Abstract Submitted for the TSF17 Meeting of The American Physical Society

An Overview of Magnetopause Location's Dependence on Upstream Solar Wind Conditions Using Observational THEMIS Data¹ CHRIS SHERRILL, CHELSI NELSON, TORIN ROSE, JAMES ZAPP, RICHARD BONDE, RAMON LOPEZ, Univ of Texas, Arlington — Solar wind is the continuous flow of charged particles from the Sun. As it travels outward, it carries the Sun's magnetic field along with it forming the interplanetary magnetic field, or IMF. The boundary between the IMF and Earth's magnetic field is called the magnetopause, and its location depends on the upstream solar wind conditions. NASA'S Time History of Events and Macroscale Interactions during Substorms, or THEMIS, is a series of probes in which their highly elliptical orbit puts them in a position to cross over the magnetopause. We cataloged a series of THEMIS crossings in order to determine the location of the magnetopause. Upstream solar wind conditions were analyzed using OMNIWeb; a database of various satellites that uses algorithms to propagate solar wind data to Earth's predicted bow shock. We present an overview of THEMIS crossings and the solar wind conditions that affect the movement of the magnetopause.

¹NASA Grant NNX15AJ03G

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Date submitted: 21 Sep 2017

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