^{100}Mo(α,2nγ)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	D. De Frenne	NDS 110, 1745 (2009)	31-Dec-2008

1995Ef01: E=17, 24, 27 MeV. Measured: Eγ, $\gamma\gamma$, DSA. Deduced: ^{102}Ru levels, $T_{1/2}$. Only fixed on half lives.
1969Ew01: E=26 MeV; measured γ linear pol.
1971Le19: E=30 MeV; measured Eγ, Iγ, a, $\gamma(\theta)$; a, γ(t), $\gamma\gamma$-coin.

^{102}Ru Levels

E(level)[#]	J$^\pi$[†]	$T_{1/2}$[‡]	Comments
0[@]	0^+		
475.1[@]	2^+	18.3 ps *2*	
1104	2^+		
1106.4[@]	4^+	3.0 ps	
1873.1[@]	6^+	1.1 ps *4*	
2155?			
2372	5^-		
2471?			
2650	6^-		
2703.8[@]	8^+	0.9 ps *3*	
2706	7^-		J$^\pi$: J=(7) from (D+Q) γ-ray to 6^+ level; J=5,6 also possible.
2942	(8^-)		
3387?			
3430.8[@]	10^+	1.7 ps *6*	
4051.8[@]	12^+	2.5 ps *7*	
4802.8[@]	14^+	0.9 ps *3*	
5717.8[@]	16^+		

[†] From Adopted Levels.
[‡] From 1995Ef01, unless noted otherwise.
[#] From (1971Le19). Energy of several levels 5 to 7 keV off compared to Adopted Levels.
[@] Band(A): g.s. rotational band (1995Ef01).

γ(^{102}Ru)

ΔE: Overall uncertainty estimated to be ±1 keV (1971Le19).

E$_\gamma$[†]	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[b]	Comments
179.4[d]		2650	6^-	2471?			
235.4[cd]	4.3[c] *3*	2706	7^-	2471?			Weaker component of doublet.
235.4[c]	4.3[c] *3*	2942	(8^-)	2706	7^-		Stronger component of doublet.
277.1	2.2 *3*	2650	6^-	2372	5^-		
292.1	7.9 *4*	2942	(8^-)	2650	6^-		A_2=0.48 *7* and A_4=−0.12 *10* (1971Le19).
333.8	4.8 *3*	2706	7^-	2372	5^-		A_2=0.54 *21* and A_4=0.26 *29* (1971Le19).
475.1	100	475.1	2^+	0	0^+	E2	A_2=0.29 *3* and A_4=−0.06 *4* (1971Le19).
595.7[d]	8.5 *8*	2471?		1873.1	6^+		A_2=0.18 *12* and A_4=0.34 *20* (1971Le19).
621.5	8.7 *7*	4051.8	12^+	3430.8	10^+		A_2=0.24 *3* and A_4=−0.36 *20* (1971Le19).
628.0	3.3 *5*	1104	2^+	475.1	2^+		A_2=0.28 *3* and A_4=−0.08 *4* (1971Le19).
631.3[a]	85 *3*	1106.4	4^+	475.1	2^+	E2	

Continued on next page (footnotes at end of table)

^{100}Mo(α,2nγ) (continued)

γ(^{102}Ru) (continued)

E_γ[†]	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	Comments
680.7	7.6 *7*	3387?		2706	7^-		A_2=0.48 *10* and A_4=0.20 *14* (1971Le19). Placement of this γ-ray is doubtful because a 681.1γ in ^{100}Mo(^{7}Li,p4nγ) was observed under better experimental conditions and placed elsewhere in the level scheme.
[x]686.0[#]	3.3 *8*						
727.6	13.5 *6*	3430.8	10^+	2703.8	8^+		A_2=0.44 *20* and A_4=0.45 *28* (1971Le19).
751[a]		4802.8	14^+	4051.8	12^+		
766.7[a]	61 *2*	1873.1	6^+	1106.4	4^+	E2	A_2=0.36 *4* and A_4=−0.05 *8* (1971Le19).
775.2	6.9 *6*	2650	6^-	1873.1	6^+		A_2=0.56 *14* and A_4=0.11 *19* (1971Le19).
[x]787.1[@]	2.9 *6*						
[x]803.6[@]	2.6 *6*						
[x]816.3[#]	4.5 *8*						
831[a]		2703.8	8^+	1873.1	6^+		
831.4	43 *2*	2706	7^-	1873.1	6^+		A_2=0.10 *4* and A_4=−0.09 *4* (1971Le19). Mult.: (D+Q).
915[a]		5717.8	16^+	4802.8	14^+		
[x]962.4[@]	3.2 *8*						
1047.3[&d]	5.8 *8*	2155?		1106.4	4^+		
1104.0	2.6 *8*	1104	2^+	0	0^+		
[x]1150.8[@]	2.1 *6*						
1264.5	11.1 *10*	2372	5^-	1106.4	4^+		
[x]1594.3[@]	2.8 *9*						

