

# Mars Exploration Science Monthly Newsletter

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

June 2018

## Mars Science News

### **Save the date for a MEPAG Virtual Meeting (VM2) - June 25, 11-1pm PDT**

Plans are in-work for a virtual MEPAG meeting on Monday, June 25, 2018, 11 am to 1 pm PDT. This would be the 2nd virtual meeting of 2018 (VM2). Agenda and connection information will be posted to the MEPAG meeting website (<https://mepag.jpl.nasa.gov/meetings.cfm>) and sent out via email in the near future.

We invite all members of the Mars exploration community to tune in.

### **InSight and MarCO spacecraft now heading to Mars**

We congratulate the InSight (Interior Exploration using Seismic Investigations, Geodesy and Heat Transport) mission team for a successful launch from Vandenberg Air Force Base (CA, USA) during the early hours of May 5, 2018.

InSight is planned to land in Elysium Planitia, Mars late this November. This lander is designed to study in-depth the "inner space" of Mars: its crust, mantle, and core. Studying Mars' interior structure answers key questions about the early formation of rocky planets in our inner solar system - Mercury, Venus, Earth, and Mars - more than 4 billion years ago, as well as rocky exoplanets. InSight also measures tectonic activity and meteorite impacts on Mars today. For more information about the InSight mission, see <https://mars.nasa.gov/insight/mission/overview/> or a recent press release such as <https://www.nasa.gov/feature/jpl/insight-steers-toward-mars>.

Also carried in that launch were the first deep space cubesats: MarCO (Mars Cubesats One — individually nicknamed Eva and Wall-E). These interplanetary CubeSats are a technology demonstration — independently traveling to Mars, carrying their own communications and navigation experiments. During InSight's entry, descent and landing (EDL) operations, the pair will serve as an additional relay for InSight that could allow for sending more immediate information from InSight to Earth. For more information about MarCO, see <https://www.jpl.nasa.gov/cubesat/missions/marco.php>

### **Decision made to fly Mars Helicopter on Mars 2020 rover mission**

The Mars Helicopter, a small, autonomous rotorcraft, will travel with the agency's Mars 2020 rover mission, currently scheduled to launch in July 2020, to demonstrate the viability and potential of heavier-than-air vehicles on the Red Planet. For more information, see <https://www.nasa.gov/press-release/mars-helicopter-to-fly-on-nasa-s-next-red-planet-rover-mission>.

### **The Mars Science Laboratory rover is drilling again!**

Engineers working with NASA's Curiosity Mars rover have been hard at work testing a new way for the rover to drill rocks and extract powder from them. Mid-May, that effort produced the first drilled sample on Mars in more than a year. Curiosity tested percussive drilling, penetrating about 2 inches (50 millimeters) into a target called "Duluth." More recently, they are working to deliver drilled samples to instruments for analysis. For more information, see <https://mars.nasa.gov/msl/mission/mars-rover-curiosity-mission-updates/> or a recent press release, such as: <https://www.jpl.nasa.gov/news/news.php?feature=7137>.

## **SPICE Training available**

*June 19-22, 2018 @ Madrid, SPAIN*

*Application deadline: June 5, 2018*

The ESA SPICE Service (ESS) and the Navigation and Ancillary Information Facility (NAIF) will conduct a SPICE observation geometry training class on June 19-22, 2018 in Madrid, SPAIN. SPICE at ESA is described at: <http://www.cosmos.esa.int/web/spice/home>.

The class is free and open to all professionals and students involved in Solar System exploration. Further information about the class and the class registration form are found at: <https://www.cosmos.esa.int/web/spice/training-class-june-2018>. Three grants are available for European students to cover Travel expenses. Registration is due by **June 5**.

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## **Summer school/workshop “Field Training and Research Program at Meteor Crater”**

*October 6-14, 2018 @ Barringer Meteorite Crater, Arizona, USA*

*Application deadline: June 11, 2018*

The Field Training and Research Program at Meteor Crater is a week-long geology field class and research project based at Barringer Meteorite Crater, Arizona, more popularly known as Meteor Crater. The goal will be to introduce students to impact cratering processes and provide an opportunity to assist with a research project at the crater. Skills developed during the field camp should better prepare the students for their own thesis studies in impact cratered terrains, whether they be on Earth, the Moon, asteroids, Mars, or some other solar system planetary surface.

