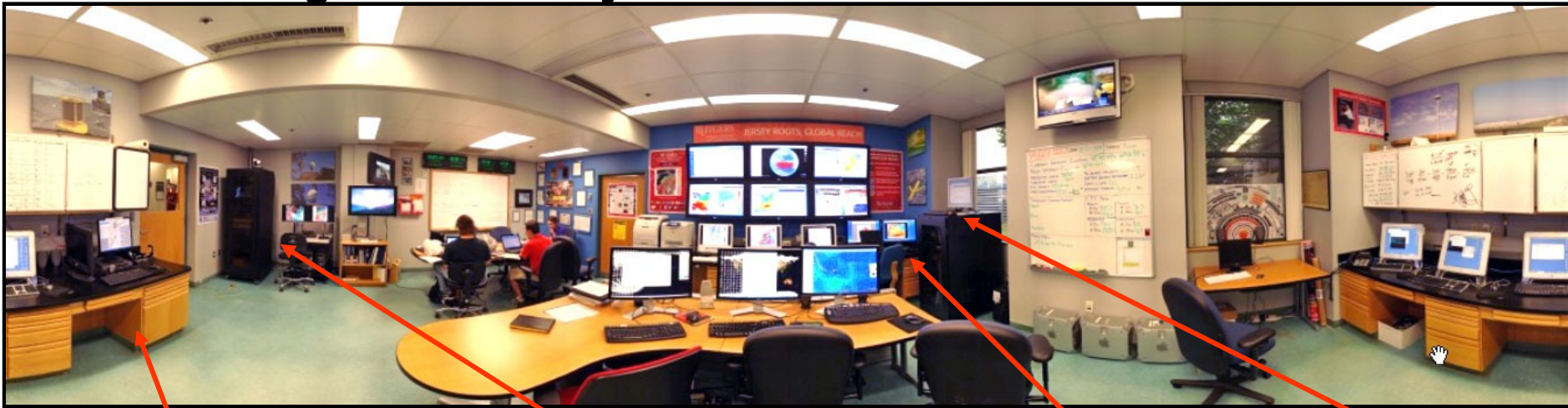
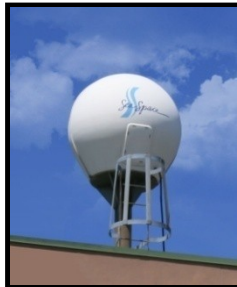


Southern Operations: Gliders On Ice

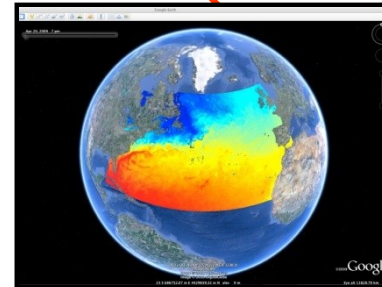
Rutgers University - Coastal Ocean Observation Lab



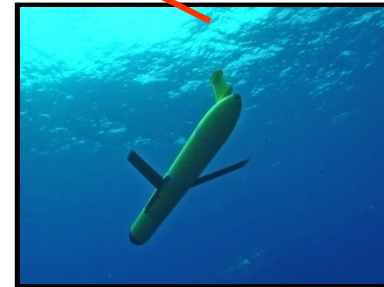
CODAR Network



**L-Band & X-Band Satellite
Receivers**



**3-D Nowcasts
& Forecasts**



Glider Fleet



Rutgers Glider Facilities

- 1 Teledyne Webb Slocum Shallow Glider (30m)
- 19 Teledyne Webb Slocum Coastal Gliders (200m)
- 2 Teledyne Webb Slocum Deep Gliders (1000m)



Rutgers Glider Facilities

1 Teledyne Webb Slocum Shallow Glider (30m)

19 Teledyne Webb Slocum Coastal Gliders (200m)

2 Teledyne Webb Slocum Deep Gliders (1000m)



Sea-Bird CTD (un-pumped)

Sea-Bird CTD (pumped)

TRDI ADCP

OSU Turbulence Chi-pod

URI Bioprobe

Wetlabs pucks (5 configurations)

Hobi Labs hydroscat-2

Sony camera

Mote Marine Lab breve buster

RU/Satlantic FIRE

Satlantic radiometer

Aanderraas optode

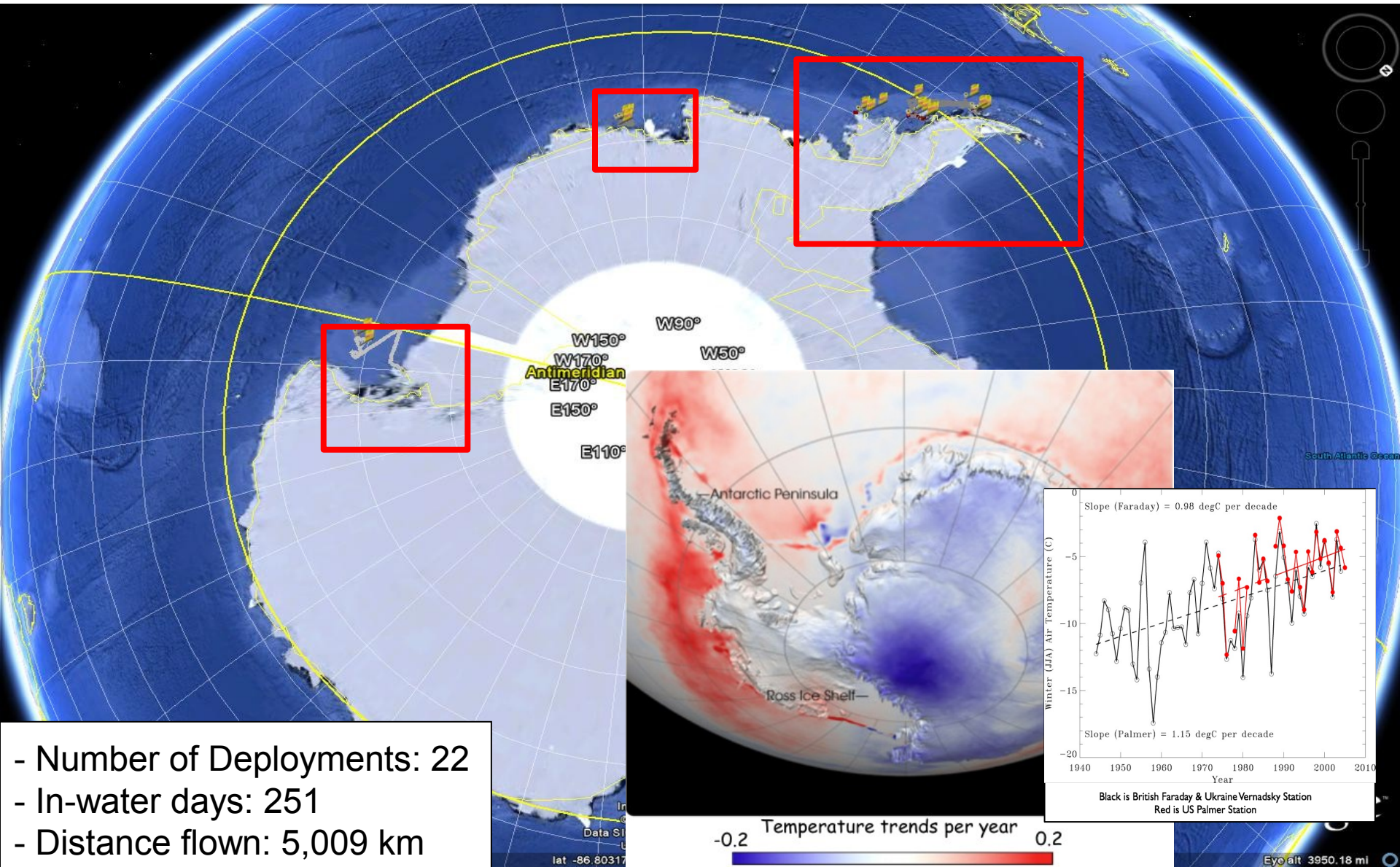
Vemco fish receiver

Wetlabs SAM

Wetlabs BAM

Licor PAR

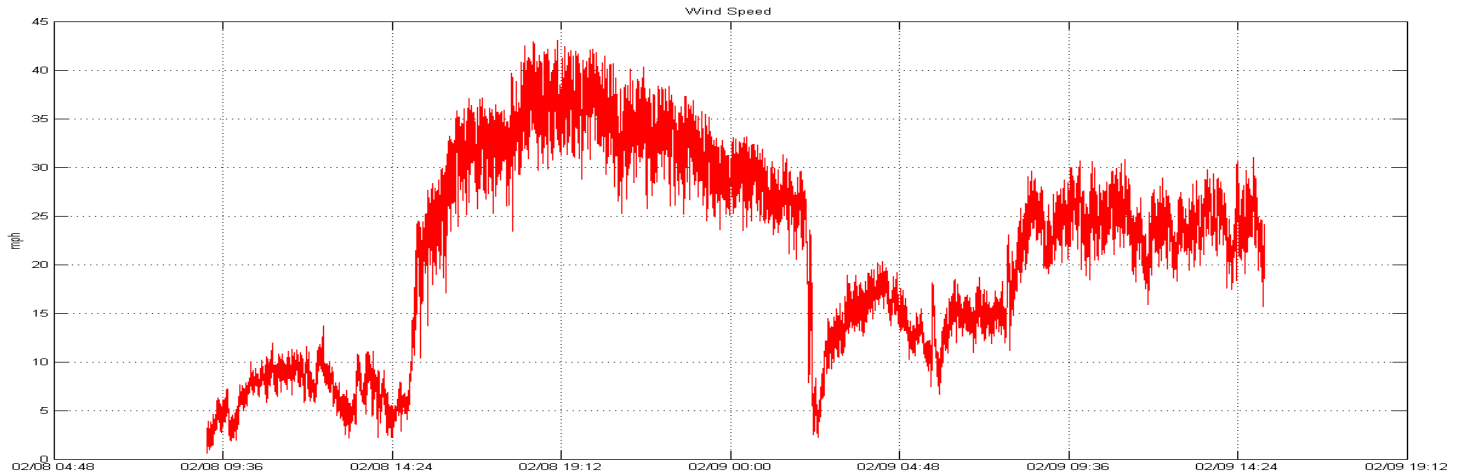
RU-COOL Glider Fleet: Antarctic Deployments: 2007 – 2011



