^{43}Ca(n,γ) E=thermal 1972Wh02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen, Balraj Singh and John A. Cameron	NDS 112, 2357 (2011)	31-Jul-2011

Additional information 1.

1972Wh02: Thermal neutron produced from the Livermore pool-type reactor with a flux of 5x10^7 n/cm^{2}sec at the target. Target of $CaCO_3$ enriched to 81.1% in ^{43}Ca. γ-rays detected with Ge(Li)- NaI(Tl) pair Compton suppression spectrometers. Measured Eγ, Iγ, $\gamma\gamma$ Deduced levels.

Others: 1969ArZT, 1971Cr02, 1966Cr06.

2007ChZX: Compilation of Eγ, Iγ from neutron capture for nuclei of Z-1-92. Measurements at Budapest to deduce elemental cross sections (using natural targets) for seven secondary γ rays.

All data from 1972Wh02, unless otherwise noted.

^{44}Ca Levels

E(level)[†]	J$^\pi$[#]	T$_{1/2}$[@]	E(level)[†]	J$^\pi$[#]	T$_{1/2}$[@]
0.0	0^+		4651.0 *4*	2^+	
1156.93 *14*	2^+	<0.35 ns	4690.0 *5*	$(1^-$ to $4^+)$	
1883.4 *4*	0^+		4803.5 *5*	$(1^-,2^+)$	
2283.06 *17*	4^+	<0.35 ns	4904.5 *4*	3^-	
2656.40 *18*	2^+	<0.76 ns	5005.6 *3*	4^+	
3044.33 *18*	4^+	<2.1 ns	5096.8 *4*	$(3,4)^-$	
3285.04 *19*	6^+	<0.76 ns	5130.1 *3*	$(2,3)^+$	
3301.5 *4*	2^+	<0.69 ns	5230.3 *3*	$(2$ to $5)^+$	<4.2 ns
3307.55 *18*	3^-	<0.35 ns	5289.2 *4*	$(2$ to $5)^+$	
3357.21 *20*	$(2^+,3,4^+)$	<0.62 ns	5300.4 *4*		
3676.2 *3*	$(1^-,2,3^-)$		5342.1 *6*	2^+	
3711.85 *20*	4^-	<0.42 ns	5374.9 *6*	$(2$ to $5)^+$	
3776.3 *5*	2	<0.69 ns	5458.8 *5*	$(2,3,4)^+$	
3913.74 *20*	5^-		5548.8 *3*	$(2,3,4)^+$	
3922.66 *21*	$(3^+,4,5)$	<0.56 ns	5733.3 *3*	$(2$ to $5)^+$	<3.5 ns
4011.3 *5*			5775.6 *3*	$(2^+,3,4^+)$	
4092.11 *23*	$(2^+,3,4^+)$		5866.3 *4*	$(2^+$ to $5)$	
4195.7 *4*	2^+	<0.69 ns	6039.9 *6*	$(2$ to $5)^+$	
4358.2 *3*	3^-		6146.1 *4*	$(2$ to $5)^+$	
4399.1 *6*	3^-		6211.3 *5*		
4479.8 *5*	2^+		6672.9 *4*		
4564.81 *22*	5^-		(11131.54[‡] *19*)	$3^-,4^-$[‡]	
4584.04 *24*	$(2^+,3,4^+)$	<3.5 ns			

[†] Least-squares fit to γ-ray energies.

[‡] From least squares fit to level scheme. 11131.27 *23* from 2011AuZZ. Observed de-exciting intensity is 49% of g.s. feeding. J^π from s-wave capture in $7/2^-$ g.s. of ^{43}Ca.

[#] From Adopted Levels.

[@] From $\gamma\gamma$(t).

γ(^{44}Ca)

Iγ normalization: normalized assuming Iγ(g.s.)=100.

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^{43}Ca(n,γ) E=thermal 1972Wh02 (continued)

γ(^{44}Ca) (continued)

