Monday, June 12, 2017
THIRD PLANETARY DATA WORKSHOP: DAY 1
8:30 a.m. Humphreys Room

Day 1 of the Third Planetary Data Workshop focuses on new planetary products, tools, data and services, with emphasis on mission results and SPICE.

Chairs: **Ray Arvidson**
Christopher Edwards

8:30 a.m. Gaddis L. *
Welcome, Logistics, Opening Remarks

8:45 a.m. Williams D. *
Geologic Mapping Overview

9:00 a.m. Beyer R. *
The NASA Context for a Planetary Spatial Data Infrastructure

9:15 a.m. Bland M. T. * Fergason R. L. Galuszka D. Mayer D. P. Beyer R. A. Kirk R. L. Phillips C. B. Schenk P. M.
Assessing the Variability and Relative Accuracy of Digital Terrain Models of Europa **[#7094]**
How well can we know Europa's relative topography from existing data sets?

9:30 a.m. Brown H. M. * Awumah A. A. Henriksen M. R. Manheim M. R. Cisneros E. Wagner R. V. Robinson M. S.
Ames Stereo Pipeline and LROC ASU Digital Terrain Model (DTM) Comparison **[#7096]**
Comparison between NASA Ames Stereo Pipeline (ASP) and ASU LROC teams digital terrain model (DTM) products made from the same NAC stereo pairs. Using absolute, relative, and qualitative measurements, we provide recommendations for DTM product use.

9:45 a.m. Manheim M. R. * Henriksen M. R. Robinson M. S. Messenger Team
High-Resolution Local-Area Digital Elevation Models and Derived Products for Mercury from MESSENGER Images **[#7001]**
New regional DEMs were created at ASU from MESSENGER MDIS NAC images tied to MLA profiles with pixel scales from 84m to 500m.

10:00 a.m. Becker K. J. * Berry K. L. Mapel J. A. Walldren J. C.
A New Approach to Create Image Control Networks in ISIS **[#7133]**
A new approach was used to create a feature-based control point network that required the development of new tools in the Integrated Software for Imagers and Spectrometers (ISIS3) system to process very large datasets.

10:15 a.m. BREAK

10:30 a.m. Speyerer E. J. * Wagner R. V. Robinson M. S.
Geometric Calibration of the Clementine UVVIS Camera **[#7072]**
We are using images acquired by the LROC Wide Angle Camera to update the Clementine UVVIS internal and external orientation parameters to enable precise and accurate map products that align with the latest geodetic reference frame.

10:45 a.m. Boyd A. K. * Robinson M. S.
LROC NAC Photometry: A Global Photometric Function **[#7076]**
A global photometric function is derived for the lunar highlands allowing photometric normalization of NAC images across a broad range of illumination conditions, enabling seamless mosaic creation and bolstering geologic mapping and science analysis.

11:00 a.m. Turner F. S. * Espiritu R. C. Patterson G. W. Stickle A. M. Cahill J. T. S.
Mini-RF Image Processing and Data Product Generation **[#7062]**
Mini-RF on LRO currently operates in concert with the Arecibo Observatory and the Goldstone DSS-13 34 meter antenna to collect S- and X-band bistatic radar data of the lunar nearside. We describe the processing and archiving of those data.

11:15 a.m. Williams J.-P. * Paige D. A. Sullivan M. T. Greenhagen B. T.
Bandfield J. L. Sefton-Nash E.
LRO Diviner Lunar Radiometer Global Data Products **[#7095]**
Diviner has acquired visible reflectance and IR radiance measurements of the lunar surface nearly continuously since 2009. Gridded data products have been developed to make the voluminous data set more accessible to the community.

11:30 a.m. Seelos F. P. * Romeo G. Hash C. D. Murchie S. L. Garhart E. C.
CRISM Multispectral and Hyperspectral Mapping Data — Observing Modes, Accumulated Coverage, Data Products, and Tile Mosaics **[#7113]**
Over the course of the MRO mission, CRISM has acquired over 283,000 mapping observation segments. The mapping observing modes, coverage status, data products and processing, and regional (CRISM map tile) mosaic products will be presented.

11:45 a.m. Morgan M. F. * Seelos F. P. Murchie S. L.
The CRISM Analysis Toolkit (CAT): Overview and Recent Updates **[#7121]**
The CRISM Analysis Toolkit (CAT) is an IDL/ENVI-based software system for analyzing and displaying data from the Compact Reconnaissance Imaging Spectrometer for Mars (CRISM). We will describe CAT's capabilities and discuss recent updates.

12:00 p.m. LUNCH

1:30 p.m. Karides A. P. * Humm D. C. Seelos F. P.
Creating True-Color Images of Mars from Spectrometer Data **[#7032]**
True-color images of the planet Mars are generated from spectral radiance data taken by the Compact Reconnaissance Imaging Spectrometer for Mars (CRISM) on the Mars Reconnaissance Orbiter (MRO).

1:45 p.m. Rodriguez K. * Laura J. Fergason R. Bogle R.
Improved Data Analysis Tools for the Thermal Emission Spectrometer **[#7107]**
We plan to stand up three different database systems for testing of a new datastore for MGS TES data allowing for more accessible tools supporting high throughput data analysis on the high-dimensionality hyperspectral data set.

2:00 p.m. Roatsch T. * Kersten E. Matz K.-D. Jaumann R. Joy S. Raymond C. A. Russell C. T.
Dawn Framing Camera Ceres Atlases **[#7004]**
The Dawn mission mapped the surface of Ceres over a period of 15 months. Imaging data from the Dawn Framing Camera were collected in three primary mapping phases: Survey, High Altitude Mapping Orbit, and Low Altitude Mapping Orbit.

2:15 p.m. Le Corre L. * Becker K. J. Reddy V. Li J.-Y. Furfaro R. Tatsumi E. Gaskell R.
Processing of AMICA and NIRS Observations of Asteroid Itokawa from the Hayabusa Mission **[#7033]**
We processed AMICA images and NIRS spectra of asteroid Itokawa that are archived in the PDS SBN to produce radiometrically calibrated and photometrically corrected mosaics for analysis of the reflectance of Itokawa's surface.

2:30 p.m. Archinal B. A. * IAU WG on Cart. Coord. & Rot. Elements
An Update on the IAU Working Group on Cartographic Coordinates and Rotational Elements and Its Upcoming Report **[#7122]**
Update on the IAU Working Group on Cartographic Coordinates and Rotational Elements, the services it provides to the planetary community, and the projected changes for and status of its next ("2015") triennial report.

3:00 p.m. BREAK

3:15 p.m. Liukis M. *
What's New in SPICE **[#7007]**
We discuss new features of the latest version of the SPICE Toolkit (N66) and current software development within the NAIF group.

3:30 p.m. Besse S. * Vallat C. Geiger B. Grieger B. Costa M. Barbarisi I.
From SPICE to Map-Projection, the Planetary Science Archive Approach to Enhance Visibility and Usability of ESA's Space Science Data **[#7046]**
The Planetary Science Archive (PSA) is the European Space Agency's (ESA) repository of science data from all planetary science and exploration missions. The PSA provides access to scientific datasets through various interfaces at http://psa.esa.int.

3:45 p.m. Costa M. * Witasse O. Sanchez-Cano B.
Building a Unique Scenario to Support Cross-Mission Science with SPICE: The Siding-Spring Comet Encounter with Mars **[#7021]**
On October 2014, Mars experienced a close encounter with Comet Siding Spring. This contribution outlines a SPICE scenario built to assist studies combining MEX, MAVEN, Mars Odyssey, MSL, and Siding-Spring data focused on a Cosmographia 3D scenario.

