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New Horizons Update: Methane Detected; New Images of Pluto and Charon; Sunrise/Sunset Observations

Tricia Talbert

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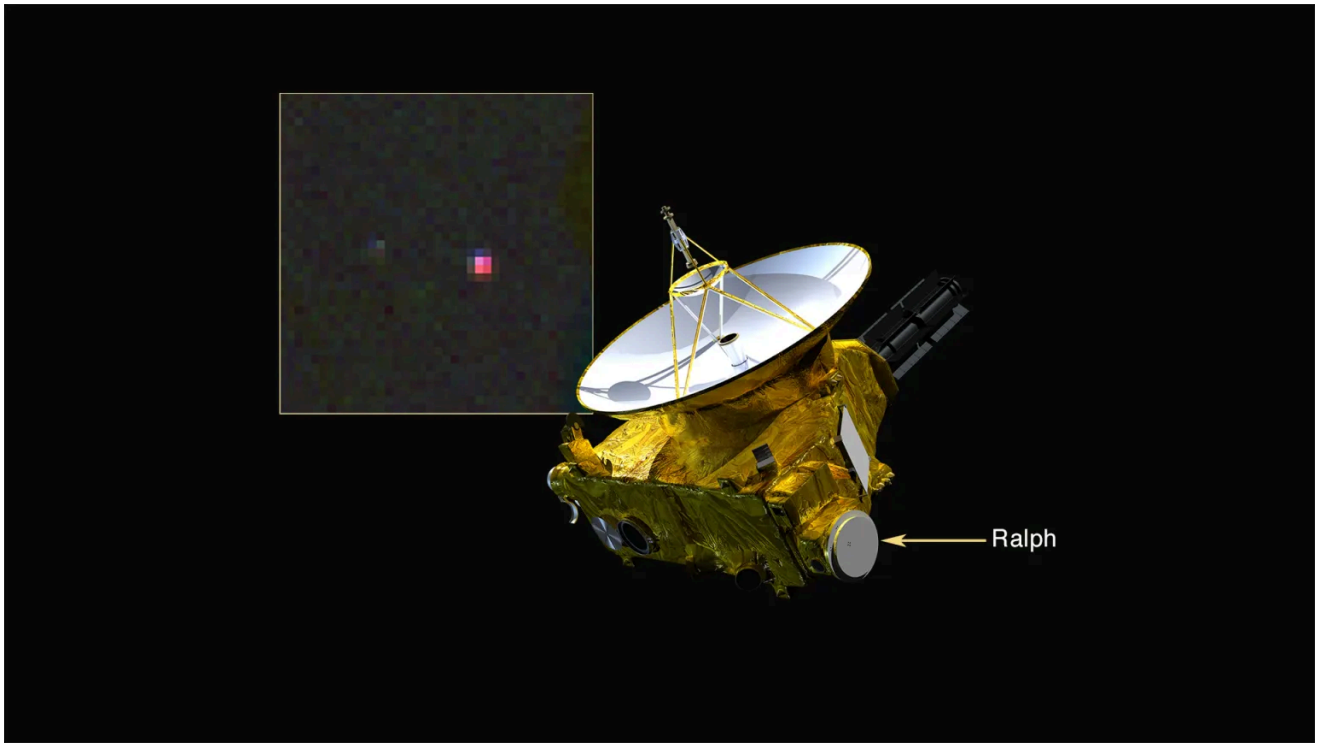
ARTICLE



The location of the New Horizons Ralph instrument, which detected methane on Pluto, is shown. The inset is a false color image of Pluto and Charon in infrared light; pink indicates methane on Pluto's surface.
NASA/Johns Hopkins Applied Physics Laboratory/Southwest Research Institute

Yes, there is methane on Pluto, and, no, it doesn't come from cows. The infrared spectrometer on NASA's Pluto-bound New Horizons spacecraft has detected frozen methane on Pluto's surface; Earth-based astronomers first observed the chemical compound on Pluto in 1976.

