

$\pi_1(1400)$
was $\hat{\rho}(1405)$

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

OMITTED FROM SUMMARY TABLE

See also the mini-review under non- $q\bar{q}$ candidates. (See the index for the page number.)

$\pi_1(1400)$ MASS

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>
1376 ±17 OUR AVERAGE				
1360 ±25	ABELE	99	CBAR	0.0 $\bar{p}p \rightarrow \pi^0\pi^0\eta$
1400 ±20 ±20	ABELE	98B	CBAR	0.0 $\bar{p}n \rightarrow \pi^-\pi^0\eta$
1370 ±16 $\begin{smallmatrix} +50 \\ -30 \end{smallmatrix}$	¹ THOMPSON	97	MPS	18 $\pi^-p \rightarrow \eta\pi^-p$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
1323.1 ± 4.6	² AOYAGI	93	BKEI	$\pi^-p \rightarrow \eta\pi^-p$
1406 ±20	³ ALDE	88B	GAM4 0	100 $\pi^-p \rightarrow \eta\pi^0n$

¹ Natural parity exchange.

² Unnatural parity exchange.

³ Seen in the P_0 -wave intensity of the $\eta\pi^0$ system, unnatural parity exchange.

$\pi_1(1400)$ WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>
300 ±40 OUR AVERAGE				
220 ±90	ABELE	99	CBAR	0.0 $\bar{p}p \rightarrow \pi^0\pi^0\eta$
310 ±50 $\begin{smallmatrix} +50 \\ -30 \end{smallmatrix}$	ABELE	98B	CBAR	0.0 $\bar{p}n \rightarrow \pi^-\pi^0\eta$
385 ±40 $\begin{smallmatrix} +65 \\ -105 \end{smallmatrix}$	⁴ THOMPSON	97	MPS	18 $\pi^-p \rightarrow \eta\pi^-p$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
143.2 ±12.5	⁵ AOYAGI	93	BKEI	$\pi^-p \rightarrow \eta\pi^-p$
180 ±20	⁶ ALDE	88B	GAM4 0	100 $\pi^-p \rightarrow \eta\pi^0n$

⁴ Resolution is not unfolded, natural parity exchange.

⁵ Unnatural parity exchange.

⁶ Seen in the P_0 -wave intensity of the $\eta\pi^0$ system, unnatural parity exchange.

$\pi_1(1400)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \quad \eta\pi^0$	seen
$\Gamma_2 \quad \eta\pi^-$	seen
$\Gamma_3 \quad \eta'\pi$	possibly seen

$\pi_1(1400)$ BRANCHING RATIOS

$\Gamma(\eta\pi^0)/\Gamma_{\text{total}} \qquad \qquad \qquad \Gamma_1/\Gamma$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
not seen	PROKOSHKIN 95B	GAM4		100 $\pi^- p \rightarrow \eta\pi^0 n$
not seen	⁷ BUGG	94	RVUE	$\bar{p}p \rightarrow \eta 2\pi^0$
not seen	⁸ APEL	81	NICE 0	40 $\pi^- p \rightarrow \eta\pi^0 n$

⁷ Using Crystal Barrel data.

⁸ A general fit allowing *S*, *D*, and *P* waves (including *m*=0) is not done because of limited statistics.

$\Gamma(\eta\pi^-)/\Gamma_{\text{total}} \qquad \qquad \qquad \Gamma_2/\Gamma$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
possibly seen	BELADIDZE 93	VES	$37\pi^- N \rightarrow \eta\pi^- N$

$\Gamma(\eta'\pi)/\Gamma_{\text{total}} \qquad \qquad \qquad \Gamma_3/\Gamma$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
possibly seen	BELADIDZE 93	VES	$37\pi^- N \rightarrow \eta\pi^- N$

$\Gamma(\eta'\pi)/\Gamma(\eta\pi^0) \qquad \qquad \qquad \Gamma_3/\Gamma_1$

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
<0.80	95	BOUTEMEUR 90	GAM4	100 $\pi^- p \rightarrow 4\gamma n$

$\pi_1(1400)$ REFERENCES

ABELE	99	PL B446 349	A. Abele <i>et al.</i>	(Crystal Barrel Collab.)
ABELE	98B	PL B423 175	A. Abele <i>et al.</i>	(Crystal Barrel Collab.)
THOMPSON	97	PRL 79 1630	D.R. Thompson <i>et al.</i>	(E852 Collab.)
PROKOSHKIN	95B	PAN 58 606	Y.D. Prokoshkin, S.A. Sadovsky	(SERP)
		Translated from YAF 58 662.		
BUGG	94	PR D50 4412	D.V. Bugg <i>et al.</i>	(LOQM)
AOYAGI	93	PL B314 246	H. Aoyagi <i>et al.</i>	(BKEI Collab.)
BELADIDZE	93	PL B313 276	G.M. Beladidze <i>et al.</i>	(VES Collab.)
BOUTEMEUR	90	Hadron 89 Conf. p 119	M. Boutemeur, M. Poulet	(SERP, BELG, LANL+)
ALDE	88B	PL B205 397	D.M. Alde <i>et al.</i>	(SERP, BELG, LANL, LAPP) IGJPC
APEL	81	NP B193 269	W.D. Apel <i>et al.</i>	(SERP, CERN)

OTHER RELATED PAPERS

JIN	03	PR D67 014025	H.Y. Jin, J.G. Korener, T.G. Steele	
ACHASOV	02J	PAN 65 552	N.N. Achasov, G.N. Shestakov	
		Translated from YAF 65	579.	
BASS	02	PR D65 057503	S.D. Bass, E. Marco	
CHUNG	02C	EPL A15 539	S.U. Chung, E. Klempt, J.G. Korener	
THOMAS	02	PL B526 72	A.W. Thomas, A.P. Szczepaniak	
ZHANG	02	PR D65 096005	R. Zhang <i>et al.</i>	
IDDIR	01	PL B507 183	F. Iddir, A.S. Safir	
SADOVSKY	00	NP A655 131c	S.A. Sadovsky	
ALDE	99B	PAN 62 421	D. Alde <i>et al.</i>	(GAMS Collab.)
		Translated from YAF 62	462.	
CHUNG	99	PR D60 092001	S.U. Chung <i>et al.</i>	(BNL E852 Collab.)
GODFREY	99	RMP 71 1411	S. Godfrey, J. Napolitano	
DONNACHIE	98	PR D58 114012	A. Donnachie <i>et al.</i>	
LACOCK	97	PL B401 308	P. Lacock <i>et al.</i>	(EDIN, LIVP)
SVEC	97C	PR D56 4355	M. Svec	(MCGI)
PROKOSHKIN	95C	PAN 58 853	Y.D. Prokoshkin, S.A. Sadovsky	(SERP)
		Translated from YAF 58	921.	
KALASHNIK...	94	ZPHY C62 323	Y.S. Kalashnikova	(ITEP)
IDDIR	88	PL B205 564	F. Iddir <i>et al.</i>	(ORSAY, TOKY)
TUAN	88	PL B213 537	S.F. Tuan, T. Ferbel, R.H. Dalitz	(HAWA, ROCH+)
ZIELINSKI	87	ZPHY C34 255	M. Zielinski	(ROCH)