Reference = ABLIKIM 13N; PR D87 092009
Verifier code = BES3

Normally we send all verifications for one experiment to one person, usually the spokesperson or data-analysis coordinator, who then distributes them to the appropriate people. Please tell us if we should send the verifications for your experiment to someone else.

PLEASE READ NOW

PLEASE REPLY WITHIN ONE WEEK

Xiao-Rui Lyu

EMAIL: xiaorui@ucas.ac.cn

July 21, 2016

Dear Colleague,

(1) Please check the results of your experiment carefully. They are marked.

(2) Please reply within one week.

(3) Please reply even if everything is correct.

(4) IMPORTANT!! Please tell WHICH papers you are verifying. We have lots of requests out.

(5) Feel free to make comments on our treatment of any of the results (not just yours) you see.

Thank you for helping us make the Review accurate and useful.

Sincerely,

Simon Eidelman
BINP, Budker Inst. of Nuclear Physics
Prospekt Lavrent'eva 11
RU-630090 Novosibirsk
Russian Federation

EMAIL: simon.eidelman@cern.ch

LIGHT UNFLAVORED MESONS ($S = C = B = 0$)

NODE=MXXX005

For $I = 1$ (π, b, ρ, a): $u\overline{d}$, $(u\overline{u} - d\overline{d})/\sqrt{2}$, $d\overline{u}$;
for $I = 0$ (η, η', h, h', ω, ϕ, f, f'): $c_1(u\overline{u} + d\overline{d}) + c_2(s\overline{s})$

NODE=MXXX005

NODE=M152

$f_0(1500)$

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

NODE=M152

See also the mini-reviews on scalar mesons under $f_0(500)$ (see the index for the page number) and on non-$q\overline{q}$ candidates in PDG 06, Journal of Physics **G33** 1 (2006).

$f_0(1500)$ MASS

NODE=M152M

NODE=M152M

YOUR DATA

VALUE (MeV)	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*	
1504± 6 OUR AVERAGE		Error includes scale factor of 1.3. See the ideogram below.			
$1468^{+14}_{-15}{}^{+23}_{-74}$	5.5k	[1] ABLIKIM 13N	BES3	$e^+e^- \rightarrow J/\psi \rightarrow \gamma\eta\eta$	
$1466 \pm 6 \pm 20$		ABLIKIM 06V	BES2	$e^+e^- \rightarrow J/\psi \rightarrow \gamma\pi^+\pi^-$	
1515 ± 12		[2] BARBERIS 00A		450 $pp \rightarrow p_f \eta\eta p_s$	
1511 ± 9		[2,3] BARBERIS 00C		450 $pp \rightarrow p_f 4\pi p_s$	
1510 ± 8		[2] BARBERIS 00E		450 $pp \rightarrow p_f \eta\eta p_s$	
1522 ± 25		BERTIN 98	OBLX	0.05–0.405 $\overline{n}p \rightarrow \pi^+\pi^+\pi^-$	
1449 ± 20		[2] BERTIN 97C	OBLX	0.0 $\overline{p}p \rightarrow \pi^+\pi^-\pi^0$	
1515 ± 20		ABELE 96B	CBAR	0.0 $\overline{p}p \rightarrow \pi^0 K^0_L K^0_L$	
1500 ± 15		[4] AMSLER 95B	CBAR	0.0 $\overline{p}p \rightarrow 3\pi^0$	
1505 ± 15		[5] AMSLER 95C	CBAR	0.0 $\overline{p}p \rightarrow \eta\eta\pi^0$	OCCUR=2
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1447 \pm 16 \pm 13$	163	[6,7] DOBBS 15		$J/\psi \rightarrow \gamma\pi^+\pi^-$	
$1442 \pm 9 \pm 4$	261	[6,7] DOBBS 15		$\psi(2S) \rightarrow \gamma\pi^+\pi^-$	OCCUR=2
1486 ± 10		[2] ANISOVICH 09	RVUE	0.0 $\overline{p}p$, πN	
1470 ± 60	568	[8] KLEMPT 08	E791	$D^+_s \rightarrow \pi^-\pi^+\pi^+$	
$1470^{+6}_{-7}{}^{+72}_{-255}$		[9] UEHARA 08A	BELL	10.6 $e^+e^- \rightarrow e^+e^-\pi^0\pi^0$	
1495 ± 4		AMSLER 06	CBAR	0.9 $\overline{p}p \rightarrow K^+K^-\pi^0$	
1539 ± 20	9.9k	AUBERT 06O	BABR	$B^+ \rightarrow K^+K^+K^-$	
1473 ± 5	80k	[10,11] UMAN 06	E835	5.2 $\overline{p}p \rightarrow \eta\eta\pi^0$	
1478 ± 6		VLADIMIRSK... 06	SPEC	40 $\pi^-p \rightarrow K^0_S K^0_S n$	
1493 ± 7		[10] BINON 05	GAMS	33 $\pi^-p \rightarrow \eta\eta n$	
1524 ± 14	1400	[12] GARMASH 05	BELL	$B^+ \rightarrow K^+K^+K^-$	
1489^{+8}_{-4}		[13] ANISOVICH 03	RVUE		
1490 ± 30		[10] ABELE 01	CBAR	0.0 $\overline{p}d \rightarrow \pi^- 4\pi^0 p$	
1497 ± 10		[10] BARBERIS 99	OMEG	450 $pp \rightarrow p_s p_f K^+K^-$	
1502 ± 10		[10] BARBERIS 99B	OMEG	450 $pp \rightarrow p_s p_f \pi^+\pi^-$	
$1502 \pm 12 \pm 10$		[14] BARBERIS 99D	OMEG	450 $pp \rightarrow K^+K^-$, $\pi^+\pi^-$	
1530 ± 45		[10] BELLAZZINI 99	GAM4	450 $pp \rightarrow pp\pi^0\pi^0$	
1505 ± 18		[10] FRENCH 99		300 $pp \rightarrow p_f (K^+K^-) p_s$	
1447 ± 27		[15] KAMINSKI 99	RVUE	$\pi\pi \rightarrow \pi\pi$, $K\overline{K}$, $\sigma\sigma$	
1580 ± 80		[10] ALDE 98	GAM4	100 $\pi^-p \rightarrow \pi^0\pi^0 n$	
1499 ± 8		[2] ANISOVICH 98B	RVUE	Compilation	
~ 1520		REYES 98	SPEC	800 $pp \rightarrow p_s p_f K^0_S K^0_S$	
1510 ± 20		[2] BARBERIS 97B	OMEG	450 $pp \rightarrow pp2(\pi^+\pi^-)$	
~ 1475		FRABETTI 97D	E687	$D^\pm_s \rightarrow \pi^\mp\pi^\pm\pi^\pm$	
~ 1505		ABELE 96	CBAR	0.0 $\overline{p}p \rightarrow 5\pi^0$	
1500 ± 8		[2] ABELE 96C	RVUE	Compilation	
1460 ± 20	120	[10] AMELIN 96B	VES	37 $\pi^-A \rightarrow \eta\eta\pi^-A$	
1500 ± 8		BUGG 96	RVUE		
1500 ± 10		[16] AMSLER 95D	CBAR	0.0 $\overline{p}p \rightarrow \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$	
1445 ± 5		[17] ANTINORI 95	OMEG	300,450 $pp \rightarrow pp2(\pi^+\pi^-)$	

1497±30		[10] ANTINORI	95	OMEG	300,450 $pp \to pp\pi^+\pi^-$	OCCUR=2
∼ 1505		BUGG	95	MRK3	$J/\psi \to \gamma\pi^+\pi^-\pi^+\pi^-$	
1446± 5		[10] ABATZIS	94	OMEG	450 $pp \to pp2(\pi^+\pi^-)$	
1545±25		[10] AMSLER	94E	CBAR	0.0 $\overline{p}p \to \pi^0\eta\eta'$	
1520±25		[2,18] ANISOVICH	94	CBAR	0.0 $\overline{p}p \to 3\pi^0, \pi^0\eta\eta$	
1505±20		[2,19] BUGG	94	RVUE	$\overline{p}p \to 3\pi^0$, $\eta\eta\pi^0$, $\eta\pi^0\pi^0$	
1560±25		[10] AMSLER	92	CBAR	0.0 $\overline{p}p \to \pi^0\eta\eta$	
1550±45± 30		[10] BELADIDZE	92C	VES	36 π^- Be $\to \pi^-\eta'\eta$ Be	
1449± 4		[10] ARMSTRONG	89E	OMEG	300 $pp \to pp2(\pi^+\pi^-)$	
1610±20		[10] ALDE	88	GAM4	300 $\pi^- N \to \pi^- N 2\eta$	
∼ 1525		ASTON	88D	LASS	11 $K^- p \to K^0_S K^0_S \Lambda$	
1570±20	600	[10] ALDE	87	GAM4	100 $\pi^- p \to 4\pi^0 n$	
1575±45		[20] ALDE	86D	GAM4	100 $\pi^- p \to 2\eta n$	
1568±33		[10] BINON	84C	GAM2	38 $\pi^- p \to \eta\eta' n$	
1592±25		[10] BINON	83	GAM2	38 $\pi^- p \to 2\eta n$	
1525± 5		[10] GRAY	83	DBC	0.0 $\overline{p}N \to 3\pi$	

