Has our planet been warmer than today's temperatures?

The following slides go through a wide variety of time scales and yes, temperatures have been higher than today's current temperature and they have been significantly higher. And somehow life survived and flourished, only interrupted by a variety of cataclysmic events.

Very simply, YES. Most of the time!!!

Conclusions

This is primarily a look at just the temperatures. Whether you believe the IPCC "science" or not is irrelevant. Life has no problem surviving at much higher temperatures than our current rather (as you will see) benign temperature levels. Can we even reach the temperatures that the IPCC report throws out? Remember, the IPCC already acknowledged that their models are running too hot and their high-end emission scenarios are implausible (i.e.: they have no idea what the climate will look like a decade from now, let alone a century or more in the future).

It is time for the IPCC to acknowledge the real science and incorporate the already available empirical data showing the much more important natural forcings.

It's not you, it's not CO_2, it's the sun!

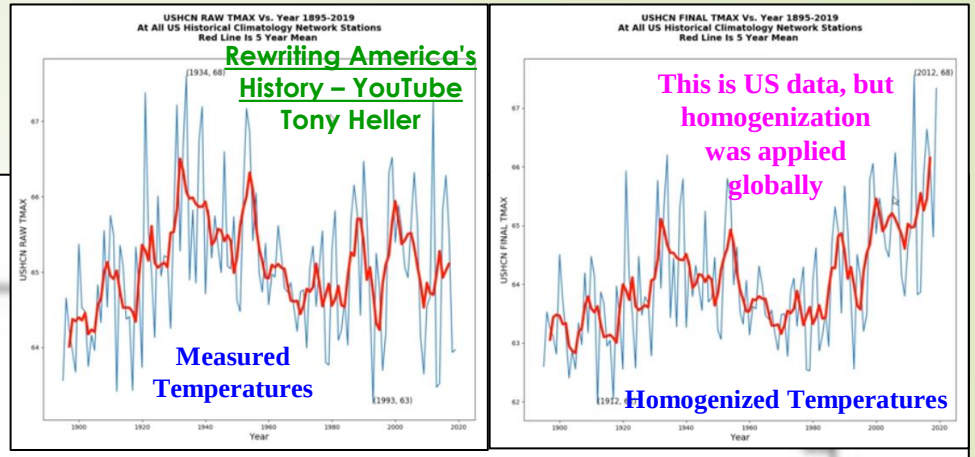
CSS-14b Has our planet been warmer than today's temperatures?

The CAGW alarmist narrative demands that we (the taxpayers) fund their ideological dreams of reducing CO_2 emissions. Their initial goals were "modest" but have transformed into the truly dangerous, economic suicide that will come to pass if their current Net Zero ambitions are seriously attempted. All to keep the temperature increase to 1.5 °C above the pre-industrial levels. Without going into the science of "Climate Change", we should at least look at the historical temperatures for perspective. We have already added 1.07 °C (based on the August 2021 IPCC AR6 Report). That leaves us with only 0.43 °C separating us from total extinction. If the temperature increases more than 0.43 °C, are we really doomed? Well, to start with, we are probably only halfway back to the levels of 1930s. And if you believe the CAGW alarmist "official" temperature records, we are already significantly warmer than the 30s. The people that lost their livelihoods and lives during that period must be relieved that their experiences were not as bad as they perceived them to be.

Modern Temperature Record

Looking further into the past will provide some more much needed perspective.

The answer is YES. Over the Modern Temperature Record (MTR) temperatures were higher during the Dirty Thirties despite what the over homogenized (i.e.: highly manipulated) "official" records may say.