The field camp is designed for graduate college students in geology and planetary science programs, although advanced undergraduate students will be considered if they have successfully completed a summer field geology program and have a demonstrated interest in impact cratering processes. U.S. and international students are eligible to apply. For more information and the application (due **June 11**), see <https://www.lpi.usra.edu/exploration/mcFieldCamp/>.

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## **Thematic School “Fluid-rock interactions in the solar system”**

*November 12-16, 2018 @ Nantes, FRANCE*

*Application deadline: Sept 20, 2018*

The Laboratoire de Planetologie et Geodynamique organises the second GeoPlaNet thematic school on Fluid-Rock Interactions in the Solar System. This school in Planetary Geosciences will present to participants various techniques for observing, analysing, experimenting and modelling the compositional and morphological aspects of fluid-rock interactions in rocky and icy bodies of all sizes of the Solar System. The school will include lectures and practicals, as well as poster presentations by attendees. It will be organised along two themes: (1) Fluid-rock interactions on planetary surfaces, and (2) Fluid-rock interactions in planetary interiors.

This high-level training program is open to 80 international Master students, PhD students and young researchers with a background in geosciences and/or in planetary science. No registration fee is required. Travel and accommodation costs have to be supported by the participants or their respective institutes. (A certain number of travel grants are available for members of the GeoPlaNet consortium.) To register, fill in the following Google form by **September 20**: <https://goo.gl/forms/uhLNPqjPbEulY3aI2>.

For more information, see [https://lpg-umr6112.fr/index.php?option=com\\_content&view=article&id=1361&Itemid=165&lang=fr](https://lpg-umr6112.fr/index.php?option=com_content&view=article&id=1361&Itemid=165&lang=fr),

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

Due	Project
June 1	<b>International Symposium on Lunar &amp; Planetary Science</b> , Registration Deadline
June 8	<b>Space Resources Roundtable</b> , Registration Deadline
June 13	<b>Comparative Climatology of Terrestrial Planets III</b> , Abstract Deadline
June 14	<b>Experimental Analysis of the Outer Solar System Workshop</b> , Abstract Deadline
June 15	<b>COSPAR 2018</b> , Registration Deadline
July 1	<b>European Astrobiology Conference (EANA 2018)</b> , Abstract Deadline
July 5	<b>European Planetary Science Congress (EPSC) 2018</b> , Presentation Registration Deadline
July 15	<b>European Astrobiology Conference (EANA 2018)</b> , Registration Deadline
July 17	<b>Bombardment: Shaping Planetary Surfaces and Their Environments</b> , Abstract Deadline
July 18	<b>Late Mars Workshop</b> , Abstract Deadline
July 24	<b>Lunar Polar Volatiles</b> , Registration Deadline
July 26	<b>Europa Deep Dive 2: Composition</b> , Abstract Deadline
July 30	<b>Comparative Climatology of Terrestrial Planets III</b> , Early Registration Deadline
July 31	<b>European Planetary Science Congress (EPSC) 2018</b> , Early Registration Deadline
August 1	<b>9th Planetary Crater Consortium</b> , Abstract Deadline <b>Experimental Analysis of the Outer Solar System Workshop</b> , Registration Deadline
August 11	<b>International Venus Conference 2018</b> , Registration Deadline
August 13	<b>Comparative Climatology of Terrestrial Planets III</b> , Registration Deadline, Student and Early Career Travel Support
August 14	<b>2018 GSA Annual Meeting</b> , Abstract Deadline, Abstract Deadline
August 17	<b>European Astrobiology Conference (EANA 2018)</b> , Early Registration Deadline

## Upcoming Conferences and Workshops

A note about “conferences” and this calendar of events

- Missing NCTS#s (and forecasting deadline, if anomalous) can be sent to Barbara Saltzberg ([Barbara.A.Saltzberg@jpl.nasa.gov](mailto:Barbara.A.Saltzberg@jpl.nasa.gov)).
- If no deadline is noted: it is usually 60 days in advance for domestic meetings — sometimes further in advance if the conference is “Heavily Attended.”
- Please do not assume our noting of NCTS# is complete. If you are unsure whether an event is a conference or not, or when the forecasting deadline may be, please consult with your NASA Center conference forecasting/travel unit.


