

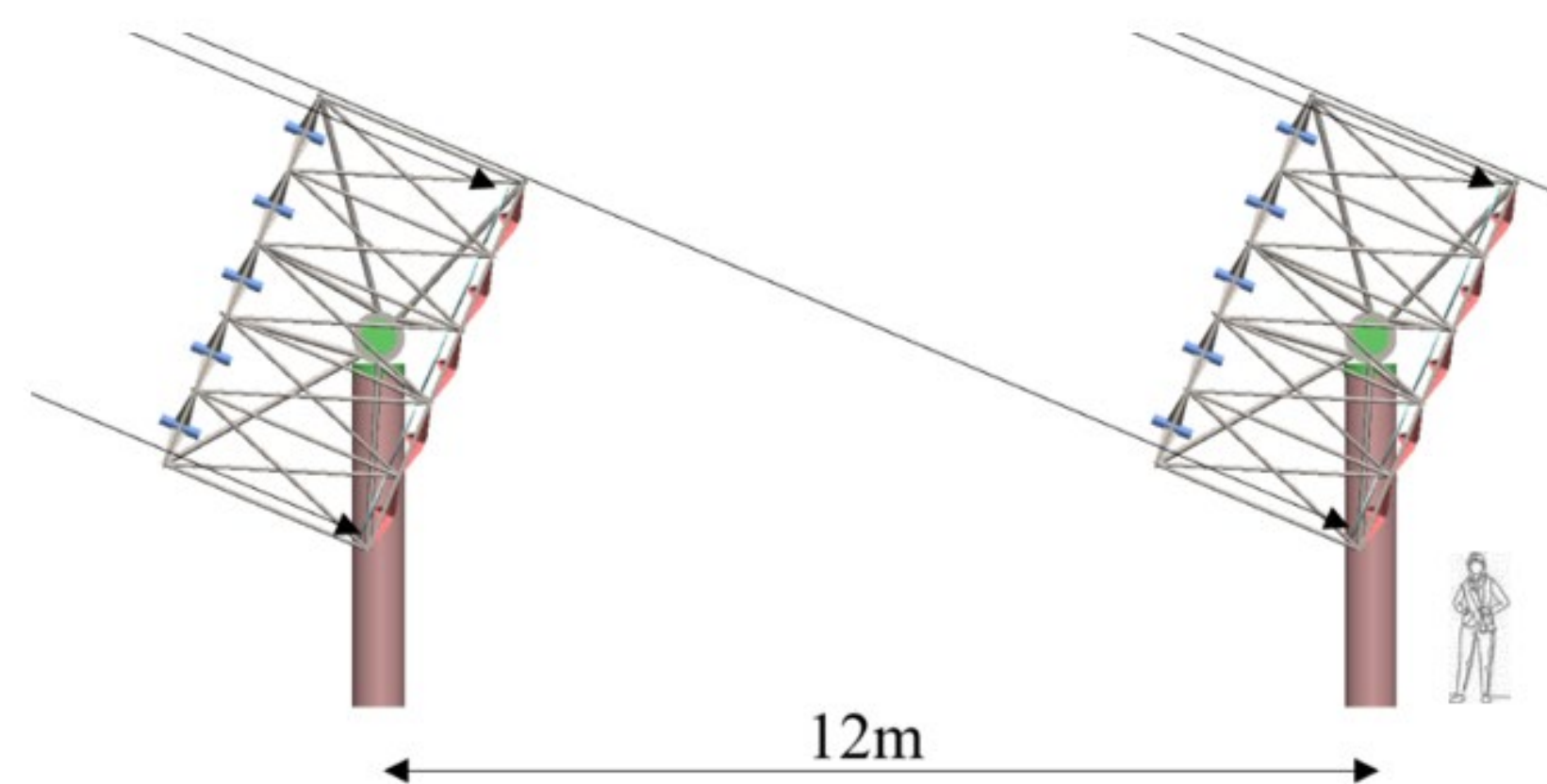
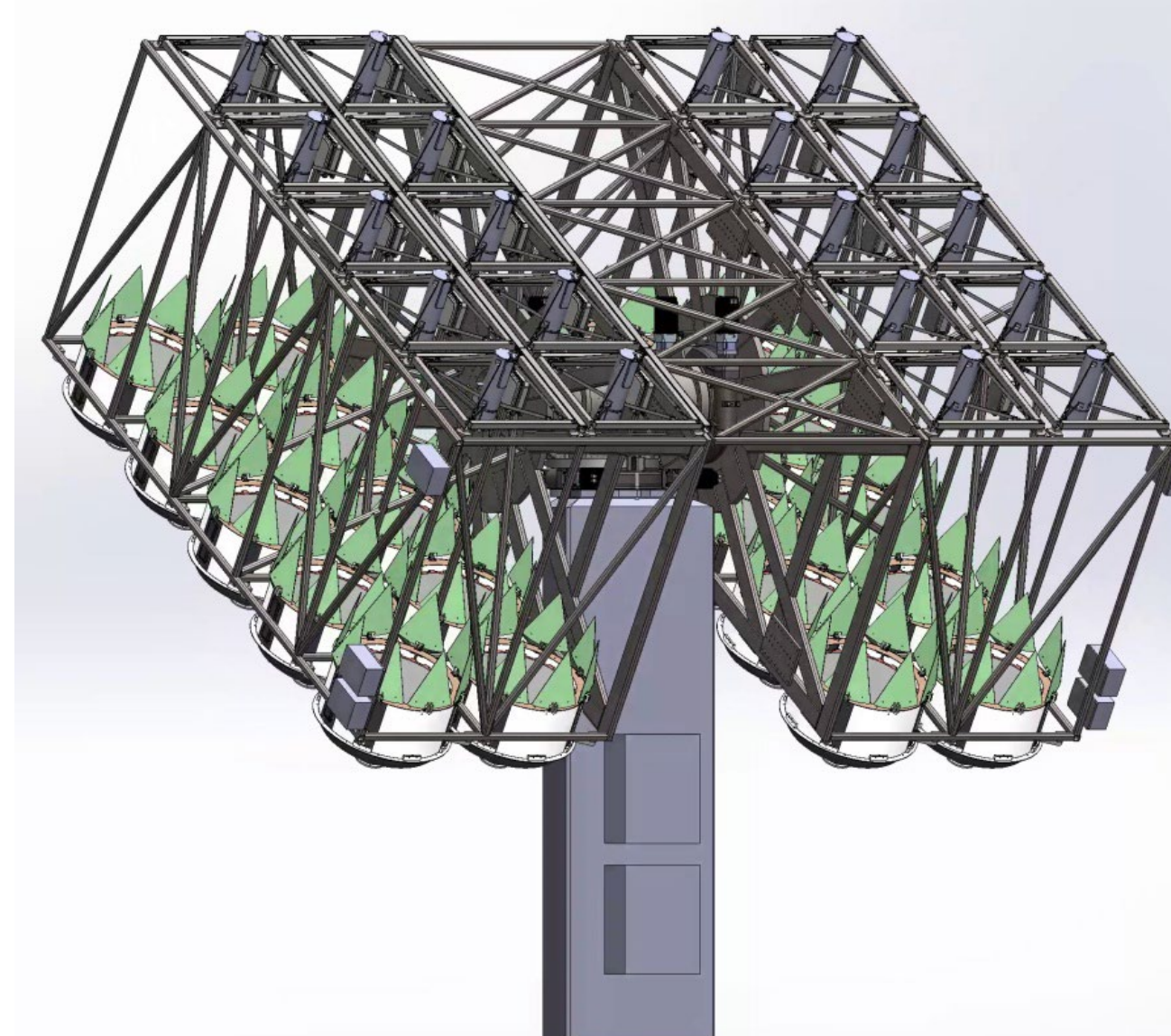
The Large Fiber Array Spectroscopic Telescope: A Platform for Stellar Intensity Interferometry?

