

Study Review

Telecon 20170906

Mission Elements

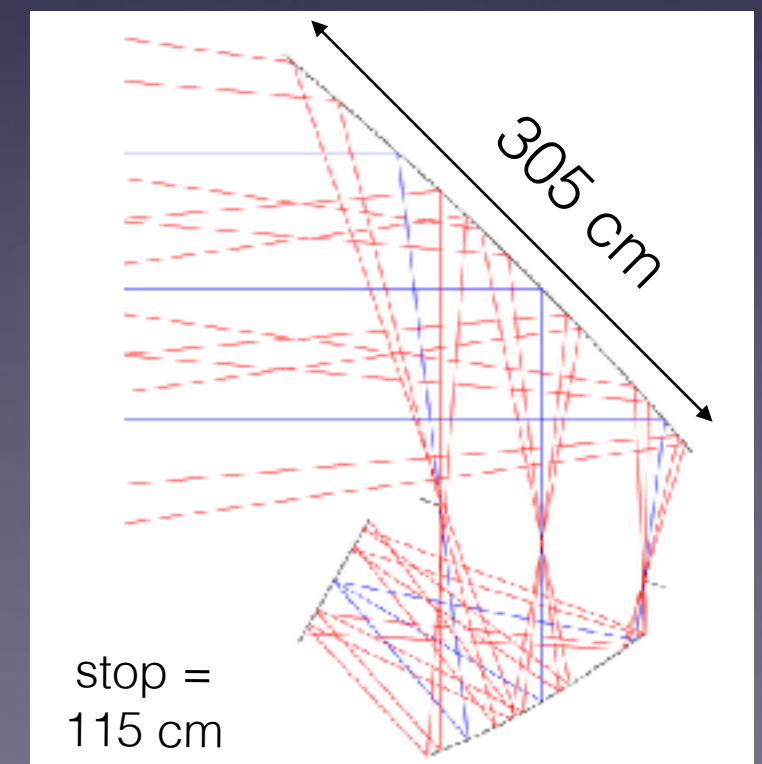
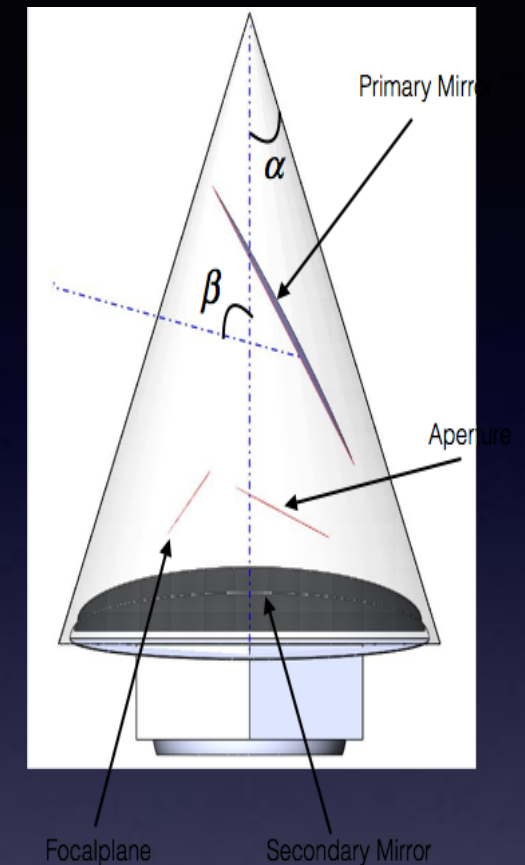
- Science Goals
 - Working groups (Fundamental Physics, Extragalactic Science, Galactic Science)
- Instruments
 - Imager, Spectrometer
 - Mission (spacecraft, TM, inertia wheels, ...)
- Supporting Working Groups (Systematics, Data Challenge)
- Workshops

Science Goals

- WGs have first round of Imager capabilities available
- LK+SH had discussions this past two weeks with the three WGs leaders
- Expect trade-offs (with noise, resolution) by end of Sept.
- SH/LK had discussions with WGs leaders regarding STM.
- Expect first round of STM science objectives by end of Sept. This activity will continue on a regular basis.