E_γ [†]	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Comments
x204.3 4	0.10					
x264.8 4	0.03					
299.5 4	0.11	4011.3		3711.85	4^-	
x302.1 4	0.05					
368.8 3	0.53	3676.2	$(1^-,2,3^-)$	3307.55	3^-	
x372.3 4	0.11					
374.4[‡d] 4	0.11	3676.2	$(1^-,2,3^-)$	3301.5	2^+	
404.34 10	4.53	3711.85	4^-	3307.55	3^-	
x418.7 3	0.21					
x440.6 6	0.39					
x443.6 6	0.41					
x472.9 3	0.42					
x476.4 6	0.20					
x594.3 6	0.10					
x597.4 6	0.12					
x606.0 6	0.09					
628.69 10	2.46	3913.74	5^-	3285.04	6^+	
637.63 12	1.60	3922.66	$(3^+,4,5)$	3285.04	6^+	
651.07[c] 12	1.89[c]	3307.55	3^-	2656.40	2^+	
651.07[c] 12	1.89[c]	4564.81	5^-	3913.74	5^-	
726.5 3	0.40	1883.4	0^+	1156.93	2^+	
761.19 10	6.51	3044.33	4^+	2283.06	4^+	Additional information 5.
806.95 15	1.41	4092.11	$(2^+,3,4^+)$	3285.04	6^+	
869.45 15	2.45	3913.74	5^-	3044.33	4^+	
878.10 20	1.45	3922.66	$(3^+,4,5)$	3044.33	4^+	
x966.53 20	1.13					
1001.85 15	6.59	3285.04	6^+	2283.06	4^+	Additional information 6.
1017.8[‡d] 7	0.38	3676.2	$(1^-,2,3^-)$	2656.40	2^+	
1024.66 20	1.99	3307.55	3^-	2283.06	4^+	
1050.54 20	0.62	4358.2	3^-	3307.55	3^-	
1074.13 15	11.13	3357.21	$(2^+,3,4^+)$	2283.06	4^+	Additional information 7.
1092.2 7	0.16	5005.6	4^+	3913.74	5^-	
1126.03 15	54.12	2283.06	4^+	1156.93	2^+	Additional information 4.
1156.89 15	96.97	1156.93	2^+	0.0	0^+	Additional information 2.
1183.1 4	0.62	5096.8	$(3,4)^-$	3913.74	5^-	
x1266.4 8	0.33					
1276.0 8	0.18	4584.04	$(2^+,3,4^+)$	3307.55	3^-	
x1283.2 8	0.14					
x1314.6 8	0.19					
1428.56 25	2.00	3711.85	4^-	2283.06	4^+	
x1442.4 8	0.13					
1496[@d]		4803.5	$(1^-,2^+)$	3307.55	3^-	
1499.30[#] 18	5.46[#]	2656.40	2^+	1156.93	2^+	
1539.40 25	0.77	4584.04	$(2^+,3,4^+)$	3044.33	4^+	
x1543.8 8	0.15					
x1577.5 4	0.39					
1588.7 4	0.53	5300.4		3711.85	4^-	
x1623.5 10	0.33					
1640.7[c] 5	0.73[c]	3922.66	$(3^+,4,5)$	2283.06	4^+	
1640.7[c] 5	0.73[c]	5733.3	$(2 \text{ to } 5)^+$	4092.11	$(2^+,3,4^+)$	
1648.1 5	1.65	5005.6	4^+	3357.21	$(2^+,3,4^+)$	
x1658.7 10	0.99					
x1729.8 10	0.85					
1773.3[c] 5	0.65[c]	5130.1	$(2,3)^+$	3357.21	$(2^+,3,4^+)$	
1773.3[c] 5	0.65[c]	5866.3	$(2^+ \text{ to } 5)$	4092.11	$(2^+,3,4^+)$	

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^{43}Ca(n,γ) E=thermal 1972Wh02 (continued)

γ(^{44}Ca) (continued)

