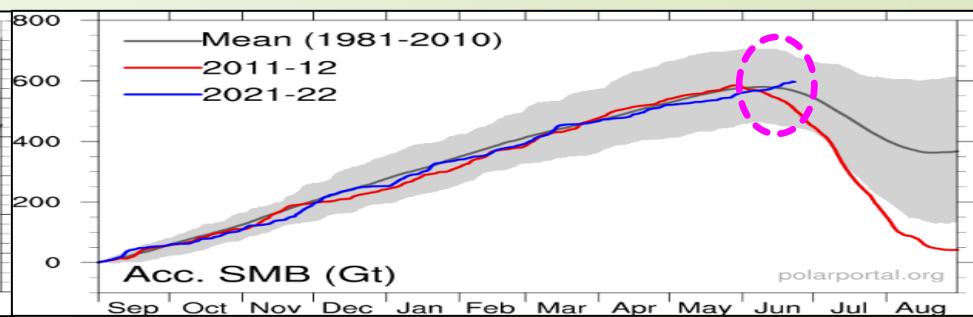
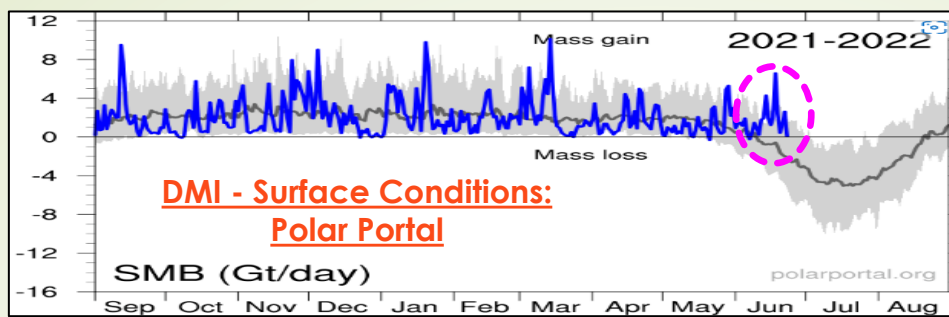


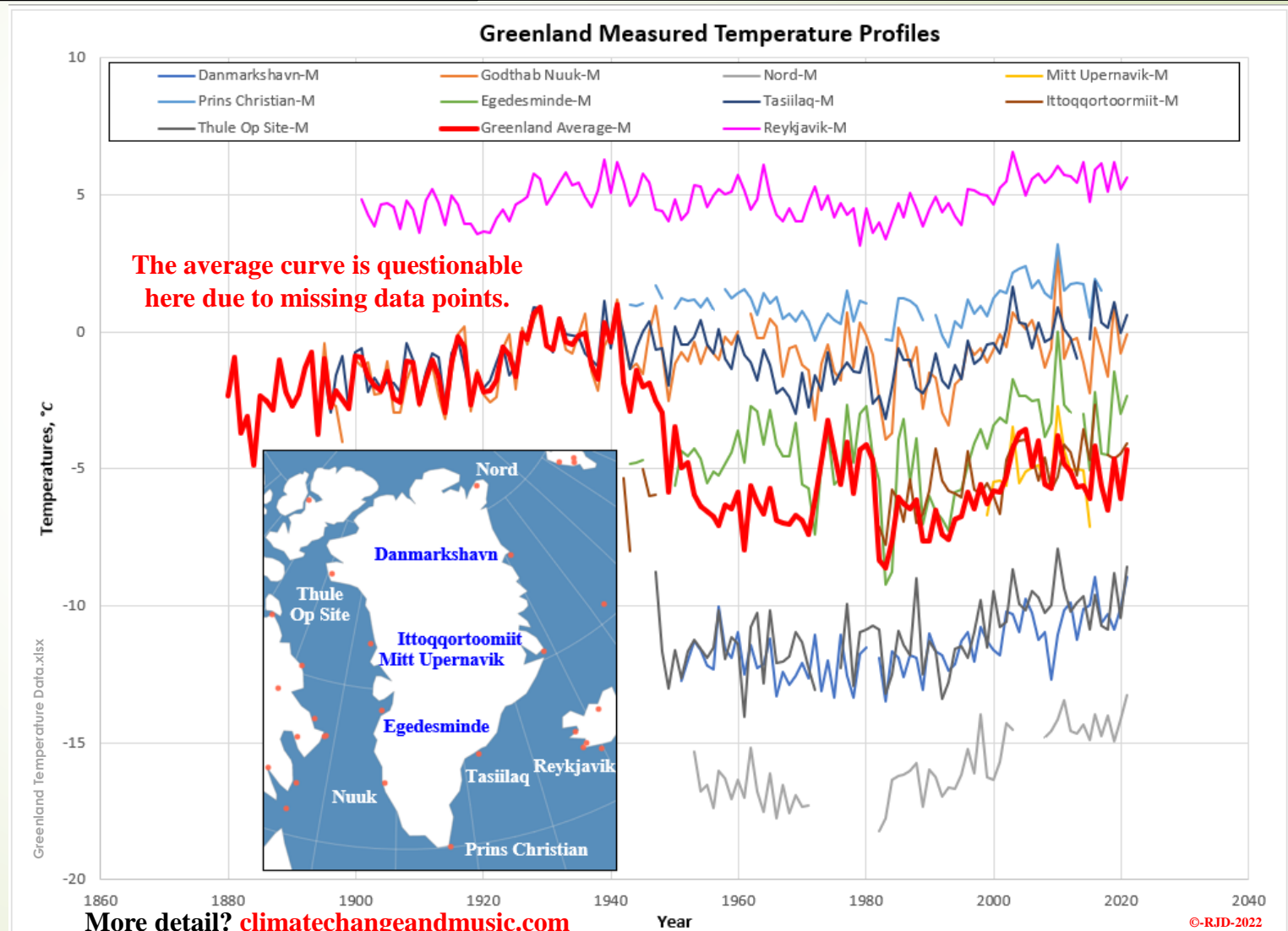
# Greenland/Iceland Homogenization All Station Measured Temperatures



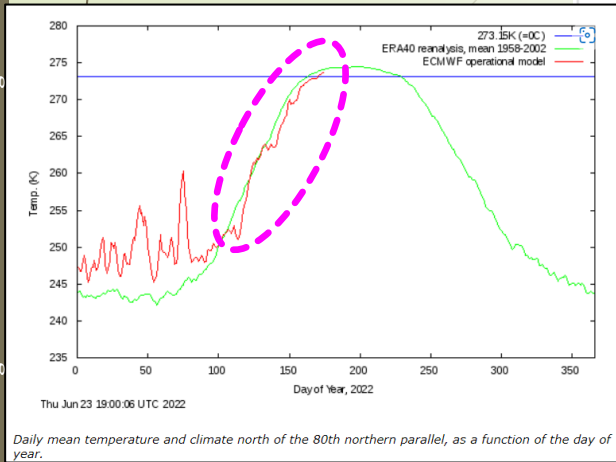
Greenland is an interesting area. Outside of Antarctica, Greenland is the largest concentration of ice on the planet. Just in general, Greenland has a greater risk of “thawing” than Antarctica, since the Greenland landmass is located at lower latitudes than Antarctica. There is also that little problem that Antarctica temperatures have been dropping for the last 40 years, culminating in the coldest 6-month period (EVER) during the Southern Hemisphere winter last year. All that information was included in my [CSS-13 – A Look At Homogenization](#) post. This Climate Short Story (CSS) looks at the Greenland temperatures with some additional colour from Iceland. The first plot shows the Measured temperatures. For a perspective on the recent Snow and Ice conditions around the world review my [CSS-11 – Snow and Ice – July 2021 Update](#) post. I have included an update to Greenland’s Surface Mass Balance (SMB) over the last year. As with last year, the temperatures in Greenland did not get the “Global Warming” memo. SMB is still building when normally the melt season would have already kicked in. SMB followed a fairly typical path (adding almost

600 Gt of new snow/ice). The other SMB curve (red, top right) shows the 2012 season. That was the warmest Arctic year in recorded history, but there was still more snow and ice added than melted (roughly 40 Gt). The measured temperature plot shows the temperature distribution across Greenland (getting warmer as you move south from Nord to Prins Christian). The warmest curve (magenta) is from Reykjavik, Iceland (which is more influenced from by the warm Gulf Stream). Greenland is no danger of melting anytime soon and there is no Climate Emergency!!

