

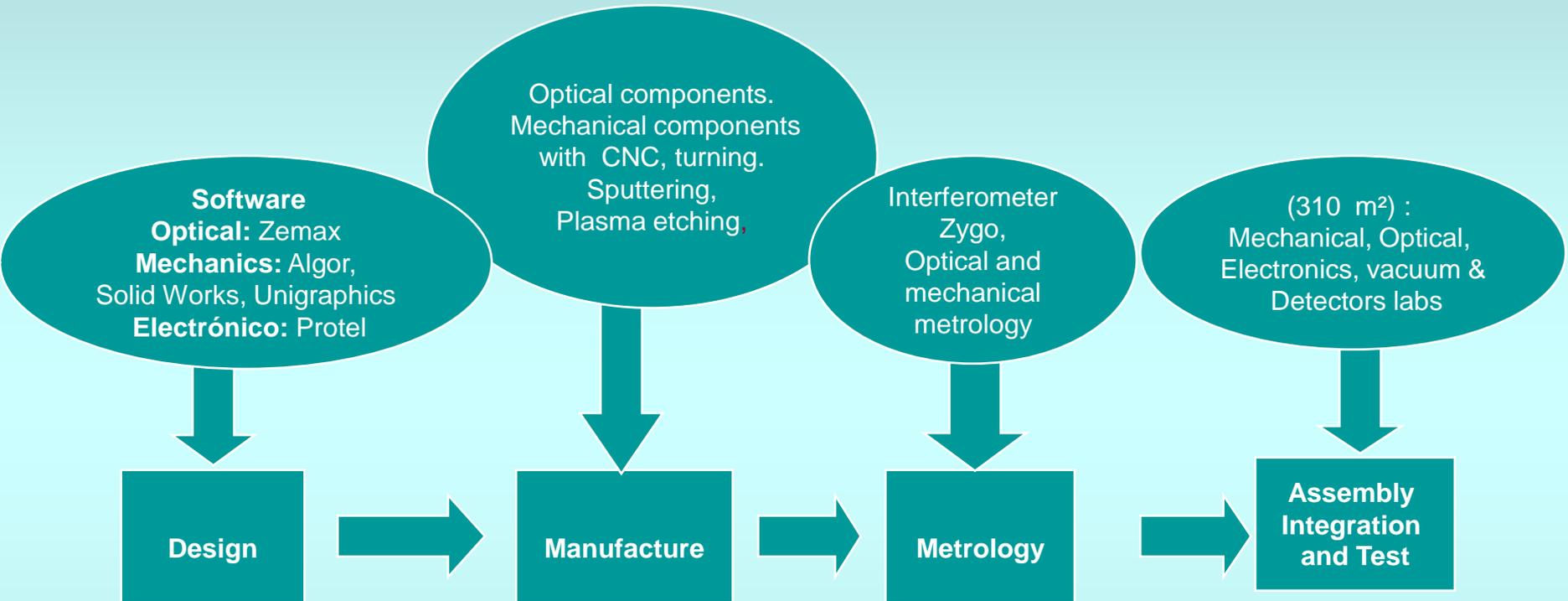


Facilities and Capabilities for Astronomical Instrumentation Development at IAUNAM, CU

*Salvador Cuevas
Beatriz Sánchez*



Capabilities



• *Strategic and Synergic collaboration with CIDESI in Mechanical development .*



Human Resources

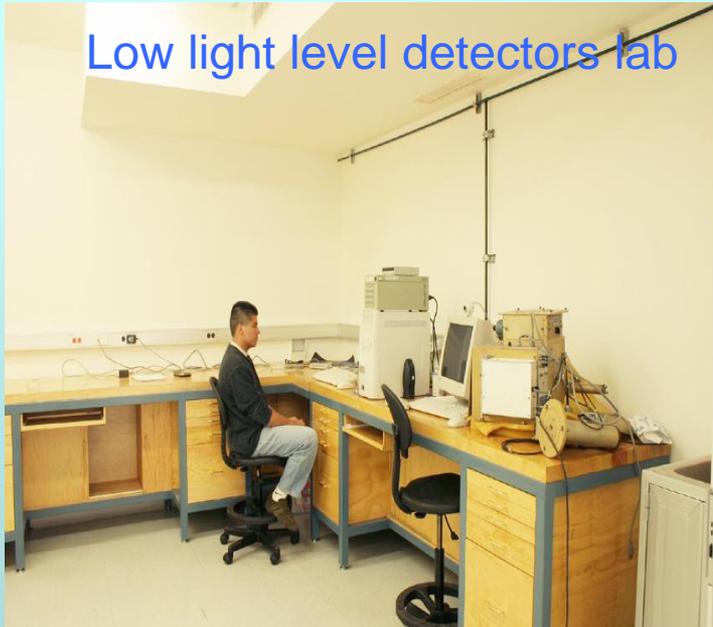
	Opt	Mech	Elec/ Cont	Vac/Thin films	Soft/ Comp.	Total
C.U.	6	3	6	2	2	19



