^{208}Pb(^{16}O,Xγ) 2011As02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Shaofei Zhu and E. A. Mccutchan	NDS 175, 1 (2021)	1-May-2021

2011As02: A 100 mg/cm^2 ^{208}Pb target was bombarded by a 85-MeV ^{18}O beam provided by the Vivitron tandem of the IReS (Strasbourg). Measured Eγ, Iγ, $\gamma\gamma$-coin, $\gamma(\theta)$ using Euroball IV array of 71 Compton-suppressed HPGe detectors (15 clusters, 26 clovers and 30 tapered single crystals) with total 239 HPGe crystals grouped into 13 angles with respect to the beam axis.

α: Additional information 1.

^{214}Po Levels

E(level)[†]	J$^\pi$[#]	T$_{1/2}$	Comments
0.0[‡]	0$^+$		
609.0[‡] *5*	2$^+$		
1014.4[‡] *7*	4$^+$		
1338.8[‡] *9*	6$^+$		
1582.9[‡] *10*	8$^+$	13 ns *1*	T$_{1/2}$: from $\gamma\gamma$(t) (2011As02).
1589.0 *10*			
1684.9? *9*			
1736.8 *10*			
1822.5 *12*	8$^+$		
1842.3 *10*			
1981.7 *10*	7		
2157.3 *12*	9		
2178.7 *12*	10$^+$		
2271.5 *13*	9		
2377.0 *13*	10$^+$		
2604.5 *14*			
2611.9 *13*	12$^+$		
2669.4 *14*			
2733.8 *14*	12$^+$		

[†] From a least squares fit to Eγ's by evaluators, Eγ uncertainty taken as 0.5 keV although it was stated as 0.1 to 0.5 keV in 2011As02.
[‡] Seq.(A): Yrast cascade.
[#] From 2011As02.

γ(^{214}Po)

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[†]	δ	α	Comments
239.6 *5*	15 *2*	1822.5	8$^+$	1582.9	8$^+$	M1+E2	0.73 *+26−23*	0.70 *10*	α(K)=0.54 *10*; α(L)=0.125 *4*; α(M)=0.0304 *7*; α(N)=0.00781 *18*; α(O)=0.00159 *5* α(P)=0.000190 *13* Mult.,δ: from α_{tot}=0.7 *1*; R$_{ADO}$=0.95 *5* (2011As02).
244.1 *5*	44 *5*	1582.9	8$^+$	1338.8	6$^+$	E2		0.240 *4*	α(K)=0.1068 *16*; α(L)=0.0991 *16*; α(M)=0.0260 *4*; α(N)=0.00667 *11*; α(O)=0.001290 *21* α(P)=0.0001249 *20* Mult.: from α_{tot}=0.25 *5*; R$_{ADO}$=1.31 *7*, A$_2$=+0.30 *15* (2011As02).
250.2 *5*	2.0 *8*	1589.0		1338.8	6$^+$				

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^{208}Pb(^{16}O,Xγ) 2011As02 (continued)

