



Calibration:



or



**Rear Admiral Dave Titley, USN (ret.), Ph.D.
Prospective Director, Center for Solutions to Weather and Climate Risk
Penn State University**

20 August 2013

Topics

- But first ... a calibration challenge
- Is this real?
- What are the specifics?
- Programmatics
- Our challenge



Calibration is like time...





...and time is like oxygen



“When you have it, you never think about it,
but when you don’t it’s the only thing you want.”

World Population (est.) 10,000 BC - 2,000 AD



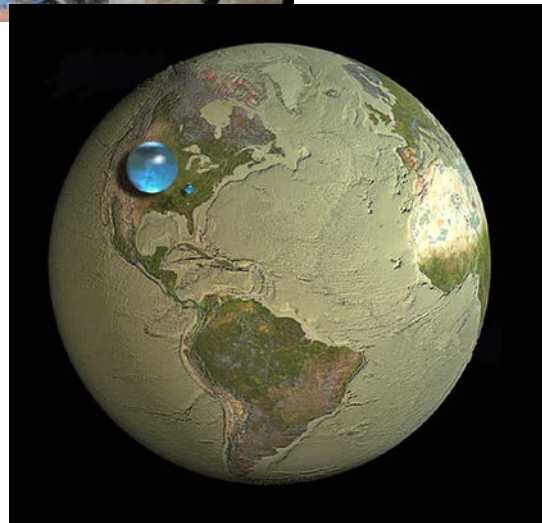


Why Care?



