

$^{54}\text{Fe}(\alpha,2p\gamma)$  1976Sa18,1975Ur02

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Huo Junde, Huo Su, Yang Dong		NDS 112, 1513 (2011)	29-Oct-2009

1976Sa18: E=20.4-29.5 MeV; measured  $\sigma(E)$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ , DSA.

1975Ur02: E=18-30 MeV; measured level lifetime, DSA.

The results of 1977Be27 ( $^{50}\text{Cr}(^{12}\text{C},\alpha 2p\gamma)$  and  $^{54}\text{Fe}(\alpha,2p\gamma)$ ) are included in (HI,xny).

 $^{56}\text{Fe}$  Levels

All data are from 1976Sa18, except as noted.

E(level) <sup>†</sup>	J <sup>π</sup> @	T <sub>1/2</sub> <sup>‡</sup>	Comments
0.0	0 <sup>+</sup>		
846.8 10	2 <sup>+</sup>		
2085 1	4 <sup>+</sup>		
3122.9 10	4 <sup>+</sup> &		
3388.4 10	6 <sup>+</sup>	>1.4 ps	
3755.6 10	6 <sup>+</sup>	0.13 <sup>#</sup> ps 2	T <sub>1/2</sub> : other: 0.14 ps 3 (1976Sa18).
4700.6 11	7 <sup>+</sup>	0.083 ps +28-14	
5255.4 11	8 <sup>+</sup>	0.35 ps 4	T <sub>1/2</sub> : other: 0.34 ps 4 (1975Ur02).
5626.8 11	8 <sup>+</sup>	0.069 ps +21-14	

<sup>†</sup> From Ey and scheme using least squares adjustment procedure.

<sup>‡</sup> From DSA measurement (1976Sa18), except as noted.

<sup>#</sup> From DSA measurement (1975Ur02).

@ Based on  $\gamma(\theta)$  and mult (1976Sa18), except as noted.

& From Adopted Levels.

 $\gamma(^{56}\text{Fe})$ 

All data are from 1976Sa18, except as noted.

E <sub>γ</sub> <sup>‡</sup>	I <sub>γ</sub> <sup>#</sup>	E <sub>i</sub> (level)	J <sub>i</sub> <sup>π</sup>	E <sub>f</sub>	J <sub>f</sub> <sup>π</sup>	Mult. <sup>†</sup>	δ <sup>‡</sup>	Comments
265.5 2	1.3 3	3388.4	6 <sup>+</sup>	3122.9	4 <sup>+</sup>			
367.0 1	18 1	3755.6	6 <sup>+</sup>	3388.4	6 <sup>+</sup>	D+Q	+0.07 12	Additional information 4.
632.6 <sup>@</sup>	<1.3	3755.6	6 <sup>+</sup>	3122.9	4 <sup>+</sup>			
846.78	100	846.8	2 <sup>+</sup>	0.0	0 <sup>+</sup>	E2		Additional information 1.
926.2 1	91.7 14	5626.8	8 <sup>+</sup>	4700.6	7 <sup>+</sup>	D+Q	+0.25 10	
944.7 2	16 2	4700.6	7 <sup>+</sup>	3755.6	6 <sup>+</sup>			
1037.8 1		3122.9	4 <sup>+</sup>	2085	4 <sup>+</sup>			
1238.20 7	100	2085	4 <sup>+</sup>	846.8	2 <sup>+</sup>	E2		Additional information 2.
1303.4 1	98.7 40	3388.4	6 <sup>+</sup>	2085	4 <sup>+</sup>	E2		B(E2)(W.u.)<8.3 Additional information 3.
1312.2 1	84 4	4700.6	7 <sup>+</sup>	3388.4	6 <sup>+</sup>	D+Q	-0.08 8	Additional information 6.
1499.3 3	27 3	5255.4	8 <sup>+</sup>	3755.6	6 <sup>+</sup>	E2		B(E2)(W.u.)=4.5 8
1670.8 4	82 3	3755.6	6 <sup>+</sup>	2085	4 <sup>+</sup>	E2		B(E2)(W.u.)=21 4 Additional information 5.
1867.1 2	73 4	5255.4	8 <sup>+</sup>	3388.4	6 <sup>+</sup>	E2		B(E2)(W.u.)=4.1 6 Additional information 7.

Continued on next page (footnotes at end of table)

$^{54}\text{Fe}(\alpha,2p\gamma)$  [1976Sa18,1975Ur02](#) (continued) $\gamma(^{56}\text{Fe})$  (continued)

$E_\gamma$ ‡	$I_\gamma$ #	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult. †	Comments
1871.3	5 5	5626.8	8 <sup>+</sup>	3755.6	6 <sup>+</sup>	E2	B(E2)(W.u.)=1.3 13 <a href="#">Additional information 8.</a>
2238 2	8.3 20	5626.8	8 <sup>+</sup>	3388.4	6 <sup>+</sup>	E2	B(E2)(W.u.)=0.9 +3-4
2276.3 2		3122.9	4 <sup>+</sup>	846.8	2 <sup>+</sup>		

† From  $\gamma(\theta)$ . The Q transitions are stretched quadrupole and are assumed by the evaluators to be E2.

