PDS ATMOSPHERES NODE NEWSLETTER

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Welcome to the NASA Planetary Data System (PDS), Planetary Atmospheres Node (ATM) Archiving Newsletter! This document is intended to serve as your definitive source for all archiving news related to planetary atmospheres and keep you informed of PDS ATM activities. For data access and proposal help, please visit our website: https://pds-atmospheres.nmsu.edu/.

UPCOMING CONFERENCE SUPPORT

ATM plans to be involved with Virtual Booth activities for the upcoming American Astronomical Society (AAS) Division for Planetary Science (DPS) 52nd Annual Meeting, which is scheduled to be a Virtual Meeting (https://aas.org/meetings/dps52) from 26-30 October 2020. Below is a listing of PDS-related activities at DPS, and there also will be opportunities to talk with PDS representatives at our virtual booth via Zoom and our Slack channel (#exb_planetary_data_system). Stop by and chat with us!

Date & Time (EDT)	Activity
Monday, 10/26, 14:00 to 14:30	Webinar: Introduction to PDS Geosciences Node Data Sets and Analysis Tools
Monday, 10/26, 14:30 to 15:30	Zoom room tutorial: Mars Reconnaissance Orbiter CRISM Hyperspectral Data Sets and Analysis Tools
Tuesday 10/27, 11:30-12:00	Webinar: Overview of Archiving Data in the PDS: From Proposal Writing to Data Acceptance
Tuesday 10/27, 14:00-14:30	Zoom room tutorial: Using the Small Bodies Image Browser (SBIB) at SBN
Tuesday 10/27, 15:00-16:00	Zoom room tutorial: Mars Rover In Situ X-ray Compositional Data Sets and Analysis Tools
Wednesday, 10/28, 14:00 to 14:30	Webinar: Introduction to PDS Geosciences Node Orbital Data Explorers and Landed Mission Analyst Notebooks
Wednesday, 10/28, 15:00 to 15:30	Zoom room tutorial: Using the Ferret search tool at SBN
Wednesday, 10/28, 16:00 to 17:00	Zoom room tutorial: Content and Use of PDS Geosciences Node Orbital Data Explorers
Wednesday 10/28, 17:00-18:00	White Paper Discussion Hour for 320.15, “The Planetary Data System (PDS) in the next decade”
Thursday 10/29, 14:00-14:30	Webinar: How to find your Outer Planets data with OPUS and related tools
Thursday 10/29, 15:00-16:00	Zoom room tutorial: Content and Use of PDS Geosciences Node Landed Mission Analyst Notebooks
Thursday 10/29, 15:30-16:00	Parallel Q&A Session for 413.04, “The Planetary Data System Atmospheres Node: A Comprehensive Archive for Planetary Atmospheric Data”
Friday 10/30, 15:00-15:30	Using the OnLine Archive Facility (OLAF) to get your data into PDS

POLICY UPDATES

Note for new data providers/proposers: Requests for letters of support should be submitted to the appropriate nodes no later than a week before the submission deadline as required by PDS policy. (Effective October 2019). See the adopted policy text for more information:
https://pds.nasa.gov/datastandards/documents/policy/FINAL_PDS_Policy_Letters_of_Support_2019_10_08.pdf

NEW MISSION RELEASES

ATM is involved in archiving data from five active missions. This involves working closely with the instrument teams and mission archiving teams to ensure that the data are delivered, validated, and released to the public on a predetermined schedule available from: https://pds.nasa.gov/datasearch/subscription-service/data-release-calendar.shtml. Here, we provide a status report of recent data releases from these missions at ATM:

MARS

InSight 1st through 5th data release is available and certified including atmospheric data from the Temperature and Wind Sensors (TWINS) and Pressure Sensors (PS). Release 6 will be October 1.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/INSIGHT/insight.html

Entry, Descent, and Landing (EDL) data is also now available.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/INSIGHT/insight_edl.html

Mars Atmospheres and Volatile Evolution (MAVEN) 1st through 22nd data release is available for Accelerometer (ACC), Neutral Gas and Ion Mass Spectrometer (NGIMS), and Imaging Ultraviolet Spectrograph (IUVS). Release 23 will be November 15.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MAVEN/maven_main.html

Mars Reconnaissance Orbiter (MRO) 1st through 54th data release is available including data from the Mars Climate Sounder (MCS). Release 55 will be December 1.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/mars_reconnaissance_orbiter.html

Mars Science Laboratory (MSL) Curiosity 1st through 24th data release is now available for the Rover Environmental Monitoring Station (REMS).
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/curiosity/curiosity.html

JUPITER

Juno Both PDS4 and PDS3 data are available for Microwave Radiometer (MWR), Ultraviolet Imager/Spectrograph (UVS), Jovian Infrared Auroral Mapper (JIRAM), and Gravity Science Experiment (GRAV), through perijove 24 data.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/JUNO/juno.html

NEW DERIVED DATA RELEASES (by program)

In addition to archiving mission data, ATM is also involved in hosting and archiving derived data, which are typically provided by individual data providers. These data are a valuable complement to the ATM mission data because they represent the results of investigations involving the analysis of mission data or the acquisition of field, laboratory, or ground-based data that support NASA's planetary missions. Below is a listing of derived data (by program) that have recently completed the archiving process and are now available online at ATM (since last issue – for past issues see: https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/newsletter/newsletter.html).

