

Development of the small EUV imaging device PHOENIX for the EQUULEUS mission

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Abstract A small telescope in extreme ultraviolet named PHOENIX (Plasmaspheric Helium ion Observation by Enhanced New Imager in eXtreme ultraviolet) will be boarded on EQUULEUS. PHOENIX consists of multilayer-coated entrance mirror (diameter of 55 mm), photon counting device (microchannel plate and resistive anode encoder), and electronics parts. The reflectivity of the mirror is optimized for the emission line of helium ion (wavelength of 30.4 nm) which is the important component of the Earth's plasmasphere. By flying far from the Earth, PHOENIX provides the entire image of the Earth's plasmasphere. The image from the equatorial plane helps us to understand the dynamics in the plasmasphere. The behavior of the plasma which is related to the solar activity is the key for understanding the physics and evolution of the Earth's environment. In this presentation, we will show the performance of PHOENIX and the method of imaging observation for the Earth's plasmasphere.