4*	3686.9	18⁺		
4763	(19⁻)	598.1 *10*	100 *13*	4165.1	(17⁻)		

$^{168}_{70}Yb_{98}$-12

Adopted Levels, Gammas (continued)

γ(^{168}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	α[c]
4763	(19⁻)	1076[g] *1*		3686.9	18⁺		
4786.1	(20⁺)	450 *1*		4336.9	20⁺		
		651.8	100 *25*	4133.8	(18⁺)		
		1099 *1*	51 *7*	3686.9	18⁺		
4968.5	(21⁻)	594.4 *10*	100[b] *6*	4373.9	(19⁻)	(E2)[a]	0.01164
		631.8 *10*	43[b] *4*	4336.9	20⁺	(E1+M2)[a]	0.03 *3*
5032	(20⁻)	620.3 *10*	100	4410.0	(18⁻)	(E2)[a]	0.01052
5036.9	22⁺	699.9 *10*	100	4336.9	20⁺	(E2)[a]	0.00796
5255.9	(21⁺)	676.4	100	4579.5	(19⁺)	(E2)[a]	0.00861
5287.1	(21)	772.8	100	4514.3	(19)		
5400.5	(21⁻)	638.4 *10*	100 *11*	4763	(19⁻)		
		1063 *1*		4336.9	20⁺		
5404.6	(21⁺)	683.5		4721.1	(19⁺)		
5511.1	(22⁺)	725.3	100 *8*	4786.1	(20⁺)		
		1174 *1*	78 *14*	4336.9	20⁺		
5612.3	(23⁻)	575.3 *10*	11.7 *15*	5036.9	22⁺		
		643.9 *10*	100 *4*	4968.5	(21⁻)	(E2)[a]	0.00964
5686.9	(22⁻)	656.6 *10*	100	5032	(20⁻)	(E2)[a]	0.00922
5797.4	24⁺	760.5 *10*	100	5036.9	22⁺	(E2)[a]	0.00662
6009.0	(23⁺)	753.1	100	5255.9	(21⁺)		
6080.6	(23⁻)	680.1 *10*	100	5400.5	(21⁻)		
6122	(23)	835.2	100	5287.1	(21)		
6143.3	(23⁺)	738.7	100	5404.6	(21⁺)		
6276.0	(24⁺)	764.9	100	5511.1	(22⁺)		
6314.7	(25⁻)	702.4 *10*	100	5612.3	(23⁻)	(E2)[a]	0.00790
6391.9	(24⁻)	705.0 *5*	100	5686.9	(22⁻)	(E2)[a]	0.00783
6623.9	26⁺	826.5 *10*	100	5797.4	24⁺		
6809.6	(25⁻)	729.0 *10*	100	6080.6	(23⁻)		
6835	(25⁺)	826.2	100	6009.0	(23⁺)	(E2)[a]	0.00553
6938.7	(25⁺)	795.4	100	6143.3	(23⁺)		
7024	(25)	902 *1*		6122	(23)		
7072.5	(26⁺)	796.5	100	6276.0	(24⁺)		
7081.9	(27⁻)	767.2 *10*	100	6314.7	(25⁻)	(E2)[a]	0.00649
7156	(26⁻)	764.0 *10*	100	6391.9	(24⁻)	(E2)[a]	0.00655
7516.9	28⁺	893.0 *10*	100	6623.9	26⁺	(E2)[a]	0.00469
7599.4	(27⁻)	789.8 *10*	100	6809.6	(25⁻)		
7727	(27⁺)	891.4	100	6835	(25⁺)	(E2)[a]	0.00470
7791.7	(27⁺)	853 *1*	100	6938.7	(25⁺)		
7912	(28⁺)	839.5	100	7072.5	(26⁺)		
7917	(29⁻)	836.3	100	7081.9	(27⁻)	(E2)[a]	0.00539

$^{168}_{70}Yb_{98}$-13

Adopted Levels, Gammas (continued)

γ(^{168}Yb) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.[†]	α[c]
7984	(28⁻)	828.5 *10*	100	7156	(26⁻)		
8453.4	(29⁻)	854.0 *10*	100	7599.4	(27⁻)		
8475.2	30⁺	958.3 *10*	100	7516.9	28⁺	(E2)[a]	0.00405
8669	(29⁺)	944.2	100	7727	(27⁺)		
8697.7	(29⁺)	906 *1*	100	7791.7	(27⁺)		
8801.3	(30⁺)	889.3	100	7912	(28⁺)		
8825.6	(31⁻)	907.4 *10*	100	7917	(29⁻)	(E2)[a]	0.00453
8880	(30⁻)	896.0 *10*	100	7984	(28⁻)		
9372.2	(31⁻)	918.8 *10*	100	8453.4	(29⁻)		
9496	32⁺	1020.4 *10*	100	8475.2	30⁺		
9748.3	(32⁺)	947 *1*	100	8801.3	(30⁺)		
9803	(33⁻)	977.2 *10*	100	8825.6	(31⁻)	(E2)[a]	0.00389
9841	(32⁻)	960.5 *10*	100	8880	(30⁻)		
10353	(33⁻)	980.7 *10*	100	9372.2	(31⁻)		
10575	34⁺	1079.1 *10*	100	9496	32⁺	(E2)[a]	0.00318
10760	(34⁺)	1012 *1*	100	9748.3	(32⁺)		
10848	(35⁻)	1045.7 *10*	100	9803	(33⁻)	(E2)[a]	0.00339
10861	(34⁻)	1020.0 *10*	100	9841	(32⁻)		
11388	(35⁻)	1035.2 *10*	100	10353	(33⁻)		
11703	36⁺	1128.6 *10*	100	10575	34⁺		
11841	(36⁺)	1081 *1*	100	10760	(34⁺)		
11931	(36⁻)	1070 *1*	100	10861	(34⁻)		
11959	(37⁻)	1110.3 *10*	100	10848	(35⁻)	(E2)[a]	0.00300
12864	(38⁺)	1161 *1*	100	11703	36⁺		
12985	(38⁺)	1144 *1*	100	11841	(36⁺)		
13023	(38⁻)	1092 *1*	100	11931	(36⁻)		
13128	(39⁻)	1169.7 *10*	100	11959	(37⁻)		
14033	(40⁺)	1169 *1*	100	12864	(38⁺)		
14138	(40⁻)	1115 *1*	100	13023	(38⁻)		
14190	(40)	1205 *1*	100	12985	(38⁺)		
14362	(41⁻)	1234 *1*	100	13128	(39⁻)		
15228	(42⁺)	1195 *1*	100	14033	(40⁺)		
15269	(42⁻)	1131 *1*	100	14138	(40⁻)		
15578	(43⁻)	1215 *1*	100	14362	(41⁻)		
16457?	(44⁺)	1229[g] *1*	100	15228	(42⁺)		
16846?	(45⁻)	1268[g]	100	15578	(43⁻)		
625.7+x	(22)	625.7	100	0.0+x	(20)		
1289.2+x	(24)	663.5	100	625.7+x	(22)		
2019.0+x	(26)	729.8	100	1289.2+x	(24)		
2802.1+x	(28)	783.1	100	2019.0+x	(26)		
3644.5+x	(30)	842.4	100	2802.1+x	(28)		

$^{168}_{70}Yb_{98}$-14

Adopted Levels, Gammas (continued)

γ(^{168}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π
4548.9+x	(32)	904.4	100	3644.5+x	(30)	1075.4+y	J+5	491.3		584.1+y	J+3
5514.4+x	(34)	965 *1*	100	4548.9+x	(32)	1349.8+y	J+6	274.4		1075.4+y	J+5
6542+x	(36)	1025 *1*	100	5514.4+x	(34)			529.6		820.2+y	J+4
7629+x	(38)	1084 *1*	100	6542+x	(36)	1642.3+y	J+7	292.5		1349.8+y	J+6
8772+x	(40)	1143	100	7629+x	(38)			566.9		1075.4+y	J+5
173.8+y	J+1	173.8	100	0.0+y	J	1952.2+y	J+8	309.9		1642.3+y	J+7
368.6+y	J+2	194.8		173.8+y	J+1			602.4		1349.8+y	J+6
		368.6[g]		0.0+y	J	2279.3+y	J+9	327.1		1952.2+y	J+8
584.1+y	J+3	215.5	100	368.6+y	J+2			637.0		1642.3+y	J+7
820.2+y	J+4	236.1	100	584.1+y	J+3	2616.7+y?	J+10	337.4[g]	100	2279.3+y	J+9
1075.4+y	J+5	255.2		820.2+y	J+4						

[†] From ^{168}Lu ε decay (6.7 min) except as noted.

