

Mars Exploration Science Monthly Newsletter

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

February 2014

Mars Science News

Mars Critical Data Products Program (Round XI)

Initial Landing Site Characterization for the Mars 2020 Rover Mission

The Mars Exploration Program has issued, in January 2014, a Request for Proposal for round IX of the Mars Critical Data Products program. This RFP provides support for initial landing site surface, atmosphere, and gravity characterization for the Mars 2020 rover mission. The intent is to convert mission data and numerical simulations into products focused on specific landing site targets (to be provided by the program) that will be useful for reducing the risk to the Mars 2020 rover mission. Proposals are due on Wednesday, March 5, 2014.

Details of the RFPs are posted at:

<https://acquisition.jpl.nasa.gov/rfp/VWH-2691-120313/default.htm> or <https://acquisition.jpl.nasa.gov/bizops/>.

SHARAD/MARSIS Data Users' Workshop

March 16, 2014 in 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/

8th 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.

The First Announcement has been posted: <http://www.hou.usra.edu/meetings/8thmars2014/>.

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. We expect that the Call for Abstracts (included in the second conference announcement) will invite contributions from Mars scientists in all scientific sub-disciplines, and will invite both specific data-driven abstracts and broader synthesis abstracts. In accordance with new conference guidelines recently issued by NASA, the meeting will not charge a registration fee and no meals will be provided. Support for student travel will be available.

Note to those that need to forecast travel to Domestic Heavily Attended Conferences (DHAC) (i.e., those who use the NASA Conference Tracking System (NCTS) or the JPL conference tools). Note that this is a Domestic Heavily Attended Conferences (DHAC), so those that need to forecast travel (i.e., those who use the NASA Conference Tracking System (NCTS) or the JPL conference tools) should forecast soon.

User Workshop for Mars ChemCam/LIBS Data at LPSC

The ChemCam LIBS dataset from Curiosity represents a large and varied geochemical dataset available for the planetary community. It involves active laser-induced breakdown spectroscopy (LIBS), passive reflectance spectra over the 0.4-0.9 micron range, and the highest resolution remote images from the rover, from ChemCam's Remote Micro-Imager (RMI). The last submission to the Planetary Data System (PDS) included a total data volume of 7.7 GB, including a recalibration of the elemental compositions from 2156 locations along the rover traverse, along with > 1500 RMI images.

A 3-hour workshop is being planned for community members interested in using this dataset, to be held in conjunction with the Lunar and Planetary Science Conference in Houston the week of March 16. We are targeting 3 pm Sunday afternoon, but stay tuned as this is not firm yet. Please RSVP at <http://msl-chemcam.com> so we have an idea of how many people to expect. The contact is Roger Wiens (rwuens@lanl.gov).

The ChemCam data can be found at <http://pds-geosciences.wustl.edu/missions/msl/chemcam.htm>

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

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>.

Photogrammetric Processing of Planetary Stereo Imagery using SOCET SET®

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®. **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
Training Coordinator, The Planetary Photogrammetry Guest Facility
United States Geological Survey

6th International Summer School on Radar/SAR Systems

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.

The highly positive feedback of previous participants showed that there is a strong interest for events that brings together young scientists to study and learn whilst at the same time building networks and forging new friendships that will lead to future collaborations. The Summer School possesses a proper balance between lectures, practical workshops and leisure activities that are an essential component for creating and sustaining an atmosphere conducive to learning and for binding with new colleagues.

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.

Synopsis of lecture programme of the 5th International Summer School on Radar/SAR:

- * Radar fundamentals (Dr. M. Weiß, Fraunhofer FHR, Germany)
- * Radar Remote Sensing (Dr. P. Rosen, JPL/NASA, USA)
- * Bistatic & Distributed Radar (Prof. H. Griffiths, UCL, United Kingdom)
- * SAR fundamentals (Prof. P. Lombardo, University la Sapienza, Italy)
- * Short Range Imaging (Prof. M. Sato, Tohoku University, Japan)
- * Antennas (Prof. D. Heberling, RWTH-Aachen, Germany)
- * Moving target recognition (MTI/GMTI) (Dr. C. Gierull, DRDC, Canada)
- * SAR interferometry (Dr. G. Fornaro, IREA, Italy)
- * Compressed Sensing with Radar (Prof. J. Ender, Fraunhofer FHR, Germany)

During the ISS the participants will be split into several workshop groups. With assistance and guidance of international experts each group works on a different problem. On Friday they will present their solution to all other students of the summer school.

Outside of the lecture theatre there will be ample time for other activities, such as enjoying the surrounds of the beautiful Rhine Valley, visiting the vibrant cities of Cologne and/or Bonn. Summer school participants will also be taken on a technical tour of the Fraunhofer FHR institute, which is located nearby.

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.

