$\rho(1700)$

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

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ρ(1700) MASS

$\eta\rho^0$ AND $\pi^+\pi^-$ MODES

VALUE (MeV)	DOCUMENT ID
1700±20 OUR ESTIMATE	
1717±13 OUR AVERAGE	Includes data from the 2 datablocks that follow this one. Error includes scale factor of 1.2.

$\eta\rho^0$ MODE

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

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
1740±20	ANTONELLI	88	DM2	$e^+e^- \rightarrow \eta\pi^+\pi^-$
1701±15	[1] FUKUI	88	SPEC	$8.95\ \pi^- p \rightarrow \eta\pi^+\pi^- n$

[1] From a two Breit-Wigner fit.

$\pi\pi$ MODE

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

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
1730 ±30	CLEGG	94	RVUE	$e^+e^- \rightarrow \pi^+\pi^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1780\ ^{+37}_{-29}$	[2] ABELE	97		$\overline{p}n \rightarrow \pi^-\pi^0\pi^0$
1768 ±21	BISELLO	89	DM2	$e^+e^- \rightarrow \pi^+\pi^-$
1745.7±91.9	DUBNICKA	89	RVUE	$e^+e^- \rightarrow \pi^+\pi^-$
1546 ±26	GESHKEN...	89	RVUE	
1650	[3] ERKAL	85	RVUE	20–70 $\gamma p \rightarrow \gamma\pi$
1550 ±70	ABE	84B	HYBR	20 $\gamma p \rightarrow \pi^+\pi^- p$
1590 ±20	[4] ASTON	80	OMEG	20–70 $\gamma p \rightarrow p 2\pi$
1600 ±10	[5] ATIYA	79B	SPEC	50 $\gamma C \rightarrow C 2\pi$
$1598\ ^{+24}_{-22}$	BECKER	79	ASPK	17 $\pi^- p$ polarized
1659 ±25	[3] LANG	79	RVUE	
1575	[3] MARTIN	78C	RVUE	17 $\pi^- p \rightarrow \pi^+\pi^- n$
1610 ±30	[3] FROGGATT	77	RVUE	17 $\pi^- p \rightarrow \pi^+\pi^- n$
1590 ±20	[6] HYAMS	73	ASPK	17 $\pi^- p \rightarrow \pi^+\pi^- n$

$K\overline{K}$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •						
1582±36	1600	CLELAND	82B	SPEC	±	50 $\pi p \rightarrow K^0_S K^\pm p$

$2(\pi^+\pi^-)$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1570± 20		[7] CORDIER	82	DM1	$e^+e^- \rightarrow 2(\pi^+\pi^-)$
1520± 30		[4] ASTON	81E	OMEG	20–70 $\gamma p \rightarrow p4\pi$
1654± 25		[8] DIBIANCA	81	DBC	$\pi^+d \rightarrow pp2(\pi^+\pi^-)$
1666± 39		[7] BACCI	80	FRAG	$e^+e^- \rightarrow 2(\pi^+\pi^-)$
1780	34	KILLIAN	80	SPEC	11 $e^-p \rightarrow 2(\pi^+\pi^-)$
1500		[9] ATIYA	79B	SPEC	50 $\gamma C \rightarrow C4\pi^\pm$
1570± 60	65	[10] ALEXANDER	75	HBC	7.5 $\gamma p \rightarrow p4\pi$
1550± 60		[4] CONVERSI	74	OSPK	$e^+e^- \rightarrow 2(\pi^+\pi^-)$
1550± 50	160	SCHACHT	74	STRC	5.5–9 $\gamma p \rightarrow p4\pi$
1450±100	340	SCHACHT	74	STRC	9–18 $\gamma p \rightarrow p4\pi$
1430± 50	400	BINGHAM	72B	HBC	9.3 $\gamma p \rightarrow p4\pi$

$\pi^+\pi^-\pi^0\pi^0$ MODE

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1660±30	ATKINSON	85B	OMEG	20–70 γp

