^{130}Te(^{37}Cl,5nγ),^{152}Sm(^{14}N,4nγ)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 195,1 (2024)	19-Sep-2023

Additional information 1.

The data are mostly from the ^{130}Te(^{37}Cl,5nγ) reaction (1998Es06). Additional information (mostly γ-ray multipolarities) is from ^{152}Sm(^{14}N,4nγ) (1987Dr07). Other reported studies are 1986Dr06, from ^{152}Sm(^{14}N,4nγ), and 1989An09 and 1997Ba45, from ^{130}Te(^{37}Cl,5nγ). The work of 1997Ba45, from the same group as 1998Es06, presents a small portion of the data given in this latter work.

1998Es06: ^{130}Te(^{37}Cl,5nγ), E(^{37}Cl)=166 MeV. Enriched (99.29%) ^{130}Te. The target consisted of two stacked ^{130}Te foils, 700 μg/cm^2 thick, on a thin ($\approx$400 μg/cm^2) Au backing. The Nordball array was used to detect the γ radiation. This array consisted of 19 Compton-suppressed HPGe detectors, one planar LEPS detector and 39 of the 60 crystals of the BaF_2 ball. Measured Eγ, Iγ, $\gamma\gamma$, and higher-fold, coincidences and DCO ratios (detectors at 37 or 143° in coincidence with detectors at 79 or 101°). DCO ratios were measured for many gammas but actual values are given only for selected ones. Deduced level scheme, J^π values and configuration assignments for the proposed bands.

1987Dr07: ^{152}Sm(^{14}N,4nγ), E(^{14}N)=65-100 MeV. Self-supporting metallic targets of thickness 3 mg/cm^2. Enrichment=98.3%. γ radiation measured using a variety of Ge detectors and a γ-X detector. Measured Eγ, Iγ, γ singles, $\gamma(\theta)$, $\gamma\gamma$ coincidences. Report yrast band and two side bands.

^{162}Tm Levels

The level scheme is that reported by 1998Es06. It is considerably more complete than the previous studies, which reported only two strongly coupled and one weakly coupled bands. It extends this information to higher spins and reports the existence of a number of interband γ transitions, which enables the relative positions of essentially all the bands to be established. It also identifies a previously proposed "negative-parity" band as having positive parity, with the proposed configuration (π 1/2[411])(ν 5/2[642]), and changes the previously proposed spins by one unit. The low-spin structure of the previously proposed bands is also modified somewhat.

The γ deexcitation of the observed bands terminates eventually on the known 5$^+$ isomer, (see ^{162}Tm Adopted Levels), which lies between 66 and 192 keV.

The band assignments are those of 1998Es06 and are based on the couplings and relative energies of the expected low-lying odd-neutron and odd-proton orbitals, the alignments and crossing frequencies and the deduced B(M1)/B(E2) ratios of the deexciting gammas.

E(level)[†]	J^π[‡]	E(level)[†]	J^π[‡]	E(level)[†]	J^π[‡]	E(level)[†]	J^π[‡]
x[#d]	5$^+$	322.9+x[c] *3*	8$^+$	787.0+x[d] *3*	11$^+$	1374.9+x[j] *3*	13$^-$
96.0+x[c] *3*	6$^+$	373.1+x[i] *4*	6$^-$	814.5+x[i] *3*	10$^-$	1458.7+x[c] *3*	14$^+$
107.1+x[g] *3*	6$^+$	393.3+x[l] *11*	9$^+$	838.4+x[f] *3*	13$^-$	1530.8+x[e] *3*	16$^-$
131.29+x[r] *16*	5$^+$	400.7+x[e] *3*	10$^-$	883.4+x[k] *10*	12$^+$	1553.3+x[i] *3*	14$^-$
136.8+x *11*	6$^+$[@]	413.1+x[h] *3*	9$^+$	910.7+x[g] *3*	12$^+$	1604.9+x[l] *10*	15$^+$
151.2+x[k] *11*	6$^+$	449.8+x[d] *3*	9$^+$	979.1+x[c] *3*	12$^+$	1663.7+x[h] *3*	15$^+$
163.56+x[e] *25*	6$^-$	514.5+x[f] *3*	11$^-$	1010.2+x[j] *3*	11$^-$	1741.1+x[d] *3*	15$^+$
189.3+x[f] *3*	7$^-$	526.4+x[k] *11*	10$^+$	1051.3+x[e] *3*	14$^-$	1809.1+x[f] *3*	17$^-$
202.9+x[d] *3*	7$^+$	555.5+x[g] *3*	10$^+$	1100.4+x[l] *10*	13$^+$	1815.9+x[j] *3*	15$^-$
210.9+x[h] *3*	7$^+$	566.3+x[i] *4*	8$^-$	1140.2+x[i] *3*	12$^-$	1890.5+x[k] *10*	16$^+$
232.7+x[l] *11*	7$^+$	595.2+x[c] *3*	10$^+$	1149.8+x[h] *3*	13$^+$	1913.6+x[g] *3*	16$^+$
237.5+x[e] *3*	8$^-$	671.0+x[e] *3*	12$^-$	1226.5+x[d] *3*	13$^+$	1999.3+x[c] *3*	16$^+$
293.7+x[&k] *11*	8$^+$	690.4+x[l] *10*	11$^+$	1274.4+x[f] *3*	15$^-$	2053.4+x[i] *3*	16$^-$
305.1+x[f] *3*	9$^-$	717.2+x[j] *4*	9$^-$	1344.0+x[k] *10*	14$^+$	2095.9+x[e] *3*	18$^-$
314.3+x[g] *3*	8$^+$	728.3+x[h] *3*	11$^+$	1368.5+x[g] *3*	14$^+$	2187.9+x[l] *10*	17$^+$

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^{130}Te(^{37}Cl,5nγ),^{152}Sm(^{14}N,4nγ) (continued)

^{162}Tm Levels (continued)

E(level)[†]	Jπ[‡]	E(level)[†]	Jπ[‡]	E(level)[†]	Jπ[‡]	E(level)[†]	Jπ[‡]
2255.1+x[h] 4	17+	4145.8+x[p] 10	23+	6150.4+x[f] 4	29−	10170.6+x[f] 7	37−
2273.2+x[d] 3	17+	4196.1+x[n] 4	23−	6188.0+x[k] 11	28+	10298.1+x[n] 6	37−
2333.3+x[j] 3	17−	4259.4+x[l] 10	23+	6221.1+x[d] 4	29+	10592.0+x[e] 9	38−
2424.6+x[f] 3	19−	4308.3+x[j] 4	23−	6394.2+x[n] 5	29−	10616.3+x[c] 6	38+
2507.4+x[k] 10	18+	4309.4+x[c] 4	24+	6481.5+x[p] 10	29+	11136.4+x[d] 7	39+
2523.8+x[g] 3	18+	4340.0+x[h] 5	23+	6538.6+x[e] 4	30−	11345.6+x[f] 9	39−
2535.7+x[c] 3	18+	4490.6+x[o] 10	24+	6650.6+x[c] 4	30+	11744.2+x[e] 10	40−
2635.5+x[i] 4	18−	4510.1+x[m] 4	24−	6658.4+x[l] 11	29+	11755.6+x[c] 7	40+
2731.0+x[e] 3	20−	4519.1+x[g] 10	24+	6752.7+x[j] 5	29−	12274.6+x[d] 8	41+
2799.5+x[d] 3	19+	4554.5+x[f] 4	25−	6799.4+x[m] 5	30−	12575.6+x[f] 10	41−
2834.1+x[l] 10	19+	4613.0+x[k] 11	24+	7045.3+x[f] 4	31−	12896.4+x[e] 11	42−
2909.4+x[h] 4	19+	4655.4+x[d] 4	25+	7069.0+x[k] 11	30+	12935.0+x[c] 9	42+
2923.5+x[j] 4	19−	4751.8+x[i] 7	24−	7094.3+x[d] 4	31+	13451.1+x[d] 9	43+
3075.8+x[c] 3	20+	4855.0+x[p] 10	25+	7255.4+x[n] 5	31−	14129.1+x?[c]	44+
3101.5+x[f] 3	21−	4867.4+x[n] 4	25−	7371.4+x[p] 11	31+	14650.0+x[d] 10	45+
3178.4+x[k] 10	20+	4890.1+x[e] 4	26−	7458.1+x[e] 4	32−	15865.3+x?[d]	47+
3182.3+x[g] 7	20+	5013.4+x[l] 11	25+	7528.3+x[l] 11	31+	y[aq]	6+
3270.0+x? 6	(20−)	5025.9+x[c] 4	26+	7551.8+x[c] 4	32+	97+y[r]	7+
3297.0+x[i] 5	20−	5085.2+x[j] 4	25−	7694.9+x[m] 5	32−	194+y[b]	(8+)
3360.0+x[d] 3	21+	5100.0+x[h] 6	25+	8008.5+x[k] 12	32+	199+y[q]	8+
3418.4+x[e] 4	22−	5215.6+x[m] 4	26−	8014.8+x[f] 5	33−	326+y[r]	9+
3517.6+x[p] 10	21+	5233.4+x[g] 10	26+	8023.5+x[d] 5	33+	490+y[q]	10+
3540.5+x[l] 10	21+	5248.9+x[o] 10	26+	8193.5+x[n] 5	33−	674+y[r]	11+
3583.2+x[j] 4	21−	5324.5+x[f] 4	27−	8417.7+x[l] 13	33+	900+y[q]	12+
3609.0+x[h] 5	21+	5369.7+x[k] 11	26+	8442.2+x[e] 5	34−	1136+y[r]	13+
3661.9+x[c] 3	22+	5406.3+x[d] 4	27+	8512.9+x[c] 5	34+	1410+y[q]	14+
3816.9+x[f] 4	23−	5602.0+x[n] 4	27−	8665.2+x[m] 6	34−	1692+y[r]	15+
3821.0+x[o] 10	22+	5642.0+x[p] 10	27+	9007.8+x[d] 5	35+	2001+y[q]	16+
3860.6+x[g] 7	22+	5684.6+x[e] 4	28−	9057.6+x[f] 5	35−	2314+y[r]	17+
3878.4+x[m] 4	22−	5808.0+x[c] 4	28+	9208.5+x[n] 6	35−	2650+y[q]	18+
3890.1+x[k] 11	(22+)	5812.4+x[l] 11	27+	9487.8+x[e] 7	36−	2965+y[r]	19+
3974.1+x[d] 3	23+	5904.8+x[j] 5	27−	9534.2+x[c] 5	36+		
4007.6+x[i] 5	22−	5976.7+x[m] 4	28−	9704.2+x[m] 6	36−		
4139.8+x[e] 4	24−	6060.6+x[o] 10	28+	10046.2+x[d] 6	37+		

[†] Obtained from a least-squares fit to the listed γ-ray energies and are relative to level at x. Where no uncertainties are given for the γ energies, a value of 1 keV is assumed and used.

[‡] The assignments are those of 1998Es06 and are based on γ-ray multipolarities and general considerations of rotational-band structure and the expected increase of spin with increasing excitation energy.

[#] The level energy, x, lies between ≈67 keV and 192 keV (see the discussion in the ^{162}Tm IT decay data set).

[@] Possible bandhead of the (π 7/2[523])(ν 5/2[523]) band.

[&] From 1987Dr07.