- It's About *People*

- It's About *Water*



- It's About *Change*

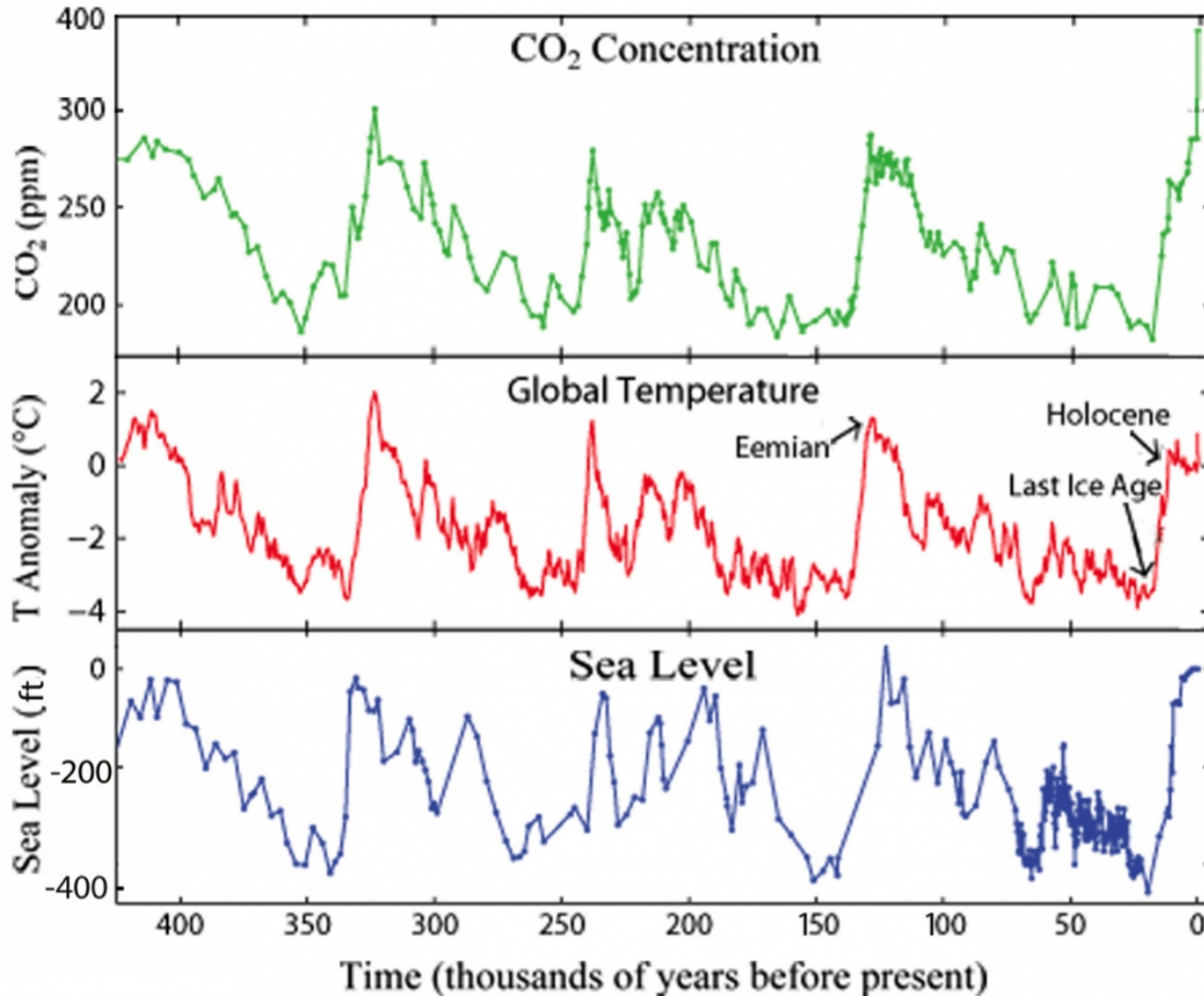


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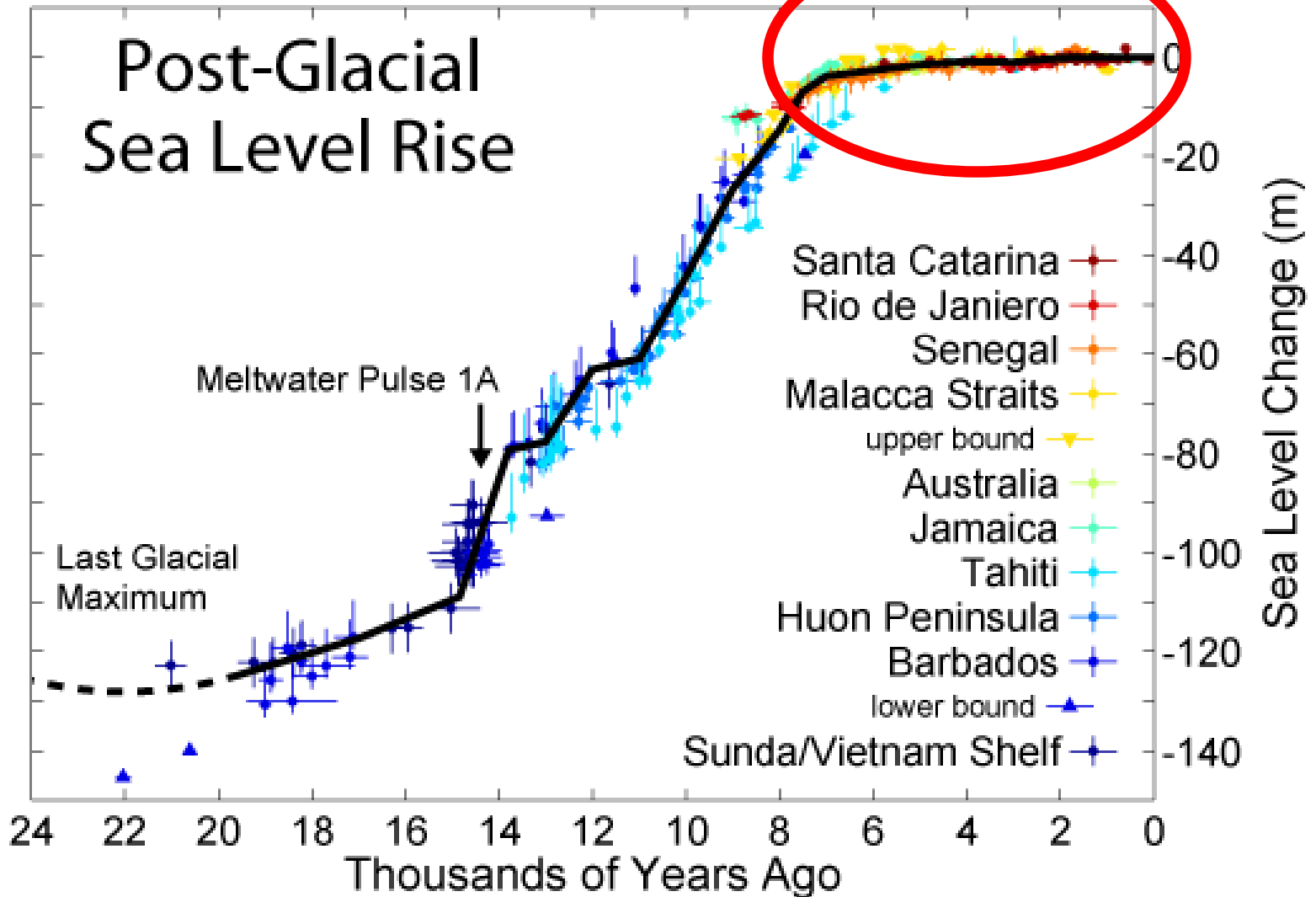
450K Years of Variability...