- Number of Deployments: 22
- In-water days: 251
- Distance flown: 5,009 km

24 Hour Winds (knots)

40
31
22
13
4



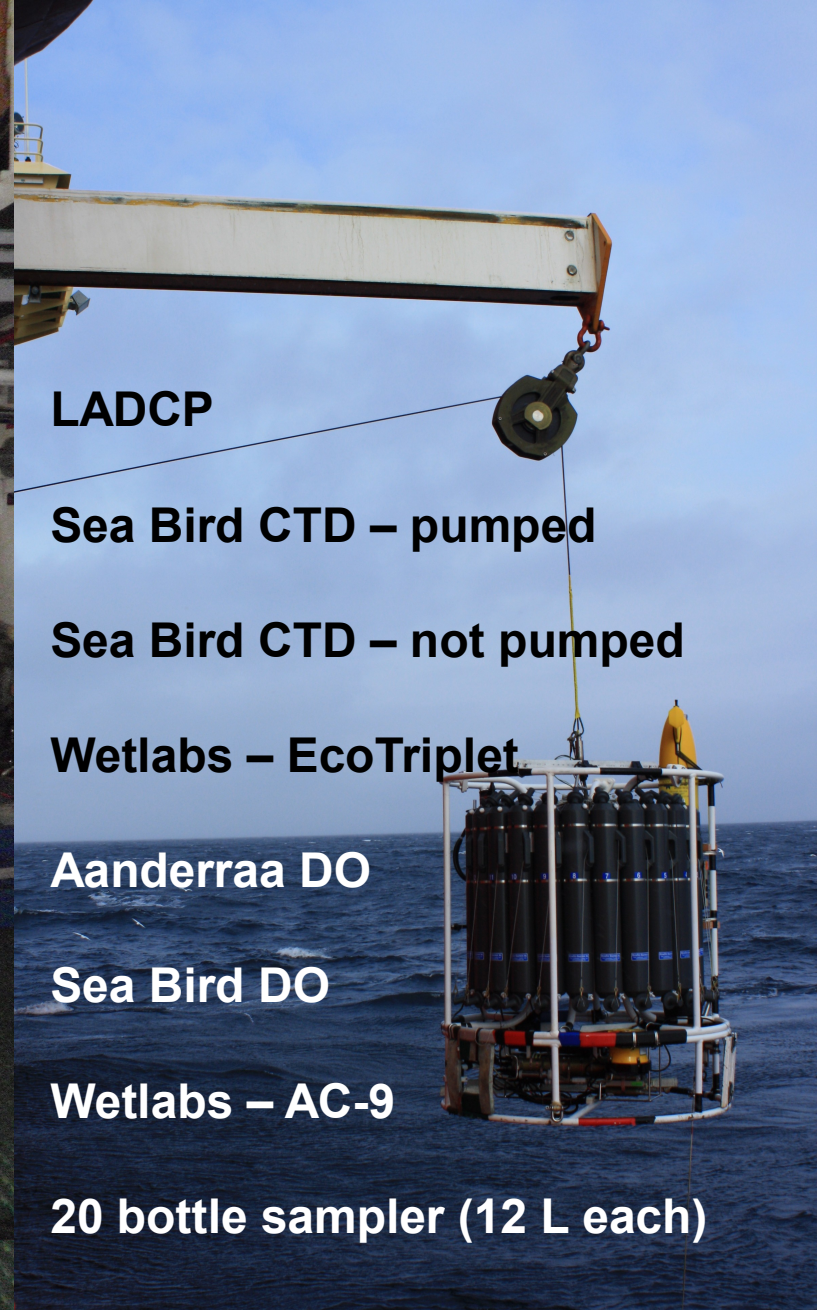
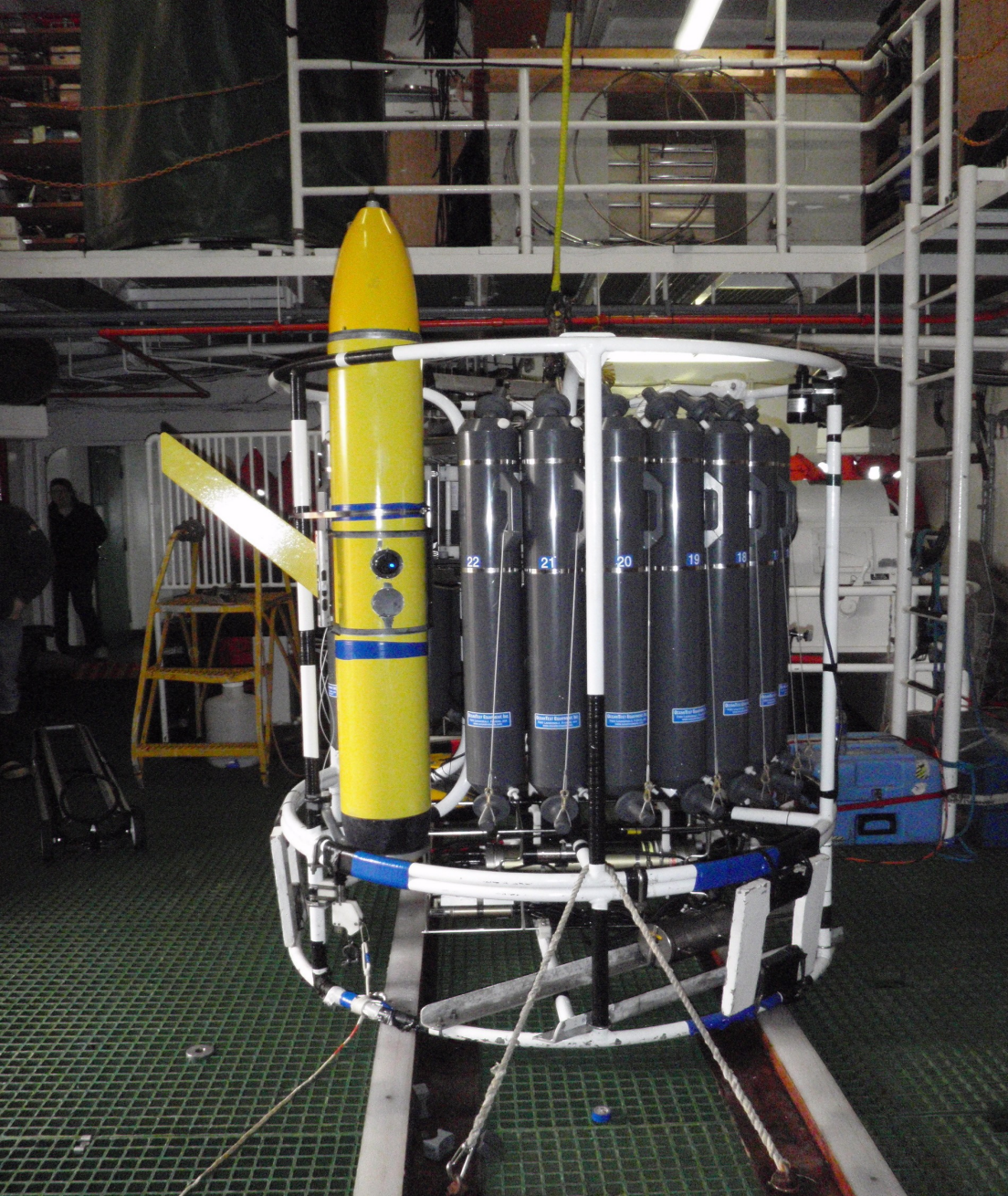




