

## Diary 12 – 14 July 2014

It is my first stay here in northeast Greenland at the Zackenberg station and I just can repeat what many week-letter-writers before me stated: it is a very beautiful place! The station, the staff and the instrumentation makes it easy and enjoyable to work here at Zackenberg - what a good experience!

Nils and I are collecting ground truth reference data for the analysis of satellite images as part of an INTERACT project of Jennifer Sobiech from Alfred Wegener Institute. Therefore, we do not use the images you know from Google Earth. We work with radar data (SAR): In opposite to satellites taking optical images the satellites we use (TerraSAR-X & TanDEM-X) actively send microwaves to the earth's surface and record the backscattered signal with a high spatial resolution (less than two meters). These kinds of images look very different from a normal optical "photo" and it is quite hard to evaluate what the microwaves are sensitive for. That is why we are here and why we measure the moisture of the soil, document the land cover and quantify the surface roughness ("micro-topography") using stereo-images. Beside the data, we collect our own we will use data from the ZERO monitoring program – great to have something like this. Nice thing about the radar instrument is that it can take images through clouds and fog and we already got the good news from the German Aerospace Centre that some radar images of our sites of study were acquired contemporaneous to our fieldwork. Back home we will do an analysis and compare the ground reference with the signal of the satellite images. One day we hope to come up with a remote and area-wide estimation of moisture conditions, land cover and/or biomass – let see, it is still a long way.

Therefore, I want to give you some insights on what was going on during the last days: Christine, Laura, Kenny, Nils and me had the chance to go up on the top of the Zackenberg Mountain on a nice and sunny day. The hike was fun and the great view on the Olsen Icecap, the Young Sund, Lindeman Fjord, the glaciers and rivers and the valley was worth all efforts - beautiful! We also made some good pictures for our work. While doing this Laura and Christine maintained some of the instruments up there and Kenny did set up a new boulder problem at the rock called "The Dancefloor". This one might be the most northern boulder problem on Greenland!

On Tuesday (plane day) and we had to say goodbye to Sandy, Tenna, Lena and Jannie. We are now free to talk about the results of the Football World Cup (Sandy was recoding the games to watch them back home). The plane also brought new people and we welcomed Tim and Kathryn. They will work on the sediments and the glacier deposits in the valley. They began their week with a very long hike – more than 40 kilometres, what a start – and they really seem to be in shape for this kind of work!

The others are doing fine, as far as I can judge: Catherine and Simon still have to carry their heavy bag backs every day. They also made some intense experience with their object of study – at least one of them. The bird team (Michelle, Moray, Jeroen, Tom) work hard on catching one of the birds carrying a geo-locater. Even though they spent the whole night, the bird avoided the trap and flew away – a sad day. However, I am very sure they will make it soon and catch it. Cross fingers! Lars, Jannik, Palle, Mikko, Laura (2x) and Christine are out every day doing their work, meanwhile Dina, Mikhail, Jørn and Kenny take care of the station, instruments and that everyone gets something to eat after a long day in the field. As you see - it seems that everything is going the normal way and at least for my part I can say I am happy to be here at Zackenberg!

Some great news as well: summer has finally arrived! The weather has turned and after some days of fog and clouds, we had now nice and sunny conditions. The snow is melting, vegetation is greening and we saw the first cotton grass down in the valley. On last Saturday temperature was up to more than ten degree (Celsius) and it was a perfect day to sit together

a celebrate Jannik's and Michal's tenth anniversary at the Zackenberg research station. Because of this event, a very curious polar fox did join our little party; it is very likely the one that has been living under one of the houses in winter (see earlier week letter).

On this Monday, we will welcome new researchers and some important guests and it will get a bit crowded here for one day until the next plane - hopefully - arrives on Tuesday. This one will bring us back home to Germany and it is on us to say goodbye. I hope to come back soon (but not in the winter) to this nice place in northeast Greenland.

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