E_γ †	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
1808.9 *5*	0.68	4092.11	$(2^+,3,4^+)$	2283.06	4^+		
1872.7[c] *3*	2.91[c]	5230.3	$(2\text{ to }5)^+$	3357.21	$(2^+,3,4^+)$		
1872.7[c] *3*	2.91[c]	5548.8	$(2,3,4)^+$	3676.2	$(1^-,2,3^-)$		
(1883.47)		1883.4	0^+	0.0	0^+	E0	Additional information 3.
1887.3 *3*	5.74	3044.33	4^+	1156.93	2^+		
x1901.2 *10*	0.16						
x1912.9 *5*	0.41						
x1983.8 *10*	0.48						
1994.2 *10*	0.76	4651.0	2^+	2656.40	2^+		
2053.9 *5*	0.57	6146.1	$(2\text{ to }5)^+$	4092.11	$(2^+,3,4^+)$		
2088.2 *5*	0.87	6672.9		4584.04	$(2^+,3,4^+)$		
2099.3 *5*	0.53	5775.6	$(2^+,3,4^+)$	3676.2	$(1^-,2,3^-)$		
2144.5 *5*	1.75	3301.5	2^+	1156.93	2^+		
2150.9 *3*	6.44	3307.55	3^-	1156.93	2^+		
x2178.8 *10*	0.29						
2186.2 *10*	0.27	5230.3	$(2\text{ to }5)^+$	3044.33	4^+		
2200.1 *3*	1.62	3357.21	$(2^+,3,4^+)$	1156.93	2^+		
2223.3 *20*	0.00	6146.1	$(2\text{ to }5)^+$	3922.66	$(3^+,4,5)$		
2248.2 *5*	0.52	4904.5	3^-	2656.40	2^+		
2281.7 *5*	0.45	4564.81	5^-	2283.06	4^+		
x2293.1 *6*	0.24						
2297.5 *6*	0.20	6211.3		3913.74	5^-		
2300.6 *5*	0.79	4584.04	$(2^+,3,4^+)$	2283.06	4^+		
x2343.4 *6*	0.11						
2376.1 *5*	0.29	5733.3	$(2\text{ to }5)^+$	3357.21	$(2^+,3,4^+)$		
x2415.6 *6*	0.17						
x2447.4 *6*	0.19						
x2467.9 *6*	0.18						
2474.9[d] *6*	0.27	5775.6	$(2^+,3,4^+)$	3301.5	2^+		
2509.2 *6*	0.15	5866.3	$(2^+\text{ to }5)$	3357.21	$(2^+,3,4^+)$		
2518.9 *5*	1.78	3676.2	$(1^-,2,3^-)$	1156.93	2^+		
x2549.9 *6*	0.31						
x2582.0 *6*	0.19						
x2612.9 *6*	0.58						
2619.1 *5*	1.46	3776.3	2	1156.93	2^+		
2656.2 *5*	0.72	2656.40	2^+	0.0	0^+		
2682.8 *6*	0.24	6039.9	$(2\text{ to }5)^+$	3357.21	$(2^+,3,4^+)$		
2688.7 *5*	0.37	5733.3	$(2\text{ to }5)^+$	3044.33	4^+		
2717.57[a] *1*	9	5374.9	$(2\text{ to }5)^+$	2656.40	2^+		Additional information 8.
2722.4 *3*	2.38	5005.6	4^+	2283.06	4^+		
2730.7 *6*	0.36	5775.6	$(2^+,3,4^+)$	3044.33	4^+		
x2746.4 *6*	0.23						
x2786.2 *6*	0.13						
x2815.0 *6*	0.33						
2846.8 *3*	1.93	5130.1	$(2,3)^+$	2283.06	4^+		
x2862.0 *5*	0.14						
2891.2[d] *6*	0.34	5548.8	$(2,3,4)^+$	2656.40	2^+		
2896.7[d] *6*	0.16	6672.9		3776.3	2		
2947.4 *3*	3.92	5230.3	$(2\text{ to }5)^+$	2283.06	4^+		
x2969.7 *5*	0.10						
x2995.1 *6*	0.13						
3006.0 *4*	1.14	5289.2	$(2\text{ to }5)^+$	2283.06	4^+		
3038.7 *4*	2.02	4195.7	2^+	1156.93	2^+		
x3052.6 *6*	0.45						
x3100.8 *7*	0.11						

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^{43}Ca(n,γ) E=thermal 1972Wh02 (continued)

γ(^{44}Ca) (continued)

