

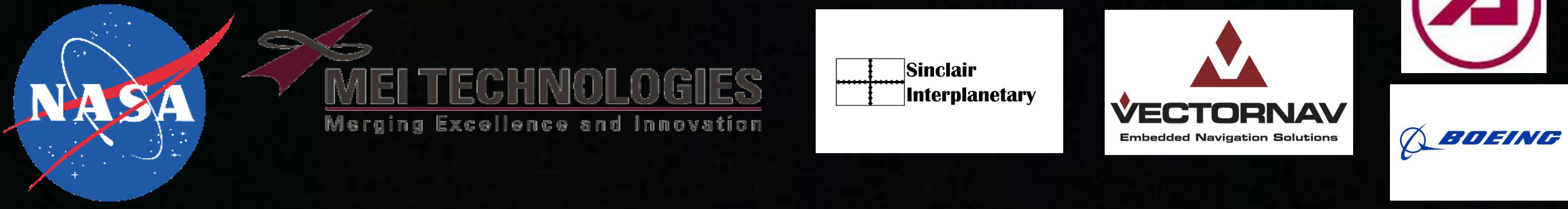


AggieSat Lab

AggieSat2 (launch July 2009, operated on orbit for 230 days):



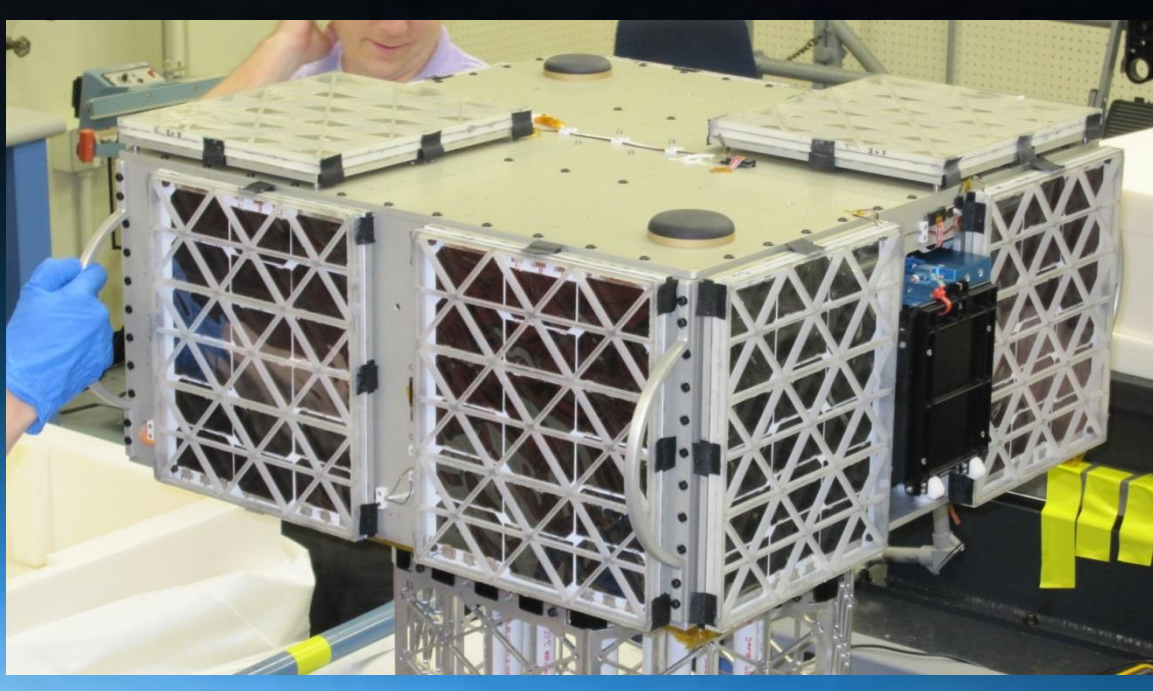
AggieSat4 (launch December 2015 to ISS, with release into orbit 29 January 2016):



STARE (pathfinders with optical payloads): 



AggieSat2



AggieSat4

Main Technical Objectives

- I. Partner with NASA Johnson Space Center and University of Texas in program LONESTAR to complete 4 missions of increasing complexity with last demonstrating ARD (Autonomous Rendezvous & Docking).
 - A. DRAGONSAT (AggieSat2/Bevo-1)
 - 1st of 4 test missions – 5” cube
 - Released from STS-127 30 July 2009
 - AggieSat2 operated 230 days collecting DRAGON GPS data
 - De-orbit 17 March 2010
 - B. LONESTAR 2 (AggieSat4/Bevo-2)
 - 2nd of 4 test missions – 50 kg mass
 - Released from ISS 29 January 2016
 - Bevo-2 to be released from AggieSat4
 - AggieSat4 will demonstrate three-axis stabilization, collect DRAGON GPS data, capture video of Bevo-2 release (Aerospace Corporation 2MPC), compute and crosslink relative navigation solutions, track Bevo-2
- II. Partner with Lawrence Livermore National Laboratory, Naval Postgraduate School in program STARE to build pathfinder 3U satellites with optical payloads.
 - 1st: NROL-36 Atlas V, 13 Sept 2012
 - 2nd: ORS 3 Minotaur 1, 19 Nov 2013.
- III. AggieProbe1 – Partner with NASA Jet Propulsion Laboratory to advance technology demonstrator mission utilizing an electric sail method of propulsion. Beginning August 2015.
- IV. The Aerospace Corporation ground station network – Riverside campus

Student Involvement

- I. Integrated Approach to Small Spacecraft Research, Design-Build-Fly, Education.
 - II. Students responsible for whole design process: concept to end-of-mission.
 - III. Business environment with real-world deliverables, quality assurance checks, documentation, organization.
 - IV. Students gain hands-on mastery in current tools, systems engineering, and industry practices related to specification, design, analysis, fabrication, testing.
 - V. Context for this program is in advancing small satellites, yet skill set learned applicable to wide variety of disciplines and industries.
- Recent Student Activities:
- Roles: Program Manager, Subsystem Leads
 - Mission Requirements Flow Down
 - Trade Studies
 - Modeling and Simulation
 - Integration and Test Procedures
 - Documentation Procedures
 - Design and Safety Review Presentations to NASA Johnson Space Center
 - Community Education and Outreach

Multidisciplinary Teamwork

AggieSat Lab integrates graduate and undergraduate students, with ~80% freshmen through seniors. Students of any discipline are welcome to join, and since start of program in 2005, following majors have participated:

Engineering:	Business:
- Aerospace	- Accounting
- Computer Science	- Marketing
- Computer Engineering	- Education
- Electrical	- Finance
- Industrial	- Management
- Mechanical	- Info Systems
- Technology	Sciences:
Liberal Arts:	- Mathematics
- History	- Physics
- Political Science	- Biology

Our only requirement is that students be US citizens, per Federal law

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