AGU ADVANCING EARTH AND SPACE SCIENCE | Planetary Sciences

April 2022 Newsletter

Greetings from Your Planetary Sciences Section Leadership!

Start your engines! It's time to submit proposals for AGU Fall Meeting 2022. Proposals for general scientific sessions, union sessions, innovations, town halls and scientific workshops are due 20 April and can be submitted here.

If you have any ideas for areas that you would like to see the Planetary Sciences Section involved in, please reach out and let us know. We look forward to hearing from you.

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 (all conferences virtual unless otherwise noted)

- **13-15 April 2022:** Handling and Manipulation of Small Extraterrestrial Samples, Purdue University, West Lafayette, Indiana
- **25-29 April 2022:** Advancing IDEA in Planetary Science

Planetary Sciences Announcements/Updates

#1) GLEE Workshop: Sending LunaSats to the Moon

Dear Colleagues,

Want to send a LunaSat to the surface of the Moon? So do we! Join the Great Lunar Expedition for Everyone (GLEE) and your team could have the opportunity to do so. GLEE is in its second workshop phase, and we are now accepting teams of students from all over the world! Your first step to become a GLEE participant is to apply for the upcoming GLEE Remote Team Workshop!

GLEE is a mission to land 500 LunaSats (small spacecraft about the size of a Post-it note) on the Moon in 2023 to conduct both science and technology missions. GLEE is led by Colorado Space Grant Consortium at the University of Colorado, Boulder, and is currently supported by NASA's Artemis Student Challenges.

GLEE's goal is to engage students around the world by giving them the opportunity to work with hardware and code that could one day be sent to the Moon. We are working towards securing a ride to the Moon. We will let participants know as soon as our flight is confirmed and teams that complete this remote workshop will be offered flight hardware for the full GLEE mission.

After a successful in-person workshop in October 2021, GLEE is now offering a self-guided version of the experience for interested students and faculty to work hands-on with their very own LunaSat. In this workshop, we walk through 10 modules that explore the functionality of the LunaSat. Teams will receive support through the modules via virtual office hours and email to receive help. This program is FREE to all participants.

GLEE Remote Workshop Information:
Application Link: https://tinyurl.com/GLEE-2022-APP
Applications Open: 17 February 2022

Applications Close: 4 April 2022
Application Status Notification: 22 April 2022

Team Requirements:
• Teams must have a mentor
• Teams must be students in high school, or at a 2 or 4 year college/university

General Logistics:
• If accepted, your team will be sent a “GLEE Kit” which will have two LunaSats and additional materials to go through the modules
• A link to the video modules will be sent to teams
• Support resources will be sent to teams to help support teams through the modules

Part 1 of the application will take less than 5 minutes to complete. Upon completion of Part 1, teams will receive details on how to submit Part 2, which will take ~20 minutes to complete.

Part 1 collects basic information from teams that wish to be a part of the GLEE project. Part 2 collects more detailed information about the team and its plans for participation with GLEE. In order to be considered for GLEE, teams shall complete both Part 1 and Part 2 of the application. Part 1 AND Part 2 of the application shall be completed by 4 April 2022, at 12 PM MDT.

In addition, up-to-date information can be found on our website, glee2023.org, or across our social media accounts listed below. We would love your help to get the word out about this opportunity! Please let us know if there is any additional information we could send you to help you do that.

To the Moon,
The GLEE Team

Contact: info@glee2023.org
Website: GLEE2023.org
Twitter: @GLEE2023
Instagram: @GLEEMission2023

#2) JPL Job Opening Pasadena, CA: Research Scientist, Origin of Life/Prebiotic Chemistry

The Jet Propulsion Laboratory, California Institute of Technology invites applications for a staff Scientist in the Laboratory Studies group in the Planetary Science Section at JPL. In this position, you will conduct origin of life/prebiotic chemistry experimental studies and related astrobiology research. You will also participate in mission formulation activities, with an emphasis on mission concepts involving Ocean Worlds and Mars life detection/habitability. It is expected that the successful candidate will develop an independently funded research program and will pursue new lines of

research focusing on experimental origin of life research and life detection. You will be expected to publish in peer-reviewed journals and give talks at national and international conferences.

This position requires the following qualifications:
• Ph.D. in Chemistry with focus on synthetic organic and/or organometallic chemistry or related technical or scientific discipline
• Experience with experimentation on and analysis of complex organic biological molecules in a planetary context, including mineral / metal driven catalysis of organics.
• Experience in the design, construction and operation of novel experimental systems to address astrobiology questions, esp. high pressure systems; Experience with sample handling and analysis of oxygen sensitive materials.
• Demonstrated professional reputation as a productive researcher with a track record of publications in peer-reviewed journals and presentations at national and/or international conferences
• Familiarity with/ongoing participation in the astrobiology community, and in relating experimental studies and techniques to mission relevant strategic efforts

The following qualifications are preferred:
• 3-5 years of related post-doc experience
• Demonstrated ability to work in a team of experimental scientists
• Experience coordinating experiments and analysis between institutes / NASA centers / local universities and non-profits
• History of writing successful external research funding proposals
• Excellent oral (including public speaking) and written communication skills

To view the full description of this unique opportunity and apply, please visit this website.

Applications received by 25 April 2022 will receive full consideration.

