

NASA Range Safety Support for the Space Florida Educational Balloon Release Program

The Space Academy, a joint venture between Space Florida and the NASA/Florida Space Grant Consortium, was specially designed to encourage students to continue their studies in science-based programs at their college or university, through continuing studies, Kennedy Space Center Internships, and science-based research programs. The Academy hosts Florida teachers, undergraduates, middle school, and high school students in a range of scientific and hands-on activities at the Kennedy Space Center Visitors Complex Education Center. The students and teachers represent several academic institutions from across the state of Florida and the nation.



The program focuses on bridging engineering and science gaps that currently exist in academics and in the workforce. In addition to the hands-on activities, the students work on a number of interdisciplinary projects designed to help them become problem-solvers, with real-life space and science-based problems. The students also have the opportunity to meet with top NASA scientists as well as potential Kennedy Space Center employers.

Educational Balloon Release Program

Over the past two years, 22 balloons have been released: 10 in 2006 and 12 in 2007. The releases have taken place from a variety of locations ranging from the Cape Canaveral Air Force Station Weather Station, the Kennedy Space Center Visitors Complex, Kelly Park on Merritt Island, and the Astronaut Hall of Fame in Titusville.



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These scientific balloons are designed to climb to an altitude of over 100,000 feet (20 miles), and at that altitude, relay pictures of the curvature of the Earth and the blackness of space back to the students.

The scientific balloons are launched from Kennedy Space Center with the following payloads on board:

- Live camera that is set to relay pictures to a ground receiver and monitor
- Global Positioning System designed to chart the flight pattern of the balloon



Plans are in the works for additional payloads such as ozone monitoring sensors.

Balloon Release Program Safety Requirements

NASA Range Safety works with the 45th Space Wing Safety Office to ensure all requirements and common sense practices are satisfied. In the balloon release program, Space Florida must adhere to four primary requirements.

1. Any individual payload package weighing over 4 pounds must have a surface density of less than 3 ounces per square inch (computed by dividing the total weight by the area of the smallest surface of the package).
2. Any individual payload package must weigh less than 6 pounds.
3. The total payload must weigh less than 12 pounds (Space Florida payloads generally weigh less than 14 ounces).
4. The payload suspension line must have a breaking strength of not more than 50 pounds.

These are the same requirements used for the daily weather balloon releases by the 45th Space Wing at Cape Canaveral Air Force Station Weather Facility. Balloons flown under these requirements are exempt from notification to Federal Aviation Administration control facilities, but Space Florida makes pre-launch courtesy notifications to the Kennedy Space Center Shuttle Landing Facility/Military Radar Unit and to the 45th Space Wing, 1st Range Operations Squadron since the release location is inside restricted airspace under their control.

Once all of these requirements and notifications have been satisfied, the 45th Space Wing Safety Office issues an approval letter with concurrence from NASA Range Safety to Space Florida to conduct their balloon release.