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

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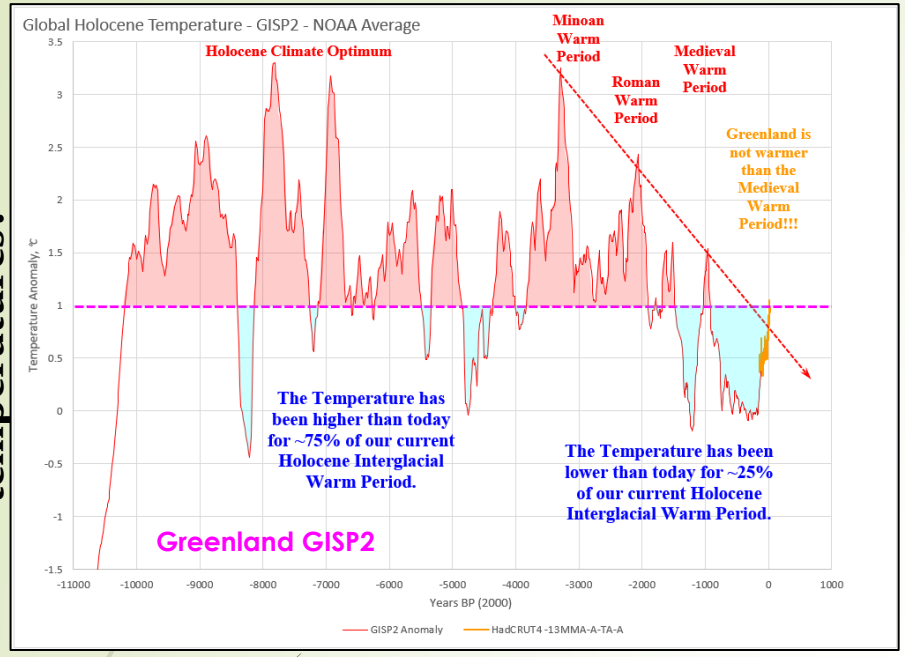
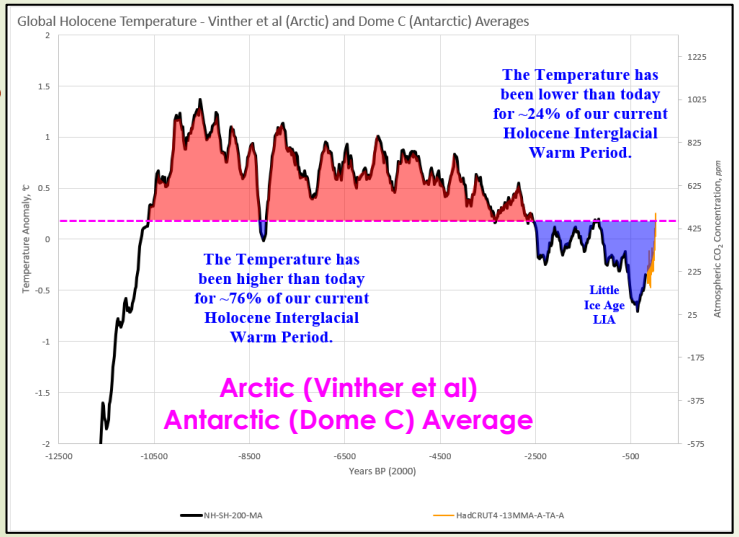
CSS-14c

