PROVIDING AFFORDABLE SPACE SOLUTIONS

SPACE TECHNOLOGY HUB

University of New Hampshire – Space Science Center
eos.unh.edu/STH
BUILDING ON SPECIALIZED SPACE EXPERIENCE

- Decades of NASA/NOAA mission involvement by the UNH Space Science Center
  - 60+ years of space research
  - 100+ partnerships on NASA missions

- Highly specialized expertise in space instrumentation design, build, and test for LEO, GEO, cis-lunar, and interplanetary space

- Strength in smallsats, radiation, and space weather instrumentation
SENSOR DESIGN, BUILD, TEST, & CALIBRATION

- World-class expertise in:
  - Star sensors
  - Magnetometers
  - Dosimeters for radiation monitoring
  - UV detectors
  - Electron and ion electrostatic analyzers
  - Time-of-flight mass spectrometers
Who does the work:

- 30 Technical Staff: Full-time Engineers, Instrument Scientists, and Technicians
- 25 Faculty Members in Space Science/Heliophysics
- Depending on project: student assistants

How we can engage:

- Full life-cycle projects/government grants
- Space environment expertise consulting/advising
- Testing facilities/services
- Student intern/workforce pipeline
- Partnerships/other opportunities
SPECIALIZED SKILLSETS AT THE SPACE TECH HUB

- **Highly Experienced Mechanical, Electrical, and Systems Engineering**
  - HV Analog/Digital Engineering
  - FPGA, Flight Software, Onboard Data Processing
  - Thermal + Structural Analysis
  - Test Engineers and Data Analysis

- **Mission Lifecycle Project Management, Requirements Management, Science Operations Center**

- **Space Weather Instrumentation, Data Analysis, and Interpretation**

- **Technician Expertise:**
  - Board assembly
  - Machine shop for specialized parts
  - Floating ultra thin carbon foils
  - IPC J-STD-001 Certification for Soldered Electrical and Electronic Assemblies (NASA Required Certification)
Comprehensive AI&T (Assembly, Integration, and Test) Services

- Proven processes and procedures for testing & calibrating space technologies
  - Electronics, subsystems, full instrumentation, smallsats

- Space Qualification Testing
  - Testing at our facilities followed by data analysis
  - On-site:
    - Anomaly Diagnostics/Troubleshooting
    - Cross-disciplinary Anomaly Resolution (Mechanical/Thermal/Electrical/Software)
      - Technical staff can implement corrections prior to retest

- Facilitate TRL raises (TRL 4 ➔ TRL 9)
Comprehensive AI&T (Assembly, Integration, and Test) Services

- **Flight Certified Thermal Vacuum Chamber**
  - 4'x5' cylinder
  - Liquid Nitrogen shroud
  - $10^{-7}$ Torr
  - RGA scanner
  - TQCM

- **Flight Assembly and Integration Facilities**
  - ISO 7 clean rooms
  - ISO 5 laminar flow assembly benches
  - Clean room storage

- **Anechoic Chamber: EMI/EMC Diagnostic Testing**

- **Ultra-low Temp Dilution Refrigerator (10 mKelvin)**

- **Thermal Cycling Chamber**

- **Rough Vacuum Bakeout Chamber**

- **On-site Electronic Assembly Lab**

- **On-site Machine Shop**