E_γ [†]	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π
x3109.1 9	0.22				
x3115.5 9	0.20				
3120.5[d] 15	0.14	5775.6	(2$^+$,3,4$^+$)	2656.40	2$^+$
x3149.8 7	0.23				
x3158.9 7	0.23				
3176.2 7	0.44	5458.8	(2,3,4)$^+$	2283.06	4$^+$
3200.1[‡d] 7	0.33	4358.2	3$^-$	1156.93	2$^+$
x3203.7 7	0.56				
x3219.5 7	0.13				
x3234.5 7	0.33				
3242.1 7	0.56	4399.1	3$^-$	1156.93	2$^+$
x3259.2 7	0.31				
3265.4 7	0.54	5548.8	(2,3,4)$^+$	2283.06	4$^+$
3301.5 6	0.70	3301.5	2$^+$	0.0	0$^+$
x3312.4 7	0.17				
3322.8 6	0.63	4479.8	2$^+$	1156.93	2$^+$
x3335.5 7	0.16				
x3354.9 6	0.31				
x3367.7 6	0.47				
x3395.9 7	0.13				
3427.5 4	1.96	4584.04	(2$^+$,3,4$^+$)	1156.93	2$^+$
3450.3 4	1.74	5733.3	(2 to 5)$^+$	2283.06	4$^+$
x3467.0 7	0.13				
3492.9 4	1.09	5775.6	(2$^+$,3,4$^+$)	2283.06	4$^+$
x3508.9 7	0.37				
x3516.5 7	0.27				
3532.9 6	0.75	4690.0	(1$^-$ to 4$^+$)	1156.93	2$^+$
x3545.1 7	0.14				
x3565.3 7	0.27				
3583.4 6	0.65	5866.3	(2$^+$ to 5)	2283.06	4$^+$
x3622.2 6	0.78				
3628.9 7	0.30	6672.9		3044.33	4$^+$
3647.2 6	0.56	4803.5	(1$^-$,2$^+$)	1156.93	2$^+$
x3661.4 7	0.22				
x3672.8 7	0.40				
x3712.3 7	0.10				
x3717.8 7	0.07				
x3723.6 7	0.24				
3747.2 6	0.82	4904.5	3$^-$	1156.93	2$^+$
x3756.6 7	0.20				
x3808.5 6	0.48				
x3826.8 7	0.16				
3848.9 7	0.29	5005.6	4$^+$	1156.93	2$^+$
3861.7 7	0.66	6146.1	(2 to 5)$^+$	2283.06	4$^+$
x3870.0 7	0.41				
x3874.4 7	0.17				
x3892.3 7	0.27				
x3903.4 6	0.58				
x3923.2 7	0.21				
x3957.3 6	0.52				
3973.1 4	1.61	5130.1	(2,3)$^+$	1156.93	2$^+$
x4025.9 8	0.38				
x4034.4 8	0.58				
x4075.4 7	0.14				
x4131.1 8	0.19				
x4150.0 8	0.29				

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^{43}Ca(n,γ) E=thermal 1972Wh02 (continued)

γ(^{44}Ca) (continued)

E_γ [†]	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π
x4168.8 7	0.53				
4185.6 8	0.13	5342.1	2^+	1156.93	2^+
x4209.1 7	1.10				
4217.9 8	0.69	5374.9	$(2 \text{ to } 5)^+$	1156.93	2^+
x4264.7 7	0.44				
x4276.8 8	0.18				
x4284.3 8	0.22				
4301.7 7	0.22	5458.8	$(2,3,4)^+$	1156.93	2^+
x4318.1 8	0.22				
x4345.4 8	0.12				
x4376.8 8	0.16				
x4383.4 7	0.39				
4391.5 7	0.39	5548.8	$(2,3,4)^+$	1156.93	2^+
x4436.3 7	0.47				
4457.9 7	1.90	(11131.54)	$3^-,4^-$	6672.9	
x4462.7 8	0.54				
x4488.4 8	0.05				
x4499.4 8	0.16				
x4502.6 8	0.23				
x4530.9 8	0.12				
x4554.3 8	0.39				
4565.1[d] 8	0.44	4564.81	5^-	0.0	0^+
x4577.6 8	0.18				
x4599.1 7	0.24				
4618.0 8	0.40	5775.6	$(2^+,3,4^+)$	1156.93	2^+
x4625.1 8	0.72				
x4638.3 8	0.24				
4651.0 5	1.09	4651.0	2^+	0.0	0^+
x4678.6 8	0.08				
x4686.9 8	0.16				
x4716.1 8	0.06				
x4748.3 7	0.28				
x4775.6 8	0.09				
x4808.1 7	0.37				
x4814.9 8	0.22				
x4849.8 8	0.12				
x4872.1 8	0.09				
x4890.6 7	0.33				
x4905.5 7	0.38				
4919.9 7	0.90	(11131.54)	$3^-,4^-$	6211.3	
x4974.6 8	0.15				
4984.4 5	1.12	(11131.54)	$3^-,4^-$	6146.1	$(2 \text{ to } 5)^+$
x5006.9 7	0.27				
x5039.1 7	0.39				
x5068.4 8	0.09				
5091.6 8	0.40	(11131.54)	$3^-,4^-$	6039.9	$(2 \text{ to } 5)^+$
x5119.3 8	0.11				
x5136.0 7	0.45				
x5160.3 8	0.17				
x5196.0 5	0.62				
x5223.9 7	0.26				
x5239.7 7	0.21				
5264.4 5	1.19	(11131.54)	$3^-,4^-$	5866.3	$(2^+ \text{ to } 5)$
x5281.6 8	0.08				
x5287.3 8	0.15				
x5304.2 7	0.26				

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^{43}Ca(n,γ) E=thermal 1972Wh02 (continued)

γ(^{44}Ca) (continued)

