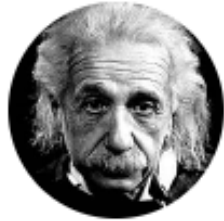


CSS-86a Is “the Science” Settled? - Generalities

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This question is intentionally grammar challenged. Firstly, there is no such thing as “the science”. Science is not some specific entity. And secondly, science is never settled. Albert Einstein and Stephen Hawking address that point in a couple of quotes included below. The UN’s Melissa Fleming’s flagrant claim that ***“We own the science”*** or Anthony Fauci’s egotistical statement that ***“They’re really criticizing science because I represent science”***, shows how far that science has fallen. The Scientific Method has been replaced by “consensus science” as described by Michael Crichton below. That is



“Why 100? If I were wrong, one would have been enough. Einstein’s response to the book “Hundred Authors Against Einstein”.

– Albert Einstein

“No amount of experimentation can ever prove me right; a single experiment can prove me wrong.”

Stephen Hawking echoed Einstein’s viewpoint. ***“Any physical theory is always provisional. No matter how many times the results of experiments agree with some theory, you can never be sure that the next time the result will not contradict the theory. On the other hand, you can disprove a theory by finding even a single observation that disagrees with the predictions of the theory.”***

not good for science, and not good for our future society. Here (to the right) are just a few scenarios that did not turn out as predicted. There are

13. **1988**: Regional Droughts (that never happened) in 1990s
14. **1988**: Temperatures in DC Will Hit Record Highs
15. **1988**: Maldiv Islands will Be Underwater by 2018 (they’re not)
16. **1989**: Rising Sea Levels will Obliterate Nations if Nothing Done by 2000
17. **1989**: New York City’s West Side Highway Underwater by 2019 (it’s not)
18. **2000**: Children Won’t Know what Snow Is
19. **2002**: Famine In 10 Years If We Don’t Give Up Eating Fish, Meat, and Dairy
20. **2004**: Britain will Be Siberia by 2024
21. **2008**: Arctic will Be Ice Free by 2018
22. **2008**: Climate Genius Al Gore Predicts Ice-Free Arctic by 2013
23. **2009**: Climate Genius Prince Charles Says we Have 96 Months to Save World
24. **2009**: UK Prime Minister Says 50 Days to ‘Save The Planet From Catastrophe’
25. **2009**: Climate Genius Al Gore Moves 2013 Prediction of Ice-Free Arctic to 2014
26. **2013**: Arctic Ice-Free by 2015 ([additional link](#))
27. **2014**: Only 500 Days Before ‘Climate Chaos’
36. **2006**: Super Hurricanes!
37. **2005**: Manhattan Underwater by 2015

50 Years of Failed Doomsday, Eco-pocalyptic Predictions; the So-called ‘experts’ Are 0-50 – [American Enterprise Institute \(AEI\)](#)

Settled Science? Generalities
many more examples that ***“disagree with the predictions of the theory”*** (i.e.: “global warming”).
Another great

physicist, Freeman Dyson (to the right), recognized the field of “climate science” for what it was. A very complicated field with many disciplines that we know very little about. But that does not stop the All CO₂, All the Time alarmist crowd from putting forward their simplistic, unscientific “theories”. To round the discussion out, I will finish with Richard Feynman’s quote (far right).

The science is never settled, but without asking questions, science does not advance.



“I want to pause here and talk about this notion of consensus, and the rise of what has been called consensus science. I regard consensus science as an extremely pernicious development that ought to be stopped cold in its tracks. Historically, the claim of consensus has been the first refuge of scoundrels; it is a way to avoid debate by claiming that the matter is already settled.

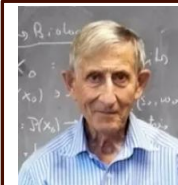
Whenever you hear the consensus of scientists agree on

something or other, reach for your wallet, because you’re being had.

“Let’s be clear: the work of science has nothing whatever to do with consensus. Consensus is the business of politics. Science, on the contrary, requires only one investigator who happens to be right, which means that he or she has results that are verifiable by reference to the real world. In science consensus is irrelevant. What is relevant is reproducible results. The greatest scientists in history are great precisely because they broke with the consensus.

“There is no such thing as consensus science. If it’s consensus, it isn’t science. If it’s science, it isn’t consensus. Period.

“In addition, let me remind you that the track record of the consensus is nothing to be proud of”



“Climate Change is part of the normal order of things, and we know it was happening before humans came.”

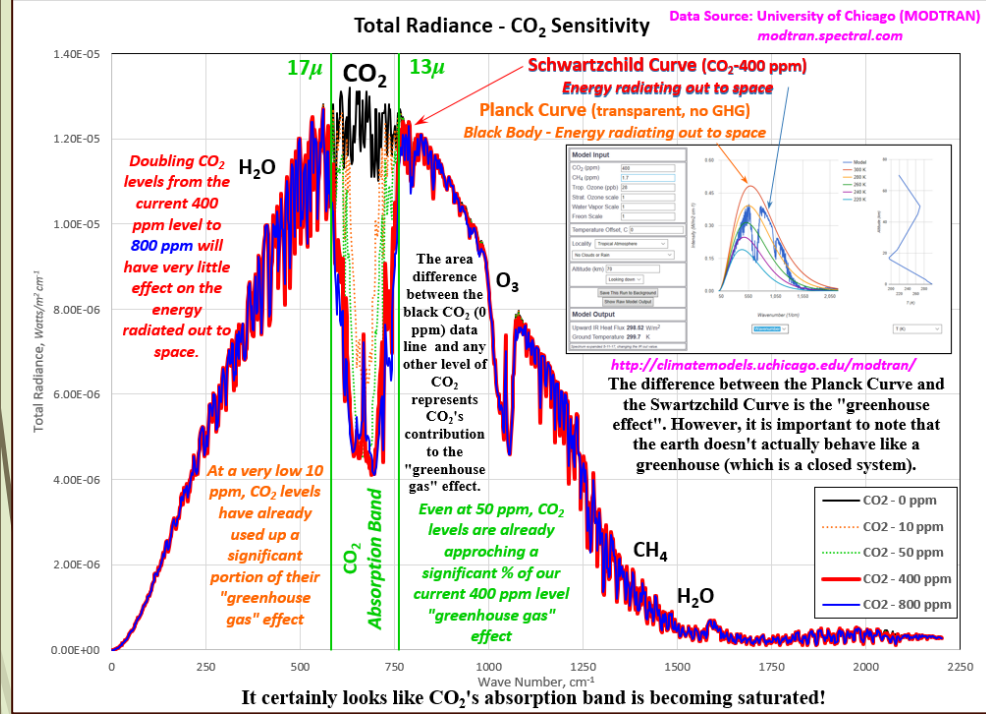
“When I listen to the public debates about climate change, I am impressed by the enormous gaps in our knowledge, the sparseness of our observations and the superficiality of our theories.”

Freeman Dyson

“I would rather have questions that can't be answered than answers that can't be questioned.”

