



Mars Public Engagement

Mars Public Engagement Overview



HEND Conference
Russia/June 2005

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California Institute of Technology



NASA MISSION and MARS PUBLIC ENGAGEMENT GOAL

To understand and protect our home planet
To explore the Universe and search for life
To inspire the next generation of explorers





To Share the Adventure

by creating direct opportunities for public participation

To Make Mars a Real Place

by providing direct and “virtual” experiences





Formal Education

Kindergarten (5 years old) - Community College
Students/Teachers

Informal Education

Museum and Planetarium Partners

Public Outreach

Internet, Commercial Partners (Media is separate)

2001 Mars Odyssey

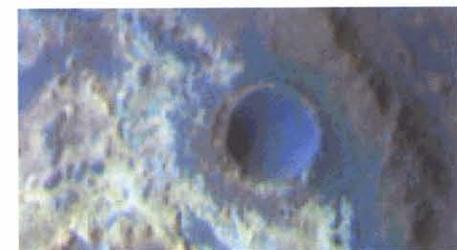
FEATURES



Hiking Boots Required: tough trekking in the name of science education - Mar 4, 2005

During a three-day Mars Remote Sensing Teacher Institute, educators pant, sweat, and occasionally bleed as they hike up Granite Wash Mountain to learn about Mars. >>

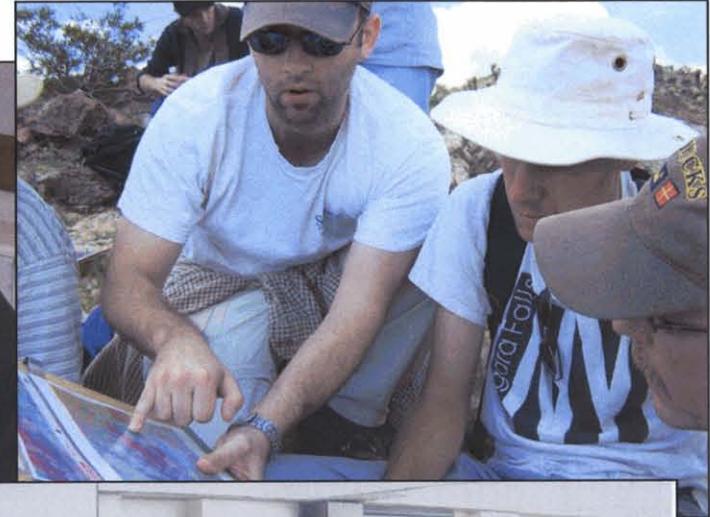
IMAGE OF THE DAY



May 19, 2005



TEACHER WORKSHOPS

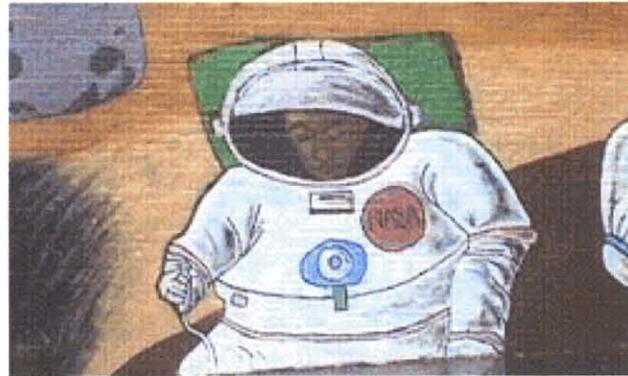


Mars scientists and engineers reach thousands of educators each year at regional and national conferences around the United States, which are hands-on, inquiry-based opportunities for teachers to learn about science and technology and improve their instructional capabilities.



SCIENCE THROUGH ARTS & HUMANITIES

The Imagine Mars Project is a science, technology and arts initiative that guides students to create a community on Mars. This program ties to NASA's long-term vision for human exploration.