$\gamma(^{214}Po)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	α	Comments
292.4 *5*	1.2 *6*	2669.4		2377.0	10^+			
324.4 *5*	70 *5*	1338.8	6^+	1014.4	4^+	E2	0.1001 *15*	α(K)=0.0562 *8*; α(L)=0.0328 *5*; α(M)=0.00848 *13*; α(N)=0.002178 *33*; α(O)=0.000426 *6* α(P)=4.31×10^{-5} *6* Mult.: from R_{ADO}=1.30 *8*, A_2=+0.3 *1* (2011As02).
333.0 *5*	2.0 *8*	2604.5		2271.5	9			
356.8 *5*	4 *1*	2733.8	12^+	2377.0	10^+	E2	0.0765 *11*	α(K)=0.0455 *7*; α(L)=0.02318 *34*; α(M)=0.00596 *9*; α(N)=0.001530 *23*; α(O)=0.000301 *4* α(P)=3.10×10^{-5} *5* Mult.: from R_{ADO}=1.3 *3* (2011As02).
398.0 *5*	1.8 *6*	1736.8		1338.8	6^+			
405.4 *5*	100	1014.4	4^+	609.0	2^+	E2	0.0542 *8*	α(K)=0.0344 *5*; α(L)=0.01482 *22*; α(M)=0.00378 *6*; α(N)=0.000971 *14*; α(O)=0.0001918 *28* α(P)=2.024×10^{-5} *29* Mult.: from R_{ADO}=1.26 *8*, A_2=+0.25 *5* (2011As02).
433.2 *5*	2.5 *10*	2611.9	12^+	2178.7	10^+	E2	0.0457 *7*	α(K)=0.0299 *4*; α(L)=0.01186 *17*; α(M)=0.00301 *4*; α(N)=0.000773 *11*; α(O)=0.0001533 *22* α(P)=1.637×10^{-5} *24* Mult.: from R_{ADO}=1.2 *2* (2011As02).
449.0 *5*	7.4 *12*	2271.5	9	1822.5	8^+	D		Mult.: from R_{ADO}=0.76 *11* (2011As02).
503.5 *5*	3 *1*	1842.3		1338.8	6^+			
554.5 *5*	8.5 *13*	2377.0	10^+	1822.5	8^+	E2	0.0252 *4*	α(K)=0.01795 *25*; α(L)=0.00546 *8*; α(M)=0.001363 *19*; α(N)=0.000350 *5*; α(O)=7.02×10^{-5} *10* α(P)=7.85×10^{-6} *11* Mult.: from R_{ADO}=1.34 *17* (2011As02).
574.4 *5*	3.8 *11*	2157.3	9	1582.9	8^+	D		Mult.: from R_{ADO}=0.8 *2* (2011As02).
595.8 *5*	11 *1*	2178.7	10^+	1582.9	8^+	E2	0.02142 *30*	α(K)=0.01555 *22*; α(L)=0.00443 *6*; α(M)=0.001100 *16*; α(N)=0.000282 *4*; α(O)=5.68×10^{-5} *8* α(P)=6.44×10^{-6} *9* Mult.: from R_{ADO}=1.32 *15* (2011As02).
609.0 *5*		609.0	2^+	0.0	0^+	E2	0.02041 *29*	α(K)=0.01489 *21*; α(L)=0.00416 *6*; α(M)=0.001031 *15*; α(N)=0.000265 *4*; α(O)=5.34×10^{-5} *8* α(P)=6.07×10^{-6} *9* Mult.: from R_{ADO}=1.24 *8*, A_2=+0.34 *5* (2011As02).
642.9 *5*	3.7 *11*	1981.7	7	1338.8	6^+	D		Mult.: from R_{ADO}=0.6 *2* (2011As02).
670.5[‡] *5*	3.8 *12*	1684.9?		1014.4	4^+			

[†] From $\gamma(\theta)$, R_{ADO}(Iγ(39.3°)/Iγ(76.6°)). Evaluators adopt E2 for stretched Q transitions due to their observed prompt character and assignment to the g.s. band.