- Richard Feynman



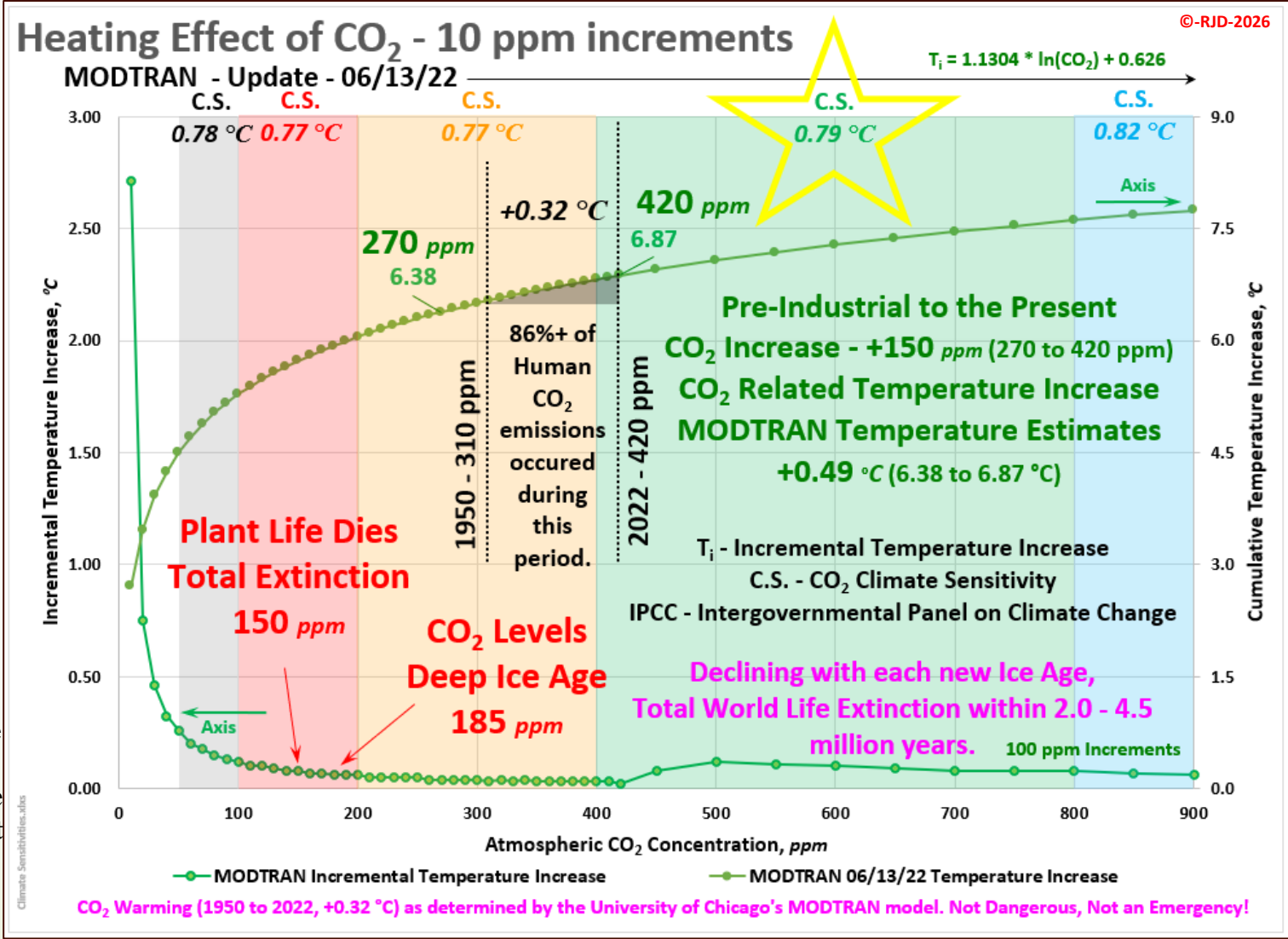


The chart above shows the radiation spectra being emitted to space (in the tropics) and was produced using the University of Chicago's MODTRAN model. The model is calibrated to satellite measurements. The chart on the right shows the temperature effect that CO₂ changes have on our planet based on CO₂'s radiative properties.

Settled Science? CO₂-ECS

As shown, a CO₂ ECS of roughly 0.8 °C is intrinsic to the MODTRAN Model. Based on my review of the available data and literature ([OPS-80 – CO₂ Affects Temperature, but Does CO₂ Drive the Climate?](#)), 0.8 °C is a reasonable estimate of CO₂'s ECS and its radiative CO₂ capacity. Is that a definitive value? No, as I have said many times, CO₂ ECS is not settled science. There are climate realists that estimate the value is much lower and have peer reviewed papers to back up that assertion. What is very clear is that the value is lower than 1.8 °C (the low end of the IPCC range), given their models all run too hot. Bottom Line, if you cannot establish a definitive CO₂ ECS, you do not know its temperature effects.

You would think that the All CO₂, All the Time alarmist community pushing the Global Warming/Greenhouse Gas Theory would be based on “Settled Science”, like they constantly remind us. But you would be wrong (even if science could be settled). The IPCC uses a wide range of CO₂ Equilibrium Climate Sensitivity (ECS) in their models (1.8 to 5.7 °C). That is not “Settled Science”. Then you can layer on the fact that the IPCC modelers have acknowledged that their models run too hot and they have regularly used implausibly high emission scenarios. In fact, this year the IPCC officially sidelined their RCP8.5/ssp5-8.5 emission scenarios. Not soon enough, given actual emission scenarios are tracking below RCP4.5/ssp2-4.5.

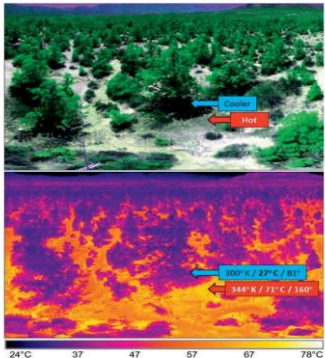


CSS-86c Is “the Science” Settled? – CO₂’s Cooling Parameters (CSS-69)

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The CO₂ ECS story can be further complicated by layering in the cooling effects that rising CO₂ also produces. The IPCC tends to focus on CO₂’s radiative forcing and they ignore CO₂’s cooling parameters. The primary cooling factor is leaf cover. The CO₂ rise since 1850 has increased plant coverage on

The CO₂/Flora Cooling Effect (Green Effect) Discussed by NASA



our planet. More leaf coverage means lower temperatures. Many studies and measurements have confirmed that fact. From NASA, “scientists say that global greening since

the early 1980s may have reduced global warming by as much as 0.2° to 0.25° C”.

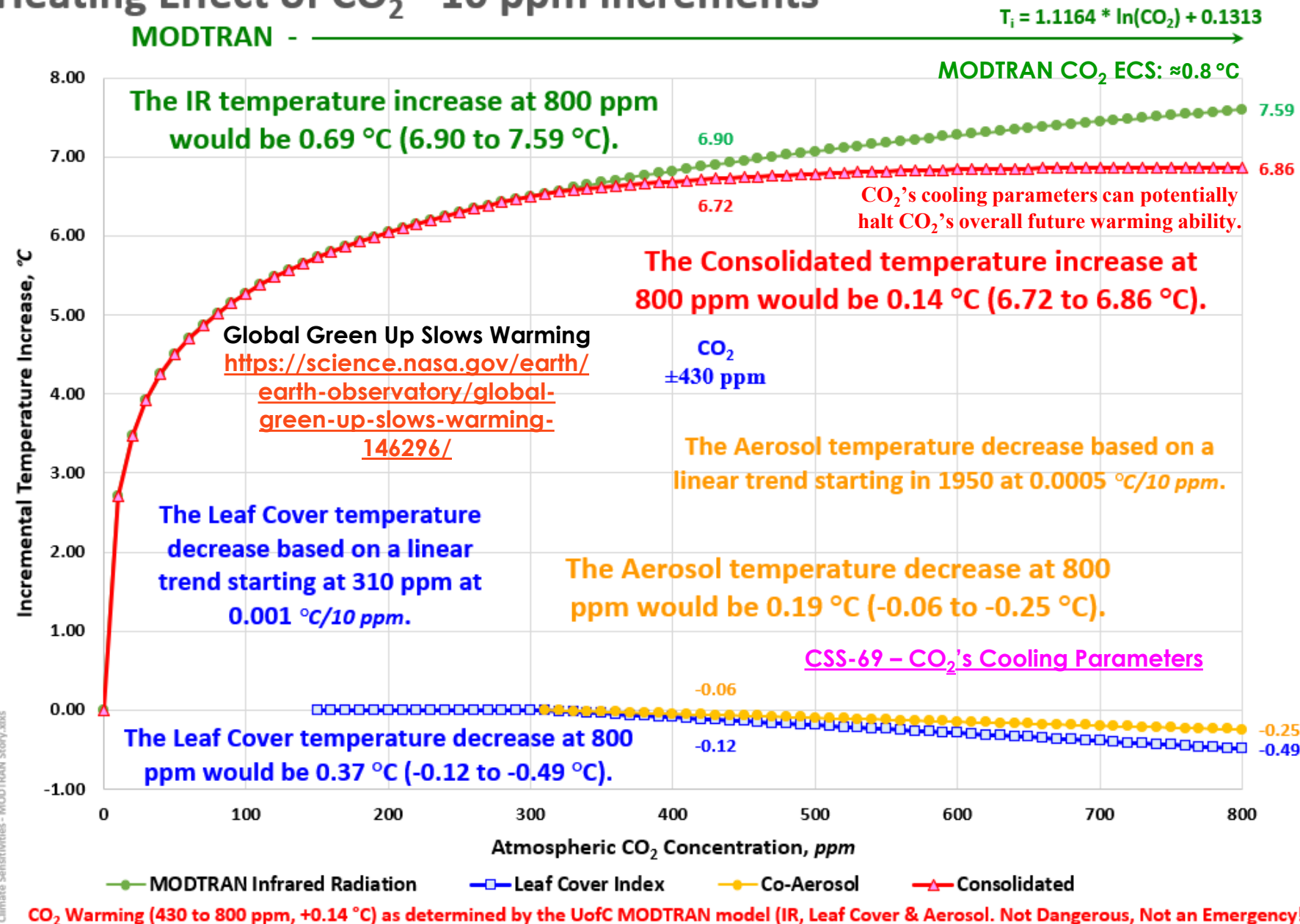
The plot to the right shows that leaf effect in blue and the production of aerosols through hydrocarbon burning in yellow.

