Newsletter 20-12

Issue 20-12, March 22, 2020

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IN MEMORIAM: ADAM SHOWMAN (1968-2020)

Adam Showman, a Professor of Planetary Sciences at the University of Arizona’s Lunar and Planetary Laboratory, passed away suddenly on March 16, 2020. Prof. Showman had a wide range of interests and expertise. Most notably he was an expert in both the atmospheres and interiors of planets. His atmospheric work concentrated on giant gaseous planets like Jupiter, Saturn and many of the extrasolar planets that have been discovered, while most of his work on interiors dealt with the icy satellites that orbit the Solar System’s giant planets.

Prof. Showman was born in 1968, and received his B.S. in Physics from Stanford in 1991 and his Ph.D. in Planetary Sciences for the California Institute of Technology in 1999, then joined LPL in 2001. He published a total of more than 150 scientific papers.

Prof. Showman served as the advisor for eight University of Arizona students who received their Ph.D.s, and as the mentor for six post-doctoral fellows. He was named a Galileo Circle Fellow by the University of Arizona College of Science in 2018, and was named a Fellow of the American Geophysical Union in 2019.

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MESSAGE FROM THE CHAIR

Dear DPS membership,

The DPS Committee has been working to implement policies to ease the strains the community is feeling as a result of the coronavirus. Please reach out (DPS.Chair@aas.org [1]) if there are further areas in which we can help to support you.

Stay safe and healthy,

Amanda Hendrix
DPS Chair

1. Planning for October meeting in Spokane

These days, many meetings are (understandably) being cancelled, postponed or turned into virtual gatherings.

In these uncertain times, the DPS leadership is keeping an eye on the COVID-19 situation in light of our annual meeting in October. We are keeping in close contact with AAS leadership and meeting planning staff with regard to plans for our meeting in Spokane. We are currently moving forward with plans to hold the annual DPS meeting in Spokane in October, 2020. Members of the Spokane LOC recently visited the Spokane Convention Center and reported that the site promises to be great.

You may have heard that the June AAS meeting in Madison has been converted to a fully remote/virtual meeting.

If necessary, we will consider whether such measures need to be taken for the DPS meeting. For now, we are holding

fast and moving forward with plans. Keep an eye on the Spokane meeting website (https://aas.org/meetings/dps52 [2])

for updates, and we anticipate that abstracts will be due in the usual ~July timeframe.

2. **COVID-19 Resources for the Planetary Community**

The DPS Committee has established a website (https://dps.aas.org/covid19-resources [3]) of resources that may be of

assistance to members during the coronavirus crisis. Because cancelled in-person conferences can hinder job-seekers

looking to make connections, the website allows members to view job postings as well as to post links to contact

info and CVs. We also provide links to resources for researchers and teachers adapting to online work. Please let

us know if you have additional resources they would like us to post.

3. **Delay in DPS Prize Nomination Submissions**

Submissions for DPS prize nomination packages are **now due April 15.** We have pushed out the deadline by 2

weeks to support those dealing with coronavirus-related issues. Please see https://dps.aas.org/prizes [4] for information

about prizes and nominate your colleagues!

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SSERVI VIRTUAL WORKSHOP ON LUNAR VOLATILES AND SOLAR SYSTEM SCIENCE, APRIL 21-22, 2020

The Solar System Exploration Research Virtual Institute (SSERVI) invites all interested members of the community to participate in a Workshop Without Walls on the theme of Lunar Volatiles and Solar System Science, to be held April 21-22. This will be a virtual meeting to discuss the latest research on lunar volatiles and outstanding questions for the upcoming decade.

Workshop participation is open to all, and presenters will be selected from contributed abstracts. We welcome contributions discussing the key questions driving your current and future research, the broader significance of lunar volatiles (including comparative planetology, and processes occurring on other solar system bodies), and missions/measurements that would address outstanding questions

for science and exploration.

Registration is not required, but is requested to facilitate planning and communication. For more information, to register and submit abstracts, please visit: https://sservi.nasa.gov/volatiles-workshop [5]. Abstracts (< 300 words) are due by March 31, 2020.

