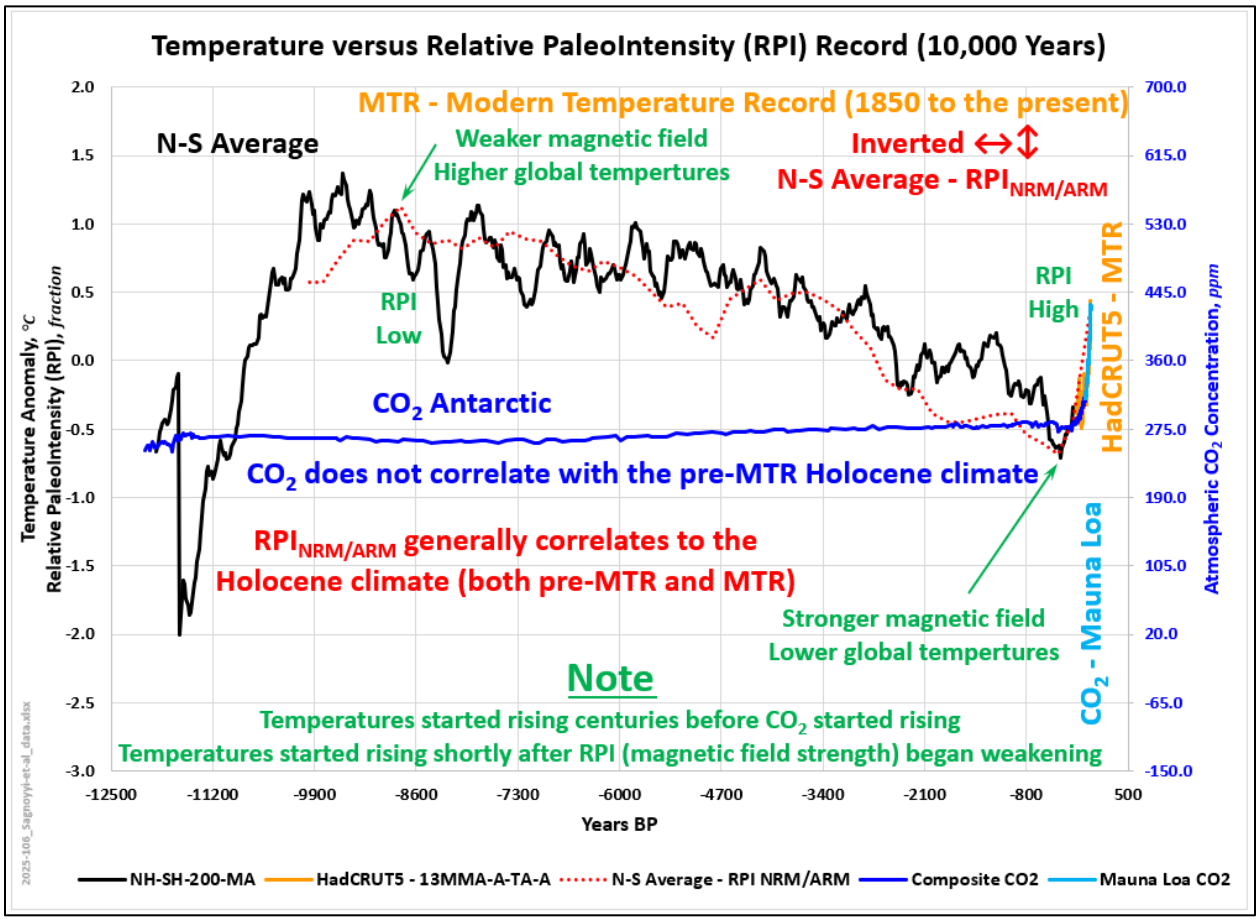
CSS-79 – A Common Sense Look at 'Climate Change'

https://climatechangeandmusic.com/weakening-electromagnetic-field/

Quick Summary

The previous discussion has been technically complex, but applying some common sense lends itself to a realistic expectation for the radiative forcing allocations for both historical and forecasted 'climate change'. Starting with the climate over the Holocene (the last ±12,500 years) puts CO_2's role in perspective. The climate changed dramatically and often throughout the Holocene while CO_2 remained virtually flat (pre-1850). Common sense dictates that CO_2 is obviously not the primary climate driver on our planet, given that the climate (i.e.: temperature, sea level, ice extent, etc.) fluctuated dramatically for approximately 98.5% of the Holocene's 12,065+ year history. CO_2 does not correlate with the Holocene climate history and therefore cannot be causal with respect to the Holocene climate. Are there any parameters that do correlate with the general Holocene climate trends? There are many, starting with the Milankovitch cycles.

The chart below compares the average global temperature (the average of the Vinther et al Arctic and the Antarctic EPICA Dome C datasets), the global atmospheric CO_2 concentration (from Antarctic ice cores), and the Relative Paleo Intensity (RPI, essentially an indication of the earth's magnetic field strength). Why does the RPI correlate with the Holocene climate? A complicated question, but the RPI is very likely a representation of the gravitational and electromagnetic interactions of the solar system and beyond. That would include the Milankovitch cycles as well as the direct contribution (i.e.: lower magnetic field strength means more solar energy enters our biosphere, contributing to the changes in

