

On the path to the commissioning of GIANO



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Infrared Group

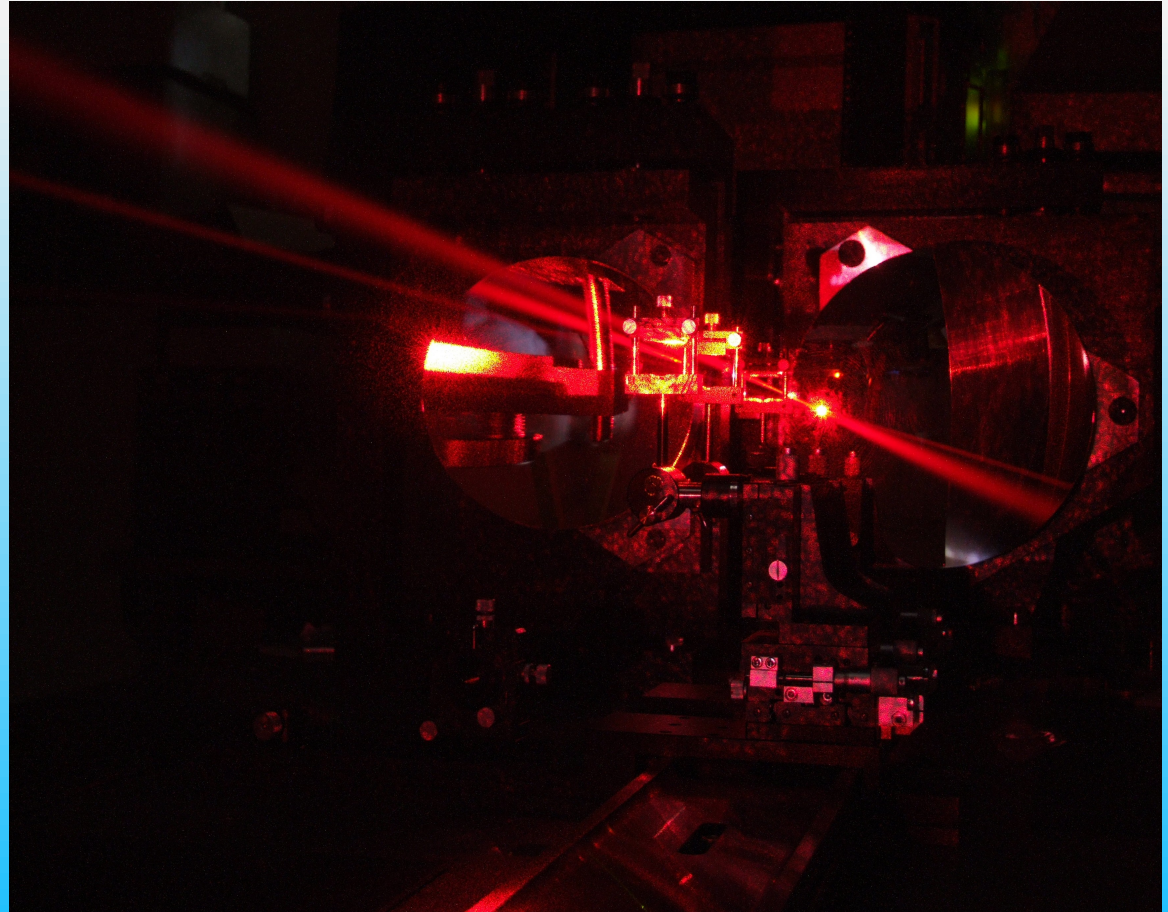
October – 10 – 2007



Contents



- The Giano spectrometer
- The optics and mechanics of Giano
- Completed tasks
- Work in progress





Expected performances

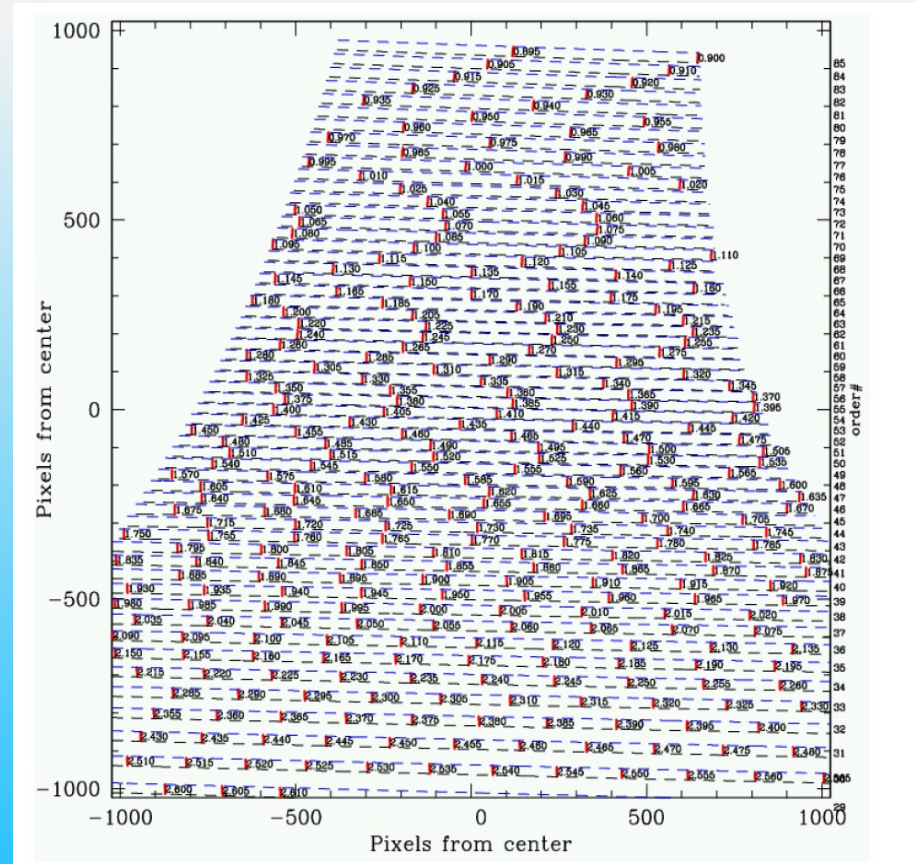


Observing mode	Slit length	RS	Spectral Coverage
High-R	6.5"	25000	0.9 - 2.5 μm
Low-R	30"	500	0.9 - 2.5 μm
Slit widths	0.5", 0.75", 1.0", 1.5"		

