

THE SMITHSONIAN REGIONAL PLANETARY IMAGE FACILITY.

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Introduction: The Smithsonian Regional Planetary Image Facility (RPIF) is housed at the Center for Earth and Planetary Studies (CEPS) of the National Air and Space Museum (NASM). It is a resource and facility for the scientific use and dissemination of archival photographs, digital images, and other data returned by planetary missions. The objective of the facility is to provide investigators funded by NASA, other scientific researchers, and the general public in the mid-Atlantic region with access to the collection, and to support the RPIF Network. From its inception in 1973 CEPS informally acted as such a facility, and in 1983 was designated as one of NASA's RPIFs. The Smithsonian RPIF collection includes more than 300,000 hard copy planetary photographs and images. Among other archival collections, the Smithsonian RPIF maintains a complete collection of hard copy prints and film of all Apollo photographs along with the necessary support data to access and interpret these photographs. We also maintain a complete collection of USGS planetary and geologic maps, and derived products. The Smithsonian RPIF provides support to identify and access digital image and other data in the Planetary Data System (PDS) archives. The Smithsonian RPIF also supports education of the general public about planetary exploration and archival collections of planetary photographs, digital images, and other data through NASM exhibits that include the "Exploring the Planets" gallery, its open house as part of the Museum's annual "Mars Day!", other public program activities, and through its website.

Smithsonian RPIF Website: The Smithsonian RPIF has maintained its own website since 1995 (<http://airandspace.si.edu/research/resources/rpif/>). The website contains a large number of selected images from the Smithsonian RPIF collection and has links to many of the other institutional websites in the RPIF network with large online digital planetary image collections. Statistics on the number of visits to the RPIF website are collected on a monthly basis. The website receives an average of over 12,000 page views per year. The Smithsonian RPIF website is expanded and updated on a regular basis. Our goal is to give visitors to our website the information they seek through either direct access or by providing a link to other RPIF Network websites. Select imagery of solar system bodies is updated to include recently acquired images from active planetary mission.

An important resource on the website is information on where and how to obtain various image data products. The Smithsonian Data Manager and RPIF Assistant regularly compile a resource booklet of

information and order forms (Sources of Earth and Planetary Photography) needed to obtain many types of data sets. The latest version of Sources consists of 17 pages of information with active web links to order forms for the different data types, all of which is also available as hardcopy.

Social media has become an increasingly valuable resource for disseminating information and images to the public. The NASM website makes use of Facebook, Twitter, Flickr, and YouTube to keep the public informed about our activities and programs. Use of these media increase awareness of the Smithsonian RPIF and the RPIF Network.

Display of Planetary Images in NASM: High-resolution digital displays in NASM's "Exploring the Planets" gallery are dedicated to showing planetary images to visitors. Displays throughout the gallery are supported by the Smithsonian RPIF and are updated by the RPIF Assistant on a regular basis. A high-definition "Magic Planet" projector system was recently installed in a repurposed space in the gallery. Existing global image mosaics of the planets are displayed and include new global mosaics of Mercury, the Moon, and Pluto obtained by MESSENGER, the Lunar Reconnaissance Orbiter, and New Horizons.

Planetary Radar Website: The evolution from hardcopy planetary photo archives to dominantly digital images presents an opportunity for RPIFs to provide access and software tools to optimize the dissemination and use of digital data. The Smithsonian RPIF is well positioned, based on ongoing research and data-archiving efforts by planetary scientists in CEPS, to serve as a central point of contact for background information, archival data, research results, and student resources related to radar exploration of the planets. The volume of available radar and sounder data has greatly grown over the past decade, and with it the need for introductory information, student resources, and support for active science investigations. Radar imaging and sounder data is often perceived as arcane or difficult to understand, not only by the public but even within the planetary science community. CEPS scientists have been involved with many recent lunar radar studies and Mars sounder instruments, and in several cases have generated the full PDS documentation and archival datasets.

The Smithsonian RPIF plans to establish a planetary radar imaging and sounding data website. This will be a major focus, and a new core public and scientific outreach function of the Smithsonian RPIF. The planetary radar website will be a unique resource contributing a

base of science tutorials, dataset documentation, search tools, and student-oriented information to the RPIF Network. The radar image datasets under the Smithsonian RPIF site will include Earth-based radar image data

for the Moon, Mars, and Venus. Radar sounder data will feature SHARAD and MARSIS echograms of Mars, and we would like to eventually include the Kaguya lunar sounder data.