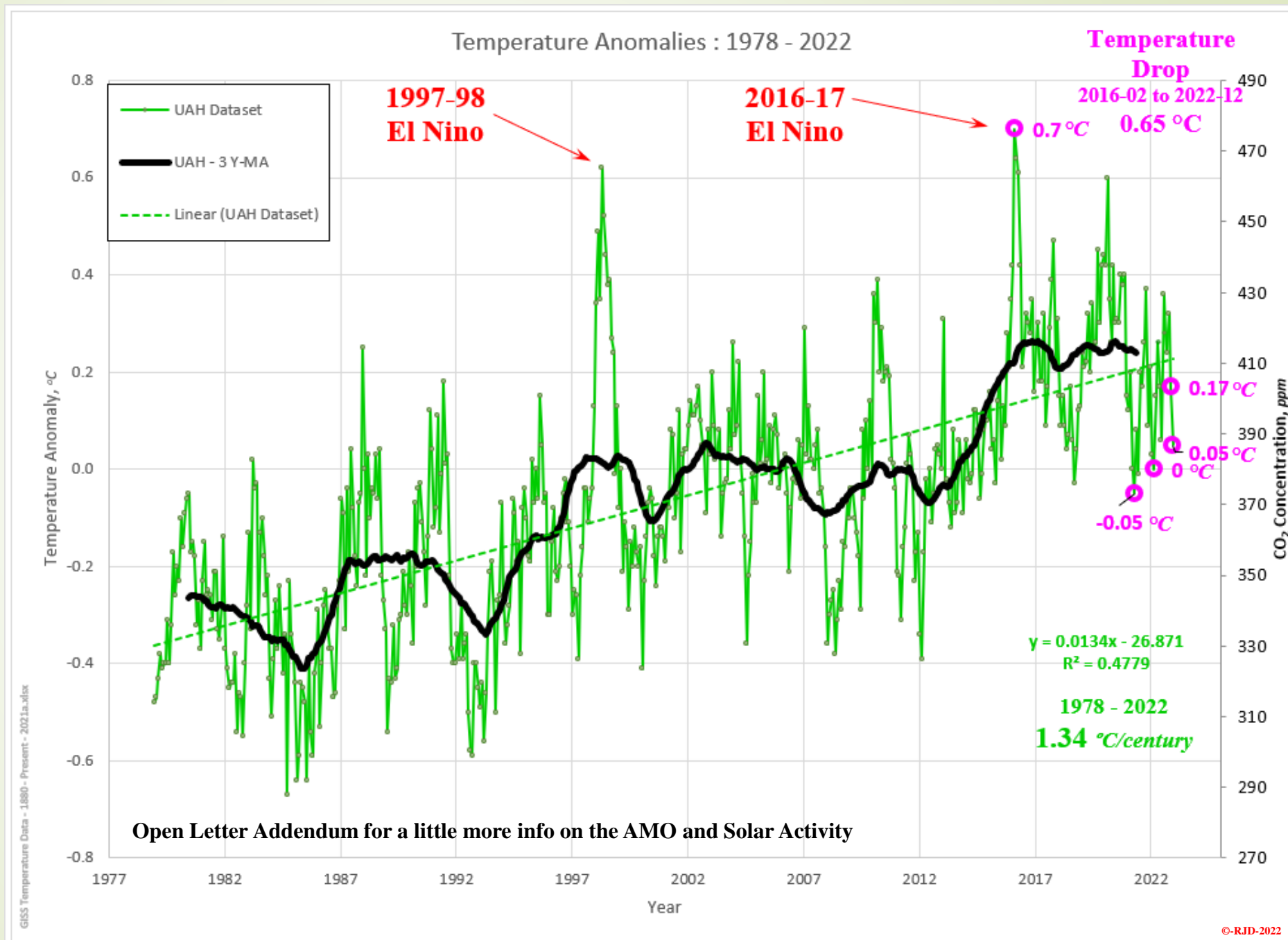


A little early for an update on the University of Alabama, Huntsville (UAH) Lower Troposphere, but there are a couple of interesting points based on the December data and some recent articles. The bitter cold Calgary experienced before Christmas was not a localized phenomena. The global temperature dropped back to the levels experienced through most of the early 21<sup>st</sup> century (just 0.05 °C above the 1991 to 2020 average). In fact, if not for the strong, positive El Niño Southern Oscillation (ENSO) pulses, the long ‘PAUSE’, experienced from just before the turn of the century until 2015, would still be going. The jump in temperatures from 2012 to 2016 is just not a CO<sub>2</sub> response. Neither are the substantial fluctuations that occur over this relatively short period. There is a