[a] The transition from this level to the bandhead (5+) is not observed. 1998Es06 conclude from this that the γ-ray energy either coincides with one of the x-ray energies or lies below ≈35 keV, which is the limit implied by absorption in the target chamber.

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^{130}Te(^{37}Cl,5nγ),^{152}Sm(^{14}N,4nγ) (continued)

^{162}Tm Levels (continued)

[b] Level shown as uncertain by 1998Es06.
[c] Band(A): (π 7/2[523])(ν 3/2[521]) band, signature=0.
[d] Band(B): (π 7/2[523])(ν 3/2[521]) band, signature=1.
[e] Band(C): (π 7/2[523])(ν 5/2[642]) band, signature=0.
[f] Band(D): (π 7/2[523])(ν 5/2[642]) band, signature=1.
[g] Band(E): (π 1/2[411])(ν 5/2[642]) band, signature=0.
[h] Band(F): (π 1/2[411])(ν 5/2[642]) band, signature=1.
[i] Band(G): (π 1/2[541])(ν 5/2[642]) band, signature=0.
[j] Band(H): (π 1/2[541])(ν 5/2[642]) band, signature=1.
[k] Band(I): (π 7/2[404])(ν 5/2[642]) band, signature=0.
[l] Band(J): (π 7/2[404])(ν 5/2[642]) band, signature=1.
[m] Band(K): (π 7/2[404])(ν 3/2[521]) band, signature=0 Members of the band with J<22 were not reported by 1998Es06.
[n] Band(L): (π 7/2[404])(ν 3/2[521]) band, signature=1 members of the band with J<23 were not reported by 1998Es06.
[o] Band(M): (π 7/2[523])(ν 5/2[523]) band, signature=0 members of the band with J<22 were not reported by 1998Es06.
[p] Band(N): (π 7/2[523])(ν 5/2[523]) band, signature=1 members of the band with J<21 were not reported by 1998Es06.
[q] Band(O): (π 5/2[402])(ν 5/2[642]) band, signature=0.
[r] Band(P): (π 5/2[402])(ν 5/2[642]) band, signature=1.

γ(^{162}Tm)

E_γ[‡]	I_γ[#]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[@]	Comments
(z)		y	6^+	131.29+x	5^+		E_γ: z=y−x−131.29, the value is probably less than or equal to the x-ray energies (see the comment on the energy of the level giving rise to this γ).
(32.2[†])		163.56+x	6^-	131.29+x	5^+		E_γ: from level energies, existence required by level scheme (1987Dr07).
48.50[†] *20*		237.5+x	8^-	189.3+x	7^-		E_γ: from 1987Dr07. I_γ: 1987Dr07 report Iγ(48.50γ)=380 *50*, relative to Iγ(73.87γ)=100 *10*. (1987Dr07 report Eγ=74.56 *7* for the γ that 1998Es06 call 73.87).
61.00[†] *7*		293.7+x	8^+	232.7+x	7^+		
68.14 *16*	68 *11*	305.1+x	9^-	237.5+x	8^-	D	A_2=−0.16 *6*, A_4=0.2 *1*. I_γ: computed by the evaluator from Iγ(115.55γ)=50 *3* and Iγ(67.95γ)/Iγ(116.45γ)=1.35 *21*, from 1987Dr07. (the latter two Eγ values are those reported by 1987Dr07 and differ somewhat from those of 1998Es06.).
73.87 *16*		237.5+x	8^-	163.56+x	6^-		
81.50 *16*	≈30	232.7+x	7^+	151.2+x	6^+		
90.4 *6*	16.7 *14*	413.1+x	9^+	322.9+x	8^+		
95.88 *16*	366 *13*	400.7+x	10^-	305.1+x	9^-	D	A_2=−0.11 *10*, A_4=0.08 *7*. γ reported as a multiplet line in the work of 1987Dr07.
95.95 *19*	≈10	232.7+x	7^+	136.8+x	6^+		
96.0[b] *4*		96.0+x	6^+	x	5^+		
96.0[b] *4*		202.9+x	7^+	107.1+x	6^+		
97[e]		97+y	7^+	y	6^+		
98.9 *3*	5.0 *10*	413.1+x	9^+	314.3+x	8^+		
99.55 *16*	142 *8*	393.3+x	9^+	293.7+x	8^+	D	A_2=−0.38 *10*, A_4=0.07 *11*.
102.6 *5*	≈10	199+y	8^+	97+y	7^+		
103.4 *4*		314.3+x	8^+	210.9+x	7^+	D[&]	R(DCO)=1.54 *25* (1998Es06).
103.6 *4*		210.9+x	7^+	107.1+x	6^+		

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^{130}Te(^{37}Cl,5nγ),^{152}Sm(^{14}N,4nγ) (continued)

γ(^{162}Tm) (continued)

Eγ[‡]	Iγ[#]	Ei(level)	J^π_i	E_f	J^π_f	Mult.[@]	Comments
105.5 *5*	11.6 *10*	555.5+x	10+	449.8+x	9+		
106.6 *3*		202.9+x	7+	96.0+x	6+		
107.4 *4*	≈10	107.1+x	6+	x	5+		
x110.70 *7*						Q	A_2=0.39 *1*, A_4=0.08 *4*. Eγ: from 1987Dr07. 1998Es06 do not report this γ.
111.1 *3*	33.5 *18*	314.3+x	8+	202.9+x	7+	D[&]	R(DCO)=1.45 *18* (1998Es06).
111.93 *16*	15 *3*	322.9+x	8+	210.9+x	7+		
113.95 *15*	442 *14*	514.5+x	11−	400.7+x	10−	D	A_2=−0.19 *2*, A_4=0.21 *6*.
114.98 *22*	41 *7*	210.9+x	7+	96.0+x	6+		
115.55 *19*	50 *3*	305.1+x	9−	189.3+x	7−	Q	A_2=0.18 *4*, A_4=0.05 *6*.
120.3 *3*		322.9+x	8+	202.9+x	7+		
126.32 *17*	17.5 *21*	326+y	9+	199+y	8+		
126.87 *16*	33.6 *14*	449.8+x	9+	322.9+x	8+		
x130.80 *5*							Eγ: from 1987Dr07. 1987Dr07 place this γ between the 6+ and 5+ levels, but 1998Es06 place a 96.00γ in that position. This γ is probably the same as the 131.29 γ reported by 1998Es06 and placed by them between the two low-lying 5+ levels.
131.29 *16*		131.29+x	5+	x	5+		
131.35[e] *19*	25 *3*	326+y	9+	194+y	(8+)		
133.05 *16*	130 *6*	526.4+x	10+	393.3+x	9+	D	A_2=−0.16 *1*, A_4=0.07 *4*.
133.12 *20*	19.3 *14*	728.3+x	11+	595.2+x	10+		
135.35 *17*	30.1 *14*	449.8+x	9+	314.3+x	8+		
142.3 *3*		555.5+x	10+	413.1+x	9+		
145.48 *16*	38.9 *16*	595.2+x	10+	449.8+x	9+		
156.64 *15*	503 *16*	671.0+x	12−	514.5+x	11−	D	A_2=−0.15 *1*, A_4=0.10 *3*.
160.55 *17*	37 *4*	393.3+x	9+	232.7+x	7+		
162.93 *16*	7 *3*	400.7+x	10−	237.5+x	8−		
163.5 *3*		163.56+x	6−	x	5+		
164.00 *16*	111 *5*	690.4+x	11+	526.4+x	10+		
164.44 *17*	34 *4*	490+y	10+	326+y	9+		
167.55 *15*	399 *12*	838.4+x	13−	671.0+x	12−	D	A_2=−0.11 *2*, A_4=0.08 *3*.
173	≈3	728.3+x	11+	555.5+x	10+		
182.22 *17*	14.4 *11*	595.2+x	10+	413.1+x	9+		
182.3 *3*	4.5 *10*	910.7+x	12+	728.3+x	11+		
183.88 *17*	27 *3*	674+y	11+	490+y	10+		
192.15 *22*	36 *5*	787.0+x	11+	595.2+x	10+		
192.28 *22*	20.0 *20*	979.1+x	12+	787.0+x	11+		
192.95 *16*	68 *3*	883.4+x	12+	690.4+x	11+		
193.23 *18*	9.5 *9*	566.3+x	8−	373.1+x	6−		
202.29 *20*	22.9 *17*	413.1+x	9+	210.9+x	7+		
207.26 *18*	17.5 *16*	314.3+x	8+	107.1+x	6+		
209.32 *16*	66.3 *24*	514.5+x	11−	305.1+x	9−	Q	A_2=0.19 *16*, A_4=0.01 *19*.
212.90 *15*	365 *11*	1051.3+x	14−	838.4+x	13−	D	A_2=−0.13 *7*.
217.05 *16*	39.5 *24*	1100.4+x	13+	883.4+x	12+	D	A_2=−0.08 *3*.
222.71 *15*	274 *8*	1274.4+x	15−	1051.3+x	14−	D	A_2=−0.15 *3*, A_4=0.08 *14*.
225.83 *17*	30.3 *18*	900+y	12+	674+y	11+		
228[e]		326+y	9+	97+y	7+		
232.03 *17*	13 *3*	1458.7+x	14+	1226.5+x	13+		
232.68 *16*	55 *3*	526.4+x	10+	293.7+x	8+	Q	A_2=0.15 *7*, A_4=0.10 *9*.
232.7 *4*	10.3 *9*	555.5+x	10+	322.9+x	8+		
234.5 *3*	2.8 *6*	1374.9+x	13−	1140.2+x	12−		
236.53 *18*	24.3 *16*	1136+y	13+	900+y	12+		
239.8 *4*		1149.8+x	13+	910.7+x	12+		

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^{130}Te(^{37}Cl,5nγ),^{152}Sm(^{14}N,4nγ) (continued)

γ(^{162}Tm) (continued)