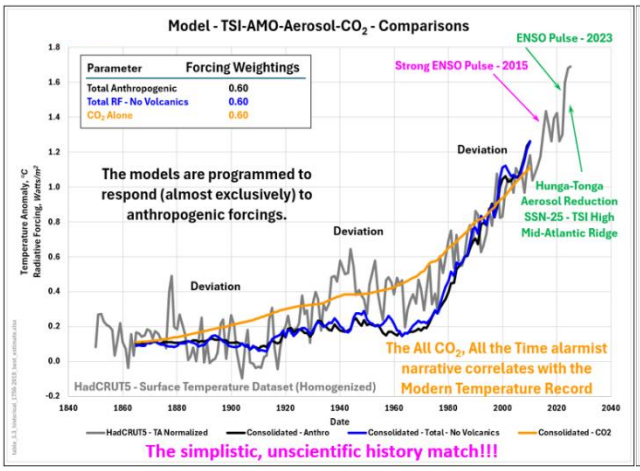


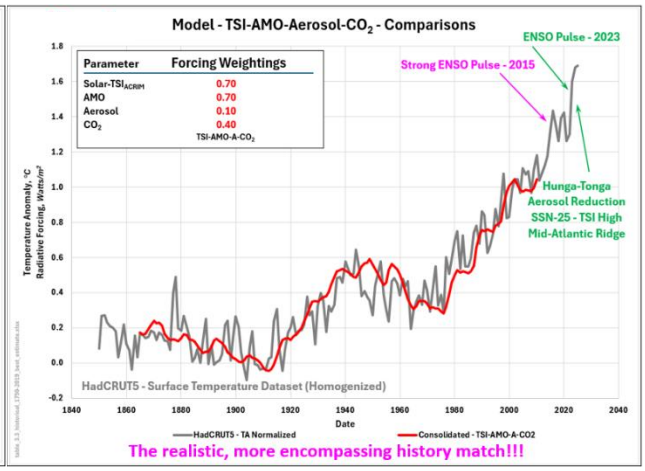
our climate). The RPI data resolution is 200 years, so the many shorter solar/ocean cycles are not reflected in the RPI data. RPI correlates to the Holocene climate, CO_2 does not!

There is some CO_2 correlation over the last 176 years (1850 to 2026) which is used by the alarmist community to push the 'global warming/climate change/emergency' narrative. But better correlations can be achieved by using just natural forcings (focused on solar activity and ocean cycles (the Atlantic Multi-decadal Oscillation (AMO), Pacific Decadal Oscillation (PDO), El Niño Southern Oscillation (ENSO), etc.). Connolly, Soon et al in their 2023 paper, *"Challenges in the Detection and Attribution of Northern Hemisphere Surface Temperature Trends Since 1850"*, reviewed 27 of the 40+ available TSI reconstructions (which included the one TSI reconstruction recommended by the IPCC) and found that many of the reconstructions produced better statistical fits than the IPCC's anthropogenically focused model projections.

Note, every one of those 40+ TSI reconstructions would produce better historical correlations (including the IPCC's one option) if the TSI is treated as a proxy, not just as an absolute value. TSI is not the only solar forcing acting on the planet, but it is the only one recognized by the IPCC in their models. TSI, as a proxy accounts for the IPCC's ignored solar forcings. Adding in the ocean cycles, just tightens up the Connolly Soon et al TSI correlations.

So, the Modern Temperature Record (MTR, 1850 to the present) can be closely modeled using the IPCC's anthropogenic ideology (focused on greenhouse gases, primarily CO_2) or Total Solar Irradiance (TSI, using reconstructions directly or as a proxy). Which one provides the correct answer? Trick question and this is where common sense comes back into play. The answer is neither, on their own. Our climate is governed by all these factors. The dilemma comes down to the weighting for each parameter. The following correlations were pulled from the IPCC's 'best estimates' (below left). The correlation (below right) starts with the IPCC's 'best estimates', adds in just one of the ocean cycles (the AMO) and substitutes out the IPCC's one TSI reconstruction for an average of six of the remaining 40+ available TSI reconstructions.





The IPCC 'best estimates' are obviously anthropogenically focused. The Total Anthropogenic Radiative Forcing (RF) curve is effectively a layover of their Total RF curve (i.e.: solar and ocean forcings are minimized and/or outright ignored). Which of these two history matches (anthropogenically or naturally focused) reflects the MTR better? I am going to go with the naturally focused option, which could be tightened up by adding in the other major ocean cycles. Which of these two history matches (anthropogenically or naturally focused) would have any chance of history matching the pre-MTR Holocene temperatures/climate? Definitely not the IPCC 'best estimate' option. The complete lack of CO_2/temperature correlation over the Holocene produces the Holocene CO_2 Conundrum. The climate changes significantly and often without any CO_2 contribution. Those natural

forcings have been active pre-MTR, were active during the MTR, and will be active in the future (just not in the climate models which are self acknowledged to run too hot and use implausibly high emission scenario).

What does that future look like? There are many factors that can and will come into play. If you believe the climate models, you are relying on a simplistic, unscientific narrative that focuses on greenhouse gases (primarily CO_2) and the warming amplification through their positive water vapor feedback hypothesis. The problem, the models use a range of CO_2 Equilibrium Climate Sensitivities (ECS, 1.8 °C to 5.7 °C) that all produce temperature projections that are greater than observations (i.e.: they all run too hot, and the IPCC obviously does not know what CO_2's ECS value is). CO_2's warming capacity declines exponentially as CO_2 concentrations rise and is approaching saturation. Combined with CO_2's two cooling properties (rising leaf cover and co-aerosol production, neither of which is included in the models), CO_2 warming may be or soon will be a non-issue. The models have proven to be inadequate. Common sense dictates that they are not reliable and are therefore not fit for policy decisions.

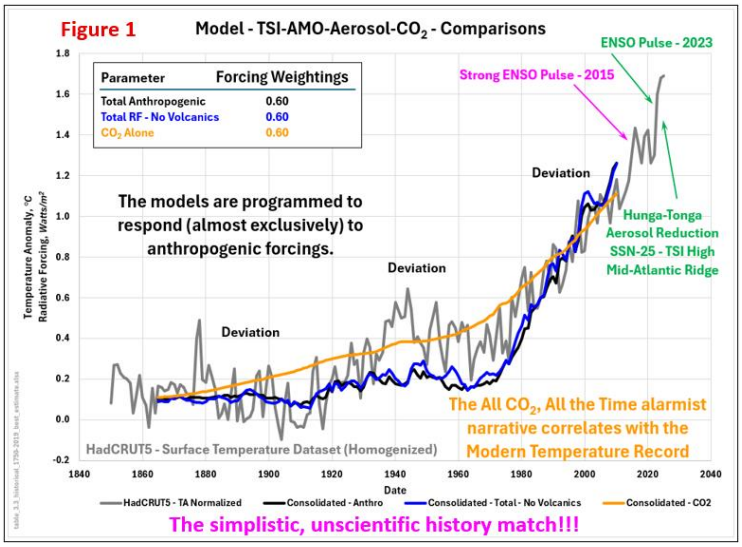
The models outright minimize/ignore the natural forcings (solar and oceanic). But those natural forcings are still active, as they were throughout the Holocene. The Milankovitch cycles are trending colder (although slowly). The Atlantic Multi-decadal Oscillation (AMO, a key climate driver) is just dropping into its 30-year cold phase. The Bond/Eddy solar cycle (blatantly visible in the Greenland temperature data) is approaching its tipping point. The temperature rise out of the Little Ice Age (which began centuries before CO_2 began rising) will be followed by a sharp drop into a prolonged cold period. The timing (probably soon) and magnitude are open for discussion, but the process has been repeated regularly throughout the Holocene. Shorter term solar activity is also likely to play a cooling role as we move into a new Grand Solar Minimum (GSM, like the Maunder Minimum in the late 1600s).