*Inner City Student Mars Mural
On Elementary School Wall*



*Students with
Art Projects*



Mars Gravity Science through Dance

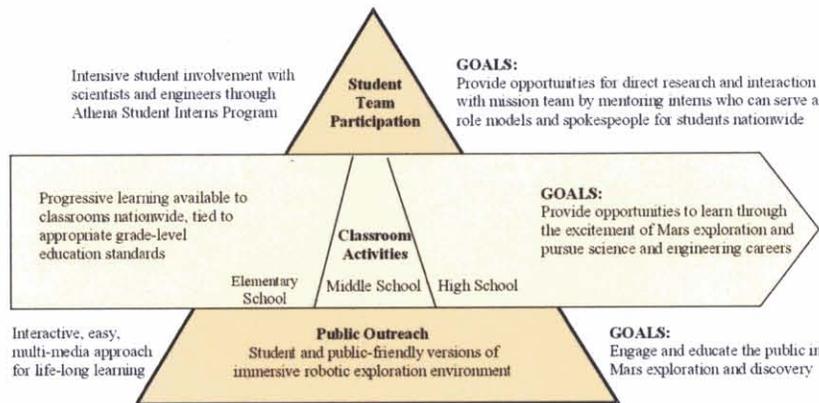


Student Concepts of Mars Colony



ROBOTICS EDUCATION

This educational effort, tied to technology education standards, provides real-world experiences with rovers and robotics to encourage students in science, engineering and mathematics.



PROGRESSIVE LEARNING

Elementary:

Basics of robotic construction & manipulation

Middle:

More complexity with computer-controlled robotics

High-school:

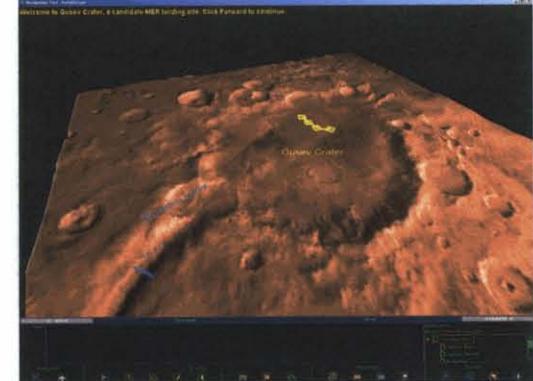
Large-scale, self-built robots



Educator Workshops



Role-modeling web casts



3-D Computer Modeling



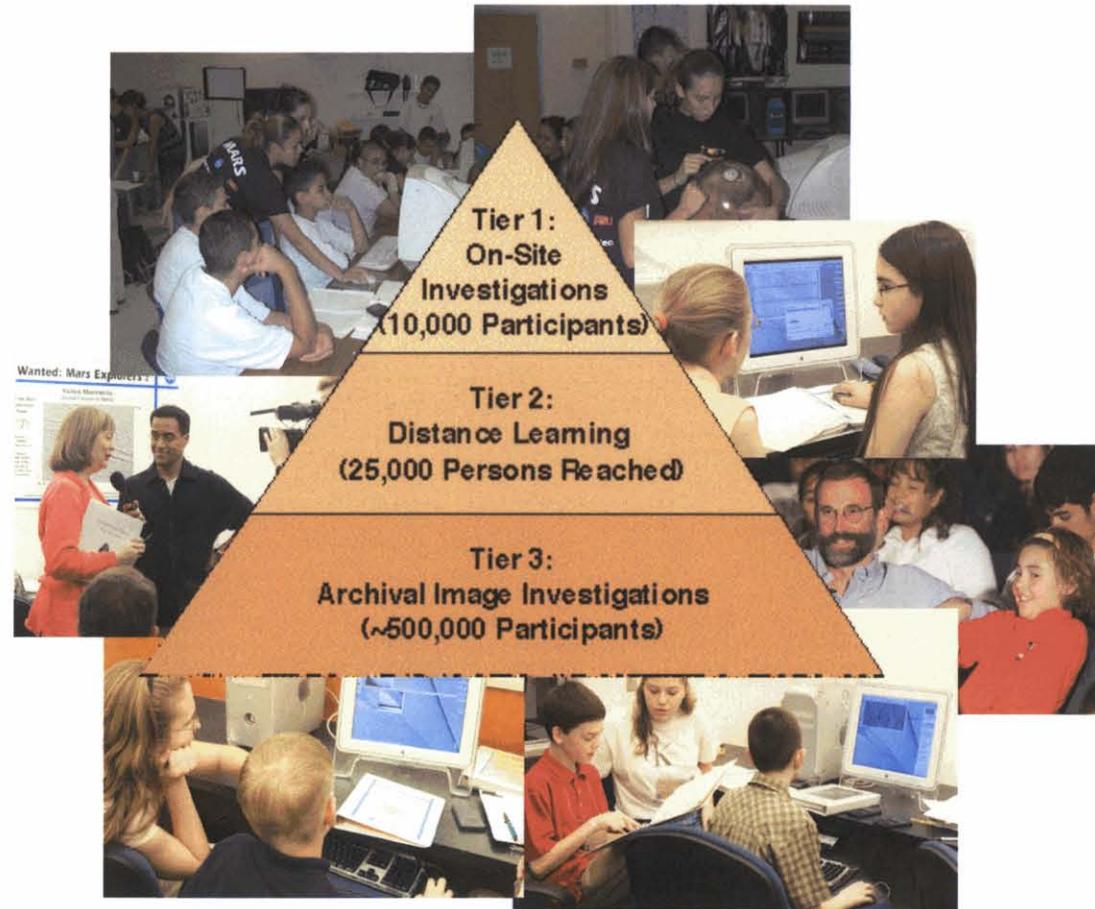
STUDENT IMAGING AND ANALYSIS



Students conduct authentic research with NASA data, improving their capabilities and confidence in science, technology, engineering, and math.



MARS STUDENT IMAGING PROJECT



This program offers opportunities for students (grades 5-14) to participate in authentic science research using a camera on the Mars Odyssey Orbiter .



RUSSIAN STUDENT PARTICIPATION

INTERNATIONAL PARTICIPATION

Link Russian teams with US teams

Meeting June 9 with local teachers



Mars Public Engagement



ASU ARIZONA STATE UNIVERSITY 

Mars Student Imaging Project (MSIP)

Use the **THEMIS** camera onboard NASA's Mars Odyssey spacecraft

Let Your Students Explore Mars For Real!

- Home
- What is MSIP?
- How Can I Get Involved?
- Getting Started
- Curriculum
- See What's Been Done
- Frequently Asked Questions
- Upcoming Events
- MSIP Resources
- MSIP Team Forum

What's New?

Themis Image of the Week
 Mars South Polar Layered Deposits (12/10/03)
[Visit the THEMIS website](#) ▶

Announcements
 Some news will go here pertaining to MSIP ▶
 Here will be a link to an cool Mars site with a new announcement or a cool feature for this audience. ▶
 Here will be another announcement for an exciting opportunity relating to Mars and kids. ▶

[Contact Us](#) [Who We Are](#)



ROCK AROUND THE WORLD

Current Totals

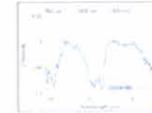
Rocks Received: 6457

Pictures Online: 6271

Spectra Collected: 5968



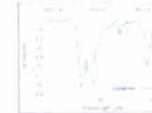
Ben from Belton, MO



Ursula from Redlands, CA



Petty from Redlands, CA



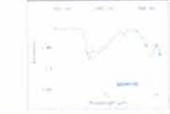
Josh from Hardin, MT



Dane from Gig Harbor, WA



Robert from Putnam Valley, NY



Jacob Aaron from Maiticello, FL



Philip from Tampa, FL



Students send rocks from their world region and compare them to those of other students' and to those of Mars scientists studying Mars.



