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BBC investigated after peer says climate change programme was biased 'one-sided polemic'

http://www.dailymail.co.uk/news/article-1063110/BBC-investigated-peer-says-climate-change-programme-biased-sided-polemic.html

By Tamara Cohen
Last updated at 2:54 AM on 27th September 2008

'Potty peer': Lord Monckton said his sceptical views were misrepresented

The BBC is being investigated by television watchdogs after a leading climate change sceptic claimed his views were deliberately misrepresented.

Lord Monckton, a former adviser to Margaret Thatcher, says he was made to look like a 'potty peer' on a TV programme that 'was a one-sided polemic for the new religion of global warming'.

Earth: The Climate Wars, which was broadcast on BBC 2, was billed as a definitive guide to the history of global warming, including arguments for and against.

During the series, Dr Iain Stewart, a geologist, interviewed leading climate change sceptics, including Lord Monckton. But the peer complained to Ofcom that the broadcast had been unfairly edited.

'I very much hope Ofcom will do something about this,' he said yesterday.

'The BBC very gravely misrepresented me and several others, as well as the science behind our argument. It is a breach of its code of conduct.

'I was interviewed for 90 minutes and all my views were backed up by sound scientific data, but this was all omitted. They made it sound as if these were just my personal views, as if I was some potty peer. It was caddish of them.'

Ofcom confirmed it was looking into a 'fairness complaint' about the documentary.

A BBC spokesman said: 'We stand by the programme.'

Lord Monckton, 56, a former journalist and Cambridge graduate, says scientific data shows the world is cooler today than in the Middle Ages.

He appeared alongside other sceptics including distinguished Florida-based meteorologist Professor Fred Singer, John Christy, a climate change expert and adviser to the U.S. government and the climatologist Dr Patrick Michaels, of the University of Virginia.

All their interviews, he claims, were heavily cut so that they appeared as personal views.

'We do not dispute that there is more carbon dioxide in the atmosphere, but we do dispute its effects', he said. 'The data shows that 2008 is the same temperature as 1980 and that the effects of these changes in the atmosphere are not negative but more likely to be beneficial.'

Lord Monckton played a key role in a legal challenge heard in the High Court in October 2007 in an effort to prevent Al Gore's film on global warming, An Inconvenient Truth, from being shown in English schools.

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Warming in a global cool period

http://features.csmonitor.com/innovation/2008/09/25/warming-in-a-global-cool-period/

Christian Science Monitor
September 25, 2008

'World is riding a 50-million-year-long cooling trend' - National Academy of Sciences report finds

By Peter N. Spotts| Staff Writer for The Christian Science Monitor/ September 25, 2008 edition

With all the focus on human-triggered global warming, it may be hard to imagine that the world is riding a 50-million-year-long cooling trend.

But it is, and blame the trend on a continental-scale collision, say geophysicists Dennis Kent of Rutgers University and Giovanni Muttoni of the University of Milan in Italy.

Researchers say there is strong evidence that increases in atmospheric CO2 contributed to a warm spell 50 million years ago dubbed the Early Eocene climate optimum – the warmest period in 65 million years. But over the following 15 million years, deep sea temperatures fell by about 10.8 degrees F., reflecting a significant cooling at the surface. This cooling ultimately allowed the cycle of ice ages to emerge.

Drs. Kent and Muttoni have mined paleomagnetic and other data and suggest that atmospheric CO2 dropped because India collided with Eurasia, shutting down a productive, natural CO2 factory.

Some 120 million years ago, the subcontinent that is now India was migrating north from Antarctica. As it moved, it shoved the ocean crust that was ahead of it under an existing crustal plate. As long as this zone off the Eurasian coast was under water, bottom muck enriched by carbon from the biologically-rich ocean plunged under the plate. It got recycled as lava in volcanoes along a geological feature dubbed the Kohistan Arc, as well as in a vast lava-oozing formation called the Deccan Traps. The eruptions released the carbon as CO2, which helped warm the climate. But once India collided with Eurasia 50 million years ago, India rode over the top of the zone and shut off the process. This, plus changes in ocean circulation as continents rearranged themselves, contributed to the long chill, the researchers suggest.

The results appear in the current issue of the Proceedings of the National Academy of Sciences.

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Details about the 2008 Arctic Melt Season

http://global-warming.accuweather.com/2008/09/details_about_the_2008_arctic.html

September 25, 2008

The Arctic summer melt season is over as sea ice has already begun to increase in coverage as the day length rapidly diminishes. The National Snow and Ice Data Center (NSIDC) released a report yesterday detailing the 2008 melt season and compared it to the record-low season of 2007.
Arctic sea ice September 23, 2007. I

Arctic sea ice September 24, 2008 (accounting for leap year)

Here are some of the main points from the report of why 2008 did not break 2007's record low.....

--Higher-than-average retention of first-year sea ice as more thin ice survived this melt season than is typical.

--The summer of 2008 was cooler than 2007.

--Much of this thin, first-year ice was located at higher latitudes compared to 2007.

--Wind patterns in 2008 as shown below were different from 2007, leading to less compacted ice, which does no melt as quickly compared to compacted ice.
Image

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The green bubble bursts

http://www.latimes.com/news/opinion/la-oe-shellenberger30-2008sep30,0,5840948.story

Amid the energy crisis, Democrats are losing the high ground on the environment to a GOP that is pushing oil drilling.

