

PEM023-01

Room: 301A

Time: May 28 09:00-09:15

## Electrostatic solitary waves associated with magnetic anomalies and wake boundary of the Moon observed by Kaguya

Kozo Hashimoto<sup>1\*</sup>, Maki Hashitani<sup>1</sup>, Yoshiya Kasahara<sup>2</sup>, Yoshiharu Omura<sup>1</sup>,  
Masaki N Nishino<sup>3</sup>, Yoshifumi Saito<sup>3</sup>, Shoichiro Yokota<sup>3</sup>, Takayuki Ono<sup>4</sup>, Hideo Tsunakawa<sup>5</sup>,  
Hidetoshi Shibuya<sup>6</sup>, Masaki Matsushima<sup>5</sup>, Hisayoshi Shimizu<sup>7</sup>, Futoshi Takahashi<sup>5</sup>

<sup>1</sup>RISH, Kyoto University, <sup>2</sup>Kanazawa University, <sup>3</sup>ISAS/JAXA, <sup>4</sup>Tohoku University,

<sup>5</sup>Tokyo Institute of Technology, <sup>6</sup>Kumamoto University, <sup>7</sup>University of Tokyo

We present the first report of observations of electrostatic solitary waves (ESW) near the Moon by SELENE (Kaguya) in the solar wind and in the lunar wake. SELENE is a lunar orbiter with an altitude of 100km and measured wave electric field, background magnetic field, and fluxes of ions and electrons. ESW observations are categorized into three types depend on the observed conditions: ESW generated by the electric field in the wake boundary (Type A), strong ESW generated by the solar wind and bi-streaming electrons mirror-reflected over the magnetic anomaly (Type B), and ESW generated in the solar wind when the local magnetic field is connected to the lunar surface (Type C). ESW of Type C often alternate with Langmuir waves.

Keywords: Kaguya, Electrostatic Solitary Waves, Wake, Magnetic Anomaly