^{159}Tb(^{16}O,4nγ) 1985Ba48,1999Jo10

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin, E. A. Mccutchan	NDS 151, 334 (2018)	30-Jun-2018

2001Th23: ^{159}Tb(^{16}O,4nγ), E(^{16}O)=84 MeV; pulsed beam (2.5 ns pulse width); recoil implantation; measured g-factor using TDPAD; 2 Tesla magnetic field perpendicular to reaction plane, external field of 6.89 *4* Tesla, reversed every 4 hours; Ta-backed ^{159}Yb foil; NaI(Tl) detectors At +45° and −45°.
1999Jo10: ^{159}Tb(^{16}O,4nγ), E(^{16}O)=84 MeV; 3 HPGe detectors, 14-element BGO array; θ=50° and 144°; measured Eγ, recoil distance Doppler shift.
1995Do32: ^{159}Tb(^{16}O,4nγ), E(^{16}O)=84 MeV, pulsed beam; measured Q(236 level) using TDPAD.
1985Ba48: ^{159}Tb(^{16}O,4nγ), E(^{16}O)=72-86 MeV; Enriched targets; measured Eγ, Iγ (5-6 Ge or Ge(Li) detector arrays with Compton suppression, low-energy photon spect, BGO), excit, prompt and delayed γγ coin (E=84 MeV), γ(θ) (E=86 MeV); cranked shell model and a semiclassical vector-coupling scheme used to interpret level structure.
The level scheme is from 1985Ba48.

^{171}Ta Levels

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	Comments
0.0[@]	5/2⁻		
0.0+x[b]	5/2⁺		
52.1[&] *4*	7/2⁺		
94.6[@] *3*	9/2⁻		
113.6+x[b] *4*	7/2⁺		
183.1[&] *5*	9/2⁺		
236.2[a] *5*	9/2⁻	46 ns *3*	Q=3.09 *19* (1995Do32) Q from TDPAD. $T_{1/2}$: γγ(t) (1985Ba48).
253.1+x[b] *3*	9/2⁺		
291.7[@] *4*	13/2⁻		
336.4[&] *5*	11/2⁺		
367.2[a] *5*	11/2⁻		
414.6+x[b] *4*	11/2⁺		
510.0[&] *5*	13/2⁺		
527.9[a] *5*	13/2⁻		
589.8[@] *5*	17/2⁻	18.3 ps *+8−17*	
598.2+x[b] *4*	13/2⁺		
700.6[&] *5*	15/2⁺		
709.7[a] *5*	15/2⁻		
798.8+x[b] *4*	15/2⁺		
906.1[&] *5*	17/2⁺		
917.5[a] *6*	17/2⁻		
978.7[@] *6*	21/2⁻	4.5 ps *4*	
1014.9+x[b] *4*	17/2⁺		
1124.5[&] *5*	19/2⁺		
1137.1[a] *6*	19/2⁻		
1243.9+x[b] *4*	19/2⁺		
1354.4[&] *6*	21/2⁺		
1379.6[a] *6*	21/2⁻		
1443.6[@] *7*	25/2⁻	1.86 ps *+22−17*	
1482.4+x[b] *5*	21/2⁺		

Continued on next page (footnotes at end of table)

^{159}Tb(^{16}O,4nγ) 1985Ba48,1999Jo10 (continued)

^{171}Ta Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$[#]	Comments
1595.2[&] 6	23/2$^+$		
1625.6[a] 6	23/2$^-$		
1734.1+x[b] 5	23/2$^+$		
1846.6[&] 6	25/2$^+$		
1891.3[a] 6	25/2$^-$		
1968.2[@] 7	29/2$^-$	<1.93 ps	
1986.1+x[b] 5	25/2$^+$		
2108.8[&] 6	27/2$^+$		
2155.8[a] 6	27/2$^-$		
2257.7+x[b] 5	27/2$^+$		
2380.6[&] 6	29/2$^+$		
2435.3[a] 7	29/2$^-$		
2494.9+x[b] 5	29/2$^+$		
2538.2[@] 8	33/2$^-$		
2664.7[&] 7	31/2$^+$		
2712.6[a] 7	31/2$^-$		
2807.7+x[b] 6	31/2$^+$		
2954.1[&] 7	33/2$^+$		
2990.8+x[c] 6	33/2$^+$		
2995.6[a] 7	33/2$^-$		
3146.7[@] 9	37/2$^-$		E(level): differs from adopted value (3179) because order of 609γ-650γ cascade is reversed here.
3260.3[&] 7	35/2$^+$		
3269.4[a] 7	35/2$^-$		
3370.7+x[b] 7	35/2$^+$		
3521.2+x[c] 7	37/2$^+$		
3557?[a] 2	37/2$^-$		E(level): level not adopted; deexcitation gammas were not confirmed in other reaction studies.
3569.3[&] 8	37/2$^+$		
3796.7[@] 9	41/2$^-$		
3808.3[a] 8	39/2$^-$		
3887.5[&] 8	(39/2$^+$)		
4107.6+x[c] 8	41/2$^+$		
4198.1[&] 8	(41/2$^+$)		
4495.7[@] 10	45/2$^-$		
4543.2[&] 9	(43/2$^+$)		
4743.7+x[c] 8	45/2$^+$		
5248.9[@] 10	49/2$^-$		
5430.9+x[c] 9	49/2$^+$		
6057.4[@] 10	53/2$^-$		
6169.0+x[c] 9	53/2$^+$		
6920.0[@] 11	57/2$^-$		
6958.7+x[c] 10	57/2$^+$		
7799.9+x[c] 10	61/2$^+$		
7835.1[@] 11	(61/2$^-$)		
8691.2+x[c] 11	65/2$^+$		
8801.0[@] 12	(65/2$^-$)		

Continued on next page (footnotes at end of table)

$^{159}Tb(^{16}O,4n\gamma)$ 1985Ba48,1999Jo10 (continued)