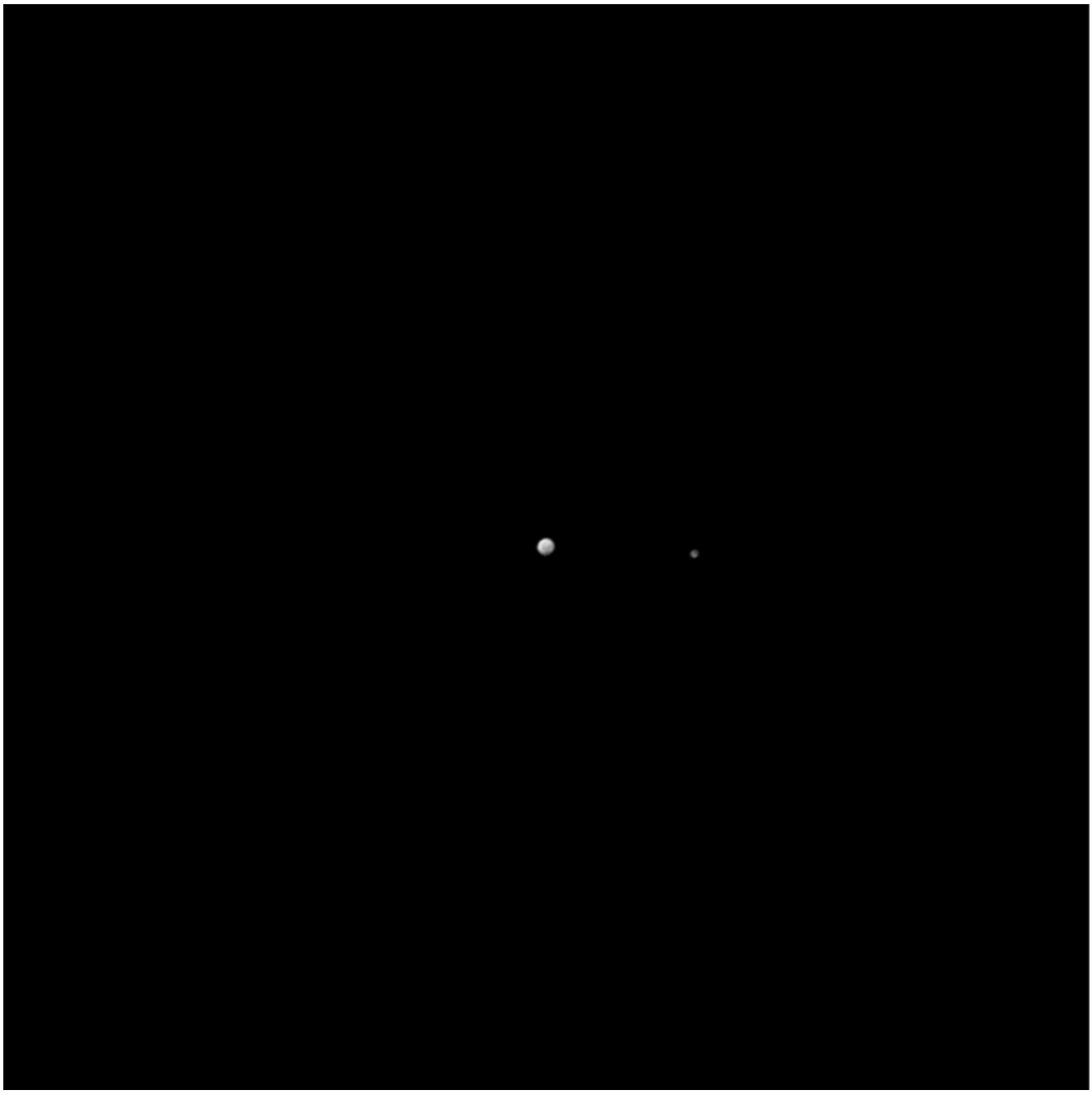
“We already knew there was methane on Pluto, but these are our first detections,” said Will Grundy, the New Horizons Surface Composition team leader with the Lowell Observatory in Flagstaff, Arizona. “Soon we will know if there are differences in the presence of methane ice from one part of Pluto to another.”

Methane (chemical formula CH4) is an odorless, colorless gas that is present underground and in the atmosphere on Earth. On Pluto, methane may be primordial, inherited from the solar nebula from which the solar system formed 4.5 billion years ago. Methane was originally detected on Pluto’s surface by a team of ground-based astronomers led by New Horizons team member Dale Cruikshank, of NASA’s Ames Research Center, Mountain View, California.

Come Fly with New Horizons on its Approach to Pluto

Images from New Horizons show the view from aboard the spacecraft closes in on the Pluto system for a July 14 flyby.

