^{169}Tm(α,4nγ), ^{171}Yb(p,3nγ) 1973Fo03

History

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

E(α)=50 MeV, E(p)=30 MeV; metallic targets; measured Eγ, Iγ (Ge(Li)), $\gamma\gamma$ coin; used classical rotor model to interpret level structure.

^{169}Lu Levels

E(level)[†]	J^{π}[‡]	E(level)[†]	J^{π}[‡]	E(level)[†]	J^{π}[‡]	E(level)[†]	J^{π}[‡]
0.0[#]	7/2$^+$	329.4[@] *6*	13/2$^-$	836.4[#] *2*	17/2$^+$	1461.9[b] *3*	21/2$^-$
29.0[@] *5*	1/2$^-$	415.1[a] *6*	9/2$^+$	842.1[&] *7*	15/2$^+$	1549.3[#] *3*	23/2$^+$
43.1[@] *6*	5/2$^-$	439.10[b] *16*	9/2$^-$	844.65[b] *22*	15/2$^-$	1697.1[b] *3*	23/2$^-$
97.4[&] *5*	1/2$^+$	439.70[#] *14*	13/2$^+$	895.2[@] *7*	15/2$^-$	1698.0[&] *8*	23/2$^+$
113.7[&] *6*	3/2$^+$	449.2?[&] *6*	9/2$^+$	937.0?[a] *7*	15/2$^+$	1746.4[@] *8*	23/2$^-$
123.46[#] *9*	9/2$^+$	508.4[&] *6*	11/2$^+$	977.3[@] *7*	21/2$^-$	1810.5[#] *6*	25/2$^+$
140.7[@] *6*	9/2$^-$	546.08[b] *17*	11/2$^-$	1031.55[b] *25*	17/2$^-$	1934.7[@] *8*	29/2$^-$
157.5?[@] *6*	3/2$^-$	569.2[a] *7*	11/2$^+$	1060.40[#] *24*	19/2$^+$	1955.8[b] *4*	25/2$^-$
186.6[a] *6*	5/2$^+$	574.3?[@] *7*	11/2$^-$	1151.3?[&] *8*	17/2$^+$	2080.9[#] *5*	27/2$^+$
225.1[&] *6*	5/2$^+$	609.9[@] *7*	17/2$^-$	1235.0[b] *3*	19/2$^-$	2196.5[&] *9*	27/2$^+$
260.5[&] *6*	7/2$^+$	628.91[#] *18*	15/2$^+$	1243.8[&] *8*	19/2$^+$	2258.5?[@] *8*	27/2$^-$
270.61[#] *13*	11/2$^+$	683.31[b] *18*	13/2$^-$	1287.7[@] *7*	19/2$^-$	2357.9[#] *7*	29/2$^+$
288.9[a] *6*	7/2$^+$	733.8[a] *7*	13/2$^+$	1298.5[#] *3*	21/2$^+$	2504.6[@] *9*	33/2$^-$
328.7?[@] *7*	7/2$^-$	763.1?[&] *7*	13/2$^+$	1422.8[@] *7*	25/2$^-$		

† From least-squares fit to Eγ.

‡ Authors′ values from relative excitation yields, E(p)/E(α) yield ratios, and rotational structure. These values are consistent with adopted values, but many adopted values are given In parentheses.

Band(A): 7/2[404] band.

@ Band(B): 1/2[541] band.

& Band(C): 1/2[411] band.

a Band(D): 5/2[402] band.

b Band(E): 9/2[514] band.

γ(^{169}Lu)

Reported intensity ratios (given in comments) are for (p,3nγ) and (α,4nγ), each at θ=90°, and normalized to 1.00 for the 123.5γ.

E$_\gamma$	I$_\gamma$[†]	E$_i$(level)	J^{π}_i	E$_f$	J^{π}_f	Mult.	Comments
(13.9[‡] *4*)		43.1	5/2$^-$	29.0	1/2$^-$		
(16.4[‡] *3*)		113.7	3/2$^+$	97.4	1/2$^+$		
(29.0 *5*)		29.0	1/2$^-$	0.0	7/2$^+$		E$_\gamma$: from Adopted Gammas.
^{x}63.2[&] *2*							
68.4 *1*	23.6	97.4	1/2$^+$	29.0	1/2$^-$	(E1)	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=1.92. Mult.: from strong intensity and retardation ($T_{1/2}$≥100 ns; value attributed to B. Skanberg in private communication to 1973Fo03). Multipolarities other than E1 would require 68.4γ to be at least four times more intense than any other transition.