Glider deployments in a unique ecosystem



© j.busecke



LADCP

Sea Bird CTD – pumped

Sea Bird CTD – not pumped

Wetlabs – EcoTriplet

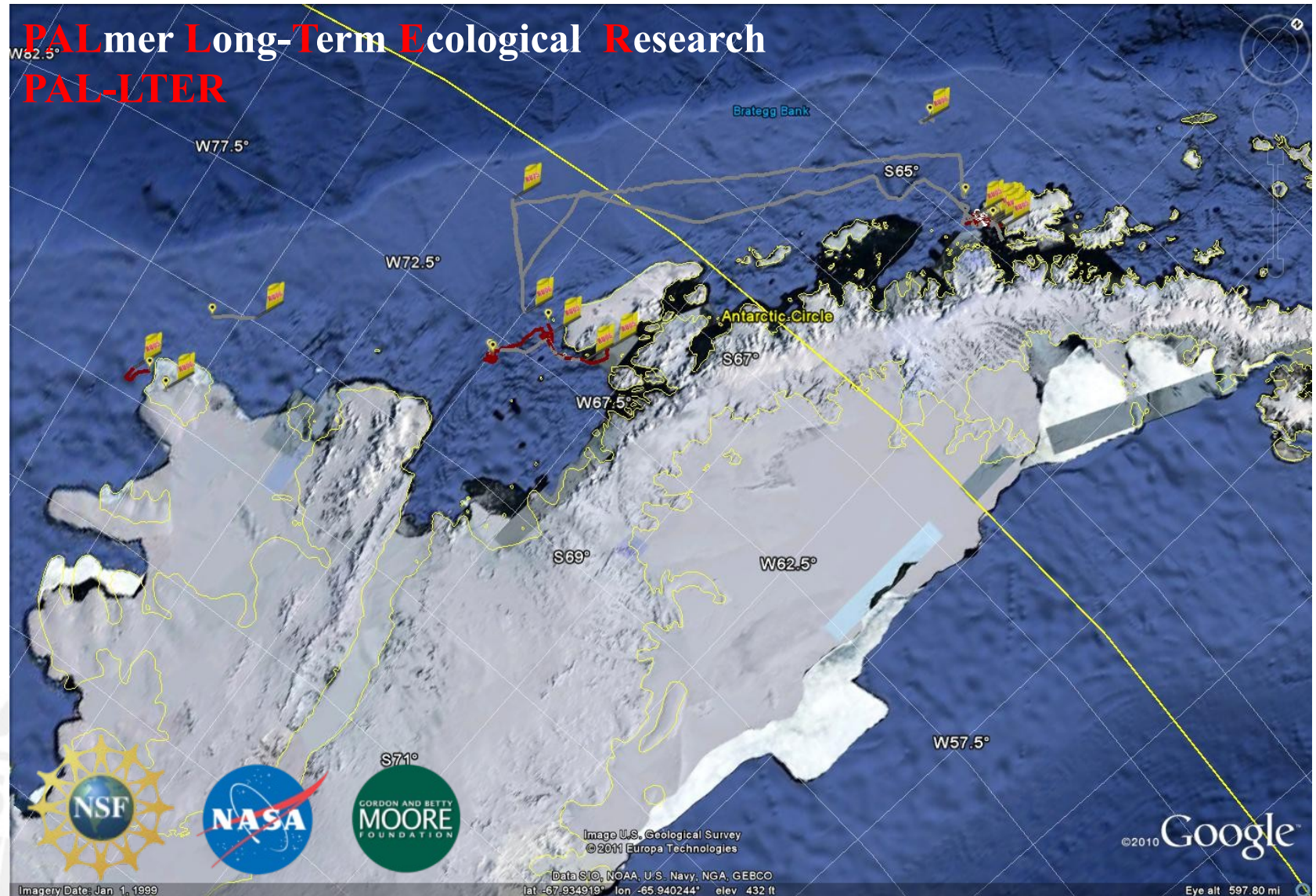
Aanderra DO

Sea Bird DO

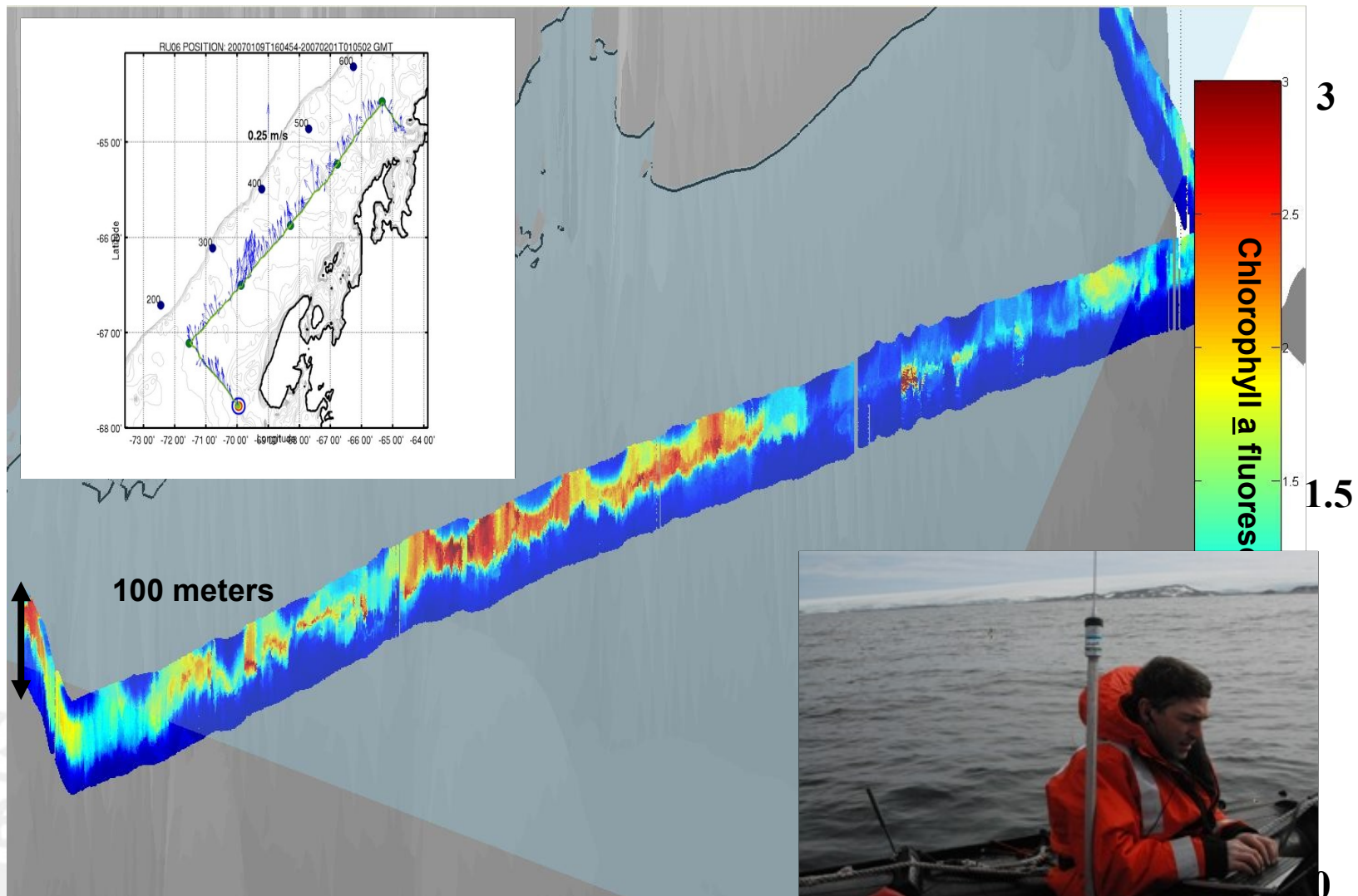
Wetlabs – AC-9

20 bottle sampler (12 L each)

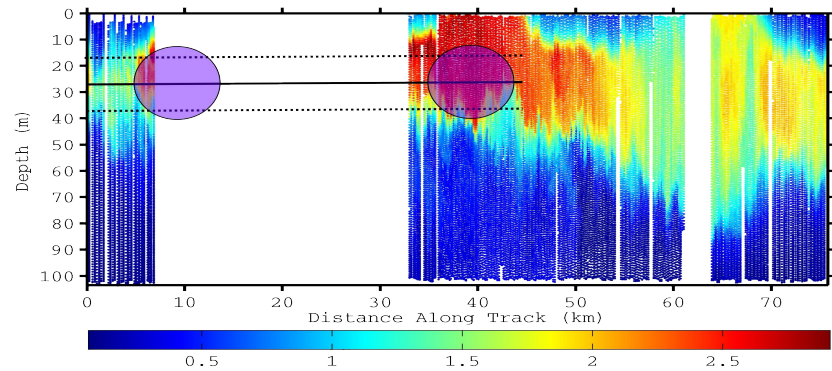
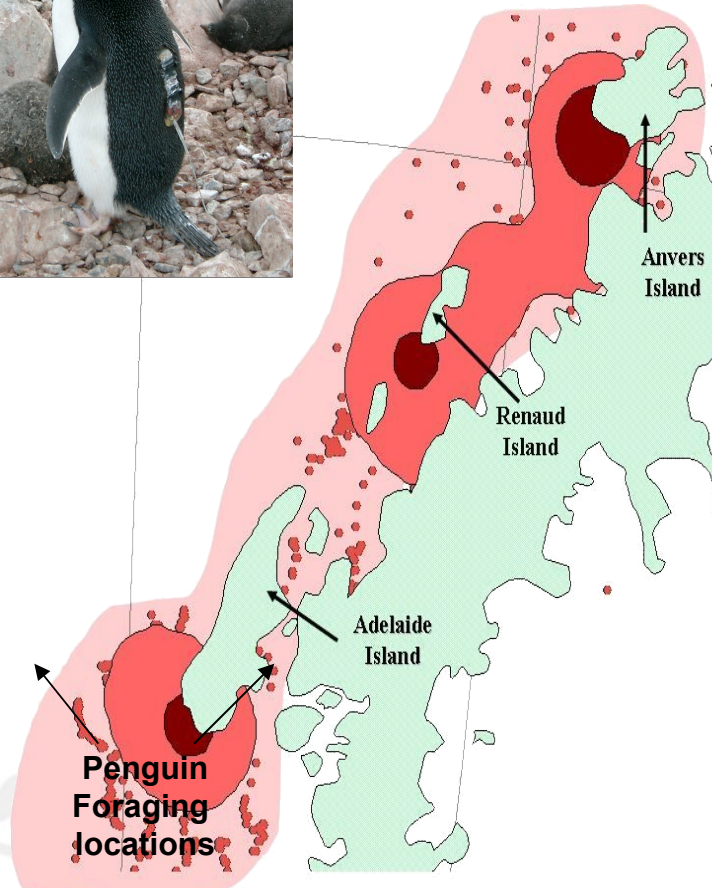
RU-COOL Palmer Peninsula Glider Deployments: 2007 - 2011



