

Little Dome C

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

Situation Report 57, 12. January 2025

Personnel @LDC:

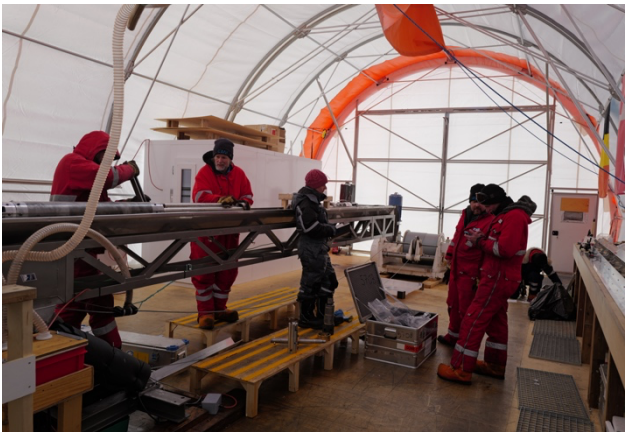
Lisa Ardoin (ULB), Marie Bouchet (CNRS), Ailsa Chung (CNRS), Danilo Collino (ENEA, Camp Leader), Inès Gay (IPEV), Matthias Hüther (AWI, Chief Driller), Manuela Krebs (AWI), Gunther Lawer (AWI), Johannes Lemburg (AWI), Martin Leonhardt (AWI), Michele Scalet (ENEA), Federico Scoto (CNR), Barbara Seth (UNIBE),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

Weather at LDC 5 pm: sunny

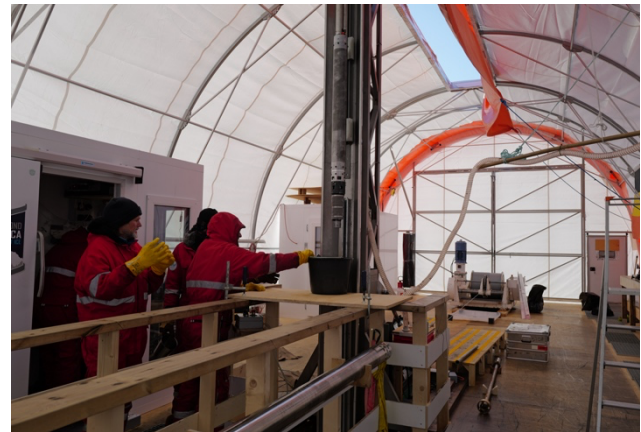
Weather at DC 5 pm: temperature: -30°C, wind 6 knts



We started 1 run with the rock drill between 14:00 and 19:30 today. We switched to the rock drill, with 2 dead weights mounted, and assembled the actual drill with one extension tube. When we started drilling, we consumed really high power and observed currents around 12 A to above 13 A. After some time, the current dropped and we operated with 6–8 A, depending on load. We attribute the high consumption of power to icing of the pump, that we managed to get out when the current dropped. We operated for 1:45 h on the bottom of the hole. We had to stop to cool the motor and restart the software that had crashed. The nominal penetration was 1.14 m, when we finally pulled up, after we observed 4 A current when idling at 60 rpm, which indicates a broken shear pin to protect the gear from overload.



Mounting the 2nd dead weight.
Credit: F. Wilhelms ©PNRA/IPEV



Testing the pump action in a bucket with drill liquid.
Credit: F. Wilhelms ©PNRA/IPEV

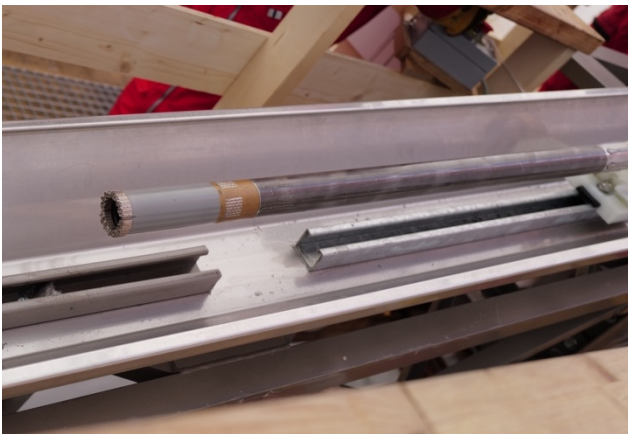




Mounting the rock drill string.
Credit: F. Wilhelms ©PNRA/IPEV



The assembled rock drill on the tower. FLTR: the outer core barrel, joint to the extension tubes, extension tube with brass centering ring, upper tube with super banger centering brass piece, super banger adaptor mount with milled pass-way and a part of the pump. Credit: F. Wilhelms ©PNRA/IPEV



The tip of the rock drill. FLTR: the grey drill head with hard inserts, the golden reamer with diamond impregnated patches, the outer core barrel and partly visible the connection to the tubing. Credit: F. Wilhelms ©PNRA/IPEV



The complete rock drill on the tower.
Credit: F. Wilhelms ©PNRA/IPEV



Sorting and packing all the small pieces that broke off the ice cores throughout the season. Credit: J. Westhoff ©PNRA/IPEV

End of day statistics at 19:30

- Driller's depth: 2804.69 m; rock drill ca. 2805.28 m;



- we started 1 rock drill run between 14:00 and 19h30 today. The length of these cores was: no core (driller length, last run underway RD #1), for a total of 0.0 m;
- Logger's depth: 2799.83 m (preliminary);
- Current processing depth: 2795 m; daily total: 0 m; season total: 1185 m.

FW, JW, MH, 12.01.2025

