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**Introduction:** The Geosciences Node of NASA's Planetary Data System (PDS) works directly with NASA missions to ensure that quality science data archives are produced and made available to the planetary science community.

The Geosciences Node has been one of the PDS Discipline Nodes since the beginning of PDS in the early 1980s, focusing on science data related to the study of the terrestrial planets and the Moon. The Node maintains its data archives both for long term preservation and for immediate access by scientists, students, and the general public. The Geosciences Node Advisory Group, a group of scientists who are active users and contributors to the archives, provide advice and feedback from the user community to help guide Node activities, particularly in terms of providing web-based services for accessing Node holdings.

**Data Holdings:** The Node's holdings include data from all NASA missions to Mercury, Venus, the Earth's Moon, and Mars since planetary science data were first collected in digital form. New data are delivered regularly from currently operating missions, including the 2001 Mars Odyssey orbiter, the twin Mars Exploration Rovers, the MESSENGER orbiter at Mercury, the Mars Reconnaissance Orbiter, and most recently the Mars Phoenix Lander. Archives from past missions include Mars Global Surveyor, Clementine, Lunar Prospector, Magellan, and the Viking Orbiters and Landers. The Node also undertakes projects to restore very early data sets, such as data from some Apollo experiments. Total data volume is about 24 terabytes and is expanding at the rate of about 1 terabyte per month. Most active missions release new data once every three months.

The Geosciences Node is working with several missions that will be launched in the next few years to plan their science archives: the Lunar Reconnaissance Orbiter (LRO) and the Lunar CRater Observation and Sensing Satellite (LCROSS), scheduled for launch in April 2009; the Mars Science Laboratory (MSL) to launch in 2011; and the Gravity Recovery and Interior Laboratory (GRAIL) and Lunar Atmosphere and Dust Environment Explorer (LADEE), lunar missions scheduled to launch in 2011.

The Node also hosts data from the European Space Agency's (ESA) Mars Express mission, and will receive the archives from the Forerunner Mini-SAR instrument on the Indian Space Research Organization's (ISRO) Chandrayaan-1 lunar mission. The Node is

working with other national space agencies such as ESA, ISRO, and the Japan Aerospace Exploration Agency (JAXA) through the International Planetary Data Alliance [1] to provide access to planetary data acquired by those agencies' missions.

**Services:** The Geosciences Node's primary interface with the planetary science community is its web site at <http://pds-geosciences.wustl.edu>. Newly released data are announced on this web site. Almost all Node holdings are online and available for download by any user. There is no charge for downloads. The archives can be browsed by planet, mission, instrument, and data set. Users who can't find what they need on the web site are welcome to ask for help by sending email to [geosci@wunder.wustl.edu](mailto:geosci@wunder.wustl.edu).

The Tools section of the site offers links to various tools for selecting, viewing, and processing data. Some are developed by the Geosciences Node, some by other parts of PDS, and some by other organizations.

Two locally developed tools are particularly useful for exploring the Geosciences Node archives. The Orbital Data Explorer (ODE, <http://ode.rsl.wustl.edu/mars>) provides methods for conducting detailed searches on orbiter-based data sets from Mars missions. Versions of ODE for Mercury and lunar data are in development [2]. A complementary tool for landed missions, the Analyst's Notebook concept was originally developed for the Mars Exploration Rovers (MER). It has been extended with additional capabilities for the Phoenix Lander archives, and a version for the MSL rover mission is planned. Along with search and download capabilities, the Analyst's Notebooks provide the user with the planning context for every science observation, allowing for a better understanding of how, when and why the data were acquired [3]. The MER Analyst's Notebook is available at <http://an.rsl.wustl.edu/mer>, and the Phoenix Analyst's Notebook is at <http://an.rsl.wustl.edu/phx>.

On an average weekday the Geosciences Node web site, ODE, and the Analyst's Notebooks have about a thousand visitors from all over the world, who download a total of about 18.5 gigabytes of data. In calendar year 2008 approximately seven terabytes of data were downloaded. This number is expected to increase as the total volume of data holdings increases.

**References:** [1] Capria M.T. and Zender J. (2008), 37<sup>th</sup> COSPAR B09-0001-08. [2] Wang J. et al. (2009), *LPS XL*, Abstract #1193. [3] Stein T.C. et al. (2009), *LPS XL*, Abstract #1079.