^{150}Sm(p,nγ) 1983SoZV

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, A. A. Sonzogni	NDS 114, 435 (2013)	1-Apr-2013

Excitation function measurements done at E= 9 *13*13 MeV proton energy and $\gamma(\theta)$ and $\gamma\gamma$ coincidences were measured with 10-MeV protons.

^{150}Eu Levels

Both the order and the spin difference of the first two levels are established by decays to both levels from a common level.

E(level)[#]	Jπ[†]	$T_{1/2}$	E(level)[#]	Jπ[†]	$T_{1/2}$	E(level)[#]
0	5^-	36.9 y *9*	406.5 *10*			598.7 *9*
42.1 *11*	0^-	12.8 h *1*	412.5 *6*	5^-		601.6? *13*
43.1 *11*	(1^-)		417.3 *6*	7^-		601.9 *13*
69.7 *9*	(2^-)		420.7 *9*	(3^-)		628.2 *11*
118.8 *11*	(2^-)		427.8 *8*			633.6 *14*
181.2 *8*	(3^-)		457.8 *9*			670.9 *13*
190.4 *6*	6^-		465.5 *13*			675.4 *12*
195.3 *8*	(3^-)		488.3? *9*			682.7 *9*
237.4 *10*	(1^-)		496.3 *12*			718.4 *14*
248.0 *7*	6^-		511.1 *10*			720.8 *12*
269.1 *6*	(4^-)		532.4 *11*			743.4 *13*
321.2 *7*	(4^-)		562.1 *5*	6^+		762.4 *13*
343.2 *9*	(3,2)		588.9 *9*	8^+[‡]	45 ns *3*	877.4 *16*
360.5 *6*	(5^-)		594.3 *9*			

[†] From Adopted Levels.
[‡] From $T_{1/2}$=45 ns and branching of isomeric decay.
[#] From least-squares fit to Eγ assuming ΔEγ=1 keV.

γ(^{150}Eu)

Eγ	E_i(level)	J_i^π	E_f	J_f^π	Comments
(≈1)	43.1	(1^-)	42.1	0^-	
26.5	69.7	(2^-)	43.1	(1^-)	
(26.8)	588.9	8^+	562.1	6^+	Eγ: this as yet unobserved transition is inferred from the decay of the 562 state to be the major mode of decay of the 589-keV level.
75.6	118.8	(2^-)	43.1	(1^-)	
76	488.3?		412.5	5^-	
77.3	420.7	(3^-)	343.2	(3,2)	
85	427.8		343.2	(3,2)	
87.9	269.1	(4^-)	181.2	(3^-)	
91.3	360.5	(5^-)	269.1	(4^-)	
92.7	720.8		628.2		
106.6	427.8		321.2	(4^-)	
111.5	181.2	(3^-)	69.7	(2^-)	
113.3	601.6?		488.3?		
118.6	237.4	(1^-)	118.8	(2^-)	
120.8	682.7		562.1	6^+	
125.6	195.3	(3^-)	69.7	(2^-)	
126[‡]	532.4		406.5		
126.1	321.2	(4^-)	195.3	(3^-)	

Continued on next page (footnotes at end of table)

^{150}Sm(p,nγ) 1983SoZV (continued)

γ(^{150}Eu) (continued)

E_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.†
127.6	488.3?		360.5	(5⁻)	
131.9	628.2		496.3		
136.6	457.8		321.2	(4⁻)	
143.5	412.5	5⁻	269.1	(4⁻)	
144.7	562.1	6⁺	417.3	7⁻	
149.6	562.1	6⁺	412.5	5⁻	
151.7	420.7	(3⁻)	269.1	(4⁻)	
158.7	427.8		269.1	(4⁻)	
167.7	237.4	(1⁻)	69.7	(2⁻)	
169.3	417.3	7⁻	248.0	6⁻	
170.0	360.5	(5⁻)	190.4	6⁻	
171.5	588.9	8⁺	417.3	7⁻	
181.2	601.9		420.7	(3⁻)	
183.4	420.7	(3⁻)	237.4	(1⁻)	
188.7	457.8		269.1	(4⁻)	
190.4	190.4	6⁻	0	5⁻	M1
195.3	237.4	(1⁻)	42.1	0⁻	
201.8	562.1	6⁺	360.5	(5⁻)	
207.5	628.2		420.7	(3⁻)	
211.3	406.5		195.3	(3⁻)	
222.3	412.5	5⁻	190.4	6⁻	M1
225.4	406.5		181.2	(3⁻)	
225.6	420.7	(3⁻)	195.3	(3⁻)	
226.9	417.3	7⁻	190.4	6⁻	M1
232.4	427.8		195.3	(3⁻)	
246.6	427.8		181.2	(3⁻)	
247.9	248.0	6⁻	0	5⁻	M1
250.2	670.9		420.7	(3⁻)	
259.0	496.3		237.4	(1⁻)	
260.6	718.4		457.8		
269.1	269.1	(4⁻)	0	5⁻	
273‡	594.3		321.2	(4⁻)	
273.6	343.2	(3,2)	69.7	(2⁻)	
277.6	598.7		321.2	(4⁻)	
284.3	465.5		181.2	(3⁻)	
300.1	720.8		420.7	(3⁻)	
301.8	420.7	(3⁻)	118.8	(2⁻)	
314.1	562.1	6⁺	248.0	6⁻	E1
315.7	511.1		195.3	(3⁻)	
321.2	321.2	(4⁻)	0	5⁻	
322‡	682.7		360.5	(5⁻)	
322.7	743.4		420.7	(3⁻)	
325.2	594.3		269.1	(4⁻)	
329.5	598.7		269.1	(4⁻)	
330‡	511.1		181.2	(3⁻)	
337.1	532.4		195.3	(3⁻)	
341.7	762.4		420.7	(3⁻)	
350.9	420.7	(3⁻)	69.7	(2⁻)	
354.2	675.4		321.2	(4⁻)	
371.6	562.1	6⁺	190.4	6⁻	E1
381.1	877.4		496.3		
396.2	633.6		237.4	(1⁻)	
412.6	412.5	5⁻	0	5⁻	
417.3	417.3	7⁻	0	5⁻	
562.2	562.1	6⁺	0	5⁻	

