**An Introduction to NASA’s Planetary Data System**

Hello. This is an introduction to NASA’s Planetary Data System.

**Observations for Millennia**

For millennia people have studied the planets, recording their place in the skies and observing their features. With the invention of the telescope more details could be observed and recorded. Soon after rockets were capable of leaving the Earth’s atmosphere we have been flying instruments to measure the interplanetary environment and make close, detailed observations of the planets.

**First missions**

In 1962 NASA launched Mariner 2 to explore Venus, its first planetary mission. By the 1980s NASA launched 8 more Mariner missions with encounters with Venus, Mars, and Mercury; 4 Pioneer missions with visits to Venus, Jupiter and Saturn, 2 Viking missions to Mars and 2 Voyager mission with visits to Jupiter, Saturn, Uranus, Neptune.

**Dedicated preservation**

NASA saved the bits from these missions. In the 1980s the National Research Council’s Committee on Data Management, Archiving and Computation, or CODMAC, identified the need to improve the preservation of the data acquired from the public investment in NASA’s planetary missions. In 1989 the pilot Planetary Data System was formed to build an archive for NASA’s planetary mission data.

**PDS Timeline**

The Planetary Data System, or PDS, defined archiving and metadata standards. The first version of these standards was introduced in early 1990 as PDS1. Soon after its introduction the standard was simplified and improved. Also, the Object Description Language (ODL) was defined for capturing metadata. These improvements were introduced as PDS2 in late 1990. In 1992 the next iteration, PDS3, was introduced and remained the standard until 2013. Beginning in 2013 a re-engineered information model, metadata data standard and archive architecture was introduced as PDS4.

**The PDS Archive**

The PDS is organized into service units by discipline in order to best address the needs of each science community. Within PDS a service unit is called a Node. There are Nodes for Atmospheres, Engineering, Geosciences, Cartography and Imaging Sciences, Navigation and Ancillary Information, Planetary Plasma Interactions, Small Bodies, and Ring-Moon systems. When archiving or looking for data it is best to start at the discipline node most closely related to your area of research. You can also find documentation and do a global search for data at the main PDS website.

**PDS4: Metadata and More**

In PDS4 metadata is expressed as an XML document with the allowed structure defined with an XML schema and the allowed content defined with Schematron. A PDS4 XML document is called a label because it typically describes files which contain data. A PDS4 label can describe images, tables, documents and more. A growing body of software can read a PDS4 label and use the metadata to provide improved analysis and display.

**The End**

For more information about PDS, visit http://pds.nasa.gov