FLUOR technical issues

V. Coudé du Foresto
Camera – short term issues

• On CHARA, FLUOR was using CHARA Classic’s NICMOS until Summer 2006
• It was then expected that the IOTA NICMOS camera (originally used by FLUOR 1998-2002) could be assigned to FLUOR:
  – This would enable dual Classic / FLUOR operation
  – CHARA NICMOS optimized for Classic

• But:
  – IOTA NICMOS chip turned out to be dead
  – Replacement chip found at NOAO (thanks Steve!), should be installed soon
    • Performances remain to be evaluated (engineering array?)
    • If positive FLUOR can then be offered again
Camera – longer term perspective

- LESIA to build 2 (possibly 3) clone camera systems
  - One « lab camera » for Persée interferometric nuller bench
  - One « sky camera » for ‘OHANA and FLUOR
    - Possibly two sky cameras if budget permits (~250k€ total)
- These systems will be optimized of HAR applications
  - Based on PICNIC array (near-science grade for sky)
  - Low-noise (read and reset), fast readout electronics, windowing options
  - Dedicated electronics (no SIDECAR ASIC) based on ‘Ohana solution
  - Digital fast I/O interface
- Gains for FLUOR:
  - Better sensitivity
  - Throughput in spectrally dispersed mode
  - More robust solution than current IOTA NICMOS
- Project timeline:
  - 11/06: start of project (JM Réess PM, + 2 electronics engineers, + 1 cryogenist)
  - 03/07: start procurement of arrays
  - 07/07: delivery of arrays
  - Autumn 07: commissionning in Meudon
  - Winter 08: commissionning at CHARA
## CHARA Collaboration Year-Three Science Review

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<th>Test Plan &amp; Rev. Date</th>
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<td>Test Engineer</td>
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### Summary of Data

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<tr>
<th>Astro-K QE</th>
<th>68.50%</th>
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<th>Scev/M</th>
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<tr>
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<td>Scev</td>
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<tr>
<td>Astro-I QE</td>
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<td>Scev</td>
<td>N/A</td>
<td>Scev/M</td>
<td>N/A</td>
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</tbody>
</table>

- Noise: 13.0 e
- Icark: 0.152 e/sec
- Gain: 273 e/mV
- Well Capacity: >136 Ke
- Linearity: N/A
- Operability: 99.90% Astro-K
- Operability Definition: > 50% of mean QE
- Interconnect: 99.56%

### Test Comments:
Science grade FPA with edge effect.
**FLUOR control SW overhaul**

- Why an overhaul?
  - Current control SW written in LabView:
    - No longer supported for MacOS => migration is needed anyhow
    - Exotic platform in the CHARA environment
    - « Legacy software » => maintenance and upgrade gets more and more difficult
    - New camera will force major SW changes anyhow
    - Not well adapted for remote control
• Phased approach:
  – First FLUOR G3 to be replaced by Target RT Linux box
  – Then overhaul of FLUOR control GUI
  – Final objective is easy remote operation from Meudon

• Implementation in line with new camera

• A dedicated SW engineer for this project (A. Sevin)

Figure 1: Design for a future implementation of the FLUOR control software
Other issues

• Trees…
  – At S2 for observations of ζ Lep, γ UMa, β Uma

• Real estate?
  – Need to anticipate changes, if any