Gliders in Antarctica: January 2007



Adaptive Sampling of Penguin Habitats

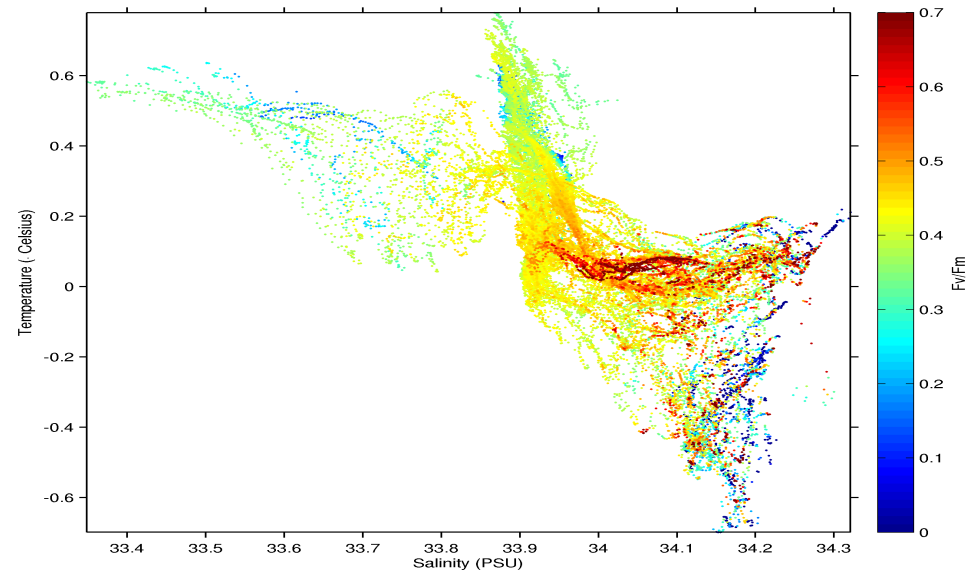
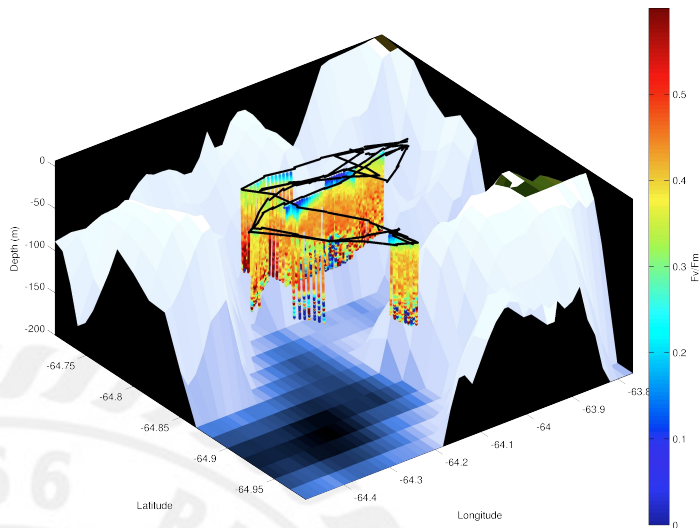
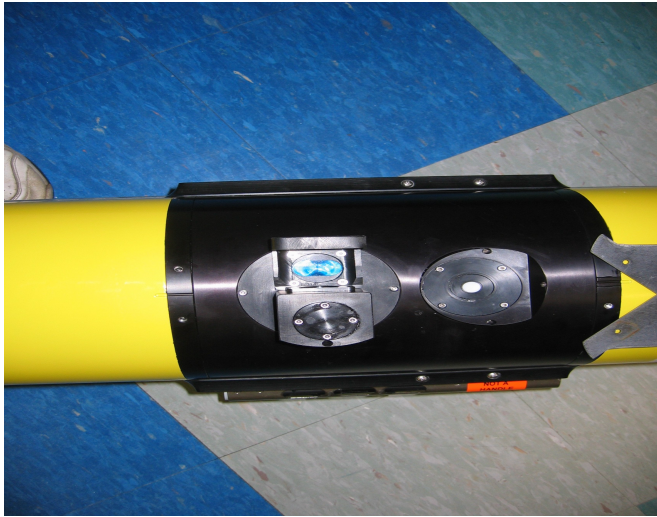


Kahl et al., 2010

Chlorophyll ($\mu\text{g/L}$)

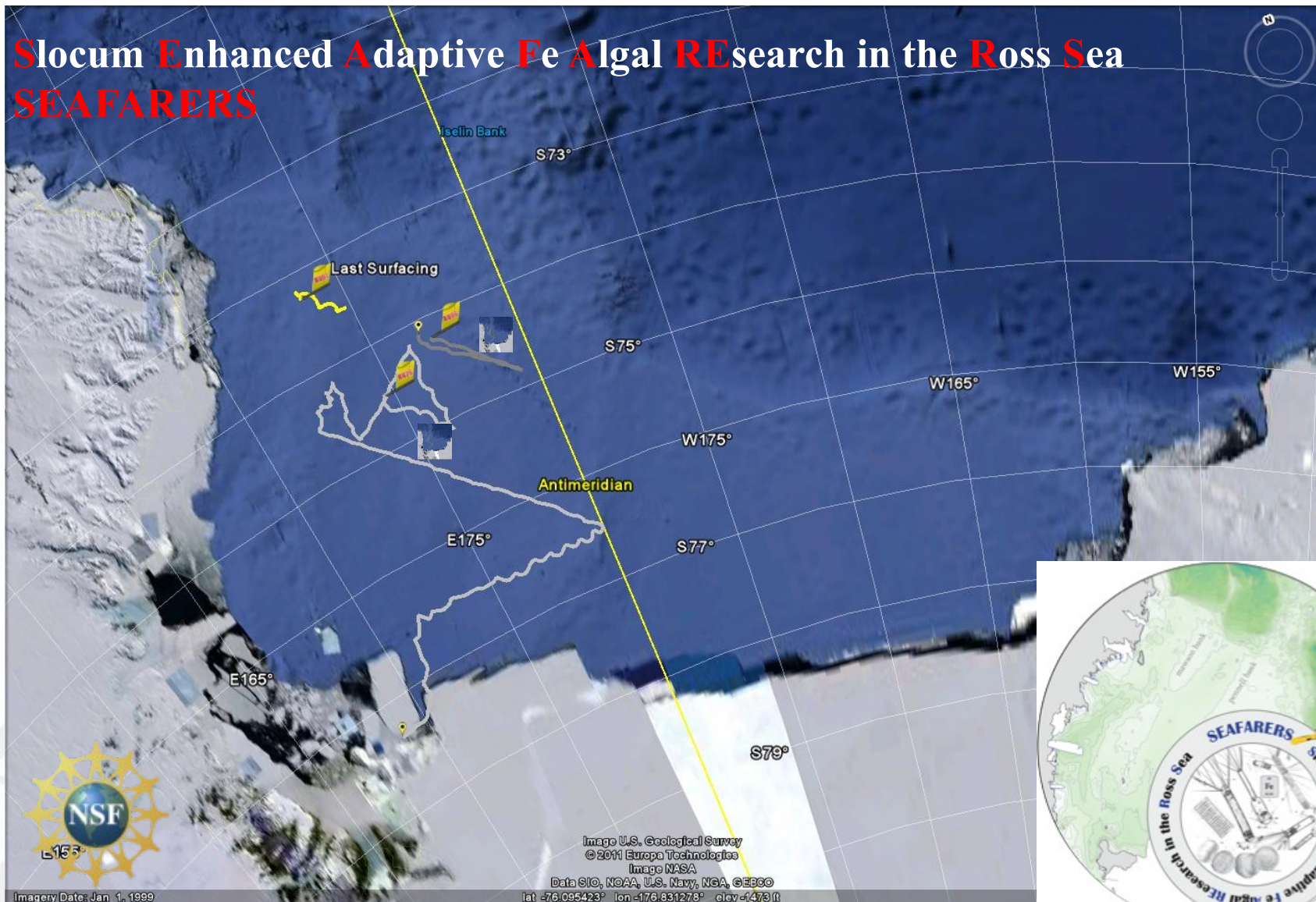
Mapping Phytoplankton Physiology

Rutgers /Satlantic FRe Sensor



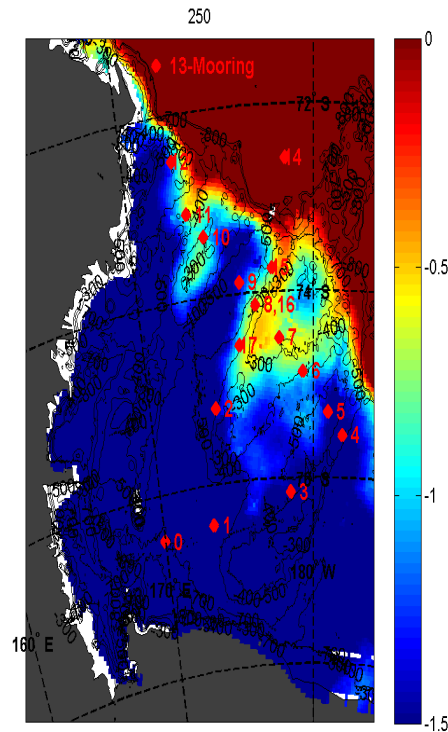
RU-COOL Ross Sea Slocum Glider Deployments: 2011

