

⁴⁴Ca(d,p) 1977Sc05,1974Br19,1967Ra15

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	T. W. Burrows	NDS 109, 171 (2008)	30-Oct-2007

1967Ra15: E=7.00 MeV. Measured $\sigma(\theta(\text{C.M.})\approx 20^\circ-180^\circ, 23 \text{ angles})$; mag spect. FWHM=12 keV. DWBA.

1974Br19: E=10 MeV. Measured $\sigma(\theta(\text{C.M.})\approx 20^\circ-180^\circ, \approx 20 \text{ angles})$; mag spect. FWHM=12 keV. DWBA.

1977Sc05: E=2.5 MeV. Measured $\sigma(\theta=40^\circ-160^\circ, 5^\circ \text{ steps})$. DWBA.

1982En06: E=2-4.5 MeV. Measured $\sigma(\theta)$ and excitation functions ($\theta=30^\circ, 150^\circ; 100\text{-keV steps}$). Analyzed their data and data from 1974Br19 and 1967Ra15 using second-order DWBA and statistical compound model. Data given only for g.s. and 176-keV state.

1992NaZN compared the $\Sigma \text{ C}^2\text{S}(2\text{S}, 1\text{d}, 1\text{f}, 2\text{p}, 1\text{g}, 2\text{d})$ for ⁴⁰Ca, ⁴²Ca, ⁴⁴Ca(d,p). No details were given for ⁴⁰, ⁴⁴CaP).

Others: see 1992Bu01.

⁴⁵Ca Levels

L(D),S(E) from DWBA (1977Sc05). 1967Ra15 and 1982En06 note that the excitation function and $\sigma(\theta)$ are characteristic for a nonstripping.

L(K),S(L) from DWBA (1967Ra15), parentheses added by evaluator, except for 4.51-MeV state.

E(level) [†]	J ^π	L [‡]	S' [‡]	E(level) [†]	L [‡]	S' [‡]	E(level) [†]	L [‡]	S' [‡]
0.0		3	2.9 3	4048 & 10			5352 ^a 10	0	0.01
176 [#] 4	5/2 ^{-@}	3	0.65	4115 & 10			5373 ^d	1	0.02
1433 4		1	0.40 4	4177 10	3	0.12 1	5390 10	4	0.50 5
1558 & 10				4258 10			5417 10	2	0.03
1584 & 6				4286 10			5440 10	1	0.03
1886 ^{ab} 6		2	0.12 1	4312 10	(1)	0.01	5479 10	0	0.01
1904 6		1	2.2 2	4388 10			5521 10	4	0.30 3
1973 ^a 6		3	0.08 1	4421 10			5551 10		
2251 6		1	0.30 3	4464 10	1	0.04 1	5569 10		
2358 6				4511 10	(1)	0.05 1	5598 10		
2396 6		0	0.10 1	4559 & 10			5629 10		
2599 & 6				4622 10	1	0.34 4	5687 10		
2683 & 6				4695 ^a 10	(3,4)		5716 10		
2766 & 6				4750 10	2	0.17 2	5742 10	(2)	0.05
2847 6		1	0.34 ^c 4	4762 ^a 10	0	0.005 1	5764 10	3	0.48 5
2953 & 6				4810 10	1	0.08 1	5792 10		
2973 ^a 6		3	0.34 4	4837 10	2	0.12 1	5818 10	0	0.02
3035 & 6				4885 ^a 10	(3)	0.05	5846 10	1	0.02
3151 & 6				4919 10	0	0.03	5892 10	2	0.04 1
3247 6		1	0.14 2	4981 ^a 10	0	0.01	5915 10		
3278 ^a 6				5005 10	1	0.36 4	5948 10		
3299 ^a 6		(2)	0.01	5047 ^a 10	0	0.02	5967 10		
3322 ^a 6		3	0.28 3	5079 & 10			5990 10		
3442 10		1	0.49 5	5128 ^a 10	(0)	0.01	6018 10		
3463 & 10				5164 10			6051 10		
3713 & 10				5201 10	0	0.01	6077 10		
3753 & 10				5243 ^a 10	1	0.04 1	6106 10		
3786 10		1	0.08 1	5285 ^a 10			6234 10		
3845 10		1	0.19 2	5309 10			6301 10		
3993 ^a 10		3	0.33 4	5324 ^a 10	2	0.07 1			

Continued on next page (footnotes at end of table)

 $^{44}\text{Ca}(\text{d,p})$ [1977Sc05](#), [1974Br19](#), [1967Ra15](#) (continued) ^{45}Ca Levels (continued)

† From [1967Ra15](#), except As noted. [1977Sc05](#) did not observe states between 4.17 and 4.51 MeV and above 5.38 MeV. [1982En06](#) observed only the g.s. and the 176- and 1433-keV states. **Note:** [1968Gr11](#) found a systematic deviation In the excitation energies cited by [1967Ra15](#) and those derived by [1968Gr11](#) In (n,γ) . The (d,p) energies could Be corrected by the formula

$$\Delta E = -0.001E_x - 1.2 \text{ keV.}$$

‡ From DWBA ([1974Br19](#)), except As noted. S' from [1967Ra15](#), [1974Br19](#), and [1977Sc05](#) are In good agreement, except for the 2.65-MeV state; [1974Br19](#) and [1967Ra15](#) assumed an uncertainty of 10% based on the 10% uncertainty In $d\sigma/d\Omega$.

Not observed by [1974Br19](#).

@ From the excitation function and $\sigma(\theta)$ ([1967Ra15](#), [1982En06](#)); characteristic of a nonstripping reaction. [1982En06](#) concluded that there is No component of the $f_{5/2}$ single-particle state.

& State reported only by [1967Ra15](#).

^a Not observed by [1977Sc05](#).

^b See footnote In the Adopted Levels.

^c 2.5 ([1977Sc05](#)).

^d From [1974Br19](#). State reported only At $E(\text{d})=10$ MeV.