E_γ [†]	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π
[x]5315.7 *8*	0.08				
[x]5348.9 *8*	0.47				
5355.7 *5*	2.88	(11131.54)	3⁻,4⁻	5775.6	(2⁺,3,4⁺)
5397.8 *5*	3.75	(11131.54)	3⁻,4⁻	5733.3	(2 to 5)⁺
[x]5472.5 *7*	0.31				
[x]5478.8 *8*	0.12				
[x]5538.2 *5*	0.81				
[x]5558.6 *7*	0.26				
5582.4 *5*	0.99	(11131.54)	3⁻,4⁻	5548.8	(2,3,4)⁺
[x]5592.2 *8*	0.15				
[x]5629.7 *7*	0.26				
5673.0 *7*	0.50	(11131.54)	3⁻,4⁻	5458.8	(2,3,4)⁺
[x]5689.9 *8*	0.11				
[x]5723.3 *8*	0.16				
[x]5735.3 *7*	0.51				
5756.3 *7*	0.85	(11131.54)	3⁻,4⁻	5374.9	(2 to 5)⁺
5789.5 *7*	0.35	(11131.54)	3⁻,4⁻	5342.1	2⁺
5831.4 *7*	1.00	(11131.54)	3⁻,4⁻	5300.4	
5841.9 *5*	1.17	(11131.54)	3⁻,4⁻	5289.2	(2 to 5)⁺
5900.9 *5*	6.97	(11131.54)	3⁻,4⁻	5230.3	(2 to 5)⁺
6001.3 *6*	3.39	(11131.54)	3⁻,4⁻	5130.1	(2,3)⁺
6034.4 *6*	1.18	(11131.54)	3⁻,4⁻	5096.8	(3,4)⁻
[x]6039.7 *10*	0.26				
[x]6071.1 *10*	0.07				
[x]6104.7 *8*	0.66				
6125.3 *6*	3.72	(11131.54)	3⁻,4⁻	5005.6	4⁺
6145.6[d] *10*	0.05	6146.1	(2 to 5)⁺	0.0	0⁺
[x]6151.1 *8*	0.16				
[x]6186.8 *10*	0.04				
[x]6197.7 *10*	0.08				
6226.7 *8*	0.84	(11131.54)	3⁻,4⁻	4904.5	3⁻
[x]6248.5 *10*	0.09				
[x]6298.7 *10*	0.07				
6328.3[&] *6*	0.59	(11131.54)	3⁻,4⁻	4803.5	(1⁻,2⁺)
[x]6335.6 *10*	0.10				
[x]6352.2 *8*	0.23				
[x]6393.5 *10*	0.05				
6441.1 *8*	0.39	(11131.54)	3⁻,4⁻	4690.0	(1⁻ to 4⁺)
6480.2 *6*	2.30	(11131.54)	3⁻,4⁻	4651.0	2⁺
6546.6 *6*	2.36	(11131.54)	3⁻,4⁻	4584.04	(2⁺,3,4⁺)
6566.4 *6*	0.56	(11131.54)	3⁻,4⁻	4564.81	5⁻
[x]6591.7 *10*	0.08				
6651.3 *8*	0.42	(11131.54)	3⁻,4⁻	4479.8	2⁺
6731.9 *10*	0.14	(11131.54)	3⁻,4⁻	4399.1	3⁻
6772.3 *6*	0.75	(11131.54)	3⁻,4⁻	4358.2	3⁻
[x]6868.6 *10*	0.03				
6935.2 *6*	0.88	(11131.54)	3⁻,4⁻	4195.7	2⁺
[x]6963.5 *10*	0.03				
[x]6980.7 *10*	0.07				
[x]7080.8 *10*	0.07				
7119.7 *10*	0.08	(11131.54)	3⁻,4⁻	4011.3	
7208.1 *6*	1.55	(11131.54)	3⁻,4⁻	3922.66	(3⁺,4,5)
[x]7247.3 *10*	0.07				
7354.2 *8*	0.49	(11131.54)	3⁻,4⁻	3776.3	2
7418.8 *6*	0.74	(11131.54)	3⁻,4⁻	3711.85	4⁻
7454.4 *10*	0.08	(11131.54)	3⁻,4⁻	3676.2	(1⁻,2,3⁻)

Continued on next page (footnotes at end of table)

^{43}Ca(n,γ) E=thermal 1972Wh02 (continued)

$\gamma(^{44}Ca)$ (continued)

