Athabasca University Geophysical Observatory

Lessons for ARBRI

Martin Connors

March 14 2012

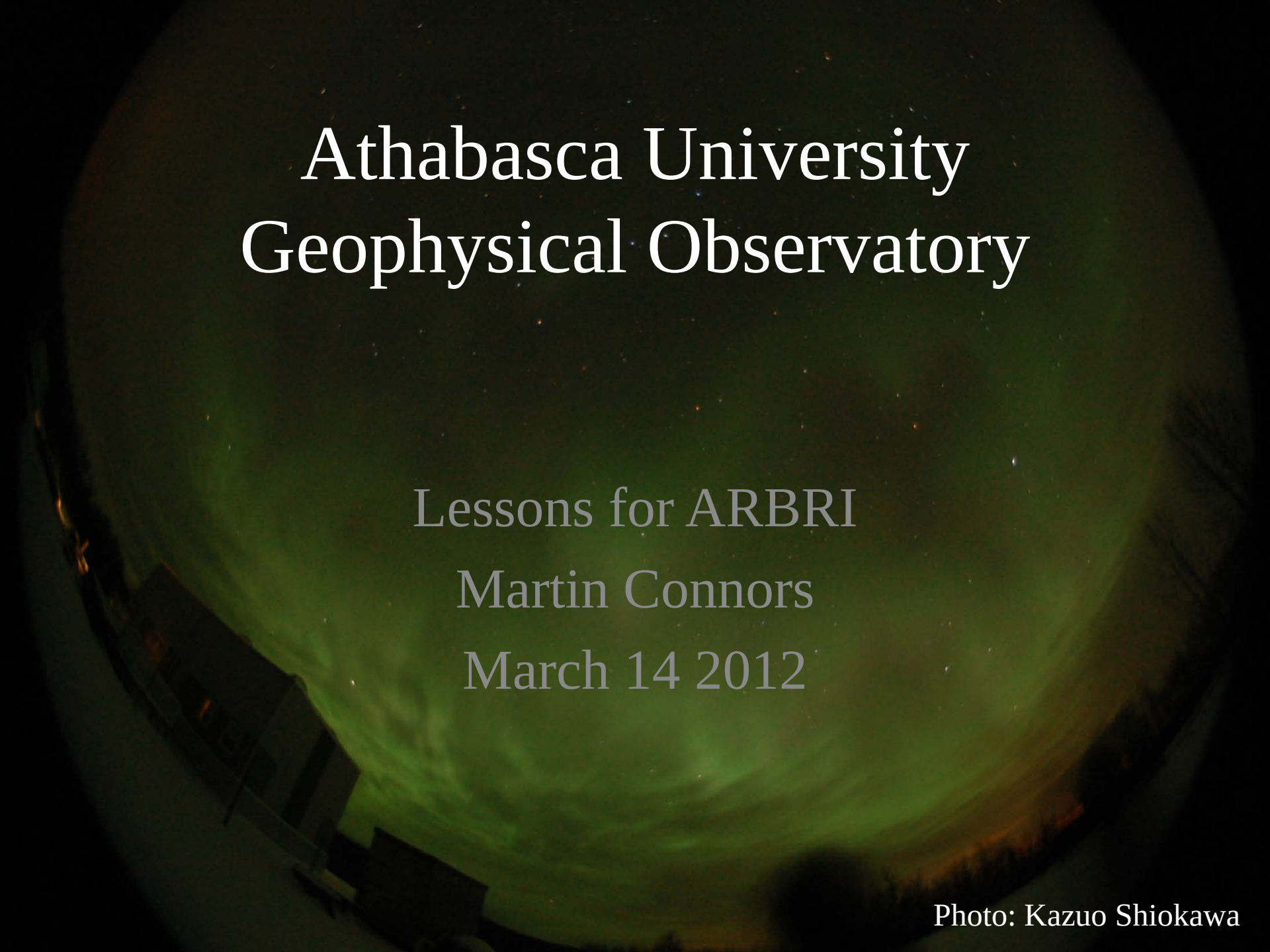
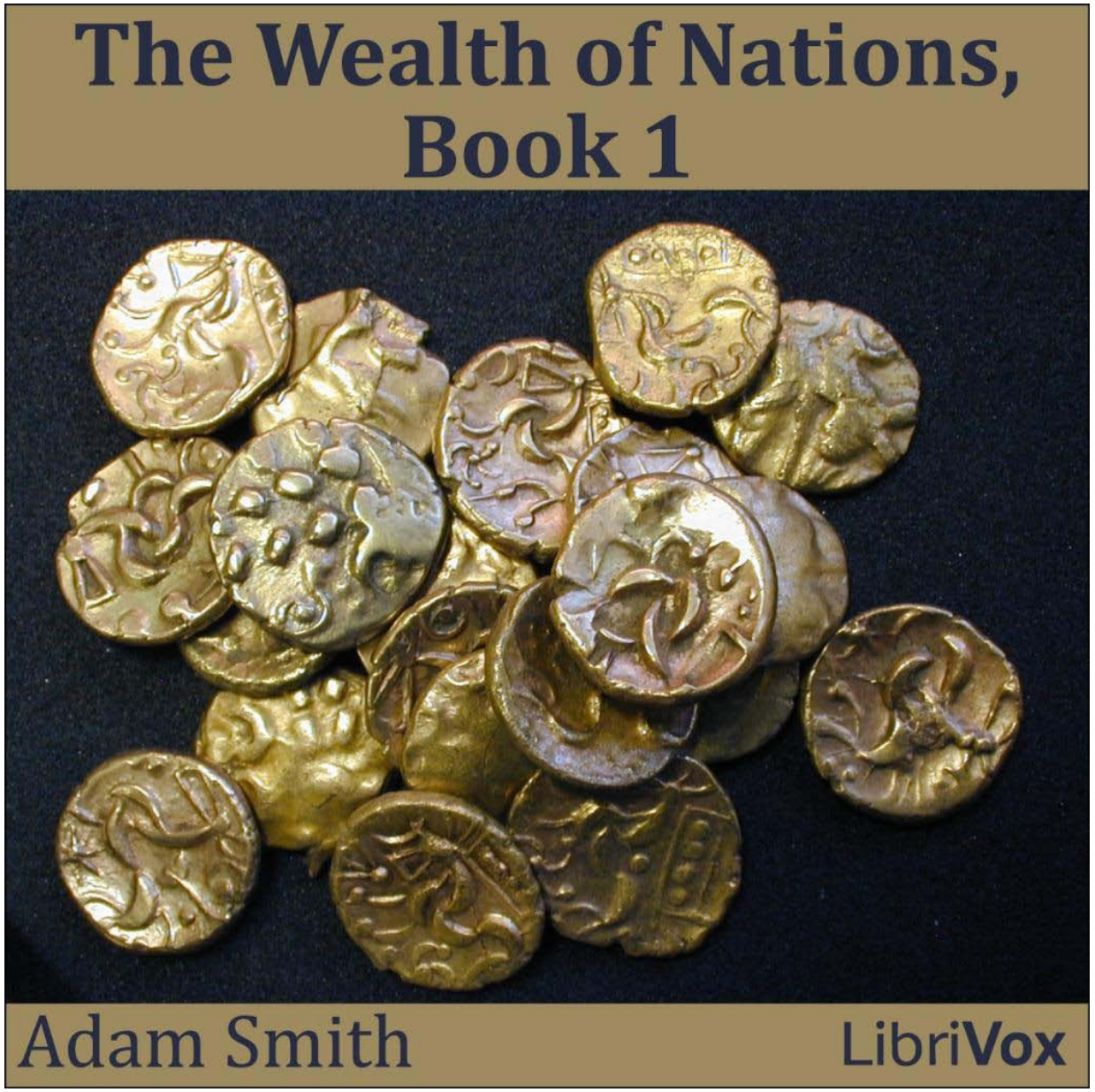