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^{169}Tm(α,4nγ), ^{171}Yb(p,3nγ) 1973Fo03 (continued)

γ(^{169}Lu) (continued)

Eγ	Iγ[†]	Ei(level)	J^π_i	E_f	J^π_f	Comments
70.9[&d] 2	<1.2[#]	113.7	3/2+	43.1	5/2−	
72.9[&d] 2	2.6	186.6	5/2+	113.7	3/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=1.04.
[x]75.2[&] 2	<2.3[#]					Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.66.
84.8[&d] 2	<5.0[#]	113.7	3/2+	29.0	1/2−	Iγ=5.0 and Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=2.23 for 84.8γ and 84.3γ(^{170}Yb) combined.
93.1[d]		508.4	11/2+	415.1	9/2+	Eγ: from level scheme In fig. 3 of 1973Fo03 only.
97.7 1	24.6	140.7	9/2−	43.1	5/2−	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.91.
102.3 1	3.7	288.9	7/2+	186.6	5/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=1.54.
107.0 2	<9.7[#]	546.08	11/2−	439.10	9/2−	Iγ: for 107.0γ and unplaced 107.8γ combined. Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.94 (for 107.0γ and unplaced 107.8γ combined).
[x]107.8 2	<9.7[#]					See comments with 107.0γ.
[x]109.8 2						Iγ≈7 At 90°.
111.5 2		225.1	5/2+	113.7	3/2+	Iγ: ≈9 At 90° and Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=1.12 for contaminated line.
[x]112.7[&] 2	8.8					
114.4[d] 2	2.2	157.5?	3/2−	43.1	5/2−	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=2.68.
120.0[&] 2	<4.2[#]	260.5	7/2+	140.7	9/2−	Iγ: 4.2, Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.78 for line with large contribution from ^{170}Lu.
123.5 1	48.7	123.46	9/2+	0.0	7/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=1.00 (intensity ratio normalization point).
126.1 1	8.9	415.1	9/2+	288.9	7/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=1.65.
[x]132.1[&] 2	1.5					Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=1.32.
[x]135.2[&] 2	0.8					
137.2 1	<11.0[#]	683.31	13/2−	546.08	11/2−	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.87.
[x]144.3[&] 2	3.7					
146.8 2	<18	260.5	7/2+	113.7	3/2+	See comments with 147.2γ.
147.2 2	≈25	270.61	11/2+	123.46	9/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=1.06 (for 146.8γ and 147.2γ combined). Iγ: deduced from Iγ<42.8 (for 146.8γ and 147.2γ combined), Iγ(270.5γ)/Iγ(147.2γ)≈1.24, and Iγ(270.5γ)=31.0.
154.0[cd] 2	[c@]	415.1	9/2+	260.5	7/2+	
154.0[c] 2	7.8[c]	569.2	11/2+	415.1	9/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=1.52.
161.3 2	<14.8	844.65	15/2−	683.31	13/2−	Iγ: 14.8 for 161.3γ and unplaced 162.6γ combined. Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.65 (for 161.3γ and unplaced 162.6γ combined).
[x]162.6 2	<14.8					See comments with 161.3γ.
164.7[&] 1	11.7[#]	733.8	13/2+	569.2	11/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=1.01.
169.1 1	≤23.1[#]	439.70	13/2+	270.61	11/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.80. Iγ: for 169.1γ and 170.8γ combined.
170.8[d] 3	≤23.1[#]	328.7?	7/2−	157.5?	3/2−	Iγ: 23.1, Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=2.42 for γ arising largely from ^{171}Lu. Iγ: see comment with 169.1γ.
[x]179.3[&] 2						Iγ≈4 At 90°.
181.9[&] 2		225.1	5/2+	43.1	5/2−	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV) >>1.
186.9 2	12.9	1031.55	17/2−	844.65	15/2−	
188.8[cd] 2	[c@]	328.7?	7/2−	140.7	9/2−	
188.8[c] 2	≈90[c]	329.4	13/2−	140.7	9/2−	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.65 (for 188.8γ and 189.2γ combined). Iγ: deduced from Iγ=100.0 (for 188.8γ and 189.2γ combined), Iγ(358.3γ)/Iγ(189.2γ)≈3.49, and Iγ(358.3γ)=34.9.

