

$N(1720) \ 3/2^+$ $I(J^P) = \frac{1}{2}(3/2^+)$ Status: ****Older and obsolete values are listed and referenced in the 2014 edition, Chinese Physics **C38** 070001 (2014). **$N(1720)$ POLE POSITION****REAL PART**

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|--------------------|-------------|--|
| 1660 to 1690 (\approx 1675) OUR ESTIMATE | | | |
| 1670 \pm 25 | SOKHOYAN | 15A | DPWA Multichannel |
| 1677 \pm 4 \pm 1 | ¹ SVARC | 14 | L+P $\pi N \rightarrow \pi N$ |
| 1680 \pm 30 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| 1710 | ROENCHEN | 15A | DPWA Multichannel |
| 1670 | SHKLYAR | 13 | DPWA Multichannel |
| 1660 \pm 30 | ANISOVICH | 12A | DPWA Multichannel |
| 1687 | SHRESTHA | 12A | DPWA Multichannel |
| 1691 \pm 23 | BATINIC | 10 | DPWA $\pi N \rightarrow N\pi, N\eta$ |
| 1666 | ARNDT | 06 | DPWA $\pi N \rightarrow \pi N, \eta N$ |
| 1692 | VRANA | 00 | DPWA Multichannel |
| 1686 | HOEHLER | 93 | SPED $\pi N \rightarrow \pi N$ |

¹ Fit to the amplitudes of HOEHLER 79.**– 2×IMAGINARY PART**

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|--------------------|-------------|--|
| 150 to 400 (\approx 250) OUR ESTIMATE | | | |
| 430 \pm 100 | SOKHOYAN | 15A | DPWA Multichannel |
| 184 \pm 8 \pm 1 | ¹ SVARC | 14 | L+P $\pi N \rightarrow \pi N$ |
| 120 \pm 40 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| 219 | ROENCHEN | 15A | DPWA Multichannel |
| 118 | SHKLYAR | 13 | DPWA Multichannel |
| 450 \pm 100 | ANISOVICH | 12A | DPWA Multichannel |
| 175 | SHRESTHA | 12A | DPWA Multichannel |
| 233 \pm 23 | BATINIC | 10 | DPWA $\pi N \rightarrow N\pi, N\eta$ |
| 355 | ARNDT | 06 | DPWA $\pi N \rightarrow \pi N, \eta N$ |
| 94 | VRANA | 00 | DPWA Multichannel |
| 187 | HOEHLER | 93 | SPED $\pi N \rightarrow \pi N$ |

¹ Fit to the amplitudes of HOEHLER 79. **$N(1720)$ ELASTIC POLE RESIDUE****MODULUS $|r|$**

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--|--------------------|-------------|--------------------------------|
| 10 to 25 (\approx 15) OUR ESTIMATE | | | |
| 26 \pm 10 | SOKHOYAN | 15A | DPWA Multichannel |
| 13 \pm 1 | ¹ SVARC | 14 | L+P $\pi N \rightarrow \pi N$ |
| 8 \pm 2 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |

• • • We do not use the following data for averages, fits, limits, etc. • • •

| | | | | |
|--------|-----------|-----|------|-----------------------------------|
| 4.2 | ROENCHEN | 15A | DPWA | Multichannel |
| 12 | SHKLYAR | 13 | DPWA | Multichannel |
| 22 ± 8 | ANISOVICH | 12A | DPWA | Multichannel |
| 20 | BATINIC | 10 | DPWA | $\pi N \rightarrow N\pi, N\eta$ |
| 25 | ARNDT | 06 | DPWA | $\pi N \rightarrow \pi N, \eta N$ |
| 15 | HOEHLER | 93 | SPED | $\pi N \rightarrow \pi N$ |

¹ Fit to the amplitudes of HOEHLER 79.

PHASE θ

| <u>VALUE (°)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--|--------------------|-------------|--------------------------------|
| –160 to –100 (\approx –130) OUR ESTIMATE | | | |
| –100 ± 25 | SOKHOYAN | 15A | DPWA Multichannel |
| –115 ± 3 ± 2 | ¹ SVARC | 14 | L+P $\pi N \rightarrow \pi N$ |
| –160 ± 30 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |

• • • We do not use the following data for averages, fits, limits, etc. • • •

| | | | | |
|-----------|-----------|-----|------|-----------------------------------|
| – 47 | ROENCHEN | 15A | DPWA | Multichannel |
| – 45 | SHKLYAR | 13 | DPWA | Multichannel |
| –115 ± 30 | ANISOVICH | 12A | DPWA | Multichannel |
| –109 | BATINIC | 10 | DPWA | $\pi N \rightarrow N\pi, N\eta$ |
| – 94 | ARNDT | 06 | DPWA | $\pi N \rightarrow \pi N, \eta N$ |

¹ Fit to the amplitudes of HOEHLER 79.

