Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109,2033 (2008)	15-Jun-2008

Q(β^-)=−2293 *3*; S(n)=6866.98 *15*; S(p)=6352.7 *19*; Q(α)=1718.4 *13* 2012Wa38
Note: Current evaluation has used the following Q record −2293 36866.98 *156342* 41733 4 2003Au03.
See, e.g., 1982Bu21 and 1983Ne13 for hfs and isotope-shift data.

^{169}Yb Levels

Band(AJ) 7/2[633] band. A=7.9, B=9.5 (7/2, 11/2, 15/2, 19/2 levels); A=8.1, B=4.5 (9/2, 13/2, 17/2, 21/2 levels).
Band(Bk) 1/2[521] band. A=11.5, a=+0.80 (1/2, 3/2, 5/2, 7/2, 9/2 levels).
Band(εM) 5/2[512] band. A=12.7, B=−9.5 (5/2, 7/2, 9/2, 11/2 levels).
Band(ΔN) 5/2[523] band. A=11.2 (5/2, 7/2, 9/2 levels).
Band(eo) 5/2[642] band. Small admixture from β vibration built on 5/2[642] (1968Mi08).
Band(ip) 1/2[510] band. Admixed with γ vibration, possibly the K-2 vibration built on 5/2[512]. Tentative assignment; populations in (d,p) are ≈40% of expected strength.

Cross Reference (XREF) Flags

A	^{169}Yb IT decay (46 s)	E	^{168}Yb(n,γ) E=thermal
B	^{169}Lu ε decay (34.06 h)	F	^{168}Yb(d,p), ^{170}Yb(d,t)
C	^{124}Sn(^{48}Ca,3nγ)	G	^{171}Yb(p,t)
D	^{167}Er(α,2nγ)	H	^{168}Yb(n,γ) E=resonance

E(level)†	J$^\pi$	$T_{1/2}$	XREF	Comments
0.0	7/2$^+$	32.018& d *5*	ABCDEF	%ε=100 μ=−0.635 *8*; Q=+3.54 *6* μ,Q: collinear fast-beam LASER spectroscopy (1989Ra17, from 1983Ne13); μ relative to μ=−0.67989 *3*, and Q relative to Q=+2.80 *4*, for ^{173}Yb. Others: μ=−0.633 *16*, Q=+3.52 *7* (1989Ra17, from 1974Ch38). J$^\pi$: optical spectroscopy (1974Ch38); E3 24γ from 1/2$^-$ 24.
24.1999 *16*	1/2$^-$	46 s *2*	ABCDEFG	%IT=100 μ=+0.507 *8* %IT: ε decay unlikely (for ε decay to 1/2$^+$ ^{169}Tm g.s., %ε+%β^+<0.05% is implied by log *ft*>5.9). μ: collinear fast-beam LASER spectroscopy (1989Ra17); value relative to μ=−0.67989 *3* for ^{173}Yb, and no hyperfine anomaly correction has been applied. J$^\pi$: collinear fast-beam LASER spectroscopy (1983Ne13); L=0 in (p,t) on 1/2$^-$ target. $T_{1/2}$: from ^{169}Yb IT decay (46 s) (1960Ho10); other value: 50 s (1949De16), also from ^{169}Yb IT decay (46 s).
70.8815 *8*	9/2$^+$‡		BCDEFG	
86.9188 *16*	3/2$^-$		B DEFG	J$^\pi$: M1+E2 γ to 1/2$^-$.
99.2405 *15*	5/2$^-$‡		BCDEFG	J$^\pi$: L=2 for (p,t) on 1/2$^-$ target consistent with established J^π.
161.6505 *10*	11/2$^+$‡		BCDEF	
191.2142 *13*	5/2$^-$	3.35 ns *15*	B DEFG	J$^\pi$: M1+E2 104γ to 3/2$^-$, E1+M2 191γ to 7/2$^+$. $T_{1/2}$: $\gamma\gamma$(t) in ^{169}Lu ε decay (34.06 h) (1968Lo10).
243.8163 *17*	7/2$^-$‡		B DEFG	J$^\pi$: M1+E2 145γ to 5/2$^-$ 99; E2 157γ to 3/2$^-$ 87.
264.2538 *21*	9/2$^-$‡		BCDEFG	J$^\pi$: M1 20γ to 7/2$^-$ 244; E2 165γ to 5/2$^-$ 99.
269.6554 *24*	13/2$^+$‡		BCDEF	J$^\pi$: M1+E2 108γ to 11/2$^+$ 162;

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Adopted Levels, Gammas (continued)

^{169}Yb Levels (continued)

E(level)[†]	J^π	XREF	Comments
278.5983 *14*	$7/2^-$	B DEF	J^π: M1+E2 87γ to $5/2^-$ 191; E1+M2 208γ to $9/2^+$ 71.
389.5279 *15*	$9/2^-$	B DEF	J^π: M1+E2 111γ to $7/2^-$ 279; E2 198γ to $5/2^-$ 191; 228γ to $11/2^+$.
405.04 *23*	$15/2^+$[‡]	CD	
486.937 *3*	$(11/2^-)$[‡]	B DEFG	J^π: (E2) intraband 243γ to $7/2^-$ 244.
512.029 *15*	$(13/2)^-$[‡]	BCDE G	J^π: E2 248γ to $9/2^-$ 264.
523.085 *3*	$11/2^-$[‡]	B DEF	
547.14 *25*	$17/2^+$[‡]	CD	
569.834 *3*	$5/2^-$	B EFG	J^π: M1+E2 291γ to $7/2^-$ 279, M1 483γ to $3/2^-$ 87.
590.689 *6*	$(5/2)^+$	B EF	J^π: M1+E2 591γ to $7/2^+$; J=5/2 consistent with band assignment.
647.276 *9*	$7/2^+$	B E	J^π: M1+E2 γ to $9/2^+$, M1+E2 γ to $7/2^+$; nuclear orientation data rule out 9/2 (1982Da23).
647.836 *3*	$7/2^-$	B EF	J^π: M1+E2 258γ to $9/2^-$ 190, M1+E2 548γ to $5/2^-$ 99.
659.630[a] *6*	$3/2^-$	B EFG	J^π: (M1) 560γ to $5/2^-$ 99, M1 635γ to $1/2^-$ 24; established band member.
677.111 *6*	$13/2^-$[‡]	DE	J^π: (M1+E2) 154γ to $11/2^-$ 523; continuation of established band.
707.054 *8*	$9/2^+$	B EF	J^π: M1+E2 546γ to $11/2^+$ 162; log *ft*=8.7 from $7/2^+$.
719.953[b] *6*	$3/2^+$	B E	J^π: E2 720γ to $7/2^+$ g.s.; primary γ from $1/2^+$ in ^{168}Yb(n,γ) E=thermal.
722.279[a] *6*	$5/2^-$	B EF	J^π: M1 478γ to $7/2^-$ 244, M1 635γ to $3/2^-$ 87.
736.2 *3*	$19/2^+$[‡]	CD	
749.026 *5*	$(9/2)^-$	B EFG	J^π: M1 470γ to $7/2^-$ 279; 226γ to $11/2^-$ 523, 587γ to $11/2^+$ 162.
757.871 *18*	$(11/2^+)$	E	J^π: 488γ to $13/2^+$ 270; 596γ to $11/2^+$ 162; band assignment.
761.846[b] *7*	$(5/2)^+$	B E	J^π: M1+E2 762γ to $7/2^+$ g.s.; band assignment.
807.074[a] *10*	$(7/2)^-$	B EFG	J^π: M1+E2 708γ to $5/2^-$ 99, (M1) 543γ to $9/2^-$ 264.
807.6 *5*	$(15/2^-)$[‡]	D	
813.337[c] *9*	$(1/2)^-$	E	J^π: M1+E2 726γ to $3/2^-$ 87; primary γ from $1/2^+$ in ^{168}Yb(n,γ) E=thermal; band assignment.
831.936[b] *9*	$(7/2)^+$	B E	J^π: M1+E2 761γ to $9/2^+$ 71; 112γ to $3/2^+$ 720.
833.8 *3*	$(17/2^-)$[‡]	CD	
851.394[c] *10*	$3/2^-$	B EF	J^π: M1+E2 660γ to $5/2^-$ 191, M1 827γ to $1/2^-$ 24.
851.5 *4*	$15/2^-$[‡]	D	
865.170 *14*	$(11/2^-)$[@]	EF	XREF: F(871). J^π: 353γ to $13/2^-$ 512, 217γ to $7/2^-$ 648, band assignment.
877 *3*	$(13/2^+)$[@]	F	
886.81[b] *4*	$9/2^+$	B	J^π: M1+E2 725γ to $11/2^+$ 162; log *ft*=8.8 from $7/2^+$.
903.2 *4*	$21/2^+$[‡]	CD	
911.640[c] *10*	$(5/2)^-$	B EF	J^π: M1 668γ to $7/2^-$ 244, (M1) 825γ to $3/2^-$ 87.
919.806[a] *10*	$(9/2)^-$	B Ef	J^π: M1 676γ to $7/2^-$ 244; 433γ to $(11/2^-)$ 487; band assignment.
929.12 *3*	$11/2^-$	B f	J^π: E1+M2 768γ to $11/2^+$; log $f^{1u}t$=9.8 from $7/2^+$. Proposed as 11/2[505] bandhead in 1980Ba07.
946.487? *12*		E	J^π: possible transitions to $11/2^+$ and $11/2^-$ and $9/2^+$ suggest J^π=(9/2,11/2,13/2$^+$).
960.594[d] *13*	$7/2^-$	B EF	J^π: E1 890γ to $9/2^+$ 71, E1 961γ to $7/2^+$ g.s.; nuclear orientation data rule out J=9/2 (1982Da23).
996.69[c] *6*	$(7/2)^-$	EF	J^π: M1 897γ to $5/2^-$ 99; band assignment.
1033.897 *5*	$(1/2^+,3/2)$	EFG	J^π: 1010γ to $1/2^-$ 24, 272γ to $(5/2)^+$ 762; primary γ from $1/2^+$.
1042.6 *5*	$(17/2^-)$[‡]	D	
1061.101[a] *15*	$(11/2^-)$	B E	J^π: 782γ to $7/2^-$ 279, 574γ to $(11/2^-)$ 487; band assignment.
1064.760 *10*	$(5/2^+,7/2,9/2^+)$	EF	J^π: 474γ to $(5/2)^+$ 591, 358γ to $9/2^+$ 707.
1070.665[f] *16*	$7/2^+$	B Ef	J^π: E0+M1+E2 1071γ to $7/2^+$ g.s..
1078.338[d] *19*	$9/2^-$	B f	J^π: E1+M2 917γ to $11/2^+$ 162, E1+M2 1078γ to $7/2^+$ g.s..
1110.706 *8*	$3/2^-,5/2^-$	EFG	J^π: L=2 for (p,t) on $1/2^-$ target. Proposed in 1988DzZW as possible β vibration

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Adopted Levels, Gammas (continued)

^{169}Yb Levels (continued)

E(level)[†]	J^π	XREF	Comments
			on 1/2[521], but J=1/2 is inconsistent with reported L(p,t).
1134 *3*		F	
1141.26[f] *10*	$(9/2)^+$	E	J^π: E2(+M1) 980γ to $11/2^+$ 162, 1141γ to $7/2^+$ g.s., 872γ to $13/2^+$ 270; band assignment.
1157.0 *4*	$23/2^+$[‡]	CD	
1159.88 *4*	$(5/2^+)$	E	J^π: primary γ from $1/2^+$, 512γ to $7/2^-$ 648, possible 1089γ to $9/2^+$ 71.
1167.629 *15*	$(7/2,9/2)^-$	B Fg	Additional information 1. J^π: M1+E2 247γ to $(9/2)^-$ 920, (E2) γ to $7/2^-$, 1068γ to $5/2^-$ 99.
1176.652 *12*	$(7/2,9/2)^+$	B EFg	J^π: M1(+E2) 1106γ to $9/2^+$ 271, 230γ to $7/2^-$ 961. Tentatively suggested as 9/2[624] bandhead (1980Ba07).
1198 *3*		F	
1198.7 *7*	$(19/2^-)$[‡]	D	
1202.256 *11*	$(5/2^+)$	E	J^π: 1131γ to $9/2^+$ 71, 1115γ to $3/2^-$ 87, primary γ from $1/2^+$.
1204.55 *17*		B	J^π: 614γ to $(5/2)^+$ 591; 1118γ to $3/2^-$ 87.
1218.0 *5*	$(21/2^-)$[‡]	CD	
1225.42 *8*	$1/2,3/2,5/2^+$[#]	EF	
1232.220 *23*	$(3/2^-)$	E	J^π: 272γ to $7/2^-$ 691; possible 419γ to $(1/2)^-$ 819; primary γ from $1/2^+$.
1250.5? *5*	$(19/2^-)$[‡]	D	
1261.890 *17*	$(5/2,7/2^-)$	E	J^π: 602γ to $3/2^-$ 660, 615γ to $7/2^+$ 647, 455γ to $(7/2)^-$ 807.
1270.742 *8*	$(1/2)^-$	E	J^π: primary γ from $1/2^+$ in ^{168}Yb(n,γ) E=thermal; M1 1184γ to $3/2^-$ 87; 1247γ with probable E0 component to $1/2^-$.
1283.275 *18*	$(7/2,9/2)^-$	B F	J^π: E1+M2 1283γ to $7/2^+$ g.s., E1+M2 1213γ to $9/2^+$ 71.
1285.126 *8*	$(3/2^+,5/2,7/2^+)$	E	J^π: 1285γ to $7/2^+$ g.s., 565γ to $3/2^+$ 720.
1296.671 *11*	$(3/2^-,5/2,7/2^-)$	E	J^π: 1210γ to $3/2^-$ 287, possible 1018γ to $7/2^-$ 279.
1311.798 *12*	$(5/2^+,7/2)$	E	J^π: 1068γ to $7/2^-$ 244, 592γ to $3/2^+$ 720, 135γ to $(7/2,9/2)^+$ 1177.
1319.827 *12*	$(1/2)^-$	EF	J^π: M1 1232γ to $3/2^-$ 87; $1/2^-$ consistent with band assignment.
1336.2 *6*	$(25/2)^+$[‡]	CD	
1343.62 *3*	$(7/2)^-$	B	J^π: M1 1244γ to $5/2^-$ 99, strong 1272γ to $9/2^+$ 71.
1350.148 *12*	$(3/2^-)$	EfG	J^π: (M1) 1326γ to $1/2^-$ 24; primary γ from $1/2^+$ in (n,γ) E=thermal; band assignment.
1354.818 *13*	$(3/2^-)$	EfG	J^π: (M1) 1163γ to $5/2^-$ 191; primary γ from $1/2^+$ in ^{168}Yb(n,γ) E=thermal.
1395.402 *11*	$(5/2^-)$[@]	EF	J^π: 1131γ to $9/2^-$ 264; γ to $3/2^-,5/2^-$ 1110; population in (d,p).
1398.713 *14*	$(3/2)^-$	E	J^π: M1 1208γ to $5/2^-$ 191, (M1) 1374γ to $1/2^-$ 24.
1406.34 *3*	$9/2^-$	B	Additional information 2. J^π: M1 1141γ to $9/2^-$ 264, E1+M2 1406γ to $7/2^+$ g.s.; nuclear orientation data rule out J=7/2 (1982Da23).
1420.48 *10*	$(5/2^-,7/2,9/2^-)$	B fg	Additional information 3. J^π: 1156γ to $9/2^-$ 264; possible 1321γ to $5/2^-$ 99. Proposed as J=7/2 member of 1/2[521] β vibration band in 1980Ba07. However, level is absent from 1988DzZW.
1426.76 *5*	$(7/2,9/2)^-$	B fg	J^π: M1 1162γ to $9/2^-$ 264, 857γ to $5/2^-$ 570.
1444.73 *5*	$7/2^-,9/2^-$	B	Additional information 4. J^π: M1(+E2) 1180γ to $9/2^-$ 264; nuclear orientation data rule out J=11/2 (1982Da23).
1449.773[e] *11*	$7/2^-$	B E	J^π: E1 1379γ to $9/2^+$ 71, M1+E2 1351γ to $5/2^-$ 99.
1463.024 *17*	$(7/2^-)$	E	J^π: 598γ to $(11/2^-)$ 865; 612γ to $3/2^-$ 851.
1463.402 *17*	$7/2^-$	B Fg	J^π: M1+E2 γ to $9/2^-$, E1+M2 γ to $7/2^+$; nuclear orientation data rule out J=9/2 (1980DuZP).
1464.98 *5*	$(7/2)^-$	Efg	J^π: M1+E2 γ to $7/2^-$ 244; band assignment.
1478.510 *16*	$(3/2^-,5/2^+)$	EfG	J^π: 518γ to $7/2^-$ 960; primary γ from $1/2^+$ in (n,γ) E=thermal.
1509.7 *9*	$1/2^-$	E G	J^π: L=0 for (p,t) on $1/2^-$ target.
1524.134 *25*	$1/2,3/2,5/2^+$[#]	Efg	
1531.570 *13*	$(3/2^-,5/2^+)$	Efg	J^π: 571γ to $7/2^-$ 960; primary γ from $1/2^+$ in (n,γ) E=thermal.

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Adopted Levels, Gammas (continued)

^{169}Yb Levels (continued)

E(level)[†]	J$^\pi$	XREF	Comments
1540.80 *3*	9/2$^-$	B	Additional information 5. J$^\pi$: M1 1018γ to 11/2$^-$ 523; M1+E2 1297γ to 7/2$^-$ 244.
1554.860 *23*	(1/2$^-$)	Ef	J$^\pi$: primary γ from 1/2$^+$ in ^{168}Yb(n,γ) E=thermal; possible 1531γ with E0 component to 1/2$^-$ 24.
1554.876[e] *23*	9/2$^-$	B f	J$^\pi$: M1+E2 1032γ to 11/2$^-$ 523, M1 1311γ to 7/2$^-$ 244.
1565.62 *5*	(7/2$^-$)	B F	Additional information 6. J$^\pi$: (M1) 1301γ to 9/2$^-$ 264; (M1) 1375γ to 5/2$^-$ 191.
1585.876 *15*	(1/2$^-$)	E G	J$^\pi$: L=(0) for (p,t) on 1/2$^-$ target.
1607 *6*		F	
1616.683 *12*	(1/2$^+$,3/2,5/2$^+$)	E	J$^\pi$: 305γ to (5/2$^+$,7/2) 1312; primary γ from 1/2$^+$ in (n,γ).
1618.784 *15*	1/2,3/2	E G	J$^\pi$: strong primary γ from 1/2$^+$ in (n,γ) E=thermal; 1595γ to 1/2$^-$ 24.
1640 *6*		F	
1650.5 *9*	(23/2$^-$)[‡]	D	
1655.2 *7*	(25/2$^-$)[‡]	CD	
1656.48 *4*	5/2$^-$,7/2$^-$,9/2$^-$	B	Additional information 7. J$^\pi$: M1+E2 1412γ to 7/2$^-$ 244.
1657.948 *22*	5/2$^+$	B	J$^\pi$: M1+E2 1658γ to 7/2$^+$ g.s.; E1+M2 1466γ to 5/2$^-$ 191; nuclear orientation data rule out J=7/2 (1982Da23).
1666.1 *8*	(27/2$^+$)[‡]	CD	
1688.92 *13*	(5/2,7/2)$^-$	Ef	J$^\pi$: M1 1498γ to 5/2$^-$ 191; 1689 γ to 7/2$^+$ g.s..
1689.289 *22*	7/2$^-$	B f	J$^\pi$: M1+E2 1498γ to 5/2$^-$ 191; E1(+M2) 1618γ to 9/2$^+$ 71.
1694.43 *6*	5/2$^+$	B f	Additional information 8. J$^\pi$: E1(+M2) 1694γ to 3/2$^-$ 87; log *ft*=8.6 from 7/2$^+$.
1696.364 *15*	3/2$^-$	E	J$^\pi$: M1 1506γ to 5/2$^-$ 191; primary γ from 1/2$^+$ in ^{168}Yb(n,γ) E=thermal.
1707.83 *6*	(7/2,9/2)$^+$	B	Additional information 9. J$^\pi$: M1+E2 1637γ to 9/2$^+$ 71; (M1+E2) doubly−placed 1708γ to 7/2$^+$ g.s.; nuclear orientation data rule out J=5/2 (1982Da23).
1708.48 *4*	7/2$^-$	B g	Additional information 10. J$^\pi$: M1+E2 1430γ to 7/2$^-$ 279, M1+E2 1517γ to 5/2$^-$ 191; nuclear orientation data rule out J=5/2 (1982Da23).
1716.196 *21*	7/2$^+$	B g	J$^\pi$: M1+E2 1645γ to 9/2$^+$ 71, E1(+M2) 1525γ to 5/2$^-$ 191.
1724.57 *3*	(3/2$^-$)	E	J$^\pi$: 1480γ to 7/2$^-$ 244; 454γ to (1/2)$^-$ 1271; primary γ from 1/2$^+$ in (n,γ) E=thermal.
1733 *6*		F	
1742.876 *18*	(3/2$^+$,5/2,7/2$^-$)	E	J$^\pi$: 1744γ to 7/2$^+$ g.s.; 511γ to (3/2$^-$) 1234.
1745.0 *8*	(1/2$^-$)	E G	XREF: G(1740). J$^\pi$: L=(0) for (p,t) on 1/2$^-$ target. Consistent with observation of primary γ from 1/2$^+$ in (n,γ) E=thermal.
1757.3 *9*	1/2,3/2,5/2,5/2$^+$[#]	E	
1767 *6*		F	
1781.239 *24*	(3/2$^-$,5/2$^-$)	E	J$^\pi$: 226γ to (1/2$^-$) 1555; 1133γ to 7/2$^-$ 648. If 1392γ is correctly placed, J^π=3/2$^-$ can Be eliminated. Level proposed in 1988DzZW. Differs from 1781 level known from ε decay because decay pattern differs.
1781.715 *19*	7/2$^-$	B g	J$^\pi$: M1 703γ to 9/2$^-$ 1078; M1+E2 1682γ to 5/2$^-$ 99.
1787.3 *8*	1/2,3/2,5/2,5/2$^+$[#]	E g	
1796.676 *22*	(3/2$^-$,5/2$^+$)	E	J$^\pi$: 989γ to (7/2)$^-$ 807; primary γ from 1/2$^+$ in (n,γ) E=thermal.
1828.053 *15*	1/2,3/2,5/2,5/2$^+$	E	J$^\pi$: primary γ from 1/2$^+$ in (n,γ) E=thermal; 132γ to 3/2$^-$ 1697. However, 1563γ to 9/2$^-$ 264 is inconsistent with primary γ feeding, suggesting this γ may Be misplaced.
1837.5 *7*	1/2,3/2,5/2,5/2$^+$[#]	E	
1844.6 *9*	(29/2$^+$)[‡]	CD	
1857.4 *9*	1/2,3/2,5/2,5/2$^+$[#]	E	

