



Non-Saturating, simultaneous multiband, infrared imager

PI: Dr. A. Soibel, JPL

Targets: Io, Venus, Saturn, Jupiter

Science:

- Understand eruption mechanisms of Io's volcanoes
- Determine the lava eruption temperature and lava composition remotely during Io flybys
- Infer Io's interior structure
- Search for and map active volcanism on Venus
- Study of gas giants storms

Objectives:

- Demonstrate a non-saturating digital focal plane array covering 1-10 μm
- Develop a faceted mirror multiband imager
 - Providing simultaneous time resolved images at 9 spectral channels with high spatial resolution
- Validate that developed imager meets requirement for an Io Observer New Frontiers mission
 - Dynamic range > 100 dB
 - Ability to measure the broad range of lava and surface temperatures, $T = 90\text{-}1900\text{K}$, with
 - Temporal resolution up to 250 fps

CoIs: W. Johnson, A. Davies, P. Hayne (JPL),
M. Blackwell MIT-LL

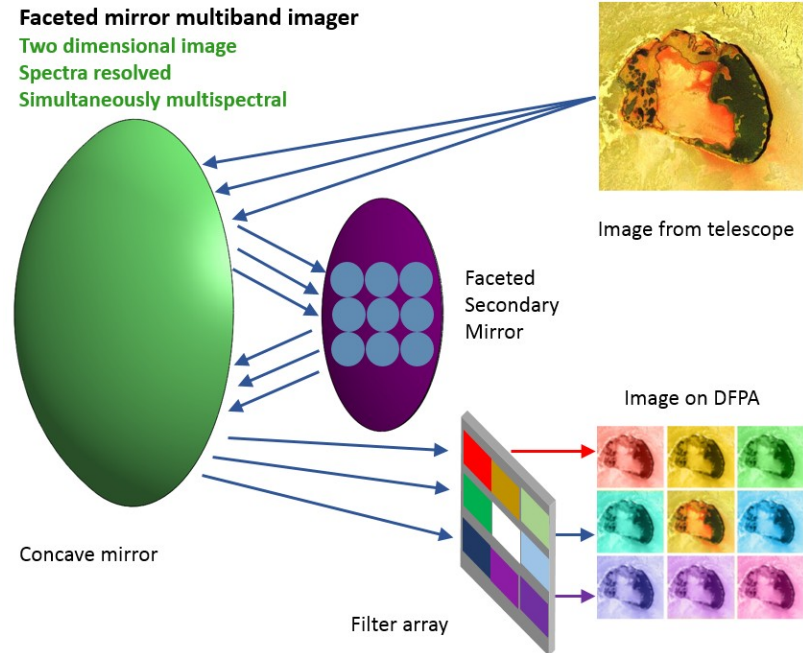


Illustration of the proposed faceted mirror multiband imager

Key Milestones:

- Feb. 2018: Deliver of set of expected at-detector radiances
- Mar. 2018: Deliver selected DROICs to JPL
- Jan. 2019: Demonstrate working 1-10 μm HOT-BIRD DFPA
- Jun. 2019: Complete optical design of the imager
- Aug. 2019: Complete assembly and testing of camera
- Aug. 2020: Complete integration, alignment and testing of imager
- Aug. 2020: Deliver final report to NASA

TRL (2) to (4)