## Greenland Measured Temperatures



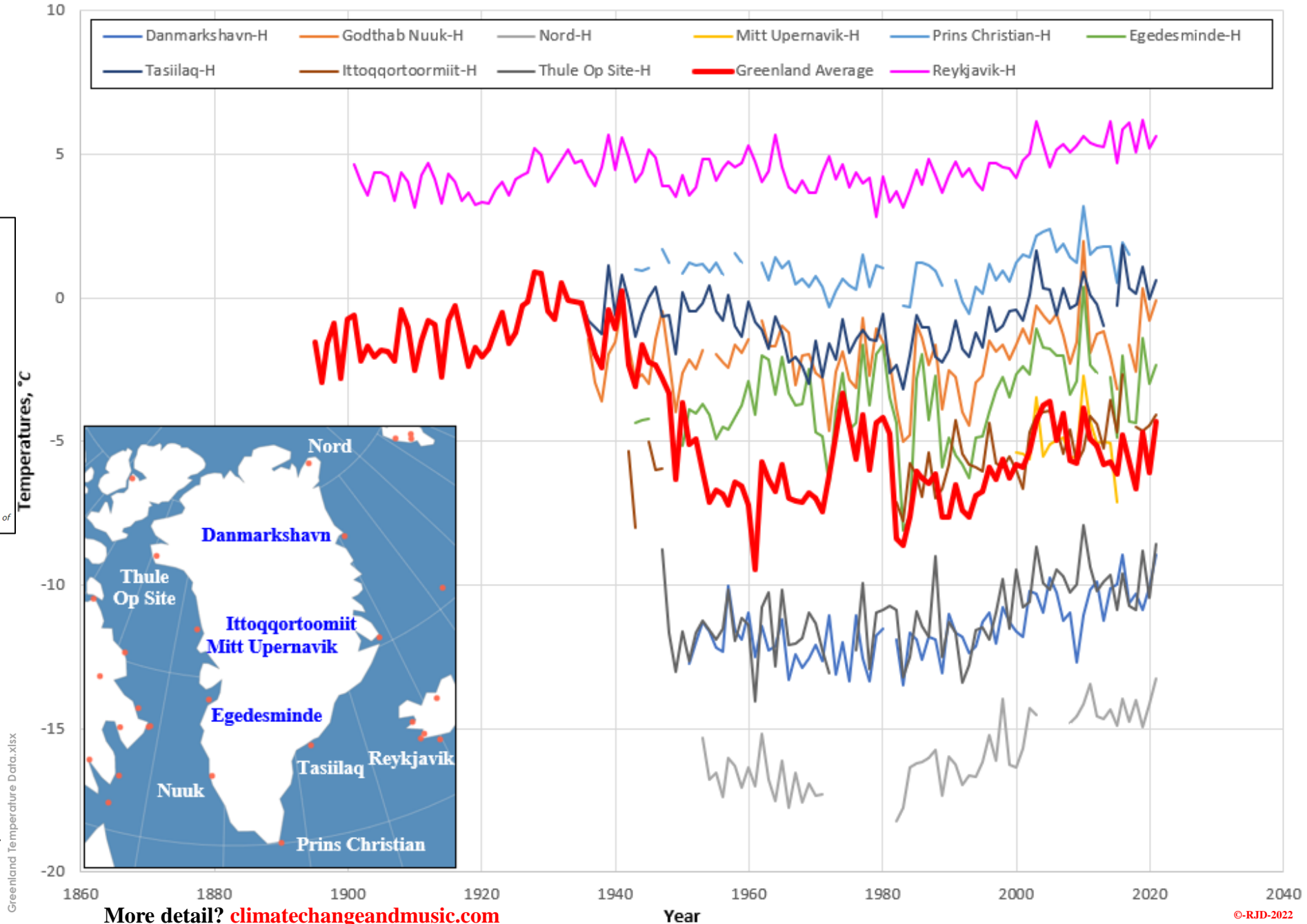
# Greenland/Iceland Homogenization All Station Homogenized Temperatures



**Greenland Homogenized Temperatures**

The homogenized temperatures are shown to the right. The manipulation is not as visible on these curves as the next few slides. The small plot above is generated by the Danish Meteorological Institute (DMI). This updates the plot included in [CSS-11](#). Interestingly, the temperatures have been below the 1958-2002 year average (highlighted above) since early April. Where is the "Global Warming"? Definitely not in Calgary!

## Greenland Homogenized Temperature Profiles



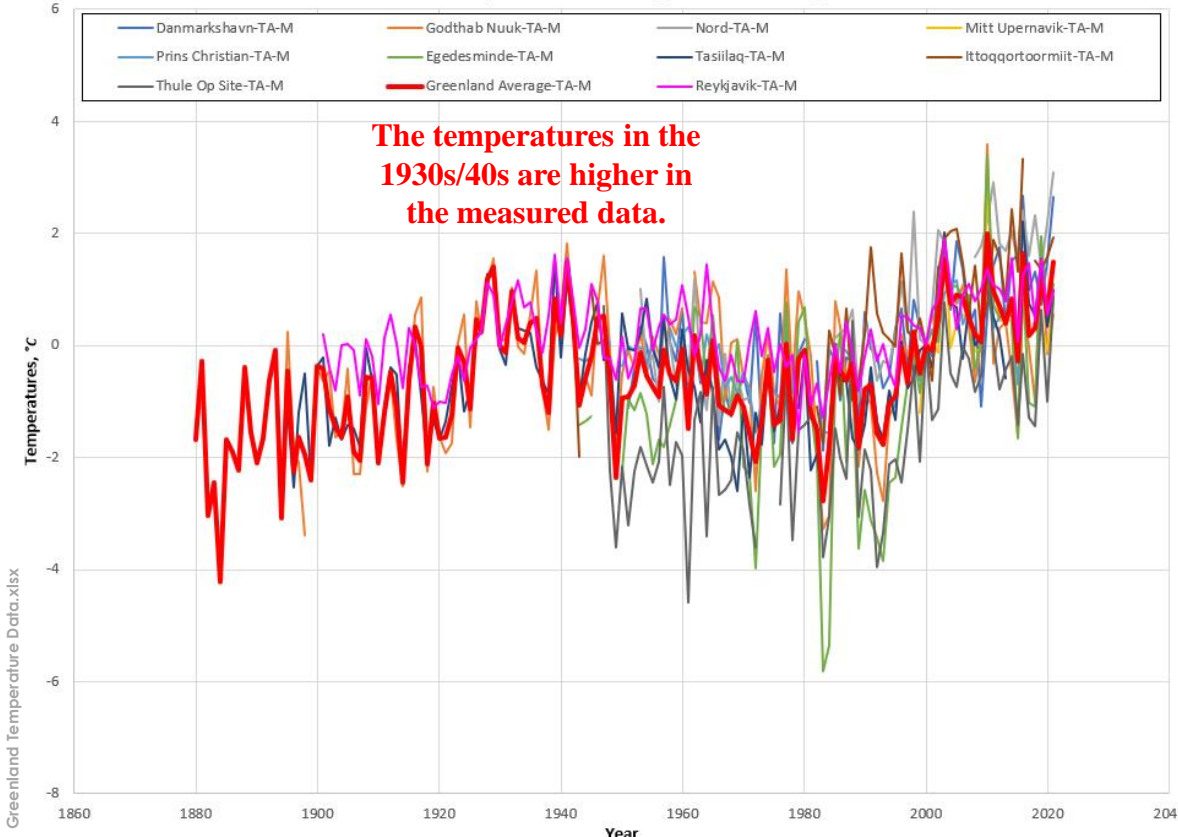
GSM - Grand Solar Minimum. The real "Climate Change" existential threat is right around the corner. Do the Research!

# Greenland/Iceland - Homogenization Measured/Homogenized Temperature Yearly Averages

More detail? [climatechangeandmusic.com](http://climatechangeandmusic.com)