[‡] Relative photon branching from each level; from ^{168}Lu ε decay (6.7 min) except as noted. Upper limits are given for photon branchings affected by multiple placement.

[#] Weighted average from ε decay (5.5 min) and ε decay (6.7 min).

[@] From relative photon branchings in ^{166}Er(α,2nγ) (1982Wa19).

[&] From ^{169}Tm(p,2nγ), (d,3nγ), ^{168}Yb(d,d′γ).

[a] From (HI,xnγ), Er(α,xnγ).

[b] From relative photon branchings in ^{124}Sn(^{48}Ca,4nγ) (1985Ba47).

[c] 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.

[d] Multiply placed.

[e] Multiply placed with undivided intensity.

[f] Multiply placed with intensity suitably divided.

[g] Placement of transition in the level scheme is uncertain.

$^{168}_{70}Yb_{98}$-15

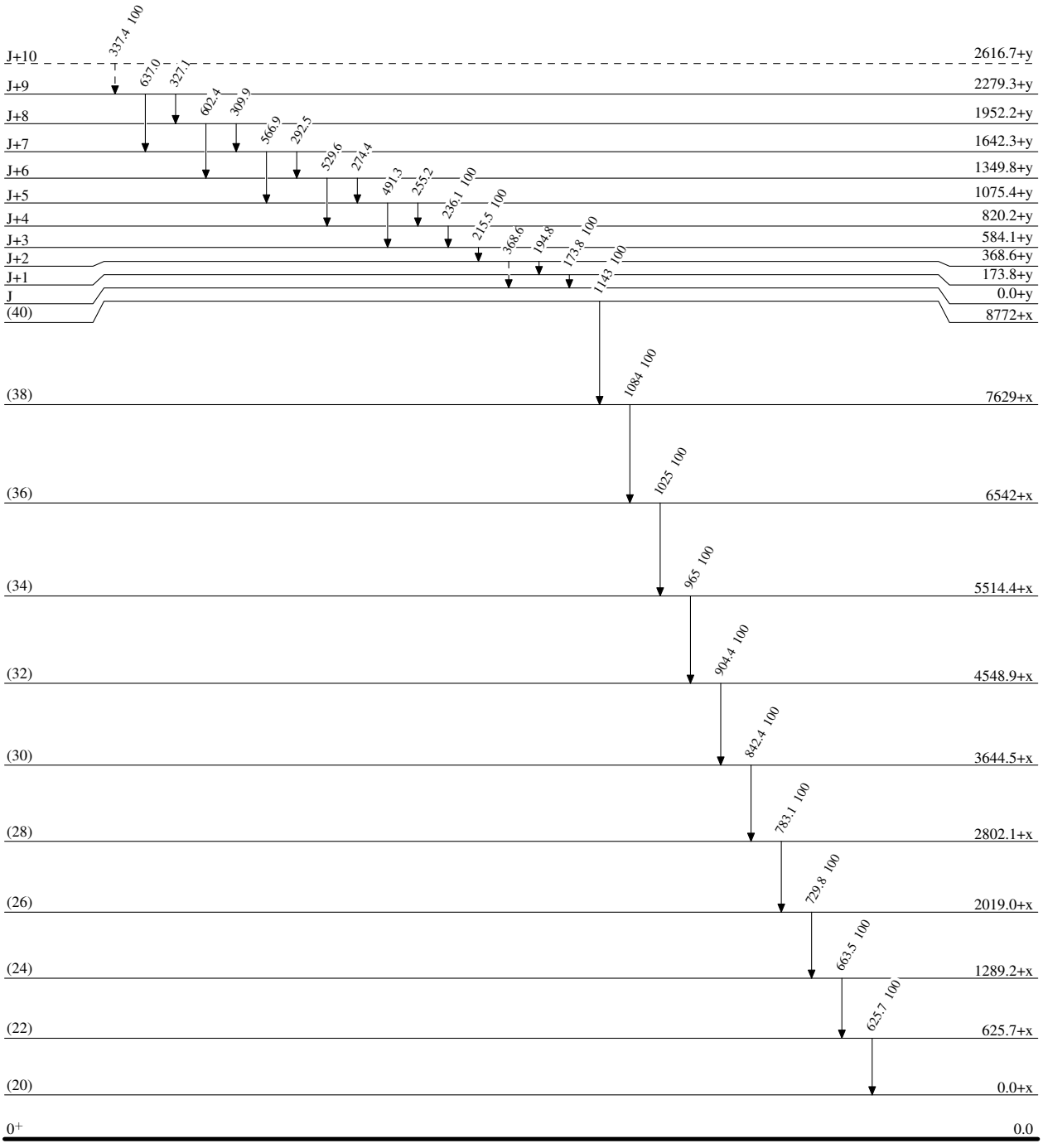
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{168}_{70}Yb_{98}$

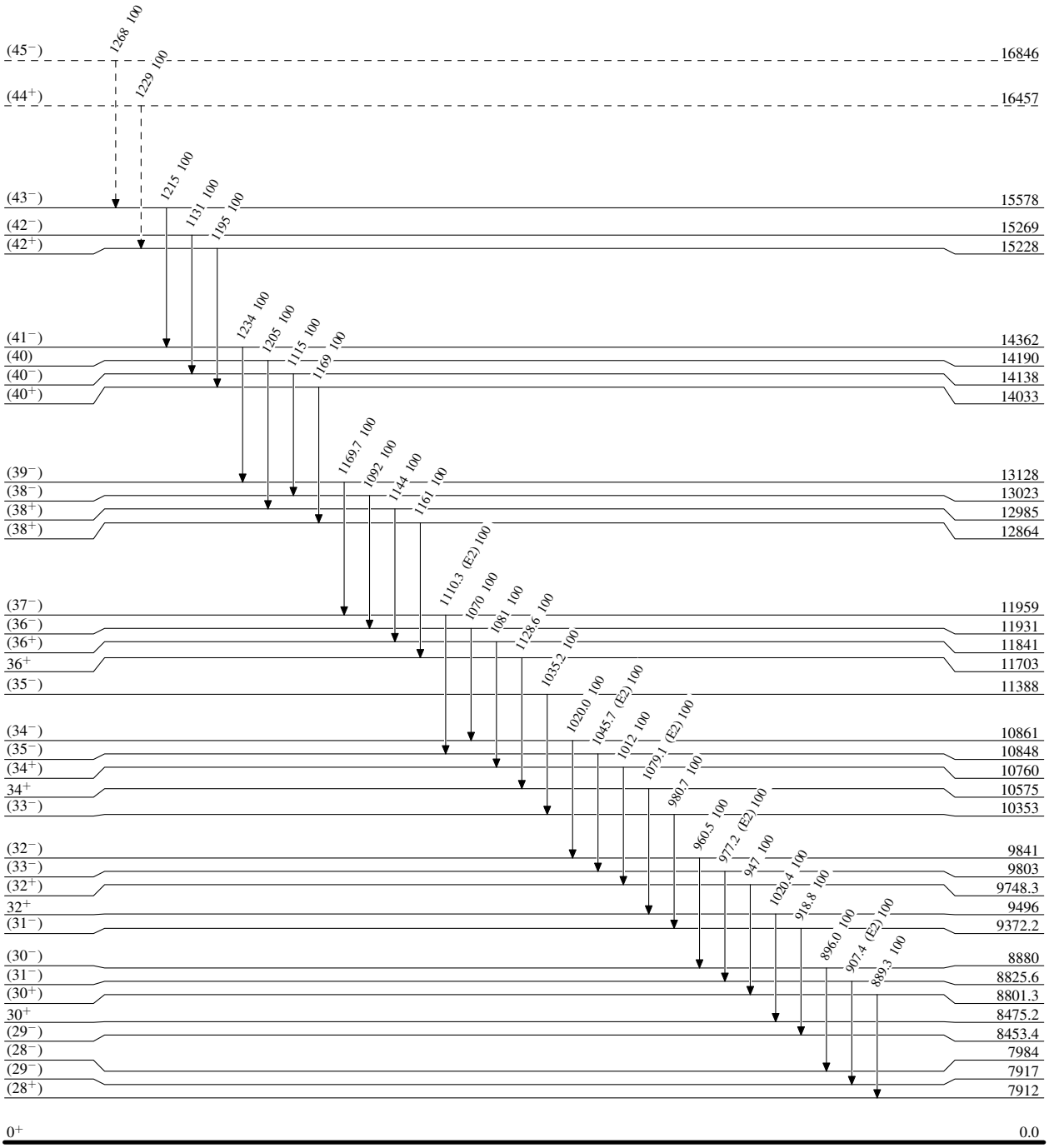
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

