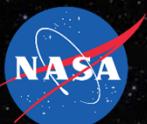


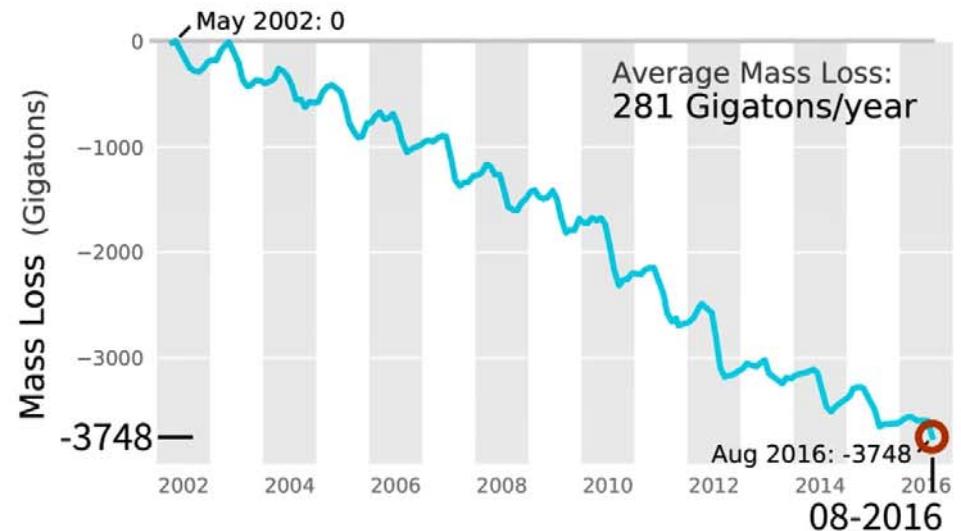
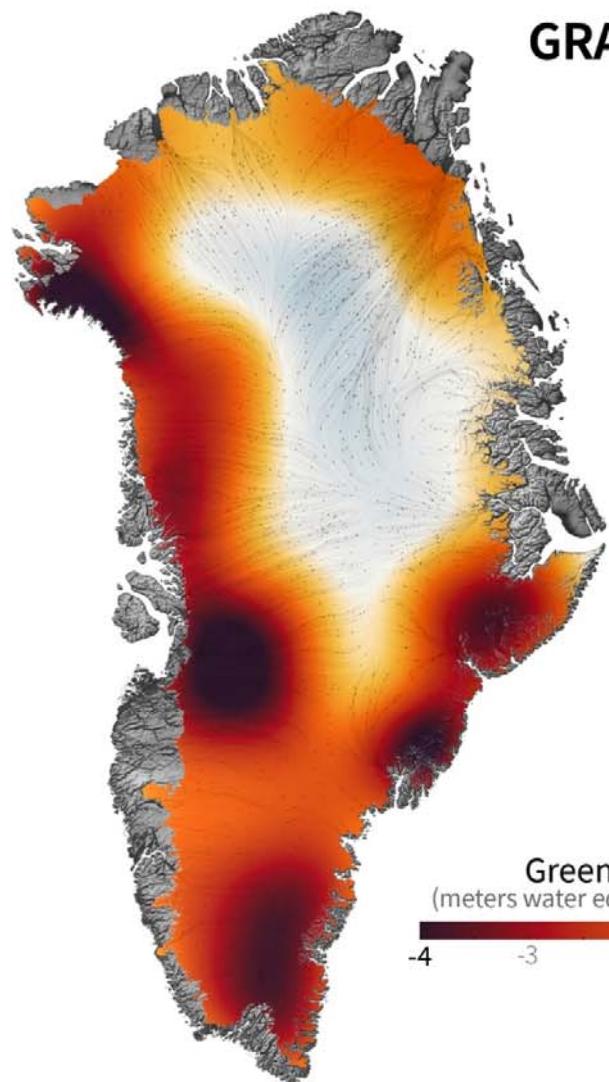
JPL



