^{170}Yb(^{16}O,4nγ) 1997Po02,2012Gl01,2012Wa16

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 130, 21 (2015)	15-Jul-2015

Includes reactions: ^{122}Sn(^{64}Ni,4nγ), ^{162}Dy(^{24}Mg,4nγ) and ^{163}Dy(^{24}Mg,5nγ).

1997Po02 (also thesis by 1986PoZS): ^{170}Yb(^{16}O,4nγ) E=95 MeV; ^{162}Dy(^{24}Mg,4nγ) E=129 MeV and ^{163}Dy(^{24}Mg,5nγ) E=129 MeV. Measured γ, γγ, γ(θ). The (^{16}O,4nγ) experiment employed an array of eight HPGe detectors and six NaI detectors as multiplicity filter. The (^{24}Mg,xnγ) experiments employed an array of 12 Compton-suppressed HPGe detectors and a 38-element BaF_2 detector array for multiplicity filter.

Additional information 1.

2012Gl01: ^{170}Yb(^{16}O,4nχ),E(^{16}O)=87 MeV with beam provided by the Koln FN Tandem accelerator. Target consisted of 1 mg/cm^2 isotopically enriched ^{170}Yb evaporated onto 2.1 mg/cm^2 Ta foil and 3.5 mg/cm^2 gold foil. Measured level lifetimes by recoil-distance Doppler-shift method (RDM) using Cologne plunger device and five large-volume Ge detectors.

2012Wa16: ^{122}Sn(^{64}Ni,4nγ),E(^{64}Ni)=295 MeV. Target=850 μg/cm^2 ^{122}Sn on a 1.5 mg/cm^2 Au foil. Gamma rays were detected by the Argonne-Notre Dame γ-ray Facility (12 Compton-suppressed HPGe detectors and a 50-element BGO multiplicity array). Measured level lifetimes by recoil-distance Doppler-shift method (RDM) using the Notre Dame plunger device. Deduced B(E2), Q_t.

2002Ro12, 2002Ro36 (also 2001St09): measured g factors by γ(θ,H,t), transient-field technique using Gd(^{29}Si,X) reaction at 145 MeV.

1994WaZZ: ^{122}Sn(^{64}Ni,4nγ) E=295 MeV. Measured level half-lives by RDDS method for yrast levels up to 14$^+$. The details of this study are not available.

1967Bu02 (also 1967Bu18): ^{169}Tm(^{19}F,6nγ) E=120 MeV. Six transitions reported in the g.s. band (to 12$^+$) but no conversion data are listed.

^{182}Pt Levels

Average g factor: <g>=+0.36 *5*, for 6$^+$ to 12$^+$ states in the high-spin quasi-continuum (2002Ro12).

E(level)	J^π[†]	$T_{1/2}$[@]	Comments
0.0[a]	0$^+$		
155.00[#a] *10*	2$^+$	479 ps *30*	g=+0.23 *4* (2002Ro36) $T_{1/2}$: weighted average of 409 ps *71* (2012Gl01,RDM) and 491 ps *30* (2012Wa16,RDM). Q_t=5.77 eb *17* (2012Wa16) for $T_{1/2}$=491 ps *30*.
419.31[#a] *14*	4$^+$	32.5 ps *20*	g=+0.42 *20* (2002Ro36) $T_{1/2}$: weighted average of 31 ps *4* (2012Gl01,RDM) and 32.9 ps *20* (2012Wa16,RDM). Q_t=6.37 eb *19* (2012Wa16) for $T_{1/2}$=32.9 ps *20*.
499.5[b] *8*	0$^+$		
666.9[c] *6*	2$^+$		
774.29[a] *17*	6$^+$	5.28 ps *35*	$T_{1/2}$: weighted average of 5.1 ps *4* (2012Gl01,RDM) and 5.41 ps *35* (2012Wa16,RDM). Q_t=7.45 eb *24* (2012Wa16) for $T_{1/2}$=5.41 ps *35*.
854.9[b] *6*	2$^+$		
941.9[c] *8*	3$^+$		
1032.6[c] *5*	4$^+$		
1205.19[a] *20*	8$^+$	2.26 ps *21*	$T_{1/2}$: weighted average of 1.9 ps *4* (2012Gl01,RDM) and 2.36 ps *21* (2012Wa16,RDM). Q_t=6.88 eb *27* (2012Wa16) for $T_{1/2}$=2.36 ps *21*.
1238.2[b] *5*	4$^+$		
1303.9[c] *5*	5$^+$		
1436.6[c] *5*	6$^+$		
1648.7[b] *5*	6$^+$		
1669.8[h] *5*	5$^−$		
1697.78[a] *22*	10$^+$	1.09 ps *14*	$T_{1/2}$: weighted average of 0.90 ps *21* (2012Gl01,RDM) and 1.18 ps *14* (2012Wa16,RDM). Q_t=6.95 eb *28* (2012Wa16) for $T_{1/2}$=1.18 ps *14*.

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$^{170}Yb(^{16}O,4n\gamma)$ 1997Po02,2012Gl01,2012Wa16 (continued)

^{182}Pt Levels (continued)

E(level)	J^{π}[†]	$T_{1/2}$[@]	Comments
1729.6[c] *6*	7+		
1844.0[i] *8*	(6−)		
1863.1 *5*	6+		
1923.8[h] *5*	7−		
1954.8[f] *5*	7−		
2081.8[e] *9*	8−		
2116.7[b] *11*	8+		
2148.8[i] *7*	(8−)		
2240.2[h] *6*	9−		
2241.1[f] *9*	9−		
2241.2[a] *7*	12+	1.18[&] ps *7*	Q_t=5.33 eb *30* (2012Wa16).
2426.9[e] *11*	10−		
2503.1[i] *8*	(10−)		
2614.4[h] *6*	11−		
2634.3[f] *11*	11−		
2689.3[d] *7*	(12+)		
2831.1[a] *7*	14+	1.11[&] ps *14*	Q_t=4.47 eb *23* (2012Wa16).
2859.6[e] *11*	12−		
2930.8[i] *9*	(12−)		
3045.6[h] *11*	13−		
3095.6[g] *8*	(13−)		
3102.7[f] *12*	13−		
3167.4[d] *9*	(14+)		
3288.7 *10*	13,14[‡]		
3357.1[e] *13*	14−		
3424.4[i] *11*	(14−)		
3459.6[a] *7*	16+	<2.57[&] ps	$T_{1/2}$: <2.29 ps *28*; side feeding correction could not be applied.
3479.0[g] *8*	(15−)		
3541.5[h] *9*	15−		
3628.6[f] *12*	15−		
3643.9[d] *9*	(16+)		
3905.5[e] *14*	16−		
3970.2[i] *11*	(16−)		
3981.5[g] *10*	(17−)		
4077.0[h] *12*	17−		
4093.4[a] *7*	18+		
4202.8[f] *14*	17−		
4231.1[d] *9*	(18+)		
4499.7[e] *16*	18−		
4554.3[i] *12*	(18−)		
4568.7[g] *10*	(19−)		
4655.9[h] *14*	19−		
4727.6[a] *10*	20+		
4824.4[f] *16*	19−		
4918.2[d] *10*	(20+)		
5138.9[e] *17*	20−		
5166.2[i] *14*	(20−)		
5207.0[g] *14*	(21−)		

