From the publishers of

On The Road
The journal of the Alliance of British Drivers

Open-minded Layman's Guide to Climate Science

Separating fact from fiction

MAG
Motorcycle Action Group

FAIR FUEL UK .com

ABD Alliance of British Drivers
Driving Sense

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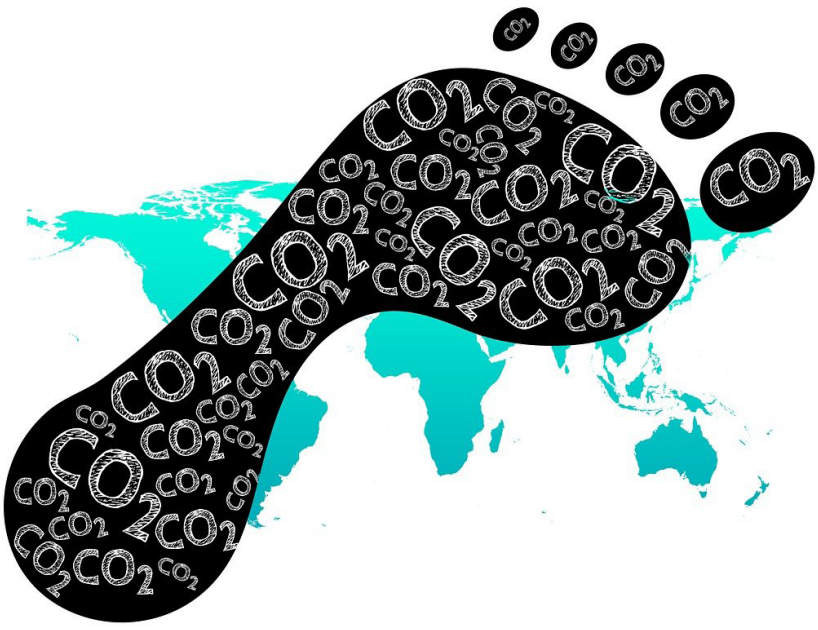


Introduction

"The climate system is a coupled non-linear chaotic system, and therefore the long-term prediction of future climate states is not possible." - Intergovernmental Panel for Climate Change (IPCC), 2018[1].

Given this as their starting-point, one is inevitably drawn to ask why, then, is the IPCC attempting to computer-model the terrestrial climate, when it is clearly beyond the scope of current human capabilities; whether computer-augmented or not?

To then push on into surreal territory, and to further suggest that the primary driving force underlying changes in the terrestrial climate is specifically Man-made atmospheric carbon dioxide (CO_2) emissions is to enter the realm of scientific absurdity, and is an entirely fallacious proposition.

On the most cursory examination, this proposition fails at the first two hurdles:

- Over whatever timescale one cares to choose, changes in atmospheric CO_2 levels invariably lag changes in global temperatures, never preceding them. "Cart" and "Horse", anyone?

- Man-made CO_2 emissions represent less than 5% of total annual emissions of this gas; the remaining 95+% of which are from uncontrollable natural sources.

- Therefore, expecting cuts in Man-made emissions of CO_2 to have any measurable effect on climate is akin to expecting to tangibly alter a super-tanker's course by prodding it with a limp celery stick.

The primary factors which determine changes in our climate are of external solar and cosmic origin, and operate over decadal-, centuries-long, and millennial scales.

The aggregated effect of these constantly varying influences at any given point in time determines the energy budget of the Earth's oceans; which in turn determines the climate over shorter timescales. Please read on to learn more.

The 2008 Climate Change Act mandates Net Zero UK Man-made Carbon Dioxide Emissions by 2050 to address a ‘climate emergency’.

There have been no accurate attempts by government to assess the feasibility, social, environmental and economic impacts, or to carry out a Cost-Benefit Analysis of implementing a Net Zero Man-made carbon dioxide emissions strategy.

Net Zero Preparations... What Preparations?

- No Feasibility Study
- No Environmental Impact Assessment
- No Economic Impact Assessment
- No Societal/ Social Impact Assessment
- No Cost-Benefit Analysis

Would these not be prudent things to do? Some solar physicists are predicting that we may actually be entering a GSM: Grand Solar Minimum – a cold period similar to the 1700s Maunder Minimum.

The last thing we ought to be doing is to compromise our energy generation capacity through over-reliance on erratic renewables with insufficient conventional/nuclear backup.

MAGICC

The US MAGICC (Model for Assessment of Greenhouse-Gas Induced Climate Change)[2] computer model (yes, yet another one!) predicts that even if the entire world adopted a Net Zero Man-made CO_2 emissions strategy, this would bring about at most a 0.1°C (by 2050) to 0.2°C (by 2100) temperature fall[3].

This is: (1) in practice not measurable, and (2) a poor ROI for an estimated £3 trillion expenditure by the UK alone.

Is this money well-spent?

Even from a "Lukewarmist" perspective, Björn Lomborg (False Alarm) & Michael Shellenberger (Apocalypse Never) suggest more cost-effective mitigation/ adaptation alternatives to the Net Zero strategy.

GWPF's (now Net Zero Watch) estimate of the cost of Net Zero implementation is £3 Trillion: >£100k per UK household (i.e., an HS2 scale project every year for three decades....).

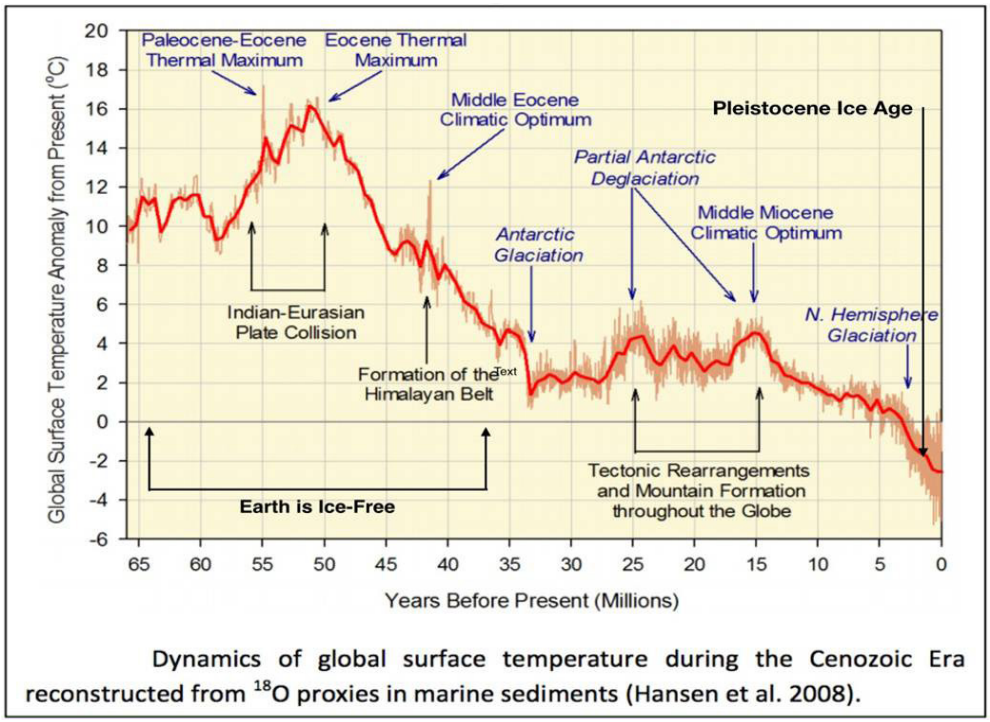
McKinsey Consultancy say it's £15 Trillion (£500Bn/annum for 30 years)[4].

Eliminate fossil fuels now – the US "MAGGICC" model says why bother?

https://www.cfact.org/2020/03/03/eliminate-fossil-fuels-now-u-s-climate-model-says-why-bother/

There is NO 'Climate Emergency'

There have been periods in Earth's history when the temperature was substantially warmer (& also sometimes significantly cooler) than it is now[5].



Dynamics of global surface temperature during the Cenozoic Era reconstructed from ^{18}O proxies in marine sediments (Hansen et al. 2008).

Over a geological timescale, there is very poor temporal correlation between temperature and atmospheric CO_2 levels[6].

Over millennial timescales, when there is any apparent correlation, due to the specific heat capacity of the Earth's oceans (and the fact that there are also long-term oceanic chemical reaction processes involving CO_2), the long-term lag between temperature change and atmospheric CO_2 concentration change can be between 600 & 1,000 years.

That being the case, how can atmospheric CO_2 be driving changes in the terrestrial climate, as opposed to responding to them?[7]

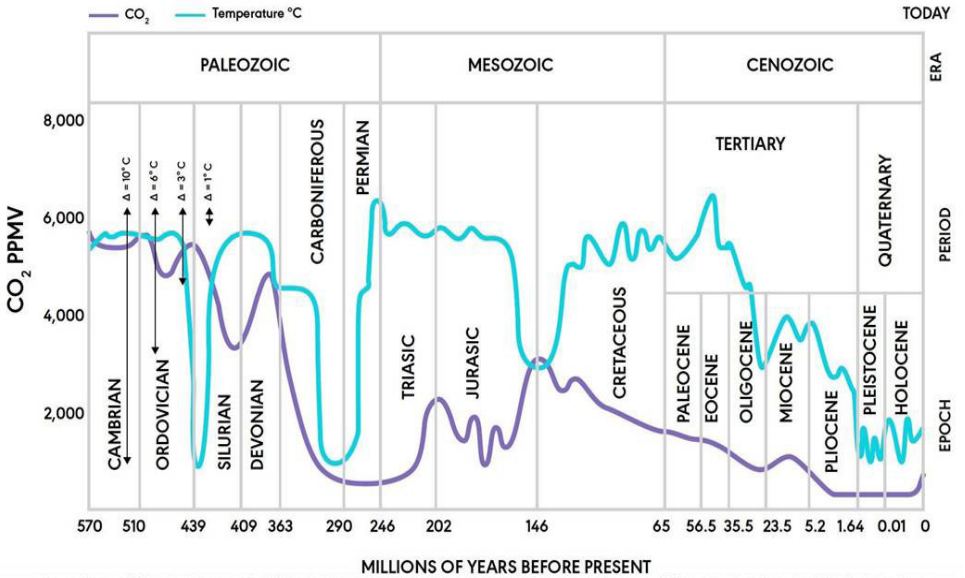
Over, the last c.10,000 years during our emergence from the last

Ice Age, the correlation is once again poor[8].

Over the approaching 10,000 years since the last Ice Age ended, Earth has endured numerous Warm and Cold periods due entirely to natural climate variations[9].

The current Modern Warm Period is in no way inconsistent with the previous Minoan, Roman and Medieval Warm Periods.

Geological Timescale: Concentration of CO_2 and Temperature Fluctuations



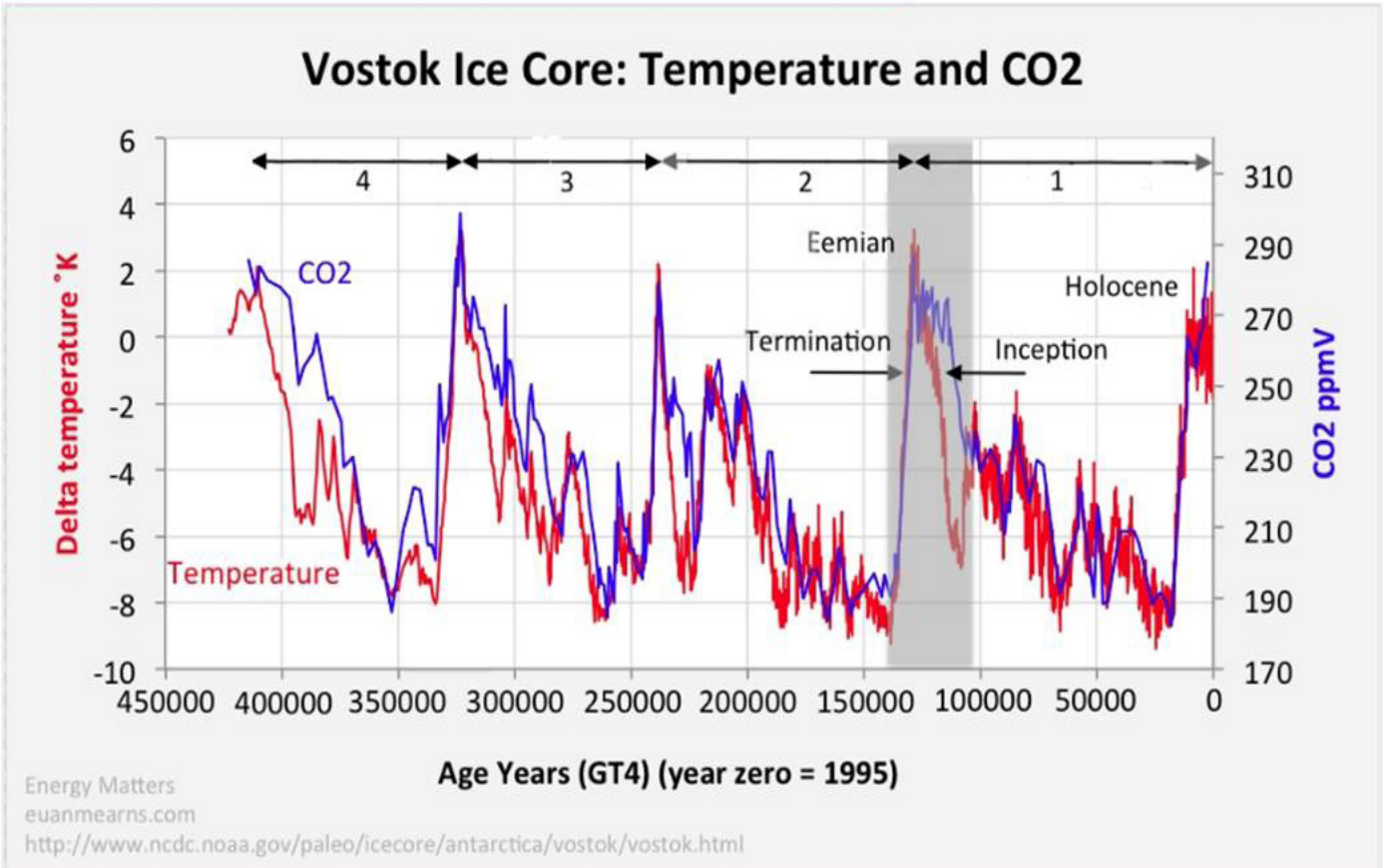
1- *Analysis of the Temperature Oscillations in Geological Eras* by Dr. C. R. Scotese © *2002*. 2- Ruddiman, W. F. 2001. *Earth's Climate: past and future*. W. H. Freeman & Sons. New York, NY. 3- Mark Pagani *et all. Marked Decline in Atmospheric Carbon Dioxide Concentrations During the Paleocene*. Science; Vol. 309, No. 5734; pp. 600-603. 22 July 2005. *Conclusion and Interpretation* by Nasif Nahle ©2005, 2007. *Corrected on 07 July 2008 (CO2: Ordovician Period).*

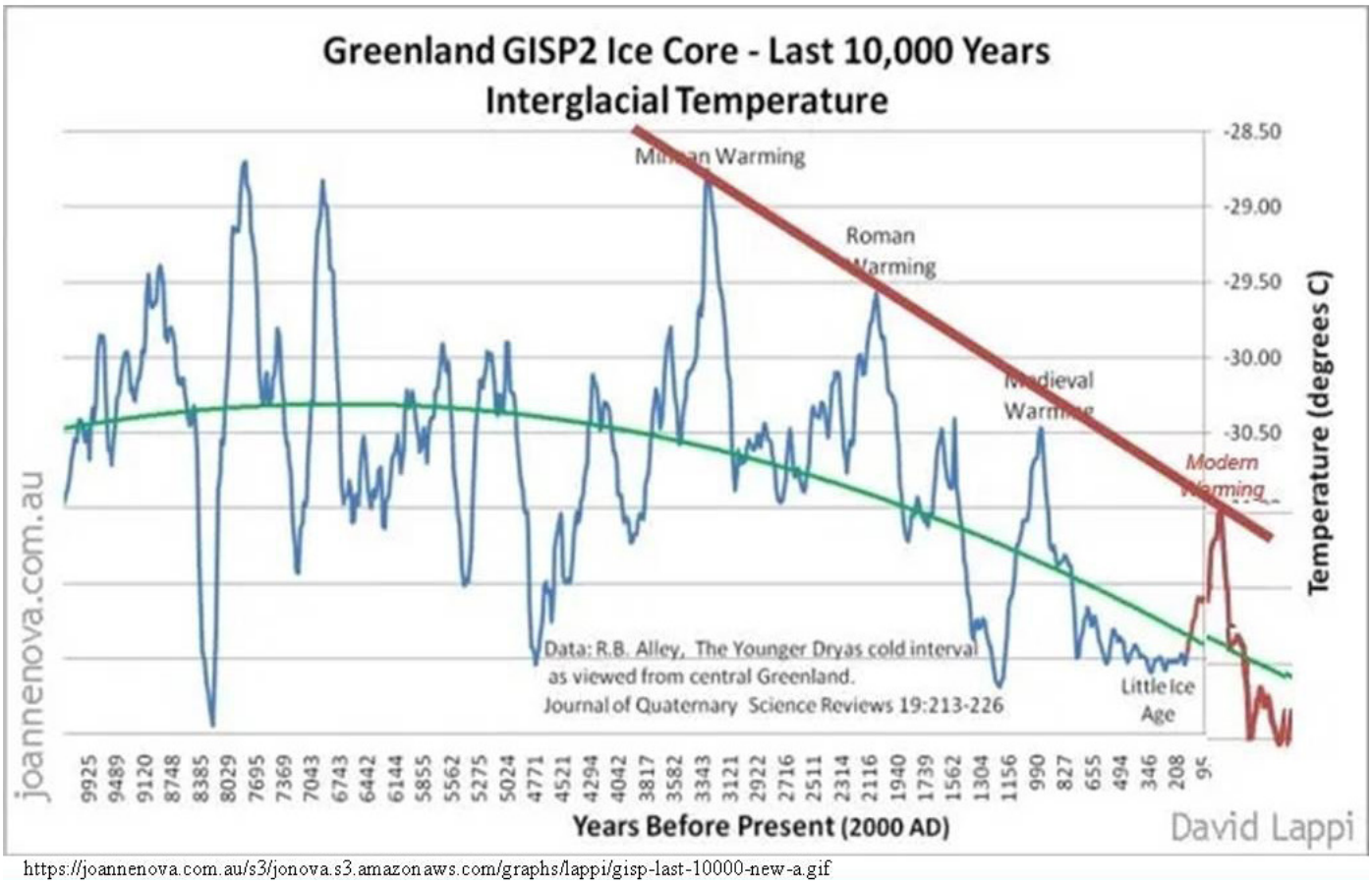
The latter period was when the Vikings settled Greenland, and petrified tree stumps in the far north of Canada show they were growing in a temperate climate; warm enough 'up there' to cultivate, no less.

The worry is that there is a downward trend in these peaks, possibly presaging the slide towards another Ice Age. Runaway warming we will NOT get (within a billion year timescale).

For confirmatory references attesting to the total absence of evidence of any "climate crisis" in real-world, measured data (see pages 6 and 7).

