

# The Planetary Data System: Challenges and Solutions

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**Abstract:** With the increase in the number of smaller, more frequent NASA planetary missions, the shift to longer-duration orbiting spacecraft, and the improvements made in remote-sensing instrument technology, the requirements and responsibilities of the Planetary Data System (PDS) have increased dramatically. The PDS was built to preserve and disseminate planetary science data collected from all NASA, and some non-NASA, planetary missions. From its release in 1991, the PDS has been closely involved in every NASA planetary mission since Magellan, guiding the creation of high quality data archives and making them available to the science community. Now, however, the PDS faces new challenges in managing and providing access to its increasingly large network of heterogeneous and geographically distributed subsystems. The architecture of the PDS is evolving to address these challenges, to handle growing data volumes and an increasingly networked community of data providers and users. New components are being added to provide improved data access, automated ingestion of new data, and distribution of customized data collections. PDS has begun incorporating the use of Object-Oriented Data Technology to support cross-discipline data access using a software component framework and a metadata-driven implementation. This talk will focus on what the PDS is doing to adapt to the new paradigm of solar system exploration.