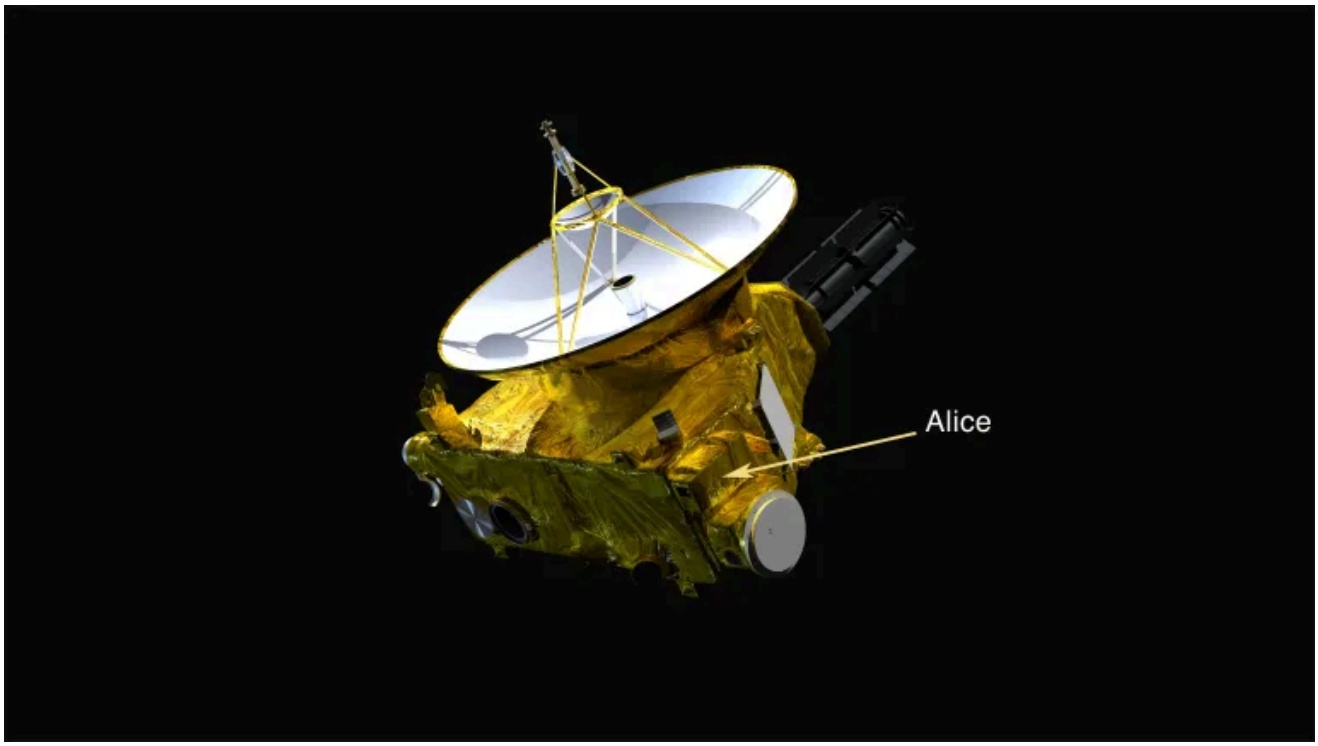
This time-lapse approach movie was made from images from the Long Range Reconnaissance Imager (LORRI) camera aboard New Horizons spacecraft taken between May 28 and June 25, 2015. During that time the spacecraft distance to Pluto decreased almost threefold, from about 35 million miles to 14 million miles (56 million kilometers to 22 million kilometers). The images show Pluto and its largest moon, Charon, growing in apparent size as New Horizons closes in. As it rotates, Pluto displays a strongly contrasting surface dominated by a bright northern hemisphere, with a discontinuous band of darker material running along the equator. Charon has a dark polar region, and there are indications of brightness variations at lower latitudes.



