MORE DATA: Historical records & proxy temperatures show that continuation of the present warming is NOT an “EXISTENTIAL THREAT” to humans

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Cruces Atmospheric Sciences Forum

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EXECUTIVE SUMMARY:

President Joe Biden has repeatedly declared "Climate change is literally an existential threat to our nation and to the world." By this he means “human-caused CO2-fueled” global warming, and presumes that humans can pass “climate legislation” to regulate the climate.

While this is a popular view in Media, Government and the Academy, we show here it is without foundation.

Here’s the United Nations
“… UN Secretary-General insisted that unless governments everywhere reassess their energy policies, the world will be uninhabitable.”

“…Mr. Guterres said in a video message, which also forecast “unprecedented heatwaves, terrifying storms, widespread water shortages and the extinction of a million species of plants and animals”.

The UN’s IPCC has declared that an increase in global temperatures of 2C from the pre-industrial temperatures of the Little Ice Age, also threatens humanity’s existence.

Sorry, humans can not determine the temperature of the Earth, the level of the sea, or even the spread of viruses to humans susceptible to those viruses.

This post shows graphically and in words that temperature is always changing, and that as recently as 7000 years ago, it was considerably warmer than the UNs “2C limit.”

EXECUTIVE SUMMARY, p2:
Evidence that it was 3C warmer than today is in “proxy temperatures” from Greenland’s GISP2 ice core first published by climate Alarmist Richard Alley of Penn State.

We have photographic evidence that Picea Glauca, White Spruce, grew on the north shore of the Tuktoyaktuk Peninsula in far northern Canada, on the Arctic Ocean, radiocarbon dated to some 5,000 years ago. Today there are no trees, because it is too cold now for trees, it is tundra today.

We have fossil footprint evidence that human ancestors roamed what is now England’s East Anglia 900,000 years ago. We have Ice Core records that interglacials occur about 100,000 years apart, and the previous interglacial, the Eemian, was 4C warmer than today, so warm that Hippos lived in the Thames and Rhine Valleys.
There is clear evidence that a little more warming is NOT the “Existential Threat” proclaimed the UN and Biden.

Facts that can be determined from study of climate history and human history are clear.
Humans and human ancestors have been with us for probably 3 million years, and it has been more than 2C warmer than the so-called “UN Limit” many times in the past and humans survived, even thrived.
We are the proof. We are here.

Acknowledgements:

Bernie McCune suggested including fossil evidence of human habitation during the Wisconsin Ice Age in southern New Mexico, specifically Pendejo Cave and White Sands National Park, and geologic history showing most of the past 600 million years earth was significantly warmer than today.

Dave Tofsted suggested mentioning Egyptian art from Biblical times showing men wearing nothing but breechcloths, an indication of much warmer times than today.

INTRODUCTION:

If you've not yet had the chance, we suggest that you read the New Visitors Post, "**Warming Not An Existential Threat"** to provide information that we have previously gathered on this topic**.**

Our Canadian friends at Climate Discussion Nexus, https://climatediscussionnexus.com/ produce excellent educational videos. One, especially noteworthy on the topic of climate, temperature history, and claims of "Hottest Year Ever!" is, https://youtu.be/ZThea5NAaOw

https://wattsupwiththat.com/2016/06/25/why-did-agriculture-start-13000-years-ago/

AGRICULTURE

Why did agriculture start 13,000 years ago?

Temperature history from Greenland Ice Sheet using the GISP2 Ice Core.

<u>Important Facts:</u>
Depth (coldest temperature) of the Wisconsin Ice Age was ~23,000 years ago.

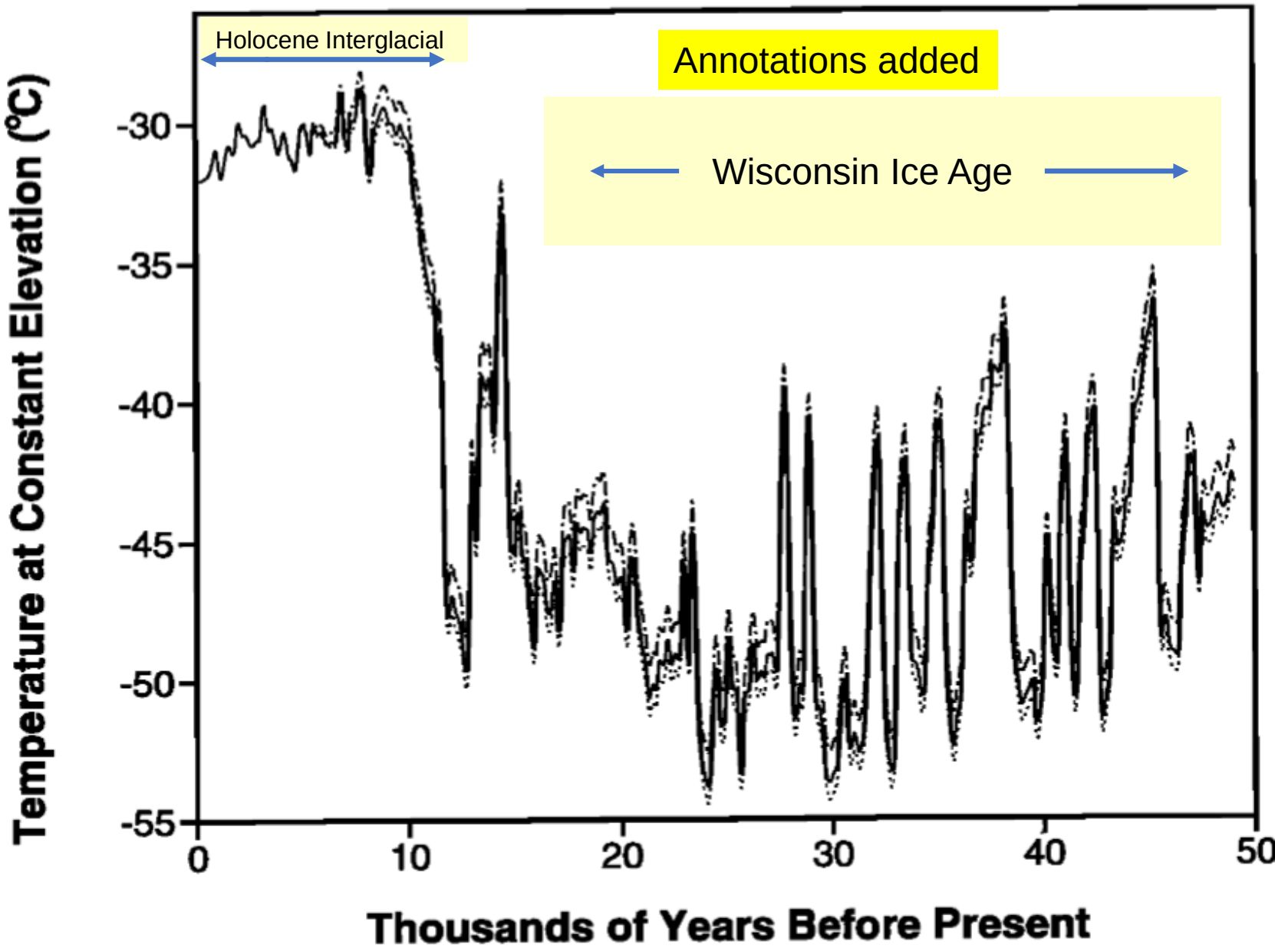
Humans could have not caused any of the temperature changes shown here.

The Wisconsin Ice Age featured severe temperature fluctuations unlike any in the past 2,000 or 10,000 years.

About 13,000 years ago it got quite warm, almost as warm as today.

Then, temperatures plummeted, briefly, The Younger Dryas Cold Period.

Our Holocene Interglacial followed.



Cuffey, K.M. and Clow, G.D. (1997) Temperature, Accumulation and Ice Sheet Elevation in Central GREENLAND through the Last Deglacial Transition. Journal of Geophysical Research, 102, 26383-26396. https://doi.org/10.1029/96JC03981

https://wattsupwiththat.com/2011/01/24/easterbrook-on-the-magnitude-of-greenland-gisp2-ice-core-data/

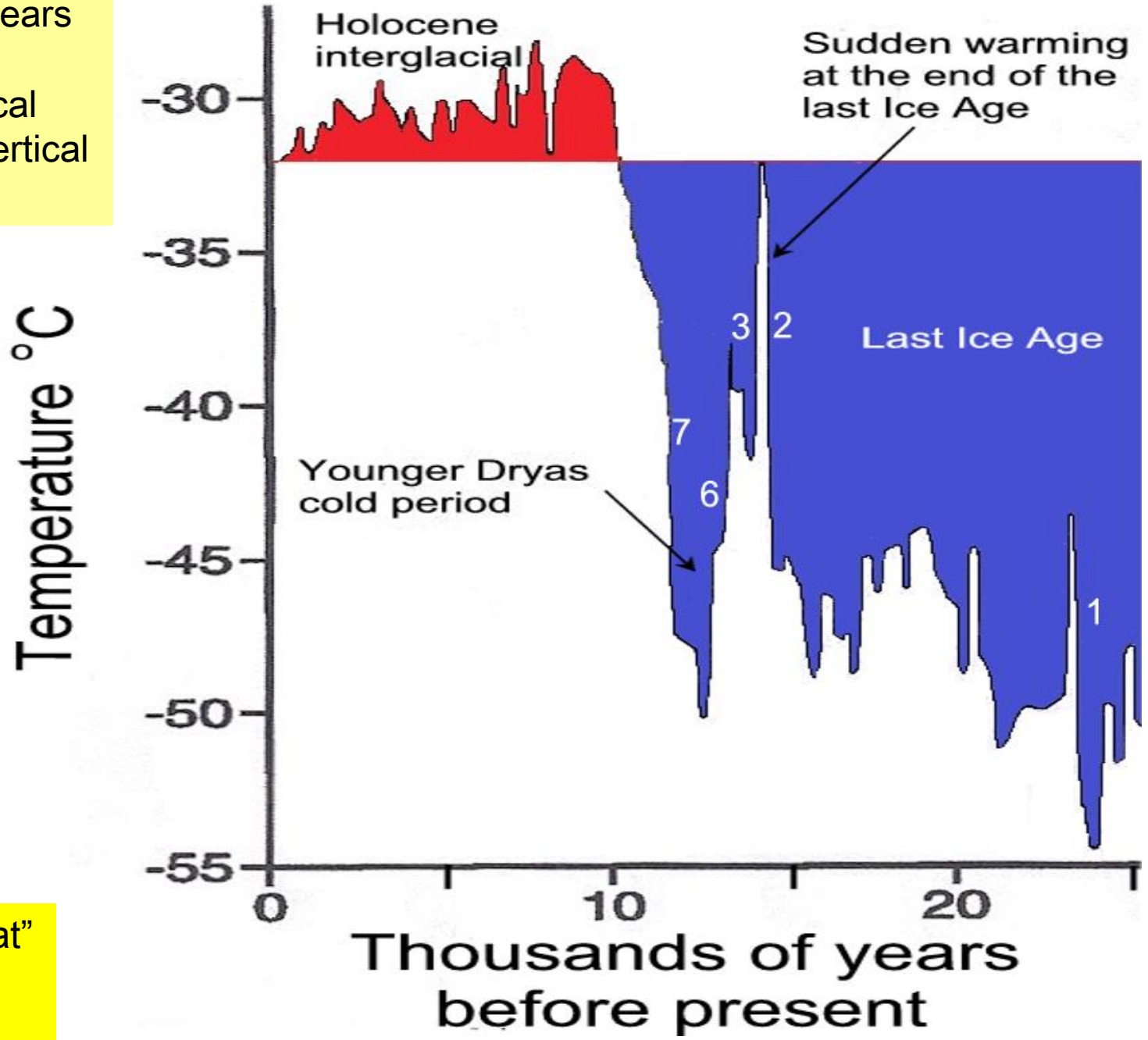
"Greenland temperatures over the past 25,000 years recorded in the GISP 2 ice core.
Strong, abrupt warming is shown by nearly vertical rise of temperatures, strong cooling by nearly vertical drop of temperatures."

