Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. -c. Wu	NDS 108,1057 (2007)	1-Mar-2007

Q(β^-)=−474 *4*; S(n)=5747.2 *24*; S(p)=7154 *15*; Q(α)=6906.3 *5* 2012Wa38
Note: Current evaluation has used the following Q record −473 4 *5747.2 23* 7154 15 *6906.3 5* 2003Au03.
Historical Note: this isotope was originally called Thorium a with symbol Th a.

Calculations, compilations:
Cluster model for α decay, Geiger-Nuttall plot: 1991Bu05.
Quasi-bands in even-even nuclei: 1984Sa37.
Spontaneous emission of heavy ions: 1986Po06.
Superdeformed and hyperdeformed configurations: 1995We02.

^{216}Po Levels

Cross Reference (XREF) Flags

- A ^{216}Bi β^- decay (2.25 min)
- B ^{216}Bi β^- decay (2.25 min+6.6 min)
- C ^{220}Rn α decay

E(level)[†‡]	J$^\pi$[#]	$T_{1/2}$	XREF	Comments
0.0[@]	0^+	0.145 s *2*	ABC	%α=100 $T_{1/2}$: weighted average of 0.144 s *8* from 2003Da24 and 0.145 s *2* from 1963Di05. Others: 0.158 s *8* (1942Wa04), 0.145 s *15* (1911Mo01).
549.76[@&] *4*	2^+		ABC	J$^\pi$: $\alpha\gamma(\theta)$ from 0^+ parent (1989Po03).
968.94[@&] *9*	(4^+)		AB	
1328.4[@&] *4*	(6^+)		A	
1551.8[@&] *5*	(8^+)		A	
1699.6 *6*			A	
1803.0 *6*			A	
1874.2 *6*			A	
1980.5?			A	
2038.7 *6*			A	
2233.8 *6*			A	

[†] If $\Delta E\gamma$ not given, ±0.30 keV assumed for least-squares fitting.
[‡] From least-square fit to Eγ's with $\Delta(E\gamma)$=0.3 keV assumed when the uncertainty is not given.
[#] Assigned as members of the yrast sequence, β^- decayed from the 2.25 min isomer of ^{216}Bi with $J^\pi=(6^-,7^-)$, feeding the 1551.4 level.
[@] Band(A): Yrast sequence.
[&] Expected coupling of $\pi(1h_{9/2})^2$.

Adopted Levels, Gammas (continued)

