

MIDI and cryogenic design

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ASTRON

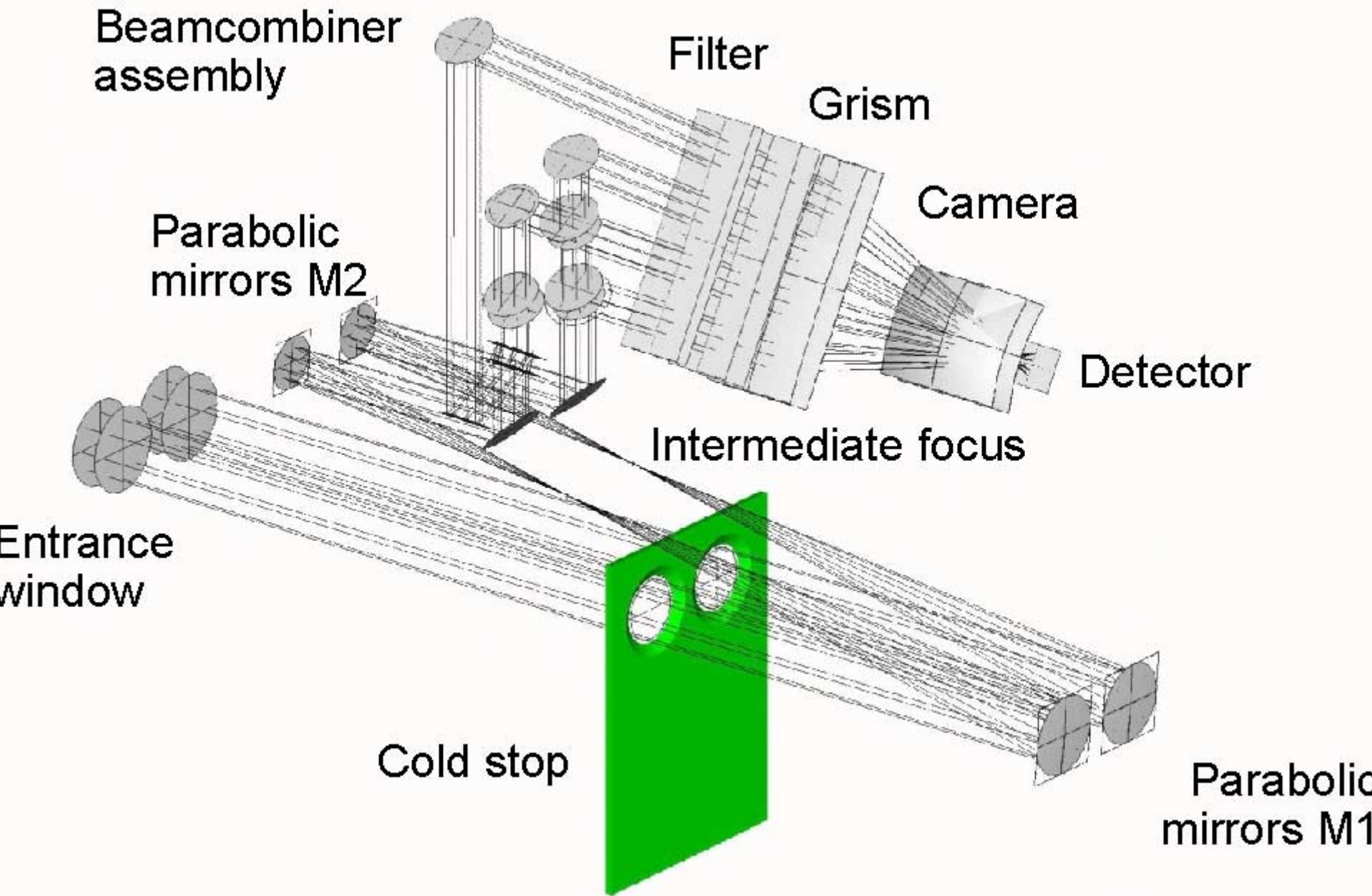
