

**Global Warming – Global Winter - What sayeth the Data:
Open Questions and New Theories.**

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Abstract.

The Fourth Assessment Report [FAS] of the IPCC was published and released worldwide first and foremost with the Summary for Policy Makers, followed by comprehensive main report volumes a few months later.¹ The ‘findings’ have been proclaimed, world-wide, as definitive, dramatic and proven by incontrovertible ‘fingerprints’ of largely anthropogenic causation. The policy recommendations are a drastic limitation of industrial CO₂ emissions.

However a more detailed review of the data and the Main Report volumes, as well as other significant research efforts on climate lead to surprisingly different, possibly contrarian conclusions, showing the dire need for more measurements, observations and fact based research before taking the political advice given in the political Summary of the IPCC FAR-2007:

- The “*Hockeystick II*” of the IPCC 2007 Summary - the graph showing **CO2 levels dramatically going off the scale** - is a false graph, generated by cherry picking the data and intentionally discarding 90,000 carbon dioxide readings because they disagreed with the Anthropogenic Global Warming [“AGW”] hypothesis. This graph will fall just as the Hockey Stick I graph – the Figure 1 on page 1 of the IPCC TAR² Summary of 2001 – fell, because it lacks credibility;
- **The temperatures of the troposphere and the stratosphere have not risen since 1998**, in fact they fluctuate 0.4⁰C below the 1998 maxima. By now this encompasses soon a decade of the 100 years of a projected IPCC “range 2°C to 4.5°C with a best estimate of about 3°C, and is *very unlikely* to be less than 1.5°C” Simulations are validated by their ability to replicate measured data. Some of

¹ The Fourth Assessment Reports [“FAR”]:

Climate Change 2007 - The Physical Science Basis Contribution of Working Group I to the Fourth Assessment Report of the IPCC (ISBN 978 0521 88009-1 Hardback; 978 0521 70596-7 Paperback)

Climate Change 2007 - Impacts, Adaptation and Vulnerability Contribution of Working Group II to the Fourth Assessment Report of the IPCC (978 0521 88010-7 Hardback; 978 0521 70597-4 Paperback)

Climate Change 2007 - Mitigation of Climate Change Contribution of Working Group III to the Fourth Assessment Report of the IPCC (978 0521 88011-4 Hardback; 978 0521 70598-1 Paperback)

² Houghton J. T., Y. Ding, D.J. Griggs, M. Noguer, P. J. van der Linden and D. Xiaosu (Eds.), *Climate Change 2001: The Scientific Basis*, Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), Cambridge University Press, UK. pp 944

these simulants have “predicted” temperature rises as high as 11 degrees by 2100;

- A ‘Scientific Approach’ to detecting anthropogenic fingerprints in Global Warming would first try to explain temperature changes of the past 150 years or so by **subtracting all known natural cyclical elements** in climate change. There are many such known cycles, extensively documented and new ones are added. Where one to do so, **little remains to be explained** as to these past 150+ years that would be outside normal statistical variations. No such effort is documented in the IPCC work;
- The overwhelming evidence, including the one presented in the Fourth Assessment Report, shows that **temperature changes “drive” CO₂** and other greenhouse gas changes, most clearly evident from over 800,000 years of Antarctic ice core data, rather than the other way around;
- The **Anthropogenic Global Warming** hypothesis **fails** at the most important boundary area, the **tropical, equatorial regions**. It also fails because during the last 10 years, carbon dioxide levels have been rising significantly and yet global temperatures in the relevant atmospheric strata are falling – again, as it did from 1940 through the mid 1970’s;
- IPCC **global warming models fail to replicate the present**, much less the future. The present state of the art of climate modeling has a very large arbitrariness in assumptions on variables and relations between them and as a result only provides a range of temperatures arbitrarily chosen among the myriad of possible outcomes. Empirically measured links between major variables within these models are largely non-existent. The across-the-board failure of these modeling exercises – tragically – is reminiscent of the spectacular failures of the “Club of Rome” Forrester and Meadows exercises of world resources disasters for the 20th century. Not a single prediction became true;
- **Significant variables are almost ignored by the IPCC models**, the most important is **clouds**. One would have expected detailed attention by the IPCC FAR 2007 of fundamental new research these past years (since 1995) e.g. the impact of **Cosmic Rays** and their variations on climate change, including Ice Ages. This work is absent in the “scientific consensus” report;
- Last and not least: **Global Warming** – whatever its cause – is **overwhelmingly beneficial** for the environment, the biosphere, agriculture and the economy, as evidenced by at least 600 million years of documented Paleoclimate of the Earth.

In Conclusion: the IPCC FAR 2007 – the Summary for Policy Makers in particular – is but a political instrumentalization of select scientific work on Climate under the pretense of unanimity to arrive at drastic ‘recommendations’ for centralized imposition of Global Governance in pursuit of an ideological agenda, with little empirical evidence backing up the computer simulations and imaginations. The actual data point in a different, much more benign, even positive direction – albeit to be confirmed by more observations and measurements.

Introduction.

In February of this year the Intergovernmental Panel on Climate Change (“IPCC”) published the Summary for Policy Makers of the Fourth Assessment Report [“FAR”], three months before agreeing and publishing the Main report of FAR, a curiosity in the practice of scientific work: how can a Summary be published of work that had not been agreed to in final form but three months later?

The Summary for Policy Maker [the politicized version of the scientific work done by the 2,500 + scientists and researchers?] could not have been more dramatic in its definitive [“highly likely”, “most likely”] conclusions:

- the observed [claimed] increase in **atmospheric CO₂** since 1750 is attributed without qualification “primarily” to human activities;
- **measured temperatures** – particularly the satellite and balloon measurements – as well as the infamous “Hockeystick” of the TAR 2001 have disappeared from the Summary and replaced with a generic [misleading] statement that “measurements of lower- and mid-tropospheric temperature show warming rates that are similar to those of the surface temperature record and are consistent within their respective uncertainties, largely reconciling a discrepancy noted in the FAR”;
- as to **causation** the IPCC found the guilty: “Most of the observed increase in global average temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic greenhouse gas concentrations”;
- Drastic changes are needed in **restricting anthropogenic CO₂** and other greenhouse gas contributions and even a reduction of global atmospheric CO₂ levels to the year 2,000 values would still see some further increase in global temperatures;
- Without such **drastic incursions into free markets** worldwide greenhouse gas levels, radiative forcing and consequently temperatures would go out of control by the end of the century, as well as the rise of sea levels worldwide.

The cost to advanced industrial economies of reducing CO₂ levels to year 2,000 values has been estimated **well in excess of \$1 trillion and counting**. The world is coming to an end, lest we follow the advice given to “Policy Makers” with dramatic increases of research, technology and political funding to prevent such anthropogenic climate disaster.

However, with the publication of the actual Fourth Assessment Report and a detailed reading thereof a plethora of questions arise and show the clear need for more (better) observations and data, before rushing out toward a collective act of economic self-immolation. Some may in fact conclude that the overwhelming evidence in fact might show that no drastic changes in human activities are needed at all, quite to the contrary.

In fact, the “consensus” claimed by the political summarizers is not evident when reading the actual work of the select 2,500 or so scientists and researchers in the Main Report: Has the “Summary” been kidnapped by a core group of political climate fundamentalists, ignoring studiously the vast uncertainties, disagreements and qualifications of claims made in the Main report itself – quite removed from any “consensus” or “unanimity” or “fingerprints” of human climate crimes?

The main issues are addressed below one by one, starting with the question of CO₂ data and causation of atmospheric CO₂ changes over the climate history of the Earth. Most of the data and evidence presented below are taken from the very IPCC 2007 FAR and its predecessors.

The other major sources are quoted and scientifically impeccable – although not always the summary of the evidence therein - a prime example of possible fallacies in limiting one’s reading to “Summaries” being the very 2007 IPCC “Summary for Policy Makers”.

The CO₂ “Explosion” a la IPCC.

Evidence Number 1 of the 2007 IPCC Summary Report for Policy Makers is Figure 1:

CHANGES IN GREENHOUSE GASES FROM ICE CORE AND MODERN DATA

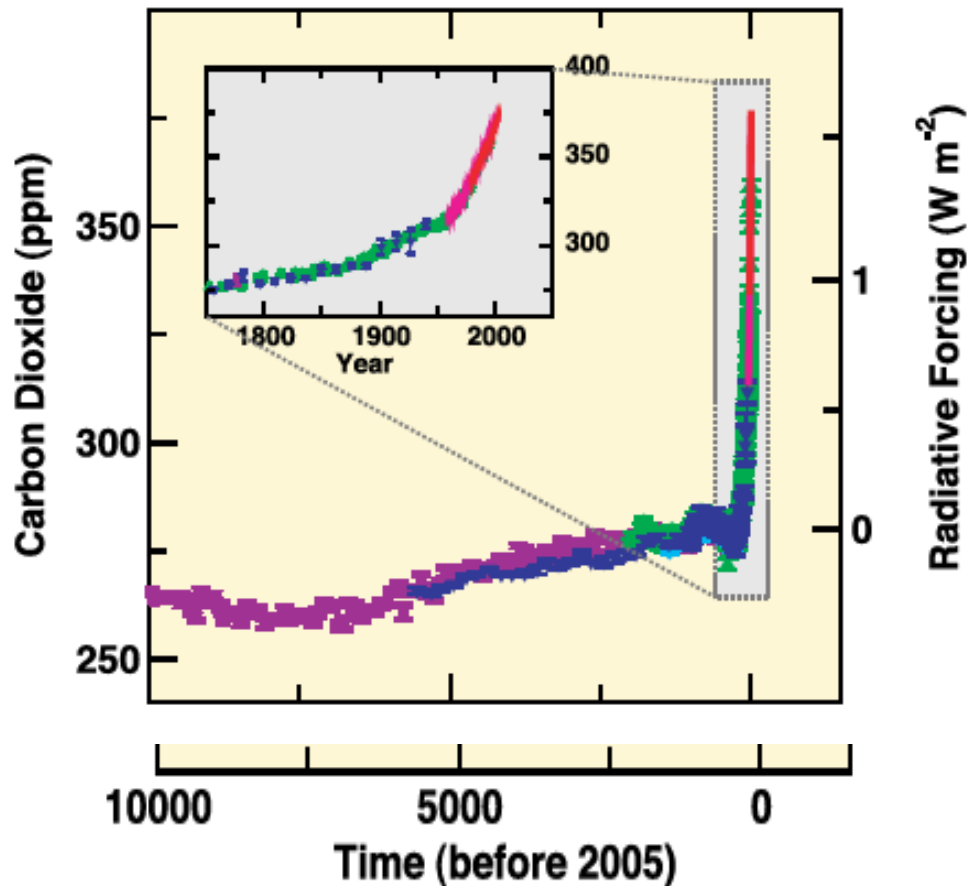


Figure 1: CO₂ “Explosion” a la IPCC:
The “Prime” Exhibit in the IPCC 2007 “Summary for Policy Makers”

As CO₂ goes up dramatically the past 100 to 200 years, temperatures have gone up too. Conclusion by IPCC consensus: CO₂ causes temperature increases and, if not stopped, the world will come to a disastrous end. As presented by the IPCC the central issue obviously is the increase in CO₂ and the havoc that will cause to climate change. It is reminiscent of the now defunct and debunked “Hockey Stick”, the premier exhibit

Figure 1 of the IPCC 2001 “Summary”, a statistical manipulation of dubious and questionable data.³

This “New Hockey Stick” scare graph would have one believe that something unheard of has taken over the environment, climate, whatever, suggesting a dramatic increase in surface heating from an increase in carbon dioxide. The left vertical axis measures CO₂ concentrations; the horizontal axis measures time over the past 10,000 years; and the right vertical axis measures radiative forcing in watts per square meter of the Earth’s surface. Radiative forcing is the estimate of increased heat energy impact on the surface of the Earth from increased CO₂ concentrations. Since the IPCC claims that increased warming from carbon dioxide did not start until man started using fossil fuels, about 1850, the first 9,850 years in the graph are unnecessary. Thus only 1.5% of the time line is important and the other 98.5% are added for “shock” value. Removing the superfluous years would make the graph much less dramatic. Further, by clever manipulation of units this graph gives the false impression that the relationship between CO₂ concentrations and warming from greenhouse effects is exponential: slight increases in CO₂ greatly increase warming. In fact, the relationship is a decreasing effect on a logarithmic scale: experiments show increases in CO₂ yield ever diminishing increases in warming and we are far along this logarithmic curve [i.e. a ‘saturation’ effect].

But things are in fact worse: both, the CO₂ series as shown by the IPCC and the “temperature history” depicted are contradicted by the data record:

As to the temperature record over the past 10,000 years the IPCC depiction in Figure 1 is selective and plain wrong, see Figures 12, 15 and 24 below.

Next, there are some questions regarding the accuracy of the IPCC “claimed” record of atmospheric CO₂ over the past 150 years and the possible insignificance of human emissions. A good summary of both, the relatively minor contribution human CO₂ emissions make to atmospheric levels (Figure 2) as well as serious questions whether the CO₂ series as cited by the IPCC are accurate at all (Figure 3) are presented by Beck.⁴

³ E.g. the alleged “increase” in temperatures by proxy measurements of the width of 19 key West Coast tree ring series has been proven to be mistaken: the increased width is due to CO₂ fertilization and not temperature increases.

⁴ Ernst-Georg Beck, “180 Years of atmospheric CO₂ Gas Analysis by Chemical Methods”, Energy & Environment, Vol. 18, Number 2, 2007

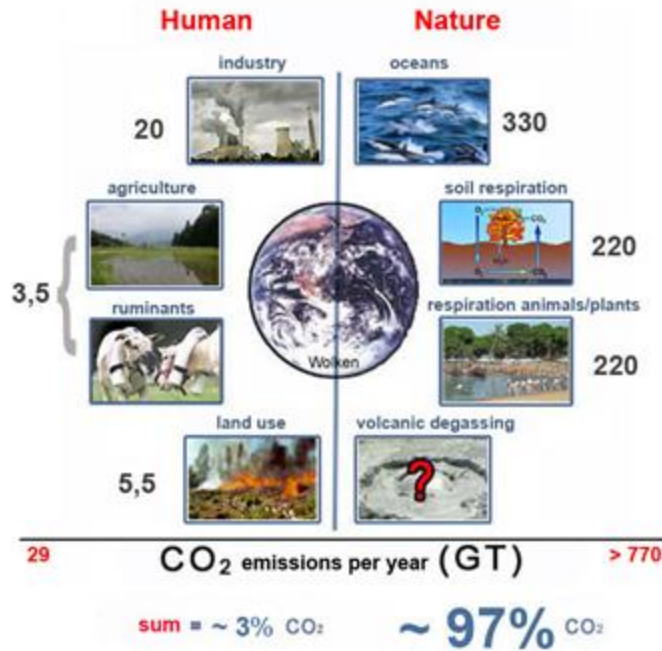


Figure 2: The relative contributions to atmospheric CO₂ levels: the Human CO₂ Tail wagging Nature’s Elephant? (Beck)

Eliminating ALL industrial CO₂ emissions (including cars) to ZERO would reduce these levels by a mere 0.6%, well within the noise and measurement accuracy levels of these parameters. A case of the Human tail wagging nature’s elephant.

Which raises also the question of the “shape” and direction of the tail: that these CO₂ data claims shown in Figure 1 may be highly dubious, based on 180 years of various measurements, most of which have been discarded as they do not agree with the “approved” story book (Figure 3).

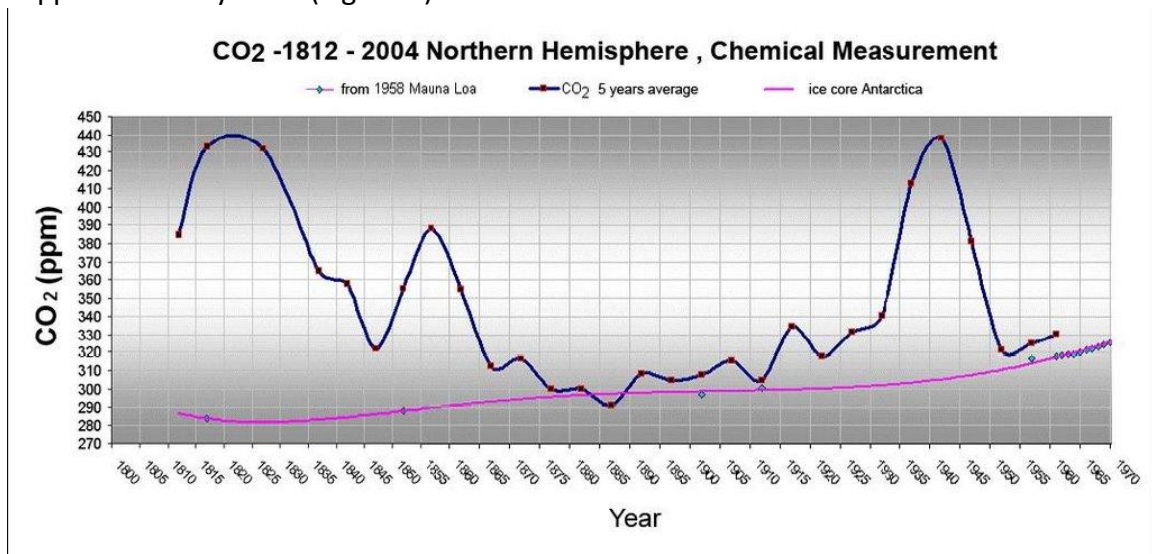


Figure 3: 180 Years of Atmospheric CO₂ Gas Analysis by Chemical Methods [Beck]

The authors of various CO₂ measurements and data series reviewed by Beck are shown in Figure 4:

Titrimetric measurements (Pettenkofer)				Amount of determinations					
Year	Author	Locality							
1	Since 1855	v. Pettenkofer [46]	Munich (D)	Many	18	1928	Krogh/Rehberg [62]	Kopenhagen (DK)	Many
2	1856 (6 month) ¹	v. Gilm ¹ [50]	Innsbruck ¹ (AUS)	19	19	1932-1935	Buch [32]	Northern atlantic ocean/ Finland (FIN)	176
● 3	1863-1864	Schulze ² [51]	Rostock, (D)	426	20	1936-1939	Duerst [37]	at Bern (Switzerland) (CH)	>1000
4	1864/65	Smith [52]	London, Manchester, Scotland (GB)	246	21	1941-1943	Misra [39]	Poona, India (IND)	> 250
5	1868-1871	Schulze ² [51]	Rostock, (D)	1600	22	1950	Effenberger [17]	Hamburg (D)	>40
6	1872-1873	Reiset [53]	Dieppe, France (Northsea) (F)	92	23	1954	Chapman et al. [63]	Ames (IOWA, USA)	>100
7	1873	Truchot [54]	Clermont Ferrand (F)	60	24	1957	● Steinhauser [64]	Vienna (AUS)	>500
● 8	1874-875	Farsky ² [55]	Tabor, Böhmen, (Cz)	295	25	1955-1960	Fonselius et al. [65] Bischof [66]	Scandinavia	>3400
9	1874-1875	Hässelbarth ² [56]	Dahme (D)	347	Volumetric and manometric measurements				
10	1879-1880	Reiset [31]	Dieppe (F)	118	1	1875 (März)	Tissander [67]	Paris, in balloon, volumetric	<10
● 11	1883	Spring [57] ²	Liege (B)	266	2	1880-1912	Müntz & Aubin [28, 29, 30]	Near Paris, Pyrenees, Carribean etc. (F) volumetric	81+
12	1886-1887	Uffelmann [58]	Rostock (D)	420	3	1910-1912	Benedict [15]	Washington (USA), volumetric	>264
13	1889-1891	Petermann [59]	Gembloux (B)	525	4	1920-1930	Rheinau [68]	Locations in Germany, Davos, Switzerland (volumetric)	>500
14	1897-1898	Letts&Blake [14]	near Belfast (IRL)	64	5	1925-1970	Van Slyke [69]	Worldwide, manometric	many
15	1898-1901	Brown& Escombe [60]	Kew Garden England (GB)	92	6	1912-1936	Haldane [70]	UK, volumetric	1500
16	1917-1918	A. Krogh [61, 62]	Kopenhagen (DK)	Many	7	1939-1941	● Kreutz [38]	Germany, volumetric	64,000
● 17	1920-1926	Lundegardh [35]	in southern Sweden (Kattegat) (S)	>3000	8	1946-1970	● Scholander [40, 41]	Worldwide, volumetric	>1000

Figure 4: 90,000 Atmospheric CO₂ Measurements (1812 – 1960) ignored by the IPCC?

