

Symposium on Planetary Sciences 2020 (SPS2020) February 17 (Mon) – 19 (Wed), 2020

Kita-Aobayama Campus, Tohoku University

Location: **Aoba Science Hall** 2F, Science Complex C bldg. (合同C棟) Feb. 17, 18, and 19 AM
N404 (地物第一講義室) 4F, Science Complex C bldg. (合同C棟) Feb. 19 PM
[Poster] N204 (多目的室) 2F, Science Complex C bldg. (合同C棟) all days

Sponsors: Planetary Plasma and Atmospheric Research Center (PPARC), Tohoku University
 JSPS Grant-in-Aid for Scientific Research on Innovative Areas "Aqua planetology"
 JSPS Grant-in-Aid for Scientific Research on Innovative Areas "Star Planet Formation - A03"
 JSPS Grant-in-Aid for Scientific Research A "Martian Atmospheric Environment"
 Institute for Space-Earth Environmental Research, Nagoya University
 "The 21st Symposium on Planetary Science" (ISEE Joint Research Program)
 Center for Planetary Science, Kobe University
 Aerospace Interdisciplinary Research Center (AIRC), Tohoku University

[Oral] **Invited** 25 min (15 min talk + 10 min discussion)
Contributed 20 min (13 min talk + 7 min discussion)

[Poster] **Display** 8:30 / Feb. 17 - 15:00 / Feb. 19 [Core time: 18:00-19:30, Feb. 17]
Board size L:180cm (available: 150cm) x W:90 cm

Feb. 17 AM

8:30 # Meeting Place Open

9:00-9:05 **Opening address** Y. Kasaba (Tohoku Univ.)

9:05-12:45 **Evolution of Planetary Water (Big Picture) #1** Chair: N. Terada (Tohoku Univ.)

*: invited Underline: PD/Student talks

09:05-09:30	01-01*	固体天体における水環境進化とハビタビリティ: 現状と課題	Y. Sekine (Tokyo Inst. Tech.)
09:30-09:55	01-02*	<u>Evolution of Planetary Water: The Perspective on Planet Formation and Material Transport in the Solar System</u>	H. Kurokawa, H. Sakuraba (Tokyo Inst. Tech.), T. Shibuya (JAMSTEC), Y. Sekine (Tokyo Inst. Tech.), B. L. Ehlmann (Caltech, JPL), F. Usui (Kobe Univ.)
09:55-10:20	01-03*	太陽系探査における水進化研究 (生命前駆物質視点)	Y. Furukawa (Tohoku Univ.)
10:20-10:40	01-04	Origin, Evolution, and Inventory of Water on Mars	T. Usui (ISAS/JAXA)

10:40-10:55 Break

Evolution of Planetary Water (Big Picture) #2

Chair: Y. Sekine (Tokyo Inst. Tech.),
T. Imamura (Univ. Tokyo)

10:55-11:15	01-05	Planetary Atmosphere Research in the Context of Water Cycle	T. Imamura (Univ. Tokyo)
11:15-11:35	01-06	太陽系探査における水進化研究 (惑星超高層視点)	N. Terada (Tohoku Univ.)
11:35-11:55	01-07	Water escape from the present Venus: Impact of magnetotail dynamics on the H ⁺ /O ⁺ ratio of outflowing ions	Y. Futaana and M. Persson (Swedish Inst.Space Phys.)
11:55-12:20	01-08*	Evolution of Planetary Water - From the Viewpoint of Ion Outflow from the Ionosphere to the Magnetosphere -	Y. Ogawa (NIPR)
12:20-12:45		Discussions	

12:45-13:45 Lunch / Poster viewing

Feb. 17 PM

13:15-13:45		(lunch-time meeting) Future Projects #1		Chair: Y. Kasaba (Tohoku Univ.), M. Ueno (TansaX/JAXA)
13:15-13:30	PRO-01	Activities of JAXA Innovation Hub on Space Exploration	M. Ueno, T. Kubota, K. Kawasaki (TansaX/JAXA)	
13:30-13:45	PRO-02	Planet-D Mission to Venus: A Plan	M. Nakamura (ISAS/JAXA)	