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^{170}Yb(^{16}O,4nγ) 1997Po02,2012Gl01,2012Wa16 (continued)

^{182}Pt Levels (continued)

E(level)	Jπ†	E(level)	Jπ†	E(level)	Jπ†	E(level)	Jπ†
5277.4[h] 17	21−	5803.6[i] 17	(22−)	6379.8[d] 17	(24+)	6960.6[f] 23	25−
5402.3[a] 14	22+	5893.0[g] 17	(23−)	6398.9[e] 22	24−	7396.0[g] 22	(27−)
5493.6[f] 19	21−	5950.4[h] 20	23−	6478.6[i] 20	(24−)		
5636.8[d] 14	(22+)	6125.9[a] 18	24+	6624[g] 2	(25−)		
5774.9[e] 20	22−	6207.6[f] 21	23−	6903.9[a] 20	26+		

† From Adopted Levels below 1436 level. Above this the assignments are based on γ(θ) data and band associations (1997Po02). All assignments are consistent with those in Adopted Levels, except that many are given in parentheses there due to lack of strong arguments.
‡ (12,13,14+) in Adopted Levels.
# The g factor from perturbed γγ(θ) from oriented nuclei in high-spin reactions (2002Ro36).
@ From recoil Distance Doppler-shift technique (RDM) using a plunger device (2012Gl01,2012Wa16).
& From RDM (2012Wa16).
[a] Band(A): $K^\pi=0^+$, g.s. band. Measured average g=+0.36 5 for 6+ to 12+ states in the ground band (2002Ro36,2002Ro12) using perturbed γγ(θ) from oriented nuclei (PDCO method) in high-spin reactions.
[b] Band(B): $K^\pi=0^+$, oblate structure.
[c] Band(C): $K^\pi=2^+$, γ vibrational band.
[d] Band(D): Band based on (12+), α=0. Continuation of g.s. band.
[e] Band(E): Band based on (8−), α=0. Configuration=$\nu i_{13/2}\otimes\nu h_{9/2}$.
[f] Band(e): Band based on (7−), α=1. Configuration=$\nu i_{13/2}\otimes\nu h_{9/2}$.
[g] Band(F): Band based on (13−), α=1. Configuration=$\pi i_{13/2}\otimes\pi h_{9/2}$. No evidence for a signature partner.
[h] Band(G): Band based on (5−), α=1. Configuration=$\nu i_{13/2}\otimes\nu p_{3/2}$.
[i] Band(g): Band based on (6−), α=0. Configuration=$\nu i_{13/2}\otimes\nu p_{3/2}$.

γ(^{182}Pt)

Eγ†	Iγ†	Ei(level)	Jπi	Ef	Jπf	Mult.#	δ	α[a]	Comments
91.5 10	1.9 7	1954.8	7−	1863.1	6+				
127.0 10	3.0 3	2081.8	8−	1954.8	7−	(M1+E2)&	+0.25 15	3.28 15	α(K)=2.63 20; α(L)=0.49 5; α(M)=0.116 14 α(N)=0.029 4; α(O)=0.0050 5; α(P)=0.000302 23 A_2=−0.53 4; A_4=−0.06 6
133‡ 1		1436.6	6+	1303.9	5+				
138‡ 1		4231.1	(18+)	4093.4	18+				
155.0 1	72 4	155.00	2+	0.0	0+	E2		0.885	α(K)=0.316 5; α(L)=0.428 7; α(M)=0.1100 16 α(N)=0.0269 4; α(O)=0.00423 6; α(P)=3.00×10^{-5} 5 B(E2)(W.u.)=114 8 Mult.: from Adopted Gammas.
159.3 10	2.0 2	2241.1	9−	2081.8	8−	(M1+E2)&	−0.21 7	1.73 5	α(K)=1.41 5; α(L)=0.246 8; α(M)=0.0573 19 α(N)=0.0142 5; α(O)=0.00253 7; α(P)=0.000161 6 A_2=−0.53 4; A_4=+0.01 33
185.8 10	3.2 3	2426.9	10−	2241.1	9−	(M1+E2)&	−0.21 6	1.12 3	α(K)=0.91 3; α(L)=0.157 4;

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^{170}Yb(^{16}O,4nγ) 1997Po02,2012Gl01,2012Wa16 (continued)

γ(^{182}Pt) (continued)

