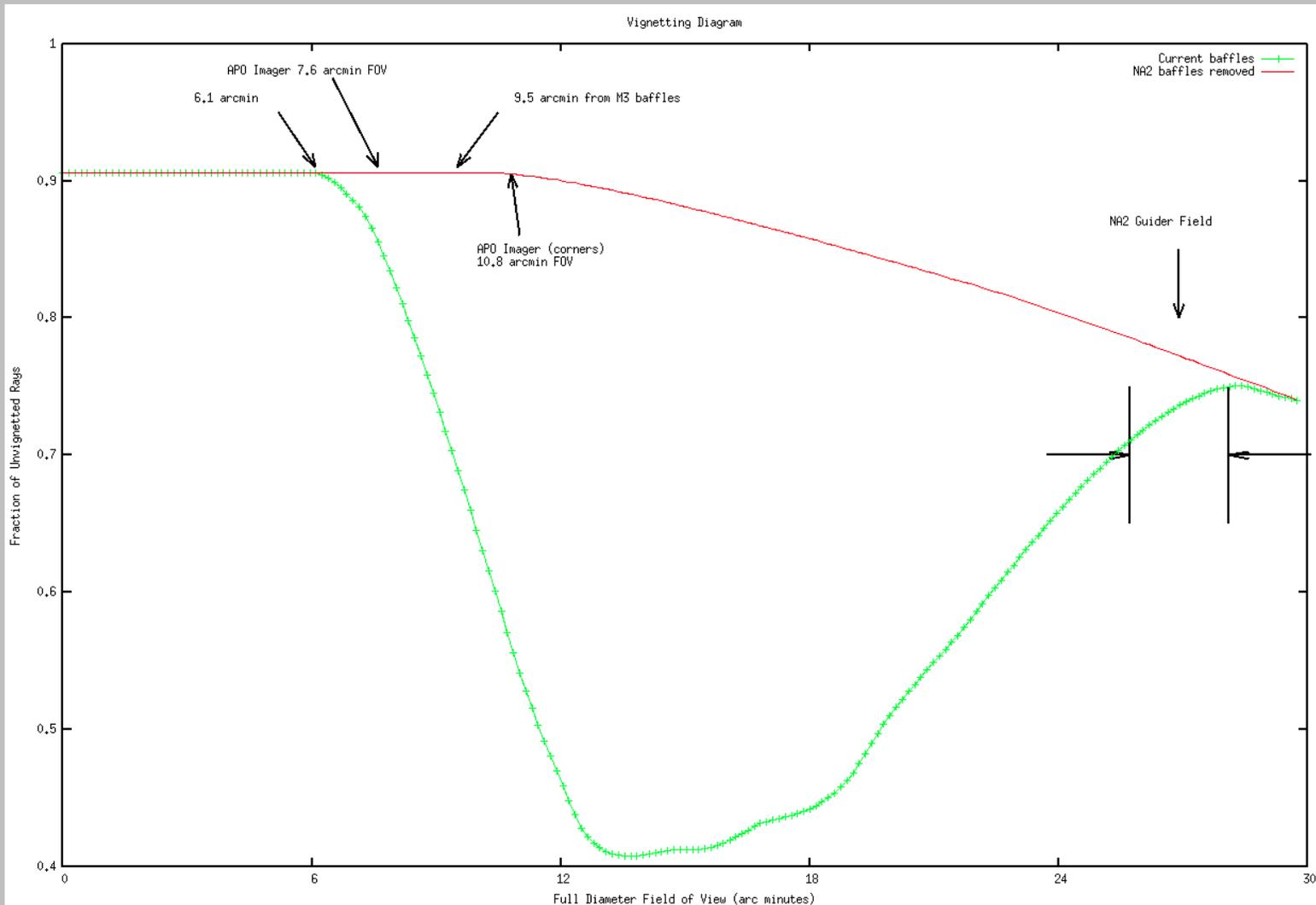


The Instrument

- Baffling
- Coatings
- Assembly
- Moths
- Lab Testing
- Commissioning

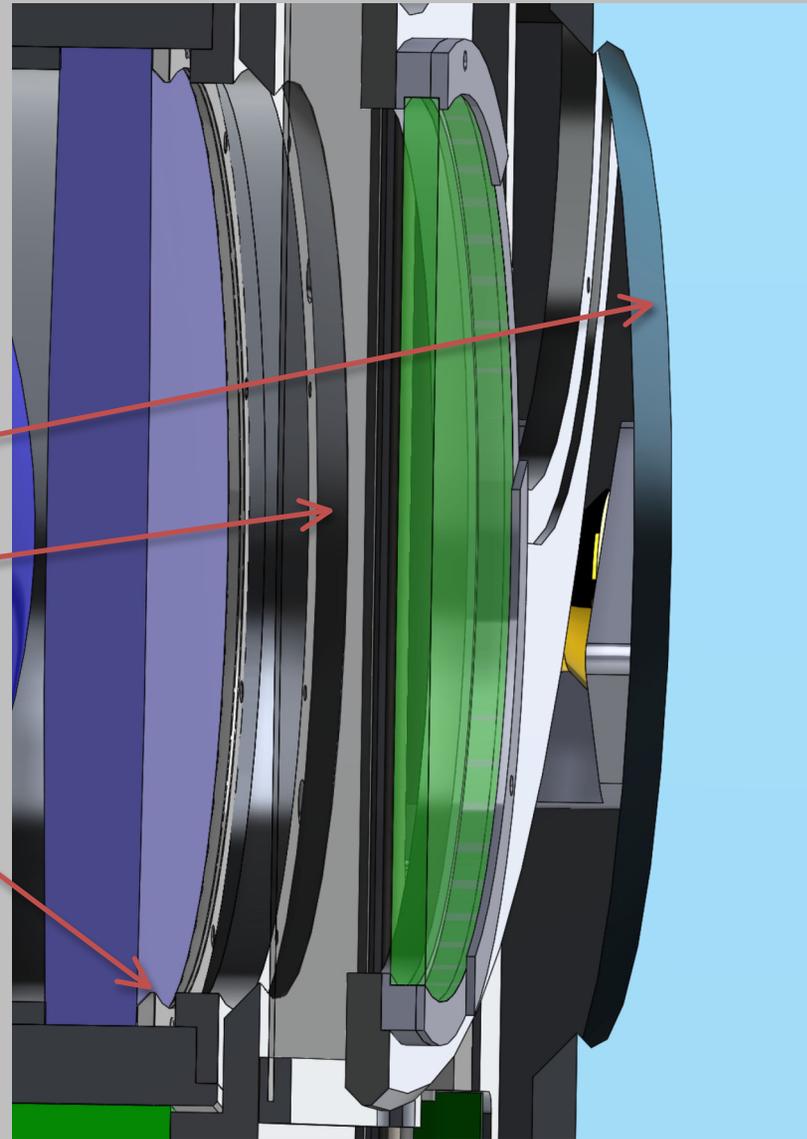
NA2 Baffle

- The NA2 baffle will need to be modified
- The baffle will need to be opened up to allow the 10.8' diameter field through



Instrument Baffles

- There are three knife edged surfaces inside the instrument
 - Entrance port
 - Back of shutter housing
 - Optical Tensioner

