

Balloon Satellite Launched by SWOSU Students and Faculty

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Southwestern Oklahoma State University faculty and students get ready to launch a balloon satellite that eventually reached an altitude of 99,911 feet.

This photo was taken from the project as it sailed through the air.

Southwestern Oklahoma State University students recently got hands-on experience working on a balloon satellite project that was launched at Weatherford's Stafford Airport and ended up eight miles northeast of Watonga.

Brad Bryant, chair of the SWOSU Industrial & Engineering Technology Department, said the satellite reached a maximum altitude of 99,911 feet about one hour after the launch. The balloon and satellite were recovered about two hours after launch in an open field near Watonga.

The project was made possible by a grant from the Oklahoma NASA Space Grant Consortium with assistance from the Oklahoma State University Department of Mechanical and Aerospace Engineering. SWOSU students working on the balloon satellite were part of Bryant's Introduction to Engineering Technology class.

The students started work on the project this past spring, building the boxes, wiring electronic relays, digital cameras and heaters for the data acquisition packages. The class intended to launch the satellite earlier in the semester, but an unexpected blizzard on one date and winds of 40 mph on another caused their cancellations.

In preparation for the launch, a flight plan was filed with the Federal Aviation Administration and students gathered June 19 at Stafford Airport for the launch. The 10-foot balloon and satellite were tracked with a Global Positioning System (GPS) that transmitted via ham radio throughout the entire flight and recovery. A temperature sensor was also sent up with the satellite that, according to Bryant, recorded a minimum temperature of -50F. Bryant said the temperature and altitude data will continue to be analyzed.

Students participating on the project included: Charlie Worley, Hobart; Tyler Dyck, Corn; Tyler Burk, Elk City; Brandon Burr and Aaron Felder, both of Weatherford; Chaz Franks, Pampa TX; Celestin Mayele, Central Africa; Chad McIntosh, Irving TX; and Matt Sauls and Nathan Treadaway, both of Woodward.

Bryant and the students express appreciation to Dr. Andy Arena and Joe Conner of Oklahoma State University Aerospace Engineering Department and Madeline Baugher, Frank White, Jeff Short and Betty Lyle of SWOSU for their assistance on the project. Bryant also thanks Stafford Airport Manager John Creswell for the use of their facilities.

Bryant said the department hopes to launch more satellites in the future, and if anyone is interested in learning more about the program to call him at 580.774.3162.