last update: Feb. 14, 2014

Symposium on Planetary Science 2014

PROGRAM

Date: February 19-21, 2014

Location: 4th floor, Aoba Memorial Hall, Tohoku University
(Poster: 1st floor, Aoba Memorial Hall)

Cosponsor: Planetary Plasma & Atmospheric Research Center (PPARC), Graduate School of Science, Tohoku University
Solar Terrestrial Environment Laboratory, Nagoya University
#The following STE Lab. research programs jointly hold this symposium;
・Conference on recent progress of planetary plasma and atmospheric environment research (convener: T. Obara)
・Outer Planets, Mercury, and Earth: Comparative Planetary Magnetosphere & Ionosphere (convener: Y. Kasaba)
・Workshop on Mars: Atmospheric escape and evolution of planetary environment (convener: H. Nakagawa)

Support: Tohoku University Support funds for improvement of prominent graduate school(MEXT)

Information on oral presentation:
30min: 25min talk + 5min discussion / 20min: 15min talk + 5min discussion
15min: 12min talk + 3min discussion

Wednesday, Feb. 19

13:30－13:35 **Welcome:**
T. Obara (Tohoku Univ.)

International Session for 13:35-17:05

Chair: I. Yoshikawa (Univ. Tokyo)

13:35－14:05 **Current status of the EXCEED mission (Invited)**
I. Yoshikawa (Univ. Tokyo)

14:05－14:20 **The dynamics of the Io plasma torus seen from the HISAKI/EXCEED**
K. Yoshioka, G. Murakami, A. Yamazaki, T. Kimura (ISAS/JAXA), F. Tsuchiya, M. Kagitani (Tohoku Univ.), I. Yoshikawa and K. Uji (Univ. Tokyo)

14:20－14:35 **Variability of plasma environment in the inner magnetosphere of Jupiter seen by EXCEED onboard HISAKI**
F. Tsuchiya, M. Kagitani, Y. Kasaba, T. Sakanoi (Tohoku Univ.), T.Kimura, K. Yoshioka, G. Murakami, A. Yamazaki (ISAS/JAXA) and I. Yoshikawa (Univ. Tokyo)

14:35－14:50 **The dynamics of Jupiter's auroral acceleration process captured by Hisaki/EXCEED**
T. Kimura (JAXA/ISAS), C. Tao (IRAP), K. Yoshioka, G. Murakami (JAXA/ISAS), F. Tsuchiya (Tohoku Univ.) and A. Yamazaki (JAXA/ISAS)

14:50－15:20 **HST images of Jupiter's UV aurorae during January 2014 (Invited)**
S. V. Badman (Lancaster Univ.), B. Bonfond (Univ. Liège), M. Fujimoto (ISAS/JAXA), M. Kagitani, Y. Kasaba (Tohoku Univ.), S. Kasahara, T. Kimura (ISAS/JAXA), H. Melin (Univ. Leicester), G. Murakami (ISAS/JAXA), J.D. Nichols (Univ. Leicester), T. Sakanoi (Tohoku Univ.), A. J. Steffl (SwRI), C. Tao (IRAP), F. Tsuchiya (Tohoku Univ.), T. Uno (Mitsubishi Electr. Co. Ltd.), A. Yamazaki (ISAS/JAXA), M. Yoneda (Tohoku Univ., Univ. Hawaii), I. Yoshikawa (Univ. Tokyo) and K. Yoshioka (ISAS/JAXA)

15:20－15:35 **Break**

15:35－16:05 **Multi-platform observations of giant planet aurora (Invited)**
H. Melin (Univ. Leicester), S. V. Badman (Lancaster Univ.), T. S. Stallard, J. O'Donoghue (Univ. Leicester), K. H. Baines (Univ. Wisconsin), W. R. Pryor (Central Arizona College), J. Gustin (Univ. Liège), C. Tao (IRAP), J. S. D. Blake (Univ. Leicester), S. Miller (Univ. College London) and J. D. Nichols (Univ. Leicester)

16:05－16:35 **Dynamics of the aurora at Jupiter (Invited)**
B. Bonfond, D, Grodent (Univ. Liège), S. V. Badman (Lancaster Univ.), J.-C. Gérard, A. Radioti, J. Gustin (Univ. Liège), T. Kimura (ISAS/JAXA), the HST GO 12883 team and the HST GO 13035 team

16:35－17:05 **Ground-based observations of the Io plasma torus during January 2014 (Invited)**
A. J. Steffl (SwRI), M. Kagitani (Tohoku Univ.), C.A. Schmidt and N.M. Schneider (Univ. Colorado)

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17:05－17:20 **Break**

Chair: H. Misawa (Tohoku Univ.)

