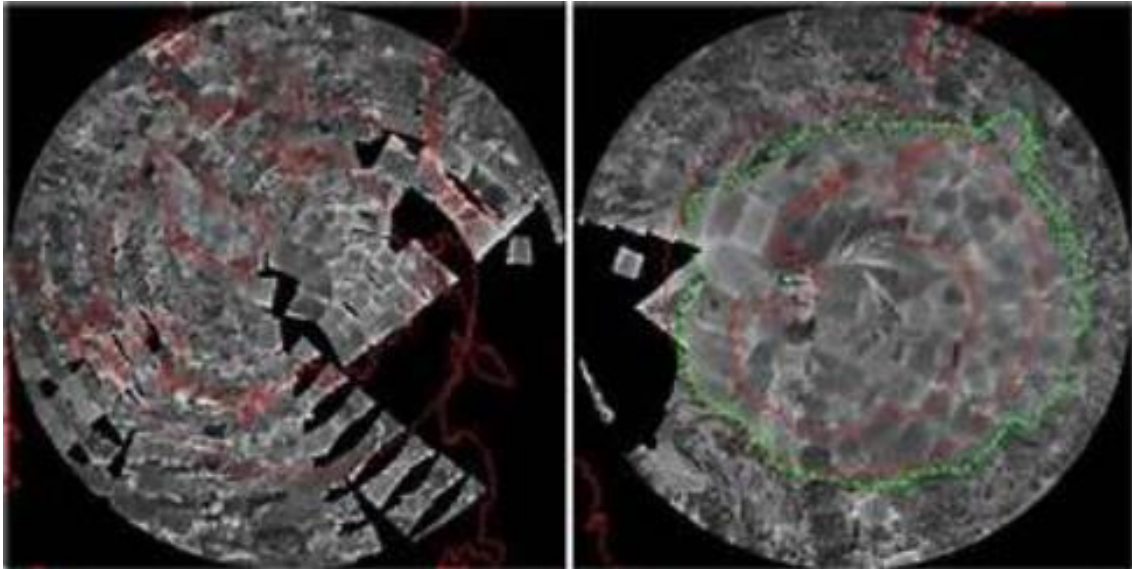


NOAA Satellites Malfunction as Arctic Ice Increases, Four Year Gap Expected

[— ADAPT 2030 Video Click Link to Watch —](#)



If you hadn't seen the latest news, NOAA's next-generation weather satellite just malfunctioned and it might not be repairable. It was set to operate for 20 years, it was an addition to GOES 17 taking a look at natural disasters wildfires, volcanic eruptions in the western half of the United States. Interesting in the Grand Solar Minimum intensification the launching to study volcanic eruptions. The Cascadia range hasn't gone into multiple eruptions for hundreds of years yet they're going to send a satellite up to specifically to study eruptions.

NOAA's Next-Gen Weather Satellite is Still Malfunctioning and May Not be Fixable



The National Oceanic and Atmospheric Administration's newest weather satellite—part of the \$11 billion Geostationary Operational Environmental Satellite constellation **set to operate for the next 20 years**—is broken and officials still aren't sure what's wrong or how to fix it.

Launched in March, the GOES-17 satellite was set to monitor weather events and natural disasters such as wildfires or **volcanic eruptions** in the western half of the United States, but officials **identified cooling issues** with the satellite's primary instrument in May.

Agencies are also saying the launch of these next set of satellites, could be pushed back if experts can't figure out how to fix what's been going wrong. They're not going to send up any other satellites if they don't know what went wrong with the first ones, because it's going to have the same malfunction as all the components and parts are built by the same companies so the story goes. They tell you and assure you right now we have an Operational Constellation serving us now with weather predictions etc., but it falls right in line with all the Arctic Ice Mapping that we're “used to getting”.



