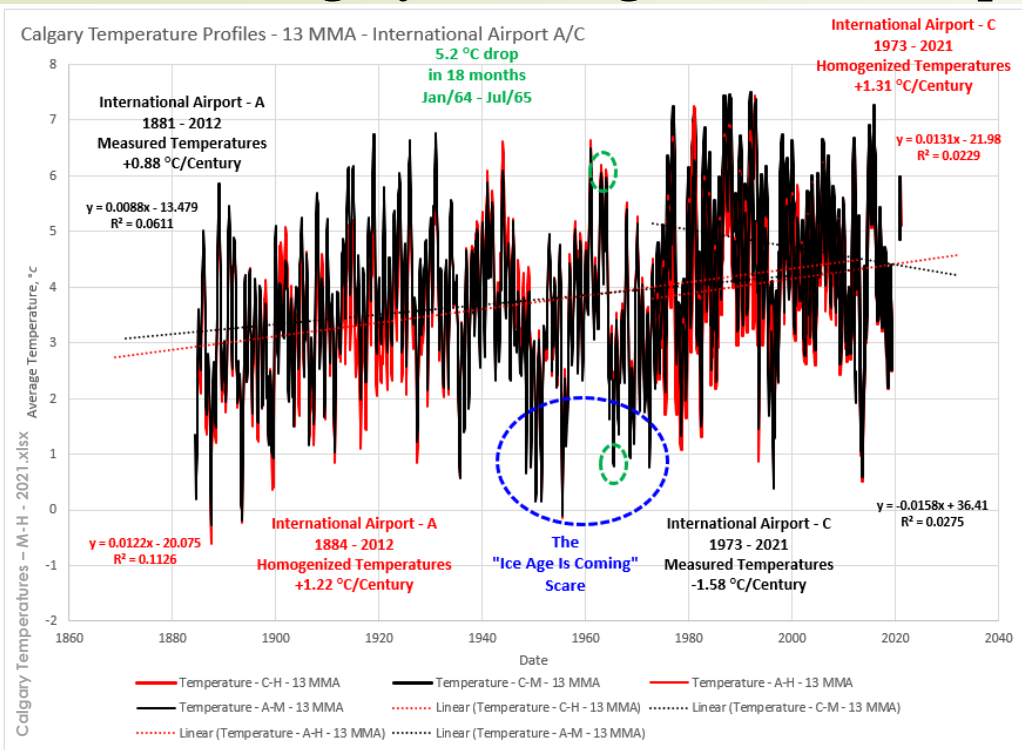
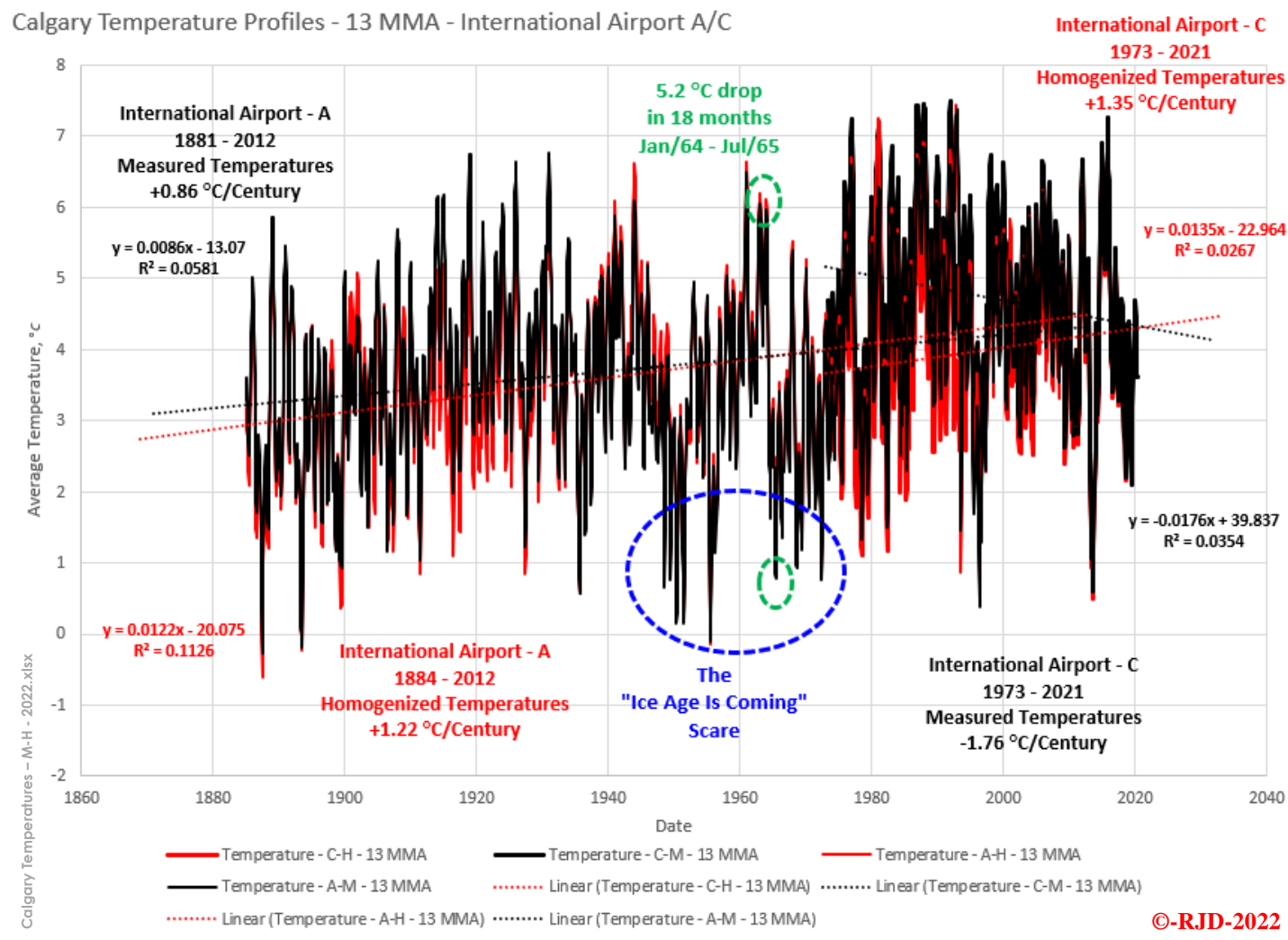


