$f_0(1590)$ REFERENCES

AMSLER	92	PL B291 347	+Augustin, Baker+	(Crystal Barrel Collab.)
BELADIDZE	92C	SJNP 55 1535	+Bityukov, Borisov	(VES Collab.) JPC
		Translated from YAF 55 2748.		
PROKOSHKIN	91	SPD 316 155		(GAM2 Collab.)
		Translated from DANS 316 900.		
PROKOSHKIN	90	Hadron 89 Conf. p 27		(SERP, BELG, LANL, LAPP, PISA, KEK)
ALDE	88	PL B201 160	+Bellazzini, Binon+	(SERP, BELG, LANL, LAPP, PISA) JP
ALDE	87	PL B198 286	+Binon, Bricman+	(LANL, BRUX, SERP, LAPP)
ALDE	86D	NP B269 485	+Binon, Bricman+	(BELG, LAPP, SERP, CERN) IGJP
BINON	84C	NC 80A 363	+Bricman, Donskov+	(BELG, LAPP, SERP, CERN)
BINON	83	NC 78A 313	+Donskov, Duteil+	(BELG, LAPP, SERP, CERN) IGJP
Also	83B	SJNP 38 561	Binon, Gouanere+	(BELG, LAPP, SERP, CERN)
		Translated from YAF 38 934.		

OTHER RELATED PAPERS

SLAUGHTER	88	MPL A3 1361	(LANL)

$\omega(1600)$

$I^G(J^{PC}) = 0^-(1^{--})$

See also $\omega(1420)$.

$\omega(1600)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
1662 ±13	435	[1] ANTONELLI	92	DM2		1.34–2.4 $e^+e^- \to$ hadrons
• • • We do not use the following data for averages, fits, limits, etc. • • •						
1609 ±20	315	[2] ANTONELLI	92	DM2		1.34–2.4 $e^+e^- \to \rho\pi$
1663 ±12	435	[3] ANTONELLI	92	DM2		1.34–2.4 $e^+e^- \to \omega\pi\pi$
1594 ±12		DONNACHIE	89	RVUE		$e^+e^- \to \rho\pi$
1670 ±20		ATKINSON	83B	OMEG		20–70 $\gamma p \to 3\pi X$
1657 ±13		CORDIER	81	DM1		$e^+e^- \to \omega 2\pi$
1679 ±34	21	ESPOSITO	80	FRAM		$e^+e^- \to 3\pi$
1652.0±17.0		COSME	79	OSPK	0	$e^+e^- \to 3\pi$

[1] From a coupled fit of $\rho\pi$ and $\omega\pi\pi$ channels.
[2] From a fit to two Breit-Wigner functions interfering between them and with the ω,ϕ tails with fixed (+,−,+) phases.
[3] From a single Breit-Wigner fit.

$\omega(1600)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
280 ±24	435	[4] ANTONELLI	92	DM2		1.34–2.4 $e^+e^- \to$ hadrons
• • • We do not use the following data for averages, fits, limits, etc. • • •						
159 ±43	315	[5] ANTONELLI	92	DM2		1.34–2.4 $e^+e^- \to \rho\pi$
240 ±25	435	[6] ANTONELLI	92	DM2		1.34–2.4 $e^+e^- \to \omega\pi\pi$
100 ±30		DONNACHIE	89	RVUE		$e^+e^- \to \rho\pi$
160 ±20		ATKINSON	83B	OMEG		20–70 $\gamma p \to 3\pi X$
136 ±46		CORDIER	81	DM1		$e^+e^- \to \omega 2\pi$
99 ±49	21	ESPOSITO	80	FRAM		$e^+e^- \to 3\pi$
42.0±17.0		COSME	79	OSPK	0	$e^+e^- \to 3\pi$

[4] From a coupled fit of $\rho\pi$ and $\omega\pi\pi$ channels.
[5] From a fit to two Breit-Wigner functions interfering between them and with the ω,ϕ tails with fixed (+,−,+) phases.
[6] From a single Breit-Wigner fit.

$\omega(1600)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\rho\pi$	seen
Γ_2	$\omega\pi\pi$	seen
Γ_3	e^+e^-	seen

$\omega(1600)$ $\Gamma(i)\Gamma(e^+e^-)/\Gamma(\text{total})$

$\Gamma(\rho\pi) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ — $\Gamma_1\Gamma_3/\Gamma$

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
134±14	435	[7] ANTONELLI	92	DM2	1.34–2.4 $e^+e^- \to$ hadrons
• • • We do not use the following data for averages, fits, limits, etc. • • •					
93±27	315	ANTONELLI	92	DM2	1.34–2.4 $e^+e^- \to \rho\pi$
96±35		DONNACHIE	89	RVUE	$e^+e^- \to \rho\pi$

[7] From a coupled fit of $\rho\pi$ and $\omega\pi\pi$ channels.

