

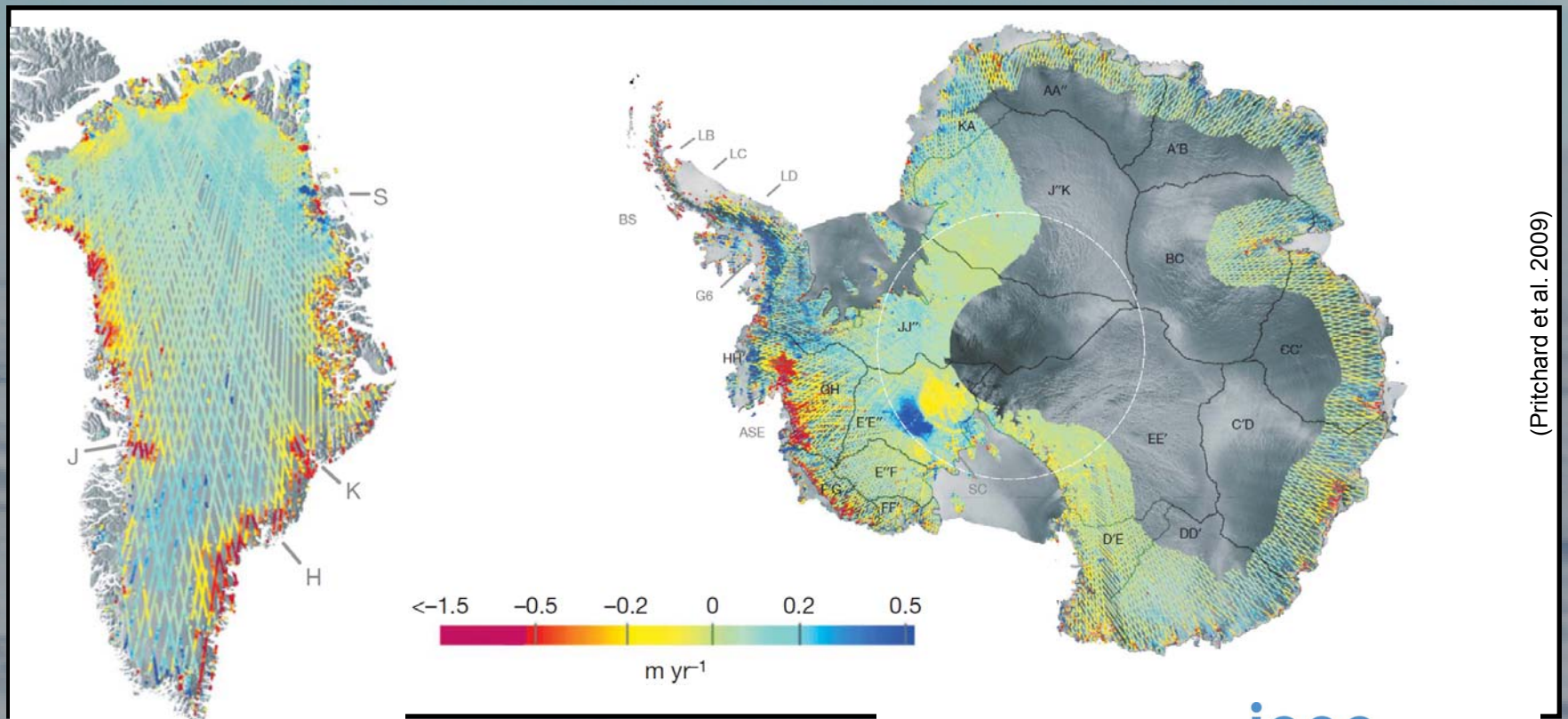
Ocean cavity beneath Pine Island Glacier

Leo Peters, Kiya Riverman, Einar Steinarsson
Martin Truffer, Tim Stanton, Mike Shortt