Limiting Magnitudes

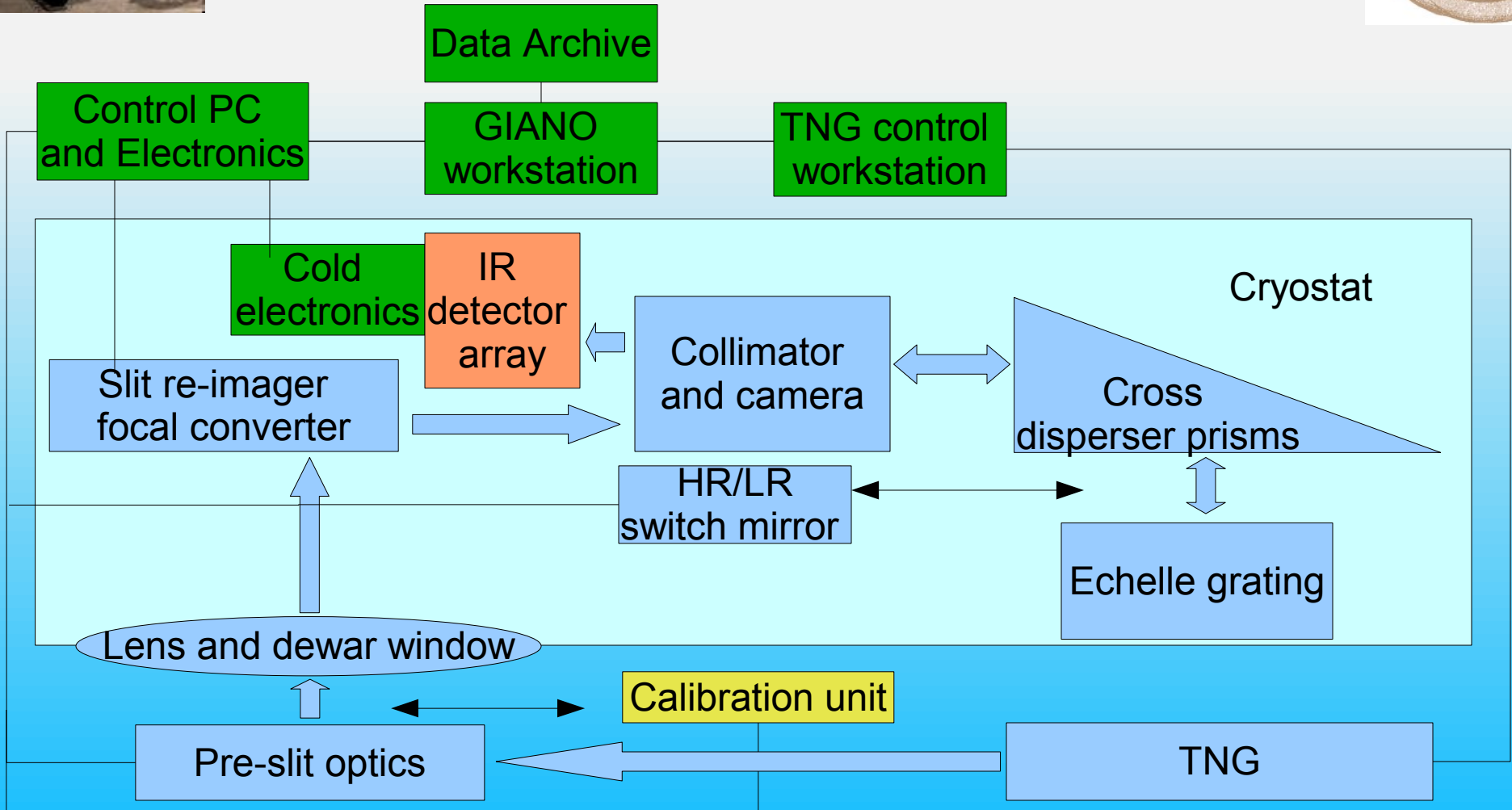
HR mode, R = 25,000 slit = 1.0" seeing = 1.0"

