

# IUGG Union Commission on Planetary Sciences (UCPS)



## UCPS Newsletter

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Website: <http://202.127.29.4/geodesy/ucps>

Editors: Shuanggen Jin, Scot Rafkin

### 1. Union Commission on Planetary Sciences

The IUGG Union Commission on Planetary Sciences (UCPS) was established by the IUGG Executive Committee in June 2015 to promote and coordinate scientific (physical, chemical, and mathematical) studies of planets in the solar system and around other stars. UCPS intends to advance planetary science through advocacy of solar system and extrasolar exploration, seeking insights on the origin, formation and evolution of planets and systems, including a search for habitable worlds beyond Earth. The UCPS together with other IUGG associations will share knowledge through scientific research and comparative studies between planetary objects and the Earth in the fields of atmosphere, surface and interior science. Additional information about UCPS can be found at <http://202.127.29.4/geodesy/ucps>.

#### Objectives:

- To advance and foster the study of scientific problems in the planetary sciences;
- To promote and coordinate international cooperation in planetary science, and promote planetary science activities in developing countries;
- To facilitate, on an international basis, discussion and publication of the results of the studies, research and work indicated above;
- To contribute to coordinating activities for future space missions.

#### Executive Committee

Shuanggen Jin (IAG, China) (Chair)  
 Athena Coustenis (IAMAS, France) (Vice-Chair)  
 Joern Helbert (IASPEI, Germany) (Vice-Chair)  
 Scot Rafkin (IAMAS, USA) (Secretary/Treasurer)

#### EC Members

Christine Schott Hvidberg (IACS, Denmark)  
 Michael Purucker (IAGA, USA)  
 Fabrizio Capaccioni (IAHS, Italy)  
 Philippe Lognonne (IASPEI, France)  
 Jose Luis Macias-Vasquez (IAVCEI, Mexico)

### 2. UCPS Events

- 1) UCPS-AOGS Special Session: Recent advances in planetary exploration and geophysics, *July 31 - August 5, 2016, Beijing, China*  
<http://www.asiaoceania.org/aogs2016>

To advance planetary sciences, the UCPS in collaboration with AOGS announces a joint Special Session at the 13<sup>th</sup> Asia Oceania Geophysical Sciences Society Meeting: "Recent Planetary Exploration and Geophysics". Papers on planetary atmosphere, geophysics, geodesy, magnetism, cryosphere, seismology, volcanology, the physics and chemistry of the interior of the planets in our solar system and around other stars, and future mission opportunities are welcome.

#### Conveners:

Shuanggen Jin (SHAO, China)  
 Jorn Helbert (DLR, Germany)  
 Noriyuki Namiki (NAO, Japan)  
 Wing-Huen Ip (NCU, Taiwan)  
 Paul Hartogh (MPG, Germany)

- 2) AOGS session: Terrestrial Planetary Atmospheres and Their Evolution, *July 31 - August 5, 2016, Beijing, China*  
<http://www.asiaoceania.org/aogs2016>

The AOGS will hold a session at the 13<sup>th</sup> Asia Oceania Geophysical Sciences Society Meeting relevant to the UCPS: "Terrestrial Planetary Atmospheres and Their Evolution". Understanding the nature, variability, physical and chemical mechanisms, and the evolution of planetary atmospheres is a main component of planetary sciences. While the long-term evolution of our own planet is constrained by a wealth of geological/geochemical data, the evolutionary paths of other terrestrial planetary bodies in and outside our solar system must be reconstructed from less abundant planetary mission data and astronomical observations. The Discovery of exoplanets provides additional opportunities for

interdisciplinary collaborations between geoscientists, astronomers, and planetary scientists. Our understanding of the Earth and other planets can greatly benefit from comparative studies of terrestrial planetary atmospheres. This session welcomes both observational and theoretical studies relevant to current physical and chemical states of terrestrial planetary atmospheres in and outside of our solar system (including the Earth) and their evolution.

