月球与行星科学国际学术研讨会
International Symposium on Lunar and Planetary Science
Scientific Organization Committee

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Co-Chair:
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Kwing Lam Chan (MUST, Macau)  Jin Chang (PMO, China)
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Chengli Huang (SAO, CAS, China)  Hejiu Hui (Nanjing U., China)
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Peter Read (U. Oxford, UK)  Rafael Rodrigo (ISSI, Switzerland)
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Yongliang Zou (CSSAR, CAS, China)

Local Organization Committee
(MUST, Macau)

Bao Mei  Xiaoping Zhang  Yinsheng Gu  Tinlong Lei
Jinghui Chen  Qing Gao  Yuting Zhang  Weishan Jin
Vongchi Leong  Meng-Hua Zhu  Ying Liao  Yuji Harada
Dongdong Ni  Roberto Bugiolacchi  Guoping Hu  Feng Zhang
**Keynote Speeches**

**Yan Geng (Lunar Exploration and Space Program Center of CNSA)**

Mr. Yan Geng is the director of deep space exploration department at Lunar Exploration and Space Program Center (LESPC) of CNSA. He dominates system argumentation, overall design and project management of China’s first Mars exploration mission, as well as demonstration of the China’s Deep Space Exploration Program.

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**Sushil Atreya (University of Michigan / Jet Propulsion Lab)**

Sushil Atreya is a professor of climate and space sciences and engineering at the University of Michigan and a Distinguished Visiting Scientist at the Jet Propulsion Lab (JPL), California Institute of Technology. He specializes in planetary science. His research is highly interdisciplinary, cutting across traditional scientific disciplines in order to address such fundamental questions as the origin and evolution of planetary and satellites atmospheres, climate evolution, planetary habitability, and the synergy between exoplanets and the solar system. He has published a textbook on the outer planets and edited three other books. He has also authored more than 250 research articles and book chapters as well as several popular scientific articles. Sushil Atreya is presently a coinvestigator on the Curiosity Rover of Mars Science Laboratory and Juno Jupiter Polar Orbiter, and in the past on the Cassini-Huygens mission to the Saturn system, Galileo Jupiter orbiter and probe mission, Voyager giant planets and interstellar missions, and ESA’s Mars Express and Venus Express missions. Sushil Atreya is a Fellow of the American Association for the Advancement of Science (AAAS; elected 2005), Fellow of the Japan Geoscience Union (JpGU; elected 2018), Full Member of the International Academy of Astronautics (IAA; elected 1993), recipient of David Bates Medal of the European Geoscience Union (EGU; 2016) and Al Seiff Memorial Award presented annually at the International Planetary Probe Workshop (IPPW; 2018).
Chi Wang (National Space Science Center, Chinese Academy of Sciences)

Prof. Chi Wang, Director General of the National Space Science Center, Chinese Academy of Sciences, also the Director of the State Key Laboratory of Space Weather. He graduated from the University of Science and Technology of China, and got his Ph.D. degree from the Massachusetts Institute of Technology, USA. His research interesting focuses on the large-scale solar wind structures in the heliosphere and the interaction of the solar wind with the magnetosphere. He worked on the plasma experiments on Voyager 2 and developed a multi-fluid solar wind model. Starting from 2002, he led the effort to establish the first state key laboratory of space weather in China, and to develop of a global MHD model of the interaction of the solar wind with the magnetosphere. He has published more than 200 peer-reviewed papers including Nature, JGR etc. He was the PI of the Chinese Meridian Project, which is the ground-based space environment monitoring chain in China. He currently is the Co-PI of the solar wind – magnetosphere – ionosphere link explorer (SMILE), an ESA-China joint space science mission, and the deputy chief engineer of the Chinese Lunar Exploration CE-4 mission.

James W. Head (Dept. of Geological Sciences, Brown University)

Prof. Jim Head is the Louis and Elizabeth Scherck Distinguished Professor of Geological Sciences, Brown University. In his early work with the NASA Apollo program, he analyzed potential landing sites, studied returned lunar samples and data, and provided training for the Apollo astronauts. His current research centers on the study of the processes that form and modify the surfaces, crusts and lithospheres of planets, how these processes vary with time, and how such processes interact to produce the historical record preserved on the planets. Comparative planetology, the themes of planetary evolution, and application of these to the study of early Earth history are also of interest. He has followed up his research on volcanism, tectonism and glaciation with field studies on active volcanoes in Hawaii and at Mount St. Helens, on volcanic deposits on the seafloor with three deep sea submersible dives, and during five field seasons in the Antarctic Dry Valleys.

