

The Koehler Sounding Rocket Launched Carrying Interesting Student-Developed Payloads



Students celebrating the successful launch. Credit: NASA Wallops

The [sixth flight of a RockSat-X education payload launched](#) on a suborbital Rocket from the Wallops Flight Facility in Virginia on August 17. RockSat-X is an educational mission, providing students with an opportunity to learn from and engage in the process of building experiments for a scientific payload. The payload consisted of a broad range of interesting [student-developed experiments](#) from eleven different colleges. Although the payload was lost, the mission itself was an educational success for the students and the program. Some data was received through telemetry. Check out [this video](#) of the launch from the NASA Wallops Flight Facility YouTube channel.

[Project Imua](#), a group of students from the University of Hawaii Community Colleges, designed two experiments for the payload. One experiment had hoped to measure thermal neutron and gamma background radiation using scintillators and photomultiplier tubes. Another experiment deployed a naphthalene sublimation mini-rocket, made from 3D printed materials, with the goal of capturing images of the sublimation rocket's release. University of Colorado Boulder students also produced an experiment involving cameras. They launched a suite of HD cameras to observe and take video data of other experiments onboard as they engage in science.

Students from the University of Nebraska designed an experiment to test the resiliency of a new deployable boom and solar panel system. Data from this experiment was intended to help develop better safety measures for delicate hardware and could help make future payload recovery easier.

An experiment using silica aerogel to capture micro-debris, called [TRAPSat](#) was developed by students from Capital University in Maryland. The next iteration of TrapSat is scheduled to fly on a NASA CubeSat in 2018.

Not all experiments were designed to look up; some went up, to look down. Students from the University of Puerto Rico designed an experiment to collect data on the [physical and chemical makeup of high-density space particles found 130-165 km above sea level](#). Data collected could have lead to the discovery and subsequent genome sequencing of organic materials found at this altitude. An experiment from [Northwest Nazarene University](#) focused on testing flexible electronics in the space environment using RFID tags. The students were interested in observing the impact low frequency electromagnetic waves that occur with lightning discharges have on the ionosphere.

[Virginia Tech students](#) were interested in demonstrating the capability of software defined radio (SDR) in spaceflight communication systems. The students also took a cue from the overall Sounding Rocket program in resourcefulness and used economically priced SDR devices for this experiment, such as the ETTUS E310.

[RockSat-X](#) is a continuation of the [Rock-ON and RockSat-C programs](#), which provide students and educators an opportunity to learn the fundamentals of rocket science and research through building and launching a rocket. RockSat-X attracts students who are ready to take their interest in science to the next level, building and launching payloads.

Rock-Sat-X 2016 celebrated it's sixth year of working with students to launch unique and scientifically interesting payloads into space.