Sridhar Anandakrishnan,
Bob Bindschadler, David Holand

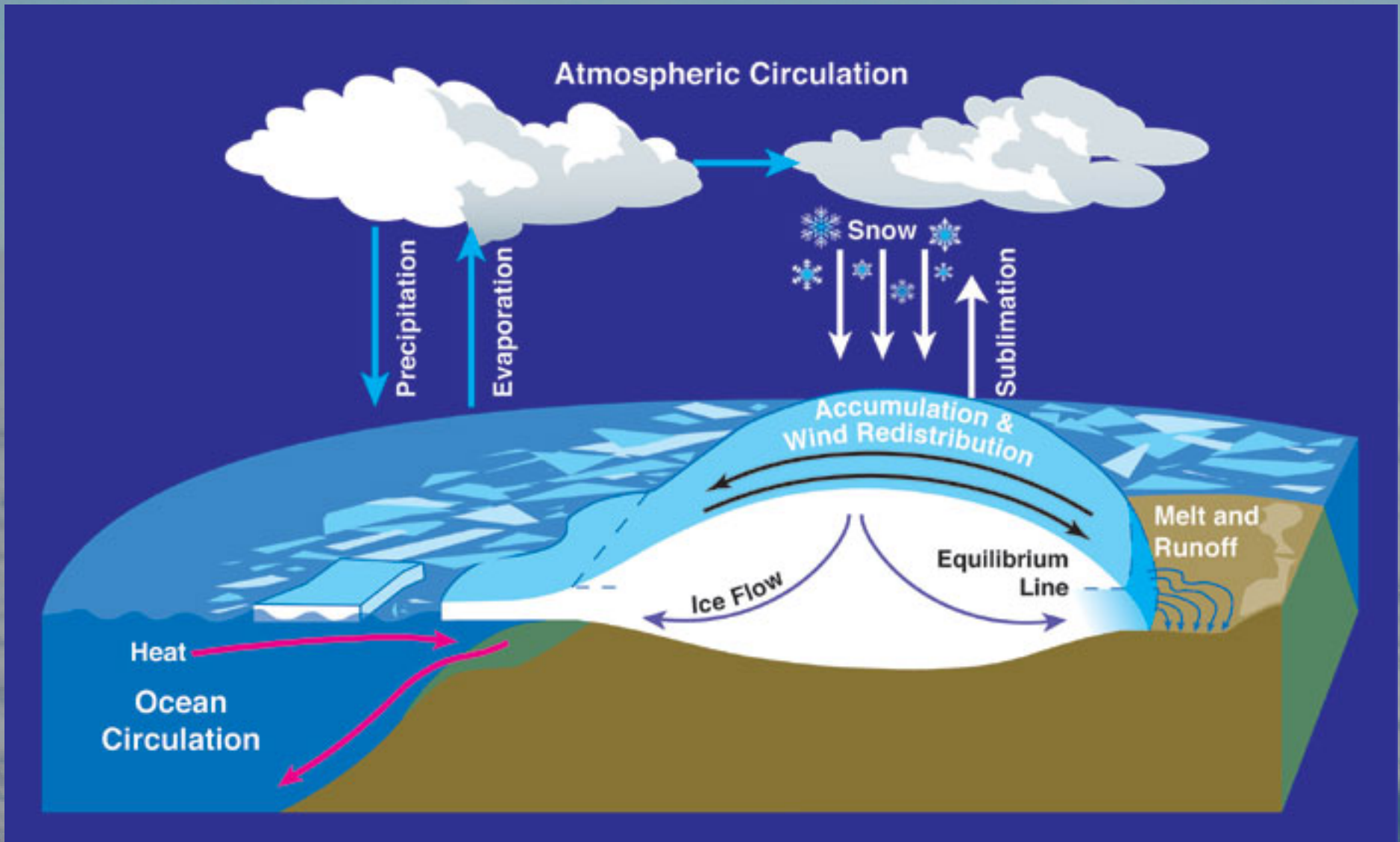
PENNSTATE





(Pritchard et al. 2009)

Ice sheet/oceans partner



Piles Fall Apart



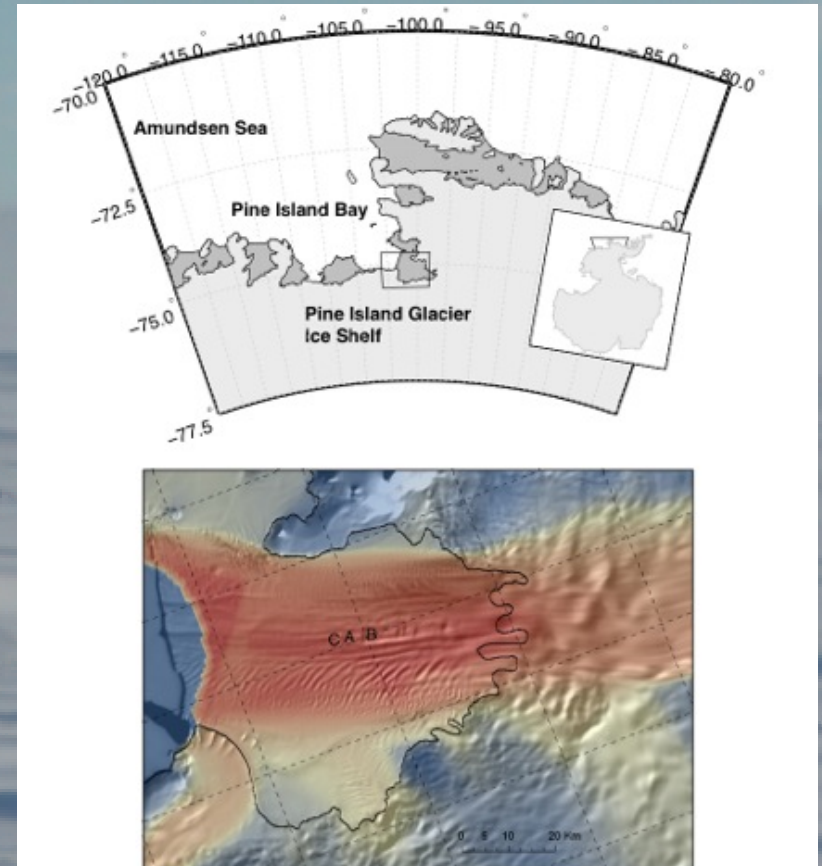
Unless We Brace



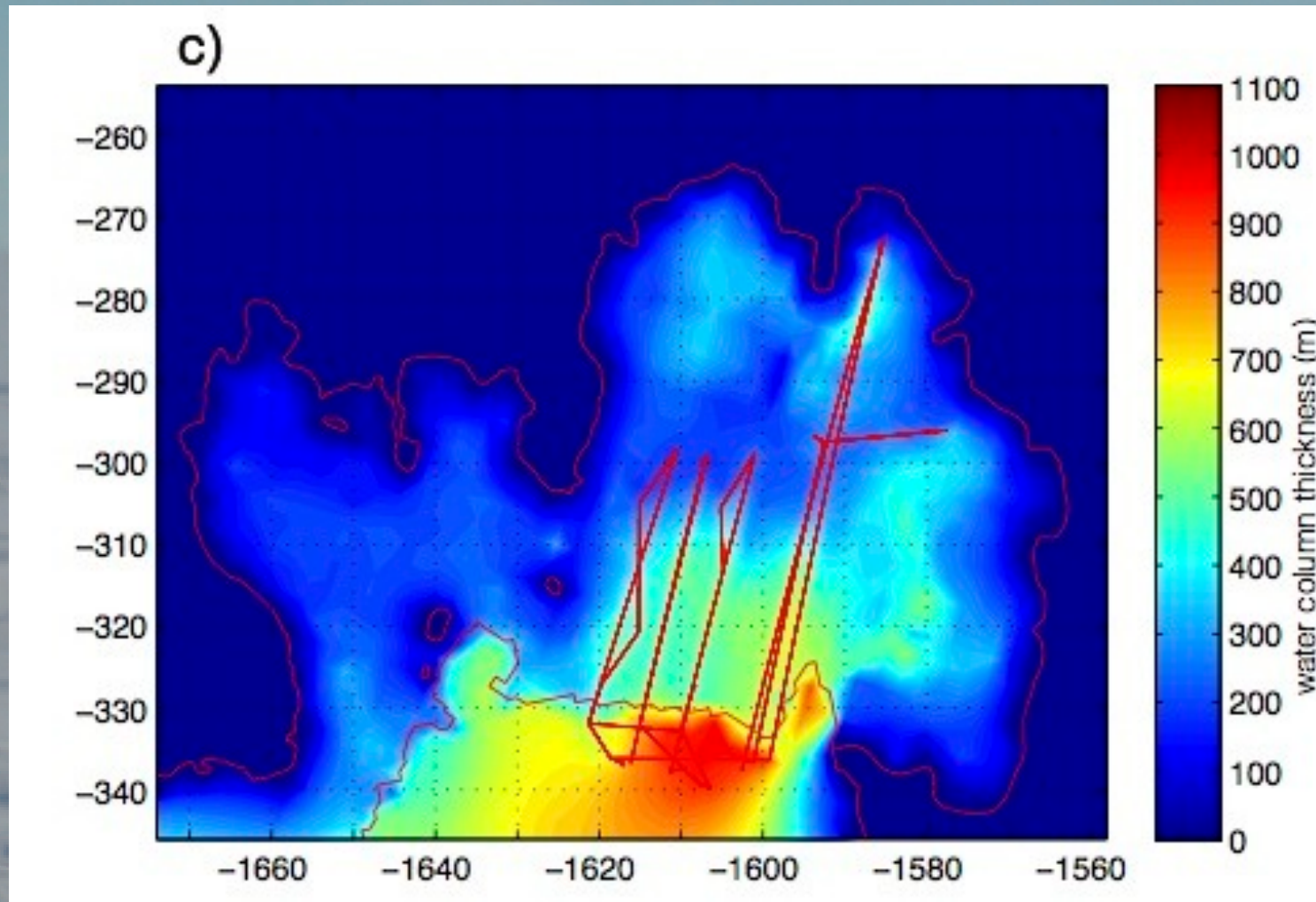
Andrew Wood [CC-BY-SA-2.0 (<http://creativecommons.org/licenses/by-sa/2.0>)], via Wikimedia Commons