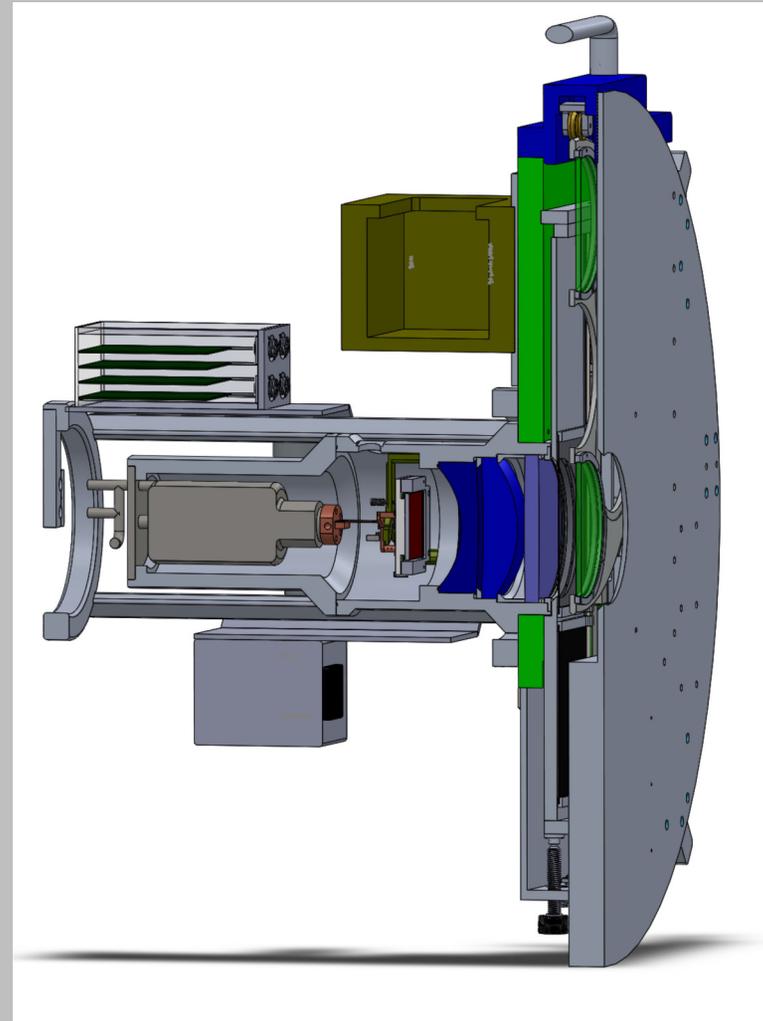


Coatings

- Dewar
 - Main components Nickel plated
 - Stainless steel components either Nickel plated or electro-polished
 - Interior wall of lens cell will be Aeroglazed (if I can get even coating thicknesses)
- Instrument housing will be anodized then Aeroglazed on the interior
- Detents, filter wheel drive mechanics and filter wheel pcb housing will be Nickel plated
- Rotator latching components will be left bare stainless steel
- Exterior
 - The exterior of the instrument will either be black or shiny silver-ish in color
 - The main purpose is for aesthetic reasons but choosing the proper coating will decrease wear on the instrument
- Interior Performance
 - All interior surfaces that can be painted will be painted with Aeroglaze to reduce any light scattering

Assembly

- Attach components to mounting plate
- Attach mounting plate to assembly test stand
- Assemble individual components
 - Dewar
 - Dewar cage
 - Shutter
 - Filter wheel system
- Attach pre-assembled systems to front mounting plate



Lets look at the Assembly

Moth proofing

- Will this instrument be moth proof?
 - No, Can anything really be moth proofed?
- Open entrance in front of instrument
- Moving parts inside instrument
- Purge air will help
- Few electrical components inside instrument to generate heat
- Sealed cover over front mounting port when instrument not in use

Lab Testing

- Dewar
 - Pump down before Nickel coating to determine baseline
 - RGA analysis
 - Long pump down after Nickel coating to determine outgassing rate, cryo-pumping capability, and ion pump stability
 - Temperature stability of dummy CCD
- Filter wheel
 - Test filter wheel repeatability with different filter loads and instrument positions
 - Calibrate the stepper motor offsets with hall affects
- Shutter
 - Lifetime degradation testing (run until repeatability starts to decline)
 - Failure mode analysis (what could cause it to fail)
- Instrument
 - Assembly and Measurements
 - Does everything fit together and still work as expected?
 - Integrating sphere tests in lab
 - CCD Characterization
 - Filter and optical throughput measurements with flats
 - Photometric accuracy using assembled instrument

Commissioning

- Planned / Requested time on sky
 - 1 half night -> 2 days off -> 2 adjacent half nights
 - Optimistic schedule if dewar does not need to be opened
 - If dewar needs to be opened then a week needs to be added between runs
 - Discuss schedule over run in Schedule Section
- Planned tasks
 - Instrument block
 - Instrument performance
 - Throughput by looking at standards (should get comparable SPICam data the previous engineering run)
 - Limiting magnitude – look at some faint standards
 - Optical properties across field – look at globular cluster or move star across field
 - ARC User Science