The unsound science behind "global warming"

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Abstract

World temperature records show no evidence of anthropogenic global warming ("AGW"). Solar activity in the late 20th century was extremely high. Atmospheric CO2 levels rose as the sea surface warmed. Henry's Solubility Law, with mass balances of carbon and its isotopes, show the total increase in atmospheric CO2 from pre-industrial times is less than 4%. Burning all our remaining fossil fuels, cannot double the CO2, but only increase it by 20%. Beck cataloged 90,000 chemical measurements of CO2 in the 1800s, some as high as 470 ppm (greater than the current Mauna Loa value of 385 ppm). These data exposed as false the UN IPCC's 280-ppm ice core values during the 1800s. IPCC's ice core measurements of CO2 were incorrect owing to their inability to correct for problems with gas solubility and the extreme pressures in glaciers. Not man but nature rules the climate.

Introduction

The recent American Physical Society (APS) debate on anthropogenic global warming was welcomed by many like myself, who believe "global warming" to be exaggerated. I have never seen any convincing evidence for it. The paper by Hafemeister and Schwartz depended upon *petitio principii*, in that the emissivity value was set to produce the desired climate sensitivity. The considerable evidence presented by Viscount Christopher Monckton of Brenchley in his APS article "Climate Sensitivity Reconsidered" was convincing. The rebuttal by Dr. Smith was not.

This paper addresses two key elements in the APS global warming debate: are, first, the scientific credibility of the UN, and, secondly, the truth about the minimal increase in the amount of anthropogenic atmospheric CO2.

The UN

The UN set up the 1992 Rio de Janeiro conference entitled "The Earth Summit". It was attended by Vice President Al Gore. At this

Conference Maurice Strong, a UN advisor, stated, "The Earth Summit will play an important role in reforming and strengthening the UN as the centerpiece of the emerging system of democratic global governance."

Al Gore is a politician, not a scientist. He had two college natural science courses. He made a "D" in one, and a "C+" in the other. He made an "F" on his College Board physics exam and a "D" in chemistry. Gore ducks all challenges to debate (including Christopher Monckton) on AGW.

Strong and the UN set up the 1997 Kyoto conference on global warming. All countries were urged to sign a treaty to reduce their CO2 output in order to save the planet. China, India and the U.S. refused. Most of Europe joined, but have done little in the way of lowering their CO2 output. The National Review magazine, Sept. 1, 1997 quoted Strong: "**The only way of saving the world may be for industrial civilization to collapse, deliberately seek poverty, and set levels of mortality".** We're starting to see the collapse of U.S. trucking and airline industry as our government limits oil drilling. Timothy Wirth, former president of the United Nations Foundation, stated: "**We have to ride the theory of Global Warming even if it is wrong."** Richard Benedict, former advisor to Kofi Annan stated: "**A global warming treaty must be implemented even if there is no evidence of global warming**." In the words of H.L. Mencken: "The urge to save humanity is almost always a false front for the urge to rule."

In 1988, the UN politicians set up the Intergovernmental Panel on Climate Control (IPCC). There was no scientific evidence then or now of any significant AGW. **Sir John Houghton, the first chairman of the UN's IPCC stated: "Unless we announce disaster, no one will listen."** Here is the summary the scientists wrote for the 1995 IPCC Draft Report:

1) **None of the studies have shown any clear evidence of climate changes due to greenhouse gases.**
2) **No study has positively attributed any climate change to anthropogenic causes.**
3) **Any claims of positive detection of significant climate change are likely to remain controversial until uncertainties in the total natural variability of the climate are reduced**.

The UN removed all three of its scientists' conclusions, inserting the following **text** in the final 1995 Summary Report for policy-makers:

The balance of evidence suggests a discernible human influence on global climate.

Many of the IPCC scientists quit, and threatened the UN with a lawsuit in order to have their names removed from the IPCC final report.

The UN's method of preparing IPCC reports is non-standard. They first publish a "Summary Report for Policy-makers". Then several months later they publish the Scientific Report so as to assure its consistency with the Summary Report. After the 1995 IPCC report, this procedure was repeated in 2001 and 2007 IPCC reports.

Temperature

In the United States, the hottest years of the 20th century were in the 1930s (Fig.1). Twenty-four states had their high temperature records set in the 1930s. Only seventeen had their temperature records set in last 50 years of the 20th century! Where is the fingerprint of anthropogenic global warming?

During the 20th century the Earth warmed ~0.7 ^{0}C. The warming culminated at about the same time as the solar Grand Maximum during the 70 years centered on the mid-1960s (Fig.2). Similarly, astronomers discovered that Jupiter, Mars, Saturn, Neptune and Pluto all warmed up in the 20th century. (Archibald, 2008). Since 1998, admittedly a strong El Nino year, "global warming" has ceased. We've had global cooling from reduced sun spot activity (Archibald, 2008).

The oceans "breathe" carbon dioxide in and out with cooling or heating. CO2 is less soluble in water as it warms and more soluble as it cools. The warming during the 20th century caused the oceans to emit more CO2 into the atmosphere (Endersbee, 2008, Fig. 4).

