Abstract Submitted
for the TSS16 Meeting of
The American Physical Society

Examining Ionospheric Potential Patterns Due to Sudden Changes in the IMF Y-component MIKAYLA STREETMAN, CHRISTOPHER SHERRILL, KEVIN PHAM, RAMON LOPEZ, University of Texas at Arlington — The continuous flow of particles out from the Sun is known as the solar wind. As the solar wind travels to the Earth, it carries with it the interplanetary magnetic field (IMF). The interaction between the IMF and the Earth's magnetic field produces a current system in the ionospheric current regions. We will find events where the IMF changes from east to west or west to east in less than five minutes. In addition, the IMF before and after these events must be relatively steady, preferably unchanged by more than 2nT. We will then examine the ionospheric electrostatic potentials produced by the Super Dual Auroral Radar Network (SuperDARN) and the Defense Meteorological Satellite Program (DMSP). SuperDARN is a network of ground based radars that observe the motion of the solar wind in the Earth's upper atmosphere beginning at mid-latitudes extending into the polar regions. DMSP is a satellite that travels through the polar regions and takes measurements of the ionosphere as it passes through. The time it takes for the ionospheric electrostatic potential to reconfigure will be calculated for both SuperDarn and DMSP. We will present a comparison of the times it takes for the transitions to occur.

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Date submitted: 08 Mar 2016 Electronic form version 1.4