E_γ [†]	I_γ [†]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [#]	δ	α [a]	Comments
									α(M)=0.0366 *9* α(N)=0.00904 *21*; α(O)=0.00162 *4*; α(P)=0.000104 *4* A_2=−0.56 *6*; A_4=+0.02 *5*
186 *1*		3643.9	(16$^+$)	3459.6	16$^+$				
191 *1*		4918.2	(20$^+$)	4727.6	20$^+$				
207.4 *10*	2.8 *3*	2634.3	11$^-$	2426.9	10$^-$	(M1+E2)[&]	−0.18 *7*	0.827 *22*	α(K)=0.678 *20*; α(L)=0.1146 *23*; α(M)=0.0266 *6* α(N)=0.00657 *14*; α(O)=0.001177 *24*; α(P)=7.73×10^{-5} *24* A_2=−0.53 *7*; A_4=+0.01 *8*
225 *1*		2148.8	(8$^-$)	1923.8	7$^-$				
225.2 *10*	3.1 *3*	2859.6	12$^-$	2634.3	11$^-$	(M1+E2)[&]	−0.29 *15*	0.64 *4*	A_2=−0.68 *8*; A_4=+0.02 *9* α(K)=0.52 *4*; α(L)=0.0905 *18*; α(M)=0.0211 *5* α(N)=0.00521 *11*; α(O)=0.000929 *19*; α(P)=5.9×10^{-5} *5*
243.1 *10*	1.7 *2*	3102.7	13$^-$	2859.6	12$^-$	D(+Q)	−0.02 *5*		A_2=−0.27 *9*; A_4=+0.01 *9*
254.1 *10*	5.3 *7*	1923.8	7$^-$	1669.8	5$^-$				
254.4 *10*	2.1 *4*	3357.1	14$^-$	3102.7	13$^-$				
263 *1*		2503.1	(10$^-$)	2240.2	9$^-$				
264 *1*		3095.6	(13$^-$)	2831.1	14$^+$				
264.3 *1*	119 *4*	419.31	4$^+$	155.00	2$^+$	E2[@]		0.1448	α(K)=0.0839 *12*; α(L)=0.0460 *7*; α(M)=0.01159 *17* α(N)=0.00284 *4*; α(O)=0.000459 *7*; α(P)=8.31×10^{-6} *12* A_2=+0.34 *3*; A_4=−0.12 *3* B(E2)(W.u.)=193 *12*
271 *1*		1303.9	5$^+$	1032.6	4$^+$				
271.5 *10*	2.3 *6*	3628.6	15$^-$	3357.1	14$^-$				
275 *1*	3.8 *3*	1923.8	7$^-$	1648.7	6$^+$				
276.9 *10*	2.0 *2*	3905.5	16$^-$	3628.6	15$^-$	D(+Q)	−0.04 *8*		A_2=−0.17 *9*; A_4=0.00 *9*
285 *1*	3.8 *4*	1954.8	7$^-$	1669.8	5$^-$	Q			A_2=+0.35 *7*; A_4=−0.11 *8*
286.3 *10*	4.7 *4*	2241.1	9$^-$	1954.8	7$^-$	(Q)			A_2=+0.31 *5*; A_4=−0.07 *6*
296.9 *10*	2.4 *7*	4499.7	18$^-$	4202.8	17$^-$				
297.3 *10*	2.5 *7*	4202.8	17$^-$	3905.5	16$^-$				
304.7 *10*	3.5 *4*	2148.8	(8$^-$)	1844.0	(6$^-$)				
306.0 *10*	3.3 *6*	1954.8	7$^-$	1648.7	6$^+$				
314.5 *10*		5138.9	20$^-$	4824.4	19$^-$				
316.1 *10*	11.2 *7*	2240.2	9$^-$	1923.8	7$^-$	Q			A_2=+0.32 *4*; A_4=−0.08 *4*
317 *1*		2930.8	(12$^-$)	2614.4	11$^-$				
324.7 *10*		4824.4	19$^-$	4499.7	18$^-$				
336.2 *10*		3167.4	(14$^+$)	2831.1	14$^+$				
345 *1*		499.5	0$^+$	155.00	2$^+$				
345.1 *10*	8.9 *5*	2426.9	10$^-$	2081.8	8$^-$	Q			A_2=+0.37 *5*; A_4=−0.11 *5*
353.9 *10*	2.3 *8*	2503.1	(10$^-$)	2148.8	(8$^-$)				
355.0 *1*	100.0 *5*	774.29	6$^+$	419.31	4$^+$	E2[@]		0.0606	α(K)=0.0404 *6*; α(L)=0.01530 *22*; α(M)=0.00380 *6* α(N)=0.000931 *13*; α(O)=0.0001534 *22*; α(P)=4.15×10^{-6} *6* A_2=+0.34 *3*; A_4=−0.10 *3* B(E2)(W.u.)=293 *20*
356 *1*		854.9	2$^+$	499.5	0$^+$				
362 *1*		1303.9	5$^+$	941.9	3$^+$				

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^{170}Yb(^{16}O,4nγ) 1997Po02,2012Gl01,2012Wa16 (continued)

γ(^{182}Pt) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	α[a]	Comments
366 *1*		1032.6	4+	666.9	2+			
374.2 *1*	12.2 *10*	2614.4	11−	2240.2	9−	Q		A_2=+0.37 *4*; A_4=−0.12 *4*
383 *1*		1238.2	4+	854.9	2+			
383.4 *10*	3.8 *4*	3479.0	(15−)	3095.6	(13−)			
393.2 *10*	8.8 *5*	2634.3	11−	2241.1	9−	(Q)		A_2=+0.30 *5*; A_4=−0.06 *5*
404 *1*		1436.6	6+	1032.6	4+			
407 *1*		3095.6	(13−)	2689.3	(12+)			
410 *1*		1648.7	6+	1238.2	4+			
419 *1*		2148.8	(8−)	1729.6	7+			
427 *1*		1729.6	7+	1303.9	5+			
427.4 *10*	4.9 *9*	2930.8	(12−)	2503.1	(10−)			
428 *1*		3970.2	(16−)	3541.5	15−			
430.9 *1*	92 *6*	1205.19	8+	774.29	6+	E2[@]	0.0360	α(K)=0.0256 *4*; α(L)=0.00791 *11*; α(M)=0.00194 *3* α(N)=0.000476 *7*; α(O)=7.96×10^{-5} *12*; α(P)=2.67×10^{-6} *4* A_2=+0.31 *3*; A_4=−0.07 *3* B(E2)(W.u.)=266 *25*
431.2 *10*		3045.6	13−	2614.4	11−			
432 *1*		1669.8	5−	1238.2	4+			
432.7 *10*		2859.6	12−	2426.9	10−			
433 *1*		3479.0	(15−)	3045.6	13−			
446 *1*		3541.5	15−	3095.6	(13−)			
448 *1*		2689.3	(12+)	2241.2	12+			
464 *1*		1238.2	4+	774.29	6+			
468 *1*		2116.7	8+	1648.7	6+			
468.4 *10*	9.3 *8*	3102.7	13−	2634.3	11−	Q		A_2=+0.39 *6*; A_4=−0.14 *6*
476.4 *10*		3643.9	(16+)	3167.4	(14+)			
477 *1*		4554.3	(18−)	4077.0	17−			
478 *1*		3167.4	(14+)	2689.3	(12+)			
487 *1*		1923.8	7−	1436.6	6+			
492.6 *1*	72 *5*	1697.78	10+	1205.19	8+	E2	0.0257	α(K)=0.0189 *3*; α(L)=0.00517 *8*; α(M)=0.001257 *18* α(N)=0.000309 *5*; α(O)=5.22×10^{-5} *8*; α(P)=1.99×10^{-6} *3* A_2=+0.33 *5*; A_4=−0.08 *3* B(E2)(W.u.)=2.8×10^2 *4*
493.8 *10*	3.1 *8*	3424.4	(14−)	2930.8	(12−)			
495.6 *10*	4.3 *8*	3541.5	15−	3045.6	13−	Q		A_2=+0.34 *7*; A_4=−0.09 *7*
497.5 *10*	9.6 *6*	3357.1	14−	2859.6	12−	(Q)		A_2=+0.29 *7*; A_4=−0.05 *7*
502.4 *10*	9.3 *9*	3981.5	(17−)	3479.0	(15−)	(Q)		A_2=+0.32 *9*; A_4=−0.08 *9*
511 *1*		5166.2	(20−)	4655.9	19−			
512 *1*		666.9	2+	155.00	2+			
518 *1*		1954.8	7−	1436.6	6+			
522 *1*		3981.5	(17−)	3459.6	16+			
523 *1*		1729.6	7+	1205.19	8+			
525.9 *1*	11.3 *10*	3628.6	15−	3102.7	13−	Q		A_2=+0.37 *6*; A_4=−0.12 *6*
530 *1*		1303.9	5+	774.29	6+			
535.9 *10*	5.7 *5*	4077.0	17−	3541.5	15−	(Q)		A_2=+0.19 *6*; A_4=−0.02 *6*
540 *1*	3.7 *6*	1844.0	(6−)	1303.9	5+	(D)		A_2=−0.04 *10*; A_4=0.00 *10*
543.5 *10*	65 *4*	2241.2	12+	1697.78	10+	E2	0.0203	A_2=+0.20 *3*; A_4=−0.10 *3* B(E2)(W.u.)=162 *10*
546.0 *10*	8.0 *11*	3970.2	(16−)	3424.4	(14−)	Q		A_2=+0.38 *8*; A_4=−0.13 *9*
548.4 *10*	8.7 *8*	3905.5	16−	3357.1	14−	Q		A_2=+0.34 *6*; A_4=−0.09 *6*
559 *1*	1.9 *6*	1863.1	6+	1303.9	5+	(D)		A_2=−0.10 *20*; A_4=0.00 *21*
574.2 *10*	8.9 *9*	4202.8	17−	3628.6	15−	(Q)		A_2=+0.32 *9*; A_4=−0.08 *9*

