

Observations of basal change from repeat radar measurements

*Cameron Lewis, Prasad Gogineni, Carl Leuschen, John Paden, all at
Cresis, KU*

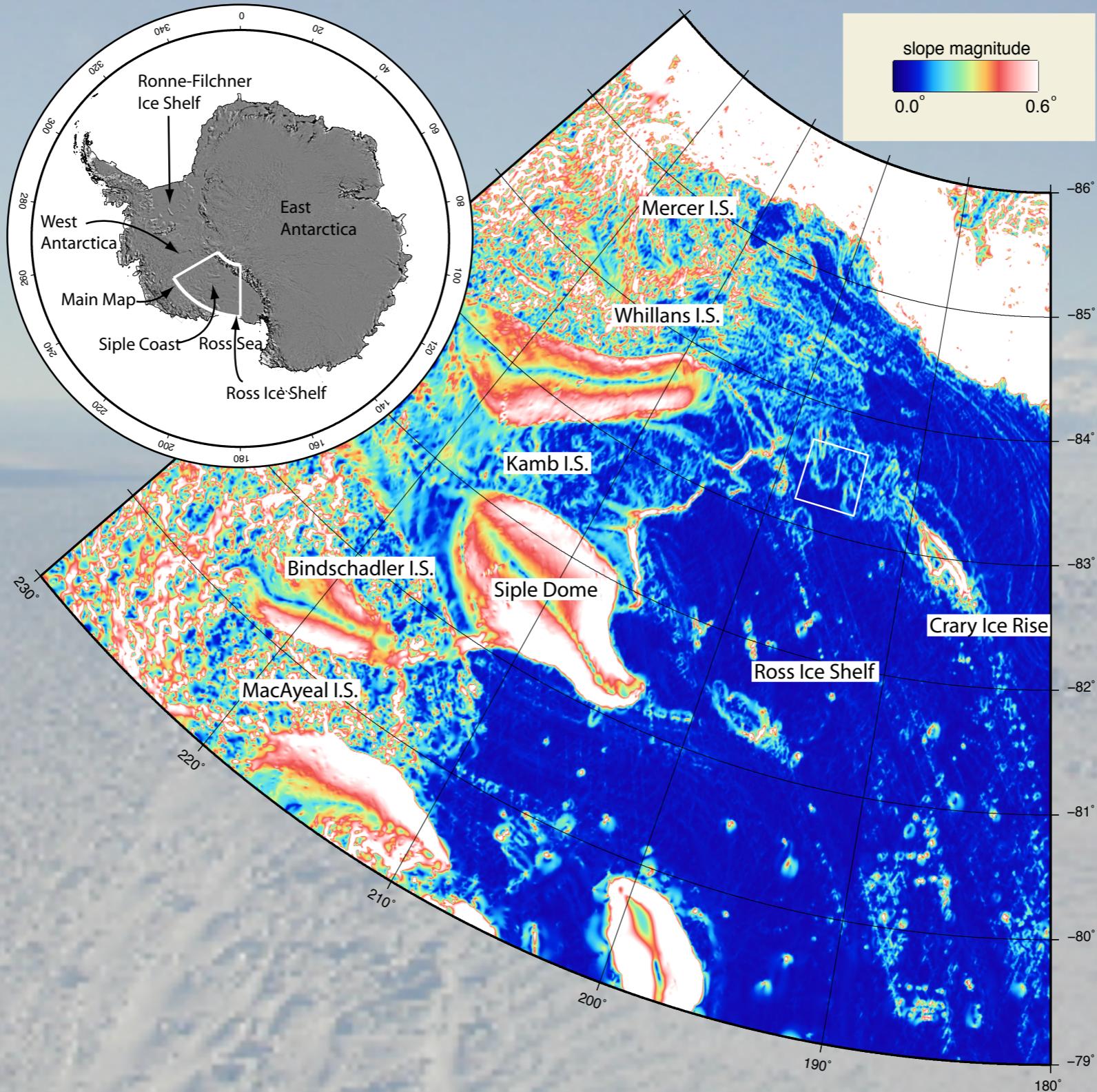
Peter Burkett, Sridhar Anandakrishnan at Cresis, PSU

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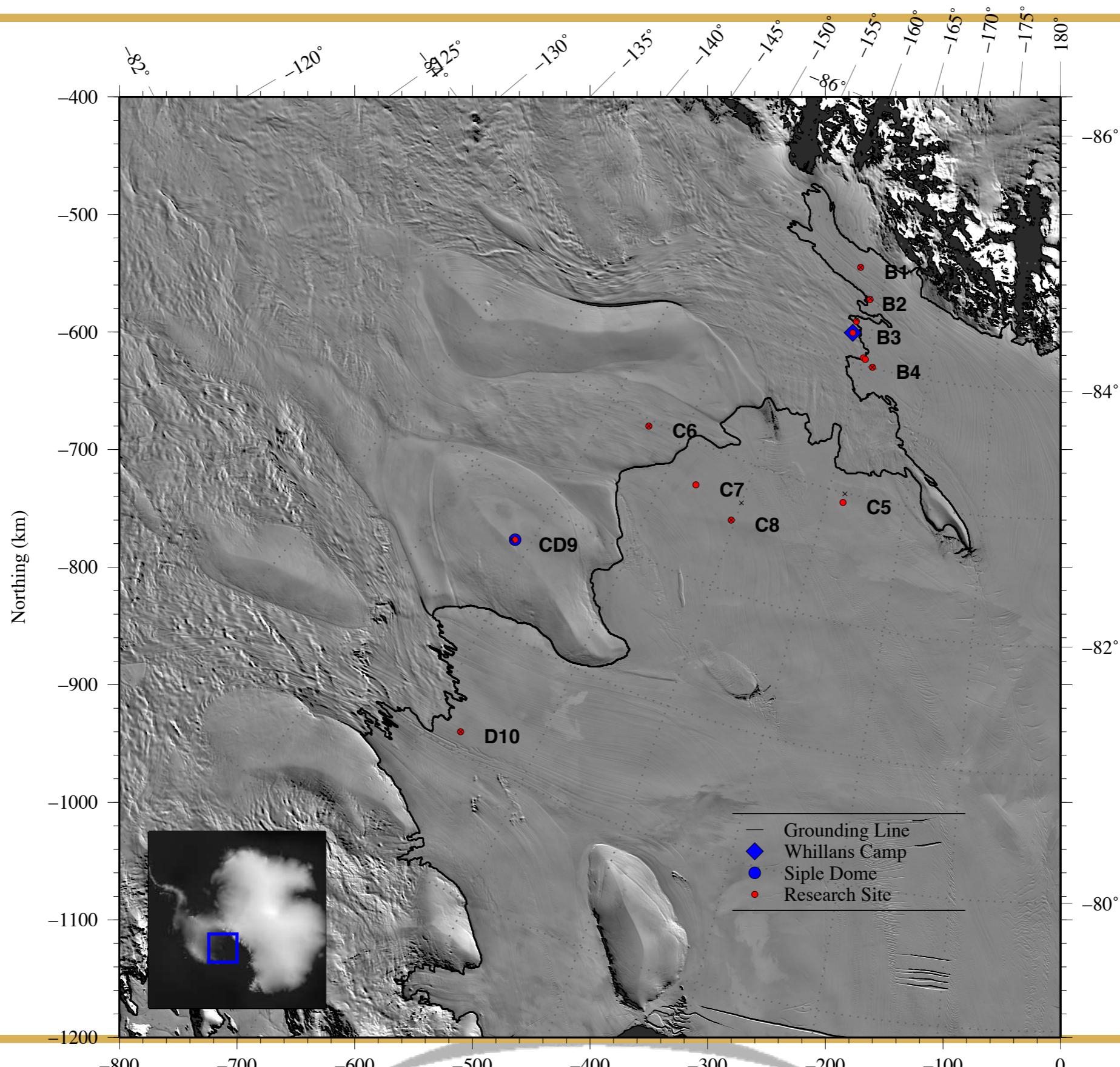


