^{196}Po IT decay (856 ns) 1991Al15

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong	NDS 108,1093 (2007)	1-Jan-2006

Parent: ^{196}Po: E=2493.9; $J^\pi=11^-$; $T_{1/2}$=856 ns *17*; %IT decay=?

1991Al15: ^{160}Dy(^{40}Ar,4nγ) E=182 MeV. Level scheme is based on coincidence relations and relative intensities.

^{196}Po Levels

E(level)†	Jπ‡	$T_{1/2}$&	Comments
0.0#	0^+	5.8 s *2*	
463.04# *9*	2^+		
859.12 *14*	2^+	<12 ns	$T_{1/2}$: from time-difference spectra, 2σ upper limit.
890.89# *12*	4^+		
1387.75 *13*	4^+		
1390.10# *5*	6^+		
1525.2 *5*			
1802.17@ *23*	5^-		
1907.0 *5*			
1940.1# *5*	8^+		
1974.4 *5*	8^+		
2039.52@ *25*	7^-		
2293.0@ *5*	9^-		
2304.7 *9*			
2493.9@ *4*	11^-	856 ns *17*	%IT=? $T_{1/2}$: From 1998CiZY.

† From least-squares fit to Eγ′s.

‡ Deduced from γγ(θ) (1995Be31), lifetime information, and systematic comparisons to even-Po isotopes.

Band(A): $K^\pi=0^+$ ground-state band. Involving the low energy configuration=$(\pi\ h_{9/2})^{+2}$ as well as neutron-hole pair admixtures.

@ Band(B): Negative-parity collective rotational band built on an Intruder 4p2h quasiparticle configuration, involving a neutron (i13/2) hole coupled to a proton (h9/2) or f neutron hole.

& From Adopted Levels, except as noted.

γ(^{196}Po)

E_γ#	I_γb	E_i(level)	J_i^π	E_f	J_f^π	Mult.†	αc	Comments
133.8a		2039.52	7^-	1907.0				
198a		2493.9	11^-	2293.0	9^-			
237.36 *9*	29.0 *4*	2039.52	7^-	1802.17	5^-	E2	0.263	α(K)=0.1138 *16*; α(L)=0.1110 *16*; α(M)=0.0292 *5*; α(N+..)=0.00906 *13* DCO ratio=1.26 *35* (1995Be31). I_γ: Other: 20 *3*(1999Ta03).
253.8 *4*	30.8 *4*	2293.0	9^-	2039.52	7^-	E2	0.212	α(K)=0.0978 *15*; α(L)=0.0847 *13*; α(M)=0.0222 *4*; α(N+..)=0.00690 *11* DCO ratio=1.16 *39* (1995Be31). I_γ: Other: 17 *1*(1999Ta03).
265@		2304.7		2039.52	7^-			
277.8& *5*	11& *3*	1802.17	5^-	1525.2				
396.3 *5*	13.1 *4*	859.12	2^+	463.04	2^+	[M1+E2]	0.15 *9*	α(K)=0.11 *8*; α(L)=0.025 *9*; α(M)=0.0060 *19*; α(N+..)=0.0019 *7*

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^{196}Po IT decay (856 ns) 1991Al15 (continued)

γ(^{196}Po) (continued)