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^{170}Yb(^{16}O,4nγ) 1997Po02,2012Gl01,2012Wa16 (continued)

γ(^{182}Pt) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	α[a]	Comments
579.7 *10*	6.4 *6*	4655.9	19⁻	4077.0	17⁻	(Q)		A_2=+0.37 *11*; A_4=−0.12 *11*
583.7 *10*	3.5 *5*	4554.3	(18⁻)	3970.2	(16⁻)			
587.0 *10*		4231.1	(18⁺)	3643.9	(16⁺)			
587.2 *1*	12.2 *12*	4568.7	(19⁻)	3981.5	(17⁻)	Q		A_2=+0.37 *7*; A_4=−0.13 *7*
590.0 *1*	43.1 *22*	2831.1	14⁺	2241.2	12⁺	E2	0.0167	A_2=+0.38 *3*; A_4=−0.13 *4* B(E2)(W.u.)=114 *15*
594.2 *10*	5.3 *5*	4499.7	18⁻	3905.5	16⁻	(Q)		A_2=+0.35 *15*; A_4=−0.10 *15*
599 *1*		3288.7	13,14	2689.3	(12⁺)			
611.1 *10*	2.6 *8*	5166.2	(20⁻)	4554.3	(18⁻)			
613 *1*	8.0 *10*	1032.6	4⁺	419.31	4⁺	D+Q		A_2=−0.02 *11*; A_4=0.00 *9*
621.5 *10*	4.1 *8*	5277.4	21⁻	4655.9	19⁻	(Q)		A_2=+0.20 *9*; A_4=−0.02 *9*
621.6 *10*	6.7 *9*	4824.4	19⁻	4202.8	17⁻	(Q)		A_2=+0.20 *9*; A_4=−0.02 *9*
624 *1*		6398.9	24⁻	5774.9	22⁻			
628.5 *1*	28.0 *18*	3459.6	16⁺	2831.1	14⁺	E2	0.01449	A_2=+0.38 *4*; A_4=−0.13 *4* B(E2)(W.u.)>36
633.8 *1*	15.8 *15*	4093.4	18⁺	3459.6	16⁺	Q		A_2=+0.37 *6*; A_4=−0.13 *6*
634.6 *10*	9.3 *13*	4727.6	20⁺	4093.4	18⁺	(Q)		A_2=+0.26 *8*; A_4=−0.04 *8*
636[b] *1*		1669.8	5⁻	1032.6	4⁺			E_γ: shown by 1997Po02 only in their level scheme (figure 1).
636 *1*		5774.9	22⁻	5138.9	20⁻			
637.4 *10*		5803.6	(22⁻)	5166.2	(20⁻)			
638.3 *10*	8.8 *6*	5207.0	(21⁻)	4568.7	(19⁻)	Q		A_2=+0.36 *9*; A_4=−0.11 *9*
639.2 *10*	6.6 *5*	5138.9	20⁻	4499.7	18⁻	Q		A_2=+0.36 *9*; A_4=−0.11 *9*
648.3 *10*	4.8 *7*	3479.0	(15⁻)	2831.1	14⁺	(D)		A_2=−0.11 *22*; A_4=0.00 *21*
662 *1*		1436.6	6⁺	774.29	6⁺			
667 *1*		666.9	2⁺	0.0	0⁺			
669.2 *10*	2.6 *5*	5493.6	21⁻	4824.4	19⁻			A_2=+0.4 *3*; A_4=−0.1 *3*
673 *1*	3.4 *5*	5950.4	23⁻	5277.4	21⁻	(Q)		A_2=+0.37 *13*; A_4=−0.12 *12*
674.7 *10*	5.5 *5*	5402.3	22⁺	4727.6	20⁺	(Q)		A_2=+0.37 *16*; A_4=−0.12 *16*
675 *1*		6478.6	(24⁻)	5803.6	(22⁻)			
686 *1*		5893.0	(23⁻)	5207.0	(21⁻)			
687.0 *10*		4918.2	(20⁺)	4231.1	(18⁺)			
699 *1*		854.9	2⁺	155.00	2⁺			
714 *1*	2.0 *9*	6207.6	23⁻	5493.6	21⁻	(Q)		A_2=+0.34 *8*; A_4=−0.09 *8*
718.6 *10*		5636.8	(22⁺)	4918.2	(20⁺)			
719 *1*	3.2 *5*	1923.8	7⁻	1205.19	8⁺			
723.6 *10*	5.2 *6*	6125.9	24⁺	5402.3	22⁺	(Q)		A_2=+0.13 *15*; A_4=−0.01 *15*
731 *1*		6624	(25⁻)	5893.0	(23⁻)			
743 *1*		6379.8	(24⁺)	5636.8	(22⁺)			
750 *1*	2.2 *4*	1954.8	7⁻	1205.19	8⁺	D		A_2=−0.20 *8*; A_4=0.00 *8*
753 *1*		6960.6	25⁻	6207.6	23⁻			
771.1 *10*		4231.1	(18⁺)	3459.6	16⁺			
772 *1*		7396.0	(27⁻)	6624	(25⁻)			
778.0 *10*	2.0 *9*	6903.9	26⁺	6125.9	24⁺			
787 *1*		941.9	3⁺	155.00	2⁺			
812.6 *10*		3643.9	(16⁺)	2831.1	14⁺			
819 *1*		1238.2	4⁺	419.31	4⁺			
824.6 *10*		4918.2	(20⁺)	4093.4	18⁺			
831 *1*	2.4 *4*	1863.1	6⁺	1032.6	4⁺	(Q)		A_2=+0.36 *12*; A_4=−0.11 *11*
854.4 *10*	2.9 *4*	3095.6	(13⁻)	2241.2	12⁺			
855 *1*		854.9	2⁺	0.0	0⁺			
875 *1*		1648.7	6⁺	774.29	6⁺			
878 *1*		1032.6	4⁺	155.00	2⁺			
885 *1*	8.7 *9*	1303.9	5⁺	419.31	4⁺			A_2=+0.42 *12*; A_4=−0.29 *14* Sign of A_4 is inconsistent with ΔJ=1 transition.

