^{58}Ni(^{46}Ti,pα2nγ)   2005Li58

	Type	Author	History Citation	Literature Cutoff Date
	Full Evaluation	N. Nica	NDS 111, 525 (2010)	19-Nov-2009

All data are from 2005Li58; previously measured by 1990Al07, 1982Ku15, 1978Hu11.

2005Li58: E=175 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma(\theta)$ using Gammasphere array of 78 BGO-suppressed Ge detectors, 30 liquid scintillation detectors, Microball array of 95 CsI(Tl) detectors.

The γ rays of ^{97}Ag were selected by coin with 763γ and 1290γ (previously knows), one α, one P, and At least one N. All γ's were detected In a time window of 9-38 ns after the time of the reaction (excluding 467γ, which is prompt, but including the ones used for gating).

Levels and spins agree well with theory based on shell-model calculations (2005Li58) using ^{78}Sr as inert core, the 9 valence protons filling 1p$_{1/2}$ and 0g$_{9/2}$ orbits, 10 valence neutrons filling 0g$_{9/2}$, 1d$_{5/2}$, 0g$_{7/2}$, 1d$_{3/2}$ and 2s$_{1/2}$ orbits.

^{97}Ag Levels

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$	Comments
0.0[#]	(9/2$^+$)		
1289.91[#] *20*	(13/2$^+$)		
2052.9[#] *3*	(17/2$^+$)		
2343.3[#] *5*	(21/2$^+$)	1.8 ns *5*	T$_{1/2}$: centroid-shift method from the time differences of any combination of 1290 and 763 transitions with 2572 and 1306 transitions (2005Li58).
4356.0 *8*	(21/2$^+$)		
4915.2[#] *7*	(23/2$^+$)		
5252.4 *11*	(23/2$^+$)		
5822.0 *8*	(25/2$^+$)		
6221.2[#] *7*	(27/2$^+$)		
6232.4 *12*	(25/2$^+$)		
6481.4[#] *8*	(31/2$^+$)	3.7 ns *1*	T$_{1/2}$: from γ(t) distributions of 2572 and 1306 transitions (2005Li58).
6948.5[#] *8*	(33/2$^+$)		

[†] From least-squares fit to Eγ's.

[‡] J values deduced by 2005Li58 from angular distribution; positive parity was assumed by 2005Li58 for all the states (based on shell-model calculations and systematics).

[#] Band(A): Yrast cascade.

$\gamma(^{97}$Ag)

Angular distributions were measured At nine polar angles; because of the limited statistics only the A$_2$ coefficients were fitted.

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$^{\pi}_i$	E$_f$	J$^{\pi}_f$	Mult.[†]	Comments
260.2 *3*	48 *7*	6481.4	(31/2$^+$)	6221.2	(27/2$^+$)	Q	A$_2$=+0.61 *16*
290.4 *3*	93 *13*	2343.3	(21/2$^+$)	2052.9	(17/2$^+$)	Q	A$_2$=+0.50 *13*
399 *1*	6 *1*	6221.2	(27/2$^+$)	5822.0	(25/2$^+$)		
467.1 *3*	35 *5*	6948.5	(33/2$^+$)	6481.4	(31/2$^+$)	(D+Q)	A$_2$=−0.1 *3*
							Mult.: mixed (D+Q), ΔJ=1 transition (2005Li58).
559 *1*	3 *1*	4915.2	(23/2$^+$)	4356.0	(21/2$^+$)		
763.0 *2*	92 *13*	2052.9	(17/2$^+$)	1289.91	(13/2$^+$)	Q	A$_2$=+0.24 *6*
906.6 *8*	5 *2*	5822.0	(25/2$^+$)	4915.2	(23/2$^+$)		
980.0 *5*	17 *3*	6232.4	(25/2$^+$)	5252.4	(23/2$^+$)	D	A$_2$=−0.9 *4*
1289.9 *2*	100 *15*	1289.91	(13/2$^+$)	0.0	(9/2$^+$)	Q	A$_2$=+0.35 *2*

Continued on next page (footnotes at end of table)

^{58}Ni(^{46}Ti,pα2nγ)   **2005Li58 (continued)**

γ(^{97}Ag) (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	Comments
1306.0 *3*	51 *7*	6221.2	$(27/2^+)$	4915.2	$(23/2^+)$	Q	A_2=+0.57 *12*
1466 *1*	2 *1*	5822.0	$(25/2^+)$	4356.0	$(21/2^+)$		
2012.6 *8*	9 *2*	4356.0	$(21/2^+)$	2343.3	$(21/2^+)$	Q	A_2=+0.3 *3*
							Mult.: consistent with ΔJ=0 transition (2005Li58).
2571.9 *5*	55 *9*	4915.2	$(23/2^+)$	2343.3	$(21/2^+)$	D	A_2=−0.81 *9*
2909 *1*	15 *3*	5252.4	$(23/2^+)$	2343.3	$(21/2^+)$	D	A_2=−0.6 *3*