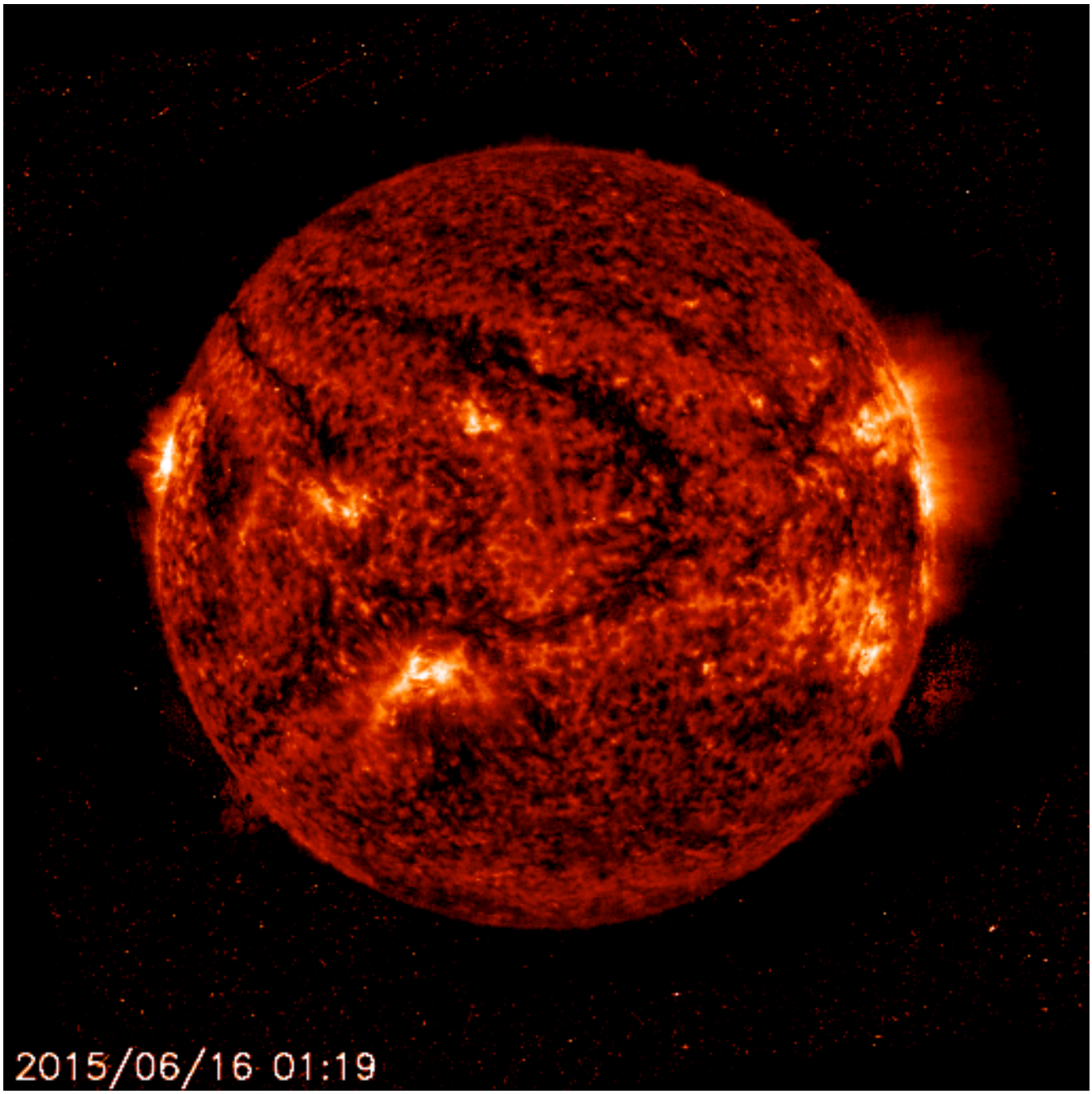
June 30, 2015, View of Pluto and Charon from New ...

This movie, from New Horizons' highest-resolution imager, shows Pluto and Charon as the spacecraft closes in. In the annotated version, Pluto's prime meridian (the region of the planet that faces Charon) is shown in yellow and the equator is shown in pink.
Credits: NASA/Johns Hopkins Applied Physics Laboratory/Southwest Research Institute

"Alice" Instrument Practices for Sunset and Sunrise Observations of Pluto's Atmosphere

