^{238}U(^{12}C,Fγ),^{208}Pb(^{18}O,Fγ) 2012As06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 152, 331 (2018)	1-Apr-2018

2012As06: ^{238}U(^{12}C,Fγ) with E(^{12}C)=90 MeV and 208Pb(^{18}O,Fγ) with E(^{18}O)=95 MeV. Measured Eγ, Iγ, γγ, γγ(θ) using the Euroball array consisting of 15 cluster Ge, 26 Clover Ge and 30 tapered single-crystal Ge detectors.

Others:

2015Pa39: ^{232}Th(^{7}Li,Fγ), with E(^{7}Li)=38 MeV. Measured γγ(θ) for 1313γ-381γ cascade. Results presented in a figure but no numerical values provided.

2010Re01: ^{232}Th(^{6}Li,Fγ), with E(^{7}Li)=45 MeV. Observed isomeric decay of 1891-keV level.

^{136}Xe Levels

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
0.0	0^+	3228.3 *5*	8^+	5480.9@ *6*	(10^+)	6737.0 *7*	(14^+)
1312.81 *20*	2^+	3483.0 *5*	10^+	5879.1@ *7*	(11^+)	7066.8@ *7*	(15^+)
1694.0 *3*	4^+	3829.1# *6*	(9^-)	5949.9@ *5*	(12^+)	7511.3@ *8*	(16^+)
1890.9 *4*	6^+	4379.6@ *5*	(8^+)	6154.7# *7*	(14^-)	7634.8 *8*	
2260.7 *4*	6^+	4856.1# *5*	(11^-)	6169.4@ *6*	(13^+)	7847.7 *9*	
2866.0 *5*	(8^+)	5140.1# *6*	(13^-)	6610.7@ *7*	(14^+)	7946.7@ *9*	(17^+)

† From least-squares fit to Eγ, by evaluator.

‡ From the Adopted Levels. These are identical to the J^π proposed by 2012As06.

Band(A): Proposed configuration of $(\pi g7/2\pi d5/2)^3(\pi h11/2)^1$ (2012As06).

@ Band(B): Proposed configuration of $(\pi g7/2\pi d5/2)^4\otimes(\nu h11/2)^{-1}(\nu f7/2)^1$ (2012As06).

γ(^{136}Xe)

Eγ	Iγ†	Ei(level)	J_i^π	Ef	J_f^π	Mult.‡	I(γ+ce)†	Comments
(70.7)		5949.9	(12^+)	5879.1	(11^+)		6.2 *19*	Eγ,I(γ+ce): deduced from γγ coin data; γ not observed.
196.8 *3*		1890.9	6^+	1694.0	4^+			
219.5 *3*	29 *6*	6169.4	(13^+)	5949.9	(12^+)			
254.6 *3*	44 *7*	3483.0	10^+	3228.3	8^+	Q		Mult.: R(22°)=1.1 *1*, R(46°)=1.0 *1*, R(75°)=1.00 *5* for (255γ)(968γ)(θ) consistent with ΔJ=2, quadrupole- ΔJ=2, quadrupole (E2) cascade.
284.0 *4*	8.8 *26*	5140.1	(13^-)	4856.1	(11^-)			
329.8 *4*	7 *2*	7066.8	(15^+)	6737.0	(14^+)			
336.4 *4*	3.4 *14*	7847.7		7511.3	(16^+)			
369.7 *3*	53 *8*	2260.7	6^+	1890.9	6^+	D		Mult.: R(22°)=1.5 *3*, R(46°)=1.2 *1*, R(75°)=1.00 *6* for (968γ)(370γ)(θ) consistent with ΔJ=2, quadrupole (E2) and ΔJ=0, dipole cascade.
381.2 *2*		1694.0	4^+	1312.81	2^+			
398.2 *4*	7.8 *23*	5879.1	(11^+)	5480.9	(10^+)			
435.4 *4*	5.1 *15*	7946.7	(17^+)	7511.3	(16^+)			
441.2 *3*	10 *3*	6610.7	(14^+)	6169.4	(13^+)			
444.5 *4*	8.5 *25*	7511.3	(16^+)	7066.8	(15^+)			
455.9 *4*	7 *2*	7066.8	(15^+)	6610.7	(14^+)			
469.1 *5*	1.6 *8*	5949.9	(12^+)	5480.9	(10^+)			
567.0 *5*	3 *2*	2260.7	6^+	1694.0	4^+			
567.5 *5*	7 *2*	6737.0	(14^+)	6169.4	(13^+)			
568.0 *5*	7 *2*	7634.8		7066.8	(15^+)			
600.8 *4*	8 *3*	3829.1	(9^-)	3228.3	8^+			
617.0 *3*	39 *6*	3483.0	10^+	2866.0	(8^+)			

