

NASA evolves student rocketry challenge, enhances ties to space launch system

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Student teams from 26 colleges and universities in 16 states and Puerto Rico will design and launch innovative rockets and payloads as part of the 2013-2014 NASA Student Launch rocketry competition.

The NASA Student Launch will be held May 15-17 at the Bonneville Salt Flats in Tooele County, Utah. There, the student teams will undergo a rigorous launch readiness review—just like actual NASA flight missions—and launch their rockets. This historic site has hosted numerous American land-speed tests since 1914 and also was the recovery site for comet and interstellar dust samples returned from NASA's Stardust mission in 2006.

"This new engineering competition ties participating students' work to NASA's pursuit of new, more demanding missions," said William Gerstenmaier, NASA's associate administrator for human exploration and operations. "Giving these students exposure to building and launching model rockets to 20,000 feet allows them to recognize the challenges in pushing new limits."

The student rocketry challenge is an evolution of the NASA Student Launch Projects, which for 12 years challenged students to build rockets of their own design capable of flying 1 mile high. The challenge was inspired by NASA's mission to build, test and fly the new Space Launch System, the nation's next flagship rocket for solar system exploration. This latest competition reaches for even greater heights—taking student-built vehicles more than 3 miles high, into the troposphere.

Another new feature of this competition is the requirement that the teams build their vehicles with a parachute-based recovery system and provide three [payloads](#) capable of delivering data that could shape future NASA missions.

Of the three payloads, one is mandatory for all teams: a landing hazard detection system, including a camera and customized software to transmit real-time information about surface conditions to operators on the ground. The teams will select the other two payloads from a list of options, all of which support NASA spacecraft development challenges. These range from studying how liquids slosh in microgravity and refining new liquid propulsion systems, to studying the environmental effects of supersonic flight on vehicle paints and coatings. All payloads must be recoverable and reusable.

Teams must predict the maximum flight altitude of their vehicle based on the research needs of their payloads. No rocket may fly higher than 20,000 feet. The team whose rocket comes closest to their predicted maximum altitude will win the coveted altitude award.

In addition, each team must prepare detailed preliminary and post-launch reports, and build and maintain a public website about their work. They also must develop an educational engagement program to inspire younger students in their local schools and communities.

Teams will be judged on their successful launch and payload deployment, as well as the thoroughness of supporting documentation. The winning team will receive a \$5,000 prize provided by the corporate sponsor for the rocketry challenge, ATK Aerospace Group of Promontory, Utah. NASA and ATK judges will present a variety of additional awards for winning elements of the challenge, including a new safety award for the team that best integrates safeguards into their vehicle design, [launch](#) plan and ground operations.

Provided by NASA

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