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ODU Engineers Launch Experimental Payload, And Benny, From Wallops

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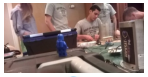

Old Dominion University engineering students are hitching a ride for their experiments on a NASA rocket as part of a program designed to expose student engineers nationwide to sub-space opportunities.

And this year's sub-space flight features a "famous" passenger, making everything awesome.

It's the second year in a row that Old Dominion student engineers have been selected to take part in RockSat-C, a national program led by the Colorado Space Grant Consortium that enables students to design and build sounding rocket payloads and launch them from the Wallops Flight Facility on the Eastern Shore.

ODU is one of nine universities to take part in the 2016 event, held as part of NASA's Rocket Week.

The Old Dominion payload, known as Monarch-Two, has as its mission demonstrating the technological feasibility of a smartphone as a control platform and transmission from a sounding rocket platform. The goal is to create a system that can record data and create a modulated signal for transmission through the radio, which can then be received and demodulated in a control station at Old Dominion.

Monarch-Two was scheduled for liftoff June 23 aboard a NASA Terrier-Improved Orion sounding rocket. However, bad weather at Wallops delayed the scheduled 15-minute flight until Friday, June 24.

Electrical engineering students Cian Branco and Connor Huffine are at the Mid-Atlantic Regional Spaceport on Wallops Island all week for the RockSat program launch. When the launch occurs, Jason Harris (electrical engineering) and Adam Horn (mechanical engineering) will man the control station in Kaufman Hall, receiving and demodulating the signal from Monarch-Two.

"Supervising" the entire operation aboard Monarch-Two will be Benny, the space-obsessed character from "The Lego Movie."

"Well, Benny was a late candidate selection, but after reading the profile on his Astronaut selection application, it was clear he was built for the job," said Branco, co-leader of the ODU project. "His enthusiasm for space is unparalleled and though a bit small in stature, he's got an affable joy that's hard to beat. Plus, he brought his own spacesuit, so that saved us valuable time and resources."

In terms of the project, "we will be taking data from a prototype solar cell provided by Rochester, as well as the information from a number of on-board sensors, packetizing the data with a Samsung Galaxy S3 and broadcasting it a straight-line 170-kilometer distance from space above Wallops back to ODU," Branco said.

The ultimate goal is to create a system that can collect and instantly transmit flight data, including acceleration, gyroscopic movement and the pull of magnetic fields.

A final report from the flight and experiments will be submitted to event organizers later this summer.

Dimitrie Popescu, associate professor of electrical and computer engineering, is the lead faculty adviser for the project, assisted by Robert Ash, professor of aerospace engineering; Christopher Bailey, assistant professor of electrical and computer engineering, and Onur Bilgen, assistant professor of mechanical engineering. The project has also received technical and financial support from the Virginia Space Grant Consortium.

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The Colorado Space Grant Consortium began working on rocket payloads in 2005 with RocketSat I, which was launched out of White Sands Missile Range on Sept. 25, 2006. Two other missions, RocketSat's II and III, furthered Colorado's knowledge in the area of sub-orbital rocket payloads and paved the way for the first RockOn workshop, which took place in June 2008.

RockOn is an intense workshop developed by the Colorado Space Grant Consortium. RockOn guides faculty and students from across the United States through the construction of a rocket payload, which is launched on the fifth day.