13:45-18:00		Moon to Mars #1		Chair: N. Namiki (NAOJ), M. Ohtake (ISAS/JAXA)
13:45-14:05	02-01	月, そして火星へ繋がる水探査の科学意義	T. Usui (ISAS/JAXA)	
14:05-14:30	02-02*	Water and the Mantle Evolution in the Moon and Mars	M. Ogawa (Univ. Tokyo)	
14:30-14:50	02-03	月の地形・地質と水, その場観測	M. Ohtake (ISAS/JAXA)	
14:50-15:15	02-04*	月の地質年代と水, サンプルリターン	T. Morota (Univ. Tokyo)	
15:15-15:35	02-05*	月のプラズマ・ダスト環境の研究動向と将来展望	M. N. Nishino (ISAS/JAXA)	
15:35-15:55	02-06*	火星からの水の散逸機構: 研究の動向と将来展望	K. Seki, Y. Mori, S. Sakai (Univ. Tokyo) T. Hara, J. McFadden (UC Berkeley), J. Halekas (Univ. Iowa), D. Brain (Univ. Colorado), G. Dibraccio (GSFC/NASA), B. Jakosky (Univ. Colorado)	

15:55-16:10 Break

Moon to Mars #2		Chair: K. Seki (Univ. Tokyo), T. Usui (ISAS/JAXA)		
16:10-16:30	02-07	Prediction of Space Radiation Exposure on Mars	R. Kataoka (NIPR), K. Murase (SOKENDAI), T. Sato (JAEA), D. Shiota, Y. Kubo (NICT), S. Miyake (Nat'l Inst. Tech., Ibaraki College), K. Seki (Univ. Tokyo), Y. Miyoshi (Nagoya Univ.)	
16:30-16:55	02-08*	Exploration Technology Development for Moon to Mars	K. Fujita (ISAS/JAXA)	
16:55-17:20	02-09*	水探査を含めた国際宇宙探査, 理学からの期待	N. Namiki (NAOJ), Y. Inatomi (ISAS/JAXA), T. Morota (Univ. Tokyo), M. N. Nishino, M. Ohtake (ISAS/JAXA), H. Usui (Kobe Univ.), T. Usui (ISAS/JAXA)	
17:20-17:40	02-10	水探査を含めた国際宇宙探査, 工学からの期待	Y. Inatomi (ISAS/JAXA), G. Ishigami (Keio Univ.), Y. Kawakatsu (ISAS/JAXA), H. Koizumi (Univ. Tokyo), T. Kobayashi (Ritsumeikan Univ.), K. Goto, H. Takeuchi, Y. Tsuda, S. Tokudome (ISAS/JAXA), H. Nagata (Hokkaido Univ.), S. Fukuda, I. Funaki, R. Funase (ISAS/JAXA), N. Yamazaki (Astronaut), T. Watanabe (Kyushu Univ.)	
17:40-18:00		「国際宇宙探査への理学・工学からの期待」公開討論	led by Y. Inatomi (ISAS/JAXA)	

18:00-19:30 Poster Session (with light refreshments)**20:00 # Meeting Place Close**

Feb. 18 AM**8:30 # Meeting Place Open**

9:00-9:45 Evolution of Planetary Water (Big Picture) #3			Chair: N. Terada (Tohoku Univ.)
9:00-9:25	01-09*	彗星探査ミッション Comet Interceptor	S. Kasahara (Univ. Tokyo), Y. Shinnaka, H. Kawakita (Kyoto Sangyo Univ.), S. Kameda (Rikkyo Univ.), K. Yoshioka (Univ. Tokyo), A. Matsuoka (ISAS/JAXA), R. Funase (Univ. Tokyo, ISAS/JAXA), N. Ozaki (ISAS/JAXA)
9:25-9:45	01-10	Heliospheric System Observatory toward Cycle 25	Y. Miyoshi, K. Iwai, S. Imada (Nagoya Univ.), G. Murakami, T. Shimizu, I. Shinohara (ISAS/JAXA), D. Shiota, C. Tao (NICT), T. Imamura (Univ. Tokyo)

9:45-12:20 Airless Bodies and Their Environments #1			Chair: Y. Miyoshi (Nagoya Univ.)
9:45-10:10	03-01*	Plasma Environments of the Moon and Mercury	Y. Harada (Kyoto Univ.)
10:10-10:35	03-02*	Secondary Ion Observations of Small Bodies for Remote SIMS Analyses	S. Yokota (Osaka Univ.), Y. Saito, M. N. Nishino, K. Asamura, A. Matsuoka (ISAS/JAXA), N. Terada (Tohoku Univ.)

