^{94}Mo(α,nγ), (^{6}Li,p2nγ) 1986Ka37

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 111, 525 (2010)	19-Nov-2009

^{97}Ru Levels

^{94}Mo(α,nγ): E(α)=12-18 MeV, ^{94}Mo(^{6}Li,p2nγ): E(^{6}Li)=20-34 MeV; measured Eγ, Iγ, $\gamma\gamma$, $\gamma(\theta)$, excit;Ge(Li) detectors, resolution 2.1 keV at 1.33 MeV.

E(level)†	J$^{\pi}$‡	Comments
0.0	5/2^{+}	
189.2	3/2^{+}	J$^{\pi}$: J=3/2 from 189.2γ excit.
421.7#	7/2^{+}	
527.8	3/2^{+}	J$^{\pi}$: J=3/2 from 527.8γ excit.
611.0#	(5/2^{+})	
771.5	(5/2^{+})	J$^{\pi}$: 3/2 or 5/2 from 582.3γ excit.
840.2	7/2^{+}	J$^{\pi}$: 7/2 from 840.2γ excit.
879.1	9/2^{+}	
908.4	(1/2^{+})	
1184.4	(3/2^{+},5/2^{+})	
1199.3	11/2^{+}	J$^{\pi}$: 11/2 from 320.2γ excit.
1229.6	9/2^{+}	J$^{\pi}$: 9/2 from 1229.6γ excit.
1376.5	(1/2^{+},3/2^{+})	
1542.9	(7/2^{+})	
1619.9	11/2^{+}	
1826.1	13/2^{+}	J$^{\pi}$: 13/2 from 947.0γ excit.
1845.8	15/2^{+}	J$^{\pi}$: 15/2 from 646.5γ excit.
1879.6	11/2^{-}	J$^{\pi}$: 11/2 from 680.3γ and 1000.5γ excit.
1933.0	(7/2^{+})	J$^{\pi}$: (5/2),7/2 from 1053.9γ excit.
1990.8	7/2^{+}	J$^{\pi}$: 7/2 from 1111.7γ excit.
2020.3	(13/2^{+})	
2488.1?@		
2502.3@	(13/2^{+},15/2^{+})	J$^{\pi}$: 676.2γ excit suggests 13/2 or 15/2.
2545.4	17/2^{+}	J$^{\pi}$: 17/2 from 699.6γ excit.
2553.1	15/2^{-}	J$^{\pi}$: 15/2 favored by 673.5γ and 727.0γ excit.
2596.2?@	(9/2)	
2640.8	17/2^{+}	J$^{\pi}$: 17/2 suggested by 814.7γ excit.
2649.1?@		
2739.0#	21/2^{+}	J$^{\pi}$: 21/2 from 193.6γ excit.
2743.2#	17/2^{+}	
2759.3#	19/2^{+}	
3620.2#	23/2^{+}	
3668.6#	25/2^{+}	
4261.4#	(27/2^{+})	J$^{\pi}$: (27/2) inferred from 529.8γ, 641.2γ excit.

† From 1986Ka37.
‡ From $\gamma(\theta)$, excit, $\gamma\gamma$; excit results normalized to J_i=9/2 for the 879.1γ (can Be different from J$^{\pi}$'s In Adopted Levels, Gammas dataset).
# Level established in ^{94}Mo(^{6}Li,p2nγ) reaction.
@ Not included in Adopted Levels.

^{94}Mo(α,nγ), (^{6}Li,p2nγ) 1986Ka37 (continued)

γ(^{97}Ru)

