^{56}Fe(^{3}He,d), (^{3}He,dγ)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. R. Bhat	NDS 85, 415 (1998)	24-Sep-1998

1978Ba51: E= 18 MeV, 22 keV FWHM.
1975Ba63: E= 6.0 MeV.
1972Ha27: E= 22 MeV, 20 keV FWHM; Eγ measured at E= 13 MeV.
1967Ro04: E= 16.5 MeV, 20 keV FWHM.

^{57}Co Levels

The C^2S' values reported by 1967Ro04 and 1972Ha27 differ by more than a factor of two. The values by 1975Ba63 (for 1379, 1507, and 1758 levels only) agree with 1967Ro04 for L=1. The adopted values are obtained by normalizing to C^2S'(g.s)+C^2S'(2314)=2.0 (assumes these levels exhaust the 1f7/2 strength) for each of the measurements of the data sets from 1978Ba51, 1972Ha27, and 1967Ro04 and then averaging them.

E(level)	J^π†	L	C^2S'	E(level)	J^π†	L	C^2S'	E(level)	L	C^2S'
0	$7/2^-$	3	1.56	4615 *20*				6504	(3)	
1224 *10*				4685 *15*		(1)	0.3	6540		
1379 *10*	$3/2^-$	1	1.26	4730 *20*				6594 *20*		
1507 *10*	$1/2^-$	1	0.58	4800 *20*				6699 *20*		
1758 *10*	$3/2^-$	1	0.24	4938	$1/2^+$	0	0.03	6739 *20*		
1898 *10*				4981?				6768 *20*		
1920 *10*				5138				6848 *20*		
2135 *10*	$5/2^-$	3	1.62	5167				6885 *20*	(1)	(0.07)
2314 *10*	$7/2^-$	3	0.44	5223 *15*	$1/2^+$	0	0.04	7020 *20*	(1)	(0.07)
2883 *10*	$3/2^-$	1	0.25	5296				7066		
2979 *10*	$1/2^+$	0	0.03	5370 *20*		1	0.09	7115 *20*	(1)	
3112 *10*		1	0.03	5425 *20*		1	0.04	7162 *20*	1	(0.08)
3175 *10*	$5/2^-$	3	0.67	5528 *20*				7187	1	(0.09)
3273 *15*	$5/2^-$	3	1.0	5559 *20*		1	0.1	7265‡ *20*	1	(0.22)
3369 *15*		1	0.37	5621 *20*		1	0.45	7281‡ *20*		
3467 *15*		1	0.30	5653 *20*				7296 *20*		
3681 *20*				5693 *20*				7324 *20*		
3728 *20*		4	0.17	5743 *20*		1	0.05	7367 *20*		
3862 *20*		2	0.32	5799 *20*				7432‡ *20*	3	(0.67)
3921 *20*		1	0.04	5914				7480 *20*		
4002 *15*		(1)	0.05	5976 *20*				7528 *20*		
4064 *20*		1	0.02	6013 *20*				7663‡	1	(0.08)
4197 *15*		1	0.04	6093 *20*				7708		
4251 *15*		3	0.44	6153 *20*		1	(0.06)	7779		
4295 *15*		1	0.05	6184 *20*				7809	2	(0.05)
4454 *20*				6268 *20*		1	(0.08)	7839	2	(0.08)
4500 *20*				6344 *20*			(0.15)	7982		
4525 *15*		1	0.06	6391		1	(0.06)			
4595 *20*	$9/2^+$	4	3.31	6492 *20*						

† Assumed for DWBA analysis. Where J is not given, C^2S' is an average of C^2S'(L+1/2) and C^2S'(L-1/2) except for L=0.
‡ Identified as the isobaric analog states of the g.s., 14.4, 137, and 367 states, respectively, in ^{57}Fe (1972Ha27,1967Ro04). However, $\gamma(\theta)$ in ^{56}Fe(p,γ) gives a $J^\pi=3/2^{(-)}$ for a level at 7267 *2*; thus, casting doubt on the identification of the 7265 *20* level as the isobaric analog of the g.s. Of ^{57}Fe.

^{56}Fe(^{3}He,d), (^{3}He,dγ) (continued)

$\gamma(^{57}Co)$

All data from 1972Ha27 (E= 13 MeV).