450kyear Temperature-CO_2 correlation





https://joannenova.com.au/s3/jonova.s3.amazonaws.com/graphs/lappi/gisp-last-10000-new-a.gif

There are various sources. Here are just a few for you to get to grips with:

1. https://www.abd.org.uk/flop-26-top-10-failed-climate-predictions-for-2020/

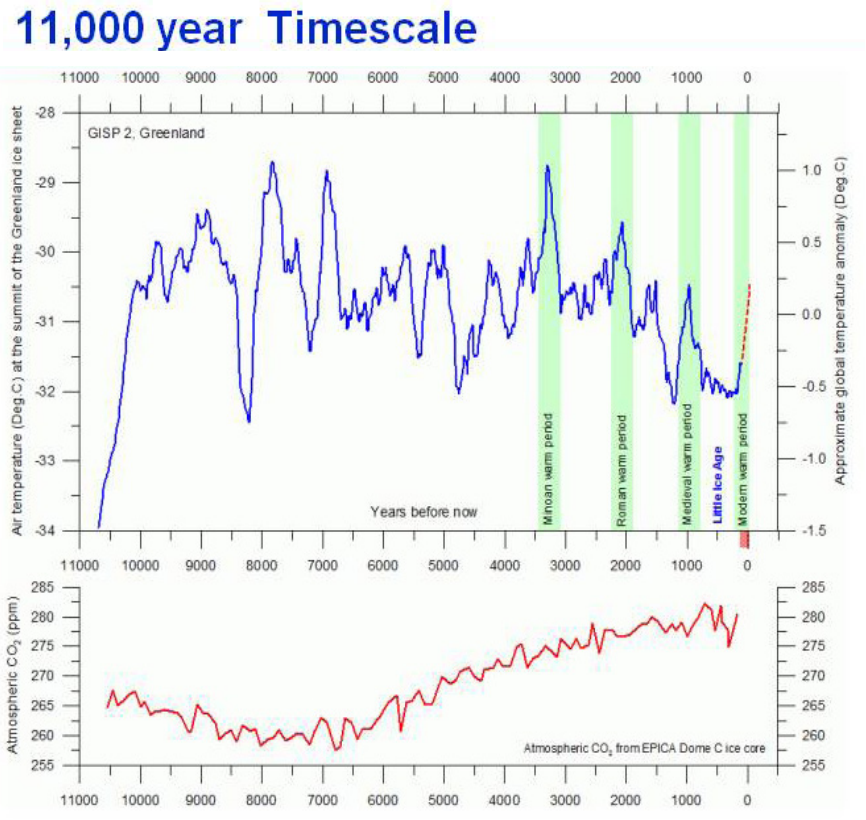
2. https://www.heartland.org/_template-assets/documents/Books/CaaGbook30vWeb2021.pdf

3. https://www.netzerowatch.com/european-parliament-told-there-is-no-climate-emergency/

4. https://patriotpost.us/opinion/61742-climate-crisis-four-major-metrics-that-sayotherwise?fbclid=IwAR0qyQtMa2DREk8smlzKc7LyMPdQHQ6uyiaGd0JcwAFlZAdgW_yFNSQAhNU

5. https://www.aei.org/carpe-diem/50-years-of-failed-doomsday-eco-pocalyptic-predictions-the-so-called-experts-are-0-50/?fbclid=IwAR3WHO6A1tXBb2AgDno0pfVk1o3PgCuWiS_EIVOHLY3SyWHPtWamDcyywDA

6. https://www.nationalreview.com/2021/10/dont-buy-the-un-climate-change-conferences-scary-stories/



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

7. https://www.youtube.com/watch?v=GD8SXP02h4c

8. https://unherd.com/2021/11/the-great-climate-change-fallacy/?=frlh

9. https://climatechangethefacts.org.au/2021/11/09/how-and-why-the-false-climate-consensus-is-manufactured/

10. https://www.sott.net/article/460582-Why-arent-journalists-and-politicians-more-sceptical-about-Net-Zero-policy-based-on-outputsof-unreliable-models?utm_source=rss&utm_medium=MINT+Social&utm_campaign=RSS

11. https://electroverse.net/physicist-william-happer-there-is-no-climate-emergency/

12. https://www.youtube.com/watch?v=-m73QYdhoCw

13. https://www.sciencedirect.com/science/article/pii/S0959378019300378

14. https://www.naturalnews.com/2019-07-12-climate-change-hoax-collapses-new-science-cloudcover.html?fbclid=IwAR1rZz_mTV0a7RwxXjySiwCkRswZZFutH-KVZSF_xUM5d5OEunEb2uL3JYM

15. https://www.technocracy.news/greenpeace-co-founder-global-warming-is-a-complete-hoax-and-scam/

16. https://climatism.wordpress.com/2019/05/28/dr-tim-ball-must-read-environmentalism-evidence-suggests-it-was-always-and-onlyabout-achieving-world-government/

17. https://www.cfact.org/2018/12/02/dr-willie-soon-versus-the-climateapocalypse/?fbclid=IwAR1rX0O6Uo2rMga5Q7VzwGHQWEQhiOCqvjFsFrQQWiBUkYRY0A3vkuNnKcY

18. https://www.youtube.com/watch?v=EhW-B2udhQw

19. https://notrickszone.com/2018/04/05/ex-noaa-climate-scientist-no-role-of-CO_2-in-any-signi%ef%ac%81cant-change-of-the-earthsclimate/#sthash.wI4E6276.dpbs

But what about the "97% of scientists" who agree there's a "crisis"? Well, guess what? It's actually 8%.

Cook et al. surveyed 11,944[1] papers on global warming that had been published from 1991 through 2012. They did not read the papers or talk to the authors, but they did read the abstracts. The results of the abstracts were divided into 7 categories:

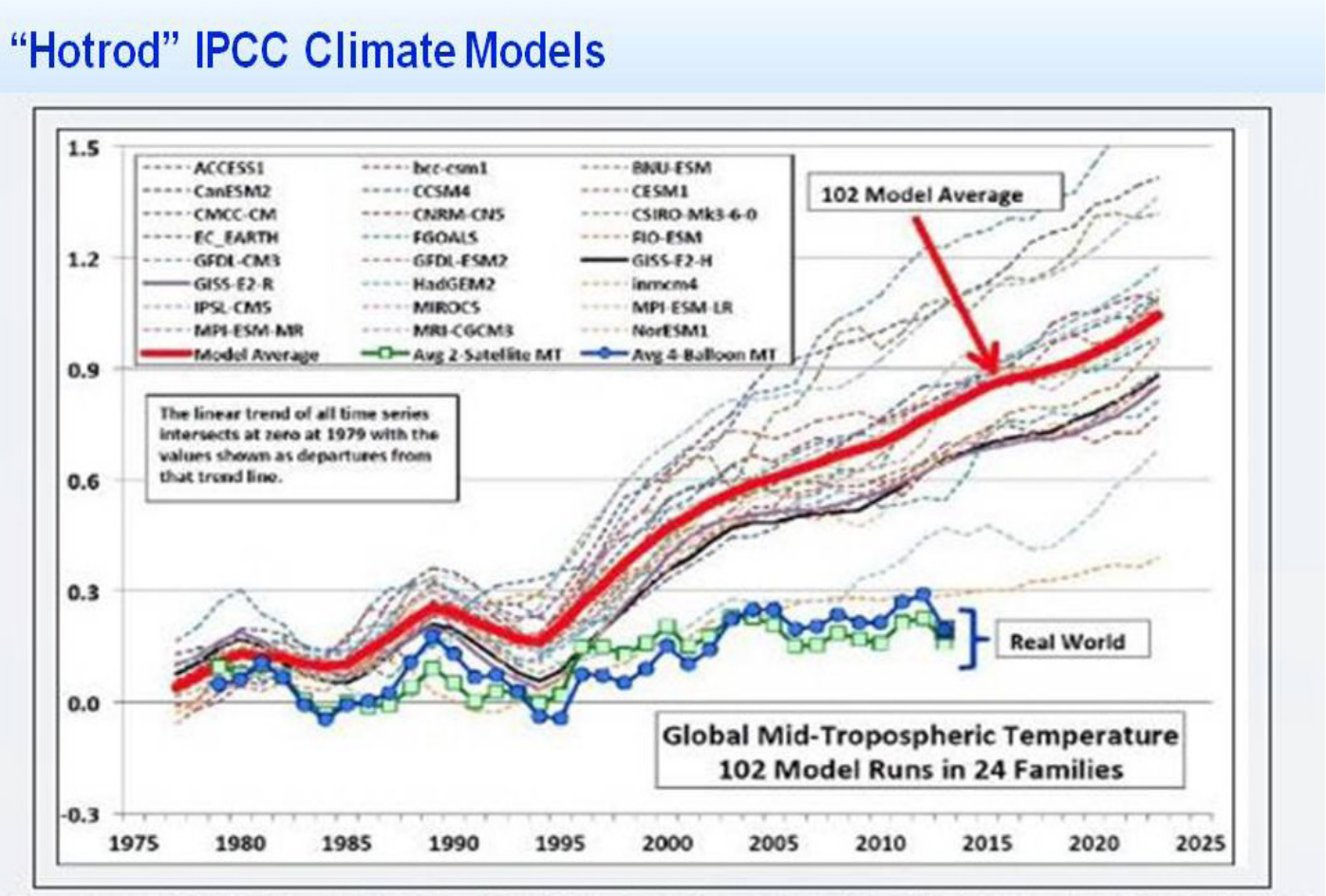
Category	Number of papers
1. Man is causing all of the warming	64
2. Man is causing over 50% of the warming	922
3. Man is causing less than 50% of the warming	2910
4. No opinion or uncertain	7930
5. Man is causing some but far less than 50%	54
6. Man is not causing warming, with qualifications	15
7. Man is not causing any warming	9

It appears that Cook et al. decided to compare only those scientists who had strong opinions. If that is the case, the first 2 categories represent scientists who believe man is causing all or most of the warming (986), while those in categories 6 and 7 believe man is causing none or almost none (24). This ratio is about 97%. But the most important result of this study is that *almost 8,000 had no opinion or were uncertain*. So much for the 97%.

[1] There were actually 11,904 papers, not 11,944

As with nearly ALL their pronouncements, irrational alarmists take “Terminologcal Inexactitude” to previously unplumbed depths of deceit: the 97% was arrived at by only taking account of polarised conclusions [986/(986+24) = 97%].

Anthropogenic Warming influence	No of papers	%
All or most	986	8.3
No Opinion	7930	66.6
Minor to none	2988	25.1



There IS a 'Climate Modelling Emergency'

Most GCMs (Global Circulation Models) not only signally fail to accurately forecast future temperatures, they cannot even be used to accurately model past temperature/ atmospheric CO_2 level relationships.

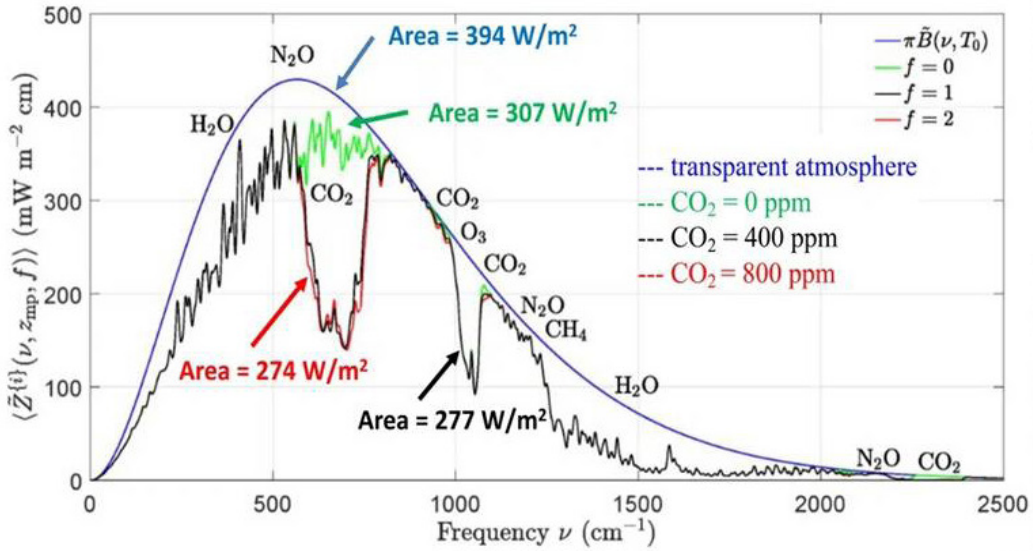
This slide, prepared by retired NASA scientist and IPCC lead author Dr. John Christy, Professor and Director, Earth SystemScience Center, NSSTC, University of Alabama in Huntsville, amply demonstrates this. The only model that accurately predicted reality (dotted light brown curve) was generated by Ukrainian Prof. Habibullo Abdussamatov.

Former NASA research & climate physicist Ferenc Miskolczi discovered in 2008 that IPCC's basic (infinite thickness atmosphere) greenhouse equations were incorrect[10]. Finite thickness atmosphere versions introduced a negative feedback (cooling) term; whose importance increases with altitude. NASA refused to publish his work. So he resigned.

Working with Ross McKitrick (debunker of Mann's notorious "Hockey Stick" algorithm fame), & corroborating the conclusions of Miskolczi's theoretical work, retired NASA climatologist John Christy has established that the climate models all run hot because they underestimate the rate of upper atmosphere heat loss during warming periods by c.50%[11&12].

Dr. John Christy: "Little known to the public is the fact that most of the scientists involved with the IPCC do not agree that global warming is occurring. Its findings have been consistently misrepresented and/ or politicised with each succeeding report."

W. A. van Wijngaarden & Emeritus Physics Professor William Happer have derived a laptop operable climate model (no £multi-million Cray supercomputer needed!) that very closely reproduces real-world measurements[13&14].
www.youtube.com/watch?v=m73QYdhoCw
and
https://wvanwijngaarden.info.yorku.ca/files/2020/12/WThermal-Radiationf.pdf?x45936



Max Planck
1858–1947

Karl Schwarzschild
1873–1916

Wijngaarden/ Happer Climate Model conclusions:

- If CO_2 were zero, it would make a big difference (about 25%) and the Earth would be cooler

- If CO_2 were doubled, it would make a very small difference

- CH_4 & N_2O are very hard to find on any graph [resulting from their modelling work]. Clearly they do not contribute [meaningfully] to the greenhouse effect

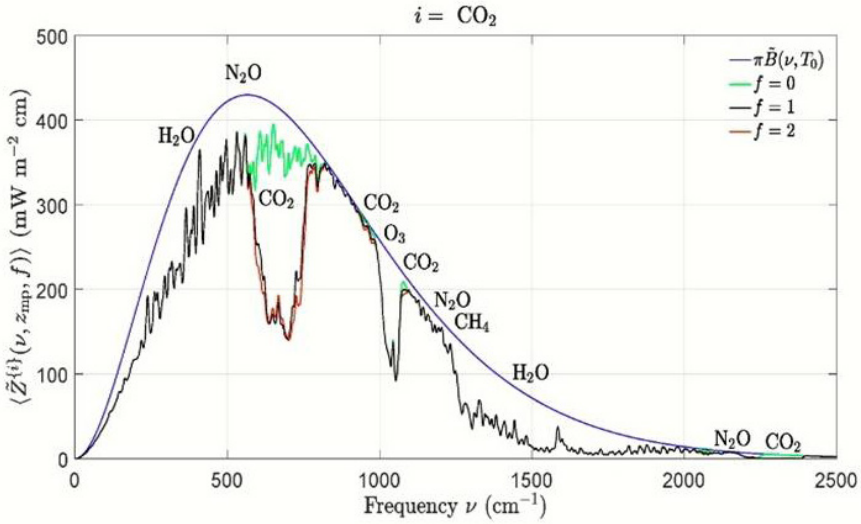


Figure 4: Effects of changing concentrations of carbon dioxide, CO_2 on the filtered spectral flux $\langle \tilde{Z}^{\{i\}}(\nu, z_{mp}, f) \rangle$ of (44) at the mesopause altitude, $z_{mp} = 86$ km. The width of the filter (43) was $\Delta\nu = 3$ cm^{-1}. The smooth blue line is the spectral flux, $\tilde{Z} = \pi\tilde{B}(\nu, T_0)$ from a surface at the temperature $T_0 = 288.7$ K for a transparent atmosphere with no greenhouse gases. The green line is $\langle \tilde{Z}^{\{i\}}(\nu, z_{mp}, 0) \rangle$ with the CO_2 removed but with all the other greenhouse gases at their standard concentrations. The black line is $\langle \tilde{Z}^{\{i\}}(\nu, z_{mp}, 1) \rangle$ with all greenhouse gases at their standard concentrations. The red line is $\langle \tilde{Z}^{\{i\}}(\nu, z_{mp}, 2) \rangle$ for twice the standard concentration of CO_2 but with all the other greenhouse gases at their standard concentrations. Doubling the standard concentration of CO_2 (from 400 to 800 ppm) would cause a forcing increase (the area between the black and red lines) of $\Delta F^{\{i\}} = 3.0$ W m^{-2}

- Molecules of tiny concentration have even less effect: example is HFCs, with extremely high GWP numbers

Building on Planck/ Schwarzschild's work, Wijngaarden/ Happer demonstrate that increasing atmospheric CO_2 from current c.400ppmv to 800ppmv would make only about a c.3Wm^{-2} difference in absorption (in about 360Wm^{-2} global average TSI (see page 19) so less than 1% increase).

In their own words:
"Doubling the standard concentration of CO_2 (from 400 to 800ppmv) would cause a forcing increase (the area between the black & red lines) of 3Wm^{-2}".

Scientific Policy Implications

- Agreement between theory and experiment is the hallmark of good science

- The method of Wijngaarden & Happer fulfils that criterion

- It is far superior to the GCM [Global Circulation Models] in IPCC reports, which always predict too high temperatures

- More CO_2 makes only a very tinydifference

- More N_2O or CH_4 makes no difference at all

Therefore:

- Do NOT take expensive actions to mitigate climate change

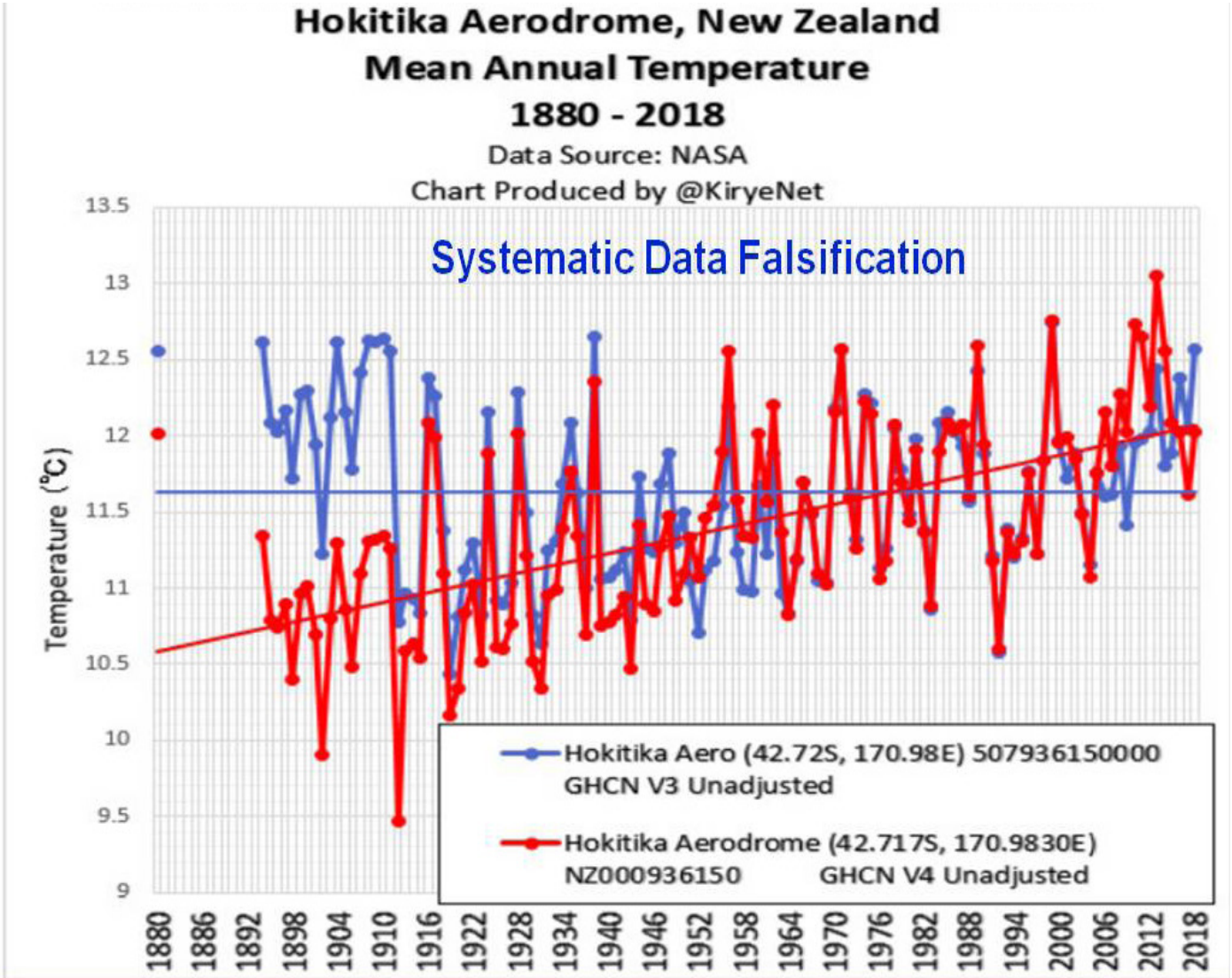
- Do NOT strive to reduce CO_2 or other greenhouse gases

Fudging the Temperature Record

NASA & NOAA have been engaged in systematic "adjustment" (i.e., falsification) of past temperature records to make the present appear anomalously warm[15&16&17&18]. Many rural stations have not been maintained and fallen into disuse.