Human ancestors' footprints are recorded in fossil footprints ~900,000 years ago in East Anglia, in present England, https://blog.britishmuseum.org/the-earliest-human-footprints-outside-africa-2

GISP2 data show it was some 3C warmer about 7,000-8,000 years before the present.

The GISP2 data during the Holocene Interglacial, as above, strongly hint the existence of ~1000-year Bond Cycles were present in the snow which became Greenland Ice.

Already we see that the cries of "Existential Threat" from the present warming are false alarms. Humans thrived in the warmer temperatures.



Prior to 13,000 years before present, atmospheric <CO2> levels were so low that plants suffered “Carbon Starvation” according to stunted Juniper fossils recovered from the La Brea Tar Pits in Los Angeles, California.

https://nhm.org/site/sites/default/files/rancho_la_brea/pdf/ward,%20harris%20publication%20PNAS.pdf 18 Jan 2005

PNAS

Carbon starvation in glacial trees recovered from the La Brea tar pits, southern California

Joy K. Ward*†‡, John M. Harris§, Thure E. Cerling†¶, Alex Wiedenhoeft‖, Michael J. Lott†, Marla-Denise Dearing†, Joan B. Coltrain**, and James R. Ehleringer†

*Department of Ecology and Evolutionary Biology, University of Kansas, 1200 Sunnyside Avenue, Lawrence, KS 66045; †Department of Biology, University of Utah, 257 South 1400 East, Salt Lake City, UT 84112-0840; §The George C. Page Museum of La Brea Discoveries, 5801 Wilshire Boulevard, Los Angeles, CA 90036; ¶Department of Geology and Geophysics, University of Utah, 135 South 1460 East, Salt Lake City, UT 84112; ‖Forest Products Laboratory, U.S. Department of Agriculture Forest Service, One Gifford Pinchot Drive, Madison, WI 53726-2398; and **Department of Anthropology, University of Utah, 270 South 1400 East, Salt Lake City, UT 84112

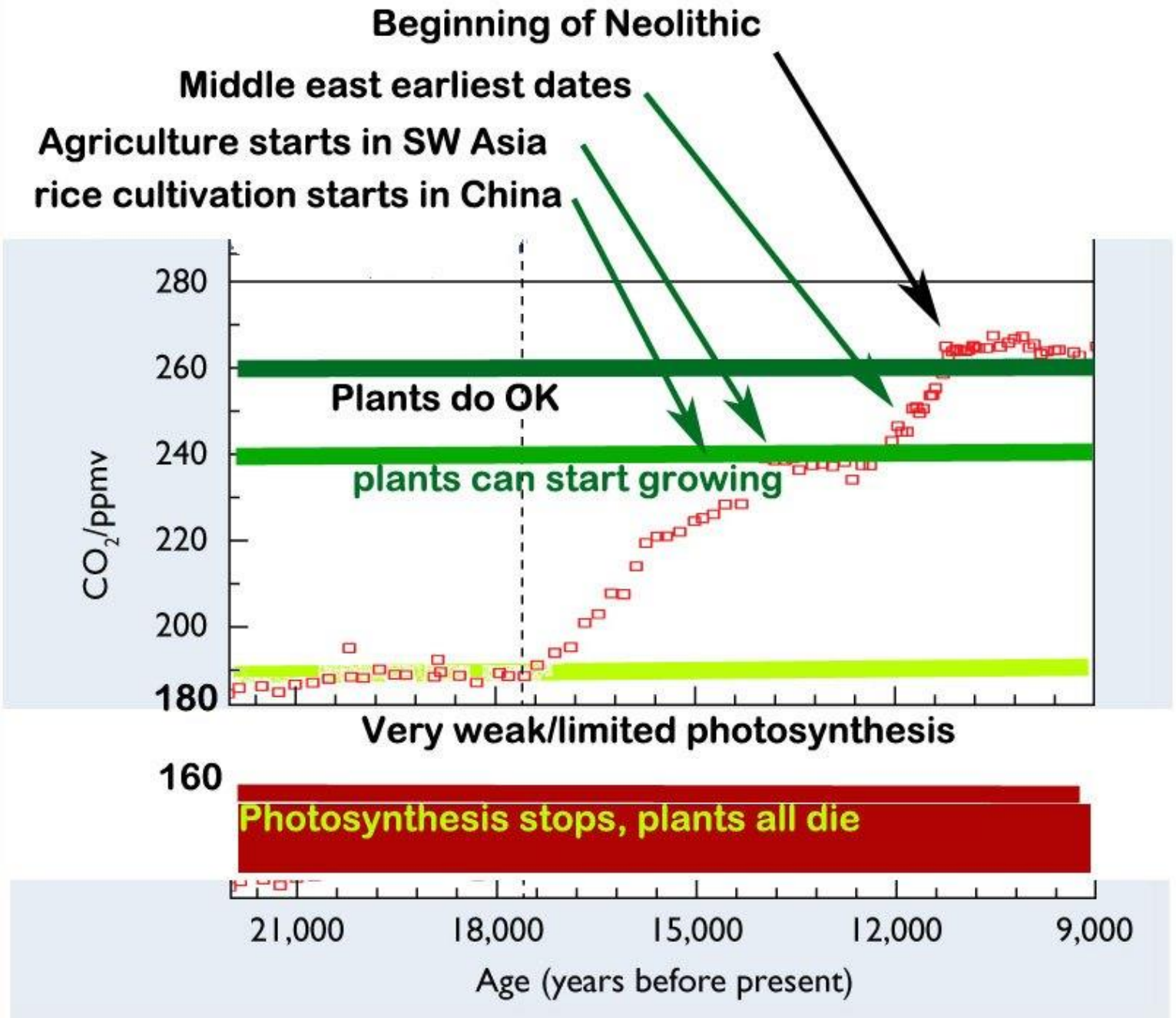
… Rancho La Brea tar pit fossil collection includes *Juniperus (C3)* wood specimens that 14C date between 7.7 and 55 thousand years(kyr) B.P., providing a constrained record of plant response for southern California during the last glacial period…

… Atmospheric CO2 concentration ranged between 180 and 220 PPM during glacial periods, rose to 280 PPM before the industrial period, and is currently approaching 380 PPM in the modern atmosphere…

… tree specimens… indicate.. that glacial trees were undergoing carbon starvation.