10:35-10:50 Break

Airless Bodies and Their Environments #2			Chair: M. N. Nishino, Y. Saito (ISAS/JAXA)
10:50-11:15	03-03*	<u>Interaction between Surface of Airless Bodies and Space Plasma: Review of Laboratory Simulations</u>	Y. Nakauchi (ISAS/JAXA), T. Kimura (Tohoku Univ.)
11:15-11:40	03-04*	<u>Laser Irradiation Experiments for Reproduction of Space Weathering Effects by Micrometeoroid Bombardments on Carbonaceous Asteroids</u>	M. Matsuoka (ISAS/JAXA)
11:40-12:00	03-05	East-West Asymmetric Profile of Ejecta on Asteroid Ryugu	N. Hirata (Kobe Univ.), N. Namiki (NAOJ)
12:00-12:20	03-06	The Problem of Interpretation on Organic Molecules with Carbon : Relation with Life	Y. Miura (Yamaguchi Univ.)

12:20-13:20 Lunch / Poster Viewing

Feb. 18 PM

12:50-13:20 (lunch-time meeting) Future Projects #2		Chair: Y. Kasaba (Tohoku Univ.)	
12:50-13:05	PRO-03	Concept Study of Comet Halley Revisiting Missions	N. Ozaki, G. Murakami (ISAS/JAXA), K. Yoshioka (Univ. Tokyo), Y. Shinnaka, H. Kobayashi (Kyoto Sangyo Univ.), S. Bonardi, R. Hyodo, D.A. Dei Tos, Y. Takao (ISAS/JAXA), H. Kawakita (Kyoto Sangyo Univ.), S. Kasahara (Univ. Tokyo), S. Kameda (Rikkyo Univ.), R. Funase (Univ. Tokyo), M. Fujimoto (ISAS/JAXA)
13:05-13:20	PRO-04	Solar System Targets for Planed Future Telescopes -- toward SPICA + TMT	H. Sagawa (Kyoto Sangyo Univ.), Y. Kasaba (Tohoku Univ.), T. Usui, T. Otsubo (ISAS/JAXA), Y. Kebukawa (Yokohama Nat'l Univ.), H. Kobayashi (Kyoto NK), K. Kobayashi (Nagoya Univ.), Y. Sekine (Tokyo Inst. Tech.), A. Takahashi (ABC), T. Terai (NAOJ), H. Maezawa (Osaka Pref. Univ.), H. Yabuta (Hiroshima Univ.), H. Yoshida (Chiba Inst. Tech.)

13:20-14:00 Airless Bodies and Their Environments #3		Chair: F. Tsuchiya (Tohoku Univ.), G. Murakami (ISAS/JAXA)	
13:20-13:40	03-07	<u>The Earliest Stages of Aqueous Alteration in CM Chondrites Parent Body Based on the Mineralogical Observations of TClS.</u>	Y. Enokido, T. Nakamura and M. Matsumoto (Tohoku Univ.)
13:40-14:05	03-08*	The Approach for the Origin of the Water through the Remote D/H Observation	K. Yoshioka (Univ. Tokyo), M. Kuwabara (ISAS/JAXA), S. Yonemoto (Univ. Tokyo), M. Taguchi (Rikkyo Univ.), T. Kawahara (Shinshu Univ.)
14:05-14:30	03-09*	ひさき及びALMAの観測で明らかになった、木星衛星イオの火山活動が大気及びイオトラスに与える影響	古賀亮一, 土屋史紀 (東北大), 鈴木達也, 平原靖大 (名大), 坂野井 健 (東北大), 北 元 (ISAS/JAXA), 鍵谷将人, 木村智樹 (東北大), 吉岡和夫, 吉川一朗 (東大), 村上 豪, 山崎 敦 (ISAS/JAXA)
14:30-14:50	03-10	紫外線による氷衛星ブリューム観測可能性 : Post Hisaki 検討	土屋史紀 (東北大), 村上 豪 (ISAS/JAXA), 古賀亮一 (東北大), 吉岡和夫 (東大), 鍵谷将人 (東北大), 鈴木雄大 (東大), 山崎 敦 (ISAS/JAXA), 木村智樹 (東北大), 埴 千尋 (NICT), 北 元, 桑原正輝 (ISAS/JAXA), 吉川一朗 (東大), Lorenz Roth (KTH)
14:50-15:10		Discussions	

