

April 2024 Newsletter

It's That Time of Year Again...

Happy (Northern Hemisphere) spring, everyone!

As the flower bloom in the soil, so too do session ideas for this year's AGU Annual Meeting bloom in our heads. And this year, we of the Planetary Sciences Section Executive Committee are trying something new.

Usually, members of the community come up with session ideas and submit them individually or with a small group of co-conveners, but there's (usually) very little or no coordination between people or teams regarding what session themes are proposed—or what aren't proposed.

So this year, we're inviting you to tell us what session(s) you're proposing.

We'll collate that information, keeping it in confidence, but this way we'll be able to see if there are session topics that haven't yet been proposed so we can work to fill that gap. And, if there are multiple session proposals on the same topic, we can help the proposing conveners to coordinate or combine their efforts.

You are not obligated to share your session proposal plans with us! But if you choose to do so, you'll be helping us determine whether this kind of coordination is a good idea for our Section going forward.

AGU Annual Meeting session proposals are due Wednesday, 24 April 2024 (23:59 EDT/03:59 +1 GMT). You can find all the info you need here:

<https://agu.confex.com/agu/agu24/prelim.cgi/ModuleMeetingInfo/sessionproposal>

As always, if you have questions, concerns, or comments, don't hesitate to reach out at paul.byrne@wustl.edu. And if you have any deadlines, events, or announcements you would like to share, please email Sarah Hörst at sarah.horst@jhu.edu.

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(1) AGU Planetary Data Training Workshop, 21-24 May 2024, Arizona State University

This **in-person only workshop** is designed to provide an introduction into using planetary spatial data in Geographic Information Systems (GIS) software, with a focus on studies of terrestrial planet and icy satellite surface research. The workshop will include a combination of lectures, demonstrations, and hands-on exercises with the software. Computer work stations will be provided by ASU, or you may bring your own laptop.

Topics will include: JMARS (**Day 1**), ArcGIS Pro (**Day 2**), ISIS3 for image processing (**Day 3 morning**), Planetary Data Management and an introduction to NASA's Planetary Data System (**Day 3 afternoon**), and Structure-from-Motion as an introduction to stereo photogrammetry and digital elevation model production (**Day 4, demos only**). The instructors of each of these activities are experts in their respective fields, some of which were staff of the former NASA Regional Planetary Information Facilities (RPIFs), and have years of experience in the use of digital planetary data for research.

This workshop is offered by the Planetary Data Training program, funded through NASA's Topical Workshops, Symposia, and Conferences (TWSC), and is facilitated by the Ronald Greeley Center for Planetary Studies, School of Earth and Space Exploration, Arizona State University, Tempe, Arizona.

Two \$2000 travel grants are offered to promote attendance from groups that are underrepresented in planetary science and STEM.

Travel Grant applications due 17 April 2024.

[Registration](#)

[PDTW Travel Grant Application](#)

(2) Comment on AGU position statements on climate change, science communication and data

AGU members have until 30 April to comment on revisions to three AGU position statements addressing climate change, science communication and data, respectively. Position statements are what enable AGU to provide scientific expertise on significant policy issues.

[Submit your comments to help shape the future of the Earth and space sciences.](#)

(3) Journal of Geophysical Research: Planets, Volume 129, Issue 2

<https://agupubs.onlinelibrary.wiley.com/toc/21699100/2024/129/2>

Articles preceded by (OA) are published with open access.

