

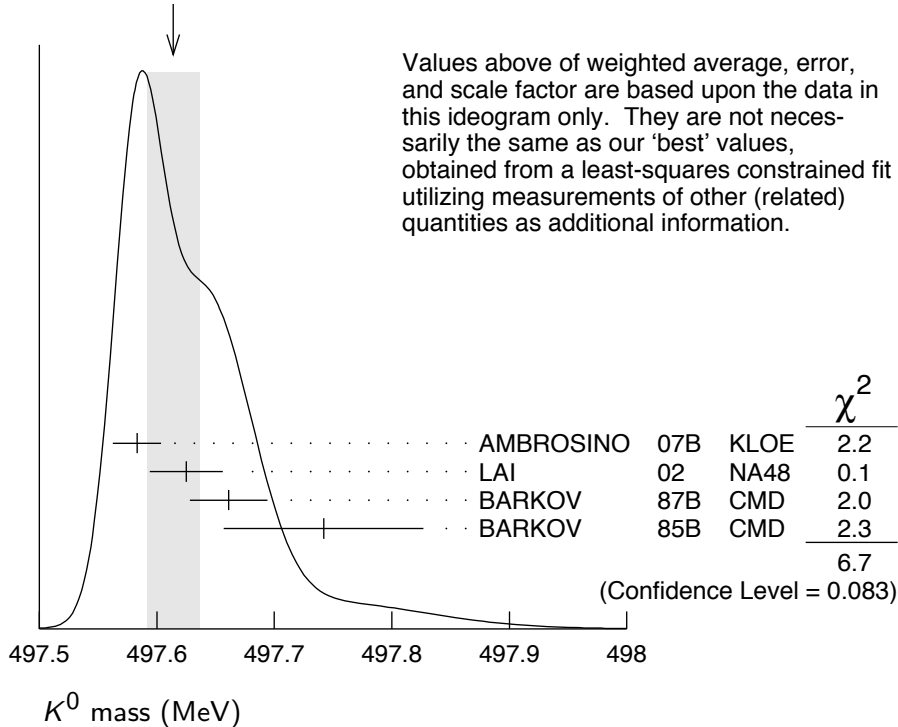


$$I(J^P) = \frac{1}{2}(0^-)$$

### $K^0$ MASS

| <u>VALUE (MeV)</u>  | <u>EVTS</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u>  |
|---|-------------|--------------------|-------------|---|
| <b>497.614±0.024 OUR FIT</b>  |             |                    |             | Error includes scale factor of 1.6.                         |
| <b>497.614±0.022 OUR AVERAGE</b>  |             |                    |             | Error includes scale factor of 1.5. See the ideogram below. |
| 497.583±0.005±0.020   | 35k         | AMBROSINO          | 07B         | KLOE $e^+e^- \rightarrow K_L^0 K_S^0$                       |
| 497.625±0.001±0.031   | 655k        | LAI                | 02          | NA48 $K_L^0$ beam   |
| 497.661±0.033   | 3713        | BARKOV             | 87B         | CMD $e^+e^- \rightarrow K_L^0 K_S^0$                        |
| 497.742±0.085   | 780         | BARKOV             | 85B         | CMD $e^+e^- \rightarrow K_L^0 K_S^0$                        |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● |             |                    |             |   |
| 497.44 ±0.50  |             | FITCH              | 67          | OSPK  |
| 498.9 ±0.5  | 4500        | BALTAY             | 66          | HBC $K^0$ from $\bar{p}p$                                   |
| 497.44 ±0.33  | 2223        | KIM                | 65B         | HBC $K^0$ from $\bar{p}p$                                   |
| 498.1 ±0.4  |             | CHRISTENS...       | 64          | OSPK  |

WEIGHTED AVERAGE  
497.614±0.022 (Error scaled by 1.5)