Photo: Kazuo Shiokawa



Strategic Thinking for the Small University

or …

If God gave you lemons, make lemonade.

February 15 2012
Operational Opening of AUGO-II

After frenzied work by Facilities (thanks guys!) AUGO could be moved into on February 15 with the startup of our KEO auroral camera.

The first night was clear and there was an aurora.

Blaise McMullin composed a sound track.

We speed up several hours of activity in this small aurora…our first.

(External movie)

Much of the funding for AUGO-II came from the Canada Foundation for Innovation, with matching from Alberta Innovation. Writing the proposal took much of a month during a visit to Japan that was supposed to be for actual research.

…that was in late 2008

Canada Foundation for Innovation
Fondation canadienne pour l'innovation

Project Module
Leading Edge Fund (LEF)

Date submitted (dd/mm/yyyy): **Project no.:** 20449

Project title: Athabasca University Geophysical Observatory Upgrades of Research Infrastructure (AUGOURI)

Language of application:

☒ English ☐ French

Applicant institution: Athabasca University

Designated Project Leader

Name: Martin G Connors
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Project Funding

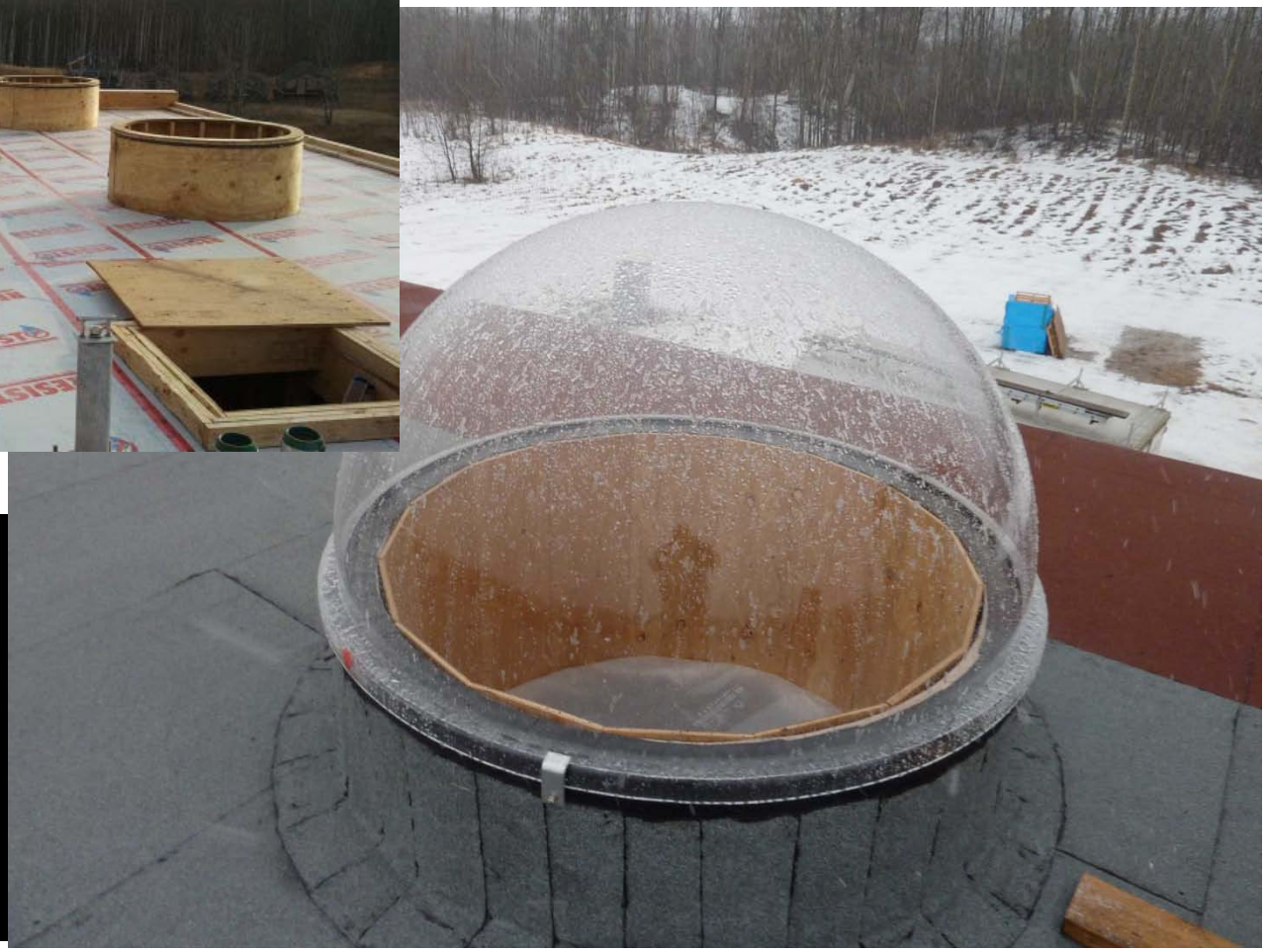
Patience is the name of the game. Getting permission to use public land (CFI will not pay for land purchase) took about two years. While this was going on a major design process took place. Finally, ground was broken in July 2011