PLANETARY DATA ARCHIVING AND TOOLS (PDART)

Archiving Titan Ionospheric Electron Density Profiles from Cassini (Withers) – Completed Online – PDS4 bundle contains occultation data for Saturn and Titan pertaining to ionospheric electron density profiles. The data products include: (A) time series of the frequency of the radio signal received at Earth during an occultation (freq); (B) individual electron density profiles from occultations (indn); (C) average electron density profiles from occultations (aven); and (D) summary of average electron density profiles (summ).
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/Cassini/cassini_radio_science_occ.html

Recalibrated Mars Global Surveyor (MGS) Thermal Emission Spectrometer (TES) (Pankine) – Completed Online – PDS4 Bundle containing recalibrated MGS TES data pertaining to atmospheric observations.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/pankine_data.html

Archiving Ionospheric Electron Density Profiles from Viking Orbiters (Withers) – Completed Online – These Viking data products were derived from Mars ionospheric electron density profiles retrieved by Paul Withers from Tamara Breus (Breus et al., 1998a,b). Detailed comparison with existing published profiles was utilized to verify the restoration. These data have not been supplanted by later missions. Compared to the Mars Global Surveyor data, these data have better sensitivity, higher vertical extent, greater global coverage and larger solar zenith angle coverage. https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/voroelden/voroelden.html

PDS3 TO PDS4 DATA MIGRATION UPDATES

Ongoing work at ATM also includes the migration of current holdings from the PDS3 archiving standard (ODL labels) to the new PDS4 archiving standard (XML labels). In general, migration at ATM will aim to add the PDS4 bundle structures to the existing PDS3 data holdings, allowing for both standards to be readily available for users from the same directory. When this is not possible, ATM will clearly designate a stand-alone PDS4 archive. The versions of the PDS4 Information Model (IM) used for each completed migration are provided for your convenience.

Cassini & Huygens

https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/Cassini/Cassini.html

Composite Infrared Spectrometer (CIRS) – ATM is working on migration of the CIRS cubes (the CIRS data themselves will be migrated by the Ring-Moon Systems Node). Several other PDS nodes are also involved in the migration of data from the other Cassini instruments.

Radio Science Subsystem (RSS) – Radio Science data migration is under way in collaboration with other PDS personnel.

***Huygens* –** All instruments except for DISR are migrated to PDS4 but will be put online upon completion of the DISR migration, which is currently planned for Fall 2020.

Juno

https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/JUNO/juno.html

***Microwave Radiometer (MWR)* –** All data are migrated through perijove 24 (PDS4 IM V1.7.0.0), and are co-located with PDS3 data:
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/JUNO/microwave.html.

***Jovian InfraRed Auroral Mapper (JIRAM)* –** All data are migrated through perijove 22 (PDS4 IM V1.13.0.0), but PDS4 stand-alone bundle, not co-located with the PDS3 data.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/JUNO/jiram.html

Ultraviolet Imager Spectrograph (UVS) – All data through perijove 24 are migrated (PDS4 IM V1.7.0.0) and are co-located with the PDS3 data:
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/JUNO/uvs.html

Gravity Science Experiment (GRAV) – All migrated data (PDS4 IM V1.13.0.0) cruise through perijove 24 will be available with the July 22 release.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/JUNO/gravity.html

Mars Global Surveyor (MGS)

https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/mgs.html

***Accelerometer* –** Aerobraking data, profile and altitude data for each drag pass during orbit insertion. All data are migrated to PDS4 (PDS4 IM V1.3.0.1) and are separate from the PDS3 data.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/mgs_aerobraking.html

Mars Odyssey (ODY)

https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/mars_odyssey.html

***Accelerometer* –** Aerobraking data, profile and altitude data for each drag pass during orbit insertion. All data are migrated to PDS4 (PDS4 IM V1.3.0.1) and are separate from the PDS3 data.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/mars_odyssey_aerobraking.html

Mars Pathfinder (MPF)

https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/pathfinder/pathfinder.html

***Surface Meteorology Data (MET)* –** All raw and derived data are migrated (PDS4 IM V1.11.0.0) and are co-located with the PDS3 data:
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/pathfinder/pathfinder_metdata.html

***Entry, Descent, Landing Profiles (ASIMET)* –** All raw and derived data are migrated (PDS4 IM V1.11.0.0) and are co-located with the PDS3 data:
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/pathfinder/lander_atm_prof.html