Josh Willis
joshua.k.willis@jpl.nasa.gov
Jet Propulsion Laboratory



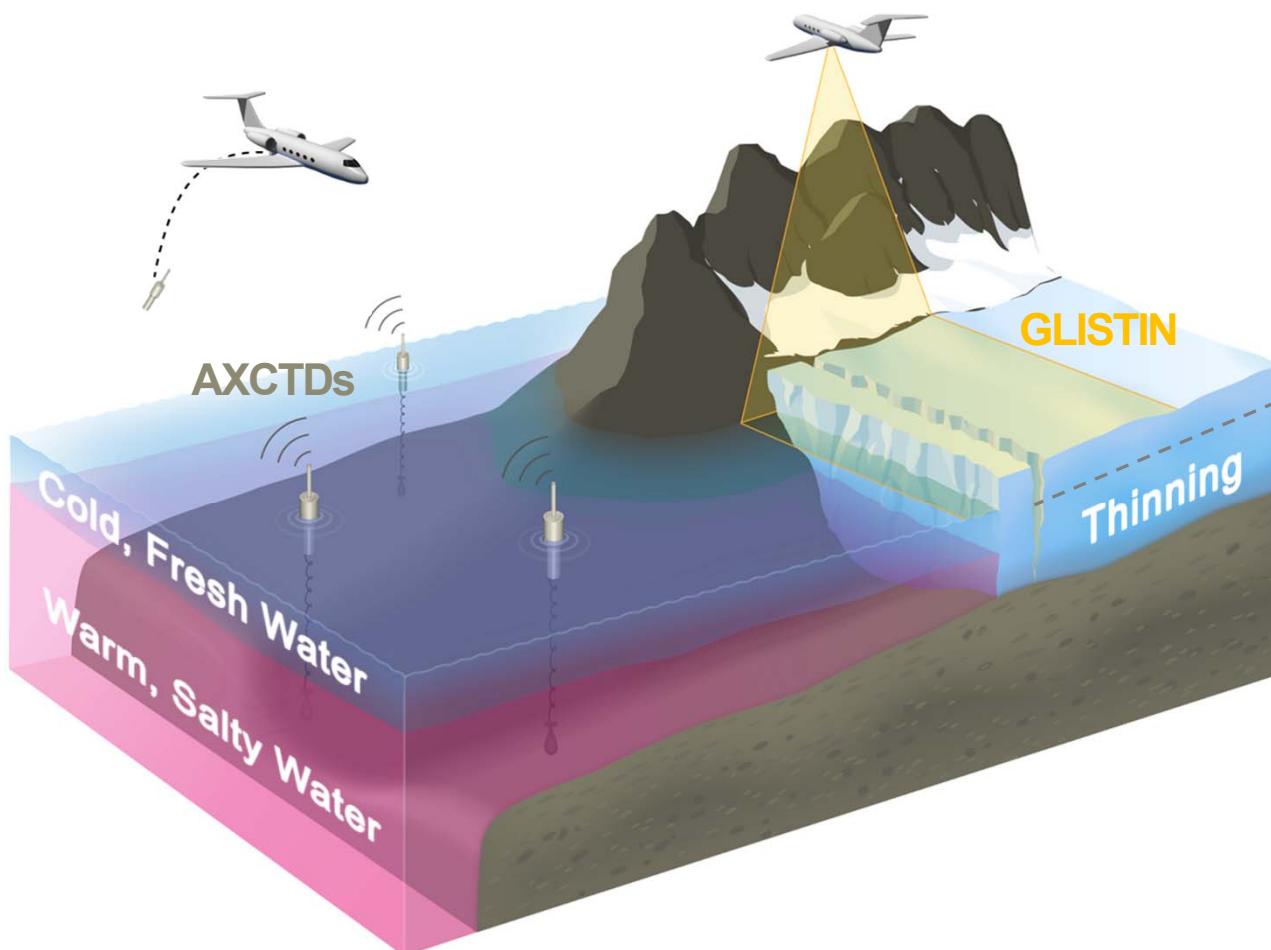
GRACE Observations of Greenland Ice Mass Changes





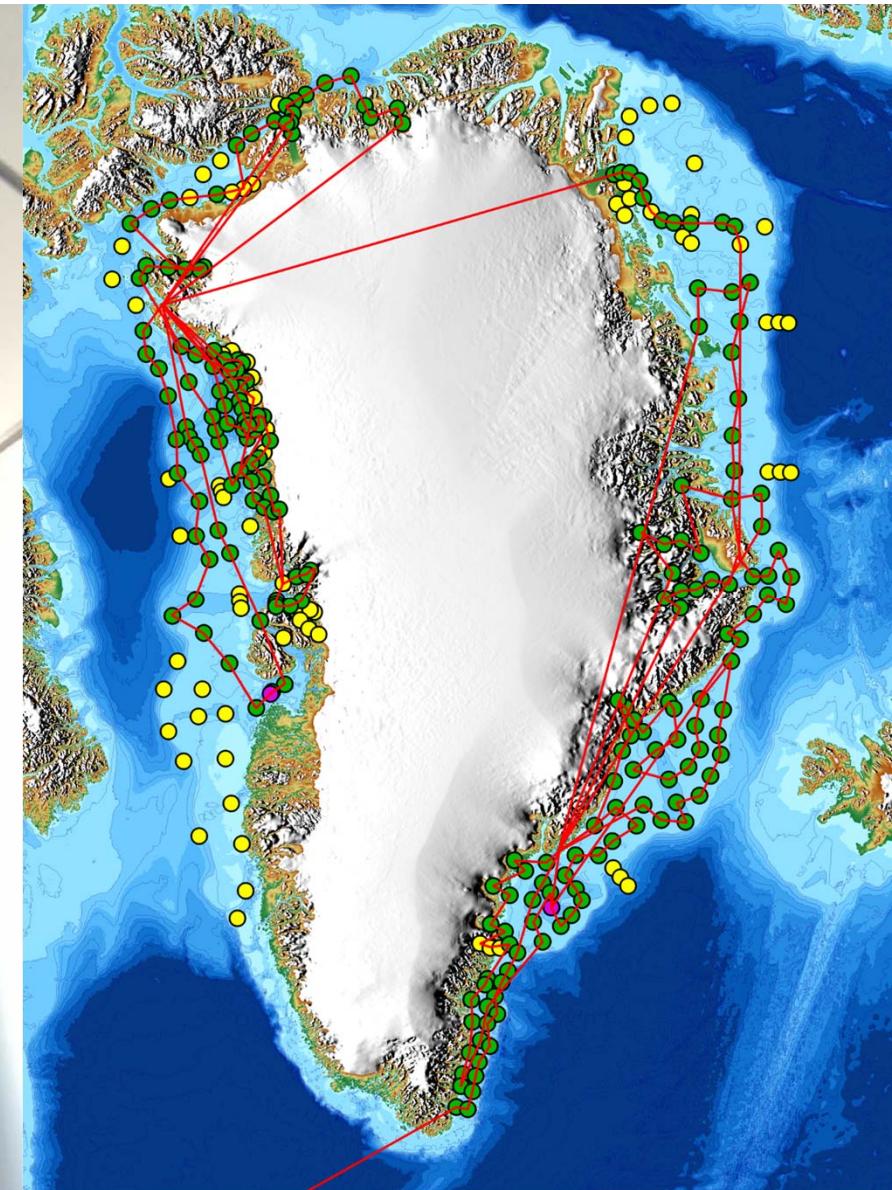
AXCTD survey is unique – no other observing system measures Temp & Salinity on shelf