YOUR NOTE

[1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances. NODE=M152M;LINKAGE=C
[2] T-matrix pole. NODE=M152M;LINKAGE=PP
[3] Average between $\pi^+\pi^-2\pi^0$ and $2(\pi^+\pi^-)$. NODE=M152M;LINKAGE=PC
[4] T-matrix pole, supersedes ANISOVICH 94. NODE=M152M;LINKAGE=D
[5] T-matrix pole, supersedes ANISOVICH 94 and AMSLER 92. NODE=M152M;LINKAGE=D1
[6] Using CLEO-c data but not authored by the CLEO Collaboration. NODE=M152M;LINKAGE=F
[7] From a fit to a Breit-Wigner line shape with fixed $\Gamma = 109$ MeV. NODE=M152M;LINKAGE=G
[8] Reanalysis of AITALA 01A data. This state could also be $f_0(1370)$. NODE=M152M;LINKAGE=KL
[9] Breit-Wigner mass. May also be the $f_0(1370)$. NODE=M152M;LINKAGE=UE
[10] Breit-Wigner mass. NODE=M152M;LINKAGE=E
[11] Statistical error only. NODE=M152M;LINKAGE=ST
[12] Breit-Wigner, solution 1, PWA ambiguous. NODE=M152M;LINKAGE=GA
[13] K-matrix pole from combined analysis of $\pi^- p \to \pi^0\pi^0 n$, $\pi^- p \to K\overline{K}n$, $\pi^+\pi^- \to \pi^+\pi^-$, $\overline{p}p \to \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$, $\pi^+\pi^-\pi^0$, $K^+K^-\pi^0$, $K^0_S K^0_S\pi^0$, $K^+K^0_S\pi^-$ at rest, $\overline{p}n \to \pi^-\pi^-\pi^+$, $K^0_S K^-\pi^0$, $K^0_S K^0_S\pi^-$ at rest. NODE=M152M;LINKAGE=KM
[14] Supersedes BARBERIS 99 and BARBERIS 99B. NODE=M152M;LINKAGE=BD
[15] T-matrix pole on sheet $--+$. NODE=M152M;LINKAGE=TK
[16] T-matrix pole. Coupled-channel analysis of AMSLER 95B, AMSLER 95C, and AMSLER 94D. NODE=M152M;LINKAGE=AB
[17] Supersedes ABATZIS 94, ARMSTRONG 89E. Breit-Wigner mass. NODE=M152M;LINKAGE=B
[18] From a simultaneous analysis of the annihilations $\overline{p}p \to 3\pi^0, \pi^0\eta\eta$. NODE=M152M;LINKAGE=A
[19] Reanalysis of ANISOVICH 94 data. NODE=M152M;LINKAGE=C1
[20] From central value and spread of two solutions. Breit-Wigner mass. NODE=M152M;LINKAGE=AZ

$f_0(1500)$ WIDTH

NODE=M152W

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT	NODE=M152W
109± 7 OUR AVERAGE						
YOUR DATA $136^{+41}_{-26}{}^{+28}_{-100}$	5.5k	[21] ABLIKIM	13N	BES3	$e^+e^- \to J/\psi \to \gamma\eta\eta$	
$108^{+14}_{-11}\pm 25$		ABLIKIM	06V	BES2	$e^+e^- \to J/\psi \to \gamma\pi^+\pi^-$	
110± 24		[22] BARBERIS	00A		450 $pp \to p_f\eta\eta p_s$	
102± 18		[22,23] BARBERIS	00C		450 $pp \to p_f 4\pi p_s$	
110± 16		[22] BARBERIS	00E		450 $pp \to p_f\eta\eta p_s$	
108± 33		BERTIN	98	OBLX	0.05–0.405 $\overline{n}p \to \pi^+\pi^+\pi^-$	
114± 30		[22] BERTIN	97C	OBLX	0.0 $\overline{p}p \to \pi^+\pi^-\pi^0$	
105± 15		ABELE	96B	CBAR	0.0 $\overline{p}p \to \pi^0 K^0_L K^0_L$	
120± 25		[24] AMSLER	95B	CBAR	0.0 $\overline{p}p \to 3\pi^0$	
120± 30		[25] AMSLER	95C	CBAR	0.0 $\overline{p}p \to \eta\eta\pi^0$	OCCUR=2
• • • We do not use the following data for averages, fits, limits, etc. • • •						
114± 10		[22] ANISOVICH	09	RVUE	0.0 $\overline{p}p$, πN	
$90^{+2}_{-1}{}^{+50}_{-22}$		[26] UEHARA	08A	BELL	10.6 $e^+e^- \to e^+e^-\pi^0\pi^0$	
121± 8		AMSLER	06	CBAR	0.9 $\overline{p}p \to K^+K^-\pi^0$	
257± 33	9.9k	AUBERT	06O	BABR	$B^+ \to K^+K^+K^-$	
108± 9	80k	[27,28] UMAN	06	E835	5.2 $\overline{p}p \to \eta\eta\pi^0$	
119± 10		VLADIMIRSK...	06	SPEC	40 $\pi^- p \to K^0_S K^0_S n$	
90± 15		[27] BINON	05	GAMS	33 $\pi^- p \to \eta\eta n$	

136 ± 23	1400	[29] GARMASH	05	BELL	$B^+ \to K^+ K^+ K^-$	
102 ± 10		[30] ANISOVICH	03	RVUE		
140 ± 40		[27] ABELE	01	CBAR	$0.0\ \overline{p} d \to \pi^- 4\pi^0 p$	
104 ± 25		[27] BARBERIS	99	OMEG	$450\ p p \to p_s p_f K^+ K^-$	
131 ± 15		[27] BARBERIS	99B	OMEG	$450\ p p \to p_s p_f \pi^+ \pi^-$	
98 ± 18 ± 16		[31] BARBERIS	99D	OMEG	$450\ p p \to K^+ K^-, \pi^+ \pi^-$	
160 ± 50		[27] BELLAZZINI	99	GAM4	$450\ p p \to p p \pi^0 \pi^0$	
100 ± 33		[27] FRENCH	99		$300\ p p \to p_f (K^+ K^-) p_s$	
108 ± 46		[32] KAMINSKI	99	RVUE	$\pi\pi \to \pi\pi, K\overline{K}, \sigma\sigma$	
280 ± 100		[27] ALDE	98	GAM4	$100\ \pi^- p \to \pi^0 \pi^0 n$	
130 ± 20		[22] ANISOVICH	98B	RVUE	Compilation	
120 ± 35		[22] BARBERIS	97B	OMEG	$450\ p p \to p p 2(\pi^+ \pi^-)$	
∼ 100		FRABETTI	97D	E687	$D_s^\pm \to \pi^\mp \pi^\pm \pi^\pm$	
∼ 169		ABELE	96	CBAR	$0.0\ \overline{p} p \to 5\pi^0$	
100 ± 30	120	[27] AMELIN	96B	VES	$37\ \pi^- A \to \eta\eta\pi^- A$	
132 ± 15		BUGG	96	RVUE		
154 ± 30		[33] AMSLER	95D	CBAR	$0.0\ \overline{p} p \to \pi^0 \pi^0 \pi^0, \pi^0 \eta\eta, \pi^0 \pi^0 \eta$	
65 ± 10		[34] ANTINORI	95	OMEG	$300{,}450\ p p \to p p 2(\pi^+ \pi^-)$	
199 ± 30		[27] ANTINORI	95	OMEG	$300{,}450\ p p \to p p \pi^+ \pi^-$	OCCUR=2
56 ± 12		[27] ABATZIS	94	OMEG	$450\ p p \to p p 2(\pi^+ \pi^-)$	
100 ± 40		[27] AMSLER	94E	CBAR	$0.0\ \overline{p} p \to \pi^0 \eta\eta'$	
148^{+20}_{-25}		[22,35] ANISOVICH	94	CBAR	$0.0\ \overline{p} p \to 3\pi^0, \pi^0 \eta\eta$	
150 ± 20		[22,36] BUGG	94	RVUE	$\overline{p} p \to 3\pi^0, \eta\eta\pi^0, \eta\pi^0\pi^0$	
245 ± 50		[27] AMSLER	92	CBAR	$0.0\ \overline{p} p \to \pi^0 \eta\eta$	
153 ± 67 ± 50		[27] BELADIDZE	92C	VES	$36\ \pi^- \mathrm{Be} \to \pi^- \eta' \eta \mathrm{Be}$	
78 ± 18		[27] ARMSTRONG	89E	OMEG	$300\ p p \to p p 2(\pi^+ \pi^-)$	
170 ± 40		[27] ALDE	88	GAM4	$300\ \pi^- N \to \pi^- N 2\eta$	
150 ± 20	600	[27] ALDE	87	GAM4	$100\ \pi^- p \to 4\pi^0 n$	
265 ± 65		[37] ALDE	86D	GAM4	$100\ \pi^- p \to 2\eta n$	
260 ± 60		[27] BINON	84C	GAM2	$38\ \pi^- p \to \eta\eta' n$	
210 ± 40		[27] BINON	83	GAM2	$38\ \pi^- p \to 2\eta n$	
101 ± 13		[27] GRAY	83	DBC	$0.0\ \overline{p} N \to 3\pi$	

YOUR NOTE

[21] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances. NODE=M152W;LINKAGE=C

[22] T-matrix pole. NODE=M152W;LINKAGE=PP

[23] Average between $\pi^+ \pi^- 2\pi^0$ and $2(\pi^+ \pi^-)$. NODE=M152W;LINKAGE=PC

[24] T-matrix pole, supersedes ANISOVICH 94. NODE=M152W;LINKAGE=D

[25] T-matrix pole, supersedes ANISOVICH 94 and AMSLER 92. NODE=M152W;LINKAGE=D1

[26] Breit-Wigner width. May also be the $f_0(1370)$. NODE=M152W;LINKAGE=UE

[27] Breit-Wigner width. NODE=M152W;LINKAGE=E

[28] Statistical error only. NODE=M152W;LINKAGE=ST

[29] Breit-Wigner, solution 1, PWA ambiguous. NODE=M152W;LINKAGE=GA

[30] K-matrix pole from combined analysis of $\pi^- p \to \pi^0 \pi^0 n$, $\pi^- p \to K\overline{K} n$, $\pi^+ \pi^- \to \pi^+ \pi^-$, $\overline{p} p \to \pi^0 \pi^0 \pi^0$, $\pi^0 \eta\eta$, $\pi^0 \pi^0 \eta$, $\pi^+ \pi^- \pi^0$, $K^+ K^- \pi^0$, $K_S^0 K_S^0 \pi^0$, $K^+ K_S^0 \pi^-$ at rest, $\overline{p} n \to \pi^- \pi^- \pi^+$, $K_S^0 K^- \pi^0$, $K_S^0 K_S^0 \pi^-$ at rest. NODE=M152W;LINKAGE=KM

