



Telemetric Biological Imaging -12P

Problem Statement

- There is currently no flight-ready biological imaging technology proven for the parabolic flight environment.
- This flight opportunity will demonstrate imaging hardware functionality in low and elevated gravity environments.
- Potential users of the matured technology include biology researchers and medical professionals interested in the parabolic flight realm, as well as the suborbital flight community

Technology Development Team

- PI Contact:
Dr. Robert Ferl
Dr. Anna-Lisa Paul
University of Florida
robferl@ufl.edu
- NASA Contact:
Dr. Howard Levine, Ph.D.
NASA/Kennedy Space Center
howard.g.levine@nasa.gov

Proposed Flight Experiment

Experiment Readiness:

- September 2012

Test Vehicles:

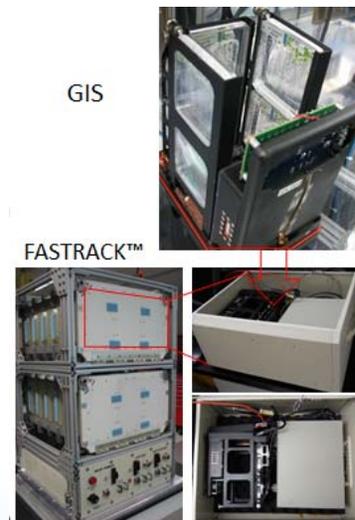
- Parabolic aircraft

Test Environment:

- Previously flew on Flight Opportunities Program parabolic flights in September 2011

Test Apparatus Description:

- Test apparatus and operator interfaces are incorporated into FASTRACK™. The GIS imager is loaded into a FASTRACK middeck locker drawer.



Technology Maturation

- Improved software interface. Full functionality during flight. Better thermal management. Clearer images.
- Provide clear images based on parabolic activation of gene activity.
- Technology maturation deadline is for deployment on suborbital and parabolic science.

Objective of Proposed Experiment

- Biological samples will be imaged in real time during the parabolic flights.
- Fluorescent images will be compared to biochemical data collected during the flight from parallel samples
- Expected flight data will evaluate the effects of the parabolic flight on the performance of the imager and on the gene expression of the biological samples.