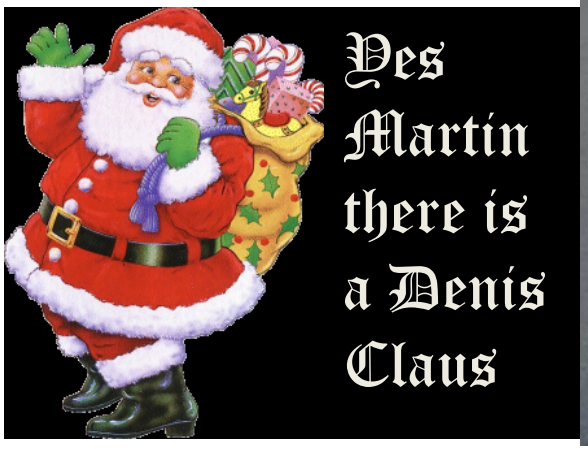
three years after the decision to apply

July 28 2011

October 2 2011: Kanji Hayashi and Ian Schofield

November-December 2011 – dome installation





A closed building envelope (well, except the domes) allows interior work to proceed

February 15-16 2012, cram in as much equipment as possible

A modest residential facility allows safety, comfort, cost savings in our isolated location

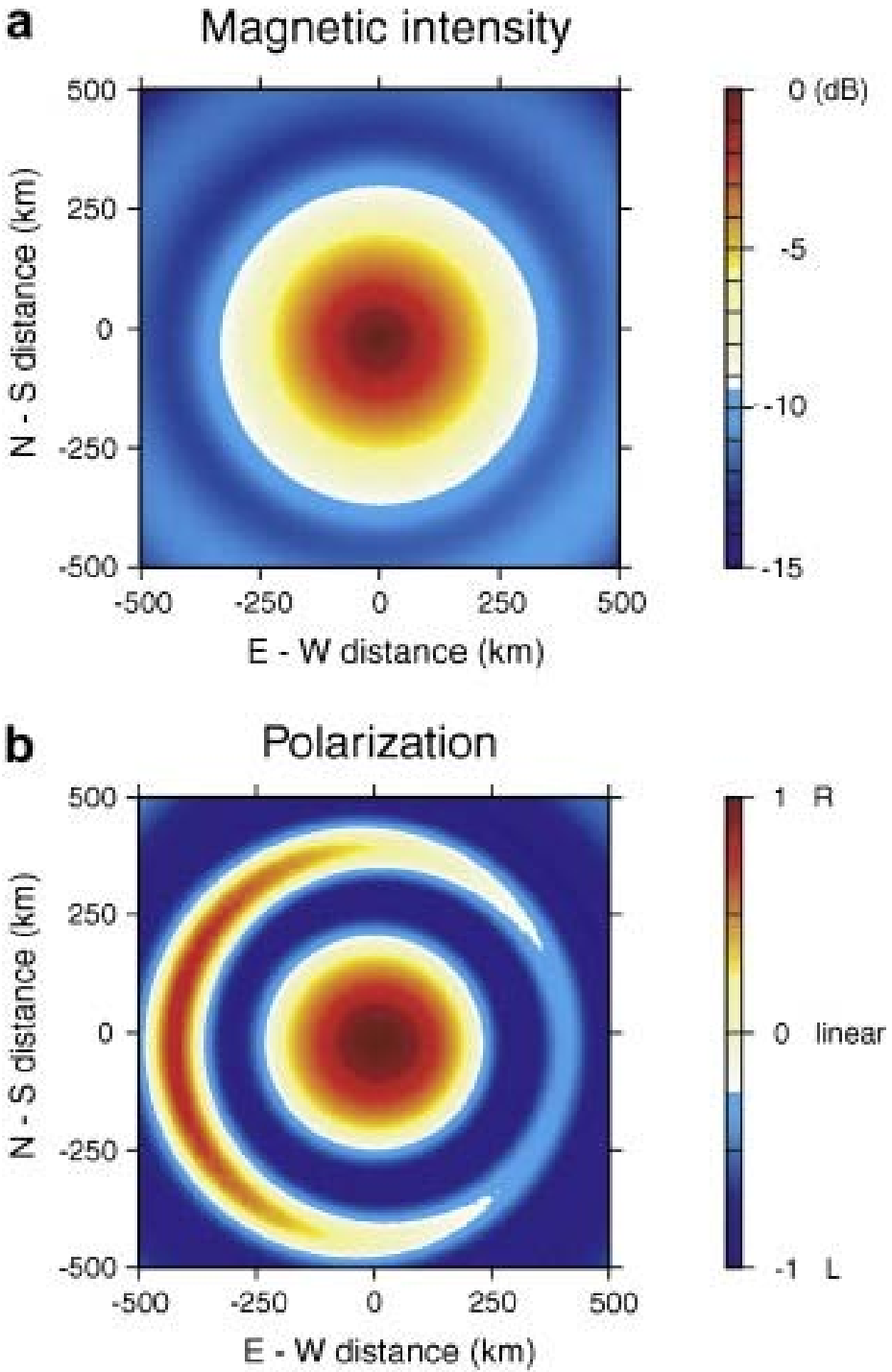
Photos: Kazuo Shiokawa

Unique guest instrumentation left behind will allow future participation in the NASA Radiation Belt Storm Probes (RBSP) and Japanese ERG satellite missions

Welcome the visiting teams from Japan

"Home Team": Sungeon, Reiko, Yokoyama, Kazuo

Fort Vermilion "Away Team" Mitsunori, Aki



Wavelength of 1kHz wave is 300km. Thus the VLF waves extends several hundreds kilometers on the ground.

Left figure: Distribution of magnetic intensity and polarization for incident of 2kHz whistler-mode waves from the ionosphere

(from Ozaki-san)

Hugely successful international campaign with more data than you can shake a stick at (to use the technical term)

1982 – AUGO Original Idea

Does anyone remember Athabasca University's cool building on Whyte Avenue?

A computer analyst at University of Alberta was busy building their first independent computing cluster (for space science) – his name – Martin Connors.

It seemed a good idea to him to set up instruments north of Edmonton, and Athabasca University intrigued him.

He looked up Athabasca on a map.

In 1988 he started tutoring for AU.

Athabasca University – Whyte Ave., Old Strathcona, Edmonton

Photo: Alex Abboud

One Solar Cycle of Athabasca University Geophysical Observatory (AUGO)

Martin Connors

Athabasca University

UCLA Space Physics Seminar, October 2009

Late November 2002, so AUGO is not really one solar cycle old, but we did install a UCLA magnetometer in Nov 1998

Vorticity in the aurora

Strategic Tips for ARBRI

1) It certainly helps to have good funding. AUGO total funding including Japanese sources is about $3 million
2) To get good funding you need good proposals
3) You have to have a track record in addition to good proposals
4) You need a strategic advantage in studying a basic scientific question
5) You need research leadership

Specific Tips for ARBRI

1) What is really needed? Is the current lab enough? *Match what you want to do to what you need.*
2) *Good proposals take a lot of work and you learn from rejection*
3) A track record takes a *long time* to develop so best if you can get someone in who has one
4) You need a *strategic advantage* in studying a *basic scientific question/part of something big*
5) You need *research leadership* (see item 3)