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Substorm Energy Deposition and Correlation with Substorm Characteristics CHRISTINE GABRIELSE, AMI M. DUBOIS, PATRICIA GAVIN, IAN SWANSON, SANDRA BROGL, RAMON LOPEZ, Florida Institute of Technology, Department of Physics and Space Sciences — The total energy deposition of various substorms was determined from Polar UVI Substorm Movies, provided by NASA and APL, using the Lyman-Birge_Hopfield-Long (LBHL) filter which mapped the total energy flux over latitudes above 60 degrees North. Because the movies run in two dimensions, it was necessary to form a model to project an image's total area of energy deposition from lying on a circle to lying on a sphere. Several relationships were then ascertained. There is a direct relationship between an onset's peak auroral electrojet (AE) index and the total energy deposition at that point in time. It was discovered, however, that this relationship does not continue throughout a substorm's lifetime. It is therefore inappropriate to state that a substorm's total energy deposition is directly related to its AE index at any point in time. There is also a relationship, though less notable, between the total energy deposition at the onset peak and the latitude at which the substorm began. These latitudes do not vary by much, though, and are generally between 65 and 70 degrees north.

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