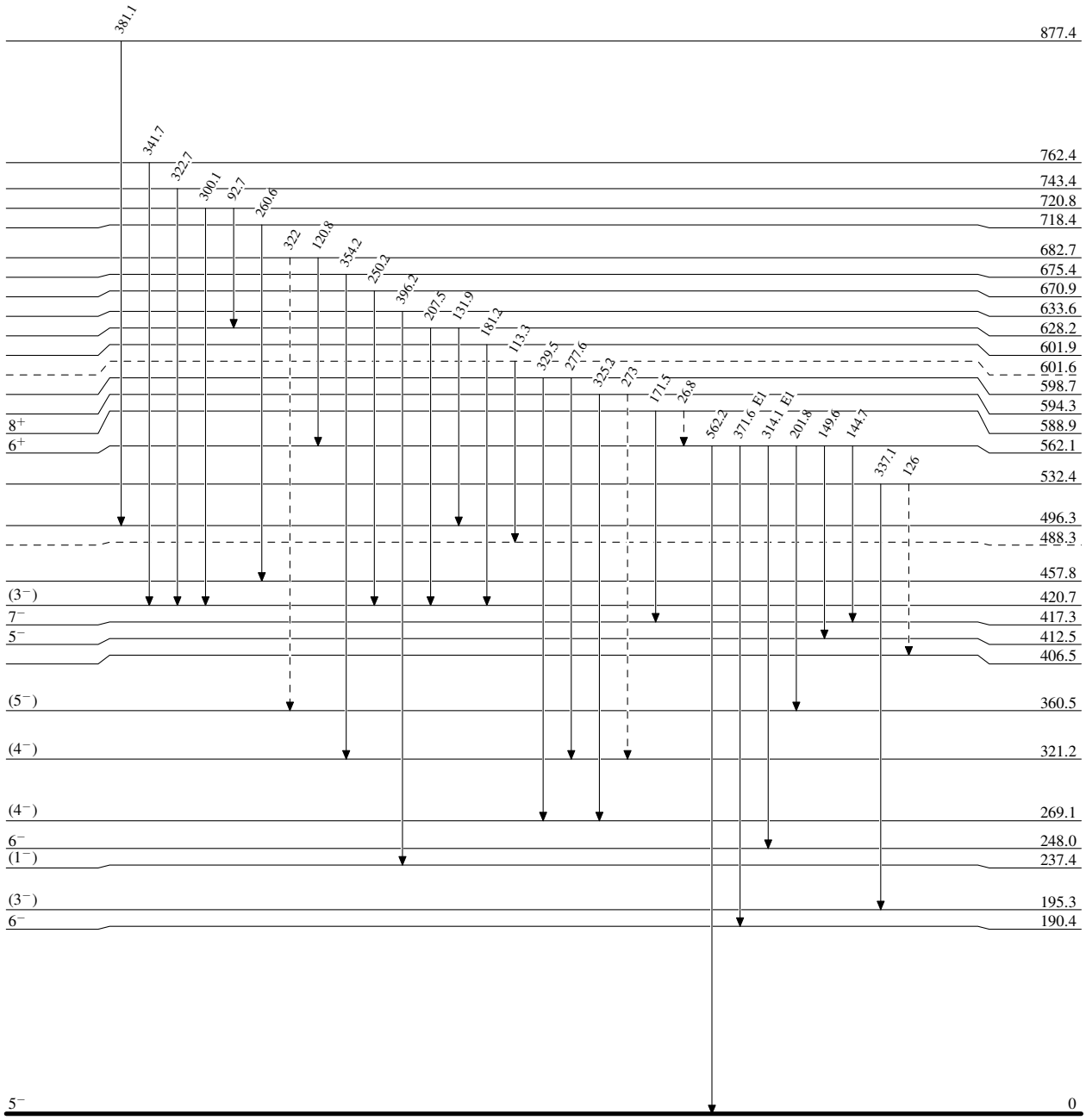
† From adopted gammas.
‡ Placement of transition in the level scheme is uncertain.