OMG's Yearly Surveys



Ice elevation in 2020 and 2021 will be observed by IceSat-II

2019 OMG survey will be used for comparison between GLISTIN-A and IceSat-II

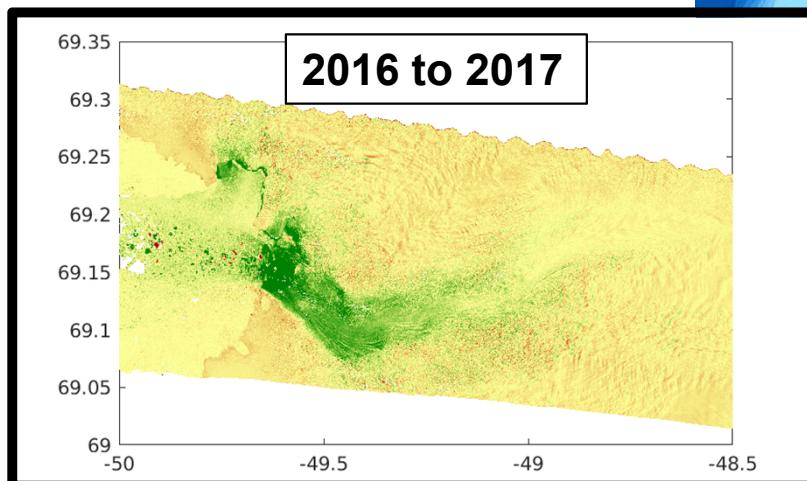




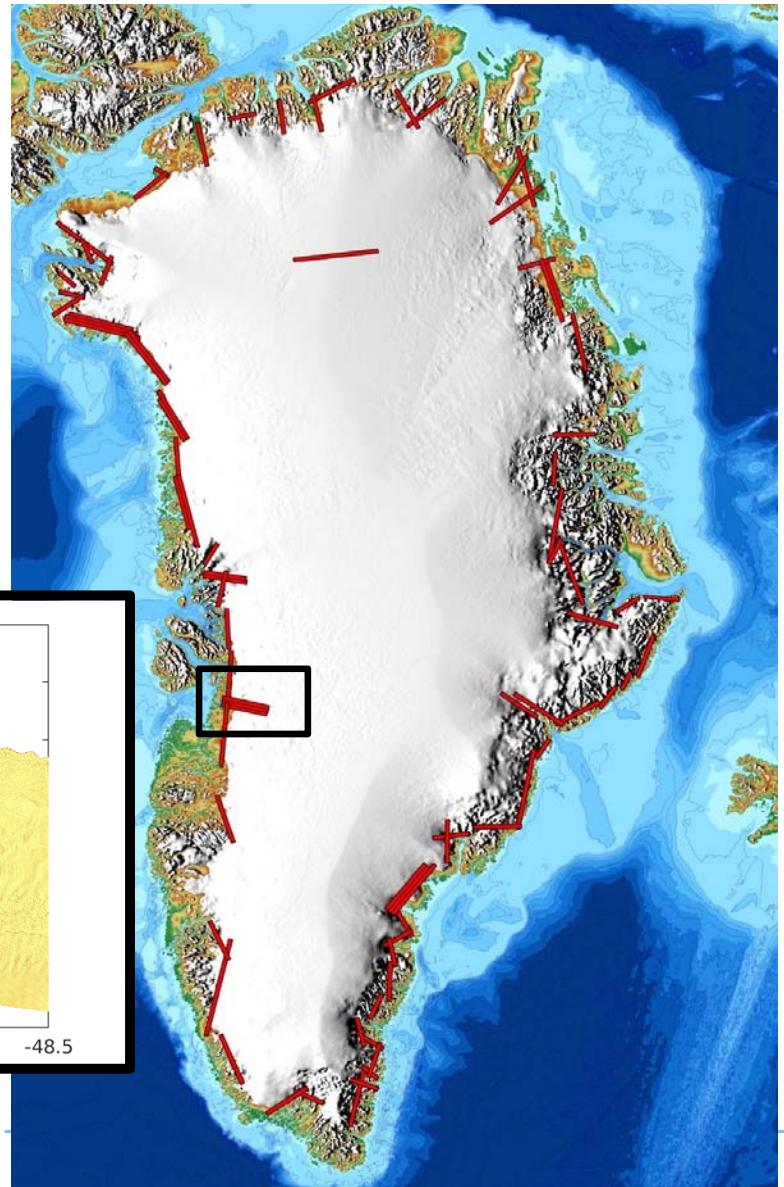
GLISTIN Surveys

The GLISTIN Surveys were completed in 2019. No 2020 or 2021 surveys were carried out since ICESat-2's successful campaign began in late 2018