GSM – Grand Solar Minimum. The real “Climate Change” existential threat is right around the corner. Do the Research!



I had a quick look at homogenization in my CSS-13 – A Look at Homogenization post. That included a discussion on Calgary Temperatures (along with other areas of the world). The general discussion has not changed over the last year. But strangely, the “official” homogenized temperature data has changed. Over the first four slides, I am presenting two graphs. The smaller graph to the left is the data and analysis as of July 2021. The larger graph below is the data as of April 2022. The official weather station is located at the Calgary International Airport. There are two sets of data. The original equipment (International Airport A (IA-A)) was in operation from July 1884 to June 2012. A second set of equipment (International Airport C (IA-C)) has been operating since March 1973.

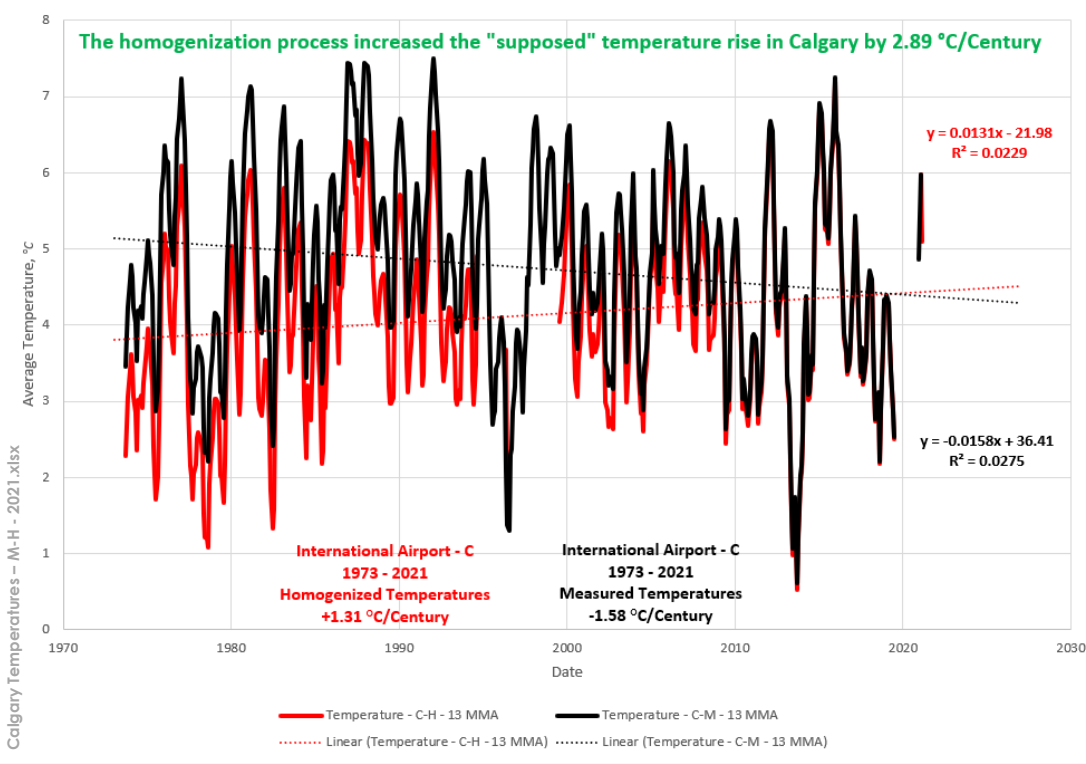


## Airport Temperatures A&C

The older data has not been changed (apart from the original homogenization). The IA-A measured data increased at a 0.88 °C/century pace. The homogenized IA-A data shows an increase of 1.22 °C/century. The slight drop (to 0.86 °C/century) in measured data is due to both the exclusion and the addition of a few months of data from 2021 to 2022. Shown/explained on slide CSS-19e. I would be curious to see why homogenization would increase the temperature incline at a location that was most likely very rural back in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. With aggressive growth, the airport is almost surrounded by the city. The Urban Heat Island Effect (UHIE) would suggest that the homogenization should be in the opposite direction. The airport location is warmer due to the UHIE. Without the development, the temperature increase would not have been as large. The discussion is a bit irrelevant since neither temperature rise is dangerous and the future temperatures (measured and homogenized) are very likely to fall further as we move further into the forecasted Grand Solar Minimum (GSM) and the Atlantic Multi-decadal Oscillation (AMO) cool phase.