He has served as an investigator with NASA and Russian Space Missions, such as the Soviet Venera 15/16 and Phobos missions, and the US Magellan (Venus), Galileo (Jupiter), Mars Surveyor, Russian Mars 1996, and Space Shuttle missions.

Dr. Head is presently a co-investigator for the NASA MESSENGER mission to Mercury and the Lunar Reconnaissance Orbiter, as well as the European Space Agency’s Mars Express Mission.

program
## WEEK AT A GLANCE

<table>
<thead>
<tr>
<th>Time</th>
<th>June 12</th>
<th>June 13 Wednesday</th>
<th>June 14 Thursday</th>
<th>June 15 Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30-09:00</td>
<td>On-desk reception (N101)</td>
<td></td>
<td>Keynote talk: 4 (N101)</td>
<td>Poster awards (N101)</td>
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<tr>
<td>09:00-09:30</td>
<td>Open ceremony and group photo (N101)</td>
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<tr>
<td>09:30-10:00</td>
<td>Keynote talks: 1&amp;2 (N101)</td>
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<td>10:00-11:00</td>
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<tr>
<td>11:00-11:30</td>
<td>Coffee break (venue: in front of N108)</td>
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<tr>
<td>11:30-13:00</td>
<td>LS1 (N101)</td>
<td>TP1 (N212)</td>
<td>LS4 (N101)</td>
<td>TP4 (N212)</td>
</tr>
<tr>
<td>13:00-14:00</td>
<td>Lunch break (venue: student canteen, E building)</td>
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<tr>
<td>14:00-15:30</td>
<td>LS2 (N101)</td>
<td>TP2 (N212)</td>
<td>LS5 (N101)</td>
<td>ST (N212)</td>
</tr>
<tr>
<td>15:30-16:00</td>
<td>Coffee break (venue: in front of N108)</td>
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<tr>
<td>16:00-17:30</td>
<td>Keynote talk: 3 &amp; Special invited talks (N101)</td>
<td>Poster Session (venue:N108)</td>
<td>SB4 (N101)</td>
<td>OP2 (N212)</td>
</tr>
<tr>
<td>17:30-18:30</td>
<td>Welcome reception (venue: 5th floor, A building)</td>
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<tr>
<td>18:30-19:00</td>
<td>Welcome banquet</td>
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<td>19:00-20:00</td>
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Remarks:
1. LS=Lunar Science, OP=Outer Planets, TP=Terrestrial Planets, PS=Plasma Science, SB=Small Bodies, ST = Special Topic;
2. Keynote1 = Yan Geng; Keynote 2 = Sushil Atreya; Keynote 3 = Chi Wang; Keynote 4 = James W. Head
3. N101 = Room 101, N building; N212 = Room 212, N building
Note:

1. The LOC members and the helper wear the sky-blue T-shirt.
2. Please check your sliders before the start of your session.
3. We encourage you to stick your poster from June 13 and take it away at the end of poster session.
4. We encourage you to wear the ISLPS T-shirt.

<table>
<thead>
<tr>
<th>Guests WiFi guideline:</th>
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<tbody>
<tr>
<td>a. Select “MUST-DOT1X”</td>
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<tr>
<td>b. Username: ssipub</td>
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<tr>
<td>c. Password: Space12345</td>
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</tbody>
</table>
Tuesday Evening, June 12
17:30 – 19:00 Welcome party (venue: 5th floor, A building)

Wednesday Morning, June 13
08:30 – 09:00 On-desk Reception (venue: in front of N101)
09:00 – 10:00 Open Ceremony and Group Photo (venue: N101)
Wednesday Morning, June 13

**Keynote Talks, Room N101**

*Chair: Kwing Lam Chan*

10:00 – 10:30 **Yan Geng**  
*abstract ID: 160*  
*China’s First Mars Mission and prospect of Deep-space exploration in China*

10:30 – 11:00 **Sushil Atreya**  
*Mars exploration today and tomorrow*

11:00 – 11:30 coffee break

**LS1, Room N101**

*Chair: Kyeong Ja Kim*

*abstract ID: 099*  
*Geology and scientific values of the Chang-E-5 landing region*

*abstract ID: 016*  
*Geological characteristics of the Chang ’E-4 landing site region: Von Kármán Crater, Northwestern South Pole-Aitken Basin*