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1) What is LFAST?

The Large Fiber Array Spectroscopic Telescope, (LFAST) is a scalable array of optical/near-infrared telescopes designed to break traditional aperture cost curve, but still enable cutting edge spectroscopic science.

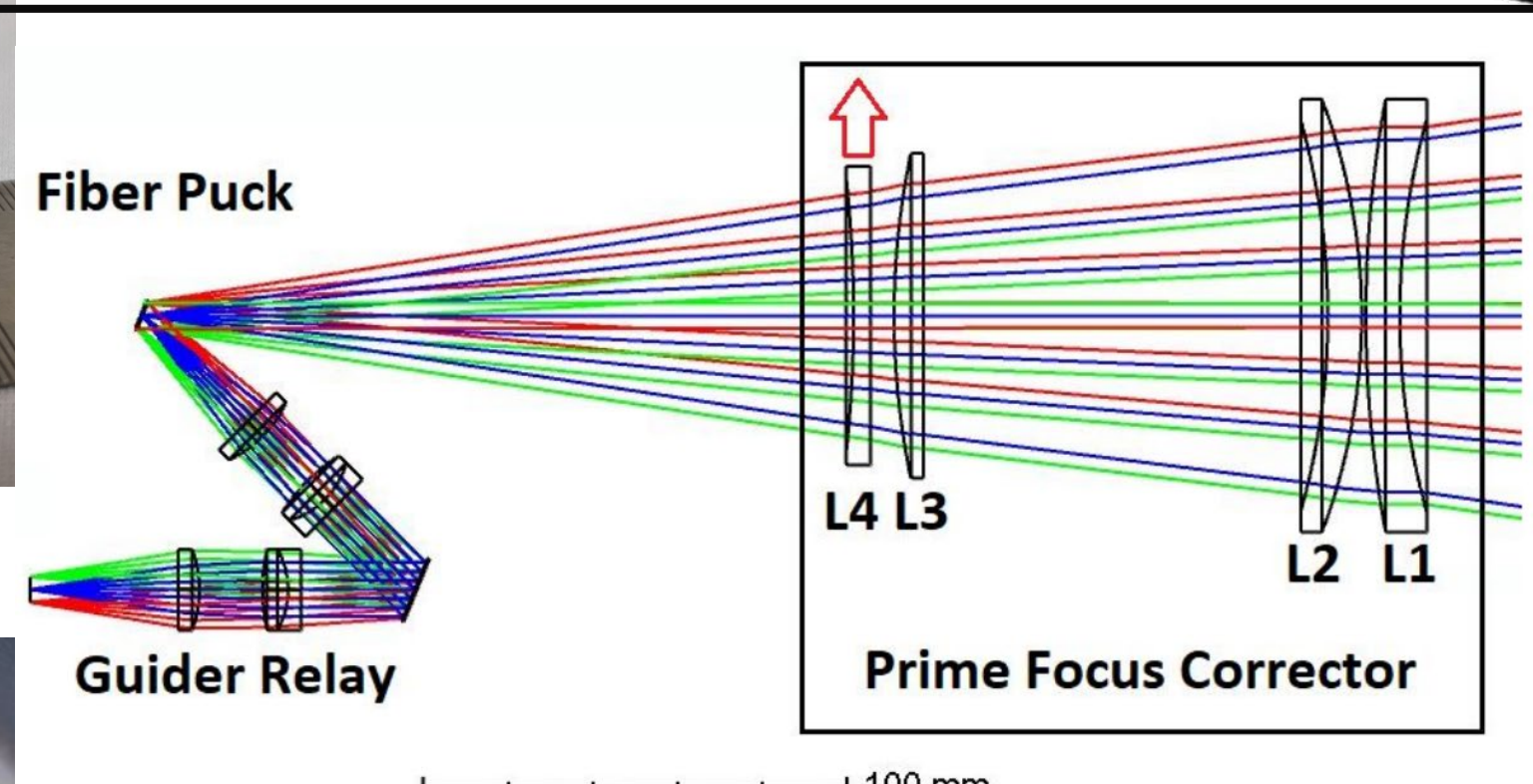
