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Thermal-Neutron Capture for $A = 36-44$

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*Research carried out under the IAEA Contract No. 10693/CPR

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Abstract:

A new evaluation has been undertaken of the level properties, prompt gamma rays and decay scheme properties of thermal neutron capture for nuclides with mass number A=36-44. The cutoff date is indicated below. This evaluation is effectively an update of the data table of the Prompt Gamma Rays from Thermal Neutron Capture as published in Atomic Data and Nuclear Data Tables 26, 511, (1981).

Cutoff date:

March 2002. All references from Nuclear Science References File (NSRF) and private communications have been considered

(Manuscript received May 2002)

$^{36}\text{Ar}(n,\gamma)$ E=thermal 1970Ha56Target $J\pi=0+$.Measured E_γ , I_γ with Ge(Li)–NaI(Tl) in nether a Compton-suppressed or a pair spectrometer. ^{37}Ar Levels

$E(\text{level})^\dagger$	$J\pi^\dagger$	$T_{1/2}^\dagger$	Comments
0.0	3/2+	35.04 d 4	% $\epsilon=100$.
1409.82 10	1/2+	660 fs 140	
1611.27 7	7/2-	4.37 ns 9	
2490.6 3	3/2-	560 fs 100	
3518.3 3	3/2-	38 fs 20	
8788.9 4	1/2+		E(level): from evaluated s(n) (95Au04). J π : from s-wave neutron capture. Observed deexcitation intensity is 77% of g.s. feeding.

 † From adopted levels, except as noted. $\gamma(^{37}\text{Ar})$

I_γ normalization: normalized from assuming $I_\gamma(\text{to g.s.})=100$.
 $\sigma_n=5.2$ b 5.

E_γ	$E(\text{level})$	$I_\gamma^\dagger\#$	Mult. ‡	$\delta^\ddagger$
(879.3 ‡)	2490.6	0.08 ‡		
(1027.7 ‡)	3518.3	0.17 ‡		
1409.7 10	1409.82	0.8		
(1611.23 ‡)	1611.27	0.08 §	M2+E3	-0.12 1
2108.0 15	3518.3	0.48		
2490.8 8	2490.6	1.1	E1 (+M2)	-0.08 9
5270.6 12	8788.9	0.47		
6298.9 10	8788.9	0.96		
7380.3 20	8788.9	0.04		
8787.7 20	8788.9	0.26		

 † Relative γ -ray intensity per 100 neutron captures. No uncertainty given by authors. Errors $\geq 10\%$ estimated by evaluators. ‡ From adopted gammas. § From intensity balance. $^\#$ For intensity per 100 neutron captures, multiply by 44.6.Level Scheme

Intensities: $I(\gamma+ce)$ per 100 parent
decays

$^{36}\text{S}(\text{n},\gamma)$ E=thermal 1984Ra09,1997Be42Target $J\pi=0+$.Measured $E\gamma$, $I\gamma$ with Ge(Li)–NaI(Tl) in either a Compton-suppressed or a pair spectrometer mode. ^{37}S Levels

$E(\text{level})^\dagger$	$J\pi^\dagger$	$T_{1/2}^\dagger$	Comments
0.0	7/2–	5.05 min	2 % β –=100.
646.18 1	3/2–		
1397.51 18	(3/2+, 5/2+)		
1991.93 5	3/2–		
2022.87 10	(5/2–, 7/2–)		
2637.86 3	1/2–		
3261.90 5	3/2–		
3492.71 8	3/2–		
4303.58 9	1/2+		

 $E(\text{level})$: from evaluated s(n) (95Au04). $J\pi$: from s-wave neutron capture.

Observed deexcitation intensity is 105% of g.s. feeding.

 † From adopted levels, except as noted. $\gamma(^{37}\text{S})$ $I\gamma$ normalization: normalized from assuming $I\gamma(\text{to g.s.})=100$. $\sigma_n=0.15$ b 3.

$E\gamma$	$E(\text{level})$	$I\gamma^\dagger\text{\%}$	$E\gamma$	$E(\text{level})$	$I\gamma^\dagger\text{\%}$
646.171 14	646.18	215 23	1665.695 22	4303.58	52 7
751.32 18	1397.51	1.5 3	1991.585 36	2637.86	54 7
810.85 7	4303.58	2.4 3	1991.9 5	1991.93	≈ 2
1041.713 35	4303.58	8.1 10	2022.9 5	2022.87	≈ 3
1239.18 11	3261.90	3.1 5	2311.65 8	4303.58	9.4 12
1345.75 5	1991.93	7.3 8	2615.68 12	3261.90	6.0 10
1376.99 21	2022.87	1.2 3	3657.28 7	4303.58	161 18
1469.50 22	3492.71	1.4 3			

 † Relative γ -ray intensity per 100 neutron captures. $\text{\%}$ For intensity per 100 neutron captures, multiply by 0.45.Level SchemeIntensities: $I(\gamma+\text{ce})$ per 100 parent decays

$^{37}\text{Cl}(n,\gamma)$ E=thermal 1973Sp06Target $J\pi=3/2+$.Measured E_γ , I_γ with Ge(Li) spectrometer. ^{38}Cl Levels

$E(\text{level})^\dagger$	$J\pi^\dagger$	$T_{1/2}^\dagger$	Comments
0.0	2-	37.24 min 5	% $\beta^-=100$.
671.361 8	5-	715 ms 3	%IT=100.
755.424 10	3-	220 fs 30	
1309.047 14	4-	370 fs 55	
1617.411 15	3-	1.5 ps 2	
1692.461 18	(1,2)-	0.9 ps 2	
1745.81 4	(0,1)-	0.7 ps 3	
1784.81 17	(2,3,4)-	66 fs 14	
1941.998 14	1+		
1981.190 16	(2,3)-	350 fs 55	
2742.88 12	3-	<20 fs	
2894.9 4	(0 to 3)-		
3093			
3538.1 6	(0 to 3)-		
3564.8 5	(0 to 3)-		
3685.2 2	(0 to 3)-		
3756.2 4	(0 to 3)-		
3821.57 17	(1,2,3)-		
3862.4 5	(1,2,3)-		
3893.39 11	(1,2,3)-		
3974.10 19	(0 to 3)-		
4010.8 3	(0 to 3)-		
4073			
4287.0 4	(0 to 3)-		
4406			
4834.6 3	(0 to 3)-		
6107.78 10	1+, 2+		

E(level): from evaluated s(n)(95Au04).

J π : from s-wave neutron capture.

Observed deexcitation intensity is 92% of g.s. feeding.

 † From adopted levels, except as noted. $\gamma(^{38}\text{Cl})$ I_γ normalization: normalized from assuming $I_\gamma(\text{to g.s.})=100$. $\sigma_n=0.433$ b 6.

E_γ	$E(\text{level})$	$I_\gamma^\dagger\#$	Mult. †	E_γ	$E(\text{level})$	$I_\gamma^\dagger\#$
(196.186 †)	1941.998	0.0007 † 2		1433.98 16	2742.88	2.6 2
288.60 $^\oplus$ 20	1981.190	2.4 $^\oplus$ 2	(M1)	$\times$ 1469.5 5		0.5 2
	3974.10	2.4 $^\oplus$ 2		1617.12 14	1617.411	4.5 2
308.40 8	1617.411	12.1 4	(M1)	$\times$ 1654.28 20		1.6 2
363.90 12	1981.190	5.0 2	(M1)	1692.11 14	1692.461	21.1 5
554.0 10	1309.047	2.7 2	(M1)	1701 3	6107.78	0.5 4
637.5 3	1309.047	11.5 2	(M1)	1745.31 17	1745.81	6.0 2
671.29 $^\oplus$ 15	671.361	12.4 $^\oplus$ 3	M3	1818.7 9	3564.8	=0.2
	3564.8	12.4 $^\oplus$ 3		1820.8 3	6107.78	0.9 2
723.2 $^\oplus$ 3	4287.0	0.5 $^\oplus$ 2		$\times$ 1869.6 5		0.5 2
	4406	0.5 $^\oplus$ 2		1912.25 20	3893.39	1.0 2
755.46 15	755.424	29.0 6	(M1)	$\times$ 1936.9 3		0.8 3
862.4 3	1617.411	6.7 7		1941.6 3	1941.998	0.7 2
936.8 3	1692.461	1.7 3		1971.8 6	3756.2	=0.3
945.89 20	1617.411	0.8 2	(E2)	1980.87 17	1981.190	9.9 2
958.20 17	2742.88	2.0 2	(M1)	1987.5 3	2742.88	0.7 2
1029.57 15	1784.81	2.2 2	(M1)	1992.8 $^\oplus$ 5	3685.2	1.6 $^\oplus$ 2
1125.68 20	2742.88	1.1 2	(M1)		3974.10	1.6 $^\oplus$ 2
1225.67 11	1981.190	5.4 2		2030.04 20	4010.8	0.5 2
1273.08 20	6107.78	0.7 2		2034.54 20	6107.78	1.0 5
1308.8 4	1309.047	1.0 2	(E2)	2092.2 $^\oplus$ 6	4073	0.4 $^\oplus$ 2

Continued on next page (footnotes at end of table)

$^{37}\text{Cl}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{38}\text{Cl})$ (continued)

E_γ	E(level)	$I_\gamma^\dagger\#$	E_γ	E(level)	$I_\gamma^\dagger\#$
2092.2@& 6	4834.6	0.4@ 2	2895.1@ 5	2894.9	1.7@ 2
2096.24 20	6107.78	1.8 2		3564.8	1.7@ 2
2133.44 20	6107.78	2.9 2	3050.9 20	4834.6	0.8 2
(2200.72 $\ddagger$)	3893.39	0.4 $\ddagger$ 2	3137.9 4	3893.39	2.3 2
2201.0 4	3093	0.4 2	$\times$ 3202.0 6		0.5 2
2205.1 4	3821.57	1.2 2	3213.0 8	6107.78	1.0 2
2214.48 17	6107.78	5.8 2	3364.74 20	6107.78	8.5 13
2245.1@ 5	3862.4	1.2@ 2	3538.2 6	3538.1	1.5 6
	6107.78	1.2@ 2	3566.2 10	3564.8	0.9 2
$\times$ 2248.8 19		$\approx$ 0.1	$\times$ 3635.1 15		1.6 5
2276.3 3	3893.39	0.5 2	3683.7 18	3685.2	2.1 2
2285.63 20	6107.78	2.3 2	3892.8 20	3893.39	1.4 7
$\times$ 2289.9 4		0.5 2	3974.5 6	3974.10	2.0 10
2351.4 3	6107.78	1.1 3	(4010.1 $\ddagger$)	4010.8	1.3 $\S$
2422.8@& 3	4406	1.9@ 2	4126.7 3	6107.78	16.8 17
	6107.78	1.9@ 2	4165.3 4	6107.78	1.0 2
2544.3@ 10	4287.0	0.4@ 2	4361.8 3	6107.78	4.7 5
	6107.78	0.4@ 2	4405.1 10	4406	1.0 2
2569 3	6107.78	0.4 2	4415.1 3	6107.78	12.8 19
$\times$ 2705.3 3		1.4 2	$\times$ 4422.4 7		2.2 6
$\times$ 2733.5 18		$\approx$ 0.1	4490.3 4	6107.78	15.1 12
2743.1 5	2742.88	1.5 2	$\times$ 4734.8 7		0.9 3
$\times$ 2813.5 8		0.9 3	5351.9 4	6107.78	7.6 4
$\times$ 2830.9 20		$\approx$ 0.2	6107 4	6107.78	3.3 23
$\times$ 2854.9 7		1.3 5			

 $\dagger$ Absolute γ -ray intensity per 100 neutron captures. $\ddagger$ From adopted gammas. $\S$ From intensity balance.

For intensity per 100 neutron captures, multiply by 1.

@ Multiply placed; undivided intensity given.

& Placement of transition in the level scheme is uncertain.

 $\times$ γ ray not placed in level scheme.

$^{37}\text{Cl}(n,\gamma)$ E=thermal (continued)

Level Scheme

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{38}_{17}\text{Cl}_{21}$

$^{38}_{17}\text{Cl}_{21}$

$^{37}\text{Cl}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{39}\text{K}(\text{n},\gamma)$ E=thermal 1984Vo01Target $J\pi=3/2+$.Measured $E\gamma$, $I\gamma$ with grenoble ILL curved crystal spectrometer GAMS, a large-volume Ge(Li) detctor, and pair spectrometer. **^{40}K Levels**

E(level) [†]	$J\pi^{\dagger}$	$T_{1/2}^{\dagger}$	Comments
0.0	4-	1.277×10^9 y 8	$\% \beta^- = 89.28$ 13; $\% \epsilon + \% \beta^+ = 10.72$ 13.
29.8299 6	3-	4.24 ns 9	
800.143 2	2-	280 fs 40	
891.40 3	5-	0.87 ps 14	
1643.65 2	0+	335 ns 10	
1959.08 2	2+	0.59 ps 10	
2047.35 3	2-	340 fs 40	
2069.81 3	3-	0.47 ps 10	
2103.67 4	1-	0.52 ps 10	
2260.40 6	3+	60 fs 10	
2289.88 3	1+	85 fs 15	
2290.50 4	3-	155 fs 20	
2397.17 4	4-	35 fs 15	
2419.18 4	2-	0.55 ps 14	
2575.95 5	2+	130 fs 20	
2626.00 4	0-	215 fs 35	
2730.38 4	1	<30 fs	
2746.92 6	(2,3)-	130 fs 35	
2756.73 4	2+	<20 fs	
2786.65 4	3+	<30 fs	
2787.1 5	(3,4)-	<40 fs	
2807.89 4	(1,2)-	140 fs 40	
2985.87 5	(2-,3+)	70 fs 30	
3027.97 5	2-	<50 fs	
3109.75 4	(1,2)+	<100 fs	
3128.38 8	2-	<20 fs	
3146.44 9	1		
3153.82 7	(2,3)-	<20 fs	
3228.68 9	2-	30 fs 20	
3368.04 11	(2,3)-		
3393.64 7	2-		
3414.36 5	2+		
3439.16 4	(1-,2+)		
3486.17 5	2-		
3556.97 5	(1- to 4+)		
3599.24 5	2-		
3629.94 6	3-	<70 fs	
3663.75 5	(3,4)+		
3738.50 5	1+		
3767.87 14	(0 to 3)-		
3797.58 6	1+		
3821.43 5	2-		
3840.25 5	(1,2+)		
3868.67 6	2-		
3887.93 6	(1- to 3)		
3923.8 4	(1- to 4+)		
4020.35 6	(0 to 3)-		
4104.47 7	(1- to 3-)		
4110.86 5	(1- to 3)		
4149.01 6	(2-,3)		
4180.04 8	3-		
4213.07 15	(2-,3+)		
4253.63 7	1-		
4280.54 10	(2-,3)		
4395.90 6	(0,1,2)-		
4419.38 8	(2- to 4+)		
4473.00 8	(2,3)-		
4537.08 8	2-		
4744.11 6	2+		

Continued on next page (footnotes at end of table)

$^{39}\text{K}(\text{n},\gamma)$ E=thermal (continued) **^{40}K Levels (continued)**

E(level) [†]	J π [†]	Comments
4788.65 17	1+	
4872.56 9	(2, 3) -	
4992.96 11	(2-, 3+)	
5063.49 7	(2-, 3+)	
7799.50 8	1+, 2+	

E(level): from 95Au04.
J π : from s-wave neutron capture.
Observed deexcitation intensity is 84% of g.s. feeding.

[†] From adopted levels, except as noted.

 $\gamma(^{40}\text{K})$

$\sigma_n=2.1$ b 2.

I γ normalization: normalized from assuming I γ (to g.s.)=100.

E γ ^S	E(level)	I γ ^{†#}	Mult. [†]	δ [†]	α	Comments
29.8299 5	29.8299	66 5	(M1)		0.308	I γ : from I(γ +ce)=86.2 7, calculated from total intensity feeding the level, and corrected for internal conversion.
185.97 [@] 10	2289.88	0.118 [@] 19				
	3414.36	0.118 [@] 19				
	3923.8	0.118 [@] 19				
311.13 4	2730.38	0.133 5				
315.52 [@] 8	2419.18	0.062 [@] 8				
	2575.95	0.062 [@] 8				
	4788.65	0.062 [@] 8				
320.9 6	3128.38	0.009 5				
327.23 8	2397.17	0.062 8	(M1)			
330.797 7	2289.88	0.33 3	(M1)			
335.44 [@] 14	3821.43	0.040 [@] 6				
	4872.56	0.040 [@] 6				
337.75 12	2756.73	0.036 6	(E1)			
349.33 3	2419.18	0.053 7				
371.79 [@] 1	2419.18	0.172 [@] 18				
	3128.38	0.172 [@] 18				
376.53 3	3486.17	0.031 4				
383.01 18	3797.58	0.020 4				
397.28 17	3153.82	0.030 7	(E1)			
440.77 7	4104.47	0.047 7				
^x 444.43 8		0.037 5				
454.19 8	3868.67	0.038 5				
460.089 [@] 14	2103.67	0.136 [@] 15				
	2419.18	0.136 [@] 15				
496.06 4	2786.65	0.047 5	(E1)			
(496.6 [†])	2787.1	0.14 [†]	(M1)			
504.5 5	4104.47	0.062 18				
522.315 7	2626.00	1.53 16	M1			
528.76 [@] 14	2575.95	0.017 [@] 3				
	3556.97	0.017 [@] 3				
534.3 [@] 3	3109.75	0.009 [@] 3				
	3663.75	0.009 [@] 3				
	4020.35	0.009 [@] 3				
	4788.65	0.009 [@] 3				
^x 554.74 23		0.133 17				
^x 558.73 10		0.044 7				
563.86 6	4744.11	0.073 9				
^x 569.98 7		0.062 8				
602.26 17	3629.94	0.034 6				
613.379 24	3599.24	0.203 23				
^x 616.42 6		0.096 11				
620.95 [@] 7	3368.04	0.070 [@] 8				
	3767.87	0.070 [@] 8				

Continued on next page (footnotes at end of table)

$^{39}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{40}\text{K})$ (continued)

