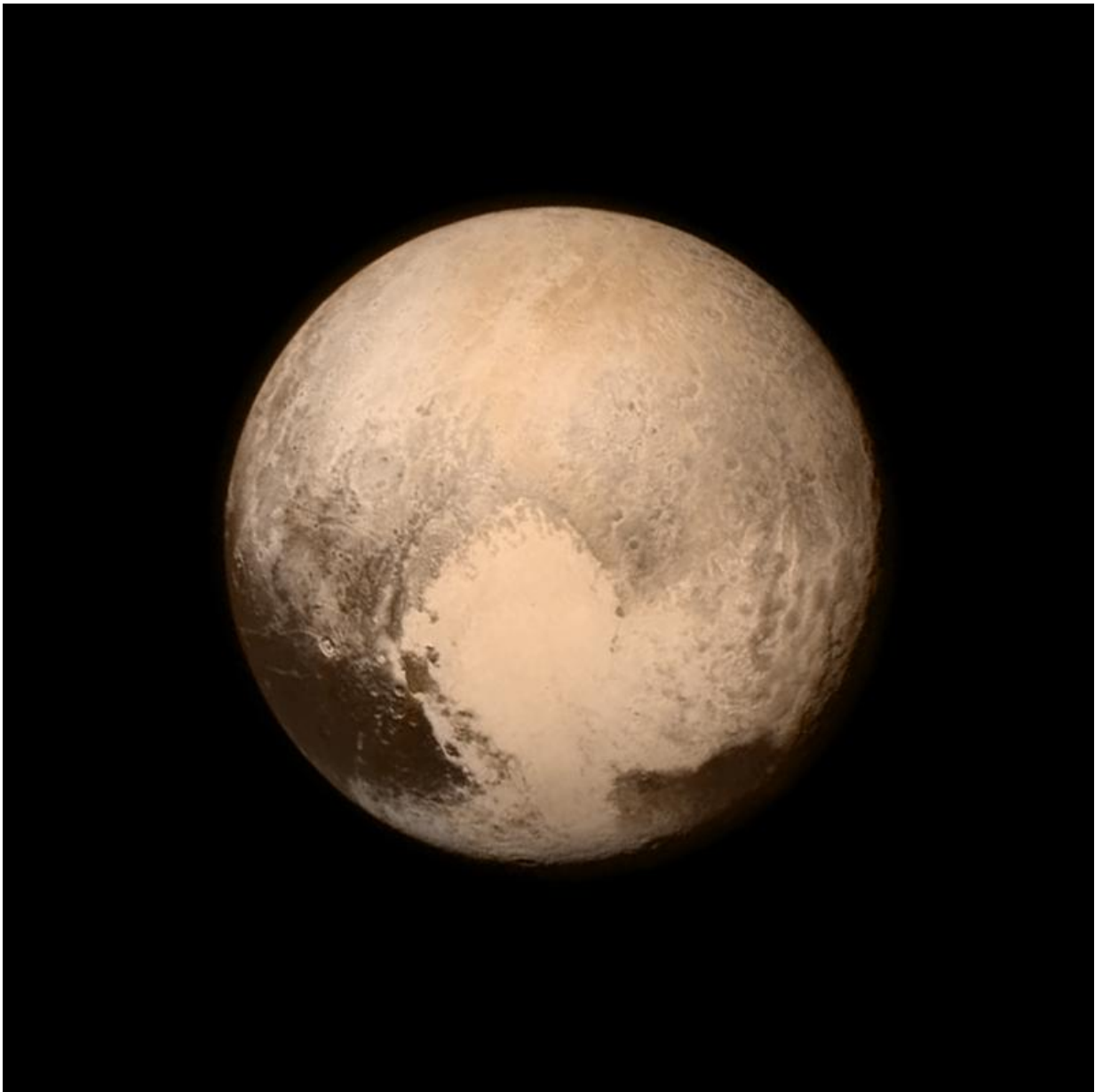


Pluto's close-ups to offer high-resolution views

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Pluto nearly fills the frame in this image from the Long Range Reconnaissance Imager (LORRI) aboard NASA's New Horizons spacecraft, taken on July 13, 2015 when the spacecraft was 476,000 miles (768,000 kilometers) from the surface. This is the last and most detailed image sent to Earth before the spacecraft's closest approach to Pluto on July 14. The color image has been combined with lower-resolution color information from the Ralph instrument that was acquired earlier on July 13. This view is dominated by the large, bright feature informally named the "heart," which measures approximately 1,000 miles (1,600 kilometers) across. The heart borders darker equatorial terrains, and the mottled terrain to its east (right) are complex. However, even at this resolution, much of the heart's interior appears remarkably featureless—possibly a sign of ongoing geologic processes. Credit: NASA/APL/SwRI

Pluto's surface has long been a blur to sky watchers on Earth, but a NASA spacecraft on Wednesday should provide the first high-resolution images of the distant dwarf planet after a historic flyby mission.

The unmanned, \$700 million nuclear-powered [spacecraft](#) known as New Horizons spent much of Tuesday snapping pictures and collecting data as it zoomed by Pluto.

Those images, including color data on Pluto and some of its five moons, are expected to offer 10 times more detail than ever before seen.

"Sending back 'first-look' data to the team 'down under'," the New Horizons team wrote on Twitter Wednesday morning, indicating its space antenna in Canberra, Australia was receiving information from the craft.

A press briefing is scheduled for 3 pm (1900 GMT) to unveil the findings.

Historic mission

Not since NASA's Voyager 2 mission, which flew by Neptune in 1989, has a spacecraft visited a planetary system.

And Pluto, long considered the farthest planet from the Sun before it was reclassified as a [dwarf planet](#) in 2006, has never before been explored.

The climax of the New Horizons mission came Tuesday at 1149 GMT when the piano-sized spacecraft passed 7,750 miles—or about the distance from New York to Mumbai, India—from Pluto's surface.

But the information the spacecraft has gathered is only beginning to reach Earth, after a journey of nearly 10 years and three billion miles (4.8 billion kilometers).

The mission's principal investigator Alan Stern said scientists can now look forward to a "16-month data waterfall" that will help scientists write whole new textbooks about Pluto.

Hearts, craters

New Horizons is equipped with seven science instruments to collect information about Pluto's geology and atmosphere.

So far, a series of pictures from the spacecraft have revealed curious surface features, from a dark shadowy whale figure to a bright heart shape.

But just what these shapes are, or what kind of terrain they represent, remains unclear.

"About this big heart feature, we don't know quite yet," said Cathy Olkin, a planetary scientist who is working on the New Horizons mission.

"We do see craters on the surface and we'll get higher resolution data on that region."

Scientists have confirmed the presence of a polar ice cap on Pluto, and have detected nitrogen escaping from its atmosphere.

They've also learned from New Horizons that the dwarf planet is slightly larger than previously thought, with a radius measuring 736 miles (1,185 kilometers).

The pictures offered so far by New Horizons are 1,000 times more detailed than any telescope on Earth could offer.

The images released Wednesday will be even better, with a resolution of about 100 meters (yards) per pixel.

Knowing more about the dwarf planet could reveal more about the origins of the Earth.

NASA's science mission directorate chief John Grunsfeld has described Pluto and its moons as "a fossil remnant of the beginnings of our solar system" that will teach us more about how the Earth formed.

"There's enormous excitement around the world, thanks to Pluto and New Horizons, and the best has yet to come," said Grunsfeld.

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