



## **Electron beams and ion events in the terrestrial foreshock observed during early STEREO orbit**

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During the early part of the STEREO mission, the spacecraft made multiple crossings of the terrestrial bow shock. The SWEA and STE electron detectors on the STEREO IMPACT boom observed electron beams, associated with Langmuir waves observed by the S/WAVES antennas, in the electron foreshock region. The combined range of SWEA and STE allows for the study of the evolution of these beams from several eV to tens of keV.

In addition to the electron beams associated with Langmuir waves, the STE detector also measured high energy (up to 100 keV) events associated with connection to the quasi-perpendicular bow shock. The velocity dispersion and energy spectra of these events allow us to draw the preliminary conclusion that STE is observing ion events.