4:00 p.m. French R. S. * Showalter M. R. Gordon M. K.
Precision Pointing Reconstruction and Geometric Metadata Generation for Cassini Images **[#7036]**
We are reconstructing accurate pointing for ~400,000 images taken by Cassini at Saturn. The results will be provided to the public along with per-pixel metadata describing precise image contents such as geographical location and viewing geometry.

4:15 p.m. Annex A. *
SpiceyPy, a Python Wrapper for SPICE **[#7081]**
SpiceyPy is an open source Python wrapper for the NAIF SPICE toolkit. It is available for macOS, Linux, and Windows platforms and for Python versions 2.7.x and 3.x as well as Anaconda. SpiceyPy can be installed by running: "pip install spiceypy. "

4:30 p.m. Estes N. M. * Bowley K. S. Silva V. H.
Ruby SPICE Wrapper **[#7022]**
The LROC SOC team developed a wrapper for NAIF's SPICE toolkit to support the Ruby programming language.

4:45 p.m. Davis L. M. * Silva V. H. Estes N. M. Boyd A. K. Bowley K. S.
Will it Blend? Getting SPICE-y with DTMs and Planetary Visualization **[#7073]**
The LROC SOC team developed a method to import regional and global DTMs into the open-source animation and modeling program, Blender. We also developed a tool to associate SPICE information with Blender models.

Monday, June 12, 2017
THIRD PLANETARY DATA WORKSHOP DEMONSTRATIONS: DAY 1
CRISM
3:15 p.m. Agassiz Room

Software and tool demonstrations for the Third Planetary Data Workshop, Day 1. Presentations on the MRO CRISM data and tools will be featured.

Chair: Trent Hare

3:15 p.m. Arvidson R. Seelos F. *
2017 CRISM Workshop (2 hours)

Monday, June 12, 2017
POSTERS FOR THE THIRD PLANETARY DATA WORKSHOP
5:30–7:30 p.m. Pre-Function Hall

McMichael S. Alexandrov O. Beyer R.
Enhanced 3D Surface Generation in the Ames Stereo Pipeline **[#7090]**
The Ames Stereo Pipeline has recently undergone significant improvements including the addition of new stereo algorithms (SGM and MGM), structure from motion capabilities (SfM), and a shape from shading (SfS) tool.

Nelson D. M. Williams D. A.
GIS Facility and Services at the Ronald Greeley Center for Planetary Studies **[#7067]**
At the RGCPS, we established a Geographic Information Systems (GIS) computer laboratory, where we instruct researchers how to use GIS and image processing software. Seminars demonstrate viewing, integrating, and digitally mapping planetary data.

Westermann M. M.
Manual Surface Feature Classification and Error Analysis for NASA's OSIRIS-Rex Asteroid Sample Return Mission Using QGIS **[#7047]**
Error mitigation for manual detection and classification of hazardous surface features for NASA's OSIRIS-REx asteroid sample return mission can be accomplished through the use of open-source GIS and standard land-cover change analysis methods.

Bachman N. J.
The SPICE Digital Shape Kernel (DSK) Subsystem **[#7015]**
The DSK subsystem is the component of SPICE concerned with detailed shape models. The DSK subsystem enables SPICE-based applications to conveniently and efficiently use detailed shape data in geometry computations performed by SPICE routines.

Wagner R. V. Speyerer E. J. Robinson M. S.
Exploring the Moon with Automated Feature Detection **[#7074]**
We demonstrate two algorithms for automatic detection of small-scale features in the very large LROC NAC dataset.

Bailen M. Sucharski R. Hare T. Akins S. Gaddis L.
Using the PDS Planetary Image Locator Tool (PILOT) to Investigate Small Bodies **[#7014]**
Functionality was recently added to the Planetary Image Locator Tool (PILOT) to access PDS image data catalogs for Dawn Framing Camera images and metadata for the asteroids Vesta and Ceres.

Cahill J. T. S. Becker K. Espiritu R. Isbell C. Seelos F.
Galileo NIMS: New ISIS3 Tools for Modernized Data Set Handling and PDS4 Re-Archival **[#7071]**
Galileo NIMS data is in the process of being re-archived in PDS4 format and is now supported with ISIS3 applications and the ISIS Support issue tracking system.

Lopez S. Paillou Ph.
Saharasar: An Interactive SAR Image Database for Desert Mapping **[#7016]**
We present a dedicated tool for accessing radar images acquired by the ALOS/PALSAR mission over Sahara and Arabia. We developed a dedicated web site, using the Mapserver web mapping server and the Cesium javascript library.

Grimes K. II Padams J. Hollins G.
Web Resource Platform **[#7131]**
The Web Resource Platform (WRP) is a suite of tools that enables data and application sharing across disparate domains.

Semenov B. V. Acton C. H. Bachman N. J. Ferguson E. W. Rose M. E. Wright E. D.
WebGeocalc and Cosmographia: Modern Tools to Access SPICE Archives **[#7018]**
The WebGeocalc (WGC) web client-server tool and the SPICE-enhanced Cosmographia visualization program are two new ways for accessing space mission geometry data provided in the PDS SPICE kernel archives and by mission operational SPICE kernel sets.

Hardman S. Hughes J. S. Joyner R. Crichton D. Law E.
Deployment of the Planetary Data Tool Registry **[#7044]**
The PDS Tool Registry enables search and discovery of tools, services, and APIs for working with data following the PDS standards. Tools and services have been submitted from the broad PDS community and multiple institutions.

Raugh A. C. PDS Team
The Planetary Data System (PDS): Ask Me Anything **[#7051]**
This poster presents a blank wall for attendees to post questions or comments about PDS, its activities, archives, and standards. Questions will be collected at least twice a day and answers posted or otherwise provided at/on the poster site.

Keely L. E. Edwards L. J. Malin M. C.
Desktop Exploration of Remote Terrain (DERT) **[#7005]**
Software tool that utilizes a virtual world to visualize, navigate, and examine NASA digital terrain models.

Wright E. D.
The SPICE Geometry Finding Subsystem **[#7012]**
The NAIF SPICE System now includes a geometry finding subsystem to calculate the time or times corresponding to specified geometric events.

Gordon M. K. Guinness E. A. Neakrase L. D. V. Padams J. Raugh A. C.
PDS4 Training: Key Concepts and Vocabulary **[#7089]**
Those planning to attend the PDS4 training session are strongly encouraged to review this poster prior to the training session. This poster briefly describes new vocabulary and a number of key concepts introduced with PDS4.

Kingston C. Palmer E. Stone J. Neese C. Mueller B.
Demonstration of New OLAF Capabilities and Technologies **[#7110]**
Upgrades to the On-Line Archiving Facility (OLAF) PDS tool are leading to improved usability and additional functionality by integration of JavaScript web app frameworks. Also included is the capability to upload tabular data as CSV files.

Tan X. Liu J. J. Zeng X. G. Zuo W. Li C. L.
The CE5 Scientific Data Products Using PDS4 **[#7003]**
This paper summarizes the format and content of the CE5 data products and associated metadata.

Le Corre L. Becker K. J. Gaskell R. Li J.-Y. Reddy V. Blewett D. T. Lucey P.
Controlled Color Mosaics of Vesta with Dawn Framing Camera Images **[#7037]**
Registration of Dawn Framing Camera color images from High Altitude Mapping Orbit phases to an updated shape model of Vesta allows the creation of controlled mosaics for photometric modeling and study of space weathering of the surface.

