# LMIRcam 3 – 5 µm Imager for the LBT Combined Focus

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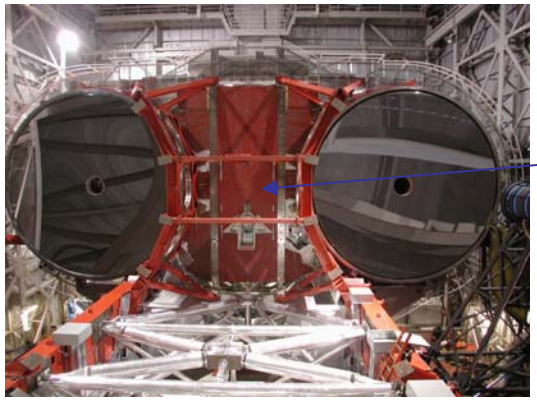
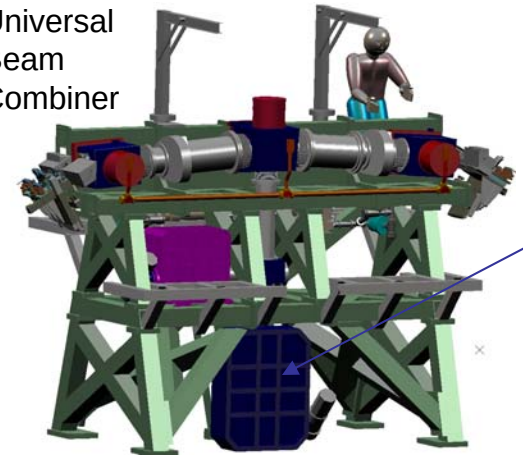
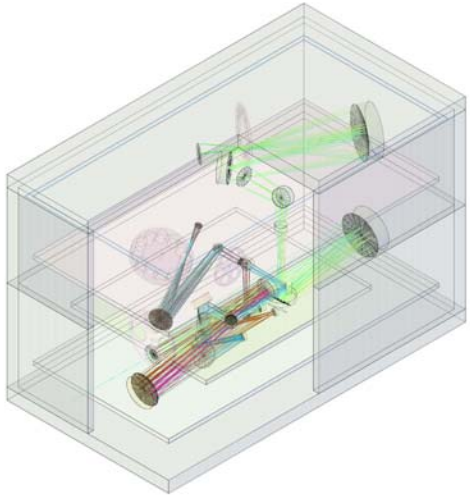
- Images Fizeau Image (direct image) of the combined focus of LBT's two 8.4-meter mirrors separated by 14.4-meter → 30 mas resolution at 4 µm.
- Shares the same cryogenic volume as 10 µm Nulling Infrared Camera (Hinz et al.) which follows the Universal Beam Combiner
- Optics will form an intermediate focus (for aperture stops, slit, occulting spots) and re-imaged pupil (for filters, grisms, pupil masks).
- Collaboration of Univ. of Virginia, Univ. of Minnesota, Notre Dame, Univ. of Arizona
- Funded by NSF ATI and UVa