1. (OA) Geologic History of Deuteronilus Cavus in the Ismenius Lacus Region, Mars, by Lukas Wueller, Wajiha Iqbal, Harald Hiesinger, James W. Head III, <https://doi.org/10.1029/2023JE008039>
2. Detection of Subsurface Density Structures of the Aristarchus Plateau by Gravity Inversion, by Feng Liang, Mohamed Amrouche, Jianguo Yan, Hakim Saib, <https://doi.org/10.1029/2023JE007856>
3. (OA) Water Vapor Variability in the Thermosphere of Mars During Mars Years 32–36, by Z. Girazian, <https://doi.org/10.1029/2023JE008117>
4. (OA) Investigating Thermal Contrasts Between Jupiter's Belts, Zones, and Polar Vortices With VLT/VISIR, by Deborah Bardet, Padraig T. Donnelly, Leigh N. Fletcher, Arrate Antuñano, Michael T. Roman, James A. Sinclair, Glenn S. Orton, Chihiro Tao, John H. Rogers, Henrik Melin, Jake Harkett, <https://doi.org/10.1029/2023JE007902>
5. (OA) Cutoff Rigidities, Galactic Cosmic Ray Flux, and Heavy Ion Detections at Jupiter, by Martin B. Enghoff, Jacob Svensmark, Heidi N. Becker, John L. Jørgensen, Stavros Kotsiaros, Matija Herceg, James W. Alexander, Meghan M. Florence, John E. P. Connerney, <https://doi.org/10.1029/2023JE008085>
6. (OA) Constraining Formation Hypotheses for Irregular Mare Patches on the Moon With Orbital Reflectance Spectra, by Hunter Vannier, Briony Horgan, Julie D. Stopar, Marie Henderson, <https://doi.org/10.1029/2023JE008108>
7. (OA) Gravity-Driven Differences in Fluvial Sediment Transport on Mars and Earth, by Lisanne Braat, Muriel Z. M. Brückner, Elliot Sefton-Nash, Michael P. Lamb, <https://doi.org/10.1029/2023JE007788>

8. (OA) Depositional and Diagenetic Sulfates of Hogwallow Flats and Yori Pass, Jezero Crater: Evaluating Preservation Potential of Environmental Indicators and Possible Biosignatures From Past Martian Surface Waters and Groundwaters, by Kathleen C. Benison, Karena K. Gill, Sunanda Sharma, Sandra Siljeström, Mike Zawaski, Tanja Bosak, Adrian Broz, Benton C. Clark, Edward Cloutis, Andrew D. Czaja, David Flannery, Teresa Fornaro, Felipe Gómez, Kevin Hand, Chris D. K. Herd, Jeffrey R. Johnson, Juan Manuel Madariaga, Morten B. Madsen, Jesús Martínez-Frías, Marion Nachon, Jorge I. Núñez, David A. K. Pedersen, Nicholas Randazzo, David L. Shuster, Justin Simon, Andrew Steele, Christian Tate, Allan Treiman, Kyle Uckert, Amy J. Williams, Anastasia Yanchilina, <https://doi.org/10.1029/2023JE008155>
9. (OA) The Effects of a Stably Stratified Region With Radially Varying Electrical Conductivity on the Formation of Zonal Winds on Gas Planets, by P. Wulff, U. R. Christensen, W. Dietrich, J. Wicht, <https://doi.org/10.1029/2023JE008042>
10. (OA) Global Distribution and Volume of Cryptomare and Visible Mare on the Moon From Gravity and Dark Halo Craters, by Kristel Izquierdo, Michael M. Sori, Brianne Checketts, Isabella Hampton, Brandon C. Johnson, Jason M. Soderblom, <https://doi.org/10.1029/2023JE007867>
11. (OA) Fate of an Earth-Like Water Inventory on Mars, by Bruce M. Jakosky, Lydia J. Hallis, <https://doi.org/10.1029/2023JE008159>
12. (OA) Europa's Double Ridges Produced by Ice Wedging, by M. D. Cashion, B. C. Johnson, H. Gibson, E. P. Turtle, M. M. Sori, H. J. Melosh, <https://doi.org/10.1029/2023JE008007>
13. (OA) Combined Neutron and X-Ray Tomography—A Versatile and Non-Destructive Tool in Planetary Geosciences, by J. Martell, C. Alwmark, R. Woracek, S. Alwmark, S. Hall, L. Ferrière, L. Daly, C. Bender Koch, J. Hektor, S. Johansson, L. Helfen, A. Tengattini, D. Mannes, <https://doi.org/10.1029/2023JE008222>
14. (OA) Ice-Ocean Interactions on Ocean Worlds Influence Ice Shell Topography, by J. D. Lawrence, B. E. Schmidt, J. J. Buffo, P. M. Washam, C. Chivers, S. Miller, <https://doi.org/10.1029/2023JE008036>
15. (OA) A Novel Approach to Impact Crater Mapping and Analysis on Enceladus, Using Machine Learning, by M. Blanco-Rojas, M. L. Carroll, C. S. Spradlin, J. A. Caraballo-Vega, Z. W. Williams, <https://doi.org/10.1029/2023JE008010>
16. A Global Survey of Gravitationally Deformed Volcanoes on Venus, by Rebecca M. Hahn, Paul K. Byrne, <https://doi.org/10.1029/2023JE008241>
17. (OA) Small-Scale Overturn of High-Ti Cumulates Promoted by the Long Lifetime of the Lunar Magma Ocean, by M. Maurice, N. Tosi, C. Hüttig, <https://doi.org/10.1029/2023JE008060>

