^{40}Ca(p,p′),(pol p,p′)　　　1975No04,1981Ej02,1987Ya11

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 140, 1 (2017)	30-Sep-2015

1975No04: E=35.2 MeV proton beam was produced from the Michigan State University cyclotron. Target was a 40 μg/cm^2 metallic Ca (enriched to 99.9% in ^{40}Ca). Scattered protons were momentum-analyzed with an Engel split-pole magnetic spectrograph (FWHM=4.5 keV) and detected with nuclear track plates. Measured proton spectra. Deduced levels from 3353 to 9275.

1981Ej02: E=65 MeV proton beam was produced from the Osaka University Research Center for Nuclear Physics cyclotron. Target was a natural Ca foil (96.94% in ^{40}Ca) of 1.2 mg/cm^2 thickness. Scattered particles were momentum-analyzed with the magnetic spectrograph RAIDEN (FWHM=15 keV) and detected by the ΔE-E telescope of position-sensitive detectors. Measured $\sigma(\theta)$.Deduced levels, J, π, L from DWBA analysis. Report levels up to 10337.

1987Ya11: E=65.1 MeV proton beam was produced from the AVF cyclotron of the Research Center for Nuclear Physics at Osaka University. Target was 1.4 mg/cm^2 metallic foil of natural Ca. Reaction products were momentum-analyzed with the RAIDEN magnetic spectrograph (FWHMM=23 keV). Measured $\sigma(\theta)$. Deduced levels, J, π, L from DWBA analysis. Report levels between 13420 and 15080.

1972Gr26: E=25, 30, 35, 40 MeV proton beams were produced from Michigan State University sector-focused cyclotron. Target was a rolled self-supported 2 mg/cm^2 foil of enriched ^{40}Ca (99.973%). Scattered particles were detected with two surface-barrier Ge(Li) detectors (FWHM=30 keV). Measured $\sigma(\theta)$. Deduced levels, J, π, L deformation parameters, transition strengths from DWBA analysis. Comparisons with shell-model calculations. Report levels up to 10277.

Other references from which results are used in this dataset:

1956Br98: E=7.17-8.00 MeV.

Additional information 1.

1964Ya02: E=55 MeV.

1965Gr11: E=14.6, 17.3 MeV. Measured $\sigma(\theta)$, deduced deformation parameters.

1968Wi05: E=155 MeV. Measured $\sigma(\theta)$, pol(θ), DWBA.

1970Bl03: E=20.3 MeV, pol p. Measured $\sigma(\theta)$, deduced deformation parameters.

1976Ka29: E=185 MeV. Measured $\sigma(\theta)$.

1976Al19: E=1.044 GeV. Measured $\sigma(\theta)$.

1982Bl10: E=800 MeV; pol p. Measured $\sigma(\theta)$, Ay(θ). Deduced deformation parameters.

1982Ho13: E=65 MeV; pol p. Measured $\sigma(\theta)$, Ay(θ), DWBA analysis.

1980Ad03: E=800 MeV, pol p. Measured $\sigma(\theta)$, Ay(θ). Deduced deformation parameters. DWBA analysis of known J^π states.

1980Ca14: E=800 MeV. Measured $\sigma(\theta)$, deduced octupole giant resonance, DWBA analysis.

1981An08: E=201 MeV. Measured $\sigma(\theta)$, deduced M1 strength.

1985Ho14, 1984Ho16: E=334 MeV; pol p. Measured $\sigma(\theta)$, Ay(θ), DWIA analysis.

1985Se14: E=500 MeV; pol p. Measured $\sigma(\theta)$, Ay(θ).

1987Fr05: E=362 MeV; pol p. Measured $\sigma(\theta)$, Ay(θ).

1989Le04: E=362 MeV; pol p. Measured $\sigma(\theta)$, Ay(θ).

1993Se02: E=200 MeV; pol p. Measured $\sigma(\theta)$, Ay(θ), FWHM=30-50 keV.

Others (p,p′):

2012Us02, 2011Us01, 2011Us03: E=200 MeV. Measured $\sigma(\theta)$. Deduced fine structure of ISGQR, level density.