Pine Island Glacier

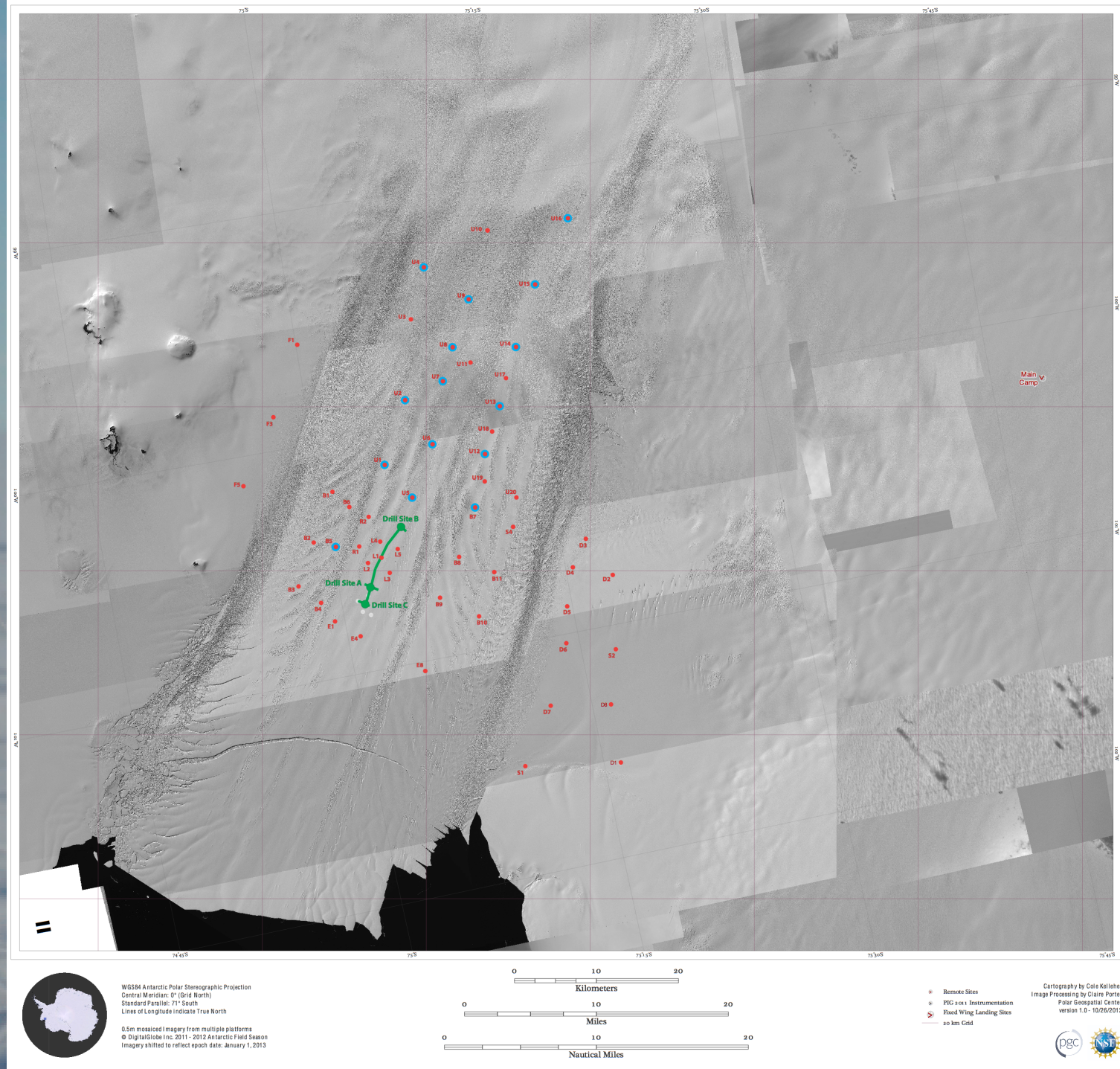
- Ice shelf has retreated
- Large crack at shelf front
- Linear crevassed ridges; intact between



