

$\rho_3(1690)$

$$I^G(J^{PC}) = 1^+(3^{--})$$

 $\rho_3(1690)$ MASSVALUE (MeV)DOCUMENT ID**1688.8 ± 2.1 OUR AVERAGE**

Includes data from the 5 datablocks that follow this one.

2 π MODEVALUE (MeV)EVTsDOCUMENT IDTECNCHGCOMMENT

The data in this block is included in the average printed for a previous datablock.

1686 ± 4 OUR AVERAGE

1677 ± 14		EVANGELIS...	81	OMEG	—	12 $\pi^- p \rightarrow 2\pi p$
1679 ± 11	476	BALTAY	78B	HBC	0	15 $\pi^+ p \rightarrow \pi^+ \pi^- n$
1678 ± 12	175	¹ ANTIPOV	77	CIBS	0	25 $\pi^- p \rightarrow p 3\pi$
1690 ± 7	600	¹ ENGLER	74	DBC	0	6 $\pi^+ n \rightarrow \pi^+ \pi^- p$
1693 ± 8		² GRAYER	74	ASPK	0	17 $\pi^- p \rightarrow \pi^+ \pi^- n$
1678 ± 12		MATTHEWS	71c	DBC	0	7 $\pi^+ N$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
1734 ± 10		³ CORDEN	79	OMEG		12–15 $\pi^- p \rightarrow n 2\pi$
1692 ± 12		^{2,4} ESTABROOKS	75	RVUE		17 $\pi^- p \rightarrow \pi^+ \pi^- n$
1737 ± 23		ARMENISE	70	DBC	0	9 $\pi^+ N$
1650 ± 35	122	BARTSCH	70B	HBC	+	8 $\pi^+ p \rightarrow N 2\pi$
1687 ± 21		STUNTEBECK	70	HDBC	0	8 $\pi^- p, 5.4 \pi^+ d$
1683 ± 13		ARMENISE	68	DBC	0	5.1 $\pi^+ d$
1670 ± 30		GOLDBERG	65	HBC	0	6 $\pi^+ d, 8 \pi^- p$

¹ Mass errors enlarged by us to $\Gamma/\sqrt{N}$; see the note with the $K^*(892)$ mass.² Uses same data as HYAMS 75.³ From a phase shift solution containing a $f'_2(1525)$ width two times larger than the $K\bar{K}$ result.⁴ From phase-shift analysis. Error takes account of spread of different phase-shift solutions. **$K\bar{K}$ AND $K\bar{K}\pi$ MODES**VALUE (MeV)EVTsDOCUMENT IDTECNCHGCOMMENT

The data in this block is included in the average printed for a previous datablock.

1696 ± 4 OUR AVERAGE

1699 ± 5		ALPER	80	CNTR	0	62 $\pi^- p \rightarrow K^+ K^- n$
1698 ± 12	6k	^{5,6} MARTIN	78D	SPEC		10 $\pi p \rightarrow K_S^0 K^- p$
1692 ± 6		BLUM	75	ASPK	0	18.4 $\pi^- p \rightarrow n K^+ K^-$
1690 ± 16		ADERHOLZ	69	HBC	+	8 $\pi^+ p \rightarrow K\bar{K}\pi$

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

1694 ± 8		⁷ COSTA	80	OMEG		10 $\pi^- p \rightarrow K^+ K^- n$
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⁵ From a fit to $J^P = 3^-$ partial wave.⁶ Systematic error on mass scale subtracted.⁷ They cannot distinguish between $\rho_3(1690)$ and $\omega_3(1670)$.

$(4\pi)^\pm$ MODE

VALUE (MeV)	EPTS	DOCUMENT ID	TECN	CHG	COMMENT
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The data in this block is included in the average printed for a previous datablock.

1686 $\pm$ 5 OUR AVERAGE Error includes scale factor of 1.1.

