

The International Symposium on Planetary Science 2011

PROGRAM

Date : March 8-11, 2011

Location: 2nd floor, Katahira Sakura Hall, Tohoku University
(Poster: 1st floor, Katahira Sakura Hall)

Information on oral presentation:

30min: 25min talk + 5min discussion / 20min: 15min talk + 5min discussion

Tuesday March 8

13:00 - 13:10 **Welcome:**
S. Okano (Tohoku Univ.)

Chair: Y. Kasaba (Tohoku Univ.)

13:10 - 13:40 **Mercury exosphere**
F. Leblanc (LATMOS, IPS-CNRS)

13:40 - 14:10 **Wide-Angle Imaging Studies of Exospheres in the Solar System**
M. Mendillo (Boston Univ.)

14:10 - 14:30 **Structure of the lunar exosphere**
S. Yokota, Y. Saito, T. Tanaka, K. Asamura, M. N. Nishino (ISAS/JAXA), H. Tsunakawa (Tokyo Inst. Tech.), H. Shibuya (Kumamoto Univ.), M. Matsushima (Tokyo Inst. Tech.), H. Shimizu (Univ. Tokyo), and F. Takahashi (Tokyo Inst. Tech.)

14:30 - 14:50 **Science Operation Concept of BepiColombo/MMO based on the MDP scheme**
Y. Kasaba (Tohoku Univ.), M. Nishino, M. Fujimoto, and T. Takashima (ISAS/JAXA).

14:50 - 15:10 **Break**

Chair: N. Iwagami (Univ. Tokyo)

15:10 - 15:30 **Return to Venus of Akatsuki**
M. Nakamura (ISAS/JAXA) and AKATSUKI Project team

15:30 - 15:50 **Characteristic features in nightside cloud-top temperature distributions of Venus observed by Akatsuki/LIR**
T. Fukuhara (Hokkaido Univ.), M. Taguchi, M. Futaguchi (Rikkyo Univ.), M. Sato (Hokkaido Univ.), T. Imamura, M. Nakamura, M. Ueno, M. Suzuki (ISAS/JAXA), N. Iwagami (Univ. Tokyo), and G. Hashimoto (Okayama Univ.)

15:50 - 16:10 **Daily variations of the mesospheric wind on Venus using IR heterodyne spectroscopy**
H. Nakagawa (Tohoku Univ.), M. Sornig (Univ. Cologne), N. Hoshino (Tohoku Univ.), G. Sonnabend, D. Stupar (Univ. Cologne), Y. Kasaba, S. Aoki, I. Murata, and S. Okano (Tohoku Univ.)

- 16:10 - 16:30 **Venus' atmospheric waves indicated by ground-based dayside infrared spectroscopic observation**
M. Hosouchi, N. Iwagami (Univ. Tokyo), S. Ohtsuki (ISAS/JAXA), and M. Takagi (Univ. Tokyo)
- 16:30 - 16:50 **Ion outflow channels around Venus controlled by IMF directions**
K. Masunaga (Tohoku Univ.), Y. Futaana, M. Yamauchi, S. Barabash (IRF/Sweden), T. L. Zhang (Space Res. Inst., Austrian Acad. Sci.), N. Terada, and S. Okano (Tohoku Univ.)
- 17:00 - 18:30 **ICEBREAKER (1st floor, Sakura Hall)**
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Wednesday March 9

Chair : A. Kumamoto (Tohoku Univ.)

- 9:00 - 9:20 **Observations of the lunar subsurface structures and Jovian hectometric radiation by Lunar Radar Sounder (LRS) onboard the Kaguya (SELENE) spacecraft**
A. Kumamoto, T. Ono (Tohoku Univ.), Y. Yamaguchi (Nagoya Univ.), A. Yamaji (Kyoto Univ.), T. Kobayashi (Shanghai Astron. Obs.), S. Oshigami (Nagoya Univ.), and Y. Kasahara (Kanazawa Univ.).
- 9:20 - 9:40 **Estimation of vertical plasma extent above the lunar surface using interference pattern of natural plasma waves**
Y. Goto, T. Fujimoto, Y. Kasahara (Kanazawa Univ.), A. Kumamoto, and T. Ono (Tohoku Univ.)
- 9:40 - 10:00 **Anomalous Deformation of the Earth's Bow Shock in the Lunar Wake: Joint Measurement by Chang'E-1 and SELENE**
M. N. Nishino (ISAS/JAXA), X.-D. Wang (Nat'l Astron. Obs., Chinese Acad. Sci.), M. Fujimoto (ISAS/JAXA), H. Tsunakawa (Tokyo Inst. Tech.), Y. Saito, S. Yokota (ISAS/JAXA), W. Bian, C.-L. Li (Nat'l Astron. Obs., Chinese Acad. Sci.), F. Takahashi (Tokyo Inst. Tech.), H. Shibuya (Kumamoto Univ.), H. Shimizu, and T. Terasawa (Univ. Tokyo)

10:00 - 10:20 **Break**

Chair : H. Misawa (Tohoku Univ.)