Gravity Inversion



Muto *et al.*, 2012

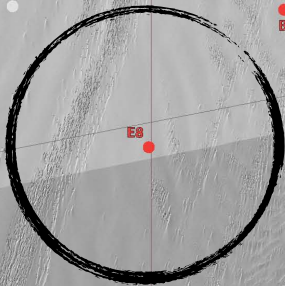
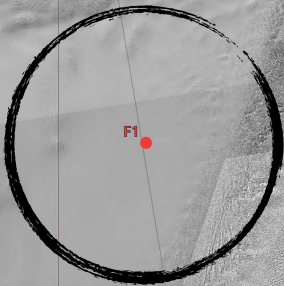
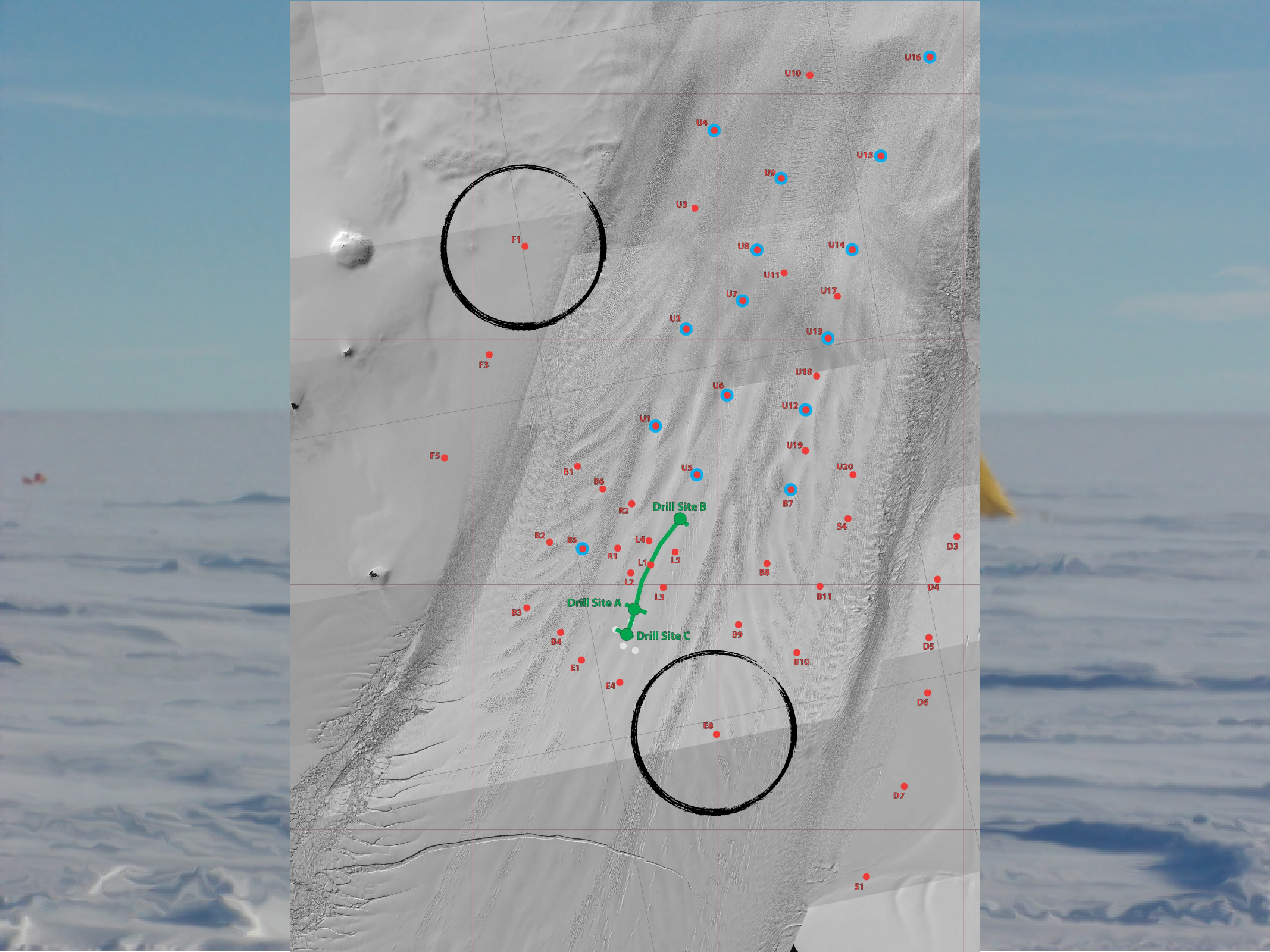


Geophysics @ PIG

- Ground-based radar and seismics (in the drilling-valley)
- Helicopter-based seismics and melt-radar
- GPS & broadband seismics