#3) AGU Journal of Geophysical Research: Planets Publications, March 2022 Issue

The link to last month's issue of JGR: Planets can be found here. Articles starting with (OA) are published with open access. Below are the articles published last month:

1. Thermal Conductivity and Compressional Velocity of Methane at High Pressure: Insights Into Thermal Transport Properties of Icy Planet Interiors, by Dylan W. Meyer, Wen-Pin Hsieh, Han Hsu, Ching-Yi Kuo, Jung-Fu Lin, https://doi.org/10.1029/2021JE007059
2. A Simple Condensation Model for the H2SO4-H2O Gas-Cloud System on Venus, by Longkang Dai, Xi Zhang, Wencheng D. Shao, Carver J. Bierson, Jun Cui, https://doi.org/10.1029/2021JE007060
3. (OA) Regional Geology of the Hypanis Valles System, Mars, by Jacob B. Adler, James F. Bell, Nicholas H. Warner, Eldar Noe Dobrea, Tanya N. Harrison, https://doi.org/10.1029/2021JE006994

4. (OA) Lunar Wrinkle Ridges and the Evolution of the Nearside Lithosphere, by Thomas R. Watters, https://doi.org/10.1029/2021JE007058
5. Nitrogen Oxide Production in Laser-Induced Breakdown Simulating Impacts on the Hadean Atmosphere, by Alan N. Heays, Tereza Kaiserová, Paul B. Rimmer, Antonín Knížek, Lukáš Petera, Svatopluk Civiš, Libor Juha, Roman Dudžák, Miroslav Krůs, Manuel Scherf, Helmut Lammer, Robert Pascal, Martin Ferus, https://doi.org/10.1029/2021JE006842
6. (OA) From the Top of Martian Olympus to Deep Craters and Beneath: Mars Radiation Environment Under Different Atmospheric and Regolith Depths, by Jian Zhang, Jingnan Guo, Mikhail I. Dobynde, Yuming Wang, Robert F. Wimmer-Schweingruber, https://doi.org/10.1029/2021JE007157
7. Layered Ejecta Craters in the Candidate Landing Areas of China's First Mars Mission (Tianwen-1): Implications for Subsurface Volatile Concentrations, by Shengli Niu, Feng Zhang, Kaichang Di, Sheng Gou, Zongyu Yue, https://doi.org/10.1029/2021JE007089
8. Barriers to Melt Ascent in the Lithosphere of Io With Applications to Heat Pipe Formation, J. Schools, L. G. J. Montési, https://doi.org/10.1029/2021JE007031
9. Effects of Regional Thermal State on the Crustal Annulus Relaxation of Lunar Large Impact Basins, by Min Ding, Meng-Hua Zhu, https://doi.org/10.1029/2021JE007132
10. Gamma-CaSO4 With Abnormally High Stability From a Hyperarid Region on Earth and From Mars, by Erbin Shi, Alian Wang, Huafang Li, Ryan Ogliore, Zongcheng Ling, https://doi.org/10.1029/2021JE007108
11. (OA) Exploring Ocean Circulation on Icy Moons Heated From Below, by Suyash Bire, Wanying Kang, Ali Ramadhan, Jean-Michel Campin, John Marshall, https://doi.org/10.1029/2021JE007025
12. Dynamical Effect on Static Stability of the Venus Atmosphere Simulated Using a General Circulation Model: A Comparison With Radio Occultation Measurements, by Hiroki Ando, Koutarou Takaya, Masahiro Takagi, Norihiko Sugimoto, Takeshi Imamura, Hideo Sagawa, Silvia Tellmann, Martin Pätzold, Yoshihisa Matsuda, Bernd Häusler, Sanjay Limaye, Raj Kumar Choudhary, Maria Antonita, https://doi.org/10.1029/2021JE006957
13. Low Thermal Conductivity of Carbon Dioxide at High Pressure: Implications for Icy Planetary Interiors, by Sean R. Shieh, Wen-Pin Hsieh, Yi-Chih Tsao, Christian Crisostomo, Han Hsu, https://doi.org/10.1029/2022JE007180
14. Stratigraphic and Isotopic Evolution of the Martian Polar Caps From Paleo-Climate Models, E. Vos, O. Aharonson, N. Schörghofer, F. Forget, E. Millour, L. Rossi, M. Vals, F. Montmessin, https://doi.org/10.1029/2021JE007115
15. (OA) The Role of Atmospheric Exchange in False-Positive Biosignature Detection, by Ryan C. Felton, Sandra T. Bastelberger, Kathleen E. Mandt, Adrienn Luspay-Kuti, Thomas J. Fauchez, Shawn D. Domagal-Goldman, https://doi.org/10.1029/2021JE006853
16. Jupiter's Enigmatic Ionosphere: Electron Density Profiles From the Pioneer, Voyager, and Galileo Radio Occultation Experiments, by Michael Mendillo, Clara Narvaez, Luke Moore, Paul Withers, https://doi.org/10.1029/2021JE007169
17. (OA) Spectral Units Analysis of Quadrangle H05-Hokusai on Mercury, by F. Zambon, C. Carli, J. Wright, D. A. Rothery, F. Altieri, M. Massironi, F. Capaccioni, G. Cremonese, https://doi.org/10.1029/2021JE006918