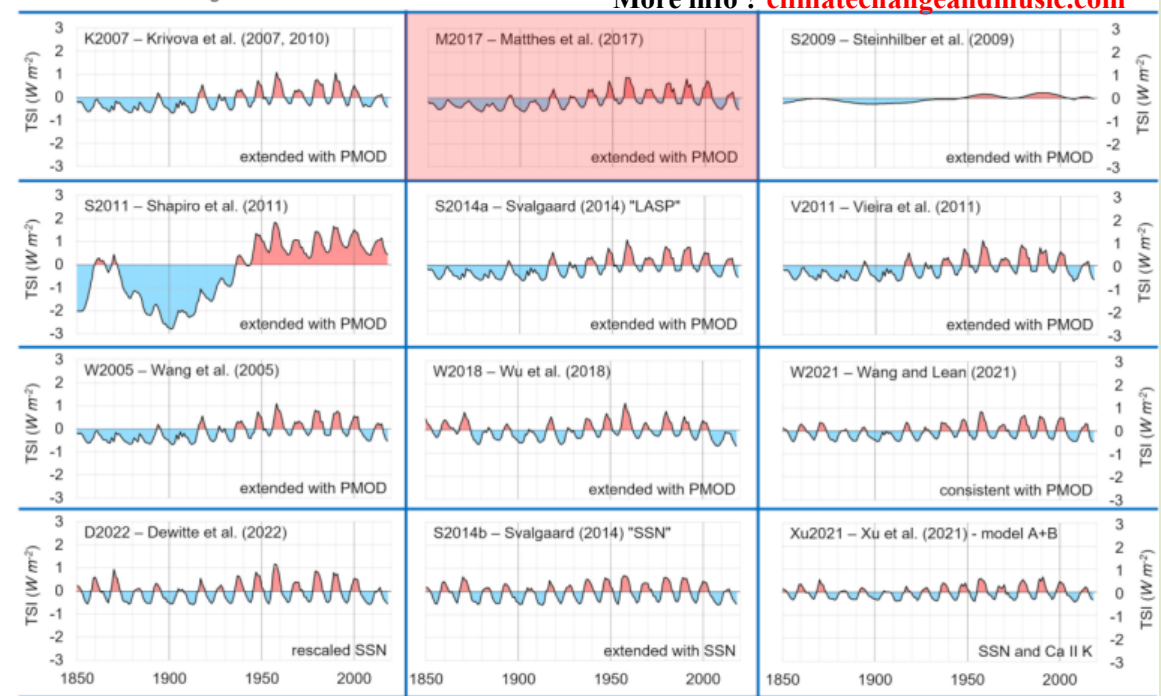
The aerosol effect is poorly understood as shown by the IPCC’s own “best estimates” discussed in my CSS-71 – IPCC Model/Theory Shortcomings post. The effect here was kept to a minimum but is more than enough combined with the leaf coverage cooling, to almost completely halt CO₂’s future warming ability. Settled science? No, but a real factor ignored by the IPCC.

Settled Science?
CO₂-Cooling

Heating Effect of CO₂ - 10 ppm increments

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The IPCC AR5 Report used an average of 4 TSI Reconstructions – (K2007, S2009, V2011, and W2005)

The IPCC AR6 Report used 1 TSI Reconstruction – (an average of C2016 and K2007)

Soon-Connolly² et al used an average of 8 ACRIM calibrated TSI Reconstructions – (B2000, E2018a, E2018b, H1993, L1995, P2022, S1998a, and S1998b)

Settled Science? Solar - TSI

CSS-86d Is “the Science” Settled? – Total Solar Irradiance (TSI)

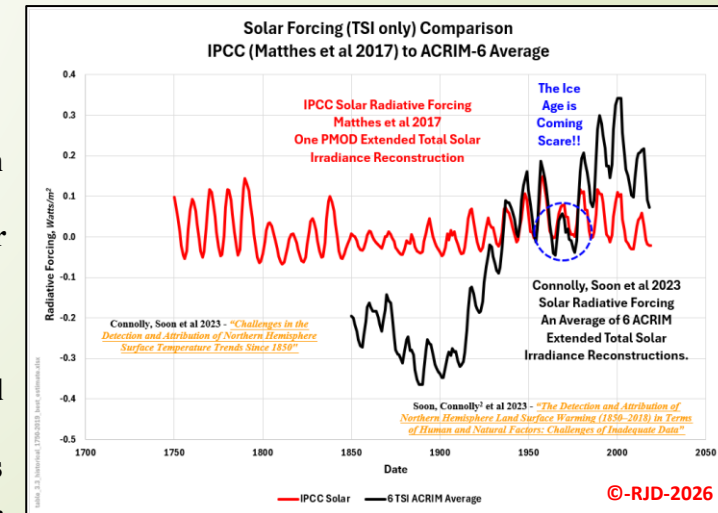
CO₂ ECS, despite its importance to the ‘climate change’ discussion remains undefined. As does solar activity! The IPCC has chosen the Matthes et al 2017 TSI reconstruction as their ‘best estimate’,

highlighted in **red above** and discussed in my [CSS-71 – IPCC Model/Theory Shortcomings](#) posts). That

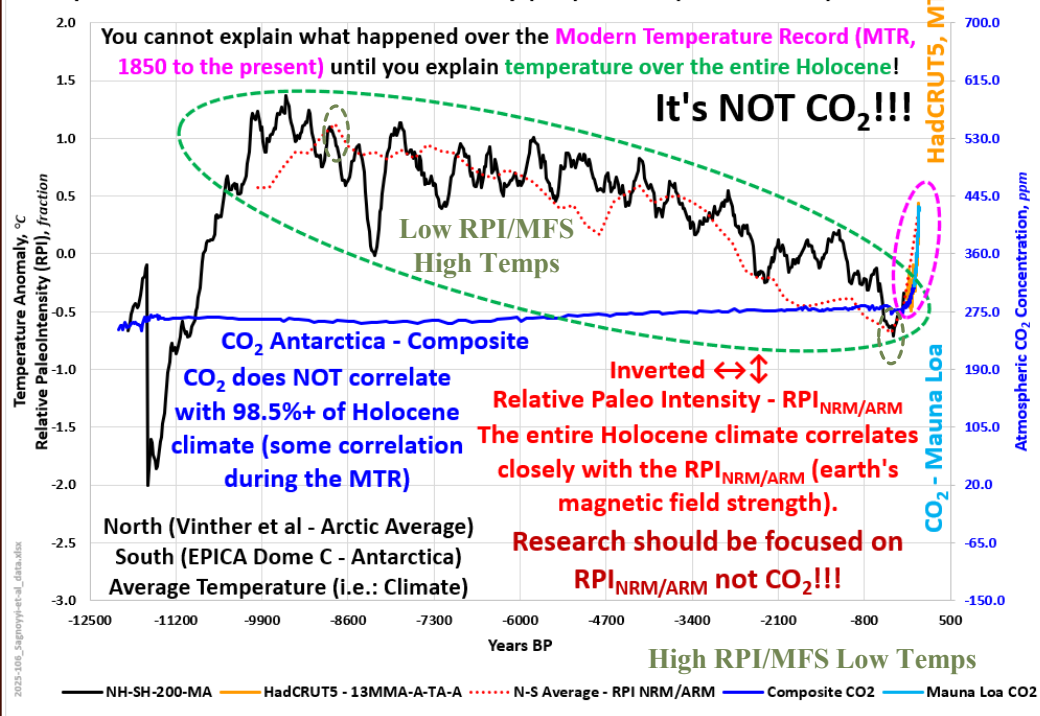
ignores the 40+ other available TSI reconstructions (27 of which are shown above). The Matthes TSI reconstruction

