



Public Involvement in Planetary Exploration

Emily Lakdawalla
The Planetary Society



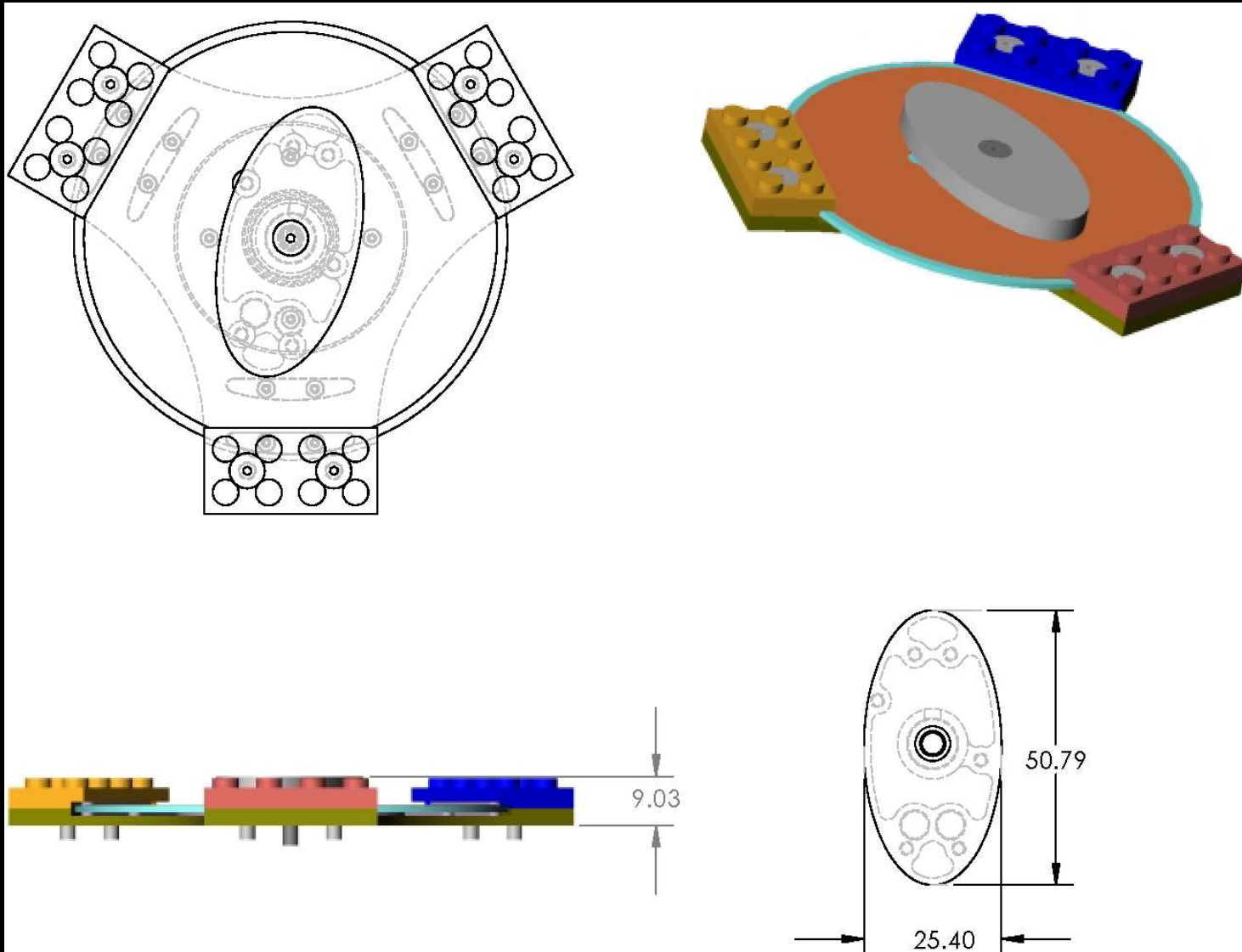


The Planetary Society

- Founded by Carl Sagan, Bruce Murray, and Louis Friedman in 1980
- A nonprofit, nongovernmental organization
- The largest space interest group in the world, with 70,000 members in 100 countries
- Our mission:
 - To encourage all countries toward the peaceful, cooperative exploration of space
 - To interest, educate, and excite the world's public about space exploration
 - To involve the world's public directly in space exploration



DVD Hardware for the Mars Exploration Rovers





DVD Hardware for the Mars Exploration Rovers



- First Panorama from *Opportunity*, Jan. 25



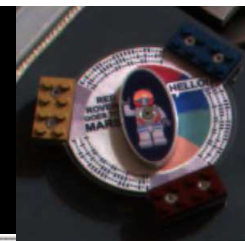
DVD Hardware for the Mars Exploration Rovers