A miniscule amount of global heating of ~0.5 W/m^2 is due to an increase of 2% to 4% of atmospheric CO2, owing to the burning of fossil fuels since the late 1800s (Segalstad, 1996). This corresponds to a tiny 0.5^0 C rise in temperature, using the climate sensitivity parameter of ~1 ^{0}C per W/m^2 (Kiehl and Trenberth, 1997). This climate sensitivity parameter of ~1 ^{0}C per W/m^2, adopted by the UN, is an order of magnitude greater than eight

natural experiments (Idso 1998). It results in exaggerated predictions of future global temperatures.

Archer (2008) assumed a rise in atmospheric CO2 of 380 to 420 ppmv in the next 20 years. Using the University of Chicago's MODTRANS facility, he obtained a 0.4 W/m^2 increase in global warming. Using Idso's 0.1 ^0C per W/m^2 sensitivity value, he predicted a 0.04^0C increase in temperature due to the CO2 greenhouse effect.

In 1995, the UN IPCC report included a global temperature anomaly chart shown in Fig.3. This chart agreed with hundreds of scientific papers which dealt with this Medieval Warm Period and the Little Ice Age which followed. From about 900 to 1350 AD, the Earth was approximately 2^0 C warmer than now. The Vikings colonized Greenland, and many of the great cathedrals were built in Europe. The Little Ice Age which followed lasted about 400 years (Soon & Baliunas, 2003). At the principal Viking settlement of Hvalsey in SW Greenland, the bodies of the Viking colonists are now buried under Greenland's permafrost. Yet, six years after this correct chart (Fig.3), the UN's 2001 IPCC report featured a new, radically different "hockey stick" chart (Fig. 5). It showed essentially a flat temperature for the 1000 years prior to the 20^{th} century, followed by a rapid rise of earth's temperature in the 20^{th} century. The UN blamed the rise on AGW. Subsequently, however, McIntyre and McKitrick (2005) found statistical discrepancies that led to a report by the US National Academy of Sciences that, while finding the hockey-stick no more than "plausible", described it as having "a validation skill not significantly different from zero". A report by three statisticians for the US House of Representatives (Wegman *et al.*, 2005), also found the graph unfit for its purpose. To this day, dozens of papers from all over the world attest to the existence of the mediaeval warm period, with temperatures up to 3.75 °C greater than the present in some places.

CO2: a natural trace gas essential to all life on Earth

CO2 is not a pollutant. It is the gas of life for plants, man, and animals. All plant life is sustained by photosynthesis, where CO2 plus water plus chlorophyll plus the Sun's energy form carbohydrates plus Oxygen. Humans and animals breathe in Oxygen and exhale CO2.

If atmospheric CO2 drops as low as 220 ppm, plants get sick. They die at 160 ppm. In a field of corn on a sunny day, unless wind currents stir up the

air, all of the CO2 is consumed within one meter of the ground in 5 minutes. (Personal communication, Daryl Smika, Plant Physiologist, U.S. Dept. of Agriculture), In order to increase their yield, commercial greenhouse owners increase the CO2 levels to 600 - 1000 ppm. According to the Mauna Loa observatory the present atmospheric CO2 is about 385 ppmv, but in times past it was as high as 2450 ppmv. (Jaworoski, 1992a, 1992b). In the Cambrian era the atmospheric concentration of CO2 reached ~7000 ppmv, 18 times today's concentration (IPCC, 2001).

The most important greenhouse gas is water vapor. Its mass is 54 times greater than CO2. Dr. Reid Bryson, former director of meteorology at the University of Wisconsin, says: "The first 30 feet of water vapor absorbs 80% of the earth's heat radiation. **You can go outside and spit and have the effect as doubling CO2!**"

150 years ago, the atmospheric CO2 contained 700 Gt of carbon (1 Gt = 1 billion tons), and the earth contained 7000 Gt of carbon in the form of fossil fuels. It is estimated that man has burned 1000 Gt of the original 7000 Gt. (Segalstad 1998). For water, at normal temperature, Henry's Law of Solubility dictates there will be 50 parts of CO2 in solution, for one part of gaseous CO2 above the water. Experimental measurements have shown that the residence time of CO2 in the atmosphere is about 5-10 years. The UN, using a confused and widely-criticized definition of residence time, says it is 50-200 years. Hence today, after 150 years, the amount of CO2 added by man to the atmosphere is (1/50) x1000 = 20 Gt, and the increase in atmospheric CO2 is (700+20)/700 = 1.03 or a 3% increase!! (Segalstad, 1998). The UN, assuming 278 ppmv as the pre-industrial concentration said the increase is 21%.

Segalstad (1998) developed an alternative method of determining how much of the atmospheric CO2 is due to fossil fuels is by an isotopic mass balance of Carbon 12, C-12, and the heavier isotope Carbon 13, C-13. During photosynthesis more of the C-12 is absorbed by the plant than C-13. Ratios between C-12 and C-13 stable isotopes are commonly expressed as in permil by a so-called delta-13-C notation multiplied by 1000. CO2 from combustion of fossil fuel have delta –13-C values of (–26 permil). Natural CO2 has a delta-12-C value of(–7 perm). Keeling (1989) reported a 1988-measured atmospheric delta-13-C value of (–7.807permil). Using a simple isotopic mass balance equation of [26X +7(1-X) = 7.807] produces an X value of 0.042. Hence the earth's atmospheric CO2 is made up of approximately 4% CO2 from the burning of fossil fuels. This is close to the

3% computed above by the alternate mass-consumed method of Segalstad. Revelle & Suess (1957) using Carbon-14 data computed the amount of atmospheric CO2 derived from fossil fuel combustion was 1.2 to 1.73 %. UN IPCC reports assume that, at present, 21% of CO2 is from fossil fuel burning!