E_γ[†]	I_γ[‡]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ[@]	Comments
189.2	44.0 *20*	189.2	3/2$^+$	0.0	5/2$^+$			
193.6		2739.0	21/2$^+$	2545.4	17/2$^+$	E2		
213.8		2759.3	19/2$^+$	2545.4	17/2$^+$			
320.2	7.2 *3*	1199.3	11/2$^+$	879.1	9/2$^+$	M1+E2	−2.3 *+5−8*	
338.6	2.4 *2*	527.8	3/2$^+$	189.2	3/2$^+$			
350.5	1.9 *2*	1229.6	9/2$^+$	879.1	9/2$^+$			
389.4	4.5 *2*	1229.6	9/2$^+$	840.2	7/2$^+$	D		
400.4	2.1 *2*	2020.3	(13/2$^+$)	1619.9	11/2$^+$			
418.5	<1	840.2	7/2$^+$	421.7	7/2$^+$			
421.7[&]	100[&]	421.7	7/2$^+$	0.0	5/2$^+$			
421.8[&]	[&]	611.0	(5/2$^+$)	189.2	3/2$^+$			E_γ: weak member of the 421.7-421.8 keV doublet.
457.4	6.2 *3*	879.1	9/2$^+$	421.7	7/2$^+$	M1+E2	−1.5 *+4−5*	
527.8	9.2 *5*	527.8	3/2$^+$	0.0	5/2$^+$			
582.3	6.4 *3*	771.5	(5/2$^+$)	189.2	3/2$^+$			Mult.: ΔJ=1 favored.
592.8		4261.4	(27/2$^+$)	3668.6	25/2$^+$			
611.0	<1	611.0	(5/2$^+$)	0.0	5/2$^+$			
641.2		4261.4	(27/2$^+$)	3620.2	23/2$^+$			
646.5	17.9 *9*	1845.8	15/2$^+$	1199.3	11/2$^+$	E2		
650.0[a]		1879.6	11/2$^-$	1229.6	9/2$^+$			
651.0[a]		840.2	7/2$^+$	189.2	3/2$^+$			
662.0[b]		2488.1?		1826.1	13/2$^+$			
663.8	1.8 *2*	1542.9	(7/2$^+$)	879.1	9/2$^+$			
673.5	2.5 *2*	2553.1	15/2$^-$	1879.6	11/2$^-$	E2		
676.2	1.3 *3*	2502.3	(13/2$^+$,15/2$^+$)	1826.1	13/2$^+$			
680.3	3.2 *2*	1879.6	11/2$^-$	1199.3	11/2$^+$	D		
699.6	3.5 *3*	2545.4	17/2$^+$	1845.8	15/2$^+$	M1+E2	−2.0 *+4−6*	
702.7		1542.9	(7/2$^+$)	840.2	7/2$^+$			γ interpreted as doublet by the authors.
719.2		908.4	(1/2$^+$)	189.2	3/2$^+$			
727.0	1.5 *2*	2553.1	15/2$^-$	1826.1	13/2$^+$	D		Mult.: ΔJ=1, $\delta\approx0$.
740.8	4.1 *2*	1619.9	11/2$^+$	879.1	9/2$^+$	M1+E2	−1.7 *2*	
771.4[&]	[&]	1542.9	(7/2$^+$)	771.5	(5/2$^+$)			
771.5[&]	[&]	771.5	(5/2$^+$)	0.0	5/2$^+$			E_γ: seen in coin with itself.
777.6	41.9 *20*	1199.3	11/2$^+$	421.7	7/2$^+$	E2		
779.7		1619.9	11/2$^+$	840.2	7/2$^+$			
807.9	8.2 *4*	1229.6	9/2$^+$	421.7	7/2$^+$	M1+E2	+3.1 *+13−48*	
814.7	1.4 *2*	2640.8	17/2$^+$	1826.1	13/2$^+$	E2		
821.0		2020.3	(13/2$^+$)	1199.3	11/2$^+$			γ interpreted as doublet by the authors.
823.0[b]		2649.1?		1826.1	13/2$^+$			E_γ: unresolved doublet with a ^{98}Ru transition.
840.2	32.2 *15*	840.2	7/2$^+$	0.0	5/2$^+$	M1+E2	−1.4 *3*	
860.9		3620.2	23/2$^+$	2759.3	19/2$^+$	E2		
879.1	63 *3*	879.1	9/2$^+$	0.0	5/2$^+$	E2		
881.2		3620.2	23/2$^+$	2739.0	21/2$^+$			
897.4		2743.2	17/2$^+$	1845.8	15/2$^+$	M1+E2	−3.8 *+25−14*	
908.4	1.0 *2*	908.4	(1/2$^+$)	0.0	5/2$^+$			
913.5		2759.3	19/2$^+$	1845.8	15/2$^+$	E2		
929.6		3668.6	25/2$^+$	2739.0	21/2$^+$	E2		
947.0	16.5 *9*	1826.1	13/2$^+$	879.1	9/2$^+$	E2		
995.2	3.4 *2*	1184.4	(3/2$^+$,5/2$^+$)	189.2	3/2$^+$			
1000.5	7.6 *3*	1879.6	11/2$^-$	879.1	9/2$^+$	D		
1053.9	<1	1933.0	(7/2$^+$)	879.1	9/2$^+$			

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^{94}Mo(α,nγ), (^{6}Li,p2nγ) 1986Ka37 (continued)

γ(^{97}Ru) (continued)

E_γ †	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult. #
1111.7	1.7 2	1990.8	$7/2^+$	879.1	$9/2^+$	
1184.4	4.3 2	1184.4	$(3/2^+,5/2^+)$	0.0	$5/2^+$	
1187.3	2.4 2	1376.5	$(1/2^+,3/2^+)$	189.2	$3/2^+$	
1198.2	6.5 3	1619.9	$11/2^+$	421.7	$7/2^+$	E2
1229.6	6.3 3	1229.6	$9/2^+$	0.0	$5/2^+$	E2
1396.9	0.8 2	2596.2?	(9/2)	1199.3	$11/2^+$	

† From 1986Ka37.
‡ From the ^{94}Mo(α,nγ) experiment.
# From $\gamma(\theta)$; the assumption has been made that all stretched Q transitions are E2, and that D+Q with large δ are M1+E2.
@ From $\gamma(\theta)$.
& Doublet.
a Doublet in this level scheme. In addition a large fraction of this γ comes from ^{98}Ru via the ^{95}Mo(α,nγ) reaction.
b Placement of transition in the level scheme is uncertain.

