

July 2023 Newsletter

Fall is coming...

And not just because the summer solstice has passed—it's time to start thinking about submitting an abstract to the AGU Fall Meeting!

This year's meeting will be back in San Francisco and online everywhere on 11-15 December, 2023. This year there are 40 planetary science sessions (and four more cross-listed with other Sections), covering topics as diverse as planetary atmospheres, minor bodies, future mission concepts, and Archean Earth, as well as current and upcoming flight investigations and, of course, a big focus on lunar exploration science. As usual, the Planetary Sciences Section will host the Sagan, Shoemaker, and Whipple Lectures, too; we'll announce who'll be giving those lectures later in the summer.

You can find the full list of sessions here: <https://agu.confex.com/agu/fm23/prelim.cgi/Program/3790>

And abstracts are due on Wednesday, 2 August 2023 at 11:59 pm EDT (03:59 +1 GMT).

Unfortunately, registration rates for this year's AGU23 have increased considerably; the early-bird fee for an AGU member for the full week is \$725, a 17% increase over 2022 rates. We're disappointed that the Fall Meeting has become so expensive, but these rates reflect increased costs associated with food and beverages, staffing, and running a large, hybrid meeting.

Decisions regarding registration fees are not made at the Section level, but if you have concerns, comments, or questions we want to hear them. So please get in touch at paul.byrne@wustl.edu, and we'll work with AGU Council leadership to find out more. We'll also be offering our student travel and caregiver grants again this year to help defray some of these expenses for folks who need it most. Details on how to apply for those grants will follow in a later newsletter.

As always, don't hesitate to reach out to any of your Section leadership. And if you have any deadlines, events or announcements you would like to share, please email Sarah Hörst at sarah.horst@jhu.edu.

Paul

Paul Byrne, President

Wendy Calvin, President-Elect

Sarah Hörst, Secretary

Emma Dahl, Early Career representative

An Li, Student representative

Michael Mischna, Past President

Upcoming Events

- **2-7 July, 2023:** International Conference on Fluvial Sedimentology (ICSF) 2023
- **3-7 July, 2023:** Complex Planetary Systems II (CPS II): Latest Methods for an Interdisciplinary Approach
- **3-7 July, 2023:** Towards Other Earths III: The Planet-Star Connection
- **7-14 July, 2023:** Space Weather, Debris, and Near Earth Objects
- **8-28 July, 2023:** Exoplanet Summer Program (ESP)
- **9-14 July, 2023:** Goldschmidt 2023
- **9-14 July, 2023:** International Conference on Aeolian Research
- **10-14 July, 2023:** Astrochemistry VIII; From the First Galaxies to the Formation of Habitable Worlds
- **10-14 July, 2023:** European Astronomical Society Annual Meeting
- **10-14 July, 2023:** Josep Comas I Solà International Summer School in Astrobiology: Searching for Life on Ocean Worlds
- **11-13 July, 2023:** 29th Meeting of the NASA Small Bodies Assessment Group (SBAG)
- **12-13 July, 2023:** Lunar Surface Innovation Consortium (LSIC) Lunar Proving Grounds Definition Workshop