‡ From [1976Sa18](#), except as noted.

# % photon branching from each level ([1976Sa18](#)).

@ Placement of transition in the level scheme is uncertain.

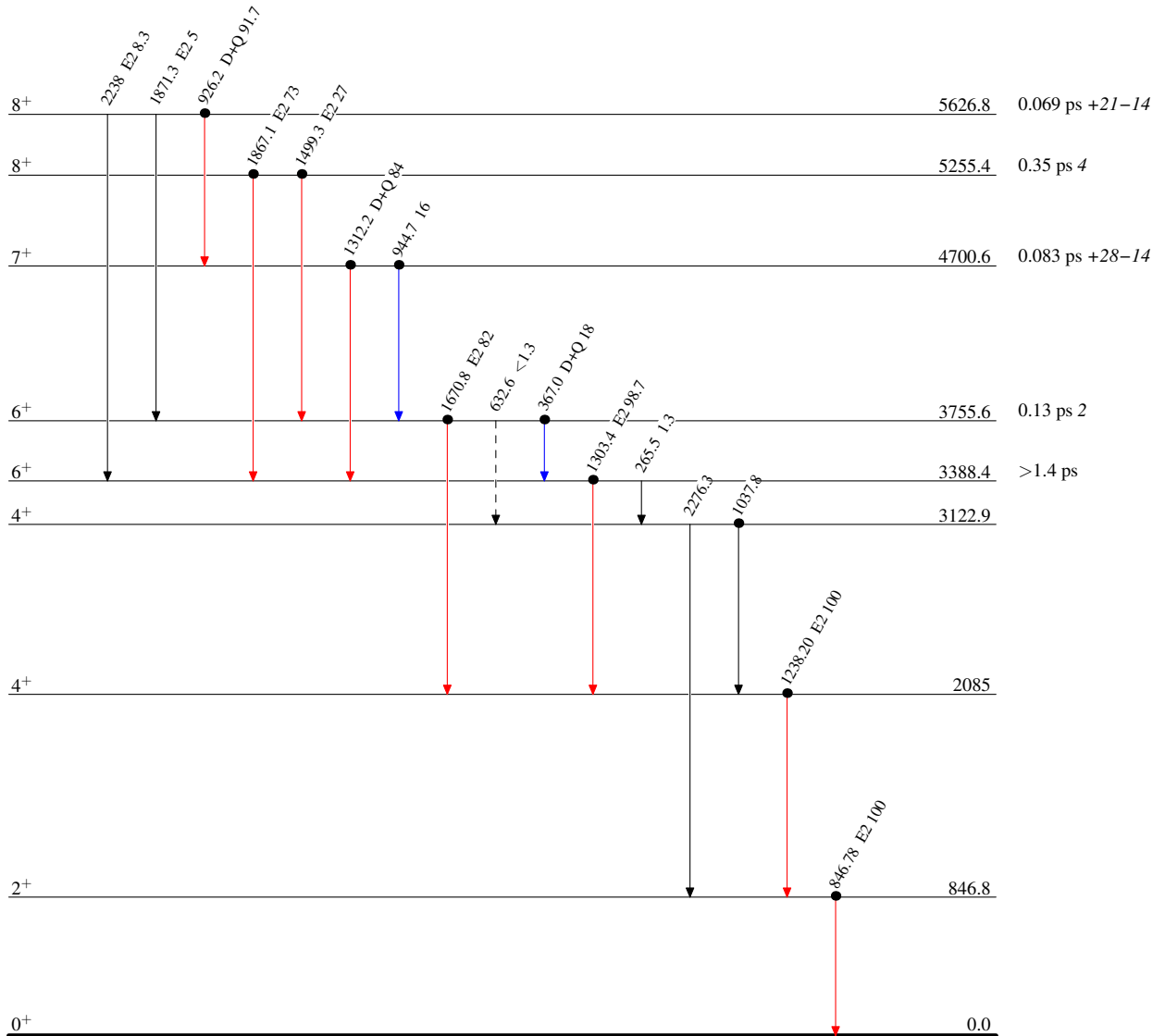
$^{54}\text{Fe}(\alpha,2p\gamma)$  1976Sa18,1975Ur02

## Level Scheme

Intensities: Type not specified

## Legend

- $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- $I_\gamma > 10\% \times I_\gamma^{\text{max}}$
- - -  $\rightarrow$   $\gamma$  Decay (Uncertain)
- Coincidence

 $^{56}\text{Fe}_{30}$