Henriksen M. R. Manheim M. R. Robinson M. S.
LROC NAC Topography: A Powerful Tool for Lunar Exploration **[#7019]**
LROC NAC digital terrain models and stereo observations are useful products for scientific studies. These products can be found through several resources located on the LROC web portal, including new shapefiles for stereo and DTM footprints.

DeWolfe A. Harter B. Brain D. Chaffin M.
MAVEN Data Analysis and Visualization Toolkits **[#7079]**
The MAVEN Science Data Center team has developed several toolkits for data visualization and analysis, written in both IDL and python.

Selznick S. H.
An Architecture for Real-Time Processing of OSIRIS-REx Engineering and Science Data, from Raw Telemetry to PDS **[#7099]**
Herein we describe an architecture developed for processing engineering and science data for the OSIRIS-REx mission. The architecture is soup-to-nuts, starting with raw telemetry and ending with submission to PDS.

Aye K.-M.
Repeating Patterns in the Day-to-Day Work with Planetary Mission Data **[#7125]**
I will discuss repeating patterns in supporting software for the real-time exploring of planetary mission data.

DellaGiustina D. N. Bennett C. A. Golish D. R. Habib N.
Generating Photomosaics of Small Bodies in Preparation for the OSIRIS-REx Encounter with Asteroid Bennu **[#7070]**
The work presents an improved image basemap of asteroid 433 Eros using recently developed tools for processing of small body images.

Yamamoto Y. Ishihara Y.
Publication of SELENE Data Compliant with PDS3 **[#7052]**
The SELENE datasets are converted to comply with PDS version 3 standards. In this presentation, we introduce the motivation and changes from the previous version.

Kim J. H. Choi Y. -J. Kim B. -Y.
Development of KPLO Science Data Archive for Public Release **[#7038]**
Korea Aerospace Research Institute is carrying out development of KARI Planetary Data System for public release of the scientific measurement data of the Korean domestic science instruments onboard the Korea Pathfinder Lunar Orbiter.

Jeong M. Choi Y.-J. Kim S. S. Kang K.-I. Shkuratov Y. G. Kaydash V. G. Videen G.
Sim C. K. Kim I.-H.
Preliminary Design of Wide-Angle Polarimetric Camera for the First Korean Lunar Mission **[#7035]**
We plan to perform polarimetric observations on a lunar orbit. We will introduce our Wide-Angle Polarimetric Camera (PolCam) which is one of the payloads for the Korean Pathfinder Lunar Orbitor (KPLO).

Tinio A. W. Hollins G. A.
Common Workflow Service: Standards Based Solution for Managing Operational Processes **[#7009]**
The Common Workflow Service is a collaborative and standards-based solution for managing mission operations processes using techniques from the Business Process Management (BPM) discipline. This presentation describes the CWS and its benefits.

DeWolfe A. Harter B. Brain D.
Data Visualization Tools for the MAVEN Mission **[#7066]**
We present a set of data visualization tools developed for use by the MAVEN mission, including interactive line plots of MAVEN science data and a 3D visualization of Mars, MAVEN's orbit, science data, and atmospheric models.

He L. Arvidson R. E. O'Sullivan J. A. Politte D. V.
Maximum Log-Likelihood Method with Weighting Penalty for CRISM Hyperspectral Images **[#7078]**
We develop the Maximum Log-likelihood Method with weighting penalties to denoise and reconstruct the CRISM data. Spatial and spectral weights determined by sampling degrees and noise levels are introduced to remove spatial and spectral artifacts.

Gosmeyer C. M. Brasseur C. Fleming S. Mutchler M.
Searching Hubble Space Telescope Archives for Solar System Observations and Planned Improvements for James Webb Space Telescope **[#7043]**
We present tips and tools for searching Hubble Space Telescope archives for solar system observations. Additionally, we provide an overview of planned archive improvements for James Webb Space Telescope.

Garcia P. A. Isbell C. E.
A Planetary Data System Archive of Lunar Mapping and Modeling Program Products **[#7084]**
We describe a PDART project to preserve selected LMMP data products, and associated ancillary data and documentation, within a PDS archive.

Barlow N. G.
Status Report on Crater Databases for Mercury, the Moon, Mars, and Ganymede **[#7027]**
Global databases of craters 5-km-diameter and larger are being compiled for Mercury, the Moon, Mars, and Ganymede. The status of each database will be discussed.

Saiz J. Macfarlane A. Docasal R. Rios C. Barbarisi I. Vallejo F. Besse S. Vallat C. Arviset C.
Common Data Model to Handle PDS3 and PDS4 Data **[#7045]**
European Space Agency's (ESA) planetary missions following either the PDS3 or the PDS4 standards preserve their data in the Planetary Science Archive (PSA). A common data model has been developed to provide transparency to all PSA services.

Naß A. Dawn Mapping Team
GIS-Based Data Structure for Geological Mapping of Ceres — One Global Map Composed of 15 Map Sheets **[#7041]**
Deriving valid statements out of interpretative geological mapping is very time intensive. Another challenge is generating one map composed of several map sheets which presents a geologically-consistent and geometrical/visual comparable content.

Gaither T. Hayward R. K. Blue J. Gaddis L. Schulz R. Aksnes K. Burba G. Consolmagno G. Lopes R. M. C. Masson P. Sheehan W. Smith B. A. Williams G. Wood C.
Planetary Nomenclature: An Overview and Update **[#7119]**
This contribution is an update for the planetary science community on the status of planetary nomenclature, its purpose and rules, the process for submitting name requests, and the IAU approval process.

Gaddis L. R. Laura J. Anderson R. B. Hare T. Klima R. Morgan F. Viviano-Beck C. Finch N.
Introduction to PySAT: A Spectral Analysis Tool for Planetary Science **[#7060]**
We introduce the PySAT software library and GUI for working with hyperspectral orbital data from Moon Mineralogy Mapper and Compact Reconnaissance Imaging Spectrometer for Mars data.

Todd N. S. Zeigler R. A.
Astromaterials Curation Digital Repository: Data Availability and New Features **[#7077]**
The Astromaterials Curation office maintains a public digital repository containing sample data and other digital resources. The purpose of this data repository, its features, available data products, and recent enhancements will be discussed.

Prats B. D. Malespin C. A. Mahaffy P. R. Brinckerhoff W. B. Johnson M. S. Lyness E. I. Dobson N.
Improved Engineering Diagnostics for Space Explorations **[#7068]**
Present technology used at GSFC provides comprehensive trending allowing instrument and subsystem health measurements during daily operations of Sample Analysis at Mars, SAM on-board Curiosity, and Mars Organic Molecular Analyzer, MOMA on ExoMars 2020.

Costa M.
SPICE for ESA Planetary Missions **[#7020]**
SPICE is an information system that provides the geometry needed to plan scientific observations and to analyze the obtained. The ESA SPICE Service generates the SPICE Kernel datasets for missions in all the active ESA Missions.

Raugh A. C. Hughes J. S.
Getting a Handle on PDS4 Labels **[#7049]**
This talk will walk through the overall structure and organization that applies to all PDS4 labels. The goal is to provide background and context for both end-users and data developers working with data in the new PDS4 standard layout.

Hare T. M. Laura J. R. Humpreys I. R. Wilson T. J. Hahn M. A. Shepherd M. R. Sides S. C.
A Sandbox Environment for the Community Sensor Model Standard **[#7130]**
Here we present ongoing work Astrogeology is undertaking to provide a programming sandbox environment for the Community Sensor Model standard. We define a sandbox as a testing environment that allows programmers to experiment.

