

Energetic Neutral Atoms from the heliosphere measured with the Interstellar Boundary Explorer

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Four years of measurements with the Interstellar Boundary Explorer (IBEX) have radically changed our concept of the interaction between the solar wind and the local interstellar plasma environment. Before IBEX, heliospheric Energetic Neutral Atoms (ENAs) were expected to be distributed symmetrically around the inflow direction ($\lambda = 259^\circ$, $\beta = 5^\circ$) of the local interstellar matter into the heliosphere^[1]. In reality, the highest and lowest ENA intensities do not coincide with the upwind-downwind axis (see figure). A meandering ribbon of intense ENA signals is observed that probably is related to the interstellar magnetic field draped around the heliosphere^[2]. The region of lowest ENA intensities, seen as a dark hole in the figure, is offset from the downwind direction by 40 degrees^[3]. The IBEX observations also imply that there is no bow shock between our heliosphere and the surrounding interstellar plasma^[4]. We will give an overview of the IBEX results obtained so far and show recent work on the energy spectrum of ENAs from the tail of the heliosphere.

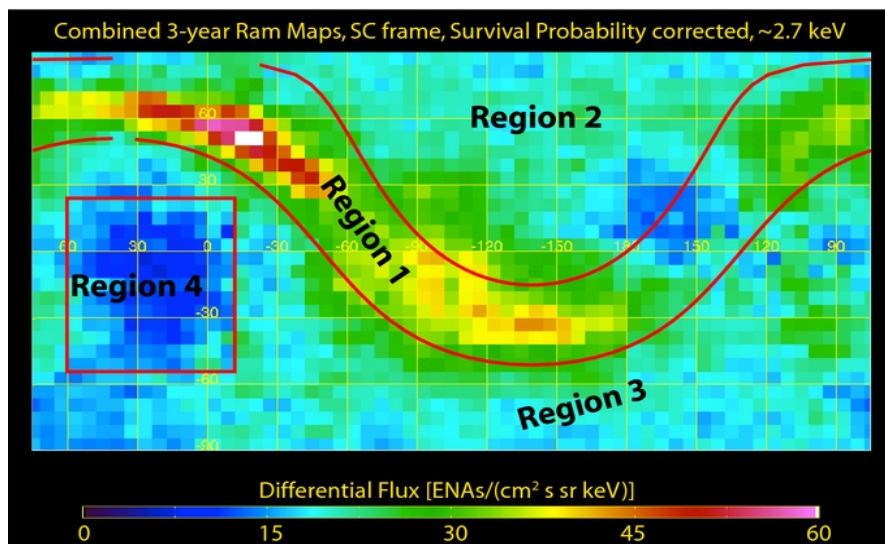


Figure 24, McComas et al.^[2]

References

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