Using Henry's Law, and assuming all the remaining 6000 Gt of carbon in our fossil fuel reserves has been burned, the increase in atmospheric CO2 will be [{(7oo+ (7000/50)}/700 =1.2], a 20 % increase over what the atmosphere contained in the mid nineteenth century (Segalstad, 1998). The UN predicts a 170% increase. Even burning all fossil fuels (7000 Gt of carbon) will have no meaningful effect on global climate. CO2 in the atmosphere cannot increase more than 20%. It cannot double!

The Earth receives about 1368 W/m^2 of radiative heat from the sun. The total amount of heat withheld is about 146 W/m^2, +/- 5 to10 W/m^2 due to natural climatic variations. Clouds can reflect up to 50 W/m^2 and can absorb up to 30 W/m^2 of the solar radiation. Less than 0.5 W/m^2 is produced by anthropogenic CO2, making it much smaller than the Earth's average greenhouse effect (water vapor, etc), which varies naturally across the interval [96, 176] W/m^2. (Segalstad, 2006)

The total internal energy of the whole ocean is 3.3×10^{27} Joules, about 3500 times greater than the total energy of the entire atmosphere, 9.4×10^{23} joules. The global climate is primarily governed by the enormous heat energy stored in the oceans and the latent heat of melting of the ice caps. From a thermodynamic heat balance, the small amounts of heat generated by anthropogenic CO2 could not possibly cause significant increases in sea level. (Segalstad, 1995; Mörner, 2004)

1400 years of study found approximately 10 inches of difference in sea level between the thermal expansions the **Medieval Warm Period** and thermal contractions of the **Little Ice Age**. (van de Plassch)

The sharpest January-January fall in global temperatures since records began in 1880 occurred between January 2007 and January 2008 (Fig. 6) The drop in temperature was about equal to the net gain in average temperature for the 20^{th} century.

Figure 7 -- Does the atmospheric CO2 correlate with temperature? It should if AGW were correct, for absence of correlation necessarily implies absence

of causation. But Figure 7 shows it does not always correlate. Fig. 4 shows CO2 does correlates very well with sea surface temperature.

Figure 8 --The long temperature record at Armagh, Ireland shows a strong correlation of temperature with sunspot-cycle length. The longer the sunspot cycle the colder the temperature. Presently we are in Solar cycle 23 which is 12 ½ years long and Archibald (2008) predicts it will last to 13 ½ years, though the first sunspot with reversed polarity, indicating the approach of Solar Cycle 24, has now been observed. Solar physicists here and in Russia are predicting globally 20-30 years of cold weather, after the end of Solar Cycle 24, based on the recently-observed slowing of the magnetic convection currents beneath both hemispheres of the Sun.

Figure 9—High temperature records from all the continents and Oceania indicate that all except one high-temperature record occurred before 1943!

Figure 10—Ernst-Georg Beck's (2007) paper plotted 90,000 accurate chemical analyses of CO2 in air. These standard textbook measurements from 380 scientific papers had an accuracy of better than 3%. Several scientists who won the Nobel Prize made these measurements. Beck's CO2 peaks (`370-450 ppm) occurred around 1823, 1859 and 1944.

Figure 11 --- A comparison of Beck's CO2 data versus Neftel's ice core data show a wide difference. Beck criticized Callendar and Keeling the men who crafted the flat portion of the Hockey Stick CO2 chart. Beck found that CO2 measurements had been rejected if they did not fit the hypothesis of anthropogenic climate warming, and that Callandar and Keeling only examined 10% of the available literature.

Zbigniew Jaworowski is a CO2 glaciologist. He has studied glaciers all over the world. He has published many papers on climate, most of them concerning CO2 measurements in ice cores. He strongly believes the CO2 measurements used in the UN IPCC reports are unreliable.

He pointed out, "Drilling ice cores is a brutal system and a polluting procedure, drastically disturbing the ice samples." He also states that ice cores cannot be regarded as a closed system and used to measure CO2 levels of air trapped in ice. He stated there are "more than 20 physical-chemical processes operating *in situ* … in the ice cores.… In cold water, CO2 is more than 70 times more soluble than nitrogen and more than 30 times more soluble than oxygen." Liquid water is commonly in present in the polar snow and ice even at the eutectic temperature of -73^0 C." This phenomenon

alone will reduce the percentage of CO2 in the air bubbles trapped in ice. The Knudsen effect, combined with inward diffusion, depletes CO2 in ice cores exposed to drastic pressure changes (up to 300 bar, for ice buried in glaciers). The effects of increased solubility and extreme pressures could explain the difference between chemical CO2 and ice core measurements in Beck's Figure 11.

A recent attempt by a researcher to use the Freedom of Information Act to obtain details of the methods by which ice cores were extracted, handled, stored, transported, and analyzed was thwarted when he was told that all such details were classified information.