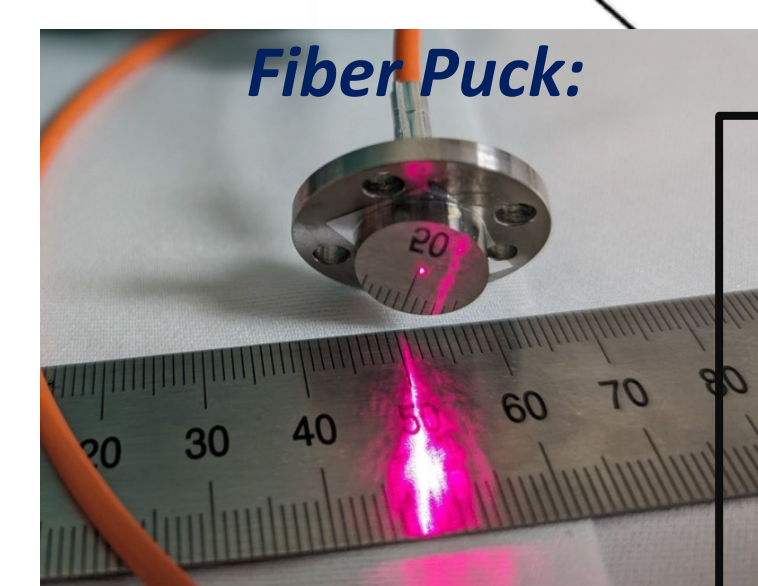
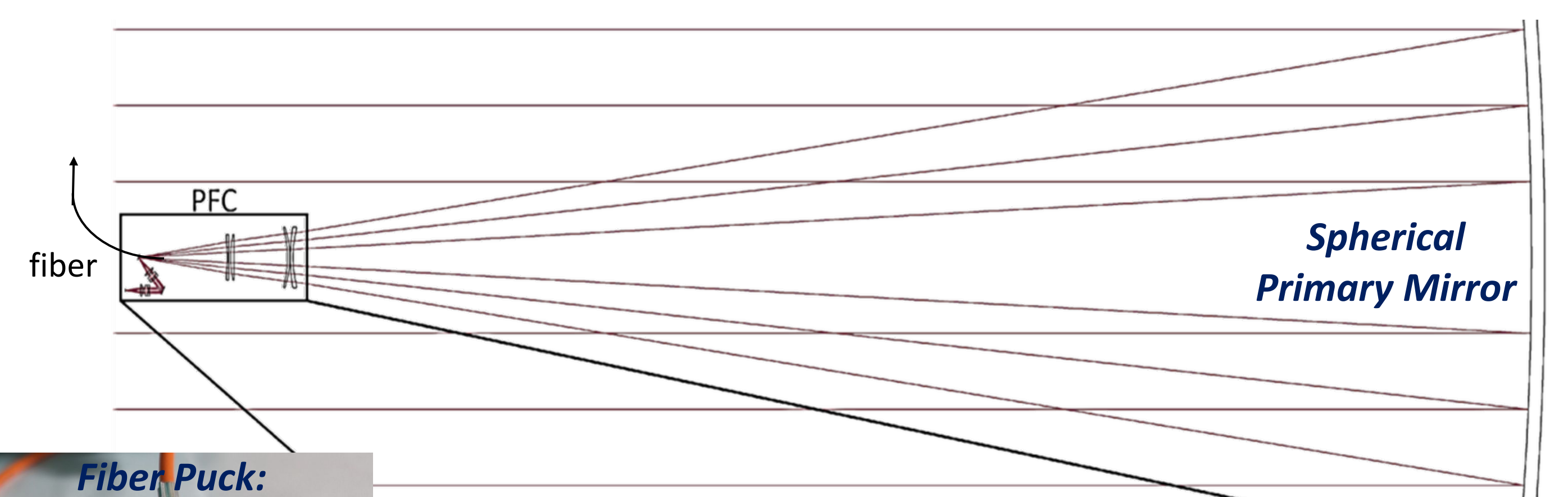
- Spectrographs in seeing limited conditions don't need phased light.
- An un-phased array lowers cost and complexity, but still collects photons
- No giant structure, no giant mirror, no giant dome
- Mass replication reduces construction cost and time