$E_\gamma^{\text{§}}$	E(level)	$I_\gamma^{\text{†\#}}$	Mult. [†]	$\delta^{\text{†}}$
626.1 ^{@ 3}	2730.38	0.010 ^{@ 3}		
	4020.35	0.010 ^{@ 3}		
627.65 ³	3414.36	0.095 ¹⁰		
640.4 ^{@ 6}	3767.87	0.044 ^{@ 22}		
	3868.67	0.044 ^{@ 22}		
	4744.11	0.044 ^{@ 22}		
	4788.65	0.044 ^{@ 22}		
646.217 ⁵	2289.88	2.10 ¹²	M1	
657.38 ³	4395.90	0.078 ⁸		
^x 666.90 ⁵		0.057 ⁶		
678.12 ^{@ 20}	3486.17	0.027 ^{@ 5}		
	3663.75	0.027 ^{@ 5}		
	4788.65	0.027 ^{@ 5}		
695.30 ^{@ 8}	2985.87	0.042 ^{@ 6}		
	3923.8	0.042 ^{@ 6}		
727.1 ^{@ 3}	3146.44	0.014 ^{@ 3}		
	4213.07	0.014 ^{@ 3}		
730.47 ¹⁵	3840.25	0.024 ⁴		
737.44 ³	3027.97	0.146 ¹⁵	(E1)	
740.88 ⁶	4180.04	0.26 ³		
756.4 ^{@ 6}	3153.82	0.08 ^{@ 4}		
	3486.17	0.08 ^{@ 4}		
	4149.01	0.08 ^{@ 4}		
	4419.38	0.08 ^{@ 4}		
760.6 ⁴	2807.89	0.12 ⁴		
770.2973 ¹⁸	800.143	42.9 ³⁹	M1 (+E2)	0.00 ¹
(771.27 [†])	2730.38	0.37 [†]		
^x 783.81 ⁴		0.103 ¹¹		
(787.81 [†])	2746.92	0.0033 [†]	(E1)	
^x 791.05 ⁴		0.50 ⁵		
798.8 ^{@ 3}	4213.07	0.062 ^{@ 7}		
	4537.08	0.062 ^{@ 7}		
800.3 ^{@ 3}	800.143	0.063 ^{@ 7}		
	3556.97	0.063 ^{@ 7}		
811.38 ¹³	3797.58	0.023 ⁴		
813.11 ^{@ 7}	3439.16	0.046 ^{@ 6}		
	4992.96	0.046 ^{@ 6}		
827.543 ¹⁵	2786.65	0.45 ⁵	M1+E2	-0.09 ⁷
838.8 ⁵	3128.38	0.066 ¹⁷	(E1)	
843.468 ¹⁶	1643.65	1.57 ¹⁶	M2	
848.7 ^{@ 3}	2807.89	0.104 ^{@ 19}		
	3109.75	0.104 ^{@ 19}		
862.2 ^{@ 3}	891.40	0.012 ^{@ 3}		
	4419.38	0.012 ^{@ 3}		
^x 869.96 ⁴		0.143 ¹⁵		
891.361 ²¹	891.40	0.90 ⁹	M1+E2	+0.099 ⁸
903.867 ²³	4744.11	0.150 ¹⁵		
^x 915.37 ¹⁶		0.017 ³		
920.11 ^{@ 18}	4149.01	0.017 ^{@ 3}		
	4788.65	0.017 ^{@ 3}		
^x 926.23 ¹⁵		0.019 ⁴		
938.71 ⁶	3228.68	0.098 ¹¹	(E1)	
946.28 ⁸	4744.11	0.037 ⁴		
951.15 ⁷	4180.04	0.043 ⁵		
958.34 ⁹	3027.97	0.026 ³		
^x 971.73 ¹⁹		0.028 ⁵		
^x 976.84 ⁶		0.109 ¹²		
981.02 ^{@ 7}	3556.97	0.103 ^{@ 12}		
	3767.87	0.103 ^{@ 12}		
1001.04 ⁵	4110.86	0.081 ⁹		
^x 1018.10 ⁴		0.141 ¹⁵		
1023.20 ⁴	3599.24	0.26 ³		
1027.08 ²⁴	2985.87	0.036 ⁸		

Continued on next page (footnotes at end of table)

$^{39}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{40}\text{K})$ (continued)

$E_\gamma^{\text{§}}$	E(level)	$I_\gamma^{\text{†\#}}$	Mult. [†]	$\delta^{\text{†}}$
$^{x}1031.1\ 3$		0.020 5		
$1034.27^{\text{®}}\ 20$	3821.43	0.038 [®] 6		
	4020.35	0.038 [®] 6		
	4473.00	0.038 [®] 6		
$^{x}1043.57\ 12$		0.023 3		
$^{x}1058.01\ 4$		0.112 12		
$1062.18\ 8$	3109.75	0.052 6	(E1)	
$1068.85^{\text{®}}\ 3$	3027.97	0.40 [®] 4	(E1)	
	4992.96	0.40 [®] 4		
$1074.37\ 9$	3821.43	0.144 17		
$1079.42\ 13$	4473.00	0.100 13		
$1082.90\ 7$	4110.86	0.200 22		
$1086.691\ 19$	2730.38	1.11 11	D	
$1090.9\ 3$	3821.43	0.037 9		
$^{x}1096.70\ 7$		0.101 11		
$1100.11\ 18$	4253.63	0.042 6		
$^{x}1110.48\ 7$		0.114 12		
$1113.3\ 3$	2756.73	0.029 5	E2	
$1118.36\ 13$	4104.47	0.054 7		
$1121.75\ 7$	3868.67	0.111 12		
$1124.89^{\text{®}}\ 6$	3228.68	0.120 [®] 13		
	4253.63	0.120 [®] 13		
$1124.9^{\text{®}}\ 6$	4110.86	0.120 [®] 13		
	4788.65	0.120 [®] 13		
$1131.15\ 5$	3887.93	0.103 11		
$1144.7\ 5$	4744.11	0.08 3		
$1150.56\ 18$	3109.75	0.23 4		
$1158.88\ 20$	1959.08	7.8 8	E1 (+M2)	0.00 2
$1162.57^{\text{®}}\ 24$	3738.50	0.31 [®] 5		
	4149.01	0.31 [®] 5		
$^{x}1172.18\ 11$		0.042 5		
$1178.36\ 4$	2069.81	0.36 4	E2 (+M3)	=0.0
$1187.43\ 8$	3146.44	0.062 7		
$1195.79\ 7$	3486.17	0.055 6		
$^{x}1201.84\ 5$		0.106 11		
$^{x}1204.34\ 10$		0.046 6		
$^{x}1213.51\ 8$		0.047 5		
$^{x}1219.45\ 11$		0.041 5		
$1221.69\ 7$	3797.58	0.067 7		
$^{x}1226.29\ 5$		0.071 8		
$1232.72\ 3$	3629.94	0.134 14		
$1247.152\ 24$	2047.35	3.8 4	M1+E2	+0.10 3
$^{x}1255.27\ 9$		0.107 12		
$1265.52\ 9$	4419.38	0.199 23		
$1267.5^{\text{®}}\ 3$	3556.97	0.105 [®] 21		
	4253.63	0.105 [®] 21		
	4395.90	0.105 [®] 21		
$1269.54\ 5$	2069.81	0.47 5	M1+E2	-0.15 8
$^{x}1283.3\ 3$		0.051 16		
$1303.51\ 7$	2103.67	2.7 3	M1+E2	+0.35 16
$1308.9^{\text{®}}\ 4$	3599.24	0.043 [®] 17		
	4419.38	0.043 [®] 17		
	4537.08	0.043 [®] 17		
$1320.9\ 4$	3368.04	0.30 3		
$^{x}1331.56\ 4$		0.152 16		
$1335.46\ 18$	3439.16	0.033 6		
$1348.04^{\text{®}}\ 14$	3767.87	0.035 [®] 4		
	3923.8	0.035 [®] 4		
	4104.47	0.035 [®] 4		
$1354.10\ 3$	4110.86	0.161 7		
$^{x}1365.03\ 24$		0.066 12		
$(1369.27^{\text{†}})$	3439.16	0.03 [†]		
$1373.202\ 21$	3663.75	1.29 13		

Continued on next page (footnotes at end of table)

$^{39}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{40}\text{K})$ (continued)

$E_\gamma^{\text{§}}$	E(level)	$I_\gamma^{\text{‡\#}}$	Mult. [†]	$\delta^{\text{†}}$
x1377.13 11		0.122 16		
1393.13 8	4180.04	0.126 14		
1399.00 4	2290.50	0.53 5	(E2)	
x1402.70 9		0.125 14		
x1416.64 9		0.048 6		
x1418.98 3		0.233 24		
1424.202 23	3821.43	0.36 4		
1427.42 18	4537.08	0.022 3		
1434.47 6	3393.64	0.140 15		
1438.69 4	3486.17	0.218 23		
x1449.95 6		0.047 5		
x1452.36 12		0.0200 20		
x1454.87 10		0.025 3		
x1460.78 10		0.049 6		
1466.08 3	3109.75	0.26 3		
x1473.63 16		0.036 5		
1477.98 6	3738.50	0.32 3		
1480.06 4	3439.16	1.54 16		
x1483.83 8		0.077 9		
1487.39 [®] 9	3556.97	0.097 [®] 12		
	4473.00	0.097 [®] 12		
1489.74 5	2289.88	1.21 12	E1 (+M2)	0.00 5
1502.97 10	3146.44	0.41 4	D	
1509.9 [®] 3	3153.82	0.022 [®] 4		
	3556.97	0.022 [®] 4		
x1517.07 9		0.122 14		
x1520.99 21		0.059 9		
1530.7 3	3821.43	0.058 14		
x1536.81 5		0.26 3		
1551.74 9	3599.24	0.102 12		
1560.41 19	3629.94	0.175 21		
x1562.75 7		0.31 3		
x1566.18 7		0.155 17		
1578.94 12	3868.67	0.035 4		
1597.85 4	3556.97	0.29 3		
1613.81 4	1643.65	5.7 6	E3	
1618.96 4	2419.18	6.2 6	M1+E2	+0.24 6
x1625.63 14		0.32 4		
1665.39 4	4395.90	0.143 15		
x1667.65 5		0.102 11		
x1680.8 4		0.010 3		
1691.22 6	3738.50	0.111 12		
1695.40 8	5063.49	0.100 11		
x1702.31 3		0.33 3		
1704.66 20	4280.54	0.31 16		
1704.69 9	3663.75	0.94 12		
x1710.15 24		0.023 4		
1718.64 4	4872.56	0.166 7		
1725.64 [®] 17	4473.00	0.033 [®] 5		
	4872.56	0.033 [®] 5		
1751.72 5	4149.01	0.225 23		
x1754.68 17		0.036 5		
1761.06 [®] 7	4180.04	0.030 [®] 4		
1761.06 [®] 17	4788.65	0.030 [®] 4		
1765.20 15	3868.67	0.224 23		
1771.4 [®] 5	3414.36	0.031 [®] 9	E2	
	3840.25	0.031 [®] 9		
1795.41 4	3439.16	1.34 14		
x1811.2 3		0.032 6		
1813.90 14	4104.47	0.072 9		
1820.31 [®] 5	3923.8	0.27 [®] 3		
	4110.86	0.27 [®] 3		
1825.73 5	2626.00	0.65 7	E2	

Continued on next page (footnotes at end of table)

$^{39}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{40}\text{K})$ (continued)

$E_\gamma^{\text{§}}$	E(level)	$I_\gamma^{\text{‡\#}}$	Mult. [†]	$\delta^{\text{†}}$
x1831.96 5		0.117 12		
1838.56 8	3797.58	0.44 4		
1843.28 9	4419.38	0.065 7		
1846.67 [®] 6	4473.00	0.105 [®] 11		
	4992.96	0.105 [®] 11		
x1854.94 5		0.202 21		
1858.46 5	4149.01	0.54 5		
1881.15 5	3840.25	0.50 5		
1888.38 8	4149.01	0.098 11		
x1892.0 3		0.037 5		
(1895.6 [†])	2787.1	0.06 [†]		
x1901.6 4		0.029 5		
x1910.65 6		0.171 18		
1916.46 6	4020.35	0.26 3		
1929.29 10	1959.08	1.8 3	E1+M2	+0.11 2
1930.2 3	2730.38	0.5 3		
1935.6 3	4744.11	0.125 22		
1946.38 17	2746.92	0.040 6		
1953.69 6	5063.49	0.31 3		
1956.53 5	2756.73	1.84 18	E1 (+M2)	0.00 7
1961.06 6	4537.08	0.154 16		
1964.22 23	3923.8	0.037 6		
1972.95 4	4020.35	0.32 3		
x1994.03 15		0.188 24		
2001.19 20	4104.47	0.137 20		
2007.66 4	2807.89	2.5 3		
2013.85 20	4744.11	0.17 3		
x2014.19 11		0.201 23		
2017.48 4	2047.35	2.7 3	M1+E2	+0.02 1
2022.27 17	4419.38	0.165 23		
2031.5 3	4788.65	0.26 4		
2039.88 4	2069.81	2.7 3	M1+E2	+0.25 8
2047.22 4	2047.35	2.7 3	E2 (+M3)	=0.0
2057.01 5	4104.47	0.141 16		
x2067.47 11		0.28 3		
2070.02 15	2069.81	2.01 20	M1 (+E2)	-0.04 6
2073.68 10	2103.67	6.5 7	E2 (+M3)	=0.0
2094.55 10	3738.50	0.048 5	M1	
2115.71 14	4872.56	0.031 4		
x2121.96 5		0.121 13		
x2131.60 17		0.036 5		
2143.31 11	4213.07	0.139 16		
2149.87 5	4253.63	0.43 4		
2153.75 4	3797.58	0.79 8	M1	
2162.10 17	4788.65	0.041 5		
2168.10 4	4744.11	0.179 19		
x2173.61 8		0.094 10		
2183.64 20	4253.63	0.47 24		
2185.64 20	2985.87	0.47 24		
2196.55 5	3840.25	0.34 4		
x2204.01 10		0.34 4		
2206.28 [®] 10	4253.63	0.75 [®] 8		
	4992.96	0.75 [®] 8		
2221.20 11	4180.04	0.183 24		
2230.47 5	2260.40	0.81 8	(E1)	
2232.9 4	4280.54	0.16 16		
2260.04 10	2260.40	0.31 3	(E1)	
x2271.12 12		0.085 10		
2290.51 7	2290.50	2.8 3	M1+E2	-0.8 3
x2310.63 5		0.51 5		
x2322.68 13		0.127 14		
x2330.09 10		0.28 3		
2345.98 10	3146.44	0.69 7	D(+Q)	+0.1 2

Continued on next page (footnotes at end of table)

$^{39}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{40}\text{K})$ (continued)

$E_{\gamma}^{\S}$	E(level)	$I_{\gamma}^{\ddagger\#}$	Mult. [†]	$\delta^{\dagger}$
2348.65 9	4395.90	0.24 3		
2367.09 5	2397.17	0.58 6	M1+E2	+0.25 3
^x 2373.66 5		0.102 11		
^x 2375.77 5		0.113 12		
^x 2384.91 11		0.141 15		
2389.10 5	2419.18	1.34 13	M1+E2	-1.4 6
^x 2393.76 12		0.108 12		
2397.04 6	2397.17	0.224 23	M1+E2	
2402.96 9	4473.00	0.119 13		
^x 2415.98 11		0.194 23		
2418.61 15	2419.18	0.63 6	E2 (+M3)	+0.1 2
^x 2424.58 5		0.54 6		
2428.20 9	3228.68	0.25 3		
^x 2448.03 17		0.045 6		
^x 2450.4 3		0.031 5		
2454.6 3	4744.11	0.025 4		
^x 2459.40 5		0.191 20		
2467.23 [®] 10	4110.86	0.067 [®] 7		
	4537.08	0.067 [®] 7		
^x 2471.4 3		0.025 4		
2483.7 3	4744.11	0.029 8		
^x 2518.7 3		0.045 7		
2528.35 11	4788.65	0.139 15		
^x 2539.78 7		0.27 3		
^x 2542.83 6		0.77 8		
2545.74 10	2575.95	2.8 3	E1+M2	+0.04 2
^x 2552.55 17		0.020 3		
^x 2556.94 13		0.027 4		
^x 2564.80 19		0.055 7		
2568.7 [®] 4	3368.04	0.033 [®] 6		
	4213.07	0.033 [®] 6		
^x 2571.99 11		0.113 13		
2577.54 10	4537.08	0.32 3		
^x 2585.97 14		0.094 11		
^x 2589.14 11		0.146 16		
2593.23 10	3393.64	0.50 5		
^x 2603.9 4		0.12 3		
2609.89 9	4253.63	1.40 9	E1	
2614.12 9	3414.36	1.16 7		
^x 2627.6 3		0.18 3		
2638.84 11	3439.16	1.04 7		
2643.9 3	5063.49	0.26 4		
^x 2659.6 4		0.098 20		
^x 2668.7 4		0.107 20		
^x 2680.3 5		0.073 19		
2685.5 [®] 3	3486.17	0.24 [®] 5		
	4788.65	0.24 [®] 5		
^x 2688.0 4		0.19 5		
^x 2697.5 3		0.144 22		
2702.50 16	4992.96	0.28 3		
2716.85 11	2746.92	0.50 4		
2726.52 7	2756.73	1.58 9	E1 (+M2)	0.00 3
2735.99 9	7799.50	0.83 5		
2746.90 18	2746.92	0.26 3		
2756.71 7	2786.65	1.93 10	E1 (+M2)	+0.09 11
^x 2775.11 17		0.27 3		
2784.3 4	4744.11	0.21 5		
(2786.34 [†])	2786.65	0.14 [†]	(E1)	
2786.9 6	2787.1	0.14 5		
2799.19 18	3599.24	0.95 10		
2806.42 12	7799.50	1.76 13		
^x 2839.60 7		1.87 10		
^x 2857.04 15		0.29 3		

Continued on next page (footnotes at end of table)

$^{39}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{40}\text{K})$ (continued)

