^{147}Sm(^{51}V,3nγ) 2013Ny01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong and Kang Mengxiao	NDS 121, 395 (2014)	1-Mar-2014

2013Ny01: E(^{51}V)=224 MeV. Measured Eγ, Iγ, $\gamma\gamma$-coin, $\alpha\gamma$-coin using RITU separator, GREAT spectrometer for particle detection and JUROGAM array of 43 Compton-suppressed HPGe detectors for γ rays at JYFL facility. Recoil-decay tagging technique. Deduced levels, J, π, strongly-coupled rotational band.

^{195}At Levels

E(level)†	J$^\pi$	T$_{1/2}$‡	Comments
0.0@	(1/2$^+$)	290 ms *20*	J$^\pi$: from adopted level.
33.0 *10*	(7/2$^-$)	143 ms *3*	%IT=12 *4* (2013Ny01); %α=88 *4* %IT branch from recoil-α time distributions (2013Ny01). J$^\pi$: from adopted level.
118.8? *5*			
293.6?@ *5*	(5/2$^+$)		
648.8?@ *9*	(9/2$^+$)		
0+x#	(13/2$^+$)		Additional information 1. E(level): x<130 keV (2013Ny01).
281.29+x# *20*	(15/2$^+$)		
516.3+x# *4*	(17/2$^+$)		
719.9+x *7*			
804.7+x# *5*	(19/2$^+$)		
1056.6+x# *6*	(21/2$^+$)		
1371.4+x# *8*	(23/2$^+$)		
1636.0+x# *10*	(25/2$^+$)		

† From least-squares fit to Eγ data.
‡ From recoil-α time distributions (2013Ny01).
# Band(A): Strongly-coupled $\pi i_{13/2}$ band.
@ Band(B): Band based on 1/2$^+$.

γ(^{195}At)

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.
(33)		33.0	(7/2$^-$)	0.0	(1/2$^+$)	[E3]
119.2‡ *5*	10 *3*	118.8?		0.0	(1/2$^+$)	
175.2‡ *5*	7 *3*	293.6?	(5/2$^+$)	118.8?		
235.1 *4*	35 *9*	516.3+x	(17/2$^+$)	281.29+x	(15/2$^+$)	
250.8 *7*	25 *9*	1056.6+x	(21/2$^+$)	804.7+x	(19/2$^+$)	
281.2 *2*	100 *15*	281.29+x	(15/2$^+$)	0+x	(13/2$^+$)	
288.4 *4*	36 *10*	804.7+x	(19/2$^+$)	516.3+x	(17/2$^+$)	
293.0‡ *6*	8 *4*	293.6?	(5/2$^+$)	0.0	(1/2$^+$)	
x302.8† *3*	58 *12*					
x307.5† *7*	17 *9*					
x312.3† *9*	19 *12*					
315.5 *15*	12 *10*	1371.4+x	(23/2$^+$)	1056.6+x	(21/2$^+$)	
355.2‡ *7*	12 *5*	648.8?	(9/2$^+$)	293.6?	(5/2$^+$)	
x416.2† *6*	35 *12*					

Continued on next page (footnotes at end of table)

^{147}Sm(^{51}V,3nγ) 2013Ny01 (continued)

$\gamma(^{195}At)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π
[x]420.6[†] 5	43 12				
[x]434.4[†] 5	40 12				
438.6 6	34 12	719.9+x		281.29+x	(15/2$^+$)
[x]476.2[†] 7	25 11				
[x]496.1[†] 6	28 8				
[x]499.1[†] 8	28 8				
517.1 6	33 13	516.3+x	(17/2$^+$)	0+x	(13/2$^+$)
522.4 6	29 11	804.7+x	(19/2$^+$)	281.29+x	(15/2$^+$)
541.0 5	34 11	1056.6+x	(21/2$^+$)	516.3+x	(17/2$^+$)
566.5 8	40 20	1371.4+x	(23/2$^+$)	804.7+x	(19/2$^+$)
[x]569.9[†] 8	40 20				
579.4 8	21 12	1636.0+x	(25/2$^+$)	1056.6+x	(21/2$^+$)
[x]629.2[†] 5	34 12				

[†] γ observed in 7/2-, 33-keV isomer α-tagged spectrum, but not assigned in level scheme.
[‡] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