Continued on next page (footnotes at end of table)

^{170}Yb(^{16}O,4nγ) 1997Po02,2012Gl01,2012Wa16 (continued)

γ(^{182}Pt) (continued)

E_γ [†]	I_γ [†]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [#]	Comments
896 *1*		1669.8	5$^-$	774.29	6$^+$		
955 *1*	3.0 *5*	1729.6	7$^+$	774.29	6$^+$		A_2=+0.24 *5*; A_4=−0.04 *4* Mult.: E2 assigned by 1997Po02, but ΔJ^π requires ΔJ=1 which allows M1+E2. The $\gamma(\theta)$ result would imply large significant mixing ratio.
992 *1*		2689.3	(12$^+$)	1697.78	10$^+$		
1017 *1*		1436.6	6$^+$	419.31	4$^+$		
1036 *1*		2240.2	9$^-$	1205.19	8$^+$		E_γ: from table I of 1997Po02, 1035 in authors′ level scheme (figure 1).
1048 *1*		3288.7	13,14	2241.2	12$^+$		
1083 *1*	3.6 *6*	1238.2	4$^+$	155.00	2$^+$		
1089 *1*	4.1 *5*	1863.1	6$^+$	774.29	6$^+$		A_2=+0.10 *10*; A_4=0.00 *10*
1149 *1*		1923.8	7$^-$	774.29	6$^+$		
1229 *1*	4.5 *5*	1648.7	6$^+$	419.31	4$^+$	(Q)	A_2=+0.12 *12*; A_4=−0.01 *12*
1250 *1*	3.9 *5*	1669.8	5$^-$	419.31	4$^+$	(D)	A_2=−0.03 *11*; A_4=0.00 *11*
1443 *1*	2.3 *6*	1863.1	6$^+$	419.31	4$^+$		

[†] From (^{16}O,4nγ) reaction (1997Po02). Energy uncertainty=0.1 keV for Iγ>10, 1 keV for others. If no Iγ given, γ ray is either very weak or contaminated and reliable intensity determination could not be made.

[‡] From (^{24}Mg,4nγ) or (^{24}Mg,5nγ) data only.

[#] Assigned (by evaluators) on the basis of $\gamma(\theta)$ data of 1997Po02. Mult=Q is likely to be E2. 1997Po02 assign E2 for all ΔJ=2 transitions, M1+E2 for ΔJ=1 transitions with mixed multipolarity and E1 for a few ΔJ=1 transitions where A_4 is 0 and implies no admixture. But, in the absence of linear polarization and/or internal conversion data, such assignments cannot be supported by strong arguments.

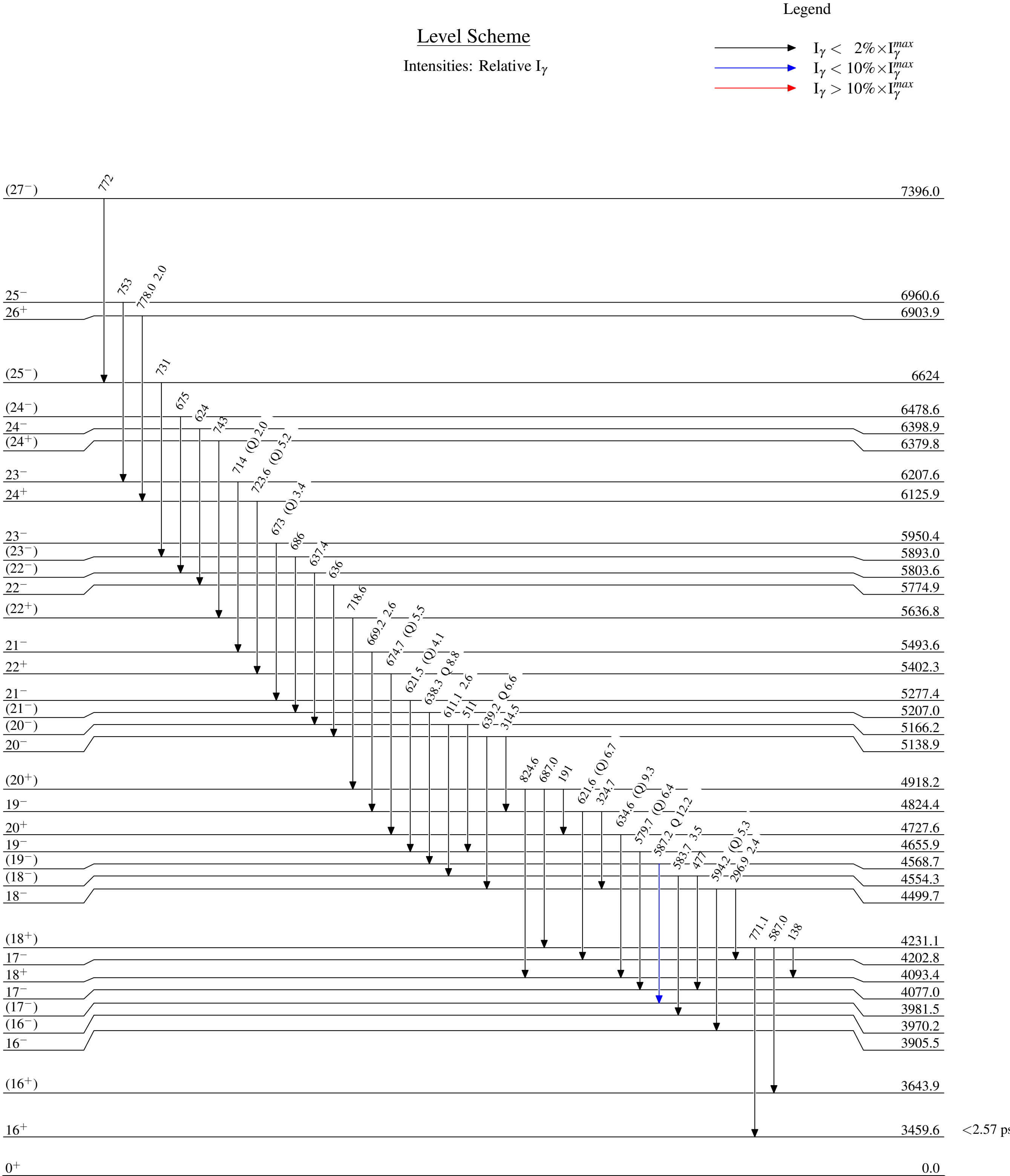
[@] From Ice and Iγ data (1967Bu02) by normalizing data to mult(154.9γ)=E2; the values of conversion coefficients are not available in 1967Bu02. Also $\gamma(\theta)$ data of 1997Po02.