By Ted Nordhaus and Michael Shellenberger

September 30, 2008

As the election enters its endgame, Democrats and their environmental allies face a political challenge they could hardly have imagined just a few months ago. America's growing dependence on fossil fuels, once viewed as a Democratic trump card held alongside the Iraq war and the deflating economy, has become a lodestone instead. Republicans stole the energy issue from Democrats by proposing expanded drilling -- particularly lifting bans on offshore oil drilling -- to bring down gasoline prices. Whereas Barack Obama told Americans to properly inflate their tires, Republicans at their convention gleefully chanted "Drill, baby, drill!" Obama's point on conservation and efficiency was lost on an electorate eager for a solution to what they perceive as a supply crisis.

Democrats and greens ended up in this predicament because they believed their own press clippings -- or, perhaps more accurately, Al Gore's. After the release of the documentary film and book "An Inconvenient Truth," greens convinced themselves that U.S. public opinion on climate change had shifted dramatically, despite having no empirical evidence that was the case. In fact, public concern about global warming was about the same before the movie -- 65% told a Gallup poll in 2007 that global warming was a somewhat or very important concern in comparison to

63% in 1989. Global warming remains a low-priority issue, hovering near the bottom of the Pew Center for People and the Press' top 20 priorities.

By contrast, public concern about gasoline and energy prices has shifted dramatically. While liberals and environmentalists were congratulating themselves on the triumph of climate science over fossil-fuel-funded ignorance, planning inauguration parties and writing legislation for the next Democratic president and Congress, gas prices became the second-highest concern after the economy, according to Gallup.

This summer, elite opinion ran headlong into American popular opinion. The train wreck happened in the Senate and went by the name of the Climate Security Act. That bill to cap U.S. greenhouse gas emissions would have, by all accounts (even the authors'), increased gasoline and energy prices. Despite clear evidence that energy-price anxiety was rising, Democrats brought the bill to the Senate floor in June when gas prices were well over $4 a gallon in most of the country. Republicans were all too happy to join that fight.

Indeed, they so relished the opportunity to accuse Democrats of raising gasoline prices in the midst of an energy crisis, they insisted that the 500-page bill be read into the Senate record in its entirety in order to prolong the debate. Within days, Senate Democrats started jumping ship. Democratic leaders finally killed the debate to avert an embarrassing defeat, but by then they had handed Republicans a powerful political club.

Republicans have been bludgeoning Democrats with it ever since. They held dramatic "hearings," unauthorized by the Democratic leadership, on the need for expanded oil drilling to lower gas prices. Former House Speaker Newt Gingrich quickly announced a book, "Drill Here, Drill Now, Pay Less," a movie and a petition drive. And Republican presidential candidate John McCain stopped making speeches about his support for bipartisan climate action, which is how he had started his campaign, and attacked Obama and congressional Democrats for opposing drilling instead.

On June 9, three days after the emissions cap-and-trade bill died in the Senate, Obama led McCain by eight points, according to Gallup. By June 24, the race was in a dead heat, a shift owed in no small part to Republicans battering Democrats on energy. Seeing the writing on the wall, Obama reversed his opposition to drilling in August, and congressional Democrats quickly followed suit.

But the damage has largely been done. In following greens, Democrats allowed McCain and Republicans to cast them as the party out of touch with the pocketbook concerns of middle-class Americans and captive to special interests that prioritize remote wilderness over economic prosperity.

In a tacit acknowledgment of their defeat, some green leaders, such as the Sierra Club's Carl Pope, have endorsed the Democrats' pro-drilling strategy. But few of them seem to realize the political implications. The most influential environmental groups in Washington -- the Natural Resources Defense Council and the Environmental Defense Fund -- are continuing to bet the farm on a strategy that relies on emissions limits and other regulations aimed at making fossil fuels more expensive in order to encourage conservation, efficiency and renewable energy. But with an economic recession likely, and energy prices sure to remain high for years to come thanks to expanding demand in China and other developing countries, any strategy predicated centrally on making fossil fuels more expensive is doomed to failure.

A better approach is to make clean energy cheap through technology innovation funded directly by the federal government. In contrast to raising energy prices, investing somewhere between $30 billion and $50 billion annually in technology R&D, infrastructure and transmission lines to bring power from windy and sunny places to cities is overwhelmingly popular with voters. Instead of embracing this big investment, greens and Democrats push instead for tiny tax credits for

renewable energy -- nothing approaching the national commitment that's needed.

With just six weeks before the election, the bursting of the green bubble is a wake-up call for Democrats. Environmental groups, perpetually certain that a new ecological age is about to dawn in America, have serially overestimated their strength and misread public opinion. Democrats must break once and for all from green orthodoxy that focuses primarily on making dirty energy more expensive and instead embrace a strategy to make clean energy cheap.

By continuing to hew to the green agenda, Democrats have not only put in jeopardy their chance of taking back the White House and growing their majority in Congress, they also have set back the prospects of establishing policies that might effectively address the climate and energy crises.