*abstract ID: 074*  
*Mafic minerals of the South Pole –Aitken Basin and the geological significance of Chang’E-4 mission*

*abstract ID: 040*  
*Chang’E-3 landing site mapping and rover localization results and their science and engineering applications*

12:40 – 13:00* **Yong Liao Zou**  
*abstract ID: 154*  
*The science goals and payloads requirement of the Chang’E-7 lunar spacecraft*
**TP1, Room N201**

*Chair: Peter Read*

11:30 – 11:50*  A. Cellino and P. Tanga  
Abstract ID: 008  
*The GAIA revolution in asteroid science*

11:50 – 12:10*  S. Atreya and P. R. Mahaffy  
Abstract ID: 012  
*Oxidants on Mars*

Abstract ID: 020  
*The case for hydrothermal seafloor-type deposits in the Eridania basin on Mars*

Abstract ID: 038  
*Strong radar echoes from the base of the Martian South Polar layered deposits and potential implications for their thermophysical conditions*

Abstract ID: 033  
*Possible subsurface ice in the Elysium-Utopia region, low latitude of Mars detected by SHARAD*

13:00-14:00 lunch break (venue: student canteen)
LS2, Room N101

Chair: Kaichang Di

14:00 – 14:20* M. Laneuville, J. Taylor, and M. Wieczorek  
*abstract_ID: 014
The magmatic and magnetic evolution of the Moon: New constraints on radioactive heat source distribution and implications

14:20 – 14:40* N. Namiki  
*abstract_ID: 123
Lunar crustal structure estimated from gravity field measurements

14:40 – 14:55 S. X. Gong  
*abstract_ID: 068
Origin of the crustal magnetic anomalies on the Moon: Constraints from the gravity

*abstract_ID: 051
An unusual geology of Mare Imbrium

15:10 – 15:25 Z. Yue, S. Sun, and K. Di  
*abstract_ID: 042
Investigation of the depth and diameter relationship of subkilometer-diameter lunar craters

*abstract_ID: 063
Ring-Moat dome structures in Mare Tranquilitatis: Distribution and morphologic diversity

TP2, Room N212

Chair: Jun Cui

14:00 – 14:20* Y. T. Lin  
*abstract_ID: 035
Science questions addressed by sample return missions and the related sample curation considerations

14:20 – 14:40* T. Mikouchi, Nakhliites and Chassignites  
*abstract_ID: 087
Nakhliites and chassignites Martian meteorites: Did they share a common igneous body on Mars?

14:40 – 14:55 S. Shang, H. Hui, S. Li et al.  
*abstract_ID: 031
Evidence for early felsic crust on Mars

*abstract_ID: 056
Partitioning behavior of bromide and chloride during Jarosite precipitation-implications for Jarosite crystal chemistry and CL/BR fractionation on Mars

abstract_ID: 013
High resolution Phobos gravity field simulation

15:30-16:00 coffee break

Keynote and Special Invited Talks, Room N101

Chair: Wing-Huen Ip

16:00 – 16:30 Chi Wang  
abstract_ID: 049
China’s Deep-Space exploration and planetary research in the past, current, and in the near future

16:30 – 16:55 Anil Bhardwaj*  
abstract_ID: 053
Highlights of the Indian planetary missions and future plan

16:55 – 17:20 Kyeong Ja Kim*  
abstract_ID: 039
Roles of nuclear payloads for future lunar explorations

18:30 – 20:00 Welcome Banquet
Thursday Morning, June 14

**Keynote Talk, Room N101**

**Chair: Ziyuan Ouyang**

09:00 – 09:30 **James W. Head**  
abstract_ID: 130  
The future of Lunar exploration: Goals, objectives and international cooperation

**LS3, Room N101**

**Chair: Long Xiao**

09:30 – 09:45 **L. Qiao, J. W. Head, L. Wilson, et al.**  
abstract_ID: 061  
Lunar irregular mare patch (IMP) sub-types: Linking their origin through hybrid relationships displayed at Cauchy 5 small shield volcano

09:45 – 10:00 **G. -P. Hu, R. Bugiolacchi, K. L. Chan, et al.**  
abstract_ID: 059  
A new map of thermal variations with depth within Oceanus Procellarum and Mare Imbrium using Chang E-2 (CE-2) microwave radiometers (MRMS) data

10:00 – 10:15 **H. H. Wang, Z. G. Meng, X. Y. Li, et al.**  
abstract_ID: 137  
Potential geological significance of Crisium basin revealed by CE-2 CELMS data