^{171}Ta Levels (continued)

E(level)[†]	Jπ[‡]
9634.6+x[c] 11	69/2+
9817[@] 3	(69/2−)

[†] From a least-squares fit to Eγ, by evaluators.
[‡] As proposed by 1985Ba48 based on γ-ray multipolarities, coincidence data, and rotational structure. See ^{171}Ta Adopted Levels for assignments adopted by evaluators.
[#] From RDM (1999Jo10), except as noted.
[@] Band(A): 1/2[541] band.
[&] Band(B): 7/2[404] band (tentative).
[a] Band(C): 9/2[514] band (tentative).
[b] Band(D): 5/2[402], α=+1/2 band (tentative).
[c] Band(E): 1/2[660] band. Suggested to be a triaxial superdeformed band in 1997Wu03; dynamic moment of inertia values are similar to those for analogous bands in ^{167}Lu, ^{165}Lu and ^{163}Lu.

γ(^{171}Ta)

Eγ[†]	Iγ[‡]	Ei(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ[#]	α[b]	Comments
(52.1 4)		52.1	7/2+	0.0	5/2−				Eγ: from Adopted Gammas.
53.0 3	22.2	236.2	9/2−	183.1	9/2+	E1[&]		0.384 9	
94.6 3	20.9	94.6	9/2−	0.0	5/2−	E2		4.62 9	Mult.: α(exp)=4.9 4 assuming Ti(298.1γ)=Ti(94.6γ).
113.6[a] 4		113.6+x	7/2+	0.0+x	5/2+				
131.0[c] 3	41.4[c]	183.1	9/2+	52.1	7/2+				Iγ: given as 41.2 and 41.6 in table 2 of 1985Ba48. Mult.: A_2=+0.36 5, A_4=+0.05 6 for doublet; consistent with δ(D,Q)=0.50 10.
131.0[c] 3	41.4[c]	367.2	11/2−	236.2	9/2−	[&]	[&]		Iγ: given as 41.2 and 41.6 in table 2 of 1985Ba48. Mult.: A_2=+0.36 5, A_4=+0.05 6 for doublet; consistent with δ(D,Q)=0.50 10.
139.5 3	68.4	253.1+x	9/2+	113.6+x	7/2+	M1+E2	0.30 10	1.63 5	A_2=+0.18 5, A_4=+0.10 5.
153.3 3	20.4	336.4	11/2+	183.1	9/2+	M1+E2	0.80 10	1.08 4	Mult.: A_2=+0.62 4, A_4=−0.04 6.
160.7 3	43.8	527.9	13/2−	367.2	11/2−	M1+E2	0.30 10	1.09 4	Mult.: A_2=+0.19 5, A_4=−0.01 5.
161.5 3	23.2	414.6+x	11/2+	253.1+x	9/2+	M1+E2	0.25 5	1.086 20	Mult.: A_2=+0.12 5, A_4=−0.03 5.
173.8 3	15.2	510.0	13/2+	336.4	11/2+	(M1+E2)[&]		0.69 22	Mult.: A_2=+0.39 5, A_4=+0.01 6.
181.8 3	35.6[@]	709.7	15/2−	527.9	13/2−	(M1+E2)	0.25 5	0.777 15	Mult.: A_2=+0.11 6, A_4=+0.04 6.
183.6 3	28.3	598.2+x	13/2+	414.6+x	11/2+	M1+E2[&]	0.25 5	0.756 15	Mult.: A_2=+0.011 5, A_4=+0.04 5.
184.1 3	74.0	236.2	9/2−	52.1	7/2+	E1		0.0752	Mult.: A_2=+0.02 5, A_4=+0.01 5.
190.6 3	16.4	700.6	15/2+	510.0	13/2+	M1+E2	0.40 10	0.652 24	Mult.: A_2=+0.24 4, A_4=+0.09 6.
197.1 3	100	291.7	13/2−	94.6	9/2−	E2		0.312	Mult.: A_2=+0.38 1, A_4=−0.08 2.
200.6 3	12.6	798.8+x	15/2+	598.2+x	13/2+	M1+E2	0.15 10	0.601 15	Mult.: A_2=+0.13 5, A_4=−0.02 5.
205.5 3	10.3	906.1	17/2+	700.6	15/2+	M1+E2	0.40 10	0.528 20	Mult.: A_2=+0.25 5, A_4=+0.07 6.
207.8 3	34.6	917.5	17/2−	709.7	15/2−	M1+E2	0.20 10	0.540 15	Mult.: A_2=+0.15 5, A_4=+0.01 5.
216.1 3	22.9	1014.9+x	17/2+	798.8+x	15/2+	M1+E2	0.30 10	0.473 17	Mult.: A_2=+0.26 4, A_4=−0.14 5.
218.4 3	11.4[@]	1124.5	19/2+	906.1	17/2+	(M1+E2)	0.40 10	0.445 18	Mult.: A_2=+0.31 4, A_4=−0.13 5.
219.6 3	32.4	1137.1	19/2−	917.5	17/2−	M1+E2	0.30 10	0.452 16	Mult.: A_2=+0.25 4, A_4=−0.02 6.