17:20－17:50 **Numerical studies of interchange instability in the Io plasma torus (Invited)**
Y. Hiraki (Nat'l Inst. Polar Res.)

17:50－18:20 **Current status of the ISS-IMAP mission (Invited)**
A. Saito (Kyoto Univ.)

Thursday, Feb. 20

Chair : T. Obara (Tohoku Univ.)

9:00－9:30 **Now and Future of Kronian Research (Invited)**
K. Fukazawa (Kyushu Univ.)

9:30－10:00 **Long-term modulations of Saturn's auroral radio emissions by the solar wind and seasonal variations controlled by the solar ultraviolet flux (Invited)**
T. Kimura (ISAS/JAXA)

10:00－10:20 **Test-particle simulation of elastic scattering of energetic electrons by neutral H_20 originating from Enceladus**
H. Tadokoro (Tokyo Univ. Tech.) and Y. Katoh (Tohoku Univ.)

10:20－10:35 **Break**

10:35－11:05 **Science Targets of JUICE Mission: What we can do in 20 years later? (Invited)**
S. Sasaki (Osaka Univ.), Y. Saito, M. Fujimoto (ISAS/JAXA),
J. Kimura (Tokyo Inst. Tech), Y. Kasaba (Tohoku Univ.) and JUICE-JAPAN (ISAS/JAX)

11:05－11:25 **Inter-planetary missions in ISAS/JAXA**
M. Ueno (ISAS/JAXA)

11:25－11:45 **Outline of mission and candidate scientific instruments of DESTINY: Demonstration and Experiment of Space Technology for INterplanetary voYage**
T. Iwata, Y. Kawakatsu (ISAS/JAXA) and DESTINY Working Group

11:45－12:05 **Examination of Mission Scenario and Spacecraft System to Study Martian Atmospheric Escape**
A. Matsuoka (ISAS/JAXA), K. Seki(Nagoya Univ.), Naoki Terada(Tohoku Univ.), S. Yokota, A. Yamazaki, Y. Kawakatsu, T. Abe (ISAS/JAXA), Y. Futaana (IRF), M. Hirahara (Nagoya Univ.), T. Imamura(ISAS/JAXA), K. Ishisaka (Toyama Pref. Univ.), A. Kumamoto (Tohoku Univ.), J. Kurihara (Hokkaido Univ.), H. Nakagawa (Tohoku Univ.), S. Ogura (Rikkyo Univ.), T. Sakanoi (Tohoku Univ.), M. Taguchi (Rikkyo Univ.), S. Yagitani (Kanazawa Univ.) and Martian Atmospheric Escape Study Working Group

12:05－12:25 **Visual Orbit Design for Next Mars Exploration Mission**
S. Ogura (Rikkyo Univ.), Y. Kawakatsu (ISAS/JAXA), M. Taguchi (Rikkyo Univ.) and A. Matsuoka (ISAS/JAXA)

12:25－13:10 **Lunch**

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13:10－14:00 **Poster Session: core time**
@1st floor, Aoba Memorial Hall
Posters can be displayed throughout the symposium.

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Chair： N. Terada and H. Nakagawa (Tohoku Univ.)

14:00－14:30 **Toward frontier exploration into evolution of solar-planetary environments (Invited)**
K. Seki (Nagoya Univ.), N. Terada (Tohoku Univ.), T. Yokoyama (Univ. Tokyo), T. Suzuki (Nagoya Univ.), T. Imamura (ISAS/JAXA), T. Nakamura (Nat'l Inst. Polar Res.), H. Nakagawa, T. Kuroda (Tohoku Univ.) , M. Fujimoto (ISAS/JAXA) and ESPE project team

14:30－15:00 **Convection and magnetic field in solar interior (Invited)**
T. Yokoyama (Univ. Tokyo)

15:00－15:30 **Evolution of Sun & Solar Wind (Invited)**
T. K. Suzuki (Nagoya Univ.)