Jaworowski noted that these effects were discovered, "only recently, many years after the ice-based edifice of anthropogenic warming had reached a skyscraper height…". Jaworowski noted how Neftel (1985) et. al. had inappropriately combined the CO2 values of 328 ppm from ice deposited in 1890 and combined it with 328 ppm CO2 values measured at Mauna Loa volcano , Hawaii, 83 years later. This unsafe data curve was then published in the 2001 IPCC report. The real data, 83 years apart, demonstrate that pre-industrial level of CO2 was the same as in the second half of the 20th century. Because of this absence of any appreciable difference in CO2 levels more than 83 years apart, Jaworowski believes that "human beings may be responsible for less than 0.01^0 C of warming during the last century".

Conclusion

The processes of the United Nations are an unsatisfactory medium for scientific enquiry. For the reasons outlined in this short paper, the principal conclusions of the IPCC are questionable and do not provide a sound basis for taking policy decisions that are calculated to cause severe economic harm to the economies of the West and to cause environmental damage by transferring manufactures from Western nations, where pollution is controlled, to Third World countries, where it is not.

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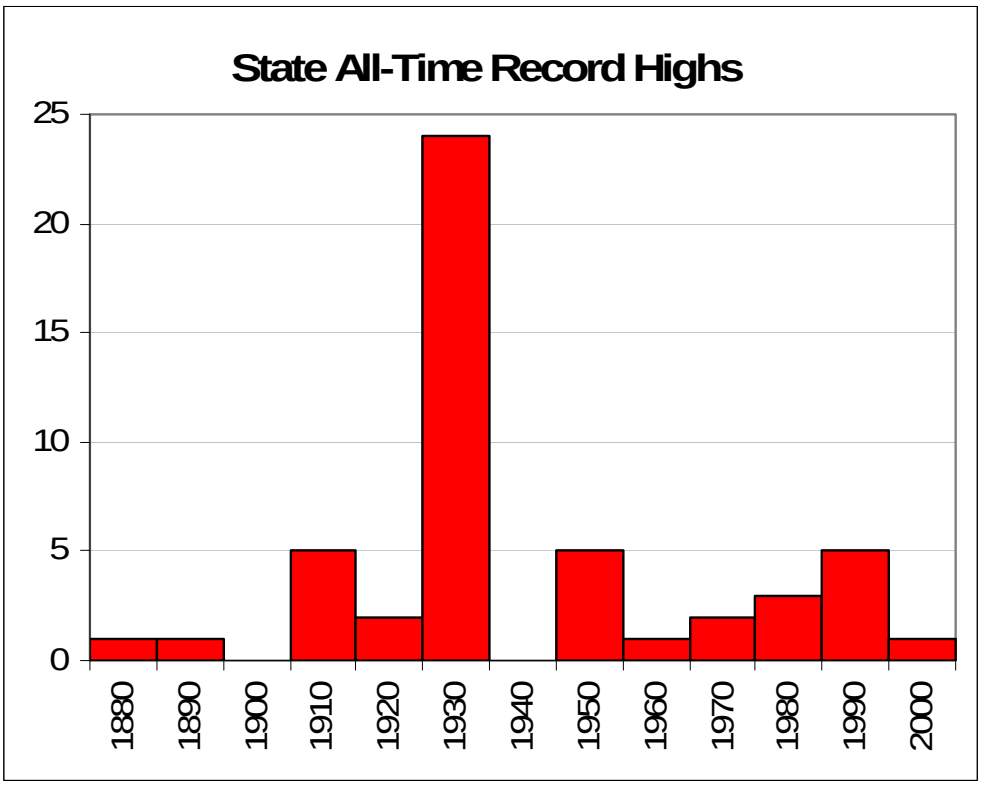
Figures



