

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

# CSS-55a Climate Misinformation – Tony Heller (1)

## Average Maximum Temperatures

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

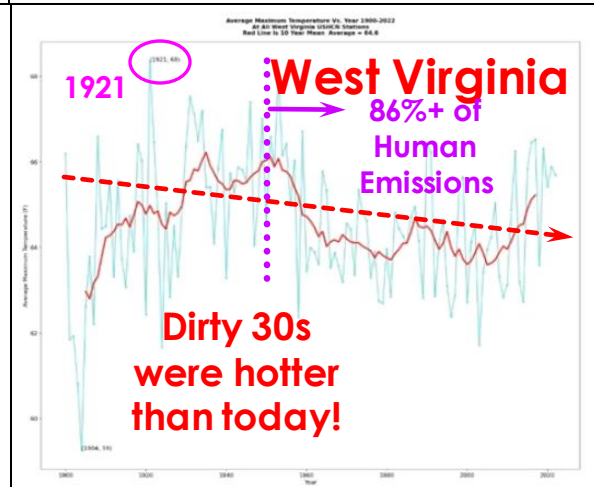
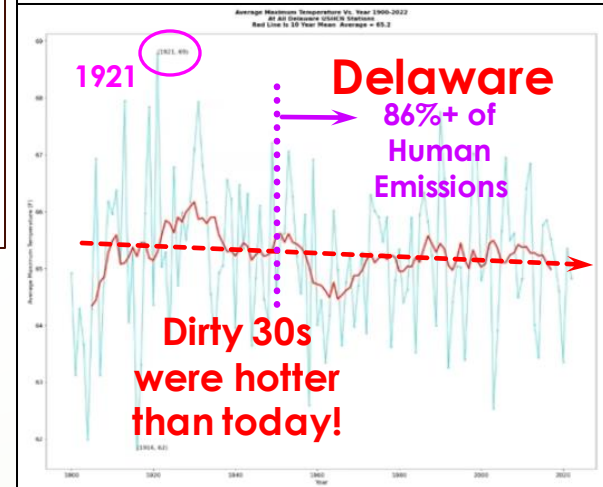
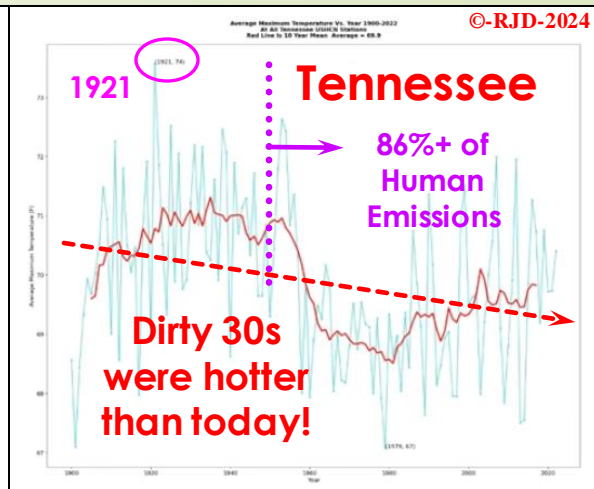
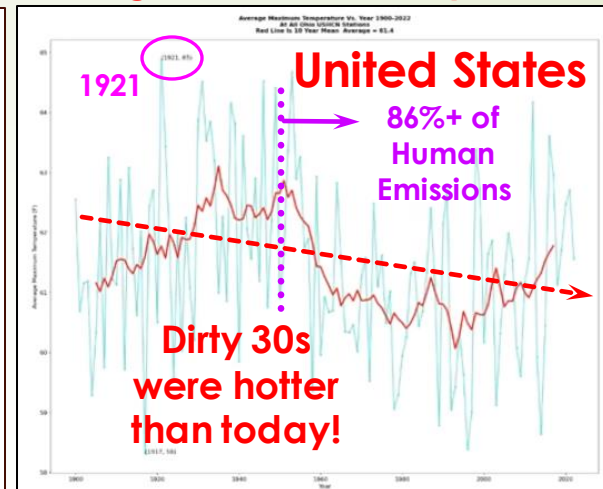
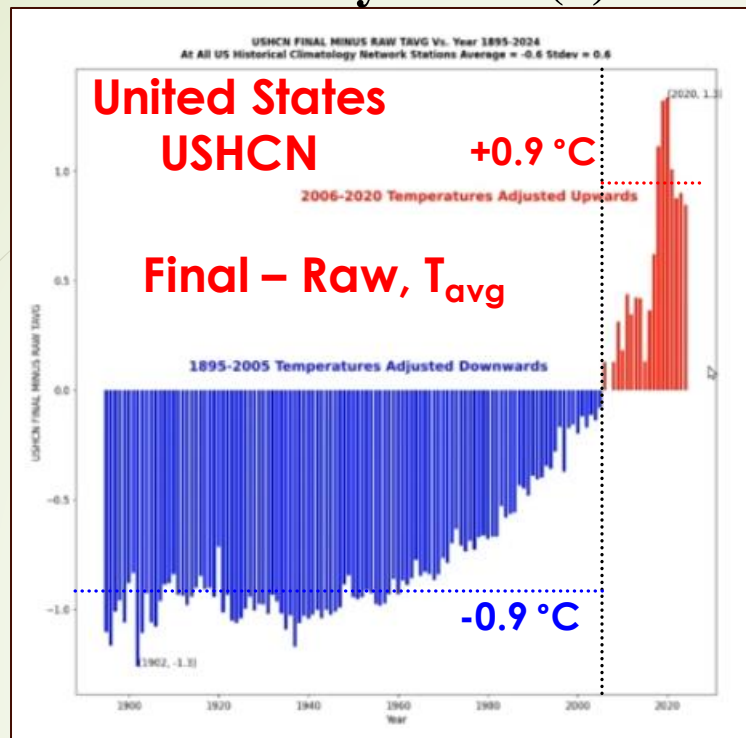
The alarmist community has made an art form out of manipulating the surface temperature information. The official process is labeled “homogenization”. And to be fair, there are scenarios where adjustments are justified (Time of Day Measurements, Physical Location Moves, etc.).

Unfortunately, homogenization has been transformed into a process that manipulates the data to fit the narrative. A process diametrically opposed to the Scientific Method, where the theory is modified to fit the empirical data. This slide discusses homogenization, bringing together five of Tony Heller’s videos and some of my own observations. The alarmists may not like Tony’s work, but they also cannot dispute the data. These images are from his late March video

**Climate Misinformation.** The plot above shows the depth of the manipulation (i.e.: homogenization). Temperatures prior to 2006 have been adjusted down by as much as 1.3 °F (close to 1 °F for much of the past). Likewise recent temperatures (2006 to 2024) have had temperatures adjusted up 1.3 °F. The total adjustments add up to 2.6 °F (1.44 °C). On a more general basis, temperatures have been adjusted by

### 1 - Climate Misinformation Tony Heller

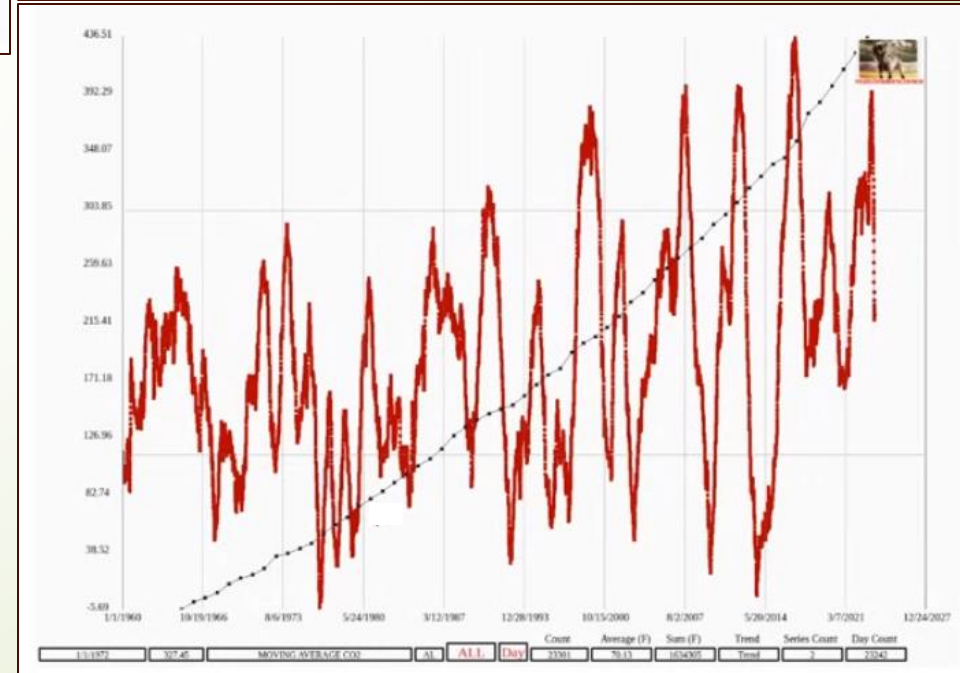
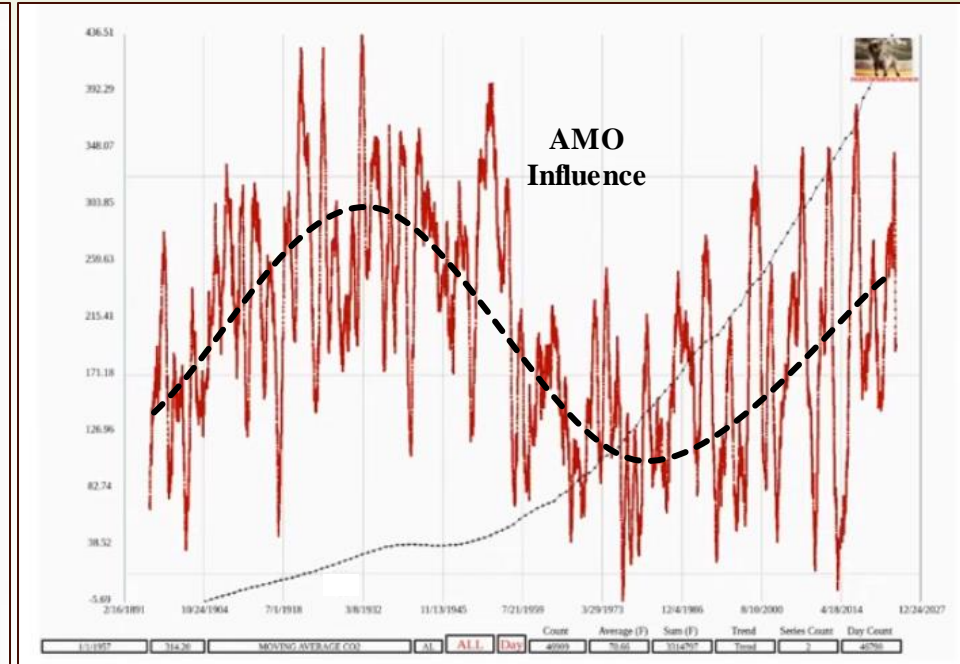
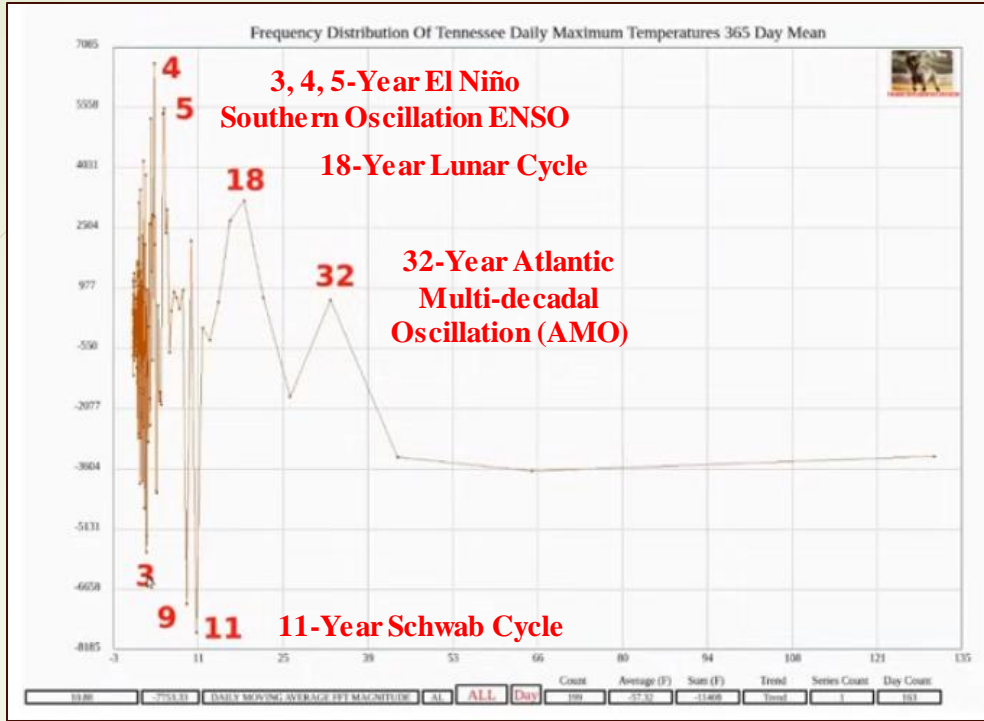
Roughly 1.8 °F (1.0 °C). That begs the question, how much of the IPCC’s global 1.07 °C temperature increase is due to homogenization (i.e.: data manipulation)? Note, the adjustment plot is just for the United States. Therefore, the adjustments are not directly applicable to the global temperature dataset. But realistically, if you are manipulating US data, you are manipulating global data, since a significant portion of the available stations are in the US (especially prior to the mid 20<sup>th</sup> century). The plots on the left show the average maximum temperature for the US and a few individual states. Several more states are presented in the video with similar downward trends. The maximum temperatures in the Dirty 30s are consistently higher than current temperatures. If CO<sub>2</sub> is controlling temperature, that control is not visible in the average maximum temperatures. In fact, average maximum temperatures have declined since 1950 (a period where over 86%+ of our emissions have occurred). Move along, nothing to see here! Another interesting aside is the 1921 temperatures. Why would 1921 have the highest average yearly maximum temperature throughout most of the United States (and the World as shown in here and in his [The Safe Climate of 1921](#) video)? Definitely not CO<sub>2</sub>. However, there was a solar event that year that injected a massive amount of energy into our global environment, causing damage to the fetal electrical system of that period (on a scale like the Carrington Event, [CSS-36 – Solar Flares & CMEs](#)). Maybe, just maybe, there is more to Climate Change than just CO<sub>2</sub>!



