NODE=M037

$\eta(1295)$

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

See the review on "Spectroscopy of Light Meson Resonances."

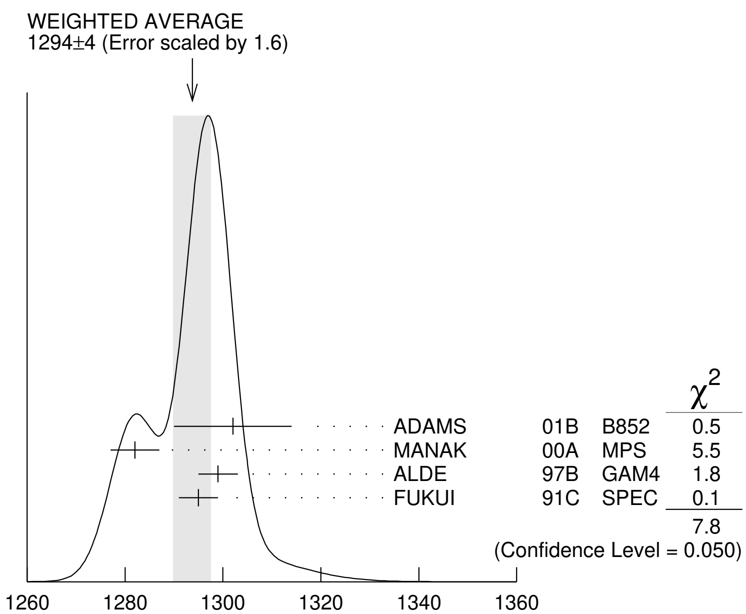
NODE=M037

$\eta(1295)$ MASS

NODE=M037M

NODE=M037M

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
1294±4 OUR AVERAGE		Error includes scale factor of 1.6. See the ideogram below.			
1302±9±8	20k	ADAMS	01B	B852	18 GeV $\pi^- p \to K^+ K^- \pi^0 n$
1282±5	9082	MANAK	00A	MPS	18 $\pi^- p \to \eta \pi^+ \pi^- n$
1299±4	2100	ALDE	97B	GAM4	100 $\pi^- p \to \eta \pi^0 \pi^0 n$
1295±4		FUKUI	91C	SPEC	8.95 $\pi^- p \to \eta \pi^+ \pi^- n$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1264±8		[1] AUGUSTIN	90	DM2	$J/\psi \to \gamma \eta \pi^+ \pi^-$
~ 1275		STANTON	79	CNTR	8.4 $\pi^- p \to n \eta 2\pi$



$\eta(1295)$ mass (MeV)

[1] PWA analysis of AUGUSTIN 92 assigns 0^{-+} quantum numbers to this state rather than 1^{++} as before.

NODE=M037M;LINKAGE=AG

$\eta(1295)$ WIDTH

NODE=M037W

NODE=M037W

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
55± 5 OUR AVERAGE					
57±23±21	20k	ADAMS	01B	B852	18 GeV $\pi^- p \to K^+ K^- \pi^0 n$
66±13	9082	MANAK	00A	MPS	18 $\pi^- p \to \eta \pi^+ \pi^- n$
53± 6		FUKUI	91C	SPEC	8.95 $\pi^- p \to \eta \pi^+ \pi^- n$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<40	2100	ALDE	97B	GAM4	100 $\pi^- p \to \eta \pi^0 \pi^0 n$
44±20		[1] AUGUSTIN	90	DM2	$J/\psi \to \gamma \eta \pi^+ \pi^-$
~ 70		STANTON	79	CNTR	8.4 $\pi^- p \to n \eta 2\pi$

[1] PWA analysis of AUGUSTIN 92 assigns 0^{-+} quantum numbers to this state rather than 1^{++} as before.

NODE=M037W;LINKAGE=AG

$\eta(1295)$ DECAY MODES

NODE=M037215;NODE=M037

	Mode	Fraction (Γ_i/Γ)	
Γ_1	$\eta\pi^+\pi^-$	seen	DESIG=2;OUR EST;→ UNCHECKED ←
Γ_2	$a_0(980)\pi$	seen	DESIG=1;OUR EST;→ UNCHECKED ←
Γ_3	$\gamma\gamma$		DESIG=3
Γ_4	$\eta\pi^0\pi^0$	seen	DESIG=4;OUR EST;→ UNCHECKED ←
Γ_5	$\eta(\pi\pi)_{S\text{-wave}}$	seen	DESIG=5;OUR EST;→ UNCHECKED ←
Γ_6	$\sigma\eta$	seen	DESIG=6;OUR EST;→ UNCHECKED ←
Γ_7	$K\overline{K}\pi$	seen	DESIG=7;OUR EST;→ UNCHECKED ←

$\eta(1295)$ $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$

NODE=M037220

$\Gamma(\eta\pi^+\pi^-) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ $\Gamma_1\Gamma_3/\Gamma$

