

$^{49}\text{Ti}(\text{p,p}'),(\text{p,p}'\gamma)$ E=6-12 MeV [1981Ma08](#),[1972Ba18](#),[1969An04](#)

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

[1981Ma08](#): E=6 MeV. Measured γ 's and $p\gamma$ and $\gamma\gamma$ -coincidences; Si. DSAM.

 ^{49}Ti Levels

All data and arguments from [1981Ma08](#), except As noted.

E(level) [†]	J ^{π‡}	T _{1/2} [#]	Comments
0.0	7/2 ⁻		
1381.77 4	3/2 ⁻		T _{1/2} >2.8 ps<6.9 ns
1542.15 4	11/2 ⁻	0.74 ps +25-17	T _{1/2} : Coul. ex. data more reliable (1981Ma08).
1586.00 4	3/2 ⁻	1.1 ps +19-5	T _{1/2} : Coul. ex. data more reliable (1981Ma08).
1622.93 5	(5/2) ⁻	35 fs 6	
1723.3 2	1/2 ⁻		T _{1/2} >0.35 ps<6.9 ns
1762.3 3	5/2 ⁻	36 fs 8	
2261.3 1	(5/2) ⁻	59 fs 17	
2471.4 2	(5/2) ⁻	52 fs 17	
2504.2 5	1/2 ⁺		T _{1/2} >0.28 ps<6.9 ns
2506.2 5	15/2 ⁻		T _{1/2} >0.21 ps<6.9 ns
2517.40 ^a 25	5/2,7/2		T _{1/2} >0.42 ps<6.9 ns
2664.1 4	(3/2) ⁺		T _{1/2} >0.22 ps<6.9 ns
2720.55 25	(11/2 ⁺ ,13/2,15/2 ⁻)	57 fs 27	
2980.5 3	(7/2 ⁻ ,9/2 ⁻)	0.13 ps 8	
3042.5 5	7/2 ⁻ ,9/2,11/2 ⁻	24 fs 15	
3175 [@] 5	1/2 ⁻		
3261 [@] 5	3/2 ⁻		
3427 ^{&} 10	3/2 ⁻		
3454? 10	(7/2 ⁻ ,9/2 ⁻)		
3510? 10	5/2 ⁻		
3612? 5			
3625? 10			
3700 5	5/2,7/2,9/2		
3746.5 ^a 6	5/2 ⁻ ,7/2 ⁻		
3781 ^{&} 10			
3818? 10			
3847 5			
3916? 10			
3936? 10			
3990? 10			
4083? 10	5/2 ⁻ ,7/2 ⁻		
4134? 10			
4213 ^{&} 10			

[†] From [1981Ma08](#) ($\Delta E(\text{level}) \leq 0.6$ keV), weighted average deduced from parallel cascades; [1969An04](#) ($\Delta E(\text{level}) = 5$ keV), E=10 MeV, mag spect, FWHM=5 keV; and [1972Ba18](#) ($\Delta E(\text{level}) = 10$ keV), E=12 MeV, mag spect. Note: states from [1972Ba18](#) were not observed by [1969An04](#) or [1981Ma08](#), except As noted.

[‡] From the Adopted Levels.

[#] From DSAM, except for upper limits which are from the observation that No delayed γ 's were observed In the coincidence measurements.

[@] Observed by [1981Ma08](#) In (d,p),(d,p γ) but not In (p,p' γ).

Continued on next page (footnotes at end of table)

$^{49}\text{Ti}(\text{p,p}'),(\text{p,p}'\gamma) \text{ E=6-12 MeV}$ **1981Ma08,1972Ba18,1969An04** (continued) ^{49}Ti Levels (continued)

& Not observed by **1969An04**. Observed by **1981Ma08** In (d,p),(d,p γ) but not In (p,p' γ).

^a See discussion In Adopted Levels.

 $\gamma(^{49}\text{Ti})$

All data are from **1981Ma08**. Coincidences shown on drawing are from $\gamma\gamma$ or $p\gamma$ for proton groups feeding states At $\approx$ 2.3, 2.5, 2.7, and 3.0 MeV. The gates on the 2.3- and 2.5-MeV groups also included contributions from ^{48}Ti .

$E_i(\text{level})$	J_i^π	E_γ	$I_\gamma^\dagger$	E_f	J_f^π
1381.77	3/2 ⁻	1381.8		0.0	7/2 ⁻
1542.15	11/2 ⁻	1542.1		0.0	7/2 ⁻
1586.00	3/2 ⁻	1586.0		0.0	7/2 ⁻
1622.93	(5/2) ⁻	1622.9		0.0	7/2 ⁻
1723.3	1/2 ⁻	341.5		1381.77	3/2 ⁻
1762.3	5/2 ⁻	1762.3		0.0	7/2 ⁻
2261.3	(5/2) ⁻	499.2	17	1762.3	5/2 ⁻
		638.4	48	1622.93	(5/2) ⁻
		2261.3	35	0.0	7/2 ⁻
2471.4	(5/2) ⁻	709.1	21	1762.3	5/2 ⁻
		848.3	47	1622.93	(5/2) ⁻
		2471.4	32	0.0	7/2 ⁻
2504.2	1/2 ⁺	1122.4		1381.77	3/2 ⁻
2506.2	15/2 ⁻	964		1542.15	11/2 ⁻
2517.40	5/2,7/2	931 ^{#@}	<10	1586.00	3/2 ⁻
		1135.6	>75	1381.77	3/2 ⁻
		2517.4	<15	0.0	7/2 ⁻
2664.1	(3/2) ⁺	901.7		1762.3	5/2 ⁻
		1282.4		1381.77	3/2 ⁻
2720.55	(11/2 ⁺ ,13/2,15/2 ⁻)	1178.4		1542.15	11/2 ⁻
2980.5	(7/2 ⁻ ,9/2 ⁻)	260 [@]	<20	2720.55	(11/2 ⁺ ,13/2,15/2 ⁻)
		1357.6	>80	1622.93	(5/2) ⁻
3042.5	7/2 ⁻ ,9/2,11/2 ⁻	1419.5	40	1622.93	(5/2) ⁻
		1500.2	25	1542.15	11/2 ⁻
		3042.5	35	0.0	7/2 ⁻
3746.5	5/2 ⁻ ,7/2 ⁻	2124 [@]		1622.93	(5/2) ⁻
		2204 [@]		1542.15	11/2 ⁻

[†] Photon branching (In percent) from each level based on $\gamma\gamma$ and uncorrected for $\gamma\gamma(\theta)$ effects.

[‡] Observed weakly In 3.0-MeV $p\gamma$ -coincidences.

[#] Evaluator's Note: probably a contaminant from $^{48}\text{Ti}(\text{p,p}'\gamma)$ (**1985Al14**); not observed In (n, γ) or (γ,γ').

[@] Placement of transition in the level scheme is uncertain.

^x γ ray not placed in level scheme.

Legend

 $^{49}\text{Ti}(\text{p,p}'),(\text{p,p}'\gamma)$ E=6-12 MeV 1981Ma08,1972Ba18,1969An04

Level Scheme

Intensities: % photon branching from each level based on $\gamma\gamma$ and uncorrected for $\gamma\gamma(\theta)$ effects
-----► γ Decay (Uncertain)
○ Coincidence
○ Coincidence (Uncertain)

