PROJECT SUMMARY REPORT - 2016 AMUNDSEN CAMPAIGN

Subproject: Carbonate Chemistry of waters in Baffin Bay

Actual field dates: June 3-July 14, 2016
Field site: Baffin Bay
Number of man-days in the field: 41

Summary:

The goal of this research project is to provide an update to the scientific community on the carbonate chemistry of waters in Baffin Bay. We are interested in how quickly the process of ocean acidification may be advancing in these waters, and so we plan to collect water samples for the overall determination of the carbonate system.

We successfully collected full depth profiles of water samples at 8 stations across a transect of Baffin Bay. The data resulting from the analysis of these water samples will allow us to fully determine the carbonate system parameters of different water masses present within Baffin Bay, and determine where ocean acidification is occurring more rapidly. We also collected continuous data of the partial pressure of carbon dioxide (pCO_2) within surface waters of Baffin Bay, using an underway system located in the engine room of CCGS Amundsen. This data combined with measurements of in-situ wind speed will be used to calculate air-sea transfer rates of CO_2.

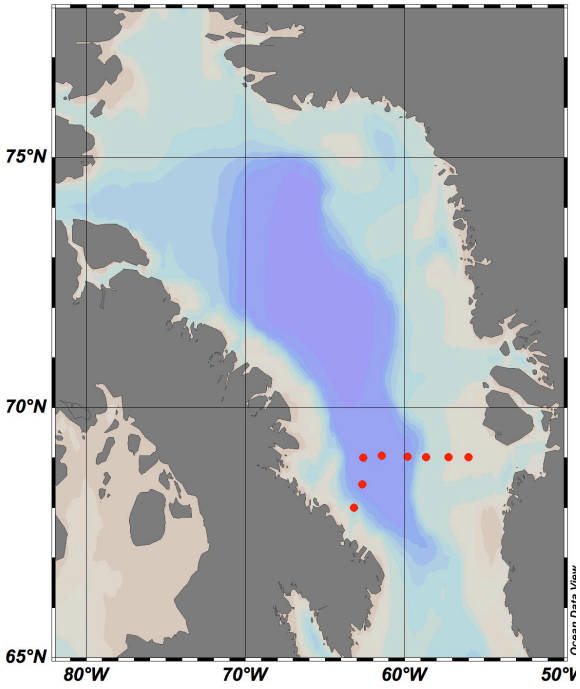

Figure 1

Photos:

Fig.1: Rosette Sampling Stations in Baffin Bay. Credit: Tonya Burgers
Fig.2: Tonya labeling seawater sampling bottles.
Credit:Sharif Mirshak (Parafilms)

Figure 2

Participants:

Dr. Tim Papakyriakou (CEOS), Tonya Burgers (CEOS)

Acknowledgements:

ArcticNet, GreenEdge, Northern Scientific Training Program (NSTP), and Natural Science and Engineering Research Council (NSERC) of Canada.