$3(\pi^+\pi^-)$ AND $2(\pi^+\pi^-\pi^0)$ MODES

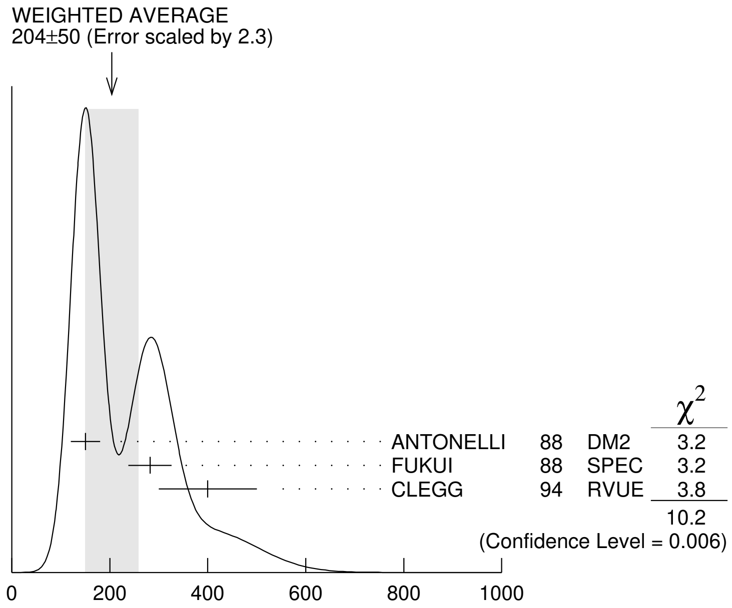
VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1783±15	CLEGG	90	RVUE	$e^+e^- \rightarrow 3(\pi^+\pi^-)2(\pi^+\pi^-\pi^0)$

[3] From phase shift analysis of HYAMS 73 data.
[4] Simple relativistic Breit-Wigner fit with constant width.
[5] An additional 40 MeV uncertainty in both the mass and width is present due to the choice of the background shape.
[6] Included in BECKER 79 analysis.
[7] Simple relativistic Breit-Wigner fit with model dependent width.
[8] One peak fit result.
[9] Parameters roughly estimated, not from a fit.
[10] Skew mass distribution compensated by Ross-Stodolsky factor.

$\rho(1700)$ WIDTH

$\eta\rho^0$ AND $\pi^+\pi^-$ MODES

VALUE (MeV)	*DOCUMENT ID*
235±50 OUR ESTIMATE	
204±50 OUR AVERAGE	Includes data from the 2 datablocks that follow this one. Error includes scale factor of 2.3. See the ideogram below.



$\rho(1700)$ width, $\eta\rho^0$ and $\pi^+\pi^-$ modes (MeV)

$\eta\rho^0$ MODE

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
The data in this block is included in the average printed for a previous datablock.				
150±30	ANTONELLI	88	DM2	$e^+e^- \rightarrow \eta\pi^+\pi^-$
282±44	[11] FUKUI	88	SPEC	$8.95\ \pi^- p \rightarrow \eta\pi^+\pi^- n$

[11] From a two Breit-Wigner fit.

$\pi\pi$ MODE

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
The data in this block is included in the average printed for a previous datablock.				
400 ±100	CLEGG	94	RVUE	$e^+e^- \rightarrow \pi^+\pi^-$

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

275 ± 45	[2] ABELE	97		$\overline{p}n \to \pi^- \pi^0 \pi^0$
224 ± 22	BISELLO	89	DM2	$e^+ e^- \to \pi^+ \pi^-$
242.5±163.0	DUBNICKA	89	RVUE	$e^+ e^- \to \pi^+ \pi^-$
620 ± 60	GESHKEN...	89	RVUE	
<315	[12] ERKAL	85	RVUE	20–70 $\gamma p \to \gamma \pi$
280^{+30}_{-80}	ABE	84B	HYBR	20 $\gamma p \to \pi^+ \pi^- p$
230 ± 80	[13] ASTON	80	OMEG	20–70 $\gamma p \to p 2\pi$
283 ± 14	[14] ATIYA	79B	SPEC	50 γC $\to$ C2π
175^{+98}_{-53}	BECKER	79	ASPK	17 $\pi^- p$ polarized
232 ± 34	[12] LANG	79	RVUE	
340	[12] MARTIN	78C	RVUE	17 $\pi^- p \to \pi^+ \pi^- n$
300 ±100	[12] FROGGATT	77	RVUE	17 $\pi^- p \to \pi^+ \pi^- n$
180 ± 50	[15] HYAMS	73	ASPK	17 $\pi^- p \to \pi^+ \pi^- n$