- 10:20 - 10:40 **Variation features of Jupiter's radiation belt observed from its synchrotron radiation**
H. Misawa, F. Tsuchiya (Tohoku Univ.), A. Bhardwaj (VSSC, India), K. Imai (Hitachi Ltd.), T. Kondo (NICT), and A. Morioka (Tohoku Univ.)
- 10:40 - 11:00 **Characteristics of Jovian ionospheric Alfvén resonator observed by using wave modulations of L-burst emissions**
T. Koshida, T. F. Shibata, S. Taguchi (Univ. Electro-Communications), and H. Misawa (Tohoku Univ.)

- 11:00 - 11:20 **Occurrence probability analyses of Jovian decametric radiation based on 3 short baselines interferometer observation**
T. Nakajo, K. Kobayashi (Fukui Univ. Tech.), and H. Oya(Tohoku Univ.)
- 11:20 - 11:40 **Relationship Between Whistler-Mode Chorus Enhancements and Anisotropic Electrons in the Jovian Inner Magnetosphere**
Y. Katoh, F. Tsuchiya (Tohoku Univ.), Y. Miyoshi (Nagoya Univ.), A. Morioka, H. Misawa (Tohoku Univ.), R. Ujiie (JAXA), W. S. Kurth (Univ. Iowa), A. T. Tomas (GeoForschungsZentrum Potsdam), and N. Krupp (MPI)
- 11:40 - 12:00 **Japanese Jupiter exploration plan; Jovian magnetospheric orbiter JMO**
T. Takashima (ISAS/JAXA) and JMO Team
- 12:00 - 12:20 **Plan for Observing Magnetospheres of Outer Planets by Using the EUV Spectrograph onboard the SPRINT-A/EXCEED Mission**
F. Tsuchiya (Tohoku Univ.), I. Yoshikawa (Univ. Tokyo), M. Kagitani (Tohoku Univ.), K. Yoshioka (Rikkyo Univ.), N. Terada, Y. Kasaba (Tohoku Univ.), G. Murakami, K. Sakai, T. Homma (Univ. Tokyo), A. Yamazaki, K. Uemizu, T. Kimura, and M. Ueno (ISAS/JAXA)

12:20 - 14:00 **Lunch**

Chair : T. Satoh (JAXA)

- 14:00 - 14:20 **Investigation of roles of Io's volcanism on Jupiter's magnetosphere**
M. Yoneda, H. Misawa, M. Kagitani, F. Tsuchiya (Tohoku Univ.), H. Nozawa (Kagoshima Nat'l Coll. Tech.), S. Okano (Tohoku Univ.), and T. Miyata (Univ. Tokyo)
- 14:20 - 14:50 **Comparing Atmospheric Escape: Io vs. Mars**
N. M. Schneider (LASP, Univ. Colorado)
- 14:50 - 15:10 **Favorable Regions for Dust Storm Expansion in Some Seasons on Mars**
K. Ogohara (ISAS/JAXA) and T. Satomura (Kyoto Univ.)
- 15:10 - 15:40 **Japan's Next Mars Exploration Plan MELOS: An Overview**
T. Satoh (ISAS/AXA)

15:40 - 16:00 **Break**

Chair : H. Nakagawa (Tohoku Univ.)

- 16:00 - 16:20 **Heavy-ion enhancement in the vicinity of the Martian ionosphere during CIR passages: Mars Express ASPERA-3 Observations**
T. Hara, K. Seki (Nagoya Univ.), Y. Futaana, M. Yamauchi (IRF/Sweden), M. Yagi (Nagoya Univ., LATMOS/IPSL, CNRS), Y. Matsumoto, M. Tokumaru (Nagoya Univ.), A. Fedorov (Centre d'Etude Spatiale des Rayonnements, France), and S. Barabash (IRF, Sweden)
- 16:20 - 16:40 **The ion distribution above the Martian crustal magnetic field – The effect of the electric field induced by the solar wind**
M. Kanao, T. Abe, A. Yamazaki, and M. Nakamura (ISAS/JAXA)
- 16:40 - 17:00 **Simulation of the CO₂ Ice Clouds in the Martian Mesosphere Using a General Circulation Model**
T. Kuroda (ISAS/JAXA)

17:00 - 17:20 **Development of the Martian upper thermosphere and exosphere DSMC model**
K. Terada, N. Terada, H. Fujiwara (Tohoku Univ.), and H. Jin(NICT)

17:30 - 18:30 **Poster session:** core time

Thursday March 10

Chair : S. Okano (Tohoku Univ.)

