ON THE MOVE



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This past week saw a lot of movement and travel across the ice sheet, as many scientists headed out into the field to carry out their research.

This past Monday, Sibylle Boxho from the Université Libre de Bruxelles (ULB) working on the PASPARTOUT project left in the direction of the coast with IPF field guide Manu Poudelet in one of the station's modified Toyota Hiluxes. They are spending about 10 days in the vicinity of the L0 ice rise. Here Sibylle will be digging a two-metre deep trench in the snow to take snow samples at various depths. Back in Brussels these snow samples will be analyzed to determine which kind of particles are present. This will help to determine atmospheric circulation patters that persist and are driven to the frozen continent of Antarctica. The analysis and the particles that are present will also help to determine from where these air masses originated before being driven south, for example do they come from Africa or another, more far off continent.

They will dig two pits, one to the west and one to the east of the summit of the L0 ice rise. The deeper depths of the snow pits will encapsulate the older particles, such as dust, with the top layer of the snow pit being the freshest and newest deposits, from the past year. Therefore a deep snow pit is required to be able to look back and have particles to analyze from multiple years, which would in turn allow the possibility to track any changes that have taken place to circulation patterns bringing air to the Antarctic continent, which would be another example of climate change.

After a few successful weeks of testing the snow auto sampler at the PEA, the instrument was taken down, loaded up and re-installed this past Friday at the same location that Sibylle had dug one of her snow pits. This instrument will stay at this location, roughly 20km from the end of the ice shelf and open water. This instrument is programmed to turn every 3 months, capturing and retaining snow from each season which will also be analyzed for the particles contained within the captured snow.

On Tuesday, Valentina, Björn and Quentin from the ExPoSoils project headed to the Dry Valleys with IPF engineer Nico to set up the HYPSTAR radiometer, which will measure solar radiance at the site over the next few weeks. At the same time, Valentina and Björn took microbial samples from the exposed soil and rock, after they had carefully removed the snow from the snow fence that had been installed during a previous campaign. The team plans on visiting more sites and will also be installing cameras at multiple locations to shoot time-lapses of the sites and track the changes/growth taking place on the exposed soil and rocks over the next year.

Wednesday and Thursday saw a mass exodus of scientists, IPF crew as well as the four-person film crew lead by Eric Goens from the station. This included a number of different research groups heading out into the deep field. The majority of people spent the first night at Perseus airfield before splitting off in various directions the next morning. The film crew was a part of the slow-crawling Prinoth traverse team. They plan to visit a number of the research sites to document the various projects taking place.

World-renowned glaciologist Eric Rignot from UC Irvine also left separately for the coast on Thursday with Christophe, another polar field guide. He and Christophe will take several radar transects of the bedrock topography of the grounding line at the King Baudoin Ice Shelf by dragging a radar apparatus mounted on top of sledges that had been specially constructed for this task by IPF engineer Nico. Additionally, Brandon Von Schalk from the EPFL in Switzerland offered to lend a helping hand and accompanied Eric to run the radar, because his instruments at PEA were running well and having more people means more time on the snowmobile, which translates to more radar measurements!

On Wednesday Simon and Nico, accompanied by fellow IPF systech engineer Aymar departed in another specially outfitted Toyota Hilux to service two automatic weather stations in the PEACE project AWS transect. The project is switching over to using Iridium antennas to send raw data to servers in France, after which the data is turned into usable weather data products which are currently used for weather forecasting as well as inputs for regional climate models. However, more importantly these automatic weather stations allow for long term monitoring of the ice sheet and provide a benchmark going forward to track any changes that are taking place in this region of East Antarctica.

On Friday, January 26th, two members of the CHINARE expedition as well as three members of the Ken Boreck flight crew departed after spending five days at PEA, using the station as a base for taking measurements of the nearby ice shelves for the international RINGS project. They arrived and departed in their specially outfitted Snow Eagle DC-3 aircraft. This research aircraft has state-of-the-art instruments to measure all things related to ice thickness and mass, including a highly accurate and sensitive gravity-meter. This instrument allows them to track changes to ice mass along the ice edges by flying the same route on separate campaigns and being able to compare and contrast the data from different years and accurately see the changes taking place along the ice shelves. Our Chinese visitors left behind several gifts, including special Chinese spirits and various Chinese foods and snacks for their Belgian hosts, which were very much appreciated!

Expedition leader Alain Hubert started his journey to the coast on Wednesday along with two members of the IPF crew, Yann and Tim, and the film crew. Alain split off from the group to take snow depth measurements along a transect to the coast that he does every year for the TIMBER project led by the

University of Grenoble. When that was completed he rendezvoused with the rest of the team close to the coast to pick up the last of the cargo the ship had dropped off a few weeks ago. Tim and Yann then headed back to PEA while Alain took the film crew over to the King Baudouin Ice Shelf to get some footage of Eric Rignot running his radar measurements and talk all things polar science!

Enjoying the station's upgraded facilities

It has now been more than a week since the new water treatment system has gone online and thanks to our engineers and plumbers, it is working perfectly. No hiccups or backups to report!
Every now and again, Aymar takes samples of the wastewater to see how well the new system is working. As no issues have been found, station residents can simply enjoy the station's upgraded facilities.

Having an upgraded water treatment system has allowed additional toilets and facilities to be installed in the station's annexes, where many of the station's personal and guests are sleeping, especially when the station is close to maximum capacity. Having additional facilities makes everyone's morning routine a lot easier, especially when the station has a lot of guests!
Stay tuned, as we will have more updates on the scientists and the research they are conducting out in the field this week.

Live from Antarctica!

Don't forget that this coming Wednesday, January 31st, there will be a special virtual webinar hosted by the University of Colorado Boulder in coordination with a number of other partners. The talk will begin at 7pm Central European Time (UTC + 1) and is scheduled to be 1.5 hours long. We will present the renewable energy production at the Princess Elisabeth Antarctica research station and the scientists will talk about the research they have been carrying out this year. Registration for the event is free and open to anyone that is interested and eager to learn!

Make sure to register for the live event to reserve your virtual seat in Antarctica!