^{40}Ar(t,p) 1975Fl08

History

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

Target ^{40}Ar $J^{\pi}=0^{+}$.

1975Fl08 (also 1973Ca13, 1961Ja07): E=20 MeV triton beam was produced from the Los Alamos three-stage electrostatic accelerator facility. Gas target of natural argon, effective thickness of 60 $\mu g/cm^2$. Protons were momentum analyzed in a broad range spectrograph and detected in nuclear emulsions along the focal plane, FWHM=35 keV, at angles from 12.5° to 57.5°. Measured $\sigma(E_p,\theta)$. Deduced levels, J^{π}, L, DWBA analysis.

Other:1974WaYT.

^{42}Ar Levels

E(level)	L[‡]	dσ/dΩ (mb/sr) (max,c.m.)[#]	E(level)	dσ/dΩ (mb/sr) (max,c.m.)[#]
0	0	0.31[@]	7355 *15*	
1208 *5*	2	0.31	7540 *30*	0.16
2415 *15*	4,3[b]	0.041	7630[†] *30*	
2520? *10*		0.026	7793 *15*	
3092 *5*	4,3[b]	0.11	7987 *15*	
3563 *5*		0.90	8080[†] *30*	
3705 *10*	(2)	0.085	8230[†] *30*	0.23[a]
3820 *20*		0.047[@]	8380 *20*	0.35
4012 *10*	2	0.31	8520[†] *20*	
4130 *15*		0.034	8690 *20*	0.34
4296 *5*		0.22	8790 *20*	
4405 *5*	3,4	0.25	8940[†] *30*	0.30
4642 *10*	(3,4)	0.21	9020 *30*	
4896 *10*	(3,4)	0.12	9130[†] *30*	
5000 *15*		0.23	9210 *20*	
5230[†] *15*		0.16[&]	9320[†] *30*	
5292[†] *15*		0.16[&]	9410 *30*	
5553 *15*	2	0.20	9535 *25*	
5763 *15*		0.20	9640[†] *30*	
5945 *20*		0.23[@]	9820 *20*	
6090 *20*		0.13[@]	9905 *20*	
6170 *15*			10015[†] *20*	
6357[†] *15*			10060 *30*	
6490[†] *20*			10140 *30*	
6614 *20*		0.21	10300[†] *30*	
6742 *15*		0.24	10540 *30*	
6880 *30*			10590[†] *30*	
7060[†] *20*			10670 *30*	
7140 *20*			10850[†] *30*	
7275[†] *15*		0.36		

[†] Probable doublet.

[‡] As implied by J^{π} values given in table 3 of 1975Fl08. 1975Fl08 give experimental and calculated (DWBA) $\sigma(\theta)$ distribution curves for the following levels also, but no specific L assignments were made based on these data: 3563 (L=2), 4130 (L=0), 4296 (L=2), 5000 (L=1), 5763 (L=2), 5945 (L=2), 6090 (L=3), 6614 (L=3), 6742 (L=3), 7275 (L=3), 8230 (L=5), 8380 (L=3).

[#] At 12.5°, unless otherwise stated.

Continued on next page (footnotes at end of table)

^{40}Ar(t,p) 1975Fl08 (continued)

^{42}Ar Levels (continued)

@ At 20°.
& For 5230+5292.
a At 27.5°.
b L=4 is preferred from comparison to ^{36}Ar(t,p).