Rather disturbing and to be checked out. Some say that these measurements are not as pristine as those of the single series Mauna Loa series – but these objections are mysteriously not applied to surface temperature measurements.

Similar arguments as to the possible deficiency in the IPCC accepted CO₂ “history” was advanced by Zbigniew Jaworowski in testimony to the US Senate Committee on Commerce, Science, and Transportation March 2004: Determinations of CO₂ in polar ice cores are commonly used for estimations of the pre-industrial CO₂ atmospheric levels. Perusal of these determinations convinced me that glaciological studies are not able to provide a reliable reconstruction of CO₂ concentrations in the ancient atmosphere. This is because the ice cores do not fulfill the essential closed system criteria. One of them is a lack of liquid water in ice, which could dramatically change the chemical composition the air bubbles trapped between the ice crystals. This criterion, is not met, as even the coldest Antarctic ice (down to -73°C) contains liquid water^{5,6}. According to Jaworowski, improper manipulation of data, and arbitrary rejection of readings that do not fit the pre-conceived idea on man-made global warming is common in many glaciological studies of greenhouse gases. In peer reviewed publications Jaworowski exposed this misuse of science.⁷ (Figure 5)

⁵ Mulvaney, R., E.W. Wolff, and K. Oates, “Sulphuric acid at grain boundaries in Antarctic ice”, *Nature*, 1988. 331(247-249).

⁶ Jaworowski, Z., T.V. Segalstad, and N. Ono, “Do glaciers tell a true atmospheric CO₂ story?”, *The Science of the Total Environment*, 1992. 114: p. 227-284.

⁷ Ibid. and Jaworowski, Z., “Ancient atmosphere - validity of ice records”, *Environ. Sci. & Pollut. Res.*, 1994. 1(3): p. 161-171.

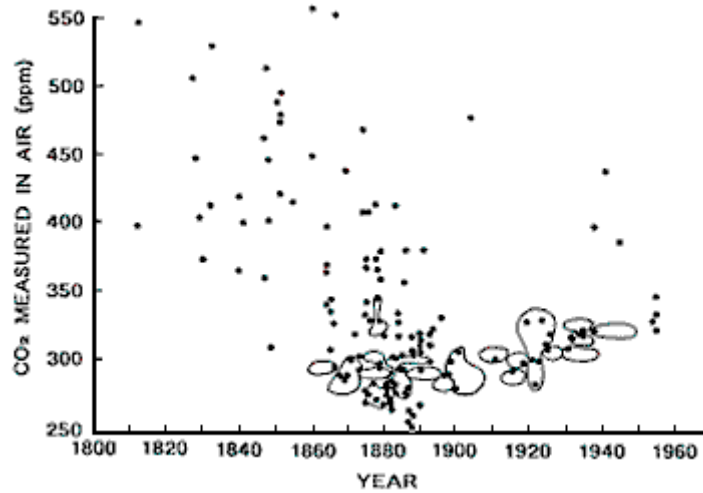


Figure 5: The Mean Values of atmospheric CO₂ Measurements (Europe, North America and Peru, 1860 – 1900) [Jaworowski]

The encircled values between 1860 and 1900 were arbitrarily selected by Callendar⁸ for estimation of 292 ppmv as the average 19th century CO₂ concentration. Slocum⁹ demonstrated that without such selection these data average 335 ppmv.

But the problems with the data decreed by the IPCC to be correct go further (see Figure 6):

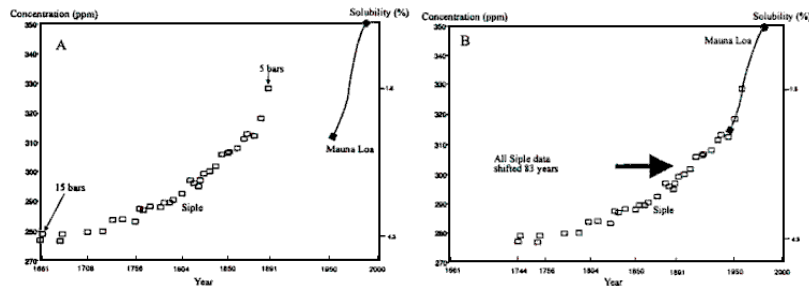


Figure 6: Concentration of CO₂ in Air Bubbles from the pre-industrial Ice from Siple, Antarctica (Open Squares) and the 1958 to 1986 Mauna Loa, Hawaii Data (solid Line)

The problem with Siple data (and with other shallow cores) is that the CO₂ concentration found in pre-industrial ice from a depth of 68 meters (i.e. above the depth of clathrate formation) was "too high". This ice was deposited in 1890 AD, and the CO₂ concentration was 328 ppmv, not about 290 ppmv, as needed by man-made warming hypotheses. The CO₂ atmospheric concentration of about 328 ppmv was measured at Mauna Loa, Hawaii as later as in 1973¹⁰, i.e. 83 years after the ice was

⁸ Callendar, G.S., "On the amount of carbon dioxide in the atmosphere", *Tellus*, 1958. 10: p. 243-248.

⁹ Slocum, G., "Has the amount of carbon dioxide in the atmosphere changed significantly since the beginning of the twentieth century?" *Month. Weather Rev.*, 1955(October): p. 225-231.

¹⁰ Boden, T.A., P. Kandrak, and M.P. Farrel, *TRENDS '90 - A Compendium of Data on Global Change*. 1990, Oak Ridge National Laboratory: Oak Ridge, Tennessee, pp. 257.

deposited at Siple.

According to Jaworowski¹¹, an ad hoc assumption, not supported by any factual evidence solved the problem: the average age of air was arbitrary decreed to be exactly 83 years younger than the ice in which it was trapped. The "corrected" ice data were then smoothly aligned with the Mauna Loa record (right side in Figure 6), and reproduced in countless publications as a famous "Siple curve". Only thirteen years later, in 1993, glaciologists attempted to prove experimentally the "age assumption",¹² but they failed (see Footnote 5).

Jaworowski's conclusion: "The basis of most of the IPCC conclusions on anthropogenic causes and on projections of climatic change is the assumption of low level of CO₂ in the pre-industrial atmosphere. This assumption, based on glaciological studies, is false. Therefore IPCC projections should not be used for national and global economic planning."¹³

Earlier criticism of Callendar's work should also be noted: in addition to Slocum (Footnote 7 above) Eric From and Charles D. Keeling took issue with Callendar's claims¹⁴: Keeling had borrowed Callendar's CO₂ notebook to work on this paper.

CO₂ and Temperature Changes: the Chicken and the Egg.

Now, why would the IPCC raise and highlight the CO₂ series as "Exhibit 1" in the Summary for Policy Makers, rather than temperatures as was done in the 2001 Summary? We will come to that later, but clearly the implication to "Policy Makers" conveyed by the IPCC is that CO₂ is exploding and the Earth's temperatures will soon follow, lest we take drastic actions.

However, "buried" in the Main Report and released three months AFTER the Summary for Policy Makers, we find on page 444 (!) a data record of over 700,000 years showing CO₂, temperature and other greenhouse gas changes (Figure 7):

¹¹ Ibid.

¹² Schwander, J., et al., "The age of the air in the firn and the ice at Summit, Greenland", *Journal of Geophysical Research*, Vol. 98, No. D2, Pages 2831–2838, 1993

¹³ Jaworowski, Z., "Climate Change: Incorrect information on pre-industrial CO₂", Statement written for the US Senate Committee on Commerce, Science, and Transportation, March 2004

¹⁴ From, Eric and Charles D. Keeling, "Reassessment of late 19th century atmospheric carbon dioxide variations in the air of western Europe and the British Isles based on an unpublished analysis of contemporary air masses by G.S. Callendar," *Tellus*, 38B (1986): 87-105

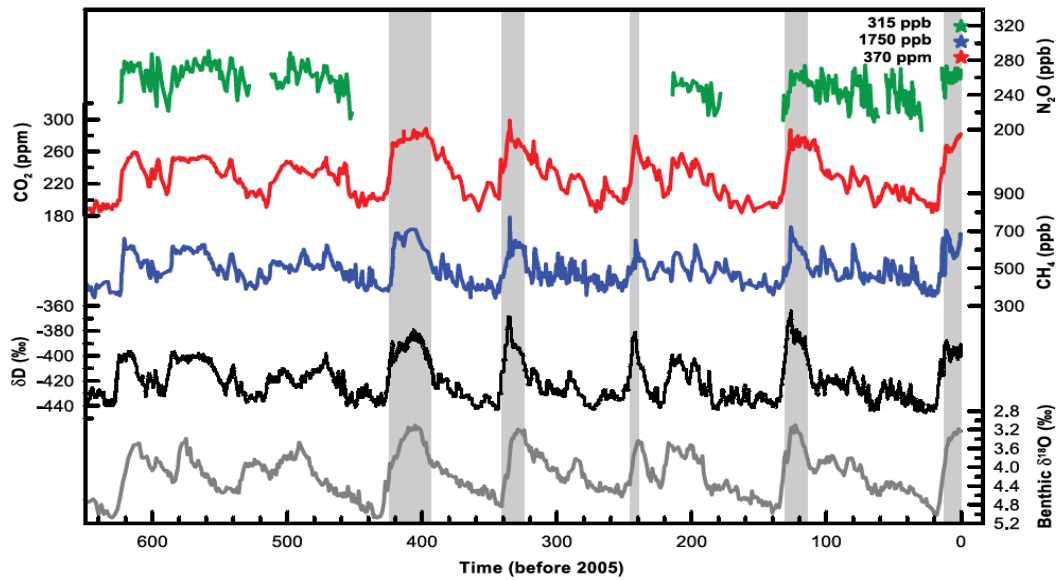
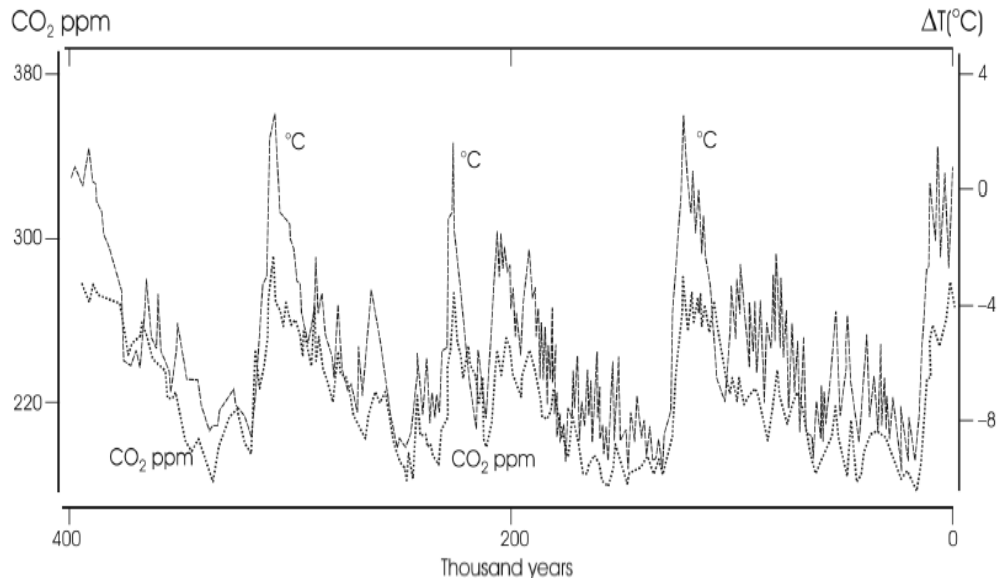


Figure 7: CO₂, CH₄, N₂O and Temperature Changes over 700,000 Years (IPCC 2007 – page 444)

Ah, these series are all moving up and down – in unison – more or less. Difficult to discern what comes first and what comes next. In Figure 7 the relationship between carbon dioxide, methane and nitric acid is depicted over the past 700,000 years as measured in Antarctic ice core data, as well as temperature proxies. The green line measures atmospheric concentrations of nitric oxides in parts per billion, the red carbon dioxide in parts per million, the blue methane in parts per billion, the black line deuterium δD and the gray line $\delta^{18}O$, both in (‰), as temperature proxy.

However, a more detailed look at the earlier 420,000 year record shows the following time pattern between temperature and CO₂ and other greenhouse gas changes, data from the 420,000 year record of the Vostok ice-cores (Figure 8):



**Figure 8: Temperature and CO₂ Changes over 420,000 Years
Vostok Ice Core Data¹⁵**

And lo and behold, the temperature changes are **leading** the CO₂ changes, something that can be “seen” even without running any statistical analysis. With thorough statistical analysis one and all conclude that **temperatures indeed lead CO₂ changes**, consistently for 420,000 years by anywhere from 200 years to 1,000 years. And look at the drastic increases indeed – the recent record pales by comparison: temperature changes of up to 12 °C within but a few years and CO₂ changes a few hundred years **later** of equally dramatic variations.

These data have now been confirmed and updated in another ice core data series, now extended back up to 800,000 years: The European Project for Ice Coring in Antarctica (EPICA) has provided two deep ice cores in East Antarctica, one at Dome C, on which the latest study focuses (EDC), and one (EDML) in the Dronning Maud Land area. The Dome C drilling was stopped at a depth of 3260 m, about 15 m above the bedrock. A preliminary low resolution δD record was previously obtained from the surface down to 3139 m with an estimated age at this depth of 740,000 BP years (thousands of years Before Present) corresponding to MIS¹⁶ 18.2. Other data (grain radius, dust concentration, dielectric profile, electrical conductivity) as well as chemical data, are available down to this depth, and analyses of the entrapped air have extended the greenhouse gas record, CO₂, CH₄ and N₂O, back to MIS 16 ~ 650,000 BP years. Here the

¹⁵ Petit J.R., Jouzel J., Raynaud D., Barkov N.I., Barnola J.M., Basile I., Bender M., Chappellaz J., Davis J., Delaygue G., Delmotte M., Kotlyakov V.M., Legrand M., Lipenkov V., Lorius C., Pépin L., Ritz C., Saltzman E., Stievenard M., 1999, “Climate and Atmospheric History of the Past 420,000 years from the Vostok Ice Core, Antarctica”, *Nature*, 399, pp.429-436.

¹⁶ Marine Isotope Stage (MIS)

extraordinary, detailed temperature record for the past 900,000 years of the Earth's Climate (Figure 9):¹⁷

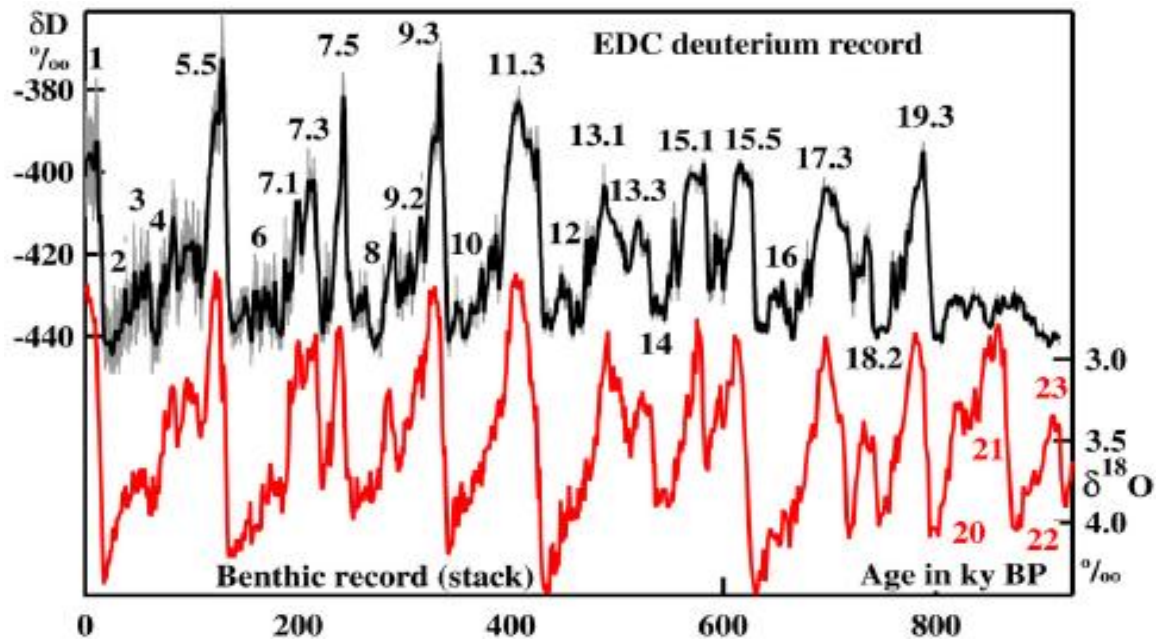


Figure 9: Comparison of the δD Dome C record on the EDC3 time scale with the benthic oxygen-18 record on its own time scale¹⁸

Their principal findings: the studies confirm that the early interglacial periods, now including MIS 19, were characterized by less pronounced warmth than those of the last 4 climatic cycles (1). Whereas peak temperatures in the warm interglacials of the later part of the record (MIS 5.5, 7.5, 9.3, 11.3) were 2° to 4.5°C higher than the last millennium, maximum temperatures were ~1° to 1.5°C colder for MIS 13, 15.1, 15.5 and 17, reaching levels typical of interstadials, such as 7.1 and 7.3. MIS 19 shows the warmest temperature for the period before Tv (~ -0.5°C). For MIS 11 to MIS 17, with the exception of MIS 15.1, peak warmth occurred at the end of the warm periods in contrast with the more recent interglacials for which earlier peak warmth was typical (Fig. 10).

