^{45}Sc(^{3}He,pγ) 1973Me04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. Ota and E. A. Mccutchan	NDS 203,1 (2025)	1-Apr-2025

1973Me04: E(^{3}He)=12 and 17 MeV. Measured Eγ, Iγ, p-γ coincidences using Ge(Li) detector.

^{47}Ti Levels

E(level)[†]	J$^{\pi}$[‡]	Comments
0.0	5/2$^-$	
157 *4*	7/2$^-$	
1249 *4*	9/2$^-$,11/2$^-$	
1441 *4*	11/2$^-$,9/2$^-$	
1548 *2*	3/2$^-$	
1794 *2*	1/2$^-$	
2160 *2*	3/2$^-$	
2533?		E(level): level not included in the Adopted Levels. See comments on 1092γ and 1284γ.
2614 *4*	7/2$^-$	
2835 *4*		
3223	7/2$^-$	T=3/2 strongly excited; however, only one weak transition seen; 1973Me04 suggest that decay goes by many branches.
5340?		E(level): not included in the Adopted Levels.
7346 *6*	7/2$^-$	T=5/2 IAS(^{47}Sc,g.s.).
7480 *10*		

[†] As given by 1973Me04 based on Ge(Li) measurements.
[‡] As suggested by 1973Me04 based on their present study and prior literature.

γ(^{47}Ti)

E$_\gamma$	E$_i$(level)	J$_i^{\pi}$	E$_f$	J$_f^{\pi}$	Comments
(157)	157	7/2$^-$	0.0	5/2$^-$	E$_\gamma$: not directly observed due to 300-keV low-energy cut off.
(246)	1794	1/2$^-$	1548	3/2$^-$	E$_\gamma$: not directly observed due to 300-keV low-energy cut off.
1092 *2*	1249	9/2$^-$,11/2$^-$	157	7/2$^-$	
1092[†]	2533?		1441	11/2$^-$,9/2$^-$	E$_\gamma$: tentative proposed placement by 1973Me04 to explain observation in spectra obtained in coincidence with proton group populating the 7346-keV analog state. Alternative explanation as this line originating from the 1249 level populated through γ-cascades via states at higher energy was also proposed by 1973Me04.
1284 *2*	1441	11/2$^-$,9/2$^-$	157	7/2$^-$	
1284[†]	2533?		1249	9/2$^-$,11/2$^-$	E$_\gamma$: tentative proposed placement by 1973Me04 to explain observation in spectra obtained in coincidence with proton group populating the 7346-keV analog state. Alternative explanation as this line originating from the 1441 level populated through γ-cascades via states at higher energy was also proposed by 1973Me04.
1287[†]	2835		1548	3/2$^-$	
1391 *2*	1548	3/2$^-$	157	7/2$^-$	
1394[†]	2835		1441	11/2$^-$,9/2$^-$	
1548 *2*	1548	3/2$^-$	0.0	5/2$^-$	
1794 *2*	1794	1/2$^-$	0.0	5/2$^-$	
1974	3223	7/2$^-$	1249	9/2$^-$,11/2$^-$	
2003	2160	3/2$^-$	157	7/2$^-$	
2160	2160	3/2$^-$	0.0	5/2$^-$	

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^{45}Sc(^{3}He,pγ) 1973Me04 (continued)

$\gamma(^{47}Ti)$ (continued)

E_γ	E_i(level)	J_i^π	E_f	J_f^π	Comments
2457	2614	$7/2^-$	157	$7/2^-$	
2678	2835		157	$7/2^-$	
2807†	5340?		2533?		
2835†	2835		0.0	$5/2^-$	
4123	7346	$7/2^-$	3223	$7/2^-$	Iγ(4123):Iγ(7189)= 2:3 (1973Me04).
7189	7346	$7/2^-$	157	$7/2^-$	
7346†	7346	$7/2^-$	0.0	$5/2^-$	1973Me04 state that Iγ is <20% that of the 7189γ.
7480	7480		0.0	$5/2^-$	

