

# Ice Core Working Group Update to Science Advisory Board

T.J. Fudge

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# Happenings in the past year

- Fieldwork happened!
  - Ice coring
  - Geophysics for site selection
- COLDEX is full steam ahead
- Herc Dome has a site and schedule
- Pacific alpine coring advances
- Greenland work is happening
- Community Meeting

# Benchmark records the gifts that keeps on giving

## Article

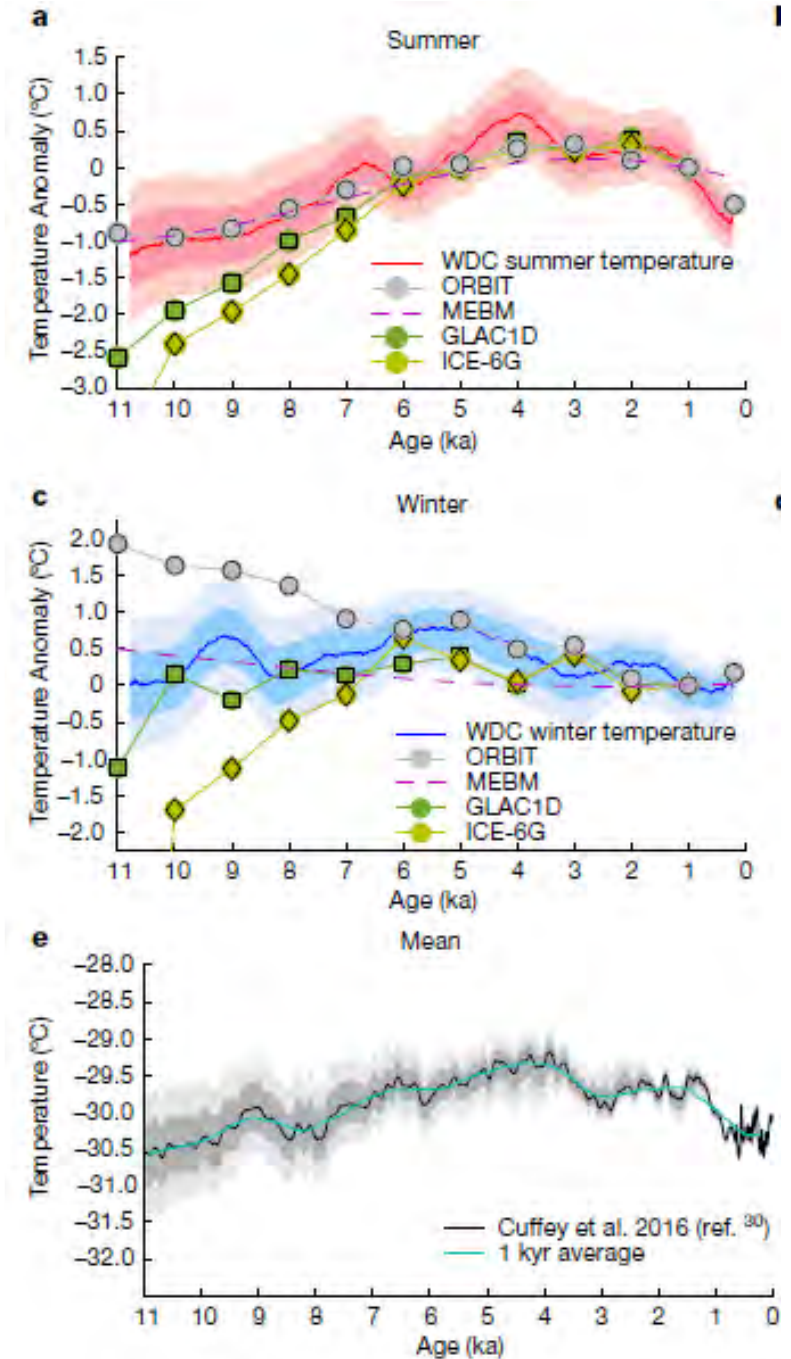
# Seasonal temperatures in West Antarctica during the Holocene