Ted Nordhaus and Michael Shellenberger are authors of "Break Through: From the Death of Environmentalism to the Politics of Possibility" and co-founders of the Breakthrough Institute.

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Nature as a Privileged Minority

http://www.spectator.org/dsp_article.asp?art_id=13972

By Thomas A. Szyszkiewicz

This past Sunday, Ecuadorans overwhelmingly approved a new constitution, the twentieth such document in that nation's history since 1830. But this constitution is markedly different from all the others, and its most notable feature is nothing less than giving nature the same rights as human beings. "Persons and people have the fundamental rights guaranteed in this Constitution and in the international human rights instruments. Nature is subject to those rights given by this Constitution and Law."

While this is the most notable feature, the entire document is full of socialistic doctrine. President Rafael Correa can now remain in office until 2017, dissolve Congress at will, and has taken over control of the country's monetary policy from the central bank. According to the *Financial Times*, he can also grab and redistribute idle farmland, appoint controlling majorities in the supreme, constitutional, and electoral courts and he has exclusive authority over the budget. Plus the document bans big landholdings, allows for popular referenda without the authorization of the congress, and raises mandatory spending on health, education, and social security.

The country's Catholic bishops vocally opposed the new document on three grounds -- that through the ambiguous language of "reproductive rights" it would allow for abortion, that it allows for same-sex civil unions to have the same status as marriage, and that it doesn't allow parents the freedom to choose the schooling they think best fits their own children's needs. That last objection translates into the constitution requiring children to attend state-run schools.

In other words, we are seeing the making of another Hugo Chavez-like Venezuela. Whether or not it will turn out to have similar militaristic overtones remains to be seen. So far, the overwhelming vote in favor of the document shows that Correa has a popular mandate, which will initially make it easy for him to implement changes. Those who were most outspokenly against him were the wealthy. According to some reports, indigenous tribes were willing to go along with the constitution, but they did so begrudgingly.

How long that popularity will last is unclear. The provisions making nature into a juridic person could be the constitution's economic undoing. There are five articles on nature in the document and the fourth one states:

The State will apply precaution and restriction measures in all the activities that can lead to the extinction of species, the destruction of the ecosystems or the permanent alteration of the natural cycles.

The introduction of organisms and organic and inorganic material that can alter in a definitive way the national genetic patrimony is prohibited.

The application of this and other key provisions to Ecuador's largest export, oil, is going to have a major impact on the country's future. Oil revenues make up more than half of the Ecuador's export earnings and one-quarter of its public sector income. Drilling or exploring for oil in environmentally sensitive areas could become increasingly difficult with the constitutional provisions on nature in place. This is especially true since any Ecuadoran can now represent nature in any court of law in the country. And that's not going to help Ecuador's economy, which grew by only two percent last year, according to the *Economist*, and has a poverty rate of 38 percent.

ECUADOR'S GRANTING of juridic personhood to nature is unique in the world, but the country is not completely alone. Spain will be granting human rights to all 350 apes in its territory. Switzerland is telling farmers not to lop flowers off as they return from mowing their fields since those flowers have a right to exist as they are. The European Court of *Human* Rights will be hearing a case that could grant a chimpanzee the status of a person in Austria. And in an editorial watching amusedly as Ecuador begins its grand experiment, the *Los Angeles Times* reported that Australia, Italy, South Africa, and Nepal (which is also in the midst of writing a constitution) have all started looking at similar juridic person provisions.

While we in the U.S. might think it's only the crazy Europeans and backwater countries like Ecuador that are into this stuff, we shouldn't be so smug. Ecuador turned to a little-known public interest law firm called the Community Environmental Legal Defense Fund in Chambersburg, Pa., for advice on the nature's rights language of its constitution. The reason: CELDF has already convinced some small municipalities here to pass similar legislation. These towns have a clear purpose in mind, which is to keep large corporations out of their territories. They don't want factory farms being set up or corporations dumping chemical sludge on their fields or giant box-stores like Wal-Mart and Target coming into their towns.

However, CELDF has another purpose in mind -- the removal of the juridic person status given to U.S. corporations. This law incenses them and they blame it for the rise of big-box retailers and the disappearance of Mom and Pop shops all over the country. While that may or may not be an accurate reading of history, what is clear is that the law is an accurate law. For behind every corporation is a group of people who run that corporation. Behind nature is...what?

For monotheists, it's "an enormous gift from God to humanity," as Pope Benedict XVI recently said. For the people of CELDF, nature is an end in itself. Article 1 of the Rights of Nature section in the Ecuadoran constitution reads, "Nature or Pachamama, where life is reproduced and exists, has the right to exist, persist, maintain and regenerate its vital cycles, structure, functions and its processes in evolution." Pachamama is the name of an Andean goddess that roughly translated means "Mother Nature." So much for Rafael Correa being what the press has termed "a devout Catholic."

