$f_2'(1525)$

$I^G(J^{PC}) = 0^+(2^{++})$

$f_2'(1525)$ T-MATRIX POLE $\sqrt{s}$

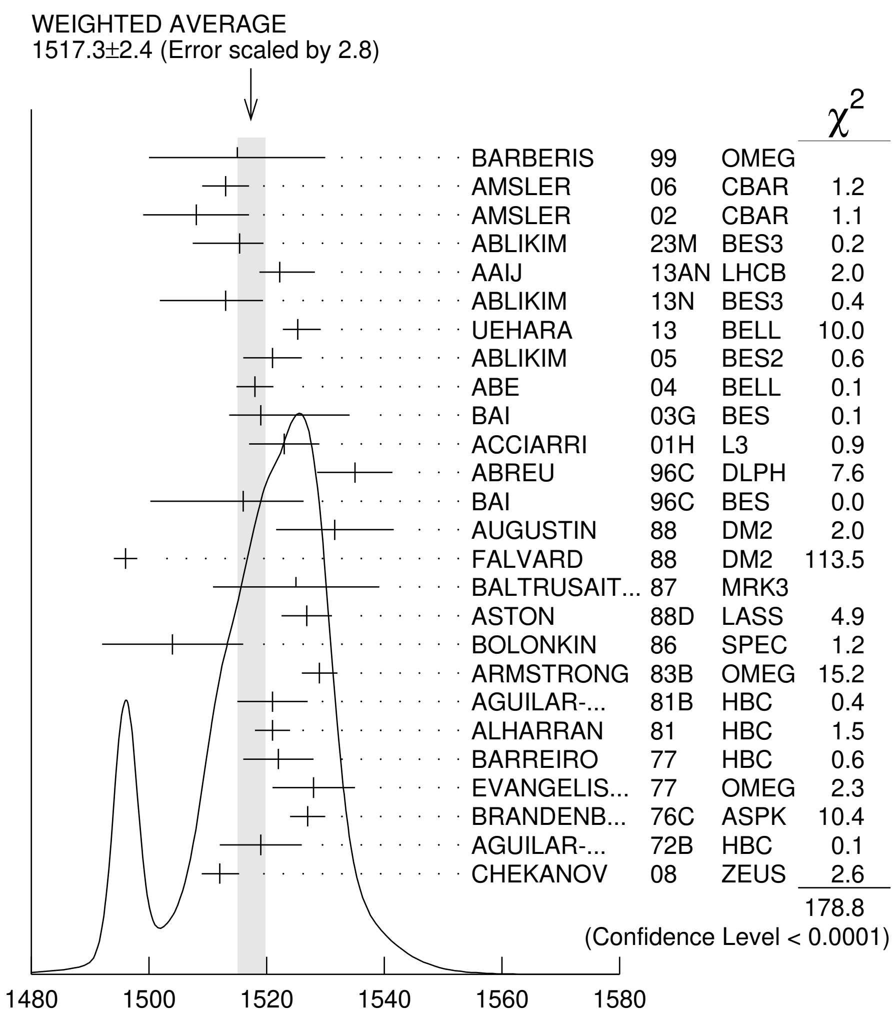
Note that $\Gamma = -2\,\text{Im}(\sqrt{s})$.

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
$(1515.7 \pm 4.3 \pm 3.3)$ $-\,i\,(33.7 \pm 3.8 \pm 4.1)$	ABLIKIM	25CD	BES3	$e^+e^- \to \psi(2S)$

$f_2'(1525)$ MASS

VALUE (MeV)	*DOCUMENT ID*

1517.3±2.4 OUR AVERAGE Includes data from the 6 datablocks that follow this one. Error includes scale factor of 2.8. See the ideogram below.



$f_2'(1525)$ MASS (MeV)

PRODUCED BY PION BEAM

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT

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

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

1521 ± 13		TIKHOMIROV	03	SPEC	40.0 $\pi^- C \to K^0_S K^0_S K^0_L X$
1547^{+10}_{-2}		[1] LONGACRE	86	MPS	22 $\pi^- p \to K^0_S K^0_S n$
1496^{+9}_{-8}		[2] CHABAUD	81	ASPK	6 $\pi^- p \to K^+ K^- n$
1497^{+8}_{-9}		CHABAUD	81	ASPK	18.4 $\pi^- p \to K^+ K^- n$
1492 ± 29		GORLICH	80	ASPK	17 $\pi^- p$ polarized $\to K^+ K^- n$
1502 ± 25		[3] CORDEN	79	OMEG	12–15 $\pi^- p \to \pi^+ \pi^- n$
1480	14	CRENNELL	66	HBC	6.0 $\pi^- p \to K^0_S K^0_S n$

[1] From a partial-wave analysis of data using a K-matrix formalism with 5 poles.
[2] CHABAUD 81 is a reanalysis of PAWLICKI 77 data.
[3] From an amplitude analysis where the $f'_2(1525)$ width and elasticity are in complete disagreement with the values obtained from $K\overline{K}$ channel, making the solution dubious.