GLISTIN Data from all 4 years is now available on PODAAC in a new easy to use gridded format

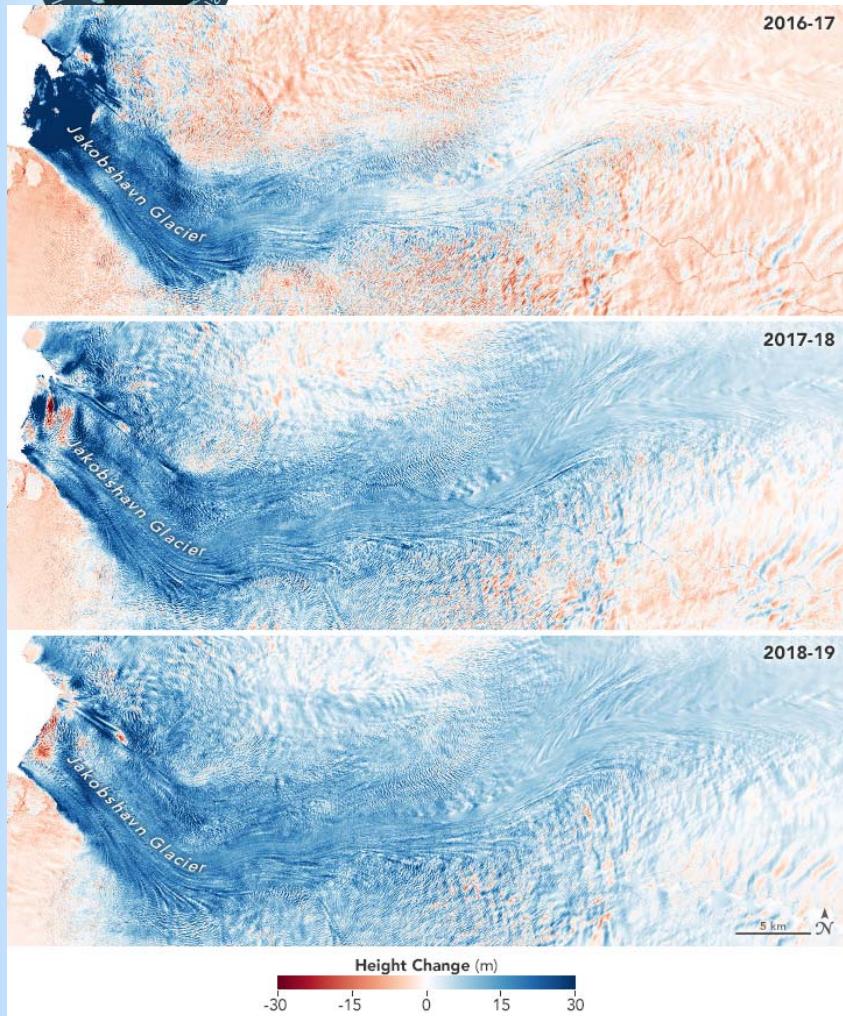


GLISTIN Data showing Jakobshavn thinning in the first two years of OMG (From Khazendar et al., 2019)





OMG News – Jakobshavn Growing

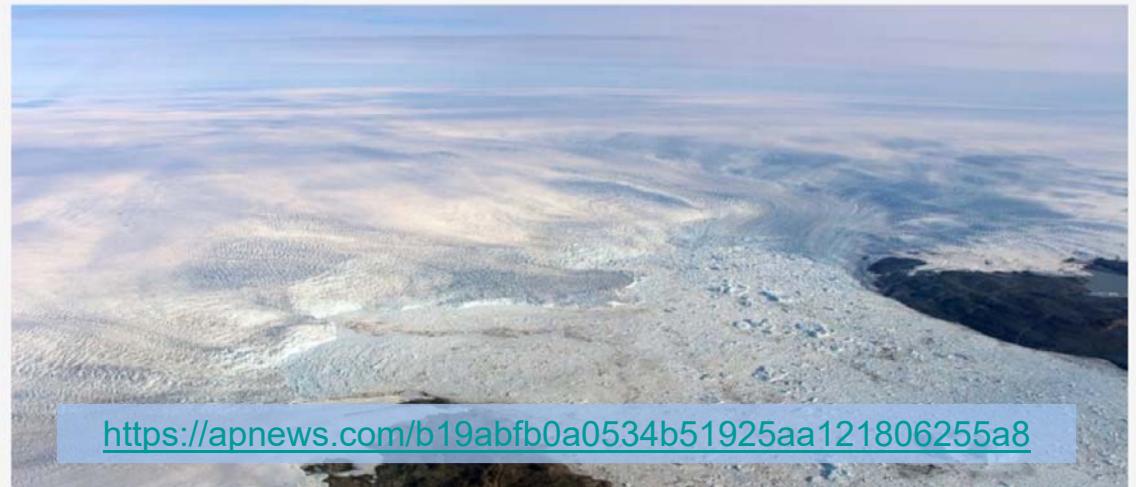


OMG showed this short term growth of Greenland's largest glacier was due to a cyclic change in ocean temperature

