PDS ATMOSPHERES NODE NEWSLETTER

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Welcome to the Autumn 2023 issue of the NASA Planetary Data System (PDS) Planetary Atmospheres Node (ATM) Archiving Newsletter. These newsletters are intended to serve as your definitive source for all archiving news related to planetary atmospheres, and to keep you informed of PDS ATM activities. We want to strike the right balance between providing open and transparent communications to our user community without overdoing it. *If there are topics that you would like to see addressed in future newsletters, please let us know!* As always, for data access, usability, and proposal assistance, please visit our website: https://pds-atmospheres.nmsu.edu/.

ATMOSPHERIC MODELING ANNEX

ATM is developing a PDS-equivalent archive/repository for atmospheric modeling output, the Atmospheric Modeling Annex (AMA), which will be a cloud-based repository for planetary atmospheric modeling outputs and simulation results. Because of the short lifespan of many models and non-supported file formats typically used in modeling, many model output files are not appropriate for full PDS archiving. However, we recognize that atmospheric modeling is a vital tool for analysis and processing of mission observational data, and our goal is to serve our user community by providing a repository for atmospheric modeling outputs, to which Digital Object Identifiers can be assigned. Dr. Victoria Hartwick (Bay Area Environmental Research Institute/NASA Ames Research Center) is working with ATM on this effort, and we will continue to provide regular updates to our user community through this newsletter and conference presentations.

To this end, we are surveying our user community to assess the data archiving needs for atmospheric modelers. If this is relevant to you, **please complete this short survey no later than December 21, 2023:** https://forms.gle/GKyRvK5zT5fu65cA9

POLICY UPDATES/REMINDERS

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
We recognize that many of the ROSES programs have moved to a No Due Date format; for those programs, please submit requests for letters no later than one week before they are needed for internal deadlines.

RESOURCES FOR DATA PROVIDERS

The PDS web pages were designed to provide a comprehensive set of resources for R & A proposers who are considering archiving their data in the PDS: https://pds.nasa.gov/home/proposers/. These pages cover the how and why of archiving in the PDS, from requesting letters of support for proposals to the entire archiving process. Proposers are encouraged to consult these pages as a first stop for seeking information about data archiving; ATM personnel are also available and eager to answer your archiving questions!
Contact us at pds-atm@nmsu.edu.

NASA TRANSFORM TO OPEN SCIENCE (TOPS)

NASA released its free Open Science 101 curriculum to empower researchers, early career scientists, and underrepresented communities with the knowledge and tools necessary to embrace open science practices. The curriculum's initial goal is to train 20,000 scientists and researchers over the next five years, enabling them to embrace open science practices and maximize the impact of their work. We encourage the PDS ATM user community to explore this curriculum as a means of becoming more proficient in the best practices of open science!

"NASA is committed to ensuring people around the world have equal and open access to science data whenever they need it," said NASA Administrator Bill Nelson. "This innovative curriculum will support the White House's Year of Open Science to help people make informed, research-based decisions that will benefit humanity and improve life here on Earth."

Press Release:
https://www.nasa.gov/news-release/new-course-from-nasa-helps-build-open-inclusive-science-community/

CONFERENCES & OUTREACH

Planetary Data Workshop, June 28-30, Flagstaff, Arizona. Atmospheres attended with students and presented two posters detailing current efforts to improve PDS4.
Huber, L., L.D.V. Neakrase, N.J. Chanover, T.M. Hare, J.H. Padams, and J. Mafi (2023). Extending the PDS4 Information Model: Product_External – Usage and Examples, 6th Planetary Data Workshop June 28-30, Flagstaff, AZ, Abstract #7030.

Neakrase, L.D.V., C. Perez, S. Ajo-Montaño, D. Shaffer, N.J. Chanover, L.F. Huber (2023). ELSA: Development of a PDS4 Educational Labeling System at the PDS Atmospheres Node, 6th Planetary Data Workshop June 28-30, Flagstaff, AZ, Abstract #7043.