E_γ[#]	I_γ[b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	α[c]	Comments
								DCO ratio=1.44 *31* (1995Be31). I_γ: Other: 17 *4*(1999Ta03).
414.1 *3*	44.8 *8*	1802.17	5^-	1387.75	4^+	E1	0.01528	α(K)=0.01254 *18*; α(L)=0.00210 *3*; α(M)=0.000492 *7*; α(N+..)=0.0001547 *22* DCO ratio=0.88 *33* (1995Be31). I_γ: Other: 31 *5*(1999Ta03).
427.82 *9*	94.7 *10*	890.89	4^+	463.04	2^+	E2	0.0472	α(K)=0.0307 *5*; α(L)=0.01236 *18*; α(M)=0.00314 *5*; α(N+..)=0.000983 *14* DCO ratio=1.24 *15* (1995Be31). I_γ: Other: 86 *10*(1999Ta03).
463.02 *9*	100	463.04	2^+	0.0	0^+	E2	0.0387	α(K)=0.0260 *4*; α(L)=0.00954 *14*; α(M)=0.00241 *4*; α(N+..)=0.000756 *11* DCO ratio=1.41 *14* (1995Be31).
496.74[@] *10*	18.5 *4*	1387.75	4^+	890.89	4^+	[M1+E2]	0.08 *5*	α(K)=0.06 *5*; α(L)=0.013 *6*; α(M)=0.0031 *12*; α(N+..)=0.0010 *4*
498.6 *5*	69.7 *7*	1390.10	6^+	890.89	4^+	E2	0.0323	α(K)=0.0223 *4*; α(L)=0.00755 *11*; α(M)=0.00190 *3*; α(N+..)=0.000595 *9* DCO ratio=1.48 *26* (1995Be31). I_γ: Other: 67 *9*(1999Ta03).
516.1		1907.0		1387.75	4^+			
517.6[&] *4*	9[&] *3*	1907.0		1390.10	6^+			
528.55 *9*	15.2 *6*	1387.75	4^+	859.12	2^+	E2	0.0282	α(K)=0.0198 *3*; α(L)=0.00631 *9*; α(M)=0.001579 *23*; α(N+..)=0.000496 *7* DCO ratio=1.44 *36* (1995Be31). I_γ: Other: 17 *5*(1999Ta03).
550.29[@] *11*	20.9 *21*	1940.1	8^+	1390.10	6^+	E2	0.0256	α(K)=0.0182 *3*; α(L)=0.00559 *8*; α(M)=0.001395 *20*; α(N+..)=0.000438 *7* DCO ratio=1.39 *51* (1995Be31).
552[‡]	57 *12*	2493.9	11^-	1940.1	8^+	E3	0.0809	α(K)=0.0444 *7*; α(L)=0.0272 *4*; α(M)=0.00710 *10*; α(N+..)=0.00223 *4*
583.3 *7*	51.7 *7*	1974.4	8^+	1390.10	6^+	E2	0.0225	α(K)=0.01622 *23*; α(L)=0.00471 *7*; α(M)=0.001171 *17*; α(N+..)=0.000368 *6* DCO ratio=1.96 *54* (1995Be31). I_γ: Other: 35 *6*(1999Ta03).
649[@]		2039.52	7^-	1390.10	6^+			
669.5[a]		1525.2		859.12	2^+			
859.2[@] *2*	20.5 *7*	859.12	2^+	0.0	0^+	E2	0.00991	α(K)=0.00769 *11*; α(L)=0.001685 *24*; α(M)=0.000408 *6*; α(N+..)=0.0001289 *18* DCO ratio=1.33 *60* (1995Be31).
911.5[@] *3*	20.1 *6*	1802.17	5^-	890.89	4^+	[E1]	0.00321	α(K)=0.00267 *4*; α(L)=0.000417 *6*; α(M)=9.68×10^{-5} *14*; α(N+..)=3.06×10^{-5} *5*
925.4[a]		1387.75	4^+	463.04	2^+			

[†] From DCO ratios and rough total conversion coefficients (1995Be31).
[‡] From 1991Al15. Not seen by 1995Be31.
[#] Weighted average of 1995Be31 and 1999Ta03, except as noted.
[@] From 1995Be31.
[&] From 1999Ta03.
[a] From 1998CiZY.
[b] From 1995Be31 and normalized to Iγ(463γ)=100,except as noted.
[c] 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.