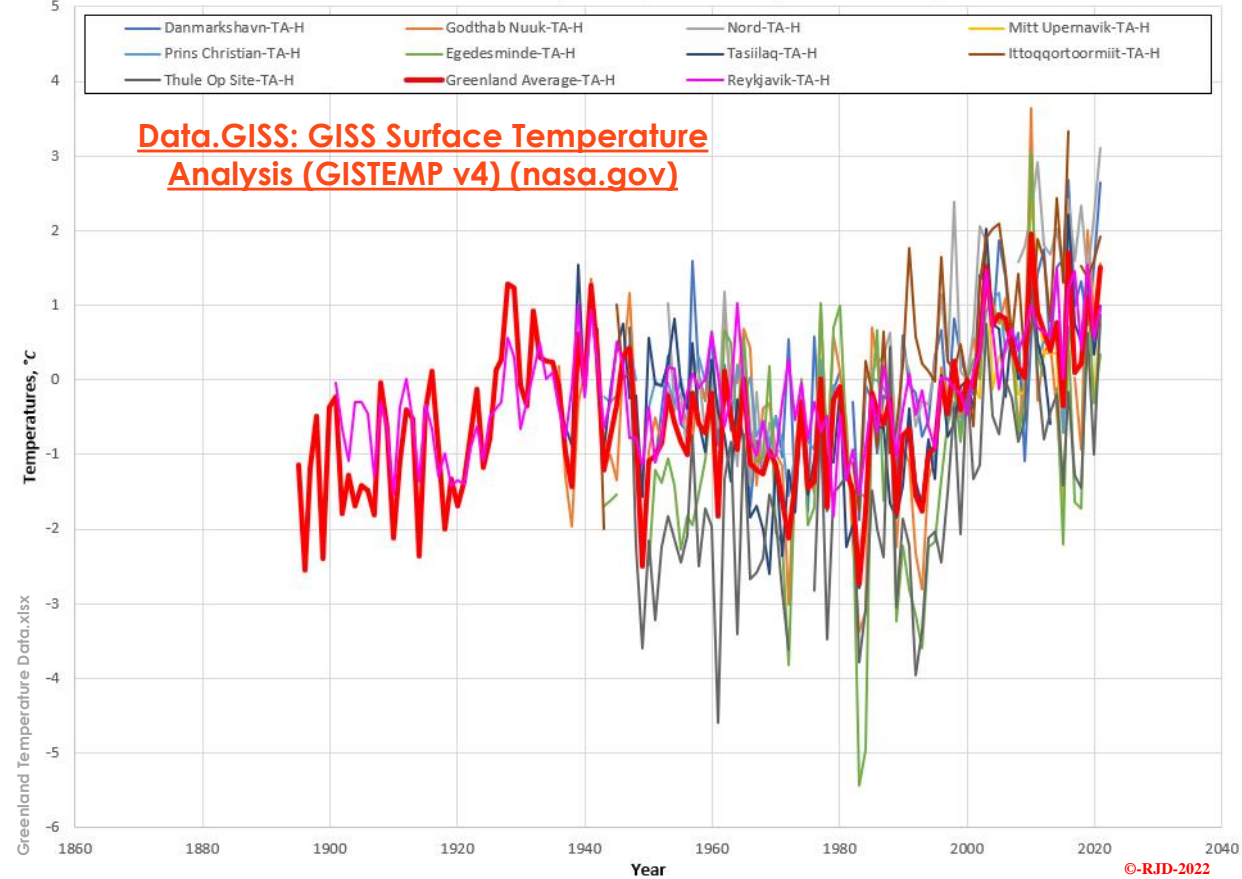
These curves show the average yearly temperatures for all the weather stations highlighted on the first two slides. The data to the left is the measured data, the data below is the homogenized data. All the data presented in this CSS comes from NASA-GISS (link below), with the exception of the last slide. Stykkisholmur, Iceland's older data comes from the Iceland Met Office (IMO). Overall, the homogenization has not been that aggressive in Greenland, but there are still some rather egregious individual station homogenizations.

Greenland Yearly Measured Temperature Average Profiles



The temperatures in the 1930s/40s are higher in the measured data.

Greenland Yearly Homogenized Temperature Average Profiles



Data.GISS: GISS Surface Temperature Analysis (GISTEMP v4) (nasa.gov)

## Yearly Temperature Averages

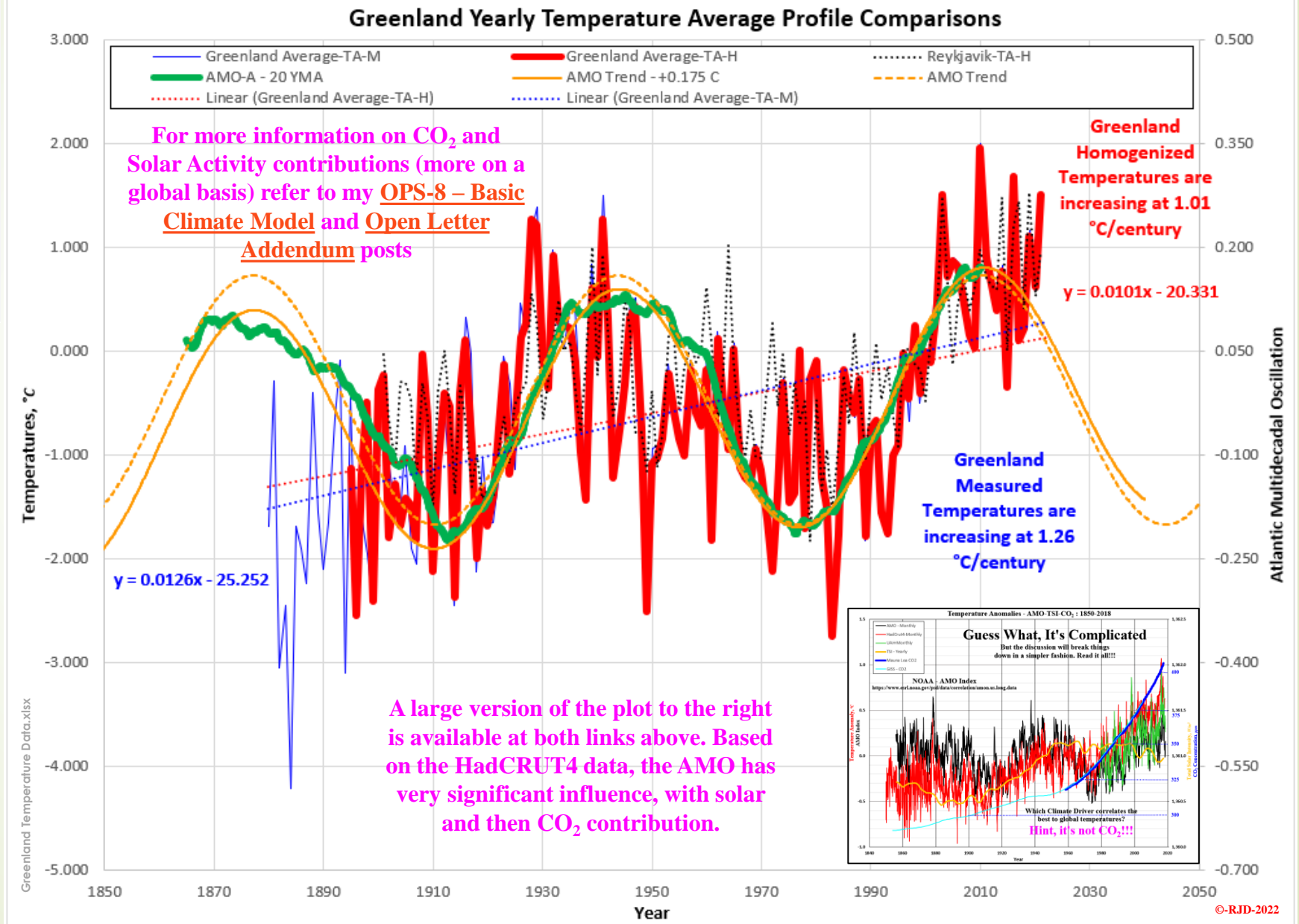
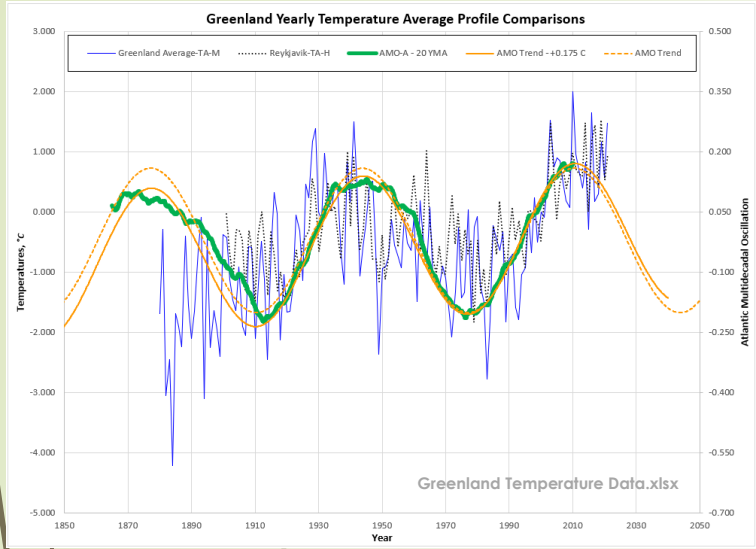
Where are the major differences between the Measured and Homogenized Temperatures? That difference comes down to (primarily) two stations (Aasiaat Egedesminde (the green curve) and Godthab-Nuuk (the gold curve)). The Reykjavik temperatures have significant homogenization, but they are not included in the average curves. How do those manipulations manifest themselves in the average curves? The high temperatures of the 1930s and 1940s are reduced a bit, but not nearly to the extent that homogenization "disappeared" the Dirty Thirties in other areas of the world. Post-1950, the Aasiaat Egedesminde and Godthab-Nuuk station homogenizations roughly cancel one another out. These relatively minor homogenizations are consistent with Antarctica (refer to [CSS-13](#)). These isolated stations, tend to be research outposts (or important locations for shipping information) with the latest measurement equipment. They are also not subject to any Urban Heat Island Effects (UHIE). The discussion specific to each homogenized station will be included in the later slides. To this point I focussed on the temperatures. The Atlantic Multi-decadal Oscillation (AMO) has been added to the upcoming discussions,

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# CSS-23d Greenland/Iceland – Homogenization – Average Temperature Anomalies – AMO Correlation

This is one area of the world where the combined homogenization produces a temperature change (1.01 °C/century) less than the measured temperatures (1.26 °C/century). These temperature rises are not dangerous.