^{150}Sm(p,nγ) 1983SoZV

Legend

γ Decay (Uncertain)

Level Scheme



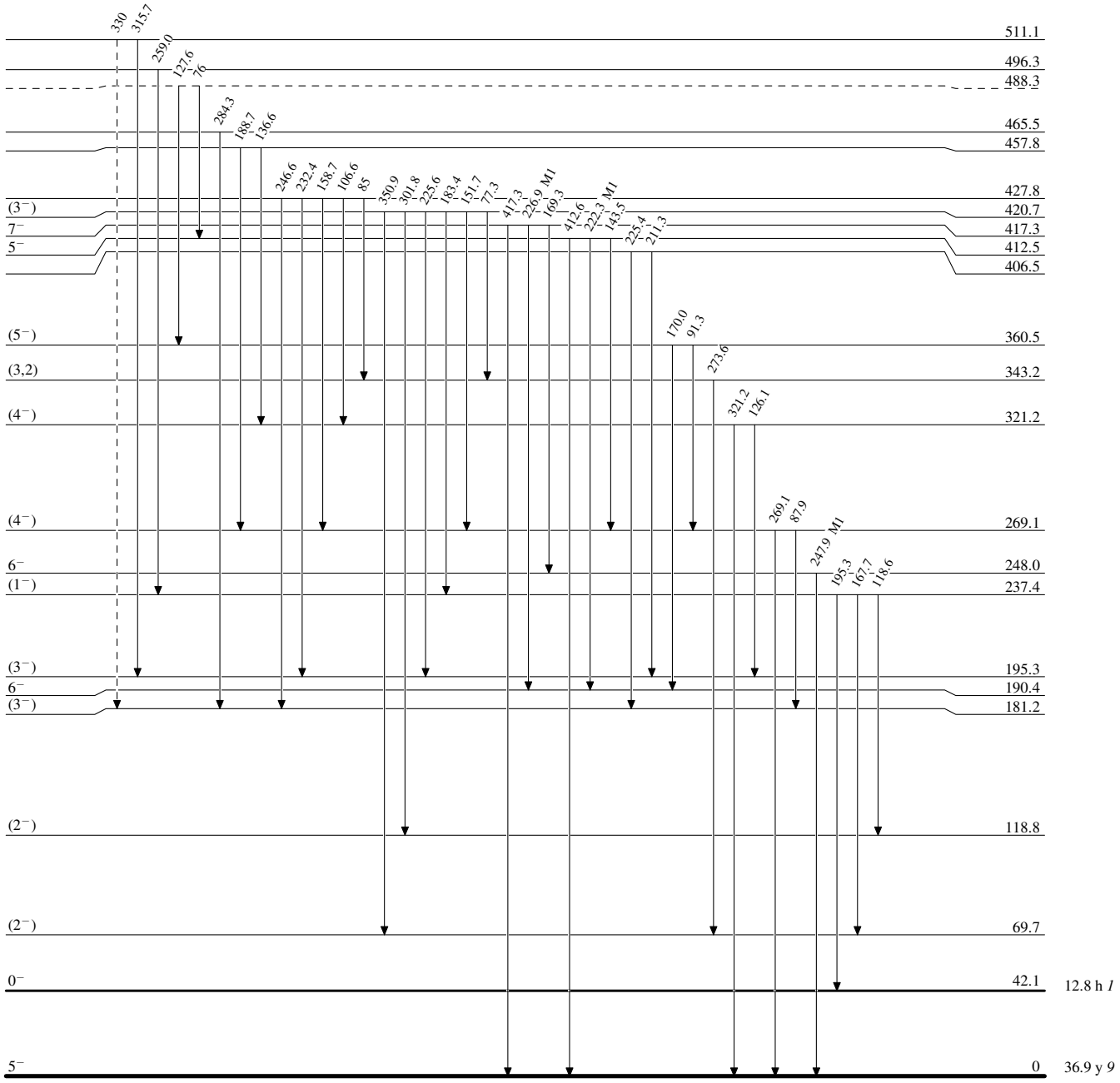
$^{150}_{63}Eu_{87}$

^{150}Sm(p,nγ) 1983SoZV

Legend

γ Decay (Uncertain)

Level Scheme (continued)



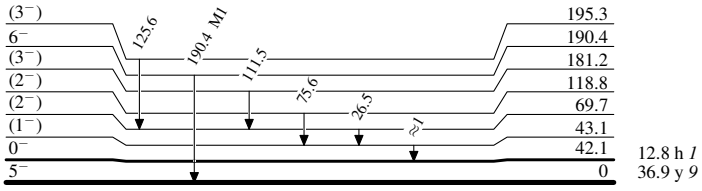
$^{150}_{63}Eu_{87}$

^{150}Sm(p,nγ) 1983SoZV

Legend

Level Scheme (continued)

- - - - - - ► γ Decay (Uncertain)



$^{150}_{63}Eu_{87}$