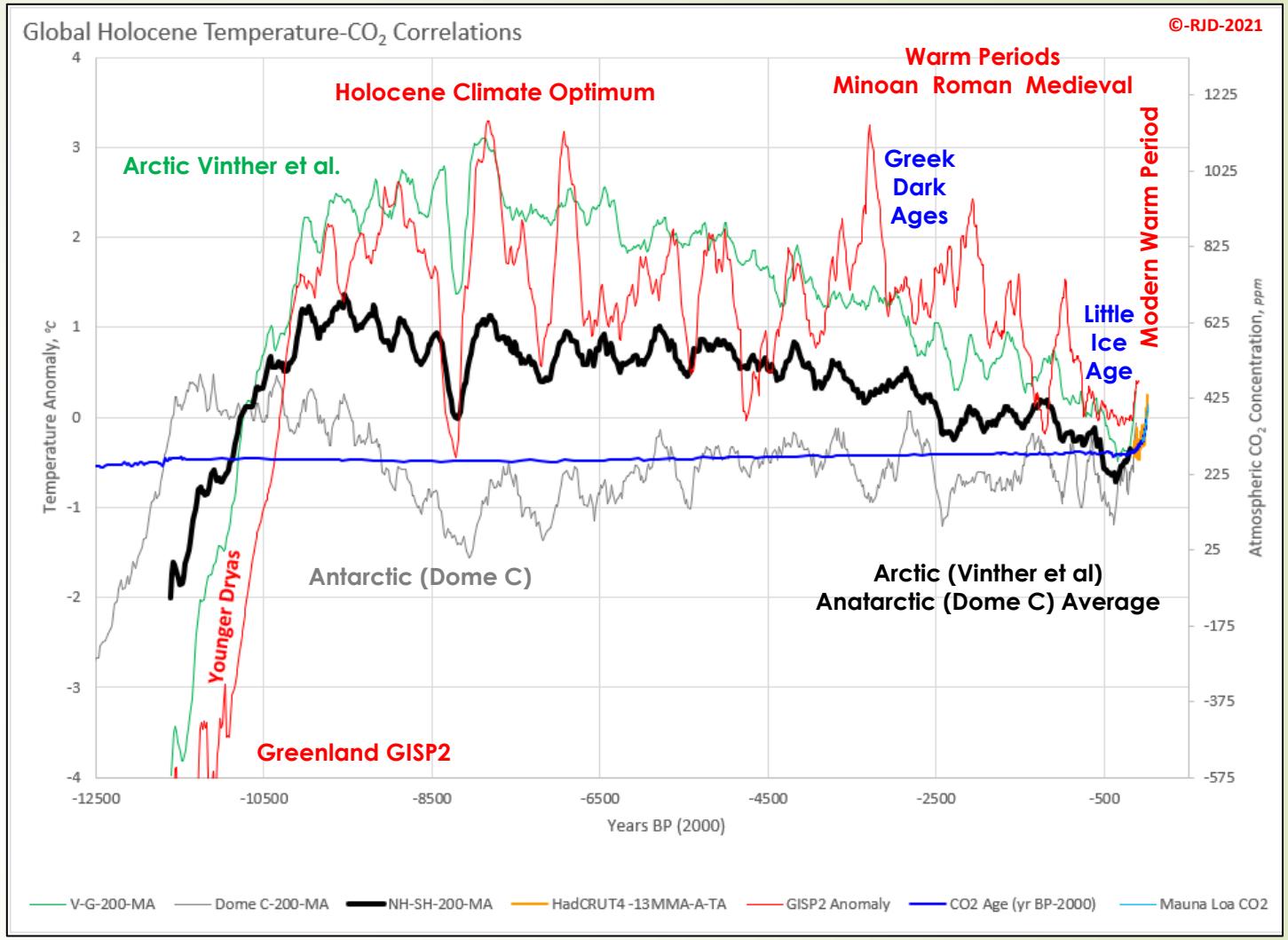
Has our planet been warmer than today's temperatures?



The answer on this scale is YES as well. Over the Holocene, temperatures were generally warmer (up to 3 °C) than current temperatures roughly 75% of the time. Not surprising that currently receding glaciers are exposing old growth forests from a few centuries and/or a few thousand years ago. Or that the Vikings colonized Greenland during the Medieval Warm Period. Or that the Romans grew grape wines in northern Scotland.

Holocene Temperatures





Human civilization survived the warmth of the Holocene Climate Optimum quite nicely. In fact, humanity thrived during the warm periods. Civilization advanced during the warm periods and struggled through the cooler periods. Empires were built during the warm periods and collapsed during the cooler ones. The Chinese dynasties rose and fell with the temperatures. More detail is available in my CSS-9 – What is the Ideal Global Temperature? post. The Antarctic temperatures are not as dramatic as the Northern Hemisphere temperatures but given that most of the population and the bulk of the agricultural areas are in the Northern Hemisphere, what happens in the Northern Hemisphere is important. The pre-Holocene temperature fluctuations are driven by natural forcings almost exclusively since CO_2 levels are virtually flat. Those natural forcings (primarily solar through direct and indirect mechanisms) were still active during the MTR and will continue to be active in the future despite the IPCC's unscientific decree that natural forcings are negligible (OPS-22 – Computer Models – Real Simple).

