^{42}Ca(t,^{3}He) 1985Aj03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen[#] and Balraj Singh	NDS 135, 1 (2016)	31-May-2016

Target ^{42}Ca $J^{\pi}=0^{+}$.

1985Aj03: E=25 MeV triton beam was produced from the Los Alamos three-stage Van de Graaff facility. ^{3}He particles were analyzed with a Q3D spectrometer and detected by a position-sensitive detector. Measured $\sigma(\theta)$. Deduced levels, J^{π}, L from CCBA analysis.

^{42}K Levels

E(level)	J$^{\pi}$[†]	Assumed L-transfer[‡]	E(level)	J$^{\pi}$[†]	Assumed L-transfer[‡]
0	2^{-}	1+3	2434 *15*		
109 *5*	3^{-}	3	2496 *15*		
262 *8*	4^{-}	3+5	2570[#] *15*		
640[a]			2626 *15*		
680?[b]			2662[#] *15*		
702 *8*	5^{-}	5	2750 *15*		
780[a]			2780 *15*		
841 *8*			2824 *15*		
1107 *15*			2862 *10*	1^{+}	0+2
1145 *10*	4^{+}	4	2895 *10*	3	
1201 *10*	$2^{-},3^{-}$		2955[#] *15*		
1259[@] *20*	2^{-}[&]	1+3[&]	3032 *10*	3^{+}	2+4
1277[@] *15*	2^{-}[&]	1+3[&]	3056 *15*		
1380[a]			3097[#] *15*	1^{+}	0+2
1413 *10*			3132[#] *15*		
1469[#] *10*			3225[#] *20*		
1539 *15*	3^{+}	2+4	3297 *10*	1^{+}	0+2
1688 *15*	3		3329 *10*	1^{+}	0+2
1735 *15*			3377 *10*	1^{+}	0+2
1810[#] *20*			3425[#] *15*	2	
1860?[b]			3503 *15*		
1926 *15*	3^{-}	3	3587 *15*		
1956 *15*	(4^{-})	3+5	3628[#] *15*		
1990?[b]			3666 *10*		
2067 *20*	3		3698 *10*		
2088 *20*	2^{-}	1+3	3758 *10*		
2193 *15*	$3^{+},4^{+}$		3793[#] *15*		
2219 *20*	$2,3^{+}$		3860 *15*		
2268[#] *15*			3887 *15*		
2328 *15*			4042[#] *15*		
2373 *15*			4121 *15*		
2409 *15*	3^{+}	2+4	4150[#] *15*		

[†] From comparison of $\sigma(\theta)$ with theoretical CCBA calculations, using assumed L-transfers. For some of the levels, these assignments differ from those in the Adopted Levels. See Adopted Levels for details.

[‡] L-transfer assumed in theoretical CCBA calculations.

[#] Unresolved multiplet.

[@] 1259 and 1277 are not well resolved.

[&] Common value for 1259 and 1277 levels.

[a] Rounded value from Adopted Levels. Weak group in (t,^{3}He).

[b] Rounded value from Adopted Levels. Not observed in (t,^{3}He), but contribution of weak group is not excluded.