

Hercules Dome Ice Core



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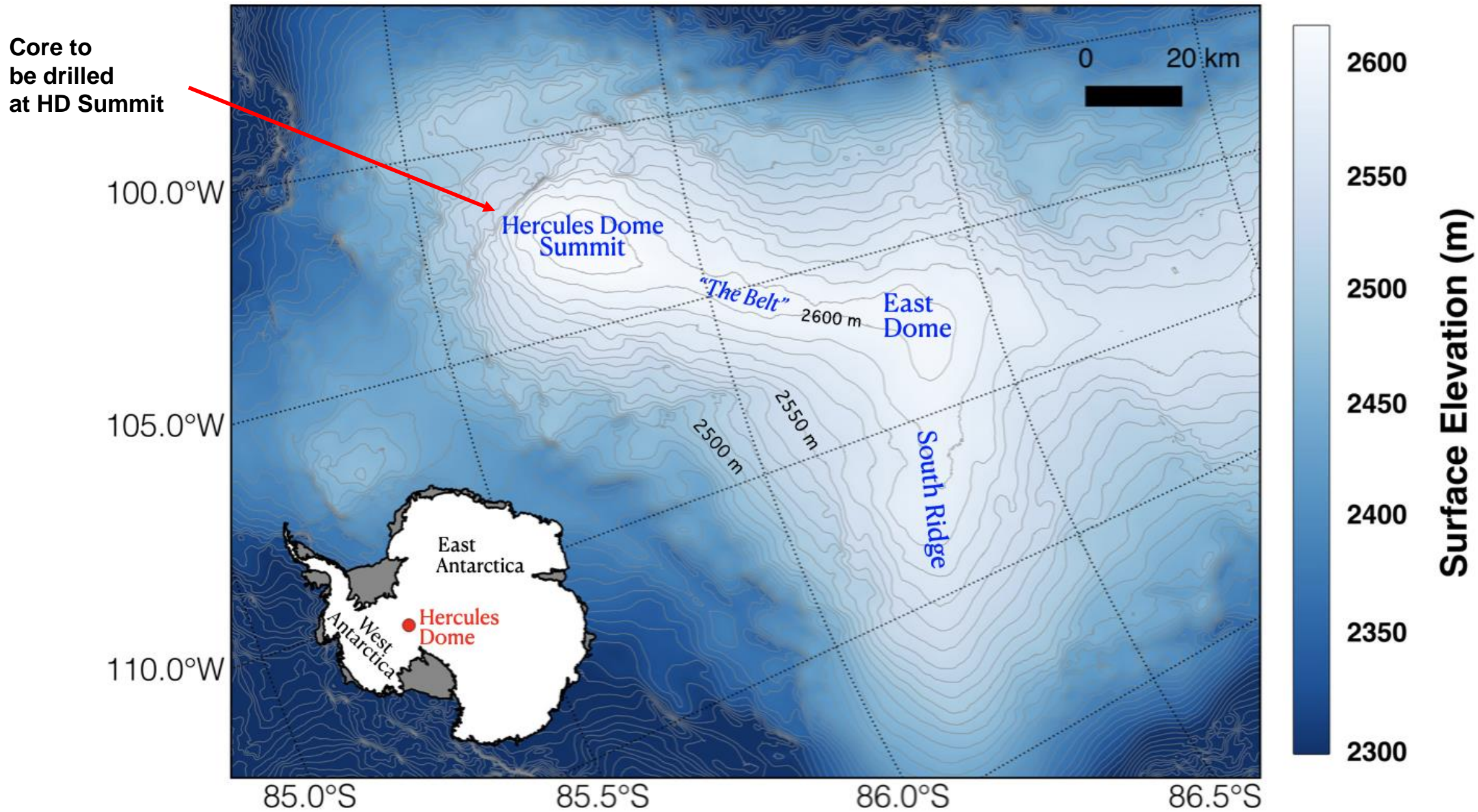
With: Knut Christianson, Ben Hills, Nick Holschuh, Annika Horlings, Andrew Hoffman, Gemma O'Connor, John Christian, Liam Kirkpatrick, Emma Erwin