1694 $\pm$ 6		⁸ EVANGELIS...	81	OMEG	—	12 $\pi^- p \rightarrow p4\pi$
1665 $\pm$ 15	177	BALTAY	78B	HBC	+	15 $\pi^+ p \rightarrow p4\pi$
1670 $\pm$ 10		THOMPSON	74	HBC	+	13 $\pi^+ p$
1687 $\pm$ 20		CASON	73	HBC	—	8,18.5 $\pi^- p$
1685 $\pm$ 14		⁹ CASON	73	HBC	—	8,18.5 $\pi^- p$
1680 $\pm$ 40	144	BARTSCH	70B	HBC	+	8 $\pi^+ p \rightarrow N4\pi$
1689 $\pm$ 20	102	⁹ BARTSCH	70B	HBC	+	8 $\pi^+ p \rightarrow N2\rho$
1705 $\pm$ 21		CASO	70	HBC	—	11.2 $\pi^- p \rightarrow n\rho2\pi$

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

1718 $\pm$ 10		¹⁰ EVANGELIS...	81	OMEG	—	12 $\pi^- p \rightarrow p4\pi$
1673 $\pm$ 9		¹¹ EVANGELIS...	81	OMEG	—	12 $\pi^- p \rightarrow p4\pi$
1733 $\pm$ 9	66	⁹ KLIGER	74	HBC	—	4.5 $\pi^- p \rightarrow p4\pi$
1630 $\pm$ 15		HOLMES	72	HBC	+	10–12 $K^+ p$
1720 $\pm$ 15		BALTAY	68	HBC	+	7, 8.5 $\pi^+ p$

⁸ From $\rho^- \rho^0$ mode, not independent of the other two EVANGELISTA 81 entries.

⁹ From $\rho^\pm \rho^0$ mode.

¹⁰ From $a_2(1320)^- \pi^0$ mode, not independent of the other two EVANGELISTA 81 entries.

¹¹ From $a_2(1320)^0 \pi^-$ mode, not independent of the other two EVANGELISTA 81 entries.

 $\omega\pi$ MODE

VALUE (MeV)	DOCUMENT ID	TECN	CHG	COMMENT
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The data in this block is included in the average printed for a previous datablock.

1681 $\pm$ 7 OUR AVERAGE

1670 $\pm$ 25		¹² ALDE	95	GAM2		38 $\pi^- p \rightarrow \omega\pi^0 n$
1690 $\pm$ 15		EVANGELIS...	81	OMEG	—	12 $\pi^- p \rightarrow \omega\pi p$
1666 $\pm$ 14		GESSAROLI	77	HBC		11 $\pi^- p \rightarrow \omega\pi p$
1686 $\pm$ 9		THOMPSON	74	HBC	+	13 $\pi^+ p$

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

1654 $\pm$ 24		BARNHAM	70	HBC	+	10 $K^+ p \rightarrow \omega\pi X$
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¹² Supersedes ALDE 92C.

 $\eta\pi^+\pi^-$ MODE

(For difficulties with MMS experiments, see the $a_2(1320)$ mini-review in the 1973 edition.)

VALUE (MeV)	DOCUMENT ID	TECN	CHG	COMMENT
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The data in this block is included in the average printed for a previous datablock.

1682 $\pm$ 12 OUR AVERAGE

1685 $\pm$ 10 $\pm$ 20	AMELIN	00	VES		37 $\pi^- p \rightarrow \eta\pi^+\pi^- n$
1680 $\pm$ 15	FUKUI	88	SPEC	0	8.95 $\pi^- p \rightarrow \eta\pi^+\pi^- n$