- Spirit (left) and Opportunity (right)



Send Your Name to Mars



Mars Exploration Rover-2003

Participation Certificate

Presented to

Marvin

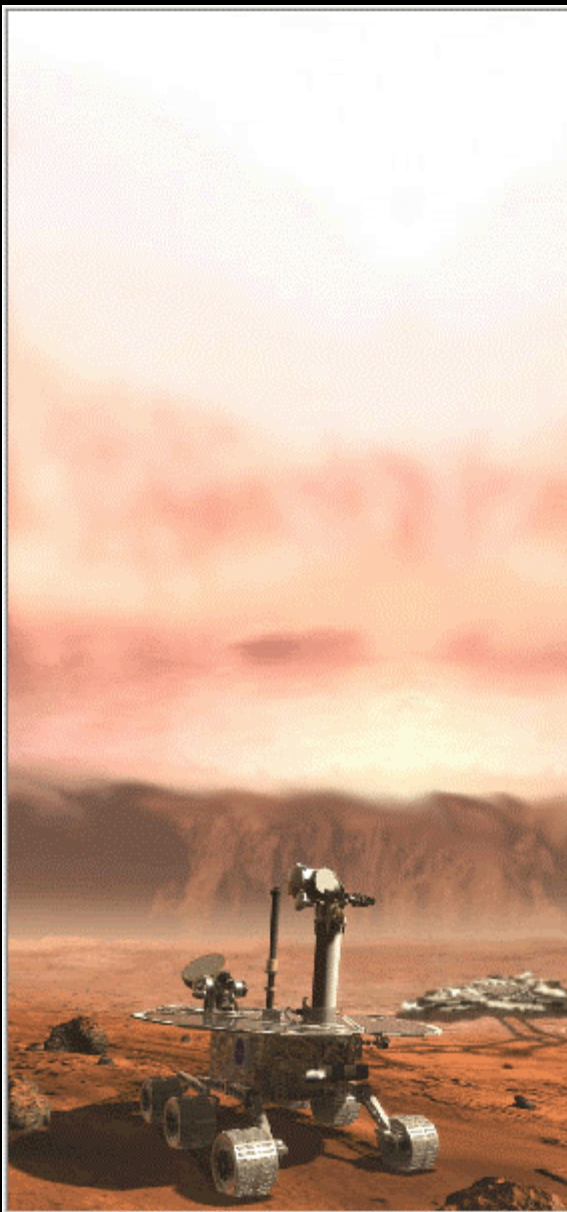
On July 26, 2001

Thank you for joining us on this mission of exploration and discovery. A compact disc bearing your name will be included in one of the next Mars Exploration Rover-2003 missions that will explore the planet's surface in search of geologic evidence of water in Mars' past.

Together, we will journey into space to discover and understand the many wonders of our universe.

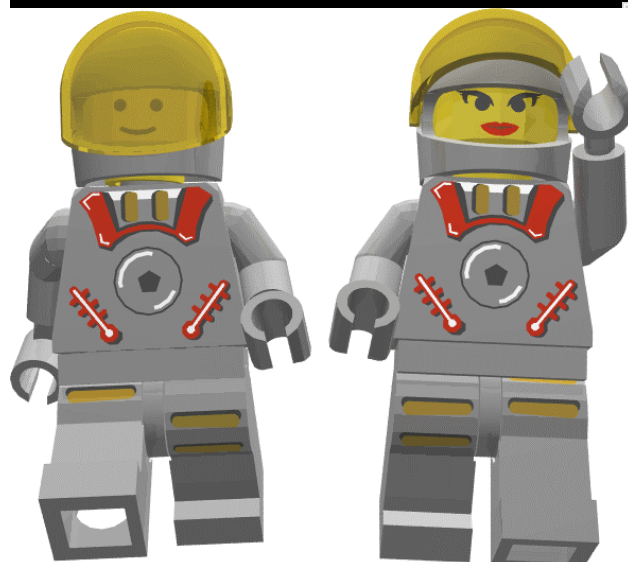
Dr. Edward J. Weiler
Associate Administrator
Office of Space Science

Certificate No. 1899993





The Astrobot Diaries



TPS: RRGTM: The Astrobot Diaries - Microsoft Internet Explorer

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*Explore Other Worlds.
Seek Other Life.
Become a Member Today!*

Related Links
[Meet the Astrobots!](#)
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Red Rover GOES TO MARS

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Astrobot Diaries: ENTRY NO. 05 2003 JUN 16

Below are e-mails between Astrobot explorers on board the [Mars Exploration Rover](#) mission. We rejoin the story a few days into the first mission, with Biff Starling in space and Sandy Moondust in mission control waiting her turn one and a half weeks later.

