

NASA pushes flying saucer parachute test to Thursday

June 3 2015



A full mission dress rehearsal for the Low-Density Supersonic Decelerator, on May 29, 2015, at the US Navy Pacific Missile Range Facility in Kauai, Hawaii

High waves forced NASA to postpone until Thursday the first test of the largest parachute ever deployed, during a flying saucer launch that will try out new technologies for landing on Mars.

If conditions improve, the test flight of the flying saucer, known as the

Low-Density Supersonic Decelerator, will be broadcast live on NASA's website beginning at 1:30 pm (1730 GMT) on Thursday.

"The ocean wave height continues to be an issue for the crew that would recover the vehicle and its data after splashdown," NASA said after the postponement of Wednesday's planned attempt. A bid on Tuesday was also canceled because of ocean conditions.

The launch window for the test extends until June 12.

Since the atmosphere on Mars is so thin, any [parachute](#) that helps a heavy, fast-moving spacecraft touch down needs to be extra strong.

The US space agency figured out how to do this decades ago, beginning with the Viking mission that put two landers on Mars in 1976.

But with the goal of sending humans to Mars in the 2030s, the agency is now testing a more advanced, new generation of parachute technology, known as the Supersonic Ringsail Parachute, that could allow even heavier spacecraft—the kind that may have humans and months of food and supplies on board—to land softly.

"We want to see if the chute can successfully deploy and decelerate the test vehicle while it is in supersonic flight," NASA's Jet Propulsion Laboratory said in a statement.

The [test vehicle](#) weighs 6,808 pounds (3,088 kilograms), or about twice the weight of the kind of robotic rover spacecraft NASA is currently capable of landing safely on Mars.



This NASA artist's concept obtained June 2, 2015 shows the test vehicle for NASA's Low-Density Supersonic Decelerator, designed to test landing technologies for future Mars missions

The parachute, described by NASA's JPL as "the largest parachute ever deployed," is 100 feet (30 meters) in diameter.

The goal is for the chute to "slow the entry vehicle from Mach 2 to subsonic speeds," NASA said.

The test will involve sending the saucer, an inner-tube shaped decelerator and parachute to an altitude of 120,000 feet (37 kilometers) over the Pacific Ocean with the help of a giant balloon.

The balloon will release the spacecraft and rockets will lift the vehicle even higher, to 180,000 feet, reaching supersonic speeds.

"Traveling at three times the speed of sound, the saucer's decelerator will

inflate, slowing the [vehicle](#), and then a parachute will deploy at 2.35 times the speed of sound to carry it to the ocean's surface," NASA said.

The first test flight of the flying saucer was in June 2014, and another [test flight](#) is planned in 2016.

A different kind of parachute known as the Supersonic Disksail was tested in the 2014 flight but it did not inflate as hoped, and shredded to pieces at the high speed and altitude.

NASA said researchers have since "gained significant insight into the fundamental physics of parachute inflation," and the team "has been re-writing the book on high speed parachute operations" since last year, the agency said.

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