[31] Supersedes BARBERIS 99 and BARBERIS 99B. NODE=M152W;LINKAGE=BD

[32] T-matrix pole on sheet $-\,-\,+$. NODE=M152W;LINKAGE=TK

[33] T-matrix pole. Coupled-channel analysis of AMSLER 95B, AMSLER 95C, and AMSLER 94D. NODE=M152W;LINKAGE=AB

[34] Supersedes ABATZIS 94, ARMSTRONG 89E. Breit-Wigner mass. NODE=M152W;LINKAGE=B

[35] From a simultaneous analysis of the annihilations $\overline{p} p \to 3\pi^0, \pi^0 \eta\eta$. NODE=M152W;LINKAGE=A

[36] Reanalysis of ANISOVICH 94 data. NODE=M152W;LINKAGE=C1

[37] From central value and spread of two solutions. Breit-Wigner mass. NODE=M152W;LINKAGE=AZ

$f_0(1500)$ REFERENCES

NODE=M152

YOUR PAPER

DOBBS	15	PR D91 052006	S. Dobbs *et al.*	(NWES)	REFID=56805
ABLIKIM	13N	PR D87 092009	Ablikim M. *et al.*	(BES III Collab.)	REFID=55387
ANISOVICH	09	IJMP A24 2481	V.V. Anisovich, A.V. Sarantsev		REFID=52719
KLEMPT	08	EPJ C55 39	E. Klempt, M. Matveev, A.V. Sarantsev	(BONN+)	REFID=52286
UEHARA	08A	PR D78 052004	S. Uehara *et al.*	(BELLE Collab.)	REFID=52309
ABLIKIM	06V	PL B642 441	M. Ablikim *et al.*	(BES Collab.)	REFID=51507
AMSLER	06	PL B639 165	C. Amsler *et al.*	(CBAR Collab.)	REFID=51136
AUBERT	06O	PR D74 032003	B. Aubert *et al.*	(BABAR Collab.)	REFID=51141
PDG	06	JP G33 1	W.-M. Yao *et al.*	(PDG Collab.)	REFID=51004
UMAN	06	PR D73 052009	I. Uman *et al.*	(FNAL E835)	REFID=51063
VLADIMIRSK...	06	PAN 69 493	V.V. Vladimirsky *et al.*	(ITEP, Moscow)	REFID=51191
		Translated from YAF 69 515.			

BINON 05 PAN 68 960 F. Binon *et al.* REFID=50780
Translated from YAF 68 998.
GARMASH 05 PR D71 092003 A. Garmash *et al.* (BELLE Collab.) REFID=50641
ANISOVICH 03 EPJ A16 229 V.V. Anisovich *et al.* REFID=49401
ABELE 01 EPJ C19 667 A. Abele *et al.* (Crystal Barrel Collab.) REFID=48334
AITALA 01A PRL 86 765 E.M. Aitala *et al.* (FNAL E791 Collab.) REFID=48004
BARBERIS 00A PL B471 429 D. Barberis *et al.* (WA 102 Collab.) REFID=47957
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BARBERIS 00E PL B479 59 D. Barberis *et al.* (WA 102 Collab.) REFID=47961
BARBERIS 99 PL B453 305 D. Barberis *et al.* (Omega Expt.) REFID=46921
BARBERIS 99B PL B453 316 D. Barberis *et al.* (Omega Expt.) REFID=46922
BARBERIS 99D PL B462 462 D. Barberis *et al.* (Omega Expt.) REFID=47395
BELLAZZINI 99 PL B467 296 R. Bellazzini *et al.* REFID=47400
FRENCH 99 PL B460 213 B. French *et al.* (WA76 Collab.) REFID=47491
KAMINSKI 99 EPJ C9 141 R. Kaminski, L. Lesniak, B. Loiseau (CRAC, PARIN) REFID=46927
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Also PAN 62 405 D. Alde *et al.* (GAMS Collab.) REFID=46914
Translated from YAF 62 446.
ANISOVICH 98B SPU 41 419 V.V. Anisovich *et al.* REFID=46331
Translated from UFN 168 481.
BERTIN 98 PR D57 55 A. Bertin *et al.* (OBELIX Collab.) REFID=45782
REYES 98 PRL 81 4079 M.A. Reyes *et al.* REFID=46378
BARBERIS 97B PL B413 217 D. Barberis *et al.* (WA 102 Collab.) REFID=45758
BERTIN 97C PL B408 476 A. Bertin *et al.* (OBELIX Collab.) REFID=45701
FRABETTI 97D PL B407 79 P.L. Frabetti *et al.* (FNAL E687 Collab.) REFID=45554
ABELE 96 PL B380 453 A. Abele *et al.* (Crystal Barrel Collab.) REFID=45011
ABELE 96B PL B385 425 A. Abele *et al.* (Crystal Barrel Collab.) REFID=45038
ABELE 96C NP A609 562 A. Abele *et al.* (Crystal Barrel Collab.) REFID=45076
AMELIN 96B PAN 59 976 D.V. Amelin *et al.* (SERP, TBIL) REFID=44725
Translated from YAF 59 1021.
BUGG 96 NP B471 59 D.V. Bugg, A.V. Sarantsev, B.S. Zou (LOQM, PNPI) REFID=45094
AMSLER 95B PL B342 433 C. Amsler *et al.* (Crystal Barrel Collab.) REFID=44377
AMSLER 95C PL B353 571 C. Amsler *et al.* (Crystal Barrel Collab.) REFID=44440
AMSLER 95D PL B355 425 C. Amsler *et al.* (Crystal Barrel Collab.) REFID=44441
ANTINORI 95 PL B353 589 F. Antinori *et al.* (ATHU, BARI, BIRM+) REFID=44437
BUGG 95 PL B353 378 D.V. Bugg *et al.* (LOQM, PNPI, WASH) REFID=44438
ABATZIS 94 PL B324 509 S. Abatzis *et al.* (ATHU, BARI, BIRM+) REFID=44090
AMSLER 94D PL B333 277 C. Amsler *et al.* (Crystal Barrel Collab.) REFID=44093
AMSLER 94E PL B340 259 C. Amsler *et al.* (Crystal Barrel Collab.) REFID=44080
ANISOVICH 94 PL B323 233 V.V. Anisovich *et al.* (Crystal Barrel Collab.) REFID=43659
BUGG 94 PR D50 4412 D.V. Bugg *et al.* (LOQM) REFID=44078
AMSLER 92 PL B291 347 C. Amsler *et al.* (Crystal Barrel Collab.) REFID=43169
BELADIDZE 92C SJNP 55 1535 G.M. Beladidze, S.I. Bityukov, G.V. Borisov (SERP+) REFID=43175
Translated from YAF 55 2748.
ARMSTRONG 89E PL B228 536 T.A. Armstrong, M. Benayoun (ATHU, BARI, BIRM+) REFID=41011
ALDE 88 PL B201 160 D.M. Alde *et al.* (SERP, BELG, LANL, LAPP+) REFID=40283
ASTON 88D NP B301 525 D. Aston *et al.* (SLAC, NAGO, CINC, INUS) REFID=40330
ALDE 87 PL B198 286 D.M. Alde *et al.* (LANL, BRUX, SERP, LAPP) REFID=40221
ALDE 86D NP B269 485 D.M. Alde *et al.* (BELG, LAPP, SERP, CERN+) REFID=20765
BINON 84C NC 80A 363 F.G. Binon *et al.* (BELG, LAPP, SERP+) REFID=21418
BINON 83 NC 78A 313 F.G. Binon *et al.* (BELG, LAPP, SERP+) REFID=20750
Also SJNP 38 561 F.G. Binon *et al.* (BELG, LAPP, SERP+) REFID=20751
Translated from YAF 38 934.
GRAY 83 PR D27 307 L. Gray *et al.* (SYRA) REFID=21370

NODE=M013

$f_2'(1525)$

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

f_2'(1525) MASS

NODE=M013205

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

NODE=M013M3
NODE=M013M3

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
The data in this block is included in the average printed for a previous datablock.				
$1521.9^{+1.8}_{-1.5}$ OUR AVERAGE Error includes scale factor of 1.1.				
$1522.2 \pm 2.8^{+5.3}_{-2.0}$		AAIJ 13AN	LHCB	$\overline{B}{}^0_s \rightarrow J/\psi K^+ K^-$
YOUR DATA $1513 \pm 5^{+4}_{-10}$	5.5k	[5] ABLIKIM 13N	BES3	$e^+e^- \rightarrow J/\psi \rightarrow \gamma\eta\eta$
$1525.3^{+1.2}_{-1.4}{}^{+3.7}_{-2.1}$		UEHARA 13	BELL	$\gamma\gamma \rightarrow K^0_S K^0_S$
1521 ± 5		ABLIKIM 05	BES2	$J/\psi \rightarrow \phi K^+ K^-$
$1518 \pm 1 \pm 3$		ABE 04	BELL	10.6 $e^+e^- \rightarrow e^+e^- K^+ K^-$
$1519 \pm 2^{+15}_{-5}$		BAI 03G	BES	$J/\psi \rightarrow \gamma K \overline{K}$
1523 ± 6	331	[6] ACCIARRI 01H	L3	91, 183–209 $e^+e^- \rightarrow e^+e^- K^0_S K^0_S$
$1535 \pm 5 \pm 4$		ABREU 96C	DLPH	$Z^0 \rightarrow K^+ K^- + X$
$1516 \pm 5^{+9}_{-15}$		BAI 96C	BES	$J/\psi \rightarrow \gamma K^+ K^-$
1531.6 ± 10.0		AUGUSTIN 88	DM2	$J/\psi \rightarrow \gamma K^+ K^-$
1515 ± 5		[7] FALVARD 88	DM2	$J/\psi \rightarrow \phi K^+ K^-$
$1525 \pm 10 \pm 10$		BALTRUSAIT..87	MRK3	$J/\psi \rightarrow \gamma K^+ K^-$

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

1532 ± 3 ± 6	644	[8,9] DOBBS	15		$J/\psi \to \gamma K^+ K^-$
1557 ± 9 ± 3	113	[8,9] DOBBS	15		$\psi(2S) \to \gamma K^+ K^-$
1523 ± 5	870	[10] SCHEGELSKY	06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$
1496 ± 2		[11] FALVARD	88	DM2	$J/\psi \to \phi K^+ K^-$

OCCUR=2

OCCUR=2

YOUR NOTE

[5] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances.
[6] Supersedes ACCIARRI 95J.
[7] From an analysis ignoring interference with $f_0(1710)$.
[8] Using CLEO-c data but not authored by the CLEO Collaboration.
[9] From a fit to a Breit-Wigner line shape with fixed Γ = 73 MeV.
[10] From analysis of L3 data at 91 and 183–209 GeV.
[11] From an analysis including interference with $f_0(1710)$.

