^{176}Yb(^{14}C,4nγ) 1999Wh02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. C. Batchelder and A. M. Hurst, M. S. Basunia	NDS 183, 1 (2022)	1-Mar-2022

Other: 1999Wh01.

Minor changes compared to previous evaluation (2003Ba44).

1999Wh02: E=67 MeV; 95.7% ^{176}Yb target; NORDBALL detector array (18 Compton-suppressed coaxial Ge detectors, 2 planar Compton-suppressed Ge detectors, 50-element ball of BaF_2 detectors for γ-multiplicity determination, 30-element Si-detector inner ball for charged-particle evaporation channel identification), measured Eγ, Iγ, $\gamma\gamma$ coin (550 ns time window), γ-x coin, γ-γ-t, γ(t), DCO ratios (79° or 101°, 37° or 143°), band mixing analysis and blocked BCS and configuration-constrained potential-energy-surface calculations. see also 1999Wh01 (same group and experiment of 1999Wh02).
Theory: for calculation of hindrance for high-K isomer decay, see 2002Sh41.

^{186}Os Levels

E(level)†	J$^\pi$‡	$T_{1/2}$#	E(level)†	J$^\pi$‡	E(level)†	J$^\pi$‡	$T_{1/2}$#
0.0[a]	0$^+$		2624.9[d]	10$^+$	4169.8[h]	16$^-$	
137.0[a]	2$^+$		2698.6[h]	11$^-$	4242.5[l]	16$^+$	
433.6[a]	4$^+$		2714.4[i]	11$^-$	4283.3[i]	16$^-$	
768.1[d]	2$^+$		2781.7[a]	12$^+$	4351.6	(16$^+$)	
868.4[a]	6$^+$		2787.8[e]	(10$^+$)	4414.7[c]	17$^+$	
910.1[d]	3$^+$		2806.2[c]	11$^+$	4483.8[k]	17$^+$	
1070.4[d]	4$^+$		2852.0[g]	11$^-$	4486.9[g]	(16$^-$)	
1207.1[e]	2$^+$		2956.0[d]	(11$^+$)	4495.2	18$^+$@	<0.5 ns
1274.9[d]	5$^+$		2977.2[h]	12$^-$	4505.7[b]	18$^+$	
1351.9[f]	4$^+$		3007.0[i]	12$^-$	4624.9[i]	17$^-$	
1420.8[a]	8$^+$		3039.4[b]	12$^+$	4637.7?[h]	17$^-$	
1460.7[e]	4$^+$		3123.1[g]	12$^-$	4760.0[g]	(17$^-$)	
1491.8[d]	6$^+$		3186.6[j]	12$^+$	4818.7[h]	(18$^-$)	
1559.6[f]	5$^+$		3221.5	(12$^+$)	4870.0[k]	18$^+$	
1628.4[g]	5$^-$	<1 ns	3288.9[h]	13$^-$	4958.0	19$^+$	
1750.4[d]	7$^+$		3294.0[c]	13$^+$	4963.8[l]	18$^+$	
1771.7[g]	6$^-$		3296.2[d]	(12$^+$)	5026.7[m]	(18$^-$)	<2 ns
1774.6[h]	7$^-$	8.5 ns *3*	3309.3[i]	13$^-$	5107.6[c]	19$^+$	
1812.4[e]	6$^+$		3425.3[g]	13$^-$	5168.5[b]	20$^+$	
1938.9[g]	7$^-$		3432.1[j]	13$^+$	5244.9[m]	(19$^-$)	
1968.3[h]	8$^-$		3440.6[b]	14$^+$	5332.8[n]	19$^-$	<1 ns
2015.5[d]	8$^+$		3506.4	(13)	5375.5	20$^+$	
2068.3[a]	10$^+$		3557.4[h]	14$^-$	5489.9[h]	(20$^-$)	
2133.6[g]	8$^-$		3558.7[a]	14$^+$	5497.3	20$^+$	
2165.6[i]	9$^-$	6.1 ns *2*	3624.0[i]	14$^-$	5502.0	20$^+$	
2188.0[h]	9$^-$		3731.4[k]	15$^+$	5561.3[n]	(20$^-$)	
2257.7[e]	(8$^+$)		3760.7?[g]	14$^-$	5670.9[k]	(20$^+$)	
2317.0[d]	9$^+$		3816.9[c]	15$^+$	5703.1	21$^{(+)}$	
2349.9[g]	9$^-$		3935.7[b]	16$^+$	5782.0[l]	(20$^+$)	
2431.2[i]	10$^-$		3940.9[h]	15$^-$	5889.3[c]	(21$^+$)	
2435.2[h]	10$^-$		3946.4[i]	15$^-$	5903.0[n]	(21$^-$)	
2563.1[b] *13*	10$^+$	<1 ns	4062.2[g]	(15$^-$)	5916.2[b]	22$^+$	
2587.5[g] *14*	10$^-$		4100.4[k]	16$^+$	5923.8	(21$^+$)	

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^{176}Yb(^{14}C,4nγ) 1999Wh02 (continued)

^{186}Os Levels (continued)

E(level)[†]	Jπ[‡]	E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	E(level)[†]	Jπ[‡]
5924.0	(21$^+$)	6474.4	(25$^+$)		7478.4	(26$^+$)
6028.0	22$^+$	6488.9	24$^+$		7584[b]	(26$^+$)
6032.0	22$^+$	6728.8[b]	24$^+$		7711	(30$^+$)
6065.5	(22$^+$)	6948.6?	(26$^+$)		7751	(30$^+$)
6152.9	(24$^+$)	6990.1	26$^+$		7779	(30$^+$)
6186?[h]	(22$^-$)	6994.0	(25$^+$)			
6448.3?	(22$^+$)	7143.9	28$^+$[&]	<2 ns		

[†] From 1999Wh02; uncertainty unstated by authors.
[‡] Authors′ values, based on transition multipolarity deduced from measured DCO ratios and band structure.
[#] From γ-t (time centroid shifts) or γ-γ-t (projected time spectra fitted with prompt Gaussian convoluted with an exponential decay) (1999Wh02).
[@] Probably a four-quasineutron intrinsic triaxial (γ=23°) state; blocked BCS calculations predict a low-lying 18$^+$ state with configuration=((11/2[615])+(9/2[624])+(9/2[505])+(7/2[503])), despite predominantly ΔK=8 deexcitation, for this yrast state is consistent with the onset of triaxiality.
[&] Probably a six-quasiparticle intrinsic triaxial (γ=26°) state; blocked BCS calculations predict a low-lying 28$^+$ state with configuration=((18$^+$ 4495 level)⊗((π 11/2[505])+(π 9/2[514]))), the short $T_{1/2}$ for this yrast state may result from the onset of triaxiality.
[a] Band(A): K$^\pi$=0$^+$ g.s. band. yrast for J≤12.
[b] Band(B): K$^\pi$=10$^+$, α=0 tilted-axis band. likely configuration=((ν 11/2[615])+(ν 9/2[624])), consistent with the relatively large alignment and the intraband E2-to-M1 branching ratios observed. Crosses g.s. band; yrast for J=14-16.
[c] Band(b): K$^\pi$=10$^+$, α=1 tilted-axis band. signature partner of K$^\pi$=10$^+$, α=0 band, exhibiting pronounced signature splitting.
[d] Band(C): K$^\pi$=2$^+$ γ band.
[e] Band(D): K$^\pi$=0$^+$ β band. the 0$^+$ bandhead (known to lie at≈1061 keV) was not observed by 1999Wh02.
[f] Band(E): Possible K$^\pi$=4$^+$ hexadecapole band. could alternatively be interpreted as a two γ phonon excitation.
[g] Band(F): K$^\pi$=5$^-$ band. similarity of alignment curve to that for the 11/2$^+$ band in ^{185}Os favors configuration=((ν 11/2[615])-(ν 1/2[510])), analogous to the 8.3 μs, 5$^-$ isomer with this configuration in ^{184}W.
[h] Band(G): K$^\pi$=7$^-$ band. likely configuration=((ν 11/2[615])+(ν 3/2[512])); alignment is consistent with that for other (ν $i_{13/2}$) bands. Analogous to band with same configuration built on 7$^-$, 2.4 ns isomer in ^{184}W isotone.
[i] Band(H): K$^\pi$=9$^-$ band. likely configuration=((ν 11/2[615])+(ν 7/2[503])), supported by similarity of alignment curve to that for other (ν 11/2[615]) bands.
[j] Band(I): K$^\pi$=(12$^+$) four-quasineutron band. possible configuration=((11/2[615])+(9/2[624])+(3/2[512])+(1/2[510])) based on comparisons with BCS calculations.
[k] Band(J): K$^\pi$=(15$^+$) four-quasineutron band. possible configuration=((11/2[615])+(9/2[624])+(7/2[503])+(3/2[512])).
[l] Band(K): π=+, α=0 band. possible rotational aligned low-K s-band; alignment much larger than that of g.s. band.
[m] Band(L): K^π=(18$^-$) Four-quasiparticle band. Possible configuration =((ν 11/2[615])+(ν 9/2[624])+(π 5/2[402])+(π 11/2[505])) based on comparisons with blocked BCS calculations.
[n] Band(M): K$^\pi$=(19$^-$) four-quasiparticle band. possible configuration= ((ν 11/2[615])+(ν 7/2[503])+(π 9/2[514])+(π 11/2[505])) based on comparisons with blocked BCS calculations.

