

# Mars Exploration Science Monthly Newsletter

A publication of the Mars Program Office and the Mars Exploration Program Analysis Group (MEPAG)

March 2014

## Mars Science News

### **29th MEPAG meeting**

*May 13-14 at the Crystal City Marriott in the Washington, DC area*

There have been many developments in Mars exploration over the past year: Discoveries by Curiosity and other operating Mars missions, the release of the AO and the receipt of instrument proposals for the 2020 Mars Rover, the launches of NASA's MAVEN and ISRO's MOM missions to Mars, the implications for Mars and Planetary Science of the passage of the FY14 budget and release of the President's proposed FY15 budget, and the developing vision of human exploration at Mars.

This meeting will report on the implications of these events as well as the overall status of Mars exploration. Further, there will be a report from the ongoing MEPAG Special Regions Science Analysis Group. The First Circular has been posted:

[http://mepag.nasa.gov/meeting/2014-05/MEPAG\\_2014\\_May\\_1st\\_circ\\_V3\\_SMD\\_ASH.pdf](http://mepag.nasa.gov/meeting/2014-05/MEPAG_2014_May_1st_circ_V3_SMD_ASH.pdf).

### **First Landing Site Workshop for the 2020 Mars Rover Mission**

*May 14-16 in the Washington, DC area (exact dates and venue TBC)*

The purpose of the first 2020 Landing Site Workshop will be to: 1) begin to identify and evaluate potential landing sites best suited to achieving science objectives of the 2020 Rover Mission within the constraints imposed by engineering requirements, planetary protection requirements, and the necessity of ensuring a safe landing; and 2) provide input to NASA and the 2020 Project at JPL on the relative importance of including any enhanced EDL capabilities on the mission. For more information and for registration, see: <http://marsnext.jpl.nasa.gov/>.

### **Eighth International Mars Conference**

*July 14-18, 2014 at the California Institute of Technology, Pasadena, CA*

As of 2014, we will have completed a remarkable and unparalleled fifteen years of concentrated scientific exploration of the Red Planet. This period includes eight successful missions (1996 Mars Global Surveyor, 1996 Mars Pathfinder, 2001 Mars Odyssey, 2003 Mars Exploration Rovers, 2003 Mars Express, 2005 Mars Reconnaissance Orbiter, 2007 Mars Phoenix, and 2011 Mars Science Laboratory), as well as telescopic observations from Earth, studies of martian meteorites, and a variety of numerical and laboratory modeling activities. Two additional missions will be en-route to Mars at the time of the conference (NASA's 2013 MAVEN and ISRO's 2013 Mars Orbiter Mission), and several other missions are actively under development for launch during the period 2016-2020. The Eighth International Mars Conference will be an ideal time to step back and summarize our current understanding of Mars, to consolidate our primary paradigms for Martian processes and history, and to refocus the primary scientific questions that remain in front of us.

We encourage Mars scientists from all scientific fields to plan to attend. The first four days of the conference will consist of morning and afternoon oral sessions organized around topical themes, along with late afternoon poster sessions of broader scope. The final day will consist of presentations and discussion focused on the synthesis of the ideas presented.

The Second Announcement has been posted: <http://www.hou.usra.edu/meetings/8thmars2014/>. Abstracts are due April 24, 2014. In accordance with new conference guidelines issued by NASA, the meeting will not charge a registration fee. We will have the capability for on-site registration, but we strongly encourage advance registration by June 13, 2014 — we will base our final logistical preparations, including the printing of conference materials, based on the count at that point. This is a Domestic Heavily Attended Conference (DHAC), so those that need to forecast travel (via the NCTS/JPL conference tools) should forecast soon.

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## **Planning for Potential Mars Returned Sample Science: Considerations Related to Sample Quality**

8:30am-4pm March 16, 2014 in the Panther Creek Room at The Woodlands conference center, The Woodlands, TX

The science community needs to describe the desired and minimum acceptable state of the samples that would be needed to achieve the scientific objectives of MSR. This is a key input into a). requirements formulation for the M-2020 rover, and b). forward planning for the other potential flight and ground elements that would be associated with MSR. Scientists with experience in any aspect of Mars-relevant sample studies are invited. Space is limited! Please RSVP to Carla De La Paz at [paz@jpl.nasa.gov](mailto:paz@jpl.nasa.gov).

