Newsletter 16-06

Issue 16-06, February 28, 2016

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IN MEMORIAM: MILDRED SHAPLEY MATTHEWS (1915-2016)

On February 11, just four days short of her 101st birthday, Mildred Shapley Matthews passed away peacefully at her home in California with her family present. Mildred was the daughter of Harvard College Observatory Director Harlow Shapley and she held the interesting distinction of being “lost in the solar system” for 75 years. As a commemoration of his newborn daughter, Shapley bestowed the name Mildred to asteroid 878 discovered in 1916. Unfortunately the initial observations of the asteroid were limited, and the object was “lost” with highly uncertain orbital elements until recovered in 1991. Friends and colleagues seeing Mildred over the years would always ask, “are you found yet?” Matthews’ foundational contributions to planetary science began around the time of her nominal retirement age, when in the 1970s she began working as the production editor in the inaugural years of the Space Science Series created by Tom Gehrels. Her role became most prominently recognized as co-editor on more than a dozen volumes extending in to the 1990s. Overall for more than 20 Space Science Series volumes she edited, operating through friendly (then increasingly stern, but always polite) post cards and phone calls to delinquent authors, it was Matthews who brought the books into their final published form. Matthews leaves behind a legacy of books that have served as the gateway for countless planetary science careers and insights toward future advancements in our field. In 1993, Matthews received the DPS' Harold Masursky Award for Meritorious Service to Planetary Science.

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MESSAGE FROM THE FRS CHAIR:

The Federal Relations Subcommittee will be visiting Congress to advocate for planetary science on March 18 and April 21. In Fiscal Year 2016, Congress appropriated $1.63B for planetary science, and we will be thanking them for that and encouraging them to continue their strong support for our science. We are in the process of updating our messaging and the materials that we provide to Congressional offices. If you have any questions, please feel free to contact Makenzie Lystrup at dps.frschair@aas.org [1]

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CALL FOR LETTERS OF APPLICATION FOR MEMBERSHIP

ON NASA'S SCIENCE DEFINITION TEAM FOR EUROPA LANDER PRE-PHASE A STUDY

The Planetary Science Division of NASA's Science Mission Directorate plans to conduct a Pre-Phase A study of a Europa lander mission concept. This study will build upon previous NASA studies with a goal to defining the science objectives and feasibility of specific lander mission concept focused on assessing the habitability of and searching for life on Europa. NASA invites scientists and other qualified and interested individuals at U.S. institutions to apply for membership on the Europa Lander Science Definition Team (SDT).

Members of the SDT will provide the technical team and NASA with scientific assistance and input during preliminary mission design. Near-term activities of the SDT will include the establishment of prioritized science objectives and a realistic scientific concept of operations, development and assessment of alternative architectures, including model payload/instrument suites for proof of concept, and suggestions for threshold science objectives/measurements for a viable mission within resource constraints provided by NASA. NASA will use the products of this study for planning purposes. The SDT will be formed in March 2016 and will be disbanded after the work is complete.

The SDT will:

1. Identify and prioritize science objectives to be addressed by the lander mission concept.

2. Participate in a Pre-Phase A mission concept study designed to address those science objectives. Aspects of this participation will include:

• Science traceability, identification of measurements, and specification of model payload
• Science concept of operations
• Participation in tradeoffs among scientific value, cost, and risk

3. Assist in the preparation of study reports.

Volunteers selected for membership will have demonstrated expertise and knowledge in areas highly relevant to science relevant for the lander mission concept. NASA anticipates the selection of approximately seven to ten SDT members. Representative(s) from the NASA Planetary Science Division will serve as ex officio members of the SDT.

DETAILS REQUESTED FOR SDT MEMBERSHIP SELECTION

Responses to this Call for Membership in the SDT shall be in the form of a Letter of Application. The Letter of Application should provide clearly defined evidence of the candidate's relevant demonstrated experience and background. The Letter of Application may also contain a brief list of references to scientific or technical peer-reviewed papers the applicant has published that formally establish their position of scientific leadership in the community; this list is not included in the page count limitation below. The letter should also contain a statement confirming the applicant's time availability during the next twelve months to participate on the SDT, particularly if there are any major schedule constraints that may restrict

engagement at critical times. The expected time commitment would include the following:

• Weekly to biweekly teleconferences beginning in April 2016
• Two face-to-face meetings in the first half of 2016
• Preparation and review of materials for the final report
• Additional teleconferences and face-to-face meetings as the SDT deems appropriate

Note that a significant amount of the interaction among the SDT is anticipated to be via E-mail and webex.

Letters of Application are invited only from individuals, and group applications will not be considered. In addition, collaborations and teams will not be considered.

Each Letter of Application, limited to one page, shall be submitted by E-mail no later than March 18, 2016 (11:59 p.m. EST), to Dr. Curt Niebur at the address below. The subject line of the E-mail should include "Europa Lander SDT".

The issuance of this Call for Letters of Application does not obligate NASA to accept any of the applications. Any costs incurred by prospective investigators in preparing submissions in response to this Call are incurred completely at the submitter's own risk.