More detail? [climatechangeandmusic.com](http://climatechangeandmusic.com)



These plots focus on the yearly station average temperatures (both measured and homogenized). The right curve shows both the measured and homogenized yearly Greenland temperatures (Reykjavik is also shown). The chart above has removed the homogenized curve to show the Measured and Reykjavik

## Average Temperature AMO Correlation

Hidden data. The discussion does not change much whether we use measured or homogenized data. When the Atlantic Multi-decadal Oscillation Momentum (AMO<sub>M</sub>) is layered over the temperature, things get interesting. Begs the questions, how much of Greenland's temperature is due to the AMO<sub>M</sub> and how much is due to CO<sub>2</sub>? The temperatures appear to cycle with the AMO<sub>M</sub> cold and warm phases and do not correlate very well with the slow, steady rise of CO<sub>2</sub>. The late 1800s and early 1900s do not correlate as well, but the temperature data through this period is limited.

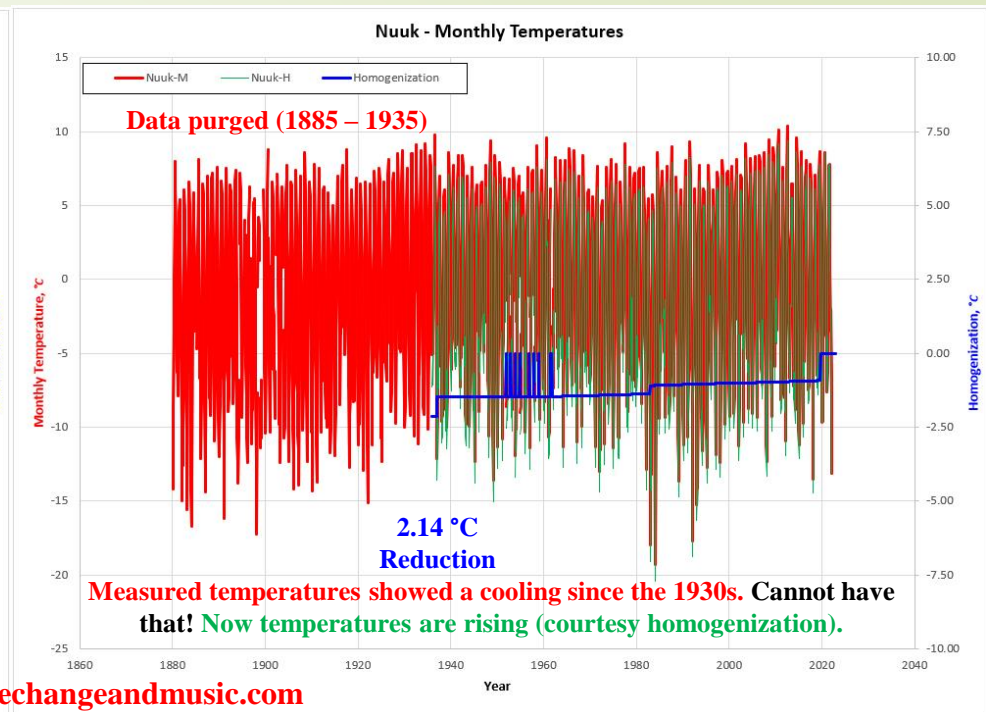
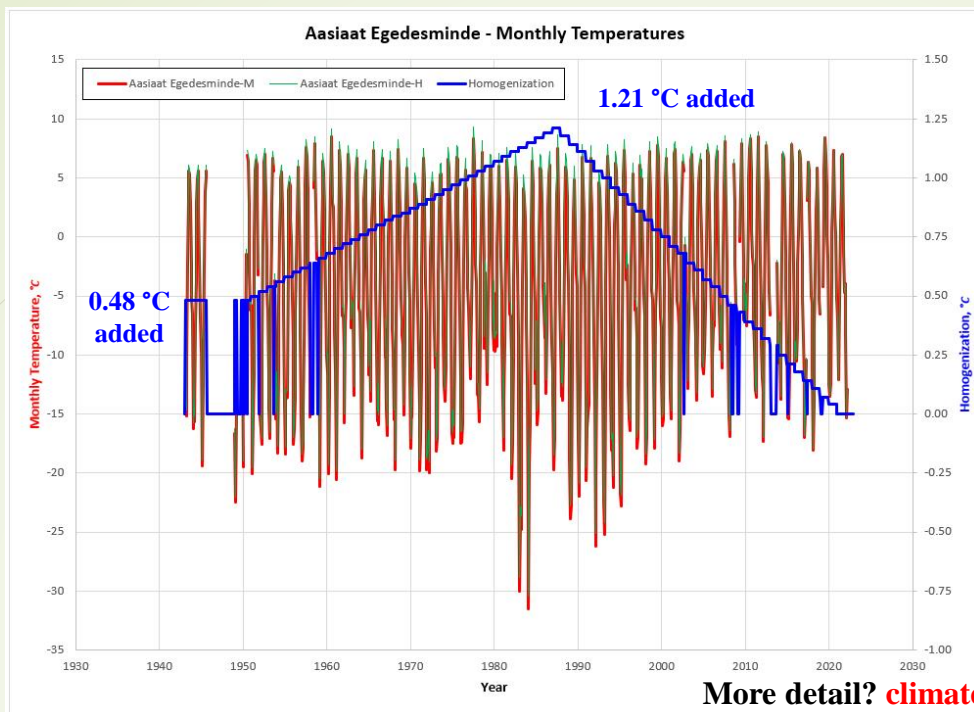
# Greenland/Iceland Homogenization Individual Station Homogenization

These are the Greenland Stations that have had some level of homogenization. The blue curves show how much and when each station was homogenized. The Aasiaat Egedesminde station was mentioned earlier.