Third World countries have a spectacularly poor record of maintaining the few stations in more remote or poverty ridden places, notably sub-Saharan Africa; so much of the data IPCC rely on is useless and/or corrupted.

Most of the northern hemisphere stations are



in eastern USA and western Europe which leaves vast swathes of continental Eurasia uncovered.

The entire southern hemisphere was covered by only eight stations, with none covering the vast expanse of oceans.

One "ocean monitoring station" is 111km inland!

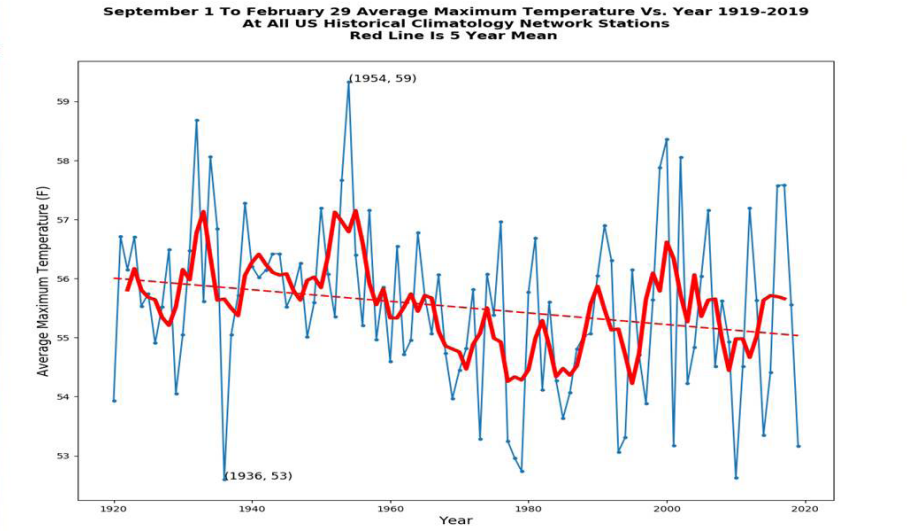
So the southern averages are hopelessly compromised and effectively unusable, resulting in a wholly distorted wholeglobe picture.

For the larger part of the globe, there are no stations, so NASA/ NOAA input guesstimates.

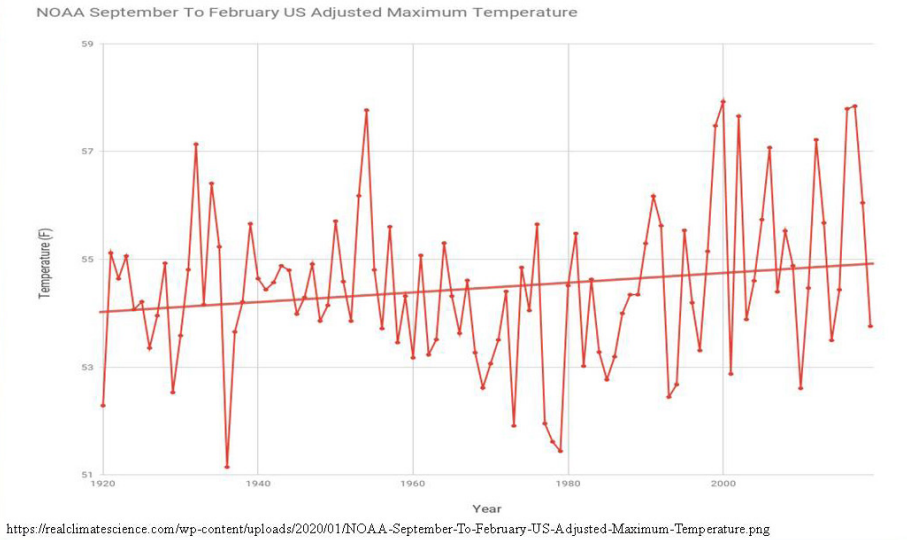
Ocean surface temperature buoys are also being surreptitiously replaced by shipboard readings...

Due to creeping urbanisation (stations on or near airports, car parks, aircon outlets(!) etc), there are massive 'Urban Heat Island' distortions (for which IPCC does not correct) with urban, suburban and city stations in 'The West'[19].

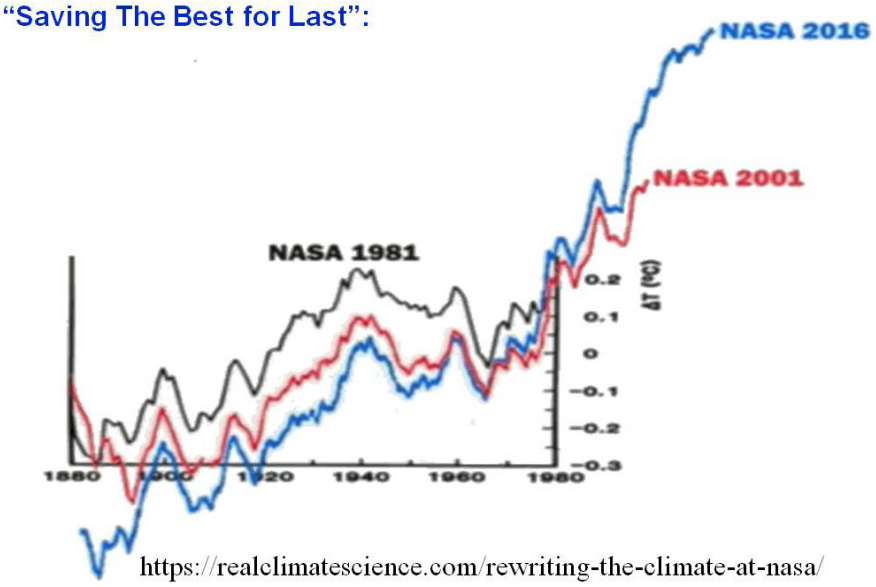
Examples of "before" and "after" adjustments[20] show in the past (cooler than reported) to present "warmer" direction.



https://realclimatescience.com/wp-content/uploads/2020/01/September-1-To-February-29-Average-Maximum-Temperature-Vs-Year-1919-2019-At-All-US-Historical-Climatology-Network-Stations-Red-Line-Is-5-Year-Mean-Average-Maximum-Temperature-vs-Year.png



https://realclimatescience.com/wp-content/uploads/2020/01/NOAA-September-To-February-US-Adjusted-Maximum-Temperature.png



https://realclimatescience.com/rewriting-the-climate-at-nasa/

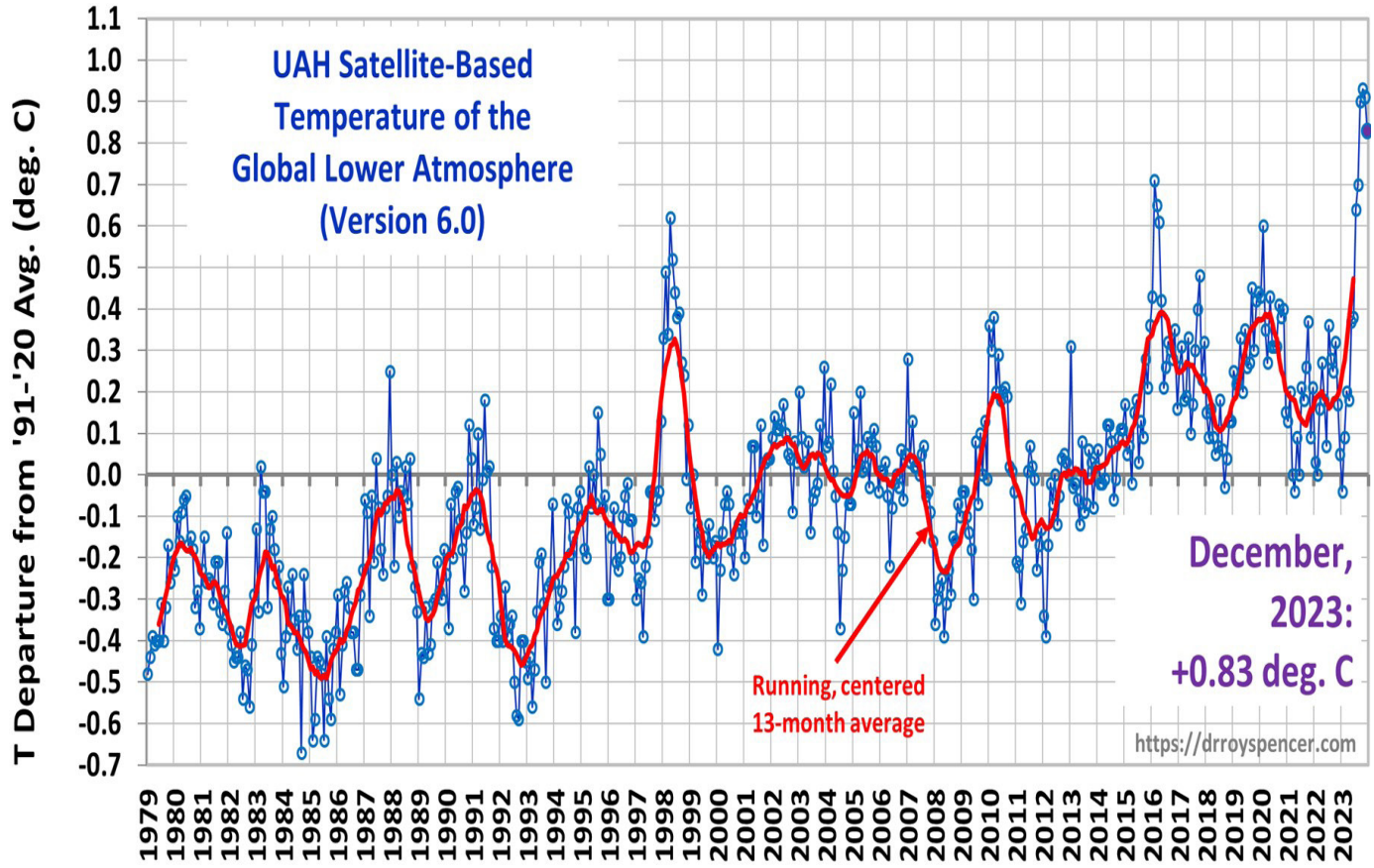
No bias of course...

Top right shows US Sep 1st to Feb1st average max temperatures 1919-2019 pre-NOAA "adjustments"[21]

Middle chart shows Post NOAA adjustments[22].

You might call it falsification, but I couldn't possibly comment.

Bottom right, Pretty self-explanatory: over time, NASA/NOAA projections have become ever more divorced from the reality of empirical measurements[23].



It's more difficult to fudge internally-calibrated satellite data...

By careful choice of the (most recent low temperature based) timeline, a c.1.4°C temperature rise is apparent over the last 45 years[24]. This choice conveniently omits the cooling period that had occurred between the 1940s and the late 1970s, despite monotonically rising atmospheric CO_2 levels over that period.

Needless to say, NASA/NOAA are trying to greenwash that fact out of existence. Don't forget the scale is in tenths of one degree; normal daily variations at most terrestrial sites can easily be 100 to 500 times this interval.

The 13 month centred running average peaked over the 2016-2021 period & had been fairly static; until the mid-2023 Hunga Tonga sub-aquatic eruption projected a huge volume of water vapour (the most abundant, potent global warming gas) into the stratosphere. This created a temperature spike (δT=+0.93°C by OCT '23); which now appears to be largely "played out"; having declined to +0.83°C by DEC '23.

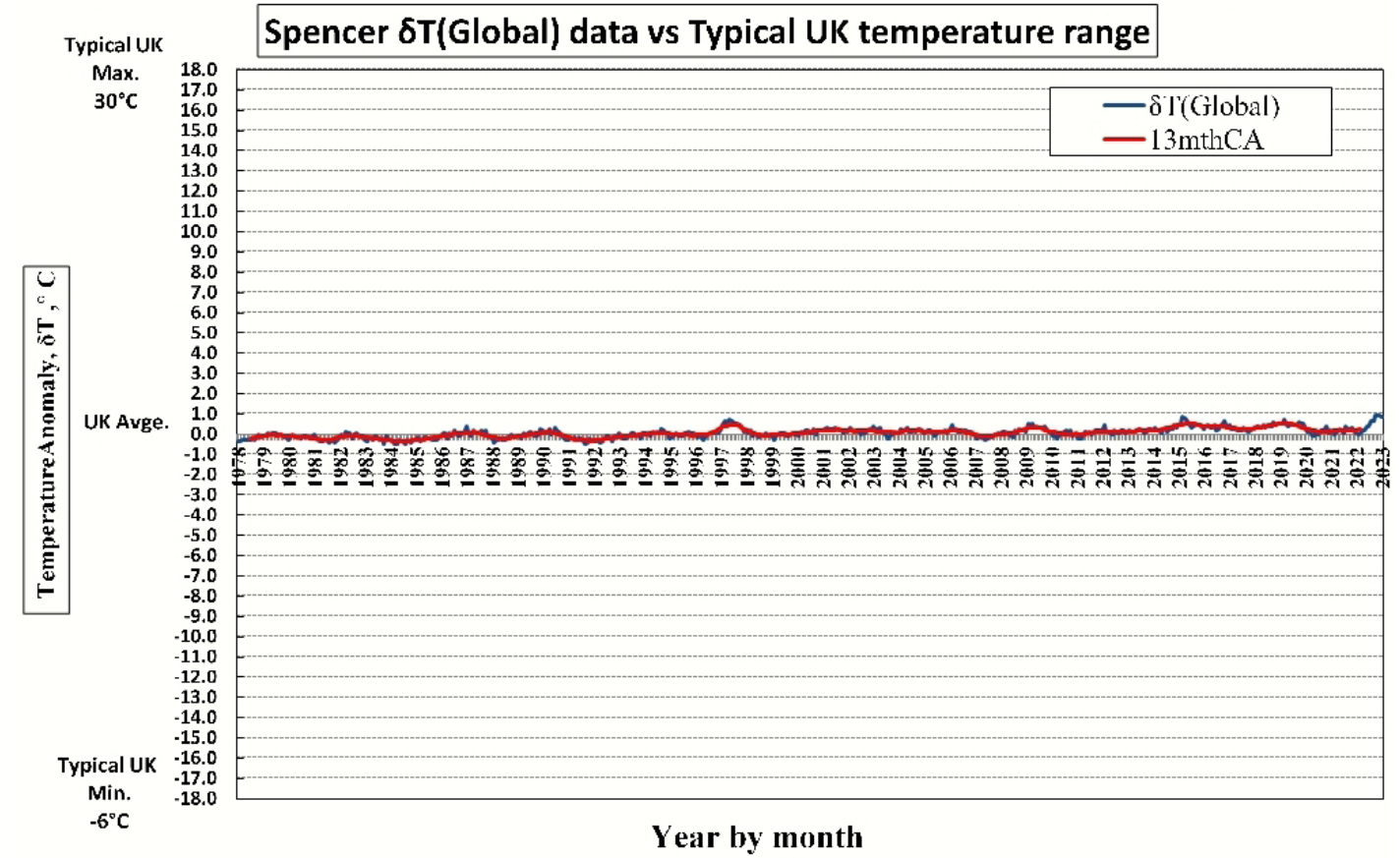
This slide also strongly refutes the IPCC proposition that there is a mutually-reinforcing positive temperature feedback loop between atmospheric CO_2 & water vapour.

It appears that in the practical climatic temperature range, the two gases behave as semi-ideal, non-interactive, ones; whose effects are additive, but mutually independent.

No (anyway First Law of Thermodynamics violating) positive feedback loop exists.

A warming trend (about a 1.4% increase per annum) does emerge from carrying out linear regression on the temperature data, **BUT** (hardly surprisingly) only about 46% of the temperature variation correlates with chronology.

Myriad other factors are contemporaneously operating (see later charts).

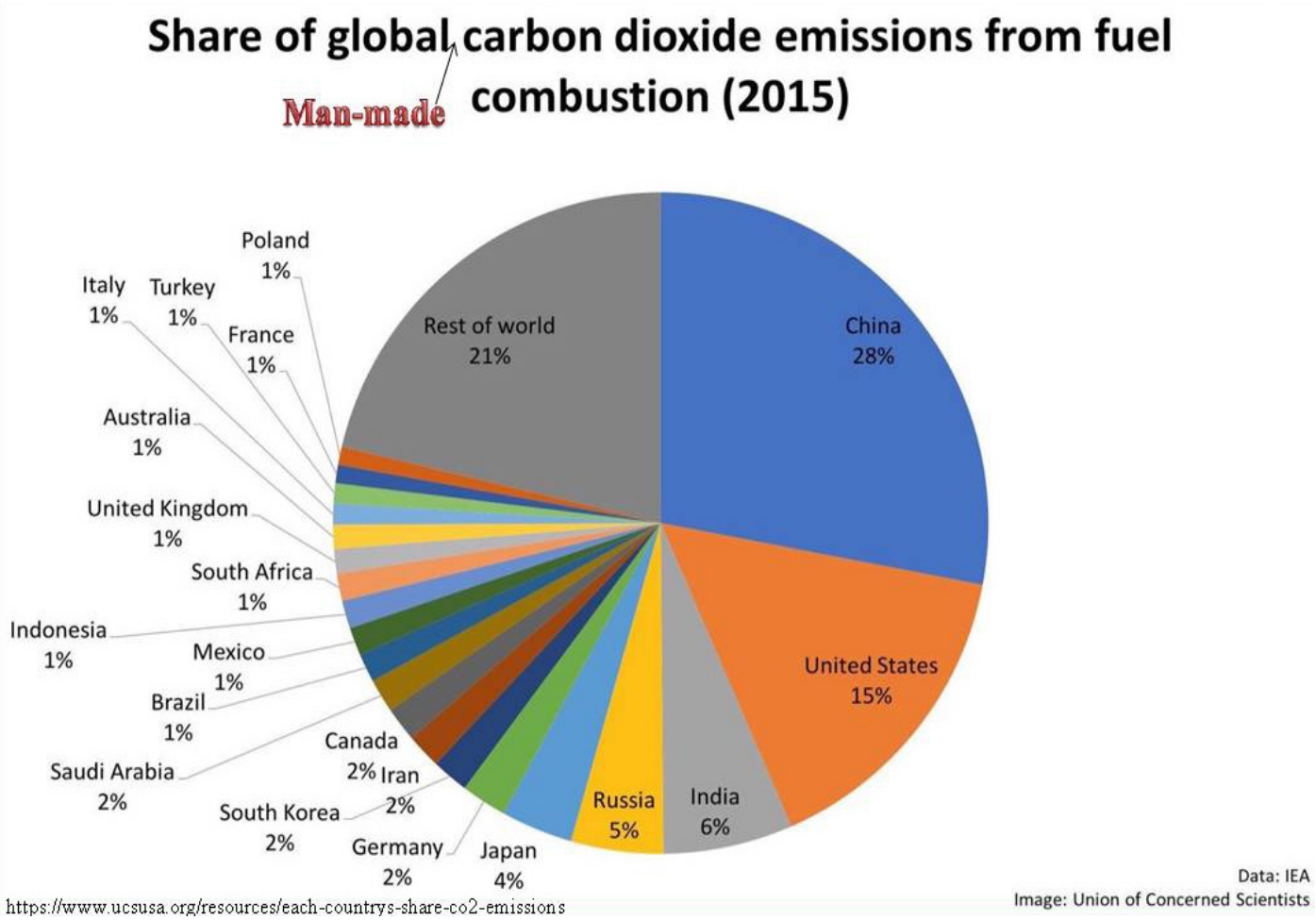


How do the empirically observed temperature variations over the last 40+ years appear, graphed on a scale that's meaningful to normal human beings?