Ice ocean interactions

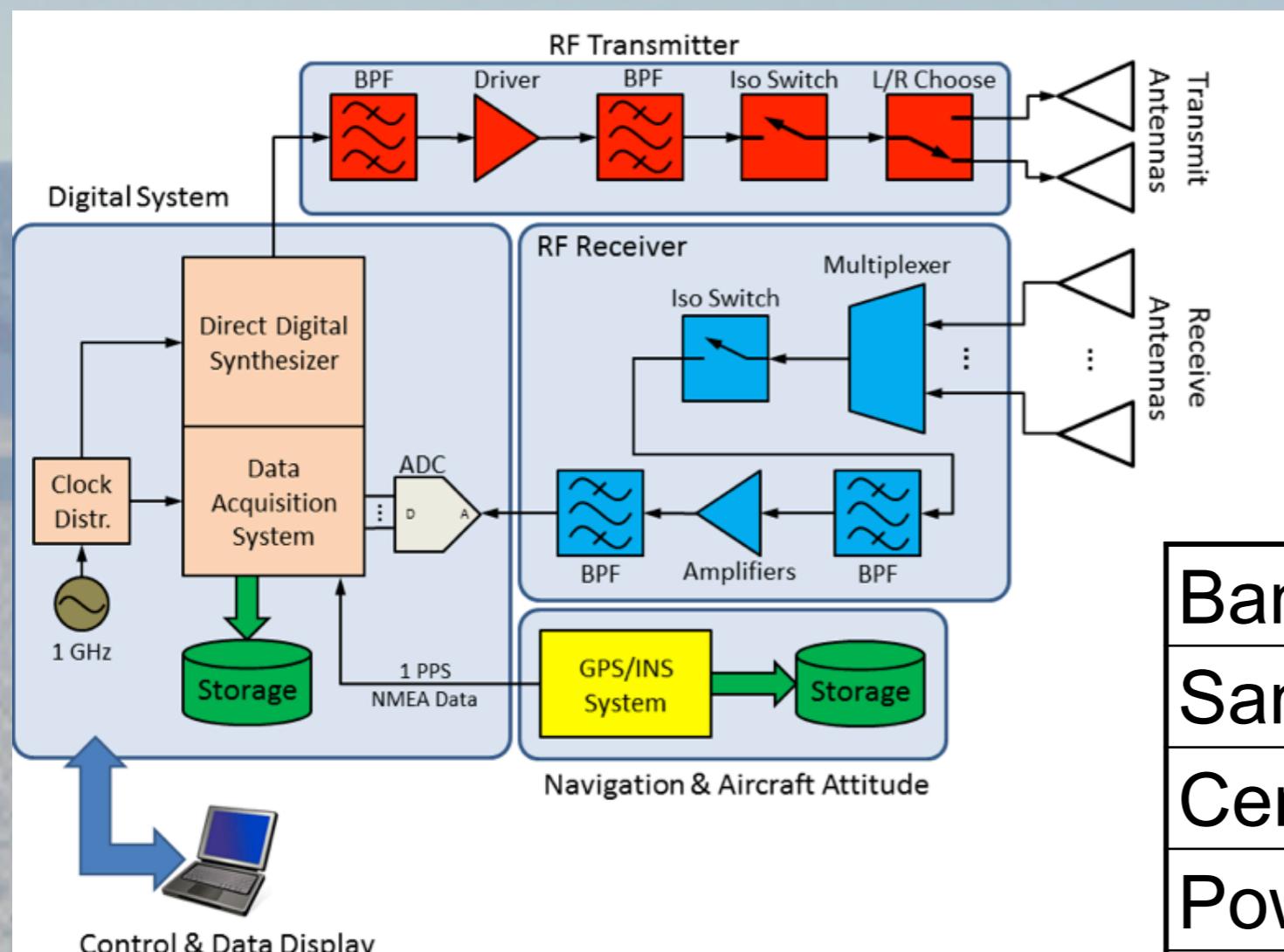
- Grounding lines of the Siple Coast ice streams
- Instrumentation
 - Broadband profiling radar
 - phase sensitive profiling radar
 - Array radar
- Field work



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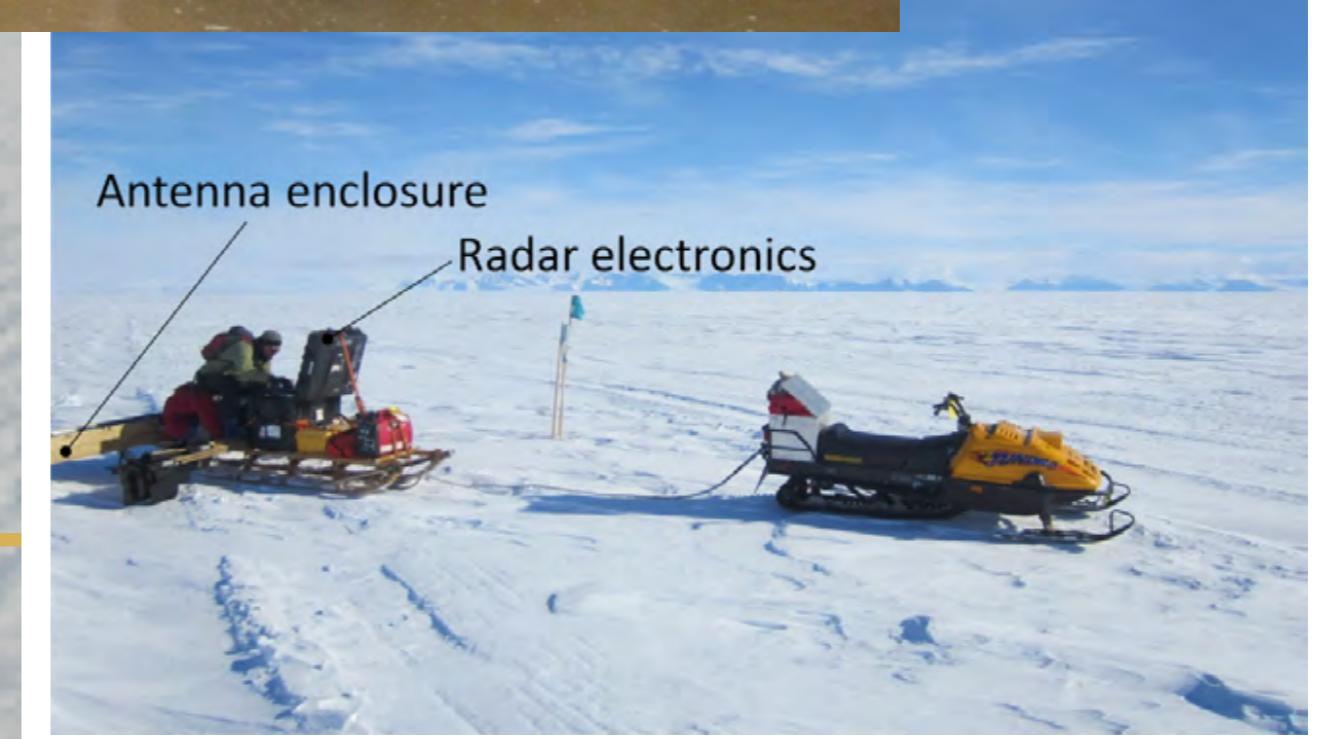