BAND	S/N=100 in 1hr	S/N=10 in 1hr
1 μm & J	13.4	16.4
H	13.0	15.9
K	12.0	14.7



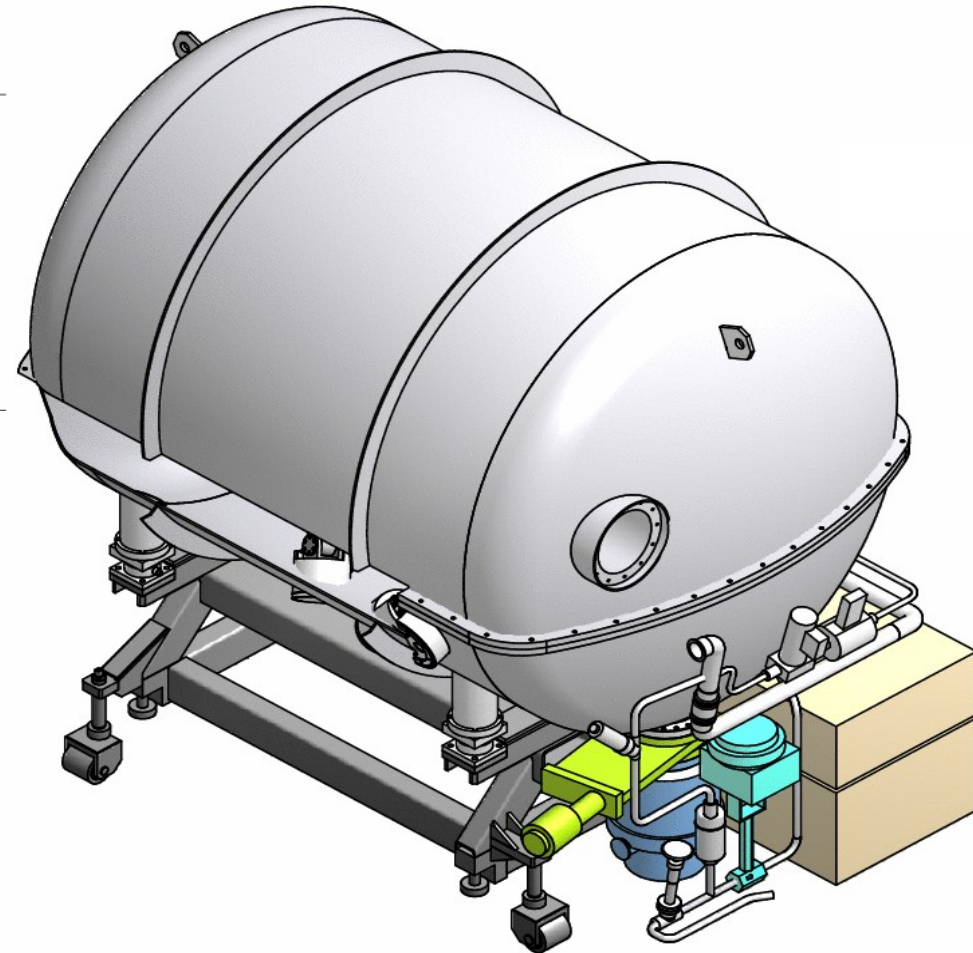
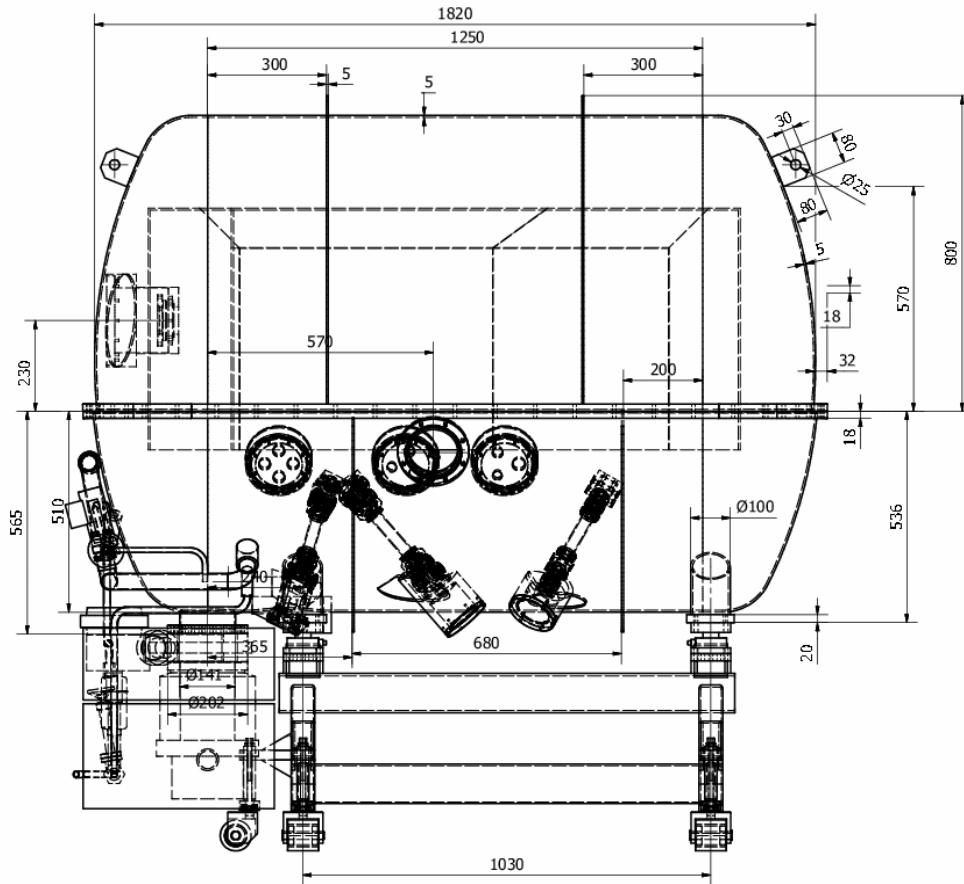