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

Calgary Temperature Profiles - 13 MMA - International Airport C Only

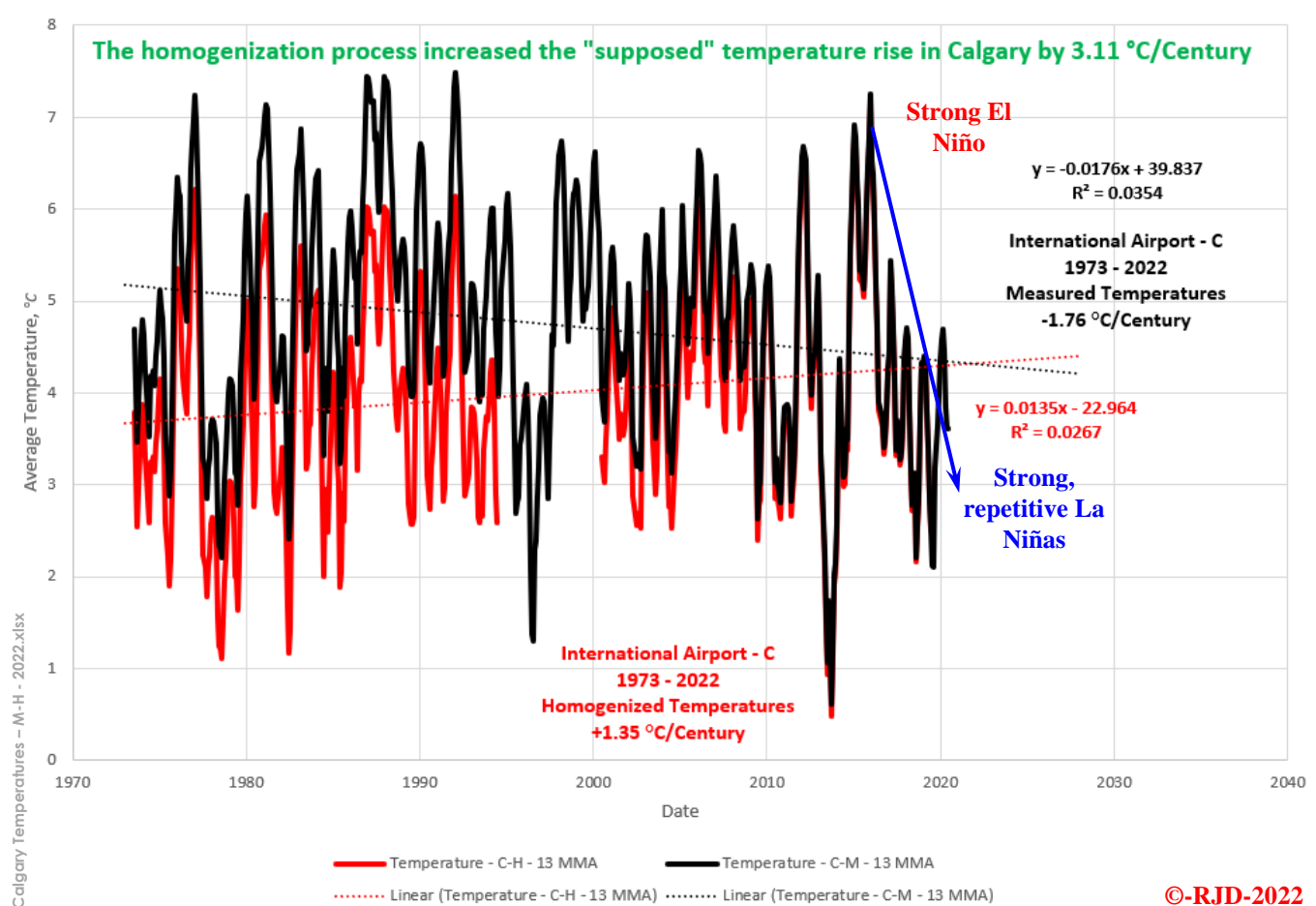


## Airport Temperatures C – 13 MMA

The 2022 data set (IA-C) has a similar, but slightly more exaggerated profile. Measured temperature declines are now at a 1.76 °C/century pace and the “homogenized” inclines have been increased to 1.35 °C/century. That is a 3.11 °C/century difference. So again, why and how are Calgary temperatures being “homogenized”? Some of that change is due to the new data (post July 2021), but a large portion is due to a “re-homogenization”. More discussion on that later. The higher measured temperature declines are not surprising. The late 2015 peak in Calgary temperatures is consistent with the peak global temperatures during the same period. That temperature increase was the direct result of the El Niño Southern Oscillation (ENSO). A strong El Niño (ENSO warm phase) raised temperatures around the world and the strong La Niñas (ENSO cool phases) since then have generally cooled temperatures significantly. Hmmm..., where is that CO<sub>2</sub> warming?