We should be applying some common sense to our future possibilities. Cooling is far more likely and dangerous than warming. Net Zero policies (greenhouse gas emission reductions in general) are an uneconomic, ineffective, dangerous ideology that is wasting taxpayer's money, producing no measurable change in climate, hastening our economic suicide, and ignoring the energy, food, financial, etc. crises that we are already facing. Rather than advocating weather dependent renewable energies (to a world that is supposedly headed for a future of weather extremes, it is not), the focus should be on the energy security realities we are already facing. The world is not transitioning off hydrocarbon energy and wants/needs our oil, natural gas, coal, and nuclear energy resources. Our resource industries are the life blood of this country, and we need to step up and provide those resources (with some of the world's highest ethical, environmental, technical, and economical standards) to the world. Hopefully common sense will prevail and give our children and grandchildren a chance for a decent future. One without the destructive, totalitarian path we are currently on.

Full Discussion

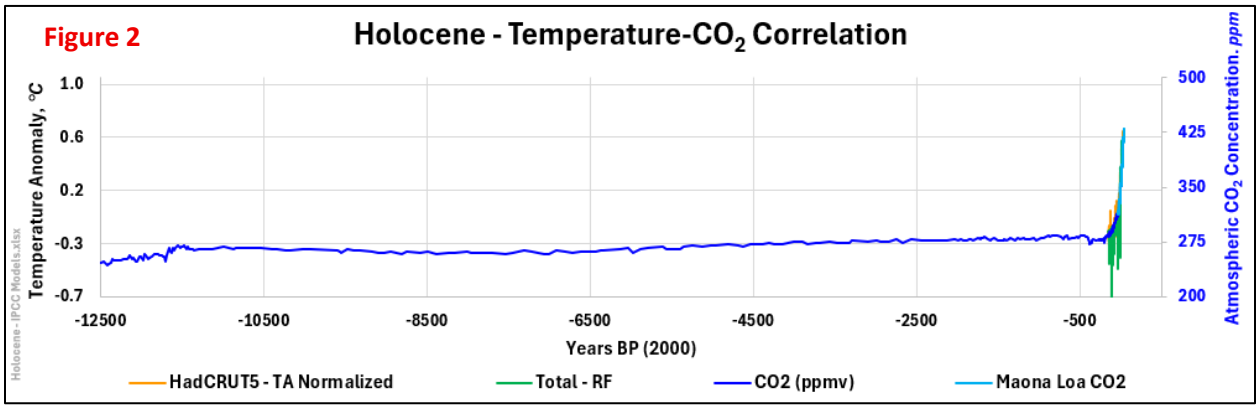
The earth's *"climate system is a coupled non-linear chaotic system, and therefore the long-term prediction of future climate states is not possible"*. Those are the IPCC's words, not mine. Yet somehow, the prevailing 'climate change' alarmist narrative believes that our future climate can effectively be predicted using just anthropogenic forcings (focused on CO_2). There are many more natural forcings that are being minimized or outright ignored by the IPCC. Common sense would dictate that your chances of modeling a complex "unpredictable" system (like our climate) effectively, would incorporate more than just the current simplistic, unscientific All CO_2, All the Time alarmist narrative. This discussion includes a common sense look at what has happened and what will likely happen with our climate in the future.

#climatechange #delaythegreen #globalwarming #showusthedata

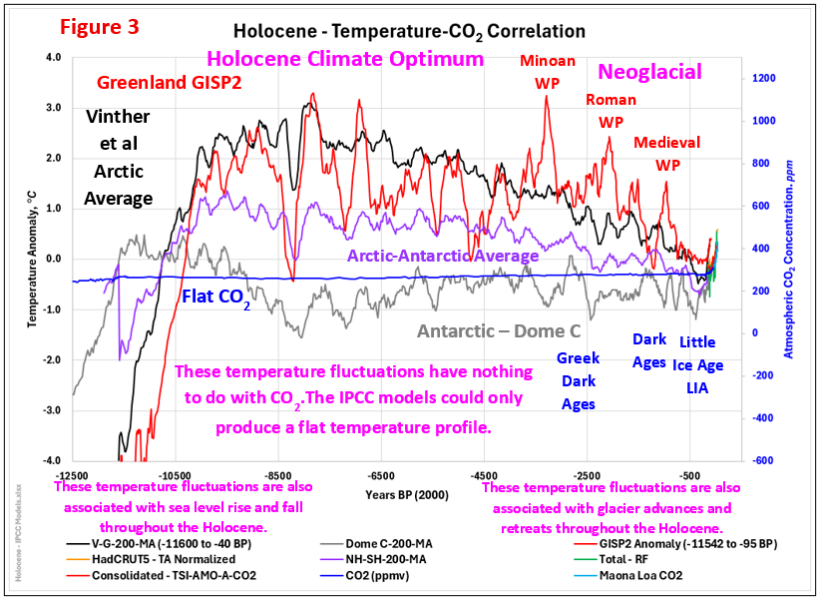


The discussion starts with the IPCC's 'best estimate' forcings. Figure 1, to the left shows the IPCC's history match (Total Radiative Forcing (RF, no volcanics), Total Anthropogenic RF, and CO_2 RF) to the HadCRUT5's "homogenized" surface temperature data set. All three 'best estimate' forcings correlate well to the HadCRUT5 temperatures (with CO_2 having the best correlation). Note, the volcanic forcings are not shown here, because they only have short term implications that complicate the graphs unnecessarily. Also note that the Total Anthropogenic and Total RF are almost identical (i.e.: the programming on these models is focused almost exclusively on anthropogenic drivers, effectively ignoring natural forcings). Most of the anthropogenic forcing happens after 1975 (coinciding with 72.5% of humanity's CO_2 emissions). This is obviously the period (1975 to the present, 51 years) where humanity's influence would be the strongest, but that is less than two data points in a 'climate change' discussion. Common sense would dictate that additional, longer-term data is required.

