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SCIENCE & SPACE

Orange Titan elates scientists

New photos highlight major triumph for Euro space program

Saturday, January 15, 2005 Posted: 9:08 AM EST (1408 GMT)

DARMSTADT, Germany (AP) -- Saturn's moon Titan looks orange -- at least that's what the first refined photo from the Huygens space probe shows.

The pale orange surface is covered by a thin haze of methane and what appears to be a methane sea complete with islands and a mist-shrouded coastline.

Space officials worked through the night to sharpen new photos taken by the space probe, which snapped the images Friday as it plunged through Titan's atmosphere before landing by parachute on the surface.

Many officials looked tired but were still clearly elated at what is a major triumph for the European space program.

Despite a few glitches, officials say the probe worked well, after taking seven years to reach Titan and deliver the first close-up look of the only moon in the solar system known to have a significant atmosphere.

Data 'superb'

"The instruments performed brilliantly," said John Zarnecki, in charge of the surface instruments. "We can't find a single missing data frame. The link and the quality of the data was absolutely superb."

One shot taken from an altitude of 10 miles (16 kilometers) showed dark lines that suggested streambeds carved by liquid flowing into a dark area thought to be a sea of liquid methane -- with light areas in the dark that could be islands.

"It is almost impossible to resist



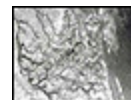
AP PHOTO/ESA/NASA/UNIV. ARIZONA

This image from European Space Agency's Huygens probe, shows orange aura of Titan.

VIDEO

Images of a rock-strewn moon elate scientists

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NASA has high hopes for the Huygens probe.

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speculating that the flat dark material is some kind of drainage channel, that we are seeing some kind of a shoreline," said scientist Marty Tomasko from the University of Arizona, head of the camera team. "We still don't know if it has liquid in it."

Titan's notorious haze -- which has kept astronomers from getting a better picture through telescopes -- is obvious in the two refined images shown Saturday.

An image taken on the surface shows chunks of what scientists say looks like water ice scattered over an orange surface overcast by methane haze.

Gas sea on surface

On Friday, the chunks were described as boulder-sized, but overnight examination showed they are much smaller and simply look big because they are close to Huygens' camera.

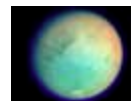
Deep shadows and depressions around the chunks suggest they could have been surrounded by liquid at one time, scientists said.

Shushiel Atreya, part of the group studying the atmosphere, said the instruments revealed "a dense cloud or thick haze approximately 18-20 kilometers (11-12 miles) from the surface."

"Presumably there is a reservoir of methane on the surface," Atreya said.

The surface itself appears to be "material which might have a thin crust followed by a region of relative uniform consistency," said Zarnecki. "The closest analogues are wet sand or clay."

Cassini-Huygens mission to Titan:



- **TITAN:** Largest Saturnian moon. May harbor organic compounds similar to those predating life on Earth. Temperature is minus 292 degrees F (minus 180 C).
- **HUYGENS PROBE:** Spacecraft is 8.9 feet in diameter and 703 pounds (317 kg). Was released from Cassini on December 24 and landed on Titan January 14.

Source: NASA

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