NODE=M084

# $f_1(1510)$

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

OMITTED FROM SUMMARY TABLE

See the review on "Spectroscopy of Light Meson Resonances."

NODE=M084

## $f_1(1510)$ MASS

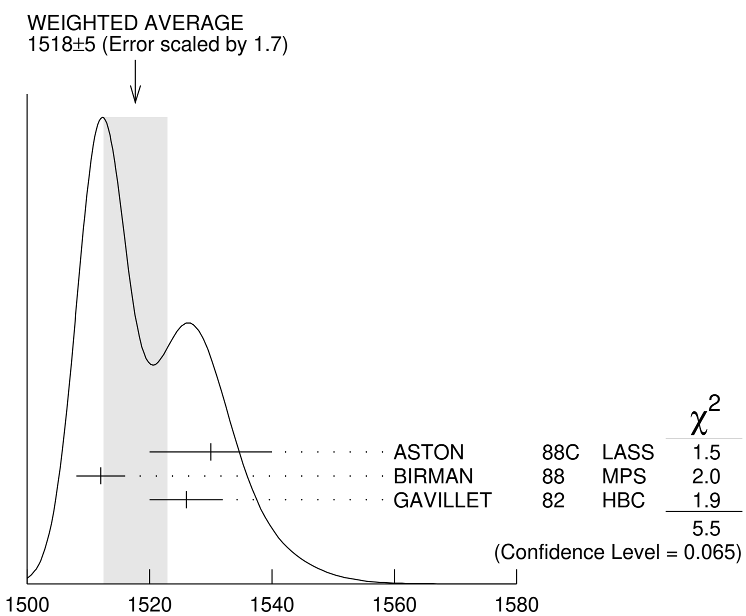
NODE=M084M

NODE=M084M

| *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 $K^- p \to K^0_S K^\pm \pi^\mp \Lambda$ |
| 1512± 4 | 600 | [1] BIRMAN | 88 | MPS | 8 $\pi^- p \to K^+ \overline{K}^0 \pi^- n$ |
| 1526± 6 | 271 | GAVILLET | 82 | HBC | 4.2 $K^- p \to \Lambda K K \pi$ |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | | |
| ∼ 1525 | | [2] BAUER | 93B | | $\gamma\gamma^* \to \pi^+\pi^-\pi^0\pi^0$ |

[1] From partial wave analysis of $K^+ \overline{K}^0 \pi^-$ state. NODE=M084M;LINKAGE=A

[2] Not seen by AIHARA 88C in the $K^0_S K^\pm \pi^\mp$ final state. NODE=M084M;LINKAGE=C




$f_1(1510)$ mass (MeV)

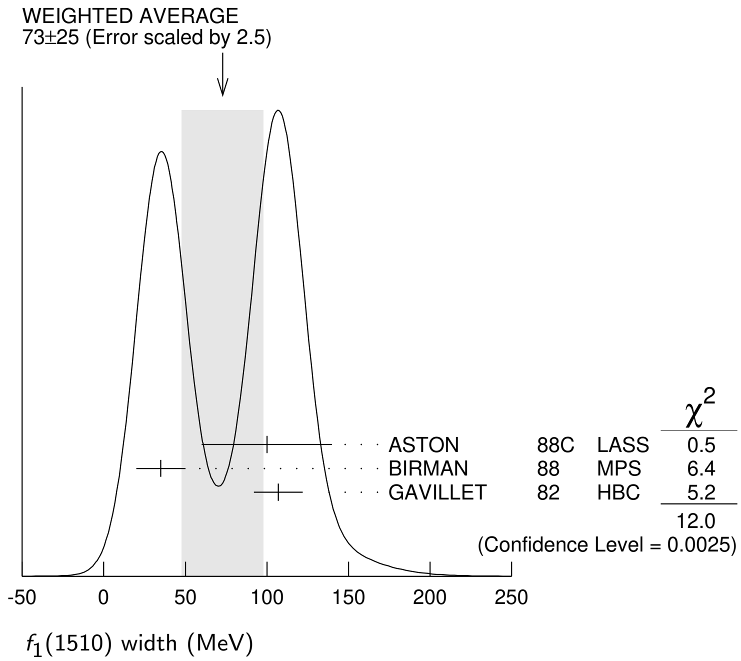
## $f_1(1510)$ WIDTH

NODE=M084W

NODE=M084W

| *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 $K^- p \to K^0_S K^\pm \pi^\mp \Lambda$ |
| 35±15 | 600 | [3] BIRMAN | 88 | MPS | 8 $\pi^- p \to K^+ \overline{K}^0 \pi^- n$ |
| 107±15 | 271 | GAVILLET | 82 | HBC | 4.2 $K^- p \to \Lambda K K \pi$ |

[3] From partial wave analysis of $K^+ \overline{K}^0 \pi^-$ state. NODE=M084W;LINKAGE=A




## $f_1(1510)$ DECAY MODES

NODE=M084215;NODE=M084

| | Mode | Fraction ($\Gamma_i/\Gamma$) |
|---|---|---|
| $\Gamma_1$ | $K\overline{K}^*(892)+$ c.c. | seen |
| $\Gamma_2$ | $\pi^+\pi^-\eta'$ | seen |
| $\Gamma_3$ | $\gamma\phi$ | seen |

DESIG=1;OUR EST;→ UNCHECKED ←
DESIG=2
DESIG=3

## $f_1(1510)$ BRANCHING RATIOS

NODE=M084225

### $\Gamma(\pi^+\pi^-\eta')/\Gamma_{total}$ — $\Gamma_2/\Gamma$

NODE=M084R01
NODE=M084R01

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

### $\Gamma(\gamma\phi)/\Gamma_{total}$ — $\Gamma_3/\Gamma$

NODE=M084R00
NODE=M084R00

| VALUE | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| **seen** | [4] ABLIKIM | 25P | BES3 | $J/\psi \rightarrow \gamma\gamma\phi$ |

[4] From a partial wave analysis of $J/\psi \rightarrow \gamma\gamma\phi$ with significance $5.3\sigma$.

NODE=M084R00;LINKAGE=A

## $f_1(1510)$ REFERENCES

NODE=M084


| | | | | | |
|---|---|---|---|---|---|
| ABLIKIM | 25P | PR D111 052011 | M. Ablikim *et al.* | (BESIII Collab.) | REFID=63260 |
| ABLIKIM | 11C | PRL 106 072002 | M. Ablikim *et al.* | (BESIII Collab.) | REFID=53684 |
| BAUER | 93B | PR D48 3976 | D.A. Bauer *et al.* | (SLAC) | REFID=43678 |
| AIHARA | 88C | PR D38 1 | H. Aihara *et al.* | (TPC-2$\gamma$ Collab.) | REFID=40564 |
| ASTON | 88C | PL B201 573 | D. Aston *et al.* | (SLAC, NAGO, CINC, INUS) JP | REFID=40282 |
| BIRMAN | 88 | PRL 61 1557 | A. Birman *et al.* | (BNL, FSU, IND, MASD) JP | REFID=40568 |
| GAVILLET | 82 | ZPHY C16 119 | P. Gavillet *et al.* | (CERN, CDEF, PADO+) | REFID=20877 |