

$^{39}\text{K}(^3\text{He},\text{p})$  1967Be41,1966Se08

Type	Author	History	Citation	Literature Cutoff Date
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$J^\pi(^{39}\text{K g.s.}) = 3/2^+$ .

1967Be41 (also 1966Be35):  $E(^3\text{He}) = 13.03$  MeV from MIT-ONR electrostatic generator. Protons detected with nuclear emulsion (FWHM=55 keV). Measured  $\sigma(\theta)$ . DWBA analysis (code JULIE).

1966Se08:  $E(^3\text{He}) = 14$  MeV from Oak Ridge National Laboratory tandem Van de Graaff accelerator. Protons detected with (E- $\Delta$ E) telescope detectors (FWHM=40 keV). Measured  $\sigma(\theta)$ .

 $^{41}\text{Ca}$  Levels

E(level) <sup>†</sup>	L <sup>‡</sup>	Comments
0	@	
1949 5	@	
2017 5	0	
2471 <sup>b</sup>		
2587 <sup>b</sup>		
2615 <sup>b</sup>		
2680 <sup>b</sup>		
2893 5	2	
2970 <sup>b</sup>		
3059 <sup>b</sup>		
3131 <sup>b</sup>		
3209 <sup>b</sup>		
3378 <sup>b</sup>		
3408 5	0+2	L: Fraction of L values:0.75 10 (L=0), 0.25 10 (L=2).
3536 <sup>b</sup>		
3686 <sup>b</sup>		
3740 5	0+2 <sup>#</sup>	
3859 <sup>b</sup>		
3954 <sup>b</sup>		
4105 5	0+2 <sup>#</sup>	
4343 <sup>b</sup>		
4431 <sup>b</sup>		
4743 10	0+2 <sup>#</sup>	
4829 10	0+2 <sup>#</sup>	
4983 10	2	
5006 <sup>b</sup>		E(level): 5019 in 1966Se08 corresponds to 5006+5024.
5024 <sup>b</sup>		
5208 10	&	
5297 10	0+2	L: Fraction of L values:0.35 10 (L=0), 0.65 10 (L=2).
5421 10	0+2	L: Fraction of L values:0.30 10 (L=0), 0.70 10 (L=2).
5477 10	0+2	L: Fraction of L values:0.55 10 (L=0), 0.45 10 (L=2). Not consistent with L=1 in $^{40}\text{Ca}(d,p)$ .
5730 10	0+2	L: Fraction of L values:0.50 10 (L=0), 0.50 10 (L=2). E(level): 5759 in 1966Se08 corresponds to 5730+5759.
5759 <sup>b</sup>		
5832 10	0	
5982 10	0+2	L: Fraction of L values:0.75 10 (L=0), 0.25 10 (L=2).
6091 10	&	

Continued on next page (footnotes at end of table)

${}^{39}\text{K}({}^3\text{He,p})$  **1967Be41,1966Se08** (continued) ${}^{41}\text{Ca}$  Levels (continued)

<u>E(level)<sup>†</sup></u>	<u>L<sup>‡</sup></u>	<u>Comments</u>
6098 <sup>b</sup>		E(level): 6093 in <b>1966Se08</b> corresponds to 6091+6098.
6338 <i>10</i>	&	
6488 <i>10</i>	&	
6990 <sup>a</sup>		
7565 <sup>a</sup>		
7762 <sup>a</sup>		
7860 <sup>a</sup>		
7964 <sup>a</sup>		
8062 <sup>a</sup>		
8159 <sup>a</sup>		

<sup>†</sup> Below 6.5 MeV excitation, **1967Be41** and **1966Se08** quote energies from  ${}^{40}\text{Ca}(\text{d,p})$  work of **1965Be14**. Above this energy levels are from **1966Se08** only.

<sup>‡</sup> From DWBA analysis (**1967Be41**).

# Fraction of L values: 0.90 *10* (L=0), 0.10 *10* (L=2).

@ Observed  $\sigma(\theta)$  may be L=1, but no analysis was carried out.

& No L-assignment could be made from observed  $\sigma(\theta)$  of **1967Be41**.

<sup>a</sup> From **1966Se08** only, probably doublets or triplets.

<sup>b</sup> Group shown by **1966Se08** in proton spectrum.