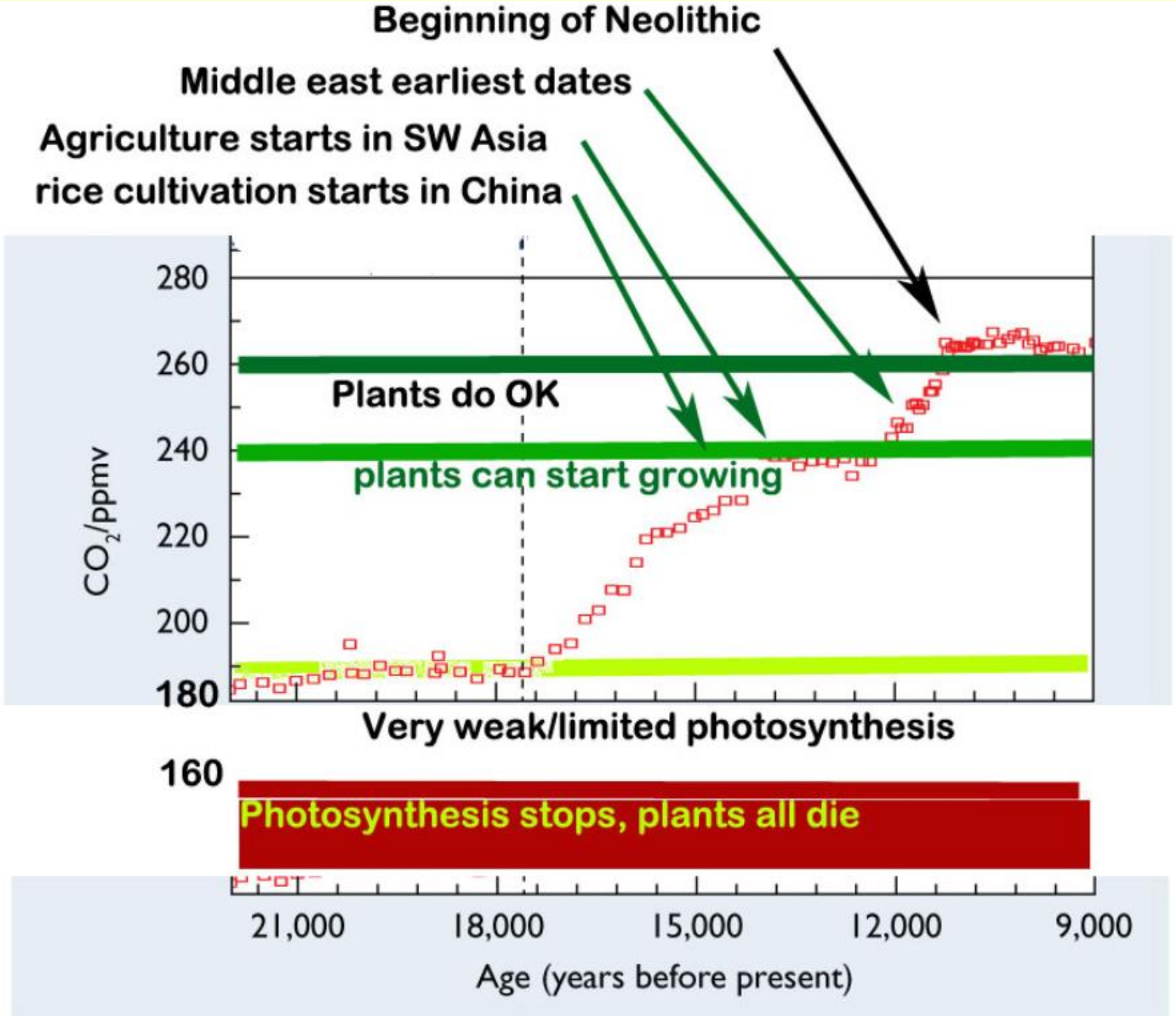
paragraphing, usage, emphasis, added

https://wattsupwiththat.com/2016/06/25/why-did-agriculture-start-13000-years-ago/



http://www.mochaexpress.com/Commentary/Elucidate/AgricultureBecamePossible/

"The Greenland Ice Chart for 9,000 to 21,000 years before present shows why agriculture arose:
(as presented on WUWT by Andy May)"



New Phytologist

Research

Rapid report

Glacial trees from the La Brea tar pits show physiological constraints of low CO_2

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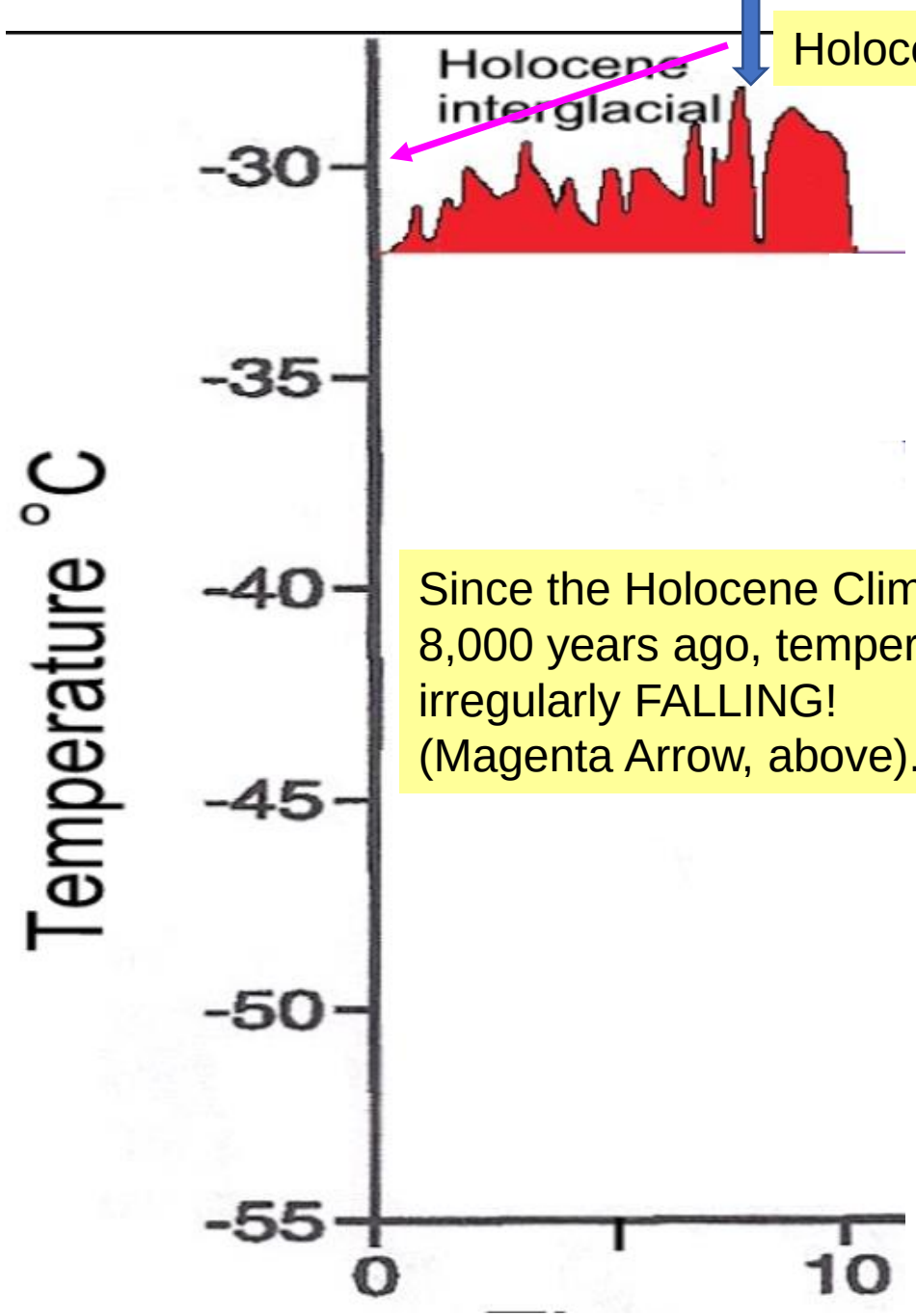
Temperature Time Series from the GISP2 Ice Cores from Greenland, shown in https://wattsupwiththat.com/2011/01/24/easterbrook-on-the-magnitude-of-greenland-gisp2-ice-core-data/



Since the Holocene Climate Optimum, ~7,000 to 8,000 years ago, temperatures have been irregularly FALLING!
(Magenta Arrow, above).

A 5,000-year old Spruce in the Canadian Arctic. This tree grew during the Holocene Climatic Optimum. Trees no longer live there because the climate is colder now. This is now tundra.

Holocene landscape development and climatic change in the low arctic, Northwest Territories, Canada

Palaeogeography, Palaeoclimatology, Palaeoecology
Volume 205, Issues 3-4, 30 March 2004, Pages 221-234

Professor Glen M. McDonald,
Director UCLA Institute for the Environment,
Full Professor, UCLA Dep't of Geography.
Chairman, Department of Geography, UCLA

Similar Photo also in
"A Primer on CO2 and Climate,"
Howard C Hayden,
Vales Lake Publishing,
Pueblo, CO, pg 18.

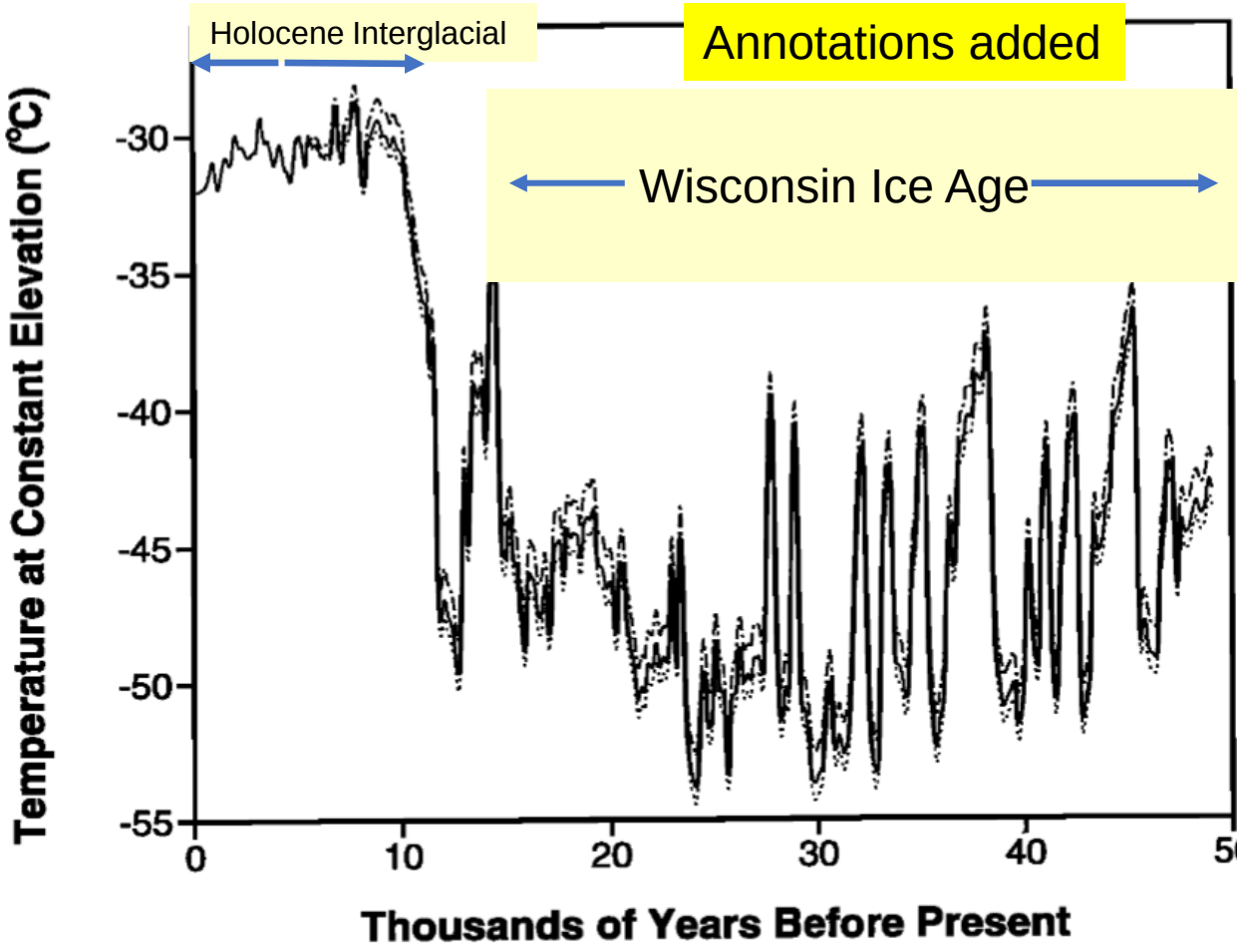
Photo is in Dr Hubert Lamb's book,
Climate, History, and the Modern World

Temperature history from Greenland Ice Sheet using the GISP2 Ice Core.