Continued on next page (footnotes at end of table)

^{159}Tb(^{16}O,4nγ) 1985Ba48,1999Jo10 (continued)

γ(^{171}Ta) (continued)

E_γ[†]	I_γ[‡]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ[#]	α[b]	Comments
229.0 *3*	13.7	1243.9+x	19/2$^+$	1014.9+x	17/2$^+$	M1+E2	0.25 *10*	0.408 *13*	Mult.: A_2=−0.16 *5*, A_4=−0.11 *6*.
229.9 *3*	13.6[@]	1354.4	21/2$^+$	1124.5	19/2$^+$				
237.2 *3*	3.0[@]	2494.9+x	29/2$^+$	2257.7+x	27/2$^+$	(M1+E2)		0.28 *11*	
238.5 *3*	14.0	1482.4+x	21/2$^+$	1243.9+x	19/2$^+$	(M1+E2)	0.25 *10*	0.365 *12*	Mult.: A_2=+0.11 *5*, A_4=−0.06 *6*.
240.9 *3*	12.2[@]	1595.2	23/2$^+$	1354.4	21/2$^+$	(M1+E2)		0.26 *11*	Mult.: A_2=−0.01 *3*, A_4=0.00 *4*.
242.5 *3*	24.4[@]	1379.6	21/2$^-$	1137.1	19/2$^-$	(M1+E2)		0.26 *10*	Mult.: A_2=−0.01 *3*, A_4=0.00 *4*.
246.1 *3*	25.6	1625.6	23/2$^-$	1379.6	21/2$^-$	M1+E2	0.30 *10*	0.330 *12*	Mult.: A_2=+0.23 *4*, A_4=−0.07 *5*.
251.4 *3*	6.6	1846.6	25/2$^+$	1595.2	23/2$^+$	M1+E2	0.60 *20*	0.23 *10*	Mult.: A_2=+0.46 *4*, A_4=−0.32 *5*.
251.7 *3*	11.5	1734.1+x	23/2$^+$	1482.4+x	21/2$^+$	M1+E2		0.277 *24*	Mult.: A_2=−0.05 *4*, A_4=0.00 *5*.
252.0 *3*	7.5	1986.1+x	25/2$^+$	1734.1+x	23/2$^+$	M1+E2		0.23 *10*	Mult.: A_2=−0.08 *5*, A_4=+0.05 *6*.
253.1 *3*		253.1+x	9/2$^+$	0.0+x	5/2$^+$	(E2)			
262.2 *3*	6.6[@]	2108.8	27/2$^+$	1846.6	25/2$^+$	(M1+E2)		0.21 *9*	Mult.: Iγ(30°)/Iγ(90°)=0.70 *9*.
264.6 *3*	14.0[@]	2155.8	27/2$^-$	1891.3	25/2$^-$	(M1+E2)		0.20 *9*	Mult.: A_2=+0.11 *4*, A_4=−0.05 *5*.
265.8 *3*	22.2[@]	1891.3	25/2$^-$	1625.6	23/2$^-$	(M1+E2)		0.20 *8*	Mult.: A_2=+0.11 *4*, A_4=−0.05 *5*.
271.6 *3*	6.3	2257.7+x	27/2$^+$	1986.1+x	25/2$^+$	(M1+E2)		0.19 *8*	Mult.: A_2=−0.07 *5*, A_4=+0.02 *6*.
271.7 *3*	4.0	2380.6	29/2$^+$	2108.8	27/2$^+$	M1+E2	0.30 *20*	0.251 *19*	Mult.: A_2=+0.10 *10*, A_4=+0.48 *13*.
273.8 *3*	7.1[@]	3269.4	35/2$^-$	2995.6	33/2$^-$	M1(+E2)	0.10 *20*	0.257 *12*	Mult.: A_2=−0.07 *4*, A_4=+0.02 *6*.
277.3 *3*	8.5	2712.6	31/2$^-$	2435.3	29/2$^-$	M1(+E2)	0.09 *10*	0.249 *6*	Mult.: A_2=−0.04 *7*, A_4=+0.11 *9*.
279.5 *3*	13.4	2435.3	29/2$^-$	2155.8	27/2$^-$	M1+E2	0.07 *20*	0.244 *10*	Mult.: A_2=−0.13 *6*, A_4=+0.05 *8*.
283.0 *3*	10.8[@]	2995.6	33/2$^-$	2712.6	31/2$^-$	(M1+E2)		0.17 *7*	Mult.: A_2=+0.26 *3*, A_4=+0.01 *4*.
284.3 *3*	19.3	336.4	11/2$^+$	52.1	7/2$^+$	E2		0.0965	Mult.: A_2=+0.38 *3*, A_4=−0.05 *4*.
288[ad] *2*		3557?	37/2$^-$	3269.4	35/2$^-$				
291.7 *3*	15.6	527.9	13/2$^-$	236.2	9/2$^-$	E2		0.0893	Mult.: A_2=+0.40 *4*, A_4=−0.10 *4*.
298.1 *3*	91.5	589.8	17/2$^-$	291.7	13/2$^-$	E2		0.0836	Mult.: A_2=+0.32 *1*, A_4=−0.08 *2*.
301.0 *3*	8.2	414.6+x	11/2$^+$	113.6+x	7/2$^+$	E2		0.0812	Mult.: A_2=+0.38 *7*, A_4=0.00 *6*.