¹⁷ J. Jouzel, V. Masson-Delmotte, O. Cattani, G. Dreyfus, S. Falourd, G. Hoffmann, B. Minster, J. Nouet, J. M. Barnola, J. Chappellaz, H. Fischer, J. C. Gallet, S. Johnsen, M. Leuenberger, L. Loulergue, D. Luthi, H. Oerter, F. Parrenin, G. Raisbeck, D. Raynaud, A. Schilt, J. Schwander, E. Selmo, R. Souchez, R. Spahni, B. Stauffer, J. P. Steffensen, B. Stenni, T. F. Stocker, J. L. Tison, M. Werner, E. W. Wolff, "Orbital and Millennial Antarctic Climate Variability over the Past 800,000 Years", *Science*, 10.1126, 5 July 2007, 5 pp.

¹⁸ Ibid.

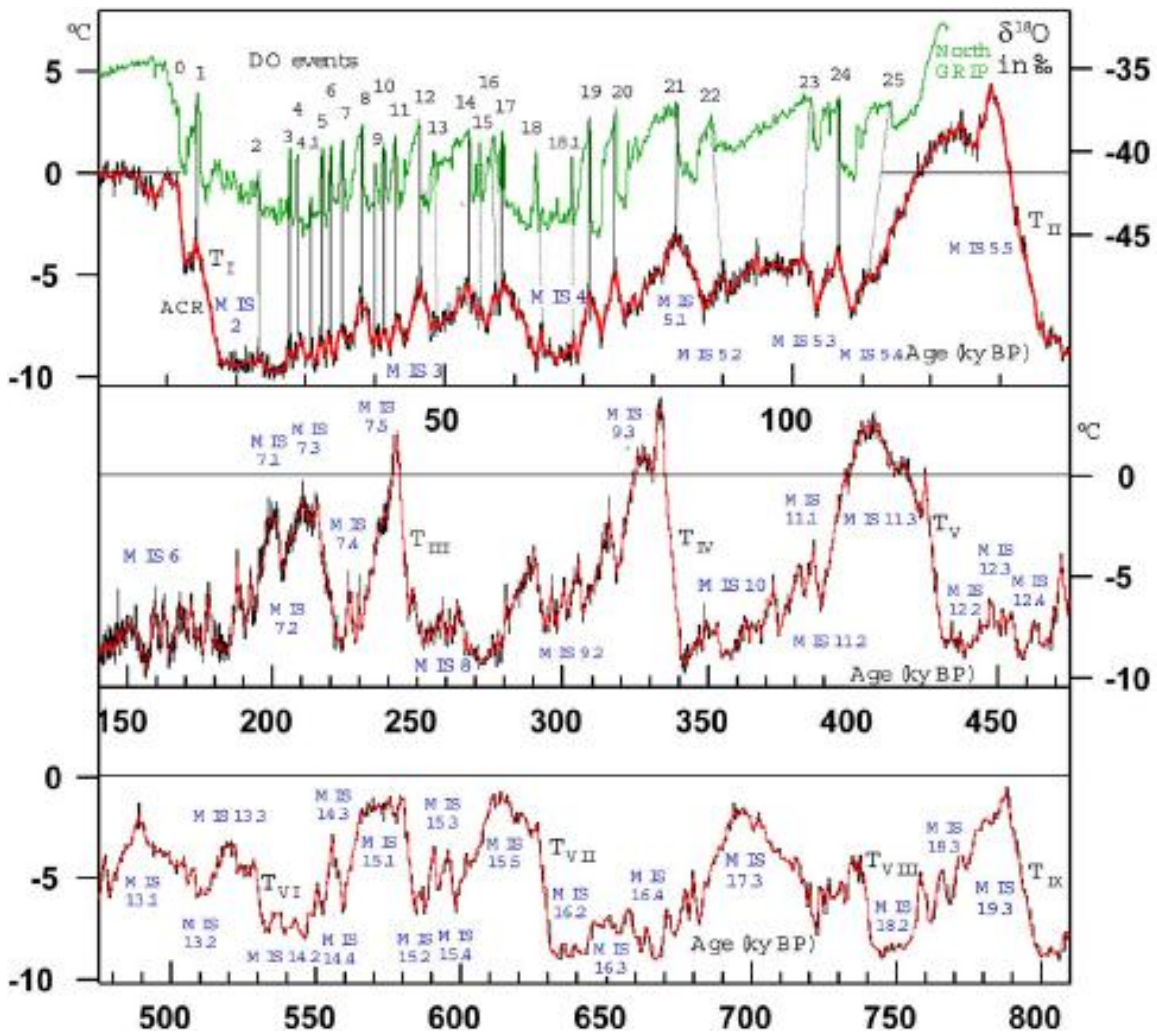


Figure 10: Dome C temperature anomaly as a function of time over the last 810,000 Years¹⁹

The key finding of this study relating to CO₂ and other greenhouse gases are quoted here in full:²⁰ “Our EDC ice core shows no indication that greenhouse gases have played a key role in such a coupling. Not only does the obliquity component of the radiative forcing, calculated accounting both for CO₂ and CH₄ changes have a small amplitude over the last 650 ky (~ 0.5 W/m² [Figure 11 below]) but it also seems to lag Antarctic and tropical temperature changes. Nor can this in phase temperature behavior be explained by local insolation as this parameter is in antiphase between low and high latitudes. Rather than being caused by greenhouse coupling, we suggest that it results from a transfer of the high latitude obliquity signal to the tropics through rapid processes involving atmospheric circulation or intermediate oceanic waters, possibly linked, as documented” from present-day and examined for past climates, with changes in sea-ice around Antarctica. The amplitude of the radiative greenhouse forcing, however, is very

¹⁹ Ibid.

²⁰ Ibid.

important in the 100 ky band ($\sim 2.5 \text{ W/m}^2$ comparable to the additional greenhouse forcing due to anthropogenic activities). This points to a strong carbon cycle feedback involved in the magnitude and possibly duration of ice ages and to a global character of the Antarctic temperature record.”

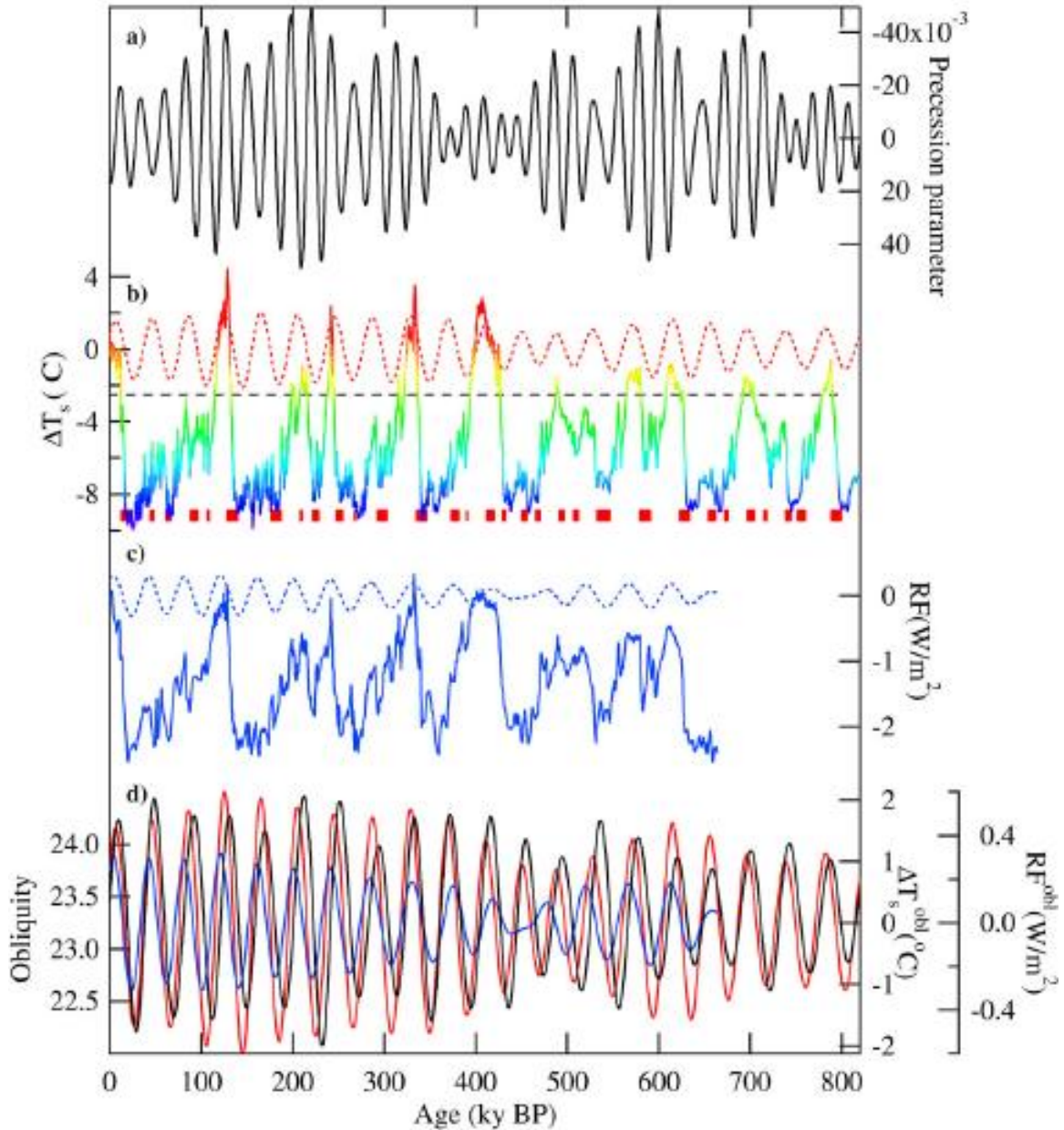


Figure 11: (a) Precession parameter; (b) EDC temperature (solid line, rainbow colors from blue, cold temperatures, to red, warm temperatures); and (c) combined top of atmosphere radiative forcing due to CO_2 and CH_4 (blue)²¹

²¹ Ibid.

By presenting the misleading graphs and ignoring studiously that temperature changes occur before CO₂ changes - thus cannot be caused by CO₂ changes – the IPCC “Summarizers” are clearly engaged in disinformation, for whatever “political good”, not science.²² Furthermore, the IPCC Summary – ignoring these key data - offers no proof that clearly establishes why this evident causal relationship over the past 420,000 and 700,000 years should all of a sudden have changed these past 150 years – other than ritual incantations on the evil of man and capitalism: quite ‘scholastic’ – the method as well as the mindset of the IPCC Curia. And whereas the latest findings were published this July, two months after the IPCC Main Report, nevertheless it is certain that among the select IPCC 2,500 plus experts at least some must have been aware of this forthcoming most important result, reconfirming what is already known from the Vostok data, certainly the ones quoted in the second paragraph below.

Given the data and their cyclicity it seems the only possible causal explanation is that temperature changes cause CO₂ and other greenhouse gas changes: no natural phenomena are known that would have CO₂ and other greenhouse gases vary dramatically and cyclically to then cause temperature changes of equal magnitude. But the reverse, of course, has a myriad of possible explanations, some already known, some still suspected or being analyzed. All this confirmed by the very IPCC in the Main Report 2007. To quote from page 444:

“The ice core record indicates that greenhouse gases co-varied with antarctic temperature over glacial-interglacial cycles, suggesting a close link between natural atmospheric greenhouse gas variations and temperature (Box 6.2). **Variations in CO₂ over the last 420 kyr broadly followed antarctic temperature, typically by several centuries to a millennium** [emphasis added] (Mudelsee, 2001). The sequence of climatic forcings and responses during deglaciations (transitions from full glacial conditions to warm interglacials) are well documented. High-resolution ice core records of temperature proxies and CO₂ during deglaciation indicates that **antarctic temperature starts to rise several hundred years before CO₂** [emphasis added] (Monnin et al., 2001; Caillon et al., 2003).”

Remarkable! Of course, no hint of such contrarian findings can be found in the “Summary for Policy Makers”: why confuse these poor minds with 700,000 years of facts? Also, whereas Figure 3 did make it into the Technical Summary (p.24), as if by magic the crucial fact that **temperatures lead greenhouse gas changes** somehow was never “summarized”. Rather the 700,000 year data record is cited as if to confirm all the bad 20th century happenings. And now we have a second, independent record dating back to 800,000 and 900,000 years.

Other research results seem to show evidence of similar CO₂ variations induced by temperature changes during the Holocene: The CO₂ reconstruction through the early

²² The term “common good” would be a crass overstatement, given the exorbitant policy restrictions the IPCC then advocates, based on its misleading presentation(s) and incantations.

Holocene bears a striking similarity to reconstructed solar activity changes. This may suggest a rapid response of climate to minor changes in solar activity during this dynamic period, which in turn impacted the global carbon cycle. This can, to some extent, also be seen in the climatic responses associated with the Maunder Minimum in the mid-17th to early 18th centuries. The reconstructed CO₂ changes also show a distinct similarity to indicators of changing solar activity. This may suggest that at least the Northern Hemisphere was particularly sensitive to changes in solar activity during this time and that atmospheric CO₂ concentrations fluctuated via rapid responses in climate.²³

What evidence does/can the IPCC provide that such demonstrated cause and effect relationship has changed all of a sudden these past 150 years? The burden of proof is on the IPCC – but is met with deafening silence. This may also explain the non-correlation of CO₂ changes and temperature changes in the 20th century, another issue the IPCC sidesteps (Figure 12)²⁴:

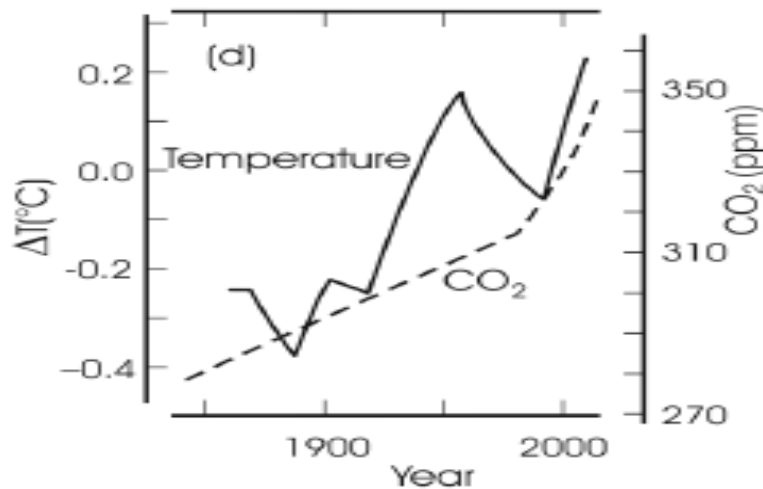


Figure 12: Non-Correlation of Temperatures and CO₂ in the 20th Century

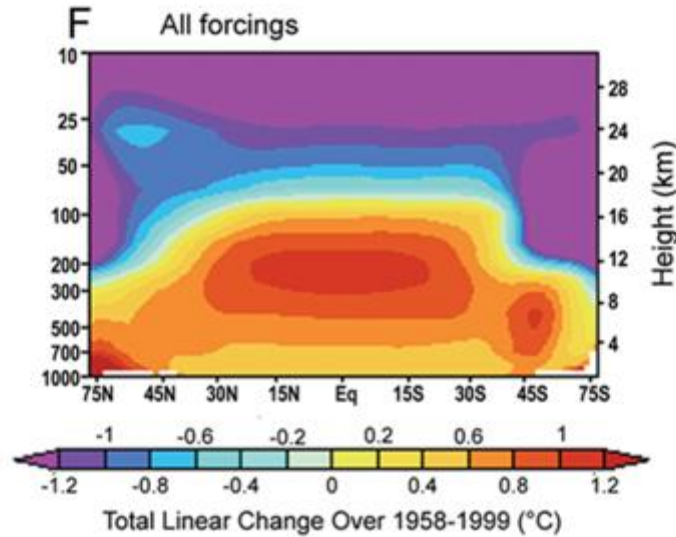
Whereas CO₂ increased steadily throughout the 20th century, temperatures did not: in fact there was a significant cooling of temperatures between 1940 and the mid 1970's , leading some of today's Kyoto consensus scientists to worry about the horrible consequences of a Global Winter.

Which raises the broader question: how well do all these costly simulation models do in explaining the recent decades, much less the future to come?

²³ C.A. Jessen et al, "CLIMATE CHANGE, SOLAR ACTIVITY FORCED CO₂ VARIABILITY IN EARLY HOLOCENE" Global and Planetary Change 57:247-260, June 2007

²⁴ Veizer, J. (2005) "Celestial Climate Driver: A Perspective From Four Billion Years Of The Carbon Cycle", Geoscience Canada, vol. 32, no. 1, 13-30.

As chance would have it, the answer was provided in the most thorough assessment of global temperatures in one of the most expensive efforts to-date, the U.S. Climate Change Science Program (CCSP) Report of April 2006.²⁵ There two most important Figures are shown, one summarizing the “back-casts” of the temperatures of the lower troposphere – the “thing” that is supposed to warm – using the most advanced climate models for the 1958-1999 period and one showing the actual measurements with radiosondes of precisely these areas for the same period (Figures 13 and 14):



**Figure 13: Climate Model Simulations
Zonal Mean Atmospheric Temperature Changes 1958-1999
[CCSP1.1 – Chapter 1, Figure 1.3F]**

versus the actual measurements:

²⁵ U.S. Climate Change Science Program, “Temperature Trends in the Lower Atmosphere – Steps for understanding and reconciling Differences”, April 2006.