$K\overline{K}$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •						
265±120	1600	CLELAND	82B	SPEC	±	50 $\pi p \to K^0_S K^\pm p$

$2(\pi^+ \pi^-)$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
510± 40		[16] CORDIER	82	DM1	$e^+ e^- \to 2(\pi^+ \pi^-)$
400± 50		[13] ASTON	81E	OMEG	20–70 $\gamma p \to p 4\pi$
400±146		[17] DIBIANCA	81	DBC	$\pi^+ d \to p p 2(\pi^+ \pi^-)$
700±160		[16] BACCI	80	FRAG	$e^+ e^- \to 2(\pi^+ \pi^-)$
100	34	KILLIAN	80	SPEC	11 $e^- p \to 2(\pi^+ \pi^-)$
600		[18] ATIYA	79B	SPEC	50 γC $\to$ C$4\pi^\pm$
340±160	65	[19] ALEXANDER	75	HBC	7.5 $\gamma p \to p 4\pi$
360±100		[13] CONVERSI	74	OSPK	$e^+ e^- \to 2(\pi^+ \pi^-)$
400±120	160	[20] SCHACHT	74	STRC	5.5–9 $\gamma p \to p 4\pi$
850±200	340	[20] SCHACHT	74	STRC	9–18 $\gamma p \to p 4\pi$
650±100	400	BINGHAM	72B	HBC	9.3 $\gamma p \to p 4\pi$

$\pi^+ \pi^- \pi^0 \pi^0$ MODE

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
300±50	ATKINSON	85B	OMEG	20–70 γp

$3(\pi^+ \pi^-)$ AND $2(\pi^+ \pi^- \pi^0)$ MODES

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
285±20	CLEGG	90	RVUE	$e^+ e^- \to 3(\pi^+ \pi^-) 2(\pi^+ \pi^- \pi^0)$

[12] From phase shift analysis of HYAMS 73 data.
[13] Simple relativistic Breit-Wigner fit with constant width.

[14] An additional 40 MeV uncertainty in both the mass and width is present due to the choice of the background shape.
[15] Included in BECKER 79 analysis.
[16] Simple relativistic Breit-Wigner fit with model-dependent width.
[17] One peak fit result.
[18] Parameters roughly estimated, not from a fit.
[19] Skew mass distribution compensated by Ross-Stodolsky factor.
[20] Width errors enlarged by us to $4\Gamma/\sqrt{N}$; see the note with the $K^*(892)$ mass.

$\rho(1700)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\rho\pi\pi$	dominant
Γ_2	$\rho^0\pi^+\pi^-$	large
Γ_3	$\rho^0\pi^0\pi^0$	
Γ_4	$\rho^\pm\pi^\mp\pi^0$	large
Γ_5	$2(\pi^+\pi^-)$	large
Γ_6	$\pi^+\pi^-$	seen
Γ_7	$\pi^+\pi^-$	
Γ_8	$K\overline{K}^*(892)+$ c.c.	seen
Γ_9	$\eta\rho$	seen
Γ_{10}	$K\overline{K}$	seen
Γ_{11}	e^+e^-	seen
Γ_{12}	$\rho^0\rho^0$	
Γ_{13}	$\pi\omega$	

$\rho(1700)$ $\Gamma(i)\Gamma(e^+e^-)/\Gamma(\text{total})$

This combination of a partial width with the partial width into e^+e^- and with the total width is obtained from the cross-section into channel$_I$ in e^+e^- annihilation.

$\Gamma(2(\pi^+\pi^-)) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ — $\Gamma_5\Gamma_{11}/\Gamma$

VALUE (keV)	*DOCUMENT ID*		*TECN*	*COMMENT*
2.83±0.42	BACCI	80	FRAG	$e^+e^- \to 2(\pi^+\pi^-)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.6 ±0.2	DELCOURT	81B	DM1	$e^+e^- \to 2(\pi^+\pi^-)$

$\Gamma(\pi^+\pi^-) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ — $\Gamma_6\Gamma_{11}/\Gamma$

VALUE (keV)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.13	[21] DIEKMAN	88	RVUE	$e^+e^- \to \pi^+\pi^-$

[21] Using total width = 220 MeV.