Ground Radar

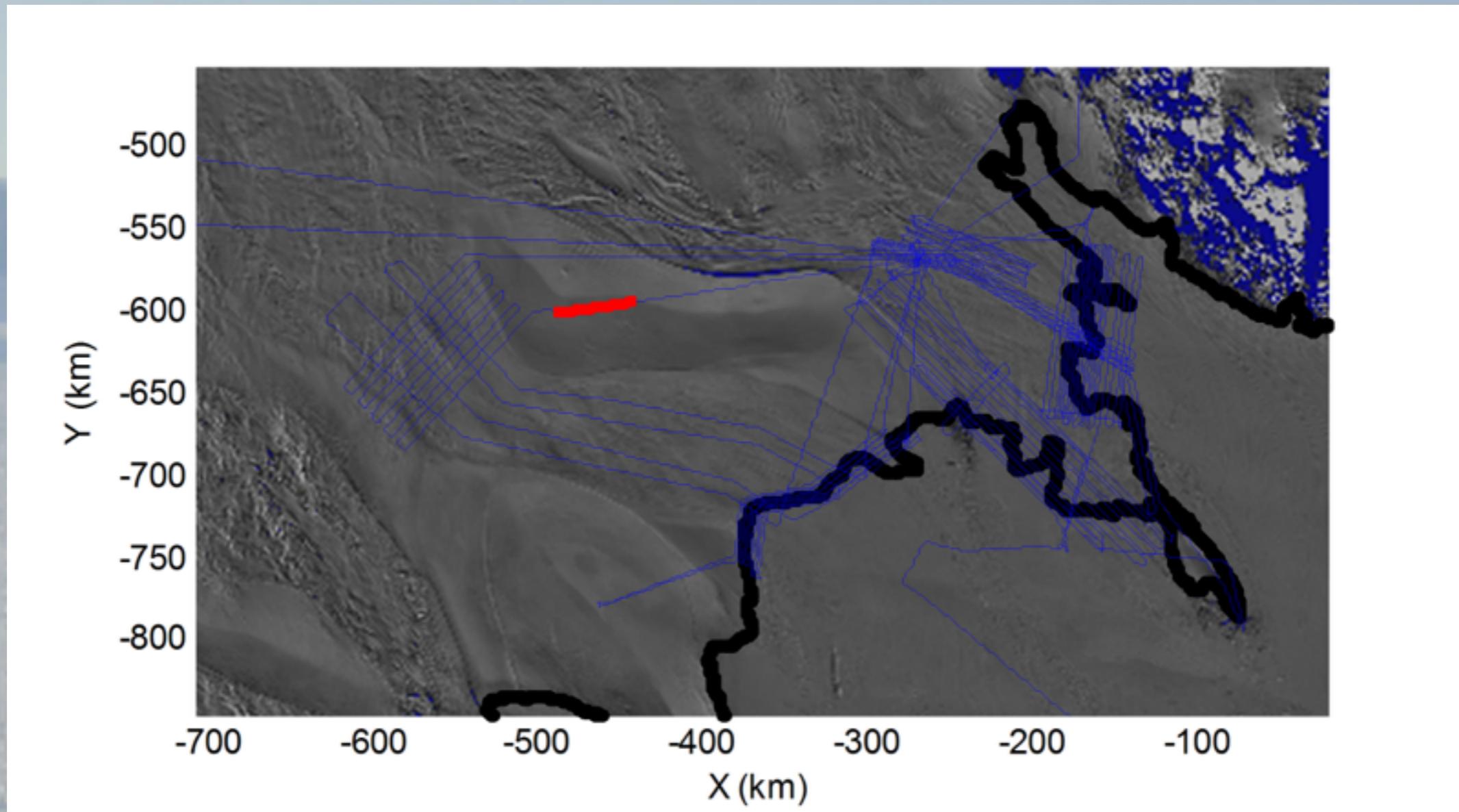


Bandwidth	300 MHz
Sampling Rate	1 GHz
Center Freq	750 MHz
Power	5W
Sensitivity	145 dB
Tx/Rx	2/6 Ping-Pong

