^{45}Sc(α,npγ),(α,d) 1976Me15,1976Ha14

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	T. W. Burrows	NDS 108, 923 (2007)	20-Feb-2007

1976Ha14: E=25 MeV. Measured $\sigma(\theta=7°-50°)$.
1976Me15: E=23 MeV. Measured γ's, γ-excitation functions (Eα=13-23 MeV), $\gamma\gamma$-coincidences, and $\gamma(\theta)$. DSAM.

^{47}Ti Levels

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	Comments
0.0	5/2$^-$		
159	7/2$^-$		
1253	9/2$^-$	0.35[@] ps *14*	
1444	11/2$^-$	1.2 ps *6*	
1553 *10*			
1798 *10*			
2175 *15*			
2310 *15*			
2420 *15*			
2540 *15*			
2630 *15*			
2684	11/2$^{(-)}$	≥2.4 ps	Doublet (1976Ha14). J$^\pi$: calculated γ-decay are inconsistent with observed decay if J$^\pi$=11/2$^-$; 1976Me15 suggest J$^\pi$=7/2$^+$ or 11/2$^+$ for the 2684 state. 1976Ha14 suggest 13/2$^-$ and (11/2$^-$) for the doublet.
2748	15/2$^-$	2.2 ps *+20−9*	
2850 *15*			
3230 *15*			
3289	13/2$^-$		J$^\pi$: calculated γ-decay are inconsistent with observed decay if J$^\pi$=13/2$^-$.
3500 *15*			
3567	17/2$^-$	0.27[@] ps *9*	J$^\pi$: 17/2$^-$ from characteristic shape of a broad maximum near 20° and γ-ray data (1976Ha14).
3580 *15*			
3640 *15*			
3690 *15*			
3720 *15*			
3840 *15*			
3950 *15*			
4494	19/2$^-$	0.25[@] ps *9*	J$^\pi$: 19/2$^-$ from characteristic shape of a broad maximum near 20°, (dσ/d$\Omega(\alpha$,d))/(dσ/d$\Omega(^3$He,p))(θ=7°)=15 *6*, and γ-ray data (1976Ha14).
4710 *15*			
4760 *15*			
5197	21/2$^-$		J$^\pi$: γ-deexcitation pattern would agree with measured E(level)'s and f7/2-shell-model calculations only if J$^\pi$=21/2$^-$ (1976Me15).

[†] From 1976Ha14 where ΔE(level) is given; others are from 1976Me15. Uncertainties are large enough to encompass the discrepancy between spectrograph and Ge(Li) work noted earlier by these authors (see (^{3}He,p),(^{3}He,pγ)).
[‡] From Adopted Levels.
[#] From DSAM (1976Me15). ΔT$_{1/2}$ includes uncertainty due to feeding time, except as noted.
[@] Might represent an upper limit due to feeding times.

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$\gamma(^{47}Ti)$

All data are from 1976Me15.

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	Comments
(159)		159	$7/2^-$	0.0	$5/2^-$			
191[#]	11	1444	$11/2^-$	1253	$9/2^-$			From figure 11. Not discussed by 1976Me15.
≈703	<12[‡]	5197	$21/2^-$	4494	$19/2^-$			
819.0	34[‡]	3567	$17/2^-$	2748	$15/2^-$	D+(Q)	≤0.1	Mult.,δ: from $\gamma(\theta)$.
926.8	17[‡]	4494	$19/2^-$	3567	$17/2^-$	D(+Q)	≤0.1	Mult.,δ: from $\gamma(\theta)$.
1093.7	27	1253	$9/2^-$	159	$7/2^-$	M1+E2		δ≤1.4≥0.23 Mult.: D+Q from $\gamma(\theta)$. RUL(M2) and δ exclude E1+M2.
1284.7	100[‡]	1444	$11/2^-$	159	$7/2^-$	E2		Mult.: Q or Q + O from $\gamma(\theta)$. Comparison to RUL excludes M2, limits M3 admixture to≤3.2×10^{-5}%.
1304.5	59[‡]	2748	$15/2^-$	1444	$11/2^-$	(E2(+M3))		Mult.: Q or Q + O from $\gamma(\theta)$. Comparison to RUL suggests M2 is excluded and M3 admixture is small.
1431.2	14	2684	$11/2^{(-)}$	1253	$9/2^-$			