### $m_{K^0} - m_{K^\pm}$

| <u>VALUE (MeV)</u>  | <u>EVTS</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>CHG</u> | <u>COMMENT</u>                      |
|---|-------------|--------------------|-------------|------------|-------------------------------------|
| <b>3.937±0.028 OUR FIT</b>  |             |                    |             |            | Error includes scale factor of 1.8. |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● |             |                    |             |            |                                     |

|             |     |           |     |     |   |                                 |
|-------------|-----|-----------|-----|-----|---|---------------------------------|
| 3.95 ± 0.21 | 417 | HILL      | 68B | DBC | + | $K^+ d \rightarrow K^0 p p$     |
| 3.90 ± 0.25 | 9   | BURNSTEIN | 65  | HBC | - |                                 |
| 3.71 ± 0.35 | 7   | KIM       | 65B | HBC | - | $K^- p \rightarrow n \bar{K}^0$ |
| 5.4 ± 1.1   |     | CRAWFORD  | 59  | HBC | + |                                 |
| 3.9 ± 0.6   |     | ROSENFELD | 59  | HBC | - |                                 |

## $K^0$ MEAN SQUARE CHARGE RADIUS

| <u>VALUE (fm<sup>2</sup>)</u>   | <u>EVTS</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u>                          |
|---|-------------|--------------------|-------------|---|
| <b>-0.077 ± 0.010 OUR AVERAGE</b>   |             |                    |             |   |
| -0.077 ± 0.007 ± 0.011  | 5037        | ABOUZAID           | 06 KTEV     | $K_L^0 \rightarrow \pi^+ \pi^- e^+ e^-$ |
| -0.090 ± 0.021  |             | LAI                | 03C NA48    | $K_L^0 \rightarrow \pi^+ \pi^- e^+ e^-$ |
| -0.054 ± 0.026  |             | MOLZON             | 78          | $K_S$ regen. by electrons               |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● |             |                    |             |   |
| -0.087 ± 0.046  |             | BLATNIK            | 79          | VMD + dispersion relations              |
| -0.050 ± 0.130  |             | FOETH              | 69B         | $K_S$ regen. by electrons               |

## $T$ -VIOLATION PARAMETER IN $K^0$ - $\bar{K}^0$ MIXING

The asymmetry  $A_T = \frac{\Gamma(\bar{K}^0 \rightarrow K^0) - \Gamma(K^0 \rightarrow \bar{K}^0)}{\Gamma(\bar{K}^0 \rightarrow K^0) + \Gamma(K^0 \rightarrow \bar{K}^0)}$  must vanish if  $T$  invariance holds.

## ASYMMETRY $A_T$ IN $K^0$ - $\bar{K}^0$ MIXING

| <u>VALUE (units 10<sup>-3</sup>)</u> | <u>EVTS</u> | <u>DOCUMENT ID</u>           | <u>TECN</u> |
|--------------------------------------|-------------|------------------------------|-------------|
| <b>6.6 ± 1.3 ± 1.0</b>               | 640k        | <sup>1</sup> ANGELOPO... 98E | CPLR        |

<sup>1</sup> ANGELOPOULOS 98E measures the asymmetry  $A_T = [\Gamma(\bar{K}_{t=0}^0 \rightarrow e^+ \pi^- \nu_{t=\tau}) - \Gamma(K_{t=0}^0 \rightarrow e^- \pi^+ \bar{\nu}_{t=\tau})] / [\Gamma(\bar{K}_{t=0}^0 \rightarrow e^+ \pi^- \nu_{t=\tau}) + \Gamma(K_{t=0}^0 \rightarrow e^- \pi^+ \bar{\nu}_{t=\tau})]$  as a function of the neutral-kaon eigentime  $\tau$ . The initial strangeness of the neutral kaon is tagged by the charge of the accompanying charged kaon in the reactions  $p\bar{p} \rightarrow K^- \pi^+ K^0$  and  $p\bar{p} \rightarrow K^+ \pi^- \bar{K}^0$ . The strangeness at the time of the decay is tagged by the lepton charge. The reported result is the average value of  $A_T$  over the interval  $1\tau_S < \tau < 20\tau_S$ . From this value of  $A_T$  ANGELOPOULOS 01B, assuming  $CPT$  invariance in the  $e\pi\nu$  decay amplitude, determine the  $T$ -violating as  $\Delta S = \Delta S$  conserving parameter (for its definition, see Review below)  $4\text{Re}(\epsilon) = (6.2 \pm 1.4 \pm 1.0) \times 10^{-3}$ .