Conveners:

Feng Tian (Tsinghua University, China)  
Eric Chassefiere (Univ Paris-Sud, France)  
Yongyun Hu (Peking University, China)

- 3) Special Session SS7 4: The Effects of Solar and Stellar Magnetic Activity on Planets, at European Week of Astronomy and Space Science, 4-8 July 2016, Athens, Greece  
<http://eas.unige.ch/EWASS2015>

The magnetic activity of cool stars in the form of flares, winds and coronal mass ejections have a direct impact on planets. This activity varies with the mass, age and rotation rate of the star and can be damaging for life, even in the case of a fairly inactive star like the Sun. During periods of intense solar activity, the solar wind is enhanced and geomagnetic storms produce auroras, disrupt radio transmissions, affect power grids, damage orbiting satellites, and can be hazardous to astronauts. By analogy, the magnetic activity of cool stars may be hazardous for the creation and development of life and is therefore of potential importance for habitability.

In this Special Session, we aim to bring together observers/theoreticians whose diverse research interests are linked with solar and stellar activity and its effect on orbiting planets. Questions that will be addressed are:

- 1) How do stellar magnetic activity influence the exoplanets orbiting main-sequence stars?
- 2) Which lessons learned from our own solar system can be incorporate in exoplanetary research?
- 3) How can stellar activity affect habitability?

#### Scientific organizers:

Heidi Korhonen, University of Turku, Finland  
Aline Vidotto, University of Geneva, Switzerland  
Contact: [heidi.h.korhonen@utu.fi](mailto:heidi.h.korhonen@utu.fi)

- 4) COSPAR2016 - Scientific Event B0.2: Mars Exploration and Science, July 30 - August 7, 2016, Istanbul, Turkey  
<http://www.cospar-assembly.org>

Mars has been extensively explored by spacecraft. At present several orbiters (e.g., MRO, MAVEN, MOM, Mars Express) and the Curiosity and Opportunity rovers are exploring the Mars surface and atmosphere, history, and habitability. Additional missions to study the interior structure and the habitability of Mars are expected to fly by the time of COSPAR 2016 Assembly (e.g. InSight, Trace Gas Orbiter and they accompanying demonstration lander). This session is to mainly address new results on Mars exploration and science, including theory, methods, measurements, and findings as well as comparative studies with the Earth in the atmosphere, surface, and interiors. Papers describing future Mars missions, in flight or planned and simulated results are also welcome.

Main Scientific Organizer (MSO):  
Shuanggen Jin (SHAO, China)  
Oleg Korablev (IKI, Russia)

### 3. Jobs Announcement

- 1) Faculty position in planetary petrology/mineralogy/geochemistry

*The Department of Earth & Planetary Sciences at The University of Tennessee seeks to fill a faculty position in petrology/mineralogy/geochemistry with emphasis in planetary geoscience. The position is for an open-rank (tenure-track or tenured); we would prefer to select a candidate at the Associate or Full Professor level, but welcome applications for Assistant Professor. The position begins August 1, 2016. The University of Tennessee, Knoxville is a Research I University and the flagship campus of the UT system. The Department (<http://eps.utk.edu>) focuses on geology and has an active emphasis on planetary research through its Planetary Geosciences Institute (<http://web.utk.edu/~pgi>). Requirements for the position are: Ph.D. in geology or a or a related field, and demonstrated research experience in planetary geoscience.*

*The successful candidate is expected to conduct a robust, funded program of planetary research, mentor graduate students, effectively teach courses in petrology and/or mineralogy at the undergraduate and graduate levels, and collaborate in department research dealing with petrology, mineralogy, geochemistry, and solar system exploration. Salary and benefits are competitive and commensurate with experience. The Knoxville campus of the University of Tennessee is seeking candidates who*

have the ability to contribute in meaningful ways to the diversity and intercultural goals of the University.