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Adopted Levels, Gammas (continued)

^{169}Yb Levels (continued)

E(level)†	Jπ	XREF	Comments
1867.66 *4*	(3/2⁻,5/2⁺)	E	Jπ: 1624γ to 7/2⁻ 244; primary γ from 1/2⁺ in (n,γ) E=thermal.
1888.00 *6*	(7/2⁺,9/2⁺)	B	Additional information 11. Jπ: 1127γ to (5/2)⁺ 762; 1726γ to 11/2⁺ 162.
1894.0 *8*	1/2,3/2,5/2⁺#	E	
1908.657 *25*	5/2⁺	B	Jπ: E1+M2 1339γ to 5/2⁻ 570, 1261γ to 7/2⁻ 648; nuclear orientation data for 1339γ rule out J=7/2 (1982Da23).
1910.9 *10*	1/2,3/2,5/2⁺#	E	
1920.5 *9*	1/2,3/2,5/2⁺#	E	
1939.0 *7*	1/2,3/2,5/2⁺#	E G	
1954.54 *3*	5/2⁻,7/2⁻	B	Additional information 12. Jπ: M1 1676γ to 7/2⁻ 279; M1(+E2) 1763γ to 5/2⁻ 191.
1972.23 *5*	9/2⁻	B g	Additional information 13. Jπ: M1+E2 1043γ to 11/2⁻ 929; log *ft*=7.5 from 7/2⁺.
1974.046 *22*	7/2⁻	B g	Jπ: E1 1327γ to 7/2⁺ g.s.; (E1+M2) 1903γ to 9/2⁺ 71; nuclear orientation consistent only with J=7/2 (1982Da23).
1998.4 *7*	1/2,3/2,5/2⁺#	E G	
2029.92 *4*	7/2⁻	B	Jπ: 1838γ to 5/2⁻ 191; (E1(+M2)) 1989γ to 9/2⁺ 71; M1+E2 1110γ to π=− 920; nuclear orientation data consistent only with J=7/2 (1982Da23).
2037.7 *8*	1/2,3/2,5/2⁺#	E	
2048.2 *11*	1/2,3/2,5/2⁺#	E G	
2065.04 *11*	7/2⁺	B	Jπ: M1+E2+E0 2065γ to 7/2⁺ g.s..
2101.03 *7*	(5/2,7/2)⁻	B	Jπ: M1,E2 2014γ to 3/2⁻ 87; 2101γ to 7/2⁺ g.s..
2103.6 *7*	1/2,3/2,5/2⁺#	E	
2123.2 *12*	1/2,3/2,5/2⁺#	E G	
2135.4 *4*		B	Jπ: 2135γ to 7/2⁺ g.s..
2139.9 *8*	(29/2⁻)‡	C	
2192.9 *10*	1/2,3/2,5/2⁺#	E	
2217.5 *10*	1/2,3/2,5/2⁺#	E	
2234.5 *9*	1/2,3/2,5/2⁺#	E	
2244.5 *7*	1/2,3/2,5/2⁺#	E	
2258.1 *22*	(31/2⁺)‡	C	
2286.2 *12*	1/2,3/2,5/2⁺#	E G	
2287.23 *5*	7/2⁻	B	Jπ: M1 2096γ to 5/2⁻ 191; M1 1898γ to 9/2⁻ 390.
2296.85 *15*	5/2⁻,7/2⁻,9/2⁻	B	Jπ: M1 848γ to 7/2⁻ 1450.
2299.1 *9*	1/2,3/2,5/2⁺#	E	
2313.6 *7*	1/2,3/2,5/2⁺#	E	
2342.4 *9*	1/2,3/2,5/2⁺#	E	
2350.1 *8*	1/2,3/2,5/2⁺#	E	
2355.6 *8*	1/2,3/2,5/2⁺#	E	
2375.9 *10*	1/2,3/2,5/2⁺#	E	
2381.4 *10*	1/2,3/2,5/2⁺#	E	
2388.0 *9*	1/2,3/2,5/2⁺#	E	
2401.0 *9*	1/2,3/2,5/2⁺#	E	
2407.4 *9*	1/2,3/2,5/2⁺#	E	
2415.4 *9*	1/2,3/2,5/2⁺#	E	
2426.1 *11*	(33/2⁺)‡	C	
2427.5 *9*	1/2,3/2,5/2⁺#	E	

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Adopted Levels, Gammas (continued)

^{169}Yb Levels (continued)

E(level)[†]	Jπ	XREF	E(level)[†]	Jπ	XREF
2441.1 *10*	1/2,3/2,5/2+[#]	E	3075.2 *12*	(37/2+)[‡]	C
2449.8 *8*	1/2,3/2,5/2+[#]	E	3094.5 *9*	1/2,3/2,5/2+[#]	E
2477.9 *10*	1/2,3/2,5/2+[#]	E	3105.6 *7*	1/2,3/2,5/2+[#]	E
2498.7 *8*	1/2,3/2,5/2+[#]	E	3118.9 *11*	1/2,3/2,5/2+[#]	E
2504.4 *9*	1/2,3/2,5/2+[#]	E	3130.3 *9*	1/2,3/2,5/2+[#]	E
2517.1 *10*	1/2,3/2,5/2+[#]	E	3142.6 *8*	1/2,3/2,5/2+[#]	E
2522.8 *8*	1/2,3/2,5/2+[#]	E	3173.8 *8*	1/2,3/2,5/2+[#]	E
2530.3 *8*	1/2,3/2,5/2+[#]	E	3238.3 *9*	(37/2−)[‡]	C
2551.1 *8*	1/2,3/2,5/2+[#]	E	3246.5 *9*	1/2,3/2,5/2+[#]	E
2620.9 *10*	1/2,3/2,5/2+[#]	E	3274.0 *15*	1/2,3/2,5/2+[#]	E
2634.0 *12*	1/2,3/2,5/2+[#]	E	3344.4 *8*	1/2,3/2,5/2+[#]	E
2655.4 *7*	1/2,3/2,5/2+[#]	E	3375.4 *8*	1/2,3/2,5/2+[#]	E
2667.7 *9*	(33/2−)[‡]	C	3450.0 *9*	1/2,3/2,5/2+[#]	E
2679.7 *8*	1/2,3/2,5/2+[#]	E	3526.7 *8*	1/2,3/2,5/2+[#]	E
2684.8 *11*	1/2,3/2,5/2+[#]	E	3559.9 *9*	1/2,3/2,5/2+[#]	E
2705.9 *8*	1/2,3/2,5/2+[#]	E	3588 *3*	(39/2+)[‡]	C
2741.8 *9*	1/2,3/2,5/2+[#]	E	3657.0 *10*	1/2,3/2,5/2+[#]	E
2774.5 *9*	1/2,3/2,5/2+[#]	E	3782.2 *14*	(41/2+)[‡]	C
2781.0 *10*	1/2,3/2,5/2+[#]	E	3855.8 *10*	(41/2−)[‡]	C
2801.9 *10*	1/2,3/2,5/2+[#]	E	4330 *4*	(43/2+)[‡]	C
2827.2 *7*	1/2,3/2,5/2+[#]	E	4524.4 *15*	(45/2+)[‡]	C
2856.0 *9*	1/2,3/2,5/2+[#]	E	4526.6 *11*	(45/2−)[‡]	C
2869.9 *9*	1/2,3/2,5/2+[#]	E	5116 *4*	(47/2+)[‡]	C
2891.6 *7*	1/2,3/2,5/2+[#]	E	5256.2 *12*	(49/2−)[‡]	C
2917.3 *8*	1/2,3/2,5/2+[#]	E	5272.5 *16*	(49/2+)[‡]	C
2929 *3*	(35/2+)[‡]	C	6046.2 *17*	(53/2+)[‡]	C
2932.8 *15*	1/2,3/2,5/2+[#]	E	6048.0 *12*	(53/2−)[‡]	C
2952.0 *10*	1/2,3/2,5/2+[#]	E	6875 *3*	(57/2+)[‡]	C
2988.6 *9*	1/2,3/2,5/2+[#]	E	6903.3 *13*	(57/2−)[‡]	C
2998.9 *10*	1/2,3/2,5/2+[#]	E	7771 *4*	(61/2+)[‡]	C
3015.2 *12*	1/2,3/2,5/2+[#]	E	7823.0 *13*	(61/2−)[‡]	C
3027.4 *10*	1/2,3/2,5/2+[#]	E	8806.3 *13*	(65/2−)[‡]	C
3038.4 *8*	1/2,3/2,5/2+[#]	E	9853.9 *15*	(69/2−)[‡]	C
3043.8 *8*	1/2,3/2,5/2+[#]	E	10960.9 *25*	(73/2−)[‡]	C
3066.1 *8*	1/2,3/2,5/2+[#]	E			

[†] From least-squares fit to adopted Eγ, except where noted or where cross references clearly indicate other source. Note, however, that 9% of the 535 transitions deviate by at least 3σ from the least-squares predicted value (16 of these by at least 5σ); although some of these are multiply-placed transitions, it seems almost certain that some are misplaced.

[‡] Continuing J^{π} pattern for band established by γ-ray multipolarities, coincidence data, and rotational structure.

[#] Primary transition from 1/2+ in ^{168}Yb(n,γ) E=thermal.

[@] Based on comparison of relative populations of levels within a band in ^{168}Yb(d,p) and ^{170}Yb(d,t) with population pattern expected for different J values for specific Nilsson orbitals.

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Adopted Levels, Gammas (continued)

^{169}Yb Levels (continued)

[&] weighted average of 31.97 d *5* (1975La16), 32.022 d *8* (1980Ho17), 32.015 d *9* (1980RuZY), 32.032 d *20* (1983Wa26,1983Fu12), 32.07 d *8* (1988Ki12), 31.88 d *4* (1990Pa08), 32.015 d *9* (2002Un02), 32.001 d *34* (2000Iw06), excluding the data of 1949Wa23 and 1990Pa08 from the average because they are statistical outliers (based on Chauvenet criterion). Others: 1946Bo09, 1949Wa23 (31.83 d *21*), 1950Co16, 1951Ma25 (33.0 d *15*), 1954Ha16, 1954Mi16, 1956Co13, 1975MeZJ, 1982HoZJ, 1990Pa08 (31.88 d *4*).

[a] Band(A): $K^{\pi}=3/2[521]$ band. Includes large admixture of K-2 γ vibration built on 1/2[521] (1968Mi08). A=12.2, B=6.4 (3/2, 5/2, 7/2, 9/2 levels).

[b] Band(B): $K^{\pi}=3/2^{+}$ band. 7/2[633] γ vibration with some 3/2[651] admixture (1968Mi08).

[c] Band(C): $K^{\pi}=1/2^{-}$ band. K-2 γ vibration built on 5/2[512], with significant 1/2[510] admixture (1968Mi08).

[d] Band(D): 7/2[514] band.

[e] Band(E): 7/2[503]? band. Tentative band assignment from 1980Ba07.

[f] Band(F): β vibration band. Built on 7/2[633] g.s.; band assignment from 1988DzZW.

Adopted Levels, Gammas (continued)

$\gamma(^{169}Yb)$

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]	$I_{(\gamma+ce)}$	Comments
24.1999	1/2$^-$	24.20 *2*	100	0.0	7/2$^+$	E3		2.58×10^5		B(E3)(W.u.)=0.0124 *6*
70.8815	9/2$^+$	70.8814[&] *9*	100	0.0	7/2$^+$	M1+E2	−0.31 *+15−26*	9.4 *6*		
86.9188	3/2$^-$	62.7190[&] *6*	100	24.1999	1/2$^-$	M1+E2	0.60 *3*	15.1 *3*		
99.2405	5/2$^-$	12.31 *2*	6.0 *13*	86.9188	3/2$^-$	M1+E2	0.026 *+6−4*	307 *23*		
		75.0404[&] *8*	100 *2*	24.1999	1/2$^-$	E2		10.05		
161.6505	11/2$^+$	90.7692[&] *10*	100.0 *21*	70.8815	9/2$^+$	M1+E2	−0.26 *3*	4.47		Other δ: −0.40 *9* from (α,2nγ).
		161.6513[&] *15*	31.1 *17*	0.0	7/2$^+$	E2		0.555		
191.2142	5/2$^-$	91.9737[&] *12*	2.91 *6*	99.2405	5/2$^-$	M1(+E2)	−0.2 *+4−3*	4.30 *7*		B(M1)(W.u.)=1.81×10^{-4} *25*; B(E2)(W.u.)=0.4 *+15−4* Other Iγ: 4.3 *7* in (n,γ) E=thermal.
		104.2955[&] *17*	2.32 *8*	86.9188	3/2$^-$	M1(+E2)	−0.55 *+65−20*	2.93 *7*		B(M1)(W.u.)=8×10^{-5} *5*; B(E2)(W.u.)<1.0 *+19−10*
		167.0141[&] *25*	0.087 *11*	24.1999	1/2$^-$	[E2]		0.495		B(E2)(W.u.)=0.0155 *21*
		191.2137[&] *15*	100.0 *23*	0.0	7/2$^+$	E1+M2	−0.017 *16*	0.0631 *25*		B(E1)(W.u.)≈7.2×10^{-6} *4*; B(M2)(W.u.)=0.3 *+5−3* δ: −0.058 *9* from nuclear orientation (1982Da23) in ε decay; <0.041 from α(K)exp=0.049 *8* (weighted average of 0.046 *10* from ε decay and 0.052 *12* from (n,γ) E=thermal). B(M2)(W.u.)≤1.0 (from RUL) implies δ≤0.033, so evaluator adopts δ=−0.017 *16*.
243.8163	7/2$^-$	144.5758[&] *9*	40.1 *10*	99.2405	5/2$^-$	M1+E2	+0.52 *+12−9*	1.10 *4*		
		156.8977[&] *10*	100.0 *18*	86.9188	3/2$^-$	E2		0.616		
264.2538	9/2$^-$	20.44 *2*	0.42 *7*	243.8163	7/2$^-$	M1		59.0		
		165.0134[&] *15*	100.0 *19*	99.2405	5/2$^-$	E2		0.517		
269.6554	13/2$^+$	108.0053[&] *25*	100 *17*	161.6505	11/2$^+$	M1+E2	−1.0 *+6−4*	2.55 *12*		Other δ: −0.32 *12* (from ^{167}Er(α,2nγ)).
		198.771[&] *5*	52 *8*	70.8815	9/2$^+$	[E2]		0.274		Iγ: from (n,γ) E=thermal. Others: 51 *11* (ε decay), 139 from (α,2nγ).
278.5983	7/2$^-$	14.22 *4*		264.2538	9/2$^-$				<17	Iγ: <0.1 from I(γ+ce) limit and α(theory=173 for M1, 3.06×10^4 for E2.
		34.79 *4*	<1.57	243.8163	7/2$^-$	M1+E2	≈0.022	≈12.36	<21	Iγ: from I(γ+ce) and α in ε decay.
		87.3836[&] *10*	100.0 *18*	191.2142	5/2$^-$	M1+E2	−0.23 *2*	5.00		

$^{169}_{70}Yb_{99}$-8

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]	Comments
278.5983	7/2⁻	179.356[&] *4*	1.39 *17*	99.2405	5/2⁻				
		207.713[&] *3*	17.5 *6*	70.8815	9/2⁺	E1(+M2)	−0.09 *+14−16*	0.07 *11*	Other Iγ: 13.0 *17* in (n,γ) E=thermal.
		278.595[&] *5*	5.3 *4*	0.0	7/2⁺	(E1)		0.0239	Other Iγ: 4.1 *5* in (n,γ) E=thermal.
389.5279	9/2⁻	110.9291[&] *10*	100.0 *24*	278.5983	7/2⁻	M1+E2	−0.17 *+7−8*	2.50	Other δ: −0.11 *+16−25* from (α,2nγ).
		198.3136[&] *17*	43.9 *15*	191.2142	5/2⁻	E2		0.276	Other Iγ: 31 *4* in (n,γ) E=thermal, 21 *4* in (α,2nγ).
		227.878[&] *3*	10.9[d] *12*	161.6505	11/2⁺	[E1]		0.0396	
		318.646[&] *15*	5.13 *24*	70.8815	9/2⁺	(E1)		0.01720	Other Iγ: 4.4 *6* in (n,γ) E=thermal.
		389.53[&] *3*	8.4 *4*	0.0	7/2⁺	(E1)		0.01067	
405.04	15/2⁺	135.3[a] *5*	50[a] *5*	269.6554	13/2⁺	(M1+E2)[a]	−0.32[a] *8*	1.39 *3*	
		243.4[@] *3*	100[a] *10*	161.6505	11/2⁺	(E2)		0.1415	Mult.: Q intraband transition from (^{48}Ca,3nγ).
486.937	(11/2⁻)	208.336[&] *15*	7.4[c] *12*	278.5983	7/2⁻				
		222.694[&] *6*	18.5 *21*	264.2538	9/2⁻				I_γ: weighted average from (α,2nγ) and (n,γ) E=thermal.
		243.127[&] *3*	100 *8*	243.8163	7/2⁻	(E2)		0.1420	I_γ: weighted average from (α,2nγ) and (n,γ) E=thermal.
512.029	(13/2)⁻	247.766 *15*	100	264.2538	9/2⁻	E2[a]		0.1337	
523.085	11/2⁻	133.542[&] *4*	100.0 *26*	389.5279	9/2⁻	M1+E2	−0.20 *+10−12*	1.46 *3*	I_γ: weighted average from (α,2nγ), ε decay and (n,γ) E=thermal.
		244.474[&] *5*	82 *8*	278.5983	7/2⁻	(E2)		0.1395	I_γ: weighted average from (α,2nγ), ε decay and (n,γ) E=thermal.
547.14	17/2⁺	141.9[a] *5*	29[a] *3*	405.04	15/2⁺	(M1+E2)[a]	−0.23[a] *9*	1.23 *3*	
		277.5[@] *3*	100[a] *10*	269.6554	13/2⁺	(E2)[a]		0.0938	
569.834	5/2⁻	291.233[&] *3*	21.0[d] *8*	278.5983	7/2⁻	M1+E2	−0.10 *9*	0.170 *4*	
		325.987[&] *12*	0.69[c] *8*	243.8163	7/2⁻				
		378.624[&] *5*	100.0 *25*	191.2142	5/2⁻	M1(+E2)	−0.04 *6*	0.0845 *13*	
		470.557[h&] *17*	5.1[hd] *4*	99.2405	5/2⁻				
		482.894[&] *12*	7.1[d] *4*	86.9188	3/2⁻	M1		0.0448	
		569.81[&] *3*	7.0[d] *4*	0.0	7/2⁺	[E1]		0.00457	
590.689	(5/2)⁺	312.082[g&] *15*	<0.13[gc]	278.5983	7/2⁻				
		503.88[&] *10*	0.42[c] *11*	86.9188	3/2⁻				
		519.788[h&] *15*	2.7[h] *3*	70.8815	9/2⁺	[E2]		0.01617	α(K)exp exceeds α(K)(M1) in (n,γ) E=thermal, inconsistent with level scheme.
		590.701[&] *12*	100 *13*	0.0	7/2⁺	M1+E2	+0.34 *+8−7*	0.0252 *8*	
647.276	7/2⁺	485.69[&] *4*	2.2[c] *4*	161.6505	11/2⁺				