NODE=M013M3;LINKAGE=A
NODE=M013M;LINKAGE=HA
NODE=M013M;LINKAGE=F1
NODE=M013M3;LINKAGE=B
NODE=M013M3;LINKAGE=C
NODE=M013M3;LINKAGE=SC
NODE=M013M;LINKAGE=F2

$f'_2(1525)$ WIDTH

NODE=M013210

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

NODE=M013W3
NODE=M013W3

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

$81.4^{+2.4}_{-2.0}$ OUR AVERAGE

YOUR DATA

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
$84 \pm 6\ ^{+10}_{-5}$		AAIJ	13AN	LHCB	$\overline{B}^0_s \to J/\psi K^+ K^-$
$75\ ^{+12}_{-10}\ ^{+16}_{-8}$	5.5k	[21] 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	[22] ACCIARRI	01H	L3	91, 183–209 $e^+e^- \to e^+e^- K^0_S K^0_S$
$60 \pm 20 \pm 19$		ABREU	96C	DLPH	$Z^0 \to K^+ K^- + X$
$60 \pm 23\ ^{+13}_{-20}$		BAI	96C	BES	$J/\psi \to \gamma K^+ K^-$
103 ± 30		AUGUSTIN	88	DM2	$J/\psi \to \gamma K^+ K^-$
62 ± 10		[23] FALVARD	88	DM2	$J/\psi \to \phi K^+ K^-$
85 ± 35		BALTRUSAIT...	87	MRK3	$J/\psi \to \gamma K^+ K^-$

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

104 ± 10	870	[24] SCHEGELSKY	06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$
100 ± 3		[25] FALVARD	88	DM2	$J/\psi \to \phi K^+ K^-$

OCCUR=2

YOUR NOTE

[21] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances.
[22] Supersedes ACCIARRI 95J.
[23] From an analysis ignoring interference with $f_0(1710)$.
[24] From analysis of L3 data at 91 and 183–209 GeV.
[25] From an analysis including interference with $f_0(1710)$.

NODE=M013W3;LINKAGE=A
NODE=M013W;LINKAGE=HA
NODE=M013W;LINKAGE=F1
NODE=M013W3;LINKAGE=SC
NODE=M013W;LINKAGE=F2

$f'_2(1525)$ REFERENCES

NODE=M013

YOUR PAPER

DOBBS	15	PR D91 052006	S. Dobbs *et al.*	(NWES)	REFID=56805
AAIJ	13AN	PR D87 072004	R. Aaij *et al.*	(LHCb Collab.)	REFID=55137
ABLIKIM	13N	PR D87 092009	Ablikim M. *et al.*	(BES III Collab.)	REFID=55387
UEHARA	13	PTEP 2013 123C01	S. Uehara *et al.*	(BELLE Collab.)	REFID=55592
SCHEGELSKY	06A	EPJ A27 207	V.A. Schegelsky *et al.*		REFID=51185
ABLIKIM	05	PL B607 243	M. Ablikim *et al.*	(BES Collab.)	REFID=50450
ABE	04	EPJ C32 323	K. Abe *et al.*	(BELLE Collab.)	REFID=49650
BAI	03G	PR D68 052003	J.Z. Bai *et al.*	(BES Collab.)	REFID=49580
ACCIARRI	01H	PL B501 173	M. Acciarri *et al.*	(L3 Collab.)	REFID=48321
ABREU	96C	PL B379 309	P. Abreu *et al.*	(DELPHI Collab.)	REFID=44671
BAI	96C	PRL 77 3959	J.Z. Bai *et al.*	(BES Collab.)	REFID=45169
ACCIARRI	95J	PL B363 118	M. Acciarri *et al.*	(L3 Collab.)	REFID=44615
AUGUSTIN	88	PRL 60 2238	J.E. Augustin *et al.*	(DM2 Collab.)	REFID=40574
FALVARD	88	PR D38 2706	A. Falvard *et al.*	(CLER, FRAS, LALO+)	REFID=40576
BALTRUSAIT...	87	PR D35 2077	R.M. Baltrusaitis *et al.*	(Mark III Collab.)	REFID=40010

NODE=M068

$f_0(1710)$

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

See our mini-review in the 2004 edition of this *Review*, Physics Letters **B592** 1 (2004). See also the mini-review on scalar mesons under $f_0(500)$ (see the index for the page number).

NODE=M068

$f_0(1710)$ MASS

NODE=M068M

NODE=M068M

VALUE (MeV)		EVTS	DOCUMENT ID		TECN	COMMENT	
1723^{+6}_{-5}	**OUR AVERAGE**		Error includes scale factor of 1.6. See the ideogram below.				
1759 ± 6	$^{+14}_{-25}$	5.5k	[1] ABLIKIM	13N	BES3	$e^+e^- \to J/\psi \to \gamma\eta\eta$	YOUR DATA
1750^{+6}_{-7}	$^{+29}_{-18}$		UEHARA	13	BELL	$\gamma\gamma \to K^0_S K^0_S$	
1701 ± 5	$^{+9}_{-2}$	4k	[2] CHEKANOV	08	ZEUS	$e p \to K^0_S K^0_S X$	
1765^{+4}_{-3}	± 13		ABLIKIM	06V	BES2	$e^+e^- \to J/\psi \to \gamma\pi^+\pi^-$	
1760 ± 15	$^{+15}_{-10}$		[3] ABLIKIM	05Q	BES2	$\psi(2S) \to \gamma\pi^+\pi^-K^+K^-$	
1738 ± 30			ABLIKIM	04E	BES2	$J/\psi \to \omega K^+K^-$	
1740 ± 4	$^{+10}_{-25}$		[4] BAI	03G	BES	$J/\psi \to \gamma K\overline{K}$	
1740^{+30}_{-25}			[4] BAI	00A	BES	$J/\psi \to \gamma(\pi^+\pi^-\pi^+\pi^-)$	
1698 ± 18			[5] BARBERIS	00E		450 $pp \to p_f\eta\eta p_s$	
1710 ± 12	± 11		[6] BARBERIS	99D	OMEG	450 $pp \to K^+K^-, \pi^+\pi^-$	
1710 ± 25			[7] FRENCH	99		300 $pp \to p_f(K^+K^-)p_s$	
1707 ± 10			[8] AUGUSTIN	88	DM2	$J/\psi \to \gamma K^+K^-, K^0_S K^0_S$	
1698 ± 15			[8] AUGUSTIN	87	DM2	$J/\psi \to \gamma\pi^+\pi^-$	
1720 ± 10	± 10		[9] BALTRUSAIT...	87	MRK3	$J/\psi \to \gamma K^+K^-$	
1742 ± 15			[8] WILLIAMS	84	MPSF	200 $\pi^-N \to 2K^0_S X$	
1670 ± 50			BLOOM	83	CBAL	$J/\psi \to \gamma 2\eta$	
• • • We do not use the following data for averages, fits, limits, etc. • • •							
1744 ± 7	± 5	381	[10,11] DOBBS	15		$J/\psi \to \gamma\pi^+\pi^-$	
1705 ± 11	± 5	237	[10,11] DOBBS	15		$\psi(2S) \to \gamma\pi^+\pi^-$	OCCUR=2
1706 ± 4	± 5	1.0k	[10,11] DOBBS	15		$J/\psi \to \gamma K^+K^-$	OCCUR=3
1690 ± 8	± 3	349	[10,11] DOBBS	15		$\psi(2S) \to \gamma K^+K^-$	OCCUR=4
1750 ± 13			AMSLER	06	CBAR	1.64 $\overline{p}p \to K^+K^-\pi^0$	
1747 ± 5		80k	[12,13] UMAN	06	E835	5.2 $\overline{p}p \to \eta\eta\pi^0$	
1776 ± 15			VLADIMIRSK...	06	SPEC	40 $\pi^-p \to K^0_S K^0_S n$	
1790^{+40}_{-30}			[3] ABLIKIM	05	BES2	$J/\psi \to \phi\pi^+\pi^-$	
1670 ± 20			[12] BINON	05	GAMS	33 $\pi^-p \to \eta\eta n$	
1726 ± 7		74	[13] CHEKANOV	04	ZEUS	$e p \to K^0_S K^0_S X$	
$1732+15$			[14] ANISOVICH	03	RVUE		
1682 ± 16			TIKHOMIROV	03	SPEC	40.0 π^-C $\to K^0_S K^0_S K^0_L X$	
1670 ± 26		3.6k	[4,15] NICHITIU	02	OBLX		
1770 ± 12			[16,17] ANISOVICH	99B	SPEC	0.6–1.2 $p\overline{p} \to \eta\eta\pi^0$	
1730 ± 15			[4] BARBERIS	99	OMEG	450 $pp \to p_s p_f K^+K^-$	
1750 ± 20			[4] BARBERIS	99B	OMEG	450 $pp \to p_s p_f \pi^+\pi^-$	
1750 ± 30			[18] ANISOVICH	98B	RVUE	Compilation	
1720 ± 39			BAI	98H	BES	$J/\psi \to \gamma\pi^0\pi^0$	
1775 ± 1.5		57	[19] BARKOV	98		$\pi^-p \to K^0_S K^0_S n$	
1690 ± 11			[20] ABREU	96C	DLPH	$Z^0 \to K^+K^- + X$	
1696 ± 5	$^{+9}_{-34}$		[9] BAI	96C	BES	$J/\psi \to \gamma K^+K^-$	
1781 ± 8	$^{+10}_{-31}$		[4] BAI	96C	BES	$J/\psi \to \gamma K^+K^-$	OCCUR=2
1768 ± 14			BALOSHIN	95	SPEC	40 π^-C $\to K^0_S K^0_S X$	
1750 ± 15			[21] BUGG	95	MRK3	$J/\psi \to \gamma\pi^+\pi^-\pi^+\pi^-$	
1620 ± 16			[9] BUGG	95	MRK3	$J/\psi \to \gamma\pi^+\pi^-\pi^+\pi^-$	OCCUR=2
1748 ± 10			[8] ARMSTRONG	93C	E760	$\overline{p}p \to \pi^0\eta\eta \to 6\gamma$	
~ 1750			BREAKSTONE	93	SFM	$pp \to pp\pi^+\pi^-\pi^+\pi^-$	
1744 ± 15			[22] ALDE	92D	GAM2	38 $\pi^-p \to \eta\eta n$	
1713 ± 10			[23] ARMSTRONG	89D	OMEG	300 $pp \to ppK^+K^-$	

