

182W(t,p) 1973Ca21,1976Ca10

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111,275 (2010)	1-Oct-2009

**1973Ca21:** E=20 MeV; broad-range Elbek magnetic spectrograph with nuclear emulsions (FWHM=20 keV); measured E(p),  $\sigma(\theta)$  At 6 angles ( $\theta(\text{lab})=20^\circ$  to  $60^\circ$ ); DWBA calculations.

**1976Ca10:** E=15 MeV; Q3d spectrometer, position-sensitive helical cathode wire proportional counter, plastic scin (FWHM=13 keV); measured  $d\sigma/d\Omega$  At 6 angles; deduced L from comparison of experimental  $\sigma(\theta)$  with DWBA prediction. Authors discuss systematics of  $\sigma(4+g)/\sigma(2+g)$  and  $\sigma(2+\gamma)/\sigma(2+g)$ . See also [1973Ca39](#).

184W Levels

E(level) <sup>†</sup>	L <sup>‡</sup>	$d\sigma/d\Omega(\text{c.m.}) (30^\circ) \mu\text{b/sr}^\#$	Comments
0	0	269 40	$d\sigma/d\Omega(\text{max})=150 \mu\text{b/sr}$ At $27.5^\circ$ ( <a href="#">1973Ca21</a> ).
109& 3		23 4	$d\sigma/d\Omega(\text{max})=14.2 \mu\text{b/sr}$ At $20^\circ$ ( <a href="#">1973Ca21</a> ).
364& 3		22 3	$d\sigma/d\Omega(\text{max})=17.1 \mu\text{b/sr}$ At $27.5^\circ$ ( <a href="#">1973Ca21</a> ).
748 5		2.6 6	$d\sigma/d\Omega(\text{max})=4.8 \mu\text{b/sr}$ At $20^\circ$ ( <a href="#">1973Ca21</a> ).
904& 3	2	23 4	$d\sigma/d\Omega(\text{max})=52.2 \mu\text{b/sr}$ At $20^\circ$ ( <a href="#">1973Ca21</a> ).
1002 5	0		$d\sigma/d\Omega(\text{max})=2.8 \mu\text{b/sr}$ At $27.5^\circ$ ( <a href="#">1973Ca21</a> ).
1121@			$d\sigma/d\Omega(\text{max})=21.4 \mu\text{b/sr}$ At $20^\circ$ ( <a href="#">1973Ca21</a> ) for 1121+1134 doublet.
1134@			$d\sigma/d\Omega(\text{max})$ : see comment on 1121 level.
1221 5			$d\sigma/d\Omega(\text{max})=9.6 \mu\text{b/sr}$ At $27.5^\circ$ ( <a href="#">1973Ca21</a> ).
1295 5			$d\sigma/d\Omega(\text{max})\leq 6 \mu\text{b/sr}$ At $20^\circ$ ( <a href="#">1973Ca21</a> ).
1481 5			$d\sigma/d\Omega(\text{max})=6.9 \mu\text{b/sr}$ At $20^\circ$ ( <a href="#">1973Ca21</a> ).
1536 5	(4)		$d\sigma/d\Omega(\text{max})=52.0 \mu\text{b/sr}$ At $27.5^\circ$ ( <a href="#">1973Ca21</a> ).
1628 5	(2)		$d\sigma/d\Omega(\text{max})=5.8 \mu\text{b/sr}$ At $20-45^\circ$ ( <a href="#">1973Ca21</a> ).
1755 5	(4)		$d\sigma/d\Omega(\text{max})=17 \mu\text{b/sr}$ At $20-35^\circ$ ( <a href="#">1973Ca21</a> ).
$\approx 1810$			$d\sigma/d\Omega(\text{max})=5.4 \mu\text{b/sr}$ At $27.5$ and $35^\circ$ ( <a href="#">1973Ca21</a> ).
1860 5			$J^\pi$ : not $0^+$ (from $\sigma(\theta)$ ) ( <a href="#">1973Ca21</a> ).
			$d\sigma/d\Omega(\text{max})=18.6 \mu\text{b/sr}$ At $35^\circ$ ( <a href="#">1973Ca21</a> ).
			$J^\pi$ : not $0^+$ (from $\sigma(\theta)$ ) ( <a href="#">1973Ca21</a> ).
2072 5			$d\sigma/d\Omega(\text{max})=16.4 \mu\text{b/sr}$ At $35^\circ$ ( <a href="#">1973Ca21</a> ).
2182 5	(0)		$d\sigma/d\Omega(\text{max})=14.5 \mu\text{b/sr}$ At $35^\circ$ ( <a href="#">1973Ca21</a> ).
2223 5			$d\sigma/d\Omega(\text{max})=15.9 \mu\text{b/sr}$ At $20^\circ$ ( <a href="#">1973Ca21</a> ).
			L: $\sigma(\theta)$ consistent with L=2, rules out L=0.
2415 5	(0)		$d\sigma/d\Omega(\text{max})=17.1 \mu\text{b/sr}$ At $27.5^\circ$ ( <a href="#">1973Ca21</a> ).

<sup>†</sup> From [1973Ca21](#), except As noted.

<sup>‡</sup> Based on  $\sigma(\theta)$  measured by [1973Ca21](#), but authors caution that unambiguous L-value assignments can be made only for the g.s. and 1002 level (L=0), and the 903 level (L=2). Others: [1976Ca10](#).

<sup>#</sup>  $d\sigma/d\Omega(\text{c.m.})$  In  $\mu\text{b/sr}$  At  $30^\circ$  ([1976Ca10](#)). see [1976Ca10](#) for  $d\sigma/d\Omega$  data At  $\theta=15^\circ, 22.5^\circ, 37.5^\circ, 45^\circ$  and  $52.5^\circ$ .

@ The 1121 and 1134 levels are not resolved.

& From [1976Ca10](#).