AGU ADVANCING EARTH AND SPACE SCIENCE | Planetary Sciences

November 2022 Newsletter

Greetings from Your Planetary Sciences Section Leadership!

The AGU Fall Meeting will be here before you know it. In preparation, we are working to facilitate wider participation among our members and have two programs, AGU registration assistance or caregiver assistance to attend the meeting please fill out the linked forms. We are continuing to accept applications for the various volunteer opportunities for our section and are looking for people interested in participating in a section mentoring program. As always, if you are interested in advertising in our newsletter, please reach out to Jennifer Whitten.

Michael Mischna, President
Paul Byrne, President-Elect
Jennifer Whitten, Secretary
Emma Dahl, Early Career representative
An Li, Student representative
Rosaly Lopes, Past President

Upcoming Deadlines & Events

Upcoming Deadlines

- ROSES-2021: Rolling Submissions
    - Several program will transition to No (Fixed) Due Dates (NoDD):
        - Emerging Worlds (EW)
        - Solar System Workings (SSW)
        - Planetary Data Archiving, Restoration, and Tools (PDART)
        - Exobiology (ExoBio)
        - Solar System Observations (SSO)

- Planetary Instrument Concepts for the Advancement of Solar System Observations (PICASSO)
- Laboratory Analysis of Returned Samples (LARS)

Upcoming Conferences

- **7-9 November 2022:** 20th Meeting of the Venus Exploration Analysis Group, Pasadena, CA
- **7-11 November 2022:** The Exploration of Asteroids Symposium, Noordwijk, The Netherlands
- **7-13 November 2022:** Forming and Exploring Habitable Worlds, Edinburgh, Scotland
- **8-10 November 2022:** Planetary Formation and Exoplanets with the ELT, Frejus, France
- **14-16 November 2022:** Hayabusa 2022 Symposium, Sagamihara, Japan
- **15-16 November 2022:** Outer Planets Assessment Group (OPAG) Meeting, Houston, TX
- **17-18 November 2022:** Great Lakes Exoplanet Area Meeting (GLEAM) 2022, Colombus, OH
- **27-30 November 2022:** Mediterranean Geosciences Union 2022, Marrakech, Morocco
- **28 November - 2 December 2022:** Astronomers for Planet Earth Symposium 2022, Virtual
- **30 November - 2 December 2022:** Workshop for EDIA for Leaders in Planetary Science, Virtual

Planetary Sciences Announcements/Updates

#1) OBITUARY FOR BOB CARLSON

Robert W. Carlson
26 October 1941 - 11 October 2022

Robert “Bob” Carlson died peacefully in his sleep in Reno, Nevada, surrounded by family, after a months-long battle with cancer. Bob was a brilliant scientist, as well as an amazing mentor, friend, husband, father and grandfather. Those of you who knew him likely recall fond memories of his soft, but detailed approach to any problem – always gracious and insightful. He was born in Waseca, Minnesota, graduated from Cal Poly San Luis Obispo in 1963, and received his PhD in physics from the University of Southern California in 1970. Bob spent most of his career (1978-2016) at the Jet Propulsion Lab in Pasadena, California. As Principal Investigator of the Galileo Near Infrared Mapping Spectrometer (NIMS), he was also the greatest skeptic of the results. Among many firsts made by Bob and the NIMS team, the discovery of hydrogen peroxide and a radiolytic sulfur cycle on Europa have transformed our understanding of the potential habitability of that world, and have helped set the stage for future exploration. As an AGU Fellow and Editor-in-Chief for the Journal of Geophysical

Research - Planets, he worked hard to see the best in every manuscript. In the lab, Bob was meticulous and diligent, enjoying every opportunity to solve a new planetary puzzle. He is survived by wife Kathie, sister Jeanne Withroe, his two daughters Jill Carlson and Kristen Conway, and his four beloved grandchildren Noah, Bridget and Caleb Conway, and Cooper Carlson.

#2) VOLUNTEERING WITH THE AGU PLANETARY SCIENCES SECTION

We are continuing to look for people interested in getting involved with the AGU Planetary Sciences Section. The available opportunities are described in detail below. Please fill out this form if you are interested in volunteering for any of these positions.