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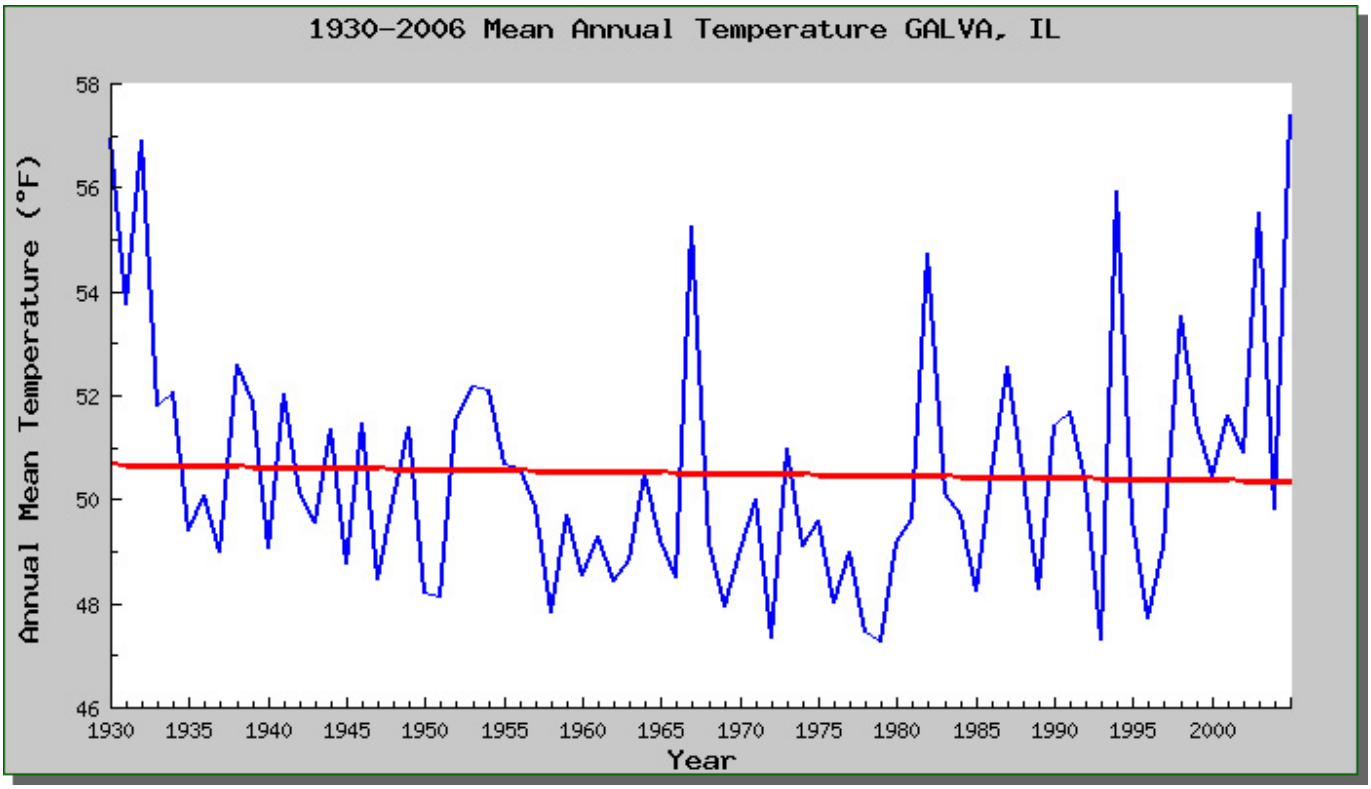
USHCN Temperature Record of the Week: Galva, IL
http://co2science.org/data/ushcn/stationoftheweek.php

To bolster our claim that "There Has Been Little Net Global Warming Over the Past 70 Years," each week we highlight the temperature record of one of the 1221 U.S. Historical Climatology Network (USHCN) stations from 1930-2005.

This issue's temperature record of the week is from Galva, IL. During the period of most significant greenhouse gas buildup over the past century, i.e., 1930 and onward, Galva's mean annual temperature has cooled by 0.32 degrees Fahrenheit. Not much global warming here!



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Central Indian Ocean Coral Recovery from 1998 Bleaching
http://co2science.org/articles/V11/N40/B2.php

Reference
Sheppard, C.R.C., Harris, A. and Sheppard, A.L.S. 2008. Archipelago-wide coral recovery patterns since 1998 in the Chagos Archipelago, central Indian Ocean. *Marine Ecology Progress Series* **362**: 109-117.

Background
The "very remote" Chagos Archipelago spans an area of about 400 x 250 km in the central Indian Ocean and "mostly lacks reef fishing, shoreline construction, sediment disturbance, or local pollution," in the words of the authors, "which therefore do not confound recovery from the warming-induced mortality" that followed the 1998 bleaching event there, where "cover values of coral and soft coral on seaward slopes before 1998 totaled 50 to 95%, which declined in 1998 to an average of 12%, and even to zero between 0 and 5 m depth in some shallow areas."

What was done
Sheppard *et al.* measured the degree of coral recovery on seaward slopes of all five islanded atolls of the Chagos Archipelago from February to March of 2006.

What was learned
The three UK scientists report that "following very heavy coral mortality (mostly >90%) caused by the 1998 warming event, and despite two further sub-lethal bleaching events, the recovery of coral cover, colony numbers and juvenile recruitment has been good in many parts of the archipelago." In fact, they state that "in 2006, coral cover was almost restored to pre-1998 values at most shallow sites." Also, they report that "no shift was observed towards algal domination, or to assemblages dominated by *Porites* or faviids, as has been reported elsewhere."