$^{169}_{70}Yb_{99}$-9

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]	Comments
647.276	7/2+	576.396[&] *12*	100[d] *7*	70.8815	9/2+	M1+E2	+0.09 *4*	0.0283 *5*	
		647.272[&] *17*	43[d] *5*	0.0	7/2+	M1+E2	+0.5 *+6−4*	0.019 *4*	
647.836	7/2−	258.311[&] *3*	40.4[d] *16*	389.5279	9/2−	M1+E2	+1.6 *+33−7*	0.15 *4*	
		369.232[&] *5*	100.0[d] *25*	278.5983	7/2−	M1+E2	−0.02 *5*	0.0904	
		383.595[&] *15*	9.5[d] *10*	264.2538	9/2−				
		403.957[&] *25*	14.8[d] *9*	243.8163	7/2−	(M1)		0.0714	
		456.638[&] *9*	85[d] *4*	191.2142	5/2−	M1(+E2)	−0.09 *9*	0.0516 *10*	
		548.546[&] *25*	42[d] *3*	99.2405	5/2−	M1+E2	+0.53 *+13−10*	0.0283 *16*	
		560.73 *7*	11.7 *8*	86.9188	3/2−	(E2)		0.01342	E_γ: for doublet dominated by this transition. I_γ: divided intensity from ε decay (34.06 h). Mult.,δ: M1+E2, δ=1.1 *3* from α(K)exp in ε decay for doublet dominated by this transition; other component is known from (n,γ) to have α(K)exp>α(K)(M1) so mult=E2(+M1) is likely for this transition. An M1 component is inconsistent with level scheme.
659.630	3/2−	89.809[&i] *15*	0.16 *4*	569.834	5/2−				
		468.434[g&] *12*	<16.2[gc]	191.2142	5/2−				
		560.369[&&] *15*	25[c] *3*	99.2405	5/2−	(M1)[&]		0.0305	Mult.: α(K)exp in (n,γ) E=thermal exceeds α(K)(M1).
		572.731[&] *12*	100[c] *13*	86.9188	3/2−	M1+E2	−0.7 *+4−6*	0.024 *5*	
		635.410[f&] *15*	<235[c]	24.1999	1/2−	M1		0.0222	
677.111	13/2−	154.020[&] *10*	31[c] *17*	523.085	11/2−	(M1+E2)[a]	−0.29[a] *+9−7*	0.962 *19*	
		287.585[&] *7*	100[c] *15*	389.5279	9/2−	[E2][a]		0.0840	
707.054	9/2+	183.920[&] *12*	0.9[c] *4*	523.085	11/2−				
		436.98[&] *10*	7.8[c] *19*	269.6554	13/2+				
		545.54[&b] *2*	75[d] *5*	161.6505	11/2+	M1+E2	−0.12 *7*	0.0325 *6*	
		636.11[&] *7*	100[d] *20*	70.8815	9/2+	(M1+E2)	≈0.91	≈0.01659	
719.953	3/2+	129.221[&] *10*	0.035 *6*	590.689	(5/2)+				
		528.672[&] *25*	1.20[c] *16*	191.2142	5/2−				
		695.53[&] *10*	0.85[c] *14*	24.1999	1/2−				
		719.979[&] *25*	100	0.0	7/2+	E2		0.00747	
722.279	5/2−	443.659[&] *25*	1.51[c] *24*	278.5983	7/2−				
		478.449[&] *10*	13.5[c] *20*	243.8163	7/2−	M1[&]		0.0459	
		531.04[&] *3*	2.03[c] *24*	191.2142	5/2−				

$^{169}_{70}Yb_{99}$-10

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]	Comments
722.279	5/2$^-$	623.026[&] *15*	100[c] *13*	99.2405	5/2$^-$	M1(+E2)		0.017 *7*	
		635.410[f&] *15*	<183	86.9188	3/2$^-$	M1		0.0222	
736.2	19/2$^+$	189.1[a] *5*	32[a] *3*	547.14	17/2$^+$	M1+E2[a]	−0.32[a] *8*	0.535 *14*	
		331.2[@] *3*	100[a] *10*	405.04	15/2$^+$	E2[a]		0.0551	
749.026	(9/2)$^-$	179.116[&] *12*	2.9[c] *11*	569.834	5/2$^-$				
		225.901[&] *6*	16 *8*	523.085	11/2$^-$				I_γ: from ε decay. I(471γ):I(225γ)=100 *43*:11.6 *11* in (n,γ) E=thermal.
		262.164[&] *8*	8[c] *3*	486.937	(11/2$^-$)				
		359.38 *7*	38.0 *21*	389.5279	9/2$^-$	(M1+E2)	1.5 *+15−6*	0.060 *14*	
		470.557[h&] *17*	100[h] *14*	278.5983	7/2$^-$	M1		0.0479	
		484.65 *4*	37.4 *16*	264.2538	9/2$^-$	(M1)		0.0444	Transition not seen in ^{168}Yb(n,γ) E=thermal, but would be expected, if placement in ^{169}Lu ε decay (34.06 h) were correct.
		505.10 *17*	32 *5*	243.8163	7/2$^-$	M1		0.0399	
		587.29[&] *20*	43[c] *19*	161.6505	11/2$^+$				
		649.72 *12*	12.8 *16*	99.2405	5/2$^-$				E_γ: not observed in (n,γ) E=thermal.
757.871	(11/2$^+$)	488.22[&] *2*	63[c] *8*	269.6554	13/2$^+$				
		596.15[&] *6*	100[c] *22*	161.6505	11/2$^+$				
761.846	(5/2)$^+$	171.156[&] *7*	0.13[c] *3*	590.689	(5/2)$^+$				
		518.07[g&] *7*	<1.8[gc]	243.8163	7/2$^-$				
		690.943[&] *20*	93[c] *12*	70.8815	9/2$^+$	(E2)		0.00820	
		761.864[&] *25*	100[c] *13*	0.0	7/2$^+$	M1+E2	0.8 *2*	0.0111 *10*	
807.074	(7/2)$^-$	417.50[g&] *11*	<4.1[gc]	389.5279	9/2$^-$				
		542.82[&] *2*	18.1 *23*	264.2538	9/2$^-$	(M1)		0.0331	Other Iγ: 52 *8* from (n,γ) E=thermal. Source of discrepancy unknown.
		563.243[&] *15*	100 *6*	243.8163	7/2$^-$	(E2)		0.01326	
		616.14[&] *12*	8.1[c] *17*	191.2142	5/2$^-$				
		707.78[&] *3*	87 *5*	99.2405	5/2$^-$	M1+E2	+0.30 *13*	0.0161 *7*	Other Iγ: 168 *21* from (n,γ) E=thermal. Source of discrepancy unknown.
807.6	(15/2$^-$)	320.7[a] *5*	100	486.937	(11/2$^-$)	[E2]		0.0606	
813.337	(1/2)$^-$	153.732[&] *12*	0.09[c] *6*	659.630	3/2$^-$				
		622.092[&] *15*	82[c] *11*	191.2142	5/2$^-$				
		726.417 *25*	100[c] *13*	86.9188	3/2$^-$	M1+E2		0.012 *5*	
831.936	(7/2)$^+$	111.961[&] *9*	0.42[c] *7*	719.953	3/2$^+$				
		640.51[&] *10*	4.7[c] *13*	191.2142	5/2$^-$				

$^{169}_{70}Yb_{99}$-11

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]
831.936	(7/2)$^+$	670.39 *3*	46[c] *5*	161.6505	11/2$^+$	E2		0.00878
		760.95[&] *4*	100[c] *14*	70.8815	9/2$^+$	M1+E2	0.8 *3*	0.0112 *15*
		831.72[&] *7*	27[c] *4*	0.0	7/2$^+$	(M1)		0.01129
833.8	(17/2$^-$)	321.8[@] *3*	100	512.029	(13/2)$^-$	(E2)[a]		0.0600
851.394	3/2$^-$	607.67[&] *5*	5.0[c] *7*	243.8163	7/2$^-$			
		660.193[f] *17*	<79[c]	191.2142	5/2$^-$	M1+E2		0.015 *6*
		752.19[&] *5*	15.3[c] *18*	99.2405	5/2$^-$			
		764.46[&] *4*	32[c] *4*	86.9188	3/2$^-$			
		827.15[&] *3*	100[c] *14*	24.1999	1/2$^-$	M1[&]		0.01144
851.5	15/2$^-$	174.5[a] *5*	33[a] *7*	677.111	13/2$^-$	(M1+E2)[a]	−0.6[a] *+5−3*	0.62 *7*
		328.4[a] *5*	100[a] *20*	523.085	11/2$^-$	(E2)[a]		0.0565
865.170	(11/2$^-$)	217.321[&] *15*	43[c] *11*	647.836	7/2$^-$			
		342.32[&] *5*	100[c] *26*	523.085	11/2$^-$			
		353.04[&] *5*	71[c] *16*	512.029	(13/2)$^-$			
886.81	9/2$^+$	725.07 *7*	100 *5*	161.6505	11/2$^+$	M1+E2	1.1 *3*	0.0112 *14*
		815.95 *4*	65 *3*	70.8815	9/2$^+$	M1+E2	−0.80 *+17−24*	0.0094 *8*
903.2	21/2$^+$	166.8[a] *5*	16[a] *3*	736.2	19/2$^+$	(M1+E2)[a]	−0.14[a] *8*	0.784 *15*
		356.0[@] *3*	100[a] *11*	547.14	17/2$^+$	(E2)[a]		0.0447
911.640	(5/2)$^-$	149.790[&] *20*	0.52[c] *13*	761.846	(5/2)$^+$			
		522.112[&] *17*	26[c] *3*	389.5279	9/2$^-$			
		633.071[&] *20*	100[c] *13*	278.5983	7/2$^-$			
		667.872[&] *25*	92[c] *10*	243.8163	7/2$^-$	M1[&]		0.0196
		812.41[&] *8*	35[c] *6*	99.2405	5/2$^-$			
		824.68[&] *6*	58[c] *8*	86.9188	3/2$^-$	(M1)		0.01153
919.806	(9/2)$^-$	170.731[&] *20*	2.5[c] *6*	749.026	(9/2)$^-$			
		197.508[&] *30*	5.2[c] *6*	722.279	5/2$^-$			
		212.783[&] *10*	<8.4[c]	707.054	9/2$^+$			
		432.75[&] *3*	26[c] *3*	486.937	(11/2$^-$)			
		530.34[&] *8*	37[d] *10*	389.5279	9/2$^-$			
		655.41[&] *6*	100[d] *11*	264.2538	9/2$^-$	(M1)		0.0205
		675.90 *11*	46[d] *5*	243.8163	7/2$^-$	M1		0.0190
		920.2[&] *10*		0.0	7/2$^+$			
929.12	11/2$^-$	406.03[f] *7*	<13.5	523.085	11/2$^-$			
		539.37 *15*	27 *4*	389.5279	9/2$^-$			

$^{169}_{70}Yb_{99}$-12

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]	Comments
929.12	11/2⁻	659.10[i] *6*		269.6554	13/2⁺	(E1)		0.00337	
		664.69[g] *8*	<39[g]	264.2538	9/2⁻	[E2(+M1)]		0.014 *6*	Mult.: E2(+M1) for doubly-placed γ in ε decay.
		767.55 *4*	100 *8*	161.6505	11/2⁺	E1+M2	−0.17 *+12−10*	0.0035 *14*	
946.487?		239.464[g&] *15*	6.9[gc] *11*	707.054	9/2⁺				
		423.376[g&] *17*	66[gc] *8*	523.085	11/2⁻				
		784.88[g&] *15*	100[gc] *20*	161.6505	11/2⁺				
960.594	7/2⁻	682.12 *28*	0.09 *4*	278.5983	7/2⁻				
		889.753 *21*	22.9 *6*	70.8815	9/2⁺	E1		0.00186	
		960.622 *20*	100 *2*	0.0	7/2⁺	E1		1.61×10^{-3}	
996.69	(7/2)⁻	348.77[&i] *5*	0.92[c] *25*	647.836	7/2⁻				
		805.47[f&i] *25*	<8.3[c]	191.2142	5/2⁻				
		897.45[&] *6*	100[c] *14*	99.2405	5/2⁻	M1[&]		0.00935	
1033.897	(1/2⁺,3/2)	272.053[&] *10*	1.22[c] *22*	761.846	(5/2)⁺				
		311.619[&] *5*	4.2[c] *5*	722.279	5/2⁻				
		313.940[&] *5*	6.8[c] *8*	719.953	3/2⁺				
		374.266[&] *7*	10.0[c] *12*	659.630	3/2⁻				
		934.87[&] *20*	12.9[c] *22*	99.2405	5/2⁻				
		947.37[&] *15*	23[c] *3*	86.9188	3/2⁻				
		1009.64[&] *6*	100[c] *14*	24.1999	1/2⁻				
1042.6	(17/2⁻)	191.0[ai] *5*		851.5	15/2⁻				E_γ: for multiply-placed γ.
		365.5[a] *5*	100[a] *21*	677.111	13/2⁻	(E2)[a]		0.0415	
1061.101	(11/2⁻)	254.01[&] *4*	6.0[c] *11*	807.074	(7/2)⁻				
		312.082[g&] *15*	<11[gc]	749.026	(9/2)⁻				
		574.10[&] *8*	56[c] *21*	486.937	(11/2⁻)				
		781.77[&] *25*	63[c] *13*	278.5983	7/2⁻				
		796.36[&] *25*	100[c] *20*	264.2538	9/2⁻				
1064.760	(5/2⁺,7/2,9/2⁺)	357.686[&] *9*	14[c] *3*	707.054	9/2⁺				
		417.50[g&] *11*	<18[gc]	647.276	7/2⁺				
		474.28[&] *6*	11.7[c] *22*	590.689	(5/2)⁺				
		1064.7[g&] *4*	100[gc] *22*	0.0	7/2⁺				
1070.665	7/2⁺	423.376[g&] *17*	<7.5[g]	647.276	7/2⁺	M1		0.0631	Other Iγ: 46 *5* from (n,γ) E=thermal; this suggests transition may Be complex there.
		480.08[&] *4*	38 *4*	590.689	(5/2)⁺	(M1)		0.0455	

$^{169}_{70}Yb_{99}$-13

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]	Comments
1070.665	7/2+	908.64 *7*	29 *4*	161.6505	11/2+				
		999.96 *7*	100 *6*	70.8815	9/2+	M1+E2	+1.3 *6*	0.0050 *11*	
		1070.81 *7*	95 *4*	0.0	7/2+	E0+M1+E2		0.046 *15*	Mult.,α: δ(M1,E2)=−0.74 *+11−13* or +10 *+50−5* and q(E0/E2)=5.8 *+8−7* or 3.57 *14* from ε decay.
1078.338	9/2−	814.02[&] *20*		264.2538	9/2−				
		916.710 *29*	48.1 *14*	161.6505	11/2+	E1(+M2)	−0.010 *27*	0.00176 *4*	
		1007.465 *32*	100.0 *25*	70.8815	9/2+	E1+M2	−0.08 *5*	0.00158 *17*	
		1078.28 *4*	59.4 *23*	0.0	7/2+	E1(+M2)	−0.01 *3*	0.00131 *3*	
1110.706	3/2−,5/2−	297.40[&] *4*	0.64[c] *12*	813.337	(1/2)−				
		390.748[&] *8*	10.4[c] *13*	719.953	3/2+				
		451.15[&i] *11*	1.4[c] *4*	659.630	3/2−				
		1023.72[&] *7*	100[c] *14*	86.9188	3/2−				
		1086.35[&] *10*	90[c] *13*	24.1999	1/2−				
1141.26	(9/2)+	871.51[&] *25*	38[c] *13*	269.6554	13/2+				
		979.74[&] *12*	100[c] *15*	161.6505	11/2+	E2(+M1)		0.0057 *19*	
		1140.78[&] *25*	78[c] *45*	0.0	7/2+				
1157.0	23/2+	253.3[a] *5*	24[a] *5*	903.2	21/2+	(M1+E2)[a]	−0.33[a] *9*	0.237 *8*	
		421.0[@] *3*	100[a] *10*	736.2	19/2+	(E2)[a]		0.0280	
1159.88	(5/2+)	512.03[&] *5*	59[c] *12*	647.836	7/2−				
		590.04[&] *6*	62[c] *11*	569.834	5/2−				
		968.77[&] *17*	57[c] *9*	191.2142	5/2−				
		1088.9[&i] *4*	100[c] *24*	70.8815	9/2+				
1167.629	(7/2,9/2)−	247.2 *3*	18 *6*	919.806	(9/2)−	M1+E2	1.0 *+28−8*	0.20 *6*	
		519.788[h&] *15*	15.4[h] *22*	647.836	7/2−	(E2)		0.01617	
		903.42 *23*	13 *5*	264.2538	9/2−				
		1068.54 *8*	100 *6*	99.2405	5/2−				
1176.652	(7/2,9/2)+	230.193[&] *25*	1.5[c] *3*	946.487?					
		418.76[g&] *5*	<9[gc]	757.871	(11/2+)				
		469.50[&] *2*	26[c] *4*	707.054	9/2+				
		585.983[&] *25*	77[c] *10*	590.689	(5/2)+				
		1015.4 *4*		161.6505	11/2+				E_γ: seen only in ce spectrum in ε decay.
		1106.11 *6*	<127[c]	70.8815	9/2+	M1(+E2)		0.0043 *13*	E_γ: 1105.5 *3* for doublet in (n,γ) E=thermal.
		1177.1[&] *4*	100[c] *18*	0.0	7/2+				E_γ: 1177.7 *4* for doublet in ε decay.
1198.7	(19/2−)	391.1[a] *5*	100	807.6	(15/2−)	(E2)[a]		0.0343	

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]	Comments
1202.256	(5/2$^+$)	137.487[&] *8*	1.9[c] *3*	1064.760	(5/2$^+$,7/2,9/2$^+$)				
		350.99[&] *10*	5.3[c] *9*	851.394	3/2$^-$				
		554.44[&] *17*	6.9[c] *28*	647.836	7/2$^-$				
		611.626[g&] *17*	<179[gc]	590.689	(5/2)$^+$				
		632.38[g&] *7*	<44[gc]	569.834	5/2$^-$				
		1115.1[&] *4*	59[c] *14*	86.9188	3/2$^-$				
		1131.29[&] *17*	100[c] *45*	70.8815	9/2$^+$				
1204.55		613.9 *3*	100 *53*	590.689	(5/2)$^+$				
		1117.61 *20*	87 *27*	86.9188	3/2$^-$				
1218.0	(21/2$^-$)	384.2[@] *4*	100	833.8	(17/2$^-$)	[E2][a]		0.0360	
1225.42	1/2,3/2,5/2$^+$	634.73[g] *8*	100[g]	590.689	(5/2)$^+$				
1232.220	(3/2$^-$)	271.70 *3*	7.0 *10*	960.594	7/2$^-$				
		418.76[g&] *5*	<32[gc]	813.337	(1/2)$^-$				
		509.88[&] *6*	100[c] *25*	722.279	5/2$^-$				
1250.5?	(19/2$^-$)	207.4[ai] *5*	63[a] *14*	1042.6	(17/2$^-$)				
		399.4[ai] *5*	100[a] *20*	851.5	15/2$^-$				
1261.890	(5/2,7/2$^-$)	454.65[&] *3*	78[c] *11*	807.074	(7/2)$^-$				
		539.10[&] *25*	96[c] *31*	722.279	5/2$^-$				
		602.08[&] *7*	100[c] *17*	659.630	3/2$^-$				
		614.5[&] *4*	52[c] *13*	647.276	7/2$^+$				
		1018.0[g&] *3*	<234[gc]	243.8163	7/2$^-$				
1270.742	(1/2)$^-$	160.035[&] *4*	1.0[c] *3*	1110.706	3/2$^-$,5/2$^-$				
		419.39[&] *3*	35[c] *5*	851.394	3/2$^-$	M1[&]		0.0647	
		457.43[&] *2*	8.5[c] *12*	813.337	(1/2)$^-$				
		1183.63[&] *25*	100[c] *21*	86.9188	3/2$^-$	M1[&]		0.00475	
		1246.5[&] *3*	72[c] *13*	24.1999	1/2$^-$				Large α(K)exp suggests probable E0 component.
1283.275	(7/2,9/2)$^-$	476.38 *15*	1.4 *3*	807.074	(7/2)$^-$				
		1212.52 *8*	22.7 *18*	70.8815	9/2$^+$	E1+M2	−0.02 *7*	0.00109 *8*	
		1283.28 *4*	100 *4*	0.0	7/2$^+$	E1+M2	−0.01 *+6−5*	0.00101 *4*	
1285.126	(3/2$^+$,5/2,7/2$^+$)	174.420[&] *2*	1.47[c] *19*	1110.706	3/2$^-$,5/2$^-$				
		453.34[&] *6*	1.5[c] *4*	831.936	(7/2)$^+$				
		565.13[&] *9*	2.3[c] *12*	719.953	3/2$^+$				
		1284.7[&] *8*	100[c] *36*	0.0	7/2$^+$				