**ROTC  
Year-end 2022  
UAH – LT**

lot more going on than just CO<sub>2</sub>. The ocean temperature influence is not restricted to just the

ENSO. The positive (i.e.: warming) phase of the Atlantic Multi-decadal Oscillation (AMO) was active from 1975 – 2005 and would have been responsible for a significant portion (if not most of) that period’s warming. And then the temperatures plateaued for 17 years. Solar activity declined slightly over the ‘PAUSE’ Exactly where is the CO<sub>2</sub> warming?



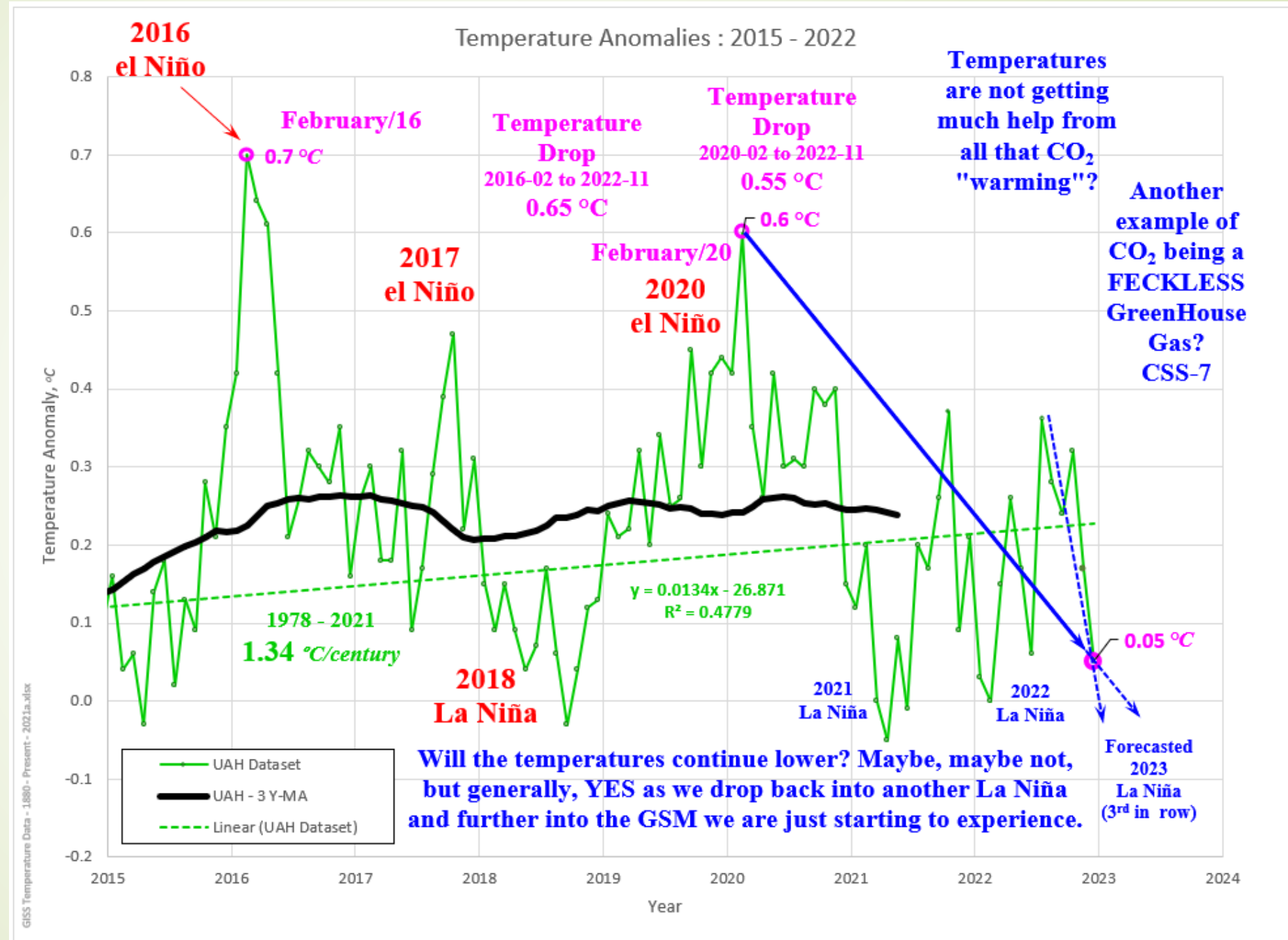
GSM – Grand Solar Minimum. The real “Climate Change” existential threat is right around the corner. Do the Research!