10:15 – 10:30 **R. Bugiolacchi**  
abstract_ID: 067  
Tycho crater rays – small craters distribution patterns

10:30 – 10:50* **P. H. Warren**  
abstract_ID: 082  
Lunar meteorites and the massive PAN (Purest Anorthosite) model: Inconvenient truths about remote sensing for planetary surface composition

11:00 – 11: 30 coffee break

**LS4, Room N101**

**Chair: Yongliao Zou**

abstract_ID: 004
Spatially resolved chemical analysis using a miniature LIMS system designed for in situ of the lunar surface

*Far-UV investigation of new impact craters, cold spots and space weathering along crater facing slopes on the Moon*

12:05 – 12:20 X. Zeng, K. Joy, S. Li et al.  abstract_ID: 114
*The fluid alteration on the Moon recorded by secondary olivine veinlets in lunar highland breccia Northwest Africa 11273*

*Oldest high-Ti basalt and magnesia not crustal materials I in feldspathic lunar meteorite Dhofar 1428*

*Lunar hydration at polar regions and implication for its sources*

*The formation and thermal stability of H2O/OH in plagioclase by proton implantation experiments*

**TP3, Room N212**

*Chair: Jianguo Yan*

09:30 – 09:45 J. Wang, L. Xiao, J. Huang, et al.  abstract_ID: 036
*Geological features and evolution of Yardangs in the Qaidam basin and their analog study with Mars*

09:45 – 10:00 Y. N. Dang, L. Xiao, Y. Xu  abstract_ID: 111
*Insight into the sequence of processes responsible for the growth of polygonal surface structures in Qaidam Basin, western China*

10:00 – 10:15 T. Huang, L. Xiao, H. Wang, et al.  abstract_ID: 054
*Microbial diversity and lipids, preservation of sediments from Dalangtan playa in the Qaidam Basin and their astrobiological significances*

10:15 – 10:35* P. Lognonne and W. B. Banerdt  abstract_ID: 032
*Seismic measurements on Mars and other planetary bodies*

10:35 – 10:50 L. Pan, C. Quantin, C. Michaut  abstract_ID: 086
*The composition and stratigraphy of the northern lowlands and implications for the Insight mission*
11:00 – 11:30 coffee break

TP4, Room N212

Chair: Yangting Lin

Global and local climatology of Mars and its dust cycle from assimilation of spacecraft observations

Sublimation flow in the southern hemisphere of Mars

12:10 – 12:30* E. Millour, F. Forget, A. Spiga, et al.  abstract_ID: 029
The LMD Mars global climate model and Mars climate database projects

12:30 – 12:45 A. M. Palumbo and J. W. Head  abstract_ID: 093
Characterizing a warm and wet early Martian climate with a 3D global climate model

Computer analysis as a replacement for experiment in space instrument development

13:00-14:00 lunch break (venue: student canteen)
Thursday Afternoon, June 14

**LS5, Room N101**

**Chair: Xiaoping Zhang**

14:00 – 14:20* T. Kobayashi  
abstract ID: 027  
*HF radar observation of the Moon: What Kaguya lunar radar sounder saw*

14:20 – 14:40* J. Haruyama  
abstract ID: 134  
*Possible lunar lava tube and its skylight hole as resource for lunar science and exploration*

14:40 – 14:55 M. Naito, J. Ishi, and N. Hasebe  
abstract ID: 028  
*Basic experiment of neutron spectroscopy for planetary hydrogen measurement*

14:55 – 15:15* G. Cremonese and the SIMBIO-SYS team  
abstract ID: 069  
*The SIMBIO-SYS imaging camera experiment of BepiColombo and the potential impact on Mercury study*

15:15 – 15:30 A. N. Deutsch and J. W. Head  
abstract ID: 096  
*Recent deposition of ice on Mercury: New results on the ages of north polar ice deposits and implications for the Moon*

15:30-16:00 coffee break

**ST, Room N212**

**Chair: Anil Bhardwaj**

14:00 – 14:15 H. Zhan  
abstract ID: 117  
*An overview of the Chinese Space Station Optical Survey*

14:15 – 14:30 Z. X. Huo, J. C. Huang, and L. Z. Meng  
abstract ID: 080  
*CROWN: A constellation of heterogeneous wide-field NEO surveyors*

abstract ID: 084
China’s space station Tiangong as laboratory and incubator for space exploration research and development

