

Land Ho! Huygens Plunged to Titan Surface 5 Years Ago

January 14 2010



Artist concept showing the descent and landing of Huygens. Image credit:
NASA/JPL/ESA

(PhysOrg.com) -- The Huygens probe parachuted down to the surface of Saturn's haze-shrouded moon Titan exactly five years ago on Jan. 14, 2005, providing data that scientists on NASA's Cassini mission to Saturn are still building upon today.

"Huygens has gathered critical on-the-scene data on the atmosphere and surface of Titan, providing valuable groundtruth to Cassini's ongoing investigations," said Bob Pappalardo, Cassini project scientist at NASA's Jet Propulsion Laboratory.

The Huygens probe, built and managed by the [European Space Agency](#), was bolted to Cassini and rode along during its nearly seven-year journey

to [Saturn](#). Huygens' descent marked mankind's first and only attempt to land a probe on another world in the [outer solar system](#).

Huygens transmitted data for more than four hours, as it plunged through Titan's hazy atmosphere and landed near a region now known as Adiri. Atmospheric density measurements from Huygens have helped engineers refine calculations for how low Cassini can fly through the moon's thick atmosphere.

Huygens captured the most attention for providing the first view from inside Titan's atmosphere and on its surface. The pictures of drainage channels and pebble-sized ice blocks surprised scientists with the extent of the moon's similarity to Earth. They showed evidence of erosion from methane and ethane rain.

"It was eerie," said Jonathan Lunine, an interdisciplinary [Cassini](#) scientist at the University of Rome, Tor Vergata, and University of Arizona, Tucson, and was with the Huygens camera team five years ago as they combed through the images coming down. "We saw bright hills above a dark plain, a weird combination of light and dark. It was like seeing a landscape out of Dante."

Combining these images with detections of methane and other gasses emanating from the surface, scientists came to believe Titan had a hydrologic cycle similar to Earth's, though Titan's cycle depends on methane and ethane rather than water. Titan is the only other body in the solar system other than Earth believed to have an active hydrologic cycle.

Huygens also gave scientists an opportunity to make electric field measurements from the atmosphere and surface, revealing a signature consistent with a water-and-ammonia ocean under an icy crust.

While the Huygens probe itself remains inactive on the Titan surface, insights inspired by the probe continue and ESA has convened a conference this week to extend the discussion, said Jean-Pierre Lebreton, Huygens Project Scientist for ESA.

"Huygens was a unique, once-in-a-lifetime mission," he said. "But we still have a lot to learn and I hope it will provide guidance for future missions to Titan."

Provided by JPL/NASA

Citation: Land Ho! Huygens Plunged to Titan Surface 5 Years Ago (2010, January 14) retrieved 20 April 2024 from <https://phys.org/news/2010-01-ho-huygens-plunged-titan-surface.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.