2000Ba18: E=319 MeV; pol p. Measured $\sigma(\theta)$, spin-flip probabilities.

1993Gr02: E=497, 581 MeV; pol p. Measured spin-flip observables.

1991Ke13: E=318 MeV; pol p. Measured $\sigma(\theta)$, Ay(θ).

1990Ba14: E=300, 800 MeV; pol p. Measured spin-flip probability.

1989Sa23: E=65 MeV. Measured $\sigma(\theta)$, FWHM=20-25 keV.

1989Ba55: E=319 MeV; pol p. Measured absolute $\sigma(\theta)$.

1989Ho11: E=500 MeV. Measured $\sigma(\theta)$.

1989Li15: E=500 MeV; pol p. Measured $\sigma(\theta)$, FWHM=70 keV. Deduced giant resonance (L=2,4) strengths.

1988Ba06: E=318 MeV; pol p. Measured $\sigma(\theta)$.

1987Gl02: E=319 MeV; pol p. Measured $\sigma(\theta)$, spin-flip probability.

1987Ba22: E=500 MeV; pol p. Measured $\sigma(\theta)$, Ay(θ), DWBA.

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1986Aa01: E=500 MeV; pol p. Measured spin-rotation parameters.
1983Mi25: E=650 MeV; pol p. Measured $\sigma(\theta)$, DWIA analysis.
1982Ga02: E=800 MeV. Deduced deformation lengths.
1982Aa04: E=497 MeV; pol p. Measured proton depolarization tensor parameters.
1981Co08: E=31,32,35.5,40,42 MeV, pol p. Measured spin-flip probability.
1980Va10: E=60.3 MeV. Measured $\sigma(\theta)$, DWBA analysis.
1977Vo09: E=19 MeV. Measured $\sigma(\theta)$.
1977Ul01: E=7-10 MeV. Measured proton-pair coin.
1975Ma07: E=155 MeV. Measured $\sigma(\theta)$.
1974Pl02: E=20 MeV, pol p. Measured $\sigma(\theta)$, pol(θ).
1973Go42: E=20-25 MeV, pol p. Measured $\sigma(\theta)$, Ay(θ).
1972Co11: E=1 GeV. Measured $\sigma(\theta)$.
1970Wh06: E=5.8-6.6 MeV. Measured $\sigma(\theta)$.
1970Ka44: E=185 MeV. Measured $\sigma(\theta)$, deduced B(EL).
1970In03: E=185 MeV. Measured $\sigma(\theta)$, pol(θ) for first 3^-.
1968Va27: E=6.28-6.73 MeV. Deduced IAR.
1968Ba64: E=13 MeV. FWHM=50 keV. About 25 groups reported.
1966Wa12: E=160 MeV.
1966Ma13: E=11.5 MeV.
1966Li02: E=155 MeV. Measured $\sigma(\theta)$.
1965Ru01: E=4.26 MeV.
1965Ha28: E=156 MeV.
1964St15: E=40 MeV.
1964Bo27: pol p.
1964Ti02:
1963Ro30: E=150 MeV.
1963Ho26: E=155 MeV.
1962Va14: E=6.6 MeV.
Others: 1964Ti02, 1958Go90, 1955Be73.

(p,p), (pol p,p): deduced optical-model parameters from $\sigma(\theta)$:
1989Gr12: E=200 MeV; pol p.
1988Hu10: E=200, 300, 400, 500 MeV; pol p.
1988Ho05: E=497.5 MeV; pol p.
1988Le10: E=200, 362, 400 MeV; pol p.
1988Ot04: E=200, 500, 800 MeV; pol p.
1988Bl07: E=320, 400, 650 MeV; pol p.
1986Mc05: E=21-48.4 MeV. Measured $\sigma(\theta)$.
1986Fe01: E=800 MeV; pol p.
1983Ba05: E=800 MeV; pol p.
1982Sc17: E=80.2, 181.5 MeV; pol p.
1982Sa19: E=65 MeV; pol p.
1982Al18: E=1 GeV.
1981Ra21: E=497 MeV, pol p.
1981Ra02: E=800 MeV.
1981No07: E=65 MeV, pol p.
1981Na02: E=80.2, 135.1, 160 MeV.
1981Ho26: E=500 MeV, pol p.
1980Fa07: E=35.2 MeV.
1979Sa38: E=65 MeV, pol p.
1979Ig01: E=800 MeV, pol p.
1977Ch29: E=1 GeV.
1975Al08: E=1 GeV.
1974Pl05: E=20, 24.5 MeV, pol p.

