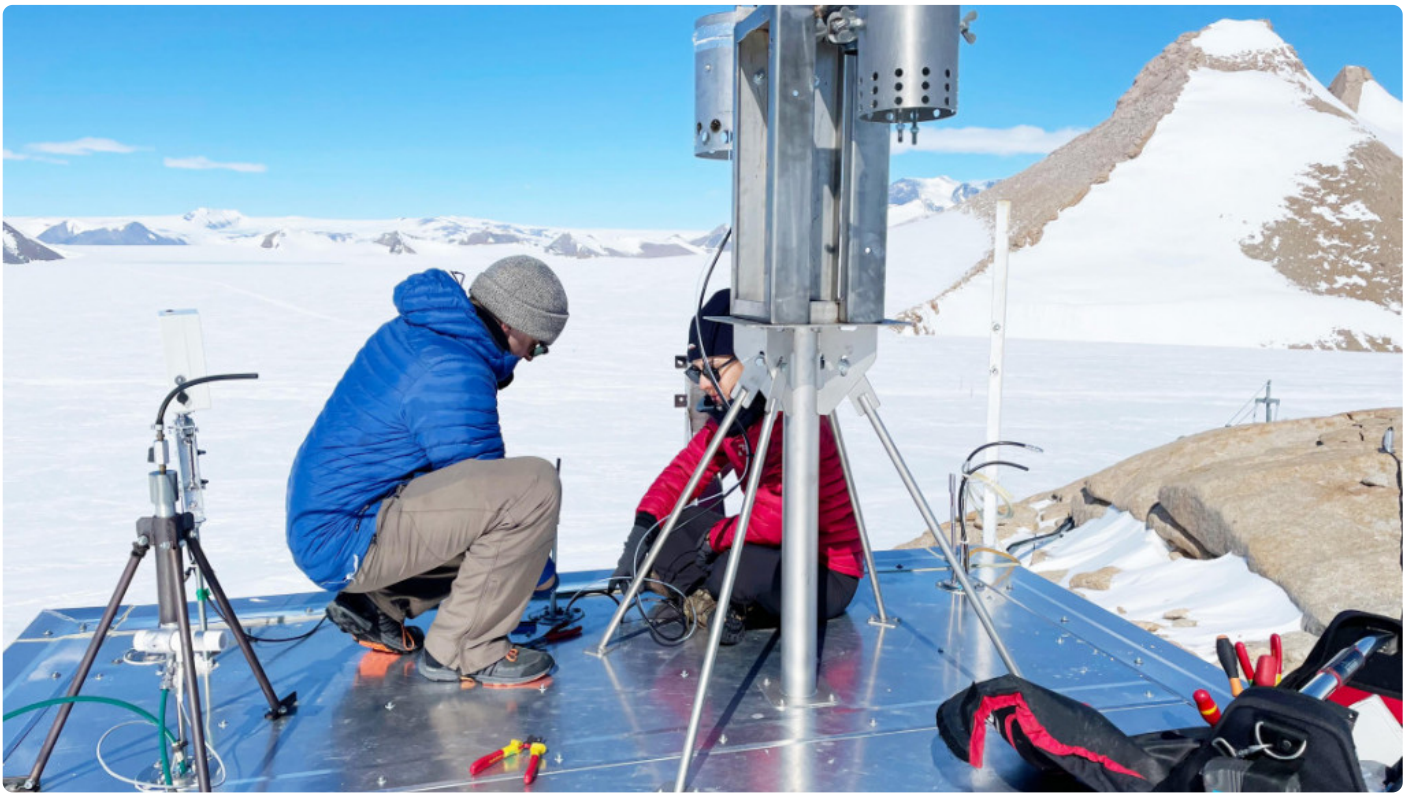
NEW YEAR, SAME UNWAVERING SUPPORT FOR SCIENCE



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Aside from a small New Year’s celebration for those who were at the Princess Elisabeth Antarctica (PEA), the scientists and crew have been working hard supporting science projects, managing logistics in prevision of the ship arriving next week, as well as maintaining and improving the station’s infrastructure.