## Second Quarter, 2018

	June 3-8, 2018 Honolulu, HI, USA	<b>Asia Oceania Geosciences Society</b> , NCTS# 31549-18 <a href="http://www.asiaoceania.org/aogs2018/public.asp?page=home.htm">http://www.asiaoceania.org/aogs2018/public.asp?page=home.htm</a> Session Title: <i>New views of ancient Mars</i>
	June 4-5, 2018 Troy, NY, USA	<b>1st Annual RPI Workshop on Image-Based Modeling and Navigation for Space Applications</b> <a href="http://mane.rpi.edu/space-imaging-workshop">http://mane.rpi.edu/space-imaging-workshop</a>
	June 5-7, 2018 Houston, TX, USA	<b>Cryovolcanism in the Solar System</b> <a href="https://www.hou.usra.edu/meetings/cryovolcanism2018/">https://www.hou.usra.edu/meetings/cryovolcanism2018/</a>
<b>New!</b>	June 6-8, 2018 Paris, France	<b>Meteorites -- Understanding the origin of planetodiversity</b> <a href="https://meteorites2018.sciencesconf.org/">https://meteorites2018.sciencesconf.org/</a>
	June 11-15, 2018 Boulder, CO, USA	<b>15th International Planetary Probe Workshop (IPPW-15)</b> <a href="https://www.colorado.edu/event/ippw2018/">https://www.colorado.edu/event/ippw2018/</a>



## Second Quarter, 2018, cont.

	June 12-14, 2018 Knoxville, TN, USA	<b>Planetary Geologic Mappers Annual Meeting</b> <a href="https://www.hou.usra.edu/meetings/pgm2018/">https://www.hou.usra.edu/meetings/pgm2018/</a>
	June 12-15, 2018 Golden, CO, USA	<b>Space Resources Roundtable</b> <a href="http://www.csmospace.com/events/srr/">http://www.csmospace.com/events/srr/</a>
	June 12-15, 2018 Golden, CO, USA	<b>Planetary &amp; Terrestrial Mapping Sciences Symposium</b> <a href="https://www.deltion.ca/ptmss">https://www.deltion.ca/ptmss</a>
	June 12-15, 2018 Pasadena, CA, USA	<b>Geobiology 2018</b> <a href="http://web.gps.caltech.edu/GBcourse/">http://web.gps.caltech.edu/GBcourse/</a>
	June 12-15, 2018 Macau, China	<b>International Symposium on Lunar &amp; Planetary Science</b> <a href="http://www.ssi.must.edu.mo/ISLPS2018/">http://www.ssi.must.edu.mo/ISLPS2018/</a>
	June 13-14, 2018 College Park, MD	<b>19th Meeting of the NASA Small Bodies Assessment Group, NCTS# 33683-18</b> <a href="https://www.lpi.usra.edu/sbag/">https://www.lpi.usra.edu/sbag/</a>
	June 18-22, 2018 Lakewood, CO, USA	<b>Mars Workshop on Amazonian and Present Day Climate, NCTS# 31858-18</b> <a href="https://www.hou.usra.edu/meetings/amazonian2018/">https://www.hou.usra.edu/meetings/amazonian2018/</a>
	June 19-22, 2018 Kharkiv, Ukraine	<b>Atmosphereless Solar System Bodies in the Space Exploration Era</b> <a href="http://www.astron.kharkov.ua/conference/ssb/18/index.php">http://www.astron.kharkov.ua/conference/ssb/18/index.php</a>
	June 23–July 1, 2018 Chamonix, France	<b>EUCOP 2018: 5th European Conference on Permafrost, NCTS# 32179-18</b> <a href="https://eucop2018.sciencesconf.org/">https://eucop2018.sciencesconf.org/</a>
	June 23–July 1, 2018 Petnica, Serbia	<b>Workshop in Geology and Geophysics in the Solar System</b> <a href="http://petnica.rs/planetary2017/">http://petnica.rs/planetary2017/</a>
	June 25, 2018 Moffett Field, CA, USA	<b>9th Annual Lunar and Small Bodies Graduate Conference (LunGradCon 2018)</b> <a href="http://impact.colorado.edu/lungradcon/2018/">http://impact.colorado.edu/lungradcon/2018/</a>
	June 25-29, 2018 Rotorua, New Zealand	<b>Astrobiology Australasia Meeting, NCTS# 33508-18</b> <a href="#">Astrobiology Australasia Meeting</a>
	June 25-29, 2018 Bordeaux, France	<b>International Conference on Aeolian Research (ICAR), NCTS# 32552-18</b> <a href="https://colloque.inra.fr/icar2018/Program">https://colloque.inra.fr/icar2018/Program</a> <i>There is a special session on Planetary Aeolian Research.</i>
	June 26-28, 2018 Moffett Field, CA, USA	<b>NASA Exploration Science Forum 2018, NCTS# 32417-18</b> <a href="https://nesf2018.arc.nasa.gov/">https://nesf2018.arc.nasa.gov/</a>




