PI Recommendation

Ken Johnston
Principal Investigator
USNO
202-762-1513
kjj@astro.usno.navy.mil
Desired Approach

• Proceed with Phase C/D

• Advantages
  – Keeps team together
  – Close to original schedule
  – No loss of momentum

• Disadvantages

• Technical Risks not Retired in Phase B
  – Optics/Centroiding
  – CCDs
Cost Limitations

• FAME Team Has Not Secured Commitments From All Outside Sources of Funding
  - Funding Is Available in Out Years
  - Letters of Commitment From All Sources Have Not Been Negotiated

• Funding Is Not Available in the Explorers Office to Continue FAME at Required Funding Levels
Suggested Approach

• One Year [10 Month] Delay in Program
  - Limited Funding

• Allows:
  - PI to Secure Commitments From Other Sources
    - DoD
    - Determine If Excess Launch Vehicle Mass Can Be Used by Other Experiments/systems
  - Continued Development of Critical Items
    - CCD Development
    - Optics Development
    - Finish Design/analysis of 7925-10 Version of S/C Bus
    - Science Data Pipeline
    - Key in Tying Optical Performance to Final Product
    - Flight Software/Algorithm Development
Risk Mitigation

• Technical Risk
  – Instrument CCDs and Optics
  – Instrument Software Development
  – Operations Algorithm Development

• Cost Risk
  – Commitments for Additional Funding
Assumptions

• 10 Month Delay
  - Delta PDR/Confirmation Review to be held Late August (TBD)

• Phase B extended thru September 30, 2002

• Phase C/D begins in October ‘02 (TBD)
  - To begin when NASA/DoD funds become available in FY03

• New Launch Date:
  - September 30, 2005
Recommended Funding for Remainder of FY02

<table>
<thead>
<tr>
<th>WBS ELEMENT</th>
<th>FY02</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 (PM)</td>
<td>750</td>
</tr>
<tr>
<td>2.0 (GND Dev)</td>
<td>1400</td>
</tr>
<tr>
<td>3.0 (Science)</td>
<td>100</td>
</tr>
<tr>
<td>4.0 (Inst)</td>
<td>10500</td>
</tr>
<tr>
<td>5.0 (S/C Bus)</td>
<td>4000</td>
</tr>
<tr>
<td>6.0 (Sys Int)</td>
<td>0</td>
</tr>
<tr>
<td>7.0 (LV Spt)</td>
<td>0</td>
</tr>
<tr>
<td>8.0 (Ops)</td>
<td>0</td>
</tr>
<tr>
<td>9.0 (E/PO)</td>
<td>100</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>16850</strong></td>
</tr>
</tbody>
</table>
Prospects for DoD Funding

• USNO has DoD mission for Astrometry

• Improved star positions needed

• Many potential funding sources

• Present commitment $14.5 M in outyears
Mission Success

• Open Team Communication

• Aggressively identify and address potential problems
  - CCDs
  - Optics
  - Instrument software
  - CCD electronics interface

• Mass no longer a problem

• Delay takes optics and CCDs off critical path
Science Drivers

• Fundamental Data for Astronomy & Physics
  - Extragalactic Distance Scale
  - Galactic Structure and Evolution
  - Brown Dwarfs and Giant Planets
  - Star Forming Regions
  - Stellar Masses
  - Reference Frames
Summary

• Delay Phase C  Oct 02

• Fund mission at critically reduced level

• USNO to obtain commitments for funding in outyears