γ(^{186}Os)

E_γ[†]	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	Comments
118.9	4.56 *16*	3935.7	16$^+$	3816.9	15$^+$		
120.9	9.8 *3*	6152.9	(24$^+$)	6032.0	22$^+$	(Q)	Mult.: DCO=1.1 *2*.
132.3	3.1 *2*	2563.1	10$^+$	2431.2	10$^-$		
137.3	799 *26*	137.0	2$^+$	0.0	0$^+$	Q	Mult.: DCO=1.00 *1*.

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^{176}Yb(^{14}C,4nγ) 1999Wh02 (continued)

$\gamma(^{186}Os)$ (continued)

E_γ[†]	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[&]	Comments
140.0	4.27 *20*	910.1	3^+	768.1	2^+			E_γ: Low compared with adopted Eγ=143.17 *5*.
143.3	45.1 *14*	1771.7	6^-	1628.4	5^-	D		Mult.: DCO=0.47 *2*.
146.1	244 *7*	1774.6	7^-	1628.4	5^-	Q		Mult.: DCO=0.96 *2*.
148.5[#a]	3.0 *1*	3440.6	14^+	3294.0	13^+			
153.8	21.3 *7*	7143.9	28^+	6990.1	26^+	Q		Mult.: DCO=1.00 *6*.
158.8	4.70 *23*	1070.4	4^+	910.1	3^+			E_γ: Low compared with adopted Eγ=160.11 *10*.
167.3	19.7 *7*	1938.9	7^-	1771.7	6^-	D		Mult.: DCO=0.53 *7*.
193.8	264 *8*	1968.3	8^-	1774.6	7^-	D		Mult.: DCO=0.60 *1*.
195.0	12.1 *5*	2133.6	8^-	1938.9	7^-			
197.3	212 *6*	2165.6	9^-	1968.3	8^-	M1	0.845	Mult.: DCO=1.05 *2*; α(exp)=0.94 *8* from intensity balance.
200.9	11.9 *4*	5703.1	$21^{(+)}$	5502.0	20^+	D		Mult.: DCO=0.74 *7*.
206.0	4.8 *2*	5703.1	$21^{(+)}$	5497.3	20^+			
207.7	4.8 *3*	1559.6	5^+	1351.9	4^+			
210.7	2.3 *1*	3432.1	13^+	3221.5	(12^+)			
216.5	7.5 *3*	2349.9	9^-	2133.6	8^-	D		Mult.: DCO=0.58 *5*.
218.2	13.9 *5*	5244.9	(19^-)	5026.7	(18^-)	D		Mult.: DCO=0.67 *5*.
219.2	1.9 *2*	1491.8	6^+	1274.9	5^+			E_γ: Low compared with adopted Eγ=215.51 *20*.
219.7	43.1 *13*	2188.0	9^-	1968.3	8^-	D		Mult.: DCO=0.56 *2*.
226.7	4.1 *2*	2165.6	9^-	1938.9	7^-			
228.6	14.4 *5*	5561.3	(20^-)	5332.8	19^-			Mult.: DCO=0.85 *7*.
232.9	29.6 *9*	3039.4	12^+	2806.2	11^+	D		Mult.: DCO=0.54 *3*.
237.6	6.03 *24*	2587.5	10^-	2349.9	9^-	D		Mult.: DCO=0.59 *10*.
243.0	84.6 *26*	2806.2	11^+	2563.1	10^+	D		Mult.: DCO=0.56 *3*.
243.3	6.8 *3*	2431.2	10^-	2188.0	9^-	D		Mult.: DCO=0.65 *4*.
245.5	32.8 *10*	3432.1	13^+	3186.6	12^+	D		Mult.: DCO=0.57 *5*.
247.2	20.4 *7*	2435.2	10^-	2188.0	9^-	D		Mult.: DCO=0.58 *6*.
252.8	3.9 *1*	1460.7	4^+	1207.1	2^+			
254.6	25.3 *8*	3294.0	13^+	3039.4	12^+	D		Mult.: DCO=0.58 *3*.
258.4	5.4 *2*	3816.9	15^+	3558.7	14^+	D		Mult.: DCO=0.54 *4*.
263.6	4.2 *2*	2698.6	11^-	2435.2	10^-			
264.5	4.6 *2*	2852.0	11^-	2587.5	10^-			
265.6	41.0 *13*	2431.2	10^-	2165.6	9^-	D		Mult.: DCO=0.60 *3*.
267.3	9.2 *4*	2698.6	11^-	2431.2	10^-	D		Mult.: DCO=0.63 *7*.
268.2[#a]	2.2 *2*	3557.4	14^-	3288.9	13^-			
269.5	46.9 *14*	2435.2	10^-	2165.6	9^-	D		Mult.: DCO=0.67 *3*.
276.7	332 *10*	1628.4	5^-	1351.9	4^+	D[@]		Mult.: DCO=0.79 *1*.
278.5	9.6 *4*	2977.2	12^-	2698.6	11^-			
279.1	43.5 *14*	2714.4	11^-	2435.2	10^-	D		Mult.: DCO=0.59 *5*.
280.7	16.9 *6*	1351.9	4^+	1070.4	4^+			Mult.: DCO=0.92 *6*; assigned as ΔJ=0 (1999Wh02).
283.0	20.9 *7*	2714.4	11^-	2431.2	10^-	D		Mult.: DCO=0.59 *7*.
292.4	36.8 *11*	3007.0	12^-	2714.4	11^-	D		Mult.: DCO=0.68 *10*.
296.9	1000 *30*	433.6	4^+	137.0	2^+	Q		Mult.: DCO=0.98 *1*.
299.1	80.5 *24*	3731.4	15^+	3432.1	13^+	Q		Mult.: DCO=0.94 *7*.
302.1	22.3 *7*	3309.3	13^-	3007.0	12^-	D		Mult.: DCO=0.66 *4*.
302.5	5.8 *3*	1070.4	4^+	768.1	2^+	Q		Mult.: DCO=1.14 *16*.
306.1	17.5 *6*	5332.8	19^-	5026.7	(18^-)			Mult.: DCO=0.93 *9*.
310.4	24.0 *8*	1938.9	7^-	1628.4	5^-	Q		Mult.: DCO=1.03 *6*.
311.5	2.93 *18*	3288.9	13^-	2977.2	12^-			
314.7	13.0 *4*	3624.0	14^-	3309.3	13^-	D		Mult.: DCO=0.56 *7*.
319.8	2.7 *2*	3506.4	(13)	3186.6	12^+			
321.5	15.9 *5*	6474.4	(25^+)	6152.9	(24^+)	D		Mult.: DCO=0.75 *10*.
322.2	5.70 *23*	3946.4	15^-	3624.0	14^-	D		Mult.: DCO=0.64 *12*.
327.6	27.8 *9*	5703.1	$21^{(+)}$	5375.5	20^+	D		Mult.: DCO=0.68 *3*.