1706 ± 10		[23] ARMSTRONG	89D	OMEG	$300\ pp \to ppK^0_S K^0_S$	OCCUR=2
1700 ± 15		[9] BOLONKIN	88	SPEC	$40\ \pi^- p \to K^0_S K^0_S n$	
1720 ± 60		[4] BOLONKIN	88	SPEC	$40\ \pi^- p \to K^0_S K^0_S n$	OCCUR=2
1638 ± 10		[24] FALVARD	88	DM2	$J/\psi \to \phi K^+ K^-, K^0_S K^0_S$	
1690 ± 4		[25] FALVARD	88	DM2	$J/\psi \to \phi K^+ K^-, K^0_S K^0_S$	OCCUR=2
1755 ± 8		[26] ALDE	86C	GAM2	$38\ \pi^- p \to n 2\eta$	
1730^{+2}_{-10}		[27] LONGACRE	86	RVUE	$22\ \pi^- p \to n 2K^0_S$	
1650 ± 50		BURKE	82	MRK2	$J/\psi \to \gamma 2\rho$	
1640 ± 50		[28,29] EDWARDS	82D	CBAL	$J/\psi \to \gamma 2\eta$	
1730 ± 10	± 20	[30] ETKIN	82C	MPS	$23\ \pi^- p \to n 2K^0_S$	

YOUR NOTE

[1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances. NODE=M068M;LINKAGE=D
[2] 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. NODE=M068M;LINKAGE=HE
[3] This state may be different from $f_0(1710)$, see CLOSE 05. NODE=M068M;LINKAGE=AB
[4] $J^P = 0^+$. NODE=M068M;LINKAGE=A8
[5] T-matrix pole. NODE=M068M;LINKAGE=TP
[6] Supersedes BARBERIS 99 and BARBERIS 99B. NODE=M068M;LINKAGE=BD
[7] $J^P = 0^+$, supersedes by ARMSTRONG 89D. NODE=M068M;LINKAGE=C3
[8] No J^{PC} determination. NODE=M068M;LINKAGE=A1
[9] $J^P = 2^+$. NODE=M068M;LINKAGE=A3
[10] Using CLEO-c data but not authored by the CLEO Collaboration. NODE=M068M;LINKAGE=F
[11] From a fit to a Breit-Wigner line shape with fixed $\Gamma = 135$ MeV. NODE=M068M;LINKAGE=G
[12] Breit-Wigner mass. NODE=M068M;LINKAGE=BW
[13] Systematic errors not estimated. NODE=M068M;LINKAGE=CH
[14] K-matrix pole, assuming $J^P = 0^+$, from combined analysis of $\pi^- p \to \pi^0\pi^0 n$, $\pi^- p \to K\overline{K} n$, $\pi^+\pi^- \to \pi^+\pi^-$, $\overline{p}p \to \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$, $\pi^+\pi^-\pi^0$, $K^+K^-\pi^0$, $K^0_S K^0_S \pi^0$, $K^+ K^0_S \pi^-$ at rest, $\overline{p}n \to \pi^-\pi^-\pi^+$, $K^0_S K^- \pi^0$, $K^0_S K^0_S \pi^-$ at rest. NODE=M068M;LINKAGE=KM
[15] Decaying to $f_0(1370)\pi\pi$. NODE=M068M;LINKAGE=NC
[16] $J^P = 0^+$. NODE=M068M;LINKAGE=AV
[17] Not seen by AMSLER 02. NODE=M068M;LINKAGE=NS
[18] T-matrix pole, assuming $J^P = 0^+$ NODE=M068M;LINKAGE=AN
[19] No J^{PC} determination. NODE=M068M;LINKAGE=4A
[20] No J^{PC} determination, width not determined. NODE=M068M;LINKAGE=A4
[21] From a fit to the 0^+ partial wave. NODE=M068M;LINKAGE=Q0
[22] ALDE 92D combines all the GAMS-2000 data. NODE=M068M;LINKAGE=AA
[23] $J^P = 2^+$, superseded by FRENCH 99. NODE=M068M;LINKAGE=C
[24] From an analysis ignoring interference with $f'_2(1525)$. NODE=M068M;LINKAGE=A
[25] From an analysis including interference with $f'_2(1525)$. NODE=M068M;LINKAGE=B
[26] Superseded by ALDE 92D. NODE=M068M;LINKAGE=BB
[27] Uses MRK3 data. From a partial-wave analysis of data using a K-matrix formalism with 5 poles, but assuming spin 2. Fit with constrained inelasticity. NODE=M068M;LINKAGE=A9
[28] $J^P = 2^+$ preferred. NODE=M068M;LINKAGE=B2
[29] From fit neglecting nearby $f'_2(1525)$. Replaced by BLOOM 83. NODE=M068M;LINKAGE=E
[30] Superseded by LONGACRE 86. NODE=M068M;LINKAGE=B1

$f_0(1710)$ WIDTH

NODE=M068W

NODE=M068W

YOUR DATA

VALUE (MeV)		*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
139 ± 8	**OUR AVERAGE**		Error includes scale factor of 1.1.			
172 ± 10	$^{+32}_{-16}$	5.5k	[1] ABLIKIM	13N	BES3	$e^+e^- \to J/\psi \to \gamma\eta\eta$
139^{+11}_{-12}	$^{+96}_{-50}$		UEHARA	13	BELL	$\gamma\gamma \to K^0_S K^0_S$
100 ± 24	$^{+7}_{-22}$	4k	[2] CHEKANOV	08	ZEUS	$ep \to K^0_S K^0_S X$
145 ± 8	± 69		ABLIKIM	06V	BES2	$e^+e^- \to J/\psi \to \gamma\pi^+\pi^-$
125 ± 25	$^{+10}_{-15}$		[3] ABLIKIM	05Q	BES2	$\psi(2S) \to \gamma\pi^+\pi^- K^+K^-$
125 ± 20			ABLIKIM	04E	BES2	$J/\psi \to \omega K^+ K^-$
166^{+5}_{-8}	$^{+15}_{-10}$		[4] BAI	03G	BES	$J/\psi \to \gamma K\overline{K}$
120^{+50}_{-40}			[4] BAI	00A	BES	$J/\psi \to \gamma(\pi^+\pi^-\pi^+\pi^-)$
120 ± 26			[5] BARBERIS	00E		$450\ pp \to p_f \eta\eta p_s$

$126 \pm 16 \pm 18$		[6] BARBERIS	99D	OMEG	450 $pp \rightarrow K^+K^-, \pi^+\pi^-$	
105 ± 34		[7] FRENCH	99		300 $pp \rightarrow p_f(K^+K^-)p_s$	
166.4 ± 33.2		[8] AUGUSTIN	88	DM2	$J/\psi \rightarrow \gamma K^+K^-, K^0_S K^0_S$	
136 ± 28		[8] AUGUSTIN	87	DM2	$J/\psi \rightarrow \gamma\pi^+\pi^-$	
130 ± 20		[9] BALTRUSAIT...	87	MRK3	$J/\psi \rightarrow \gamma K^+K^-$	
57 ± 38		[10] WILLIAMS	84	MPSF	200 $\pi^- N \rightarrow 2K^0_S X$	
160 ± 80		BLOOM	83	CBAL	$J/\psi \rightarrow \gamma 2\eta$	