E_γ †	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π	E_γ †	I_γ [b]	E_i(level)	J_i^π	E_f	J_f^π
[x]7712.0 *10*	0.03					8086.4 *7*	0.67	(11131.54)	3^-,4^-	3044.33	4^+
7773.4 *6*	3.04	(11131.54)	3^-,4^-	3357.21	$(2^+,3,4^+)$	8474.3 *10*	0.07	(11131.54)	3^-,4^-	2656.40	2^+
7822.3 *10*	0.17	(11131.54)	3^-,4^-	3307.55	3^-	8848.0 *7*	0.37	(11131.54)	3^-,4^-	2283.06	4^+
7829.3 *8*	0.60	(11131.54)	3^-,4^-	3301.5	2^+	9974.3 *8*	0.11	(11131.54)	3^-,4^-	1156.93	2^+
[x]7916.7 *10*	0.04										

† Gamma energies in 1972Wh02 have been compared with those in the PGAA-LBL Budapest database (2007ChZX).
‡ Tentative placement (by evaluators) based on ^{44}K β^- decay.
# Small component belongs to 1496γ from 4804 level.
@ Part of 1499.3 doublet.
& Poor fit. Level energy difference=6325.0.
[a] From 2007ChZX only.
[b] Intensity per 100 neutron captures.
[c] Multiply placed with undivided intensity.
[d] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

^{43}Ca(n,γ) E=thermal 1972Wh02

Level Scheme

Intensities: I_γ per 100 neutron captures

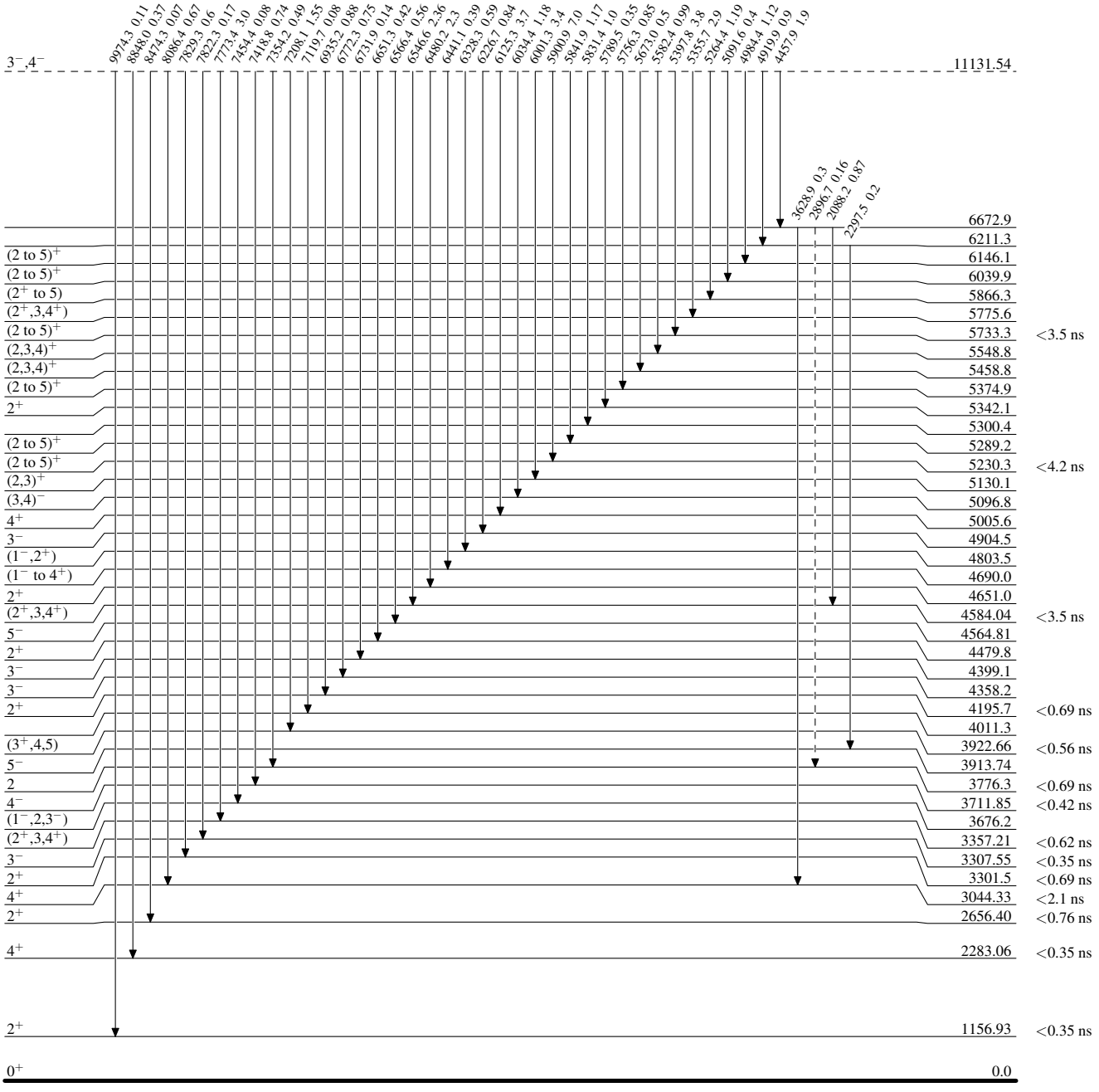
Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

