^{74}Se(^{3}He,p2nγ),(d,2nγ) 1983Wi01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Ameenah R. Farhan	NDS 107, 1923 (2006)	30-Apr-2006

1983Wi01 (also 1982AnZZ,1981Wi05): ^{74}Se(^{3}He,p2nγ) E=32 MeV, ^{74}Se(d,2nγ) E=13.5 MeV. Measured γ, $\gamma\gamma$, γ(t) $\gamma(\theta)$.

^{74}Br Levels

E(level)[†]	J^{π}[‡]	$T_{1/2}$[#]	Comments
0.0	(0^-)		
9.8 *4*	(1^-)		
14.3 *5*	$4^{(+)}$	46 min *2*	
72.6 *4*	(2^-)	≤0.5 ns	
86.4 *5*	(3^-)	13.3 ns *4*	$T_{1/2}$: from γ(t) (1981Wi05). Other: 13 ns *1* (1983Wi01).
89.60 *10*	(1^-)	≤0.5 ns	
180.60 *15*	(2^-)	≤0.5 ns	
200.9 *5*	(3^-)		
202.6 *5*	(4^-)	0.7 ns *3*	$T_{1/2}$: Other: 0.8 ns *5* (1981Wi05).
202.7 *6*	$5^{(+)}$		
212.8 *3*	1^+		
239.2 *4*	(1)		
239.3 *5*	(4^-)		
272.6 *6*			
329.8 *5*	(4^-)		E(level): 1983Wi01 proposed two separate levels near this energy with $J^{\pi}=(4^-)$ and (3^-), respectively. From (HI,xnγ), only one level is adopted.
339.6 *4*	(3^-)		
371.8 *6*	(5^-)		
380.0 *5*	(4^-)		
395.0 *6*	(4^-)		
397.4 *5*	6^+		
407.6 *6*			
424.9 *6*	(5^-)		
443.7 *6*			
463.5 *5*	(5^-)		
486.3 *6*	(6^-)	0.7 ns *4*	
593.0 *5*	(5^-)		
620.3 *6*	(6^-)		
665.7? *12*			
670.0 *6*	$7^{(+)}$		
826.5 *6*	$8^{(+)}$		
1174.1 *6*	$9^{(+)}$		
1197.5 *6*	(8^+)		
1660.9 *8*	(10^+)		

[†] From least-squares fit to Eγ's.
[‡] From 'Adopted Levels'.
[#] From γ(t).

^{74}Se(^{3}He,p2nγ),(d,2nγ) 1983Wi01 (continued)

$\gamma(^{74}Br)$

A_2 and A_4 are from (d,2nγ), unless otherwise stated. Values are also available from (^{3}He,p2nγ).