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

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Level Scheme

Intensities: Relative I_γ

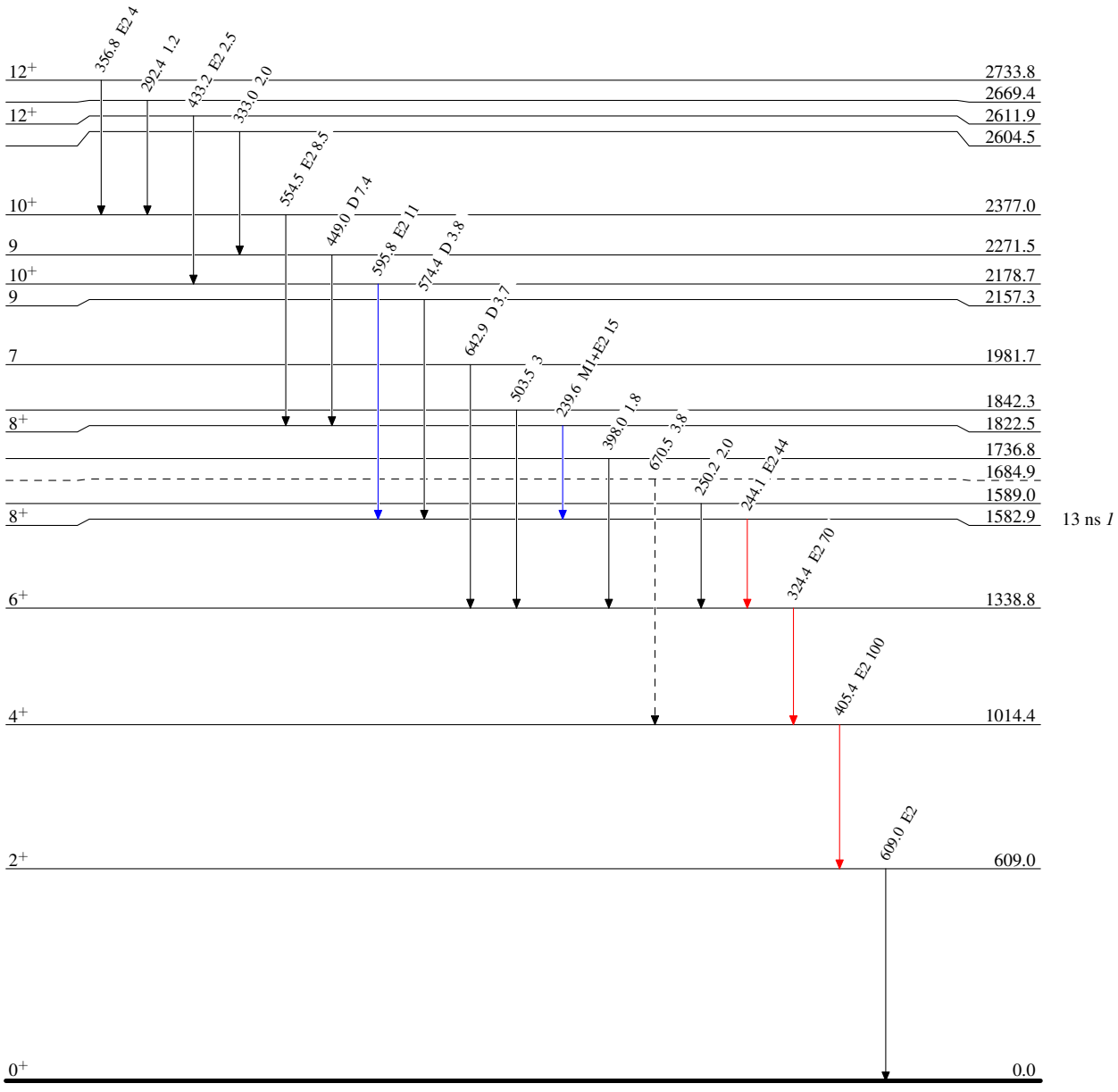
Legend

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

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

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

γ Decay (Uncertain)



$^{214}_{84}Po_{130}$

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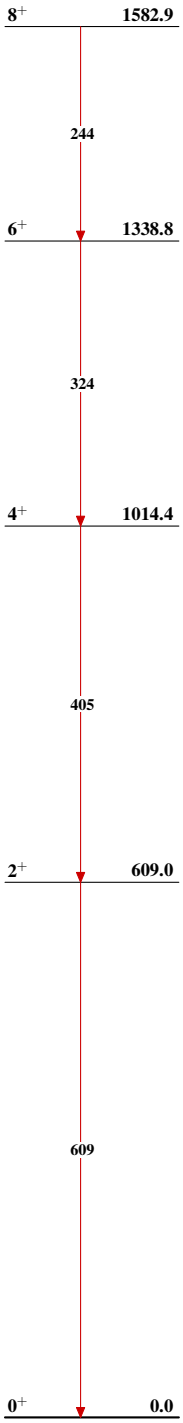
Seq.(A): Yrast cascade



$^{214}_{84}Po_{130}$