$\Gamma(K\overline{K}^*(892)+\text{c.c.}) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ — $\Gamma_8\Gamma_{11}/\Gamma$

VALUE (keV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.305 ± 0.071	[22] BIZOT	80	DM1	e^+e^-

$\Gamma(\eta\rho) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ — $\Gamma_9\Gamma_{11}/\Gamma$

VALUE (eV)	DOCUMENT ID		TECN	COMMENT
7 ±3	ANTONELLI	88	DM2	$e^+e^- \rightarrow \eta\pi^+\pi^-$

$\Gamma(K\overline{K}) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ — $\Gamma_{10}\Gamma_{11}/\Gamma$

VALUE (keV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.035 ± 0.029	[22] BIZOT	80	DM1	e^+e^-

$\Gamma(\rho\pi\pi) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ — $\Gamma_1\Gamma_{11}/\Gamma$

VALUE (keV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.510 ± 0.090	[22] BIZOT	80	DM1	e^+e^-

[22] Model dependent.

$\rho(1700)$ BRANCHING RATIOS

$\Gamma(\pi^+\pi^-)/\Gamma_{\text{total}}$ — Γ_6/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.287^{+0.043}_{-0.042}$	BECKER	79	ASPK	$17\ \pi^- p$ polarized
0.15 to 0.30	[23] MARTIN	78C	RVUE	$17\ \pi^- p \rightarrow \pi^+\pi^- n$
<0.20	[24] COSTA...	77B	RVUE	$e^+e^- \rightarrow 2\pi,\ 4\pi$
0.30 ± 0.05	[23] FROGGATT	77	RVUE	$17\ \pi^- p \rightarrow \pi^+\pi^- n$
<0.15	[25] EISENBERG	73	HBC	$5\ \pi^+ p \rightarrow \Delta^{++} 2\pi$
0.25 ± 0.05	[26] HYAMS	73	ASPK	$17\ \pi^- p \rightarrow \pi^+\pi^- n$
0.20 ± 0.05	MONTANET	73	HBC	$0.0\ \overline{p}p$

[23] From phase shift analysis of HYAMS 73 data.
[24] Estimate using unitarity, time reversal invariance, Breit-Wigner.
[25] Estimated using one-pion-exchange model.
[26] Included in BECKER 79 analysis.

$\Gamma(\pi^+\pi^-)/\Gamma(2(\pi^+\pi^-))$ — Γ_6/Γ_5

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.13 ± 0.05	ASTON	80	OMEG	$20–70\ \gamma p \rightarrow p 2\pi$
<0.14	[27] DAVIER	73	STRC	$6–18\ \gamma p \rightarrow p 4\pi$
<0.2	[28] BINGHAM	72B	HBC	$9.3\ \gamma p \rightarrow p 2\pi$

[27] Upper limit is estimate.
[28] 2σ upper limit.

$\Gamma(K\overline{K}^*(892)+\text{c.c.})/\Gamma(2(\pi^+\pi^-))$ Γ_8/Γ_5

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.15 ± 0.03	[29] DELCOURT	81B	DM1	$e^+e^- \rightarrow \overline{K}K\pi$

[29] Assuming $\rho(1700)$ and ω radial excitations to be degenerate in mass.

$\Gamma(\eta\rho)/\Gamma_{\text{total}}$ Γ_9/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.04		DONNACHIE	87B	RVUE	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.02	58	ATKINSON	86B	OMEG	20–70 γp

$\Gamma(\eta\rho)/\Gamma(2(\pi^+\pi^-))$ Γ_9/Γ_5

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.123 ± 0.027	DELCOURT	82	DM1	$e^+e^- \rightarrow \pi^+\pi^-$ MM
~ 0.1	ASTON	80	OMEG	20–70 γp

$\Gamma(\pi^+\pi^-\text{ neutrals})/\Gamma(2(\pi^+\pi^-))$ $(\Gamma_3+\Gamma_4+0.709\Gamma_9)/\Gamma_5$

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.6 ± 0.4	[30] BALLAM	74	HBC	9.3 γp

[30] Upper limit. Background not subtracted.

$\Gamma(K\overline{K})/\Gamma(2(\pi^+\pi^-))$ Γ_{10}/Γ_5

VALUE	CL%	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •						
0.015 ± 0.010		[31] DELCOURT	81B	DM1		$e^+e^- \rightarrow \overline{K}K$
<0.04	95	BINGHAM	72B	HBC	0	9.3 γp

[31] Assuming $\rho(1700)$ and ω radial excitations to be degenerate in mass.

