^{40}Ca(t,^{3}He) 1985Aj03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 140, 1 (2017)	30-Sep-2015

$J^{\pi}(^{40}\text{Ca g.s.})=0^{+}$.

1985Aj03: E=25 MeV triton beam was produced from the Los Alamos three-stage Van de Graaff accelerator. Target was 105 μg/cm^2 99.97% enriched ^{40}Ca. Reaction products were momentum analyzed with a Q3D spectrometer. Measured $\sigma(\theta)$. Deduced levels, J, π, L-transfers from comparisons with coupled-channel calculations.

1991Pi09: E=33 MeV. Measured $\sigma(\theta)$ with FWHM=100 keV. Fits to cross sections included finite range and multi-step DWBA. First four states studies.

All data are from 1985Aj03, unless otherwise noted.

^{40}K Levels

E(level)	L[#]	Comments
0	3+5	
31 *5*	3	
800 *5*	1+3	
891 *5*	5	
1642 *8*		
1959 *8*	2	
2055[‡] *15*		E(level): corresponds to 2047+2070.
2091 *20*	1	
2265[†] *15*		
2288[‡] *20*	0+2[&]	E(level): corresponds to 2290+2291.
2390 *10*	1+3[@&]	L: for 2390+2411.
2411 *15*	1+3[@&]	L: for 2390+2411.
2534[†] *15*		
2566 *15*		
2606 *15*		
2724 *15*	1	
2774 *20*		
2807 *20*		
2865 *20*		
2938 *20*		
3017[‡] *15*		
3100 *15*		
3120 *15*		
3216 *15*	1+3	
3272 *15*	(0+2)	
3360 *15*		
3391[‡] *20*		
3465[‡] *15*	[&]	E(level): corresponds to 3439+3486.
3517[†] *15*		
3618[‡] *15*	1+3[&]	E(level): corresponds to 3599+3630.
3653 *20*		
3715[‡] *15*		
3780[‡] *30*		
3859[‡] *15*	1[&]	E(level): corresponds to 3840+3869.
3883 *15*		
3995[‡] *15*		
4091[‡] *15*	[&]	E(level): corresponds to 4076+4105.
4190[†] *20*		

Continued on next page (footnotes at end of table)

^{40}Ca(t,^{3}He) 1985Aj03 (continued)

^{40}K Levels (continued)

E(level)	L[#]	Comments
4237 *15*	1	
4277 *15*	1+3	
4335 *15*		
4374 *15*		
4455 *15*		
4508 *15*		
4535[†] *15*		
4781 *15*		$\sigma(\theta)$ is not forward peaked.

[†] Weak group, observed at several angles.
[‡] Unresolved states.
[#] From comparisons of measured differential cross sections with coupled-channel Born approximation (CCBA) calculations.
[@] For 2390+2411.
[&] $\sigma(\theta)$ is of unresolved group.