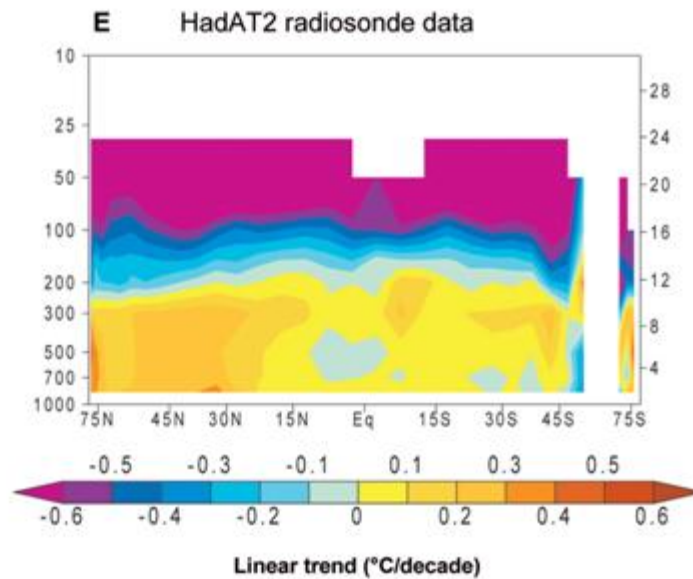


Figure 14: Radiosonde Data of Zonal Mean Temperature Changes from Equator to Polar Regions, 1958 – 1999 [CCSP1.1 – Chapter 5, Figure 7E]

The right vertical axes measure altitude in kilometers; the horizontal axes measure latitude from 75 degrees North to 75 degrees South; the bars below the graphs indicate temperature changes from -1.2°C to $+1.2^{\circ}\text{C}$. The climate models ‘predict’ a significant warming of 1°C or more, principally concentrated in the tropics between 30 degrees North and 30 degrees South at an altitude between 7 and 14 km. Observations show no significant warming anywhere in this zone. Given a choice between models and reality, clearly reality – the actual measurements – should be given priority: the models are clearly wrong. Furthermore, the observations confirm the results of experiments that show increasing carbon dioxide in an atmosphere rich with water vapor will result in little or no warming.

It is quite evident, even without any statistical analysis, that the climate models fail miserably in explaining for the past decades what actually happened where, after all, the actual data which the climate models are supposed to simulate are known. This becomes obvious when looking at the tropical zone, the area which often is projected to suffer the most dire consequences of Global Warming. The Climate Model simulation results are plotted with the actual temperature measurements for a range of altitudes (Figure 15):

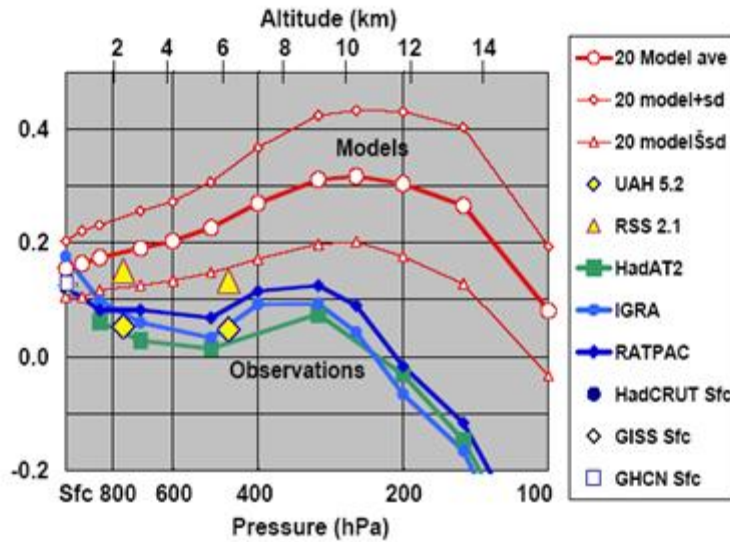


Figure 15: Disparity of Observations vs. Climate Models Simulations of Tropical Zones (Douglas, Knox, Pearson, Singer GRL-2006)

The left vertical axis measures ‘predicted’ and ‘measured’ temperature changes in degree Celsius, the horizontal axis depicts altitude (in km) and, equivalently, atmospheric pressure (in hPa).

The disparity between the ‘predicted’ [red lines] vs. the actual measurements [blue and green lines] could not be more embarrassing: while the climate models show a **significant rise** throughout the altitudes, the actual measurements show **unchanged and falling** temperatures for the period.

Conclusion: the “fingerprints” show that the climate models are faulty and fail to explain climate drivers as assumed in the models – principally greenhouse gases such as CO₂ - and thereby prove that variations in CO₂ fail to explain climate change and climate drivers. Rather than the “proclaimed consensus” that CO₂ and by implication mankind are responsible for Climate Change, the evidence shows that the climate change models fail in explaining climate reality – a far cry from “proof” of human causation.

So, if not CO₂, what is the temperature record and what causes climate to change? What are the prospects for further change?

The Temperature Record.

According to the IPCC this is the temperature record and outlook (Figure 16):

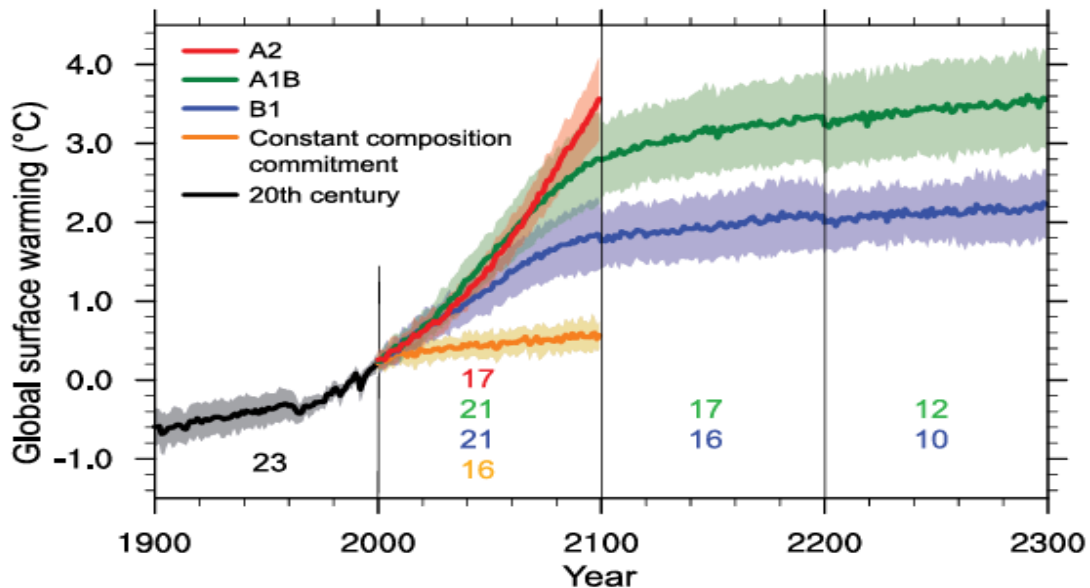
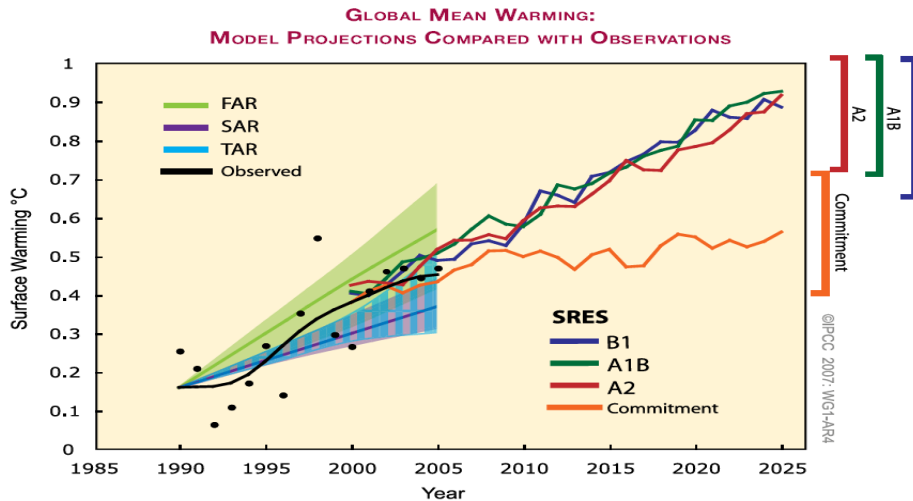


Figure 16: IPCC Reconstruction and Projection of Temperatures 1900 through 2300 – Summary for Policy Makers

But then again the “simulations” shown in this authoritative projection, meant to scare one and all into drastic CO₂ cuts, do not “reconstruct” the 20th century temperature record, shown in broad outline earlier in the Summary: how could they, given that their [IPCC’s] alleged main driver for climate change was a steadily increasing CO₂, but temperatures actually fell between 1940 and the mid 70’s?

Most interesting in Figure 16 is the orange line labeled “Constant Composition Commitment”: while sounding most reasonable – after all who would be against “constancy” and “commitment” - nevertheless these innocent terms hide one of the most radical interventions into the market economies ever proposed – including the excesses of totalitarian wars and the failures of socialist planned economies throughout the 20th century: the ‘orange’ scenario proposes to freeze CO₂ output, worldwide, to the year 2,000 levels – something utterly unrealistic, indeed idiotic. But worse [for the IPCC] or better [for the skeptics] is to come:

Whereas the simulations show a steady advance of Global Temperatures under different policy scenarios – with a flattening if we were to limit CO₂ outputs globally to 2000 levels (Figure 16) - the actual temperature data seem to move already at the “steady” scenario (Figure 17):



**Figure 17: Global Mean Warming:
Model Predictions(2000-2025) vs. Observed Values (1985-2005)
IPCC 2007 Technical Report p. 69**

All of which is quite breathtaking: the “predictions” plotted in Figure 17 by the IPCC show their “masterworks” of the First Assessment Report (FAR - 1995), the Second Assessment Report (SAR-2001) and the Third Assessment Report (TAR – 2007). Somehow the IPCC conveys a remarkable “constancy” of the simulated predictions – indicating either no new work (i.e. using the fallacies and prejudices of old) or tweaking and “fine-tuning” model parameters so as to match what is “predicted” with the given projection(s) of assumed warming. Soviet economic planning and overachievements thereof used the same “methods”: Potemkin villages of scientific over fulfillment of what is expected by the IPCC Politbureau to assure additional – even increased – funding of the next “six year prediction plan” quota of misery. It is quite obvious that the “projections” fail to even catch the temperature variations of the past 100 years – the ups and downs : we have now entered the smoothed world of increase certainty of increased Global Warming, all caused by humans. Temperature variances and cyclicities have been abolished – forever – so that the believers are not disturbed by facts and can contemplate the horror of Global Warming and the incipient end of mankind and civilization as we know it.

Cut absolute CO2 emissions – worldwide – to year 2,000 levels – and salvation shall be near. Ideally – or implicitly – this shall be established through an IPCC “Orange über Alles” Diktat, with IPCC Schutz-Staffeln enforcing the emission proclamations.

But before accepting the advent of the Fourth Reich of the IPCC to assure Global Environmental Happiness, here a few questions:

Why would the scientific approach be to show *simulations* as prime example in the Summary for **policy makers** without data points [Figure 16], but the actual data and projections are relegated to page 69 of the **Technical Report** [as shown in Figure 17].

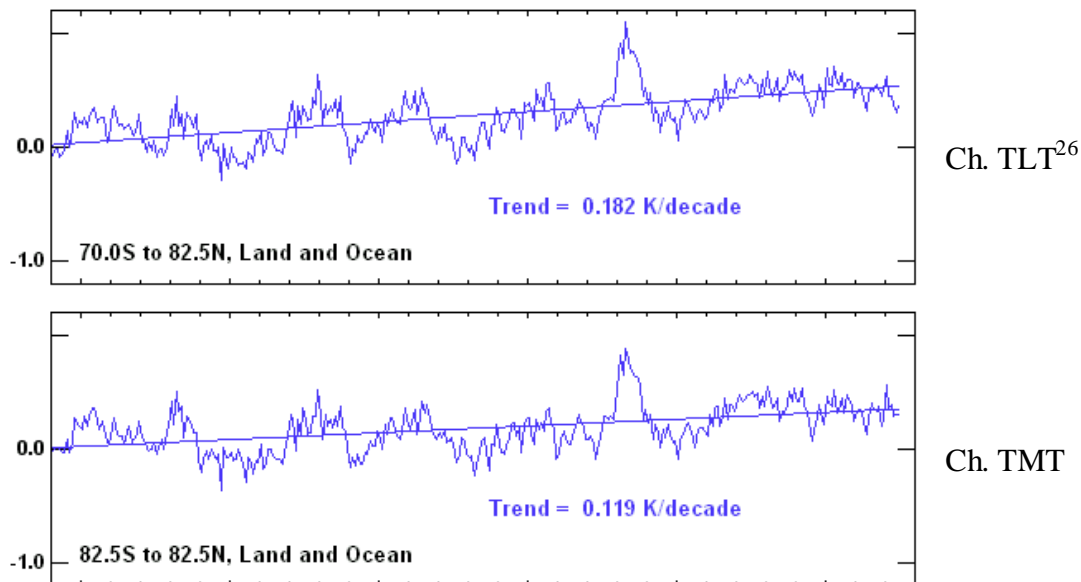
Why? Quite simple: the “observed” data plotted for 1985 through 2005 indicate **the orange line as “best predictor”** for what is to follow in the 21st century, quite

embarrassing. In fact, this is the ONLY graph depicting actual data and a “best statistical fit” for those data for the past 20 years or so - the black dots and the fitted “S” curve leveling out into the 21st century. The wide disparity of observations (black dots) demonstrates that any attempt to “fit a curve” will result in one with a massive range of error. The observations for most of the early 1990’s are well below the curve, but the observation for 1998 is substantially above the curve. Indeed, anyone familiar with errors in model predictions would realize that the shape and direction of the curve are doubtful. Yet the curve is presented without any effort to show the range of error.

And yet, this is the ONLY graph that tries to show a correlation between the observed data and what the “Climate” models are trying to predict – smoothly, in near total agreement, over hundred(s) of years, with no ups or downs – the world the IPCC seems to live in.

Which raises a host of other issues:

First of all, **why have global temperatures ceased to rise for the past ten years**, ever since 1998? The record of global temperatures of the troposphere as measured by satellites (corrected for the slight orbital decay adjustment) is shown in Figure 18:



²⁶ MSU and AMSU "Channels"

TLT	= Temperature Lower Troposphere	MSU 2 and AMSU 5
TMT	= Temperature Middle Troposphere	MSU 2 and AMSU 5
TTS	= Temperature Troposphere / Stratosphere	MSU 3 and AMSU 7
TLS	= Temperature Lower Stratosphere	MSU 4 and AMSU 9

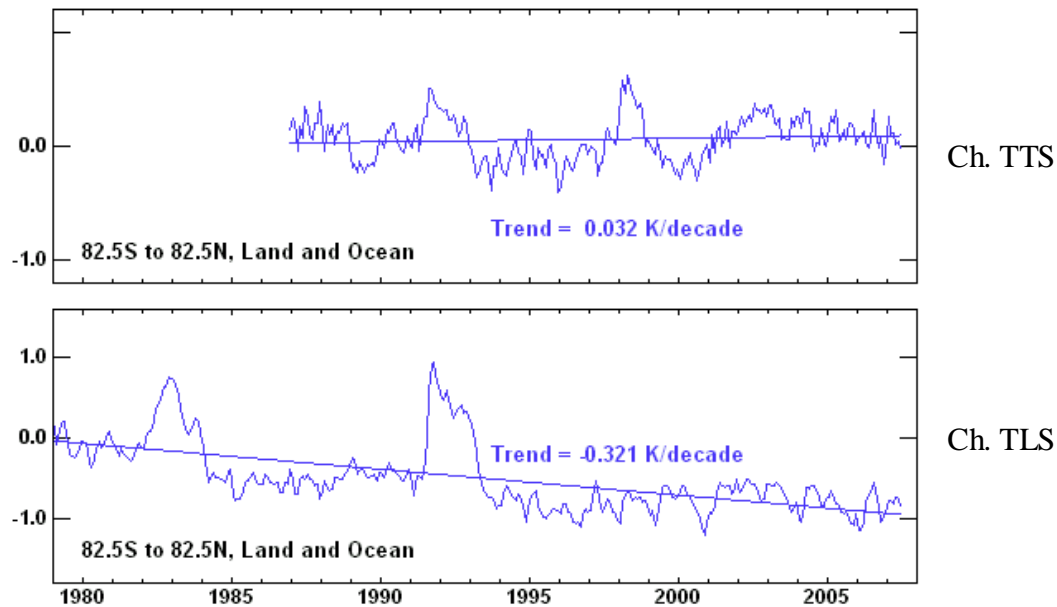


Figure 18: Global Lower Troposphere Temperatures (Satellites)
[Vertical Measures are Global Brightness Temperature Anomaly (K)]²⁷

Global, monthly time series of brightness temperature anomaly for channels TLT, TMT, TTS, and TLS. For Channel TLT (Lower Troposphere) and Channel TMT (Middle Troposphere), the anomaly time series is dominated by ENSO events and slow tropospheric warming. The three primary El Niños during the past 20 years are clearly evident as peaks in the time series occurring during 1982-83, 1987-88, and 1997-98,

²⁷ J. R. Christy, R. W. Spencer, W. D. Braswell, "MSU Tropospheric Temperatures: Dataset Construction and Radiosonde Comparisons", *Journal of Atmospheric and Oceanic Technology*, vol. 17, pp. 1153-1170, 2000. See also <http://www.ghcc.msfc.nasa.gov/temperature/>

Carl A. Mears, Matthias Schabel, Frank J. Wentz, "A reanalysis of the MSU Channel 2 Tropospheric Temperature Record", *Journal of Climate*, Volume 16, pg. 3650-3664, November, 2003.

Carl A. Mears and Frank J. Wentz, "The Effect of Diurnal Correction on Satellite-Derived Lower Tropospheric Temperature", *Science*, published online 11 August 2005; 10.1126/science.1114772.

Carl A. Mears, Matthias Schabel, Frank J. Wentz, Benjamin D. Santer, Bala Govindasamy. "Correcting the MSU Middle Tropospheric Temperature for Diurnal Drifts", *Proceedings of the International Geophysics and Remote Sensing Symposium*, Volume III, pg. 1839-1841, 2002.

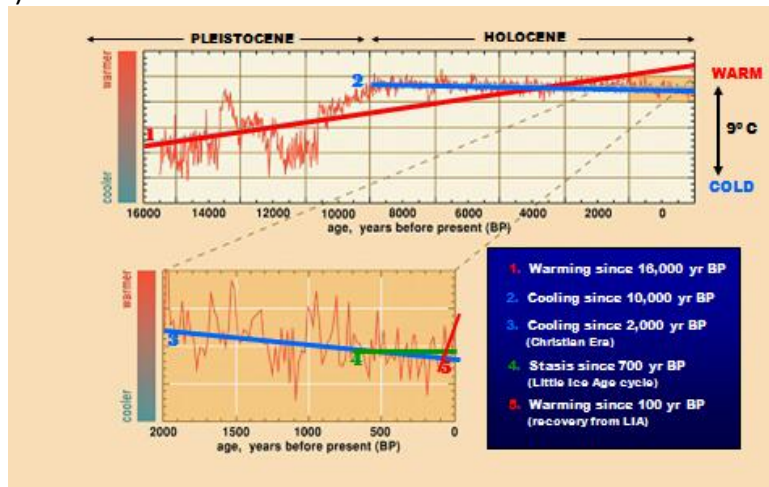
Prabhakara, C., R. Iacovazzi Jr, J.-M. Yoo, G. Dalu, "Global warming: Estimation from satellite observations", *Geophysical Research Letters*, Vol. 27(21), 3517-3520, 2000.