What it means
Sheppard *et al*. write that "given that examples of reefs without local impacts are rare, these results illustrate the importance of reference sites such as this that lack local, direct effects," and as we have long contended, Sheppard *et al*.'s findings indicate that earth's corals are much better equipped to successfully rebound from thermal-induced coral bleaching events when they are not exposed to the direct deleterious *localized* effects of humanity, which make it much more difficult for corals to successfully recover from periodic exposure to dangerously high temperatures.

Hence, it would seem to us that if we want to preserve earth's corals in the face of possible further global warming -- about which we can really do *nothing* -- our focus should be on trying to reduce the many deleterious *local* effects of humanity on coral reef environments, about which we *can* do something ... but only if we really put our minds, mouths and money to it.

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Rainfall Extremes at Uccle, Belgium: 1898-2004

http://co2science.org/articles/V11/N40/C2.php

Reference
Ntegeka, V. and Willems, P. 2008. Trends and multidecadal oscillations in rainfall extremes, based on a more than 100-year time series of 10 min rainfall intensities at Uccle, Belgium. *Water Resources Research* **44**: 10.1029/2007WR006471.

Background
The authors write that "long-term temporal analysis of trends and cycles is crucial in understanding the natural variability within the climate system." Hence, they provide a stellar example of such a "crucial analysis" with respect to extremes of rainfall in Belgium over the past hundred-plus years.

What was done
Ntegeka and Willems conducted "an empirical statistical analysis of trends in rainfall extremes ... based on the long-term high-frequency homogeneous rainfall series at the climatological station of the Royal Meteorological Institute of Belgium at Uccle." Amazingly, this series was recorded by "the same measuring instrument at the same location since 1898 and processed with identical quality since that time," and it was done at a measuring frequency of *ten minutes*, which has yielded more than 107 years of *continuous data*.

What was learned
The Belgian researchers report that "significant deviations in rainfall quantiles were found, which persisted for periods of 10 to 15 years," such that "in the winter and summer seasons, high extremes were clustered in the 1910s-1920s, the 1960s and recently in the 1990s."

What it means
"This temporal clustering," in the words of Ntegeka and Willems, "highlights the difficulty of attributing 'change' in climate series to anthropogenically induced global warming," and they say

that "no strong conclusions can be drawn on the evidence of the climate change effect in the historical rainfall series."

We find this negative or null result to be extremely interesting, especially in light of the fact that climate alarmists -- who argue that global warming should produce both more floods and more droughts -- typically contend that the warming of the earth over the past century or more has been *unprecedented over the past one to two* ***millennia***. Perhaps their worries are not all that well founded.

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The Atlantic Meridional Overturning Circulation

http://co2science.org/articles/V11/N40/C1.php

Reference
Lohmann, G., Haak, H. and Jungclaus, J.H. 2008. Estimating trends of Atlantic meridional overturning circulation from long-term hydrographic data and model simulations. *Ocean Dynamics* **58**: 127-138.

Background
"Since scenarios for future climate change," in the words of the authors, "indicate a significant reduction of the MOC [Meridional Overturning Circulation] under global warming," they state that "an assessment of variations and trends of the real MOC is important," which is what they thus proceed to provide for the Atlantic MOC over the past hundred years.

What was done
Lohmann *et al*. first "show that temperature trends at mid-latitudes provide [a] useful indirect measure of large-scale changes of deep circulation," where "a mid-depth warming is related to MOC weakening and a cooling to MOC strengthening," for which purpose they employ model simulations provided by the ECHAM5/MPI-OM climate model. Then they use actual temperature observations made at *ocean weather ship* (OWS) stations and along various oceanic sections to determine Atlantic MOC trends over the past century.

What was learned
The three German researchers report that "the temperature indicators suggest no MOC trend for the past 100 years using the existing long-term observations from the OWS." In addition, they say that "Lohmann *et al*. (2004) used high-resolution data from [the] Cariaco Basin (64.67°W, 10.5°N; Black *et al*., 1999), covering the last 800 years, in order to trace variations in [the] MOC," and they say that these proxy records also show "no pronounced trend."

What it means
Over the period of time (the last century) during which climate alarmists say the earth experienced a warming that was *unprecedented over the past one to two* ***millennia***, there appears to have been essentially *no net change* in the magnitude of the Atlantic Meridional Overturning Circulation. This *real-world observation* does not bode well for the climate-alarmist *claim* that such extreme warming should produce a significant downturn in the strength of this phenomenon ***or*** for their claim that the warming of the past century or so is truly as unprecedented as they contend.

References
Black, D.E., Peterson, L.C., Overpeck, J.T., Kaplan, A., Evans, M.N. and Kashgarian, M. 1999. Eight centuries of North Atlantic Ocean atmosphere variability. *Science* **286**: 1709-1713.

Lohmann, G., Rimbu, N. and Dima, M. 2004. Climate signature of solar irradiance variations: analysis of long-term instrumental, historical, and proxy data. *International Journal of Climatology* **24**: 1045-1056.