[&] Significant dipole+quadrupole admixture favors M1+E2 over E1+M2.

[a] 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.

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

^{170}Yb(^{16}O,4nγ) 1997Po02,2012Gl01,2012Wa16



$^{182}_{78}Pt_{104}$

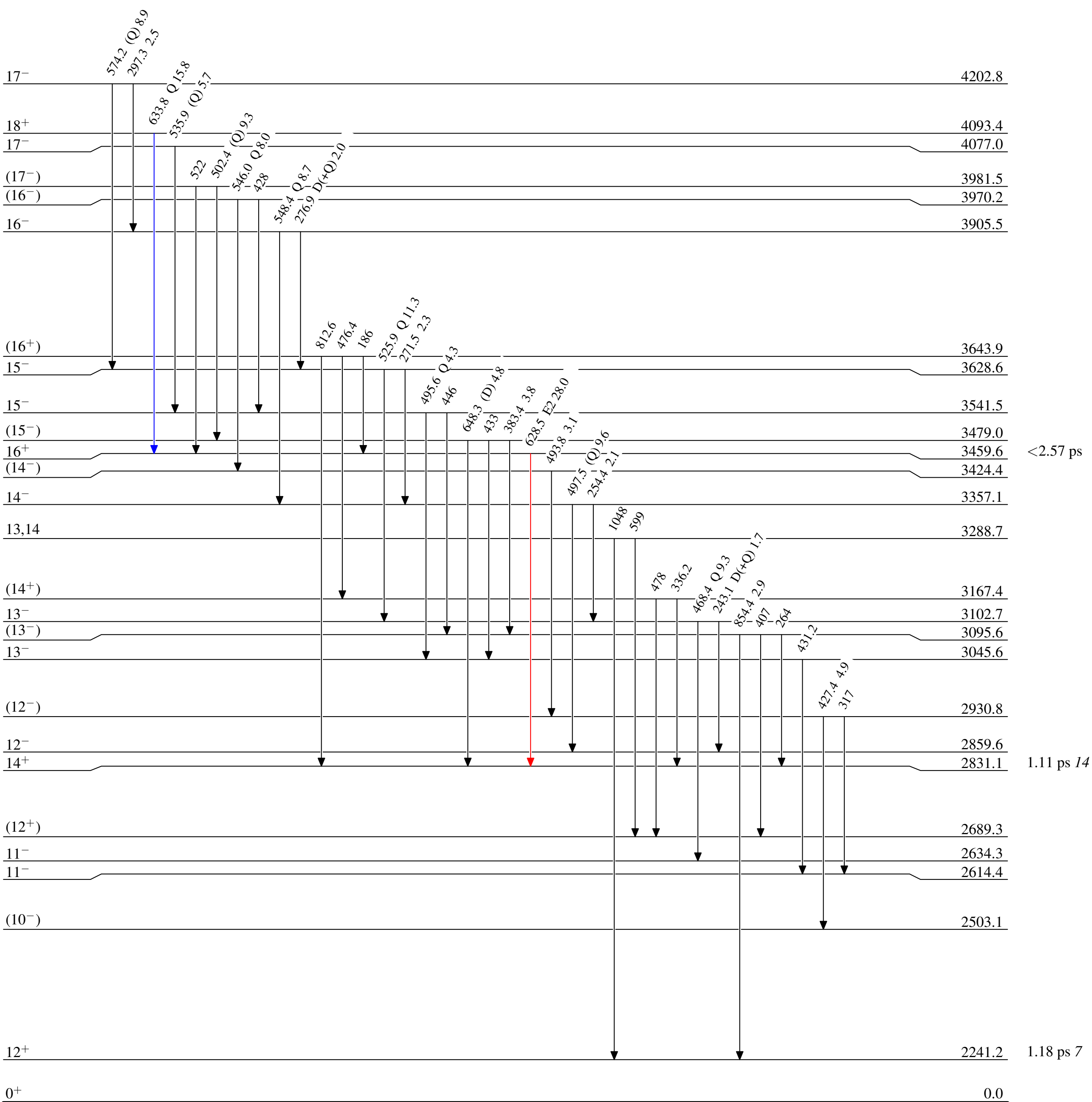
$^{170}Yb(^{16}O,4n\gamma)$ 1997Po02,2012Gl01,2012Wa16

Level Scheme (continued)