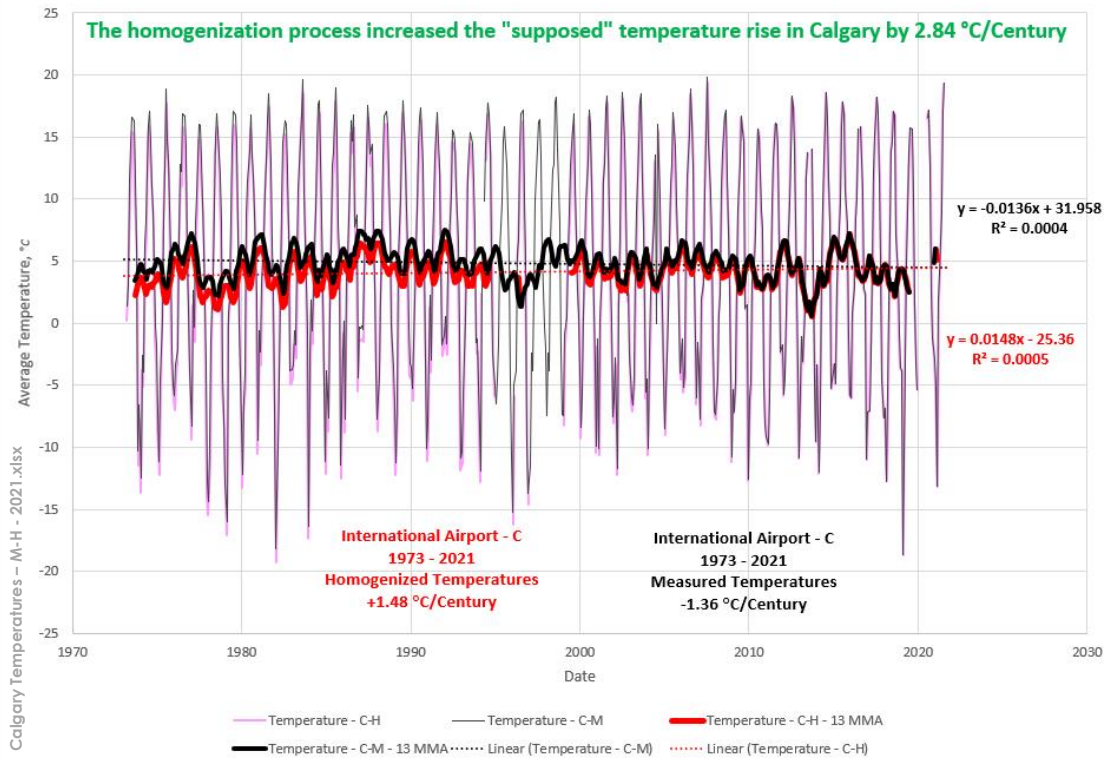
The more interesting story lies within the IA-C data set. Based on the data available back in July 2021, the measured temperatures were declining (I repeat, declining) at a rate of 1.58 °C/century. Through the magic of homogenization, Calgary’s official temperature record was somehow transformed to a temperature rise of 1.31 °C/century. That is a 2.89 °C/century manipulation since 1973. I am pretty sure, by 1973, we had modern equipment and knew how to measure temperatures accurately. Begs the questions, why and how are the Calgary temperatures being “homogenized”? That pesky UHIE is still also front and center (and probably more prevalent given the rapid urban growth and encroachment experienced around the airport over this short period). Strange, how measured temperatures declined despite the UHIE.