$^{169}_{70}Yb_{99}$-15

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]
1296.671	(3/2$^-$,5/2,7/2$^-$)	185.941[&] *25*	0.41[c] *5*	1110.706	3/2$^-$,5/2$^-$			
		262.753[&] *17*	0.73[c] *14*	1033.897	(1/2$^+$,3/2)			
		445.17[&] *7*	1.2[c] *4*	851.394	3/2$^-$			
		1018.0[g&] *3*	<24[gc]	278.5983	7/2$^-$			
		1105.5[g&] *3*	33[gc] *5*	191.2142	5/2$^-$			
		1197.8[&] *7*	100[c] *29*	99.2405	5/2$^-$			
		1209.8[&] *3*	55[c] *11*	86.9188	3/2$^-$			
1311.798	(5/2$^+$,7/2)	135.130[&] *15*	0.60[c] *13*	1176.652	(7/2,9/2)$^+$			
		504.64[&] *7*	10.5[c] *25*	807.074	(7/2)$^-$			
		549.90[&] *10*	5.0[c] *10*	761.846	(5/2)$^+$			
		591.78[&] *6*	22[c] *7*	719.953	3/2$^+$			
		1033.72[&] *25*	50[c] *10*	278.5983	7/2$^-$			
		1067.64[&] *20*	100[c] *18*	243.8163	7/2$^-$			
1319.827	(1/2)$^-$	468.434[g&] *12*	<13.0[gc]	851.394	3/2$^-$			
		660.193[f&] *17*	<102[c]	659.630	3/2$^-$	M1+E2[&]		0.015 *6*
		1232.64[&] *17*	100[c] *13*	86.9188	3/2$^-$	M1[&]		0.00431
		1295.6[&] *4*	99[c] *16*	24.1999	1/2$^-$	(M1)[&]		0.00383
1336.2	(25/2)$^+$	177.9[ai] *5*	<14.2[a]	1157.0	23/2$^+$			
		433.0[@] *5*	100[a] *10*	903.2	21/2$^+$	(E2)[a]		0.0260
1343.62	(7/2)$^-$	272.66 *16*	9 *3*	1070.665	7/2$^+$			
		432.27 *7*	4.1 *5*	911.640	(5/2)$^-$	M1+E2	1.2 *+43−7*	0.040 *14*
		1065.09 *5*	69 *6*	278.5983	7/2$^-$	M1		0.00614
		1099.89 *11*	9.3 *10*	243.8163	7/2$^-$			
		1244.24 *12*	11.0 *14*	99.2405	5/2$^-$	M1		0.00422
		1272.46 *6*	100 *5*	70.8815	9/2$^+$			
		1343.56 *13*	21.6 *17*	0.0	7/2$^+$			
1350.148	(3/2$^-$)	239.464[g&] *15*	<0.31[gc]	1110.706	3/2$^-$,5/2$^-$			
		498.77[&] *4*	2.1[c] *3*	851.394	3/2$^-$			
		627.852[&] *25*	19.5[c] *24*	722.279	5/2$^-$			
		630.23[&] *3*	10.3[c] *14*	719.953	3/2$^+$			
		1263.08[&] *20*	100[c] *16*	86.9188	3/2$^-$	(M1)[&]		0.00407
		1325.5[&] *6*	44[c] *9*	24.1999	1/2$^-$	(M1)[&]		0.00364
1354.818	(3/2$^-$)	443.182[&] *9*	27[c] *4*	911.640	(5/2)$^-$	(M1)[&]		0.0560
		632.38[g&] *7*	<19[gc]	722.279	5/2$^-$			

$^{169}_{70}Yb_{99}$-16

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]	Comments
1354.818	(3/2⁻)	634.73[g&] *8*	<29[gc]	719.953	3/2⁺				
		1163.14[&] *20*	100[c] *20*	191.2142	5/2⁻	(M1)[&]		0.00495	
1395.402	(5/2⁻)	284.691[&] *8*	2.0[c] *3*	1110.706	3/2⁻,5/2⁻				
		588.46[&] *4*	20[c] *3*	807.074	(7/2)⁻				
		1131.29[&] *17*	66[c] *30*	264.2538	9/2⁻				
		1151.36[&] *20*	100[c] *16*	243.8163	7/2⁻				
1398.713	(3/2)⁻	113.569[&] *15*	4.6[c] *6*	1285.126	(3/2⁺,5/2,7/2⁺)				
		547.45[&i] *20*	2.5 *6*	851.394	3/2⁻				
		678.67[&] *10*	2.7[c] *27*	719.953	3/2⁺				
		739.02[&i] *10*	7.2[c] *11*	659.630	3/2⁻				
		1207.5[&] *3*	86[c] *17*	191.2142	5/2⁻	M1[&]		0.00453	
		1373.6[&] *5*	100[c] *15*	24.1999	1/2⁻	(M1)[&]		0.00335	
1406.34	9/2⁻	657.86 *30*	<94	749.026	(9/2)⁻				
		1141.96 *10*	18.3 *24*	264.2538	9/2⁻	M1		0.00518	
		1162.49[f] *7*	<85	243.8163	7/2⁻	M1		0.00496	
		1215.28 *11*	47 *4*	191.2142	5/2⁻				
		1307.20 *5*	50 *8*	99.2405	5/2⁻	E2		0.00220	
		1406.23 *5*	100 *4*	0.0	7/2⁺	E1+M2	+0.08 *13*	0.00099 *24*	
1420.48	(5/2⁻,7/2,9/2⁻)	1156.03 *16*	100 *18*	264.2538	9/2⁻				
		1176.48 *22*	<340	243.8163	7/2⁻				I_γ: undivided Iγ for doublet.
		1321.53[f] *16*	<164	99.2405	5/2⁻				
1426.76	(7/2,9/2)⁻	466.93 *21*	87 *22*	960.594	7/2⁻	(E2)		0.0213	
		664.69[g] *8*	<248[g]	761.846	(5/2)⁺				Mult.: E2(+M1) for doubly−placed γ in ε decay.
		857.15 *24*	65 *35*	569.834	5/2⁻				
		939.7[f] *5*	<326	486.937	(11/2⁻)				
		1037.49 *13*	87 *43*	389.5279	9/2⁻				
		1148.0 *6*	100 *52*	278.5983	7/2⁻				
		1162.49[f] *7*	<366	264.2538	9/2⁻	M1		0.00496	
1444.73	7/2⁻,9/2⁻	796.93 *7*	42 *9*	647.836	7/2⁻	E2		0.00597	
		1180.45 *6*	100 *11*	264.2538	9/2⁻	M1(+E2)		0.0037 *11*	
		1201.0 *9*		243.8163	7/2⁻				
1449.773	7/2⁻	166.509 *19*	1.29 *6*	1283.275	(7/2,9/2)⁻	M1+E2	+0.5 *3*	0.73 *6*	
		187.817[&] *17*	0.17[c] *3*	1261.890	(5/2,7/2⁻)				
		489.25 *6*	1.42 *17*	960.594	7/2⁻	M1		0.0433	
		617.682 *25*	2.38 *19*	831.936	(7/2)⁺	E1		0.00386	
		642.65 *8*	0.57 *9*	807.074	(7/2)⁻	(M1)		0.0216	

$^{169}_{70}Yb_{99}$-17

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]	Comments
1449.773	7/2⁻	687.93 *4*	2.71 *14*	761.846	(5/2)⁺	(E1+M2)	+0.01 *8*	0.0031 *4*	
		701.04 *24*	0.59 *12*	749.026	(9/2)⁻				
		802.34 *4*	2.67 *21*	647.836	7/2⁻				
		879.93 *4*	3.44 *19*	569.834	5/2⁻	M1+E2	−0.9 *4*	0.0076 *13*	
		926.6 *5*	0.24 *12*	523.085	11/2⁻				
		1060.28 *4*	19.2 *6*	389.5279	9/2⁻	M1+E2	+0.036 *22*	0.00620	
		1171.20 *4*	8.1 *3*	278.5983	7/2⁻	M1+E2	+0.22 *+74−15*	0.0048 *10*	
		1206.00 *4*	5.1 *3*	243.8163	7/2⁻	M1+E2	≥0.83	0.0031 *6*	
		1258.59 *6*	3.58 *9*	191.2142	5/2⁻	M1		0.00410	
		1350.65 *9*	1.95 *5*	99.2405	5/2⁻	M1+E2	−0.19 *+15−21*	0.00344 *16*	
		1379.04[f] *4*	21	70.8815	9/2⁺	E1		9.54×10^{-4}	
		1449.74 *4*	100.0 *21*	0.0	7/2⁺	E1(+M2)	0.00 *4*	9.32×10^{-4} *16*	
1463.024	(7/2⁻)	177.94[&] *4*	2.4[c] *14*	1285.126	(3/2⁺,5/2,7/2⁺)				
		401.87[&] *7*	3.8[c] *11*	1061.101	(11/2⁻)				
		597.83[&] *7*	40[c] *7*	865.170	(11/2⁻)				
		611.626[g&] *17*	<230[gc]	851.394	3/2⁻				
		1218.7[&] *7*	100[c] *30*	243.8163	7/2⁻				
1463.402	7/2⁻	502.8 *3*	6.2 *10*	960.594	7/2⁻				
		939.7[f] *5*	<8	523.085	11/2⁻				
		1073.79 *3*	51 *3*	389.5279	9/2⁻	M1+E2	+0.18 *7*	0.00593 *12*	
		1184.88 *3*	100 *4*	278.5983	7/2⁻	M1+E2	−0.15 *7*	0.00469 *9*	
		1199.10 *6*	10.1 *8*	264.2538	9/2⁻	M1+E2	+0.22 *+25−19*	0.0045 *3*	
		1219.61 *4*	13.5 *18*	243.8163	7/2⁻	M1+E2	−1.0 *+3−9*	0.0035 *6*	
		1463.39 *4*	67.9 *16*	0.0	7/2⁺	E1(+M2)	+0.02 *+11−9*	0.00093 *10*	
1464.98	(7/2)⁻	518.56[&] *8*	3.5[c] *6*	946.487?					
		553.31[&] *5*	4.4[c] *7*	911.640	(5/2)⁻				
		1200.9[&] *10*	20[c] *6*	264.2538	9/2⁻				
		1221.1[&] *2*	100[c] *15*	243.8163	7/2⁻	M1+E2[&]		0.0035 *10*	
1478.510	(3/2⁻,5/2⁺)	79.793[&] *9*	3.3[c] *6*	1398.713	(3/2)⁻				
		444.69[&i] *11*	7.9[c] *15*	1033.897	(1/2⁺,3/2)				
		518.07[g] *7*	<15[g]	960.594	7/2⁻				
		756.30[&] *9*	26[c] *4*	722.279	5/2⁻				
		758.89[&i] *20*	17[c] *5*	719.953	3/2⁺				
		908.8[&] *4*	<21[c]	569.834	5/2⁻				
		1391.8[g&] *17*	100[gc] *52*	86.9188	3/2⁻				

E_γ: for doubly-placed γ.
Undivided Iγ from (n,γ)
E=thermal.

$^{169}_{70}Yb_{99}$-18

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]	Comments
1524.134	1/2,3/2,5/2$^+$	174.017[&] *25*	22 *7*	1350.148	(3/2$^-$)				
		459.25[&] *5*	100 *27*	1064.760	(5/2$^+$,7/2,9/2$^+$)				
1531.570	(3/2$^-$,5/2$^+$)	181.27[&] *45*	8[c] *3*	1350.148	(3/2$^-$)				
		234.904[&] *7*	0.64[c] *8*	1296.671	(3/2$^-$,5/2,7/2$^-$)				
		497.68[&] *7*	1.6[c] *3*	1033.897	(1/2$^+$,3/2)				
		571.36[&] *20*	4.1[c] *9*	960.594	7/2$^-$				
		1432.5[&] *7*	100[c] *20*	99.2405	5/2$^-$				
		1445.2[g&] *17*	<34[gc]	86.9188	3/2$^-$				
1540.80	9/2$^-$	1017.58 *5*	100 *7*	523.085	11/2$^-$	M1		0.00686	
		1151.70 *7*	79 *10*	389.5279	9/2$^-$	M1+E2	≥0.36	0.0038 *11*	
		1276.62[f] *23*	<74	264.2538	9/2$^-$	M1		0.00397	
		1296.90 *5*	64 *4*	243.8163	7/2$^-$	M1+E2	1.0 *+9−5*	0.0030 *5*	
		1540.63 *15*	15 *4*	0.0	7/2$^+$				
1554.860	(1/2$^-$)	204.705[&] *25*	1.2[c] *3*	1350.148	(3/2$^-$)				
		703.38[&] *9*	75[c] *10*	851.394	3/2$^-$				
		741.54[&] *12*	54[c] *10*	813.337	(1/2)$^-$				
		792.97[&] *12*	29[c] *5*	761.846	(5/2)$^+$				
		834.94[&] *8*	85[c] *13*	719.953	3/2$^+$				
		1467.3[&] *12*	100[c] *48*	86.9188	3/2$^-$				
		1530.5[g&] *10*	<490[gc]	24.1999	1/2$^-$				Large α(K)exp suggests probable E0 component for doubly-placed γ.
1554.876	9/2$^-$	1031.91 *6*	11.5 *6*	523.085	11/2$^-$	M1+E2	−0.28 *+19−29*	0.0064 *6*	
		1165.21 *11*	14.9 *10*	389.5279	9/2$^-$	M1		0.00493	
		1276.62[f] *23*	<16.7	278.5983	7/2$^-$	M1		0.00397	
		1290.59 *3*	100 *5*	264.2538	9/2$^-$	M1+E2	0.9 *4*	0.0031 *4*	
		1311.13 *7*	5.7 *10*	243.8163	7/2$^-$	M1		0.00373	
		1363.83 *9*	6.1 *8*	191.2142	5/2$^-$	E2		0.00204	
		1483.97[i] *9*	17.6 *12*	70.8815	9/2$^+$	[E1]		9.25×10^{-4}	Note that α(K)exp in ε decay favors mult=E2, inconsistent with this placement.
		1554.4[f] *5*	<11.7	0.0	7/2$^+$				
1565.62	(7/2$^-$)	1301.33 *5*	73 *4*	264.2538	9/2$^-$	(M1)		0.00380	
		1321.53[f] *16*	<40	243.8163	7/2$^-$				
		1374.53 *8*	100 *4*	191.2142	5/2$^-$	(M1)		0.00335	
1585.876	(1/2$^-$)	187.159[&] *9*	3.9[c] *6*	1398.713	(3/2)$^-$				

$^{169}_{70}Yb_{99}$-19

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]	Comments
1585.876	(1/2⁻)	315.151[&] *20*	13.9[c] *21*	1270.742	(1/2)⁻				
		674.29[&] *15*	100[c] *16*	911.640	(5/2)⁻				
1616.683	(1/2⁺,3/2,5/2⁺)	304.880[&] *7*	46[c] *6*	1311.798	(5/2⁺,7/2)				
		320.013[&] *7*	44[c] *6*	1296.671	(3/2⁻,5/2,7/2⁻)				
		506.06[&] *3*	100[c] *13*	1110.706	3/2⁻,5/2⁻				
		705.07[&] *10*	83[c] *32*	911.640	(5/2)⁻				
		1518.5[g&] *8*	<1070[gc]	99.2405	5/2⁻				
		1530.5[g&] *10*	<1451[gc]	86.9188	3/2⁻				Large α(K)exp, suggesting probable E0 component for doubly-placed γ, probably results from the alternative placement.
1618.784	1/2,3/2	416.528[&] *10*	6.8[c] *9*	1202.256	(5/2⁺)				
		767.29[&] *20*	6.7[c] *17*	851.394	3/2⁻				
		805.47[f&i] *25*	<6.0[c]	813.337	(1/2)⁻				
		1594.5[&] *11*	100[c] *29*	24.1999	1/2⁻				
1650.5	(23/2⁻)	451.8[a] *5*	100	1198.7	(19/2⁻)	(E2)[a]		0.0232	
1655.2	(25/2⁻)	437.2[@] *5*	100	1218.0	(21/2⁻)	(E2)[a]		0.0253	
1656.48	5/2⁻,7/2⁻,9/2⁻	934.5 *5*	53 *26*	722.279	5/2⁻				
		1266.68 *25*	100 *18*	389.5279	9/2⁻	E2		0.00233	
		1392.27[f] *4*	79	264.2538	9/2⁻	E2		0.00197	
		1412.39 *10*	86 *9*	243.8163	7/2⁻	M1+E2	−0.08 *18*	0.00315 *9*	
		1556.7 *4*	42 *7*	99.2405	5/2⁻				
1657.948	5/2⁺	587.44 *6*	1.9 *4*	1070.665	7/2⁺	M1		0.0271	
		1088.23 *8*	3.0 *5*	569.834	5/2⁻				
		1379.04[f] *4*	32	278.5983	7/2⁻	E1		9.54×10^{-4}	
		1466.84 *4*	100 *3*	191.2142	5/2⁻	E1(+M2)	−0.03 *4*	0.0009 *33*	
		1658.08 *5*	23.9 *6*	0.0	7/2⁺	M1+E2	+0.28 *11*	0.0022 *26*	
1666.1	(27/2⁺)	509.1[#] *6*	100	1157.0	23/2⁺				
1688.92	(5/2,7/2)⁻	624.00[&] *25*	10[c] *5*	1064.760	(5/2⁺,7/2,9/2⁺)				
		777.31[&] *15*	5.5[c] *9*	911.640	(5/2)⁻				
		1410.6[&] *6*	100[c] *49*	278.5983	7/2⁻				
		1497.6[&] *20*	65[c] *19*	191.2142	5/2⁻	M1[&]		0.00278	
		1689.2[&] *12*	47[c] *23*	0.0	7/2⁺				
1689.289	7/2⁻	406.03[f] *7*	<6.0	1283.275	(7/2,9/2)⁻				
		728.73 *6*	34.2 *20*	960.594	7/2⁻	(M1)		0.01570	

$^{169}_{70}Yb_{99}$-20

Adopted Levels, Gammas (continued)

$\gamma(^{169}Yb)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]	Comments
1689.289	7/2$^-$	1497.92 *4*	39.5 *16*	191.2142	5/2$^-$	M1+E2	+0.24 *6*	0.00272 *5*	
		1618.48 *4*	100.0 *23*	70.8815	9/2$^+$	E1(+M2)	+0.04 *6*	0.00093 *4*	
		1689.35 *5*	73 *4*	0.0	7/2$^+$	E1(+M2)	−0.03 *7*	0.00093 *4*	
1694.43	5/2$^+$	1595.2 *5*	34 *8*	99.2405	5/2$^-$				
		1607.51 *6*	100 *8*	86.9188	3/2$^-$	E1(+M2)	+0.04 *18*	0.00093 *20*	
		1694.38 *14*	64 *5*	0.0	7/2$^+$	(M1)		0.00219	
1696.364	3/2$^-$	399.621[&] *17*	3.9[c] *5*	1296.671	(3/2$^-$,5/2,7/2$^-$)				
		425.77[&] *6*	0.85[c] *23*	1270.742	(1/2)$^-$				
		784.88[g&] *15*	<6.0[gc]	911.640	(5/2)$^-$				
		845.10[&] *25*	4.7[c] *11*	851.394	3/2$^-$				
		1417.7[&] *5*	54[c] *25*	278.5983	7/2$^-$				
		1505.9[&] *10*	100[c] *20*	191.2142	5/2$^-$	M1[&]		0.00275	
1707.83	(7/2,9/2)$^+$	875.9[f]	<24	831.936	(7/2)$^+$				
		1636.82 *8*	100 *4*	70.8815	9/2$^+$	M1+E2		0.0019 *4*	
		1707.97[f] *9*	<97	0.0	7/2$^+$	(M1+E2)		0.0018 *4*	
1708.48	7/2$^-$	1318.53[f] *12*	<26	389.5279	9/2$^-$	(M1)		0.00368	
		1429.87 *9*	57 *3*	278.5983	7/2$^-$	M1+E2	+0.02 *+18−13*	0.00307 *7*	
		1517.31 *4*	100 *6*	191.2142	5/2$^-$	M1+E2	−5.9 *+7−9*	0.00175 *3*	
1716.196	7/2$^+$	1326.85[f] *3*	95	389.5279	9/2$^-$	E1		9.81×10^{-4}	
		1437.43 *4*	100 *3*	278.5983	7/2$^-$	E1(+M2)	−0.07 *+9−8*	0.00096 *11*	
		1524.77 *5*	82 *4*	191.2142	5/2$^-$	E1(+M2)	+0.03 *4*	9.26×10^{-4} *25*	
		1554.4[f] *5*	<21	161.6505	11/2$^+$				
		1645.14 *8*	12.7 *8*	70.8815	9/2$^+$	M1+E2	+0.34 *+21−15*	0.00223 *11*	
1724.57	(3/2$^-$)	439.42[&] *4*	2.2 *6*	1285.126	(3/2$^+$,5/2,7/2$^+$)				
		453.69[&] *7*	1.1 *4*	1270.742	(1/2)$^-$				
		522.58[g&] *6*	<3.6[g]	1202.256	(5/2$^+$)				
		917.4[&] *4*	3.3[c] *11*	807.074	(7/2)$^-$				
		1064.7[g&] *4*	<12[gc]	659.630	3/2$^-$				
		1076.56[&] *8*	71[c] *11*	647.836	7/2$^-$				α(K)exp in (n,γ) E=thermal suggests M1 multipolarity, inconsistent with this placement, but line appears to Be complex.
		1445.2[g&] *17*	<21[gc]	278.5983	7/2$^-$				
		1480.1[&] *20*	65[c] *37*	243.8163	7/2$^-$				
		1625.3[&] *8*	≈100[c]	99.2405	5/2$^-$				