Spencer temperature anomaly figures plotted against a scale which most of humanity occupying temperate climes would comprehend: +30°C to -6°C with a 12°C average. This therefore amply demonstrates there is certainly no climate "emergency" or "crisis".

Despite blatant NASA/ NOAA temperature data record falsification, scientifically-valid evidence of "global boiling" is notable for its absence (*see: https://temperature.global/*): 14.1°C is the average temperature from 69,961 temperature readings; only 86°C to go!!![25]

The Earth's oceans (two-thirds of the planet's surface area) represent the largest absorber of incoming solar energy & ultimately determine the climate.



Some Climate Science Facts

The UK is responsible for just 1% (& falling) of global Man-made CO_2 emissions[26].

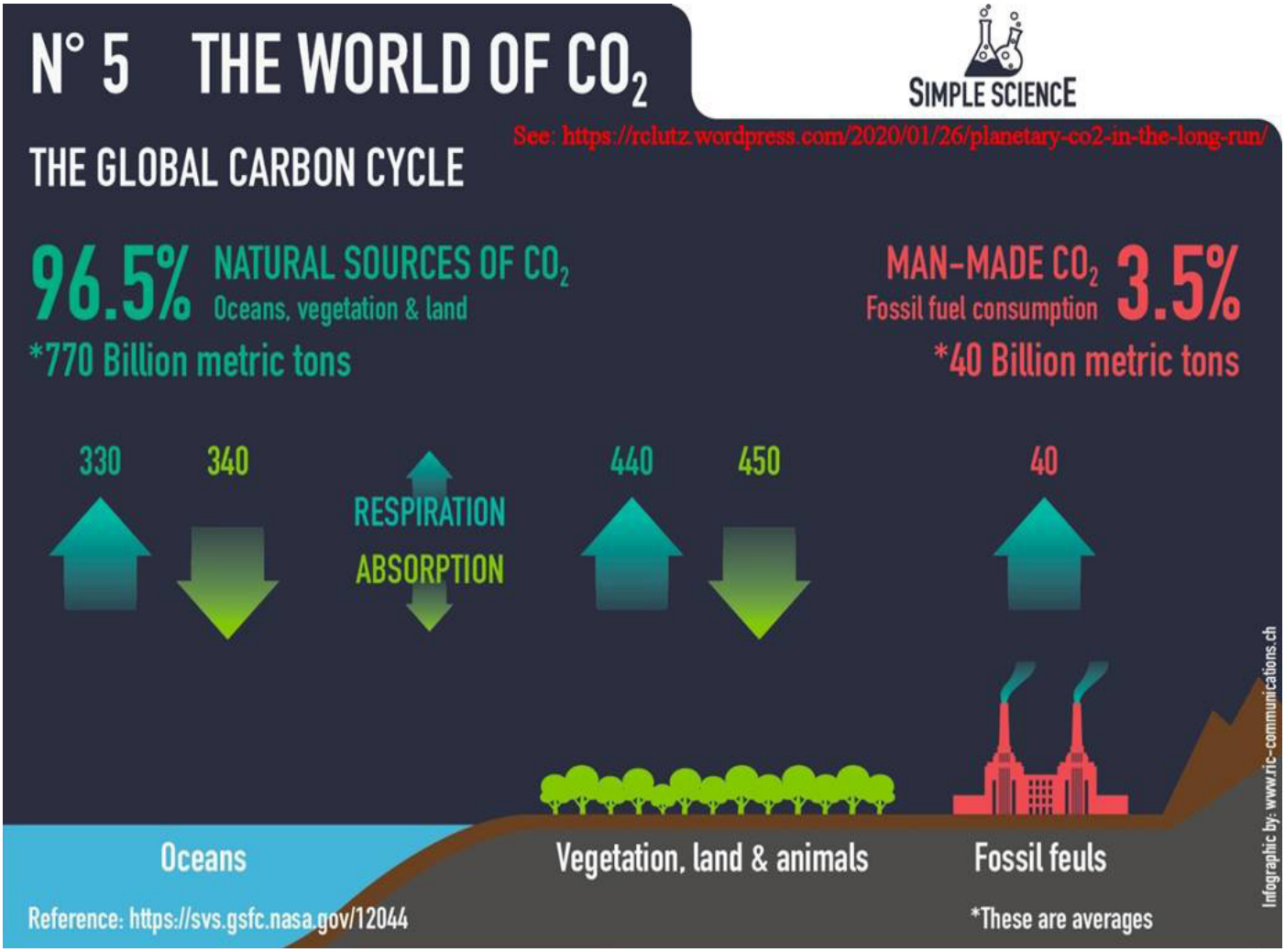
Globally, Man-made CO_2 is estimated to represent about 40Gte of a c.800+Gte carbon cycle: <5%. The other 95%+ is from natural sources[27].There are substantial uncertainties regarding both the magnitude and the variability of natural emissions, which are of the order of total Man-made emissions.

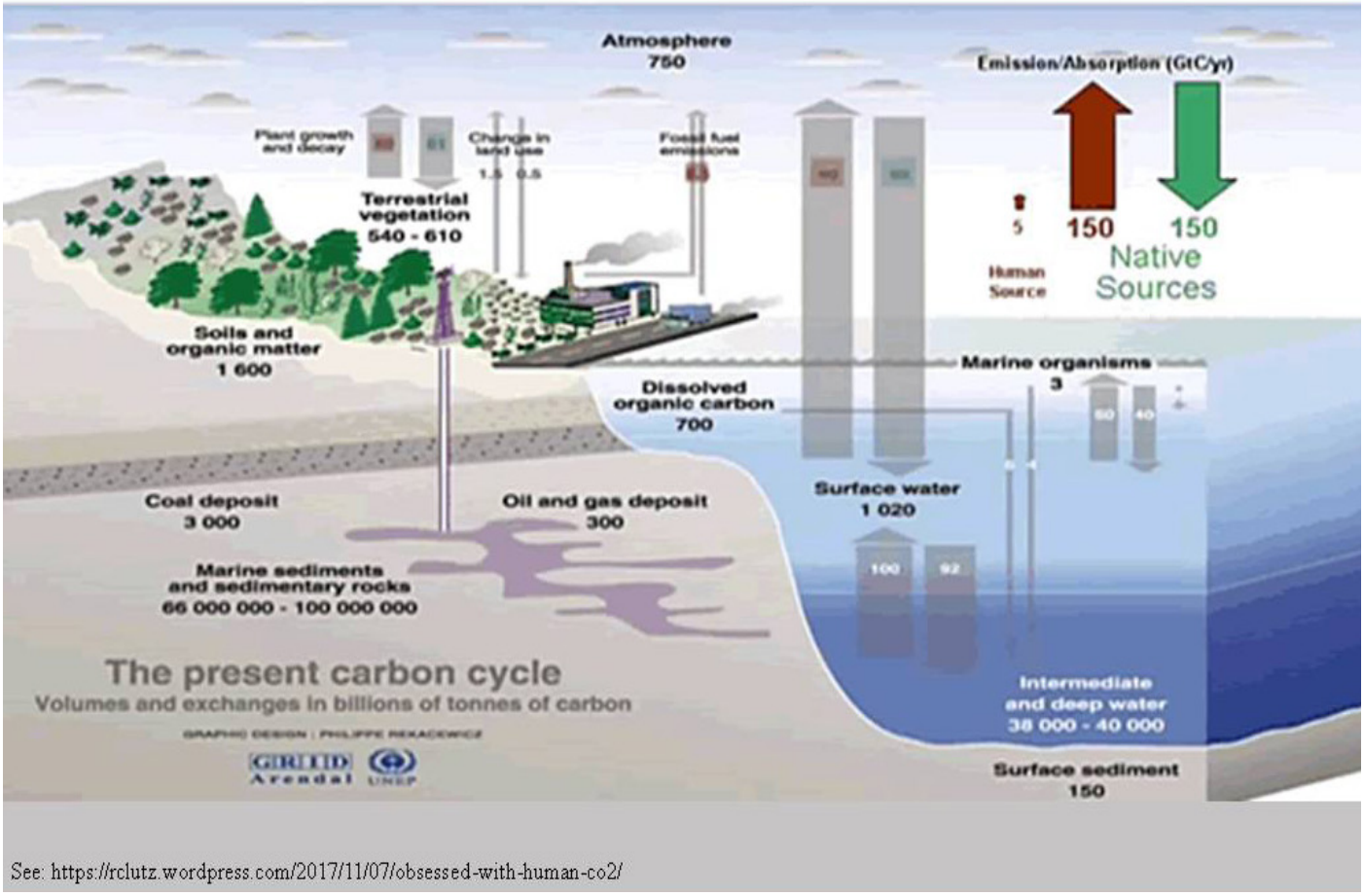
There are some 40-50,000 Gte of carbon locked in the deep oceans as carboniferous rock; which arose from the pressure fusion over aeons of the skeletons of dead oceanic life.

The whole climate system is a linked, chaotic, non-linear system with so many degrees of freedom that current human computing capabilities are unable to accurately model it. Webpage: https://rclutz.wordpress.com/2017/11/07/obsessed-with-human-CO_2 gives an excellent overview of why our preoccupation with atmospheric CO_2 is unnecessary and unhelpful.

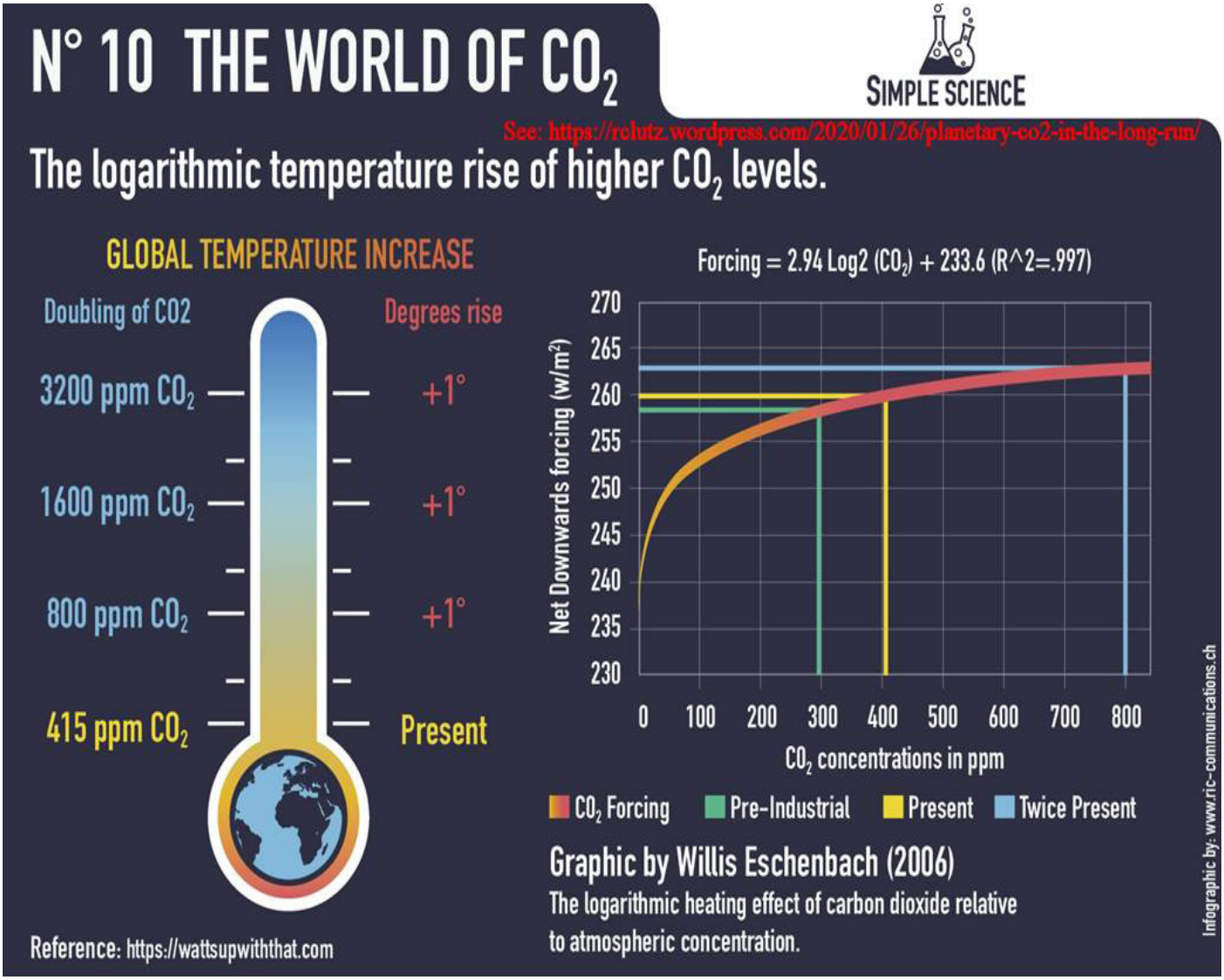
The warming effect of atmospheric CO_2 is logarithmically decaying, not linear[28]. The current concentration is closing on the saturation point: each further CO_2-forced 0.5° - 1°C rise requires a doubling of atmospheric CO_2 concentration: a 1°C rise requires another 400ppmv of CO_2 (to 800ppmv), 2°C would require 1600ppmv & 3°C would require 3200ppm; a terrestrial atmospheric concentration not seen for some 150m years.

Given the 50:1 partition coefficient between oceanic and atmospheric CO_2, and the amount of CO_2 permanently fixed as carboniferous rock (see page 29), there likely isn't sufficient chemically accessible carbon to support such an atmospheric concentration (though it would be great news for plant and animal life).





See: https://rclutz.wordpress.com/2017/11/07/obsessed-with-human-co2/



What are the Primary influences on the Terrestrial Climate?

These are summarised in the mnemonic "SCRAMM".

If the sun stopped shining, the surface temperature of the Earth would halve approximately every two months, according to Cornell University imprint website Ask an Astronomer.

This means that within a few weeks the temperature would be too cold to sustain terrestrial life[29].

So, what actually controls the Terrestrial Climate (via its oceans)?

- ***S***olar Activity
- ***C***osmic ***R***ay Environment
- ***A***tmospheric Composition
- ***M***ilankovich Cycles
- ***M***iscellaneous: Magnetospheric Variations; Volcanic/Tectonic Activity; El Niño/La Niña; Beaufort Gyre

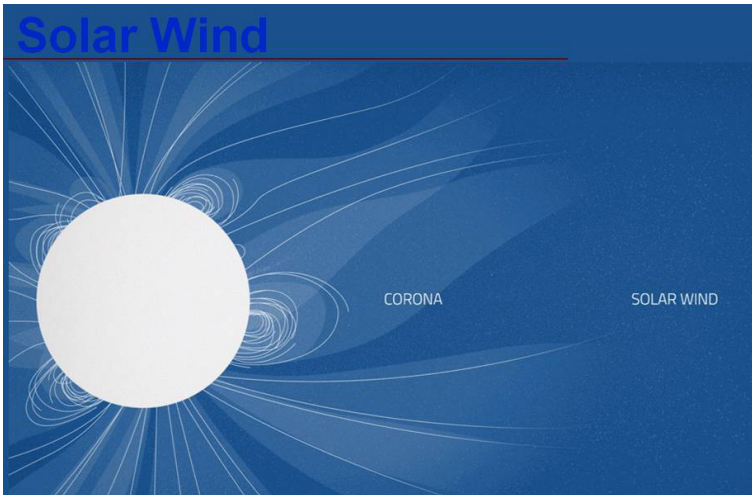
Other than atmospheric composition, IPCC Global Circulation Models take little to no account of any of the other foregoing factors in developing its “storyline” future temperature projections.

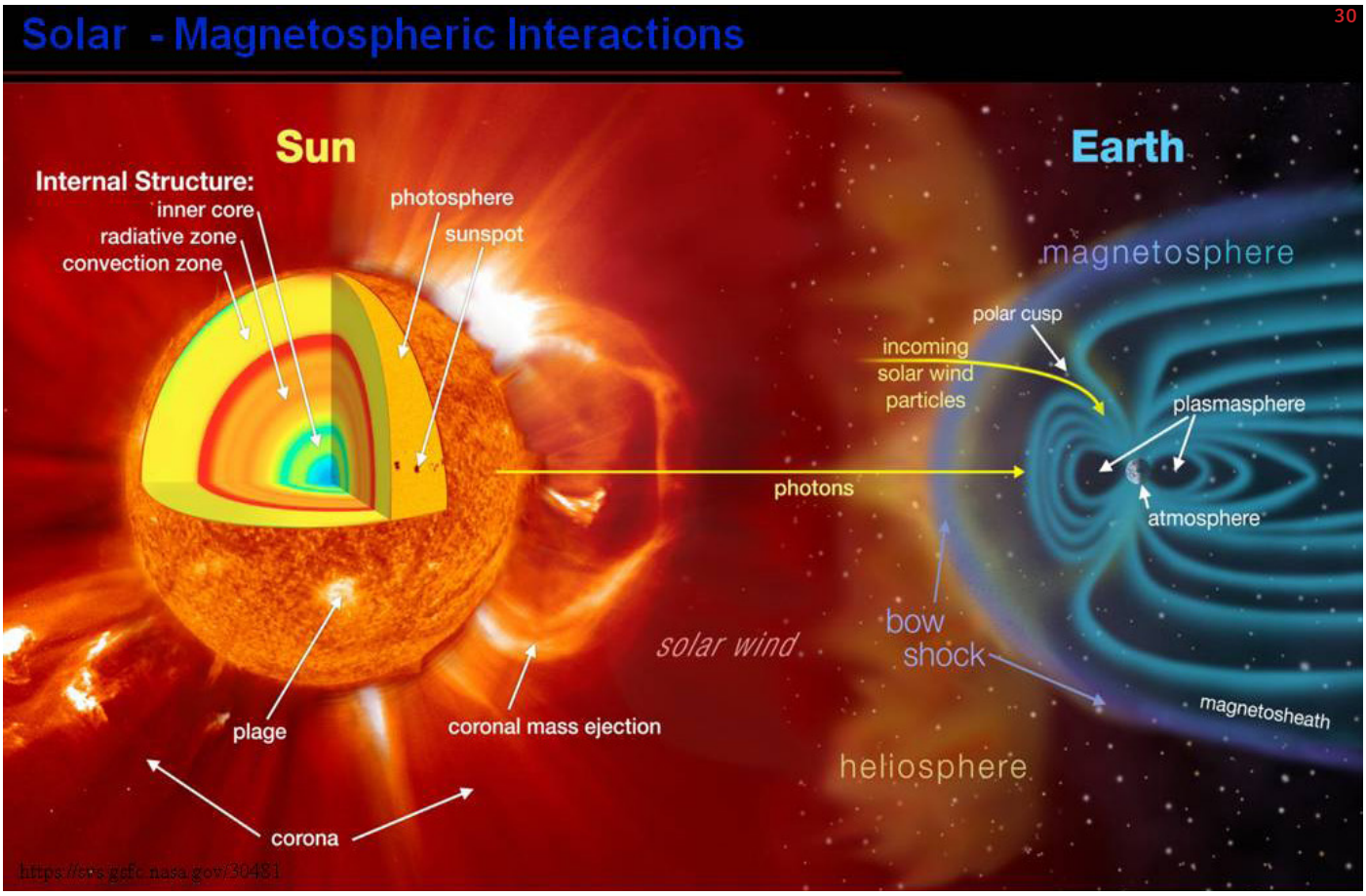
Little wonder, then, that they are of extremely limited utility in accurately modelling future temperatures.