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^{176}Yb(^{14}C,4nγ) 1999Wh02 (continued)

γ(^{186}Os) (continued)

E_γ [†]	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	Comments
336.9	2.95 *19*	4283.3	16^-	3946.4	15^-		
341.7	10.0 *3*	5903.0	(21^-)	5561.3	(20^-)		Mult.: DCO=0.95 *12*; assigned as ΔJ=0 (1999Wh02).
351.6	5.2 *4*	1812.4	6^+	1460.7	4^+		
353.0	64.5 *20*	1628.4	5^-	1274.9	5^+		Mult.: DCO=1.00 *3*; assigned as ΔJ=0 (1999Wh02).
361.9	35.5 *12*	2133.6	8^-	1771.7	6^-	Q	Mult.: DCO=1.01 *8*.
362.4	9.5 *3*	6065.5	(22^+)	5703.1	$21^{(+)}$		Mult.: DCO=0.85 *10*.
365.0	14.4 *5*	1274.9	5^+	910.1	3^+	Q	Mult.: DCO=0.93 *11*.
368.9	45.7 *14*	4100.4	16^+	3731.4	15^+	D	Mult.: DCO=0.57 *2*.
376.5	4.8 *3*	3816.9	15^+	3440.6	14^+		
376.8	5.00 *24*	3935.7	16^+	3558.7	14^+	Q	Mult.: DCO=1.0 *1*.
380.2	7.3 *3*	3186.6	12^+	2806.2	11^+		
383.2	14.6 *5*	4483.8	17^+	4100.4	16^+	D	Mult.: DCO=0.49 *6*.
386.0	7.0 *3*	4870.0	18^+	4483.8	17^+		
392.3	13.3 *4*	3432.1	13^+	3039.4	12^+	D	Mult.: DCO=0.57 *10*.
394.6	5.9 *2*	4495.2	18^+	4100.4	16^+		
397.2	151 *5*	2563.1	10^+	2165.6	9^-	D	Mult.: DCO=0.72 *5*.
401.1	11.3 *4*	3440.6	14^+	3039.4	12^+	Q	Mult.: DCO=1.1 *2*.
407.2	6.7 *4*	1274.9	5^+	868.4	6^+		
410.7	30.3 *10*	2349.9	9^-	1938.9	7^-	Q	Mult.: DCO=0.97 *6*.
413.4	37.3 *12*	2188.0	9^-	1774.6	7^-	Q	Mult.: DCO=0.96 *7*.
417.4	21.5 *7*	5375.5	20^+	4958.0	19^+	D	Mult.: DCO=0.61 *5*.
420.8	17.6 *7*	1491.8	6^+	1070.4	4^+	Q	Mult.: DCO=1.07 *7*.
421.8	9.5 *3*	5923.8	(21^+)	5502.0	20^+		Mult.: DCO=0.9 *1*.
426.7	9.5 *3*	5924.0	(21^+)	5497.3	20^+		Mult.: DCO=1.0 *1*.
434.9	822 *25*	868.4	6^+	433.6	4^+	Q	Mult.: DCO=1.02 *1*.
441.5	91 *3*	1351.9	4^+	910.1	3^+		Mult.: DCO=0.91 *3*.
445.3	9.4 *4*	2257.7	(8^+)	1812.4	6^+		
453.9	28.3 *9*	2587.5	10^-	2133.6	8^-	Q	Mult.: DCO=0.99 *8*.
456.9	67.2 *20*	6488.9	24^+	6032.0	22^+	Q	Mult.: DCO=0.96 *3*.
460.9	27.9 *9*	6488.9	24^+	6028.0	22^+		Mult.: DCO=0.83 *6*.
462.8	120 *4*	4958.0	19^+	4495.2	18^+	D	Mult.: DCO=0.55 *3*.
463.1	26.5 *9*	2431.2	10^-	1968.3	8^-		Mult.: DCO=0.88 *4*.
466.8	27.8 *9*	2435.2	10^-	1968.3	8^-	Q	Mult.: DCO=1.03 *8*.
474.2[#a]	11.7 *4*	6948.6?	(26^+)	6474.4	(25^+)		
475.2	16.5 *6*	1750.4	7^+	1274.9	5^+	Q	Mult.: DCO=0.97 *8*.
476.1	13.7 *5*	3039.4	12^+	2563.1	10^+		Mult.: DCO=0.94 *16*.
476.4	9.8 *5*	910.1	3^+	433.6	4^+		
478.5	7.9 *3*	4414.7	17^+	3935.7	16^+	D	Mult.: DCO=0.65 *6*.
484.4	1.1 *1*	7478.4	(26^+)	6994.0	(25^+)		
488.0	27.3 *9*	3294.0	13^+	2806.2	11^+	Q	Mult.: DCO=0.97 *8*.
489.0	11.0 *6*	1559.6	5^+	1070.4	4^+		Mult.: DCO=1.1 *1*.
494.9	345 *10*	3935.7	16^+	3440.6	14^+	Q	Mult.: DCO=1.01 *1*.
501.2	63.5 *19*	6990.1	26^+	6488.9	24^+	Q	Mult.: DCO=0.98 *3*.
502.2	23.7 *8*	2852.0	11^-	2349.9	9^-	Q	Mult.: DCO=0.98 *7*.
505.1	11.5 *4*	6994.0	(25^+)	6488.9	24^+	D	Mult.: DCO=0.64 *7*.
510.6	53.9 *17*	2698.6	11^-	2188.0	9^-	Q	Mult.: DCO=1.03 *6*.
523.1	36.5 *11*	3816.9	15^+	3294.0	13^+	Q	Mult.: DCO=0.98 *8*.
524.0	22.4 *8*	2015.5	8^+	1491.8	6^+	Q	Mult.: DCO=0.97 *6*.
524.6[#a]	0.7 *2*	6448.3?	(22^+)	5923.8	(21^+)		
530.1	5.7 *4*	2787.8	(10^+)	2257.7	(8^+)		
530.1	30.5 *10*	6032.0	22^+	5502.0	20^+	Q	Mult.: DCO=0.98 *6*.
530.7	16.7 *6*	6028.0	22^+	5497.3	20^+	Q	Mult.: DCO=0.93 *9*.
531.5	57.2 *18*	5026.7	(18^-)	4495.2	18^+		Mult.: DCO=1.04 *3*; assigned as ΔJ=0 (1999Wh02).
534.6	12.7 *4*	6032.0	22^+	5497.3	20^+		
535.6	12.7 *5*	3123.1	12^-	2587.5	10^-	Q	Mult.: DCO=1.07 *6*.

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^{176}Yb(^{14}C,4nγ) 1999Wh02 (continued)

γ(^{186}Os) (continued)