1900 Time Scale 2020

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This video ([Real Climate Science](#)) was posted in early March 2024. The plots shown here are based on Tennessee temperature information, but similar results exist in other states. The plots to the far-right show Tennessee average temperatures plotted against atmospheric CO<sub>2</sub> concentrations. The Upper plot shows the data from 1891 to 2024. The lower plot focuses in on 1960 to 2024 (remember 86%+ of humanity’s emissions occurred post-1950). So, if we (i.e.: CO<sub>2</sub>) are responsible for the temperature rise, the post-1950 period is where the causal effects would manifest. But if you take a step



back and look at the entire history, there are major temperature fluctuations that obviously have nothing to do with the exponentially but smooth rising CO<sub>2</sub> concentrations. The chart above is produced by running the temperature data through a discreet Fourier Transform, a mathematical process that highlights the regular frequencies within a dataset. Tony Heller mentioned the 11-Year frequency which corresponds to the 11-Year Solar Schwab Cycle, but the other frequencies are also interesting. The 32-Year cycle is very visible in the Tennessee average temperature data, and correlates directly to the Atlantic Multi-decadal

## 1 – Real Climate Science Tony Heller

Oscillation (AMO), a regular  $\pm 30$  cycle that warms and cools the planet. This sinusoidal cycle also includes a shallow incline (visible on longer time scales) that is related to the increased solar energy the earth has received as Total Solar Irradiance (TSI) has risen out of the Little Ice Age. The 18-Year frequency corresponds to the 18-Year lunar cycle. The 9-Year frequency corresponds to a Lunar Half-Cycle. Interestingly, a roughly 9-year temperature pulse is visible in both the Arctic and Antarctic temperature data as shown in my [CSS-32 – UAH Temperature Analysis](#) post. My [CSS-39 – WMO – Global Warming Propaganda](#) post (among other things) delves into the lunar influence on climate (as laid out by Dr. David Lilley). The 3, 4, and 5-Year frequencies may well be related to the El Nino Southern Oscillation (ENSO), a more erratic, short-term oscillation between warm El Niños and cold La Niñas. There is a lot more going on than just CO<sub>2</sub> (easily overpowered by natural forcings).

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# CSS-55c Climate Data Corruption Business – Tony Heller (1)

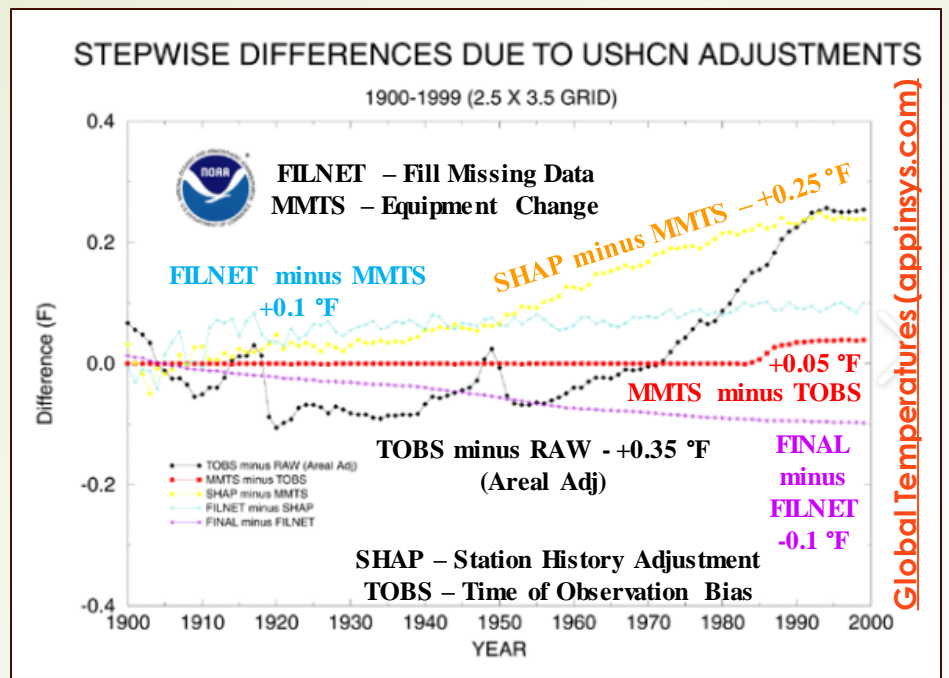
More detail? [climatechangeandmusic.com](http://climatechangeandmusic.com)

The plot to the right shows some of NOAA's temperature adjustments.

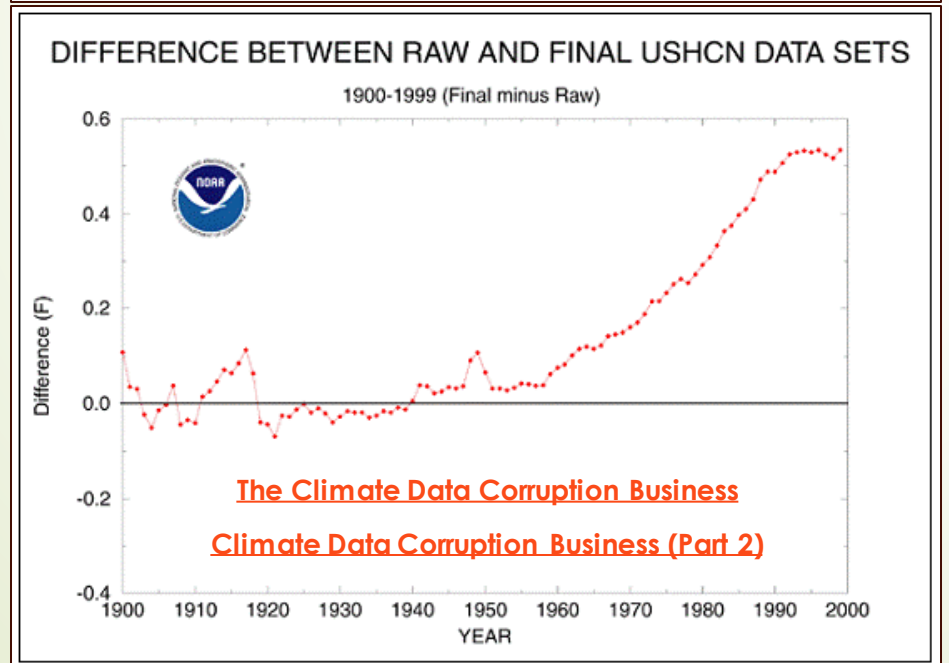
The Time of Observation Bias (TOB) is self-explanatory. If temperatures are taken at different times of the day (for example, morning versus afternoon), they need to be adjusted before they are directly comparable. That is not an issue where continuous readings are taken, but in the older records they may have been recorded intermittently at various times of the day. Station History Adjustment (SHA) would cover scenarios where stations were relocated (i.e: moving the station from a parking lot to a nearby open field would yield significantly different results). Equipment change (MMTS) also needs to be recognized. Replacing old equipment or upgrading to new measurement technology requires adjustments and/or calibration.

## Climate Data Corruption - 1 Tony Heller

The individual data adjustments are totalled in the lower plot. Note these are the adjustments NOAA was using in 2000 (24 years ago). The total adjustment was relatively flat pre-1960 and then rose by roughly +0.6 °F by the 1990s. The TOBS component accounted for roughly 0.35 °F. The SHAP added another 0.25 °F, with the remaining parameters cancelling out.

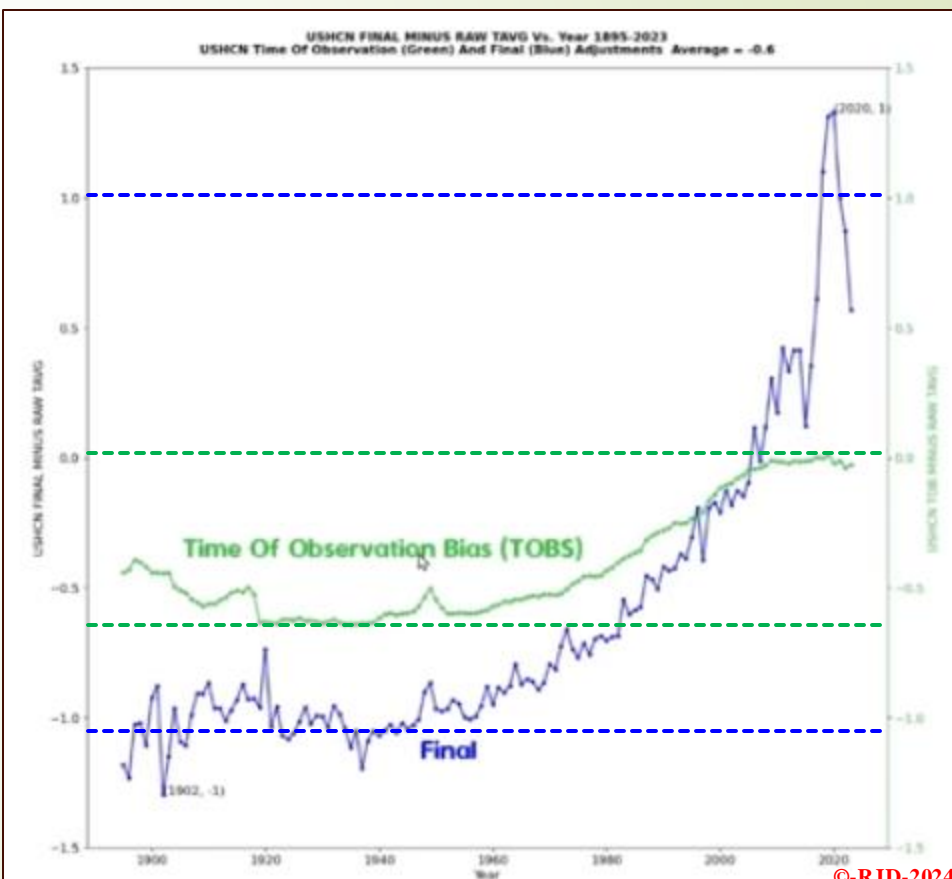


GlobalTemperatures (appinsys.com)