To apply, please email the following to [mcsween@utk.edu](mailto:mcsween@utk.edu): C.V., cover letter describing research research and teaching experience and plans, and names of 4 references with contact information. Applications received by December 15, 2015 are ensured review, but earlier submission is encouraged. The position will remain open until filled. Questions about the position should be directed to H. McSween.

The University of Tennessee is an EEO/AA/Title VI/Section 504/ADA/ADEA institution in the provision of provision of its education and employment programs and and services. All qualified applicants will receive equal equal consideration for employment without regard to to race, color, national origin, religion, sex, pregnancy, pregnancy, marital status, sexual orientation, gender identity, age, physical or mental disability, or covered covered veteran status.

2) PhD and Post-doc positions at Shanghai Astronomical Observatory, CAS, Shanghai, China.

Applications in the fields of geophysics, atmosphere, hydrology, mathematics or planetary science are invited to pursue PhD studies at the Shanghai Astronomical Observatory, CAS, Shanghai, China, with full scholarship covering tuition fee, insurance, dormitory and additional allowance of about 1000 USD per month. If interested please contact Prof. Shuanggen Jin ([sgjin@shao.ac.cn](mailto:sgjin@shao.ac.cn)). More information can be found at: <http://twas.org/opportunity/cas-twas-presidents-phd-fello-wship-programme>

In addition, several Post-Doc positions are available in planetary exploration and science. Candidates with a Ph.D. and a strong CV interested in a postdoctoral position at the Shanghai Astronomical Observatory, CAS, should contact Prof. Shuanggen Jin ([sgjin@shao.ac.cn](mailto:sgjin@shao.ac.cn))

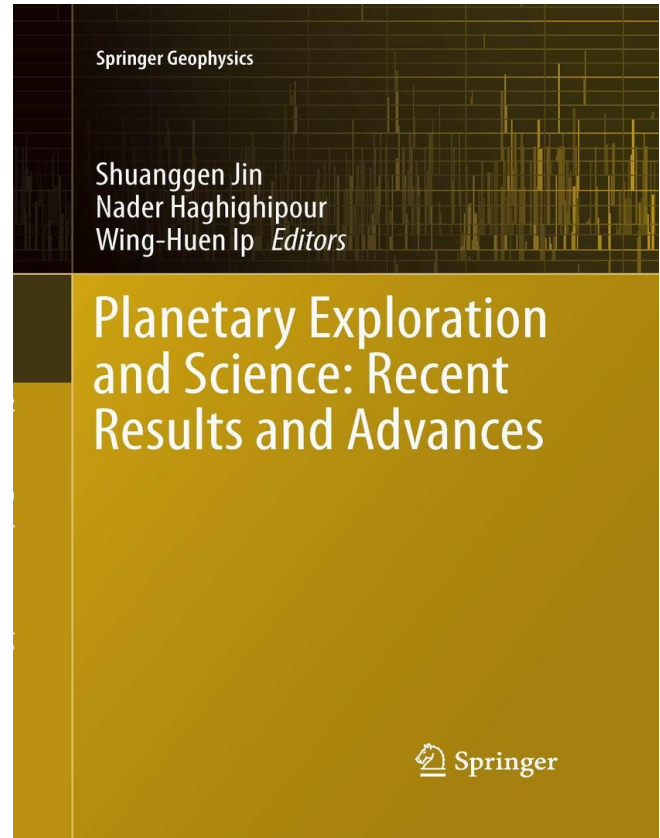
3) PhD student and postdoc positions at Tsinghua University, Beijing, China.