Dr. Curt Niebur
Planetary Sciences Division
Science Mission Directorate
E-mail: curt.niebur@nasa.gov [2]
Phone: 202-358-0390

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SBAG ANNOUNCEMENT

Dear SBAG community,

An initiative to develop a long term roadmap for the exploration of Ocean Worlds has kicked off. The committee charged with developing this roadmap is committed to an open and inclusive process. At this point, all bodies which plausibly can have or are known to have an ocean will be considered as part of this study and that includes bodies of interest to SBAG.

Please consider joining this roadmap effort if this topic is of interest to you by emailing the co-chairs:

Amanda Hendrix (ahendrix@psi.edu [3])
Terry Hurford (terry.a.hurford@nasa.gov [4])
And please copy me on the email as well (nancy.chabot@jhuapl.edu [5]).

Best wishes,
Nancy Chabot
SBAG Chair

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2016 NASA PLANETARY SCIENCE SUMMER SCHOOL
APPLICATIONS OPEN

NASA is accepting applications from science and engineering post-docs, recent PhDs, and doctoral students for its 28th Annual Planetary Science Summer School, which will be held July 25-29, 2016 at the Jet Propulsion Laboratory in Pasadena, Calif.

During the program and pre-session webinars, student teams will carry out the equivalent of an early mission concept study, prepare a proposal authorization presentation, present it to a review board, and receive feedback. By the end of the session, students will have a clearer understanding of the life cycle of a space mission; relationships between mission design, cost, and schedule; and the tradeoffs necessary to stay within cost and schedule while preserving the quality of science.

Applications are due April 6, 2016. Partial financial support is available for a limited number of individuals. Further information is available at:

http://pscischool.jpl.nasa.gov [6]

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A NEW VOLUME IN THE “HELIOPHYSICS” SERIES

A fourth volume in the "Heliophysics" series will be released by Cambridge University Press (CUP) on March 17, 2016, entitled "Heliophysics: Active stars, their astrospheres, and impacts on planetary environments". This volume, edited by C. Schrijver, F. Bagenal, and J. Sojka, expands the topics related to the Sun-Earth connections presented in the preceding three volumes to other bodies in the solar system and to extrasolar planetary systems.

CUP (at cambridge.org) offers a 20% discount (on pre-orders, and throughout 2016 after the book becomes available) with discount code "heliophy": www.cambridge.org/9781107090477 [7].

The same discount (with the same code) applies to the hardcover and paperback editions of the preceding three "Heliophysics" volumes, subtitled "Plasma physics of the local cosmos", "Space storms and radiation: causes and effects", and "Evolving solar activity and the climates of space and Earth".

A provisional 5th volume on "Space Weather and Society" can be freely downloaded from:
http://www.vsp.ucar.edu/Heliophysics/science-resources-textbooks.shtml [8]

The Heliophysics books aim at the advanced undergraduate and at graduate-level students, taking the perspective of heliophysics as a single intellectual discipline. The books touch on most branches of heliophysics, with particular emphasis on universal processes and on the multi-disciplinary character of many of its diverse range of specialties. The list of topics includes the formation of planetary systems, astrophysical dynamos, heliospheric perturbations, particle acceleration, cosmic-ray modulation, interactions of the solar wind with planetary magnetospheres, impulstive

and explosive events, irradiance and the tropospheric climate system, ionospheric processes, and impacts of space weather on satellites and for manned space flight, among many more.

The Heliophysics book series has its origins in the Summer School series of the same name. Many of the recorded lectures, problem sets, lab manuals, and other online supporting materials can be accessed at the School's site at http://www.vsp.ucar.edu/Heliophysics/ [9].

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UPCOMING MEETINGS

A) 2016 ANNUAL LABORATORY ASTROPHYSICS DIVISION
OF THE AAS MEETING
San Diego, CA
June 13-16, 2016

http://lad.aas.org/meetings/lad2016 [10]

Key dates:
Regular Registration: March 3, 2016
Abstracts: March 3, 2016

The 2016 LAD meeting will be devoted to the interplay between laboratory astrophysics and other fields in astronomy, planetary science and related sciences. The meeting will be held jointly with the 228th Meeting of the AAS, and feature the inaugural 2015 Laboratory Astrophysics Prize talk by Lou Allamandola, a talk by the 2016 Laboratory Astrophysics Prize winner Peter Beiersdorfer, and a talk by the inaugural LAD Early Career Prize Winner Francois Lique. The sessions will cover the full range of LAD topics, with special focus on interplay with observatories such as ALMA, Hitomi (nee' Astro-H — now launched!), and NuSTAR.

The session titles and invited speakers are listed below; each session has room for contributed talks. A parallel 4-day long poster session, with all posters up the entire time, is also planned. We encourage you to submit.