18. (OA) Sedimentology and Stratigraphy of the Shenandoah Formation, Western Fan, Jezero Crater, Mars, by K. M. Stack, L. R. W. Ives, S. Gupta, M. P. Lamb, M. Tebolt, G. Caravaca, J. P. Grotzinger, P. Russell, D. L. Shuster, A. J. Williams, H. Amundsen, S. Alwmark, A. M. Annex, R. Barnes, J. Bell III, O. Beyssac, T. Bosak, L. S. Crumpler, E. Dehouck, S. J. Gwizd, K. Hickman-Lewis, B. H. N. Horgan, J. Hurowitz, H. Kalucha, O. Kanine, C. Lesh, J. Maki, N. Mangold, N. Randazzo, C. Seeger, R. M. E. Williams, A. Brown, E. Cardarelli, H. Dypvik, D. Flannery, J. Frydenvang, S.-E. Hamran, J. I. Núñez, D. Paige, J. I. Simon, M. Tice, C. Tate, R. C. Wiens, <https://doi.org/10.1029/2023JE008187>
19. (OA) Constraints on the Spatial Distribution of Lunar Crustal Magnetic Sources From Orbital Magnetic Field Data, by Joana S. Oliveira, Foteini Vervelidou, Mark A. Wieczorek, Marina Díaz Michelena, <https://doi.org/10.1029/2023JE008125>
20. Investigating the Linkage Between Spiral Trough Morphology and Cloud Coverage on the Martian North Polar Layered Deposits, by K. A. Lutz, R. L. Hawley, M. C. Palucis, <https://doi.org/10.1029/2023JE008015>
21. A Preliminary Study on the Identification and Spatio-Temporal Characteristics of Martian Atmospheric Eddies, by Bo Li, Shaojie Qu, Zongcheng Ling, Shengbo Chen, <https://doi.org/10.1029/2023JE007937>
22. Megaflood Erosion on Mars—How Lava-Filled Craters Became Mesas (With Insights From Lava Physics, Stream Power, and Rock Mechanics), by Neil M. Coleman, <https://doi.org/10.1029/2023JE007997>
23. Chang'E-5 In Situ Spectra Reveal Photometric Properties of the Lunar Surface, by Lin Guo, Xin Ren, Dawei Liu, Bin Liu, Wangli Chen, Xiaoxia Zhang, Wei Yan, Jianjun Liu, <https://doi.org/10.1029/2023JE007847>
24. (OA) Radar Attenuation Characteristics of Low Reflectivity Zones in the Martian South Polar Layered Deposits, by Abu Hashmeh, <https://doi.org/10.1029/2023JE008154>
25. (OA) A Mastcam Multispectral Investigation of Rock Variability in Gale Crater, Mars: Implications for Alteration in the Clay-Sulfate Transition of Mount Sharp, by A. M. Eng, M. S. Rice, W. H. Farrand, J. R. Johnson, S. Jacob, E. B. Rampe, L. Thompson, M. St. Clair, D. Applin, J. Bishop, E. Cloutis, M. Gabbert, J. Haber, K. Lapo, A. Rudolph, C. Seeger, R. Sheppard, <https://doi.org/10.1029/2023JE008033>
26. (OA) The Spectral Characteristics of Lunar Agglutinates: Visible–Near-Infrared Spectroscopy of Apollo Soil Separates, by Chanud N. Yasanayake, Brett W. Denevi, Takahiro Hiroi, Brad. L. Jolliff, Anna C. Martin, Annabelle L. Gao, Margaret L. Zhang, Lucas M. Bloom, Samuel J. Lawrence, <https://doi.org/10.1029/2023JE008115>