This correlation (1850 to the present, 176 years) is the benchmark of the All CO_2, All the Time alarmist narrative. That is still less than six data points in a 'climate change' discussion. Hardly a statistically significant data set. What happens to that correlation pre-1850? Figure 2, on the following page, shows the CO_2 concentrations over the entire Holocene (with the post 1850 CO_2-Temperature correlation still acknowledged). Prior to 1850, there is obviously very little potential for anthropogenic forcing, given that CO_2 concentrations are virtually flat. The obvious implication (based on the All CO_2, All the Time alarmist narrative) would be that the climate was benign and unchanging.

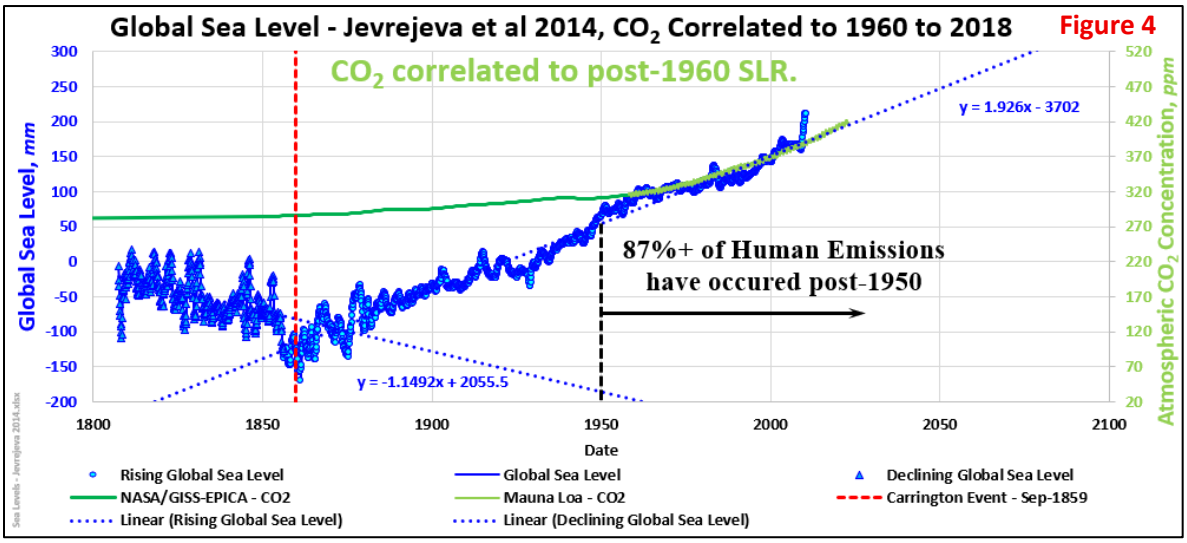


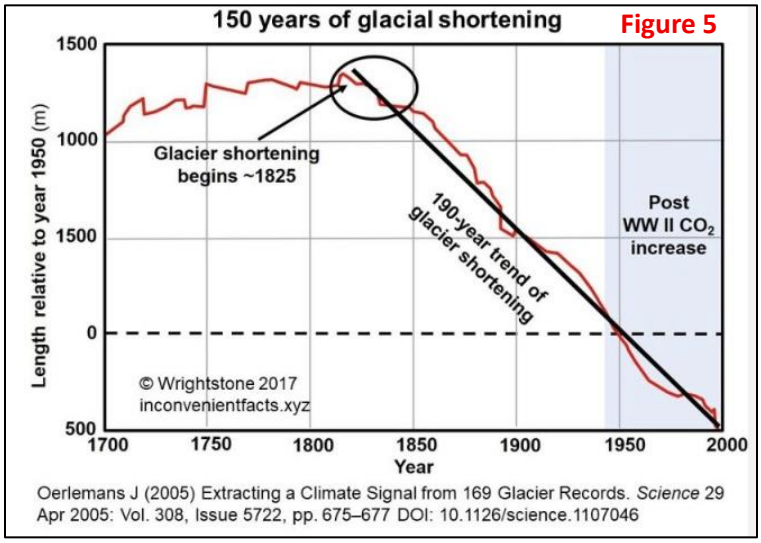
Common sense and historical reality say otherwise. There is ample evidence that the climate changed dramatically throughout the entire Holocene. The current minor ±1.5 °C temperature rise since 1850 is well within natural variability and is neither unusual nor unprecedented. There may well be a component of CO_2 warming in ±1.5 °C temperature rise, but the natural forcings that are on full display in the Holocene temperature data (Figure 3 on the following page) were still active during the ±1.5 °C warming and will still be active in the future (just not in the climate models). The magnitude of that CO_2 contribution is dependent on CO_2's Equilibrium Climate Sensitivity (ECS), which is no where



near settled in the IPCC's science. The models are using a range of ECS (1.8 to 5.7 °C), And even at 1.8 °C, they are running too hot (by their own admission).

CO_2 has obviously NOT been driving the climate over the last 12,500 years. The temperature fluctuations shown here are accompanied by rising and falling sea levels (Figure 4 below) and advancing and receding glaciers (Figure 5 below). All without the help of CO_2. Common sense says there is more to 'climate change' than just anthropogenic forcing.