$^{169}_{70}Yb_{99}$-21

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]
1724.57	(3/2⁻)	1637.2[g&] *12*	53[gc] *16*	86.9188	3/2⁻			
1742.876	(3/2⁺,5/2,7/2⁻)	264.365[&] *10*	0.75[c] *10*	1478.510	(3/2⁻,5/2⁺)			
		510.70[&] *5*	13.6[c] *19*	1232.220	(3/2⁻)			
		671.94[&] *15*	6.8[c] *25*	1070.665	7/2⁺			
		1095.58[&] *12*	69[c] *10*	647.276	7/2⁺			
		1551.5[&] *15*	46[c] *23*	191.2142	5/2⁻			
		1743.8[&] *15*	100[c] *31*	0.0	7/2⁺			
1781.239	(3/2⁻,5/2⁻)	226.379[&] *5*	2.8[c] *4*	1554.860	(1/2⁻)			
		869.64[&] *8*	52[c] *8*	911.640	(5/2)⁻			
		1061.60[&] *17*	100[c] *18*	719.953	3/2⁺			
		1133.4[&] *5*	59[c] *15*	647.836	7/2⁻			
		1391.8[g&] *17*	<147[gc]	389.5279	9/2⁻			
1781.715	7/2⁻	703.33 *10*	10.2 *12*	1078.338	9/2⁻	M1		0.01716
		821.18 *4*	26.4 *10*	960.594	7/2⁻	M1+E2	+0.13 *+31−13*	0.0115 *9*
		862.4[f] *5*	<4.5	919.806	(9/2)⁻			
		1392.27[f] *4*	100	389.5279	9/2⁻	E2		0.00197
		1502.89 *6*	18.0 *10*	278.5983	7/2⁻	(M1)		0.00276
		1590.35 *5*	40.1 *16*	191.2142	5/2⁻	M1+E2	+0.117 *23*	0.00245
		1682.49 *5*	24.5 *25*	99.2405	5/2⁻	M1+E2	+0.53 *+8−6*	0.00206 *5*
		1781.75 *5*	78.5 *22*	0.0	7/2⁺	E1+M2	+0.08 *+6−5*	0.00097 *5*
1796.676	(3/2⁻,5/2⁺)	511.55[&] *2*	38[c] *5*	1285.126	(3/2⁺,5/2,7/2⁺)			
		989.34[&] *25*	20[c] *4*	807.074	(7/2)⁻			
		1227.3[&] *7*	35[c] *11*	569.834	5/2⁻			
		1518.5[g&] *8*	<140[gc]	278.5983	7/2⁻			
		1604.8 *12*	100[c] *39*	191.2142	5/2⁻			
1828.053	1/2,3/2,5/2⁺	131.6883[&] *20*	0.95[c] *21*	1696.364	3/2⁻			
		296.53[&] *2*	1.05[c] *8*	1531.570	(3/2⁻,5/2⁺)			
		477.98[&] *3*	8.2[c] *14*	1350.148	(3/2⁻)			
		717.34[&] *12*	15[c] *5*	1110.706	3/2⁻,5/2⁻			
		1105.5[g&] *3*	<36[gc]	722.279	5/2⁻			
		1563.0[&] *10*	100[c] *31*	264.2538	9/2⁻			
		1583.6[&] *10*	69[c] *27*	243.8163	7/2⁻			
		1637.2[g&] *12*	<168[gc]	191.2142	5/2⁻			
1844.6	(29/2⁺)	508.4[#] *6*	100	1336.2	(25/2)⁺			

$^{169}_{70}Yb_{99}$-22

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]
1867.66	(3/2$^-$,5/2$^+$)	143.087[&] *25*	0.83[c] *19*	1724.57	(3/2$^-$)			
		1623.6[&] *9*	100[c] *66*	243.8163	7/2$^-$			
1888.00	(7/2$^+$,9/2$^+$)	817.6 *4*	100 *4*	1070.665	7/2$^+$			
		1055.8 *4*	39 *13*	831.936	(7/2)$^+$			
		1127.1 *6*		761.846	(5/2)$^+$			
		1726.30 *9*	29 *3*	161.6505	11/2$^+$			
		1817.12 *7*	16.1 *11*	70.8815	9/2$^+$			
1908.657	5/2$^+$	1146.92 *13*	4.5 *9*	761.846	(5/2)$^+$	(M1)		0.00512
		1260.86 *6*	19.6 *12*	647.836	7/2$^-$			
		1318.53[f] *12*	<8.7	590.689	(5/2)$^+$	(M1)		0.00368
		1338.82 *4*	100 *3*	569.834	5/2$^-$	E1+M2	−0.04 *3*	0.00099 *3*
		1630.02 *13*	4.0 *7*	278.5983	7/2$^-$			
		1717.41 *6*	6.9 *6*	191.2142	5/2$^-$			
		1908.46 *6*	5.1 *3*	0.0	7/2$^+$	(M1,E2)		0.0016 *3*
1954.54	5/2$^-$,7/2$^-$	875.9[f]	<29	1078.338	9/2$^-$			
		883.81 *9*	44 *9*	1070.665	7/2$^+$			
		993.96 *13*	29 *9*	960.594	7/2$^-$	(M1)		0.00727
		1122.21 *7*	84 *10*	831.936	(7/2)$^+$			
		1676.46 *8*	47.9 *23*	278.5983	7/2$^-$	M1		0.00223
		1763.35 *5*	100 *5*	191.2142	5/2$^-$	M1(+E2)		0.0017 *4*
		1954.48 *9*	23.3 *15*	0.0	7/2$^+$			
1972.23	9/2$^-$	1043.20 *8*	100 *7*	929.12	11/2$^-$	M1+E2	−1.1 *7*	0.0048 *13*
		1223.07[f] *8*	<92	749.026	(9/2)$^-$			
		1707.97[f] *9*	<146	264.2538	9/2$^-$	(M1+E2)		0.0018 *4*
		1810.64 *13*	15.9 *28*	161.6505	11/2$^+$			
1974.046	7/2$^-$	419.39 *8*	12.8 *12*	1554.876	9/2$^-$			
		895.82 *11*	50 *17*	1078.338	9/2$^-$			
		1013.08 *10*	28 *5*	960.594	7/2$^-$	(M1)		0.00693
		1251.74 *25*	23 *7*	722.279	5/2$^-$	(E2)		0.00238
		1326.85[f] *3*	40	647.276	7/2$^+$	E1		9.81×10^{-4}
		1487.21 *24*	12.8 *17*	486.937	(11/2$^-$)			
		1710.17 *10*	99 *25*	264.2538	9/2$^-$			
		1730.8 *6*	7 *4*	243.8163	7/2$^-$			
		1903.04 *5*	25.5 *13*	70.8815	9/2$^+$	(E1+M2)	+0.08 *15*	0.00100 *12*
		1973.68 *6*	100 *3*	0.0	7/2$^+$	(E1+M2)	−0.13 *+9−8*	0.00104 *7*
2029.92	7/2$^-$	862.4[f] *5*	<8	1167.629	(7/2,9/2)$^-$			
		1109.99 *7*	27.3 *14*	919.806	(9/2)$^-$	M1+E2	−0.19 *+24−37*	0.0055 *6*
		1223.07[f] *8*	<21	807.074	(7/2)$^-$			
		1751.2 *4*	2.0 *5*	278.5983	7/2$^-$			

$^{169}_{70}Yb_{99}$-23

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[†]	δ[†]	α[e]	Comments
2029.92	7/2$^-$	1838.30 *8*	5.2 *3*	191.2142	5/2$^-$				
		1959.24 *9*	40.8 *14*	70.8815	9/2$^+$	(E1(+M2))	+0.03 *4*	1.00×10^{-3} *2*	
		2030.00 *6*	100 *3*	0.0	7/2$^+$	(E1(+M2))	+0.03 *5*	1.03×10^{-3} *2*	
2065.04	7/2$^+$	2065.03 *11*	100	0.0	7/2$^+$	M1+E2+E0			
2101.03	(5/2,7/2)$^-$	1822.42 *11*	100 *7*	278.5983	7/2$^-$				Mult.: E1 or E2 from α(K)exp in ε decay.
		2014.06 *9*	90 *11*	86.9188	3/2$^-$	M1,E2		0.00148 *23*	
		2101.09 *13*	35.3 *27*	0.0	7/2$^+$				
2135.4		2135.4 *4*	100	0.0	7/2$^+$				
2139.9	(29/2$^-$)	484.7[#] *3*	100	1655.2	(25/2$^-$)	(E2)		0.0193	Mult.: Q from ^{124}Sn(^{48}Ca,3nγ) for intraband γ.
2258.1	(31/2$^+$)	592[#] *2*	100	1666.1	(27/2$^+$)				
2287.23	7/2$^-$	1367.56 *7*	100 *6*	919.806	(9/2)$^-$				
		1897.60 *10*	21.4 *13*	389.5279	9/2$^-$	M1		0.00183	
		2095.90 *7*	86 *3*	191.2142	5/2$^-$	M1		1.63×10^{-3}	
2296.85	5/2$^-$,7/2$^-$,9/2$^-$	847.9 *7*	43 *22*	1449.773	7/2$^-$	M1		0.01076	
		1547.69 *18*	100 *13*	749.026	(9/2)$^-$				
		2018.40 *27*	27 *8*	278.5983	7/2$^-$				
2426.1	(33/2$^+$)	581.5[#] *6*	100	1844.6	(29/2$^+$)				
2667.7	(33/2$^-$)	527.8[#] *3*	100	2139.9	(29/2$^-$)	(E2)		0.01556	Mult.: Q from ^{124}Sn(^{48}Ca,3nγ) for intraband γ.
2929	(35/2$^+$)	671[#] *2*	100	2258.1	(31/2$^+$)				
3075.2	(37/2$^+$)	649.1[#] *6*	100	2426.1	(33/2$^+$)				
3238.3	(37/2$^-$)	570.6[#] *3*	100	2667.7	(33/2$^-$)	(E2)		0.01285	Mult.: Q from ^{124}Sn(^{48}Ca,3nγ) for intraband γ.
3588	(39/2$^+$)	659[#] *1*	100	2929	(35/2$^+$)				
3782.2	(41/2$^+$)	707.0[#] *6*	100	3075.2	(37/2$^+$)				
3855.8	(41/2$^-$)	617.5[#] *3*	100	3238.3	(37/2$^-$)				
4330	(43/2$^+$)	742[#] *2*	100	3588	(39/2$^+$)				
4524.4	(45/2$^+$)	742.2[#] *6*	100	3782.2	(41/2$^+$)				
4526.6	(45/2$^-$)	670.8[#] *6*	100	3855.8	(41/2$^-$)				
5116	(47/2$^+$)	786[#] *1*	100	4330	(43/2$^+$)				
5256.2	(49/2$^-$)	729.6[#] *3*	100	4526.6	(45/2$^-$)				
5272.5	(49/2$^+$)	748.1[#] *6*	100	4524.4	(45/2$^+$)				
6046.2	(53/2$^+$)	773.7[#] *3*	100	5272.5	(49/2$^+$)				
6048.0	(53/2$^-$)	791.8[#] *3*	100	5256.2	(49/2$^-$)	(E2)		0.00606	Mult.: Q from ^{124}Sn(^{48}Ca,3nγ) for intraband γ.

$^{169}_{70}Yb_{99}$-24

Adopted Levels, Gammas (continued)

γ(^{169}Yb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
6875	(57/2$^+$)	829[#] *2*	100	6046.2	(53/2$^+$)	
6903.3	(57/2$^-$)	855.3[#] *3*	100	6048.0	(53/2$^-$)	
7771	(61/2$^+$)	896[#] *2*	100	6875	(57/2$^+$)	
7823.0	(61/2$^-$)	919.7[#] *3*	100	6903.3	(57/2$^-$)	
8806.3	(65/2$^-$)	983.3[#] *3*	100	7823.0	(61/2$^-$)	
9853.9	(69/2$^-$)	1047.5[#] *6*	100	8806.3	(65/2$^-$)	
10960.9	(73/2$^-$)	1107[#] *2*	100	9853.9	(69/2$^-$)	

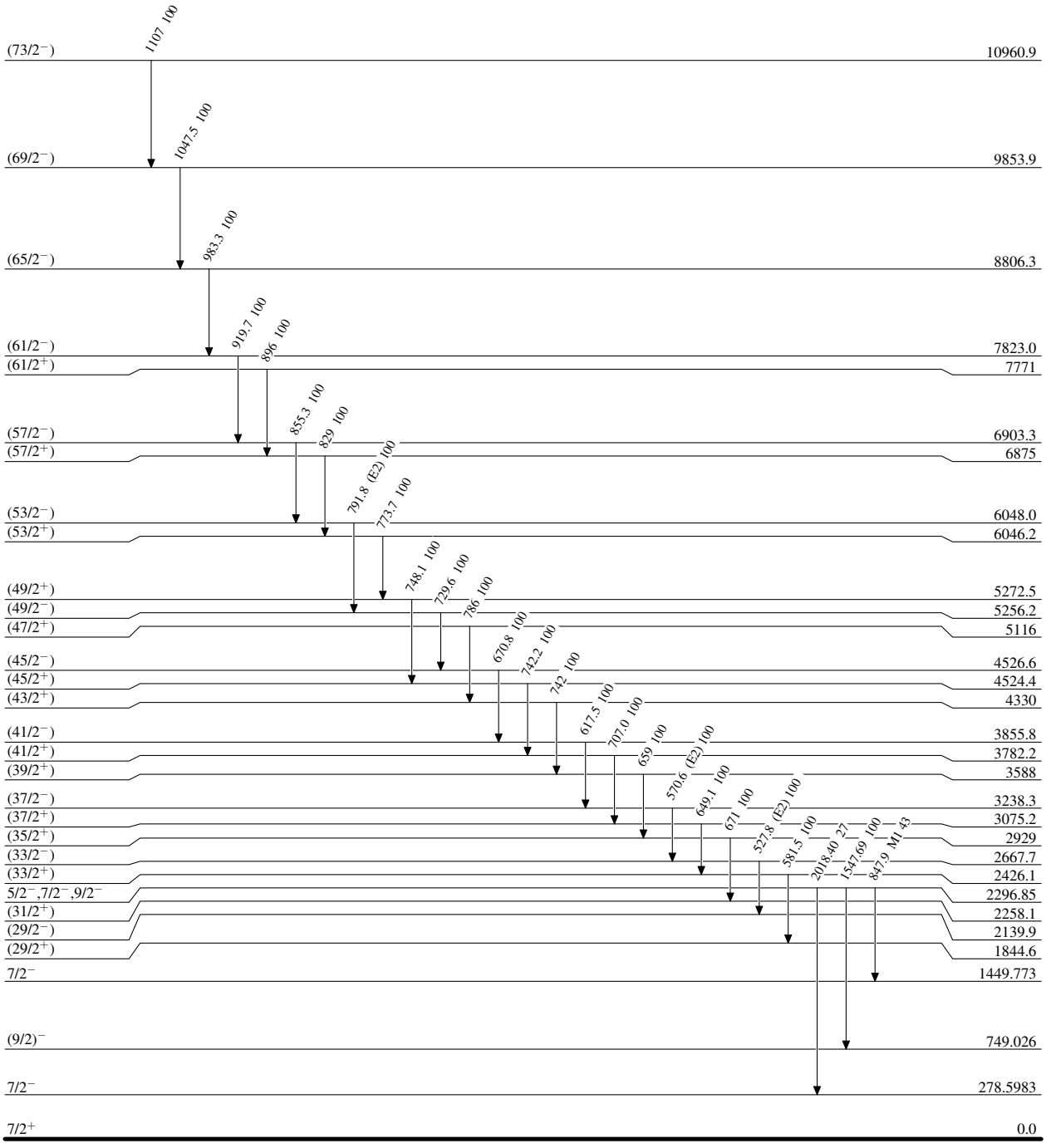
† From ^{169}Lu ε decay (34.06 h), except where noted to the contrary.
‡ Relative photon branching from each level; values are from ^{169}Lu ε decay (34.06 h), except where noted. Upper limits are shown for photon branchings affected by multiple placement.
# From ^{124}Sn(^{48}Ca,3nγ).
@ Average from ^{124}Sn(^{48}Ca,3nγ) and ^{167}Er(α,2nγ).
& From ^{168}Yb(n,γ) E=thermal.
a From ^{167}Er(α,2nγ).
b Complex peak (broader than normal).
c From (n,γ) E=thermal.
d Weighted average from ε decay and (n,γ) E=thermal.
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.
g Multiply placed with undivided intensity.
h Multiply placed with intensity suitably divided.
i Placement of transition in the level scheme is uncertain.