Calgary Temperature Profiles - 13 MMA - International Airport C Only



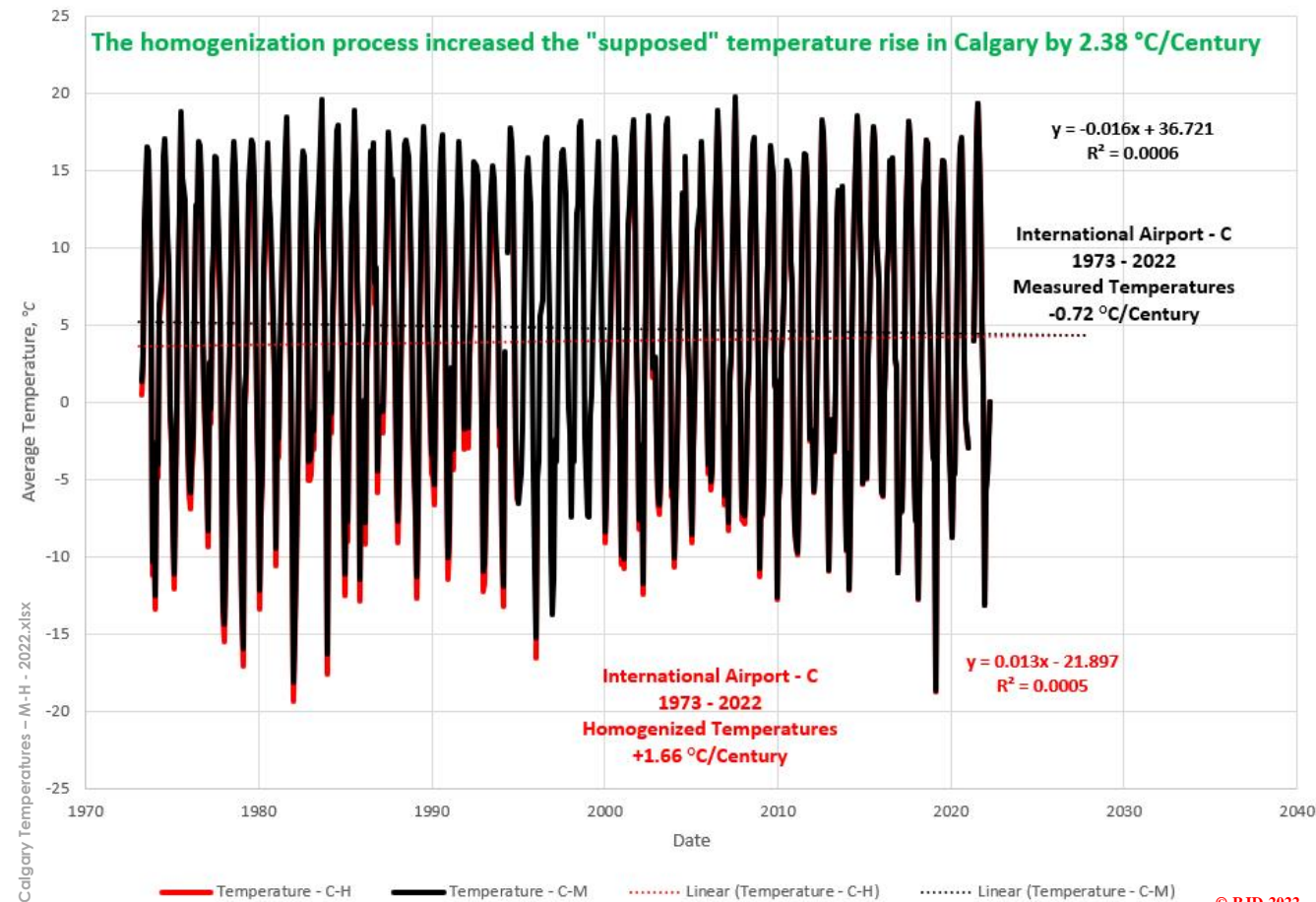


Calgary Temperature Profiles - Monthly - International Airport C Only



This view supplies a little more info on the temperature fluctuations than the 13 Month Moving Averages (MMA) plotted on the previous slide. Using the monthly data gives slightly different temperature trends than the 13 MMA, but the general story is similar. Measured temperature trends in 2021 were  $-1.36\text{ }^{\circ}\text{C}/\text{century}$  and decreased to  $-0.72\text{ }^{\circ}\text{C}/\text{century}$  in 2022. Homogenized temperature trends increased from  $1.48\text{ }^{\circ}\text{C}/\text{century}$  to  $1.66\text{ }^{\circ}\text{C}/\text{century}$ . Overall manipulation dropped from  $2.84\text{ }^{\circ}\text{C}/\text{century}$  to  $2.38\text{ }^{\circ}\text{C}/\text{century}$ . If the January to March 2021 data had not been removed from both the measured and “homogenized” data sets, the differences between the monthly and “homogenized” data would not have been as high. The 13 MMA data was left in the 2021 plot to show the relative difference between monthly and 13 MMA data.

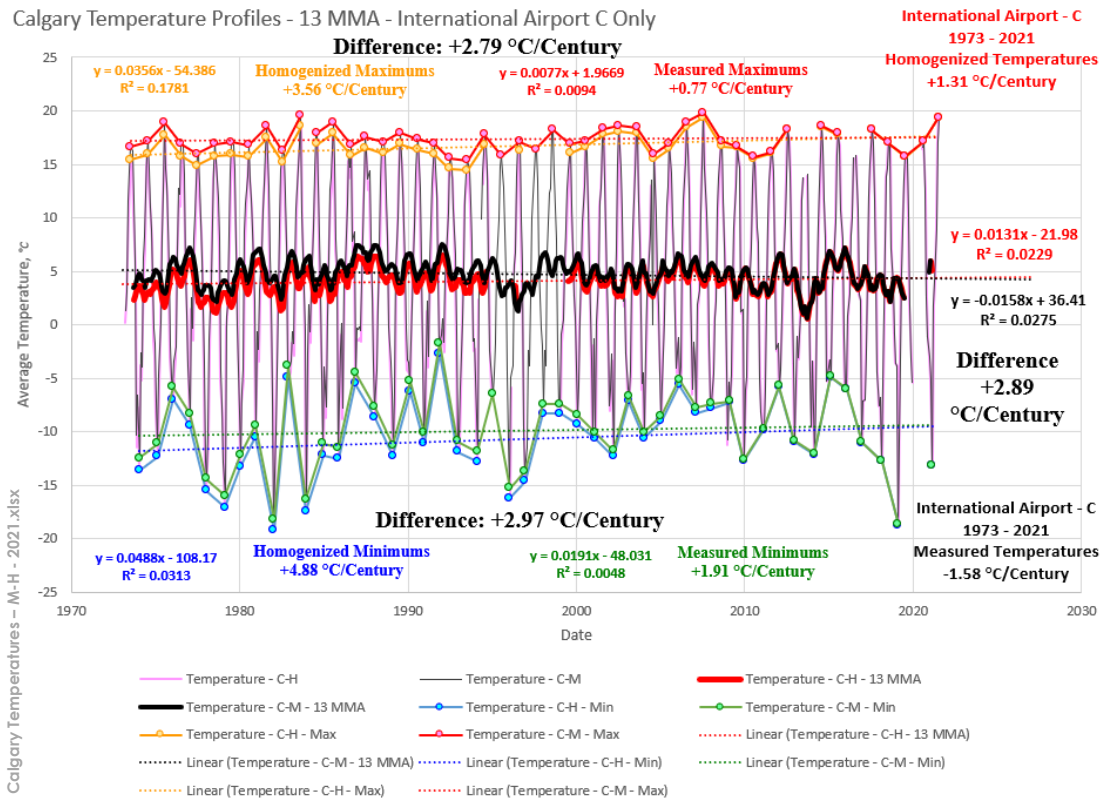
Calgary Temperature Profiles - International Airport C Only



