PDS ATMOSPHERES NODE NEWSLETTER

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Welcome to the first issue of 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 relating 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/.

POLICY UPDATES

Note for new data providers/proposers: Requests for letters of support requests 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. Here we provide a status report of recent data releases from these missions:

MARS

InSight 1st through 4th data release is available and certified including atmospheric data from the Temperature and Wind Sensors (TWINS) and Pressure Sensors (PS).
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/INSIGHT/insight.html

Mars Atmospheres and Volatile Evolution (MAVEN) 1st through 21st data release is available for Accelerometer (ACC), Neutral Gas and Ion Mass Spectrometer (NGIMS), and Imaging Ultraviolet Spectrometer (IUVS).
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MAVEN/maven_main.html

Mars Reconnaissance Orbiter (MRO) 1st through 52nd data release is available including data from the Mars Climate Sounder (MCS).
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/mars_reconnaissance_orbiter.html

Mars Science Laboratory (MSL) Curiosity 1st through 23rd 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 PDS3 data are available for Gravity through perijove 22. PDS4 (and PDS3) data are available for Microwave Radiometer (MWR) and Ultraviolet Imager/Spectrometer (UVS) through perijove 22 and Jovian Infrared Auroral Mapper (JIRAM) through perijove 20.
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:

CASSINI DATA ANALYSIS PROGRAM (CDAP)

C_2H_4 Mole Fraction and Temperature Profiles after the 2010 Saturn Storm (Hesman) – Completed Online – Cassini Composite Infrared Spectrometer (CIRS) C_2H_4 and H_2 temperature profiles within the storm region.
https://pds-atmospheres.nmsu.edu/PDS/data/PDS4/cocirs_c2h4abund/

Cassini Radio Occultations of Titan's Ionosphere (Kliore) – Completed Online – Cassini Radio Science Subsystem (RSS) data for occultations of Titan's ionosphere.
https://pds-atmospheres.nmsu.edu/PDS/data/PDS4/titan_iono/

Cassini Radio Occultations of Saturn's Ionosphere (Kliore) – Completed Online – Cassini Radio Science Subsystem (RSS) data for occultations of Saturn's ionosphere.
https://pds-atmospheres.nmsu.edu/PDS/data/PDS4/saturn_iono/

Saturn's Zonal Wind Profile in 2004-2009 from Cassini ISS Images (García-Melendo) – Completed Online – Cassini Imaging Science Subsystem (ISS) retrieved zonal wind profile for Saturn.
https://pds-atmospheres.nmsu.edu/PDS/data/PDS4/coiss_zonal_winds/

PLANETARY DATA ARCHIVING AND TOOLS (PDART)

IRTF Observations of Io Photometry from 1983-1993 (Davies) – Completed Online – derived from Veeder, G.J. et al. (1994) Io's heat flow from infrared radiometry: 1983-1993, J. Geophys. Res., 99, 17095-17162. Data consist of NASA's Infrared Telescope Facility (IRTF) data collected at 4.8 μ (M band), 8.7 μ, 10 μ (N band), and 20 μ (Q band). https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/JUPITER/io_irtf.html

Digitizing, Generation, and Archiving of Planetary Aeolian Threshold Data from Wind Tunnel Experiments (Burr) – Completed Online – derived from multiple wind tunnel publication sources detailing wind tunnel particle threshold speed data for multiple analog bodies (Venus, Earth, Mars, Titan).
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/wt_threshold/wt_threshold.html

CONTRIBUTED DATA

Venus Atmospheric Profiles from Soviet Venus-Halley (VeGa) Mission (Lorenz) – Completed Online – PDS3 data recovered/restored from the VeGa Balloon and Lander experiments. Balloon data consist of VLBI positional measurements. Lander data consist of pressure and temperature measurements, through EDL.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/VENUS/vega.html

Photometry of Uranus and Neptune from Lowell Observatory (1972-2016) (Lockwood) – Completed Online – Photometric data collected from Lowell Observatory between 1972-2016 in the *b* (472 nm) and *y* (551 nm) filters of the Strömgren photometric system. Data record mainly seasonal variations of disk-integrated albedos of these objects.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/lowell/lowell.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 migrations 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 22 (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 20 (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 Spectrometer (UVS) – All data through perijove 22 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

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

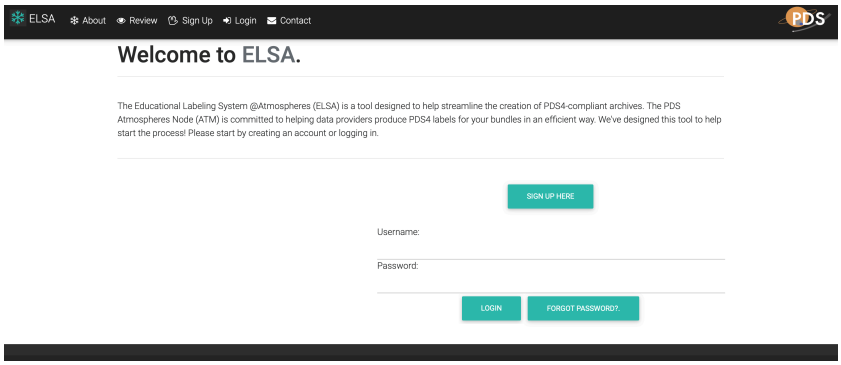
Viking Lander Meteorology Data (MET) **–** All data are migrated (PDS4 IM V1.11.0.0) and are co-located with the PDS3 data:
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/viking/surface_met.html

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:

Don Bandfield (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 any questions or concerns, please contact Dr. Nancy Chanover (ATM PI): nchanove at nmsu.edu. 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.