Instrument Design - Imager

- Imager
 - WG meets weekly
 - Baseline optical system exists
 - Baseline frequencies, resolutions, noise levels exist (see worksheet); still iterating
- Now designing focal plane (Urgently need optimization of # of detectors/band)
- Cooling strategy, Telescope - JPL



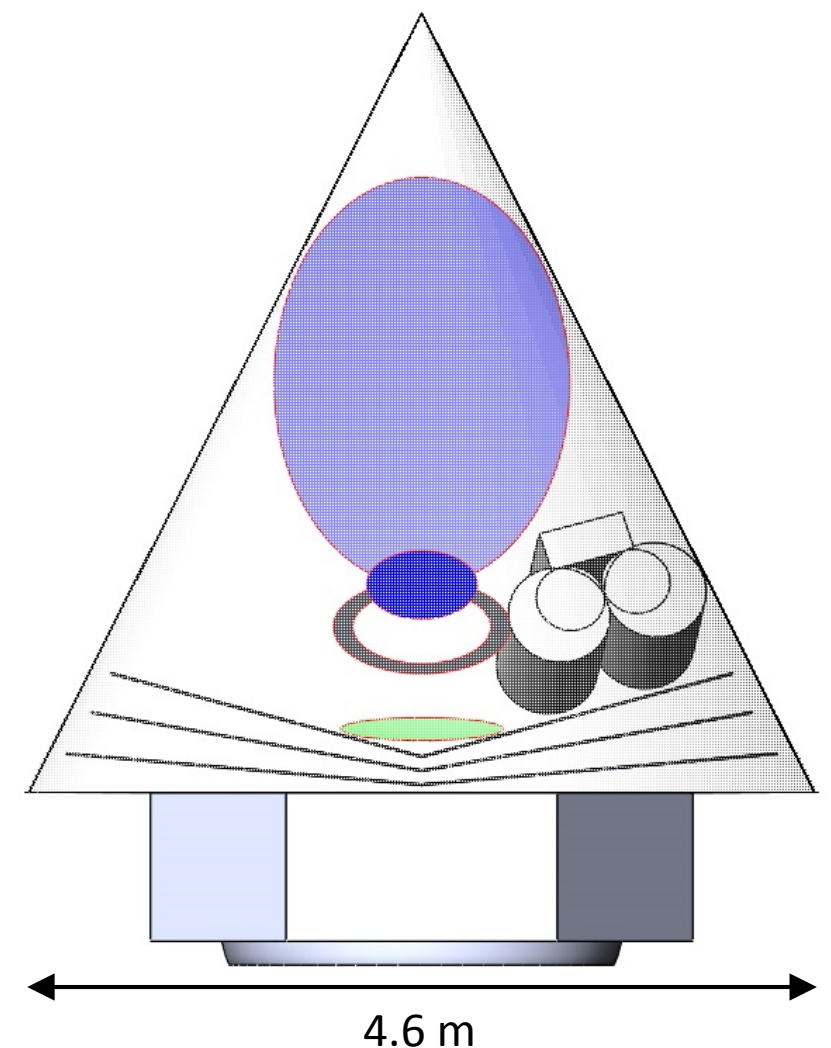
Instrument Design - Spectrometer

- Decision point in Oct. 11 = Very Soon
- Path to decision
 - What are the science drivers? (one more round next week)
 - What are the implementation trade-offs
 - Imager will shrink to LiteBIRD size AND
 - Need immediate engineering support from Goddard