PRODUCED BY $K^{\pm}$ BEAM

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT

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

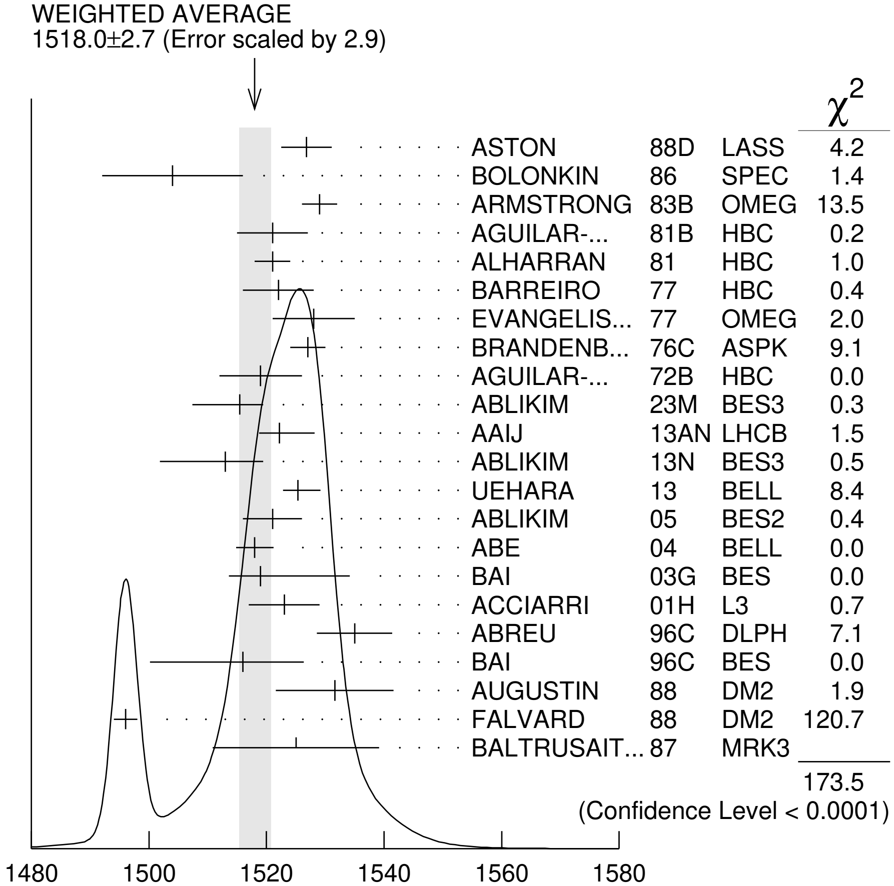
1518.0± 2.7 OUR AVERAGE Includes data from the datablock that follows this one. Error includes scale factor of 2.9. See the ideogram below.

1526.8 ± 4.3		ASTON	88D	LASS	11 $K^- p \to K^0_S K^0_S \Lambda$
1504 ± 12		BOLONKIN	86	SPEC	40 $K^- p \to K^0_S K^0_S Y$
1529 ± 3		ARMSTRONG	83B	OMEG	18.5 $K^- p \to K^- K^+ \Lambda$
1521 ± 6	650	AGUILAR-...	81B	HBC	4.2 $K^- p \to \Lambda K^+ K^-$
1521 ± 3	572	ALHARRAN	81	HBC	8.25 $K^- p \to \Lambda K \overline{K}$
1522 ± 6	123	BARREIRO	77	HBC	4.15 $K^- p \to \Lambda K^0_S K^0_S$
1528 ± 7	166	EVANGELIS...	77	OMEG	10 $K^- p \to K^+ K^- (\Lambda, \Sigma)$
1527 ± 3	120	BRANDENB...	76C	ASPK	13 $K^- p \to K^+ K^- (\Lambda, \Sigma)$
1519 ± 7	100	AGUILAR-...	72B	HBC	3.9,4.6 $K^- p \to K \overline{K} (\Lambda, \Sigma)$

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

1514 ± 8	61	BINON	07	GAMS	32.5 $K^- p \to \eta\eta(\Lambda/\Sigma^0)$
1513 ± 10		[1] BARKOV	99	SPEC	40 $K^- p \to K^0_S K^0_S y$

[1] Systematic errors not estimated.



PRODUCED BY $K^{\pm}$ BEAM (MeV)

PRODUCED IN e^+e^- ANNIHILATION AND PARTICLE DECAYS

VALUE (MeV)	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*

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

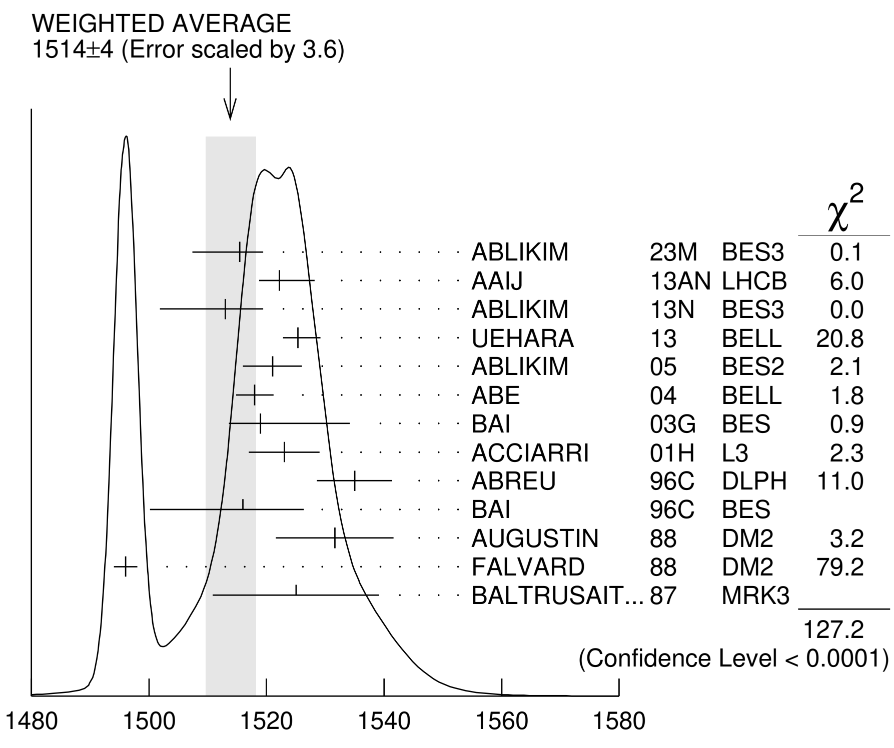
VALUE (MeV)	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*
1514 ± 4 OUR AVERAGE				Error includes scale factor of 3.6. See the ideogram below.
$1515.4 \pm 2.5 ^{+3.2}_{-7.6}$	126k	ABLIKIM 23M	BES3	$J/\psi \to \gamma K^0_S K^0_S \pi^0$
$1522.2 \pm 2.8 ^{+5.3}_{-2.0}$		AAIJ 13AN	LHCB	$\overline{B}^0_s \to J/\psi K^+ K^-$
$1513 \pm 5 ^{+4}_{-10}$	5.5k	[1] ABLIKIM 13N	BES3	$e^+e^- \to J/\psi \to \gamma\eta\eta$
$1525.3 ^{+1.2}_{-1.4} {}^{+3.7}_{-2.1}$		UEHARA 13	BELL	$\gamma\gamma \to K^0_S K^0_S$
1521 ± 5		ABLIKIM 05	BES2	$J/\psi \to \phi K^+ K^-$
$1518 \pm 1 \pm 3$		ABE 04	BELL	$10.6\ e^+e^- \to e^+e^- K^+K^-$
$1519 \pm 2 ^{+15}_{-5}$		BAI 03G	BES	$J/\psi \to \gamma K\overline{K}$
1523 ± 6	331	[2] ACCIARRI 01H	L3	91, 183–209 $e^+e^- \to e^+e^- K^0_S K^0_S$
$1535 \pm 5 \pm 4$		ABREU 96C	DLPH	$Z^0 \to K^+K^- + X$
$1516 \pm 5 ^{+9}_{-15}$		BAI 96C	BES	$J/\psi \to \gamma K^+K^-$
1531.6 ± 10.0		AUGUSTIN 88	DM2	$J/\psi \to \gamma K^+K^-$