Planetary Sciences Announcements/Updates

#1) AGU Journal of Geophysical Research: Planets Publications, March Issue

Journal of Geophysical Research: Planets, Volume 128, Issue 3

<https://agupubs.onlinelibrary.wiley.com/toc/21699100/2023/128/3>

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

1. (OA) Regolith of the Crater Floor Units, Jezero Crater, Mars: Textures, Composition, and Implications for Provenance, by Alicia Vaughan, Michelle E. Minitti, Emily L. Cardarelli, Jeffrey R. Johnson, Linda C. Kah, Paolo Pilleri, Melissa S. Rice, Mark Sephton, Briony H. N. Horgan, Roger C. Wiens, R. Aileen Yingst, Maria-Paz Zorzano Mier, Ryan Anderson, James F. Bell III, Adrian J. Brown, Edward A. Cloutis, Agnes Cousin, Kenneth E. Herkenhoff, Elisabeth M. Hausrath, Alexander G. Hayes, Kjartan Kinch, Marco Merusi, Chase C. Million, Robert Sullivan, Sandra M. Siljeström, Michael St. Clairi, <https://doi.org/10.1029/2022JE007437>
2. (OA) Compositional Variations in Sedimentary Deposits in Gale Crater as Observed by ChemCam Passive and Active Spectra, by H. T. Manelski, R. Y. Sheppard, A. A. Fraeman, R. C. Wiens, J. R. Johnson, E. B. Rampe, J. Frydenvang, N. L. Lanza, O. Gasnaulti, <https://doi.org/10.1029/2022JE007706>
3. (OA) The EUV Reflectance of Mercury's Surface Measured by BepiColombo/PHEBUS, by J.-Y. Chaufray, E. Quémerais, D. Koutroumpa, R. Robidel, F. Leblanc, A. Réberac, I. Yoshikawa, K. Yoshioka, G. Murakami, O. Korablev, D. Belyaev, M. G. Pelizzo, A. J. Corsoi, <https://doi.org/10.1029/2022JE007669>
4. Spectroscopic Characterization of Impactites and a Machine Learning Approach to Determine the Oxidation State of Iron in Glass-Bearing Materials, by E. Bruschini, C. Carli, H. Skogby, G. B. Andreozzi, A. Stojic, A. Morloki, <https://doi.org/10.1029/2023JE007736>
5. (OA) Experimental Weathering of Rocks and Minerals at Venus Conditions in the Glenn Extreme Environments Rig (GEER), by Alison R. Santos, Martha S. Gilmore, James P. Greenwood, Leah M. Nakley, Kyle Phillips, Tibor Kremic, Xavier Lopezi, <https://doi.org/10.1029/2022JE007423>
6. (OA) Comparison of Ventifact Orientations and Recent Wind Direction Indicators on the Floor of Jezero Crater, Mars, by K. E. Herkenhoff, R. J. Sullivan, C. E. Newman, G. Paar, M. Baker, D. Viúdez-Moreiras, J. W. Ashley, A. Bechtold, J. I. Nuñezi, <https://doi.org/10.1029/2022JE007599>
7. Rifting Venus: Insights From Numerical Modeling, by Alessandro Regorda, Cedric Thieulot, Iris van Zelst, Zoltán Erdős, Julia Maia, Susanne Buiteri, <https://doi.org/10.1029/2022JE007588>
8. (OA) Martian Gravity Waves Observed by the Thermal Emission Imaging System (THEMIS) During Northern Summer, by J. Michael Battalio, Nicholas Heavens, Alexey Pankine, Corwin Wright, Aster Cowarti, <https://doi.org/10.1029/2022JE007653>

9. Retrieval of Martian Atmospheric CO Vertical Profiles From NOMAD Observations During the First Year of TGO Operations, by Ashimananda Modak, Miguel Angel López-Valverde, Adrian Brines, Aurélien Stolzenbach, Bernd Funke, Francisco González-Galindo, Brittany Hill, Shohei Aoki, Ian Thomas, Giuliano Liuzzi, Gerónimo Villanueva, Justin Erwin, José Juan Lopez Moreno, Nao Yoshida, Udo Grabowski, Francois Forget, Frank Daerden, Bojan Ristic, Giancarlo Bellucci, Manish Patel, Loic Trompet, Ann-Carine Vandaele, <https://doi.org/10.1029/2022JE007282>
10. (OA) Turbulent Drag at the Ice-Ocean Interface of Europa in Simulations of Rotating Convection: Implications for Nonsynchronous Rotation of the Ice Shell, by H. C. F. C. Hay, I. Fenty, R. T. Pappalardo, Y. Nakayamai, <https://doi.org/10.1029/2022JE007648>
11. (OA) Near Surface Atmospheric Temperatures at Jezero From Mars 2020 MEDA Measurements, by A. Manguira, R. Hueso, A. Sánchez-Lavega, M. de la Torre-Juarez, G. M. Martínez, C. E. Newman, E. Sebastian, A. Lepinette, A. Vicente-Retortillo, B. Chide, M. T. Lemmon, T. Bertrand, R. D. Lorenz, D. Banfield, J. Gómez-Elvira, J. Martín-Soler, S. Navarro, J. Pla-García, J. A. Rodríguez-Manfredi, J. Romeral, M. D. Smith, J. Torresi, <https://doi.org/10.1029/2022JE007559>
12. (OA) Carbon Dioxide Retrievals From NOMAD-SO on ESA's ExoMars Trace Gas Orbiter and Temperature Profile Retrievals With the Hydrostatic Equilibrium Equation: 2. Temperature Variabilities in the Mesosphere at Mars Terminator, by L. Trompet, A. C. Vandaele, I. Thomas, S. Aoki, F. Daerden, J. Erwin, Z. Flimon, A. Mahieux, L. Neary, S. Robert, G. Villanueva, G. Liuzzi, M. A. López-Valverde, A. Brines, G. Bellucci, J. J. Lopez-Moreno, M. R. Pateli, <https://doi.org/10.1029/2022JE007279>
13. (OA) Local Structure and Density of Liquid Fe-C-S Alloys at Moon's Core Conditions, by Bin Zhao, Guillaume Morard, Eglantine Boulard, Silvia Boccato, Nicki C. Siersch, Attilio Rivoldini, Nicolas Guignot, Laura Henry, Andrew King, Claire Zurkowski, Yingwei Fei, Daniele Antonangeli, <https://doi.org/10.1029/2022JE007577>
14. (OA) The Low-Altitude Ionosphere of the Ice Giant Planets, by G. J. Molina-Cuberos, O. Witasse, D. Toledo, S. N. Tripathii, <https://doi.org/10.1029/2022JE007568>
15. Exploring the Lunar Regolith's Thickness and Dielectric Properties Using Band-Limited Impedance at Chang'E-4 Landing Site, by Yongjiu Feng, Shurui Chen, Xiaohua Tong, Chao Wang, Pengshuo Li, Mengrong Xi, Changjiang Xiaoi, <https://doi.org/10.1029/2022JE007540>
16. (OA) Growth and Evolution of Secondary Volcanic Atmospheres: 2. The Importance of Kinetics, by Philippa Liggins, Sean Jordan, Paul B. Rimmer, Oliver Shorttlei, <https://doi.org/10.1029/2022JE007528>
17. (OA) Carbon Dioxide Retrievals From NOMAD-SO on ESA's ExoMars Trace Gas Orbiter and Temperature Profiles Retrievals With the Hydrostatic Equilibrium Equation: 1. Description of the Method, by L. Trompet, A. C. Vandaele, I. Thomas, S. Aoki, F. Daerden, J. Erwin, Z. Flimon, A. Mahieux, L. Neary, S. Robert, G. Villanueva, G. Liuzzi, M. A. López-Valverde, A. Brines, G. Bellucci, J. J. López-Moreno, M. R. Pateli, <https://doi.org/10.1029/2022JE007277>