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

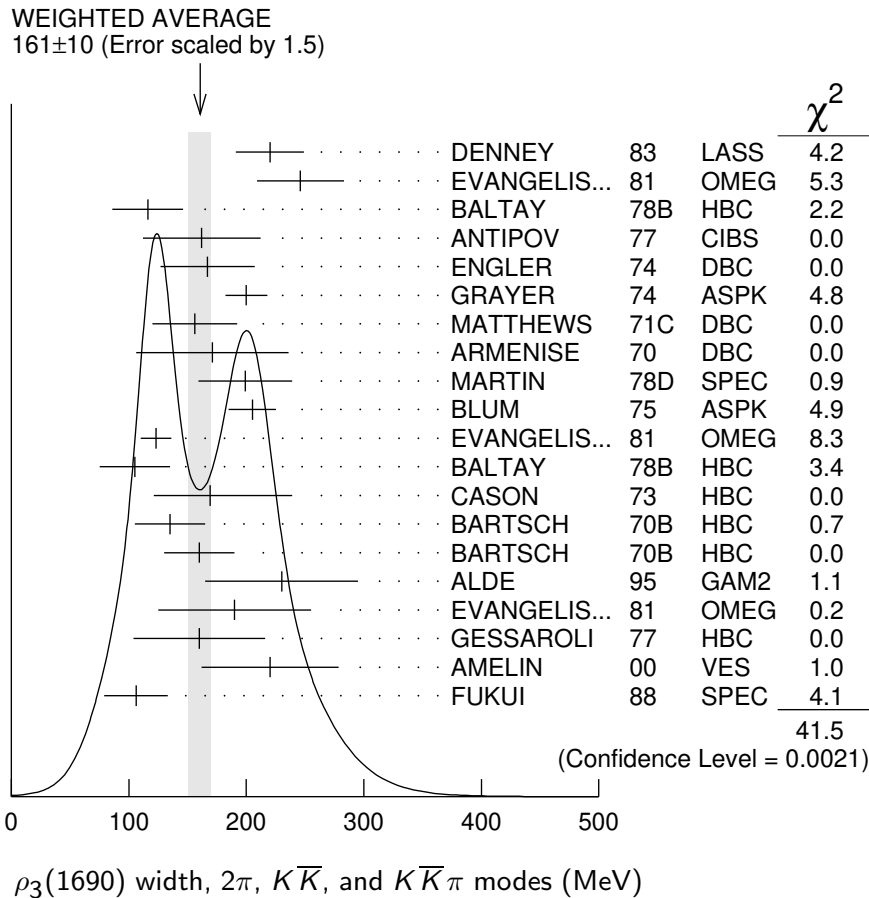
1700 $\pm$ 47	¹³ ANDERSON	69	MMS	—	16 $\pi^- p$ backward
1632 $\pm$ 15	^{13,14} FOCACCI	66	MMS	—	7–12 $\pi^- p \rightarrow pMM$
1700 $\pm$ 15	^{13,14} FOCACCI	66	MMS	—	7–12 $\pi^- p \rightarrow pMM$

1748±15 13,14 FOCACCI 66 MMS — 7–12 $\pi^- p \rightarrow p\text{MM}$
13 Seen in 2.5–3 GeV/c $\bar{p}p$. $2\pi^+ 2\pi^-$, with 0, 1, 2 $\pi^+ \pi^-$ pairs in ρ band not seen by
OREN 74 (2.3 GeV/c $\bar{p}p$) with more statistics. (Jan. 1976)
14 Not seen by BOWEN 72.

$\rho_3(1690)$ WIDTH

2 π , $K\bar{K}$, AND $K\bar{K}\pi$ MODES

VALUE (MeV) DOCUMENT ID
161±10 OUR AVERAGE Includes data from the 5 datablocks that follow this one. Error includes scale factor of 1.5. See the ideogram below.



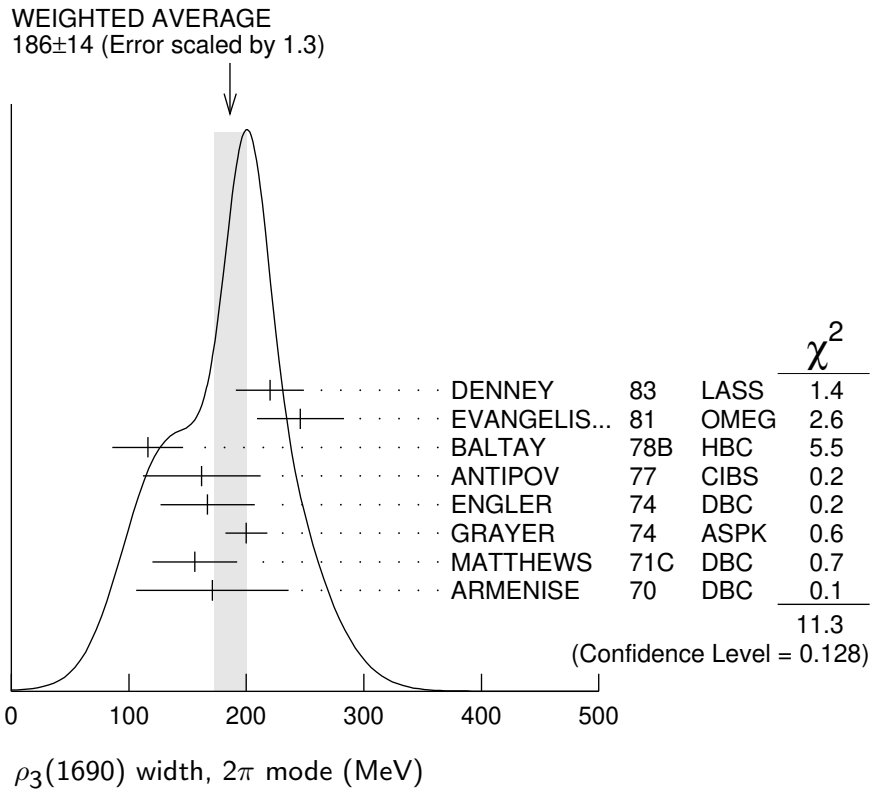
2 π MODE

VALUE (MeV) EVTS DOCUMENT ID TECN CHG COMMENT
The data in this block is included in the average printed for a previous datablock.