1496 ± 2		[3] FALVARD	88	DM2	$J/\psi \to \phi K^+ K^-$
1525 ±10 ±10		BALTRUSAIT...87		MRK3	$J/\psi \to \gamma K^+ K^-$

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

1518 ± 3		[4] KLEMPT	22	RVUE	$J/\psi(1S) \to \gamma \pi^0 \pi^0$, $\gamma K^0_S K^0_S$
1503 ±11		[5] RODAS	22	RVUE	$J/\psi(1S) \to \gamma\ (\pi\pi,\ K\overline{K})$
1532 ± 3 ± 6	644	[6,7] DOBBS	15		$J/\psi \to \gamma K^+ K^-$
1557 ± 9 ± 3	113	[6,7] DOBBS	15		$\psi(2S) \to \gamma K^+ K^-$
1526 ± 7	29	[8] LEES	14H	BABR	$e^+ e^- \to K^0_S K^0_S K^+ K^- \gamma$
1523 ± 5	870	[9] SCHEGELSKY	06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$
1515 ± 5		[10] FALVARD	88	DM2	$J/\psi \to \phi K^+ K^-$

[1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances.
[2] Supersedes ACCIARRI 95J.
[3] From an analysis including interference with $f_0(1710)$.
[4] Fit of the tensor partial waves from BES3 in the multipole basis.
[5] T-matrix pole from coupled channel K-matrix fit to data on $J/\psi \to \gamma \pi^0 \pi^0$ (ABLIKIM 15AE) and $J/\psi \to \gamma K^0_S K^0_S$ (ABLIKIM 18AA).
[6] Using CLEO-c data but not authored by the CLEO Collaboration.
[7] From a fit to a Breit-Wigner line shape with fixed $\Gamma = 73$ MeV.
[8] From a fit to a Breit-Wigner line shape plus a second-order polynomial function. Systematic errors not evaluated.
[9] From analysis of L3 data at 91 and 183–209 GeV.
[10] From an analysis ignoring interference with $f_0(1710)$.



$f'_2(1525)$ mass, $e^+ e^-$ annihilation and particle decays (MeV)

PRODUCED IN $\overline{p}p$ ANNIHILATION

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT

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

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
1512 ± 4 OUR AVERAGE				
1513 ± 4	AMSLER	06	CBAR	0.9 $\overline{p}p \rightarrow K^+ K^- \pi^0$
1508 ± 9	[1] AMSLER	02	CBAR	0.9 $\overline{p}p \rightarrow \pi^0 \eta\eta$, $\pi^0 \pi^0 \pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1495.0± 1.1±8.1	[2] ALBRECHT	20	RVUE	0.9 $\overline{p}p \rightarrow \pi^0 \pi^0 \eta$, $\pi^0 \eta\eta$, $\pi^0 K^+ K^-$
1530 ±12	[3] ANISOVICH	09	RVUE	0.0 $\overline{p}p$, πN

[1] T-matrix pole.
[2] T-matrix pole, 4 poles, 4 channels, including scattering data from HYAMS 75 ($\pi\pi$), LONGACRE 86 ($K\overline{K}$), BINON 83 ($\eta\eta$).
[3] 4-poles, 5-channel K matrix fit.

CENTRAL PRODUCTION

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

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
1515±15	BARBERIS	99	OMEG	450 $pp \rightarrow p_s p_f K^+ K^-$

PRODUCED IN ep COLLISIONS

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

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$1512 \pm 3^{+1.4}_{-0.5}$		[1] CHEKANOV	08	ZEUS	$ep \rightarrow K^0_S K^0_S X$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1537^{+9}_{-8}	84	[2] CHEKANOV	04	ZEUS	$ep \rightarrow K^0_S K^0_S X$

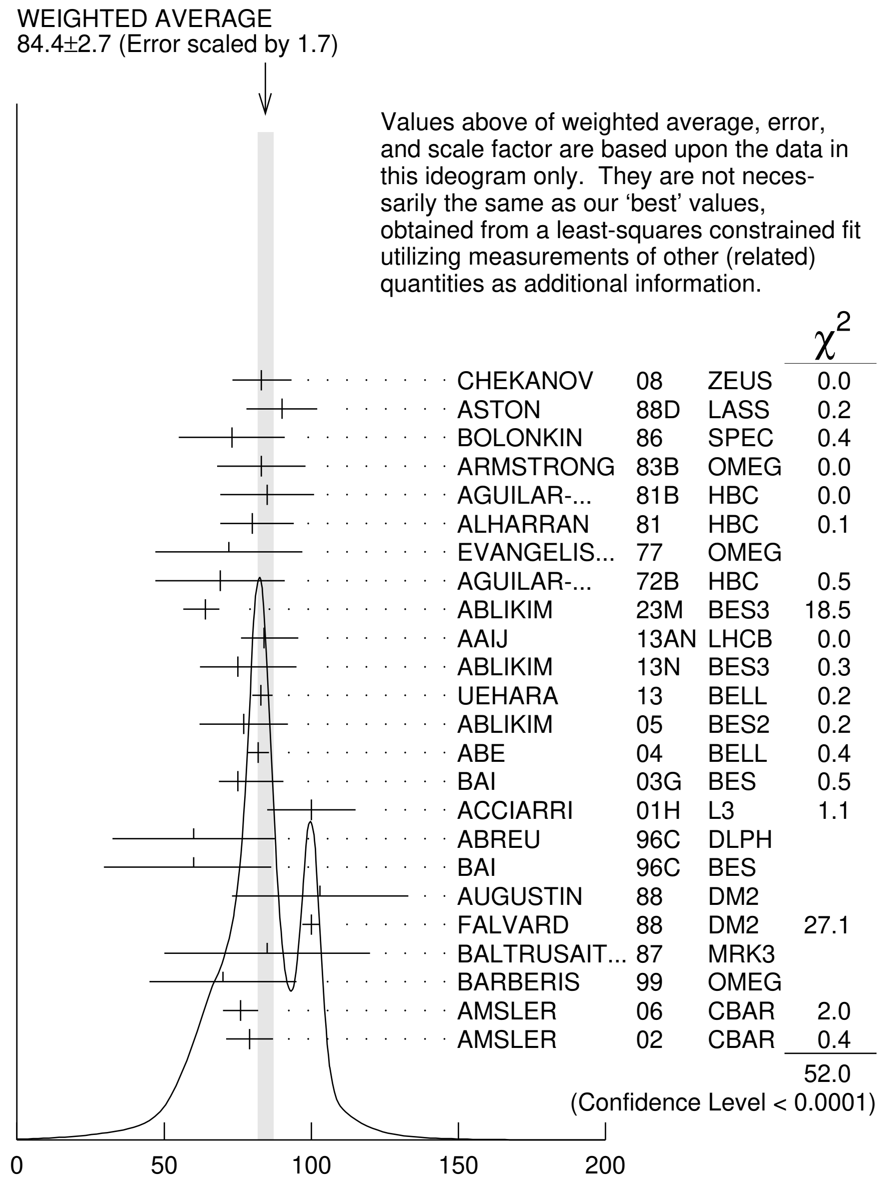
[1] In the SU(3) based model with a specific interference pattern of the $f_2(1270)$, $a^0_2(1320)$, and $f'_2(1525)$ mesons incoherently added to the $f_0(1710)$ and non-resonant background.
[2] Systematic errors not estimated.