CSS-14d

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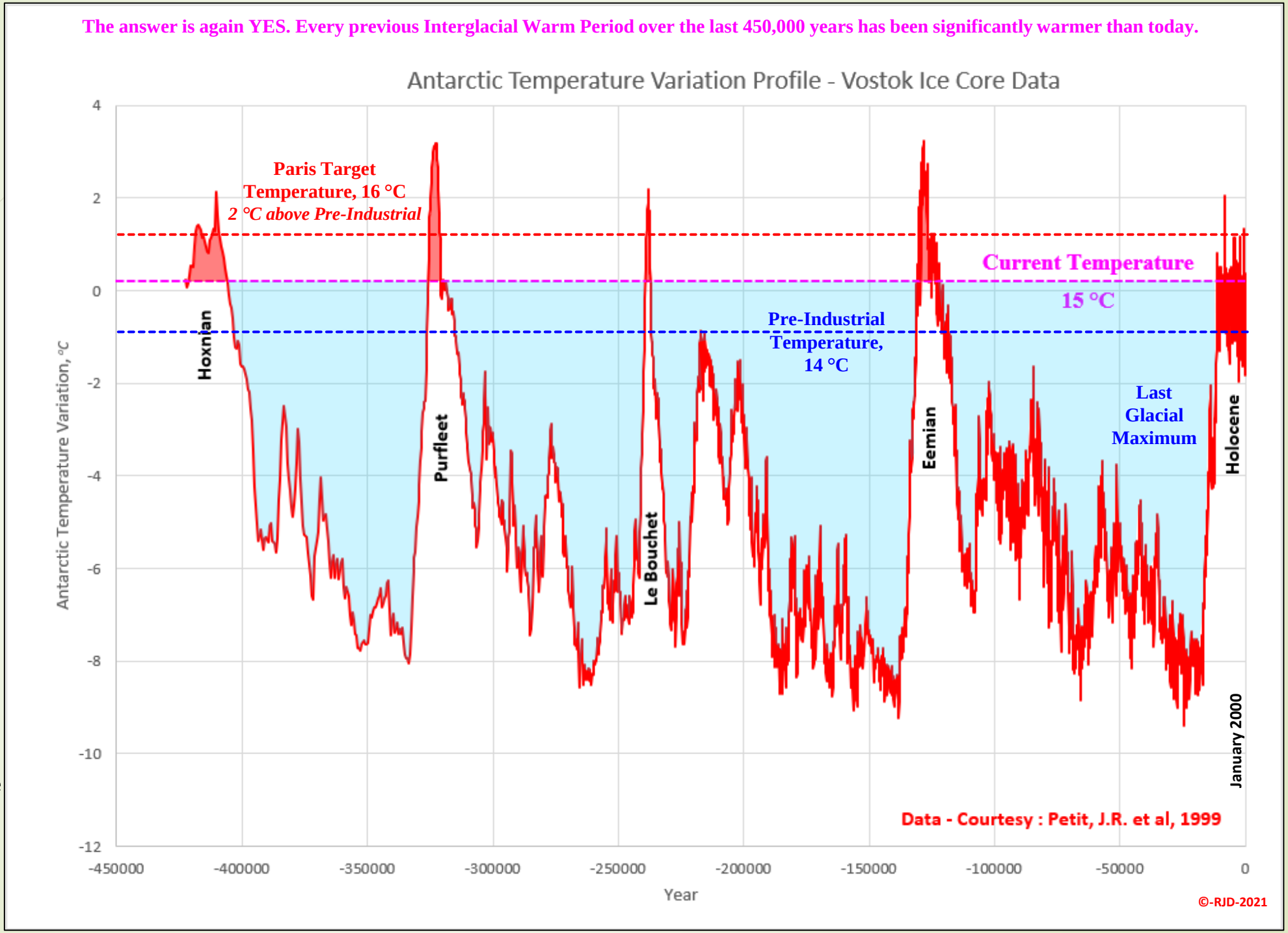
We are living through the Pleistocene Ice Age. We are also thankfully living through one of the many relatively short interglacial warm periods. Every previous interglacial warm over the last 500,000 years has been significantly warmer than our current 15 °C temperature. Did life survive easier when the planet was warmer than now or cooler than now? I suspect hat life was a bit more difficult when the northern hemisphere was covered with the massive ice sheets and CO_2 levels were down to near starvation levels in the 180 - 200 ppm range. Plant life struggles at these CO_2 levels and droughts are widespread when a significant portion of the planet's water is tied up in ice. Low CO_2 reduces plant's drought resistance since they lose water through their stomata as they take in CO_2. The less CO_2 the more water is lost. We will move back into a deep ice age. Will that be in 100, 1,000 or 20,000 years. Time will tell, but it will be solar activity that decides the timing just as it always has for millions and billions of years. Sadly, solar and related activity is not something todays so called "climate scientists" understand. CO_2 will play no significant role in that process although I wish it would.

Vostok Ice Cores

The answer is again YES. Every previous Interglacial Warm Period over the last 450,000 years has been significantly warmer than today.



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CSS-14e

Has our planet been warmer than today's temperatures?