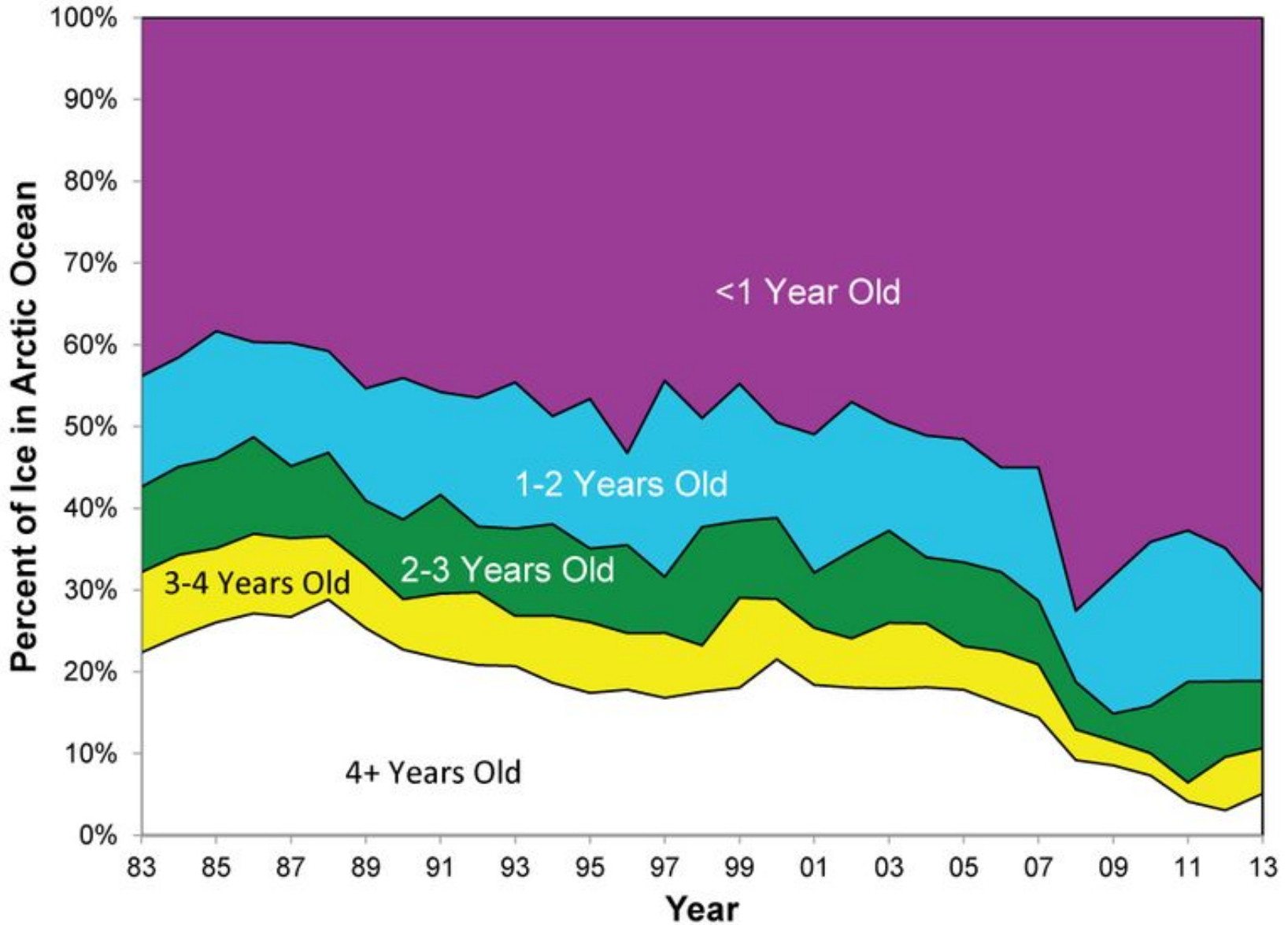


John Englander / "High Tide on Main Street" adapted from Hansen & Sato

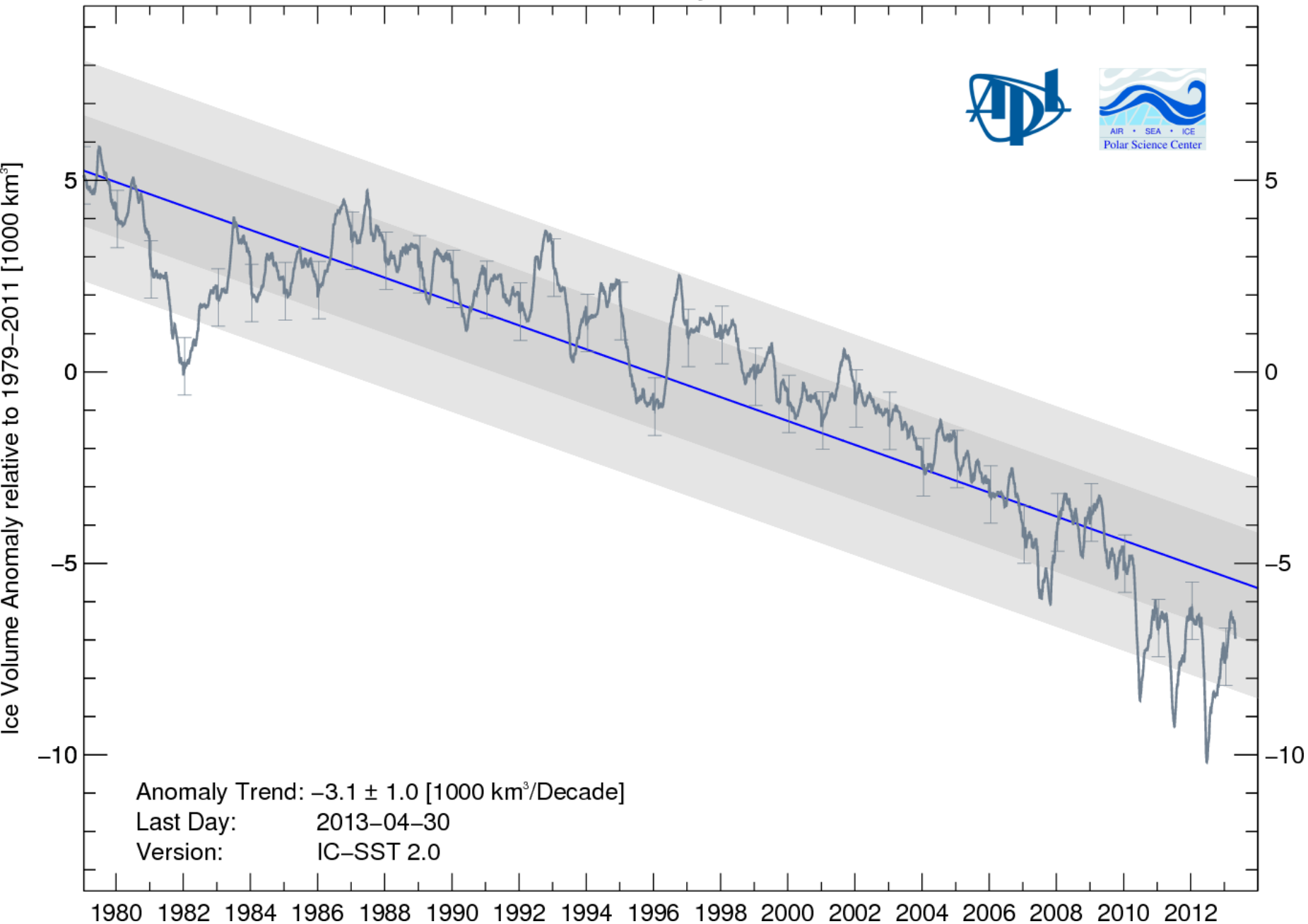