14:45 – 15:00 J. C. Huang, H. X. Liao and Z. X. Huo
Research and development on the small body exploration in CAST

abstract_ID: 092

SELMA-A mission to investigate the origin of lunar water

abstract_ID: 155

15:15 – 15:30 Q. -G. Zong, J. -S. He, and the IHP team
Interstellar Heliosphere Probes

abstract_ID: 022

15:30 – 15:45* J. -L. Zhou
Transiting bright star exoplanets in antarctic and Tibet with AST3 and TIDO

abstract_ID: 161

15:30-16:00 coffee break

16:00 – 17:30
Poster session
(Room N108)

Note.
We are pleased to announce 6 awards for the best poster presentation with certificate and a monetary award of HKD 1,000. The winners will be announced at the morning (9:00 am -9:30 am) of June 15.
Friday Morning, June 15

09:00 - 09:30 Awards for Best Poster Presentation, Room N101

SB1, Room N101

Chair: Nobuyuki Hasebe

09:30 – 09:50* S. Kwok
Organics in the solar system

abstract_ID: 081

09:50 – 10:10* G. Fillachione
A comparative study of the surface properties of asteroids and comets from an infrared perspective

abstract_ID: 001

10:10 – 10:30* C. Tubiana, H. Sierks, and the OSIRIS team
The Rosetta comet 67P/Churyumov-Gerasimenko through the eyes of OSIRIS:
Major results and expectations for the exploration of a main-belt comet

abstract_ID: 125

Water vapor deposition from the inner gas coma onto the nucleus of comet 67P/Churyumov-Gerasimenko

abstract_ID: 018

10:45 – 11:00 Z. Wang
The study of radio observation of comets

abstract_ID: 076

11:00 – 11:30 coffee break

SB2, Room N101

Chair: Peter Wurz

Ceres as observed by Dawn/VIR: Mineralogical and thermal mapping of a dwarf planet in the main asteroid belt

abstract_ID: 002
*abstract_ID*: 085

The asteroid spin-rate study using wide-field surveys

12:05 – 12:20 X. P. Lu and D. Jewitt  
*abstract_ID*: 145

Binary asteroid simulation and relationship between magnitude variation and shape axis-ratio

*abstract_ID*: 119

Density and porosity of meteorite and the implication to asteroid structure

**PS1, Room N212**

**Chair: Lou-Chuang Lee**

09:30 – 09:50* L. Li, Y.T Zhang, B. Zhou et al.  
*abstract_ID*: 045

Dust levitation and transport over the surface of the Moon

*abstract_ID*: 116

Numerical simulation of lunar dust transportation in specific regions of the Moon

*abstract_ID*: 041

The effect of spacecraft charging and outgassing on the LADEE ion measurements

*abstract_ID*: 015

The energetic particle environment of the lunar nearside

10:40 – 10:55 D. W. Guo, X. P. Zhang, L. H. Xie  
*abstract_ID*: 121

Backscattered solar wind entry into the lunar wake from ARTEMIS observation

11:00 – 11:30 coffee break

**PS2, Room N212**

**Chair: Qiugang Zong**

*abstract_ID*: 048

Investigation of Mercury plasma/particle environment by MPPE (Mercury Plasma Particle Experiment) on BepiColombo/MMO
11:50 – 12:05 J. T. Zao, Q. -G. Zong, and W. J. Sun  
abstract_ID: 149
A statistical study of Mercury’s flux rope with strong core field

abstract_ID: 108
Formations of magnetic flux ropes Kelvin-Helmholtz vortices and radio waves in planetary environments

12:25 – 12:40 J. Yu, L. Y. Li and J. Cui  
abstract_ID: 100
Intense low-frequency whistler-mode waves with periodic rising-tone observed in high-density region

12:40 – 12:55 X. D. Gu and J. Huang  
abstract_ID: 079
Case study of whistler mode chorus using JUNO data

13:00-14:00 lunch break (venue: student canteen)
Friday Afternoon, June 15

SB3, Room N101

Chair: Liping Qin

14:00 – 14:20 *N. Hasebe, M. Naito, K. J. Kim, et al.  
abstract_ID: 026  
Neutron and gamma-ray spectroscopic measurements at near-Earth asteroids and comets