326.8 *3*	30.8	510.0	13/2$^+$	183.1	9/2$^+$	E2		0.0637	Mult.: A_2=+0.28 *4*, A_4=+0.06 *6*.
342.5 *3*	18.4	709.7	15/2$^-$	367.2	11/2$^-$	E2		0.0556	Mult.: A_2=+0.25 *5*, A_4=−0.16 *7*.
345.1 *3*	16.7	598.2+x	13/2$^+$	253.1+x	9/2$^+$	E2		0.0544	Mult.: A_2=+0.17 *7*, A_4=−0.20 *8*.
364.1 *3*	34.4	700.6	15/2$^+$	336.4	11/2$^+$	E2		0.0468	Mult.: A_2=+0.25 *3*, A_4=−0.10 *4*.
384.2 *3*	20.9	798.8+x	15/2$^+$	414.6+x	11/2$^+$	E2		0.0403	Mult.: A_2=+0.32 *5*, A_4=−0.07 6..
388.9 *3*	77.8[@]	978.7	21/2$^-$	589.8	17/2$^-$	E2			Mult.: A_2=+0.34 *2*, A_4=−0.10 *2*.
389.6 *3*	13.0[@]	917.5	17/2$^-$	527.9	13/2$^-$	(E2)		0.0388	Mult.: A_2=+0.34 *2*, A_4=−0.11 *3*.
396.1 *3*	44.0	906.1	17/2$^+$	510.0	13/2$^+$	E2		0.0370	Mult.: A_2=+0.32 *4*, A_4=−0.09 *4*.
416.7 *3*	16.0	1014.9+x	17/2$^+$	598.2+x	13/2$^+$	E2		0.0323	Mult.: A_2=+0.28 *4*, A_4=−0.08 *4*.
423.9 *3*	34.7	1124.5	19/2$^+$	700.6	15/2$^+$	E2		0.0309	Mult.: A_2=+0.34 *4*, A_4=−0.16 *5*.
427.4 *3*	34.1	1137.1	19/2$^-$	709.7	15/2$^-$	E2		0.0302	Mult.: A_2=+0.36 *8*, A_4=−0.11 *4*.
445.1 *3*	16.1	1243.9+x	19/2$^+$	798.8+x	15/2$^+$	E2		0.0271	Mult.: A_2=+0.33 *6*, A_4=−0.01 *8*.
448.3 *3*	40.7	1354.4	21/2$^+$	906.1	17/2$^+$	E2		0.0266	Mult.: A_2=+0.34 *2*, A_4=−0.04 *3*.
462.1 *3*	23.6	1379.6	21/2$^-$	917.5	17/2$^-$	E2		0.0246	Mult.: A_2=+0.22 *3*, A_4=0.00 *3*.
464.9 *3*	65.8	1443.6	25/2$^-$	978.7	21/2$^-$	E2		0.0242	Mult.: A_2=+0.30 *2*, A_4=−0.08 *2*.
467.5 *3*	20.0	1482.4+x	21/2$^+$	1014.9+x	17/2$^+$	E2		0.0239	Mult.: A_2=+0.32 *5*, A_4=−0.10 *7*.
470.8 *3*	34.4	1595.2	23/2$^+$	1124.5	19/2$^+$	E2		0.0235	Mult.: A_2=+0.35 *3*, A_4=−0.12 *3*.
488.6 *3*	17.4	1625.6	23/2$^-$	1137.1	19/2$^-$	E2		0.0214	Mult.: A_2=+0.31 *3*, A_4=−0.12 *3*.
490.2 *3*	18.0	1734.1+x	23/2$^+$	1243.9+x	19/2$^+$	E2		0.0210	Mult.: A_2=+0.28 *4*, A_4=+0.10 *5*.
492.1 *3*	26.2	1846.6	25/2$^+$	1354.4	21/2$^+$	E2		0.0210	Mult.: A_2=+0.32 *2*, A_4=−0.10 *3*.
495.9 *3*	10.2	2990.8+x	33/2$^+$	2494.9+x	29/2$^+$	E2		0.0206	Mult.: A_2=+0.38 *6*, A_4=−0.13 *7*.
503.7 *3*	10.5	1986.1+x	25/2$^+$	1482.4+x	21/2$^+$	E2		0.0198	Mult.: A_2=+0.50 *8*, A_4=−0.15 *8*.
508.8 *3*	12.5[@]	2494.9+x	29/2$^+$	1986.1+x	25/2$^+$	(E2)		0.0193	Mult.: A_2=+0.19 *2*, A_4=+0.01 *3*.
511.6 *3*	26.2[@]	1891.3	25/2$^-$	1379.6	21/2$^-$	(E2)		0.0190	Mult.: A_2=+0.08 *2*, A_4=+0.04 *3*.
513.6 *3*	29.8	2108.8	27/2$^+$	1595.2	23/2$^+$	E2		0.0188	Mult.: A_2=+0.27 *3*, A_4=−0.08 *4*.
523.6 *3*	19.5[@]	2257.7+x	27/2$^+$	1734.1+x	23/2$^+$	(E2)		0.0180	Mult.: A_2=+0.29 *2*, A_4=−0.05 *2*.
524.6 *3*	41.2[@]	1968.2	29/2$^-$	1443.6	25/2$^-$	E2		0.0179	Mult.: A_2=+0.29 *2*, A_4=−0.05 *2*.