E_{γ}^{S}	E(level)	$I_{\gamma}^{\dagger\#}$	Mult. [†]	E_{γ}^{S}	E(level)	$I_{\gamma}^{\dagger\#}$
$\times 2892.08$ 15		0.36 3		3791.7 3	3821.43	0.18 3
$\times 2897.8$ 7		0.061 20		$\times 3821.97$ 13		0.264 19
2912.5 3	4872.56	0.145 21		3838.30 7	3868.67	0.62 4
$\times 2917.70$ 9		0.89 5		3857.77 11	3887.93	0.305 21
2922.80 20	4992.96	0.33 3		3868.1 10	3868.67	0.12 5
2926.74 10	7799.50	0.73 5		3874.5 3	7799.50	0.28 6
2938.20 9	3738.50	0.67 4		3895.5 11	3923.8	0.21 11
$\times 2949.11$ 15		0.63 4		$\times 3898.8$ 7		0.32 11
2955.82 16	2985.87	0.41 3		3911.28 18	7799.50	0.96 9
2967.7 3	3767.87	0.163 19		3930.43 5	7799.50	1.56 8
$\times 2992.48$ 14		0.50 3		3943.60 6	4744.11	0.98 5
$\times 3000.3$ 3		0.133 17		3958.98 5	7799.50	1.48 8
3010.43 14	7799.50	0.50 3		3977.62 5	7799.50	1.29 7
3027.6 3	3027.97	0.139 18		$\times 3988.86$ 14		0.242 19
$\times 3034.31$ 17		0.293 24		4001.57 5	7799.50	1.61 9
3040.12 13	3840.25	0.62 4		$\times 4007.9$ 3		0.139 15
3055.45 12	7799.50	2.86 17		4031.36 14	7799.50	0.221 17
3068.6 4	3868.67	0.25 4		4060.70 5	7799.50	1.53 8
3088.2 5	3887.93	0.19 4		4080.47 12	4110.86	0.325 22
3098.43 20	3128.38	0.37 14		$\times 4085.91$ 9		0.46 3
3100.29 20	4744.11	0.37 14	E2	4135.35 5	7799.50	3.41 18
3127.93 13	3128.38	0.61 4		4148.2 3	4149.01	0.134 18
$\times 3133.36$ 14		0.51 4		4169.08 9	7799.50	0.71 4
3144.17 19	4788.65	0.28 3	M1	4199.80 5	7799.50	2.23 12
3153.4 3	3153.82	0.38 3		4223.42 7	4253.63	0.83 5
3198.5 3	3228.68	0.146 22		4242.23 11	7799.50	0.45 3
$\times 3204.6$ 4		0.101 20		4249.3 4	4280.54	0.119 16
$\times 3213.98$ 24		0.223 24		4280.10 22	4280.54	0.37 4
3219.94 21	4020.35	0.24 3		4312.6 3	7799.50	0.28 4
3229.3 4	3228.68	0.128 21	(E2)	4359.93 6	7799.50	4.33 24
$\times 3255.8$ 4		0.37 7		4384.69 7	7799.50	1.47 8
3262.42 12	7799.50	2.43 17		4389.06 18	4419.38	0.37 3
3286.3 8	4180.04	0.15 5		4405.10 11	7799.50	0.42 3
3304.09 11	4104.47	0.99 7		$\times 4420.89$ 14		0.294 22
3310.8 5	4110.86	0.12 3		4430.91 16	7799.50	0.59 5
3326.29 12	7799.50	0.79 6		4472.53 11	4473.00	0.40 3
3336.2 10	3368.04	1.7 8		4506.69 7	4537.08	0.77 5
3348.76 10	4149.01	1.12 7		4652.65 8	7799.50	0.52 3
3368.7 6	3368.04	0.10 3		$\times 4666.7$ 4		0.110 21
3380.1 4	7799.50	0.22 4		4670.55 10	7799.50	0.66 4
3384.51 24	3414.36	0.40 5		4688.6 5	7799.50	0.052 11
3403.43 11	7799.50	1.00 7		4842.5 4	4872.56	0.076 12
$\times 3429.6$ 7		0.09 3		$\times 4850.84$ 25		0.120 13
3452 1	4253.63	1.71 10		4872.15 14	4872.56	0.252 19
3480.4 5	4280.54	0.13 3		$\times 4912.2$ 7		0.044 11
3518.68 10	7799.50	1.05 7		$\times 4929.0$ 3		0.183 21
3526.82 10	3556.97	1.02 7		4961.9 4	4992.96	0.107 19
3545.78 6	7799.50	4.7 3		4991.05 5	7799.50	2.18 11
3569.13 8	3599.24	0.45 3		5012.13 6	7799.50	1.17 6
$\times 3578.0$ 3		0.070 12		5042.09 6	7799.50	1.78 9
3586.36 13	7799.50	0.217 17		5062.6 4	5063.49	0.070 9
3599.45 20	3629.94	0.185 19		5068.31 6	7799.50	1.25 7
3619.22 6	7799.50	0.77 4		5072.84 5	7799.50	2.30 12
3629.76 15	3629.94	0.33 3		$\times 5188.4$ 3		0.053 6
3633.70 9	3663.75	0.63 4		$\times 5216.5$ 6		0.020 4
3650.16 5	7799.50	2.22 11		5222.77 7	7799.50	0.377 20
3663.14 9	3663.75	0.44 3		$\times 5228.49$ 24		0.057 5
3688.49 15	7799.50	1.49 12		5379.45 6	7799.50	7.9 4
3694.97 11	7799.50	1.43 10		5508.71 7	7799.50	3.17 16
3736.82 10	4537.08	1.14 7		5694.94 7	7799.50	5.6 3
$\times 3743.0$ 3		0.21 3		5728.8 7	7799.50	2.28 12
$\times 3764.65$ 19		0.180 17		5751.16 7	7799.50	5.5 3
3778.8 1	7799.50	0.93 6		$\times 6067.1$ 3		0.050 5

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$^{39}\text{K}(\text{n},\gamma)$ E=thermal (continued)

$\gamma(^{40}\text{K})$ (continued)

$E_{\gamma}^{\S}$	E(level)	$I\gamma^{\ddagger\#}$
6998.11 10	7799.50	2.15 11
7767.94 19	7799.50	5.6 3

$\dagger$ From adopted gammas.

$\ddagger$ Absolute γ -ray intensity per 100 neutron captures.

$\S$ Literature recoil correction removed by evaluator.

$\#$ For intensity per 100 neutron captures, multiply by 1.0.

@ Multiply placed; undivided intensity given.

$\times$ γ ray not placed in level scheme.

$^{39}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme

Intensities: I(γ +ce) per 100 parent decays
& Multiplied; undivided intensity given

$^{39}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{39}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: $I(\gamma+\text{ce})$ per 100 parent decays
& Multiplied; undivided intensity given

$^{39}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{39}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{39}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{40}_{19}\text{K}_{21}$

$^{40}_{19}\text{K}_{21}$

$^{39}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiplied; undivided intensity given

$^{40}_{19}\text{K}_{21}$

$^{40}\text{Ar}(\text{n},\gamma)$ E=thermal 1970Ha56Target $J\pi=0+$.Measured $E\gamma$, $I\gamma$ with Ge(Li) and pair spectrometer. ^{41}Ar Levels

E(level) [†]	$J\pi^{\dagger}$	$T_{1/2}^{\dagger}$	Comments
0.0	7/2-	109.34 min 12	% β^- =100.
167.3 2	5/2-	420 ps 30	
516.0 3	3/2-	330 ps 20	
1034.7 6	3/2+	5 ps 3	
1354.0 4	3/2-	400 ps 50	
1869 2	1/2+		
2398.3 6	1/2-	120 fs 35	
2694?			
2733.4 7	3/2-	<30 fs	
2948.5 7	3/2-	<65 fs	
3009.7 8	(1/2, 3/2)-	<110 fs	
3111?			
3278?			
3326.7 8	1/2-	<17 fs	
3431?			
3565?			
3573?			
3703?			
3732?			
3968.2 7	1/2-	21 fs 12	
4270.1 10	3/2-		
6098.7 6	1/2+		

E(level): from evaluated s(n) (95Au04).

 $J\pi$: from s-wave neutron capture.

Observed deexcitation intensity is 94% of g.s. feeding.

[†] From adopted levels, except as noted. $\gamma(^{41}\text{Ar})$ $I\gamma$ normalization: normalized from assuming $I\gamma(\text{to g.s.})=100$. $\sigma_n=0.66$ b 1.

$E\gamma$	E(level)	$I\gamma^{\dagger\S}$	Mult. [†]	α	$E\gamma$	E(level)	$I\gamma^{\dagger\S}$
167.3 2	167.3	79.6	(M1)	0.00257	2781.8 15	2948.5	1.7
348.7 3	516.0	6.6			2810.6 8	3326.7	5.9
(515 [†])	1869	0.03 [†]			2842.6 10	3009.7	0.88
516.0 3	516.0	25.3	(M1)		3089.5 10	6098.7	1.1
(518.7 [†])	1034.7	0.9 [†]	(E1)		3111.4 [#] 22	3111?	0.40 [#]
(834 [†])	1869	0.01 [†]				3278?	0.40 [#]
837.7 3	1354.0	9.6			3150.3 10	6098.7	4.0
867.3 6	1034.7	1.1	(E1)		3365.6 10	6098.7	4.2
1044.3 4	2398.3	6.0	(M1)		3405.5 [#] 25	3573?	0.08 [#]
1186.8 3	1354.0	52.2				6098.7	0.08 [#]
(1353 [†])	1869	0.02 [†]			3452.0 10	3968.2	2.0
1354.0 4	1354.0	2.3	(E2)		3564.7 [#] 25	3565?	0.13 [#]
(1379.4 [†])	2733.4	0.25 [†]				3732?	0.13 [#]
(1457.7 [†])	3326.7	0.06 [†]	E1		^x 3658.7 18		0.25
1828.8 12	6098.7	1.0			3700.6 8	6098.7	9.8
1881.5 10	2398.3	1.4			4102.7 15	4270.1	0.3
1972.7 12	3326.7	0.54			4745.3 8	6098.7	55.0
2130.8 8	6098.7	4.4			^x 4917.1 20		0.07
2229.5 20	2398.3	0.29	(E2)		5064.0 10	6098.7	0.26
2291.7 20	3326.7	0.20			^x 5449.0 25		0.05
2432.5 8	2948.5	0.84			5582.4 8	6098.7	11.6
2566.1 8	2733.4	2.8			^x 5960.7 25		0.01
2614.4 8	3968.2	2.9			^x 6063.1 25		0.04
2668.2 [#] 20	3703?	0.51 [#]			^x 6082.8 25		0.02
	6098.7	0.51 [#]			^x 6093.3 25		0.03
2771.9 8	6098.7	8.6			^x 6142.5 25		0.02

Footnotes continued on next page

$^{40}\text{Ar}(n,\gamma)$ E=thermal (continued) $\gamma(^{41}\text{Ar})$ (continued)

† From adopted gammas.

‡ Relative γ -ray intensity per 100 neutron captures. No uncertainty given by authors. Errors $\geq 10\%$ estimated by evaluators.

§ For intensity per 100 neutron captures, multiply by 0.93.

Multiply placed; undivided intensity given.

x γ ray not placed in level scheme.Level SchemeIntensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{40}\text{Ca}(\text{n},\gamma)$ E=thermal 1967Gr16,1970Cr04Target $J\pi=0+$.Measured $E\gamma, I\gamma$ with Ge(Li) (67Gr16); $E\gamma$ with pair spectrometer (70Cr04). ^{41}Ca Levels

E(level) [†]	$J\pi^{\dagger}$	$T_{1/2}^{\dagger}$	Comments
0.0	7/2-	1.03×10^5 y 4	%ε=100.
1942.61 11	3/2-	415 fs 40	
2009.8 2	3/2+	505 ps 12	
2462.2 2	3/2-	3.7 ps 8	
2669.9 2	1/2+	2.2 ps 4	
3049.7 3	3/2(+)	0.7 ps 2	
3399.9 2	1/2+	85 fs 20	
3525.7 4	3/2+	50 fs 17	
3613.5 2	1/2-	100 fs 40	
3845.4 5	1/2+	110 fs 30	
3944.1 2	1/2-	<14 fs	
4603.1 2	3/2-	<40 fs	
4752.6 2	1/2-	<25 fs	
4778.1 4	(3/2, 5/2)+	<14 fs	
5011.6 8	1/2+		
8362.7 3	1/2+		

E(level): from evaluated s(n) (95Au04).

 $J\pi$: from s-wave neutron capture.

Observed deexcitation intensity is 86% of g.s. feeding.

[†] From adopted levels, except as noted. $\gamma(^{41}\text{Ca})$ $I\gamma$ normalization: normalized from assuming $I\gamma(\text{to g.s.})=100$. $\sigma_n=0.41$ b 2.

$E\gamma^{\dagger\#}$	E(level)	$I\gamma^{\S@}$	Mult. [†]	$\delta^{\dagger}$	$E\gamma^{\dagger\#}$	E(level)	$I\gamma^{\S@}$
^x 182					^x 2606.5 5		1.6
(379.8 [†])	3049.7	0.03 [†]			2660.3 20	4603.1	1.3
444.5 4	3845.4	0.5			2768.8 20	4778.1	2.8
519.50 13	2462.2	13.4	M1+E2	+0.03 1	2809.8 5	4752.6	3.8
660.2 6	2669.9	0.8			(3001.5 [†])	5011.6	
727.3 4	2669.9	2.1	(E1)		3067.3 20	5011.6	0.7
(855.8 [†])	3525.7	0.05 [†]	M1+E2	+0.22	3351.0 15	8362.7	0.4
(943.6 [†])	3613.5	0.4 [†]	E1		3585.2 6	8362.7	1.6
1040.1 15	3049.7	0.3			3610.2 3	8362.7	6.0
(1107.1 [†])	3049.7	0.2 [†]			3759.2 4	8362.7	3.1
1151.22 20	3613.5	1.1			^x 3947 3		0.4
1390.13 20	3399.9	2.2			4418.6 5	8362.7	17.1
1482.0 3	3944.1	1.3			4518 3	8362.7	0.7
(1515.9 [†])	3525.7	0.18 [†]			^x 4560 3		0.1
(1583.1 [†])	3525.7	0.27 [†]			4749.1 6	8362.7	2.6
(1611.6 [†])	5011.6		M1		4839 ^{&} 3	8362.7	0.5
1670.67 20	3613.5	1.3			^x 4944 3		0.8
(1835.5 [†])	3845.4	0.2 [†]			4962.4 6	8362.7	1.8
(1902.6 [†])	3845.4	0.05 [†]	(E1)		5314 3	8362.7	0.3
1942.61 17	1942.61	88.5	E2 (+M3)	≈0.0	5692.5 7	8362.7	1.1
2001.6 3	3944.1	18.9			5900.1 6	8362.7	7.0
2009.8 3	2009.8	11.5	M2+E3	+0.13 3	6352 3	8362.7	0.2
2290.3 3	4752.6	1.6			6420.7 10	8362.7	43.5

[†] From adopted gammas.[‡] Weighted average of values from 67Gr16 and 70Cr04.[§] Absolute γ -ray intensity per 100 neutron captures from 67Gr16. No uncertainty given by authors. Errors $\geq 10\%$ estimated by evaluators. Systematic values derived from adopted gammas.[#] Literature recoil correction removed by evaluator.[@] For intensity per 100 neutron captures, multiply by 1.0.[&] Placement of transition in the level scheme is uncertain.^x γ ray not placed in level scheme.

Level Scheme

Intensities: I(γ +ce) per 100 parent decays

$^{40}\text{K}(\text{n},\gamma)$ E=thermal 1984Kr05Target $J\pi=4-$.Measured $E\gamma$, $I\gamma$ with ILL curved crystal bragg spectrometer and pair spectrometer. ^{41}K Levels

$E(\text{level})^\dagger$	$J\pi^\dagger$	$T_{1/2}^\dagger$	Comments
0.0	$3/2+$	stable	
980.476 8	$1/2+$	290 fs 75	
1293.609 8	$7/2-$	7.2 ns 2	
1559.903 12	$3/2+$	375 fs 40	
1582.001 11	$3/2-$	9.3 ps 3	
1593.107 12	$1/2+$	95 fs 20	
1677.235 11	$7/2+$	14 ps 3	
1698.005 15	$5/2+$	0.8 ps 2	
2143.82 2	$5/2+$	140 fs 55	
2166.70 2	$3/2-$	1.9 ps 2	
2316.70 2	$5/2-$	570 fs 95	
2447.83 7	($1/2-$ to $7/2+$)		
2494.91 3	$9/2+$	>3.1 ps	
2507.93 3	$7/2+$	150 fs 35	
2527.66 3	$11/2+$	150 ps 3	
2593.97 3	$3/2-$		
2712.57 3	($3/2-$)	535 fs 130	
2756.73 3	$5/2+$	50 fs 20	
2761.73 3	$11/2-$	480 fs 50	
2774.25 3	$13/2+$	51 ps 2	
3048.22 5	$3/2-$		
3141.84 3	$7/2-$		
3142.43 3	$5/2-$	145 fs 45	
3213.61 4	$5/2-$	125 fs 55	
3235.57 4	($3/2-$ to $7/2$)	50 fs 20	
3240.65 4	($5/2+, 7/2$)		
3431.84 4	$9/2-, (7/2-)$		
3488.5 3	$5/2+$		
3489.30? 15	($5/2, 7/2$) -		
3521.38? 9	($5/2, 7/2$) +		
3534.45 4	($7/2+$ to $11/2+$)		
3560.61 5	($3/2-$ to $7/2+$)		
3612.77 5	($3/2-, 5/2$)		
3651.46 5	($5/2, 7/2, 9/2$)		
3761.54 5	($3/2-$ to $7/2+$)		
3774.66 5	$5/2-$		
3826.90 10	($5/2+, 7/2$)		
3870.52? 6	($5/2, 7/2$) -		
3990.40 5	($7/2-$ to $13/2-$)		
3996.49 4	$5/2+$		
4026.94 7	$5/2+$		
4146.15 6	($5/2, 7/2$) -		
4164.57 4	($5/2$ to $9/2+$)		
4220.62 5	($5/2, 7/2+$)		
4228.99 5	$5/2-$		
4244.22 5	$3/2-$		
4260.36 13	($3/2-, 5/2$)		
4274.96 5	($7/2-, 9/2+$)		
4303.01 5	($5/2, 7/2$) +		
4345.66 5	($5/2, 7/2-$)		
4459.72 5	$3/2-$		
4525.37 5	($3/2-$ to $7/2$)		
4568.75 5	($9/2+, 11/2$)		
4609.48 7	($5/2+$ to $9/2+$)		
4730.70 5	$3/2-$		
4735.86 6	($5/2, 7/2$) +		
4745.49 10	$5/2+$		
4749.47 8	($3/2-$ to $7/2+$)		
4823.33 5	($7/2, 9/2$) +		
4862.43 6	$5/2$		

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${}^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued) ${}^{41}\text{K}$ Levels (continued)

E(level) [†]	J π [†]	T _{1/2} [†]	Comments
4927.83 6	5/2+		
4948.94 6	(3/2- to 7/2-)		
4982.9 2	19/2-	75 ps 6	
5021.23 8	(3/2-, 5/2+)		
5096.20 8	(3/2+ to 9/2-)		
5185.27 6	(5/2, 7/2-)		
5298.86 6	(3/2- to 7/2-)		
5497			
5548			
5557			
5575			
5605			
5611			
5656			
5659			
5801			
5827			
5887			
5912			
5952			
5969			
6041			
6071			
6079			
6186			
6212			
6230			
6256			
6290			
6394			
6435			
6450			
6497			
6528			
6770			
6783			
6791			
6835			
6996			
7021			
7035			
7361			
7593			
7655			
7939			
8190			
8200			
9741			
10095.18 10	7/2-, 9/2-		E(level): from evaluated s(n) (95Au04). J π : from s-wave neutron capture. Observed deexcitation intensity is 70% of g.s. feeding.

[†] From adopted levels, except as noted. $\gamma({}^{41}\text{K})$

I γ normalization: normalized from assuming I γ (to g.s.)=100.
 $\sigma_n=30$ b 8.