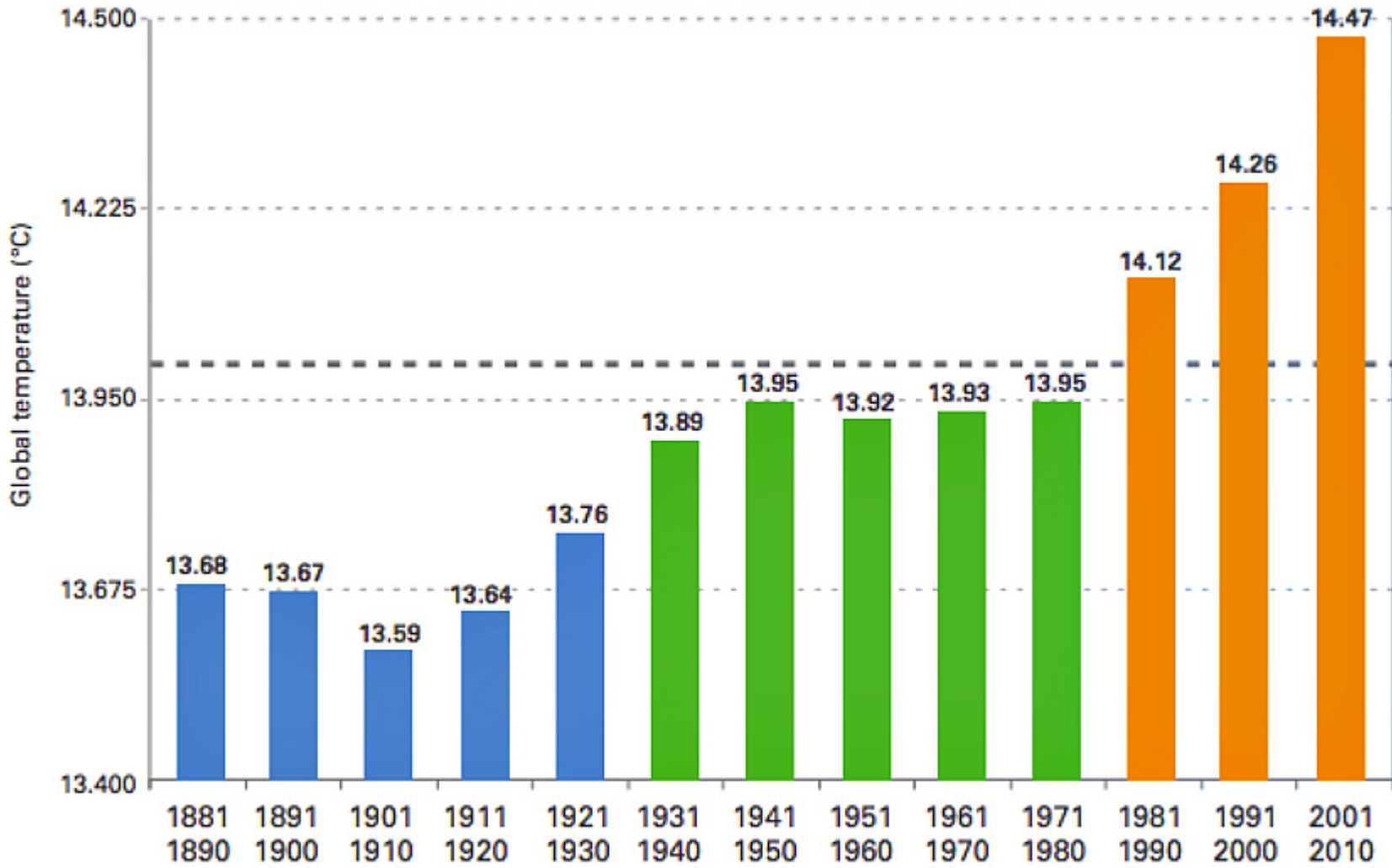
...but 8K Years of Stability





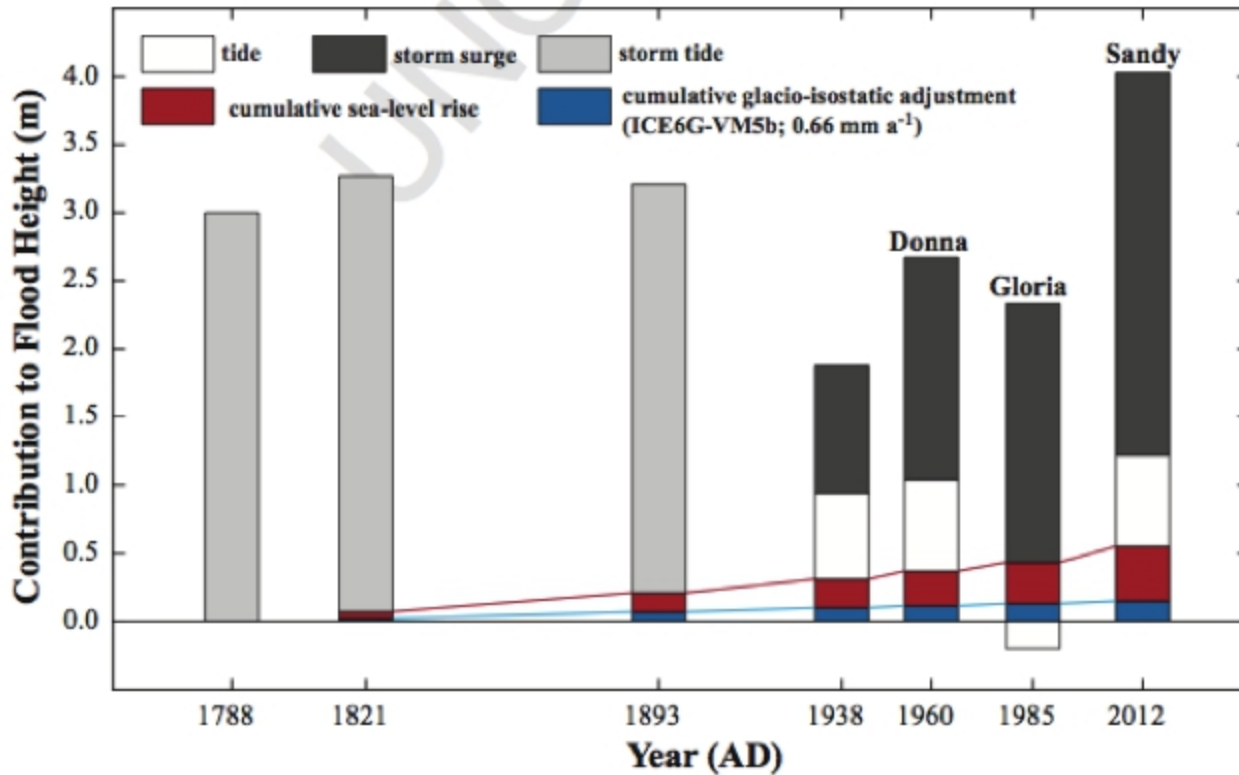
Arctic Sea Ice Volume Anomaly and Trend from PIOMAS