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## $CP$ -VIOLATION PARAMETERS

### Re( $\epsilon$ )

| <u>VALUE (units 10<sup>-3</sup>)</u>  | <u>DOCUMENT ID</u>         | <u>TECN</u> |
|---|----------------------------|-------------|
| <b>1.596 ± 0.013</b>  | <sup>2</sup> AMBROSINO 06H | KLOE        |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● |                            |             |
| 1.664 ± 0.010   | <sup>3</sup> LAI           | 05A NA48    |

- <sup>2</sup> AMBROSINO 06H uses Bell-Steinberger relations with the following measurements:  $B(K_L^0 \rightarrow \pi^+ \pi^-)$  in AMBROSINO 06F,  $B(K_S^0 \rightarrow \pi^0 \pi^0 \pi^0)$  in AMBROSINO 05B, the  $K_S^0$ -semileptonic charge asymmetry in AMBROSINO 06E, and  $K^0$ -semileptonic results in ANGELOPOULOS 98F.
- <sup>3</sup> LAI 05A values are obtained through unitarity (Bell-Steinberger relations), improving determination of  $\eta_{000}$  and combining other data from PDG 04 and APOSTOLAKIS 99B.

## CPT-VIOLATION PARAMETERS

In  $K^0$ - $\bar{K}^0$  mixing, if  $CP$ -violating interactions include a  $T$  conserving part then

$$|K_S\rangle = [ |K_1\rangle + (\epsilon + \delta) |K_2\rangle ] / \sqrt{1 + |\epsilon + \delta|^2}$$

$$|K_L\rangle = [ |K_2\rangle + (\epsilon - \delta) |K_1\rangle ] / \sqrt{1 + |\epsilon - \delta|^2}$$

where

$$|K_1\rangle = [ |K^0\rangle + |\bar{K}^0\rangle ] / \sqrt{2}$$

$$|K_2\rangle = [ |K^0\rangle - |\bar{K}^0\rangle ] / \sqrt{2}$$

and

$$|\bar{K}^0\rangle = CP |K^0\rangle.$$

The parameter  $\delta$  specifies the  $CPT$ -violating part.

Estimates of  $\delta$  are given below assuming the validity of the  $\Delta S = \Delta Q$  rule. See also THOMSON 95 for a test of  $CPT$ -symmetry conservation in  $K^0$  decays using the Bell-Steinberger relation.

### REAL PART OF $\delta$

A nonzero value violates  $CPT$  invariance.

| VALUE (units $10^{-4}$ ) | EVTS | DOCUMENT ID   | TECN | COMMENT                 |
|--------------------------|------|---|------|-------------------------|
| <b>2.3 ± 2.7</b>         |      | <sup>4</sup> AMBROSINO 06H  | KLOE |                         |
| • • •                    |      | We do not use the following data for averages, fits, limits, etc. • • • |      |                         |
| 2.4 ± 2.8                |      | <sup>5</sup> APOSTOLA... 99B  | RVUE |                         |
| 2.9 ± 2.6 ± 0.6          | 1.3M | <sup>6</sup> ANGELOPO... 98F  | CPLR |                         |
| 180 ± 200                | 6481 | <sup>7</sup> DEMIDOV 95   |      | $K_{\ell 3}$ reanalysis |

<sup>4</sup> AMBROSINO 06H uses Bell-Steinberger relations with the following measurements:  $B(K_L^0 \rightarrow \pi^+ \pi^-)$  in AMBROSINO 06F,  $B(K_S^0 \rightarrow \pi^0 \pi^0 \pi^0)$  in AMBROSINO 05B, the  $K_S^0$ -semileptonic charge asymmetry in AMBROSINO 06E, and  $K^0$ -semileptonic results in ANGELOPOULOS 98F.