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^{169}Tm(α,4nγ), ^{171}Yb(p,3nγ) 1973Fo03 (continued)

γ(^{169}Lu) (continued)

E_γ	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Comments
188.8[cd] 2	[c@]	449.2?	9/2+	260.5	7/2+	
189.2 2	≈10	628.91	15/2+	439.70	13/2+	See comments with 188.8γ.
[x]197.0 2	≈19.1[#]					
[x]198.6 2	≈18.1[#]					Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.11.
203.4[cd] 2	[c@]	937.0?	15/2+	733.8	13/2+	
203.4[c] 2	13.5[c]	1235.0	19/2−	1031.55	17/2−	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.26.
207.4 2	9.2	836.4	17/2+	628.91	15/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.19.
217.3[&] 3		260.5	7/2+	43.1	5/2−	Iγ≈1 At 90° for 217.3γ+218.8γ doublet.
224.0[cd] 2	[c@]	449.2?	9/2+	225.1	5/2+	
224.0[c] 2	14.9[c]	1060.40	19/2+	836.4	17/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.75.
226.9 2	10.4	1461.9	21/2−	1235.0	19/2−	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.51.
228.5 2	7.0	415.1	9/2+	186.6	5/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.47.
235.2[&] 2	4.6	1697.1	23/2−	1461.9	21/2−	
238.3[&] 3	4.2	1298.5	21/2+	1060.40	19/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.27.
243.6[&] 4	16.3	683.31	13/2−	439.70	13/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.82. May also feed 9/2− 439.1 level.
245.3[&d] 3	7.6	574.3?	11/2−	329.4	13/2−	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=1.41.
247.8[c] 1	23.2[c]	508.4	11/2+	260.5	7/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=1.05.
247.8[cd] 1	[c@]	574.3?	11/2−	328.7?	7/2−	
[x]249.9[&] 3	7.1					I_γ: for 249.9γ and 250.8γ combined.
250.8[&] 3	<7.1	1549.3	23/2+	1298.5	21/2+	I_γ: see comment with 249.9γ.
[x]252.2[&] 3	4.3					Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.46.
254.6[&d] 3	3.3	763.1?	13/2+	508.4	11/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.71.
258.7[&] 3	7.9	1955.8	25/2−	1697.1	23/2−	
261.0[&d] 3	4.2	1810.5	25/2+	1549.3	23/2+	
270.5[c] 2	31.0[c]	270.61	11/2+	0.0	7/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.68. entire Iγ is shown with this placement because alternative placement In uncertain.
270.5[cd] 2	[c@]	2080.9	27/2+	1810.5	25/2+	Placement from 2080.9 level uncertain.
275.0[&] 3	<7.4	546.08	11/2−	270.61	11/2+	I_γ: for 275.0γ and unplaced 276.3γ combined. Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=1.45 (for 275.0γ and unplaced 276.3γ combined).
[x]276.3[&] 3	<7.4					See comments with 275.0γ.
280.6[b] 2	87.7[b]	569.2	11/2+	288.9	7/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.32.
280.6[b] 2	87.7[b]	609.9	17/2−	329.4	13/2−	see comment on 280.6γ from 569 level.
285.6[b&] 3	<1[b]	328.7?	7/2−	43.1	5/2−	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)≈1.00.
285.6[b&d] 3	<1[b]	895.2	15/2−	609.9	17/2−	
[x]287.4[&] 3	≈1					Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)≈3.00.
298.6 2	9.9	844.65	15/2−	546.08	11/2−	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.26.
[x]306.9[&] 4						Iγ≈1.5 At 90°.
≈310		1287.7	19/2−	977.3	21/2−	Observed only in γγ coin spectrum.
314.1[&d] 3	6.7	763.1?	13/2+	449.2?	9/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.72.
315.7 2	<46.3	439.10	9/2−	123.46	9/2+	I_γ: for 315.7γ and 316.2γ combined. Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.76 (for 315.7γ and 316.2γ combined).
316.2 2	<46.3	439.70	13/2+	123.46	9/2+	See comments with 315.7γ.
318.5[&] 3	≈8	733.8	13/2+	415.1	9/2+	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=1.15.
319.9[&d] 3	8.2	895.2	15/2−	574.3?	11/2−	
324.0[a&] 5		1746.4	23/2−	1422.8	25/2−	Iγ≈1.5 At 90°.

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^{169}Tm(α,4nγ), ^{171}Yb(p,3nγ) 1973Fo03 (continued)

γ(^{169}Lu) (continued)