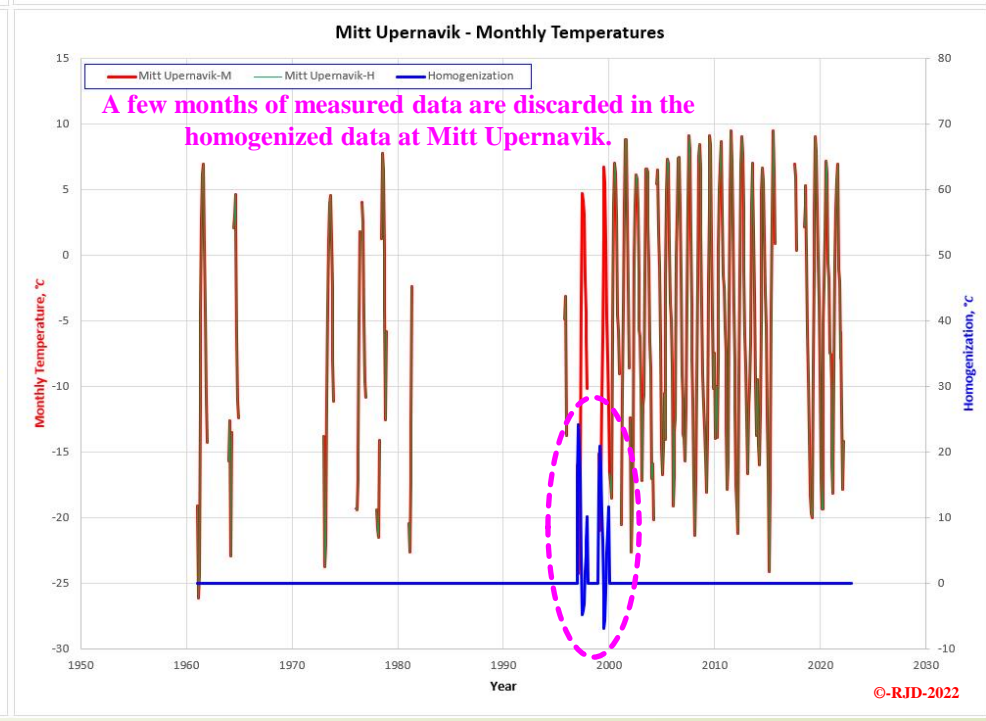
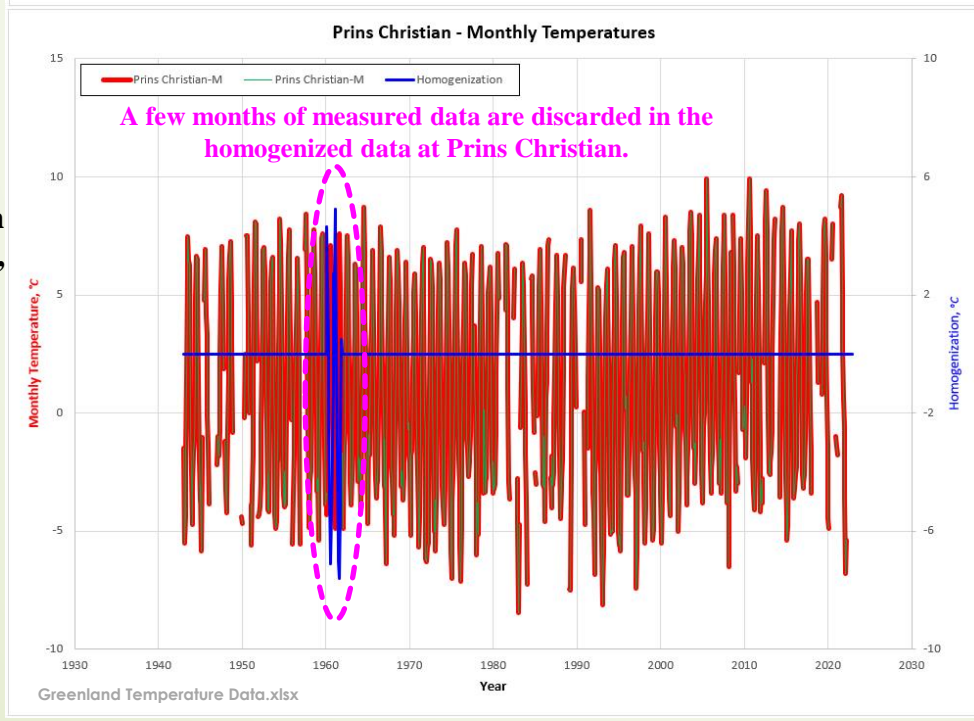
Homogenization goes all the way back to the 1940s where the measured temperatures were increased by 0.48 °C. Every additional temperature has been added, peaking in 1987 at 1.21 °C. Since then, temperature adds have been reduced yearly, reaching 0 °C in 2021.

## Individual Stations Greenland

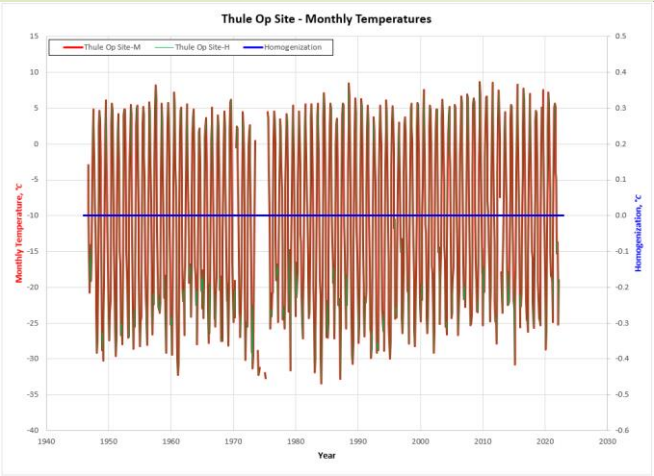
Some aggressive homogenization. Godthab-Nuuk is by far the most homogenized. Temperatures prior to 1935 were just discarded. Beginning in 1936, homogenization removed 2.14 °C, with a quick step drop to 1.46 °C, followed by another step drop in 1983 to 1.09 °C, then 0 °C in 2020. Reasons not forthcoming.



More detail? [climatechangeandmusic.com](http://climatechangeandmusic.com)



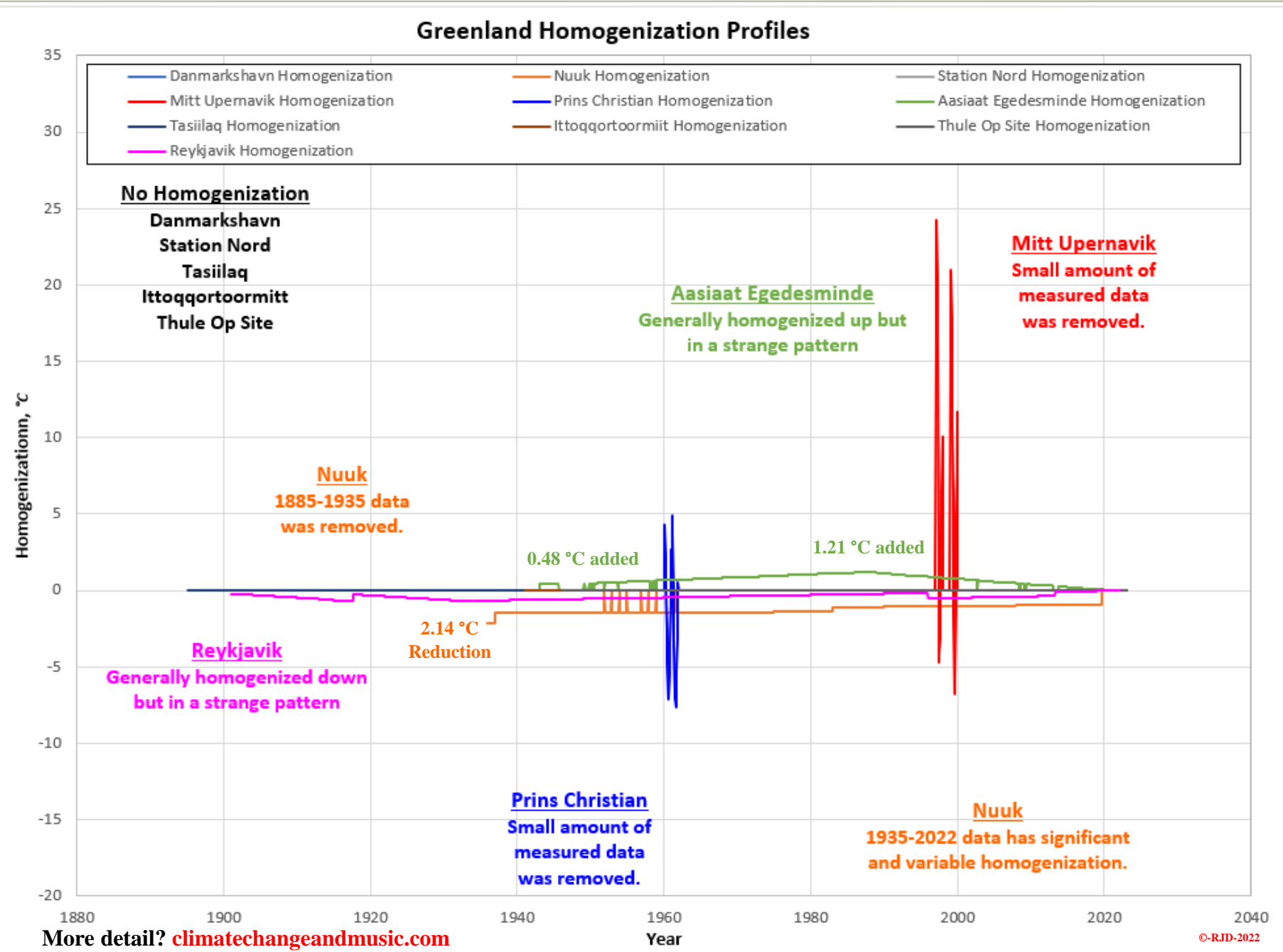
# Greenland/Iceland – Homogenization – Consolidated Homogenization



The plot above (Thule Op Site) is one example of the stations that had no homogenization applied. The non-homogenized stations are listed to the right. If you want to see the temperature data, go to [Data GISS: GISS Surface Temperature Analysis \(GISTEMP v4\) \(nasa.gov\)](https://data.giss.nasa.gov/gistemp/). As mentioned earlier, the

## Consolidated Homogenizations

Greenland data was (in general) not overly homogenized. However, the Godthab-Nuuk station was very homogenized. 50 years of early data (1885 to 1935) was purged with most of the remaining history reduced by at least 1 °C. Was that justified or just convenient? The Aasiaat Egedesminde station was strangely homogenized in a triangular pattern. The other two stations with homogenization had some of the data months removed. There may be rationale for these exclusions, but what are they?