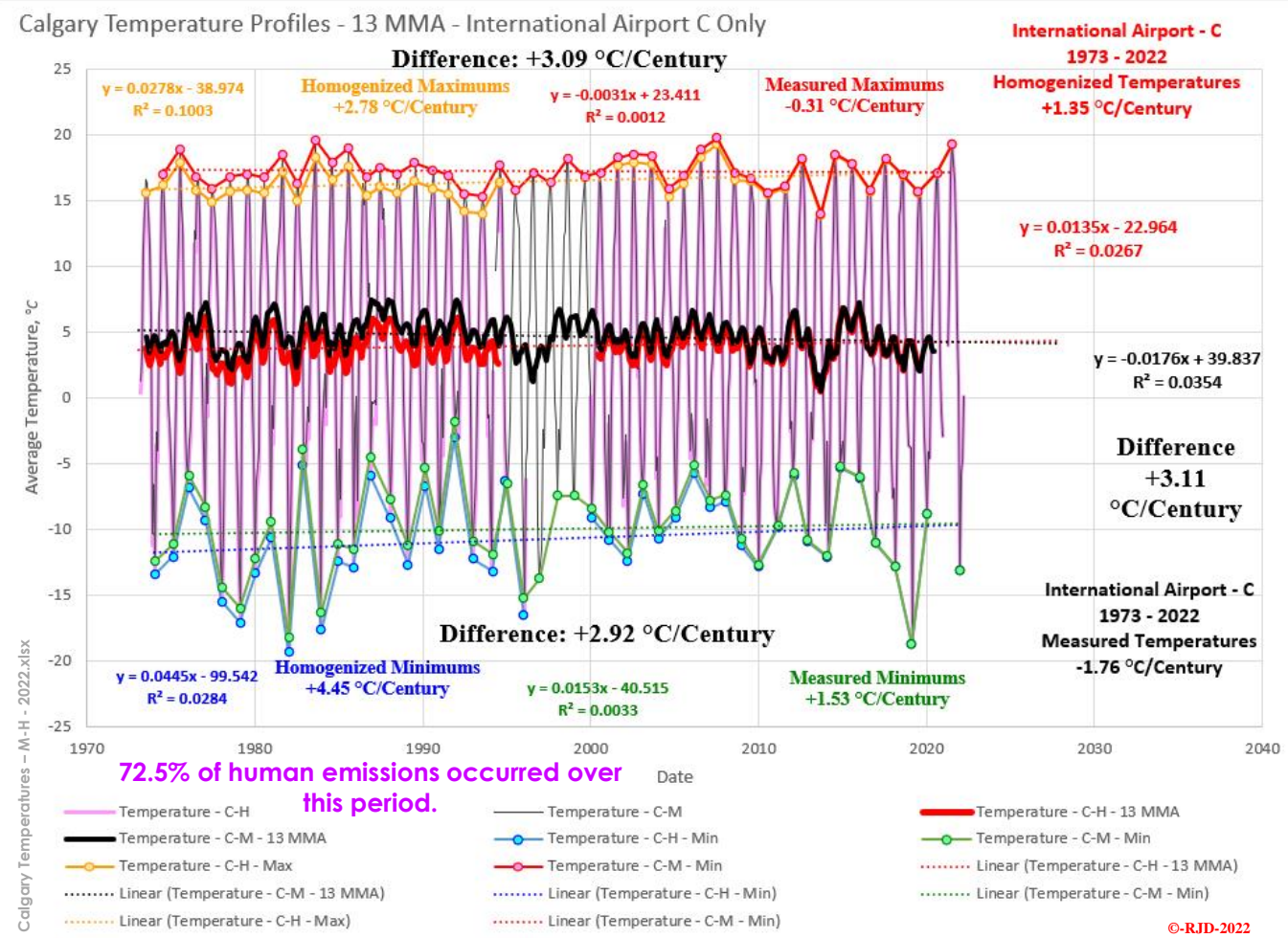
**Airport  
Temperatures  
C - Detail**

The detailed monthly data has a few points worth referencing. Last July 2021, we (along with the rest of the Pacific Northwest) experienced some very hot weather that prompted a huge outcry from the CAGW alarmist community. There is no question that the temperatures were much warmer than normal. But as per normal CAGW alarmist MO, they ignored the rest of the world (the average global temperature at the time was only  $0.2\text{ }^{\circ}\text{C}$  warmer than the 1979 to 2000 average and many places in the world were experiencing much colder than normal temperatures). Even in this data, the average monthly summer high was higher in both 1983 and 2007. There is also no mention of the coldest winter month the IA-C equipment ever experienced just back in January 2019. January 2021 was also chillier than normal. Even a little chilly right now (May 8<sup>th</sup>, 2022), with snow in the forecast. Could use a little  $\text{CO}_2$  warming. Actually, Calgary could use a lot of  $\text{CO}_2$  warming.





This slide evaluates the general range of temperatures we have experienced here in Calgary over the last 50 years. If we focus on the summer average highs, we see a downward trend in measured data (0.31 °C/century) with homogenization transforming that into an upward trend at 2.78 °C/century. The total homogenization, 3.09 °C/century. Moving to the winter average highs, we see an upward trend in both the measured data (1.53 °C/century) and the homogenized data (4.48 °C/century). Total homogenization, 2.92 °C/century. Those measured temperature profiles are consistent with many urban centres with summer temperatures warming slower than winter temperatures. So even with the UHIE, measured summer temperatures have been falling in Calgary. What would those temperatures have fallen to without that UHIE?



## Airport Temperatures C – Min/Max

Generally, the trends based on the 2021 data were like the 2022 trends, In 2021, the summer average high temperatures were increasing at a modest (0.77 °C/century) rate. With the onset of the ENSO cooling phase (several consecutive strong La Nina years), that

incline has been turned into a 0.31 °C/century decline. The last time I checked, CO<sub>2</sub> has been continuously rising over this period. And over 72.5% of human emissions have occurred over this period. Obviously, CO<sub>2</sub> is not the only, let alone the primary climate driver. Whatever warming CO<sub>2</sub> provides is relatively small and is routinely dominated by the other natural forcings (solar forcing (Total Solar Irradiance (TSI), Cosmic Ray Flux (CRF), High Energy Particle Fluctuations (HEPF), etc.), ocean cycles (Atlantic Multi-decadal Oscillation (AMO), El Nino Southern Oscillation (ENSO), Pacific Decadal Oscillation (PDO), etc.), etc. Detail in my [CSS-7 – CO<sub>2</sub>, the FECKLESS GreenHouse Gas post](#).

