

WHY IS BEING A SCIENTIST THE COOLEST JOB IN THE WORLD!



Why did I choose my job? 2 reasons!

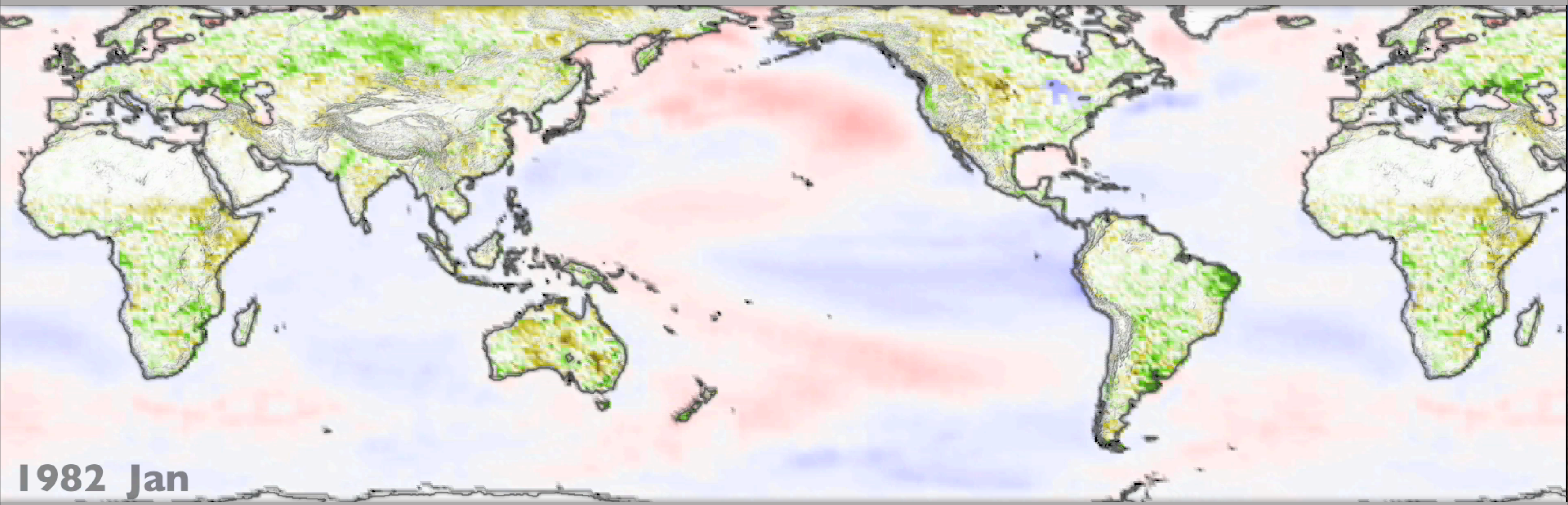
REASON 1: I grew up in the ocean, swimming, fishing, surfing, skin diving. I love the ocean. The ocean has changed significantly in my lifetime.



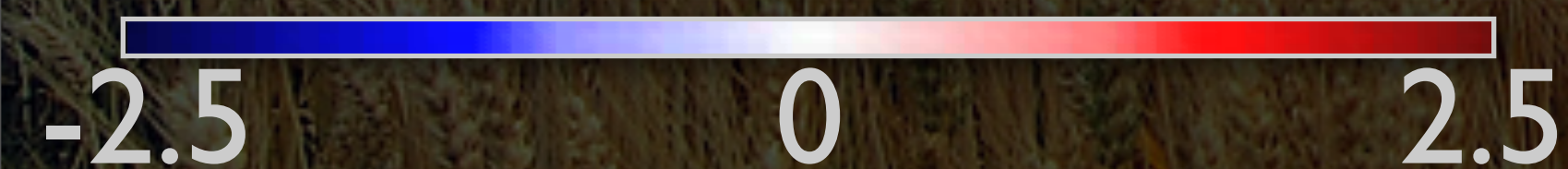


Reason 2: DOING Science is fun and an adventure

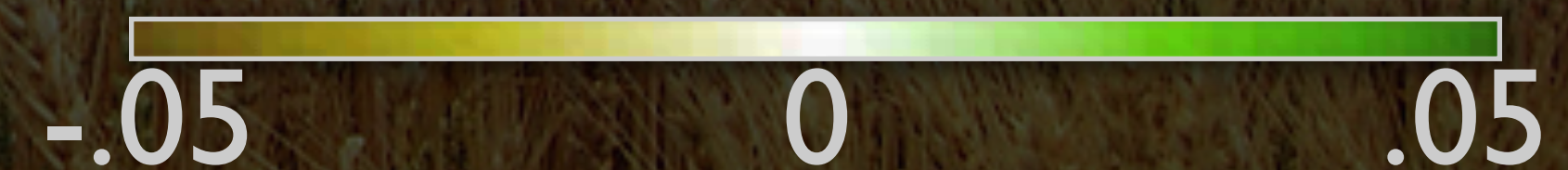
Ocean is important for all humans who rely on the weather to provide them food... Everybody



Sea Surface Temperature Anomalies



Vegetation Index Anomalies



Adapted from, Earth Observatory story:
“Watching Plants Dance to the Rhythms of the Ocean”
<http://earthobservatory.nasa.gov/Study/SSTNDVI/>

A world map is centered in the background, rendered in a light blue color against a darker blue background. The map shows the continents of North America, South America, Europe, Africa, and Asia. The background has a marbled or watercolor-like texture.

When I was an undergraduate I was lucky to do science with my hands. Doing science was exciting, creative, and an adventure!

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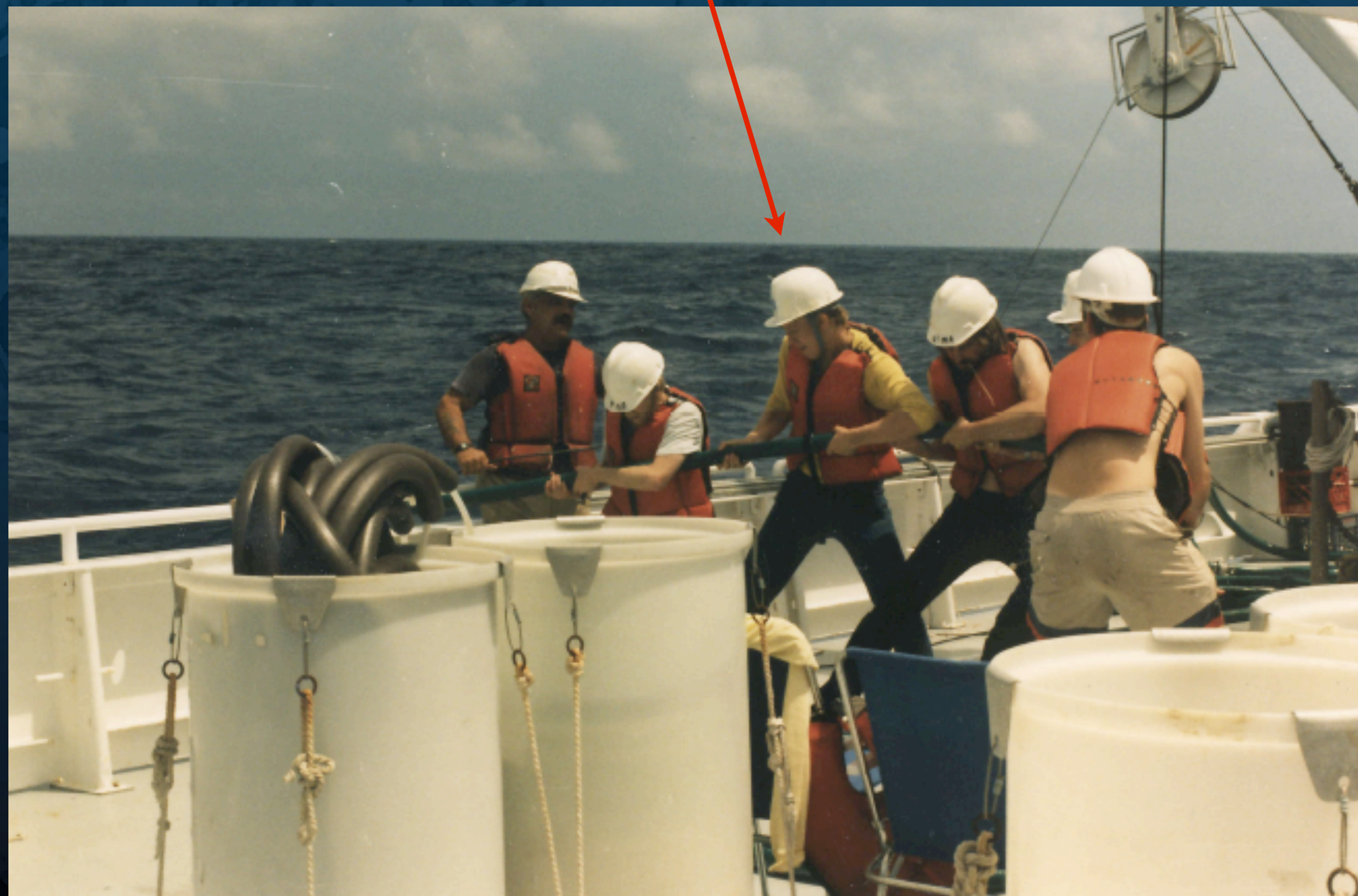
hand lowering a sensor
at age 18 on my first ocean cruise



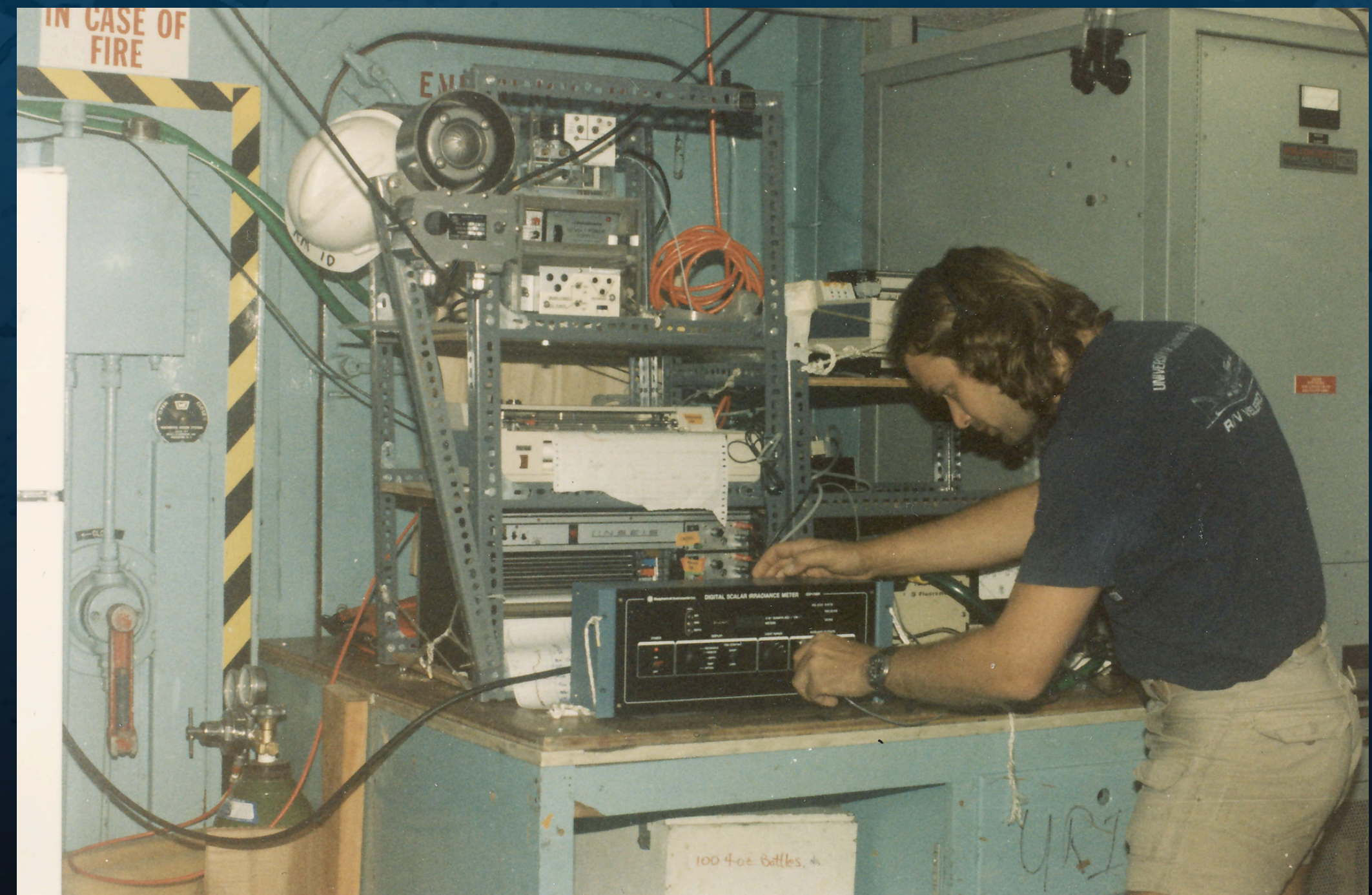
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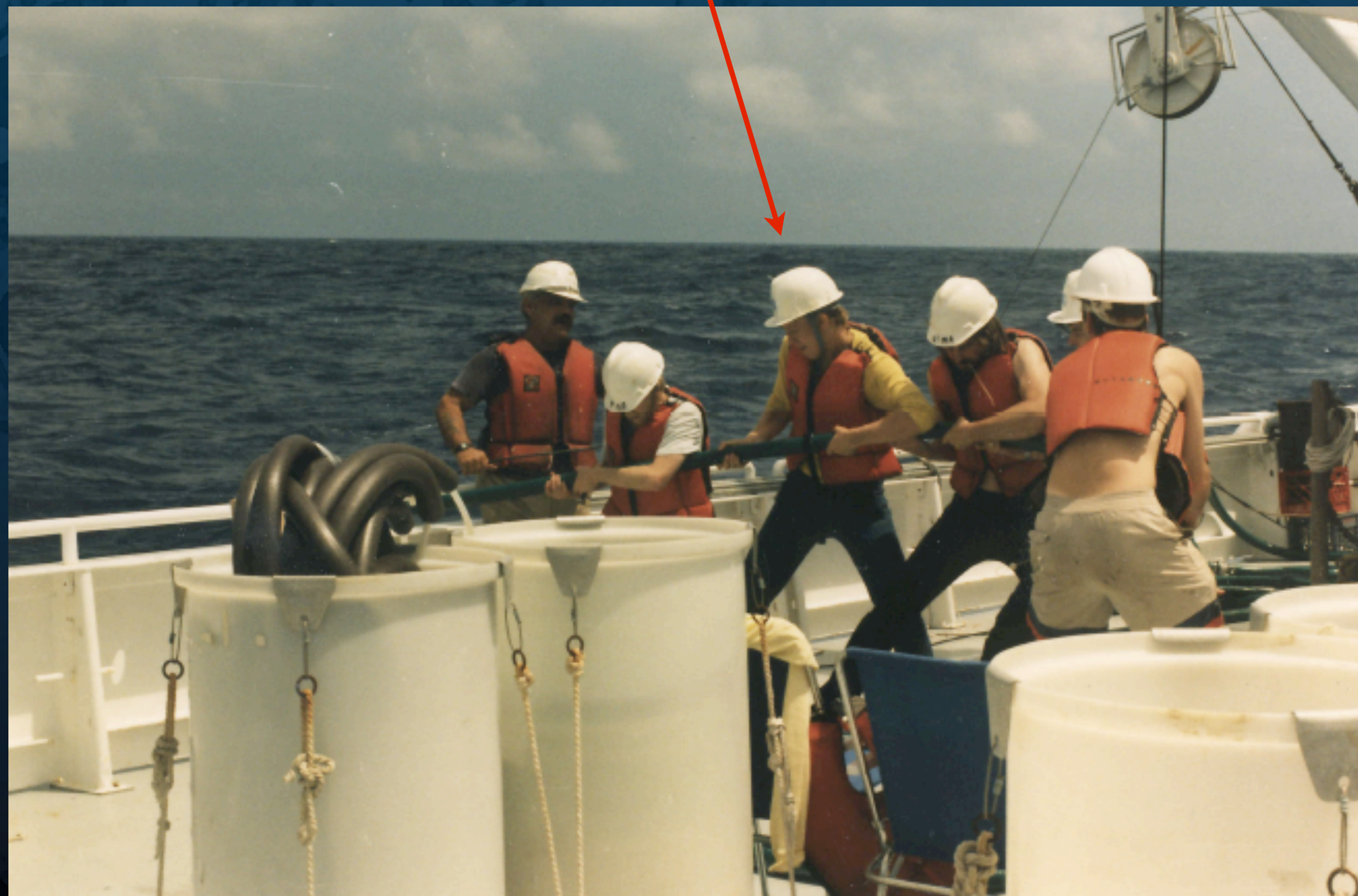
We built instruments and brought them sea



