

## Newsletter 17-16

Issue 17-16, April 11, 2017

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### VOLUNTEER AS A TOTAL SOLAR ECLIPSE SUBJECT MATTER EXPERT

Join NASA's efforts to engage the public about the August 21, 2017 total solar eclipse by volunteering as a Subject Matter Expert!

NASA welcomes scientists, engineers, science writers, amateur astronomers, and science educators to identify themselves as subject matter experts, or SMEs, available and interested in supporting programs around the nation on August 21. By volunteering, groups seeking an expert speaker can reach out to you to join their event.

To be considered as a SME, you will need to have a minimum understanding of

selected eclipse content. Before filling out the application form

(<https://eclipse2017.nasa.gov/subject-matter-expert> [1]) you must download and review eclipse training documents. In addition, you must meet the following requirements:

- Be at least 21 years of age.
- Have a basic working knowledge of astronomy especially eclipses and the sun-Earth-Moon system.
- Be available to support a solar eclipse event somewhere in the country as a speaker/eclipse educator.

For more information, access to eclipse training documents, and to apply, visit:

<https://eclipse2017.nasa.gov/subject-matter-expert> [1]

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#### NASA FRONTIER DEVELOPMENT LAB (FDL) APPLICATIONS OPEN

NASA Frontier Development Lab (FDL) has announced its 2017 challenges and opened the application process for participants, with a deadline of April 19, 2017. FDL is looking for 12 planetary scientists and 12 computer scientists with machine-learning emphasis. Applicants must have a masters, doctorate or post-doc level of understanding in this year's problem areas (Heliophysics, Astronomy, Exogeology, Data Science, Software Engineering or Advanced Statistics). The challenge questions for 2017 cover planetary defense, space weather and space resources.

Hosted by the SETI Institute in Mountain View, CA, FDL is an applied research accelerator established to tackle knowledge gaps in space

science by bringing together machine learning expertise and physical science specialists at the PhD level. Interdisciplinary teams address tightly defined problems and the format encourages rapid iteration and prototyping to create outputs with meaningful application. The 2017 8-week program will accept 24 participants and will run June 26 - August 18, 2017.

To learn more about FDL, the 2017 challenge questions, and to apply, please visit the FDL website at:

<http://www.frontierdevelopmentlab.org> [2]

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ROSES-17 AMENDMENT 5: C.22 OREX-PSP FINAL TEXT

OSIRIS-REx launched September 8, 2016, with the primary objective of traveling to the near-Earth (Apollo type, spectral class B) asteroid 101955 Bennu, obtaining a sample containing at least 60 g of regolith material, and delivering this sample back to Earth. Once the spacecraft reaches Bennu, a wide range of observations and measurements will be made to characterize and map the asteroid, identify and characterize in detail sites where samples might be collected, and finally to collect a sample from the optimal site and stow it for delivery to Earth.

The objective of the OSIRIS-REx Participating Scientist Program (OREx-PSP) is to enhance the scientific return during the asteroid-operational phase of the OSIRIS-REx mission by expanding

participation in the mission through new investigations that broaden and/or complement existing investigations.

Step-1 proposals are due May 4, 2017, and Step-2 proposals are due July 11, 2017. Questions and comments on this draft program element should be directed to Jeffrey Grossman and or Christina Richey at [hq-orexpsp@mail.nasa.gov](mailto:hq-orexpsp@mail.nasa.gov) [3].

This Amendment to the NASA Research Announcement ROSES 2017 will be posted on the NASA research opportunity homepage at:

<http://nspires.nasaprs.com/> [4]

and will appear on the RSS feed at:

<https://science.nasa.gov/researchers/sara/grant-solicitations/roses-2017/> [5]

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**NASA PLANETARY SCIENCE DIVISION SEEKS REVIEWERS FOR  
SOLAR SYSTEM OBSERVATIONS (SSO) PROPOSALS**

The planetary science division is seeking subject matter experts to serve as mail-in and/or panel meeting reviewers of proposals submitted to the ROSES-17 Solar System Observations program element.

To volunteer please go to:

<https://science.nasa.gov/researchers/volunteer-review-panels/2017-solar-system-observations> [6]

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### SALMON-3 MMX NGRS PRE-PROPOSAL CONFERENCE

The Planetary Science Division of NASA's Science Mission Directorate released, on March 21, 2017, a Program Element Appendix (PEA) to the Third Stand-Alone Missions of Opportunity Notice (SALMON-3), soliciting proposals for the development of, and science investigations using, a Neutron and Gamma-Ray Spectrometer for the Japan Aerospace Exploration Agency (JAXA) Martian Moons eXploration (MMX) mission. The Pre-Proposal Conference for this PEA will be held, via Webex, on Monday, April 17, 2017, from 1:00 PM to 4:00 PM EDT. Details on attending this conference will be posted on the acquisition homepage for the MMX PEA:

<http://soma.larc.nasa.gov/mmx/> [7]

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### TAKE THE PLANETARY MAP SURVEY (MAPSIT)

Please take a few minutes to fill out this short anonymous survey about planetary map creation and use. This request takes <5 minutes and covers all types of mapping efforts focused on non-terrestrial bodies.