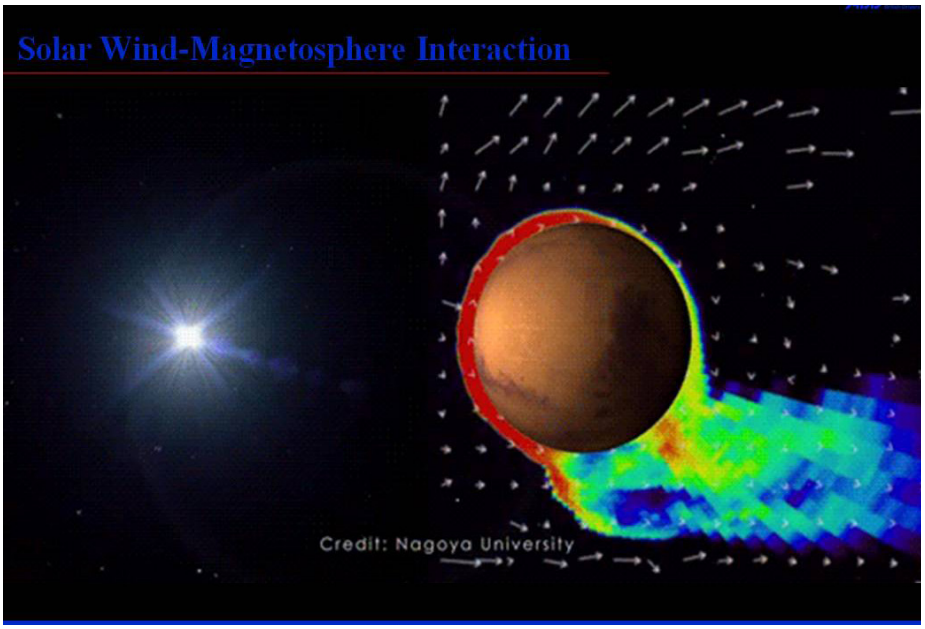
Solar Activity

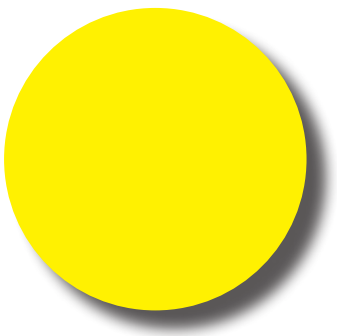
Solar Wind: the stream of charged particles/electromagnetic radiation emitted by the Sun.

Both a blessing (when it is strong it shields the Earth from harmful cosmic rays) and a curse (Earth's currently weakening magnetosphere shields us from the highest energy solar charged particles/rays).

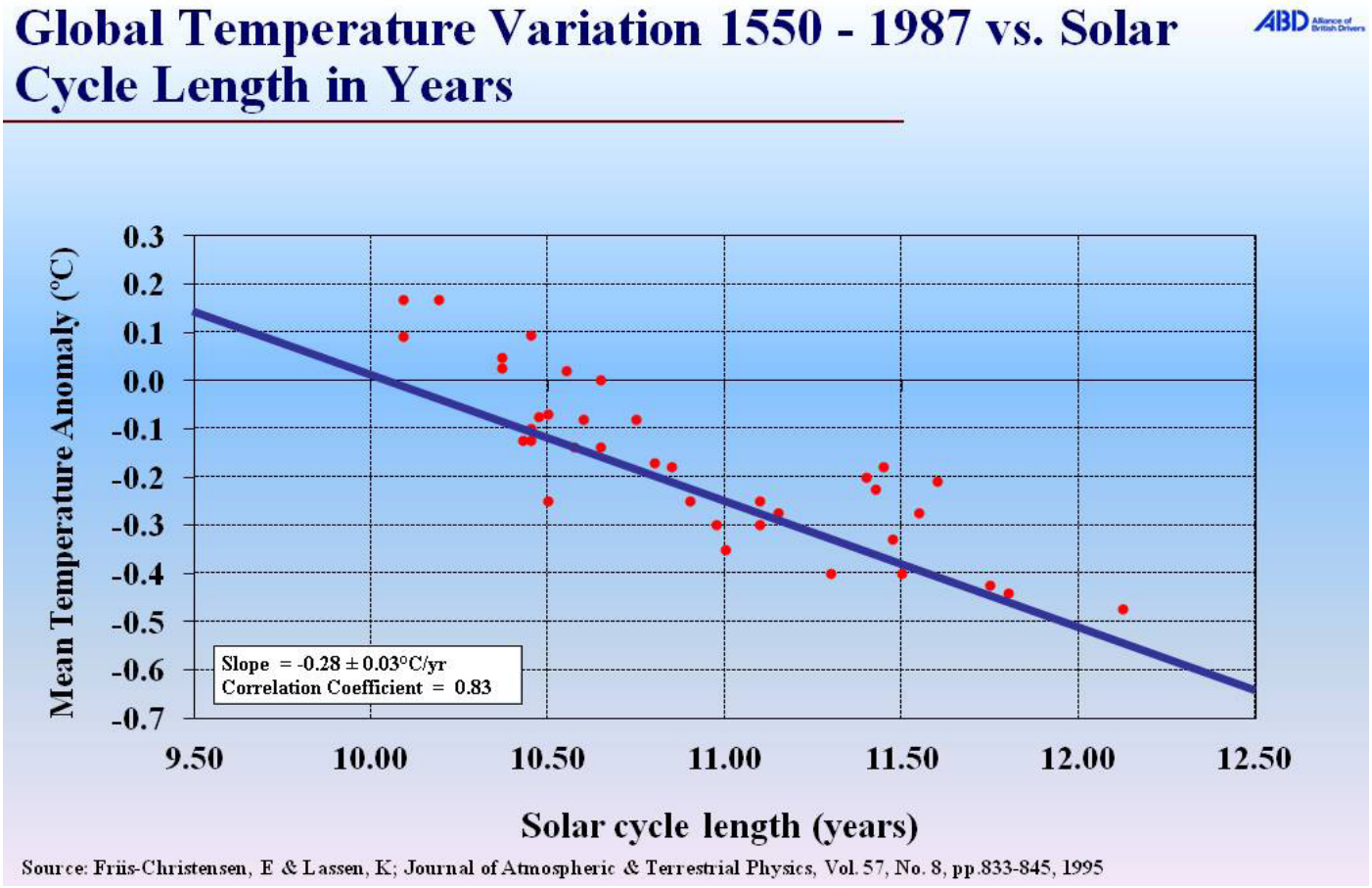








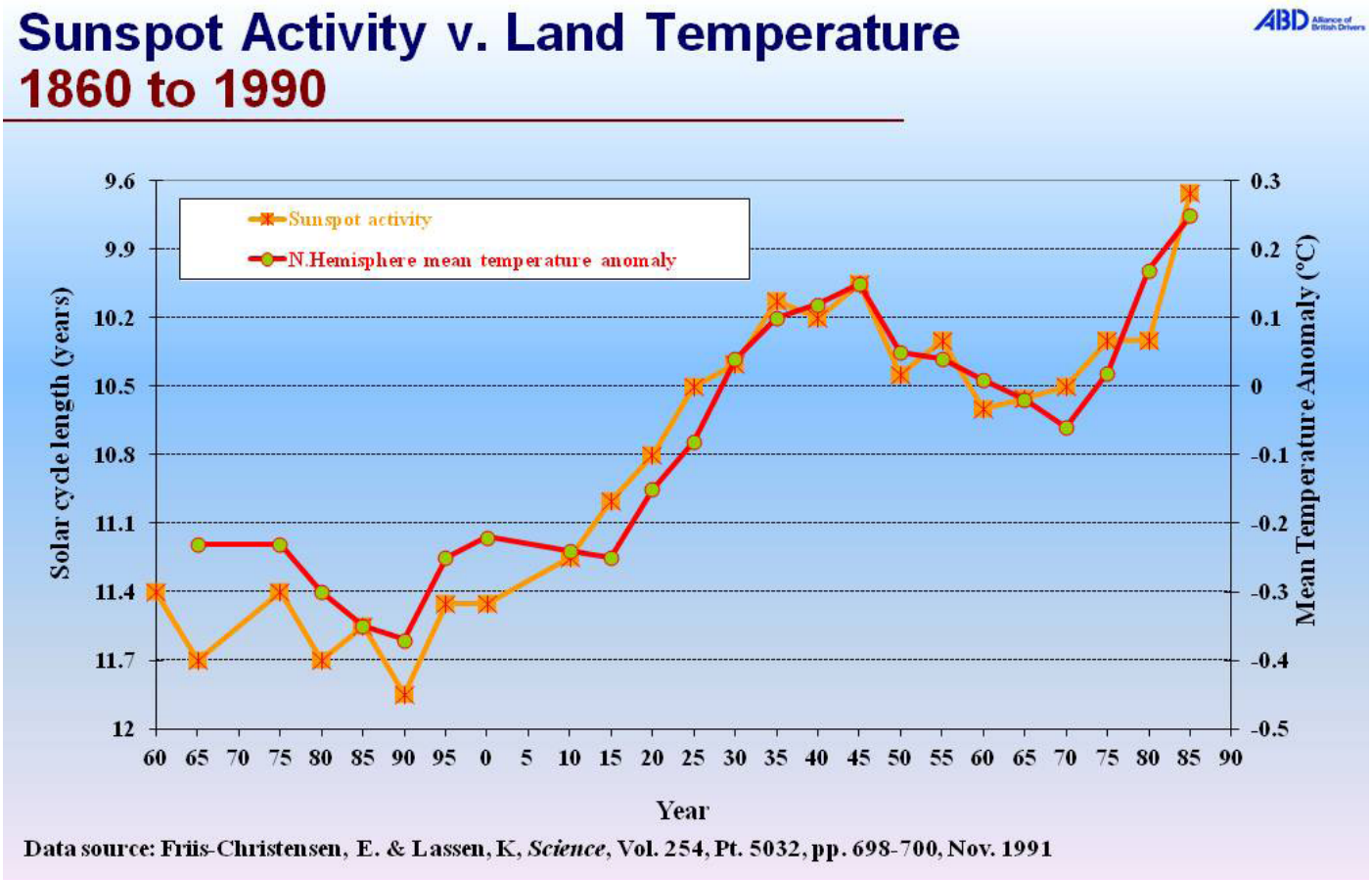
83% of variations in global temperatures since the late 1500s can be accounted for by variations in the length of the solar cycle, without need for any assumed Man-made "Global Warming" effects[31].



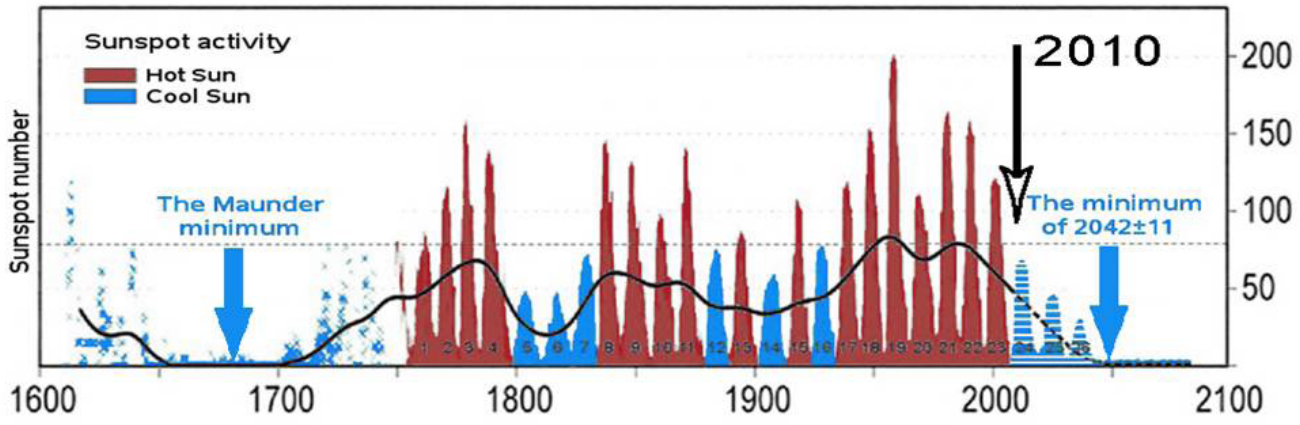
In the chart above, Sunspot activity vs. temperature since 1600 is plotted.

There is a strong observable correlation between high sunspot activity (Warm periods) and low solar activity (Cool ones)[32].

Below is the activity between 1860 and 1990[33].



It's the sun wot dunnit.....



Relative Strength of Sunspot Activity (including prediction for 2008 onwards)

The strength of each numbered sunspot cycle is shown, with solid data commencing in the 1750's. Data prior to 1750's is regarded as less accurate, but of generally accepted scientific standard. Future predictions for 2008 onwards by Abdussamatov are shown as shaded blue.

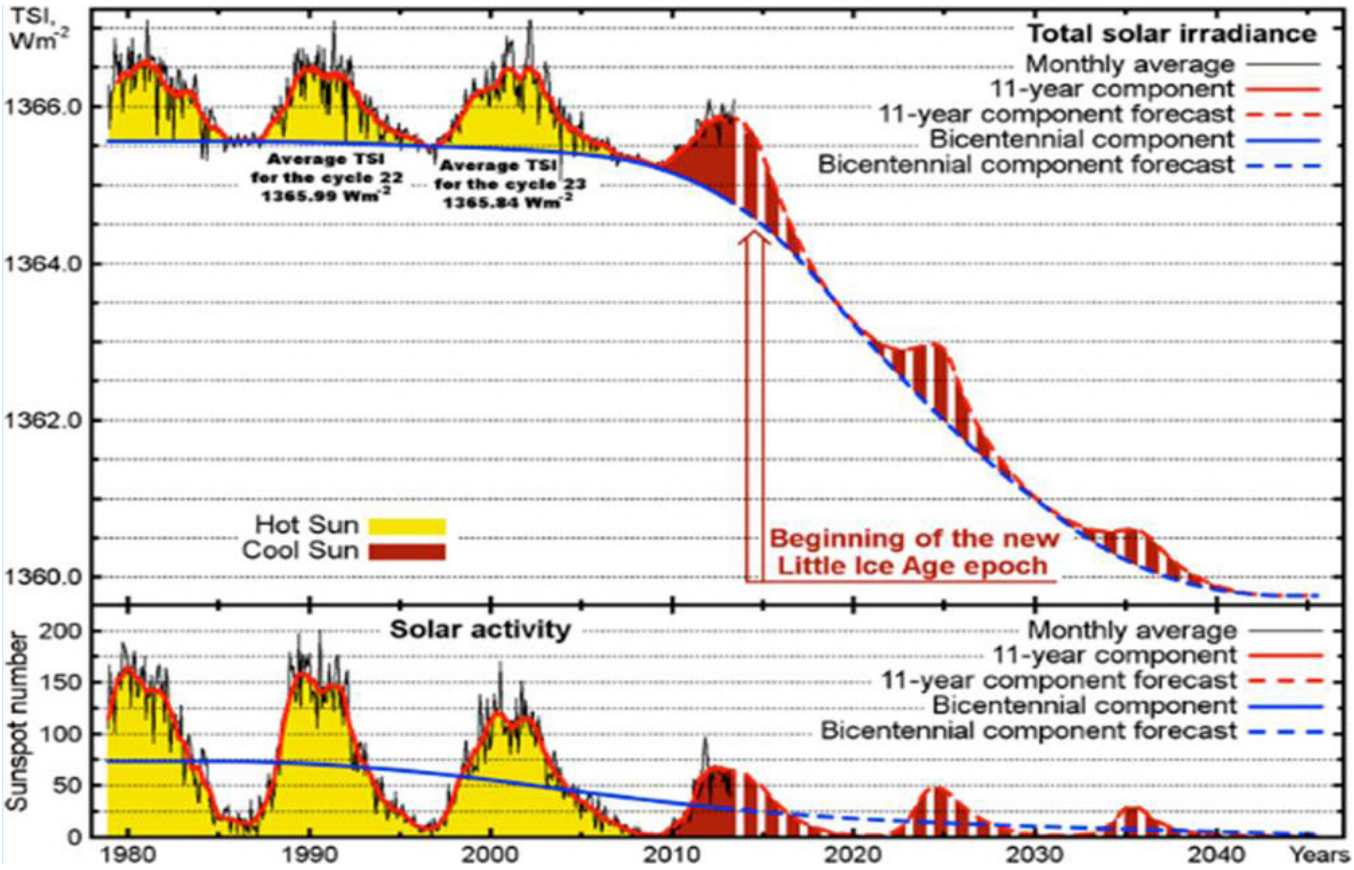
Graph taken from Abdussamatov (2009) "The Sun Defines the Climate" p4

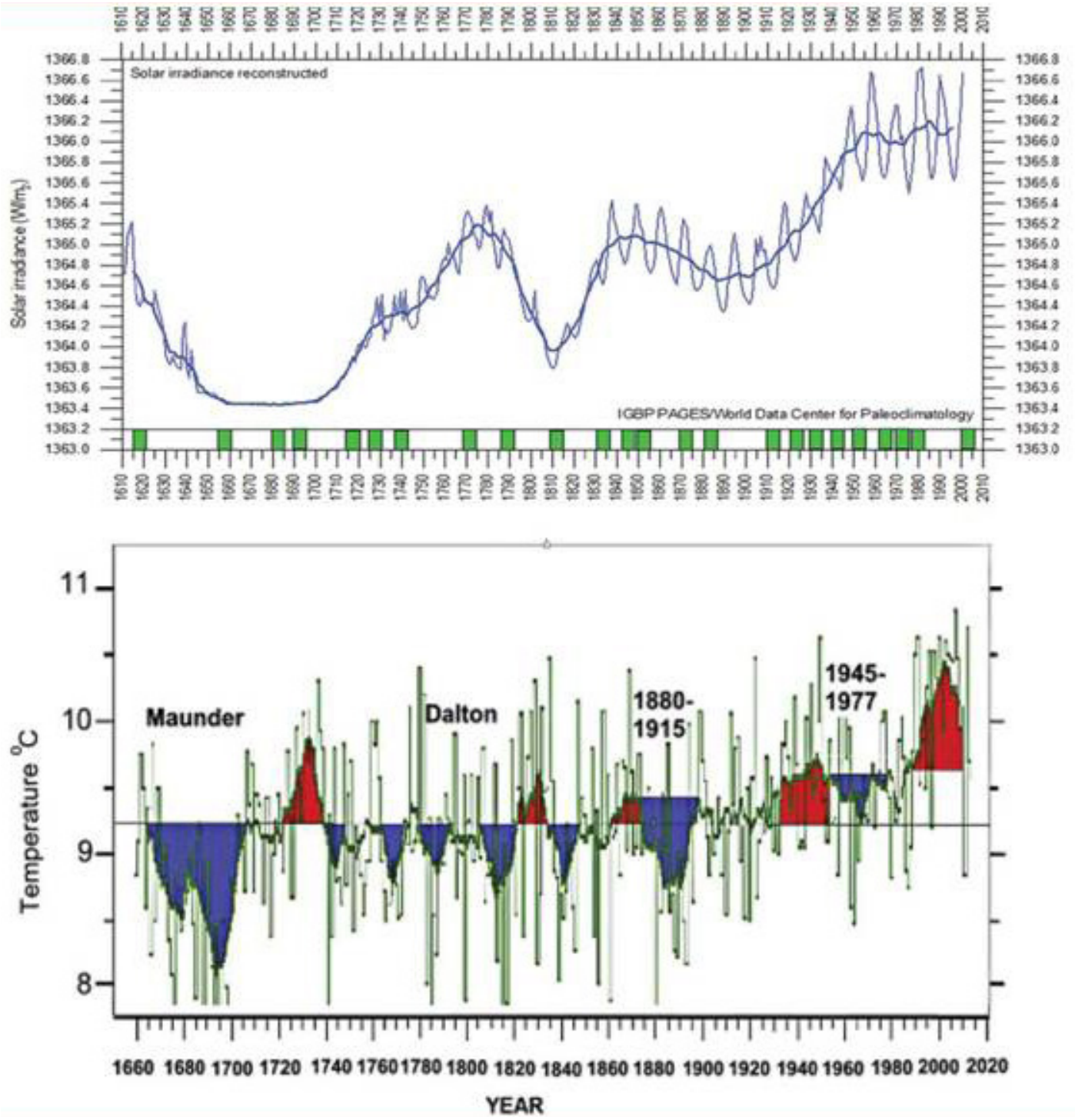
NOTE: Colour code has been inverted from original. Marker arrows and 2010 line have been added.