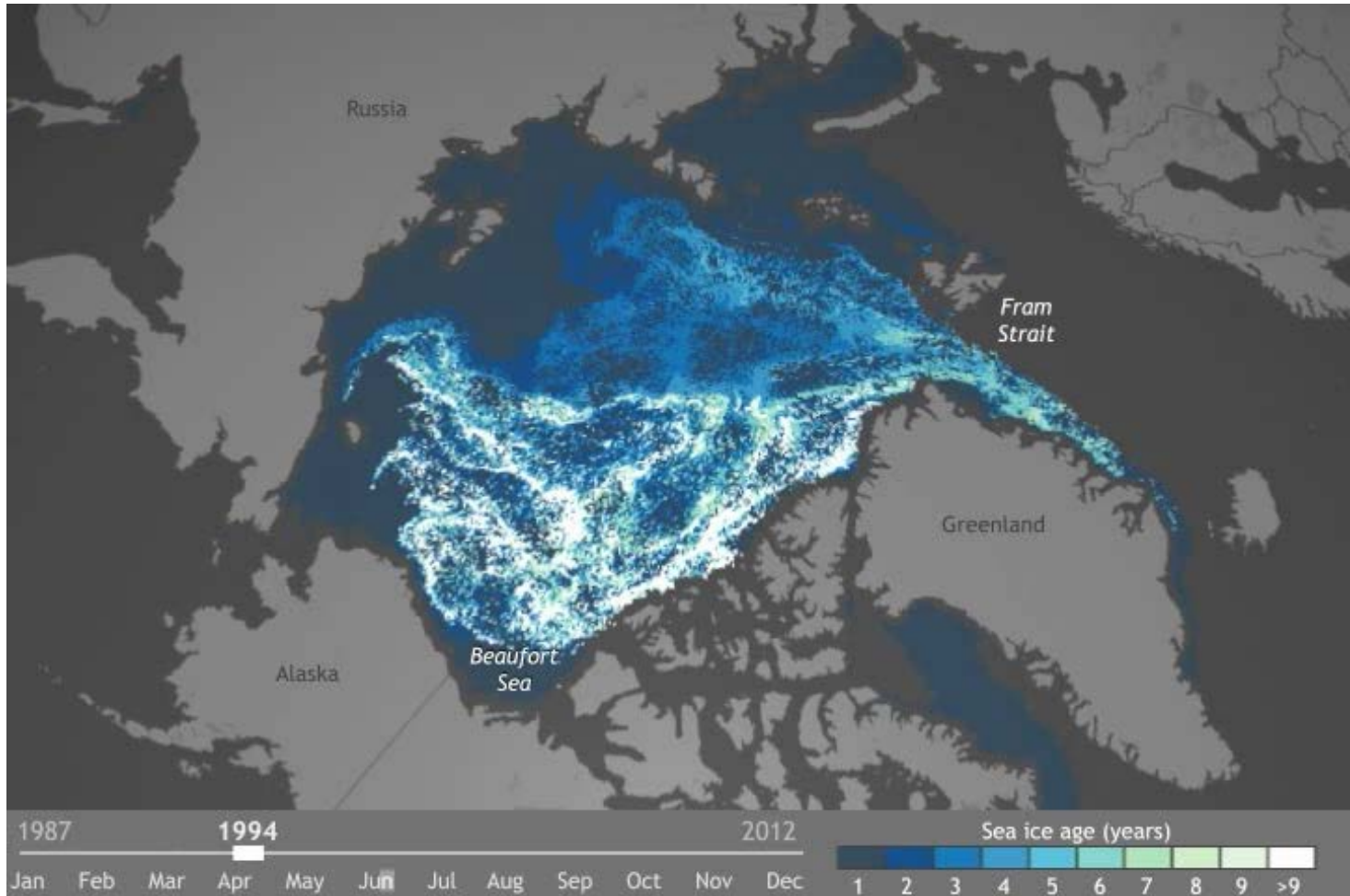


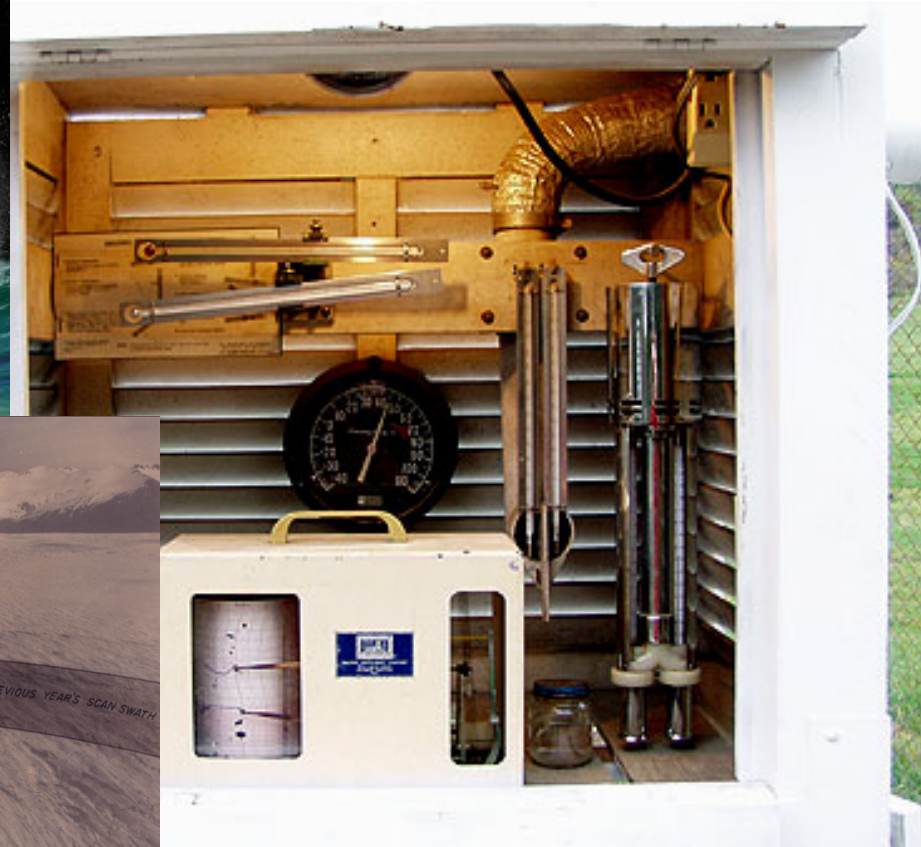
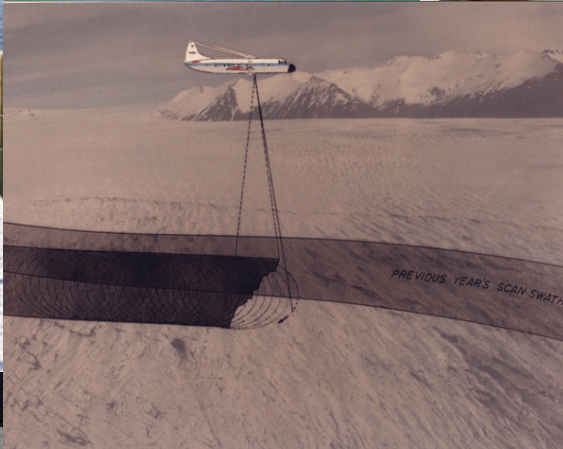
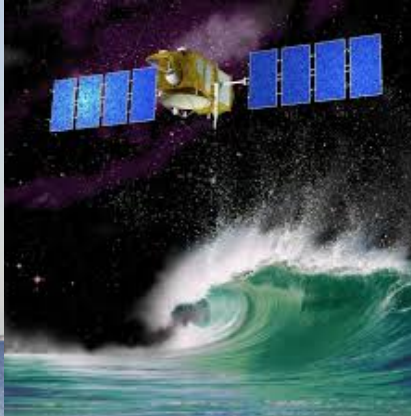
Contribution to NYC Storm Surge