Matthias C. Schabel, Carl A. Mears, Frank J. Wentz, "Stable Long-Term Retrieval of Tropospheric Temperature Time Series from the Microwave Sounding Unit", *Proceedings of the International Geophysics and Remote Sensing Symposium*, Volume III, pg. 1845-1847, 2002.

with the most recent one being the largest. Channel TLS (Lower Stratosphere) is dominated by stratospheric cooling, punctuated by dramatic warming events caused by the eruptions of El Chichon (1982) and Mt Pinatubo (1991). Channel TTS (Troposphere / Stratosphere) appears to be a mixture of both effects. The maximum temperatures reached in 1998 were 0.8°C above the average, temperatures since then at most 0.4°C above.

One last remark to these data: please also note that the first Channel, the TLT Channel, only includes data down to 70 degrees South, excluding the persistently COLDER region of the Globe, which may account for some of the higher temperature trends derived from that Channel. All others are symmetric North and South to 82.5 degrees.

Before discussing the possible components of climate change, what is it now with temperatures: are they rising, falling or steady? The answer is an unequivocal YES TO ALL! (Figure 19):



**Figure 19: Temperature Trends from Greenland Ice Core Data:
Rising (16,000 years), Steady (10,000 years), Sinking (since 2,000 years), Steady (past 1,000 years) and Rising (past 150 years)**

Temperature increases like the past 150 years are nothing unusual. E.g. a nearly identical rise can be seen in data of some 26,000 years ago (Figure 20):

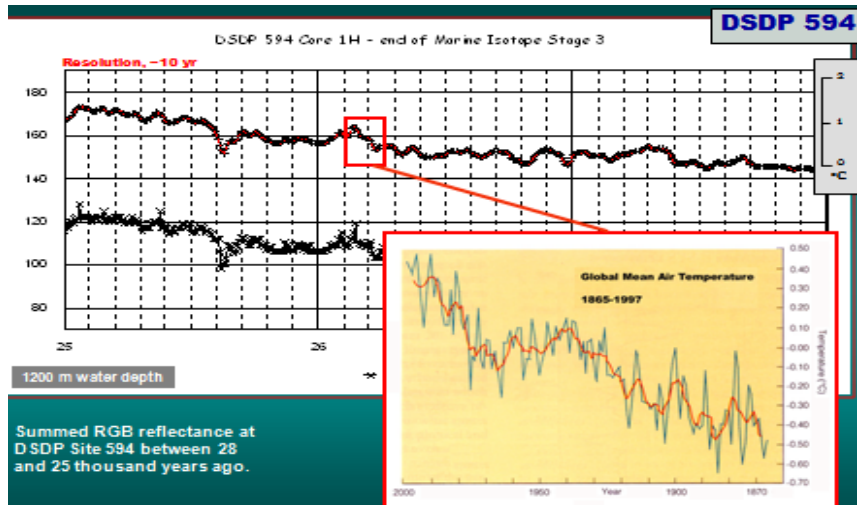
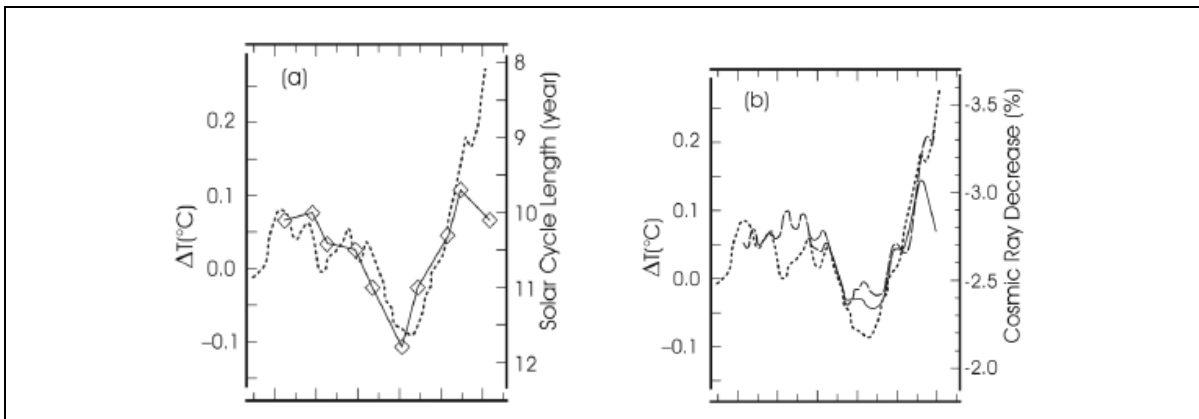


Figure 20: Temperature increases some 26,000 years ago, estimated from Ocean sediments off New Zealand (25,000 to 28,000 years ago).

If not greenhouse gases, what causes temperature/climate change? Well, whatever it is, the actual mechanism must relate to the Sun and the various cycles between the Sun, Earth and their movement through the Milky Way.

Drivers of Temperature Change.

Whereas CO₂ correlates poorly with temperature changes in the 20th century, here various parameters of Solar activity and temperatures (Figure 21)²⁸:



²⁸ Veizer, J. (2005) "Celestial Climate Driver: A Perspective From Four Billion Years Of The Carbon Cycle", Geoscience Canada, vol. 32, no. 1, 13-30.

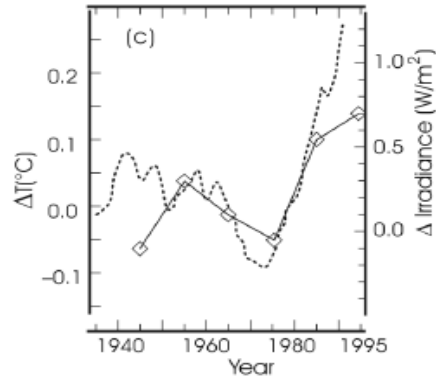


Figure 21: Are Solar Cycles, Cosmic Rays and Changes in Irradiance the Drivers of Temperatures and Climate Change?

As can be seen from these different plots of temperatures vs. Solar cycles, cosmic ray activity and changes in irradiance, they all “track” temperature changes rather nicely – including the significant fall in global temperatures from 1940 through the mid 1970’s. The horizontal axes in each case depict time from 1940 to 1995; the vertical axes on the left each depict change in temperatures (in °C) and the vertical axes to the right Solar Cycle Length, Cosmic Ray Decrease (in %, a decrease increases warming) and change in irradiance (W/m^2). So the driving force(s) may well be buried there, since by any stretch of the imagination it is unlikely that human activities and events in and around the Earth influence the activities of the Sun.

In addition, a new hypothesis has emerged from a Russian-Swiss research effort under L.N. Makarova et. al. on the effects of Solar radiation on the Middle Stratosphere.²⁹ Their main finding: A new mechanism of the thermal heating in the middle stratosphere by the solar wind induced electric currents may be at work. This process occurs mostly at 20-30 km altitude where a permanent layer of heavy ion-clusters is produced by the galactic cosmic rays and by some other sporadically occurring sources. The currents in this layer control the electric fields in the stratosphere. Numerical estimation of the possible atmospheric heating rate due to this process shows that such heating could reach (1-2) K/day that is comparable to the heating due to the absorption of the solar UV radiation. Thus, the electric fields and currents induced by the solar wind energy are candidates for producing relevant additional heating in the middle stratosphere (altitudes 20-30 km). This process may alter the thermal structure of the polar stratosphere and the structure of the polar stratospheric vortex, and as a result, the

²⁹ Makarova L.N., A.V. Shirochikov, A.P. Nagurny and E. Rozanov and W.Schmutz, “Parameterization of the Heating in the Middle Stratosphere due to Solar Wind induced Electric Currents”, Arctic and Antarctic Research Institute, Saint - Petersburg 199397, Russia and Physikalisch-Meteorologisches Observatorium, Davos, CH-7260 Davos Dorf, Switzerland, INTAS project 2001-0432

global climate/weather system. Contrary to the efforts documented in the U.S. CCSP effort cited earlier and the failure to reconstruct through CO₂ forcings the measured temperature profiles of Segments of the atmosphere these researchers claim to have succeeded with a rough reproduction of these zones of the Middle Stratosphere.³⁰

We now know that the Solar spots and their cycles are determined by a 22 year cycle in the switch of the Solar polar fields: from North Pole to South Pole (eleventh year) and from South Pole back to the North Pole (22nd year).

Beyond that, additional cyclicities seem to occur: an ~87 year cycle (~four times 22), a ~210 year cycle (~ ten times 22 year Solar polarity cycle), a ~1470 year cycle (~ seven (eight?) times ~210 year cycle). All these seem to be based on the “dance” of the Earth around the Sun and variations thereof over time. It’s the movement of the Earth around the Sun and the movement of the Solar System through and around the Milky Way that determines our climate for the past 4 billion plus years. The principal components are depicted in Figure 22:

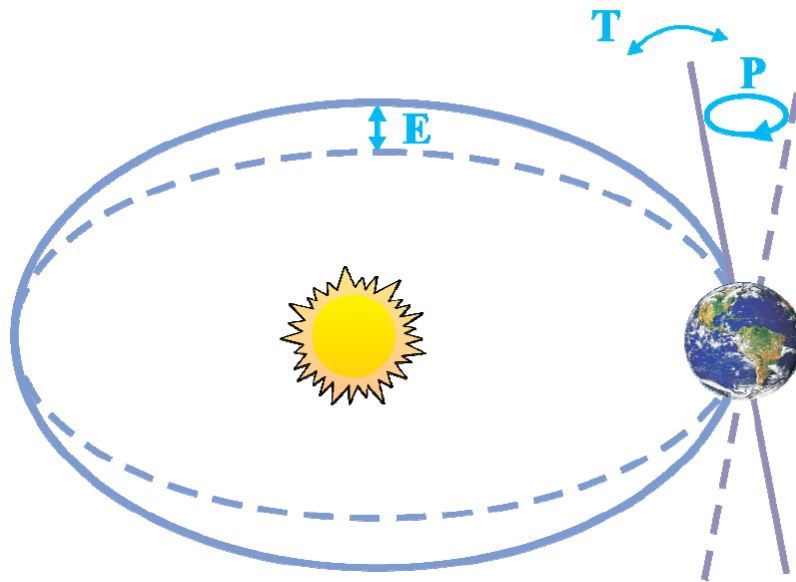


Figure 22: Earth’s orbital changes determine the ice age cycles.
[IPCC 2007, Paleoclimate]

³⁰ Makarova L.N., op. cit. “Several rough approximations have been made in the above calculations, which nevertheless did not prevent to get realistic results. The aim of the further studies is to elaborate more accurate values of the parameters involved in these calculations. The preliminary calculation of the global Joule heating fields allows to conclude that the proposed method of the Joule heating rate parameterization is physically correct and meaningful.”

In Figure 22 “T” denotes changes in the tilt (or obliquity) of the Earth’s axis, “E” denotes changes in the eccentricity of the orbit and “P” denotes precession, i.e. changes in the direction of the axis tilt at a given point of the orbit (today pointed at Polaris, long Northern summers, short winters) [Rahmstorf and Schellnhuber, 2006] .

Beyond that, of course, we know about the ~20,000 and ~40,000 year Milankovitch cycles resulting from the peculiarities of the Earth/Sun movements through the Milky Way, wherein the North and South regions of Earth “switch” the long summers/short winter cycles and the North pole points to Vega instead of Polaris. Beyond that the Antarctic ice core data indicate clearly a 100,000 year climate cycle for the last one million years – the cycles shown so distinctly in Figures 7 and 8 above. These are the “micro” fluctuations of up to 100,000 years.

A “scientific” approach to climate change and temperature predictions would be to take all these different cycles and see **how much remains to be explained** in the past 150 years beyond these cyclical movements: if a significant deviation from these “natural” movements can be found, maybe something needs to be explained after all. Well, bad news again for Climate disaster adherents: recent work by Ernest c. Njau establishes **a close to zero “remainder”**. To quote: “This establishment implies that, contrary to previous expectations and opinions, anthropogenic activities hardly generate significant net alterations in global temperature or solar energy patterns. However, these anthropogenic activities can significantly alter other parameters of the surface–atmosphere system...” and “...As detailed in Refs. [15–21, 26, 28, 29], the global temperature variation patterns since 1700 AD (including the much-reported post-1970 global warming trend) consist of a series of sinusoidal amplitude-modulation envelopes and beats-containing amplitude-modulation envelopes. All these envelopes (together with their phase-reversal sequences whose theory is given in Ref. [21]) are significantly related to the ~800 years solar cycle, the 90–120 years solar (or sunspot) cycle and the 180–250 years solar cycle in the manner explained in Refs. [19, 21, 28]. The post-1970 global warming trend, for example, coincides with the last rising phase of a large (temperature) sinusoidal envelope related to the 90–120 years solar cycle, and that this particular envelope is itself mounted or carried on the ongoing rising phase of another larger (temperature) sinusoidal envelope related to the 180–250 years solar cycle [15–21, 26, 28]....”³¹

Over 1,300 years we find the following pattern – still being refined and improved as to data quality and resolution (Figure 23):

³¹ Njau, Ernest C., 2007. Formulations of human-induced variations in global temperature. Renewable Energy Vol. 32, No 13, pp. 2211-2222, October 2007

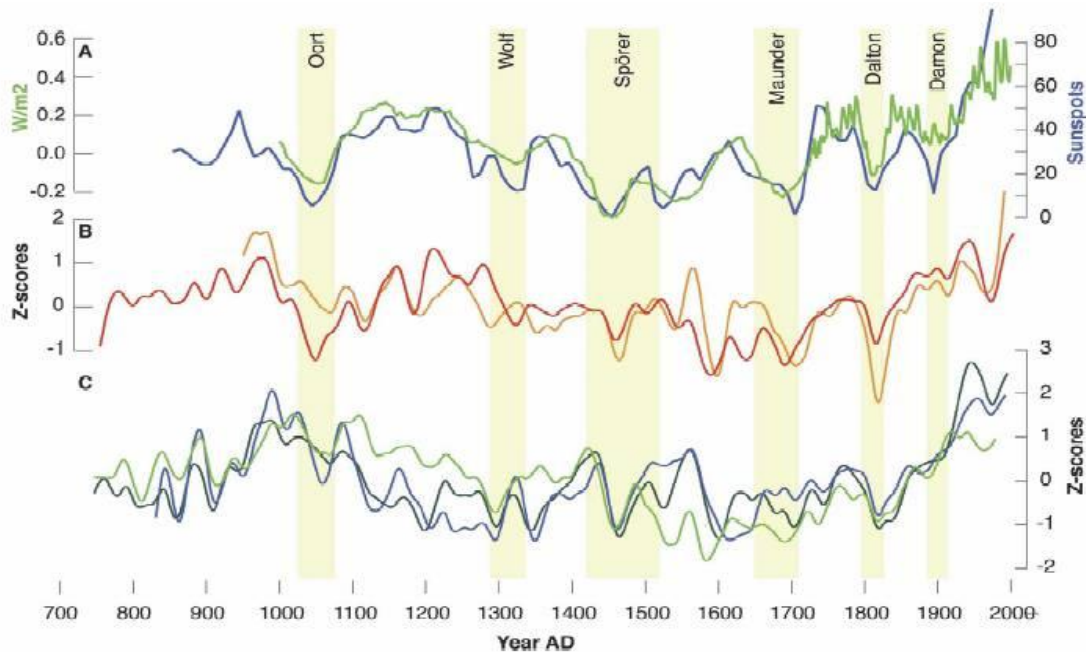
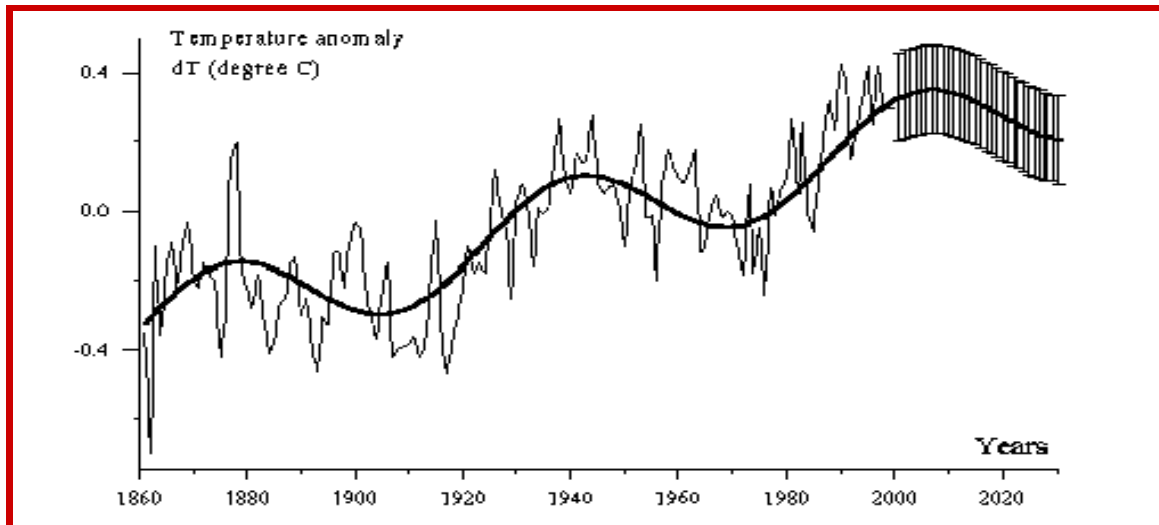


Figure 23: 1,300 Years of Solar Activity, Temperatures, Climate Change

The art and the science in measuring such data and establishing reliable records is enormous. To illustrate the difficulty of “measuring” temperature and related weather/climate data is illustrated in the Appendix for the United States Historical Climatology Network (USHCN) and their exemplary effort for the US data series since 1895. The standardized z-scores of temperature and precipitation are statistical techniques applied to raw measurements to establish comparable temperature and precipitation records.³²

Based on all this and related expertise, members of the Russian Academy of Sciences in St. Petersburg have predicted the likely outbreak of a Little Ice Age just as in the Middle Ages several hundred years ago (Figure 24):

³² **Temperature Categories Used for Growing Season Calculations:** Monthly and annual temperatures are usually well represented by the normal distribution; therefore, the Z-score (or standardized departure from average) was used to classify, by category, the growing season length. The growing season Z-score is calculated as $z(i) = (T(i) - T(\text{avg}))/s$, where $T(i)$ is the growing season length associated with a given Z-score, $z(i)$, $T(\text{avg})$ is the mean annual growing season length over the selected period (e.g. 1971-2000), and s is the standard deviation of the annual growing season lengths over the selected period (e.g. 1971-2000). For example, MUCH ABOVE NORMAL would represent a amount greater than a 1.282 standard departure above the mean. In a normal distribution, the NORMAL category will contain 40% of the values. The ABOVE NORMAL and BELOW NORMAL categories will each contain 20% of the values, and the MUCH ABOVE and the MUCH BELOW categories will each contain 10% of the values. The 30% category shown in the WETS Table represents the class limit values associated with the NORMAL category Z-values of -0.524 and 0.524.