Tuesday, June 13, 2017
THIRD PLANETARY DATA WORKSHOP: DAY 2
8:30 a.m. Humphreys Room

Day 2 of the Third Planetary Data Workshop focuses on new planetary products, tools, data and services, with emphasis on PDS and other data services.

Chairs: **Samuel Lawrence**
Dan Crichton

8:30 a.m. Gaddis L. *
Announcements

8:35 a.m. Crichton D. *
PDS4 Overview and Status

8:55 a.m. Hughes J. S. *
PDS4 Information Model

9:15 a.m. Raugh A. C. * Hughes J. S.
PDS4: Realizing the Benefits **[#7050]**
The presentation will highlight some of the benefits that both end-users and data providers will find in using the new PDS4 labeling standards.

9:30 a.m. Joy S. P. * Walker R. J. King T. A. Mafi J. N.
Strategy for Writing a Good Data Management Plan for a ROSES Proposal **[#7093]**
For years the ROSES calls have made it clear that all funded activities must archive any data products that are generated with the PDS or an equivalent archive. In this paper we outline a strategy for generating a well written data management plan.

9:45 a.m. Crombie M. K. *
A Systems Engineering Approach to Planetary Data Archive Development **[#7103]**
This abstract outlines a systems engineering approach to archive-lifecycle development from proposal though archive delivery.

10:00 a.m. BREAK

10:15 a.m. Wang J. Scholes D. Zhou F. Slavney S. Guinness E. A. Arvidson R. E. *
Accessing Planetary Data Using PDS Geosciences Node's Orbital Data Explorer **[#7026]**
An overview of NASA's Planetary Data System's Geosciences Node's Orbital Data Explorer, which provides web-based functions to search, display, and download orbital data from multiple missions and instruments in the rapidly expanding planetary data archives.

10:30 a.m. Gordon M. K. * Showalter M. R. Ballard L. Tiscareno M. French R. S. Olson D.
OPUS: A Comprehensive Search Tool for Remote Sensing Observations of the Outer Planets. Now with Enhanced Geometric Metadata for Cassini and New Horizons Optical Remote Sensing Instruments. **[#7088]**
The PDS RMS Node hosts OPUS – an accurate, comprehensive search tool for spacecraft remote sensing observations. OPUS supports Cassini: CIRS, ISS, UVIS, VIMS; New Horizons: LORRI, MVIC; Galileo SSI; Voyager ISS; and Hubble: ACS, STIS, WFC3, WFPC2.

10:45 a.m. Stein T. C. * Arvidson R. E. Zhou F.
PDS Analyst's Notebook for MSL and MER **[#7013]**
The PDS Analyst's Notebook (http://an.rsl.wustl.edu) for MSL and MER provides access to science information from several of NASA's landed missions. Peer-reviewed data, documentation, and support files, updated coincident with PDS data releases.

11:00 a.m. Padams J. * Grimes K. Hollins G. Lavoie S. Stanboli A.
NASA PDS IMG: Accessing Your Planetary Image Data **[#7114]**
PDS IMG continues to develop and improve tools, like the Image Atlas, to support both the wide variety of available data and the ease of access to that data both interactively, through a web browser, and programmatically through web services.

11:15 a.m. Neakrase L. D. V. * Hornung D. Chanover N. Huber L. Beebe R. Johnson J. Sweebe K. Stevenson Z.
Archiving Derived Data with the PDS Atmospheres Node: The Educational Labeling System for Atmospheres (ELSA) **[#7063]**
The PDS Atmospheres Node is developing an online tool, the Educational Labeling System for Atmospheres (ELSA), to aid in planning and creation of PDS4 bundles and associated labels for archiving derived data.

11:30 a.m. Algermissen S. S. * Padams J. H. Radulescu C.
PDS Label Assistant for Interactive Design (PLAID): Simplifying PDS4 Label Template Building **[#7030]**
The PDS Label Assistant for Interactive Design (PLAID) tool seeks to simplify and expedite the process of building a PDS4 label template with a simple step-by-step interface that does not require experience with XML or PDS4 Schemas and Schematrons.

11:45 a.m. Zeng X. G. * Zuo W. Liu J. J. Tan X. Li C. L.
Ongoing Work of Science Data Archive and Release in China Lunar Exploration Program (CLEP) **[#7002]**
China has successfully lauched three lunar exploration missions which are CE1 in 2007, CE2 in 2010, and CE3 in 2013. This approach is about to discuss the details of the recent work in the science data archive and release CE Program.

12:00 p.m. LUNCH

1:30 p.m. Deen R. G. * Penteado P. F. Calef F. J. III
Does PDS Need to Support a Medium Term "Archive?" **[#7085]**
White paper intended to provoke thought and discussion about the need for PDS to preserve active server assets provided by missions over the medium term after the mission ends.

1:45 p.m. Million C. * Brazier A. King T. Hayes A.
Status of Software Preservation in Planetary Science **[#7059]**
We will review the current status of software archiving in planetary science and suggest next steps.

2:00 p.m. Hughes J. S. * Hardman S. H. Padams J. H. Algermissen S. S.
PDS4 Tool Development: Leveraging the PDS4 Information Model **[#7008]**
Many tools that access PDS data products will parse PDS4 product labels for information about the labeled digital object(s). Significant additional information is also available in the PDS4 Information Model.

2:15 p.m. Nagdimunov L. *
PDS4 Viewer: A Standalone Display Tool for PDS4 Data, Backed by a Python PDS4 Read-In API **[#7065]**
We present two tools intended to aid both PDS data users and data providers: A standalone display tool for PDS4 data, and an API to read PDS4 data into Python.

2:30 p.m. Verma R. *
Next Generation Parallelization Systems for Processing and Control of PDS Image Node Assets **[#7128]**
We present next-generation parallelization tools to help Planetary Data System (PDS) Imaging Node (IMG) better monitor, process, and control changes to nearly 650 million file assets and over a dozen machines on which they are referenced or stored.

2:45 p.m. Stanboli A. Bue B. Wagstaff K. * Altinok A.
Automated Content Detection for Cassini Images **[#7048]**
NASA missions generate numerous images ever organized in increasingly large archives. Image archives are currently not searchable by image content. We present an automated content detection prototype that can enable content search.

3:00 p.m. BREAK

3:15 p.m. Wagstaff K. L. * Francis R. Gowda T. Lu Y. Riloff E. Singh K.
Mars Target Encyclopedia: Information Extraction for Planetary Science **[#7031]**
Mars surface targets / and published compositions / Seek and ye will find. We used text mining methods to extract information from LPSC abstracts about the composition of Mars surface targets. Users can search by element, mineral, or target.

3:30 p.m. Oyen D. A. * Lanza N. L.
Interactive Machine Learning for Discovering Patterns in Spectral Data and Images **[#7054]**
We balance the strengths of machine learning to perform pattern recognition, while empowering scientists to explore large sets of data. We demonstrate two such approaches for (1) ChemCam spectral data, and (2) interactive image analysis.

3:45 p.m. Laura J. R. * Rodriguez K. Paquette A. C.
Sparse Multi-Image Control: The AutoCNET Library **[#7101]**
n-image correspondence identification of CTX imagery to develop a relatively controlled (no ground) mosaic using CPU and GPU computing technologies.