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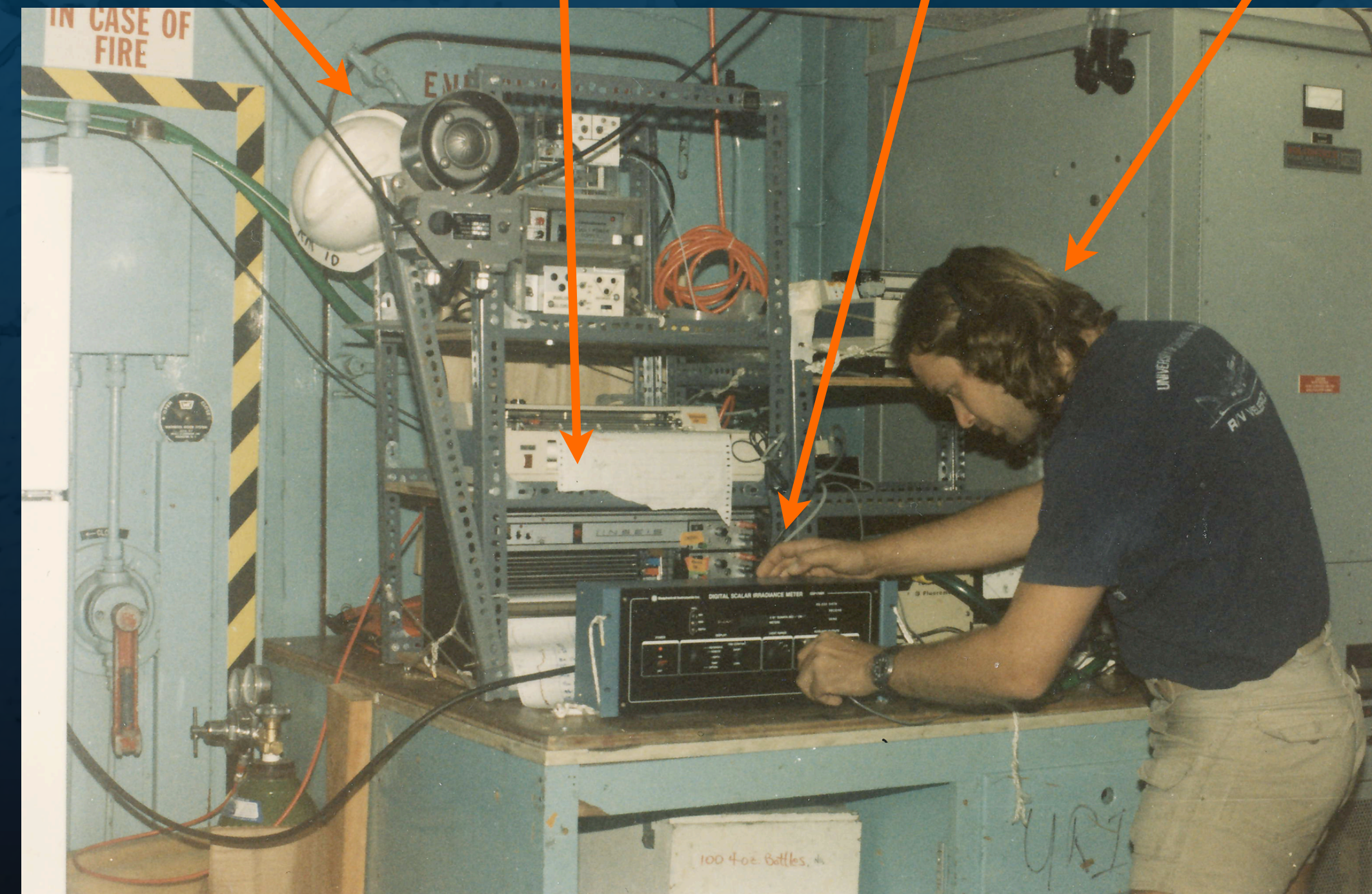
Many instruments required human power to collect samples in the ocean

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We built instruments and brought them sea

no computers, data recorded to paper
instrument controlled by hand
bad 80's hair



There is now technology a revolution and will change how humans interact with the ocean.

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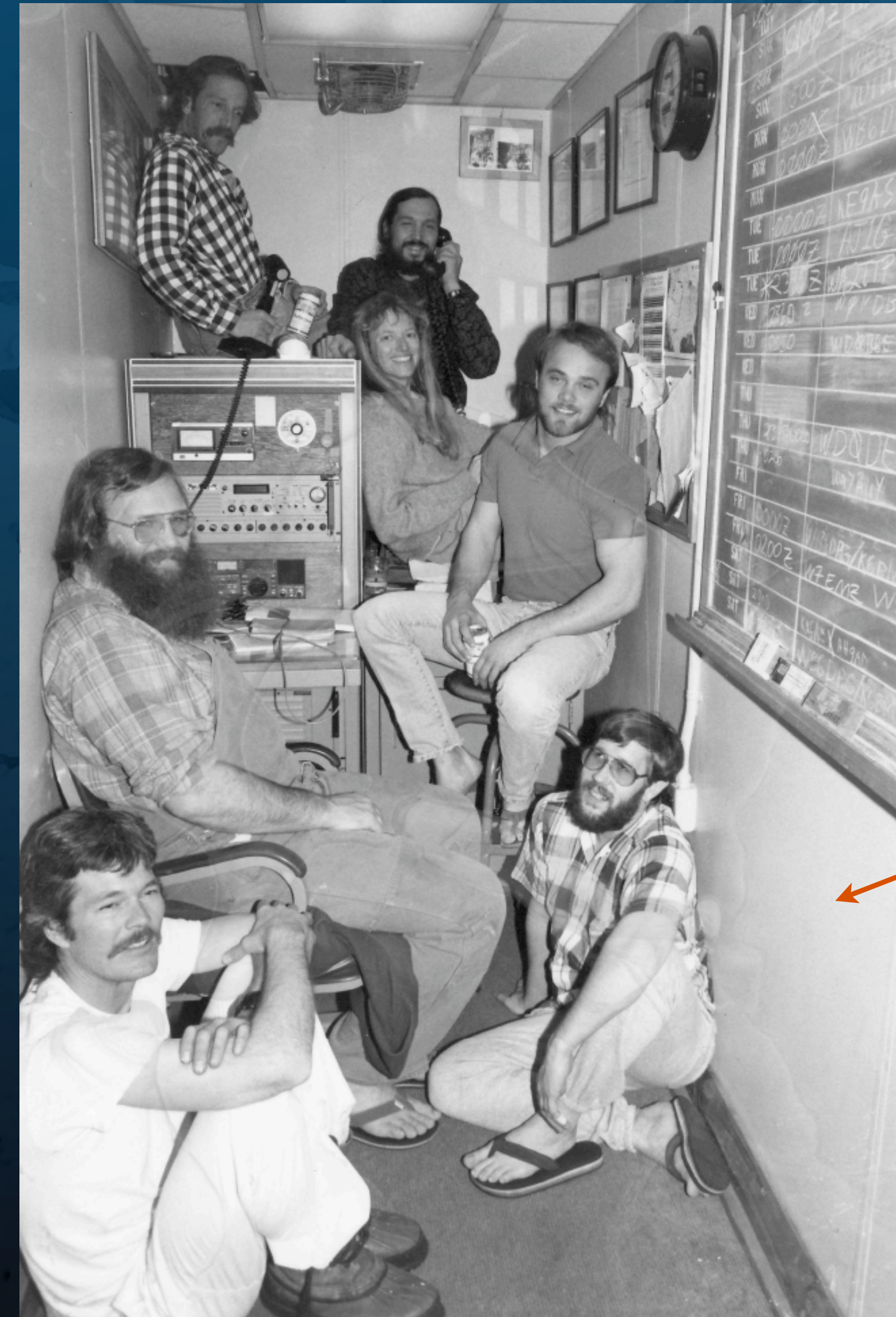


1988, I was
23 years old
working in
Antarctica.

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When we could, we
called home using a
HAM radio system. It
was a one way
conversation and
nothing was guaranteed.
It was also a
conversation heard all
over the world,,,, not a
great romance gateway.

Palmer station
Antarctica Radio
team in 1988



How have times changed!!!!