<https://doi.org/10.1038/s41586-022-05411-8>

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Tyler R. Jones<sup>1</sup>✉, Kurt M. Cuffey<sup>2</sup>, William H. G. Roberts<sup>3</sup>, Bradley R. Markle<sup>1,4</sup>, Eric J. Steig<sup>5</sup>, C. Max Stevens<sup>6,7</sup>, Paul J. Valdes<sup>8</sup>, T. J. Fudge<sup>5</sup>, Michael Sigl<sup>9</sup>, Abigail G. Hughes<sup>1,4</sup>, Valerie Morris<sup>1</sup>, Bruce H. Vaughn<sup>1</sup>, Joshua Garland<sup>10</sup>, Bo M. Vinther<sup>11</sup>, Kevin S. Rozmiarek<sup>1,4</sup>, Chloe A. Brashear<sup>1,4</sup> & James W. C. White<sup>12</sup>



# Early pleistocene

Article

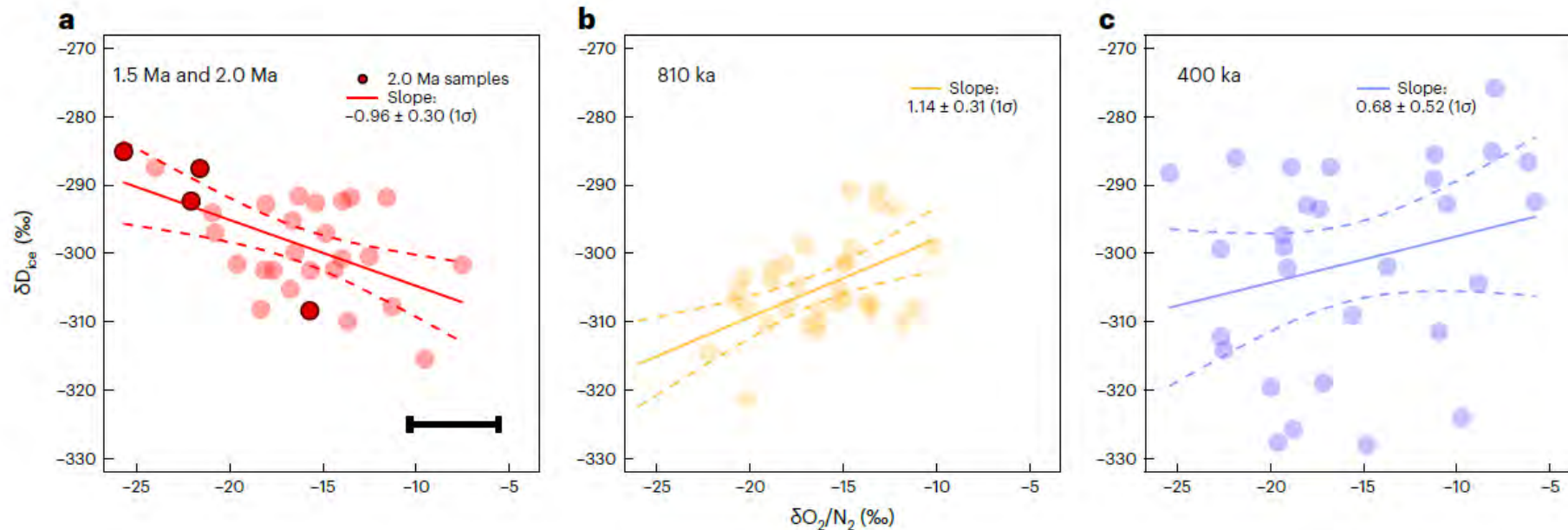
<https://doi.org/10.1038/s41561-022-01095-x>