OSPA Coordinators—Responsible for overseeing the Outstanding Student Presentation Award for the section. Identifying/confirming judges, interacting with session liaisons, reviewing judging scoresheets and making the OSPA selections. Time commitment: August-November: ~10 hours; December: ~20 hours (incl. Fall Meeting); January: ~5 hours

Honors Canvassing Committee—Reaching out to colleagues, department heads, managers, etc. to encourage submission of applications for the Fred Whipple Award and Ronald Greeley Early Career Award. Identify worthy candidates, and secure commitments for nominations packages to be submitted on their behalf. Time commitment: December-March: ~20 hours

Honors Selection Committee—Review applications for Whipple and Greeley awards and make selection of award winners. Time commitment: March-June: ~20 hours

Student Travel Grant Committee—Review planetary science applications for Student Travel Grant program and make selections of awardees. Time commitment: June-September: ~5 hours

Caregiver Award Committee—Review applications for caregiver awards (child or dependent care); work with executive committee to establish number and amount of awards based on need. Time commitment: June-October: ~10 hours

Feel free to contact any of the PSS Officers for more details.

#3) PLANETARY SCIENCE SECTION MENTORSHIP PROGRAM

Sign up for the new Planetary Science section mentorship program during AGU Fall Meeting!

The AGU Planetary Science section is launching a new mentorship program to match students and early career scientists with more experienced scientists going to Fall Meeting. Our goal is to help new planetary science students and early career scientists learn how to best navigate Fall Meeting. First-time attendees of AGU Fall Meeting will be prioritized as mentees, and the form will be open until all

openings are filled. Mentees and mentors will meet each other and grab a free lunch on Monday, 12/12 from 12:45-1:45pm. **Interested mentors and mentees, please sign up here:** https://forms.gle/NovgR4vzMMjjboUi8.

#4) STUDENT AND EARLY CAREERS EARTH AND PLANETARY INTERIORS TRIVIA NIGHT

If you are a student or early career scientist in planetary science, consider getting a ticket for the Earth and Planetary Interiors trivia night at AGU Fall Meeting!

The event will be on Monday, December 12 from 6:30-8:00 pm. Tickets are $10/student and $20/early career scientist. Hors d'oeuvres and drinks are included, and there will be prizes! It's a great way to meet people in your section and related fields, so we hope to see you in Chicago in December.

#5) AGU JOURNAL OF GEOPHYSICAL RESEARCH: PLANETS PUBLICATIONS, OCTOBER 2022 ISSUE

Journal of Geophysical Research: Planets, Volume 127, Issue 10 https://agupubs.onlinelibrary.wiley.com/toc/21699100/2022/127/10

Articles starting with (OA) are published with open access

1. (OA) Active Ground Patterns Near Mars' Equator in the Glen Torridon Region of Gale Crater, by B. Hallet et al., https://doi.org/10.1029/2021JE007126
2. (OA) Seasonal Changes in the Vertical Structure of Ozone in the Martian Lower Atmosphere and Its Relationship to Water Vapor, by K. S. Olsen et al., https://doi.org/10.1029/2022JE007213
3. Paleogeographic Reconstructions of an Ocean Margin on Mars Based on Deltaic Sedimentology at Aeolis Dorsa, by B. T. Cardenas, M.P. Lamb, https://doi.org/10.1029/2022JE007390
4. (OA) An Extremely Elongated Cloud Over Arsia Mons Volcano on Mars: 2. Mesoscale Modeling, by J. Hernández-Bernal et al., https://doi.org/10.1029/2022JE007352
5. Determination of Broadband Complex EM Parameters of Powdered Materials: 1. MCMC-Based Two-Port Transmission Line Measurements, by A. L. Boivin et al., https://doi.org/10.1029/2022JE007199
6. (OA) Partially-Saturated Brines Within Basal Ice or Sediments Can Explain the Bright Basal Reflections in the South Polar Layered Deposits, by D. E. Stillman et al., https://doi.org/10.1029/2022JE007398
7. (OA) Planetary Core-Style Rotating Convective Flows in Paraboloidal Laboratory Experiments, by T. L. Lonner, A. Aggarwal, J. M. Aurnou, https://doi.org/10.1029/2022JE007356
8. (OA) Mineralogy of a Possible Ancient Lakeshore in the Sutton Island Member of Mt. Sharp, Gale Crater, Mars, From Mastcam Multispectral Images, by J. T. Haber et al., https://doi.org/10.1029/2022JE007357

