

A horizontal banner image featuring a sequence of celestial bodies from left to right: a blue planet with white clouds, a brown planet, a reddish-brown planet, a white planet, and a large yellow planet. The text "Planetary Data System" is overlaid in white on the right side of the banner.

Planetary Data System

PDS4/Mission Infusion

PDS 2010 System Review

Reta Beebe

March 22-24, 2010

Overview

- A key principle for PDS is that PDS3 pipelines must remain intact
- PDS is currently targeting several “new starts” as opportunities to insert PDS4 into missions
 - LADEE, MAVEN and Juno, for example
 - LADEE is considered the key prototyping opportunity

Targeted Missions

Missions Under Development and Future Missions	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20
MAVEN (Mars Scout 2)	Light Blue	Green	Green	Green	Green	Orange	Orange	Orange			
Mars Science Laboratory (MSL)	Green	Green	Green	Green	Green	Orange	Orange	Orange			
MAX-C Caching Rover (NASA/ESA)	Green	Green	Green	Green	Green	Green	Green	Green	Green		
Mars Trace Gas Orbiter	Green	Green	Green	Green	Green	Green	Green	Green	Green		
LADEE Orbiter	Green	Green	Green	Green	Green	Orange	Orange	Orange			
ILN	Green	Light Blue	Green	Green	Green	Green	Green	Green	Green	Orange	Orange
Juno (New Frontiers 2)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Orange	Orange
GRAIL	Green	Green	Green	Green	Green	Orange	Orange	Orange			
Discovery AO-2012	Dark Blue	Dark Blue	Dark Blue	Light Blue	Green	Green	Green	Green	Green	Orange	Orange
OSIRIS-REX (NF3)	Dark Blue	Dark Blue	Light Blue	Light Blue	Green	Green	Green	Green	Green	Orange	Orange
Moonrise (NF3)	Dark Blue	Dark Blue	Light Blue	Light Blue	Green	Green	Green	Green	Green	Orange	Orange
SAGE (NF3)	Dark Blue	Dark Blue	Light Blue	Light Blue	Green	Green	Green	Green	Green	Orange	Orange
Outer Planet Flagship	Pink	Dark Blue	Light Blue	Light Blue	Green	Green	Green	Green	Green	Orange	Orange

Pink	Study: pre-Phase A (response to proposal request)
Dark Blue	Formulation: Phase A (mission and systems definition)
Light Blue	Formulation: Phase B (preliminary design)
Green	Implementation: Phase (design/build, test, launch)
Orange	Operations: Phase E

LADEE/Maven/Juno

- MAVEN will carry a Particles & Fields package from Berkeley, a Goddard mass spectrometer and a U. of Colo. UV imaging spectrometer. Archival nodes are PPI and ATMOS.
- LADEE has 3 instruments that will produce archival products
 - Mass spectrometer (NMS) - Mahaffy/GSFC
 - Ultraviolet Spectrometer (UVS) - Colaprete/Ames
 - Dust detector (LDEX) - Horanyi/LASP
 - The Small Bodies Dust Node & Atmospheres Node have dealt with all 3 PIs on previous missions
 - Laser communication experiment (LLCD) – Boranson/MIT-LL will not generate products
- Juno may be interested as their team as expressed strong interest in adoption of XML-based data products and they have a long cruise period
- Reta Beebe as Chief Scientist and ATMOS PI is working the interfaces

Plan

- None of the missions are producing prototype products yet
- PDS expects to release a baseline PDS4 standard to support product definition of early candidate missions at the end of the FY
- After the PDS4 baseline release, we can begin working with missions to define the products
 - Between now and then, PDS is developing prototype products to validate the standard
- PDS will also begin delivering new validation and design tools for PDS4 which are critical