

Abstract Submitted
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Latitude of Poleward Expansion versus Auroral Electrojet Maximum of Isolated Substorms AMI M. DUBOIS, CHRISTINE GABRIELSE, PATRICIA GAVIN, IAN SWANSON, SANDRA BROGL, RAMON LOPEZ, Florida Institute of Technology, Department of Physics and Space Sciences — A substorm is a short magnetospheric disturbance lasting only a few hours. We are using the UVI substorm movies provided by the POLAR satellite to find if there is a correlation between the intensity of a substorm and how far north auroras move from the initial magnetic latitude onset. We downloaded the auroral electrojet (AE) data for each movie that was an isolated substorm and which occurred at anytime other than between 1400 UT and 1900 UT. For the Polar movie that corresponds to the substorm we identified the latitudes at which the onset of the aurora and the maximum northern point of the aurora occur. The onset is the point at which the aurora begins to intensify or expand to greater latitudes. Since the aurora expands southward as well as northward, we also measure maximum southern point of the aurora. From here, we compare the latitude of the maximum northern point the aurora reached, the difference in latitude between the onset of the aurora and the northern most point, the latitude of the onset of the aurora, and the difference in latitude between the northern most and southern most points of the aurora all to the peak strength of the substorm and plot the results. From the preliminary results, we found there was a correlation between the latitude of onset and other quantities. We will discuss the implications of this result for energy storage and the size of substorms.

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