GIANO General Layout



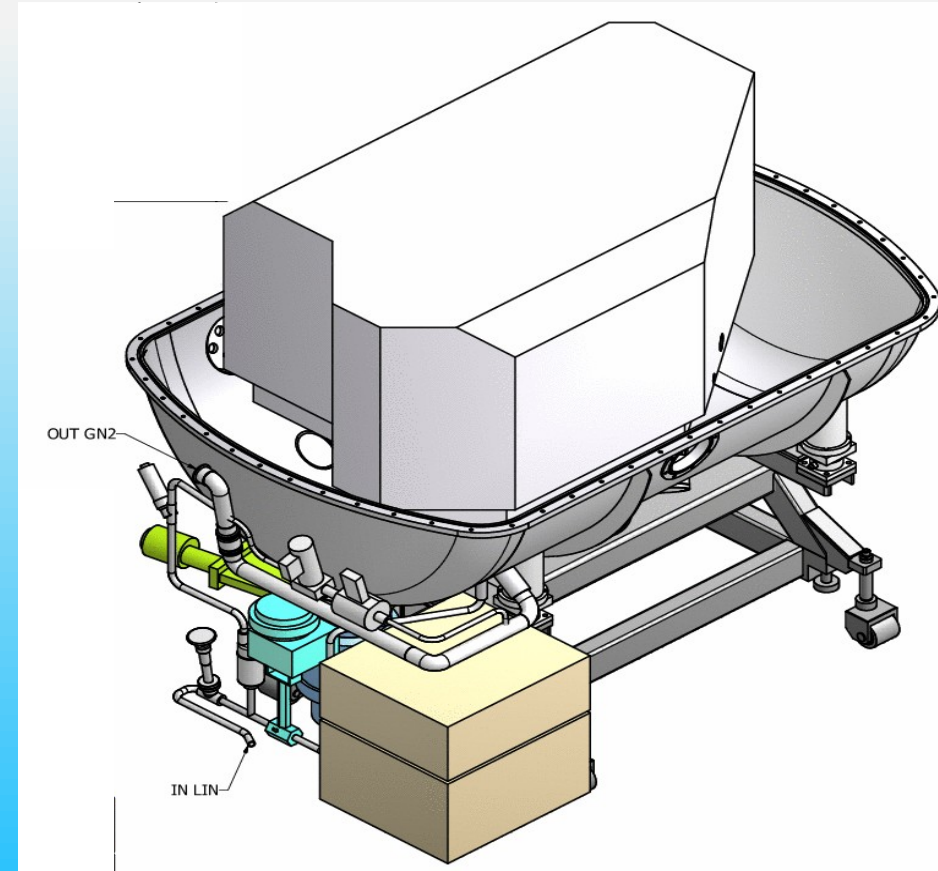
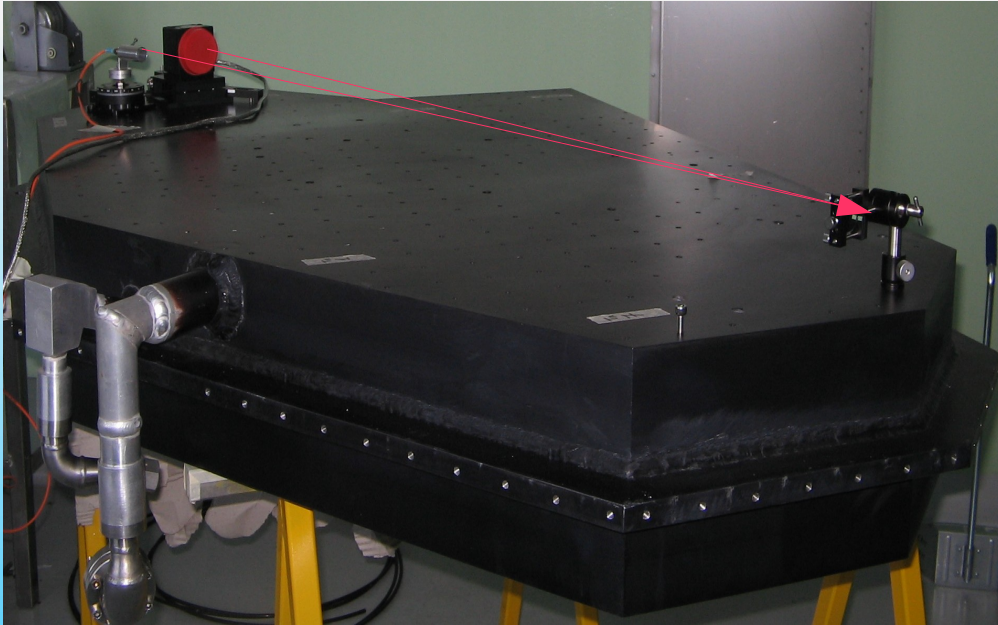