72.5% of human emissions occurred over this period.

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CSS-19e

# Calgary Homogenization 2021 Airport C

This plot lays out the changes based on the July 2021 data and the April 2022 data. The July 2021 temperatures were lowered continuously the further back in time we go (with a couple of large step drops). This looks more like outright data manipulation to further a narrative than the traditional reasons for homogenization (changing time of day acquisition, new equipment calibrations, station relocation, etc. What possible reason can explain a yearly adjustment and/or adjustments in only one direction. The 2022 data reversed direction in 1986, but the net homogenization was still -0.90 °C

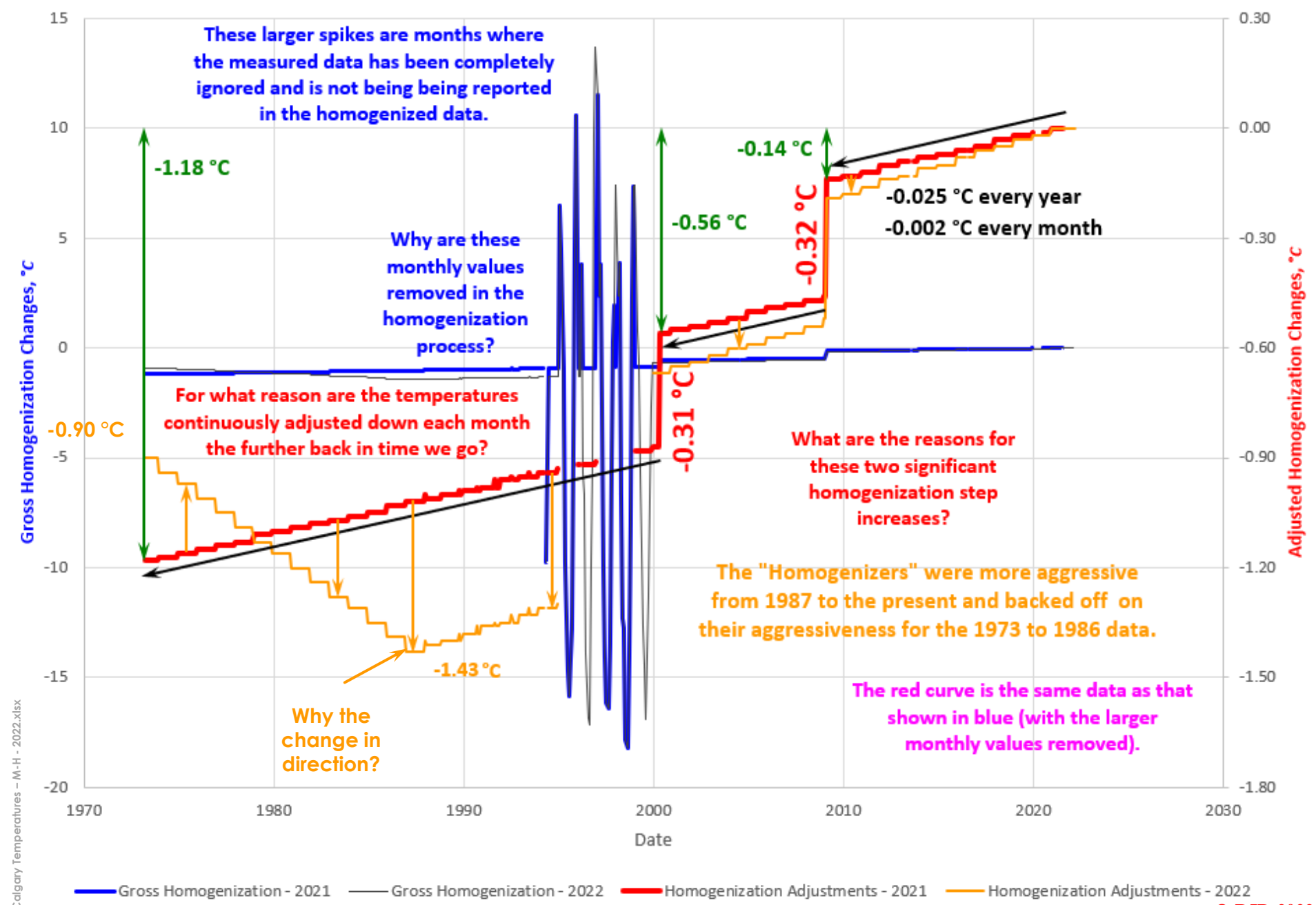
## Airport C Homogenization 2021

versus the peak homogenization of 1.43 °C. The 2021 data had a maximum homogenization

of 1.18 °C. On an anecdotal note, I have lived and worked in Calgary since 1984. Our temperatures have not warmed over that time as shown in the MEASURED data. There is no Climate Emergency in Calgary (or globally) despite our Mayor's declaration. As per CLINTEL scientists, There is no Climate Emergency period!

