

Diary 2 - 29 April 2014

After two weeks of glaciological fieldwork up on A. P. Olsen Ice Cap, our group of four, Geo from the Institute of Geodesy and Photogrammetry (ETH, Zurich), Daniel from the Central Institute for Meteorology and Geodynamics (ZAMG, Vienna) and Michele and Babis from the Geological Survey of Denmark and Greenland (GEUS, Copenhagen), successfully completed all scheduled tasks and performed maintenance on all GPS and automatic weather stations (AWSs) on the Ice Cap. Geo and Daniel focused on retrieving the GPS data since April 2013 and replacing all the solar panels to achieve optimum performance for next melt season. A new GPS station was established in the vicinity of the 'Milwaukee lake', an ice-damped lake, that drained last time during 2013 melt season and the event was recorded by means of GPS and seismic sensors. Additionally, photos from a camera at the proglacial area captured the magnitude of the outburst and also the time that the water propagated englacially from the lake to the terminus of the glacier.



Fieldwork at the 'Argo Glacier'. Photo: Geo Boffi.

The Danish group focused on the local AWSs that have been operating along the flowline of the 'Argo glacier' since 2008, and are financed by GlacioBasis project. Last year's data were retrieved and the sensors were replaced by newly calibrated ones. Snow pits close to the AWSs revealed a winter season of unusually high accumulation for the area. Radar tracks gave a wider perspective to the snow pit measurements and snow stereophotography from the summit to the terminus should quantify the surface roughness of the glacier.

A one-day trip to the Freya glacier in the Clavering Island completed the glaciological survey. Geo and Daniel after climbing the steep glacial tongue with skilled ski-doing, managed to visit and salvage the lost AWS that was almost completely covered with snow.

Besides the glaciologists, GeoBasis has also been active with Maria and Magnus revisiting the local permafrost sensors and evaluating the frost levels before the summer season begins. Maria will stay



Arctic hare at Zackenberg. Photo: Geo Boffi.

at Zackenberg ZERO station until the beginning of June and will witness the beginning of water flow along the frozen Zackenberg river. Another team from Aarhus University and CIRES, Colorado University – Stine and Glen – completed more than a month of fieldwork measuring snow densities in various proglacial areas that will be used to validate energy balance and snow model output.



Sunset at Zackenberg. Photo: Geo Boffi.

Besides the science, our group had the chance to enjoy creative food by making turns in the kitchen and nice relaxing time during the evening with nice cognac and chatting until late. Of course, everything was possible with the restless support of Jørgen who was able to make the ski-doo's behave every morning. Tomorrow, the plane will take us to Constable Point and afterwards to Akureyri, Island. Maria and Jørgen will stay in the ZERO station and will soon welcome the next science groups that operate in the region.

Babis Charalampidis (GEUS)