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**Examining the Relationship between Magnetotail Stretching and Auroral Activity** DAVID SOWARD, DERRIC EDWARDS, KEVIN PHAM, RAMON LOPEZ, University of Texas at Arlington — The Sun is always emitting the solar wind, which carries a magnetic field; this is called the interplanetary magnetic field (IMF). When the Z direction of the IMF transitions from positive to negative, this has an effect on the structure of the Earth's magnetosphere. One of these effects is that the magnetotail begins to stretch. We can use data from the geosynchronous GOES (Geostationary Operational Environmental Satellite) to observe a signature of magnetotail stretching. There is a possibility that magnetotail stretching enhances auroral activity, which can be measured using the auroral electrojet (AE) index. The AE index is a measure of magnetic activity in the auroral zone. We will determine if there is any correlation between magnetotail stretching and the AE index, and will present our results.

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