E_γ [†]	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	Comments
539.5	41.7 *13*	5497.3	20^+	4958.0	19^+	D	Mult.: DCO=0.54 *3*.
542.0	14.9 *5*	2977.2	12^-	2435.2	10^-	Q	Mult.: DCO=0.95 *6*.
543.7	42.5 *13*	5502.0	20^+	4958.0	19^+	D	Mult.: DCO=0.56 *3*.
545.9	19.8 *7*	2977.2	12^-	2431.2	10^-	Q	Mult.: DCO=1.16 *6*.
549.2	8.79 *4*	2714.4	11^-	2165.6	9^-		
552.2	596 *18*	1420.8	8^+	868.4	6^+	Q	Mult.: DCO=0.99 *1*.
558.4	99 *3*	1628.4	5^-	1070.4	4^+	@	Mult.: DCO=0.91 *4*.
559.6	310 *9*	4495.2	18^+	3935.7	16^+	Q	Mult.: DCO=1.01 *1*.
566.6	20.8 *8*	2317.0	9^+	1750.4	7^+	Q	Mult.: DCO=1.02 *7*.
567.4	11.7 *4*	7711	(30^+)	7143.9	28^+		Mult.: DCO=1.3 *1*.
570.0	55.1 *16*	4505.7	18^+	3935.7	16^+	Q	Mult.: DCO=0.98 *4*.
570.2	8.0 *4*	5903.0	(21^-)	5332.8	19^-		
571.6	13.7 *5*	3007.0	12^-	2435.2	10^-	Q	Mult.: DCO=1.1 *2*.
573.3	17.6 *6*	3425.3	13^-	2852.0	11^-	Q	Mult.: DCO=1.05 *6*.
575.8	11.0 *4*	3007.0	12^-	2431.2	10^-		
580.2	36.3 *12*	3557.4	14^-	2977.2	12^-	Q	Mult.: DCO=1.02 *7*.
584.7	220 *7*	1351.9	4^+	768.1	2^+	Q	Mult.: DCO=0.97 *2*.
590.5	33.0 *11*	3288.9	13^-	2698.6	11^-	Q	Mult.: DCO=0.97 *6*.
595.3	29.4 *9*	3309.3	13^-	2714.4	11^-	Q	Mult.: DCO=1.1 *1*.
598.2	33.1 *10*	4414.7	17^+	3816.9	15^+	Q	Mult.: DCO=1.02 *8*.
606.8	11.0 *4*	7751	(30^+)	7143.9	28^+	Q	Mult.: DCO=0.9 *1*.
609.4	22.5 *8*	2624.9	10^+	2015.5	8^+	Q	Mult.: DCO=1.03 *6*.
612.4	39.2 *12*	4169.8	16^-	3557.4	14^-	Q	Mult.: DCO=0.99 *7*.
616.6	30.9 *10*	3624.0	14^-	3007.0	12^-	(Q)	Mult.: DCO=1.16 *10*.
622.6	20.6 *8*	1491.8	6^+	868.4	6^+		Mult.: DCO=0.85 *7*.
623.6	25.9 *8*	3186.6	12^+	2563.1	10^+	Q	Mult.: DCO=1.94 *14* with D 245γ in gate.
626.2	21.9 *7*	3432.1	13^+	2806.2	11^+	Q	Mult.: DCO=1.81 *12* with D 243γ in gate.
630.6	125 *4*	768.1	2^+	137.0	2^+		Mult.: DCO=0.86 *2*.
635.5	3.7 *2*	7779	(30^+)	7143.9	28^+		
636.8	98.6 *3*	1070.4	4^+	433.6	4^+		Mult.: DCO=0.92 *2*; assigned as ΔJ=0 (1999Wh02).
636.9	15.7 *6*	4062.2	(15^-)	3425.3	13^-		
637.4	25.7 *9*	3946.4	15^-	3309.3	13^-	Q	Mult.: DCO=0.91 *9*.
637.6[#a]	8.5 *4*	3760.7?	14^-	3123.1	12^-		
639.0	14.1 *5*	2956.0	(11^+)	2317.0	9^+	Q	Mult.: DCO=0.98 *6*.
647.6	542 *16*	2068.3	10^+	1420.8	8^+	Q	Mult.: DCO=1.00 *1*.
648.9	18.6 *7*	4818.7	(18^-)	4169.8	16^-	Q	Mult.: DCO=0.91 *6*.
649.7	12.9 *7*	1559.6	5^+	910.1	3^+		
652.1	25.0 *8*	3940.9	15^-	3288.9	13^-	Q	Mult.: DCO=0.98 *7*.
652.4	35.8 *11*	6028.0	22^+	5375.5	20^+	Q	Mult.: DCO=0.99 *5*.
656.6	25.7 *8*	6032.0	22^+	5375.5	20^+	Q	Mult.: DCO=0.91 *6*.
659.0	362 *11*	3440.6	14^+	2781.7	12^+	Q	Mult.: DCO=1.01 *1*.
659.3	30.0 *10*	4283.3	16^-	3624.0	14^-		
662.8	29.1 *9*	5168.5	20^+	4505.7	18^+	Q	Mult.: DCO=1.01 *8*.
671.2	9.7 *4*	5489.9	(20^-)	4818.7	(18^-)		
671.3	10.3 *4*	3296.2	(12^+)	2624.9	10^+	Q	Mult.: DCO=0.99 *9*.
678.4	19.3 *6*	4624.9	17^-	3946.4	15^-	Q	Mult.: DCO=1.11 *8*.
683.8	11.7 *5*	4242.5	16^+	3558.7	14^+	Q	Mult.: DCO=1.00 *6*.
684.0	8.8 *3*	4624.9	17^-	3940.9	15^-		
691.3[#a]	12.6 *4*	4637.7?	17^-	3946.4	15^-		
692.9	23.0 *7*	5107.6	19^+	4414.7	17^+	Q	Mult.: DCO=0.99 *10*.
695.7[#a]	12.8 *4*	6186?	(22^-)	5489.9	(20^-)	(Q)	Mult.: DCO=0.9 *1*.
696.8[#a]	22.2 *7*	4637.7?	17^-	3940.9	15^-	Q	Mult.: DCO=1.1 *1*.
697.8	19.4 *6*	4760.0	(17^-)	4062.2	(15^-)	Q	Mult.: DCO=0.93 *9*.
707.9	17.7 *6*	5332.8	19^-	4624.9	17^-	Q	Mult.: DCO=0.91 *7*.
713.5	484 *15*	2781.7	12^+	2068.3	10^+	Q	Mult.: DCO=1.03 *1*.

Continued on next page (footnotes at end of table)

^{176}Yb(^{14}C,4nγ) 1999Wh02 (continued)

γ(^{186}Os) (continued)

E_γ[†]	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	Comments
721.3	8.3 *4*	4963.8	18^+	4242.5	16^+	Q	Mult.: DCO=0.94 *7*.
726.2	10.7 *4*	4486.9	(16^-)	3760.7?	14^-		Mult.: DCO=1.06 *7* for 638γ (of unknown multipolarity) in gate.
747.7	13.1 *4*	5916.2	22^+	5168.5	20^+	Q	Mult.: DCO=1.03 *5*.
752.4	5.8 *2*	4483.8	17^+	3731.4	15^+		
759.9	111 *3*	1628.4	5^-	868.4	6^+	D[@]	Mult.: DCO=0.71 *2*.
767.8	140 *5*	768.1	2^+	0.0	0^+	Q	Mult.: DCO=1.03 *3*.
769.8	6.0 *3*	4870.0	18^+	4100.4	16^+		
773.6	131 *4*	910.1	3^+	137.0	2^+		Mult.: DCO=0.94 *3*.
777.0	47.8 *15*	3558.7	14^+	2781.7	12^+	Q	Mult.: DCO=0.98 *5*.
781.7	5.5 *2*	5889.3	(21^+)	5107.6	19^+	(Q)	Mult.: DCO=1.1 *2*.
793.0	2.8 *2*	4351.6	(16^+)	3558.7	14^+		
800.9	6.7 *2*	5670.9	(20^+)	4870.0	18^+		
812.6	5.5 *2*	6728.8	24^+	5916.2	22^+	Q	Mult.: DCO=0.96 *8*.
818.2	2.2 *2*	5782.0	(20^+)	4963.8	18^+	(Q)	Mult.: DCO=1.1 *2*.
841.9	98 *3*	1274.9	5^+	433.6	4^+		Mult.: DCO=0.89 *2*.
855.3	2.3 *1*	7584	(26^+)	6728.8	24^+	(Q)	Mult.: DCO=1.1 *2*.
880.5	84.9 *26*	5375.5	20^+	4495.2	18^+	Q	Mult.: DCO=1.01 *3*.
882.3	19.9 *8*	1750.4	7^+	868.4	6^+		
903.2	7.9 *4*	1771.7	6^-	868.4	6^+		
906.4	5.6 *3*	1774.6	7^-	868.4	6^+		
910.9	3.6 *2*	4351.6	(16^+)	3440.6	14^+		
918.7	5.72 *27*	1351.9	4^+	433.6	4^+		
933.7	63.6 *21*	1070.4	4^+	137.0	2^+	Q	Mult.: DCO=1.07 *8*.
944.1	4.1 *3*	1812.4	6^+	868.4	6^+		
971.1	19.5 *6*	3039.4	12^+	2068.3	10^+	Q	Mult.: DCO=0.98 *9*.
1002.1	14.7 *5*	5497.3	20^+	4495.2	18^+	Q	Mult.: DCO=0.99 *8*.
1006.8	15.6 *5*	5502.0	20^+	4495.2	18^+	Q	Mult.: DCO=1.00 *7*.
1027.3	2.6 *4*	1460.7	4^+	433.6	4^+		
1057.5	19.7 *8*	1491.8	6^+	433.6	4^+	Q	Mult.: DCO=1.04 *6*.
1069.3	6 *1*	1207.1	2^+	137.0	2^+		
1118.3	21.3 *7*	3186.6	12^+	2068.3	10^+	Q	Mult.: DCO=1.10 *7*.
1142.1	3.7 *2*	2563.1	10^+	1420.8	8^+		
1146.8	5.7 *3*	2015.5	8^+	868.4	6^+		
1153.3	12.5 *5*	3221.5	(12^+)	2068.3	10^+	Q	Mult.: DCO=1.04 *10*.
1215.1	7.5 *3*	1351.9	4^+	137.0	2^+		
1324.3	1.5 *3*	1460.7	4^+	137.0	2^+		

[†] From 1999Wh02; uncertainty unstated by authors.

[‡] From measured DCO ratios (79° (or 101°), 37° (or 143°)). the values given in comments are for stretched Q gating transitions, unless noted otherwise, and expected values are≈0.56 for stretched D transitions and≈1.00 for stretched Q (or D, ΔJ=0) transitions (1999Wh02). Multipolarities not assigned by the evaluators for some cases, when DCO value is significantly different from≈ 0.56, 1.00 and inconsistent with ΔJ.

