$^{41}\text{K}(^3\text{He,p})$ 1968Do02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen[#]	NDS 126, 1 (2015)	31-Mar-2015

$J^\pi(^{41}\text{K g.s.})=3/2^+$.

1968Do02: E=13.0 MeV ^{3}He beam was produced at the Laboratory for Nuclear Science. Target of enriched ^{41}KI (99.18%) on a thin carbon backing, thickness of 78 μg/cm^2. Protons were analyzed with the MIT multiple gap spectrograph. Measured $\sigma(E_p,\theta)$ for transitions up to 9 MeV excitation. A total of 28 groups reported up to 9 MeV excitation. Deduced levels, J, π, L from DWBA analysis.

^{43}Ca Levels

E(level)	L	dσ/dΩ (μb/sr)[†]	Comments
0[‡]		10[‡]	
990	0	18	Weak population is consistent with configuration=$1f^4_{7/2}1d^{-1}_{3/2}$, J=3/2, T=3/2 as proposed by 1966Do02 in (d,p).
1393?		<4	Very weak population suggests a configuration more complicated than $1f^4_{7/2}1d^{-1}_{3/2}$; J=3/2,T=3/2, proposed by 1966Do02 in (d,p).
2050[‡]		10[‡]	
2270[‡]		15[‡]	
2843	0	46	Strongest transition below 6 MeV. Strong population relative to the 990 group is consistent with configuration=$1f^4_{7/2}1d^{-1}_{3/2}$; $J^\pi=3/2^+$, T=3/2.
3100[‡]		15[‡]	
3300[‡]		30[‡]	
3916	2	10[‡]	Similarity to 4984, $9/2^+$ state in ^{41}Ca indicates 4p-1h component in this level.
6300[‡]		40[‡]	
6410[‡]		30[‡]	
6460[‡]		45[‡]	
6570[‡]		30[‡]	
6640[‡]		60[‡]	
6680[‡]		60[‡]	
6790[‡]		100[‡]	
6950[‡]		80[‡]	
7040[‡]		50[‡]	
7090[‡]		80[‡]	
7190[‡]		160[‡]	
7500[‡]		190[‡]	
7570[‡]		80[‡]	
7730[‡]		80[‡]	
7920[‡]		95[‡]	
8033 *30*	0	640[‡]	T=5/2. IAS of ^{43}K ground state.
8160[‡]		35[‡]	
8270[‡]		45[‡]	
8470[‡]		110[‡]	
8930[‡]		90[‡]	

[†] At $\theta=7.5°$.
[‡] Approximate value read from a plot (in 1968Do02) of excitation energy versus dσ/dΩ. Uncertainty in level energy is estimated at $\approx$30 keV.