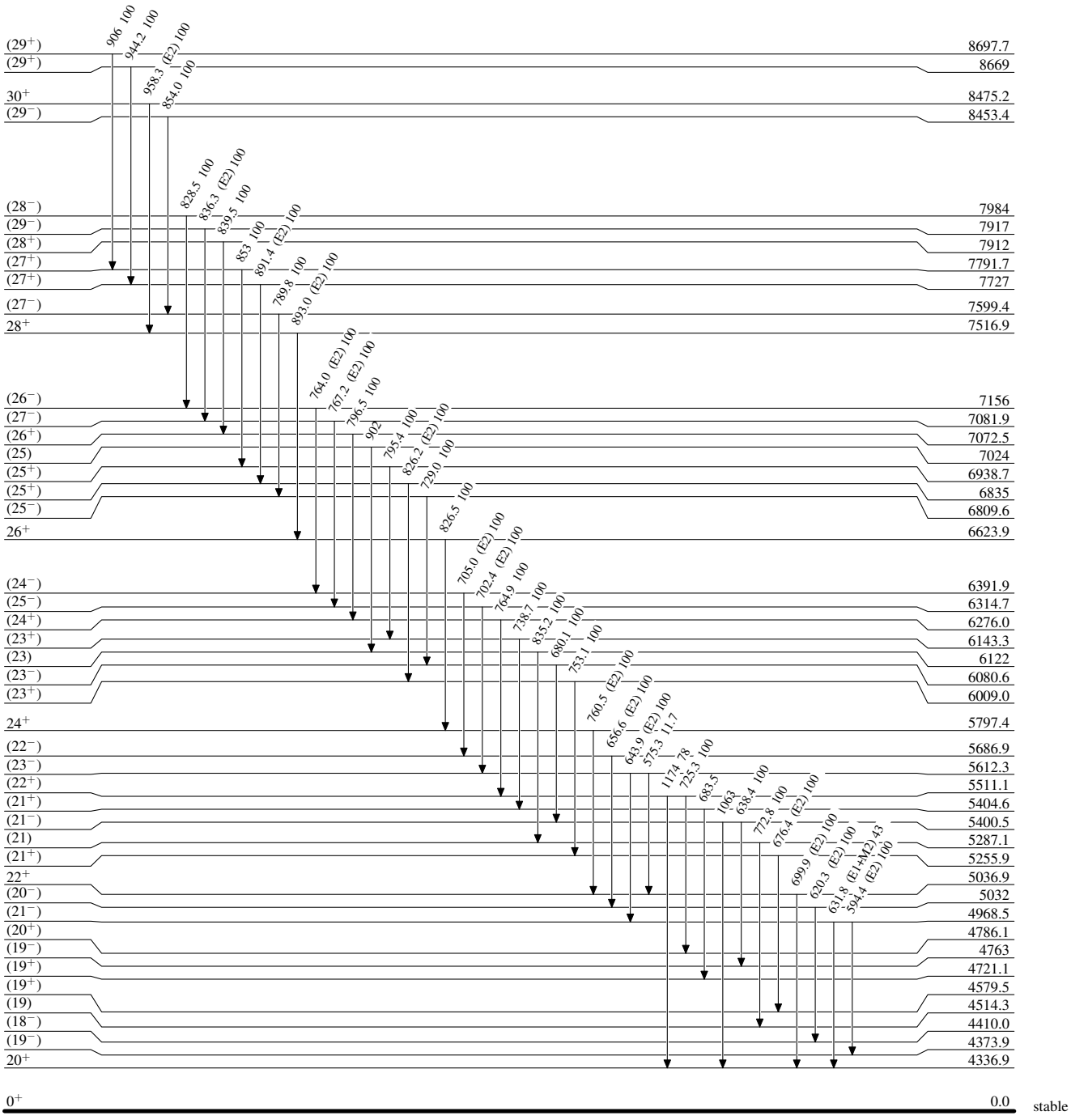


$^{168}_{70}Yb_{98}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{168}_{70}Yb_{98}$

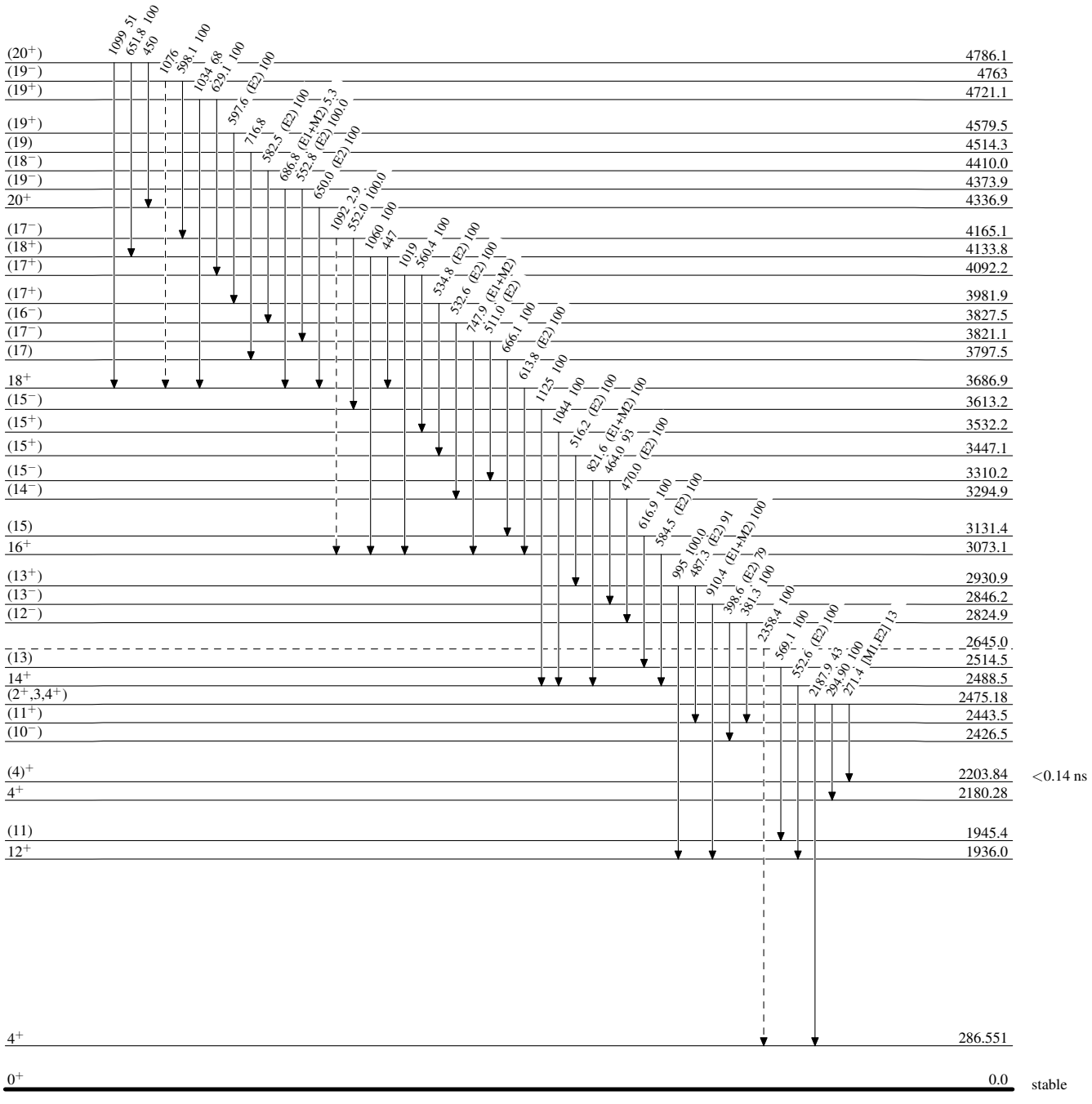
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