E_γ	E_i(level)	J_i^π	E_f	J_f^π	E_γ	E_i(level)	J_i^π	E_f	J_f^π
128	1507	$1/2^-$	1379	$3/2^-$	1547	3467		1920	
251†	1758	$3/2^-$	1507	$1/2^-$	1758	1758	$3/2^-$	0	$7/2^-$
379†	1758	$3/2^-$	1379	$3/2^-$	1920	1920		0	$7/2^-$
963	2883	$3/2^-$	1920		1990	3369		1379	$3/2^-$
1090	2314	$7/2^-$	1224		2088	3467		1379	$3/2^-$
1125	2883	$3/2^-$	1758	$3/2^-$	2135	2135	$5/2^-$	0	$7/2^-$
1221	2979	$1/2^+$	1758	$3/2^-$	2495†	4002		1507	$1/2^-$
1224	1224		0	$7/2^-$	2883	2883	$3/2^-$	0	$7/2^-$
1379	1379	$3/2^-$	0	$7/2^-$	3306	4685		1379	$3/2^-$

† Placement of transition in the level scheme is uncertain.

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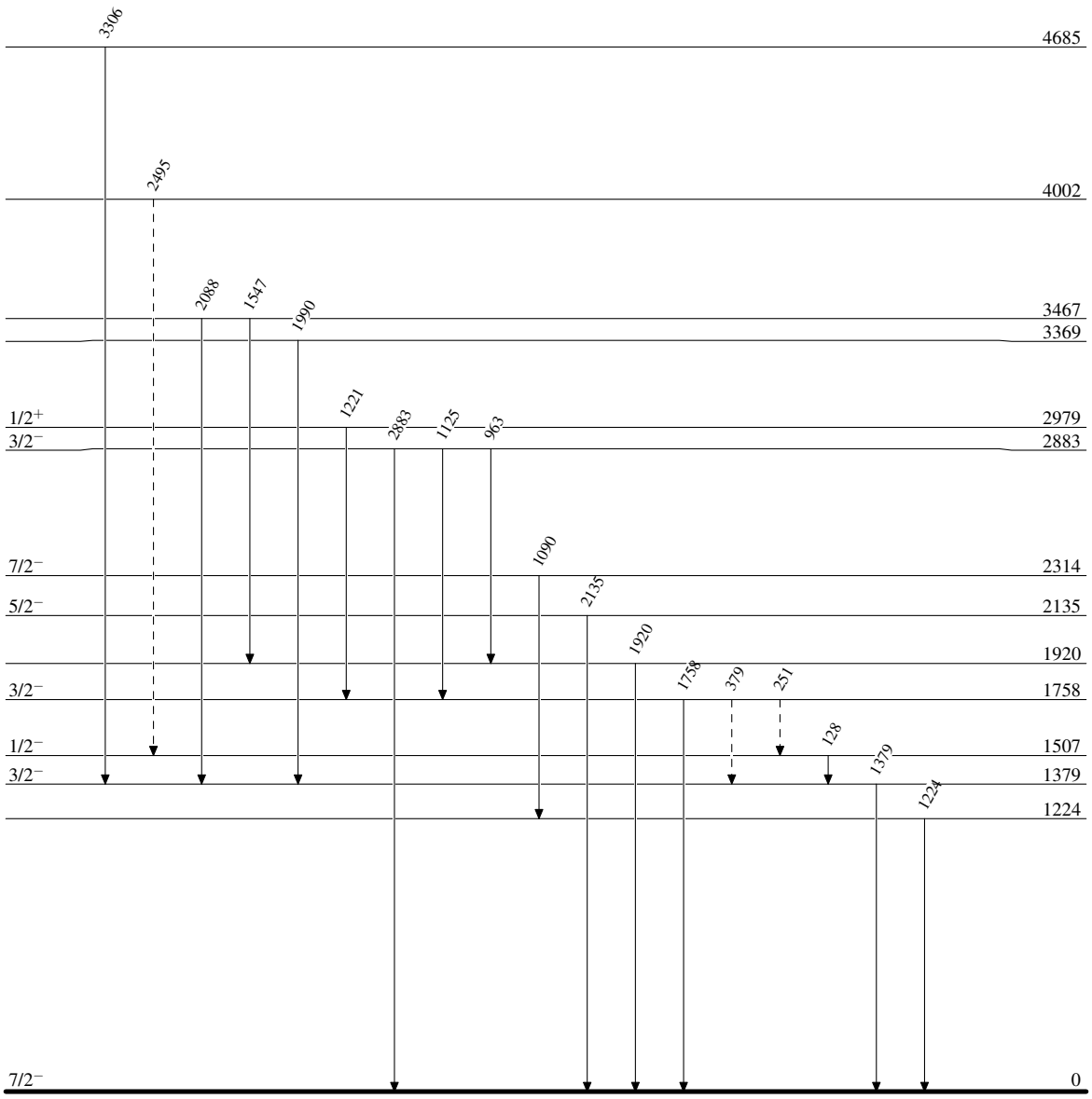
Legend

γ Decay (Uncertain)

Level Scheme



$^{57}_{27}Co_{30}$