## Third Quarter, 2018

	July 1-9, 2018 Denham, Australia	<b>Astrobiology Grand Tour</b> <a href="#">Astrobiology Grand Tour</a>
	July 14-22, 2018 Pasadena, CA, USA	<b>42nd COSPAR Scientific Assembly NCTS# 28500-18</b> <a href="http://cospar2018.org/">http://cospar2018.org/</a>
	July 22-27, 2018 Moscow, Russia	<b>81st Annual Meeting of The Meteoritical Society, NCTS# 32898-18</b> <a href="http://metsoc81-moscow.ru/">http://metsoc81-moscow.ru/</a>
	July 29, 2018 Cambridge, MA, USA	<b>Exoplanet Exploration Program Analysis Group (ExoPAG), NCTS# 33921-18</b> <a href="https://exoplanets.nasa.gov/exep/events/205/exopag-18/">https://exoplanets.nasa.gov/exep/events/205/exopag-18/</a>
	August 7-9, 2018 Laurel, MD, USA	<b>Lunar Polar Volatiles, NCTS# 32572-18</b> <a href="https://www.hou.usra.edu/meetings/lunarvolatiles2018/">https://www.hou.usra.edu/meetings/lunarvolatiles2018/</a>
	August 8-10, 2018 Boulder, CO, USA	<b>The 9<sup>th</sup> Planetary Crater Consortium</b> <a href="http://www.planetarycraterconsortium.nau.edu/">http://www.planetarycraterconsortium.nau.edu/</a>
	August 12-17, 2018 Boston, MA, USA	<b>Goldschmidt Conference 2018, NCTS# 32184-18</b> <a href="https://goldschmidt.info/2018/">https://goldschmidt.info/2018/</a> <i>Session: 11d: From Source to Sink - Geochemical Sulfur Cycles on Earth and Mars</i>
	August 12-17, 2018 Boulder, CO, USA	<b>Cassini Science Symposium, NCTS# 33060-18</b> <a href="http://lasp.colorado.edu/home/2018-cassini-science-symposium">http://lasp.colorado.edu/home/2018-cassini-science-symposium</a>