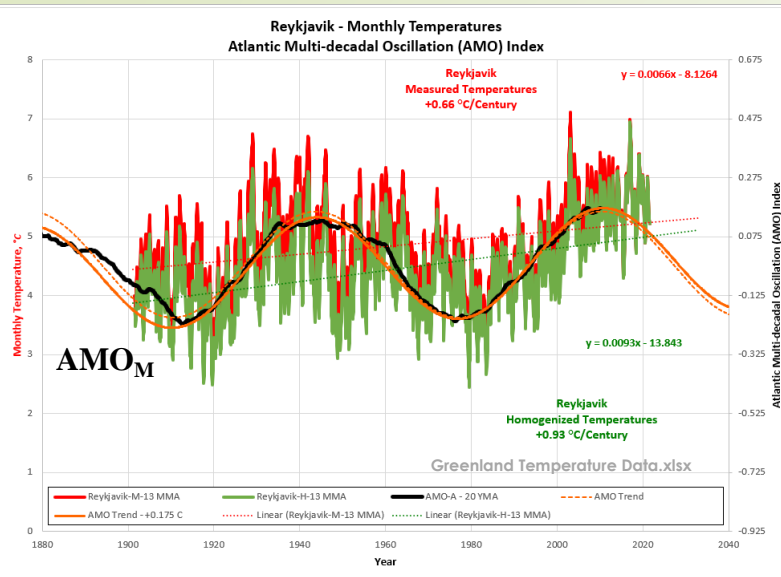


More detail? [climatechangeandmusic.com](http://climatechangeandmusic.com)

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# Greenland/Iceland – Homogenization – Reykjavik – Temperature and Homogenization

I have included Reykjavik, Iceland in this evaluation for a little color. Although, geographically close to Greenland, Reykjavik is significantly warmer (at similar latitudes). Not surprising, given that Iceland is directly in the path of the warm Gulf Stream. Iceland is also located in the North Atlantic, so not surprisingly, they also feel the direct effects of the AMO.



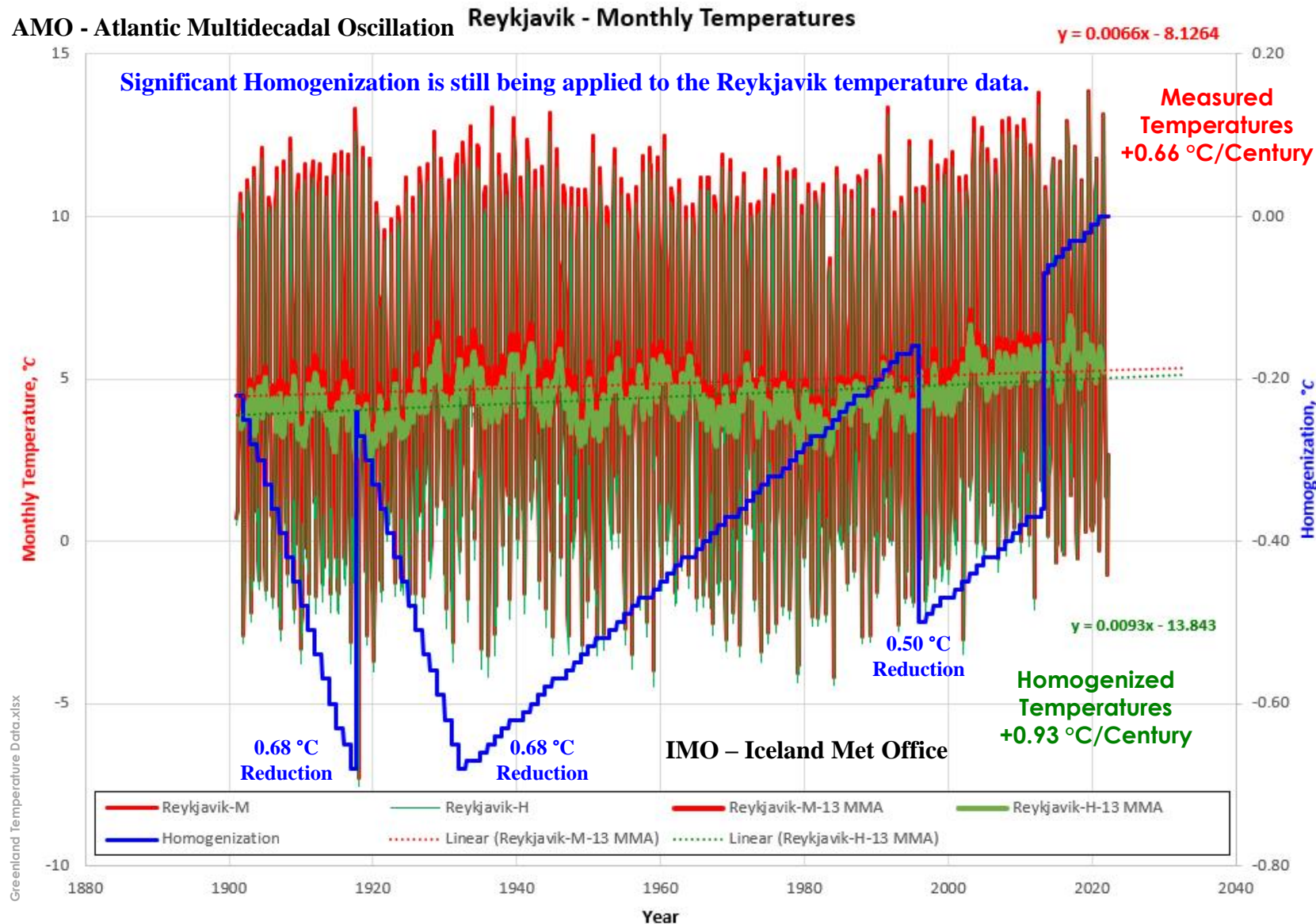
The AMO momentum (AMO<sub>M</sub>) data is plotted against the temperature data above. Looks like the AMO is responsible for temperature fluctuations in Reykjavik with little to no CO<sub>2</sub> contribution.

Another example of CSS-7 – CO<sub>2</sub> – The FECKLESS GreenHouse Gas? Looks like it.

Reykjavik’s homogenization has been reduced over the years because the Iceland Met Office (IMO) complained about the magnitude. Tony Heller covered

## Reykjavik Temperature Homogenization

off that discussion in his March 28<sup>th</sup>, 2019 post. Reykjavik, like many places around the world are overtly (without justification) homogenized. The most recent homogenization is shown to the right. Although subdued in historical terms, Reykjavik is still homogenized aggressively. Tony also quickly looked at the Godthab-Nuuk station that day. He suggested that was the first example he noticed where NASA/GISS actually changed the measured data directly. More Fraud?

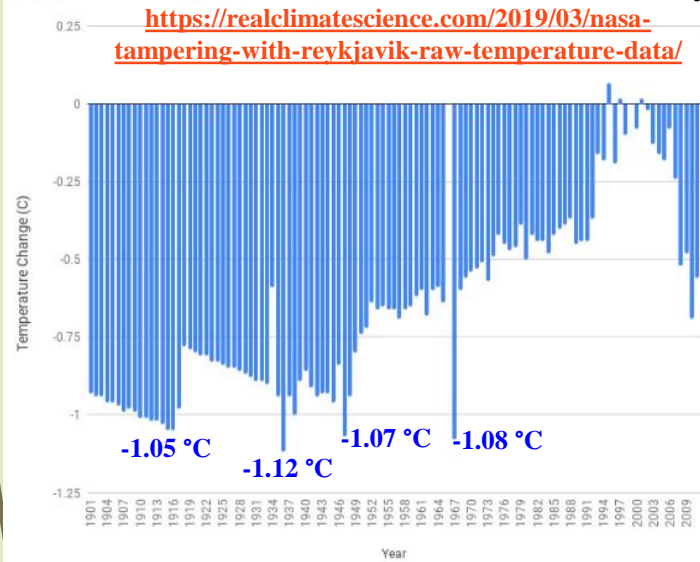


More detail? [climatechangeandmusic.com](http://climatechangeandmusic.com)

# Greenland/Iceland – Homogenization – Reykjavik – Homogenization History

I have added the historical temperature data sets to the current **Measured** and **Homogenized** Reykjavik information below. All these curves are generated from the same raw data set. So, any chance that there could some maleficence in the data manipulation?