is plotted (to the right) against the average of the six TSI reconstructions highlighted in green above. The choice you make for TSI makes a huge difference in how much contribution can be expected by the sun (both directly (TSI) and indirectly through the solar related activity like ocean and atmospheric circulations, space weather (cosmic ray flux (CRF), high energy particles (HEP), solar

wind and magnetic field strength), etc.). The IPCC literally ignores any solar forcings other than TSI. The CRF and HEP are programmed into the CMIP6 protocols and were able to reproduce the Modern Temperature Record (MTR, 1850 to the present) without CO₂ contribution during beta testing. But of course, they had an easy fix, just turn the CRF and HEP off or way down and turn the CO₂ knob back up. They also ignore the fact that all these TSI's have a similar profile when normalized to their max and mins. Meaning any TSI reconstruction can be used as a proxy to model the MTR by recognizing that there are more solar forcings than just TSI. Solar activity impacts are not settled science, and the alarmist community cannot ethically/morally use just one TSI.



Temperature versus Relative PaleoIntensity (RPI) Record (10,000 Years)



than observations prove their narrative? There is some settled science in both the plots shown here. CO₂ does not correlate with the pre-MTR Holocene temperatures (i.e.: climate) and can therefore not be driving that climate. Conversely, the Relative Paleo Intensity (RPI, the Magnetic Field Strength, MFS) does generally correlate with the entire Holocene (including the MTR) and could therefore be impacting the global Holocene climate. Is the magnetic field driving the climate on its own? No, but the correlation is very likely a reflection of the gravitational and electromagnetic interactions throughout our solar system (and beyond) that also drive our climate. Our magnetic field strength has been decreasing rapidly since its peak during the 1600s Maunder Minimum (high magnetic field strength, cold temperatures). Temperatures began rising shortly after the RPI began rising and centuries BEFORE CO₂ began rising. Which parameter, CO₂ or RPI (i.e.: MFS) has a more important role in driving the climate? MFS is down roughly 42% since the 1600s, 25-30% since 1859. Not “settled science” but important and valid.

Settled Science? Indirect Solar

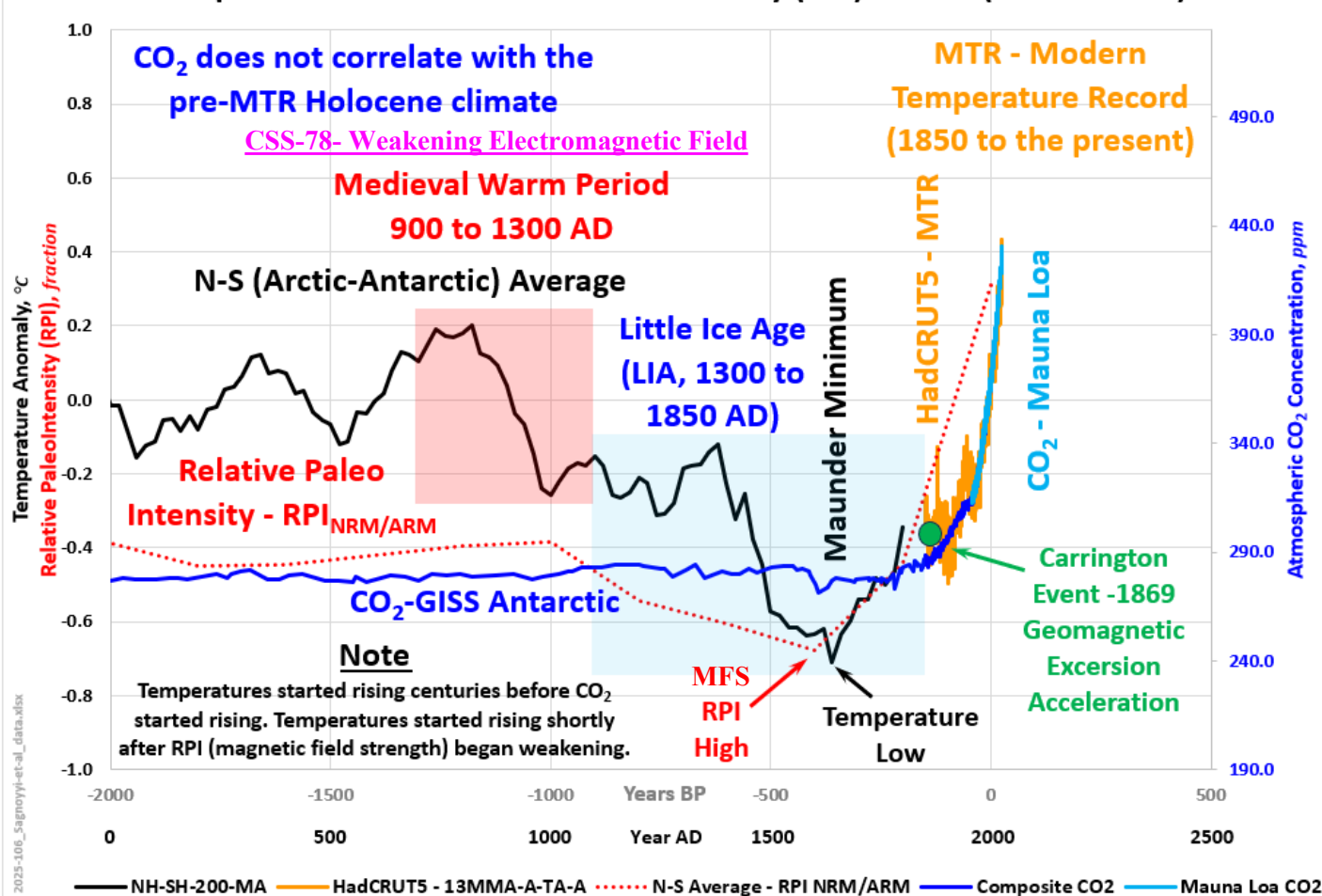
CSS-86e Is “the Science” Settled? – Indirect Solar Forcing

“The science” of Total Solar Irradiance is not “settled” and will not be settled in the near future. An unfortunate gap in the ACRIM satellite data measurements has left the TSI science open to interpretation. With many more decades of future data, the discrepancies may be moderated. There is more discussion in my [CSS-20 – Homogenization – Solar Activity Style](#) post. As mentioned, solar forcings over and above TSI are routinely and knowingly ignored because they do not have a “proven mechanism”. That is rich coming from an ideology that relies on their “unproven positive water vapor feedback mechanism” to produce the CO₂ ECS that drive their alarmist narrative. In what reality does a huge range of ECS (as per the IPCC, 1.8 to 5.7 °C) that all produce projections that are higher

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Temperature versus Relative PaleoIntensity (RPI) Record (10,000 Years)