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2020 NASA PLANETARY SCIENCE SUMMER SCHOOL APPLICATIONS DUE DATE EXTENDED

Now through April 13, 2020, NASA is encouraging applications for its 32nd Annual Planetary Science Summer School. Offered by the Jet Propulsion Laboratory in Pasadena, California, PSSS is a 3-month long early career development experience to help prepare the next generation of planetary science and engineering mission leaders. Participants learn the process of developing a hypothesis-driven robotic space mission in a concurrent engineering environment while getting an in-depth, first-hand look at mission design, life cycle, costs, schedule and the trade-offs inherent in each.

Science and engineering doctoral candidates, recent Ph.D.s, postdocs, junior faculty, and certain master's degree students, who are U.S. Citizens or legal permanent residents (and a very limited number of Foreign Nationals from non-designated counties), are eligible. Applicants from diverse backgrounds are particularly encouraged to apply. Partial financial support is available for a limited number of individuals.

Session 1: Preparatory Sessions May 18-July 17. Culminating Week at JPL July 20-24

Session 2: Preparatory Sessions May 18-July 31. Culminating Week at JPL August 3-7

Roughly equivalent in workload to a rigorous 3-hour graduate-level course, participants spend the first 10 weeks in preparatory webinars acting as a science mission team, prior to spending the final culminating week at JPL being mentored by JPL's Advance Project Design Team, or "Team X" to refine their planetary science mission concept design, then present it to a mock expert review board.

The deadline is April 13, 2020. To apply and learn more about the NASA Science Mission Design Schools:

http://go.nasa.gov/missiondesignschools [6]

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EPSC2020 SESSIONS

"Ice Giant System Science and Exploration"

Conveners: David H. Atkinson, Sushil Atreya, Thibault Cavalié, Leigh Fletcher, Mark Hofstadter, Kathleen Mandt, Olivier Mousis

Session Description

This session welcomes abstracts addressing all aspects of ice giant systems including (but not limited to) the internal structure of the ice giants, the composition, structure, and processes of and within ice giant atmospheres, and ice giant magnetospheres, satellites, and rings. We also welcome interdisciplinary talks that emphasise the cross-cutting themes of ice giant exploration, including the relationship to exoplanetary science and the connections to heliophysical studies. The session will comprise a combination of solicited and contributed oral and poster presentations on new, continuing, and future studies of the ice giant systems and the connection of the ice giants to our current understanding of planetary origins, both in our solar system and around other stars. We welcome papers that

- Address the current understanding of ice giant systems, including atmospheres, interiors, magnetospheres, rings, and satellites including Triton;

- Advance our understanding of the ice giant systems in preparation for future exploration, both remote sensing and in situ;

- Discuss what the ice giants can tell us about solar system formation and evolution leading to a better understanding of the current structure of the solar system and its habitable zone as well as extrasolar systems;

- Address outstanding science questions requiring future investigations including from spacecraft, remote sensing, theoretical, and laboratory work necessary to improve our knowledge of the ice giants and their relationship to the gas giants and the solar system;

- Present concepts for missions, instruments, and investigations to make appropriate and useful measurements of the ice giants and ice giant systems.

The call for abstracts is now open. For more information, please see https://epsc2020.eu/abstract_management/how_to_submit_an_abstract.html [7]

Abstract deadline: 13 May 2020, 13:00 CEST.

“Radio and Optical Science Instrumentation and Techniques for Solar System Studies”

Conveners:

· David H. Atkinson, JPL, David.H.Atkinson@jpl.nasa.gov [8]

· Sami.W. Asmar, JPL, Sami.W.Asmar@jpl.nasa.gov [9]

· Daniele Durante, Sapienza, Università di Roma, daniele.durante@uniroma1.it [10]

· Silvia Tellmann, stellman@uni-koeln.de [11], Rheinisches Institut für Umweltforschung, Abteilung Planetenforschung, Universität zu Köln, Aachener Str. 209, 50931 Köln, Germany

Session Description

Radio Science techniques have advanced solar system exploration over the past five decades via studies of planetary and solar phenomena, and fundamental physics. This session encompasses radio science investigations using radio and optical techniques to study planetary and small body interiors (including ocean worlds), the structure and dynamics of planetary atmospheres, characterizing the scattering, electrical, and other properties of planetary surfaces, ionosphere/solar plasma characterizations accessible via multifrequency links, and research in solar system dynamics and fundamental physics. Technologies relevant to this session include the design of small spacecraft networks and constellations including smallsat pairs such as GRAIL and mission concepts comprising multiple entry probes, advances in space clock technologies, novel communications
architectures including optical links, advances in radio and laser technologies, flight and ground instrumentation, and new instrumentation and techniques for entry probe radio science.