The Tian Research Group at Tsinghua University welcomes students interested in planetary atmospheres and their evolution. A position will be available starting in September 2017. Applications must be received by July 1st 2016. If admitted, tuition fee, insurance, dormitory, and reasonable living expenses of the student will be provided. Postdoc positions are also possible. For detailed information please contact Prof. Feng Tian ([tianfengco@mail.tsinghua.edu.cn](mailto:tianfengco@mail.tsinghua.edu.cn))

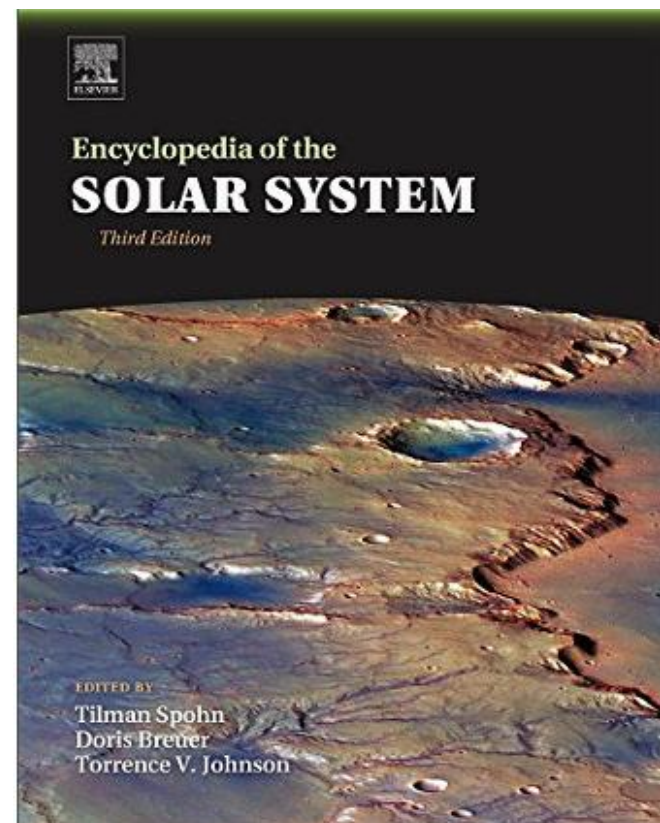
#### 4. Highlighting Activities

- Jin, S.G., N. Haghighipour, and W.-H. Ip (Eds.) (2015), Planetary Exploration and Science: Recent Results and Advances, Springer Verlag, Heidelberg,

Germany, ISBN: 978-3-662-45051-2, 340pp.



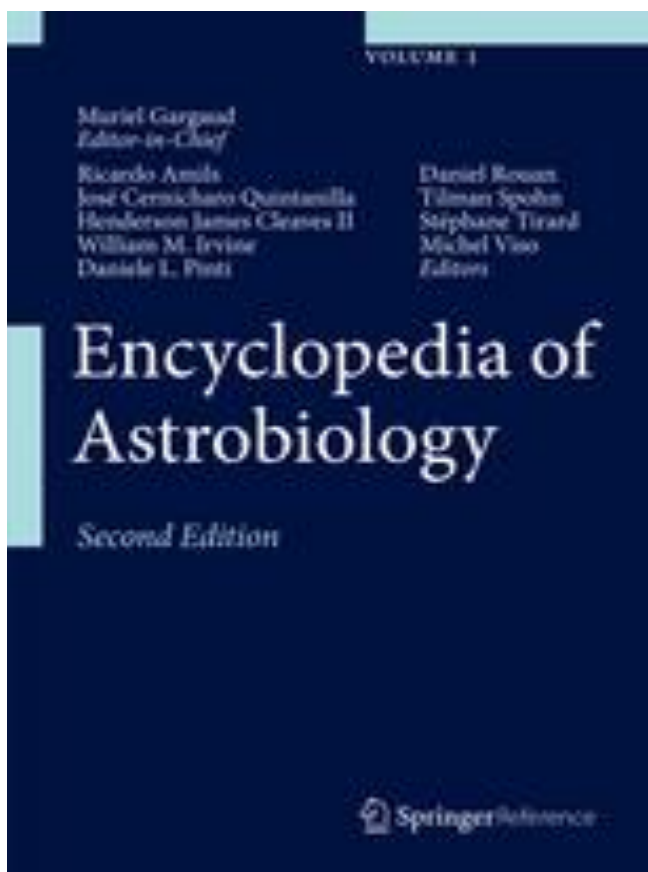
- Spohn, T., D. Breuer & T. V. Johnson (Eds.) (2014), Encyclopedia of the Solar System, Third Edition, Elsevier, ISBN: 9780124158450, 1336pp.



