

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. Morse	NDS 197,259 (2024).	26-Sep-2023

$Q(\beta^-)=2976$ 16; $S(n)=4923$ 20; $S(p)=6013$ 22; $Q(\alpha)=3893$ 17 2021Wa16
 $S(2n)=11199$ 16, $S(2p)=14124$ 17 (2021Wa16).

 ^{230}Ac LevelsCross Reference (XREF) FlagsA ^{230}Ra β^- decay

E(level) [†]	J^π [‡]	$T_{1/2}$	XREF	Comments
0.0	(1 ⁺)	122 s 3	A	$\% \beta^- = 100$ $\% \beta^-$ -delayed fission= 1.19×10^{-6} 40 from 2001Yu03. $T_{1/2}$: From 1978Gi07. Other measured value: 80 s 10 (1973Ch24). J^π : log ft values for β^- transitions to 0 ⁺ , 1 ⁺ , 2 ⁺ , 3 ⁻ states in ^{230}Th suggest $J^\pi=1^+$. From systematics of proton and neutron Nilsson orbitals, probable configuration is: π 3/2[651], ν 5/2[633].
8.99 7	(0,1,2) ⁺		A	
72.01 7	1 ⁻		A	
101.07 6	1 ⁺		A	
151.52? 9	(1 ⁺)		A	
198.17 7	1 ⁻		A	
211.78 7	1 ⁺		A	
264.69 10			A	
285.19 7	1 ⁺		A	
292.91 9			A	
346.07 9	1 ⁺		A	
375.72 14			A	
395.27 12	1 ⁻		A	
457.92 8	1 ⁺		A	
478.70 8	1 ⁺		A	
536.73 11	1 ⁺		A	
581.16 10	1 ⁺		A	
591.56? 11	1 ⁺		A	
635.77? 18	1 ⁺		A	

[†] The excited levels are from ^{230}Ra β^- . Since the decay scheme is not well established, the excited levels and the placements of gammas should be considered tentative. See ^{230}Ra β^- decay for spins and parities proposed in 1980Gi04.

[‡] Adopted from ^{230}Ra β^- decay based on log ft values.

 $\gamma(^{230}\text{Ac})$

$E_i(\text{level})$	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	$E_i(\text{level})$	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π
72.01	1 ⁻	63.0 1	35 2	8.99	(0,1,2) ⁺	198.17	1 ⁻	198.2 1	20 3	0.0	(1 ⁺)
		72.0 1	100 6	0.0	(1 ⁺)	211.78	1 ⁺	110.7 1	10.0 10	101.07	1 ⁺
101.07	1 ⁺	92.1 1	100 24	8.99	(0,1,2) ⁺			202.8 1	100 4	8.99	(0,1,2) ⁺
		101.0 1	76 15	0.0	(1 ⁺)			211.8 1	36.7 10	0.0	(1 ⁺)
151.52?	(1 ⁺)	151.5 1	100	0.0	(1 ⁺)	264.69		192.6 1	87 19	72.01	1 ⁻
198.17	1 ⁻	189.2 1	100 3	8.99	(0,1,2) ⁺			255.7 2	100 25	8.99	(0,1,2) ⁺

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued) $\gamma(^{230}\text{Ac})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\ddagger	E_f	J_f^π	$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\ddagger	E_f	J_f^π
285.19	1 ⁺	184.1 1	63.2 16	101.07	1 ⁺	478.70	1 ⁺	132.7 3	<1.0	346.07	1 ⁺
		285.2 1	100 4	0.0	(1 ⁺)			469.7 1	100 4	8.99	(0,1,2) ⁺
292.91		141.4 2	16 5	151.52?	(1 ⁺)			478.7 1	83 4	0.0	(1 ⁺)
		292.9 1	100 14	0.0	(1 ⁺)	536.73	1 ⁺	251.5 1	100 5	285.19	1 ⁺
346.07	1 ⁺	134.3 1	80 9	211.78	1 ⁺			536.9 2	12.1 20	0.0	(1 ⁺)
		147.9 1	100 6	198.17	1 ⁻	581.16	1 ⁺	288.2 2	15 5	292.91	
375.72		177.5 3	60 20	198.17	1 ⁻			296.1 2	18 3	285.19	1 ⁺
		274.6 2	100 3	101.07	1 ⁺			316.4 1	15 3	264.69	
		375.8 2	30 10	0.0	(1 ⁺)			509.4 2	100 10	72.01	1 ⁻
395.27	1 ⁻	49.2 1	100 20	346.07	1 ⁺	591.56?	1 ⁺	440.0 3	7 3	151.52?	(1 ⁺)
		197.1 2	50 8	198.17	1 ⁻			490.5 1	100 19	101.07	1 ⁺
457.92	1 ⁺	259.9 2	18 3	198.17	1 ⁻	635.77?	1 ⁺	437.7 3	16 6	198.17	1 ⁻
		448.9 1	81 3	8.99	(0,1,2) ⁺			484.2 2	100 21	151.52?	(1 ⁺)
		457.9 1	100 4	0.0	(1 ⁺)						

[†] From ^{230}Ra β^- decay (1980Gi04).




[‡] Relative photon intensity deexciting each level (1980Gi04).

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

Legend

-  $I_\gamma < 2\% \times I_\gamma^{max}$
-  $I_\gamma < 10\% \times I_\gamma^{max}$
-  $I_\gamma > 10\% \times I_\gamma^{max}$