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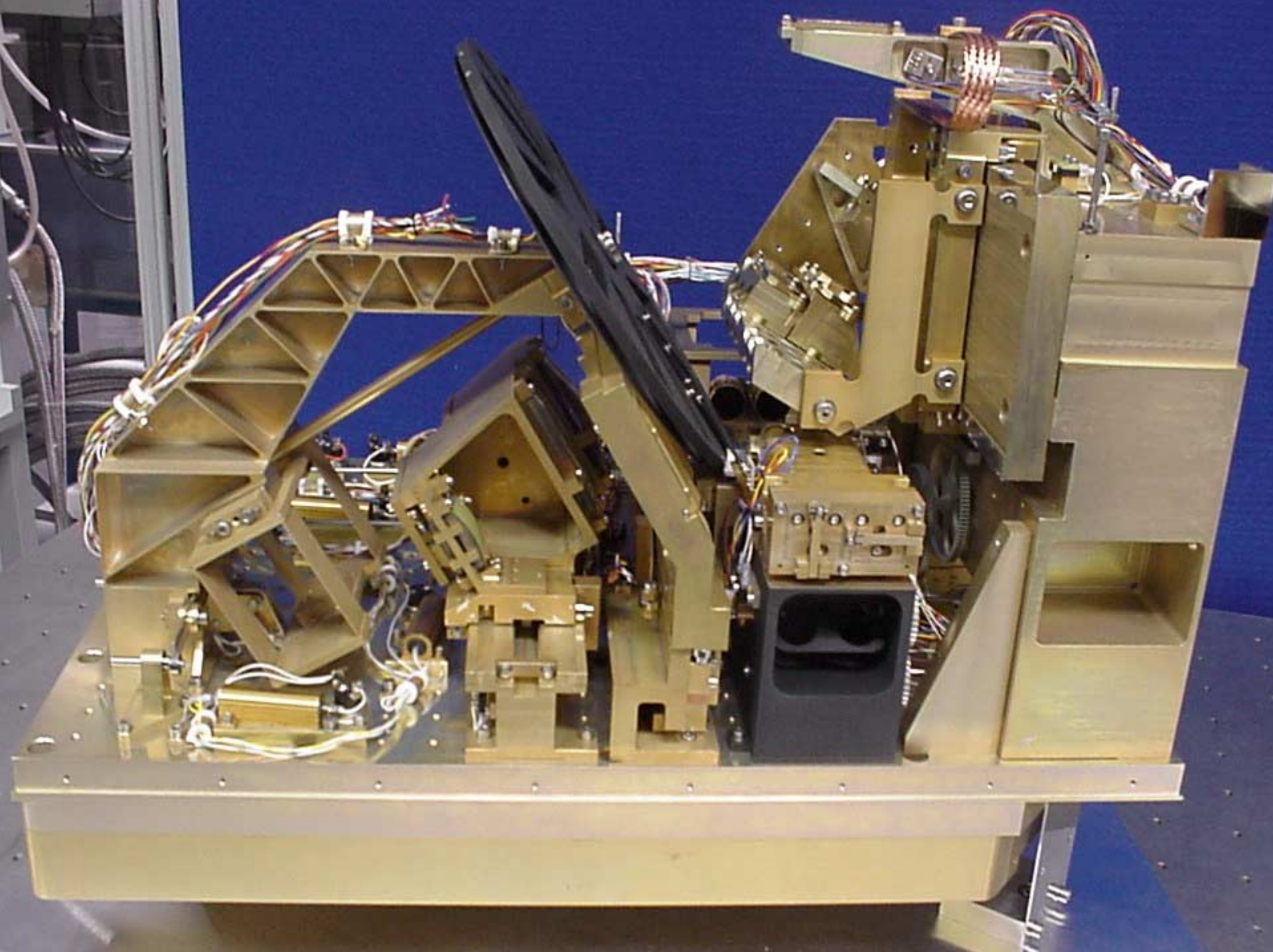