To: Biff
From: Dash@planetary.org
cc: Dot, Sandy
Subject: Spacecraft doing great
Date: June 16, 2003

Biff, it has been 6 days since launch, and the spacecraft is doing great. All systems are working perfectly. The launch put you right where we want you -- on your way to Mars.




To: Dash
From: Biff.Starling@planetary.org
cc: Dot, Sandy
Subject: Re: Spacecraft doing great

Most righteous, Earthly dude. I still haven't gotten over that launch experience. That was incredible! Can I do it again?

To: Biff
From: Sandy.Moondust@planetary.org
cc: Dash, Dot

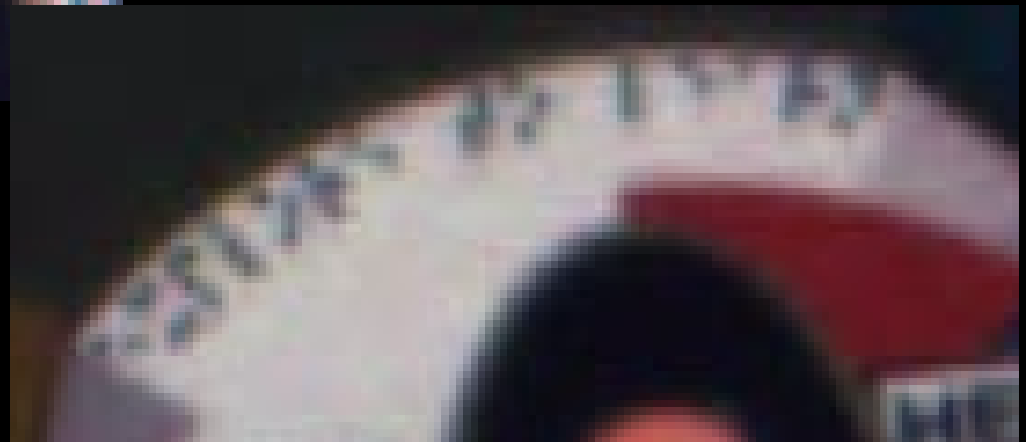
Hi Biff,

No, you can't launch again, but I look forward





Crack the Secret Code on Mars



- Spirit (left) and Opportunity (right)



Astrobot Magnets



Opportunity Sol 2, Sol 12, and Sol 55

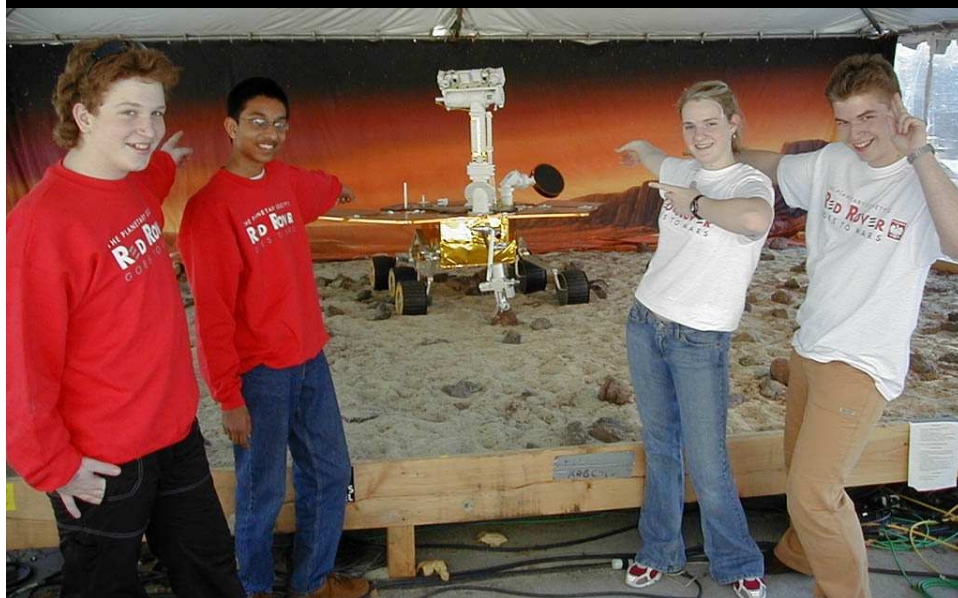


Red Rover Goes to Mars

Student Astronauts



- Selected through an international essay competition (kids had to plan two days of Mars Exploration Rover mission)
- Finalists were interviewed by phone
- 16 kids from 12 countries and 5 continents were selected, 8 boys and 8 girls
- Kids came to Pasadena in pairs to spend 8 “sols” each on the mission beginning January 1, 2004
- Were part of the science team, working on DVD and MarsDial images and sitting in science meetings