15:30－16:00 **The Faint Young Sun Paradox: Astronomical Approach (Invited)**
S. Imada (Nagoya Univ.), R. Kataoka (Nat'l Inst. Polar Res.), T. Suzuki (Nagoya Univ.), H. Miyahara (Musashino Art Univ.), and S. Tsuneta (ISAS/JAXA)

16:00－16:15 **Break**

16:15－16:45 **Physical analogies between solar chromosphere and Earth's ionosphere (Invited)**
H. Isobe (Kyoto Univ.)

16:45－17:15 **Major questions in planetary meteorology (Invited)**
T. Imamura (ISAS/JAXA)

17:15－17:35 **Simulation study of the atmospheric escape from non-magnetized terrestrial planets**
N. Terada (Tokyo Univ.)

17:35－18:05 **Evolution of martian surface environment (Invited)**
H. Usui (Tokyo Inst. Tech.)

18:05－18:35 **Atmospheric evolution on Mars during the heavy bombardment period (Invited)**
K. Kurosawa (Chiba Inst. Tech.)

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18:45－20:30 **Banquet**
@Shikisai, 3rd floor, Aoba Memorial Hall

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Friday, Feb. 21

Chair： T. Kouyama (Nat'l Inst. Adv. Industrial Sci. Tech.) and T. Kimura (ISAS/JAXA)

9:00－9:20 **Formation of Martian Surface Materials by Air-Solid Interaction**
Y. Miura (Yamaguchi Univ.)

9:20－9:40 **Convectively-generated gravity waves and their influence on the thermosphere on Mars**
A. Watanabe (Tokyo Univ.), T. Imamura (ISAS/JAXA) and
Y. Maejima (Meteor. Res. Inst.)

9:40－10:10 **Current status and future prospects of the observations and modeling of Martian atmosphere (Invited)**
T. Kuroda (Tohoku Univ.)

10:10－10:40 **Venus Exploration: Today and Tomorrow (Invited)**
H. Ando, T. Imamura and M. Nakamura (ISAS/JAXA)

10:40－10:55 **Break**

10:55－11:15 **Temporal variations of the UV reflectivity of Venus observed by the Venus Monitoring Camera onboard Venus Express**
Y. J. Lee, T. Imamura (ISAS/JAXA) and S. Schroeder (Inst. Planet. Res.)

11:15－11:35 **Mid-infrared Observations for Investigating Spatiotemporal Variations of Venus Middle Atmosphere**
T. Kouyama (Nat'l Inst. Adv. Industrial Sci. Tech.), H. Sagawa (Nat'l Inst. Inform. Comm. Tech.), T. Sato (ISAS/JAXA) and S. Ohtsuki (Senshu Univ.)

11:35－11:55 **Characteristics of oxygen ion velocity distributions at Venus and ion acceleration mechanisms**
K. Masunaga (Tohoku Univ.), Y. Futaana, G. Stenberg, M. Yamauchi, S. Barabash (IRF), T. L. Zhang (Austrian Academy Sci.), A. Fedorov (IRAP) and N. Terada (Tohoku Univ.)

11:55－12:15 **Modulation lanes of Jupiter’s decametric radio emission observed by LWA1**
K. Imai, Y. Shimanouchi (Kochi Nat’l Coll. Tech.), T. Clarke (Naval Res. Lab.), C. A. Higgins (Middle Tennessee State Univ.) and M. Imai (Kyoto Univ.)

12:15－12:35 **Study of dynamics of the Jovian magnetosphere: energy transportation process to the inner magnetosphere**
T. Mizuguchi, H. Misawa, F. Tsuchiya, T. Obara (Tohoku Univ.) and S. Kasahara (ISAS/JAXA)

12:35－13:30 **Lunch**

Chair： M. Yagi (Tohoku Univ.)

13:30－14:00 **Ion Escape From Mercury's Upper Atmosphere (Invited)**
D. Delcourt (LPP-Ecole Polytech.-CNRS-UPMC)

14:00－14:30 **Characterization Through Global Hybrid Simulations of Solar Wind Ions Impacting the Dayside of Mercury (Invited)**
G. M. Chanteur (LPP-Ecole Polytech.-CNRS-UPMC), R. Modolo, S. Hess, F. Leblanc (LATMOS/UVSQ-IPSL) and E. Richer (LPP-Ecole Polytech.-CNRS-UPMC)

14:30－15:00 **Recent study of Mercury's magnetosphere (Invited)**
M. Yagi (Tohoku Univ.)