Average Total Warming Created by Adjustments to USHCN Data

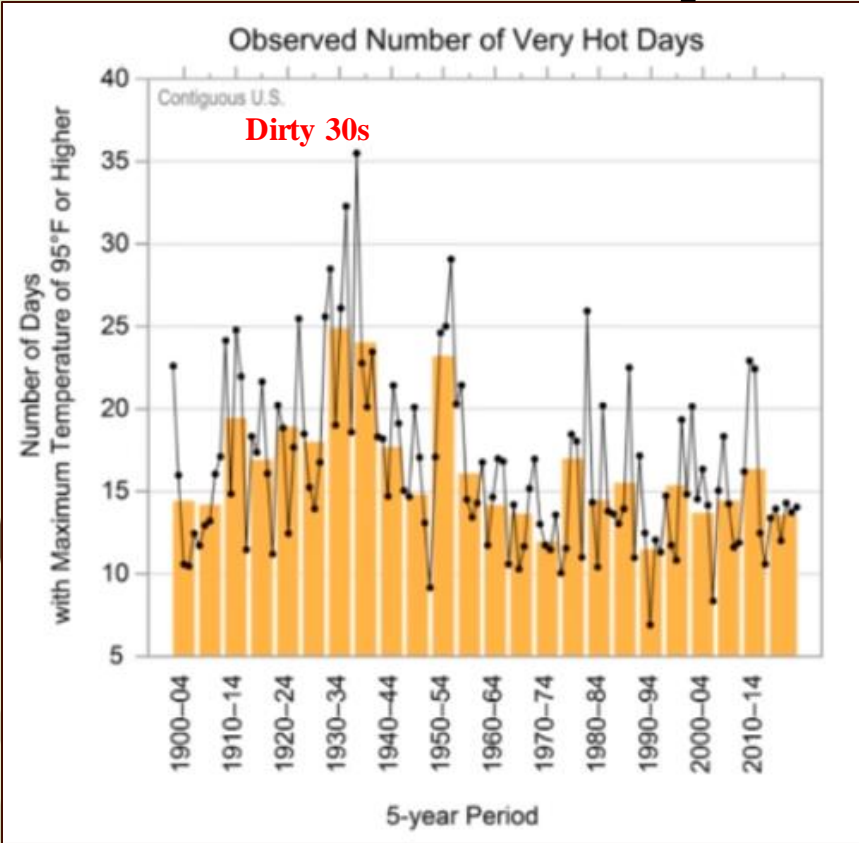
A few things have changed since 1999. The TOBS has increased to almost 0.7 °F (doubling from 0.35 °F) and has somehow transitioned to a much more negative scenario. Effectively, all the historical TOBS is now negatively biased, despite the strong positive bias that existed back around the turn of the century. You gotta love "homogenization". The other parameters are not broken out here, but the total adjustments are now roughly 2 °F (over 3 times 1999 levels) with 1.3 °F (more than 5 times 1999 levels) applicable to the non-TOBS adjustments. The adjustment frenzy has exited the scientific freeway and is accelerating further from reality as more drastic manipulation is required to maintain the alarmist's simplistic, unscientific, ideological narrative. Long live the Hockey Shtick. Not!



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# CSS-55d Climate Data Corruption Business – Tony Heller (2)

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

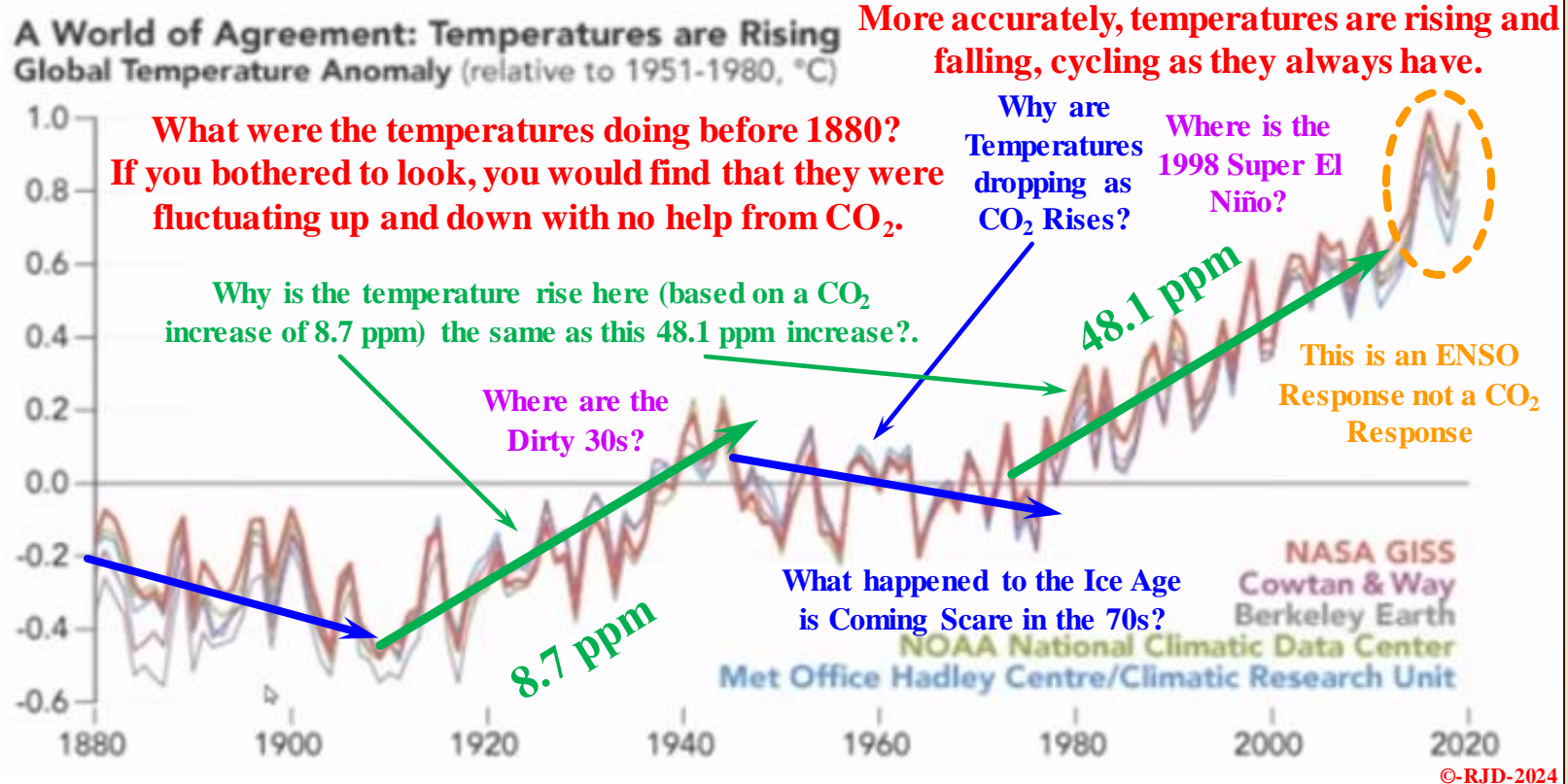


The Observed Number of Very Hot Days chart to the left (for the contiguous U.S.) was pulled from the [State Climate Summaries 2022 – NCICS Report](#) (Page 248 in the Wyoming Section). What stands out in this plot? A stark reality that temperatures were much warmer in the United States prior to 1960 (consistent with the Average Maximum Temperature plots shown earlier). You cannot homogenization the number of high temperature days out of existence like they routinely do with the average temperature data (as shown in the chart below). The measured temperature was either over 95 °F (35 °C) or the temperature was not. The figures presented in Slides CSS-55c to CSS-55f were pulled from two February 2024 videos ([The Climate Data Corruption Business](#) and [Climate Data Corruption Business \(Part 2\)](#)). Despite the very aggressive “homogenization” conducted by each of these Institutions, they are not able to hide all the climate change that has happened over this period. The Atlantic Multi-decadal Oscillation (AMO) is visible. The strong positive ENSO pulse (beginning in 2015) is also visible (and has very little to do with CO<sub>2</sub>). The 8.7 ppm CO<sub>2</sub> rise would have had little to do with the 1915 to 1945 temperature rise. So, if you believe that Solar Activity has a negligible effect, the 1915 to 1945 temperature rise would very likely be due to the ocean cycles. If the ocean cycles produced the 1914 to 1945 temperature rise, they could just as easily have produced the 1975 to 2005 temperature rise. Given the dropping temperatures from 1945 to 1975 and the

## Climate Data Corruption - 2 Tony Heller

ENSO pulse, you could easily argue that CO<sub>2</sub> influence is marginal at best. Tony alludes to collusion rather than agreement for a variety of reasons and I would have to agree with him. One

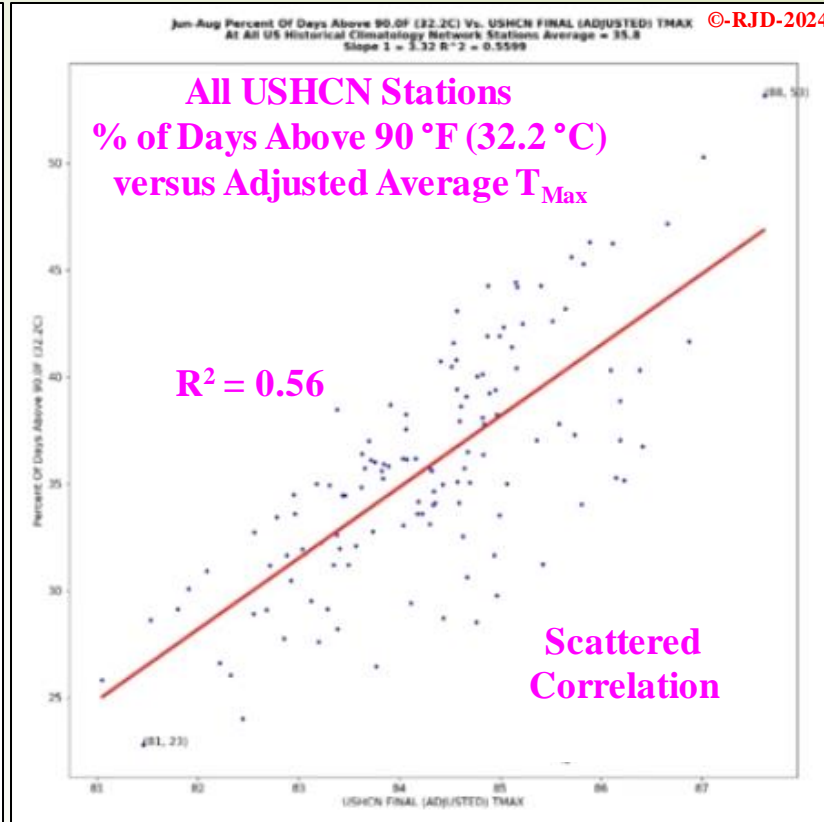
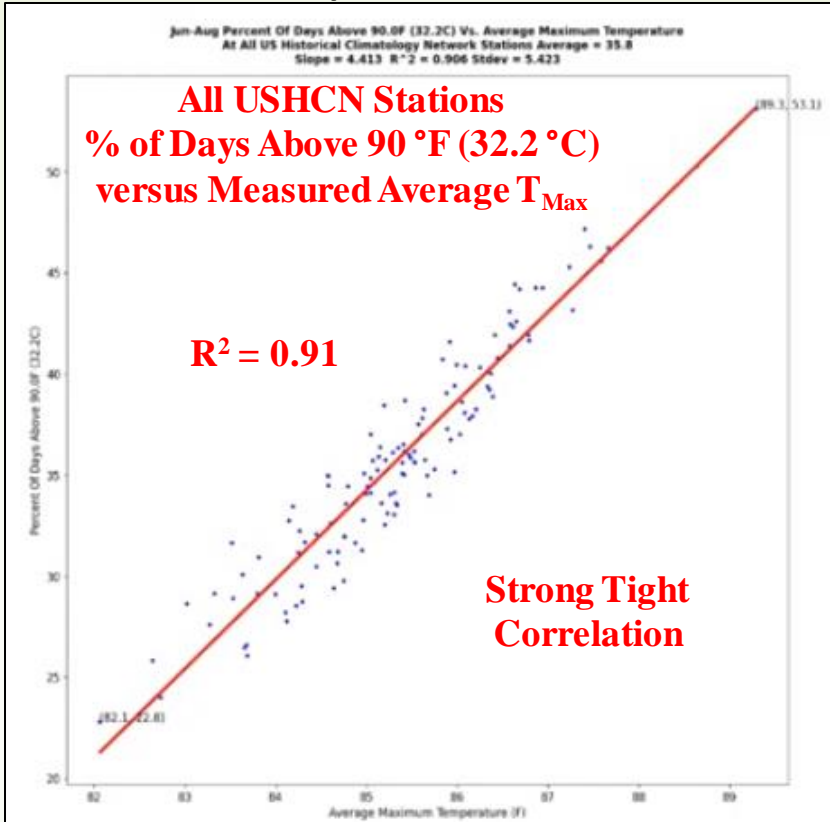
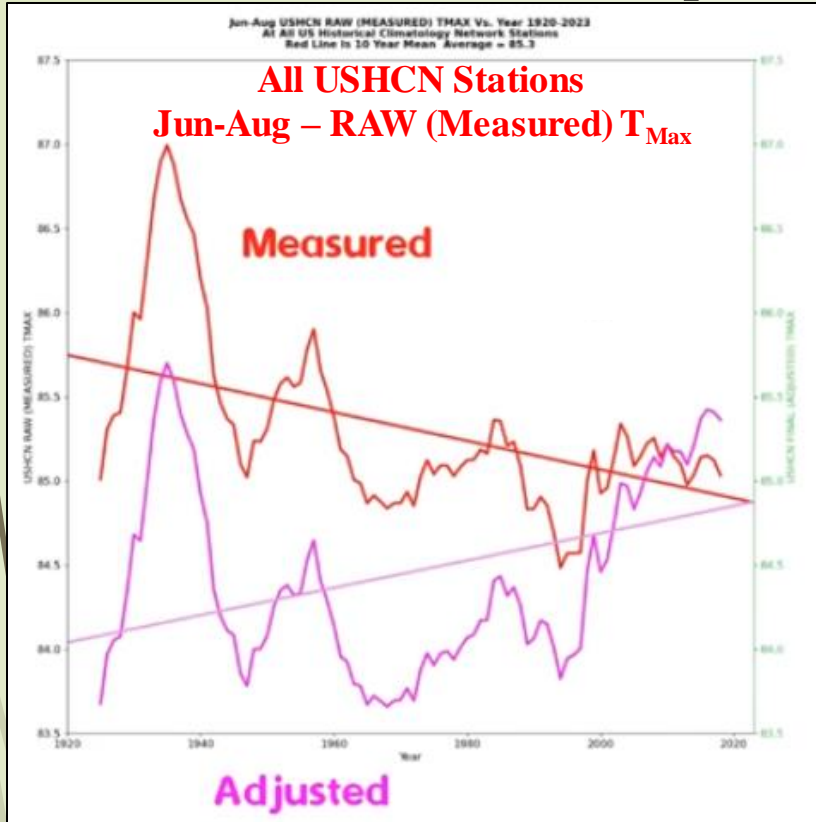
thing you will not see on the plot to the right is the satellite temperature datasets. The Lower Troposphere temperature rise determined by satellite measurements is smaller than the over-homogenized surface data estimates (and the model projections that are self-acknowledged to run way too hot). That does not fit the alarmist narrative. For those that are unaware, the UAH satellite data has recently been corroborated by NOAA STAR’s updated satellite data and previously by weather balloon data.



