CHARA Beam Combiners and Observing Preparation

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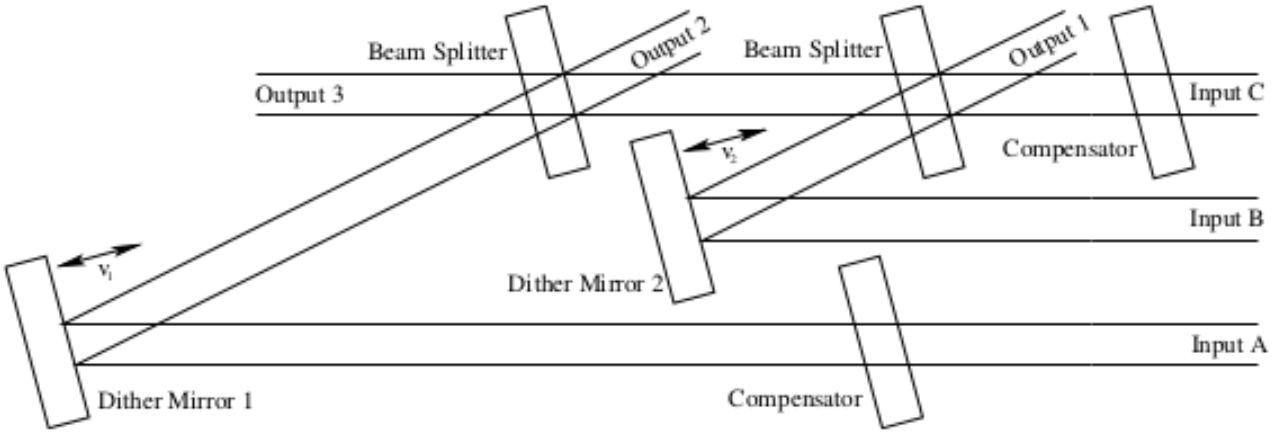
Beam Combiners

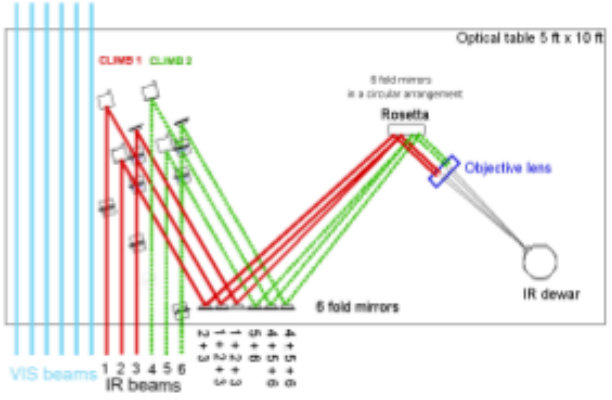
Combiner	Num Tel.	Band	Typical Mag	Best Mag	Spec. Res.	Science
CLASSIC	2T	H or K	7.0	8.5	Broad	Diameters
CLIMB	3T	H or K	6.0	7.0	Broad	Binaries, Disks
MIRC-X	6T	H	6.5	7.5	50	Stellar Imaging, Binaries, Disks
PAVO	2T	630-900 nm	7.0	8.0	30	Diameters
VEGA – HiRes	2-3T	2 bands (7nm) in 480-850 nm	4.0	5.0	30000	Spectral studies
VEGA – MedR	2-3T	2 bands (35 nm) in 480-850 nm	6.5	7.5	6000	Spectral studies, Diameters

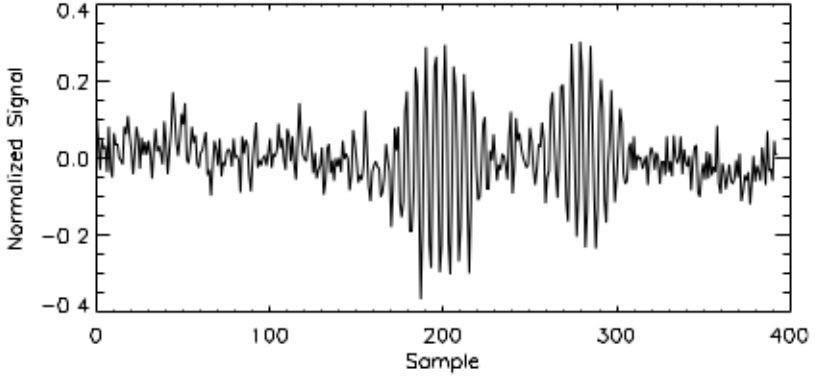
Limit for acquisition and tiptilt tracking: V = 10-12 mag