Eγ	Iγ[†]	Ei(level)	J^π_i	Ef	J^π_f	Mult.	Comments
324.0[a&d] 5		2258.5?	27/2⁻	1934.7	29/2⁻		Iγ≈1.5 At 90°.
333.7 3	15.6	842.1	15/2⁺	508.4	11/2⁺		Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.89.
[x]340.0[&] 5							Iγ≈2 At 90°.
348.3 3	17.3	1031.55	17/2⁻	683.31	13/2⁻		Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.76.
358.3 2	34.9	628.91	15/2⁺	270.61	11/2⁺		Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.42.
367.5[cd] 2	[c@]	508.4	11/2⁺	140.7	9/2⁻		
367.5[cd] 2	[c@]	937.0?	15/2⁺	569.2	11/2⁺		
367.5[c] 2	70.5[c]	977.3	21/2⁻	609.9	17/2⁻		Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.14.
[x]378.7[&] 4	2.5						
[x]382.8[&] 3	≈7						I_γ: for 382.8γ and 384.2γ combined. Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.36 (for 382.8γ and 384.2γ combined).
[x]384.2[&] 3	≈7						See comments with 382.8γ.
388.2[&d] 4	3.8	1151.3?	17/2⁺	763.1?	13/2⁺		Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.51.
390.3[&] 3	<16.7[#]	1235.0	19/2⁻	844.65	15/2⁻		Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.26.
392.2[&] 4	1.2	1287.7	19/2⁻	895.2	15/2⁻		
396.7 2	30.2	836.4	17/2⁺	439.70	13/2⁺		Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.27.
[x]398.7[&] 3	<1.8						Iγ=1.8 and Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.68 (for 398.7γ and 400.5γ combined).
[x]400.5[&] 3	<1.8						See comments with 398.7γ.
401.7 3	10.9	1243.8	19/2⁺	842.1	15/2⁺		Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.31.
[x]406.2[&] 4	≈2						
413.1[&] 4	≈4	683.31	13/2⁻	270.61	11/2⁺		
[x]416.3[&] 4	≈6						
422.8[&] 3	≈5	546.08	11/2⁻	123.46	9/2⁺		
430.6 3	<33.8	1461.9	21/2⁻	1031.55	17/2⁻		I_γ: 33.8 for 430.6γ and 431.7γ combined. Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.16 (for 430.6γ and 431.7γ combined).
431.7 3	<33.8	1060.40	19/2⁺	628.91	15/2⁺		See comments with 430.6γ.
433.2[&d] 3	10.9	574.3?	11/2⁻	140.7	9/2⁻		
439.0 3	6.7	439.10	9/2⁻	0.0	7/2⁺		
[x]440.4 3	13.5						
445.6 2	53.5	1422.8	25/2⁻	977.3	21/2⁻		
454.2[&] 3	10.6	1698.0	23/2⁺	1243.8	19/2⁺	Q	
458.5[&] 3	7.1	1746.4	23/2⁻	1287.7	19/2⁻		
462.0[b] 2	37.1[b]	1298.5	21/2⁺	836.4	17/2⁺		Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.08.
462.0[b] 2	37.1[b]	1697.1	23/2⁻	1235.0	19/2⁻		
[x]469.0[&] 3	5.9						
[x]476.5[&] 3	9.2						Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.50.
[x]479.3[&] 4							Iγ≈6 At 90°.
488.9 2	26.5	1549.3	23/2⁺	1060.40	19/2⁺		Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=0.08.
494.0[&] 4	7.4	1955.8	25/2⁻	1461.9	21/2⁻		
498.5[&] 3		2196.5	27/2⁺	1698.0	23/2⁺		Iγ≈9.0 At 90°.
512.0[b&] 5	<148[b#]	1810.5	25/2⁺	1298.5	21/2⁺		
512.0[b&] 5	<148[b#]	1934.7	29/2⁻	1422.8	25/2⁻		
512.0[a&d] 5	[#@]	2258.5?	27/2⁻	1746.4	23/2⁻		
[x]516.8[&] 3	≈12						
531.6[&] 3	14.2	2080.9	27/2⁺	1549.3	23/2⁺		

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$^{169}Tm(\alpha,4n\gamma)$, $^{171}Yb(p,3n\gamma)$ 1973Fo03 (continued)

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

E_γ	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Comments
[x]539.5[&] *4*	3.9					
[x]543.7[&] *4*	10.5					
547.4[&] *4*	16.9	2357.9	29/2$^+$	1810.5	25/2$^+$	
[x]557.1[&] *4*	9.7					
[x]562.9[&] *4*	13.5					
565.6[&] *4*		895.2	15/2$^-$	329.4	13/2$^-$	Iγ(E(p)=30 MeV)/Iγ(E(α)=50 MeV)=1.00. Iγ≈6 At 90°.
569.9[&] *4*	23.0	2504.6	33/2$^-$	1934.7	29/2$^-$	
[x]574.0[&] *4*	3.5					
[x]582.1[&] *5*	≈3					
[x]588.8[&] *5*	≈2					
[x]597.4[&] *4*	12.8					
[x]601.9[&] *5*						Iγ≈5.4 At 90°.
[x]610.4[&] *5*						Iγ≈6.0 At 90°.
[x]618.3[&] *4*	16.0					
[x]634.7[&] *5*						Iγ≈7.4 At 90°.
[x]665.0[&] *5*						Iγ≈3.0 At 90°.
677.6[&] *5*		1287.7	19/2$^-$	609.9	17/2$^-$	Iγ≈5.7 At 90°.