Continued on next page (footnotes at end of table)

^{159}Tb(^{16}O,4nγ) 1985Ba48,1999Jo10 (continued)

γ(^{171}Ta) (continued)

E_γ[†]	I_γ[‡]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	α[b]	Comments
530.1 3	15.2[@]	2155.8	27/2−	1625.6	23/2−	(E2)	0.01744	Mult.: A_2=+0.21 4, A_4=−0.05 5.
530.4 3	12.3[@]	3521.2+x	37/2+	2990.8+x	33/2+	(E2)	0.01741	Mult.: A_2=+0.21 4, A_4=−0.05 5.
534.1 3	25.9	2380.6	29/2+	1846.6	25/2+	E2	0.01712	Mult.: A_2=+0.31 3, A_4=−0.09 5.
538.9 3	7.2	3808.3	39/2−	3269.4	35/2−	E2	0.01675	Mult.: A_2=+0.12 9, A_4=0.00 14.
544.1 3	18.9[@]	2435.3	29/2−	1891.3	25/2−	E2	0.01636	Mult.: A_2=+0.37 5, A_4=−0.18 7.
550.0 3	8.7[@]	2807.7+x	31/2+	2257.7+x	27/2+	(E2)	0.01594	Mult.: Iγ(30°)/Iγ(90°)=1.26 14.
555.9 3	17.1[@]	2664.7	31/2+	2108.8	27/2+	(E2)	0.01554	Mult.: A_2=+0.29 3, A_4=−0.10 3.
556.8[c] 3	22.7[c]	2712.6	31/2−	2155.8	27/2−	(E2)[&]	0.01548	Mult.: A_2=+0.29 3, A_4=−0.10 3 for triplet.
556.8[c] 3	22.7[c]	3269.4	35/2−	2712.6	31/2−	(E2)[&]	0.01548	Mult.: A_2=+0.29 3, A_4=−0.10 3 for triplet.
560.3 3	16.1	2995.6	33/2−	2435.3	29/2−	E2	0.01524	Mult.: A_2=+0.37 4, A_4=−0.13 5.
561[ad] 2		3557?	37/2−	2995.6	33/2−			
563.0 3	4.3	3370.7+x	35/2+	2807.7+x	31/2+	E2	0.01507	Mult.: A_2=+0.48 7, A_4=−0.16 9.
570.0 3	32.8	2538.2	33/2−	1968.2	29/2−	E2	0.01463	Mult.: A_2=+0.33 3, A_4=−0.02 5.
573.5 3	15.4	2954.1	33/2+	2380.6	29/2+	E2	0.01442	Mult.: A_2=+0.45 3, A_4=−0.22 4.
586.4 3	9.8[@]	4107.6+x	41/2+	3521.2+x	37/2+	(E2)	0.01368	Mult.: A_2=+0.31 4, A_4=−0.09 5.
595.6 3	7.6[@]	3260.3	35/2+	2664.7	31/2+	(E2)	0.01319	Mult.: Iγ(30°)/Iγ(90°)=0.97 7.
608.5 3	21.3	3146.7	37/2−	2538.2	33/2−	E2	0.01254	Mult.: A_2=+0.22 3, A_4=−0.03 4.
615.2 3	6.2[@]	3569.3	37/2+	2954.1	33/2+	(E2)	0.01222	
627.2 3	4.3	3887.5	(39/2+)	3260.3	35/2+	(E2)[&]	0.01169	
628.8 3	3.1[@]	4198.1	(41/2+)	3569.3	37/2+	(E2)	0.01162	
636.1 3	4.3[@]	4743.7+x	45/2+	4107.6+x	41/2+	(E2)	0.01132	
650.0 3	11.3	3796.7	41/2−	3146.7	37/2−	E2	0.01077	Mult.: A_2=+0.23 4, A_4=−0.26 6.
655.6 3	1.0[@]	4543.2	(43/2+)	3887.5	(39/2+)	(E2)	0.01056	
687.2 3	2.9[@]	5430.9+x	49/2+	4743.7+x	45/2+	(E2)		
699.0 3	4.0[@]	4495.7	45/2−	3796.7	41/2−	E2		
738.1 3	<1.0[@]	6169.0+x	53/2+	5430.9+x	49/2+	(E2)		
753.2 3	1.4[@]	5248.9	49/2−	4495.7	45/2−	E2		
789.7 3		6958.7+x	57/2+	6169.0+x	53/2+	(E2)		
808.5 3	<1.0[@]	6057.4	53/2−	5248.9	49/2−	E2		
841.2 3		7799.9+x	61/2+	6958.7+x	57/2+	(E2)		
862.6 3		6920.0	57/2−	6057.4	53/2−	E2		
891.3 3		8691.2+x	65/2+	7799.9+x	61/2+	(E2)		
915.1 3		7835.1	(61/2−)	6920.0	57/2−			
943.4 3		9634.6+x	69/2+	8691.2+x	65/2+	(E2)		
965.9 3		8801.0	(65/2−)	7835.1	(61/2−)			
1016[d] 2		9817	(69/2−)	8801.0	(65/2−)			

[†] Uncertainties not reported, but estimated by evaluator from implied precision of energies in 1985Ba48.
[‡] Arbitrary units for ^{159}Tb(^{16}O,4nγ) (values relative to Iγ(197.1γ)=100) (1985Ba48).
[#] From γ(θ) in (^{16}O,4nγ) and/or intensity analysis of cascading γ′s (1985Ba48). For γ(θ) results, stretched E2 assignments were based on large positive A_2, and M1+E2 assignments, on negative A_2 and placement relative to cascading E2 γ′s.
[@] From coincidence-gated spectrum (1985Ba48).
[&] From combined angular distribution data for multiply-placed line (1985Ba48).
[a] From level-energy difference (1985Ba48); transition not listed in γ-ray table of 1985Ba48, but present in fig. 4.
[b] 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.

Continued on next page (footnotes at end of table)

^{159}Tb(^{16}O,4nγ) 1985Ba48,1999Jo10 (continued)

γ(^{171}Ta) (continued)

[c] Multiply placed with undivided intensity.
[d] Placement of transition in the level scheme is uncertain.