Intensities: Relative I_γ

Legend

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

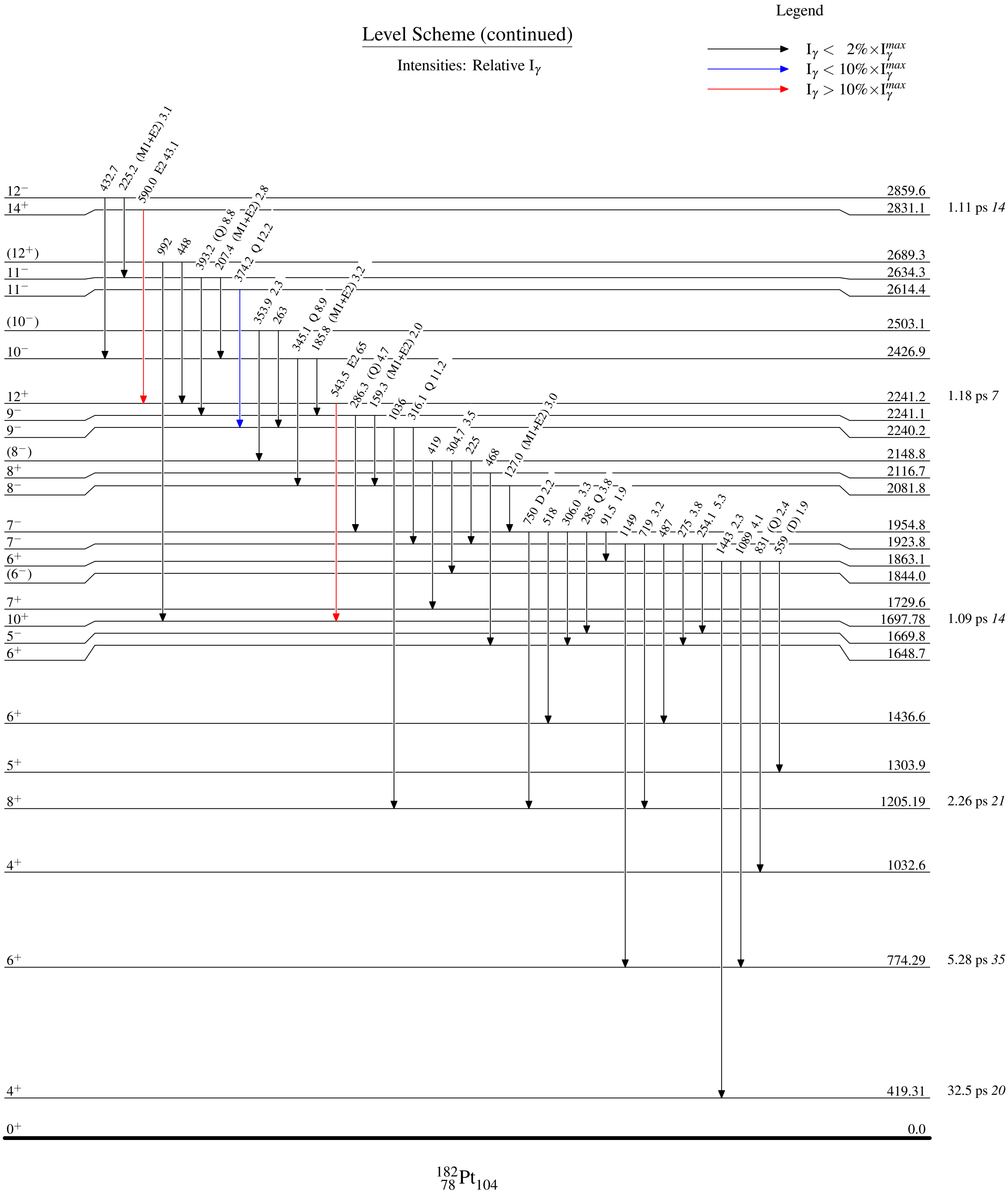


$^{182}_{78}Pt_{104}$

$^{170}Yb(^{16}O,4n\gamma)$ 1997Po02,2012Gl01,2012Wa16

Level Scheme (continued)