$N(1720)$ INELASTIC POLE RESIDUE

The “normalized residue” is the residue divided by $\Gamma_{pole}/2$.

Normalized residue in $N\pi \rightarrow N(1720) \rightarrow N\eta$

| <u>MODULUS</u> | <u>PHASE (°)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|----------------|------------------|--------------------|-------------|-------------------|
| 0.03 ± 0.02 | | ANISOVICH | 12A | DPWA Multichannel |
| • • • | | | | |
| 0.007 | 106 | ROENCHEN | 15A | DPWA Multichannel |

Normalized residue in $N\pi \rightarrow N(1720) \rightarrow \Lambda K$

| <u>MODULUS</u> | <u>PHASE (°)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|----------------|------------------|--------------------|-------------|-------------------|
| 0.06 ± 0.04 | –150 ± 45 | ANISOVICH | 12A | DPWA Multichannel |
| • • • | | | | |
| 0.011 | –70 | ROENCHEN | 15A | DPWA Multichannel |

Normalized residue in $N\pi \rightarrow N(1720) \rightarrow \Sigma K$

| <u>MODULUS</u> | <u>PHASE (°)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|----------------|------------------|--------------------|-------------|-------------------|
| • • • | | | | |
| 0.002 | 79 | ROENCHEN | 15A | DPWA Multichannel |

Normalized residue in $N\pi \rightarrow N(1720) \rightarrow \Delta\pi, P$ -wave

| <u>MODULUS</u> | <u>PHASE (°)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|----------------|------------------|--------------------|-------------|-------------------|
| 0.28 ± 0.09 | 95 ± 30 | SOKHOYAN | 15A | DPWA Multichannel |
| • • • | | | | |
| 0.29 ± 0.08 | 80 ± 40 | ANISOVICH | 12A | DPWA Multichannel |

Normalized residue in $N\pi \rightarrow N(1720) \rightarrow \Delta\pi$, F -wave

| <u>MODULUS</u> | <u>PHASE ($^\circ$)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|------------------------------------|--------------------|-------------|-------------------|
| 0.07 ± 0.05 | | SOKHOYAN | 15A | DPWA Multichannel |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | |
| 0.03 ± 0.03 | | ANISOVICH | 12A | DPWA Multichannel |

Normalized residue in $N\pi \rightarrow N(1720) \rightarrow N\sigma$

| <u>MODULUS</u> | <u>PHASE ($^\circ$)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|-----------------|------------------------------------|--------------------|-------------|-------------------|
| 0.08 ± 0.04 | -110 ± 35 | SOKHOYAN | 15A | DPWA Multichannel |

Normalized residue in $N\pi \rightarrow N(1720) \rightarrow N(1520)\pi$, S -wave

| <u>MODULUS</u> | <u>PHASE ($^\circ$)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|-----------------|------------------------------------|--------------------|-------------|-------------------|
| 0.05 ± 0.04 | undefined | SOKHOYAN | 15A | DPWA Multichannel |

 $N(1720)$ BREIT-WIGNER MASS

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|-----------------------|-------------|---|
| 1680 to 1750 (≈ 1720) OUR ESTIMATE | | | |
| 1745 ± 6 | GOLOVATCH | 19 | DPWA $\gamma p \rightarrow \pi^+ \pi^- p$ |
| 1690 ± 30 | SOKHOYAN | 15A | DPWA Multichannel |
| 1700 ± 10 | ¹ SHKLYAR | 13 | DPWA Multichannel |
| 1720 ± 5 | ¹ SHRESTHA | 12A | DPWA Multichannel |
| 1763.8 ± 4.6 | ARNDT | 06 | DPWA $\pi N \rightarrow \pi N, \eta N$ |
| 1700 ± 50 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |
| 1710 ± 20 | HOEHLER | 79 | IPWA $\pi N \rightarrow \pi N$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| $1690 + 70$ $- 35$ | ANISOVICH | 12A | DPWA Multichannel |
| 1720 ± 18 | BATINIC | 10 | DPWA $\pi N \rightarrow N\pi, N\eta$ |
| 1705 ± 10 | PENNER | 02C | DPWA Multichannel |
| 1716 ± 112 | VRANA | 00 | DPWA Multichannel |