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West Antarctic Ice Sheet (Mass Balance) – Summary

http://co2science.org/subject/w/summaries/waisbalance.php

Is the West Antarctic Ice Sheet (WAIS) growing or shrinking? Climate alarmists would have everyone believe that it is rapidly disappearing; while the *illuminati* -- Al Gore and James Hansen -- prophetically proclaim that we have but a few short years in which to (1) *repent* of our profligate usage of fossil fuels, (2) *preserve* the ice at the planet's southern pole by curbing our appetite for fossil-fuel energy and stopping global warming, and (3) *avoid* the catastrophic rise in sea level that would otherwise inundate the world's coastal lowlands. But are these zealots correct in what they preach? In what follows, we briefly review the findings of several researchers who have focused their attention on the *mass balance* of the WAIS in an attempt to help reason prevail over rhetoric in this important but contentious war of words.

Anderson and Andrews (1999) analyzed grain size and foraminiferal contents of radiometrically-dated sediment cores collected from the eastern Weddell Sea continental shelf and the western Weddell Sea deep-sea floor in an attempt to better understand the behavior of both the East and West Antarctic ice sheets. In doing so, their data led them to conclude that "significant deglaciation of the Weddell Sea continental shelf took place prior to the last glacial maximum," and that the ice masses that border the Weddell Sea today "are more extensive than they were during the previous glacial minimum." Hence, they concluded "that the current interglacial setting is characterized by a more extensive ice margin and larger ice shelves than existed during the last glacial minimum, and that the modern West and East Antarctic ice sheets have not yet shrunk to their minimum." It is thus to be expected -- independent of what global air temperature may currently be doing, because of the great inertial forces at work over much longer time scales -- that the modern East and West Antarctic Ice Sheets may well continue to shrink and release more icebergs to the Southern Ocean over the coming years, decades and centuries, thereby slowly raising global sea level. Nothing man has done is responsible for these phenomena, however; and nothing man can do will impact them in any way.

Also studying the combined ice sheets of both East and West Antarctica were Wingham *et al.* (1998), who used satellite radar altimeter measurements from 1992 to 1996 to estimate the rate of change of the thickness of nearly two thirds of the grounded portion of the entire Antarctic Ice Sheet, while using snowfall variability data obtained from ice cores to ultimately calculate the mass balance of the interior of the continental ice sheet over the past century. Their results showed that, *at most*, the interior of the Antarctic Ice Sheet has been "only a modest source or sink of sea-level mass this century." As a result, Wingham *et al*. concluded that "a large century-scale imbalance for the Antarctic interior is unlikely," noting that this conclusion is in harmony with a body of relative sea-level and geodetic evidence "supporting the notion that the grounded ice has been in balance at the millennial scale." This full set of findings thus suggests that both portions of the Antarctic Ice Sheet may be rather impervious to climate changes of the magnitude characteristic of the Medieval Warm Period and Little Ice Age, which is the type of change most likely to occur -- if there is any change at all -- in response to the ongoing rise in the air's CO_2 content.

In another study of all of Antarctica, Vaughn *et al.* (1999) used more than 1800 published and unpublished measurements of the surface mass balance of the continent to produce an updated assessment of yearly ice accumulation. Their results indicated that the "total net surface mass balance for the conterminous grounded ice sheet is 1811 Gton yr^{-1} (149 kg m^{-2} yr^{-1}) and for the

entire ice sheet including ice shelves and embedded ice rises, 2288 Gton yr^{-1} (166 kg m^{-2} yr^{-1})." Since Vaughn *et al.* say "these values are around 18% and 7% higher than the estimates widely adopted at present," which were derived about 1985, they would seem to suggest that net icefall on Antarctica may well have been somewhat greater near the end of the 20th century than what was believed to have been the case a decade and a half earlier. Nevertheless, because of uncertainties in these numbers, as well as in those representing the total mass of ice lost from the ice sheet and ice shelves, the authors note that "we are still unable to determine even the sign of the contribution of the Antarctic Ice Sheet to recent sea level change."

A year later, Stenoien and Bentley (2000) mapped the catchment region of West Antarctica's Pine Island Glacier, using radar altimetry and synthetic aperture radar interferometry. These data were used to develop a velocity map that revealed a system of tributaries that channeled ice from the catchment area into the fast-flowing glacier; and by combining the velocity data with information on ice thickness and snow accumulation rates, the two researchers were able to calculate an approximate mass balance for the glacier. Within an uncertainty of 30%, it was thereby determined that the mass balance of the catchment region was not significantly different from zero.

After three more years, Davis and Ferguson (2004) evaluated elevation changes of the entire Antarctic ice sheet over the five-year period June 1995 to April 2000, based on more than 123 *million* elevation change measurements made by the European Space Agency's European Remote Sensing 2 satellite radar altimeter. In doing so, they determined that the east Antarctic ice sheet had a five-year trend of 1.0 ± 0.6 cm/year, that the west Antarctic ice sheet had a five-year trend of -3.6 ± 1.0 cm/year, and that the entire Antarctic continent (north of 81.6°S) had a five-year trend of 0.4 ± 0.4 cm/year. In addition, the Pine Island, Thwaites, DeVicq and Land glaciers of West Antarctica exhibited five-year trends ranging from - 26 to - 135 cm/year.