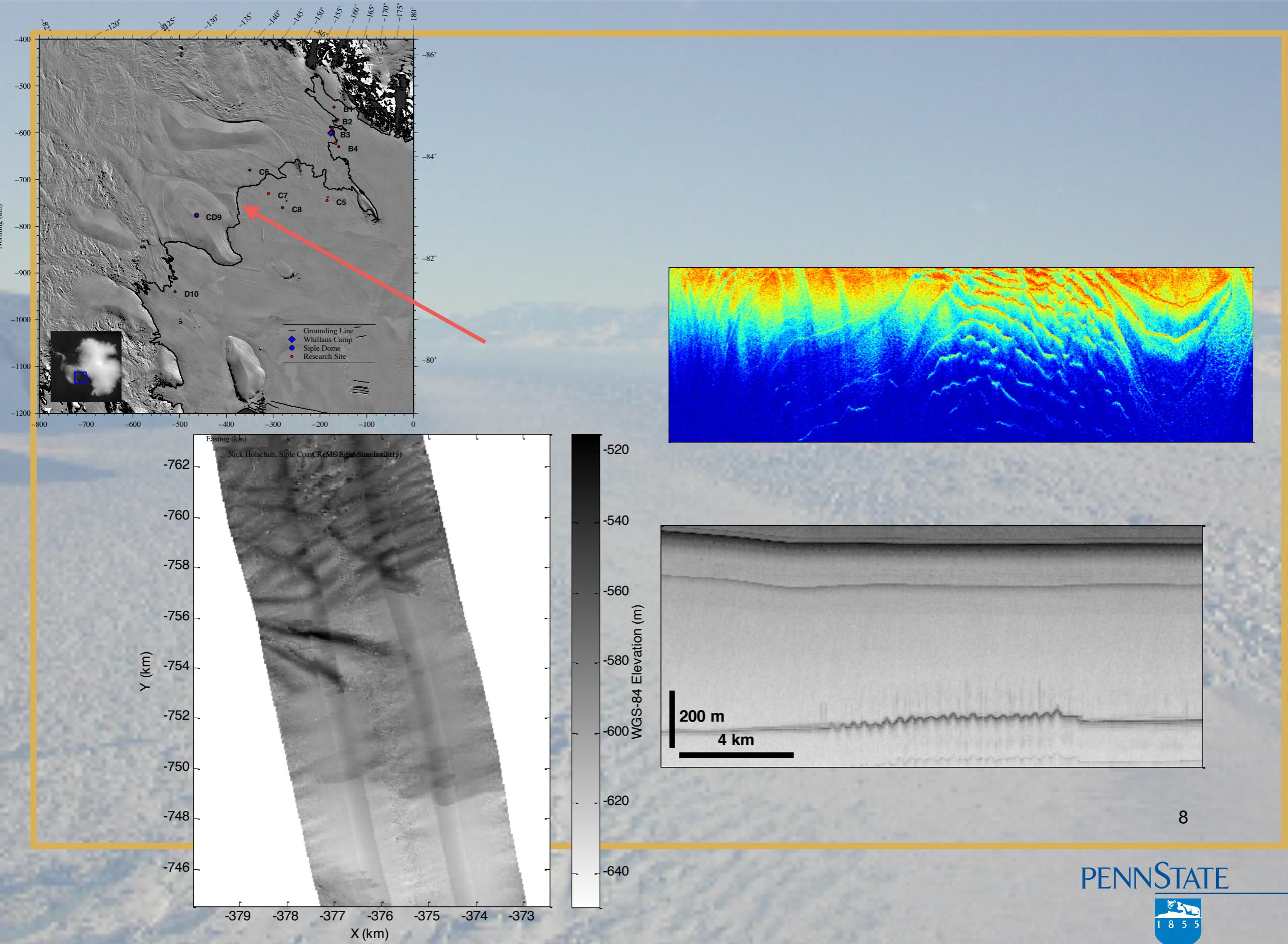
For John and Michelle

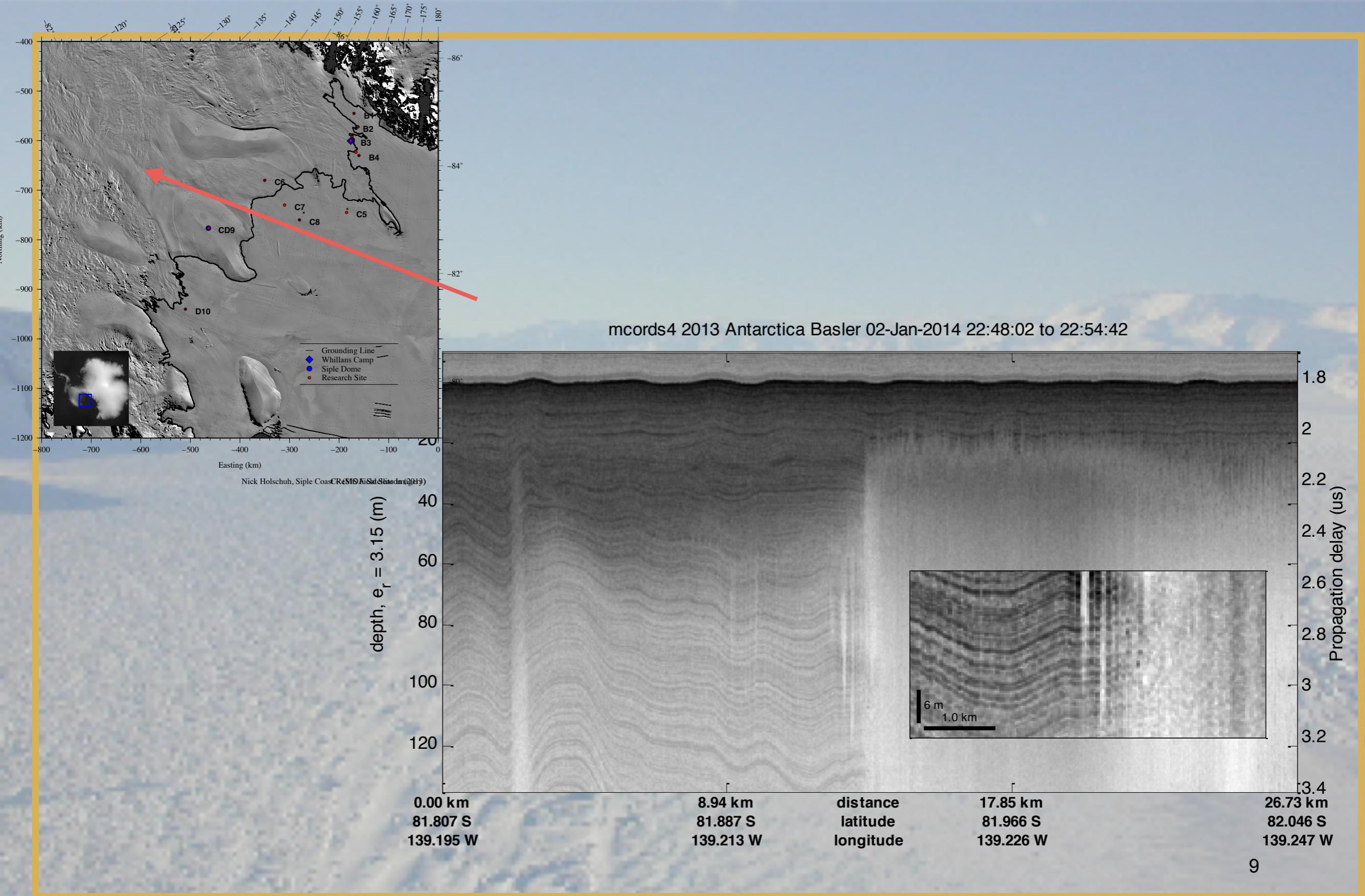


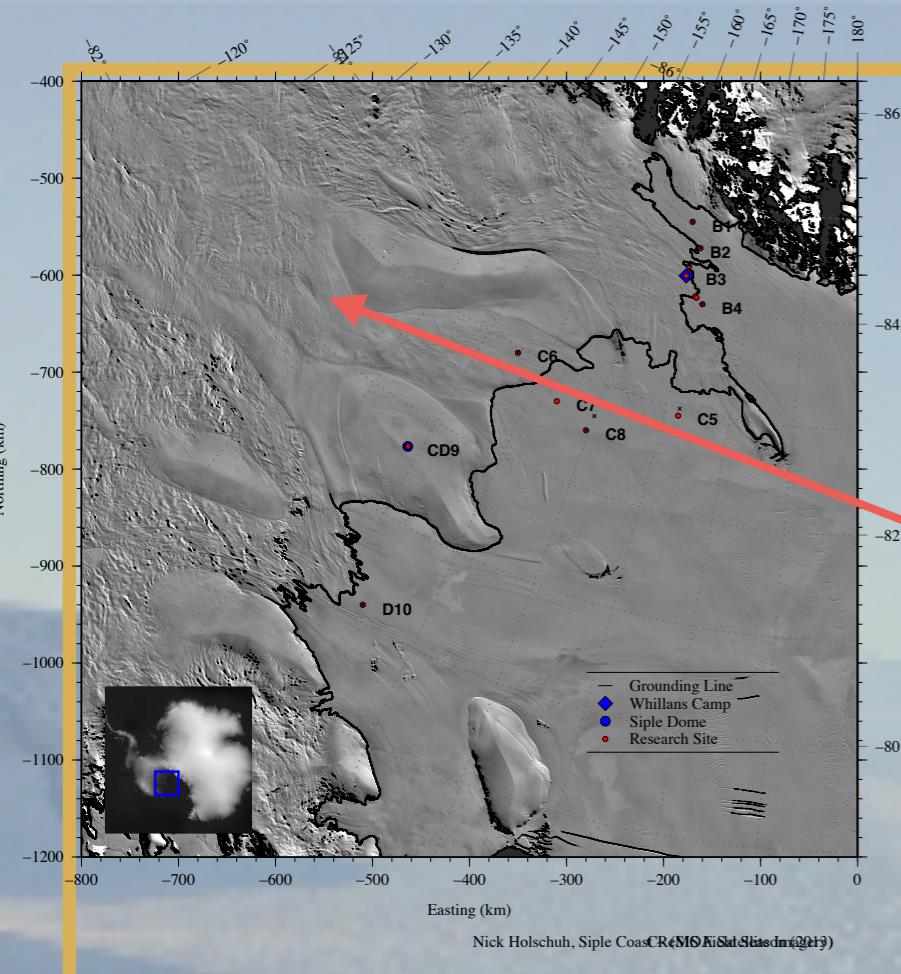
Cresis DC3 2013/14 coverage