The Student Astronaut journals

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TPS: RRGTM: Student Astronaut Journals - Microsoft Internet Explorer

File Edit View Favorites Tools Help Links

Address C:\Documents and Settings\Administrator\My Documents\Web\rrgtm\journals\index.html

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Astrobot Diaries Drive a Rover! Contests Send an eCard Sign Up for Updates
Student Astronauts Red Rover Project Press Room Explore Mars!

Student Astronaut Journals from Inside Mars Exploration Rover Mission Operations

New reports will be added every sol, once each report has been approved for publication by JPL, so stay tuned!

Nomathemba and Camillia

Nomathemba, from South Africa, and Millie, from the United Kingdom, were tracking *Spirit* sols 48 through 55 and *Opportunity* sols 27 through 35.

Opportunity Sol 35: The Last Day for the Student Astronauts - [Millie](#) - [Nomathemba](#)

Opportunity Sol 34: ICKs and Berries - [Millie](#) - [Nomathemba](#)

Opportunity Sol 33: Women Working On Mars - [Millie](#) - [Nomathemba](#)

Opportunity Sol 32: Scientists Like Chocolate Too - [Millie](#) - [Nomathemba](#)

Opportunity Sol 31: Flash! - [Millie](#) - [Nomathemba](#)

Opportunity Sol 30: Clouds, Temperature, and Dust - [Millie](#) - [Nomathemba](#)

Opportunity Sol 29: Deer, dust, and RATs - [Millie](#) -

Related Links

- [Student Astronaut Journals](#)
- [Meet the Student Astronauts](#)
- [About the Student Astronaut program](#)
- [International Student Team Selected to Work in Mars Rover Mission Operations](#)
- [Learn More About the Mars Exploration Rover Mission](#)

Written every day
by each Student
Astronaut,
describing life
inside Mars
Exploration Rover
mission operations



Scientists and Engineers Can Be Heroes to Kids

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Wei Lin:



“Opportunity has successfully landed on Mars! Everything that's happened tonight is just so amazing that there are NO words for it.

“The actual entry, descent and landing were so awesome! The biggest applause was when it was confirmed that Opportunity was safely on the ground and no longer bouncing. The cheering was just so amazing! Almost like at sporting events but way better!

“To think that we were actually there to witness the making of history! We were inches away from the HEROES man! These people - everyone who made the Mars Exploration Rovers a success - are really heroes in my eyes.”



Stereotypes shattered with a few minutes of interaction

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Nomathemba:



“Well I was impressed with the scientists because they are not as boring as I thought they would be but they are all very friendly and willing to answer as many questions that we ask. These people turn out to be just normal people who love what they do and one thing I noticed is that they are all passionate about what they do and most of all they work as a team.”



Kids can explain science to kids (and adults too)

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Tomás:

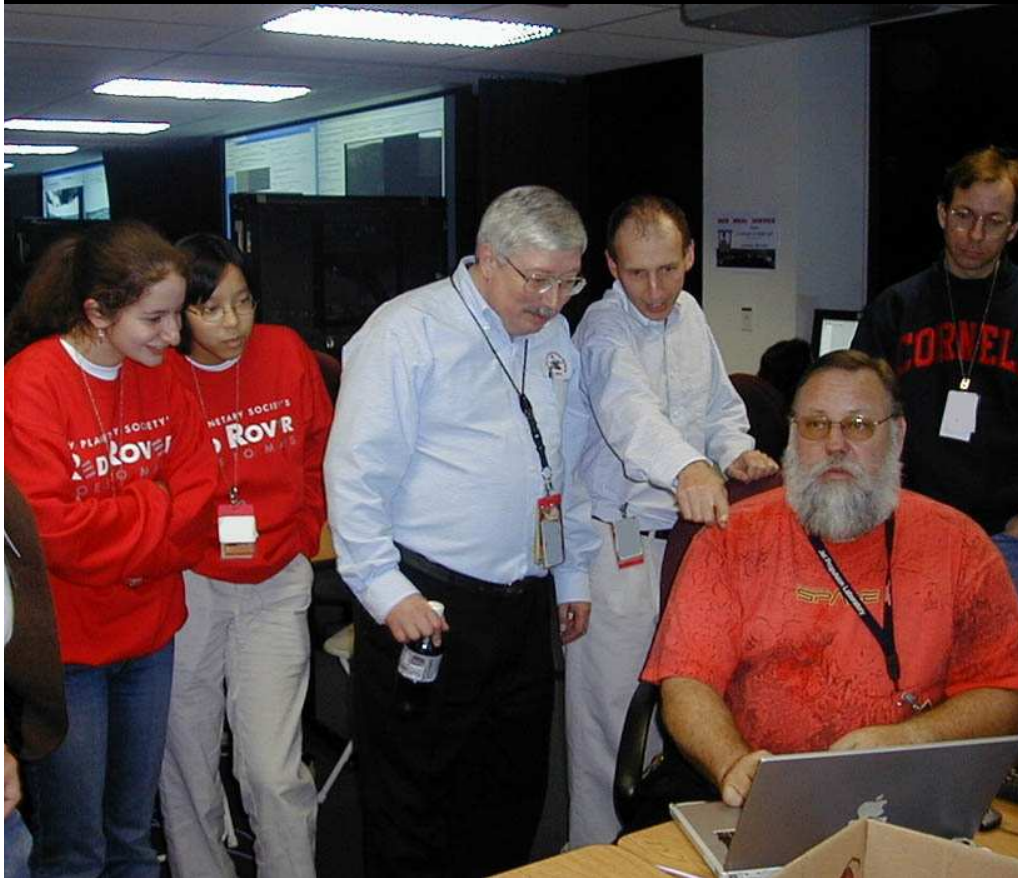


“The science theme groups have to get together in one room to decide what the rover is really going to do next sol. This is necessary because there is a limited amount of time to do activities and a limited amount of data that can be returned to Earth or that the rover can save safely, so scientists can't do all the activities they want to. Each activity that a group wants to do is given a priority....It was very interesting to see how the scientists have hot debates and have many disagreements, but finally come to a result that more or less satisfies everyone.”



Impressions of the science process in action

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Vignan:



“It was really exciting to see how the scientists had different proposals on just one observation.”

Abby:



“Earlier this evening, someone on the Pancam team told us that “Sleep is for wimps.” This seems to be the motto with all of the scientists and engineers here at JPL.”

Wei Lin:



“The scientists seemed to be impatient to get off and start studying everything, but the engineers are being really careful to avoid any glitches, so the atmosphere in the room was a little tense. Someone told me that this usually happens on space missions.”



Impressions of the scientists and engineers

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Kristyn:



“It’s really neat to talk to a bunch of scientists. I had always thought that scientists wouldn’t be very friendly and that they would be too busy to stop and talk to a bunch of kids. Well I was extremely wrong. The scientists here are so nice and they are almost always willing to stop what they are doing to explain something to us.

“There are such a variety of scientists working on the mission that it’s really neat to see them all coming together. All the different view points are necessary for the final outcome.”



Impressions of the scientists and engineers

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Abby:



“I am surprised and very pleased at how friendly all of the scientists were to Shih-Han and me. At first I felt very weird walking up to them while they were working, but all of the scientists seemed happy to take a short break from whatever they were doing and explain their work to Shih-Han and me.

“I loved talking to the scientists because they make everything they are studying sound so interesting, even pictures of dirt and dust in the air!”



Millie's thoughts on encouraging public interest in science

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“I realized for possibly the first time in my life that science and research technology is the most interesting thing around. And then, I thought to myself, hey, what ways are there to encourage people to take another look at science and realize its full potential. Some of the ideas I came up with are listed down below:

1. “Remove all boring teachers who suck the life out of science.
2. “Create more competitions for students that allow students to take part in what science is like (such as this Student Astronaut Mission).
3. “And finally, get some lead heartthrob such as Orlando Bloom (wahey!) to play a budding young (and incredibly attractive) scientist (slash Baywatch impersonator) recently moved to the States, or wherever, because he's the only person who has been able to crack this scientific code to save the world--or something!”



Refreshingly Idealistic Voices

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Maciej:



“It was a magnificent experience, being in the place that is currently the capital of Mars research. Being a member – a minor one, but still a member – of an international team of scientists, who had the opportunity to analyze first-hand information from the Red Planet was a marvelous adventure.”