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## **User Workshop for Mars ChemCam/LIBS Data**

3-6pm March 16, 2014 in the Alden Bridge Room of The Woodlands conference center, The Woodlands, TX

ChemCam on Curiosity provides a large and varied geochemical dataset available for the planetary community including laser-induced breakdown spectroscopy (LIBS), passive VIS reflectance spectra, and the highest resolution remote micro-images (RMI) from the rover. More than 8 GB of data are available at the Planetary Data System node (<http://pds-geosciences.wustl.edu/missions/msl/chemcam.htm>) including compositions from > 2500 locations along the rover traverse and > 1500 RMI images. Already > 25 submitted papers have included results from this data.

A 3-hour workshop will be held for community members interested in using this dataset at 3 pm on Sunday, March 16, in the Alden Bridge Room of The Woodlands conference center, in conjunction with the Lunar and Planetary Science Conference. In the workshop we will describe the LIBS technique as used on ChemCam and data processing for the levels 1 and 2 provided in the PDS. We will also provide a couple of tools to help understand and use the spectra. Attendees are strongly encouraged to RSVP at <http://msl-chemcam.com>. The contact is Roger Wiens ([rwuens@lanl.gov](mailto:rwuens@lanl.gov)). Presentation materials will also be posted on the PDS.

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## **SHARAD/MARSIS Data Users' Workshop**

3-7pm March 16, 2014 in the Montgomery Ballroom A at The Woodlands conference center, The Woodlands, TX

This workshop will provide an introduction to the radar sounding data from the SHARAD instrument on MRO and the MARSIS instrument on Mars Express. There is no registration fee; however, attendees are required to register at the Workshop website: [http://www.ig.utexas.edu/sharad\\_marsis/](http://www.ig.utexas.edu/sharad_marsis/)

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## **Student Travel Grants available for upcoming Mars meetings**

Student travel grants are available for (1) the First Landing Site Workshop for the 2020 Mars Rover Mission (May 14-16 in the Washington, DC area; due March 19) and (2) the 8th International Mars Conference (July 14-18, Pasadena, CA; due April 11). These opportunities are open to undergraduate and graduate students with Mars-related research interests, who are US citizens or legal residents. Information and the applications are posted on the MEPAG site::

<http://mepag.nasa.gov/student.cfm?expand=student>. Questions should be directed to Serina Diniega: [serina.diniega@jpl.nasa.gov](mailto:serina.diniega@jpl.nasa.gov).

## 2014 NASA Planetary Science Summer School Applications Open

NASA is accepting applications from science and engineering post-docs, recent PhDs, and doctoral students for its 26th Annual Planetary Science Summer School, which will be held in three separate sessions in summer 2014 (June 16-20, July 14-18, and August 11-15) 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 review 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. The 2014 sessions will address planetary exploration missions needing power system trade-offs, including the use of solar electric vs. Multi-mission Radioisotope Thermoelectric Generators (MMRTG). The session in August will have a targeted focus on spacecraft power systems.

Applications are due April 1, 2014. Partial financial support is available for a limited number of individuals. Further information is available at <http://pscischool.jpl.nasa.gov>.

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## 6th International Summer School on Radar/SAR Systems

July 4-11, 2014 in Bonn, GERMANY.

Fraunhofer FHR, one of Europe's leading radar research institutes and has pioneered radar and SAR research and development over the decades, is pleased to announce the 6th International Summer School on Radar/SAR, which will take place from 04-11 July 2014 in the picturesque Upper Middle Rhine region (Haus Humboldtstein). We cordially invite students, PhD candidates, post-docs and anyone else eager to broaden and deepen their understanding of radar and SAR techniques to participate in our summer school.