γ Decay (Uncertain)



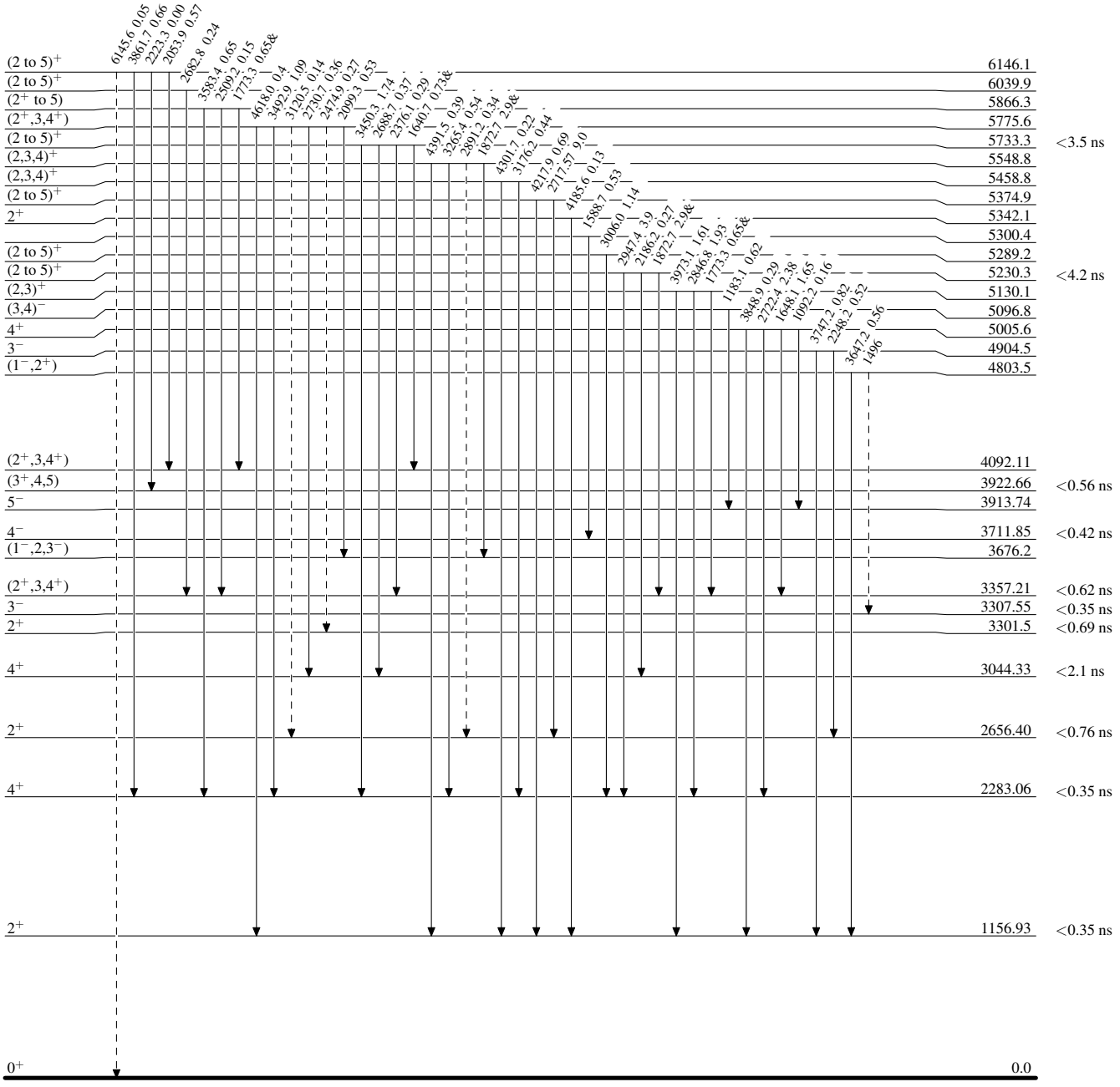
$^{44}_{20}Ca_{24}$

^{43}Ca(n,γ) E=thermal 1972Wh02

Level Scheme (continued)