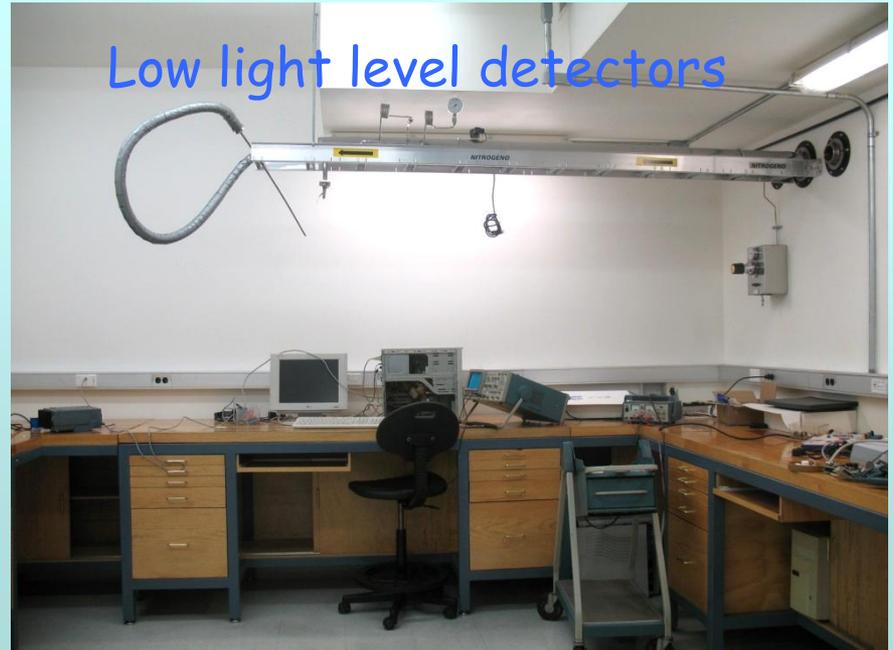
Facilities



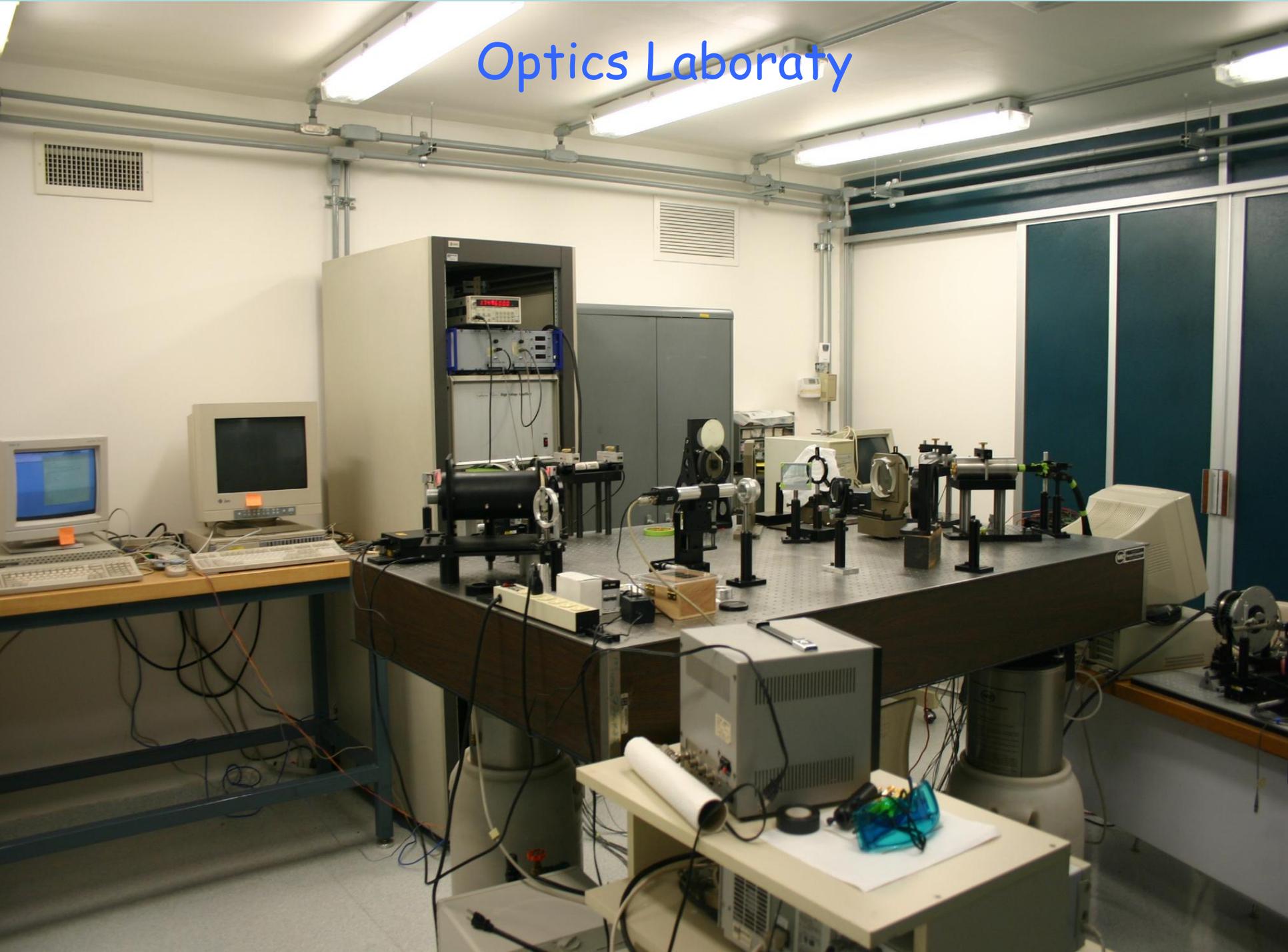
Low light level detectors lab



Low light level detectors



Optics Laboratory



Vacuum and thin films lab



Electronics lab



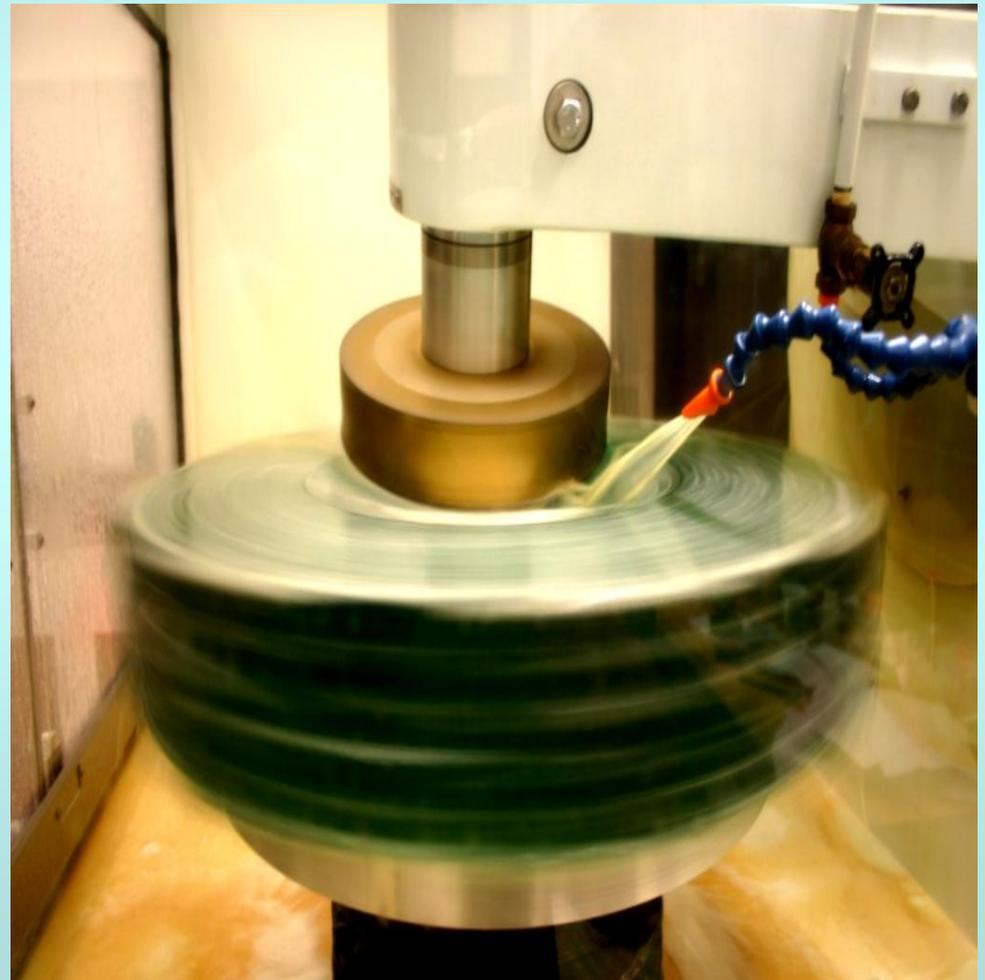
Mechanical AIV Lab





Optical Workshop Facilities

Generation and polish of the components up to 90 cm.





Optical Facilities & Capabilities



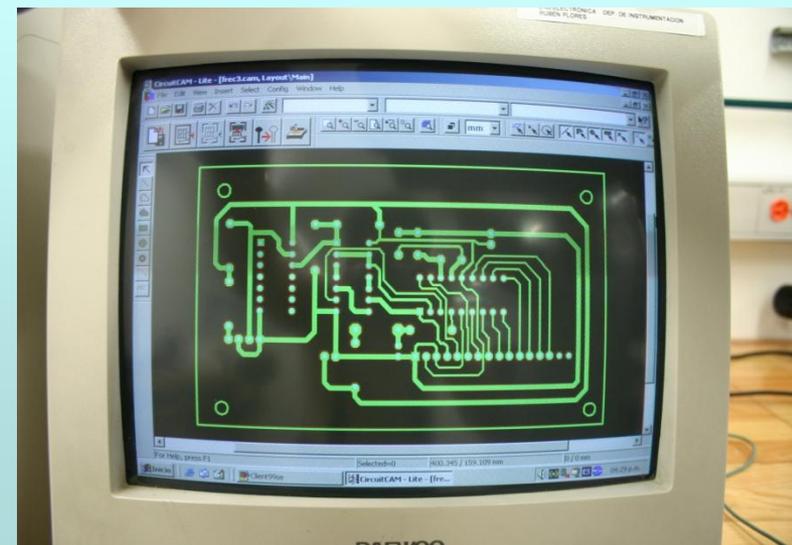
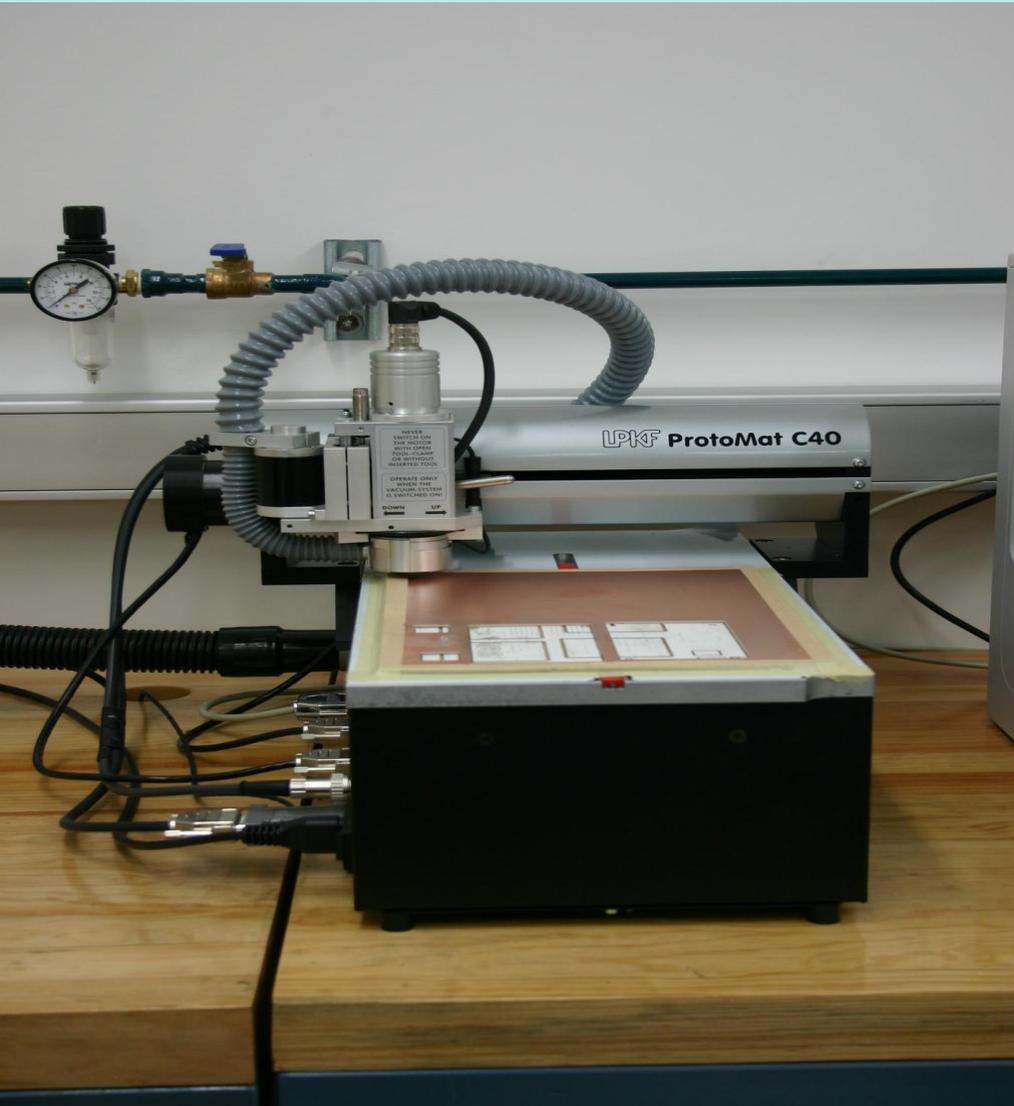