The call for abstracts is now open. For more information, please see https://epsc2020.eu/abstract_management/how_to_submit_an_abstract.html [7]

Abstract deadline: 13 May 2020, 13:00 CEST.

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NASA PLANETARY DATA SYSTEM (PDS) ANNUAL CUSTOMER SATISFACTION SURVEY 2020

NASA’s PDS customer satisfaction survey of the Planetary Data System (PDS) is still open. This survey will be used to set priorities for the PDS, identify areas for improvement, determine what new services are needed, and ensure that the needs of the scientific community are well met both now and in the future.

The survey is available at the following anonymous link: Below is the anonymous survey link that can be posted to any website: https://feedback.app.cfigroup.com/l/r/NASAPDSGen [12]

Alternatively, you may have also received an email invitation with a link from our consultant, CFI Group, which is working on behalf of NASA and the PDS to administer the survey. Note that no personal data is tracked and the survey will remain anonymous.

We hope to get the widest response possible and appreciate your support in helping us to improve the PDS. Please contact the PDS at pds-operator@jpl.nasa.gov [13] with questions on the survey.

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JOBS, POSITIONS, OPPORTUNITIES

A) POSTBACCALAUREATE POSITIONS IN INSTRUMENT MODELING,

ATMOSPHERIC MODELING, AND LABORATORY STUDIES WITH THE

NASA SELLERS EXOPLANET ENVIRONMENTS COLLABORATION (SEEC)

Applications are now being accepted for multiple short-term postbaccalaureate research positions to support the Sellers Exoplanet Environments Collaboration [14] (SEEC) at NASA/Goddard Space Flight Center in Greenbelt, Maryland. The position is funded through the Southeastern Universities Research Association and the Center for Research and Exploration in Space Science and Technology II [15].

Positions available with SEEC span a variety of research areas. Successful candidates will be chosen to work on one of the research areas listed below.

1. Assist in developing a Python software framework to simulate spectroscopic exoplanet data acquired with a suite of novel instrument technologies. Previous experience data simulation or analysis is required.
2. Assist in developing planet atmosphere retrieval algorithms to examine the scientific return from simulated and future data products. Results from these data simulations and analysis will facilitate design trade studies to inform technology investments and laboratory demonstrations. Previous experience in modeling or analyzing planetary atmospheres is required.
3. Perform either 3-D climate model simulations of exoplanet atmospheres, in order to produce observables for missions like JWST and ground-based telescopes like ELTs, and/or modify a 1-D photochemistry code to apply for terrestrial and Neptune-like planets and generate observables like transit and reflection spectra. Previous experience in modeling or analyzing planetary atmospheres is required.
4. Assist in laboratory measurements of high-temperature gas-phase species and low-temperature ices, in order to determine optical properties and improve spectral modeling tools. Previous laboratory classwork, either in chemistry or physics, is required. Technical experience with vacuum systems and FTS/FTIR would be a major advantage.

Applications received by April 9, 2020 will receive best consideration.

Start date by April-June 2020 preferred.

The full job posting can be found at the following link:

https://cresst2.umd.edu/opportunities/SEEC%20Post-Baccalaureate%20Research%20Assistant%20Position.pdf [16]

B) POSTDOCTORAL RESEARCHERS IN PLANETARY MAGNETOSPHERIC PHYSICS

Applications are now being accepted for two or more postdoctoral scientists to work with the Planetary Magnetospheres Laboratory's magnetometer group at NASA/Goddard Space Flight Center in Greenbelt, Maryland. The position is funded through the

Center for Research and Exploration in Space Science and Technology II [15].

