Peripheral East Antarctic ice core sites as unique recorders of climate variability

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Driving questions for Antarctic LIG ice records

- Were there major differences in temperature, atmospheric circulation during LIG?
- What was the response of climate to a warmer LIG world?
- Was the WAIS diminished or completely collapsed?

Data from Jouzel et al., 2007; Lambert et al., 2008
Dust in the ice core record

Koffman & Kreutz, 2014
Mt. Moulton (W. Antarctica)

Map adapted from Steig et al., 2015

Korotkikh et al., 2011
Talos Dome

Narcisi et al., 2016
Taylor Glacier

Aarons et al., 2019
Summary & future questions...

- Records hint at increased volcanism or volcanic dust signature & perhaps variations in WAIS coverage?
- Expansion of BIA LIG records close to WAIS & EAIS boundary may provide spatially relevant paleoclimate information.
- Continue exploring/testing BIA areas for LIG (and older) ice.
- More BID drilling of LIG ice for continuous, high-resolution, large-sample size record for probing nuances in regional climate.

BIA locations adapted from Bintanja, 1999
References

5. Korotkikh et al. (2011) The last interglacial as represented in the glaciochemical record from Mount Moulton Blue Ice Area, West Antarctica, Quaternary Science Reviews.
8. Spaulding et al. (2013) Climate archives from 90 to 250 ka in horizontal and vertical ice cores from the Allan Hills Blue Ice Area, Antarctica, Quaternary Research.