18. The Mechanism for the Barrier of Lunar Regolith on the Migration of Water Molecules, by Yasheng Li, Zhi Wen, Chengdan He, Yanjing Wei, Qiang Gaoi, <https://doi.org/10.1029/2022JE007254>
19. Can Clay Mimic the High Reflectivity of Briny Water Below the Martian SPLD? by Barbara Cosciotti, Elisabetta Mattei, Alessandro Brin, Sebastian Emanuel Lauro, David E. Stillman, Alister Cunje, Dylan Hickson, Graziella Caprarelli, Elena Pettinelli, <https://doi.org/10.1029/2022JE007513>
20. Geometry of Freezing Impacts Ice Composition: Implications for Icy Satellites, by J. J. Buffo, C. R. Meyer, C. J. Chivers, C. C. Walker, C. Huber, B. E. Schmidt, <https://doi.org/10.1029/2022JE007389>
21. (OA) Detection of Copper by the ChemCam Instrument Along Curiosity's Traverse in Gale Crater, Mars: Elevated Abundances in Glen Torridon, by Walter Goetz, Erwin Dehouck, Patrick J. Gasda, Jeffrey R. Johnson, Pierre-Yves Meslin, Nina L. Lanza, Roger C. Wiens, William Rapin, Jens Frydenvang, Valerie Payré, Olivier Gasnault, <https://doi.org/10.1029/2021JE007101>
22. (OA) First Observations of CH₄ and Spatially Resolved Emission Layers at Jupiter Equator, as Seen by JIRAM/Juno, by A. Migliorini, B. M. Dinelli, C. Castagnoli, M. L. Moriconi, F. Altieri, S. Atreya, A. Adriani, A. Mura, F. Tosi, A. Moirano, G. Piccioni, D. Grassi, R. Sordini, R. Noschese, A. Cicchetti, S. J. Bolton, G. Sindoni, C. Plainaki, A. Olivieri, <https://doi.org/10.1029/2022JE007509>
23. (OA) Groundwater-Controlled Deposition of Equatorial Layered Deposits in Central Arabia Terra, Mars, by I. Di Pietro, G. Schmidt, A. C. Tangari, F. Salese, S. Silvestro, A. G. Fairén, L. Marinangeli, M. Pondrelli, <https://doi.org/10.1029/2022JE007504>
24. Secondary Cratering From Rheasilvia as the Possible Origin of Vesta's Equatorial Troughs, by Naoyuki Hirata, <https://doi.org/10.1029/2022JE007473>
25. (OA) SHERLOC Raman Mineral Class Detections of the Mars 2020 Crater Floor Campaign, by Andrea Corpolongo, Ryan S. Jakubek, Aaron S. Burton, Adrian J. Brown, Anastasia Yanchilina, Andrew D. Czaja, Andrew Steele, Brittan V. Wogsland, Carina Lee, David Flannery, Desirée Baker, Edward A. Cloutis, Emily Cardarelli, Eva L. Scheller, Eve L. Berger, Francis M. McCubbin, Joseph Razzell Hollis, Keyron Hickman-Lewis, Kim Steadman, Kyle Uckert, Lauren DeFlores, Linda Kah, Luther W. Beegle, Marc Fries, Michelle Minitti, Nikole C. Haney, Pamela Conrad, Richard V. Morris, Rohit Bhartia, Ryan Roppel, Sandra Siljeström, Sanford A. Asher, Sergei V. Bykov, Sunanda Sharma, Svetlana Shkolyar, Teresa Fornaro, William Abbey, <https://doi.org/10.1029/2022JE007455>