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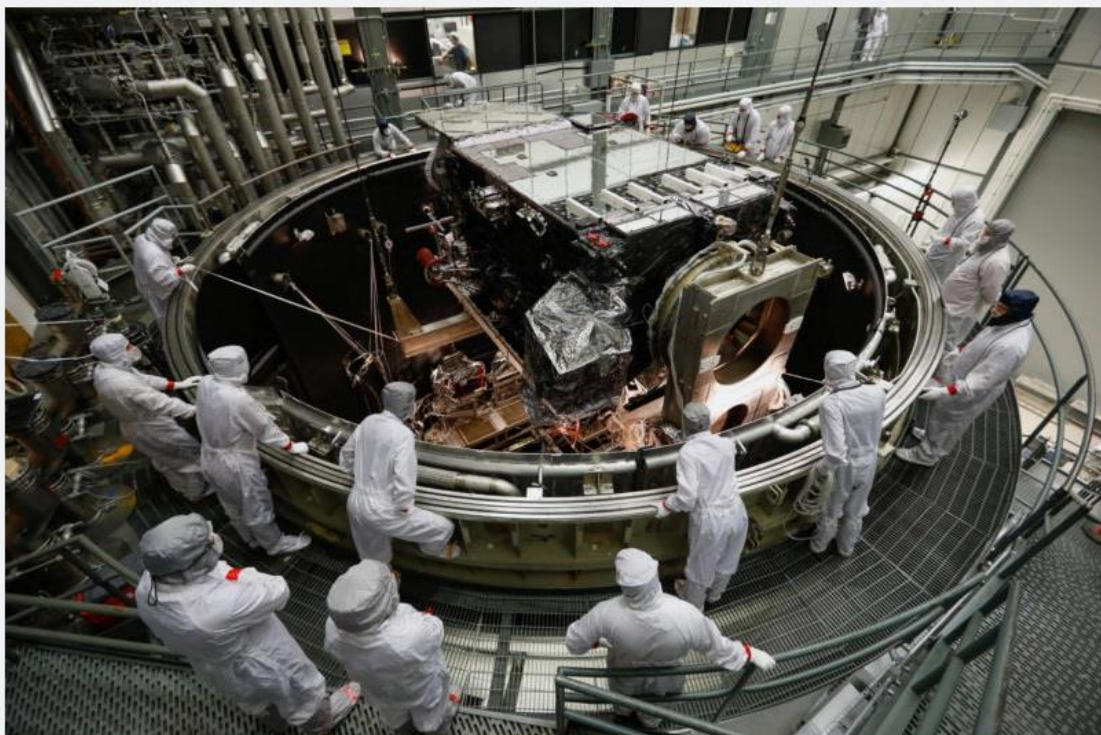
NOAA's Next-Gen Weather Satellite is Still Malfunctioning and May Not be Fixable



In the meantime, GOES-17 remains in a holding pattern orbit 22,000 miles above the Earth's surface, and the launch dates of two future GOES satellites, the next of which is scheduled for 2020, could be pushed back if experts and engineers aren't able to figure out what went wrong with the older sibling satellite.

"Right now we have an operational constellation serving us and we're able to carry out the mission today without any degradation," said Joe Pica, director of the National Weather Service's Office of Observations. "We're fully ingrained with the teams working to resolve this issue and optimize performance.