9:00 - 9:30 **PLANETS: A novel new telescope for planetary studies**

J. R. Kuhn (IFA Univ. Hawaii) and the PLANETS team

9:30 - 9:50 **Development and future prospect of a new telescope at Haleakala: PLANETS**

S. Okano (Tohoku Univ.) and the PLANETS team

9:50 - 10:10 **Development of infrared imager and Echelle spectrograph for ground-based measurement of planetary atmosphere**

T. Sakanoi, T. Uno, T. Kitami, M. Kagitani, Y. Kasaba, S. Okano, and T. Ichikawa (Tohoku Univ.)

10:10 - 10:30 **Jovian Radio Wave Observation system using LLFAST: Lunar Low Frequency Astronomy Telescope**

T. Iwata (ISAS/JAXA), K. Imai(Kochi Nat'l Coll.Tech.), T. Nakajo (Fukui Univ. Tech), T. Kondo (NICT), and H. Takeuchi (ISAS/JAXA)

10:30 - 10:50 **Break**

Chair : N. Terada (Tohoku Univ.)

10:50 - 11:20 **Solar/stellar activity variations over long-time scales and its impact on atmospheric evolution and habitability**

H. Lammer (Austrian Academy of Sciences, Space Research Institute)

11:20 - 11:50 **Atmospheric escape**

F. Leblanc (LATMOS, IPS-CNRS)

11:50 - 12:10 **Atmospheric escape from unmagnetized planets - research activities at Tohoku University**

N. Terada, H. Fujiwara, Y. Katoh, K. Terada, K. Masunaga, M. Kagitani, F. Tsuchiya, Y. Kasaba, S. Okano, A. Kumamoto, and T. Ono (Tohoku Univ.)

12:10 - 12:30 **The high resolution MHD simulation of Kronian magnetosphere**

K. Fukazawa (Kyushu Univ.), T. Ogino (Nagoya Univ.), R. J. Walker (IGPP, UCLA), and K. Yumoto (Kyushu Univ.)

12:30 - 14:00 **Lunch**

14:00 - 21:00 **Excursion & Banquet**

Friday, March 11

Chair : T. Sakanoi (Tohoku Univ.)

- 9:00 - 9:20 **X-ray Observations of Jupiter and Beyond**
Y. Ezoe (Tokyo Metropolitan Univ.)
- 9:20 - 9:40 **Modeling of UV and IR auroral emissions from Jupiter and Saturn**
C. Tao, S. V. Badman, and M. Fujimoto (ISAS/JAXA)
- 9:40 - 10:00 **Influences on the Intensity of Saturn's Infrared Aurora**
S. V. Badman (ISAS/JAXA), K.H. Baines (Univ. Wisconsin-Madison), R.H. Brown (Univ. Arizona), M. Fujimoto (ISAS/JAXA), A. Grocott, J.D. Nichols, T. Stallard (Univ. Leicester), and C. Tao (ISAS/JAXA)
- 10:00 - 10:20 **Concept of Japanese Mars meteorological orbiter**
T. Imamura (ISAS/JAXA) and MELOS Meteorological Orbiter Team
- 10:20 - 10:40 **High resolution general circulation model experiments of the Martian atmosphere: Resolution dependence of disturbance and surface stress**
Y. O. Takahashi, Y. Hayashi (Kobe Univ.), M. Odaka (Hokkaido Univ.), and W. Ohfuchi (Earth Simulator Center).
- 10:40 - 11:00 **Break**

Chair : T. Kobayashi (Shanghai Astron. Obs.)

