

$a_0(1450)$

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

See minireview on scalar mesons under $f_0(1370)$.

$a_0(1450)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
1474 ± 19 OUR AVERAGE				
1480 ± 30		ABELE	98 CBAR	0.0 $\bar{p}p \rightarrow K_L^0 K^\pm \pi^\mp$
1470 ± 25		¹ AMSLER	95D CBAR	0.0 $\bar{p}p \rightarrow \pi^0 \pi^0 \pi^0, \pi^0 \eta \eta, \pi^0 \pi^0 \eta$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
1441 ⁺⁴⁰ ₋₁₅	35280	⁴ BAKER	03 SPEC	$\bar{p}p \rightarrow \omega \pi^+ \pi^- \pi^0$
1303 ± 16		⁵ BARGIOTTI	03 OBLX	$\bar{p}p$
1296 ± 10		² AMSLER	02 CBAR	0.9 $\bar{p}p \rightarrow \pi^0 \pi^0 \eta$
1565 ± 30		² ANISOVICH	98B RVUE	Compilation
1290 ± 10		BERTIN	98B OBLX	0.0 $\bar{p}p \rightarrow K^\pm K_S^0 \pi^\mp$
1450 ± 40		AMSLER	94D CBAR	0.0 $\bar{p}p \rightarrow \pi^0 \pi^0 \eta$
1435 ± 40		BUGG	94 RVUE	$\bar{p}p \rightarrow \eta 2\pi^0$
1410 ± 25		ETKIN	82C MPS	23 $\pi^- p \rightarrow n 2K_S^0$
~ 1300		MARTIN	78 SPEC	10 $K^\pm p \rightarrow K_S^0 \pi p$
1255 ± 5		³ CASON	76	

¹ Coupled-channel analysis of AMSLER 95B, AMSLER 95C, and AMSLER 94D.

² T-matrix pole.

³ Isospin 0 not excluded.

⁴ From the pole position.

⁵ Coupled channel analysis of $\pi^+ \pi^- \pi^0$, $K^+ K^- \pi^0$, and $K^\pm K_S^0 \pi^\mp$.

$a_0(1450)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
265 ± 13 OUR AVERAGE				
265 ± 15		ABELE	98 CBAR	0.0 $\bar{p}p \rightarrow K_L^0 K^\pm \pi^\mp$
265 ± 30		⁶ AMSLER	95D CBAR	0.0 $\bar{p}p \rightarrow \pi^0 \pi^0 \pi^0, \pi^0 \eta \eta, \pi^0 \pi^0 \eta$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
110 ± 14	35280	⁹ BAKER	03 SPEC	$\bar{p}p \rightarrow \omega \pi^+ \pi^- \pi^0$
92 ± 16		¹⁰ BARGIOTTI	03 OBLX	$\bar{p}p$
81 ± 21		⁷ AMSLER	02 CBAR	0.9 $\bar{p}p \rightarrow \pi^0 \pi^0 \eta$
292 ± 40		⁷ ANISOVICH	98B RVUE	Compilation
80 ± 5		BERTIN	98B OBLX	0.0 $\bar{p}p \rightarrow K^\pm K_S^0 \pi^\mp$
270 ± 40		AMSLER	94D CBAR	0.0 $\bar{p}p \rightarrow \pi^0 \pi^0 \eta$
270 ± 40		BUGG	94 RVUE	$\bar{p}p \rightarrow \eta 2\pi^0$
230 ± 30		ETKIN	82C MPS	23 $\pi^- p \rightarrow n 2K_S^0$
~ 250		MARTIN	78 SPEC	10 $K^\pm p \rightarrow K_S^0 \pi p$
79 ± 10		⁸ CASON	76	

⁶ Coupled-channel analysis of AMSLER 95B, AMSLER 95C, and AMSLER 94D.

⁷ T-matrix pole.

⁸ Isospin 0 not excluded.

⁹ From the pole position.