[http://bit.ly/map\\_input](http://bit.ly/map_input) [8]

Poll results will help inform how planetary geoscience mapping efforts can be improved. Results and paths forward will be posted on the MAPSIT

webpage by end of summer:

<http://www.lpi.usra.edu/mapsit> [9]

Please forward the above link as needed to interested community members. Thank you in advance for your time.

MAPSIT Steering Committee

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VEXAG MEETING #15, NOVEMBER 14-16, 2017

Venus Exploration Analysis Group (VEXAG) Meeting #15 will be held on Tuesday-Thursday, November 14-16, 2017, at the Applied Physics Laboratory, Laurel, Maryland.

Current plans are:

Tuesday, November 14, 2017 - NASA and Mission Reports

Wednesday, November 15, 2017 - Venus Science and Technology Reports

Thursday, November 16, 2017 - VEXAG Activities (adjourn at mid-day)

If you'll be attending in person and haven't done so already, please enter your name on the Meeting Registration/Intent to Attend Form on the VEXAG Web-Site:

[https://www.hou.usra.edu/meeting\\_portal/registration/?mtg=vexag2017](https://www.hou.usra.edu/meeting_portal/registration/?mtg=vexag2017) [10]

on or before October 29. Look for a one-page abstract call in the summer.

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## JOBS, POSITIONS, OPPORTUNITIES

### A) TWO POSTDOCTORAL POSITIONS AT NORTHERN ARIZONA UNIVERSITY

The Edwards research group in the Department of Physics and Astronomy at Northern Arizona University seeks two postdoctoral scholars. This group works on characterizing the surfaces of rocky planets and instrument development. The successful candidate will carry out independent research related to the job, is expected to publish scientific papers and, may submit proposals for external funding.

#### Minimum Qualifications:

A PhD in geoscience/remote sensing/planetary science or a related field

#### Preferred Qualifications (Job 603079):

- \* Experience with thermal infrared/visible-near infrared/visible remote sensing data of planetary surfaces, especially the Moon or Mars
- \* Experience with planetary science software packages (e.g. ISIS, IDL, Python, etc.)
- \* Strong background in scientific programming
- \* Experience with GIS, thermal modeling and/or spectral modeling of planetary surfaces

#### Preferred Qualifications (Job 603080):

- \* Strong working knowledge of laboratory spectroscopic methods

- 
- \* Experience using laboratory/field instruments to address outstanding problems in geoscience/planetary science
  - \* Optical instrument development experience
  - \* Solid modeling and thermal modeling experience

Applications must include a curriculum vitae, cover letter, statement of research interests and contact information for three professional references.

Application deadline: April 20, 2017 11:59PM MST

For questions, please contact: [Christopher.Edwards@nau.edu](mailto:Christopher.Edwards@nau.edu) [11]

[https://hr.peoplesoft.nau.edu/psp/ph92prta/EMPLOYEE/HRMS/c/HRS\\_HRAM.HRS\\_APP\\_SCHJOB.GBL?Page=HRS\\_APP\\_JBPST&Action=U&FOCUS=Applicant&SiteId=1&JobOpeningId=603079&PostingSeq=1](https://hr.peoplesoft.nau.edu/psp/ph92prta/EMPLOYEE/HRMS/c/HRS_HRAM.HRS_APP_SCHJOB.GBL?Page=HRS_APP_JBPST&Action=U&FOCUS=Applicant&SiteId=1&JobOpeningId=603079&PostingSeq=1) [12]

[https://hr.peoplesoft.nau.edu/psp/ph92prta/EMPLOYEE/HRMS/c/HRS\\_HRAM.HRS\\_APP\\_SCHJOB.GBL?Page=HRS\\_APP\\_JBPST&Action=U&FOCUS=Applicant&SiteId=1&JobOpeningId=603080&PostingSeq=1](https://hr.peoplesoft.nau.edu/psp/ph92prta/EMPLOYEE/HRMS/c/HRS_HRAM.HRS_APP_SCHJOB.GBL?Page=HRS_APP_JBPST&Action=U&FOCUS=Applicant&SiteId=1&JobOpeningId=603080&PostingSeq=1) [13]

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#### UPCOMING WORKSHOPS AND MEETINGS

##### A) AIDA THIRD INTERNATIONAL WORKSHOP

Johns Hopkins Applied Laboratory, Laurel, MD

June 20-22, 2017

The 3rd AIDA International Workshop will be held June 20-22, 2017 at the Johns Hopkins Applied Physics Laboratory (JHU/APL) in Laurel, Maryland.

