

$^{181}\text{Ta}(\text{d},\text{d}'), (\text{n},\text{n}'), (\text{p},\text{p}')$  1961Co07,1970Ro05,1958Co73

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. -c. Wu	NDS 106, 367 (2005)	31-Aug-2005

1961Co07: E(d)=15 MeV, scattered deuterons bent by magnet spectrographs measured with photographic plates.

1970Ro05: E(n)=0.24 to 1.8 MeV, deexcitation  $\gamma$ 's measured with Ge(Li).

1958Co73: E(p)=23 MeV, scattered protons bent by magnet spectrographs measured with CsI(Tl) crystals; deexcitation  $\gamma$ 's measured with p- $\gamma$  coin., with NaI(Tl) for protons and NaI(Tl) for  $\gamma$ 's.

 $^{181}\text{Ta}$  Levels

E(level) <sup>†</sup>	T <sub>1/2</sub>	Comments
0 <sup>‡</sup> #		
6		E(level): level inferred but not directly observed in (n,n').
136 <sup>#</sup>		
159 <sup>#</sup>		
301 <sup>‡</sup> #		
339 <sup>#</sup>		
482 <sup>#</sup>		
498 <sup>‡</sup> #		
548 <sup>#</sup>		
615? <sup>#</sup>	18.5 ns 10	T <sub>1/2</sub> : from time of flight spectrum in (n,n' $\gamma$ ) (1972Ri14). Other: 22 ns 3 from $\gamma$ (t) after the pulsed beam in (p,p' $\gamma$ ) (1967Co20).
619? <sup>#</sup>		
718 <sup>‡</sup> #		
930 <sup>#</sup> 25		
1230 <sup>‡</sup>		
1340 15		E(level): from (p,p'), not clearly separate from adjacent levels.
1390 <sup>‡</sup>		
2020 <sup>‡</sup>		
2570 <sup>‡</sup>		
2890 <sup>‡</sup>		

<sup>†</sup> For levels measured in multiple reactions (n,n') energies are given.

<sup>‡</sup> Observed in (d,d') (1961Co07).

# Observed in (n,n') (1970Ro05).

 $\gamma(^{181}\text{Ta})$ 

Gammas measured in (n,n' $\gamma$ ) (1970Ro05).

E <sub><math>\gamma</math></sub>	E <sub>i</sub> (level)	E <sub>f</sub>	E <sub><math>\gamma</math></sub>	E <sub>i</sub> (level)	E <sub>f</sub>	E <sub><math>\gamma</math></sub>	E <sub>i</sub> (level)	E <sub>f</sub>	E <sub><math>\gamma</math></sub>	E <sub>i</sub> (level)	E <sub>f</sub>
133 <sup>†</sup>	615?	482	165	301	136	220	718	498	482	482	0
136	136	0	180	339	159	301	301	0	615 <sup>†</sup>	615?	0
137 <sup>†</sup>	619?	482	197	498	301	346	482	136	619 <sup>†</sup>	619?	0
153	159	6	209	548	339	362	498	136			

<sup>†</sup> Placement of transition in the level scheme is uncertain.

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Legend

## Level Scheme

----->  $\gamma$  Decay (Uncertain)