Internationally renowned experts from across Europe, USA and Canada make up the summer school lecture team. This is a unique opportunity to gain an in-depth appreciation of modern radar and SAR systems whilst absorbing the multifarious atmosphere of the famous Upper Middle Rhine region. Participation in the programme of social activities with the international group of attendees will inspire and enrich your learning experience. Due to the kind sponsorship from Cassidian (an EADS company) we can offer the summer school, inclusive full board and lodging, for only 600 Euro for students, 900 Euro for Ph.D. candidates, and 1200 Euro for all others.

Fraunhofer FHR cordially invites appropriate candidates to visit our website: <http://www.radarsummerschool.fraunhofer.de> for further information and to download the Application form. Specific queries regarding the summer school should be addressed to: [matthias.weiss@fhr.fraunhofer.de](mailto:matthias.weiss@fhr.fraunhofer.de). The application deadline is March 18, 2014.

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## Humans to Mars Summit

Co-sponsored by Explore Mars, the George Washington University, and the Space Policy Institute at GW, the Humans to Mars Summit (H2M) will be held on April 22-24, 2014 at George Washington University in Washington, DC. H2M will be a comprehensive Mars exploration conference to address the major technical, scientific, and policy related challenges that need to be overcome to send humans to Mars by 2030. Topics will include Mars mission architecture and challenges, science goals, planetary protection, International cooperation, Mars and STEM education, space and US competitiveness, ISRU, and many other topics.

Some of the tentative speakers already include Charles Bolden, William Gerstenmaier, James Garvin, James Greene, Doug McCuiston, Penelope Boston, Sam Scimemi, Mike Raftery, Marc Kaufman, Buzz Aldrin, Joel Levine, Miles O'Brien, Rebecca Keiser, and many more.

Register today at [h2m2014.exploremars.org](http://h2m2014.exploremars.org)

## Photogrammetric Processing of Planetary Stereo Imagery using SOCET SET<sup>®</sup>

April 29-May 1, 2014 at the Astrogeology Science Center of the USGS, Flagstaff, AZ.

The Planetary Photogrammetry Guest Facility at the Astrogeology Science Center of the U.S. Geological Survey would like to announce a Call for Participation for a training opportunity on April 29 - May 1, 2014, on Photogrammetric Processing of Planetary Stereo Imagery using SOCET SET<sup>®</sup>. **The training is free to participants**, and will cover end-to-end, hands-on photogrammetric procedures for surface extraction from Mars Reconnaissance Orbiter HiRISE image pairs. The topics include

- **An introduction to photogrammetric procedures and surface generation techniques;**
- **Overview of HiRISE imagery; and**
- **Workflow and data exchange between ISIS and SOCET SET.**

The hands-on training will include ISIS preprocessing, SOCET SET import of image and reference data, control point selection, orientation procedures, triangulation and bundle adjustment, manual and automated surface extraction of digital terrain models (DTM), editing, and data export.

If you are interested in participating in this opportunity, please send an email to [Dr. Raad Saleh \(PlanetaryPhotogrammetry@usgs.gov\)](mailto:Dr. Raad Saleh (PlanetaryPhotogrammetry@usgs.gov)) with the following specific information: your name, title, affiliation, address, full contact information, and a short statement describing your interest in the training. Please note that seating for this session is very limited, so please express your interest as soon as possible.

Please note the following:

1. Training will be 3 days, from Tuesday through Thursday, April 29 - May 1, 2014.
  2. The training will be based exclusively on a standard set of HiRISE stereo images.
  3. ISIS, SOCET SET and the Guest Facility support the use of images from several planetary cameras in addition to HiRISE. While this hands-on training will be based on HiRISE images, it would be our pleasure to advise participants on the suitability of other planetary cameras for their research projects. Furthermore, we can provide one-on-one support to producing DTMs at later days.
  4. The Guest Facility has a single workstation available year-round for users who need to generate their own products. If you would like to stay longer (after this training) or come at a later date to generate your own products using the Guest Facility, please let us know the kind of images you would be using and how many DTMs you hope to produce so that we can schedule your visit accordingly.
  5. For more information about the Guest Facility, and for Frequently Asked Questions, please visit: <http://astrogeology.usgs.gov/geology/photogrammetry-guest-facility>. Go to Downloads at the bottom of the page and follow the link "Planetary Photogrammetry Guest Facility FAQ".
  6. If you are interested in ISIS training, please see: <http://isis.astrogeology.usgs.gov/IsisWorkshop/index.php/IsisWorkshop>
- With your participation, we look forward to realizing another successful and productive training session. In the meantime, please do not hesitate to contact me directly if you have any questions or require further information.




