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Variations in the Polar Cap Boundary Location Based on Solar Wind Parameters[1] ROBERT ALLEN, SOPHIA COCKRELL, BETHANY HILLER, PERLA GONZALEZ, RAMON E. LOPEZ, University of Texas at Arlington — The Earth's magnetic field is a dipole with field lines coming out from the southern hemisphere and into the northern hemisphere. When the interplanetary magnetic field (IMF) is pointed southward, the Earth's magnetic field becomes interconnected with the IMF. The boundary that separates the region of field lines that are connected to the Earth at both ends and the region of field lines that are connected to both the Earth and the IMF is called the polar cap boundary. We can detect the polar cap boundary using particle precipitation measurements from the Defense Meteorological Satellite Program (DMSP) satellite F13. The DMSP satellite F13 has approximately a 104 minute polar orbit that makes roughly dusk-dawn passes. We will investigate the variation of the polar cap boundary's location based on solar wind parameters.

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