¹Statistical error only. **$N(1720)$ BREIT-WIGNER WIDTH**

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|-----------------------|-------------|---|
| 150 to 400 (≈ 250) OUR ESTIMATE | | | |
| 116 ± 27 | GOLOVATCH | 19 | DPWA $\gamma p \rightarrow \pi^+ \pi^- p$ |
| 420 ± 80 | SOKHOYAN | 15A | DPWA Multichannel |
| 152 ± 2 | ¹ SHKLYAR | 13 | DPWA Multichannel |
| 200 ± 20 | ¹ SHRESTHA | 12A | DPWA Multichannel |
| 210 ± 22 | ARNDT | 06 | DPWA $\pi N \rightarrow \pi N, \eta N$ |
| 125 ± 70 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |
| 190 ± 30 | HOEHLER | 79 | IPWA $\pi N \rightarrow \pi N$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| 420 ± 100 | ANISOVICH | 12A | DPWA Multichannel |
| 244 ± 28 | BATINIC | 10 | DPWA $\pi N \rightarrow N\pi, N\eta$ |
| 237 ± 73 | PENNER | 02C | DPWA Multichannel |
| 121 ± 39 | VRANA | 00 | DPWA Multichannel |

¹Statistical error only.

$N(1720)$ DECAY MODES

The following branching fractions are our estimates, not fits or averages.

| Mode | Fraction (Γ_i/Γ) |
|---|--------------------------------|
| Γ_1 $N\pi$ | 8–14 % |
| Γ_2 $N\eta$ | 1–5 % |
| Γ_3 $N\omega$ | 12–40 % |
| Γ_4 ΛK | 4–5 % |
| Γ_5 $N\pi\pi$ | 50–90 % |
| Γ_6 $\Delta(1232)\pi$ | 47–89 % |
| Γ_7 $\Delta(1232)\pi$, P -wave | 47–77 % |
| Γ_8 $\Delta(1232)\pi$, F -wave | <12 % |
| Γ_9 $N\rho$ | |
| Γ_{10} $N\rho$, $S=1/2$, P -wave | 1–2 % |
| Γ_{11} $N\sigma$ | 2–14 % |
| Γ_{12} $N(1440)\pi$ | <2 % |
| Γ_{13} $N(1520)\pi$, S -wave | 1–5 % |
| Γ_{14} $p\gamma$ | 0.05–0.25 % |
| Γ_{15} $p\gamma$, helicity=1/2 | 0.05–0.15 % |
| Γ_{16} $p\gamma$, helicity=3/2 | 0.002–0.16 % |
| Γ_{17} $n\gamma$ | 0.0–0.016 % |
| Γ_{18} $n\gamma$, helicity=1/2 | 0.0–0.01 % |
| Γ_{19} $n\gamma$, helicity=3/2 | 0.0–0.015 % |

 $N(1720)$ BRANCHING RATIOS

| $\Gamma(N\pi)/\Gamma_{\text{total}}$ | | | | | Γ_1/Γ |
|---|-----------------------|------|---------|-----------------------------------|-------------------|
| VALUE (%) | DOCUMENT ID | TECN | COMMENT | | |
| 8 to 14 (≈ 11) OUR ESTIMATE | | | | | |
| 11 ± 4 | SOKHOYAN | 15A | DPWA | Multichannel | |
| 17 ± 2 | ¹ SHKLYAR | 13 | DPWA | Multichannel | |
| 13.6 \pm 0.6 | ¹ SHRESTHA | 12A | DPWA | Multichannel | |
| 9.4 \pm 0.5 | ARNDT | 06 | DPWA | $\pi N \rightarrow \pi N, \eta N$ | |
| 10 ± 4 | CUTKOSKY | 80 | IPWA | $\pi N \rightarrow \pi N$ | |
| 14 ± 3 | HOEHLER | 79 | IPWA | $\pi N \rightarrow \pi N$ | |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | | |
| 10 ± 5 | ANISOVICH | 12A | DPWA | Multichannel | |
| 18 ± 3 | BATINIC | 10 | DPWA | $\pi N \rightarrow N\pi, N\eta$ | |
| 17 ± 2 | PENNER | 02C | DPWA | Multichannel | |
| 5 ± 5 | VRANA | 00 | DPWA | Multichannel | |

¹Statistical error only.