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1974Gu14: E=5-6 MeV.
1974Co09: E=156 MeV.
1973Be41: E=40 MeV, pol p.
1973Ba79: E=1 GeV.
1972Lo10: E=10.8-16.3 MeV.
1972Kl03: E=2.3-2.8 MeV, pol p.
1971Va09: E=10-180 MeV.
1971Hn02: E=30.3 MeV, pol p.
1971Di17: E=10-22 MeV.
1971Br22: E=21.0, 23.5, 26.3, 48.0 MeV.
1970Ma54: E=25, 30, 35, 40 MeV.
1969Fu07: E=61.4 MeV.
1968Pr16: E=6.3-6.9 MeV.
1967Gr19: E=35.8, 45.5 MeV.

Level energy data: 1987Ya11, 1981Ej02, 1975No04, 1981An08, 1972Gr26, 1965Gr11.
L-transfers: 1972Gr26, 1993Se02, 1984Ho16, 1976Al19, 1976Ka29, 1970Bl03, 1965Gr11, 1964Ya02.
J^π from (pol p,p′): 1993Se02, 1989Le04, 1987Fr05, 1985Ho14, 1982Bl10, 1982Ho13, 1968Wi05.

^{40}Ca Levels

Differential cross sections at 15.4° in μb/sr (from 1975No04) are listed under comments. 1975No04 give cross sections at 30.7°
also. Both sets of data were normalized to cross section for 4492, 5⁻ level as determined by 1972Gr26. The uncertainties are 10%,
unless otherwise stated.
B(EL)(W.u.) values given under comments are from 1972Gr26.

E(level)[†‡]	J^π	L[#]	β_LR[@]	Comments
0	0⁺	0		
3352.1 _3_	0⁺[d]	0		L: from 1993Se02.
				dσ/dΩ=126 μb/sr.
3736.4	3⁻	3	1.39[f]	β_3=0.41 (1985Se14)
				J^π: from (pol p,p′) (1968Wi05,1982Ho13,1982Bl10,1987Fr05,1989Le04).
				β_LR: others: 1.40, 1.38, 1.35, 1.32 from E=25, 30, 35, 40 MeV data (1972Gr26).
				B(E3)(W.u.)=28.7 _20_ (1972Gr26).
				Other β_3=0.340 (1982Bl10).
				dσ/dΩ=11300 μb/sr, %EWSR=22.1 (1972Gr26).
3904.1	2⁺	2	0.52[f]	β_2=0.14 (1985Se14)
				J^π: from (pol p,p′) (1987Fr05,1984Ho16).
				β_LR: others: 0.42, 0.43, 0.42, 0.43 from E=25, 30, 35, 40 MeV data (1972Gr26), 0.43
				(1984Ho16).
				Other β_2=0.133 (1982Bl10).
				dσ/dΩ=2240, %EWSR=3.2 (1972Gr26).
				B(E2)(W.u.)=2.05 _20_ (1972Gr26).
4491.5	5⁻	5	0.76[f]	β_5=0.25 (1985Se14)
				J^π: from (pol p,p′) (1987Fr05,1982Bl10).
				β_LR: others: 0.91, 0.86, 0.83, 0.80 from E=25, 30, 35, 40 MeV data (1972Gr26).
				Other β_5=0.215 (1982Bl10).
				dσ/dΩ=1560, %EWSR=6.4 (1972Gr26).
				B(E5)(W.u.)=20.6 _21_ (1972Gr26).
5213.8 _5_				dσ/dΩ=13 _4_.
5249.5	2⁺[c]	2	0.12	β_LR: others: 0.14, 0.15, 0.12 from E=30, 25, 40 MeV data (1972Gr26), 0.11 (1984Ho16).
				dσ/dΩ=575.
				B(E2)(W.u.)=0.26 _5_, %EWSR=0.3 (1972Gr26).
5279.3 _3_		4	0.14	β_LR: others: 0.15, 0.16, 0.13 from E=30, 25, 40 MeV data (1972Gr26).