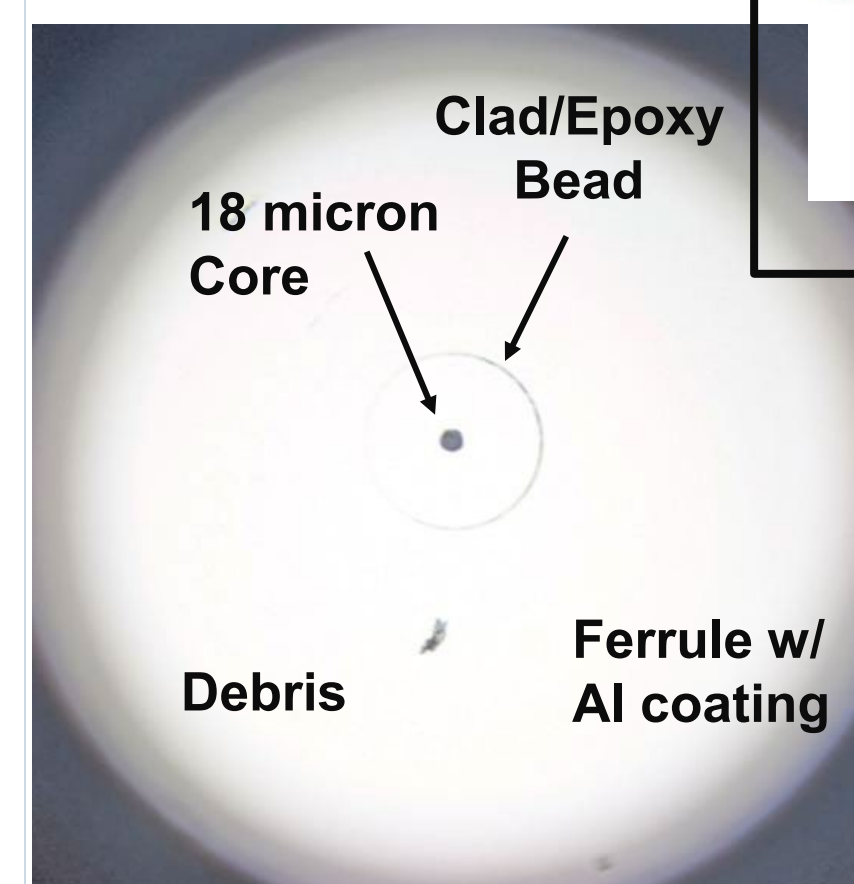
2) LFAST Unit Telescope

LFAST combines 20 "unit telescopes" on an Alt-Az mount

