Future Technologies for Interferometry
(random comments)

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Topics

• Mirrors
• Detectors
• Locations
• Fibers
Mirrors

- New technologies could make mirrors lighter and cheaper
- “bubble mirror” or “corrugated glass” from ITT (Kodak)
- Lightweight: 8 kg/m$^2$
- Replicated quickly
- Deformable mirror downstream to remove fixed WF errors
Detectors

- “Zero” read noise with non-destructive, multiple reads
- Si or HgCdTe (>0.7 um) or bonded to back-end mux
- CMOS (< 1.7 um) replacing CCD (<1.1 um)
- CMOS can put detector & readout on a single chip
- Ge:Sb photoconductor array 32x32 (lambda<40-140 um)
Locations

- Moon: not a good idea
- Space: TPF-I/Darwin (6-20 um) someday
- Dome C: do this before space
- Atacama: lots of infrastructure
- Cost is paramount, science close but second
- General Astrophysics with TPF-C/I/O will fill a niche
- Keck Outriggers (4) at NPOI: a major facility, include in plan
- Rotating array of telescopes seems attractive (no delay lines; also image reconstruction is easy)
- IOTA is now at PTI, with 3-beam closure phase planned
- (parts of IOTA are also at MROI and CHARA)
Fibers

• Reduce dispersion with structured (layered) cladding?
• mid-infrared fibers (silver halide or chalconide) may be developed for TPF-I/Darwin
• Use pupil-mapping (2 mirrors or lenses) to shape beam for bulk delay lines, also to feed a fiber