186±14 OUR AVERAGE Error includes scale factor of 1.3. See the ideogram below.

220±29		DENNEY	83	LASS		10 $\pi^+ N$
246±37		EVANGELIS...	81	OMEG	—	12 $\pi^- p \rightarrow 2\pi p$
116±30	476	BALTAY	78B	HBC	0	15 $\pi^+ p \rightarrow \pi^+ \pi^- n$
162±50	175	15 ANTIPOV	77	CIBS	0	25 $\pi^- p \rightarrow p3\pi$
167±40	600	ENGLER	74	DBC	0	6 $\pi^+ n \rightarrow \pi^+ \pi^- p$
200±18		16 GRAYER	74	ASPK	0	17 $\pi^- p \rightarrow \pi^+ \pi^- n$
156±36		MATTHEWS	71c	DBC	0	7 $\pi^+ N$

171±65	ARMENISE	70	DBC	0	9 $\pi^+ d$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
322±35	¹⁷ CORDEN	79	OMEG		12–15 $\pi^- p \rightarrow n 2\pi$
240±30	^{16,18} ESTABROOKS	75	RVUE		17 $\pi^- p \rightarrow \pi^+ \pi^- n$
180±30	122 BARTSCH	70B	HBC	+	8 $\pi^+ p \rightarrow N 2\pi$
267 ⁺⁷² ₋₄₆	STUNTEBECK	70	HDBC	0	8 $\pi^- p$, 5.4 $\pi^+ d$
188±49	ARMENISE	68	DBC	0	5.1 $\pi^+ d$
180±40	GOLDBERG	65	HBC	0	6 $\pi^+ d$, 8 $\pi^- p$
¹⁵ Width errors enlarged by us to $4\Gamma/\sqrt{N}$; see the note with the $K^*(892)$ mass.					
¹⁶ Uses same data as HYAMS 75 and BECKER 79.					
¹⁷ From a phase shift solution containing a $f_2'(1525)$ width two times larger than the $K\bar{K}$ result.					
¹⁸ From phase-shift analysis. Error takes account of spread of different phase-shift solutions.					



$K\bar{K}$ AND $K\bar{K}\pi$ MODES

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
The data in this block is included in the average printed for a previous datablock.					

204±18 OUR AVERAGE

199±40	6000	¹⁹ MARTIN	78D	SPEC	10	$\pi p \rightarrow K_S^0 K^- p$
205±20		BLUM	75	ASPK	0	18.4 $\pi^- p \rightarrow n K^+ K^-$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●						
219± 4		ALPER	80	CNTR	0	62 $\pi^- p \rightarrow K^+ K^- n$
186±11		²⁰ COSTA	80	OMEG		10 $\pi^- p \rightarrow K^+ K^- n$
112±60		ADERHOLZ	69	HBC	+	8 $\pi^+ p \rightarrow K \bar{K} \pi$

¹⁹ From a fit to $J^P = 3^-$ partial wave.

²⁰ They cannot distinguish between $\rho_3(1690)$ and $\omega_3(1670)$.

$(4\pi)^\pm$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
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The data in this block is included in the average printed for a previous datablock.

129±10 OUR AVERAGE

123±13		²¹ EVANGELIS...	81	OMEG	—	12 $\pi^- p \rightarrow p4\pi$
105±30	177	BALTAY	78B	HBC	+	15 $\pi^+ p \rightarrow p4\pi$
169 ⁺⁷⁰ ₋₄₈		CASON	73	HBC	—	8,18.5 $\pi^- p$
135±30	144	BARTSCH	70B	HBC	+	8 $\pi^+ p \rightarrow N4\pi$
160±30	102	BARTSCH	70B	HBC	+	8 $\pi^+ p \rightarrow N2\rho$