[#] Eγ is shown in parentheses in table 1 of 1999Wh02; evaluator interprets this as an indication that the placement is uncertain, however, transition is not shown as uncertain in fig. 1.

[@] DCO ratio is higher than expected for a pure D transition. 1999WH02 suggest that this may be a result of nuclear deorientation. since most of the intensity feeding the 5^- parent is delayed by the 7^- and 9^- isomers.

[&] 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.

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

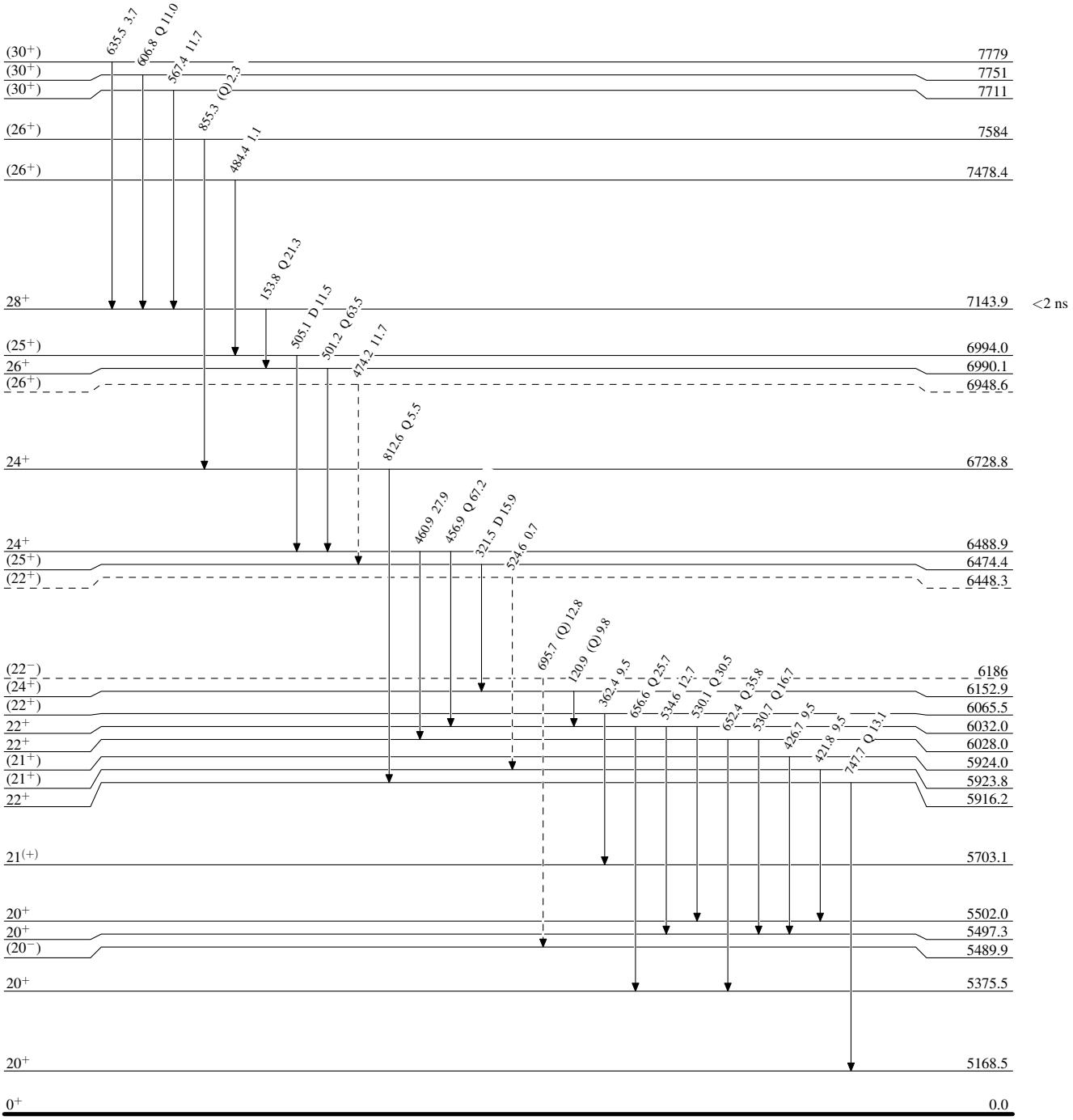
^{176}Yb(^{14}C,4nγ) 1999Wh02

Level Scheme

Intensities: Relative I_γ

Legend

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



$^{186}_{76}Os_{110}$

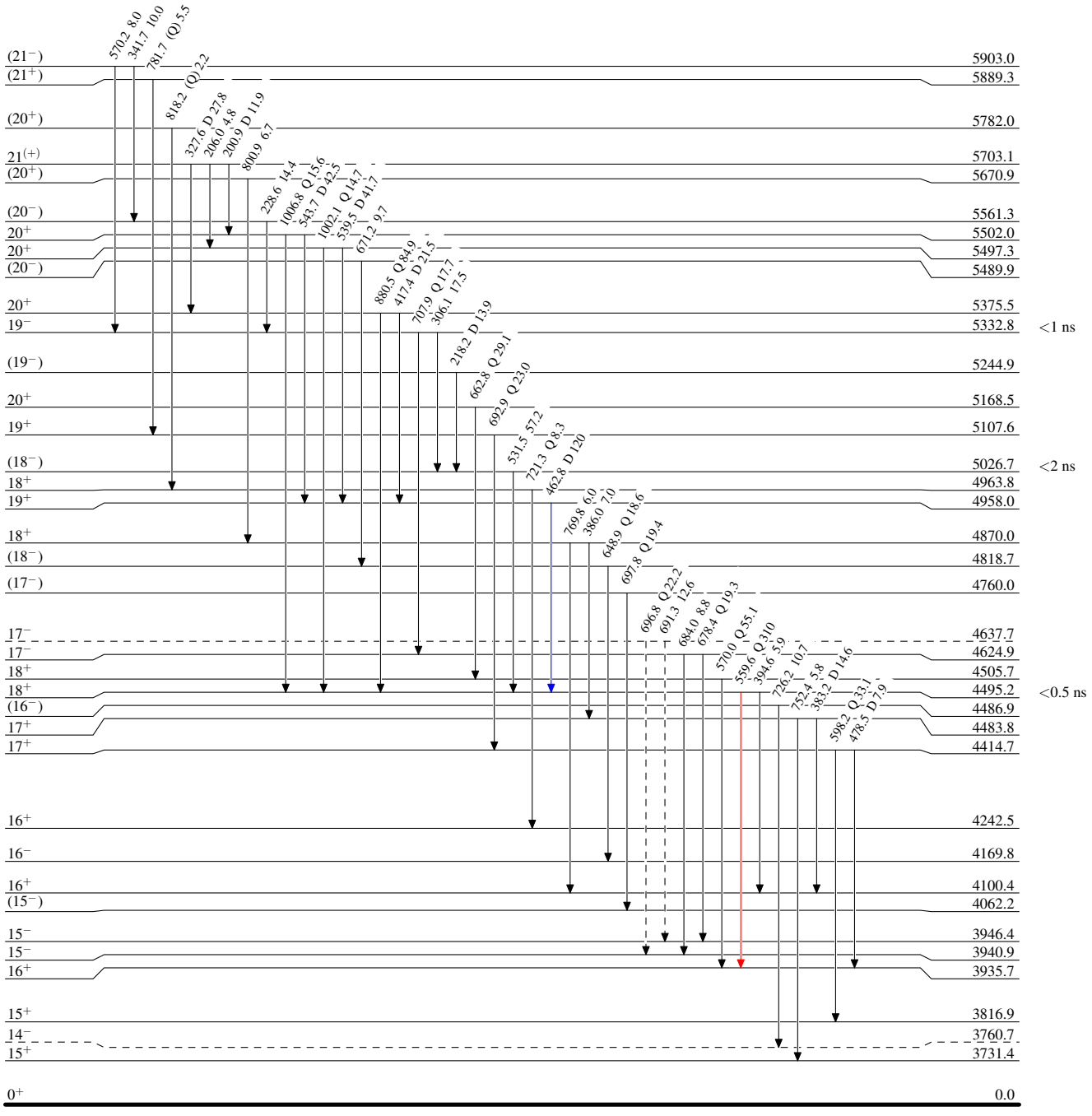
$^{176}Yb(^{14}C,4n\gamma)$ 1999Wh02

Level Scheme (continued)