<u>Important Considerations:</u>
Humans survived the numerous violent temperature fluctuations of 15C magnitude during the Wisconsin Ice Age, without benefit of hot and cold running water, fossil-fueled transport, electrical appliances, and insulated shelter, all available today.

Natural climate changes during the Wisconsin Ice Age appear to be <u>ten times as strong during the Wisconsin Ice Age</u> than during today's Holocene Interglacial.

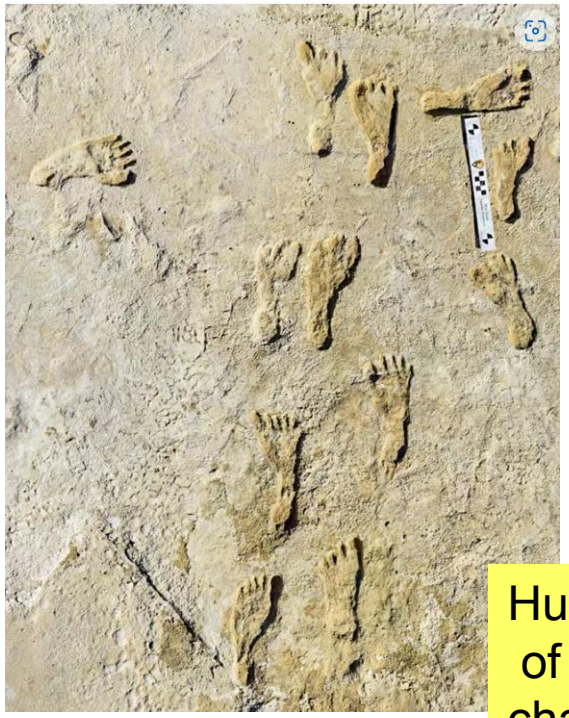
Claims that today's modest changes in temperatures, going on 2C, will result in "Existential Threats" to humanity are false.
In the Holocene Climate Optimum, it was 3C warmer than today. Humanity survived, thrived.



Cuffey, K.M. and Clow, G.D. (1997) Temperature, Accumulation and Ice Sheet Elevation in Central GREENLAND through the Last Deglacial Transition. Journal of Geophysical Research, 102, 26383-26396. https://doi.org/10.1029/96JC03981

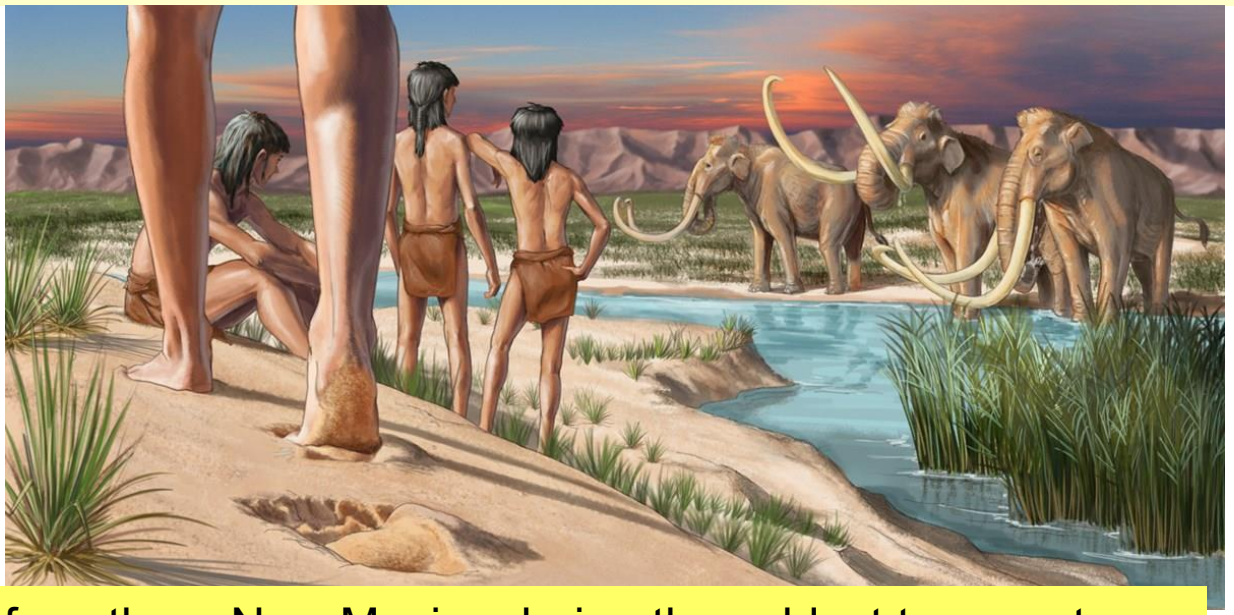
Pendejo Cave is a geological feature and archaeological site located in southern New Mexico about 20 miles east of Orogrande. https://en.wikipedia.org/wiki/Pendejo_Cave
Faunal remains in the cave have been dated to possibly as old as 55,000 years. This quote is germane:
"…it is difficult to avoid accepting the hypothesis of pre-Clovis Paleoamericans in the American Southwest prior to 37,000 or 55,000 B.P."

"The latest research shows that humans have been living in North America and Tularosa Basin for at least 23,000 years…" https://www.nps.gov/whsa/learn/nature/fossilized-footprints.htm. "Footprints across **White Sands** have been found coexisting and interacting with extinct ice age animals.
One set of footprints shows what appears to be humans stalking a giant sloth…."



Fossil footprints dated 23,000 years before present, left, are present in the gypsum soil at **White Sands National Park**.

Interpretive image right, shows teenagers who left the footprints at White Sands.



Humans lived in the Tularosa Basin of southern New Mexico during the coldest temperatures of the Wisconsin Ice Age, during periods of significant natural climate change, much stronger changes than the temperature changes of today.

http://drtimball.com/2012/sensationalist-and-distorted-climate-stories-increase-as-climate-science-failures-exposed/

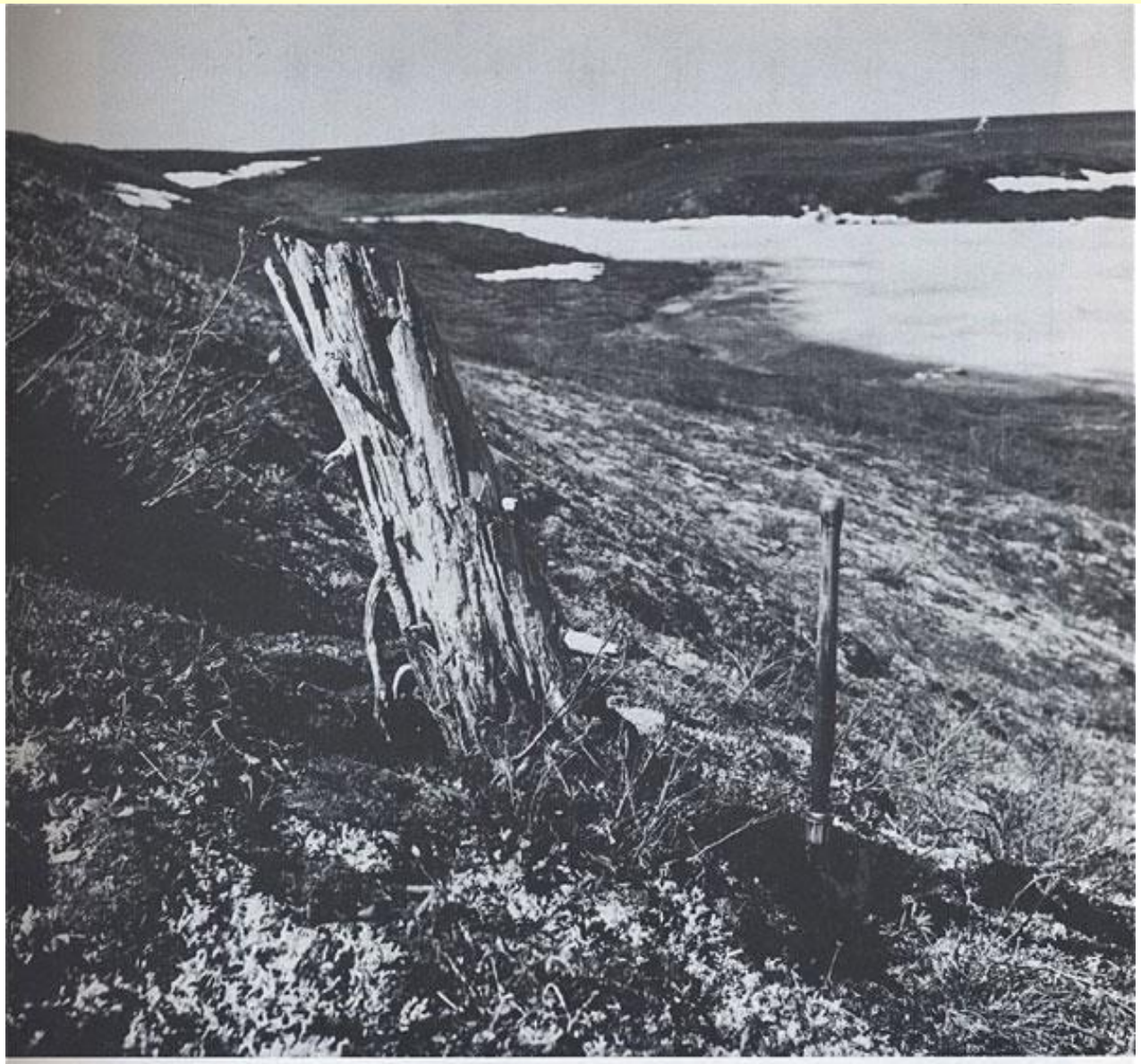


PLATE IV Tree stump (*Picea glauca*) in the north Canadian tundra.