**Figure 24: A Small Little Ice Age in ten to 15 Years?
60 Year Cyclicality in Global Surface Temperature
(Klyashtorin und Lyubushin, 2003 – Energy and Environment 14, 773-783)**

Given the earlier (hidden) findings of the IPCC (Figure 17 above), wherein the “extrapolation” of the data fit curve (black line) based on the last decade indicate a slowing down of Global Temperatures toward the “orange line” projection (the one with “Year 2000” constant global CO₂ levels), but without any drastic cuts in human CO₂ output to the atmosphere: good news indeed, as the Russian projections, Nja u’s work and the very IPCC data-fits and simulated projections for once seem to agree, except of course, for the need to cut CO₂ emissions, which by the very evidence of the IPCC 2007 report itself has been shown to be caused by temperature changes, rather than the other way around. Good news indeed, but one would not know it reading but the “Summary for Policy Makers” (i.e. the sources of further funding).

Three more themes will be addressed: is Global Warming intrinsically “bad” or “good” should it continue ; what is the link between Solar variations and temperature variations on Earth; and whence the “Precautionary Principle”.

Is Global Warming intrinsically “Good” or “Bad”?

In the 1970’s the National Museum of Natural History in Washington D.C. – the museum accused of late to submit to “political pressure” in not unequivocally predicting impending Global Doom due to Global Warming – dedicated three rooms to Climate Change and the horrible consequences of ... a Global Ice Age. This exhibit was on display well into the 21st century until a few years ago. Bottom line: an Ice Age would be horrible, have drastic negative economic and ecological consequences, lead to wholesale extinction of species, hunger, pestilence, possibly the end of mankind as we know it.

Well, the panels have been changed to Global Warming as of late, but the cries of the Climate Cassandras remains the same: wholesale extinction of species, drastic negative economic consequences, hunger and pestilence, possibly the end of mankind as we know it. All you have to do is “push a button” and you will know precisely what the world will look like 50 years from now: doom, gloom, disasters.

Well, the only negative effect of further Global Warming that on the face of it at least looks logical is the melting of the ice on Greenland and the Antarctic (not the Arctic of course, difficult as that is to explain even to habitual drinkers of “on the rocks” libations, where glasses fail to overflow despite the melting of the ice).

Well, the ice has been melting seriously now for about 16,000 years and will continue to do so even with Little Ice Ages in between (Figure 25):

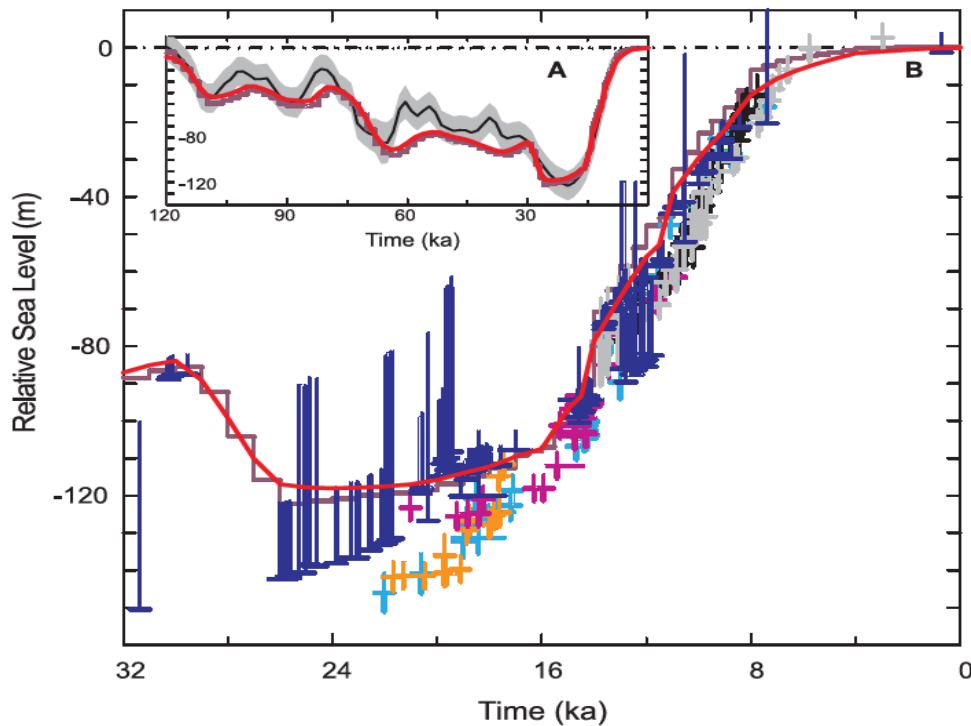


Figure 25: The Formation and Melting of the Earth’s Ice: 120,000 Years and 32,000 Years (IPCC 2007)

We are where we were 120,000 years ago. Not only that: the major melting of ice is behind us and occurred between 16,000 and 7,000 years ago, with a series of truly catastrophic events such as the flooding of the Black Sea some 7,500 years ago spreading all the residents into the four corners of the known world, the horrendous floods, possibly periodic, of the Scablands in Washington State and the Rocky Mountain area and untold disasters yet to be documented. But the curve has flattened out, most of the ice is gone, some remains and when all is gone sea levels indeed will rise another few tens of meters over thousands of years and be where they were before ice ages. We

have survived – thanks amongst others to Gilgamesh /Noah - and will adapt also to whatever further changes nature will bring. But the melting of ice is not something we can stop: nowhere is that proposed, not even by the IPCC. The ice will melt, lest another ice age cometh – neither one of which we can stop, or bring about.

Yet even if the current warm climate were to persist, it is doubtful that we would reach an “ice free” Northern Hemisphere of two+ million years ago, when all this cooling started for serious, or even an ice free Antarctic of five+ million years ago: we would have returned to what in biblical times is described as “Paradise” – where one and all could cavort around naked quite comfortably.

The question is whether, in principle, less ice or more ice is good for mankind and nature. And the resounding evidence is: less ice. Here but two examples:



Figure 26: Europe during the Climate Optimum of the Holocene (6 to 9,000 years ago) and the Ice Age (21,000 years ago) (Ulrich Berner, *Klimafakten*, 2001)

In Figure 26 Europe is shown based NOT computer simulations, but on extensive archeological and climatological records:

- (a) “Option A” during the Holocene Climate Optimum (now being rechristened by some), where temperatures were 2⁰C to 3⁰C warmer than today and with higher humidity. At that time conditions for intensive agriculture extended practically throughout a glacier free Europe, with the “green zone” of most bioactive areas covering most of Western and Central Europe, as well as “Little Asia”; and
- (b) “Option B” during the last Ice Age of 21,000 years ago, where glaciers covered all of Northern Europe, including all of the United Kingdom, the Benelux States, most of Germany and Central Europe, all of the Alps – today the richest economic zone of Europe if not the world - and some of the Apennines and the Pyrenees: a true environmental, biological, economic and societal disaster, obvious on “optical inspection” without the need of “sophisticated” computer models known as climate models today.

We also have, thanks to NCDC-NOAA, a fairly accurate depiction of conditions during the Holocene optimum of the North Polar regions (Figure 27):

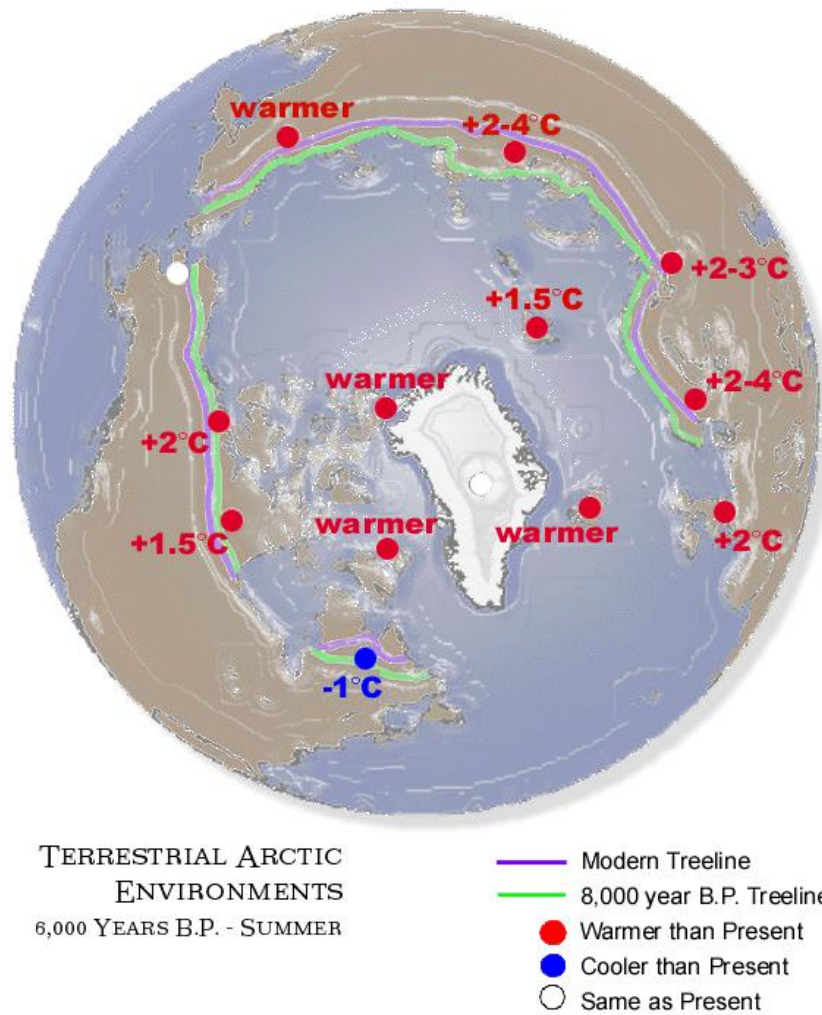


Figure 27: Temperature (6,000 years) and forest line (8,000 years) ago (Summer) Comparisons to Present in the Northern Region (NCDC-NOAA)

As is clearly evident from these data (not simulations) the biosphere extended substantially further North, Greenland could be circumnavigated, just as one suspects also during the time of the Medieval Climate Optimum at the time of the Viking expeditions and Medieval maps showing the full contours of Greenland, with the exception of one single point around Northeastern Labrador (-1°C). The polar bears survived this climate optimum quite well, it seems. They will also survive the current warming.

Related thereto: New Danish research shows that large parts of Greenland were covered by forest. This was discovered by analyzing fossil DNA which had been preserved under the kilometer-thick icecap. The DNA-traces are likely close to 450,000 years old, and that means that Greenland was also covered in a large ice sheet 125,000 years ago during the earth's last warm period, Eem. This was so while the climate was five degrees warmer than the interglacial period we currently live in.³³

Yes, some coastal zones will have to be abandoned: “we” have done that now for over 16,000 years and will continue to do so. Many a harbor city of antiquity now is flooded by the sea. But we also gain immensely due to the dramatic expansion of “living space” throughout the Northern Hemisphere and, at some future time, maybe even in the Antarctic. Two relevant empirical observations thereto:

Will Global Warming increase or decrease rainfall/humidity?

Horror stories are generated in computer models and let loose on the innocent readers: Europe is going to become a desert, the same is predicted by some for the United States, a “global dustbowl” is “predicted”. Again, the measured data and the archeological and climatological records indicate exactly the opposite. It is also counterintuitive: higher atmospheric temperatures mean higher atmospheric humidity, hence higher rainfalls somewhere – certainly not less. Which goes to explain why the Sahara was covered with grazing lands and habitation during the Holocene (revealed first by satellite images in the 1970’s). Many other examples can be cited. Here the actual measurements over oceans for the past decades (Figure 28):

³³ Eske Willerslev, “Grønland var vitterlig grøn”, announcement of the University of Copenhagen, July 6th, 2007

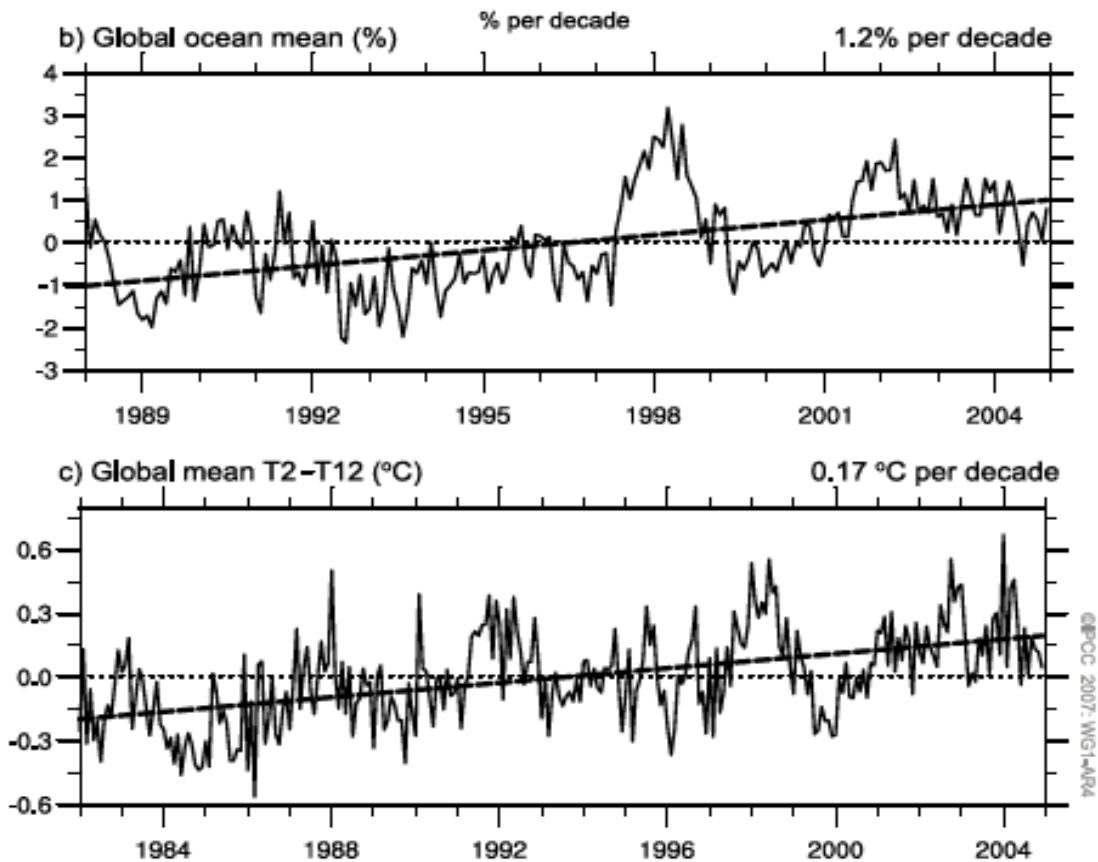


Figure 28: Global Mean Humidity (1988-2005) and Temperature Increases (troposphere, oceans) (IPCC 2007)

This is also evident, to the layman at least, when comparing humidity vs. dryness between Tropical (warm) and Antarctic (cold) areas: the former are quite humid, the latter the driest places on Earth, with close to zero humidity. For the same reason one needs to “humidify” lips in Winter and while on excursions on glaciers.

Will Global Warming Increase or Decrease the Severity of Weather Fluctuations?

Again and again horror scenarios are painted by the Global Warming adherents as to the coming hurricane and tornado avalanche and much more drastic weather/climatic variations. Well, aside from the known US record of tornados and hurricanes which shows a clear “peak” in the 1930’s and a reduction and flattening since then, a much more detailed record for the past 50,000 years or so by now also indicates that warmer climates are more “stable” climates, whereas cold (ice age) periods cause much more violent year to year weather and climate fluctuations (Figure 29)

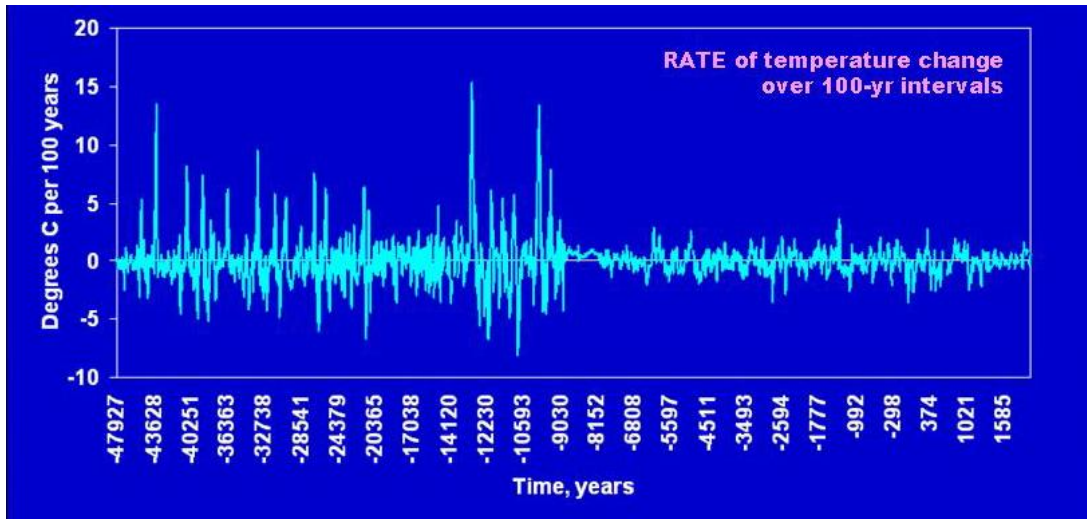


Figure 29: Temperature Variations of the Past 50,000 Years (GISP2 – Greenland Ice Cores) (Robert Carter)³⁴

These are exciting and relevant measurements indeed, from Greenland Ice Cores and they belie the general alarmist notion that warm climates lead to more violent weather events overall. This abatement of weather/temperature changes in warmer periods is intuitively explained by the simple fact, that with a general rise of global temperatures the polar regions will warm much more than the tropics – as evidenced also by the much shorter measurements mentioned earlier when comparing simulated to actual Tropospheric data for the most recent past. The rate of temperature rise has been many times higher in the past 50,000 years than it is in the 20th century.

