

$^{99}\text{Ru}(\text{p},\text{n}\gamma)$ 1984Ka23

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli		NDS 145, 25 (2017)	1-Jul-2017

E=4.0 MeV to 6.5 MeV.
Measured $E\gamma$, $I\gamma$, $\gamma\gamma$, $\gamma(\theta)$, excit.

 ^{99}Rh Levels

E(level)	$J^{\pi\dagger}$	$T_{1/2}$	Comments
0	$1/2^{-}$		
65.2 18	$9/2^{+}$	4.7 h 1	$T_{1/2}$: From Adopted Levels.
201.5 18	$(7/2)^{+}$		
410.5 7			
427.2 8	$5/2^{-}$		
464.9 18	$(5/2,7/2)^{+}$		
843.4 20	$13/2^{+}$		
851.9 18	$(7/2)^{+}$		
875.2 16	$(5/2)^{+}$		
979.4 13	$9/2^{-}$		
1015.0 10	$(5/2,7/2)$		
1018.7 19	$(7/2)$		
1035.9 8	$(1/2,3/2)$		
1100.5 10	$(1/2^{-},3/2)$		
1168.5 19	$(5/2)^{+}$		
1367.5 19	$(5/2^{+})$		
1381.7 10	$(3/2)$		
1398.5?			
1407.8 13	$(5/2)$		
1431.5 19			
1477.1 13	$(3/2)$		
1528.1 13	$(3/2)^{+}$		
1536.9 19	$(5/2,7/2)^{+}$		
1616.9 20			
1618.2 13			
1623.1 20			
1626.5 16			
1736.6?			
1790.5?			
1795.5 20			
1798.6 13			
1815.3 20	$(3/2^{+},5/2^{+},7/2^{+})$		
1882.5 20			
1920.7 13			
1969.4?	$(5/2,7/2)^{+}$		
2069.4 20			

$\dagger$ Adopted values.

$^{99}\text{Ru}(\text{p},\text{n}\gamma)$ **1984Ka23** (continued)

$\gamma(^{99}\text{Rh})$					
E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
136.1 [†]		201.5	(7/2) ⁺	65.2	9/2 ⁺
263.5	44.3 15	464.9	(5/2,7/2) ⁺	201.5	(7/2) ⁺
293.3	5.5 [‡] 2	1168.5	(5/2) ⁺	875.2	(5/2) ⁺
386.7	9.4 4	851.9	(7/2) ⁺	464.9	(5/2,7/2) ⁺
399.8	12.3 4	464.9	(5/2,7/2) ⁺	65.2	9/2 ⁺
410.5	45.8 [‡] 15	410.5		0	1/2 ⁻
410.5	45.8 [‡] 15	875.2	(5/2) ⁺	464.9	(5/2,7/2) ⁺
427.3	100	427.2	5/2 ⁻	0	1/2 ⁻
523.4 ^{&}	#	1398.5?		875.2	(5/2) ⁺
552.2	16.8 5	979.4	9/2 ⁻	427.2	5/2 ⁻
588.0	16.3 5	1015.0	(5/2,7/2)	427.2	5/2 ⁻
604.3	3.0 2	1015.0	(5/2,7/2)	410.5	
625.4	2.3 1	1035.9	(1/2,3/2)	410.5	
636.1 ^{&}		1736.6?		1100.5	(1/2 ⁻ ,3/2)
647.1		1626.5		979.4	9/2 ⁻
650.3	4.7 3	851.9	(7/2) ⁺	201.5	(7/2) ⁺
652.9	@	1528.1	(3/2) ⁺	875.2	(5/2) ⁺
673.6	40.3 [‡] 12	875.2	(5/2) ⁺	201.5	(7/2) ⁺
673.6	40.3 [‡] 12	1100.5	(1/2 ⁻ ,3/2)	427.2	5/2 ⁻
689.7	4.3 2	1100.5	(1/2 ⁻ ,3/2)	410.5	
778.2	5.2 3	843.4	13/2 ⁺	65.2	9/2 ⁺
787.0	14.1 6	851.9	(7/2) ⁺	65.2	9/2 ⁺
809.8	7.8 3	875.2	(5/2) ⁺	65.2	9/2 ⁺
817.3	13.2 4	1018.7	(7/2)	201.5	(7/2) ⁺
953.3	1.2 [‡] 1	1018.7	(7/2)	65.2	9/2 ⁺
954.1	1.2 [‡] 1	1381.7	(3/2)	427.2	5/2 ⁻
966.6	7.2 [‡] 4	1431.5		464.9	(5/2,7/2) ⁺
967.1 ^{&}	7.2 4	1168.5	(5/2) ⁺	201.5	(7/2) ⁺
971.5	3.7 2	1381.7	(3/2)	410.5	
980.6	8.6 4	1407.8	(5/2)	427.2	5/2 ⁻
1035.8	11.4 5	1035.9	(1/2,3/2)	0	1/2 ⁻
1066.6	2.3 2	1477.1	(3/2)	410.5	
1072.1	1.8 2	1536.9	(5/2,7/2) ⁺	464.9	(5/2,7/2) ⁺
1100.9	@	1528.1	(3/2) ⁺	427.2	5/2 ⁻
1151.9		1616.9		464.9	(5/2,7/2) ⁺
1158.1		1623.1		464.9	(5/2,7/2) ⁺
1165.9	1.3 1	1367.5	(5/2 ⁺)	201.5	(7/2) ⁺
1191.0		1618.2		427.2	5/2 ⁻
1229.9	7.6 4	1431.5		201.5	(7/2) ⁺
1302.3	2.6 2	1367.5	(5/2 ⁺)	65.2	9/2 ⁺
1335.3	#	1536.9	(5/2,7/2) ⁺	201.5	(7/2) ⁺
1372.2 ^{&}		1798.6		427.2	5/2 ⁻
1379.9 ^{&}		1790.5?		410.5	
1388.1		1798.6		410.5	
1477.1 ^{&}	3.2 2	1477.1	(3/2)	0	1/2 ⁻
1493.5		1920.7		427.2	5/2 ⁻
1504.6 ^{&}		1969.4?	(5/2,7/2) ⁺	464.9	(5/2,7/2) ⁺
1594.0		1795.5		201.5	(7/2) ⁺
1604.4		2069.4		464.9	(5/2,7/2) ⁺
1613.8		1815.3	(3/2 ⁺ ,5/2 ⁺ ,7/2 ⁺)	201.5	(7/2) ⁺
1681.0		1882.5		201.5	(7/2) ⁺