The temperatures over the Pleistocene were generally lower than current temperatures (roughly 90% of the time). The Milankovitch Cycles have kept our planet in deep ice ages for most of the last 3 million years. When the planet warmed up for that 10% reprieve every 40,000 years and later 100,000 years, life was more comfortable for whoever/whatever existed at the time. The Milankovitch Cycles will move us back into a deep ice age again and relatively soon. How quickly will depend on the other natural cycles that are also at play. CO_2 is a FECKLESS Greenhouse Gas (CSS-7). Ocean cycles like the Atlantic Multi-decadal Oscillation (AMO), Pacific Decadal Oscillation (PDO) and el Niño Southern Oscillation (ENSO) routinely overpowered CO_2 during the MTR. All those ocean cycles are in or entering cool phases. Combine that with the potential for the Beaufort Gyre to release its cold fresh water into the Northern Atlantic, the export of many large icebergs to the mid latitudes, the cooling from the GSM we are just entering, the increased volcanic aerosol dispersion (associated with GSMs), a potential micro novae (any of which could trigger a deep ice age) and who knows what will happen? We are below the previous interglacial trigger points

State of Climate Science

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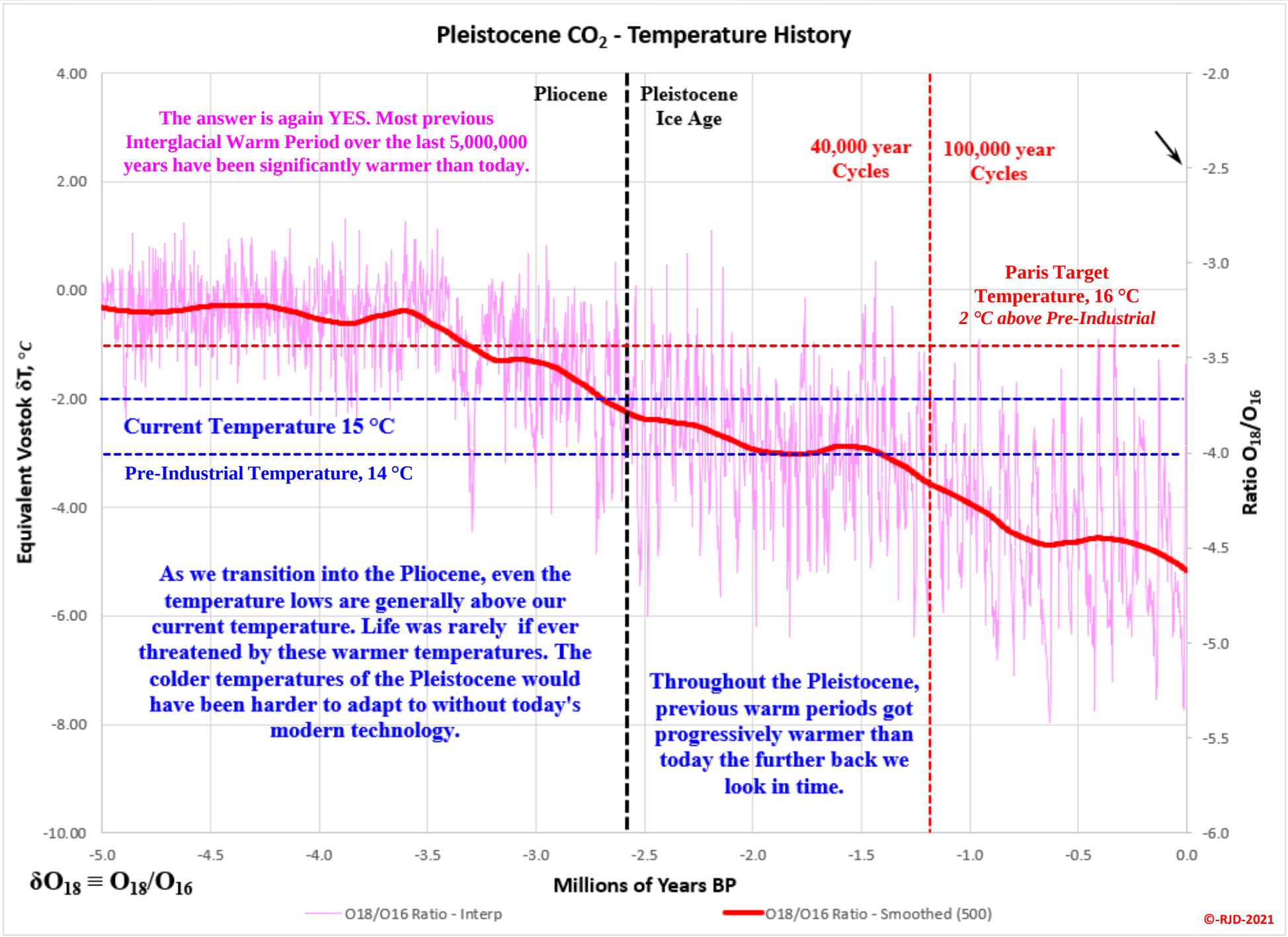
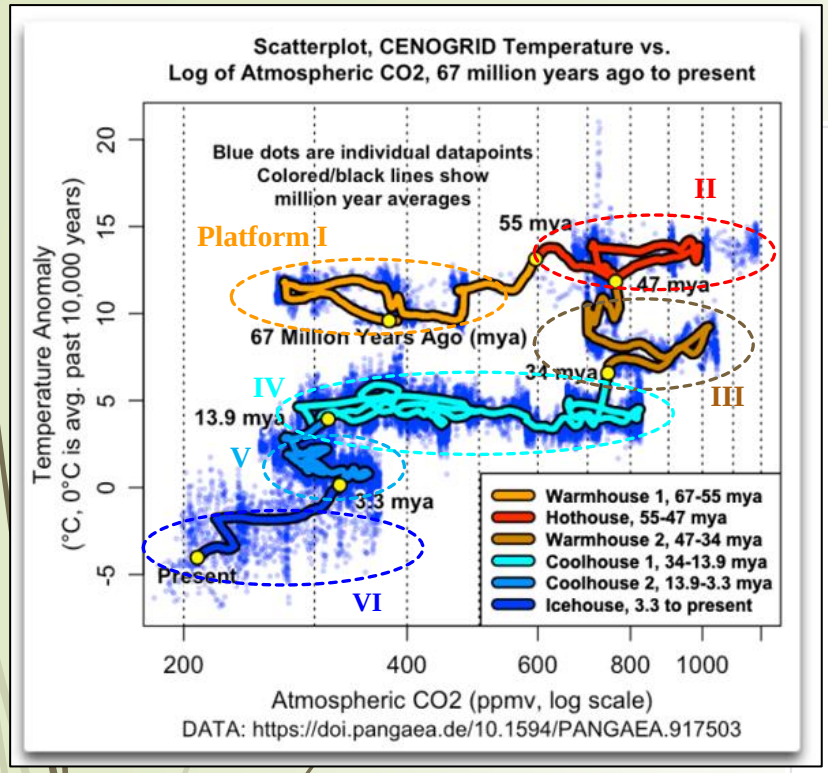