NODE=M037G2
NODE=M037G2

VALUE (keV)	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
<0.066	95	ACCIARRI	01G	L3	183–202 $e^+e^- \rightarrow e^+e^-\eta\pi^+\pi^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.6	90	AIHARA	88C	TPC	$e^+e^- \rightarrow e^+e^-\eta\pi^+\pi^-$
<0.3		ANTREASYAN	87	CBAL	$e^+e^- \rightarrow e^+e^-\eta\pi\pi$

$\Gamma(K\overline{K}\pi) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ $\Gamma_7\Gamma_3/\Gamma$

NODE=M037G3
NODE=M037G3

VALUE (keV)	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.014	90	[1,2] AHOHE	05	CLE2	10.6 $e^+e^- \rightarrow e^+e^-K^0_S K^\pm\pi^\mp$

[1] Using $\eta(1295)$ mass and width 1294 MeV and 55 MeV, respectively.
NODE=M037G3;LINKAGE=AH

[2] Assuming three-body phase-space decay to $K^0_S K^\pm\pi^\mp$.
NODE=M037G3;LINKAGE=B3

$\eta(1295)$ BRANCHING RATIOS

NODE=M037225

$\Gamma(a_0(980)\pi)/\Gamma_{\text{total}}$ Γ_2/Γ

NODE=M037R1
NODE=M037R1

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
not seen	BERTIN	97	OBLX	0.0 $\overline{p}p \rightarrow K^\pm(K^0)\pi^\mp\pi^+\pi^-$
seen	BIRMAN	88	MPS	8 $\pi^-p \rightarrow K^+\overline{K}^0\pi^-n$
large	ANDO	86	SPEC	8 $\pi^-p \rightarrow \eta\pi^+\pi^-n$
large	STANTON	79	CNTR	8.4 $\pi^-p \rightarrow n\eta 2\pi$

$\Gamma(a_0(980)\pi)/\Gamma(\eta\pi^0\pi^0)$ Γ_2/Γ_4

NODE=M037R2
NODE=M037R2

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
0.65±0.10	[1] ALDE	97B	GAM4	100 $\pi^-p \rightarrow \eta\pi^0\pi^0n$

[1] Assuming that $a_0(980)$ decays only to $\eta\pi$.
NODE=M037R2;LINKAGE=A

$\Gamma(\eta(\pi\pi)_{S\text{-wave}})/\Gamma(\eta\pi^0\pi^0)$ Γ_5/Γ_4

NODE=M037R4
NODE=M037R4

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
0.35±0.10	ALDE	97B	GAM4	100 $\pi^-p \rightarrow \eta\pi^0\pi^0n$

$\Gamma(a_0(980)\pi)/\Gamma(\sigma\eta)$ Γ_2/Γ_6

NODE=M037R5
NODE=M037R5

VALUE	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
0.48±0.22	9082	MANAK	00A	MPS	18 $\pi^-p \rightarrow \eta\pi^+\pi^-n$

$\eta(1295)$ REFERENCES

NODE=M037

AHOHE	05	PR D71 072001	R. Ahohe *et al.*	(CLEO Collab.)	REFID=50764
ACCIARRI	01G	PL B501 1	M. Acciarri *et al.*	(L3 Collab.)	REFID=48319
ADAMS	01B	PL B516 264	G.S. Adams *et al.*	(BNL E852 Collab.)	REFID=49649
MANAK	00A	PR D62 012003	J.J. Manak *et al.*	(BNL E852 Collab.)	REFID=47989
ALDE	97B	PAN 60 386 Translated from YAF 60 458.	D. Alde *et al.*	(GAMS Collab.)	REFID=45396
BERTIN	97	PL B400 226	A. Bertin *et al.*	(OBELIX Collab.)	REFID=45417
AUGUSTIN	92	PR D46 1951	J.E. Augustin, G. Cosme	(DM2 Collab.)	REFID=41584
FUKUI	91C	PL B267 293	S. Fukui *et al.*	(SUGI, NAGO, KEK, KYOT+)	REFID=41748
AUGUSTIN	90	PR D42 10	J.E. Augustin *et al.*	(DM2 Collab.)	REFID=41352
AIHARA	88C	PR D38 1	H. Aihara *et al.*	(TPC-2γ Collab.)	REFID=40564
BIRMAN	88	PRL 61 1557	A. Birman *et al.*	(BNL, FSU, IND, MASD) JP	REFID=40568
ANTREASYAN	87	PR D36 2633	D. Antreasyan *et al.*	(Crystal Ball Collab.)	REFID=40008
ANDO	86	PRL 57 1296	A. Ando *et al.*	(KEK, KYOT, NIRS, SAGA+) IJP	REFID=20891
STANTON	79	PRL 42 346	N.R. Stanton *et al.*	(OSU, CARL, MCGI+) JP	REFID=20887