"It's the sun wot dunnit". Sunspot activity vs. temperature since 1600. See the chart above for details.

Strong observable correlation between high sunspot activity (Warm periods) and low solar activity (Cool ones)[34].

Under certain circumstances (on which more later), only a small drop in TSI (Total Solar Irradiance), of the order of 6Wm-2 (in an average c.1360Wm-2), again correlating extremely well with sunspot activity, is needed to flip the Earth between Warm and Cool periods. See the chart below.





Zharkova et al

Ukranian astrophysicist Valentina Zharkova et al[35] have successfully characterised the interaction between the Sun's independent poloidal & toroidal magnetic fields.

When in-phase, reinforcement occurs, boosting the Solar Background Magnetic Field (SBMF).

At other, counter-phase intervals, field interference and partial mutual cancellation occurs, reducing SBMF.

Entering the current solar cycle (No.25), the sun's two poloidal fields are counter-phase. The currently observed, resultant reduced SBMF is predicted to persist into Cycle 26 (which ends towards 2040).

Her (& co-workers) model of the 1660 to 2020 period shows a very strong correlation of solar-magnetic variations with observed temperature variability (far superior to that with atmospheric CO_2 levels).

Nearly all the observed temperature variation since 1750 can be accounted for by superposing:

1. The (c.200 year) De Vries/Suess solar activity cycle, &...

2. The (c.65 year) AMO/ PDO oceanic cycles (effect of solar activity on the Atlantic & Pacific oceans; modulated by oceanic specific heat capacity; hence time-delayed)[36&37&38&39&40&41&42]

Graphical confirmation of these assertions is seen below.

Solar activity (/broadly inversely related) cosmic ray activity & ocean temperatures are the primary determinants of the terrestrial climate, modulated by the other influences per page 27[43&44].

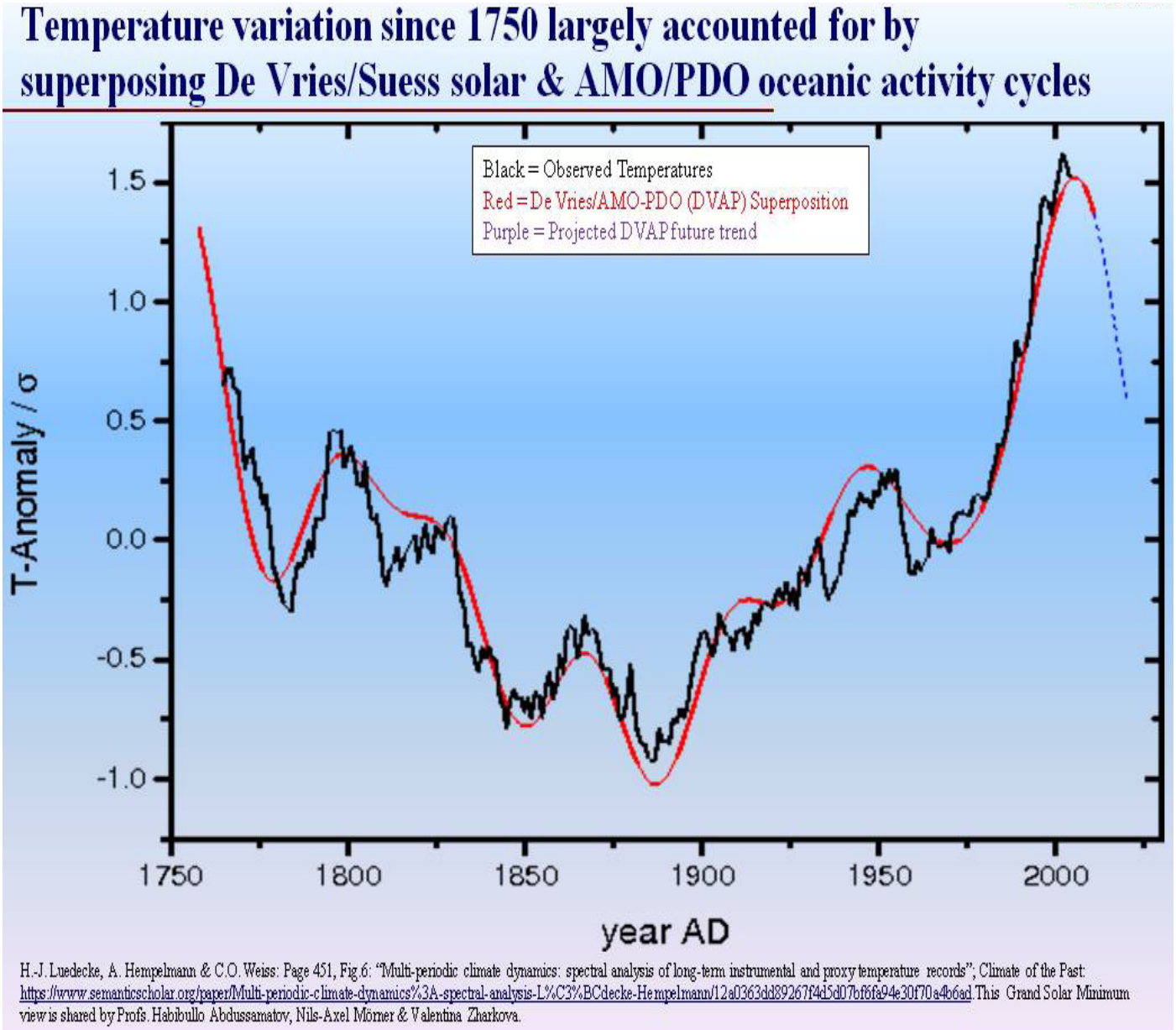
Atmospheric CO_2 is a climate follower.

Cosmic Ray Environment

Another major influence on terrestrial climate is the cosmic ray environment. When solar activity is high, terrestrial cosmic ray incidence is suppressed. When it is low, terrestrial cosmic ray incidence increases. With consequences:

- Low level cloud formation increases.

Landmark research by Henrik Svensmark & co-workers at the Danish Meteorological Institute (and subsequently at the CERN Nuclear Physics facility) has unequivocally elucidated the mechanism by which cosmic rays initiate low level-cloud formation See: 'The Chilling Stars', by Svensmark and Calder, Chapter 4, pp.99-131.



H.-J. Luedecke, A. Hempelmann & C.O. Weiss: Page 451, Fig.6: "Multi-periodic climate dynamics: spectral analysis of long-term instrumental and proxy temperature records", Climate of the Past: https://www.semanticscholar.org/paper/Multi-periodic-climate-dynamics%3A-spectral-analysis-L%C3%BCdecke-Hempelmann/12a0363dd89267f4d5d07bf6fa94e30f70a4b6ad.This Grand Solar Minimum view is shared by Profs. Habibullo Abdussamatov, Nils-Axel Mörner & Valentina Zharkova.

- Low-level clouds reflect solar energy back into the upper atmosphere, shield the Earth's surface and cause cooling. A 4% increase in low-level terrestrial cloud cover reduces the global temperature by 2°C.

- Increased cosmic ray incidence disrupts the normally stable, polar-cap jetstream.

- The highest energy cosmic rays only interact with the really dense matter (magma) found in the Earth's core. Some scientists hypothesise that this heats the magma, promoting volcanic activity/ eruptions, tectonic movement and earthquake activity. It is, of course, extremely difficult to definitively confirm this.

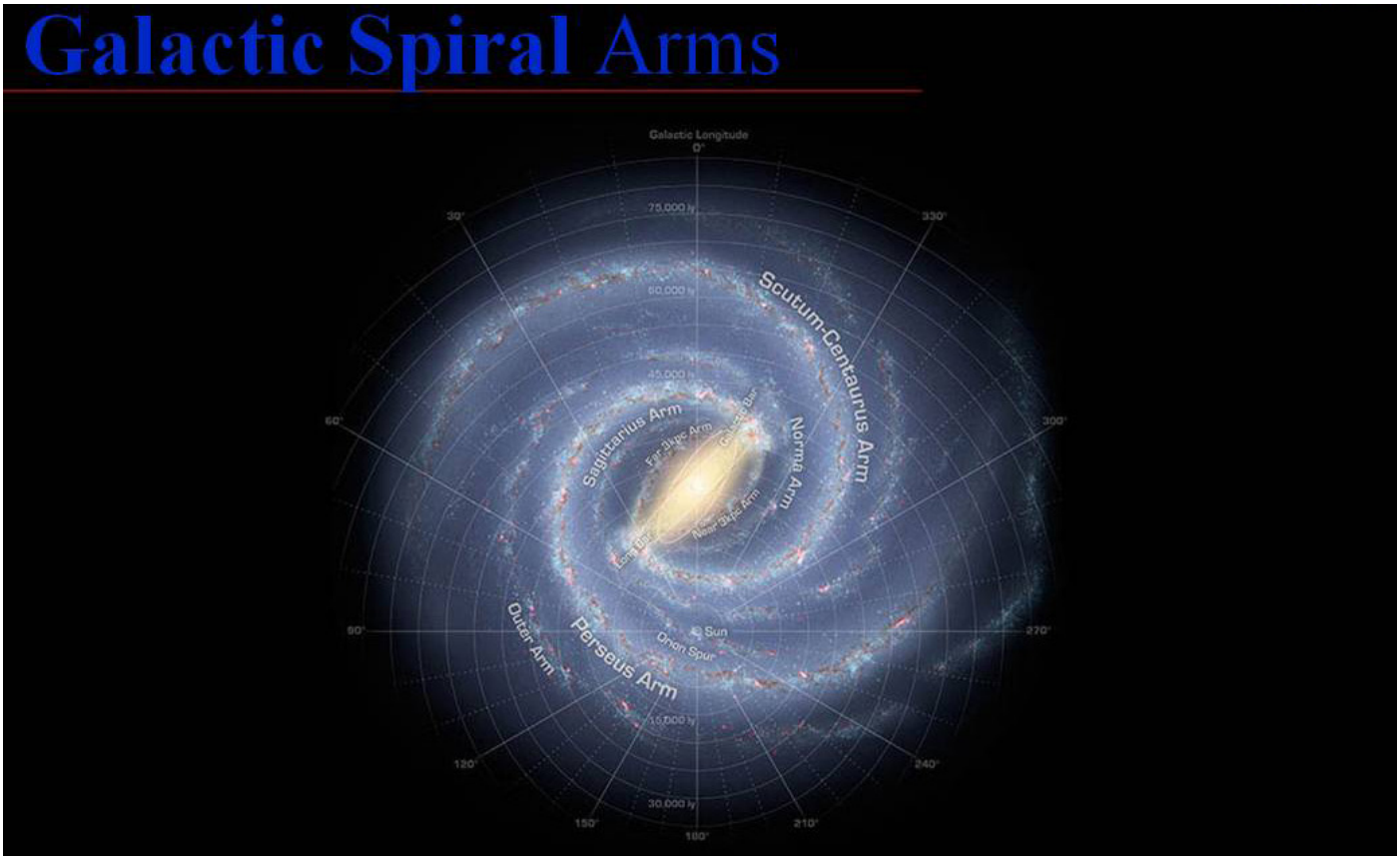
When the Solar System passes through one of our galaxy's Spiral Arms, cosmic ray activity is further enhanced, because Earth is exposed to higher cosmic ray incidence in a high stellar density environment, where a higher frequency of past (cosmic ray-generating) stellar extinction events has occurred.

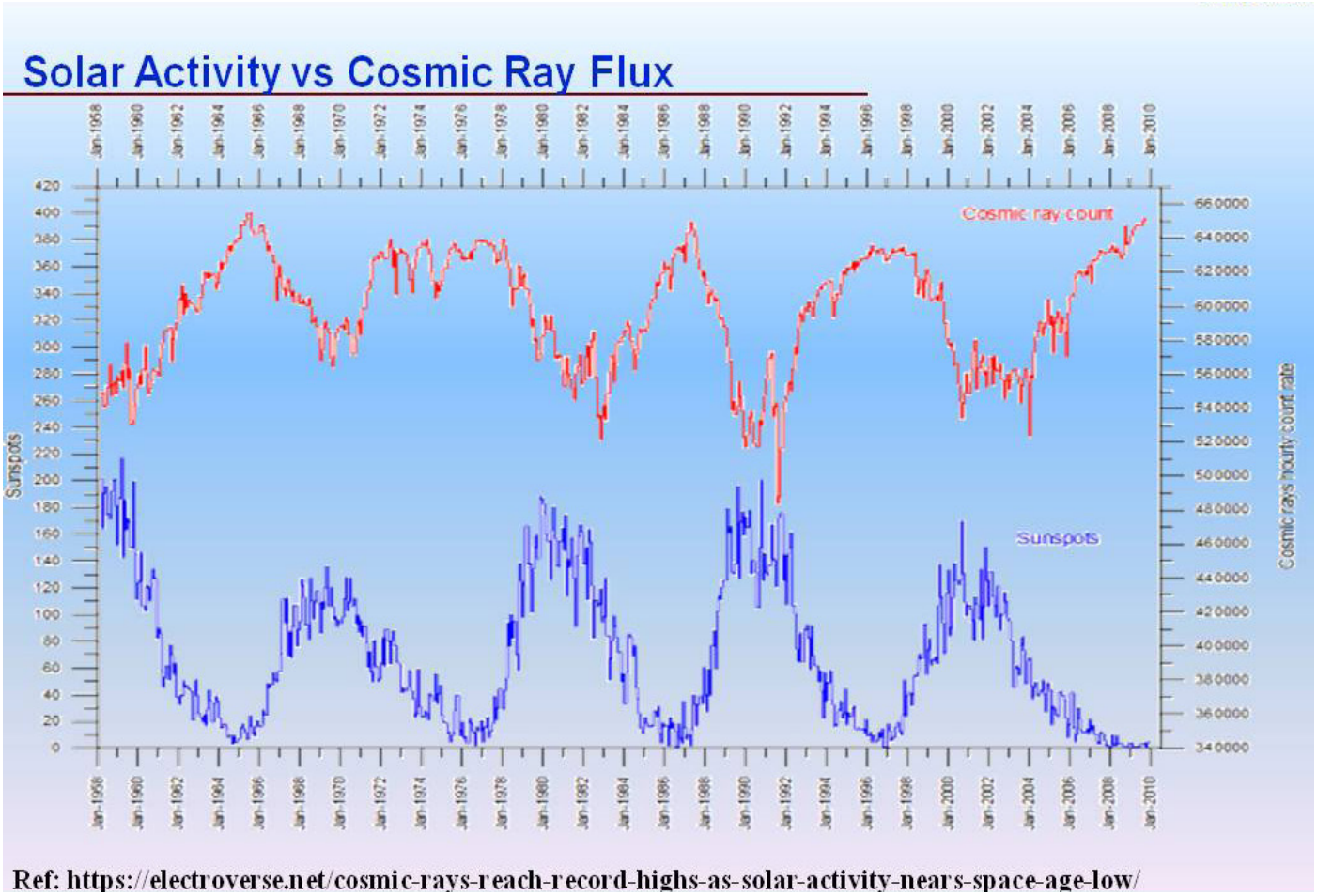
Solar Activity & Temperature Anomaly

Solar activity over the past several centuries can be reconstructed using different proxies[45].

These reconstructions demonstrate that 20th century activity is unparalleled over the past 600 years (previously high solar activity took place around 1000 years ago, and 8000 yrs ago).

Specifically, we see sunspots and ^{10}Be.
The latter is formed in the atmosphere by ~1GeV cosmic rays,which are modulated by the solar wind (stronger solar wind → less galactic cosmic rays → less ^{10}Be production). Note that neither proxy captures the decrease in the high energy cosmic rays that took place since the 1970's, but which the ion chamber data confirms. Inverse relationship between solar activity & cosmic ray incidence[46].





Ref: https://electroverse.net/cosmic-rays-reach-record-highs-as-solar-activity-nears-space-age-low/

- Calder & Friis-Christensen's pioneering studies on the effects of the complex interaction between solar activity (& inversely-related) cosmic ray incidence on the terrestrial climate have been followed up by Henrik Svensmark et al, & Israeli physicist, Nir Shaviv

- In a nutshell, solar activity modulates terrestrial cosmic ray incidence; which in turn primarily controls temperature- regulating over-oceanic low-level cloud formation

- A potted history of their conclusions can be found in the aptly-named, "The Chilling Stars", by Henrik Svensmark & Nigel Calder: ISBN10:1-84046-815-7/ISBN13:978-1840468-15-1

"In the last half billion years, Earth has lost, four times, its polar caps: no ice at the North Pole and none at the South Pole. And, four times, the polar caps were reconstituted. Man did not exist then, only the so-called cosmic rays, discovered by mankind in the early twentieth century. The last cosmic ice age started 50 million years ago when we entered into one of the galaxy [spiral] arms."

Dr. Antonino Zichichi, President of the World Federation of Scientists

A 4% increase in low level terrestrial cloud cover reduces the global temperature by 2°C[47]

IPCC GCM models do not take any account of low-level cloud cover variation, or its effect on climate.

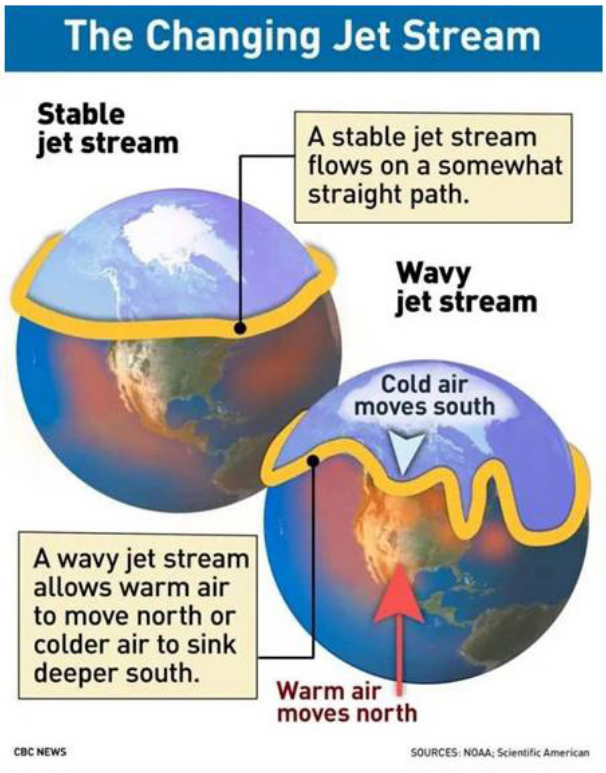
Why? Because it's currently too complex to computer model.

Increased cosmic ray incidence also disrupts the normally stable polar cap jetstream & converts it into a Meridional (more erratic, wavy) flow pattern; drawing warm air anomalously far North and & cold air anomalously far South in certain regions.

A Meridional jetstream (i.e., polar cooling) increases the Pole-to-Equator temperature differential and hence the frequency and intensity of extreme weather events.

Warming does the reverse.