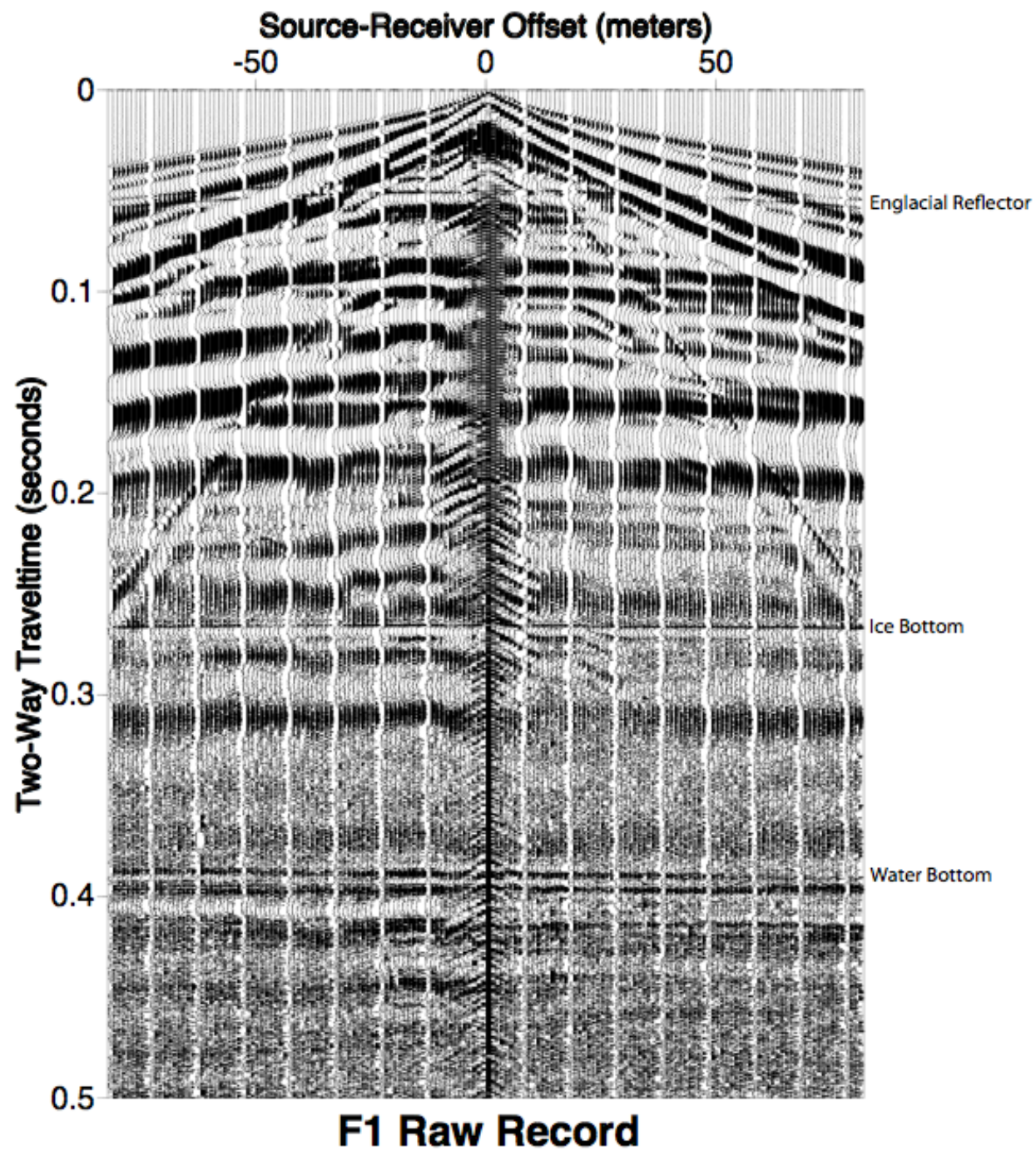


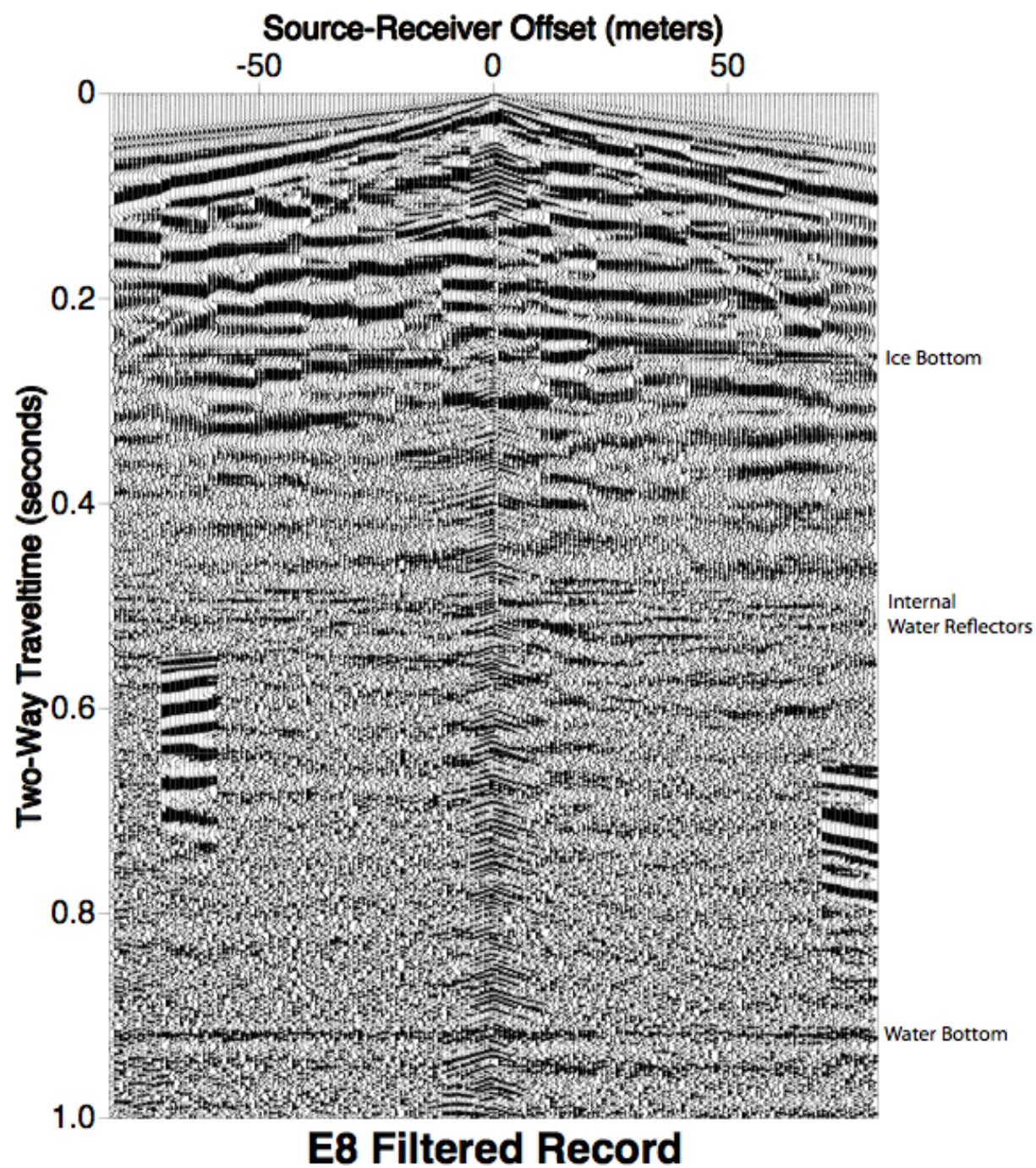


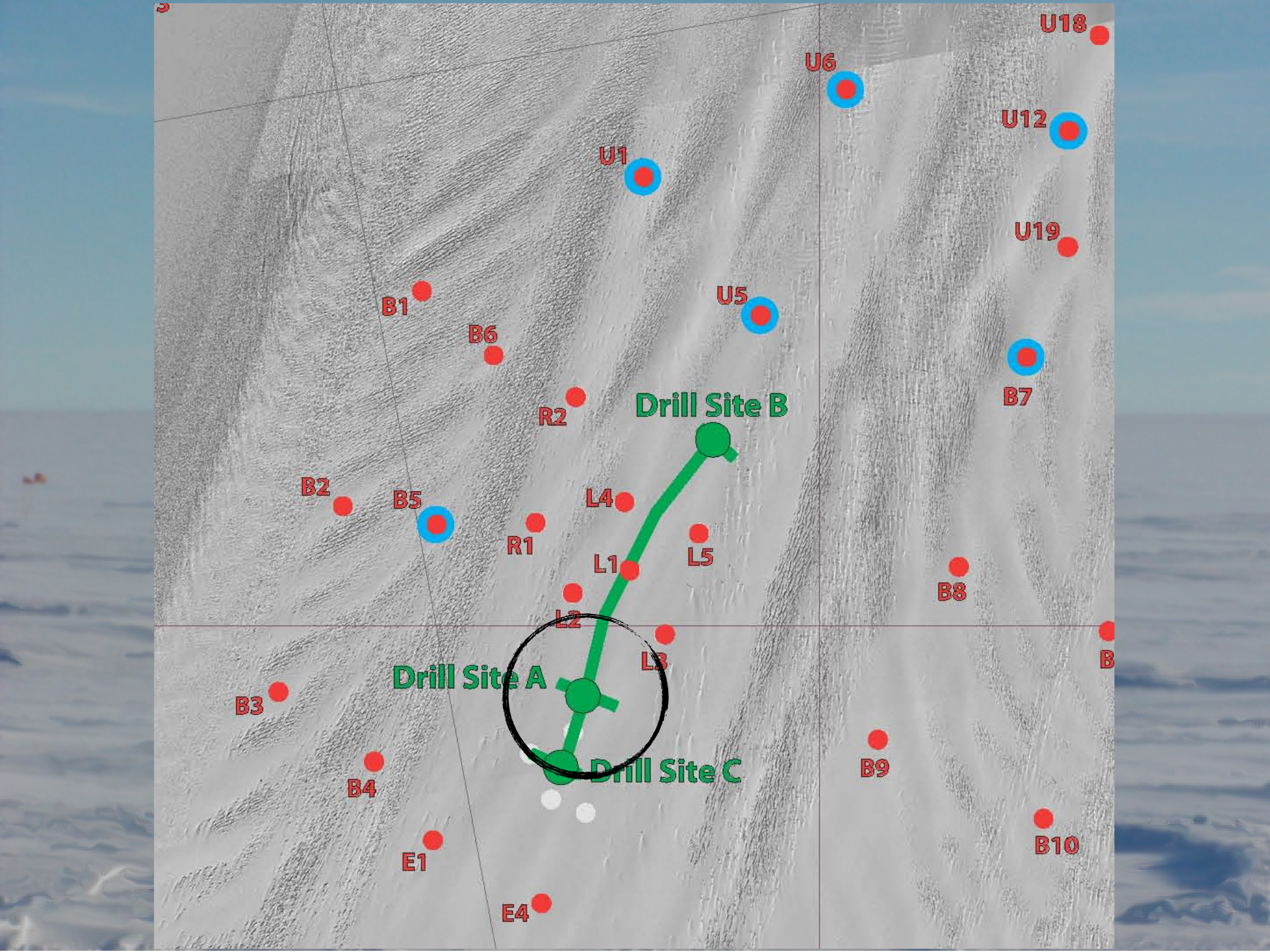