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

$148 {}^{+40}_{-30}$		AMSLER	06	CBAR	1.64 $\overline{p}p \rightarrow K^+K^-\pi^0$	
188 ± 13	80k	[3,11] UMAN	06	E835	5.2 $\overline{p}p \rightarrow \eta\eta\pi^0$	
250 ± 30		VLADIMIRSK...	06	SPEC	40 $\pi^- p \rightarrow K^0_S K^0_S n$	
$270 {}^{+60}_{-30}$		[12] ABLIKIM	05	BES2	$J/\psi \rightarrow \phi\pi^+\pi^-$	
260 ± 50		[3] BINON	05	GAMS	33 $\pi^- p \rightarrow \eta\eta n$	
$38 {}^{+20}_{-14}$	74	[11] CHEKANOV	04	ZEUS	$ep \rightarrow K^0_S K^0_S X$	
144 ± 30		[13,14] ANISOVICH	03	RVUE		
$320 {}^{+50}_{-20}$		[14,15] ANISOVICH	03	RVUE		OCCUR=2
102 ± 26		TIKHOMIROV	03	SPEC	40.0 $\pi^- C \rightarrow K^0_S K^0_S K^0_L X$	
267 ± 44	3651	[4,16] NICHITIU	02	OBLX		
220 ± 40		[17,18] ANISOVICH	99B	SPEC	0.6–1.2 $p\overline{p} \rightarrow \eta\eta\pi^0$	
100 ± 25		[4] BARBERIS	99	OMEG	450 $pp \rightarrow p_s p_f K^+K^-$	
160 ± 30		[4] BARBERIS	99B	OMEG	450 $pp \rightarrow p_s p_f \pi^+\pi^-$	
250 ± 140		[19] ANISOVICH	98B	RVUE	Compilation	
30 ± 7	57	[20] BARKOV	98		$\pi^- p \rightarrow K^0_S K^0_S n$	
$103 \pm 18 {}^{+30}_{-11}$		[9] BAI	96C	BES	$J/\psi \rightarrow \gamma K^+K^-$	
$85 \pm 24 {}^{+22}_{-19}$		[4] BAI	96C	BES	$J/\psi \rightarrow \gamma K^+K^-$	OCCUR=2
56 ± 19		BALOSHIN	95	SPEC	40 $\pi^- C \rightarrow K^0_S K^0_S X$	
160 ± 40		[21] BUGG	95	MRK3	$J/\psi \rightarrow \gamma\pi^+\pi^-\pi^+\pi^-$	
$160 {}^{+60}_{-20}$		[9] BUGG	95	MRK3	$J/\psi \rightarrow \gamma\pi^+\pi^-\pi^+\pi^-$	OCCUR=2
264 ± 25		[8] ARMSTRONG	93C	E760	$\overline{p}p \rightarrow \pi^0\eta\eta \rightarrow 6\gamma$	
200 to 300		BREAKSTONE	93	SFM	$pp \rightarrow pp\pi^+\pi^-\pi^+\pi^-$	
< 80 90% CL		[22] ALDE	92D	GAM2	38 $\pi^- p \rightarrow \eta\eta N^*$	
181 ± 30		[23] ARMSTRONG	89D	OMEG	300 $pp \rightarrow ppK^+K^-$	
104 ± 30		[23] ARMSTRONG	89D	OMEG	300 $pp \rightarrow ppK^0_S K^0_S$	OCCUR=2
30 ± 20		[9] BOLONKIN	88	SPEC	40 $\pi^- p \rightarrow K^0_S K^0_S n$	
350 ± 150		[4] BOLONKIN	88	SPEC	40 $\pi^- p \rightarrow K^0_S K^0_S n$	OCCUR=2
148 ± 17		[24] FALVARD	88	DM2	$J/\psi \rightarrow \phi K^+K^-, K^0_S K^0_S$	
184 ± 6		[25] FALVARD	88	DM2	$J/\psi \rightarrow \phi K^+K^-, K^0_S K^0_S$	OCCUR=2
$122 {}^{+74}_{-15}$		[26] LONGACRE	86	RVUE	22 $\pi^- p \rightarrow n2K^0_S$	
200 ± 100		BURKE	82	MRK2	$J/\psi \rightarrow \gamma 2\rho$	
$220 {}^{+100}_{-70}$		[27,28] EDWARDS	82D	CBAL	$J/\psi \rightarrow \gamma 2\eta$	
$200 {}^{+156}_{-9}$		[29] ETKIN	82B	MPS	23 $\pi^- p \rightarrow n2K^0_S$	

YOUR NOTE

[1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances. NODE=M068W;LINKAGE=F
[2] 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. NODE=M068W;LINKAGE=HE
[3] Breit-Wigner width. NODE=M068W;LINKAGE=BW
[4] $J^P = 0^+$. NODE=M068W;LINKAGE=A8
[5] T-matrix pole. NODE=M068W;LINKAGE=TP
[6] Supersedes BARBERIS 99 and BARBERIS 99B. NODE=M068W;LINKAGE=BD
[7] $J^P = 0^+$, supersedes by ARMSTRONG 89D. NODE=M068W;LINKAGE=C3
[8] No J^{PC} determination. NODE=M068W;LINKAGE=A1
[9] $J^P = 2^+$. NODE=M068W;LINKAGE=A3
[10] No J^{PC} determination. NODE=M068M;LINKAGE=WI
[11] Systematic errors not estimated. NODE=M068W;LINKAGE=CH
[12] This state may be different from $f_0(1710)$, see CLOSE 05. NODE=M068W;LINKAGE=AB
[13] (Solution I) NODE=M068W;LINKAGE=K1

14 K-matrix pole, assuming $J^P = 0^+$, from combined analysis of $\pi^- p \to \pi^0 \pi^0 n$, $\pi^- p \to K \overline{K} n$, $\pi^+ \pi^- \to \pi^+ \pi^-$, $\overline{p} p \to \pi^0 \pi^0 \pi^0$, $\pi^0 \eta \eta$, $\pi^0 \pi^0 \eta$, $\pi^+ \pi^- \pi^0$, $K^+ K^- \pi^0$, $K^0_S K^0_S \pi^0$, $K^+ K^0_S \pi^-$ at rest, $\overline{p} n \to \pi^- \pi^- \pi^+$, $K^0_S K^- \pi^0$, $K^0_S K^0_S \pi^-$ at rest. NODE=M068W;LINKAGE=KM

15 (Solution I) NODE=M068W;LINKAGE=K2

16 Decaying to $f_0(1370) \pi \pi$. NODE=M068W;LINKAGE=NC

17 $J^P = 0^+$. NODE=M068W;LINKAGE=AV

18 Not seen by AMSLER 02. NODE=M068W;LINKAGE=NS

19 T-matrix pole, assuming $J^P = 0^+$ NODE=M068W;LINKAGE=AN

20 No J^{PC} determination. NODE=M068W;LINKAGE=4A

21 From a fit to the 0^+ partial wave. NODE=M068W;LINKAGE=Q0

22 ALDE 92D combines all the GAMS-2000 data. NODE=M068W;LINKAGE=AA

23 $J^P = 2^+$, (0^+ excluded). NODE=M068W;LINKAGE=B

24 From an analysis ignoring interference with $f'_2(1525)$. NODE=M068W;LINKAGE=C

25 From an analysis including interference with $f'_2(1525)$. NODE=M068W;LINKAGE=D

26 Uses MRK3 data. From a partial-wave analysis of data using a K-matrix formalism with 5 poles, but assuming spin 2. Fit with constrained inelasticity. NODE=M068W;LINKAGE=A9

27 $J^P = 2^+$ preferred. NODE=M068W;LINKAGE=B2

28 From fit neglecting nearby $f'_2(1525)$. Replaced by BLOOM 83. NODE=M068W;LINKAGE=E

29 From an amplitude analysis of the $K^0_S K^0_S$ system, superseded by LONGACRE 86. NODE=M068W;LINKAGE=A

$f_0(1710)$ REFERENCES

NODE=M068

	DOBBS	15	PR D91 052006	S. Dobbs *et al.*	(NWES)	REFID=56805
YOUR PAPER	ABLIKIM	13N	PR D87 092009	Ablikim M. *et al.*	(BES III Collab.)	REFID=55387
	UEHARA	13	PTEP 2013 123C01	S. Uehara *et al.*	(BELLE Collab.)	REFID=55592
	CHEKANOV	08	PRL 101 112003	S. Chekanov *et al.*	(ZEUS Collab.)	REFID=52275
	ABLIKIM	06V	PL B642 441	M. Ablikim *et al.*	(BES Collab.)	REFID=51507
	AMSLER	06	PL B639 165	C. Amsler *et al.*	(CBAR Collab.)	REFID=51136
	UMAN	06	PR D73 052009	I. Uman *et al.*	(FNAL E835)	REFID=51063
	VLADIMIRSK...	06	PAN 69 493	V.V. Vladimirsky *et al.*	(ITEP, Moscow)	REFID=51191
			Translated from YAF 69 515.			
	ABLIKIM	05	PL B607 243	M. Ablikim *et al.*	(BES Collab.)	REFID=50450
	ABLIKIM	05Q	PR D72 092002	M. Ablikim *et al.*	(BES Collab.)	REFID=50958
	BINON	05	PAN 68 960	F. Binon *et al.*		REFID=50780
			Translated from YAF 68 998.			
	CLOSE	05	PR D71 094022	F.E. Close, Q. Zhao		REFID=50788
	ABLIKIM	04E	PL B603 138	M. Ablikim *et al.*	(BES Collab.)	REFID=50174
	CHEKANOV	04	PL B578 33	S. Chekanov *et al.*	(ZEUS Collab.)	REFID=49672
	PDG	04	PL B592 1	S. Eidelman *et al.*	(PDG Collab.)	REFID=49653
	ANISOVICH	03	EPJ A16 229	V.V. Anisovich *et al.*		REFID=49401
	BAI	03G	PR D68 052003	J.Z. Bai *et al.*	(BES Collab.)	REFID=49580
	TIKHOMIROV	03	PAN 66 828	G.D. Tikhomirov *et al.*		REFID=49423
			Translated from YAF 66 860.			
	AMSLER	02	EPJ C23 29	C. Amsler *et al.*		REFID=48580
	NICHITIU	02	PL B545 261	F. Nichitiu *et al.*	(OBELIX Collab.)	REFID=48848
	BAI	00A	PL B472 207	J.Z. Bai *et al.*	(BES Collab.)	REFID=47426
	BARBERIS	00E	PL B479 59	D. Barberis *et al.*	(WA 102 Collab.)	REFID=47961
	ANISOVICH	99B	PL B449 154	A.V. Anisovich *et al.*		REFID=46886
	BARBERIS	99	PL B453 305	D. Barberis *et al.*	(Omega Expt.)	REFID=46921
	BARBERIS	99B	PL B453 316	D. Barberis *et al.*	(Omega Expt.)	REFID=46922
	BARBERIS	99D	PL B462 462	D. Barberis *et al.*	(Omega Expt.)	REFID=47395
	FRENCH	99	PL B460 213	B. French *et al.*	(WA76 Collab.)	REFID=47491
	ANISOVICH	98B	SPU 41 419	V.V. Anisovich *et al.*		REFID=46331
			Translated from UFN 168 481.			
	BAI	98H	PRL 81 1179	J.Z. Bai *et al.*	(BES Collab.)	REFID=46342
	BARKOV	98	JETPL 68 764	B.P. Barkov *et al.*		REFID=46616
	ABREU	96C	PL B379 309	P. Abreu *et al.*	(DELPHI Collab.)	REFID=44671
	BAI	96C	PRL 77 3959	J.Z. Bai *et al.*	(BES Collab.)	REFID=45169
	BALOSHIN	95	PAN 58 46	O.N. Baloshin *et al.*	(ITEP)	REFID=44621
			Translated from YAF 58 50.			
	BUGG	95	PL B353 378	D.V. Bugg *et al.*	(LOQM, PNPI, WASH)	REFID=44438
	ARMSTRONG	93C	PL B307 394	T.A. Armstrong *et al.*	(FNAL, FERR, GENO+)	REFID=43587
	BREAKSTONE	93	ZPHY C58 251	A.M. Breakstone *et al.*	(IOWA, CERN, DORT+)	REFID=43312
	ALDE	92D	PL B284 457	D.M. Alde *et al.*	(GAM2 Collab.)	REFID=41591
	Also		SJNP 54 451	D.M. Alde *et al.*	(GAM2 Collab.)	REFID=44696
			Translated from YAF 54 745.			
	ARMSTRONG	89D	PL B227 186	T.A. Armstrong, M. Benayoun	(ATHU, BARI, BIRM+)	REFID=41010
	AUGUSTIN	88	PRL 60 2238	J.E. Augustin *et al.*	(DM2 Collab.)	REFID=40574
	BOLONKIN	88	NP B309 426	B.V. Bolonkin *et al.*	(ITEP, SERP)	REFID=40580
	FALVARD	88	PR D38 2706	A. Falvard *et al.*	(CLER, FRAS, LALO+)	REFID=40576
	AUGUSTIN	87	ZPHY C36 369	J.E. Augustin *et al.*	(LALO, CLER, FRAS+)	REFID=40268
	BALTRUSAIT...	87	PR D35 2077	R.M. Baltrusaitis *et al.*	(Mark III Collab.)	REFID=40010
	ALDE	86C	PL B182 105	D.M. Alde *et al.*	(SERP, BELG, LANL, LAPP)	REFID=21694
	LONGACRE	86	PL B177 223	R.S. Longacre *et al.*	(BNL, BRAN, CUNY+)	REFID=20768
	WILLIAMS	84	PR D30 877	E.G.H. Williams *et al.*	(VAND, NDAM, TUFTS+)	REFID=21693
	BLOOM	83	ARNS 33 143	E.D. Bloom, C. Peck	(SLAC, CIT)	REFID=21682
	BURKE	82	PRL 49 632	D.L. Burke *et al.*	(LBL, SLAC)	REFID=21676
	EDWARDS	82D	PRL 48 458	C. Edwards *et al.*	(CIT, HARV, PRIN+)	REFID=21677
	ETKIN	82B	PR D25 1786	A. Etkin *et al.*	(BNL, CUNY, TUFTS, VAND)	REFID=20390
	ETKIN	82C	PR D25 2446	A. Etkin *et al.*	(BNL, CUNY, TUFTS, VAND)	REFID=20391