Open-Dragone 1.2 m

$\alpha = 27^\circ$

$\beta = 68^\circ$

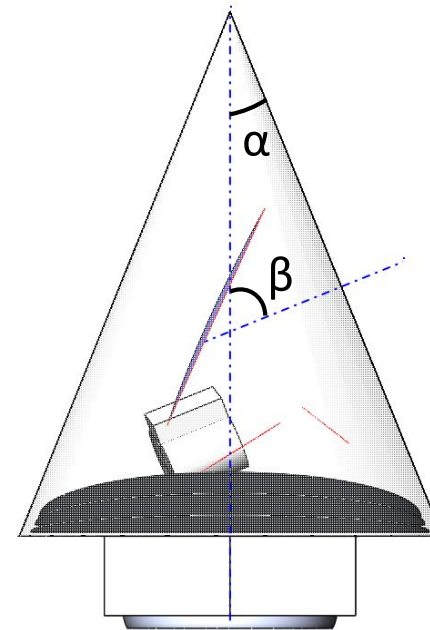
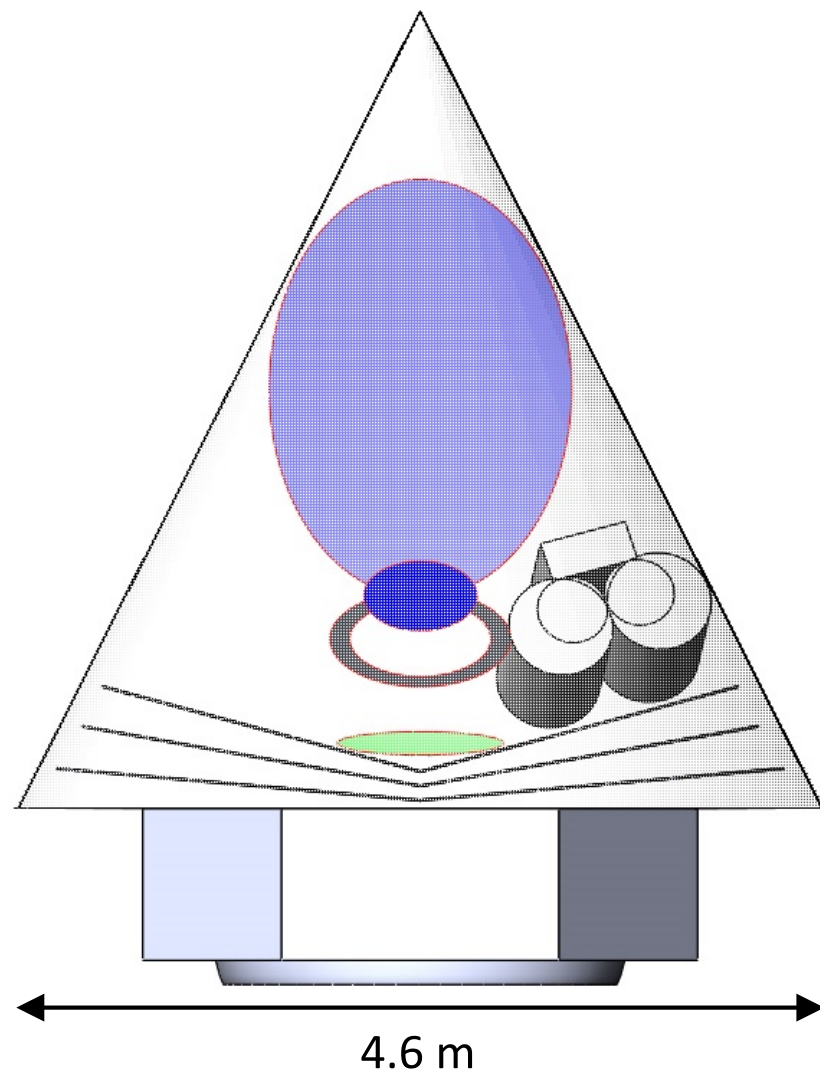