## Early Pleistocene East Antarctic temperature in phase with local insolation

Received: 19 April 2022

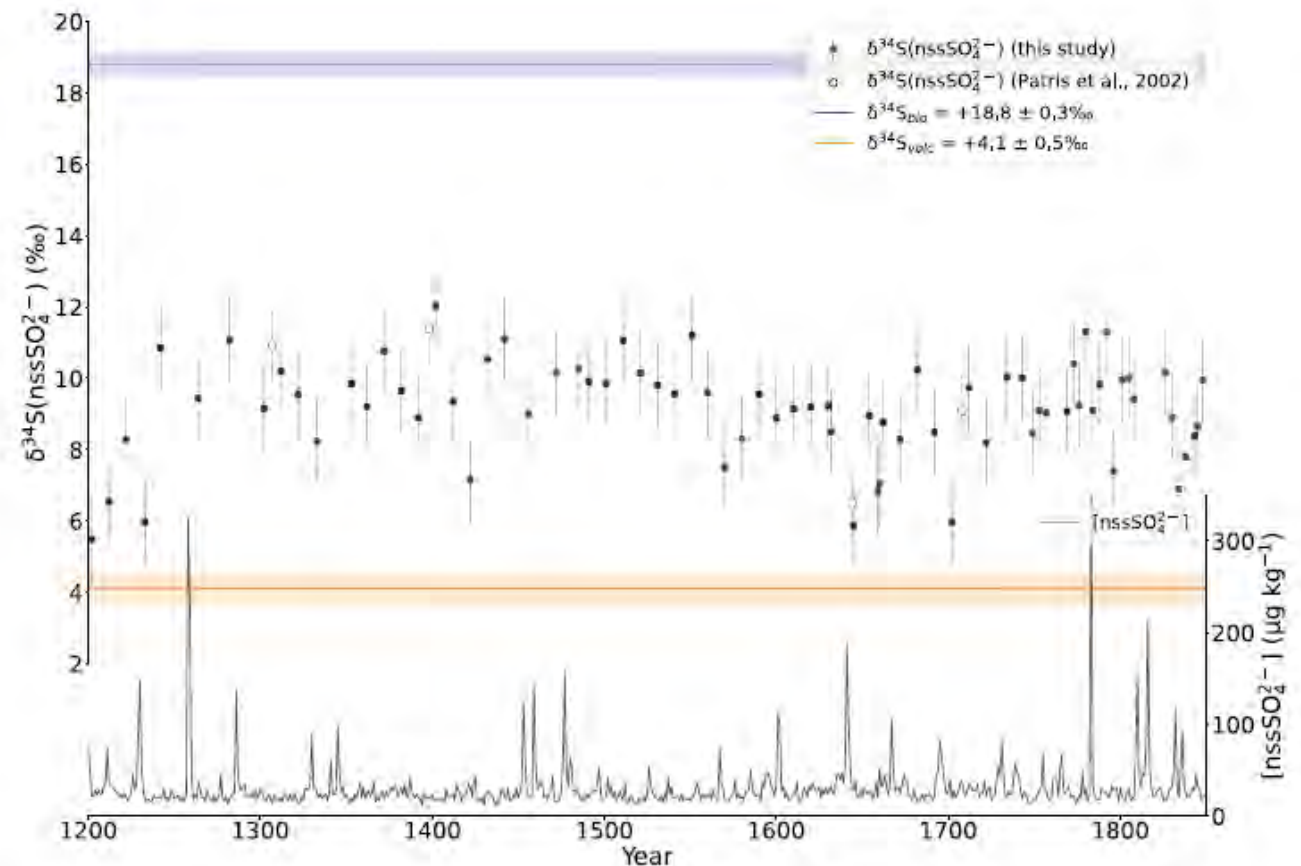
Yuzhen Yan<sup>1</sup>✉, Andrei V. Kurbatov<sup>2,3</sup>, Paul A. Mayewski<sup>2</sup>,  
Sarah Shackleton<sup>1</sup> & John A. Higgins<sup>1</sup>

Accepted: 26 October 2022



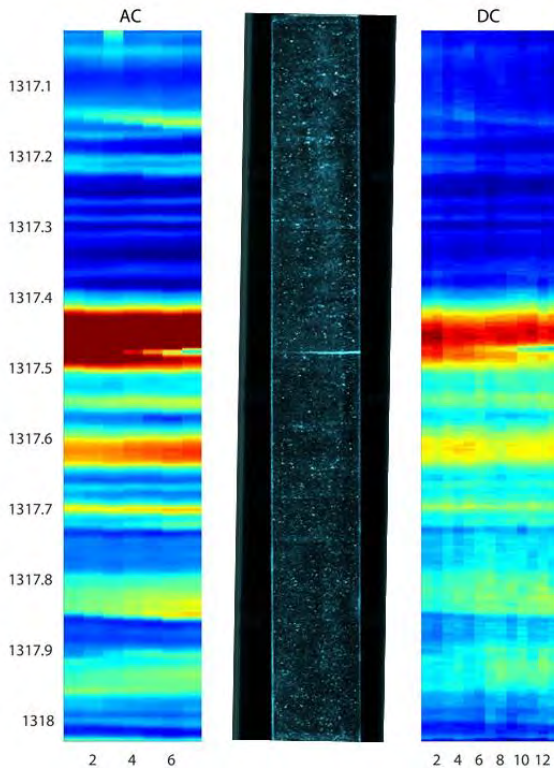
# Underestimated Passive Volcanic Sulfur Degassing Implies Overestimated Anthropogenic Aerosol Forcing

