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ESA's Planetary Science Archive: Status and Plans

David Heather, Maud Barthelemy, Nicolas Manaud, Santa Martinez, Marek Szumlas, Jose Luis Vazquez, Christophe Arviset, Pedro Osuna, and PSA Development Team
ESA / ESAC, SRE-O, Spain (dheather@rssd.esa.int)

Scientific and engineering data from ESA's planetary missions are made accessible to the world-wide scientific community via the Planetary Science Archive (PSA). The PSA consists of online services incorporating search, preview, download, notification and delivery basket functionality. The PSA currently holds data from Mars Express, Venus Express, SMART-1, Huygens, Rosetta and Giotto, as well as several ground-based cometary observations. It will be used for archiving on ExoMars, BepiColombo and for the European contributions to Chandrayaan-1. The focus of the PSA activities is on the long-term preservation of data and knowledge from ESA's planetary missions. Scientific users can access the data online using several interfaces:

- The Advanced Search Interface allows complex parameter based queries, providing the end user with a facility to complete very specific searches on meta-data and geometrical parameters.

- The Map-based Interface is currently operational only for Mars Express HRSC and OMEGA data. This interface allows an end-user to specify a region-of-interest by dragging a box onto a base map of Mars. From this interface, it is possible to directly visualize query results. The Map-based and Advanced interfaces are linked and cross-compatible. If a user defines a region-of-interest in the Map-based interface, the results can be refined by entering more detailed search parameters in the Advanced interface.

- The FTP Browser Interface is designed for more experienced users, and allows for direct browsing and access of the data set content through ftp-tree search. Each dataset contains documentation and calibration information in addition to the scientific or engineering data.

All PSA data are prepared by the corresponding instrument teams, and are made to comply with the internationally recognized PDS standards. PSA supports the instrument teams in the full archiving process, from the definition of the data products, meta-data and product labels through to validation and ingestion of the products into the archive.

To ensure a common archiving approach for all of ESA's planetary missions as well as to provide a similar data quality and standard for end users, a tool has been developed supporting the instrument teams in syntactically validating their datasets before delivering to the PSA. This tool, and the overall archiving process is being streamlined in line with the re-development of the science ground segment for Rosetta. This will be very important for the efficient handling and release of data during Rosetta's encounter with the comet Churyamov-Gerasimenko.

A major focus for the PSA in 2013 will be to establish a PSA User Group (PSA-UG) and host a first working meeting. The PSA-UG is comprised of 6-8 members chosen to ensure an appropriate range of expertise in disciplines important for the PSA. They shall be a major driver for the future development of the PSA and its data content, and will be a focus for the interests of the scientific community.

PSA personnel are the ESA representatives on the committee of the International Planetary Data Alliance (IPDA), an international collaboration of space agencies with a mission of providing access to scientific data returned from Solar System missions archived at international data centers. Venus Express data are already made available internationally via the 'PDAP' protocol thanks to this collaboration. A key IPDA project for 2013 is the implementation of the emerging PDS4 data standards. The new Standards aim to provide a framework for capturing planetary science data results in international archives based on a homogeneous set of standards that can be extended as needed for international usage. PSA are co-leading this project, using the upcoming BepiColombo mission to develop our first PDS4 data models.