CSS-14f Has our planet been warmer than today's temperatures?

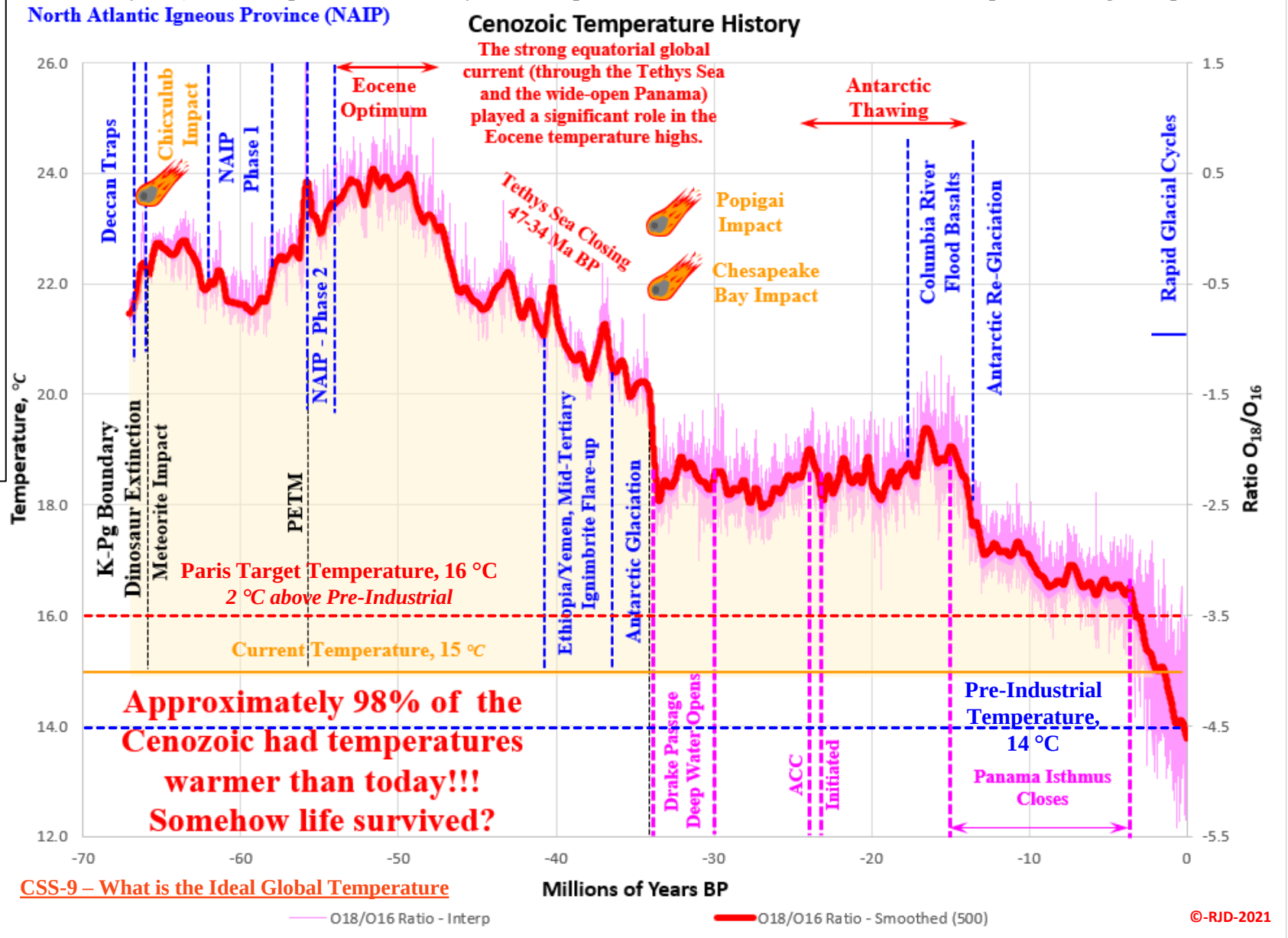
We can definitely answer that question with a resounding YES.



