SOLAR WIND OBSERVATIONS FROM THE STEREO PERSPECTIVE (2007-2009)

ANTOINETTE B. GALVIN

Space Science Center EOS and Department of Physics, University of New Hampshire

The STEREO two-spacecraft mission has been fully operational since January 2007 and provides both in-situ and remote observations at 1AU with (at this time) up to 110^{o} longitudinal separation between the two spacecraft. The longitudinal and (to some extent) latitudinal vantage points available amongst the STEREO and L1 assets have provided unique opportunities for studying spatial and temporal variations of the solar wind, and are an excellent proving ground for space weather predictive techniques and models. The extended period of solar quiet during the mission thus far has provided an exceptional opportunity for studying in-situ signatures of solar wind slow-high-slow speed stream interfaces, plasma sheet boundaries, and solar minimum ICMEs, yielding some new perspectives on their origins and propagation. In addition, with the incorporation of remote imaging that now extends from the solar disk to 1 AU, some solar wind features have been tracked directly and comprehensively from their solar source to the local measurements at 1 AU. In this review, I present a review of the solar wind observations in the STEREO (thus far) era in the context of the above and in relation to the current solar cycle conditions.

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Antoinette B. Galvin, Space Science Center, Institute for the Study of Earth, Oceans and Space and the Department of Physics, University of New Hampshire, Morse Hall, 8 College Road, Durham, NH 03824; tel: 1-603-862-3511; tel:1-603-862-0022 (Sec); fax: 1-603-862-0311; email: toni.galvin@unh.edu