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Decay Scheme

Intensities: Relative I_γ

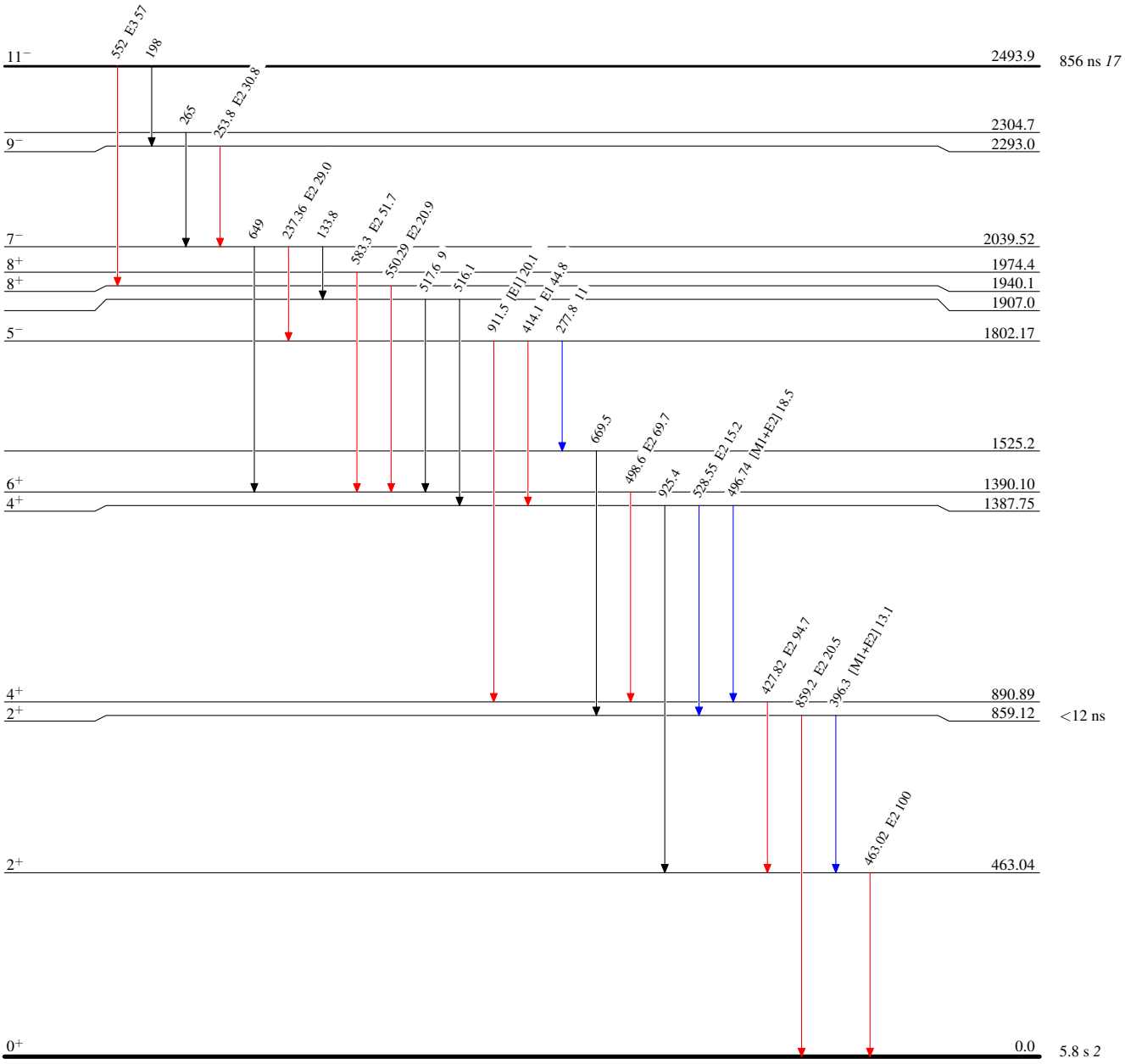
%IT=?

Legend

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

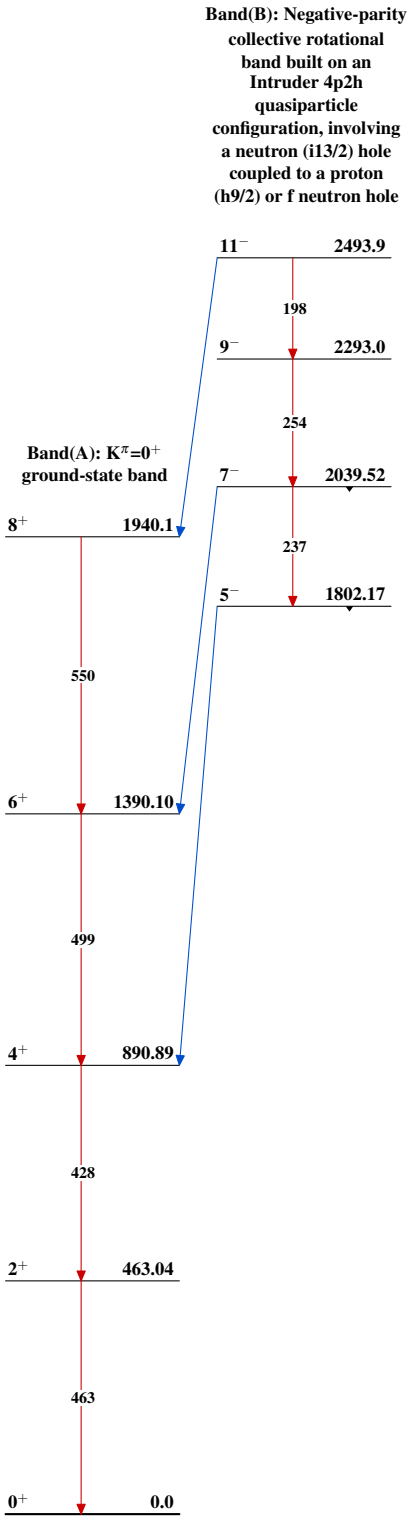
$I_\gamma < 10\% \times I_\gamma^{max}$

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



$^{196}_{84}Po_{112}$

^{196}Po IT decay (856 ns) 1991Al15



$^{196}_{84}Po_{112}$