

New Horizons Spacecraft Gets Boost From Jupiter for Pluto Encounter

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An artist's concept of the Jupiter flyby. Credit: JHUAPL/SwRI

NASA's New Horizons spacecraft successfully completed a flyby of Jupiter early this morning, using the massive planet's gravity to pick up speed for its 3-billion mile voyage to Pluto and the unexplored Kuiper Belt region beyond.

"We're on our way to Pluto," said New Horizons Mission Operations Manager Alice Bowman of Johns Hopkins University Applied Physics Laboratory (APL), Laurel, Md. "The swingby was a success; the spacecraft is on course and performed just as we expected."

New Horizons came within 1.4 million miles of Jupiter at 12:43 a.m. EST, placing the spacecraft on target to reach the Pluto system in July

2015. During closest approach, the spacecraft could not communicate with Earth, but gathered science data on the giant planet, its moons and atmosphere.

At 11:55 a.m. EST mission operators at APL established contact through NASA's Deep Space Network and confirmed New Horizons' health and status.

The fastest spacecraft ever launched, New Horizons is gaining nearly 9,000 mph from Jupiter's gravity - accelerating to more than 52,000 mph. The spacecraft has covered approximately 500 million miles since its launch in January 2006 and reached Jupiter faster than seven previous spacecraft to visit the solar system's largest planet. New Horizons raced through a target just 500 miles across, the equivalent of a skeet shooter in Washington hitting a target in Baltimore on the first try.

New Horizons has been running through an intense six-month long systems check that will include more than 700 science observations of the Jupiter system by the end of June. More than half of those observations are taking place this week, including scans of Jupiter's turbulent atmosphere, measurements of its magnetic cocoon, surveys of its delicate rings, maps of the composition and topography of the large moons Io, Europa, Ganymede and Callisto, and a detailed look at volcanic activity on Io.

"We designed the entire Jupiter encounter to be a tough test for the mission team and our spacecraft, and we're passing the test," says New Horizons Principal Investigator Alan Stern from the Southwest Research Institute in Boulder, Colo. "We're not only learning what we can expect from the spacecraft when we visit Pluto in eight years, we're already getting some stunning science results at Jupiter - and there's more to come."

While much of the close-in science data will be sent back to Earth during the coming weeks, the team also downloaded a sampling of images to verify New Horizons' performance.

The outbound leg of New Horizons' journey includes the first-ever trip down the long "tail" of Jupiter's magnetosphere, a wide stream of charged particles that extends more than 100 million miles beyond the planet. Amateur backyard telescopes, the giant Keck telescope in Hawaii, NASA's Hubble Space Telescope and Chandra X-Ray Observatory and other ground and space-based telescopes are turning to Jupiter as New Horizons flies by, ready to provide global context to the close-up data New Horizons gathers.

Source: NASA

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