¹⁰ Coupled channel analysis of $\pi^+\pi^-\pi^0$, $K^+K^-\pi^0$, and $K^\pm K_S^0 \pi^\mp$.

$a_0(1450)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $\pi\eta$	seen
Γ_2 $\pi\eta'(958)$	seen
Γ_3 $K\bar{K}$	seen
Γ_4 $\omega\pi\pi$	seen

$\Gamma(\pi\eta'(958))/\Gamma(\pi\eta)$ Γ_2/Γ_1

VALUE	DOCUMENT ID	TECN	COMMENT
0.35±0.16	¹¹ ABELE	98	CBAR 0.0 $\bar{p}p \rightarrow K_L^0 K^\pm \pi^\mp$
0.43±0.19	ABELE	97C	CBAR 0.0 $\bar{p}p \rightarrow \pi^0 \pi^0 \eta'$

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

¹¹ Using $\pi^0\eta$ from AMSLER 94D.

$\Gamma(K\bar{K})/\Gamma(\pi\eta)$ Γ_3/Γ_1

VALUE	DOCUMENT ID	TECN	COMMENT
0.88±0.23	¹¹ ABELE	98	CBAR 0.0 $\bar{p}p \rightarrow K_L^0 K^\pm \pi^\mp$

$\Gamma(\omega\pi\pi)/\Gamma(\pi\eta)$ Γ_4/Γ_1

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
10.7±2.3	35280	¹² BAKER	03	SPEC $\bar{p}p \rightarrow \omega\pi^+\pi^-\pi^0$

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

¹² Using results on $\bar{p}p \rightarrow a_0(1450)^0 \pi^0$, $a_0(1450) \rightarrow \eta\pi^0$ from ABELE 96C and assuming the $\omega\rho$ mechanism for the $\omega\pi\pi$ state.

$a_0(1450)$ REFERENCES

BAKER	03	PL B563 140	C.A. Baker <i>et al.</i>	
BARGIOTTI	03	EPJ C26 371	M. Bargiotti <i>et al.</i>	(OBELIX Collab.)
AMSLER	02	EPJ C23 29	C. Amsler <i>et al.</i>	
ABELE	98	PR D57 3860	A. Abele <i>et al.</i>	(Crystal Barrel Collab.)
ANISOVICH	98B	UFN 41 419	V.V. Anisovich <i>et al.</i>	
BERTIN	98B	PL B434 180	A. Bertin <i>et al.</i>	(OBELIX Collab.)
ABELE	97C	PL B404 179	A. Abele <i>et al.</i>	(Crystal Barrel Collab.)
ABELE	96C	NP A609 562	A. Abele <i>et al.</i>	(Crystal Barrel Collab.)
AMSLER	95B	PL B342 433	C. Amsler <i>et al.</i>	(Crystal Barrel Collab.)
AMSLER	95C	PL B353 571	C. Amsler <i>et al.</i>	(Crystal Barrel Collab.)
AMSLER	95D	PL B355 425	C. Amsler <i>et al.</i>	(Crystal Barrel Collab.)
AMSLER	94D	PL B333 277	C. Amsler <i>et al.</i>	(Crystal Barrel Collab.) IGJPC
BUGG	94	PR D50 4412	D.V. Bugg <i>et al.</i>	(LOQM)
ETKIN	82C	PR D25 2446	A. Etkin <i>et al.</i>	(BNL, CUNY, TUFTS, VAND)
MARTIN	78	NP B134 392	A.D. Martin <i>et al.</i>	(DURH, GEVA)
CASON	76	PRL 36 1485	N.M. Cason <i>et al.</i>	(NDAM, ANL)

————— **OTHER RELATED PAPERS** —————

FURMAN	02	PL B538 266	A. Furman, L. Lesniak	
BARBERIS	00H	PL B488 225	D. Barberis <i>et al.</i>	(WA 102 Collab.)
MASONI	99	EPJ C8 385	A. Masoni	
AMSLER	98	RMP 70 1293	C. Amsler	