Eγ[‡]	Iγ[#]	Ei(level)	J^π_i	Ef	J^π_f	Mult.[@]	Comments
241.17 *16*	72 *3*	555.5+x	10+	314.3+x	8+	Q[&]	
243.80 *16*	33.9 *20*	1344.0+x	14+	1100.4+x	13+		
247.49 *17*	16.1 *8*	1226.5+x	13+	979.1+x	12+		
248.21 *17*	12.2 *8*	814.5+x	10−	566.3+x	8−		
256.21 *15*	225 *7*	1530.8+x	16−	1274.4+x	15−	D	A_2=−0.14 *1*, A_4=0.09 *4*.
258.11 *18*	10.4 *18*	1999.3+x	16+	1741.1+x	15+		
260.95 *17*	25.1 *22*	1604.9+x	15+	1344.0+x	14+	D	A_2=−0.22 *15*.
262.45 *18*	14.5 *12*	2535.7+x	18+	2273.2+x	17+		
263.0 *3*	4.1 *6*	1815.9+x	15−	1553.3+x	14−		
263.70 *17*	18.6 *16*	2799.5+x	19+	2535.7+x	18+		
270.28 *16*	123 *4*	671.0+x	12−	400.7+x	10−	Q	A_2=0.21 *5*, A_4=−0.10 *8*.
272.34 *18*	17 *5*	595.2+x	10+	322.9+x	8+		
274.00 *18*	19.3 *10*	2273.2+x	17+	1999.3+x	16+		
274.09 *18*	21.3 *14*	1410+y	14+	1136+y	13+		
276.26 *17*	21 *4*	3075.8+x	20+	2799.5+x	19+		
278.49 *16*	157 *5*	1809.1+x	17−	1530.8+x	16−	D	A_2=−0.08 *1*, A_4=−0.03 *15*.
280.21 *20*	6.0 *8*	2333.3+x	17−	2053.4+x	16−		
281.07 *18*	16.3 *11*	1692+y	15+	1410+y	14+		
282.27 *17*	17.8 *11*	1741.1+x	15+	1458.7+x	14+		
284.25 *16*	30 *3*	3360.0+x	21+	3075.8+x	20+		
285.54 *18*	15.8 *13*	1890.5+x	16+	1604.9+x	15+	D	A_2=−0.17 *10*. Value for a γ shown as doubly placed by 1987Dr07.
286.55 *16*	130 *4*	2095.9+x	18−	1809.1+x	17−	D	A_2=−0.17 *10*. Value for a γ shown as doubly placed by 1987Dr07.
290.6 *3*	7.8 *10*	490+y	10+	199+y	8+		
293.0 *3*	5.3 *11*	1010.2+x	11−	717.2+x	9−		
296	≈3	1663.7+x	15+	1368.5+x	14+		
297.10 *16*	98 *5*	690.4+x	11+	393.3+x	9+	Q	A_2=0.20 *8*, A_4=−0.20 *14*.
297.35 *19*	15 *3*	2187.9+x	17+	1890.5+x	16+		
301.75 *16*	30.3 *21*	3661.9+x	22+	3360.0+x	21+		
303.48 *18*	5.1 *12*	3821.0+x	22+	3517.6+x	21+		
306.34 *16*	74 *3*	2731.0+x	20−	2424.6+x	19−	D	A_2=−0.22 *6*.
309.1 *3*	12.9 *13*	2001+y	16+	1692+y	15+		
312.41 *17*	24.9 *21*	3974.1+x	23+	3661.9+x	22+		
313.5 *3*	10.6 *11*	2314+y	17+	2001+y	16+		
314.72 *24*	45.9 *21*	728.3+x	11+	413.1+x	9+		
316.74 *16*	49.2 *19*	3418.4+x	22−	3101.5+x	21−		
319.40 *18*	11.6 *19*	2507.4+x	18+	2187.9+x	17+		
323.07 *17*	30.6 *16*	4139.8+x	24−	3816.9+x	23−		
323.79 *16*	232 *7*	838.4+x	13−	514.5+x	11−	Q	A_2=0.29 *8*, A_4=−0.14 *10*.
324.47 *23*	13 *3*	4145.8+x	23+	3821.0+x	22+		
325.88 *17*	25.4 *20*	1140.2+x	12−	814.5+x	10−		
326.69 *19*	10.7 *15*	2834.1+x	19+	2507.4+x	18+		
328.37 *16*	88 *3*	2424.6+x	19−	2095.9+x	18−		
335.25 *17*	22.2 *19*	4309.4+x	24+	3974.1+x	23+		
335.48 *19*	19.4 *11*	4890.1+x	26−	4554.5+x	25−		
337.03 *17*	27 *3*	787.0+x	11+	449.8+x	9+		
344.37 *22*	6.8 *9*	3178.4+x	20+	2834.1+x	19+		
344.62 *18*	10.3 *12*	4490.6+x	24+	4145.8+x	23+		
345.61 *17*	16.8 *13*	4655.4+x	25+	4309.4+x	24+		
348.03 *19*	17.8 *18*	674+y	11+	326+y	9+		
355.20 *16*	131 *5*	910.7+x	12+	555.5+x	10+		
355.4 *3*	4.7 *11*	566.3+x	8−	210.9+x	7+	D[&a]	
356.95 *16*	107 *5*	883.4+x	12+	526.4+x	10+	Q	A_2=0.28 *10*.
360.00 *17*	13.2 *10*	5684.6+x	28−	5324.5+x	27−		

Continued on next page (footnotes at end of table)

^{130}Te(^{37}Cl,5nγ),^{152}Sm(^{14}N,4nγ) (continued)

γ(^{162}Tm) (continued)

Eγ[‡]	Iγ[#]	Ei(level)	J_i^π	Ef	J_f^π	Mult.[@]	Comments
364.17 *19*	9.2 *9*	4855.0+x	25+	4490.6+x	24+		
364.64 *17*	12.7 *11*	1374.9+x	13−	1010.2+x	11−		
370.26 *17*	13.5 *15*	5025.9+x	26+	4655.4+x	25+		
370.31 *16*	56.0 *22*	3101.5+x	21−	2731.0+x	20−	D	A_2=−0.13 *6*.
380.17 *17*	240 *10*	1051.3+x	14−	671.0+x	12−	Q	A_2=0.22 *4*, A_4=−0.17 *6*.
380.43 *18*	13.1 *20*	5406.3+x	27+	5025.9+x	26+		
384.01 *17*	28.7 *14*	979.1+x	12+	595.2+x	10+		
388.4 *3*	8.0 *9*	6538.6+x	30−	6150.4+x	29−		
389.4[e] *5*		2053.4+x	16−	1663.7+x	15+	D[&a]	
393.35 *22*	6.0 *9*	5642.0+x	27+	5248.9+x	26+		
393.89 *24*	5.6 *9*	5248.9+x	26+	4855.0+x	25+		
398.43 *16*	40.8 *19*	3816.9+x	23−	3418.4+x	22−		
401.48 *18*	10.8 *11*	5808.0+x	28+	5406.3+x	27+		
401.62 *18*	8.4 *8*	814.5+x	10−	413.1+x	9+	D[&a]	R(DCO)=1.48 *15* (1998Es06).
403.0 *3*	4.1 *18*	717.2+x	9−	314.3+x	8+	D[&a]	
403.57 *22*	5.3 *14*	1553.3+x	14−	1149.8+x	13+	D[&a]	R(DCO)=1.56 *25* (1998Es06).
409.81 *20*	22.9 *23*	900+y	12+	490+y	10+		
410.10 *16*	101 *4*	1100.4+x	13+	690.4+x	11+	Q	A_2=0.29 *9*.
411.89 *22*	6.8 *8*	1140.2+x	12−	728.3+x	11+	D[&a]	
412.9 *5*	4.6 *11*	7458.1+x	32−	7045.3+x	31−		
412.96 *18*	8.9 *10*	6221.1+x	29+	5808.0+x	28+		
413.48 *19*	30.4 *25*	1553.3+x	14−	1140.2+x	12−		
414.62 *16*	24.2 *14*	4554.5+x	25−	4139.8+x	24−		
418.6 *3*	3.8 *10*	6060.6+x	28+	5642.0+x	27+		
419.79 *20*	7.8 *18*	2333.3+x	17−	1913.6+x	16+	D[&a]	R(DCO)=1.56 *32* (1998Es06).
420.8 *3*	3.8 *10*	6481.5+x	29+	6060.6+x	28+		
421.35 *16*	49.4 *20*	1149.8+x	13+	728.3+x	11+		
427.4 *5*	2.1 *7*	8442.2+x	34−	8014.8+x	33−		
429.45 *25*	5.5 *18*	6650.6+x	30+	6221.1+x	29+		
430[e]		9487.8+x	36−	9057.6+x	35−		
434.1 *5*	15.2 *12*	5324.5+x	27−	4890.1+x	26−		
436.03 *15*	307 *9*	1274.4+x	15−	838.4+x	13−	Q	A_2=0.31 *7*, A_4=−0.10 *9*.
439.36 *17*	34.5 *17*	1226.5+x	13+	787.0+x	11+		
440.73 *19*	25.5 *19*	1815.9+x	15−	1374.9+x	13−		
443.7 *3*	5.2 *10*	7094.3+x	31+	6650.6+x	30+		
447.26 *19*	10.7 *19*	1815.9+x	15−	1368.5+x	14+	D[&a]	R(DCO)=1.40 *29* (1998Es06).
454.55 *21*	5.7 *9*	1010.2+x	11−	555.5+x	10+	D[&a]	R(DCO)=1.45 *23* (1998Es06).
457.86 *16*	120 *5*	1368.5+x	14+	910.7+x	12+	Q	A_2=0.28 *3*, A_4=−0.21 *6*.
458	≈4	7551.8+x	32+	7094.3+x	31+		
460.54 *16*	113 *5*	1344.0+x	14+	883.4+x	12+	Q	A_2=0.41 *10*. γ reported as a multiplet line in the work of 1987Dr07.
462.34 *18*	27.2 *17*	1136+y	13+	674+y	11+		
464.05 *20*	9.6 *19*	1374.9+x	13−	910.7+x	12+	D[&a]	R(DCO)=1.53 *25* (1998Es06).
465.91 *18*	9.1 *10*	6150.4+x	29−	5684.6+x	28−		
479.70 *16*	262 *8*	1530.8+x	16−	1051.3+x	14−		
479.71 *17*	33.9 *18*	1458.7+x	14+	979.1+x	12+		
500.23 *17*	34.7 *12*	2053.4+x	16−	1553.3+x	14−		
504.45 *16*	112 *5*	1604.9+x	15+	1100.4+x	13+		
506.4 *5*	5.5 *9*	7045.3+x	31−	6538.6+x	30−		
510.48 *18*	26.6 *25*	1410+y	14+	900+y	12+		
513.87 *17*	41.8 *19*	1663.7+x	15+	1149.8+x	13+		
514.82 *16*	51.0 *20*	1741.1+x	15+	1226.5+x	13+		
517.26 *18*	26.9 *18*	2333.3+x	17−	1815.9+x	15−		
526.28 *16*	48.1 *24*	2799.5+x	19+	2273.2+x	17+		

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^{130}Te(^{37}Cl,5nγ),^{152}Sm(^{14}N,4nγ) (continued)

γ(^{162}Tm) (continued)