Intensities: I_γ per 100 neutron captures
& Multiply placed: undivided intensity given

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



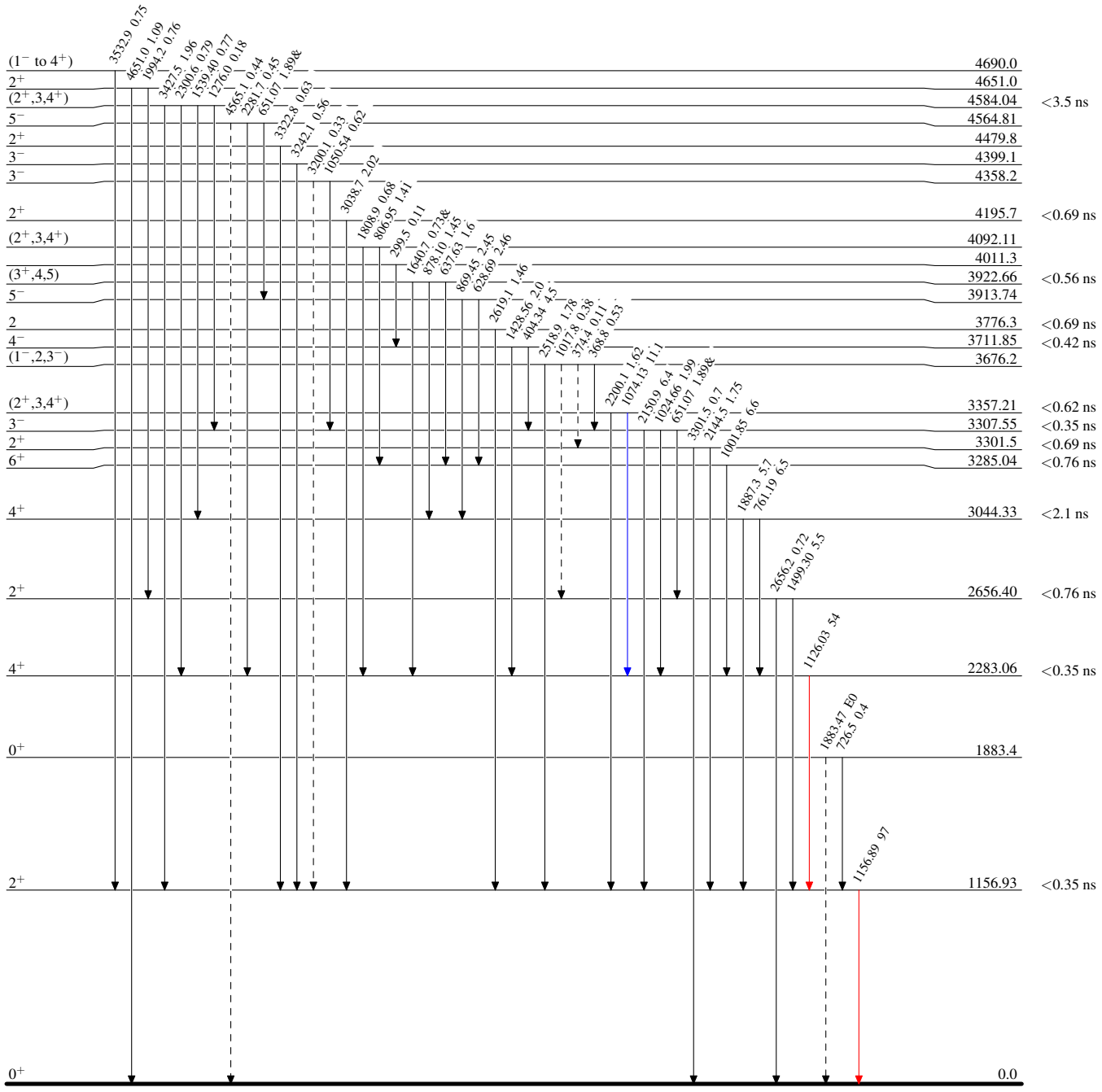
$^{44}_{20}Ca_{24}$

^{43}Ca(n,γ) E=thermal 1972Wh02

Level Scheme (continued)

Intensities: I_γ per 100 neutron captures
& Multiply placed: undivided intensity given

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



$^{44}_{20}Ca_{24}$