$\gamma(^{216}Po)$

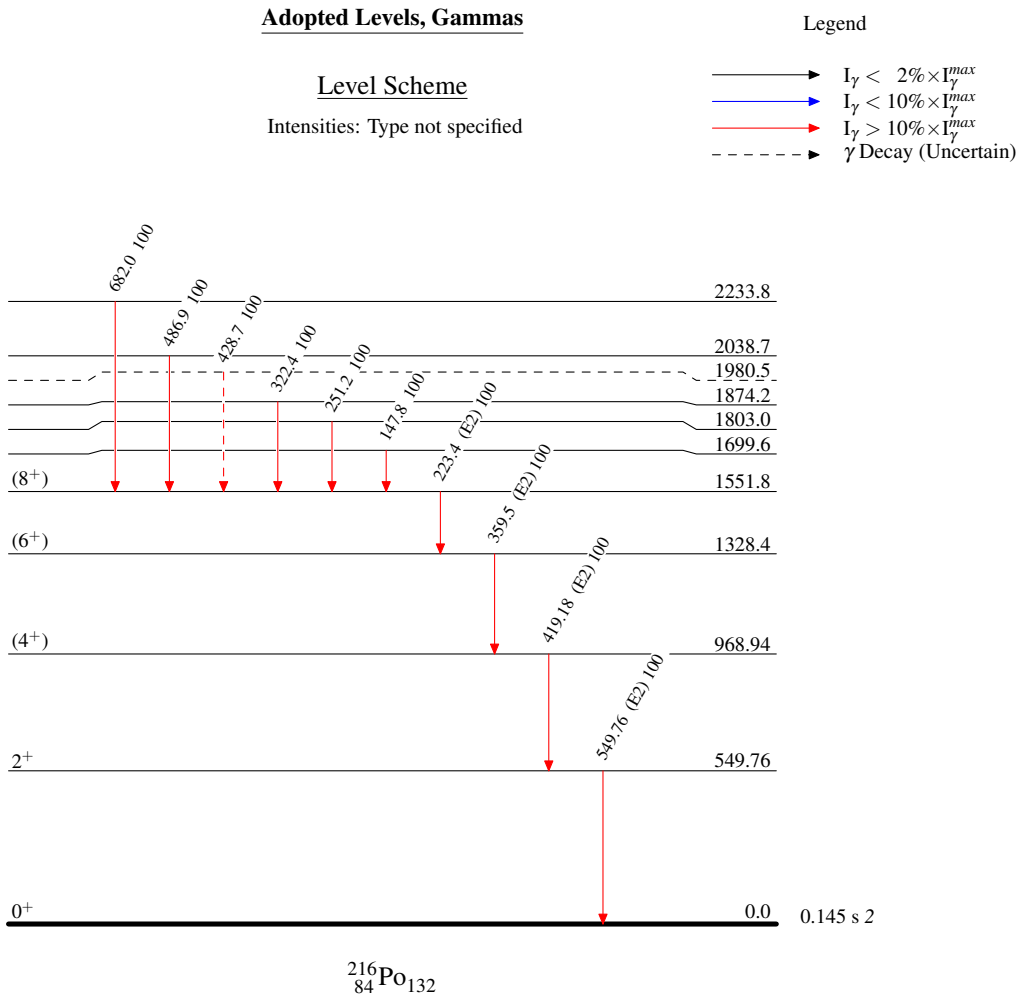
E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[†]	α[‡]	Comments
549.76	2^+	549.76 *4*	100	0.0	0^+	(E2)	0.0257	E_γ: weighted average of Eγ's from ^{216}Bi β^- decay (2.25 min), ^{216}Bi β^- decay (2.25 min+6.6 min) and ^{220}Rn α decay. Mult.: from ^{220}Rn α decay.
968.94	(4^+)	419.18 *8*	100	549.76	2^+	(E2)	0.0497	E_γ: weighted average of Eγ's from ^{216}Bi β^- decay (2.25 min) and ^{216}Bi β^- decay (2.25 min+6.6 min).
1328.4	(6^+)	359.5	100	968.94	(4^+)	(E2)	0.0749	
1551.8	(8^+)	223.4	100	1328.4	(6^+)	(E2)	0.322	
1699.6		147.8	100	1551.8	(8^+)			
1803.0		251.2	100	1551.8	(8^+)			
1874.2		322.4	100	1551.8	(8^+)			
1980.5?		428.7[#]	100	1551.8	(8^+)			
2038.7		486.9	100	1551.8	(8^+)			
2233.8		682.0	100	1551.8	(8^+)			

[†] From β^- decay (2.25 min), except as noted.
[‡] 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.
[#] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

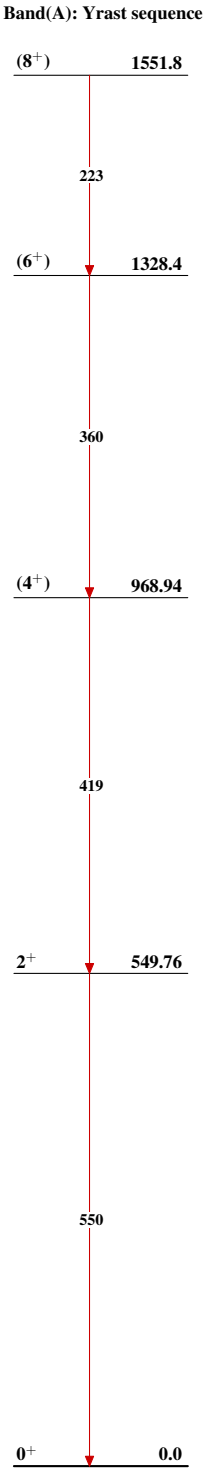
Level Scheme

Intensities: Type not specified



$^{216}_{84}Po_{132}$

Adopted Levels, Gammas



$^{216}_{84}Po_{132}$