E_γ[‡]	I_γ[#]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[@]	Comments
532.17 *17*	39 *4*	2273.2+x	17$^+$	1741.1+x	15$^+$		
534.55 *16*	271 *9*	1809.1+x	17$^-$	1274.4+x	15$^-$	Q	A_2=0.27 *5*, A_4=−0.10 *7*.
536.51 *18*	36.2 *21*	2535.7+x	18$^+$	1999.3+x	16$^+$		
540.21 *17*	39 *6*	3075.8+x	20$^+$	2535.7+x	18$^+$		
540.49 *18*	22 *4*	1999.3+x	16$^+$	1458.7+x	14$^+$		
544[e]		2799.5+x	19$^+$	2255.1+x	17$^+$	Q[&]	
545.07 *16*	104 *4*	1913.6+x	16$^+$	1368.5+x	14$^+$		
546.51 *16*	95 *4*	1890.5+x	16$^+$	1344.0+x	14$^+$	Q	A_2=0.24 *15*.
552.06 *17*	21.5 *18*	3075.8+x	20$^+$	2523.8+x	18$^+$	Q[&]	R(DCO)=1.04 *10* (1998Es06).
555.84 *18*	29.8 *20*	1692+y	15$^+$	1136+y	13$^+$		
556.4 *5*	4.0 *10*	8014.8+x	33$^-$	7458.1+x	32$^-$		
560.37 *16*	64 *3*	3360.0+x	21$^+$	2799.5+x	19$^+$		
565.12 *16*	253 *8*	2095.9+x	18$^-$	1530.8+x	16$^-$		
582.14 *18*	22.4 *10*	2635.5+x	18$^-$	2053.4+x	16$^-$		
583.08 *16*	98 *4*	2187.9+x	17$^+$	1604.9+x	15$^+$	Q	A_2=0.39 *13*. γ reported as a multiplet line in the work of 1987Dr07.
586.14 *16*	65 *6*	3661.9+x	22$^+$	3075.8+x	20$^+$		
590.14 *17*	26.1 *16*	2923.5+x	19$^-$	2333.3+x	17$^-$		
590.48 *19*	21.9 *20*	2001+y	16$^+$	1410+y	14$^+$		
591.32 *17*	33.8 *18*	2255.1+x	17$^+$	1663.7+x	15$^+$		
605.42 *19*	12.5 *8*	4145.8+x	23$^+$	3540.5+x	21$^+$	Q[&]	R(DCO)=1.13 *11* (1998Es06).
609.35 *24*	6.0 *10*	2273.2+x	17$^+$	1663.7+x	15$^+$	Q[&]	
610.36 *16*	67 *3*	2523.8+x	18$^+$	1913.6+x	16$^+$	Q	A_2=0.38 *2*, A_4=−0.13 *6*.
614.27 *17*	58.2 *22*	3974.1+x	23$^+$	3360.0+x	21$^+$		
615.72 *16*	204 *7*	2424.6+x	19$^-$	1809.1+x	17$^-$	Q	A_2=0.31 *18*.
616.87 *16*	76.3 *25*	2507.4+x	18$^+$	1890.5+x	16$^+$	Q	A_2=0.32 *10*.
622.08 *17*	28.8 *20*	2535.7+x	18$^+$	1913.6+x	16$^+$	Q[&]	R(DCO)=1.00 *12* (1998Es06).
622.45 *20*	21.5 *17*	2314+y	17$^+$	1692+y	15$^+$		
628.06 *19*	16.1 *24*	4145.8+x	23$^+$	3517.6+x	21$^+$		
631.70 *18*	10.1 *11*	4510.1+x	24$^-$	3878.4+x	22$^-$		
634.5 *4*	5.5 *10*	3270.0+x?	(20$^-$)	2635.5+x	18$^-$		
635.09 *16*	201 *6*	2731.0+x	20$^-$	2095.9+x	18$^-$	Q	A_2=0.24 *3*, A_4=−0.2 *1*.
646.21 *16*	86 *4*	2834.1+x	19$^+$	2187.9+x	17$^+$	Q	A_2=0.30 *10*.
647.38 *17*	59.3 *20*	4309.4+x	24$^+$	3661.9+x	22$^+$		
649.5 *3*	12.4 *13*	2650+y	18$^+$	2001+y	16$^+$		
651.20 *23*	10.7 *12*	2965+y	19$^+$	2314+y	17$^+$		
654.36 *18*	26.4 *14*	2909.4+x	19$^+$	2255.1+x	17$^+$		
658.5[d] *6*	21.2[d] *16*	3182.3+x	20$^+$	2523.8+x	18$^+$		
658.5[d] *6*	10.0[d] *10*	4519.1+x	24$^+$	3860.6+x	22$^+$		
659.68 *18*	24.4 *15*	3583.2+x	21$^-$	2923.5+x	19$^-$		
661.51 *20*	12.5 *7*	3297.0+x	20$^-$	2635.5+x	18$^-$		
669.93 *22*	14.9 *21*	4490.6+x	24$^+$	3821.0+x	22$^+$		
670.91 *17*	64 *3*	3178.4+x	20$^+$	2507.4+x	18$^+$		
671.30 *17*	8.1 *9*	4867.4+x	25$^-$	4196.1+x	23$^-$		
677.06 *16*	144 *5*	3101.5+x	21$^-$	2424.6+x	19$^-$	Q	A_2=0.31 *6*, A_4=−0.3 *2*.
678.34 *18*	15.4 *13*	3860.6+x	22$^+$	3182.3+x	20$^+$		
681.20 *17*	52.9 *20*	4655.4+x	25$^+$	3974.1+x	23$^+$		
683.44 *17*	31.0 *23*	3517.6+x	21$^+$	2834.1+x	19$^+$	Q[&]	R(DCO)=0.97 *8* (1998Es06).
687.37 *16*	153 *5*	3418.4+x	22$^-$	2731.0+x	20$^-$	Q	A_2=0.22 *3*, A_4=−0.23 *9*.
699.60 *18*	16.1 *9*	3609.0+x	21$^+$	2909.4+x	19$^+$		
703.39 *18*	13.9 *18*	2799.5+x	19$^+$	2095.9+x	18$^-$	D[&]	R(DCO)=1.33 *13* (1998Es06).
705.71 *19*	13.5 *10*	5215.6+x	26$^-$	4510.1+x	24$^-$		

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^{130}Te(^{37}Cl,5nγ),^{152}Sm(^{14}N,4nγ) (continued)

γ(^{162}Tm) (continued)

E_γ ‡	I_γ #	E_i(level)	J^π_i	E_f	J^π_f	Mult. @	Comments
706.35 17	29.4 19	3540.5+x	21+	2834.1+x	19+		
709.21 22	15.5 23	4855.0+x	25+	4145.8+x	23+		
710.6 3	6.1 5	4007.6+x	22−	3297.0+x	20−		
711.72 17	42.8 18	3890.1+x	(22+)	3178.4+x	20+		
714.7 5	3.5 8	5233.4+x	26+	4519.1+x	24+		
715.60 16	112 4	3816.9+x	23−	3101.5+x	21−		
716.86 17	39.7 16	5025.9+x	26+	4309.4+x	24+		
718.71 23	10.7 9	4259.4+x	23+	3540.5+x	21+		
721.25 16	107 4	4139.8+x	24−	3418.4+x	22−		
722.93 19	18.1 13	4613.0+x	24+	3890.1+x	(22+)		
725.08 20	14.1 18	1999.3+x	16+	1274.4+x	15−	D&	R(DCO)=1.43 35 (1998Es06). This value is for the sum of the the 725.08 and 726.6 gammas.
725.16 19	15.2 13	4308.3+x	23−	3583.2+x	21−		
726.6 3	13.3 19	2535.7+x	18+	1809.1+x	17−	D&	R(DCO)=1.43 35 (1998Es06). This value is for the sum of the the 725.08 and 726.6 gammas.
729.6 3	5.3 11	5248.9+x	26+	4519.1+x	24+	Q&	
731.01 23	9.0 9	4340.0+x	23+	3609.0+x	21+		
734.52 18	13.3 10	5602.0+x	27−	4867.4+x	25−		
737.53 16	64.6 25	4554.5+x	25−	3816.9+x	23−		
742.1 3	5.6 12	4259.4+x	23+	3517.6+x	21+	Q&	R(DCO)=0.99 15 (1998Es06).
742.42 20	12.5 18	2273.2+x	17+	1530.8+x	16−	Q&	R(DCO)=1.44 18 (1998Es06).
742.5 4	3.3 8	5233.4+x	26+	4490.6+x	24+		
744.2 4	3.4 4	4751.8+x	24−	4007.6+x	22−		
750.45 16	75 3	4890.1+x	26−	4139.8+x	24−		
750.92 17	41 3	5406.3+x	27+	4655.4+x	25+		
754.05 20	10.3 13	5013.4+x	25+	4259.4+x	23+		
756.61 18	12.7 13	5369.7+x	26+	4613.0+x	24+		
758.65 25	11.1 11	5248.9+x	26+	4490.6+x	24+		
759.94 21	6.4 9	5100.0+x	25+	4340.0+x	23+		
761.12 17	16.8 11	5976.7+x	28−	5215.6+x	26−		
769.97 16	42.6 19	5324.5+x	27−	4554.5+x	25−		
776.83 20	12.7 10	5085.2+x	25−	4308.3+x	23−		
782.20 17	35.4 24	5808.0+x	28+	5025.9+x	26+		
786.89 21	13.6 14	5642.0+x	27+	4855.0+x	25+		
792.24 18	16.1 11	6394.2+x	29−	5602.0+x	27−		
794.50 16	50.9 21	5684.6+x	28−	4890.1+x	26−		
798.94 22	7.7 11	5812.4+x	27+	5013.4+x	25+		
811.7 3	9.6 14	6060.6+x	28+	5248.9+x	26+		
814.84 17	34.4 16	6221.1+x	29+	5406.3+x	27+		
818.34 20	9.3 12	6188.0+x	28+	5369.7+x	26+		
819.68 23	9.0 9	5904.8+x	27−	5085.2+x	25−		
822.65 18	14.3 10	6799.4+x	30−	5976.7+x	28−		
826.00 17	27.4 14	6150.4+x	29−	5324.5+x	27−		
839.57 23	9.9 12	6481.5+x	29+	5642.0+x	27+		
842.63 17	25 3	6650.6+x	30+	5808.0+x	28+		
846.09 23	6.2 13	6658.4+x	29+	5812.4+x	27+		
847.82 20	6.2 10	6752.7+x	29−	5904.8+x	27−		
853.82 16	39.0 18	6538.6+x	30−	5684.6+x	28−		
861.20 17	13.4 10	7255.4+x	31−	6394.2+x	29−		
869.9 3	5.4 12	7528.3+x	31+	6658.4+x	29+		
873.24 18	25.0 14	7094.3+x	31+	6221.1+x	29+		
881.01 23	6.1 12	7069.0+x	30+	6188.0+x	28+		
889.4 5	3.3 10	8417.7+x	33+	7528.3+x	31+		
889.9 4	6.7 12	7371.4+x	31+	6481.5+x	29+		

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^{130}Te(^{37}Cl,5nγ),^{152}Sm(^{14}N,4nγ) (continued)

γ(^{162}Tm) (continued)

