

## Little Dome C

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

Situation Report 13, 9. December 2023

### Personnel @LDC:

Saverio Panichi (ENEA, Camp Leader), Olivier Alemany (CNRS), Philippe Possenti (CNRS), Matthias Hüther (AWI), Rémi Dallmayr (AWI), Gunther Lawer (AWI), Johannes Lemburg (AWI), Andrea Ceinini (ENEA), Federico Scoto (CNR), Tamara Gerber (UCPH), Iben Koldtoft (UCPH), Julien Westhoff (UCPH), James Veale (BAS), Michaela Mühl (UNIB), Fortunat Joos (UNIB), and Inès Gay (IPEV)

Weather at LDC 5 pm: cloudy

Meteo at DC 5 pm: -23°C and 7 knts



Today's main event was a visit to our little dome c site by an IPEV and PNARA delegation from Concordia: Nathalie Metzler (Deputy Director of IPEV), Olivier Poivre d'Arvor (Ambassador for the Poles) and Thomas Pesquet (French Spacionaute). We were honored to show them around our camp and introduce them to the Beyond EPICA project. We all shared an excellent meal prepared by Saverio, our camp manager.

Apart from the visit, we continued our work on processing ice cores from last year, and continued to try our hand at coring. Indeed, after our two runs yesterday, we were confronted with a problem of the corer's descent between 800 and 805 meters depth. After a few attempts, we decided to ream this section. We were then able to get through the tight section again. Despite this, the drilling is still unstable, the motor's lack of torque is penalizing us, and either we can't hook the ice and start the run, or, if we try to put a little more weight on the drill head, we block the motor due to the lack of torque.

We're preparing a new drill head with a slightly more aggressive geometry, to try and overcome this problem tomorrow.

What we did today at LDC:

- We reamed 6 meters of the lowest part of the borehole;
- We try to drill after this reaming procedure, but without success;
- We continued processing the last year`s core and finished another 21 m in shifts;
- We prepared some saw dust (from the processed core) and “sent” these bags to Concordia in order to be analyzed the water isotopes with a spectrometer at Concordia;





Figure 1: The BEOI team at LDC and our distinguished guest: photo F. Scoto



Figure 2: Gunther struggling with the drill connection screws: photo F. Scoto

End of day statistics at 16h:

Driller's depth: 806.5 m

Logger's depth: NA

Current processing depth: 748 m, daily total: 21 m, season total: 140 m.

OA, MH, JW, and SP, 09.12.2023

