$\omega_3(1670)$

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

$\omega_3(1670)$ 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	+Berdnikov, Bityukov+	(SERP, TBIL)
BAUBILLIER	79	PL 89B 131	+	(BIRM, CERN, GLAS, MSU, ORSAY)
BALTAY	78E	PRL 40 87	+Cautis, Kalelkar	(COLU) JP
CORDEN	78B	NP B138 235	+Corbett, Alexander+	(BIRM, RHEL, TELA, LOWC)
CERRADA	77B	NP B126 241	+Blockzijl, Heinen+	(AMST, CERN, NIJM, OXF) JP
WAGNER	75	PL 58B 201	+Tabak, Chew	(LBL) JP
DIAZ	74	PRL 32 260	+Dibianca, Fickinger, Anderson+	(CASE, CMU)
MATTHEWS	71D	PR D3 2561	+Prentice, Yoon, Carroll+	(TNTO, WISC)
BARNES	69B	PRL 23 142	+Chung, Eisner, Flaminio+	(BNL)
KENYON	69	PRL 23 146	+Kinson, Scarr+	(BNL, UCND, ORNL)
ARMENISE	68B	PL 26B 336	+Forino, Cartacci+	(BARI, BGNA, FIRZ, ORSAY)

OTHER RELATED PAPERS

MATTHEWS	71	LNC 1 361	+Prentice, Yoon, Carroll+	(TNTO, WISC)
ARMENISE	70	LNC 4 199	+Ghidini, Foring, Cartacci+	(BARI, BGNA, FIRZ)