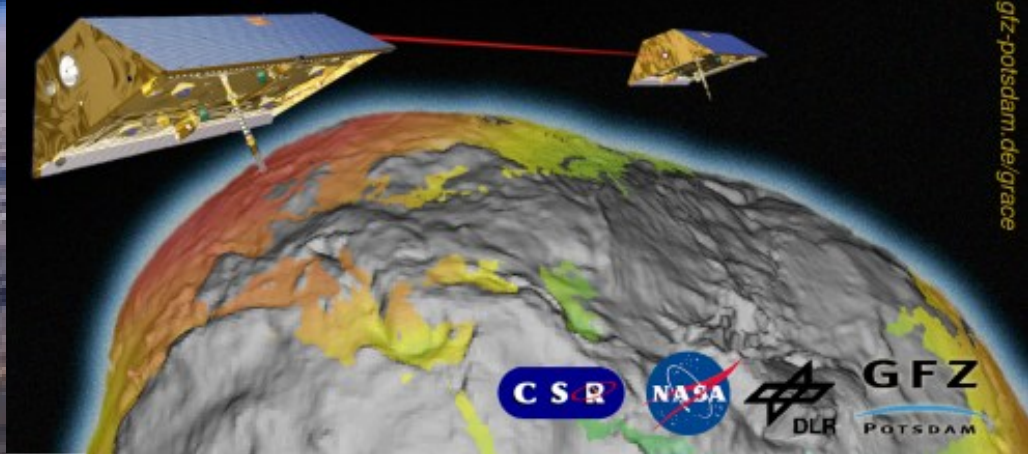
Measured Change (1994-2012)





GRACE

Gravity Recovery and Climate Experiment



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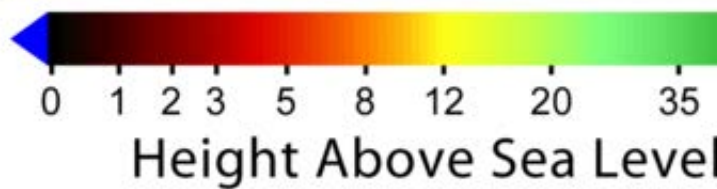
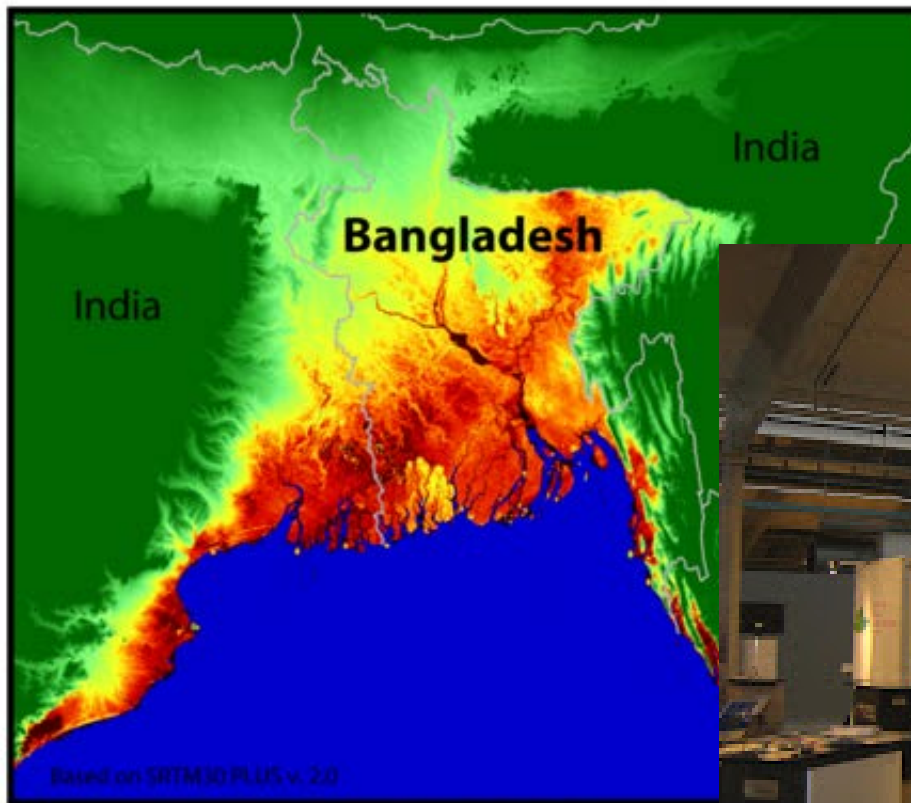






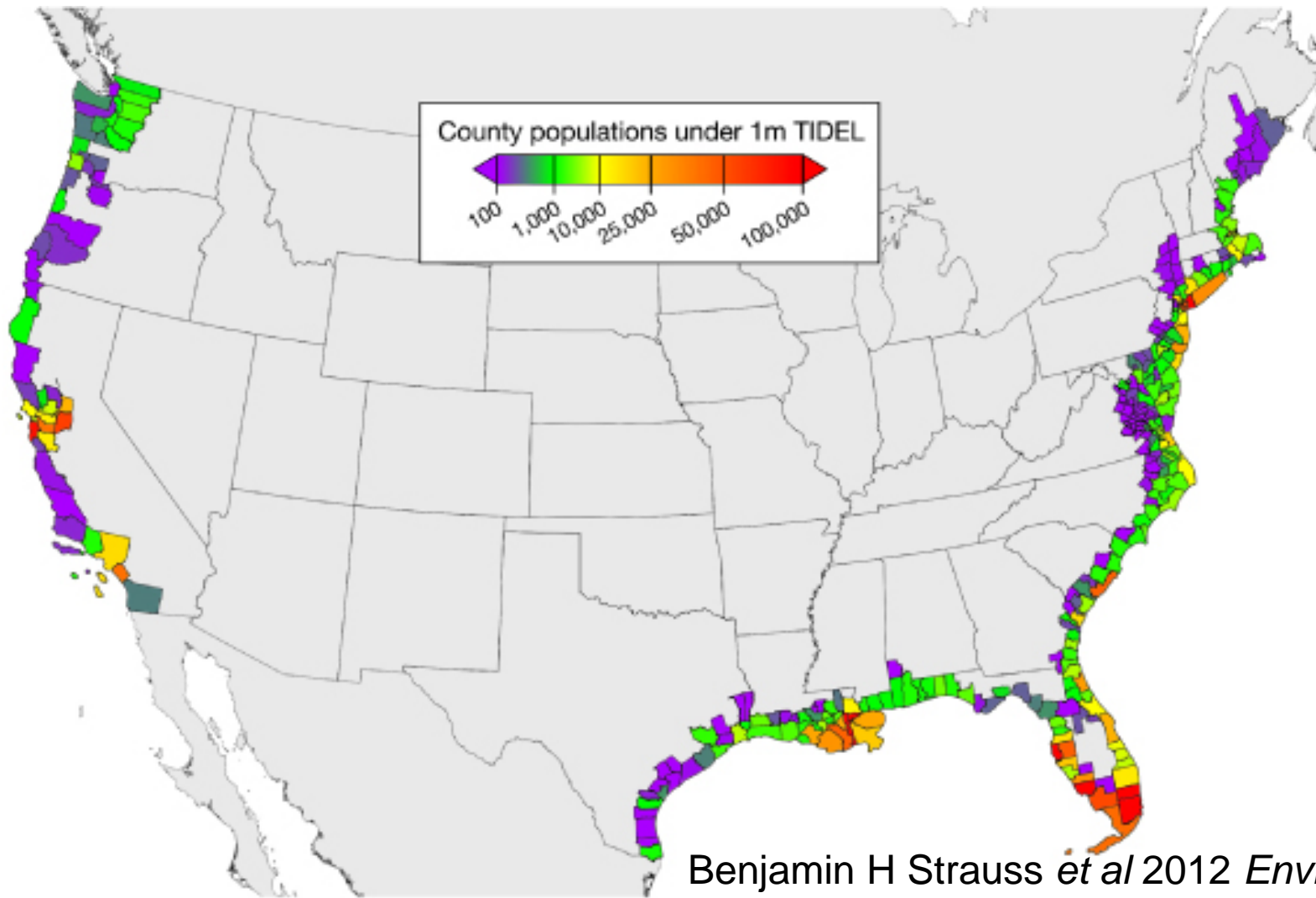
Where we usually think about...