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Comments
9.8		9.8	(1$^-$)	0.0	(0$^-$)	From ^{74}Kr ε decay.
53.0 *4*	2.4	424.9	(5$^-$)	371.8	(5$^-$)	I_γ: from (d,2nγ), relative to 100 for 72.1γ.
61.4 *2*	2.5	486.3	(6$^-$)	424.9	(5$^-$)	A_2=−0.2 in (^{3}He,p2nγ).
62.8 *1*	36	72.6	(2$^-$)	9.8	(1$^-$)	A_2=−0.12 *2*, A_4=−0.03 *3*. Additional information 1.
72		443.7		371.8	(5$^-$)	
72.1 *1*	100	86.4	(3$^-$)	14.3	4$^{(+)}$	A_2=−0.01 *2*, A_4=−0.02 *2*. Additional information 2.
89.6 *1*	21	89.60	(1$^-$)	0.0	(0$^-$)	A_2=−0.06 *1*, A_4=−0.03 *2*. A_2=−0.1 in (^{3}He,p2nγ).
91.0 *1*	7.8	180.60	(2$^-$)	89.60	(1$^-$)	A_2=−0.11 *4*, A_4=0.00 *6*. A_2=−0.1 in (^{3}He,p2nγ).
100.3 *3*	2.8	339.6	(3$^-$)	239.2	(1)	A_2=−0.1 *1*, A_4=0.0 *1*.
114.5 *1*	16	486.3	(6$^-$)	371.8	(5$^-$)	A_2=−0.47 *9*, A_4=−0.1 *1* in (^{3}He,p2nγ). Additional information 10.
116.2 *1*	83	202.6	(4$^-$)	86.4	(3$^-$)	A_2=−0.48 *3*, A_4=+0.01 *4*. Additional information 4.
123.2 *3*	1.7	212.8	1$^+$	89.60	(1$^-$)	A_2=+0.14 *9*, A_4=0.0 *1*. A_2=+0.1 in (^{3}He,p2nγ).
127.6 *3*	3.0	329.8	(4$^-$)	202.6	(4$^-$)	A_2=+0.4 *2*, A_4=+0.1 *2*. A_2=+0.5 in (^{3}He,p2nγ).
128.3 *2*	33	200.9	(3$^-$)	72.6	(2$^-$)	A_2=−0.24 *4*, A_4=−0.03 *6* for doublet. Additional information 3.
128.6 *2*	16	329.8	(4$^-$)	200.9	(3$^-$)	A_2=−0.1 in (^{3}He,p2nγ).
134.0 *3*	10	620.3	(6$^-$)	486.3	(6$^-$)	A_2=+0.4 *5*, A_4=−0.1 *7*. A_2=+0.2 IN (^{3}He,p2nγ).
134.9 *4*	3.3	407.6		272.6		A_2=−0.4 *1*, A_4=+0.1 *2*. Additional information 9.
140.1 *5*	1.6	212.8	1$^+$	72.6	(2$^-$)	A_2=−0.2 *2*, A_4=−0.3 *3*. A_2=−0.4 in (^{3}He,p2nγ).
149.6 *3*	7.9	239.2	(1)	89.60	(1$^-$)	A_2=−0.17 *6*, A_4=−0.07 *8*. A_2=−0.3 in (^{3}He,p2nγ).
156.4 *2*	15	826.5	8$^{(+)}$	670.0	7$^{(+)}$	A_2=−0.41 *4*, A_4=−0.11 *9* in (^{3}He,p2nγ).
159.0 *3*	2.2	339.6	(3$^-$)	180.60	(2$^-$)	A_2=−0.2 in (^{3}He,p2nγ).
169.2 *2*	50	371.8	(5$^-$)	202.6	(4$^-$)	A_2=−0.31 *3*, A_4=+0.13 *4*. Additional information 7.
179.1 *3*	10	380.0	(4$^-$)	200.9	(3$^-$)	
180.7[#] *3*	2.5	180.60	(2$^-$)	0.0	(0$^-$)	
186.2 *2*	8.3	272.6		86.4	(3$^-$)	A_2=−0.09 *6*, A_4=−0.06 *8*. A_2=−0.2 in (^{3}He,p2nγ).
188.4[‡] *2*	43[‡]	202.6	(4$^-$)	14.3	4$^{(+)}$	
188.4[‡] *2*	140[‡]	202.7	5$^{(+)}$	14.3	4$^{(+)}$	A_2=−0.38 *2*, A_4=+0.03 *3* for doublet. Additional information 5.
192.4 *3*	2	395.0	(4$^-$)	202.6	(4$^-$)	
194.7 *1*	83	397.4	6$^+$	202.7	5$^{(+)}$	A_2=−0.71 *5*, A_4=+0.11 *7*. Additional information 8.
195.4 *3*	7	620.3	(6$^-$)	424.9	(5$^-$)	A_2=−0.5 in (^{3}He,p2nγ).
203.0 *3*	2.3	212.8	1$^+$	9.8	(1$^-$)	A_2=+0.07 *7*, A_4=+0.06 *9*. A_2=+0.4 in (^{3}He,p2nγ).
204.9 *4*	2.7	407.6		202.6	(4$^-$)	A_2=+0.2 in (^{3}He,p2nγ).