$\Gamma(\omega\pi\pi) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ — $\Gamma_2\Gamma_3/\Gamma$

VALUE (keV)	EVTS	DOCUMENT ID		TECN	COMMENT
170±17	435	[8] ANTONELLI	92	DM2	1.34–2.4 $e^+e^- \to$ hadrons
• • • We do not use the following data for averages, fits, limits, etc. • • •					
135±16	435	[9] ANTONELLI	92	DM2	1.34–2.4 $e^+e^- \to \omega\pi\pi$
56±31		DONNACHIE	89	RVUE	$e^+e^- \to \omega 2\pi$

[8] From a coupled fit of $\rho\pi$ and $\omega\pi\pi$ channels.
[9] From a single Breit-Wigner fit.

$\omega(1600)$ REFERENCES

ANTONELLI	92	ZPHY C56 15	+Baldini+	(DM2 Collab.)
DONNACHIE	89	ZPHY C42 663	+Clegg	(CERN, MCHS)
ATKINSON	83B	PL 127B 132	+	(BONN, CERN, GLAS, LANC, MCHS, CURIN+)
CORDIER	81	PL 106B 155	+Bisello, Bizot, Buon, Delcourt, Mane	(ORSAY)
ESPOSITO	80	LNC 28 195	+Marini, Patteri+	(FRAS, NAPL, PADO, ROMA)
COSME	79	NP B152 215	+Dudelzak, Grelaud, Jean-Marie, Jullian+	(IPN)

OTHER RELATED PAPERS

ATKINSON	87	ZPHY C34 157	+	(BONN, CERN, GLAS, LANC, MCHS, CURIN)
ATKINSON	84	NP B231 15	+	(BONN, CERN, GLAS, LANC, MCHS, CURIN+)

$X(1600)$

$I^G(J^{PC}) = 2^+(2^{++})$

OMITTED FROM SUMMARY TABLE

Observed in the reaction $\gamma\gamma \to \rho^0\rho^0$ near threshold. The large ratio of cross-sections $\sigma(\gamma\gamma \to \rho^0\rho^0)$ / $\sigma(\gamma\gamma \to \rho^+\rho^-) \approx$ 4 and the dominance of the $J^P = 2^+$ wave in the reaction $\gamma\gamma \to \rho^0\rho^0$ is a signature consistent with the production of an exotic ($I = 2$) resonance. Needs confirmation.

$X(1600)$ MASS

VALUE (MeV)	DOCUMENT ID		TECN	CHG	COMMENT
1600±100	[1] ALBRECHT	91F	ARG	0	10.2 $e^+e^- \to e^+e^- 2(\pi^+\pi^-)$

[1] Our estimate.

$X(1600)$ WIDTH

VALUE (MeV)	DOCUMENT ID		TECN	CHG	COMMENT
400±200	[2] ALBRECHT	91F	ARG	0	10.2 $e^+e^- \to e^+e^- 2(\pi^+\pi^-)$

[2] Our estimate.

$X(1600)$ REFERENCES

ALBRECHT	91F	ZPHY C50 1	+Appuan, Paulini, Funk+	(ARGUS Collab.)

OTHER RELATED PAPERS

ALBRECHT	89M	PL B217 205	+Bockmann+	(ARGUS Collab.)
BEHREND	89D	PL B218 494	+Criegee+	(CELLO Collab.)

$f_2(1640)$

$I^G(J^{PC}) = 0^+(2^{++})$

OMITTED FROM SUMMARY TABLE

Needs confirmation.

$f_2(1640)$ MASS

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1647± 7	ADAMO	92	OBLX	$\overline{n}p \to 3\pi^+ 2\pi^-$
1590±30	BELADIDZE	92B	VES	36 $\pi^- p \to \omega\omega n$
1635± 7	ALDE	90	GAM2	38 $\pi^- p \to n\omega\omega$

$f_2(1640)$ WIDTH

VALUE (MeV)	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
58±20		ADAMO	92	OBLX	$\overline{n}p \to 3\pi^+ 2\pi^-$
100±20		BELADIDZE	92B	VES	36 $\pi^- p \to \omega\omega n$
< 70	90	ALDE	90	GAM2	38 $\pi^- p \to n\omega\omega$

$f_2(1640)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\omega\omega$	seen