In discussing their findings, Davis and Ferguson noted that the strongly negative trends of the coastal glacier outlets "suggest that the basin results are due to dynamic changes in glacier flow," and that recent observations "indicate strong basal melting, caused by ocean temperature increases, is occurring at the grounding lines of these outlet glaciers." Hence, they concluded "there is good evidence that the strongly negative trends at these outlet glaciers, the mass balance of the corresponding drainage basins, and the overall mass balance of the west Antarctic ice sheet may be related to increased basal melting caused by ocean temperature increases." Nevertheless, driven by the significantly positive trend of the much larger east Antarctic ice sheet, the ice volume of the entire continent grew ever larger over the last five years of the 20th century, the majority of which increase, according to Davis and Ferguson, was due to increased snowfall.

One year later, in an Editorial Essay published in the journal *Climatic Change*, Oppenheimer and Alley (2005) discussed "the degree to which warming can affect the rate of ice loss by altering the mass balance between precipitation rates on the one hand, and melting and ice discharge to the ocean through ice streams on the other," with respect to the WAIS and Greenland Ice Sheet (GIS). After a brief overview of the topic, they noted that "the key questions with respect to both WAIS and GIS are: What processes limit ice velocity, and how much can warming affect those processes?" In answer to these questions, they said that "no consensus has emerged about these issues nor, consequently, about the fate of either ice sheet, a state of affairs reflecting the weakness of current models and uncertainty in paleoclimatic reconstructions."

After a cursory review of the science related to these two key questions, Oppenheimer and Alley say their review "leads to a multitude of questions with respect to the basic science of the ice sheets," which we list below. However, instead of listing them in their original question form, we post them in the form of statements that address what *we do not know* about the various sub-topics mentioned, which is obviously what prompts the questions in the first place and validates the content of the statements.

(1) *We do not know* if the apparent response of glaciers and ice streams to surface melting and melting at their termini (e.g., ice shelves) could occur more generally over the ice sheets.

(2) *We do not know* if dynamical responses are likely to continue for centuries and propagate further inland or if it is more likely that they will be damped over time.

(3) *We do not know* if surface melting could cause rapid collapse of the Ross or Filchner-Ronne ice shelves, as occurred for the smaller Larsen ice shelf.

(4) *We do not know* if ice sheets made a significant net contribution to sea level rise over the past several decades.

(5) *We do not know* what might be useful paleoclimate analogs for sea level and ice sheet behavior in a warmer world.

(6) *We do not know* the reliability of Antarctic and Southern Ocean temperatures (and polar amplification) that are projected by current GCMs, nor do we know why they differ so widely among models, nor how these differences might be resolved.

(7) *We do not know* the prospects for expanding measurements and improving models of ice sheets nor the timescales involved.

(8) *We do not know* if current uncertainties in future ice sheet behavior can be expressed quantitatively.

(9) *We do not know* what would be useful early warning signs of impending ice sheet disintegration nor when these might be detectable.

(10) *We do not know*, given current uncertainties, if our present understanding of the vulnerability of either the WAIS or GIS is potentially useful in defining "dangerous anthropogenic interference" with earth's climate system.

(11) *We do not know* if the concept of a threshold temperature is useful.

(12) *We do not know* if either ice sheet seems more vulnerable and thus may provide a more immediate measure of climate "danger" and a more pressing target for research.

(13) *We do not know* if any of the various temperatures proposed in the literature as demarking danger of disintegration for one or the other ice sheet are useful in contributing to a better understanding of "dangerous anthropogenic interference."

(14) *We do not know* on what timescale future learning might affect the answers to these questions.

In concluding their essay, Oppenheimer and Alley describe this list of deficiencies in our knowledge of things related to the WAIS as "gaping holes in our understanding" that "will not be closed unless governments provide adequate resources for research," which seem just a bit self-serving. More importantly, however, they state that "if emissions of the greenhouse gases are not reduced while uncertainties are being resolved, there is a risk of making ice-sheet disintegration nearly inevitable."

Clearly, there is a chance -- be it ever so small -- that almost anything *could* occur. But how *probable* are such high-risk phenomena? To claim, as Oppenheimer and Alley do, that ice-sheet disintegration is *nearly inevitable* if emissions of greenhouse gases are not reduced, is *incredibly illogical*, especially in light of the existence of what they say are "gaping holes in our understanding," as enumerated in the above list. In fact, given the degree of deficiency in our

knowledge of the matter, it is perhaps as likely as not that a continuation of the planet's recovery from the relative cold of the Little Ice Age could actually lead to a *buildup* of polar ice; but there is no way *we* would ever say that that outcome is "nearly inevitable."

The following year also saw the publication of a paper that had little to recommend its main conclusions. Velicogna and Wahr (2006) used measurements of time-variable gravity from the Gravity Recovery and Climate Experiment (GRACE) satellites to determine mass variations of the Antarctic ice sheet for the 34 months between April 2002 and August 2005. When all was said and done -- which included a lot of dubious approximations -- the two researchers concluded that "the ice sheet mass decreased significantly, at a rate of 152 ± 80 km^3/year of ice, equivalent to 0.4 ± 0.2 mm/year of global sea level rise," all of which mass loss came from the WAIS, since they calculated that the East Antarctic Ice Sheet mass balance was 0 ± 56 km^3/year.

