

Antarctic Expedition: SANAE Adventures

MISSION: GAIN THE MOST GROUND SLIDING ON BLUE ICE

But what did we really do at SANAE? We surveyed the blockfield on the Northern Buttress of Vesles (the site for my MSc), took Ski-Doo rides to Robertskollen and Lorentzenpiggen to measure tafoni and took helicopter rides to Flarjuven to download a data logger, Valterkulten to collect more tafoni data as well as to observe a brine lake (yes, a **LAKE** in the Antarctic, no kidding) and Troll, the Norwegian station to download another data logger. Of all the study sites, with the exception of the Northern Buttress, Lorentzenpiggen was the closest. Our day started at 4am and by 6am we had traversed the 7km to 'Piggen' and were ready to measure tafoni (honeycomb weathering on rocks). But by 8am the weather had gotten so terrible that fingers went numb, snow goggles wouldn't de-fog and even our field assistant and member of S49 (the old overwintering crew) was getting uncomfortable. So we sped through our sampling whilst still maintaining the required diligence and accuracy (difficult to do when you can't feel your toes or finger tips), drove over the ice plain back to Vesles (when my Ski-Doo started making ominous noises) and were flabbergasted when the weather at SANAE was warm and beautiful! Who would have thought that 7km could make such a difference?



Figure 1: Coffee break at Lorentzenpiggen.



Figure 2: Walking on ice.



Figure 3: Robertskollen.



Figure 4: New Years Day: the oceanographer's handiwork on show...



Figure 5: Ski-Doo and geo sled on the way to Robertskollen.

Figure 6: Preparing for a day of sampling at Robertskollen.

Robertskollen at 25km away proved another challenge as we had to traverse one (known) crevasse but undoubtedly also drove over many more unknowingly... In any case, this is a well-known crevasse and quite deep, although how deep is not known. Mike (colleague) and Etienne (S49 member) were 'volunteered' to probe the depth of the snow bridge that formed over the crevasse. When it was deemed safe we all got on our Ski-Doos and carefully drove over the crevasse to the safety of the other side. Robertskollen, another tafoni site, is also an icy wonder and our snow boots and crampons were put to good use. This site is also exceptional as it is home to at least (as we counted) 9 species of lichen (not all pretty to look at – some rocks actually looked as if they had gangrene) and we spent a fairly warm, productive and (more or less) relaxing day here. The 4am starts started to look like a good idea as we were home at SANAE by the early afternoon, having had another good day in the field.



Figure 7: Inspecting the northern wind scoop at Robertskollen.

Figure 8: Lichen (one of many species) at Robertskollen.

But not all trips were done by Ski-Doo. The trusted Titan helicopter crew were our willing taxi-fliers by flying us not only to Valterkulten and Flarjuven but also to Troll. Troll is the Norwegian research station more than 1 ½ hours away by helicopter ride and to get there we had to cross the Jultustraumen, the second largest continental glacier in the world (the largest one is also located in the Antarctic, go figure). This glacier is so humongous the helicopter (for this trip the B-212) could have easily fit whole into one of its crevasses. It is a monster, a titan of ice, slowly and inexorably making its way to the coast hundreds of kilometres away and any other method but flight would have made traversing this area too dangerous.

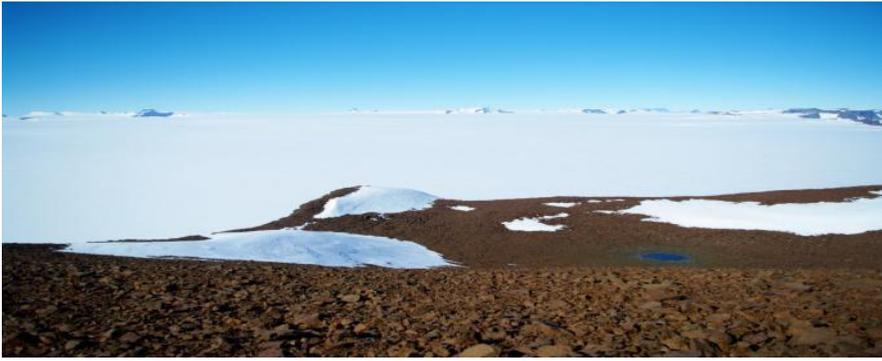


Figure 9: Valterkulten



Figure 10: Jutulstraumen glacier.

Troll is the site of the Antarctic International Airport and has a runway made of blue ice with a thin layer of snow overlying it. The construction was done with a laser that cut the ice to a smooth runway and at places this ice is 1.2km deep, although the average depth is more between 300-500m. Impressive indeed! Our reason to visit Troll was to download a data logger (like the one at Vesles) that measures active layer and permafrost temperatures. This is part of a larger and international project to study the effect that climate change has on these layers as many Northern Hemisphere countries (such as those of Scandinavia) actually use permafrost as the foundation for their buildings. Understandably they are a bit worried that the warming climate might make all their cities fall down on them, allowing us (the South Africans) to travel to Troll 😊!



