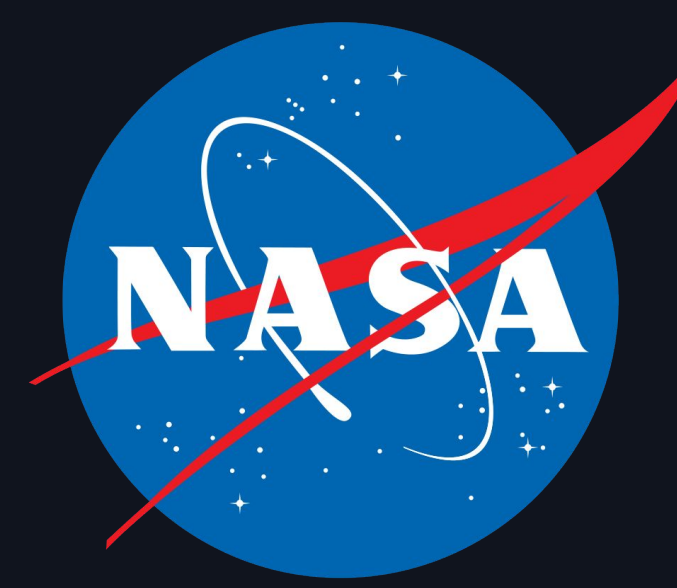


Spectral Ocean Color Imager - SPOC



Small Satellite
Research Laboratory
Franklin College of Arts and Sciences
UNIVERSITY OF GEORGIA

The **University of Georgia** Small Satellite
Research Laboratory - **UGA SSRL**

Mission Overview

The SPECTral Ocean Color Imager (SPOC) is a hyperspectral 3U cube satellite. The payload is designed to have spectral range from ~433-866 nm with a spectral resolution of ~1 nm and a spatial resolution of ~130 m.

The objective of SPOC is to provide moderate resolution multispectral images to monitor wetland status, estuarine water quality, and near coastal water quality.

To accomplish this mission, SPOC will acquire data similar to current observations:

- Landsat 8 bands 1-4: 430-450, 450-510, 530-590, 640-670 nm
- MODIS bands 1-4: 620-670, 841-876, 459-479, 545-565 nm

SPOC will produce hyperspectral data cubes that are comparable to existing NASA and ESA solutions. Additionally, it will deliver data that supplements and augments environmental data from the Georgia Ecosystems Long Term Ecological Research Program.

Full Mission Success Criteria

1. Image the same coastal target 5 times in a month. The images shall have a minimum spatial resolution of at least 200m;
2. Acquire images between 400 and 850 nm with a spectral resolution of 10nm;
3. Acquire hyperspectral images in the range of 400-850 nm to derive wetland biophysical characteristics and near-coastal ocean productivity.

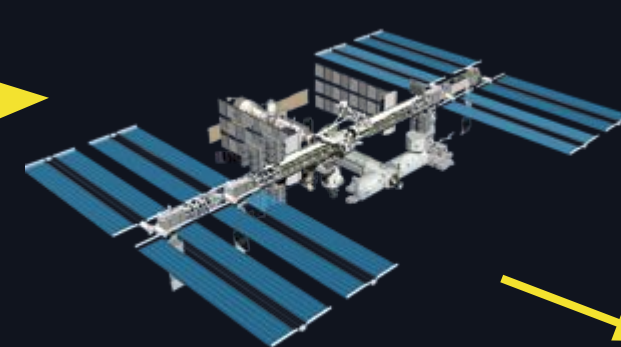
Programmatic Overview

SPOC has passed its Preliminary Design Review and is quickly approaching a Critical Design Review. SPOC is funded by the NASA USIP and was selected for the eighth round of NASA's CSLI.

SPOC is expected to be launched to the International Space Station some time in 2018, 2019, or 2020. This will give SPOC an orbital altitude of ~400km.

Concept of Operations

1. Launch to ISS (2018, 2019, or 2020)

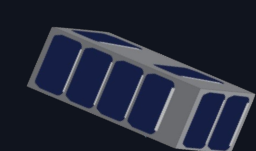


2. Deployment Mode:

Deployed from ISS
Health Checks
Beacon
Detumble

3. Cruise Mode:

Power Generation
Health Checks
Basic (UHF/VHF) Comms



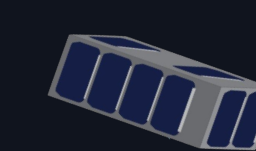
4. Scan Mode:

Fine Pointing
Scans Target



5. Cruise Mode:

Power Generation
Health Checks
Basic (UHF/VHF) Comms



6. Data Downlink Mode:

Fine Pointing
S-Band Comms



7. Deorbit:

Mission End



*. Safe Mode:
Something's Wrong ...