$f'_2(1525)$ WIDTH

VALUE (MeV)	DOCUMENT ID

$72\ ^{+7}_{-6}$ OUR FIT

84.4±2.7 OUR AVERAGE Includes data from the 6 datablocks that follow this one. Error includes scale factor of 1.7. See the ideogram below.



$f'_2(1525)$ WIDTH (MeV)

PRODUCED BY PION BEAM

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
The data in this block is included in the average printed for a previous datablock.			
• • • We do not use the following data for averages, fits, limits, etc. • • •			
102 ± 42	TIKHOMIROV 03	SPEC	40.0 $\pi^- C \to K^0_S K^0_S K^0_L X$
108^{+5}_{-2}	[1] LONGACRE 86	MPS	22 $\pi^- p \to K^0_S K^0_S n$
69^{+22}_{-16}	[2] CHABAUD 81	ASPK	6 $\pi^- p \to K^+ K^- n$
137^{+23}_{-21}	CHABAUD 81	ASPK	18.4 $\pi^- p \to K^+ K^- n$
150^{+83}_{-50}	GORLICH 80	ASPK	17 $\pi^- p$polarized $\to K^+ K^- n$

165 ± 42		[3] CORDEN	79	OMEG	12–15 $\pi^- p \to \pi^+\pi^- n$
92^{+39}_{-22}		[4] POLYCHRO...	79	STRC	7 $\pi^- p \to n K^0_S K^0_S$

[1] From a partial-wave analysis of data using a K-matrix formalism with 5 poles.
[2] CHABAUD 81 is a reanalysis of PAWLICKI 77 data.
[3] From an amplitude analysis where the $f'_2(1525)$ width and elasticity are in complete disagreement with the values obtained from $K\overline{K}$ channel, making the solution dubious.
[4] From a fit to the D with $f_2(1270)$-$f'_2(1525)$ interference. Mass fixed at 1516 MeV.

PRODUCED BY $K^\pm$ BEAM

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

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
82± 6 OUR AVERAGE					
90 ± 12		ASTON	88D	LASS	11 $K^- p \to K^0_S K^0_S \Lambda$
73 ± 18		BOLONKIN	86	SPEC	40 $K^- p \to K^0_S K^0_S Y$
83 ± 15		ARMSTRONG	83B	OMEG	18.5 $K^- p \to K^- K^+ \Lambda$
85 ± 16	650	AGUILAR-...	81B	HBC	4.2 $K^- p \to \Lambda K^+ K^-$
80^{+14}_{-11}	572	ALHARRAN	81	HBC	8.25 $K^- p \to \Lambda K \overline{K}$
72 ± 25	166	EVANGELIS...	77	OMEG	10 $K^- p \to K^+ K^- (\Lambda, \Sigma)$
69 ± 22	100	AGUILAR-...	72B	HBC	3.9,4.6 $K^- p \to K \overline{K} (\Lambda, \Sigma)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
92^{+25}_{-16}	61	BINON	07	GAMS	32.5 $K^- p \to \eta\eta(\Lambda/\Sigma^0)$
75 ± 20		[1] BARKOV	99	SPEC	40 $K^- p \to K^0_S K^0_S y$
62^{+19}_{-14}	123	BARREIRO	77	HBC	4.15 $K^- p \to \Lambda K^0_S K^0_S$
61 ± 8	120	BRANDENB...	76C	ASPK	13 $K^- p \to K^+ K^- (\Lambda, \Sigma)$

[1] Systematic errors not estimated.

