

Diary 18 – 31 August 2014

As this year's summer season reached its end, the Austrian Weather Service (ZAMG) and the Geological Survey of Denmark and Greenland (GEUS) joined forces on a two-man mission to retrieve the summer mass budgets and all new data from the weather stations and sensors that operate on Freya Glacier and the A. P. Olsen Ice Cap. The alpine and ice sheet glaciologists Daniel Binder (ZAMG) and Babis Charalampidis (GEUS) embarked on the 15th of August from the ZERO station on what was proven to be more an adventure than conventional glaciological fieldwork.

An afternoon boat ride dropped the two at the entry of Skilledal, Clavering Island, where a base camp was set. The following day, the ascent towards Freya began with all necessary equipment, bivouac sacks and supplies for two plus two days strapped on the backpacks. The conditions were completely different from expected as the accumulation was above average during the past winter and there was still continuous thick snow cover at the surface making every footstep a difficult task. A relatively clear spot on the side-moraine at the higher part of the glacier provided excellent shelter for spending the two planned nights with good protection from the active nighttime katabatic wind. The next two days were spent maintaining the local weather station, cameras and ablation stakes. Snow-probing at several locations while descending from the top of the glacier towards the margin gave the spatial distribution of the still present snow cover. Also, at the lower part of the glacier the team established an experimental autonomous sonic ranger that should provide continuous monitoring of the surface elevation changes during the new hydrological year.

After all the work at Freya, three days were spent at ZERO station to regain strength and prepare for the bigger and more demanding survey of the A. P. Olsen Ice Cap. In the morning of the 23rd of August the two were dropped again by boat at Tyrolerfjord, at the coast southwest of Zackenberg to begin an estimated 12-hour hike towards A. P. Olsen. The weather conditions at that time, although not preventing the hike, were indicating a somewhat wet day with sparse rainfall and low cloud cover. The reality was finally quite different since 8 hours later and 3 hours after the crossing of the river in Store Sødal, a strong storm forced the glaciologists to set camp within the glacier valley, some eight kilometers away from the ice cap margin. The unexpected weather conditions had also unexpected long duration since the team was forced inside the tent, waiting out the storm for four days in a row. As supplies were enough for six plus two days, there was no real worry other than drying and keeping dry all clothes and equipment that got wet during the outbreak of the storm. The time inside the tent was spent with regular two-hour naps and frequent coffee consumption. The spirit of the team remained high, with good humor towards the situation, but also without underestimating the dangers that camping in this region for too long included. A bit of cognac in the evenings was gladly consumed under the sounds of evening discussions and the persistent valley wind. On the noon of the 27th, the last clouds and rain drops gave way to a bright and blue sky allowing for completing the last part of the hike towards the margin of A. P. Olsen. The storm brought solid precipitation on the surface of the Argo glacier, resulting already in an average snow cover of about half a meter.

Since four days were spent in the tent, the remaining supplies were enough for two days of glaciological survey without including the emergency supplies. The team prioritized the inspection of the ablation stakes for the GlacioBasis project as well as retrieval of GPS data and the pick-up of the seismic sensors that were established three years ago. The last part of the survey included a descent into the bottom of the recently drained ice-dammed lake where ZAMG installed a pressure sensor in spring 2013. On Saturday the 30th, at around 13:00 the two began the long

and exhausting hike back to Tyrolerfjord was Kenny and Lau would meet those 12 hours later and bring them back to ZERO station.

While the glaciologists were away on their trip, the rest at Zackenberg remained active on their respective tasks. Lau carried on the research of the GeoBasis monitoring programme and managed to intensively monitor the flood wave of the glacial lake outburst on the 17th of August, which are drains into the Zackenberg River and consequently directly passing the ZERO station. The BioBasis monitoring program was run by Lars and Palle. Palle continued the monitoring of lemmings and Lars was focusing beside on the musk oxen. Erik continued his airborne surveys of the region with daily drone flights and - last, but not least - Kenny made sure that the station remained in order as well as assisting the glaciologists with their undertaking.

Babis Charalampidis (GEUS) and Daniel Binder (ZAMG)



Figure 1 Bivouac at the side moraine of the Freya Glacier. Photo: Daniel Binder and Babis Charalampidis.