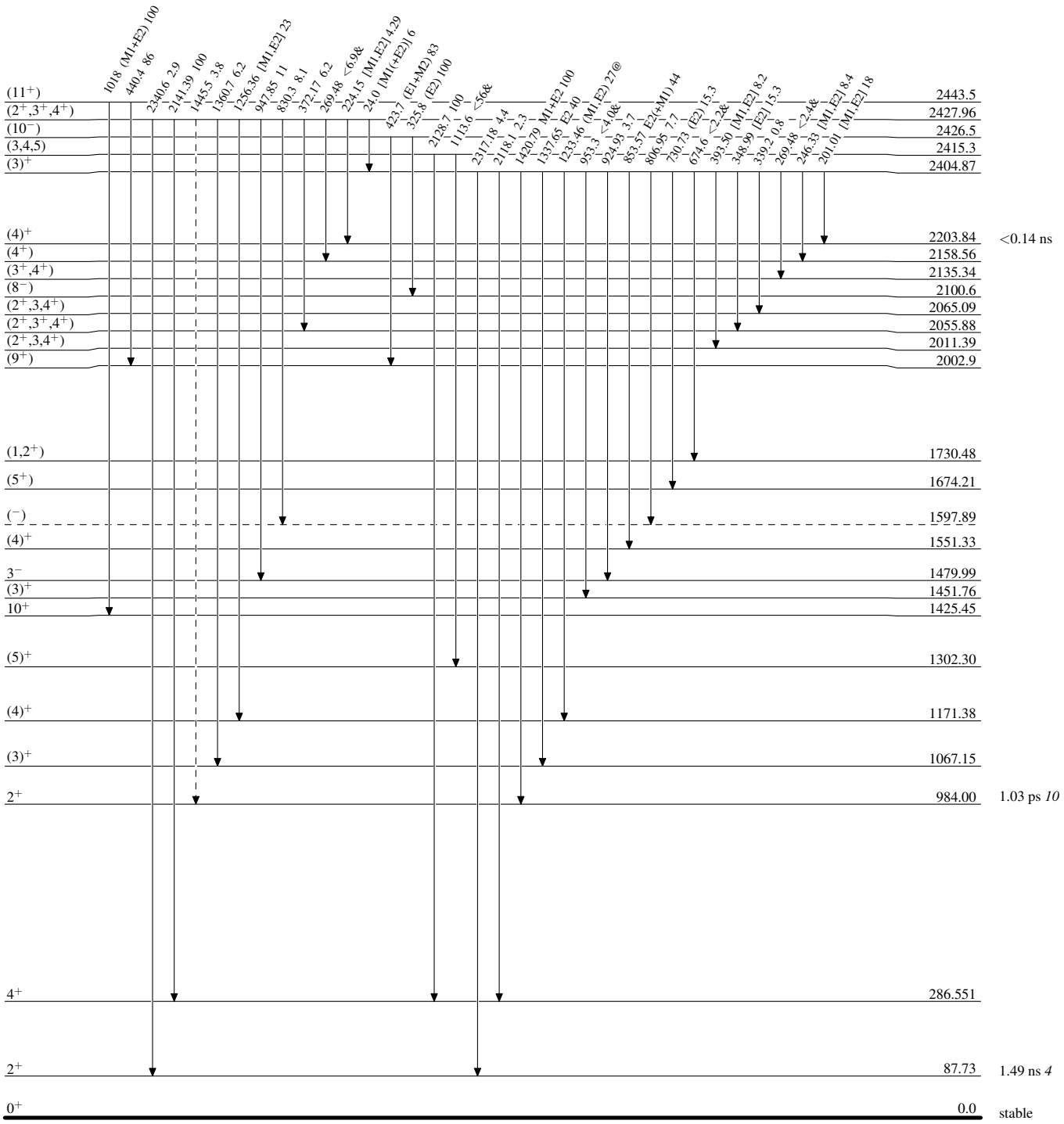
$^{168}_{70}Yb_{98}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend
- - - - - - ► γ Decay (Uncertain)