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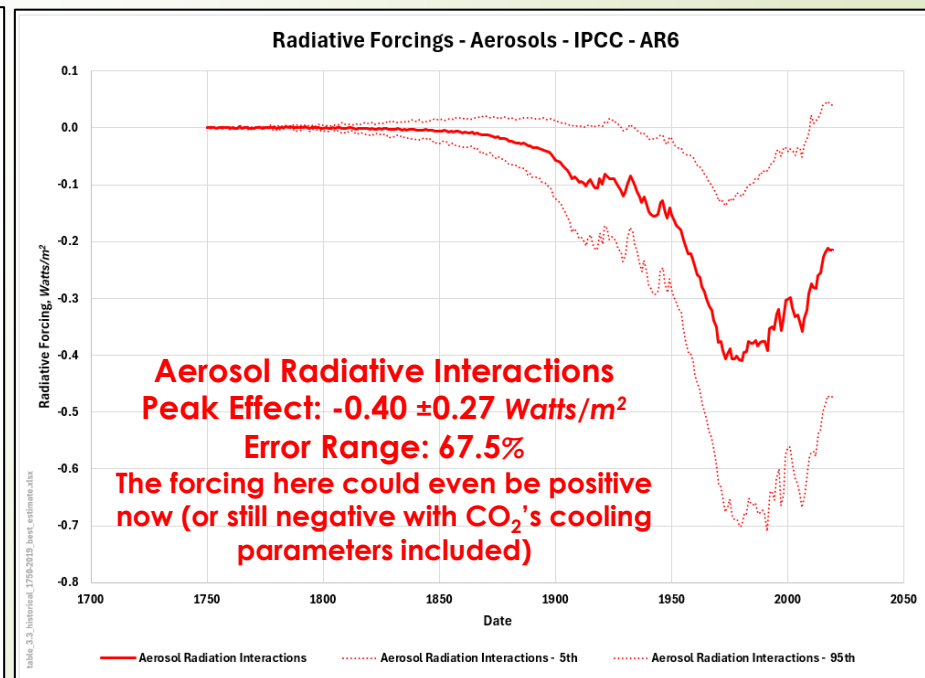
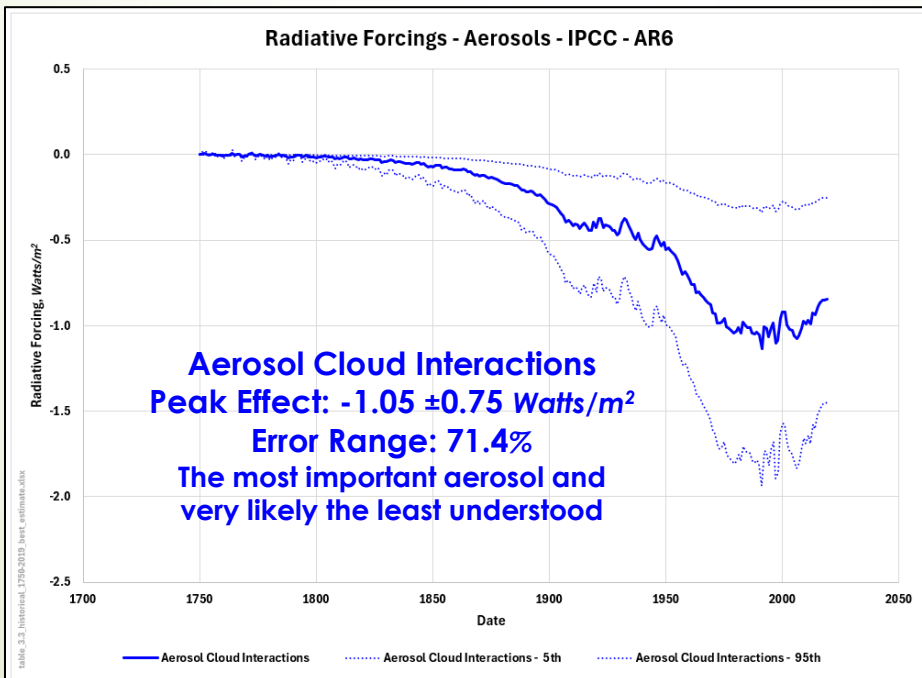
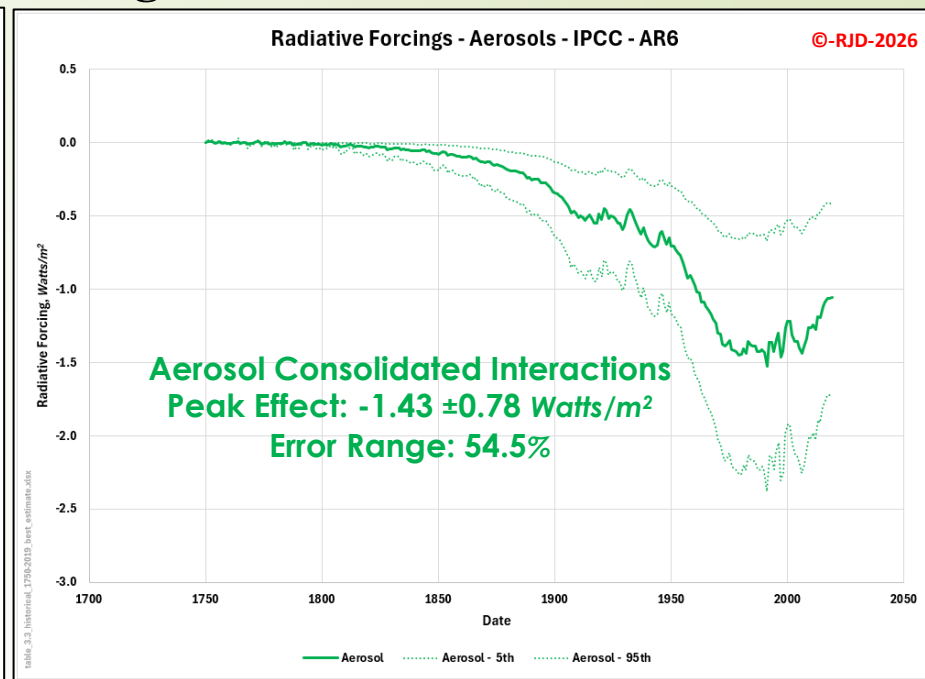
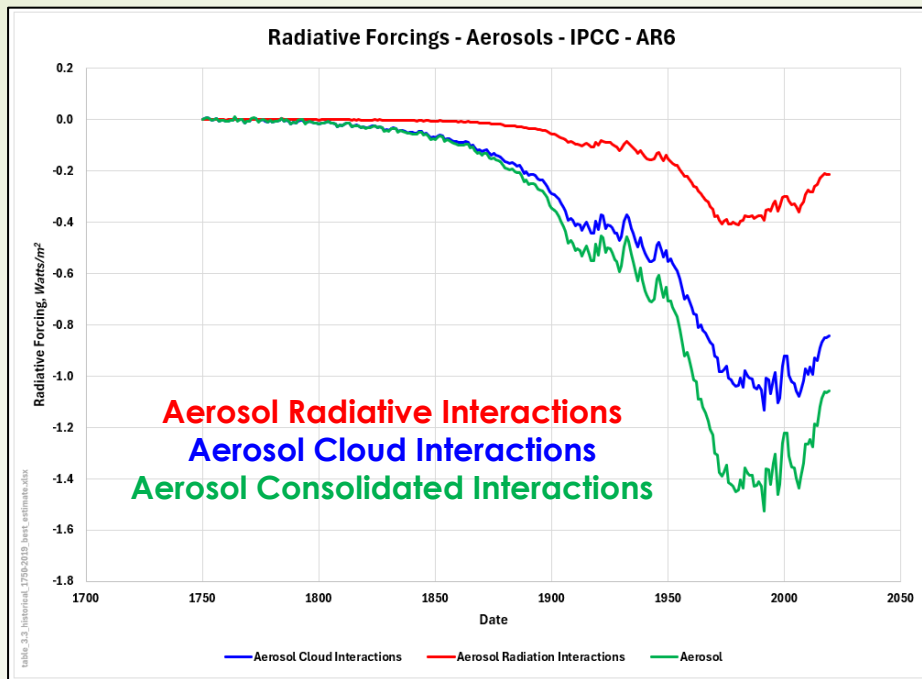
CSS-86f Is “the Science” Settled? – IPCC Best Estimates - Aerosol Forcing

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A side bar to solar forcing is aerosol forcing. Aerosols play a key role in how much of the sun’s energy reaches and leaves our planet. According to Bing AI, “aerosols play a dual role in climate change: they can cool the planet by reflecting sunlight and warm it by absorbing solar energy, while also modifying cloud properties and precipitation. Their net effect is complex and regionally variable, and changes in aerosol emissions can significantly influence the pace of global warming, making them a critical factor in climate science and policy planning.” But ultimately, they are poorly understood. As shown in the charts to the right, the IPCC’s ‘best estimates’ have a wide margin of error. And that does not include the fact that the IPCC does not acknowledge the effect that Cosmic Ray Flux (CRF) has on cloud nucleation. A proven mechanism as valid and plausible as the IPCC’s positive water vapor feedback hypothesis that produces a wide range (1.8 to 5.7 °C) of CO₂ ECS and still produces projections that all, self admittedly, run too hot.