Thank you

Contact: Dr. Raad Saleh [PlanetaryPhotogrammetry@usgs.gov](mailto:PlanetaryPhotogrammetry@usgs.gov)  
Training Coordinator, The Planetary Photogrammetry Guest Facility  
United States Geological Survey

## Near-term Due Dates (next three months)

Due	Project
March 13th, 2014	<b>Workshop on Planetary Volcanism</b> Abstract Deadline
March 14th, 2014	<b>Clay Minerals Society Meeting</b> Abstract Deadline <b>48th ESLAB Symposium: New Insights to Volcanism Across the Solar System</b> Abstract Deadline
March 20th, 2014	<b>1st Exomars 2018 Landing Site Selection Workshop</b> Registration Deadline
March 28th, 2014	<b>Habitable Worlds Across Time and Space</b> Registration Deadline
March 31st, 2014	<b>Biosignatures Across Space and Time</b> Abstract and Registration Deadline <b>Humans to Mars Summit</b> Registration Deadline
April 1st, 2014	<b>Annual Planetary Science Summer School</b> Application Deadline for all sessions
April 4th, 2014	<b>Clay Minerals Society Meeting</b> Early Registration Deadline
April 15th, 2014	<b>48th ESLAB Symposium: New Insights to Volcanism Across the Solar System</b> Early Registration Deadline <b>Eighth International Conference on Aeolian Research (ICAR VIII)</b> Abstract and Early Registration Deadline
April 18th, 2014	<b>Venus Exploration Targets Workshop</b> Early Registration Deadline
April 24th, 2014	<b>8th International Conference on Mars</b> Abstract Deadline
April 30th, 2014	<b>ISC 2014 Sedimentology at the Crossroads of New Frontiers</b> Abstract Deadline
May 6th, 2014	<b>European Planetary Science Congress</b> Abstract Deadline
May 7th, 2014	<b>6th Alfvén Conference: Plasma interaction with solar system objects: anticipating Rosetta, Maven and Mars Orbiter Mission</b> Abstract and Early Registration Deadline
May 17th, 2014	<b>40th COSPAR 2014 and Associated Events</b> Early Registration Deadline
May 27th, 2014	<b>Workshop on Planetary Volcanism</b> Registration Deadline

## Upcoming Conferences and Workshops

First Quarter, 2014		
	March 1-8, 2014 Big Sky, MT, USA	<b>IEEE Aerospace Conference</b> <a href="http://www.aeroconf.org/">http://www.aeroconf.org/</a>
	March 16, 2014 The Woodlands, TX, USA	<b>SHARAD/MARSIS Data Users' Workshop</b> <a href="http://www.ig.utexas.edu/sharad_marsis/">http://www.ig.utexas.edu/sharad_marsis/</a>
<b>New!</b>	March 16, 2014 The Woodlands, TX, USA	<b>Planning for Potential Mars Returned Sample Science: Considerations Related to Sample Quality</b> RSVP to Carla De La Paz at <a href="mailto:paz@jpl.nasa.gov">paz@jpl.nasa.gov</a> .
	March 16, 2014 The Woodlands, TX, USA	<b>User Workshop for Mars ChemCam/LIBS Data</b> Attendees are strongly encouraged to RSVP at <a href="http://msl-chemcam.com">http://msl-chemcam.com</a> .
	March 17-21, 2014 Woodlands, TX, USA	<b>45th Lunar and Planetary Science Conference</b> <a href="http://www.hou.usra.edu/meetings/lpsc2014/">http://www.hou.usra.edu/meetings/lpsc2014/</a>
	March 26-28, 2014 ESAC, Madrid, SPAIN	<b>1st Exomars 2018 Landing Site Selection Workshop</b>