<sup>5</sup> APOSTOLAKIS 99B assumes only unitarity and combines CPLEAR and other results.

<sup>6</sup> ANGELOPOULOS 98F use  $\Delta S = \Delta Q$ . If  $\Delta S = \Delta Q$  is not assumed, they find  $\text{Re}\delta = (3.0 \pm 3.3 \pm 0.6) \times 10^{-4}$ .

<sup>7</sup> DEMIDOV 95 reanalyzes data from HART 73 and NIEBERGALL 74.

### IMAGINARY PART OF $\delta$

A nonzero value violates  $CPT$  invariance.

| VALUE (units $10^{-5}$ ) | EVTS | DOCUMENT ID                | TECN | COMMENT |
|--------------------------|------|----------------------------|------|---------|
| <b>0.4 ± 2.1</b>         |      | <sup>8</sup> AMBROSINO 06H | KLOE |         |

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

|                  |      |                           |     |                         |
|------------------|------|---------------------------|-----|-------------------------|
| – 0.2± 2.0       |      | <sup>9</sup> LAI          | 05A | NA48                    |
| 2.4± 5.0         |      | <sup>10</sup> APOSTOLA... | 99B | RVUE                    |
| – 90 ± 290 ± 100 | 1.3M | <sup>11</sup> ANGELOPO... | 98F | CPLR                    |
| 2100 ± 3700      | 6481 | <sup>12</sup> DEMIDOV     | 95  | $K_{\ell 3}$ reanalysis |

<sup>8</sup> AMBROSINO 06H uses Bell-Steinberger relations with the following measurements:  $B(K_L^0 \rightarrow \pi^+ \pi^-)$  in AMBROSINO 06F,  $B(K_S^0 \rightarrow \pi^0 \pi^0 \pi^0)$  in AMBROSINO 05B, the  $K_S^0$ -semileptonic charge asymmetry in AMBROSINO 06E, and  $K^0$ -semileptonic results in ANGELOPOULOS 98F.

<sup>9</sup> LAI 05A values are obtained through unitarity (Bell-Steinberger relations), improving determination of  $\eta_{000}$  and combining other data from PDG 04 and APOSTOLAKIS 99B.

<sup>10</sup> APOSTOLAKIS 99B assumes only unitarity and combines CPLEAR and other results.

<sup>11</sup> If  $\Delta S = \Delta Q$  is not assumed, ANGELOPOULOS 98F finds  $\text{Im}\delta = (-15 \pm 23 \pm 3) \times 10^{-3}$ .

<sup>12</sup> DEMIDOV 95 reanalyzes data from HART 73 and NIEBERGALL 74.

### Re(y)

A non-zero value would violate *CPT* invariance in  $\Delta S = \Delta Q$  amplitude.  $\text{Re}(y)$  is the following combination of  $K_{e3}$  decay amplitudes:

$$\text{Re}(y) = \text{Re} \left( \frac{A(\overline{K}^0 \rightarrow e^- \pi^+ \overline{\nu}_e)^* - A(K^0 \rightarrow e^+ \pi^- \nu_e)}{A(\overline{K}^0 \rightarrow e^- \pi^+ \overline{\nu}_e)^* + A(K^0 \rightarrow e^+ \pi^- \nu_e)} \right)$$

| <u>VALUE (units <math>10^{-3}</math>)</u> | <u>EVTS</u> | <u>DOCUMENT ID</u>          | <u>TECN</u> |
|---|-------------|-----------------------------|-------------|
| <b>0.4±2.5</b>                            | 13k         | <sup>13</sup> AMBROSINO 06E | KLOE        |

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

|         |  |                           |     |      |
|---------|--|---------------------------|-----|------|
| 0.3±3.1 |  | <sup>14</sup> APOSTOLA... | 99B | CPLR |
|---------|--|---------------------------|-----|------|

<sup>13</sup> They use the PDG 04 for the  $K_L^0$  semileptonic charge asymmetry and PDG 04 (*CPT* review, *CPT* NOT ASSUMED) for  $\text{Re}(\epsilon)$ .