Sea Level Risks - Bangladesh





3.7M people within 1m of high tide



Benjamin H Strauss *et al* 2012 *Environ. Res. Lett.* 7



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A year in the life of JPSS...

\$11.9B

\$12.9B

GAO U.S. Government Accountability Office

[Reports & Testimonies](#)
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[Key Issues](#)
[About GAO](#)

Key Issues > High Risk > Mitigating Gaps in Weather Satellite Data



Mitigating Gaps in Weather Satellite Data

This information appears as published in the 2013 High Risk Report.

[View the 2013 Report](#)



\$13.9B

\$11.3B



What can we learn from the Submarine Programs

- Develop and maintain legislators' trust
- Keep your program stable
 - *“firm and unchanging requirements are key to a stable program”*
 - *“It is lower risk to aspire to the ‘state of the practice’ rather than the ‘state of the art’”*
- Maintain transparency, openness, and alignment



Source: US Naval Institute – “How to Build a Better Submarine”



Enemies of Acquisition Programs



REQUIREMENTS CREEP



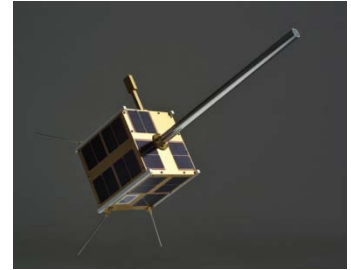
GOOD IDEA FAIRY

Therefore you must...