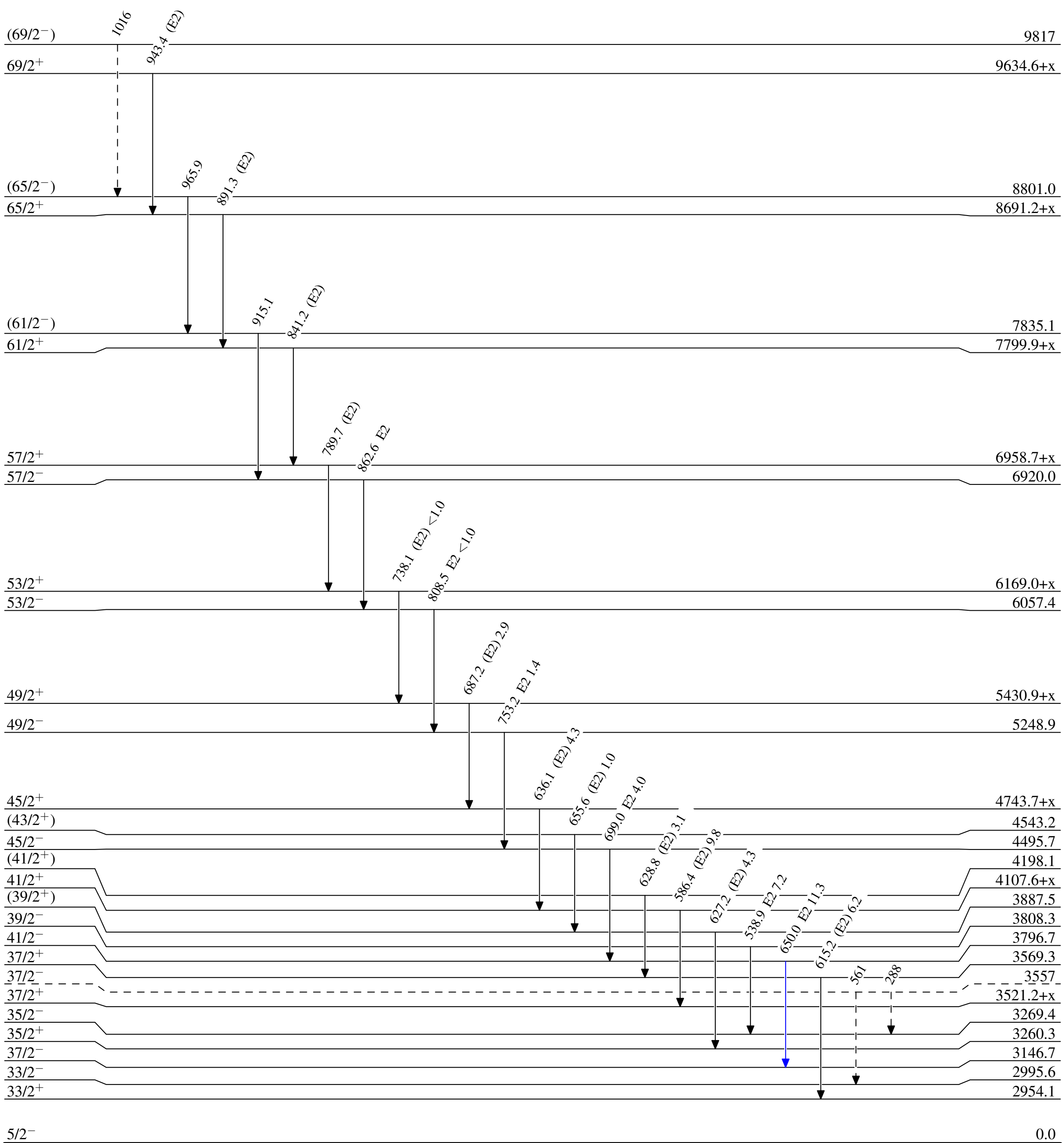
^{159}Tb(^{16}O,4nγ) 1985Ba48,1999Jo10

Level Scheme

Intensities: Relative Iγ for ^{159}Tb(^{16}O,4nγ)

Legend

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



$^{171}_{73}Ta_{98}$

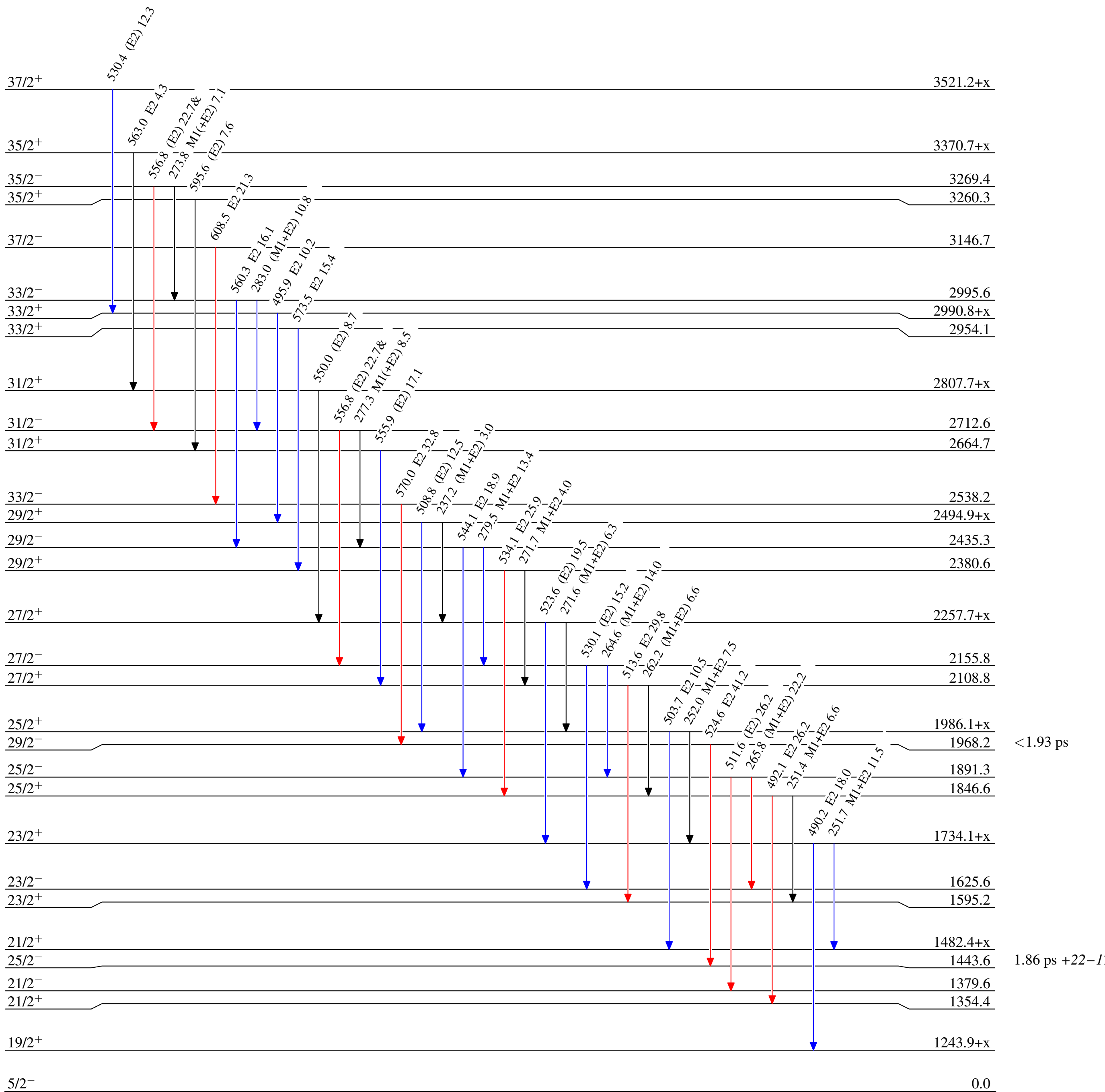
$^{159}Tb(^{16}O,4n\gamma)$ 1985Ba48,1999Jo10