4:00 p.m. Wagner R. V. * Henriksen M. R. Manheim M. R. Robinson M. S.
PhotoScan for Planetary and Analog Sites **[#7023]**
We used the Agisoft PhotoScan software to produce accurate 3D terrain models of an Apollo sample site and an Earth analog of a collapse pit, and show that PhotoScan is an effective tool for planetary research.

4:15 p.m. Thompson T. J. * Mahanti P. Robinson M. S.
Extracting Crater Shape Information from Narrow Angle Camera DTMs **[#7075]**
We combined several software tools to qualitatively classify and extract morphological data from high resolution topography from LROC NAC DTMs.

4:30 p.m. Haugaard Z. * Ohn D. Philabaum C. Rodriguez K. Shepard M. Laura J. R. Hare T.
Improved Access to Kaguya Hyperspectral Data **[#7102]**
Development of a horizontally scalable web stack for Big Data query and exploratory analysis of the Kaguya Spectral Profiler data set.

4:45 p.m. Lehnert K. A. * Evans C. Todd N. Zeigler R.
MoonDB: Update on the Restoration and Synthesis of Lunar Geochemical and Petrological Sample Data **[#7136]**
Update on the status on the MoonDB project. MoonDB is a data system that restores, publishes, and synthesizes lunar sample data from published and unpublished sources to make them 'fit for re-use' in modern cyberinfrastructure. A prototype will be demonstrated.

Tuesday, June 13, 2017
THIRD PLANETARY DATA WORKSHOP DEMONSTRATIONS: DAY 2
SOFTWARE DEVELOPER BREAKOUTS AND PDS TOOLS
9:00 a.m. Agassiz Room

Software and tool demonstrations for the Third Planetary Data Workshop, Day 2.
In the morning, the software developers will discuss a variety of topics.
In the afternoon, demos will be given for several PDS tools and one software package for research with point spectra.

Chair: **Trent Hare**

9:00 a.m. Group *
Software Developers Discussion

9:30 a.m. Estes N. *
Lunaserv Server Discussion

9:45 a.m. Kerner H. *
Neural Networks Discussion

10:15 a.m. Aye K. M. *
Anaconda Discussion

11:30 a.m. Group *
Planetary Py

12:00 p.m. LUNCH

1:30 p.m. Semenov B. *
Cosmographia, WebGeoCalc

2:45 p.m. Algermissen S. *
PLAID Demonstration

3:30 p.m. Nagdimunov L. *
PDS4 Viewer and Library

4:15 p.m. Anderson R. *
PySAT Point Spectral GUI

Wednesday, June 14, 2017
THIRD PLANETARY DATA WORKSHOP: DAY 3
8:30 a.m. Humphreys Room

Day 3 of the Third Planetary Data Workshop focuses on new planetary products, tools, data and services, with emphasis on GIS topics and demonstrations of a variety of tools.

Chair: **Ross Beyer**

8:30 a.m. Hare T. *
Announcements

8:35 a.m. Hare T. *
Topics in Planetary GIS

8:55 a.m. Walter S. H. G. *
Web Map Tile Services for Single Images of Planetary Remote Sensing Data **[#7086]**
We present a concept to stream single images and their metadata as individual entities via WMS to enable functionality such as time series analysis of the martian surface.

9:15 a.m. Marco Figuera R. * Pham Huu B. Halder A. Yin K. Rossi A. P.
PlanetServer: A Hyperspectral Analysis and Visualization Web Client and Python API **[#7039]**
PlanetServer is a web client and Python API aiming to visualize and analyze hyperspectral imagery from different planetary bodies using the Web Coverage Processing Service (WCPS) OGC standard.

9:30 a.m. Dickenshied S. * Anwar S. Noss D. Hagee W. Carter S. Rios K. Wren P. Burris M.
JMARS — Remote Sensing Visualization and Analysis for All Planetary Bodies **[#7126]**
JMARS is a free GIS application for viewing planetary remote sensing data on Windows, Mac, or Linux devices. It is used by school kids, graduate students, and NASA mission planners.

10:00 a.m. BREAK

10:15 a.m. Manaud N. * Nass A. Lewando M. van Gasselt S. Rossi A. P. Hare T. Carter J. Hargitai H.
OpenPlanetaryMap: Building the First Open Planetary Mapping and Social Platform for Researchers, Educators, Storytellers, and the General Public **[#7024]**
OpenPlanetaryMap is a collaborative effort to build an Open Planetary Mapping and Social platform for space enthusiasts, planetary scientists, educators, and storytellers.

10:30 a.m. Anderson R. B. * Finch N. Clegg S. Graff T. Morris R. V. Laura J.
Python Spectral Analysis Tool (PySAT) for Preprocessing, Multivariate Analysis, and Machine Learning with Point Spectra **[#7061]**
We present a Python-based library and graphical interface for the analysis of point spectra. The tool is being developed with a focus on methods used for ChemCam data, but is flexible enough to handle spectra from other instruments.

10:45 a.m. Hunter M. A. * Skinner J. A. Hare T. M. Fortezzo C. M.
Planetary Geologic Mapping Python Toolbox: A Suite of Tools to Support Mapping Workflows **[#7091]**
The collective focus of the Planetary Geologic Mapping Python Toolbox is to provide researchers with additional means to migrate legacy GIS data, assess the quality of data and analysis results, and simplify common mapping tasks.

11:00 a.m. Riedel C. * Michael G. G. Kneissl T.
Crater Counting on Heavily Cratered Surfaces: Implementing Non-Sparseness Correction in an ArcGIS Independent Tool for Planetary Surface Dating **[#7017]**
We develop an ArcGIS independent tool for crater size-frequency measurements which considers the effects of crater obliteration on planetary surface dating.

11:15 a.m. Calef F. J. III * Abarca H. E. Soliman T. Abercrombie S. P. Powell M. W.
Multi-Mission Geographic Information System for Science Operations: A Test Case Using MSL Data **[#7111]**
The Multi-Mission Geographic Information System (MMGIS) is a NASA AMMOS project in its second year of development, built to display and query science products in a spatial context. We present our progress building this tool using MSL in situ data.

11:30 a.m. Deen R. G. * Maki J. N. Algermissen S. S. Abarca H. E. Ruoff N. A.
Mastcam Stereo Analysis and Mosaics (MSAM) **[#7083]**
Describes a new PDART task that will generate stereo analysis products (XYZ, slope, etc.), terrain meshes, and mosaics (stereo, ortho, and Mast/Nav combos) for all MSL Mastcam images and deliver the results to PDS.

11:45 a.m. Milazzo M. *
Archiving GIS-Compatible Products in PDS

12:00 p.m. LUNCH

Wednesday, June 14, 2017
THIRD PLANETARY DATA WORKSHOP: DAY 3
DEMONSTRATIONS AND DISCUSSIONS: VARIOUS TOOLS
1:30 p.m. Humphreys Room

Software and tool demonstrations for the Third Planetary Data workshop, Day 3.
In the afternoon, demos will be provided for several planetary data access, processing, and visualization packages.

Chair: Jason Laura

1:30 p.m. Estes N. *
Lunaserv Demo

2:00 p.m. Becker T. * Becker K.
ISIS3 Introduction

2:30 p.m. Edmundson K. * Sucharski T.
ISIS3 Integrated Planetary Control Environment (IPCE) Demo

3:00 p.m. BREAK

3:15 p.m. Beyer R. * Alexandrov O. McMichael S.
Ames Stereo Pipeline Demo

3:45 p.m. Laura J. * Milazzo M.
Python Tools (AutoCNET, Camera) Demo

4:15 p.m. Law E. *
Trek Tools Demo: Mars, Moon, Vesta, etc.