Giano from the outside



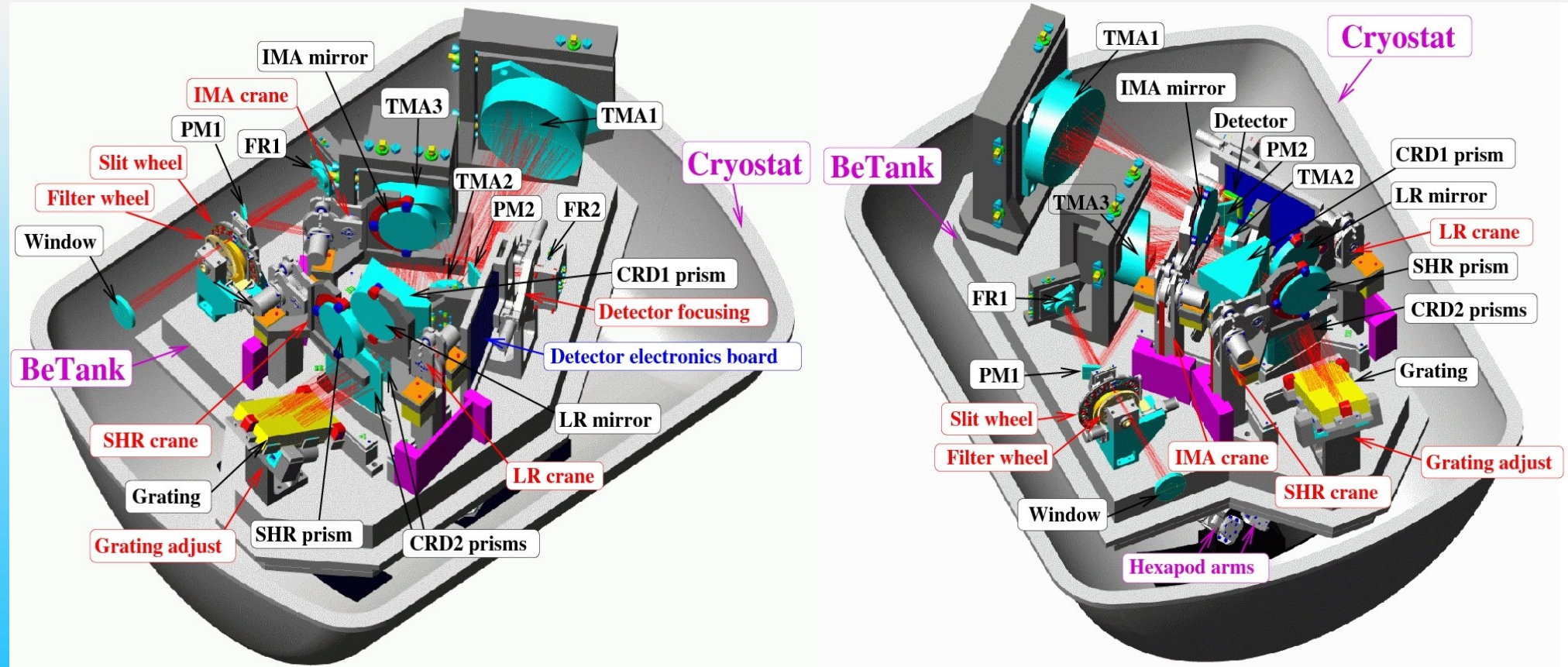


Cryostat and betank

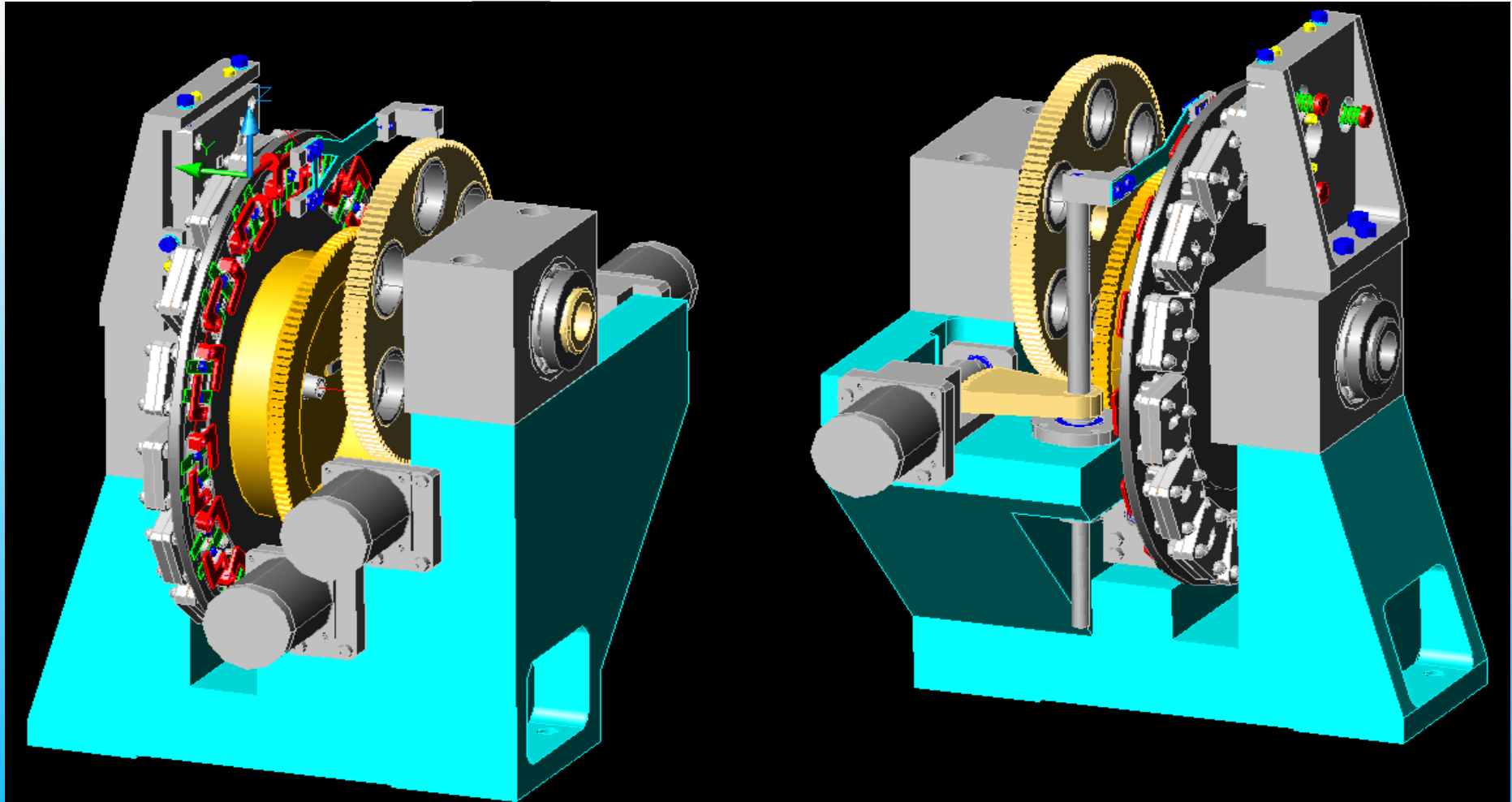