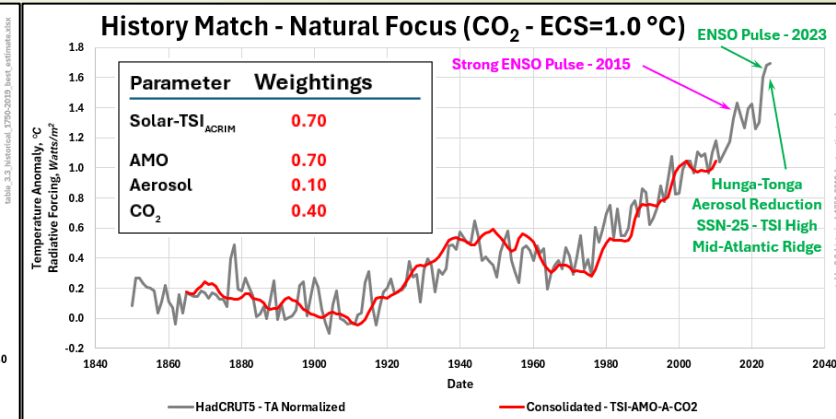
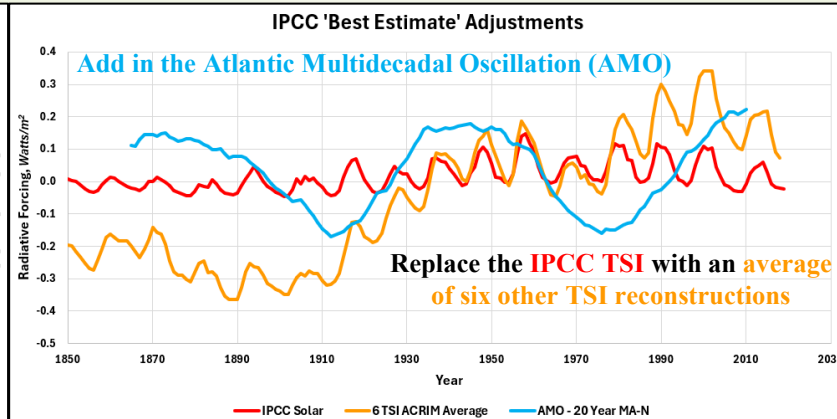
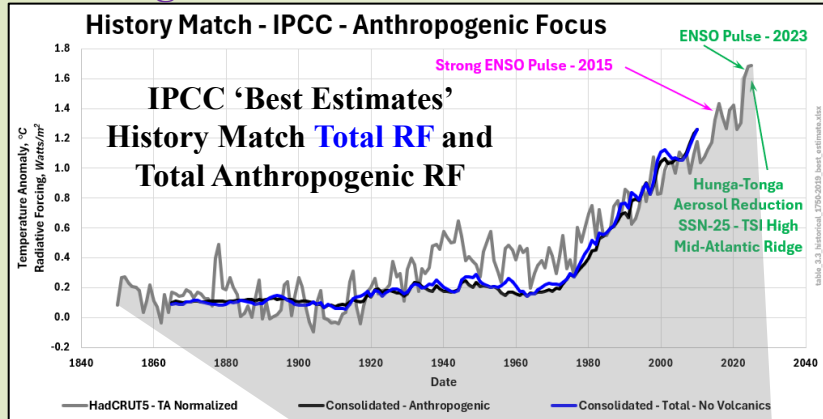
Settled Science? IPCC Aerosols

Acknowledging the solar forcing just might go a long way to dealing with that little “the models are running too hot” problem. But that would not fit the All CO₂, All the Time alarmist narrative, would it? The next slide shows just how easy the transition from an anthropogenic to solar/natural weighted forcing can happen with established science!

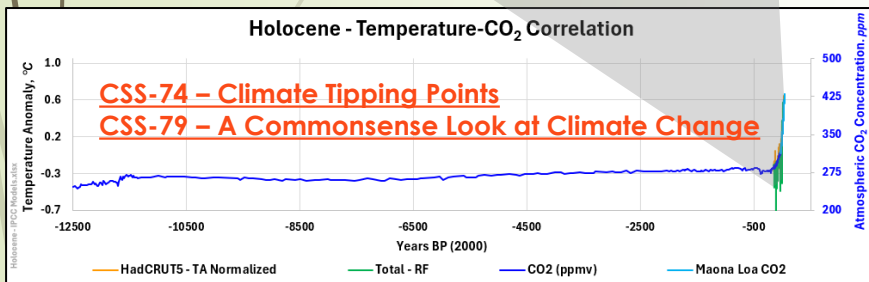


CSS-86g Is “the Science” Settled? – IPCC Best Estimates – Human versus Natural

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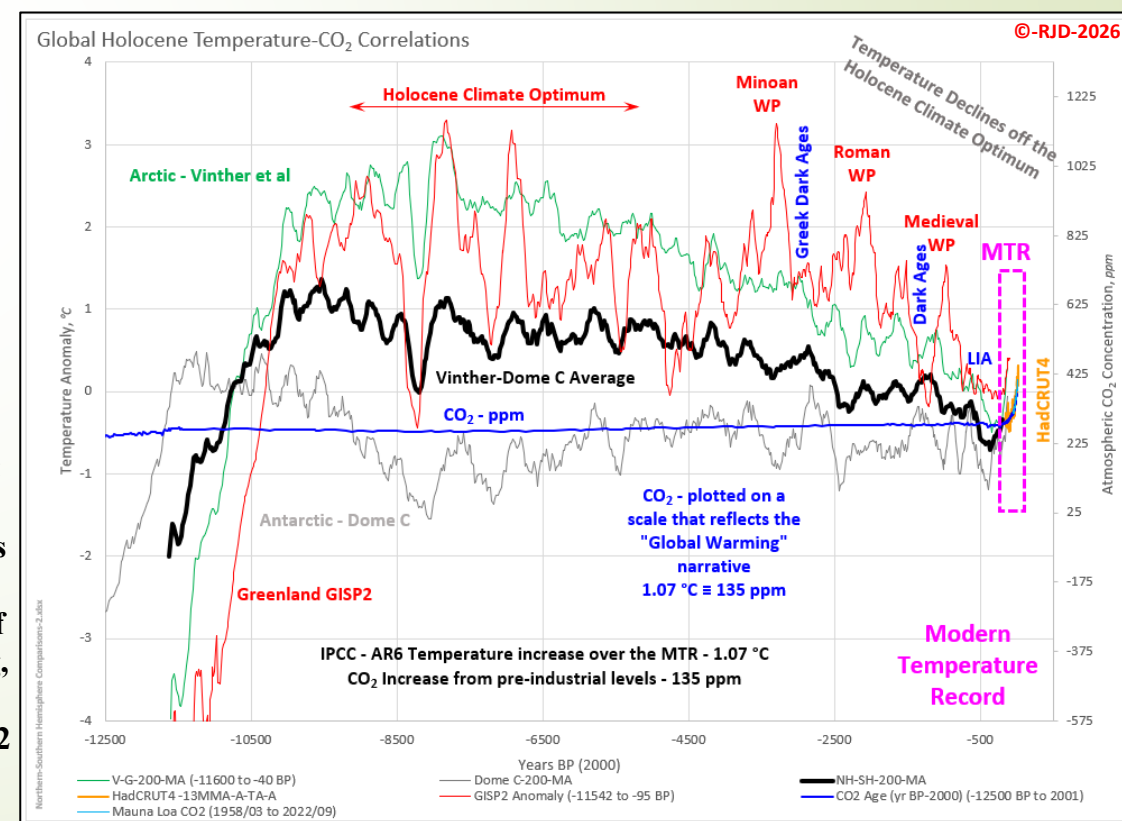
To go from the IPCC ‘best estimate’ history match (an anthropogenic focus) to the far better solar focused history match only requires the addition of the **Atlantic Multidecadal Oscillation** and a substitution of the **IPCC TSI reconstruction (Matthes et al 2017)** with an equally valid alternative TSI reconstruction (**an average of six of other 40+ available TSI reconstructions**). Adding in the other major ocean cycles would tighten up that history match further. The IPCC’s anthropogenically focused ‘best estimates’ cannot possibly history