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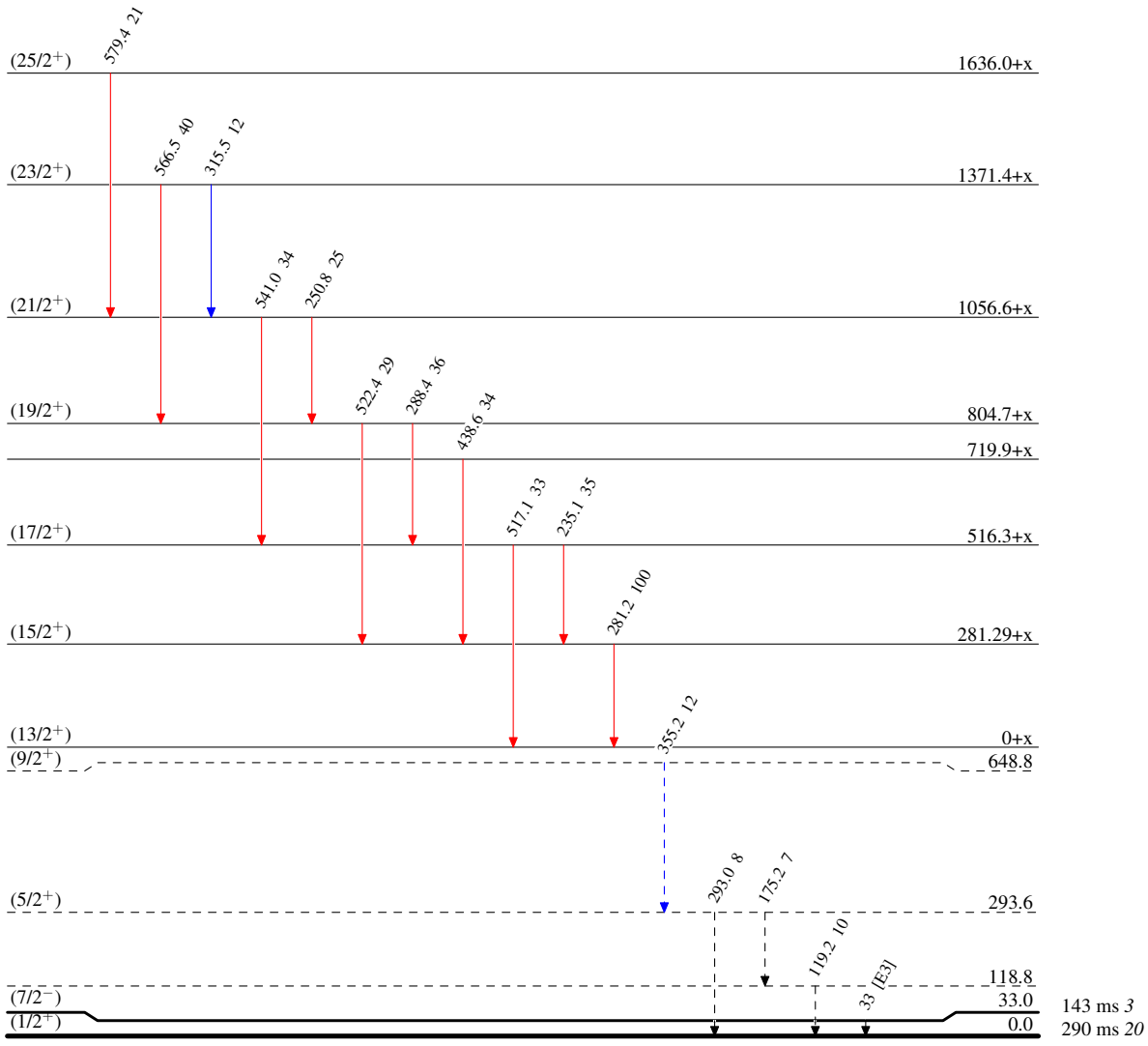
Level Scheme

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)



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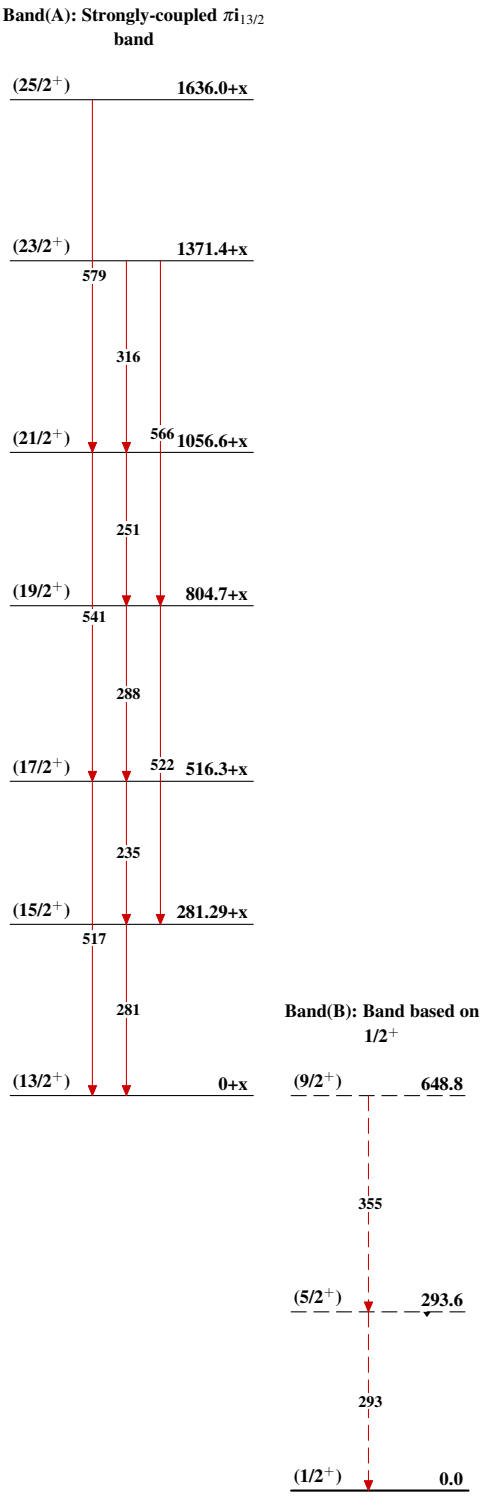

$^{195}_{85}At_{110}$