[†] Arbitrary units for E(α)=50 MeV, θ=125°. ΔIγ≈10% for strong, well-resolved peaks, and up to 50% for others. See 1973Fo03 for additional intensity data.

[‡] 1973Fo03 deduced energies for unobserved transitions from 5/2$^-$ 1/2[541] to 1/2$^-$ 1/2[541] (given as x by authors) and from 3/2$^+$ 1/2[411] to 1/2$^+$ 1/2[411] (given as y by authors) as follows. From fits of the J(J+1) expansions, both x and y are≈15 keV. The 97.7γ-120.0γ-247.8γ coincidence requires y=x+2.5 keV. With 84.8γ then placed, x can be deduced from 146.8γ+84.8γ-120.0γ-97.7γ (=13.9 *4*) and y, from 84.8γ-68.4γ (=16.4 *3*). 1973Fo03 report these energy values as tentative and somewhat uncertain.

[#] Includes possible component from contaminant. See 1973Fo03 for source.

[@] No intensity attributed to the uncertain additional placement.

[&] Assignment to ^{169}Lu uncertain.

[a] Multiply placed.

[b] Multiply placed with undivided intensity.

[c] Multiply placed with intensity suitably divided.

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

[x] γ ray not placed in level scheme.

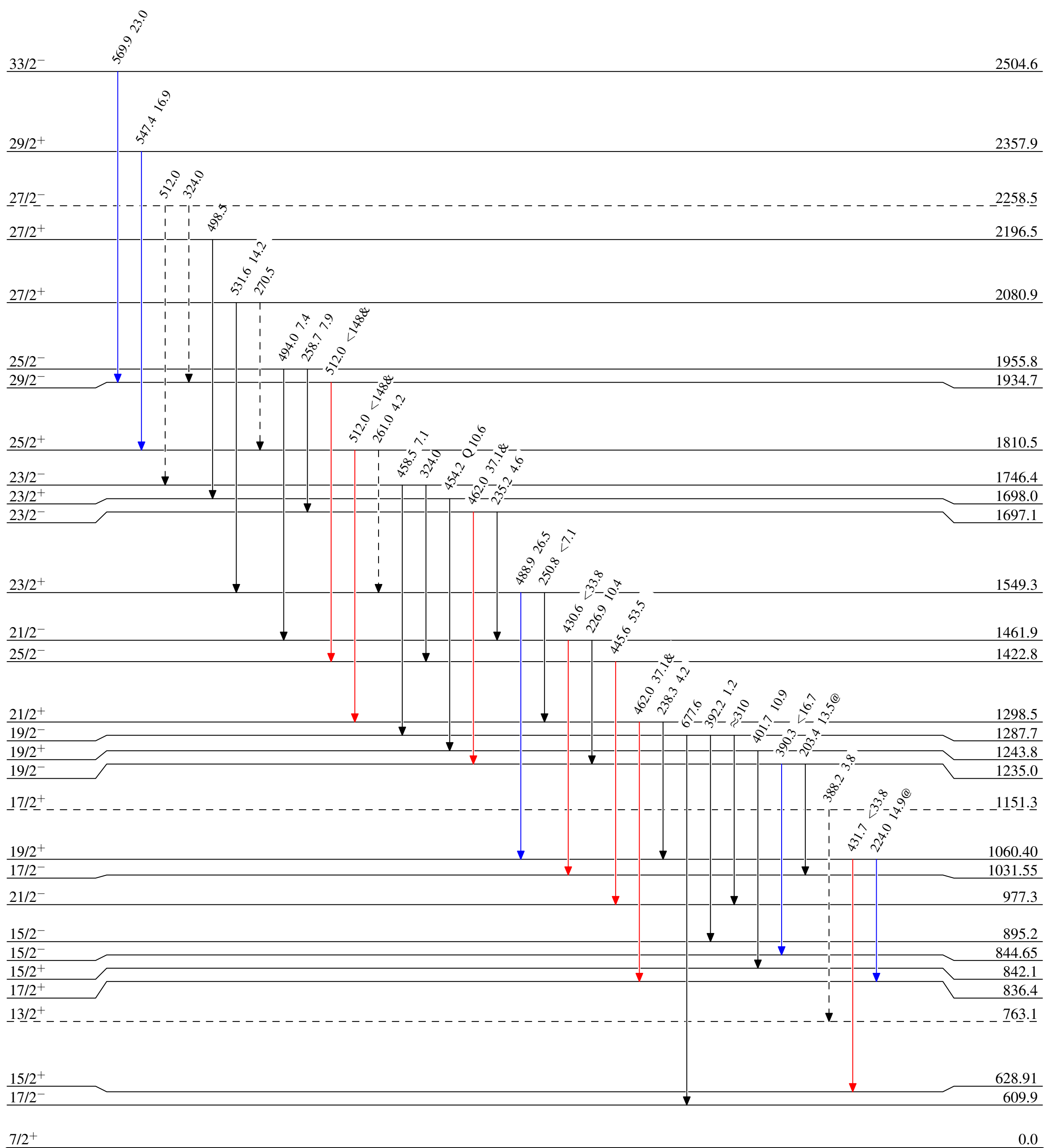
^{169}Tm(α,4nγ), ^{171}Yb(p,3nγ)   1973Fo03