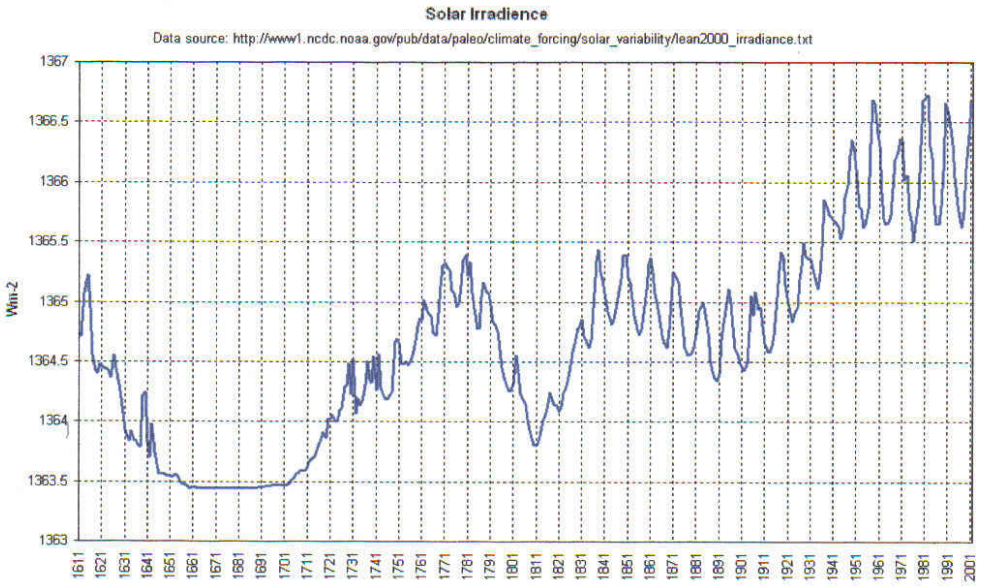


Fig. 2 Total Solar Irradiance 1611 to 2001

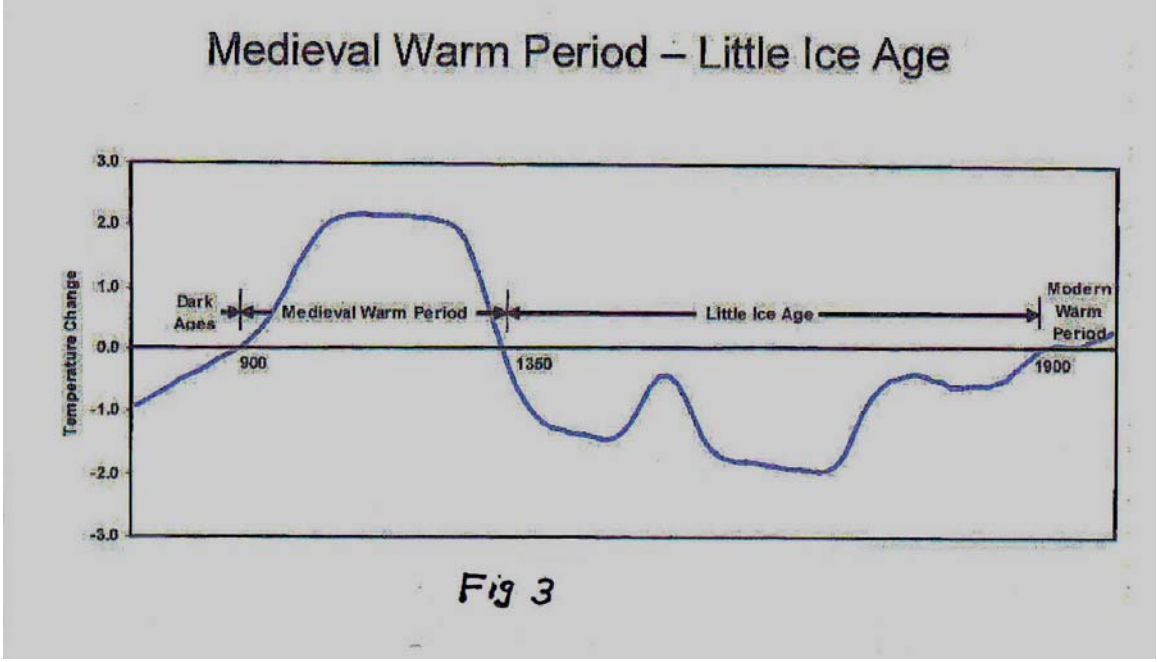


Fig 3

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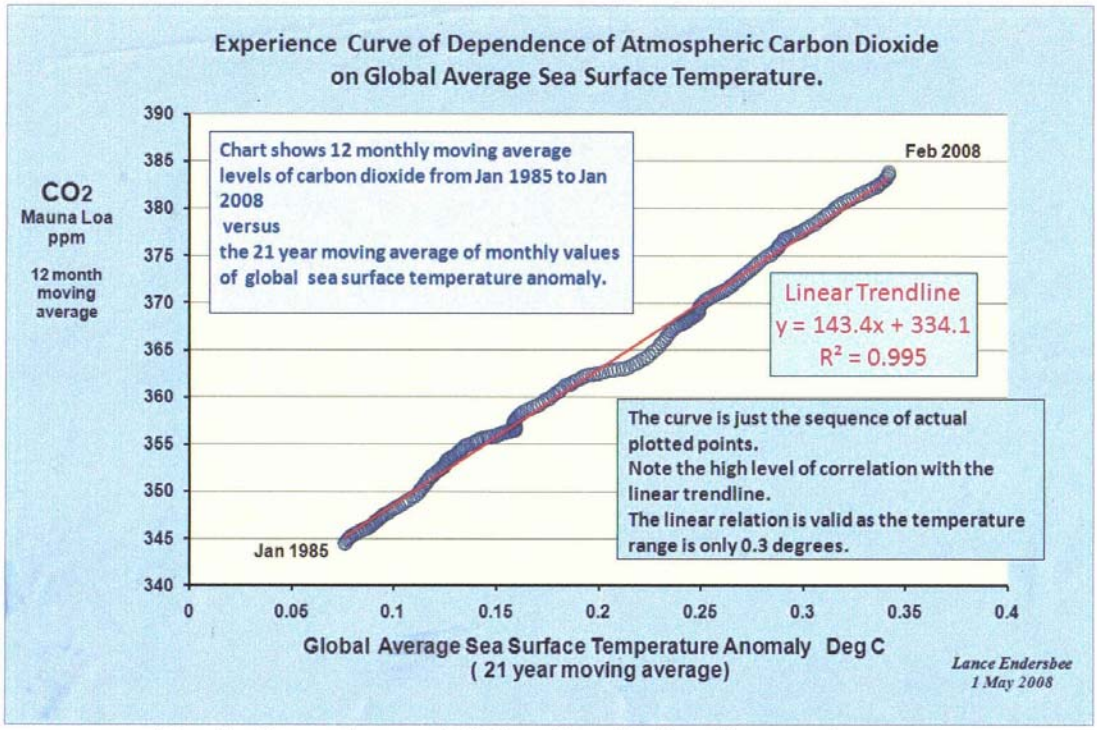