$^{169}_{70}Yb_{99}$-25

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

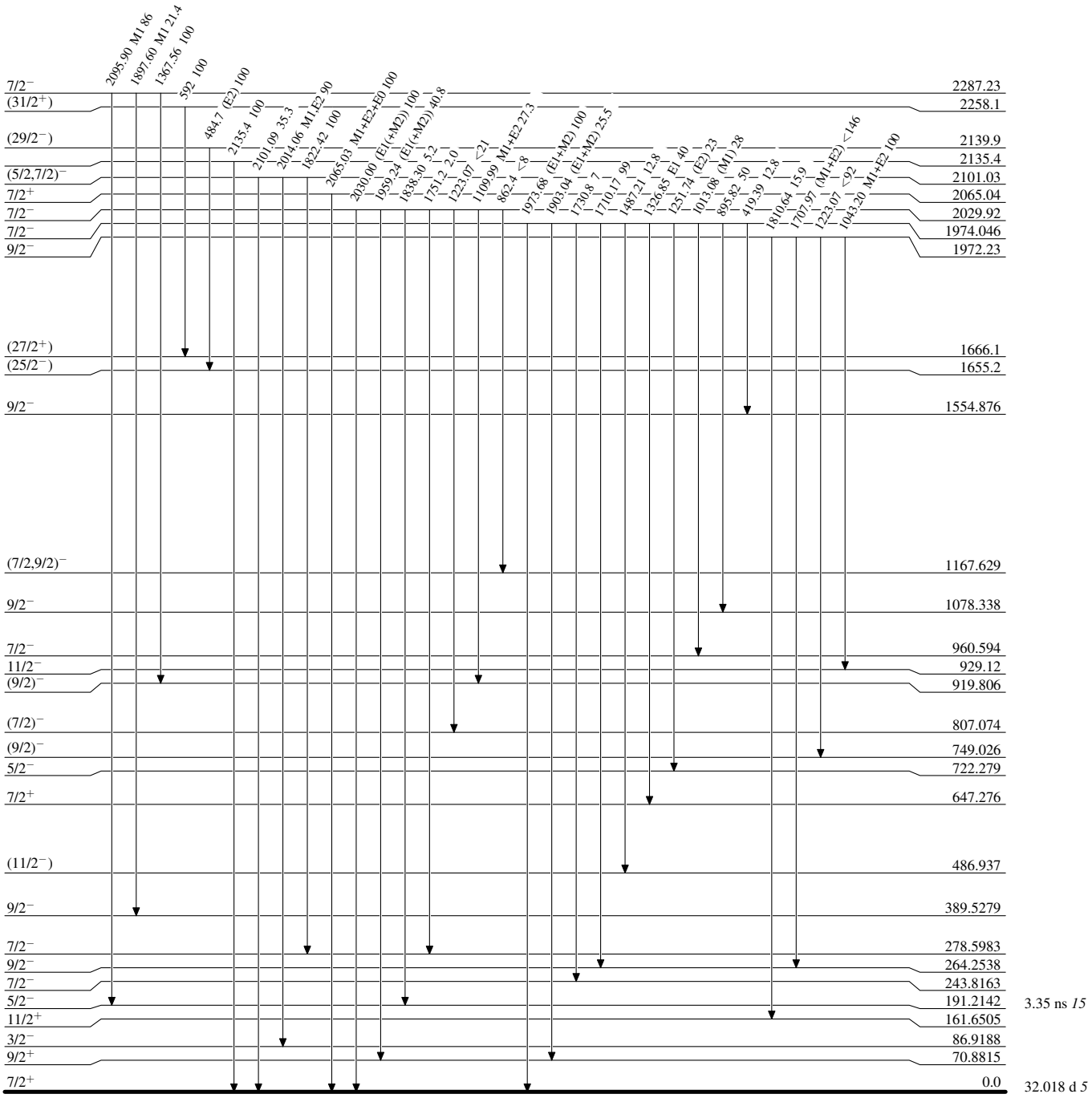


$^{169}_{70}Yb_{99}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

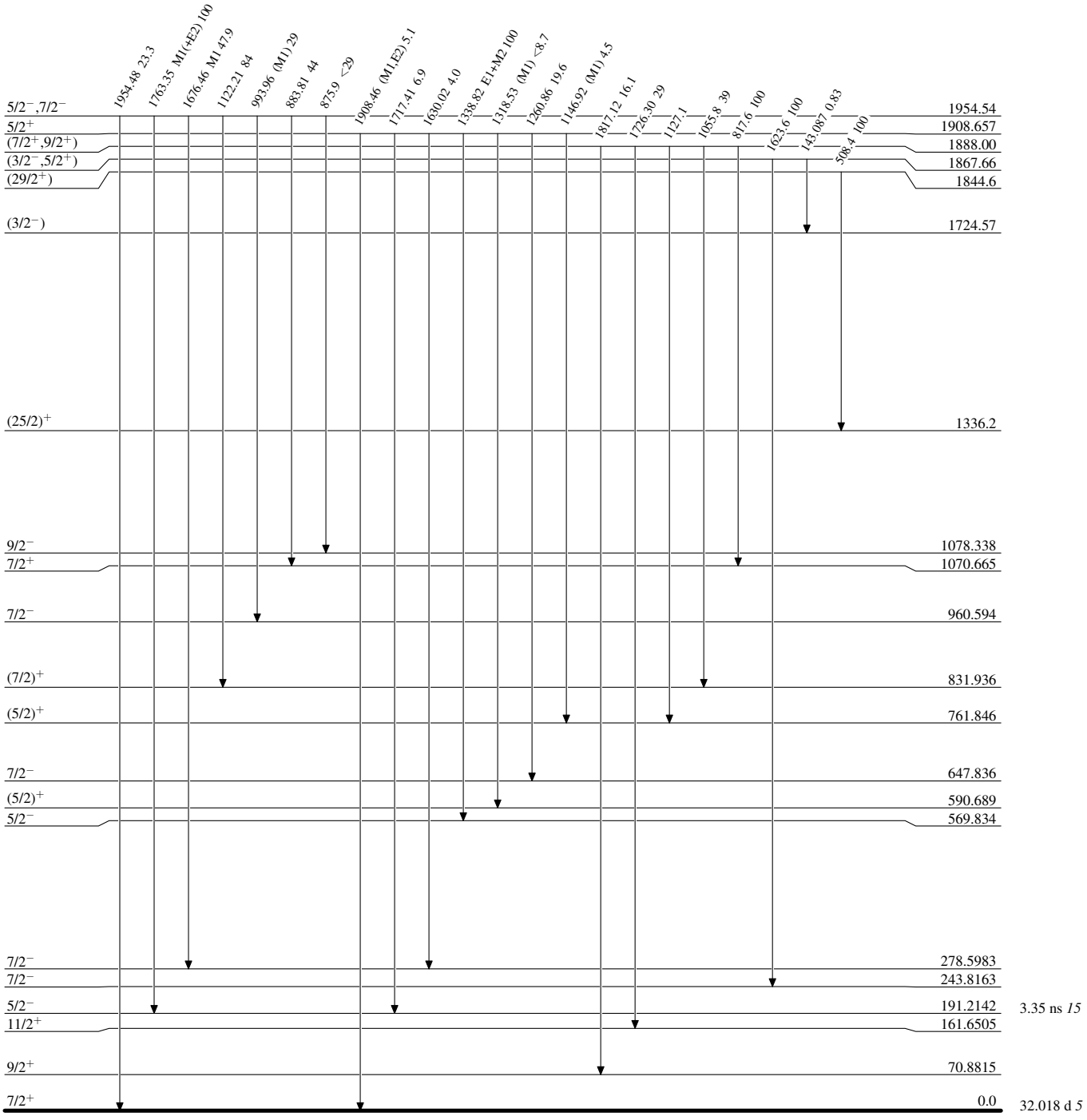


$^{169}_{70}Yb_{99}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

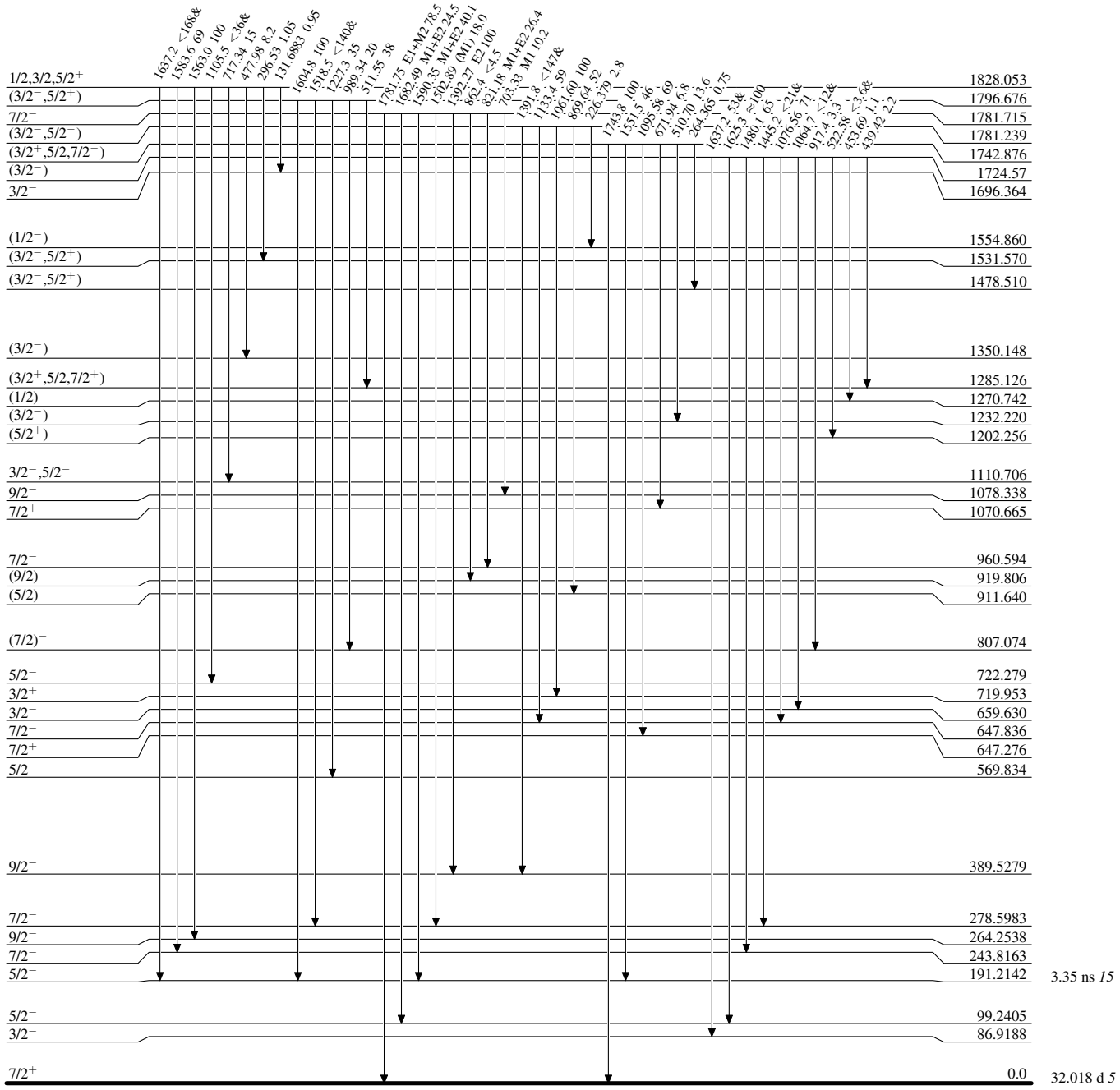


$^{169}_{70}Yb_{99}$

Adopted Levels, Gammas

Level Scheme (continued)

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

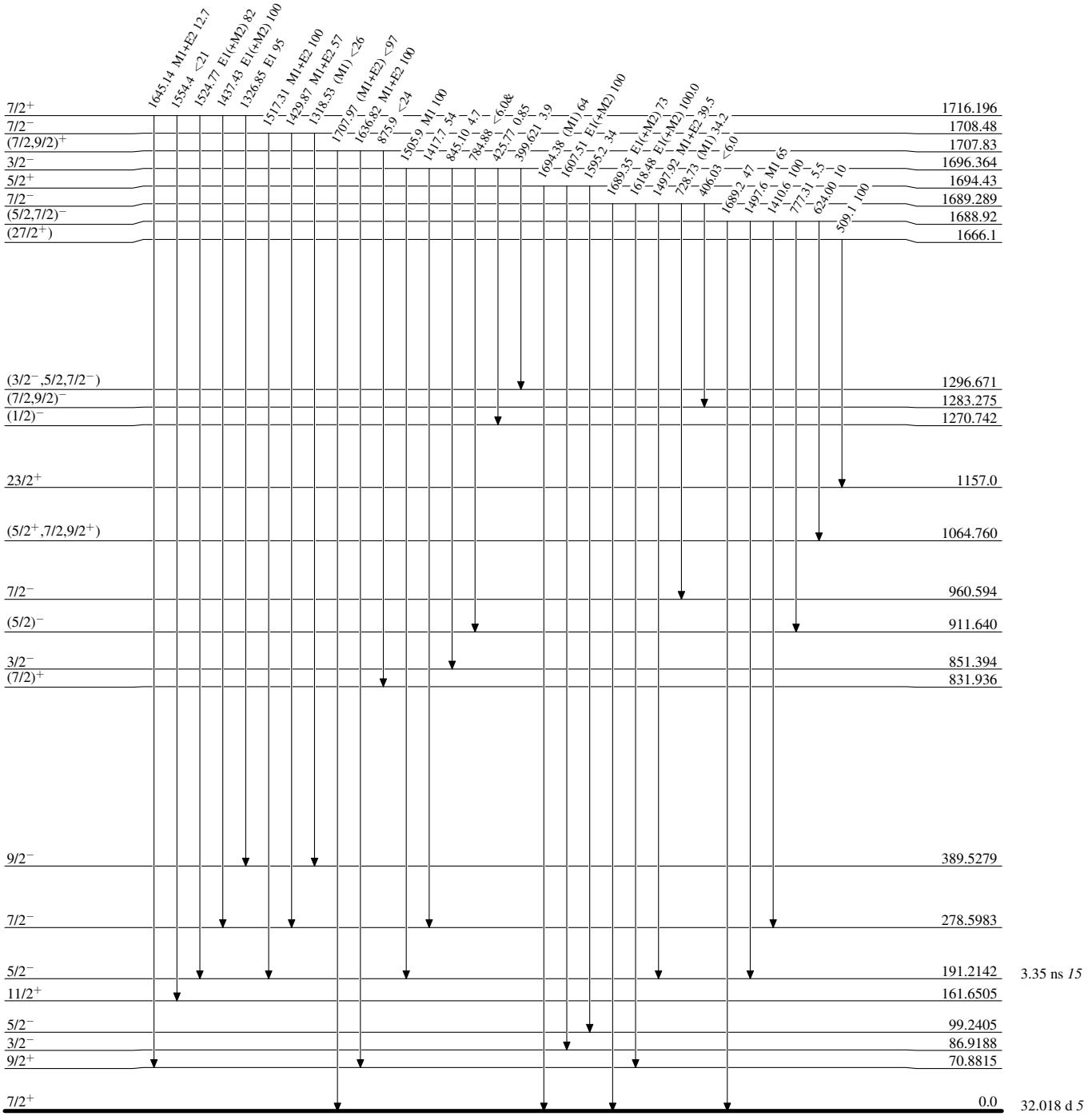


$^{169}_{70}Yb_{99}$

Adopted Levels, Gammas

Level Scheme (continued)

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



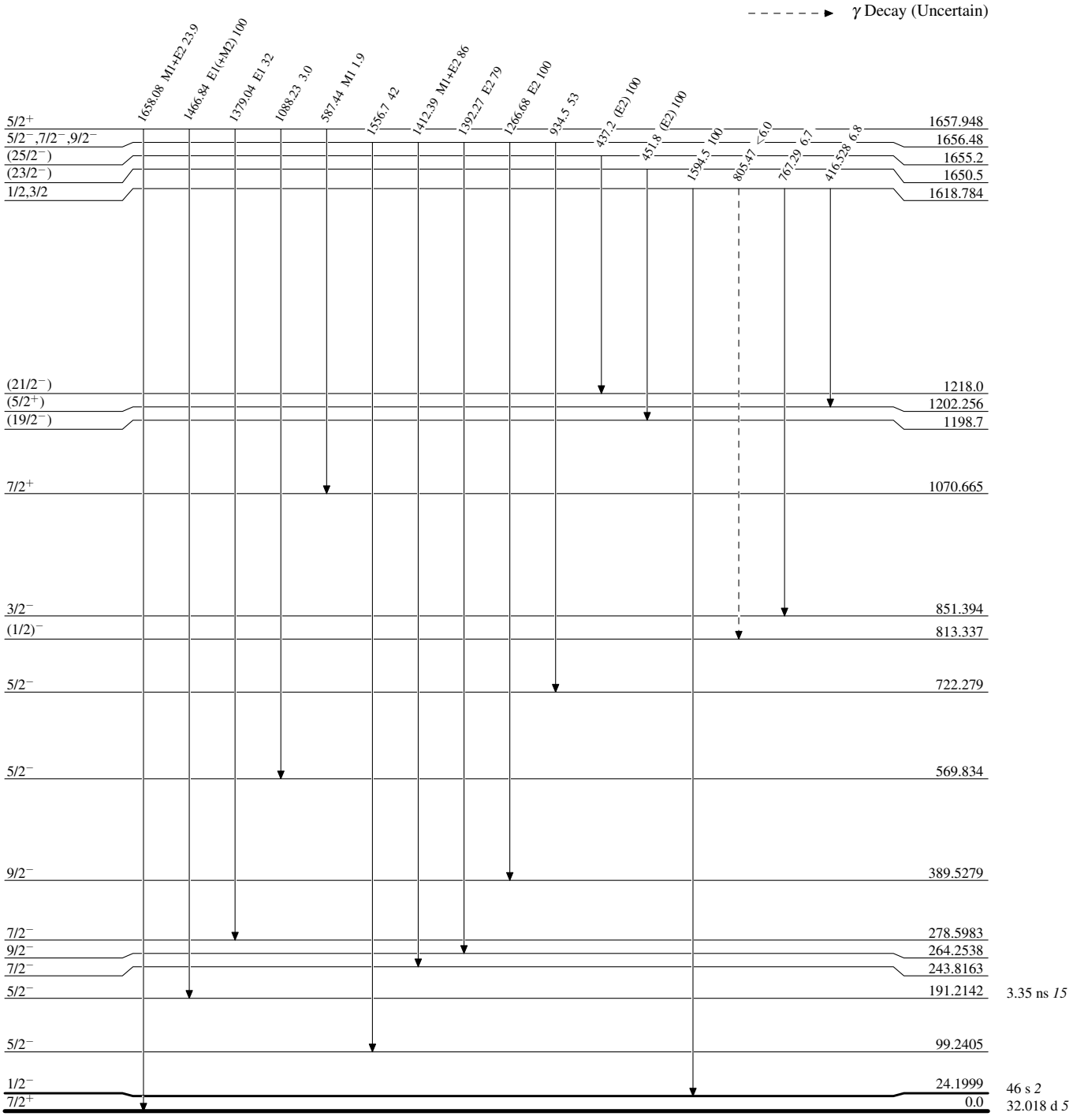
$^{169}_{70}Yb_{99}$

Adopted Levels, Gammas

Legend

Level Scheme (continued)

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



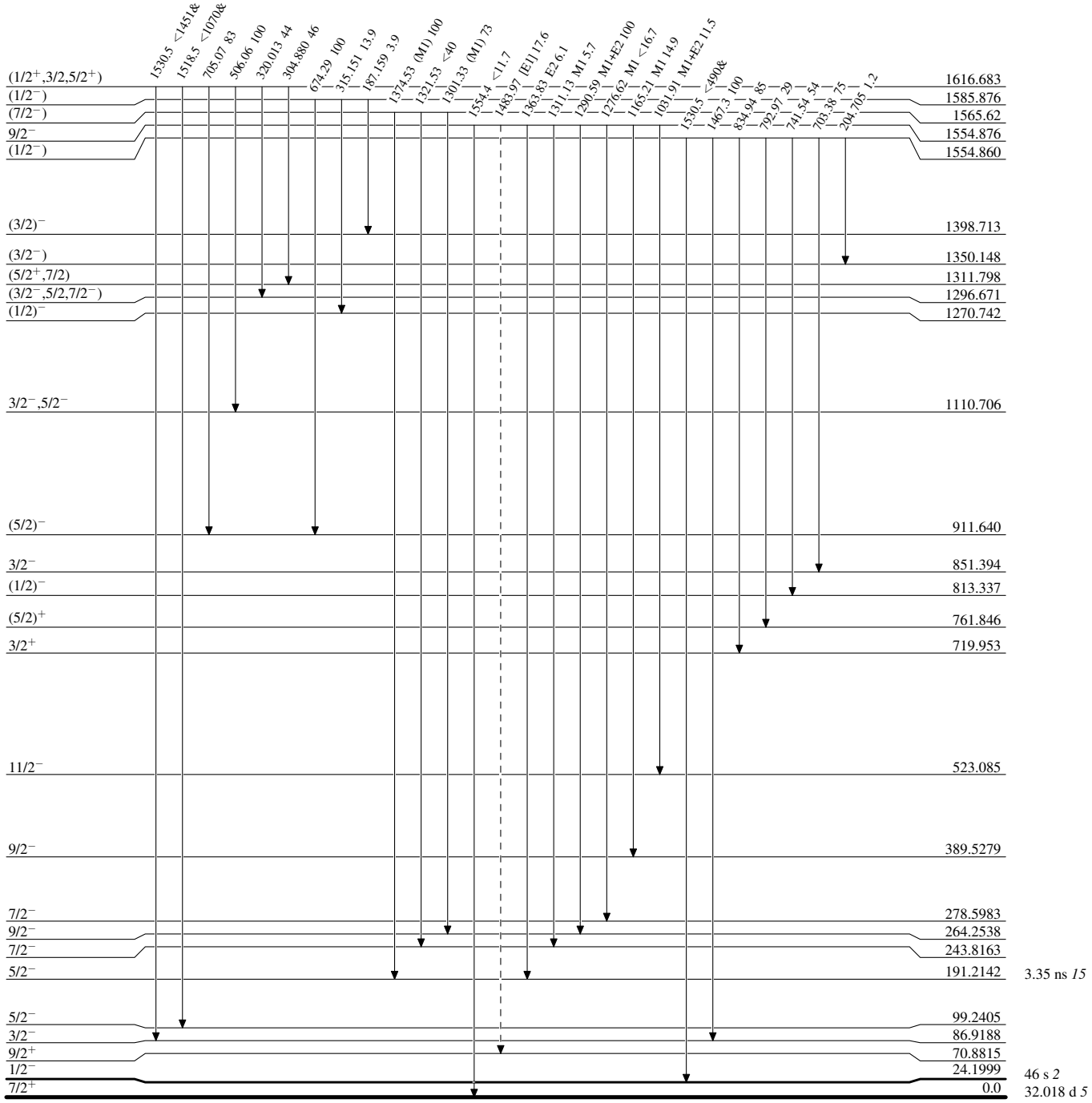
$^{169}_{70}Yb_{99}$

Adopted Levels, Gammas

Level Scheme (continued)

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

Legend
γ Decay (Uncertain)

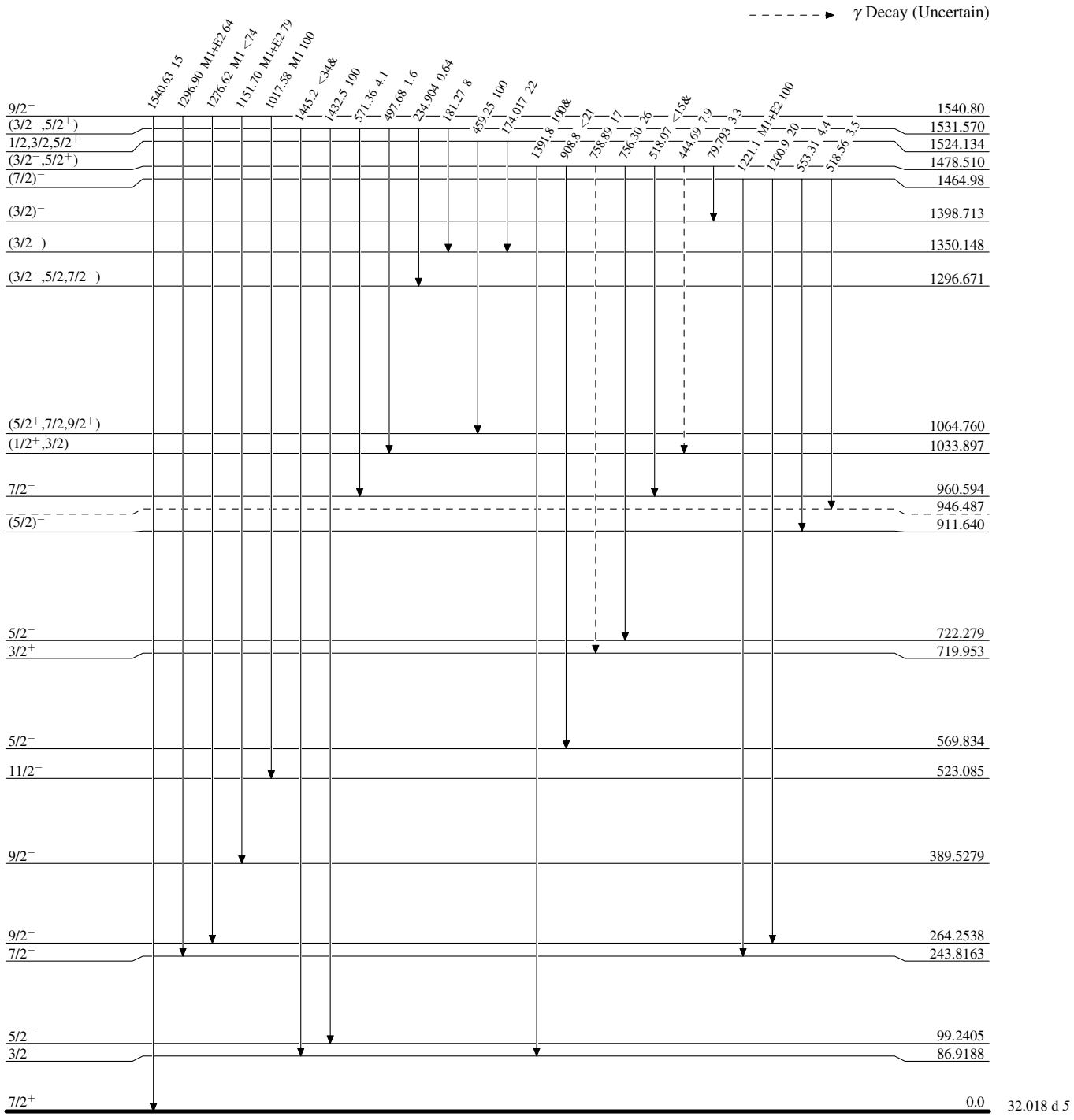


$^{169}_{70}Yb_{99}$

Adopted Levels, Gammas

Level Scheme (continued)