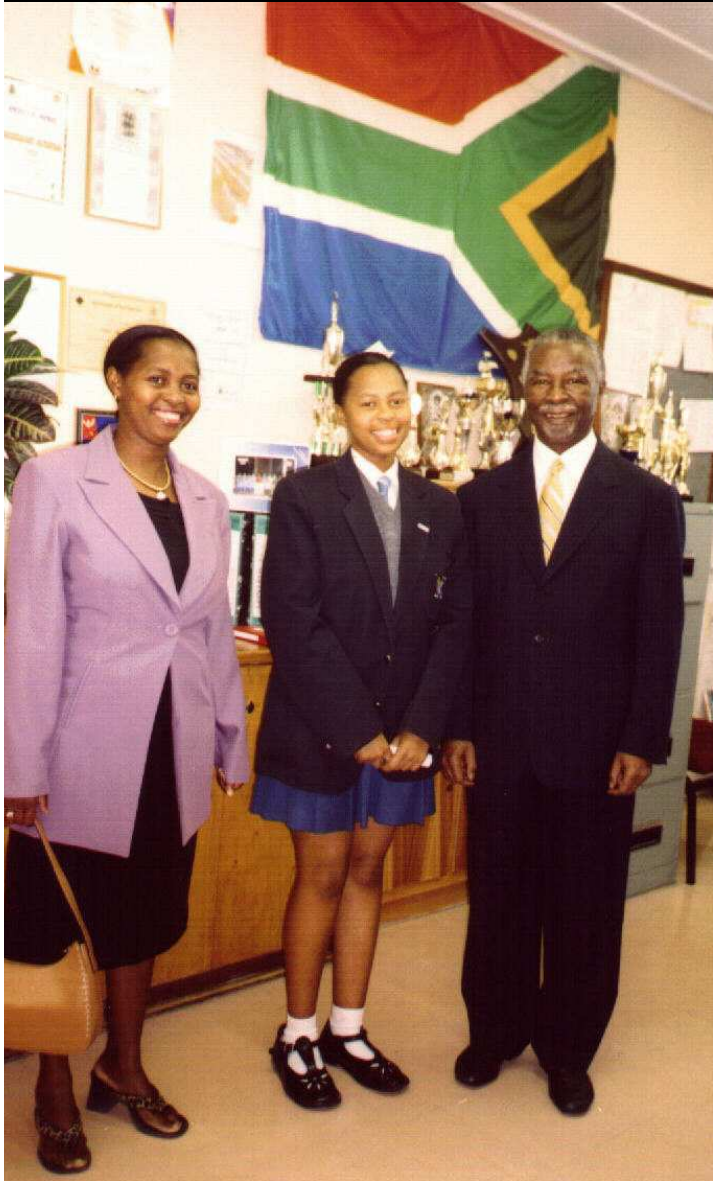


“When you’re here, it doesn’t matter what your nationality, religion or political opinions are. What matters is that you’re from Earth and exploring Mars.”



National Attention

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- Across the world, many of the Student Astronauts received national attention, some becoming celebrities.
- Media attention was spotty.
 - In Taiwan, Singapore, India, Poland, Spain, Hungary, Canada, and South Africa the students were featured in national newspapers, on TV, and radio, often more than once, reaching millions of people.
 - In the UK and USA the students were largely ignored by the national media.
- Nomathemba (South Africa) and Vignan (India) met their Presidents.