Slocum Enhanced Adaptive Fe Algal REsearch in the Ross Sea
SEAFARERS



Modified Circumpolar Deep Water and the Ross Sea Ecosystem

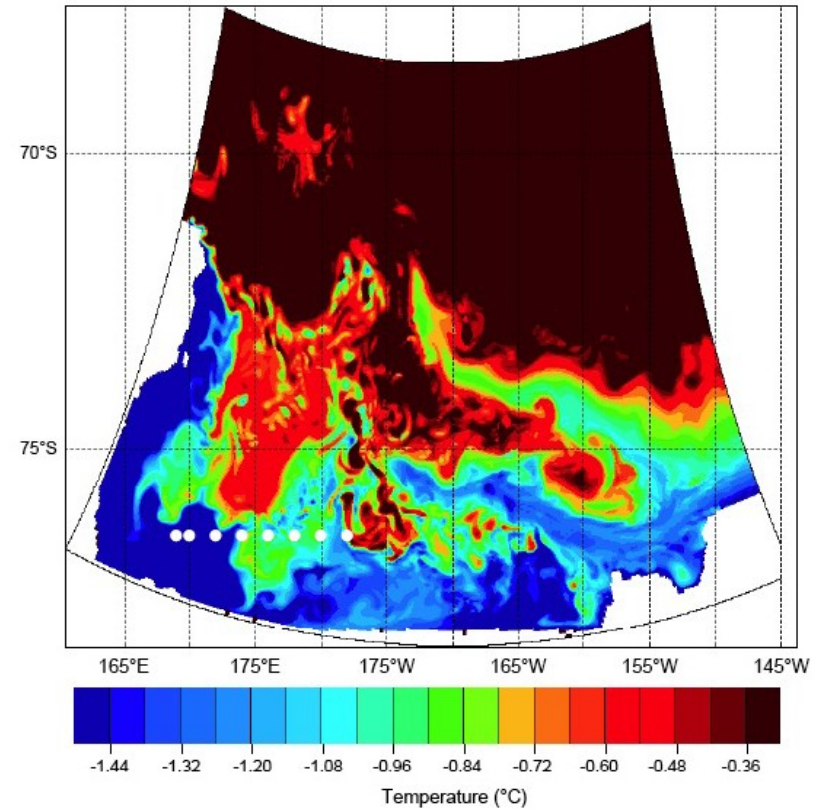
Ross Sea Climatology



Temperature – 250m

Orsi et al.

Ross Sea Forecasts

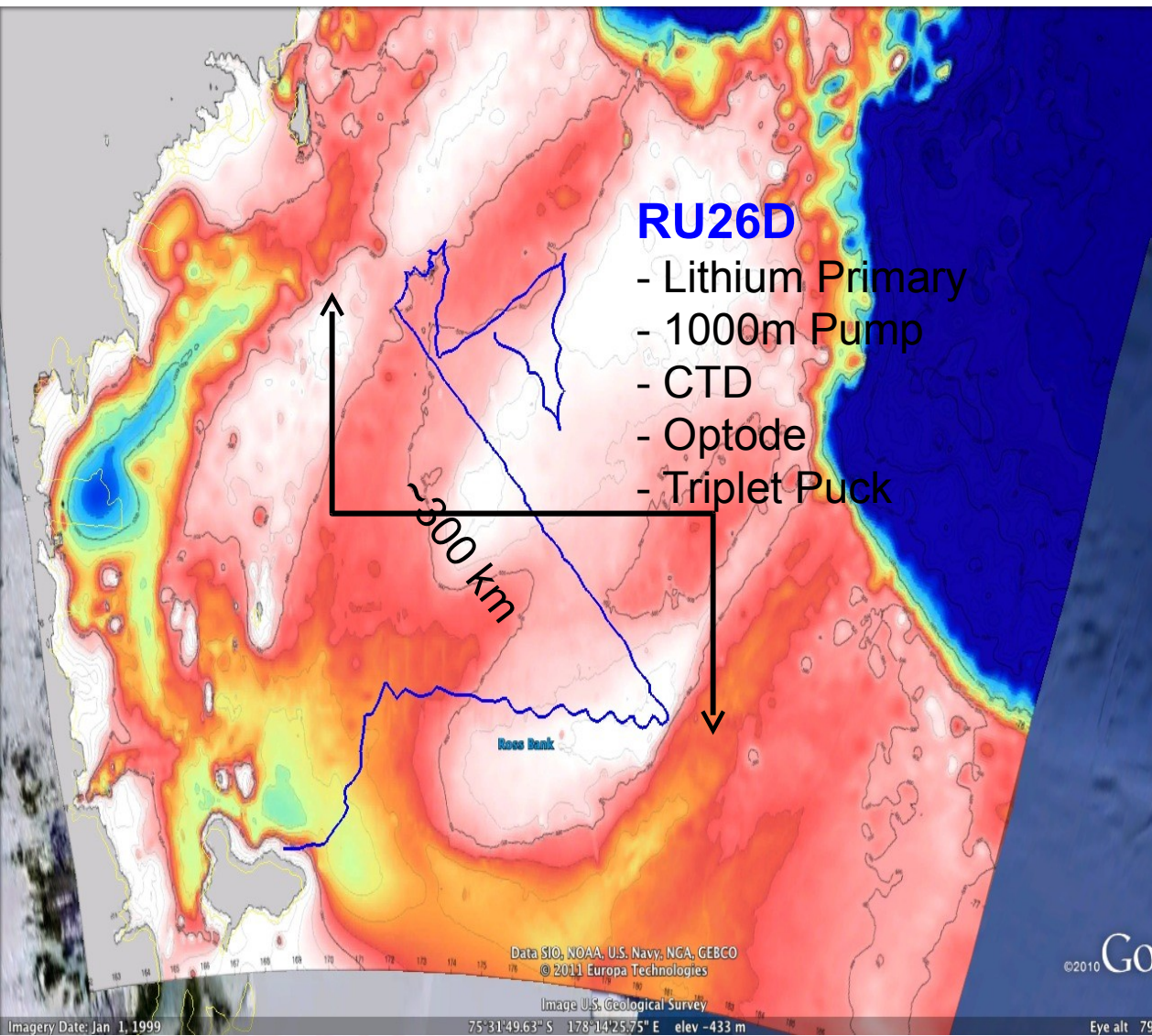


Dinninman et al.

©CHRISLINDER

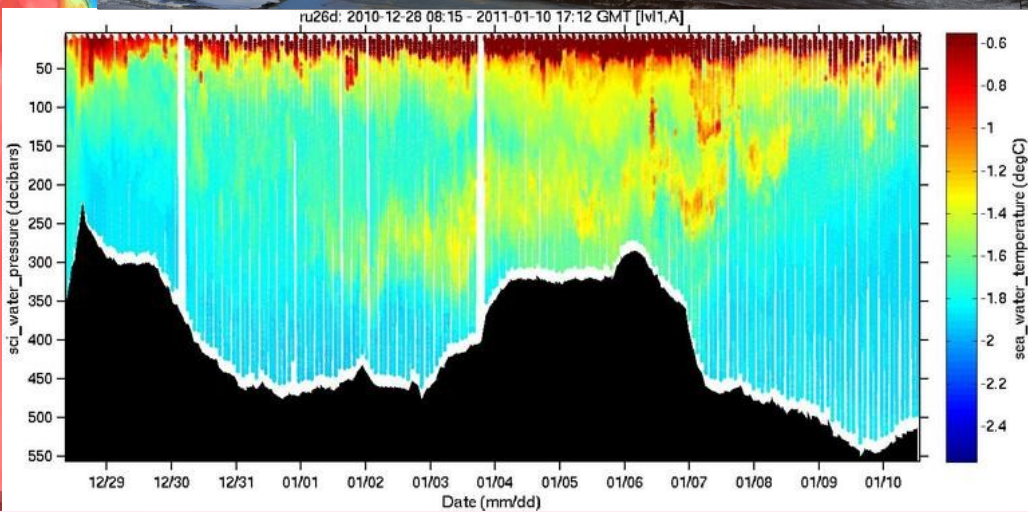
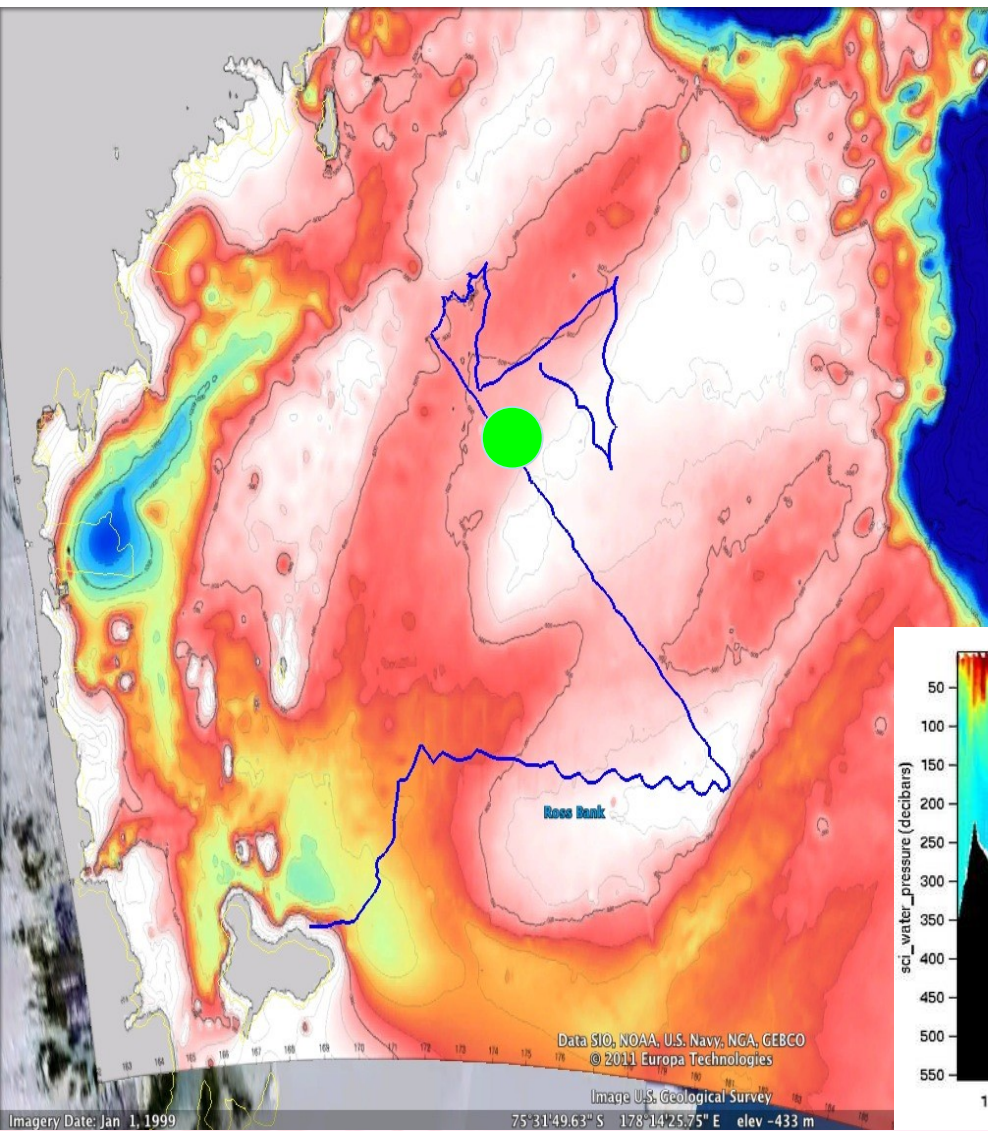
Deep Glider Mapping of Ross Sea Water Masses