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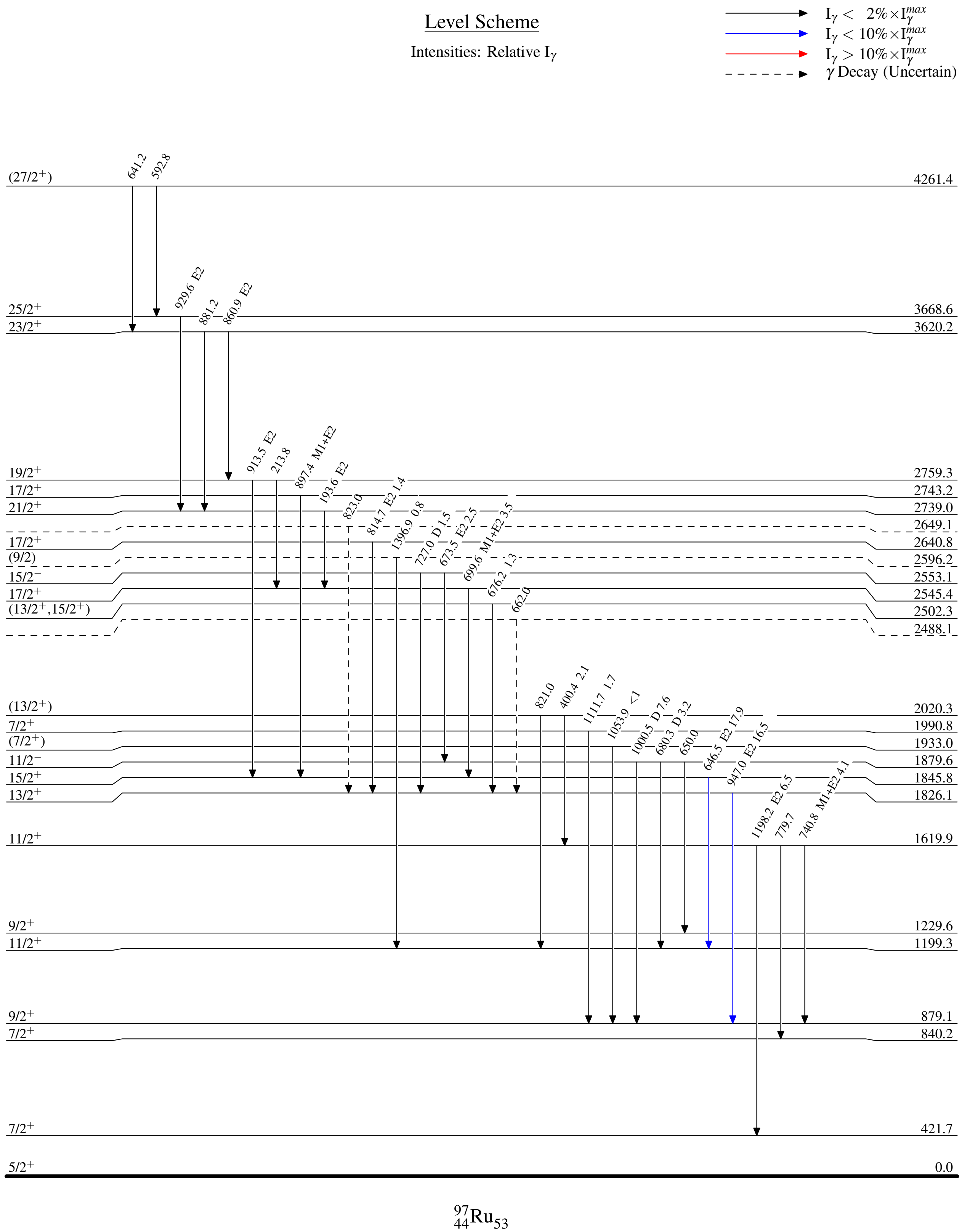
Level Scheme

Intensities: Relative I_γ



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Level Scheme (continued)

Intensities: Relative I_γ