

"Categorization of Cusp Structures in the Magnetosphere"

Summer Thresher, Walla Walla University

Laboratory for Atmospheric and Space Physics

Mentors: Karlheinz Trattner and Bill Peterson

Magnetic reconnection is the entanglement of the Earth's magnetic field (geomagnetic field) lines and the Interplanetary Magnetic Field (IMF) lines at the magnetopause. These open field lines allow solar wind plasma to stream into the magnetosphere. With data taken from the POLAR, ACE and WIND satellites, we categorized the cusp crossing data, looking for specific structures related to specific reconnection processes at the magnetopause. Comparing the cusp crossing data with the solar wind data, we determined any trends that will help distinguishing temporal or spatial processes, multiple reconnection lines and where reconnection occurs at the magnetopause.