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

230±28		²² EVANGELIS...	81	OMEG	—	12 $\pi^- p \rightarrow p4\pi$
184±33		²³ EVANGELIS...	81	OMEG	—	12 $\pi^- p \rightarrow p4\pi$
150	66	²⁴ KLIGER	74	HBC	—	4.5 $\pi^- p \rightarrow p4\pi$
106±25		THOMPSON	74	HBC	+	13 $\pi^+ p$
125 ⁺⁸³ ₋₃₅		²⁴ CASON	73	HBC	—	8,18.5 $\pi^- p$
130±30		HOLMES	72	HBC	+	10–12 $K^+ p$
180±30	90	²⁴ BARTSCH	70B	HBC	+	8 $\pi^+ p \rightarrow Na_2\pi$
100±35		BALTAY	68	HBC	+	7, 8.5 $\pi^+ p$

²¹ From $\rho^- \rho^0$ mode, not independent of the other two EVANGELISTA 81 entries.

²² From $a_2(1320)^- \pi^0$ mode, not independent of the other two EVANGELISTA 81 entries.

²³ From $a_2(1320)^0 \pi^-$ mode, not independent of the other two EVANGELISTA 81 entries.

²⁴ From $\rho^\pm \rho^0$ mode.

$\omega\pi$ MODE

VALUE (MeV)	DOCUMENT ID	TECN	CHG	COMMENT
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The data in this block is included in the average printed for a previous datablock.

190±40 OUR AVERAGE

230±65	²⁵ ALDE	95	GAM2		38 $\pi^- p \rightarrow \omega\pi^0 n$
190±65	EVANGELIS...	81	OMEG	—	12 $\pi^- p \rightarrow \omega\pi p$
160±56	GESSAROLI	77	HBC		11 $\pi^- p \rightarrow \omega\pi p$

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

89±25	THOMPSON	74	HBC	+	13 $\pi^+ p$
130 ⁺⁷³ ₋₄₃	BARNHAM	70	HBC	+	10 $K^+ p \rightarrow \omega\pi X$

²⁵ Supersedes ALDE 92C.

$\eta\pi^+\pi^-$ MODE

(For difficulties with MMS experiments, see the $a_2(1320)$ mini-review in the 1973 edition.)

VALUE (MeV)	DOCUMENT ID	TECN	CHG	COMMENT
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The data in this block is included in the average printed for a previous datablock.

130±40 OUR AVERAGE Error includes scale factor of 1.8.

220±30±50	AMELIN	00	VES		37 $\pi^- p \rightarrow \eta\pi^+\pi^- n$
106±27	FUKUI	88	SPEC	0	8.95 $\pi^- p \rightarrow \eta\pi^+\pi^- n$

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

195	²⁶ ANDERSON	69	MMS	—	16 $\pi^- p$ backward
< 21	^{26,27} FOCACCI	66	MMS	—	7–12 $\pi^- p \rightarrow p$ MM
< 30	^{26,27} FOCACCI	66	MMS	—	7–12 $\pi^- p \rightarrow p$ MM
< 38	^{26,27} FOCACCI	66	MMS	—	7–12 $\pi^- p \rightarrow p$ MM
²⁶ Seen in 2.5–3 GeV/c $\bar{p}p$. $2\pi^+ 2\pi^-$, with 0, 1, 2 $\pi^+ \pi^-$ pairs in ρ^0 band not seen by OREN 74 (2.3 GeV/c $\bar{p}p$) with more statistics. (Jan. 1979)					
²⁷ Not seen by BOWEN 72.					

$\rho_3(1690)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)	Scale factor
Γ_1	4π	(71.1 $\pm$ 1.9) %	
Γ_2	$\pi^\pm \pi^+ \pi^- \pi^0$	(67 $\pm$ 22) %	
Γ_3	$\omega \pi$	(16 $\pm$ 6) %	
Γ_4	$\pi \pi$	(23.6 $\pm$ 1.3) %	
Γ_5	$K \bar{K} \pi$	(3.8 $\pm$ 1.2) %	
Γ_6	$K \bar{K}$	(1.58 $\pm$ 0.26) %	1.2
Γ_7	$\eta \pi^+ \pi^-$	seen	
Γ_8	$\rho(770) \eta$	seen	
Γ_9	$\pi \pi \rho$	seen	
Γ_{10}	$a_2(1320) \pi$	seen	
Γ_{11}	$\rho \rho$	seen	
Γ_{12}	$\phi \pi$		
Γ_{13}	$\eta \pi$		
Γ_{14}	$\pi^\pm 2\pi^+ 2\pi^- \pi^0$		

