

The ESA Planetary Science Archive. J. Zender¹, D. Heather¹, M. Barthelemy², C. Arviset², O. Witasse¹ and A. Rossi¹, ¹ European Space Agency, ESTEC, Keplerlaan 1, 2201 AZ Noordwijk, The Netherlands, Joe.Zender@rssd.esa.int ² European Space Agency, ESAC, Villafranca del Castillo, 28080 Madrid, Spain

Introduction: Scientific and engineering data from ESA's planetary missions are made accessible to the world-wide scientific community via the Planetary Science Archive (PSA), see [1]. The PSA consists of several online services incorporating search, preview, download, notification and delivery basket functionality. Besides data from the GIOTTO spacecraft and several ground-based cometary observations, the PSA contains data from the Mars Express and Huygens. Data preparation for the Smart-1 spacecraft are ongoing and independent reviews for the first data obtained on the ROSETTA and Venus Express spacecraft are prepared for spring 2007.

Data Services: Primary emphasis of the archiving efforts are on long-term data and knowledge preservation. Scientific users of the data can access the data online using several interfaces:

1. Classical Interface
2. Map-based Interface
3. Dataset Browser Interface

The Classical Interface allows parameter based queries, the Map-based Interface the specification of a region-of-interest and the visualization of query results and the Dataset Browser Interface the direct browsing and access of the dataset content. Each dataset contains documentation and calibration information in addition to the scientific or engineering data.

Data Processing:

All data are prepared by the corresponding instrument teams, mostly located in Europe.

PSA staff supports the instrument teams in the full archiving process, starting from the definition of the data products, definition of data labels towards the validation and ingestion of the products into the archive. To insure a common archiving approach for all ESA's planetary missions as well as to provide a same data quality and standard for end users, a

dataset validation tool was developed supporting the instrument teams in syntactically validating their datasets before delivering to the PSA. In a next step, a further validation is envisaged to ensure correctness, completeness and cross correlation of all information, label and data content, within a dataset.

Archive Approach:

All data are compatible to the Planetary Data System (PDS) Standard and the PSA staff work in close collaboration with the PDS System. New areas of data exploitation as e.g. interoperability are explored recently. Also major contributions are done toward the internationalization of planetary data standards, see [2]. A PSA advisory body exists that meets regularly to review the progress on defined requirements.

References:

- [1] PSA Home Page, <http://www.rssd.esa.int/psa>
- [2] IPDA Home Page, <http://planetarydata.org>