PRODUCED IN e^+e^- ANNIHILATION AND PARTICLE DECAYS

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

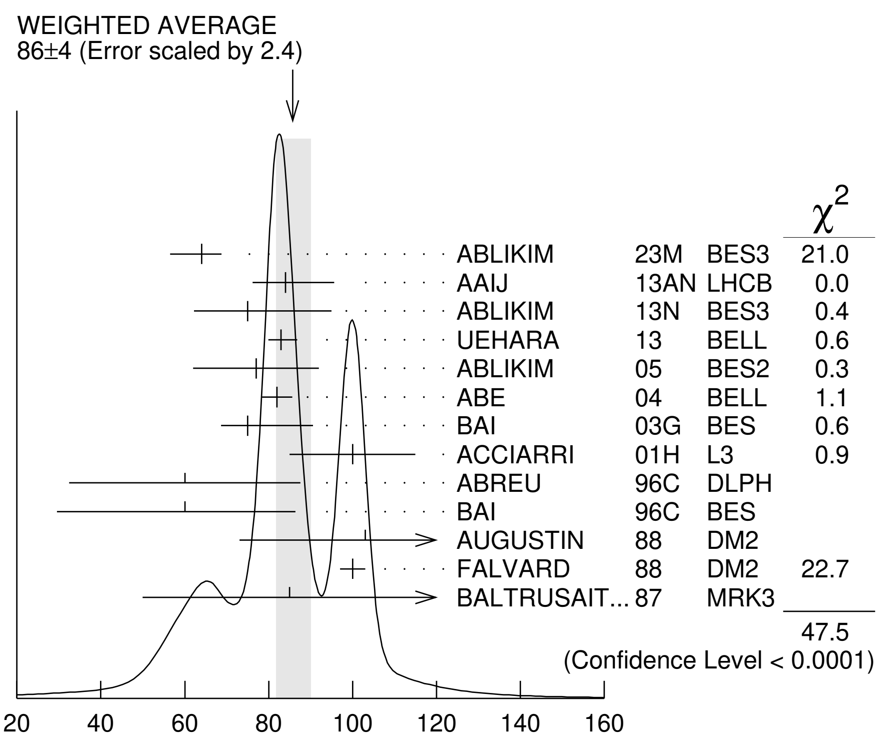
VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
86 ± 4 OUR AVERAGE Error includes scale factor of 2.4. See the ideogram below.					
$64.0\pm 4.3^{+\ 2.0}_{-\ 6.1}$	126k	ABLIKIM	23M	BES3	$J/\psi \to \gamma K^0_S K^0_S \pi^0$
$84\pm 6\ ^{+10}_{-\ 5}$		AAIJ	13AN	LHCB	$\overline{B}^0_s \to J/\psi K^+ K^-$
$75\ ^{+12}_{-10}\ ^{+16}_{-\ 8}$	5.5k	[1] ABLIKIM	13N	BES3	$e^+e^- \to J/\psi \to \gamma\eta\eta$
$82.9^{+\ 2.1}_{-\ 2.2}{}^{+\ 3.3}_{-\ 2.0}$		UEHARA	13	BELL	$\gamma\gamma \to K^0_S K^0_S$
77 ± 15		ABLIKIM	05	BES2	$J/\psi \to \phi K^+ K^-$
$82\pm 2\pm 3$		ABE	04	BELL	10.6 $e^+e^- \to e^+e^- K^+ K^-$
$75\pm 4\ ^{+15}_{-\ 5}$		BAI	03G	BES	$J/\psi \to \gamma K \overline{K}$
100 ± 15	331	[2] ACCIARRI	01H	L3	91, 183–209 $e^+e^- \to e^+e^- K^0_S K^0_S$
$60\pm20\pm19$		ABREU	96C	DLPH	$Z^0 \to K^+ K^- + X$

60	± 23 $^{+13}_{-20}$		BAI	96C	BES	$J/\psi \rightarrow \gamma K^+ K^-$
103	± 30		AUGUSTIN	88	DM2	$J/\psi \rightarrow \gamma K^+ K^-$
100	$\pm$ 3		[3] FALVARD	88	DM2	$J/\psi \rightarrow \phi K^+ K^-$
85	± 35		BALTRUSAIT...	87	MRK3	$J/\psi \rightarrow \gamma K^+ K^-$

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

78	$\pm$ 6		[4] KLEMPT	22	RVUE	$J/\psi(1S) \rightarrow \gamma \pi^0 \pi^0$, $\gamma K^0_S K^0_S$
84	± 15		[5] RODAS	22	RVUE	$J/\psi(1S) \rightarrow \gamma (\pi\pi$, $K\overline{K})$
37	± 12	29	[6] LEES	14H	BABR	$e^+ e^- \rightarrow K^0_S K^0_S K^+ K^- \gamma$
104	± 10	870	[7] SCHEGELSKY	06A	RVUE	$\gamma\gamma \rightarrow K^0_S K^0_S$
62	± 10		[8] FALVARD	88	DM2	$J/\psi \rightarrow \phi K^+ K^-$

[1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances.
[2] Supersedes ACCIARRI 95J.
[3] From an analysis including interference with $f_0(1710)$.
[4] Fit of the tensor partial waves from BES3 in the multipole basis.
[5] T-matrix pole from coupled channel K-matrix fit to data on $J/\psi \rightarrow \gamma \pi^0 \pi^0$ (ABLIKIM 15AE) and $J/\psi \rightarrow \gamma K^0_S K^0_S$ (ABLIKIM 18AA).
[6] From a fit to a Breit-Wigner line shape plus a second-order polynomial function. Systematic errors not evaluated.
[7] From analysis of L3 data at 91 and 183–209 GeV.
[8] From an analysis ignoring interference with $f_0(1710)$.



$f'_2(1525)$ width, $e^+ e^-$ annihilation and particle decays (MeV)

PRODUCED IN $\overline{p}p$ ANNIHILATION

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
The data in this block is included in the average printed for a previous datablock.			
77 ± 5 OUR AVERAGE			
76 ± 6	AMSLER 06	CBAR	0.9 $\overline{p}p \rightarrow K^+ K^- \pi^0$
79 ± 8	[1] AMSLER 02	CBAR	0.9 $\overline{p}p \rightarrow \pi^0 \eta\eta$, $\pi^0\pi^0\pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
104.8± 0.9±9.8	[2] ALBRECHT 20	RVUE	0.9 $\overline{p}p \rightarrow \pi^0\pi^0\eta$, $\pi^0\eta\eta$, $\pi^0 K^+ K^-$
128 ±20	[3] ANISOVICH 09	RVUE	0.0 $\overline{p}p$, πN

[1] T-matrix pole.
[2] T-matrix pole, 4 poles, 4 channels, including scattering data from HYAMS 75 ($\pi\pi$), LONGACRE 86 ($K\overline{K}$), BINON 83 ($\eta\eta$).
[3] K-matrix, 4-poles, 5-channel fit.

CENTRAL PRODUCTION

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
The data in this block is included in the average printed for a previous datablock.			
70±25	BARBERIS 99	OMEG	450 $pp \rightarrow p_s p_f K^+ K^-$

PRODUCED IN ep COLLISIONS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
The data in this block is included in the average printed for a previous datablock.				
$83 \pm 9^{+5}_{-4}$		[1] CHEKANOV 08	ZEUS	$ep \rightarrow K^0_S K^0_S X$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
50^{+34}_{-22}	84	[2] CHEKANOV 04	ZEUS	$ep \rightarrow K^0_S K^0_S X$

[1] In the SU(3) based model with a specific interference pattern of the $f_2(1270)$, $a^0_2(1320)$, and $f'_2(1525)$ mesons incoherently added to the $f_0(1710)$ and non-resonant background.
[2] Systematic errors not estimated.