## Second Quarter, 2014

	April 22-24, 2014 Washington, DC USA	<b>Humans to Mars Summit</b> <a href="http://h2m2014.exploremars.org">h2m2014.exploremars.org</a>
	April 28-May 1, 2014 Baltimore, MD, USA	<b>Habitable Worlds Across time and Space</b> <a href="http://www.stsci.edu/institute/conference/habitable-worlds">http://www.stsci.edu/institute/conference/habitable-worlds</a>
	May 13-14, 2014 Washington, DC USA	<b>Mars Exploration Analysis Group (MEPAG) Meeting</b> <a href="http://mepag.nasa.gov/meetings.cfm">http://mepag.nasa.gov/meetings.cfm</a>
<b>NEW!</b>	May 17-21, 2014 College Station, TX, USA	<b>Clay Minerals Society Meeting</b> <a href="https://cms2014.tamu.edu/">https://cms2014.tamu.edu/</a> , Special Session - Martian Clays
	May 19-21, 2014 Houston, TX, USA	<b>Venus Exploration Targets Workshop</b> <a href="http://www.hou.usra.edu/meetings/venus2014/">http://www.hou.usra.edu/meetings/venus2014/</a>
	May 20-22, 2014 Bergen, NORWAY	<b>Biosignatures Across Space and Time</b> <a href="http://www.nordicastrobiology.net/Biosignatures2014/">http://www.nordicastrobiology.net/Biosignatures2014/</a>
	May 26-31, 2014 Nice, FRANCE	<b>International interdisciplinary workshop on: Accretion and early differentiation of the terrestrial planets</b> <a href="http://www.accrete.uni-bayreuth.de/?page=workshops">http://www.accrete.uni-bayreuth.de/?page=workshops</a>
<b>NEW!</b>	May 28-30, 2014 Houston, TX, USA	<b>Workshop on Planetary Volcanism</b> <a href="http://www.hou.usra.edu/meetings/volcanism2014/">http://www.hou.usra.edu/meetings/volcanism2014/</a>
	June 16-21, 2014 Noordwijk, NETHERLANDS	<b>48th ESLAB Symposium: New Insights to Volcanism Across the Solar System</b> <a href="http://congrexprojects.com/2014-events/48-ESLAB/">http://congrexprojects.com/2014-events/48-ESLAB/</a>
	June 16-20, 2014 Pasadena, CA USA	<b>Annual Planetary Science Summer School, Session I</b> <a href="http://pscischool.jpl.nasa.gov">http://pscischool.jpl.nasa.gov</a>

## Third Quarter, 2014

	July 6-11, 2014 Nara, JAPAN	<b>ORIGINS 2014</b> <a href="http://www.origin-life.gr.jp/origins2014/index.html">http://www.origin-life.gr.jp/origins2014/index.html</a>
	July 7-11, 2014 London, UK	<b>6<sup>th</sup> Alfven Conference: Plasma interaction with solar system objects: anticipating Rosetta, Maven and Mars Orbiter Mission</b> <a href="https://www.ucl.ac.uk/mssl/planetary-science/alfven-conference">https://www.ucl.ac.uk/mssl/planetary-science/alfven-conference</a>
	July 14-18, 2014 Pasadena, CA, USA	<b>8th International Conference on Mars</b> <a href="http://www.hou.usra.edu/meetings/8thmars2014/">http://www.hou.usra.edu/meetings/8thmars2014/</a>
	July 14-18, 2014 Pasadena, CA USA	<b>Annual Planetary Science Summer School, Session II</b> <a href="http://pscischool.jpl.nasa.gov">http://pscischool.jpl.nasa.gov</a>
	July 21-25, 2014 Lanzhou, CHINA	<b>Eighth International Conference on Aeolian Research (ICAR VIII)</b> <a href="http://www.2014icar8.com">http://www.2014icar8.com</a> , Special session - Extra-terrestrial Aeolian research