Position 1: The postdoctoral researcher(s) will work for either the Juno or MAVEN projects with the primary responsibility of conducting analysis and publishing the magnetometer results. In addition, each candidate will assist with the magnetometer data validation and calibration.

Position 2: The data scientist's primary responsibility will be to develop a data production pipeline. This involves taking raw magnetometer data, applying the appropriate transformations and calibrations, and producing the final public data products. The data scientist is encouraged to pursue their own research interest.

Candidates for this position should have earned a Ph.D. in physics, astronomy, planetary science, space physics, geosciences, or related fields. Successful candidates should also have expertise with one or more programming languages commonly used in space science including Python, IDL, MATLAB, and/or FORTRAN. A demonstrated track record in analyzing spaceflight data, especially magnetometer data and experience with the NAIF SPICE software package is highly desired. Funding for this position will be for one year, with the possibility of extension

based on performance and funding availability.

Each applicant should send a Curriculum Vita, list of publications, statement of

interest, and contact information for three references to katherine.s.mckee@nasa.gov [17].

The positions received by April 30, 2020 will receive the best consideration.

Start date by September 1, 2020 is preferred; later start dates may be negotiated.

Technical questions should be directed to Dr. Ron Oliversen (r [18]onald.j.oliversen@nasa.gov [18]).

For information on CRESST II contact Katherine McKee.

The full job posting can be found at the following link:

https://cresst2.umd.edu/opportunities/researchopp.html [19]

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Send submissions to:

Anne Verbiscer, DPS Secretary (dpssec@aas.org [20])

You are receiving this email because you are a DPS member.

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to privacy@aas.org [21]. The more general AAS privacy policy is available

online at https://aas.org/about/policies/privacy-policy [22]. Current and back

issues of the DPS Newsletter can be found at https://dps.aas.org/newsletters [23]

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[5] https://sservi.nasa.gov/volatiles-workshop
[6] http://go.nasa.gov/missiondesignschools
[7] https://urldefense.proofpoint.com/v2/url?u=https-3A__epsc2020.eu_abstract-5Fmanagement_how-5Fto-5Fsubmit-5Fan-5Fabstract.html&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=fG5pH1N7YtwOEF6xelPAeRse0ND3CGAXrgq3T4Wd0y4&m=QASaTi-99M_QS8U0kndibGH6mY3mS8B4PJYg4t87w8Q&s=1ECrM2QiQVVR3P66Fx8IErJ8ND1cPF3Trn42WlYEEc4&e=
[8] mailto:David.H.Atkinson@jpl.nasa.gov
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[11] mailto:stellman@uni-koeln.de
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[13] mailto:pds-operator@jpl.nasa.gov
[14] https://seec.gsfc.nasa.gov/
[15] https://urldefense.proofpoint.com/v2/url?u=https-3A__cresst2.umd.edu_&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=fG5pH1N7YtwOEF6xelPAeRse0ND3CGAXrgq3T4Wd0y4&m=QASaTi-99M_QS8U0kndibGH6mY3mS8B4PJYg4t87w8Q&s=jbECXihld6IL7j8yoBb3kQ-8z_x56-dTcbOcZ3KgaoM&e=
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[17] mailto:katherine.s.mckee@nasa.gov
[18] mailto:ronald.j.oliversen@nasa.gov
[19] https://urldefense.proofpoint.com/v2/url?u=https-3A__cresst2.umd.edu_opportunities_researchopp.html&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=fG5pH1N7YtwOEF6xelPAeRse0ND3CGAXrgq3T4Wd0y4&m=QASaTi-99M_QS8U0kndibGH6mY3mS8B4PJYg4t87w8Q&s=IEjD9HQ3cP9PkbPROWC-pdFY8OTDx7eXizcRbZ5RCUY&e=
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[23] https://urldefense.proofpoint.com/v2/url?u=https-3A__dps.aas.org_newsletters&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=fG5pH1N7YtwOEF6xelPAeRse0ND3CGAXrgq3T4Wd0y4&m=QASaTi-99M_QS8U0kndibGH6mY3mS8B4PJYg4t87w8Q&s=z9dwTlaN7oIv-algifl2boEWjdBpjKQSiO8bg_glHdk&e=