$f'_2(1525)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$K\overline{K}$	(88.8 ±2.2) %
Γ_2	$\eta\eta$	(10.3 ±2.2) %
Γ_3	$\pi\pi$	(8.2 ±1.5) $\times 10^{-3}$
Γ_4	$K\overline{K}^*(892)+$ c.c.	
Γ_5	$\pi K\overline{K}$	
Γ_6	$\pi\pi\eta$	
Γ_7	$\pi^+\pi^+\pi^-\pi^-$	
Γ_8	$\gamma\phi$	seen
Γ_9	$\gamma\gamma$	(1.12±0.15) $\times 10^{-6}$

CONSTRAINED FIT INFORMATION

An overall fit to 2 partial widths, a combination of partial widths obtained from integrated cross sections, and 3 branching ratios uses 16 measurements and one constraint to determine 5 parameters. The overall fit has a $\chi^2 = 14.2$ for 12 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients $\left\langle \delta x_i \delta x_j \right\rangle / (\delta x_i \cdot \delta x_j)$, 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_2	−100			
x_3	−5	−1		
x_9	0	0	1	
Γ	−28	28	−1	−62
	x_1	x_2	x_3	x_9

	Mode	Rate (MeV)
Γ_1	$K\overline{K}$	64^{+6}_{-5}
Γ_2	$\eta\eta$	7.4 ± 1.9
Γ_3	$\pi\pi$	0.59 ± 0.12
Γ_9	$\gamma\gamma$	$(8.1 \pm 0.9) \times 10^{-5}$

$f'_2(1525)$ PARTIAL WIDTHS

$\Gamma(K\overline{K})$ Γ_1

VALUE (MeV)	*DOCUMENT ID*	*TECN*	*COMMENT*
64^{+6}_{-5} OUR FIT			
63^{+6}_{-5}	[1] LONGACRE 86	MPS	$22\ \pi^- p \to K^0_S K^0_S n$

[1] From a partial-wave analysis of data using a K-matrix formalism with 5 poles.

$\Gamma(\eta\eta)$ Γ_2

VALUE (MeV)	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*
7.4±1.9 OUR FIT				
• • • We do not use the following data for averages, fits, limits, etc. • • •				
5.0 ± 0.8	870	[1] SCHEGELSKY 06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$
24^{+3}_{-1}		[2] LONGACRE 86	MPS	$22\ \pi^- p \to K^0_S K^0_S n$

[1] From analysis of L3 data at 91 and 183–209 GeV, using $\Gamma(f'_2(1525) \to K\overline{K}) = 68$ MeV and SU(3) relations.

[2] From a partial-wave analysis of data using a K-matrix formalism with 5 poles.

$\Gamma(\pi\pi)$ Γ_3

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
0.59±0.12 OUR FIT					
1.4 $^{+1.0}_{-0.5}$		[1] LONGACRE	86	MPS	$22\ \pi^- p \to K^0_S K^0_S n$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.2 $^{+1.0}_{-0.2}$	870	[2] SCHEGELSKY	06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$

[1] From a partial-wave analysis of data using a K-matrix formalism with 5 poles.
[2] From analysis of L3 data at 91 and 183–209 GeV, using $\Gamma(f'_2(1525) \to K\overline{K}) = 68$ MeV and SU(3) relations.

$\Gamma(\gamma\gamma)$ Γ_9

VALUE (keV)	EVTS	DOCUMENT ID		TECN	COMMENT
0.081±0.009 OUR FIT					
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.13 ±0.03	870	[1] SCHEGELSKY	06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$

[1] From analysis of L3 data at 91 and 183–209 GeV, using $\Gamma(f'_2(1525) \to K\overline{K}) = 68$ MeV and SU(3) relations.

$\Gamma(K\overline{K})/\Gamma_{total}$ Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.746\pm0.002^{+0.166}_{-0.162}$	[1] ALBRECHT	20	RVUE	$0.9\ \overline{p}p \to \pi^0\pi^0\eta$, $\pi^0\eta\eta$, $\pi^0 K^+ K^-$

[1] Residue from T-matrix pole, 4 poles, 4 channels, including scattering data from HYAMS 75 ($\pi\pi$), LONGACRE 86 ($K\overline{K}$), BINON 83 ($\eta\eta$).

$f'_2(1525)$ $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(total)$

$\Gamma(K\overline{K}) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ $\Gamma_1\Gamma_9/\Gamma$

VALUE (keV)	EVTS	DOCUMENT ID		TECN	COMMENT
0.072 ±0.007 OUR FIT					
0.072 ±0.007 OUR AVERAGE					
$0.048\ ^{+0.067}_{-0.008}\ ^{+0.108}_{-0.012}$		UEHARA	13	BELL	$\gamma\gamma \to K^0_S K^0_S$
0.0564±0.0048±0.0116		ABE	04	BELL	$10.6\ e^+e^- \to e^+e^- K^+K^-$
0.076 ±0.006 ±0.011	331	[1] ACCIARRI	01H	L3	$e^+e^- \to e^+e^- K^0_S K^0_S$
0.067 ±0.008 ±0.015		[2] ALBRECHT	90G	ARG	$e^+e^- \to e^+e^- K^+K^-$
$0.11\ ^{+0.03}_{-0.02}\ \pm0.02$		BEHREND	89C	CELL	$e^+e^- \to e^+e^- K^0_S K^0_S$
$0.10\ ^{+0.04}_{-0.03}\ ^{+0.03}_{-0.02}$		BERGER	88	PLUT	$e^+e^- \to e^+e^- K^0_S K^0_S$
0.12 ±0.07 ±0.04		[2] AIHARA	86B	TPC	$e^+e^- \to e^+e^- K^+K^-$
0.11 ±0.02 ±0.04		[2] ALTHOFF	83	TASS	$e^+e^- \to e^+e^- K\overline{K}$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.0314±0.0050±0.0077		[3] ALBRECHT	90G	ARG	$e^+e^- \to e^+e^- K^+K^-$

[1] Supersedes ACCIARRI 95J. From analysis of L3 data at 91 and 183–209 GeV,
[2] Using an incoherent background.
[3] Using a coherent background.