CLASSIC / CLIMB

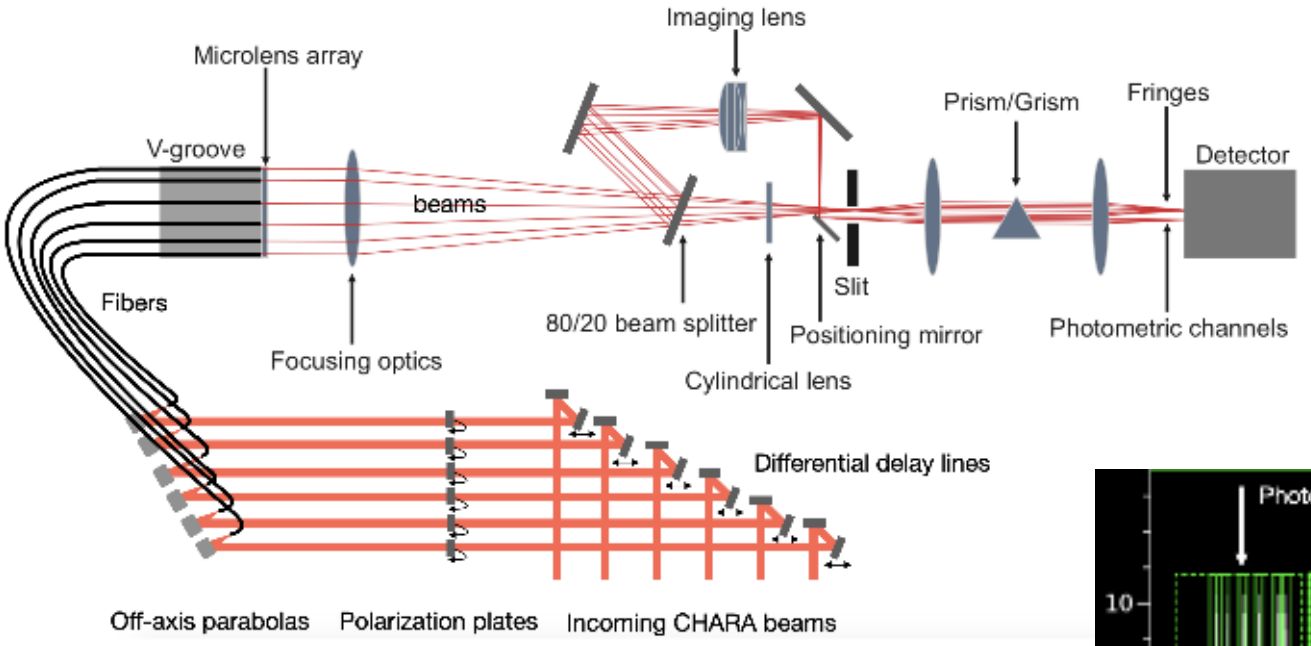


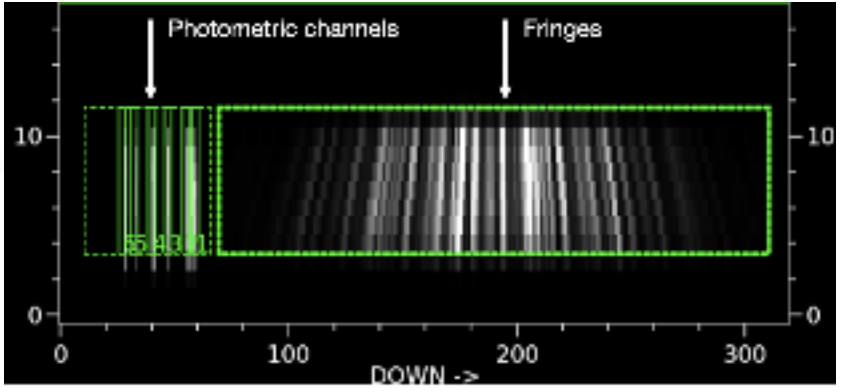
ten Brummelaar et al. 2013
Farrinton et al. 2010





