

$^{41}\text{Ca}(n,\gamma)$ E=thermal 1989Ki11

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen [#] and Balraj Singh		NDS 135, 1 (2016)	31-May-2016

1989Ki11: thermal neutrons were produced from the Los Alamos Omega Reactor. Target of a 12 mg CaCO₃ enriched to 81.7% in ⁴¹Ca. γ -rays were detected with a 26 cm³ Ge(Li) detector with a NaI(Tl) annulus operated in either a Compton-suppression mode or in a pair spectrometer mode. Measured E γ , I γ . Deduced neutron-separation energy. The authors report observing more than 250 γ rays in the range of 100 keV to 10 MeV. But only selected cascades, relevant to the determination of the neutron-separation energy, are reported in the paper.

^{42}Ca Levels

E(level) [†]	J π [‡]	Comments
0.0	0 ⁺	
1524.73 3	2 ⁺	
2424.18 4	2 ⁺	
2752.42 4	4 ⁺	
3253.90 4	4 ⁺	
3446.96 4	3 ⁻	
3954.42 5	4 ⁻	
3999.67 9	4 ⁺	
4690.07 10	3 ⁻	
4759.71 16	2 ⁺	
5017.15 11	4 ⁺	
(11480.65 7)	3 ⁻ ,4 ⁻ [#]	Additional information 1.

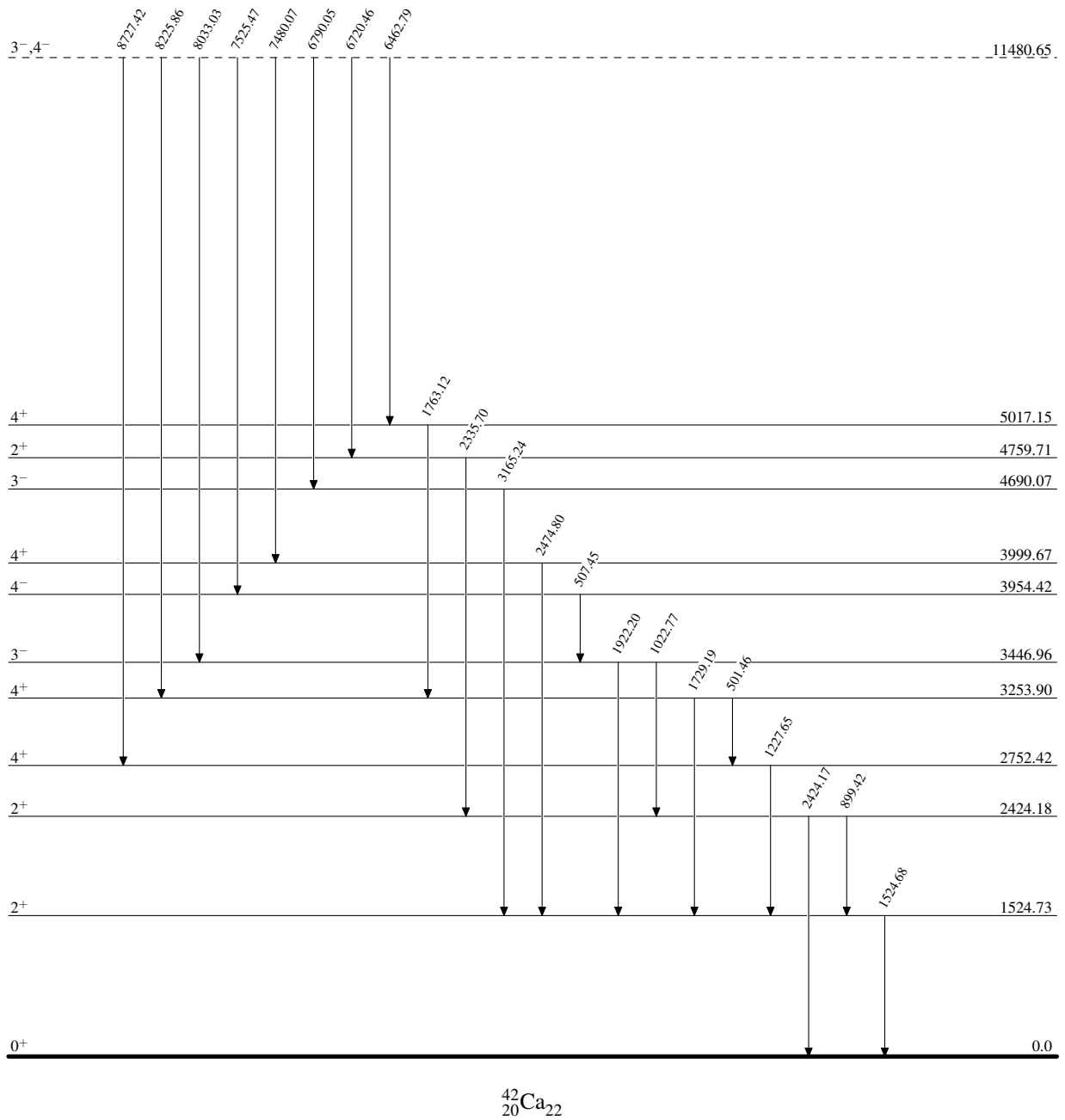
[†] From least-squares fit to E γ data.
[‡] From Adopted Levels unless otherwise noted.
[#] s-wave capture in ⁴¹Ca g.s. (J π =7/2⁻).

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

E γ	E _i (level)	J π _i	E _f	J π _f	E γ	E _i (level)	J π _i	E _f	J π _f
501.46 3	3253.90	4 ⁺	2752.42	4 ⁺	2474.80 10	3999.67	4 ⁺	1524.73	2 ⁺
507.45 3	3954.42	4 ⁻	3446.96	3 ⁻	3165.24 11	4690.07	3 ⁻	1524.73	2 ⁺
899.42 3	2424.18	2 ⁺	1524.73	2 ⁺	6462.79 17	(11480.65)	3 ⁻ ,4 ⁻	5017.15	4 ⁺
1022.77 3	3446.96	3 ⁻	2424.18	2 ⁺	6720.46 18	(11480.65)	3 ⁻ ,4 ⁻	4759.71	2 ⁺
1227.65 3	2752.42	4 ⁺	1524.73	2 ⁺	6790.05 17	(11480.65)	3 ⁻ ,4 ⁻	4690.07	3 ⁻
1524.68 3	1524.73	2 ⁺	0.0	0 ⁺	7480.07 18	(11480.65)	3 ⁻ ,4 ⁻	3999.67	4 ⁺
1729.19 5	3253.90	4 ⁺	1524.73	2 ⁺	7525.47 10	(11480.65)	3 ⁻ ,4 ⁻	3954.42	4 ⁻
1763.12 12	5017.15	4 ⁺	3253.90	4 ⁺	8033.03 18	(11480.65)	3 ⁻ ,4 ⁻	3446.96	3 ⁻
1922.20 7	3446.96	3 ⁻	1524.73	2 ⁺	8225.86 13	(11480.65)	3 ⁻ ,4 ⁻	3253.90	4 ⁺
2335.70 30	4759.71	2 ⁺	2424.18	2 ⁺	8727.42 14	(11480.65)	3 ⁻ ,4 ⁻	2752.42	4 ⁺
2424.17 6	2424.18	2 ⁺	0.0	0 ⁺					

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Level Scheme

 $^{42}_{20}\text{Ca}_{22}$