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^{40}Ca(p,p$'$),(pol p,p$'$)   **1975No04,1981Ej02,1987Ya11 (continued)**

^{40}Ca Levels (continued)

E(level)[†][‡]	J^{π}	L[#]	$\beta_{L}R$[@]	Comments
				%EWSR=0.2 (1972Gr26).
				$d\sigma/d\Omega$=122.
5614.3		5	0.33	$\beta_{L}R$: others: 0.36, 0.42, 0.31 from E=30, 25, 40 MeV data (1972Gr26).
				%EWSR=1.2 (1972Gr26).
				$d\sigma/d\Omega$=194.
5630.1 *3*	2^{+c}	2	0.15[f]	L: from 1984Ho16.
				$\beta_{L}R$: 0.13 (1984Ho16).
				$d\sigma/d\Omega$=248.
				B(E2)(W.u.)=0.13 *5* (1972Gr26).
5903.3 *3*		1		$d\sigma/d\Omega$=503.
6026.2 *3*	2^{-}	3	0.18	J^{π}: from (pol p,p$'$) (1982Ho13).
				$\beta_{L}R$: others: 0.20, 0.23, 0.17 from E=30, 25, 40 MeV data (1972Gr26).
				%EWSR=0.7 (1972Gr26).
				$d\sigma/d\Omega$=268.
6285.8	3^{-d}	3	0.38[f]	$\beta_{L}R$: others: 0.46, 0.43, 0.41, 0.40 from E=25, 30, 35, 40 MeV data (1972Gr26).
				$d\sigma/d\Omega$=1471.
				B(E3)(W.u.)=3.1 *3*, %EWSR=3.4 (1972Gr26).
6422	2^{+}	2	<0.04	E(level),L,$\beta_{L}R$: from 1984Ho16 only.
6508.4 *3*		4	0.18	$\beta_{L}R$: others: 0.17, 0.18, 0.17 from E=30, 25, 40 MeV data (1972Gr26).
				%EWSR=0.5 (1972Gr26).
				$d\sigma/d\Omega$=114.
6543.6 *4*				$d\sigma/d\Omega$=32.
6583.3 *3*	3^{-d}	3	0.34[f]	$\beta_{L}R$: others: 0.41, 0.36, 0.33, 0.32 from E=25, 30, 35, 40 MeV data (1972Gr26).
				$d\sigma/d\Omega$=975.
				B(E3)(W.u.)=2.5 *3*, %EWSR=2.4 (1972Gr26).
6750.9 *3*	2^{-}	3	0.22	J^{π}: from (pol p,p$'$) (1982Ho13).
				$\beta_{L}R$: others: 0.24, 0.27, 0.21 from E=30, 25, 40 MeV data (1972Gr26).
				%EWSR=1.1 (1972Gr26).
				$d\sigma/d\Omega$=410.
6909.1 *3*	2^{+c}	2	0.49[f]	$\beta_{L}R$: others: 0.44, 0.43, 0.42, 0.45 from E=25, 30, 35, 40 MeV data (1972Gr26), 0.42 (1984Ho16).
				$d\sigma/d\Omega$=2316.
				B(E2)(W.u.)=2.25 *23*, %EWSR=5.7 (1972Gr26).
6931.8 *3*		≥3		$d\sigma/d\Omega$=190.
6950.9 *4*		1		$d\sigma/d\Omega$=2457.
7113.9 *4*		5	0.29	L: other: 3 (1965Gr11).
				$\beta_{L}R$: others: 0.32, 0.40, 0.27 from E=30, 25, 40 MeV data (1972Gr26).
				%EWSR=1.2 (1972Gr26).
				$d\sigma/d\Omega$=164.
7278.0 *4*				$d\sigma/d\Omega$=76.
7300.7 *5*		2	0.09	L: 1972Gr26 did not resolve the 7278 and 7301 level and assigned L=(0,2) for a level at 7292 with %EWSR=0.3.
				$\beta_{L}R$: others: 0.10, 0.10, 0.09 from E=30, 25, 40 MeV data (1972Gr26).
				$d\sigma/d\Omega$=25 *4*.
7425? *1*				E(level): very weak state and assignment is tentative (1975No04).
				$d\sigma/d\Omega$<10.
7447.1 *6*		4	0.16	$\beta_{L}R$: others: 0.17, 0.20, 0.15 from E=30, 25, 40 MeV data (1972Gr26).
				%EWSR=0.5 (1972Gr26).
				$d\sigma/d\Omega$=33 *5*.
7466.2 *6*	2^{+c}	2	<0.07	L,$\beta_{L}R$: from 1984Ho16.
				$d\sigma/d\Omega$=46.
7532.5 *5*		(3)	0.17	E(level),L: 1972Gr26 did not resolve this level from 7561 but assigned L=3 and (4), respectively.
				$\beta_{L}R$: others: 0.17, 0.19, 0.15 from E=30, 25, 40 MeV data (1972Gr26).
				%EWSR=0.7 (1972Gr26).
				$d\sigma/d\Omega$=221.