NODE=M038

$f_2(1810)$

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

OMITTED FROM SUMMARY TABLE

Needs confirmation.

NODE=M038

$f_2(1810)$ MASS

NODE=M038M

NODE=M038M

	VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
	1815±12 OUR AVERAGE	Error includes scale factor of 1.4. See the ideogram below.				
YOUR DATA	$1822^{+29}_{-24}{}^{+66}_{-57}$	5.5k	[1] ABLIKIM	13N	BES3	$e^+e^- \to J/\psi \to \gamma\eta\eta$
	$1737\pm 9^{+198}_{-65}$		[2] UEHARA	10A	BELL	$10.6\ e^+e^- \to e^+e^-\eta\eta$
	1800±30	40	ALDE	88D	GAM4	$300\ \pi^- p \to \pi^- p 4\pi^0$
	1806±10	1600	ALDE	87	GAM4	$100\ \pi^- p \to 4\pi^0 n$
	1870±40		[3] ALDE	86D	GAM4	$100\ \pi^- p \to \eta\eta n$
	1857^{+35}_{-24}		[4] COSTA...	80	OMEG	$10\ \pi^- p \to K^+K^- n$
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
	1858^{+18}_{-71}		[5] LONGACRE	86	RVUE	Compilation
	1799±15		[6] CASON	82	STRC	$8\ \pi^+ p \to \Delta^{++}\pi^0\pi^0$

YOUR NOTE

[1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances. NODE=M038M;LINKAGE=B

[2] Breit-Wigner mass. NODE=M038M;LINKAGE=UE

[3] Seen in only one solution. NODE=M038M;LINKAGE=F

[4] Error increased by spread of two solutions. Included in LONGACRE 86 global analysis. NODE=M038M;LINKAGE=A

[5] From a partial-wave analysis of data using a K-matrix formalism with 5 poles. Includes compilation of several other experiments. NODE=M038M;LINKAGE=L

[6] From an amplitude analysis of the reaction $\pi^+\pi^- \to 2\pi^0$. The resonance in the $2\pi^0$ final state is not confirmed by PROKOSHKIN 97. NODE=M038M;LINKAGE=P1

$f_2(1810)$ WIDTH

NODE=M038W

NODE=M038W

	VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
	197± 22 OUR AVERAGE	Error includes scale factor of 1.5. See the ideogram below.				
YOUR DATA	$229^{+52}_{-42}{}^{+88}_{-155}$	5.5k	[7] ABLIKIM	13N	BES3	$e^+e^- \to J/\psi \to \gamma\eta\eta$
	$228^{+21}_{-20}{}^{+234}_{-153}$		[8] UEHARA	10A	BELL	$10.6\ e^+e^- \to e^+e^-\eta\eta$
	160± 30	40	ALDE	88D	GAM4	$300\ \pi^- p \to \pi^- p 4\pi^0$
	190± 20	1600	ALDE	87	GAM4	$100\ \pi^- p \to 4\pi^0 n$
	250± 30		[9] ALDE	86D	GAM4	$100\ \pi^- p \to \eta\eta n$
	185^{+102}_{-139}		[10] COSTA...	80	OMEG	$10\ \pi^- p \to K^+K^- n$
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
	388^{+15}_{-21}		[11] LONGACRE	86	RVUE	Compilation
	280^{+42}_{-35}		[12] CASON	82	STRC	$8\ \pi^+ p \to \Delta^{++}\pi^0\pi^0$

YOUR NOTE

[7] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances. NODE=M038W;LINKAGE=B

[8] Breit-Wigner width. NODE=M038W;LINKAGE=UE

[9] Seen in only one solution. NODE=M038W;LINKAGE=F

[10] Error increased by spread of two solutions. Included in LONGACRE 86 global analysis. NODE=M038W;LINKAGE=A

[11] From a partial-wave analysis of data using a K-matrix formalism with 5 poles. Includes compilation of several other experiments. NODE=M038W;LINKAGE=L

[12] From an amplitude analysis of the reaction $\pi^+\pi^- \to 2\pi^0$. The resonance in the $2\pi^0$ final state is not confirmed by PROKOSHKIN 97. NODE=M038W;LINKAGE=P1

$f_2(1810)$ BRANCHING RATIOS

NODE=M038220

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

NODE=M038R3

NODE=M038R3

	VALUE	DOCUMENT ID		TECN	COMMENT
YOUR DATA	**seen**	ABLIKIM	13N	BES3	PWA of $J/\psi \to \gamma\eta\eta$
	• • • We do not use the following data for averages, fits, limits, etc. • • •				
	$0.008^{+0.028}_{-0.003}$	[16] LONGACRE	86	RVUE	Compilation

[16] From a partial-wave analysis of data using a K-matrix formalism with 5 poles. Includes compilation of several other experiments. NODE=M038R3;LINKAGE=L

$f_2(1810)$ REFERENCES

NODE=M038

YOUR PAPER	ABLIKIM	13N	PR D87 092009	Ablikim M. *et al.*	(BES III Collab.)	REFID=55387
	UEHARA	10A	PR D82 114031	S. Uehara *et al.*	(BELLE Collab.)	REFID=53641
	PROKOSHKIN	97	SPD 42 117	Y.D. Prokoshkin *et al.*	(SERP)	REFID=45386
			Translated from DANS 353 323.			
	ALDE	88D	SJNP 47 810	D.M. Alde *et al.*	(SERP, BELG, LANL, LAPP+)	REFID=44652
			Translated from YAF 47 1273.			
	ALDE	87	PL B198 286	D.M. Alde *et al.*	(LANL, BRUX, SERP, LAPP)	REFID=40221
	ALDE	86D	NP B269 485	D.M. Alde *et al.*	(BELG, LAPP, SERP, CERN+)	REFID=20765
	LONGACRE	86	PL B177 223	R.S. Longacre *et al.*	(BNL, BRAN, CUNY+)	REFID=20768
	CASON	82	PRL 48 1316	N.M. Cason *et al.*	(NDAM, ANL)	REFID=20746
	COSTA...	80	NP B175 402	G. Costa de Beauregard *et al.*	(BARI, BONN+)	REFID=20737

NODE=M168

$f_0(2100)$

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

OMITTED FROM SUMMARY TABLE

Needs confirmation. NODE=M168

$f_0(2100)$ MASS

NODE=M168M

NODE=M168M

	VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT	
	2101± 7 OUR AVERAGE						
YOUR DATA	$2081\pm13^{+24}_{-36}$	5.5k	[1] ABLIKIM	13N	BES3	$e^+e^- \rightarrow J/\psi \rightarrow \gamma\eta\eta$	
	2102 ± 13		[2] ANISOVICH	00J	SPEC	$2.0\ \overline{p}p \rightarrow \eta\pi^0\pi^0, \pi^0\pi^0, \eta\eta, \eta\eta', \pi^+\pi^-$	
	2090 ± 30		BAI	00A	BES	$J/\psi \rightarrow \gamma(\pi^+\pi^-\pi^+\pi^-)$	
	2105 ± 10		ANISOVICH	99K	SPEC	0.6–1.94 $\overline{p}p \rightarrow \eta\eta, \eta\eta'$	
	• • • We do not use the following data for averages, fits, limits, etc. • • •						
	$2090\pm10\pm6$	529	[3,4] DOBBS	15		$J/\psi \rightarrow \gamma\pi^+\pi^-$	
	$2099\pm17\pm8$	283	[3,4] DOBBS	15		$\psi(2S) \rightarrow \gamma\pi^+\pi^-$	OCCUR=2
	2105 ± 8	80k	[5] UMAN	06	E835	$5.2\ \overline{p}p \rightarrow \eta\eta\pi^0$	
	~ 2104		BUGG	95		$J/\psi \rightarrow \gamma\pi^+\pi^-\pi^+\pi^-$	
	~ 2122		HASAN	94	RVUE	$\overline{p}p \rightarrow \pi\pi$	