- 11:00 - 11:20 **ALSE revisited: Kaguya Lunar Radar Sounder observation of southern Serenitatis**
T. Kobayashi, J-S. Ping (Shanghai Astron. Obs.), A. Kumamoto (Tohoku Univ.), Y. Yamaguchi (Nagoya Univ.), A. Yamaji (Kyoto Univ.), S. Oshigami (Nagoya Univ.), and T. Ono (Tohoku Univ.)
- 11:20 - 11:40 **Trojan Asteroids and the Early Evolution of the Solar System**
P. S. Lykawka (Kinki Univ.), J. Horner (Univ. New South Wales), B. W. Jones (Open Univ., UK), and T. Mukai (Kobe Univ.)
- 11:40 - 12:00 **Elemental Transportation mainly by the Solar Winds to the Moon and Planetary Polar Regions**
Y. Miura (Yamaguchi Univ.)
- 12:00 - 12:20 **Solar Radio Observation and Database Project in Tohoku University**
K. Iwai, F. Tsuchiya, M. Misawa, M. Kagitani, and A. Morioka (Tohoku Univ.)
- 12:20 **Final Words**
S. Okano (Tohoku Univ.)

Posters

Information on poster presentation:

Session core time: 17:30-18:30 on Wednesday, March 9 (@1st floor, Sakura Hall)

Board size:90cm (width) X 240cm (height)

#Posters can be displayed during the symposium.

1. Numerical Simulation on the Sodium/Potassium Ratio in Mercury's Exosphere

K.Kaneko, M. Kagitani, and S. Okano (Tohoku Univ.)

2. Estimation of the energy transportation of Venusian atmospheric turbulence using VEX/VMC UV images

T.Teraguchi, Y. Kasaba, N. Hoshino (Tohoku Univ.), Y. Takahashi, S. Watanabe (Hokkaido Univ.), M. Yamada (ISAS/JAXA), and Y. Matsuda (Tokyo Gakugei Univ.)

3. Contrast sources for the infrared images taken by the Venus mission AKATSUKI

S.Takagi, and N.Iwagami (Univ. Tokyo)

4. Effects of gravity waves on the general circulation in the Venusian mesosphere and thermosphere

N. Hoshino, H.Fujiwara (Tohoku Univ.), M. Takagi (Univ. Tokyo), and Y. Kasaba(Tohoku Univ.)

5. Heavy ion escape processes for non-magnetized planet: The comparison between Mars and Venus

Y. Kubota, K. Maezawa (ISAS/JAXA), and H. Jin (NICT)

6. Examination of the MELOS Orbiters and Scientific Instruments to Study the Martian Atmospheric Escape

A. Matsuoka, T. Abe (ISAS/JAXA), Y. Futaana (IRF, Sweden), S. Yokota (ISAS/JAXA), K. Ishisaka (Toyama Pref, Univ.), A. Kumamoto (Tohoku Univ.), J. Kurihara (Hokkaido Univ.), N. Ogawa (JSPEC/JAXA), K. Seki (Nagoya Univ.), M. Taguchi (Rikkyo Univ.), N. Terada (Tohoku Univ.), S. Yagitani (Kanazawa Univ.), A. Yamazaki (ISAS/JAXA), and MELOS Mars Atmospheric Escape Study Group

7. Search of H₂O₂ in the Martian atmosphere by MEX/PFS: Global average, Annual variation, and Seasonal variation

S. Aoki, Y. Kasaba (Tohoku Univ.), M. Giuranna, A. Geminale, G. Sindoni (I.F.S.I, INAF, Italy), H. Nakagawa, I. Murata (Tohoku Univ.) and V. Formisano(I.F.S.I, INAF, Italy)

8. Climate history on Mars as seen from the polar layered deposits

K. Akisato and S. Okano (Tohoku Univ.)

9. Application of the VLBI Techniques for Mars Rotation Observation

F. Kikuchi (Nati'l Astron. Obs., Japan), T. Iwata (ISAS/JAXA), K. Matsumoto, Y. Ishihara (Nati'l Astron. Obs., Japan), Y. Harada (Shanghai Astron. Obs.), and S. Sasaki (Nat'l Astron. Obs., Japan)

10. Detectability of the Moist Convective Activities in the Jovian Troposphere by High-resolution Observation of the Millimeter Interferometer

S. Takeuchi (Fukuoka Univ.)

11. Scattering Properties of Jovian Tropospheric Cloud Particles Inferred from Cassini/ISS data: Mie Scattering Phase Function and Particle Size in the South Tropical Zone