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

### Homogenization Adjustments - Monthly





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CSS-19f

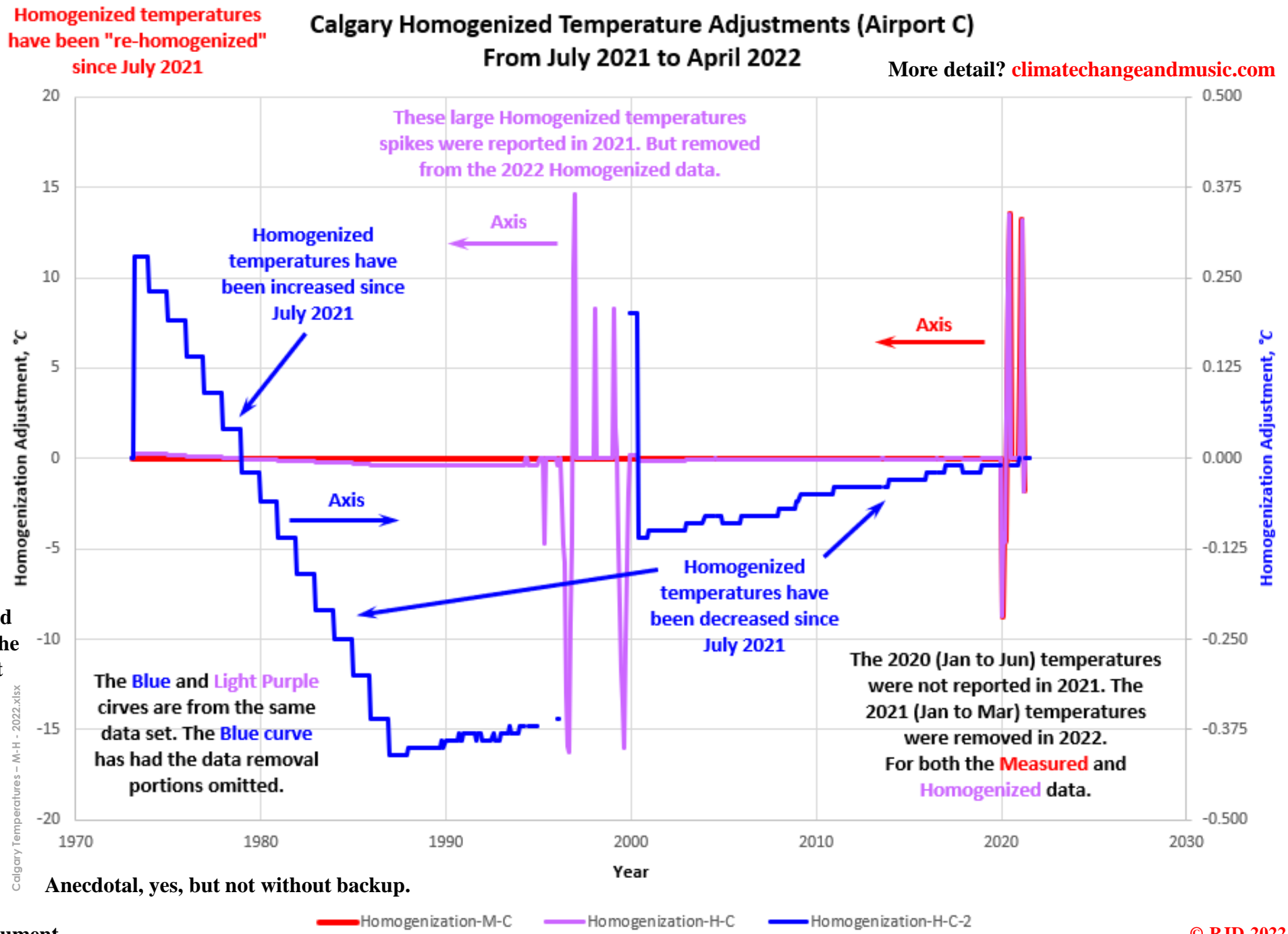
# Calgary Homogenization 21-22 Airport C

This plot lays out the changes from July 2021 to April 2022. I for one would be very interested in hearing the rationale for the re-homogenization (and the last year's homogenization). For the most part, the "homogenizers" were more aggressive. They did back their aggression off for the 1973 to 1986 period, but as mentioned on the previous slide, the homogenization was still aggressive at -0.90 °C. The larger spikes represent entire months that were "homogenized" out of existence. Ultimately, climate science is extremely complicated. Even a simple component like Calgary's weather station is wide open for

## Airport C Homogenization 2021 - 2022

interpretation and adjustment. Yet, the CAGW alarmist community

hangs on to the simple, unscientific concept that a molecule (essential for life) that has increased by 0.01% in the atmosphere has led us to a Climate Emergency. Hard to believe that when temperatures have decreased in Calgary and I am watching a snowstorm outside my dining room window in the middle of the afternoon while I prepare this document.



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

CSS-19g

# Calgary Homogenization Airport A & C Ocean Cycles

Just for the heck of it, let's complicate the picture even more. CO<sub>2</sub> is certainly not causing a steadily increasing temperature in Calgary, despite its continued rise. So, what is the mechanism driving our temperatures? The ocean cycles play a significant role. ENSO and PDO have well documented effects on our localized climate/weather. Not surprising that they can affect us locally when they have major influence on the global climate. ENSO records only go back to the 1960s but would have been playing a role prior to the data. The ocean cycles are complicated,

but their general effects can be seen in the Calgary temperature data. The Ice Age is Coming scare of the 1970s was brought on by a generally coordinated decline in all the major ocean cycles. That scare was followed by a generally coordinated increase in all the ocean cycles (with CO<sub>2</sub> helping out). But ENSO has entered, AMO and solar activity (TSI) are entering and the PDO will soon enter a cold phase.

## Airport Temperatures Ocean Cycles

### Calgary Temperature Profiles - 13 MMA - International Airport A/C