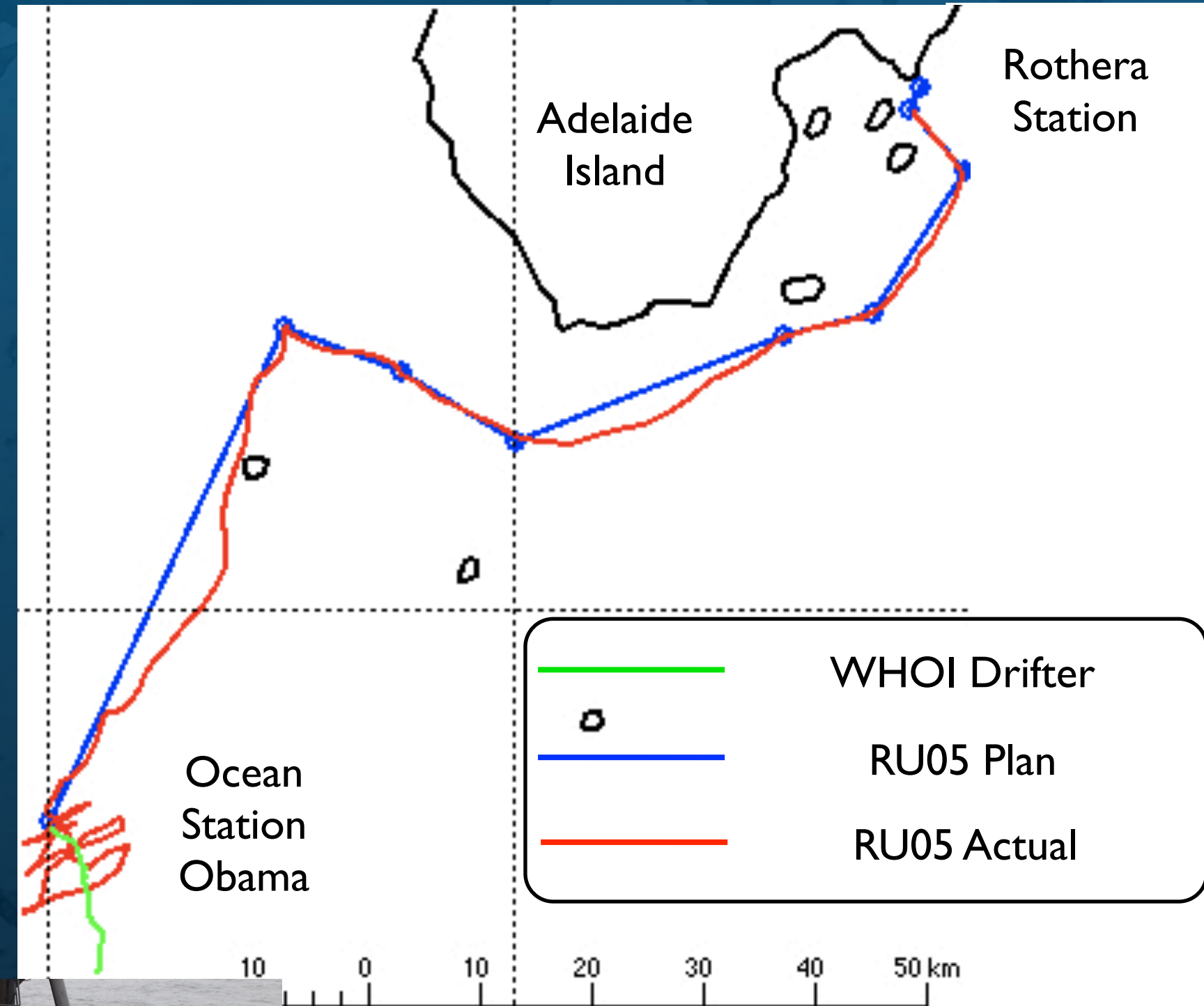
70 West

69 West

**A New
Reality**

68 South

RV Gould



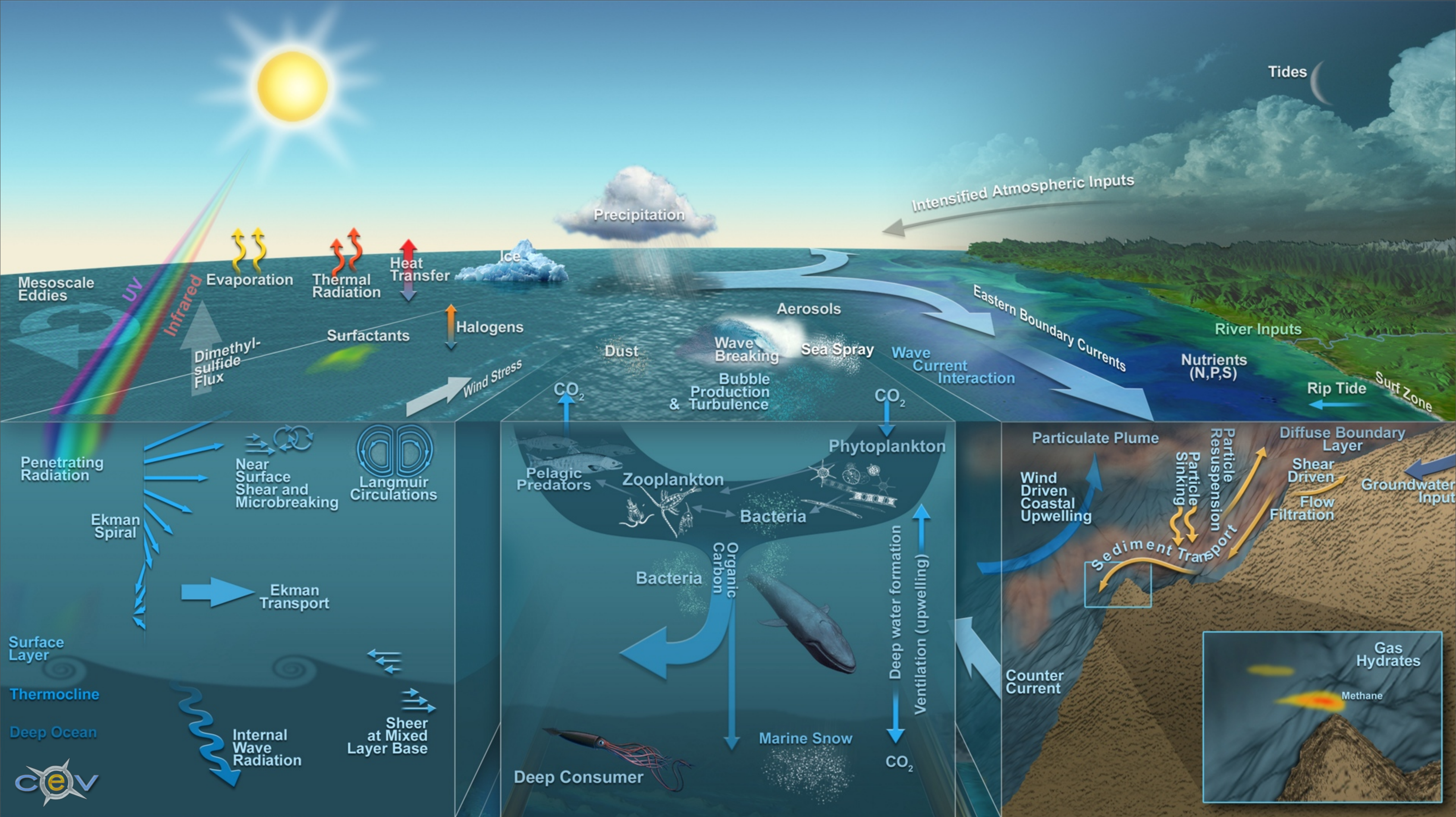
**Rothera
Base**

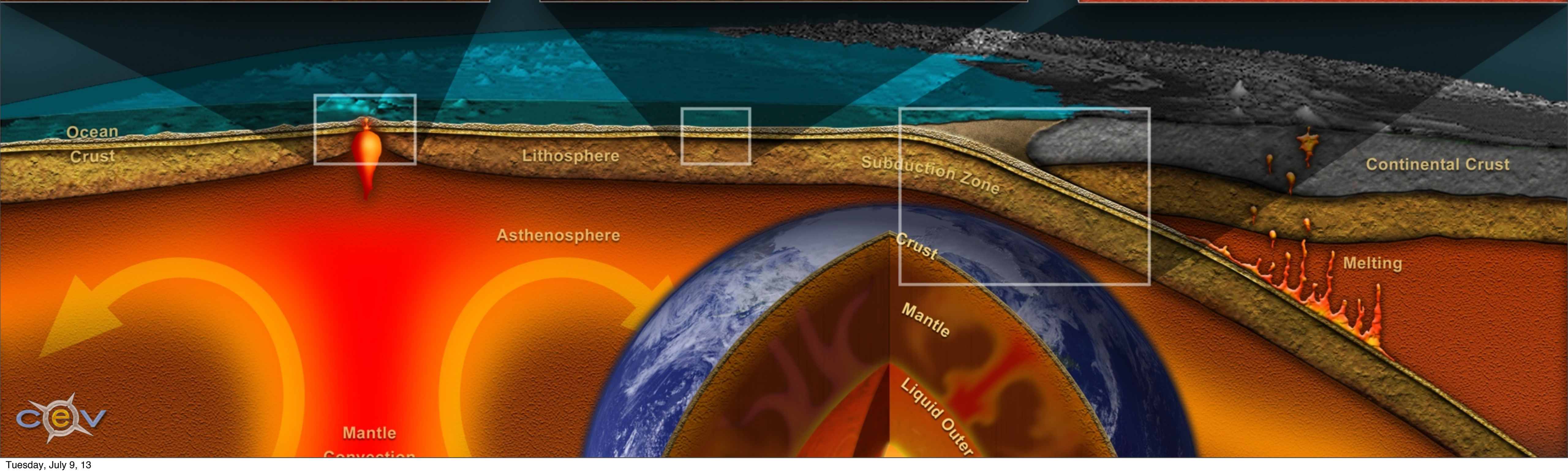
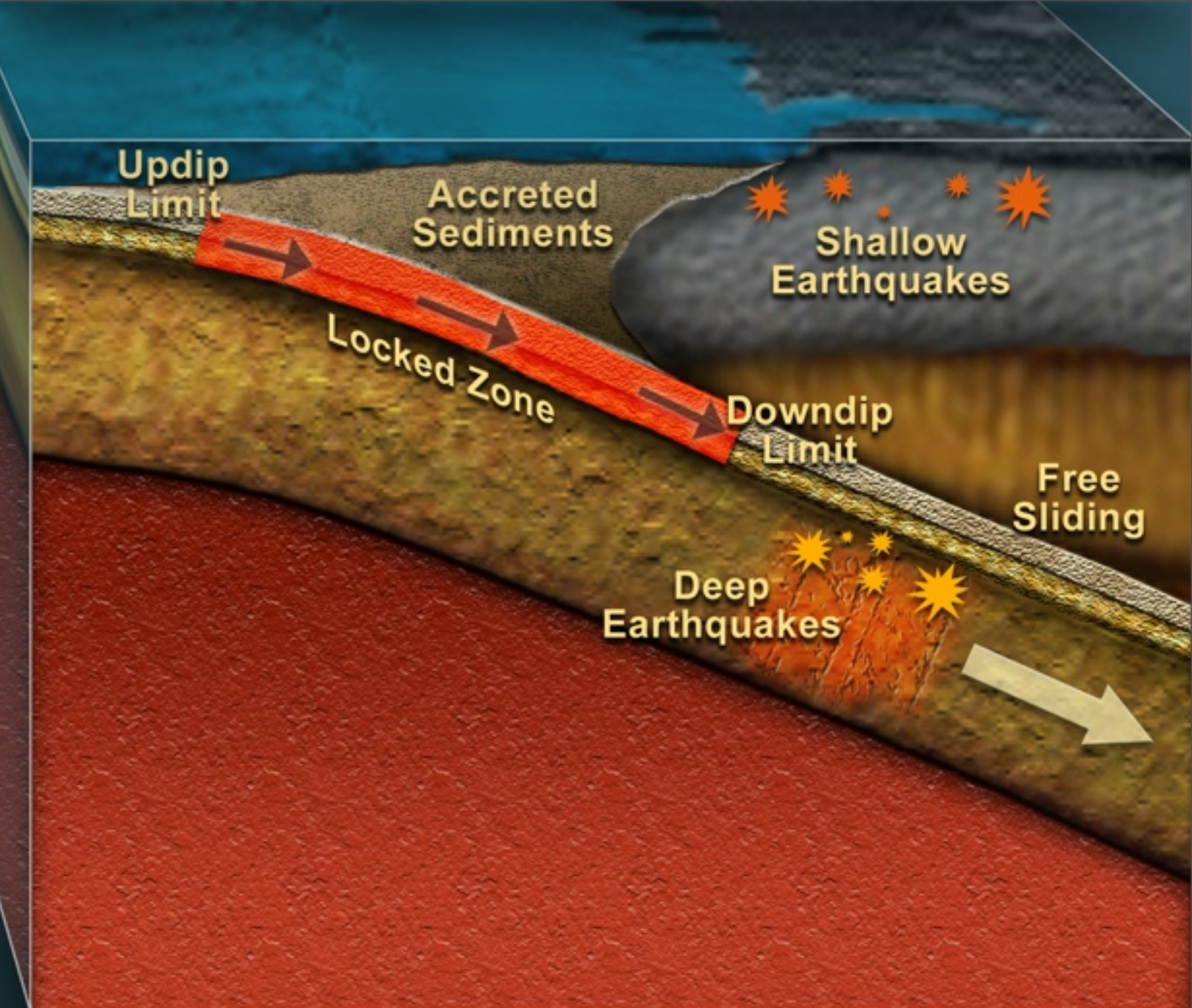
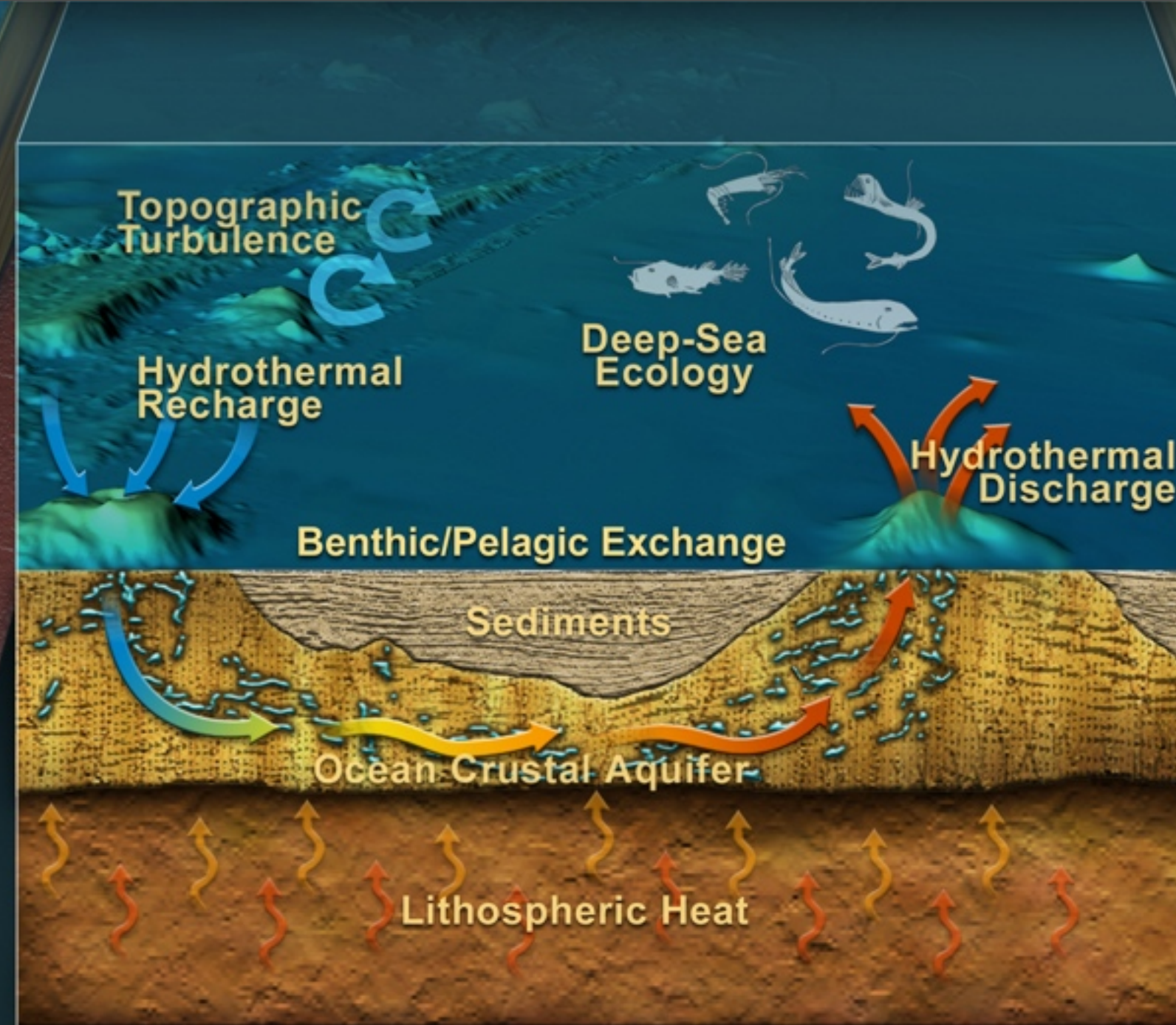
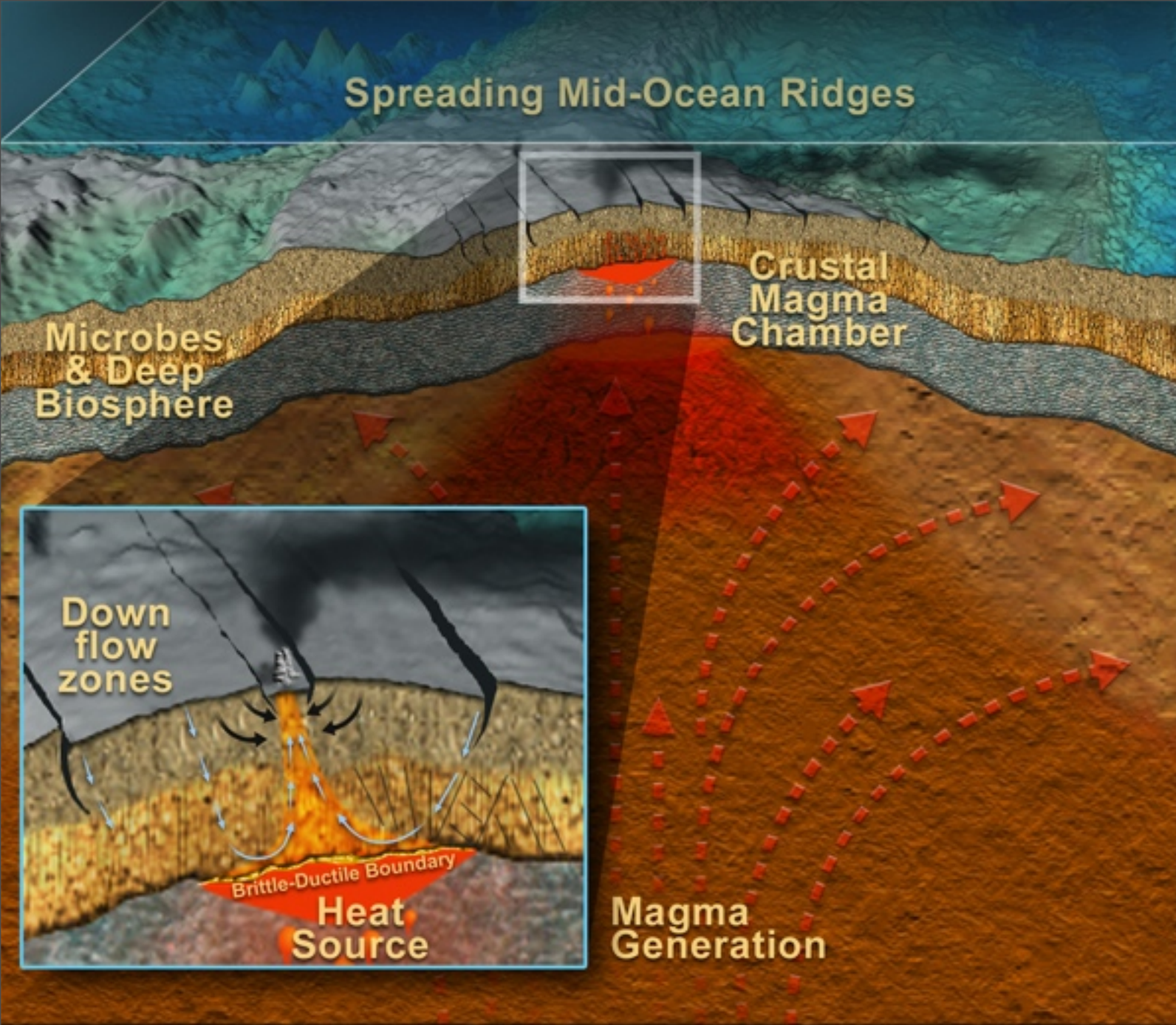
Real time