4:45 p.m. Akins S. *
PDS Imaging POW and MAP2 Tools Demo

Wednesday, June 14, 2017
THIRD PLANETARY DATA WORKSHOP DEMONSTRATIONS: DAY 3
HACK-A-THON AND RESEARCH TOOLS
8:30 a.m. Agassiz Room

Software and tool demonstrations for the Third Planetary Data Workshop, Day 3.
In the morning, the software developers will conduct a "hack-a-thon."
In the afternoon, demos will be given for several research tools and data visualization packages.

Chairs:	**Alessandro Frigeri** **Trent Hare**
8:30–11:30 a.m.	Frigeri A. * Hare T. *Hack-a-thon*
11:30 a.m.	Frigeri A. * *QGIS Demonstration*
12:00 p.m.	LUNCH
1:30–3:15 p.m.	Hunter M. * Hare T. * Fortezzo C. * *Demo: ArcMap for Mappers*
3:15–4:15 p.m.	Dickenshied S. * *Demo: JMARS*
4:15–5:00 p.m.	Hare T. * *Demo: GDAL: ISIS3 Writer and Py Scripting*

Wednesday, June 14, 2017
THIRD PLANETARY DATA WORKSHOP:
PDS4 TRAINING SESSION
9:00 a.m. Fremont Room

Day 3 of the Third Planetary Data Workshop features an all-day training session on PDS4 archiving.

Chair: Mitchell Gordon

9:00 a.m. Gordon M. *
Introduction to PDS4 Concepts and Vocabulary

9:45 a.m. Hardman S. *
Provide help with Virtual Box installation (as needed)

10:00 a.m. PDS Training Group: Crombie K. * Guinness E. Isbell C. Hughes S. Mafi J. Neakrase L. Padams J. Radulescu C. Raugh A. Stirling A.
Hands-On 1: Design a Bundle, Identify Collections, Develop LID Algorithms

10:30 a.m. Raugh A. *
Oxygen Demo, Eclipse Comments

11:15 a.m. PDS Training Group *
PDS4 Q&A

11:30 a.m. LUNCH

1:00 p.m. PDS Training Group *
Hands-On 2: Design a Label for a Character Table (PLAID, Oxygen, Eclipse)

2:15 p.m. BREAK

2:30 p.m. PDS Training Group *
Hands-On 3: Design a Basic Product Label for an Image File

3:30 p.m. Raugh A. *
Demo Validate Tool with a Known Error File

4:00 p.m. PDS Training Group *
PDS4 Q&A

Thursday, June 15, 2017
THIRD PLANETARY DATA WORKSHOP: DAY 4
MAPSIT TOWN HALL
8:30 a.m. Humphreys Room

Day 4 of the Third Planetary Data Workshop focuses on recent activities by and for the Mapping and Planetary Spatial Infrastructure Team (MAPSIT) assessment group.

Chairs: **Justin Hagerty**
Lisa Gaddis

8:30 a.m. Hagerty J. *
Announcements

8:35 a.m. Radebaugh J. *
MAPSIT Overview and Goals

8:55 a.m. Williams D. *
Geologic Mapping Community Update

9:15 a.m. Radebaugh J. *
MAPSIT: Other Community Discussions and Input

9:30 a.m. Hagerty J. *
Planetary Spatial Data Infrastructure: Why We Need It

9:45 a.m. BREAK

10:00 a.m. Keszthelyi L. * Hagerty J. Akins S. Archinal B. Bailen M. Bland M. Edmundson K. Fergason R. Hare T. Hayward R. Hunter M. Laura J. Sides S. Velasco M.
The NASA-USGS Planetary Spatial Data Infrastructure Inter-Agency Agreement **[#7097]**
This abstract is intended to clarify the role of the NASA-USGS PSDI Inter-Agency Agreement (PSDI-IAA) within the much broader context of the concept of planetary spatial data infrastructure.

10:15 a.m. Archinal, B. *
PSDI Foundational Products

10:30 a.m. Laura J. R. * Gaddis L. R. Hare T. M. Hagerty J. J.
The Role of Technology in a Planetary Spatial Data Infrastructure **[#7129]**
Technology plays a critical role in all aspects of Planetary Spatial Data Infrastructure. Here we explore the dynamic nature of technology as it permeates all components of PSDI.

10:45 a.m. Gaddis L. R. * Laura J. Hare T. Hagerty J.
The NASA Planetary Data System's Cartography and Imaging Sciences Node and the Planetary Spatial Data Infrastructure (PSDI) Initiative **[#7124]**
Here we address the role of the PSDI initiative in the context of work to archive and deliver planetary data by NASA's Planetary Data System, and in particular by the PDS Cartography and Imaging Sciences Discipline Node (aka "Imaging" or IMG).

11:00 a.m. Thomson, B. *
The Status of the MAPSIT Roadmap

11:15 a.m. DISCUSSION

Thursday, June 15, 2017
THIRD PLANETARY DATA WORKSHOP: DAY 4
HACK-A-THON (CONTINUED)
8:30 a.m. Agassiz Room

Day 4 of the Third Planetary Data Workshop focuses on a continuation of the software developers' Hack-a-thon.

Chair: Trent Hare

8:30 a.m.–12:00 p.m. *Hack-a-thon (continued)*

Thursday, June 15, 2017
THIRD PLANETARY DATA WORKSHOP: DAY 4
PDS4 ARCHIVING Q&A
8:30 a.m. Fremont Room

Day 4 of the Third Planetary Data Workshop focuses on a Q&A session following the PDS4 Training Event.

Chair: Mitchell Gordon

8:30–11:30 a.m. *PDS4 Q&A*

Monday, June 12, 2017
PLANETARY GEOLOGIC MAPPERS ANNUAL MEETING:
MERCURY, VENUS, MARS I
9:00 a.m. Fremont Room

The Annual Meeting of the Planetary Geologic Mappers features presentations and posters on the results of NASA-funded geologic mapping projects. Day 1 (morning) topics include general mapping issues and mapping of Mercury, Venus, and Mars.

Chair: **David Williams**

9:00 a.m. Williams D. *
Welcome, Logistics, Opening Remarks

9:15 a.m. Skinner J. *
Planetary Geologic Mapping Coordinator's Report to the Community

9:30 a.m. Naß A. * Fortezzo C. M. Skinner J. A. Jr. Hunter M. A. Hare T. M.
Cartographic Symbolization in Geologic and Geomorphologic Maps — Specified Collection and GIS-Based Implementation for Planetary Science **[#7064]**
To allow correlation between different map products, the objects are visualized by predefined and standardized cartographic symbols. Focus is on changing the symbology with respect to time and how it effects communication within and between the maps.

9:50 a.m. Buczkowski D. L. * Goosmann E. Denevi B. W. Ernst C. M. Fassett C. I. Byrne P. K.
A Geologic Map of the Caloris Basin, Mercury **[#7109]**
We present a geologic map of the Caloris basin of Mercury, which serves to synthesize the results of previous geologic studies into a contextual framework for quickly viewing the thematic research that has been performed on this interesting region.

10:10 a.m. BREAK

10:25 a.m. Mohr K. J. * Williams D. A. Garry W. B. Bleacher J. E.
Geologic Mapping of Ascraeus Mons, Mars **[#7029]**
Mapping of the geomorphology of lava flows on and surrounding Ascraeus Mons has proven to show the history and evolution of the large shield volcano.