Continued on next page (footnotes at end of table)

^{74}Se(^{3}He,p2nγ),(d,2nγ) 1983Wi01 (continued)

γ(^{74}Br) (continued)

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Comments
213.0 *4*	5.9	593.0	(5$^-$)	380.0	(4$^-$)	A_2=−0.1 in (^{3}He,p2nγ).
222		665.7?		443.7		
222.2 *2*	21	424.9	(5$^-$)	202.6	(4$^-$)	A_2=−0.44 *9*, A_4=+0.2 *3*. A_2=−0.44 *6*, A_4=−0.03 *9* in (^{3}He,p2nγ).
224.2 *2*	13	463.5	(5$^-$)	239.3	(4$^-$)	Placement from (HI,xnγ); unplaced in 1983Wi01. A_2=−0.54 *8*, A_4=+0.3 *1*. A_2=−0.6 in (^{3}He,p2nγ).
225.0 *2*	24	239.3	(4$^-$)	14.3	4$^{(+)}$	Placement from (HI,xnγ); unplaced in 1983Wi01. A_2=−0.01 *5*, A_4=−0.05 *9*. Additional information 6.
241.0 *3*	9.3	443.7		202.7	5$^{(+)}$	
243.8 *3*	3	329.8	(4$^-$)	86.4	(3$^-$)	A_2=−0.1 in (^{3}He,p2nγ).
248.5 *5*	5	620.3	(6$^-$)	371.8	(5$^-$)	A_2=−0.6 in (^{3}He,p2nγ).
256.9 *3*	2	329.8	(4$^-$)	72.6	(2$^-$)	
263.5 *4*	2	593.0	(5$^-$)	329.8	(4$^-$)	
272.6 *3*	29	670.0	7$^{(+)}$	397.4	6$^+$	
[x]277.0 *3*	3					
283.7 *3*	33	486.3	(6$^-$)	202.6	(4$^-$)	A_2=+0.31 *8*, A_4=−0.2 *1*. Additional information 11.
285.3 *4*	25	371.8	(5$^-$)	86.4	(3$^-$)	A_2=+0.2 in (^{3}He,p2nγ).
307.3 *3*	5.5	380.0	(4$^-$)	72.6	(2$^-$)	A_2=+0.2 in (^{3}He,p2nγ).
308.6 *2*	12	395.0	(4$^-$)	86.4	(3$^-$)	A_2=−0.6 in (^{3}He,2pnγ).
347.6 *2*	14	1174.1	9$^{(+)}$	826.5	8$^{(+)}$	A_2=−0.4 *1*, A_4=−0.1 *2* in (^{3}He,p2nγ).
383.2 *2*	38	397.4	6$^+$	14.3	4$^{(+)}$	A_2=+0.33 *9*, A_4=−0.1 *2* in (^{3}He,p2nγ).
392.1 *5*	5.8	593.0	(5$^-$)	200.9	(3$^-$)	
418 *1*	5	620.3	(6$^-$)	202.6	(4$^-$)	
429.1 *2*	30	826.5	8$^{(+)}$	397.4	6$^+$	A_2=+0.32 *6*, A_4=−0.10 *9* in (^{3}He,p2nγ).
467.3 *2*	13	670.0	7$^{(+)}$	202.7	5$^{(+)}$	A_2=+0.5 *2*, A_4=0.0 *2* in (^{3}He,p2nγ).
505[#] *1*	5	1174.1	9$^{(+)}$	670.0	7$^{(+)}$	
527.5 *3*	7	1197.5	(8$^+$)	670.0	7$^{(+)}$	
834.4 *5*	8	1660.9	(10$^+$)	826.5	8$^{(+)}$	

[†] From (^{3}He,p2nγ) at 32 MeV. 1983Wi01 also provide ratios of intensities for (d,2nγ)(E=13 MeV)/(^{3}He,p2nγ), and (d,2nγ)(E=12 MeV)/(d,2nγ)(E=13 MeV).

[‡] Multiply placed with intensity suitably divided.

[#] Placement of transition in the level scheme is uncertain.

[x] γ ray not placed in level scheme.

