

${}^{44}\text{Ca}(t,\alpha)$ 1968Sa09,1970Aj01

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

Target ${}^{44}\text{Ca}$ $J^\pi=0^+$.

1968Sa09: E=13 MeV triton beam was produced from the Aldermaston tandem accelerator and impinged on an enriched target of ${}^{44}\text{Ca}$. Alpha particles were momentum analyzed in the multi-angle spectrograph and detected in Ilford K1 emulsions. Measured $\sigma(E_\alpha,\theta)$. Deduced levels, J, π , spectroscopic factors from DWBA analysis.

1970Aj01: E=20 MeV triton beam was produced from the Los Alamos MEG Tandem facility and impinged on a ${}^{44}\text{Ca}$ target of a 205 $\mu\text{g}/\text{cm}^2$ layer of calcium metal deposited on a 50 $\mu\text{g}/\text{cm}^2$ carbon foil, oriented at 30° to the beam. Alpha particles were analyzed in an Elbek-type spectrograph and detected with Ilford K-minus-one nuclear plates. Measured $\sigma(E_\alpha,\theta)$. Deduced levels.

 ${}^{43}\text{K}$ Levels

E(level) [†]	L [‡]	S ^{‡#}	E(level) [†]	L [‡]	S ^{‡#}	E(level) [†]	L [‡]	S ^{‡#}	E(level) [†]
0	2	2.2	2981 15			3890& 30			4680?& 40
560 15	(0)	1.3	3056 17			3970?& 30			4820& 40
740 15	3	0.48	3084 @ 15			4015 @ 15		0.24	4860?& 40
967 15	(1)	0.10	3150 18			4070& 30			4920?& 40
1107 15	2	0.20	3228 21	2	0.19	4127 @ 15	(0)	0.06	5030& 40
1202 15	(2)	0.06	3344 19	2	0.45	4177 15			5150?& 40
1544 15			3460& 30			4234 15			5200& 40
1847 15			3580& 30			4290& 30			5260& 40
2177 15	(2)	0.05	3670& 30			4410& 40			5380& 40
2446 17	0	0.24	3717 15			4490?& 40			
2666 16	2	0.45	3837 15			4540& 40			

[†] From weighted average of 1968Sa09 and 1970Aj01.

[‡] From 1968Sa09.

[#] 1978En02 point out that absolute S-factors given by 1968Sa09 are quite large; therefore, 1978En02 prefer to give relative S-factors, normalized to 3.8 for the ground state.

@ From 1968Sa09 only.

& Reported by 1970Aj01 only.