

$^{85}\text{Rb}(\alpha, n\gamma)$ **1974Ba06**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	E. A. McCutchan and A. A. Sonzogni		NDS 115, 135 (2014)	1-Nov-2013

1988Ko08: $E\alpha=27$ MeV. Measured $T_{1/2}$ of 232 level with Ge(Li) detector using centroid-shift method.

1974Ba06: $E\alpha=11.8, 12.2$ and 13.0 MeV. Measured $E\gamma, I\gamma, \gamma(t)$ using a Ge(Li) detector.

1973BrXF: $E\alpha=14$ MeV. Measured $E\gamma, T_{1/2}$ using Doppler-shift Attenuation method (DSAM); measured $T_{1/2}$ of 232 level using Recoil distance Doppler-shift method (RDM).

1972IsZX: $E\alpha=14$ MeV. Measured $E\gamma, I\gamma$.

 ^{88}Y Levels

E(level) [†]	J^π [‡]	$T_{1/2}$ [#]	Comments
0	4^-		
231.90 <i>10</i>	5^-	0.8 ns <i>1</i>	$T_{1/2}$: from centroid-shift method (1988Ko08). Other: 0.7 ns <i>2</i> from RDM (1973BrXF).
392.88 <i>10</i>	1^+		
674.60 <i>14</i>	8^+	13.4 ms <i>6</i>	$T_{1/2}$: from $\gamma(t)$ (1974Ba06).
706.76 <i>14</i>	2^-	>10 ps	
715.14 <i>14</i>	$(6)^+$		
766.5 <i>4</i>	$(0)^+$	2.4 ps <i>+13-6</i>	
843.17 <i>13</i>	5^+	1.8 ps <i>+9-3</i>	
984.85 <i>13</i>	$(4)^+$	0.82 ps <i>8</i>	
1088.21 & <i>10</i>	$(4,5,6)^-$		J^π : assigned as 5^- in 1974Ba06 .
1129.11 <i>22</i>	$3^-, 4^-, 5^-$	<0.25 ps	J^π : assigned as $5^-, (4^-)$ in 1974Ba06 .
1221.29 <i>14</i>	$(0,1)^+$	0.44 ps <i>4</i>	J^π : assigned as $2^+, (1^+)$ in 1974Ba06 .
1266.6? @		0.110 ps <i>15</i>	
1275.3? @			
1283.96 <i>16</i>	$(3,4,5)^+$	0.19 ps <i>2</i>	J^π : assigned as 3^+ in 1974Ba06 .
1320.11 <i>14</i>	$-$	0.24 ps <i>3</i>	J^π : assigned as $6^-, (5^-, 4^-)$ in 1974Ba06 .
1461.6 <i>7</i>	$(6^-, 7^-)$	1.8 ps <i>+6-4</i>	J^π : assigned as 7^- in 1974Ba06 .
1475.5 <i>7</i>	9^+	0.11 ps <i>3</i>	
1570.5 @			
1575.47? & <i>25</i>	$(1,2)^+$		
1595.9 & <i>5</i>	$3^-, 4^-$		J^π : assigned as 4^- in 1974Ba06 .
1702.75 <i>24</i>	$3^+, 4^+$	0.130 ps <i>15</i>	J^π : assigned as 3^+ in 1974Ba06 .

[†] From a least-squares fit to $E\gamma$ by evaluators.

[‡] From the Adopted Levels.

[#] From DSAM in **1973BrXF**, except where noted.

@ Observed only by **1972IsZX**.

& Observed only by **1974Ba06**.

 $\gamma(^{88}\text{Y})$

E_γ [†]	I_γ [‡]	$E_i(\text{level})$	J_i^π	E_f	J_f^π
(40.5 [#])	<1	715.14	$(6)^+$	674.60	8^+
128.1 <i>1</i>	14.2 <i>7</i>	843.17	5^+	715.14	$(6)^+$
141.6 <i>1</i>	10.0 <i>5</i>	984.85	$(4)^+$	843.17	5^+
231.9 <i>1</i>	100 <i>5</i>	231.90	5^-	0	4^-
295.3 @a		1570.5		1275.3?	
299.1 <i>1</i>	10.3 <i>6</i>	1283.96	$(3,4,5)^+$	984.85	$(4)^+$

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$^{85}\text{Rb}(\alpha, n\gamma)$ **1974Ba06 (continued)** $\gamma(^{88}\text{Y})$ (continued)

E_γ †	I_γ ‡	$E_i(\text{level})$	J_i^π	E_f	J_f^π
313.9 1	15.0 8	706.76	2 ⁻	392.88	1 ⁺
349.6 @		1570.5		1221.29	(0,1) ⁺
373.6 3	6.8 4	766.5	(0) ⁺	392.88	1 ⁺
392.9 1	47.1 24	392.88	1 ⁺	0	4 ⁻
442.7 1	42.8 22	674.60	8 ⁺	231.90	5 ⁻
483.5 2	2.6 3	715.14	(6) ⁺	231.90	5 ⁻
509.0 @		1275.3?		766.5	(0) ⁺
611.0 2	5.7 4	843.17	5 ⁺	231.90	5 ⁻
706.3 5	1.2 6	706.76	2 ⁻	0	4 ⁻
717.9 2	5.2 5	1702.75	3 ⁺ , 4 ⁺	984.85	(4) ⁺
800.9 6	2.4 4	1475.5	9 ⁺	674.60	8 ⁺
828.4 1	12.0 8	1221.29	(0,1) ⁺	392.88	1 ⁺
842.5 3	5.8 5	843.17	5 ⁺	0	4 ⁻
868.7 ^a 2	8.5 6	1575.47?	(1,2) ⁺	706.76	2 ⁻
882.5 @ ^a		1275.3?		392.88	1 ⁺
897.2 2	8.7 6	1129.11	3 ⁻ , 4 ⁻ , 5 ⁻	231.90	5 ⁻
985.1 2	14.8 9	984.85	(4) ⁺	0	4 ⁻
1088.2 & 1	13.7 & 9	1088.21	(4,5,6) ⁻	0	4 ⁻
1088.2 & 1	13.7 & 9	1320.11	-	231.90	5 ⁻
1177.7 @		1570.5		392.88	1 ⁺
1229.7 7	2.3 6	1461.6	(6 ⁻ , 7 ⁻)	231.90	5 ⁻
1266.6 @		1266.6?		0	4 ⁻
1284.2 5	2.8 6	1283.96	(3,4,5) ⁺	0	4 ⁻
1595.9 5	6.0 5	1595.9	3 ⁻ , 4 ⁻	0	4 ⁻

† From 1974Ba06, except where noted.

‡ From 1974Ba06 at $E\alpha=12.2$ MeV.

γ expected since there is an intensity imbalance of $\Delta I_\gamma=11.6$ for the 715 level. Note that $\alpha=27.5$ if E2 and 2.4 if M1.

@ From 1972IsZX.

& Multiply placed with undivided intensity.

^a Placement of transition in the level scheme is uncertain.

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Level Scheme

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

Legend

- \blacktriangleright $I_\gamma < 2\% \times I_\gamma^{\max}$
- $\color{blue}\blacktriangleright$ $I_\gamma < 10\% \times I_\gamma^{\max}$
- $\color{red}\blacktriangleright$ $I_\gamma > 10\% \times I_\gamma^{\max}$
- $\color{gray}\text{---}\blacktriangleright$ γ Decay (Uncertain)

