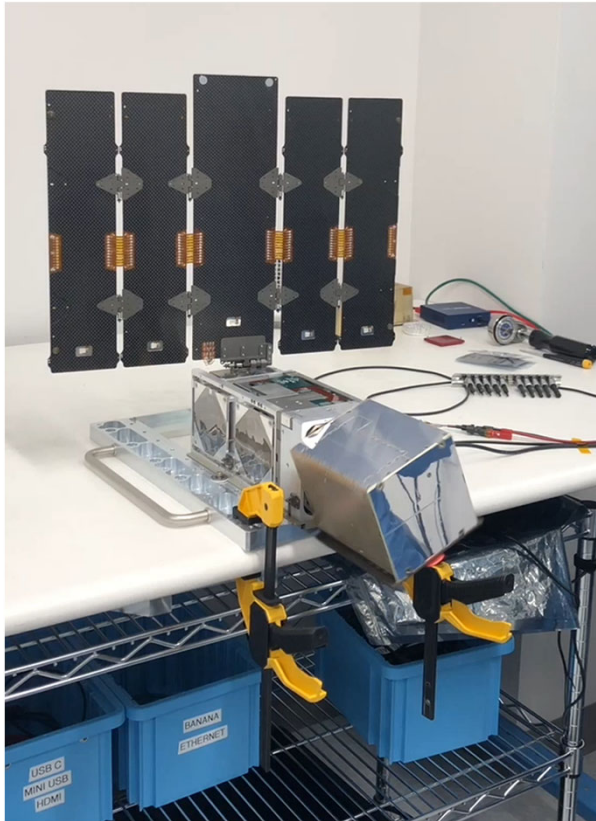
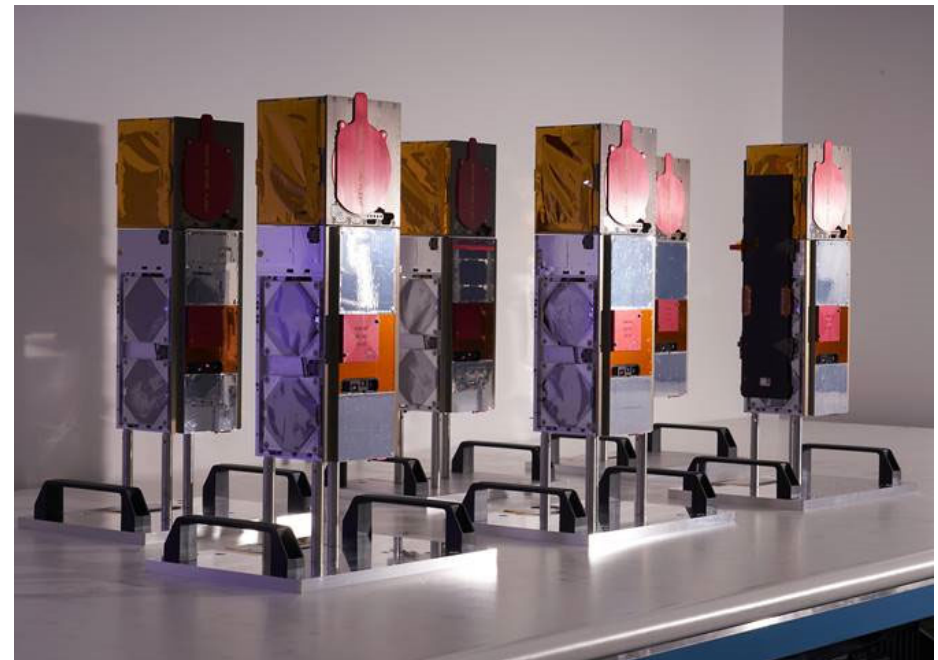




