

⁴³Ca(α ,n γ) 1978Dr06,1974Du14

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. -c. Wu	NDS 91, 1 (2000)	15-Jul-2000

E=8-15 MeV (1978Dr06); measured E γ , I γ , $\gamma\gamma$ coin, $\gamma(\theta)$, γ excitation functions, DSAM determination of T_{1/2}.
 E=6.5,7.5 MeV (1974Du14); DSAM determination of T_{1/2}.
 E=12-17 MeV see ⁴⁰Ar(⁹Be,3n γ) (1982Ra01).
 Decay scheme from 1978Dr06, except as noted.

⁴⁶Ti Levels

E(level)	J π #	T _{1/2} &	Comments
0.0 [†]	0 ⁺		
889.3 [†]	2 ⁺		
2009.9 [†]	4 ⁺	1.3 ^a ps 6	
2613.3	0 ⁺	0.076 ps 21	
2962	2 ⁺ @	0.15 ps 4	
3058.9 [‡]	3 ⁻	7 ps 2	
3167.6	1 ⁻ @	0.15 ps 4	
3213			
3235	2 ⁺ @	0.028 ps 10	
3299.0 [†]	6 ⁺	1.1 ps 3	
3441.7 [‡]	4 ⁻	10 ps +7-4	
3571		0.18 ps 4	
3582		0.07 ^a ps 3	
3608			
3723.2		0.052 ps 14	
3826.9	5 ⁻ @	3.7 ^a ps 21	
3846		<0.024 ps	
3852.8 [‡]	5 ⁻	12 ^a ps 5	
3890		0.38 ps 7	From 1974Du14; not observed by 1978Dr06.
3905			
3941		<0.02 ^a ps	
4003			
4040			
4178.7			
4191.5			
4371			
4415.9	6 ⁻ @	0.45 ^a ps 17	
4524		0.07 ^a ps 3	
4663.0 [‡]	6 ⁻	>3 ^a ps	
4697			
4725			
4897.3 [†]	8 ⁺	0.39 ^a ps 12	
5025?			
5198.4 [‡]	7 ⁻	0.83 ^a ps 3	
5280			
6027			
6150 [‡]	8 ⁻		
6195			
6244 [†]	10 ⁺	0.83 ^a ps 4	

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⁴³Ca(α ,n γ) **1978Dr06,1974Du14** (continued)

⁴⁶Ti Levels (continued)

- † Proposed as member of g.s. band.
- ‡ Proposed as member of K=3 rotational band built on 3⁻ level at 3059.
- # From Adopted Levels, except as noted.
- @ Tentative assignment based on $\gamma(\theta)$ measured at E(α)=11 MeV, supported by excitation functions (1978Dr06).
- & Based on DSAM; from 1974Du14, except as noted.
- ^a DSAM from 1978Dr06.

$\gamma(^{46}\text{Ti})$

<u>E_i(level)</u>	<u>J_i^{π}</u>	<u>E_{γ}[†]</u>	<u>I_{γ}</u>	<u>E_f</u>	<u>J_f^{π}</u>	<u>Comments</u>
889.3	2 ⁺	889.3 10	100	0.0	0 ⁺	
2009.9	4 ⁺	1120.6 10	100	889.3	2 ⁺	
2613.3	0 ⁺	1724.0	100	889.3	2 ⁺	
2962	2 ⁺	2073	100	889.3	2 ⁺	
3058.9	3 ⁻	1049.0	100	2009.9	4 ⁺	
3167.6	1 ⁻	2278.8 10	61 6	889.3	2 ⁺	
		3167.0 15	39 6	0.0	0 ⁺	
3213		2324	100	889.3	2 ⁺	
3235	2 ⁺	2346	100	889.3	2 ⁺	
3299.0	6 ⁺	1289.1	100	2009.9	4 ⁺	
3441.7	4 ⁻	382.8 1	74 4	3058.9	3 ⁻	
		1431.8 4	26 4	2009.9	4 ⁺	
3571		2682	100	889.3	2 ⁺	
3582		1573	100	2009.9	4 ⁺	
3608		2719	100	889.3	2 ⁺	
3723.2		1713.0 10	24 7	2009.9	4 ⁺	
		2834.2 8	76 7	889.3	2 ⁺	
3826.9	5 ⁻	768.0	100	3058.9	3 ⁻	
3846		2957	100	889.3	2 ⁺	
3852.8	5 ⁻	411.1 2	4 3	3441.7	4 ⁻	
		793.9 3	12 5	3058.9	3 ⁻	
		1842.80 15	84 5	2009.9	4 ⁺	
3890		720		3167.6	1 ⁻	Used by 1974Du14 for T _{1/2} measurement; E, ΔE not given.
3905		3906	100	0.0	0 ⁺	
3941		1932	100	2009.9	4 ⁺	
4003		944.1	100	3058.9	3 ⁻	
4040		3151	100	889.3	2 ⁺	
4178.7		2168.0 10	74 7	2009.9	4 ⁺	
		3290.3 15	26 7	889.3	2 ⁺	
4191.5		2182.0 10	16 8	2009.9	4 ⁺	
		3301.8 15	84 8	889.3	2 ⁺	
4371		2362	100	2009.9	4 ⁺	
4415.9	6 ⁻	588.3 9	<5	3826.9	5 ⁻	
		974.2 2	>95	3441.7	4 ⁻	
4524		1225	100	3299.0	6 ⁺	
4663.0	6 ⁻	810.5 4	12 4	3852.8	5 ⁻	
		1221.1 4	64 6	3441.7	4 ⁻	
		1364.0 8	24 6	3299.0	6 ⁺	
4697		2687	100	2009.9	4 ⁺	
4725		2715	100	2009.9	4 ⁺	
4897.3	8 ⁺	1598.3	100	3299.0	6 ⁺	
5025?		1726 [‡]	100	3299.0	6 ⁺	
5198.4	7 ⁻	535		4663.0	6 ⁻	I _{γ} : not given.
		1345.6		3852.8	5 ⁻	I _{γ} : not given.