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^{40}Ca(p,p′),(pol p,p′)   **1975No04,1981Ej02,1987Ya11 (continued)**

^{40}Ca Levels (continued)

E(level)[†‡]	J^π	L[#]	β_LR[@]	Comments
7561.6 5		(4)	0.20	β_LR: others: 0.20, 0.23, 0.19 from E=30, 25, 40 MeV data (1972Gr26). %EWSR=0.8 (1972Gr26). $d\sigma/d\Omega$=146.
7623.5 5				$d\sigma/d\Omega$=49.
7658.5				$d\sigma/d\Omega$=59.
7676.4 6		(≥6)		$d\sigma/d\Omega$=34 (30.7°).
7694.4 6				$d\sigma/d\Omega$=44 (30.7°).
7701.2 6				$d\sigma/d\Omega$=42 (30.7°).
7769.4? 10				E(level): very weak state and assignment is tentative (1975No04). $d\sigma/d\Omega$=8 2.
7814.7 6				$d\sigma/d\Omega$=15 2 (30.7°).
7871.7 5	2^{+c}	2	0.23	$d\sigma/d\Omega$=696. β_LR: others: 0.25, 0.28, 0.23 from E=30, 25, 40 MeV data (1972Gr26). B(E2)(W.u.)=0.92 15, %EWSR=1.8 (1972Gr26).
7927.9 5		4	0.29	$d\sigma/d\Omega$=333. B(E4)(W.u.)=2.2 2, %EWSR=1.7 (1972Gr26). β_LR: others: 0.31, 0.34, 0.29 from E=30, 25, 40 MeV data (1972Gr26).
7976.3 6				E(level): doublet. $d\sigma/d\Omega$=92.
8018.8? 10				E(level): very weak state and assignment is tentative (1975No04). $d\sigma/d\Omega$=15 3.
8051.8 6				$d\sigma/d\Omega$=52.
8091.2 6	2^{+c}	2	0.17	$d\sigma/d\Omega$=269. β_LR: others: 0.17, 0.18, 0.16 from E=30, 25, 40 MeV data (1972Gr26), 0.21 (1984Ho16). B(E2)(W.u.)=0.38 6, %EWSR=1.0 (1972Gr26).
8113.1? 6		3	0.16	β_LR: others: 0.17, 0.19, 0.15 from E=30, 25, 40 MeV data (1972Gr26). %EWSR=0.7 (1972Gr26). $d\sigma/d\Omega$=115.
8138.1? 10				E(level): very weak state and assignment is tentative (1975No04). $d\sigma/d\Omega$<20.
8186.8? 10		(6)	0.15	E(level): very weak state and assignment is tentative (1975No04). E(level): unresolved from 8196 in 1972Gr26, %EWSR=0.8. β_LR: others: 0.22 from E=25 data (1972Gr26). $d\sigma/d\Omega$=15 4.
8195.9 6				$d\sigma/d\Omega$=33 5.
8271[a] 1				$d\sigma/d\Omega$=170 34.
8276[a] 1				$d\sigma/d\Omega$=250 50.
8323.1 6				$d\sigma/d\Omega$=23 5.
8339.1 6				$d\sigma/d\Omega$=36.
8358.9? 6				$d\sigma/d\Omega$=121.
8373.3 6		(4)	0.35[f]	E(level): unresolved from 8359 in 1972Gr26, but they assigned L=4 for E=8366 and associated it with a previously reported 8371 level. β_LR: others: 0.32, 0.31, 0.31, 0.33 from E=25, 30, 35, 40 MeV data (1972Gr26). $d\sigma/d\Omega$=348. B(E4)(W.u.)=2.0 2, %EWSR=2.1 (1972Gr26).
8424.2 7	2^-	3	0.25	J^π: from (pol p,p′) (1985Ho14,1982Ho13). β_LR: others: 0.27, 0.29, 0.25 from E=30, 25, 40 MeV data (1972Gr26). %EWSR=1.7 (1972Gr26). $d\sigma/d\Omega$=279.
8439.0 7				$d\sigma/d\Omega$=100.
8484.3 7				$d\sigma/d\Omega$=50.
8551.1 7		5	0.19	Additional information 2. $d\sigma/d\Omega$=169. β_LR: for E=8535, others: 0.20, 0.23, 0.18 from E=30, 25, 40 MeV data (1972Gr26). %EWSR=0.6 (1972Gr26).