These hypotheses and data are also confirmed by recent results of a Woods Hole study of hurricane intensities over the past 5,000 years and results of similar studies at Louisiana State University³⁵:

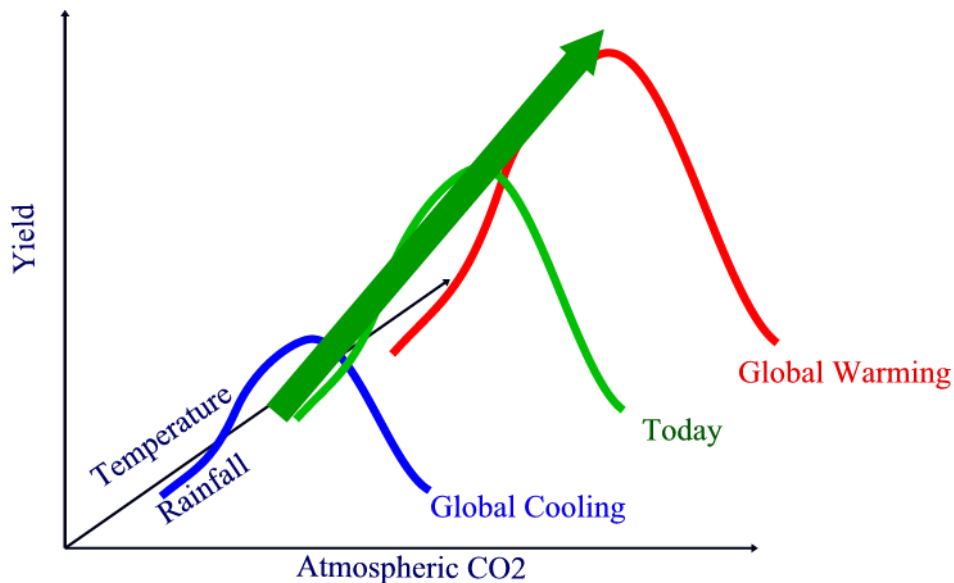
Will Global Warming Decrease or Increase Global Food Production/Wellbeing?

³⁴ After NOAA, GISP Ice Core Temperature and Accumulation Data, R.B. Alley, 2004

³⁵ Jeff Donnelly of Woods Hole and Kam-biu Liu of Louisiana State University. To quote Mr. Liu: “Our records go back about 5,000 years, and we definitely see a long-term cycle,” he notes. From about 5,000 to 3,400 years ago, hurricane patterns in the Gulf Coast were relatively mild. From 3,400 to 1,000 years ago, the region endured a “hyperactive” period. The past 1,000 years have been relatively placid. “The good news is that we are living in a quiet period,” Liu says. “The bad news is that if we think we have seen too many catastrophic hurricanes coming our way, we haven’t seen anything yet.”

Also: Catherine Brahic -- New Scientist, 6 June 2007: The recent increase in the number of major Atlantic hurricanes may just be a return to the norm after a period of unusually low storm frequency, say researchers. Johan Nyberg of the Geological Survey of Sweden and colleagues used marine sediment cores of coral samples from the northeast Caribbean to build a proxy record of wind shear and sea-surface temperatures since 1730, and from this they estimated hurricane activity since that time. [...] Nyberg says that, when considered in the context of the past three centuries, this [recent] sudden burst of large hurricanes is simply a return to the norm.

The “greening” of Earth with higher temperatures has another, most positive effect³⁶: food production – both yield and area – will expand substantially with increased warming. This is evident from NASA / NOAA Landsat images but, more importantly, also confirmed by extensive econometric studies in the 1970’s for Goddard Space Flight Center, when Global Warming was not an issue (indeed Global Winter was, based on the previous 35 years of sinking temperatures).³⁷ At that time crop areas and yields were compared county by county and over the complete available agricultural data record in North America – and for that matter also Russia and its allied Union members. The results are shown in Figure 30:



Yield vs. Temperature/Rainfall and CO₂

Figure 30: Increased Crop Yields from Higher Temperatures, Humidity and CO₂ Econometric Studies for Goddard Space Flight Center 1970’s

³⁶ Wittwer, S.H.: *Food, Climate and Carbon Dioxide: The Global Environment and World Food Production*, 1992, Boca Raton, Florida: CRC Lewis Publishers; Wittwer, S.H.: *Flower Power: Rising Carbon Dioxide is great for Your Plants*, 1995 *Policy Review* (Fall) 4-9 and Keeling, C.D., J.F.S. Chin, and T.P. Whorf, Increased Activity in Northern Vegetation Inferred from Atmospheric CO₂ Measurements, *Nature* 1996, 382:146-49

³⁷ Heiss, K. P.: “Econometric Models of Agricultural Supply: The Effects of Price and Weather on Wheat Production”, ECON Report to Goddard Space Flight Center, September 1977; Heiss, K.P., D.F. Bradford, H.H. Kelejian: “The Value of Information for Crop Forecasting in a Market System with International Trade: Theory and Empirical Results” ECON Inc., Princeton NJ, 1975; K.P. Heiss: “Economic Benefits of Improved Information on Worldwide Crop Production”, Report for NASA Goddard Space Flight Center, NAS-5-23412, 1977; K.P. Heiss: “An Integrated Model of the Value of Worldwide Wheat Supply Information in Production and Distribution”, Council of Economic Advisers, April 1977; K.P. Heiss, F. Sand, J. Bodechtel, D. Farley, J. Henkel “Economic Assessment of a European Remote Sensing Satellite System for Agriculture Applications”, ECON Report for the European Space Agency, August 1980

The increase in worldwide food (grain) production by 30% to possibly as much as 50% is due to two factors: one, increased yield (see Figure 22) and two, increased areas opened for cultivation throughout Northern America and Russia/Siberia. The detailed quantitative results are shown in the footnote.³⁸ The basic results of substantially higher global productivity with higher global temperatures have also been confirmed before³⁹ and since then in other empirical studies.⁴⁰

The positive relationship between temperatures and grain production has been known for some time, dating back at least to the time on Leibnitz. Figure 31 shows the historical relationship between wheat prices and temperatures (Solar activity) for local grain (wheat) markets in Lower Saxony:

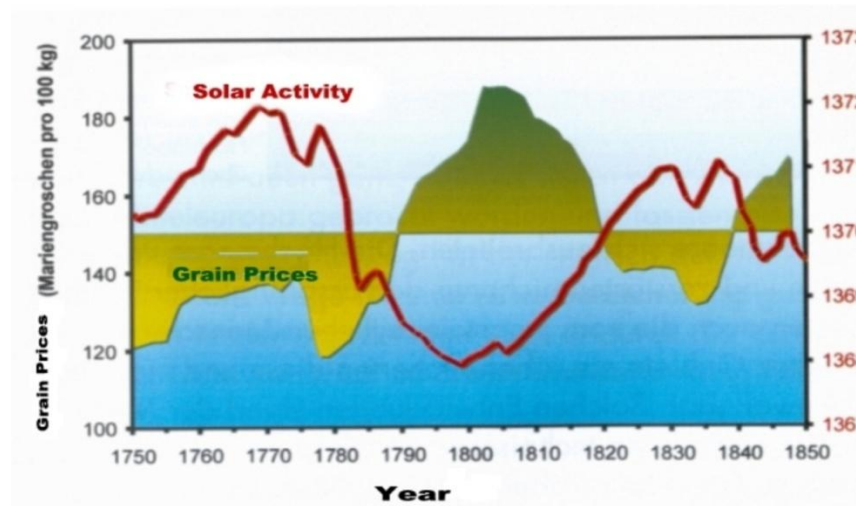


Figure 31: Wheat Prices and Solar Activity in Lower Saxony 1750 – 1850 (Ulrich Berner, *Klimafakten*, 2001)

³⁸ **WINTERWHEAT:**

$$\text{Yield} = 1.0537 - 0.02357 \text{ Area} + 0.4632 \text{ Trend} + 0.0194 \text{ W1} - 0.08036\text{W1}^2 + 0.02482\text{W2} - 0.04454\text{W2}^2 - 0.01246\text{W3} + 0.01188\text{W3}^2$$

with values for weather (rainfall, temperatures): **W1** for December, January and February; **W2** for March, April, May and **W3** for June, July, August. The regression coefficient is 0.9095; the standard deviation 0.1308; Rho 0.6308 and the t-value (Rho) 3.62; statistically significant and stable results. The t-values for the weather variables are 0.56 (W1), 0.45 (W1²), 3.0 (W2), 2.1 (W2²), 0.83 (W3) und 0.43 (W3²) – the values for March, April and May are particularly significant.

SPRINGWHEAT:

$$\text{Yield} = -0.17056 + 0.00033 \text{ Area} + 0.05429 \text{ Trend} + 0.6100\text{W1} - 0.17331\text{W1}^2$$

where W1 represent weather (rainfall, temperatures) in June, July and August. The regression coefficient is still 0.7994, the standard deviation is 0.1896, Durbin Watson 2.0. The t-values for W1 and W1² are 1.61 and 1.46, well within econometric acceptable values for economic production processes.

³⁹ Thompson, L.M.: "Weather and Technology in the Production of Wheat in the U.S.", *Journal of Soil and Water Conservation*, 24, 1969, pp. 220-224;

⁴⁰ Prentice, C., W. Cramer, S. Harrington, R. Leemans, R. Monserud and A. Solomon: "A Global Biome Model Based on Plant Physiology and Dominance, Soil Properties and Climate" 1992, *Journal of Biogeography* 19: 117-34 and Woodward, I., T. Smith and W. Emanuel: "A Global Land Primary Productivity and Phytobiogeography Model", 1995, *Global Biogeochemical Cycles* 9: 471- 490

This again has been confirmed in econometric studies of the 1970's and since⁴¹. This point is presented in such detail and with references to quantitative, empirical results and evidence, to disprove the canard being advanced that the effects of global warming, were it to persist, would have catastrophic consequences: the evidence therefor is lacking. On the contrary: even the IPCC 2001 Technical Report comes to the same positive conclusion as to the effects of CO₂, but who would ever now from reading the "Summary" (pp. 198ff. of 2001 IPCC Main Report).

Over historical times – the past 5,000 years or so – the cycles between warm and cold periods and the coincidence of "good" periods with "warm" periods are quite remarkable (Figure 32):

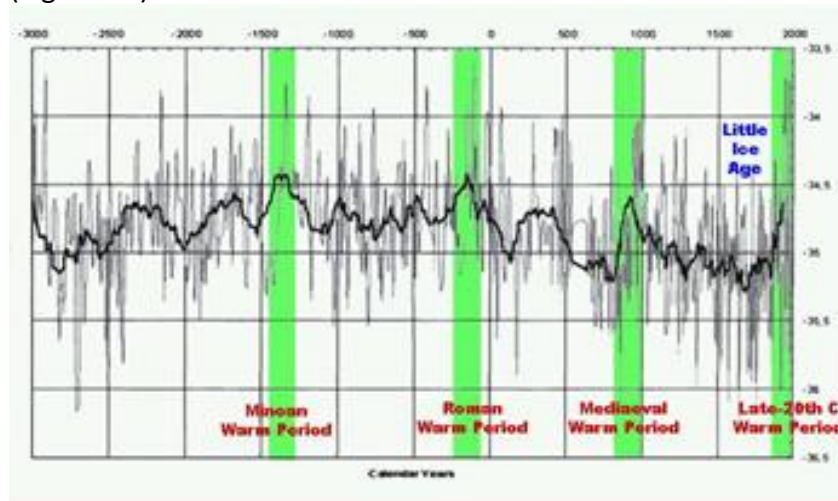


Figure 32: Warm Periods – Good Periods?
Variation in Magnitude of Polar Temperature – last 5,000 Years
Following the 11, 22, 87, 210, and 1470 year Solar Cycles through History⁴²

What Causes Paleoclimate Changes? A New Theory.

Which leaves one last, "small" problem: what causes the vast temperature changes throughout Earth's climate history? The "temperature" variations of the Sun Spot cycle alone, by themselves, clearly are insufficient to explain the vast temperature changes on Earth: sometimes horrendous "Ice Boxes" persisting for millions of years, preceded and followed by eons of calm, high temperature climates, with CO₂ levels "astronomically" higher e.g. 500-600 million years ago - the Middle Age of Climate – than today. In Figure 33 key climate change data for the past 400 and 70 million years are shown:

⁴¹ Heiss, K. P., "Econometric Models of Agricultural Supply: The Effects of Price and Weather on Wheat Production", ECON Report to Goddard Space Flight Center, September 1977

⁴² P. M. Grootes, M. Stuiver, J. W. C. White, S. Johnsen & J. Jouzel "Comparison of oxygen isotope records from the GISP2 and GRIP Greenland ice cores", *Nature* 366, 552 - 554 (1993).

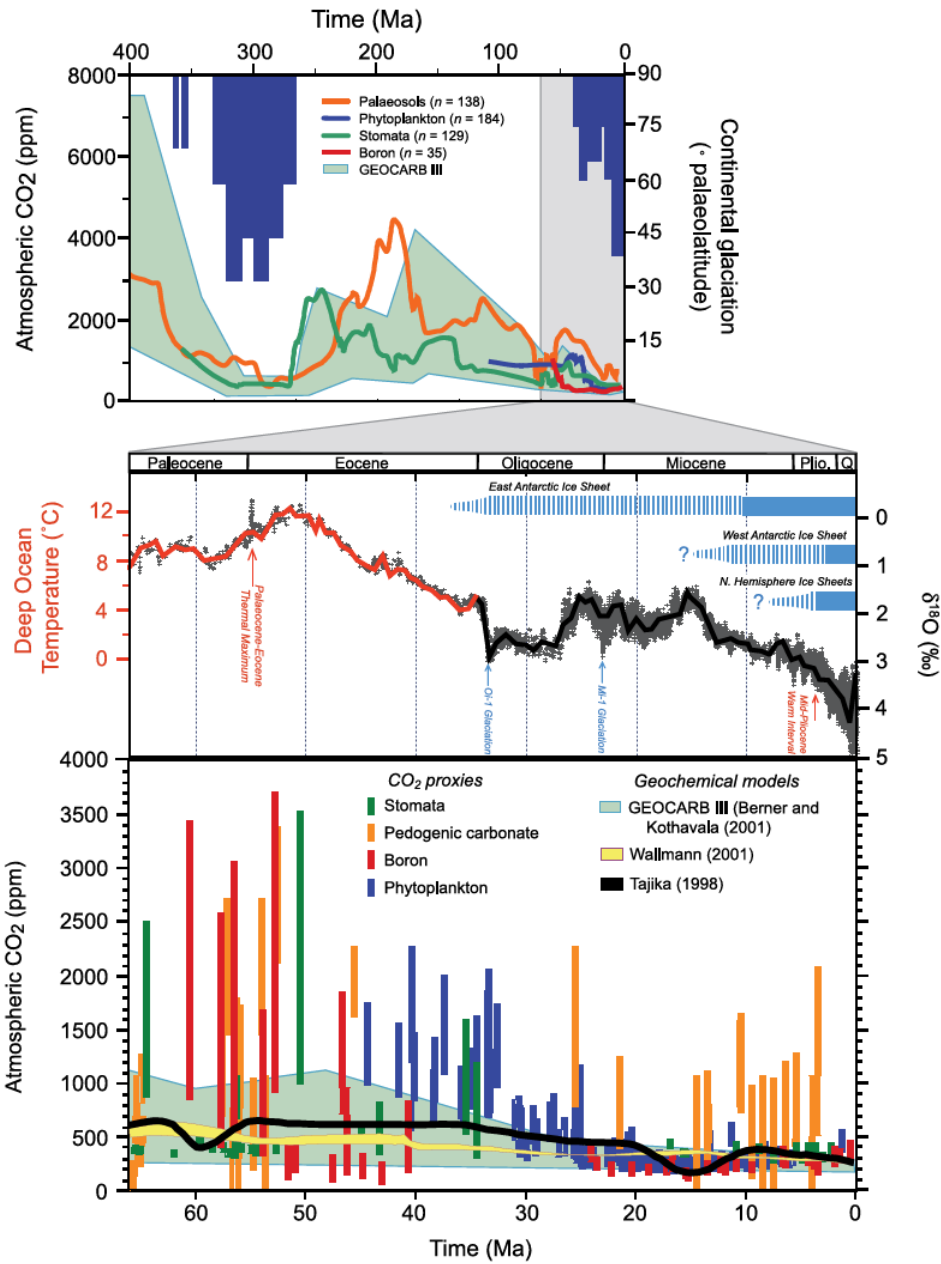


Figure 33: Continental Glaciation, Atmospheric CO₂ and Climate Change Past 400 Million Years and 70 Million Years (IPCC 2007)

There is unanimity among all paleoclimate scientists that CO₂ levels five to 600 million years ago were dramatically higher than today, ten to twentyfold higher. Temperatures were also higher, although not by that factor when compared to today's relatively low values. According to the IPCC depiction there existed two extensive "Ice Boxes" during this time: one about 300 million years ago, another one "today" – the past 35, five and two million years. Other paleoclimate scientists believe there were also periods of smaller (little) ice ages in between, e.g. 140 million years ago.

Moving to the "Second Ice Box" shown in Figure 31, the one we are in now, we see that contiguous ice sheets in the Northern Hemisphere formed only about three million years ago, in the Southern Hemisphere (the Antarctic) ten or more million years ago (East Antarctica). The temperature record by now can be established with surprising accuracy based on ¹⁰Be measurements, principally from ocean cores near and around New Zealand, where the world's ocean climate forms between the Antarctic waters and the Pacific Ocean.

The questions are many. E.g. what triggers the dramatic descent into cold periods? Given the available paleoclimate record and the Vostok Ice Core data of 400,000 and now 800,000 years – we now know that CO₂ is not the cause of temperature changes. Rather, the temperature changes cause the CO₂ changes. We also know that temperature changes track closely Solar cycles. The relation was established in great detail by Friis-Christensen and Knud Larsen, published in 1991 (Figure 34):

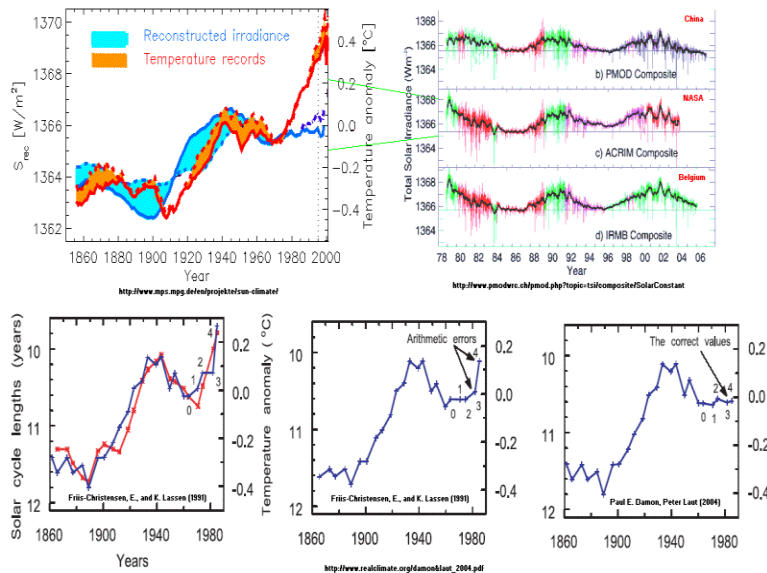


Figure 34: Solar Activities (Cycle Lengths) and Temperature Anomalies [E. Friis-Christensen and K. Lassen, 1991]]

But the change in Solar energy emitted from the Sun in no way can explain the temperature changes on Earth.