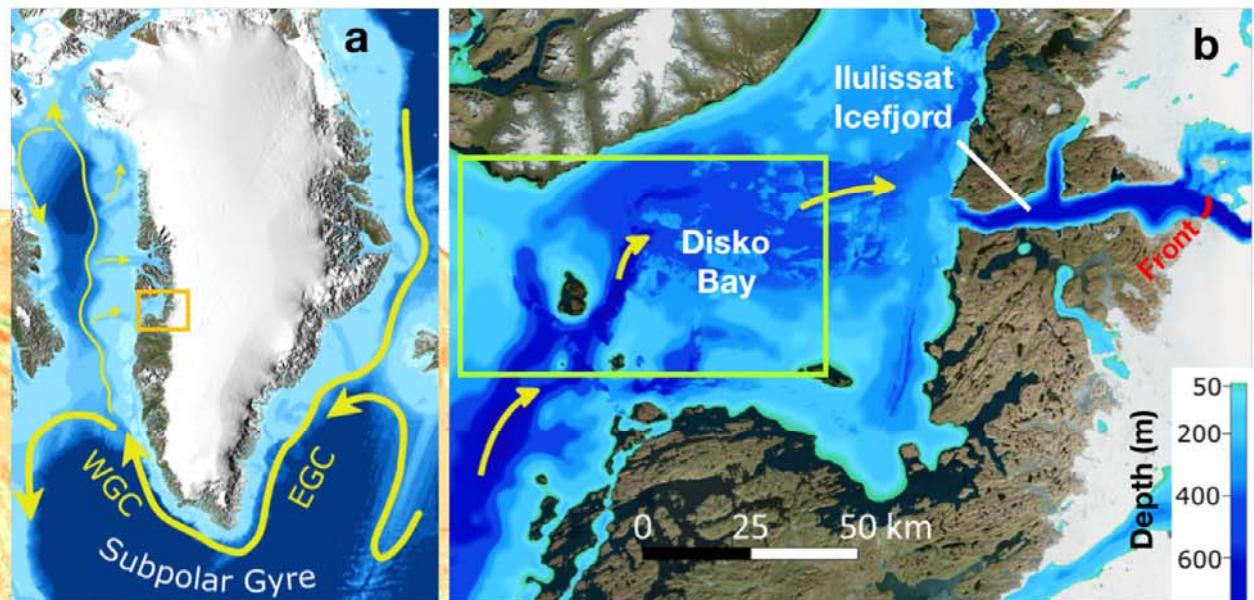
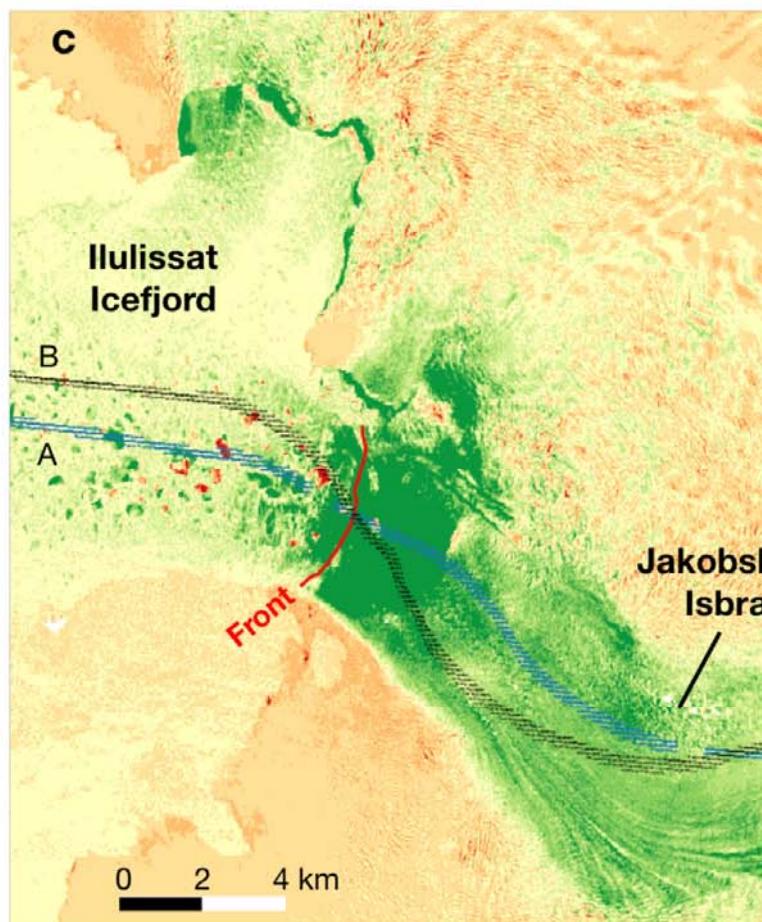
AP