MIDI

- Mid-infrared interferometer for the VLTI
- Combines light from 2 telescopes
- Wavelength N-band and Q-band
- Imaging or spectroscopy
- Dispersion low and medium







Design criterion

- Monolithic manufacture
- Homogeneity
- Isostatic mounting
- Uniformity
- Accessibility





Problems

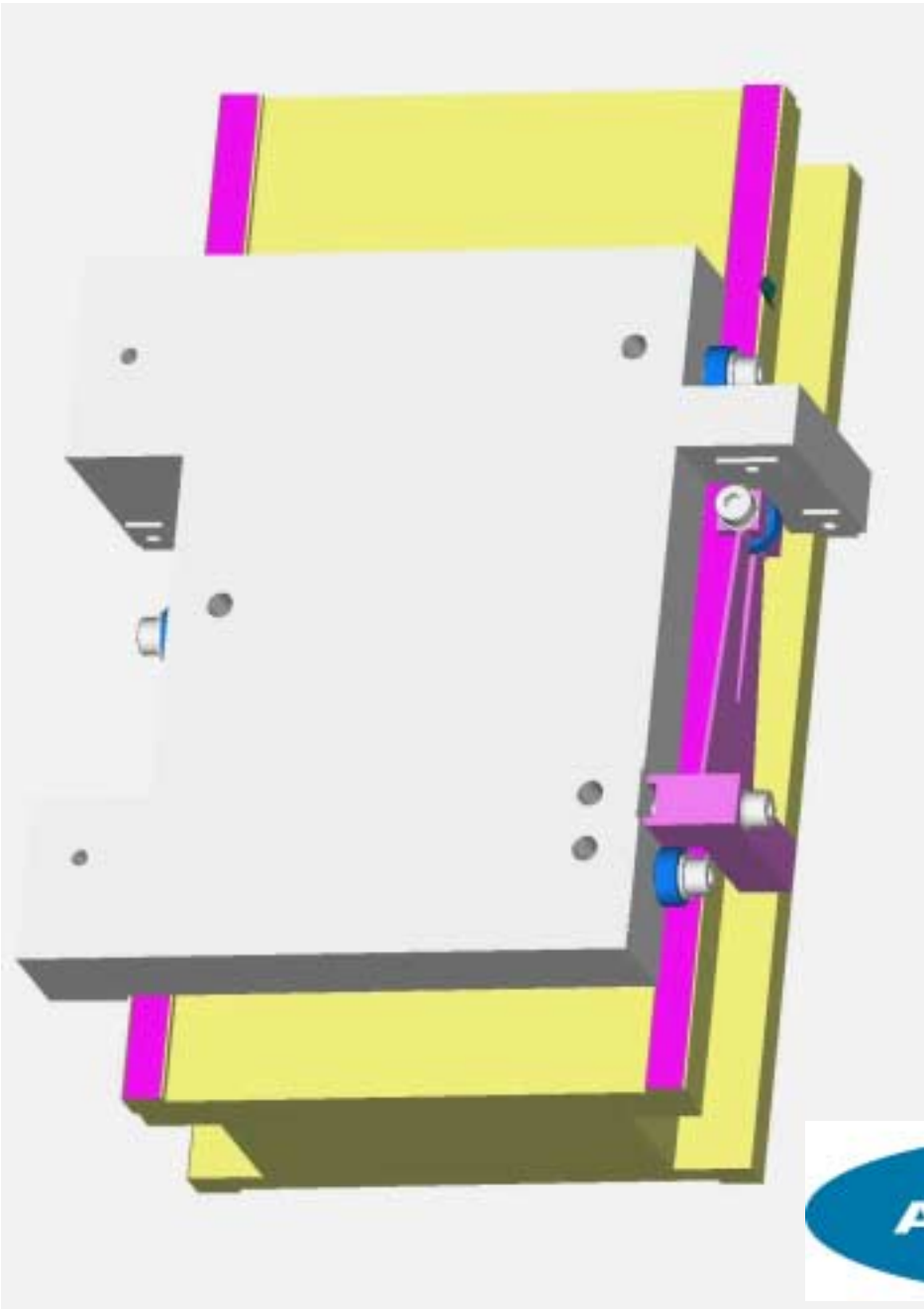
- Very cold temperatures
 - electronics
 - materials
- High vacuum
 - out gassing
 - air pockets



MIDI slider

- External motors
- cryogenic bearings
- V-groove positioning
 - allows external motor without need for high accuracy feedthrough





List of Filters

- N-band
- NeII
- NeII_ref2
- SiC
- PAH1+ArIII_ref1
- ArIII+PAH1_ref2
- PAH2
- SIV



List of Spatial Filters

- Open
- Full field
- 0.4mm pinhole
- 170, 110, 71 micron triple pinholes
- 200, 100, 50 slits



Reference

- Cold Optics of MIDI: the mid-infrared interferometric instrument for the VLT[4006-18] JW Pel, AW Glazenborg-Kluttig, JCM de Haas, H Hanenburg, R Lenzen. SPIE Interferometry in Optical Astronomy Vol. 4006 P164-173 March 2000

