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- Autos
- Employment
- Homes
- Rentals
- Special Offers
- Personals
- Obituaries
- Business Directory
- Special Sections
- Classifieds

News

- Traffic
- Route 66
- Weather
- Newsletters
- Special Reports
- Ed MaueI
- John Weeks
- Sunday's Best
- Lottery

Columnists

Coffee Break

- Flash games
- Crickler
- Crossword
- Horoscopes
- Gossip
- Sports Challenge

Sports

- Lakers / NBA
- Clippers / NBA
- Dodgers / MLB
- Angels / MLB
- Kings / NHL
- USC
- UCLA
- Area Colleges
- NFL
- Prep Sports
- Sports Challenge
- Columnists
- Other Sports
- Horse Racing

U-Entertainment

- Film
- TV
- Music
- Gossip
- Dining

Living

Travel

Food

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Article Published: Thursday, January 27, 2005 - 9:07:26 PM PST

Project beams Saturn researchers into classrooms

By **CHUCK MUELLER**, Staff Writer

APPLE VALLEY - About 200 students from Apple Valley to Okinawa gained firsthand insight Thursday into a deep-space venture probing the mysteries of Saturn and its largest moon, Titan.

The young people, taking part in a two-hour teleconference, asked top space scientists about the complexities of the Cassini-Huygens mission to the ringed planet.

The Cassini spacecraft, launched by NASA, is orbiting Saturn and radioing data about the planet's atmosphere, terrain and temperature to scientists at Pasadena's Jet Propulsion Laboratory.

On Jan. 14, the European Space Agency's piggyback Huygens spacecraft parachuted from Cassini to the surface of Titan, a frigid moon.

Interpreting the data, scientists said geological evidence for erosion, precipitation and other fluvial activity indicate physical processes shaping Titan are similar to those shaping Earth.

"Did you have any problems when Huygens descended to Titan's surface?" asked ninth-grader Keri Pinkstaff, one of the 89 students at the Lewis Center teleconference.

"No," replied mission engineer Shaun Standley. "If everything hadn't worked perfectly, we wouldn't have had such a successful mission. The details we've received about Titan's landscape are breathtaking."

Mark Hofstadter, a scientist with NASA's planetary atmosphere division, said the space agencies plan carefully to overcome unexpected events.

Data from the spacecraft has revealed fine details of Titan's surface, which is fine-tuned with ground-based data from an 111-foot dish antenna at the Goldstone Deep Space Communications Complex near Barstow to ensure its accuracy.

Students taking part in the Goldstone Apple Valley Radio Telescope Project, as the program is called, have access to the dish antenna via the Internet.

"They've gathered data about Saturn's atmosphere and its thermal temperature, sharing that information with NASA," said Dave MacLaren, the Lewis Center's director of global programs.

The project, conceived by center director Rick Piercy in 1990, links about 14,000 students at 248 schools in 24 states and 14 countries.

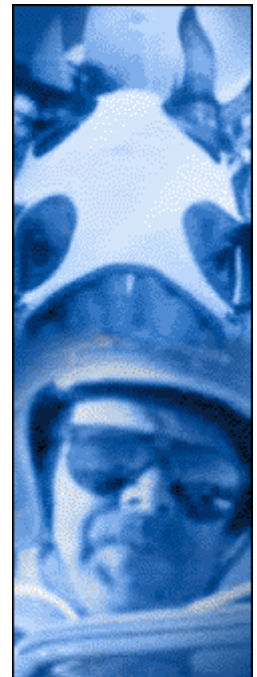
Ninth-grader Alex Klinglesmith asked Standley how versatile the Huygens was in its

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Info



Titan probe. The engineer said the spacecraft was designed to operate on any type of surface and to take measurements there.

Titan is in a deep freeze, with an atmosphere composed of nitrogen, Standley told student Jessica Berger, who asked whether the moon has any oxygen.

Ninth-grader Alex Sanchez wanted to know whether Titan has rain or snow.

"There is evidence of methane rain and snow formed by hydrocarbons," Standley said.

MacLaren said, "Our affiliation with NASA gives students a chance to experience the real world and to work with professional scientists. The Lewis Center's focus is to educate the whole child, and not just to develop test-preparation skills."

The center's educational partnership with NASA has opened a new spectrum for student research through radio astronomy.

"Through that partnership, we hope all our students can gain a real appreciation for what science is," MacLaren said.

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