AGU ADVANCING EARTH AND SPACE SCIENCE | Planetary Sciences

April 2023 Newsletter

Spring is, uh, springing (at least in the northern hemisphere)!

Welcome to the second newsletter from your new AGU Planetary Sciences Section leadership!

This is an exciting time for planetary sciences, with a hugely successful Lunar and Planetary Science Conference in March and the launch this month of ESA's JUpiter ICy moons Explorer (JUICE) mission. And you only have to look at the number of planetary-related workshops and meetings in the coming weeks to get a sense of just how vibrant the international planetary science community is right now!

Not all is well, however: NASA recently announced a delay to its selected Venus radar orbiter mission, VERITAS, by no fewer than three years. And the Agency faces continuing cost pressures on other fronts. Continued community engagement with all stakeholders, including the U.S. Congress where possible, is going to be crucial to ensure we're able to realize the ambitious exploration program in the new *Origins, Worlds and Life* Decadal Survey.

Still, it's hard not to be optimistic about our community! So I'm going to take inspiration from the new growth and opportunities that springtime represents, and I invite you to do the same.

As always, if you have questions, concerns or comments, don't hesitate to reach out at paul.byrne@wustl.edu. 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 Deadlines & Events

Upcoming Deadlines

- **18-20 April 2023:** 4th Workshop on Thermal Models for Planetary Science
- **23-28 April 2023:** European Geosciences Union General Assembly 2023
- **24-25 April 2023:** Lunar Surface Innovation Consortium (LSIC) Spring Meeting
- **24-30 April 2023:** 2023 International Conference of Deep Space Sciences
- **25-27 April 2023:** Extraterrestrial Materials Analysis Group (Spring Meeting)
- **26 April 2023:** Lunar Surface Innovation Consortium (LSIC) Funding Workshop
- **2-3 May 2023:** Outer Planets Assessment Group May 2023
- **3-5 May 2023:** 6th Chianti Topics- International Focus Workshop: Geology, Physics and Chemistry of Planetary Environments
- **4-7 May 2023:** 4th International Planetary Caves Conference
- **5-7 May 2023:** Second Barry Blumberg Memorial Workshop in Astrobiology
- **7-13 May 2023:** The Inner Disk of Young Stars: Accretion, Ejection, and Planet Formation
- **10-12 May 2023:** Apophis T-6 Years: Knowledge Opportunities for the Science of Planetary Defense
- **15-18 May 2023:** Brines Across the Solar System: Ancient and Future Brines
- **16-19 May 2023:** Planetary Systems and the Origins of Life in the Era of JWST
- **21-26 May 2023:** Japan Geoscience Union Meeting 2023
- **23-16 May 2023:** 4th Advanced School on Exoplanetary Science: Astrophysics of Transiting Exoplanets
- **24-26 May 2023:** Dusty Visions 2023
- **25-26 May 2023:** Quantum Sensors for Science Exploration Workshop
- **28 May–2 June 2023:** AGU Chapman Conference on Advances in Understanding Alfven Waves in the Sun and the Heliosphere
- **29 May–2 June 2023:** Star Formation in the Era of JWST

Planetary Sciences Announcements/Updates

#1) DPS–EPSC 2023 Hybrid Meeting: Save the Date!

Join us 1–6 October 2023 for the 55th Annual Division for Planetary Sciences (DPS) joint meeting with the Europlanet Science Congress (EPSC). Be sure to save the date and plan to attend, either in person or online. Being a joint meeting with the Europlanet Society (EPS), the topics cover all areas of planetary science, including those beyond the astronomical topics traditionally related to AAS/DPS meetings. As a hybrid meeting, we anticipate a large attendance both in person at the Marriott Rivercenter Hotel in San Antonio, Texas and online. Solar eclipse aficionados and educators will enjoy an adjacent workshop on solar eclipse planning held on 29–30 September 2023: register now. Return to the websites above and watch #DPSEPSC2023 on social media for more details to come!

Kurt Retherford (Local Host), Catherine Neish (DPS Chair) and Lena Noack (EPSC Chair)

#2) Help Support VERITAS: Petition Congress for 2029 Launch Date

The VERITAS team needs your help. NASA selected VERITAS in June 2021 and then put the mission on hold this past November despite us being on time and on budget. Now we are scheduled to launch “no earlier than 2031.”

To maintain our schedule as much as possible, we are working to petition Congress to stipulate a 2029 launch date for VERITAS. If you are willing and able, please click here to see (and sign) the petition to our elected officials. We realize that many are unable to participate in this petition given your affiliations, but please share this with any U.S. friends and family you may have who are able to do so.
If you would like more information about the situation VERITAS finds itself in, please feel free to reach out to me or anyone else on the VERITAS team.