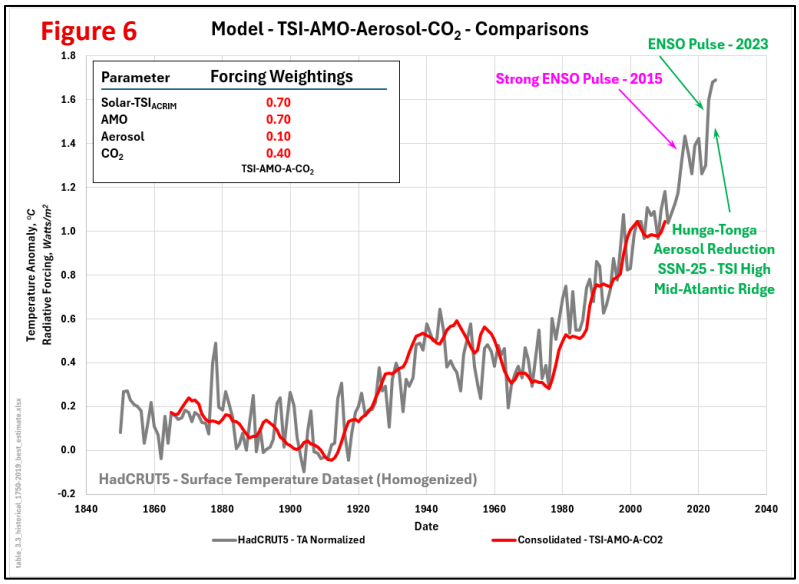


The climate models are obviously useless. They may produce a reasonable history match to the post-1850 temperatures, but they fail miserably pre-1850 and are therefore not fit to produce a reliable forecast. As per the IPCC, long-term climate forecasting is impossible. Using models that are obviously wrong does not improve your chances of reaching a reasonable forecast.

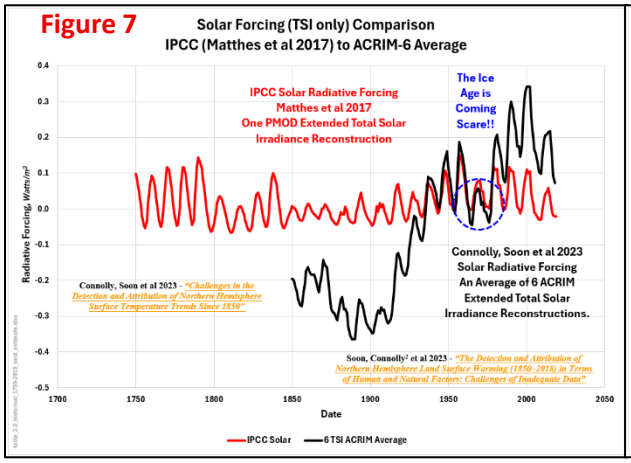
Common sense would dictate that the models be adjusted to recognize the natural forcings that are obviously still in play. So where could we

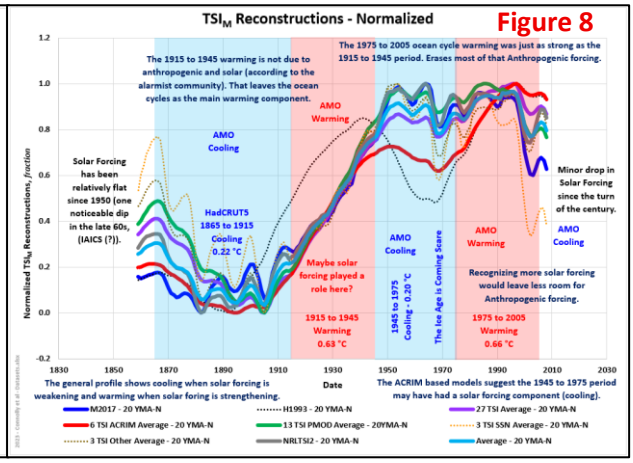
improve on the IPCC's best estimates? They do not include any ocean cycles in their best estimates on the assumption that they are cycles and will just oscillate above and below a baseline temperature. The oceans very likely warm and cool on longer time scales as solar activity rises and falls. The longer-term absolute values are open to discussion, but they should still be included (along with the very significant decadal changes) to produce a much better history match. Including the ocean cycles will produce a better history match. But that history match can be improved significantly by properly incorporating solar activity.

The IPCC does use a Total Solar Irradiance (TSI) reconstruction in their 'best estimates'. They have arbitrarily chosen just one (the Matthes et al 2017 version) out of the 40+ TSI reconstructions that are available. They also assume that the only energy the sun delivers to our planet is restricted to TSI. That is just not true. The newest model protocols (CMIP6) have both Cosmic Ray Flux (CRF) and High Energy Particle (HEP) forcings available. During beta testing, CRF (modulates the amount of energy that makes its way to our planet's surface through albedo adjustments) and HEP (energy added over and above TSI) were sufficient to model our planet's post-1850 temperatures (no CO_2 required). That obviously did not fit the narrative and was easily "fixed" by turning the solar forcings off and/or down significantly.



What happens when you include the ocean cycles and a more representative solar forcing (TSI reconstruction)? You get a much better post-1850 history match, the possibility of history matching the pre-1850 climate and a chance at a reasonable future prediction. Figure 6 (to the left) adds in just the Atlantic Multi-decadal Oscillation (AMO) and uses a TSI reconstruction based on an average of six of the other 40+ TSI reconstructions available. This history match still uses a significant CO_2 contribution (roughly based on a CO_2 ECS of 0.8 °C). Figure 7 (below) compares the IPCC's single Matthes et al 2017 TSI reconstruction to the six





TSI average reconstruction used in the history match on the previous page. Figure 8 (previous page, lower right) normalizes the 27 TSI reconstructions presented by Connolly et al in their 2023 paper *"Challenges in the Detection and Attribution of Northern Hemisphere Surface Temperature Trends Since 1850"*. Any of the available 40+ TSI reconstructions would produce similar history matches if they are treated as a proxy since all the TSI reconstructions have similar profiles (just different TSI magnitudes which are a small portion of the overall solar forcings).

TSI is just an indication of overall solar activity levels (not an absolute measure of the energy reaching our planet). TSI Momentum (TSI_M, the 20 Year Moving Average) energy levels have moved in a narrow range since the 1600s (≈1.07 Watts/m^2, just 0.079% of the 1361.2 W/m^2 maximum in the early second half of 20th century). A small change but for perspective that is 5 times larger than ±150 ppm (0.015%) increase in CO_2 concentration.