$f'_2(1525)$ BRANCHING RATIOS

$\Gamma(\eta\eta)/\Gamma_{total}$ — Γ_2/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.059\pm0.003\pm0.026$	[1] ALBRECHT	20	RVUE	$0.9\ \overline{p}p \to \pi^0\pi^0\eta$, $\pi^0\eta\eta$, $\pi^0 K^+ K^-$
seen	UEHARA	10A	BELL	$10.6\ e^+e^- \to e^+e^-\eta\eta$
$0.10\ \pm0.03$	[2] PROKOSHKIN	91	GAM4	$300\ \pi^- p \to \pi^- p\eta\eta$

[1] Residue from T-matrix pole, 4 poles, 4 channels, including scattering data from HYAMS 75 ($\pi\pi$), LONGACRE 86 ($K\overline{K}$), BINON 83 ($\eta\eta$).
[2] Combining results of GAM4 with those of WA76 on $K\overline{K}$ central production and results of CBAL, MRK3 and DM2 on $J/\psi \to \gamma\eta\eta$.

$\Gamma(\eta\eta)/\Gamma(K\overline{K})$ — Γ_2/Γ_1

VALUE	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
0.116±0.028 OUR FIT						
0.115±0.028 OUR AVERAGE						
$0.119\pm0.015\pm0.036$		61	[1] BINON	07	GAMS	$32.5\ K^- p \to \eta\eta(\Lambda/\Sigma^0)$
$0.11\ \pm0.04$			[2] PROKOSHKIN	91	GAM4	$300\ \pi^- p \to \pi^- p\eta\eta$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<0.14	90		BARBERIS	00E		$450\ pp \to p_f\eta\eta p_s$
<0.50			BARNES	67	HBC	$4.6,5.0\ K^- p$

[1] Using the compilation of the cross sections for $f'_2(1525)$ production in $K^- p$ collisions from ASTON 88D.
[2] Combining results of GAM4 with those of WA76 on $K\overline{K}$ central production and results of CBAL, MRK3 and DM2 on $J/\psi \to \gamma\eta\eta$.

$\Gamma(\pi\pi)/\Gamma_{total}$ — Γ_3/Γ

VALUE (units 10^{-2})	CL%	DOCUMENT ID		TECN	COMMENT
0.82±0.16 OUR FIT					
0.75±0.16 OUR AVERAGE					
$0.7\ \pm0.2$		COSTA	80	OMEG	$10\ \pi^- p \to K^+K^- n$
$2.7\ ^{+7.1}_{-1.3}$		[1] GORLICH	80	ASPK	$17,18\ \pi^- p$
0.75 ± 0.25		[1,2] MARTIN	79	RVUE	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$3.4\ \pm1.5\ \pm1.0$		[3] ALBRECHT	20	RVUE	$0.9\ \overline{p}p \to \pi^0\pi^0\eta$, $\pi^0\eta\eta$, $\pi^0 K^+K^-$
<6	95	AGUILAR-...	81B	HBC	$4.2\ K^- p \to \Lambda K^+K^-$
$19\ \ \pm3$		CORDEN	79	OMEG	$12–15\ \pi^- p \to \pi^+\pi^- n$
<4.5	95	BARREIRO	77	HBC	$4.15\ K^- p \to \Lambda K^0_S K^0_S$
$1.2\ \pm0.4$		[1] PAWLICKI	77	SPEC	$6\ \pi N \to K^+K^- N$
<6.3	90	BRANDENB...	76C	ASPK	$13\ K^- p \to K^+K^-(\Lambda,\Sigma)$
<0.86		[1] BEUSCH	75B	OSPK	$8.9\ \pi^- p \to K^0\overline{K}^0 n$

[1] Assuming that the $f'_2(1525)$ is produced by an one-pion exchange production mechanism.
[2] MARTIN 79 uses the PAWLICKI 77 data with different input value of the $f'_2(1525) \to K\overline{K}$ branching ratio.
[3] Residue from T-matrix pole, 4 poles, 4 channels, including scattering data from HYAMS 75 ($\pi\pi$), LONGACRE 86 ($K\overline{K}$), BINON 83 ($\eta\eta$).

$\Gamma(\pi\pi)/\Gamma(K\overline{K})$ — Γ_3/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
0.0092±0.0018 OUR FIT				
0.075 ±0.035	AUGUSTIN	87	DM2	$J/\psi \to \gamma\pi^+\pi^-$

$[\Gamma(K\overline{K}^*(892)+\text{c.c.})+\Gamma(\pi K\overline{K})]/\Gamma(K\overline{K})$ — $(\Gamma_4+\Gamma_5)/\Gamma_1$

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.35	95	AGUILAR-...	72B	HBC	3.9,4.6 $K^- p$
<0.4	67	AMMAR	67	HBC	

$\Gamma(\pi\pi\eta)/\Gamma(K\overline{K})$ — Γ_6/Γ_1

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.41	95	AGUILAR-...	72B	HBC	3.9,4.6 $K^- p$
<0.3	67	AMMAR	67	HBC	

$\Gamma(\pi^+\pi^+\pi^-\pi^-)/\Gamma(K\overline{K})$ — Γ_7/Γ_1

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.32	95	AGUILAR-...	72B	HBC	3.9,4.6 $K^- p$

$\Gamma(\gamma\phi)/\Gamma_{\text{total}}$ — Γ_8/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[1] ABLIKIM	25P	BES3	$J/\psi \to \gamma\gamma\phi$

[1] From a partial wave analysis of $J/\psi \to \gamma\gamma\phi$ with significance 16.4σ.