Intensities: Relative I_γ

Legend

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



$^{186}_{76}Os_{110}$

^{176}Yb(^{14}C,4nγ) **1999Wh02**

Level Scheme (continued)

Intensities: Relative I_γ

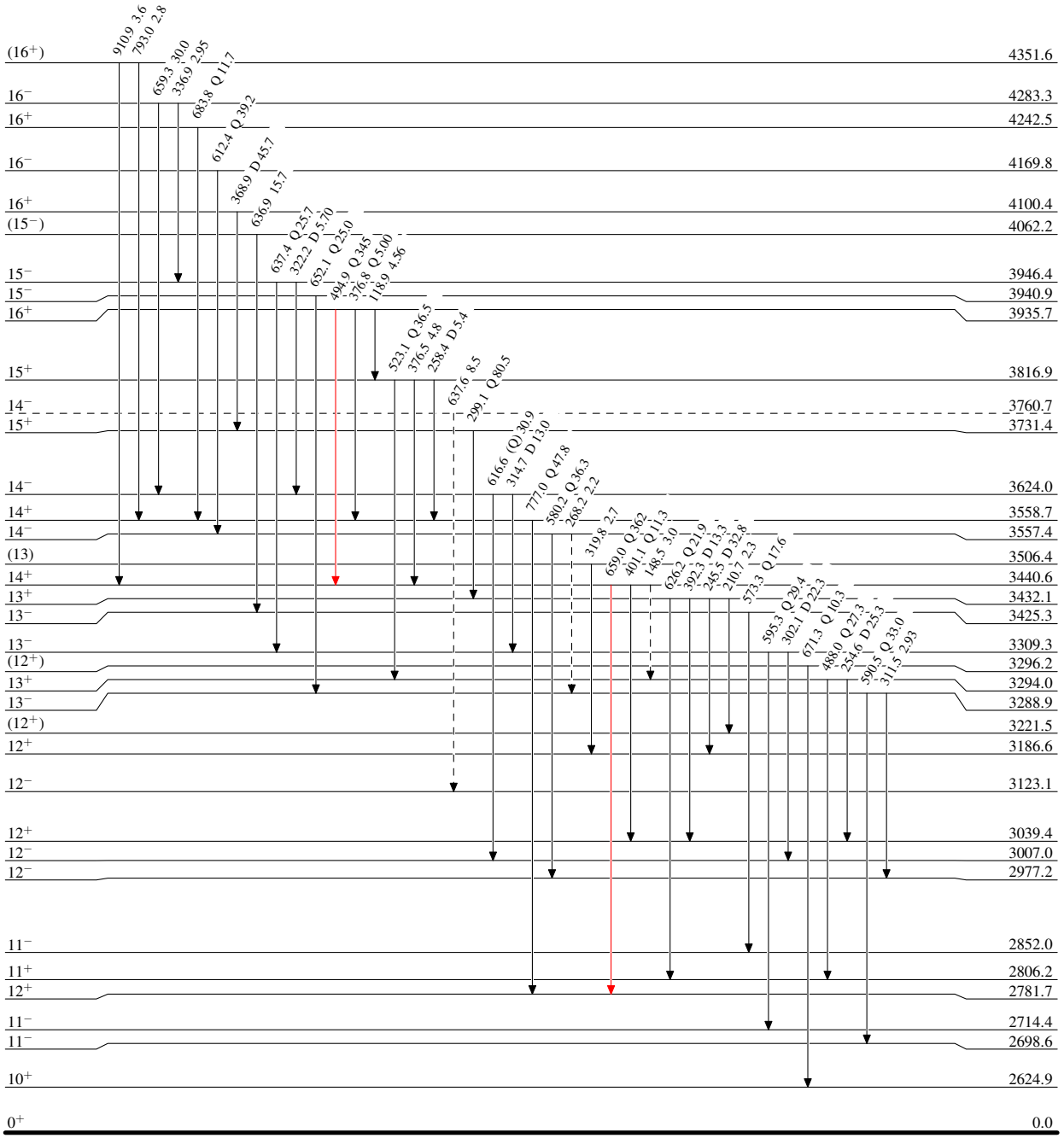
Legend

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

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

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

γ Decay (Uncertain)



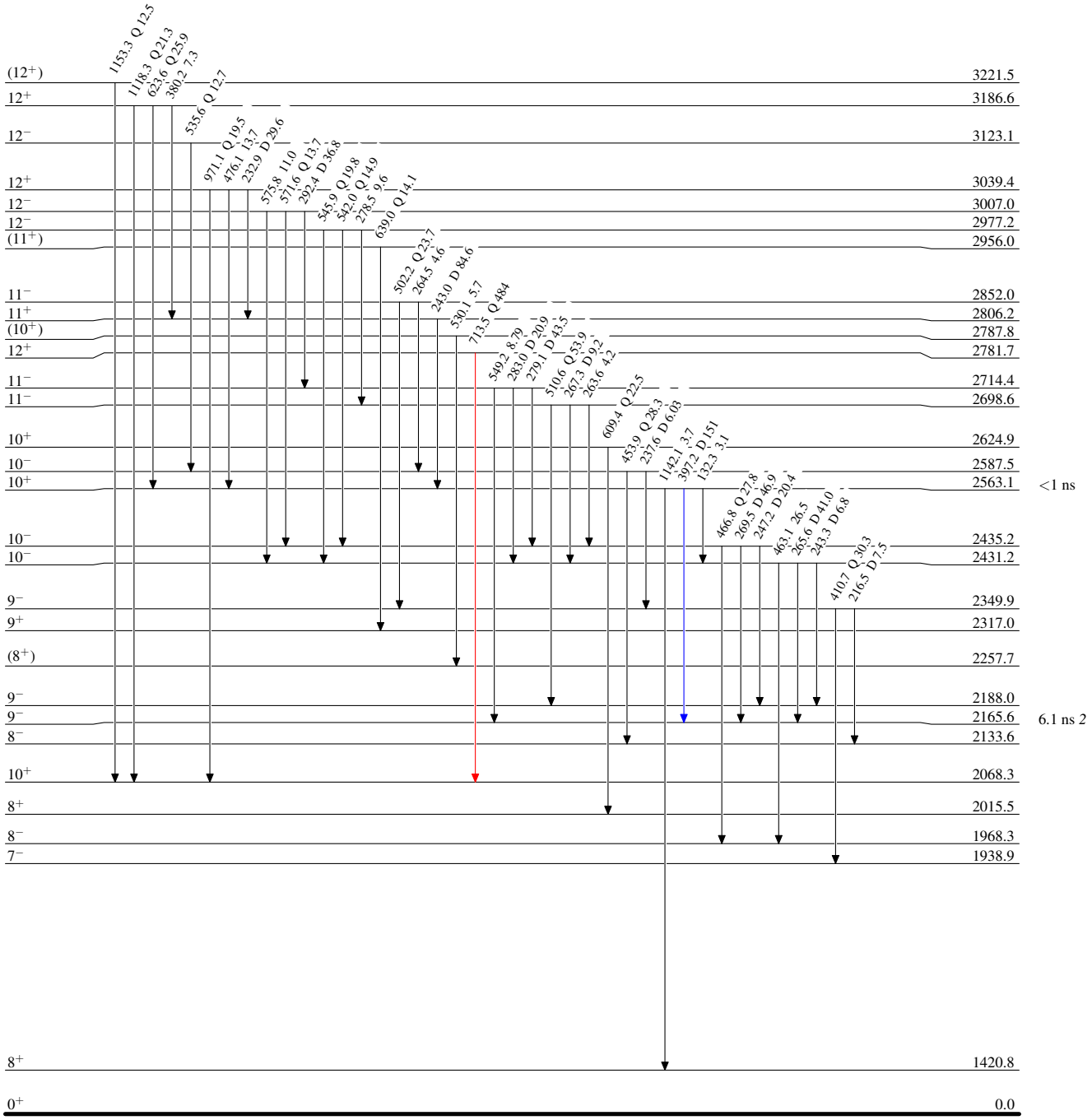
$^{186}_{76}Os_{110}$

$^{176}Yb(^{14}C,4n\gamma)$ 1999Wh02

Level Scheme (continued)

Intensities: Relative I_γ

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



$^{186}_{76}Os_{110}$

^{176}Yb(^{14}C,4nγ) 1999Wh02

Level Scheme (continued)

