

## UNST 124g fall 2011

### *What drives change in human cultural systems?*

#### **Introduction**

We will watch a documentary about Claude Lorius, a French glaciologist who pioneered the use of ice cores for paleoclimate studies and has long championed international collaboration in scientific research. Lorius began his life's work as a glaciologist during the International Geophysical Year (IGY, July 1957 to December 1958), a period of intense, global geophysical observations that included the establishment of many remote scientific research stations. An important component of the IGY was international coordination and collaboration.

The IGY heralded a new era in scientific research. Geophysicists and others were beginning to appreciate the complex interactions among many components of the Earth system and they were interested in large observational campaigns that would provide the data needed to understand its interconnected processes. Every sphere of the planet was part of the observational plan, from the deep interior to the top of the atmosphere. Technological advances made over the prior few decades made this ambition seem reasonable and changed fundamentally the ways in which scientists were able to observe the Earth and Earth processes. Cosmic ray recorders, spectrometers, and radiosonde balloons opened the upper atmosphere to observation and electronic computers facilitated the analysis of the resulting large data sets. Gravimeters, magnetometers, and seismometers were used to probe the interior of the planet and to measure the thickness of the ice sheets in Greenland and Antarctica. Improvements in rocketry following WWII made space exploration more than science fiction and both the United States and Soviet Union sent artificial satellites into earth orbit. This was the first step toward the constellation of Earth-observing satellites that now allow us to study and monitor both geophysical and biological processes with a spatial and temporal comprehensiveness not possible from the ground alone.

#### **Assignment**

Toward the end of the documentary, Professor Lorius makes some strong assertions regarding human culture and environmental challenges. Evaluate his position using examples from *The Worst Hard Time* to support your analysis.

Recall that in an argumentative essay your task is to investigate a topic, establish a position on the topic in a concise way, and support your position using evidence. As always, citations to information sources are important. You may wish to review past assignments, where different essay types have been described, or the Purdue OWL presentation on this topic.

#### **References**

Egan, Timothy. (2006). *The Worst Hard Time: The Untold Story of Those Who Survived the Great American Dust Bowl*. New York: Houghton Mifflin.

Pont du Jour (Producer) and Chambenoit, K. (Director). (2007). *Man of the Glaciers: Antarctic Researcher Claude Lorius* [Motion picture]. French.