E γ	E(level)	I γ [†] \$	Mult. [‡]	$\delta^{\ddagger}$
191.240 60	2507.93	0.008 2	(E1)	
193.73 11	4220.62	0.003 2		

Continued on next page (footnotes at end of table)

$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{41}\text{K})$ (continued)

E_γ	E(level)	$I_\gamma^\dagger$	Mult. [‡]	$\delta^\ddagger$
246.587 3	2774.25	0.543 82	M1 (+E2)	+0.013 14
258.534 51	5557	0.015 3		
266.841 19	2761.73	0.009 3	(E1)	
288.388 6	1582.001	0.035 12	(E2)	
293.786 [#] 10	3534.45	0.023 [#] 5		
	4568.75	0.023 [#] 5		
296.340 23	4525.37	0.008 2		
304.763 36	4525.37	0.006 2		
^x 314.73 11		0.007 3		
^x 327.766 2		0.028 6		
^x 336.627 6		0.079 13		
338.468 57	6835	0.004 2		
339.412 37	4948.94	0.008 2		
344.793 79	3996.49	0.143 22		
354.541 7	10095.18	0.113 17		
358.465 13	4228.99	0.147 42		
361.993 32	5185.27	0.011 2		
364.089 7	2507.93	0.192 29	(M1)	
371.512 57	4146.15	0.048 8		
380.132 70	3141.84	0.005 2		
380.696 8	3142.43	0.067 10		
383.617 6	1677.235	0.142 21	(E1)	
385.107 7	3141.84	0.099 19		
395.945 2	2712.57	0.62 13	(M1)	
402.081 30	4228.99	0.018 5		
403.031 31	4164.57	0.018 4		
^x 417.190 5		0.037 8		
418.804 36	3560.61	0.006 2		
419.308 [#] 26	5605	0.007 [#] 2		
	6079	0.007 [#] 2		
429.790 10	3990.40	0.114 22		
445.814 5	2143.82	0.233 50	(M1)	
454.557 7	5185.27	0.022 5		
^x 476.623 36		0.008 2		
^x 481.242 20		0.013 3		
^x 487.991 23		0.009 2		
492.821 23	7021	0.009 2		
539.086 27	3774.66	0.018 4		
^x 541.828 32		0.035 7		
545.876 7	2712.57	0.072 17		
548.365 10	4823.33	0.043 11		
550.727 29	2143.82	0.009 3	(E2)	
561.047 41	3774.66	0.011 3		
561.842 22	2143.82	0.014 3	(E1)	
^x 564.011 31		0.013 3		
^x 565.729 30		0.016 14		
^x 566.650 17		0.087 18		
568.170 17	5298.86	0.098 19		
573.597 9	2166.70	0.052 12	(E1)	
579.418 7	1559.903	0.89 17	M1+E2	0.12 4
583.900 15	2143.82	1.43 26	(M1)	
584.685 11	2166.70	0.219 48		
586.264 35	3826.90	0.009 4		
592.777 25	4244.22	0.016 5		
601.517 12	1582.001	0.76 18	E1 (+M2)	-0.06 +9-3
606.824 18	2166.70	0.027 8	(E1)	
607.846 [#] 9	4220.62	0.089 [#] 21		
	6435	0.089 [#] 21		
612.637 8	1593.107	0.262 79	M1	
612.925 8	2756.73	0.313 71		
614.766 7	3142.43	0.091 23		
620.337 31	5548	0.012 3		
623.486 14	6450	0.049 13		

Continued on next page (footnotes at end of table)

$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{41}\text{K})$ (continued)

E_γ	E(level)	$I_\gamma^\dagger$	Mult. ‡	$\delta^\ddagger$
633.891 8	3141.84	0.72 17		
$\times$ 635.073 18		0.061 17		
639.345 11	2316.70	0.031 17	(E1)	
645.168 56	6256	0.015 3		
646.924 4	3141.84	0.403 90		
655.597 34	5605	0.011 3		
$\times$ 657.927 50		0.006 3		
659.921 [#] 94	4220.62	0.025 [#] 6		
	5185.27	0.025 [#] 6		
$\times$ 660.935 11		0.045 14		
$\times$ 661.225 39		0.057 15		
670.112 8	3431.84	0.383 98		
$\times$ 672.039 13		0.064 17		
$\times$ 676.088 30		0.023 5		
685.056 [#] 8	3826.90	0.083 [#] 20		
	4459.72	0.083 [#] 20		
694.199 10	4345.66	0.203 43		
(708.4 ‡)	4982.9	‡	(E2)	
712.800 [#] 17	5575	0.034 [#] 8		
	6791	0.034 [#] 8		
719.272 12	3431.84	0.297 61		
732.714 [#] 6	3240.65	0.51 [#] 12		
	4164.57	0.51 [#] 12		
734.605 8	2316.70	0.45 11	M1+E2	-0.14 7
740.505 37	4274.96	0.032 9		
742.142 13	5605	0.100 21		
745.733 13	3240.65	0.179 38		
768.531 19	4303.01	0.079 21		
773.471 19	5298.86	0.111 31		
796.926 20	2494.91	0.88 22	E2 (+M3)	$\approx$ 0.0
817.659 9	2494.91	2.31 50	M1+E2	+0.38 2
825.193 27	3141.84	0.038 8		
$\times$ 827.328 76		0.018 5		
830.679 9	2507.93	2.68 57	M1+E2	+0.4 3
846.967 23	4459.72	0.067 15		
850.417 7	2527.66	3.10 70	E2 (+M3)	$\approx$ 0.0
854.043 20	3996.49	0.242 68		
854.642 20	3996.49	0.148 62		
880.139 26	5611	0.074 15		
887.125 [#] 49	5497	0.070 [#] 21		
	6186	0.070 [#] 21		
891.260 20	5912	0.081 16		
895.955 10	2593.97	0.330 69		
904.383 [#] 26	3048.22	0.063 [#] 13		
	6791	0.063 [#] 13		
918.949 13	3235.57	0.86 20		
948.001 13	2507.93	0.51 11	E2 (+M3)	$\approx$ 0.0
974.665 65	4749.47	0.079 17		
980.461 16	980.476	3.44 74	M1+E2	0.15 2
988.474 59	4228.99	0.065 14		
993.207 75	4228.99	0.036 9		
998.448 69	3142.43	0.043 10	(E1)	
1004.869 33	3761.54	0.091 19		
1006.811 34	3534.45	0.441 89		
1011.89 21	2593.97	0.114 27		
1014.498 18	2712.57	0.329 71	(E1)	
1022.996 7	2316.70	11.2 25	M1+E2	-0.08 1
1026.484 [#] 58	3521.38?	0.084 [#] 22		
	3534.45	0.084 [#] 22		
1039.532 12	3534.45	0.61 13		
1041.512 53	3489.30?	0.108 25		
1051.268 36	5801	0.064 14		
1058.708 15	2756.73	0.405 79		

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$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{41}\text{K})$ (continued)

$E\gamma$	E(level)	$I\gamma^{\dagger}\S$	Mult. ‡	$\delta^{\ddagger}$
$\times 1062.550$ 55		0.057 13		
1064.926 [#] 20	5801	0.287 [#] 62		
	7593	0.287 [#] 62		
1079.440 42	2756.73	0.066 17		
1090.735 53	5827	0.117 25		
1096.832 17	3240.65	0.236 48		
1101.713 34	4244.22	0.150 32		
1110.083 14	4345.66	0.78 16		
1115.198 26	3431.84	0.190 39		
1130.76 20	2712.57	0.64 11		
1156.32 12	5887	0.135 38		
(1163.33 $\frac{1}{2}$)	2143.82	0.30 $\frac{1}{2}$ 6	(E2)	
1186.170 17	2166.70	0.60 16	E1 (+M2)	-0.14 14
1196.785 17	2756.73	0.50 10		
1201.303 17	2494.91	1.51 35	E1+M2	+0.06 2
1203.205 51	4345.66	0.170 42		
1214.327 22	2507.93	0.69 14	(E1)	
1228.587 47	3990.40	0.213 44		
$\times 1231.46$ 16		0.154 62		
1247.401 35	6071	0.240 51		
$\times 1250.850$ 95		0.084 20		
$\times 1255.711$ 65		0.175 74		
1266.45 [#] 22	3761.54	0.144 [#] 33		
	3774.66	0.144 [#] 33		
1286.029 95	6783	0.168 47		
1293.586 7	1293.609	40.5 86	M2+E3	0.118 12
1321.333 89	5096.20	0.087 22		
1355.98 28	5659	0.051 14		
1368.47 12	4609.48	0.119 30		
$\times 1373.020$ 45		0.313 66		
1418.975 15	2712.57	3.22 82		
(1455.09 $\frac{1}{2}$)	3048.22	$\frac{1}{2}$		
1463.35 12	2756.73	0.69 23		
1465.097 49	3142.43	1.19 29	(E1)	
1468.090 12	2761.73	3.29 73	E2 (+M3)	≈ 0.0
1470.99 17	6770	0.176 81		
$\times 1481.59$ 16		0.084 30		
1488.542 38	3996.49	0.338 67		
1499.78 13	5497	0.254 54		
1513.313 78	4274.96	0.396 41		
1529.97 25	5557	0.057 7		
1534.15 48	7361	0.030 5		
1542.19 21	3240.65	0.066 8		
1557.67 18	5548	0.211 25		
1559.890 34	1559.903	4.14 41	M1+E2	0.27 2
$\times 1563.96$ 11		0.167 17		
1581.980 40	1582.001	3.68 37	E1+M2	-0.08 2
1588.68 11	4730.70	0.133 14		
1593.40 45	1593.107	0.311 31		
1606.053 [#] 75	5827	0.194 [#] 20		
	6791	0.194 [#] 20		
1624.76 16	5185.27	0.116 13		
1631.47 40	3213.61	0.255 69		
1649.96 [#] 14	4244.22	0.157 [#] 17		
	6835	0.157 [#] 17		
1666.51 15	4260.36	0.101 12		
1677.233 40	1677.235	19.7 20	E2 (+M3)	≈ 0.0
1697.934 40	1698.005	8.13 81	M1+E2	-2.1 2
(1710.20 $\frac{1}{2}$)	4026.94	$\frac{1}{2}$		
1716.19 51	4164.57	0.032 7		
1721.021 40	4228.99	0.505 51		
1727.24 [#] 24	3870.52?	0.123 [#] 15		
	7939	0.123 [#] 15		

Continued on next page (footnotes at end of table)

$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{41}\text{K})$ (continued)

$E\gamma$	E(level)	$I\gamma^{\dagger\S}$	Mult. ‡	$\delta^{\ddagger}$
1739.140 74	6835	0.270 28		
1747.88 16	5912	0.098 11		
1753.64 18	5185.27	0.088 10		
$\times$ 1763.72 31		0.051 7		
1770.55 [#] 22	6230	0.072 [#] 8		
	6791	0.072 [#] 8		
1790.26 27	3488.5	0.069 8		
(1791.25 $\frac{1}{2}$)	3489.30?	0.068 $\frac{1}{2}$ 7		
1794.59 93	4568.75	0.199 20		
1804.72 28	5969	0.033 8		
1808.66 [#] 30	4303.01	0.064 [#] 26		
	5298.86	0.064 [#] 26		
1840.93 15	6450	0.111 12		
1848.815 40	3142.43	3.48 35		
1852.845 64	4609.48	0.400 40		
1857.896 98	6079	0.191 20		
1867.45 [#] 25	5298.86	0.069 [#] 8		
	7939	0.069 [#] 8		
1895.093 40	10095.18	1.11 11		
(1895.3 $\frac{1}{2}$)	3488.5	0.023 $\frac{1}{2}$ 6		
1904.965 66	10095.18	0.320 32		
1909.74 14	8200	0.284 30		
1919.951 40	3213.61	2.07 21		
1941.912 40	3235.57	1.91 19		
1946.946 40	3240.65	0.974 98		
1952.97 28	5605	0.102 12		
$\times$ 1965.91 13		0.146 15		
1974.221 40	3651.46	1.08 11		
1986.36 [#] 23	4303.01	0.081 [#] 9		
	7939	0.081 [#] 9		
$\times$ 1998.94 35		0.173 29		
2011.67 89	6256	0.222 23		
(2019.61 $\frac{1}{2}$)	3612.77	0.08 $\frac{1}{2}$ 2		
2026.35 30	5801	0.089 27		
2030.51 20	3612.77	0.122 13		
2041.016 74	4568.75	0.374 38		
2046.31 16	6290	0.168 18		
2059.77 32	5887	0.120 16		
2062.66 27	4228.99	0.197 22		
2066.09 44	4823.33	0.070 10		
(2067.69 $\frac{1}{2}$)	3048.22	$\frac{1}{2}$		
2077.55 12	4244.22	0.279 29		
2083.644 67	6230	0.330 33		
2089.12 24	6435	0.085 10		
$\times$ 2100.717 54		0.426 43		
2106.50 19	7655	0.112 12		
2114.10 25	4609.48	0.829 83		
2121.40 25	8200	0.105 12		
2128.60 29	3826.90	0.118 14		
2138.116 40	3431.84	1.01 10		
2143.705 40	2143.82	4.67 47	M1+E2	-0.15 6
2149.732 54	3826.90	0.429 43		
2156.166 57	10095.18	1.26 13		
2158.925 84	6186	0.535 55		
2166.717 54	2166.70	0.486 49		
2171.006 56	4927.83	0.473 48		
2192.21 12	3774.66	0.276 29		
(2194.8 $\frac{1}{2}$)	3488.5	0.021 $\frac{1}{2}$ 7		
2195.58 14	3489.30?	0.251 26		
2201.526 [#] 89	3761.54	0.258 [#] 26		
	4345.66	0.258 [#] 26		
2211.93 19	7035	0.177 19		
2215.33 21	4927.83	0.156 17		

Continued on next page (footnotes at end of table)

$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{41}\text{K})$ (continued)

E_γ	E(level)	$I_\gamma^\dagger$	Mult. ‡	$\delta^\ddagger$
2240.952 66	4735.86	0.681 69		
2250.38 15	4745.49	0.213 22		
2268.13 19	4862.43	0.125 14		
2278.47 58	6041	0.047 8		
2295.92 30	4823.33	0.196 25		
2298.55 12	3996.49	0.457 48		
2304.83 17	5827	0.138 15		
2315.33 20	4823.33	0.509 81		
2316.55 20	2316.70	0.382 74		
2319.272 52	3996.49	1.37 14		
2328.34 15	4823.33	0.156 17		
2355.91 60	7655	0.093 19		
2358.46 23	3651.46	0.240 29		
2375.65 31	4823.33	0.083 10		
2381.08 40	4525.37	0.163 26		
2383.43 37	5096.20	0.180 28		
2405.64 21	5548	0.117 14		
2414.923 73	5656	0.484 49		
2419.029 79	4735.86	0.474 48		
2428.92 18	4745.49	0.231 24		
2433.16 21	7361	0.291 31		
2436.614 94	3996.49	0.984 99		
2440.275 64	10095.18	0.856 86		
2447.765 61	2447.83	0.454 46		
2458.48 29	6071	0.090 10		
2466.900 66	4026.94	0.728 73		
2480.917 49	3774.66	0.628 63		
2487.270 41	4164.57	1.53 15		
2502.123 50	10095.18	0.732 74		
2507.884 41	2507.93	3.22 32	E2 (+M3)	≈ 0.0
(2507.9 ‡)	3488.5	0.037 ‡ 8		
2513.88 12	5656	0.250 26		
2521.84 $^\#$ 24	4220.62	0.111 $^\#$ 13		
	6783	0.111 $^\#$ 13		
2531.48 12	6528	0.443 46		
2534.44 38	8190	0.161 21		
2543.49 19	4220.62	0.210 22		
2559.89 34	6835	0.189 27		
2562.55 11	4260.36	0.724 75		
2567.41 36	6394	0.096 12		
2576.48 $^\#$ 25	3870.52?	0.107 $^\#$ 13		
	4274.96	0.107 $^\#$ 13		
$\times$ 2583.8 14		0.028 10		
2588.31 54	5096.20	0.188 35		
2590.61 67	5827	0.130 34		
(2593.88 ‡)	2593.97	0.03 ‡ 1		
$\times$ 2599.437 83		0.381 39		
2605.076 74	4303.01	0.449 45		
2611.15 12	4927.83	0.332 34		
2615.48 25	7361	0.198 21		
2619.41 19	6394	0.214 23		
2647.83 $^\#$ 25	4345.66	0.114 $^\#$ 13		
	5096.20	0.114 $^\#$ 13		
$\times$ 2658.8 18		0.039 26		
2668.551 99	4345.66	1.19 12		
2671.12 35	5912	0.231 33		
2677.266 99	5185.27	0.426 43		
$\times$ 2681.54 13		0.302 31		
2688.19 12	6450	0.342 35		
2692.14 22	6996	0.198 22		
2702.641 65	3996.49	0.489 50		
$\times$ 2710.41 16		0.188 20		
$\times$ 2719.22 17		0.181 19		

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$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{41}\text{K})$ (continued)

E_γ	E(level)	$I_\gamma^\dagger$	Mult. ‡	$\delta^\ddagger$
2727.07 18	7655	0.173 18		
(2733.23 ‡)	4026.94	‡		
2733.904 66	10095.18	0.556 56		
2756.681 42	2756.73	2.72 27	M1+E2	-32 +17-18
2763.398 59	4345.66	0.584 59		
$\times$ 2780.15 15		0.296 31		
2784.08 17	5497	0.260 27		
2794.04 20	3774.66	0.255 69		
2805.21 13	6041	0.289 30		
2809.89 38	5952	0.099 12		
$\times$ 2817.10 13		0.237 25		
2827.06 24	6041	0.136 16		
2833.70 31	6394	0.136 16		
2838.08 34	6079	0.120 14		
2850.18 40	5298.86	0.289 57		
2852.25 17	4146.15	0.830 96		
2862.57 15	5575	0.435 46		
$\times$ 2865.82 30		0.301 33		
$\times$ 2869.69 29		0.188 22		
2875.73 29	6528	0.122 15		
$\times$ 2887.179 61		0.573 58		
2899.774 60	4459.72	0.785 79		
2919.06 13	7655	0.251 26		
2926.964 63	4220.62	0.580 58		
2935.074 51	4228.99	0.955 96		
2945.08 12	6186	0.326 33		
2950.546 52	4244.22	1.63 16		
2963.01 43	5557	0.086 13		
2968.61 $^\#$ 18	5497	0.217 $^\#$ 23		
	6996	0.217 $^\#$ 23		
2981.255 51	4274.96	2.55 25		
2988.20 99	5497	0.034 8		
$\times$ 2995.81 19		0.186 20		
3001.38 27	5497	0.133 16		
3015.81 44	3996.49	0.132 25		
3024.88 21	7021	0.312 31		
3038.40 29	4735.86	0.317 39		
3042.81 20	6186	0.621 50		
3047.83 29	3048.22	0.471 49		
3051.70 29	4345.66	0.368 48		
3059.75 10	10095.18	0.874 56		
3067.79 20	4745.49	0.367 34		
3073.974 90	10095.18	1.154 70		
3086.74 67	6230	0.092 29		
$\times$ 3089.97 83		0.072 29		
3099.57 10	10095.18	1.413 28		
3124.48 70	4823.33	0.049 15		
3129.59 15	5887	0.258 22		
3138.25 14	5912	0.251 22		
3146.19 13	4823.33	0.443 32		
3150.58 29	5912	0.223 25		
3154.96 31	5298.86	0.154 22		
3163.668 99	4745.49	0.614 39		
3179.67 10	5497	0.654 41		
3185.19 32	4862.43	0.177 22		
3191.19 27	5952	0.333 37		
3194.82 64	5969	0.120 32		
$\times$ 3201.88 35		0.156 21		
3206.73 27	5969	0.201 23		
3213.74 35	3213.61	0.122 18		
3229.62 47	4927.83	0.44 11		
$\times$ 3244.14 28		0.377 47		
3253.10 94	4927.83	0.31 16		

Continued on next page (footnotes at end of table)

$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{41}\text{K})$ (continued)