Level Scheme (continued)

Intensities: Relative $I\gamma$ for $^{159}Tb(^{16}O,4n\gamma)$
& Multiply placed: undivided intensity given

Legend

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

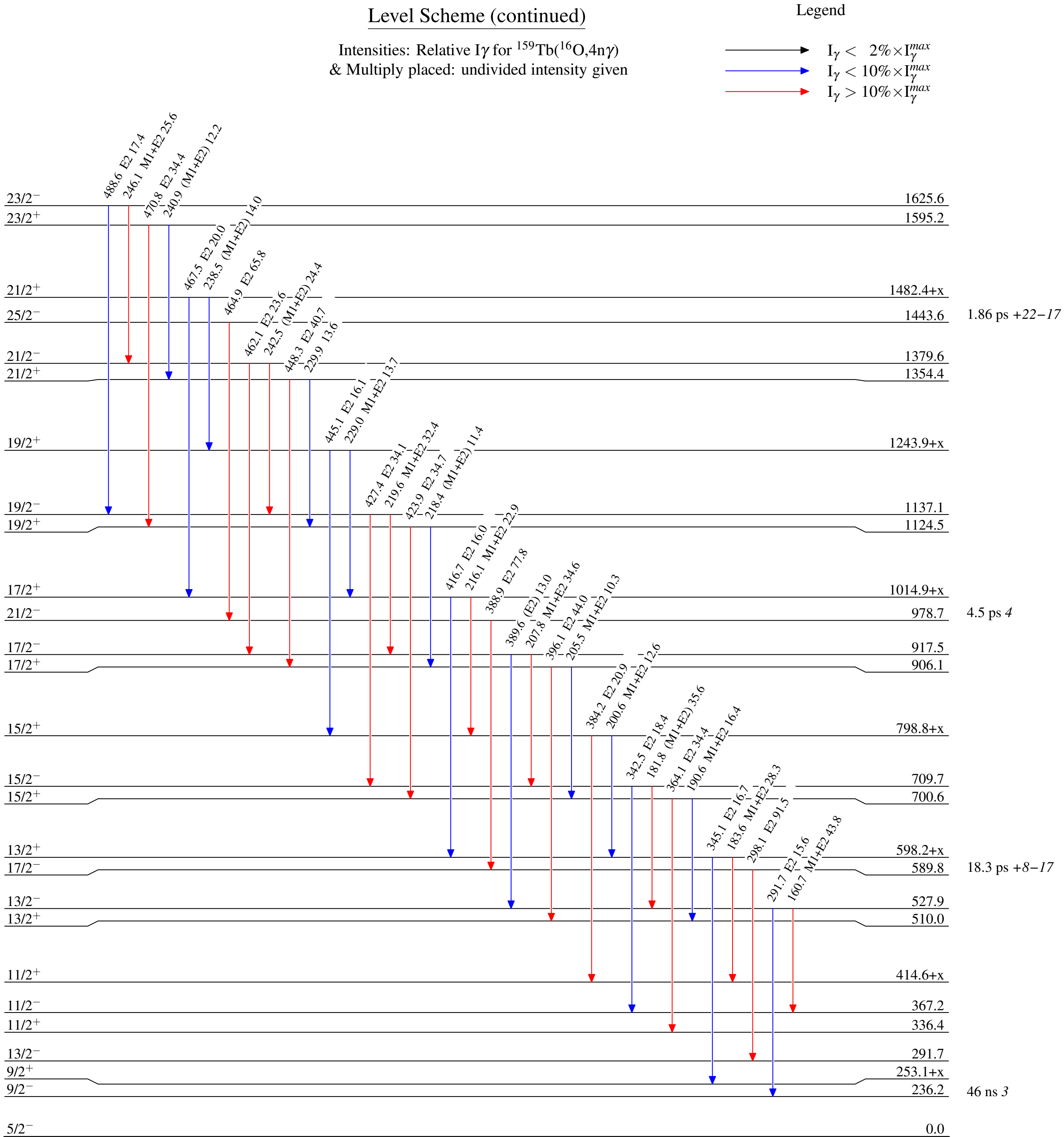


$^{171}_{73}Ta_{98}$

$^{159}Tb(^{16}O,4n\gamma)$ 1985Ba48,1999Jo10

Level Scheme (continued)

Intensities: Relative Iγ for $^{159}Tb(^{16}O,4n\gamma)$
& Multiply placed: undivided intensity given