Mechanical Workshop Facilities With CNC



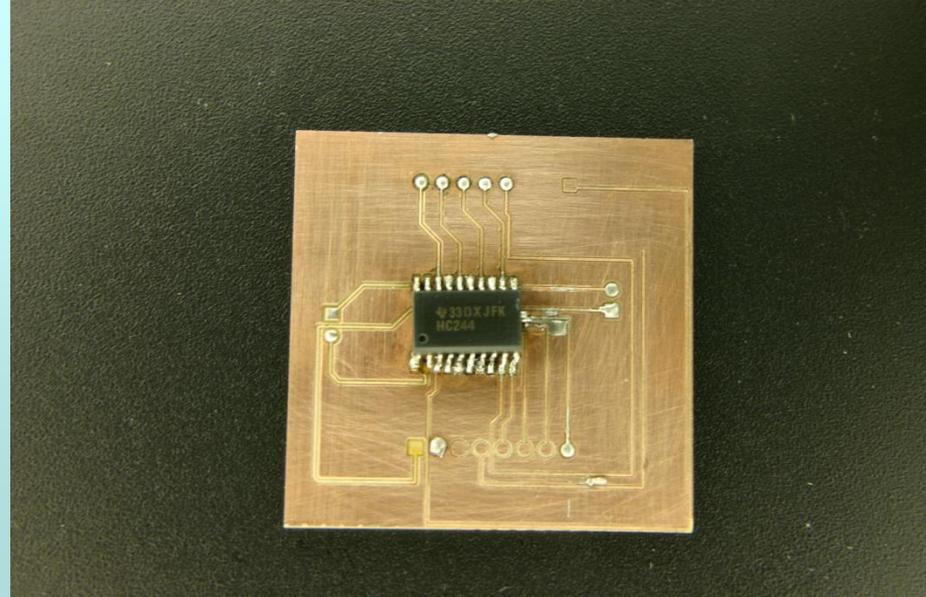
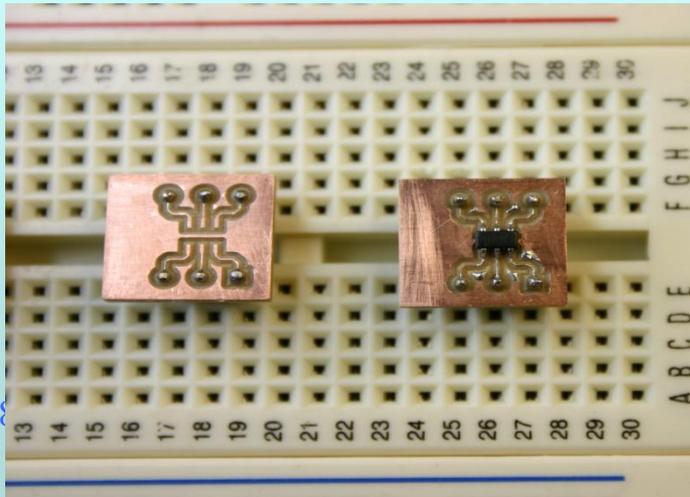
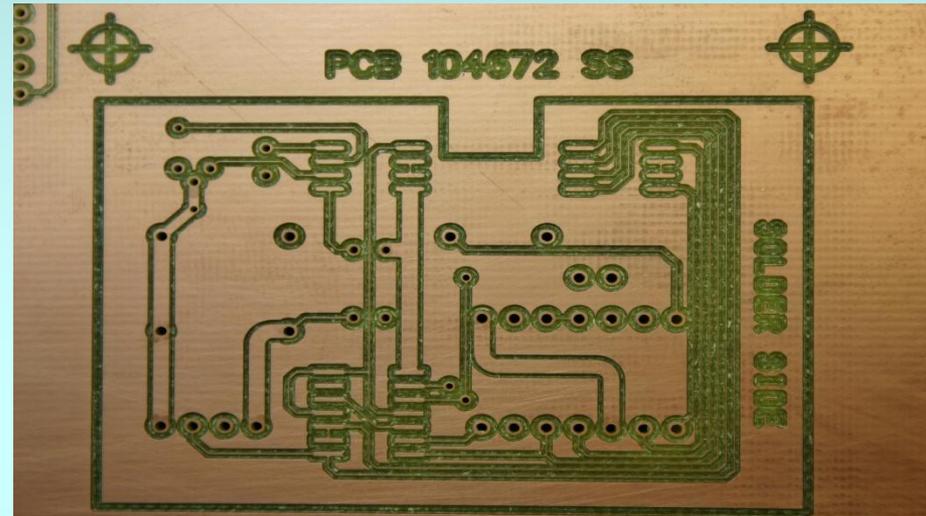
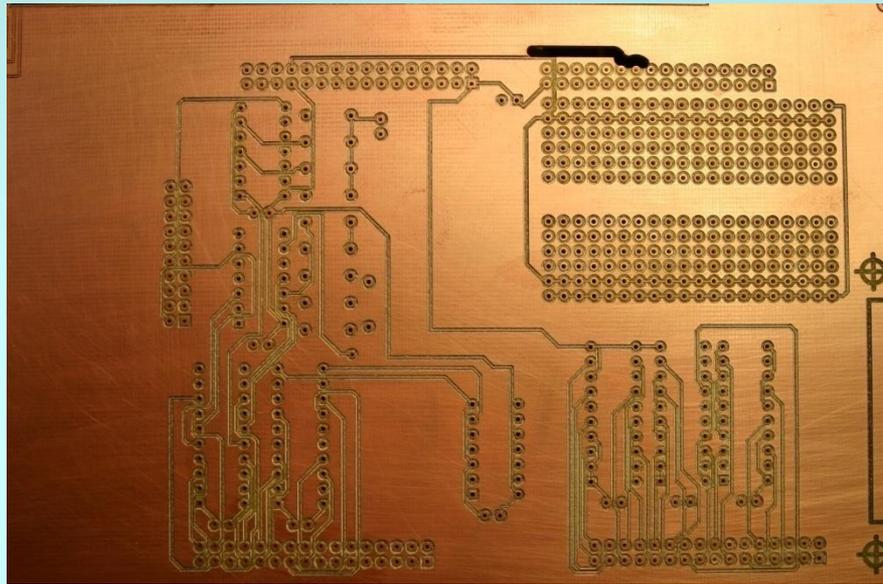


