^{48}Ti(^{3}He,d),(^{3}He,pd),(d,n) 1976Ga04,1968Pu01,1968Ba02

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	T. W. Burrows[a]	NDS 109, 1879 (2008)	14-Jul-2008

All groups measured $\sigma(\theta)$ and performed DWBA analysis. Except for 1971Ok06, these groups used magnetic spectrometers. Others for (^{3}He,d): see 1995Bu23.

1968Ba02: E(^{3}He)=18 MeV. θ=5°−30°, 7 angles. See also (t,α).

1968Pu01: E(^{3}He)=16.4, 17.0 MeV.

1971Ok06: E(d)=11.2 MeV. tof. ΔE=50-70 keV.

1976Ga04: E(^{3}He)=25 MeV. For IAS above 7.7 MeV; unbound states also studied At 25.5 MeV with P detected In coincidence with d At zero degrees.

Most data are from (^{3}He,d) and (^{3}He,pd). Except As noted, all data for states up to 6661 are from 1968Ba02 and data on higher states are from 1968Pu01. See 1978Ha15 for more detailed discussions and comparisons including results from other references.

^{49}V Levels

E(α),S(β) g.s., 92, and 155 and 2279 and 2317 states unresolved by 1971Ok06. C^2S' agree with results presented here.
E(d),S(E) also observed by 1971Ok06. C^2S' agree with results presented here.

E(level)[†]	Jπ[‡]	L[#]	C^2S'[#]	Comments
0.0	7/2−	3	4.3	
92			WEAK	
155	3/2−	1	0.17	
750	3/2+	2	0.36	
1025				
1149				doublet.
1672	3/2−	1	0.50	
2193	(5/2)−	3	0.79	Jπ: from observation that state is weakly populated In (t,α) (1968Ba02). Note: Jπ(2183)=7/2− In ADOPTED.
2204?	(5/2)−	3	0.63	Jπ: from observation that state is weakly populated In (t,α) (1968Ba02).
2279	3/2−	1	0.55	
2317	3/2−	1	1.31	
2388? *10*				from 1968Pu01.
2770?				from 1971Ok06. Not observed In (^{3}He,d) or (^{3}He,pd).
2821	5/2−	3	0.79	2812 and 2821 states In (t,α) and (^{3}He,d) coincided but are assumed to Be different states based on $\sigma(\theta)$ (1968Ba02).
3137	9/2+	4	0.25	
3152?				
3248?	1/2+	0	0.01	
3401		1	0.02	
3464? *20*				from 1968Pu01.
3688? *20*				from 1968Pu01.
3748		1	0.08	doublet.
3763	(7/2)−	3	0.18	doublet.
3922		1	0.29	
4012		1	0.04	
4135	5/2−	3	0.10	
4224		1	0.08	
4253		1	0.05	
4379		1	0.04	
4448				
4502		1	0.22	
4587				
4599				
4645	5/2−	3	2.11	main 5/2 strength expected At this energy (1968Ba02).

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^{48}Ti(^{3}He,d),(^{3}He,pd),(d,n) 1976Ga04,1968Pu01,1968Ba02 (continued)

^{49}V Levels (continued)

E(level)†	Jπ‡	L#	C^{2}S′#	Comments
4852		1	0.27	
4894? *20*				from 1968Pu01.
4945		1	0.02	
5017				
5057		1	0.05	
5130?				
5216		1	0.15	
5257		1	0.03	
5370		1	0.02	
5403	5/2$^-$	3	0.35	
5597		1	0.03	
5676		1	0.04	
5718		1	0.03	
5826	5/2$^-$	3	0.13	
5889		1	0.02	
5947	5/2$^-$	3	0.10	
5987		1	0.06	
6045		1	0.04	
6146		1	0.10	
6184				
6220		1	0.08	
6258				
6333		1	0.05	
6368				
6416? *20*				from 1968Pu01.
6474				
6521				
6555		1	0.22	
6603		1	0.17	
6661 *30*				
6683 *30*				
6711 *30*				
6816 *30*				
6856 *30*				
6892 *30*				
6943 *30*				
6978 *30*				
7054 *30*				
7099 *30*				
7137 *30*				
7240 *30*				
7290 *30*				
7365 *30*				
7430 *30*				L: L=(1) for 7430+7478 doublet.
7478 *30*				
7554 *30*				
7605 *30*				
7645 *30*				
7745@ *7*	3/2$^-$	1	0.56&	T=5/2 Jπ: from Pd(θ), 1976Ga04. IAS(^{49}Ti, 1382, 3/2$^-$) (1976Ga04).
7850 *30*				
7896 *30*				
7947 *30*				
7999 *30*				
8079 *30*				

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^{48}Ti(^{3}He,d),(^{3}He,pd),(d,n) 1976Ga04,1968Pu01,1968Ba02 (continued)

^{49}V Levels (continued)

E(level)[†]	Jπ[‡]	L[#]	C^{2}S′[#]	Comments
8092 *7*	(1/2$^-$)	(1)	0.3	T=5/2 Jπ: IAS(^{49}Ti, 1724, 1/2$^-$).
8192 *30*				
8246 *30*				
8277 *30*				
8326 *30*				
8371 *30*				
8405 *30*				
8444 *30*				
8491 *30*				
8591 *30*				
8665 *30*				
8686 *30*				
8880?				from 1971Ok06. Not observed In (^{3}He,d) or (^{3}He,pd).
8915[@] *10*	(5/2$^-$)			T=5/2 Jπ: IAS(^{49}Ti) (1976Ga04).
9568[@] *10*	(1/2$^-$)			T=5/2 Jπ: IAS(^{49}Ti) (1976Ga04).
9662[@] *10*	3/2$^-$			T=5/2 Jπ: from Pd(θ) and IAS(^{49}Ti, 3266, 3/2$^-$) (1976Ga04).
10230[@] *10*	(5/2)$^-$	3	0.22[&]	T=5/2 Jπ: IAS(^{49}Ti, 3847, 5/2$^-$) (1976Ga04).
10925[@] *7*	(5/2)$^+$	2	0.12[&]	T=5/2 Jπ: IAS(^{49}Ti, 4505, 5/2$^+$) (1976Ga04).
11150[@] *7*	(9/2)$^+$	4	0.27[&]	T=5/2 Jπ: IAS(^{49}Ti, 4770, 9/2$^+$) (1976Ga04).

[†] From 1968Ba02 for states up to 6661 and 1968Pu01 for higher energies, except As noted. Compared to the data of 1968Ba02, values from 1968Pu01 are≈10 keV high (4-6 MeV) and≈10 keV low near 6.5 MeV. Above 6661 keV those energies with ΔE<30 keV are from 1976Ga04.

[‡] Assumed for DWBA analysis, except As noted.

[#] L are based on comparison to DWBA for both (^{3}He,d) and (t,α). N=4.42 for C^{2}S′ from 1968Ba02.

[@] T=5/2 IAS′s studied by 1976Ga04 In (^{3}He,pd). See also ^{48}Ti(p,γ),(^{3}He,pd), ^{52}Cr(p,α), above.

[&] From C^{2}S=0.185, 0.044, 0.024, and 0.030, respectively (1976Ga04).