^{180}Ta(n,γ) E=th 1973LaZY

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

Private communication based on 1973LaZY quoted by 1973El18.
The level scheme was constructed on the basis of $\gamma\gamma$-coincidence data and primary γ population. No γ intensity data were provided. Primary γ's are shown, and no transitions were reported deexciting some levels. Spins are from the Adopted Levels.
For cross section measurements, see 2001Wi22, 2001Wi13, 1981Co17.

^{181}Ta Levels

E(level)[†]	J$^\pi$	Comments
0.0	7/2$^+$	
6.24 *2*	9/2$^-$	
136.28 *2*	9/2$^+$	
158.57 *3*	(11/2)$^-$	
301.64 *3*	11/2$^+$	
337.56 *3*	(13/2)$^-$	
482.20 *3*	5/2$^+$	
495.20 *3*	13/2$^+$	
542.53 *4*	(15/2)$^-$	
615.27 *6*	1/2$^+$	
619.25 *4*	3/2$^+$	
716.68 *3*	15/2$^+$	
772.99 *4*	(17/2$^-$)	
965.02 *4*	17/2$^+$	
1027.97 *5*	(19/2$^-$)	
1233.1		
1239.50 *6*	19/2$^+$	
1307.08 *5*	(21/2$^-$)	
1403.41 *4*		
1472.7		
1539.36 *11*	21/2$^+$	
1555.6? *10*		
1661.1		
2361.4		
2481.6?		
2525.7		
2539.3?		
7653.9 *15*	17/2$^-$,19/2$^-$	J$^\pi$: thermal neutron s-wave capture from 9$^-$ state in ^{180}Ta (1980Bu09).

[†] From least-square fit to Eγ's.

γ(^{181}Ta)

E$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
(6.25 *2*)	6.24	9/2$^-$	0.0	7/2$^+$	E$_\gamma$: from adopted gammas.
[x]95.4 *2*					
[x]101.45 *7*					
[x]107.96 *2*					
[x]124.8 *2*					
133.07 *5*	615.27	1/2$^+$	482.20	5/2$^+$	
(136.28 *2*)	136.28	9/2$^+$	0.0	7/2$^+$	Obscured by impurity and not directly observed. Energy taken from ε decay.
137.05 *3*	619.25	3/2$^+$	482.20	5/2$^+$	
[x]141.48 *5*					

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^{180}Ta(n,γ) E=th 1973LaZY (continued)

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

E_γ	E_i(level)	J_i^π	E_f	J_f^π	Comments
≈151#	1555.6?		1403.41		Obscured by strong 152-keV γ.
152.32 *2*	158.57	$(11/2)^-$	6.24	$9/2^-$	
x163.82 *4*					
165.40 *2*	301.64	$11/2^+$	136.28	$9/2^+$	
179.00 *2*	337.56	$(13/2)^-$	158.57	$(11/2)^-$	
x181.00 *4*					
x186.2# *5*					
x188.46 *4*					
x192.83 *5*					
193.72 *5*	495.20	$13/2^+$	301.64	$11/2^+$	
x198.25# *5*					
204.98 *2*	542.53	$(15/2)^-$	337.56	$(13/2)^-$	
x210.67# *5*					
x212.40# *5*					
x215.69 *8*					
x219.18 *2*					
221.48 *2*	716.68	$15/2^+$	495.20	$13/2^+$	
x223.85 *15*					
230.47 *2*	772.99	$(17/2^-)$	542.53	$(15/2)^-$	
x234.02 *8*					
x236.9 *2*					
x243.73 *4*					
x245.50 *15*					
248.41 *4*	965.02	$17/2^+$	716.68	$15/2^+$	
255.07† *5*	1027.97	$(19/2^-)$	772.99	$(17/2^-)$	
x256.17 *10*					
274.50# *10*	1239.50	$19/2^+$	965.02	$17/2^+$	
279.18# *3*	1307.08	$(21/2^-)$	1027.97	$(19/2^-)$	
x288.37 *8*					
301.5‡ *5*	301.64	$11/2^+$	0.0	$7/2^+$	
x302.90# *7*					
331.29 *3*	337.56	$(13/2)^-$	6.24	$9/2^-$	
346.00 *5*	482.20	$5/2^+$	136.28	$9/2^+$	
x348.98 *8*					
358.88 *2*	495.20	$13/2^+$	136.28	$9/2^+$	
x362.63 *15*					
x367.58 *15*					
x374.4# *2*					
383.90 *5*	542.53	$(15/2)^-$	158.57	$(11/2)^-$	
x390.57 *15*					
x404.71 *5*					
x411.97 *5*					
415.07 *3*	716.68	$15/2^+$	301.64	$11/2^+$	
x420.75 *20*					
x426.2 *5*					
x431.43 *10*					
435.42 *3*	772.99	$(17/2^-)$	337.56	$(13/2)^-$	
x442.87# *10*					
x456.06 *3*					
x462.87 *7*					
469.77 *3*	965.02	$17/2^+$	495.20	$13/2^+$	
x474.2 *3*					
x476.3# *8*					