Cenozoic Temperatures

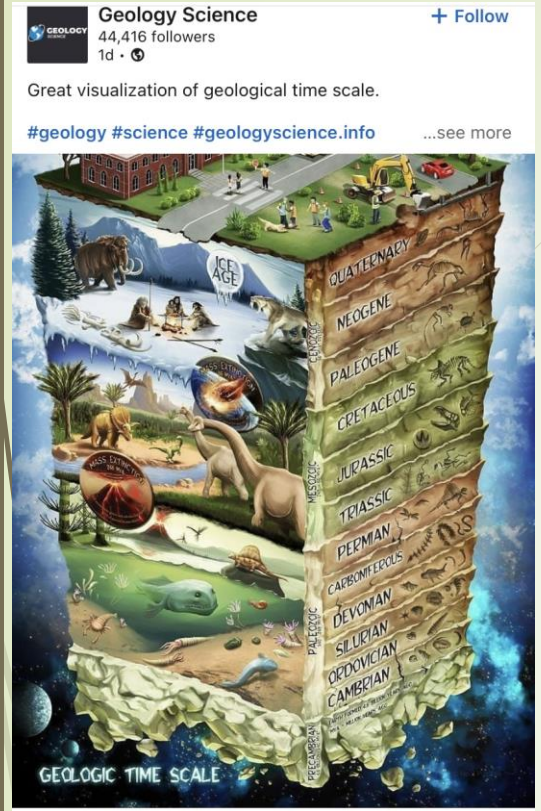
As shown in the previous slide, the temperature fluctuations are a good representation of the Milankovitch Cycles through the Pleistocene Ice Age. I suspect hat the same processes played out over the entire Cenozoic, dictating the Temperatures and CO_2 levels over shorter geological time frames (10s to 100s of thousands of years) like the ice core data. Life flourished in the warmer temperatures. Human life developed in the very harsh environment of the Pleistocene Ice Age. Human development was very dependent on living through the warmth of the Holocene. When the temperatures fall towards the next ice age (and they will), humanity will face severe population reductions (in the billions). A better time to have developed would have been during the Eocene Optimum (no risk of being wiped out by an ice age).

The Cenozoic was a very interesting time in climate history. That story is laid out in my CSS-10 – A Ride Through the Cenozoic (with data links). Temperatures tended to form stable platforms (while CO_2 fluctuated significantly), that were separated by significant geological (volcanic intrusions, ocean current adjustments, etc.) and celestial events (large impacts and continually rising cosmic ray flux). that conspired to continually drive temperatures down from the Eocene Climate Optimum's high temperatures.