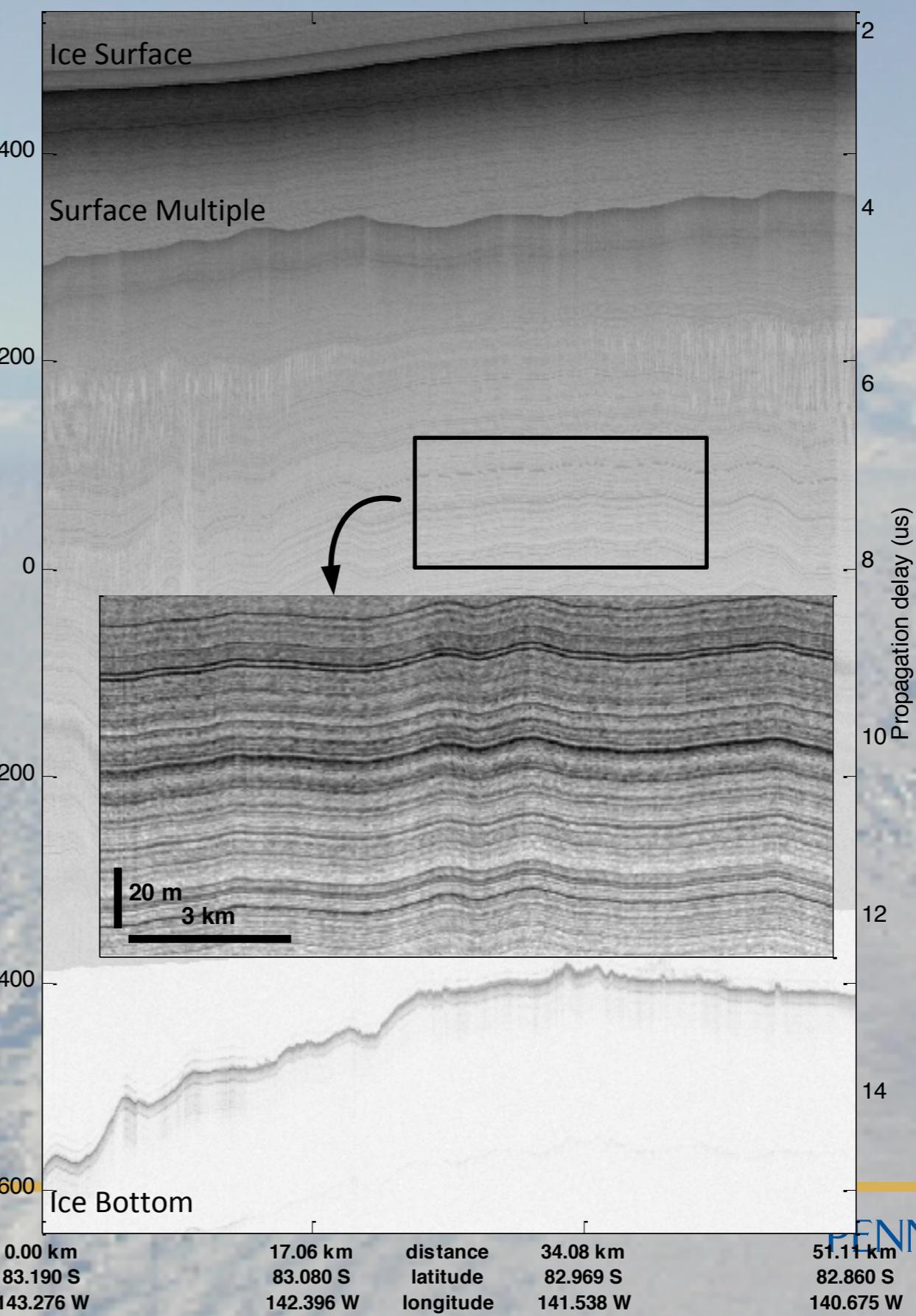
7

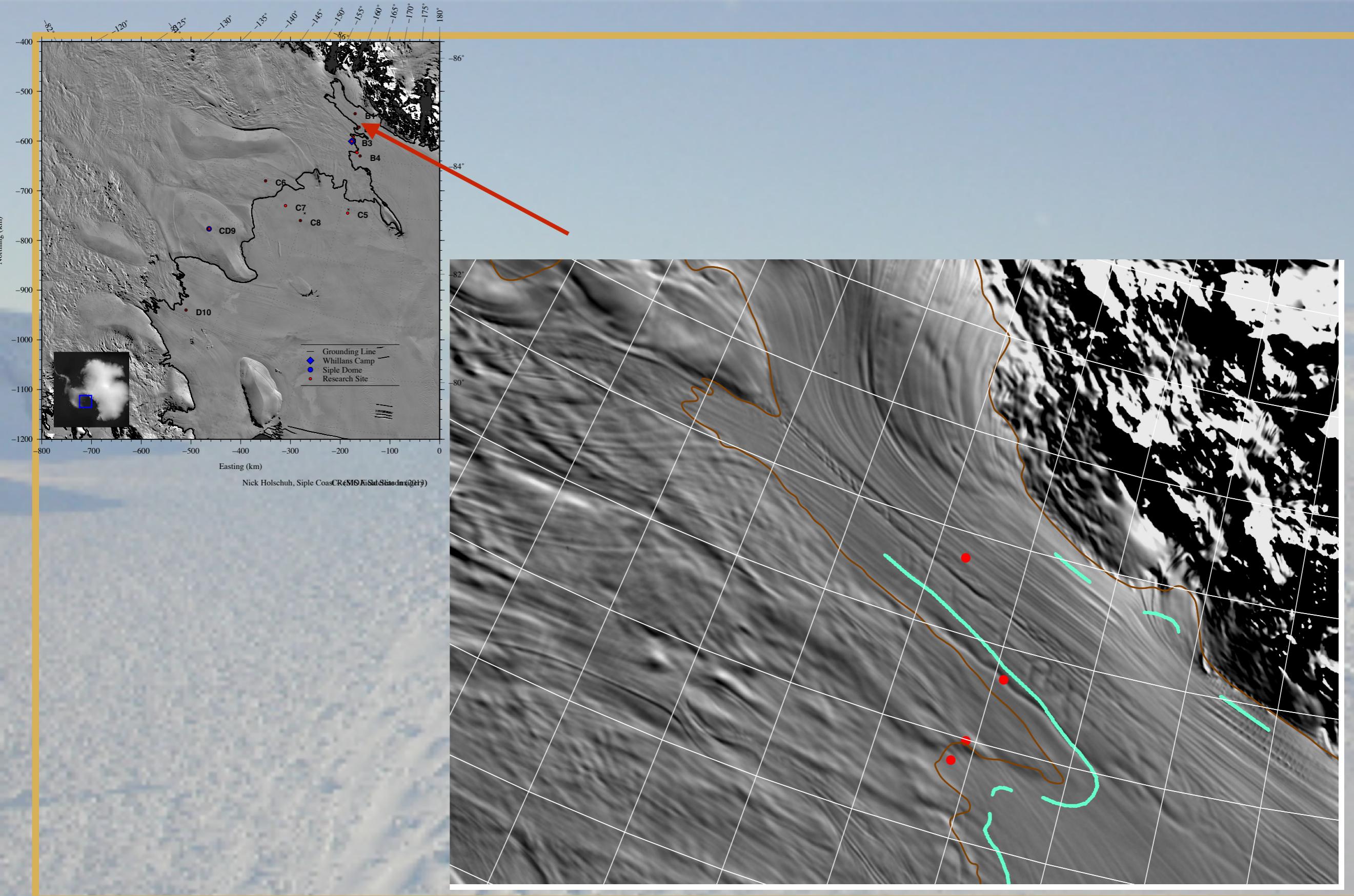




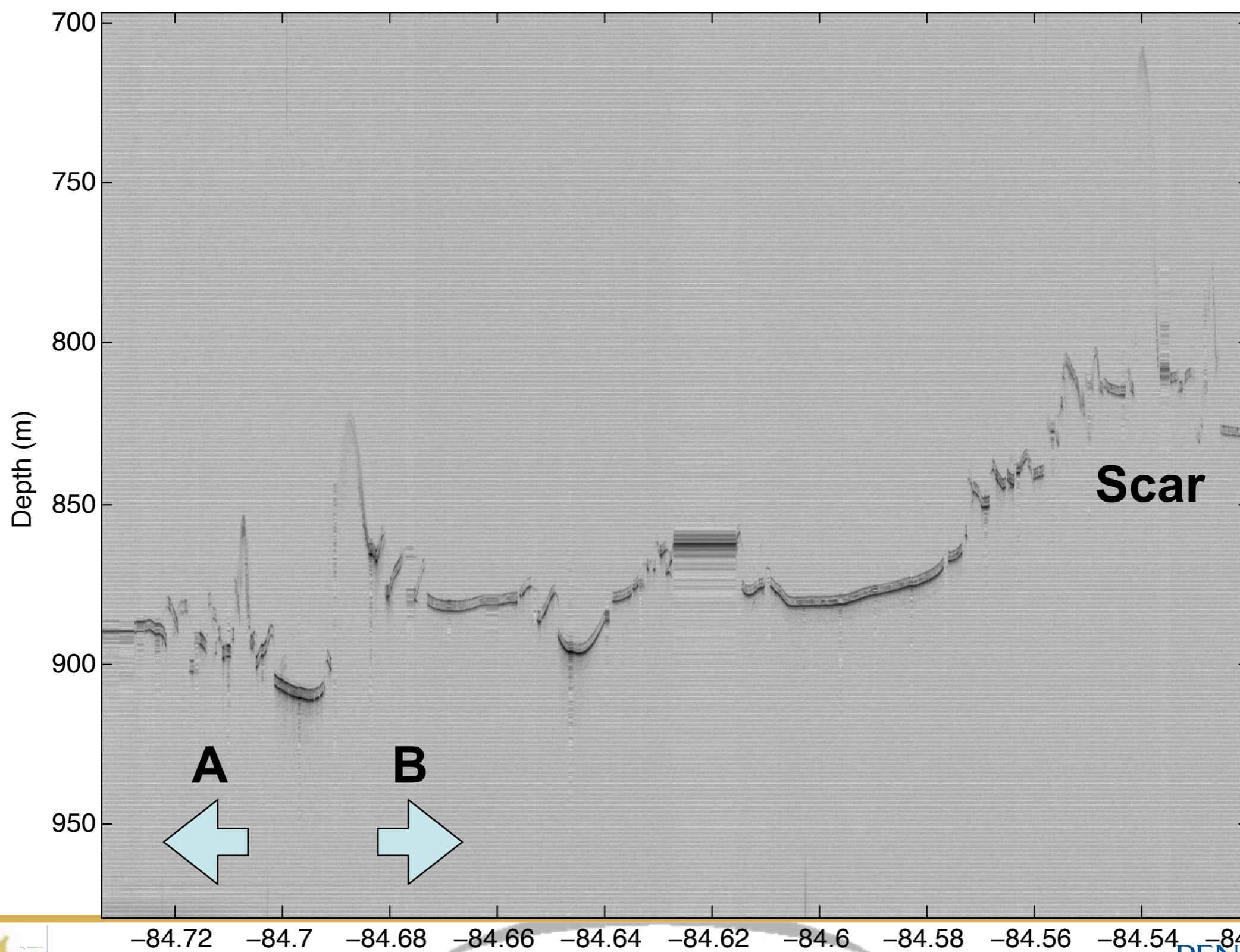


mcords4 2013 Antarctica Basler 