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

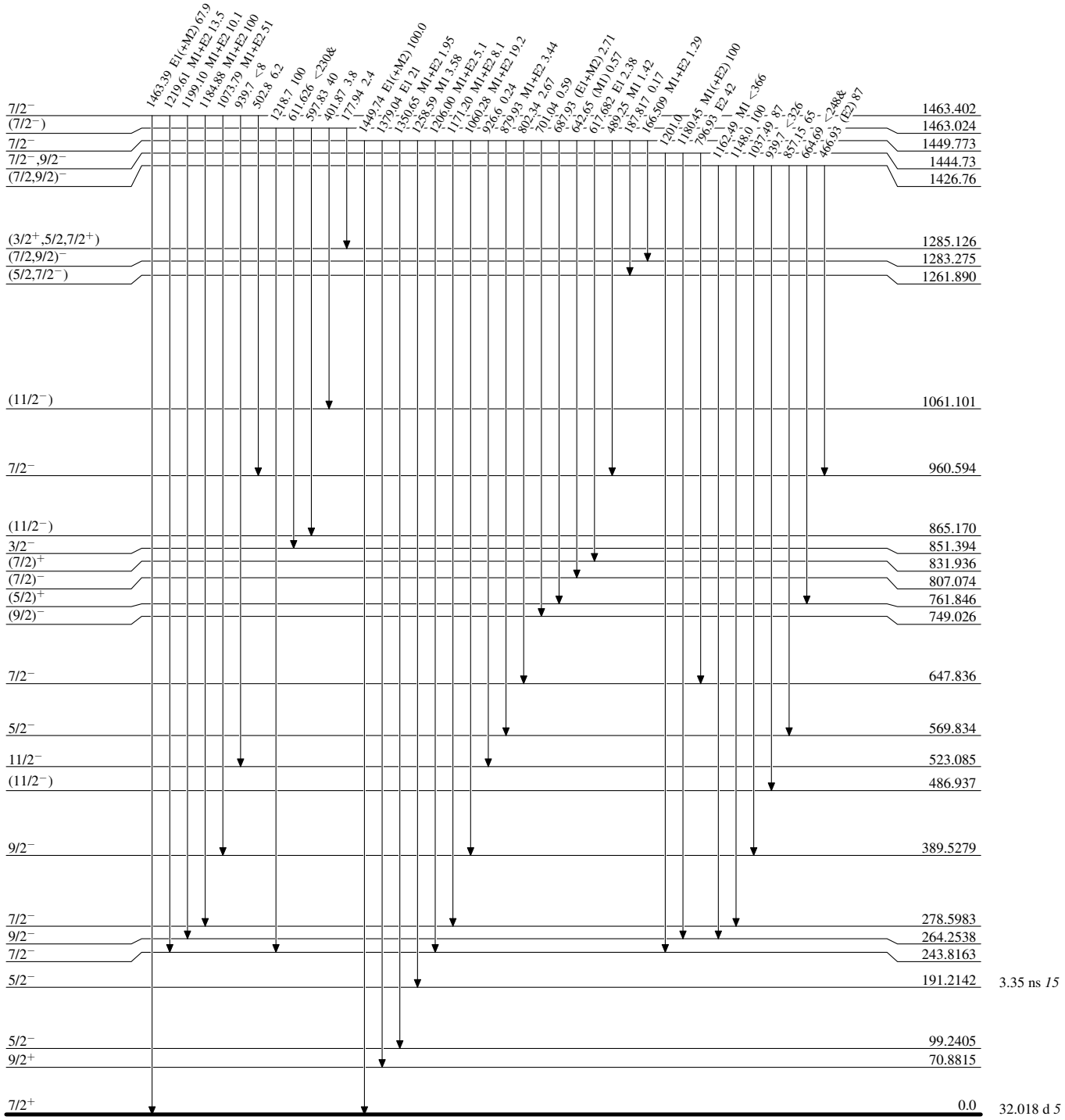


$^{169}_{70}Yb_{99}$

Adopted Levels, Gammas

Level Scheme (continued)

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



$^{169}_{70}Yb_{99}$

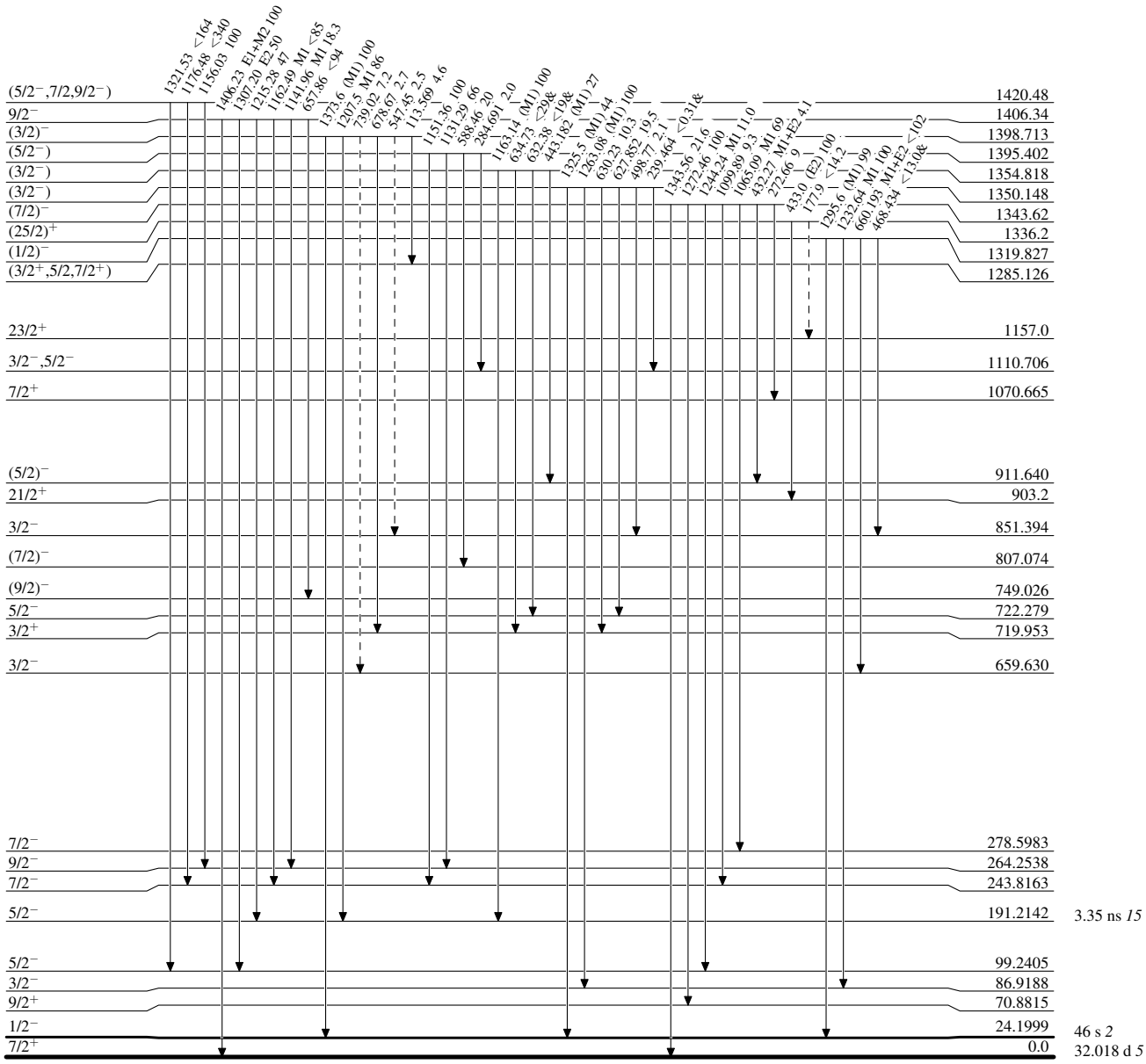
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)



$^{169}_{70}Yb_{99}$

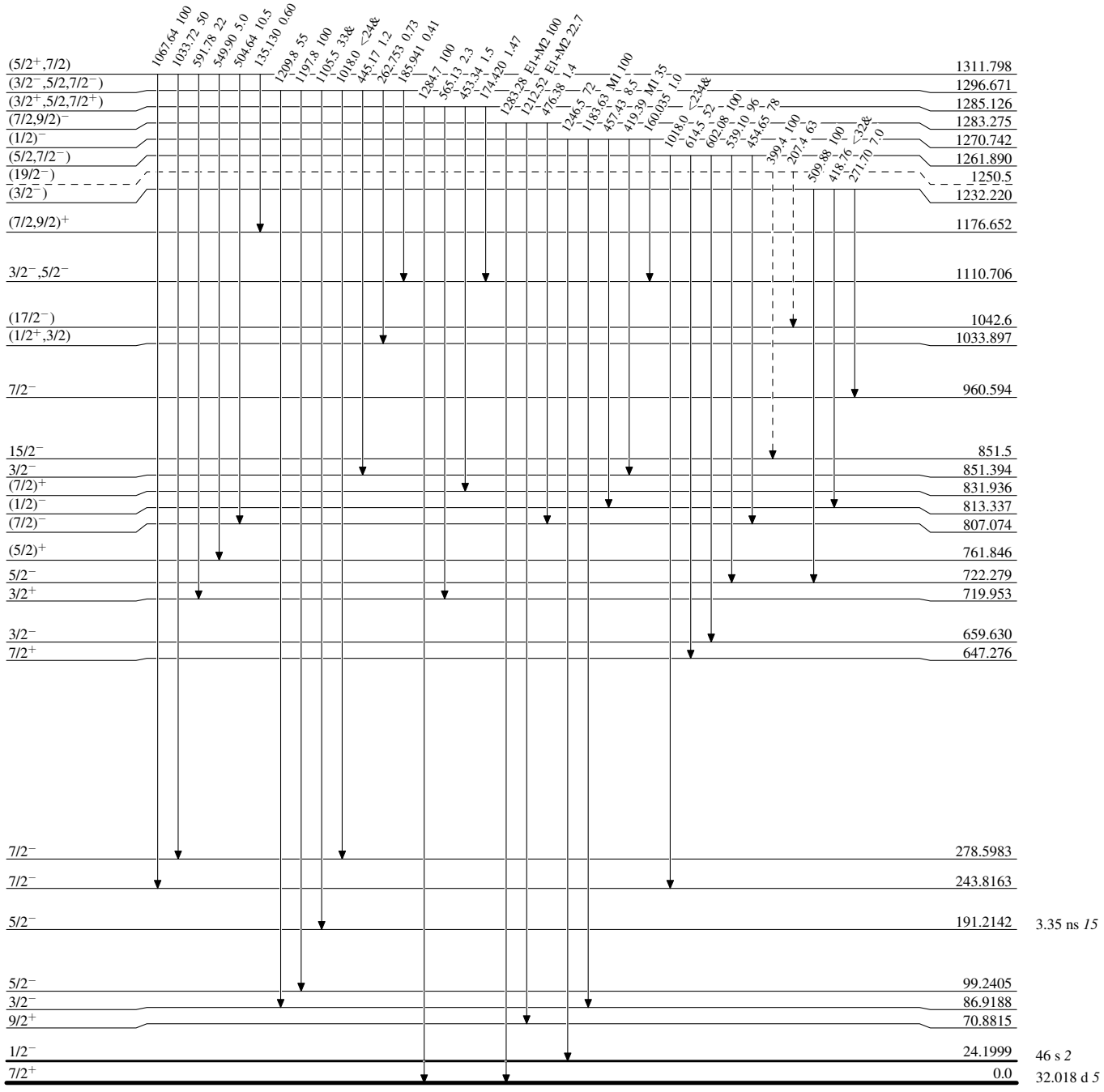
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)

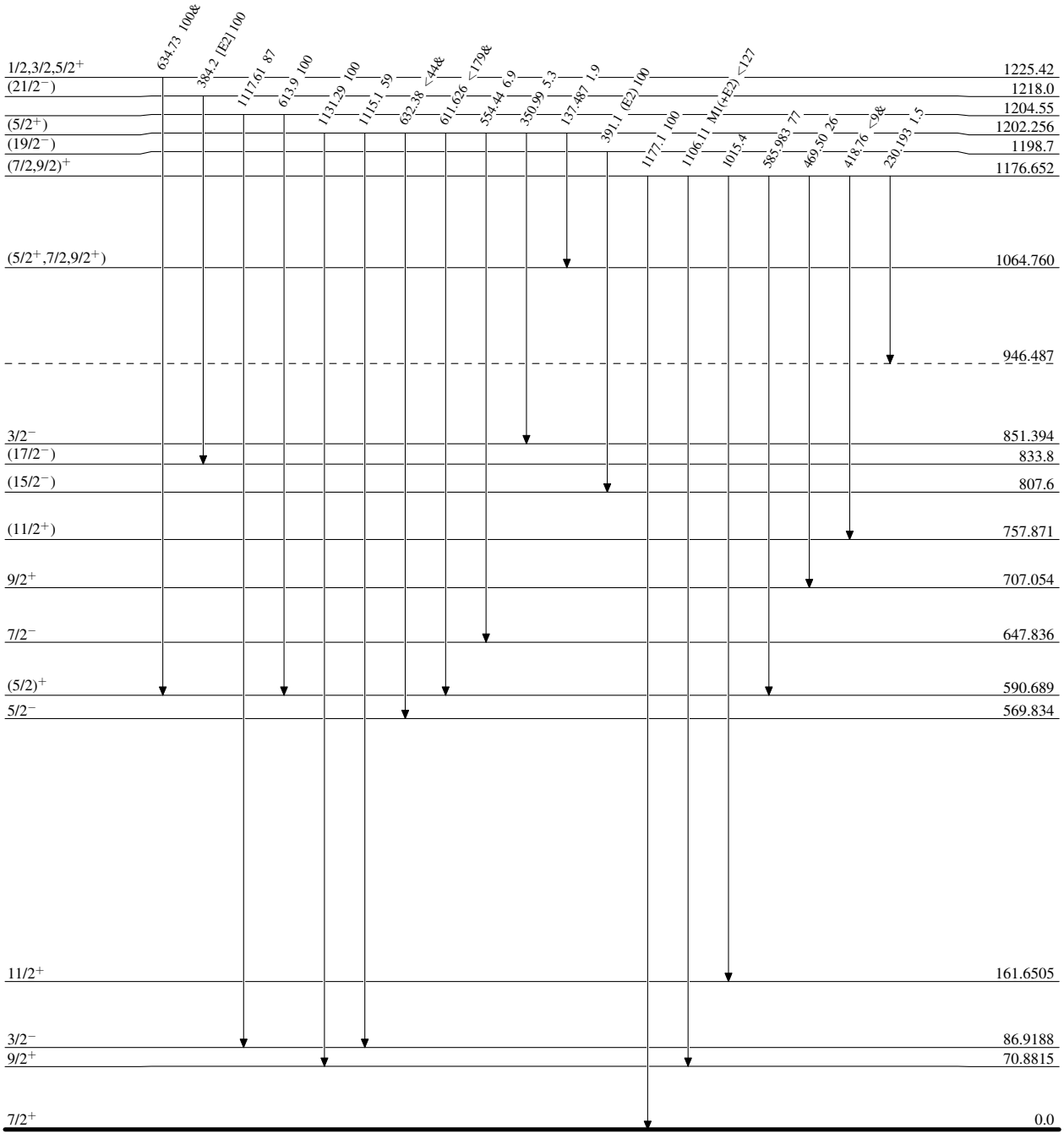


$^{169}_{70}Yb_{99}$

Adopted Levels, Gammas

Level Scheme (continued)

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



$^{169}_{70}Yb_{99}$

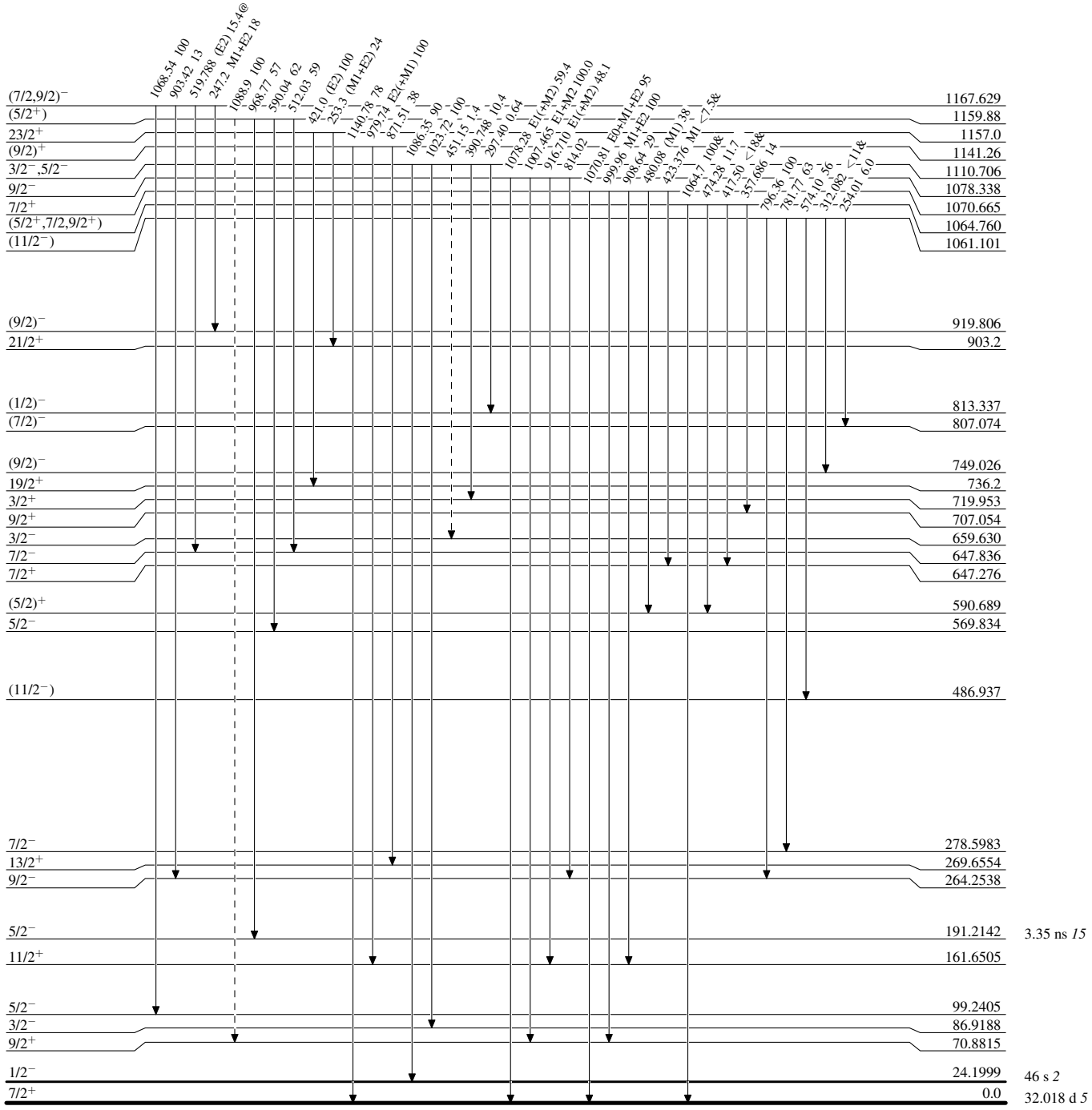
Adopted Levels, Gammas

Level Scheme (continued)

Legend

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

– – – – – – ► γ Decay (Uncertain)



