

# **AN INTERCOMPARISON STUDY OF THE PLASMAPAUSE BETWEEN IMAGE-EUV SELENE-UPI, AND CROSS-PHASE MEASUREMENTS**

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A statistical study of comparison of plasmopause location between Extreme Ultraviolet (EUV) and cross-phase measurements was performed for 50 days in May-July 2000 and one day in April 2008.

In EUV images, the plasmopause was detected as He<sup>+</sup> edges where the brightness of 30.4 nm He<sup>+</sup> emission drops down. We have taken EUV images obtained by the two instruments on the IMAGE and the SELENE satellites, which were operated in a solar maximum and minimum periods, respectively.

Whereas, the plasmopause was defined as a steep drop of mass density in its radial profile. Mass density was inferred from eigenfrequency of field line resonances in the ULF band [ $\sim 1$ -1000 mHz], which was deduced from geomagnetic data using cross-phase analysis.

The two measurements of the plasmopause have been compared in a same meridian at same time and very good agreement was found in 18 of 19 events. Our result clearly indicates that the plasmopause is usually detected at same place when it is defined by He<sup>+</sup> or sum of mass of dominant species. In only one event, the He<sup>+</sup> edge and the mass density gap located at different places. It would reflect difference of refilling time between He<sup>+</sup> and other dominant species.

Plasmasphere, ULF wave, Extreme-Ultraviolet image

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