Mars 2020 Announcement of Opportunity

Amended

The Mars 2020 Investigations AO solicits flight investigations for which each Principal Investigator is responsible for a complete space flight investigation, including instrument hardware, mission operations, and data analysis. Investigations comprised of individual instruments or multiple instruments (suites) may respond to the overall Mars 2020 objectives to explore and quantitatively assess Mars as a potential habitat for life, to search for signs of past life, to collect carefully selected samples for possible future return to Earth, and to prepare for future human exploration of Mars.

The 2nd amendment (posted on October 21, 2013) changed the date for the Pre-Proposal Conference (PPC) to October 28, 2013, the due date for required Notices of Intent (NOIs) to November 4, 2013, the due date for proposals to January 15, 2014, the due date for letters of commitment to January 15, 2014, the deadline for receipt of proposals on CD-ROM to January 21, 2014, the target date for selection announcements to April 2014 and the target date for instrument Phase A contracts to May 2014. A 3rd amendment (posted early December, 2013) made a number of changes, additions, corrections and clarifications, which are identified in the Foreword and detailed in bold in the text, to the Announcement of Opportunity.

All amendments to the NASA Announcement of Opportunity "Mars 2020 Investigations" (NNH13ZDA018O) have been posted on the NASA research opportunity homepage at <http://solicitation.nasaprs.com/Mars2020>.

Questions concerning these amendments and the Mars 2020 AO, may be directed to Mitchell Schulte, Planetary Science Division, Science Mission Directorate, NASA Headquarters, Washington, DC 20546-0001. Telephone: (202) 358-2127; E-mail: mars2020-ao@lists.nasa.gov

General Information:

Solicitation Number: NNH13ZDA018O
Release Date: September 24, 2013
Revision Date: October 21, 2013
Pre-proposal Conference: November 4, 2013 (amended)
Proposal Due Date: January 15, 2014 (amended)
Letter of Commitment due: January 15, 2014 (amended)

The National Aeronautics and Space Administration (NASA) Science Mission Directorate (SMD) is releasing an Announcement of Opportunity (AO) entitled Mars 2020 Investigations to solicit proposals for investigations for a space flight mission to Mars, to be launched in July/August 2020.

The full text of the AO and any appendices are available electronically at the NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES) website (<http://solicitation.nasaprs.com/Mars2020>). Links to the AO and additional information about the intent and the capabilities of the Mars 2020 rover are located at the Mars 2020 Acquisition Website (<http://soma.larc.nasa.gov/mars2020>).

Investigations comprised of individual instruments or multiple instruments (suites) may respond to the overall Mars 2020 objectives to explore and quantitatively assess Mars as a potential habitat for life, to search for signs of past life, to collect carefully selected samples for possible future return to Earth, and to prepare for future human exploration of Mars.

The Mars 2020 Investigations AO solicits flight investigations for which each Principal Investigator is responsible for a complete space flight investigation, including instrument hardware, mission operations, and data analysis. Although individual PI-managed instrument science investigations do not have a predetermined cost cap, the total allocated cost for all the SMD-funded investigations selected is approximately \$100M in Real Year (RY) dollars for Phases A through D. Additional funding of approximately \$60M RY is allocated for investigation in Phase E. Additionally, exploration technology investigations, jointly funded by the Human Exploration and Operations Mission Directorate (HEOMD) and Space Technology Mission Directorate (STMD) may be selected at a total cost of approximately \$30M in RY dollars, including Phase E costs. The total payload resources, including mass, power, and data for the instrument complement, will be provided in a Payload Information Package (PIP) posted to the Mars 2020 Acquisition Website. Note that the Mars 2020 Investigations AO may contain provisions that differ from this notice, in which case those in the AO will take precedence.

Participation in this AO is open to all categories of organizations (U.S. and non-U.S.), including educational, industrial, and not-for-profit organizations, Federally Funded Research and Development Centers, University Affiliated Research Centers, NASA centers, the Jet Propulsion Laboratory, and other Government agencies. Principal Investigators are responsible for, and may assemble their investigation teams from, any of these organizations.

Contracting Office Address:

NASA Goddard Space Flight Center, NASA Headquarters Acquisition Branch, Code 210.H, Greenbelt, MD 20771

Near-term Due Dates (next three months)

Due	Project
February 14th, 2014	40th COSPAR and Associated Events Abstract Deadline
February 28th, 2014	ExoMars 2018 Landing Site Proposal Deadline
February 28th, 2014	Habitable Worlds Across Time and Space Abstract Deadline
February 28th, 2014	1st ExoMars 2018 Landing Site Selection Workshop Proposal Deadline
March 28th, 2014	Habitable Worlds Across Time and Space Registration Deadline
March 31st, 2014	Biosignatures Across Space and Time Abstract and Registration Deadline
March 31st, 2014	48th ESLAB Symposium: New Insights to Volcanism Across the Solar System Abstract Deadline
April 1st, 2014	Annual Planetary Science Summer School Application Deadline for all sessions
April 15th, 2014	Origins 2014 Early Registration Deadline
April 15th, 2014	48th ESLAB Symposium: New Insights to Volcanism Across the Solar System Registration Deadline
April 15th, 2014	Eighth International Conference on Aeolian Research (ICAR VIII) Abstract and Early Registration Deadline

