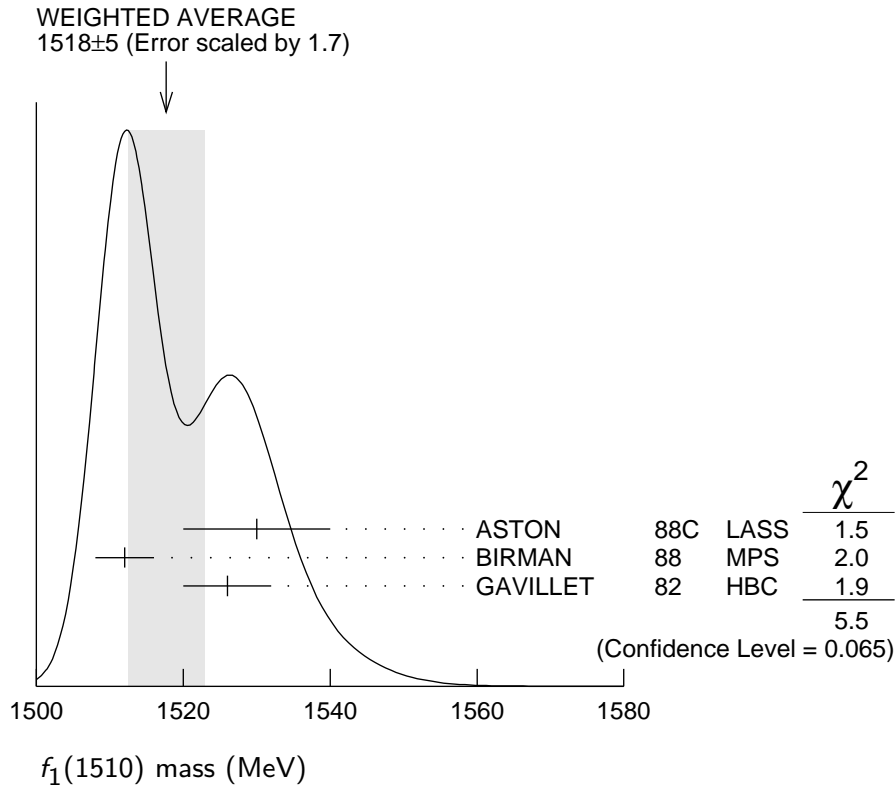# $f_1(1510)$

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

OMITTED FROM SUMMARY TABLE
See the minireview under $\eta(1405)$.

$f_1(1510)$ MASS
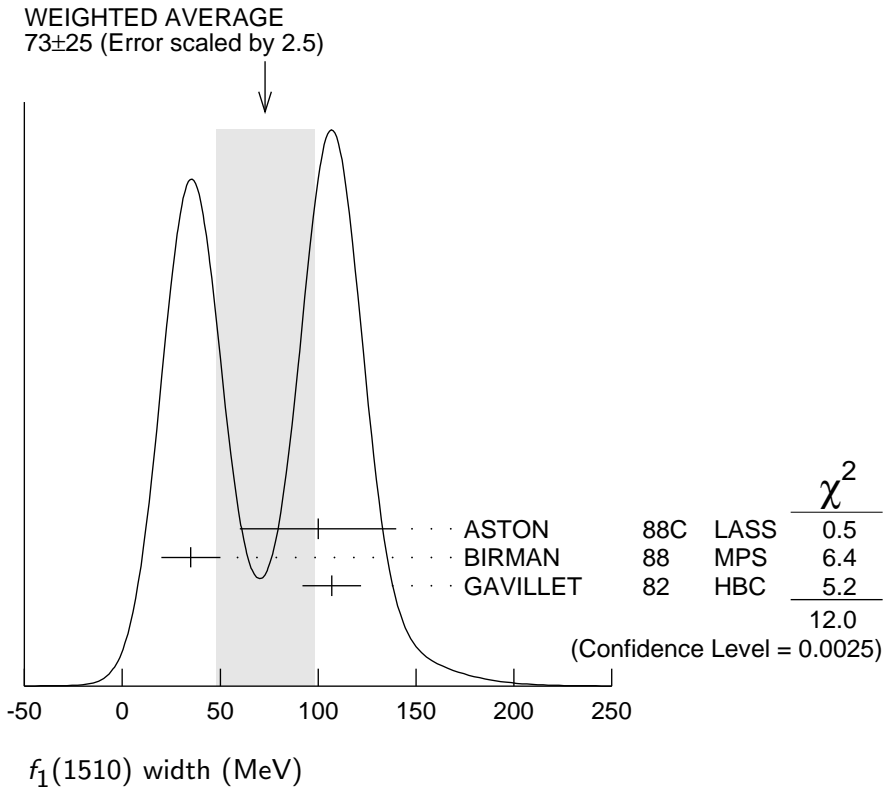
VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
1518± 5 OUR AVERAGE		Error includes scale factor of 1.7. See the ideogram below.			
1530±10		ASTON	88C	LASS	11 $K^- p \rightarrow K^0_S K^\pm \pi^\mp \Lambda$
1512± 4	600	[1] BIRMAN	88	MPS	8 $\pi^- p \rightarrow K^+ \overline{K}^0 \pi^- n$
1526± 6	271	GAVILLET	82	HBC	4.2 $K^- p \rightarrow \Lambda K K \pi$

