

## THE NASA REGIONAL PLANETARY IMAGE FACILITY NETWORK: A FIVE YEAR PLAN.

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**Introduction:** NASA's Regional Planetary Image Facilities (RPIFs) are planetary data and information centers located throughout the United States, in Canada, and overseas. The U.S. locations are funded by both NASA and their host institutions [1]. A network of these facilities was established in 1977 to "maintain photographic and digital data as well as mission documentation. Each facility's general holdings contain images and maps of planets and their satellites taken by Solar System exploration spacecraft. These planetary data facilities, which are open to the public, are primarily reference centers for browsing, studying, and selecting planetary data including images, maps, supporting documentation, and outreach materials. Experienced staff at each of the facilities can assist scientists, educators, students, media, and the public in ordering materials for their own use" [2].

Since it was formally established, the network of RPIFs has expanded to nine U.S. facilities and seven facilities in other countries. The first RPIF to be established outside of the U.S. was in the United Kingdom in 1980, at University College London (UCL), and since then RPIFs have been set up in Canada, France, Germany, Israel, Italy, and Japan. Through its longevity and ability to adapt, the RPIF Network has leveraged its global reach to become a unique resource covering 60 years of international planetary science.

Historically the Network nodes have had an institutional focus, whereby they provided resources to local clients, and communicated with other nodes only when the need arose. Using this methodology, the nodes of the RPIF Network, hereafter referred to as RPIFN, have combined to serve an average of ~65,000 people per year since 2000. However, with the advent of simpler and more wide-ranging forms of data transfer and sharing, it is clear that the nodes can operate together to provide the planetary science community and the public with greater access to: 1) archived mission products (e.g., maps, photographs, films, and documents); 2) mission-enabling documentation (e.g., data on previous mission design, development, implementation, and evaluation); 3) science and public research support, and 4) outreach experience and capabilities. Each node of the Network has unique capabilities that meet one or more of the above criteria; however, by linking the nodes through a centralized website and database, it is now possible to provide a wider array of materials to a wider array of users.

**Distribution of Planetary Geologic Maps:** Each node of the RPIFN maintains a mixture of common and unique collections. The Regional Planetary Information Facility at the USGS Astrogeology Science Center is unique in that one of its primary functions is

to serve as a store house and distribution point for planetary geologic maps. At present, the USGS RPIF has 60,000 USGS lunar and planetary maps and now has a full inventory of all maps in the collection.

The USGS RPIF is responsible for distributing (free of charge) newly published I-maps to the other nodes of the RPIFN, as well as to interested members of the planetary science community. In recent years it became clear that the distribution process was outdated and inefficient. Given this motivation, the USGS RPIF has been working with leaders in the planetary mapping community to increase the efficiency of the distribution process and to raise awareness of the importance of planetary geologic maps. One of our major continuing efforts is to meet with members of the community at the Annual Planetary Geologic Mappers meeting to discuss the importance and distribution of planetary geologic maps. As a result of these efforts we have established a web-based distribution point (Fig. 1) that is accessible to users who are sent an invitation email with a link to the distribution page.

**USGS**  
Astrogeology Science Center

Home About Labs / Facilities Maps / Products Missions / Research Tools

Home / RPIF / Map Request Form

This is the USGS Astrogeology Regional Planetary Information Facility (RPIF) form for ordering folded paper USGS planetary maps. Maps are available at no cost to the requester. Please click the box next to the map or maps you require and fill in your complete shipping address below. If you require none of the maps listed below, no response is necessary.

By NASA mandate, paper USGS planetary maps are intended primarily for distribution to members of the planetary science community. Maps are available on a first-come, first-served basis. Specific maps might become unavailable if demand is great.

If you have any questions, please [contact the RPIF](#).

If you are requesting maps, the fields with an \* are required.