UCIRVINE



Location map



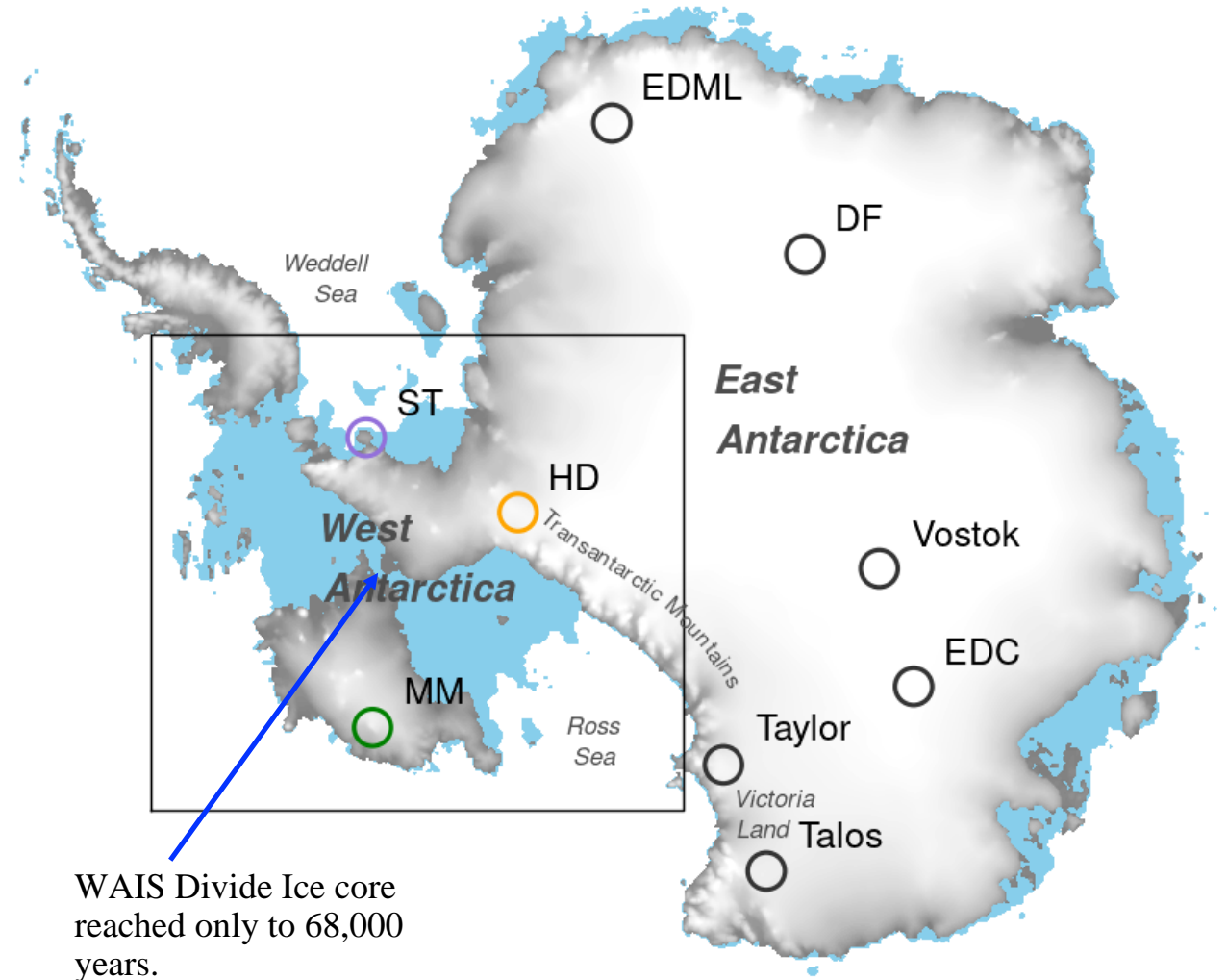
Why Hercules Dome?

Accumulation ~ 11 - 14 cm/year, high for East Antarctica. Mean annual temperature ~ -40°C.

Climate of the West Antarctic region during the LIG is unknown.

Climate at Hercules Dome is affected by the topography and climate of West Antarctica..

Hercules Dome will also provide ice for numerous other science goals (e.g. better-resolved gases beyond WAIS Divide).



Brief History and Update

Herc Dome was selected as the next priority deep ice core site in Antarctica, following community input and consensus via the Ice Core Working Group.

Coring was funded in 2019. COVID delays and competition for logistics resources has delayed drilling, which was originally to start in 2022.

A Science Logistics Plan (SLP) has been submitted to NSF and is under consideration.

Designed to reduce the use of Hercules aircraft by taking equipment to Herc Dome by traverse, taking advantage of the well established South Pole Traverse (SPOT) route, and the new Intermediate Science Traverse (IST) platform.

This plan benefits both current and future Antarctic logistics for myriad other projects.

Current timeline

- 24/25 (now) Testing and commissioning of the Intermediate Science Traverse vehicles.
- 25/26 Antarctic season: Traverse vehicles drill, and camp materials to Hercules Dome.
- 26/27 Second traverse, drill set-up.
Summer 2027: Earliest possible core processing at NSF ICF
- 27/28 First main drilling season. (Through the Holocene)
Summer 2028: Core processing at NSF
- 28/29 Second main drilling season (to bedrock)
Summer 2029: Core processing at NSF ICF Summer 2029
- 29/30 Final drilling season if needed. Perhaps replicate coring (not yet proposed or funded).



Hercules Dome is a community project

To submit a proposal to work on the Herc Dome ice core:

- Inform leadership team of proposal plans, considering contribution to overall project and ice allocation needs.
- **Come to the proposal-planning workshop in May 2025** (We will include a virtual-attendance option).
- Get on the Herc Dome mailing list.
- Details at HerculesDome.org

We're happy to provide relevant information that might not yet be published, but will be useful.