Meridional Jetstream



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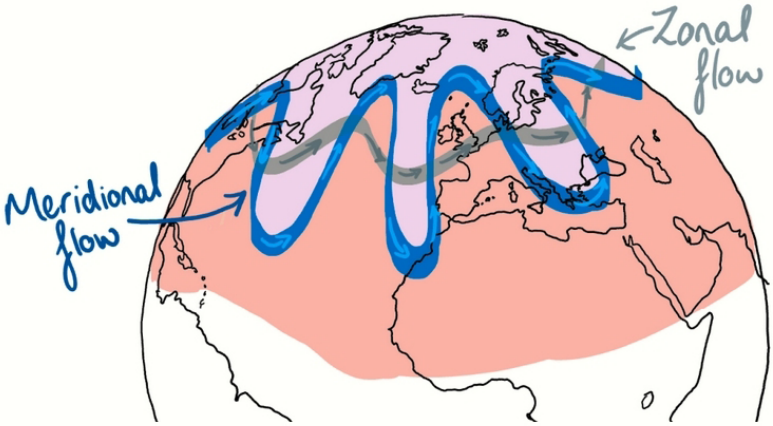


EXPLAINED: LOW SOLAR ACTIVITY AND A 'MERIDIONAL' JET STREAM FLOW

JANUARY 9, 2023 CAP ALLON

*All 2,000 of my **electroverse.net** articles (my previous website–that was heavily censored and eventually demonetized) have mysteriously and suspiciously vanished; I cannot locate them, and neither can my hosting service.*

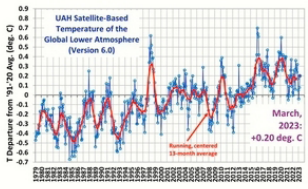
*Thanks to the Wayback Machine I am still able to read a good number of them, and will, over time, be updating a few of the most pertinent and re-publishing them on **electroverse.co**.*

*This is one (dated **June 30, 2022**):*

EXPLAINED: LOW SOLAR ACTIVITY AND A 'MERIDIONAL' JET STREAM FLOW

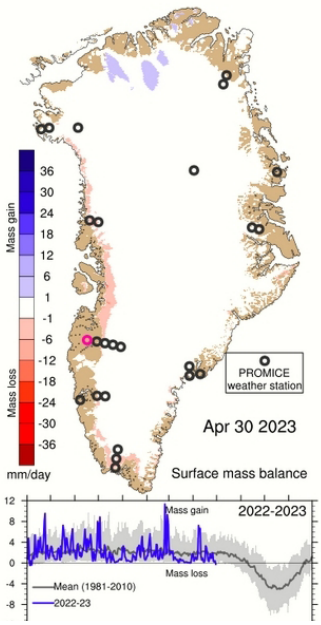
Unusual *summer* chills have been gripping Western Europe over the past

LATEST UAH TEMPERATURE 1979-MARCH 2023 (0.20C)



DR ROY SPENCER

LATEST GREENLAND SMB



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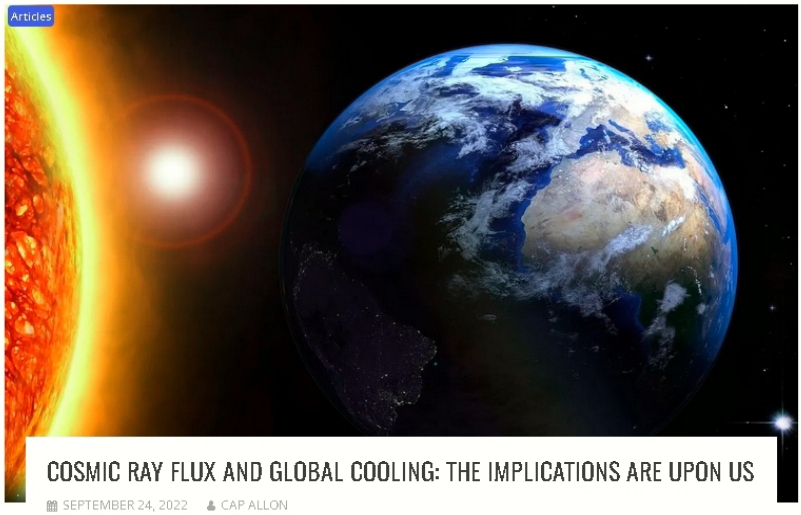


COSMIC RAY FLUX AND GLOBAL COOLING: THE IMPLICATIONS ARE UPON US

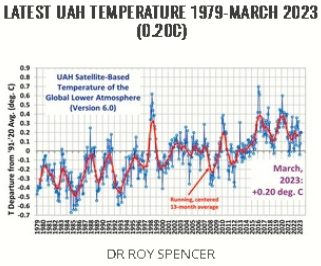
SEPTEMBER 24, 2022 CAP ALLON

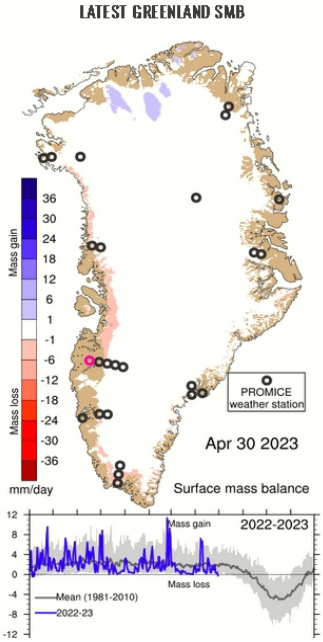
[Article originally published on electroverse.net on April 30, 2021]

GALACTIC Cosmic Rays are a mixture of high-energy photons and sub-atomic particles accelerated toward Earth by supernova explosions and other violent events in the cosmos; SOLAR Cosmic Rays are effectively the same, only their source is the Sun.

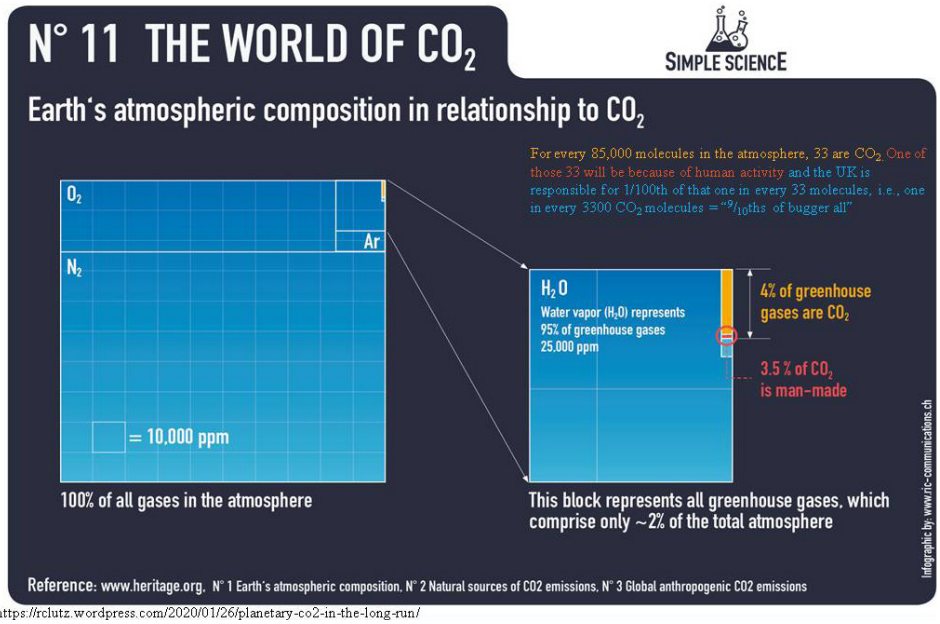
Spaceweather.com and the students of Earth to Sky Calculus have been launching cosmic ray balloons almost weekly since March 2015–*before the pandemic threw a spanner in.*

The team's published results reveal that atmospheric radiation reached record highs just as solar activity hit a new space age low — the correlation is clear for all to see, with additional proxy data revealing it has been the





Atmospheric Composition



https://rclutz.wordpress.com/2020/01/26/planetary-co2-in-the-long-run/

- Gases with a global warming influence constitute roughly 2 - 2.5% of the atmosphere.

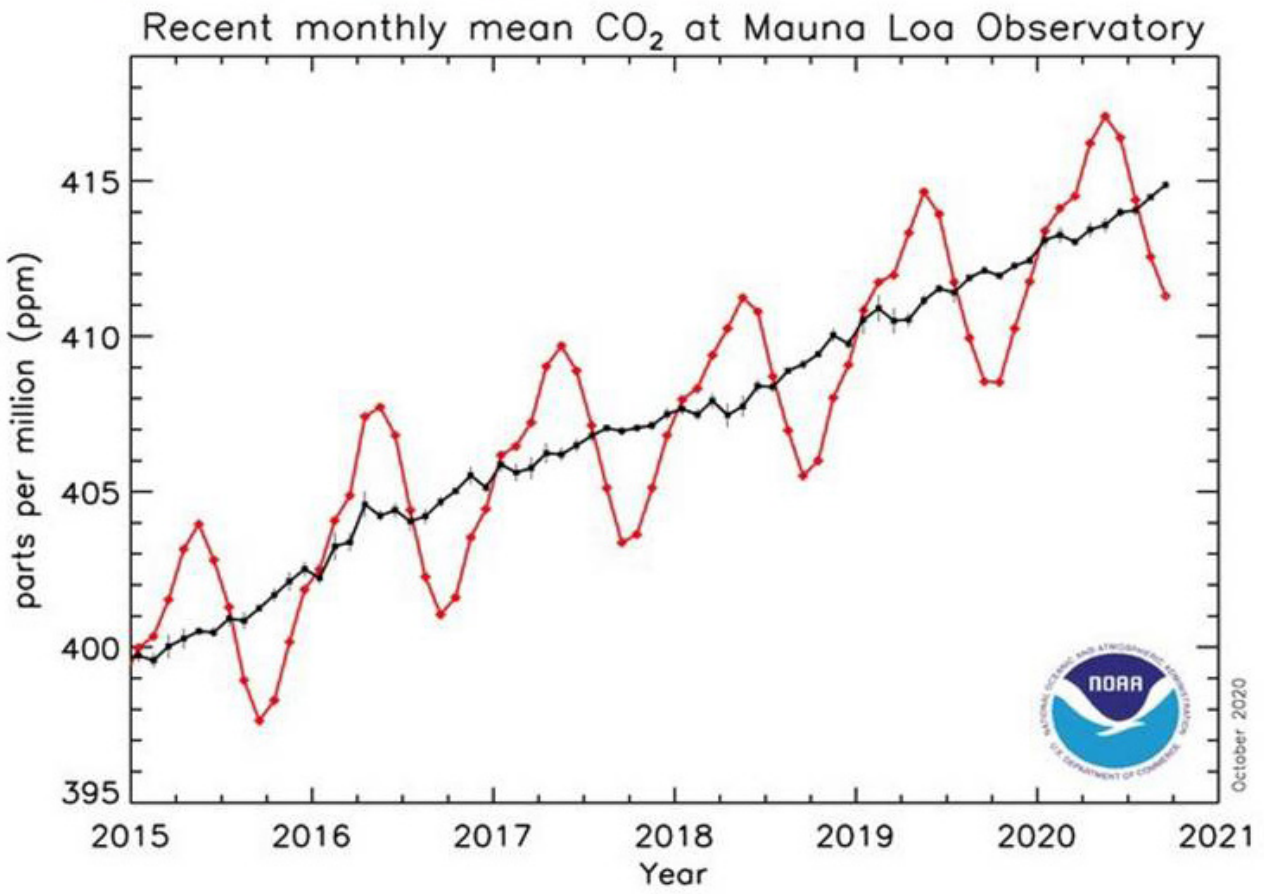
- Water vapour represents 95% of the atmospheric global warming gases present.

- As a GWG, water vapour is 7x (seven times) more potent molecule for molecule than CO_2: it absorbs over a wider IR range & has more absorption bands than CO_2.

- There is some 60 times as much atmospheric water vapour as there is atmospheric CO_2

- Man-made CO_2 represents less than 5% of the 0.04% of total atmospheric CO_2[48].

If natural variation swamps COVID's effect on the anthropogenic fingerprint, why is that only happening now?



If the climate science denying Warmists were correct, and CO_2 drives climate, Covid-19 should have generated some falloff in atmospheric CO_2 levels (monthly readings: wiggly red line) and (black) trendline, as there was a substantial decline in Man-made CO_2 emissions over the period of the outbreak.

No such drop is perceptible, just a reported continuing monotonic increase.

Warmists ascribe this to 'natural variation' masking anthropogenic effects.

Why can this only have happened then?

Given the recorded 600-1,000 year lag between temperature changes and subsequent atmospheric CO_2 concentration response, isn't that a more likely explanation?

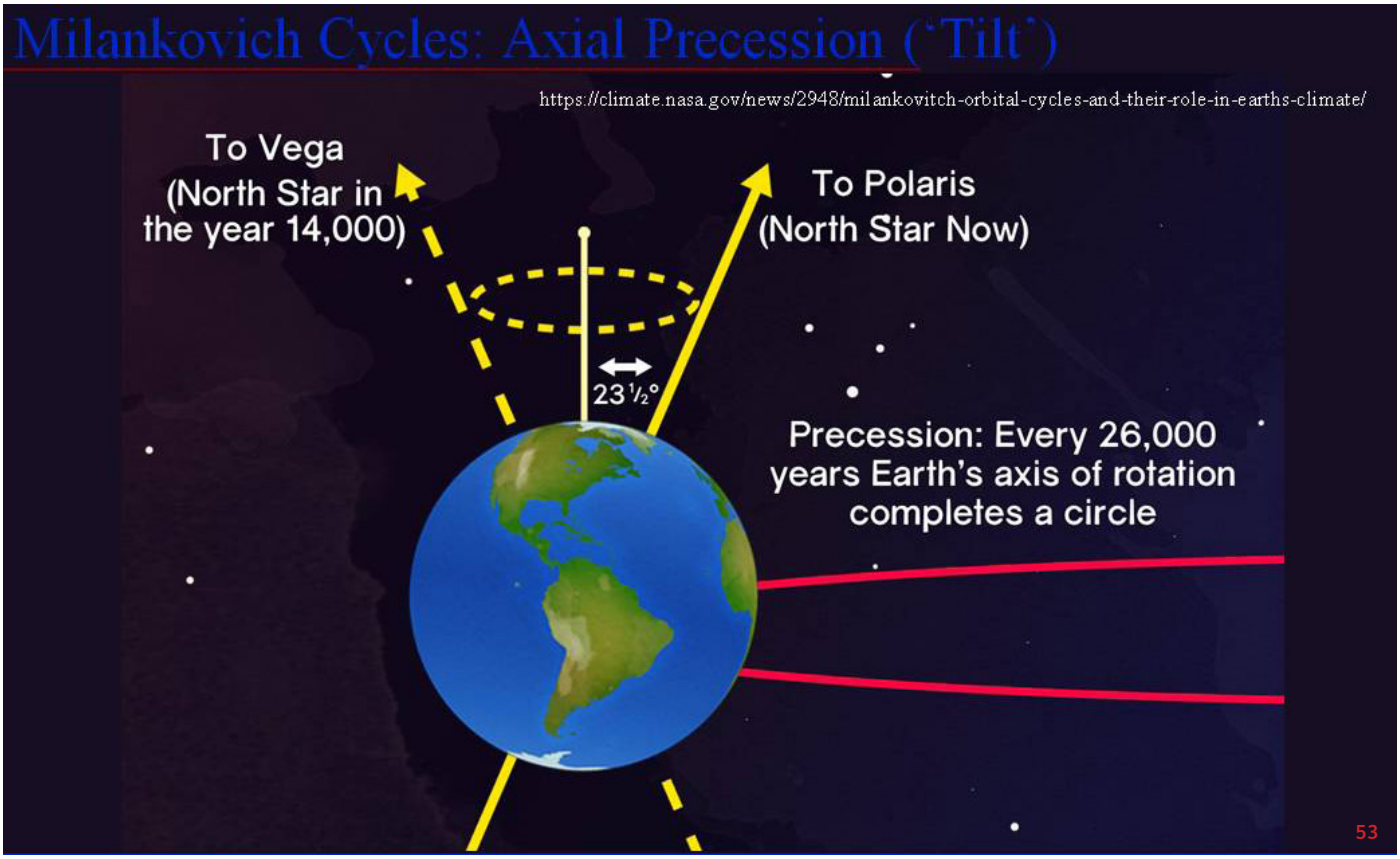
Latest research (using ^{14}C specific activity)[49] indicates that only one-eighth of the 140ppmv atmospheric CO_2 increase (from a 280ppmv estimate in 1750 - significantly challenged by Georg Beck's work[50&51] - to a measured 420ppmv today); arises from human activities; i.e., only 17.5ppmv'.

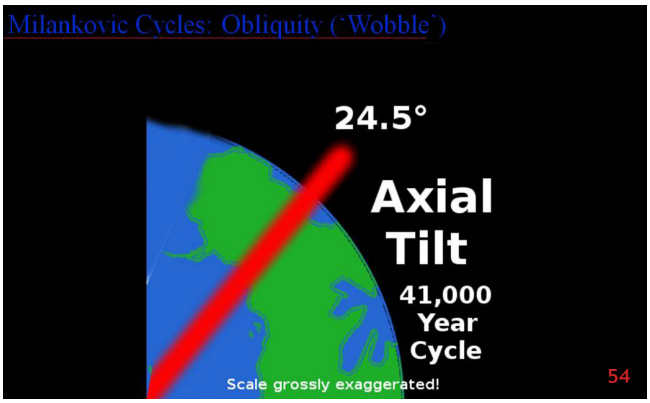
The remaining seven-eighths (122.5ppmv) of it arise from natural sources, totally outside human control. There is also substantial re-absorption by natural carbon exchange reservoirs. This refutes the conclusions of all previous studies.

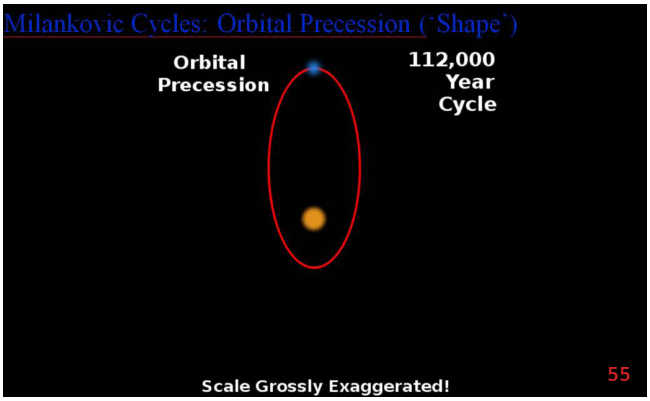
Milankovitch Cycles

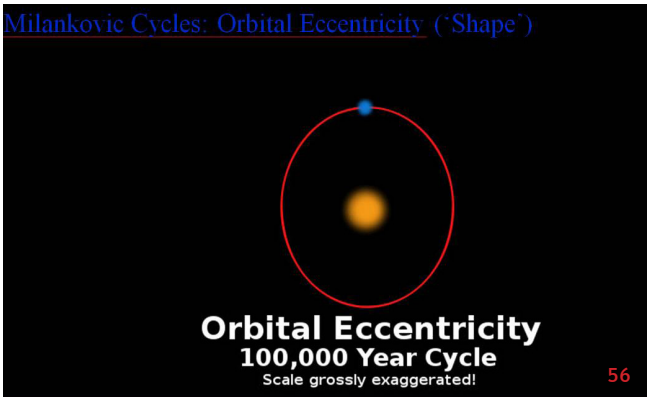
The Milankovitch cycles are: (a) Axial precession (26kyear 'Wobble'), (b) Orbital obliquity: changes in angle relative to the orbital plane (41kyear 'Tilt') and (c) Orbital precession/ eccentricity (112kyear & 100kyear 'Shape').

While they cannot explain recently observed warming, they nevertheless influence long-term terrestrial climate[52].









Other influences:

- Magnetospheric: weakening polar fields presaging c.10kyr cyclic pole switch. Highest energy cosmic rays largely unaffected by this.

- Low solar activity permits increased CR incidence. Increased low level cloud formation aside, CR absorption by magma allegedly stokes climate-influencing volcanic/ tectonic/ geothermal activity (e.g., Svalbard & Thwaites Glacier plumes)[57&58] .

- AMOC, El Nino/La Nina, PDO selfexplanatory[59&60].

- Beaufort Gyre - any instability has potential effects on Gulf Stream & hence Western European climate[61].