Thank you for your support,
Jenny Whitten
she/her
Associate Deputy PI of VERITAS
jwhitten1@tulane.edu

#3) NASA Planetary Data Training Workshop, Arizona State University, Tempe, Arizona, 23-26 May 2023

The next NASA Planetary Data Training Workshop will be an in-person only event held at Arizona State University, Tempe, Arizona, on 23-26 May, 2023. This Workshop is intended for students and

newcomers who want to learn to use digital planetary data for research involving studies of the surfaces of the terrestrial planets and icy moons. We are offering two $2,000 travel grants for people from underrepresented groups who want to learn to use planetary data. For a description of the Workshop, registration form and travel grant applications, and information on hotels and other travel information, please visit this website.

Please contact David.Williams@asu.edu for questions.

#4) AGU Journal of Geophysical Research: Planets Publications, February Issue

Articles starting with (OA) are published with open access

1. Surface Energy Fluxes and Temperatures at Jezero Crater, Mars, by H. I. Savijärvi, G. M. Martinez, A.-M. Harri, https://doi.org/10.1029/2022JE007438
2. Periodicities and Plasma Density Structure of Jupiter's Dawnside Magnetosphere, by A. A. Schok, P. A. Delamere, B. Mino, P. A. Damiano, B. Zhang, A. Sciola, K. Sorathia, S. Wing, J. R. Johnson, X. Ma, Z. Yao, O. Brambles, https://doi.org/10.1029/2022JE007637
3. (OA) Radar Attenuation in Enceladus' Ice Shell: Obstacles and Opportunities for Constraining Shell Thickness, Chemistry, and Thermal Structure, by Ondřej Souček, Marie Běhounková, Dustin M. Schroeder, Natalie S. Wolfenbarger, Klára Kalousová, Gregor Steinbrügge, Krista M. Soderlund, https://doi.org/10.1029/2022JE007626
4. (OA) Convective Vortices and Dust Devils Detected and Characterized by Mars 2020, by R. Hueso, C. E. Newman, T. del Río-Gaztelurrutia, A. Munguira, A. Sánchez-Lavega, D. Toledo, V. Apéstigue, I. Arruego, A. Vicente-Retortillo, G. Martínez, M. Lemmon, R. Lorenz, M. Richardson, D. Viudez-Moreiras, M. de la Torre-Juarez, J. A. Rodríguez-Manfredi, L. K. Tamppari, N. Murdoch, S. Navarro-López, J. Gómez-Elvira, M. Baker, J. Pla-García, A. M. Harri, M. Hieta, M. Genzer, J. Polkko, I. Jaakonaho, T. Makinen, A. Stott, D. Mimoun, B. Chide, E. Sebastian, D. Banfield, A. Lepinette-Malvite, https://doi.org/10.1029/2022JE007516
5. (OA) Surface Energy Budget, Albedo, and Thermal Inertia at Jezero Crater, Mars, as Observed From the Mars 2020 MEDA Instrument, by G. M. Martínez, E. Sebastián, A. Vicente-Retortillo, M. D. Smith, J. R. Johnson, E. Fischer, H. Savijärvi, D. Toledo, R. Hueso, L. Mora-Sotomayor, H. Gillespie, A. Munguira, A. Sánchez-Lavega, M. T. Lemmon, F. Gómez, J. Polkko, L. Mandon, V. Apéstigue, I. Arruego, M. Ramos, P. Conrad, C. E. Newman, M. de la Torre-Juarez, F. Jordan, L. K. Tamppari, T. H. McConnochie, A.-M. Harri, M. Genzer, M. Hieta, M.-P. Zorzano, M. Siegler, O. Prieto, A. Molina, J. A. Rodríguez-Manfredi, https://doi.org/10.1029/2022JE007537
6. Shock Compression of Fluorapatite to 120 GPa, by M. J. Rucks, J. M. Winey, Y. Toyoda, Y. M. Gupta, T. S. Duffy, https://doi.org/10.1029/2022JE007642
7. (OA) Dayside Temperature Maps of the Upper Mesosphere and Lower Thermosphere of Mars Retrieved From MAVEN IUVS Observations of O I 297.2 nm Emission, by J. S. Evans, E. Soto, S.