Big U-turn: Key melting Greenland glacier is growing again

BY SETH BORENSTEIN March 25, 2019



<https://apnews.com/b19abfb0a0534b51925aa121806255a8>



2017 front

2011 ATM path

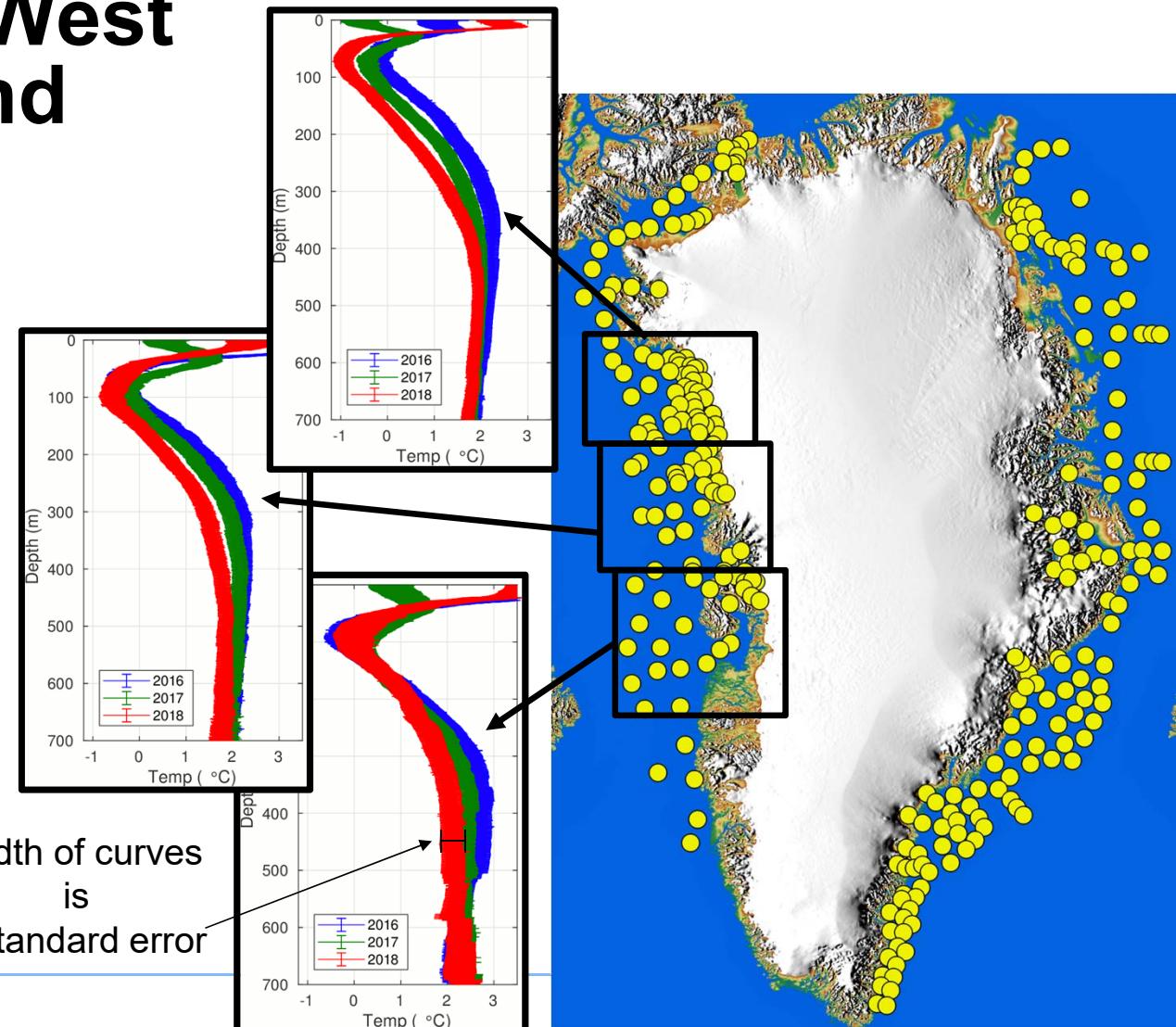
2017 ATM path

Speed measurements location



Cooling in West Greenland

Cooling of 1°C has spread north, along the entire west coast of Greenland, due to a shift of the NAO, which has been in a warm phase for nearly 20 years.





**CBS
This
Morning**

<https://www.cbsnews.com/video/nas-a-program-omg-working-to-find-how-fast-greenland-is-melting/>



**NBC's
Today
Show**

<https://www.today.com/video/climate-in-crisis-al-roker-studies-greenland-s-melting-glaciers-69039685943>