15:10-15:25 Break

15:25-17:45 General / Young Researchers #1		Chair: H. Usui (Kobe Univ.), H. Nakagawa (Tohoku Univ.)	
15:25-15:45	04-01	<u>Global Hybrid Simulation of Highly Compressed Magnetosphere Event at Mercury</u>	S. Aizawa, N. Andre (IRAP), R. Modolo, F. Leblanc, E. Werner (LATMOS), V. Genot (IRAP)
15:45-16:05	04-02	<u>Study of Ion Escape Mechanisms from Ancient Mars with a Focus on Effects of the Global Intrinsic Magnetic Field</u>	R. Sakata, K. Seki, S. Sakai (Univ. Tokyo), N. Terada (Tohoku Univ.), H. Shinagawa (NICT), T. Tanaka (Kyushu Univ.)
16:05-16:25	04-03	<u>Stability of Atmospheric Redox States of Early Mars Inferred from Time Response of the Regulation of H and O Losses</u>	S. Koyama, N. Terada, H. Nakagawa and T. Kuroda (Tohoku Univ.)
16:25-16:45	04-04	The Efficiency of Vertical Coupling between Lower and Upper Atmosphere on Mars	H. Nakagawa, N. Yoshida, N. Terada (Tohoku Univ.), MAVEN/IUVS, NGIMS team
16:45-17:05	04-05	<u>Effects of the IMF Direction on Atmospheric Escape from a Mars-like Planet under a Weak Intrinsic Magnetic Field Condition</u>	S. Sakai, K. Seki (Univ. Tokyo), N. Terada (Tohoku Univ.), H. Shinagawa (NICT), R. Sakata (Univ. Tokyo), T. Tanaka (NICT, Kyushu Univ.), Y. Ebihara (Kyoto Univ.)
17:05-17:25	04-06	<u>DSMC Simulation of Slow Hydrodynamic Escape From Terrestrial Planets</u>	K. Terada, N. Terada (Tohoku Univ.), H. Fujiwara (Seikei Univ.), M. Ikoma (Univ. Tokyo)
17:25-17:45	04-07	<u>The Influence of Carbon Escape on the Evolution of the Martian Atmosphere</u>	R. Yagi, N. Terada, S. Koyama, T. Kuroda, H. Nakagawa, I. Murata and Y. Kasaba (Tohoku Univ.)

17:45-18:00 Break

18:00-18:55 Future Projects #3		Chair: Y. Saito (ISAS/JAXA), Y. Kasaba (Tohoku Univ.)	
18:00-18:15	PRO-05	Near-Future Opportunities for NASA-JAXA Cooperation on Planetary Missions	Kunio M. Sayanagi (Hampton Univ.)
18:15-18:30	PRO-06	外惑星探査における最新国際情勢 (TBC)	Y. Saito (ISAS/JAXA)
18:30-18:45	PRO-07	How to Make It Easy to Use Satellites: Onboard Planner for Autonomous Spacecraft using Model-Based Systems Engineering	S. Nakajima (ISAS/JAXA)
18:45-18:55	PRO-08	惑星を軸とした大学連携検討状況 [+ University-Scale Ground-Based Observatories for Solar System]	Y. Kasaba (Tohoku Univ.), K. Seki (Univ. Tokyo), N. Namiki (NAOJ), Y. Hayashi (Kobe Univ.)

