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Hubble Discovers a Fifth Moon Orbiting Pluto



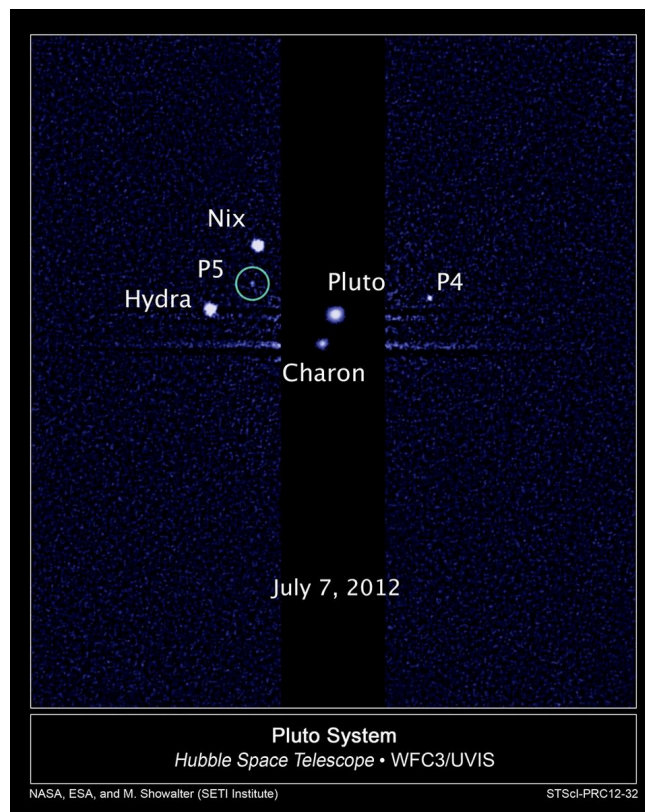
NASA Hubble Mission Team

Goddard Space Flight Center

JUL 11, 2012



ARTICLE



This image, taken by NASA's Hubble Space Telescope, shows five moons orbiting the distant, icy dwarf planet Pluto. The green circle marks the newly discovered moon, designated P5, as photographed by Hubble's Wide Field Camera 3 on July 7. Other observations that collectively...

A team of astronomers using NASA's Hubble Space Telescope is reporting the discovery of another moon orbiting the icy dwarf planet Pluto.

The moon is estimated to be irregular in shape and 6 to 15 miles across. It is in a 58,000-mile-diameter circular orbit around Pluto that is assumed to be co-planar with the other satellites in the system.

"The moons form a series of neatly nested orbits, a bit like Russian dolls," said team lead Mark Showalter of the SETI Institute in Mountain View, Calif.

The discovery increases the number of known moons orbiting Pluto to five.

The Pluto team is intrigued that such a small planet can have such a complex collection of satellites. The new discovery provides additional clues for unraveling how the Pluto system formed and evolved. The favored theory is that all the moons are relics of a collision between Pluto and another large Kuiper belt object billions of years ago.

The new detection will help scientists navigate NASA's New Horizons spacecraft through the Pluto system in 2015, when it makes an historic and long-awaited high-speed flyby of the distant world.

The team is using Hubble's powerful vision to scour the Pluto system to uncover potential hazards to the New Horizons spacecraft. Moving past the dwarf planet at a speed of 30,000 miles per hour, New Horizons could be destroyed in a collision with even a BB-shot-size piece of orbital debris.

"The discovery of so many small moons indirectly tells us that there must be lots of small particles lurking unseen in the Pluto system," said Harold Weaver of the Johns Hopkins University Applied Physics Laboratory in Laurel, Md.

"The inventory of the Pluto system we're taking now with Hubble will help the New Horizons team design a safer trajectory for the spacecraft," added Alan Stern of the Southwest Research Institute in Boulder, Colo., the mission's principal investigator.

Pluto's largest moon, Charon, was discovered in 1978 in observations made at the United States Naval Observatory in Washington, D.C. Hubble observations in 2006 uncovered two additional small moons, Nix and Hydra. In 2011 another moon, P4, was found in Hubble data.

Provisionally designated S/2012 (134340) 1, the latest moon was detected in nine separate sets of images taken by Hubble's Wide Field Camera 3 on June 26, 27, and 29, 2012 and July 7 and 9, 2012.

In the years following the New Horizons Pluto flyby, astronomers plan to use the infrared vision of Hubble's planned successor, NASA's James Webb Space Telescope, for follow-up observations. The Webb telescope will be able to measure the surface chemistry of Pluto, its moons, and many other bodies that lie in the distant Kuiper Belt along with Pluto.

The Pluto team members are M. Showalter (SETI Institute), H.A. Weaver (Applied Physics Laboratory, Johns Hopkins University), and S.A. Stern, A.J. Steffl, and M.W. Buie (Southwest Research Institute).

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Hubble Discovers a Fifth Moon Orbiting Pluto (Unannotated)



Compass and Scale Image of Pluto



This image, taken by NASA's Hubble Space Telescope, shows five moons orbiting the distant, icy dwarf planet Pluto. The newly discovered small moon, designated P5, is the innermost of the moons found by Hubble over the past seven years. The diagram shows that P5 is in a...

Motion of Pluto's Five Moons



This video shows the motion of Pluto's five satellites as photographed by the Hubble Space Telescope on July 7, 2012. The three-exposure-time-lapse sequence spans a total of 4.5 hours. The images were taken with Hubble's Wide Field Camera 3 in visible light.

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LOCATION

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CREDITS

NASA, ESA, and M. Showalter (SETI Institute)

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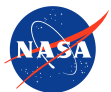
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