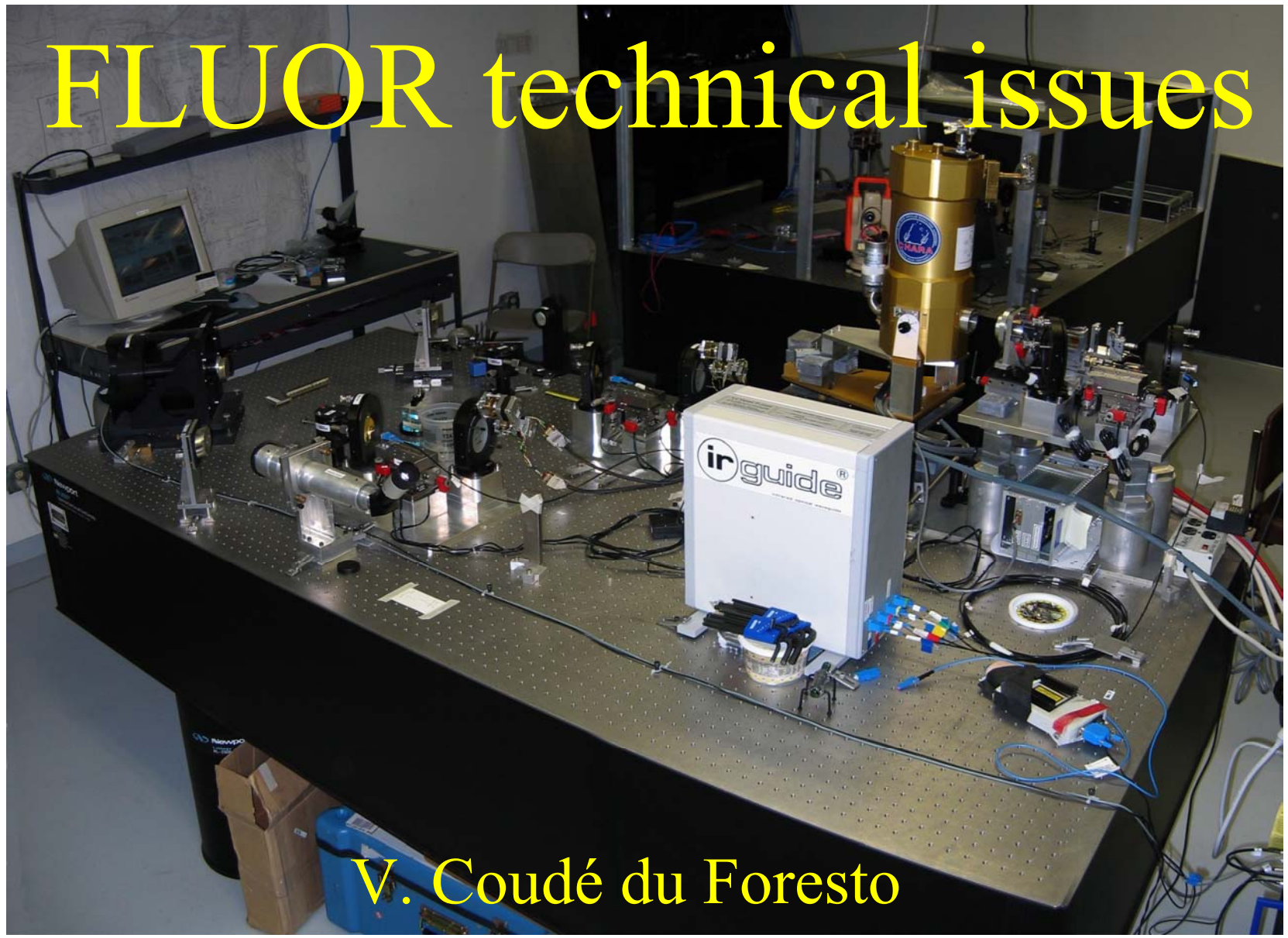




# FLUOR technical issues



V. Coudé du Foresto



LESIA





# 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: commissioning in Meudon
  - Winter 08: commissioning at CHARA



Program	PICNIC	Test Plan & Rev.	N/A
FPA Number	343	Date	N/A
Date	7/15/03		
Test Engineer	M. Farris		
Detector ID	9-331L-LR	MUX Type	PICNIC
Pixel Pitch	40.0 m	MUX ID	L4W11F6
Pixel Size	40.0 m		
Array Format	256 X 256	Tests Performed	
Test Temp.(s)	80 K	QE	<input checked="" type="checkbox"/>
Pixel Rate	250 KHz	Noise	<input checked="" type="checkbox"/>
Frame Rate	0.068 sec/frame	Idark	<input checked="" type="checkbox"/>
		Gain	<input checked="" type="checkbox"/>
		Well Capacity	<input checked="" type="checkbox"/>
		Interconnect	<input checked="" type="checkbox"/>
		Linearity	<input type="checkbox"/>
		Power Dis.	<input type="checkbox"/>
		Other	<input type="checkbox"/>