02-Jan-2014 21:59:40 to 22:12:17

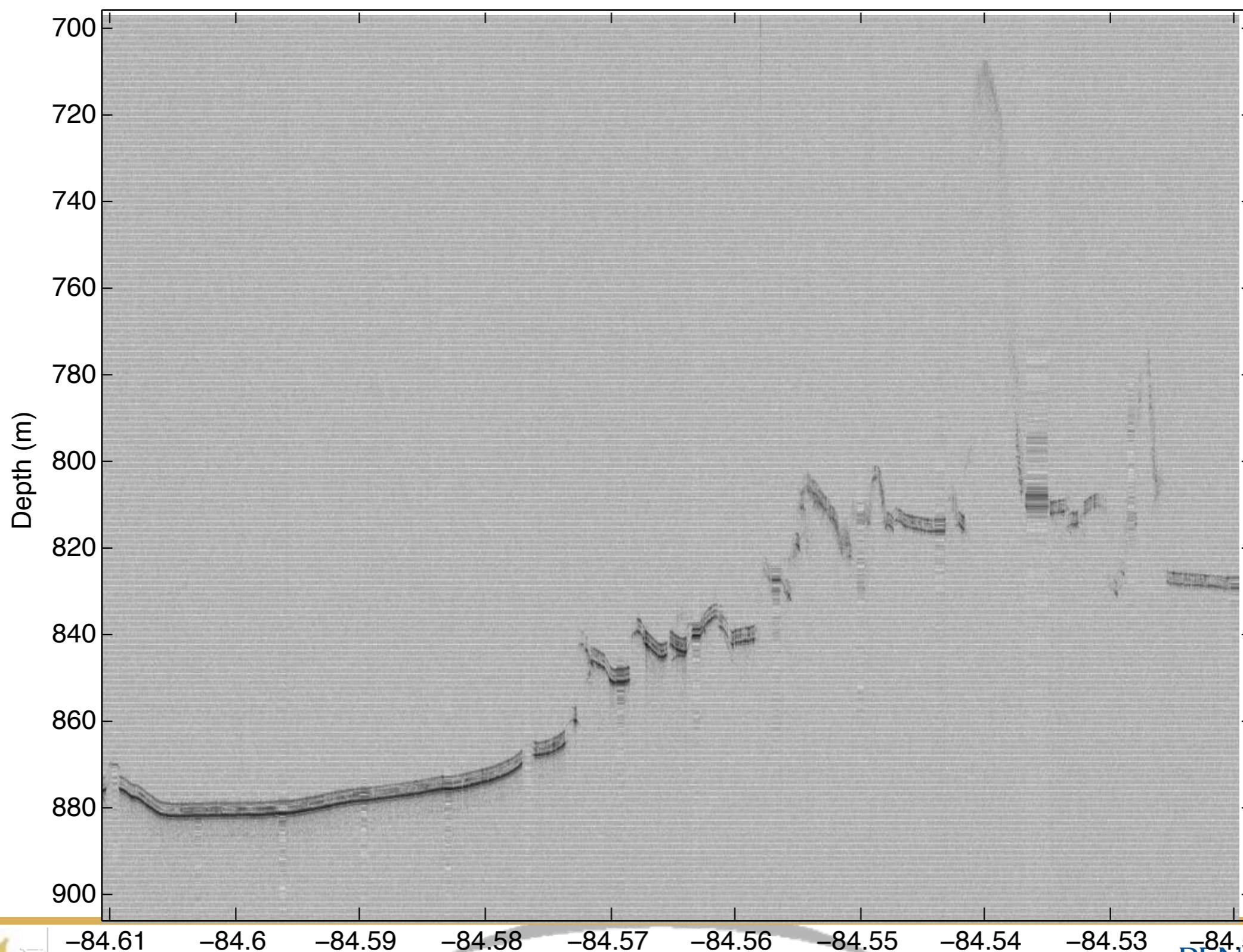




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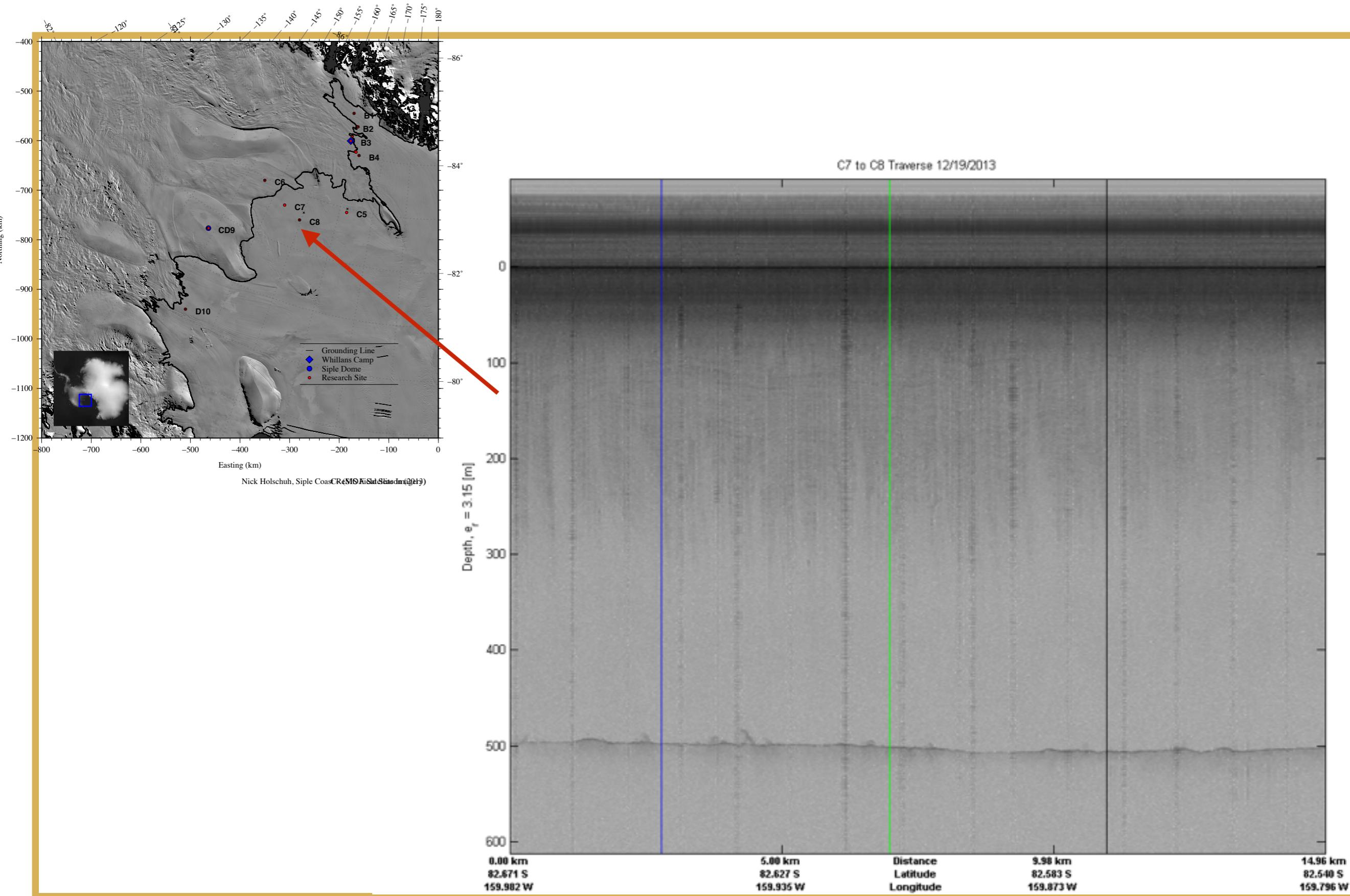