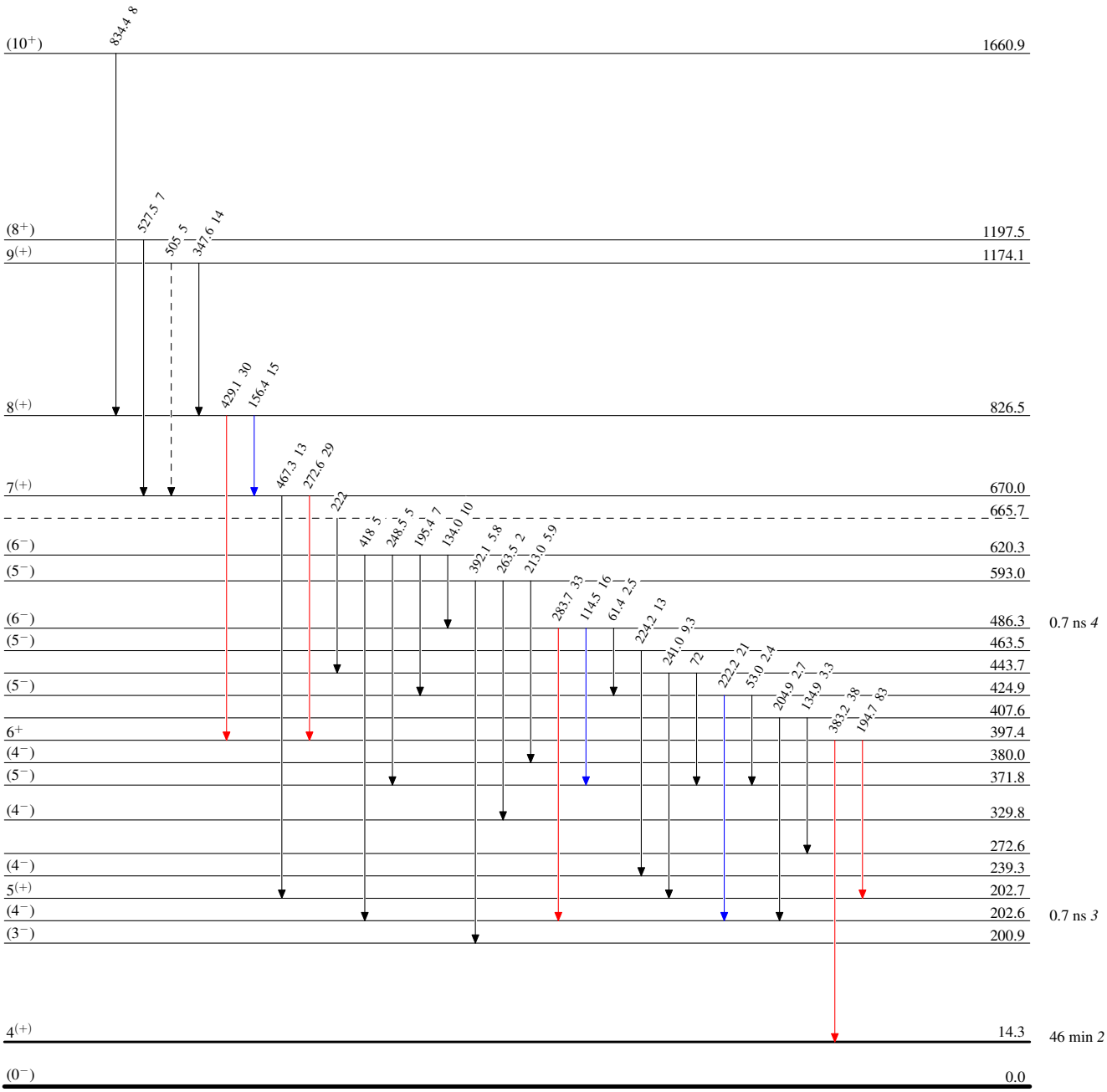
^{74}Se(^{3}He,p2nγ),(d,2nγ) 1983Wi01

Level Scheme

Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



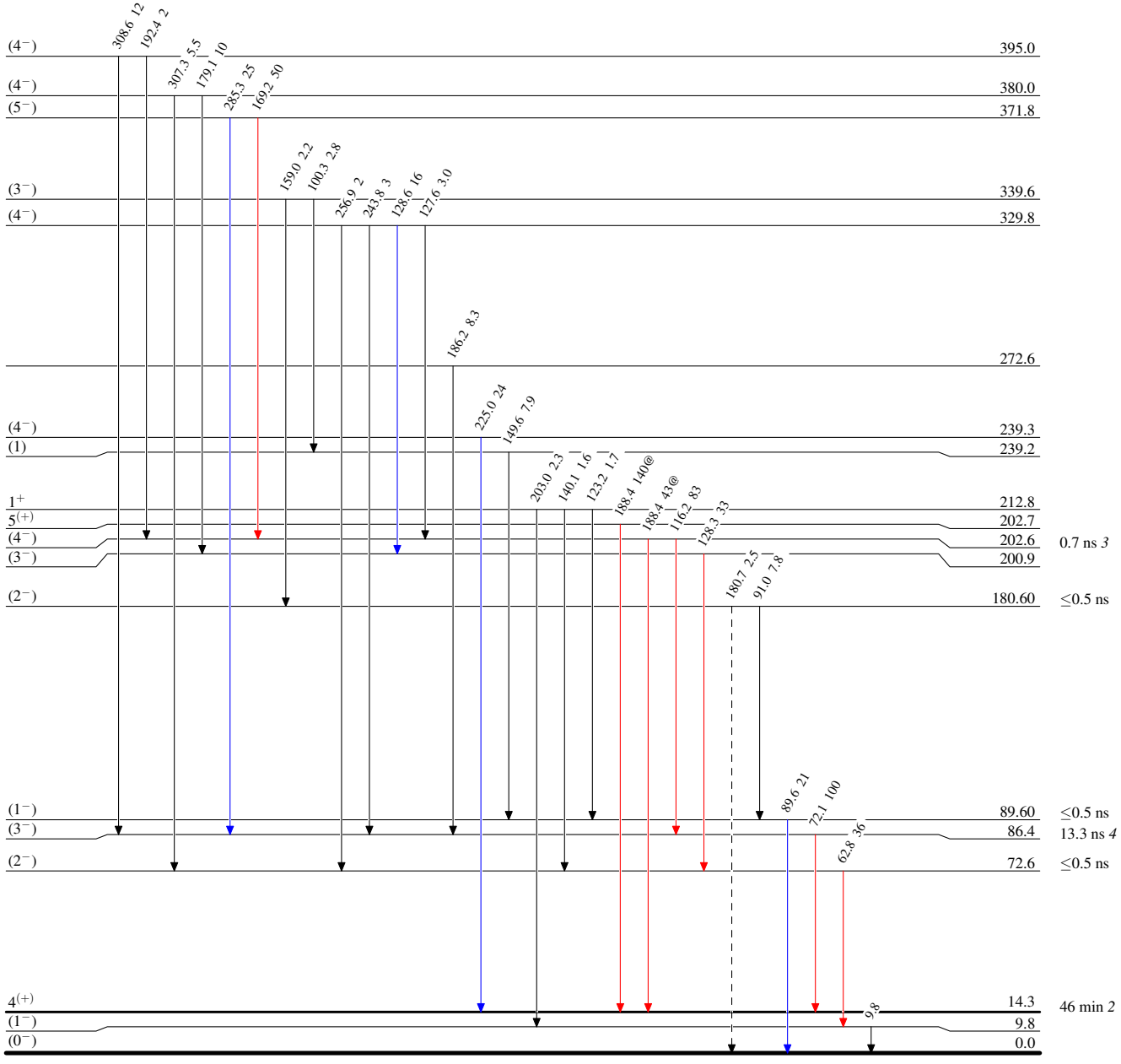
$^{74}_{35}Br_{39}$

^{74}Se(^{3}He,p2nγ),(d,2nγ) 1983Wi01

Level Scheme (continued)

Intensities: Relative I_γ
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



$^{74}_{35}Br_{39}$