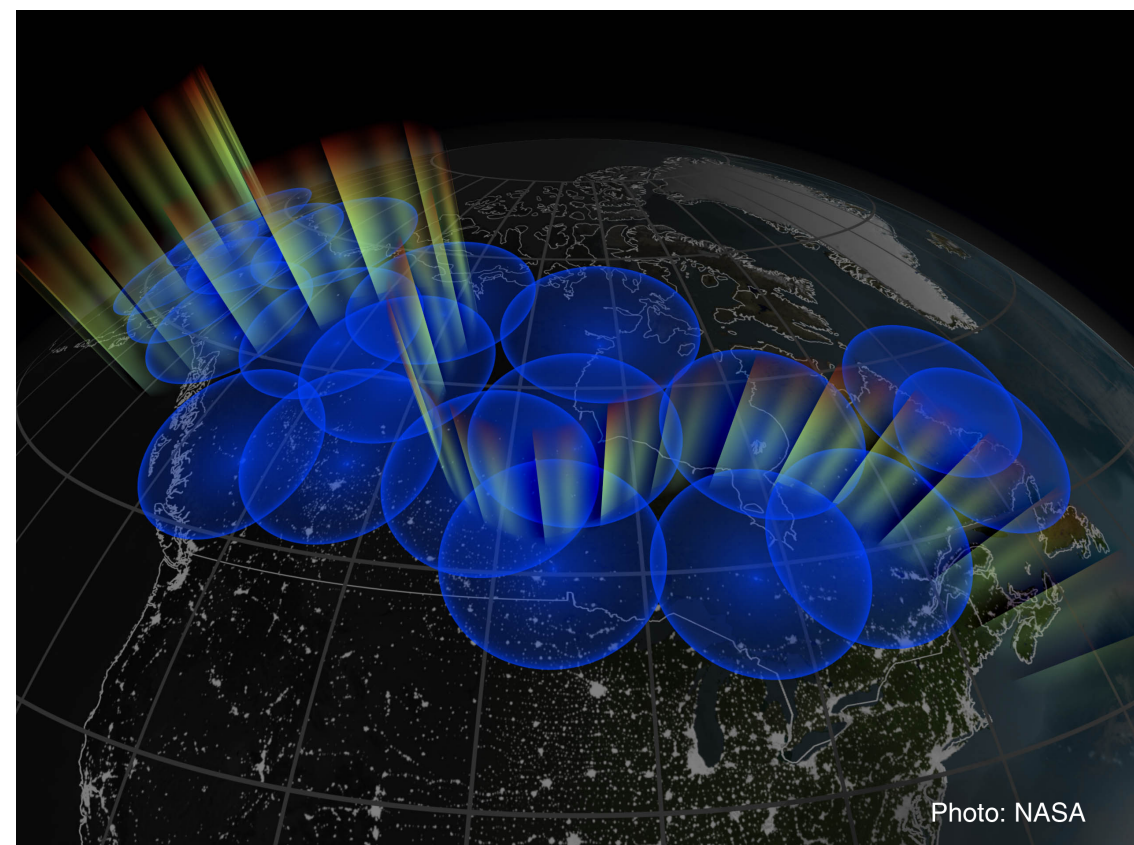


Aurora and Meteor Detection Stations for Farms and Schools

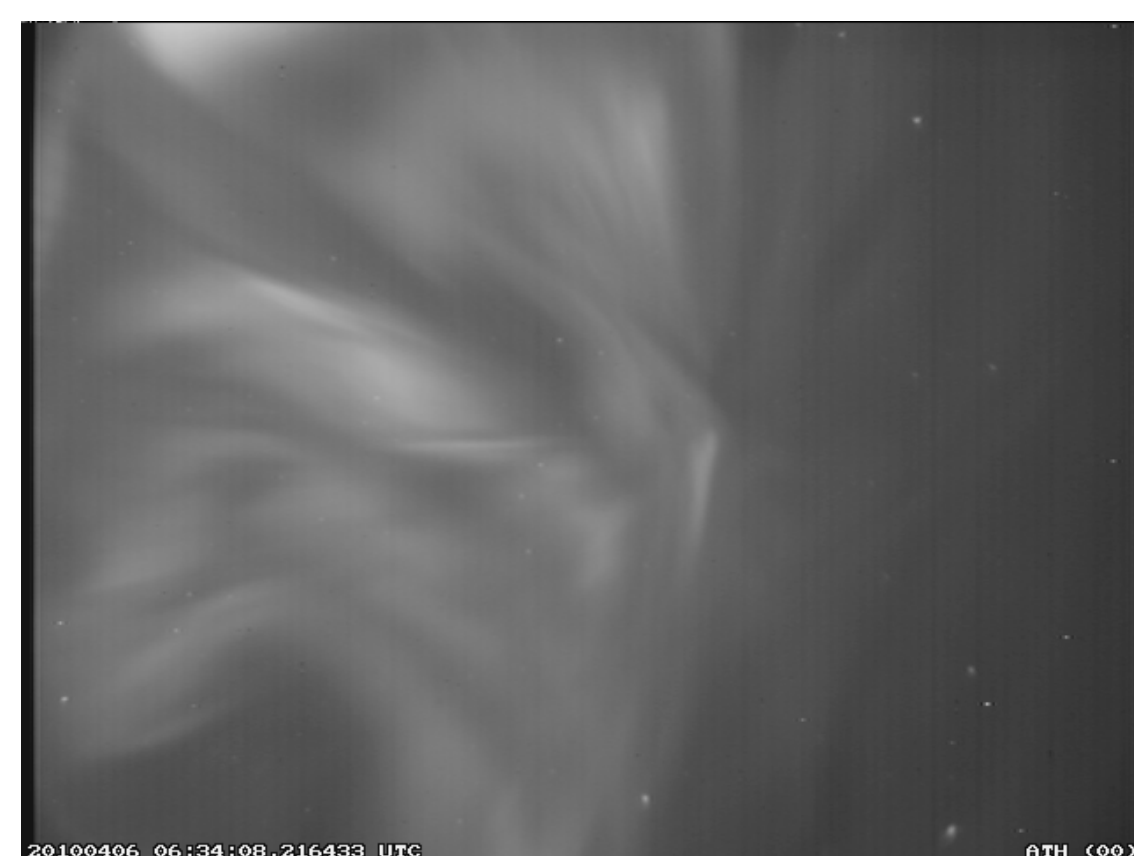
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The northern lights are mysterious. Scientists are still endeavoring to understand the processes that drive the aurora borealis high above the earth.



The **magnetometer** is one of main tools space physicists use to study the aurora - by measuring the degree the earth's magnetic field is disturbed by waves of energetic particles blasted from the surface of the sun, called the solar wind. By establishing networks of closely-spaced magnetic sensor stations, scientists can picture a clearer image of the magnetic and electric environment high overhead, and in so doing unravel the secrets of the aurora.

Magnetometers have traditionally been very expensive. Advances in sensor and computer technology has driven prices down so that scientific research can be performed with an **instrument costing 500 dollars**. Now everyone can watch the space weather with their own **aurora detector**.