YOUR NOTE

[1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances. NODE=M168M;LINKAGE=A
[2] Includes the data of ANISOVICH 00B indicating to exotic decay pattern. NODE=M168M;LINKAGE=AN
[3] Using CLEO-c data but not authored by the CLEO Collaboration. NODE=M168M;LINKAGE=B
[4] From a fit to a Breit-Wigner line shape with fixed Γ = 209 MeV. NODE=M168M;LINKAGE=C
[5] Statistical error only. NODE=M168M;LINKAGE=ST

$f_0(2100)$ WIDTH

NODE=M168W

NODE=M168W

	VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
	224^{+23}_{-21} OUR AVERAGE		Error includes scale factor of 1.3. See the ideogram below.			
YOUR DATA	273^{+27+70}_{-24-23}	5.5k	[6] ABLIKIM	13N	BES3	$e^+e^- \rightarrow J/\psi \rightarrow \gamma\eta\eta$
	211 ± 29		[7] ANISOVICH	00J	SPEC	$2.0\ \overline{p}p \rightarrow \eta\pi^0\pi^0, \pi^0\pi^0, \eta\eta, \eta\eta', \pi^+\pi^-$
	330 ± 100		BAI	00A	BES	$J/\psi \rightarrow \gamma(\pi^+\pi^-\pi^+\pi^-)$
	200 ± 25		ANISOVICH	99K	SPEC	0.6–1.94 $\overline{p}p \rightarrow \eta\eta, \eta\eta'$
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
	236 ± 14	80k	[8] UMAN	06	E835	$5.2\ \overline{p}p \rightarrow \eta\eta\pi^0$
	~ 203		BUGG	95		$J/\psi \rightarrow \gamma\pi^+\pi^-\pi^+\pi^-$
	~ 273		HASAN	94	RVUE	$\overline{p}p \rightarrow \pi\pi$

YOUR NOTE

[6] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances. NODE=M168W;LINKAGE=A
[7] Includes the data of ANISOVICH 00B indicating to exotic decay pattern. NODE=M168W;LINKAGE=AN
[8] Statistical error only. NODE=M168W;LINKAGE=ST

$f_0(2100)$ REFERENCES

NODE=M168

YOUR PAPER	DOBBS	15	PR D91 052006	S. Dobbs *et al.*	(NWES)
	ABLIKIM	13N	PR D87 092009	Ablikim M. *et al.*	(BES III Collab.)
	UMAN	06	PR D73 052009	I. Uman *et al.*	(FNAL E835)
	ANISOVICH	00B	NP A662 319	A.V. Anisovich *et al.*	
	ANISOVICH	00J	PL B491 47	A.V. Anisovich *et al.*	
	BAI	00A	PL B472 207	J.Z. Bai *et al.*	(BES Collab.)
	ANISOVICH	99K	PL B468 309	A.V. Anisovich *et al.*	
	BUGG	95	PL B353 378	D.V. Bugg *et al.*	(LOQM, PNPI, WASH)
	HASAN	94	PL B334 215	A. Hasan, D.V. Bugg	(LOQM)

REFID=56805
REFID=55387
REFID=51063
REFID=47942
REFID=47950
REFID=47426
REFID=47472
REFID=44438
REFID=44103

NODE=M108

$f_2(2340)$

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

$f_2(2340)$ MASS

NODE=M108M

	VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
	2345^{+50}_{-40} OUR AVERAGE					
YOUR DATA	$2362^{+31}_{-30}{}^{+140}_{-63}$	5.5k	[1] ABLIKIM	13N	BES3	$e^+e^- \to J/\psi \to \gamma\eta\eta$
	2339 ± 55		[2] ETKIN	88	MPS	$22\ \pi^- p \to \phi\phi n$
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
	$2350\pm\ 7$	80k	[3] UMAN	06	E835	$5.2\ \bar{p}p \to \eta\eta\pi^0$
	2392 ± 10		BOOTH	86	OMEG	$85\ \pi^-\text{Be} \to 2\phi\text{Be}$
	2360 ± 20		LINDENBAUM	84	RVUE	

NODE=M108M

YOUR NOTE

[1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances.

NODE=M108M;LINKAGE=A

[2] Includes data of ETKIN 85. The percentage of the resonance going into $\phi\phi\ 2^{++}\ S_2$, D_2, and D_0 is 37 ± 19, 4^{+12}_{-4}, and 59^{+21}_{-19}, respectively.

NODE=M108M;LINKAGE=C

[3] Statistical error only.

NODE=M108M;LINKAGE=ST

$f_2(2340)$ WIDTH

NODE=M108W

	VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
	322^{+70}_{-60} OUR AVERAGE					
YOUR DATA	$334^{+62}_{-54}{}^{+165}_{-100}$	5.5k	[4] ABLIKIM	13N	BES3	$e^+e^- \to J/\psi \to \gamma\eta\eta$
	319^{+81}_{-69}		[5] ETKIN	88	MPS	$22\ \pi^- p \to \phi\phi n$
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
	$218\pm\ 16$	80k	[6] UMAN	06	E835	$5.2\ \bar{p}p \to \eta\eta\pi^0$
	$198\pm\ 50$		BOOTH	86	OMEG	$85\ \pi^-\text{Be} \to 2\phi\text{Be}$
	150^{+150}_{-50}		LINDENBAUM	84	RVUE	

NODE=M108W

YOUR NOTE

[4] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances.

NODE=M108W;LINKAGE=A

[5] Includes data of ETKIN 85.

NODE=M108W;LINKAGE=C

[6] Statistical error only.

NODE=M108W;LINKAGE=ST

$f_2(2340)$ REFERENCES

NODE=M108

YOUR PAPER	ABLIKIM	13N	PR D87 092009	Ablikim M. *et al.*	(BES III Collab.)
	UMAN	06	PR D73 052009	I. Uman *et al.*	(FNAL E835)
	ETKIN	88	PL B201 568	A. Etkin *et al.*	(BNL, CUNY)
	BOOTH	86	NP B273 677	P.S.L. Booth *et al.*	(LIVP, GLAS, CERN)
	ETKIN	85	PL 165B 217	A. Etkin *et al.*	(BNL, CUNY)
	LINDENBAUM	84	CNPP 13 285	S.J. Lindenbaum	(CUNY)

REFID=55387
REFID=51063
REFID=40285
REFID=21870
REFID=21871
REFID=21869

$c\bar{c}$ MESONS

NODE=MXXX025

NODE=M070

$J/\psi(1S)$

$I^G(J^{PC}) = 0^-(1^{--})$

$J/\psi(1S)$ BRANCHING RATIOS NODE=M070230

RADIATIVE DECAYS NODE=M070310

$\Gamma(\gamma f_0(1710) \to \gamma\eta\eta)/\Gamma_{total}$ Γ_{171}/Γ

NODE=M070S84
NODE=M070S84

	VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
YOUR DATA	$\mathbf{2.35^{+0.13}_{-0.11}{}^{+1.24}_{-0.74}}$	5.5k	[1] ABLIKIM	13N	BES3	$J/\psi \to \gamma\eta\eta$

YOUR NOTE [1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances. NODE=M070S84;LINKAGE=A

$\Gamma(\gamma f'_2(1525) \to \gamma\eta\eta)/\Gamma_{total}$ Γ_{177}/Γ

NODE=M070S86
NODE=M070S86

	VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
YOUR DATA	$\mathbf{3.42^{+0.43}_{-0.51}{}^{+1.37}_{-1.30}}$	5.5k	[1] ABLIKIM	13N	BES3	$J/\psi \to \gamma\eta\eta$

YOUR NOTE [1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances. NODE=M070S86;LINKAGE=A

$\Gamma(\gamma f_2(1810) \to \gamma\eta\eta)/\Gamma_{total}$ Γ_{181}/Γ

NODE=M070S87
NODE=M070S87

	VALUE (units 10^{-5})	EVTS	DOCUMENT ID		COMMENT
YOUR DATA	$\mathbf{5.40^{+0.60}_{-0.67}{}^{+3.42}_{-2.35}}$	5.5k	[1] ABLIKIM	13N	$J/\psi \to \gamma\eta\eta$

YOUR NOTE [1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances. NODE=M070S87;LINKAGE=A

$\Gamma(\gamma f_0(2100) \to \gamma\eta\eta)/\Gamma_{total}$ Γ_{197}/Γ

NODE=M070S85
NODE=M070S85

	VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
YOUR DATA	$\mathbf{1.13^{+0.09}_{-0.10}{}^{+0.64}_{-0.28}}$	5.5k	[1] ABLIKIM	13N	BES3	$J/\psi \to \gamma\eta\eta$

YOUR NOTE [1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances. NODE=M070S85;LINKAGE=A

$\Gamma(\gamma f_2(2340) \to \gamma\eta\eta)/\Gamma_{total}$ Γ_{205}/Γ

NODE=M070S88
NODE=M070S88

	VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
YOUR DATA	$\mathbf{5.60^{+0.62}_{-0.65}{}^{+2.37}_{-2.07}}$	5.5k	[1] ABLIKIM	13N	BES3	$J/\psi \to \gamma\eta\eta$

YOUR NOTE [1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances. NODE=M070S88;LINKAGE=A

$\Gamma(\gamma f_0(1500) \to \gamma\eta\eta)/\Gamma_{total}$ Γ_{207}/Γ

NODE=M070S83
NODE=M070S83

	VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
YOUR DATA	$\mathbf{1.65^{+0.26}_{-0.31}{}^{+0.51}_{-1.40}}$	5.5k	[1] ABLIKIM	13N	BES3	$J/\psi \to \gamma\eta\eta$

YOUR NOTE [1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances. NODE=M070S83;LINKAGE=A

$J/\psi(1S)$ REFERENCES NODE=M070

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