Seven Flight Units Ready for Launch



Engineering Qualification Unit



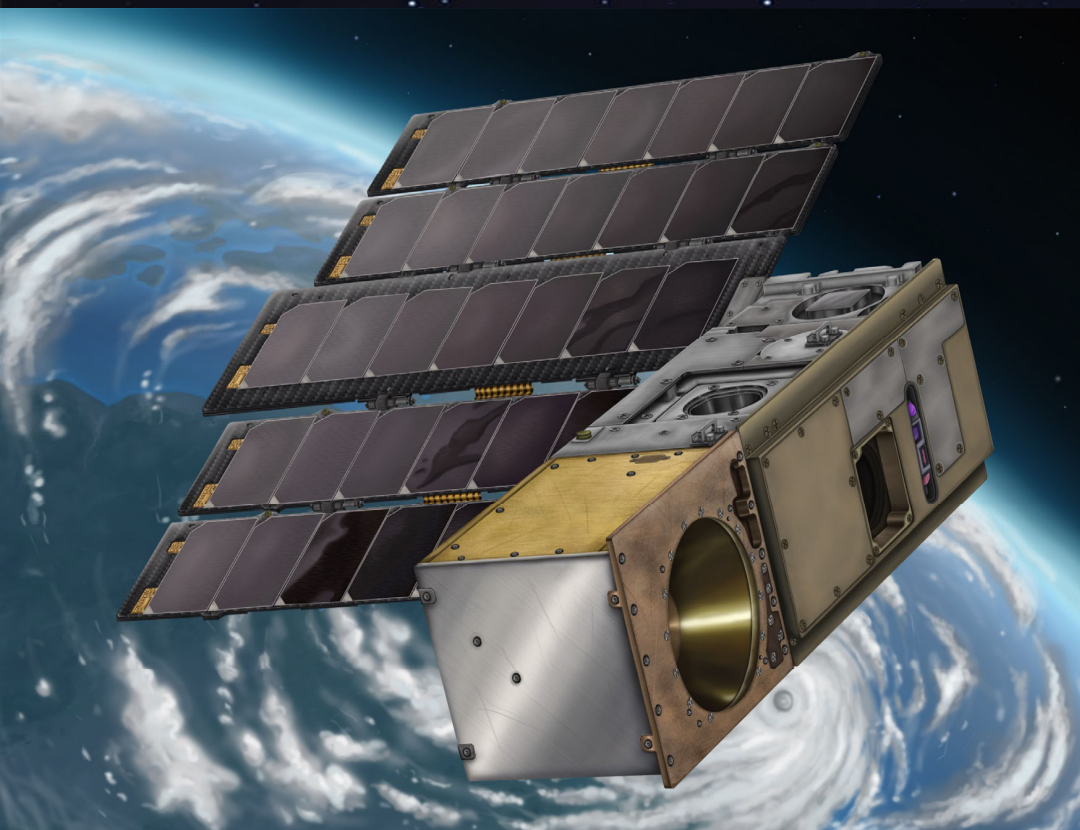
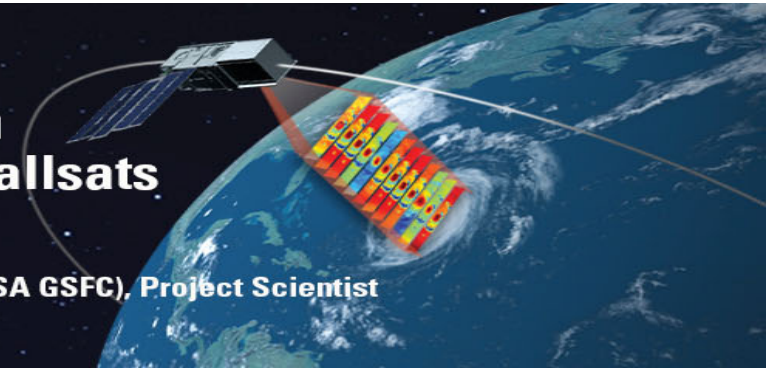
Six flight units for the constellation mission



Time-Resolved Observations of Precipitation Structure and Storm Intensity with a Constellation of Smallsats

MIT Lincoln Laboratory (lead organization)

William J. Blackwell, Principal Investigator. Scott Braun (NASA GSFC), Project Scientist



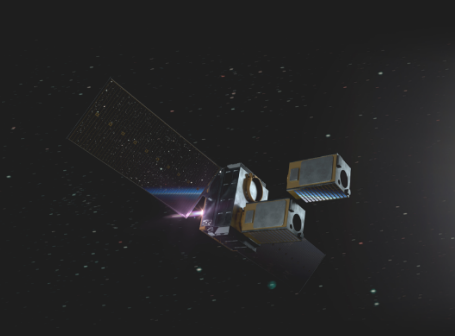
TROPICS Pathfinder Mission

- The engineering qualification unit will be flown in advance of the constellation to reduce risk of all elements of the primary mission and expedite science returns.
- MIT LL is funding hardware readiness and operations, NASA is funding launch and some launch qualifications testing
- Launch is being provided by the NASA CubeSat Launch Initiative (CSLI), details on next slide



TROPICS Pathfinder Launch Awarded by NASA

- Launch Date: June 2021
- Momentus Space “Vigoride”
- SpaceX Falcon 9 launch from Vandenberg

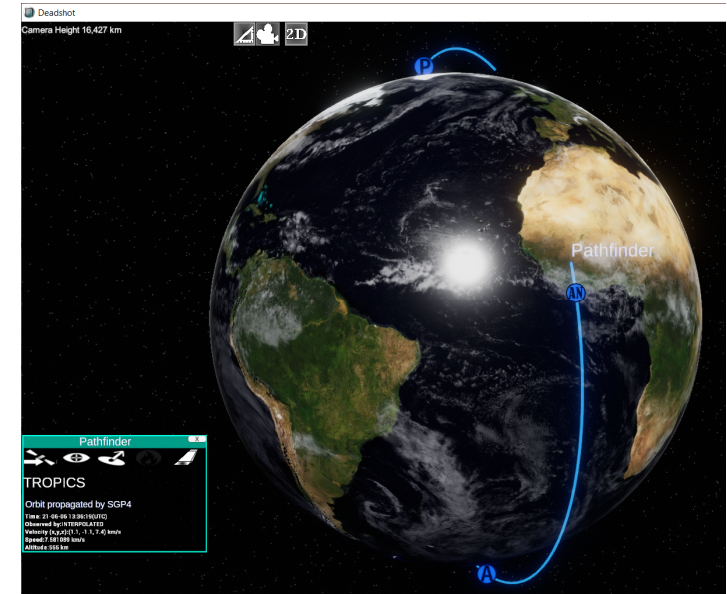



VIGORIDE™

Satellites with masses up to 250 kg can be moved from ISS orbit all the way up to 2,000 km on Vigoride. Vigoride can be launched from an ESPA or ESPA Grande ring, from ISS airlocks, or from almost any small dedicated launcher or larger rideshare vehicle.

USER GUIDE | CAD

VIGORIDE WET MASS: 215 KG
MAXIMUM PAYLOAD MASS: 500 KG
TOTAL IMPULSE: 450,000 N-S
MAXIMUM ΔV : 1.6 KM/S FOR 150 KG PAYLOAD



Orbit parameters:
550 km altitude, circular
98° inclination (sun-synchronous)
13:30 Local Time of Ascending Node (LTAN)