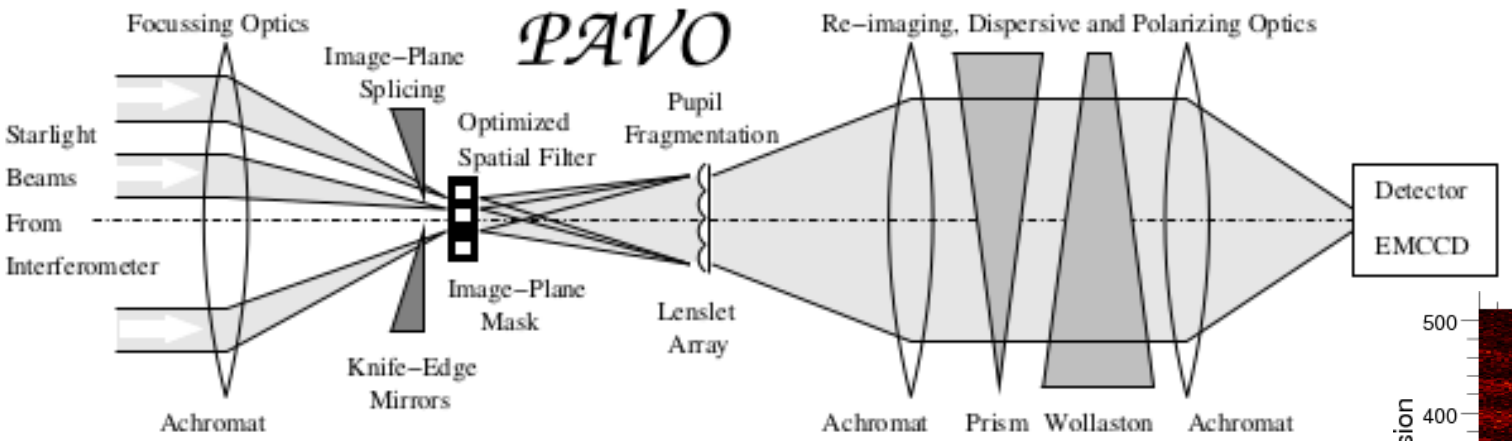
MIRC-X

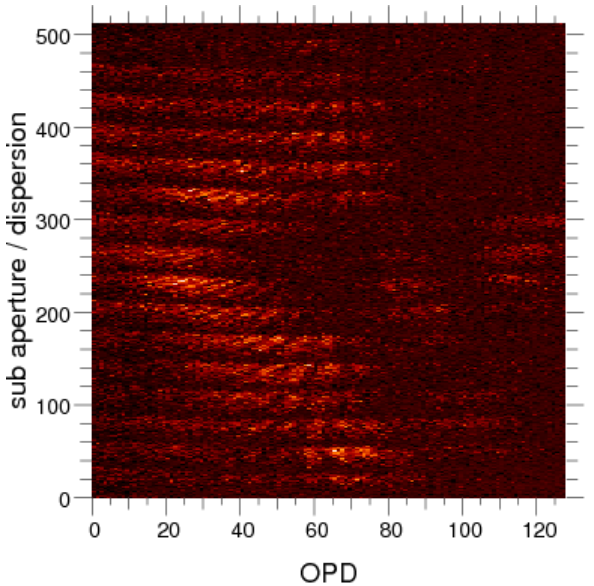




Anugu et al. 2020, submitted

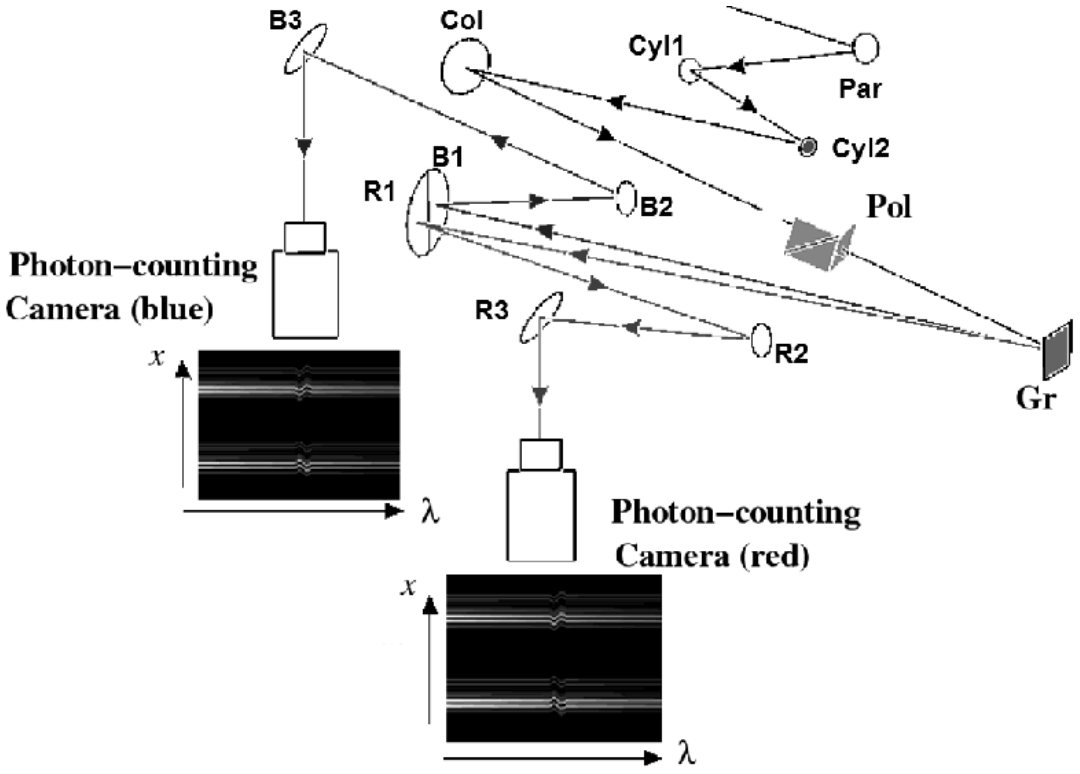
PAVO

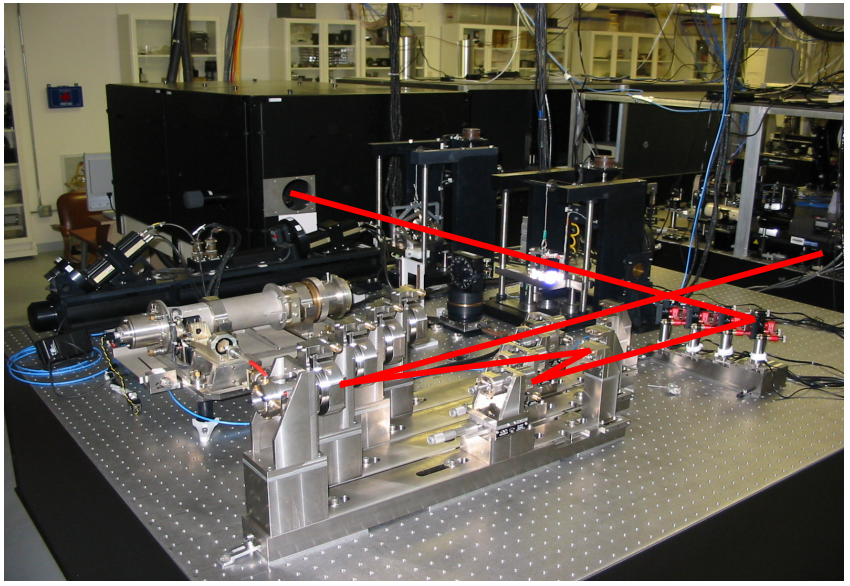


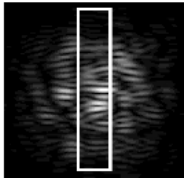


Ireland et al. 2008

VEGA







Mourard et al. 2008, 2009

Future Instruments

- CLIMB++
  - New low-noise SAPHIRA detector for CLASSIC/CLIMB
  - Improve sensitivity by ~ 2 magnitudes
- MYSTIC
  - 6 Telescope K-band combiner (2.13 μm)
  - Fall 2020
- SPICA
  - 6 Telescope visible combiner (650-800 nm)
  - Spectral resolutions: 50, 3000, (10000?)
  - First light expected 2021/2022