Rural Alberta is an ideal place to witness the aurora, because its northern half is situated within the auroral oval and has abundant dark skies.

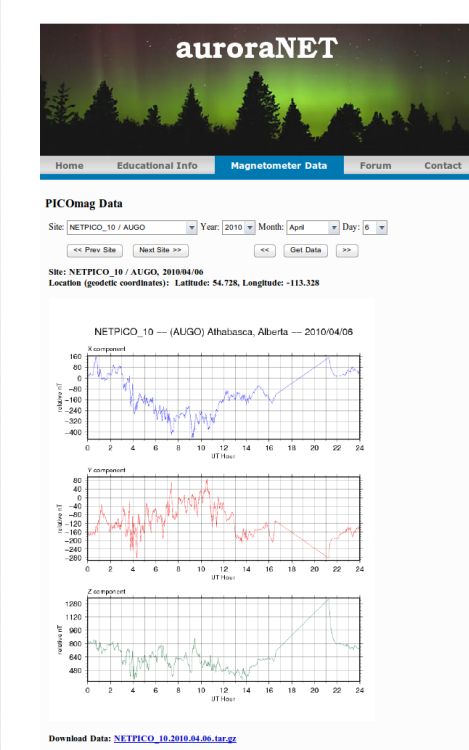
Athabasca University is offering a **low cost high-sensitivity magnetometer to teachers or interested enthusiasts free of charge**. Called **netPICOMAG**, it is

suitable for installation on suitable farms, schools or acreages. HAM radio operators may be particularly interested as magnetic disturbances associated with the aurora plays a major role in radio reception. All that is required is a secluded location far from roads and electric motors. Stations located in the auroral oval (in Northern Alberta) will typically see more dramatic auroral and magnetic activity than in the south.



netPICOMAG networked magnetometers are compact all in one unit, roughly 38-inches long and 5-inches in diameter. They are partially buried in the ground. Once powered up, netPICOMAG will transmit data in near real-time to AU's magnetic data web portal