The stump, radiocarbon dated about 4940 years (±140) B.P., is seen still standing on a steep bank on the Tuktoyaktuk Peninsula (69°7′N 133°16′W) which borders the Arctic Ocean (Beaufort Sea) east of the delta of the Mackenzie River in extreme northwest Canada. This tree in what is now tundra shows wider growth rings than the nearest present-day spruce forest 80–100 km farther south,

Tree Stump (Picea glauca) in the north Canadian tundra.

The stump, radiocarbon dated about 4940 (+/- 140) years BP is seen still standing on a steep bank on the Tuktoyaktuk Peninsula (69.7N 133.16W) which borders the Arctic Ocean (Beaufort Sea) east of the McKenzie Delta in extreme northwest Canada. This tree, in what is now tundra, shows wider growth rings than the nearest present-day spruce forest 80-100 km further south near Inuvik in the lowest part of the McKenzie River valley.

Photograph kindly supplied by Professor J. C, Ritchie of Scarborough College, Toronto University

The Tuktoyaktuk Peninsula… location of the 5,000-year-old White Spruce which grew during the Holocene Climate Optimum.

Tuktoyaktuk Peninsula

Prudhoe Bay
Kaktovik
Arctic National Wildlife Refuge
Arctic Village
Venetie
Ivvavik National Park of Canada
Vuntut National Park
Old Crow
Tuktoyaktuk
Kittigazuit
Reindeer Station
Inuvik
Aklavik
Fort McPherson
Tsiigehtchic
Paulatuk
Colville Lake

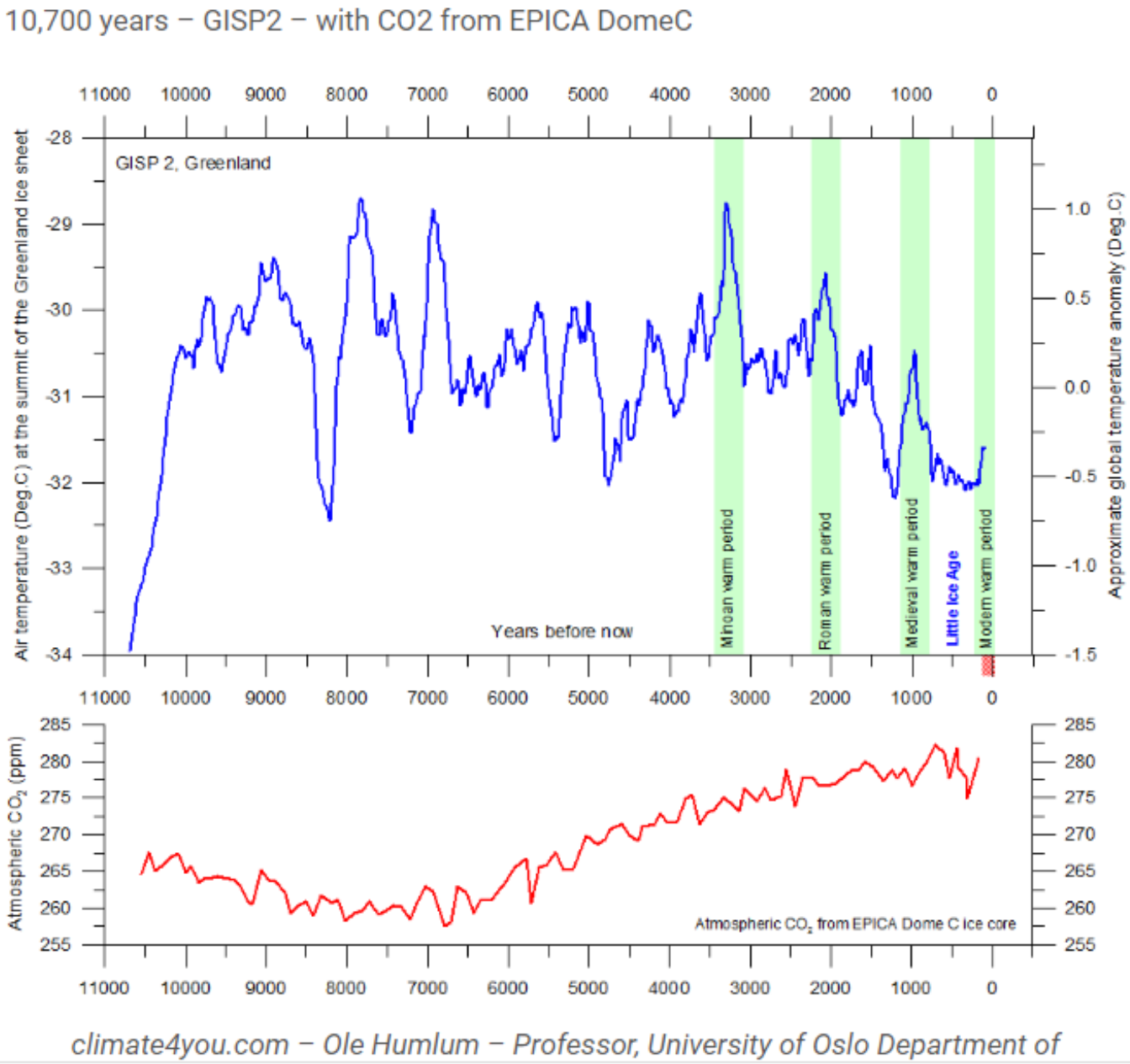
Area around Tuktoyaktuk today: http://www.tuktoyaktuk.ca/index.php/visiting/getting-here

Tundra. Too cold for trees.

http://www.climate4you.com/images/GISP2%20TemperatureSince10700%20BP%20with%20CO2%20from%20EPICA%20DomeC.gif

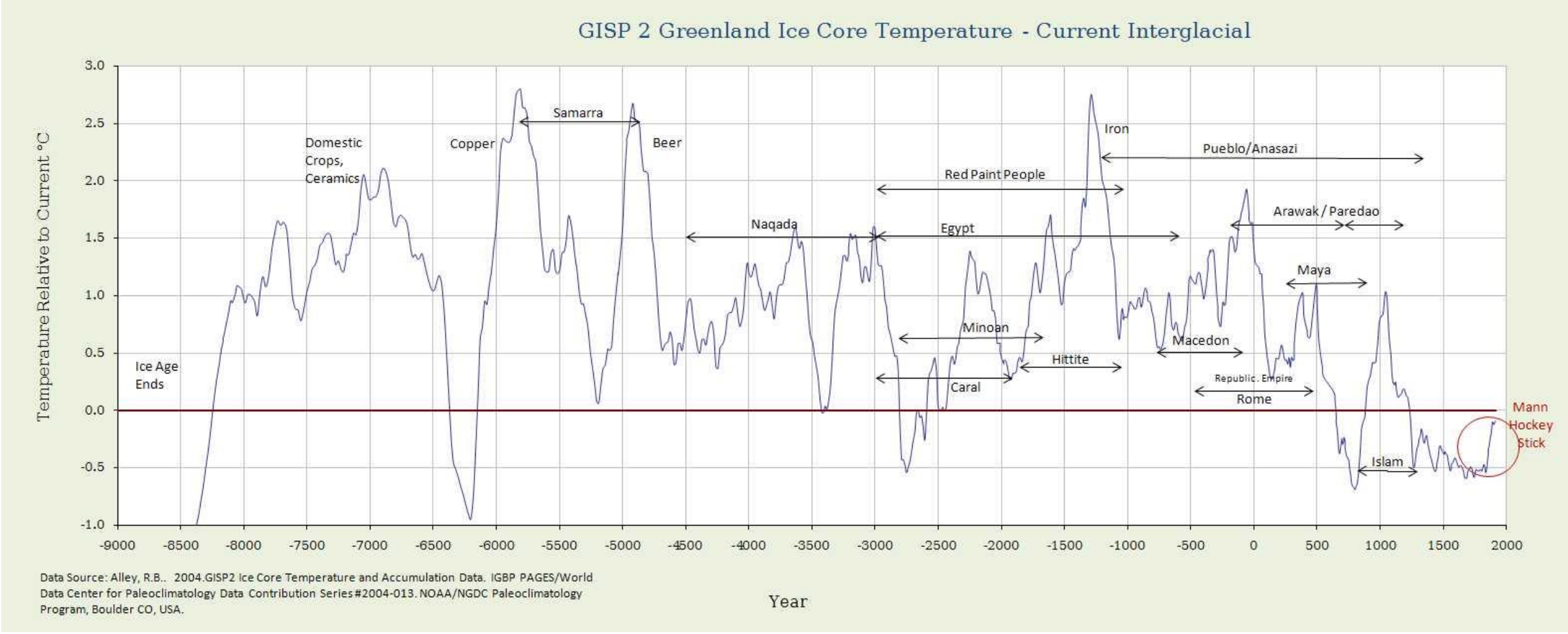
Paleoclimate chart from Ole Humlum, University of Oslo, Geosciences Dept. showing that it was 2.5C- 3C warmer than today several times in the recent past.

None of these temperature changes were caused by humans or human use of fossil fuels.



https://wattsupwiththat.files.wordpress.com/2011/07/alley-2004.jpg

Temperature Time Series showing that most of the past 10,000 years **were warmer** than at present; more warming is no threat, certainly not the "Existential Threat" of which alarmists decry.