E_γ[‡]	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	Comments
894.96 *17*	18.0 *14*	7045.3+x	31⁻	6150.4+x	29⁻		
895.49 *19*	10.4 *11*	7694.9+x	32⁻	6799.4+x	30⁻		
901.16 *18*	20.7 *19*	7551.8+x	32⁺	6650.6+x	30⁺		
919.48 *18*	25.1 *15*	7458.1+x	32⁻	6538.6+x	30⁻		
929.17 *20*	14.4 *12*	8023.5+x	33⁺	7094.3+x	31⁺		
938.10 *19*	9.2 *9*	8193.5+x	33⁻	7255.4+x	31⁻		
939.54 *22*	4.0 *10*	8008.5+x	32⁺	7069.0+x	30⁺		
961.08 *19*	15.5 *17*	8512.9+x	34⁺	7551.8+x	32⁺		
969.57 *19*	13.5 *11*	8014.8+x	33⁻	7045.3+x	31⁻		
970.32 *22*	7.6 *9*	8665.2+x	34⁻	7694.9+x	32⁻		
984.01 *21*	16.2 *13*	8442.2+x	34⁻	7458.1+x	32⁻		
984.36 *23*	9.1 *10*	9007.8+x	35⁺	8023.5+x	33⁺		
1014.98 *20*	6.3 *8*	9208.5+x	35⁻	8193.5+x	33⁻		
1021.33 *22*	8.7 *10*	9534.2+x	36⁺	8512.9+x	34⁺		
1038.34 *25*	6.9 *9*	10046.2+x	37⁺	9007.8+x	35⁺		
1038.98 *24*	4.9 *8*	9704.2+x	36⁻	8665.2+x	34⁻		
1042.74 *24*	10.1 *9*	9057.6+x	35⁻	8014.8+x	33⁻		
1045.6 *5*	8.0 *9*	9487.8+x	36⁻	8442.2+x	34⁻		
1047.5 *3*	≈4	5602.0+x	27⁻	4554.5+x	25⁻	Q[&]	
1050.48 *22*	6.5 *8*	4867.4+x	25⁻	3816.9+x	23⁻	Q[&]	R(DCO)=0.95 *16* (1998Es06).
1075.60 *21*	5.1 *8*	5215.6+x	26⁻	4139.8+x	24⁻	Q[&]	
1082.1 *3*	6.0 *8*	10616.3+x	38⁺	9534.2+x	36⁺		
1089.6 *3*	4.5 *8*	10298.1+x	37⁻	9208.5+x	35⁻		
1090.2 *3*	4.6 *8*	11136.4+x	39⁺	10046.2+x	37⁺		
1091.80 *21*	9.4 *10*	4510.1+x	24⁻	3418.4+x	22⁻	Q[&]	R(DCO)=0.91 *13* (1998Es06).
1094.66 *23*	5.1 *9*	4196.1+x	23⁻	3101.5+x	21⁻	Q[&]	R(DCO)=0.92 *15* (1998Es06).
1104.2 *5*	5.7 *9*	10592.0+x	38⁻	9487.8+x	36⁻		
1113.0 *5*	7.7 *8*	10170.6+x	37⁻	9057.6+x	35⁻		
1138.2 *4*	≈3	12274.6+x	41⁺	11136.4+x	39⁺		
1139.3 *4*	4.1 *7*	11755.6+x	40⁺	10616.3+x	38⁺		
1147.35 *19*	5.0 *9*	3878.4+x	22⁻	2731.0+x	20⁻	Q[&]	R(DCO)=0.90 *33* (1998Es06).
1152.2[c] *5*	6.0[c] *14*	11744.2+x	40⁻	10592.0+x	38⁻		
1152.2[c] *5*	6.0[c] *14*	12896.4+x	42⁻	11744.2+x	40⁻		
1175.0 *5*	8.6 *9*	11345.6+x	39⁻	10170.6+x	37⁻		
1176.5 *4*	≈2	13451.1+x	43⁺	12274.6+x	41⁺		
1179.4 *5*	≈2	12935.0+x	42⁺	11755.6+x	40⁺		
1194[e]		14129.1+x?	44⁺	12935.0+x	42⁺		
1198.9 *4*	≈1	14650.0+x	45⁺	13451.1+x	43⁺		
1215[e]		15865.3+x?	47⁺	14650.0+x	45⁺		
1230.0 *5*	6.1 *9*	12575.6+x	41⁻	11345.6+x	39⁻		

[†] 1998Es06 do not provide information on γ's having energies below 68 keV.

[‡] From 1998Es06, unless otherwise noted.

[#] From 1998Es06, ^{130}Te(^{37}Cl,5nγ), at 166 MeV. The only other study to report Iγ values is that of 1987Dr07. These latter values are not given here but are taken into account in arriving at the adopted γ branching from the various levels (in the Adopted Levels, Gammas data set).

[@] Unless noted otherwise, the explicit dipole (D) and quadrupole (Q) assignments were made by the evaluator from the $\gamma(\theta)$ coefficients of 1987Dr07. They are based on the statement of 1986Dr06 that the stretched E2 γ's give $A_2 \approx 0.25$ *8* and $A_4 \approx -0.07$ *4*. The dipole transitions with ΔJ=1 are expected to have smaller and negative A_2's. It is probable that all the γ's having mult=Q are in fact E2 rather than M2.

[&] From the DCO ratio (the value is not always given) quoted by 1998Es06. These authors state that the DCO ratios should be ≈1.0

Continued on next page (footnotes at end of table)

^{130}Te(^{37}Cl,5nγ),^{152}Sm(^{14}N,4nγ) (continued)

γ(^{162}Tm) (continued)

for stretched quadrupole transitions and ≈1.5 for stretched dipole transitions.

[a] 1998Es06 assign this γ as E1 rather than M1, since an M1 assignment leads to an unreasonably large reduced M1 matrix element for this interband (dipole) transition.

[b] Multiply placed.

[c] Multiply placed with undivided intensity.

[d] Multiply placed with intensity suitably divided.

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

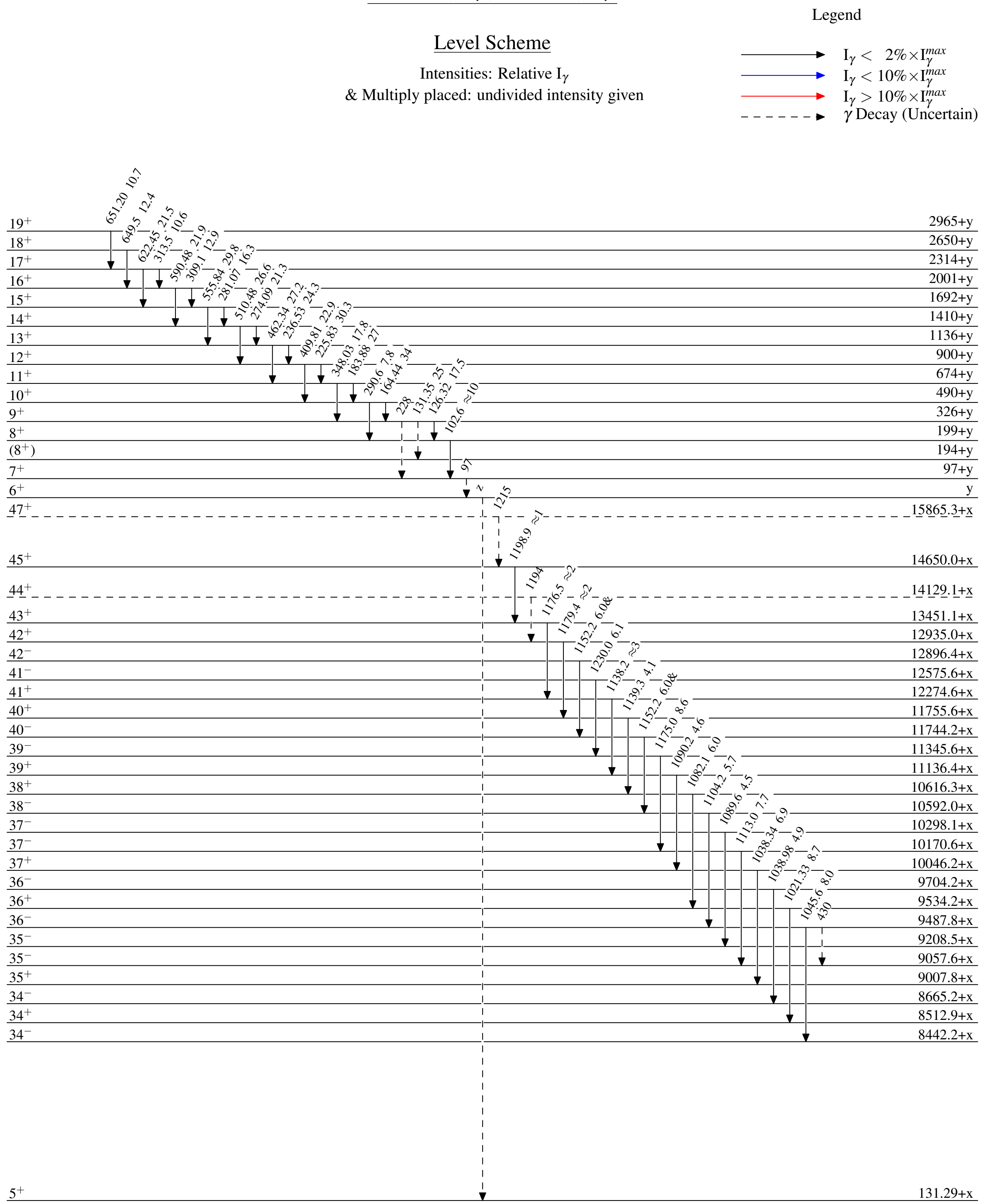
[x] γ ray not placed in level scheme.

$^{130}Te(^{37}Cl,5n\gamma),^{152}Sm(^{14}N,4n\gamma)$

Level Scheme

Intensities: Relative I_γ

& Multiply placed: undivided intensity given



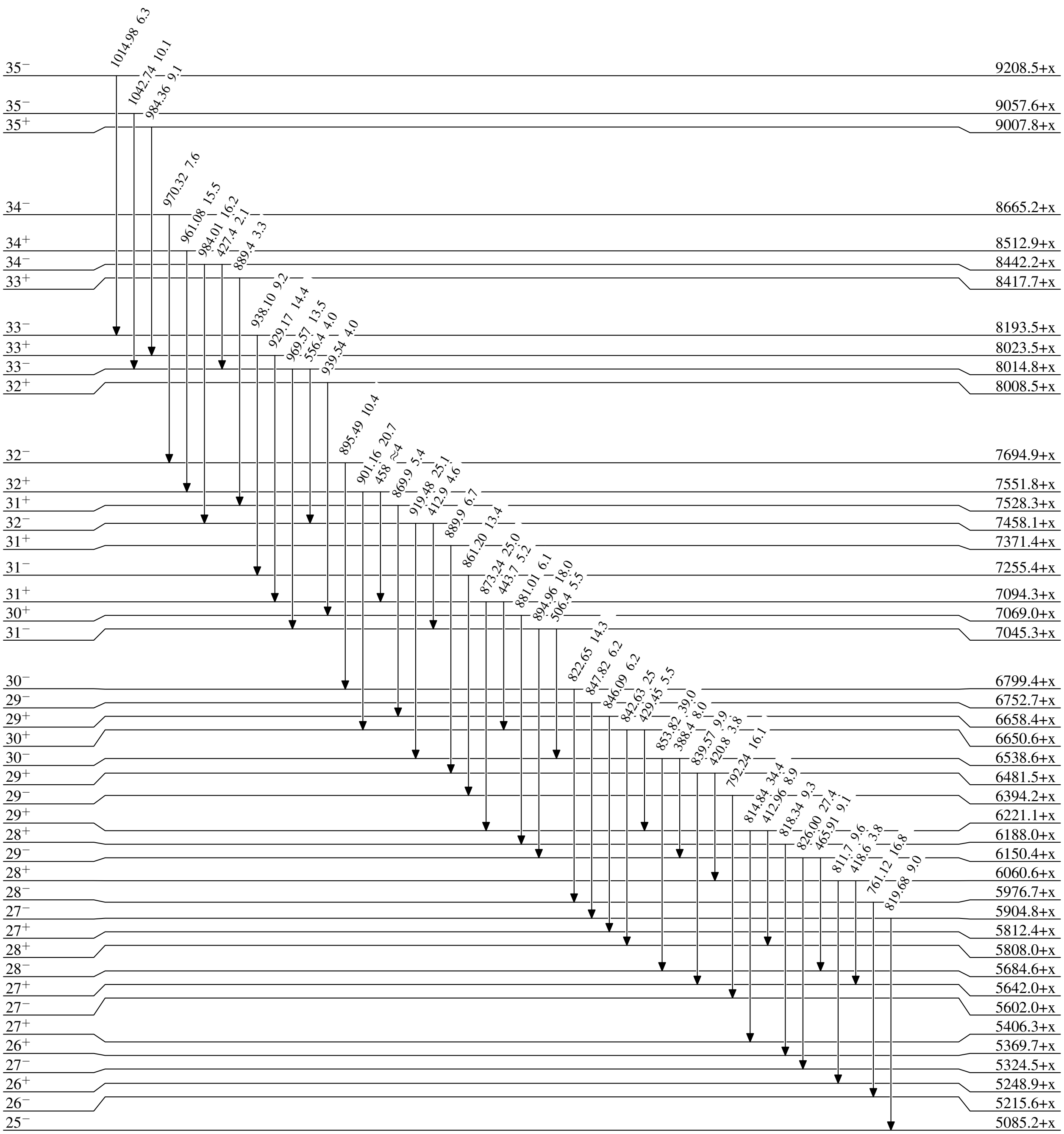
^{130}Te(^{37}Cl,5nγ),^{152}Sm(^{14}N,4nγ)

