

**(HI,xn $\gamma$ ) 1974Po14,1989Sa47,1981Fr08**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Huo Junde	NDS 109, 787 (2008)	30-Apr-2007

**1974Po14:**  $^{51}\text{V}(^7\text{Li},3n\gamma)$ , E=25 MeV, natural target; Ge(Li), measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ , RDM or DSA; shell-model analysis.

**1989Sa47:**  $^{30}\text{Si}(^{28}\text{Si},2pn\gamma)$ , E=80 MeV, target: 300  $\mu\text{g}/\text{cm}^2$ ; measured  $\gamma\gamma$ -coin,  $\gamma(\theta)$ , excitation functions.

**1981Fr08:**  $^{46}\text{Ti}(^{13}\text{C},2p2n\gamma)$ , E=49,55 MeV, measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin with Ge(Li) and Ge(Li)-NaI anti-Compton spectrometer.

**1982Ke07:**  $^{48}\text{Ti}(^{12}\text{C},\alpha n\gamma)$ , E=39 MeV, natural target ( $^{48}\text{Ti}$ : 73.7%); RDM; Ge(Li) (FWHM 1.9 keV at 1.33 MeV).

All data are from **1974Po14**, except as noted.

 $^{55}\text{Fe}$  Levels

E(level)	$J^\pi$ <sup>†</sup>	$T_{1/2}$	Comments
0.0	$3/2^-$		
931.41 16	$5/2^-$	<8.3 ps	$T_{1/2}$ : from <b>1982Ke07</b> .
1316.76 20	$7/2^-$	2.1 ps +14-7	$T_{1/2}$ : from <b>1982Ke07</b> . Other: >0.11 ps ( <b>1974Po14</b> ).
1408.57 20	$7/2^-$	37.9 ps 17	$T_{1/2}$ : weighted average of 36.9 ps 21 ( <b>1982Ke07</b> ) and 40 ps 3 ( <b>1974Po14</b> ).
2212.1 4	$9/2^-$	0.76 ps 21	
2255.6 11			
2301.2 3	$9/2^-$		
2539.6 3	$11/2^-$	9.3 ps 13	$T_{1/2}$ : weighted average of 9.0 ps 14 ( <b>1982Ke07</b> ) and 12 ps 4 ( <b>1974Po14</b> ).
2813.2 4	$13/2^-$	10.0 ps 21	$T_{1/2}$ : other: 2.4 ps +14-10 ( <b>1982Ke07</b> ).
2984.3 5	$9/2^-$		
3072.4 8	$11/2^-$	>0.7 ps	
3418.8 4	$15/2^{(-)}$	0.07 ps 2	
3458.3 7	$(13/2^-)$	>0.6 ps	
3660.2 11			
3903.0 8	$(13/2^-)$		
5099.4 6	$(19/2^-)$ <sup>‡</sup>	22.4 ps 8	
5476.2 23		>0.7 ps	
5946.4 12			
6528.4 12	$(21/2)$ <sup>‡</sup>	<0.7 ps	
7605.6 15	$23/2$		
7916.8 15	$23/2$ <sup>#</sup>		
8987.7 18	$25/2$ <sup>#</sup>		
9305.3 16	$25/2$ <sup>#</sup>		
9908	$27/2$ <sup>#</sup>		
10242.7 21	$27/2$ <sup>#</sup>		

<sup>†</sup> From Adopted Levels, except as noted.

<sup>‡</sup> **1974Po14** compared the energies of the yrast levels observed in their work with those of higher spin states calculated by **1971Ho33**. Combining  $T_{1/2}$  and  $\sigma(\theta)$  information, tentative spins were assigned.

<sup>#</sup> Based on  $\gamma(\theta)$  and  $\gamma\gamma$  angular correlation from oriented nuclei method (**1989Sa47**).