Fig. 4 Dependence of CO2 on Sea Surface Temperature

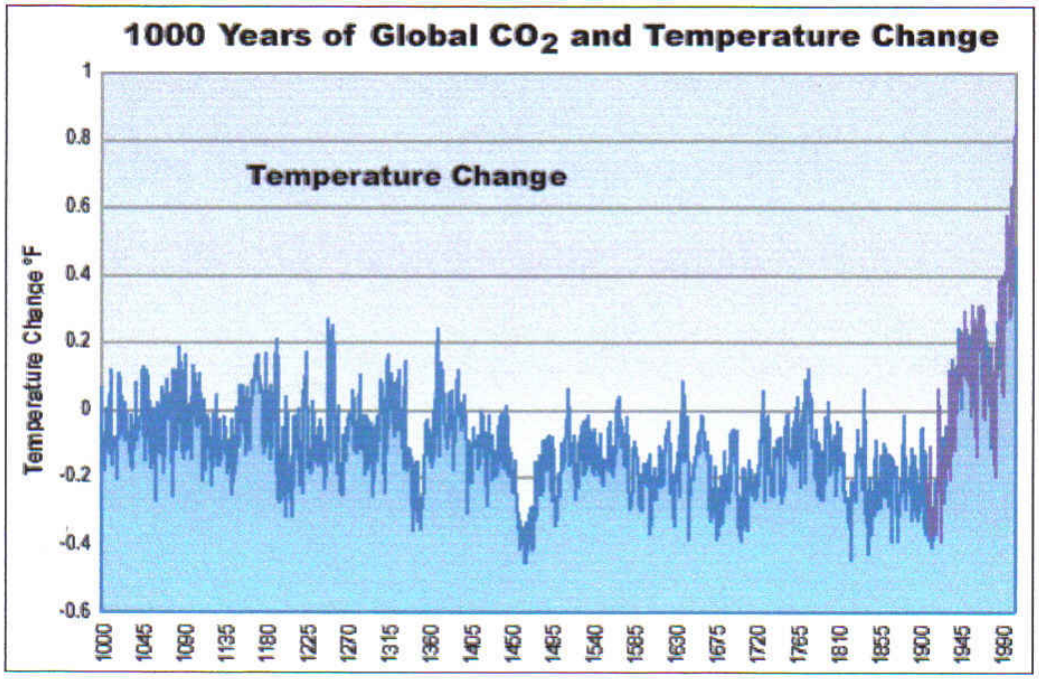


Fig.5 - The `Hockey Stick'

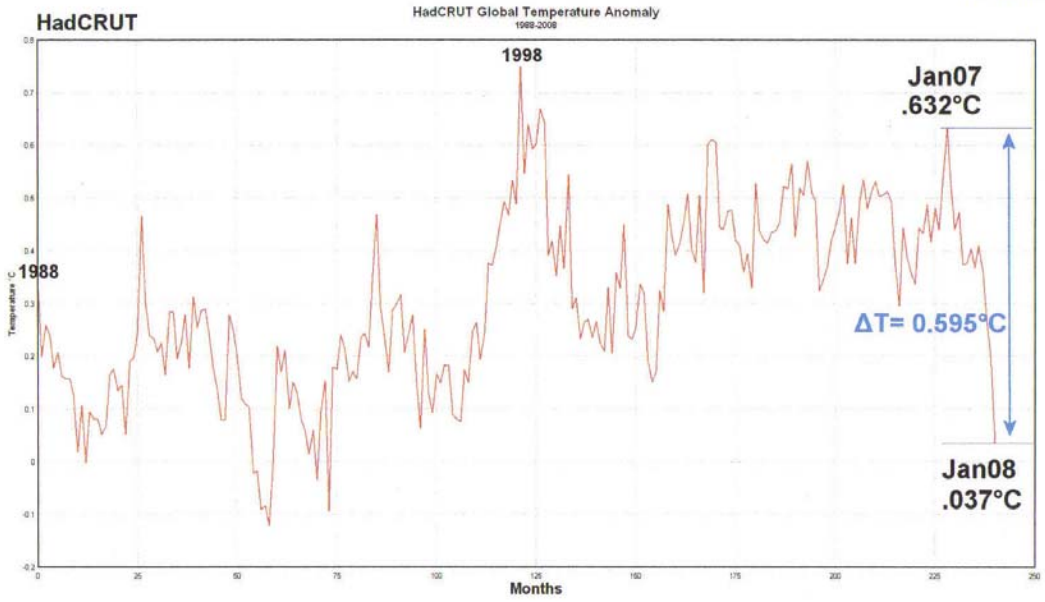


Fig. 6 Biggest Temperature Drop in One Year?