LBT at Mt. Graham, AZ

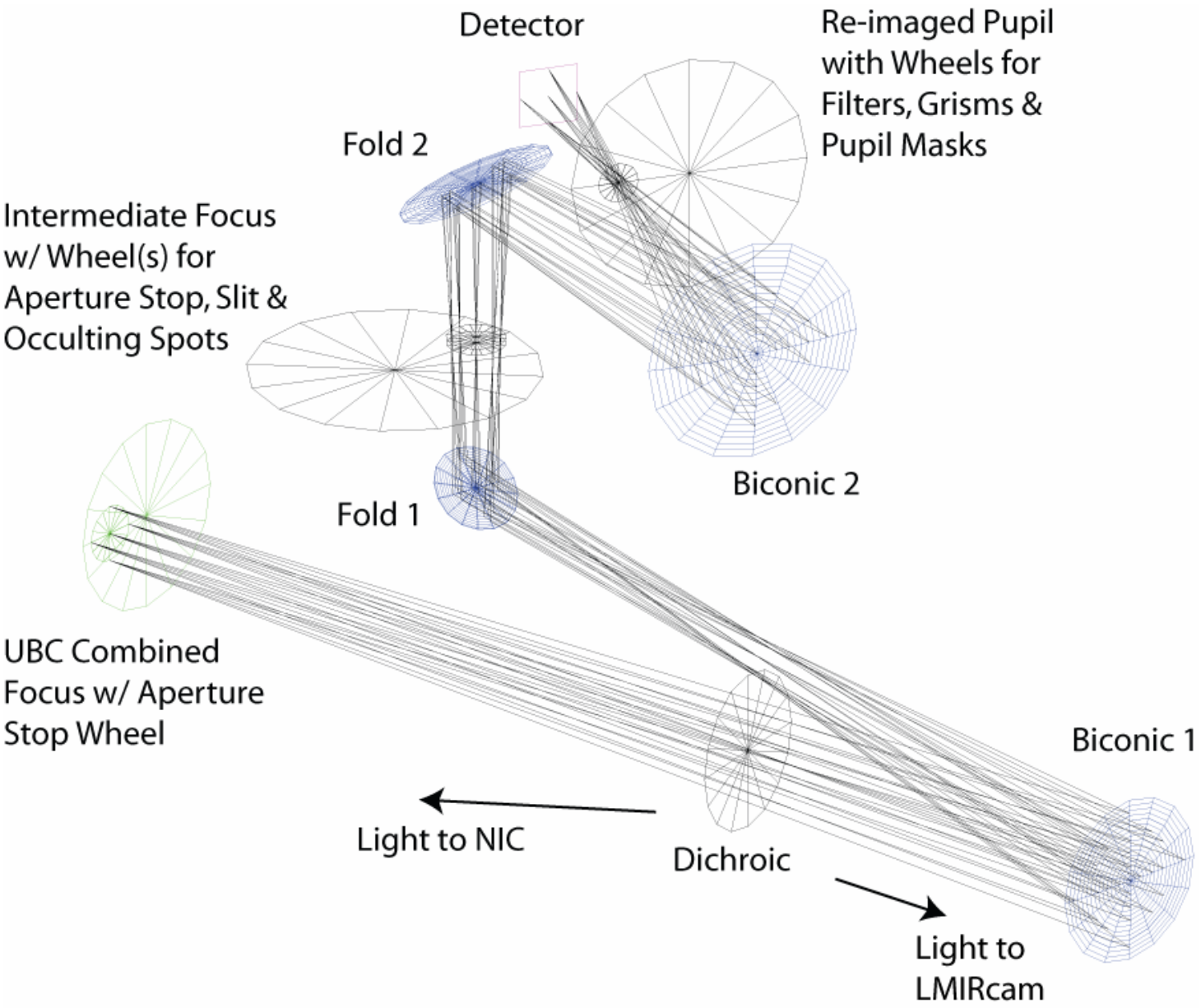


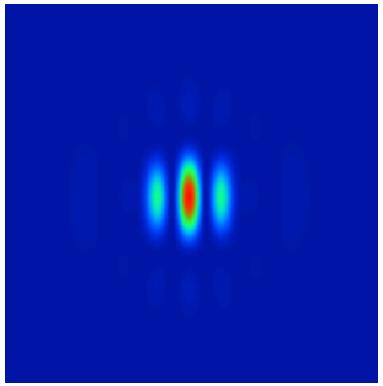

NIC



Latest Dewar layout.
LMIRcam optics in green.

# LMIRcam Optical Train






Imaging Mode Anticipated Sensitivity (5 σ, 1 hr on source)

L’-band 20.3 vega mag (2.1 µJy)

M-band 17.3 vega mag (15 µJy)

Grism Spectroscopy Mode (R~375) Sensitivity

Approx. 2.5 max brighter

• Science: direct imaging of extrasolar planets, Galactic star formation (e.g. resolve structure in nearby accretion disks), extragalactic star formation, mass loss from evolved stars, dusty AGN and quasars, gravitational lenses in MIR, synergy with Spitzer, WISE, ALMA

• Coronography at thermal infrared wavelengths: limit the energy in the diffraction pattern to reduce the brightness of semi-static speckles and thus improve PSF subtraction.

- Potential Test-bed for high-contrast coronographic methods