The AIDA project is a technology demonstration of asteroid deflection by a



kinetic impactor. It is an international cooperation composed of two missions, the NASA DART (Double Asteroid Redirection Test), which is the kinetic impactor, and the ESA AIM (Asteroid Impact Mission). The combination of DART and AIM is AIDA. The first AIDA international workshop took place in October, 2014, and the second AIDA workshop was held in June, 2016.

The 3rd AIDA International Workshop will discuss planetary defense and science topics:

Predictions of momentum transfer by kinetic impactor; determinations of momentum transfer from Earth-based remote sensing and from in situ observations at the target [65803] Didymos; kinetic impact simulations; Didymos physical properties and dynamical system, with changes induced by kinetic impact; impact ejecta dynamical fates and evolution; science proximity observations at Didymos.

For additional information see <http://dart.jhuapl.edu/aida-workshop2017/> [14]

## B) ENABLING EXOPLANET OBSERVATIONS WITH JWST

STScI, Baltimore, MD

10-12 July 2017

This workshop will provide a forum for the exoplanet community to learn about and discuss planning JWST observations to characterize transiting exoplanets. Talks will inform potential users about science opportunities and tools for observation planning. Data challenges will introduce the community to planned data products and identify key tools and resources

for further data reduction and interpretation. With a Cycle 1 proposal deadline in early 2018, this workshop will serve as an important opportunity for the transiting exoplanet community to begin building high-quality JWST observing programs.

Registration is now open. The registration fee is \$165.00 to attend the workshop. For more information regarding this workshop, please visit <http://www.cvent.com/d/n5q7nc> [15].

#### C) EPSC CONFERENCE

Riga, Latvia

17-22 September 2017

Dear colleagues,

this is a reminder for the upcoming abstract submission deadline of the next EPSC conference (<http://www.epsc2017.eu> [16]) that will be held in Riga on 17-22 September 2017.

The "Abstract submission deadline" is May 3, 2017, 13:00 CEST.

We would like to invite you to submit an abstract to the Session:

SB5 - "Ceres and Vesta - 10th anniversary of Dawn Special Session".

Session summary: September 2017 marks 10 years since the launch of NASA's Dawn mission. Dawn has been the first mission to orbit two different targets in the main asteroid belt: the largest asteroid Vesta and the dwarf planet Ceres. Dawn's overall results represent a huge leap in our understanding

of these bodies.

In this session we welcome contributions that cover: 1) latest results obtained from the Dawn mission on both Ceres and Vesta, concerning geology, mineralogy, surface composition and/or geophysics, 2) comparative analysis of Vesta and Ceres in terms of surface processes, internal structure, thermal evolution and origins.

The goal of this session is to highlight the major achievements of the Dawn mission, and to illustrate recent discoveries and ongoing work on Vesta and Ceres through direct analysis of Dawn data, study of analogs and/or theoretical models.

To submit you may use the following link:

<https://administrator.copernicus.org/authentication.php> [17]

Looking forward to see you in Riga,

the conveners

Katrin Stephan

Michael Toplis

Francesca Zambon

D) FORMATION OF COMPLEX MOLECULES IN SPACE AND ON PLANETS,  
FROM INTERSTELLAR CLOUDS TO LIFE

Tartu, Estonia

17 - 22 July 2017

The summer school course aims to cover the biochemical evolution in the universe from formation of the first molecules in interstellar clouds to the assembly of the first cells on Earth. The course consists of lectures, student-led discussions and poster sessions. The following subjects are included:

- Formation of the elements in space
- Chemical processes in dark clouds, star-forming regions and protoplanetary disks
- Atmospheric processes in rocky, gaseous planets and their satellites
- Emergence of Homochirality
- Formation of complex molecules in hydrothermal systems
- From carbon molecules to biogenic activity
- Assembly of first cells

Participants will also have the possibility to display their own research results in a poster session. Furthermore, a half-day excursion to interesting sites in the area (Ice Age Museum, Lake Peipus) and a walk in Tartu are included as a social programme.

The event is aimed for students and early career scientists and open to applicants from all nationalities. Detailed information about the summer school and the application procedure (deadline 31 May 2017) can be found at the website:

<http://www.nordicastrobiology.net/Tartu2017> [18]

## E) THE EARLY HISTORY OF PLANETARY SYSTEMS AND HABITABLE PLANETS

Conference for Early Career Astrobiologists

Tartu, Estonia

8 - 10 August 2017

The Astrobiology early career scientists conference "The Early History of Planetary systems and habitable planets" will be hosted in Tartu, Estonia. The event will start on the morning of August 8th and finishes in August 10th in the evening.