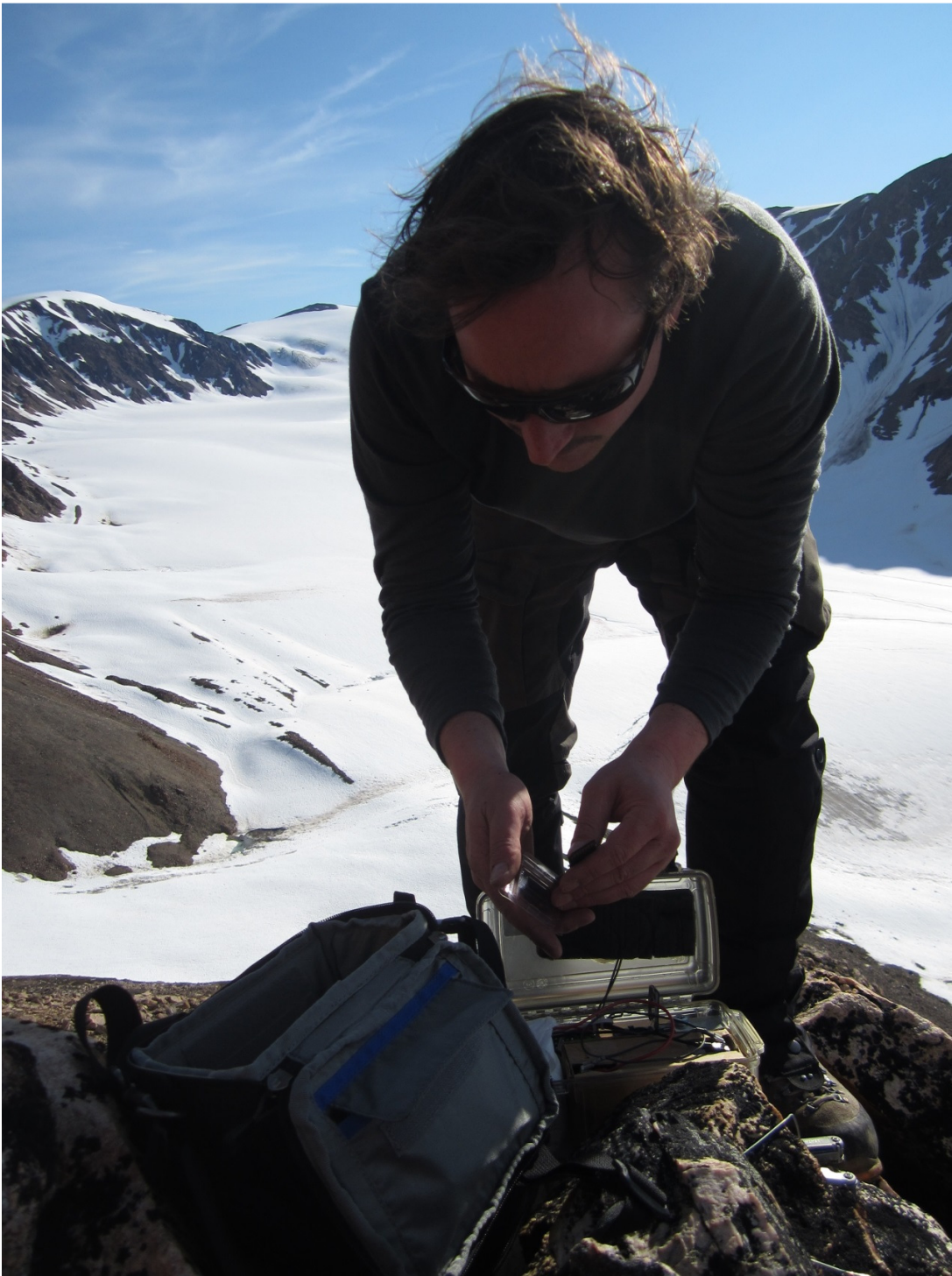


Figure 2: Getting the data of the automated camera. Photo: Daniel Binder and Babis Charalampidis.



Figure 3: Stuck in the tent. Photo: Daniel Binder and Babis Charalampidis.



Figure 4: Fieldwork completed. Photo: Daniel Binder and Babis Charalampidis.

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