Continued on next page (footnotes at end of table)

 $^{99}\text{Ru}(\text{p},\text{n}\gamma)$ **1984Ka23** (continued)

 $\gamma(^{99}\text{Rh})$ (continued)

† Doublet with Coulomb excitation line in ^{181}Ta .

‡ Doublet in ^{99}Rh . Total intensity only.

Weak.

@ Unresolved doublet.

& Placement of transition in the level scheme is uncertain.

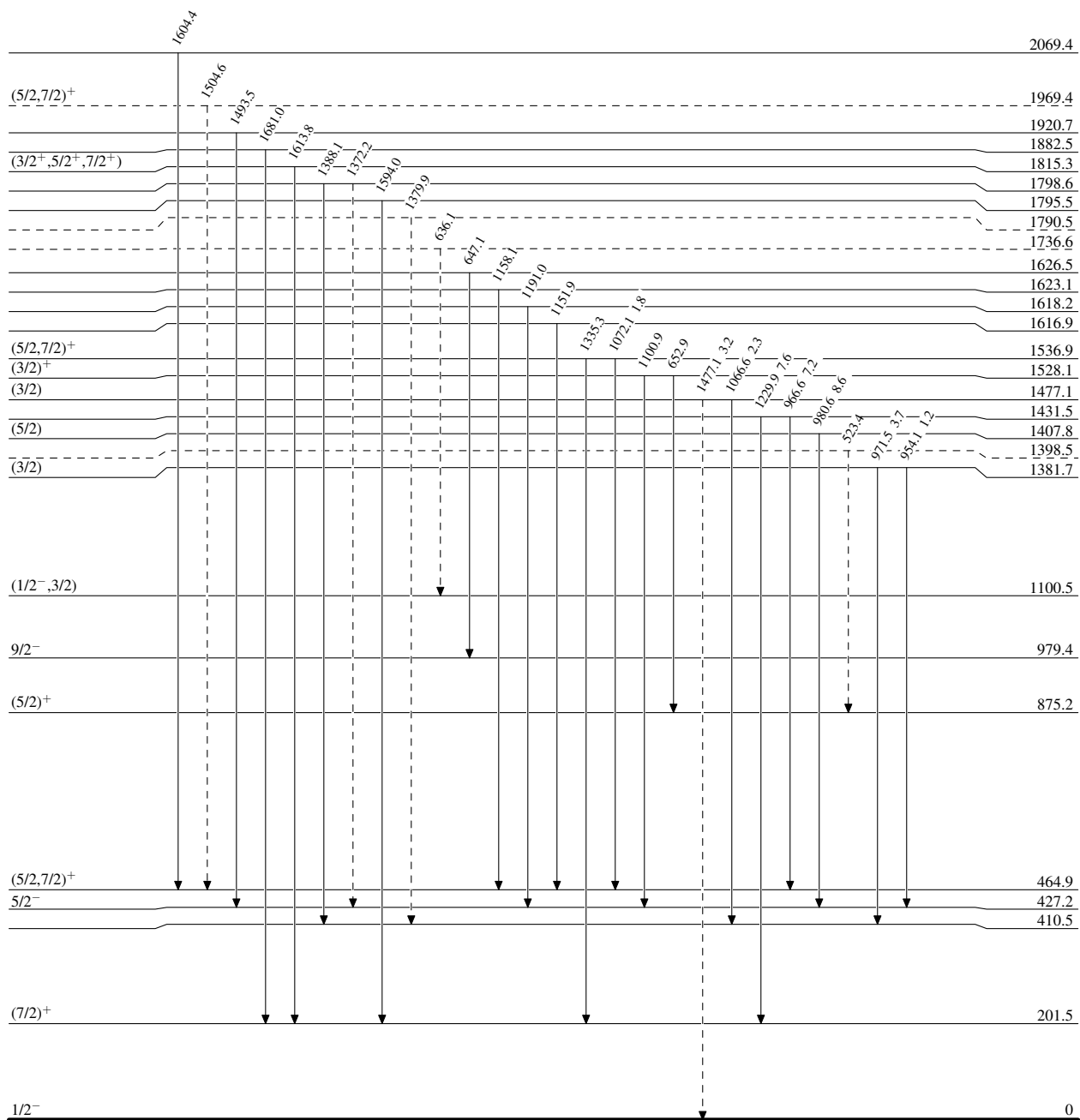
$^{99}\text{Ru}(\text{p},\text{n}\gamma)$ 1984Ka23

Legend

Level Scheme

Intensities: Relative I_γ

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

 $^{99}\text{Rh}_{54}$

$^{99}\text{Ru}(\text{p},\text{n}\gamma)$ 1984Ka23

Legend

Level Scheme (continued)

Intensities: Relative I_γ

- $\longrightarrow$ $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
 $\longrightarrow$ $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
 $\longrightarrow$ $I_\gamma > 10\% \times I_\gamma^{\text{max}}$
 $-\cdots-\longrightarrow$ γ Decay (Uncertain)