Nomathemba and her mother with
President Thabo Mbeki



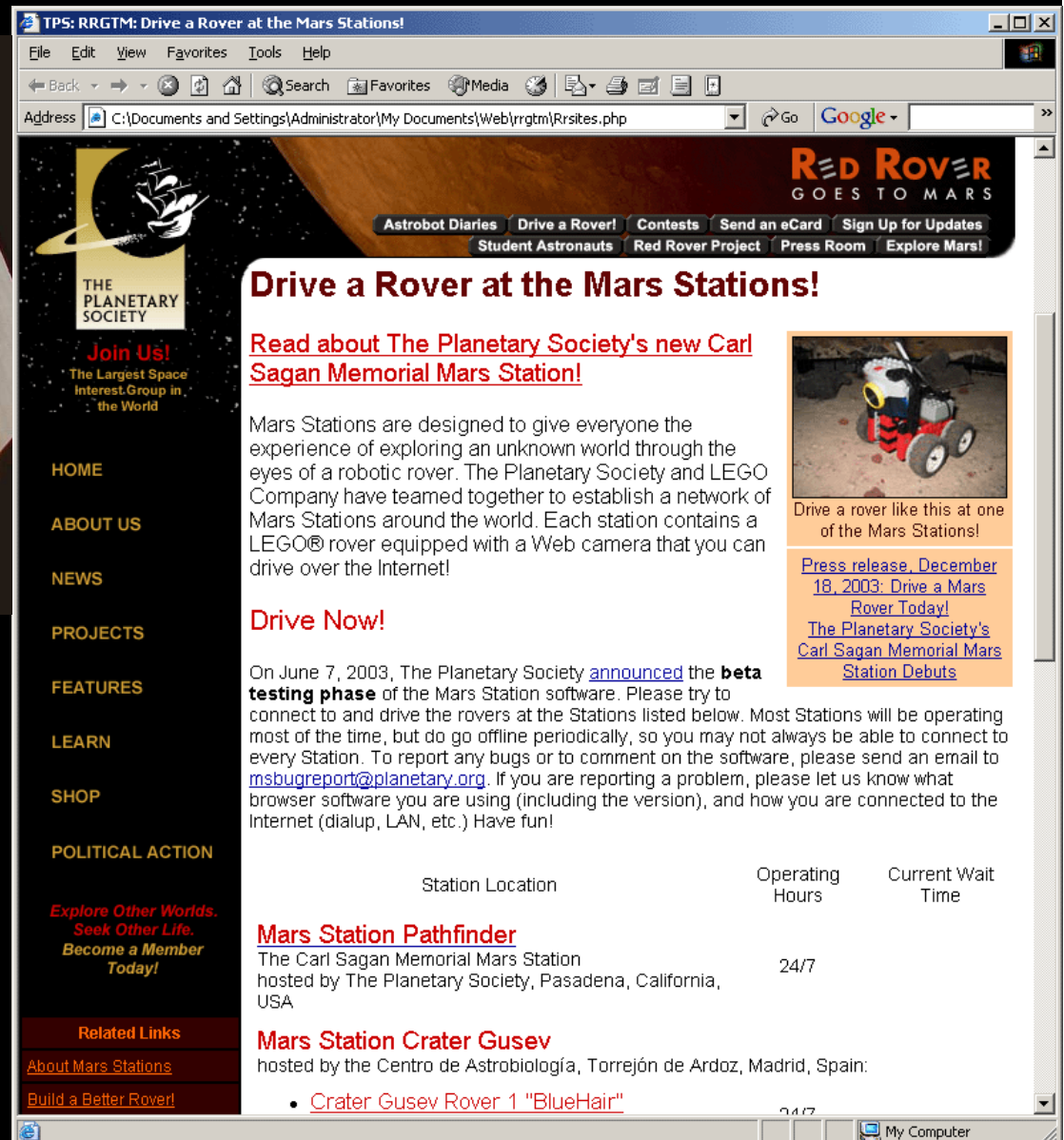
Public Events



“Wild About Mars,” January 3-4, 2004, attracted over 2500 people to Pasadena to witness *Spirit's* landing



- Mars dioramas containing LEGO rovers, remotely operable via your Web browser

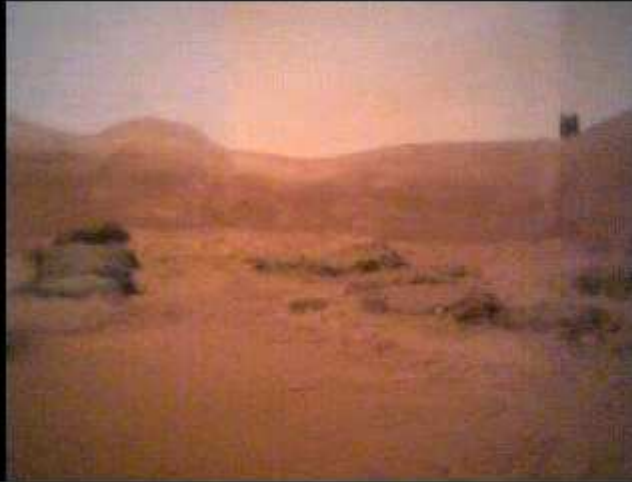




Mars Stations: What You See When You Drive

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ROVER CAMERA



LOGBOOK

15:59:00 Susini-Sri Lanka: Post a message: "These rovers are gonna be a big hit!!!"
15:57:22 Susini-Sri Lanka: Turn right 2 sec with power 4x
15:57:09 Susini-Sri Lanka: Move forward 6 sec with power 4x
15:56:56 Susini-Sri Lanka: Successful login
12:48:53 svabbi-Faeroe Islands: Successful login
11:33:27 rr-United States: Move forward 6 sec with power 4x
11:33:14 rr-United States: Move forward 6 sec with power 4x
11:33:00 rr-United States: Move forward 6 sec with power 4x
11:32:42 rr-United States: Move forward 6 sec with power 4x

ROVER CONTROL PANEL



MESSAGE WINDOW

These rovers are gonna be a big hit!!!