TROUBLE AT THE TOP OF THE WORLD

AL GOES TO GREENLAND FOR FIRSTHAND LOOK AT CLIMATE CRISIS

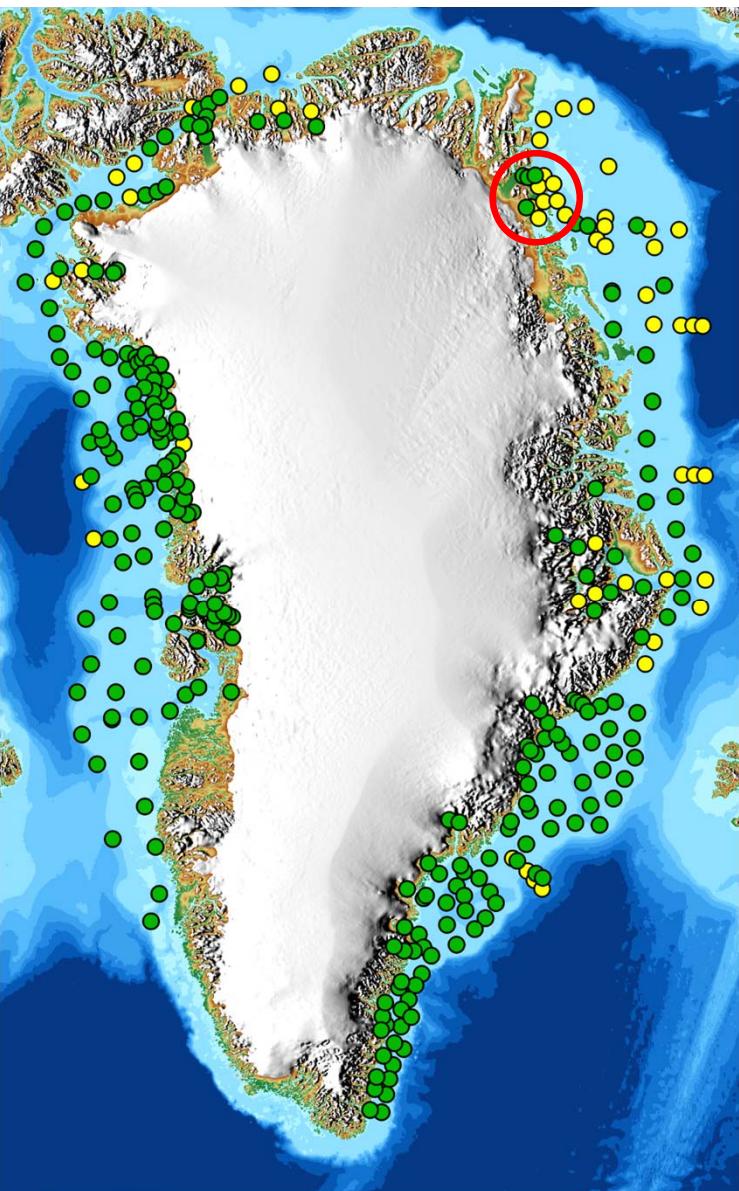
OMG Media flights - August 2019



OMG flew 8 media outlets in 6 days during in August 2019

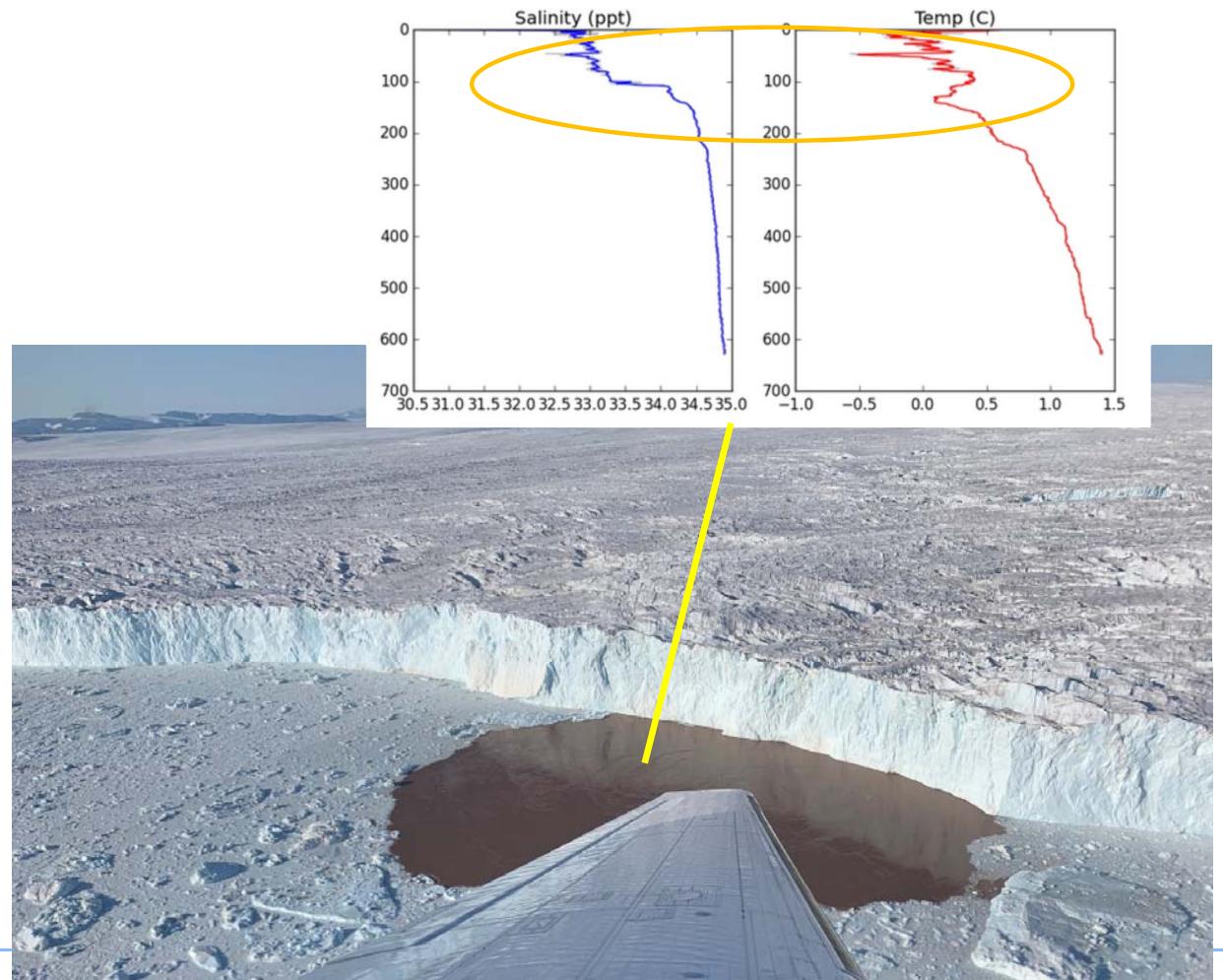
Outlets included:

NBC Today Show
CBS News
CNN
Weather Channel
AP
AFP
ITN
National Geographic



Zacharie

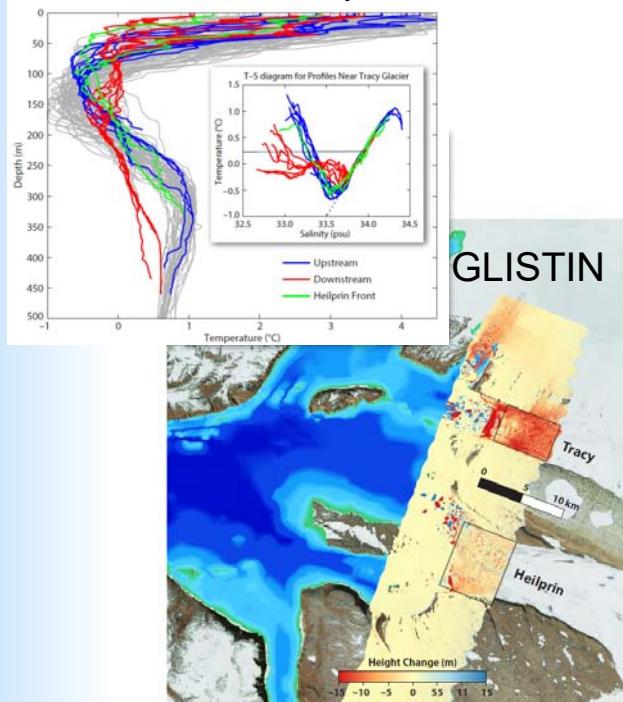
Plume Profile





OMG's Excellent Record for Science

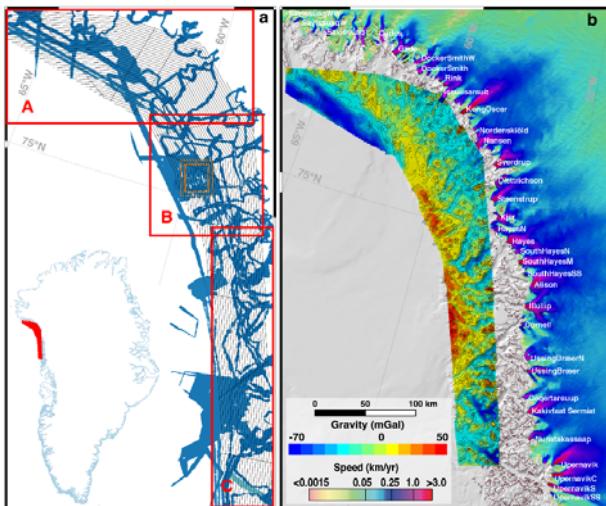
AXCTDs & ship CTDs



Willis et al., *Oceanography*, 2018

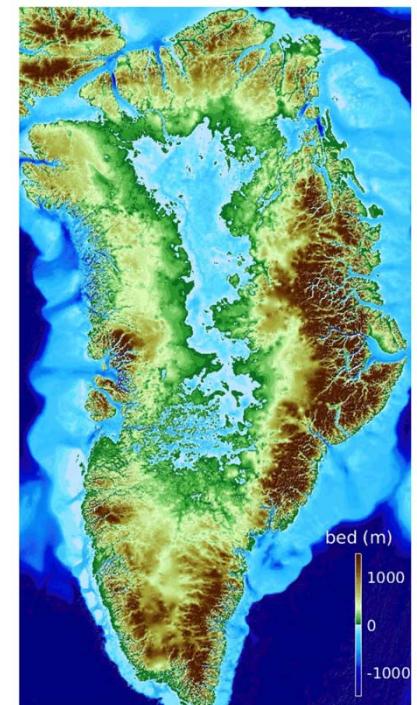
45 peer-reviewed pubs using data from every survey

Airborne Gravity



An et al., *Remote Sensing*, 2019

Ship based bathymetry



Morlighem et al., *Geophys. Res. Lett.*, 2017