27. (OA) Modeling of Cosmogenic Cr Isotopes Produced in Lunar Rocks Compared With Existing Calculations and Measurements, by Bailiang Liu, Jingnan Guo, Mikhail I. Dobynde, Jia Liu, Yingnan Zhang, Liping Qin, <https://doi.org/10.1029/2023JE008069>
28. Energetic Plasma Injections in Jovian Inner Magnetosphere: A Simulation Study, by Yuxian Wang, Jian Yang, Xiaocheng Guo, Michel Blanc, Chi Wang, <https://doi.org/10.1029/2023JE008178>
29. Measuring Erosional and Depositional Patterns Across Comet 67P's Imhotep Region, by A. S. Jindal, S. P. D. Birch, A. G. Hayes, F. P. Özyurt, A. B. Issah, S. A. Moruzzi, M. N. Barrington, J. M. Soderblom, R. L. Kirk, R. Marschall, J. B. Vincent, <https://doi.org/10.1029/2023JE008089>
30. Ultra-Fast Kelvin Wave Packets in Mars' Atmosphere and Their Interactions With Tides as Viewed by MAVEN/NGIMS and MRO/MCS, by Federico Gasperini, J. Hughes, J. M. Forbes, E. M. B. Thiemann, <https://doi.org/10.1029/2023JE008174>

(4) Journal of Geophysical Research: Planets, Volume 129, Issue 3

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1. (OA) Frictional Strength, Stability, and Potential Shear Heating on Icy Satellite Faults, by Maheenuz Zaman, Christine McCarthy, Rob M. Skarbek, Heather M. Savage, <https://doi.org/10.1029/2023JE008215>
2. (OA) Formation and Stability of Salty Soil Seals in Mars-Like Conditions. Implications for Methane Variability on Mars, by Alexander A. Pavlov, James Johnson, Raul Garcia-Sanchez, Ariel Siguelnitzky, Chris Johnson, Jeffrey Davis, Scott Guzewich, Prabhakar Misra, <https://doi.org/10.1029/2023JE007841>
3. (OA) Recent Widespread Deposition in the Martian North and South Polar Layered Deposits as Revealed by Multiband SHARAD Surface Reflectivity, by Erica R. Jawin, Bruce A. Campbell <https://doi.org/10.1029/2023JE008082>
4. (OA) Exomoon Phase Curves: Toroidal Exosphere Simulations of Exo-Ios Orbiting 8 Exoplanets in Alkali Spectroscopy, by M. Meyer zu Westram, A. V. Oza, A. Galli, <https://doi.org/10.1029/2023JE007935>
5. (OA) Perseverance MEDA Atmospheric Pressure Observations—Initial Results, by Ari-Matti Harri, Mark Paton, Maria Hieta, Jouni Polkko, Claire Newman, Jorge Pla-Garcia, Joonas Leino, Terhi Mäkinen, Janne Kauhanen, Iina Jaakonaho, Agustín Sánchez-Lavega, Ricardo Hueso, Maria Genzer, Ralph Lorenz, Mark Lemmon, Alvaro Vicente-Retortillo, Leslie K. Tamppari, Daniel Viudez-Moreiras,

Manuel de la Torre-Juarez, Hannu Savijärvi, Javier A. Rodríguez-Manfredi, German Martinez, <https://doi.org/10.1029/2023JE007880>

6. (OA) Evolution of Impact Melt Pools on Titan, by Klára Kalousová, Shigeru Wakita, Christophe Sotin, Catherine D. Neish, Jason M. Soderblom, Ondřej Souček, Brandon C. Johnson, <https://doi.org/10.1029/2023JE008107>

7. The Infrared Auroral Footprint Tracks of Io, Europa and Ganymede at Jupiter Observed by Juno-JIRAM, by A. Moirano, A. Mura, V. Hue, B. Bonfond, L. A. Head, J. E. P. Connerney, A. Adriani, F. Altieri, C. Castagnoli, A. Cicchetti, B. M. Dinelli, D. Grassi, A. Migliorini, M. L. Moriconi, R. Noschese, G. Piccioni, C. Plainaki, P. Scarica, G. Sindoni, R. Sordini, F. Tosi, D. Turrini, F. Zambon, <https://doi.org/10.1029/2023JE008130>

8. (OA) Estimating pie using the topography of the terrestrial planets, by Jérémie Vasseur, Fabian B. Wadsworth, <https://doi.org/10.1029/2024JE008378>