Electronics Design and Manufacture



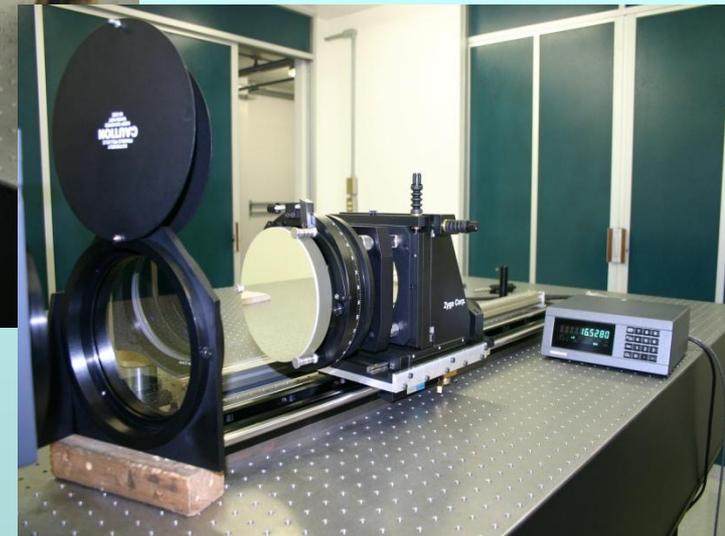
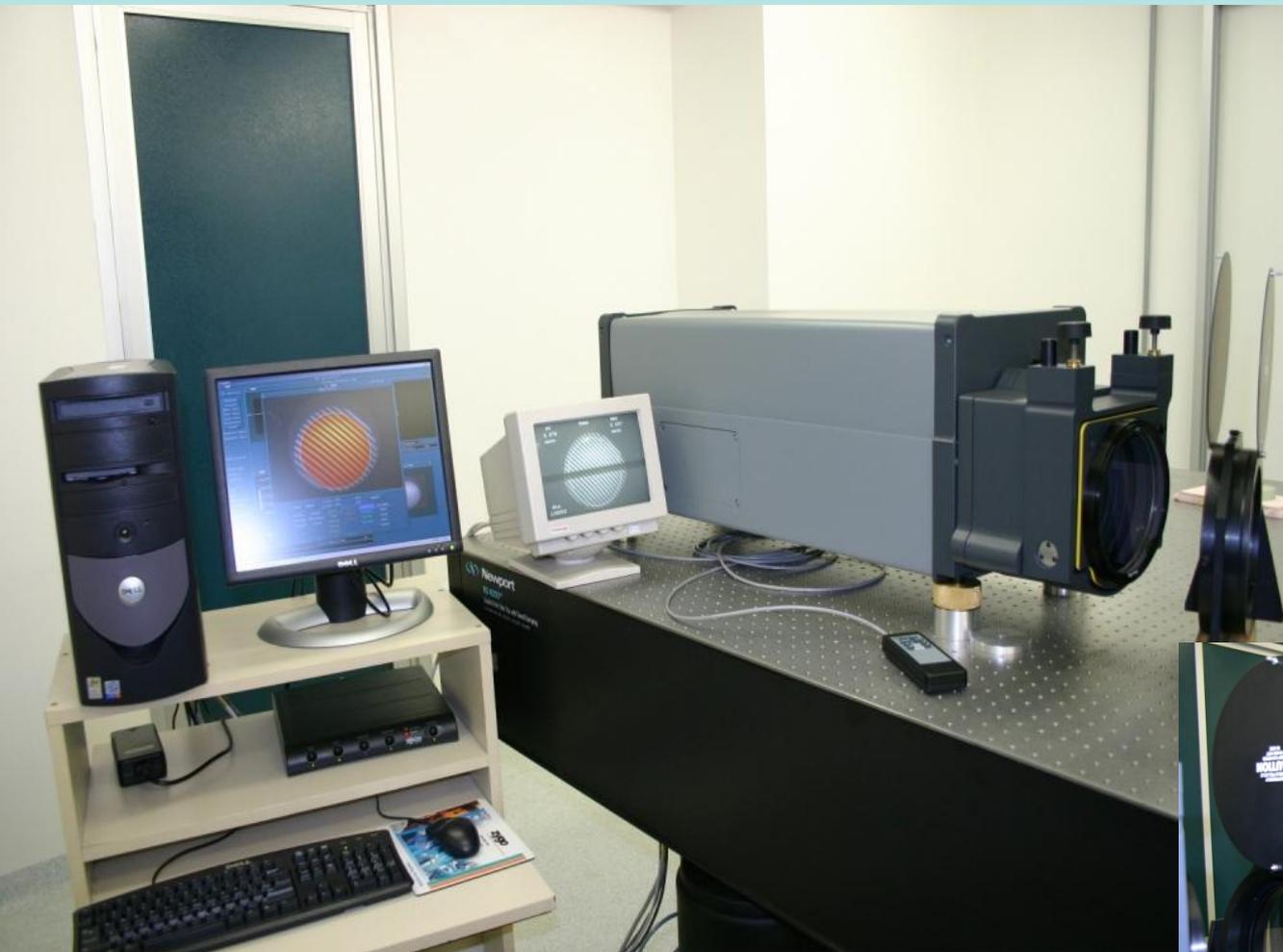


Electronics Design and Manufacture





Metrology: Zygo Interferometer



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Metrology: Mechanical and Optical Components



18/08/2008

X: 705 mm, Y: 1005 mm, Z: 605 mm

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AIV Optomechanical Facilities



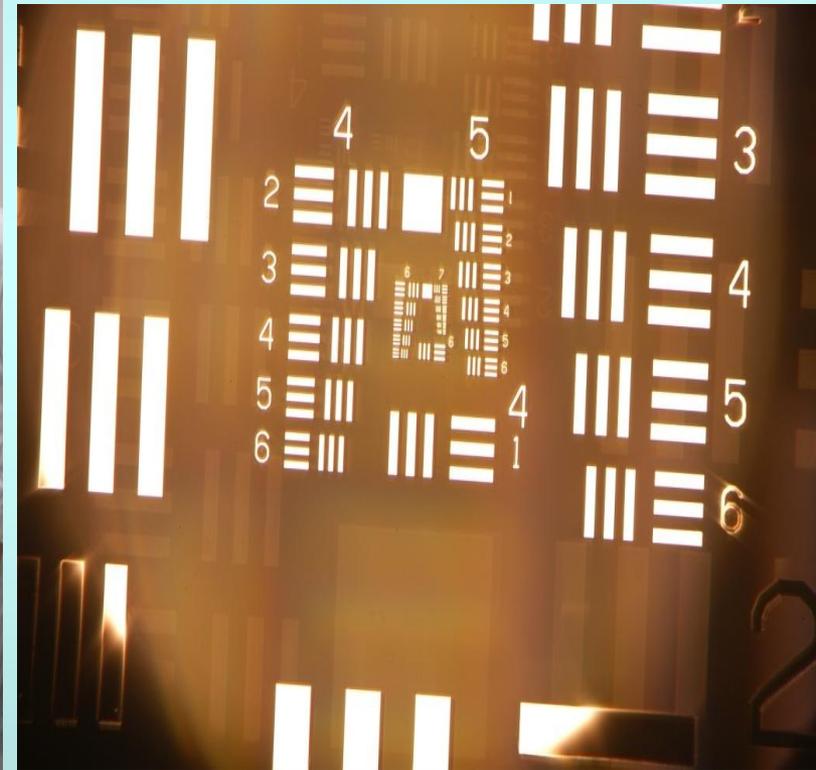
ALBatros

- Clean & general purpose optics and mechanical/electrical components assembly and test area





