Little Dome C

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

Situation Report #42; Friday 13th January 2023

Personnel @LDC:
Saverio Panichi (ENEA, Camp Leader), Frank Wilhelms (AWI, Chief Driller), Robert Mulvaney (BAS, Chief Scientist), Markus Grimmer (UNIBE), Romilly Harris Stuart (LSCE), Matthias Hüther (AWI), Gunther Lawer (AWI), Johannes Lemburg (AWI), Florian Krauss (UNIBE), Martin Leonhardt (AWI), Michele Scalet (ENEA), Julien Westhoff (NBI), Andrea de Vito (ENEA)

Personnel @DC: Giuditta Celli (ENEA)

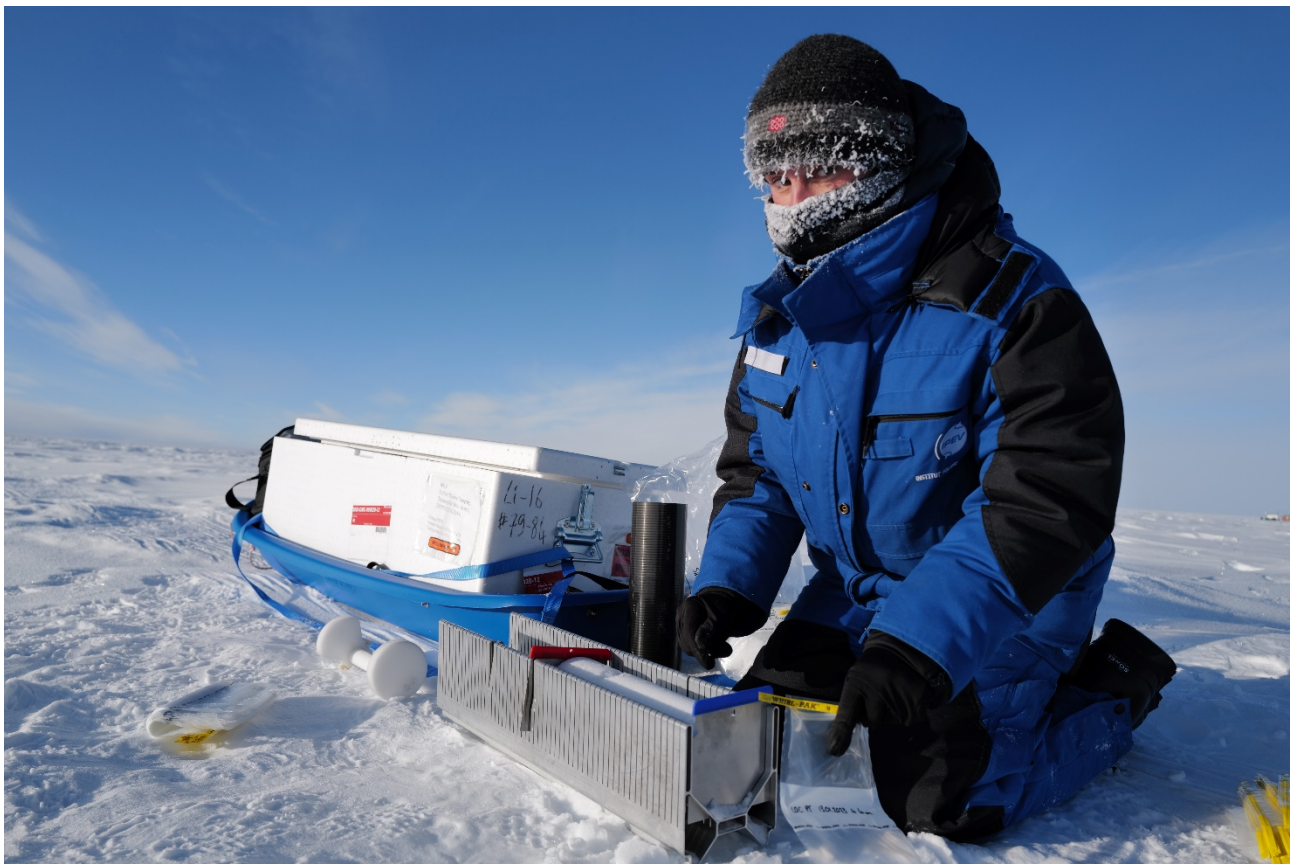
Weather at LDC 5 pm: sunny, 3 knots, 642 hPa
Meteo at DC 5 pm: T = −28°C, Wind = NE 5 knots, Wind Chill T = −38°C

Drilling a little trickier; Florian and Markus return from Concordia; collecting surface snow samples

Drilling was a little less routine today, with a torn hollow shaft filter sleeve slowing us down late morning. An alternative hollow shaft with drilled holes rather than a gauze filter proved too great a backpressure for the fluid pump, and the run was aborted after only 30 cm. Once the gauze filter had been replaced on the normal hollow shaft, we were able to continue. Individual runs were a little shorter than of late, but by the end of the day we had drilled nine cores, totaling over 23 meters.

During the early afternoon the Arctic Truck arrived, driven by Vito, bringing Markus and Florian back to camp after a few days at Concordia dealing with the ice core processing equipment that had to be recovered from the damaged science trench. They will be with us now until the end of the season helping with the drilling.

Most evenings, after her drilling shift finishes at 1930, Romilly walks out 1000 m in the ‘clean air sector’ to her surface science site where she is monitoring the development of the snow surface during the season. Over a 100 m transect, she has placed small stakes every 2.5 m, and each evening she draws a sledge mounted camera along the transect taking around 100 photos of the snow surface in what is known as a photogrammetry project. Several times during the season, she also takes a series of eight 30 cm ice cores and subsamples them into bags for analysis back in the laboratory.



Romilly collects a series of 30 cm short cores along a photogrammetry transect several times during the season, cutting the cores into 10 mm samples. The project is designed to follow the development of the snow surface topography and stable water isotopes during the season. (Photo: Mulvaney, Leica Q2, 28mm, 1/500, f5.6, ISO-100)

End of day statistics:

Individual runs of the drill were recorded as: 2.97, 3.18, 0.36, 2.44, 3.43, 2.67, 3.25, 2.06, 2.91 m

Drillers' depth: 727.27 m; daily total 23.55 m

Loggers' depth: 730.84 m; daily total 23.44 m

RM and FW, 16 Jan 2023