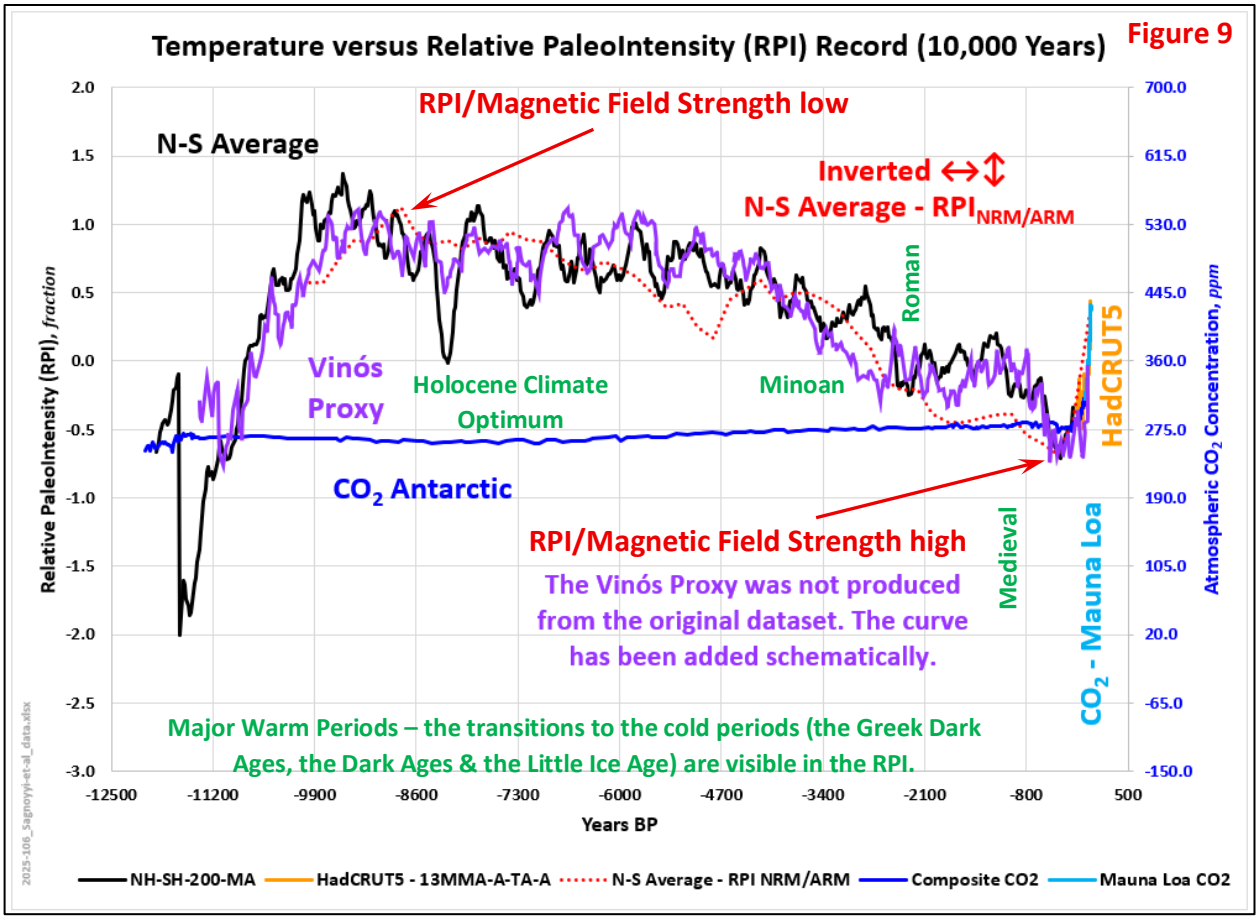
Again, common sense dictates that there is more to 'climate change' than just CO_2 and the allocation of each of the forcings will ultimately determine the most reasonable history match. The IPCC 'best estimates' (almost exclusively anthropogenic focused) only correlate to the last 175 years (just 1.4% of the Holocene). CO_2 has not been driving the Holocene climate. Incorporating the ocean cycles and a less ideologically focused TSI choice yields a far better result. That Figure 6 history match can be improved significantly by adding in a few of the other prominent ocean cycles (the Pacific Decadal Oscillation (PDO), the El Niño Southern Oscillation (ENSO, and the Indian Ocean Dipole (IOD)). For example, most of the post 2010 temperature increase is likely related to strong positive ENSO pulses and/or seismic/volcanic activity and some other factors. Very little is due to the small increase in CO_2 since 2010 (regardless of the CO_2 ECS used).

This is where the All CO_2, All the Time alarmists often step in and say that there are no proven mechanisms that justify solar activity warming. That is not true, there are many mechanisms (CRF, HEP, Electro Magnetic Field/Solar Wind variations, cloud albedo/sunshine hours, etc.). The mechanisms are not fully understood but that does not mean processes do not exist. Apples were falling out of trees long before one of them hit Isacc Newton on the head, solidifying the theory of gravity. CO_2 has its own mechanism issues. As mentioned previously, the IPCC uses a range of 1.8 to 5.7 °C CO_2 ECS. That is not settled science and given that the models run too hot even at 1.8 °C (according to the modelers themselves) they may need to work on their "mechanism" (positive water vapor feedback).

The IPCC models focus on the radiative warming only and ignore the two CO_2 cooling parameters (more leaf coverage and co-aerosols generated by hydrocarbon combustion). The cooling contributions can be significant and may be close to making the IPCC's positive water vapor feedback mechanism moot. Combined with CO_2's exponentially declining warming capacity (its approaching saturation issues), rising CO_2 levels could be or may soon be producing cooling. As per this NASA statement, *"Scientists say that global greening since the early 1980s may have reduced global warming by as much as 0.2° to 0.25° Celsius (0.36° to 0.45° Fahrenheit)."*

Climate Change is complex and the correct answer will not be found in a simplistic, unscientific focus on anthropogenic forcings alone. Conversely, the answer is not just the sun alone. The sun certainly appears to play a dominant role, but its activities are ultimately controlled by the electromagnetic and gravitational interactions active throughout our solar system and beyond. That is a complex subject and will not be discussed here in any detail. Links have been included below that go into more detail (for those inclined).