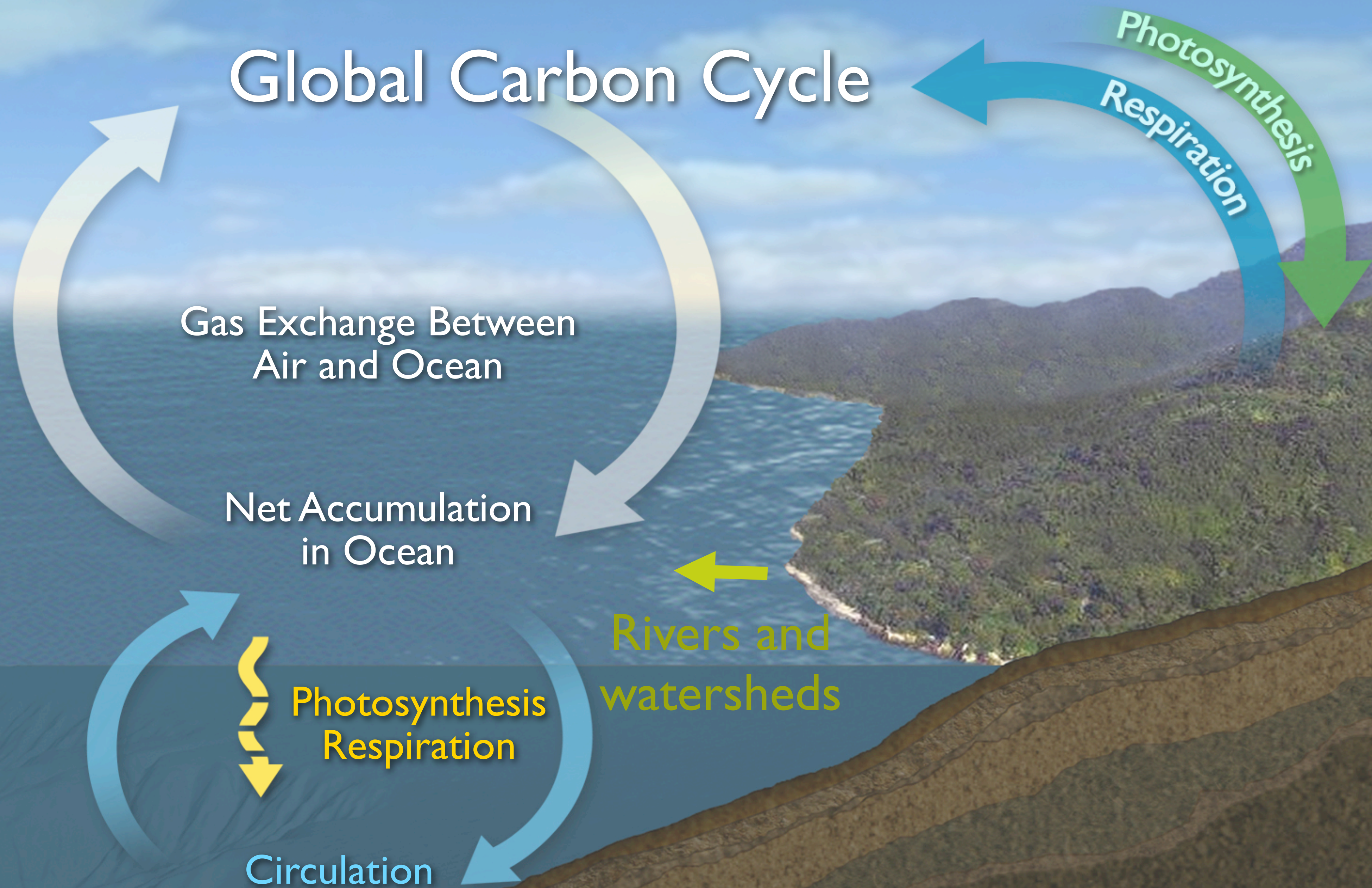
**Rutgers
COOLroom**



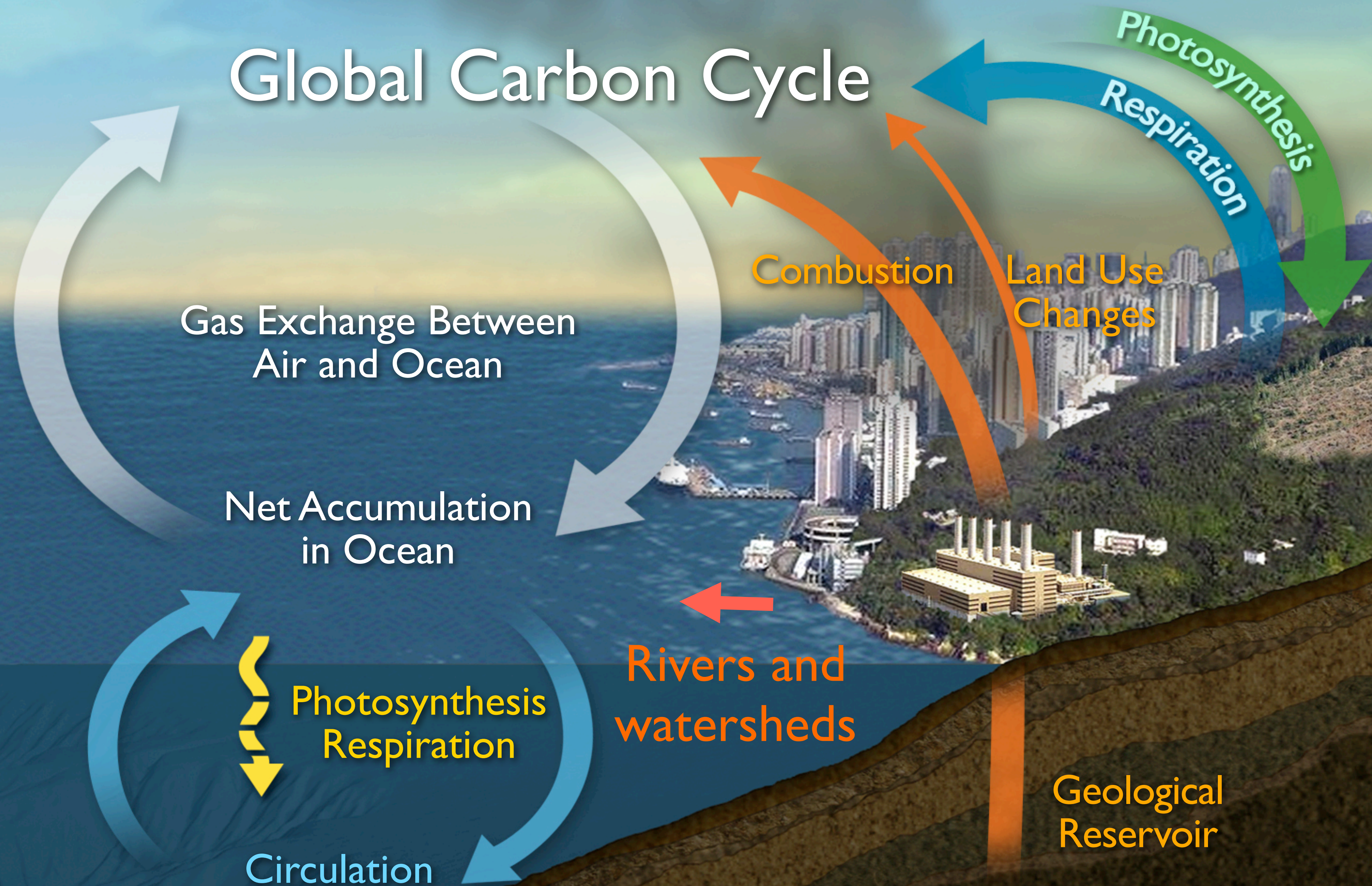




Global Carbon Cycle



Global Carbon Cycle



This oceans
are changing
in our lifetime

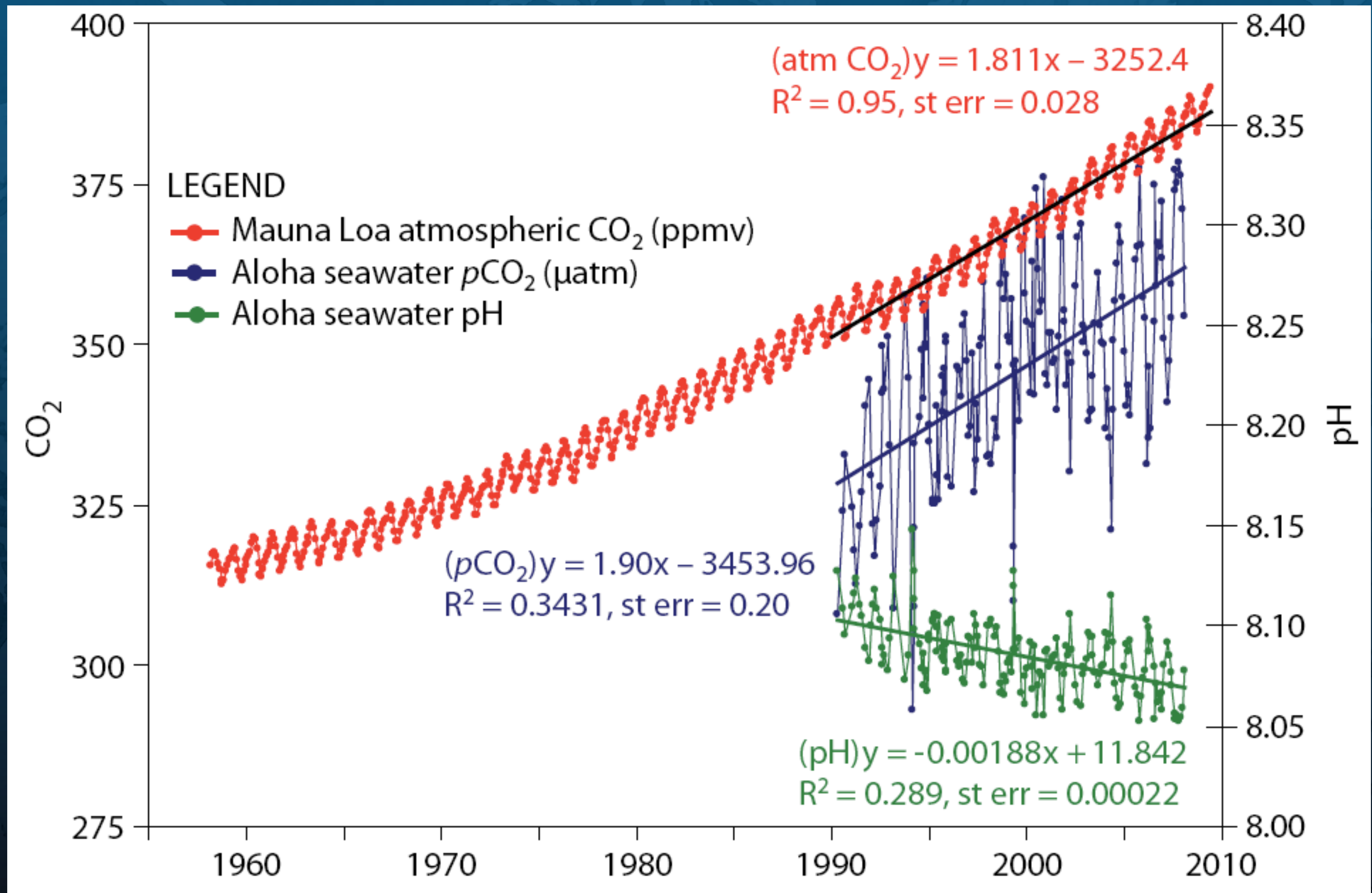
Annual Sea Ice Minimum - 1980

Image Source: NASA (svs.gsfc.nasa.gov)

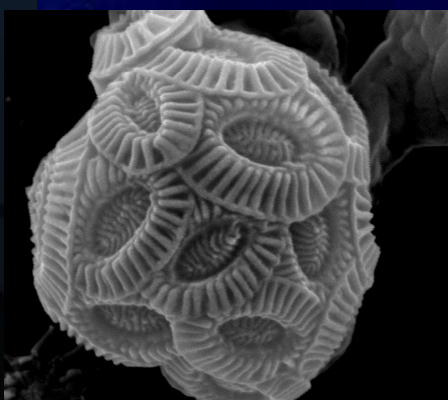
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Annual Sea Ice Minimum - 2007

Image Source: NASA (svs.gsfc.nasa.gov)





