

## **Planetary Wonderings**

### **December 2006 Focus: Mars Global Surveyor — RIP?**

**By Mary-Frances Bartels, NASA Solar System Ambassador**

Readers of this column may have recently learned about the apparent demise of Mars Global Surveyor from major news sources. The last communication received from the craft was on November 2. Since then all attempts to contact or otherwise locate the 10-year-old probe have failed. Still, scientists have not given up hope. It is believed that the spacecraft's solar panels are stuck, making it impossible to generate electricity. A brief discussion of the MGS can be found in October's column. MGS's original mission was to have lasted two years; instead it lasted 10. Here are a few of the scientific contributions made by this spacecraft:

- Its camera found gullies, the features of which indicate that they are geologically young, possibly created by the action of liquid water.
- The mineral-mapping infrared spectrometer found concentrations of a mineral that often forms under wet conditions, fine-grained hematite. This helped scientists select the landing site for NASA's Mars Exploration Rover Opportunity.
- Laser altimeter measurements produced an unprecedented global topographic map of Mars.
- The magnetometer found localized remnant magnetic fields, indicating that Mars once had a global magnetic field like Earth's, shielding the surface from deadly cosmic rays.
- A long life allowed Global Surveyor to track changes through repeated annual cycles. For three Martian summers in a row, deposits of carbon-dioxide ice near Mars' South Pole shrunk from the previous year's size, suggesting a climate change in progress.

#### **Significant December 2006 Anniversaries**

- 12.02 — 35<sup>th</sup> Anniversary, Mars 3 Arrival at Mars (Soviet Mars Lander & Orbiter)
- 12.04 — 10<sup>th</sup> Anniversary, Mars Pathfinder launch
- 12.14 — 460<sup>th</sup> Birthday, Tycho Brahe
- 12.21 — 10<sup>th</sup> Anniversary, Luna 13 launch
- 12.25 — 363<sup>rd</sup> Birthday, Isaac Newton
- 12.27 — 435<sup>th</sup> Birthday, Johannes Kepler

#### **Resource of the Month**

Check out [www.wunderground.com](http://www.wunderground.com), primarily a weather-related website. Enter your zip code near the top left of the opening page. Then scroll about halfway down the page containing weather for your area. Look on the left half of the page and you will see some astronomy-related data such as sunrise, sunset, moonrise, moonset, phase of the moon, and length of daylight. Click on “extended view” to see even more information.

#### **Activity of the Month**

Learn how to bake a cake on Mars! In the process you will also learn about how atmospheric pressure affects baking. Also, just for fun, throw a Mars Party using recipes from the Planetary Society. Both activities are available on my website at [www.KeepLookingUp.net](http://www.KeepLookingUp.net). Check under “Mad About Mars” on the right side of the page.

I am now in the process of making past *Planetary Wonderings* columns available at my [www.KeepLookingUp.net](http://www.KeepLookingUp.net) site. Suggestions, questions, and comments about “Planetary Wonderings” are welcomed and may be directed to stargazer @ keeplookinup.net.

**Remember to *keep looking up!***

Sources: <http://solarsystem.nasa.gov/index.cfm>  
[http://www.nasa.gov/mission\\_pages/mgs/index.html](http://www.nasa.gov/mission_pages/mgs/index.html)