^{50}Ti(^{3}He,p) 1975Ca07

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yang Dong, Huo Junde	NDS 128, 185 (2015)	10-Jul-2015

E=15 MeV, measured σ(E(p),θ), the reaction protons were momentum analyzed in a multi-angle magnetic spectrograph at angles ranging from 3.75° to 86.25° in steps of 7.7°, overall energy resolution for the experiment was 25 keV FWHM. DWBA analysis. Others: 1974Ha55, 1972Ha31, 1971Ha55.

^{52}V Levels

E(level)	J$^{\pi}$	L[#]	dσ/dΩ(μb/sr)max	Comments
0	1$^+$,2$^+$,3$^+$	2	54	
19 *10*		(2+4)	109	
142 *10*	1$^+$	0+2	279	
442 *10*			9	
853 *10*	(3$^+$,4$^+$,5$^+$)	(4)	17	
1297 *10*	(1$^+$)	(0+2)	157	
1423 *10*			18	
1665 *10*	1$^+$	0+2	580	
1766 *10*	1$^+$,2$^+$,3$^+$	2	115	
1802 *10*			19	
2108 *10*			21	
2152 *10*	1$^+$	0+2	129	
2325 *10*			11	
2396[‡] *10*	0$^+$,(1$^+$)	0+(2)	233	Identified as possible fragment of AAS. See footnote.
2435 *10*	1$^+$,2$^+$,3$^+$	2	42	
2591 *10*	1$^+$	0+2	913	
2697[‡] *10*	0$^+$,(1$^+$)	0+(2)	68	Identified as possible fragment of AAS. See footnote.
2785 *10*			28	
2881 *10*	1$^+$,2$^+$,3$^+$	2	82	
3066 *15*	(1$^+$,2$^+$,3$^+$)	(2)	22	
3149 *15*	(1$^+$,2$^+$,3$^+$)	(2)	68	
3249 *15*			17	
3342 *15*			21	
3550 *15*			79	L: L=1 or L=0+2 with L=2 dominant.
3579 *15*	3$^+$	2+4	21	L: data can be fit by either L=3 or L=4 dominated 2+4. Exclusion of L=3, and hence assignment of J^{π}=3$^+$, are based on consideration of (d,p) results.
3693 *15*			53	
3726 *15*			33	
3781 *15*			23	
3822 *15*	1$^+$,2$^+$,3$^+$	2	65	
3894 *15*			13	
4107 *15*			46	
4276[†] *15*			80	
4327 *15*			62	
4419 *15*			41	
4455 *15*			19	
4496 *15*			61	
4557 *15*	1$^+$,2$^+$,3$^+$	2	156	
4622 *15*	1$^+$	0+2	147	
4721 *15*			93	
4910 *15*			29	
4951 *15*			62	
5000 *15*	(1$^+$,2$^+$,3$^+$)	(2)	27	
5070 *15*			8	
5096 *15*			108	

Continued on next page (footnotes at end of table)

^{50}Ti(^{3}He,p) 1975Ca07 (continued)

^{52}V Levels (continued)

E(level)	Jπ	L#	dσ/dΩ(μb/sr)max	E(level)	Jπ	L#	dσ/dΩ(μb/sr)max
5233 *15*			22	6292 *15*			64
5273 *15*			30	6326 *15*			29
5360 *15*			32	6374 *15*			53
5410 *15*	$(1^+,2^+,3^+)$	(2)	57	6414 *15*			23
5506 *15*			39	6472 *15*			23
5549 *15*			56	6524 *15*			61
5600 *15*			78	6557 *15*			174
5646 *15*			106	6590 *15*			60
5711 *15*			65	6640 *15*	$1^+,2^+,3^+$	2	63
5745 *15*	$(1^+,2^+,3^+)$	(2)	142	6675 *15*			74
5813 *15*			76	6744† *15*			248
5863 *15*			39	6809 *15*			45
5936† *15*			162	6844 *15*			90
6021 *15*			89	6886 *15*			81
6084 *15*			185	6919 *15*			63
6169 *15*			98	8838@ *15*	0^+	0	615
6225 *15*			119				

† Probable doublet.

‡ The pairing-vibration model predicts a T=3, $J^\pi=0^+$ anti-analog state (AAS), as well as the T=4 IAS, based on the ^{52}Ti g.s. as parent. These two are the only candidates for L=0 states in the right region to be fragments of AAS. However, the combined yield accounts for only ≈18% of that expected from the theoretical ratio σ(AAS)/σ(IAS)=3.

Assignments made by comparing observed angular distributions to DWBA calculations. Empirical criterion employed for distinguishing L=0 from L=0+2. See 1975Ca07 for details.

@ T=4. Identified as IAS ^{52}Ti g.s.