$\Gamma(N\eta)/\Gamma_{\text{total}}$ Γ_2/Γ

| VALUE (%) | DOCUMENT ID | TECN | COMMENT |
|---|-----------------------|------|--------------------------------------|
| 1 to 5 (≈ 3) OUR ESTIMATE | | | |
| < 1 | SHKLYAR | 13 | DPWA Multichannel |
| 3 \pm 2 | ANISOVICH | 12A | DPWA Multichannel |
| < 1 | ¹ SHRESTHA | 12A | DPWA Multichannel |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | |
| 0 \pm 1 | BATINIC | 10 | DPWA $\pi N \rightarrow N\pi, N\eta$ |
| 10 \pm 7 | THOMA | 08 | DPWA Multichannel |
| 0.2 \pm 0.2 | PENNER | 02C | DPWA Multichannel |
| 4 \pm 1 | VRANA | 00 | DPWA Multichannel |

¹Statistical error only.

$\Gamma(N\omega)/\Gamma_{\text{total}}$ Γ_3/Γ

| VALUE (%) | DOCUMENT ID | TECN | COMMENT |
|-------------|-------------|------|-------------------|
| 26 \pm 14 | DENISENKO | 16 | DPWA Multichannel |

$\Gamma(\Lambda K)/\Gamma_{\text{total}}$ Γ_4/Γ

| VALUE (%) | DOCUMENT ID | TECN | COMMENT |
|---|-----------------------|------|-------------------|
| 2.8 \pm 0.4 | ¹ SHRESTHA | 12A | DPWA Multichannel |
| 4.3 \pm 0.4 | SHKLYAR | 05 | DPWA Multichannel |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | |
| 12 \pm 9 | THOMA | 08 | DPWA Multichannel |
| 9 \pm 3 | PENNER | 02C | DPWA Multichannel |

¹Statistical error only.

$\Gamma(N\pi\pi)/\Gamma_{\text{total}}$ Γ_5/Γ

| VALUE | DOCUMENT ID | TECN | COMMENT |
|-----------------------------------|-------------|------|---|
| 0.84 \pm 0.16 | GOLOVATCH | 19 | DPWA $\gamma p \rightarrow \pi^+ \pi^- p$ |

$\Gamma(\Delta(1232)\pi, P\text{-wave})/\Gamma_{\text{total}}$ Γ_7/Γ

| VALUE (%) | DOCUMENT ID | TECN | COMMENT |
|---|-------------|------|-------------------|
| 62 \pm 15 | SOKHOYAN | 15A | DPWA Multichannel |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | |
| 75 \pm 15 | ANISOVICH | 12A | DPWA Multichannel |

$\Gamma(\Delta(1232)\pi, F\text{-wave})/\Gamma_{\text{total}}$ Γ_8/Γ

| VALUE (%) | DOCUMENT ID | TECN | COMMENT |
|-----------|-------------|------|-------------------|
| 6 \pm 6 | SOKHOYAN | 15A | DPWA Multichannel |

$\Gamma(N\rho, S=1/2, P\text{-wave})/\Gamma_{\text{total}}$ Γ_{10}/Γ

| VALUE (%) | DOCUMENT ID | TECN | COMMENT |
|---|-----------------------|------|-------------------|
| 1.4 \pm 0.5 | ¹ SHRESTHA | 12A | DPWA Multichannel |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | |
| 91 \pm 1 | VRANA | 00 | DPWA Multichannel |

¹Statistical error only.

| $\Gamma(N\sigma)/\Gamma_{\text{total}}$ | | | | | Γ_{11}/Γ |
|---|-------------|------|---------|--------------|----------------------|
| VALUE (%) | DOCUMENT ID | TECN | COMMENT | | |
| 8 ± 6 | SOKHOYAN | 15A | DPWA | Multichannel | |

| $\Gamma(N(1440)\pi)/\Gamma_{\text{total}}$ | | | | | Γ_{12}/Γ |
|--|-------------|------|---------|--------------|----------------------|
| VALUE (%) | DOCUMENT ID | TECN | COMMENT | | |
| < 2 | SOKHOYAN | 15A | DPWA | Multichannel | |

| $\Gamma(N(1520)\pi, S\text{-wave})/\Gamma_{\text{total}}$ | | | | | Γ_{13}/Γ |
|---|-------------|------|---------|--------------|----------------------|
| VALUE (%) | DOCUMENT ID | TECN | COMMENT | | |
| 3 ± 2 | SOKHOYAN | 15A | DPWA | Multichannel | |