E_γ	E(level)	$I_\gamma^\dagger\%$	E_γ	E(level)	$I_\gamma^\dagger\%$
3259.52 14	10095.18	1.082 79	3908.840 66	10095.18	1.560 85
3282.81 49	6041	0.197 46	$\times$ 3925.352 91		0.797 48
3292.64 19	5801	0.266 25	3932.66 51	5611	0.098 18
3304.17 15	10095.18	0.377 29	3939.92 28	8200	0.247 26
3312.70 14	10095.18	0.510 37	3944.80 46	8190	0.141 23
3317.59 22	7593	0.311 29	$\times$ 3973.74 16		0.403 31
3325.40 12	10095.18	0.497 35	3996.246 55	3996.49	2.50 13
3334.58 28	4927.83	0.169 21	$\times$ 4004.50 18		0.296 24
$\times$ 3362.07 35		0.105 14	4016.40 14	10095.18	0.422 29
3366.78 13	4948.94	0.336 23	4024.41 13	10095.18	0.427 29
3379.76 12	7655	0.304 20	4041.04 61	5021.23	0.068 16
3385.88 10	6435	0.379 24	4054.409 90	10095.18	0.750 44
$\times$ 3399.66 45		0.177 20	4063.04 31	5656	0.143 18
3404.78 15	5912	0.450 32	$\times$ 4088.529 61		0.449 24
3410.75 21	7655	0.285 25	4099.69 24	5659	0.084 8
3416.76 28	5912	0.249 26	$\times$ 4105.165 89		0.335 19
3421.20 47	7035	0.128 23	4117.868 77	6435	0.318 18
3437.10 12	4730.70	0.448 31	4126.137 66	10095.18	0.392 21
3455.859 88	4749.47	0.792 47	4142.628 57	10095.18	0.610 32
3479.77 33	4459.72	0.188 26	$\times$ 4150.83 13		0.131 9
(3488.3 †)	3488.5	0.55 † 2	$\times$ 4167.05 13		0.149 10
3488.59 21	5656	0.820 97	4175.64 23	6770	0.089 8
$\times$ 3499.81 79		0.071 22	4182.538 62	10095.18	0.861 45
$\times$ 3508.2 10		0.126 64	$\times$ 4187.79 10		0.317 19
$\times$ 3511.30 84		0.157 65	$\times$ 4200.512 92		0.227 13
3520.84 15	3521.38?	0.473 38	4208.053 56	10095.18	0.742 38
3529.40 39	4823.33	0.149 24	$\times$ 4215.831 94		0.343 20
3540.77 92	6783	0.099 35	4220.63 12	4220.62	0.251 15
3560.99 50	3560.61	0.45 12	4227.37 30	6394	0.089 13
3565.41 67	10095.18	0.46 12	4228.75 30	4228.99	0.109 14
$\times$ 3578.95 24		0.108 11	4238.51 20	6996	0.165 14
$\times$ 3585.54 16		0.165 13	$\times$ 4251.80 18		0.205 16
3597.88 15	10095.18	0.229 17	4259.73 11	4260.36	0.376 23
3612.91 11	3612.77	0.268 17	4268.336 72	10095.18	0.729 40
$\times$ 3620.27 10		0.294 18	$\times$ 4283.906 83		0.540 31
3627.74 14	6770	0.209 15	4294.092 83	10095.18	0.547 31
3634.14 34	4927.83	0.073 10	4302.67 29	4303.01	0.101 12
3644.24 26	10095.18	0.233 26	4322.00 18	7035	0.121 10
3655.04 31	4948.94	0.226 27	$\times$ 4332.02 23		0.097 9
3660.75 13	10095.18	0.641 45	$\times$ 4339.534 91		0.329 19
$\times$ 3670.55 25		0.152 17	$\times$ 4350.62 24		0.089 9
3683.710 71	6212	0.905 51	4372.61 $^\#$ 51	6071	0.108 $^\#$ 13
3693.22 33	6835	0.116 15		8200	0.108 $^\#$ 13
3700.848 99	10095.18	0.527 32	4380.2 10	6079	0.062 12
3715.89 $^\#$ 38	5298.86	0.095 $^\#$ 15	4429.02 46	8190	0.065 10
	6212	0.095 $^\#$ 15	4434.99 59	10095.18	0.543 35
3723.86 31	6041	0.118 15	4439.368 74	10095.18	1.204 65
3740.45 23	8200	0.252 26	$\times$ 4446.47 17		0.179 13
3747.94 $^\#$ 56	6256	0.095 $^\#$ 20	4458.97 59	4459.72	0.589 32
	7361	0.095 $^\#$ 20	4465.68 40	6783	0.063 9
3761.210 67	3761.54	1.689 93	4474.04 67	6791	0.032 7
3774.74 12	3774.66	0.598 41	4484.24 11	10095.18	0.333 20
3785.64 31	7021	0.179 23	4489.92 11	10095.18	0.388 23
3792.64 28	7939	0.201 24	4496.02 39	6079	0.067 9
3805.04 11	10095.18	0.693 44	4509.56 34	6186	0.142 18
3815.21 10	6528	0.671 43	4519.62 13	10095.18	0.473 33
3826.55 15	3826.90	0.400 31	4532.68 28	5827	0.374 45
3839.07 11	10095.18	0.575 38	4536.67 39	10095.18	0.260 41
3865.20 12	10095.18	0.327 21	4546.791 81	10095.18	1.146 65
3870.84 11	5548	0.364 22	4576.65 11	5557	0.200 12
3883.571 59	10095.18	1.037 55	$\times$ 4582.88 32		0.101 10
$\times$ 3889.75 18		0.229 17	$\times$ 4587.18 76		0.034 9
3894.98 41	6212	0.078 11	4598.255 63	10095.18	0.874 45

Continued on next page (footnotes at end of table)

$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{41}\text{K})$ (continued)

E_γ	E(level)	$I_\gamma^\dagger\%$	E_γ	E(level)	$I_\gamma^\dagger\%$
4639.50 19	8200	0.087 7	5547.91 12	5548	0.563 34
4647.89 17	7361	0.105 8	5568.78 37	10095.18	0.149 19
^x 4657.352 65		0.532 28	5573.90 31	5575	0.183 20
4668.25# 24	6835	0.099# 9	5604.26 18	5605	0.262 19
	8190	0.099# 9	5610.25 51	5611	0.080 12
4673.52 11	6256	0.270 16	5635.263 76	10095.18	1.453 76
4696.38# 17	6290	0.280# 20	^x 5646.31 44		0.071 10
	6394	0.280# 20	5658.90 15	5659	0.257 17
4701.28 46	8190	0.145 16	^x 5676.90 18		0.203 15
4705.79 75	6290	0.056 15	5727.03 22	7021	0.748 65
^x 4723.261 93		0.369 21	5749.311 92	10095.18	4.06 23
4735.89 32	4735.86	0.076 9	5776.8 10	7361	0.099 32
4744.57 59	4745.49	0.435 27	5791.75 25	10095.18	0.549 54
4749.05 11	4749.47	0.510 32	^x 5806.03 82		0.110 29
4776.65 22	6071	0.110 10	5819.99 11	10095.18	2.16 13
4796.104 67	10095.18	0.812 43	5834.25 15	10095.18	1.044 73
4820.08 18	5801	0.167 12	5850.46 13	10095.18	1.356 88
^x 4832.468 89		0.542 30	5865.66 13	10095.18	1.516 97
^x 4855.30 17		0.085 6	5873.60 23	10095.18	0.653 56
4862.429 95	4862.43	0.186 11	5930.190 87	10095.18	1.234 67
^x 4875.66 16		0.122 8	5948.69 11	10095.18	0.649 39
4880.75 62	7593	0.027 5	6068.06 25	10095.18	0.174 16
4891.12 14	7035	0.098 7	6098.226 70	10095.18	5.44 28
4905.32 86	5887	0.150 45	6104.24 30	10095.18	0.376 36
4910.05 25	10095.18	0.626 61	6224.86 31	10095.18	0.152 16
^x 4926.15 26		0.333 35	6267.86 11	10095.18	0.850 50
^x 4978.63 37		0.150 21	6289.24 21	6290	0.272 22
4998.635 78	10095.18	0.603 33	6308.79 84	9741	0.049 12
^x 5012.68 11		0.315 19	6319.70 59	10095.18	0.877 51
5021.19 17	5021.23	0.165 12	6333.239 85	10095.18	1.803 97
5073.43 47	10095.18	0.096 16	^x 6357.85 45		0.097 14
^x 5083.40 20		0.275 23	6443.17 11	10095.18	0.382 22
5114.53 35	6791	0.153 18	6450.61 40	6450	0.069 8
5146.00 21	10095.18	0.365 30	6481.45 21	10095.18	0.120 10
5151.74 31	8200	0.290 27	6522.43 56	8200	0.030 5
5157.84 71	6835	0.085 18	6534.26 22	10095.18	0.093 7
5167.18 10	10095.18	0.812 48	6560.219 84	10095.18	0.635 33
5203.22 32	6497	0.134 16	6573.41 13	10095.18	0.203 12
5225.90 44	7939	0.117 17	^x 6588.10 77		0.022 5
5232.14 25	10095.18	0.223 20	6606.06 33	10095.18	0.085 7
^x 5249.91 19		0.262 21	6644.90 15	7939	0.306 20
^x 5260.2 10		0.039 13	6662.849 97	10095.18	0.821 45
5271.538 71	10095.18	1.878 99	6853.89 30	10095.18	0.372 38
^x 5278.87 29		0.111 12	6859.39 46	10095.18	0.224 33
^x 5288.18 38		0.065 10	6881.05 10	10095.18	1.628 91
^x 5299.95 21		0.127 12	6952.258 96	10095.18	1.97 11
5309.31 47	6290	0.053 9	7028.03 25	9741	0.044 4
5319.46 85	6996	0.028 9	7046.71 19	10095.18	0.062 5
5345.65 12	10095.18	1.133 78	7337.71 12	10095.18	2.04 12
5349.57 10	10095.18	1.558 94	7381.97 11	10095.18	2.33 13
5357.74 30	7035	0.433 44	7586.57 10	10095.18	0.525 28
5358.99 30	10095.18	0.528 46	7599.37 14	10095.18	0.244 15
5364.03 12	10095.18	0.600 36	7777.89 14	10095.18	9.05 57
^x 5420.46 18		0.244 18	7950.70 13	10095.18	2.78 17
^x 5440.87 14		0.359 24	8396.41 12	10095.18	0.183 10
5476.01# 34	6770	0.116# 14	8417.05 19	10095.18	0.112 9
	7035	0.116# 14	8445.48 74	9741	0.009 2
5485.423 73	10095.18	1.611 85	^x 8469.49 69		0.010 2
^x 5495.880 76		1.320 70	8512.31 14	10095.18	0.202 21
5510.82 15	7655	0.297 20	8800.55 13	10095.18	1.021 68
5526.14 13	10095.18	0.369 23			
5541.64 17	6835	0.329 23			

Footnotes continued on next page

$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued)

$\gamma(^{41}\text{K})$ (continued)

- † Relative γ -ray intensity per 100 neutron captures.
‡ From adopted gammas.
§ For intensity per 100 neutron captures, multiply by 0.79.
Multiply placed; undivided intensity given.
x γ ray not placed in level scheme.

$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
 & Multiply placed; undivided intensity given

$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

7/2⁻, 9/2⁻

10095.18

9741

${}^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

7/2-, 9/2-

10095.18

9741

$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

${}^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

${}^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued)Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

${}^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{40}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{41}\text{K}(\text{n},\gamma)$ E=thermal 1985Kr06Target $J\pi=3/2+$.Measured E_γ , I_γ with ILL curved crystal bragg spectrometer and pair spectrometer. ^{42}K Levels

E(level) [†]	$J\pi^\dagger$	$T_{1/2}^\dagger$	Comments
0.0	0+	12.360 h 3	%β ⁻ =100.
106.828 7	3-	285 ps 40	
258.261 8	4-	130 ps 8	
638.726 12	3-	<1.4 ns	
681.943 11	(2,3)		
699.08 3	5-	41 ps 8	
783.87 2	2-		
841.940 12	3-		
1110.747 17	3+		
1143.590 19	4+	<1.4 ns	
1197.90 2	4-		
1254.820 19	(2,3)-		
1266.305 18	2-		
1273.54 2	(2- to 4+)		
1375.96 10	6+	1.1 ns 2	
1377.12 2	(1,2,3)-		
1400.04 5	(2,3)		
1407.922 19	3+		
1453.07 5	(2- to 4-)		
1463.65 2	(1- to 3)		
1489.27 9			
1513.08 4			
1538.73 7	(3,5)+	<3 ps	
1692.00 4			
1723.42 4	(2 to 4+)		
1745.61 3	(2+ to 4+)		
1816.87 3	(2+ to 4+)		
1842.98 3	(1- to 3)		
1861.90 2	2-		
1913.48 2	(2-,3)		
1937.50 2	(1,2,3)-		
1987.97 3			
2049.32 4	3+		
2072.00 4	(2,3)-		
2161.62 6	(2+ to 4+)		
2187.20 7	3+		
2204.03 6	(2- to 4+)		
2238.62 5	(1,2,3)-		
2251.09 5			
2366.19 5	(2,3)-		
2388.83 6	3+		
2401.82 5	(2,3)-		
2422.13 5	(1- to 3)		
2482.16 5	(1,2,3)-		
2573.63 6	(2,3)		
2607.02 6	(1- to 3)		
2627.85 6	(2-,3)		
2644.31 6	3-		
2653.79 11	(2-,3)		
2718.12 6	(2-,3)		
2765.96 6	(2-,3)		
2862.71 7	(2-,3)		
2877.98 6	3-		
2917.02 8	(1- to 4+)		
2926.09 6	(2,3)-		
2938.59 7	(1- to 3)		
3008.35 7	3		
3014.46 7	(1- to 4+)		
3021.10 7	(2-,3)		
3040.15 8	3-		

Continued on next page (footnotes at end of table)

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued) ^{42}K Levels (continued)

E(level) [†]	J π [†]	Comments
3195.82 7	(2-, 3)	
3210.64 7	(2, 3)-	
3233.92 7	(3, 4+)	
3284.40 7	(2, 3)-	
3287.19? 7	(2- to 4+)	
3295.32? 9	(2, 3)	
3304.34 9		
3323.74? 8	3-	
3367.34 8		
3418.45 8	(2, 3)-	
3421.28 8		
3502.90 8	(2+ to 4+)	
3528.95 17		
3621.24 9	(2, 3)	
3658.59 8	(2-, 3)	
3674.15 8	(1- to 3)	
3696.44 10	(3-, 4+)	
3770.64 10		
3794.64 9		
3798.15? 10	(2- to 4+)	
3831.71? 10	(1+ to 3)	
3861.99 9		
3876.98 8		
3888.34 10	(2, 3)-	
3890.13? 9		
3934.64 10	(2, 3)	
4013.92 9		
4036.93 11	3-	
4039.95 8	(1+ to 3)	
4053.90 9	(2, 3)-	
4103.77 10		
4105.3? 4		
4128.34 9	3-	
4152.39 9	(2- to 4+)	
4155.67? 11	(1- to 3)	
4179.44 10	(2- to 4+)	
4259.12? 10	(1- to 3)	
4389.78 15	(2- to 4+)	
4416.61 9	(2, 3)-	
4428.25 9	(1+ to 3)	
4443.15 10		
4481.05 10	(2, 3)-	
4556.67 10	(1- to 3)	
4576.26 10	(2, 3)-	
4590.59 10	(2- to 4+)	
4612.78? 11	(2+, 3)	
4660.73? 13	(2-, 3)	
4715.41? 17	(2-, 3)	
4748.54 13	(2, 3)-	
4778.04 12		
4806.84 10	(1, 2, 3)-	
4853.60 10	(0 to 3)-	
4877		
4904		
4939		
4943		
4960		
5003		
5064		
5081		
5097		
5179		
5247		

Continued on next page (footnotes at end of table)

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued) ^{42}K Levels (continued)

E(level) [†]	J π [†]	Comments
5319		
5477		
5630		
5697		
5711		
5760		
5790		
5847		
5954		
5978		
7533.77 15	1+, 2+	E(level): from evaluated s(n) (95Au04). J π : from s-wave neutron capture. Observed deexcitation intensity is 89% of g.s. feeding.

[†] From adopted levels, except as noted.

 $\gamma(^{42}\text{K})$

I γ normalization: normalized from assuming I γ (to g.s.)=100.
 $\sigma_n=1.46$ b 3.

E γ	E(level)	I γ ^{†§}	Mult. [‡]	δ [‡]	α
106.817 7	106.828	32.9 66	M1 (+E2)	+0.01 3	0.00961
151.431 3	258.261	10.7 22	M1 (+E2)	-0.008 16	0.00398
198.330 86	1453.07	0.366 97			
(232.37 $\frac{1}{2}$)	1375.96	0.0086 $\frac{1}{2}$ 6	E2+M3	-0.04 3	
268.793 8	1110.747	1.76 36			
275.93 12	3934.64	0.177 49			
283.78 12	2765.96	0.167 43			
289.207 89	1400.04	0.223 52			
301.50 14	1143.590	0.126 34	(E1)		
376.708 50	2238.62	0.61 14			
378.198 50	2366.19	0.146 38			
380.473 13	638.726	2.50 50			
395.20 38	1538.73	0.135 30			
408.87 15	1861.90	0.067 18			
413.16 16	1254.820	0.059 17			
428.712 47	1110.747	0.203 42			
431.566 16	1273.54	2.89 58			
437.24 18	1692.00	0.048 14			
440.854 18	699.08	1.26 25	M1+E2	+0.102 8	
444.525 19	1143.590	0.92 19	(E1)		
450.97 12	2388.83	0.069 17			
454.009 33	1861.90	0.275 56			
504.828 16	1143.590	2.43 36	(E1)		
531.908 15	638.726	5.72 86			
537.17 14	2926.09	0.044 10			
544.68 21	2482.16	0.030 8			
550.297 98	1816.87	0.062 12			
559.225 28	1197.90	0.260 40			
562.072 39	1816.87	0.166 26			
569.475 20	1842.98	0.601 90			
571.847 50	2388.83	0.127 20			
575.041 52	681.943	0.117 19			
579.299 57	2422.13	0.104 17			
584.404 42	1266.305	0.470 78			
(592.25 $\frac{1}{2}$)	699.08	0.047 $\frac{1}{2}$ 12	(E2)		
595.618 17	1861.90	0.83 12			
602.046 22	1745.61	0.375 57			
612.635 50	3014.46	0.201 33			
612.645 50	1723.42	0.81 14			
616.118 14	1254.820	2.32 35			

Continued on next page (footnotes at end of table)

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{42}\text{K})$ (continued)

E_γ	E(level)	$I_\gamma^{\dagger\ddagger}$	Mult. [‡]	$\delta^\ddagger$
618.201 80	3040.15	0.095 16		
620.244 16	2482.16	1.05 16		
621.727 16	1463.65	1.34 20		
627.551 15	1266.305	1.56 23		
634.652 57	1273.54	0.094 15		
638.717 14	638.726	3.37 51		
663.24 46	1937.50	0.037 8		
671.149 23	1513.08	0.297 45		
676.87 11	1375.96	0.075 14	E1+M2	+0.025 11
678.341 63	2401.82	0.128 21		
681.932 12	681.943	15.5 23		
695.189 17	1377.12	0.92 14		
706.982 81	2644.31	0.059 10		
721.66 16	1987.97	0.030 7		
725.963 33	1407.922	0.157 24		
735.099 14	841.940	2.13 32		
761.312 77	1400.04	0.058 10		
766.205 91	2627.85	0.049 9		
783.903 14	783.87	2.75 41		
805.996 [#] 28	2877.98	0.178 [#] 27		
	4039.95	0.178 [#] 27		
811.492 85	3418.45	0.050 9		
817.047 48	3021.10	0.093 15		
828.462 16	2765.96	1.22 18		
830.892 90	1513.08	0.052 9		
841.895 13	841.940	13.2 20		
846.594 47	3008.35	0.095 15		
851.01 20	1489.27	0.021 6		
856.198 32	2718.12	0.147 23		
861.338 64	2607.02	0.067 11		
874.088 19	2072.00	0.520 78		
881.33 11	1723.42	0.038 7		
903.635 21	1745.61	0.426 64		
905.712 19	2049.32	0.611 92		
912.69 23	2401.82	0.019 5		
920.811 62	2644.31	0.072 12		
923.66 19	3861.99	0.028 6		
925.71 24	4428.25	0.129 20		
^x 934.486 25		0.236 36		
939.605 17	1197.90	1.15 17		
949.60 20	2204.03	0.036 9		
951.11 14	3890.13?	0.051 10		
958.215 21	2366.19	0.430 65		
964.496 89	2877.98	0.047 8		
972.200 41	2238.62	0.108 17		
977.524 18	2251.09	0.78 12		
986.453 76	4660.73?	0.059 10		
989.065 21	2366.19	0.375 56		
993.863 23	2401.82	0.297 45		
996.511 16	1254.820	1.43 21		
1001.005 16	1842.98	1.49 22		
1011.623 30	2388.83	0.210 32		
1015.233 24	1273.54	0.608 92		
1018.032 21	2161.62	0.404 61		
1027.03 16	3890.13?	0.025 5		
1034.900 70	2573.63	0.081 13		
1036.826 31	1143.590	0.204 31		
1043.78 13	2187.20	0.068 14		
1052.881 34	4943	0.162 25		
1071.509 20	1913.48	0.533 80		
1076.51 12	2187.20	0.041 8		
1080.17 10	3284.40	0.041 7		
1084.48 12	1723.42	0.039 7		

