^{206}At α decay 1981Va29,1981Va27

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 196,342 (2024)	1-Sep-2023

Parent: ^{206}At: E=0.0; J^π=(5)$^+$; $T_{1/2}$=30.6 min *8*; Q(α)=5887 *5*; %α decay=0.90 *8*

^{206}At-J^π,$T_{1/2}$: From 2008Ko21.

^{206}At-Q(α): From 2021Wa16.

^{206}At-%α decay: From 2008Ko21.

1981Va29,1981Va27: ^{206}At produced in bombardment of 660 MeV proton beam on metalic Th and U targets following by mass separation using magnetic spectrometer at JINR. Measured Eα using a magnetic α spectrograph.

^{202}Bi Levels

E(level)[†]	J^π[†]	$T_{1/2}$[†]	Comments
0.0	5$^+$	1.71 h *4*	Configuration=$\pi(h^{+1}_{9/2})\otimes\nu(p^{-1}_{3/2})$.
7 *5*	(7$^+$)		Configuration=$\pi(h^{+1}_{9/2})\otimes\nu(f^{-1}_{5/2})$.
41.30 *9*	(4$^+$)		
68.0 *30*	(5)$^+$		Configuration=$\pi(h^{+1}_{9/2})\otimes\nu(f^{-1}_{5/2})$.

[†] From Adopted Levels.

α radiations

Eα[‡]	E(level)	Iα[#@]	HF[†]	Comments
5702.6 *18*	68.0	95.7 *5*	2.19 *22*	Eα: Value recommended by 1991Ry01, based on 5696 keV *8* (1963Ho18), 5703 keV *2* (1968Go12) and 5703 keV *5* (quoted in 1991Ry01 from 1981Va27).
5734 *3*	41.30	1.1 *3*	255 *74*	
5767 *3*	7	2.3 *4*	177 *36*	
5774 *4*	0.0	0.9 *3*	4.9×10^2 *17*	

[†] r_0(^{202}Bi)=1.471 *8*, unweighted average of 1.4917 *27* (^{202}Po), 1.4755 *52* (^{204}Po), 1.4625 *22* (^{200}Pb) and 1.4547 *10* (^{202}Pb) (2020Si16).

[‡] From 1981Va27.

[#] From 1981Va29.

[@] For absolute intensity per 100 decays, multiply by 0.0090 *8*.

γ(^{202}Bi)

E$_\gamma$	I$_\gamma$	E$_i$(level)	J^π_i	E$_f$	J^π_f	Mult.	α[†]	Comments
41.30 *9*		41.30	(4$^+$)	0.0	5$^+$	M1	25.4 *4*	α(L)=19.38 *30*; α(M)=4.56 *7* α(N)=1.168 *18*; α(O)=0.239 *4*; α(P)=0.0284 *4* E$_\gamma$,Mult.: From adopted gammas.
≈68	0.16 *3*	68.0	(5)$^+$	0.0	5$^+$	M1	5.87 *8*	α(L)≈4.49; α(M)≈1.056 α(N)≈0.270; α(O)≈0.0552; α(P)≈0.00657 E$_\gamma$: From 1963Ho18, measured with a NaI detector without giving the uncertainty. I$_\gamma$: From 1963Ho18, relative to Iα(5696). Mult.: α(exp)=5.3 *13* (1963Ho18).

[†] Additional information 1.

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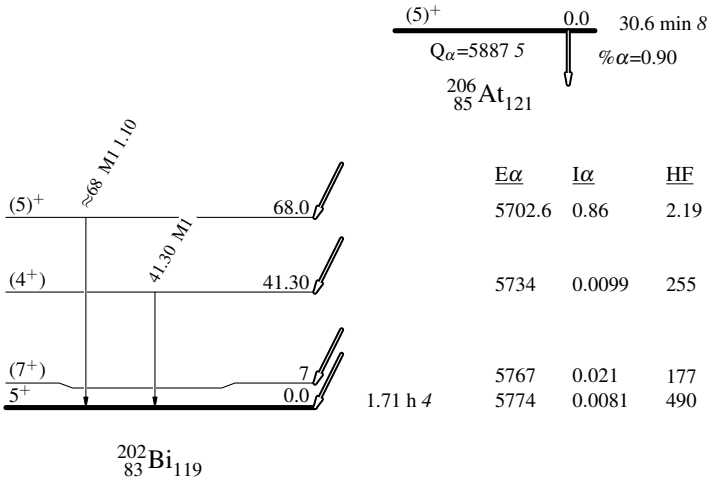
Decay Scheme

Intensities: Relative $I_{(\gamma+ce)}$



	Eα	Iα	HF
	5702.6	0.86	2.19
	5734	0.0099	255
	5767	0.021	177
	5774	0.0081	490