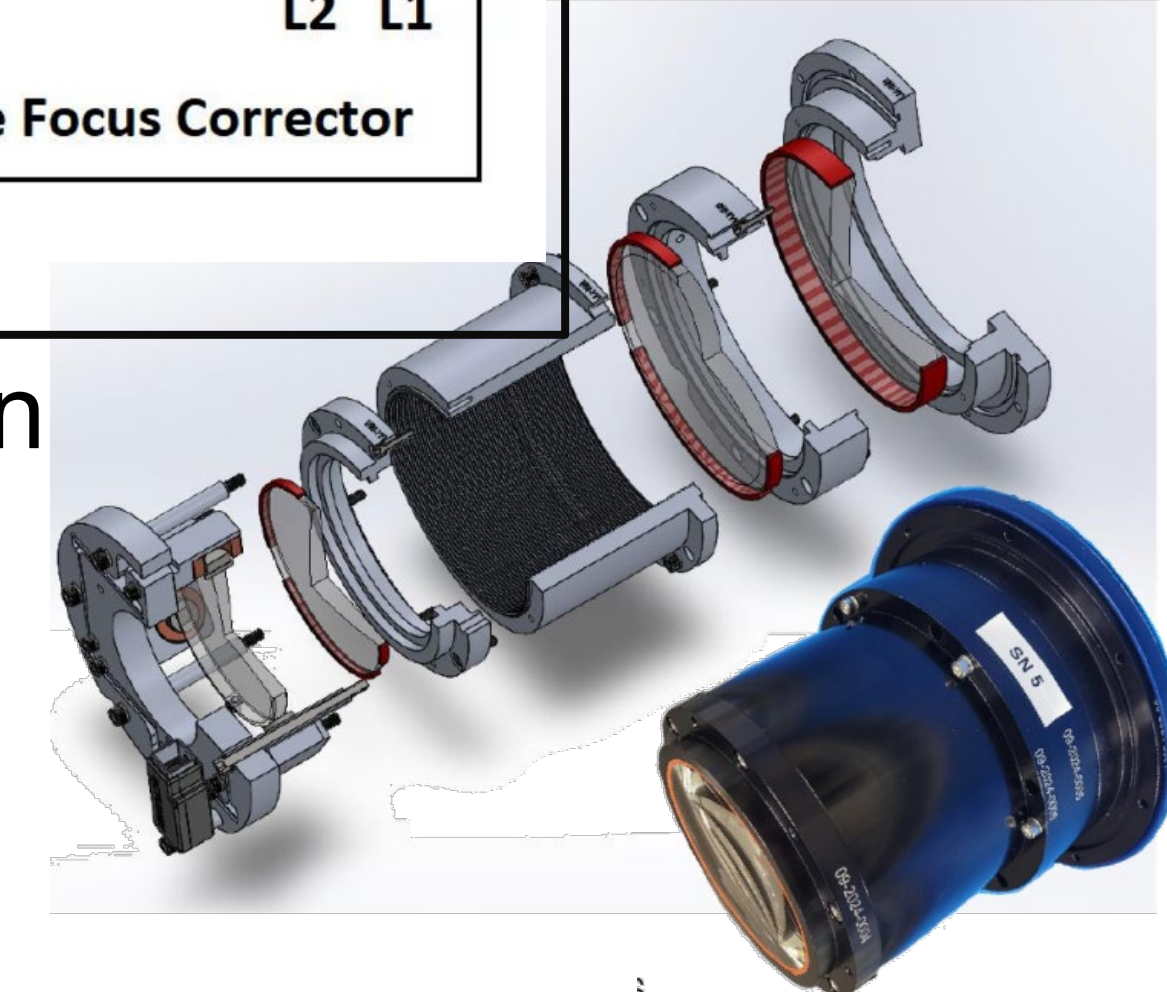
- Unit telescope: 76 cm, f/3.3, spherical primaries
- Equivalent to a 3.5 m monolithic mirror