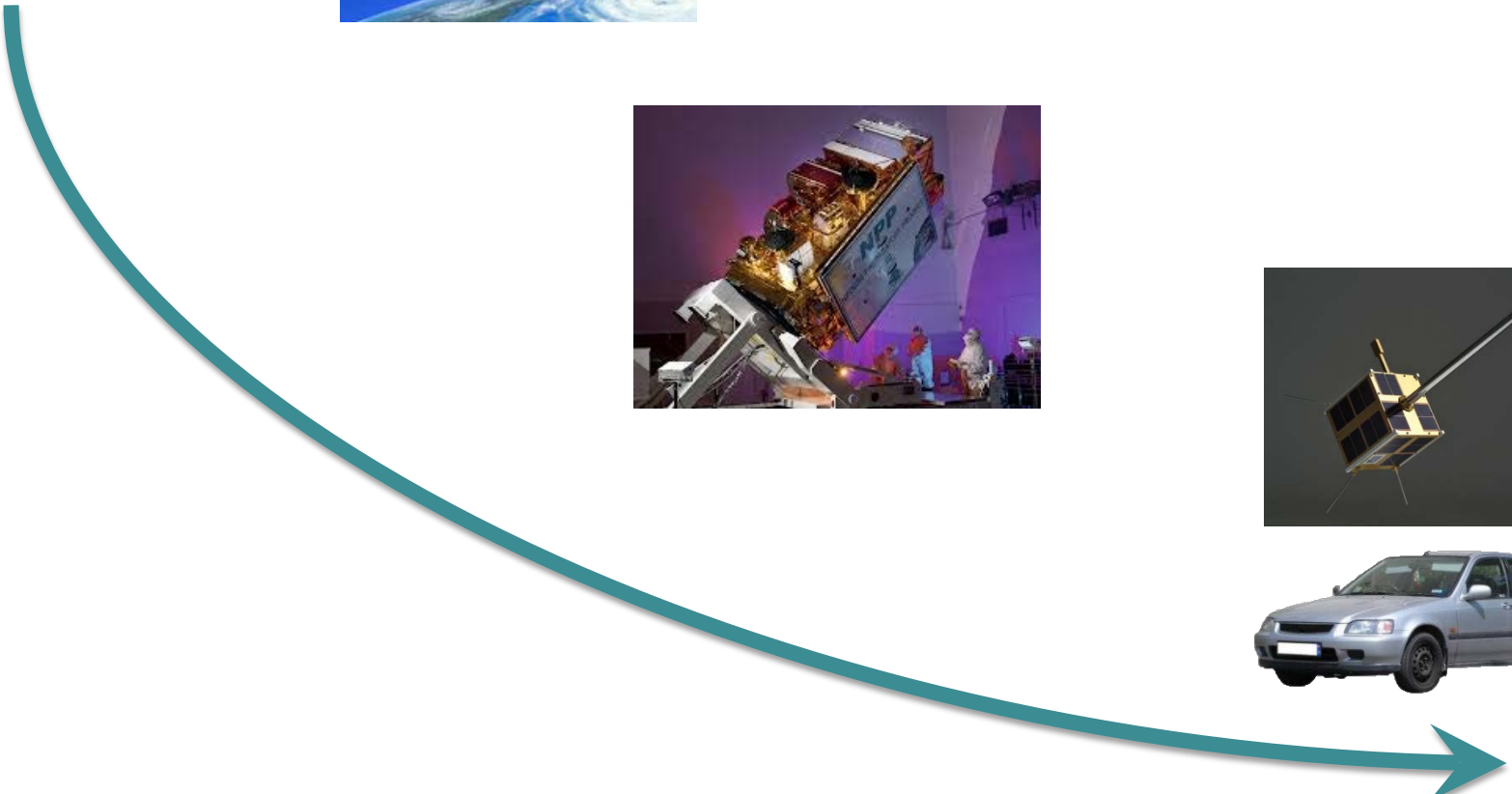


Be
ruthless

COST
COMPLEXITY

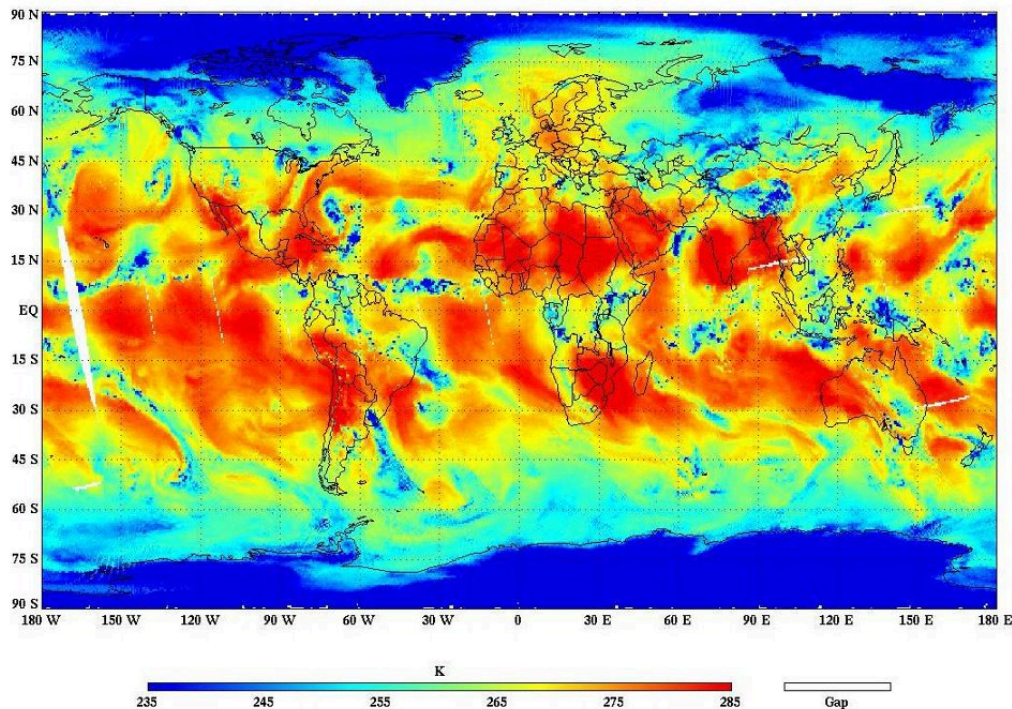


TIME



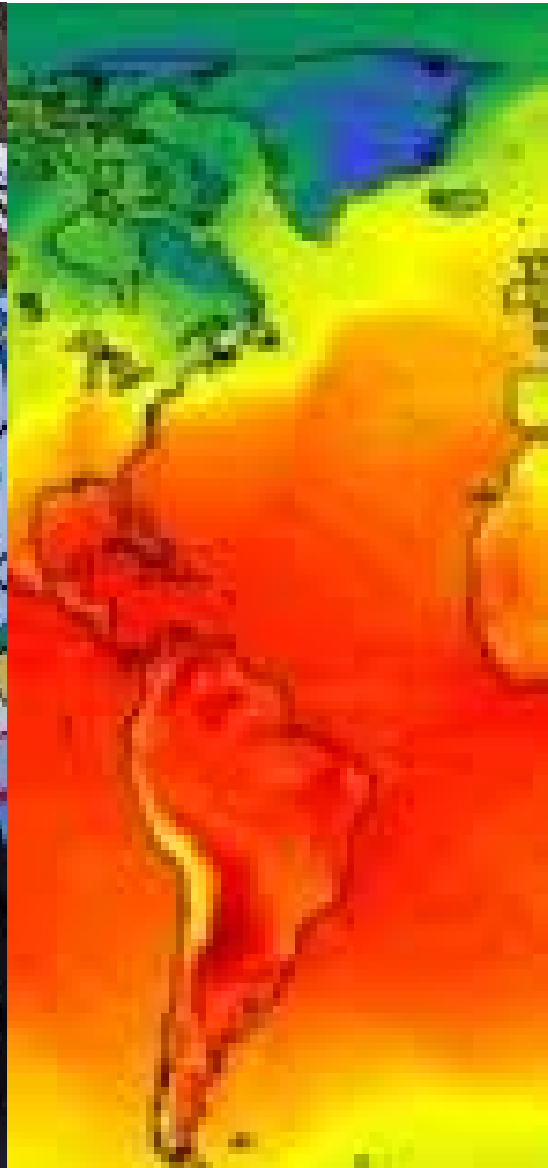
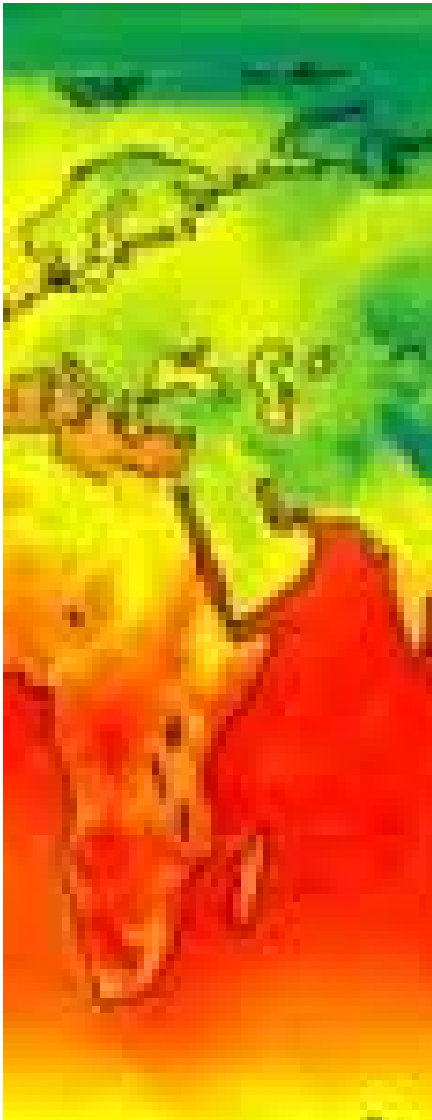


Value of the Joint Center for Satellite Data Assimilation



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Discussion