$^{168}_{70}Yb_{98}$

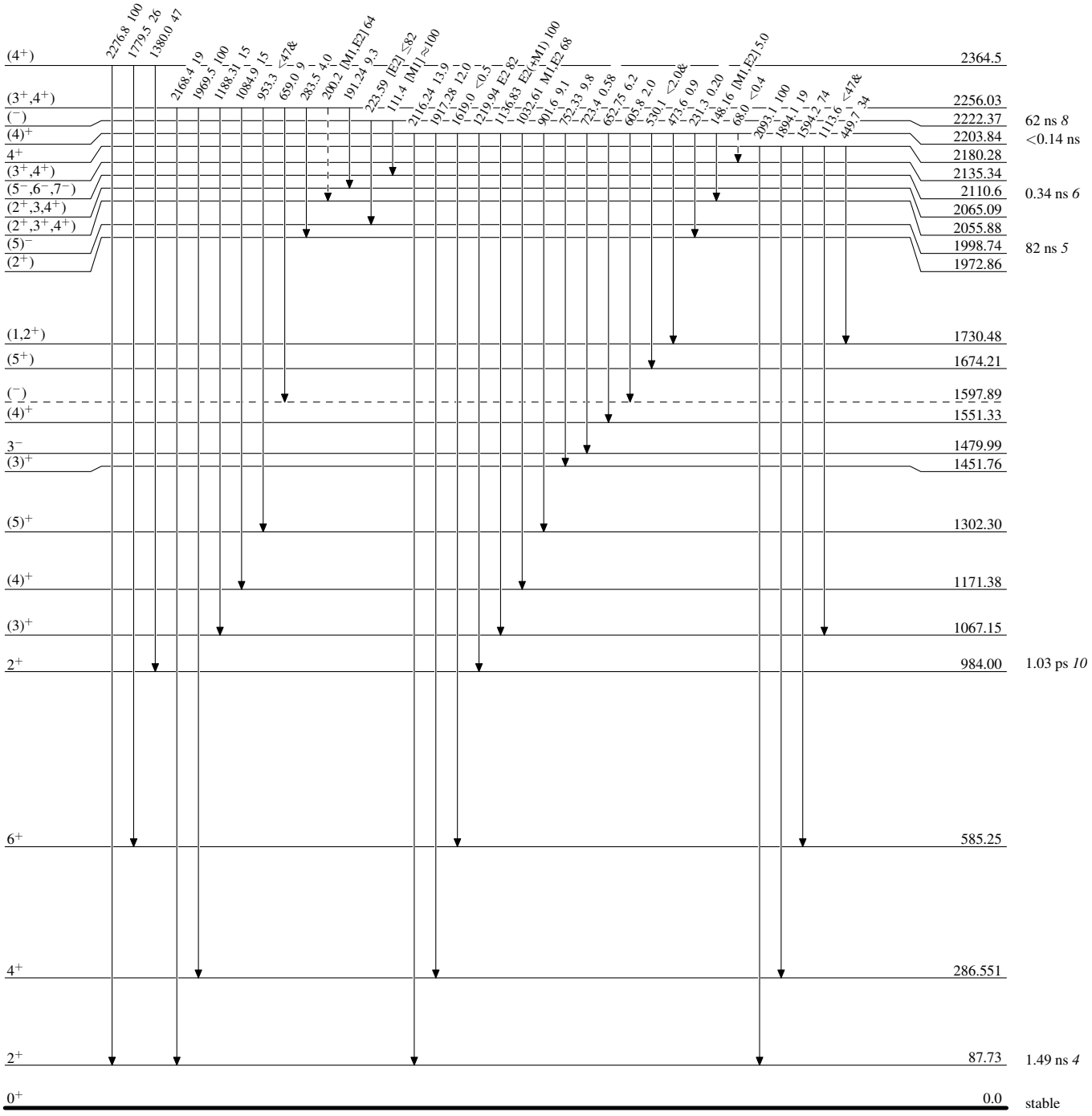
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

- - - - - - ► γ Decay (Uncertain)



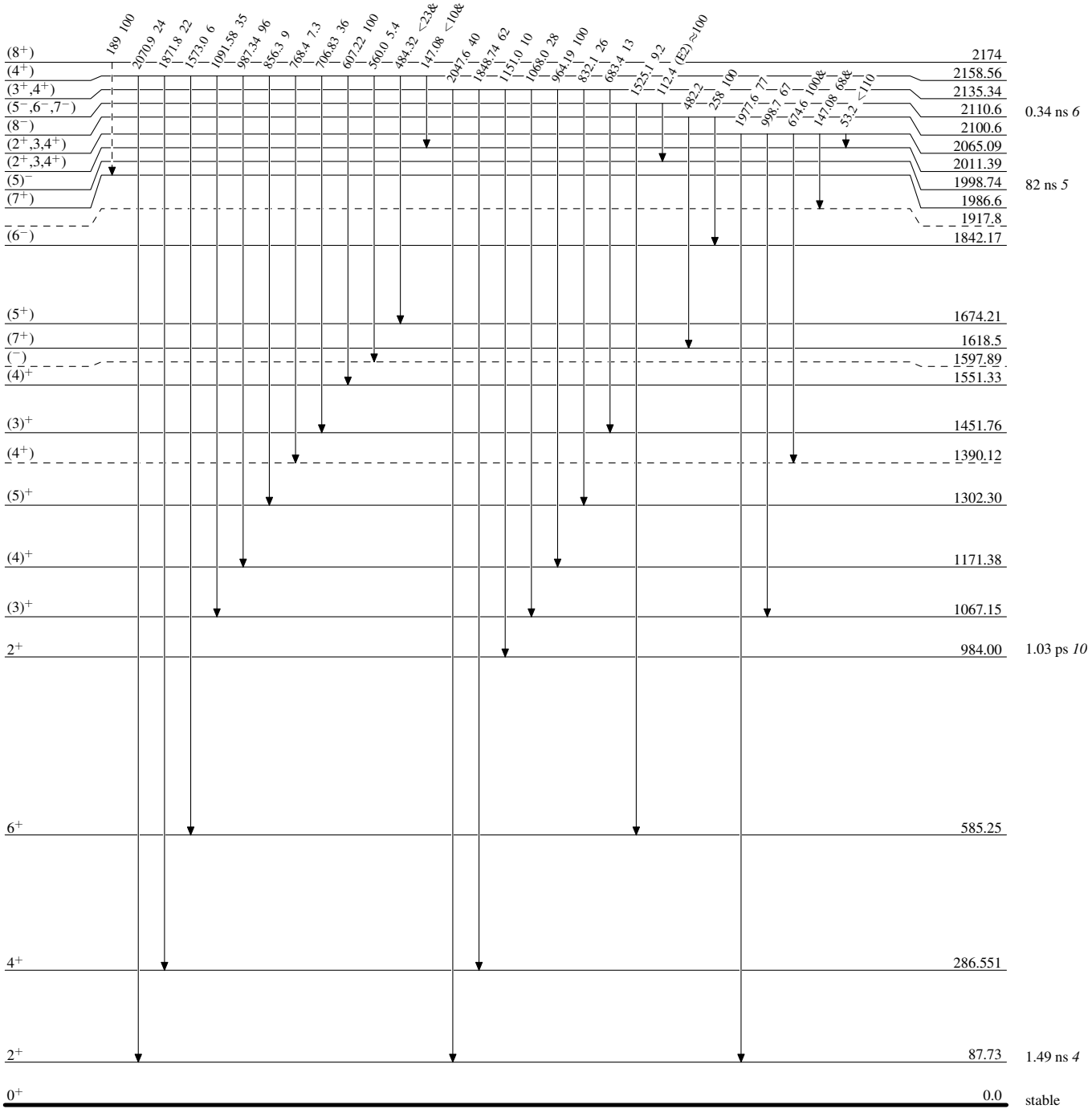
$^{168}_{70}Yb_{98}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend
- - - - - - ► γ Decay (Uncertain)