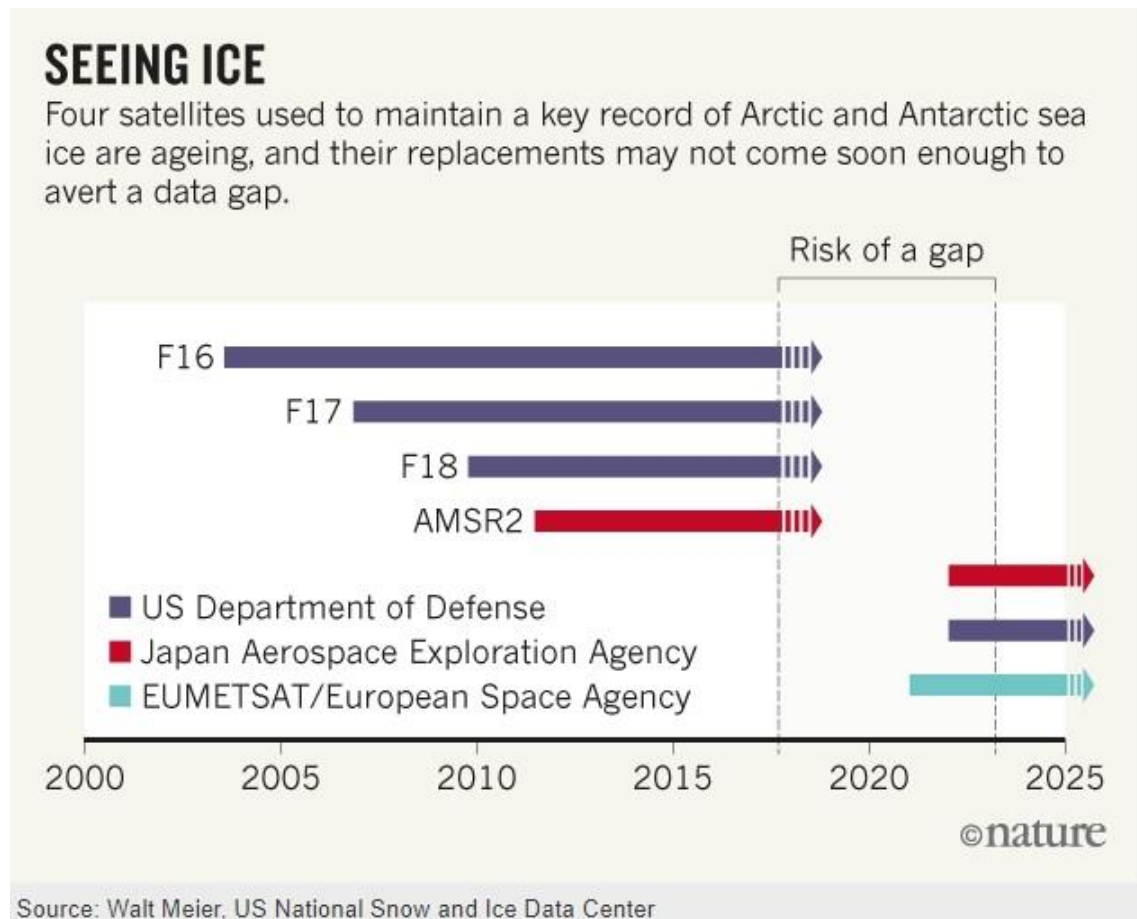
This is GOES 17 under construction.



NASA

Enlarge / GOES-17 is in space now, where fixing problems is... difficult.

What did it mean by gaps? Looking into Seeing Ice, these four satellites used to maintain a key record of Arctic and Antarctic sea ice. They're also giving data for weather forecasting across the Arctic maintained by the US military services in some instances here like NSIDC which I'll show you in a second. US Department of Defense, that's the purple, so three out of four of those, and notice even though it's not just US satellites which are ageing, the Japanese satellite data set also is going to break at 2019 to 2021.



This is incredibly interesting on the timing, because they're telling you in advance that this whole ice satellite data set is going to be interrupted right when ice gains increase to far above the levels we have seen over the last 50 years.

Ageing satellites put crucial sea-ice climate record at risk

Scientists scramble to avert disruption to data set that has tracked polar ice since the late 1970s.



One of the most important continuous records of climate change — nearly four decades of satellite measurements of Arctic and Antarctic sea ice — might soon be interrupted.

When I mentioned the United States military taking care of some of the ice measurements, the Defense Meteorological Satellite Program called DMSP. What this means is at least three of these aging satellites are all going to die at the same time, they're not going to have any replacements and the one malfunctioning last week, these agencies have told us they're not going to launch anything else up there until they figure out what's going on.

Ageing satellites put crucial sea-ice climate record at risk

NSIDC analysts continued using NASA sea-ice data until 1987, when they switched to information collected by the Defense Meteorological Satellite Program (DMSP). The military uses the microwave information to detect ocean wind speeds to feed into weather models, among other uses, but the data happen to be nearly perfect for sensing sea ice, says Walt Meier, a sea-ice specialist with the NSIDC. The centre has been using DMSP data ever since.

