

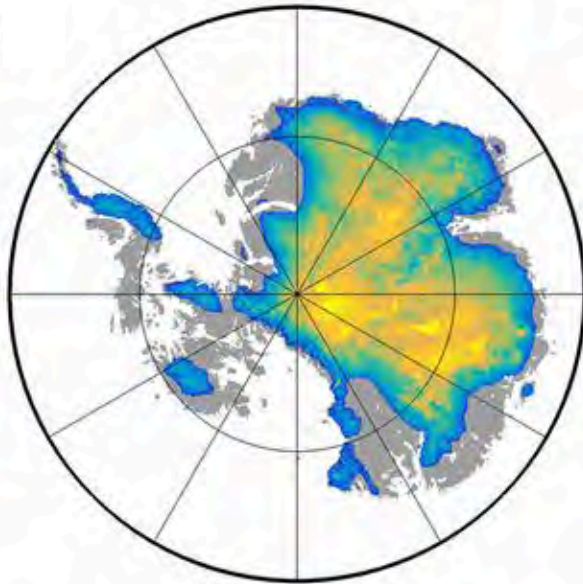
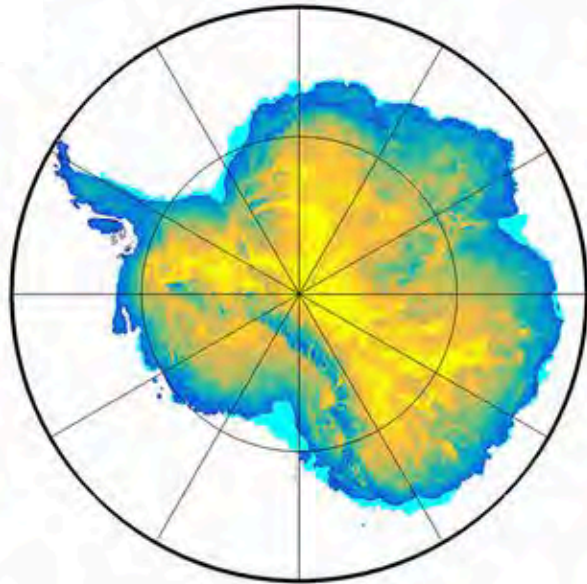
Sediment secrets

Taryn Noble

Antarctic Ice Sheet in a warming world?

280 ppm CO₂

500 ppm CO₂



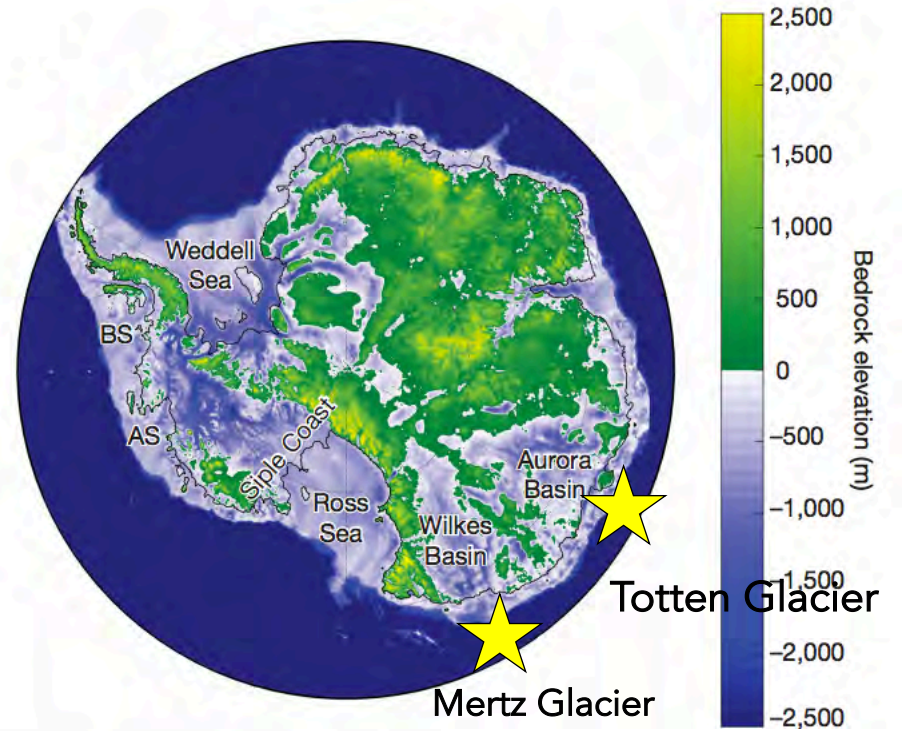
ice thickness (m)

0 500 1000 1500 2000 2500 3000 3500 4000



0 500 1000 1500 2000

bathymetry (m)



Bedrock elevation (m)

