

$\omega_3(1670)$

$$I^G(J^{PC}) = 0^-(3^{--})$$

$\omega_3(1670)$ MASS

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|---|-------|-----------------------|------|--|
| 1667 ± 4 OUR AVERAGE | | | | |
| 1665.3 ± 5.2 ± 4.5 | 23400 | AMELIN | 96 | VES 36 $\pi^- p \rightarrow \pi^+ \pi^- \pi^0 n$ |
| 1685 ± 20 | 60 | BAUBILLIER | 79 | HBC 8.2 $K^- p$ backward |
| 1673 ± 12 | 430 | ^{1,2} BALTAY | 78E | HBC 15 $\pi^+ p \rightarrow \Delta 3\pi$ |
| 1650 ± 12 | | CORDEN | 78B | OMEG 8-12 $\pi^- p \rightarrow N 3\pi$ |
| 1669 ± 11 | 600 | ² WAGNER | 75 | HBC 7 $\pi^+ p \rightarrow \Delta^{++} 3\pi$ |
| 1678 ± 14 | 500 | DIAZ | 74 | DBC 6 $\pi^+ n \rightarrow p 3\pi^0$ |
| 1660 ± 13 | 200 | DIAZ | 74 | DBC 6 $\pi^+ n \rightarrow p \omega \pi^0 \pi^0$ |
| 1679 ± 17 | 200 | MATTHEWS | 71D | DBC 7.0 $\pi^+ n \rightarrow p 3\pi^0$ |
| 1670 ± 20 | | KENYON | 69 | DBC 8 $\pi^+ n \rightarrow p 3\pi^0$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | |
| ~ 1700 | 110 | ¹ CERRADA | 77B | HBC 4.2 $K^- p \rightarrow \Lambda 3\pi$ |
| 1695 ± 20 | | BARNES | 69B | HBC 4.6 $K^- p \rightarrow \omega 2\pi X$ |
| 1636 ± 20 | | ARMENISE | 68B | DBC 5.1 $\pi^+ n \rightarrow p 3\pi^0$ |
| ¹ Phase rotation seen for $J^P = 3^- \rho\pi$ wave. | | | | |
| ² From a fit to $I(J^P) = 0(3^-) \rho\pi$ partial wave. | | | | |

$\omega_3(1670)$ WIDTH

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|---|-------|-------------------------|------|--|
| 168 ± 10 OUR AVERAGE | | | | |
| 149 ± 19 ± 7 | 23400 | AMELIN | 96 | VES 36 $\pi^- p \rightarrow \pi^+ \pi^- \pi^0 n$ |
| 160 ± 80 | 60 | ³ BAUBILLIER | 79 | HBC 8.2 $K^- p$ backward |
| 173 ± 16 | 430 | ^{4,5} BALTAY | 78E | HBC 15 $\pi^+ p \rightarrow \Delta 3\pi$ |
| 253 ± 39 | | CORDEN | 78B | OMEG 8-12 $\pi^- p \rightarrow N 3\pi$ |
| 173 ± 28 | 600 | ^{3,5} WAGNER | 75 | HBC 7 $\pi^+ p \rightarrow \Delta^{++} 3\pi$ |
| 167 ± 40 | 500 | DIAZ | 74 | DBC 6 $\pi^+ n \rightarrow p 3\pi^0$ |
| 122 ± 39 | 200 | DIAZ | 74 | DBC 6 $\pi^+ n \rightarrow p \omega \pi^0 \pi^0$ |
| 155 ± 40 | 200 | ³ MATTHEWS | 71D | DBC 7.0 $\pi^+ n \rightarrow p 3\pi^0$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | |
| 90 ± 20 | | BARNES | 69B | HBC 4.6 $K^- p \rightarrow \omega 2\pi$ |
| 100 ± 40 | | KENYON | 69 | DBC 8 $\pi^+ n \rightarrow p 3\pi^0$ |
| 112 ± 60 | | ARMENISE | 68B | DBC 5.1 $\pi^+ n \rightarrow p 3\pi^0$ |
| ³ Width errors enlarged by us to $4\Gamma/\sqrt{N}$; see the note with the $K^*(892)$ mass. | | | | |
| ⁴ Phase rotation seen for $J^P = 3^- \rho\pi$ wave. | | | | |
| ⁵ From a fit to $I(J^P) = 0(3^-) \rho\pi$ partial wave. | | | | |

$\omega_3(1670)$ DECAY MODES

| Mode | Fraction (Γ_i/Γ) |
|---------------------------|--------------------------------|
| Γ_1 $\rho\pi$ | seen |
| Γ_2 $\omega\pi\pi$ | seen |
| Γ_3 $b_1(1235)\pi$ | possibly seen |

$\omega_3(1670)$ BRANCHING RATIOS

$\Gamma(\omega\pi\pi)/\Gamma(\rho\pi)$ Γ_2/Γ_1

| VALUE | EVTS | DOCUMENT ID | TECN | COMMENT |
|---|------|-------------|------|--------------------------------------|
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | |
| 0.71 ± 0.27 | 100 | DIAZ | 74 | DBC $6 \pi^+ n \rightarrow p 5\pi^0$ |

$\Gamma(b_1(1235)\pi)/\Gamma(\rho\pi)$ Γ_3/Γ_1

| VALUE | DOCUMENT ID | TECN | COMMENT |
|---------------|-------------|------|--------------------------------------|
| possibly seen | DIAZ | 74 | DBC $6 \pi^+ n \rightarrow p 5\pi^0$ |

$\Gamma(b_1(1235)\pi)/\Gamma(\omega\pi\pi)$ Γ_3/Γ_2

| VALUE | CL% | DOCUMENT ID | TECN | COMMENT |
|---|-----|-------------|------|--------------------------|
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | |
| >0.75 | 68 | BAUBILLIER | 79 | HBC $8.2 K^- p$ backward |

$\omega_3(1670)$ REFERENCES

| | | | | |
|------------|-----|-------------|-------------------------------------|------------------------|
| AMELIN | 96 | ZPHY C70 71 | D.V. Amelin <i>et al.</i> | (SERP, TBIL) |
| BAUBILLIER | 79 | PL 89B 131 | M. Baubillier <i>et al.</i> | (BIRM, CERN, GLAS+) |
| BALTAY | 78E | PRL 40 87 | C. Baltay, C.V. Cautis, M. Kalelkar | (COLU) JP |
| CORDEN | 78B | NP B138 235 | M.J. Corden <i>et al.</i> | (BIRM, RHEL, TELA+) |
| CERRADA | 77B | NP B126 241 | M. Cerrada <i>et al.</i> | (AMST, CERN, NIJM+) JP |
| WAGNER | 75 | PL 58B 201 | F. Wagner, M. Tabak, D.M. Chew | (LBL) JP |
| DIAZ | 74 | PRL 32 260 | J. Diaz <i>et al.</i> | (CASE, CMU) |
| MATTHEWS | 71D | PR D3 2561 | J.A.J. Matthews <i>et al.</i> | (TNT0, WISC) |
| BARNES | 69B | PRL 23 142 | V.E. Barnes <i>et al.</i> | (BNL) |
| KENYON | 69 | PRL 23 146 | I.R. Kenyon <i>et al.</i> | (BNL, UCND, ORNL) |
| ARMENISE | 68B | PL 26B 336 | N. Armenise <i>et al.</i> | (BARI, BGNA, FIRZ+) |