Mars Public Engagement

MARS MUSEUM VISUALIZATION ALLIANCE

Our museum alliance provides nationwide, “big screen, front seat” participation in Mars Exploration through real-time delivery of images and training sessions with scientists and engineers. **120 MEMBERS**

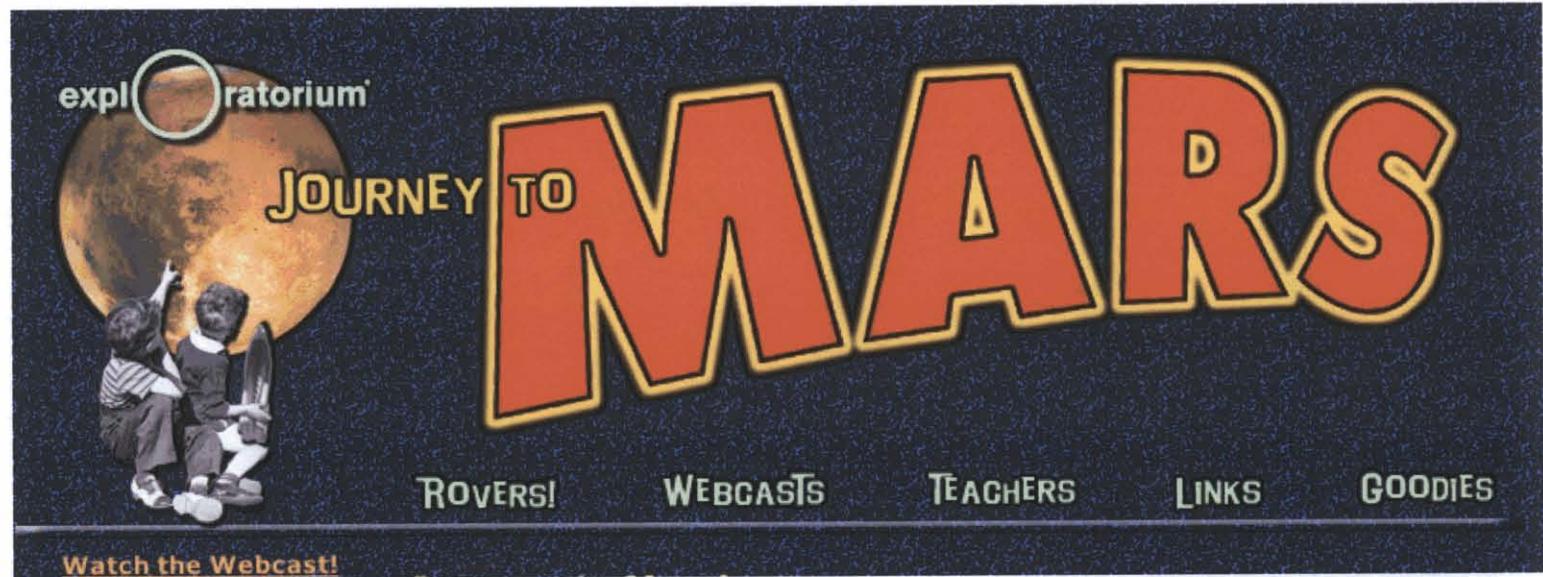


Image credit: Exploratorium

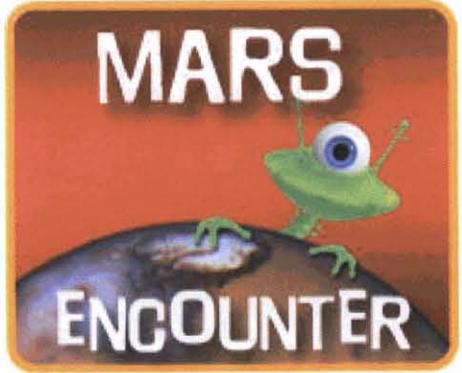
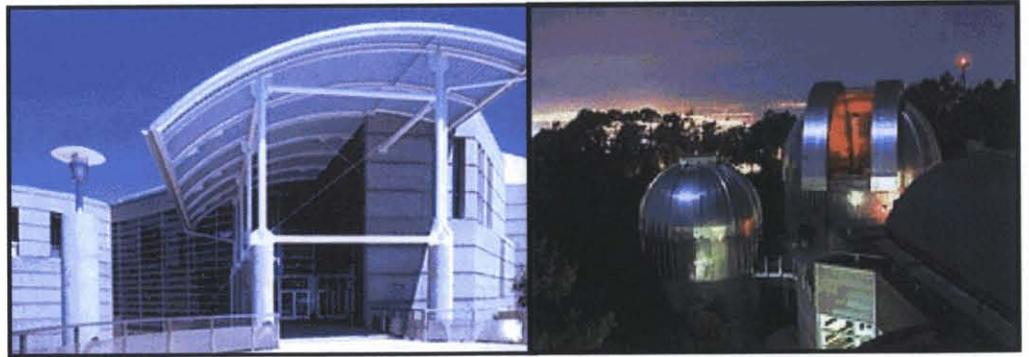


Image credits: Chabot

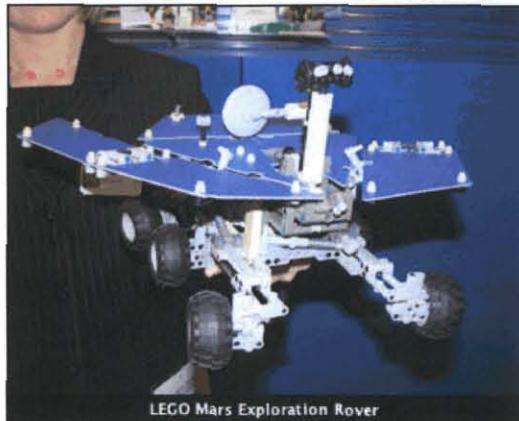




COMMERCIALIZATION



LEGO Discovery series: Saturn V Moon Mission, International Space Station and Mission to Mars



LEGO Mars Exploration Rover

- **LEGO Toy Models from their Discovery Series: “Mission to Mars” includes a Mars Exploration Rover, a Mars Odyssey Orbiter and a Delta rocket (417 pieces)**
- **LEGO Mars Exploration Rover is a detailed replica featuring LEGO TECHNIC elements (857 pieces)**
- **high-quality, desk-top-sized commemorative model also in works from another company (potentially affordable for small museums)**
- **potential Disney commercialization item(s), currently undefined, but in association with Epcot exhibit**



INTERNET

Mars Public Engagement

JPL HOME EARTH SOLAR SYSTEM STARS & GALAXIES TECHNOLOGY

2001 Mars Odyssey

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Mars for Kids ↗
Mars for Students ↗
Mars for Educators ↗
Mars for Press ↗

+ Mars Home
+ Odyssey Home
Home

1289 Days in Orbit
Where is Odyssey now?
(Updated every ten minutes)

Mars Exploration Program

The Vision for Space Exploration

ORBITER UPDATE



Happy Anniversary Odyssey! - 4/7/05

Four years ago on April 7, 2001, the mechanics, scientists, secretaries, and family members of the Odyssey orbiter team said a final farewell to their creation and hello to Mars. Don't miss the video, "An Odyssey of Exploration," for the groundbreaking account since launch.

