



## **Short timescale variation in the heliospheric ENA flux: IBEX observations and correlations with solar wind observations**

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The Interstellar Boundary Explorer (IBEX) completes a full sweep of the sky once every six months; thus in general, if we seek evidence for temporal variation in the heliospheric ENA flux, we must wait six months before revisiting the same part of the sky. However, due to the constant sun-pointing orientation of the IBEX spin axis, two points on the sky, the ecliptic poles, are observed continuously. Therefore, we can examine if the outer heliosphere is changing on timescales shorter than six months at the poles, by tracking the evolution of ENA flux emanating from these regions. Our findings show that on timescales  $> 50$  days, temporal variations at the poles are present. Due to time dispersion within the IBEX energy passbands, this is at the limit of achievable time resolution. The separate energy passbands also leads to a time dispersion in ENAs arriving from the heliosheath of  $\sim 1$  year for ENAs between 500 eV and 6 keV.

ENAs in this energy range shows flux decreases in all passbands, but is most pronounced at 1.1 keV, where a 60% drop in flux (i.e. a factor of 2.5) is observed at the south ecliptic pole between January 2009 and June 2010. We have compared time-shifted ENA observations with solar wind observations at 1 AU during the period from mid-2006 through early-2009. We observe a strong correlation between the observed ENA flux and the steadily declining solar wind ram pressure observed during this period. This suggests that the weakening solar wind flow during the recent extended and deep solar minimum has lead to a corresponding reduction in heliosheath pressure.