Drill Site B

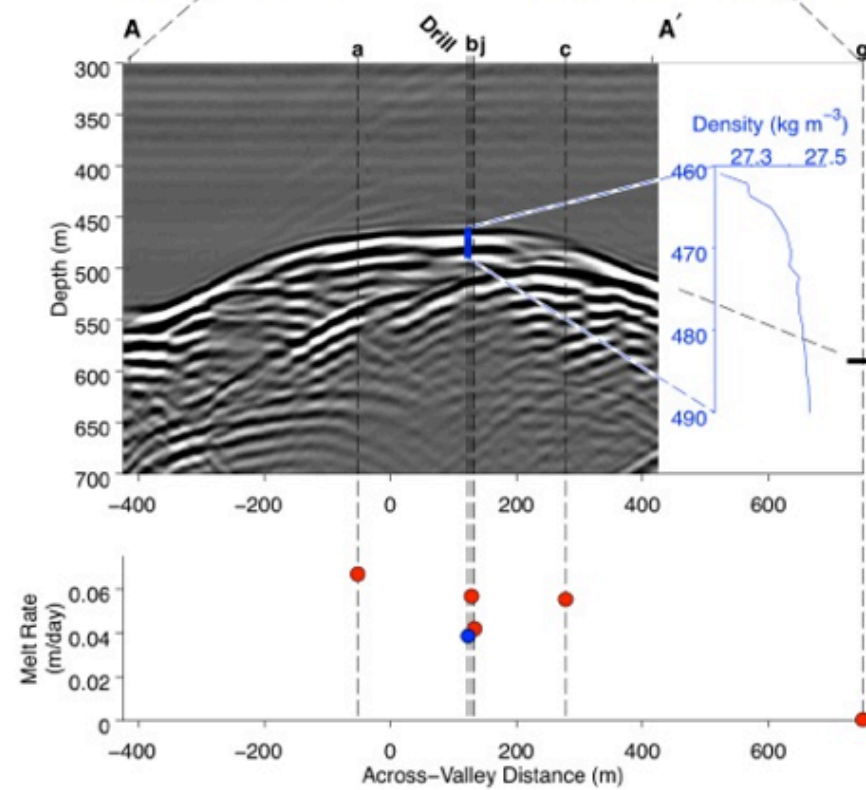
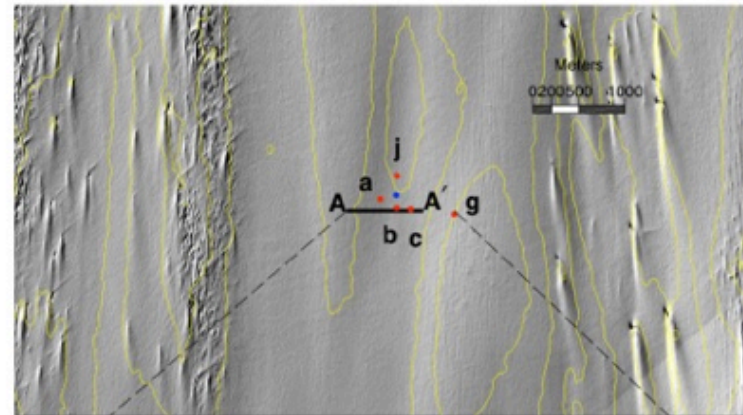
Drill Site A