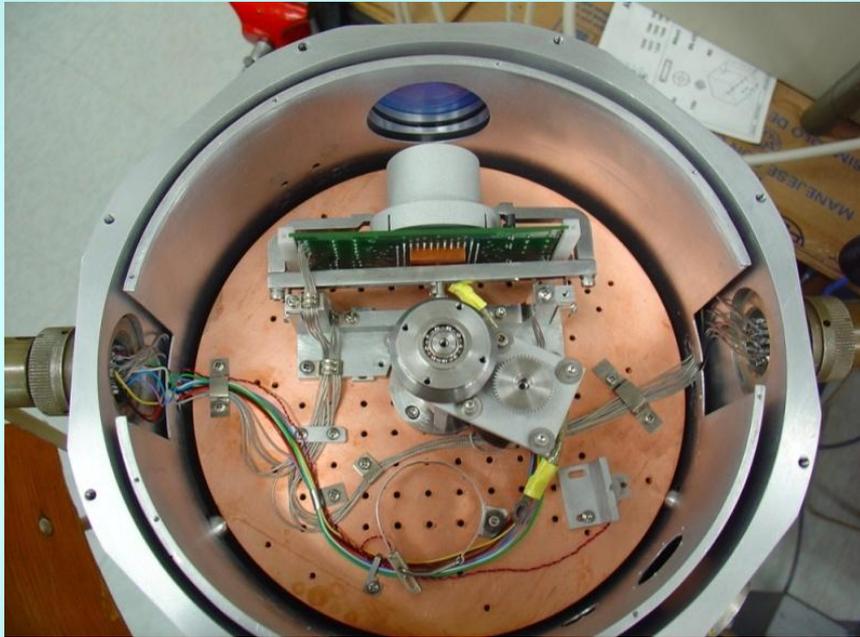
Characterization and Test Capabilities



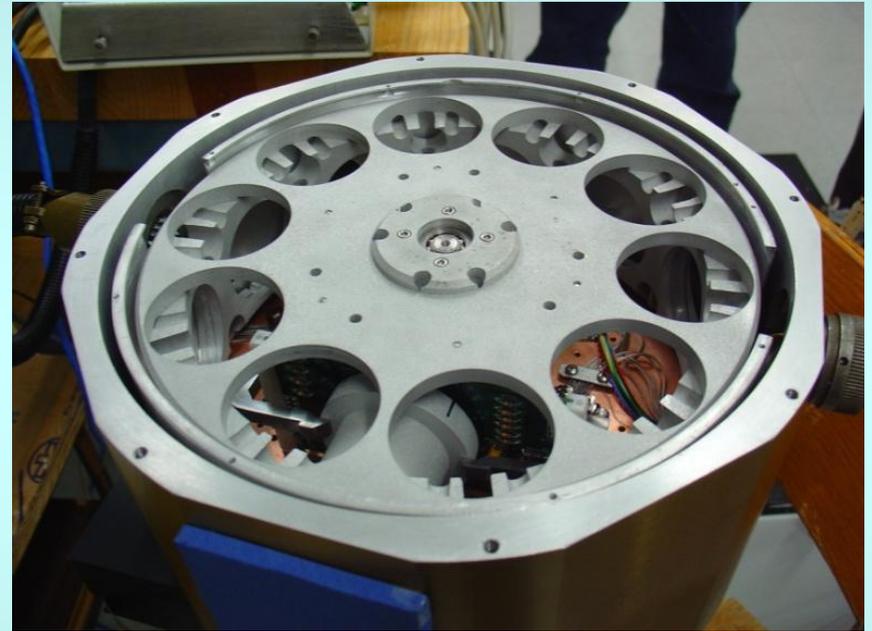


Cataviña Project

- Hawaii 1024x1024 pix detector system for images



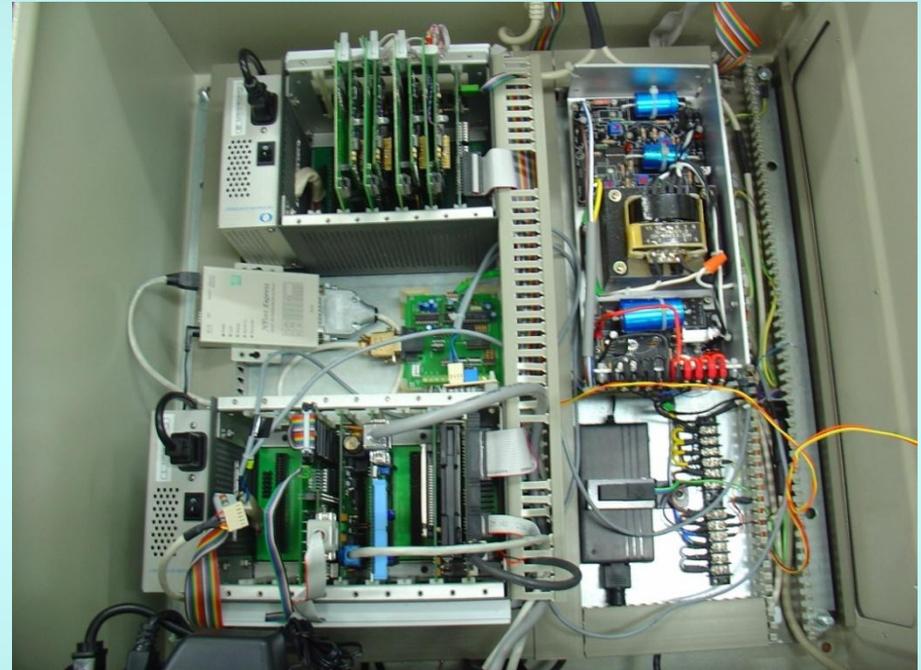
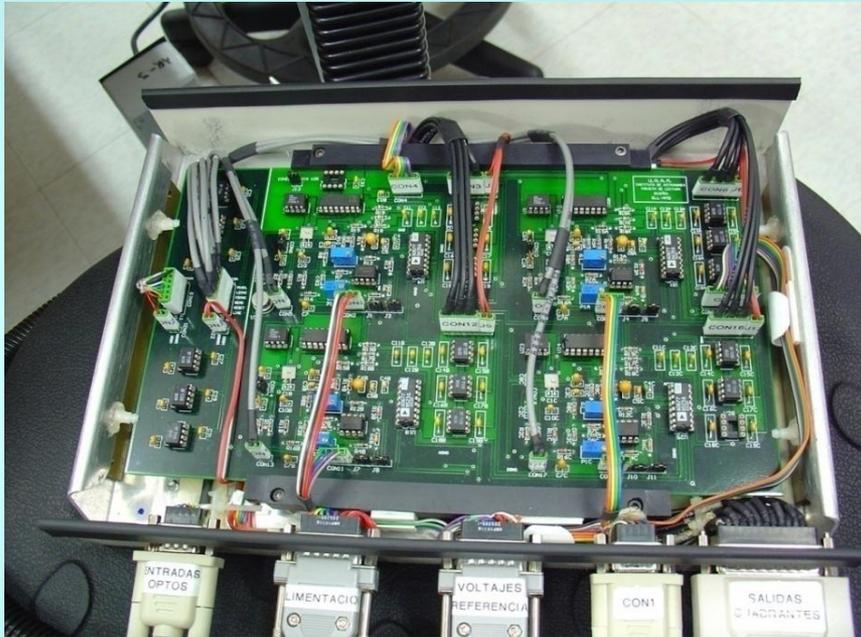
Cryostat inner: Cold bench and detector support



Filter wheel

Cataviña Project

- *Detector Controller and acquisition system*

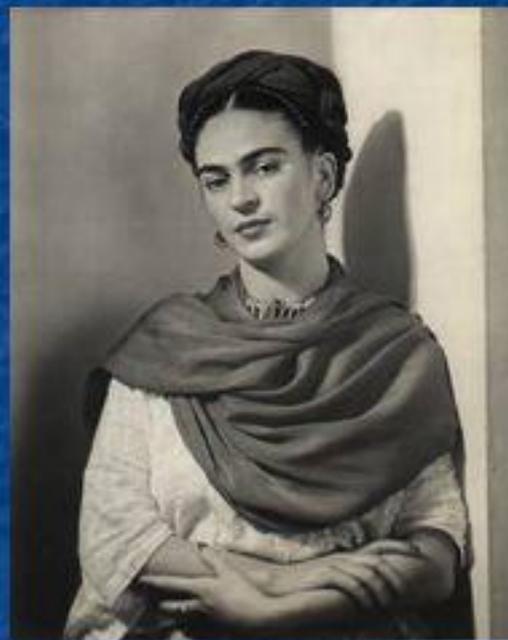


FRIDA INTEGRAL FIELD SPECTROSCOPIC MODE

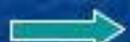
Seeing limited Frida



Diffraction limited Frida

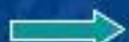


Telescope

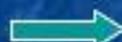


AO

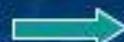
System



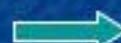
FRIDA



Grating



IFU



Slicer



FRIDA Project

- FRIDA is a Collaborative Project and the last year has the PDR.
- Wavelength range 0.9 - 2.5 microns with Hawaii RG 2048x2048. Low, intermediate and high spectral resolution ($R \sim 30\,000$)