19:00 # Meeting Place Close

19:00-21:00 Banquet@ Restaurant AOSIS

Feb. 19 AM

8:30 # Meeting Place Open

9:00-11:55

General / Young Researchers #2			Chair: M. Takagi (Kyoto Sangyo Univ.), M. Nakamura (ISAS/JAXA)
9:00-9:20	04-08	Simulation of Possible Water Emission from RSLs on Mars using a High-Resolution GCM	T. Kuroda (Tohoku Univ.), H. Kurokawa (Tokyo Inst. Tech.), S. Aoki (Liege Univ.), H. Nakagawa (Tohoku Univ.)
9:20-9:40	04-09	Spatio-Temporal Variations of Venus Clouds as Inferred from Restored Akatsuki/IR2 Images	T. Satoh (ISAS/JAXA, SOKENDAI), C. W. Vun (SOKENDAI), T. M. Sato (Hokkaido Info Univ.)
9:40-10:00	04-10	<u>Planetary-Scale Wave Structures at Venusian Cloud Top Revealed by an Improved Cloud-Tracking Method</u>	Y. Nara and T. Imamura (Univ. Tokyo)
10:00-10:20	04-11	<u>Wind Field at the Cloud Top of Venus Covering All Local Time Obtained from Thermal Infrared Images</u>	K. Fukuya, T. Imamura (Univ. Tokyo), M. Taguchi, T. Fukuhara (Rikkyo Univ.), T. Kouyama (AIST)
10:20-10:40	04-12	Mean Meridional Circulation in the Venus Atmosphere	M. Takagi (Kyoto Sangyo Univ.), N. Sugimoto (Keio Univ.), H. Ando (Kyoto Sangyo Univ.), H. Kashimura (Kobe Univ.), Y. Matsuda (Tokyo Gakugei Univ.)

10:40-10:55 Break

General / Young Researchers #3			Chair: T. Kimura, H. Misawa (Tohoku Univ.)
10:55-11:15	04-13	<u>Generation of Dawn-to-Dusk Electric Field in the Jovian Magnetosphere via Region 2-like FAC</u>	Y. Nakamura, K. Terada (Tohoku Univ.), C. Tao (NICT), N. Terada, Y. Kasaba (Tohoku Univ.), H. Kita (ISAS/JAXA), A. Nakamizo (NICT), A. Yoshikawa (Kyushu Univ.), S. Ohtani (Johns Hopkins Univ.), F. Tsuchiya, M. Kagitani, T. Sakanoi (Tohoku Univ.), G. Murakami (ISAS/JAXA), K. Yoshioka (Univ. Tokyo), T. Kimura (Tohoku Univ.), A. Yamazaki (ISAS/JAXA), I. Yoshikawa (Univ. Tokyo)
11:15-11:35	04-14	<u>Geocoronal Solar Wind Charge Exchange Events Simultaneously Detected by Suzaku and XMM-Newton</u>	D. Ishi (Tokyo Metropol. Univ.), K. Ishikawa (ISAS/JAXA), Y. Ezoe (Tokyo Metropol. Univ.), Y. Miyoshi (Nagoya Univ.), N. Terada (Tohoku Univ.)
11:35-11:55	04-15	Stellar Flare of a Close Binary System Monitored by the Hisaki Satellite during the NICER-Hisaki Observing Campaign 2018-2019	T. Kimura (Tohoku Univ.), W. Iwakiri (RIKEN), A. Yamazaki, G. Murakami (ISAS/JAXA), F. Tsuchiya (Tohoku Univ.), K. Yoshioka (Univ. Tokyo), H. Kita (ISAS/JAXA), M. Kuwabara and S. Toriumi (Univ. Tokyo)

11:55-12:00 Closing Remarks for Oral Sessions T. Obara (Tohoku Univ.)