U. A. Jongeblod<sup>1</sup> , A. J. Schauer<sup>2</sup>, J. Cole-Daf<sup>3</sup> , C. G. Larrick<sup>3</sup>, R. Wood<sup>1</sup> , T. P. Fischer<sup>4</sup> , S. A. Carn<sup>5</sup> , S. Salimi<sup>1</sup>, S. R. Edouard<sup>2</sup>, S. Zhai<sup>1</sup> , L. Geng<sup>6</sup> , and B. Alexander<sup>1</sup> 



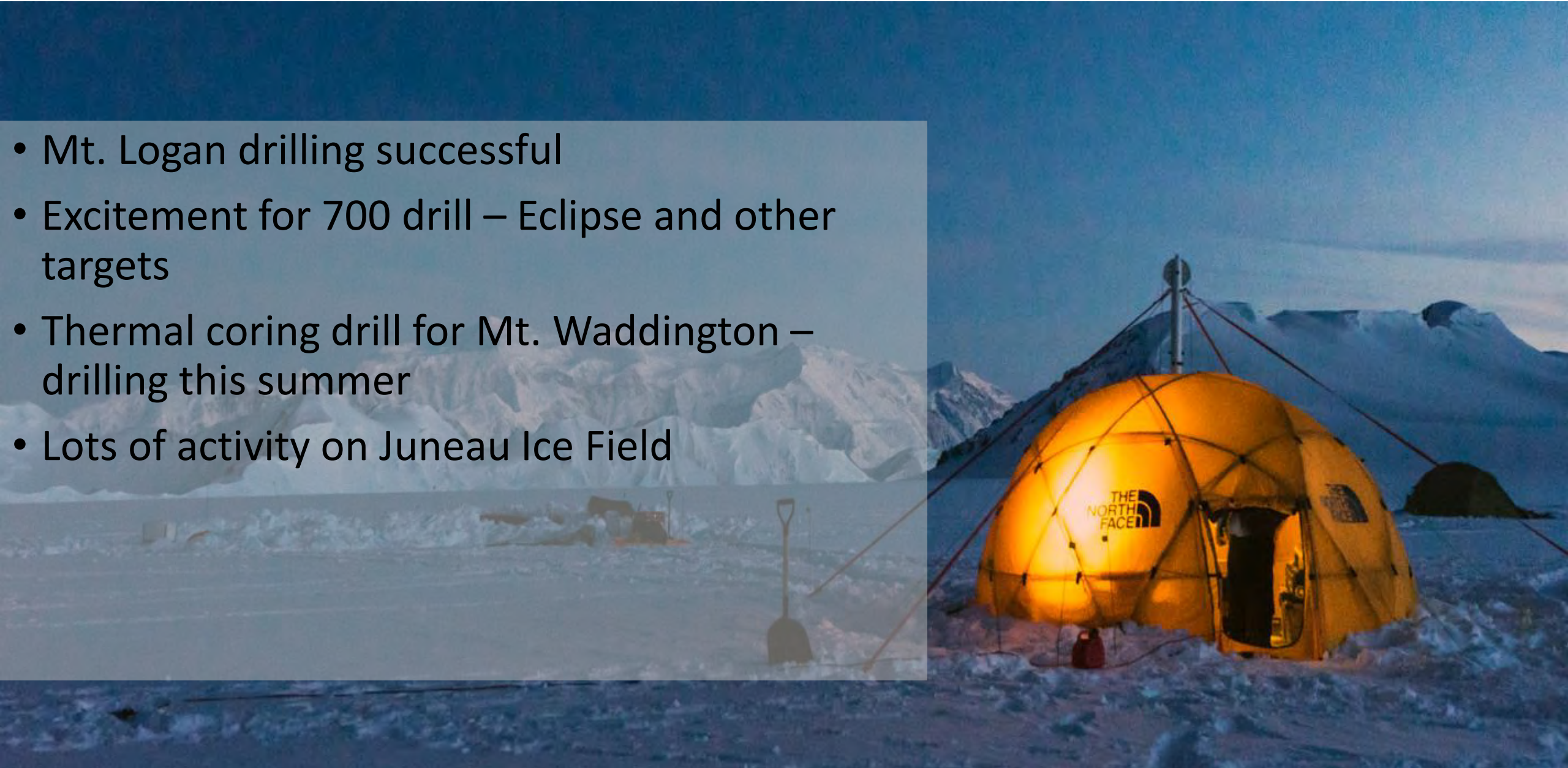
# Excitement for new NSF Ice Core Facility