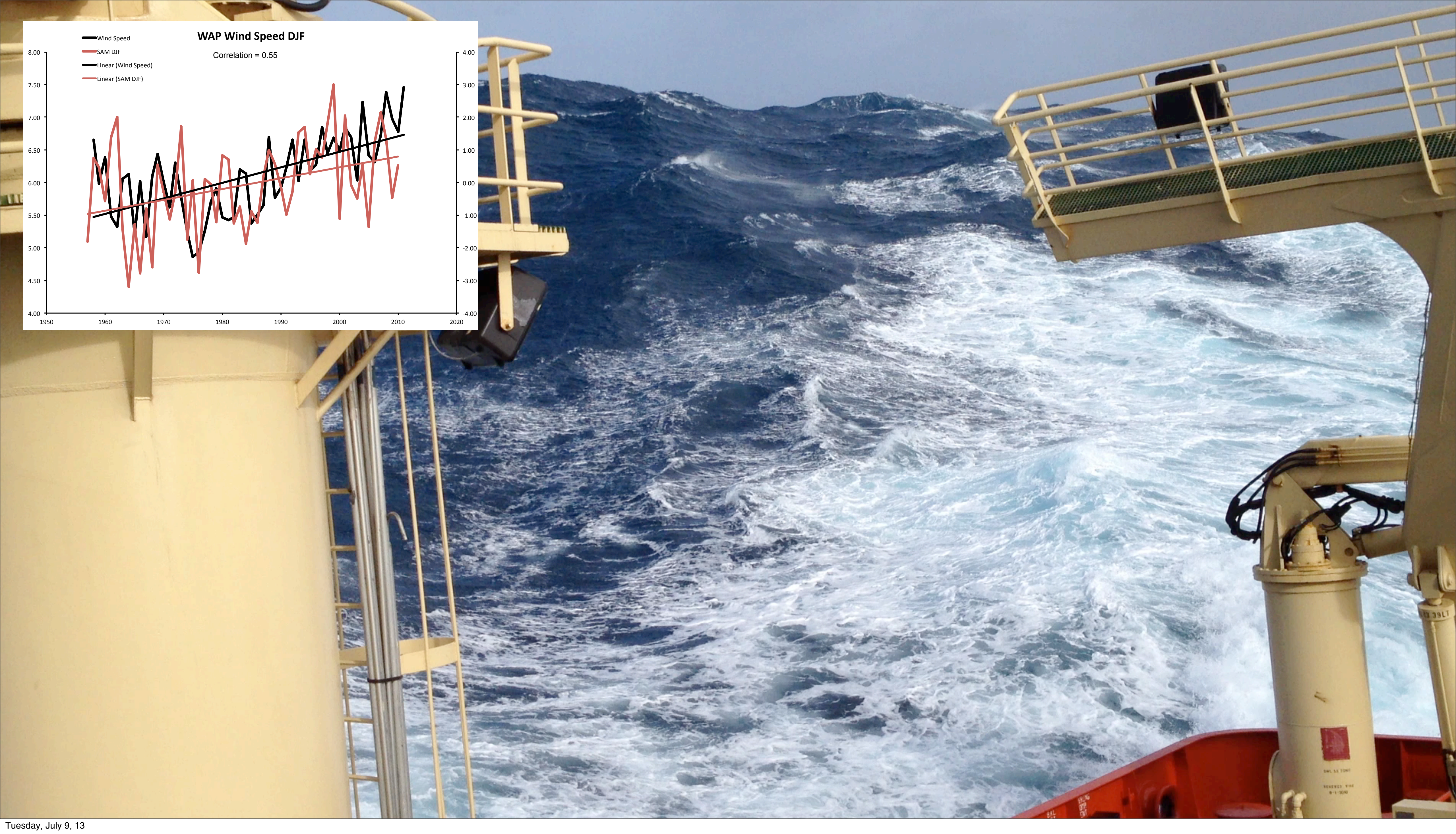
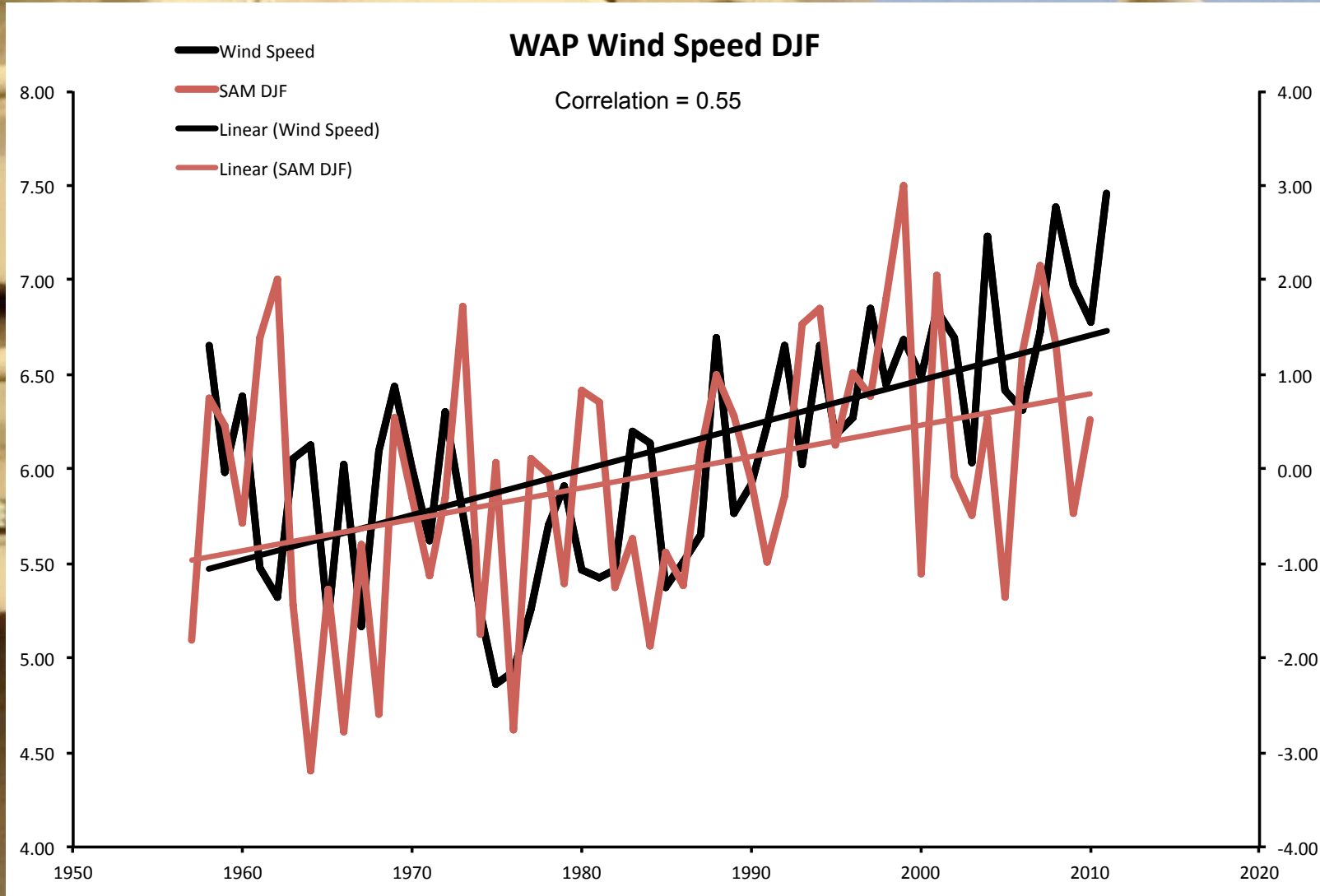


In Situ Research- 'The Early Years'









Discrete versus continuous data

Oceanographers have historically collected discrete data



What is happening here????

Discrete versus continuous data

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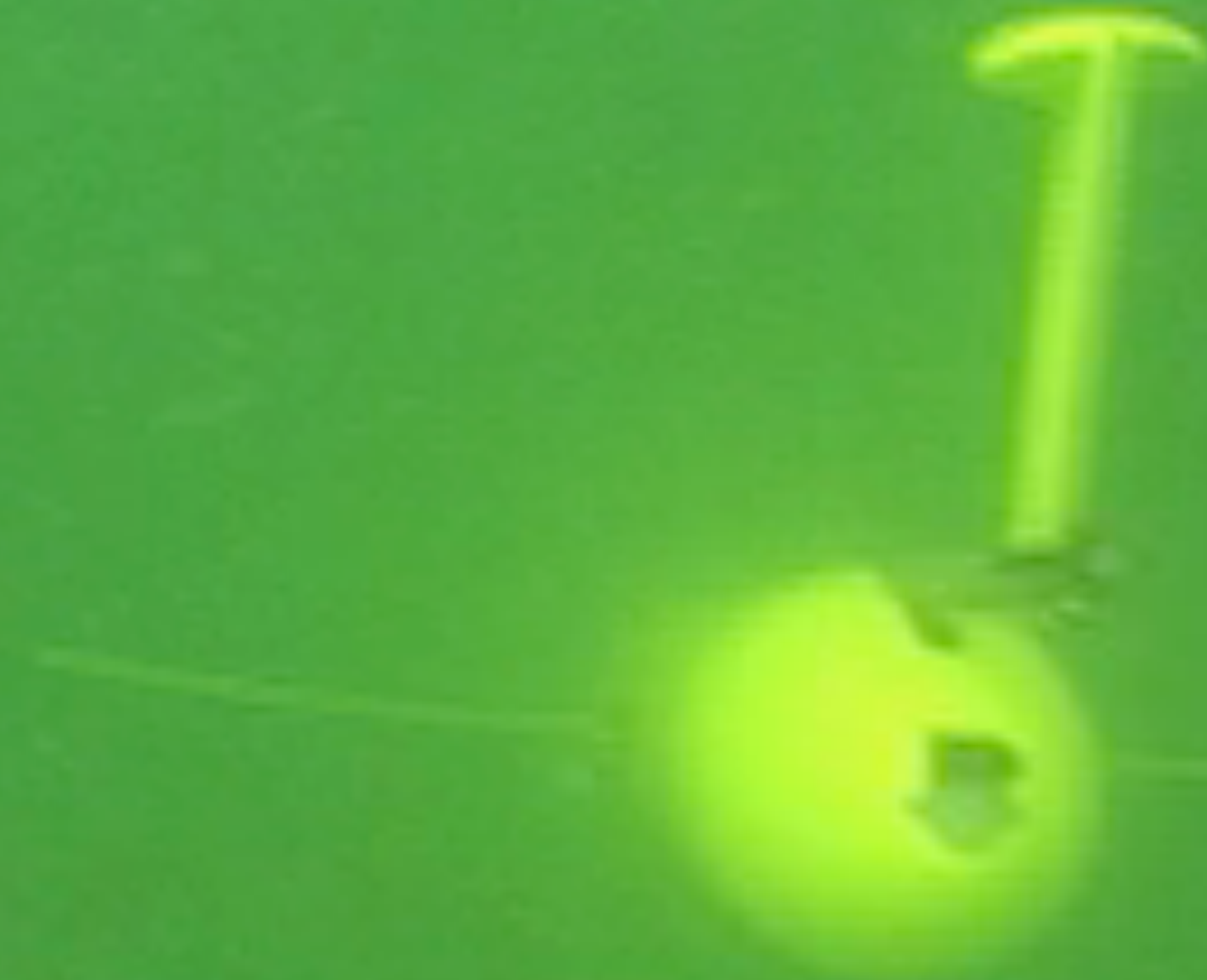
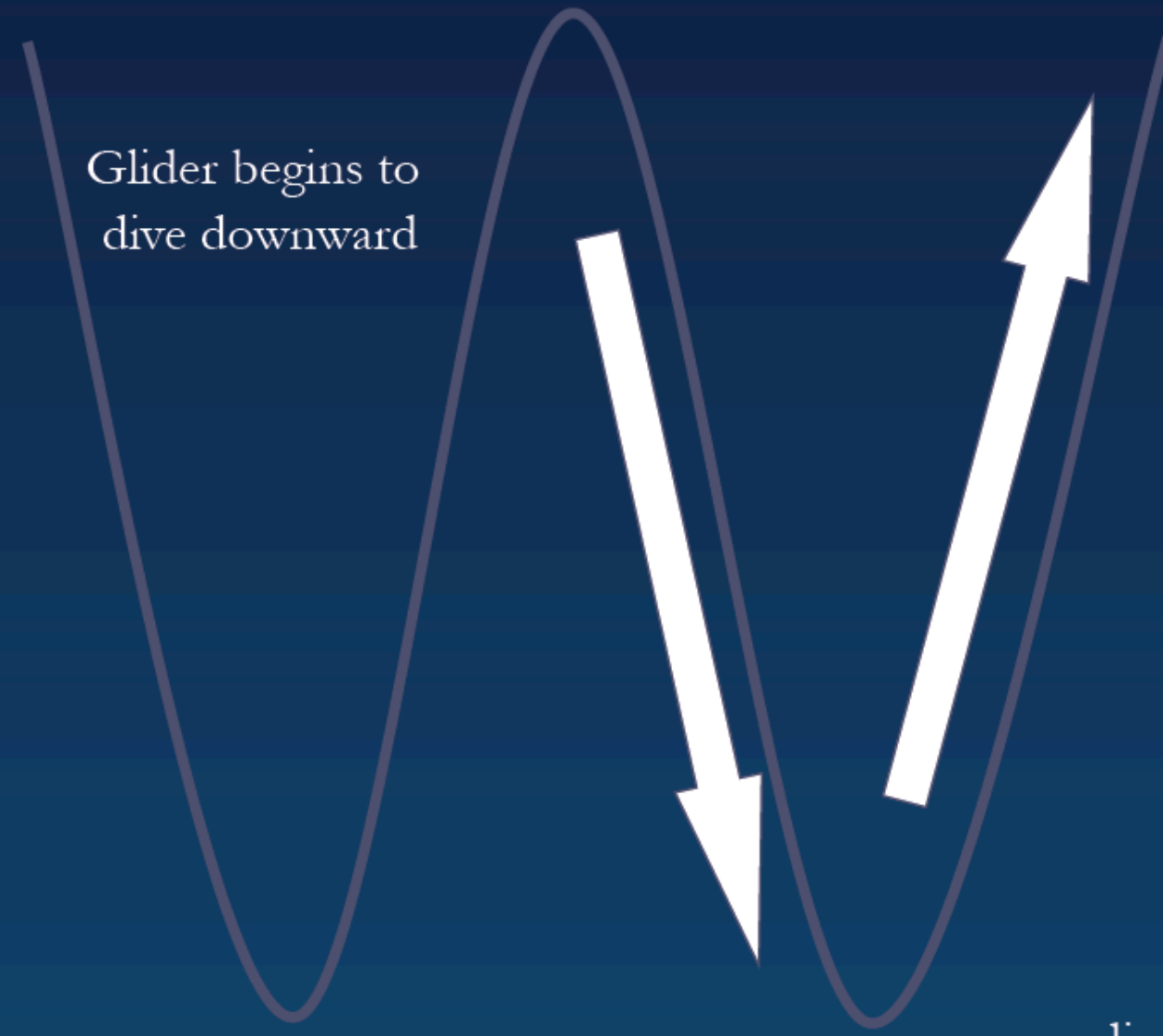


How do Gliders “Fly”?