This plot just focuses in on the UAH-LT temperature data over the last 8 years. As shown on a later slide, the temperatures over this period have been declining at a 1.87 °C/century rate. And yes that includes the El Niño induced temperature highs, but the longer La Nina temperature lows are also included. Not much CO<sub>2</sub> influence happening here. And realistically, there should not be, given that CO<sub>2</sub> over this time interval has not changed much. Why is CO<sub>2</sub> warming so easily overpowered by natural forcings? A shallow decline in solar activity appeared to easily over power CO<sub>2</sub> during the 'PAUSE'. And over this period, the CO<sub>2</sub> warming is definitely inconsequential. This data puts the 1.07 °C temperature rise since

pre-industrial conditions into perspective (as per the IPCC's 2021 AR6 report).

Solar activity levels are headed much lower, the AMO (which dropped temperatures from 1945 to 1975) is starting its decline into its cold phase and for the third year in a row we are headed into a strong La Niña.

One of these influences is enough to overpower any CO<sub>2</sub> warming. What would you expect to happen when all three of these influences are headed colder?



Temperatures are not getting much help from all that CO<sub>2</sub> "warming"?

Another example of CO<sub>2</sub> being a FECKLESS GreenHouse Gas? CSS-7

Will the temperatures continue lower? Maybe, maybe not, but generally, YES as we drop back into another La Niña and further into the GSM we are just starting to experience.

## ROTC Temperatures Recent

# CSS-34c Rate of Temperature Change (ROTC) – UAH – Yearly Average

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

With the December 2022 data in hand, we can update the yearly average plot.

Based on the UAH-LT temperature data, 2022 was the SEVENTH HOTTEST YEAR EVER. Wait that was my inner AGW alarmist voice yelling that out. A more measured and accurate response would have clarified that this was the seventh hottest year since 1978. The earth's temperature has been significantly hotter than 2022 (or even 2016) for most of its history (roughly 86% of the time). Historical temperatures were reviewed in detail in my [CSS-9 – What is the Ideal Temperature](#) and [CSS-14 – Has our Planet Been Warmer Than Today's Temperatures](#) posts. In our recent past, that would include the Dirty 30s and some random years like 1859 and 1921 where we were bombarded by some