2,500
2,000
1,500
1,000
500
0
-500
-1,000
-1,500
-2,000
-2,500

Totten Glacier

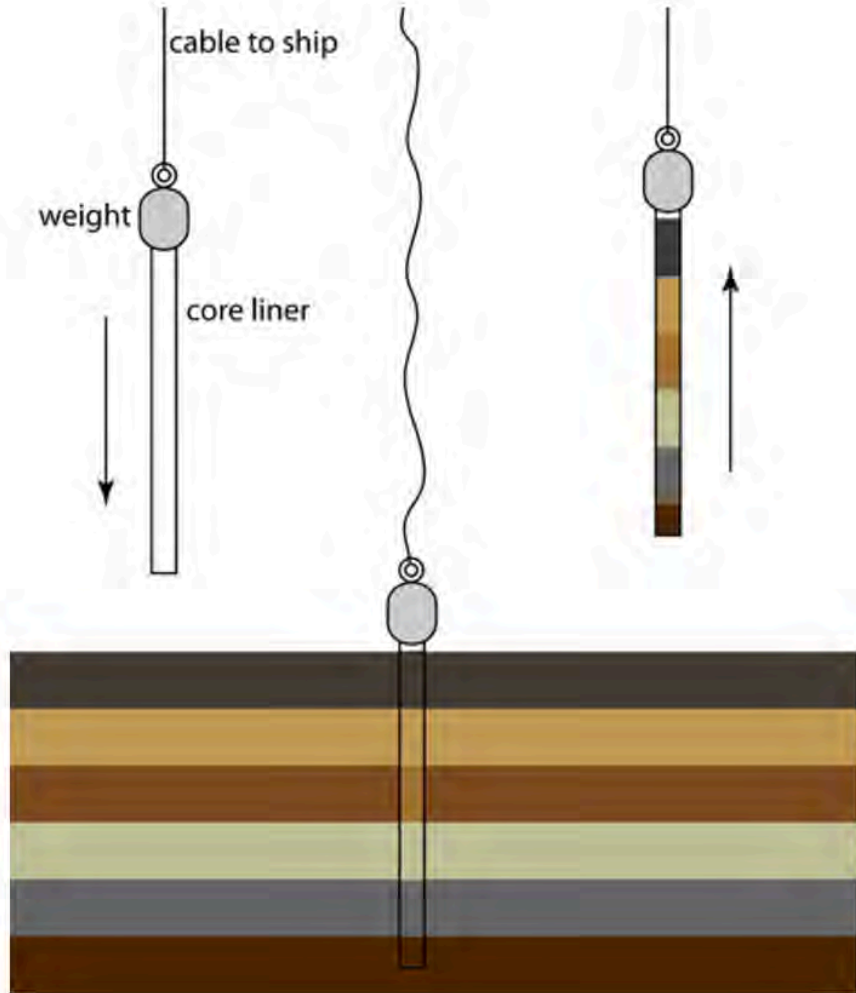
Mertz Glacier

Sampling

RV Investigator Jan-Mar 2017 Sabrina Seafloor Survey

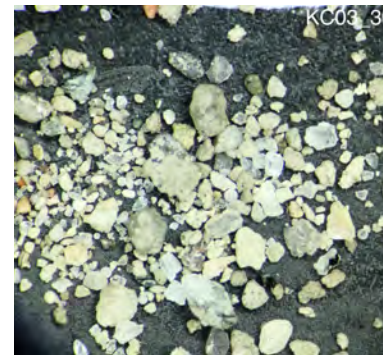
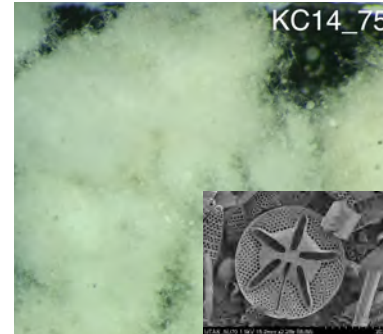
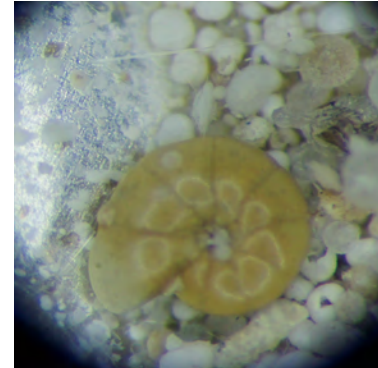


Collecting sediment with a Kasten corer



Antarctic mud

Back in time



Foraminifera

- Age dating with foraminifera
- C and O isotopes. Mg/Ca, Ba/C etc

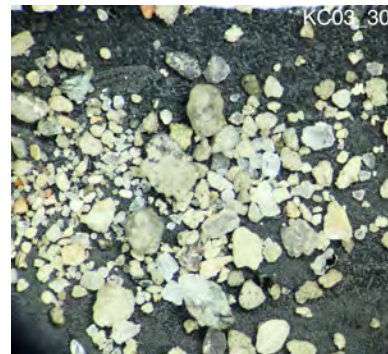
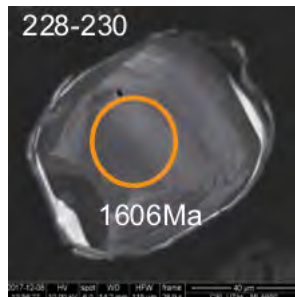
Diatoms

- Sea ice thickness and distribution

Lithogenic material

- Iceberg rafted rock fragments = ice sheet break up
- Rock fragments represent Antarctic geology hidden beneath the ice

How did Antarctica respond to past climate warming?



- + IBRD flux
- + neodymium isotopes,
- + U/Pb ages
- + diatom concentration
- + elemental ratios

