

NASA launches next generation PhoneSat, Ames-developed launch adapter

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A Minotaur I rocket carrying, among other payloads, 11 small cubesat research satellites as part of NASA's fourth Educational Launch of a Nanosatellite (ELaNa) program, lifts off from Virginia's Mid-Atlantic Regional Spaceport Pad 0B at NASA's Wallops Flight Facility at 5:15 p.m. PST Nov. 19. Credit: NASA/Chris Perry

(Phys.org) —A second-generation smartphone cubesat as well as a nanosatellite deployment system, launched into space Tuesday from the Virginia coast. The cubesats were included as auxiliary payload aboard a

U.S. Air Force Minotaur 1 rocket that lifted off from the Mid-Atlantic Regional Spaceport at NASA's Wallops Flight Facility at 5:15 p.m. PST.

The launch marks the first flight several components of the Nanosatellite Launch Adapter System (NLAS), built by NASA's Ames Research Center in Moffett Field, Calif. The NLAS is capable of carrying approximately 100 pounds of secondary payloads into orbit, and can accommodate various configurations of cubesats.

"NLAS will enable NASA and academic opportunities to fly nanosatellite missions as secondary payloads on many government sponsored launches. " said David Korsmeyer, director of engineering at Ames.

Also sent into orbit was PhoneSat 2.4, a second-generation smartphone cubesat mission sponsored by NASA's Space Technology Mission Directorate. Phonesat 2.4 will test the smartphone's capability as communication technology for nanosatellites and as hardware to manage pointing, taking images and software execution. PhoneSat 2.4 has several improvements over the previous mission, including a two-way radio to enable command of the satellite from the ground, solar arrays to enable it to be operational for up to a year, and a system for attitude control.

"With an expected orbital life-time of up to two years, PhoneSat 2.4 will measure and validate the performance of commercially-developed components in space," said Deborah Westley, PhoneSat project manager at Ames.

Cubesats are a class of research spacecraft called nanosatellites. The cube-shaped satellites measure about four inches on each side, have a volume of about one quart and weigh less than three pounds. Cubesat research addresses science, exploration, technology development, education or space missions.

"The advancements of the cubesat community are enabling an acceleration of flight-qualified technology that will ripple through the aerospace industry," said Jason Crusan, director of NASA's Advanced Exploration Systems Division, which oversees the CubeSat Launch Initiative. "Our future missions will be standing on the developments the cubesat community has enabled."

Also onboard were cubesats research satellites from nine universities as well as the first developed by high school students. The cubesats, NASA's fourth Educational Launch of Nanosatellite (ELaNa) mission, deployed from their protective cases into Earth's orbit 20 minutes after liftoff.

As the [miniature satellites](#) come online, the teams responsible for them are beginning to receive signals. Although it could take several more days for full confirmation, all of the cubesats appear to be doing well in their new home in low-Earth orbit. The teams are responsible for confirming activation and normal operations of the cubesats.

The TJ3Sat from Thomas Jefferson High School for Science and Technology of Alexandria, Va., contains a voice synthesizer that will take written phrases in the form of code and produce a phonetic voice reading on the satellite's downlink frequencies. TJ3Sat is the first NASA-sponsored cubesat developed by [high school students](#).

ELaNa missions, conducted under NASA's CubeSat Launch Initiative, give students, teachers and faculty hands-on experience developing flight hardware by providing access to a low-cost avenue for research. Since its inception in 2010, the CubeSat Launch Initiative has selected more than 90 cubesats from primarily educational and government institutions around the United States. NASA chose these miniature satellites from respondents to public announcements for the agency's CubeSat Launch Initiative. NASA has a current call for proposals due Nov. 26.

More information: For additional information about NASA's CubeSat Launch Initiative, visit: go.nasa.gov/CubeSat_initiative

For additional information about ELaNa 4, visit: go.nasa.gov/18i2YFk

For more information about NASA's PhoneSat 2.4 mission, visit:

www.nasa.gov/directorates/spac...ecraft/PhoneSat.html

www.nasa.gov/content/phonesat-24-ready-for-launch

For additional information about NLAS, visit:

www.nasa.gov/centers/ames/news...eady-for-flight.html

Provided by NASA

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