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# CSS-55e Climate Data Corruption Business – Tony Heller (3)

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



## Climate Data Corruption - 3 Tony Heller

The charts above present a different view of the data. Homogenizing this data has literally made the results worse. This sadly is what passes for science these days. These results would be laughable if they were not so dangerous and destructive. Today's

Climate Science is driven by the need to protect the "narrative", ignoring the real scientific and economic consequences. The three world views to the right just show how sparse the data gathering. Outside the US, Europe, Japan and parts of Australia, we have very little usable temperature data prior to the mid 20<sup>th</sup> century. Global coverage would be less than 10%. No room for data manipulation there. Remember 70%+ of the globe is covered by ocean (minimal coverage until the turn of the century) and these world views do not incorporate the polar regions, which have minimal coverage. Current coverage has improved significantly, but there are still large areas of the world that are not well represented, and much of the world's temperatures are computer generated.

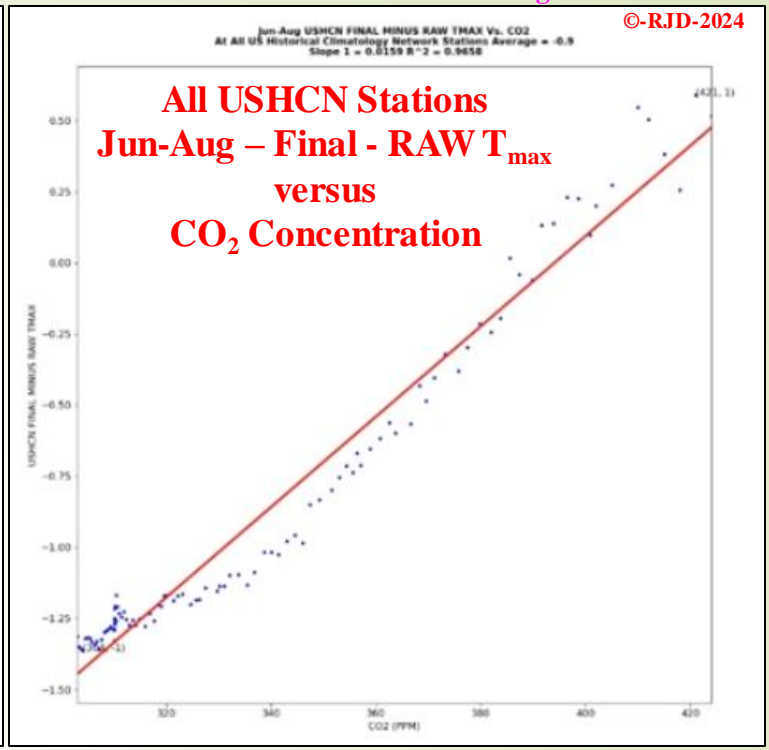
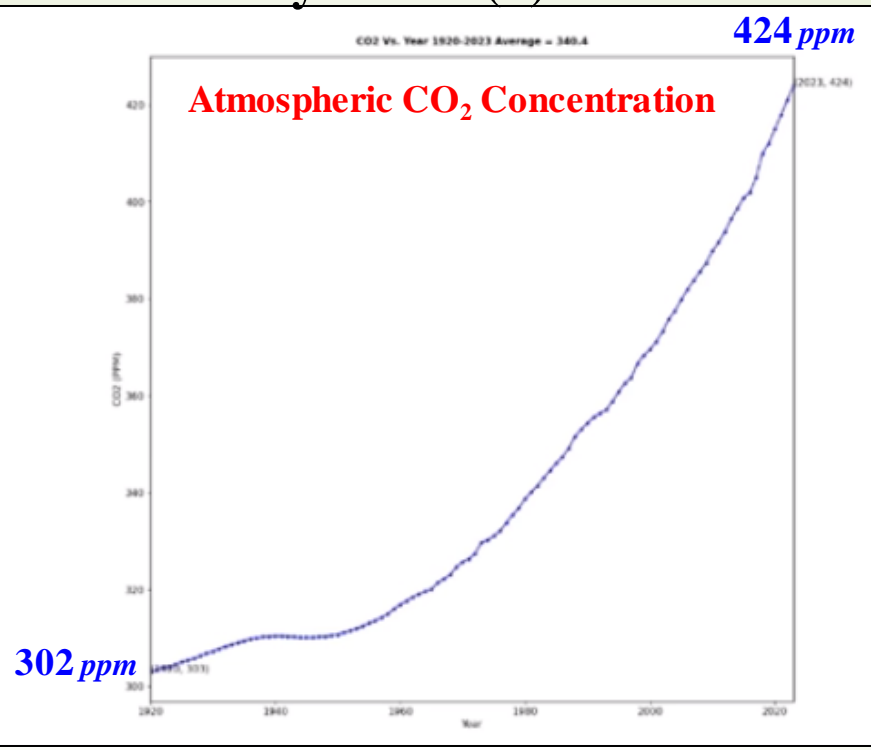
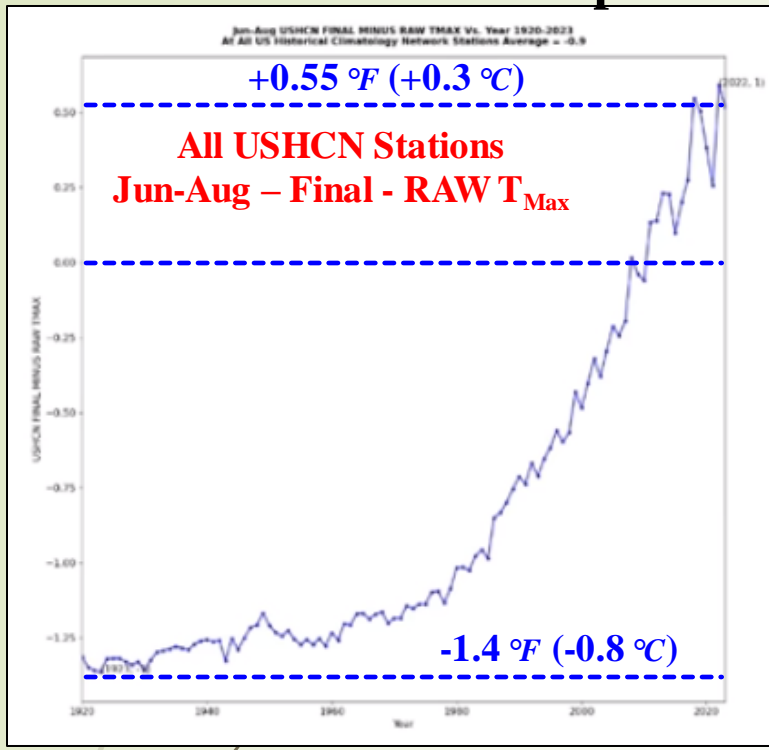


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# CSS-55f Climate Data Corruption Business – Tony Heller (4)

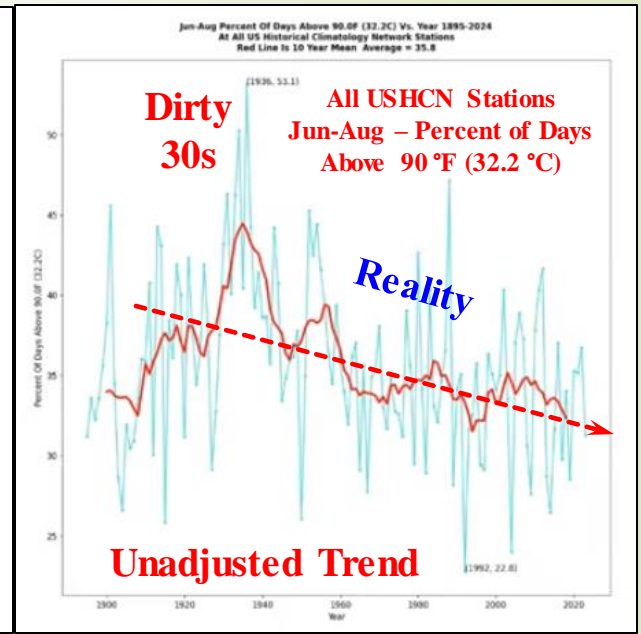
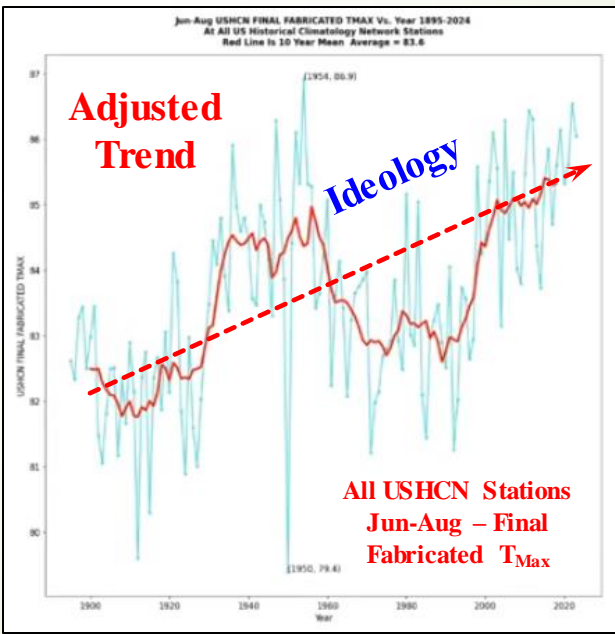
More detail? [climatechangeandmusic.com](http://climatechangeandmusic.com)



## Climate Data Corruption - 4 Tony Heller

These charts epitomize the alarmist narrative goal (Global Warming/CO<sub>2</sub>) must be stopped) and data manipulation is critical to maintaining that narrative. The natural temperature rise (independent of CO<sub>2</sub> levels) out of the Little Ice Age was enough to kick off the Global Warming Scare. But over time, "Global Warming" morphed into "Climate Change" because inconvenient data like the "PAUSE" were casting doubt on the narrative. Cue the need for new data manipulation efforts.