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^{40}Ca(p,p'),(pol p,p')   **1975No04,1981Ej02,1987Ya11 (continued)**

^{40}Ca Levels (continued)

E(level)[†‡]	J^π	L[#]	β_LR[@]	Comments
8578.2 7	2^+	2	0.17	J^π: from 1982Ho13 and 1984Ho16.
				β_LR: others: 0.18, 0.17, 0.17 from E=30, 25, 40 MeV data (1972Gr26), 0.16 (1984Ho16).
				%EWSR=1.1 (1972Gr26).
				$d\sigma/d\Omega$=439.
8665.3 8				$d\sigma/d\Omega$=112.
8747.7 8	2^{+c}	2	0.15	β_LR: others: 0.15, 0.17, 0.14 from E=30, 25, 40 MeV data (1972Gr26), 0.12 (1984Ho16).
				%EWSR=0.9 (1972Gr26).
				$d\sigma/d\Omega$=392.
8850.6 9		7	0.09	β_LR: others: 0.10, 0.10, 0.09 from E=30, 25, 40 MeV data (1972Gr26).
				β_LR: 0.28 for L=6.
				%EWSR=0.1 (1972Gr26).
				$d\sigma/d\Omega$=42.
8909.0 9				$d\sigma/d\Omega$=24.
8938.4 9				$d\sigma/d\Omega$=66.
8978 6		6	0.17	E(level): from 1981An08 and 1987Ya11.
				%EWSR=0.5 (1972Gr26).
8995.0 10				$d\sigma/d\Omega$=50.
9032.7 10		5	0.16	$d\sigma/d\Omega$=177.
				%EWSR=0.5 (1972Gr26).
9050.1 10				$d\sigma/d\Omega$=47.
9080.3 11				$d\sigma/d\Omega$=20 5.
9093.0 11				$d\sigma/d\Omega$=32 6.
9136.1		3	0.23	$d\sigma/d\Omega$=177.
				%EWSR=1.6 (1972Gr26).
9162.1 11				$d\sigma/d\Omega$=131.
9185.3 12				$d\sigma/d\Omega$=30 5.
9209.0 12				$d\sigma/d\Omega$=317.
9227.5 12				$d\sigma/d\Omega$=75.
9246.0 12		7	0.06	β_LR: 0.23 for L=5.
				%EWSR=0.1 (1972Gr26).
				$d\sigma/d\Omega$=40 12.
9274.5 12				$d\sigma/d\Omega$=38.
9363 5		3	0.16	E(level): weighted average of 9372 8 (1981Ej02) and 9360 5 (1972Gr26).
				%EWSR=0.8 (1972Gr26).
9414 5		3	0.26	E(level): weighted average of 9418 8 (1981Ej02) and 9413 5 (1972Gr26).
				%EWSR=2.0 (1972Gr26).
9465 8				
9547 8		4	0.15	%EWSR=0.5 (1972Gr26).
9591 4		3	0.12	E(level): from 1972Gr26.
				%EWSR=0.5 (1972Gr26).
9647 7				E(level): weighted average of 9657 8 (1981Ej02) and 9642 6 (1972Gr26).
9859 4		5	0.19	E(level): from 1972Gr26.
				%EWSR=0.7 (1972Gr26).
9877 8	(2^+)	2	0.14	E(level): doublet.
				L: 0,1 (1984Ho16) for second component.
				β_LR: from 1984Ho16 for a doublet at 9868.
				J^π: 1^+ in Adopted Levels.
10052 3		5	0.19	E(level): weighted average of 10058 8 (1981Ej02) and 10051 3 (1972Gr26).
				%EWSR=0.8 (1972Gr26).
10276 3		4	0.18	E(level): weighted average of 10267 8 (1981Ej02) and 10277 3 (1972Gr26).
				%EWSR=0.9 (1972Gr26).
10290 8				
10328 8	1^+			J^π: from (pol p,p') (1985Ho14).
10344 8				E(level): 10344 in Fig.10 and 10337 in Fig.2 of 1981Ej02.
12030		0		E(level),L: from 1981An08.
13420 40		$(2)^e$		%EWSR=0.6 (1987Ya11).

