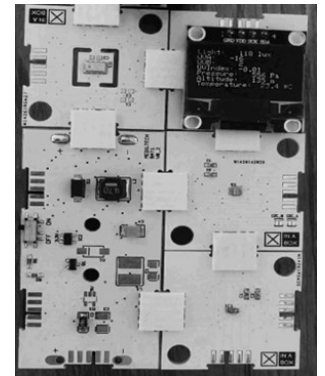
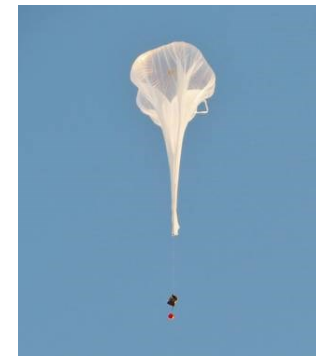


Program Overview: Virginia Commercial Space Flight Authority (“VCSFA”) and Twiggs Space Lab, LLC (“TSL”) have partnered to create an exciting program to advance STEM education and promote space science and systems engineering. The three phase program is designed for students in grades 4th – 12th.

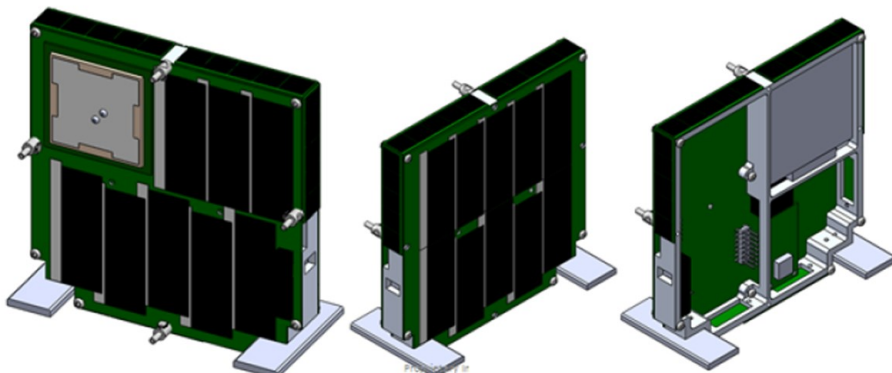
Phase 1: In Phase 1 of the program, students are introduced to sensors, software, electronics, and data collection methods. The students design, construct and test various configurations of a desktop satellite. Each participating school will receive ten (10) electronic satellite kits, which include multiple sensors, power supplies, and related software. The student teams will assemble various combinations of sensors to collect data. Additionally, each school will receive two balloon mission packs and a ground station to collect data from the balloon missions. The technology is very user-friendly and incorporates a simplistic ‘plug and play’ design which is easy for students to assemble.



Phase 2: The student teams will decide on a final configuration and build an engineering model of their space satellite that incorporates various sensors. This engineering model will fly on a high-altitude balloon and possibly on an Unmanned Aerial Vehicle (“UAV”) and collect atmospheric data. The student teams will analyze the data collected from both ground tests and the flight mission. After review and approval of the final design by the student teams, they will submit a request to TSL for the manufacture of their ThinSat based on submitted specifications.



Phase 3: TSL manufactures the flight satellites based on the specifications of the engineering model provided by the student teams. The satellites will be tested and deemed operational prior to integration into the containerized satellite dispensers and integration onto the second stage of the Antares rocket by TSL. The ThinSats may be provided to the student teams for in-class testing prior to launch to Extreme Low Earth Orbit (“ELEO”). The flight satellite will be launched into ELEO and are expected to orbit the Earth and send data (accessible by the students) for approximately 5 days. The student teams will analyze the data collected by their satellite and submit a report outlining their findings.



ThinSats

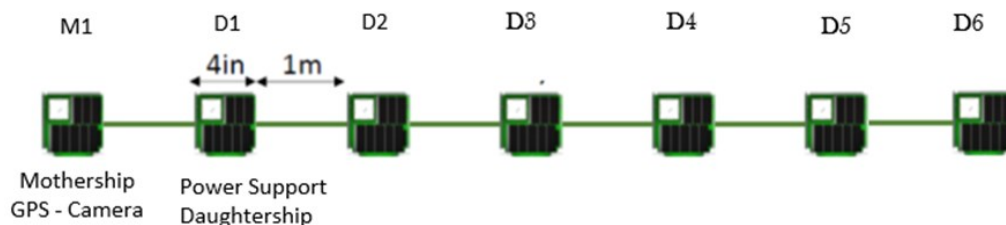
To the left are images of ThinSats. A total of 84 ThinSat will be launched from an Antares rocket.

Research Opportunities: Although the three-phased program is targeted to students in grades 4th – 12th, there are many educational opportunities for institutions of higher learning, including: technical colleges, junior colleges and universities. TSL will make the electronic kits, satellites, satellite buses, communications, GPS, and sensors available so that students at these institutions can design, build and test satellites to be flown on the launch opportunities described below.

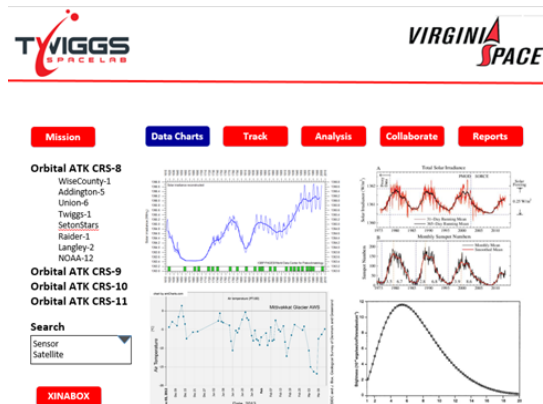


Launch Opportunity: VCSFA has secured launch capacity on the 2nd stage of future Orbital ATK Antares launches. VCSFA and TSL will have the opportunity to launch up to 96 PocketQubes, 84 ThinSat or other femto-satellite equivalents on four (4) 3U Containerized Satellite Dispensers (“CSDs”) on each of the Antares resupply missions through June 30, 2021. Additional capacity may be added to meet future demand.

Lead Institution: VCSFA and TSL will identify lead institutions, who will partner with six additional schools (middle schools, high schools, community colleges, and other organizations). The Lead institutions will be responsible for organizational leadership, mentorship with their partners schools, and community outreach to promote the program. The Lead Institution and six partner schools will have their ThinSats tethered together. Each string of ThinSats will have a camera on the Mothership. One of the three strings of ThinSat in each CSD will have a GPS.



Data Dashboard: Students can track their ThinSat and receive data in near real time through the dashboard. Additionally, the students can compare data from previous missions and within missions from other student ThinSats.



About Us: Virginia Commercial Space Flight Authority operates the Mid-Atlantic Regional Spaceport located on the NASA Wallops Flight Facility, Wallops Island, VA. Twiggs Space Lab, LLC was founded by Professor Bob Twiggs to develop inspirational STEM based products with an emphasis on space technologies. Professor Twiggs is the co-inventor of the CubeSat and inventor of the PocketQube. In 2010 he was selected by the Space News publication as one of 10 space professionals “That Made a Difference in Space.” The other two selected from the United States were Elon Musk and President Barack Obama.