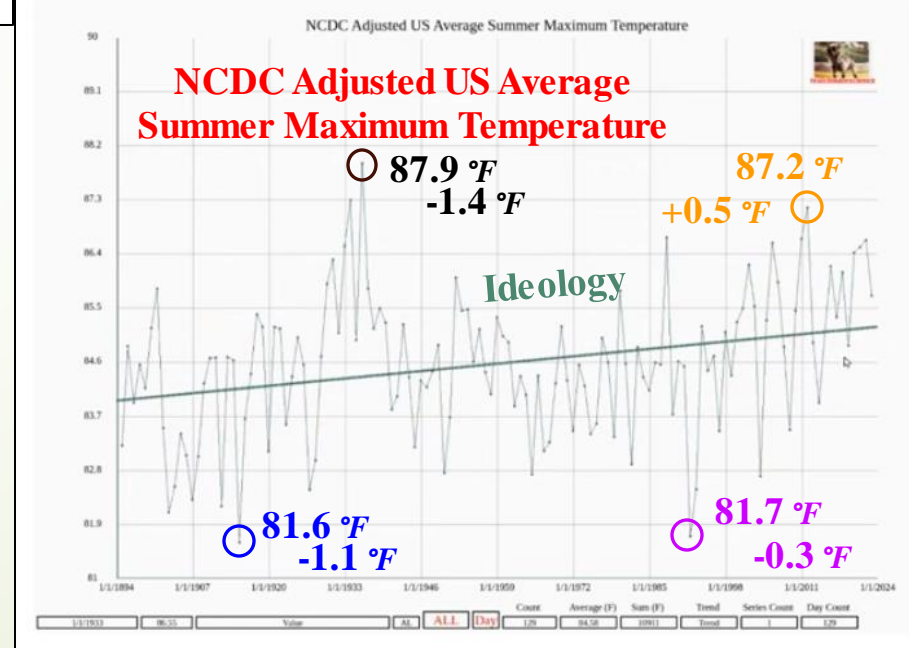
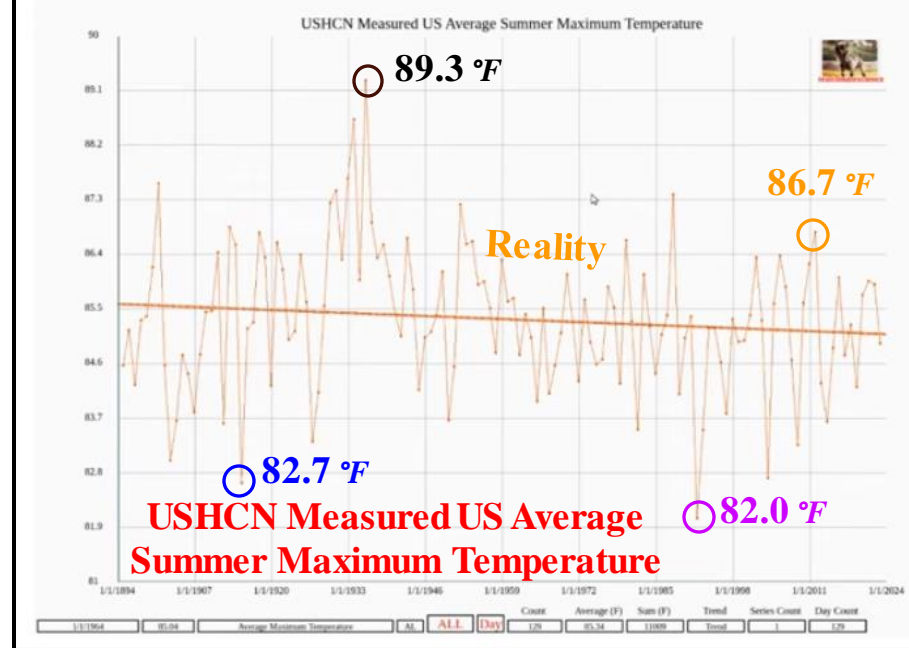
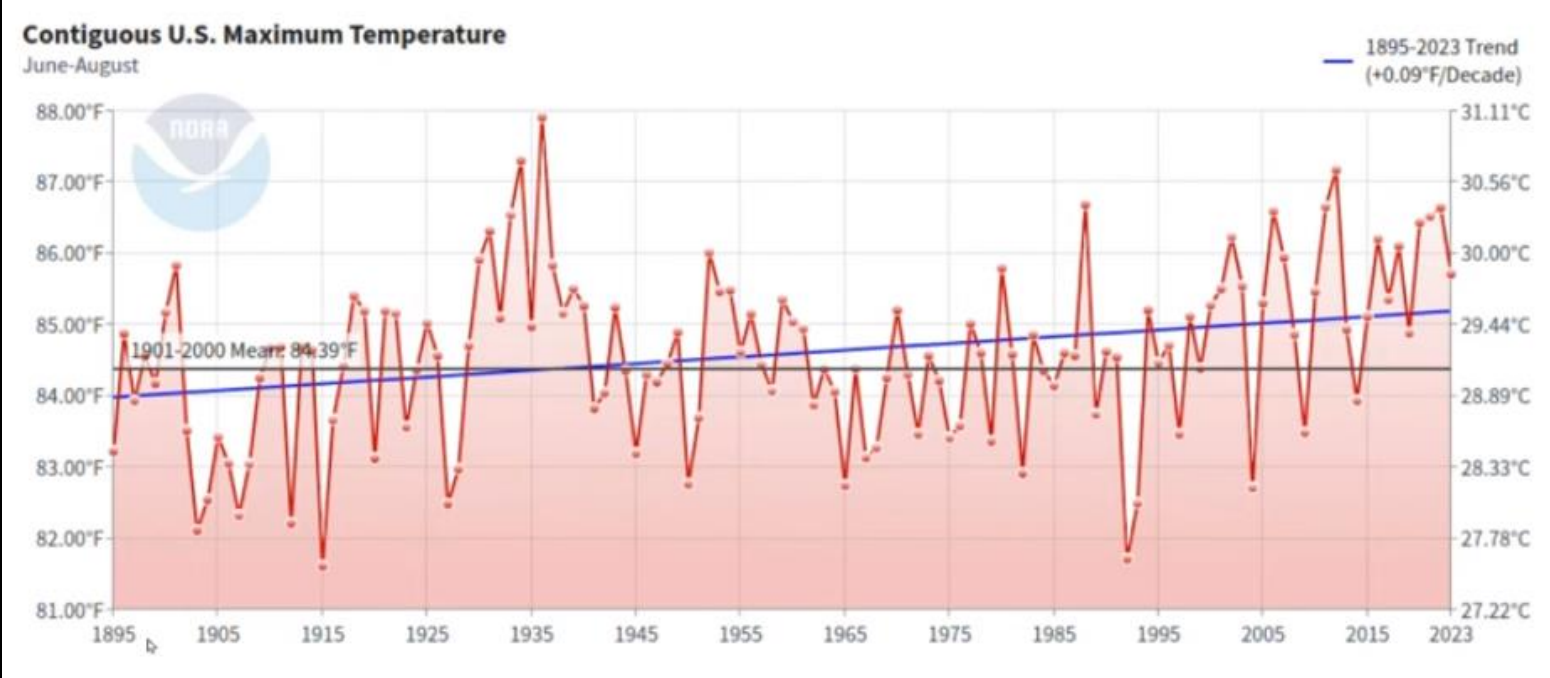
Temperature is the focus here, but in "climate science" every category (sea level, total solar irradiance (TSI), tree rings (i.e.: the Hockey Shtick), etc.). Temperature plots need to be manipulated (homogenized) to show an increase when the historical measured data shows just the opposite (the past was warmer). The top three charts show how the trends are inverted. In direct contradiction to the Scientific Method, the temperature data is manipulated to match the CO<sub>2</sub> concentration curve (the narrative). The Scientific Method states that the theory (in this case, narrative) needs to be modified to fit the empirical data. Not surprisingly, that process yields a linear relationship shown in the top right chart (a guide to how much manipulation is required on any future temperature measurements).



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# CSS-55g US Climate Fakery – Tony Heller (1)

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



The graph above comes from [NOAA's Climate at a Glance](#) website and shows the contiguous US summer afternoon temperatures since 1895 (along with the rising trend line). This is where the deception starts. As Tony points out, there are no disclaimers or warnings that the data has been manipulated (and significantly).

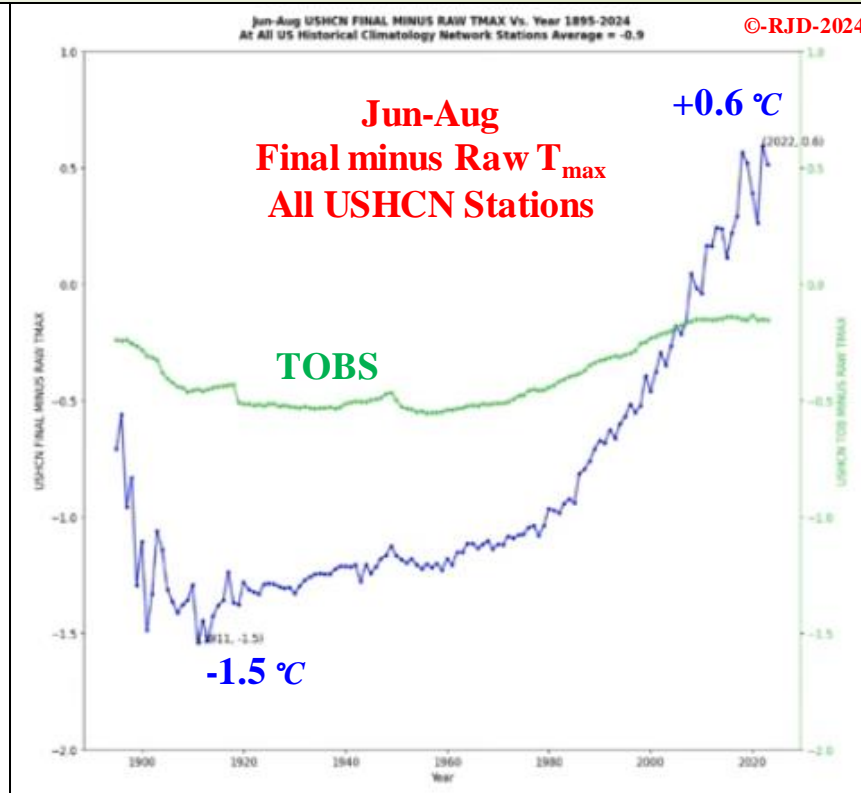
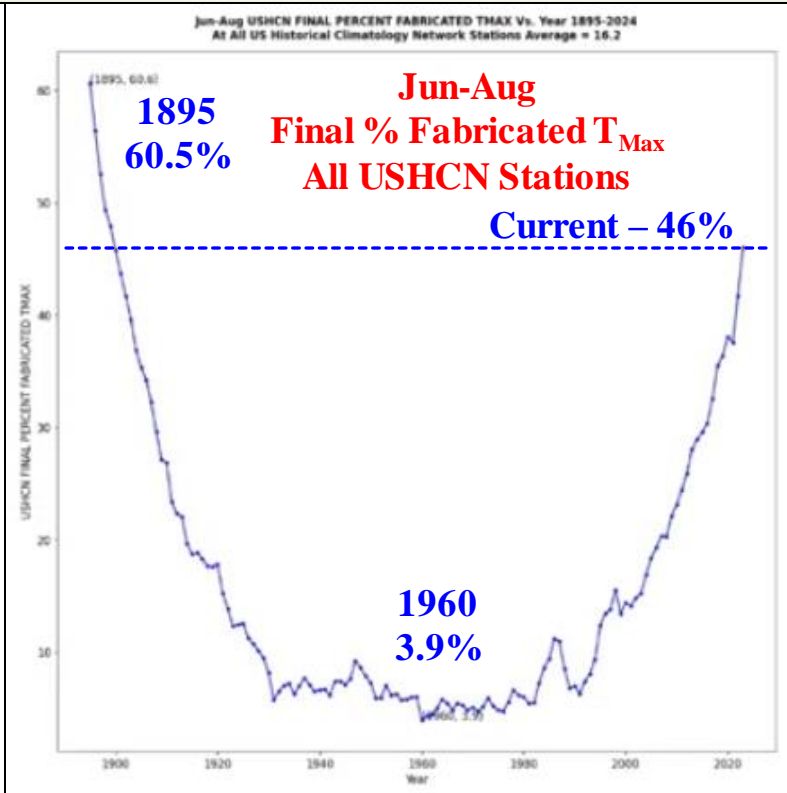
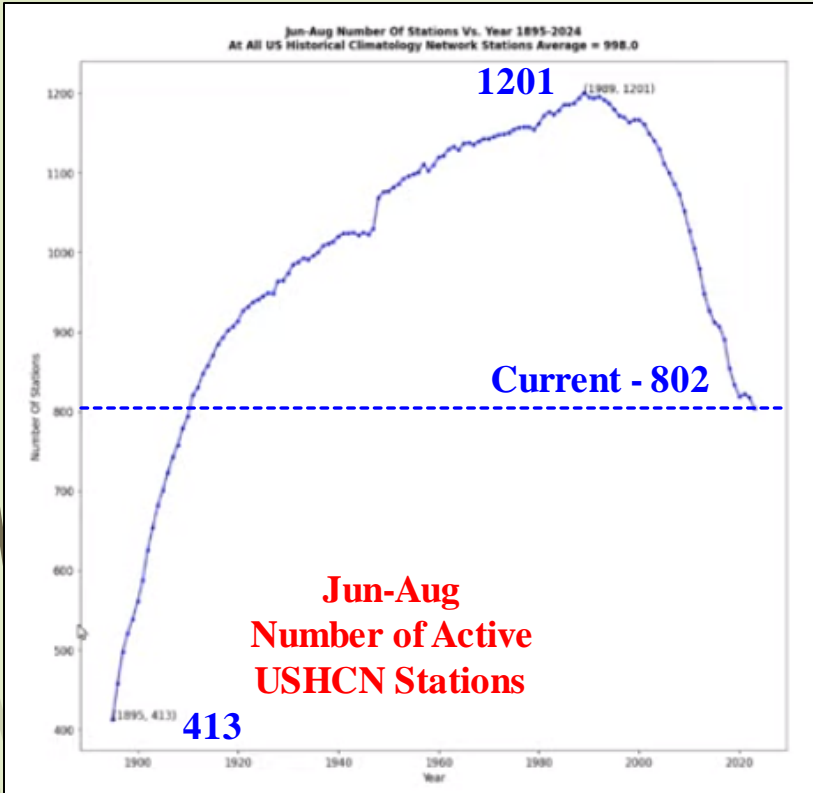
There are also no indications as to the potential error built into the temperatures. Those errors could be significant in the 1800s and the first half of the 20<sup>th</sup> century given the very poor station distribution and lack of ocean readings. NOAA should hold itself to a higher scientific standing but has unfortunately succumbed to the unrelenting ideological pressure rampant in today's society. To be fair to NOAA, they have made a couple of course corrections in their "Climate Change" voyage that are positive. They have recognized that we are

**1 - US Climate Fakery Tony Heller**

Entering the next Grand Solar Minimum and have forecasted virtually no sunspots for Solar Cycle 26 (as per my [OPS-52 – Solar Activity – NOAA Forecast](#) post). They have also recalibrated their NOAA STAR satellite global Lower Troposphere Temperature estimates. Details in my [CSS-40 – Satellite Temperature Comparisons](#) post. The University of Alabama, Huntsville (UAH) used to be an outlier satellite data set and was quickly dubbed irrelevant by the alarmist community. With NOAA now corroborating the UAH dataset, indignant dismissal is no longer a reality. Is NOAA attempting to salvage their scientific integrity or are they just covering their butts? We shall see!