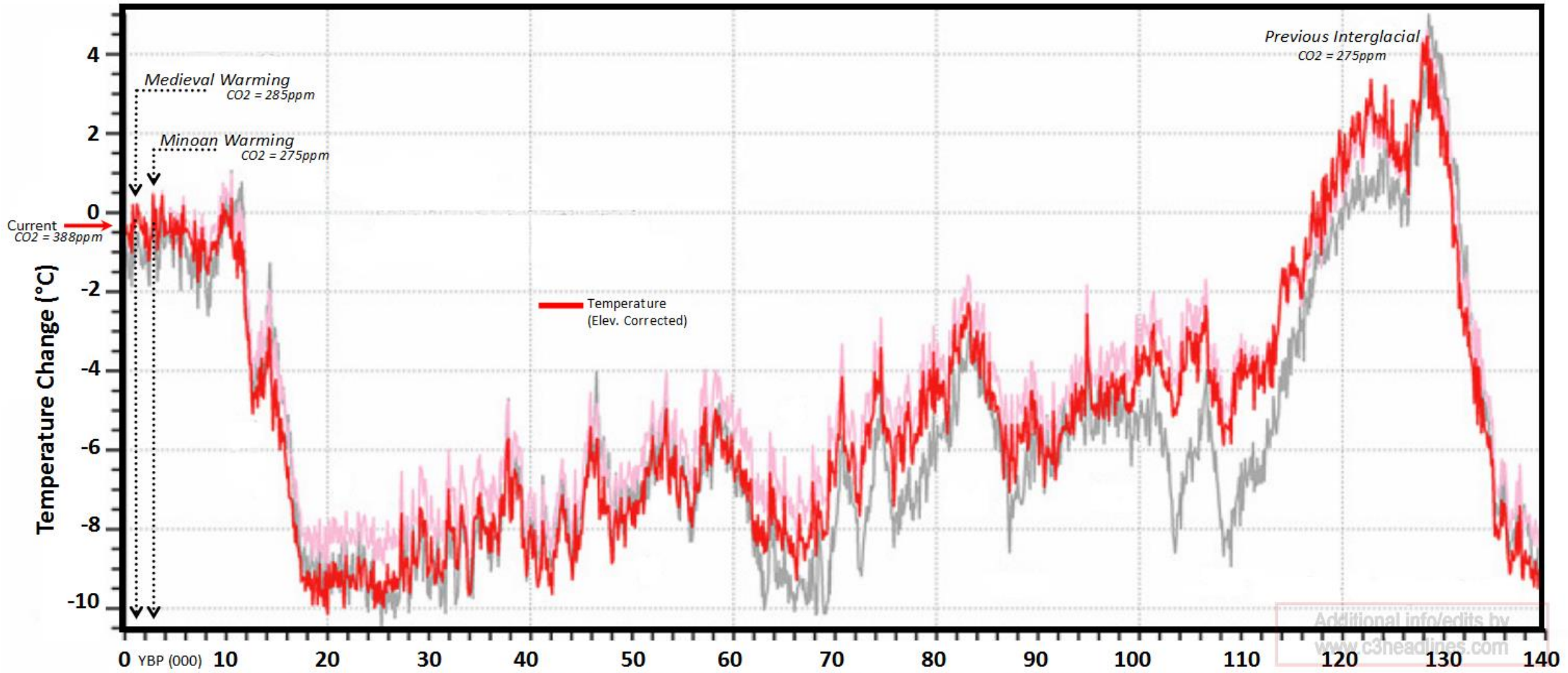
Data Source: Alley, R.B.. 2004.GISP2 Ice Core Temperature and Accumulation Data. IGBP PAGES/World Data Center for Paleoclimatology Data Contribution Series #2004-013. NOAA/NGDC Paleoclimatology Program, Boulder CO, USA.

Since 13,000 years ago, warmer temperatures and more CO2 in the air enabled agriculture, more food for humans and farm animals, development of language, culture, art, architecture, cities, medicine, in short, *civilization*.

https://wattsupwiththat.files.wordpress.com/2012/10/49ff5-6a010536b58035970c0134840e51fd970c-pi.png

Medieval & Minoan Period Temperatures Higher Than Modern Temps

High Resolution Antarctica Ice Core Data

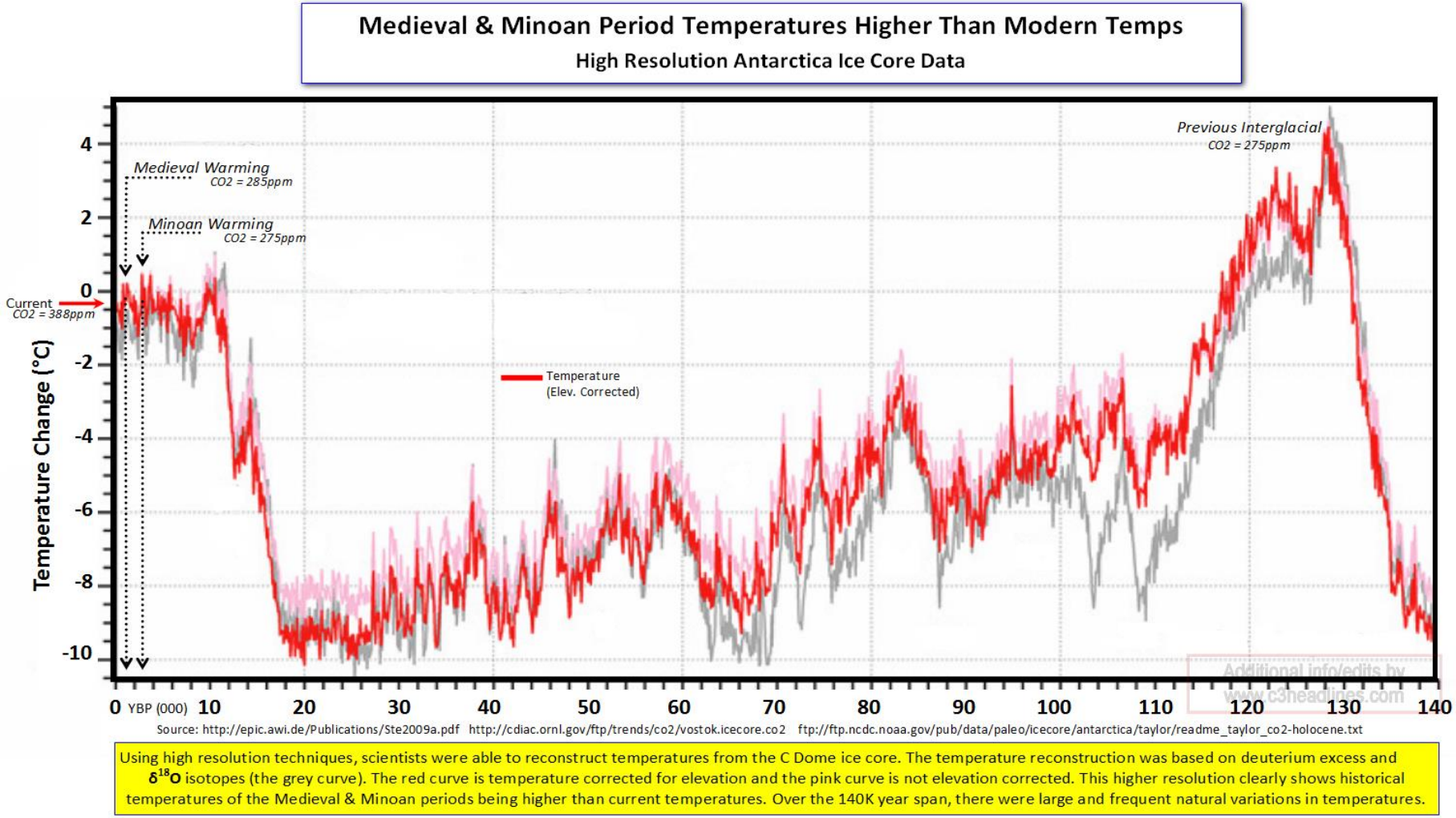


Source: http://epic.awi.de/Publications/Ste2009a.pdf http://cdiac.ornl.gov/ftp/trends/co2/vostok.icecore.co2 ftp://ftp.ncdc.noaa.gov/pub/data/paleo/icecore/antarctica/taylor/readme_taylor_co2-holocene.txt

Using high resolution techniques, scientists were able to reconstruct temperatures from the C Dome ice core. The temperature reconstruction was based on deuterium excess and $\delta^{18}O$ isotopes (the grey curve). The red curve is temperature corrected for elevation and the pink curve is not elevation corrected. This higher resolution clearly shows historical temperatures of the Medieval & Minoan periods being higher than current temperatures. Over the 140K year span, there were large and frequent natural variations in temperatures.

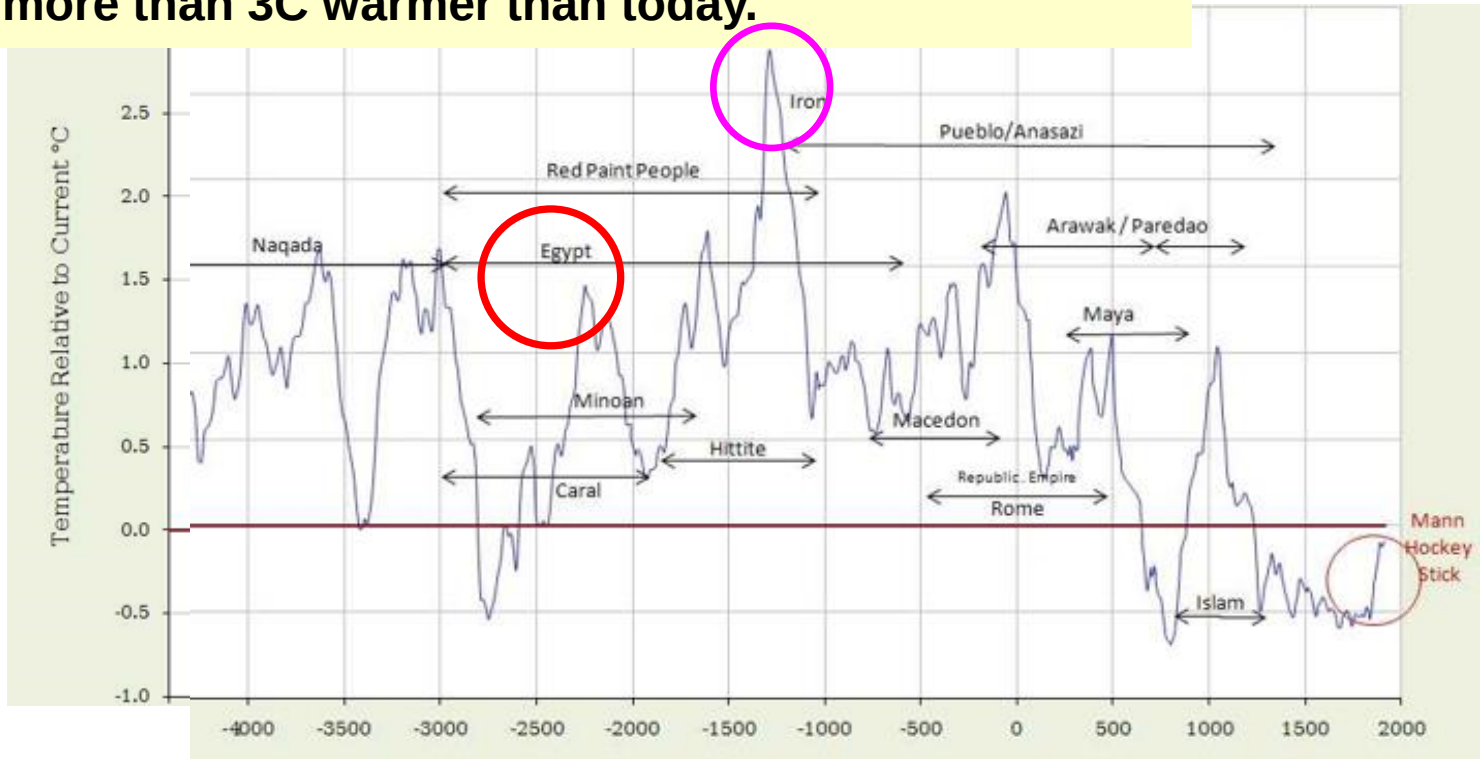
https://wattsupwiththat.files.wordpress.com/2012/10/49ff5-6a010536b58035970c0134840e51fd970c-pi.png

