

UK scientists get a 'whiff' of Titan's surface

January 21 2005

Further insights into Titan were [unveiled today](#) (21st January 2005) as scientists involved in the joint NASA/ESA/ASI Cassini-Huygens mission presented further results and images a week to the day after the successful descent and arrival of the Huygens probe on the surface of Saturn's largest moon.

Principal Investigator for the Huygens Surface Science Package [SSP], Professor John Zarnecki from the Open University, Milton Keynes, has spent the last week with his team analysing and interpreting the data.

Speaking at a press briefing from ESA's Headquarters in Paris he said: "The Gas Chromatograph Mass Spectrometer has detected a 'whiff' of methane evaporating off the surface and the SSP data has also shown indications of gas flowing into its sensing area. These gaseous outbursts were released as heat generated by Huygens warmed the soil beneath the probe. This is a tantalising glimpse of the processes at work on Titan and shows how the weather systems operate with methane forming clouds and raining down on to the surface - producing the drainage channels, river beds and other features that we see in the images.

We are continuing to analyse the data from our penetrometer - the very first instrument to touch the surface of Titan - it then pushed through the crust to a depth of 10 to 15cm. Results indicate that beneath the thin crust lies a material with the consistency of sand or clay - but made of water ice grains rather than the rock grains that we find on Earth."

Prof. Zarnecki added, "All of the instruments are producing intriguing

results which, when combined, will begin to build a fascinating picture of this exotic World - with its unique geology, geography and even meteorology. The more we see the more there is to find out. We have only looked at a fraction of the data received - there is much more to study.”

After a 4 billion kilometre journey through the Solar System that lasted almost 7 years, the Huygens probe plunged into the hazy atmosphere of Titan at 10.13 GMT on 14th January 2005. It landed safely on the surface at 12.45 GMT with an impact speed of 5m per second. It continued transmitting from the surface for several hours, even after the Cassini orbiter dropped below the horizon and stopped recording data to relay back to Earth. The Surface Science Package of instruments on Huygens received 1 hour, 9 minutes and 36 seconds worth of data from the surface.

The science data received by Huygens will provide the vital ‘ground truth’ for the Cassini spacecraft as it continues its scientific observations of Titan during its 4-year tour of Saturn.

The Surface Science Package, designed and assembled in the UK (in partnership with ESTEC and SRC Warsaw), was the first part of the Huygens probe to make contact with Titan’s surface.

Source: PPARC

Citation: UK scientists get a 'whiff' of Titan's surface (2005, January 21) retrieved 10 April 2024 from <https://phys.org/news/2005-01-uk-scientists-whiff-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.