The Balloon Experimental Twin Telescope for Infrared Interferometry (BETTII)

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What is BETTII?

Rinehart, et al. 2014

Dewar

Primary

Telescope Assembly

Siderostat

Metering Truss

Exoskeleton
Spectra of Cores

Herschel beam

Partially embedded disk system

Deeply embedded YSO

YSO with Water Ice Feature at 43 μm
The Bigger Picture
The Completed Truss

- Light (~70kg)
- Strong – can take a 10g load with factor of 2 margin
- Stiff: first mode at 23.0 Hz.
External Optics

BETTII: FISICA Workshop
The Telescope Assembly

Primary

Secondary

Tertiary

Flat
Opto-Mechanical
Control Testing

Sensors

Actuator
Overall Status

• Proceeding well: upcoming milestones
  – Internal optics installed and aligned by May 2015
  – Detector delivery March/April 2015 (?)
    • Detector testing/characterization through Spring/Summer
  – Delivery of telescope assemblies in March/April 2015
    • Alignment of external optics by June 2015
  – Control system testing ongoing
    • Continues to perform beyond expectations!

• Launch in Fall 2015 unlikely, unfortunately; 2016 should be good…
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And the Far-Infrared Telescope Experiment (FITE) team in Japan (H. Shibai, PI)