 $\gamma(^{55}\text{Fe})$ 

$E_\gamma$	$I_\gamma$ <sup>‡</sup>	$E_f(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult.	$\delta$ <sup>@</sup>	Comments
238.3 2	5.0 4	2539.6	$11/2^-$	2301.2	$9/2^-$	M1(+E2)	-0.02 2	<a href="#">Additional information 8.</a>
259.2 5		3072.4	$11/2^-$	2813.2	$13/2^-$	M1+E2	+0.79 +40-1	
273.6 2	100	2813.2	$13/2^-$	2539.6	$11/2^-$	M1(+E2)	+0.05 +3-2	<a href="#">Additional information 10.</a>
328 <sup>†</sup>	1.0 2	2539.6	$11/2^-$	2212.1	$9/2^-$	M1+E2	-0.20 2	

Continued on next page (footnotes at end of table)

**(HI,xn $\gamma$ ) 1974Po14,1989Sa47,1981Fr08 (continued)** $\gamma(^{55}\text{Fe})$  (continued)

$E_\gamma$	$I_\gamma^\ddagger$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult.	$\delta^\oplus$	Comments
385.3 2	7 1	1316.76	7/2 <sup>-</sup>	931.41	5/2 <sup>-</sup>	M1(+E2)	+0.017 +1-2	Additional information 2.
477.2 2	59	1408.57	7/2 <sup>-</sup>	931.41	5/2 <sup>-</sup>	M1(+E2)	+0.13 4	Additional information 4.
532.9 3		3072.4	11/2 <sup>-</sup>	2539.6	11/2 <sup>-</sup>	M1+E2	+0.25 +5-6	
605.6 2	100	3418.8	15/2 <sup>(-)</sup>	2813.2	13/2 <sup>-</sup>	M1+E2	-0.01 +1-3	Additional information 11.
772.2 3	100	2984.3	9/2 <sup>-</sup>	2212.1	9/2 <sup>-</sup>			
803.6 3	100	2212.1	9/2 <sup>-</sup>	1408.57	7/2 <sup>-</sup>	M1+E2	-0.13 8	Additional information 6.
847& 1	100	2255.6		1408.57	7/2 <sup>-</sup>			
847& 1	100	3660.2		2813.2	13/2 <sup>-</sup>			
847&†		5946.4		5099.4	(19/2 <sup>-</sup> )			
918.7& 6	100	3458.3	(13/2 <sup>-</sup> )	2539.6	11/2 <sup>-</sup>	M1+E2	-0.06 +6-14	
918.7& 6	100	3903.0	(13/2 <sup>-</sup> )	2984.3	9/2 <sup>-</sup>			
931.4 2	100	931.41	5/2 <sup>-</sup>	0.0	3/2 <sup>-</sup>	M1+E2	+0.4 2	Additional information 1.
984 <sup>x</sup> 1000†		2301.2	9/2 <sup>-</sup>	1316.76	7/2 <sup>-</sup>			$E_\gamma$ : observed only in 1982Ke07. $E_\gamma$ : 1989Sa47 place it between 9908 and 8988 levels.
1078†	100	7605.6	23/2	6528.4	(21/2)	M1+E2	-0.03 2	
1222.8 3	94 1	2539.6	11/2 <sup>-</sup>	1316.76	7/2 <sup>-</sup>	E2		Additional information 9.
1255†	100#	10242.7	27/2	8987.7	25/2			
1316.8 3	93 1	1316.76	7/2 <sup>-</sup>	0.0	3/2 <sup>-</sup>	E2		Additional information 3.
1369.8 4	100 2	2301.2	9/2 <sup>-</sup>	931.41	5/2 <sup>-</sup>	E2		Additional information 7.
1382†	100#	8987.7	25/2	7605.6	23/2			
1388†		9305.3	25/2	7916.8	23/2			
1390.3	100	7916.8	23/2	6528.4	(21/2)			$E_\gamma$ : from 1981Fr08.
1408.5 3	41 2	1408.57	7/2 <sup>-</sup>	0.0	3/2 <sup>-</sup>	E2		Additional information 5.
1429.0 10	100	6528.4	(21/2)	5099.4	(19/2 <sup>-</sup> )	M1+E2	-0.13 +6-7	
1680.6 4	100 3	5099.4	(19/2 <sup>-</sup> )	3418.8	15/2 <sup>(-)</sup>	(E2)		Additional information 12.
1700†		9305.3	25/2	7605.6	23/2	E2		
1816.0 20	100 3	5476.2		3660.2				Additional information 13.

† Observed only in 1989Sa47.

‡ Percent branching ratio for each level.

# Weak intensity, see 1989Sa47.

⊕ From 1989Sa47, phase conventions of 1970Kr03.

&amp; Multiply placed.

<sup>x</sup>  $\gamma$  ray not placed in level scheme.