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 ${}^{43}\text{Ca}(\alpha, n\gamma)$ [1978Dr06](#), [1974Du14](#) (continued) $\gamma({}^{46}\text{Ti})$ (continued)

<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ^\dagger</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>
5280		1427	100	3852.8	5^-
6027		1363	100	4663.0	6^-
6150	8^-	1487	100	4663.0	6^-
6195		1298	100	4897.3	8^+
6244	10^+	1346	100	4897.3	8^+

[†] From [1978Dr06](#); when not specified, uncertainties were in the range 0.25 to 1.5 keV.

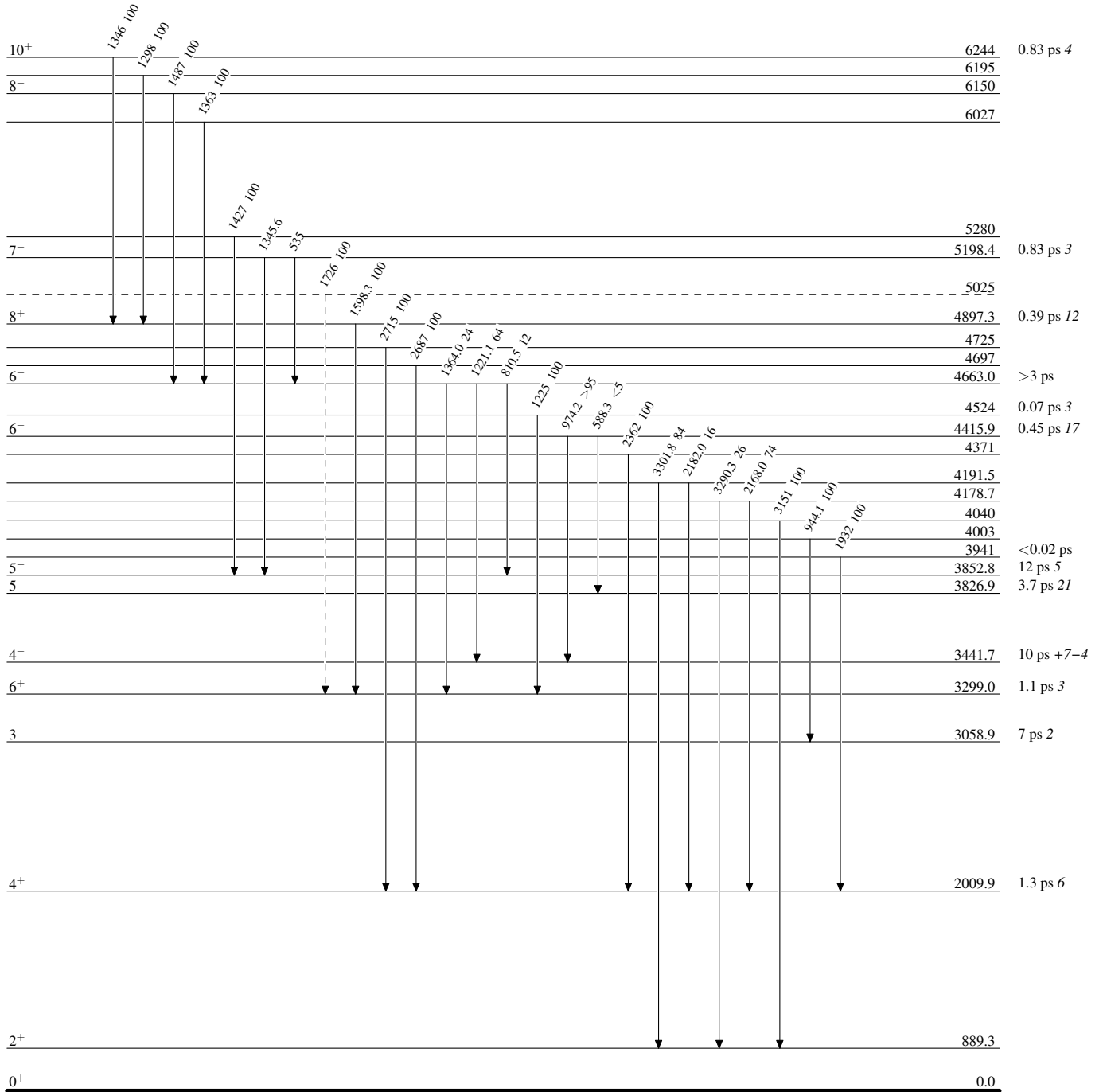
[‡] Placement of transition in the level scheme is uncertain.

$^{43}\text{Ca}(\alpha, n\gamma)$ 1978Dr06, 1974Du14

Legend

Level Scheme

Intensities: % photon branching from each level

-----> γ Decay (Uncertain) $^{46}_{22}\text{Ti}_{24}$

$^{43}\text{Ca}(\alpha, n\gamma)$ 1978Dr06,1974Du14

Level Scheme (continued)

Intensities: % photon branching from each level