CSS-9 – What is the Ideal Global Temperature

CSS-14g



Phanerozoic Temperature

More detail
CSS-10
CSS-12
OPS-41

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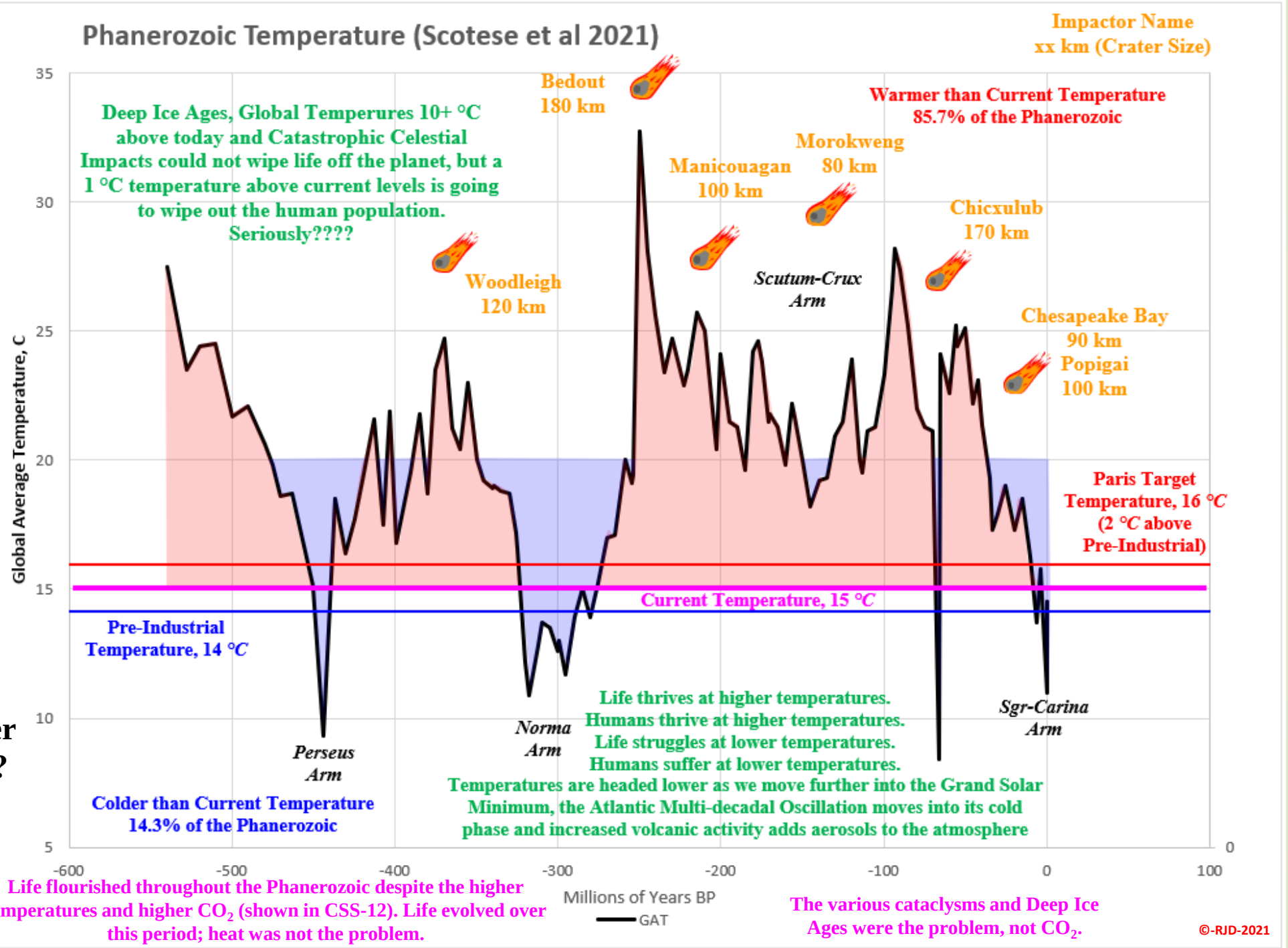
Dare I say YES? Global temperatures have been significantly warmer (roughly 86% of the time) than today's relatively chilly existence (after all we are still living through the Pleistocene Ice Age). And still significantly warmer than the Paris Targets and the IPCC scarier scenarios.



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