

Program of Phobos, Deimos, and Mars Workshop

Date: February 15th – 16th, 2016

Place: ELSI Hall, ELSI-1 Building, Tokyo Institute of Technology

35 min talk for invited speakers [30min+5minQ&A]

20 min talk for contributed speakers [15min+5minQ&A]

1.5 min flash talk for poster presenters [no Q&A]

----- Day 1 (Feb. 15) -----

12:30 – Registration Open

13:00 – Opening Talk:

“Welcome to ELSI” by **Kei Hirose** (Director of ELSI)

“Objectives of this WS” by **Hidenori Genda** (ELSI)

13:20 – *Chair: Hidenori Genda (ELSI)*

“What can we really say about the origin of the Martian moons?”

Pascal Rosenblatt [*invited*] (Royal Observatory of Belgium), S. Charnoz, P. Lee

“Formation of Phobos and Deimos in a giant collision scenario”

Sébastien Charnoz [*invited*] (Univ. Paris Diderot), P. Rosenblatt, K. M. Dunseath, M. Terao-Dunseath, A. Trinh, R. Hyodo, H. Genda

[Coffee Break]

15:00 – *Chair: Hirdy Miyamoto (Univ. Tokyo)*

“The geophysical and dynamical environment of Phobos and Deimos”

Daniel J. Scheeres [*invited*] (Univ. Colorado)

“Results of Phobos studies based on HRSC/SRC observations”

Konrad Willner [*invited*] (DLR)

[Coffee Break]

16:30 – Discussion Session *led by Hidenori Genda (ELSI)*

17:00 – Poster Flash Talks

17:30 – Poster Viewing Session

18:30 – Banquet at ELSI Lounge (ELSI-2 1F)

----- **Day 2 (Feb. 16)** -----

- 9:00 – MMX Session (Mars Moon eXploration) *Chair: Masaki Fujimoto (JAXA/ELSI)*
- “Mission overview” by **Masaki Fujimoto** (JAXA/ELSI)
 - “Scientific aspects” by **Hidenori Genda** (ELSI)
 - “Spectral features of Phobos and Deimos with reference to hydrated carbonaceous chondrites” by **Tomoki Nakamura** (Tohoku Univ.)
 - “Keys to understand surface processes and internal structures of Phobos and Deimos” by **Hirdy Miyamoto** (Univ. Tokyo)
- [Coffee Break]
- “Laboratory analysis of returned samples from Phobos: A prospective study” by **Tomohiro Usui** (Titech)
 - “Observation of Mars” by **Takeshi Imamura** (JAXA)
 - “Engineering, Technology and Program” by **Yasuhiro Kawakatsu** (JAXA)
- [Discussion]
- [Group Photo]
- 12:00 – Lunch & Poster Viewing Session
- 14:00 – *Chair: Tomoki Nakamura (Tohoku Univ.)*
- “Thermal emission observations of Phobos: Compositional implications”
Ted L. Roush [*Invited*] (NASA Aims)
 - “TBD”
Jean-Pierre Bibring [*Invited*] (IAS)
 - “Tracing the history of the Martian atmosphere and hydrosphere using isotopic compositions”
Hiroyuki Kurokawa (ELSI), K. Kurosawa, T. Usui
- [Coffee Break]
- 16:00 – *Chair: Tomohiro Usui (Titech)*
- “Solving the Phobos mystery: The unique roll of high-precision oxygen isotope analysis”
Richard Greenwood [*Invited*] (Open Univ.)
 - “Did the Martian meteorites really come from the Mars?”
Minoru Ozima (Univ. Tokyo), M. Koike
 - “Mimicking organic syntheses on inner-Solar System asteroids: Implications for OSIRIS-REx, Hayabusa-2 & Phobos Sample Return Missions”
Chaitanya Giri (ELSI/EON), J. A. Nuth
- 17:30 – Discussion Session *led by Tomohiro Usui (Titech)*
- 18:00 Adjournment

----- **Poster Lists** -----

- P01:** “Capture of planetesimals by gas drag”
Ryo Suetsugu (Kobe Univ.), K. Ohtsuki
- P02:** “Temporary Capture of Asteroids by a Planet: Dependence of Prograde/Retrograde Capture on Asteroids’ Semimajor Axes”
Arika Higuchi (Titech), S. Ida
- P03:** “The Maximum Velocity and the Amount of the Impact Ejecta: Application to the Transportation of Martian Materials to Phobos”
Takaya Okamoto (Chitech), K. Kurosawa, H. Genda, K. Wada, T. Matsui
- P04:** “Grooves on Phobos: statistical and numerical analyses”
Hiroshi Kikuchi (Univ. Tokyo), H. Miyamoto
- P05:** “DCAM5 in MMX”
Koji Wada (Chitech), H. Sawada, K. Ogawa, K. Shirai, N. Sakatani, K. Ishibashi, R. Honda, M. Yasui, M. Arakawa
- P06:** “Scientific objectives and conceptual design of Telescopic Nadir imager for Geomorphology (TENG) and Observation of Reflectance by Optical Chromatic imager (OROCHI) instruments”
Shingo Kameda (Rikkyo Univ.), MMX Camera Team
- P07:** “A laser-induced breakdown spectroscopy instrument for elemental analyses on Phobos”
Yuichiro Cho (Rikkyo Univ.), M. Horiuchi, K. Shibasaki, S. Kameda, K. Wada, T. Nakamura, T. Mikouchi, Y. Miura, R. Okazaki, K. Ishibashi, K. Yoshioka, S. Sugita
- P08:** “Development of an ultraviolet spectrometer dedicated for Mars and its moons”
Masaki Kuwabara (Univ. Tokyo), K. Yoshioka, I. Yoshikawa
- P09:** “Geophysical Experiments on Phobos Proposed in MMX”
Kazunori Ogawa (Kobe Univ.), S. Tanaka, N. Sakatani, M. Ueno, T. Hoshino, K. Sakamoto, T. Kawamura, Y. Ishihara, N. Takeuchi, P. Lognonné, A. Araya, R. Yamada, T. Tsuji, T. Kobayashi, K. Shirai, N. Kobayashi, M. Grott, J. Grygorczuk, A. Hagermann, J. Knollenberg, T. Spohn, H. Miyamoto, H. Katsuragi, S. Shirono, T. Morota, M. Arakawa
- P10:** “Seismic observation package for Mars Moon Exploration Mission”
Yoshiaki Ishihara (JAXA), T. Kawamura, R. Yamada, K. Ogawa, N. Takeuchi, A. Araya, P. Lognonné, K. Shirai, T. Tsuji, T. Kobayashi, S. Tanaka, N. Kobayashi
- P11:** “Science objectives of MINE (Magnetic field, Ion and Neutral Experiment) observations for Martian moons and system”
Reiko Nomura (ISAS/JAXA), MINE WG
- P12:** “Water Partitioning between Proto-Atmosphere and Interior of Mars Growing in a Solar Nebula”
Hiroaki Saito (Hokkaido Univ.), K. Kuramoto