Level Scheme

Intensities: Relative Iγ for E(α)=50 MeV, θ=125°
& 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)



$^{169}_{71}Lu_{98}$

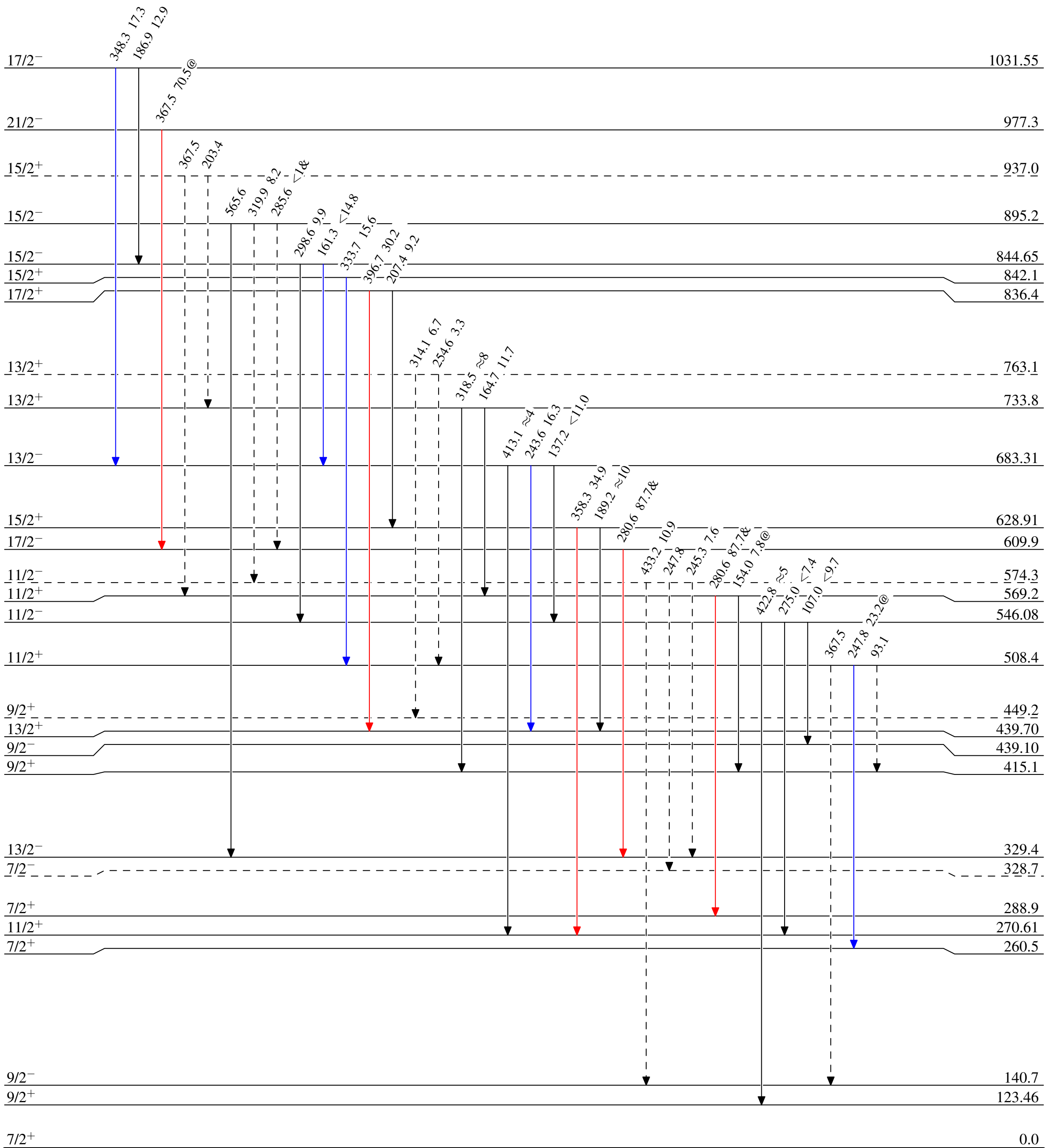
^{169}Tm(α,4nγ), ^{171}Yb(p,3nγ) 1973Fo03