Name \*

Email \*

Maps Requested \*

<input type="checkbox"/>	SM-3116 Geologic Map of the Lakshmi Planum Quadrangle (V-7), Venus, 1:5 000 000 series, M. Ivanov, J. Head, 2010
<input type="checkbox"/>	SM-3121 Geologic Map of the Ganiki Quadrangle (V-14), Venus, 1:5 000 000 series, E. Grosfils, S. Long, E. Venechuk, D. Hunzler, J. Richards, B. Klotz, D. Orury, J. Hardin, 2011
<input type="checkbox"/>	SM-3158 Geologic Map of the Metis Venus Quadrangle (V-6), Venus, 1:5 000 000 series, J. Dohrn, K. Tanaka, J. Skinner, 2011
<input type="checkbox"/>	SM-3163 Geologic Map of the Hercules Chasma Quadrangle (V-28), Venus, 1:5 000 000 series, E. Stefan, J. Guest, A. Brian, 2012
<input type="checkbox"/>	SM-3165 Geologic Map of the Themis Regio Quadrangle (V-53), Venus, 1:5 000 000 series, E. Stefan, A. Brian, 2012

**Figure 1.** New online order form for the USGS Planetary Map collection.

**Five Year Plan:** The role of the RPIF Network is evolving as key historical planetary data sets are con-

verted to digital files and are made available online. Instead of trying to compete with vast array of materials housed in digital servers (i.e., the PDS, whose goal is to focus on serving more technically oriented NASA-funded users), *the RPIF Network will serve as a valuable resource for specialized knowledge and services that will make it possible to remove the barriers associated with locating, accessing, and using planetary science data, particularly derived data products. The goal of the Network is to provide support to a broad audience of planetary data users.*

The RPIF Network nodes will continue to serve as reference centers that are needed for preserving and accessing derived products from Solar System exploration missions, and will continue to do so for future missions as well. In an effort to meet our customer's needs, we aim to achieve the following primary goals:

1. Maintain and improve the foundation that has been established over the past four decades so as not to lose critical, historical information. This goal will be aided by a systematic effort to scan and digitize fragile materials as a means of increasing access and preserving the materials.
2. Help users to locate, access, visualize, and use planetary science data. In an effort to make this possible, RPIF personnel are being trained in the use of common planetary data sets and processing tools such that they can assist novice researchers with locating and using planetary data. One tool that will be used in this effort is the Magic Planet from Global Imagination (Fig. 2). Each US facility of the Network now has one of these globes which will make it easier for researchers to visualize and work with global data sets.
3. Improve the connection between the Network nodes while also leveraging the unique resources of each node. To achieve this goal, each facility will develop and share searchable databases of their entire collections.
4. Promote the Network in an effort to make potential users aware of resources and services provided by the Network.

By achieving these goals, we will introduce new users to data products from past, current, and new missions. The underlying premise of data needs for users of the RPIF Network (whether hard copy or digital) is that research and discovery does not end with each mission, but continues for generations to come. As such, the RPIF Network provides the bridge between generations as one phase of exploration ends and another begins.

In summary, over the next five years the RPIF Network will continue its traditional service as a source of derived data products and expand its reach through new technologies by making obscure, but crit-

ical data sets available to a wider user community. New initiatives in digitizing hard copy data will make valuable resources widely available and provide a mechanism for long term preservation. It should be noted that digitization of all photographic imaging data at the same resolution as the original, cannot be fully achieved except at large cost; therefore, access to hard copy materials remains necessary. Consequently, the distributed reference collections held by the RPIFs remain an important and accessible resource. By leveraging the expertise and resources of the RPIF Network, NASA will be able to make the exciting new discoveries of planetary science more widely available, which will allow the Network to better serve NASA, the planetary science community, and the general public.

For more information, or to request materials, please contact any of the RPIFs listed below. Additional, detailed information can also be found at <http://www.lpi.usra.edu/library/RPIF>

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**References:** [1] Shirley and Fairbridge, eds. (1997) *Encyclopedia of Planetary Sciences*, Chapman and Hall, London, 686; [2] Muller and Grindrod (2010) *European Planetary Science Congress 2010*, 883;



**Figure 2.** Magic Planet from Global Imagination. A new visualization tool for global planetary data.