

Nunavut Research Institute
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Non-Technical Summary Report

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In 2012, Brooke Milne (University of Manitoba) and Mostafa Fayek (University of Manitoba) organized field logistics to carry out helicopter and pedestrian foot survey in the interior of southern Baffin Island to explore the local geology and identify Palaeo-Eskimo sites. The objectives of this work were to sample bedrock outcrops to acquire raw chert samples for geochemical testing as part of a larger provenance study investigating the diversity and distribution of this toolstone on southern Baffin Island. Archaeological sites identified in proximity to these outcrops were to be tested as well to acquire chert debitage for geochemical analysis. Ultimately, the research aims to use chert toolstone as a proxy to investigate several culture-historical questions relating to Palaeo-Eskimo seasonal mobility, technological organization, culture change, and land use.

Unfortunately, unforeseen logistical issues prevented the execution of this fieldwork program in 2012. Alternatively, a limited geological and archaeological survey was undertaken near Koojese Inlet and the Sylvia Grinnell River outside of Iqaluit. Two days were spent surveying and mapping locations in these vicinities.

The geological survey found that formations in vicinity of Shaymark (KkDn-2) and Crystal II (KkDn-1) consist of rocks that are Paleoproterozoic in age, characterized by migmatitic gneisses, that range from granodiorite to quartz monzonite, with pegmatitic quartz-rich veins. These veins may be the source for the crystalline quartz that is found among archaeological sites in the area. Perhaps of greatest interest to our project is the fact that no evidence for the Proterozoic and younger siliciclastic and carbonate rocks of the Penrhyn Group on the southern Melville Peninsula, and their along-strike correlatives of the Piling Group (central Baffin Island) were found in the surveyed areas near Iqaluit. This means that there are no naturally occurring sources of chert in this immediate area and that the chert artifacts found at large sites like Shaymark and Crystal II must have been brought in from non-local sources.

The archaeological survey found a small assemblage of Pre-Dorset artifacts scattered along a raised ridge just above the Crystal II site. The linear extent of these artifacts is approximately 77 meters. Diagnostic types include two burin spalls, a broken burin tip, a crystal-quartz microblade core, and numerous chert and crystal-quartz flakes. The occurrence of these artifacts indicates an earlier Palaeo-Eskimo component at this famous site exists.

An artifact analysis will be conducted on the stone tools collected from Crystal II in 2013 to understand how they were made and used at the site. Plans are underway to carry out in 2013 the fieldwork that was originally scheduled in 2012. This will allow the research team to collect chert samples for testing and to identify potential source areas in the island's interior.



Picture 1. Dr. Mostafa Fayek (Geological Sciences, University of Manitoba) and MA Graduate Student, David Landry (Anthropology, University of Manitoba) investigate rock formations near the Crystal II site (KkDn-1), Baffin Island Nunavut.



Picture 2. Crystal-quartz microblade core found on the surface near Crystal II (KkDn-1), Baffin Island, NU.