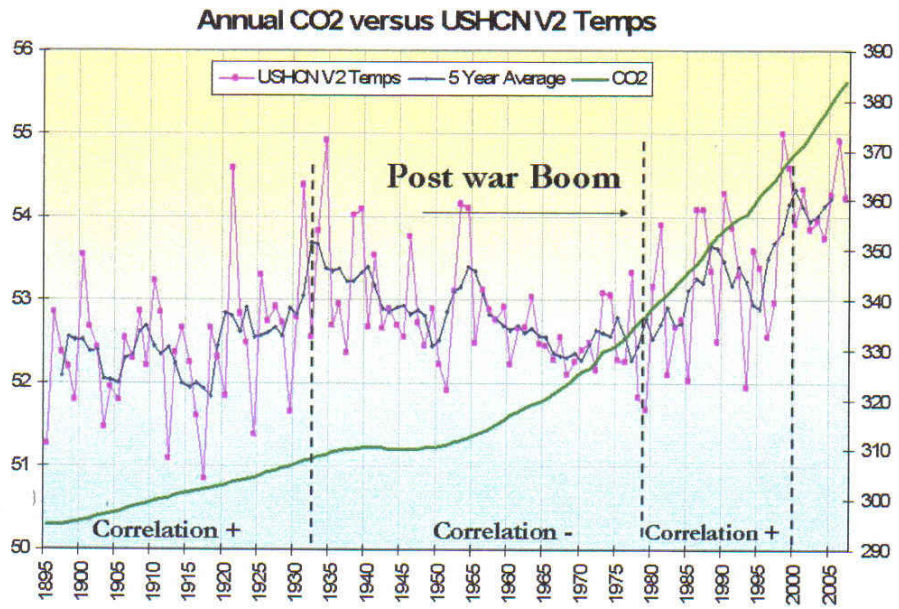
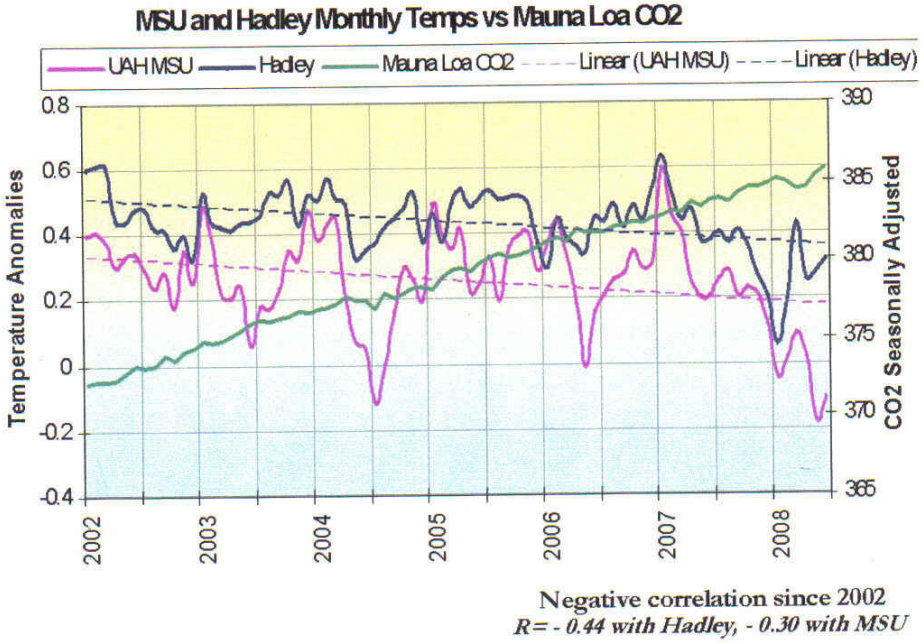


Fig. 7 Does CO2 Correlate With Air Temperature



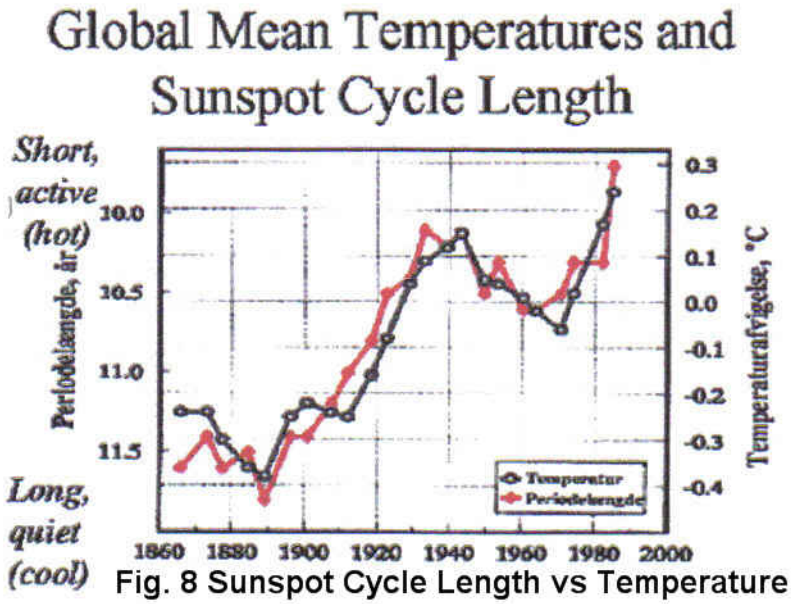


Fig. 8 Sunspot Cycle Length vs Temperature

The Armagh Observatory in Ireland has one of the longest continuous record of temperatures and they repeated the analysis and again showed a lock-step relationship.