CONSTRAINED FIT INFORMATION

An overall fit to 5 branching ratios uses 10 measurements and one constraint to determine 4 parameters. The overall fit has a $\chi^2 = 14.7$ for 7 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients $\langle \delta x_i \delta x_j \rangle / (\delta x_i \delta x_j)$, in percent, from the fit to the branching fractions, $x_i \equiv \Gamma_i / \Gamma_{\text{total}}$. The fit constrains the x_i whose labels appear in this array to sum to one.

x_4	−77		
x_5	−74	17	
x_6	−15	2	0
	x_1	x_4	x_5

$\rho_3(1690)$ BRANCHING RATIOS $\Gamma(\pi\pi)/\Gamma_{\text{total}}$ Γ_4/Γ

VALUE	DOCUMENT ID	TECN	CHG	COMMENT
0.236 ± 0.013 OUR FIT				
0.243 ± 0.013 OUR AVERAGE				
$0.259^{+0.018}_{-0.019}$	BECKER	79	ASPK	0 17 $\pi^- p$ polarized
0.23 ± 0.02	CORDEN	79	OMEG	12–15 $\pi^- p \rightarrow n2\pi$
0.22 ± 0.04	²⁸ MATTHEWS	71C	HDBC	0 7 $\pi^+ n \rightarrow \pi^- p$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.245 ± 0.006	²⁹ ESTABROOKS	75	RVUE	17 $\pi^- p \rightarrow \pi^+ \pi^- n$
²⁸ One-pion-exchange model used in this estimation.				
²⁹ From phase-shift analysis of HYAMS 75 data.				

 $\Gamma(\pi\pi)/\Gamma(\pi^\pm\pi^+\pi^-\pi^0)$ Γ_4/Γ_2

VALUE	DOCUMENT ID	TECN	CHG	COMMENT
0.35 ± 0.11	CASON	73	HBC	– 8,18.5 $\pi^- p$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.2	HOLMES	72	HBC	+ 10–12 $K^+ p$
<0.12	BALLAM	71B	HBC	– 16 $\pi^- p$

 $\Gamma(\pi\pi)/\Gamma(4\pi)$ Γ_4/Γ_1

VALUE	DOCUMENT ID	TECN	CHG	COMMENT
0.332 ± 0.026 OUR FIT	Error includes scale factor of 1.1.			
0.30 ± 0.10	BALTAY	78B	HBC	0 15 $\pi^+ p \rightarrow p4\pi$

 $\Gamma(K\bar{K})/\Gamma(\pi\pi)$ Γ_6/Γ_4

VALUE	DOCUMENT ID	TECN	CHG	COMMENT
0.067 ± 0.011 OUR FIT	Error includes scale factor of 1.2.			
$0.118^{+0.040}_{-0.032}$ OUR AVERAGE	Error includes scale factor of 1.7. See the ideogram below.			
$0.191^{+0.040}_{-0.037}$	GORLICH	80	ASPK	0 17,18 $\pi^- p$ polarized
0.08 ± 0.03	BARTSCH	70B	HBC	+ 8 $\pi^+ p$
$0.08^{+0.08}_{-0.03}$	CRENNELL	68B	HBC	6.0 $\pi^- p$

$\Gamma(\rho\rho)/[\Gamma(\pi\pi\rho) + \Gamma(a_2(1320)\pi) + \Gamma(\rho\rho)]$					$\Gamma_{11}/(\Gamma_9+\Gamma_{10}+\Gamma_{11})$
VALUE	DOCUMENT ID	TECN	CHG	COMMENT	

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

0.48±0.16 CASO 68 HBC — 11 $\pi^- p$

$\Gamma(a_2(1320)\pi)/\Gamma(\pi^\pm\pi^+\pi^-\pi^0)$					Γ_{10}/Γ_2
VALUE	DOCUMENT ID	TECN	CHG	COMMENT	

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

0.66±0.08 BALTAY 78B HBC + 15 $\pi^+ p \rightarrow p4\pi$

0.36±0.14 ³² THOMPSON 74 HBC + 13 $\pi^+ p$

not seen CASON 73 HBC — 8,18.5 $\pi^- p$

0.6 ±0.15 BARTSCH 70B HBC + 8 $\pi^+ p$

0.6 BALTAY 68 HBC + 7,8.5 $\pi^+ p$

³² $\rho\rho$ and $a_2(1320)\pi$ modes are indistinguishable.