### Third Quarter, 2018, cont.

	August 15-17, 2018 Fayetteville, AR, USA	<b>Experimental Analysis of the Outer Solar System Workshop</b> , NCTS# 33887-18 <a href="https://www.hou.usra.edu/meetings/exoss2018/">https://www.hou.usra.edu/meetings/exoss2018/</a>
<b>New!</b>	August 16-17 Green Belt, MD, USA	<b>3rd Planetary CubeSat Science Symposium</b> , NCTS# 34422-18 <a href="https://cubesats.gsfc.nasa.gov/symposium.html">https://cubesats.gsfc.nasa.gov/symposium.html</a>
	August 27-30, 2018 Houston, TX, USA	<b>Comparative Climatology of Terrestrial Planets III</b> , NCTS# 32374-18 <a href="https://www.hou.usra.edu/meetings/climatology2018/">https://www.hou.usra.edu/meetings/climatology2018/</a> <i>Student and Early Career travel awards — applications due June 13</i>
	September 11-14, 2018 Niseko, Japan	<b>International Venus Conference 2018</b> , NCTS# 31333-18 <a href="https://www.cps-jp.org/~akatsuki/venus2018/">https://www.cps-jp.org/~akatsuki/venus2018/</a>
<b>Updated!</b>	September 11-12, 2018 Pasadena, CA USA	<b>Outer Planets Assessment Group (OPAG) Meeting</b> , NCTS# 34029-18 <a href="https://www.lpi.usra.edu/opag/">https://www.lpi.usra.edu/opag/</a>
	September 12-13, 2018 Berlin, Germany	<b>International Workshop on Instrumentation for Planetary Missions (IPM) 2018</b> NCTS# 34186-18 <a href="https://ipm2018.org/">https://ipm2018.org/</a>
	September 12-14, 2018 Irvine, CA, USA	<b>NASEM Committee on Astrobiology and Planetary Science (CAPS)</b> <a href="http://sites.nationalacademies.org/SSB/SSB_067577#Meetings_and_Events">http://sites.nationalacademies.org/SSB/SSB_067577#Meetings_and_Events</a>
	September 16-21, 2018 Berlin, Germany, USA	<b>European Planetary Science Congress (EPSC) 2018</b> , NCTS# 32031-18 <a href="https://www.epsc2018.eu/">https://www.epsc2018.eu/</a>
	September 24-27, 2018 Honolulu, HI, USA	<b>Multispectral, Hyperspectral, and Ultraspectral Remote Sensing Technology, Techniques and Applications VII</b> <a href="http://spie.org/AE/conferencedetails/multispectral-hyperspectral-and-ultraspectral-remote-sensing?SSO=1">http://spie.org/AE/conferencedetails/multispectral-hyperspectral-and-ultraspectral-remote-sensing?SSO=1</a>
	September 24-28, 2018 Berlin, Germany	<b>European Astrobiology Conference (EANA 2018)</b> <a href="http://www.eana-net.eu/index.php?page=Conferences/EANA2018">http://www.eana-net.eu/index.php?page=Conferences/EANA2018</a>
<b>Updated!</b>	Sept. 30-Oct. 3, 2018 Flagstaff, AZ, USA	<b>Bombardment: Shaping Planetary Surfaces and Their Environments</b> , NCTS# 28520-18 <a href="https://www.hou.usra.edu/meetings/bombardment2018/">https://www.hou.usra.edu/meetings/bombardment2018/</a>

### Fourth Quarter, 2018

	October 1-3, 2018 Houston, TX, USA	<b>Late Mars Workshop</b> , NCTS# 34492-19 <a href="https://www.hou.usra.edu/meetings/latemars2018/">https://www.hou.usra.edu/meetings/latemars2018/</a>
	October 8-12, 2018 Moscow, Russia	<b>Ninth Moscow International Solar System Symposium (9M-S3)</b>
<b>New!</b>	October 9-11, 2018 Houston, TX, USA	<b>Europa Deep Dive 2: Composition</b> , NCTS# 34828-19 <a href="https://www.hou.usra.edu/meetings/europadeepdive2018/">https://www.hou.usra.edu/meetings/europadeepdive2018/</a>
	October 16-18 Glendale, CA, USA	<b>4th Mars 2020 Rover Landing Site Selection Workshop</b> , NCTS# 34492-19 <a href="https://marsnext.jpl.nasa.gov/workshops/wkshp_2018_10.cfm">https://marsnext.jpl.nasa.gov/workshops/wkshp_2018_10.cfm</a>
<b>Updated!</b>	October 21-26, 2018 Knoxville, TN, USA	<b>50th Meeting of the AAS Division for Planetary Sciences</b> , NCTS# 32241-19 <a href="https://aas.org/meetings/dps50">https://aas.org/meetings/dps50</a>
	November 4-7, 2018 Indianapolis, IN, USA	<b>2018 GSA Annual Meeting</b> <a href="https://www.geosociety.org/GSA/Events/Annual_Meeting/GSA/Events/gsa2018.aspx">https://www.geosociety.org/GSA/Events/Annual_Meeting/GSA/Events/gsa2018.aspx</a> <i>T51: Planetary Aeolian Geology from Outcrop to Orbit: Nathan Bridges Memorial Session</i>
<b>Updated!</b>	November 6-8, 2018 Laurel, MD, USA	<b>16th Venus Exploration Analysis Group meeting</b> , NCTS# 34829-19 <a href="https://www.lpi.usra.edu/vexag/">https://www.lpi.usra.edu/vexag/</a>
	November 26, 2018	<b>Insight landing</b>
<b>Updated!</b>	December 10-14, 2018 Washington, DC, USA	<b>American Geophysical Union Fall Meeting</b> , NCTS# 31561-19 <a href="https://fallmeeting.agu.org/2017/">https://fallmeeting.agu.org/2017/</a>