$N(1720)$ PHOTON DECAY AMPLITUDES AT THE POLE

$N(1720) \rightarrow p\gamma$, helicity-1/2 amplitude $A_{1/2}$

| MODULUS ($\text{GeV}^{-1/2}$) | PHASE ($^\circ$) | DOCUMENT ID | TECN | COMMENT |
|---|--------------------|-------------|------|-------------------|
| 0.115 ± 0.045 | 0 ± 35 | SOKHOYAN | 15A | DPWA Multichannel |
| $0.051^{+0.005}_{-0.004}$ | 57^{+9}_{-4} | ROENCHEN | 14 | DPWA |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 0.039 | 5.3 | ROENCHEN | 15A | DPWA Multichannel |

$N(1720) \rightarrow p\gamma$, helicity-3/2 amplitude $A_{3/2}$

| MODULUS ($\text{GeV}^{-1/2}$) | PHASE ($^\circ$) | DOCUMENT ID | TECN | COMMENT |
|---|--------------------|-------------|------|-------------------|
| 0.140 ± 0.040 | 65 ± 35 | SOKHOYAN | 15A | DPWA Multichannel |
| $0.014^{+0.009}_{-0.003}$ | 102^{+29}_{-59} | ROENCHEN | 14 | DPWA |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 0.032 | 66 | ROENCHEN | 15A | DPWA Multichannel |

$N(1720)$ BREIT-WIGNER PHOTON DECAY AMPLITUDES

$N(1720) \rightarrow p\gamma$, helicity-1/2 amplitude $A_{1/2}$

| VALUE ($\text{GeV}^{-1/2}$) | DOCUMENT ID | TECN | COMMENT |
|---|-----------------------|------|---|
| 0.080 to 0.120 (≈ 0.100) OUR ESTIMATE | | | |
| 0.0809 ± 0.0115 | GOLOVATCH | 19 | DPWA $\gamma p \rightarrow \pi^+ \pi^- p$ |
| 0.115 ± 0.045 | SOKHOYAN | 15A | DPWA Multichannel |
| -0.065 ± 0.002 | ¹ SHKLYAR | 13 | DPWA Multichannel |
| 0.095 ± 0.002 | WORKMAN | 12A | DPWA $\gamma N \rightarrow N\pi$ |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | |
| 0.110 ± 0.045 | ANISOVICH | 12A | DPWA Multichannel |
| 0.057 ± 0.003 | ¹ SHRESTHA | 12A | DPWA Multichannel |
| 0.073 | DRECHSEL | 07 | DPWA $\gamma N \rightarrow \pi N$ |
| 0.097 ± 0.003 | DUGGER | 07 | DPWA $\gamma N \rightarrow \pi N$ |
| -0.053 | PENNER | 02D | DPWA Multichannel |

¹Statistical error only.

$N(1720) \rightarrow p\gamma$, helicity-3/2 amplitude $A_{3/2}$

| VALUE ($\text{GeV}^{-1/2}$) | DOCUMENT ID | TECN | COMMENT |
|---|---------------------------|------|--------------------------------------|
| -0.034 ± 0.0076 | GOLOVATCH 19 | DPWA | $\gamma p \rightarrow \pi^+ \pi^- p$ |
| 0.135 ± 0.040 | SOKHOYAN 15A | DPWA | Multichannel |
| 0.035 ± 0.002 | ¹ SHKLYAR 13 | DPWA | Multichannel |
| -0.048 ± 0.002 | WORKMAN 12A | DPWA | $\gamma N \rightarrow N\pi$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| 0.150 ± 0.030 | ANISOVICH 12A | DPWA | Multichannel |
| -0.019 ± 0.002 | ¹ SHRESTHA 12A | DPWA | Multichannel |
| -0.011 | DRECHSEL 07 | DPWA | $\gamma N \rightarrow \pi N$ |
| -0.039 ± 0.003 | DUGGER 07 | DPWA | $\gamma N \rightarrow \pi N$ |
| 0.027 | PENNER 02D | DPWA | Multichannel |

¹Statistical error only. **$N(1720) \rightarrow n\gamma$, helicity-1/2 amplitude $A_{1/2}$**

| VALUE ($\text{GeV}^{-1/2}$) | DOCUMENT ID | TECN | COMMENT |
|---|---------------------------|------|------------------------------|
| -0.080 ± 0.050 | ANISOVICH 13B | DPWA | Multichannel |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| -0.002 ± 0.001 | ¹ SHRESTHA 12A | DPWA | Multichannel |
| -0.003 | DRECHSEL 07 | DPWA | $\gamma N \rightarrow \pi N$ |
| -0.004 | PENNER 02D | DPWA | Multichannel |