$^{169}_{70}Yb_{99}$

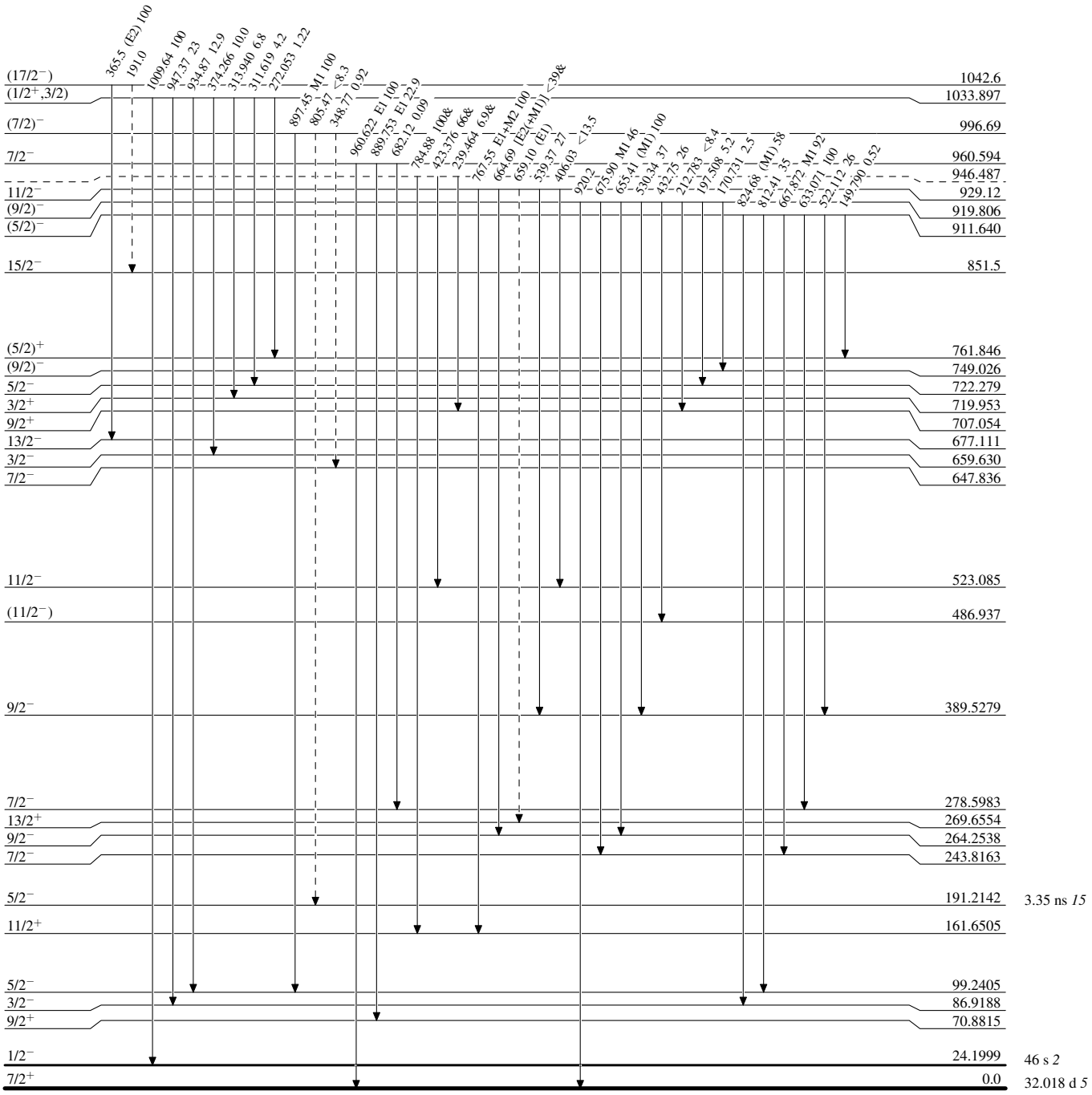
Adopted Levels, Gammas

Level Scheme (continued)

Legend

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

γ Decay (Uncertain)

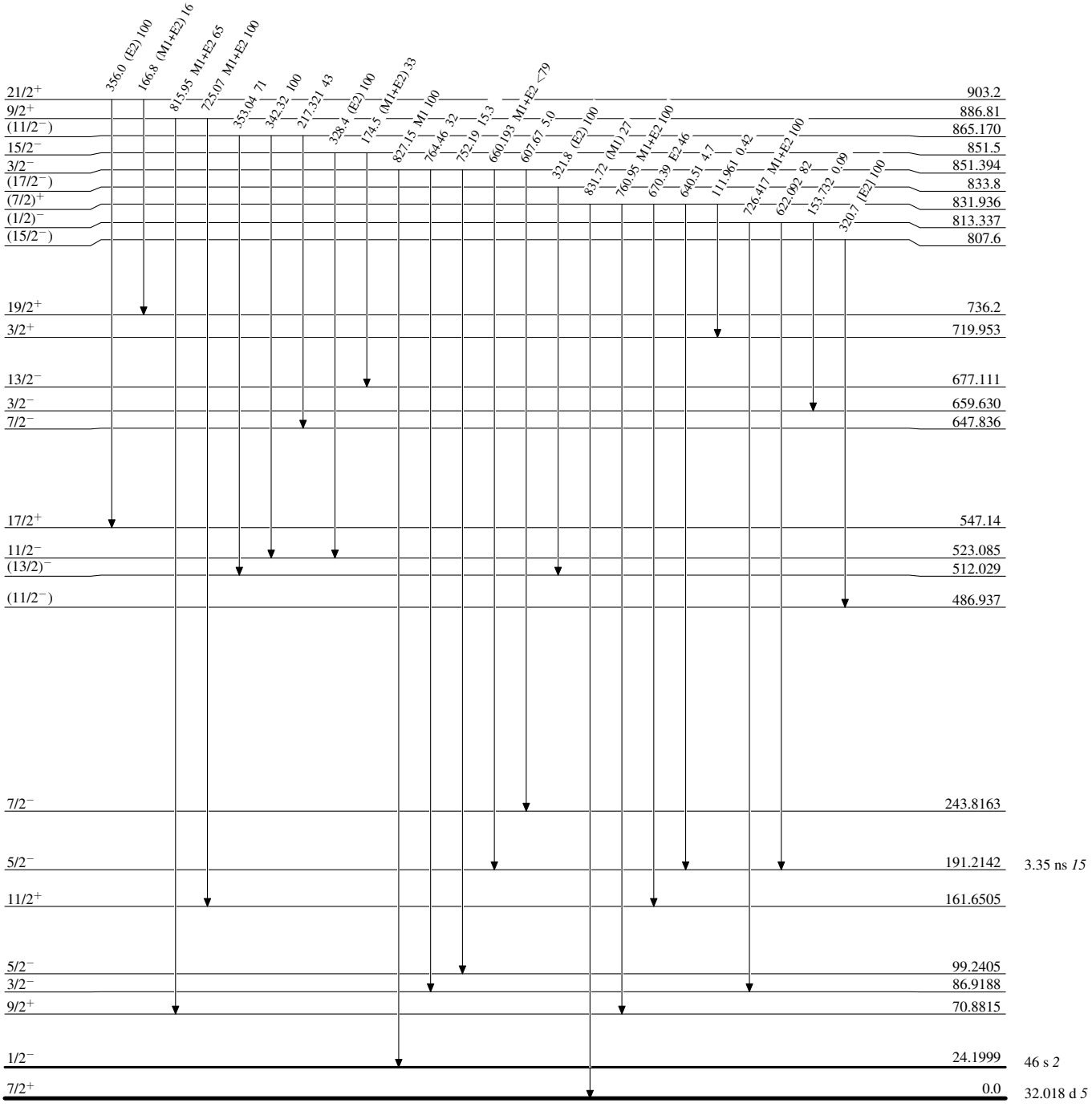


$^{169}_{70}Yb_{99}$

Adopted Levels, Gammas

Level Scheme (continued)

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

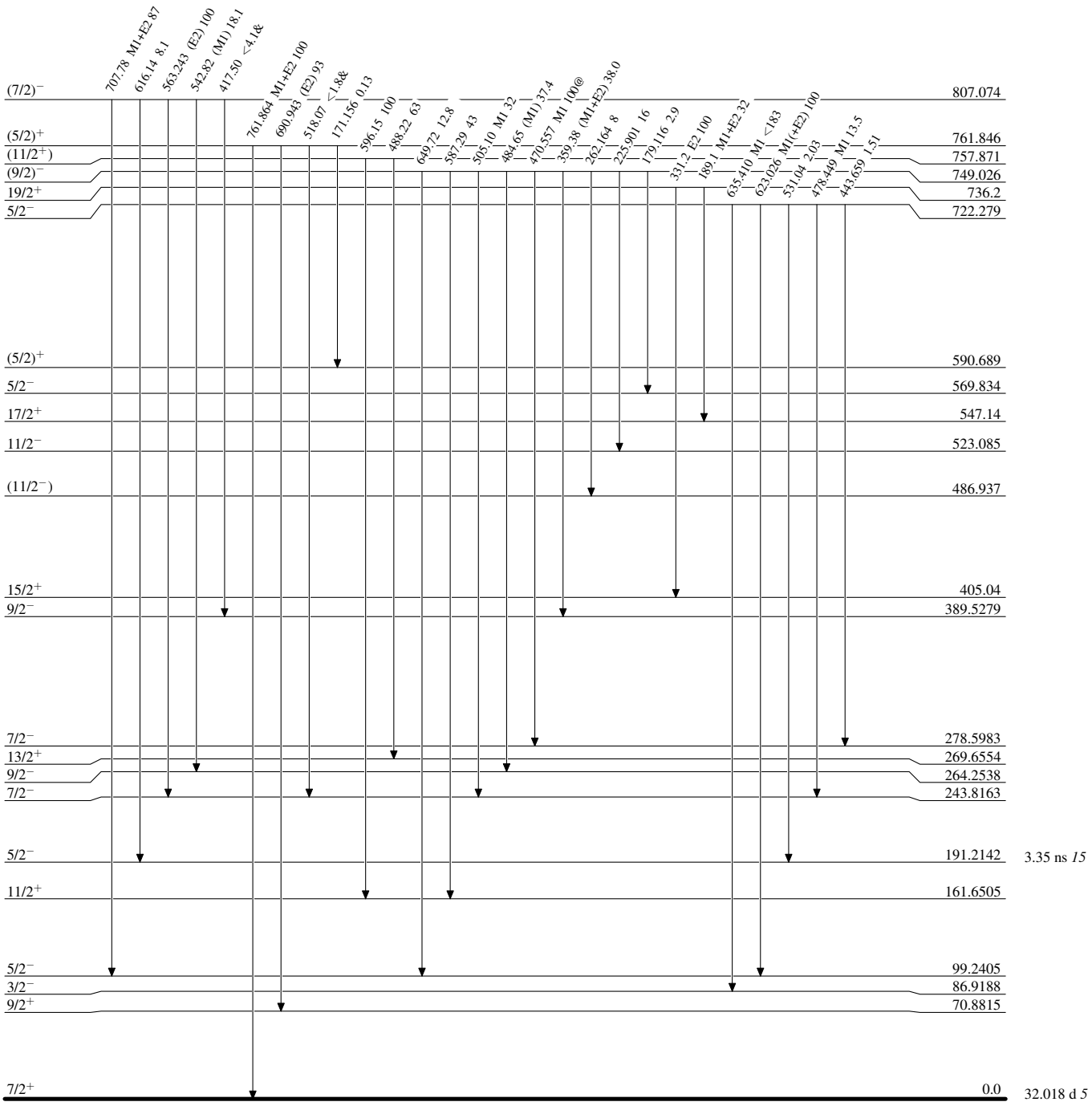


$^{169}_{70}Yb_{99}$

Adopted Levels, Gammas

Level Scheme (continued)

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



$^{169}_{70}Yb_{99}$

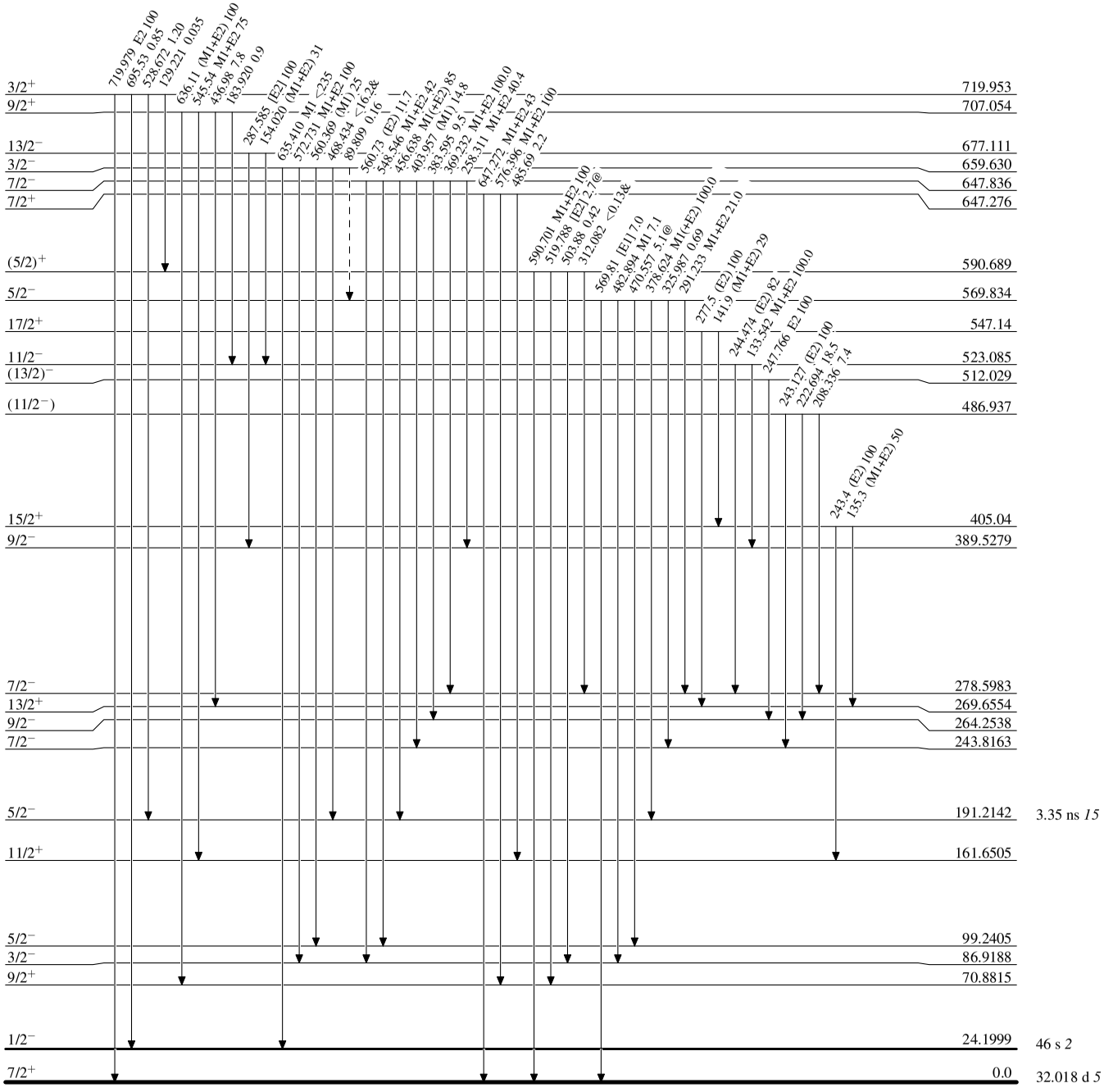
Adopted Levels, Gammas

Level Scheme (continued)

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

Legend

- - - - - - ► γ Decay (Uncertain)

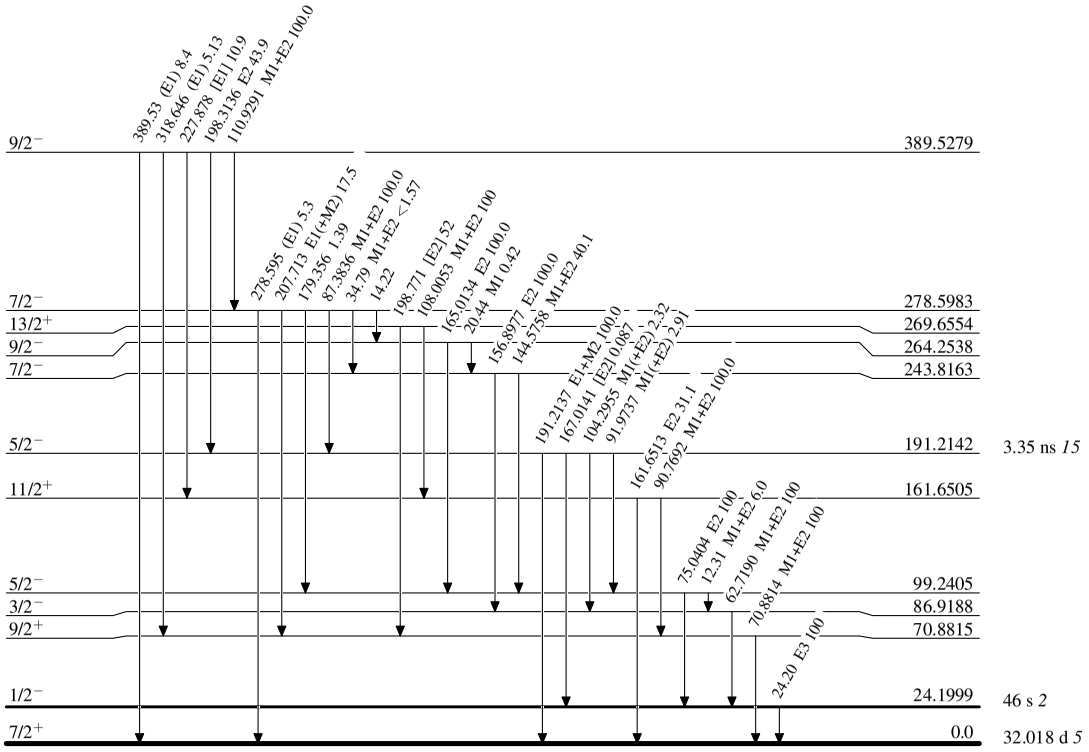


$^{169}_{70}Yb_{99}$

Adopted Levels, Gammas

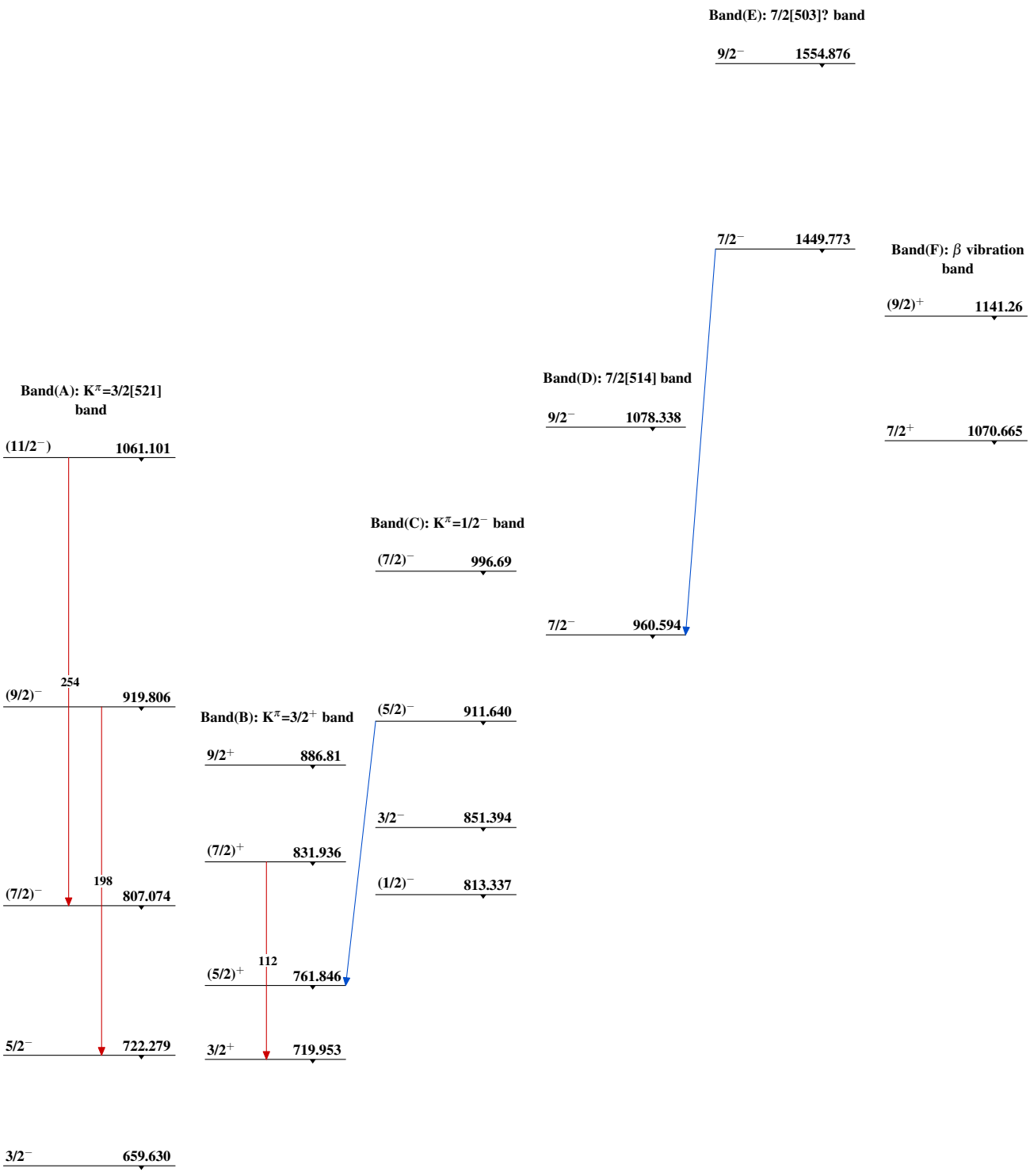
Level Scheme (continued)

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



$^{169}_{70}Yb_{99}$

Adopted Levels, Gammas



$^{169}_{70}Yb_{99}$