Continued on next page (footnotes at end of table)

^{238}U(^{12}C,Fγ),^{208}Pb(^{18}O,Fγ) 2012As06 (continued)

γ(^{136}Xe) (continued)

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	Comments
897.5 *4*	7 *2*	7066.8	(15^+)	6169.4	(13^+)		
967.6 *3*	56 *8*	3228.3	8^+	2260.7	6^+	Q	Mult.: R(22°)=1.5 *3*, R(46°)=1.2 *1*, R(75°)=1.00 *6* for (968γ)(370γ)(θ) consistent with ΔJ=2, quadrupole (E2) and ΔJ=0, dipole cascade.
975.1 *3*	47 *7*	2866.0	(8^+)	1890.9	6^+		
1014.6 *4*	6 *3*	6154.7	(14^-)	5140.1	(13^-)		
1027.1 *4*	4 *2*	4856.1	(11^-)	3829.1	(9^-)		
1093.7 *3*	11 *3*	5949.9	(12^+)	4856.1	(11^-)		
1101.3 *3*	9.7 *29*	5480.9	(10^+)	4379.6	(8^+)		
1151.2 *3*	13 *3*	4379.6	(8^+)	3228.3	8^+		
1312.8 *2*		1312.81	2^+	0.0	0^+		
1373.0 *4*	23 *5*	4856.1	(11^-)	3483.0	10^+		
1657.0 *5*	6 *3*	5140.1	(13^-)	3483.0	10^+		
2467.2 *5*	5.0 *25*	5949.9	(12^+)	3483.0	10^+		

[†] Relative intensities normalized to the sum of the populations of the 6^+, 1891-keV level: Iγ(370γ)+Iγ(975γ)=100 (2012As06).
[‡] From $\gamma\gamma(\theta)$ (2012As06).

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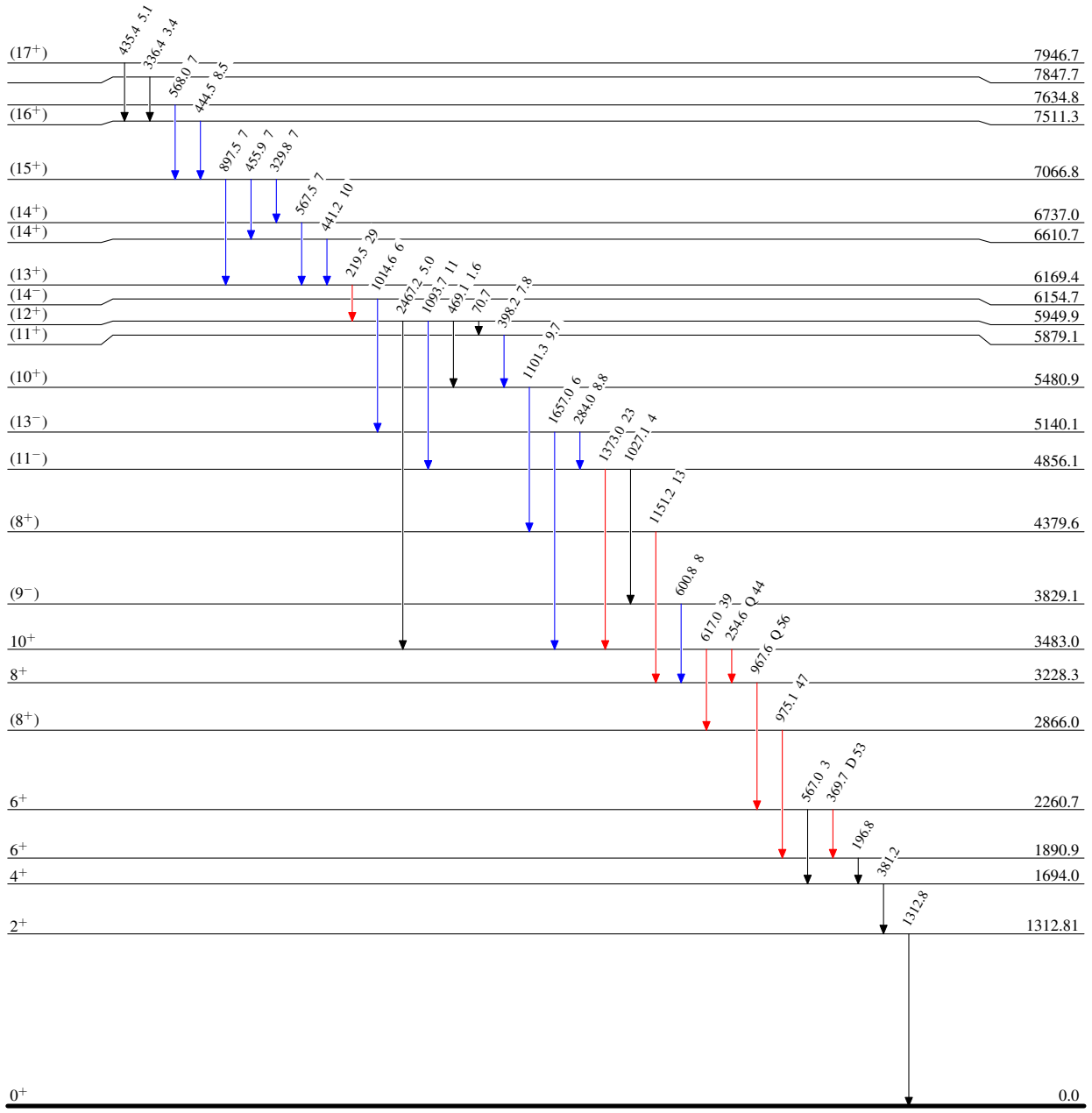
Level Scheme