The two charts on the right show the raw measured temperature data and the final adjusted product (consistent with the plot above). A few of the data points have been highlighted to show some of the individual adjustments. Like the earlier plots, recent temperatures are adjusted higher and more historical temperatures are adjusted lower.

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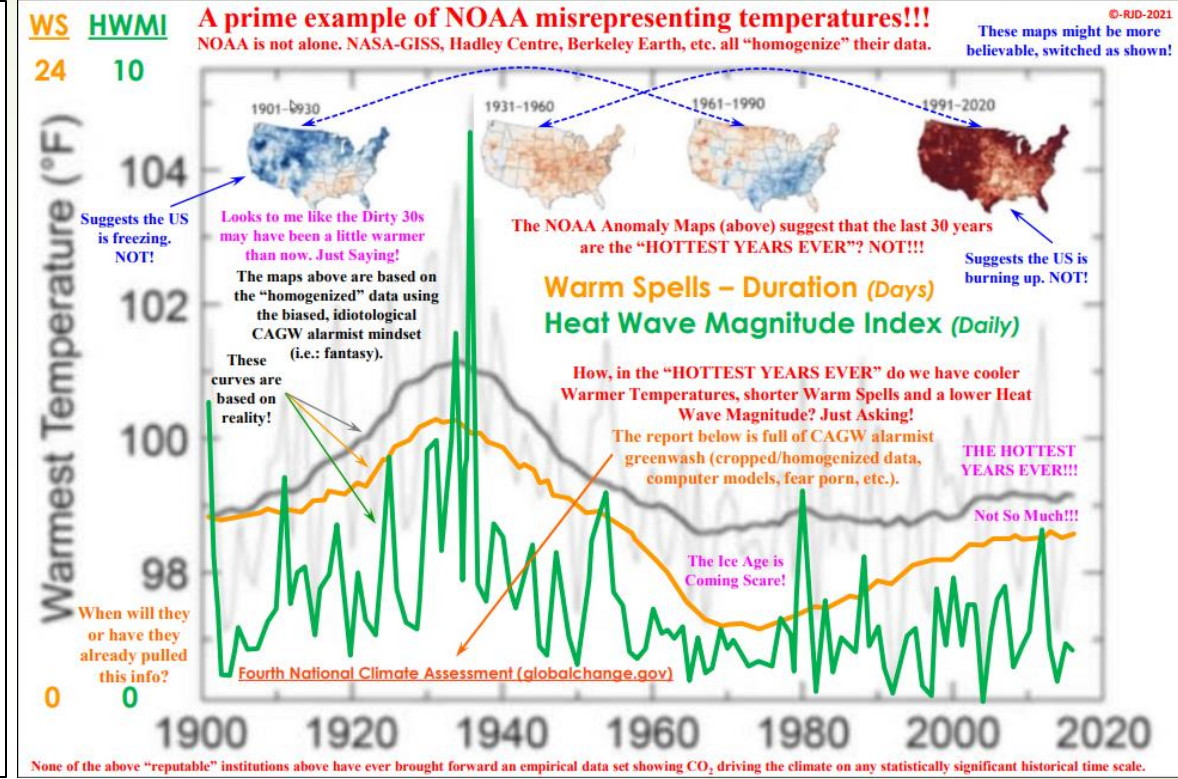
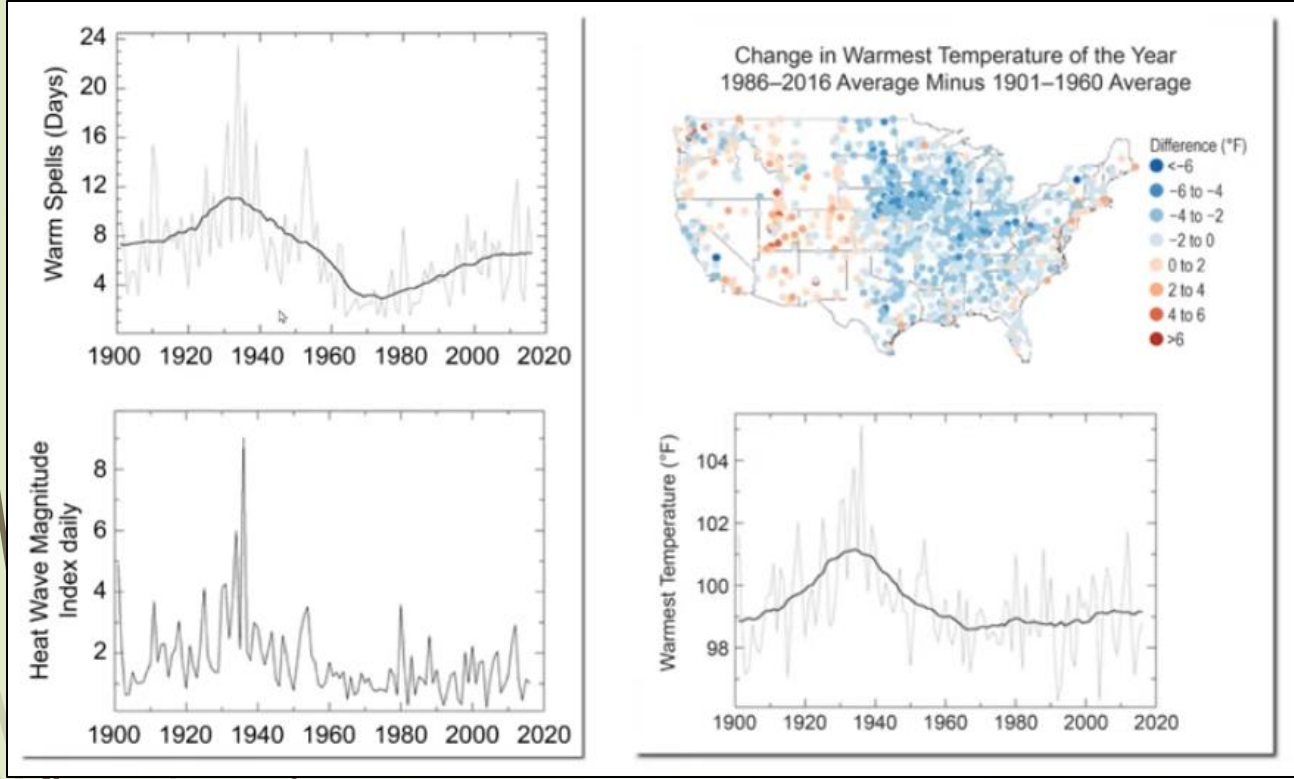
**2 - US Climate Fakery Tony Heller**

If you doubt that the temperature data is manipulated, you should consider these images carefully. There are 1,218 weather stations in the US Historical Climatological Network (USHCN). The number of active stations peaked in 1988 at 1201 (98.6%).

Deactivation has brought the number of stations down by 1/3 to 802 (shown in the chart above and the maps to the left). One third of the stations are still reporting an official temperature despite no actual measurement. The fabrications go further than that. In 1895, justifiably so since many stations did not yet exist, 60.5% of the stations were fabricated. From 1950 to 1990, fabrication was reduced to less than 10%, but we are back to a 46% fabrication level. And that does not count the individual station over-“homogenization” that is routinely applied in the US and elsewhere.



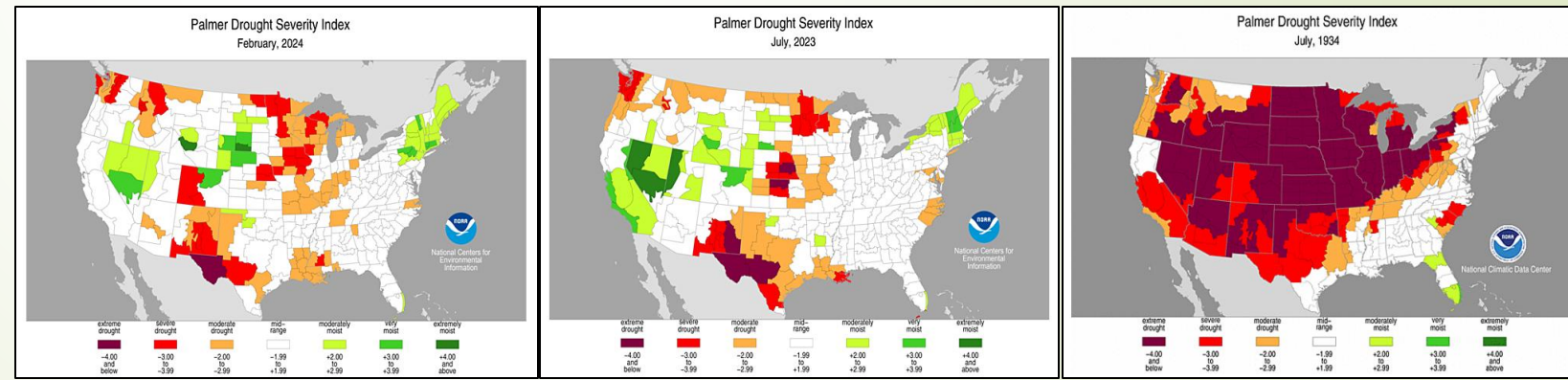




In his US Climate Fakery video, Tony also touched on temperature related parameters like heat wave index, Warm Spells and Warmest Temperatures. The image above was pulled from the 2017 National Climate Assessment and shows very definitively that the US experienced much higher temperatures and related events during the early 20<sup>th</sup> century than we do today (and that includes the infamous Pacific Northwest "Heat Dome" in 2021). The chart in the upper right is from my

