

$^{167}\text{Er}(^3\text{He,d})$ 1973Pr06

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111, 1807 (2010)	15-Jun-2010

$J^\pi(^{167}\text{Er})=7/2^+$.

$E(^3\text{He})=24$ MeV; $\theta=20^\circ, 39^\circ, 60^\circ$; metallic Er target, enriched to 91.9% in ^{167}Er ; measured E(level) (split-pole mag spect, FWHM=16), differential cross sections.

 ^{168}Tm Levels

E(level) [†]	J^π [‡]	$d\sigma/d\Omega(\theta=39^\circ)$ $\mu\text{b/sr}$ [#]	Comments
0.0 ^a	3 ⁺	11.8	
≈ 46		≈ 1.2	
64 ^a 2	4 ⁺	12.3	
≈ 85		≈ 2.7	
149 ^b 2	4 ⁺	20	
≈ 150 ^a	5 ⁺	<5	E, $d\sigma/d\Omega$: from table 3.
176 2		2.7	
201 2	3 ⁻ & 4 ⁻ @	28.5	
204 2		7.4	
231 ^b 2	5 ⁺	16.6	
245 2	5 ⁻ @	10.9	
313 2	6 ⁻ & 7 ⁺ @ &	12.4	Large cross section indicates level is probable doublet, with components of both assigned configurations.
≈ 328 ^b	6 ⁺	<3.0	E, $d\sigma/d\Omega$: from table 3.
338 ^c 2	4 ⁻	19.7	
368 2		1.3	
389 2	7 ⁻ @	1.4	
447 ^c 2	5 ⁻	7.4	
492 2		2.1	
520 2		10.4	
564 ^c 2	6 ⁻	4.8	
580 2		2.9	
609 2		6	
631 2		6.5	
674 2		2.5	
698 ^c 2	7 ⁻	2.4	
730 2	6 ⁺	35.6	probable Configuration=((ν 7/2[633])+(π 5/2[402])).
760 2		6.1	
815 ^d 2	1 ⁺	16.6	
848 ^d 2	2 ⁺	14.6	
892 ^d 2	3 ⁺	6.9	
934 2		2.5	
995 2		2.3	
1009 2		2.3	
1123 2		4.8	
1161 2		6	
≈ 1202		≈ 2.4	
≈ 1225		≈ 3	
≈ 1252		≈ 2.8	
≈ 1273		≈ 2.7	
1322 2		7.6	
1343 2		≈ 3.0	
1389 ^e 2	4 ⁻	40.6	

Continued on next page (footnotes at end of table)

$^{167}\text{Er}(^3\text{He},\text{d})$ **1973Pr06 (continued)** ^{168}Tm Levels (continued)

$E(\text{level})^\dagger$	$J^\pi^\ddagger$	$d\sigma/d\Omega(\theta=39^\circ) \mu\text{b}/\text{sr}^\#$	$E(\text{level})^\dagger$	$J^\pi^\ddagger$	$d\sigma/d\Omega(\theta=39^\circ) \mu\text{b}/\text{sr}^\#$
1413 2		23.8	$\approx 1540^f$	4^-	≈ 5.8
1438 ^f 2	3^-	27.6	≈ 1562		≈ 2.0
≈ 1460		≈ 8.0	1590 ^e 2	6^-	10.4
1482 ^e 2	5^-	26.8	1628 ^f 2	5^-	4.8
≈ 1500		≈ 8.0			

[†] For $\theta=39^\circ$.[‡] From cross sections and model arguments (authors' values). See ^{168}Tm Adopted Levels for evaluator's assignments.[#] $d\sigma/d\Omega$ At 39° for $E(^3\text{He})=24$ MeV; uncertainty $\approx 10\%$.[@] Configuration= $((\nu 7/2[633])-(\pi 1/2[541]))$.[&] Configuration= $((\nu 7/2[633])+(\pi 7/2[404]))$.^a Band(A): $K^\pi=3^+$ band. Configuration= $((\nu 7/2[633])-(\pi 1/2[411]))$.^b Band(B): $K^\pi=4^+$ band. Configuration= $((\nu 7/2[633])+(\pi 1/2[411]))$.^c Band(C): $K^\pi=4^-$ band. Configuration= $((\nu 7/2[633])+(\pi 1/2[541]))$.^d Band(D): $K^\pi=1^+$ band. Configuration= $((\nu 7/2[633])-(\pi 5/2[402]))$.^e Band(E): $K^\pi=4^-$ band. Configuration= $((\nu 7/2[633])+(\pi 1/2[530]))$.^f Band(F): $K^\pi=3^-$ band. Configuration= $((\nu 7/2[633])-(\pi 1/2[530]))$.

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				Band(F): $K^\pi=3^-$ band	
		Band(E): $K^\pi=4^-$ band		<u>5⁻</u>	<u>1628</u>
		<u>6⁻</u>	<u>1590</u>		
				<u>4⁻</u>	<u>≈1540</u>
		<u>5⁻</u>	<u>1482</u>		
				<u>3⁻</u>	<u>1438</u>
		<u>4⁻</u>	<u>1389</u>		
		Band(D): $K^\pi=1^+$ band			
		<u>3⁺</u>	<u>892</u>		
		<u>2⁺</u>	<u>848</u>		
		<u>1⁺</u>	<u>815</u>		
		Band(C): $K^\pi=4^-$ band			
		<u>7⁻</u>	<u>698</u>		
		<u>6⁻</u>	<u>564</u>		
		<u>5⁻</u>	<u>447</u>		
		Band(B): $K^\pi=4^+$ band			
		<u>6⁺</u>	<u>≈328</u>	<u>4⁻</u>	<u>338</u>
		<u>5⁺</u>	<u>231</u>		
		Band(A): $K^\pi=3^+$ band			
		<u>5⁺</u>	<u>≈150</u>	<u>4⁺</u>	<u>149</u>
		<u>4⁺</u>	<u>64</u>		
		<u>3⁺</u>	<u>0.0</u>		