10:45 a.m. Crown D. A. * Berman D. C. Platz T. Scheidt S. P. Hauber E. Weitz C. M.
Geologic Mapping of the Summit and Western Flank of Alba Mons, Mars **[#7034]**
This investigation employs imaging and topographic datasets to produce two 1:1M-scale geologic maps covering the Alba Mons summit (245–255°E, 32.5–47.5°N) and western flank (230–245°E, 37.5–47.5°N).

11:05 a.m. Anderson R. C. Parker T. J. * Schroeder J. F.
Conversion of Seven Completed Maps into ArcGIS for Publication, Part 2 **[#7123]**
Conversion of East Acidalia maps to ArcGIS is complete. These maps will be submitted for peer-review by this meeting. Have begun conversion of 1:500,000 maps of Argyre Planitia to a 1:1,000,000 scale map for the second year of project.

11:25 a.m. LUNCH

Monday, June 12, 2017
PLANETARY GEOLOGIC MAPPERS ANNUAL MEETING:
MARS II
1:00 p.m. Fremont Room

The Annual Meeting of the Planetary Geologic Mappers features presentations and posters on the results of NASA-funded geologic mapping projects.
Day 1 (afternoon) discussion focuses on a continuation of Mars mapping topics.

Chair: David Williams

1:00 p.m. Wilson S. A. * Grant J. A. Buczkowski D. L.
Geologic Mapping in Southern Margaritifer Terra on Mars and the Evolution of Nirgal Vallis **[#7053]**
The Margaritifer Terra region on Mars preserves a long and fascinating record of aqueous activity. Geologic mapping in four quadrangles helps constrain the timing, source, duration, and relative importance of aqueous versus other geomorphic processes.

1:20 p.m. Weitz C. M. * Wilson S. A. Irwin R. P. III Grant J. A.
Geologic Mapping to Constrain the Sources and Timing of Fluvial Activity in Western Ladon Basin, Mars **[#7028]**
We are mapping two quadrangles in Margaritifer Terra (–15032 and –20032) to define the evolution of the western Ladon basin region as it relates to fluvial/alluvial events occurring on surrounding surfaces.

1:40 p.m. Skinner J. A. Jr. * Fortezzo C. M. Barton M. L.
Results of 1:24,000-Scale Geologic Mapping of Western Hadriacus Cavi, Mars **[#7127]**
We report results of HiRISE-based 1:24,000 scale geologic mapping of a suite of stratified rocks located in southwestern Tyrrhena Terra, Mars. We interpret the mapped sequences as primary and remobilized volcaniclastic sediments.

2:00 p.m. Okubo C. H. * Gaither T. A.
High-Resolution Geologic Mapping in Eastern Candor Chasma: 2017 Status Report **[#7055]**
This abstract summarizes current results and planned activities from an ongoing initiative to construct a series of high-resolution structural and geologic maps in the east Candor Chasma region of Valles Marineris, Mars.

2:20 p.m. Berman D. C. * Weitz C. M. Palmero Rodriguez J. A. Crown D. A.
Geologic Map of the Source Region of Shalbatana Vallis, Mars **[#7082]**
We are currently producing a 1:500,000-scale USGS geologic map of MTM quadrangles 00042 and 00047 in the Xanthe Terra region of Mars.

2:40 p.m. Huff A. E. * Skinner J. A. Jr.
The 1:1,000,000-Scale Geology of Western Libya Montes and Northwestern Tyrrhena Terra **[#7112]**
We describe our mapping of the geology of western Libya Montes and northwestern Tyrrhena Terra and correlate our interpretations with previous mapping efforts at smaller scales (larger areas).

3:00 p.m. Seelos K. D. * Maxwell R. E. Seelos F. P. Buczkowski D. L.
Viviano-Beck C. E. Weitz C. M.
Characterization of Laterally Contiguous Phyllosilicate Deposits in West Margaritifer Terra, Mars **[#7132]**
The widespread occurrence and characteristics associated with surface or near-surface Fe/Mg smectite deposits suggests a regional emplacement and/or alteration process active in the Noachian, consistent with other regional layered phyllosilicates.

3:20 p.m. BREAK

3:40 p.m. Burr D. M. * Jacobsen R. E. Lefort A. Borden R. M. Boyd A. S. Peel S. E.
Update on Mapping of the Aeolis Dorsa Region, Mars: Discovering Ever More Diversity in This Inverted Landscape **[#7010]**
Near the end of our third year of mapping the Aeolis Dorsa region, we have completed mapping of the inverted fluvial deposits and are continuing mapping of widespread aeolian, localized tectonic, and possible groundwater and/or lacustrine features.

4:00 p.m. DISCUSSION

Monday, June 12, 2017
POSTERS FOR THE PLANETARY GEOLOGIC MAPPERS ANNUAL MEETING
5:30–7:30 p.m. Pre-Function Hall

Kinczyk M. J. Byrne P. K. Prockter L. M. Denevi B. W. Ostrach L. R. Skinner J. A. Buczkowski D. L. Hynek B. M.
Creating a Global Geological Map of Mercury with MESSENGER Datasets **[#7116]**
Review of mapping efforts to make a USGS global geological map of Mercury with possible subdivision of the intercrater plains using a newly calibrated enhanced color mosaic.

Ostrach L. R. Mest S. C. Prockter L. M. Petro N. E. Byrne P. K.
Geologic Map of the Borealis Quadrangle (H-1) on Mercury: 2017 Status Report **[#7108]**
We report on the first year of mapping progress for the Borealis Quadrangle (H-1) map of Mercury.

Hynek B. M. Robbins S. J. Mueller K. Gemperline J. Osterloo M. K. Thomas R.
Unlocking Mercury's Geological History with Detailed Mapping of Rembrandt Basin: Year 3 **[#7098]**
Current results of the USGS Rembrandt basin, Mercury, geologic map are presented.

Lang N. P. Rogers K. Covley M. Nypaver C. Baker E. Thomson B. J.
Refining the Mahuea Tholus (V-49) Quadrangle, Venus **[#7118]**
We present our continued mapping of V-49. Our mapping this past year has emphasized the Diana-Dali as it extends into the map area as well as characterizing small volcanic edifices.

Mohr K. J. * Williams D. A. Garry W. B. Bleacher J. E.
Geologic Mapping of Ascraeus Mons, Mars **[#7029]**
Mapping of the geomorphology of lava flows on and surrounding Ascraeus Mons has proven to show the history and evolution of the large shield volcano.

Borden R. M. Burr D. M.
Mapping and Preliminary Analysis of Wrinkle Ridges in the Aeolis Dorsa Region, Mars **[#7056]**
We present a map of wrinkle ridges in Aeolis Dorsa, Mars; along with results from preliminary analyses of the ridges to infer locations, directions, and amounts of shortening.

Mest S. C. Crown D. A. Michalski J. Chuang F. C. Price Blount K. Bleamaster L. F.
Geologic Mapping of Volcanic and Sedimentary Terrains, Northeast Hellas, Mars **[#7106]**
We are using image, topographic, and spectral data to map the geology along the northeast rim of Hellas basin, Mars. The region displays mantled highlands, explosive and effusive volcanic materials, eroded sedimentary plains, and Dao and Niger Valles.

Huff A. E. * Skinner J. A. Jr.
The 1:1,000,000-Scale Geology of Western Libya Montes and Northwestern Tyrrhena Terra **[#7112]**
We describe our mapping of the geology of western Libya Montes and northwestern Tyrrhena Terra and correlate our interpretations with previous mapping efforts at smaller scales (larger areas).