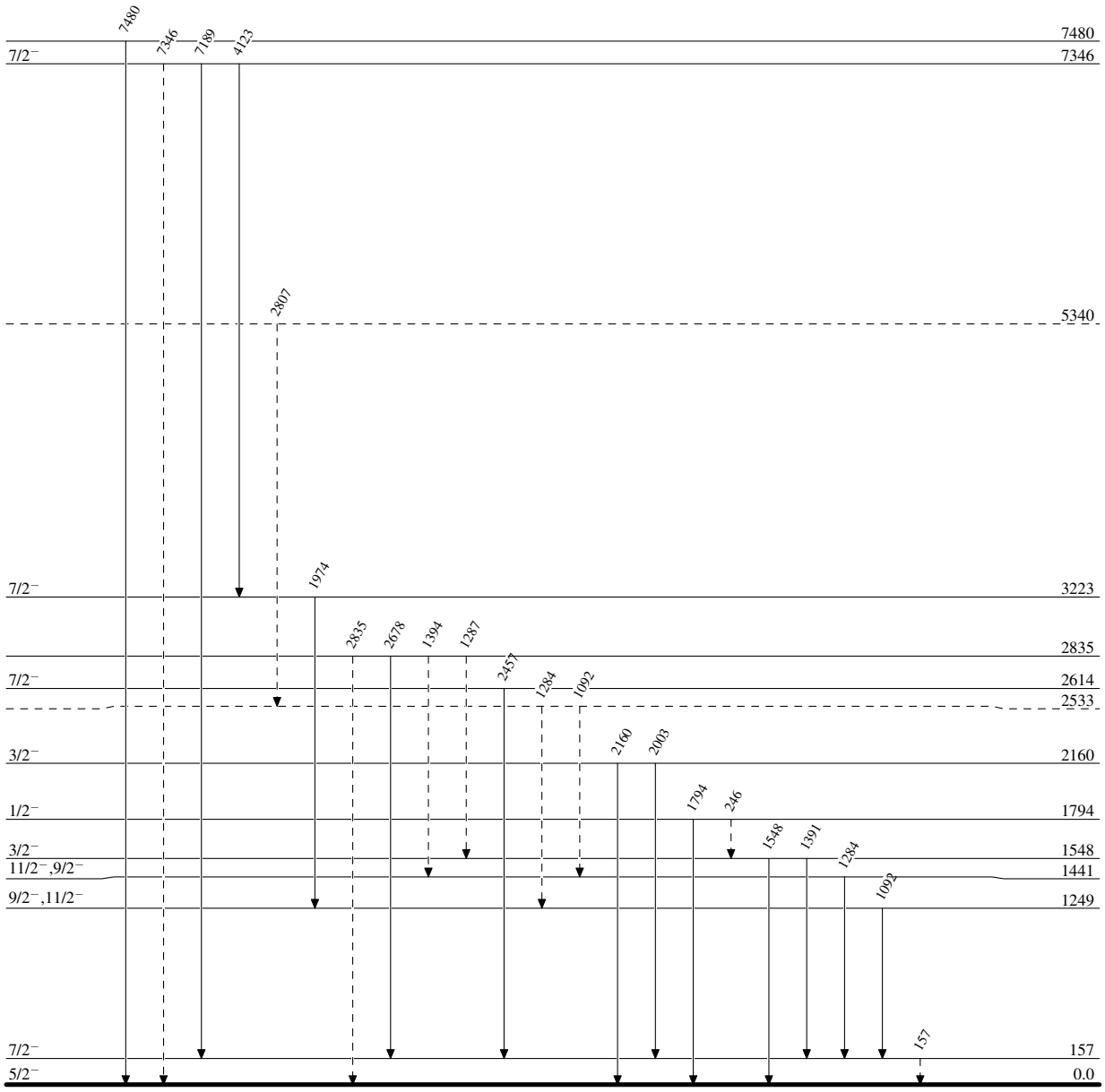
† Placement of transition in the level scheme is uncertain.

Legend

^{45}Sc(^{3}He,pγ) 1973Me04

Level Scheme

γ Decay (Uncertain)



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