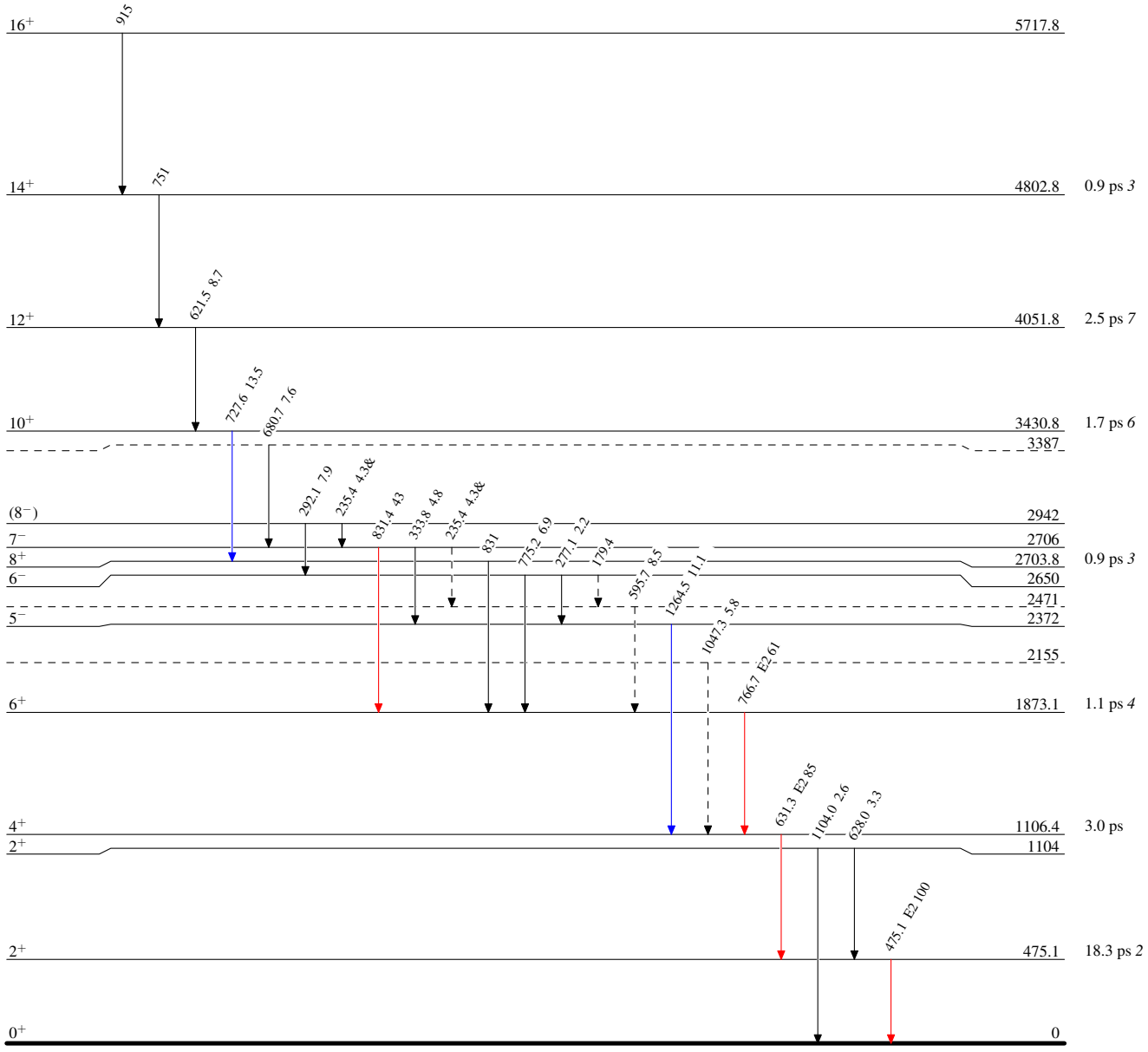
[†] Unless noted otherwise, from 1971Le19.
[‡] Overall uncertainty estimated to be ±1 keV (1971Le19).
[#] Probably assignment to ^{102}Ru based on excitation considerations.
[@] Assignment is uncertain.
[&] Probable placement based on coincidence data.
[a] From 1995Ef01 in ^{100}Mo(α,2nγ).
[b] From $\alpha\gamma(\theta)$.Q assumed E2 in gs rotational band.
[c] Multiply placed with undivided intensity.
[d] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

^{100}Mo(α,2nγ)

Level Scheme

Intensities: Type not specified
& Multiply placed: undivided intensity given

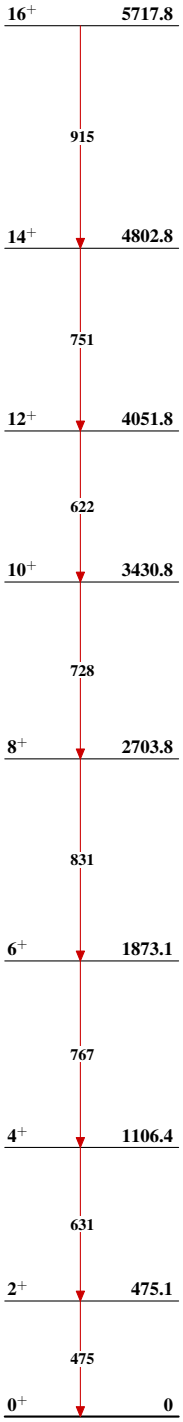
Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



$^{102}_{44}Ru_{58}$

^{100}Mo(α,2nγ)

Band(A): g.s. rotational band (1995Ef01)



$^{102}_{44}Ru_{58}$