SATLASS

Satellite Autonomous Launch and Assembly

ERORA

The World's Most Advanced CubeSat Deployer

Introduction

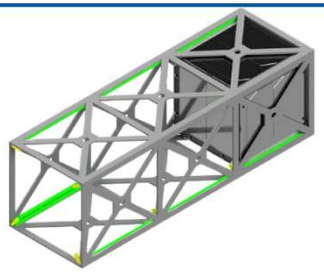
- First CubeSat deployer capable of deploying at multiple orbits
- Features a cold-gas thruster system
- Can deploy up to 3 1U CubeSats
- CubeSats are miniature satellites composed of Units (U's).
- 1U measures approximately 10x10x10 cm

ERORA Executive Officers

President: Jackson Lamb | **Vice President**: JT Lozano

SATLASS Lead: Akshay Kaundinya

Club Advisor: Professor Sean Crouse



SATLASS Structure with a 1U Cubesat inside

Deployment Mechanism

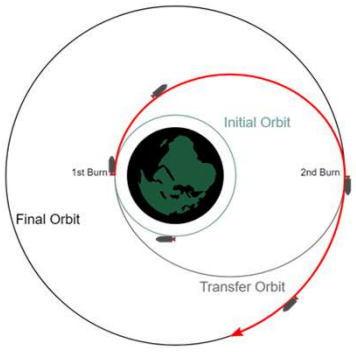
- Currently developing the deployment mechanism
- Current system would utilize rotating tabs to deploy the CubeSats
- A rotating shaft would allow for CubeSats to be released sequentially
- 3D printing prototypes of the deployment system

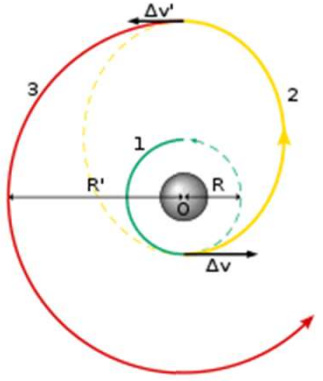
Cold-Gas Thruster

- Thruster system will use Nitrogen as fuel
- Currently working on nozzle design
- Nozzle will be a converging-diverging nozzle
- Currently designing a test stand to test the thruster system
- Will use CFD to verify thruster performance taking pressure drops into account
- Design paper will be submitted to *Beyond: Undergraduate Research Journal*

Orbital Mechanics

- Settled on the use of a combination of Bi-Elliptic transfer orbits and Hohmann transfer orbits to minimize required delta-v
- Currently targeting an orbital range of ±70 kilometers from the orbit of the ISS (408 kilometers)





Hohmann transfer [1] (left) | Bi-Elliptic Transfer [2] (right)

Points of Contact

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Test Stand

SATLASS Test Stand