[†] Deduced by evaluator based on the A_2 coefficients listed by 2005Li58, ΔJ=2, Q for A_2>0, and ΔJ=1, D for A_2<0, except where noted.
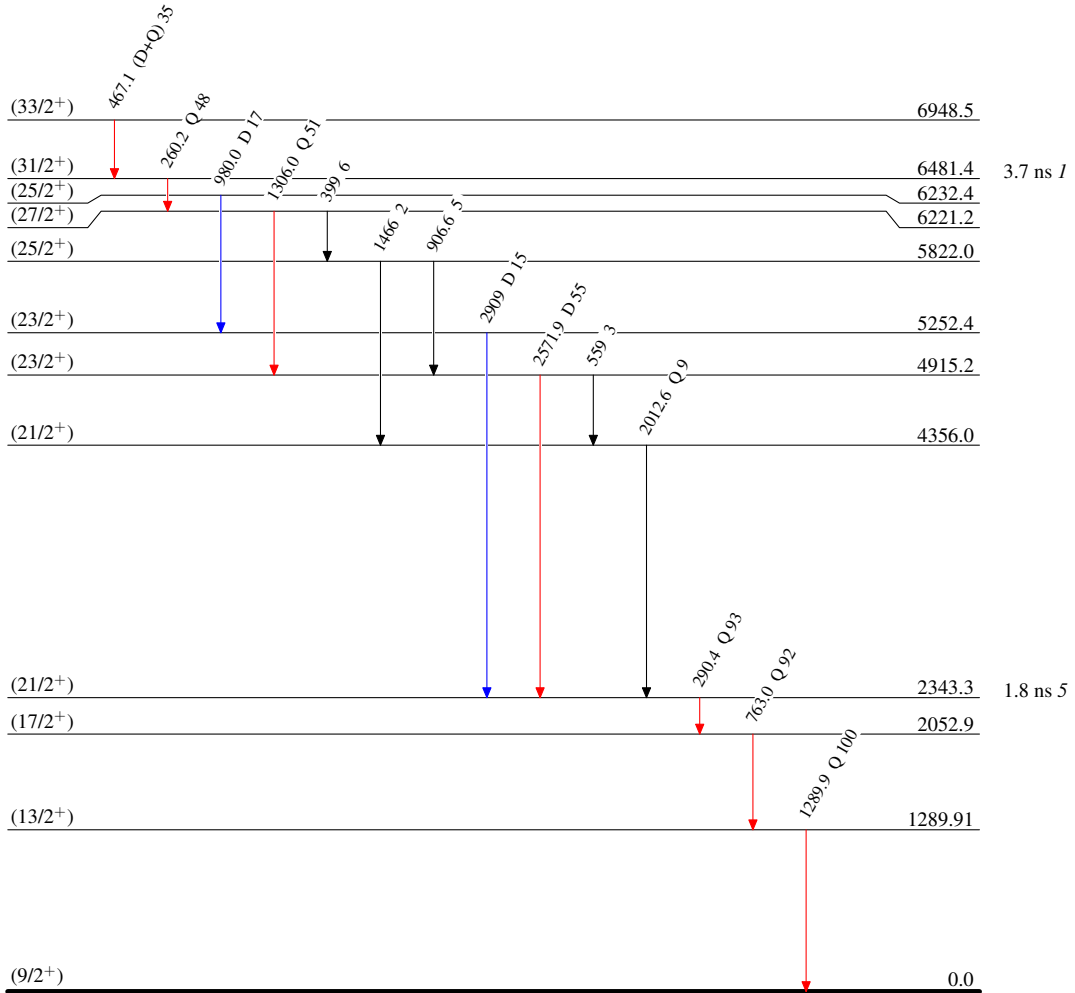
^{58}Ni(^{46}Ti,pα2nγ)   2005Li58

Level Scheme

Intensities: Relative I$_\gamma$

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

$^{97}_{47}$Ag$_{50}$

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Band(A): Yrast cascade

(33/2$^+$)   6948.5

467

(31/2$^+$)   6481.4

260

(27/2$^+$)   6221.2

1306

(23/2$^+$)   4915.2

2572

(21/2$^+$)   2343.3

290

(17/2$^+$)   2052.9

763

(13/2$^+$)   1289.91

1290

(9/2$^+$)   0.0

$^{97}_{47}$Ag$_{50}$