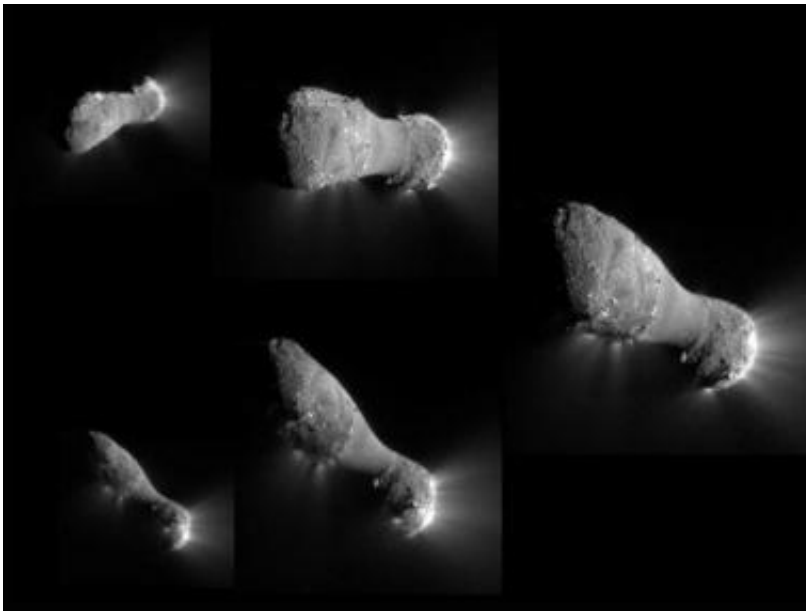


Images: New insights revealed into comet features with EPOXI flyby

November 5 2010

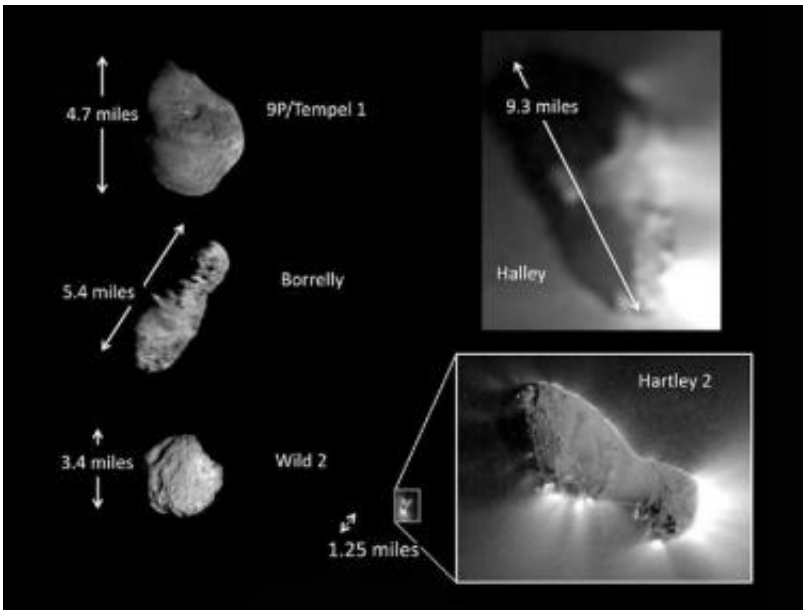


This image montage shows comet Hartley 2 as NASA's EPOXI mission approached and flew under the comet. The images progress in time clockwise, starting at the top left. Image credit: NASA/JPL-Caltech/UMD

(PhysOrg.com) -- NASA's EPOXI mission spacecraft successfully flew past comet Hartley 2 at 7 a.m. PDT (10 a.m. EDT) Thursday, Nov. 4. Scientists say initial images from the flyby provide new information about the comet's volume and material spewing from its surface.

"Early observations of the comet show that, for the first time, we may be

able to connect activity to individual features on the nucleus," said EPOXI Principal Investigator Michael A'Hearn of the University of Maryland, College Park. "We certainly have our hands full. The images are full of great cometary data, and that's what we hoped for."



