

¹⁸¹Ta(d,t) **1983De43**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 126, 151 (2015)	1-Feb-2015

$J^\pi(^{181}\text{Ta})=7/2^+$.

E(d)=17.4 MeV. Measured $\sigma(\theta)$ for $\theta=7.5^\circ$ to 90° in 7.5° steps using QDDD spectrometer (FWHM=20 keV); DWBA analysis.

¹⁸⁰Ta Levels

E(level)	J^π^\dagger	L^\ddagger	C ² S [#]	E(level)	J^π^\dagger	L^\ddagger	C ² S [#]	E(level)	J^π^\dagger	L^\ddagger	C ² S [#]
0.0 [@]	1 ⁺	4	1.09	462 ^c 4	7 ⁻	5	0.638	753 ^b 5	7 ⁻	3	0.544
45 [@] 2	2 ⁺	4	2.79	476 ^a 4	2 ⁻	3	0.480	775 ^d 5	3 ⁻	1	0.983
114 [@] 2	3 ⁺	6	1.30	545 ^a 4	3 ⁻	3	0.643	822 ^e 5	5 ⁻	3	0.587
172 ^{&} 5	8 ⁺	4	0.690	571 ^b 4	6 ⁻	3	0.565	875 ^d 8	4 ⁻	3	0.227
187 [@] 2	4 ⁺	6	0.348	592 ^{&} 3	10 ⁺	6	1.95	893 6			
312 [@] 3	5 ⁺	6	1.16	652 ^a 4	4 ⁻	3	1.43	930 2			
376 ^{&} 4	9 ⁺	6	1.42	671 ^c 6	8 ⁻	5	0.720	948 ^e 2	6 ⁻		0.468
420 ^a 4	1 ⁻	3	0.555	712 ^e 5	4 ⁻	1	0.951				

[†] Spin, parity, and configuration assignments are based on comparison between experimental and theoretical cross sections, on rotational structure, and on measured L-transfers.

[‡] From comparison of measured angular distributions and DWBA calculations.

[#] C²S=(1/N) ($\sigma(\text{exp})/\sigma(\text{DWBA})$), N=1.33. C²S values are for $\theta=60^\circ$, except for members of the K=1⁻ rotational band, for which $\theta=30^\circ$. Note that a typical normalization factor for a (d,t) reaction is N=3.33.

[@] K ^{π} =1⁺ rotational band; probable configuration=((π 7/2[404])-(ν 9/2[624])).

[&] K ^{π} =8⁺ rotational band; probable configuration=((π 7/2[404])+(ν 9/2[624])).

^a K ^{π} =1⁻ rotational band; probable configuration=((π 7/2[404])-(ν 5/2[512])).

^b K ^{π} =6⁻ rotational band; probable configuration=((π 7/2[404])+(ν 5/2[512])).

^c K ^{π} =7⁻ rotational band; probable configuration=((π 7/2[404])+(ν 7/2[514])).

^d K ^{π} =3⁻ rotational band; probable configuration=((π 7/2[404])-(ν 1/2[521])).

^e K ^{π} =4⁻ rotational band; probable configuration=((π 7/2[404])+(ν 1/2[521])).