Tenuous times

The US military is developing another set of weather satellites to replace the DMSP series, but the one carrying a microwave sensor will not launch before 2022. That means that when the current three ageing satellites die, the United States will be without a reliable, long-term source of sea-ice data. "Every day it's more and more risk," says Meier. "If one of those goes it will get to be nail-biting time, and certainly if two of them go."

Interesting in the timing on all of this, next possible replacements they're talking about wouldn't launch until it early 2020s but now they're talking about pushing it further back. So you're going to tell me that we're not going to have ice measurements for four or five years? No satellite coverage for the Arctic or Antarctic.

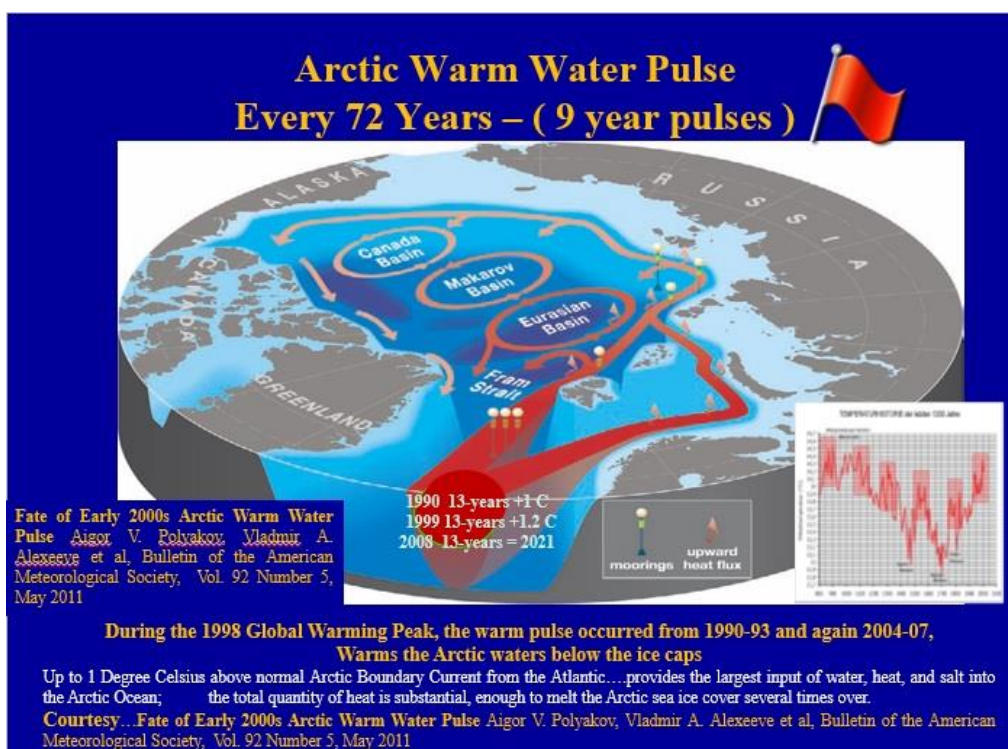


Ageing satellites put crucial sea-ice climate record at risk

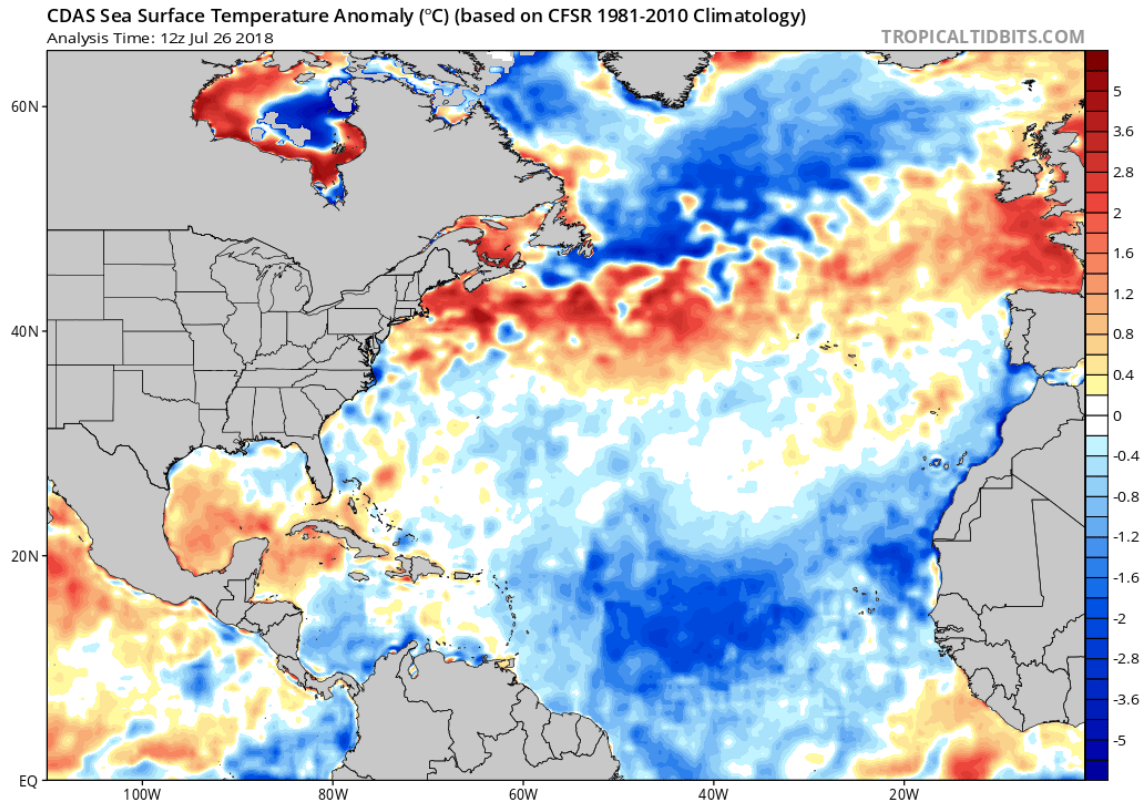
