

Coulomb excitation 2003Lo01,1997Lo05

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

1997Lo05: (³²S,³²S') with E(³²S)=125 MeV and (⁵⁸Ni,⁵⁸Ni') with E(⁵⁸Ni)=225 MeV. Measured E_γ, I_γ, γγ, and γ-particle coincidences using 24 PIN diodes and 5 Compton-suppressed Ge detectors for the ³²S beam experiment and 55 PIN diodes and the NORDBALL array for the ⁵⁸Ni experiment. Similar results also presented in 1996Lo19.

2003Lo01: (⁵⁸Ni,⁵⁸Ni'), E(⁵⁸Ni)=225 MeV. Measured E_γ, I_γ, γγ, and particle-γ coincidences using NORDBALL array consisting of 20 Ge detectors and 55 PIN diodes placed at backwards angles. Also used ³⁶S at E=1.8-3.5 MeV/nucleon and ⁶⁴Ni at E=2.0-2.4 MeV/nucleon for activation experiments. Earlier results presented in 1999Lo13.

Others: (¹³⁶Xe,¹³⁶Xe'), 2001Sc22, 1997Vo11; (p,p'), (α,α'), 1998Sc36, 1997Sc18; (³²S,³²S'), (³⁶S,³⁶S'), 1994Sc26.

α: Additional information 1.

¹⁸⁰Ta Levels

E(level) [†]	J ^π [‡]	Comments
77.1 ^{#a} 8	9 ⁻ [#]	Additional information 2.
280.20 ^a 10	10 ⁻	
505.50 ^a 12	11 ⁻	
752.9 ^a 3	12 ⁻	
1021.4 ^a 3	13 ⁻	
1136.1? ^{&} 10	(7 ⁻) ^{&}	
1291.2? ^{&} 10	(8 ⁻) ^{&}	
1310.7 ^a 4	14 ⁻	
1339.1 [@] 10	11 ⁻ [@]	
1450? ^{&}	(9 ⁻) ^{&}	
1546.2 [@] 10	12 ⁻ [@]	
1620.0 ^a 5	15 ⁻	
1947.7 ^a 7	16 ⁻	

[†] From a least-squares fit to E_γ by evaluator.

[‡] As proposed by 1997Lo05 and based on assumed band structure, except where noted.

[#] From the Adopted Levels.

[@] From 2003Lo01.

[&] From from 2003Lo01; due to tentative assignment, level is not included in the Adopted Levels.

^a Band(A): Rotational band build on 9⁻ isomer.

γ(¹⁸⁰Ta)

E _i (level)	J _i ^π	E _γ [†]	I _γ	E _f	J _f ^π	Mult. [@]	α
280.20	10 ⁻	203.1 1		77.1	9 ⁻		
505.50	11 ⁻	225.3 1	100	280.20	10 ⁻	(M1)	0.441
		428.4 2	22.1 10	77.1	9 ⁻	(E2)	0.0300
752.9	12 ⁻	247.4 6	100	505.50	11 ⁻	(M1)	0.341 6
		472.7 6	49 11	280.20	10 ⁻	(E2)	0.0232
1021.4	13 ⁻	268.5 3	100	752.9	12 ⁻	(M1)	0.273
		515.9 3	85 12	505.50	11 ⁻	(E2)	0.0186
1136.1?	(7 ⁻)	1059 [#]		77.1	9 ⁻		
1291.2?	(8 ⁻)	1011 [#]		280.20	10 ⁻		
1310.7	14 ⁻	289.2 3	100	1021.4	13 ⁻	(M1)	0.223

Continued on next page (footnotes at end of table)

Coulomb excitation 2003Lo01,1997Lo05 (continued) $\gamma(^{180}\text{Ta})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ	E_f	J_f^π	Mult. @	α
1310.7	14 ⁻	558.0 4	102 34	752.9	12 ⁻	(E2)	0.01540
1339.1	11 ⁻	1262 [‡]		77.1	9 ⁻		
1450?	(9 ⁻)	947 ^{#&}		505.50	11 ⁻		
1546.2	12 ⁻	1266 [‡]		280.20	10 ⁻		
1620.0	15 ⁻	309.1 5	100	1310.7	14 ⁻	(M1)	0.186
		598.7 4	92 46	1021.4	13 ⁻	(E2)	0.01303
1947.7	16 ⁻	327.4 9	100	1620.0	15 ⁻	(M1)	0.159 3
		637.1 7	140 90	1310.7	14 ⁻	(E2)	0.01128

[†] From 1997Lo05, except where noted.

[‡] From 2003Lo01.

[#] From 2003Lo01; due to tentative assignment γ is not included in the Adopted Gammas.

@ As proposed by 1997Lo05 based on assumed rotational band structure.