<sup>14</sup> Constrained by Bell-Steinberger (or unitarity) relation.

### Re(x<sub>-</sub>)

A non-zero value would violate *CPT* invariance in decay amplitudes with  $\Delta S \neq \Delta Q$ .  $x_{-}$ , used here to define  $\text{Re}(x_{-})$ , and  $x_{+}$ , used below in the  $\Delta S = \Delta Q$  section are the following combinations of  $K_{e3}$  decay amplitudes:

$$x_{\pm} = \frac{1}{2} \left( \frac{A(\overline{K}^0 \rightarrow \pi^- e^+ \nu_e)}{A(K^0 \rightarrow \pi^- e^+ \nu_e)} \pm \frac{A(K^0 \rightarrow \pi^+ e^- \overline{\nu}_e)^*}{A(\overline{K}^0 \rightarrow \pi^+ e^- \overline{\nu}_e)^*} \right).$$

| <u>VALUE (units <math>10^{-3}</math>)</u> | <u>EVTS</u> | <u>DOCUMENT ID</u>          | <u>TECN</u> | <u>COMMENT</u> |
|---|-------------|-----------------------------|-------------|----------------|
| <b>-2.9± 2.0</b>                          |             | <sup>15</sup> AMBROSINO 06H | KLOE        |                |

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

|            |      |                             |      |                         |
|------------|------|-----------------------------|------|-------------------------|
| -0.8± 2.5  | 13k  | <sup>16</sup> AMBROSINO 06E | KLOE |                         |
| -0.5± 3.0  |      | <sup>17</sup> APOSTOLA...   | 99B  | CPLR Strangeness tagged |
| 2 ± 13 ± 3 | 650k | ANGELOPO...                 | 98F  | CPLR Strangeness tagged |

<sup>15</sup> AMBROSINO 06H uses Bell-Steinberger relations with the following measurements:  $B(K_L^0 \rightarrow \pi^+ \pi^-)$  in AMBROSINO 06F,  $B(K_S^0 \rightarrow \pi^0 \pi^0 \pi^0)$  in AMBROSINO 05B, the  $K_S^0$ -semileptonic charge asymmetry in AMBROSINO 06E, and  $K^0$ -semileptonic results in ANGELOPOULOS 98F.

<sup>16</sup> Uses PDG 04 for the  $K_L^0$  semileptonic charge asymmetry and  $\text{Re}(\delta)$  from CPLEAR, ANGELOPOULOS 98F.

<sup>17</sup> Constrained by Bell-Steinberger (or unitarity) relation.

$$|m_{K^0} - m_{\bar{K}^0}| / m_{\text{average}}$$

A test of *CPT* invariance. "Our Evaluation" is described in the "Tests of Conservation Laws" section. It assumes *CPT* invariance in the decay and neglects some contributions from decay channels other than  $\pi\pi$ .

| <u>VALUE</u>         | <u>CL%</u> | <u>DOCUMENT ID</u> | <u>TECN</u> |
|----------------------|------------|--------------------|-------------|
| $<8 \times 10^{-19}$ | 90         | PDG                | 10          |

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

$(-3 \pm 4) \times 10^{-18}$       <sup>18</sup> ANGELOPO... 99B RVUE

<sup>18</sup> ANGELOPOULOS 99B assumes only unitarity and combines CPLEAR and other results.

$$(\Gamma_{K^0} - \Gamma_{\bar{K}^0}) / m_{\text{average}}$$

A test of *CPT* invariance.

| <u>VALUE</u>                    | <u>DOCUMENT ID</u>            | <u>TECN</u> |
|---------------------------------|-------------------------------|-------------|
| $(7.8 \pm 8.4) \times 10^{-18}$ | <sup>19</sup> ANGELOPO... 99B | RVUE        |

<sup>19</sup> ANGELOPOULOS 99B assumes only unitarity and combines CPLEAR with other results. Correlated with  $(m_{K^0} - m_{\bar{K}^0}) / m_{\text{average}}$  with a correlation coefficient of  $-0.95$ .

