

$^{40}\text{Ca}(^{39}\text{K}, \text{n}2\text{p}\gamma)$ **1988Ga13**

Type	Author	History	Citation	Literature Cutoff Date
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1988Ga13: E(^{39}K)=120 MeV. Measured E γ , I γ , $\gamma\gamma$ -coin, $\gamma(\theta)$, proton-neutron- γ coin, excitation functions, cross section.

 ^{76}Rb Levels

E(level) [†]	J π [‡]	T _{1/2}	Comments
0.0 [@]	1 ⁻		
101.29 [@] 24	2 ⁽⁻⁾		
246.21 [@] 24	3 ⁽⁻⁾		
316.7 ^{&} 4	(4 ⁺)	3.050 μs 7	T _{1/2} : from Adopted Levels.
104.4+x [#] 3			E(level): 421.1.
454.3 [@] 3	(4 ⁻)		
497.0 ^{&} 5	(5 ⁺)		
345.9+x [#] 5			E(level): 662.6.
689.4 [@] 3	(5 ⁻)		
707.0 ^{&} 5	(6 ⁺)		
636.5+x [#] 5			E(level): 953.4.
977.6 ^{&} 5	(7 ⁺)		
1009.6 [@] 4	(6 ⁻)		
1256.2 ^{&} 5	(8 ⁺)		
969.7+x [#] 5			E(level): 1286.6.
1332.7 [@] 4	(7 ⁻)		
1619.9 ^{&} 6	(9 ⁺)		
1362.0+x [#] 5			E(level): 1678.8.
2018.9 ^{&} 6	(10 ⁺)		

[†] From a least-squares fit to γ -ray energies.

[‡] From possible band assignments. The $\gamma(\theta)$ data indicate DJ=1 for selected transitions in a band.

Value of x=316.7 for this level to correspond to a level in the Adopted Levels, Gammas dataset.

@ Band(A): $K^\pi=1^-$ band.

& Band(B): $K^\pi=4^+$ band.

 $\gamma(^{76}\text{Rb})$

E γ [†]	I γ [†]	E _i (level)	J π _i	E _f	J π _f	Mult. [‡]	Comments
70.5 3	41 4	316.7	(4 ⁺)	246.21	3 ⁽⁻⁾	D	
101.2 3	100 10	101.29	2 ⁽⁻⁾	0.0	1 ⁻	D	A ₂ =-0.15 4; A ₄ =-0.08 4
104.4 3	18 4	104.4+x					A ₂ =+0.3 2; A ₄ =-0.1 1
145.0 3	100 10	246.21	3 ⁽⁻⁾	101.29	2 ⁽⁻⁾	D	A ₂ =-0.21 3; A ₄ =+0.02 4
180.2 3	54 6	497.0	(5 ⁺)	316.7	(4 ⁺)	D	A ₂ =-0.6 2; A ₄ =+0.01 6
208.2 3	15 3	454.3	(4 ⁻)	246.21	3 ⁽⁻⁾	D	A ₂ =-0.34 8; A ₄ =-0.03 4
210.0 3	31 3	707.0	(6 ⁺)	497.0	(5 ⁺)	D	A ₂ =-0.7 2; A ₄ =+0.04 8
235.1 3	9 2	689.4	(5 ⁻)	454.3	(4 ⁻)	D	A ₂ =-0.2 1; A ₄ =-0.1 2
241.5 3	26 3	345.9+x		104.4+x		D	A ₂ =-0.5 2; A ₄ =+0.03 5
246.3 3	6 1	246.21	3 ⁽⁻⁾	0.0	1 ⁻		
270.7 3	15 3	977.6	(7 ⁺)	707.0	(6 ⁺)		
278.7 3	10 2	1256.2	(8 ⁺)	977.6	(7 ⁺)	D	A ₂ =-0.7 3; A ₄ =+0.1 4

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$^{40}\text{Ca}(^{39}\text{K}, \text{n}2\text{p}\gamma)$ 1988Ga13 (continued) $\gamma(^{76}\text{Rb})$ (continued)

E_γ [†]	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [‡]	Comments
290.8 3	14 3	636.5+x		345.9+x		D	$A_2=-0.7$ 3; $A_4=+0.1$ 4
320.4 3	3 1	1009.6	(6 ⁻)	689.4	(5 ⁻)		
323.2 3	2 1	1332.7	(7 ⁻)	1009.6	(6 ⁻)		
333.2 3	7 2	969.7+x		636.5+x		D	$A_2=-0.8$ 4; $A_4=+0.01$ 4
352.9 3	2 1	454.3	(4 ⁻)	101.29	2 ⁽⁻⁾		
363.8 3	3 1	1619.9	(9 ⁺)	1256.2	(8 ⁺)	D	$A_2=-0.4$ 3; $A_4=+0.05$ 8
390.3 3	4 1	707.0	(6 ⁺)	316.7	(4 ⁺)		
392.2 3	2 1	1362.0+x		969.7+x			
398.5 [#]		2018.9	(10 ⁺)	1619.9	(9 ⁺)		
443.3 3	3 1	689.4	(5 ⁻)	246.21	3 ⁽⁻⁾		$A_2=+0.2$ 3; $A_4=-0.4$ 6
480.6 3	3 1	977.6	(7 ⁺)	497.0	(5 ⁺)		
532.1		636.5+x		104.4+x			
549.2 3	5 1	1256.2	(8 ⁺)	707.0	(6 ⁺)		$A_2=+0.2$ 1; $A_4=-0.2$ 3
555.2 3	2 1	1009.6	(6 ⁻)	454.3	(4 ⁻)		
623.6 3	2 1	969.7+x		345.9+x			
642.2 3	2 1	1619.9	(9 ⁺)	977.6	(7 ⁺)		
643.2 3	1.0 5	1332.7	(7 ⁻)	689.4	(5 ⁻)		
725.6 3	1.0 5	1362.0+x		636.5+x			
762.7 3	1.0 5	2018.9	(10 ⁺)	1256.2	(8 ⁺)		

[†] From 1988Ga13. At 90°. Uncertainties on intensities are assigned as follows based on a general statement by 1988Ga13 that these are 10% for strong and 40% for weak lines: 10% for $I_\gamma > 20$, 20% for $I_\gamma = 5-20$, 40% for $I_\gamma < 5$.

[‡] From $\gamma(\theta)$ in 1988Ga13.

[#] Placement of transition in the level scheme is uncertain.

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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)



