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The Plasma and SupraThermal Ion Composition (PLASTIC) instruments on the STEREO mission: Sneak preview of early suprathermal ion observations

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The two Solar Terrestrial Relations Observatory (STEREO) spacecraft were successfully launched on October 26, 2006, after which followed a three-month commissioning phase. The commissioning phase included a single lunar swing-by for STEREO A, and two lunar swing-bys for STEREO B. After the second lunar swing-by (January 21) both spacecraft will be in heliocentric orbits at 1 AU. The Ahead (A) spacecraft leads the Earth, while the Behind (B) spacecraft trails the Earth. From the perspective of the Sun, the observatories drift away from the Earth in opposite directions by about 22.5 degrees per year. The science mission in heliocentric orbits begins at the end of January 2007.

The two identical PLAsma and SupraThermal Ion Composition (PLASTIC) instruments onboard STEREO-A and STEREO-B measure both solar wind ions and suprathermal ions in the energy-per-charge range of 0.3-80 keV/e. The instruments are time-of-flight plus energy (M, M/Q) and time-of-flight (M/Q) spectrometers. The suprathermal section of the instruments is designed to provide spectral and some compositional (species identification) information. Suprathermal ions of interest to the mission objectives include ions accelerated under local shock conditions, pickup ions

(interstellar and local sources), and suprathermal-tails of solar wind ion distributions. In this poster, we will present PLASTIC's initial suprathermal observations, including data from the near-Earth phasing orbits. A companion oral presentation by Blush et al. will provide an overview of the PLASTIC initial solar wind ion observations.