## 2019

	March 18-22, 2019 The Woodlands, TX, USA	<b>50th Lunar and Planetary Science Conference</b> <a href="https://www.hou.usra.edu/meetings/lpsc2019/">https://www.hou.usra.edu/meetings/lpsc2019/</a>
	March 26-28, 2019 Washington, DC, USA	<b>NASEM's Committee on Astrobiology and Planetary Science (CAPS)</b> <a href="http://sites.nationalacademies.org/SSB/SSB_067577#Meetings_and_Events">http://sites.nationalacademies.org/SSB/SSB_067577#Meetings_and_Events</a>
	July 22-26, 2019 Pasadena, CA, USA	<b>9th International Conference on Mars</b> <a href="https://www.hou.usra.edu/meetings/ninthmars2019/">https://www.hou.usra.edu/meetings/ninthmars2019/</a>
	September 11-12, 2019 Irvine, CA, USA	<b>NASEM's Committee on Astrobiology and Planetary Science (CAPS)</b> <a href="http://sites.nationalacademies.org/SSB/SSB_067577#Meetings_and_Events">http://sites.nationalacademies.org/SSB/SSB_067577#Meetings_and_Events</a>
	September 22-25, 2019 Phoenix, AZ, USA	<b>2019 GSA Annual Meeting</b> <a href="https://www.geosociety.org/GSA/Events/Annual_Meeting/GSA/Events/gsa2019.aspx">https://www.geosociety.org/GSA/Events/Annual_Meeting/GSA/Events/gsa2019.aspx</a>
	October 2019 [TBD]	<b>Habitability in the Solar System</b> <i>Date and location are not set yet—proposed: Yellowstone Nat'l Park, WY, USA</i>

## Seasons on Mars

	MY34	MY35	MY36
<b>Start of Northern Spring / L<sub>s</sub> 0</b>	5/05/2017	3/23/2019	2/07/2021
<b>Start of Northern Summer / L<sub>s</sub> 90</b>	11/20/2017	10/08/2019	8/25/2021
<b>Start of Northern Autumn / L<sub>s</sub> 180</b>	5/22/2018	4/08/2020	2/24/2022
<b>Start of Northern Winter / L<sub>s</sub> 270</b>	10/16/2018	9/02/2020	7/21/2022

## Special holidays to consider when scheduling conferences/workshops/meetings

Good Friday	3/30/2018	4/19/2019	4/10/2020	4/2/2021
Rosh Hashanah	9/10/2018	9/30/2019	9/19/2020	9/7/2021
Yom Kippur	9/19/2018	10/09/2019	9/28/2020	9/16/2021

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

Thanksgiving Day, Canada	10/08/2018	10/14/2019	10/12/2020	10/11/2021
Thanksgiving Day, U.S.	11/22/2018	11/28/2019	11/26/2020	11/25/2021
Christmas Day	12/25/2018	12/25/2019	12/25/2020	12/25/2021

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

Barbara Saltzberg at [Barbara.a.Saltzberg@jpl.nasa.gov](mailto:Barbara.a.Saltzberg@jpl.nasa.gov)

This newsletter (and all previous months') is also posted on the MEPAG website: <http://mepag.jpl.nasa.gov>

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