

**Planetary Wonderings**  
**May Focus: International Polar Year**  
**By Mary-Frances Bartels, NASA Solar System Ambassador**

Happy New Year! You probably think that I am a little too late with this greeting. In this context however, I am not as late as you think. You see, the International Polar Year began on March 1 and actually spans two years. IPY 2007-8 is a huge, exciting scientific campaign focusing on the polar regions. NASA will make use of a number of terrestrial satellites in its participation in this endeavour. Additionally, NASA has taken the liberty of expanding the focus from just planet Earth to include the polar regions of the moon and Mars. I would contend that, since NASA's Ulysses probe has been actively studying the polar regions of the sun, our closest star could be added to the list as well.

NASA's missions to Earth, especially those with a polar bent, have several areas of study including Snow and Ice (QuikScat), Atmosphere and Climate (CloudSat), Land and Sea (Moderate Resolution Imaging Spectroradiometer --- MODIS), and Life on Earth.

In February the 16-year-old Ulysses (International Solar Polar Mission) craft reached its maximum southern latitude for the third time. It passed below the sun looking almost directly up at its south pole from 329 million kilometers away. Because Ulysses' orbit is perpendicular to the planetary orbits, its trajectory provides a perspective of the sun no other spacecraft can ever offer.

NASA's Mars Odyssey orbiter, launched in 2001, and still active, has discovered much water ice mixed into the top one meter of the planet's surface near the poles. That discovery prompted development of the Phoenix Mars Lander mission, which will launch in August and travel to a far northern Martian plain equivalent in latitude to southern Greenland. Phoenix will dig into the soil and analyze samples scooped at various depths from the surface to the icy layer.

NASA's Mars Reconnaissance Orbiter and the European Space Agency's Mars Express orbiter are using cameras, spectrometers and ground-penetrating radar to study Martian polar regions and other portions of the planet. Polar layered terrain holds a record of climate history analogous to tree rings or terrestrial ice.

Finally, NASA has started planning a base in the polar regions of the Earth's moon. Next year, an instrument designed, built, and managed by JPL will be carried to the moon aboard the Indian Space Agency's Chandrayaan-1 spacecraft. The Moon Mineralogy Mapper is a state-of-the-art imaging spectrometer that will give scientists their first opportunity to examine lunar mineralogy at high spatial and spectral resolution. The Moon Mineralogy Mapper will map the entire lunar surface from an altitude of 100 kilometers.

It should be exciting to see all the discoveries made during IPY.

→ Are you interested in lunar geology? Do you like to play video games? Are you between the ages of 13 and 18 years old? It is **not** too late to sign up to participate in NASA's Selene Project. There is still room left. Details were given in last month's column and also can be found at [selene.cet.edu](http://selene.cet.edu) . If you are interested please check out these resources first, and then e-mail me if you think you qualify. I will continue to take reservations until May 14. The study officially begins May 16. ←

**Resource of the Month:** Begin your own journey of discovery about the poles. Visit [http://www.ipy.org/index.php?/ipy/detail/ipy\\_2007\\_2008\\_school\\_launch\\_event/](http://www.ipy.org/index.php?/ipy/detail/ipy_2007_2008_school_launch_event/) . Scroll about

halfway down the page to see the “Ice Activities” headline. There you will find mostly science-related activities involving ice. Near the bottom of the page is a short glossary of “icy terms.”

**Activity of the Month:** See how many words or phrases you can think of that contain the word “pole.” Examples include *pole vaulting* and *pole cat*.

Suggestions, questions, and comments about “Planetary Wonderings” are welcomed and may be directed to stargazer @ keeplookup.net. (remove spaces) Past columns may be found at [www.keeplookingup.net](http://www.keeplookingup.net) (click on “Planetary Wonderings” on the right side of opening screen).

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

Sources: <http://www.us-ipy.org/> US IPY Site  
<http://www.jpl.nasa.gov/news/features.cfm?feature=1322>  
[http://www.nasa.gov/mission\\_pages/IPY/main/index.html](http://www.nasa.gov/mission_pages/IPY/main/index.html) NASA’s IPY Site  
<http://ulysses.jpl.nasa.gov/> Ulysses Site