Scientists all over the world rely on the sea-ice record compiled by the US National Snow and Ice Data Center (NSIDC) in Boulder, Colorado. But the US military satellites that collect the data, by measuring ice extent using microwave sensors, are approaching the end of their lives. Three are still working but ageing, and their intended successor started experiencing glitches in 2016, before conking out for good this month. **The next possible replacement won't launch until at least the early 2020s** (see 'Seeing ice').

That means the most complete and most scientifically significant sea-ice record is at risk of breaking. Any gap in satellite coverage is not just a short-term problem: it would compromise **future research, because scientists would not be able to accurately compare observations made before the gap** with those from afterward.

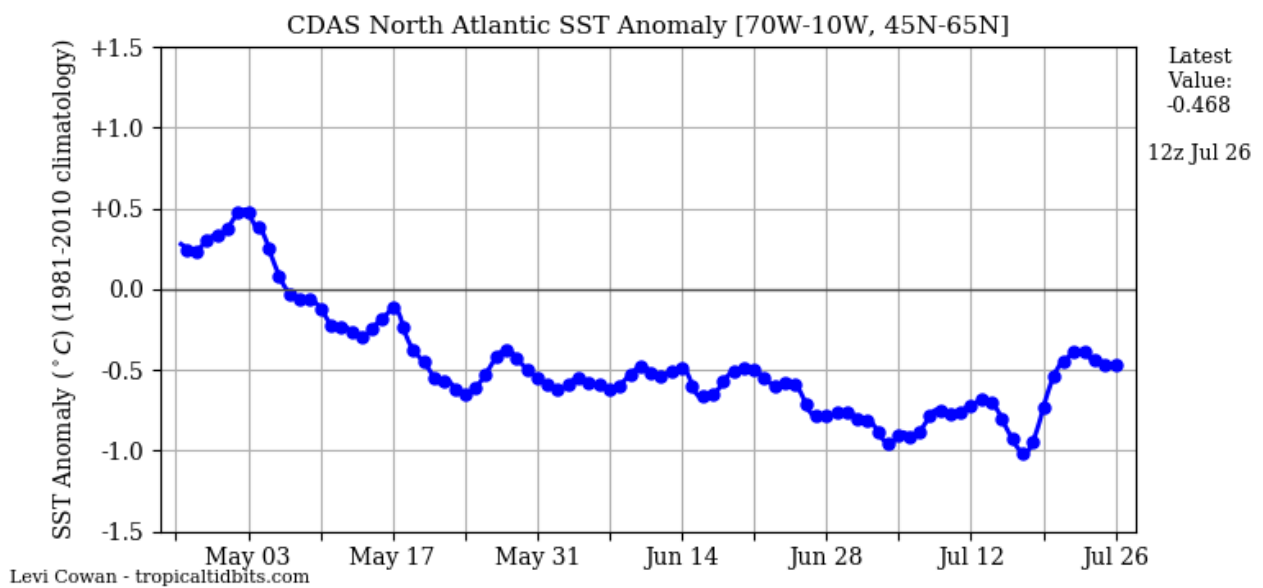
You might ask yourself, why would that make any kind of waves in the climate debate? If we look at David Dilly's research, the Arctic water pulses this next pulse are going up into the Arctic with Atlantic water temperatures cooling, it's absolutely going to cause more sea ice because it's not going to be melting from beneath as much.



