

Little Dome C

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

Situation Report 38, 24. December 2024

Personnel @LDC:

Lisa Ardoin (ULB), Marie Bouchet (CNRS), Ailsa Chung (CNRS), Danilo Collino (ENEA, Camp Leader), Inès Gay (IPEV), Matthias Hüther (AWI, Chief Driller), Manuela Krebs (AWI), Gunther Lawer (AWI), Johannes Lemburg (AWI), Martin Leonhardt (AWI), Michele Scalet (ENEA), Federico Scoto (CNR), Barbara Seth (UNIBE), Lison Soussaintjean (UNIBE), Julien Westhoff (UCPH, Chief Scientist), Frank Wilhelms (AWI, PI in the field)

Weather at LDC 5 pm: sunny

Weather at DC 5 pm: temperature: -24.5°C, wind 5 knts



We did 6 runs between 19:30 yesterday and 19:30 today. Today, processing rested again to collect more information on the properties of the lowermost ice. The PICARRO team continued processing samples at the maximum pace. We recorded the temperature in the borehole with one of the standard loggers used at Concordia station, which we lowered in the drill in a custom-made pressure housing, which is bolted to the super-banger at the upper end of the core barrel. During the afternoon Saverio, Thomas and Andrea visited us and brought the Christmas dinner, batteries and syringes for the PICARRO. Thank you to Concordia station, Philippe and Gianluca!



Lemmi, greasing the logger for good thermal contact, with the pressure housing in front. Credit: F. Wilhelms ©PNRA/IPEV



Closing the pressure housing. Credit: F. Wilhelms ©PNRA/IPEV



The mounted pressure housing attached to the super-banger. At the price of 20.5 cm less core. Credit: F. Wilhelms ©PNRA/IPEV



A huge "Thank you!!!" to Ailsa and Manuela for getting us a beautiful Christmas tree. Credit: A. Chung ©PNRA/IPEV

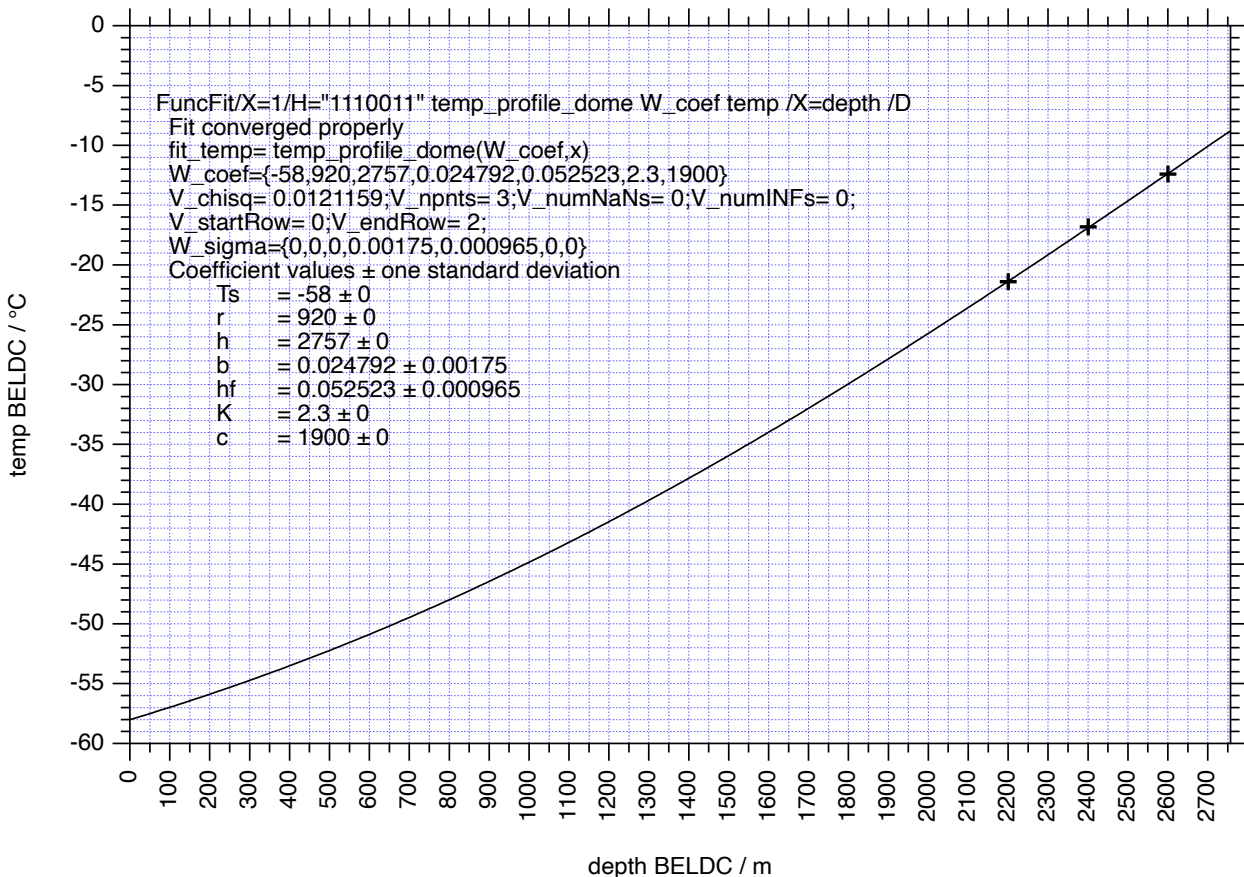


End of day statistics at 14:00

- Driller's depth: 2623.36 m;
- we did 4 runs between 19h30 yesterday and 14h00 today. The length of these cores was: 4.51, 3.98, 3.76, 4.54 (driller length, last run #846), for a total of 16.79 m;
- Logger's depth: 2619.90 m
- Current processing depth: 2545 m; daily total: 0 m; season total: 956 m.

We wish everybody following us a Merry Christmas and peaceful days!

FW, JW, MH, 24.12.2024



The three temperature readings at three different depths. The line shows a fitted temperature profile for a Dome position. Towards the bed we can interpolate linearly. At the bed, we expect about -9°C , which is ideal for drilling and close to the requirements below -8°C , as formulated for the site selection during the pre-site survey. The fitted accumulation rate $b = 2.5 \text{ cm yr}^{-1}$ and the geothermal heat flux $hf = 52.5 \text{ mW m}^{-2}$ are reasonable values.