Future Conferences and Workshops

First Quarter, 2014		
	February 9-14th Davos, SWITZERLAND	Exoclimes III http://www.exoclimes.org
	February 18-19, 2014 Noordwijk, NETHERLANDS	Science and Challenges of Lunar Sample Return Workshop http://congrexprojects.com/2014-events/14c05/
	February 19, 2014 Pasadena, CA, USA	2001 Mars Odyssey PSG
	March 1-8, 2014 Big Sky, MT, USA	IEEE Aerospace Conference http://www.aeroconf.org/
New!	March 16, 2014 The Woodlands, TX, USA	SHARAD/MARSIS Data Users' Workshop http://www.ig.utexas.edu/sharad_marsis/
	March 17-21, 2014 Woodlands, TX, USA	45th Lunar and Planetary Science Conference http://www.hou.usra.edu/meetings/lpsc2014/
New!	March 26-28, 2014 ESAC Madrid, SPAIN	1st Exomars 2018 Landing Site Selection Workshop Contact: Jorge L. Vago jorge.vago@esa.int Proposal deadline: February 28, 2014


Second Quarter, 2014

	April 22-24, 2014 Washington, DC	Humans to Mars Summit h2m2014.exploremars.org
	April 28-May 1, 2014 Baltimore, MD, USA	Habitable Worlds Across time and Space http://www.stsci.edu/institute/conference/habitable-worlds Abstract deadline is February 28, 2014. Registration deadline is March 28, 2014.
	May 13-14, 2014 Washington, DC	Mars Exploration Analysis Group (MEPAG) Meeting
	May 19-21, 2014 Houston, TX, USA	Venus Exploration Targets Workshop http://www.hou.usra.edu/meetings/venus2014/
	May 20-22, 2014 Bergen, NORWAY	Biosignatures Across Space and Time http://www.nordicastrobiology.net/Biosignatures2014/ Abstract and Registration deadline is March 31, 2014
	May 26-31, 2014 Nice, FRANCE	International interdisciplinary workshop on: Accretion and early differentiation of the terrestrial planets http://www.accrete.uni-bayreuth.de/?page=workshops
	June 16-21, 2014 Noordwijk, NETHERLANDS	48th ESLAB Symposium: New Insights to Volcanism Across the Solar System http://congrexprojects.com/2014-events/48-ESLAB/ Abstract deadline is March 31, 2014. Registration deadline is April 15, 2014.
	June 16-20, 2014 Pasadena, CA USA	Annual Planetary Science Summer School, Session I http://pscischool.jpl.nasa.gov Application deadline: April 1, 2014

Third Quarter, 2014

	July 6-11, 2014 Nara, JAPAN	ORIGINS 2014 http://www.origin-life.gr.jp/origins2014/index.html
	July 7-11, 2014 London, UK	6th Alfvén Conference: Plasma interaction with solar system objects: anticipating Rosetta, Maven and Mars Orbiter Mission https://www.ucl.ac.uk/mssl/planetary-science/alfven-conference Abstract deadline is May 7, 2014. Early registration deadline is May 7, 2014.
	July 14-18, 2014 Pasadena, CA, USA	8th International Conference on Mars
	July 14-18, 2014 Pasadena, CA USA	Annual Planetary Science Summer School, Session II http://pscischool.jpl.nasa.gov Application deadline: April 1, 2014
	July 21-25, 2014 Lanzhou, CHINA	Eighth International Conference on Aeolian Research (ICAR VIII) Special session on extra-terrestrial Aeolian research http://www.2014icar8.com
	August 2-10, 2014 Moscow, RUSSIA	40th COSPAR 2014 and Associated Events http://www.cospar-assembly.org/

Third Quarter, 2014

	August 11-15, 2014 Pasadena, CA USA	Annual Planetary Science Summer School, Session III http://pscischool.jpl.nasa.gov Application deadline: April 1, 2014
	September 22, 2014	MAVEN Mars Orbit Insertion (MOI)
	September 24, 2014 UTC	The Indian Space Research Organisation (ISRO) Mars Orbiter Mission (MOM) Mars Orbit Insertion

Fourth Quarter, 2014

New!	October 13-16, 2014 Edinburgh, Scotland	EANA 2014 - The 14th European Astrobiology Conference http://www.astrobiology.ac.uk/eana2014/
	October 19-22, 2014 Vancouver, British Columbia, CANADA	Geological Society of America Annual Meeting
	November 9-14, 2014 Tucson, AZ, USA	46th Meeting of the American Astronomical Society Division of Planetary Sciences (DPS 2014) http://dps.aas.org/meetings
	December 15-19, 2014 San Francisco, CA, USA	AGU Fall Meeting

2015

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

2016

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

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, 818-354-3160.

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

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