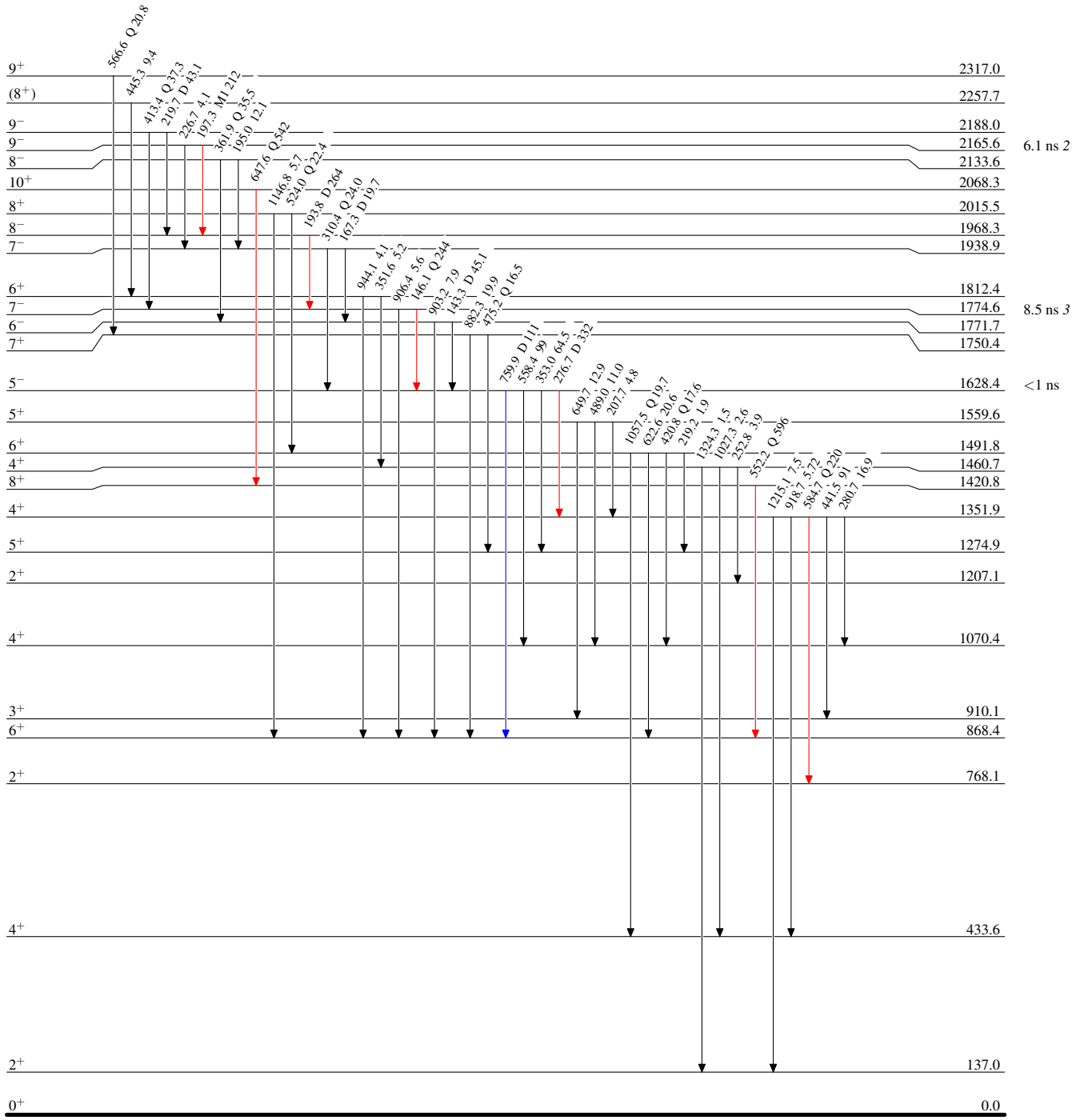
Intensities: Relative I_γ

Legend

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

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

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

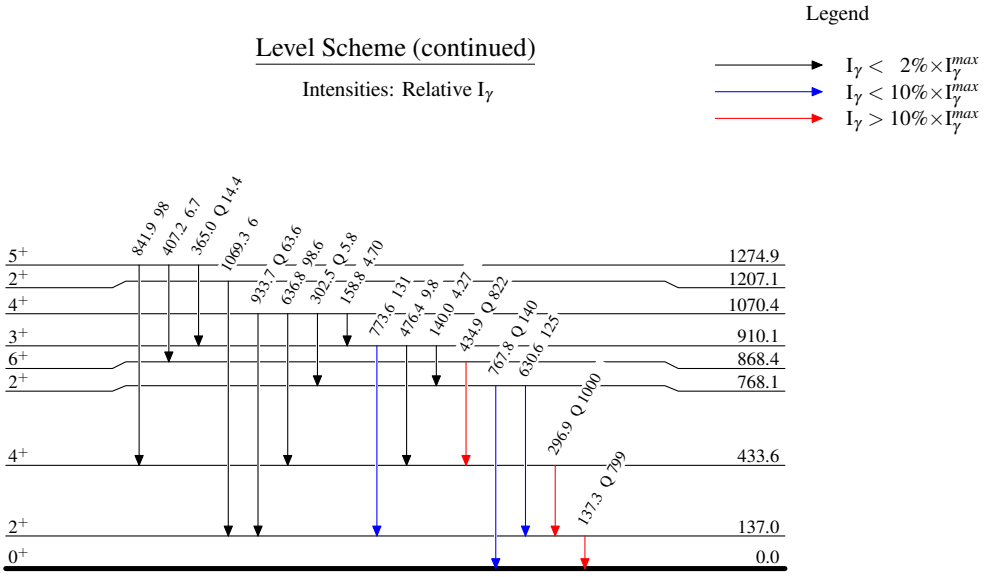


$^{186}_{76}Os_{110}$

^{176}Yb(^{14}C,4nγ) 1999Wh02

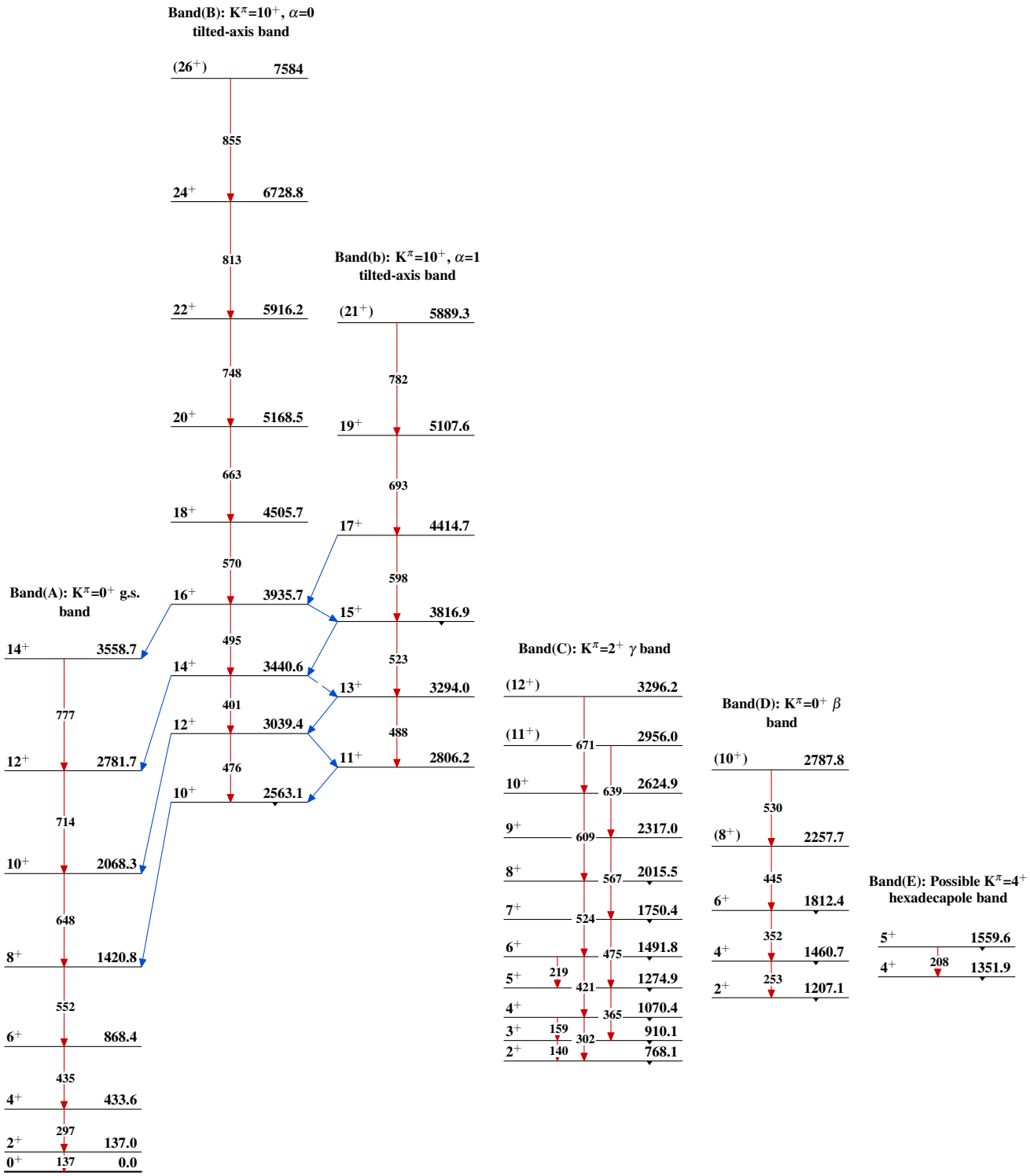
Level Scheme (continued)

