Hisaki/EXCEED observation of solar-wind-driven atmospheric escape from Venus

Naoki Terada[1]; Kei Masunaga[2]; Ichiro Yoshikawa[3]; Fuminori Tsuchiya[4]; Atsushi Yamazaki[5]; Kazuo Yoshioka[6]; Go Murakami[7]; Tomoki Kimura[8]; Masato Kagitani[9]; Yasumasa Kasaba[10]; Takeshi Sakanoi[11]; Yoshifumi Futaana[12]; Kanako Seki[13]; Francois Leblanc[14]; Chihiro Tao[15]; Daikou Shiota[16]
[1] Dept. Geophys., Grad. Sch. Sci., Tohoku Univ.; [2] STEL, Nagoya Univ.; [3] EPS, Univ. of Tokyo; [4] Planet. Plasma Atmos. Res. Cent., Tohoku Univ.; [5] ISAS/JAXA; [6] JAXA/ISAS; [7] ISAS/JAXA; [8] JAXA/ISAS; [9] PPARC, Tohoku Univ; [10] Tohoku Univ.; [11] Grad. School of Science, Tohoku Univ.; [12] IRF; [13] STEL, Nagoya Univ.; [14] LATMOS-IPSL, CNRS; [15] LPP, Ecole Polytechnique; [16] STEL, Nagoya Univ.

Hisaki is an Earth-orbiting spectroscopic satellite equipped with the EXCEED (EXtreme ultraviolet spectrosCope for ExosphEric Dynamics) instrument, which was successfully launched on September 14, 2013. One of the primary objectives of Hisaki/EXCEED is to study atmospheric escape from Venus responding to variations of solar and solar wind parameters, and its impact on the evolution of the planetary environment. The amount of atmospheric volatiles escaping to space from Venus still remains poorly constrained. Hisaki/EXCEED has constrained the atmospheric escape rates from Venus by measuring emissions from OII, CII, NII, OI, Lyman-alpha, etc. from the Venusian ionosphere, thermosphere, exosphere, and tail region, which are expected to significantly vary responding to Sun's EUV and solar wind variations. In this presentation, preliminary results of Hisaki/EXCEED observation of escaping planetary atmospheres together with collaborative studies with in-situ observation by the ASPERA-4 and MAG instruments aboard Venus Express and with solar wind models will be presented.