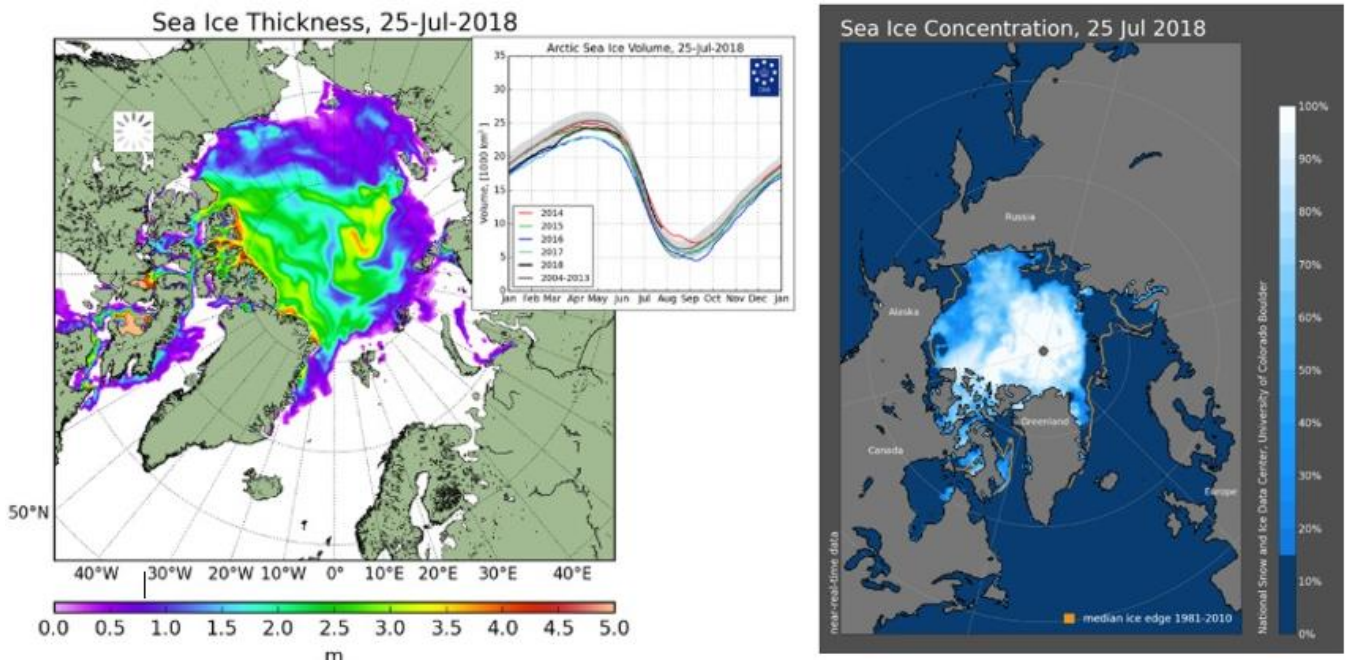
Each successive water pulse entering the Arctic from the Atlantic from this point forward is going to get cooler and cooler. We're heading into a Grand Solar Minimum.



