SCIENTIFIC ANALYSIS AND DISPLAY OF PLANETARY DATA WITH McIDAS-eXplorer;

R.S. Saunders, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, Sanjay S. Limaye and Robert Krauss, Space Science and Engineering Center, Universit y of Wisconsin-Madison

The Planetary Data System (PDS) has now published extensive Mars and Venus data on CD-ROM volumes from Magellan, Viking and Galileo missions as well as for the outer planets and their satellites from the Voyager missions. The compilation of radar observations of the Venus surface from the Magellan mission data has resulted in over 70 gigabytes of molar reflectivity (MIDRs and FMAPs) and radiometry images (GxDR's) and altimetry profiles (ARCDRs) covering over 98% of the surface of Venus. To facilitate access, analysis and display of these data, a software environment, McIDAS-eXplorer is now avail able.' This planetary image access, display and analysis environment is based on a mature system that is used for weather operations, research and education at many sites around the world. The.<Xp-orgr.extensions now allow analysis of most solars ystem targets for which spacecraft and ground based telescopic data are available in a recognizable format such as the PDS or FITS. Navigation, registration and calibration of the planetary data are an integral part of the environment. Designed to run on most UNIX workstations supporting X-windows, the environment is user extensible allowing addition-of user developed applications and includes both a Graphical User Interface and a command line interface, multi-frame display and animation capability and tools for most image analysis" applications such as digital enhancements, filters, cartographic projectiona, graphical overlays, and color composites and image classification. "