- Hyperspectral camera has arrived
- Blue ice storage



# Alpine Glaciers and Ice Caps

- Mt. Logan drilling successful
- Excitement for 700 drill – Eclipse and other targets
- Thermal coring drill for Mt. Waddington – drilling this summer
- Lots of activity on Juneau Ice Field

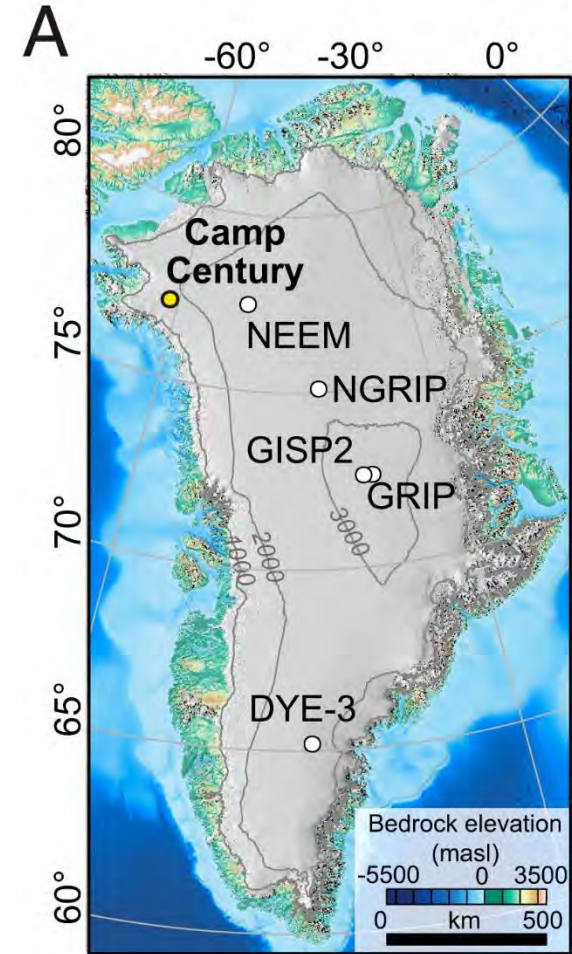


# Greenland

TUNU cores will provide great 2ka records

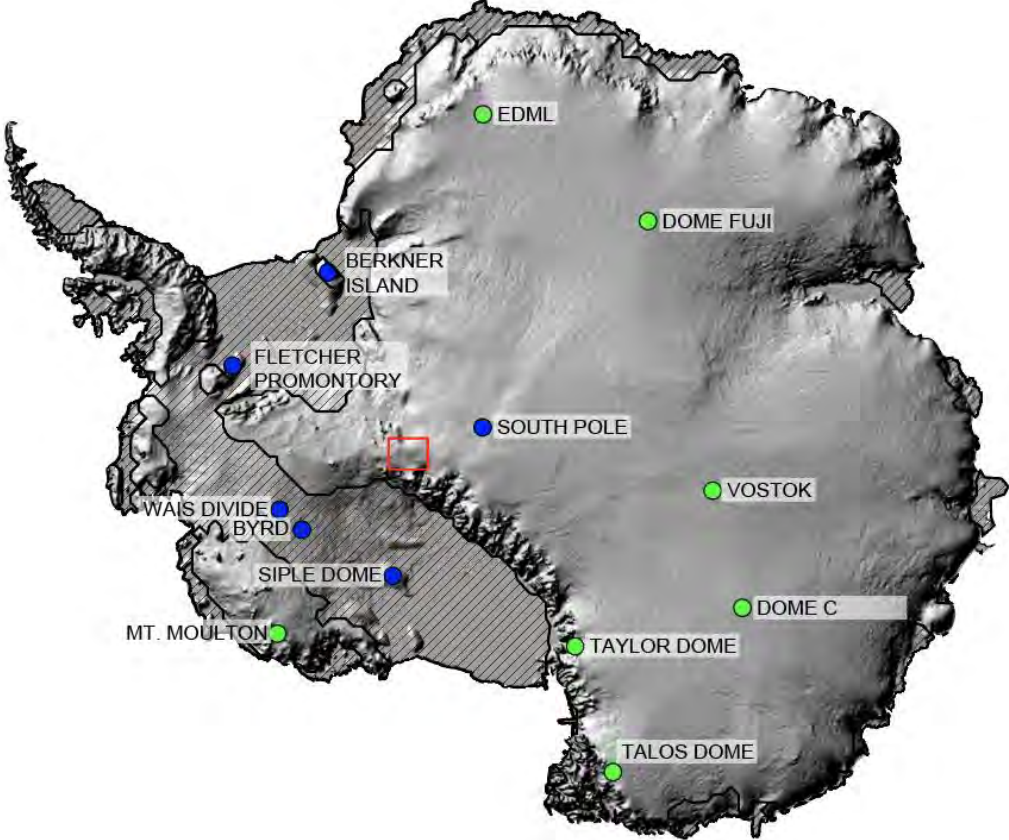
New summit cores coming

EastGRIP reoccupied and progress





# Antarctica



# COLDEX

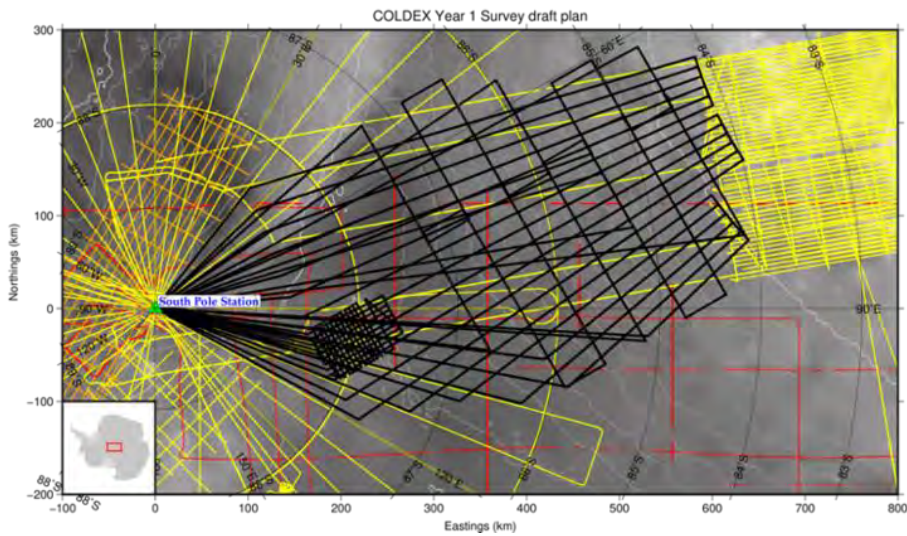