Figure 11: The international 'passenger lounge' at Troll.



Figure 12: Runway at Troll.



Figure 13: Ilyushin plane.



Figure 14: Directions to various locations on the globe from Troll.

But we didn't just jump into the deep end and go adventuring without the proper training and preparation. First order of business was Ski-Doo training (again to the envy of everyone there as the 'Geos', as we were known, got to do this first **HAI!**), which proved quite entertaining. The initial sliding and stuttering over the ice quickly progressed to donuts and races down the ice road (of course at no more than the Environmental Affairs prescribed maximum speed of 40km/h). This was then followed by mountain climbing training in the hangar (for members of S50 – we had already completed our mountain climbing training in Pretoria) and by hazardous terrain traversal and crampon training at Klein Bergie. Here we were introduced to the use of ice axes, arresting our fall down a steep icy slope, trudging up that same slope using crampons (**HARD** work!), pulleys and all other kinds of mountaineering techniques.

The stay at SANAE was also not just work but also play 😊. The DOC of the trip allowed some of the oceanographers from the SA Agulhas to spend New Years at SANAE and again (another group of oceanographers) for the Take-Over party. New Years offered a unique opportunity for the old overwintering crew to get to know everyone else. Needless to say it was a day (as the sun didn't set...) of great fun, starting off with chilling in the games room and bar, progressing to dancing and singing and ending with those still up saluting the new year on the top of the roof. On New Years Day some of us also got to go to the wind scoop, a journey app. 45 minutes away on Ski-Doos. Here we got to see the wonders of Crystal Palace: bubbles caught in blue ice, icicles, snow overhangs that looked like ice cream cones or cotton wool, numerous 'Bergschrunds' (mountain crevasses) and even a section of ice that looked like someone had graded the ice and taken great pains to create a 50m long road – bizarre.



Figures 15-17: Crystal Palace.

Then there were the Take-Over Games, a time for soccer, tug-of-war and boot throwing. Faithful Oom Koos of the caterpillar crew graded the parking area on the edge of the cliff for days beforehand, teams were consolidated and strategies fine-tuned. Finally the day arrived to show our respective athletic skills or, if you were so inclined, photographic and cheerleading skills. In soccer the Titan crew was soundly

beaten by the Scientists, S49 beat Department of Public Works, S50 beat S49 and finally Department of Environmental Affairs, to our chagrin, beat the Scientists. The tug-of-war showcased the superior strength of the caterpillar and helicopter crews and the boot throwing competition showed the surprising strength of a little pipsqueak of a man, who ended up 3rd. Who would have thought?



Figure 18: Take-over games: soccer.



Figure 19: Tug-of-war.

The Take-Over function was also quite a big event as it is the official handing over of the base to the new overwintering team. The dining room was kitted out in fancy tablecloths and the cutlery was polished (as much as stainless steel can be polished), crew members got dressed in their poshest clothing (which didn't mean much), speeches were held and awards handed over. This was, as per usual, accompanied by a 5 course mouth-watering meal and delightful wines. Snow baths had for those whose birthday fell in the time of the Take-Over, the RADAR system explained to me and pretty much every nook and cranny of the base explored.



Figure 20: Boot throwing competition.



Figure 21: The in-vain search for the elusive iButton.

But in the end even my time at SANAE had to come to an end. After having been in the field almost every day, having had field assistants that included a historian, S49 members, oceanographers and fellow Geos, having traversed countless kilometres of razor sharp rocks and fields of ice, a multitude of helicopter and Ski-Doo rides, twice falling on my knees so I can still hear the crunching when I walk now, slipping on the

ice more than can be counted (to the merriment of others), having my study site first snowed in and then becoming a mini-hotspot when the weather became uncharacteristically warm (at around -1°C), planting iButtons to collect data, not finding one, using a metal detector to discover its location and **STILL** not finding it and finally resorting to just having fun with a metal detector in the Antarctic (how could we not?), stressing, being extremely puzzled, exhausted sleep and made many new friends the time had come to pack our bags. When we were told that we would fly the next day due to bad weather coming in (having thought we had at least a week left) the base became a hive of elevated activity. One after one the helicopter loads left, the base became like a ghost town and the remainder of us (*app.* 20) got to spend our last day at SANAE seeing the first sunset of the year – a truly magical event, giving a fitting closure to my time on the Antarctic continent. So the time had come to head back to the SA Agulhas, newly returned from her trip in the Atlantic, the Sandwich Islands and South Georgia and (again) our home for the next 3 weeks.



Figure 22: Our first sunset of the year.

TO BE CONTINUED...

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