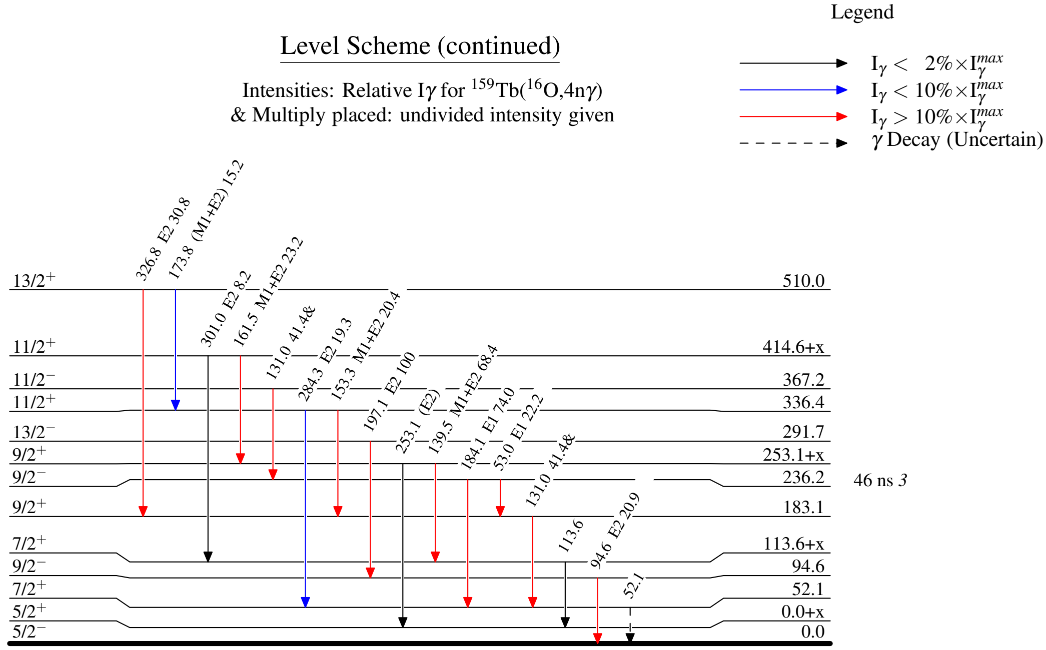


$^{171}_{73}Ta_{98}$

^{159}Tb(^{16}O,4nγ) 1985Ba48,1999Jo10

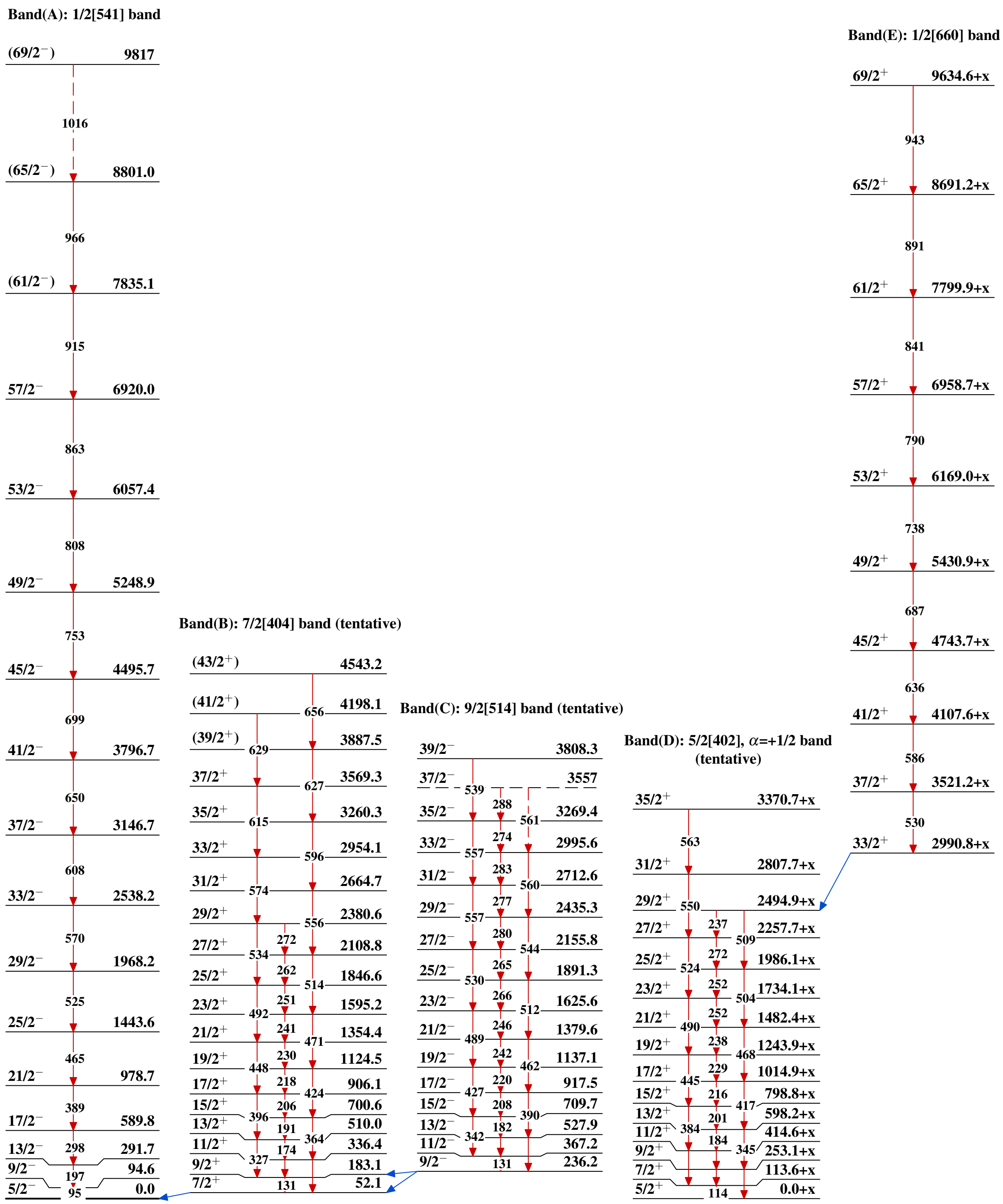
Level Scheme (continued)

Intensities: Relative Iγ for ^{159}Tb(^{16}O,4nγ)
& Multiply placed: undivided intensity given



$^{171}_{73}Ta_{98}$

$^{159}Tb(^{16}O,4n\gamma)$ 1985Ba48,1999Jo10



$^{171}_{73}Ta_{98}$