Center for Oldest Ice Exploration

*First field season complete:*

*Airborne Geophysics from South Pole*

*Shallow Coring in Allan Hills*

*Geophysics in Allan Hills*



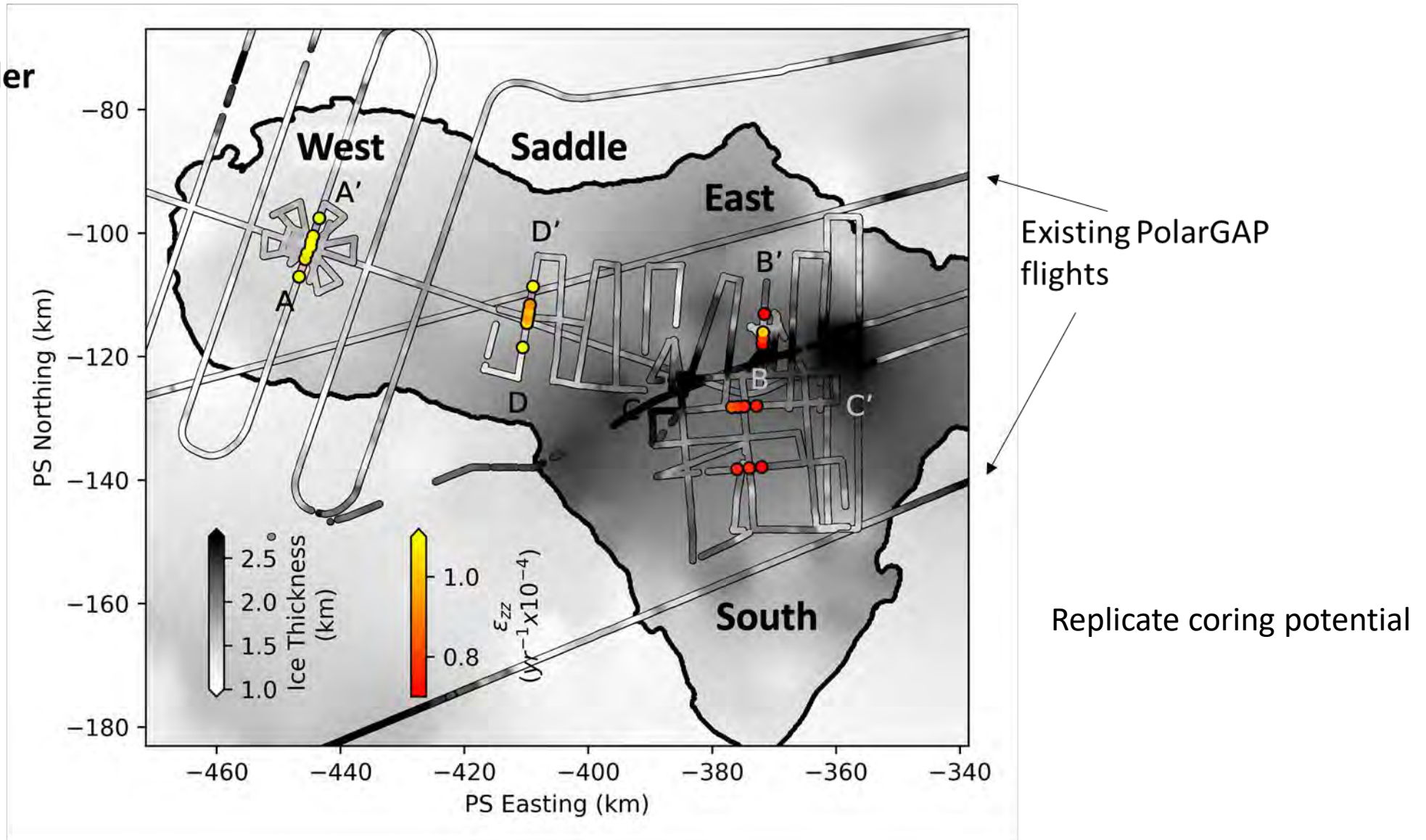
Core quality issues with Foro



# Herc Dome – good to drill at West Dome

Flight with  
COLDEX Basler

West Dome  
radial grid





## SEA ICE IN THE POLAR REGIONS

### EDITORS

Matthew Chadwick, Karen E. Kohfeld, Amy Leventer, Anna Pieńkowski, Heike Zimmermann and Sarah Eggleston

### Early-career perspectives on ice-core science

#### EDITORS

Jessica Badgeley, T.J. Fudge, Bess Koffman and Summer Rupper

# ICECReW 2022 synthesis papers published October 2022

- 10 articles on logistics, dating, paleoclimate, human impacts, microbiology, firn processes, sub-ice sediment and bedrock, and more
- Lots of great new figures
- Helpful resource for undergrads, early-career grad students, etc.
- Funded through IDP

EDITORIAL: EARLY-CAREER PERSPECTIVES ON ICE-CORE SCIENCE

97

[doi.org/10.22498/pages.30.2.97](https://doi.org/10.22498/pages.30.2.97)