Inside the cryostat

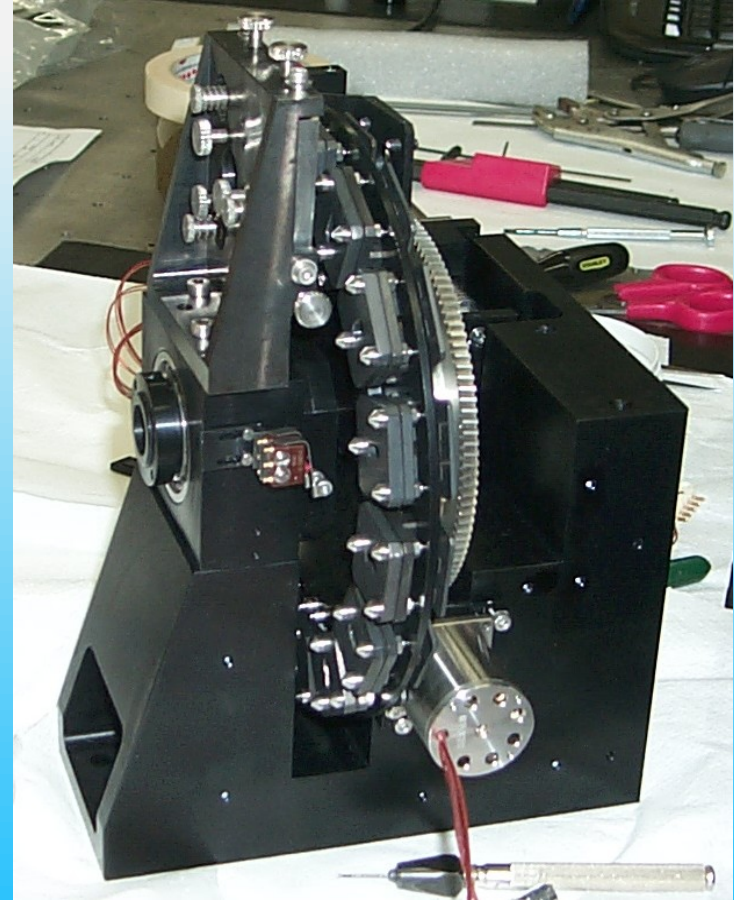
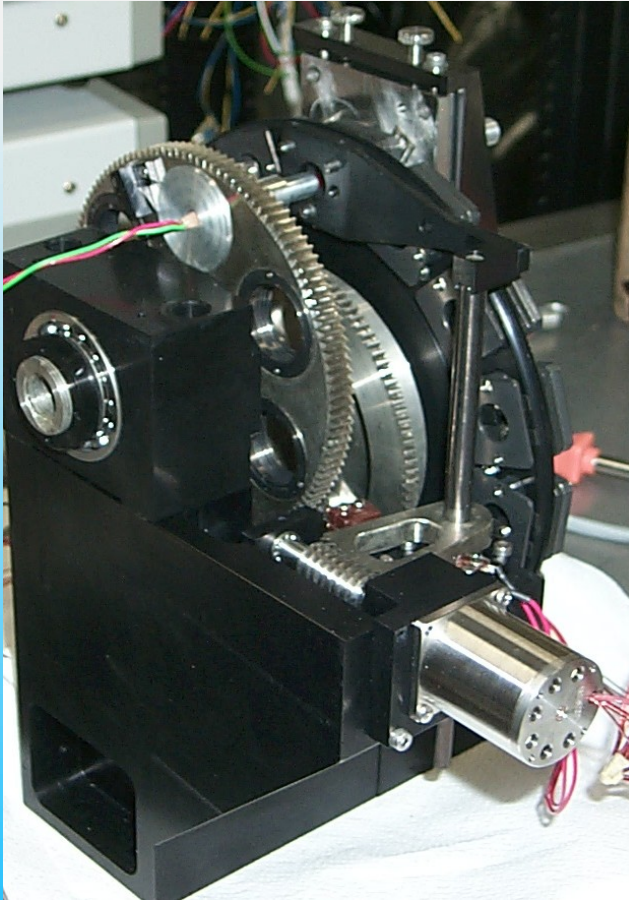