Reykjavik V4 Homogenized Minus V2



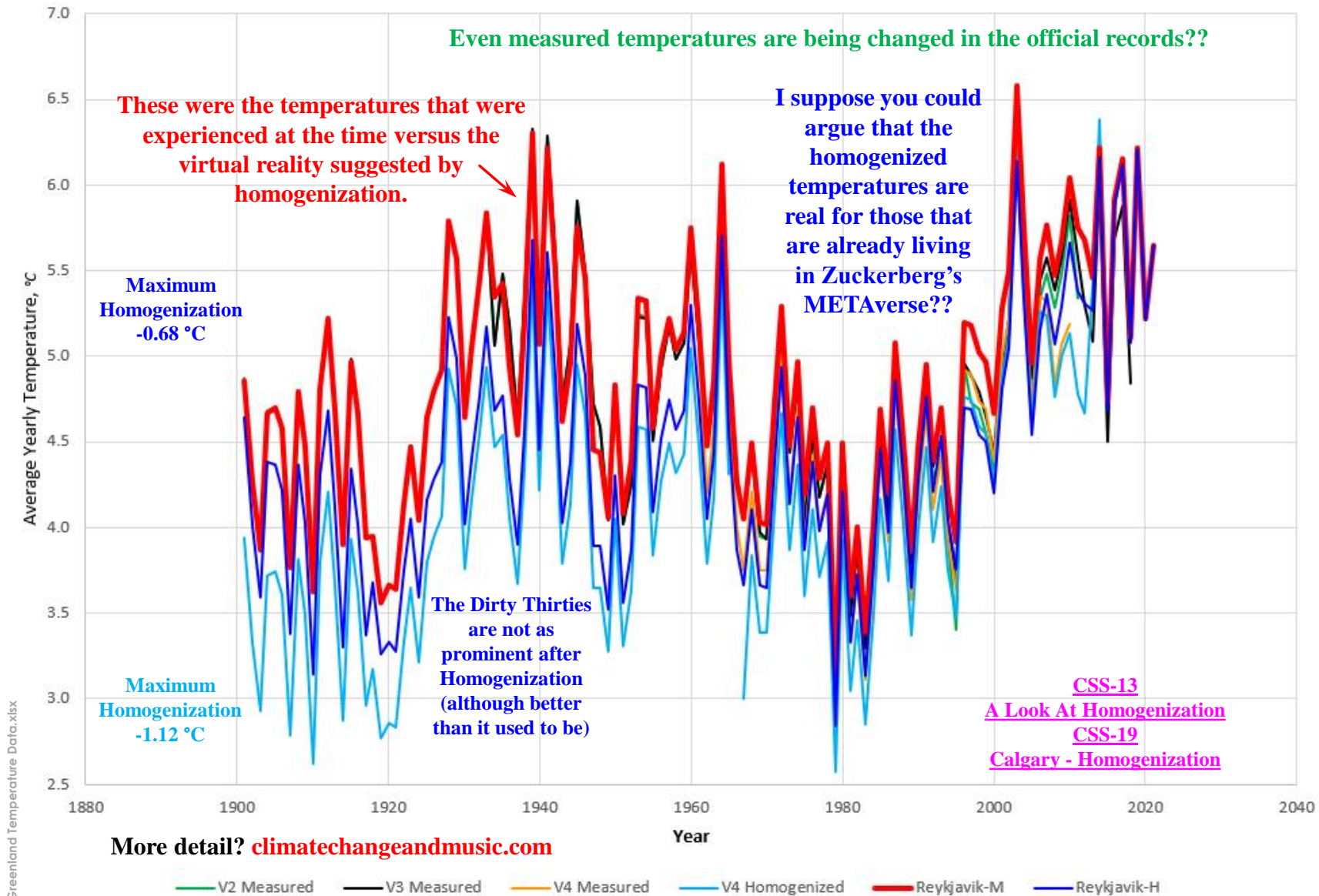
I am just touching on the data manipulation history at Reykjavik. The Tony Heller link I provided on the previous slide goes into detail. I just pulled one plot (above) showing the level of homogenization that the IMO complained about.

## Reykjavik Homogenization History

NASA-GISS walked back almost half of their original homogenization (1.12 °C down to 0.68 °C, still aggressive).

Cooling down the past is a Great way to push a narrative that temperatures are increasing faster than they are. In my world, I experience measured temperature not the fabricated homogenized temperatures that are routinely used as the “official” temperature. Reykjavik is obviously localized, but the same scenario plays out elsewhere. Calgary measured temperatures have declined at 1.76 °C/century since 1973. Homogenized temperatures are increasing at 1.35 °C/century. That is a 3.11 °C/century homogenization?? **My homogenization posts to the right.**

Reykjavik, Iceland - Homogenization History



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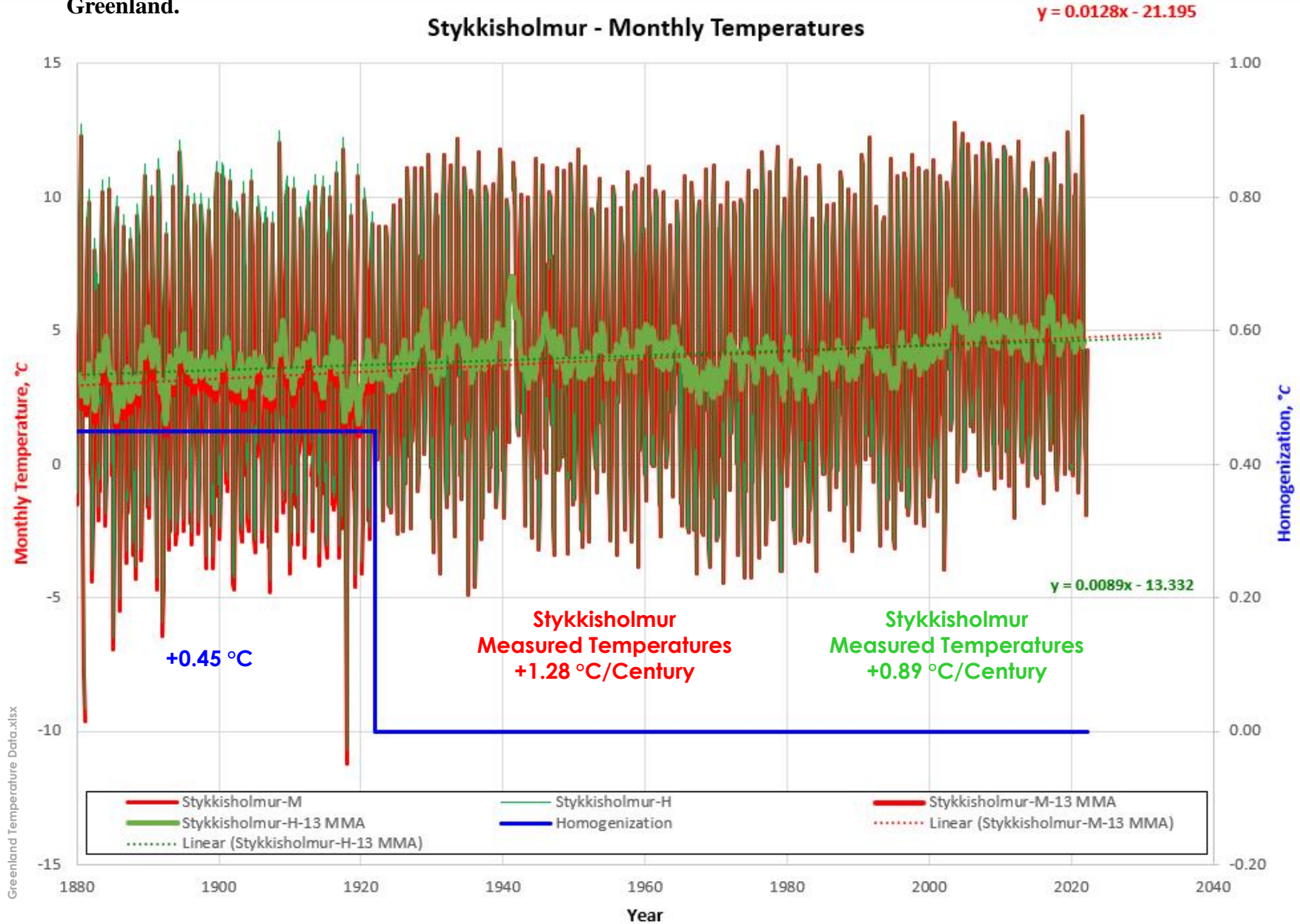
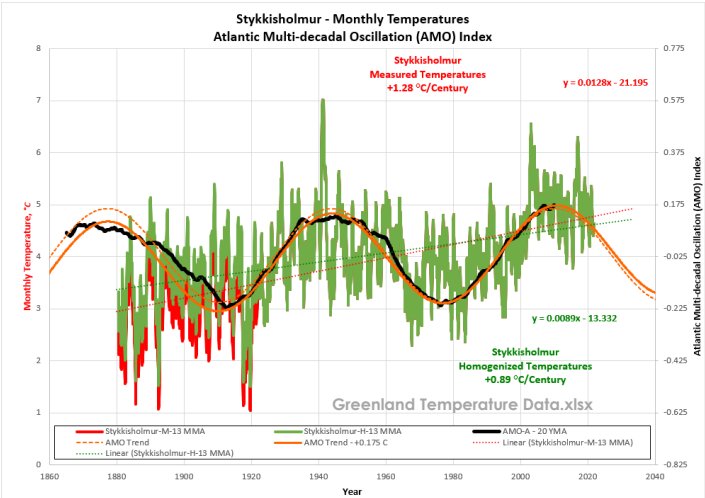


GSM – Grand Solar Minimum. The real “Climate Change” existential threat is right around the corner. Do the Research!