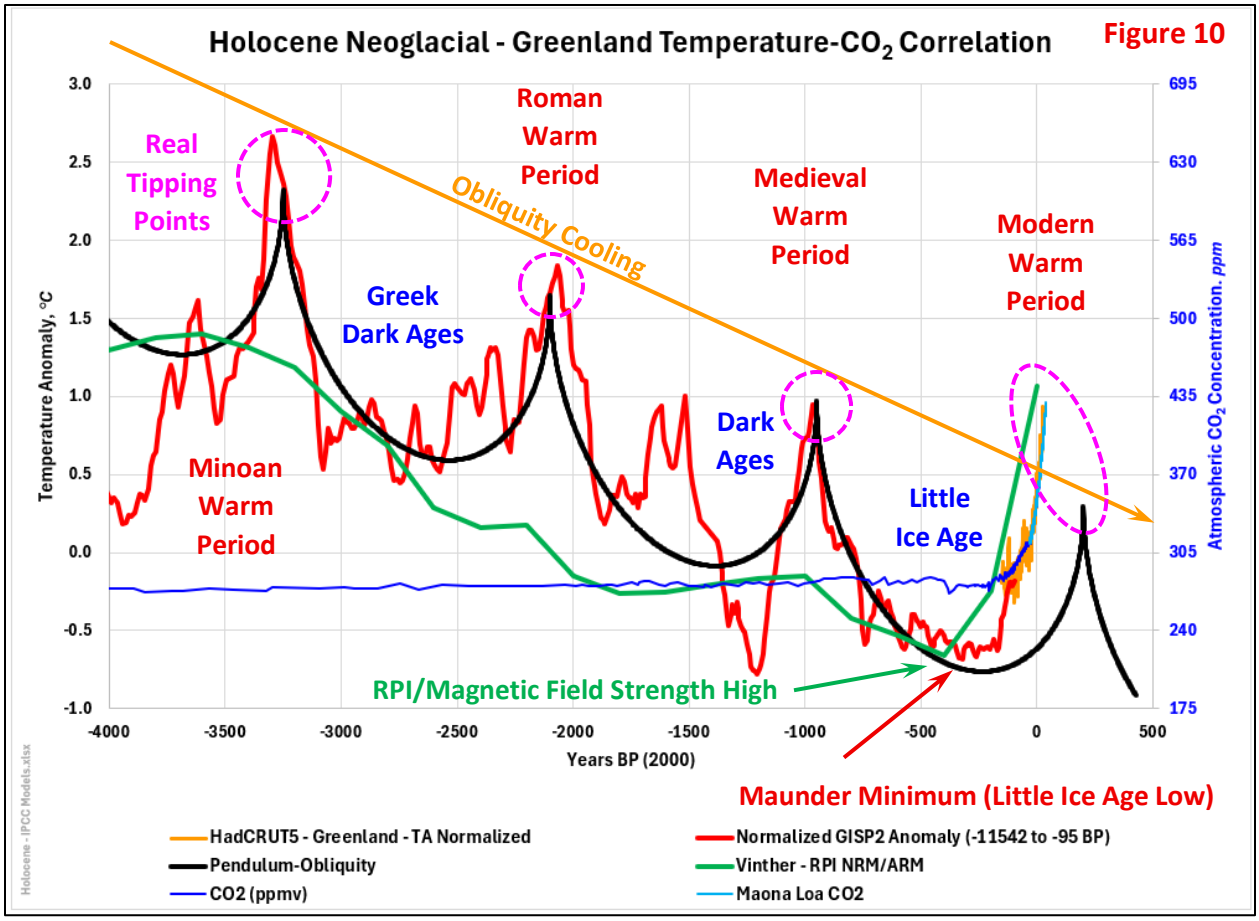
The recent Sagnotti et al paper (January 2026), *"Improving the reconstruction of Holocene geomagnetic paleosecular variation in the Antarctic region"* lays out the status of the earth's magnetic field strength over the Holocene. Figure 9 (on the following page) shows that the Holocene Relative



Paleo Intensity (RPI) correlates closely with the average global temperature (including the sharp temperature climb out of the depths of the Little Ice Age (the Maunder Minimum). Obviously a far better correlation than the non-correlation with CO_2. Note, the temperatures started rising a couple of centuries before CO_2 began rising. Again, CO_2 is not the primary driver of 'climate change'. Note, the RPI data has a 200-year periodicity, so fine detail is not visible.

