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NASA Launches New Orion & New Era

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NASA's new Orion spacecraft streaked into orbit on Friday on a high-stakes test flight meant to usher in a new era of human exploration leading ultimately to Mars. The unmanned orbital journey began with a sunrise liftoff witnessed by thousands of NASA guests. Parts of the spacecraft peeled away exactly as planned, falling back toward Earth as onboard cameras provided stunning views of our blue, cloud-covered planet.

"The star of the day is Orion," said NASA administrator Charles Bolden Jr., back for the second morning in a row. He called it "Day One of the Mars era."

Orion's debut will be brief – just 4 hours from launch to splashdown, with two orbits of Earth. But for the first time in 42 years, NASA is sending a spacecraft built for humans farther than a couple of hundred miles from Earth. The previous time was the Apollo 17 moon shot. And it's NASA's first new vehicle for space travel since the shuttle.

Friday's flight test brings NASA "one step closer" to putting humans aboard Orion, Bolden said just before liftoff.

Sluggish rocket valves and wind halted Thursday's launch attempt.

Everything went NASA's way on Friday, and the Delta IV rocket blasted off with Orion as dawn broke. NASA was aiming for a peak altitude of 5,800 km on Orion's second lap around the planet, in order to give the capsule the necessary momentum for a scorchingly high-speed re-entry over the Pacific. Engineers want to see how the heat shield – the largest of its kind ever built – holds up when Orion comes back through the atmosphere travelling 32,200 kph and enduring 2,200 degrees Celsius.

The atmosphere at Kennedy Space Center was reminiscent of the shuttle-flying days. After more than three years since the last shuttle flight, NASA revelled in all the attention. Roads appeared to be less jammed before dawn for try two, and NASA was uncertain how many of the estimated 27,000 invited guests returned.

Nonetheless, the press site remained jammed, the hotels packed and the excitement level high. "It's a big day for the world, for people who know and like space," Bolden said, observing the crowds.

The spacecraft is rigged with 1,200 sensors to gauge everything from heat to vibration to radiation. At 11-feet tall with a 16.5-foot base, Orion is bigger han the old-time Apollo capsules and, obviously, more advanced.

NASA deliberately kept astronauts off this first Orion. Managers want to test the riskiest parts of the spacecraft — the heat shield, parachutes, various jettisoning components — before committing to a crew.

Associated Press



Key Milestones of the 4-1/2-hour FLIGHT

1 minute, 25 seconds after liftoff, Orion went supersonic

4 minutes after liftoff, two of Delta 4's three liquid-fuelled boosters were jettisoned

5 minutes, 30 seconds, the last booster burned out and separated from the upper-stage engine.

6 minutes, 15 seconds, three protective panels separate from Orion's mock-up service module

5 seconds later, the launch escape system is jettisoned

17 minutes, second-stage engine shuts down, leaving Orion in its initial orbit 185 by 888 km above Earth

3 hours, Orion passes through intense radiation in the Van Allen Belts and reaches its peak altitude of 5,800 km

3 hours, 23 minutes, Orion prepares to return to Earth

3 hours, 57 minutes, positions itself for atmospheric re-entry

4 hours, 13 minutes, Orion, travelling at 32,000 kmh reaches upper limits of Earth's atmosphere

4 hours, 19 minutes, parachutes begin deploying to slow Orion's descent

4 hours, 23 minutes, Orion lands in the Pacific Ocean