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)



$^{136}_{54}Xe_{82}$

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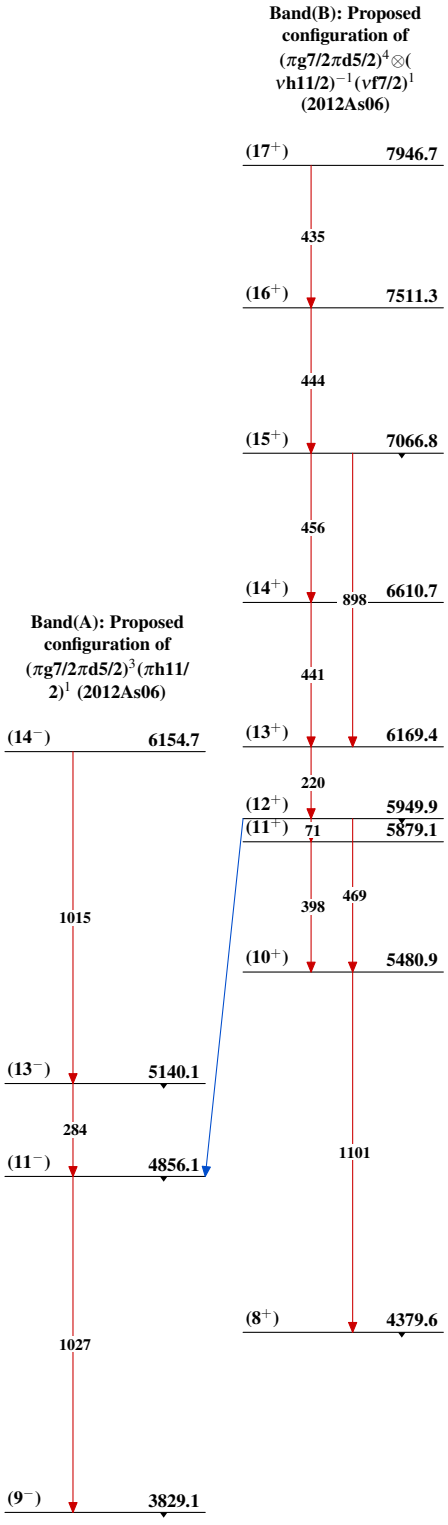

$^{136}_{54}Xe_{82}$