

**$\eta_2(1870)$**

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

OMITTED FROM SUMMARY TABLE  
Needs confirmation.

**$\eta_2(1870)$  MASS**

| <u>VALUE (MeV)</u>  | <u>EVTS</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>CHG</u> | <u>COMMENT</u>                                 |
|---|-------------|--------------------|-------------|------------|--|
| <b>1842 ± 8 OUR AVERAGE</b>   |             |                    |             |            |  |
| 1835 ± 12   |             | BARBERIS           | 00B         |            | 450 $pp \rightarrow p_f \eta \pi^+ \pi^- p_s$  |
| 1844 ± 13   |             | BARBERIS           | 00C         |            | 450 $pp \rightarrow p_f 4\pi p_s$              |
| 1840 ± 25   |             | BARBERIS           | 97B OMEG    |            | 450 $pp \rightarrow pp2(\pi^+ \pi^-)$          |
| 1875 ± 20 ± 35  |             | ADOMEIT            | 96 CBAR     | 0          | 1.94 $\bar{p}p \rightarrow \eta 3\pi^0$        |
| 1881 ± 32 ± 40  | 26          | KARCH              | 92 CBAL     |            | $e^+ e^- \rightarrow e^+ e^- \eta \pi^0 \pi^0$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● |             |                    |             |            |  |
| 1860 ± 5 ± 15   |             | ANISOVICH          | 00E SPEC    |            | 1.94 $\bar{p}p \rightarrow \eta 3\pi^0$        |
| 1840 ± 15   |             | BAI                | 99 BES      |            | $J/\psi \rightarrow \gamma \eta \pi^+ \pi^-$   |

**$\eta_2(1870)$  WIDTH**

| <u>VALUE (MeV)</u>  | <u>EVTS</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>CHG</u> | <u>COMMENT</u>                                 |
|---|-------------|--------------------|-------------|------------|--|
| <b>225 ± 14 OUR AVERAGE</b>   |             |                    |             |            |  |
| 235 ± 22  |             | BARBERIS           | 00B         |            | 450 $pp \rightarrow p_f \eta \pi^+ \pi^- p_s$  |
| 228 ± 23  |             | BARBERIS           | 00C         |            | 450 $pp \rightarrow p_f 4\pi p_s$              |
| 200 ± 40  |             | BARBERIS           | 97B OMEG    |            | 450 $pp \rightarrow pp2(\pi^+ \pi^-)$          |
| 200 ± 25 ± 45   |             | ADOMEIT            | 96 CBAR     | 0          | 1.94 $\bar{p}p \rightarrow \eta 3\pi^0$        |
| 221 ± 92 ± 44   | 26          | KARCH              | 92 CBAL     |            | $e^+ e^- \rightarrow e^+ e^- \eta \pi^0 \pi^0$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● |             |                    |             |            |  |
| 250 ± 25 <sup>+50</sup> <sub>-35</sub>  |             | ANISOVICH          | 00E SPEC    |            | 1.94 $\bar{p}p \rightarrow \eta 3\pi^0$        |
| 170 ± 40  |             | BAI                | 99 BES      |            | $J/\psi \rightarrow \gamma \eta \pi^+ \pi^-$   |

**$\eta_2(1870)$  DECAY MODES**

| Mode       |                  |
|------------|------------------|
| $\Gamma_1$ | $\eta \pi \pi$   |
| $\Gamma_2$ | $a_2(1320) \pi$  |
| $\Gamma_3$ | $f_2(1270) \eta$ |
| $\Gamma_4$ | $a_0(980) \pi$   |

## $\eta_2(1870)$ BRANCHING RATIOS

### $\Gamma(a_2(1320)\pi)/\Gamma(f_2(1270)\eta)$ $\Gamma_2/\Gamma_3$

| <u>VALUE</u>                    | <u>DOCUMENT ID</u>                  | <u>TECN</u> | <u>CHG</u> | <u>COMMENT</u>                                  |
|---------------------------------|-------------------------------------|-------------|------------|---|
| <b>6 ± 5</b> <b>OUR AVERAGE</b> | Error includes scale factor of 2.3. |             |            |   |
| 20.4 ± 6.6                      | BARBERIS                            | 00B         |            | 450 $pp \rightarrow p_f \eta \pi^+ \pi^- p_s^0$ |
| 4.1 ± 2.3                       | ADOMEIT                             | 96          | CBAR 0     | 1.94 $\bar{p}p \rightarrow \eta 3\pi^0$         |

### $\Gamma(a_2(1320)\pi)/\Gamma(a_0(980)\pi)$ $\Gamma_2/\Gamma_4$

| <u>VALUE</u>       | <u>DOCUMENT ID</u> | <u>COMMENT</u>                                |
|--------------------|--------------------|---|
| <b>32.6 ± 12.6</b> | BARBERIS 00B       | 450 $pp \rightarrow p_f \eta \pi^+ \pi^- p_s$ |

## $\eta_2(1870)$ REFERENCES

|           |     |              |                              |                          |
|-----------|-----|--------------|------------------------------|--------------------------|
| ANISOVICH | 00E | PL B477 19   | A.V. Anisovich <i>et al.</i> |                          |
| BARBERIS  | 00B | PL B471 435  | D. Barberis <i>et al.</i>    | (WA 102 Collab.)         |
| BARBERIS  | 00C | PL B471 440  | D. Barberis <i>et al.</i>    | (WA 102 Collab.)         |
| BAI       | 99  | PL B446 356  | J.Z. Bai <i>et al.</i>       | (BES Collab.)            |
| BARBERIS  | 97B | PL B413 217  | D. Barberis <i>et al.</i>    | (WA 102 Collab.)         |
| ADOMEIT   | 96  | ZPHY C71 227 | J. Adomeit <i>et al.</i>     | (Crystal Barrel Collab.) |
| KARCH     | 92  | ZPHY C54 33  | K. Karch <i>et al.</i>       | (Crystal Ball Collab.)   |

## OTHER RELATED PAPERS

|       |    |             |                        |                        |
|-------|----|-------------|------------------------|------------------------|
| KARCH | 90 | PL B249 353 | K. Karch <i>et al.</i> | (Crystal Ball Collab.) |
|-------|----|-------------|------------------------|------------------------|