

Little Dome C

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

Situation Report #28; Friday 30 December 2022

**Personnel @LDC:**

Saverio Panichi (ENEA, Camp Leader), Frank Wilhelms (AWI, Chief Driller), Robert Mulvaney (BAS, Chief Scientist), Giuditta Celli (ENEA), Matthias Hüther (AWI), Gunther Lawer (AWI), Johannes Lemburg (AWI), Martin Leonhardt (AWI), Michele Scalet (ENEA), Julien Westhoff (NBI), Andrea de Vito (ENEA)

**Personnel @DC:** Markus Grimmer (UNIBE), Florian Krauss (UNIBE), Romilly Harris Stuart (LSCE)

**Weather at LDC 5 pm:** sunny, 3-5 knots, 643 hPa

**Meteo at DC 5 pm:** T = -32°C, Wind = SW, 5 knots, Wind Chill T = -42°C



*Disappointing drilling continues; Romilly departs for Concordia; science trench collapse.*

We struggled on trying different settings for drilling, but with only one reasonable core recovered during the day.



During the afternoon, the Arctic Truck arrived with Rocco, Philippe and Kathi to collect Romilly who is having an away-day or two in Concordia to help her colleague Roxanne from the lab at LSCE with a project that looks at how gases are transported in the porous upper layers of compacted snowfall that we call the firn layer. They use pumps to extract the air from a series of tubes that have been drilled into the top 20 m of firn at six different depths (we call this 'firn air pumping'). This is the final of six gas samplings experiments carried out over the previous year. These will be measured over the next year at LSCE and used to study the seasonal cycle of gases in the upper firn – this a major part of Romilly's PhD research.

Romilly's colleague Roxanne operates the vacuum and pressure pumps to extract air from a tube let into the near-surface compacted snow and compress into a 'Silcocan' gas canister for later measurement of the mix of gases in the laboratory at LSCE. (Photo: Harris Stuart, iPhone screen grab of video file)



There was an unfortunate incident this afternoon at Concordia Station: part of the cold laboratory, where Markus and Florian are processing the BE-OIC cores, collapsed. Nobody was hurt, but one section of the laboratory was damaged beyond repair, and effectively ended the work of di-electric profiling (DEP) of the cores and cutting them into longitudinal sections for shipping to Europe. It is unlikely that the section of laboratory can be repaired this season, so we are looking at the possibility of transferring the DEP instrument and the horizontal saw to our drilling camp at Little Dome C. If this is not possible, then the processing may have to be put on hold until next season. (As a side note, our very own Eric Wolff was one of those that helped build this laboratory during the 1996/97 EPICA campaign.)

End of day statistics:

Individual runs of the drill were recorded as: 0.26, 1.00, 1.02, 2.33, 1.19, 0.00, 0.25 m

Drillers' depth: 386.74 m; daily total 6.29 m

Loggers' depth: 391.37 m; daily total 6.31 m

Processors' depth: unknown

RM and FW, 02 Jan 2023