12:00-13:00 Lunch / Poster Viewing

Feb. 19 PM <N404 (地球物理第一講義室)>

13:00-16:00 Future Projects #4			Chair: Y. Kasaba, N. Terada (Tohoku Univ.)
13:00-13:15	A Summary Discussion: How Should be the Next Meeting ?		SOC + LOC + Any
13:15-13:30 [telecon]	PRO-09	THz-band Heterodyne Spectroscopy for Planetary Atmospheric Observations in Domestic Satellite Plans	H. Maezawa (Osaka Pref. Univ.)
13:30-16:00	<Free Discussions> for "PRO-01-09" + any		Chair: M. Nakamura (ISAS/JAXA), Y. Kasaba (Tohoku Univ.)
	PRO-01	Activities of JAXA Innovation Hub on Space Exploration	M. Ueno, T. Kubota, K. Kawasaki (TansaX/JAXA)
	PRO-02	Planet-D Mission to Venus: A Plan	M. Nakamura (ISAS/JAXA)
	PRO-03	Concept Study of Comet Halley Revisiting Missions	N. Ozaki, G. Murakami (ISAS/JAXA), K. Yoshioka (Univ. Tokyo), Y. Shinnaka, H. Kobayashi (Kyoto Sangyo Univ.), S. Bonardi, R. Hyodo, D.A. Dei Tos, Y. Takao (ISAS/JAXA), H. Kawakita (Kyoto Sangyo Univ.), S. Kasahara (Univ. Tokyo), S. Kameda (Rikkyo Univ.), R. Funase (Univ. Tokyo), M. Fujimoto (ISAS/JAXA)
	PRO-04	Solar System Targets for Planned Future Telescopes -- toward SPICA + TMT	H. Sagawa (Kyoto Sangyo Univ.), Y. Kasaba (Tohoku Univ.), T. Usui, T. Otsubo (ISAS/JAXA), Y. Kebukawa (Yokohama Nat'l Univ.), H. Kobayashi (Kyoto NK), K. Kobayashi (Nagoya Univ.), Y. Sekine (Tokyo Inst. Tech.), A. Takahashi (ABC), T. Terai (NAOJ), H. Maezawa (Osaka Pref. Univ.), H. Yabuta (Hiroshima Univ.), H. Yoshida (Chiba Inst. Tech.)
	PRO-05	Near-Future Opportunities for NASA-JAXA Cooperation on Planetary Missions	Kunio M. Sayanagi (Hampton Univ.)
	PRO-06	惑星探査における最新国際情勢	Y. Saito (ISAS/JAXA)
	PRO-07	How to Make It Easy to Use Satellites: Onboard Planner for Autonomous Spacecraft using Model-Based Systems Engineering	S. Nakajima (ISAS/JAXA)
	PRO-08	惑星を軸とした大学連携検討状況 [+ University-Scale Ground-Based Observatories for Solar System]	Y. Kasaba (Tohoku Univ.), K. Seki (Univ. Tokyo), N. Namiki (NAOJ), Y. Hayashi (Kobe Univ.)
	PRO-09	THz-band Heterodyne Spectroscopy for Planetary Atmospheric Observations in Domestic Satellite Plans	H. Maezawa (Osaka Pref. Univ.)