Intensities: Relative I_γ



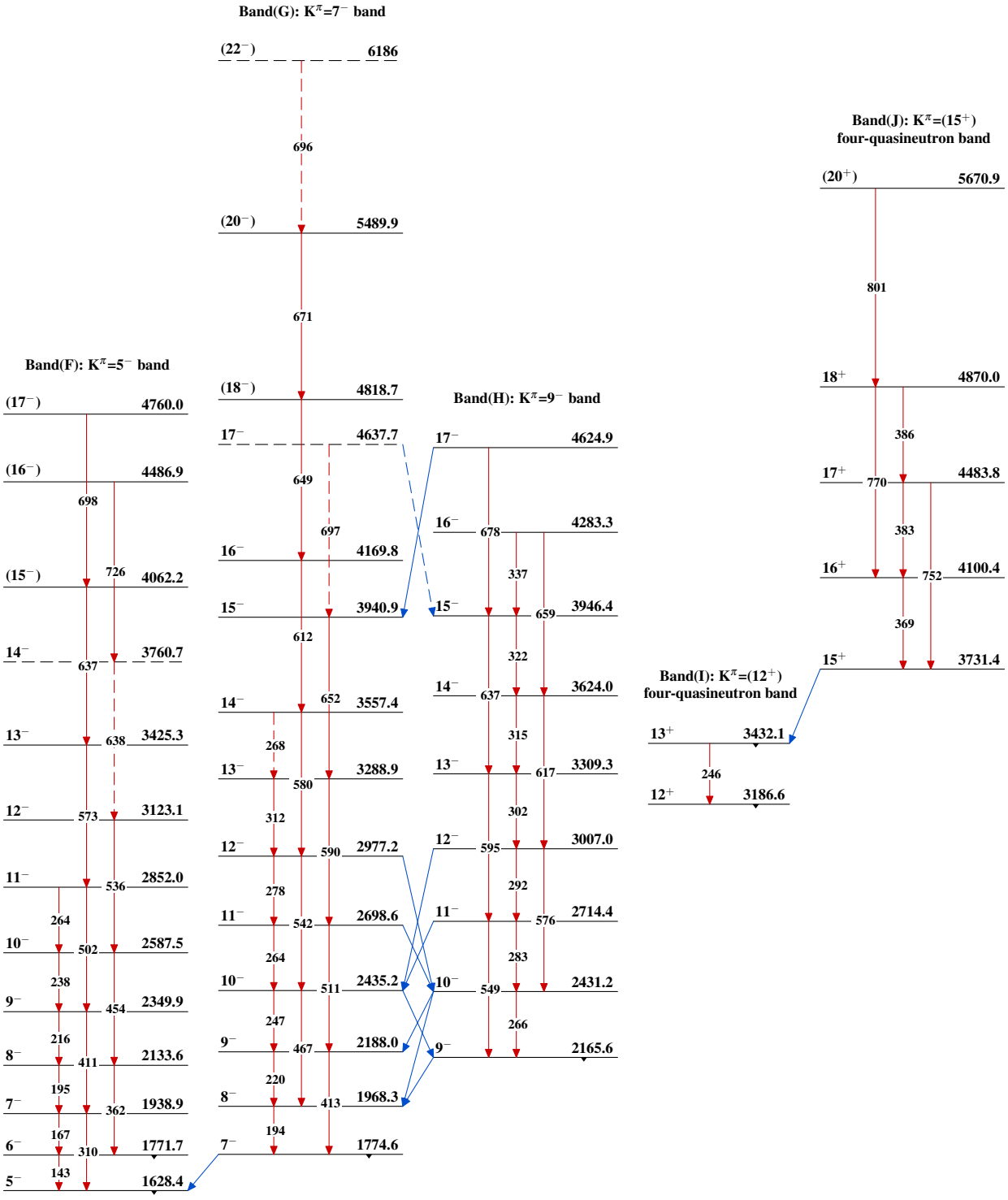
$^{186}_{76}Os_{110}$

$^{176}Yb(^{14}C,4n\gamma)$ 1999Wh02



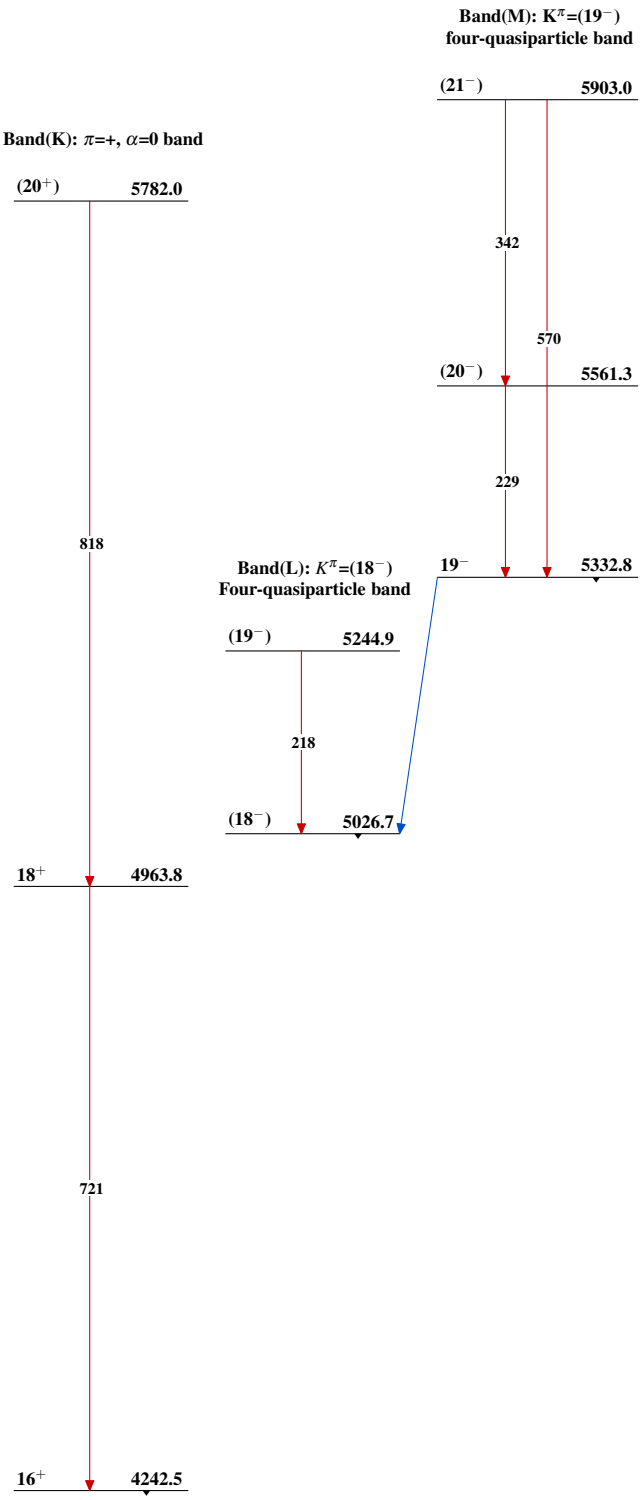
$^{186}_{76}Os_{110}$

^{176}Yb(^{14}C,4nγ) 1999Wh02 (continued)



$^{186}_{76}Os_{110}$

^{176}Yb(^{14}C,4nγ) 1999Wh02 (continued)



$^{186}_{76}Os_{110}$