Level Scheme (continued)

Intensities: Relative Iγ for E(α)=50 MeV, θ=125°
& 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)



$^{169}_{71}Lu_{98}$

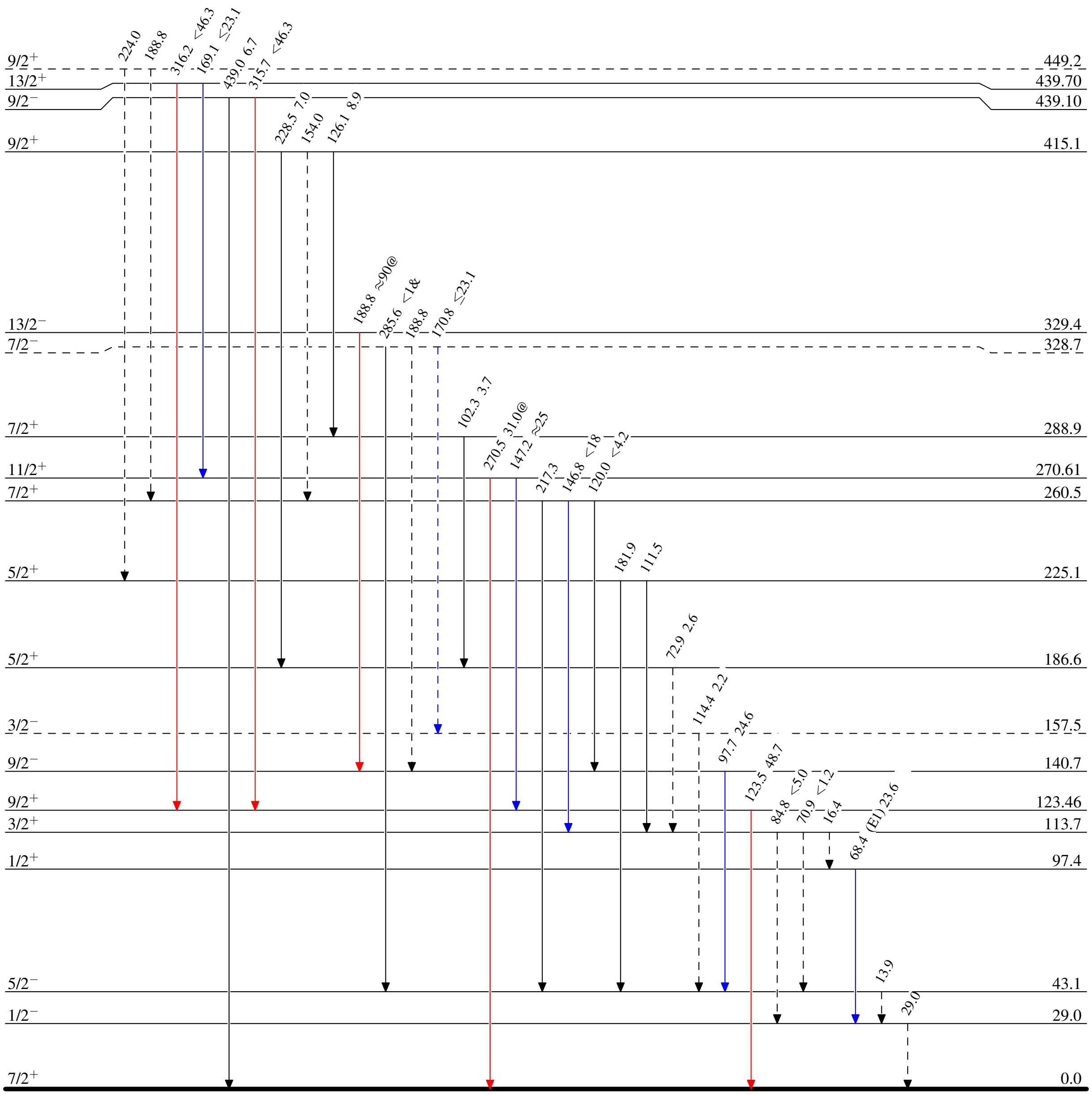
^{169}Tm(α,4nγ), ^{171}Yb(p,3nγ) 1973Fo03