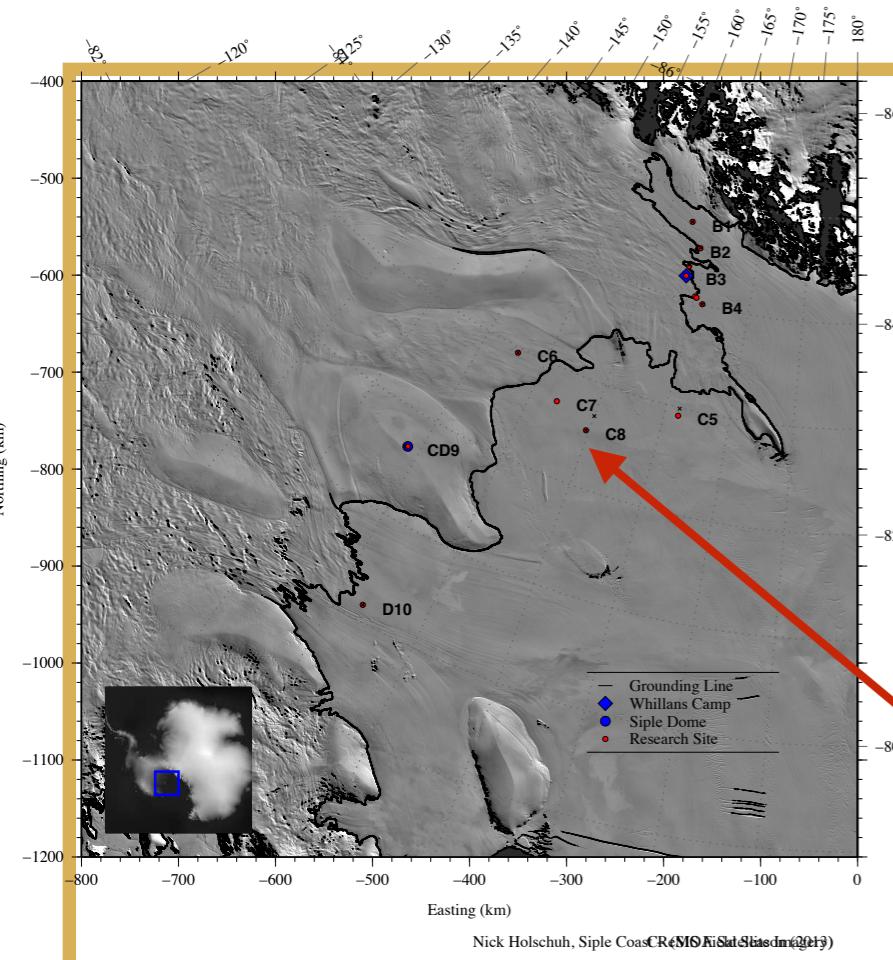
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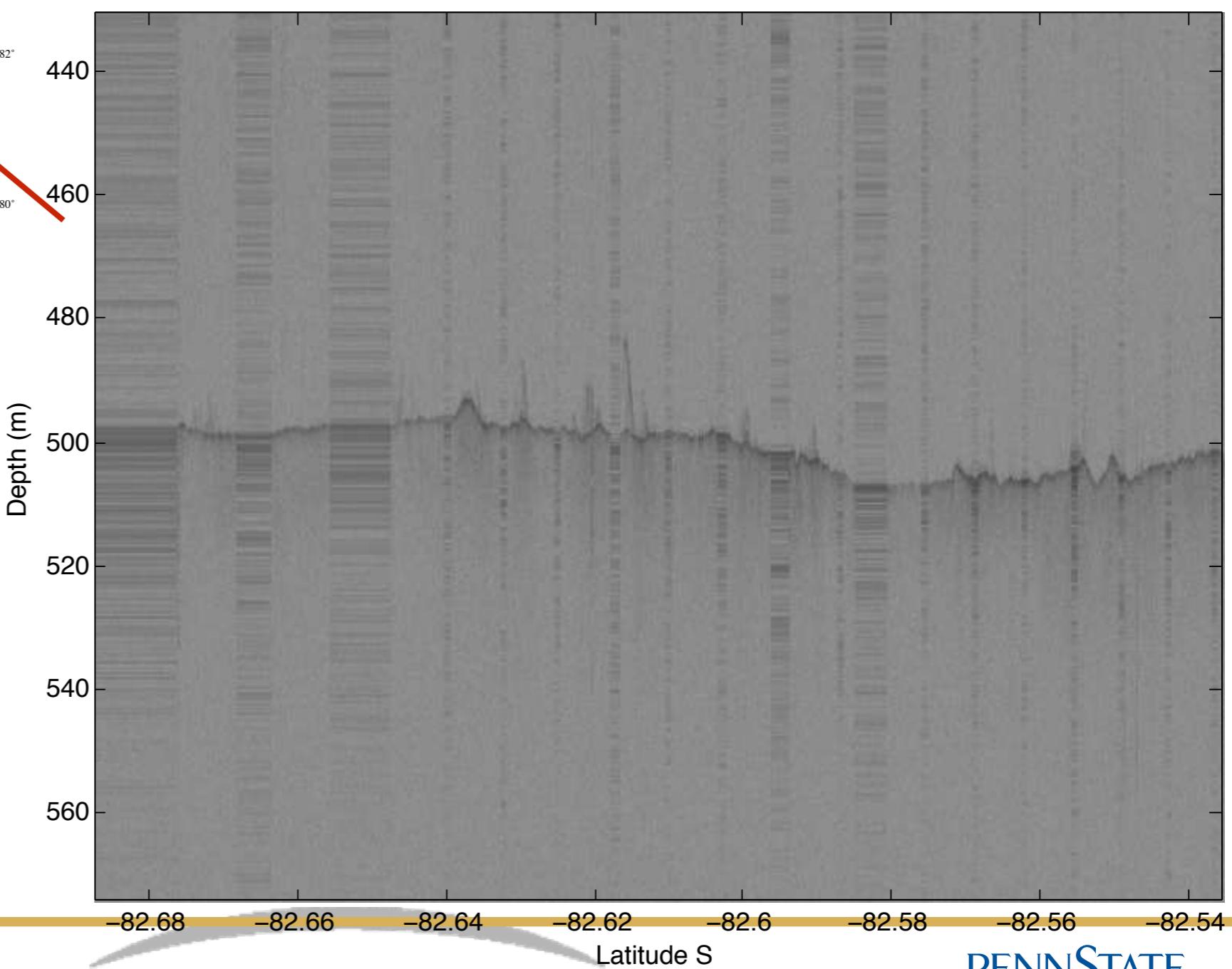
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1855