Scientific work ramps up

The team from the PASPARTOUT project has installed an active sampler for volatile organic compounds (VOCs) on top of the southern shelter as well as a passive particle sampler. These samplers installed by Paula Lamprea Pineda from Ghent University (UGent) will run at the Princess Elisabeth station for a year and then be installed at the coast during BELARE 24-25 campaign. Sibylle Boxho from the Université Libre de Bruxelles (ULB) installed a snow sampler in the vicinity of PEA to ensure everything is running correctly before the instrument is relocated to the Princess Ragnhild Coast later this month with the assistance from IPF field guide Manu Poudelet and engineer Nicolas Herinckx who has built a mobile power unit for that purpose.

After installing and testing the HYPSTAR radiometer by the PEA airfield as well as two SKYCAMS on top of the scientific shelters, Quentin Vanhellemont from the Royal Belgian Institute of Natural Sciences (RBINS) is now testing the energy consumption of the HYPSTAR to better monitor its energy needs. This is

necessary because the instrument will be temporarily installed at two different remote sites (Yuboku valley and on the Ketlersbreen Glacier's dry valley) this season to measure solar reflectance from the surface of rocky terrain.

After their scheduled arrival on January 11th, Quentin's ExPoSoils colleagues Valentina Savaglia from the University of Liege and Björn Tytgat from UGent will begin sampling microorganisms in areas where previous Belgian projects MICROBIAN had installed open-top chambers and snow fences in Antarctic Specially Protected Areas (ASPAs). Open-top chambers and snow fences mimic the possible effects that climate change (warming temperatures, increased precipitation) might have on microbial communities, including genetic adaptation of these microbes over time.

The team from the 4SAT project, which includes Maarten Baes from UGent and two members of Belgian Defence, have been spending the last week travelling to various locations to carry out site surveys. These locations are being analyzed as potential sites to install a telescope, which would observe and monitor low orbiting objects (LEO) such as space debris in the coming years. They have been using a high definition drone to 3-D map the topography of these different locations to determine which site would be most suitable for a telescope.

Some of the sites that have been surveyed seem promising and well sheltered from the wind, however many of the places they have visited so far have been too windy. Their project requires a location that is protected from the wind and has little atmospheric disturbance to ensure minimal vibration so the telescope can adequately see and track low orbiting objects.

Making the best of unexpected down time

The cargo ship which was scheduled to arrive at the coast in early January has been slightly delayed. Schedule changes are nothing new to Antarctic logistics however, and the traverse team has taken this opportunity to prepare the Perseus runway in anticipation of a flight scheduled to arrive on February 6th. The runway needs to be well groomed and then roughed up to enhance friction in order for planes to land safely; it takes time to do this properly.

At the moment the traverse team is on its way to the coast to meet the ship for the unloading of the cargo, which includes more scientific equipment, many batteries, fresh food supplies and more. Once the unloading is complete, there will be 31 containers of waste which had been prepped for removal, in accordance with the Antarctic Treaty. Another traverse will be necessary later on this season to bring all the new containers back to PEA.

Meanwhile engineers Aymar de Lichtervelde and Nicolas Herinckx along with plumbers Bernard and Simeon Polet have been putting the finishing touches on the station's new Water Treatment System (WTS). The pipes, pumps and tanks are all in place. The only thing left to finish before the system is operational is the testing of the software that will run the WTS. The team in Antarctica has been in regular contact with Wouter Paesen in Belgium, who wrote the code and designed the program for the new WTS.

As a preventative measure, carpenters have been busy building a roof over the gap between PEA's north annex and the exposed part of the ridge on which the station is built. This gap has a tendency to become filled in with snow, which impedes the annex's movement each time the building needs to be raised at the start and end of each season. The station is built and anchored into a granite rock ridge, however glacial dynamics ensures that the surrounding ice is in a constant, slow creep towards the coast which is why the annexes need to be levelled each season.

Changes on the horizon

The flight scheduled for January 11th will not only bring Valentina and Bjorn for the ExPoSoils project, but will also bring a new station Doctor, a familiar face in Barbara Weith, who will replace Mathieu Pasquier for the rest of the season. A small Belgian TV crew lead by Eric Goens is also scheduled to arrive and will spend a few weeks at PEA to film for an upcoming documentary.

Time has been flying, for we are already past the halfway mark of the BELARE 2023-2024 campaign. This also means that some IPF staff and scientists will head back home soon while new faces will arrive to finish out the season at PEA. The next flight between Antarctica and South Africa (Cape Town) is scheduled to take place on the 11th or 12th of January. We thank everyone for their hard work for what has been a smooth and successful season! That being said stay tuned for many projects are in full swing and there is still much to be done before this expedition comes to an end in late February.