Watch Blue Origin send its New Shepard passenger rocket to space and back

After a seven-month hiatus from spaceflight, private aerospace company Blue Origin is set to fly its New Shepard rocket to space and back again on the company's 12th overall test flight. It'll be the sixth time this particular New Shepard vehicle has seen space and then landed back on Earth. If all goes well, this rocket will hold the record for most trips to space out of any other New Shepard vehicle.

The New Shepard is Blue Origin's passenger rocket, designed to take crews of six to the edge of space to experience a few minutes of weightlessness. The vehicle is meant to take off vertically from the ground, carrying a capsule to 62 miles or 100 kilometers up, a height many consider to be above the boundary to space. While high above the Earth, the capsule on top of the vehicle — where future passengers will ride — detaches from the rest of the rocket. The two parts of the vehicle will then fall back to Earth; the rocket is designed to land propulsively, using its engine to lower itself to the ground, while the capsule will land with the aid of parachutes.

"we've tapped the brakes a little bit."
People have not flown on New Shepard yet, however, and there won't be any on board the rocket today, either. Blue Origin is still testing out the vehicle in order to get it ready for its first human crews. Earlier this year, company officials claimed that 2019 would be the year that the New Shepard carried its first crew. In fact, the vehicle that's supposed to fly people — the fourth iteration of the rocket — is already at Blue Origin's test flight facility in West Texas, where the company performs its New Shepard launches. However,

Blue Origin hasn’t flown the vehicle since May, as the company has been making sure the vehicle is ready for people.

“We’re in the position of where we’ve tapped the brakes a little bit,” Blue Origin CEO Bob Smith said during a conference in October, according to *Space News*. “Verifying that you actually have something that’s safe and ready to go is where we are. We’re just going through all of our systems and making sure that we actually have all those systems right.” The last few test flights of the New Shepard have carried a dummy passenger aboard. Nicknamed Mannequin Skywalker, the dummy is equipped with sensors to study how the trips will affect future customers.

The mannequin that Blue Origin flies on its test launches. Image: Blue Origin

While New Shepard isn’t in the business of flying people yet, it *has* been in the business of carrying scientific payloads to space. For the last few flights, the rocket has carried research and experiments from NASA, universities, and companies that are designed to take advantage of the microgravity environment that New Shepard experiences during its tests. Today’s flight is no different; it will carry an experiment developed by students at Columbia University to study how microgravity affects cells. Another payload from NASA, called OSCAR, is designed to create gaseous mixtures out of common waste, either to create propulsion or fuel life support systems. Even the rock band OK GO has facilitated student art projects to fly on today’s launch.

Although Blue Origin hasn’t been flying much this year, the company has had its sights set on other longer-term projects. For one, the company is still in the midst of developing a much more powerful rocket called New Glenn that is supposed to take satellites, cargo, and eventually passengers into orbit.

Like the New Shepard, New Glenn is also meant to be reusable and land after each flight. Blue Origin particularly wants New Glenn to be chosen by the US Air Force to fly national security payloads in the future. Additionally, the company is also very keen on helping NASA send people back to the Moon in the next decade. In May, Blue Origin unveiled the mockup of its lunar lander, called Blue Moon, which is designed to take cargo and people to the surface of the Moon.

All of those other vehicles still have a few years before they come to fruition, though. In the meantime, New Shepard is Blue Origin's only flying vehicle. For today's test flight, the company is targeting a launch time of 10:00AM ET. Blue Origin's live stream of the event is set to begin around 9:30AM ET, and the entire flight should last about 11 minutes from takeoff to landing.

Update December 10th, 10:10AM ET: *Blue Origin was originally supposed to launch on Tuesday, December 10th, but it decided to push the launch to Wednesday, December 11th due to bad weather in the area.*

https://www.theverge.com/2019/12/10/21003756/blue-origin-new-shepard-rocket-test-launch-science-research-watch-live