This high-resolution temperature time history from the Vostok Ice Core in Antarctica shows the Eemian, the previous interglacial period, **over 4C warmer than the present**. During the Eemian, <CO2> was 275 Parts per Million, and Hippos were in the Rhine and Thames Valleys and sea levels were ~ 4m higher than at present. Human ancestors clearly survived the Eemian, so claims of Climate Catastrophe if temperatures exceeded an IPCC-declared critical 1.5C or 2C warmer than pre-Industrial times are nonsense. It happened before, in the Eemian.



Art through the ages provides a window into the time the artwork was created.
The image of Egyptian men at work in the harvest shows them wearing breechcloths, nothing else, an indication that it was a lot warmer than today in Biblical Egypt.

The timeline below from the GISP2 ice core in Greenland shows truth of this analysis. Biblical Egypt's zenith period is shown with the Red circle, while temperatures at the time in the Magenta circle are **more than 3C warmer than today.**



Existence of the civilization in ancient Egypt when temperatures were more than 3C warmer than today shows that an increase of 3C again would NOT be an existential threat to humanity.

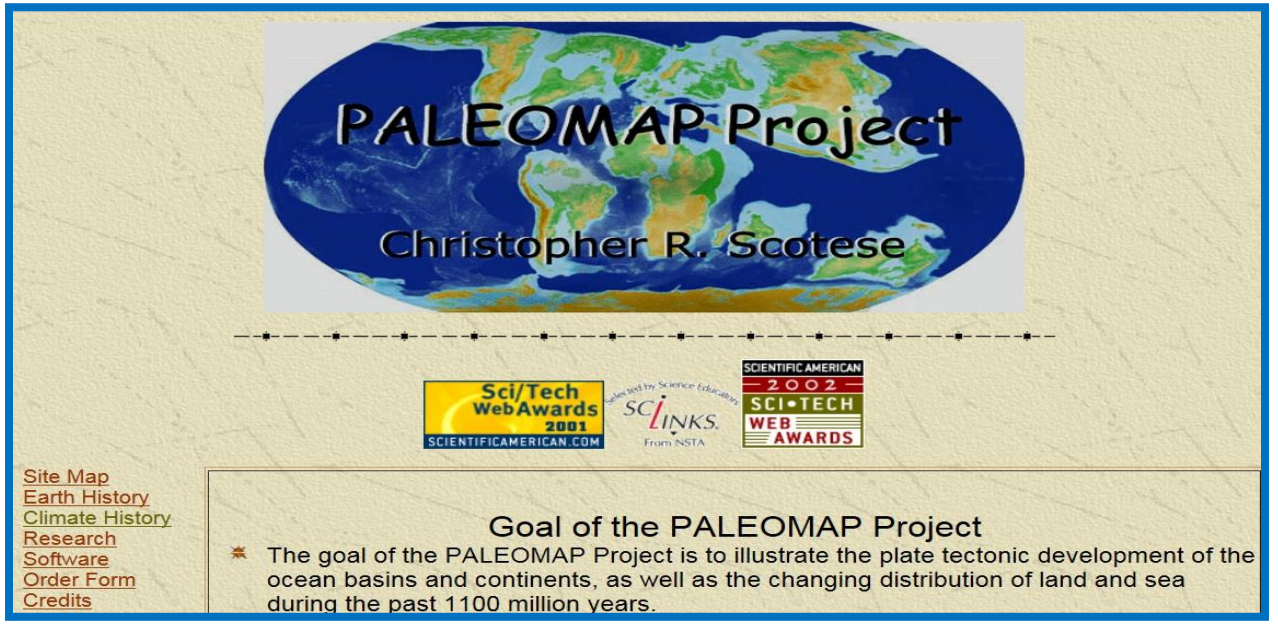
Time Domain: Last 600 million years

Since the Cambrian “explosion of life” across Ocean sea floors -- when fossils became common.

References for Temperature and Carbon Dioxide data

http://www.scotese.com/

http://ajsonline.org/content/301/2/182.abstract



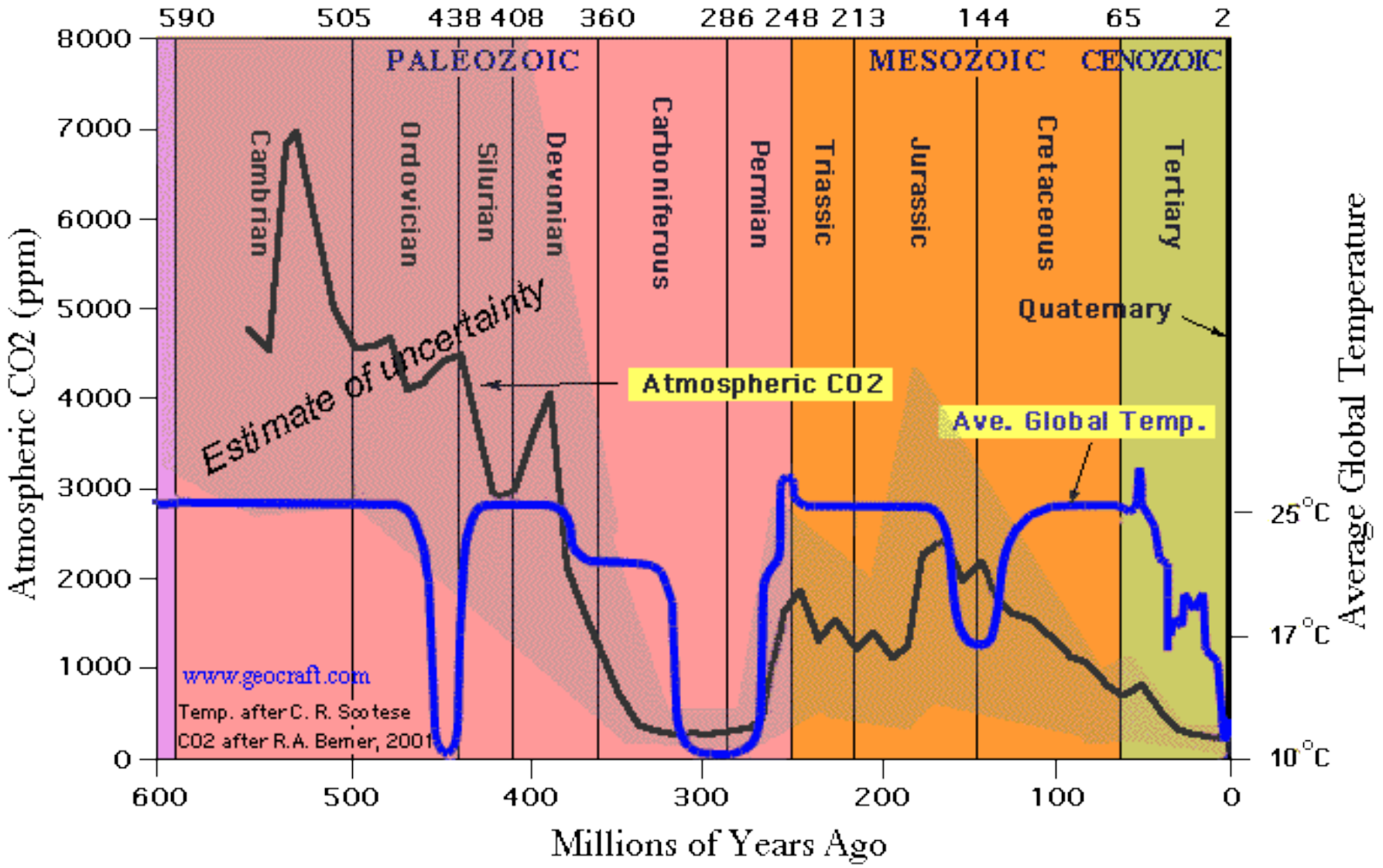
[American Journal of Science, Vol. 301, February, 2001, p. 182–204]