## TESTS OF $\Delta S = \Delta Q$ RULE

### Re( $x_+$ )

A non-zero value would violate the  $\Delta S = \Delta Q$  rule in *CPT* conserving transitions.  $x_+$  is defined above in the Re( $x_-$ ) section.

| <u>VALUE (units <math>10^{-3}</math>)</u>    | <u>EVTS</u> | <u>DOCUMENT ID</u>            | <u>TECN</u> |
|--|-------------|-------------------------------|-------------|
| <b><math>-0.9 \pm 3.0</math> OUR AVERAGE</b> |             |                               |             |
| $-2 \pm 10$                                  |             | <sup>20</sup> BATLEY 07D      | NA48        |
| $-0.5 \pm 3.6$                               | 13k         | <sup>21</sup> AMBROSINO 06E   | KLOE        |
| $-1.8 \pm 6.1$                               |             | <sup>22</sup> ANGELOPO... 98D | CPLR        |

<sup>20</sup> Result obtained from the measurement  $\Gamma(K_S^0 \rightarrow \pi e \nu) / \Gamma(K_L^0 \rightarrow \pi e \nu) = 0.993 \pm 0.34$ , neglecting possible *CPT* non-invariance and using PDG 06 values of  $B(K_L^0 \rightarrow \pi e \nu) = 0.4053 \pm 0.0015$ ,  $\tau_L = (5.114 \pm 0.021) \times 10^{-8}$  s and  $\tau_S = (0.8958 \pm 0.0005) \times 10^{-10}$  s.

<sup>21</sup> Re( $x_+$ ) can be shown to be equal to the following combination of rates:

$$\text{Re}(x_+) = \frac{1}{2} \frac{\Gamma(K_S^0 \rightarrow \pi e \nu) - \Gamma(K_L^0 \rightarrow \pi e \nu)}{\Gamma(K_S^0 \rightarrow \pi e \nu) + \Gamma(K_L^0 \rightarrow \pi e \nu)}$$

which is valid up to first order in terms violating *CPT* and/or the  $\Delta S = \Delta Q$  rule.

<sup>22</sup> Obtained neglecting *CPT* violating amplitudes.