# Greenland/Iceland – Homogenization – Stykkisholmur – Temperature and Homogenization

Temperature rise in Iceland is consistent with Greenland.

Measured Temperatures - Greenland – 1.26, Reykjavik – 0.66, Stykkisholmur – 0.89 °C/century  
Homogenized Temperatures - Greenland – 1.01, Reykjavik – 0.93, Stykkisholmur – 1.28 °C/century



I am adding one additional Iceland Station to this post (Stykkisholmur). The plots on this page go back to 1880 based on the NASA-GISS database. Over that time period, the measured temperatures increased at a rate of 0.89 °C/century. Homogenization has added 0.39 °C/century (based on a 0.45 °C add from 1880 to 1921). Temperatures are now “increasing” at a

## Stykkisholmur Temperature Homogenization

a rate of 1.28 °C/century. The far north does not appear to be increasing at twice the rate of the rest

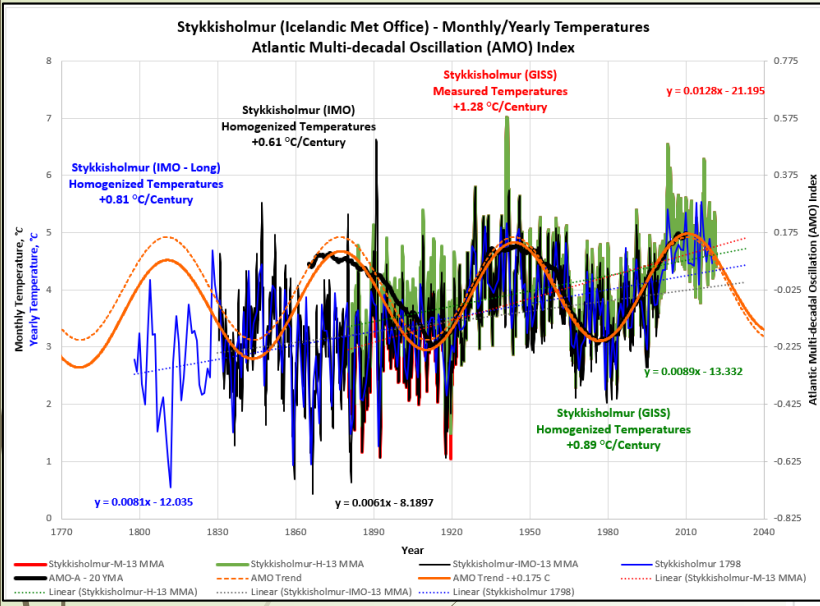
of the world. Unlike the “fear infused” headlines a couple of years ago where every jurisdiction in the world was purportedly increasing twice as fast as the rest of the world. The Arctic temperatures are supposed to be increasing faster than anywhere else in the world.

Why are they not? Maybe because, the AMO is significantly more important than atmospheric CO<sub>2</sub> concentrations. Just a theory.

More detail? [climatechangeandmusic.com](http://climatechangeandmusic.com)

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I included Stykkisholmur because the temperature record goes back to 1798. The Icelandic Meteorological Office (IMO) has two records (both are plotted here). The blue line (to the left) covers 1798 to 2020. The black line (to the left) and green/red lines (below) cover 1930 to 1999. The green line (to the left, NASA/GISS) covers 1880 to 2022.

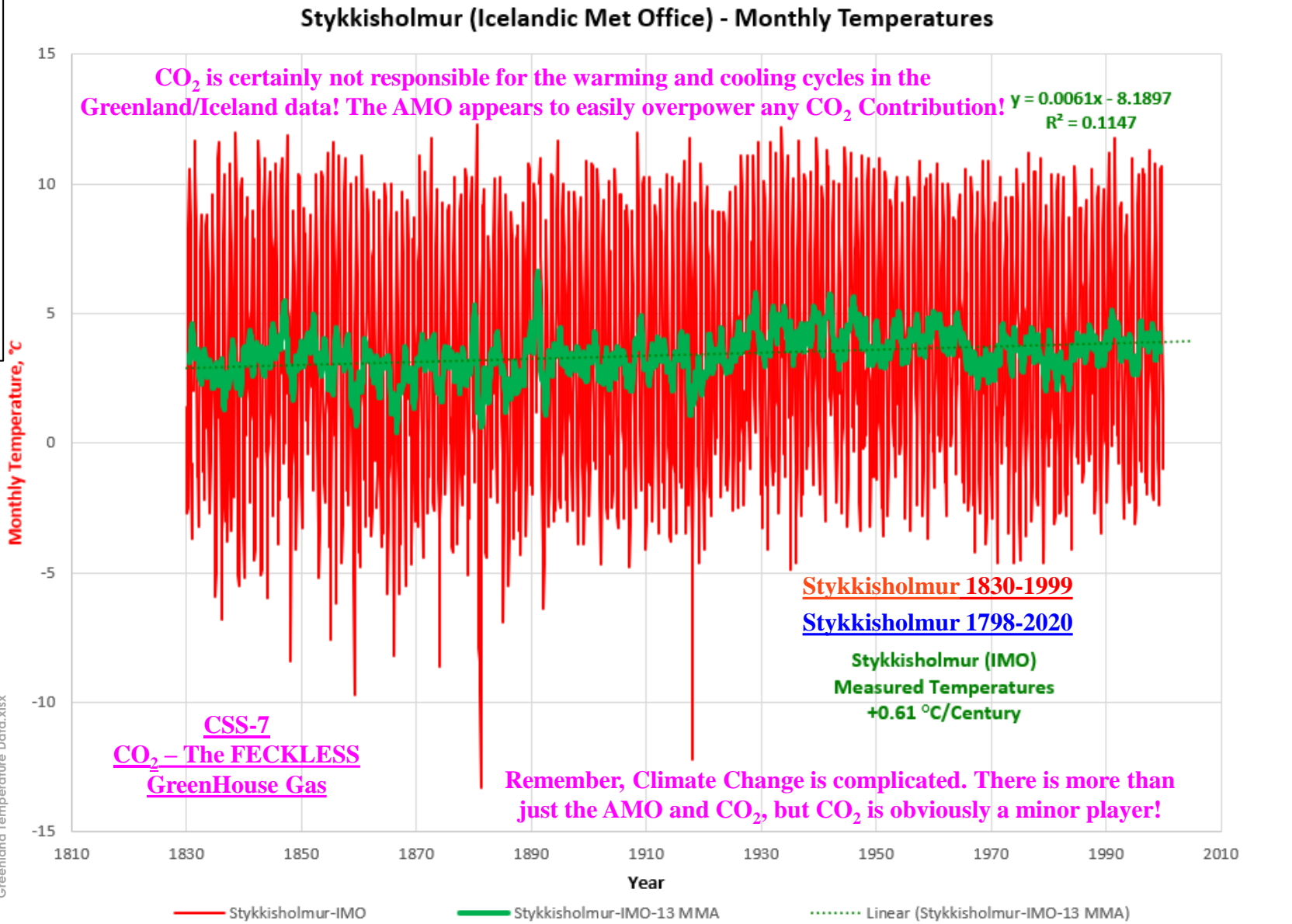


The correlation with the AMO<sub>M</sub> is not very strong when compared with the older temperatures. Obviously, the Stykkisholmur is very localized and could be affected by other localized events. That does not take away the very obvious correlation over the Modern

### Stykkisholmur Temperature IMO Extension

Temperature Record (MTR, 1850 to the present). So, what are the most important points to take away from this CSS?

That would be the correlation with the Atlantic Multidecadal Oscillation (AMO) and the low temperature rise experienced over the last couple of centuries. Even with homogenization, the Greenland temperature rise is only 1.01 °C/century. Iceland comes in even lower. The north is supposed to be warming faster than the mid latitudes or the equatorial regions? Given the strong correlation to the AMO, there does not seem to be much CO<sub>2</sub> warming?



CSS-7  
CO<sub>2</sub> - The FECKLESS  
GreenHouse Gas

Remember, Climate Change is complicated. There is more than just the AMO and CO<sub>2</sub>, but CO<sub>2</sub> is obviously a minor player!

More detail? [climatechangeandmusic.com](http://climatechangeandmusic.com)