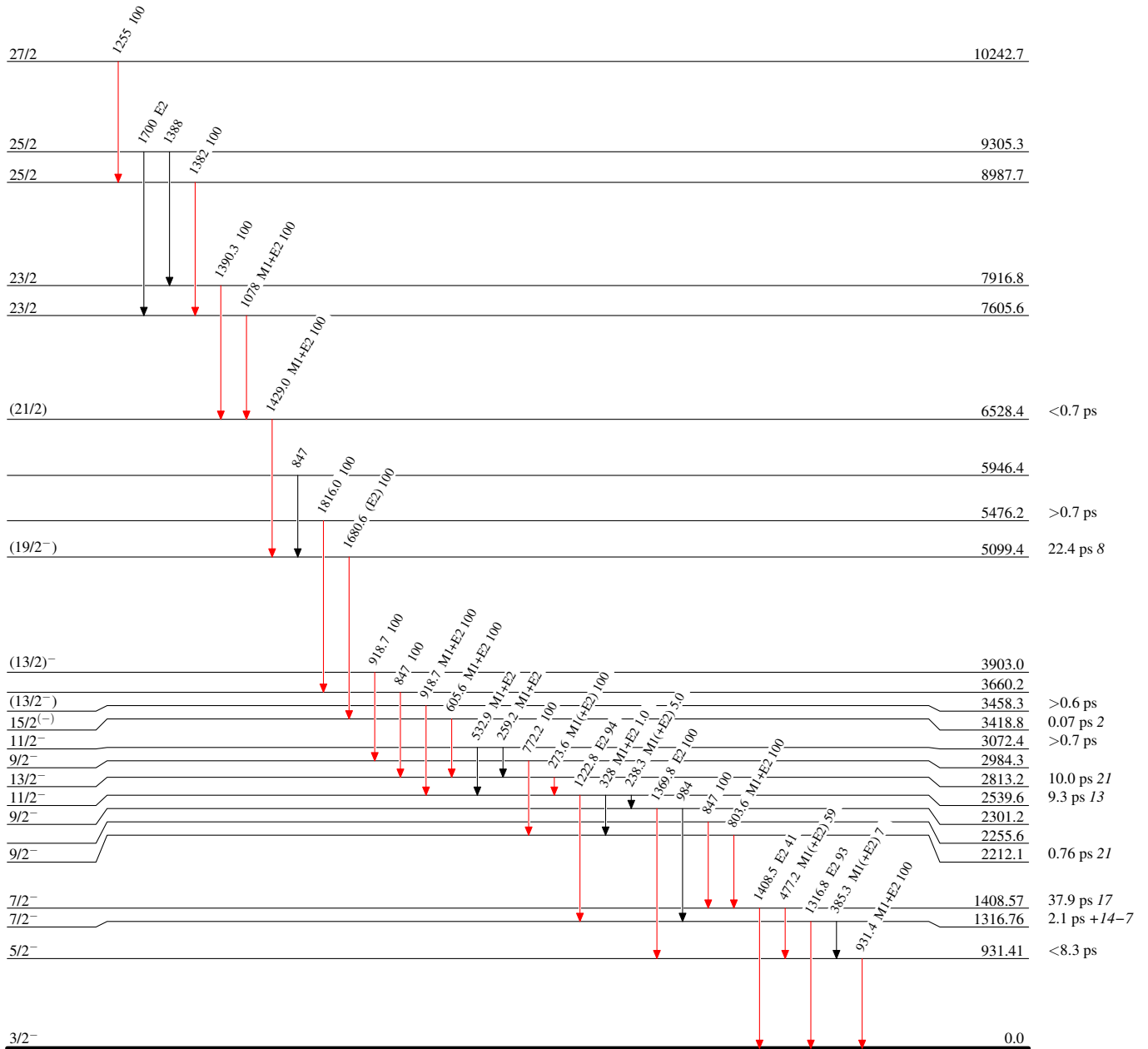
(HI,xn $\gamma$ ) 1974Po14,1989Sa47,1981Fr08

Level Scheme

Intensities: Relative I $\gamma$

Legend

- I $\gamma$  < 2% × I $\gamma$ <sup>max</sup>
- I $\gamma$  < 10% × I $\gamma$ <sup>max</sup>
- I $\gamma$  > 10% × I $\gamma$ <sup>max</sup>



<sup>55</sup>Fe<sub>29</sub>