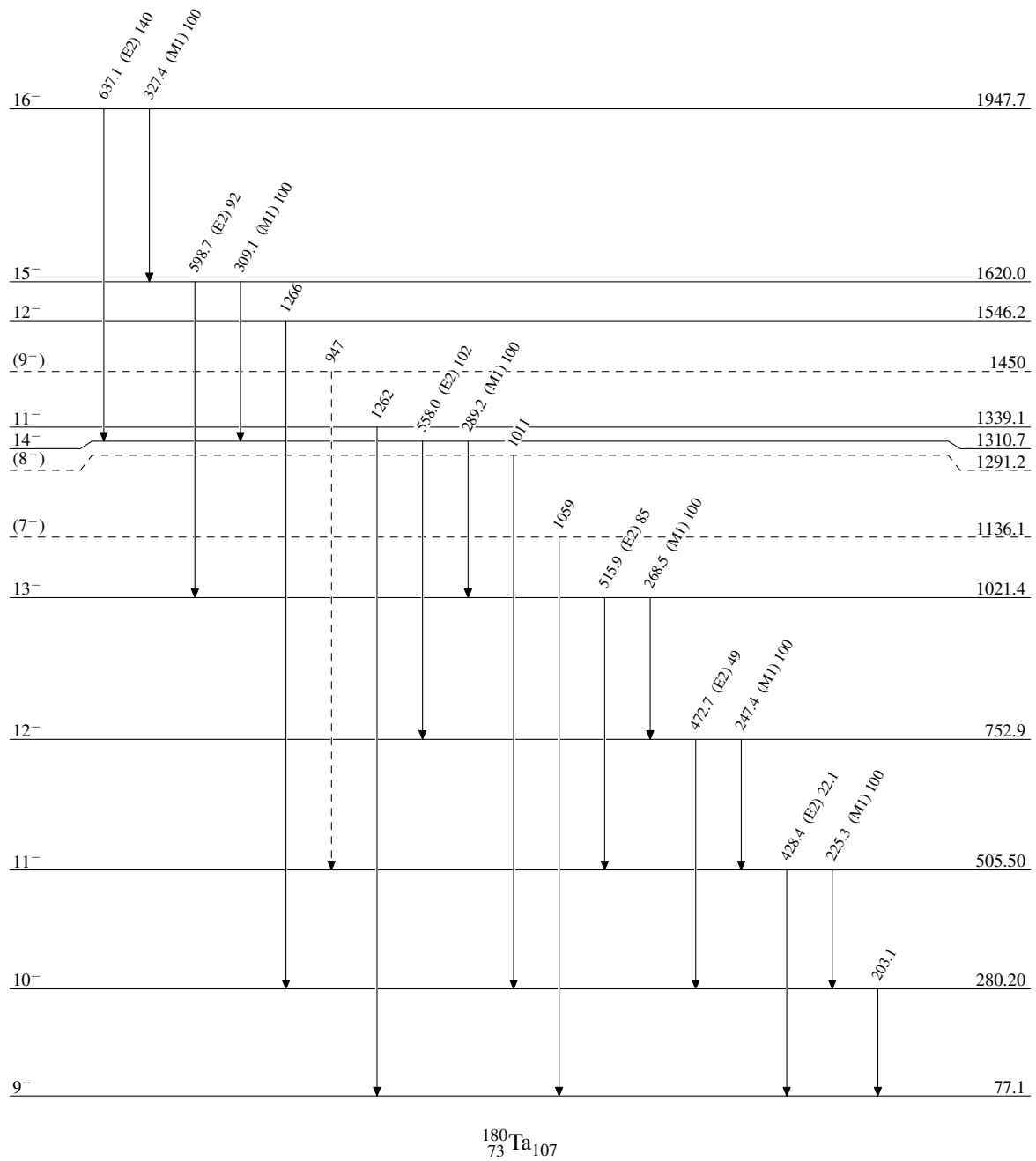
& Placement of transition in the level scheme is uncertain.

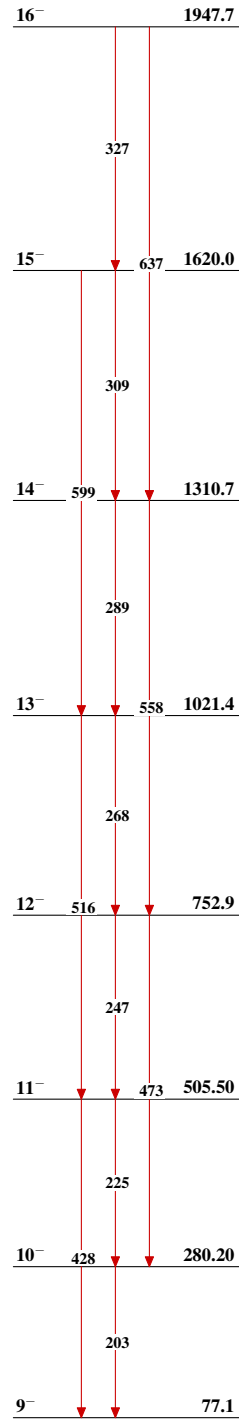
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Legend

Level Scheme

Intensities: Relative photon branching from each level

-----▶ γ Decay (Uncertain)

Coulomb excitation 2003Lo01,1997Lo05**Band(A): Rotational band build on
9⁻ isomer** $^{180}_{73}\text{Ta}_{107}$