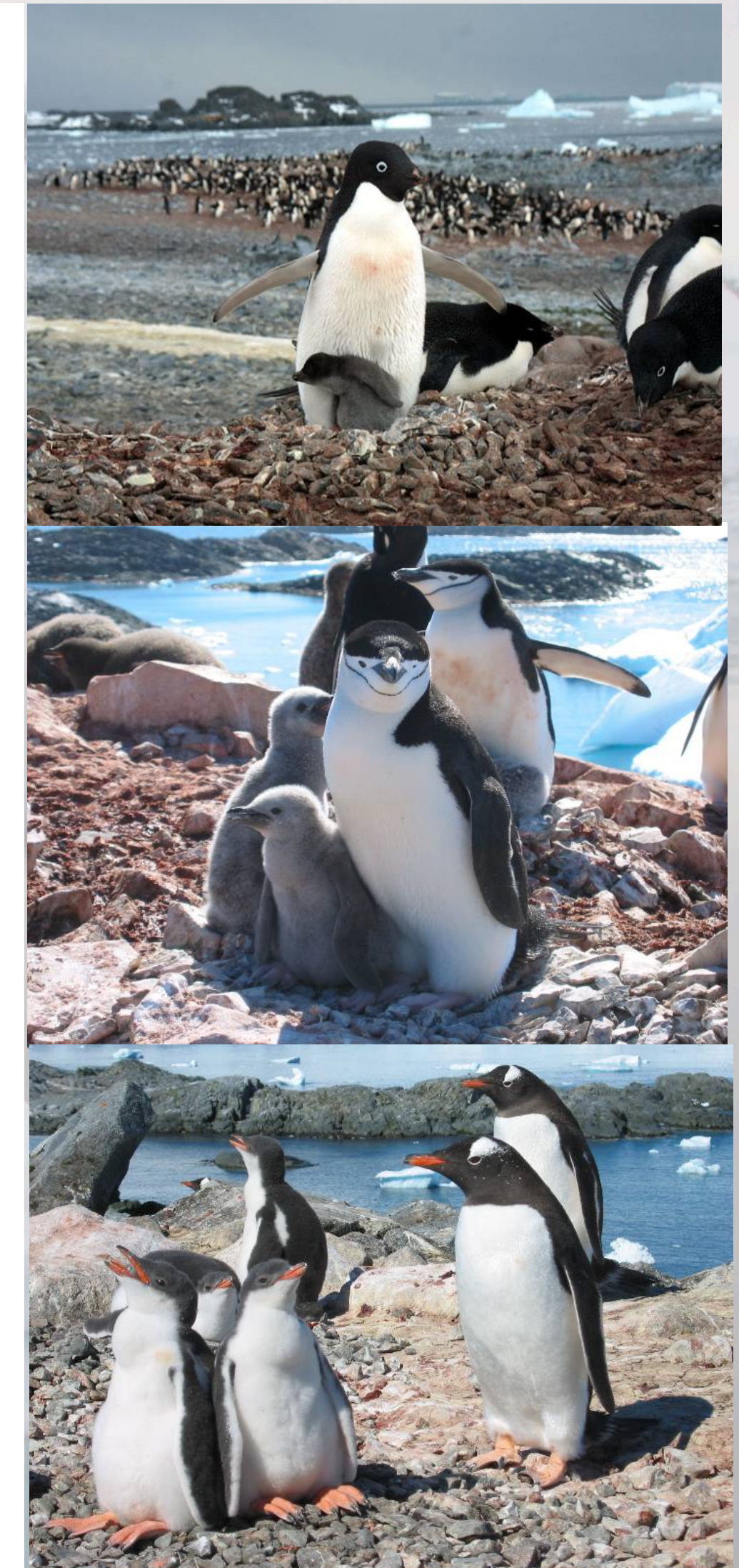
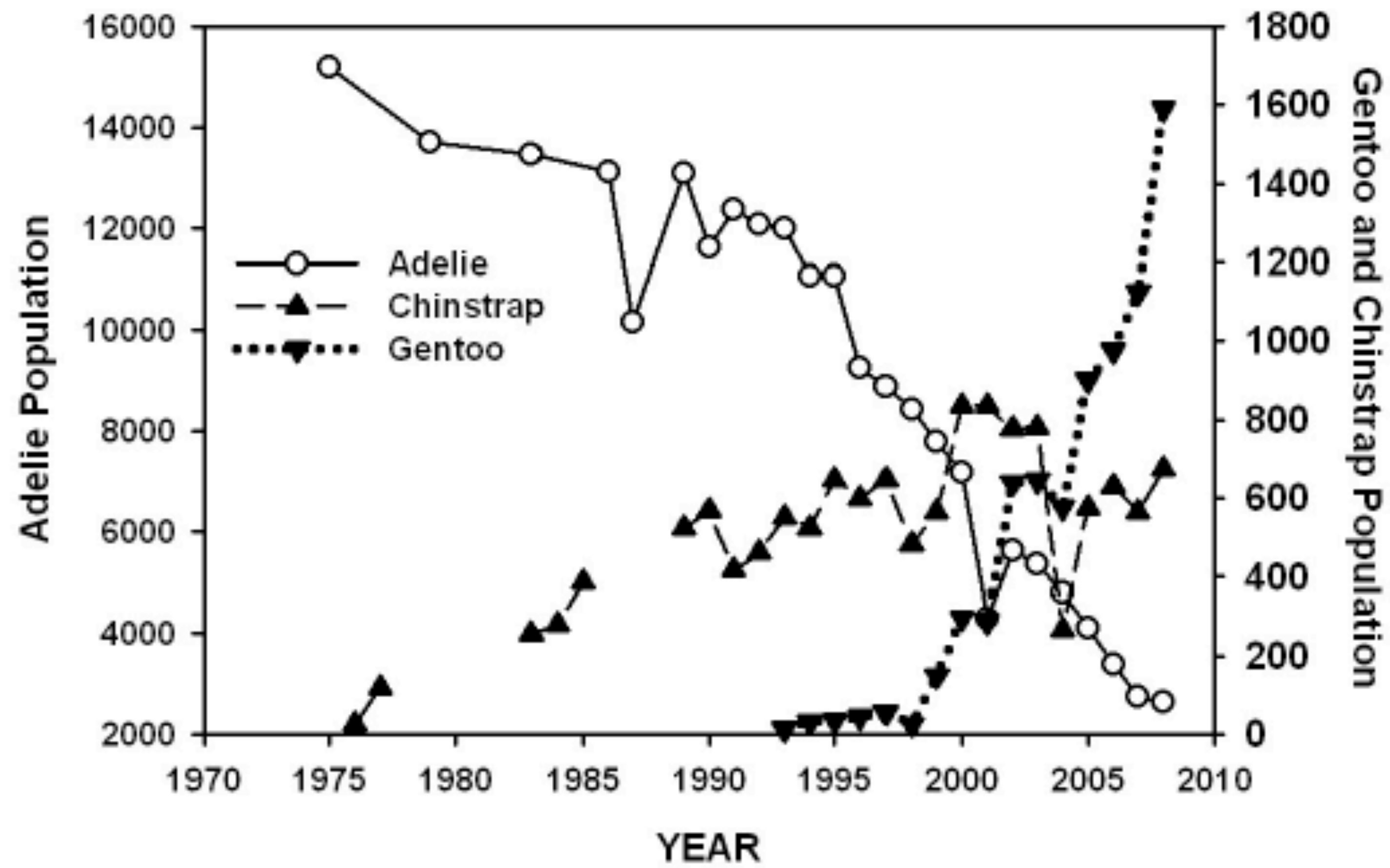
Buoyancy pump in ← the glider pulls in 0.5 L of water

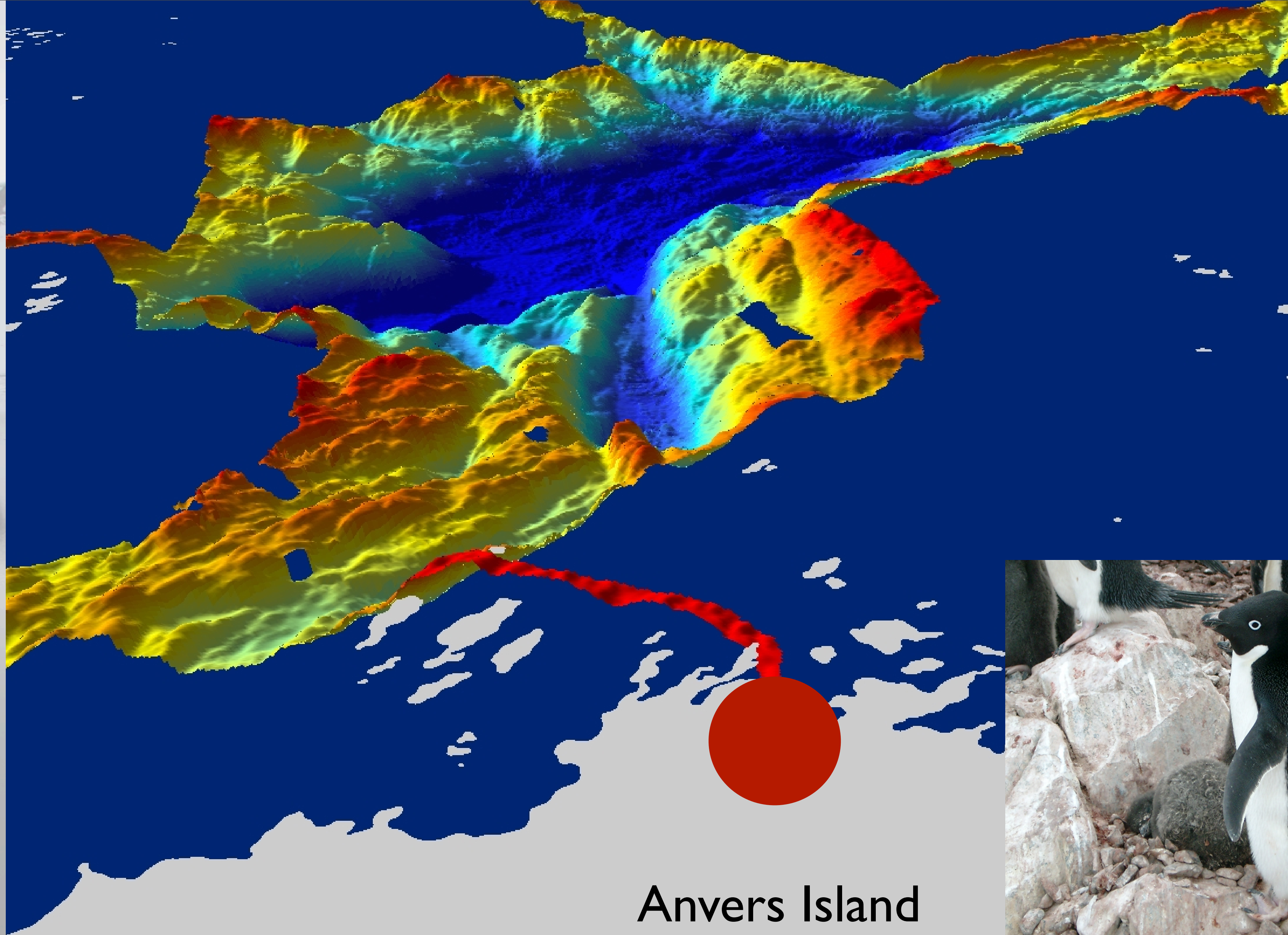
When surfacing to connect glider inflates air bladder

