

**R006-P46**

**ポスター 1 : 11/24 PM1/PM2 (13:15-18:15)**

#桑原 正輝<sup>1)</sup>, 吉岡 和夫<sup>2)</sup>, 村上 豪<sup>3)</sup>, 吉川 一朗<sup>4)</sup>

(<sup>1)</sup>立教大学, (<sup>2)</sup>東大・新領域, (<sup>3)</sup>ISAS/JAXA, (<sup>4)</sup>東大

## **The observation of the Earth's plasmasphere in extreme ultraviolet from a nano-spacecraft**

#Masaki Kuwabara<sup>1)</sup>, Kazuo Yoshioka<sup>2)</sup>, Go Murakami<sup>3)</sup>, Ichiro Yoshikawa<sup>4)</sup>

(<sup>1)</sup>Rikkyo University, (<sup>2)</sup>The University of Tokyo, (<sup>3)</sup>Japan Aerospace Exploration Agency, (<sup>4)</sup>University of Tokyo

The Plasmaspheric Helium ion Observation by Enhanced New Imager in eXtreme ultraviolet (PHOENIX) onboard EQUilibrium Lunar-Earth point 6U Spacecraft (EQUULEUS) is an ultra-small instrument for observing the Earth's plasmasphere from a meridian view. The PHOENIX instrument is a normal-incidence telescope optimized for observing He II emission at 30.4 nm. It comprises an Mo/Si multilayer-coated mirror, an Al/C metallic thin filter, and a 2-D photon-counting device with microchannel plate and resistive anode. In May 2023, PHOENIX successfully conducted imaging observations of the Earth's plasmasphere while EQUULEUS was en route to the Earth-Moon Lagrange point 2, revealing the density structure formed along the dipole-shaped magnetic field lines. This marks the first instance of imaging the entire Earth's plasmasphere using an ultra-small instrument onboard a nano-spacecraft. In this presentation, an overview of the PHOENIX instrument and the observation results of the Earth's plasmasphere will be shown. Future applications of PHOENIX for planetary exploration will also be discussed.