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

Legend

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



$^{162}_{69}Tm_{93}$

$^{130}Te(^{37}Cl,5n\gamma),^{152}Sm(^{14}N,4n\gamma)$

Level Scheme (continued)

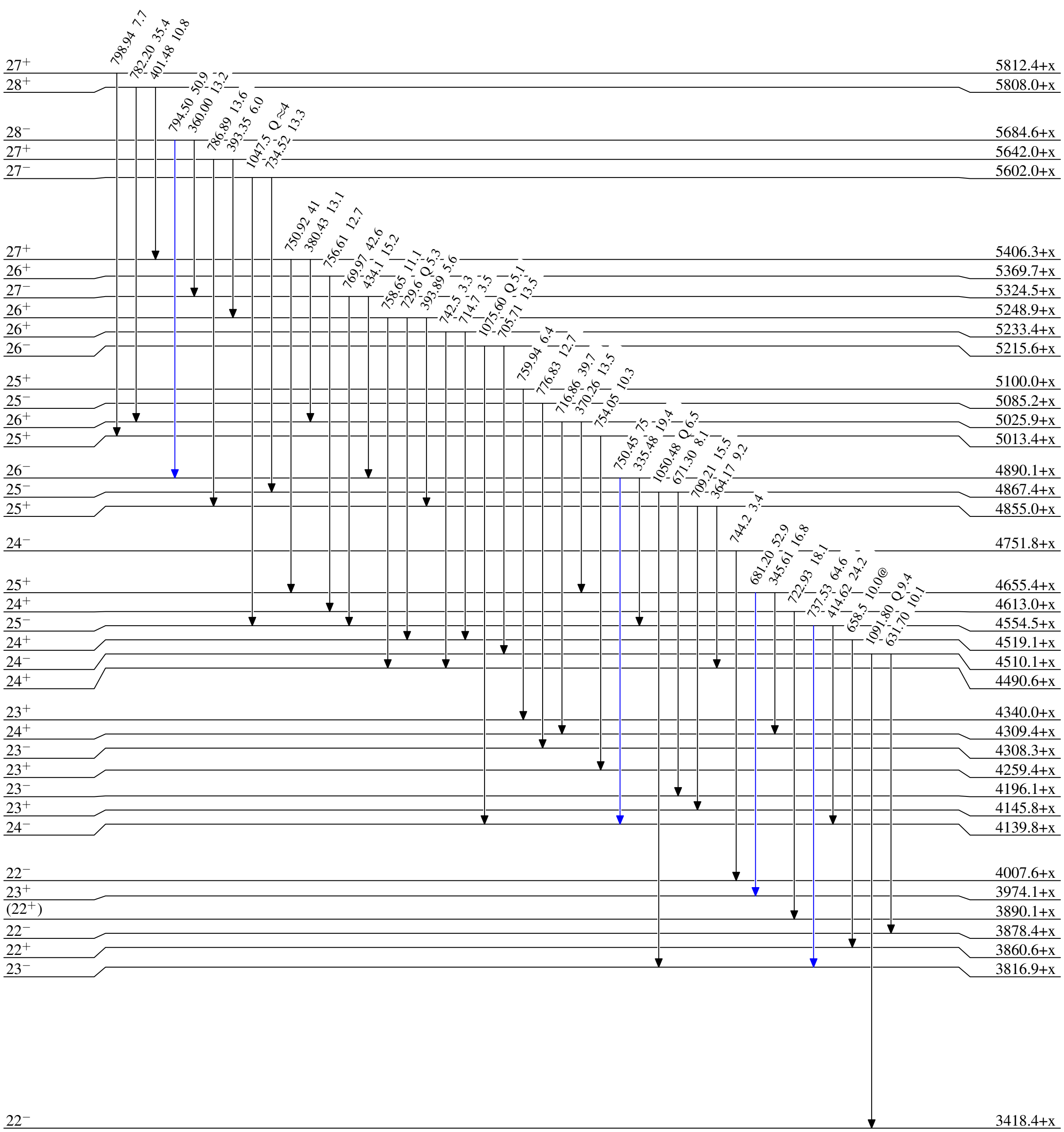
Intensities: Relative I_γ

& Multiply placed: undivided intensity given

@ Multiply placed: intensity suitably divided

Legend

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



$^{162}_{69}Tm_{93}$

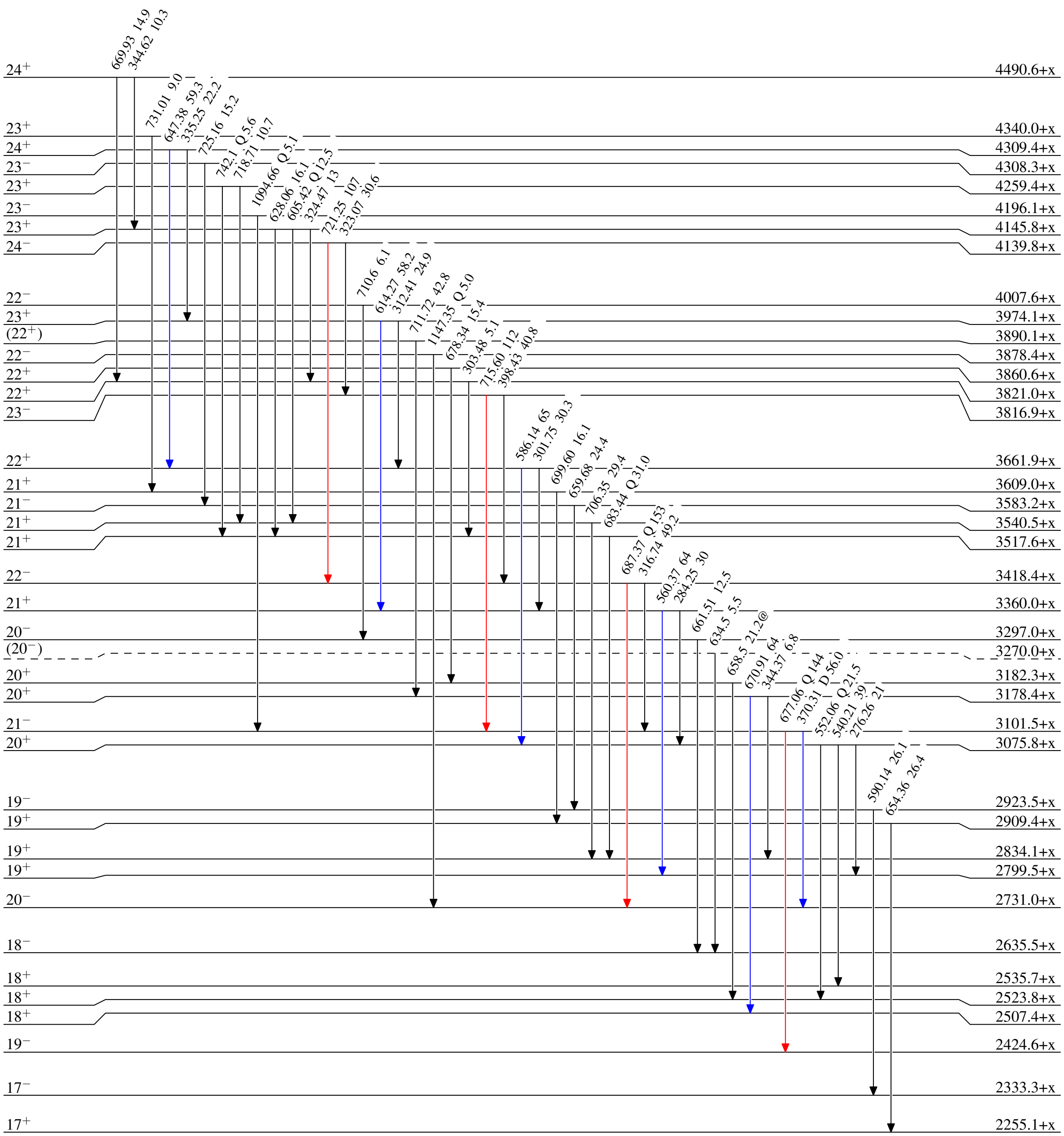
^{130}Te(^{37}Cl,5nγ),^{152}Sm(^{14}N,4nγ)