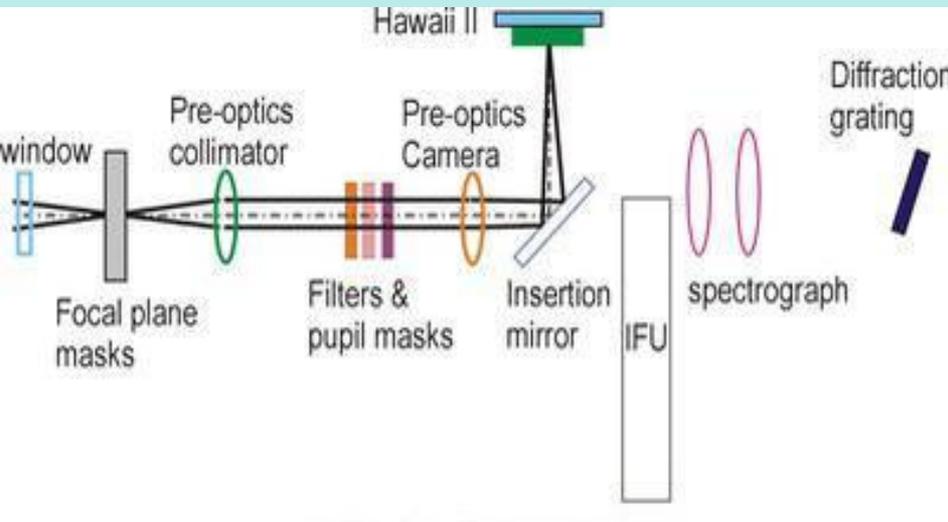
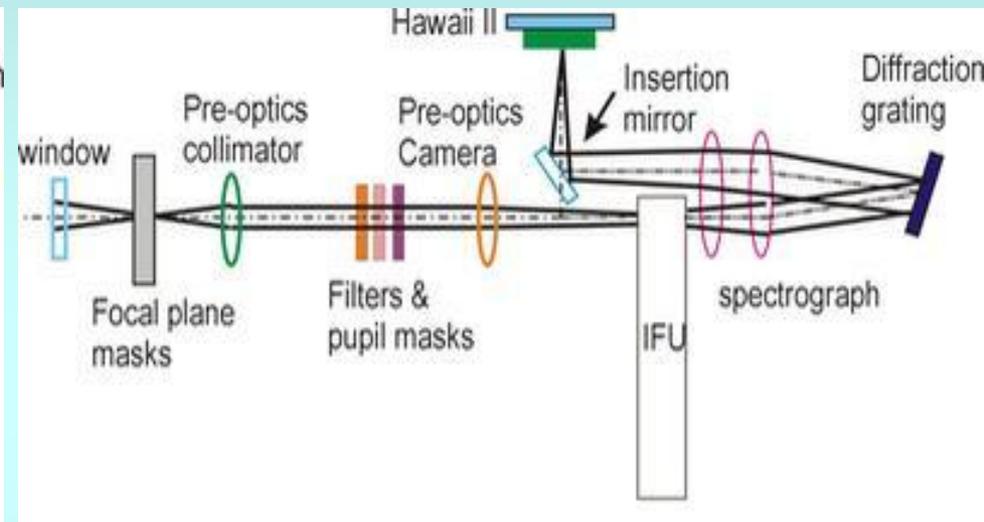


Image Mode Configuration

Scales: 0.010 and 0.020 arsec/pix.