### 3 - US Climate Fakery Tony Heller

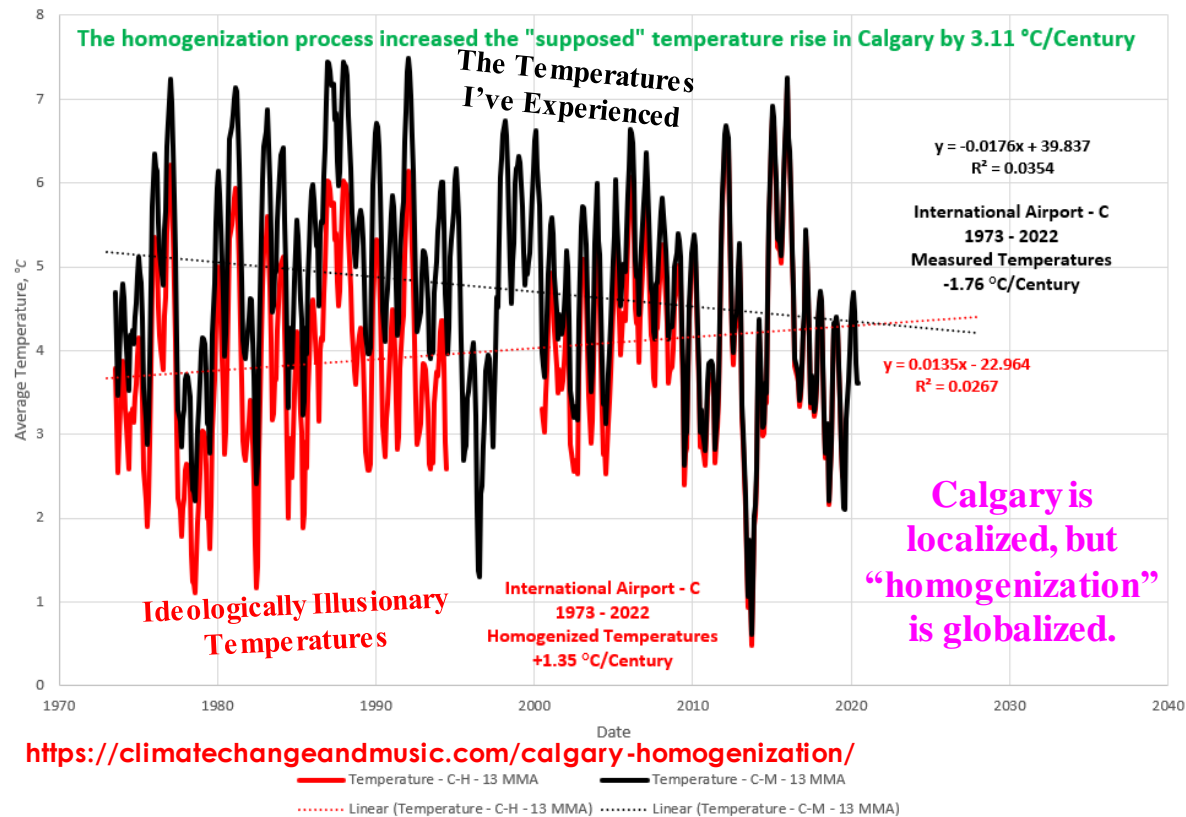
[OPS-49 – Temperature Manipulation](#) post (May 2021). The three curves in the upper left plot have been consolidated in the upper right. More discussion and links are available there and, in my [CSS-8 – Earth Day 2021](#) post. For those snowflakes that are trembling in fear over the "droughts" of today, the map to the far right shows the drought conditions in July 1934. We had no problems surviving the July 2023 "droughts" (middle map) and the February 2024 conditions (left map) do not look all that menacing either. Extreme Weather Events (drought included) have been statistically flat or trending down, not up as CO<sub>2</sub> concentrations have been rising. Not good for the narrative ([CSS-52 – Extreme Weather Events](#))



and, in my [CSS-8 – Earth Day 2021](#) post. For those snowflakes that are trembling in fear over the "droughts" of today, the map to the far right shows the drought conditions in July 1934. We had no problems surviving the July 2023 "droughts" (middle map) and the February 2024 conditions (left map) do not look all that menacing either. Extreme Weather Events (drought included) have been statistically flat or trending down, not up as CO<sub>2</sub> concentrations have been rising. Not good for the narrative ([CSS-52 – Extreme Weather Events](#))

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Calgary Temperature Profiles - 13 MMA - International Airport C Only



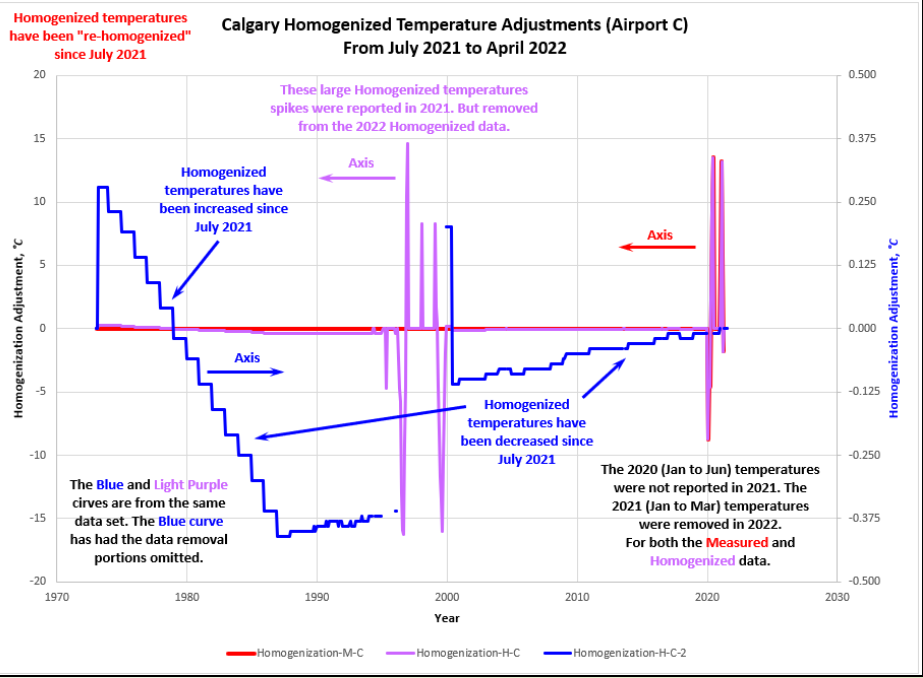
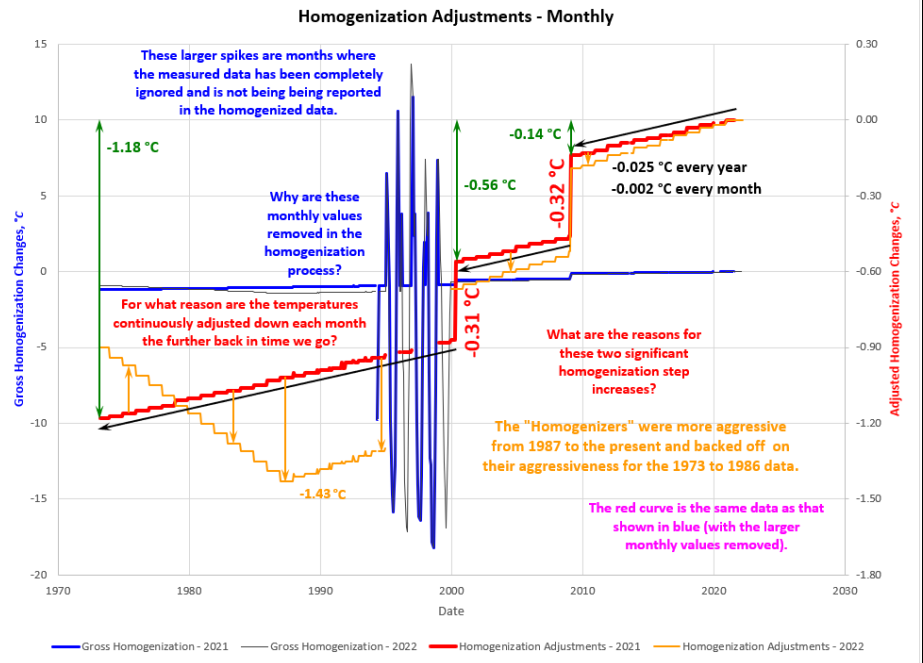
<https://climatechangeandmusic.com/calgary-homogenization/>

## Homogenization Calgary

Urban Heat Island Effect (UHIE)? There is significantly more detail in my [CSS-19 - Calgary - Homogenization](#) post. The focus here is the second measurement system that was installed in 1973. Since 1973, the measured temperatures have declined at 1.76 °C /century. Through the magic of homogenization, Calgary's "official" temperature record has been increasing at 1.35 °C/century rate. A little basic math and we can see that Calgary's temperature have been adjusted upward by 3.11 °C /century. This is a ludicrous change, given the adjustments should be downward in an area that is affected by the UHIE. But not withstanding that point, how have Calgary's temperatures been homogenized (i.e.: manipulated)? The answer (structure, not rationale) can be seen in the two plots to the left. Note, the "homogenization" is strong (and complicated) in this one. For those that want to investigate the details further (with larger images), use the CSS-19 link or URL above. The Upper plot lays out the monthly adjustments. The Lower plot shows a one-time adjustment that occurred sometime between July 2021 and April 2022. I fail to see how these adjustments can be justified. These are not TOB, equipment change, location change, etc. adjustments and we can assume Calgary uses modern accurate equipment. So, with all due respect to the "algorithms", I experience measured temperatures, not "homogenized" temperatures.

## CSS-55j Homogenization Discussion Calgary

I will finish off with my own experiences with homogenization". Starting at home, I looked at Calgary. The official weather station is located at the International Airport. The original station was set up in 1884 (outside the city). Not surprisingly, the airport did not exist at the time. The airport was built in the late 1930s and has since been gradually incorporated into the city. Can you say



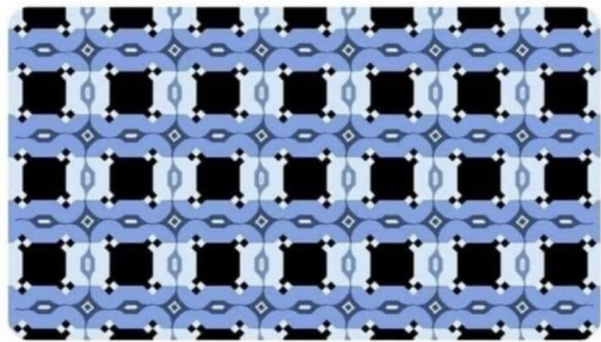
More detail? [climatechangeandmusic.com](https://climatechangeandmusic.com)

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# CSS-55k Homogenization - Australia

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

Blue stripes are parallel



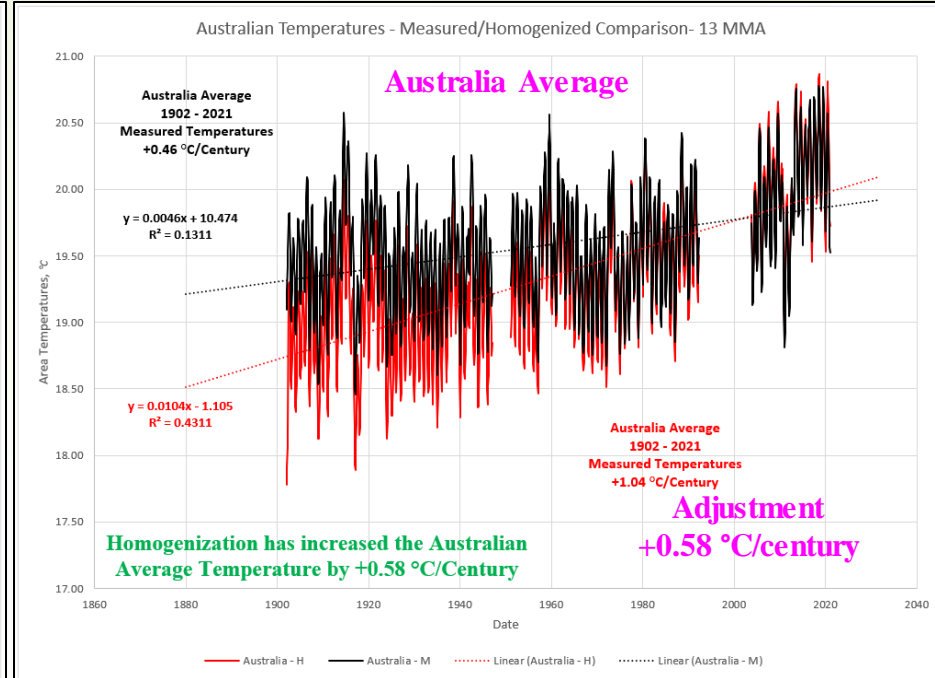
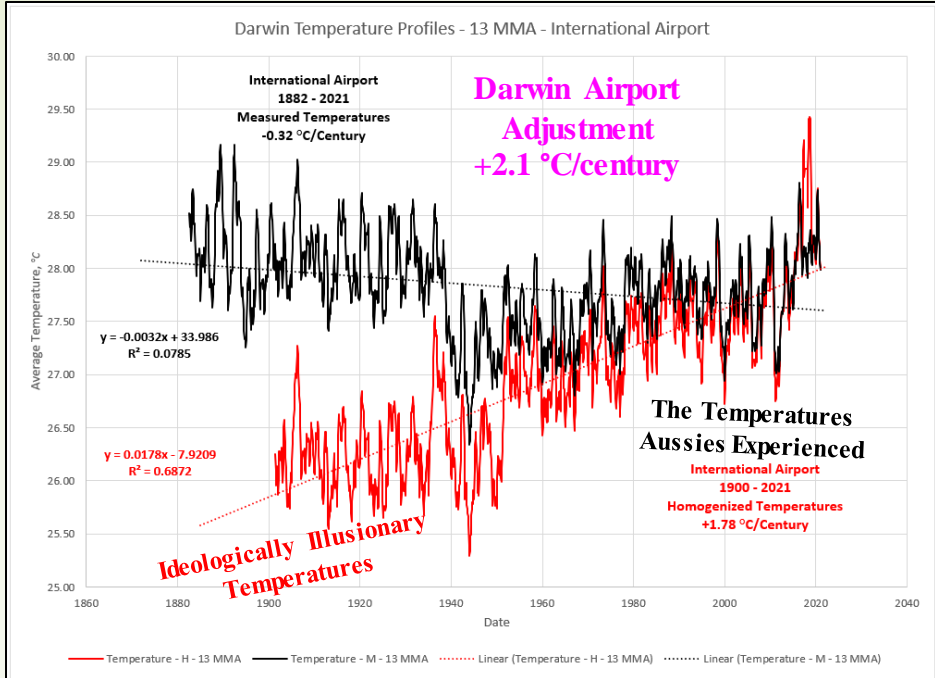
My [CSS-13 - A Look at Homogenization](#) post reviewed the 48 long-term Australian weather stations (pre-1911). Overall, the Australian temperature trend has been homogenized up by 0.58 °C /century. The most notable individual station is the

Darwin Airport (upper left). The data has been adjusted by.....