T. M. Sato (Tohoku Univ.), T. Satoh (ISAS/JAXA), and Y. Kasaba (Tohoku Univ.)

12. The observations of Jovian H₂ and H₃⁺ auroral emission using the SUBARU and IRTF

T. Uno, T. Sakanoi, and Y. Kasaba (Tohoku Univ.)

13. Plan of two-element radio interferometer for the observation of Jupiter's synchrotron radiation

F. Tsuchiya, H. Misawa, S. Sato, A. Morioka (Tohoku Univ.), and T. Kondo (NICT)

14. Short term variations of Jupiter's synchrotron radiation derived from VLA data analysis

H. Kita, H. Misawa, F. Tsuchiya, and A. Morioka (Tohoku Univ.)

- 15. Solar Wind Response of Jupiter's Magnetosphere observed from the Radio Spectra**
H. Misawa, F. Tsuchiya, and A. Morioka (Tohoku Univ.)
- 16. Non-MHD Aspects of Ganymede's Magnetosphere: Investigation of Wave-Particle Interaction Based on Multi-Instrumental Observations During Galileo G02 Flyby**
T. Kimura, S. Kasahara, and M. Fujimoto (ISAS/JAXA)
- 17. Development of a new multi-fluid code for the Io-Jupiter system based on the semi-discrete central scheme**
K. Matsuda, N. Terada, Y. Katoh, and H. Misawa (Tohoku Univ.)
- 18. Plasma Transport Rate through Interchange Instability at the Io Torus**
Y. Hiraki (Nat'l Inst. Fusion Sci.), F. Tsuchiya and Y. Kato (Tohoku Univ.)
- 19. The Slowing Ion in Saturn's Plasma Disk**
S. Sakai, S. Watanabe (Hokkaido Univ.), M. W. Morooka, and J. -E. Wahlund (Swedish Inst. Space Phys., Uppsala)
- 20. A photochemical model of Titan's upper atmosphere and ionosphere**
K. Nakaoka, S. Watanabe, and S. Sakai (Hokkaido Univ.)
- 21. Development of electric circuit system for infrared imager**
T. Kitami, T. Sakanoi, T. Uno, and T. Ichikawa (Tohoku Univ.)
- 22. Performance test of Micro-pore Optics (MPO)**
H. Ishii, K. Sakai, T. Homma (Univ. Tokyo), K. Yoshioka (Rikkyo Univ.), G. Murakami, and I. Yoshikawa (Univ. Tokyo)
- 23. Calibration of detective sensitivity of SPRINT-A/EXCEED**
K. Sakai, G. Murakami, T. Homma, H. Ishii, I. Yoshikawa (Univ. Tokyo), K. Yoshioka (Rikkyo Univ.), M. Ueno, A. Yamazaki, K. Uemizu (ISAS/JAXA), M. Kagitani, F. Tsuchiya, and N. Terada (Tohoku Univ.)
- 24. Study of optical loading and radiation effects on Jupiter X-ray imaging spectrometer onboard EJSM JMO**
K. Ishikawa, Y. Ezoe, T. Ohashi (Tokyo Metropolitan Univ.), T. Kimura (ISAS/JAXA), and Y. Miyoshi (Nagoya Univ.)
- 25. Dynamical Evolution of Dwarf Planet (136108) Haumea Collisional Family: General Properties and Implications for the Trans-neptunian Belts**
P. S. Lykawka (Kinki Univ.), J. Horner (Univ. New South Wales), A. M. Nakamura, and T. Mukai (Kobe Univ.)
- 26. Suzaku Observations of Enhanced Diffuse X-ray Background Associated Coronal Mass Ejections and Geomagnetic Storms**
Y. Ezoe (Tokyo Metropolitan Univ.), Y. Miyoshi (Nagoya Univ.), N. Terada (Tohoku Univ.), S. Oishi, K. Ishikawa, T. Ohashi (Tokyo Metropolitan Univ.), and H. Yoshitake (ISAS/JAXA)
- 27. Statistical analysis of energetic electron precipitation and VLF emissions at Syowa station during sudden impulses**
H. Tadokoro (Nat'l Inst. Polar Res.), Y. Miyoshi (Nagoya Univ.), H. Yamagishi, and H. Miyaoka, and Y. Tanaka (Nat'l Inst. Polar Res.)
- 28. Relationship between BRIFLE phenomena observed by EXOS-D satellite and energetic electrons observed by NOAA**
A. Takemura, T. Nakajo (Fukui Univ. Tech.), and H. Oya (Tohoku Univ.)
- 29. Recent Advances in the Planetary X-ray Emission**
A. Bhardwaj (VSSC, India)
- 30. Solar Wind Interaction with the Moon: A New Look from the SARA Experiment aboard Chandrayaan-1**
A. Bhardwaj (VSSC, India)