15:00－15:15 **Break**

15:15－15:45 **Study of Mercury's sodium exosphere and solar wind (Invited)**
A. Fusegawa, S. Kameda (Rikkyo Univ.), M. Kagitani and S. Okano (Tohoku Univ.)

15:45－16:05 **Radial distribution of compressive waves in the solar corona revealed by radio occultation observations using Akatsuki spacecraft**
M. Miyamoto (Univ. Tokyo), T. Imamura (ISAS/JAXA), M. Tokumaru (Nagoya Univ.), H. Ando (ISAS/JAXA), H. Isobe, A. Asai (Kyoto Univ.) and D. Shiota (RIKEN)

16:05－16:35 **Planetary observation from the Haleakala observatory in Hawaii (Invited)**
M. Kagitani (Tohoku Univ.)

16:35－16:40 **Final Words**

Posters

Information on poster presentation:

Session core time: 13:10-14:00 on Thursday, Feb. 20
Location: @1st floor, Aoba Memorial Hall
Board size: 112cm (width) X 168cm(height)
#Posters can be displayed throughout the symposium.

1. The dynamics of the Io plasma torus seen from the HISAKI/EXCEED

K. Yoshioka, G. Murakami, A. Yamazaki, T. Kimura (ISAS/JAXA), F. Tsuchiya, M. Kagitani (Tohoku Univ.), I. Yoshikawa and K. Uji (Univ. Tokyo)

2. In-orbit calibration of HISAKI/EXCEED by stellar observation

G. Murakami, K. Yoshioka, A. Yamazaki, T. Kimura (ISAS/JAXA), F. Tsuchiya, M. Kagitani (Tohoku Univ.), I. Yoshikawa and K. Uji (Univ. Tokyo)

3. Observations of Infrared and Synchrotron Emission from Jupiter during Sprint-A/EXCEED Campaign

H. Kita, H. Misawa, F. Tsuchiya, S. Fujisawa, T. Sakanoi and Y. Kasaba (Tohoku Univ.)

4. Dependence of Location of Jovian Magnetopause on Solar Wind Dynamic Pressure

H. Kitagawa (Univ. Tokyo, ISAS/JAXA), S. Kasahara (ISAS/JAXA), C. Tao (IRAP), T. Kimura and M. Fujimoto (ISAS/JAXA)

5. Estimation of the ion acceleration from Ganymede polar region by the Galileo spacecraft observation

S. Watanabe, Y. Katoh, A. Kumamoto and T. Ono (Tohoku Univ.)

6. Galileo Observation of Energetic Electrons and Plasma Waves at nKOM Source Region

S. Kurita and H. Misawa (Tohoku Univ.)

7. Ray Tracing Survey on Jovian Hectometric Attenuation Lanes

M. Imai (Kyoto Univ.), C.A. Higgins (Middle Tennesee Univ.), A. Lecacheux (CNRS-Obs. Paris), K. Imai (Kochi Nat'l College Tech.) and J.R. Thieman (NASA/GSFC)

8. Time variable occurrence features of Jupiter's auroral radio emissions

H. Misawa (Tohoku Univ.), M. Yoneda (Tohoku Univ., Univ. Hawaii), T. Mizuguchi, F. Tsuchiya and A. Morioka (Tohoku Univ.)

9. Occurrence characteristics of Saturn's short-term radio burst

D. Maruno, Y. Kasaba (Tohoku Univ.), T. Kimura (ISAS/JAXA), A. Morioka (Tohoku Univ.) and B. Cecconi (LESIA-Obs. Paris)

10. Searches of Sulfur-bearing Species in Neptune's Stratosphere as the Remnants of Cometary Impact

T. Iino, A. Mizuno, T. Hidemori (Nagoya Univ.), T. Tsukagoshi (Ibaraki Univ.), T. Nakajima and C. Kato (Nagoya Univ.)

11. Observing the time variation of Venusian UV brightness by Pirka telescope

M. Imai, Y. Takahashi, S. Watanabe and M. Watanabe (Hokkaido Univ.)

12. Study of the Venus' upper haze

S. Takagi (Univ. Tokyo), A. Mahieux, S. Robert, V. Wilquet, A.C. Vandaele (BISA) and N. Iwagami (Univ. Tokyo)

13. Venusian upper hazes observed with a Imaging-Polarimetry system "HOPS"

T. Enomoto (SOKENDAI), T. Satoh (SOKENDAI, ISAS/JAXA), Y. Nakatani (Kyoto Univ.), T. Nakakushi (Wakayama Univ.), T. M. Sato (ISAS/JAX) and M. Hosouchi (Univ. Tokyo)