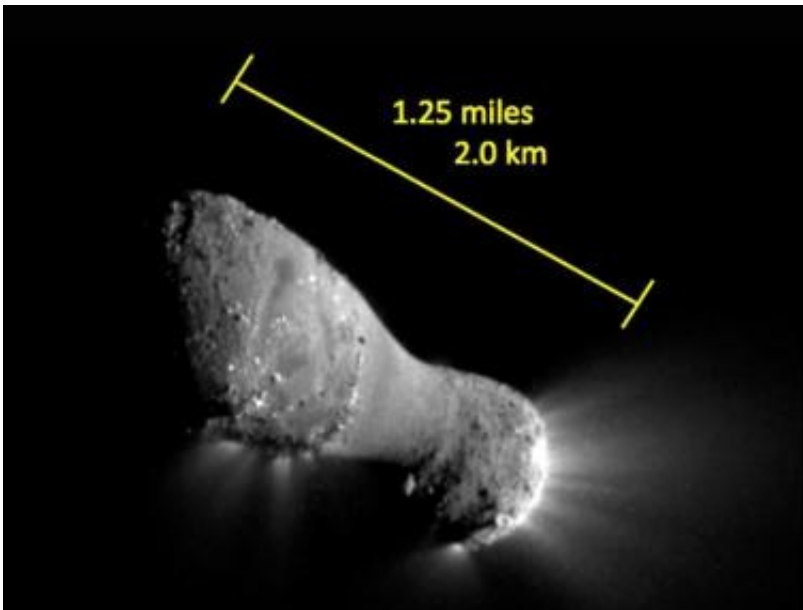
This montage shows the only five comets imaged up close with spacecraft. The comets vary in shape and size. Comet Hartley 2 is by far the smallest and has the most activity in relation to its surface area. Image credit: NASA/JPL-Caltech/UMD

EPOXI is an extended mission that uses the already in-flight [Deep Impact](#) spacecraft. Its encounter phase with Hartley 2 began at 1 p.m. PDT (4 p.m. EDT) on Nov. 3, when the spacecraft began to point its two imagers at the comet's nucleus. Imaging of the nucleus began one hour later.

"The spacecraft has provided the most extensive observations of a comet in history," said Ed Weiler, associate administrator for NASA's Science

Mission Directorate at the agency's headquarters in Washington.

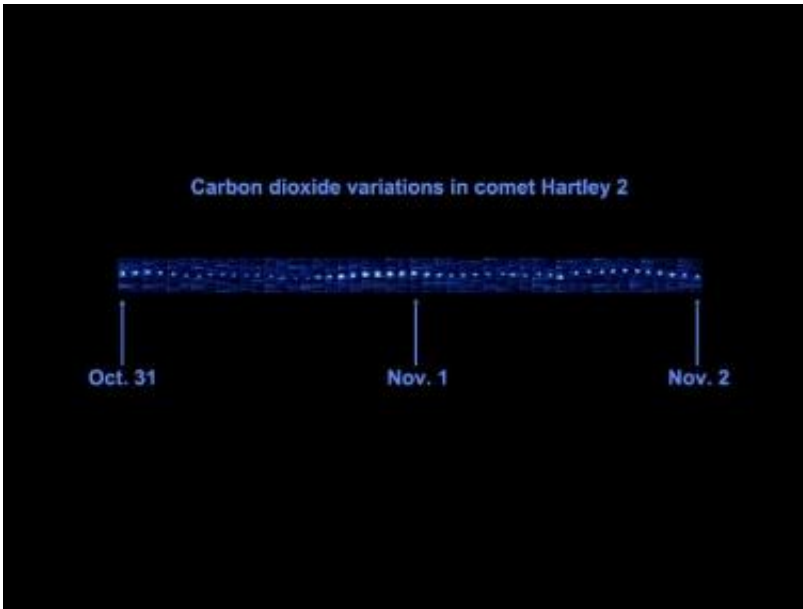
"Scientists and engineers have successfully squeezed world-class science from a re-purposed spacecraft at a fraction of the cost to taxpayers of a new science project."



This enhanced image shows jets and where they originate from the surface of comet Hartley 2. There are jets outgassing from the sunward side, the night side, and along the terminator -- the line between the two sides. Image credit: NASA/JPL-Caltech/UMD

Images from the EPOXI mission reveal comet Hartley 2 to have 100 times less volume than comet Tempel 1, the first target of Deep Impact. More revelations about Hartley 2 are expected as analysis continues.

Initial estimates indicate the [spacecraft](#) was about 700 kilometers (435 miles) from the comet at the closest-approach point. That's almost the exact distance that was calculated by engineers in advance of the flyby.



In the upper panel, small images of the comet are specially filtered to show only carbon dioxide, or evaporated dry ice, as a function of time. The lower panel is a graph showing the variation of total brightness. Image credit: NASA/JPL-Caltech/UMD

"It is a testament to our team's skill that we nailed the [flyby](#) distance to a [comet](#) that likes to move around the sky so much," said Tim Larson, EPOXI project manager at NASA's Jet Propulsion Laboratory in Pasadena, Calif. "While it's great to see the images coming down, there is still work to be done. We have another three weeks of imaging during our outbound journey."

Provided by JPL/NASA

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