Continued on next page (footnotes at end of table)

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{42}\text{K})$ (continued)

E_γ	E(level)	$I_\gamma^{\dagger\text{S}}$	E_γ	E(level)	$I_\gamma^{\dagger\text{S}}$
1091.088 18	1197.90	0.77 12	1616.84 11	1723.42	0.060 10
1110.767 16	1110.747	2.04 31	1622.525 70	2765.96	0.084 13
1121.704 50	2938.59	0.244 71	1640.181 44	2482.16	0.101 15
1122.744 50	2388.83	0.439 90	1644.553 62	3831.71?	0.066 10
1128.202 34	2401.82	0.133 20	1655.162 33	1913.48	0.213 32
1135.398 66	2401.82	0.063 10	1658.945 94	4576.26	0.049 8
1147.24 22	2401.82	0.416 63	1661.82 36	2917.02	0.083 13
1153.606 29	1937.50	0.192 29	1665.14# 14	2862.71	0.029# 5
1155.987 77	4443.15	0.066 11		4053.90	0.029# 5
1166.808 25	1273.54	0.302 46	1671.20 11	2926.09	0.045 8
1179.921 16	1861.90	1.64 25	1673.71# 11	4039.95	0.052# 9
1195.02 13	1453.07	0.033 6		5711	0.052# 9
1197.992 29	1197.90	0.171 26	1684.174 53	3888.34	0.110 29
1204.080 19	1987.97	0.68 10	1684.194 53	2366.19	0.110 29
1207.363 17	2049.32	1.44 22	1687.08 10	7533.77	0.042 7
1213.51 13	4152.39	0.042 8	1707.012 65	2388.83	0.131 20
1217.32 14	3421.28	0.060 12	1709.983 25	1816.87	0.98 15
1223.294 50	1861.90	0.084 13	^x 1735.047 31		0.268 40
1229.894 30	2607.02	0.157 24	1740.201 29	2422.13	0.395 59
1254.796 31	1254.820	0.79 13	1744.030 37	7533.77	0.146 22
1255.521 31	1937.50	2.02 31	1749.628 48	5790	0.147 23
1266.305 15	1266.305	3.73 56	1754.977 28	1861.90	0.484 73
1301.008 20	1407.922	0.508 76	1759.278 64	3621.24	0.066 10
1319.32 23	2161.62	0.230 35	1763.388 71	4152.39	0.068 11
1329.81 16	3696.44	0.030 6	1766.264 28	3021.10	0.487 73
1340.942 23	2718.12	0.345 52	1774.085 45	7533.77	0.155 24
1352.020 67	2607.02	0.144 22	1783.51 12	2422.13	0.394 59
1361.535 23	2627.85	0.345 52	1785.948 63	2627.85	0.210 33
1368.70 23	3418.45	0.201 30	1787.52 26	3195.82	0.173 28
1377.065 16	1377.12	3.07 46	^x 1797.26 15		0.069 12
1382.22 29	1489.27	0.014 4	1800.146 40	2482.16	0.234 35
1391.44 33	3233.92	0.179 27	1802.57 11	3210.64	0.088 14
1399.781 87	1400.04	0.586 88	1810.512 99	3008.35	0.069 11
1403.481 50	2187.20	0.090 14	1812.50# 18	3674.15	0.037# 7
1407.898 16	1407.922	2.99 45		5097	0.037# 7
1430.74 16	3418.45	0.028 5	1818.32 23	3195.82	0.138 21
1433.274 19	2072.00	0.71 11	1823.179 30	7533.77	0.340 51
1451.745 19	2718.12	0.74 11	1830.42 23	1937.50	0.161 24
1454.53 12	2862.71	0.95 14	1833.884 50	3233.92	0.115 18
1463.592 27	1463.65	0.247 37	1836.548 43	7533.77	0.138 21
1470.088 62	2877.98	0.075 12	1842.946 26	1842.98	1.12 17
1472.999 66	2926.09	0.067 11	1861.855 24	1861.90	3.43 51
1485.601# 76	2862.71	0.063# 10	1864.683 54	3008.35	0.123 19
	2938.59	0.063# 10	^x 1872.97 18		0.021 5
1500.37 13	2644.31	0.073 15	1877.127 55	4128.34	0.222 33
1501.85 21	3014.46	0.048 12	1881.097 30	3794.64	0.368 55
1509.924 44	4877	0.101 16	1891.917 49	5179	0.089 14
1520.277 35	2718.12	0.174 26	1900.494# 92	3888.34	0.049# 8
1555.500 41	7533.77	0.119 18		5319	0.049# 8
1558.718 34	3304.34	0.196 30	1903.405 89	7533.77	0.051 8
1565.468# 54	3502.90	0.080# 12	1909.899 53	3287.19?	0.083 13
	4428.25	0.080# 12	1913.79 34	1913.48	0.011 3
1568.99 12	2251.09	0.040 7	1921.61 15	4943	0.026 5
1571.815 42	3621.24	0.192 29	1934.161 33	2718.12	0.278 42
1572.85 30	4806.84	0.122 30	1937.484 26	1937.50	1.50 23
1574.47 30	3418.45	0.122 30	1941.216 70	4128.34	0.064 10
1580.318 29	7533.77	0.301 45	1945.688 30	2204.03	0.415 62
1585.101 37	1692.00	0.127 19	^x 1948.894 65		0.087 14
1596.62 23	2862.71	0.204 31	1962.294 29	2644.31	0.502 75
1602.079 37	3674.15	0.242 37	1965.096 29	2072.00	0.483 73
1603.597 53	1861.90	0.183 37	1968.083 85	2607.02	0.060 10
1604.357 53	3421.28	0.183 37	1976.640 52	3890.13?	0.106 16
1606.952 58	5711	0.083 13	1985.20 12	4612.78?	0.042 7

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$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{42}\text{K})$ (continued)

E_γ	E(level)	$I_\gamma^{\dagger\text{S}}$	E_γ	E(level)	$I_\gamma^{\dagger\text{S}}$
1987.999 76	1987.97	0.112 17	2315.191 38	2422.13	1.45 14
1990.197 87	3367.34	0.088 14	2319.695 75	3696.44	0.144 15
1998.11 11	3195.82	0.067 12	2325.11 12	4576.26	0.053 7
2006.00 31	2644.31	0.033 10	2332.50# 11	3014.46	0.074# 9
2012.086 87	4778.04	0.142 16		5954	0.074# 9
2014.36 19	4416.61	0.136 15	2334.63 17	5630	0.047 7
2020.828 57	2862.71	0.416 42	2338.486 79	5760	0.123 13
2023.76 11	4389.78	0.075 9	2341.09# 19	3040.15	0.033# 5
2027.35 19	4416.61	0.035 6		5760	0.033# 5
2030.274 81	4748.54	0.163 17	2354.546 78	7533.77	0.132 14
*2034.258 68		0.249 28	2359.173 55	3502.90	0.326 33
2035.910 99	3233.92	0.129 17	2366.129 35	2366.19	3.92 39
2050.02 10	3502.90	0.093 11	2369.91 27	2627.85	0.171 18
2056.85 12	7533.77	0.063 9	2372.68 11	3861.99	0.075 9
2060.99 18	4939	0.034 7	2375.354 76	2482.16	0.138 15
2065.16 11	3528.95	0.086 12	2381.83 26	4128.34	0.179 18
2071.946 36	2072.00	2.16 22	2384.990 76	3658.59	0.135 14
2076.855 54	5003	0.201 24	2388.813 50	2388.83	0.442 45
2076.895 54	4443.15	0.100 16	2392.139 55	3658.59	0.325 33
2083.939 39	2765.96	1.35 14	2395.526 64	2653.79	0.212 22
2086.528 54	3284.40	0.412 42	2397.834 89	3798.15?	0.096 11
2089.75 36	3233.92	0.104 12	2401.717 54	2401.82	0.335 34
2094.05# 11	2877.98	0.069# 9	2403.839 68	3658.59	0.177 19
	4576.26	0.069# 9	2408.82 11	4612.78?	0.064 9
2096.60 12	2938.59	0.065 8	2411.92 26	3195.82	0.067 19
2101.26 21	3367.34	0.027 6	2413.34 17	3876.98	0.104 21
2107.92 15	2366.19	0.037 7	2422.20 11	2422.13	0.072 9
2113.09 23	3367.34	0.033 8	2436.645 52	7533.77	0.330 33
2115.55 18	4103.77	0.100 22	2441.02 13	5319	0.041 6
2116.83 35	3861.99	0.122 24	2450.82# 14	4612.78?	0.091# 17
2119.72 14	3658.59	0.055 8		5954	0.091# 17
*2122.196 99		0.089 11	2452.360 77	7533.77	0.227 26
2125.60 13	3502.90	0.049 8	2455.04# 12	4443.15	0.056# 7
*2128.43 10		0.081 10		5760	0.056# 7
2131.86 28	2238.62	0.021 7	2460.94 26	3658.59	0.224 23
2138.42 10	3861.99	0.112 13	2466.688 58	2573.63	0.281 28
2143.432 49	2401.82	0.663 67	2469.811 56	7533.77	0.301 30
*2148.804 85		0.165 18	2476.787 63	3876.98	0.211 21
*2156.341 79		0.194 20	2480.28 14	3888.34	0.062 9
2163.29 11	3418.45	0.100 12	2482.21 20	2482.16	0.044 7
2166.376 57	3008.35	0.417 42	2485.25 28	3861.99	0.028 6
2172.71 25	3014.46	0.028 6	2487.418 71	4853.60	0.153 16
2179.044# 80	2877.98	0.179# 20	2490.651 68	4428.25	0.171 18
	4806.84	0.179# 20	2493.18 14	4481.05	0.043 6
2184.45 14	3295.32?	0.067 9	2500.454 49	3284.40	0.505 51
2188.20 18	4590.59	0.104 19	2504.34# 13	3770.64	0.038# 5
2189.90 19	4103.77	0.106 18		4576.26	0.038# 5
2192.79 23	3304.34	0.044 8	*2508.145 84		0.097 10
2195.95 10	2877.98	0.105 12	2520.730 89	2627.85	0.110 12
2199.61 13	4806.84	0.060 9	2523.295 75	5097	0.132 14
2215.11 20	7533.77	0.183 30	*2526.253 66		0.180 19
2220.569 46	3418.45	0.579 58	2530.769 62	7533.77	0.333 35
2238.557 35	2238.62	2.17 22	*2533.168 91		0.090 10
*2240.558 53		0.378 40	2537.357 72	2644.31	0.146 16
2243.247 91	3696.44	0.098 11	2542.11 13	5847	0.045 6
2259.282 35	2366.19	2.14 21	2550.12 11	4013.92	0.052 7
2262.79 16	3528.95	0.040 6	2554.93 12	4416.61	0.064 9
2266.550 74	4128.34	0.151 16	2556.935 71	3195.82	0.137 15
2281.90 10	2388.83	0.075 9	2561.53 12	4748.54	0.038 5
2287.123 49	7533.77	0.464 47	2566.859 85	4259.12?	0.089 10
2294.976 34	2401.82	3.07 31	2573.54 16	2573.63	0.150 42
*2298.874 81		0.125 13	2574.57 20	7533.77	0.120 41
2307.39 10	3418.45	0.072 8	2580.792 91	5003	0.074 9

Continued on next page (footnotes at end of table)

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{42}\text{K})$ (continued)

E_γ	E(level)	$I_\gamma^{\dagger\%}$	E_γ	E(level)	$I_\gamma^{\dagger\%}$
2585.61 20	3696.44	0.019 5	2907.35 14	3014.46	0.408 41
2590.811 61	7533.77	0.197 20	$\times$ 2913.563 93		0.061 7
2594.91 37	7533.77	0.129 15	2919.89 60	7533.77	0.246 69
2599.421 79	4416.61	0.102 11	2926.008 52	2926.09	0.338 34
2602.764 99	4806.84	0.059 7	2938.376 61	2938.59	0.190 19
2606.36 26	4013.92	0.169 17	2943.149 49	7533.77	0.431 44
$\times$ 2617.476 85		0.083 9	2945.07 14	4806.84	0.067 10
2622.61 16	3304.34	0.042 7	2952.856 63	4416.61	0.170 17
2624.65 19	3323.74?	0.042 6	2957.388 51	7533.77	0.361 36
2627.74 10	2627.85	0.091 11	2961.110 87	4778.04	0.069 8
2629.79 10	7533.77	0.125 14	2964.633 63	4428.25	0.167 17
2632.029 82	4039.95	0.101 11	2977.037 47	7533.77	0.535 54
2648.382 63	3287.19?	0.181 19	2981.69# 19	4179.44	0.027# 4
2653.56 10	2653.79	0.055 7		4389.78	0.027# 4
2656.434 71	7533.77	0.128 13	2984.32 12	4128.34	0.061 7
2660.49 17	3502.90	0.026 4	2987.07 17	3770.64	0.030 4
2664.15 12	4481.05	0.070 9	2991.87 10	3674.15	0.071 9
2666.13 11	4179.44	0.074 10	2997.69 24	3696.44	0.020 4
$\times$ 2672.02 14		0.038 6	3008.278 86	3008.35	0.135 8
$\times$ 2678.088 96		0.102 12	3010.543 81	3794.64	0.176 10
2680.154 44	7533.77	0.619 62	3014.64 26	3696.44	0.222 12
2685.170 83	3367.34	0.087 10	3021.071 75	3021.10	0.308 16
2687.54 11	3798.15?	0.065 8	3025.544 88	4939	0.119 7
2691.065 69	4155.67?	0.137 14	3028.887 73	3287.19?	0.407 21
2695.131 81	5097	0.093 10	3034.899 71	3876.98	0.484 24
2700.177 97	4939	0.059 7	3039.915 81	3040.15	0.305 23
2706.03 12	4778.04	0.035 5	3052.689 69	7533.77	0.795 40
2710.02 42	5477	0.009 3	3065.38 19	3323.74?	0.024 3
$\times$ 2717.292 70		0.137 14	3077.33 10	4590.59	0.074 5
2720.05 25	4128.34	0.301 30	3080.10# 26	5319	0.019# 3
2726.898 40	7533.77	1.11 11		5847	0.019# 3
2730.74 11	5097	0.044 5	3088.47 11	3770.64	0.095 8
2740.083 55	4013.92	0.270 27	3090.553 93	7533.77	0.213 12
2745.19 10	3528.95	0.065 8	3092.856 87	4556.67	0.136 9
2747.662 72	4013.92	0.121 13	3105.486 70	7533.77	0.860 43
2751.51 36	4128.34	0.184 19	$\times$ 3110.292 76		0.291 16
2755.70 50	7533.77	0.154 16	3112.498# 87	3794.64	0.145# 9
2762.47 10	3021.10	0.061 7		4576.26	0.145# 9
2765.799 39	2765.96	1.61 16	3117.039 69	7533.77	1.259 63
2770.75 13	2877.98	0.036 5	$\times$ 3120.98 16		0.037 3
2774.04 29	4590.59	0.066 7	$\times$ 3123.853 96		0.095 6
2779.633 61	3418.45	0.187 20	3126.83# 10	3233.92	0.099# 6
2781.844 51	4036.93	0.352 36		4590.59	0.099# 6
2784.84 28	7533.77	0.114 12	3144.36 11	7533.77	0.282 14
2787.391 72	4053.90	0.165 17	3150.87 11	3934.64	0.057 4
$\times$ 2789.735 55		0.266 27	3160.038 75	3418.45	0.346 19
2810.148 62	2917.02	0.183 19	3161.657 81	4416.61	0.222 27
$\times$ 2814.13 20		0.023 4	3161.816 81	4428.25	0.221 27
2817.67 27	7533.77	0.098 10	3177.25 16	3284.40	0.195 11
2820.84 20	3502.90	0.031 4	3180.00 19	3861.99	0.188 40
2823.40 19	3934.64	0.029 4	$\times$ 3181.20 16		0.183 43
$\times$ 2827.245 89		0.070 8	3185.088 93	4877	0.096 5
2832.134 58	3674.15	0.221 22	3188.90 28	3295.32?	0.013 2
$\times$ 2846.094 52		0.325 33	3195.593 79	3195.82	0.255 13
2854.71 10	4128.34	0.054 6	3206.66 22	3888.34	0.019 2
$\times$ 2860.49 10		0.161 22	3210.462 80	3210.64	0.219 11
2862.021 76	4128.34	0.232 27	3216.47 19	3323.74?	0.044 6
2873.62 35	7533.77	0.233 24	3220.894 87	5064	0.138 7
2878.10 16	2877.98	0.024 4	3223.99 32	3861.99	0.016 3
2881.44 24	5760	0.017 4	$\times$ 3226.967 98		0.079 5
2887.15 22	4960	0.016 3	$\times$ 3234.13 12		0.040 3
2896.23 29	5760	0.025 6	$\times$ 3238.49 11		0.075 6
2898.28 11	4715.41?	0.064 8	$\times$ 3240.727 83		0.180 10

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$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{42}\text{K})$ (continued)