¹Statistical error only. **$N(1720) \rightarrow n\gamma$, helicity-3/2 amplitude $A_{3/2}$**

| VALUE ($\text{GeV}^{-1/2}$) | DOCUMENT ID | TECN | COMMENT |
|---|---------------------------|------|------------------------------|
| -0.140 ± 0.065 | ANISOVICH 13B | DPWA | Multichannel |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| -0.001 ± 0.002 | ¹ SHRESTHA 12A | DPWA | Multichannel |
| -0.031 | DRECHSEL 07 | DPWA | $\gamma N \rightarrow \pi N$ |
| 0.003 | PENNER 02D | DPWA | Multichannel |

¹Statistical error only. **$N(1720)$ REFERENCES**For early references, see Physics Letters **111B** 1 (1982).

| | | | |
|---------------|---------------------|---------------------------------|-------------------------|
| GOLOVATCH 19 | PL B788 371 | E. Golovatch <i>et al.</i> | (CLAS Collab.) |
| DENISENKO 16 | PL B755 97 | I. Denisenko <i>et al.</i> | |
| ROENCHEN 15A | EPJ A51 70 | D. Roenchen <i>et al.</i> | |
| SOKHOYAN 15A | EPJ A51 95 | V. Sokhoyan <i>et al.</i> | (CBELSA/TAPS Collab.) |
| PDG 14 | CP C38 070001 | K. Olive <i>et al.</i> | (PDG Collab.) |
| ROENCHEN 14 | EPJ A50 101 | D. Roenchen <i>et al.</i> | |
| Also | EPJ A51 63 (errat.) | D. Roenchen <i>et al.</i> | |
| SVARC 14 | PR C89 045205 | A. Svarc <i>et al.</i> | (RBI Zagreb, UNI Tuzla) |
| ANISOVICH 13B | EPJ A49 67 | A.V. Anisovich <i>et al.</i> | |
| SHKLYAR 13 | PR C87 015201 | V. Shklyar, H. Lenske, U. Mosel | (GIES) |
| ANISOVICH 12A | EPJ A48 15 | A.V. Anisovich <i>et al.</i> | (BONN, PNPI) |
| SHRESTHA 12A | PR C86 055203 | M. Shrestha, D.M. Manley | (KSU) |
| WORKMAN 12A | PR C86 015202 | R. Workman <i>et al.</i> | (GWU) |

| | | | | |
|----------|-----|------------------------|--------------------------------------|---------------------|
| BATINIC | 10 | PR C82 038203 | M. Batinic <i>et al.</i> | (ZAGR) |
| THOMA | 08 | PL B659 87 | U. Thoma <i>et al.</i> | (CB-ELSA Collab.) |
| DRECHSEL | 07 | EPJ A34 69 | D. Drechsel, S.S. Kamalov, L. Tiator | (MAINZ, JINR) |
| DUGGER | 07 | PR C76 025211 | M. Dugger <i>et al.</i> | (JLab CLAS Collab.) |
| ARNDT | 06 | PR C74 045205 | R.A. Arndt <i>et al.</i> | (GWU) |
| SHKLYAR | 05 | PR C72 015210 | V. Shklyar, H. Lenske, U. Mosel | (GIES) |
| PENNER | 02C | PR C66 055211 | G. Penner, U. Mosel | (GIES) |
| PENNER | 02D | PR C66 055212 | G. Penner, U. Mosel | (GIES) |
| VRANA | 00 | PRPL 328 181 | T.P. Vrana, S.A. Dytman, T.-S.H. Lee | (PITT, ANL) |
| HOEHLER | 93 | πN Newsletter 9 1 | G. Hohler | (KARL) |
| CUTKOSKY | 80 | Toronto Conf. 19 | R.E. Cutkosky <i>et al.</i> | (CMU, LBL) IJP |
| Also | | PR D20 2839 | R.E. Cutkosky <i>et al.</i> | (CMU, LBL) IJP |
| HOEHLER | 79 | PDAT 12-1 | G. Hohler <i>et al.</i> | (KARLT) IJP |
| Also | | Toronto Conf. 3 | R. Koch | (KARLT) IJP |