December 2010-February 2011

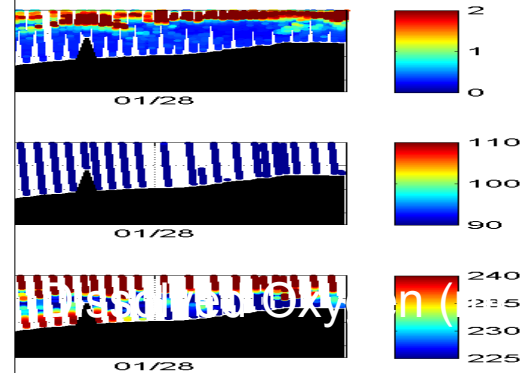
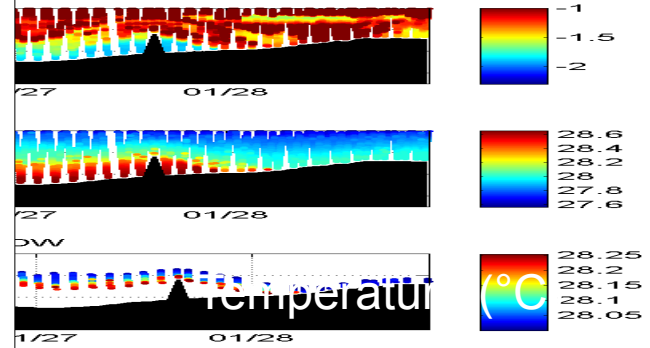
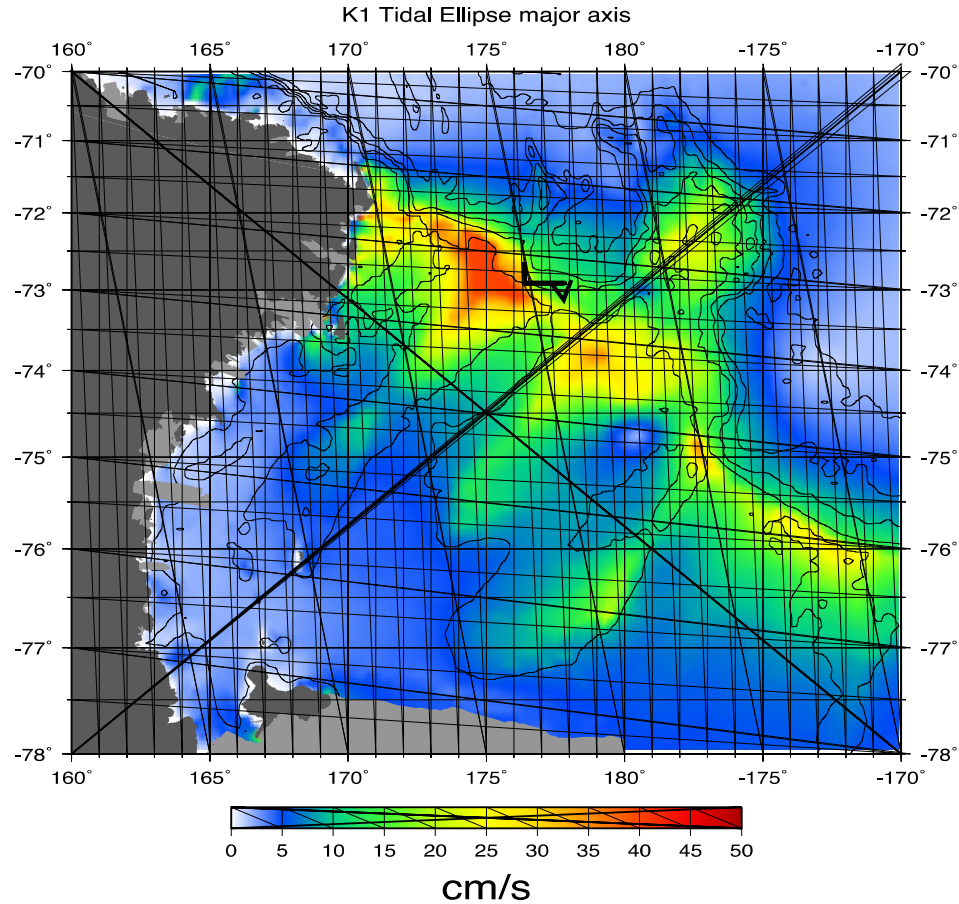


Deep Glider Mapping of Ross Sea Water Masses

Cross bank section identifies peak MCDW



Small Scale Water Mass Variations (Time and Space)



7.7

7.5

7.3

7.1

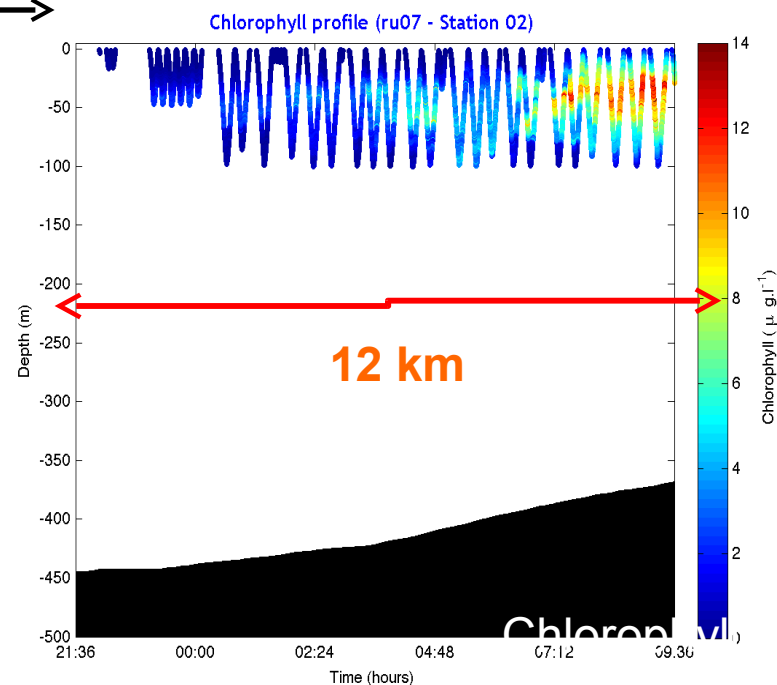
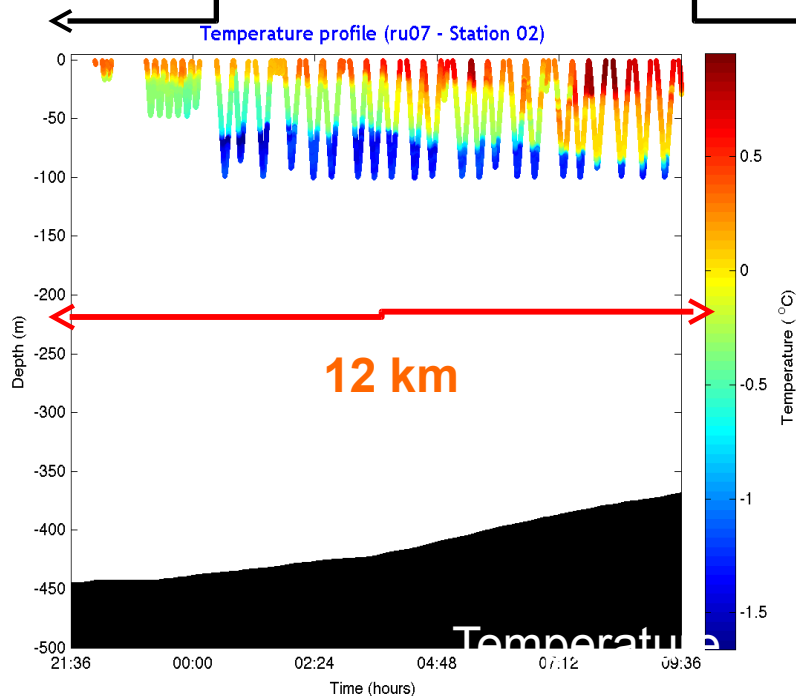
Line of Sight Glider Missions
RVIB Nathaniel B. Palmer