Level Scheme (continued)

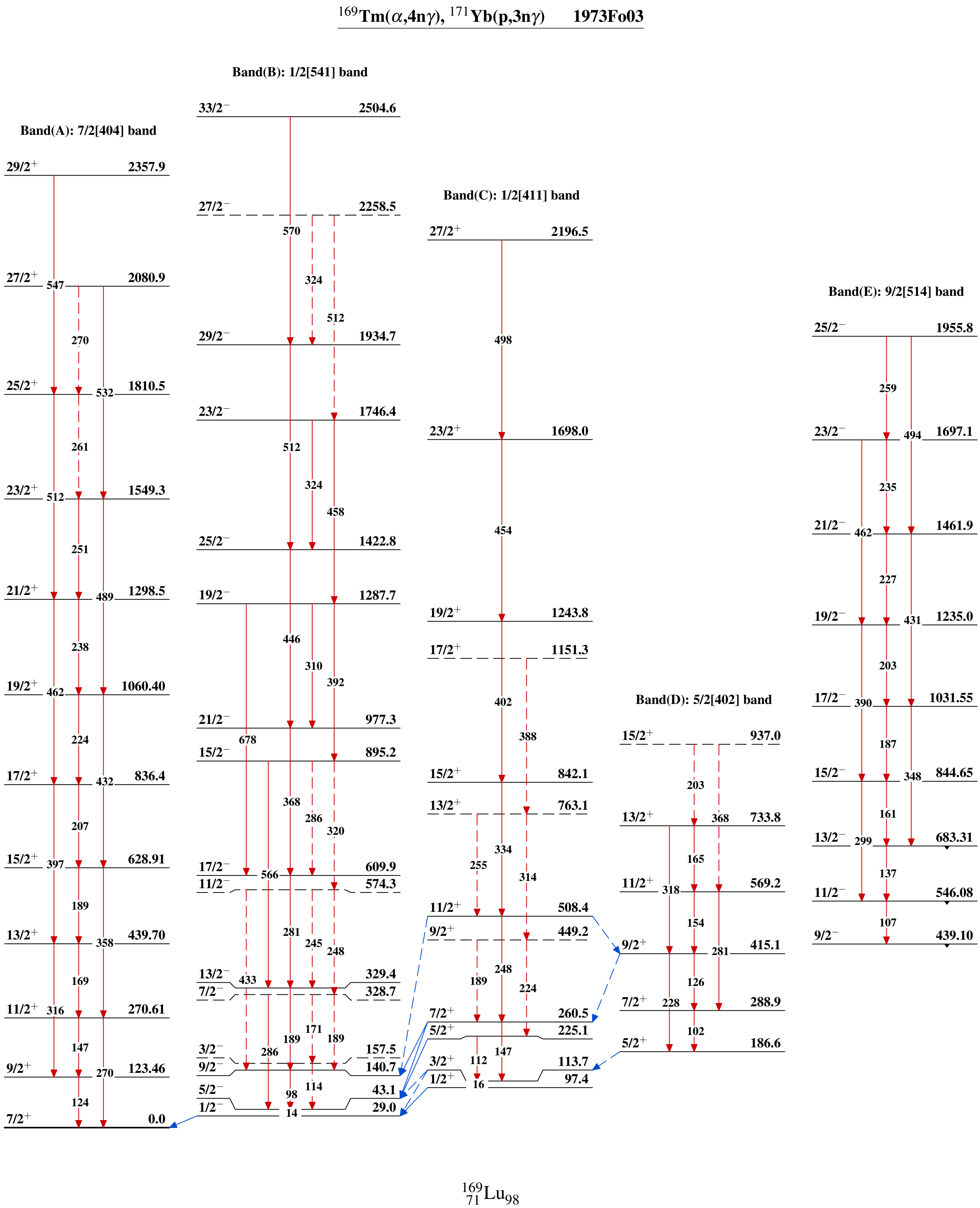
Intensities: Relative Iγ for E(α)=50 MeV, θ=125°
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

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)



$^{169}_{71}Lu_{98}$


^{169}Tm(α,4nγ), ^{171}Yb(p,3nγ) 1973Fo03
Band(A): 7/2[404] band
Band(B): 1/2[541] band
Band(C): 1/2[411] band
Band(D): 5/2[402] band
Band(E): 9/2[514] band
$^{169}_{71}Lu_{98}$