Slit and filter wheel design



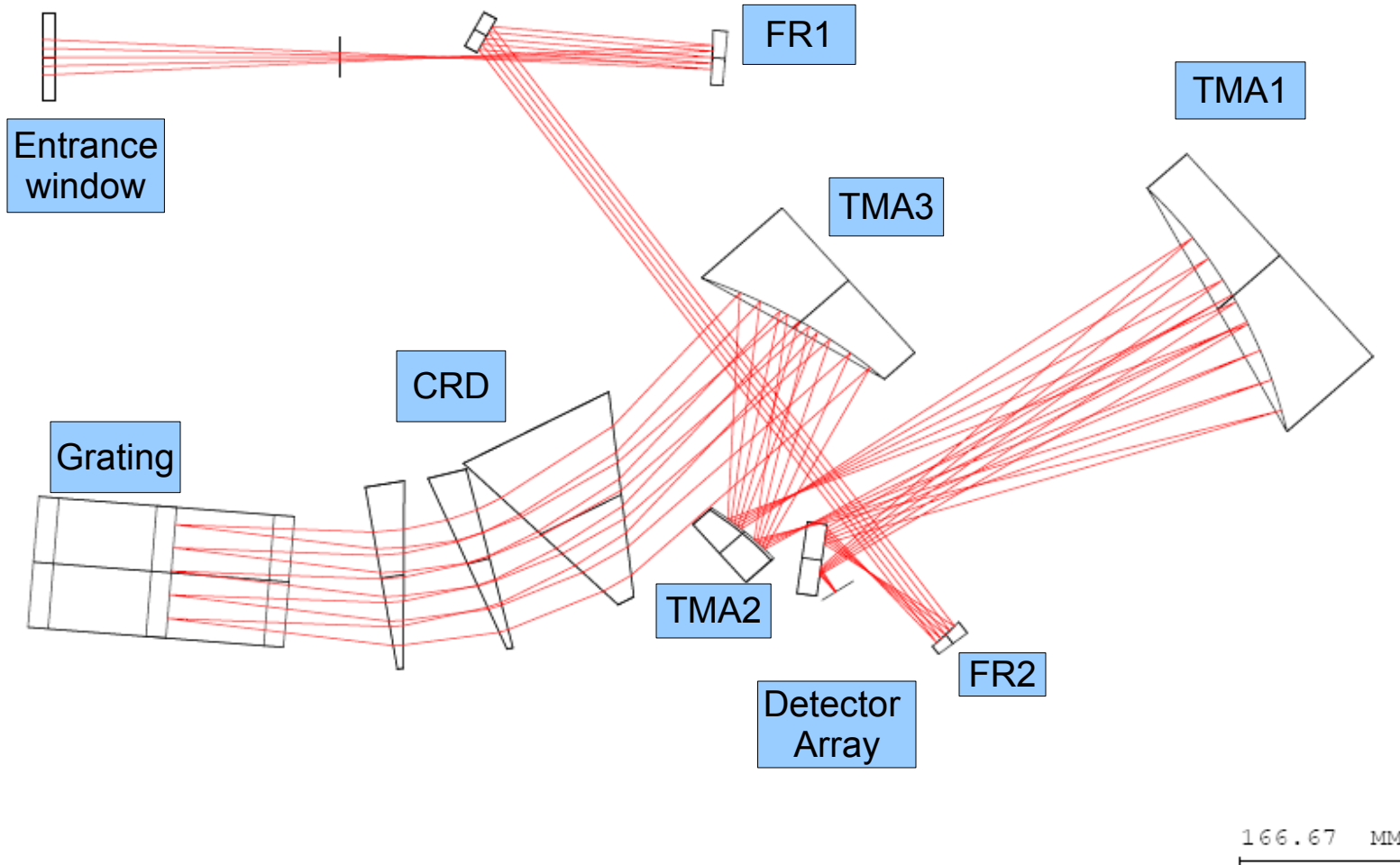


.....And the real thing



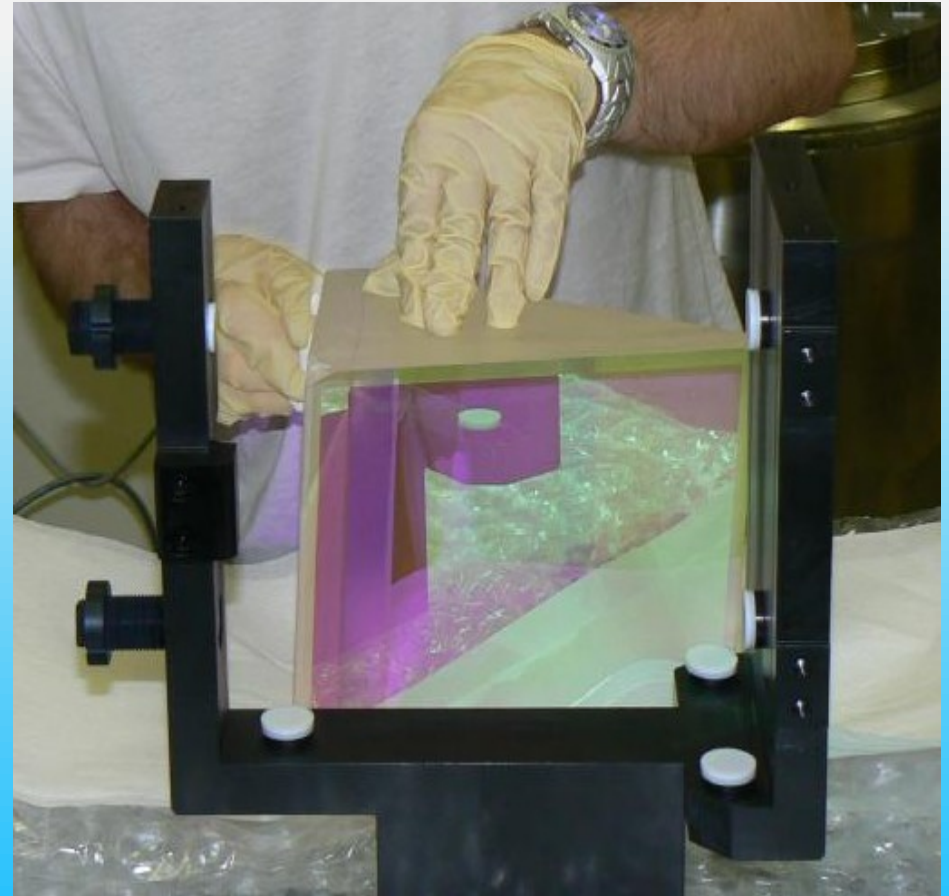
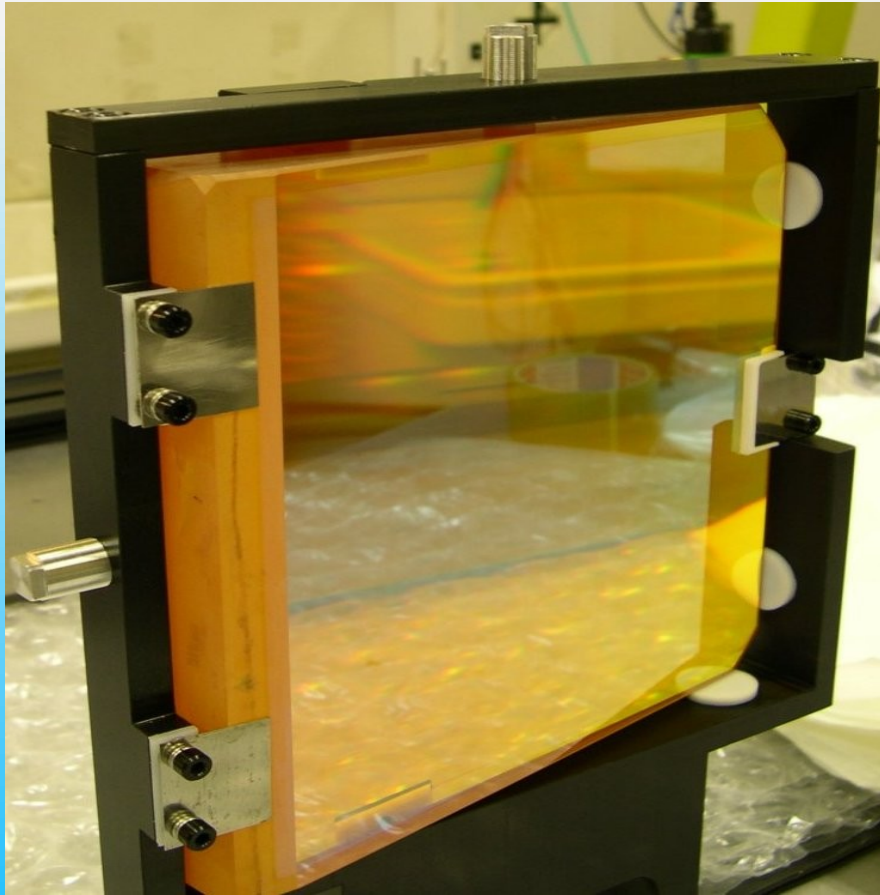