$\Gamma(\omega\pi)/\Gamma(\pi^\pm\pi^+\pi^-\pi^0)$					Γ_3/Γ_2
VALUE	CL%	DOCUMENT ID	TECN	CHG	COMMENT

0.23±0.05 OUR AVERAGE Error includes scale factor of 1.2.

0.33±0.07 THOMPSON 74 HBC + 13 $\pi^+ p$

0.12±0.07 BALLAM 71B HBC — 16 $\pi^- p$

0.25±0.10 BALTAY 68 HBC + 7,8.5 $\pi^+ p$

0.25±0.10 JOHNSTON 68 HBC — 7.0 $\pi^- p$

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

<0.11 95 BALTAY 78B HBC + 15 $\pi^+ p \rightarrow p4\pi$

<0.09 KLIGER 74 HBC — 4.5 $\pi^- p \rightarrow p4\pi$

$\Gamma(\phi\pi)/\Gamma(\pi^\pm\pi^+\pi^-\pi^0)$					Γ_{12}/Γ_2
VALUE	DOCUMENT ID	TECN	CHG	COMMENT	

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

<0.11 BALTAY 68 HBC + 7,8.5 $\pi^+ p$

$\Gamma(\pi^\pm 2\pi^+ 2\pi^- \pi^0)/\Gamma(\pi^\pm\pi^+\pi^-\pi^0)$					Γ_{14}/Γ_2
VALUE	DOCUMENT ID	TECN	CHG	COMMENT	

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

<0.15 BALTAY 68 HBC + 7,8.5 $\pi^+ p$

$\Gamma(\eta\pi)/\Gamma(\pi^\pm\pi^+\pi^-\pi^0)$					Γ_{13}/Γ_2
VALUE	DOCUMENT ID	TECN	CHG	COMMENT	

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

<0.02 THOMPSON 74 HBC + 13 $\pi^+ p$

$\Gamma(K\bar{K})/\Gamma_{\text{total}}$					Γ_6/Γ
VALUE	DOCUMENT ID	TECN	CHG	COMMENT	

0.0158±0.0026 OUR FIT Error includes scale factor of 1.2.

0.0130±0.0024 OUR AVERAGE

0.013 ±0.003 COSTA 80 OMEG 0 10 $\pi^- p \rightarrow K^+ K^- n$

0.013 ±0.004 ³³ MARTIN 78B SPEC — 10 $\pi p \rightarrow K_S^0 K^- p$

³³ From $(\Gamma_4\Gamma_6)^{1/2} = 0.056 \pm 0.034$ assuming $B(\rho_3(1690) \rightarrow \pi\pi) = 0.24$.

$\Gamma(\omega\pi)/[\Gamma(\omega\pi) + \Gamma(\rho\rho)]$	$\Gamma_3/(\Gamma_3 + \Gamma_{11})$
VALUE	DOCUMENT ID TECN CHG COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •	
0.22 ± 0.08	CASON 73 HBC — $8,18.5 \pi^- p$
$\Gamma(\eta\pi^+\pi^-)/\Gamma_{\text{total}}$	Γ_7/Γ
VALUE	DOCUMENT ID TECN COMMENT
seen	FUKUI 88 SPEC $8.95 \pi^- p \rightarrow \eta\pi^+\pi^- n$
$\Gamma(a_2(1320)\pi)/\Gamma(\rho(770)\eta)$	Γ_{10}/Γ_8
VALUE	DOCUMENT ID TECN COMMENT
5.5 ± 2.0	AMELIN 00 VES $37 \pi^- p \rightarrow \eta\pi^+\pi^- n$