Sessions:

Bridging Laboratory & Astrophysics: Dust & Ices with ALMA & Hitomi
Monday, 13 June 2014: 10:00 am-11:30 am
Laboratory astrophysics is the Rosetta Stone that enables astronomers to understand and interpret the cosmos. This session will focus on the interplay between astrophysics with theoretical and experimental studies into the underlying dust and ice processes, which drive our Universe, focusing on connections to ALMA or Hitomi observations.
Confirmed Speakers:

• Lou Allamandola, NASA/Ames Research Center
[Inaugural Laboratory Astrophysics Prize Talk]
• Lia Corrales, MIT

Bridging Laboratory and Astrophysics: Molecules seen with ALMA I
Monday, 13 June 2014: 2:00 pm-3:30 pm
Laboratory astrophysics is the Rosetta Stone that enables astronomers to

understand and interpret the cosmos. This session will focus on the interplay between astrophysics with theoretical and experimental studies into the underlying molecular processes, which drive our Universe, with special attention to connections with ALMA observations.
Confirmed Speakers:

• Viviana Guzman, Harvard
• Paola Caseli, MPE

Bridging Laboratory and Astrophysics: Molecules seen with ALMA II
Tuesday, 14 June 2014: 10:00 am-11:30 am
Laboratory astrophysics is the Rosetta Stone that enables astronomers to understand and interpret the cosmos. This session will focus on the interplay between astrophysics with theoretical and experimental studies into the underlying molecular processes, which drive our Universe, with special attention to connections with ALMA observations.
Confirmed Speakers:

• Francois Lique, University Le Havre [Inaugural LAD Early Career Prize Talk]
• Lucy Ziurys, University of Arizona

Bridging Laboratory and Astrophysics: Planetary Physics seen with ALMA and Hitomi
Tuesday, 14 June 2014: 2:00pm-3:30 pm
Laboratory astrophysics is the Rosetta Stone that enables astronomers to understand and interpret the cosmos. This session will focus on the interplay between astrophysics with theoretical and experimental studies into the underlying planetary science processes, which drive our Universe, with special attention to observations done with ALMA and Hitomi.
Confirmed Speakers:

• Martin Cordiner, NASA/Goddard Space Flight Center
• Geoff Blake, CalTech

Bridging Laboratory and Astrophysics: Atomic Physics seen with Hitomi
Wednesday, 15 June 2014: 10:00 am-11:30 am
Laboratory astrophysics is the Rosetta Stone that enables astronomers to understand and interpret the cosmos. This session will focus on the interplay between astrophysics with theoretical and experimental studies into the underlying atomic processes, which drive our Universe, with special attention to observations done with Hitomi.
Confirmed Speakers:

• Peter Beiersdorfer, Lawrence Livermore National Lab
[2016 Laboratory Astrophysics Prize Talk]
• Renata Cumbee, University of Georgia

Bridging Laboratory and Astrophysics: Atomic, Nuclear, & Particles Physics with Hitomi and NuSTAR
Wednesday, 15 June 2014: 2:00pm-3:30 pm
Laboratory astrophysics is the Rosetta Stone that enables astronomers to understand and interpret the cosmos. This session will focus on the interplay between astrophysics with theoretical and experimental studies into the underlying nuclear processes, which drive our Universe, with special attention to observations done with Hitomi and NuSTAR.

Confirmed Speakers:

• Javier Garcia, Harvard-Smithsonian Center for Astrophysics
• Steven Boggs, UC-Berkeley

Science Organizing Committee: Farid Salama, Randall Smith, Steven Federman, Paul Drake, Daniel Wolf Savin, John Black, Nancy Janet Chanover, Gianfranco Vidali, Karin Oberg, Edward Brown, Jan Cami, Oswald Siegmund

B) ASIA OCEANIA GEOSCIENCES CONFERENCE 2016
July 31 – Aug 5, Beijing, China

Session Title: Moon And Mercury - A Comparative View
Planetary Sciences - Session PS 16

Conference website:
http://www.asiaoceania.org/aogs2016/public.asp?page=home.htm [11]
Abstract submission deadline: extended to March 4, 2016

Session Description: Recent years have provided us with many new insights on both the Moon and Mercury. In the past the Moon was often considered as a Mercury analog. Now we know that this view is true only to a limited extent. However there are many similarities between these two bodies, and the differences allow us to learn more about airless bodies in the Solar System in general. Therefore we invite contributions to this comparative session. In addition to comparative presentations, contributions that focus on just one of these bodies are welcome.

Main Convener: Dr. Jorn Helbert
(German Aerospace Center (DLR), Germany), joern.helbert@dlr.de [12]
Co-convener(s): Dr. David Blewett
(Johns Hopkins University Applied Physics Laboratory, United States), David.Blewett@jhuapl.edu [13]
Prof. Sho Sasaki (Osaka University, Japan), sasakisho@ess.sci.osaka-u.ac.jp [14]
Prof. Masaki Fujimoto (Japan Aerospace Exploration Agency, Japan), fujimoto@stp.isas.jaxa.jp [15]

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Send submissions to:
Anne Verbiscer, DPS Secretary (dpssec@aas.org [16])

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