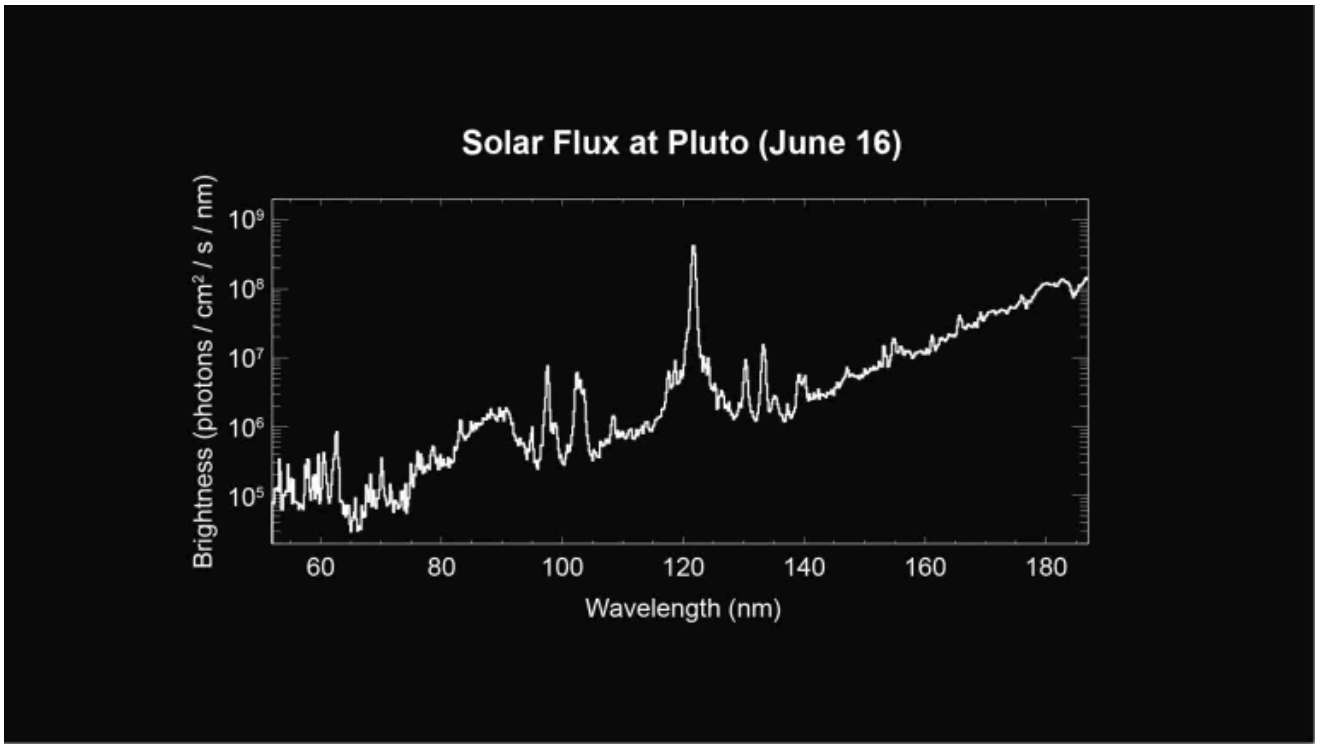


The location of the Alice ultraviolet imaging spectrograph on the New Horizons spacecraft is indicated.
NASA/Johns Hopkins Applied Physics Laboratory/Southwest Research Institute



This is how the Sun looked in ultraviolet light to NASA's SOHO spacecraft on June 16, 2015, when New Horizons observed the Sun at similar ultraviolet wavelengths.
NASA

The New Horizons spacecraft has made a critical observation in preparation for its upcoming observations of Pluto's tenuous atmosphere. Just hours after its flyby of Pluto on July 14, the spacecraft will observe sunlight passing through the planet's atmosphere, to help scientists determine the atmosphere's composition. "It will be as if Pluto were illuminated from behind by a trillion-watt light bulb," said Randy Gladstone, a New Horizons scientist from Southwest Research Institute, San Antonio. On June 16, New Horizons' Alice ultraviolet imaging spectrograph successfully performed a test observation of the sun from 3.1 billion miles away (5 billion kilometers), which will be used to interpret the July 14 observations.



This spectrum of the Sun obtained by New Horizons' Alice instrument on June 16, 2015, will be used to interpret the spacecraft's upcoming observations of Pluto's atmosphere.

NASA/Johns Hopkins Applied Physics Laboratory/Southwest Research Institute

New Horizons is now less than 11 million miles (18 million kilometers) from the Pluto system. The spacecraft is healthy and all systems are operating normally.

The Johns Hopkins University Applied Physics Laboratory in Laurel, Maryland, designed, built, and operates the New Horizons spacecraft, and manages the mission for NASA's Science Mission Directorate. The Southwest Research Institute, based in San Antonio, leads the science team, payload operations and encounter science planning. New Horizons is part of the New Frontiers Program managed by NASA's Marshall Space Flight Center in Huntsville, Alabama.

To view images from New Horizons and learn more about the mission visit: **https://www.nasa.gov/newhorizons** and **http://pluto.jhuapl.edu**

Follow the New Horizons mission on social media, and use the hashtag #PlutoFlyby to join the conversation. The mission's official NASA Twitter account is @NASANewHorizons. Live updates will be available on Facebook at: https://www.facebook.com/new.horizons1

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