

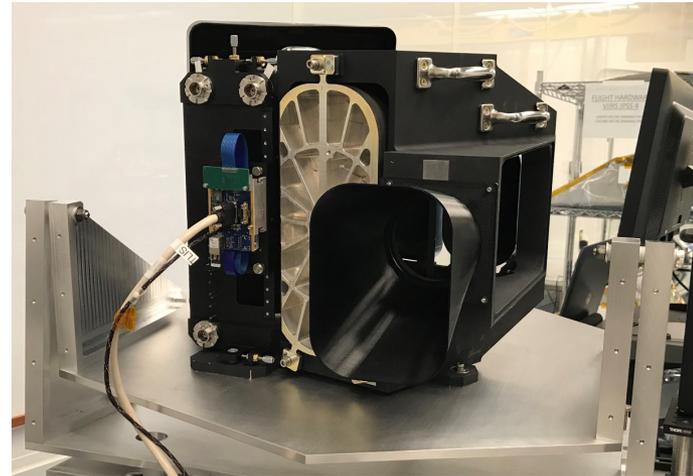


# Advanced Technology Land Imaging Spectroradiometer (ATLIS)

PI: Jeff Puschell, Raytheon

## Objective

- Demonstrate ATLIS design meets or exceeds SLI-T Visible Short Wave Infrared (VSWIR) requirements.
- ATLIS is a compact, low mass design with wide field of view (WFOV), fast optics, large format, small detector digital Focal Plane Array (FPS) and on-chip Time Delay and Integration (TDI).
- Utilized technologies include: WFOV telecentric reflective triplet (RT) telescope with free form optics; digital FPS production with on chip TDI; full aperture calibration approach, detailed instrument system ATLIS Performance Model.



ATLIS-Prototype fully assembled on optical table for laboratory demonstration and optical characterization.

## Approach

Design, build, test and demonstrate a single spectral band (865 nm) ATLIS-Prototype (ATLIS-P) by:

- Designing ATLIS-P system scaled to meet SLI-T VSWIR Reference Mission Architecture (RMA) requirements.
- Procuring, integrating and testing ATLIS-P elements.
- Planning and completing demonstration of ATLIS-P performance in a laboratory environment.
- Comparing demonstrated ATLIS-P performance with model predictions, updating and documenting model and using verified model to extend predictions to other SLI-T RMA VSWIR bands.

## Key Milestones

- |  |       |
|--|-------|
| • Design ATLIS-P demonstration system              | 02/17 |
| • Complete hardware procurement                    | 02/18 |
| • ATLIS-P System integration                       | 07/18 |
| • Initial test and analysis                        | 10/18 |
| • ATLIS-P laboratory demonstration                 | 03/19 |
| • Data analysis and model verification             | 09/19 |
| • Telescope assessment after environmental testing | 06/20 |
| • Final report                                     | 08/20 |

Co-Is/Partners: Lynn Mears, Raytheon

TRL<sub>in</sub> = 3    TRL<sub>Current</sub> = 4