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

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



$^{162}_{69}Tm_{93}$

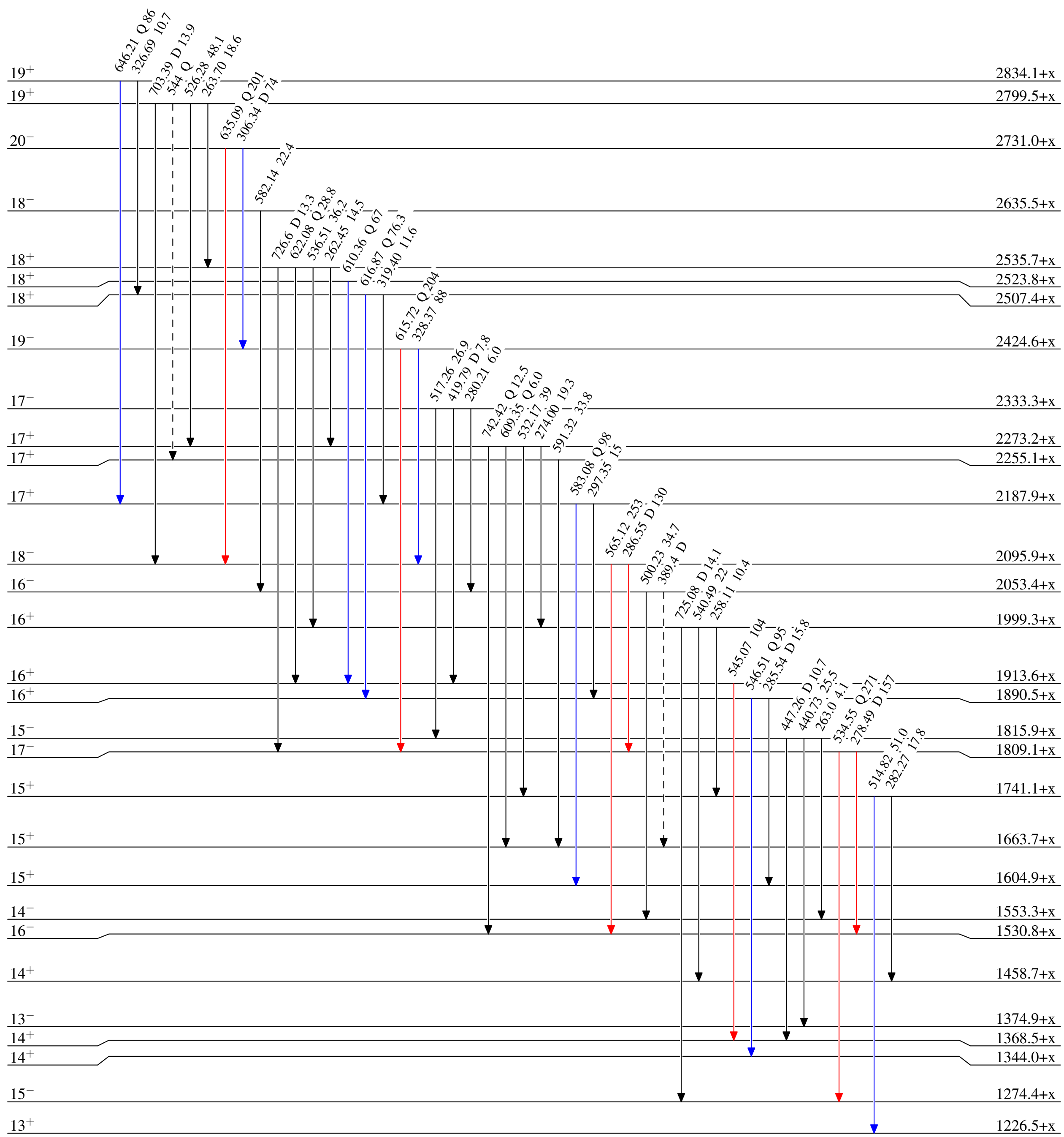
$^{130}Te(^{37}Cl,5n\gamma),^{152}Sm(^{14}N,4n\gamma)$

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

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

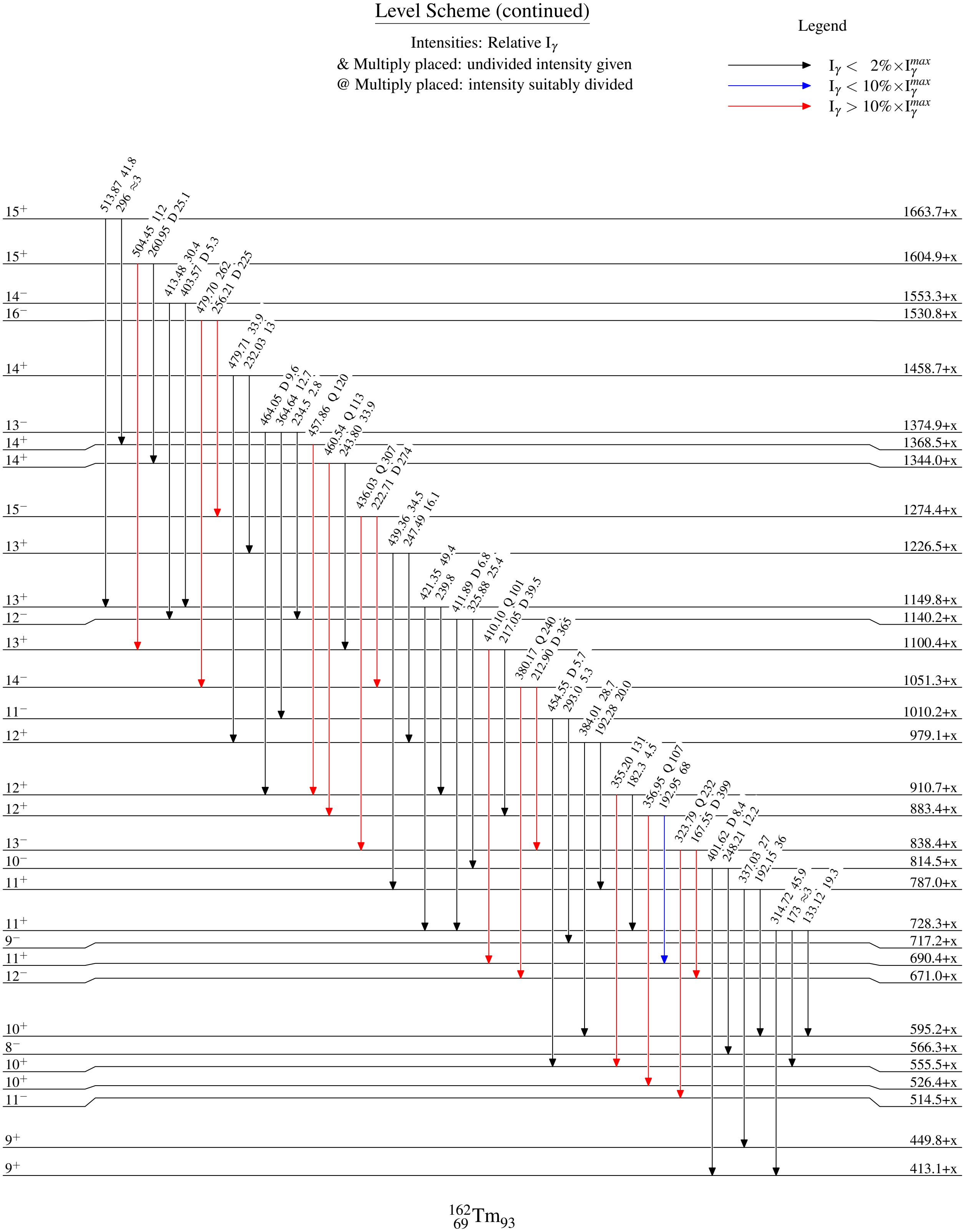


$^{162}_{69}Tm_{93}$

^{130}Te(^{37}Cl,5nγ),^{152}Sm(^{14}N,4nγ)

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



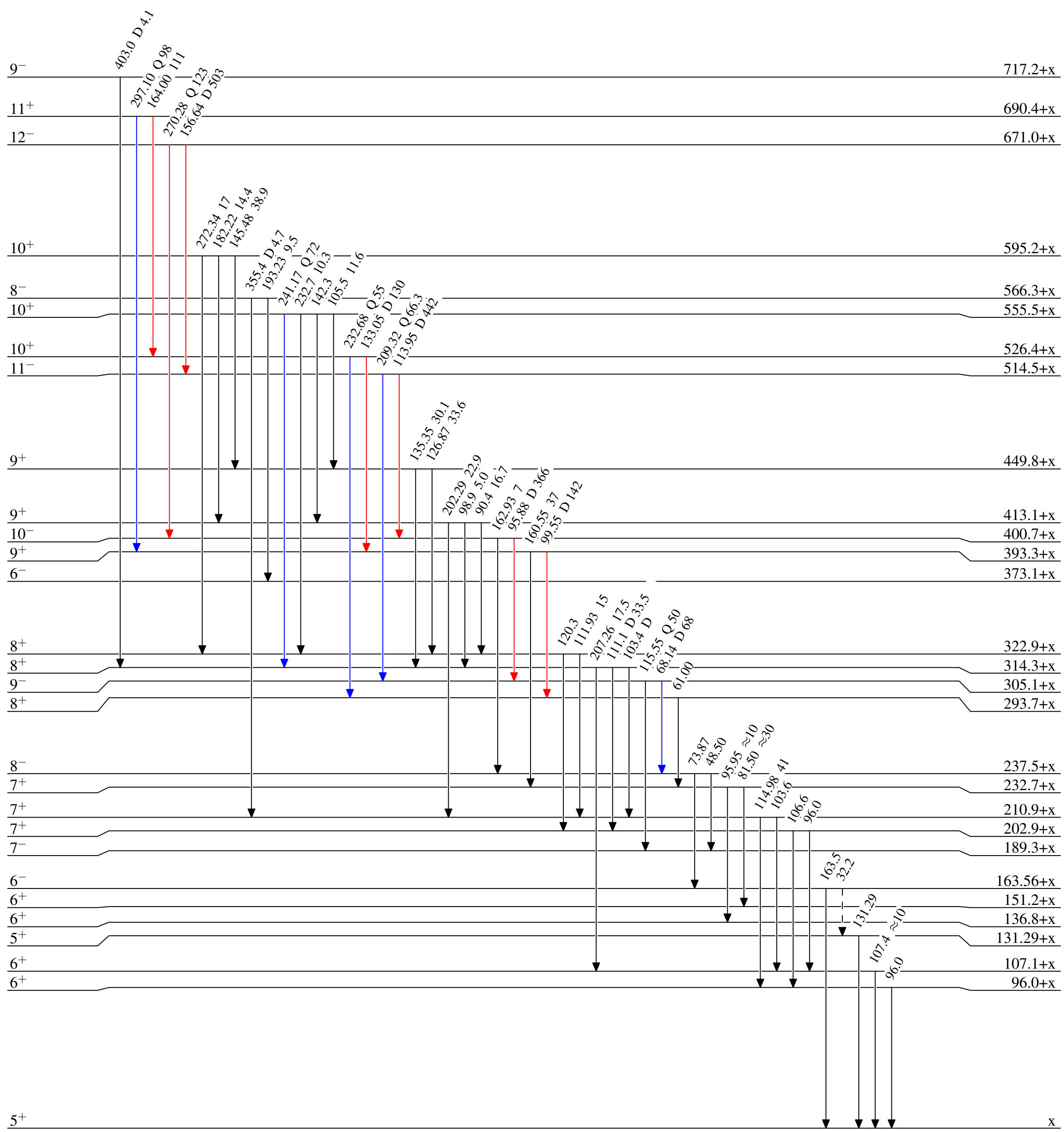
^{130}Te(^{37}Cl,5nγ),^{152}Sm(^{14}N,4nγ)