## $K^0$ REFERENCES

|              |     |                          |  |                     |
|--------------|-----|--------------------------|--|---------------------|
| PDG          | 10  | JPG 37 075021            | K. Nakamura <i>et al.</i>                | (PDG Collab.)       |
| AMBROSINO    | 07B | JHEP 0712 073            | F. Ambrosino <i>et al.</i>               | (KLOE Collab.)      |
| BATLEY       | 07D | PL B653 145              | J.R. Batley <i>et al.</i>                | (CERN NA48 Collab.) |
| ABOUZAID     | 06  | PRL 96 101801            | E. Abouzaid <i>et al.</i>                | (KTeV Collab.)      |
| AMBROSINO    | 06E | PL B636 173              | F. Ambrosino <i>et al.</i>               | (KLOE Collab.)      |
| AMBROSINO    | 06F | PL B638 140              | F. Ambrosino <i>et al.</i>               | (KLOE Collab.)      |
| AMBROSINO    | 06H | JHEP 0612 011            | F. Ambrosino <i>et al.</i>               | (KLOE Collab.)      |
| PDG          | 06  | JPG 33 1                 | W.-M. Yao <i>et al.</i>                  | (PDG Collab.)       |
| AMBROSINO    | 05B | PL B619 61               | F. Ambrosino <i>et al.</i>               | (KLOE Collab.)      |
| LAI          | 05A | PL B610 165              | A. Lai <i>et al.</i>                     | (CERN NA48 Collab.) |
| PDG          | 04  | PL B592 1                | S. Eidelman <i>et al.</i>                | (PDG Collab.)       |
| LAI          | 03C | EPJ C30 33               | A. Lai <i>et al.</i>                     | (CERN NA48 Collab.) |
| LAI          | 02  | PL B533 196              | A. Lai <i>et al.</i>                     | (CERN NA48 Collab.) |
| ANGELOPO...  | 01B | EPJ C22 55               | A. Angelopoulos <i>et al.</i>            | (CPLEAR Collab.)    |
| ANGELOPO...  | 99B | PL B471 332              | A. Angelopoulos <i>et al.</i>            | (CPLEAR Collab.)    |
| APOSTOLA...  | 99B | PL B456 297              | A. Apostolakis <i>et al.</i>             | (CPLEAR Collab.)    |
| ANGELOPO...  | 98D | PL B444 38               | A. Angelopoulos <i>et al.</i>            | (CPLEAR Collab.)    |
| Also         |     | EPJ C22 55               | A. Angelopoulos <i>et al.</i>            | (CPLEAR Collab.)    |
| ANGELOPO...  | 98E | PL B444 43               | A. Angelopoulos <i>et al.</i>            | (CPLEAR Collab.)    |
| ANGELOPO...  | 98F | PL B444 52               | A. Angelopoulos <i>et al.</i>            | (CPLEAR Collab.)    |
| Also         |     | EPJ C22 55               | A. Angelopoulos <i>et al.</i>            | (CPLEAR Collab.)    |
| DEMIDOV      | 95  | PAN 58 968               | V. Demidov, K. Gusev, E. Shabalin        | (ITEP)              |
| From YAF     | 58  | 1041.                    |  |                     |
| THOMSON      | 95  | PR D51 1412              | G.B. Thomson, Y. Zou                     | (RUTG)              |
| BARKOV       | 87B | SJNP 46 630              | L.M. Barkov <i>et al.</i>                | (NOVO)              |
|              |     | Translated from YAF 46   | 1088.                                    |                     |
| BARKOV       | 85B | JETPL 42 138             | L.M. Barkov <i>et al.</i>                | (NOVO)              |
|              |     | Translated from ZETFP 42 | 113.                                     |                     |
| BLATNIK      | 79  | LNC 24 39                | S. Blatnik, J. Stahov, C.B. Lang         | (TUZL, GRAZ)        |
| MOLZON       | 78  | PRL 41 1213              | W.R. Molzon <i>et al.</i>                | (EFI+)              |
| NIEBERGALL   | 74  | PL 49B 103               | F. Niebergall <i>et al.</i>              | (CERN, ORSAY, VIEN) |
| HART         | 73  | NP B66 317               | J.C. Hart <i>et al.</i>                  | (CAVE, RHEL)        |
| FOETH        | 69B | PL 30B 276               | H. Foeth <i>et al.</i>                   | (AACH, CERN, TORI)  |
| HILL         | 68B | PR 168 1534              | D.G. Hill <i>et al.</i>                  | (BNL, CMU)          |
| FITCH        | 67  | PR 164 1711              | V.L. Fitch <i>et al.</i>                 | (PRIN)              |
| BALTAY       | 66  | PR 142 932               | C. Baltay <i>et al.</i>                  | (YALE, BNL)         |
| BURNSTEIN    | 65  | PR 138 B895              | R.A. Burnstein, H.A. Rubin               | (UMD)               |
| KIM          | 65B | PR 140B 1334             | J.K. Kim, L. Kirsch, D. Miller           | (COLU)              |
| CHRISTENS... | 64  | PRL 13 138               | J.H. Christenson <i>et al.</i>           | (PRIN)              |
| CRAWFORD     | 59  | PRL 2 112                | F.S. Crawford <i>et al.</i>              | (LRL)               |
| ROSENFELD    | 59  | PRL 2 110                | A.H. Rosenfeld, F.T. Solmitz, R.D. Tripp | (LRL)               |