Mission plan for exploration of the space weather and climate at Mars

*Kanako Seki¹, Atsushi Yamazaki², Naoki Terada³, Ayako Matsuoka², Hiromu Nakagawa³, Shoichiro Yokota⁴, Satoshi Kasahara¹, Yoshifumi Saito², Takeshi Sakanoi³, Takeshi Imamura⁵, Yasumasa Kasaba³, Keigo Enya², Yoshifumi Futaana⁶, Atsushi Kumamoto³, Tomohiro Usui⁷, Hiroyuki Maezawa⁸, YASUKO KASAI⁹, Hideo Sagawa¹⁰, Makoto Taguchi¹¹, Yoshizumi Miyoshi¹², Takuya Hara¹³, Takeshi Kuroda⁹, Shotaro Sakai¹, Kazuhisa Fujita¹⁴, Sho Sasaki⁴, MSWC team

1. Graduate School of Science, University of Tokyo, 2. ISAS, JAXA, 3. Graduate School of Science, Tohoku University, 4. Graduate School of Science, Osaka University, 5. Graduate School of Frontier Sciences, University of Tokyo, 6. Swedish Institute of Space Physics, 7. Earth Life Science Institute, Tokyo Institute of Technology, 8. Osaka Prefecture University, 9. National Institute of Information and Communications Technology, 10. Faculty of Science, Kyoto Sangyo University, 11. Faculty of Science, Rikkyo University, 12. ISEE, Nagoya University, 13. SSL, UC Berkeley, 14. Research and Development Directorate, JAXA

Mars is a unique planet in terms of understanding of conditions for terrestrial planets to obtain a habitable environment. Recent discoveries from Martian explorations such as MAVEN have indicated importance of extreme solar variations and suggested new technical possibilities to measure Martian environment. In this presentation, a mission plan to explore key issues of space weather and climate at Mars will be presented.

Keywords: Mars, Orbiter exploration, Habitable planet, climate change, atmospheric escape, radiation environment