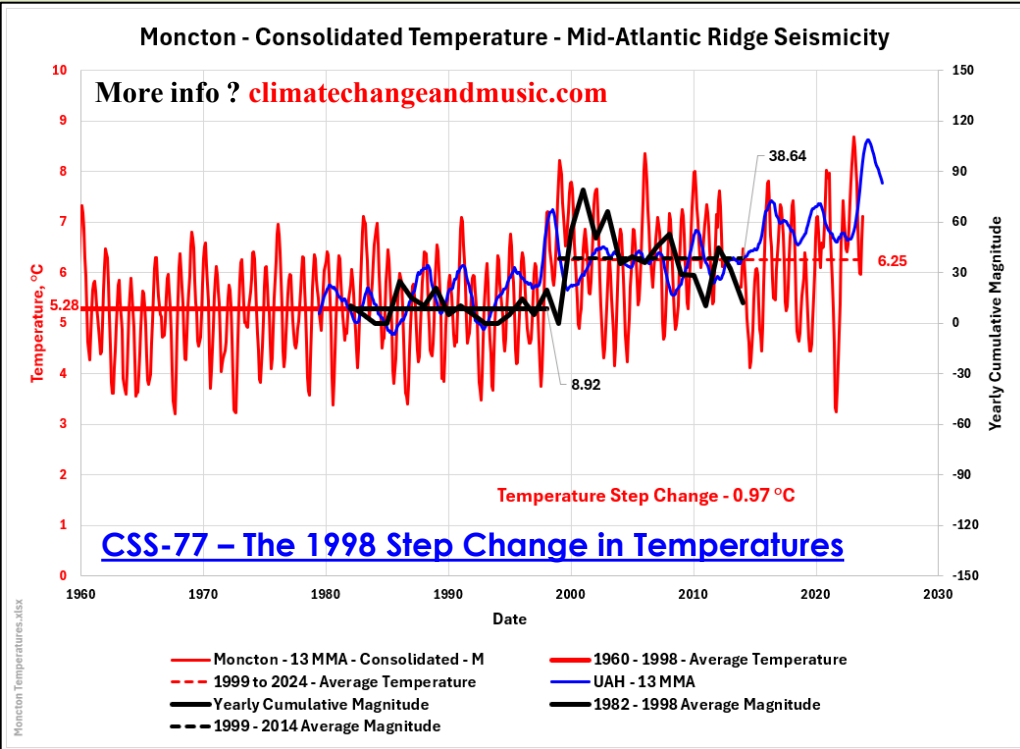
history match the pre-MTR Holocene climate given that there are essentially no anthropogenic forcings (CO₂ or otherwise pre-MTR, as shown to the left). A solar focused model has a chance to history match the pre-MTR Holocene climate. Solar Cycles

(through direct and indirect mechanisms) are not “settled science”, but something is driving the very obvious Holocene ‘climate change’ shown to the right and CO₂ (natural or anthropogenic) is not the answer. There is a much more detailed discussion on Solar Cycles in my **CSS-75 – Solar Cycle Discussion** post. Temperatures fluctuated significantly and often throughout

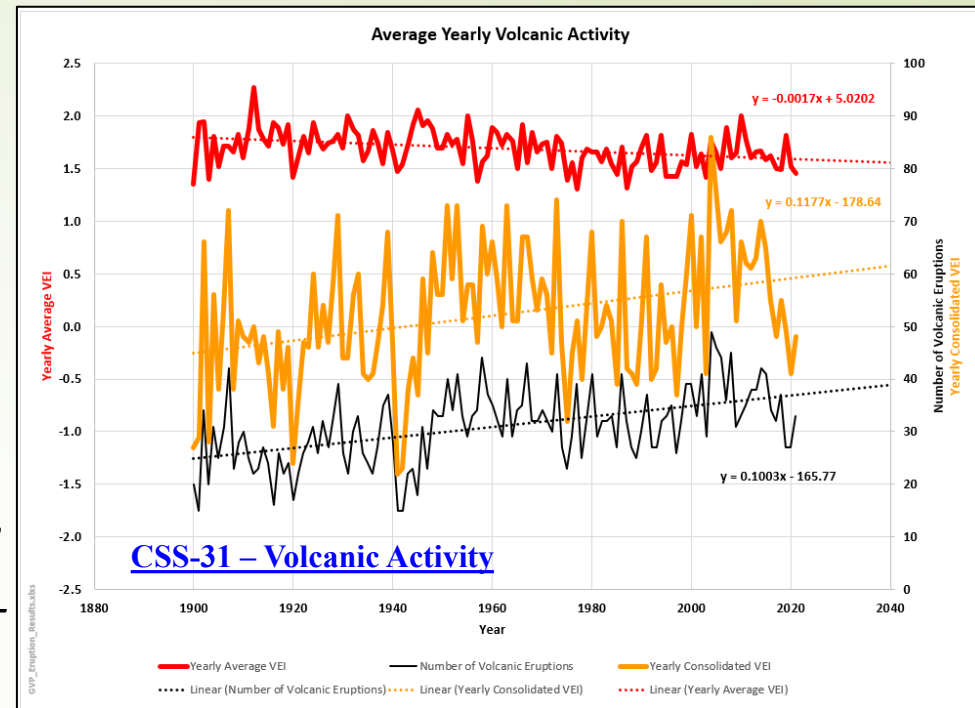
the Holocene. Those temperature fluctuations (in both the Northern and Southern Hemispheres) were associated with sea level rise and fall, and glacial advances and retreats. The natural forcings that produced those fluctuations were still active during the Modern Temperature Record (MTR, 1850 to the present) and will still be active in the future. Note, the current temperature rise (out of the Little Ice Age (LIA)) began during the Maunder Minimum (centuries before CO₂ began rising, but right after our magnetic field began weakening). That temperature rise is very likely just a continuation of the ±1,100-year Bond/Eddy Solar Cycle that is very visible in the Greenland GISP2 temperature data (to the right). Although localized that data is likely connected to the potential collapse of the AMOC, a **tipping point to colder temperatures** which will affect the global climate.



CSS-86h Is “the Science” Settled? – Seismicity and Volcanics



Another important potential climate forcing that is not that well understood is deep ocean seismicity and volcanic activity in general. Another forcing that is generally ignored by the alarmist community (outside of a few large eruptions like Pinatubo). The Hunga-Tonga eruption in early 2021 added to the 2023/24 warming rather than the typical cooling response and according to work by [Arthur Viterito](#), “the new knowledge that large upticks in mid-ocean seismic activity for 1995-1996 and 2013-2014 preceded the 1997-1998 and 2015-2016 “Super El Nino” episodes by two years” (correlations below). Increased Mid-Atlantic Ridge



activity also correlates with a ± 1.0 °C temperature jump in most

Canadian data sets (laid out by Dr. Joseph Hickey, chart above). The two

charts to the right were produced using data from the Smithsonian (included in my [CSS-31 – Volcanic Activity](#) post). As shown, land based volcanic activity has been increasing since 1900. The turn of the century mid-ocean seismicity activity uptick is also visible in the volcanic activity, while the 2015 uptick is not. A lot can happen below the surface.