IMAGE OF THE DAY

May 03, 2005
Iana Chaos - False Color
High-resolution
located at the University of

FEATURES

Hiking Boots Required: tough trekking in the name of science education - Mar 4, 2005
During a three-day Mars Remote Sensing Teacher Institute, educators pant, sweat, and occasionally bleed as they hike up Granite Wash Mountain to learn about Mars. >>

Mars Odyssey Begins Overtime After Successful Mission - August 25, 2004
Odyssey begins working overtime after completing a prime mission filled with discoveries. >>

MULTIMEDIA

<http://marsprogram.jpl.nasa.gov>

<http://marsprogram.jpl.nasa.gov/odyssey>

<http://www.nasa.gov>

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Exploring the Universe

+ MAIN FEATURES

- OUR SOLAR SYSTEM

+ STARS AND GALAXIES

+ WATCH THE SKIES

+ NEW WORLDS

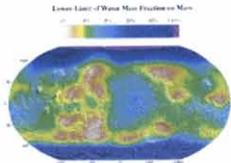
+ ROBOTIC EXPLORERS

MISSION NEWS

Mars Odyssey Begins Overtime After Successful Mission 08.25.04

NASA's Mars Odyssey orbiter begins working overtime today after completing a prime mission that discovered vast supplies of frozen water, ran a safety check for future astronauts, and mapped surface textures and minerals all over Mars, among other feats.

Image right: This map shows the estimated upper limit of the water content of the upper meter of Martian soil. Click for full caption. Image Credit: NASA/JPL/Los Alamos National Laboratory.



Lower Limit of Water Molecules on Mars

"Odyssey has accomplished all of its mission success criteria," said Dr. Philip Varghese, project manager for Odyssey at NASA's Jet Propulsion Laboratory, Pasadena, Calif. The spacecraft has been examining Mars in detail since February 2002, more than a full Mars year of about 23 Earth months. NASA has approved an extended mission through September 2006.

"This extension gives us another martian year to build on what we have already learned," said JPL's Dr. Jeff Plaut, project scientist for Odyssey. "One goal is to look for climate change. During the prime mission we tracked dramatic seasonal changes, such as the coverings and gorgs of polar ice, clouds and dust storms. Now, we have begun watching for year-to-year differences at the same time of year."

Choose another category:

- Life on Earth
- Humans in Space

NASA's Mars Exploration Program

OVERVIEW SCIENCE TECHNOLOGY MISSIONS PEOPLE FEATURES EVENTS MULTIMEDIA ALL ABOUT MARS

Mars for Kids ↗
Mars for Students ↗
Mars for Educators ↗
Mars for Press ↗

+ CURRENT MISSIONS

MARS GLOBAL SURVEYOR

2001 MARS ODYSSEY

MARS EXPLORATION ROVER

MARS EXPRESS

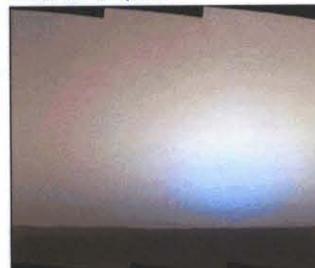
+ ALL MARS MISSIONS

Next Mission to Launch:
Mars Reconnaissance Orbiter

Countdown:

81	23	17	52
DAYS	HRS	MIN	SEC

Latest Rover Update



Twilight at Gusev >>

Latest: Mars Global Surveyor
Mars Odyssey

Latest Orbiter Update



Mars Global Surveyor: Snaps Pictures of Other Orbiters Flying above Mars! >>

Latest: Mars Exploration Rover
Mars Reconnaissance Orbiter

Features

First-of-Its-Kind Antenna to Probe the Depths of Mars - May 04, 2005
MARSIS will look for what's hidden on Mars. Engineers give the go-ahead for the MARSIS antenna to look for what's hidden beneath the surface of Mars. >>

Multimedia

Mars Odyssey Image for May 19, 2005:



Mawrth Valles



FUTURE PROGRESS

GOAL: Improve and rigorously evaluate programs to ensure they are reaching diverse student populations and equitably enhancing the quality of science, mathematics, and technology education.

Mars Public Engagement

