

**OVERVIEW OF THE REGIONAL PLANETARY IMAGE FACILITY (RPIF) AT THE JET PROPULSION LABORATORY.** Jeff Schroeder and Robert C. Anderson, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA 91109, Robert.C.Anderson@jpl.nasa.gov

**Introduction**

The Jet Propulsion Laboratory (JPL) Regional Planetary Image Facility (RPIF) is chartered as a repository for all robotic spacecraft hard-copy data and thus provides a valuable resource to NASA funded science investigators, and an important conduit for distribution of NASA generated materials to local educators in the Los Angeles/southern California area (Figure 1). At their inception, the RPIFs were designed as scientific data repositories providing a means by which investigators could easily access hard-copy data products. In this new era of electronic data, the role of the JPL RPIF has changed. Although the focus of the RPIF continues to be providing support for NASA sponsored scientific investigations, its education customer base has dramatically increased, surpassing NASA funded science interactions. As a result, the RPIF is now also providing a valuable avenue for exposing the next generation of student scientists in the nearby Los Angeles area to space data.

**Overview of the JPL RPIF Facility**

The RPIF at JPL presently contains nearly two million images of planets and their satellites (negatives and prints) taken from Earth and space missions, as well as topographic and geologic maps produced from these missions (see Table 1). As new types of data continues to become available, and as archives from other sources are transferred to the RPIF, they are added to the collection. All of the data products in the collection are available for use by individuals and groups, including hard-to-find photographic and cartographic materials of the Moon and other planetary bodies. Historically, these data have provided a foundation for geologic, photometric, colorimetric, photogrammetric, and atmospheric dynamical studies. In addition, the materials contained within the RPIF are useful for teachers, as well as general science researchers (*e.g.*, those composing news stories or writing books on space exploration).

From its inception, the JPL RPIF's charter was to



**Figure 1** Inside view of the new 1000 square foot RPIF at JPL. Storage for the delicate materials are stored in an adjacent, temperature controlled room.

be the interface between robotic planetary flight projects and other RPIFs at various locations around the country (and in recent years, globally), which included providing a conduit for hard to find (when available) mission collections to the Planetary Data System (PDS). Unfortunately, in the new age of electronic data, post-Magellan planetary missions no longer generate hardcopy media such as negatives, prints, CDROMs, or DVDs. In rare cases where hard media products are requested (*e.g.*, prints from negatives), or when educational materials become available (*e.g.* posters), the RPIF acts as a repository and arranges for them to be distributed to the other 17 RPIFs. Today, the RPIF at JPL is primarily responsible for maintaining hardcopies of data collected from the historic missions (*e.g.* pre-Viking) and distributes prints and/or CDs/DVDs from those missions when requested. Without the coordination and distribution efforts of the RPIF at JPL, these historic collections and accessibility to hard-to-find historic data could become lost, along with the knowledge relevant to these early missions. Some of the unique mission data sets at this facility include: Apollo 8-17; Mariner 4, 5, 7, 9, and 10; Pioneer Venus; Ranger 7-9; Surveyor 1, 3, 5-7; and Lunar Orbiter 1-5.

An important aspect of the JPL RPIF is that it is open to the general public. Although the facility does not produce photographs for users, in general

the relatively low cost of desktop publishing has made it possible for most individuals to produce their own hard copies of data products. In special cases, where very high quality products are needed, the RPIF, through subcontracts of the JPL Photo Lab, has the ability to duplicate data at user expense. These arrangements are an added value service of the RPIF at JPL, with no cost or risk to the facility.

### *Current Activities and Goals*

- Preserve and Archive Historic Hard Copy Spacecraft Mission Data
- Strengthen Scientific Research Function
- Educational and Outreach Support
- Creation and Distribution of New Brochure

### *Proposed Activities and Strategy for the Future*

To aid the facility in its evolution into the era of electronic data, both short and long-term plans are formulated to bolster its usability. For example, a key short-term goal is to increase the relevance of the RPIF to the science community. The JPL RPIF serves as a facilitator to aid scientists with their investigations by assisting in the search for relevant electronic planetary and mission data. Another short-term goal is to define the RPIF's role in relation to the PDS Imaging node. A plan is being developed to strengthen the ties between the two organizations, making the JPL RPIF the "go to" place for assistance in data search and documentation for local researchers.

As technology changes, the long-term viability of

the RPIFs will always be an issue. It is therefore vital to continually assess current and planned operations, with the goal to seek new and innovative methods of raising the facility's user base (e.g. providing access and training in ArcGIS). This goal is an important challenge in the current era of heightened security at government facilities, making overcoming the difficulty of access to the RPIF by offsite users a top priority.

To work in conjunction with increased facility security, a web-based database is being created to enable searches for products and documents that are available at the JPL RPIF facility. Currently planned is the development and implementation of a user-friendly interface to access the JPL RPIF database, thus providing available resources to offsite scientific researchers, educators, and the general public. The goal is to create a "virtual" tour of the facility, similar to the interface used in the Real Estate industry, where potential buyers visit the interiors of homes from the convenience of their personal computers. Individuals will be able to virtually browse the JPL RPIF, identify materials of interest, access the materials, and download the selected items to their own computers. Hard-copy materials unique to the RPIF will be scanned by the JPL RPIF Data Manager and forwarded to users in a timely fashion. A high-resolution film/print scanner will be used to fulfill requests from the community for digital copies of materials that are unique to the RPIF (and not already available online on the PDS, for example).

**Table 1. Estimated RPIF holdings at JPL**

Type	In the Facility	In Temporary Storage	Total
Images *	1,055,000	855,000	1,910,000
Books	5000	25,000	30,000
CD-ROMs	10,000		10,000
Videos	100		100
Slides	1,000		1,000
Maps	8,000	1,000	9,000
Journals	500		500
Other	2,000	5,000	7,000
<b>Total</b>	<b>1,081,600</b>	<b>886,000</b>	<b>1,967,600</b>

\* Includes prints, negatives, slides, and microfiche