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

∼ 1525		[2] BAUER	93B		$\gamma\gamma^* \rightarrow \pi^+\pi^-\pi^0\pi^0$

[1] From partial wave analysis of $K^+ \overline{K}^0 \pi^-$ state.
[2] Not seen by AIHARA 88C in the $K^0_S K^\pm \pi^\mp$ final state.

WEIGHTED AVERAGE
1518±5 (Error scaled by 1.7)

			χ^2
ASTON	88C	LASS	1.5
BIRMAN	88	MPS	2.0
GAVILLET	82	HBC	1.9
			5.5

(Confidence Level = 0.065)

$f_1(1510)$ mass (MeV)

$f_1(1510)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
73±25 OUR AVERAGE		Error includes scale factor of 2.5. See the ideogram below.			
100±40		ASTON	88C	LASS	11 $K^- p \rightarrow K^0_S K^\pm \pi^\mp \Lambda$
35±15	600	[3] BIRMAN	88	MPS	8 $\pi^- p \rightarrow K^+ \overline{K}^0 \pi^- n$
107±15	271	GAVILLET	82	HBC	4.2 $K^- p \rightarrow \Lambda K K \pi$

[3] From partial wave analysis of $K^+ \overline{K}^0 \pi^-$ state.

WEIGHTED AVERAGE
73±25 (Error scaled by 2.5)

			χ^2
ASTON	88C	LASS	0.5
BIRMAN	88	MPS	6.4
GAVILLET	82	HBC	5.2
			12.0

(Confidence Level = 0.0025)

-50   0   50   100   150   200   250

$f_1(1510)$ width (MeV)

$f_1(1510)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$K \overline{K}^*(892) +$ c.c.	seen
Γ_2	$\pi^+ \pi^- \eta'$	seen

$f_1(1510)$ BRANCHING RATIOS

$\Gamma(\pi^+ \pi^- \eta')/\Gamma_{\textbf{total}}$ Γ_2/Γ

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
seen	230	ABLIKIM 11C	BES3	$J/\psi \to \gamma \pi^+ \pi^- \eta'$

$f_1(1510)$ REFERENCES

ABLIKIM	11C	PRL 106 072002	M. Ablikim *et al.*	(BES III Collab.)
BAUER	93B	PR D48 3976	D.A. Bauer *et al.*	(SLAC)
AIHARA	88C	PR D38 1	H. Aihara *et al.*	(TPC-2γ Collab.)
ASTON	88C	PL B201 573	D. Aston *et al.*	(SLAC, NAGO, CINC, INUS) JP
BIRMAN	88	PRL 61 1557	A. Birman *et al.*	(BNL, FSU, IND, MASD) JP
GAVILLET	82	ZPHY C16 119	P. Gavillet *et al.*	(CERN, CDEF, PADO+)