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^{180}Ta(n,γ) E=th 1973LaZY (continued)

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

E_γ	E_i(level)	J_i^π	E_f	J_f^π
482.17 *3*	482.20	$5/2^+$	0.0	$7/2^+$
485.35 *5*	1027.97	$(19/2^-)$	542.53	$(15/2)^-$
x517.8 *2*				
522.81 *5*	1239.50	$19/2^+$	716.68	$15/2^+$
534.09 *7*	1307.08	$(21/2^-)$	772.99	$(17/2^-)$
x537.0 *2*				
x543.7 *5*				
x558.08† *15*				
574.27 *10*	1539.36	$21/2^+$	965.02	$17/2^+$
x580.7 *2*				
x623.5 *10*				
x698.34 *10*				
x711.18 *15*				
x860.7# *3*				
860.7# *3*	1403.41		542.53	$(15/2)^-$
1065.84 *5*	1403.41		337.56	$(13/2)^-$
x1097.4# *2*				
x1146.1 *3*				
x1212.1 *3*				
1244.85 *4*	1403.41		158.57	$(11/2)^-$
x1293.7# *1*				
x1299.3 *2*				
x1712.1 *2*				
5114.5#	7653.9	$17/2^-$,$19/2^-$	2539.3?	
5128.1	7653.9	$17/2^-$,$19/2^-$	2525.7	
5172.2#	7653.9	$17/2^-$,$19/2^-$	2481.6?	
5292.4	7653.9	$17/2^-$,$19/2^-$	2361.4	
5992.7	7653.9	$17/2^-$,$19/2^-$	1661.1	
6098.2	7653.9	$17/2^-$,$19/2^-$	1555.6?	
6112.8	7653.9	$17/2^-$,$19/2^-$	1539.36	$21/2^+$
6181.1	7653.9	$17/2^-$,$19/2^-$	1472.7	
6413.1	7653.9	$17/2^-$,$19/2^-$	1239.50	$19/2^+$
6420.7	7653.9	$17/2^-$,$19/2^-$	1233.1	
6687.5	7653.9	$17/2^-$,$19/2^-$	965.02	$17/2^+$
6877.9	7653.9	$17/2^-$,$19/2^-$	772.99	$(17/2^-)$
6936.0	7653.9	$17/2^-$,$19/2^-$	716.68	$15/2^+$
7109.6	7653.9	$17/2^-$,$19/2^-$	542.53	$(15/2)^-$

† Complex transition.
‡ Energy error increased by evaluator. Transition probably obscured by unreported 300-keV M1+E2 γ from 1539 level.
# Placement of transition in the level scheme is uncertain.
x γ ray not placed in level scheme.