GEOCARB III: A REVISED MODEL OF ATMOSPHERIC CO_2 OVER PHANEROZOIC TIME

ROBERT A. BERNER and ZAVARETH KOTHAVALA

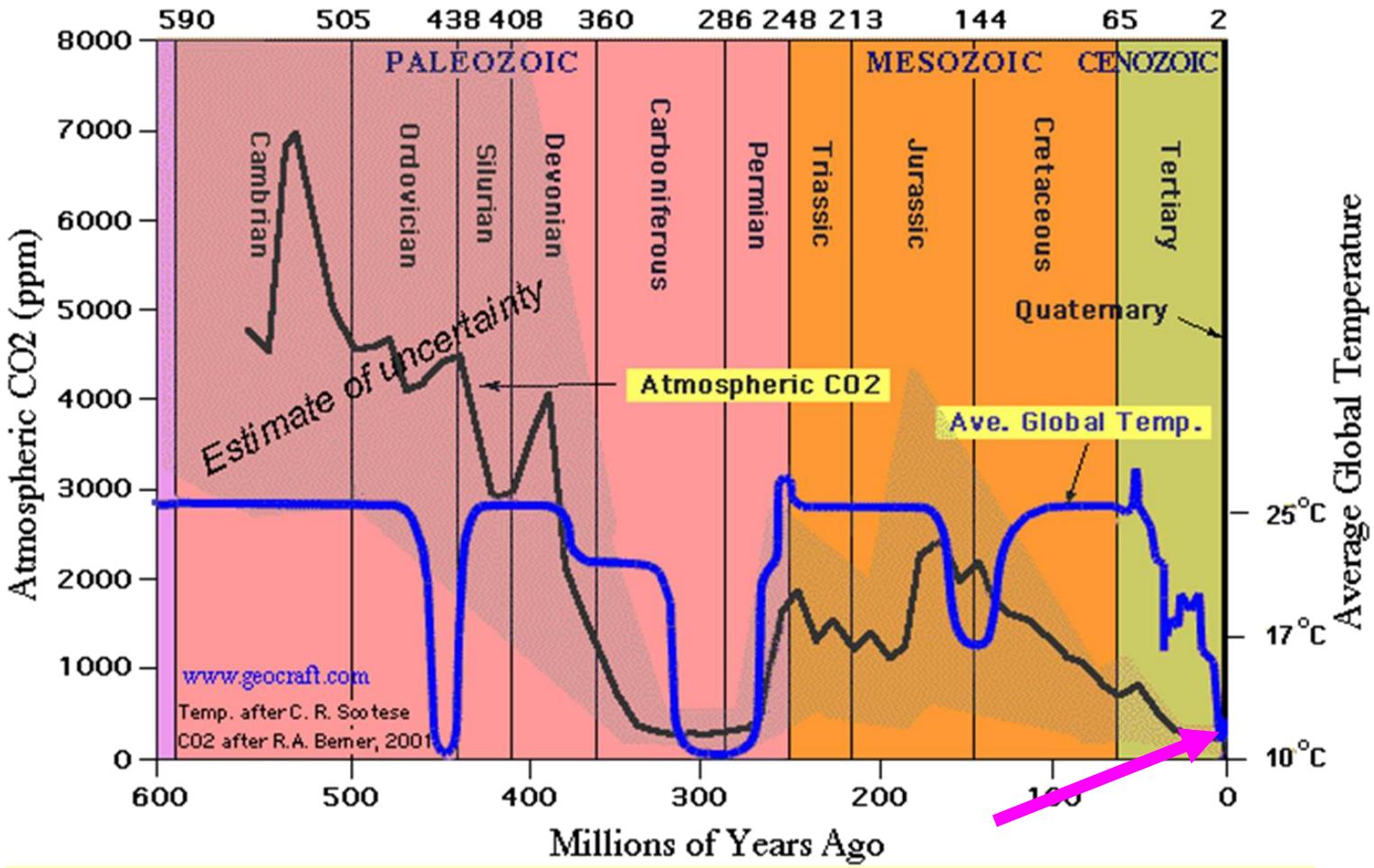
Department of Geology and Geophysics, Yale University,
New Haven, Connecticut 06520-8109

ABSTRACT. Revision of the GEOCARB model (Berner, 1991, 1994) for paleolevels of atmospheric CO_2, has been made with emphasis on factors affecting CO_2 uptake by continental weathering. This includes: (1) new GCM (general circulation model)



X-Axis Time: Cambrian 600 Million Years ago, Left Present on Right
Y-Axis Blue Average Global Temperature, Scotese **Paleomap** Project **Climate** Tab
Y-Axis Black Atmospheric <CO2> Berner & Kothavala, Am J. Sci., 2001, p 182-204

MOST OF GEOLOGIC HISTORY THERE WAS A LOT MORE CO2, and IT WAS A LOT WARMER.



The Magenta Arrow shows the present time, temp and CO2 levels

IPCC, other Alarmist Organizations posit that warming of 2C above the modern minimum in the Little Ice Age is an “Existential Threat” to Humanity, but warmer is better for plants and animal life.

Important Data from this Chart of Geologic History:

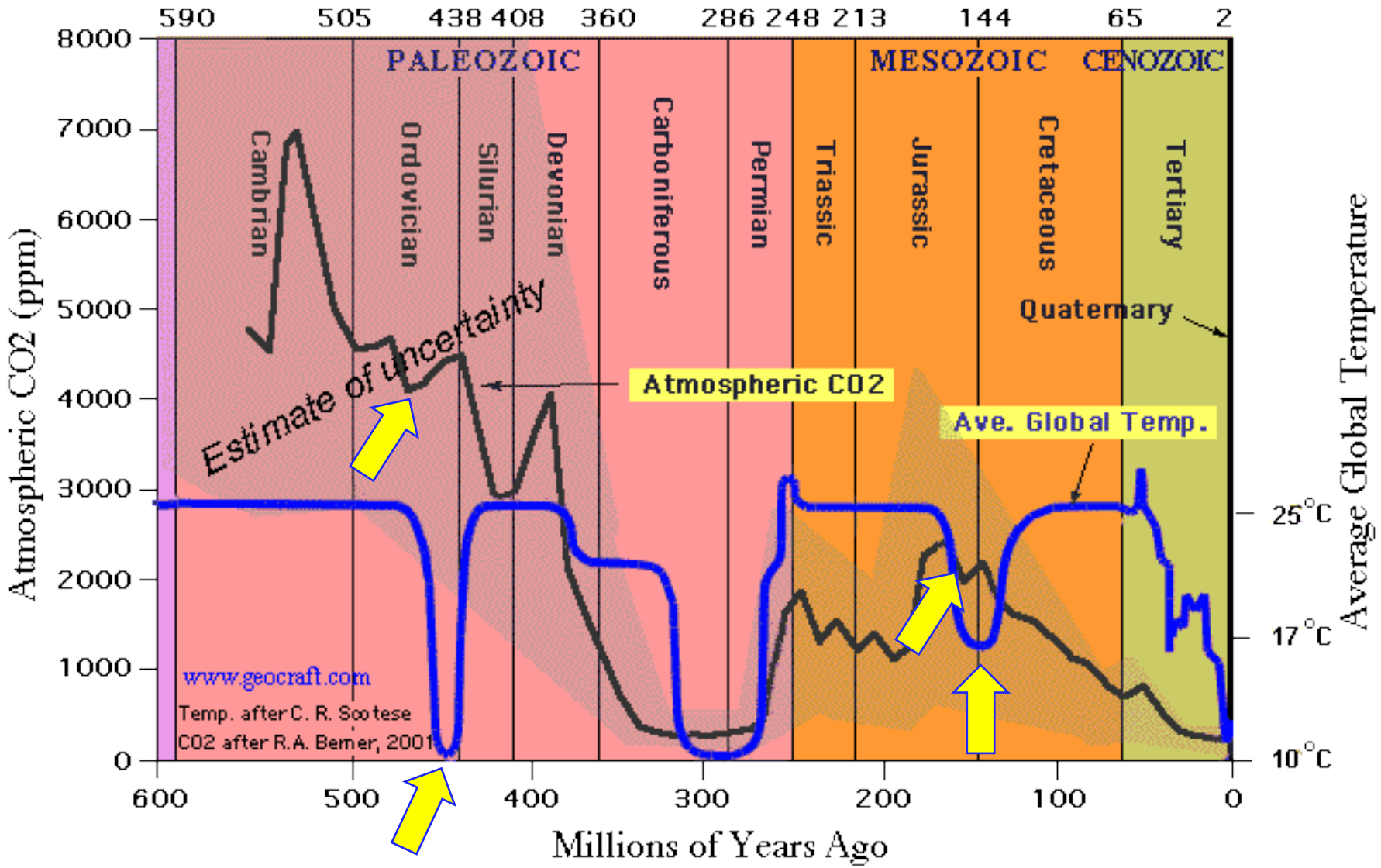
Chart shows last 600 million years during which the fossil record of plants and animals is clear.

There is no thermal runaway as posited by many alarmist models, despite <CO2> being 17X more concentrated than now.

The Cambrian explosion of Trilobites and’ Brachiopods and the spread of Fish during the Devonian happened during warm times.

The long rein of Dinosaurs from the late Permian to the top of the Cretaceous, ~200 million years, was during warm times with some 1800-2800 PPM CO2.

Humans, animals, and plants are carbon-based life forms. Life loves warm temperatures and lots of CO2 in the air.



SIDEBAR ON CO2 AND TEMPERATURE: If atmospheric <CO2> effect has such a great effect on Temperature and the feedbacks are so strong, why, at the end of the Ordovician, 450M years BP, did temperatures fall so precipitously, when <CO2> INCREASED from 4100 to 4500 PPM.?
Similar effect at end of Jurassic. Yellow Arrows; <CO2> increased but temperatures fell, a lot.

CONCLUSIONS:

The UN, President Biden, Secretary Austin and others proclaim that a continuation of the present slow and uneven warming, to 2C above the pre-industrial cold of the Little Ice Age, will result in an “EXISTENTIAL THREAT” to the USA and humanity.

Quite frankly, they make these claims without consideration of the knowledge of climate history and human history that are available to anyone with the ability to use Internet Search and the curiosity to examine what has happened in the past.

Examination of the proxy temperature histories from the Greenland and Antarctic Ice Cores reveals hundreds of thousands of years of data, with each year determined by counting the dust layers which form over the ice each warm season.

Temperatures were 2.5C to 3C warmer than today several times, during the height of the ancient city of Samarra, during the height of the Minoan Civilization, and the times of Biblical Egypt. Artwork from the time, the frontispiece of this topic, shows Egyptian men working with only a breechcloth, an indication of the warmth during that time.

The previous interglacial, the Eemian from 130,000 years ago, was 4C warmer than at present, so warm that fossils of hippos are found in the valleys of the Rhine and the Thames.

Clearly the ancients survived those times, we are their descendants, here today. Those warning of an EXISTENTIAL THREAT from today’s puny rate of warming have no skill in looking up past climate, or in critical thought.