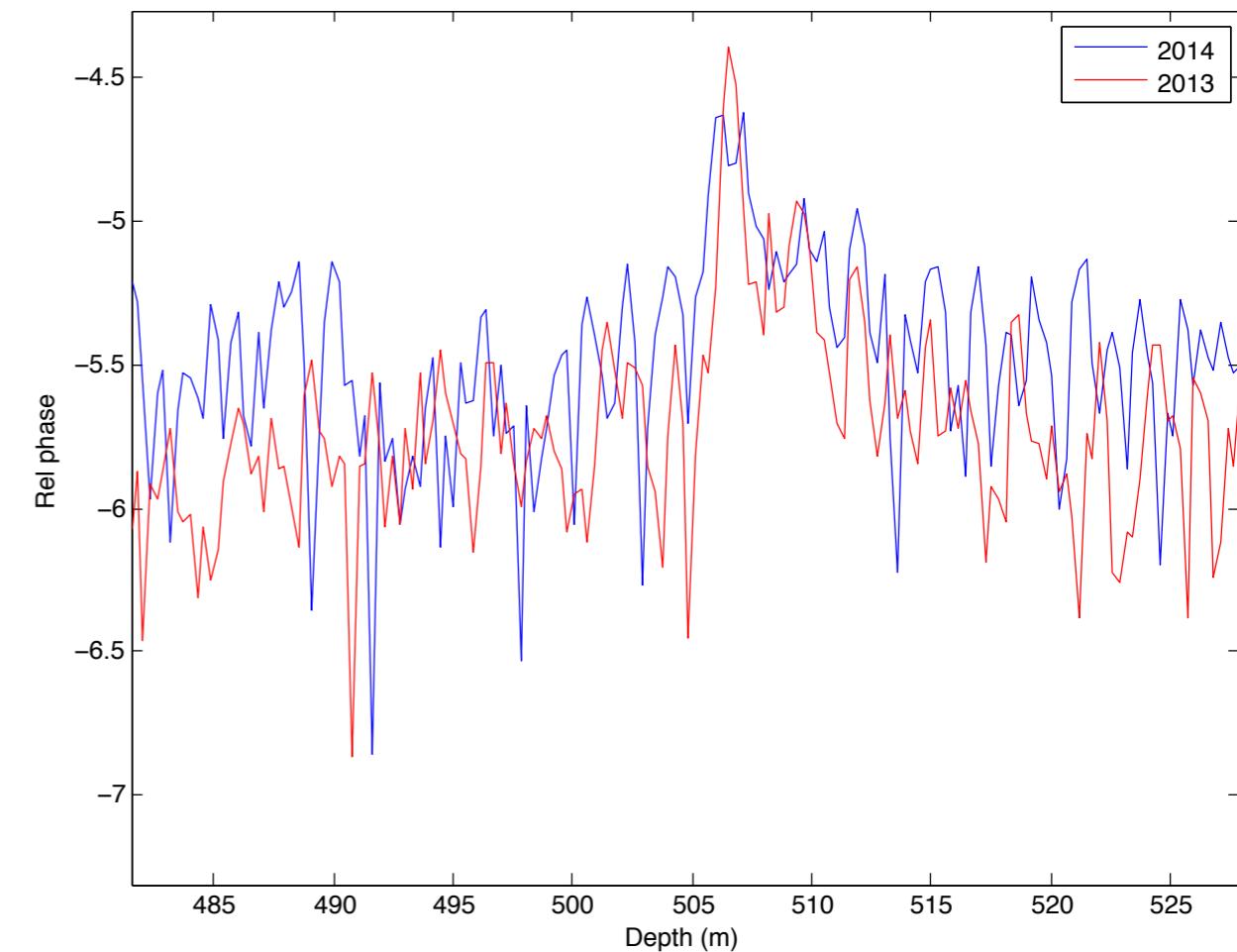
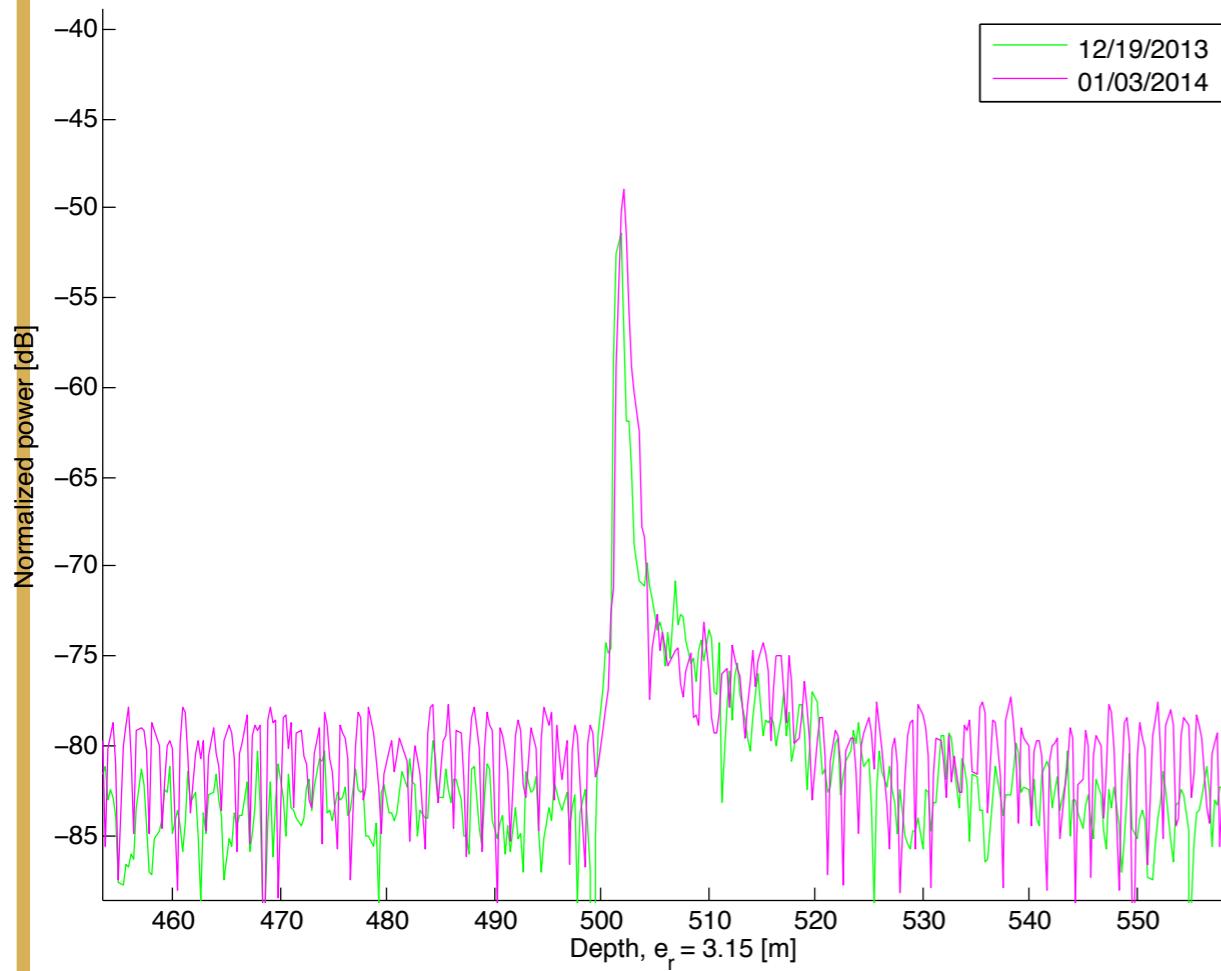
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Repeatable



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Phased-array phase radar

- Broadband, high power
 - 1 km of ice shelf
 - Array processing will increase gain
- Array of 6 receivers, 2 transmitters
 - swath processing (AGU?)
- Phase stability
 - cm repeatability

Thanks

- NSF OPP and STC (Sci & Tech Ctr)
- NY Air Nat. Guard
- Kenn Borek Air
- Ant. Support Assoc.