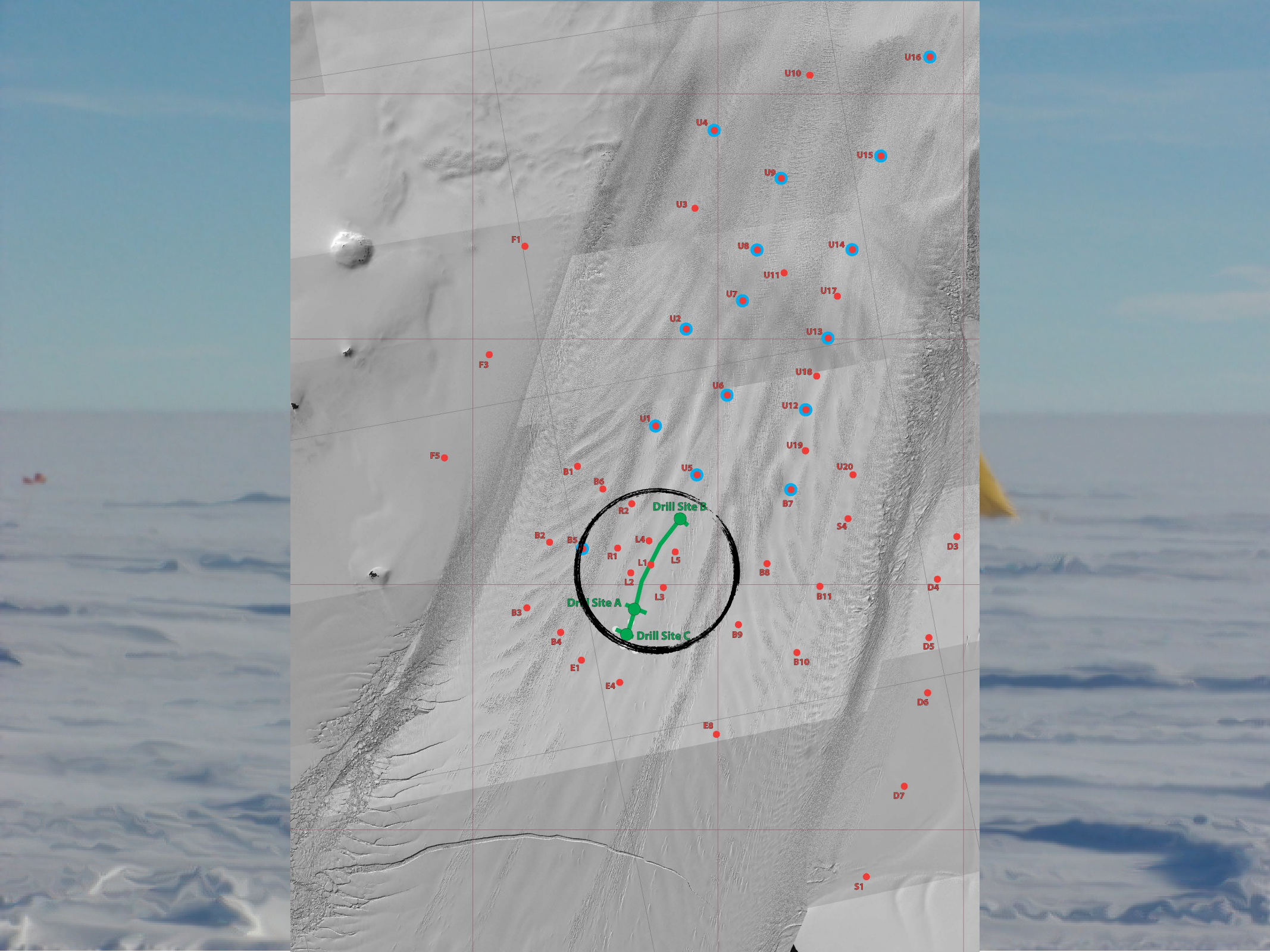
Drill Site C

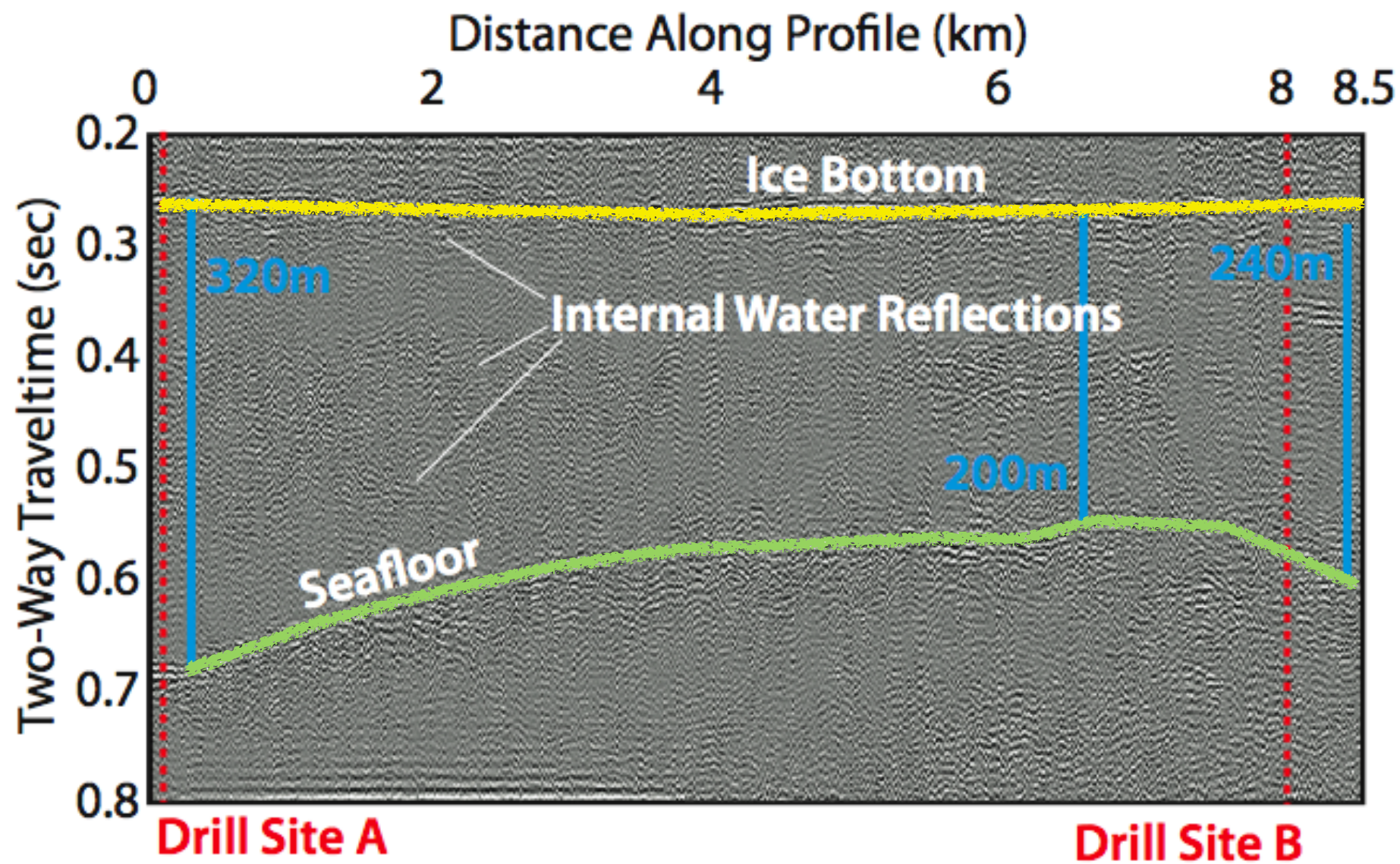




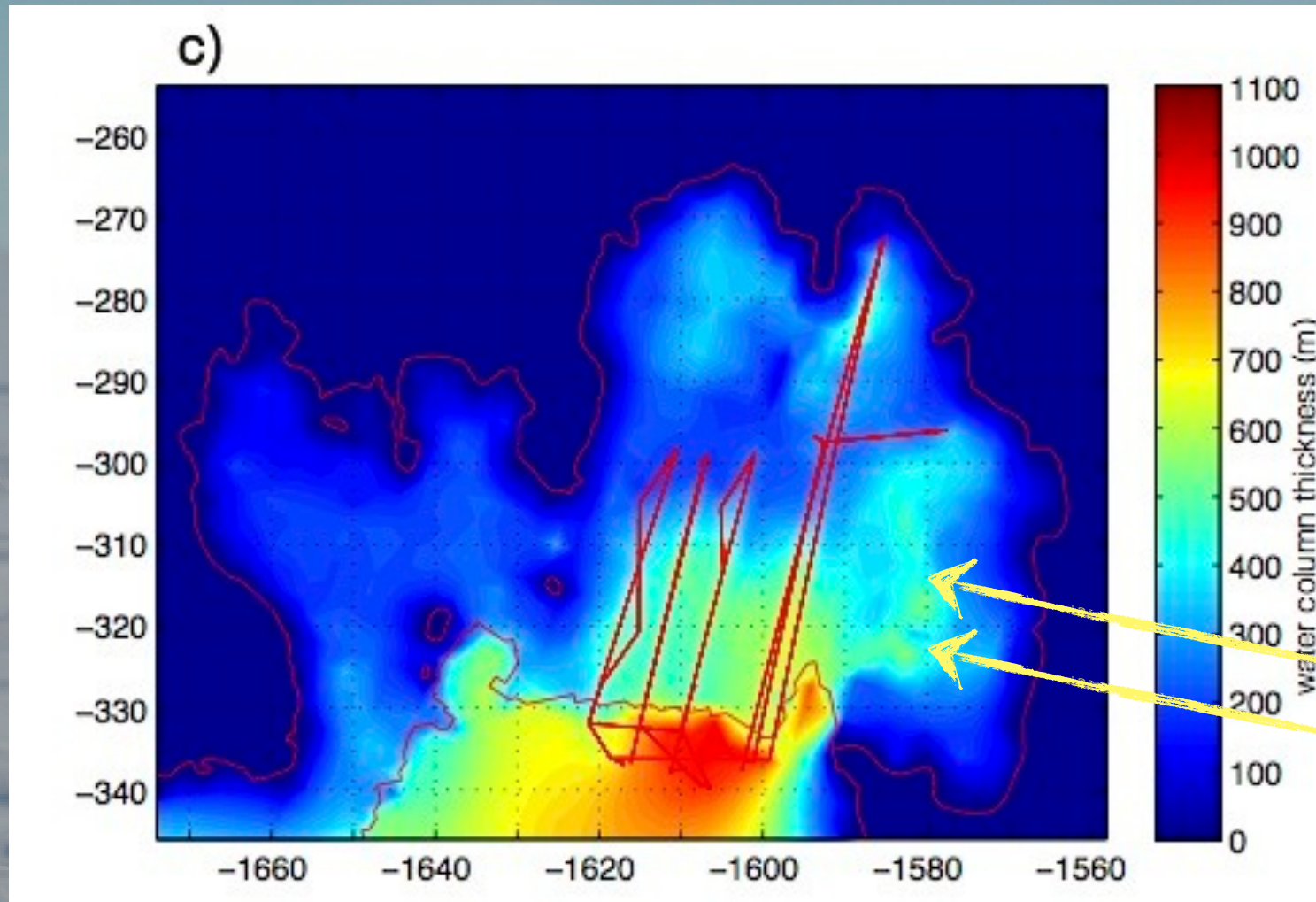




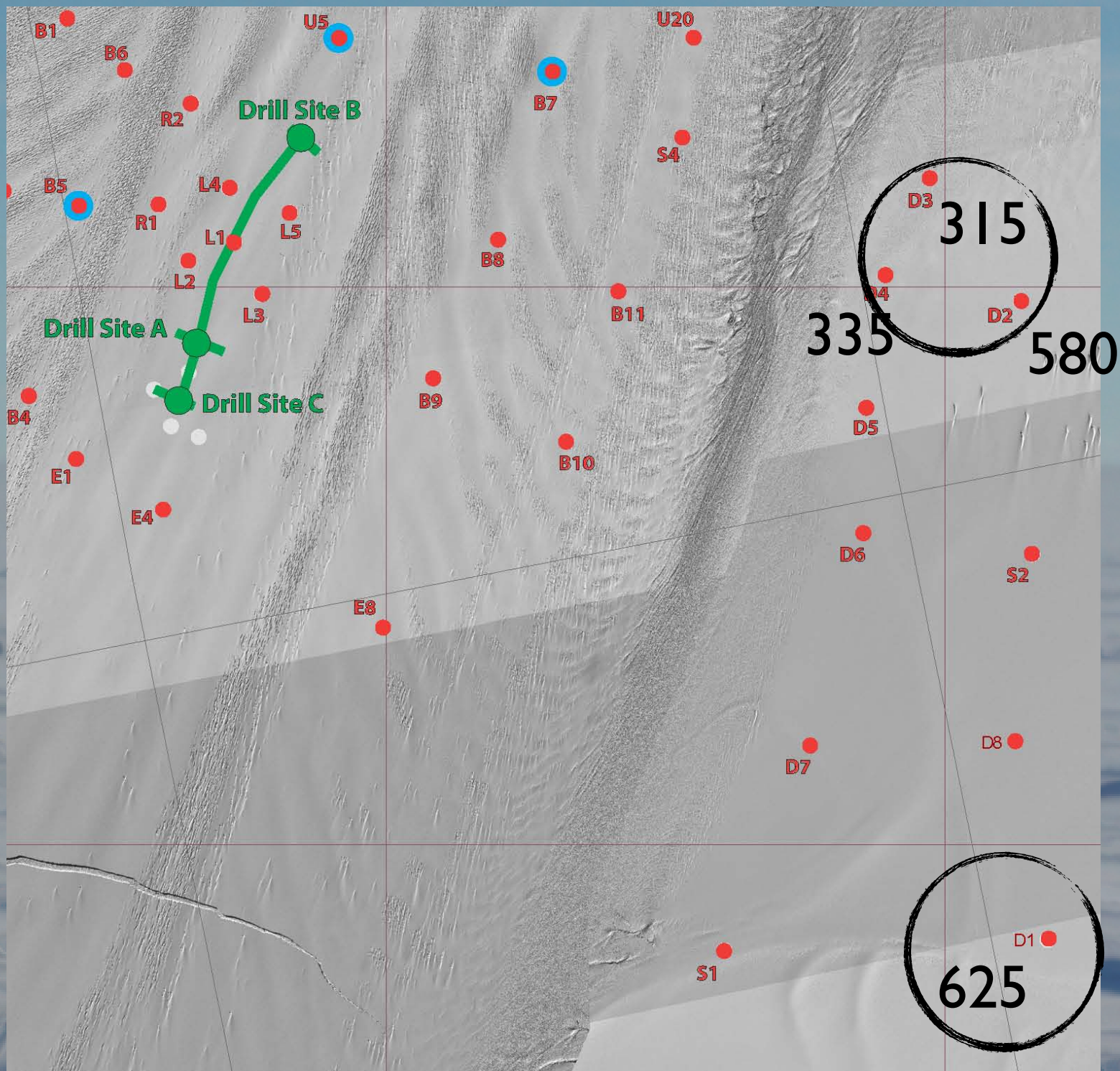




Gravity Inversion



Muto *et al.*, 2012



Conclusions

- Gravity data very good, but don't contain the short wavelength variability
- Water-internal reflectors likely a temperature boundary
- Sediment and deeper-reflector analysis ongoing