Fields: 20.48x20.48 and 40.96x40.96



IFS Mode Configuration,

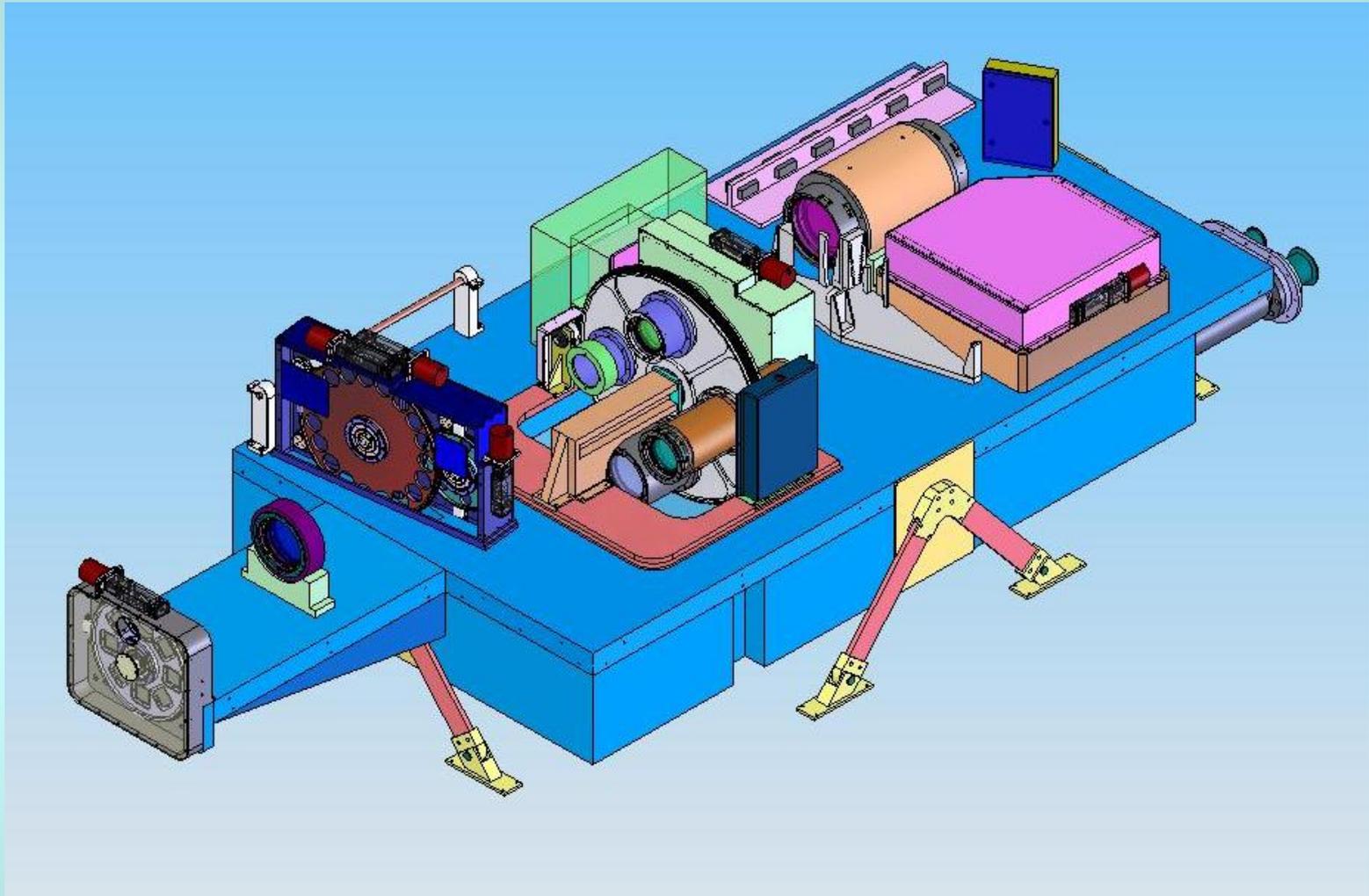
30 slices, 66 pixels/slice

Fields: 0.66x0.60, 1.32x1.20 & 40.96x40.96





FRIDA Project

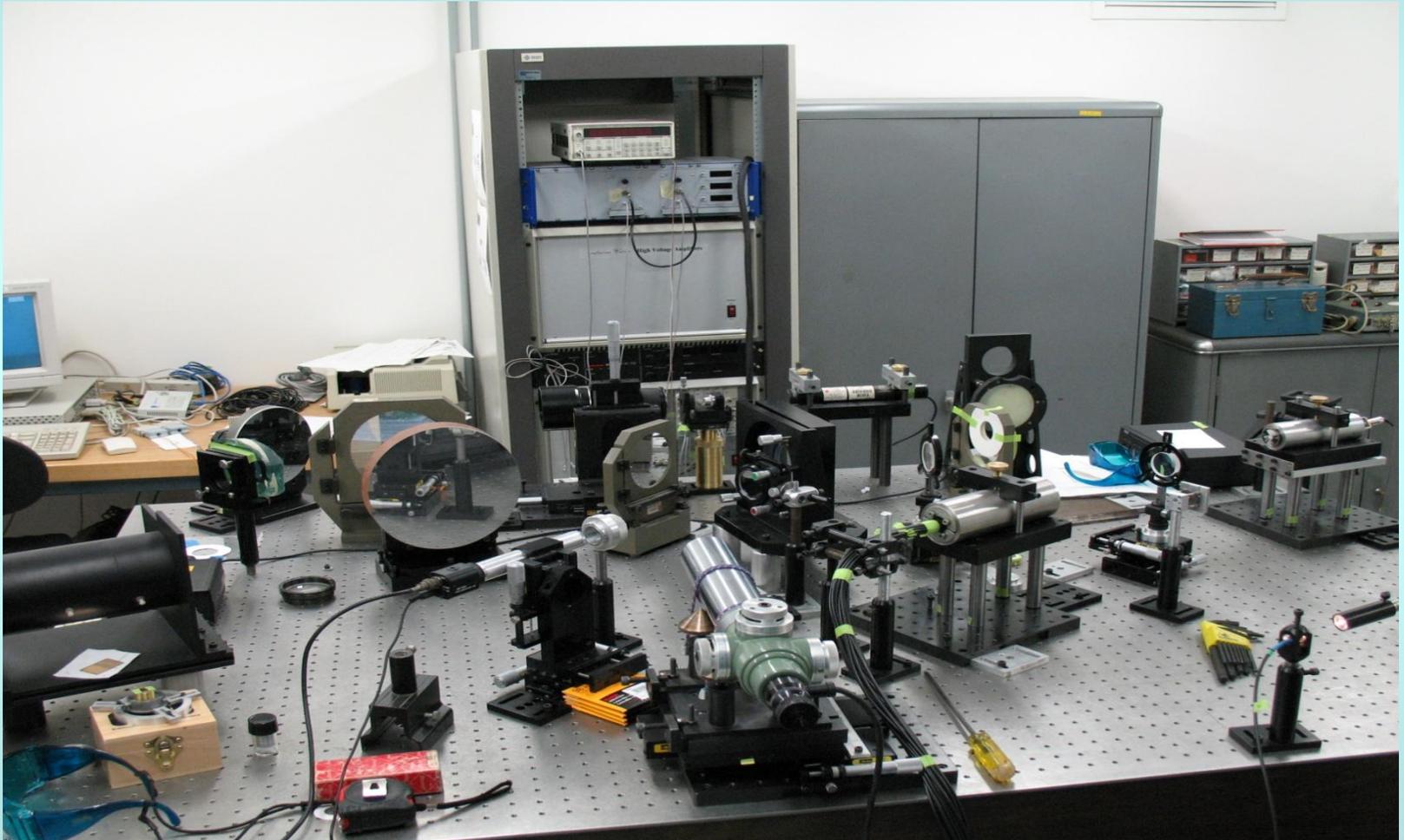


FRIDA Cold Bench (main body dimension : 2m x 1.25m)

