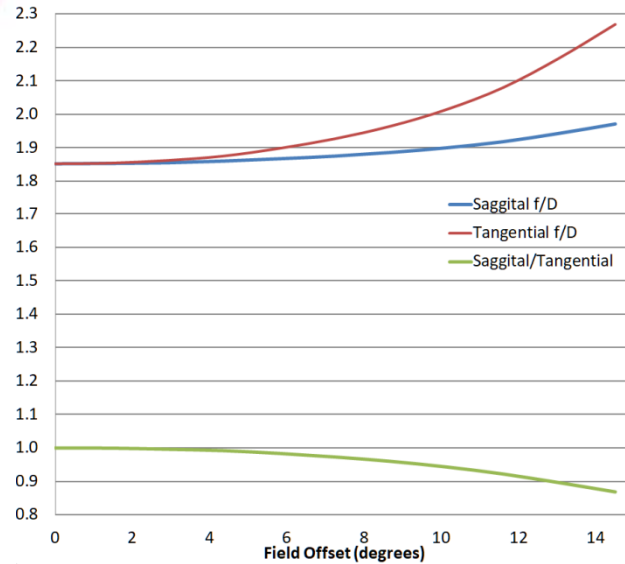
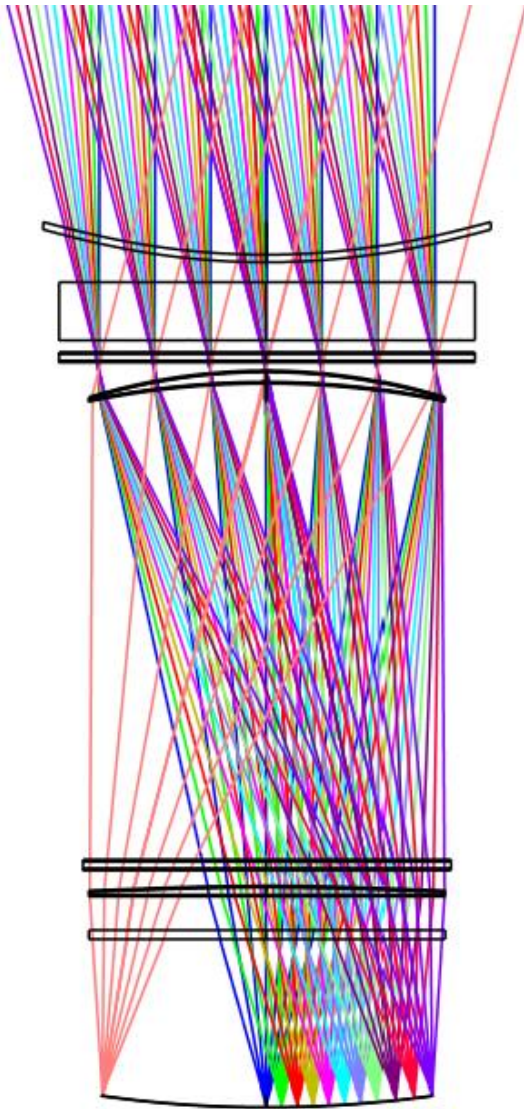
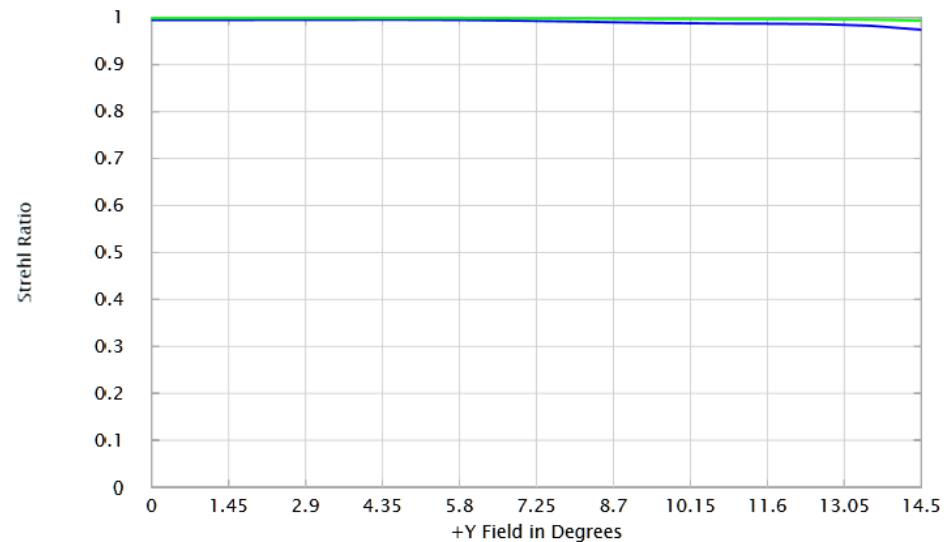


Two Lens design with Thin Silicon Lenses



- 445 mm lens diameter
- Blank thickness < 50 mm
- Lens 1 is 12 mm thick
- Lens 2 is 9 mm thick and is plano-convex
- Detector diameter 414 mm curvature R = 1470 mm
- Strehl > 0.97 @ λ 1mm



Lessons Learned about 2 Lens Designs

- There is no reason to accept Strehl ratios < 0.95
 - The Strehl can be made uniform with radius by adjusting the weights
 - One minus the Strehl is a loss of efficiency & an increase in sidelobes
- 1. objective lens diameter, 2. field of view, 3. f/D ratio at detector, 4. diameter of detector — you can choose only three, they are linked by the Helmholtz constant of the optics
- Lens 1 must be a meniscus; Lens 2 can be plano-convex
- Lenses can easily be modified in thickness by removing a uniformly thick layer & re-calculating the asphere shape
- The edge thickness must be chosen so as to assure cooling; that will determine the center thickness.