E_γ	E(level)	$I_\gamma^{\dagger\text{S}}$	E_γ	E(level)	$I_\gamma^{\dagger\text{S}}$
3252.93 13	4660.73?	0.044 4	3582.50 15	4960	0.026 2
3258.01 31	5247	0.020 4	3589.451 85	3696.44	0.218 11
3265.39 16	5179	0.030 3	$\times$ 3594.07 15		0.026 2
3269.86 16	4053.90	0.022 2	3599.026 82	7533.77	0.339 17
3274.469 89	7533.77	0.120 7	$\times$ 3610.109 95		0.101 6
3278.85 23	4389.78	0.032 5	3624.83 14	5697	0.025 2
3280.80 73	5003	0.019 5	3638.65 16	4481.05	0.024 2
3283.44 18	4556.67	0.090 8	3643.457 83	7533.77	0.336 19
3285.59 40	4128.34	0.043 6	3645.26 10	7533.77	0.151 12
$\times$ 3287.91 16		0.076 7	3656.628 79	7533.77	0.729 37
3290.62 23	4556.67	0.024 3	3659.96 16	5477	0.033 3
3295.16 11	3295.32?	0.051 4	3671.701 79	7533.77	0.866 43
3310.396 77	4152.39	0.348 18	$\times$ 3688.195 83		0.332 17
3312.74 10	4155.67?	0.082 6	$\times$ 3698.33 15		0.042 3
3317.11 19	4428.25	0.019 2	3701.911 94	7533.77	0.117 6
3321.651 85	4105.3?	0.189 12	3707.96 12	4389.78	0.039 3
3323.691 87	3323.74?	0.210 12	3714.28 17	4556.67	0.019 2
3338.36 23	4036.93	0.047 4	$\times$ 3727.98 11		0.057 3
3342.50 20	4806.84	0.019 2	$\times$ 3732.40 14		0.044 3
3346.01# 23	4612.78?	0.023# 3	3735.515 88	7533.77	0.201 11
	5954	0.023# 3	3738.943 81	7533.77	0.767 39
3350.64 14	5978	0.115 14	$\times$ 3752.52 13		0.051 4
3354.221 85	7533.77	0.166 9	3755.063 93	3861.99	0.139 8
$\times$ 3366.79 11		0.075 6	$\times$ 3759.14 12		0.040 3
3367.195 84	3367.34	0.098 13	3763.033 97	7533.77	0.102 5
3370.045 84	4481.05	0.207 26	3769.86 11	3876.98	0.069 4
3379.073 82	7533.77	0.215 12	3777.695 91	4416.61	0.067 7
3381.313 75	7533.77	0.652 33	3790.359 91	5064	0.164 9
3394.24 12	4660.73?	0.041 3	3794.82 12	3794.64	0.040 3
3399.51 27	3658.59	0.102 6	3801.25 17	5790	0.018 2
3405.337 73	7533.77	2.07 10	3814.80 27	5081	0.026 6
$\times$ 3410.66 13		0.036 3	3816.80 14	5978	0.060 6
$\times$ 3414.362 90		0.126 7	3827.56 12	3934.64	0.045 3
3417.07 16	4259.12?	0.040 4	3831.32 11	3831.71?	0.063 4
3421.085 77	3421.28	0.529 27	3837.269 83	7533.77	0.963 48
3427.933 82	7533.77	0.232 14	3842.41 12	4481.05	0.043 3
3429.868 81	7533.77	0.250 15	3859.477 85	7533.77	0.521 26
$\times$ 3439.12 10		0.071 4	$\times$ 3862.889 93		0.173 9
3446.56 10	4960	0.066 4	3869.12 10	5247	0.082 5
3450.39 13	4904	0.142 18	3874.66 40	4556.67	0.242 29
$\times$ 3455.184 84		0.203 11	3875.048 86	7533.77	0.801 48
3459.36 11	5711	0.060 4	3881.34 20	5954	0.016 2
3465.261 99	4576.26	0.081 5	3889.93 10	3890.13?	0.104 6
3468.989# 85	4612.78?	0.182# 10	3893.969 94	4152.39	0.157 8
	4877	0.182# 10	$\times$ 3901.538 94		0.166 9
$\times$ 3474.274 83		0.219 11	3912.277 88	7533.77	0.350 18
3479.730# 80	4590.59	0.311# 16	$\times$ 3914.57 18		0.040 5
	7533.77	0.311# 16	3935.39 19	4778.04	0.017 2
$\times$ 3483.49 15		0.027 3	$\times$ 3943.942 97		0.142 7
3489.449 78	4128.34	0.496 25	$\times$ 3952.660 95		0.169 9
3493.765 87	7533.77	0.160 9	$\times$ 3971.64 15		0.022 2
3496.667 78	7533.77	0.472 24	4005.79 23	7533.77	0.104 6
3501.70 27	5247	0.012 2	4013.766 89	4013.92	0.732 37
3514.40 12	3621.24	0.044 3	$\times$ 4020.19 13		0.034 2
3519.729 75	7533.77	1.445 72	4022.79 36	4806.84	0.301 15
$\times$ 3524.376 95		0.109 7	4030.702 94	7533.77	0.258 13
3528.78 17	3528.95	0.092 18	4033.35 39	4715.41?	0.036 4
3539.88 13	3798.15?	0.034 3	4037.16 27	4036.93	0.024 3
$\times$ 3548.45 20		0.033 3	4039.64 15	4039.95	0.043 4
3551.83 10	4806.84	0.070 4	4048.91 29	4748.54	0.063 4
$\times$ 3565.364 89		0.152 8	4053.64 12	4053.90	0.047 3
3574.58 20	4416.61	0.028 4	$\times$ 4057.92 12		0.055 4
3576.98 11	4259.12?	0.061 5	$\times$ 4064.34 11		0.065 4

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$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{42}\text{K})$ (continued)

$E\gamma$	E(level)	$I\gamma^{\dagger\text{S}}$	$E\gamma$	E(level)	$I\gamma^{\dagger\text{S}}$
4095.81 18	4778.04	0.019 2	4636.57 20	5319	0.016 2
4101.15 17	4943	0.021 2	4645.03 11	4904	0.077 4
4105.75 12	4105.3?	0.062 4	4655.619 98	7533.77	0.578 29
4112.197 94	7533.77	0.588 30	4670.931 99	7533.77	0.465 23
4115.153 92	7533.77	1.718 86	^x 4675.94 15		0.027 2
4120.72 11	5319	0.091 5	^x 4686.38 11		0.081 4
4124.16 33	4806.84	0.014 2	4693.08 35	5477	0.009 2
4127.93 14	4128.34	0.045 3	4698.54 11	5954	0.148 8
4131.35 23	4389.78	0.021 2	^x 4709.19 22		0.014 2
4140.35 28	5630	0.011 2	4714.72 53	4715.41?	0.007 2
4154.22 12	4155.67?	0.050 3	^x 4731.14 17		0.020 2
4158.77 34	4416.61	0.009 2	4734.52 44	5847	0.008 2
4166.198 99	7533.77	0.321 16	^x 4745.37 23		0.023 3
^x 4173.09 12		0.060 4	4747.87 38	4748.54	0.014 3
^x 4182.98 15		0.025 2	4767.568 97	7533.77	4.11 21
4203.80 23	4904	0.016 2	4815.352 99	7533.77	1.461 73
4209.94 10	7533.77	0.226 12	^x 4826.89 16		0.030 2
^x 4212.71 13		0.055 4	^x 4830.94 17		0.027 2
4218.71 25	5003	0.012 2	4853.29 11	4853.60	0.205 10
4229.38 11	7533.77	0.210 11	^x 4861.33 11		0.165 9
4233.87 22	5697	0.018 2	4880.55 37	7533.77	0.062 4
4238.31 11	7533.77	0.219 11	4889.17 10	7533.77	0.943 47
4246.39 12	7533.77	0.120 7	4895.69 28	5003	0.012 2
4249.24 10	7533.77	0.914 46	4905.67 10	7533.77	0.587 29
4254.09 20	5630	0.018 2	4926.46 10	7533.77	0.592 30
4258.95 13	4259.12?	0.042 3	4938.54 13	4939	0.049 3
4270.35 16	5760	0.021 2	4959.88 10	7533.77	0.368 19
^x 4294.41 24		0.014 2	^x 4985.71 14		0.042 3
4299.708 94	7533.77	0.490 25	^x 5031.31 12		0.121 8
4309.58 12	4416.61	0.049 3	5051.32 10	7533.77	2.01 10
4319.907 99	5697	0.190 10	5057.60 31	5697	0.013 2
4322.901 94	7533.77	0.460 23	5080.94 13	5081	0.059 3
4331.51 35	4590.59	0.022 2	5096.55 15	5097	0.029 2
4337.706 93	7533.77	0.827 41	5111.39 10	7533.77	2.01 10
4365.99 41	5477	0.007 2	5131.64 10	7533.77	3.69 18
^x 4371.429 98		0.228 12	5144.68 11	7533.77	1.030 52
4374.04 10	4481.05	0.149 8	5167.28 10	7533.77	6.56 33
4399.00 18	5081	0.027 2	^x 5227.95 73		0.005 2
4402.48 21	4660.73?	0.052 6	^x 5239.85 22		0.017 2
4404.62 11	5247	0.134 9	5282.38 11	7533.77	0.540 27
^x 4410.83 15		0.025 2	5294.82 11	7533.77	2.65 13
4416.314 99	4416.61	0.217 11	^x 5316.71 24		0.013 2
4425.20 10	5064	0.141 8	5328.22 28	7533.77	0.125 6
^x 4432.87 15		0.031 2	5339.22 14	5978	0.049 3
4442.06 11	5081	0.076 4	5346.34 13	7533.77	0.058 3
4457.34 33	4715.41?	0.012 2	5371.91 11	7533.77	0.383 19
4465.44 29	5978	0.009 2	^x 5405.17 23		0.013 1
^x 4472.85 14		0.026 2	5452.25 16	5711	0.028 2
4481.16 18	4481.05	0.040 4	5461.44 11	7533.77	2.52 13
4483.67 30	4590.59	0.035 4	5484.12 11	7533.77	1.818 91
4493.405 96	7533.77	0.435 22	5595.93 11	7533.77	1.365 68
^x 4504.02 12		0.073 5	5671.50 12	7533.77	3.71 19
4512.495 94	7533.77	1.257 63	5690.44 12	7533.77	2.26 11
4519.109 95	7533.77	0.638 32	5716.54 12	7533.77	0.187 10
4525.184 95	7533.77	0.892 45	5787.79 13	7533.77	0.155 8
4534.97 13	5319	0.045 3	5810.00 12	7533.77	0.633 32
^x 4568.52 11		0.107 6	^x 5828.69 24		0.011 1
^x 4581.67 22		0.015 2	^x 5840.01 21		0.013 1
4594.977 97	7533.77	0.517 26	^x 5852.66 16		0.030 2
4601.31 21	5978	0.017 2	^x 5857.96 46		0.005 1
4607.477 98	7533.77	0.440 22	^x 5959.42 18		0.022 1
4612.29 62	4612.78?	0.007 2	^x 6047.65 39		0.005 1
4616.58 10	7533.77	0.274 14	6069.65 13	7533.77	0.310 16

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$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{42}\text{K})$ (continued)

<u>Eγ</u>	<u>E(level)</u>	<u>I$\gamma^{\dagger\S}$</u>		<u>Eγ</u>	<u>E(level)</u>	<u>I$\gamma^{\dagger\S}$</u>
6125.37 13	7533.77	0.370 19		6851.29 14	7533.77	5.63 28
6133.19 16	7533.77	0.400 20		6894.52 14	7533.77	1.252 63
6156.15 13	7533.77	0.901 45		7426.34 15	7533.77	3.21 16
6259.76 13	7533.77	0.369 19		7533.16 15	7533.77	1.857 93
6267.03 13	7533.77	0.785 39				
6278.49 13	7533.77	1.536 77				
6389.70 14	7533.77	0.206 10				
6422.57 13	7533.77	0.635 32				
6691.34 14	7533.77	0.785 39				

$\dagger$ Relative γ -ray intensity per 100 neutron captures.

$\ddagger$ From adopted gammas.

$\S$ For intensity per 100 neutron captures, multiply by 0.95.

Multiply placed; undivided intensity given.

^x γ ray not placed in level scheme.

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

41 ps
<1.4 ns
130 ps
285 ps
12.360 h

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{42}_{19}\text{K}_{23}$

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued)Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: $I(\gamma+\text{ce})$ per 100 parent decays
& Multiply placed; undivided intensity given

$^{41}\text{K}(\text{n},\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{42}\text{Ca}(\text{n},\gamma)$ E=thermal 1969Gr08Target $J\pi=0+$.Measured $E\gamma$, $I\gamma$ with Ge(Li), $\gamma\gamma$ coincidence with Ge(Li)-NaI(Tl).

See also 71Cr02.

 ^{43}Ca Levels

$E(\text{level})^\dagger$	$J\pi^\dagger$	$T_{1/2}^\dagger$	Comments
0.0	7/2-	stable	
372.762 7	5/2-	33 ps 3	
593.394 6	3/2-	81 ps 4	
990.257 8	3/2+	49 ps 3	
1394.473 14	5/2+	2.4 ps 5	
1957.4 2	1/2+	1.1 ps 2	
2046.25 7	3/2-	0.8 ps 2	
2102.7 2	3/2-	335 fs 60	
2272.7 2	(3/2, 5/2)+	275 fs 60	
2611.0 2	1/2-	130 fs 40	
2878.0 2	1/2-	110 fs 30	
2943.2 2	3/2-	<60 fs	
3285.7 2	3/2-	<60 fs	
3315.3 4	(1/2, 3/2)-	130 fs 50	
3572.3 2	3/2-		
4207.1 2	1/2-		
4901.2 4	(1/2, 3/2)-		
5037.6 3	(1/2, 3/2)-		
7933.0 3	1/2+		

E(level): from evaluated s(n) (95Au04).

 $J\pi$: from s-wave neutron capture.

Observed deexcitation intensity is 88.8% of g.s. feeding.

 † From adopted levels, except as noted. $\gamma(^{43}\text{Ca})$ $\sigma_n=0.68$ b. $I\gamma$ normalization: normalized from assuming $I\gamma(\text{to g.s.})=100$.

$E\gamma^\S$	$E(\text{level})$	$I\gamma^\dagger\#$	Mult. ‡	$\delta^\ddagger$	Comments
220.6 3	593.394	11 1	M1+E2	-0.09 4	
372.70 20	372.762	38 4	M1+E2	-0.192 11	
396.9 4	990.257	0.9 2	E1 (+M2)	-0.1 1	
404.0 8	1394.473	0.5 2	M1+E2	+0.32 5	
564.4 6	2611.0	1.5 5	(M1)		
593.4 6	593.394	23 2	E2 (+M3)	≈ 0.0	
617.7 3	990.257	6.6 7	E1 (+M2)	-0.012 17	
651.6 6	2046.25	0.9 5			
(801.1 ‡)	1394.473	0.1 ‡	E1 (+M2)	-0.03 4	
831.4 10	2878.0	0.4 2	(M1)		
840.9 10	2943.2	0.3 2			
(878.2 ‡ 6)	2272.7	0.04			$I\gamma$: 0.9 2 is inconsistent with primary intensity feeding this level.
967.5 15	1957.4	≈ 0.2			
(990.2 ‡)	990.257	0.2 ‡	(M2)		
1021.5 10	1394.473	1.4 4	E1 (+M2)	+0.11 12	
1055.9 6	2046.25	4.2 6	E1 (+M2)	0.00 3	
1239.1 12	3285.7	1.0 2			
1268.9 6	3315.3	0.7 2			
(1282.4 ‡)	2272.7	0.2 ‡			
1363.9 10	1957.4	1.5 10	(E1)		
$\times$ 1370.48 10		1.1 2			
(1394.5 ‡)	1394.473	0.09 ‡	E1 (+M2)	≈ 0.0	
1453.0 3	2046.25	4.9 5			
(1509.3 ‡)	2102.7	0.8 ‡	M1 (+E2)	+2.0 17	
1525.4 10	3572.3	0.7 2			
1673.5 4	2046.25	11.9 12			
1729.9 10	2102.7	1.2 4			

Continued on next page (footnotes at end of table)

$^{42}\text{Ca}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{43}\text{Ca})$ (continued)

$E\gamma^{\S}$	E(level)	$I\gamma^{\dagger\#}$	Mult. ‡	$\delta^{\ddagger}$
2017.9 8	2611.0	2.8 3		
2046.3 3	2046.25	38 4	E2 (+M3)	0.00 2
2102.7 6	2102.7	1.2 5	(E2)	
2161.1 6	4207.1	2.1 3		
2285.4 10	2878.0	1.4 3		
2350.3 4	2943.2	2.5 3		
(2628.4 ‡)	4901.2	0.2 ‡		
(2692.2 ‡)	3285.7	0.5 ‡		
(2798.4 ‡)	4901.2	0.3 ‡		
(2854.8 ‡)	4901.2	0.3 ‡		
2895.1 5	7933.0	2.0 3		
(2912.8 ‡)	3285.7	0.5 ‡		
2978.9 7	3572.3	1.2 3		
2992.4 10	5037.6	0.6 3		
3031.3 10	7933.0	1.1 3		
(3080.1 ‡)	5037.6	0.6 ‡		
(3199.4 ‡)	3572.3	0.3 ‡		
3613.4 8	4207.1	4.7 12		
^x 3654.7 6		0.9 3		
3725.3 3	7933.0	8.3 12		
(4047.1 ‡)	5037.6	0.8 ‡		
(4307.6 ‡)	4901.2	0.2 ‡		
4359.5 5	7933.0	2.9 4		
4616.6 9	7933.0	0.6 3		
4646.2 6	7933.0	2.4 5		
^x 4836.8 9		≈ 0.1		
4989.2 5	7933.0	3.6 5		
5054.2 5	7933.0	2.4 4		
5321.4 5	7933.0	4.1 6		
^x 5420.7 12		≈ 0.2		
5828.6 15	7933.0	0.9 3		
5886.0 4	7933.0	53 8		
5975.2 15	7933.0	0.6 3		
7339.0 7	7933.0	5.7 9		

 † Absolute γ -ray intensity per 100 neutron captures. ‡ From adopted gammas. § Literature recoil correction removed by evaluator. $^{\#}$ For intensity per 100 neutron captures, multiply by 1.0.^x γ ray not placed in level scheme.

$^{42}\text{Ca}(n,\gamma)$ E=thermal (continued)Level SchemeIntensities: I(γ +ce) per 100 parent decays **$^{43}\text{Ca}(n,\gamma)$ E=thermal 1972Wh02**Target $J\pi=7/2^-$.Measured EG, IG with Ge(Li), Ge(Li)-NaI(Tl) pair, Compton suppression spectrometer. γ - γ coincidence with Ge(Li). ^{44}Ca Levels

E(level) [†]	$J\pi^{\dagger}$	$T_{1/2}^{\dagger}$	Comments
0.0	0+	stable	
1157.047 15	2+	2.61 ps 14	
1883.51 5	0+	14 ps 4	
2283.14 3	4+	1.9 ps 7	
2656.50 5	2+	30 fs 3	
3044.33 7	4+	4.6 ps 11	
3285.00 4	6+	13.4 ps 10	
3301.3 2	2+	35 fs 18	
3307.86 7	3-	<340 ps	
3357.2 2	(2+ to 4+)	<620 ps	
3676.07 7	(1- to 3-)		
3711.80 7	(3, 4, 5-)	<410 ps	
3776.20 7	2	<0.7 ns	
3913.55 10	5-	>2 ps	
3922.6 3	(3+ to 5)		
4011.4 5			
4092.0 3	(2+ to 4+)		
4195.7 4	2+	<0.7 ns	
4358.42 9	3-		
4399.4 5	3-		
4479.8 5	2+		
4564.9 4	5-		
4584.1 3	(2+ to 4+)	<3 ns	
4651.0 4	2+		

Continued on next page (footnotes at end of table)

$^{43}\text{Ca}(n,\gamma)$ E=thermal 1972Wh02 (continued) ^{44}Ca Levels (continued)

E(level) [†]	J π [†]	T _{1/2} [†]	Comments
4690.2 6	(1- to 4+)		
4803.7 5	(1-, 2+)		
4904.6 4	3-		
5005.9 4	4+		
5096.8 5	(3, 4)-		
5130.4 3	(2, 3)+		
5230.7 4	(2 to 5)+	<4 ns	
5289.3 4	(2 to 5)+		
5300.4 5			
5342.2 5	2+		
5375.1 5	(2 to 5)+		
5458.8 5	(2, 3, 4)+		
5549.0 16	(2, 3, 4)+		
5733.5 4	(2 to 5)+	<3 ns	
5775.9 5	(2+ to 4+)		
5866.7 5	(2+ to 5)		
6039.5 9	(2 to 5)+		
6146.1 5	(2 to 5)+		
6211.4 6			
6673.4 5			
11131.55 19	3-, 4-		

E(level): from least squares fit to level scheme. 11132.0 7 from 95Au04.

J π : from s-wave neutron capture.

Observed deexciting intensity is 49% of g.s. feeding.