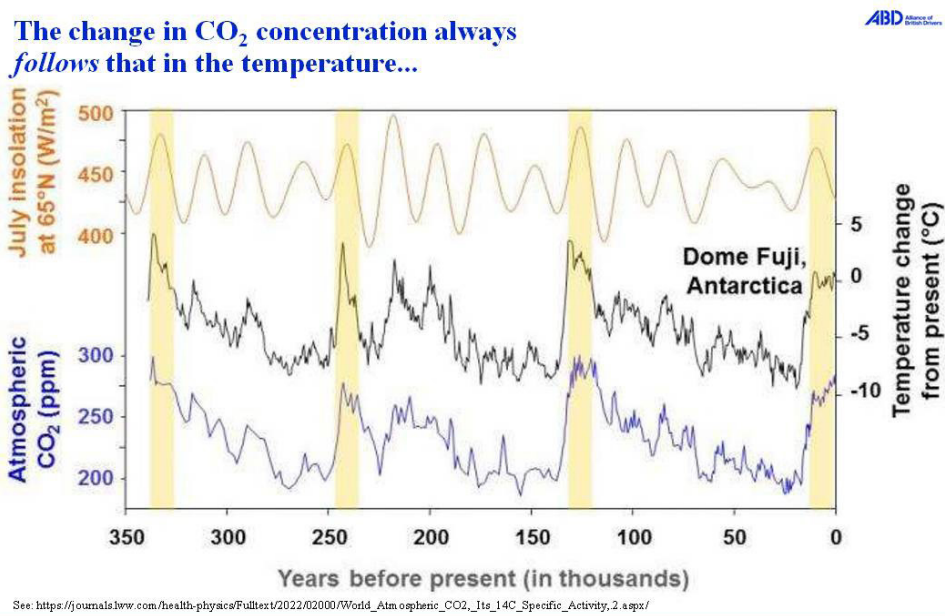
Inconveniently, the carbon dioxide "horse" obdurately lags behind the temperature "cart":

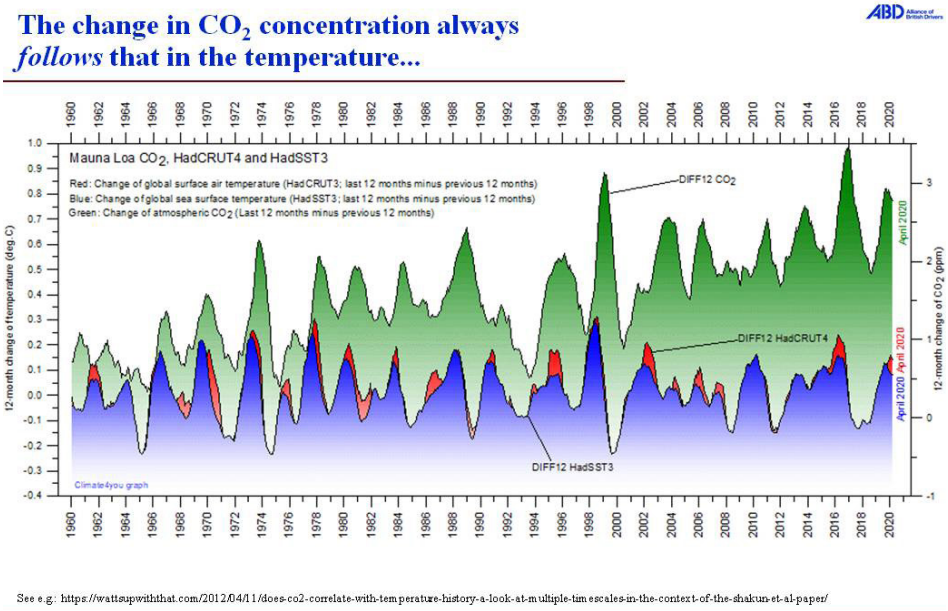
The cart is definitively preceding the horse.

Over millennial timescales, external (i.e., natural, solar cycle-induced) warming & cooling always precede atmospheric CO_2 concentration increases (oceanic degassing) & decreases (oceanic CO_2 resolublisation)[62].

Atmospheric/ oceanic temperature changes invariably precede atmospheric CO_2 concentration changes, even on a short-term scale[63]. How can atmospheric CO_2 be driving changes in the terrestrial climate (as opposed to responding to them) unless it can "temporallytunnel"?

Even Dr. Who would struggle to square that circle!





Over geological time (>140m years), terrestrial marine organisms have been progressively & very successfully sequestering CO_2 from the Earth's oceans (& consequently from the atmosphere in steady state interface with it) to create carboniferous "armour plate" exoskeletons.

These sank to the deepest ocean depths when the organisms died. Under the colossal pressures at those depths, over aeons the shells formed carboniferous rocks, while the organic matter from them was transformed into oil.

Atmospheric CO_2 concentration has consequently been on a declining trend that could have disrupted the Carbon Cycle & potentially threatened the survival of all terrestrial life[64].

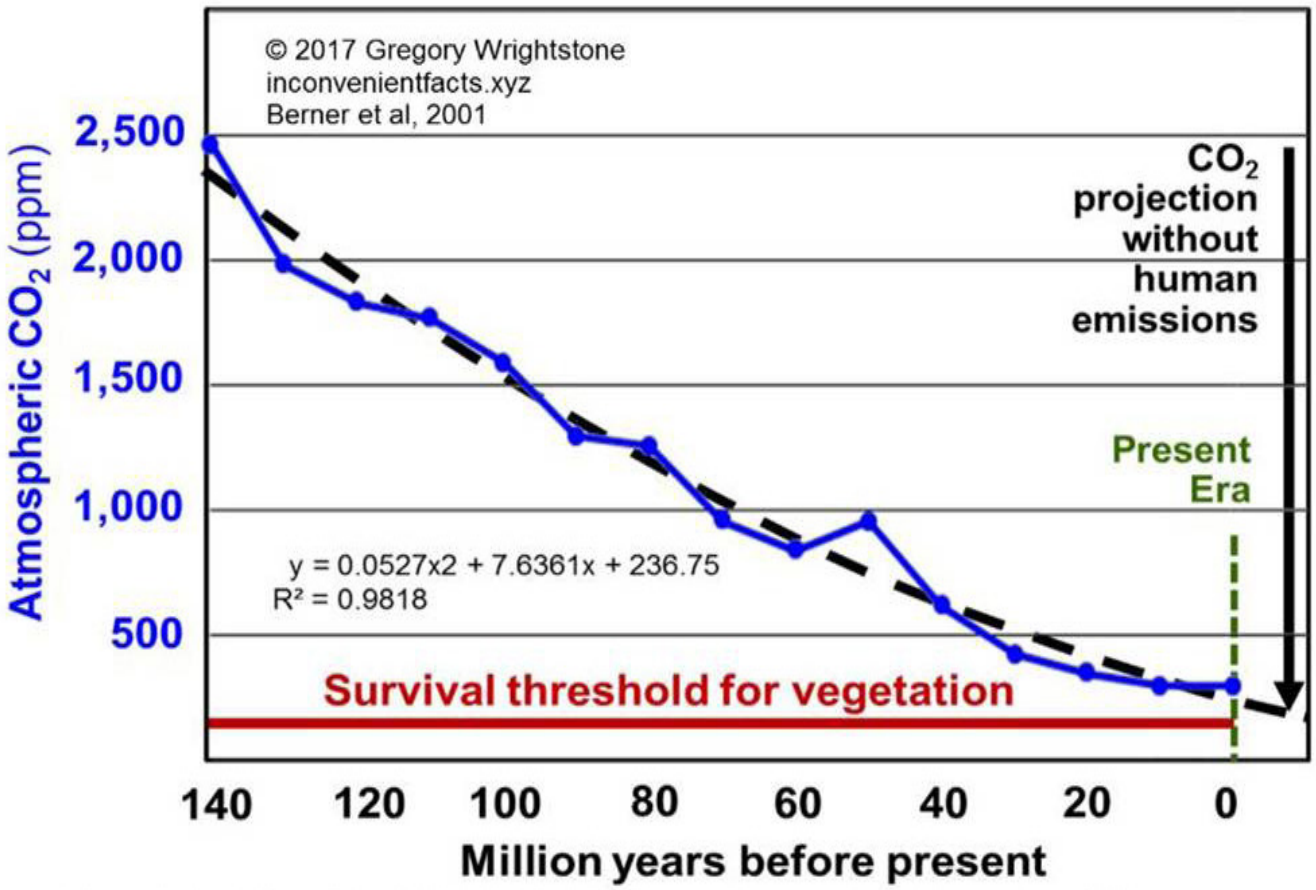
Below 170ppmv of atmospheric CO_2, plant life can no longer sustain itself. Shortly thereafter, nor would any other landbased life on Earth.

Inadvertent human intervention (through hydrocarbon fuel combustion) temporarily staved off the extinction risk & rebalanced the Carbon Cycle.

So the current, slight rise in atmospheric CO_2, whether or not partly a consequence of human activities, is not only welcome but was actually essential to the survival of ALL terrestrial species.

It is not in the least any kind of existential threat. See Greenpeace founder member, Patrick Moore, talking at length on this topic (from 25min onwards) here[65].

Fig I-12: The dangerous 140-million-year decline in CO2



Berner RA, Kothavala Z (2001) GEOCARB III: A revised model of atmospheric CO2 over Phanerozoic time, IGBP PAGES and World Data Center for Paleoclimatology, Data Contribution Series # 2002-051. NOAA/NGDC Paleoclimatology Program, Boulder CO, USA.

Emerging View on Terrestrial Climate Influences

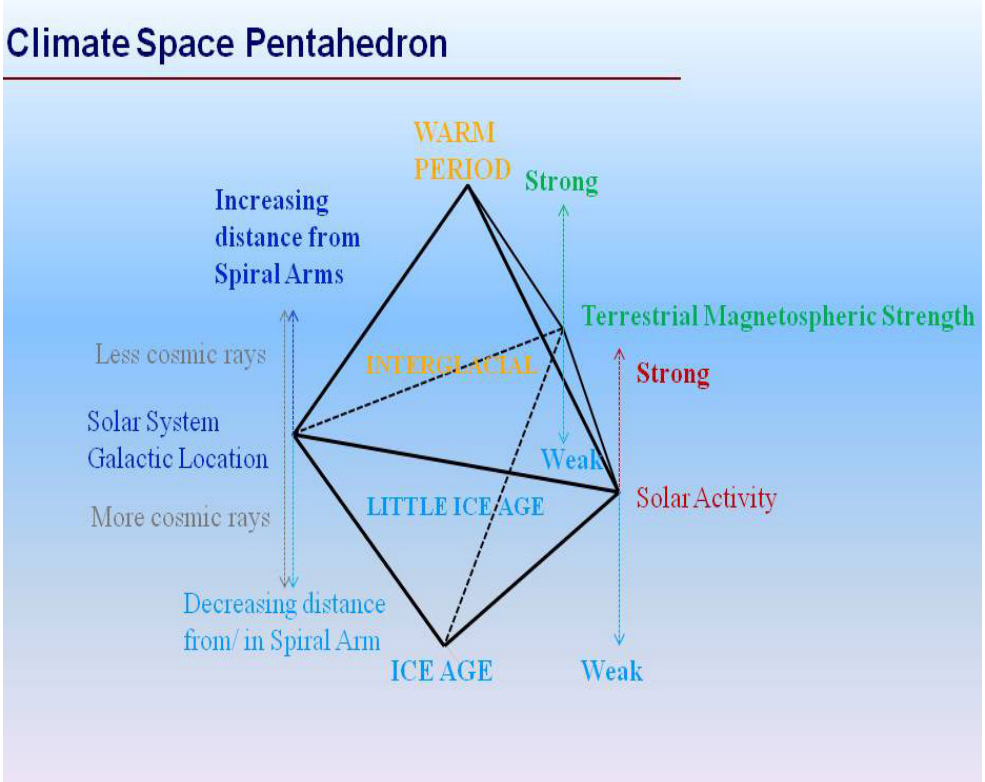
Climate Space Pentahedron

The emerging climate theory (which has partially been validated) is that the extremely complex interplay between solar activity, cosmic rays, solar-planetary Earth orbital perturbation effects and the terrestrial magnetic field are primary determinants of the magnitude of the energy absorbed by the Earth's oceans - which consequently in aggregate drive terrestrial climate change.

Climate Space Pentahedron

Axes	Condition	Condition
Galactic Location	Distant from Spiral Arm	In Spiral Arm
Solar Activity (incl. Milanković effects etc)	Strong	Weak
Terrestrial Magnetospheric Field	Strong	Weak
Outcome	Interglacial or Warm Period	Little or Full Ice Age

Referring back to the Zichichi Spiral Arm quote. In periods when: (1) solar activity and the Earth's magnetic field are both strong, and (2) cosmic ray incidence & consequential low-level cloud cover is suppressed, and (3) the Solar System is not close to, or in, a Galactic Spiral Arm, the Earth enjoys an Interglacial or full-blown Warm Period.



Conversely, when (4) solar activity is weak, (5) cosmic ray incidence & consequent low-level cloud cover are enhanced, and (6) the Solar System is close to, or in, a Galactic Spiral Arm, Earth suffers a Cold Period or a full-blown Ice Age.

Again consistent with the Zichichi Spiral Arm quote.

Some Illuminating Background

Quotes from UN/ IPCC officials

Christiana Figueres, Executive Secretary of the UN Framework Convention on Climate Change 2010-16:

“This is the first time in the history of mankind that we are setting ourselves the task of intentionally, within a defined period of time, to change the economic development model that has been reigning for at least 150 years, since the Industrial Revolution.

“This is probably the most difficult task we have ever given ourselves, which is to intentionally transform the economic development model for the first time in human history.[66]*”*

Ottmar Edenhoffer, UN co-chair of the Intergovernmental Panel on Climate Change working group on Mitigation of Climate Change from 2008 to 2015:

"One has to free oneself from the illusion that international climate policy is environmental policy. This has almost nothing to do with the environmental policy anymore, with problems such as deforestation or the ozone hole."
"We redistribute de facto the world's wealth by climate policy.[67]"

Climate activist quote

Naomi Klein, author (This Changes Everything: Capitalism vs. the Climate) & climate activist:

"What if global warming isn't only a crisis?" Klein asks in a preview of a documentary inspired by her book.

"What if it's the best chance we're ever going to get to build a better world?“

In her mind, the world has to “change, or be changed” because an “economic system” - meaning free-market economics - has caused environmental “wreckage”.

Rational eco-activists Lomborg, Shellenberger & Moore all dispute this:

Source: https://www.investors.com/politics/editorials/another-climate-alarmist-admits-real-motive-behind-warming-scare/

Democratic Accountability Deficit

What right do UN functionaries have to determine the economic system by which any individual country, let alone the world, operates?

What bearing do national economic systems have on our ever-changing climate?

A Final, Thought-provoking Quote

"So here we sit. The next beat of the 179-year solar retrograde cycle is due.

"The next beat of the 360-year Little Ice Age Cycle is due.

"The next beat of the 1440-year Ice-Age Cycle is due.

"The next beat of the 11,500-year Ice-Age Cycle is due.

"The next beat of the 100,000-year Ice-Age Cycle is due . . . and we're worried about global warming?

"It's ludicrous to be worried about global warming.[68]"

Climate Change

Climate Change: A Natural Phenomenon caused by:

1. Changes in the activity/ output of the sun
2. Changes in the interplanetary medium
3. Changes in the terrestrial magnetosphere
4. Changes in the Earth's axial tilt
5. Changes in the Earth's orbital eccentricity
6. Changes in the level of tectonic activity

These all influence the energy absorbed by the Earth's oceans; which is the primary determinant of our climate.

The Earth is 4.7 Billion years old; Climate Change is just as old.

Still believe that Carbon Dioxide (CO_2) is THE ONLY terrestrial climate control knob?

Climate Change Legislation Will Ruin Your Life

If you don't do something about it very soon:

- You will be permanently deprived of the unrestricted freedom of movement over the entire UK road network that you currently enjoy.

- Your choice of vehicle powertrain will be steadily reduced - before it is withdrawn altogether.

- A number of local authorities plan to make your use and ownership of private cars - even fully electric powered ones (EVs) - "history" by 2041 latest.

- You will have to apply for permission to use a communally-accessible, car-club or state-owned electric vehicle.

Think we are mad? Think again. Resulting from the provisions of the Climate Change Act 2008, by 2030, government has legislated to ban the sale of internal combustion engined vehicles (ICEVs), whether diesel, petrol or hybrid (deferral to 2035).

- The Parliamentary Science and Technology Select Committee has even gone as far as to say that: "private vehicle ownership and use is incompatible with significant decarbonisation".

Government's intentions for policies to impose on the plebs (us) are outlined under endnote[69] and will mean that:

- You will not be permitted to catch foreign - or even domestic - holiday flights.

- Your "choice" of domestic heating source will restricted to electricity only.

- If you already have a gas or oil heating installation, you will be compelled to have it removed and replaced with an electric one; necessitating an energy-inefficient £20,000 heat pump and larger radiators. In operation, it will be unaffordable.

- The law has been changed to permit energy providers to cap or cut off your energy supply via so-called SMART meters[70].

https://www.technocracy.news/uk-paves-way-for-smart-meters-to-directly-control-home-appliances/

This legislation arises from an alleged "Climate Emergency"; to which it is asserted we must respond.

This “emergency” only exists in the computer-generated projections of a tightly-knit group of climate modellers and meteorologists.

This group not only shuns objective scrutiny of its activities, but also is not above seeking to falsify historical temperature records in pursuit of its aims.

Empirical (measured, real world) data do NOT support any “emergency” assertion.

ABD Alliance of British Drivers Driving Sense

Actions You Can Take

- Download the CIPT/ ABD information sheet on responding to the (now closed) consultation on ICEV withdrawal:

http://www.votersformotors.org/wpcontent/uploads/2020/09/ReappraiseNetZerov5-2020-08-18.pdf; read it, then:

Write to your MP (find him/ her here: https://members.parliament.uk/FindYourMP)
(1) Opposing the accelerated ICEV sale phaseout timetable,
(2) Seeking comprehensive, scientifically-balanced Environmental and Economic Impact Assessments and Cost-Benefit Analysis of Net Zero Emissions Policies, &
(3) Re-appraisal of the legislation accordingly.

Does the apparent political indifference to evidence like this worry you? Then join the Alliance of British Drivers **NOW**.

For what does the ABD stand?

Sense on the environment:

Publicising the truth about air pollution and climate change

Freedom to use your car:

Fairer disposition of motoring taxes

An end to motorway and urban road pricing proposals

Exposing disguised anti-mobility policies

Real Road Safety improvements:

Better driver training

Realistic (85th percentile) speed limits and discretionary enforcement

An end to fixed-, mobile- & ToD speed camera abuses

An advisory motorway speed limit of not less than 80mph

Author's note:

This presentation is to the best of my knowledge (as an Oxford University Natural Sciences graduate) factually correct and free from any intentional exaggerations or distortions.

I was assisted by some insightful, constructive suggested additions by fellow ABD member, Dr. Duncan White, & by Brian RL Catt CEng, CPhys, MBA, MCIM.

It is a fundamental error to imagine that any scientific advance has EVER arisen from glibly accepting 'consensus' thinking (a political, not scientific, concept).

Copernicus, Galileo, Newton, Einstein all had to overcome scientific inertia - and at times threats of physical violence or worse - for their (then revolutionary) ideas to become accepted wisdom - sometimes long after their deaths.

If it's 'consensus', it definitely isn't science. Science advances by shattering cosy, consensus thinking (i.e., groupthink) and riding roughshod over it with superior hypotheses, reasoning; and models that better reflect the observed behaviour of the natural universe.

This is done by studying, and being guided by, empirically collected evidence, not by falsifying evidence to shore up a preconceived, scientifically unsound 'consensus' hypothesis.

If climate models don't mirror the empirical evidence, however much they are "adjusted" - which they don't, they're just plain wrong.

They need to be abandoned and replaced with better ones that model all the variables, and so are more likely to give worthwhile projections of future climate system behaviour.

Only closed minds tolerate and embrace current counter-scientific 'consensus' views.

I leave others to speculate on the motives of the UN, IPCC, NASA/ NOAA personnel advancing what are best described as junk-science climate projections.
Some starting points might be the following references:

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Brian J. Gregory, M.A.(Oxon.), M.Sc., January, 2024.

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MAG
Motorcycle Action Group


FAIR
FUEL
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ABD
Alliance of
British Drivers
Driving Sense