Data Yield of the **ILRS** Global Network
Over the Past Decade

Erricos C. Pavlis
Joint Center for Earth Systems Technology and
NASA Goddard Space Flight Center
epavlis@JCET.umbc.edu

14th International Laser Workshop
San Fernando, Spain, June 7 - 11, 2004
Recent Data Distribution

### 1st Quarter 2004

<table>
<thead>
<tr>
<th>Sites</th>
<th>ILRS NPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>5</td>
</tr>
<tr>
<td>Max</td>
<td>19</td>
</tr>
<tr>
<td>Points</td>
<td>70</td>
</tr>
<tr>
<td>Mean</td>
<td>11</td>
</tr>
<tr>
<td>Median</td>
<td>11</td>
</tr>
<tr>
<td>Std Dev.</td>
<td>3</td>
</tr>
</tbody>
</table>

### 14th ILRS Workshop

Erricos C. Pavlis
“Weekend” Effect

1st Quarter 2004

$y = a + b \cdot t + D \cdot \cos\left(\frac{360 \cdot t}{7 + [f]}\right)$

<table>
<thead>
<tr>
<th>Value</th>
<th>Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>63184</td>
</tr>
<tr>
<td>b</td>
<td>-1.2</td>
</tr>
<tr>
<td>D</td>
<td>81.3</td>
</tr>
<tr>
<td>[f]</td>
<td>23.8</td>
</tr>
<tr>
<td>R</td>
<td>0.47</td>
</tr>
</tbody>
</table>
“1993”

- Best year!
“1997”

Exceptionally low yield!

No. of ILRS NPs

1997

MJD

Summary

- The analysis of the past 10-year tracking record for LAGEOS I and II shows a strong weekend effect throughout the period.
- Some years (few) exhibit significantly stronger tracking than others (most)
- For most years, significant annual and semi-annual signals are evident
- In the most recent years a drop in the tracking is clearly evident
- The linear slope from the entire 10-year record is positive (+1 NP/yr) while the slope fit to the 1st quarter of 2004 has opposite sign: -1 NP/yr
- The amplitude of the “weekend effect” is ~62 NPs for the entire 10-year record, but the effect is enhanced in the 2004 fit, with an amplitude of ~81 NPs.