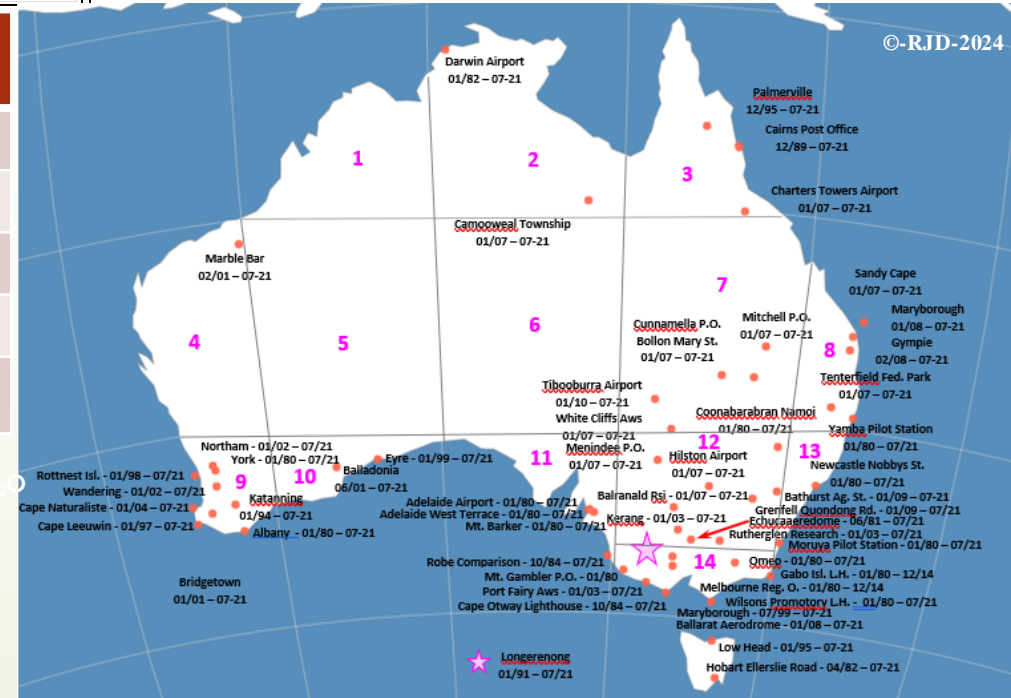
## Homogenization Australia

2.01 °C/century. Is that adjustment real

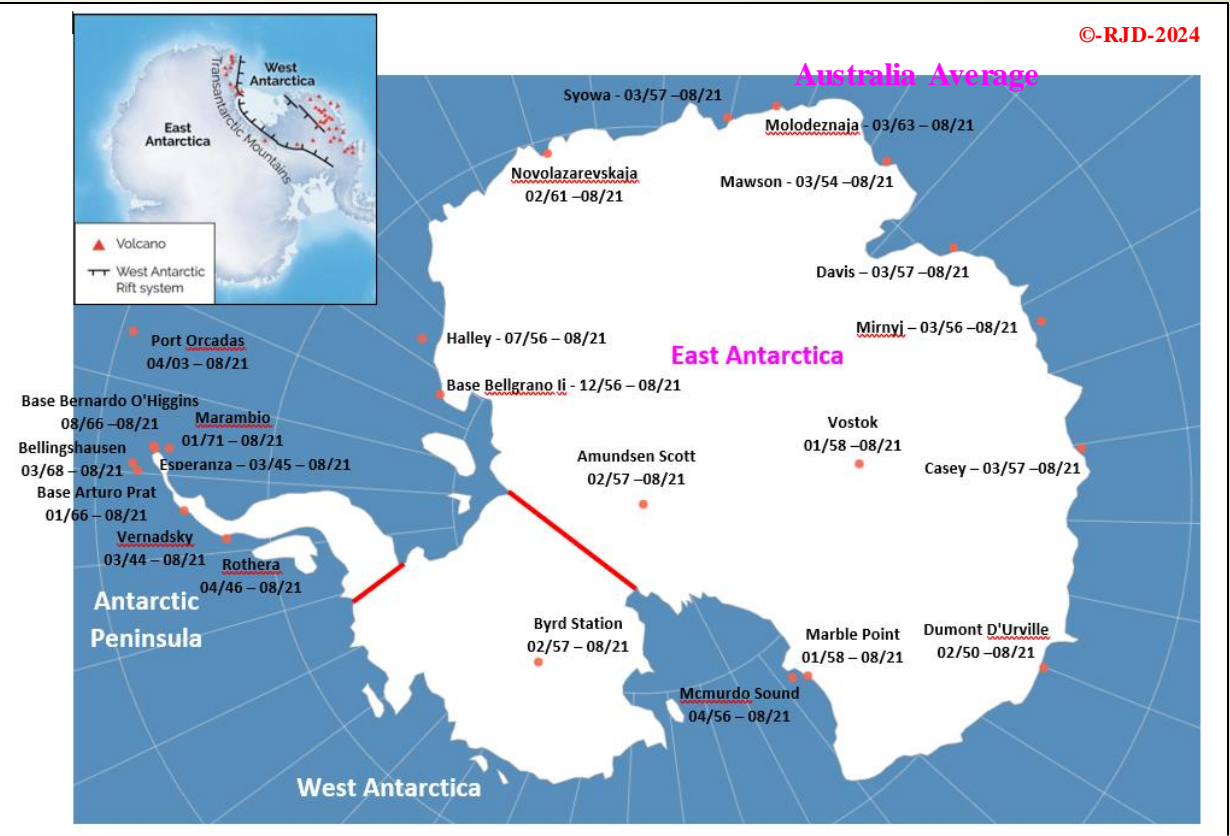
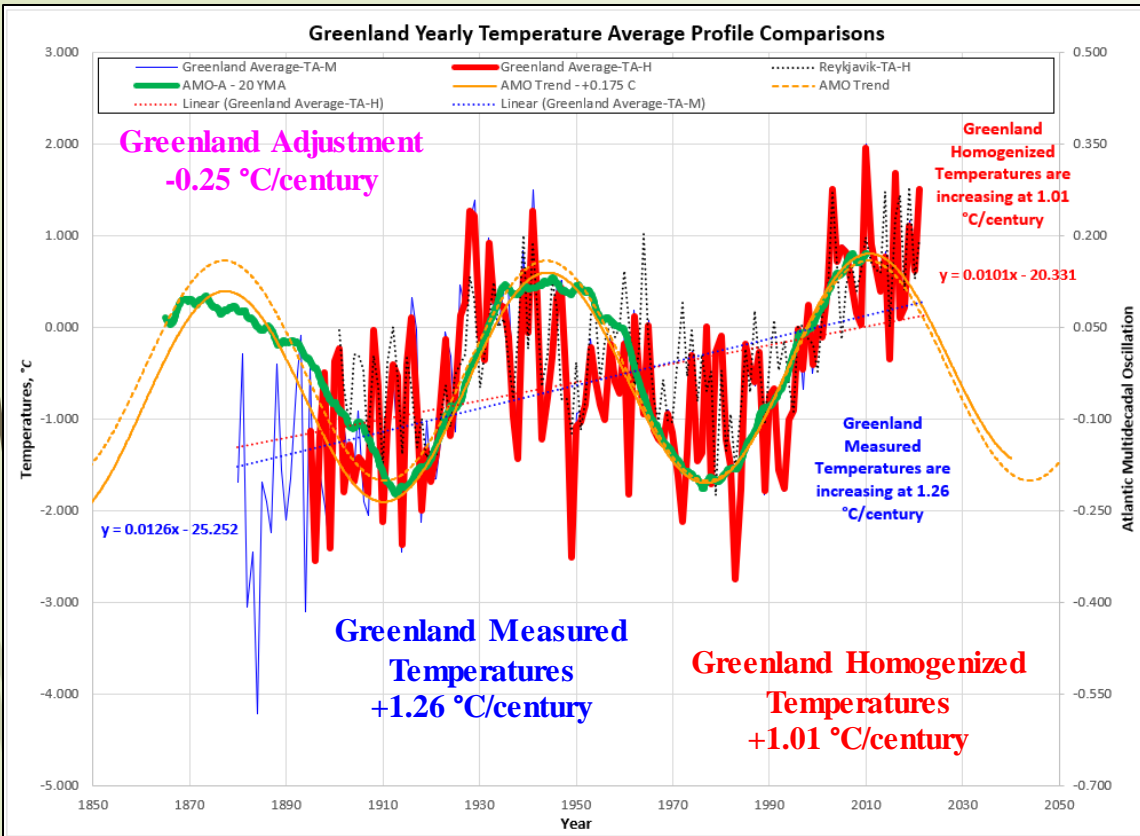
or an optical illusion like the blue stripes above? In my opinion, there is certainly some sleight of hand in play through the magic of "homogenization". A more apt description of homogenization might be an "ideological illusion"? This is not a fully comprehensive look at Australia's temperatures, but the bias is very evident. Only 7 of the 48 (≈15%) long-term stations show a negative change in temperature trend. As with most of the world, Australia is weather station challenged. Outside of the SE and SW corners of the country/continent, there are very few long term weather stations. That situation has only improved marginally, with better coastal but still poor interior coverage. Data manipulation is real and unscientific.



Homogenization Parameters	Temperature, °C/century	Comments
Positive Changes	+0.56	41 of 48 Stations
Negative Changes	-0.27	7 of 48 Stations
Maximum Positive	+2.10	Darwin Airport
Maximum Negative	-0.65	Tibooburra Airport
Overall Average	+0.51	Arithmetic Station



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



## Antarctica Homogenization Greenland



My [CSS-13 – A Look at Homogenization](#) post also included a look at Antarctica’s long-term weather stations. Notably there is very little homogenization at our southern pole. These are all research stations and would have had up-to-date equipment and virtually no human impact (UHIE, agricultural use, etc.). There should be little to no need for homogenization. I suspect the alarmists would love to homogenize, given Antarctic temperatures are generally flat, if not declining. Given the lack of stations, there is room for interpretation. Satellite temperature data is very likely the most accurate Antarctic estimate. Those temperatures have been statistically flat since 1979. Antarctica is and will continue to be cold with minor melting occurring in the small Antarctic Peninsula and some geothermal induced melting in West Antarctica. Greenland temperatures have undergone some minor homogenization that reduced measured temperatures by 0.25 °C (as shown in the upper left). Temperature manipulation is minor in the polar regions. What the polar temperatures show is an obvious disregard for the alarmist CO<sub>2</sub> narrative. CO<sub>2</sub> is definitely not raising temperatures in Antarctica. And Greenland/Iceland temperatures are reacting to ocean cycles, not CO<sub>2</sub>. Additional clarification can be found in [CSS-13](#) and my [CSS-23 – Greenland/Iceland Homogenization](#) and [OPS-72 – Where Are Greenland Temperatures Headed](#) posts.

Area	Temperature Decline, °C/decade Arithmetic Average	Temperature Decline, °C/decade ERA5 Study
East Antarctica	-0.277	-0.70 ±0.24 (-0.46 to -0.94)
West Antarctica	-0.934	-0.42 ±0.37 (-0.79 to -0.05)
Antarctic Peninsula	+0.035	+0.18 ±0.23 (-0.05 to +0.41)

Satellite temperature data is very likely the most accurate Antarctic estimate. Those temperatures have been statistically flat since 1979. Antarctica is and will continue to be cold with minor melting occurring in the small Antarctic Peninsula and some geothermal induced melting in West Antarctica. Greenland temperatures have undergone some minor homogenization that reduced measured temperatures by 0.25 °C (as shown in the upper left). Temperature manipulation is minor in the polar regions. What the polar temperatures show is an obvious disregard for the alarmist CO<sub>2</sub> narrative. CO<sub>2</sub> is definitely not raising temperatures in Antarctica. And Greenland/Iceland temperatures are reacting to ocean cycles, not CO<sub>2</sub>. Additional clarification can be found in [CSS-13](#) and my [CSS-23 – Greenland/Iceland Homogenization](#) and [OPS-72 – Where Are Greenland Temperatures Headed](#) posts.