$\Gamma(K\overline{K})/\Gamma(K\overline{K}^*(892)+\text{c.c.})$ Γ_{10}/Γ_8

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.052 ± 0.026	BUON	82	DM1	$e^+e^- \rightarrow$ hadrons

$\Gamma(\rho^0\pi^+\pi^-)/\Gamma(2(\pi^+\pi^-))$ Γ_2/Γ_5

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
~ 1.0		DELCOURT	81B	DM1	$e^+e^- \rightarrow 2(\pi^+\pi^-)$
0.7 ± 0.1	500	SCHACHT	74	STRC	5.5–18 $\gamma p \rightarrow p4\pi$
0.80		[32] BINGHAM	72B	HBC	9.3 $\gamma p \rightarrow p4\pi$

[32] The $\pi\pi$ system is in S-wave.

$\Gamma(\rho^0\pi^0\pi^0)/\Gamma(\rho^\pm\pi^\mp\pi^0)$ — Γ_3/Γ_4

VALUE	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.10	ATKINSON	85B	OMEG		20–70 γp
<0.15	ATKINSON	82	OMEG	0	20–70 $\gamma p \rightarrow p 4\pi$

$\rho(1700)$ REFERENCES

ABELE	97	PL B391 191	+Adomeit, Amsler+	(Crystal Barrel)
CLEGG	94	ZPHY C62 455	+Donnachie	(LANC, MCHS)
CLEGG	90	ZPHY C45 677	+Donnachie	(LANC, MCHS)
BISELLO	89	PL B220 321	+Busetto+	(DM2 Collab.)
DUBNICKA	89	JPG 15 1349	+Martinovic+	(JINR, SLOV)
GESHKEN...	89	ZPHY 45 351	Geshkenbein	(ITEP)
ANTONELLI	88	PL B212 133	+Baldini+	(DM2 Collab.)
DIEKMAN	88	PRPL 159 101		(BONN)
FUKUI	88	PL B202 441	+Horikawa+	(SUGI, NAGO, KEK, KYOT, MIYA)
DONNACHIE	87B	ZPHY C34 257	+Clegg	(MCHS, LANC)
ATKINSON	86B	ZPHY C30 531	+	(BONN, CERN, GLAS, LANC, MCHS, CURIN+)
ATKINSON	85B	ZPHY C26 499	+	(BONN, CERN, GLAS, LANC, MCHS, CURIN+)
ERKAL	85	ZPHY C29 485	+Olsson	(WISC)
ABE	84B	PRL 53 751	+Bacon, Ballam+	(SLAC Hybrid Facility Photon Collab.)
ATKINSON	82	PL 108B 55	+	(BONN, CERN, GLAS, LANC, MCHS, CURIN+)
BUON	82	PL 118B 221	+Bisello, Bizot, Cordier, Delcourt+	(LALO, MONP)
CLELAND	82B	NP B208 228	+Delfosse, Dorsaz, Gloor	(DURH, GEVA, LAUS, PITT)
CORDIER	82	PL 109B 129	+Bisello, Bizot, Buon, Delcourt	(LALO)
DELCOURT	82	PL 113B 93	+Bisello, Bizot, Buon, Cordier, Mane	(LALO)
ASTON	81E	NP B189 15		(BONN, CERN, EPOL, GLAS, LANC, MCHS+)
DELCOURT	81B	Bonn Conf. 205		(ORSAY)
Also	82	PL 109B 129	Cordier, Bisello, Bizot, Buon, Delcourt	(LALO)
DIBIANCA	81	PR D23 595	+Fickinger, Malko, Dado, Engler+	(CASE, CMU)
ASTON	80	PL 92B 215		(BONN, CERN, EPOL, GLAS, LANC, MCHS+)
BACCI	80	PL 95B 139	+DeZorzi, Penso, Baldini-Celio+	(ROMA, FRAS)
BIZOT	80	Madison Conf. 546	+Bisello, Buon, Cordier, Delcourt+	(LALO, MONP)
KILLIAN	80	PR D21 3005	+Treadwell, Ahrens, Berkelman, Cassel+	(CORN)
ATIYA	79B	PRL 43 1691	+Holmes, Knapp, Lee, Seto+	(COLU, ILL, FNAL)
BECKER	79	NP B151 46	+Blanar, Blum+	(MPIM, CERN, ZEEM, CRAC)
LANG	79	PR D19 956	+Mas-Parareda	(GRAZ)
MARTIN	78C	ANP 114 1	+Pennington	(CERN)
COSTA...	77B	PL 71B 345	Costa De Beauregard, Pire, Truong	(EPOL)
FROGGATT	77	NP B129 89	+Petersen	(GLAS, NORD)
ALEXANDER	75	PL 57B 487	+Benary, Gandsman, Lissauer+	(TELA)
BALLAM	74	NP B76 375	+Chadwick, Bingham, Fretter+	(SLAC, LBL, MPIM)
CONVERSI	74	PL 52B 493	+Paoluzi, Ceradini, Grilli+	(ROMA, FRAS)
SCHACHT	74	NP B81 205	+Derado, Fries, Park, Yount	(MPIM)
DAVIER	73	NP B58 31	+Derado, Fries, Liu, Mozley, Odian, Park+	(SLAC)
EISENBERG	73	PL 43B 149	+Karshon, Mikenberg, Pitluck+	(REHO)
HYAMS	73	NP B64 134	+Jones, Weilhammer, Blum, Dietl+	(CERN, MPIM)
MONTANET	73	Erice School 518		(CERN)
BINGHAM	72B	PL 41B 635	+Rabin, Rosenfeld, Smadja+	(LBL, UCB, SLAC) IGJP

