

Project Title:

Arctic carbonates, sandstones and volcanic rocks, Northern Axel Heiberg Island, Nunavut

Researchers names and affiliations:

Leader: Benoit Beauchamp, University of Calgary, Calgary, Alberta

Student: Anirudh Bhargava, University of Calgary, Calgary, Alberta

Student: Daniel Alonso Torres, University of Calgary, Calgary, Alberta

Project Location:

The study area is located north of Bukken Fiord on northern Axel Heiberg Island

Timeframe:

June 01, 2016 to August 01, 2016

Project Description:***Purpose:***

We will investigate different rock units of carbonate, sandstone and volcanic rocks that have recorded important interplay between large forces some 280 million years ago in the area now occupied by the Canadian Arctic. We will focus on an area of the Sverdrup Basin centered on northern Axel Heiberg Island, where this phenomenon is well displayed in outcrops.

Goals and objectives

The project will address four aspects of importance in the Sverdrup Basin:

1. **Carbonate units.** A focus of this project is to examine outcrops of large ancient reefs and surrounding rocks on Northern Axel Heiberg Island.
2. **Sandstone units.** A focus of this project is to examine outcrops of sandstones on Northern Axel Heiberg Island.
3. **Volcanic units.** A focus of this project is to examine outcrops of volcanic rocks on Northern Axel Heiberg Island.

Method of transportation:

Twin Otter transportation from Resolute Bay to Eureka or strips designated by PCSP.

Helicopter transportation to study area.

Walk from camp sites to outcrops.

Structures to be erected:

The research team consists only of three people. Only three temporary personal tents and a tent for storage and cooking will be erected at the different camp sites. We are planning three different camp sites.

Restoration/abandonment plans:

Each camp site will be restored to its original conditions. All garbage will be gathered and shipped back to Resolute.

Methodology:

Collection protocol and mechanism

About 50 small rock samples (less than 0.5 kg each) will be collected for geochemical and microscopic analysis. Samples will be collected with a geological hammer and will be catalogued and preserved in Calgary by the Geological Survey of Canada. No fossils will be collected.

Individuals selected for your research

The three individuals selected for our research are with the Department of Geoscience at the University of Calgary. The field leader is Professor Benoit Beauchamp,, who will be accompanied by his two graduate students, Daniel Alonso Torres and Anirbh Bhargava, who will be acquiring their field data in support of their ongoing MSc research.

Data:

Use of data:

In the short term, the data will be used in support of the work of the researchers and the graduate students. The data will then be published in peer-reviewed journals, after which it will be made publicly available through the GSC to anyone who wishes to use it.

Reporting

Five to ten peer-reviewed papers will result from this project. Report to the media and/or the communities will be provided upon request, including customized presentations, if there is an interest for our work.