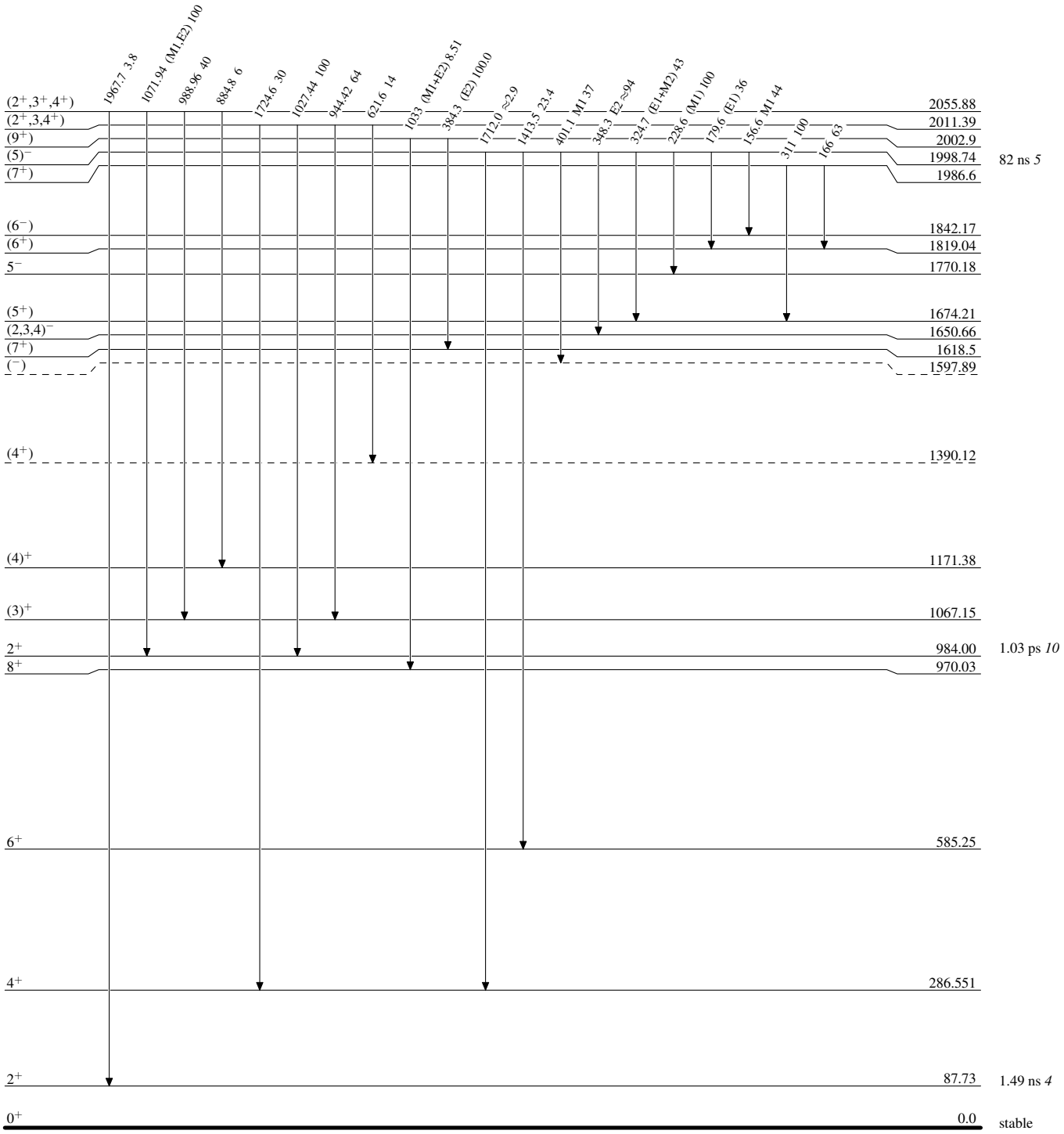


$^{168}_{70}Yb_{98}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



$^{168}_{70}Yb_{98}$

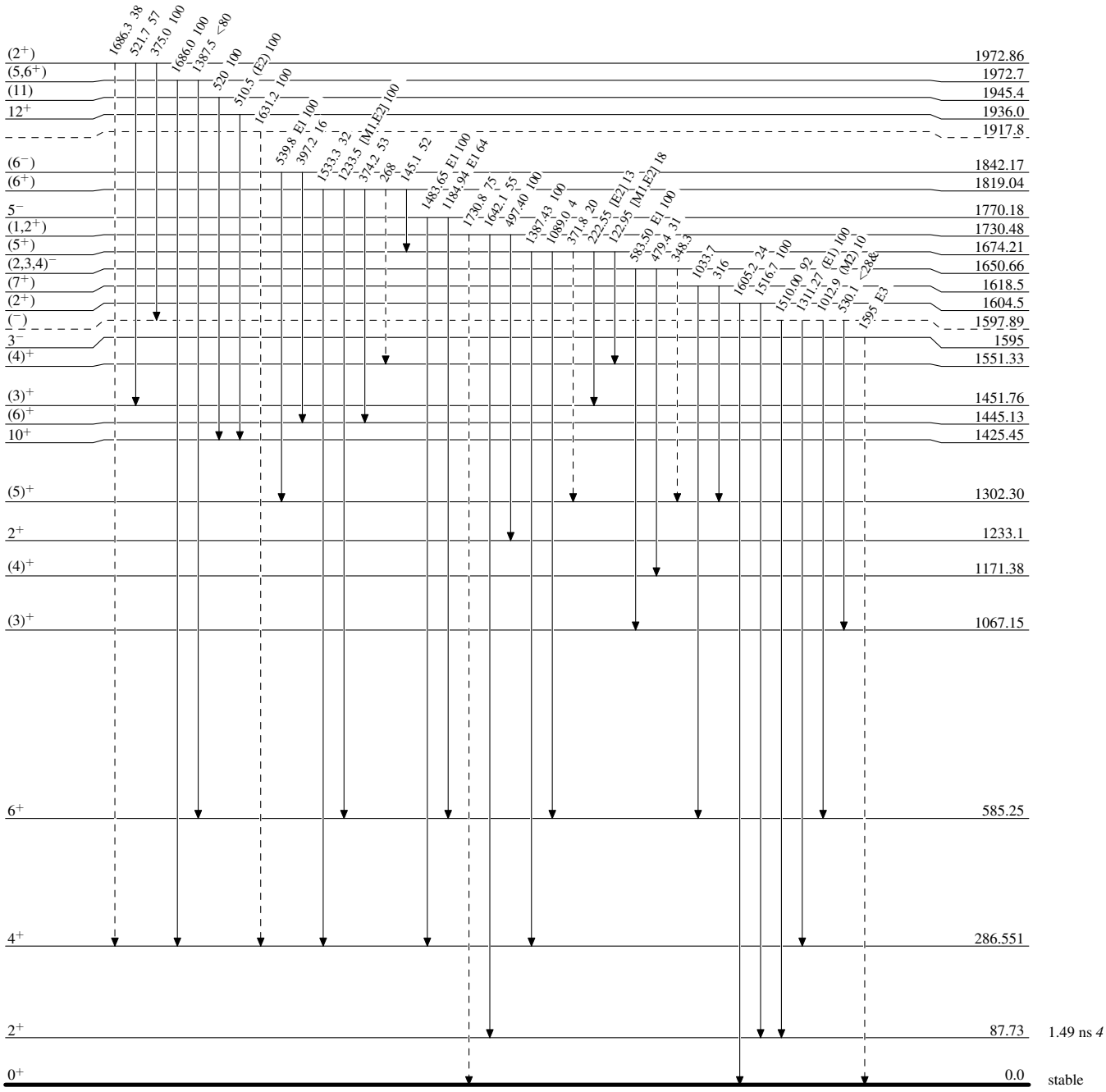
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

γ Decay (Uncertain)