- Gargaud, M., R. Amils, J. Cernicharo, H. J. Cleaves II, K. Kobayashi, D. Pinti, M. Viso (Eds) (2015), The



Encyclopedia of Astrobiology, 2nd edition, Springer,  
ISBN 978-3-662-44184-8, 2550pp.



April 4 - 8, 2016, Oxford, UK  
<http://venus2016.uk>

EGU General Assembly 2016  
April 17 - 22, 2016, Vienna, Austria  
<http://www.egu2016.eu>

Exoplanets Conference  
July 3 - 8, 2016, Davos, Switzerland  
<http://www.exoplanetscience.org>

European Week of Astronomy and Space Science  
4 - 8 July 2016, Athens, Greece  
<http://eas.unige.ch/EWASS2016>

International Symposium on Geodesy and Geodynamics (ISGG2016)  
July 22 - 26, 2016, Tianjin, China  
<http://isgg2016.csp.escience.cn>

41st COSPAR Scientific Assembly  
July 30 - August 7, 2016, Istanbul, Turkey  
<http://www.cospas-assembly.org>

AOGS 13<sup>th</sup> Annual Meeting  
July 31 - August 5, 2016, Beijing, China  
<http://www.asiaoceania.org/aogs2016>

79<sup>th</sup> Meeting of the Meteoritical Society  
August 7 - 12, 2016, Berlin, Germany  
<http://www.metsoc-berlin.de>

6<sup>th</sup> International Conference on Mars Polar Science and Exploration  
September 5 - 9, 2016, Reykjavik, Iceland  
<http://www.hou.usra.edu/meetings/marspolar2016>

DPS-EPSC Joint Meeting 2016  
October 16 - 21, 2016, Pasadena, CA, USA  
<http://dps.aas.org/meetings/future>

3<sup>rd</sup> International Workshop on Instrumentation for Planetary Missions  
October 24 - 27, 2016, Pasadena, CA, USA  
<http://www.hou.usra.edu/meetings/ipm2016>

AGU 2016 Fall Meeting  
December 12 - 16, 2016, San Francisco, California, USA  
<http://meetings.agu.org/upcoming-meetings>

IAPSO-IAMAS-IAGA 2017  
August 27 - 1 September, 2017, Cape Town, South Africa  
<http://www.iapso-iamas-iaga2017.com>

## 5. UCPS Membership

If you are interested in participating and contributing to UCPS activities or wish to join the IUGG UCPS as a member, please contact Prof. Shuanggen Jin ([sgjin@shao.ac.cn](mailto:sgjin@shao.ac.cn))

## 6. Upcoming conferences

8<sup>th</sup> Annual Conference on European Space Policy  
January 12 - 13, 2016, Brussels, Belgium  
<http://www.b-bridge.eu/en/index.html>

Astrophysics of Planetary Habitability  
February 8 - 12, 2016, Vienna, Austria  
<http://habitability.univie.ac.at>

Solar System Symposium  
February 17-19, 2016, Sapporo, Japan  
<http://ws2016.webnode.jp>

2<sup>nd</sup> Conference on Astrophysics and Space Science (APSS 2016),  
February 28 to March 1, 2016, Beijing, China  
<http://www.engii.org/ws2016/Home.aspx?id=686>

47<sup>th</sup> Lunar and Planetary Science Conference  
March 21 - 25, 2016, Woodlands, Texas, USA  
<http://www.hou.usra.edu/meetings/lpsc2016/>

International Venus Science Conference