OTHER RELATED PAPERS

ACHASOV	96B	PAN 59 1262	+Shestakov	(NOVM)
		Translated from YAF 59 1319.		
AMSLER	93B	PL B311 362	+Armstrong, v.Dombrowski+	(Crystal Barrel Collab.)
LANDSBERG	92	SJNP 55 1051		(SERP)
		Translated from YAF 55 1896.		

ASTON	91B	NPBPS 21 105	+Awaji, Bienz+	(LASS Collab.)	
ACHASOV	88C	PL B209 373	+Kozhevnikov	(NOVM)	
BRAU	88	PR D37 2379	+Franek+	(SLAC Hybrid Facility Photon Collab.)	JP
CLEGG	88	ZPHY C40 313	+Donnachie	(MCHS, LANC)	
ASTON	87	NP B292 693	+Awaji, D'Amore+	(SLAC, NAGO, CINC, INUS)	
ERKAL	86	ZPHY C31 615	+Olsson	(WISC)	
BARKOV	85	NP B256 365	+Chilingarov, Eidelman, Khazin, Lelchuk+	(NOVO)	
BISELLO	85	LAL 85-15	+Augustin, Ajaltouni+	(PADO, LALO, CLER, FRAS)	
ATKINSON	84C	NP B243 1	+	(BONN, CERN, GLAS, LANC, MCHS, CURIN+)	JP
ATKINSON	83B	PL 127B 132	+	(BONN, CERN, GLAS, LANC, MCHS, CURIN+)	
ATKINSON	83C	NP B229 269	+	(BONN, CERN, GLAS, LANC, MCHS, CURIN+)	
AUGUSTIN	83	LAL 83-21	+Ayach, Bisello, Baldini+	(LALO, PADO, FRAS)	
SHAMBROOM	82	PR D26 1	+Wilson, Anderson, Francis+	(HARV, EFI, ILL, OXF)	
BARBER	80C	ZPHY C4 169	+Dainton, Brodbeck, Brookes+	(DARE, LANC, SHEF)	
KILLIAN	80	PR D21 3005	+Treadwell, Ahrens, Berkelman, Cassel+	(CORN)	
COSME	76	PL 63B 352	+Courau, Dudelzak, Grelaud, Jean-Marie+	(ORSAY)	
FRENKIEL	72	NP B47 61	+Ghesquiere, Lillestol, Chung+	(CDEF, CERN)	
ALVENSLEB...	71	PRL 26 273	Alvensleben, Becker, Bertram, Chen+	(DESY, MIT)	G
BRAUN	71	NP B30 213	+Fridman, Gerber, Givernaud+	(STRB)	G
BULOS	71	PRL 26 149	+Busza, Kehoe, Beniston+	(SLAC, UMD, IBM, LBL)	G
LAYSSAC	71	NC 6A 134	+Renard	(MONP)	