The Atlantic water temperatures are cooling beyond any expectation of even the experts on how fast it's cooling.

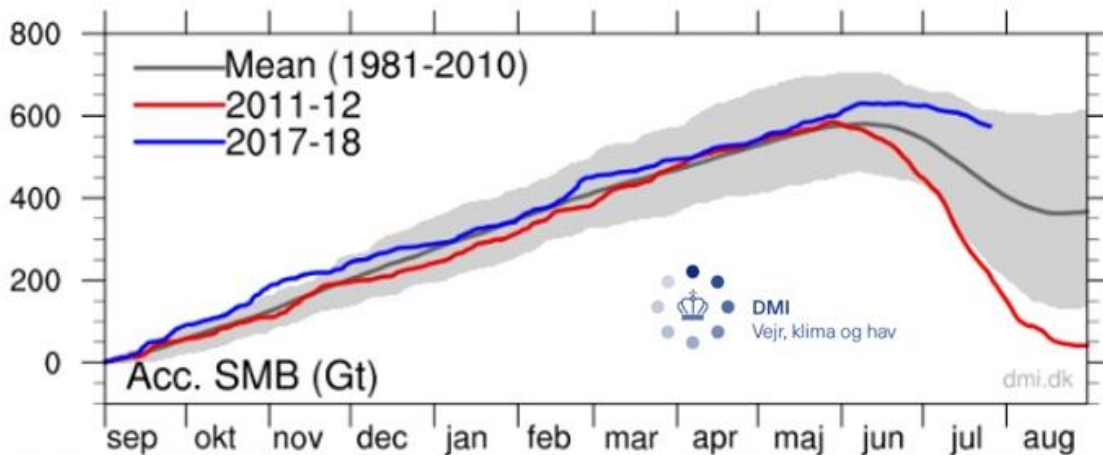


(BELOW) The Arctic ice gains that we're seeing this year, left side this is from Polar Portal, right side is what you're getting from the NSIDC that's the satellite data set I was referencing earlier. I put these side-by-side for the comparison, notice there's a few discrepancies where there's less ice being shown in the NSIDC set compared to where the DMI & European agencies are showing it. North of Alaska, on the graphic to the right of Alaska, if you're looking at that chart those two giant areas that show no ice on the left side DMI showing ice with the NSIDC set does not show ice.



Greenland Ice Mass Budget, it's increased 600 billion tons this year of new ice. Really irregular timing that all the satellites are going to go down and we're getting more Arctic ice and more ice on Greenland. Wont to be able to measure that either as it grows.

Current Surface Mass Budget of the Greenland Ice Sheet



Top: The total daily contribution to the surface mass balance from the entire ice sheet (blue line, Gt/day).
 Bottom: The accumulated surface mass balance from September 1st to now (blue line, Gt) and the season 2011-12 (red) which had very high summer melt in Greenland. For comparison, the mean curve from the period 1981-2010 is shown (dark grey). The same calendar day in each of the 30 years (in the period 1981-2010) will have its own value. These differences from year to year are illustrated by the light grey band. For each calendar day, however, the lowest and highest values of the 30 years have been left out.

We're getting into the coolest part of the Grand Solar Minimum around 2024, so you need to ask yourself, is this all purposeful because it's absolutely the strangest of circumstances when we're going to blank out all of this ice coverage for the next several years as it increases all at the same time.

The shift of our global weather patterns are set to amplify 2x from July-Dec 2017, and from 2018-2019 a 4x shift, with another jump up as the spread widens to 6x in 2019. (I explain this in detail on pages 38-41)



Thanks for reading, hope you got something out of the article. If you like this type of information you can get more in-depth commentary in my tri-weekly podcast Mini Ice Age Conversations.

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Sea Ice Coverage <http://polarportal.dk/en/sea-ice-and-...>

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