[†] Relative photon intensity.
[‡] Coincidence data show that any crossovers or other competing transitions must be weak (<10%).
[#] Placement of transition in the level scheme is uncertain.

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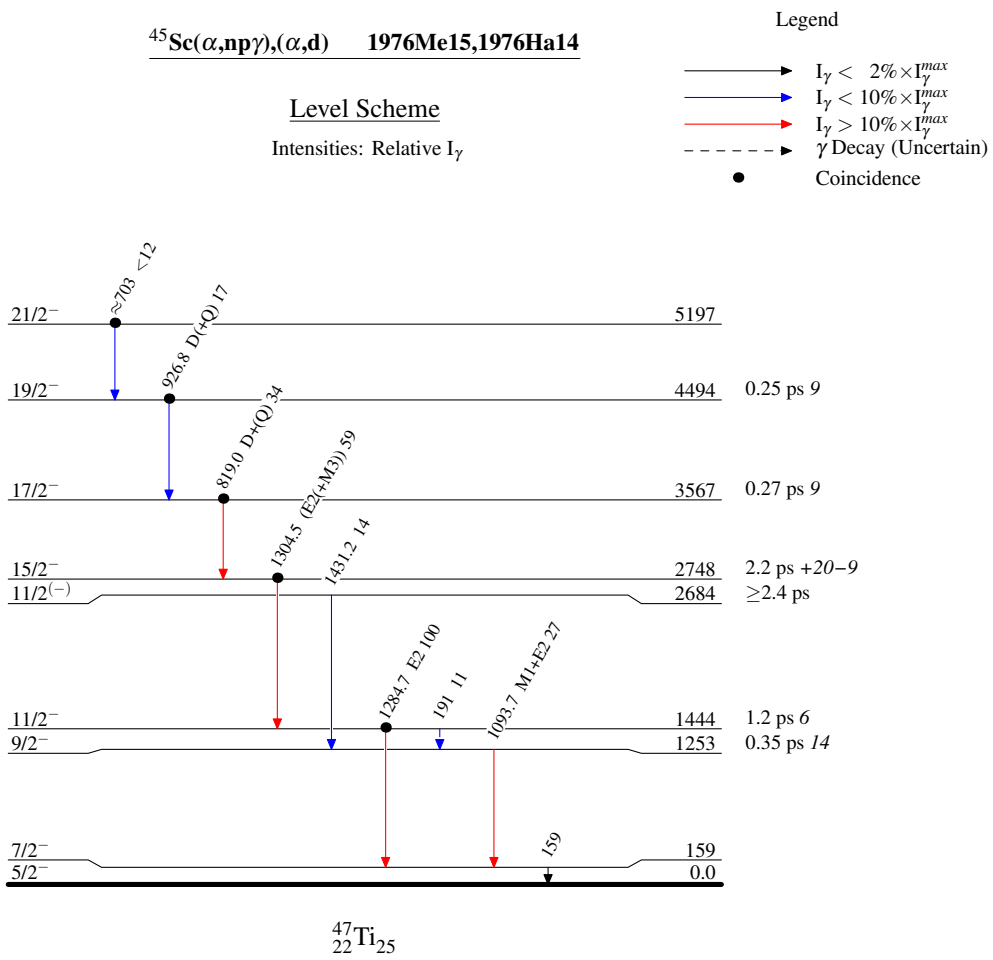
Level Scheme

Intensities: Relative I_γ



$^{47}_{22}Ti_{25}$