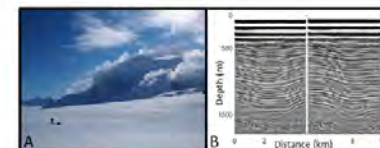
## Early-career perspectives on ice-core science

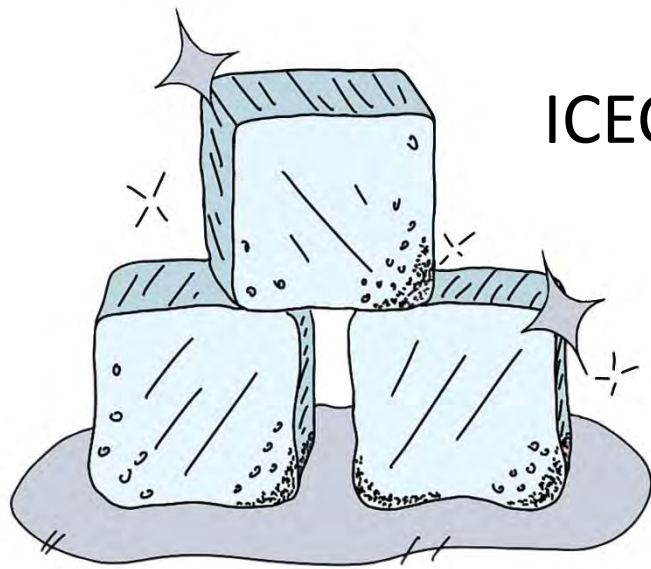
Jessica Badgeley<sup>1</sup>, T.J. Fudge<sup>1</sup>, B. Koffman<sup>2</sup> and S. Rupper<sup>3</sup>

Ice cores have changed the way we understand the Earth. Ice cores drilled in the 1990s in Greenland showed definitively for the first time the abrupt nature of climate change events in the past (e.g. Dansgaard et al. 1993; Grootes et al. 1993). Ice cores from Antarctica have yielded a continuous climate history of the past 800,000 years, as well as snapshots of climate older than two million years (Jouzel et al. 2007; Yan et al. 2019, Bergelin et al. 2022), providing important context for climate changes underway today. The global network of ice cores drilled in remote mountainous and polar regions

must occur at every level – for instance, the International Partnerships in Ice Core Sciences (IPICS; [pastglobalchanges.org/ipics](https://pastglobalchanges.org/ipics)) open science meetings foster international inclusion. Through both individual and institutional actions, we can create a community where all feel welcome.

In addition to building a more inclusive ice-core community, continued advances in ice-core science will be enabled through measurements of ice from new sites. Some current and future projects include multiple searches for a continuous climate record spanning 1.5 million years in East Antarctica, and projects targeting previous warm periods—such as the Last Interglacial (~130,000 years ago)—to determine the amount and rate of sea-level rise at that time. New cores from mountain regions are filling in the global network and providing important regional perspectives. In the coming decades,





***ICECReW***

*May 7–8th 2023*

## ICECReW 2023: Developing collaborations and proposal ideas

- Series of presentations and panel discussions on what makes a good proposal, how to respond to feedback, NSF and IDP resources and perspectives
- Focused introductions through “speed dating”
- Brainstorming sessions to develop proposal ideas
- Work sessions to develop “one-pagers” to send to NSF
- Paul Cutler has generously volunteered to review these with colleagues, and to meet with each team to provide feedback
- Goal is to make the proposal writing and submission process more transparent and to establish new relationships among ECRs that could lead to new proposals
- Organizers: Ursula Jongebloed, Emma Robertson, Julia Andreasen, T.J. Fudge, Bess Koffman

# 2ND US ICE CORE OPEN SCIENCE MEETING

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**May 8-10, 2023**

**Center for Urban Horticulture**

**University of Washington, Seattle, WA**



- Open science meeting; seeking ongoing funding for this open model
- Significant journalism component with parallel workshop and some overlapping sessions
- Discussion periods for planning new projects and other community conversations
- Organizing committee for future meetings: Seth Campbell, TJ Fudge, Kaitlin Keegan, Bess Koffman, Peter Neff

Tentative location for next year: Portland, Maine