Settled Science? Volcanics Seismicity

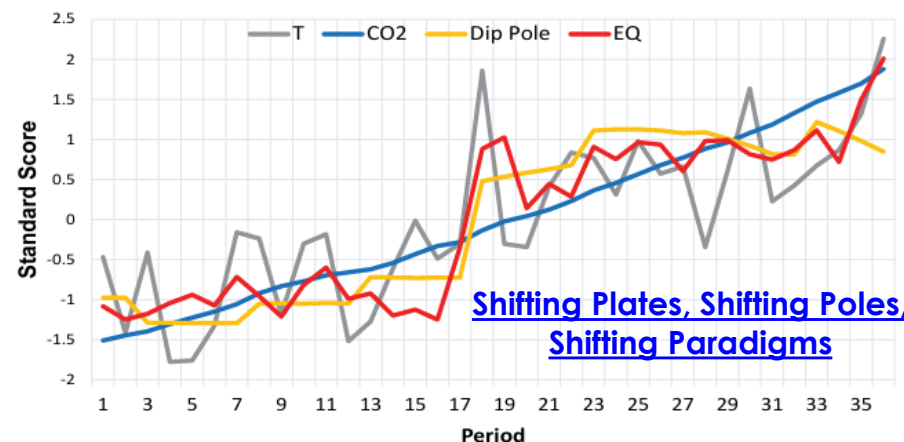
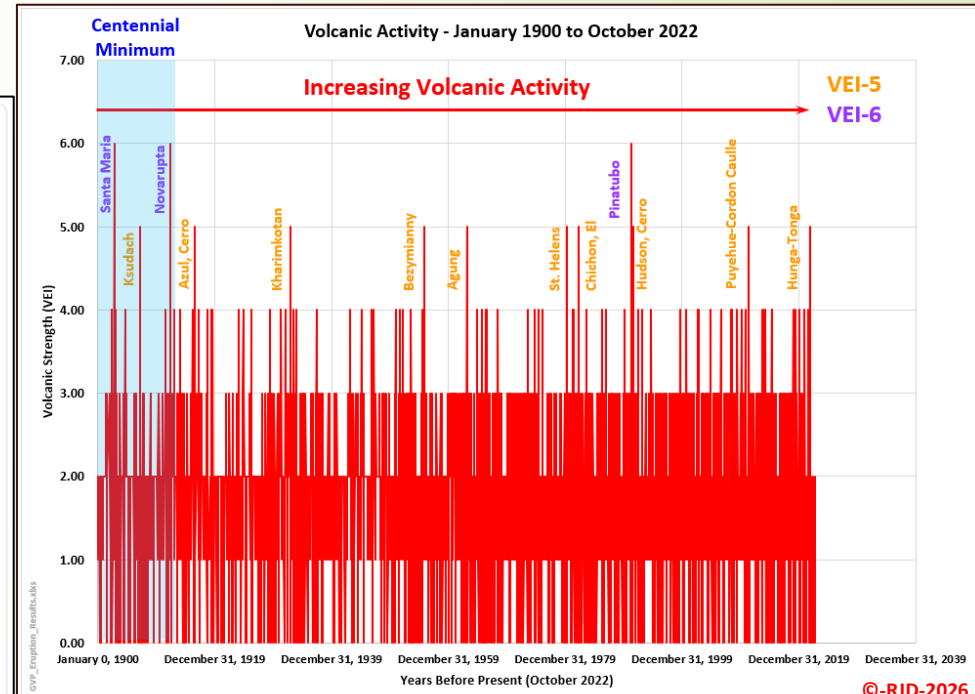


Figure 2: Time series plots for global temperatures (T), carbon dioxide (CO₂), north magnetic dip pole movement (Dip Pole) and mid-ocean seismicity (EQ), 1979-2016.



Chapter 12

Climate Change Information for Regional Impact and for Risk Assessment

Table 12.12 | Emergence of CIDs in different time periods, as assessed in this section. The colour corresponds to the confidence of the region with the highest confidence: white cells indicate where evidence is lacking or the signal is not present, leading to overall low confidence of an emerging signal.

Climatic Impact-driver Type	Climatic Impact-driver Category	Already Emerged in Historical Period	Emerging by 2050 at Least for RCP8.5/SSP5-8.5	Emerging Between 2050 and 2100 for at Least RCP8.5/SSP5-8.5
Heat and Cold	Mean air temperature	1		
	Extreme heat	2	3	
	Cold spell	4	5	
	Frost			
Wet and Dry	Mean precipitation		6	7
	River flood			
	Heavy precipitation and pluvial flood			8
	Landslide			
	Aridity			
	Hydrological drought			
	Agricultural and ecological drought			
	Fire weather			
Wind	Mean wind speed			
	Severe wind storm			
	Tropical cyclone			
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet		9	10
	Permafrost			
	Lake, river and sea ice	11		
	Heavy snowfall and ice storm			
	Hail			
Coastal	Snow avalanche			
	Relative sea level		12	
	Coastal flood			
Open Ocean	Coastal erosion			
	Mean ocean temperature			
	Marine heatwave			
	Ocean acidity			
Other	Ocean salinity	13		
	Dissolved oxygen	14		
	Air pollution weather			
	Atmospheric CO ₂ at surface			
	Radiation at surface			

Extreme weather (as represented by the All CO₂, All the Time alarmists) barely deserves a mention in a discussion of science, let alone “settled science”. The alarmist premise that extreme weather has been getting worse (more frequent and intense) is not backed up by any science (i.e.: empirical data).

Extreme weather trends (normalized and shown below) are moving down, the opposite direction of rising atmospheric CO₂ concentrations. More discussion along with the data links are included in my [CSS-52 – Extreme Weather Events](#) post. [Table 12-12](#) from the IPCC’s 2021 AR6 WG1 report (discussed in my [CSS-64](#) post) confirms that the IPCC have

“Low confidence in direction of change” in virtually every Climatic Impact-driver Category that relates to extreme weather (as shown in the left column of the table to the left, Already Emerged in Historical Period). Looks to me like the IPCC are being

disingenuous. The empirical data shows some very definitive declines. A more proper (closer to the truth) labeling would be ‘Low confidence in decrease’. Only 5 of the 33 categories have a ‘High confidence in direction of change’. Of those 5, two are related to global temperature rise and one is atmospheric CO₂

concentration (none of which are extreme categories). And yes, both land and ocean temperatures along with CO₂ concentrations have risen. But correlation is not causation. The other two have an extreme component, but the examples are localized, not global. The other two columns summarize the projections, which do not add much in the way of extreme weather events even when using the implausibly high, officially discarded RCP8.5/ssp5-8.5 emission scenarios. The IPCC does not show much confidence in the extreme weather/anthropogenic forcing connection, but they also do not push back against the politicians, academics, and media (mainstream or otherwise) that push the LIES that extreme weather is getting more frequent and intense.

Settled Science? Extreme Weather

1. High confidence except over a few regions (CNA and NWS) where there is low agreement across observation datasets.
2. High confidence in tropical regions where observations allow trend estimation and in most regions in the mid-latitudes, medium confidence elsewhere.
3. High confidence in all land regions.
4. Emergence in Australia, Africa and most of Northern South America where observations allow trend estimation.
5. Emergence in other regions.
6. Increase in most northern mid-latitudes, Siberia, Arctic regions by mid-century, others later in the century.
7. Decrease in the Mediterranean area, Southern Africa, South-west Australia.
8. Northern Europe, Northern Asia and East Asia under RCP8.5 and not in low-end scenarios.
9. Europe, Eastern and Western North America (snow).
10. Arctic (snow).
11. Arctic sea ice only.
12. Everywhere except WAN under RCP8.5.
13. With varying area fraction depending on basin.
14. Pacific and Southern oceans then many other regions by 2050.

High confidence of decrease Medium confidence of decrease Low confidence in direction of change Medium confidence of increase High confidence of increase

1856

https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter12.pdf

Normalized Extreme Weather Data - Scorecard