It is here that Henrik Svensmark had a seminal “insight” twelve years ago, in 1995: could it be that cosmic rays caused cloud formation and changes in cloud formation give rise to the large swings in global temperatures? With more clouds more sunlight would be reflected back into Space – hence cooling, with fewer clouds, less reflection and therefor warming of the atmosphere (see Figure 35):

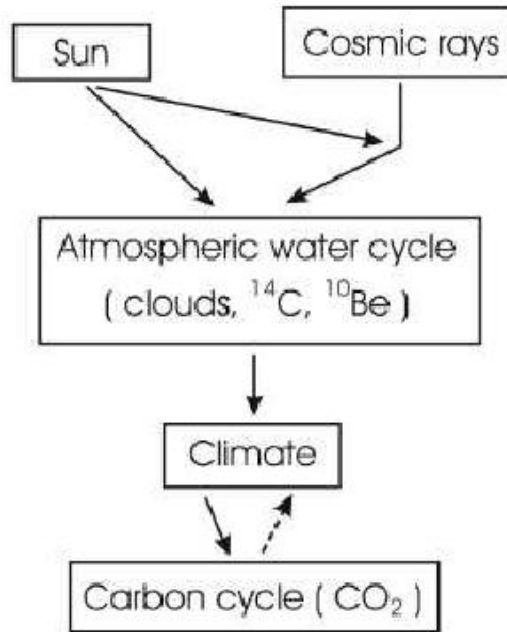


Figure 35: Henrik Svensmark’s New Paradigm on Climate Change

By studiously collecting and aggregating cloud cover data and impacts of cosmic rays on Earth’s atmosphere Svensmark established a strong, positive correlation between these. These data, first published in 1997 were updated by Svensmark and Marsh in 2003 (Figure 36):

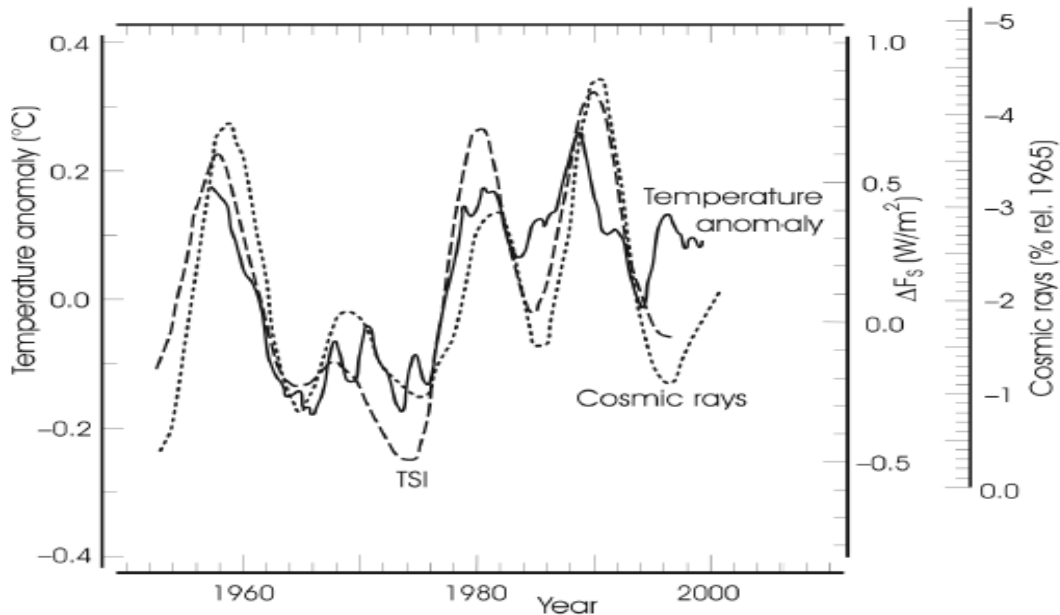


Figure 36: Temperature Variability and (inverse) Cosmic Rays Impact 1950 – 2000 (Marsh, Svensmark 2003)

The match could not have been better. Svensmark and colleagues then proceeded to also provide physical proof of the generation mechanism between cosmic rays and cloud formation in the SKY experiment. The experiment was delayed, but in the end successful and – with further delays “by the establishment” - published in October 2006. Since the others have duplicated and confirmed these results. Just out is a good summary of these issues by Svensmark and Calder, *The Chilling Stars*⁴³.

The same theory also helps to explain the dichotomy between global temperature changes worldwide vs. peculiar “reverse” trends in the Antarctic: when global temperatures warm, the Antarctic often tends to cool. The reason for this: whereas clouds over oceans and land are much whiter (reflecting) than those surfaces – hence reflect more solar energy, the reverse is the case in the Antarctic: the ice there is whiter, more reflective than the clouds, hence with more clouds actually a warming tendency in those areas.

By now Solar activity cycles have been reconstructed with reasonable accuracy and detail for the past 1,300 years (see Figure 23 above), but some have set their eyes even further back: Shaviv and Veizer extended the cosmic rays and climate change connection all the way back for the 4 billion plus years of Earth’s climate history. According to their theory, the often dramatic changes in climate can be explained by the movement of the Solar system through the Milky Way. When we move through heavy gravitational zones, with larger star formation and subsequent supernova events, things

⁴³ Henrik Svensmark und Nigel Carter, *The Chilling Stars – A new Theory of Climate Change*, IKON Books (UK) und TOTEM Books (USA), 2007.

tend to cool remarkably on Earth and vice versa, when we move through zones of tranquility between the major arms of our galaxy things quite down and are in a stable steady, warm state (Figure 37):

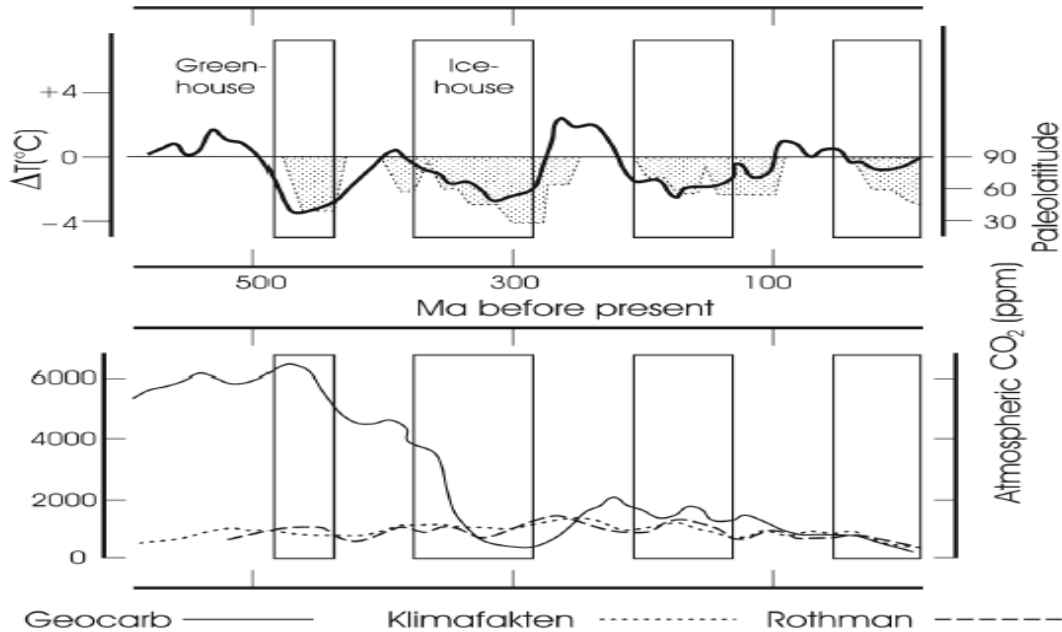


Figure 37: Are the major Climate Changes observed in the Paleoclimate caused by the Movement of the Solar System through Gravitational Arms of our Milky Way? (Shaviv and Veizer)

These new possibilities are breathtaking, akin to a universal Cosmologic Theory of Climate Change of yet incalculable implications. Most important, an empirical, credible “causality” would have been established.

It’s the movement of the Earth around the Sun and the movement of the Solar System through and around the Milky Way that determines our climate for the past 4 billion plus years. The various Earth-Sun cycles were depicted in Figure 22. Earth’s orbital changes determine the ice age cycles. These are the “micro” fluctuations of up to 100,000 years.

And then there are the “macro” events: the movement of the Solar system through the Milky Way, a roundtrip of about 225+ million years. The record so far is encouraging: 2,400 to 2,200 million years ago and then again 750 to 580 million years ago all of Earth was a **snowball**, completely covered by ice floats and sheets. It was precisely at those times that the Solar system moved through particularly strong gravitational fields and star formation regions, with concurrent strong cosmic ray fluxes. The same occurred again about 300 million years ago, with drastic cooling, impact of asteroids (from nearby supernova explosions?) and mass extinctions of marine and land based organisms on an

unprecedented scale: between 70% and 90% of all living organisms died out. It was also the time of the rise of mammals and other warm blooded creatures, since they had a better chance of making it through the cold period, given their use of oxidation processes to provide requisite sources of bodily energy.

Our current state of knowledge as to our Milky Way, its various arms and the location of our Solar system are shown in Figure 38:

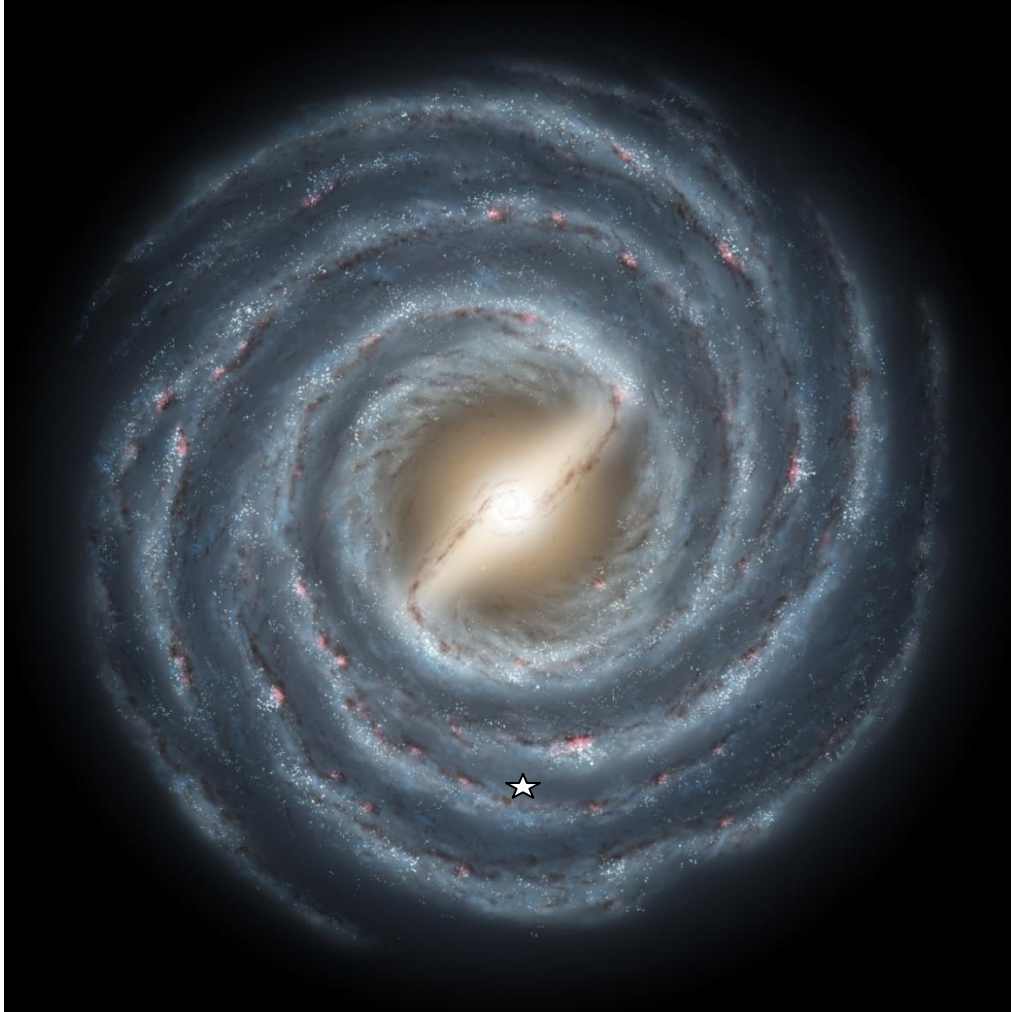
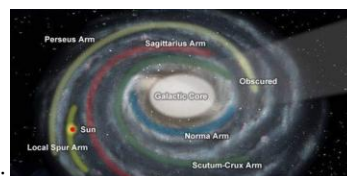


Figure 38: Our Current Knowledge as to the Structure of the Milky Way – enabled in large part by observations in the infra-red part of the spectrum. The “star” indicates the approximate location of our Solar system.⁴⁴



⁴⁴ For reference as to the Main Arms of the Milky Way:

In further work Svensmark established a strong relation between ^{13}C (biological activities) and ^{18}O in ocean sediments (temperature proxies). Svensmark was able to trace this relationship back 3,600 million years with cycles of strong Solar and cosmic ray activity with concurrent cold times and extensive periods of low cosmic radiation and Solar activities with warm periods, in total 13 periods of about 400 million years each – with a correlation of 92%. Not bad.

Other interesting research topics arise: Shaviv's theory would indicate a cold period about 140 million years ago which to-date was assumed to be a warm period (see Figure 33 above). Since then geologic finds indicate indeed the possibility of an Ice period at that time: Neville Alley and Larry Frakes, University of Adelaide found evidence of glaciation near the Flinders Range in Western Australia dating to that period, probably the first time in climate theory that a climate prediction led to the discovery of such evidence in the climatic record.

And more: the Solar system journeys in a "Dolphin" like wave up and down the Milky Way disk as it moves around the core, crossing the main disk every 34 million years or so. Some cyclicity of this length is evident in the geologic record as well. To top this off, now news that the Solar System may in fact move at a 60° to 90° angle to the plane of the Milky Way, with strong interactions of the Galactic and the Solar magnetic fields – and of course the cosmic ray impacts – hence Earth's climate.⁴⁵

Last but not least, at the "dawn" of mankind: some 2.8 million years ago a close and very strong supernova event seems to have happen, just as we were moving through the Pleiades constellation arm, maybe as close as a few 100 light years, our very back yard. It is this event which may have triggered our descent into the current "Ice Box" of 2.75 million years of extreme cold, even with the periodic ups and downs we discussed above. Evidence documenting this event has been found in ocean sediments – ^{60}Fe isotopes discovered and measured by Günter Korschinek and his team (Garching, Germany). Korschinek's conclusion: it may have been this event that triggered the selective survival and adaptation mechanisms leading to hominid and then human species of today. Other exciting vistas have been opened herewith, with many new findings coming in nearly every month.

And the IPCC 2007? All the results over the past decade by Svensmark, Veizer, Shaviv, Marsh and many others do not even appear in the footnotes or references of its vast compendium: politically incorrect? As to the "consensus" of climate scientists – proclaimed *ex catedra* in the Summary, such consensus never existed nor exists: up to 17,000 scientists in the late 1990's signed up against the follies of Kyoto and nothing has changed, at least as facts and data are concerned, to change scientific minds with such paucity of new "evidence".⁴⁶

⁴⁵ Mera v Opher, astrophysicist, George Mason University, Virginia. See Appendix II

⁴⁶ See <http://www.oism.org/pproject/index.htm>; also Marc Morano, "Climate Momentum Shifting: Prominent Scientists Reverse Belief in Man-made Global Warming – Now Skeptics", http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=c5e16731-3c64-481c-9a36-d702baea2a42

Which brings us to the last refuge of climate alarmists:

The “Precautionary Principle” – against what and what for?

The importation of the “*Vorsorgeprinzip*” of German sociopolitical doctrines of the 1920’s into the English literature, similar to the other currently *de rigueur* attribute “sustainable”, seem to have sliced the links between rational arguments based on evidence and proposed policies: whatever the evidence, precaution by Climate Shiites dictates that we mutilate ourselves economically and socially through drastic CO₂ and other greenhouse gas reductions so as to assure a good, benign future climate and world.

Well, since

- we do not know whether the world will continue to warm,
- global temperatures these past ten years (since 1998) have not increased (Figure 18) and
- the very IPCC projections buried in the Main Report indicate an approximation of the plotted temperature measurements to the flat, orange “zero CO₂ increase” scenario without any such restrictions (Figures 13 and 14);
- the preponderance of evidence indicates that temperatures are causing CO₂ and other greenhouse gas changes rather than the reverse (at least for a complete record of 700,000 years by now; Figures 7 and 8);
- global warming in fact leads us back to a better, more benign future such as we experienced over long periods in the past (Figures 26 and 27 among others);
- Climate Change is caused by Solar activities and the movement of our Solar system through the Milky Way, with sometimes vast variations in cosmic ray impacts on Earth, over which we have no influence whatever (Figures 32 through 35);
- A Little Ice Age with known negative effects on the environment, biodiversity and economic wellbeing may be around the corner (Figure 24); and
- We cannot stop the melting of the ice, whatever we chose to do (Figure 25)

what is it then that we should be “precautionary” about and what mechanism /measures should/can be implemented with any chance of success?

E.g., if the proposed measures of the IPCC were “effective”, they might lead to a serious aggravation of the next Little Ice Age, should the preponderance of the cyclical analyses of Climate Change be correct, including the very graphs buried by the IPCC in the Main Report.

Thanks, but no thanks: I’d rather go to the Moon and establish a Condominium of Climate Observatories to find out what the facts are and where these might lead us.⁴⁷

⁴⁷ Klaus P. Heiss, Walter Pecorella and Piero Spillantini, “Constructing an Observatory Condominium on the Moon for Climate Measurements”, STAF 2007 and <http://www.highfrontier.org/Archive/Jt/Constructing%20an%20Observatory%20Condominium%20on%20the%20Moon%20for%20Climate%20Data%20Measurements.pdf>