Glider begins to dive downward



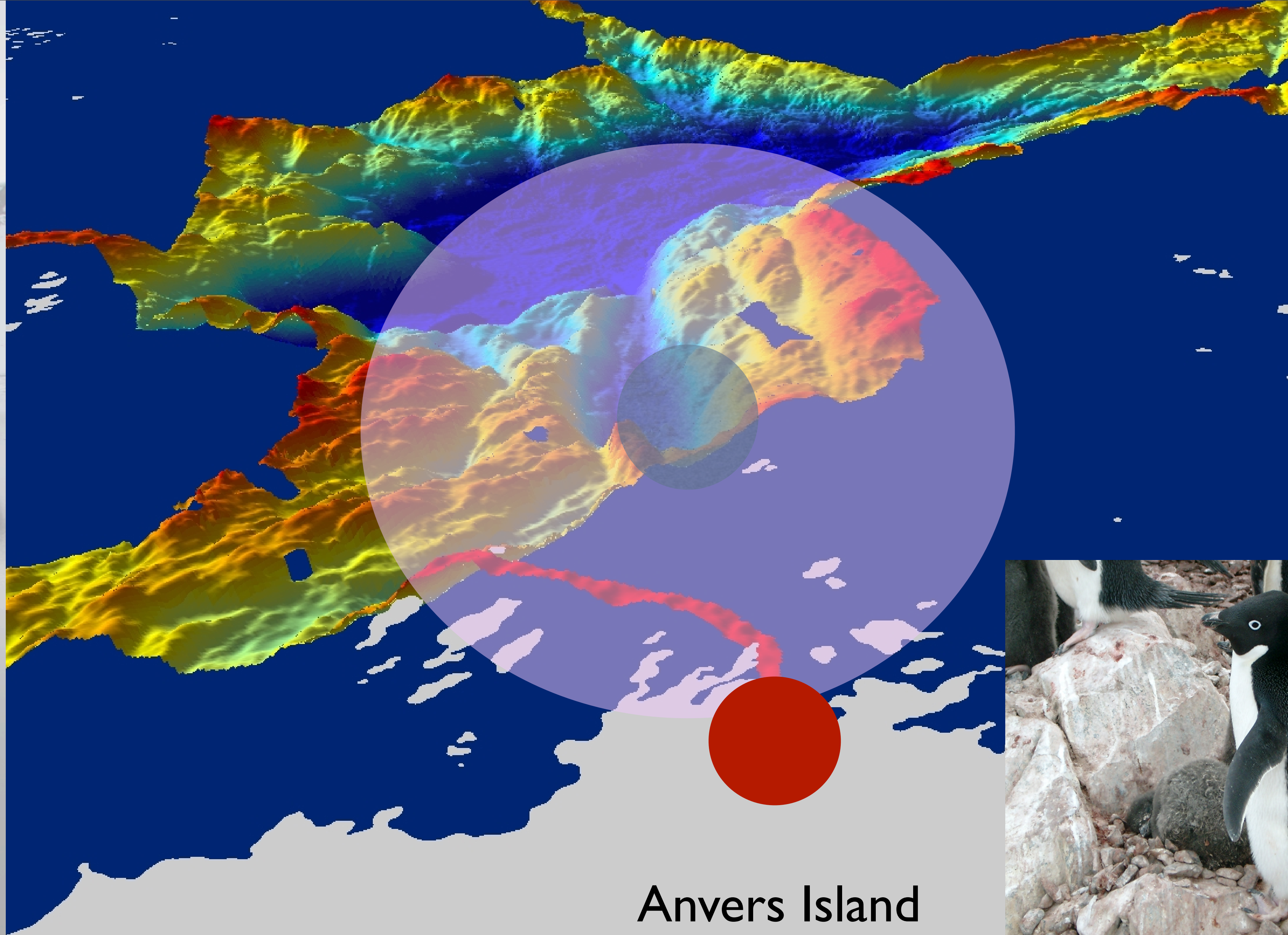




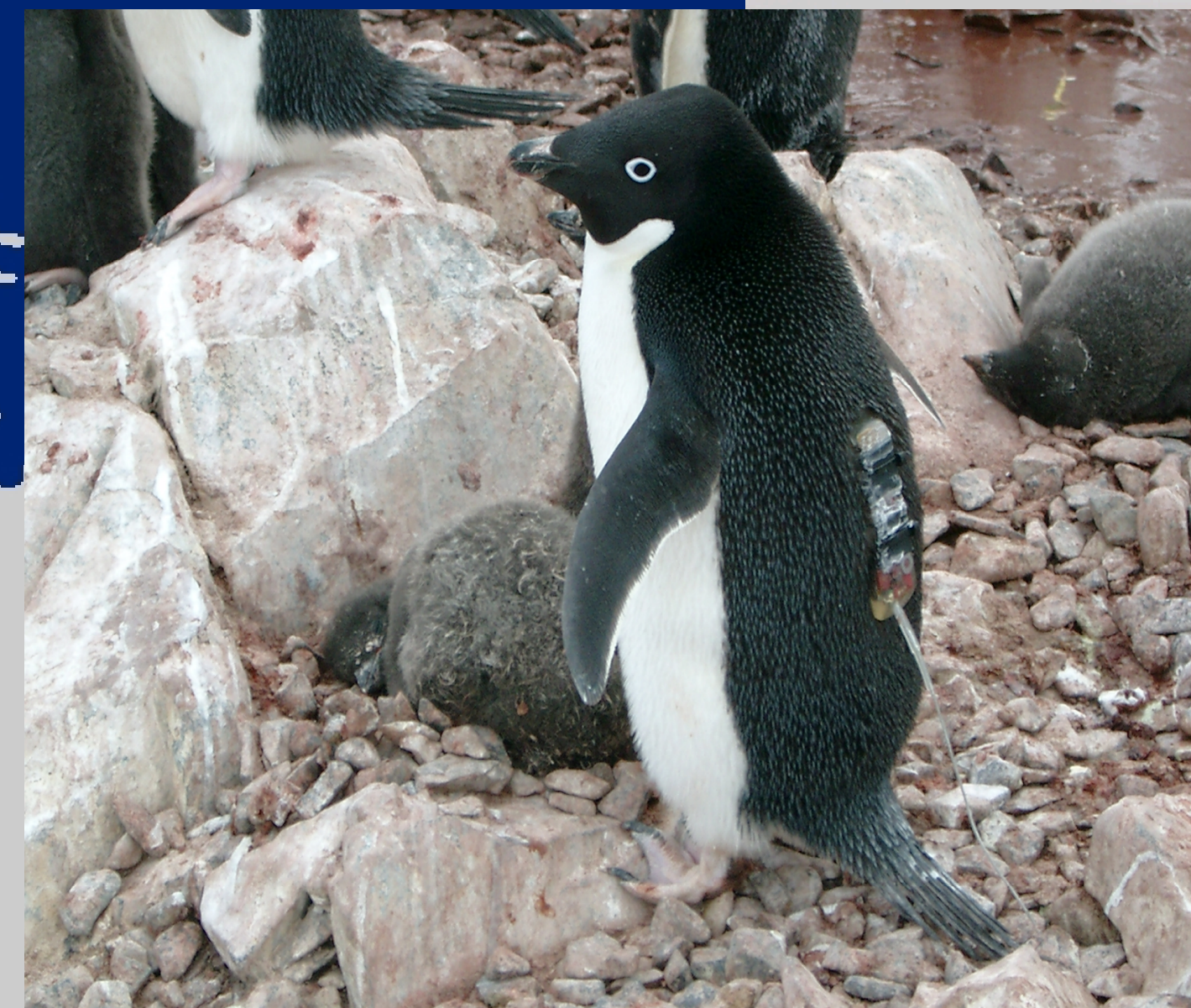


Anvers Island

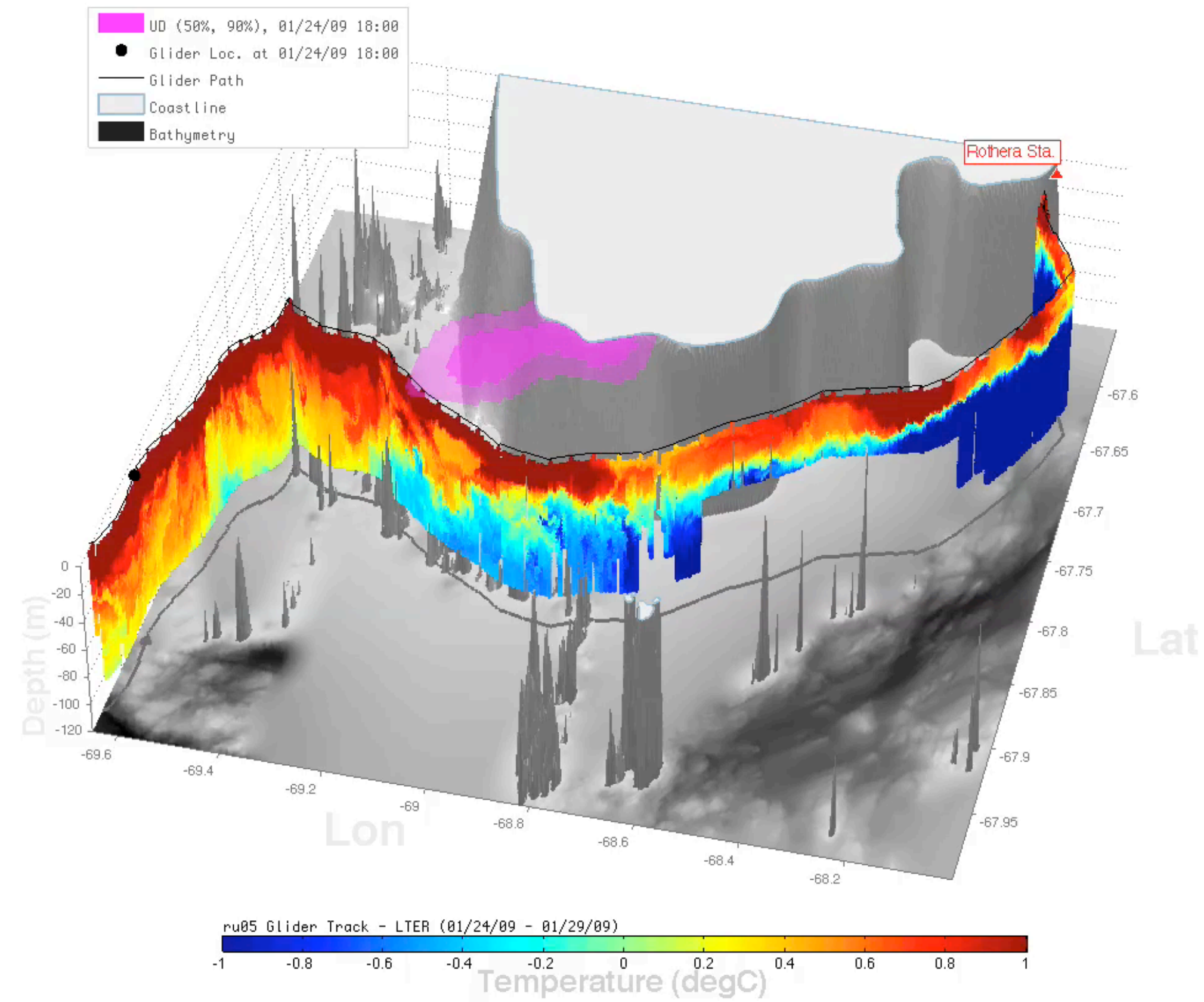




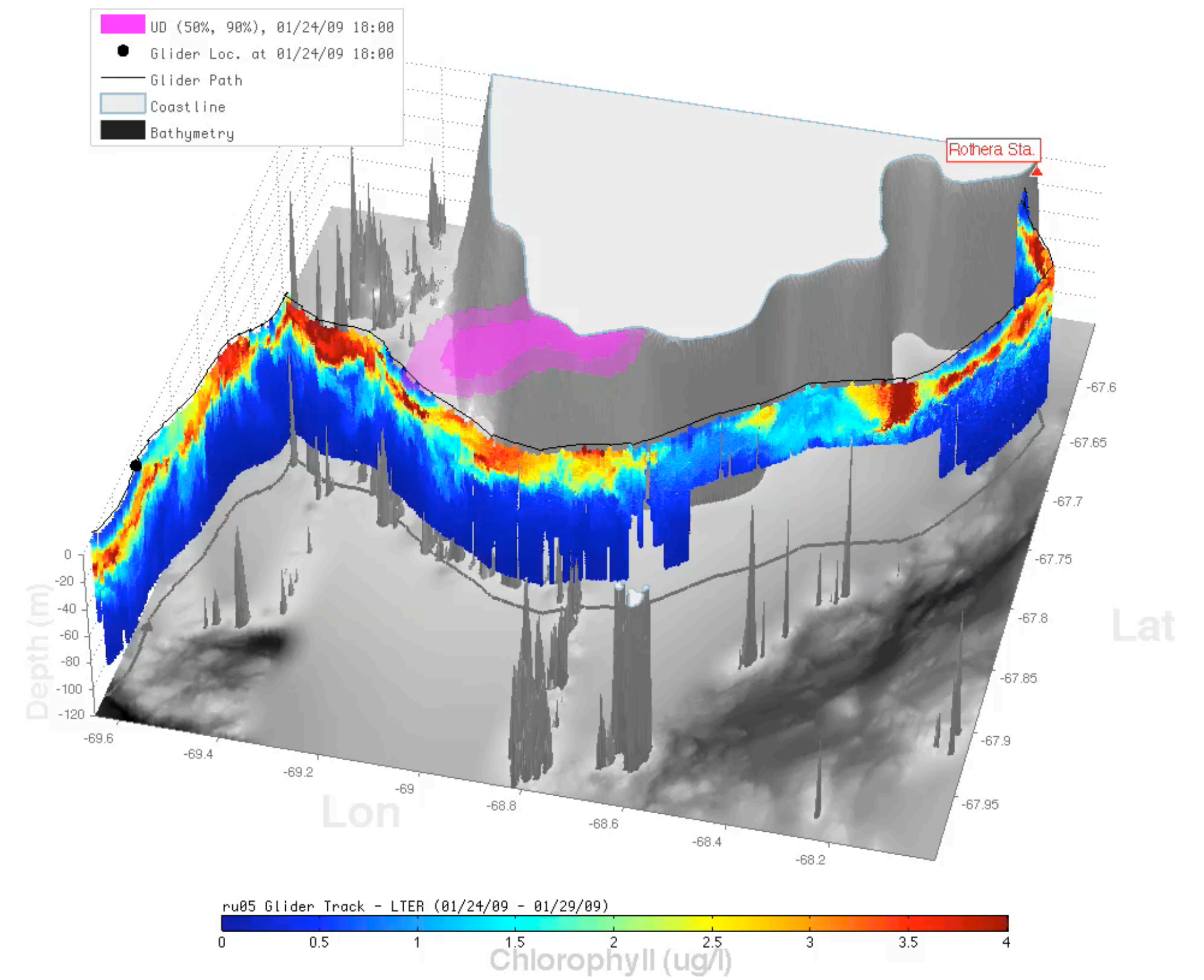
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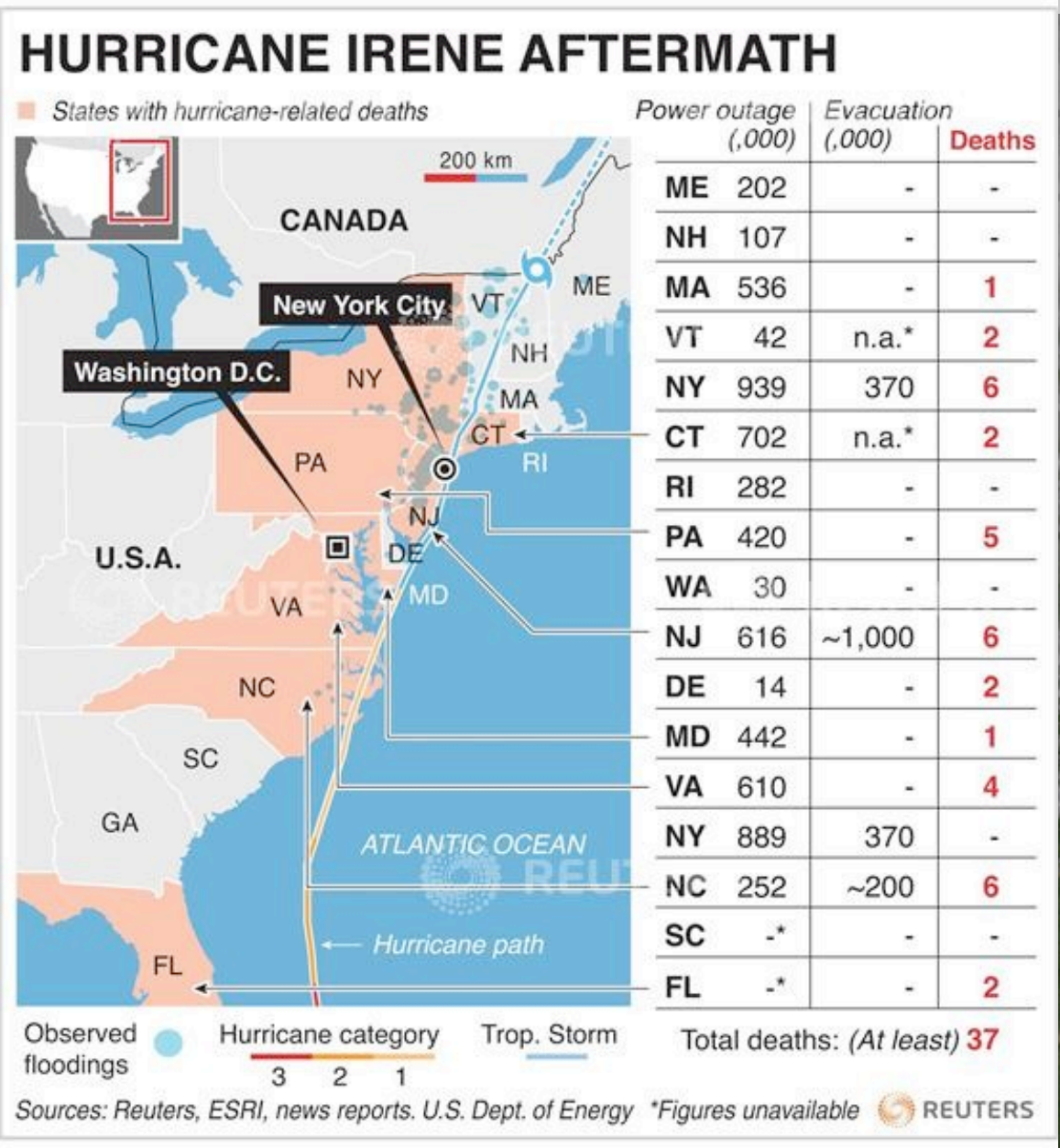
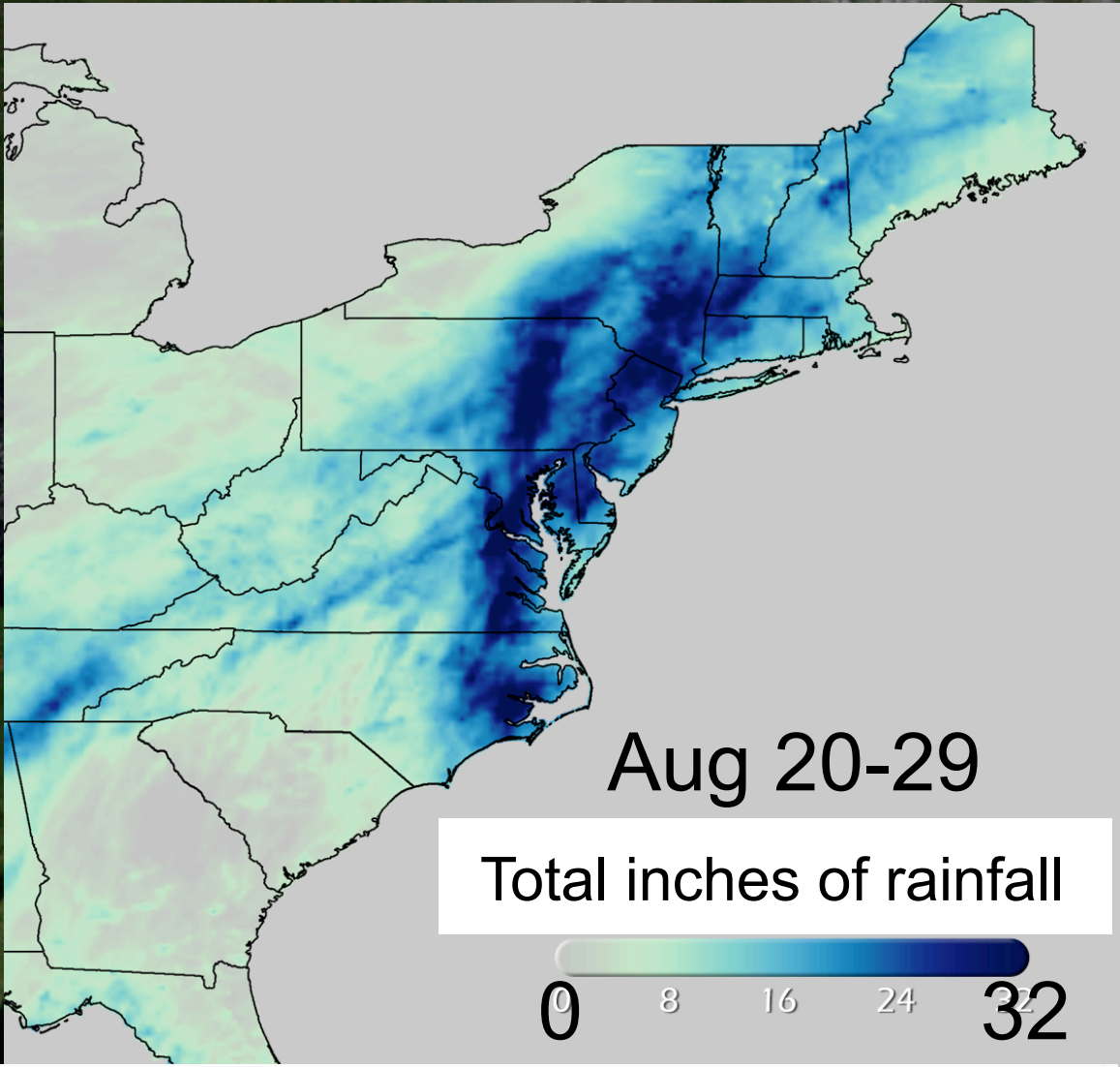
Temperature from ru05's 01/24/09 - 01/29/09 deployment with overlay of 2009 penguin UD shown at 50% and 90% confidence intervals