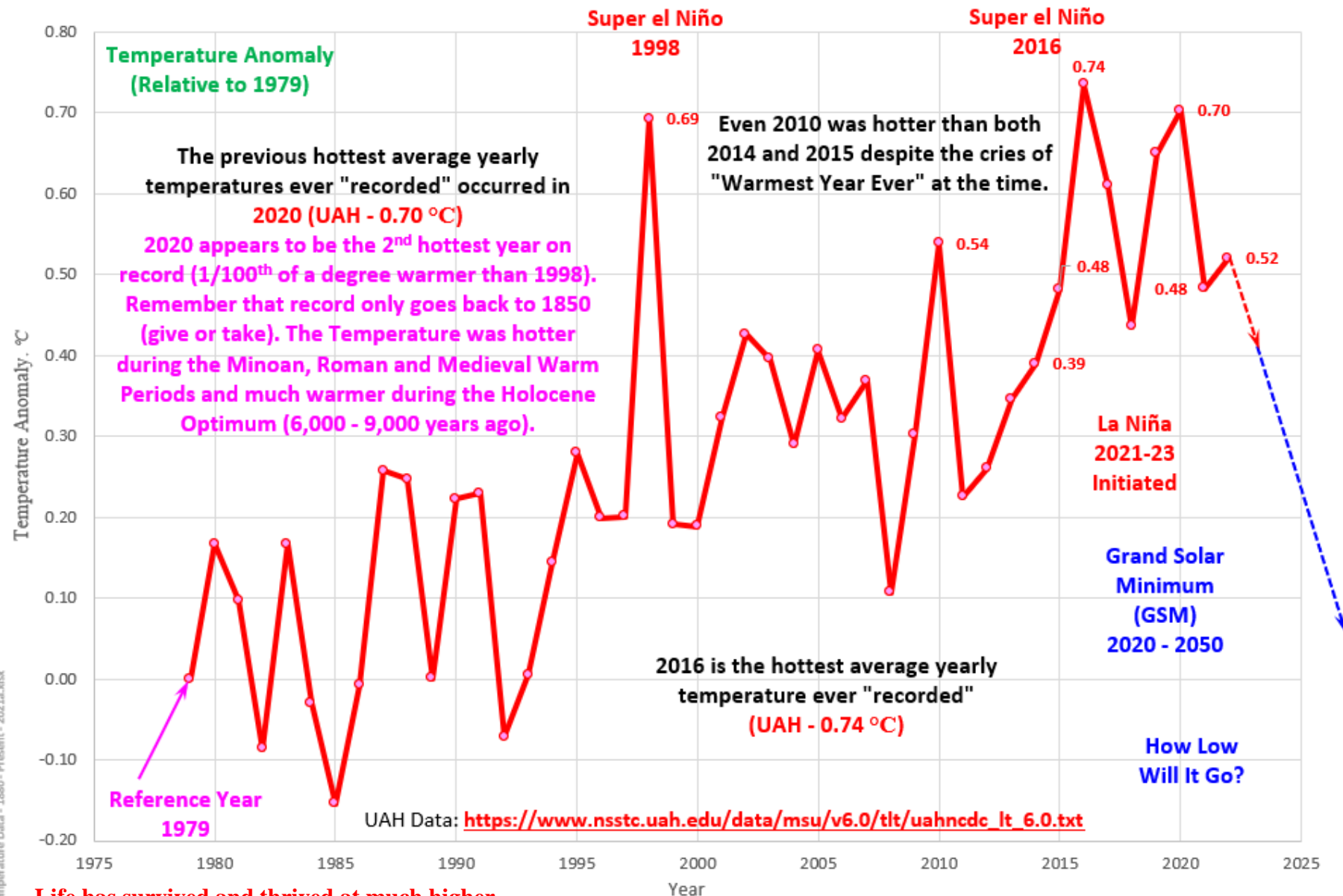
very powerful Coronal Mass Ejections (CME). A future post will address those

## ROTC Yearly Average UAH – LT

random years. If you want some homework, Tony Heller has addressed these CME events several times on his [home site](#) and YouTube channel.

Temperatures over the Holocene interglacial warm period (the last 10,000 years) were warmer than today 75% of the time. Over the last 66 million years (the Cenozoic) it was warmer 98% of the time.

### Average Yearly Global Temperature Anomaly - UAH Satellite Data



Life has survived and thrived at much higher temperatures and CO<sub>2</sub> levels than today.

UAH - Temperature Anomaly



An alternative look at the data shows that the Rate Of Temperature Change (ROTC) has been declining over the Satellite Period (despite a continually rising atmospheric CO<sub>2</sub> concentration).