$^{168}_{70}Yb_{98}$

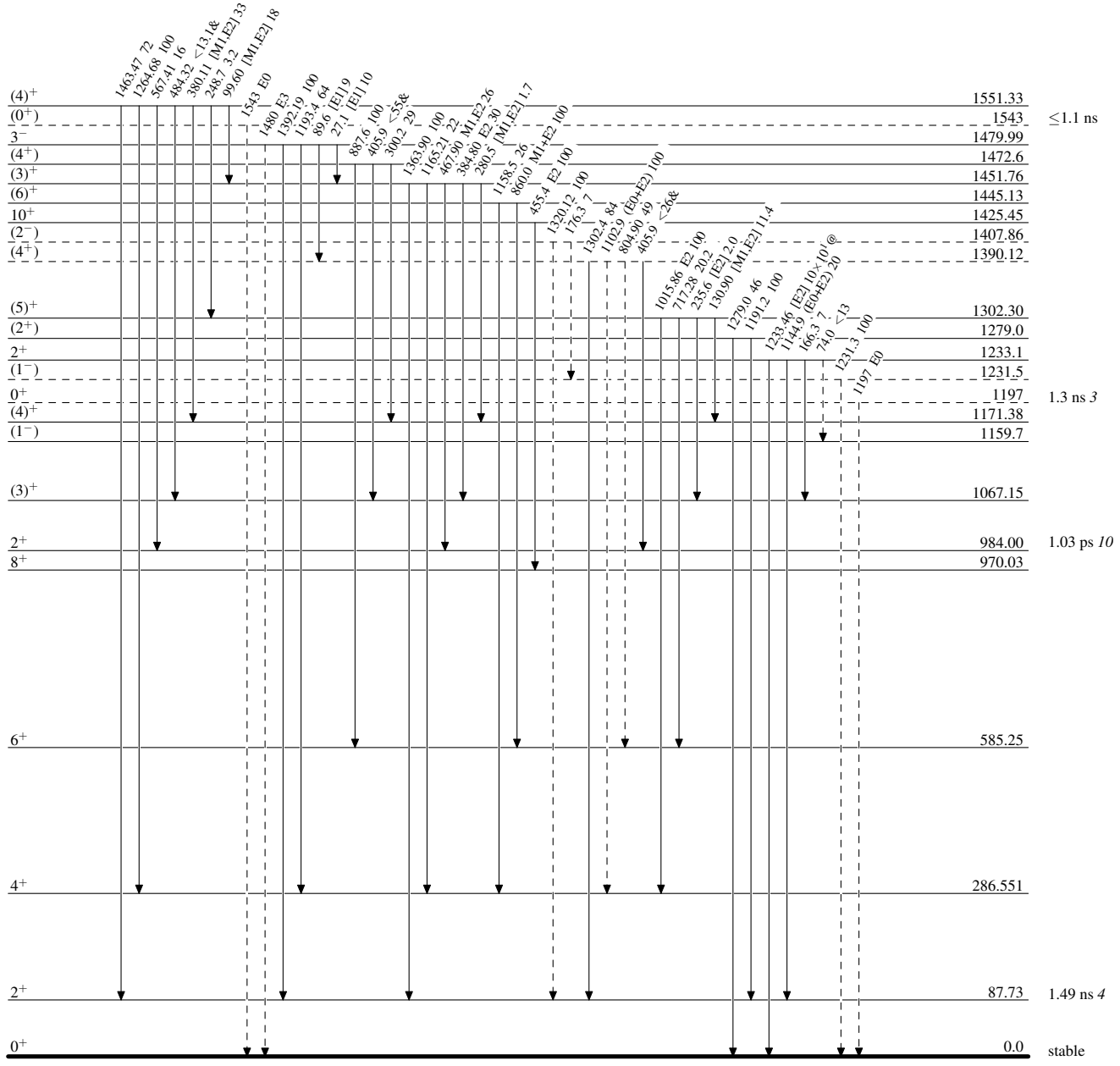
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

γ Decay (Uncertain)



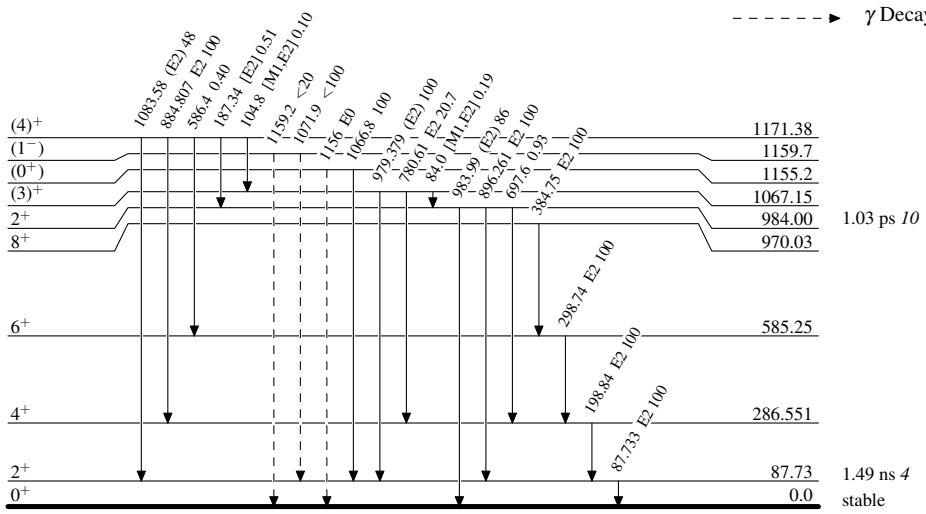
$^{168}_{70}Yb_{98}$

Adopted Levels, Gammas

Level Scheme (continued)

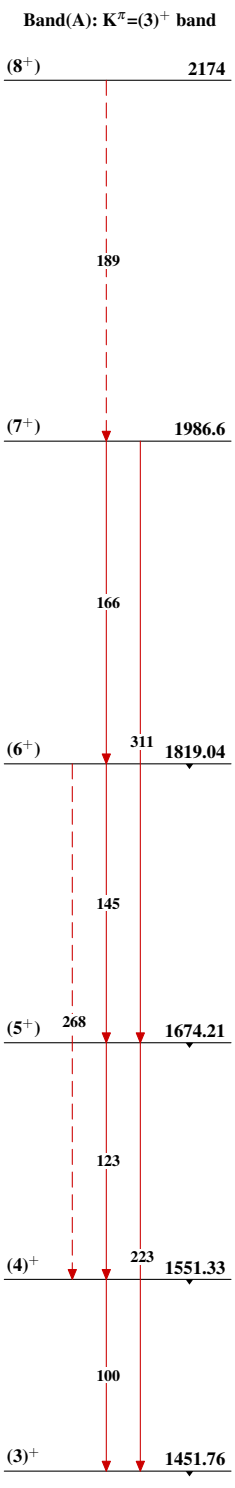
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend



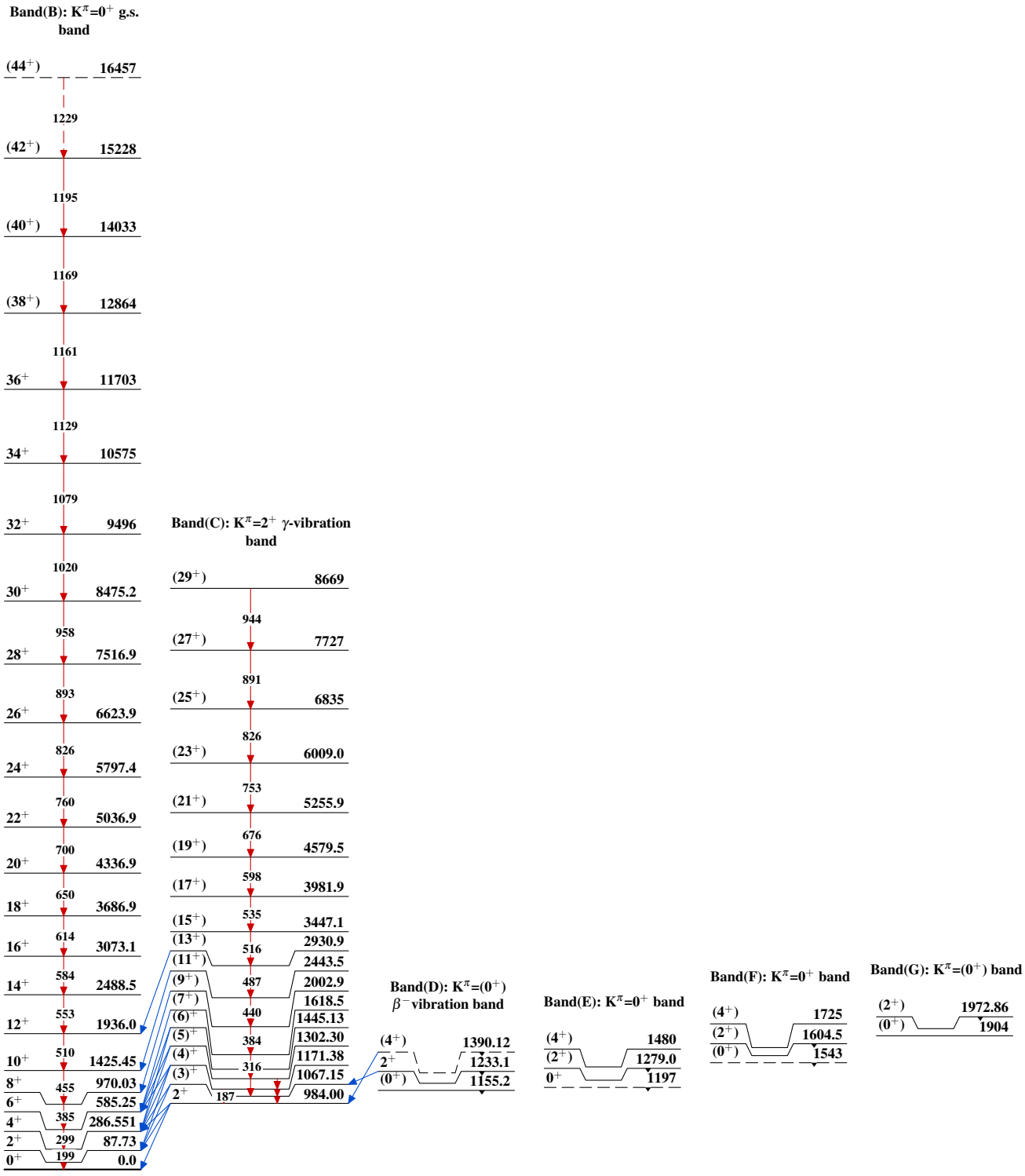
$^{168}_{70}Yb_{98}$

Adopted Levels, Gammas



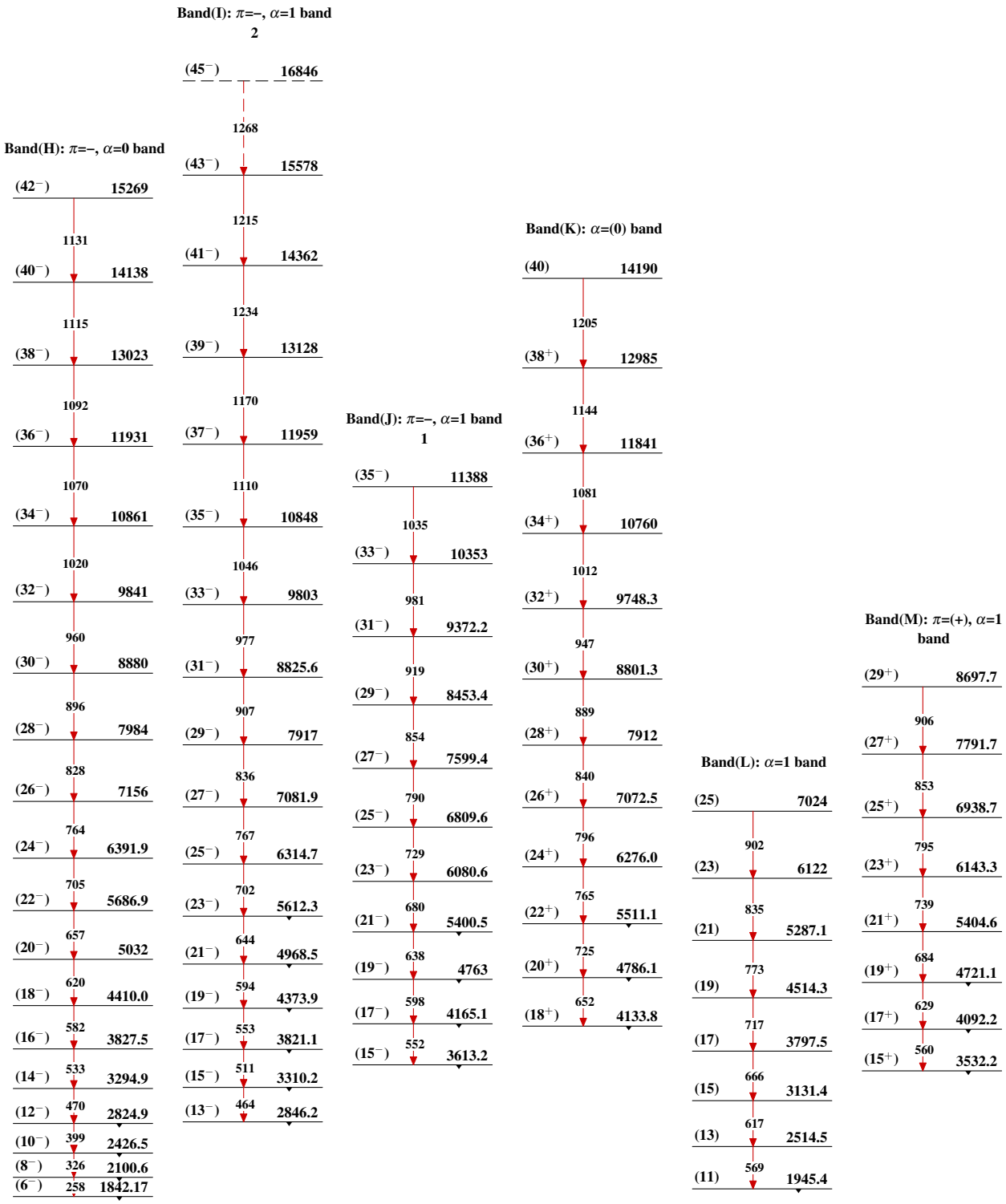
$^{168}_{70}Yb_{98}$

Adopted Levels, Gammas (continued)

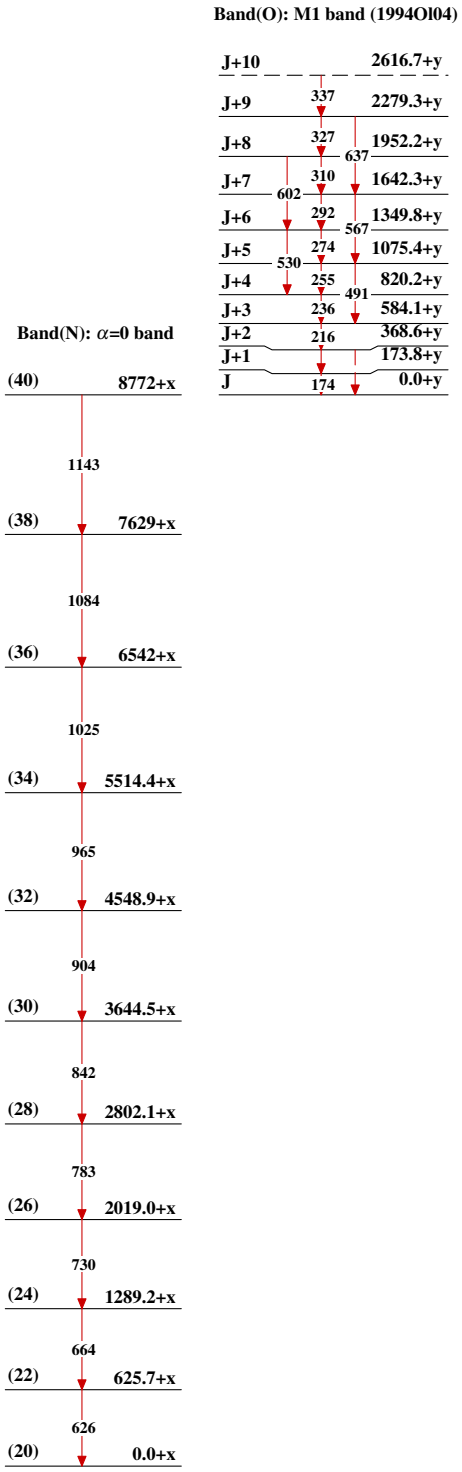


$^{168}_{70}Yb_{98}$

Adopted Levels, Gammas (continued)



Adopted Levels, Gammas (continued)



$^{168}_{70}Yb_{98}$