14. Study of the images of Venus Express/VMC, comparing with the ground infrared observations

M. Hosouchi (Univ. Tokyo), T. Kouyama (AIST), N. Iwagami (Univ. Tokyo), S. Ohtsuki (Senshu Univ.) and M. Takagi (Kyoto Sangyo Univ.)

15. The observation of the Venus atmosphere during the 2012 transit of Venus

M. Kanao, M. Nakamura, T. Imamura and T. Shimizu (ISAS/JAXA)

16. Spatial/temporal variations of Venusian cloud modeled by GCM

F. Kato, T. Kuroda (Tohoku Univ.), A. Nitta (Univ. Tokyo), M. Kuroda, Y. Kasaba (Tohoku Univ.) and M. Takahashi (Univ. Tokyo)

17. Investigation of the eddy diffusion in the mesosphere and lower thermosphere

H. Fujiwara (Seikei Univ.), S. Nozawa (Nagoya Univ.), Y. Ogawa (Nat'l Inst. Pol. Res.) and Y. Miyoshi (Kyushu Univ.)

18. Type-II entry of solar wind protons into the lunar wake: Effects of magnetic connection to the night-side surface

M. N. Nishino (Nagoya Univ.), M. Fujimoto, Y. Saito (ISAS/JAXA), M. Kawamura (Univ. Tokyo), H. Tsunakawa (Tokyo Inst. Tech.), Y. Kasahara (Kanazawa Univ.), M. Matsushima, F. Takahashi (Tokyo Inst. Tech.), H. Shibuya (Kumamoto Univ.), H. Shimizu (Univ. Tokyo), Y. Goto (Kanazawa Univ.), K. Hashimoto, Y. Omura (Kyoto Univ.), A. Kumamoto, T. Ono (Tohoku Univ.) and S. Yokota (ISAS/JAXA)

19. Group-standing effects on upstream whistler-mode waves

Y. Tsugawa, Y. Katoh, N. Terada (Tohoku Univ.), H. Tsunakawa, F. Takahashi (Tokyo Inst. Tech.), H. Shibuya (Kumamoto Univ.), H. Shimizu (Univ. Tokyo) and M. Matsushima (Tokyo Inst. Tech.)

20. Observation of CME on 13 June 2011 by Radio Occultation Technique in Akatuski

H. Ando, T. Imamura (ISAS/JAXA), D. Shiota (Nagoya Univ.), H. Isobe, A. Asai (Kyoto Univ.) and M. Tokumaru (Nagoya Univ.)

21. Evaluating error characteristics of gyration under uniform magnetic field by Buneman-Boris method

K. Ohara, H. Tadokoro (Tokyo Univ. Tech.), Y. Katoh (Tohoku Univ.) and T. Tsuboi (Tokyo Univ. Tech.)

22. Electromagnetic Environment of Small Dielectric Body with Magnetic Anomaly: Global Vlasov Simulation on the K-computer

T. Umeda (Nagoya Univ.)

23. Wave-Particle Interaction Analyzer: Direct Measurements of Wave-Particle Interactions in Planetary Magnetospheres

Y. Katoh (Tohoku Univ.) and H. Kojima (Kyoto Univ.)

24. Observing plan for continuous monitoring of planetary atmospheres using IR heterodyne spectroscopy

H. Nakagawa, Y. Kasaba, S. Aoki, I. Murata (Tohoku Univ.), S. Okano (Tohoku Univ., Univ. Hawaii) and G. Sonnabend (Radiometer phys.)

25. Observation of Planets by a Circumpolar Stratospheric Telescope System FUJIN

A. Maeda, M. Taguchi (Rikkyo Univ.), K. Yosida,Y. Sakamoto, T. Nakano (Tohoku Univ.), Y. Shoji (ISAS/JAXA), Y. Takahashi, J. Nakamoto, M. Imai, M. Watanabe and Y. Goda (Hokkaido Univ.)