Little Dome C

Beyond EPICA Oldest Ice Drilling Site (75.29917 °S, 122.44516 °E)

Situation Report #8, 24th November 2025

Personnel @LDC:
Carlo Barbante (UNIVE, CNR-ISP, PI in the field), Gianluca Bianchi Fasani (ENEA, Camp Leader), Katrin Ederer (AWI), Matthias Hüther (AWI, Chief Driller), Marion Lahuec (IPEV), Gunther Lawer (AWI), Johannes Lemburg (AWI), Barbara Seth (UNIBE), Mohammad Vafadarmianvelayat (AWI), Chiara Venier (CNR-ISP), Sergio Zannini (ENEA)

Personnel @DC:
Philippe Possenti (CNRS)

Weather at LDC: sunny; windy and cold
Meteo at DC 10 am: T = −34.9°C, Wind speed = 17 kt, Windchill T = −53°C, Humidity = 68 %

After a long night's rest at 2800 m to allow the sensors to equilibrate, the mini-logger was brought back to the surface early this morning. The data was downloaded to the computer, but unfortunately, it seems that we had pressure seal failures across both the sensor and the logging pressure tube. However, data seems to have been acquired down to a depth of 2400 m. It is clear that the mini-logger will not be used again, but tomorrow we will proceed with the basal temperature measurements with another device.

Logging a borehole in an ice drilling project is important because it helps scientists understand the physical conditions inside the ice sheet. Measuring temperature, pressure, inclination of the hole, and orientation provides essential information about how the ice behaves and how accurate the other measurements will be. Temperature and pressure affect the physical and electrical properties of the ice, while inclination and orientation show whether the borehole is straight or tilted. Together, these measurements allow scientists to correct and interpret data accurately, ensuring that any changes observed in the ice come from real environmental variations, not from drilling or measurement errors.

The day in the drilling tent proceeded with the filtration of the liquid in the hole. The procedure was very effective, and we will repeat it tomorrow.

The science trench, permanently at -52 °C, has been prepared to host the horizontal cutting saw (the famous “Swiss Saw”) and the DEP (Dielectric Property) device that helps scientists “to see inside” the ice without melting it. It works a bit like scanning the ice to find layers, impurities, and past climate events. This is an important set of information while you are drilling in the field.

Life in the camp went smoothly. We prepared a few ice core holders to be used by our colleagues of the Million Years Ice Core project.

The Arctic Truck will come tomorrow to LDC, and we therefore prepared a long list of things we need in the Camp. We lack milk, fruit juice, and many other things. Let’s hope for the best!


Filtrations of the drilling liquid in the drilling trench, Photo: B. Seth

Marion, Barbara and Gunther relaxing with the Beyond EPICA " The Game" just after dinner tonight. Photo: C. Barbante

CB, GBF, BS & MH; LDC, 24.11.2025