Summary of Data

Astro-K QE	68.50%	Sdev	2.70%	Sdev/M	3.90%
Astro-H QE	N/A	Sdev	N/A	Sdev/M	N/A
Astro-J QE	N/A	Sdev	N/A	Sdev/M	N/A

Noise

Idark

Gain

Well Capacity

Linearity

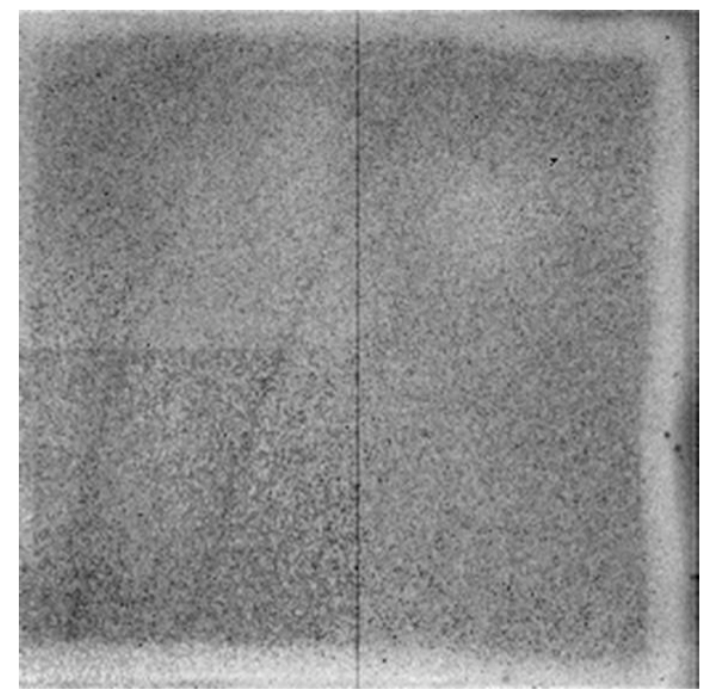
Operability

Operability Definition

Interconnect

Test Comments

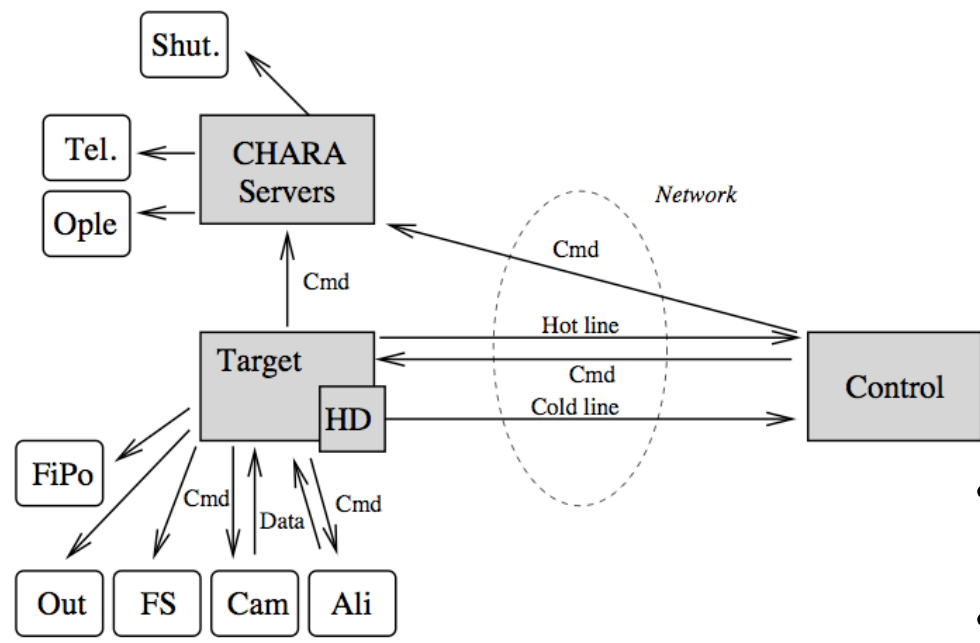
### QE Map





# 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 futur implementation of the FLUOR control software



# Other issues

- Trees...
  - At S2 for observations of  $\zeta$  Lep,  $\gamma$  UMa,  $\beta$  Uma
- Real estate?
  - Need to anticipate changes, if any