<http://auroranet.org>



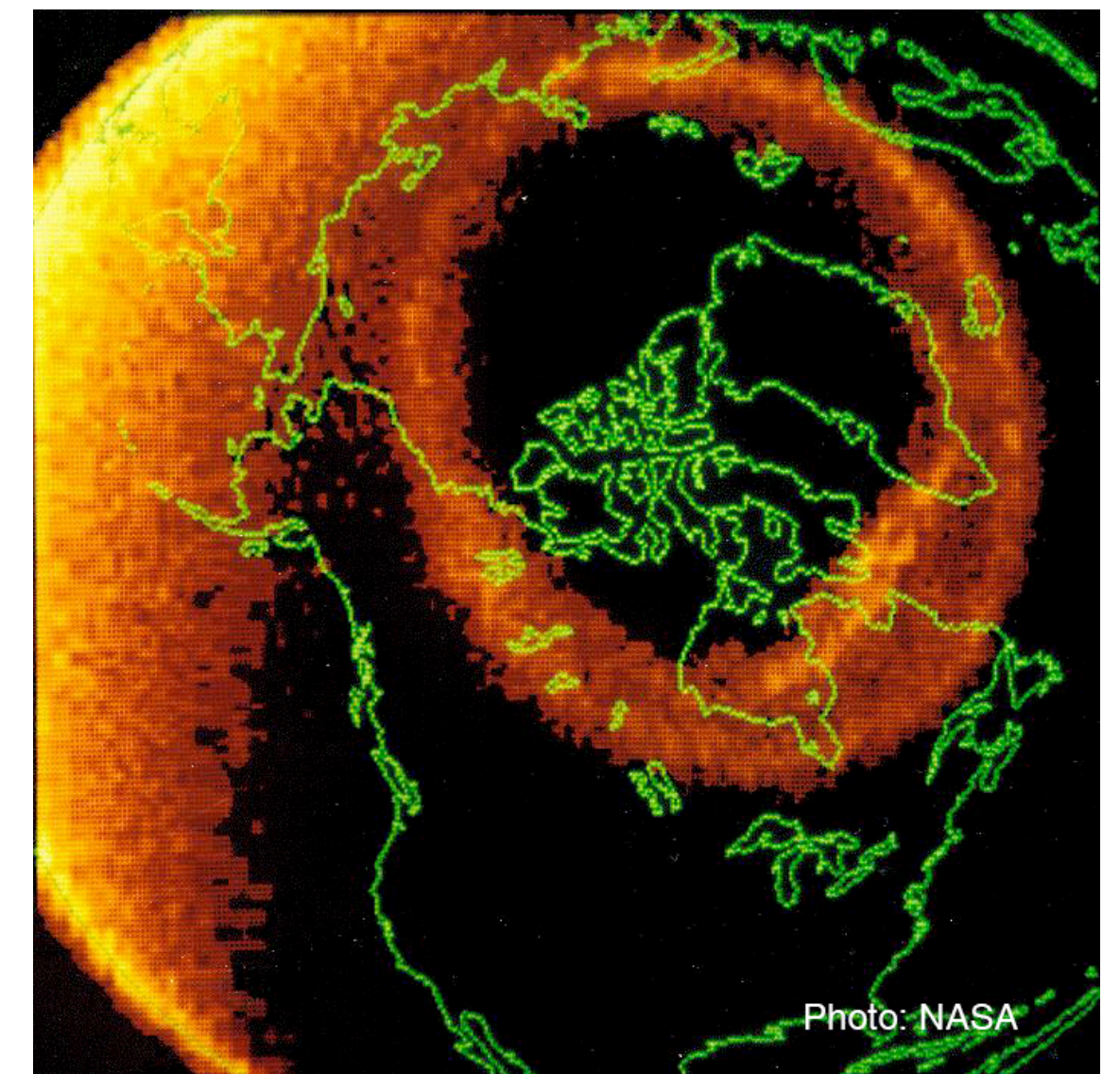
This aim of this project to **engage students in the hope that by seeing aurora data from where they live, their interest in science will be stimulated**.



Photo: Blaise MacMullin



Creating Rural Connections Conference 2010
University of Lethbridge - May 11-13



Students and enthusiasts alike will be able to contribute to leading-edge scientific investigation happening right now.

Meteor Detection

Potential instrument operators in southerly prairie locales may be interested to participate in a **province-wide meteor detection network**. Debris from space rains down on earth all the time. A network of all-sky meteor cameras will help scientists track down meteorites that reach the ground. AU will supply the camera, and control computer preconfigured with state of the art ASGARD meteor motion detection software developed at University of Western Ontario by Rob Weryk. A meteor detection system is an ideal complement to a netPICOMAG aurora detector, and can make use of the existing Internet service.



Acknowledgements

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