

## Neutral atom signatures of the cusp ion injection for northward IMF

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We report neutral atom signatures identified by the Low-Energy Neutral Atom (LENA) imager on the IMAGE spacecraft in the direction of the high-latitude magnetopause for steady northward IMF conditions. Results of analyses from several LENA cusp signal events show that the intensity of the LENA signal is correlated with the solar wind number density, and that the sharp change of the IMF clock angle can be a controlling factor for whether or not the LENA cusp signal is observed. The LENA cusp signal for northward IMF has been interpreted to be due to the ion injection from cusp reconnection, and these results are consistent with that interpretation. From the present results we will deduce possible location of the IMF By-dependent ion injection region for northward IMF. Results of analyses also show that the direction of the signal can move poleward or equatorward slowly. This will be discussed in terms of the inward or outward shift of the reconnection region on the magnetopause which is caused by the variation of the solar wind dynamic pressure.