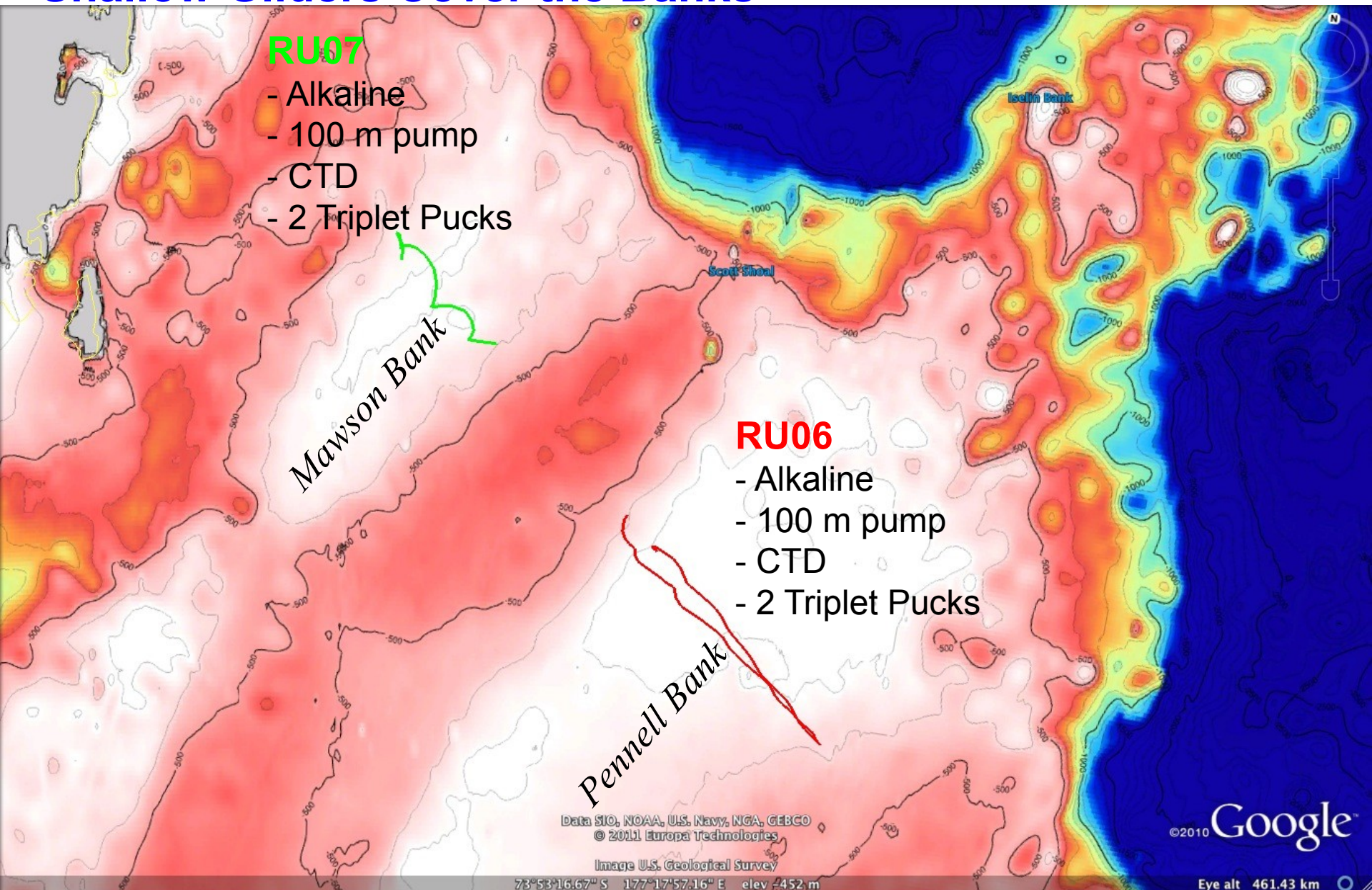
©CHRIS LINDER

Small Scale Water Mass Variations

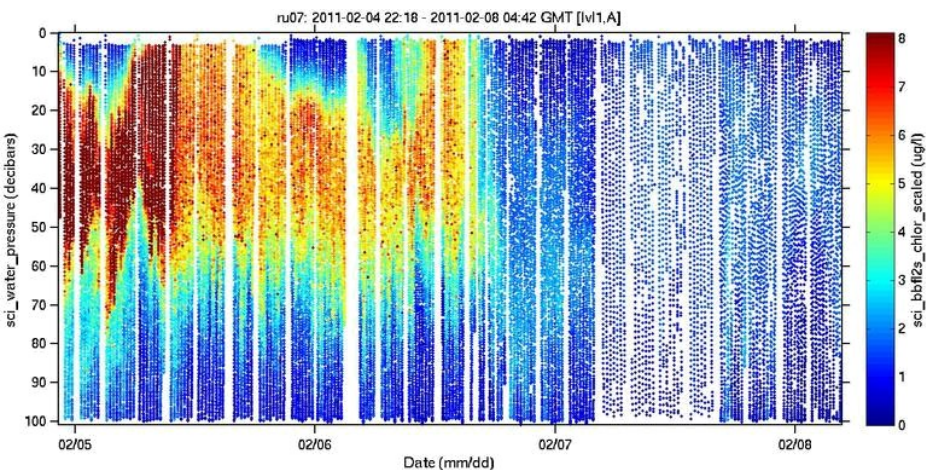
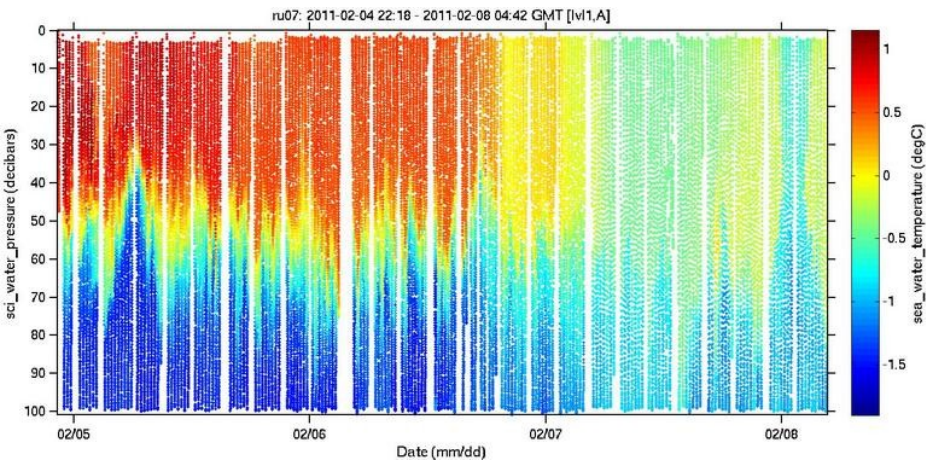
Relative to ship sampling



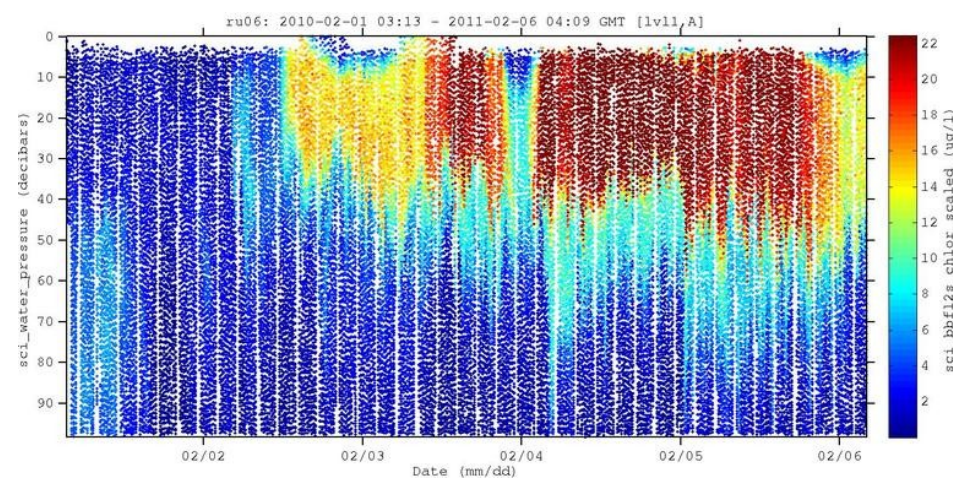
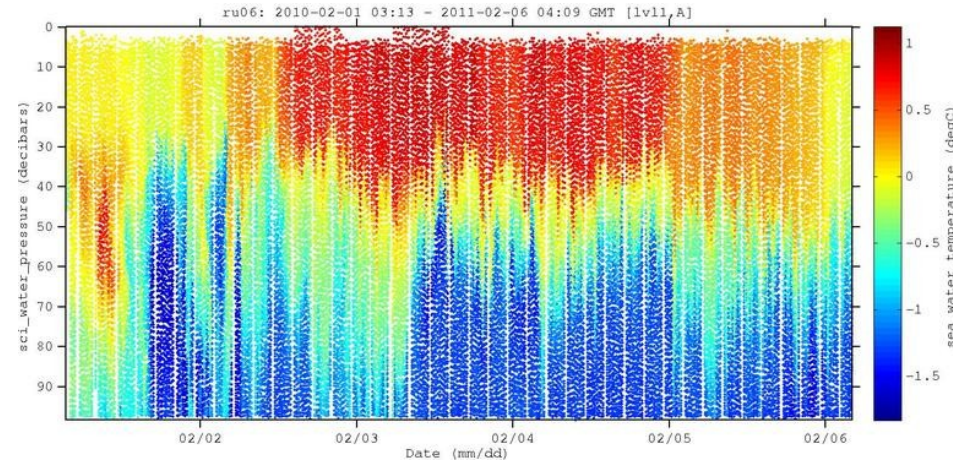
Shallow Gliders Cover the Banks