Underline: PD/Student posters

P01	Main Points for the Moon Formation: Contrast with Water-Planet Earth	Y. Miura (Yamaguchi Univ.)
P02	<u>Accretion of Pebbles into the Circumplanetary Disk of a Giant Planet</u>	N. Maeda, K. Ohtsuki (Kobe Univ.), M. N. Machida (Kyusyu Univ.), R. Suetsugu (Univ. Occ.I Env. Health)
P03	Coupled Planetary Environments: from Surface to Space, Thermal to Nonthermal, and Gyration to Evolution	Y. Katoh, T. Kimura, H. Nakagawa (Tohoku Univ.), the Planet. & Space Phys. Group, Tohoku Univ.
P04	<u>The Composition and Interior Structure of Mars</u>	T. Yoshizaki (Tohoku Univ.), W. F. McDonough (Tohoku Univ., Univ. Maryland)
P05	<u>Search of Shallow Subsurface Reflectors in Chryse and Acidalia Planitiae on Mars</u>	A. Oura, Y. Kasaba, A. Kumamoto (Tohoku Univ.), R. Noguchi (ISAS/JAXA), K. Ishiyama (Nat'l Inst. Tech., Tsuruoka College), T. Usui (ISAS/JAXA), F. Tsuchiya (Tohoku Univ.), C. Uemura (SOKENDAI)
P06	<u>Zonal Wind Acceleration in the Martian Mesosphere during the Global Dust Storm 2018 Observed by Ground-Based IR Heterodyne Spectroscopy</u>	A. Miyamoto, H. Nakagawa, T. Kuroda, K. Takami, I. Murata (Tohoku Univ.), S. Aoki (Royal Belgian Inst. Space Aeron.), H. Sagawa (Kyoto Sangyo Univ.), N. Yoshida, K. Toriumi, Y. Kasaba and N. Terada (Tohoku Univ.)
P07	<u>Study of Molecular Ion Contribution to the Polar Plume from Mars Based on MAVEN Observations</u>	K. Sakakura, K. Seki, S. Sakai (Univ. Tokyo), D. Brain (Univ. Colorado), J. McFadden (UC Berkeley), J. Halekas (Univ. Iowa), G. DiBraccio (GSFC/NASA), B. Jakosky (Univ. Colorado)
P08	ULF Waves in the Ionosphere of Mars	Y. Harada (Kyoto Univ.), S. Ruhunusiri, J. S. Halekas (Univ. Iowa), J. R. Espley, G. DiBraccio (GSFC/NASA), J. P. McFadden, D. L. Mitchell (UC Berkeley), C. Mazelle (IRAP), G. Collinson (GSFC/NASA), D. A. Brain (Univ. Colorado), T. Hara (UC Berkeley), M. Nosé (Nagoya Univ.), S. Oimatsu, K. Yamamoto (Kyoto Univ.), B. M. Jakosky (Univ. Colorado)
P09	High Resolution 3-4 Micron Spectroscopy of Venus' Atmosphere by IRTF/iSHELL	T. M. Sato (Hokkaido Info Univ.), H. Sagawa (Kyoto Sangyo Univ.)
P10	<u>Variability of UV Albedo and Its Relation to the Wind Field Revealed by Akatsuki UVI</u>	T. Iwanaka, T. Imamura (Univ. Tokyo), L. Y. Joo (Tech. Univ. Berlin), UVI Team, Cloud Tracking Team (ISAS)
P11	<u>Properties of Gravity Wave Packets Detected in Radio Occultation Temperature Profiles of the Venus Atmosphere</u>	R. Mori, T. Imamura (Univ. Tokyo), H. Ando (Kyoto Sangyo Univ.), J. Peralta (JAXA)
P12	Recent Activities of Solid Body-Plasma Interaction Simulations	Y. Miyake (Kobe Univ.), M. N. Nishino (ISAS/JAXA), Y. Harada (Kyoto Univ.), W. J. Miloch (Univ. Oslo), H. Usui (Kobe Univ.)
P13	<u>2-D Particle-In-Cell Calculations of Non-Neutral Plasma Structure near the Phobos Plasma Wake Region and Its Effect on the Surface Charging</u>	M. Tanabe, N. Terada (Tohoku Univ.), H. Usui and Y. Miyake (Kobe Univ.)
P14	Development of Generic Plasma Irradiation System for Modeling of Space Weathering at Solar System Bodies	T. Kimura (Tohoku Univ.), J. Kimura (Osaka Univ.), K. Yoshioka (Univ. Tokyo), G. Murakami (ISAS/JAXA), N. Terada (Tohoku Univ.), H. Usui (Kobe Univ.), M. N. Nishino (ISAS/JAXA), S. Yokota (Osaka Univ.), Y. Miyake (Kobe Univ.)
P15	Electron Elastic Collisions with Water Molecule around Enceladus Torus	H. Tadokoro (Musashino Univ.), Y. Katoh (Tohoku Univ.)
P16	Ion Energization During Reconnection-driven Large-scale Injections in Saturn's Magnetotail: Cassini Observations	K. Keika (Univ. Tokyo), P. C. Brandt, D. G. Mitchell, R. C. Allen, C. Paranicas, M. Kusterer (Johns Hopkins Univ.), D. C. Hamilton (Univ. Maryland), S. Sakai (Univ. Tokyo)
P17	<u>Light Curve of Jupiter's UV Aurora and Io Plasma Torus after 2016 Obtained from Hisaki EXCEED</u>	H. Kita (ISAS/JAXA), T. Kimura, F. Tsuchiya (Tohoku Univ.), G. Murakami, A. Yamazaki (ISAS/JAXA), R. Koga (Tohoku Univ.), R. Hikida, K. Yoshioka and I. Yoshikawa (Univ. Tokyo)
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