Instrument Design - Spectrometer

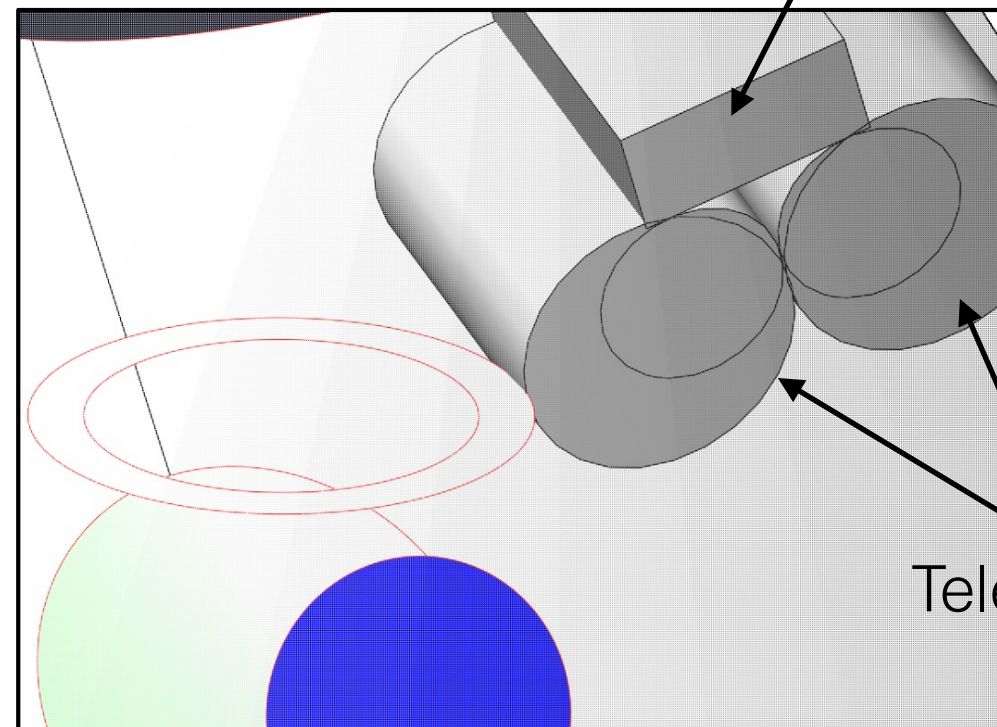
Open-Dragone 1.2 m

$\alpha = 27^\circ$

$\beta = 68^\circ$



Spectrometer
box



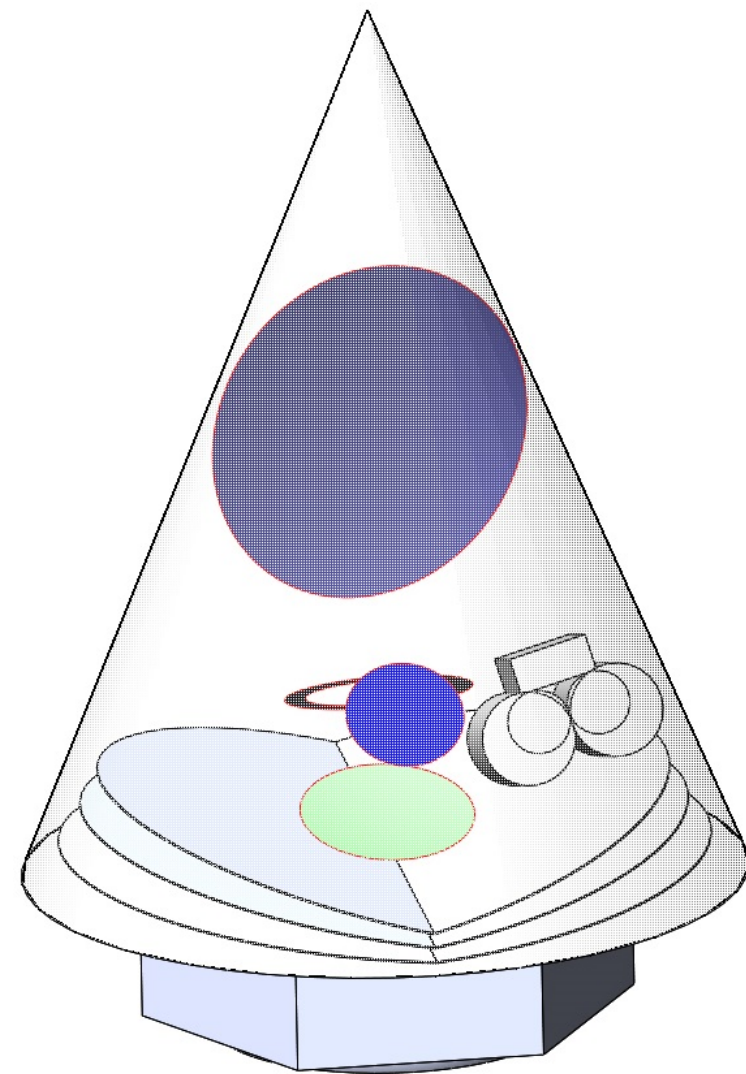
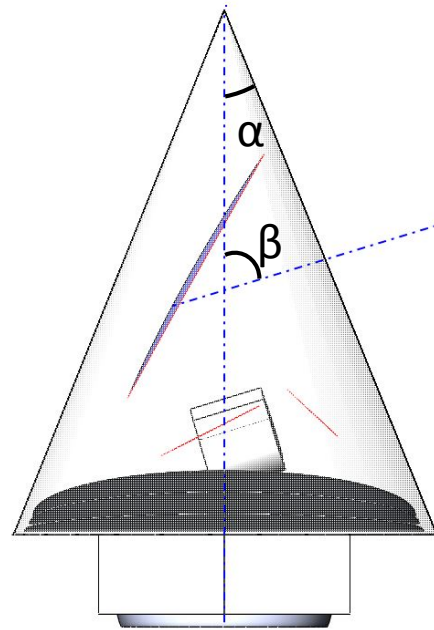
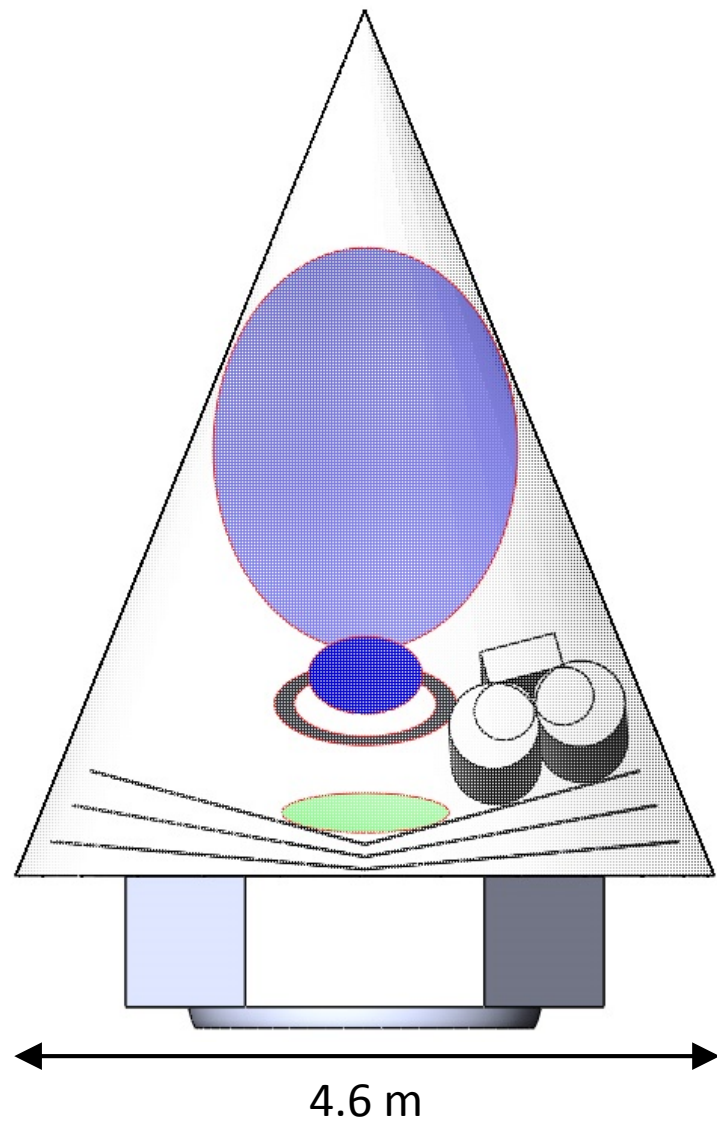
Telescopes

Instrument Design - Spectrometer

Open-Dragone 1.4 m

$\alpha = 22^\circ$

$\beta = 73^\circ$



Instrument Design - Mission

- Cost model built (wait for Amy)
- Chris Paine working on cooling architecture
 - baseline: warm primary; cold secondary + stop
- Roger O'Brient working on power (driven by readout for ~10,000 detectors)
- Brian Sutin (new system engineer) working on telescope material and structure
- Kris assessing scan strategy (going slow)

Supporting WGs

- Data Challenge
 - scheduled to present in two weeks
- Systematics
 - meeting (almost) weekly
 - scheduled to present in two weeks

Workshops

- Foregrounds
 - In October
 - Status of Prep/Advertisement
- Science + Complementarity
 - Spring
 - Perhaps coordinated with S4
 - When is deadline for decision?