Mars Phoenix Lander (PHX)

https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/phoenix/phoenix.html

Meteorological Station (MET) **–** All data are migrated (PDS4 IM V1.1.0.0) and are co-located with the PDS3 data: https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/phoenix/met.html

Light Detection and Ranging (LIDAR) – All data are migrated (PDS4 IM V1.1.0.0) and are co-located with the PDS3 data:
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/phoenix/lidar.html

Atmospheric Structure Experiment (ASE) **–** All data are migrated (PDS4 IM V1.1.0.0) and are co-located with the PDS3 data:
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/phoenix/ase.html

Atmospheric Opacity (AO) **–** All data are migrated (PDS4 IM V1.1.0.0) and are co-located with the PDS3 data: https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/phoenix/ao.html

Telltale Anemometer (TT) **–** All data are migrated (PDS4 IM V1.1.0.0) and are co-located with the PDS3 data: https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/phoenix/ao.html

Mars Reconnaissance Orbiter (MRO)

https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/mars_reconnaissance_orbiter.html

Accelerometer **–** Aerobraking data, profile and altitude data for each drag pass during orbit insertion. All data are migrated (PDS4 IM V1.3.0.1) and separate from the PDS3 data.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/mro_aerobraking.html

Mercury Surface, Space Environment, Geochemistry, and Ranging (MESSENGER)

https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MESSENGER_Venus/messenger_mission.html

Mercury Atmospheric and Surface Composition Spectrometer (MASCS) **–** All data are migrated (PDS4 IM V 1.11.0.0) and are co-located with the PDS3 data:
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MESSENGER/messenger.html

Viking 1 & 2 Landers

https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/viking/viking_lander.html

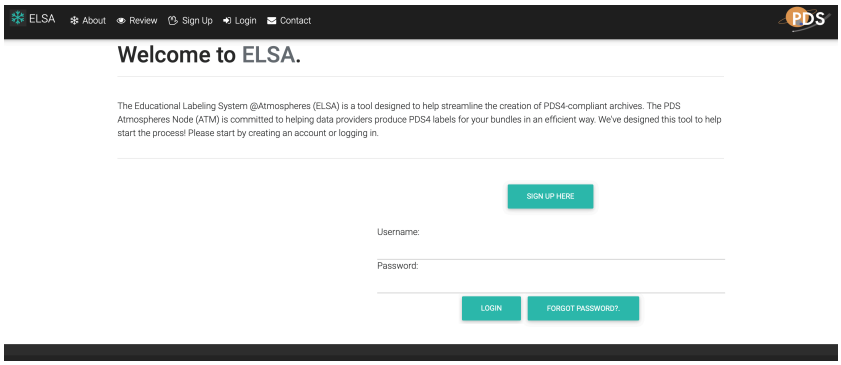
Viking Lander Meteorology Data (MET) **–** All data are migrated (PDS4 IM V1.11.0.0) and are co-located with the PDS3 data:
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/viking/surface_met.html

Viking Lander Footpad Temperature Data (FTPD) **–** All data are migrated (PDS4 IM V1.11.0.0) and are co-located with the PDS3 data:
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/viking/pt_by_pt_footpad_temp.html

PDS4 TOOL DEVELOPMENT NEWS

The Atmospheres Node is in the progress of developing a PDS4 tool for helping users plan and design labels for simple bundles of data that they wish to archive in the PDS. The Educational Labeling System at Atmospheres (ELSA) is well on its way to being a functional guide for putting archive bundles together. ELSA aims to allow easy access to tailoring PDS4-compliant label templates for your needs. ELSA will allow persistent editing through a free account and step-by-step tutoring for building your bundles. Stay tuned to this section for future updates.

For more information or to volunteer as a beta-tester for the online tool, contact: elsa@atmos.nmsu.edu.



ATM Advisory Group

The Atmospheres Node has reconstituted its Advisory Group, which is designed to provide input and feedback to us on issues of importance to our user base. We adjusted the AG membership to better reflect our current user community, and we anticipate that the members will serve as a sounding board for new ideas about ways we can better serve the planetary atmospheres community, as well as a conduit for ideas and feedback from our user community. Please join us in thanking the current AG members for their service:

Natasha Batalha (NASA/ARC)
Don Banfield (Cornell)
Ashley Davies (JPL)
Melinda Kahre (NASA/ARC)
Ralph Lorenz (JHU/APL)
Kevin McGouldrick (CU/LASP)
Conor Nixon (NASA/GSFC)
Paul Withers (Boston University)
Mike Wong (UC Berkeley)

Contact Us

We want to hear from you! We value your feedback and are committed to improving the archiving process as well as the usability and discoverability of data at ATM. If you have a derived data set that fits our archiving mission, please contact us to start a dialog. Also please contact us at: pds-atm@nmsu.edu if you have any questions or concerns. There is also a feedback widget on our web site that you can use if you are having trouble finding something on our web site.