^{46}Ca(^{3}He,p)   **1972Fl02,1972Fl01**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 179, 1 (2022)	30-Nov-2021

Both experiments measured $\sigma(\theta)$ in 7.5° steps at 18 MeV and performed DWBA analyses.

1972Fl02,1972Fl01: E=18 MeV ^{3}He beam was produced from the University of Pennsylvania tandem accelerator. Target was isotopically pure ^{46}Ca in a carbon foil of about 50 μg/cm^2. Reaction products were momentum-analyzed with a magnetic multi-gap spectrograph (FWHM=40 keV). Measured $\sigma(\theta$=3.75° to 101.25° in 1972Fl01,3.8° to 87.8° in 1972Fl02). Deduced levels, J, π, L-transfers from DWBA analysis. 1972Fl01 Emphasize in analysis placed on states populated by L=0 transitions (J^π=1$^+$ or 0$^+$). Spin assignments based on empirical considerations and DWBA analysis.

All data are from 1972Fl02, except as noted.

^{48}Sc Levels

E(level)[†]	J$^{\pi}$[‡]	L[#]	E(level)[†]	J$^{\pi}$[‡]	L[#]	E(level)[†]	J$^{\pi}$[‡]	L[#]
0.0	6$^+$		3068 15	1$^+$	0+2	5208 15	(2,3)$^+$	2
133	5$^+$		3168 15	1$^+$	0+2	5342 15	(2,3)$^+$	2
253	4$^+$		3232 20	1$^+$,0$^+$	0(+2)	5422 25	1$^+$	0+2
624	3$^+$,(2)$^+$	2	3502 20	(2,3)$^+$	2	5512 20	(2,3)$^+$	2
1095	7$^+$		3698 15	1$^+$	0+2	5608 20	(2,3)$^+$	2
1145	2$^+$,(3$^+$)	2	4038 20	1$^+$	0+2	5742 15	1$^+$	0+2
2078 15	(4,5)$^+$		4168 15	1$^+$	0+2	6242 15	(2,3)$^+$	2
2202 15	(2,3)$^+$	2	4322 20	1$^+$,0$^+$	0(+2)	6677.6[@] 21	0$^+$	0
2288 15	(2,3)$^+$	2	4682 15	1$^+$	0+2	6832 20	1$^+$,2$^+$,3$^+$	2
2522 15	1$^+$	0+2	4778 15	1$^+$	0+2	6952 15	1$^+$,2$^+$,3$^+$	2
2682 20	(4,5)$^+$		4862 15	(2,3)$^+$	2			
2988 15	1$^+$	0+2	5028 20	(2,3)$^+$	2			

[†] Energies of the first six excited states were taken from (^{3}He,t) data of 1970Oh01. Remaining energies were given relative to the 6685 state; these have been reduced 7.5 keV by the evaluator to reflect the adopted value of 6677.5 21.

[‡] From the comparison of the angular distributions to the shapes of 1$^+$ to 5$^+$ states in ^{48}Ca(^{3}He,p), except as noted.

[#] From DWBA analysis of measured $\sigma(\theta)$ (1972Fl02).

[@] From Adopted Levels. 1972Fl02 assumed 6685 (1972Fl01 assumed 6690).