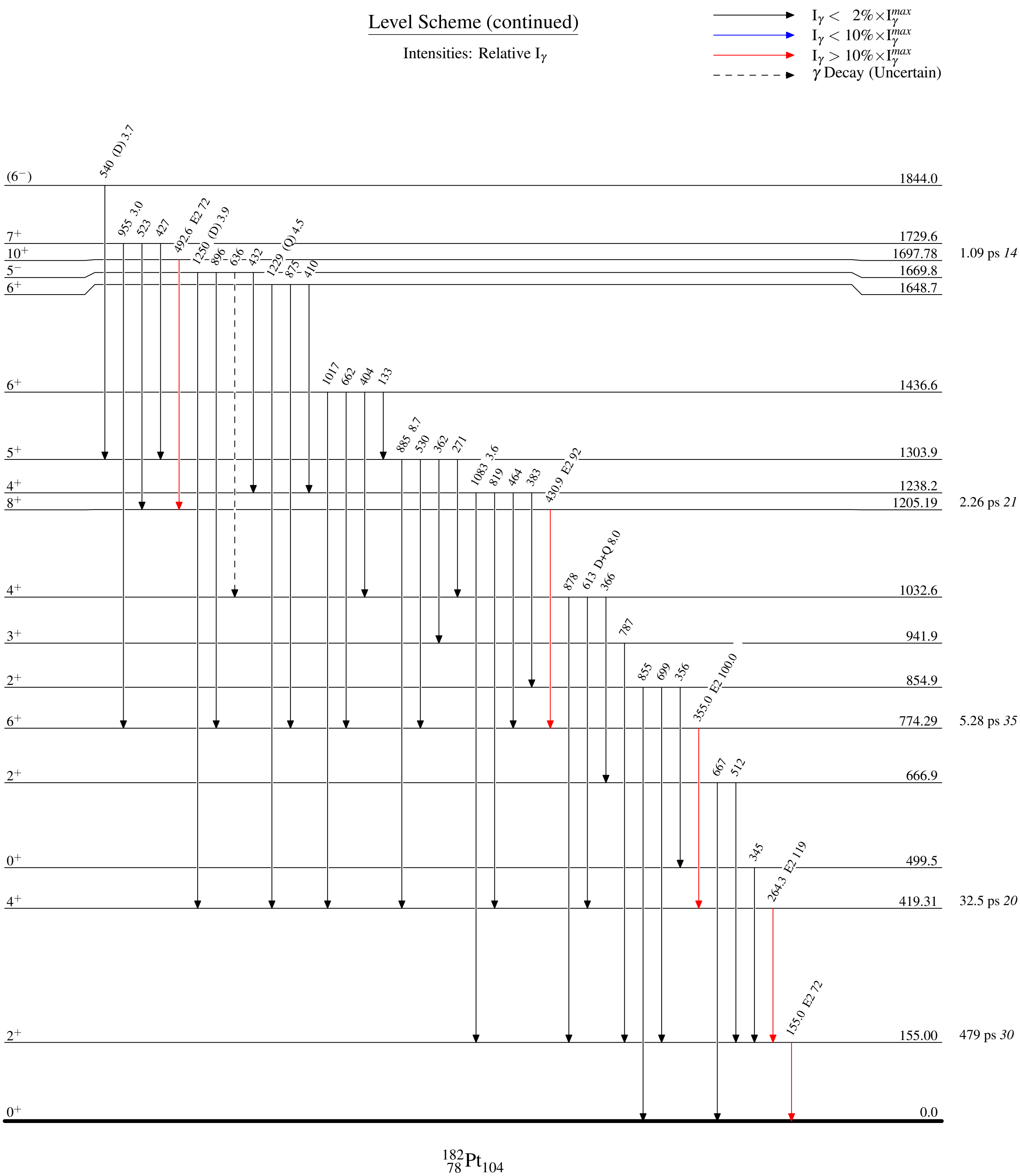
Intensities: Relative I_γ



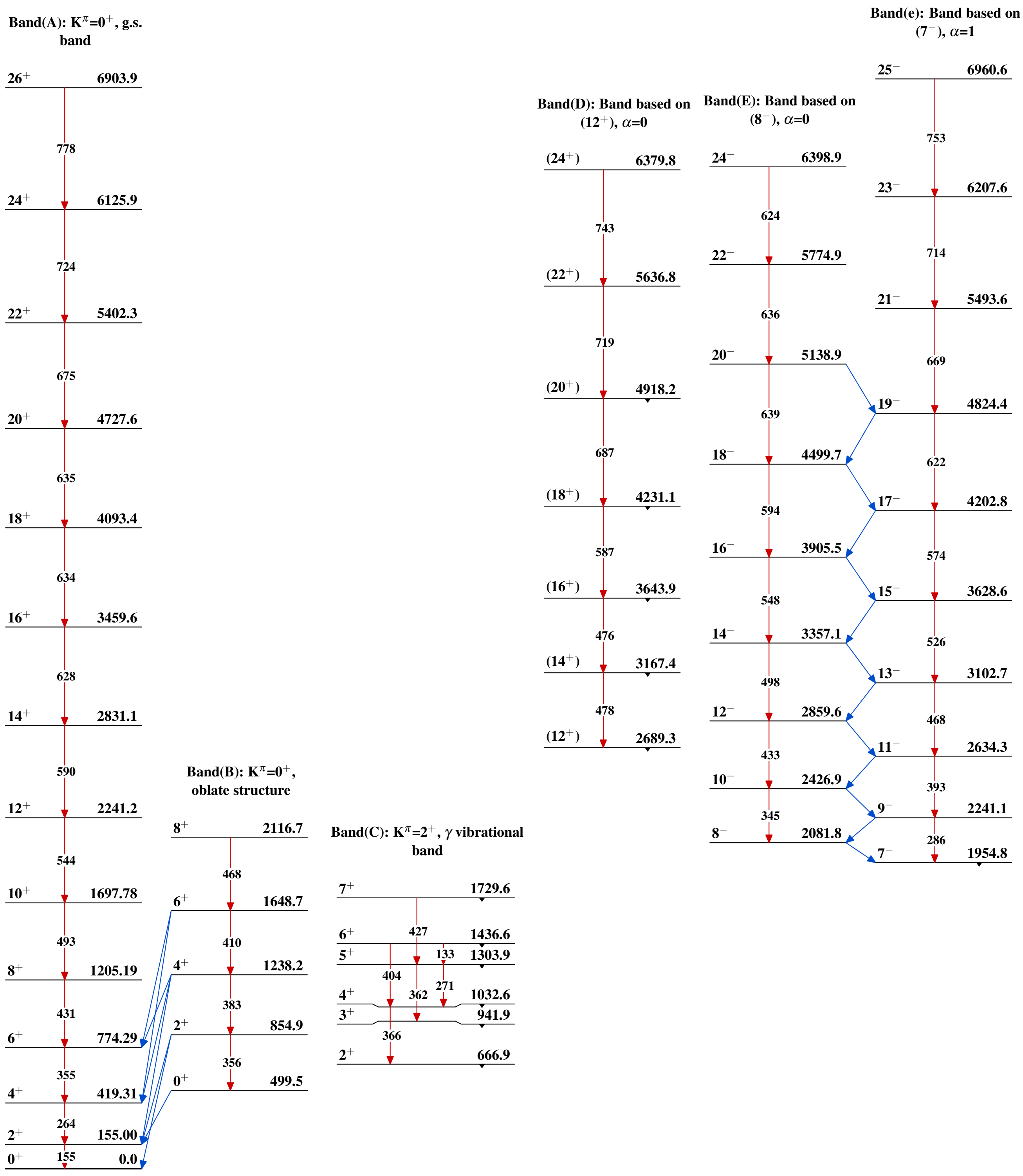
^{170}Yb(^{16}O,4nγ) 1997Po02,2012Gl01,2012Wa16

Level Scheme (continued)

Intensities: Relative I_γ

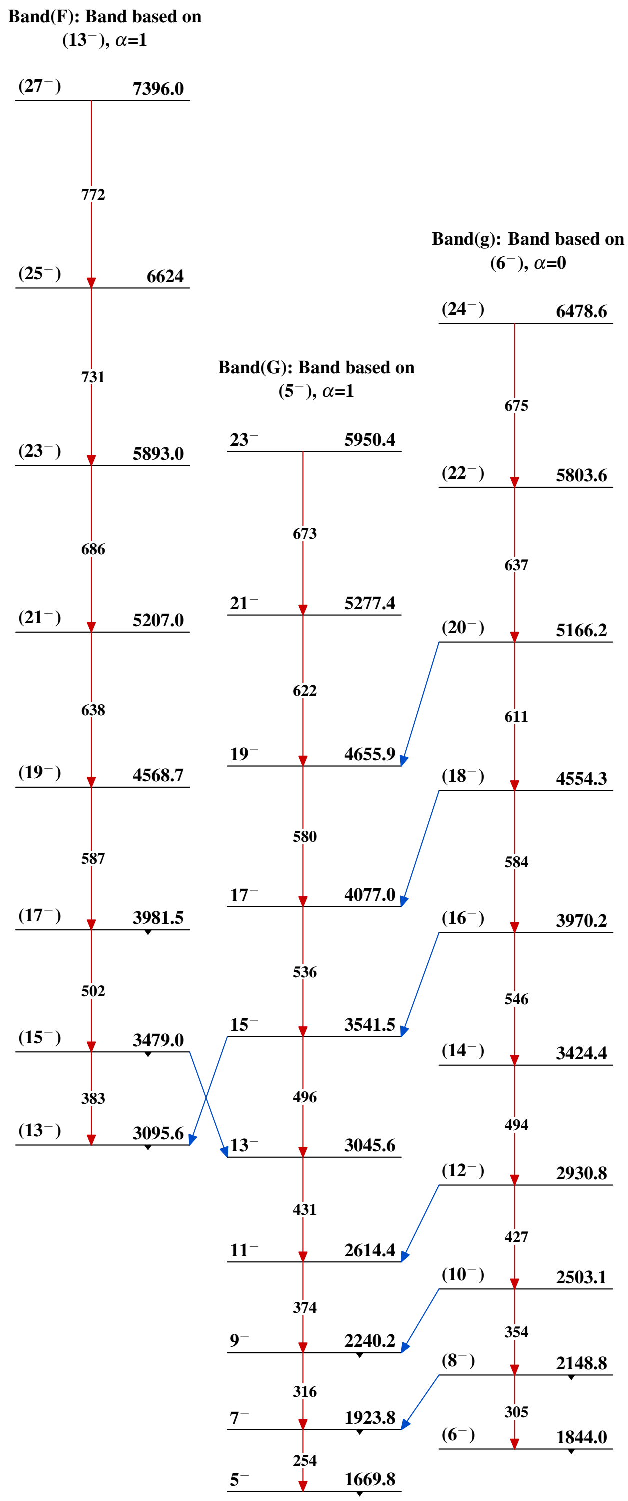


$^{170}Yb(^{16}O,4n\gamma)$ 1997Po02,2012Gl01,2012Wa16



$^{182}_{78}Pt_{104}$

$^{170}Yb(^{16}O,4n\gamma)$ 1997Po02,2012Gl01,2012Wa16 (continued)



$^{182}_{78}Pt_{104}$