9. (OA) Water-Ice Dominated Spectra of Saturn's Rings and Small Moons From JWST, by M. M. Hedman, M. S. Tiscareno, M. R. Showalter, L. N. Fletcher, O. R. T. King, J. Harkett, M. T. Roman, N. Rowe-Gurney, H. B. Hammel, S. N. Milam, M. El Moutamid, R. J. Cartwright, I. de Pater, E. M. Molter, <https://doi.org/10.1029/2023JE008236>

10. (OA) Architecture of Fluvial and Deltaic Deposits Exposed Along the Eastern Edge of the Western Fan of Jezero Crater, Mars, by N. Mangold, G. Caravaca, S. Gupta, R. M. E. Williams, G. Dromart, O. Gasnault, S. Le Mouélic, G. Paar, J. Bell, O. Beyssac, N. Carlot, A. Cousin, E. Dehouck, B. Horgan, L. C. Kah, J. Lasue, S. Maurice, J. I. Núñez, D. Shuster, K. M. Stack, B. P. Weiss, R. C. Wiens, <https://doi.org/10.1029/2023JE008204>

11. The Ancient Lithospheric Parameters of Impact Basins on the Far Side of the Moon Based on the Mantle and Mare Basalt Load Model, by Wensong Zhang, Qingyun Deng, Mao Ye, Weifeng Hao, Yihao Chen, Yingjun Zheng, Zhen Zhong, Jianguo Yan, Xuemei Sun, Fei Li, <https://doi.org/10.1029/2023JE008006>

12. A Comparative Analysis of Gravity Waves in He and Ar Densities in the Martian Thermosphere, by V. Leelavathi, N. V. Rao, <https://doi.org/10.1029/2023JE008209>

13. Early Thermal Histories of IAB Main Group Irons: Insights From Ca-Phosphates in Campo del Cielo and Nantan, by Y. Li, A. Mei, W. Hsu, S. Li, <https://doi.org/10.1029/2023JE008124>

14. (OA) A Microphysical Thermal Model for the Lunar Regolith: Investigating the Latitudinal Dependence of Regolith Properties, by Johanna Bürger, Paul O. Hayne, Bastian Gundlach, Matthias Läufer, Tobias Kramer, Jürgen Blum, <https://doi.org/10.1029/2023JE008152>

15. Quantifying the Electron Energy of Mars Aurorae Through the Oxygen Emission Brightness Ratio at 130.4 and 135.6 nm, by Lauriane Soret, Benoît Hubert, Jean-Claude Gérard, Sonal Jain, K. Chirakkil, R. Lillis, J. Deighan, <https://doi.org/10.1029/2023JE008214>
16. (OA) Coarse-Grained Ripples Investigated by the Opportunity Rover on Meridiani Planum, Mars, by J. Kozakiewicz, M. Dłuzewski, J. Rotnicka, M. Sobucki, T. Michaels, M. Pilarska-Mazurek, K. Krzemien, L. Nowak, R. Olszewski, N. Frodyma, A. Podbielska, K. Choromanski, <https://doi.org/10.1029/2023JE008225>
17. (OA) Long-Term Variability of Mean Winds and Planetary-Scale Waves Around Venusian Cloud Top Observed With Akatsuki/UVI, by Takeshi Horinouchi, Toru Kouyama, Masataka Imai, Shin-ya Murakami, Yeon Joo Lee, Atsushi Yamazaki, Manabu Yamada, Shigeto Watanabe, Takeshi Imamura, Javier Peralta, Takehiko Satoh, <https://doi.org/10.1029/2023JE008221>
18. (OA) Quantifying Uncertainty in Sustainable Biomass and Production of Biotic Carbon in Enceladus' Notional Methanogenic Biosphere, by Peter M. Higgins, Weibin Chen, Christopher R. Glein, Charles S. Cockell, Barbara Sherwood Lollar, <https://doi.org/10.1029/2023JE008166>
19. (OA) Effects of Pressure and Temperature Changes on Shock Remanence Acquisition for Single-Domain Titanomagnetite-Bearing Basalt, by Masahiko Sato, Kosuke Kurosawa, Sunao Hasegawa, Futoshi Takahashi, <https://doi.org/10.1029/2023JE007864>
20. Synthesis of Benzene and Phenol From the Irradiation of Benzonitrile: Water Ices by (<10 eV) Electrons: Application to the Planets and Meteorites Surface Chemistry, by H. Abdoul-Carime, B. Lathuilière, P. Nedelec, J. Kopyra, <https://doi.org/10.1029/2023JE008151>