FIELD CAMPAIGNS CONTINUE AS MORE SCIENTISTS AND CREW ARRIVE

Ongoing field campaigns

The BELSPO-funded FROID and ULTIMO projects continued their field work this past week. At the Niels Larsen Blue Ice Field, members of the FROID team managed to drill several shallow ice cores, which are test runs for the deeper cores they plan to drill next season, when they hope to reach million-year old ice close to the elevated bedrock close to the Sør Rondane Mountains.

Meanwhile, the ULTIMO project has been able to collect several meteorites during their field trip, in spite of logistical difficulties. Initially the team had been stuck about 100 km from their ultimate destination, Mont Belgica, due to the large number of crevasses that the traverse team lead by Alain Hubert encountered along the way. However, thanks to logistical support from members of the Swida RINGS project led by Frederick Paulsen, which is examining the retreat of outlet glaciers in Antarctica. The Swida RINGS group initially had planned to stay at PEA for one night. But since they ended up staying for six days due to inclement weather where they wanted to go, they offered their support in lending one of their twin-otter planes to assist the ULTIMO project by flying the scientists and their equipment, including 6 snow mobiles up to Mont Belgica. For the next several weeks the team will continue to collect meteorites that can offer clues about the

origins of the solar system; they are scheduled to be flown back to PEA on January 3rd..

Meanwhile, the IPF team continued to offer logistical support to AWI's Polar 6 plane as it continues to take aerial surveys of the ice margin at the coast of the Queen Maud Land for the Scientific Committee on Antarctic Research's international RINGS project. They only have a few more transects to do before they head back to Norway's Troll station several hundred kilometres away. Some technical difficulties have hampered their progress, but the IPF team has been available to help in any way they can to make sure they can finish the job.

Skidooing to King Baudouin Ice Shelf

Before heading back to Belgium, systems engineer Nico Herinckx along with Simon Steffen travelled 200 kilometers (oneway) on skidoo to service an automatic weather station that had been set up last year for UC Irvine glaciologist Eric Rignot as part of the greater NISAR project. The main objective was to replace the data logger to ensure the SBD iridium modem could transmit the data to polar orbiting satellites which ensures that the data can be viewed remotely throughout the year.

Eric will arrive in mid-January to continue studying to what extent warming water and ocean circulation beneath an ice shelf contributes to its melt. The plan is to monitor weather conditions above the ice shelf, as well as drill a hole through the ice shelf and send an unmanned robotic vehicle underneath it to measure parameters such as temperature and salinity. Most of the melt an ice shelf experiences comes from below, not on the surface. But we'll tell you more about this project once Eric arrives in a few weeks!

Later this week Simon will head back to the coast at the L0 Ice Rise to set up infrastructure for the PASPARTOUT project. Paula Lampreda from UGent is also returning to the station in January and hopes to install a volatile organic compound collector at L0 to study the origin of certain atmospheric particles that arrive in Antarctica and atmospheric circulation patterns in the Southern Hemisphere. It will be in the same area where her colleague from the ULB Sibylle Boxho dug a snow pit to collect atmospheric particle samples in ice layers going back several decades.

A surprise visit

On December 18th, the Princess Elisabeth Antarctica was treated to a surprise stop to refuel by members of the CHINARE expedition who were rotating out after their stay at Zhongshan station. While their plane was refueling, the CHINARE team members visited PEA and met with BELARE team leader Alain Hubert, who gave them a warm welcome. The CHINARE team then went on to take a flight to Ultima Air Base where they boarded their connecting flight back to Cape Town.

Fresh faces

The Princess Elisabeth Antarctica saw its first crew rotation on Friday, December 20th, as our all around superstar, systems engineer Nicolas Herinckx left and was replaced by Benoit Hellebuyck. Two other IPF team members that will stay until the end of the season also arrived, Laurens Gonzalez and Mathieu Chable .

Scientists from two additional projects also arrived. The first group of scientists are from the Royal Meteorological Institute of Belgium for the GEOMAG project, which has been studying Earth's geomagnetic field at the Princess Elisabeth Antarctica with instruments that have been installed in a special non-magnetic shelter a few hundred metres from the station and has been in operation since 2015.

During this season the GEOMAG teams also will head out to the site of the old King Baudoin station Belgium built in the late 1950s to take geomagnetic measurements in the same location the scientific teams from the BELARE expeditions from the 1960s took them to compare how Earth's geomagnetic field on those locations have changed over the last 60 years. BELARE team leader Alain Hubert will accompany these scientists as they head out to the King Baudouin Ice shelf to provide logistical support.

The other batch of new scientists that arrived from the EPFL in Lausanne, Switzerland, will work on the CRYOS project. This project has been running for almost a decade at PEA, tracking ice particles in the atmosphere to determine how much snow lands on the ground and contributes to growing the ice sheet, how many ice particles are blown away, how many sublime back into water vapour, and at what height above the surface different key processes happen.

Several instruments installed at PEA and serviced regularly by IPF staff (when scientists have not been able to travel to Antarctica) have been collecting long-term data. These data will contribute to a greater understanding of the surface mass balance of the Antarctic Ice Sheet.

Once they complete the requisite safety and field training all newcomers must undergo, they will get to work on their respective projects.