



Measuring local magnetic disturbances in schools across the northern U.S.: THEMIS Education and Public Outreach

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Time History of Events and Macroscale Interactions during Substorms (THEMIS), a NASA mission, scheduled to be launched in the fall of 2006. A single motionless, green auroral arc can change suddenly to many colorful auroral forms dancing across the sky. We call this sudden change in aurora, "auroral eruption." This auroral eruption and its associated magnetospheric events are known together as "substorm onset." The THEMIS mission will determine the timing and location of magnetospheric events associated with substorm onset and sudden change in aurora. THEMIS has an Education and Outreach Program (E/PO) that brings THEMIS space science directly into the classroom. We call this E/PO program Geomagnetic Event Observation Network by Students (GEONS), in which 10 northern U.S. schools have received research-grade magnetometers at their schools to be used by teachers and students. These magnetometers are instruments that measure local magnetic fields and the data are displayed on the school computer monitors as well as on the THEMIS E/PO website: <http://ds9.ssl.berkeley.edu/themis>. Our program provides intensive and sustaining professional development on Earth's magnetosphere and space weather to a main teacher at the school. The teachers involved in GEONS have become "Magnetometer Ambassadors," sharing their knowledge of space physics and the magnetometers with their communities (e.g. hunters viewing the aurora), other teachers (e.g. Michigan Science Teacher Association Conferences), and other schools (e.g. high school students teaching elementary students about the magnetometer and space weather in the same town). We will show how we create and maintain a relationship with these teachers while teaching them aurora science content and pedagogical knowledge.