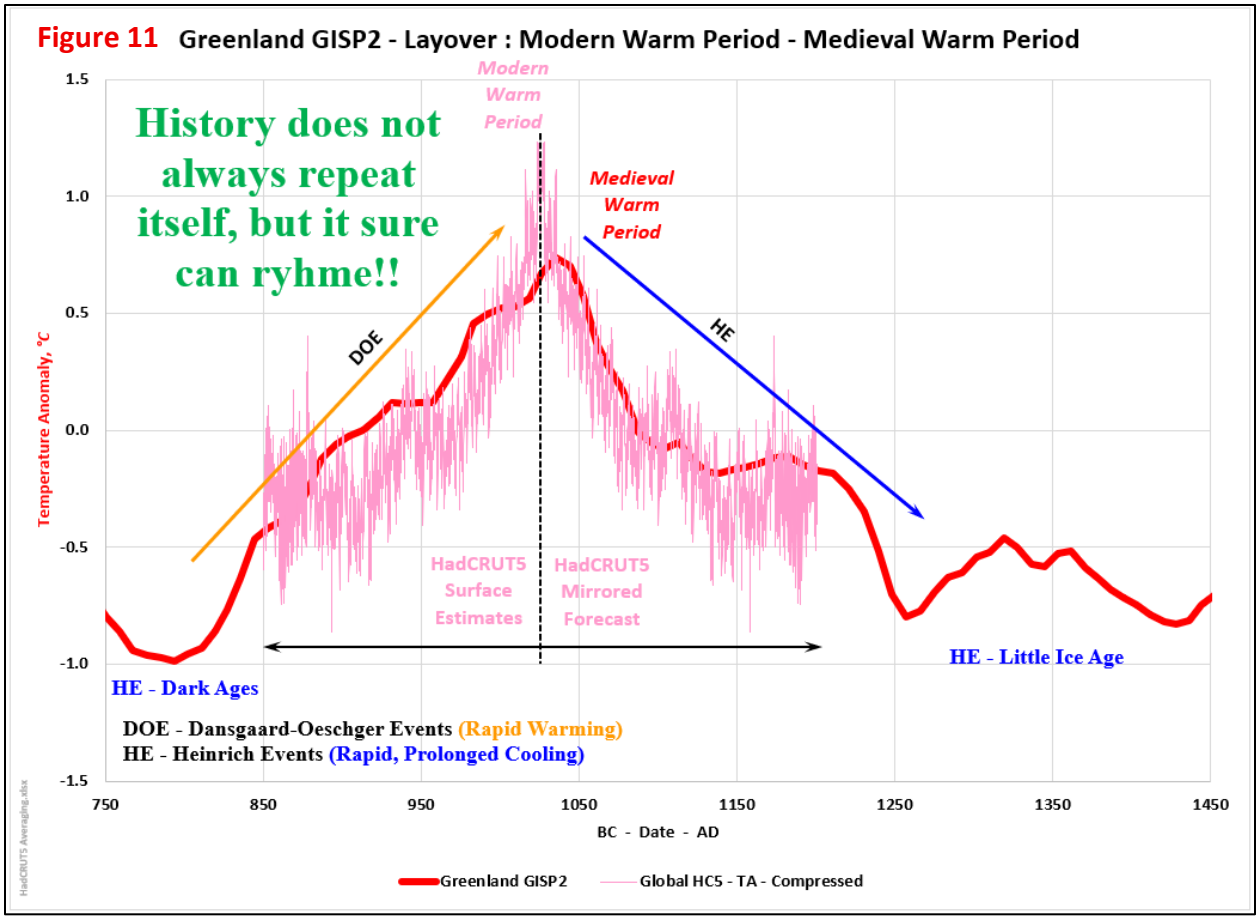
Is the Figure 9 RPI correlation (general temperatures are high when the RPI/Magnetic Field strength is low and vice versa), causal? Likely in part, but the RPI is also very likely tied directly to the Milankovitch cycles (the well-established climate driver on longer time frames). However, the sharp drop, remember the RPI is inverted, beginning in the 1600s is likely a separate, shorter-term manifestation of the electromagnetic and gravitational interactions affecting our solar system. That rapidly weakening RPI may be the real key to the recent past and what our future holds. The planet's warming began in the 1600s, well before CO_2 concentrations began rising.

The Greenland temperatures (Figure 10, GISP2 on the following page) show the response to solar activity (directly and through indirect forcings like oceanic/atmospheric cycles). The black curve is a schematic representation of the sun's Bond/Eddy cycle (±1,150 years) consolidated with the Milankovitch's Obliquity cycle (±41,000 years) cooling phase. The Bond/Eddy cycle is characterized by warming out of a prolonged cold period. That warming (regardless of its source) ends abruptly (a tipping point perhaps (?)) and drops rapidly back into the next prolonged cold period (called a Heinrich event with each successively colder as the Obliquity cooling progresses).



Heinrich events are induced by warming. That warming accelerates melt in the higher latitudes, leading to more cold, fresh water in the Arctic and the North Atlantic. The cold, fresh Arctic waters are stored in the Beaufort Gyre until they are released into the North Atlantic en masse. That release is overdue. Along with accelerated iceberg drifts into the mid-latitudes (a significant Heinrich event characteristic), has the potential to disrupt the Atlantic Meridional Overturning Circulation (regardless of whether the AMOC is currently strengthening or weakening). If the AMOC shuts down (as it has many times in the past), the Northern Hemisphere drops into a new Little Ice Age (with implications for the entire planet). Greenland is the canary in the coal mine. The warming has already begun (again more than two centuries before CO_2 began to rise and even had a chance of influencing temperatures).

That warming is earlier than expected (based solely on the Bond/Eddy solar cycle), but the end result (an AMOC collapse) will very likely be the same. That collapse will look like the illustration pictured in Figure 11, on the following page. The HadCRUT5 temperature dataset was overlain on the Medieval Warm Period's warming, followed by a mirror image of the HadCRUT5 data over the Medieval Warm Period's cooling phase (the 'coming' Heinrich event). CO_2 did not initiate the warming, so what did? As shown in Figure 10, the RPI abruptly shifted from strengthening to weakening sharply in the early 1600s, just before the temperatures began rising. A weaker magnetic field would contribute to that warming, along with the other climate drivers that are influenced by the earth's gravitational and electromagnetic interactions with the sun, the solar system and even the galaxy. The natural variability of this "*coupled non-linear chaotic system*" (i.e.: subject to unpredictability) also must be considered. The sun has many other shorter cycles that can also play a role on shorter time scales.



For more perspective and more detailed analysis, you can also check out some of the following posts.

IPCC Working Group 1 (WG1) Sixth Assessment Report (AR6) Annex III Extended Data
https://zenodo.org/records/5705391

Challenges in the Detection and Attribution of Northern Hemisphere Surface Temperature Trends Since 1850 – Connolly Soon et al 2023
https://iopscience.iop.org/article/10.1088/1674-4527/acf18e

Global Green Up Slows Warming - NASA
https://science.nasa.gov/earth/earth-observatory/global-green-up-slows-warming-146296/

Improving the reconstruction of Holocene geomagnetic paleosecular variation in the Antarctic region – Sagnotti et al (January 2026)
https://www.sciencedirect.com/science/article/pii/S0031920125001815

Climate Short Story (CSS)

CSS-56 – The Holocene & Solar Activity
https://climatechangeandmusic.com/the-holocene-solar-activity/

CSS-69 – CO_2's Cooling Parameters
https://climatechangeandmusic.com/co2s-cooling-parameters/

CSS-71 – IPCC's Model/Theory Shortcomings
https://climatechangeandmusic.com/ipcc-model-theory-shortcomings/

CSS-71 – IPCC's Model/Theory Shortcomings – Revisited
https://climatechangeandmusic.com/css-71-ipcc-model-theory-shortcomings-revisited/

CSS-74 – Climate Tipping Points
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CSS-75 – Solar Forcing Discussion
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