The main (but by no means exclusive) themes of the conference are:

- Formation of protoplanetary disks and planetary systems
- Early History of Earth and other planets
- Impacts and their role in the evolution of planets
- Formation and evolution of planet and satellite atmospheres
- Co-evolution of Earth's geosphere and biosphere and the evolution of life
- Habitability and factors influencing it
- Life in extreme environments and its possible role in the evolution of life on Earth
- Habitable extrasolar planets: detection and characterisation
- New aspects of planetary evolution

A large number of bursaries is available for students and early career scientists (up to 8 years after their Ph.D) covering meals and accommodation during the entire meeting (evening August 7th, to morning August 11th). Deadline for registration is 29th June 2017.

Information can be found at the website:

<https://sisu.ut.ee/eac/home-0> [19]

## F) IMPACTS AND THEIR ROLE IN THE EVOLUTION OF LIFE

Saaremaa, Estonia

25 July - 3 August 2017

The summer school course "Impacts and their Role in the Evolution of Life" will take place from 25 July to 3 August 2017 at Kuressaare and the Kaali impact crater site on the island of Saaremaa, Estonia. The course consists of lectures, practical exercises and student-led discussions. Participants will also have the possibility to display their own research results in two poster sessions. The following subjects will be covered:

- Roles of impacts in the formation of habitable planets
- Physical and chemical properties of comets and meteorites
- Detection and investigation of impact craters by geological methods and remote sensing from space
- Ecological consequences of impacts and the role of impacts in mass extinctions
- Transfer of life through meteorite impacts
- Threat of life on our planet by near-Earth asteroids and comets

Practical exercises include:

- Electromagnetic mapping of impact sites
- Analysis of pollen indicators of the Kaali impact event.
- Microscopy of impactites
- Georadar profiling

Bursaries covering meals and accommodation are available for a number of students from most European Countries. Application deadline is 30 April 2017. The website:

<http://www.nordicastrobiology.net/Impacts2017> [20]

#### G) GEOSCIENCES FOR UNDERSTANDING HABITABILITY IN THE UNIVERSE

EGU Galileo Conference

Terra Nostra Garden Hotel, Furnas, Azores

25 - 29 September 2017

This conference will address some hotly debated questions in the field including the following:

- What effects do core and mantle have on evolution and habitability of planets?
- What is the relation between (plate) tectonics and atmospheric evolution?
- What role does the mantle overturn play in the evolution of the interior and atmosphere?
- What is the role of the global carbon and water cycles herein?
- What influence do comet and asteroid impacts exert on the evolution of the planet?
- How does life interact with the evolution of Earth's geosphere and atmosphere?
- How can we use our knowledge of the solar system geophysics and habitability for exoplanets?



The conference will be held at the Hotel Terra Nostra Garden, Furnas, Sao Miguel, Azores, Portugal. The hotel is a newly renovated Art Deco hotel with a large, famous botanical garden. The Joao Paulo Airport with frequent direct flights to the European mainland is located only 45 km from the venue. The deadline for registration and abstract submission is 15 June 2017.

The website of the event is found at:

<http://www.egu-galileo.eu/gc2-habitability/> [21]

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Send submissions to:

Anne Verbiscer, DPS Secretary ([dpssec@aas.org](mailto:dpssec@aas.org)) [22]

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- [11] <mailto:Christopher.Edwards@nau.edu>
- [12] [https://hr.peoplesoft.nau.edu/psp/ph92prta/EMPLOYEE/HRMS/c/HRS\\_HRAM.HRS\\_APP\\_SCHJOB.GBL?Page=HRS\\_APP\\_JBPST&Action=U&FOCUS=Applicant&SiteId=1&JobOpeningId=603079&PostingSeq=1](https://hr.peoplesoft.nau.edu/psp/ph92prta/EMPLOYEE/HRMS/c/HRS_HRAM.HRS_APP_SCHJOB.GBL?Page=HRS_APP_JBPST&Action=U&FOCUS=Applicant&SiteId=1&JobOpeningId=603079&PostingSeq=1)
- [13] [https://hr.peoplesoft.nau.edu/psp/ph92prta/EMPLOYEE/HRMS/c/HRS\\_HRAM.HRS\\_APP\\_SCHJOB.GBL?Page=HRS\\_APP\\_JBPST&Action=U&FOCUS=Applicant&SiteId=1&JobOpeningId=603080&PostingSeq=1](https://hr.peoplesoft.nau.edu/psp/ph92prta/EMPLOYEE/HRMS/c/HRS_HRAM.HRS_APP_SCHJOB.GBL?Page=HRS_APP_JBPST&Action=U&FOCUS=Applicant&SiteId=1&JobOpeningId=603080&PostingSeq=1)
- [14] <http://dart.jhuapl.edu/aida-workshop2017/>
- [15] <http://www.cvent.com/d/n5q7nc>
- [16] <http://www.epsc2017.eu/>
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