K. Jain, J. Deighan, M. H. Stevens, M. S. Chaffin, D. Y. Lo, S. Gupta, N. M. Schneider, S. Curry, https://doi.org/10.1029/2022JE007325

8. Estimates for Tethys' Moment of Inertia, Heat Flux Distribution, and Interior Structure From Its Long-Wavelength Topography, by Szilárd Gyalay, Francis Nimmo, https://doi.org/10.1029/2022JE007550

9. (OA) High-Resolution Nighttime Temperature and Rock Abundance Mapping of the Moon Using the Diviner Lunar Radiometer Experiment With a Model for Topographic Removal, by T. M. Powell, T. Horvath, V. Lopez Robles, J.-P. Williams, P. O. Hayne, C. L. Gallinger, B. T. Greenhagen, D. S. McDougall, D. A. Paige, https://doi.org/10.1029/2022JE007532

10. Initial Results of the Relative Humidity Observations by MEDA Instrument Onboard the Mars 2020 Perseverance Rover, by J. Polkko, M. Hieta, A.-M. Harri, L. Tamppari, G. Martínez, D. Viúdez-Moreiras, H. Savijärvi, P. Conrad, M. P. Zorzano Mier, M. De La Torre Juarez, R. Hueso, A. Munguira, J. Leino, F. Gómez, I. Jaakonaho, E. Fischer, M. Genzer, V. Apestigue, I. Arruego, D. Banfield, A. Lepinette, M. Paton, J. A. Rodriguez-Manfredi, A. Sánchez Lavega, E. Sebastian, D. Toledo, A. Vicente-Retortillo, MEDA team, https://doi.org/10.1029/2022JE007447

11. (OA) Timing and Origin of Compressional Tectonism in Mare Tranquillitatis, by T. Frueh, H. Hiesinger, C. H. van der Bogert, J. D. Clark, T. R. Watters, N. Schmedemann, https://doi.org/10.1029/2022JE007533

12. (OA) Vertical-Wind-Induced Cloud Opacity Variation in Low Latitudes Simulated by a Venus GCM, by Hiroki Karyu, Takeshi Kuroda, Kazunari Itoh, Akira Nitta, Kohei Ikeda, Masaru Yamamoto, Norihiko Sugimoto, Naoki Terada, Yasumasa Kasaba, Masaaki Takahashi, Paul Hartogh, https://doi.org/10.1029/2022JE007595

13. (OA) Repeated, Cross-Cutting, and Spatially Migrating Outflow Channel Formation, Grjótá Valles, Mars, by Jason R. Brown, Gerald P. Roberts, https://doi.org/10.1029/2022JE007247

14. (OA) Anomalous 33S in the Lunar Mantle, by J. W. Dottin III, S.-T. Kim, B. Wing, J. Farquhar, C. Shearer, https://doi.org/10.1029/2022JE007597

15. Unconventional Surface Charging Within Deep Cavities on Airless Planetary Bodies: Particle-In-Cell Plasma Simulations, by J. Nakazono, Y. Miyake, https://doi.org/10.1029/2022JE007589

16. (OA) Changes in the Raman and Fluorescence Spectroscopic Signatures of Irradiated Organic-Mineral Mixtures: Implications for Molecular Biosignature Detection on Mars, by A. C. Fox, R. S. Jakubek, J. L. Eigenbrode, https://doi.org/10.1029/2022JE007624

17. Hourly Periodic Variations of Ultralow-Frequency (ULF) Waves in Jupiter's Magnetosheath, by W. D. Gu, Z. H. Yao, D. X. Pan, Y. Xu, B. Zhang, P. A. Delamere, S. Y. Fu, L. Xie, S. Y. Ye, Y. N. Chen, W. R. Dunn, Y. Wei, https://doi.org/10.1029/2022JE007625

18. Enhanced C2H2 Absorption Within Jupiter's Southern Auroral Oval From Juno UVS Observations, by Rohini S. Giles, Vincent Hue, Thomas K. Greathouse, G. Randall Gladstone, Joshua A. Kammer, Maarten H. Versteeg, Bertrand Bonfond, Denis C. Grodent, Jean-Claude

Gérard, James A. Sinclair, Scott J. Bolton, Steven M. Levin, https://doi.org/10.1029/2022JE007610

19. (OA) Martian Atmospheric Temperature and Density Profiles During the First Year of NOMAD/TGO Solar Occultation Measurements, by Miguel Angel López-Valverde, Bernd Funke, Adrian Brines, Aurèlien Stolzenbach, Ashimananda Modak, Brittany Hill, Francisco González-Galindo, Ian Thomas, Loic Trompet, Shohei Aoki, Gerónimo Villanueva, Giuliano Liuzzi, Justin Erwin, Udo Grabowski, Francois Forget, José Juan López-Moreno, Julio Rodriguez-Gómez, Bojan Ristic, Frank Daerden, Giancarlo Bellucci, Manish Patel, Ann-Carine Vandaele, the NOMAD team, https://doi.org/10.1029/2022JE007278