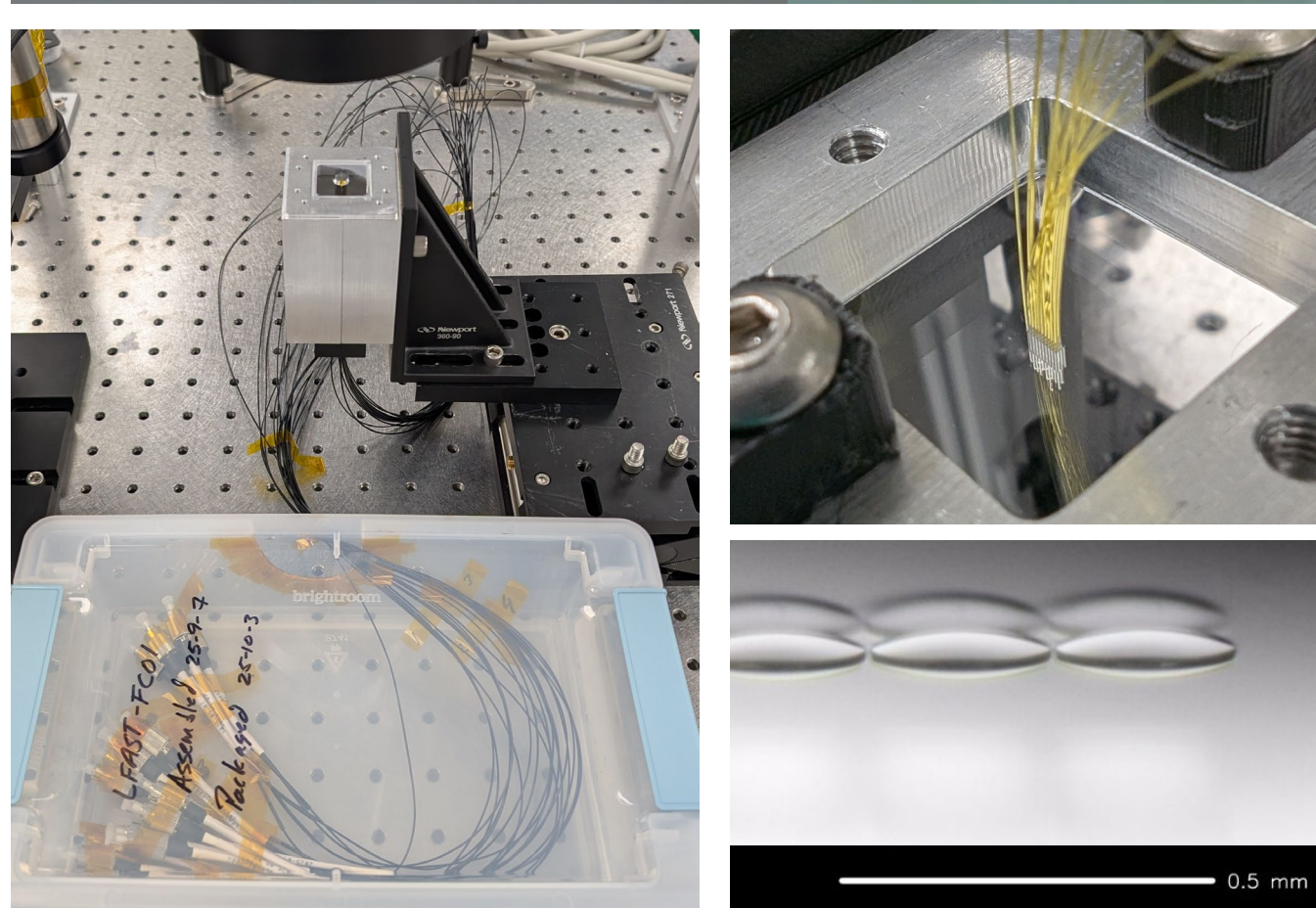
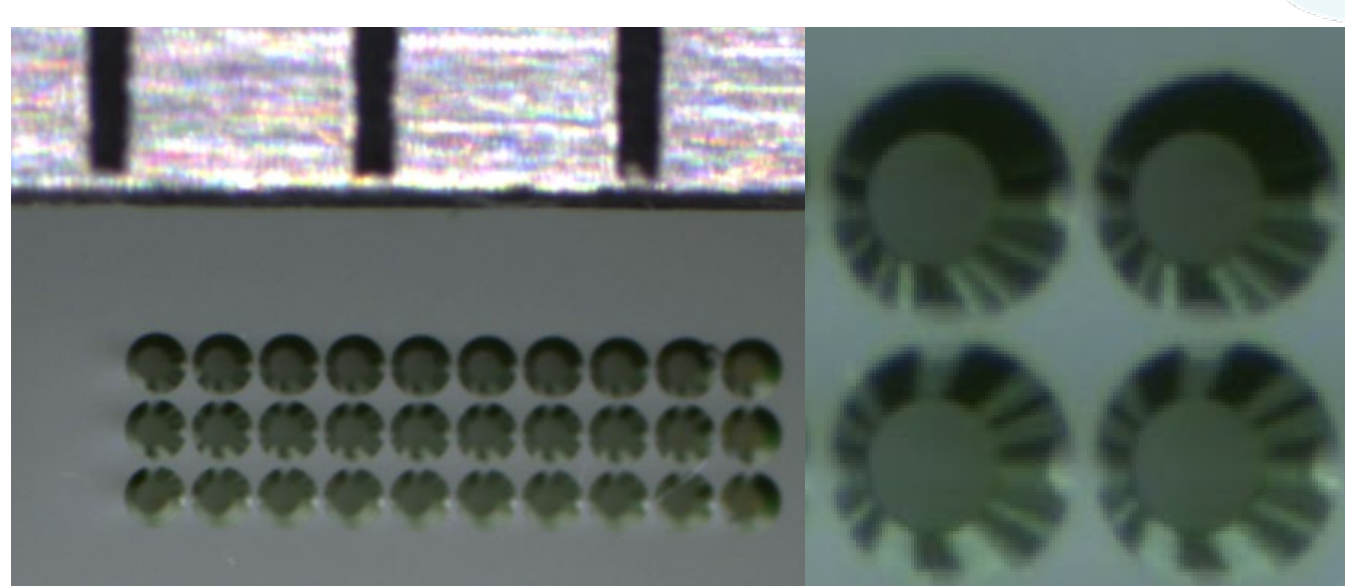
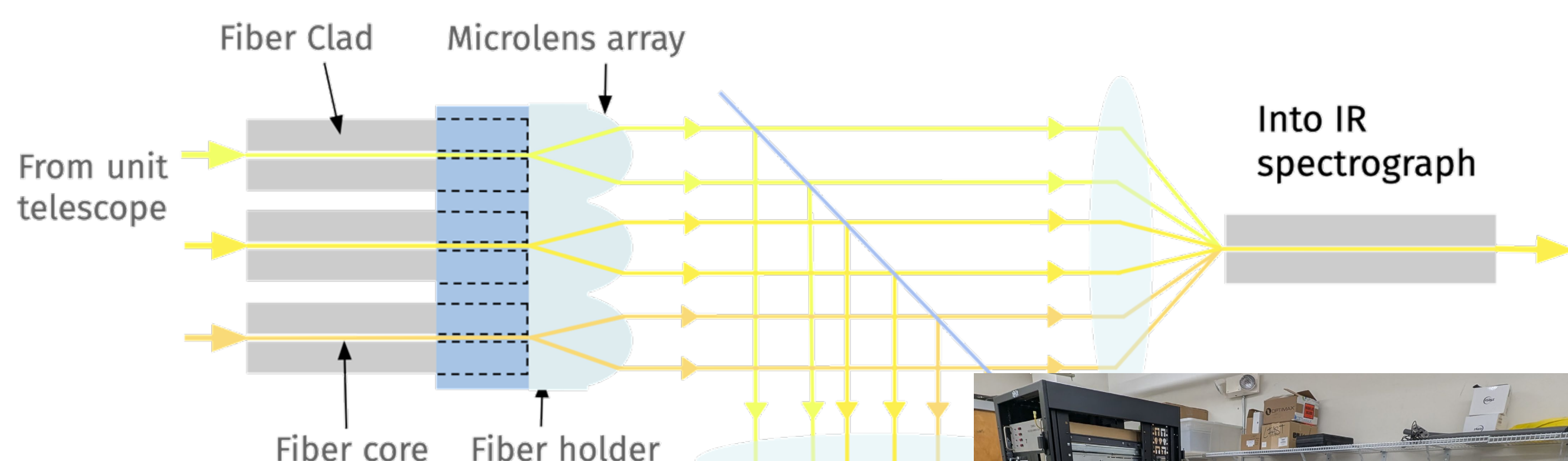
Prime Focus Corrector:



The fiber puck can accommodate different fibers to enable different science



3) LFAST Fiber Feed De-slices the Light to Efficiently Feed Spectrographs



Fiber array feeds a microlens array, which is re-imaged into rectangular fiber that forms the spectrograph entrance slit.



4) LFAST as a Platform for Intensity Interferometry?

LFAST is an excellent platform to enable SII:

- 20X system provides array baselines up to 5 meters
- Multiple systems can be arranged for longer baselines
- Telescope fiber feed can be easily replaced with GRIN fiber that bypasses the de-slicer, and feeds SNSPD detectors
- Large arrays could span the globe, making EHT sized baselines a reality (but would this require local coherence)?

• **Let's talk about how to make this a reality!**