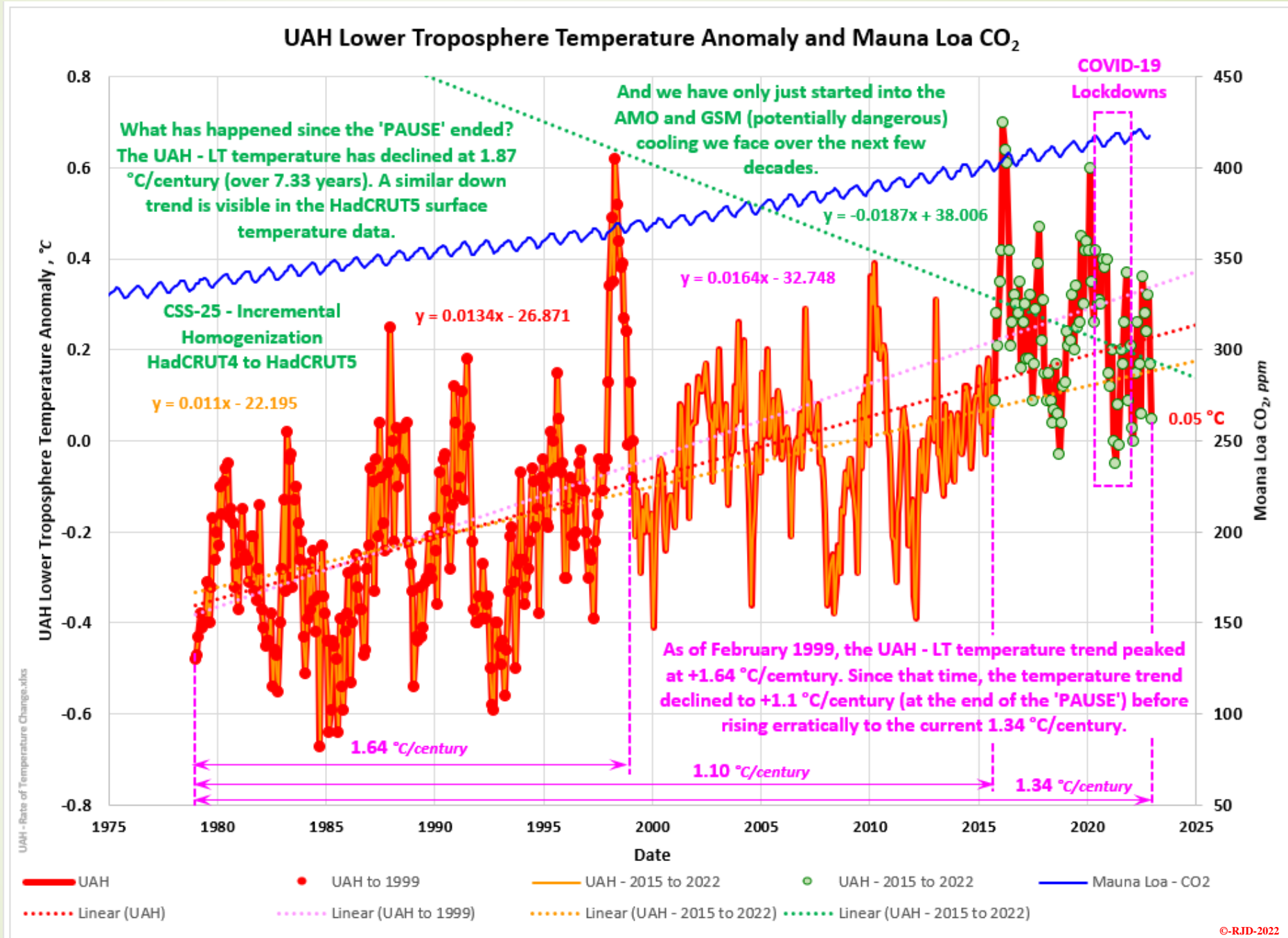
This might also be a good time to mention that over two thirds (66%+) of human CO<sub>2</sub> emissions have occurred over this period. So, despite our significant CO<sub>2</sub> emissions the ROTC is declining. Given that CO<sub>2</sub>'s warming influence declines exponentially as CO<sub>2</sub> rises and the AMO/ENSO/Solar Activity forcings are headed colder, what direction would you expect the ROTC to move? The full ROTC history is plotted on the next slide, but the general progression can be seen here. Based on the data available at the end of 1998, temperatures had been increasing at a rate of 1.64 °C/century.

By the end of 2014 that temperature rise had declined to just 1.10 °C/century (helped lower by the

## ROTC Progressive UAH – LT

'PAUSE'). The strong El Nino that developed over 2015 and subsequent ENSO pulses have brought the temperature rate back up to 1.34 °C/century. But you must ask yourself what happens next?

Temperatures have declined at a rate of 1.87 °C/century over the last 7+ years and we are just starting to move into the AMO and GSM cold phases. **Again, what happens next?**



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A recent article can be found at the [Watts Up With That website](#) that takes a look at the Rate of Temperature Change (ROTC) in the UAH – Lower Troposphere temperature data. I have recreated the ROTC data here and combined the ROTC with the rate of atmospheric CO<sub>2</sub> changes. We have a “climate change” dichotomy playing out. Over the 44 year satellite period, the ROTC has been declining while the Rate of CO<sub>2</sub> Concentration Changes (ROCCC) has continually rose. Not very consistent with the Catastrophic Anthropogenic Global Warming (CAGW) alarmist narrative. That trend will very likely continue down and will very likely accelerate as temperature drops accelerate with the progressively aggressive AMO and GSM cooling. As shown earlier, temperatures over the

2015 to 2022 time frame have declined at a 1.87 °C/century rate. That is consistent with the

## ROTC Temperature & CO<sub>2</sub>

decline experienced in the HadCRUT5 surface temperature dataset. For those that have not seen by [CSS-32 – UAH-LT Temperature – November 2022](#) post, to review

some of the other interesting information associated with the UAH-LT temperature data. Taking the simplistic, unscientific CO<sub>2</sub> focused view is outright stupid and extremely dangerous (in my opinion).