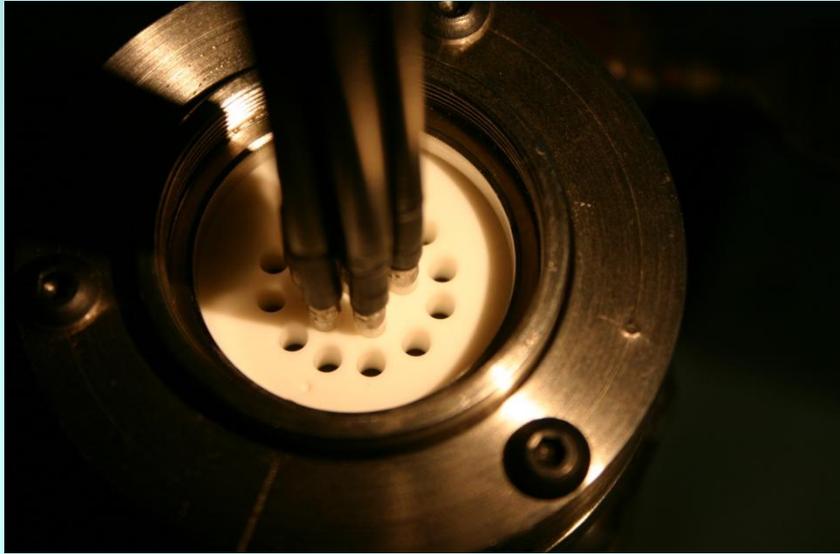


Guieloa Project

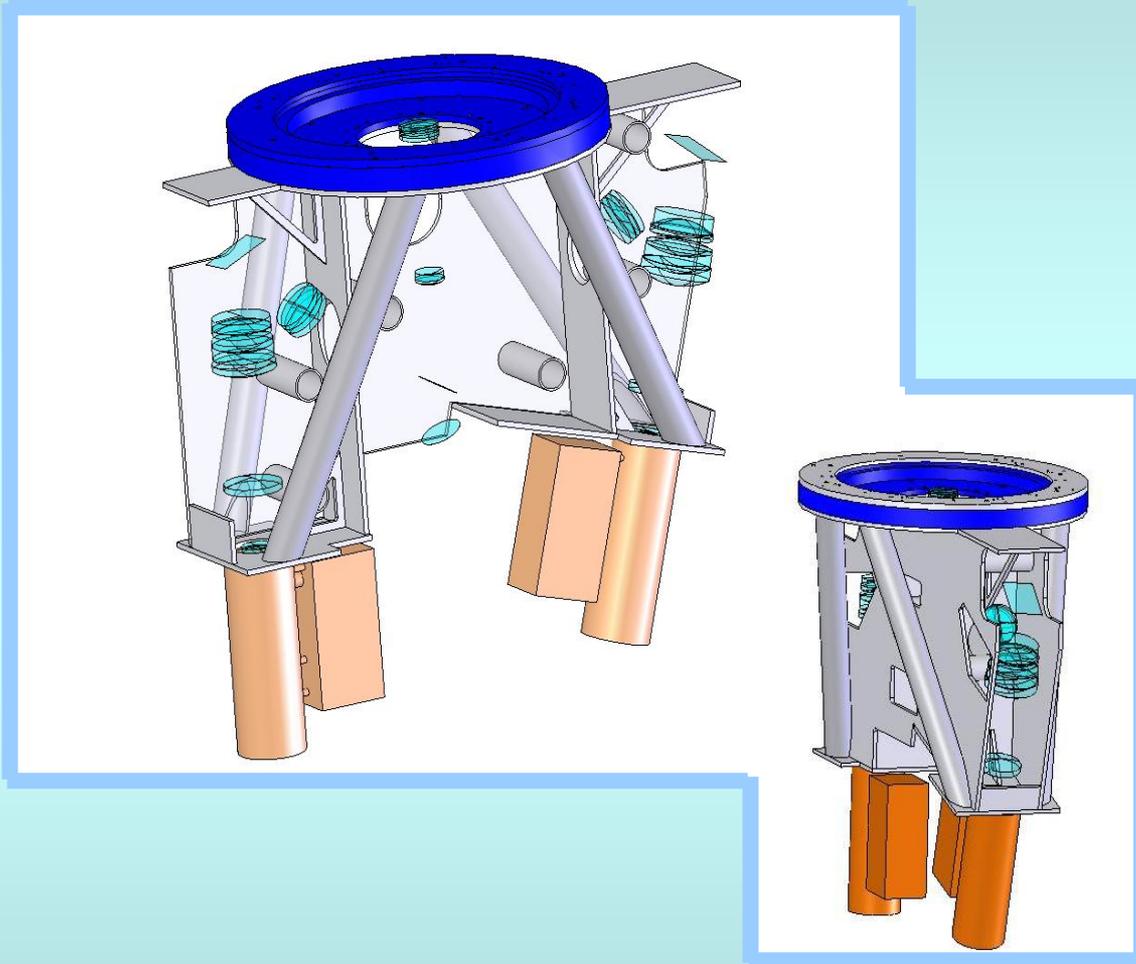
Optical Test Bench, in laboratory



GUIELOA : Curvature WFS, 19 elements with APD's



Esopo Project



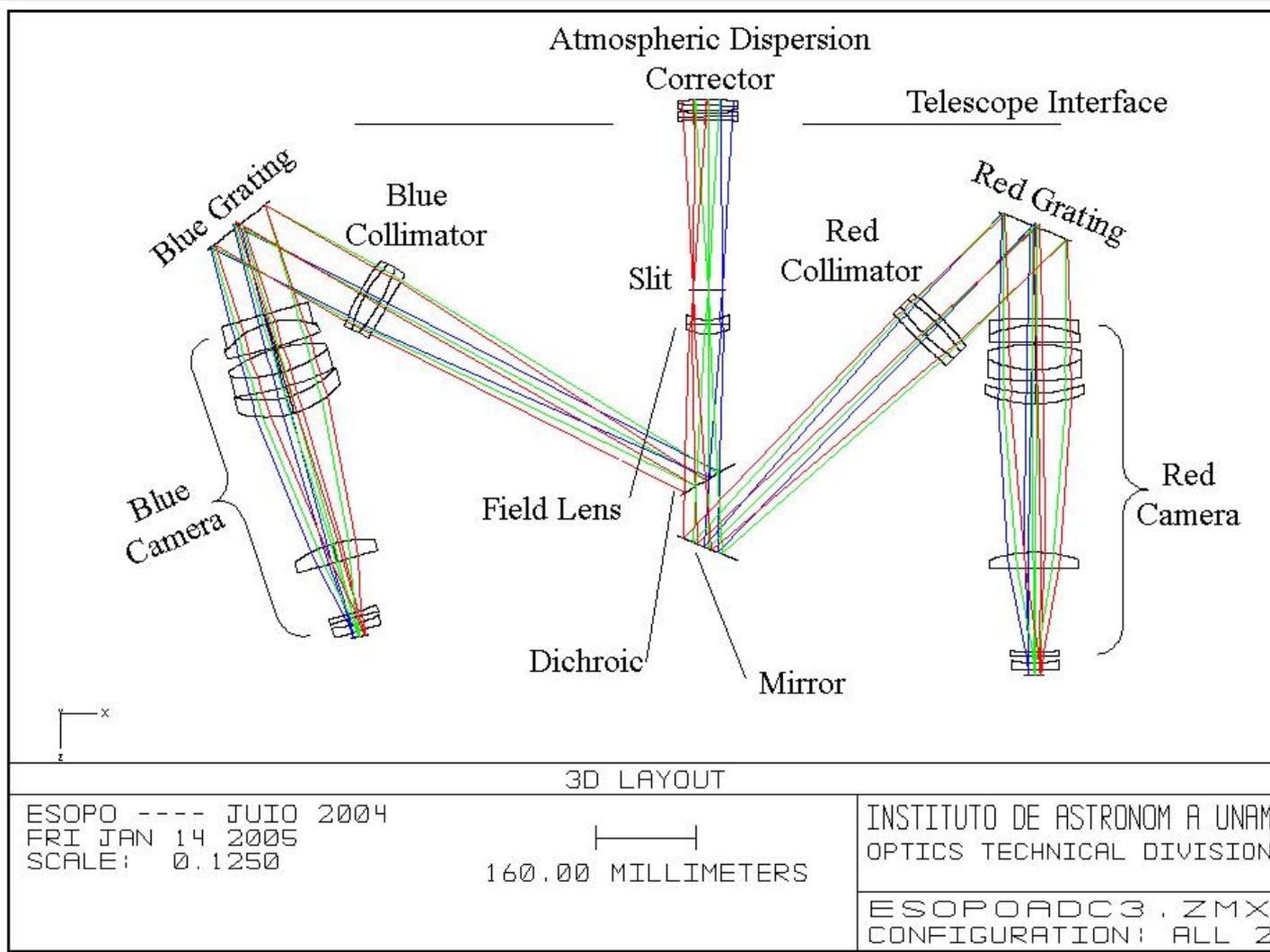
“3D Model:Structure and Optics

18/08/2008

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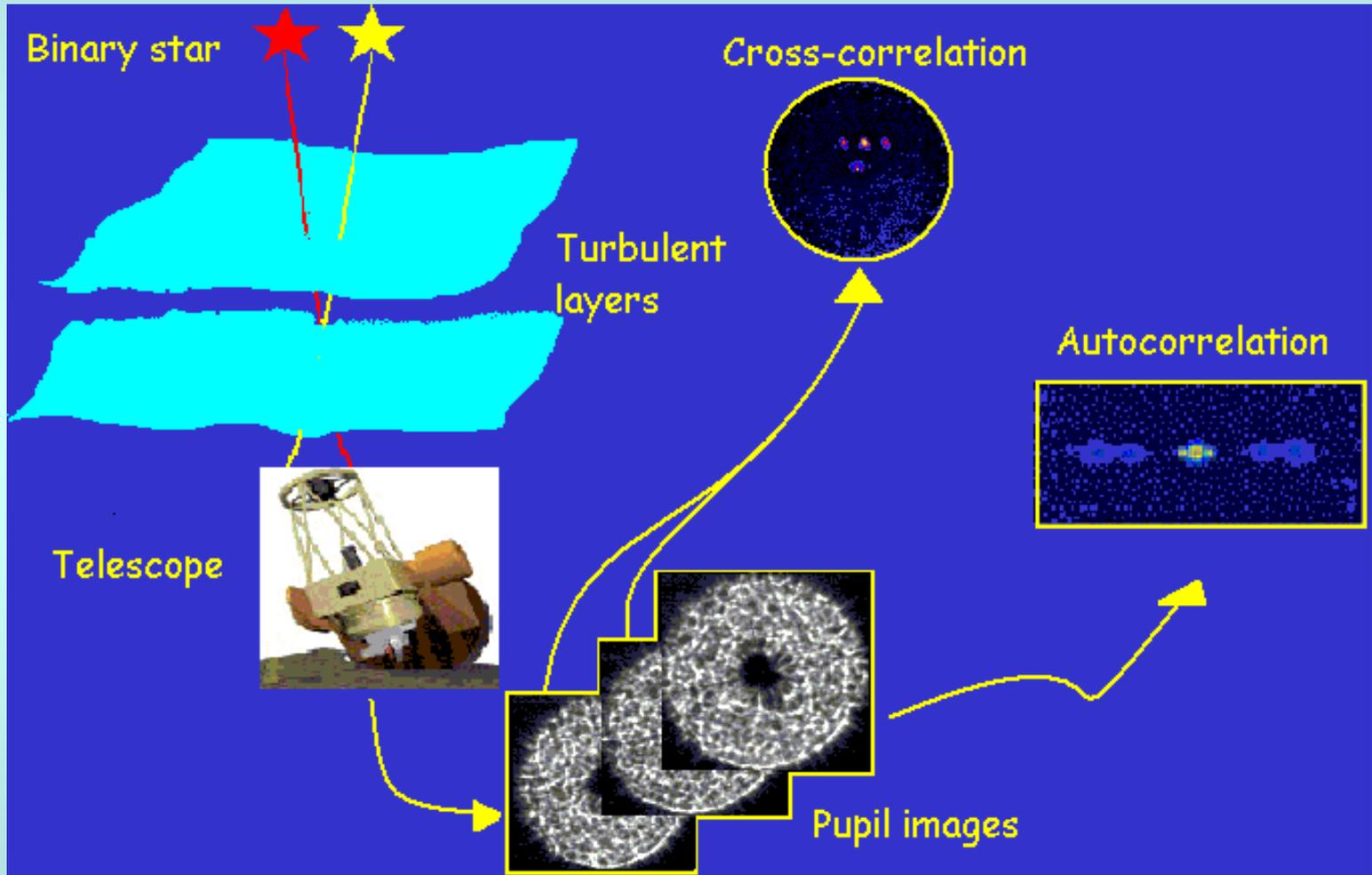


Esopo: Optical Design





Generalized Sidar





Conclusion

- *The IAUNAM has a competitive set of human and technical resources for the development, construction and integration of modern mid-size astronomical instrumentation*
- *For such an ambitious project as SASIR, IA-UNAM will not only undertake responsibility for some of its components, but will certainly play a central role in the Mexico-UC synergy for SASIR's integral development and exploitation*