[†] From adopted levels, except as noted.[‡] least-squares fit to γ energies. $\gamma(^{44}\text{Ca})$ I γ normalization: normalized from assuming I γ (to g.s.)=100. $\sigma_n=6.2$ b (81MuZQ).

E γ ^S	E(level)	I γ ^{†#}	Mult. [‡]	δ [‡]
x204.33 40		0.10		
(263.53 [‡])	3307.86		(E1)	
x264.81 40		0.03		
299.48 40	4011.4	0.11		
x302.08 40		0.05		
368.84 30	3676.07	0.53		
x372.27 40		0.11		
x374.35 40		0.11		
(374.77 [‡])	3676.07			
404.34 10	3711.80	4.53		
x418.73 30		0.21		
x440.57 60		0.39		
x443.61 60		0.41		
x472.94 30		0.42		
x476.40 60		0.20		
x594.27 60		0.10		
x597.38 60		0.12		
x606.01 60		0.09		
628.69 10	3913.55	2.46		
637.63 12	3922.6	1.60		
(646.6 [‡])	4358.42			
651.07 12	4564.9	1.89		
(651.35 [‡])	3307.86	0.84 [‡]		
(667.46 [‡])	3711.80		(E1)	
(682.34 [‡])	4358.42			
726.48 30	1883.51	0.40	E2	
761.19 10	3044.33	6.51	M1+E2	-0.25 20
806.95 15	4092.0	1.41		
869.45 15	3913.55	2.45		

Continued on next page (footnotes at end of table)

$^{43}\text{Ca}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{44}\text{Ca})$ (continued)

$E\gamma^{\S}$	E(level)	$I\gamma^{\ddagger\#}$	Mult. ‡	$\delta^{\ddagger}$
878.10 20	3922.6	1.45		
$\times 966.53$ 20		1.13		
1001.85 15	3285.00	6.59	(E2)	
$\times 1017.77$ 70		0.38		
(1019.56 ‡)	3676.07			
1024.66 20	3307.86	1.99		
1050.54 20	4358.42	0.62		
1074.13 15	3357.2	11.13		
1092.15 70	5005.9	0.16		
(1119.68 ‡)	3776.20			
1126.03 15	2283.14	54.12	E2+M3	-0.05 4
1156.89 15	1157.047	96.97	E2	
1183.10 40	5096.8	0.62		
$\times 1266.35$ 80		0.33		
1276.01 80	4584.1	0.18		
$\times 1283.24$ 80		0.14		
$\times 1314.58$ 80		0.19		
1428.56 25	3711.80	2.00		
$\times 1442.39$ 80		0.13		
1499.30 $^{\oplus}$ 18	2656.50	5.46 $^{\oplus}$	M1+E2	-0.123 16
	4803.7	5.46 $^{\oplus}$		
1539.40 25	4584.1	0.77		
$\times 1543.82$ 80		0.15		
$\times 1577.45$ 40		0.39		
1588.69 40	5300.4	0.53		
$\times 1623.5$ 10		0.33		
1640.74 $^{\oplus}$ 50	3922.6	0.73 $^{\oplus}$		
	5733.5	0.73 $^{\oplus}$		
1648.13 50	5005.9	1.65		
$\times 1658.7$ 10		0.99		
(1701.88 ‡)	4358.42			
$\times 1729.8$ 10		0.85		
1773.27 50	5130.4	0.65		
(1774.7 ‡)	5866.7			
1808.92 50	4092.0	0.68		
1872.74 $^{\oplus}$ 30	5230.7	2.91 $^{\oplus}$		
	5549.0	2.91 $^{\oplus}$		
(1883.47 ‡)	1883.51		E0	
1887.28 30	3044.33	5.74	E2+M3	-0.08 5
$\times 1901.2$ 10		0.16		
$\times 1912.85$ 50		0.41		
$\times 1983.8$ 10		0.48		
1994.2 10	4651.0	0.76		
2053.94 50	6146.1	0.57		
2088.18 50	6673.4	0.87		
2099.31 50	5775.9	0.53		
2144.50 50	3301.3	1.75		
2150.93 30	3307.86	6.44		
$\times 2178.8$ 10		0.29		
2186.2 10	5230.7	0.27		
2200.05 30	3357.2	1.62		
2223.3 20	6146.1	0.00		
2248.20 50	4904.6	0.52		
2281.74 50	4564.9	0.45		
$\times 2293.14$ 60		0.24		
2297.53 60	6211.4	0.20		
2300.61 50	4584.1	0.79		
$\times 2343.37$ 60		0.11		
2376.13 50	5733.5	0.29		
$\times 2415.60$ 60		0.17		
$\times 2447.39$ 60		0.19		
$\times 2467.95$ 60		0.18		
2474.86 60	5775.9	0.27		

Continued on next page (footnotes at end of table)

$^{43}\text{Ca}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{44}\text{Ca})$ (continued)

$E\gamma^{\S}$	E(level)	$I\gamma^{\ddagger\#}$	Mult. ‡	$\delta^{\ddagger}$
(2490.8)	5775.9			
2509.20 60	5866.7	0.15		
2518.90 50	3676.07	1.78		
$\times$ 2549.92 60		0.31		
$\times$ 2581.96 60		0.19		
$\times$ 2612.88 60		0.58		
2619.11 50	3776.20	1.46	D+Q	-0.62 8
2656.24 50	2656.50	0.72	E2	
2682.77 60	6039.5	0.24		
2688.67 50	5733.5	0.37		
(2718.5 ‡)	5375.1			
2722.44 30	5005.9	2.38		
2730.71 60	5775.9	0.36		
$\times$ 2746.44 60		0.23		
(2759.8 ‡)	6673.4			
$\times$ 2786.21 60		0.13		
$\times$ 2814.99 60		0.33		
2846.75 30	5130.4	1.93		
$\times$ 2861.97 50		0.14		
2891.18 60	5549.0	0.34		
2896.71 60	6673.4	0.16		
(2934.8 ‡)	4092.0			
2947.38 30	5230.7	3.92		
$\times$ 2969.72 50		0.10		
$\times$ 2995.13 60		0.13		
3006.02 40	5289.3	1.14		
3038.67 40	4195.7	2.02		
$\times$ 3052.56 60		0.45		
$\times$ 3100.80 70		0.11		
$\times$ 3109.10 90		0.22		
$\times$ 3115.50 90		0.20		
3120.5 15	5775.9	0.14		
$\times$ 3149.79 70		0.23		
$\times$ 3158.89 70		0.23		
3176.20 70	5458.8	0.44		
$\times$ 3200.14 70		0.33		
(3201.25 ‡)	4358.42			
$\times$ 3203.70 70		0.56		
$\times$ 3219.49 70		0.13		
$\times$ 3234.48 70		0.33		
3242.09 70	4399.4	0.56		
$\times$ 3259.15 70		0.31		
3265.35 70	5549.0	0.54		
3301.50 60	3301.3	0.70	E2	
(3307.73 ‡)	3307.86	‡	E3	
$\times$ 3312.38 70		0.17		
3322.77 60	4479.8	0.63		
$\times$ 3335.52 70		0.16		
$\times$ 3354.93 60		0.31		
$\times$ 3367.70 60		0.47		
$\times$ 3395.94 70		0.13		
3427.51 40	4584.1	1.96		
3450.31 40	5733.5	1.74		
$\times$ 3467.03 70		0.13		
3492.89 40	5775.9	1.09		
$\times$ 3508.95 70		0.37		
$\times$ 3516.55 70		0.27		
3532.86 60	4690.2	0.75		
$\times$ 3545.08 70		0.14		
$\times$ 3565.34 70		0.27		
3583.36 60	5866.7	0.65		
$\times$ 3622.17 60		0.78		
3628.92 70	6673.4	0.30		

Continued on next page (footnotes at end of table)

$^{43}\text{Ca}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{44}\text{Ca})$ (continued)

$E\gamma^{\S}$	E(level)	$I\gamma^{\dagger\#}$	Mult. ‡	$E\gamma^{\S}$	E(level)	$I\gamma^{\dagger\#}$
3647.15 60	4803.7	0.56		*4849.82 80		0.12
*3661.41 70		0.22		*4872.06 80		0.09
*3672.77 70		0.40		*4890.59 70		0.33
(3675.90 ‡)	3676.07			*4905.45 70		0.38
*3712.30 70		0.10		4919.89 70	11131.55	0.90
*3717.78 70		0.07		*4974.57 80		0.15
*3723.58 70		0.24		4984.43 50	11131.55	1.12
3747.15 60	4904.6	0.82		*5006.95 70		0.27
*3756.61 70		0.20		*5039.11 70		0.39
*3808.53 60		0.48		*5068.41 80		0.09
*3826.84 70		0.16		5091.62 80	11131.55	0.40
3848.93 70	5005.9	0.29		*5119.31 80		0.11
3861.67 70	6146.1	0.66		*5135.96 70		0.45
*3869.99 70		0.41		*5160.27 80		0.17
*3874.37 70		0.17		*5196.00 50		0.62
*3892.29 70		0.27		*5223.92 70		0.26
*3903.45 60		0.58		*5239.69 70		0.21
*3923.24 70		0.21		5264.41 50	11131.55	1.19
*3957.29 60		0.52		*5281.62 80		0.08
3973.07 40	5130.4	1.61		*5287.26 80		0.15
*4025.88 80		0.38		*5304.22 70		0.26
*4034.42 80		0.58		*5315.66 80		0.08
*4075.37 70		0.14		*5348.86 80		0.47
*4131.05 80		0.19		5355.71 50	11131.55	2.88
*4149.98 80		0.29		5397.75 50	11131.55	3.75
*4168.77 70		0.53		*5472.53 70		0.31
4185.57 80	5342.2	0.13		*5478.84 80		0.12
(4195.5 ‡)	4195.7		E2	*5538.15 50		0.81
*4209.14 70		1.10		*5558.59 70		0.26
4217.90 80	5375.1	0.69		5582.39 50	11131.55	0.99
*4264.71 70		0.44		*5592.20 80		0.15
*4276.77 80		0.18		*5629.68 70		0.26
*4284.27 80		0.22		5672.96 70	11131.55	0.50
4301.69 70	5458.8	0.22		*5689.95 80		0.11
*4318.14 80		0.22		*5723.34 80		0.16
*4345.38 80		0.12		*5735.33 70		0.51
*4376.80 80		0.16		5756.29 70	11131.55	0.85
*4383.36 70		0.39		5789.47 70	11131.55	0.35
4391.46 70	5549.0	0.39		5831.37 70	11131.55	1.00
*4436.32 70		0.47		5841.88 50	11131.55	1.17
4457.88 70	11131.55	1.90		5900.89 50	11131.55	6.97
*4462.67 80		0.54		6001.28 60	11131.55	3.39
(4479.6 ‡)	4479.8		E2	6034.40 60	11131.55	1.18
*4488.41 80		0.05		*6039.7 10		0.26
*4499.36 80		0.16		*6071.1 10		0.07
*4502.64 80		0.23		*6104.66 80		0.66
*4530.95 80		0.12		6125.28 60	11131.55	3.72
*4554.27 80		0.39		6145.6 10	6146.1	0.05
4565.06 80	4564.9	0.44		*6151.07 80		0.16
*4577.58 80		0.18		*6186.8 10		0.04
*4599.08 70		0.24		*6197.7 10		0.08
4617.95 80	5775.9	0.40		6226.70 80	11131.55	0.84
*4625.11 80		0.72		*6248.5 10		0.09
*4638.25 80		0.24		*6298.7 10		0.07
4650.97 50	4651.0	1.09	E2	6328.26 60	11131.55	0.59
*4678.58 80		0.08		*6335.6 10		0.10
*4686.95 80		0.16		*6352.21 80		0.23
*4716.09 80		0.06		*6393.5 10		0.05
*4748.25 70		0.28		6441.14 80	11131.55	0.39
*4775.60 80		0.09		6480.23 60	11131.55	2.30
(4803.4 ‡)	4803.7			6546.64 60	11131.55	2.36
*4808.06 70		0.37		6566.35 60	11131.55	0.56
*4814.93 80		0.22		*6591.7 10		0.08

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$^{43}\text{Ca}(\text{n},\gamma)$ E=thermal (continued) $\gamma(^{44}\text{Ca})$ (continued)

$E\gamma^{\S}$	E(level)	$I\gamma^{\dagger\#}$	$E\gamma^{\S}$	E(level)	$I\gamma^{\dagger\#}$
6651.29 80	11131.55	0.42	7418.78 60	11131.55	0.74
6731.9 10	11131.55	0.14	7454.4 10	11131.55	0.08
6772.26 60	11131.55	0.75	^x 7712.0 10		0.03
^x 6868.6 10		0.03	7773.37 60	11131.55	3.04
6935.23 60	11131.55	0.88	7822.3 10	11131.55	0.17
^x 6963.5 10		0.03	7829.30 80	11131.55	0.60
^x 6980.7 10		0.07	^x 7916.7 10		0.04
^x 7080.8 10		0.07	8086.43 70	11131.55	0.67
7119.7 10	11131.55	0.08	8474.3 10	11131.55	0.07
7208.09 60	11131.55	1.55	8848.00 70	11131.55	0.37
^x 7247.3 10		0.07	9974.30 80	11131.55	0.11
7354.22 80	11131.55	0.49			

[†] Absolute γ -ray intensity per 100 neutron captures. uncertainties of 5–10% from 200–2500 keV energy range given by authors. No uncertainties for high-energy range given by authors.

[‡] From adopted gammas.

[§] literature recoil correction removed by evaluator.

[#] For intensity per 100 neutron captures, multiply by 1.0.

@ Multiply placed; undivided intensity given.

^x γ ray not placed in level scheme.

$^{43}\text{Ca}(n,\gamma)$ E=thermal (continued)

Level Scheme

Intensities: I(γ +ce) per 100 parent decays
 & Multiply placed; undivided intensity given

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
& Multiply placed; undivided intensity given

$^{43}\text{Ca}(n,\gamma)$ E=thermal (continued)

Level Scheme (continued)

Intensities: I(γ +ce) per 100 parent decays
 & Multiply placed; undivided intensity given

$^{44}\text{Ca}(\text{n},\gamma)$ E=thermal 1968Gr11

Target $J\pi=0+$.
Measured $E\gamma$, $I\gamma$ with Ge(Li).

 ^{45}Ca Levels

$E(\text{level})^\dagger$	$J\pi^\dagger$	$T_{1/2}^\dagger$	Comments
0.0	7/2-	163.8 d 18	$\% \beta^-=100$.
174.269 24	5/2-	0.40 ns 4	
1434.74 7	3/2-	1.10 ps +22-18	
1879.91 16	3/2+	0.05 ps 3	
1884.3 3			
1899.90 9	3/2-	1.12 ps 11	
2249.08 10	1/2-	0.43 ps 7	
2392.38 14	1/2+	0.19 ps 4	
2842.07 15	3/2-	22 fs 6	
3241.35 24	3/2-	36 fs 12	
3418.34 14	1/2-	35 fs 7	
3783.28 22	1/2-, 3/2-	<26 fs	
3838.03 20	(1/2)-	<15 fs	
4467.7 10	1/2-, 3/2-		
4615.76 15	1/2-	<12 fs	
4999.76 19	(1/2)-	<9.7 fs	
5237 3	1/2-, 3/2-		
7414.8 3	1/2+		

$E(\text{level})$: from evaluated s(n) (95Au04).

$J\pi$: from s-wave neutron capture.

Observed deexcitation intensity is 100% of g.s. feeding.

† From adopted levels, except as noted.

 $\gamma(^{45}\text{Ca})$

$I\gamma$ normalization: normalized from assuming $I\gamma(\text{primary } \gamma\text{-ray from capture state})=100$.
 $\sigma_n=0.88$ b 5.

$E\gamma^\S$	$E(\text{level})$	$I\gamma^\dagger\#$	Mult. †	$\delta^\dagger$
174.5 3	174.269	77.4	(M1)	
349.2 3	2249.08	4.2	(M1)	
465.1 3	1899.90	5.2	(M1+E2)	
492.5 6	2392.38	0.1	(E1)	
(512 † 1)	2392.38	0.16 †	(M1)	
x 565.6 10		0.3		
576.7 4	3418.34	0.7	(M1)	
814.5 3	2249.08	4.8	(M1)	
x 917.0 10		=0.5		
942.7 10	2842.07	0.3	D, E2	
957.9 $^\oplus$ 3	2392.38	1.0 $^\oplus$	(E1)	
	2842.07	1.0 $^\oplus$		
(992 †)	3241.35			
1026.0 6	3418.34	0.4	(E1)	
1169.4 6	3418.34	4.0	(M1)	
x 1186.6 5		0.3		
1260.70 10	1434.74	18.3	M1+E2	
1434.72 10	1434.74	8.8	(E2)	
(1705.6 † 2)	1879.91	0.16 †	(E1)	
1710.2 20	1884.3	1.1		
1725.8 3	1899.90	43.5	M1+E2	+0.34 4
x 1751.1 3		0.2		
(1879.9 † 3)	1879.91	†	(M2)	
1900.0 3	1899.90	11.8	(E2)	
(1938.1 † 5)	3838.03	0.35 †	(M1)	
x 1942 4		<1.0		
1983.6 20	3418.34	1.0	(M1)	
2075.5 4	2249.08	7.9	(E2)	
2178.5 30	7414.8	0.2		
(2217.9 † 6)	2392.38	0.002 †	(M2)	

Continued on next page (footnotes at end of table)

⁴⁴Ca(n,γ) E=thermal (continued)

γ(⁴⁵Ca) (continued)

Eγ [§]	E(level)	Iγ ^{‡#}	Mult. [†]	Eγ [§]	E(level)	Iγ ^{‡#}	Mult. [†]
^x 2287.5 6		0.9		3243.7 6	3418.34	2.5	(E2)
(2392.0 [†] 4)	2392.38	0.001 [†]		3565.0 15	4999.76	0.3	
2403.6 10	3838.03	0.7	(M1)	3576.8 4	7414.8	1.3	
2415.4 5	7414.8	2.2		3608.5 5	3783.28	0.7	D, E2
2608.3 15	4999.76	1.1		3631.5 5	7414.8	1.0	
2668.1 3	2842.07	3.3	D, E2	3996.0 5	7414.8	10.2	
2716.1 4	4615.76	1.4	(M1)	^x 4121.6 10		0.3	
2799.3 4	7414.8	3.4		4173.0 8	7414.8	2.4	
2841.6 8	2842.07	0.7	(E2)	4572.5 8	7414.8	4.1	
2947.1 10	7414.8	0.3		^x 4630.3 10		=1.0	
3067.6 6	3241.35	1.1	D, E2	5165.5 8	7414.8	9.7	
(3099.7 [†] 4)	4999.76	0.9 [†]		5515.1 10	7414.8	54.5	
3180.8 6	4615.76	1.0	(M1)	5980.3 10	7414.8	10.7	
(3241 [†])	3241.35						

[†] From adopted gammas.

[‡] Absolute γ-ray intensity per 100 neutron captures. Errors are 10–15% for γ-ray with an intensity ≥2.0 and up to 50% for γ-ray with an intensity <2.0 given by authors.

[§] Literature recoil correction removed by evaluator.

[#] For intensity per 100 neutron captures, multiply by 1.0.

@ Multiply placed; undivided intensity given.

^x γ ray not placed in level scheme.

Level Scheme

Intensities: I(γ+ce) per 100 parent decays
& Multiply placed; undivided intensity given

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