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

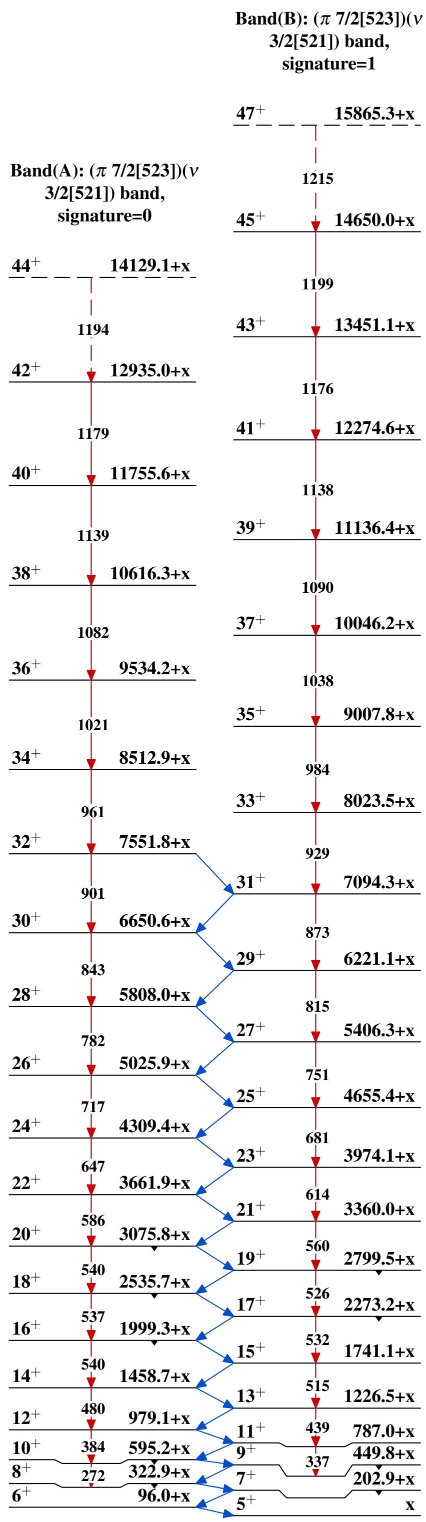
Legend

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



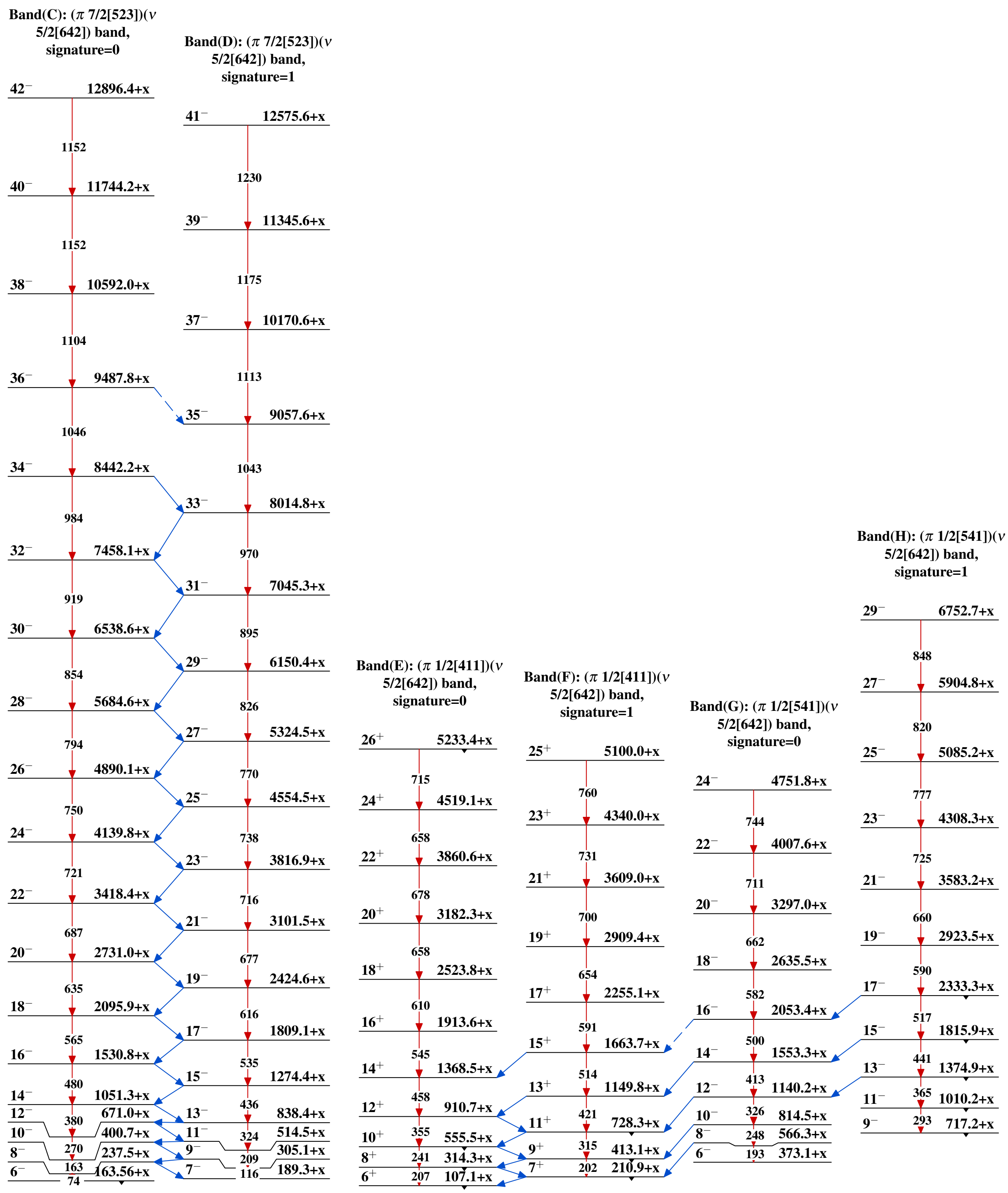
$^{162}_{69}Tm_{93}$

^{130}Te(^{37}Cl,5nγ),^{152}Sm(^{14}N,4nγ)



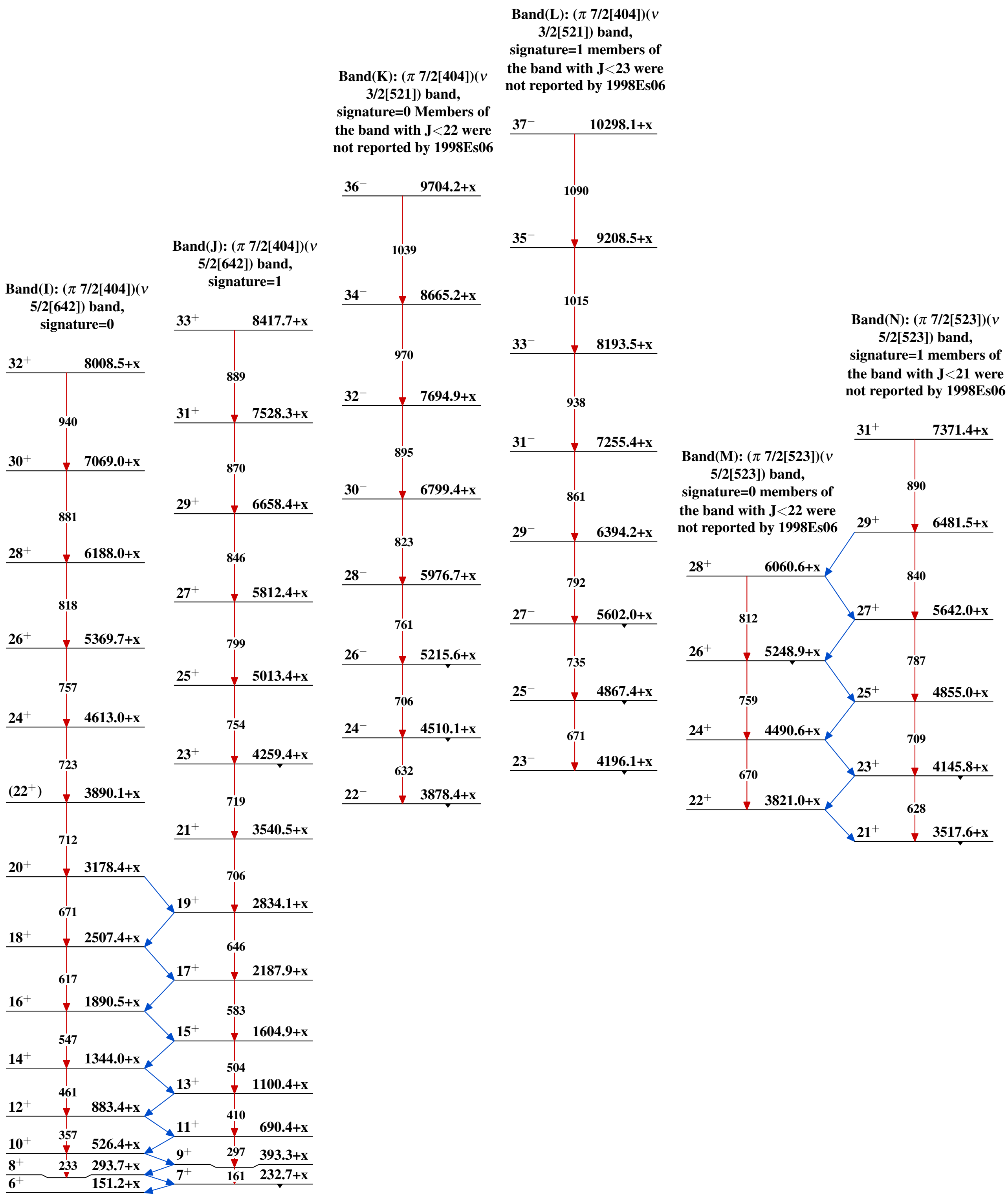
$^{162}_{69}Tm_{93}$

$^{130}Te(^{37}Cl,5n\gamma),^{152}Sm(^{14}N,4n\gamma)$ (continued)



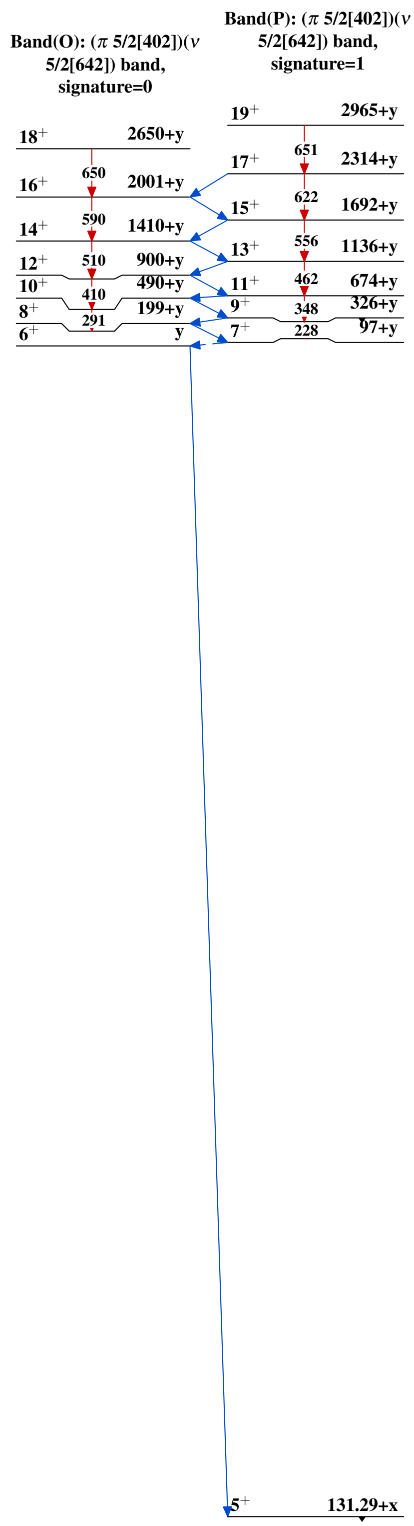
$^{162}_{69}Tm_{93}$

$^{130}Te(^{37}Cl,5n\gamma),^{152}Sm(^{14}N,4n\gamma)$ (continued)



$^{162}_{69}Tm_{93}$

$^{130}Te(^{37}Cl,5n\gamma),^{152}Sm(^{14}N,4n\gamma)$ (continued)



$^{162}_{69}Tm_{93}$