9. (OA) CO2 Ocean Bistability on Terrestrial Exoplanets, by R. J. Graham, T. Lichtenberg, R. T. Pierrehumbert , https://doi.org/10.1029/2022JE007456
10. Seasons of Ice: Water Ice Migration and Seasonal Transient Shadow at the Lunar Poles, by K. M. Luchsinger, N. J. Chanover, https://doi.org/10.1029/2022JE007336
11. Radar Backscatter and Emissivity Models of Proposed Pyroclastic Density Current Deposits on Venus, by I. Ganesh, L. M. Carter, T. N. Henz, https://doi.org/10.1029/2022JE007318
12. Regional-Scale Lithospheric Recycling on Venus Via Peel-Back Delamination, by A. C. Adams et al., https://doi.org/10.1029/2022JE007460
13. Thermal Structure of the Middle and Upper Atmosphere of Mars From ACS/TGO CO2Spectroscopy, by D. A. Belyaev et al., https://doi.org/10.1029/2022JE007286
14. (OA) Cold Compaction and Macro-Porosity Removal in Rubble-Pile Asteroids: 1. Theory, by Z. Zhang, D. Bercovici, L. Elkins-Tanton, https://doi.org/10.1029/2022JE007342
15. Determination of Broadband Complex EM Parameters of Powdered Materials: 2. Ilmenite-Bearing Lunar Analogue Materials, by A. L. Boivin et al. https://doi.org/10.1029/2022JE007200
16. Cold Compaction and Macro-Porosity Removal in Rubble-Pile Asteroids: 2. Applications, by Z. Zhang, D. Bercovici, L. Elkins-Tanton, https://doi.org/10.1029/2022JE007343
17. Topographic Degradation Processes of Lunar Crater Walls Inferred From Boulder Falls, by A. Ikeda, H. Kumagai, T. Morota, https://doi.org/10.1029/2021JE007176
18. A Comprehensive Model for Pickup Ion Formation at the Moon, by A. R. Poppe, J. S. Halekas, Y. Harada, https://doi.org/10.1029/2022JE007422
19. (OA) The Distribution of Clay Minerals and Their Impact on Diagenesis in Glen Torridon, Gale Crater, Mars, by A. Rudolph et al., https://doi.org/10.1029/2021JE007098
20. (OA) Global Variations in Water Vapor and Saturation State Throughout the Mars Year 34 Dusty Season, by J. A. Holmes et al., https://doi.org/10.1029/2022JE007203
21. (OA) Spatio-Temporal Level Variations of the Martian Seasonal North Polar Cap From Co-Registration of MOLA Profiles, by H. Xiao et al., https://doi.org/10.1029/2021JE007158
22. (OA) In Situ Regolith Seismic Velocity Measurement at the InSight Landing Site on Mars, by N. Brinkman et al., https://doi.org/10.1029/2022JE007229
23. (OA) Experimentally Induced Thermal Fatigue on Lunar and Eucrite Meteorites—Influence of the Mineralogy on Rock Breakdown, by M. Patzek, O. Rüsch, https://doi.org/10.1029/2022JE007306
24. (OA) Potential Volcano-Tectonic Origins and Faulting Mechanisms of Three Low-Frequency Marsquakes Detected by a Single InSight Seismometer, by M. Sita, S. van der Lee, https://doi.org/10.1029/2022JE007309
25. Manganese Mobility in Gale Crater, Mars: Leached Bedrock and Localized Enrichments, by J. A. Berger et al., https://doi.org/10.1029/2021JE007171