Juno Science Team Training, July 17-20, Rome (remote) – Atmospheres gave a presentation about PDS to the Juno Data Analysis Workshop for Science Capacity Building. The workshop is intended to be an early career workshop to familiarize younger scientists with the mission and its instruments. The workshop and the PDS presentation were considered extremely successful and the Juno team is considering another such workshop in the US in the near future.

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 15th data release (final) is available and certified including atmospheric data from the Temperature and Wind Sensors (TWINS) and Pressure Sensors (PS). Includes Sols 1-1188 (2018/11/30 – 2022/03/29)
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/INSIGHT/insight.html

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

Mars Atmospheres and Volatile Evolution (MAVEN) 1st through 35th data release is available for Accelerometer (ACC), Neutral Gas and Ion Mass Spectrometer (NGIMS), and Imaging Ultraviolet Spectrograph (IUVS).
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MAVEN/maven_main.html

Mars Reconnaissance Orbiter (MRO) 1st through 67th 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 34th 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

Mars 2020 Rover (M2020) Perseverance 1st through 8th data release is available for Mars OXygen In-situ resource utilization Experiment (MOXIE) (final) & Mars Environmental Dynamics Analyzer (MEDA).
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/PERSEVERANCE/perseverance_rover.html

JUPITER

Juno PDS3/PDS4 data are available for
Microwave Radiometer (MWR) including the recalibrated 2.0 cruise data, through perijove 50
Ultraviolet Imager/Spectrograph (UVS), through perijove 50
Jovian Infrared Auroral Mapper (JIRAM), through perijove 50
Gravity Science Experiment (GRAV), through perijove 50 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, RESTORATION & TOOLS (PDART)
PLANETARY DATA ARCHIVING & RESTORATION (PDAR)

Mars Global Surveyor (MGS) Thermal Emission Spectrometer (TES) Atmospheric Column Optical Depths for Dust and Water Ice Bundle. Extracted TES spectra utilize an improved retrieval for column aerosol (dust and water ice) optical depth using TES thermal IR spectra obtained in nadir viewing geometry.

Citation:
Montabone, L., M. Smith, M. Wolff, and B. Cantor (2023), Mars Global Surveyor (MGS) Thermal Emission Spectrometer (TES) Atmospheric Column Optical Depths for Dust and Water Ice Bundle, NASA Planetary Data System, http://doi.org/10.17189/kwez-jq47.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/montabone.html

Cassini ISS Global Maps of Jupiter and Saturn. Cassini ISS data were searched to find images suitable for global maps of Jupiter and Saturn in multiple filters.

Citation:
Li, Liming, Robert West, Xun Jiang, and Benjamin Knowles (2023), Cassini ISS Global Maps of Jupiter and Saturn Bundle, NASA Planetary Data System, https://doi.org/10.17189/rkkb-6y30.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/Cassini/sat_global_map.html

Mars Global Surveyor Thermal Emission Spectrometer Atmospheric Recalibration Bundle. Updated - corrections to the original submission of recalibrated TES data. Includes collections of derived data for nadir atmospheric opacities and temperatures, and surface emissivity and surface products.

Citation:
Pankine, A., (2022), Mars Global Surveyor Thermal Emission Spectrometer Atmospheric Recalibration Bundle, NASA Planetary Data System, https://doi.org/10.17189/xhqz-zw13.
https://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/MARS/pankine_data.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.

We are constantly adding updates and improving the user experience through new features. We presented a poster on ELSA with some live demos at the Planetary Data Workshop in Flagstaff, AZ in July 2023. Feedback from that conference has led to improvements that are continuing to take shape currently.

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

If you're curious:
https://atmos.nmsu.edu/elsa/ -- requires a free account to access. Our tool is not fully operational but is available for some basic testing. We will be opening this up with a new user interface sometime Spring 2024.

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.