Mawson Bank



Pennell Bank



Deeper



Shallower

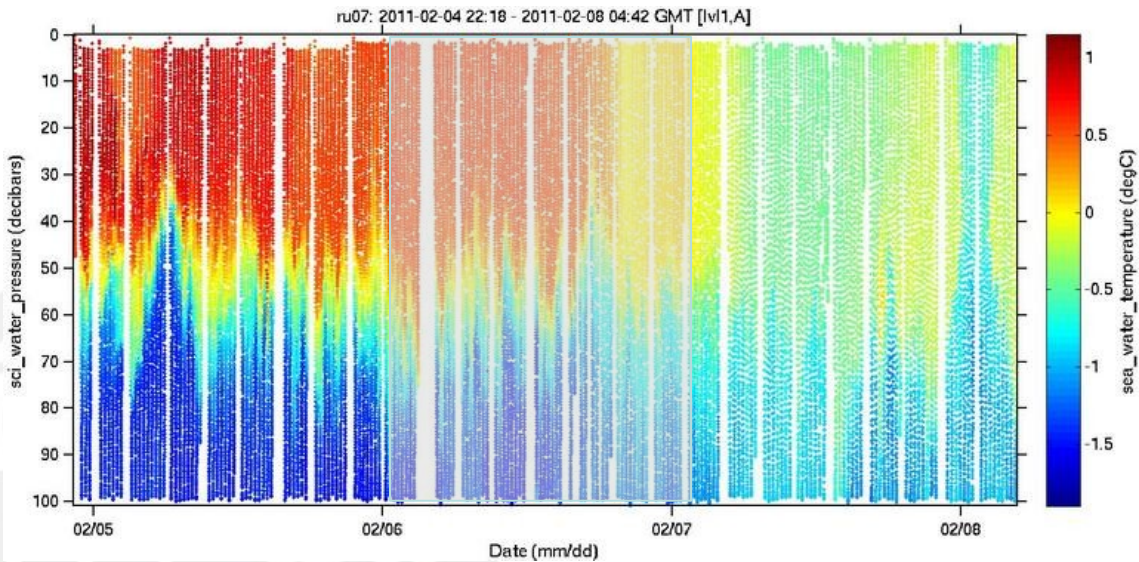
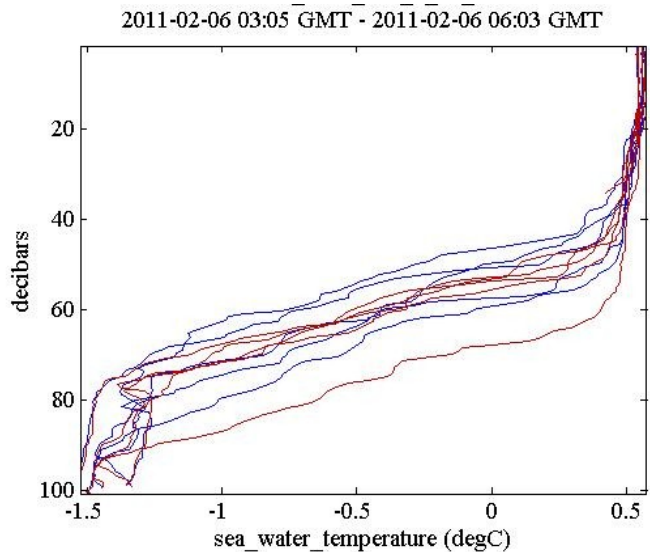
Deeper



Shallower

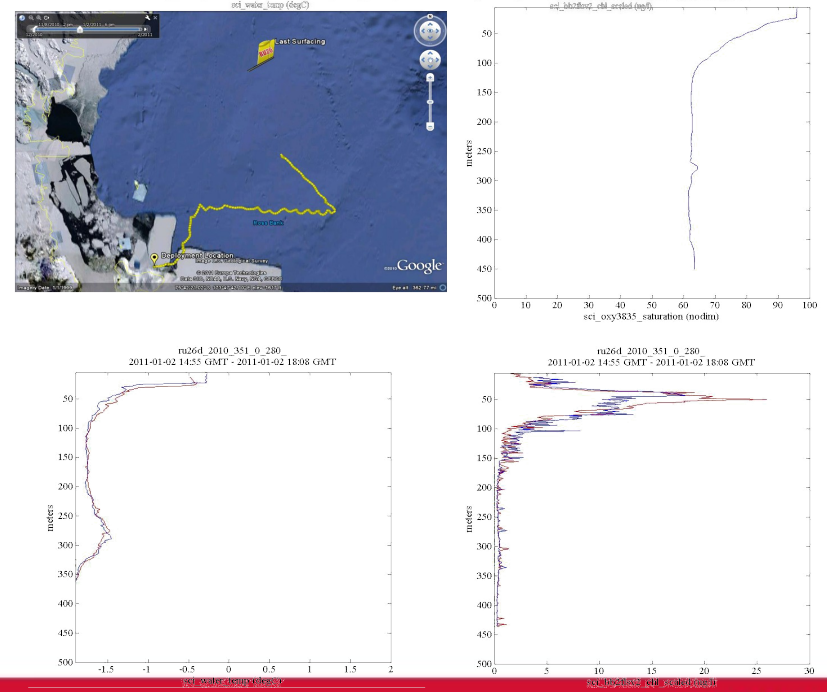
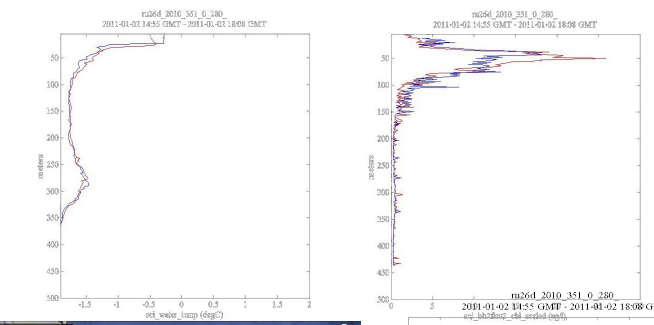
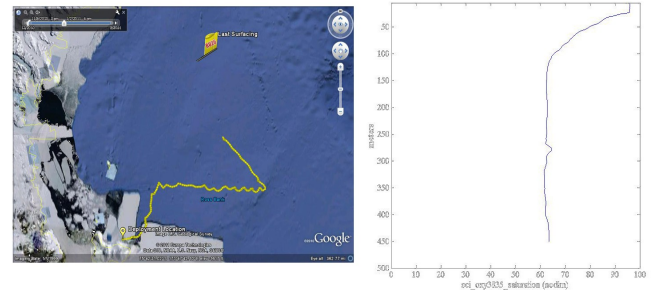
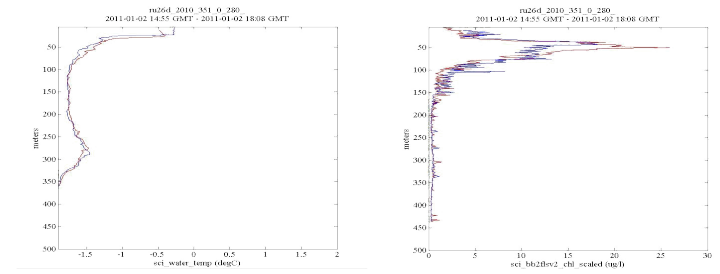
We were not alone on the ship

Students follow along back on campus



We were not alone on the ship

Students follow along back on campus



The Ross Sea Connection

Many beyond the science team participate in the science



ROSS SEA CONNECTION
Connecting classrooms with research in the Ross Sea

ABOUT THE EXPEDITION | ARCHIVE | EXPEDITION MAP | LIVE CALLS | EMAIL | POSTS | RSS

Daily Journals by Hugh and Chris | **For Teachers** Teacher Resources | **Glider Updates** Pre-cruise science | **Mission Extras** Info and interviews | **Multimedia** Photos, Video, and Audio

Enter keywords...

'Glider Base, This is Zodiac'

JANUARY 21, 2011 5 COMMENTS

In walkie-talkie etiquette, you call to the person you want to talk to, then identify yourself. So when 'Glider Base, this is Zodiac' comes over the radio, it means that someone in a little inflatable rubber boat (called a zodiac) wants to talk to the person who is running the gliders.

Six of us were in that boat, bobbing in the waves about a half-mile from the Palmer. We were about to launch glider RU07 for a day's sampling. That morning we had reached 'Big Red,' the point where glider RU26 had seen signs of our target—Modified Circumpolar Deep Water—two weeks ago.

While the science teams spent the day sampling the water beneath us, glider RU07 headed southeast to sample the surrounding water. By the end of the day, it had found something surprising. Read on through the slideshow to see what happened:

View the Full Expedition Map

POPULAR | LATEST | COMMENTS | TAGS

Plants That Eat Food
JANUARY 30, 2011

Where Biology and Chemistry

- Daily Blog Entries
 - Science
 - Technology
- Materials for teachers
- 9 live phone calls from the ship to the classrooms
- Over the 28-day cruise...
 - 11,000 Visitors
 - 340 Comments

Summary

- Gliders are well suited for required flexible sampling requirements of the Antarctic coastal seas.
- Gliders provide a unique view of important coupled process over small time and space scales allowing us to view the polar seas as we have never been able to before.
- Polar ecosystems are more accessible to broad audiences through glider missions shared through the internet.

