

Volcanic activity on Io, formation of the atmosphere, and escape of atmosphere to the magnetosphere

*Fuminori Tsuchiya¹, Ryoichi Koga¹, Mizuki Yoneda², Masato Kagitani¹, Kazuo Yoshioka⁴, Reina Hikida⁴, Go Murakami³, Tomoki Kimura¹, Atsushi Yamazaki³, Hajime Kita³, Ichiro Yoshikawa⁴

1. Tohoku University, 2. Tadano, 3. ISAS/JAXA, 4. The University of Tokyo

Jupiter's satellite Io is known as the most active volcanically active body in the solar system. The atmosphere of the satellite consists mainly of volcanic gas composed of sulfur dioxide. The molecular escaped becomes primary source of plasma in the magnetosphere of Jupiter. Here, observations of the volcanic gas escaped from satellite with the extreme ultraviolet telescope satellite, Hisaki, and a groundbased visible telescope, and observations of hot spot of Io's volcano with infrared telescopes are presented. We will discuss the formation of the satellite atmosphere, escape process of the atmospheric gas to the magnetosphere, and their relation to volcano types.

Keywords: volcano, Io, Hisaki