Cold optics



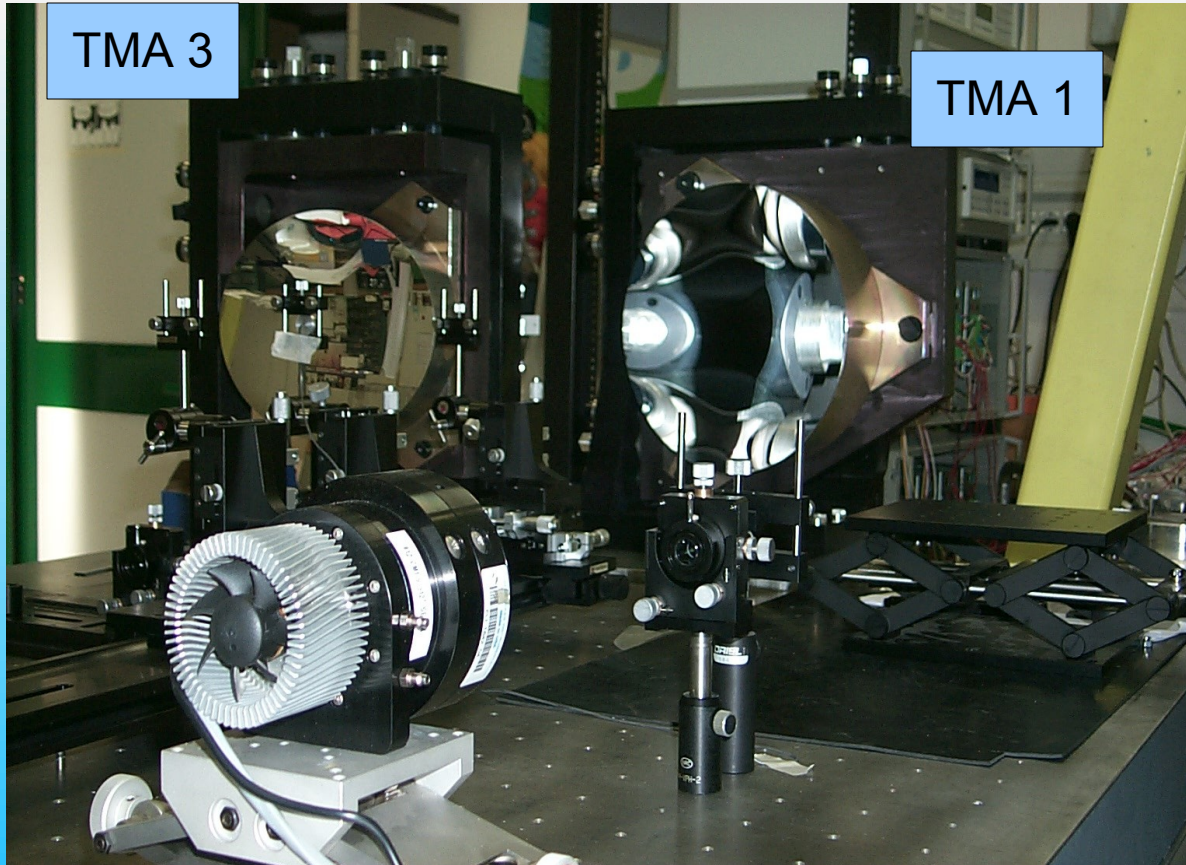


CRD Prisms





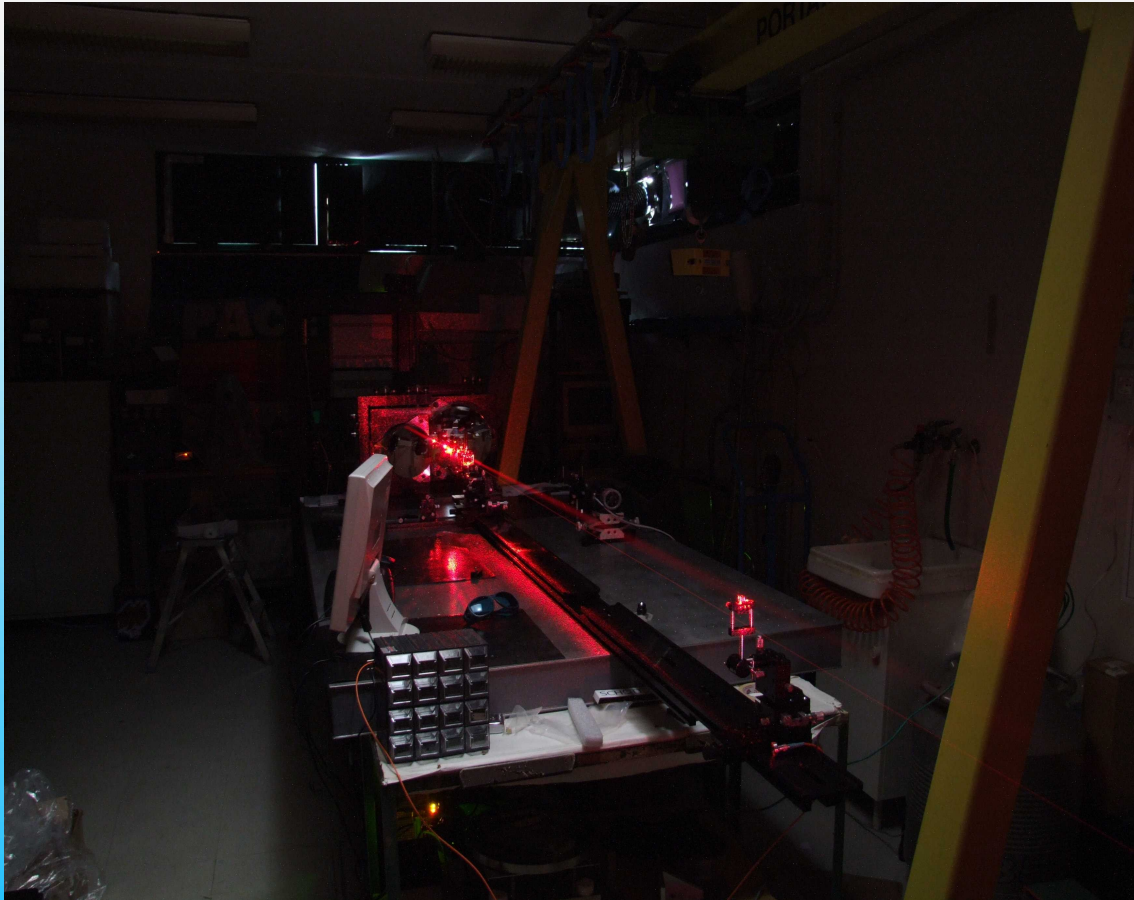
TMA1 and TMA3



- TMA 1
 - $K = -0.1018$
 - $R = 503.6 \text{ mm}$
- TMA 2
 - $K = -6.5094$
 - $R = -239.7 \text{ mm}$
- TMA 3
 - $K = -0.6418$
 - $R = 499.4 \text{ mm}$



Aligning the TMA



- Defining the optical axis
- Determining the focal points
- Adjusting the position of TMA1
- Switching the source
- Adjusting the position of TMA3
- Checking the aberrations



Future work



- Installing and testing the cryostat
- Installing and aligning the TMA system
- Mounting the grating, the CRD and the FR
 - Alignment at room temperature
 - Fine tuning at cryogenic temperature



IR Group



- Sandro Gennari* - Optics, Cryogeny and Mechanic Development
- Carlo Baffa* - Software, Electronics, Data Acquisition, Web
- Elisabetta Giani* - Software, Web Documentation, Computer Maintenance
- Valdemaro Biliotti* - Electronics Development
- Mauro Sozzi* - Digital and Analogic Electronic, Microcontrollers
- Gilberto Falcini* - Criogeny and Mechanic Development
- Gianni Marcucci* - Mechanics