

Remarks on High Angular Resolution Imaging with Long Baseline Interferometry

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Possible Science Directions for Long Baseline Optical Interferometry

- Stellar physics
 - Develop interface to theoretical astrophysics community
 - Interpretation/calibration of stellar global oscillation models
 - What is the real need for precision in fundamental parameters?
 - Develop complementarity with GAIA
 - Motivate stellar surface imaging
 - Supports precision RV for exoplanets
 - Study of stellar dynamos
 - Understanding of habitable zones
 - 2-d -> 3-d detail in mass loss and outflow geometry
 - Imaging with Hi-res spectroscopy
 - Connection to ALMA capabilities
- AGN
 - Define/verify the potential and requirements
 - Verify capability with demo observations – e.g. at VLT
 - Determine the essential target population, scale the facility requirement
- Planet-formation themes – PFI
 - Candidate for technical demonstrations and preliminary PFI design
- NASA Vision Missions
 - Heavy reliance on interferometry
 - Build community and expertise
 - Perhaps premature for major development in 2020's

Possible 2020's Midscale Directions for Long Baseline Optical Interferometry – Develop with small-to-medium scale efforts at existing arrays

- Spectroscopy
 - Especially higher resolution
- Precision
 - To 1% and better
- Wavelength
 - Thermal IR
- Polarization
 - Structure in diffuse circumstellar regions
- Imaging detail by improved UV coverage
 - Cooperating-arrays
 - GSMT + arrays
 - New telescopes
- Angular resolution
 - New telescopes with longer baselines
- Sensitivity
 - Improved Detectors
 - More efficient Coatings
 - Bigger telescopes