Continent	*All-time High*	*Place*	*Date*
Africa	136	El Azizia, Libya	September 13, 1922
North America	134	Death Valley, CA	July 10, 1913
Asia	129	Tirat Tsvi, Israel	June 22, 1942
Australia	128	Cloncurry, Queensland	January 16, 1889
Europe	122	Seville, Spain	August 4, 1881
South America	120	Rivadavia, Argentina	December 11, 1905
Oceania	108	Tuguegarao, Philippines	April 29, 1912
Antarctica	59	Vanda Station, Scott Coast	January 5, 1974

Fig. 9 World Wide Record High Temperatures

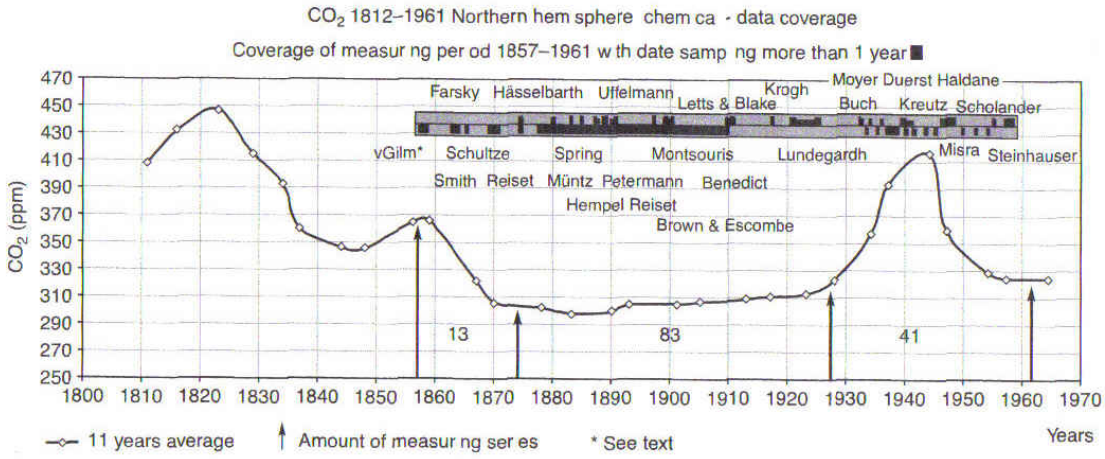


Figure 11: Local CO_2 concentration for the northern hemisphere, determined through chemical analysis between 1812 and 1861. Data plotted as an 11 year average. Data coverage and important scientists indicated in dark grey/black. The curve delineates three major maxima in CO_2 content, though the one situated around 1820 must be treated as provisional only. Data series used: time window 1857–1873: 13 yearly averages, 83 until 1927 and up to 1961 41 data records (eleven interpolated).

Fig. 10 Beck's CO2 Concentrations from 1810

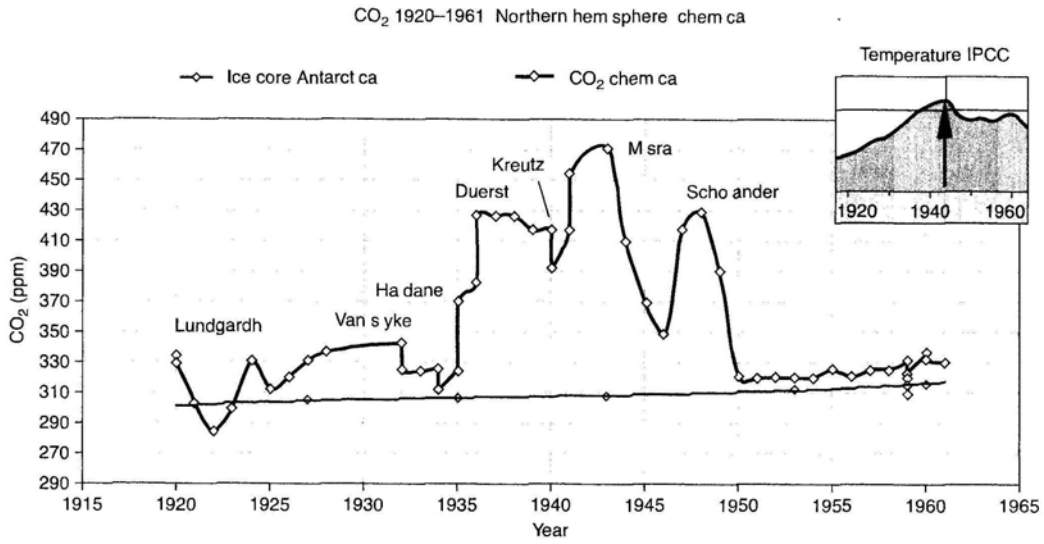


Figure 13: The northern hemisphere 1942 CO_2 maximum, delineated by historical chemical analysis. Inclusive ice core data by Neftel et al. [33] and IPCC temperature for orientation.

Fig. 11 Beck's CO2 Data vs Ice Core Data

Ed Blick, Ph.D, has 54 years' scientific experience. He is the author of 150 publications in engineering, meteorology, and cardiology, and has also written two engineering textbooks. He is the co-developer of a medical patent, and is the inventor of a new type of windmill.