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^{40}Ca(p,p′),(pol p,p′)　　1975No04,1981Ej02,1987Ya11 (continued)

^{40}Ca Levels (continued)

E(level)[†‡]	J$^\pi$	L[#]	Comments
13450[&] _40_			
13510[&] _40_			
13610 _40_		2[e]	%EWSR=0.8 (1987Ya11).
13700 _40_		2[e]	%EWSR=1.1 (1987Ya11).
13830 _40_		(2)[e]	%EWSR=1.1 (1987Ya11).
13890 _40_		(0)[e]	%EWSR=3.3 (1987Ya11).
13921[b] _15_	(4$^-$)		T=0 (1989Sa23)
			J$^\pi$: from $\sigma(\theta)$ (1989Sa23); but L=(4) in 1987Ya11.
			%EWSR=0.3 (1987Ya11).
14020 _40_		(3)[e]	%EWSR=0.5 (1987Ya11).
14100 _40_		2[e]	%EWSR=0.7 (1987Ya11).
14210 _40_		(3)[e]	%EWSR=0.2 (1987Ya11).
14283[b] _15_	(6$^-$)		T=1 (1989Sa23)
			J$^\pi$: from $\sigma(\theta)$ (1989Sa23).
14320 _40_		(3)[e]	%EWSR=0.5 (1987Ya11).
14410 _40_		3[e]	%EWSR=0.6 (1987Ya11).
14500 _40_		2[e]	E(level): doublet: 14490+14530.
			%EWSR=1.3 (1987Ya11).
14660 _40_		2[e]	%EWSR=1.0 (1987Ya11).
14780 _40_		2[e]	%EWSR=1.0 (1987Ya11).
15080[&] _40_			
31×10^3 _2_		3	E(level),L: from 1980Ca14.
			Γ=10 MeV _2_ (1980Ca14).

[†] From 1975No04 for levels up to 9300 (level energies where no uncertainties are stated were used as calibrants); from 1981Ej02 for levels between 9370 and 10350 (only ΔE=8 keV indicated in Fig.10 for peaks above 10000 but should be smaller for the peaks below 10000 in Fig.2 with better statistics); from 1987Ya11 for levels between 13500 and 15100 (ΔE=40 keV); unless otherwise noted.

[‡] Additional information 3.

[#] From 1972Gr26, unless otherwise noted.

[@] From E=35 MeV data in 1972Gr26, values from E=30, 25 and 40 MeV data are given under comments, unless otherwise noted.

[&] Multiplet.

[a] Incompletely resolved doublet with average centroid 8274.5 and L=1.

[b] From 1981Ej02.

[c] From 1984Ho16.

[d] From 1993Se02.

[e] From 1987Ya11.

[f] From 1980Ad03.