Campbell J. D. Sidiropoulos P. Muller J-P.
Compositional Characterisation of the Martian South Polar Residual Cap Using CRISM **[#7057]**
Using hyperspectral data from the CRISM instrument, we map compositional changes in the Martian South Polar Residual Cap in order to attempt to detect organic material in exposed dust particles.

Chojnacki M. Hynek B. M. Black S. R. Thomas R. Hoover R. Martin J. R.
Year 3 Geologic Mapping of Eastern Coprates Chasma (MTM -15057), Mars **[#7104]**
Here we present an update on our 1:500,000-scale geologic map of Coprates Chasma in the eastern Valles Marineris to eventually be submitted to the USGS for publication.

Fortezzo C. M. * Gullikson A. L. Kumar P. S. Platz T.
Geologic Mapping of Central Valles Marineris, Mars, Year 4 **[#7120]**
This is a summary of geologic mapping of central Valles Marineris up to year 4.

Mest S. C. * Crown D. A. Yingst R. A. Berman D. C. Williams D. A. Buczkowski D. L.
Scully J. E. C. Platz T. Jaumann R. Roatsch T. Preusker F. Nathues A. Hiesinger H. Pasckert J. H.
Raymond C. A. Russell C. T. Dawn Science Team
The HAMO-Based Global Geologic Map of Ceres **[#7105]**
We are using image, topographic, and color data derived from Framing Camera images, obtained during the High Altitude Mapping Orbit phase of the Dawn mission to generate a global geologic map of Ceres. This map is used to define the cerean timescale.

Golish D. R. * DellaGiustina D. N. Clark B. E. Bennett C. A. Li J. Y.
Zou X. D. Lauretta D. S.
Photometric Modeling of Simulated Surface-Resolved Bennu Images **[#7069]**
We present the results of testing photometric modeling software that will be used to support basemap generation of asteroid 101955 Bennu for the OSIRIS-REx asteroid sample return mission.

Williams D. A. NASA Dawn Team
Update on the Geological Mapping of Dwarf Planet Ceres from NASA's Dawn Mission **[#7006]**
This presentation is an update on the geological mapping campaign for Ceres as part of NASA's Dawn mission.

Yingst R. A. Mest S. C. Williams D. A. Garry W. B. Berman D. C.
Geologic Mapping of Vesta: Preliminary Results **[#7135]**
We are in the initial stages of constructing a global geologic map of Vesta at 1:300,000-scale for mapping and digital publication. It incorporates the full range of available, calibrated data including Dawn mission elemental and mineralogical data.

Tuesday, June 13, 2017
PLANETARY GEOLOGIC MAPPERS ANNUAL MEETING:
MARS III, SMALL BODIES, OUTER SATELLITES
9:00 a.m. Fremont Room

The Annual Meeting of the Planetary Geologic Mappers features presentations and posters on the results of NASA-funded geologic mapping projects. Day 2 topics include mapping of Mars, Small Bodies, and Outer Satellites.

Chair: David Williams

9:00 a.m. Mouginis-Mark P. J. * Hamilton C. W.
Mapping Hrad Vallis, Mars **[#7080]**
Our 1:175K-scale geologic map is almost done! And we've found inflated lava flows and multiple episodes of aqueous discharge interspersed with volcanic eruptions. But we should also look beyond this area, as these units extend beyond the map area.

9:20 a.m. Fortezzo C. M. * Gullikson A. L. Kumar P. S. Platz T.
Geologic Mapping of Central Valles Marineris, Mars, Year 4 **[#7120]**
This is a summary of geologic mapping of central Valles Marineris up to year 4.

9:40 a.m. Skinner J. A. Jr. * Fortezzo C. M.
Mapping the Stratigraphy of the Olympia Cavi, Planum Boreum, Using High-Resolution Data Sets **[#7134]**
We report on the progress of 1:100,000 scale geologic mapping of strata exposed in the Olympia Cavi region of Mars.

10:00 a.m. BREAK

10:20 a.m. Weitz C. M. * Berman D. Rodriguez J. A. P. Bishop J. L.
Geologic Mapping and Studies of Diverse Deposits at Noctis Labyrinthus, Mars **[#7058]**
We are mapping at 1:500,000 publication scale the western portion of Noctis Labyrinthus (–6 to –14°N, –99.5 to –95.0°W), which includes some of the most diverse mineralogies identified on Mars using CRISM data.

10:40 a.m. Anderson R. C. * Dohm J. M. Siwabessy A. Fewell N.
Desciphering the Temporal and Spatial Relationships of Stratigraphic Units within the Claritas Region; Mars Through a New Preliminary 1:1,000,000-Scale Geological Map **[#7092]**
The formation of the Tharsis has dominated the tectonic and geologic histories of the western hemisphere of Mars. For this project, we have created a new, preliminary geologic map quadrangle for the Claritas region at 1:1M-scale.

11:00 a.m. LUNCH

12:30 p.m. Golish D. R. * DellaGiustina D. N. Clark B. E. Bennett C. A. Li J. Y. Zou X. D. Lauretta D. S.
Photometric Modeling of Simulated Surface-Resolved Bennu Images **[#7069]**
We present the results of testing photometric modeling software that will be used to support basemap generation of asteroid 101955 Bennu for the OSIRIS-REx asteroid sample return mission.

12:50 p.m. Mest S. C. * Crown D. A. Yingst R. A. Berman D. C. Williams D. A. Buczkowski D. L. Scully J. E. C. Platz T. Jaumann R. Roatsch T. Preusker F. Nathues A. Hiesinger H. Pasckert J. H. Raymond C. A. Russell C. T. Dawn Science Team
The HAMO-Based Global Geologic Map of Ceres **[#7105]**
We are using image, topographic, and color data derived from Framing Camera images, obtained during the High Altitude Mapping Orbit phase of the Dawn mission to generate a global geologic map of Ceres. This map is used to define the cerean timescale.

1:10 p.m. Leonard E. J. * Patthoff D. A. Senske D. A. Collins G. C. Bunte M. K. Doggett T.
Updating the Global Geologic Map of Europa **[#7025]**
Mapping features on / Europa's complex surface / Ends with many lines.

1:30 p.m. Malaska M. J. * Lopes R. M. C. Mitchell K. L. Radebaugh J. Verlander T. Schoenfeld A.
Mapping the Labyrinths of Titan **[#7115]**
We are mapping the labyrinths of Titan.

1:50 p.m. Patterson G. W. * Collins G. C. Kinczyk M. J. Patthoff A. D. Perkins R. P. Pappalardo R. T. Bland M. T. Becker T. L.
Progress on a 1:2M Global Geologic Map of Enceladus **[#7117]**
We report on progress toward the creation of global geologic map of Enceladus at a scale of 1:2M.

2:10 p.m. DISCUSSION (2 hours)

4:10 p.m. ADJOURN

PRINT ONLY: THIRD PLANETARY DATA WORKSHOP

Edmundson K. L. Archinal B. A. Backer J. C. Barrett J. M. Becker K. J. Becker T. L. Bonn J. P. Cook D. A. Hahn M. A. Humphrey I. R. Lambright S. Lee E. M. Mapel J. A. Oyama K. A. Paquette A. C. Shepherd M. R. Sides S. C. Sucharski T. L. Weller L. A.

The User Experience: Developing an Integrated Photogrammetric Control Environment (IPCE) for Planetary Mapping **[#7011]**

The USGS Astrogeology Science Center is developing in ISIS3 an interactive user interface that integrates all aspects of the photogrammetric control process in a single environment. Here we provide a progress update on this work.