^{116}Cd(^{7}Li,3nγ)   1984QuZX,1983Va14

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	K. Kitao, Y. Tendow and A. Hashizume	NDS 96, 241 (2002)	1-Dec-2001

1983Va14: E=29 MeV; γ, γγ, (γ)(pulsed beam)(t), γ(θ).
1984QuZX: E=23, 26, 29, 32 MeV, semi γ, excitation function, γγ, γ(θ), (γ)(pulsed beam)(t).
1987Lu06: E=26,30,35,40 MeV, γ, γ(t).
The level scheme is that proposed by 1984QuZX.

^{120}Sb Levels

E(level)[‡]	J^{π}[#]	T$_{1/2}$[@]	Comments
0.0+x	8^{-}		Additional information 1.
165.20+x 24			
230.40+x 21			
518.0+x 3	9^{-}		
858.0+x[†] 3	8^{-}		
1037.06+x[†] 25	9^{-}		
1242.6+x[†] 3	10^{-}		
1369.9+x[†] 4	10^{-}		
1449.8+x 4	10^{-}		
1564.9+x 4	11^{+}		
1742.8+x[†] 5	11^{-}		
2123.9+x 5	12^{+}		
2134.1+x[†] 5	12^{-}		
2266.3+x 4	12^{-}		
2328.3+x 6	13^{+}	400[&] ns 8	
2552.7+x[†] 6	13^{-}		
2736.4+x 5	(14)		
2884.7+x 6	(16)	14 ns 3	

[†] ΔJ=1 negative parity band built on 8^{-}.

[‡] From a least-squares fit to the E(γ's) by the evaluators. Uncertainties do not include the uncertainty in the reference level.

[#] Proposed by 1984QuZX based on γ(θ), cascading of γ's with the same half-life, and syst on the ΔJ=1 band built on 8^{-} state in even Sb isotopes.

[@] From 1984QuZX, unless otherwise noted.

[&] From 1987Lu06. 1984QuZX also reported that the 204γ and following γ's decayed with a T$_{1/2}$=221 ns 12. However, 1984QuZX had suggested existence of another level with this half-life based on the 204γ having a prompt component.

γ(^{120}Sb)

E$_{γ}$[†]	I$_{γ}$[†]	E$_i$(level)	J$^{π}_i$	E$_f$	J$^{π}_f$	Mult.[a]
65.0 3	19.0 4	230.40+x		165.20+x		D
115.0 3	17.8 3	1564.9+x	11^{+}	1449.8+x	10^{-}	D
148.3 3	5.4 2	2884.7+x	(16)	2736.4+x	(14)	(Q)
165.0 3	26.0 3	165.20+x		0.0+x	8^{-}	D
178.9 3	44.3 4	1037.06+x	9^{-}	858.0+x	8^{-}	D+Q
204.4 3	17.7 3	2328.3+x	13^{+}	2123.9+x	12^{+}	(Q)
230.4 3	100.0 4	230.40+x		0.0+x	8^{-}	Q
287.4[#] 3	107.8 5	518.0+x	9^{-}	230.40+x		
322.4 3	36.8 4	1564.9+x	11^{+}	1242.6+x	10^{-}	D

^{116}Cd(^{7}Li,3nγ)   **1984QuZX,1983Va14 (continued)**

$\gamma(^{120}$Sb) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[a]
332.8 _3_	32.5 _3_	1369.9+x	10⁻	1037.06+x	9⁻	D+Q
339.9 _3_	7.3 _7_	858.0+x	8⁻	518.0+x	9⁻	D
372.9 _3_	27.5 _3_	1742.8+x	11⁻	1369.9+x	10⁻	D+Q
391.3 _3_	13.5 _4_	2134.1+x	12⁻	1742.8+x	11⁻	D+Q
418.6 _3_	@	2552.7+x	13⁻	2134.1+x	12⁻	
470.1 _3_	8.3 _6_	2736.4+x	(14)	2266.3+x	12⁻	(Q)
511.7[‡b] _4_		1369.9+x	10⁻	858.0+x	8⁻	
559.0 _3_	32.3 _5_	2123.9+x	12⁺	1564.9+x	11⁺	D
627.6 _3_	34.2 _4_	858.0+x	8⁻	230.40+x		Q
705.7[‡b] _4_		1742.8+x	11⁻	1037.06+x	9⁻	
764.2[‡] _4_		2134.1+x	12⁻	1369.9+x	10⁻	
931.8 _3_	25.9 _6_	1449.8+x	10⁻	518.0+x	9⁻	D
1023.7[#] _3_	43.9 _9_	2266.3+x	12⁻	1242.6+x	10⁻	
1037.2 _3_	&	1037.06+x	9⁻	0.0+x	8⁻	
1242.6 _3_	64.8 _5_	1242.6+x	10⁻	0.0+x	8⁻	(Q)

[†] From 1984QuZX, unless otherwise noted.

[‡] Taken from authors' drawing, value is a sum of cascade γ's. No intensity was given by authors (1984QuZX).

[#] Doublet (1984QuZX).

[@] No intensity was given by the authors (1984QuZX).

[&] Weak (1984QuZX).

[a] From $\gamma(\theta)$ (1983Va14,1984QuZX).

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

$^{116}Cd(^7Li,3n\gamma)$　　1984QuZX,1983Va14

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)

$^{120}_{51}Sb_{69}$