Legend

γ Decay (Uncertain)

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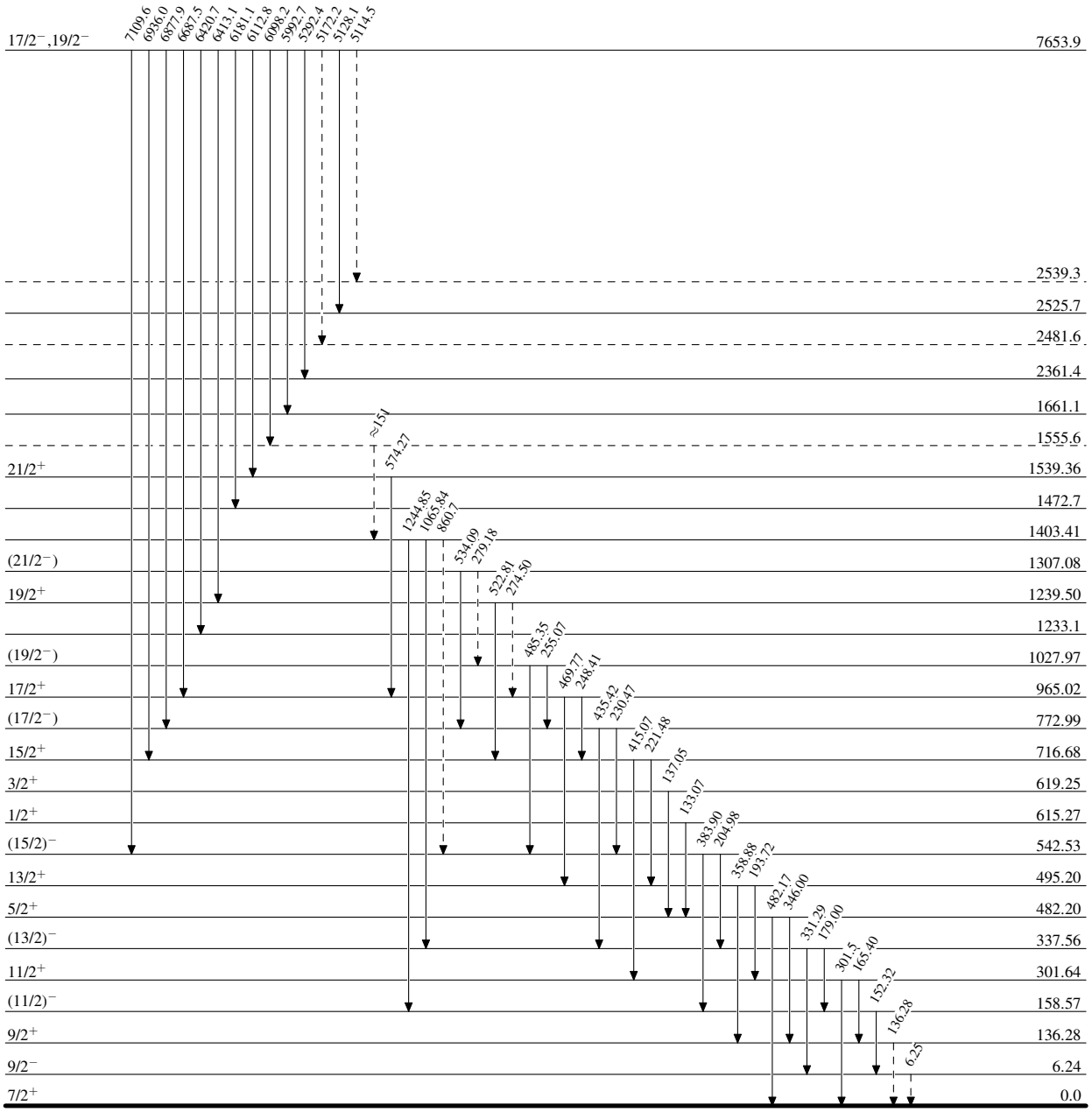
Level Scheme



$^{181}_{73}Ta_{108}$