Send Message

Show Messages Only

Show Full Logbook

- We are still looking for more Mars Station hosts!



The EarthDial Project



EarthDials in Walcote, UK; Irvine, USA;
Tegucigalpa, Honduras; and at the South Pole

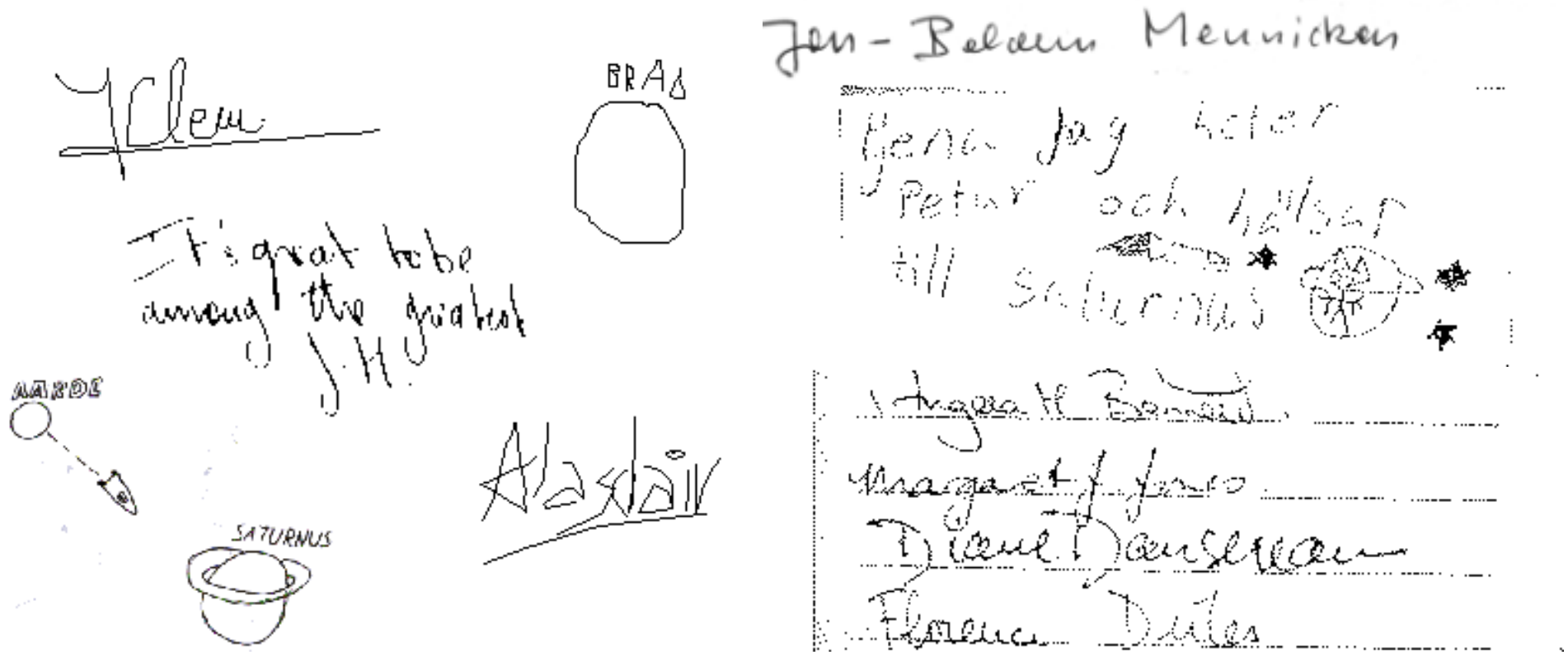
The MarsDial on Earth and on Mars

- Again, we still need more hosts!



How Will The Planetary Society Involve the Public in Cassini-Huygens?

- Signature collection campaign:
 - Planetary Society volunteers sorted, counted, and scanned 616,400 handwritten signatures collected by NASA and ESA from 81 countries





How Will The Planetary Society Involve the Public in Cassini-Huygens?

- Just beginning to discuss our Cassini-Huygens public involvement campaign with the mission
- Ideas based on past experiences:
 - Art contests, essay contests, short story writing contests
 - Spacecraft diaries
 - Public events, physical or online, for SOI and Huygens' Titan landing
 - Produce materials for use in local "SaturnWatch" events by planetaria, schools, and museums around the world
 - Titan Stations
 - International student presence in mission operations
- We invite any and all ideas!



<http://planetary.org>