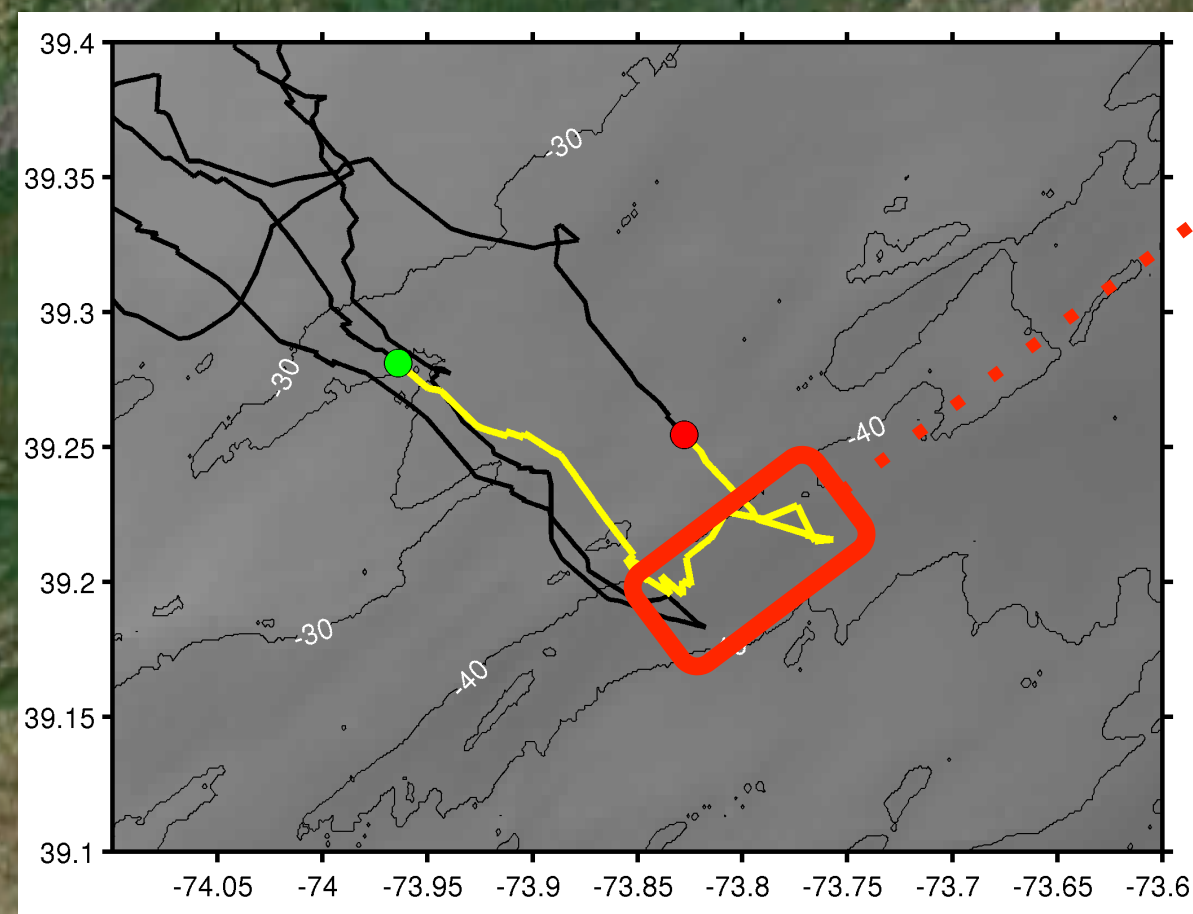
Chlorophyll from ru05's 01/24/09 - 01/29/09 deployment with overlay of 2009 penguin UD shown at 50% and 90% confidence intervals



Hurricane Irene



- First tropical storm to threaten NYC since Hurricane Gloria in 1985
- Flooding records broken in 26 rivers
 - Caused at least 56 deaths
 - Damage nearly \$8 billion



Hurricane Irene

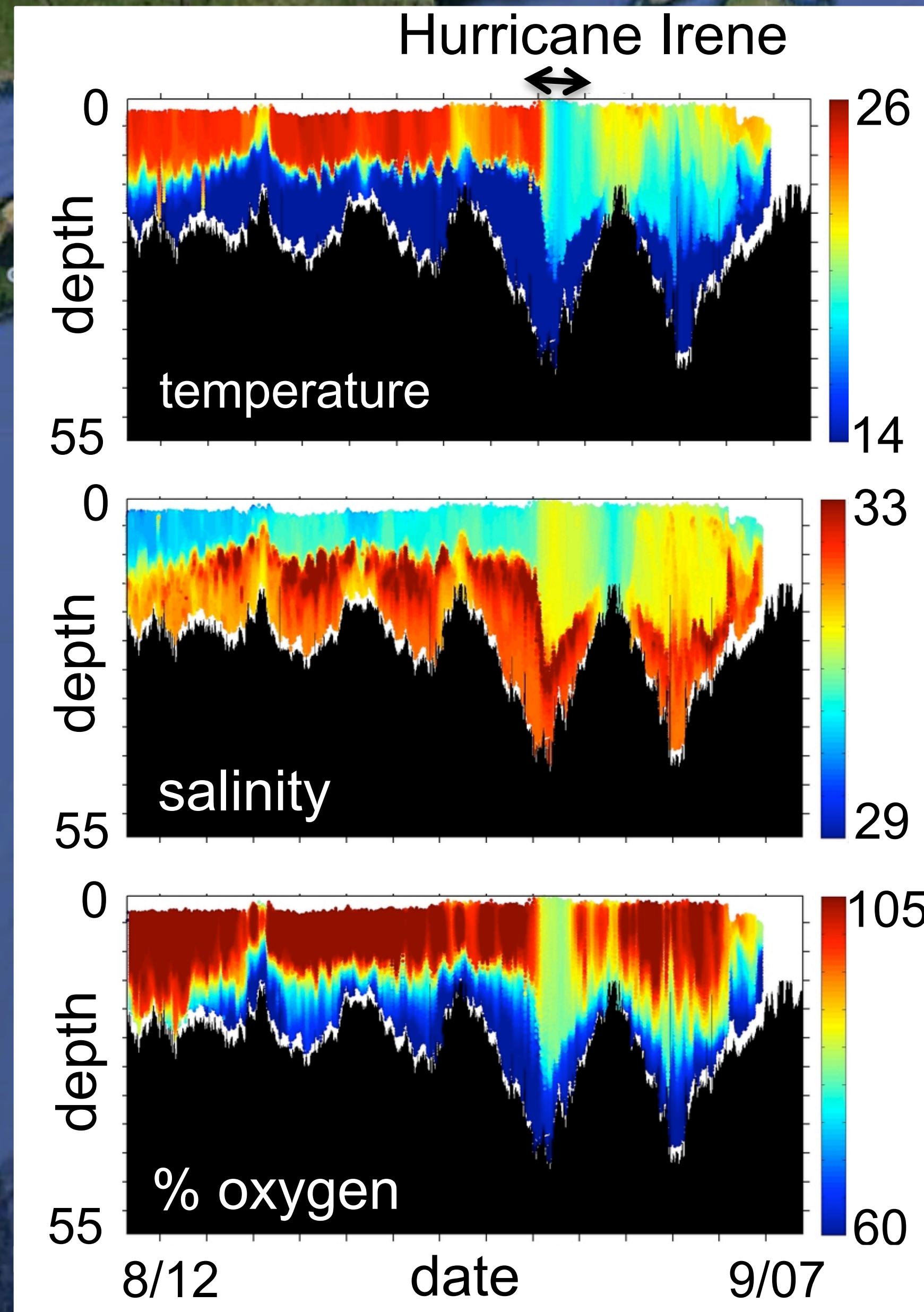
Long Island Sound

Last Surfacing

Current Waypoint: ru16

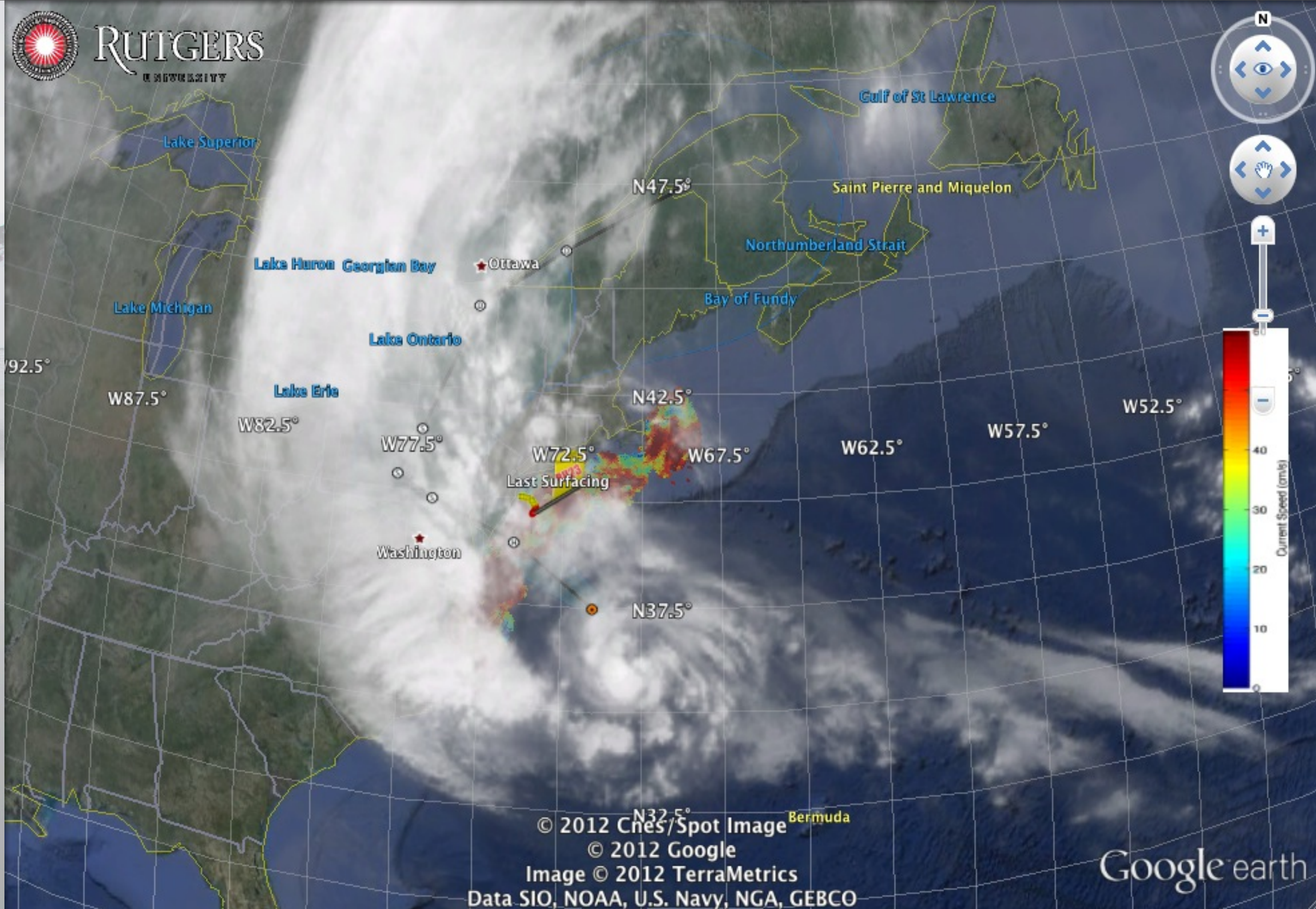
Delaware Bay

RU16





RUTGERS
UNIVERSITY



Google earth