$f_2'(1525)$ REFERENCES

ABLIKIM	25CD	JHEP 2510 081	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	25P	PR D111 052011	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	23M	JHEP 2303 121	M. Ablikim *et al.*	(BESIII Collab.)
KLEMPT	22	PL B830 137171	E. Klempt *et al.*	(BONN)
RODAS	22	EPJ C82 80	A. Rodas *et al.*	(JPAC Collab.)
ALBRECHT	20	EPJ C80 453	M. Albrecht *et al.*	(Crystal Barrel Collab.)
ABLIKIM	18AA	PR D98 072003	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	15AE	PR D92 052003	M. Ablikim *et al.*	(BESIII Collab.)
DOBBS	15	PR D91 052006	S. Dobbs *et al.*	(NWES)
LEES	14H	PR D89 092002	J.P. Lees *et al.*	(BABAR Collab.)
AAIJ	13AN	PR D87 072004	R. Aaij *et al.*	(LHCb Collab.)
ABLIKIM	13N	PR D87 092009	M. Ablikim *et al.*	(BESIII Collab.)
UEHARA	13	PTEP 2013 123C01	S. Uehara *et al.*	(BELLE Collab.)
UEHARA	10A	PR D82 114031	S. Uehara *et al.*	(BELLE Collab.)
ANISOVICH	09	IJMP A24 2481	V.V. Anisovich, A.V. Sarantsev	(PNPI)
CHEKANOV	08	PRL 101 112003	S. Chekanov *et al.*	(ZEUS Collab.)
BINON	07	PAN 70 1713	F. Binon *et al.*	(GAMS Collab.)
		Translated from YAF 70 1758.		
AMSLER	06	PL B639 165	C. Amsler *et al.*	(Crystal Barrel Collab.)
SCHEGELSKY	06A	EPJ A27 207	V.A. Schegelsky *et al.*	
ABLIKIM	05	PL B607 243	M. Ablikim *et al.*	(BES Collab.)
ABE	04	EPJ C32 323	K. Abe *et al.*	(BELLE Collab.)
CHEKANOV	04	PL B578 33	S. Chekanov *et al.*	(ZEUS Collab.)
BAI	03G	PR D68 052003	J.Z. Bai *et al.*	(BES Collab.)
TIKHOMIROV	03	PAN 66 828	G.D. Tikhomirov *et al.*	
		Translated from YAF 66 860.		
AMSLER	02	EPJ C23 29	C. Amsler *et al.*	(Crystal Barrel Collab.)
ACCIARRI	01H	PL B501 173	M. Acciarri *et al.*	(L3 Collab.)

BARBERIS	00E	PL B479 59	D. Barberis *et al.*	(WA 102 Collab.)
BARBERIS	99	PL B453 305	D. Barberis *et al.*	(Omega Expt.)
BARKOV	99	JETPL 70 248	B.P. Barkov *et al.*	
		Translated from ZETFP 70 242.		
ABREU	96C	PL B379 309	P. Abreu *et al.*	(DELPHI Collab.)
BAI	96C	PRL 77 3959	J.Z. Bai *et al.*	(BES Collab.)
ACCIARRI	95J	PL B363 118	M. Acciarri *et al.*	(L3 Collab.)
PROKOSHKIN	91	SPD 36 155	Y.D. Prokoshkin	(GAM2 and GAM4 Collab.)
		Translated from DANS 316 900.		
ALBRECHT	90G	ZPHY C48 183	H. Albrecht *et al.*	(ARGUS Collab.)
BEHREND	89C	ZPHY C43 91	H.J. Behrend *et al.*	(CELLO Collab.)
ASTON	88D	NP B301 525	D. Aston *et al.*	(SLAC, NAGO, CINC, INUS)
AUGUSTIN	88	PRL 60 2238	J.E. Augustin *et al.*	(DM2 Collab.)
BERGER	88	ZPHY C37 329	C. Berger *et al.*	(PLUTO Collab.)
FALVARD	88	PR D38 2706	A. Falvard *et al.*	(CLER, FRAS, LALO+)
AUGUSTIN	87	ZPHY C36 369	J.E. Augustin *et al.*	(LALO, CLER, FRAS+)
BALTRUSAIT...	87	PR D35 2077	R.M. Baltrusaitis *et al.*	(Mark III Collab.)
AIHARA	86B	PRL 57 404	H. Aihara *et al.*	(TPC-2γ Collab.)
BOLONKIN	86	SJNP 43 776	B.V. Bolonkin *et al.*	(ITEP) JP
		Translated from YAF 43 1211.		
LONGACRE	86	PL B177 223	R.S. Longacre *et al.*	(BNL, BRAN, CUNY+)
ALTHOFF	83	PL 121B 216	M. Althoff *et al.*	(TASSO Collab.)
ARMSTRONG	83B	NP B224 193	T.A. Armstrong *et al.*	(BARI, BIRM, CERN+)
BINON	83	NC 78A 313	F.G. Binon *et al.*	(BELG, LAPP, SERP+)
AGUILAR-...	81B	ZPHY C8 313	M. Aguilar-Benitez *et al.*	(CERN, CDEF+)
ALHARRAN	81	NP B191 26	S. Al-Harran *et al.*	(BIRM, CERN, GLAS+)
CHABAUD	81	APP B12 575	V. Chabaud *et al.*	(CERN, CRAC, MPIM)
COSTA	80	NP B175 402	G. Costa *et al.*	(BARI, BONN, CERN, GLAS+)
GORLICH	80	NP B174 16	L. Gorlich *et al.*	(CRAC, MPIM, CERN+)
CORDEN	79	NP B157 250	M.J. Corden *et al.*	(BIRM, RHEL, TELA+) JP
MARTIN	79	NP B158 520	A.D. Martin, E.N. Ozmutlu	(DURH)
POLYCHRO...	79	PR D19 1317	V.A. Polychronakos *et al.*	(NDAM, ANL)
BARREIRO	77	NP B121 237	F. Barreiro *et al.*	(CERN, AMST, NIJM+)
EVANGELIS...	77	NP B127 384	C. Evangelista *et al.*	(BARI, BONN, CERN+)
PAWLICKI	77	PR D15 3196	A.J. Pawlicki *et al.*	(ANL) IJP
BRANDENB...	76C	NP B104 413	G.W. Brandenburg *et al.*	(SLAC)
BEUSCH	75B	PL 60B 101	W. Beusch *et al.*	(CERN, ETH)
HYAMS	75	NP B100 205	B.D. Hyams *et al.*	(CERN, MPIM)
AGUILAR-...	72B	PR D6 29	M. Aguilar-Benitez *et al.*	(BNL)
AMMAR	67	PRL 19 1071	R. Ammar *et al.*	(NWES, ANL) JP
BARNES	67	PRL 19 964	V.E. Barnes *et al.*	(BNL, SYRA) IJPC
CRENNELL	66	PRL 16 1025	D.J. Crennell *et al.*	(BNL) I