 $\rho_3(1690)$ REFERENCES

AMELIN	00	NP A668 83	D. Amelin <i>et al.</i>	(VES Collab.)
ALDE	95	ZPHY C66 379	D.M. Alde <i>et al.</i>	(GAMS Collab.) JP
ALDE	92C	ZPHY C54 553	D.M. Alde <i>et al.</i>	(BELG, SERP, KEK, LANL+)
FUKUI	88	PL B202 441	S. Fukui <i>et al.</i>	(SUGI, NAGO, KEK, KYOT+)
DENNEY	83	PR D28 2726	D.L. Denney <i>et al.</i>	(IOWA, MICH)
EVANGELIS...	81	NP B178 197	C. Evangelista <i>et al.</i>	(BARI, BONN, CERN+)
ALPER	80	PL 94B 422	B. Alper <i>et al.</i>	(AMST, CERN, CRAC, MPIM+)
COSTA	80	NP B175 402	G. Costa <i>et al.</i>	(BARI, BONN, CERN, GLAS+)
GORLICH	80	NP B174 16	L. Gorlich <i>et al.</i>	(CRAC, MPIM, CERN+)
BECKER	79	NP B151 46	H. Becker <i>et al.</i>	(MPIM, CERN, ZEEM, CRAC)
CORDEN	79	NP B157 250	M.J. Corden <i>et al.</i>	(BIRM, RHEL, TELA+) JP
BALTAY	78B	PR D17 62	C. Baltay <i>et al.</i>	(COLU, BING)
MARTIN	78B	NP B140 158	A.D. Martin <i>et al.</i>	(DURH, GEVA)
MARTIN	78D	PL 74B 417	A.D. Martin <i>et al.</i>	(DURH, GEVA)
ANTIPOV	77	NP B119 45	Y.M. Antipov <i>et al.</i>	(SERP, GEVA)
GESSAROLI	77	NP B126 382	R. Gessaroli <i>et al.</i>	(BGNA, FIRZ, GENO+)
BLUM	75	PL 57B 403	W. Blum <i>et al.</i>	(CERN, MPIM) JP
ESTABROOKS	75	NP B95 322	P.G. Estabrooks, A.D. Martin	(DURH)
HYAMS	75	NP B100 205	B.D. Hyams <i>et al.</i>	(CERN, MPIM)
ENGLER	74	PR D10 2070	A. Engler <i>et al.</i>	(CMU, CASE)
GRAYR	74	NP B75 189	G. Grayr <i>et al.</i>	(CERN, MPIM)
KLIGER	74	SJNP 19 428	G.K. Kliger <i>et al.</i>	(ITEP)
		Translated from YAF 19 839.		
OREN	74	NP B71 189	Y. Oren <i>et al.</i>	(ANL, OXF)
THOMPSON	74	NP B69 220	G. Thompson <i>et al.</i>	(PURD)
CASON	73	PR D7 1971	N.M. Cason <i>et al.</i>	(NDAM)
BOWEN	72	PRL 29 890	D.R. Bowen <i>et al.</i>	(NEAS, STON)
HOLMES	72	PR D6 3336	R. Holmes <i>et al.</i>	(ROCH)
BALLAM	71B	PR D3 2606	J. Ballam <i>et al.</i>	(SLAC)
MATTHEWS	71C	NP B33 1	J.A.J. Matthews <i>et al.</i>	(TNTO, WISC) JP
ARMENISE	70	LNC 4 199	N. Armenise <i>et al.</i>	(BARI, BGNA, FIRZ)
BARNHAM	70	PRL 24 1083	K.W.J. Barnham <i>et al.</i>	(BIRM)
BARTSCH	70B	NP B22 109	J. Bartsch <i>et al.</i>	(AACH, BERL, CERN)
CASO	70	LNC 3 707	C. Caso <i>et al.</i>	(GENO, HAMB, MILA, SACL)
STUNTEBECK	70	PL 32B 391	P.H. Stuntebeck <i>et al.</i>	(NDAM)
ADERHOLZ	69	NP B11 259	M. Aderholz <i>et al.</i>	(AACH3, BERL, CERN+)
ANDERSON	69	PRL 22 1390	E.W. Anderson <i>et al.</i>	(BNL, CMU)
ARMENISE	68	NC 54A 999	N. Armenise <i>et al.</i>	(BARI, BGNA, FIRZ+) I
BALTAY	68	PRL 20 887	C. Baltay <i>et al.</i>	(COLU, ROCH, RUTG, YALE) I
CASO	68	NC 54A 983	C. Caso <i>et al.</i>	(GENO, HAMB, MILA, SACL)
CRENNELL	68B	PL 28B 136	D.J. Crennell <i>et al.</i>	(BNL)
JOHNSTON	68	PRL 20 1414	T.F. Johnston <i>et al.</i>	(TNTO, WISC) IJP
FOCACCI	66	PRL 17 890	M.N. Focacci <i>et al.</i>	(CERN)
GOLDBERG	65	PL 17 354	M. Goldberg <i>et al.</i>	(CERN, EPOL, ORSAY+)