14:20 – 14:35 T. Ma and J. Chang  
abstract_ID: 046  
Gamma-ray spectrometer for asteroid mission in China

abstract_ID: 104  
Photometric results of DESTINY+mission target asteroid 3200 Phaethon (1983 TB) during the 2017 apparition

abstract_ID: 060  
(3200) Phaethon observing campaign: Ground-based observations of the Lulin observatory team

abstract_ID: 090  
The capture statistics of Triton as a probe to the original population of trans-Neptunian objects

15:20 – 15:35 C. -Y. Dong and L. -Y. Zhou  
abstract_ID: 102  
On the close encounters between Plutinos and Neptune Trojans

15:30-16:00 coffee break

SB4, Room N101

Chair: Xiaoping Lu

16:00 – 16:15 J. W. Zhao and L. Xiao  
abstract_ID: 075  
Shock effects of quartz and zircons in basement granite and impact breccia drilled from the peak ring of the Chicxulub impact crater, Mexico

16:15 – 16:30 Z. Y. Xiao  
abstract_ID: 006  
Search for potential impact craters in China
16:30 – 16:45 J. Pu, Z. Y. Xiao and H. J. Hui
Tektites in China

16:45 – 17:00 L. Qin, J. Liu, K. Zhu, et al.
The formation of chondrules, a CR isotope perspective

17:00 – 17:15 Z. Guo, Y. Li, Z. Xie, et al.
The origin of Metallic iron in a highly shocked ordinary chondrite

**OP1, Room N212**

Chair: Michel Blanc

14:00 – 14:20* A. P. Showman
Atmospheric dynamics of Jupiter and hot Jupiters

Convective Dynamics of Gaseous Planets

14:40 – 15:00* D. L. Kong, K. Zhang, and G. Schubert
Jupiter’s equatorially anti-symmetric gravitational field and its interior dynamics

15:00 – 15:15 D. D. Ni
Empirical models of Jupiter’s interior from JUNO data: Moment of inertia and tidal Love number $K_2$

15:15 – 15:30 K. Lam, D. L. Kong, and K. Zhang
Nonlinear thermal inertial waves in planetary fluid systems

15:30-16:00 coffee break

**OP2, Room N212**

Chair: KeKe Zhang

16:00 –16:20* J. Cui
Sources of Titan's ionosphere
*abstract_ID: 047*

>The ring atmosphere/ionosphere revisited using results from the Cassini Grand Finale mission

16:35 – 16:50  H. S. Shi and W. -H. Ip  
*abstract_ID: 107*

>The atmosphere of Pluto and other icy dwarf planets

16:50 – 17:10* J. Yang, F. Ding, R.M. Ramirez, et al.  
*abstract_ID: 070*

>Climate change and the habitability of icy worlds: Europa and Enceladus

17:10 – 17:30* M. Blanc  
*abstract_ID: 152*

Science goals and mission objectives for the future exploration of the Jupiter system: A horizon 2061 perspective
Poster session

*Suggested poster size: 120 cm (h) x 90 cm (w)*

*Poster board size: 170 cm (h) x 90 cm (w)*

*(Venue: Room N108)*

**Moon (No. 001 - 026)**

No. 001. Y. Q. Qian, L. Xiao, G. X. Wang, et al. [abstract ID: 010]

*Geomorphological features and regolith properties of the China’s Chang’E-5 landing region on the Moon*

No. 002. G. G. Kochemasov [abstract ID: 011]

*Mare Orientale – an impact or a regular tectonic features?*

No. 003. Y. C. Wang and Z. Y. Xiao [abstract ID: 023]

*What is the minimum confidential diameter for crater statistics?*

No. 004. M. Naito, J. Ishi, and N. Hasebe [abstract ID: 028]

*Basic experiment of neutron spectroscopy for planetary hydrogen measurement*

No. 005. C. P. Tang, K. Sawchuk, and P. H. Warren [abstract ID: 037]

*A textural/mineralogical gradient within vitrophyric mare basalt NWA 8632*

No. 006. T. M. Wang, Q. Huang, and J. N. Zhao [abstract ID: 050]

*The Gardner volcanic complex of the Moon: Geological characteristics and its volcanic activity*

No. 007. Y. Li, A. T. Basilevsky, M. G. Xie, W. –H. Ip [abstract ID: 147]

*Correlations between ejecta boulder spatial density of small lunar craters and the crater age*

No. 008. Y. Z. Wu and B. Hapke [abstract ID: 052]

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No. 009. B. Wu, J. Huang, and Y. Li, et al. [abstract ID: 062]

*Rock abundance at the candidate Chang’E-5 landing region on the Moon*
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