### Third Quarter, 2014





	August 2-10, 2014 Moscow, RUSSIA	<b>40th COSPAR 2014 and Associated Events</b> <a href="http://www.cospar-assembly.org/">http://www.cospar-assembly.org/</a>
	August 11-15, 2014 Pasadena, CA USA	<b>Annual Planetary Science Summer School, Session III</b> <a href="http://pscischool.jpl.nasa.gov">http://pscischool.jpl.nasa.gov</a>
<b>New!</b>	August 18-22, 2014 Geneva, SWITZERLAND	<b>ISC 2014 Sedimentology at the Crossroads of New Frontiers</b> <a href="http://www.sedimentologists.org/meetings/isc">http://www.sedimentologists.org/meetings/isc</a> , Session 038 - Extraterrestrial Sedimentology
<b>New!</b>	September 7-12, 2014 Centro de Congressos do Estoril, Cascais, PORTUGAL	<b>European Planetary Science Congress</b> <a href="http://www.epsc2014.eu/">http://www.epsc2014.eu/</a>
	September 22, 2014	<b>MAVEN Mars Orbit Insertion (MOI)</b>
	September 24, 2014	<b>The Indian Space Research Organisation (ISRO) Mars Orbiter Mission (MOM) Mars Orbit Insertion</b>

### Fourth Quarter, 2014

	October 13-16, 2014 Edinburgh, Scotland	<b>EANA 2014 - The 14th European Astrobiology Conference</b> <a href="http://www.astrobiology.ac.uk/eana2014/">http://www.astrobiology.ac.uk/eana2014/</a>
	October 19-22, 2014 Vancouver, British Columbia, CANADA	<b>Geological Society of America Annual Meeting</b> <a href="http://www.geosociety.org/meetings/2014/">http://www.geosociety.org/meetings/2014/</a> , Special Session - MicroMars to MegaMars: Integration of Surface and Orbital Investigations
	October 19, 2014	<b>Comet Siding Spring closest approach to Mars</b>
	November 4-7, 2014 Greenbelt, MD, USA	<b>International Workshop on Instrumentation for Planetary Missions (IPM-2014)</b> <a href="http://ssed.gsfc.nasa.gov/IPM/">http://ssed.gsfc.nasa.gov/IPM/</a>
<b>New!</b>	November 9-14, 2014 Tucson, AZ, USA	<b>46th Meeting of the American Astronomical Society Division of Planetary Sciences (DPS 2014)</b> <a href="http://aas.org/meetings/dps46">http://aas.org/meetings/dps46</a>
	December 15-19, 2014 San Francisco, CA, USA	<b>AGU Fall Meeting</b>

### 2015

	March 2015	<b>46th Lunar and Planetary Science Conference</b>
	November 1-4, 2015 Baltimore, MD, USA	<b>Geological Society of America Annual Meeting</b>

2016		
	January 7, 2016	<b>20-Day ExoMars Launch Period Opens</b>
	March 8, 2016	<b>20-Day Insight Launch Window Opens</b>
	September 20, 2016	<b>Insight Arrival at Mars</b>
	October 16, 2016	<b>ExoMars Arrival at Mars</b>

**Special holidays to consider when scheduling conferences/workshops/meetings:**

Good Friday	4/18/2014	4/3/2015	4/6/2016	4/14/2017
Rosh Hashanah	9/25/2014	9/14/2015	9/16/2016	9/20/2017
Yom Kippur	10/4/2014	9/23/2015	9/25/2016	9/29/2017

(Note that Jewish holidays start at sundown the previous evening)

Thanksgiving Day, U.S.	11/27/2014	11/26/2015	11/22/2016	11/23/2017
Thanksgiving Day, Canada	10/13/2014	10/12/2015	10/8/2016	10/9/2017
Christmas Day	12/25/2014	12/25/2015	12/25/2016	12/25/2017

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Please send your Mars Community Announcements and calendar items for inclusion in next month's email to:

Carla de la Paz at [paz@jpl.nasa.gov](mailto:paz@jpl.nasa.gov), 818-354-3160.

All announcements listed in this newsletter will be posted on the MEPAG website, available at:

<http://mepag.jpl.nasa.gov>