What these results imply about the real world is highly dependent upon their ability to truly represent what they presume to describe; and in this regard Velicogna and Wahr say there is "geophysical contamination ... caused by signals outside Antarctica," including "continental hydrology ... and ocean mass variability." The first of these confounding factors, according to them, "is *estimated* [our italics] using monthly, global water storage fields from the Global Land Data Assimilation system," while "the ocean contamination is *estimated* [our italics] using a JPL version of the Estimating Circulation and Climate of the Ocean (ECCO) *general circulation model* [our italics]."

In addition to these problems, the two researchers note that the GRACE mass solutions "do not reveal whether a gravity variation over Antarctica is caused by a change in snow and ice on the surface, a change in atmospheric mass above Antarctica, or post-glacial rebound (PGR: the viscoelastic response of the solid Earth to glacial unloading over the last several thousand years)."

To adjust for the confounding effect of the variable atmospheric mass above Antarctica, Velicogna and Wahr utilized European Centre for Medium-Range Weather Forecasts (ECMWF) meteorological fields, but they acknowledge that "there are errors in those fields," so they "*estimate* [our italics] the secular component of those errors by finding monthly differences between meteorological fields from ECMWF and from the National Centers for Environmental Prediction."

With respect to post-glacial rebound, Velicogna and Wahr say "there are two important sources of error in PGR estimates: the ice history and Earth's viscosity profile." To deal with this problem, they "*estimate* [our italics] the PGR contribution and its uncertainties using *two* ice history *models* [our italics]."

All of these estimates and adjustments are convoluted and complex, as well as highly dependent upon various *models*. In addition, the estimates and adjustments do not deal with miniscule effects, as Velicogna and Wahr acknowledge that "the PGR contribution is much larger than the uncorrected GRACE trend." In fact, their calculations indicate that the PGR contribution exceeds that of the signal being sought *by nearly a factor of five!!!* And they are forced to admit that "a significant ice mass trend does not appear until the PGR contribution is removed."

In light of the latter *humungous* confounding problem, Velicogna and Wahr rightly state in their concluding paragraph that "the main disadvantage of GRACE is that it is more sensitive than other techniques to PGR." In fact, considering the many other adjustments they had to make, based upon *estimations* utilizing *multiple models* and *databases with errors* that had to be *further estimated*, we are led to totally discount the significance of their final result, particularly in light of the additional fact that it did not even cover a full three-year period. *Much* more likely to be *much* more representative of the truth with respect to the WAIS's mass balance are the findings of Zwally *et al*. (2005), who determined Antarctica's contribution to mean global sea

level over a recent *nine*-year period to be only 0.08 mm/year compared to the five-times-greater value of 0.4 mm/year calculated by Velcogna and Wahr.

In a contemporaneous study, van de Berg *et al.* (2006) compared results of model-simulated Antarctic *surface mass balance* (SMB) -- which they derived from a regional atmospheric climate model for the time period 1980 to 2004 that used ERA-40 fields as lateral forcings -- with "all available SMB *observations* [our italics] from Antarctica (N=1900)" in a *recalibration process* that ultimately allowed them "to construct a best estimate of contemporary Antarctic SMB," where the many real-world observations employed in this process came from the studies of Vaughan *et al.* (1999), van den Broeke *et al.* (1999), Frezzotti *et al.* (2004), Karlof *et al.* (2000), Kaspari *et al.* (2004), Magand *et al.* (2004), Oerter *et al.* (1999, 2000), Smith *et al.* (2002) and Turner *et al.* (2002), which observations were derived by a number of different measurement techniques -- including stake arrays, bomb horizons and chemical analyses of ice cores that covered time periods ranging from a few years to more than a century.

As a result of this effort, van de Berg *et al.* determined that "the SMB integrated over the grounded ice sheet (171 ± 3 mm per year) exceeds previous estimates by as much as 15%," with the largest differences between their results and those of others being "up to one meter per year higher in the coastal zones of East and West Antarctica," concluding that "support or falsification of this result can only be found in new SMB observations from poorly covered high accumulation regions in coastal Antarctica." Consequently, until such time as pertinent new data might indicate otherwise, we have little reason to believe anything much different from what they have determined, i.e., that Antarctica's grounded ice sheet has been steadily growing for the past quarter-century.

In the very same year, Wingham *et al.* (2006) "analyzed 1.2 x 10^8 European remote sensing satellite altimeter echoes to determine the changes in volume of the Antarctic ice sheet from 1992 to 2003," which survey, in their words, "covers 85% of the East Antarctic ice sheet and 51% of the West Antarctic ice sheet," which together comprise "72% of the grounded ice sheet." In doing so, they found that "overall, the data, corrected for isostatic rebound, show the ice sheet growing at 5 ± 1 mm per year." To calculate the ice sheet's change in *mass*, however, "requires knowledge of the density at which the volume changes have occurred," and when the researchers' best estimates of regional differences in this parameter were used, they found that "72% of the Antarctic ice sheet is gaining 27 ± 29 Gt per year, a sink of ocean mass sufficient to *lower* [their italics] global sea levels by 0.08 mm per year." This net *extraction* of water from the global ocean, according to Wingham *et al.*, occurs because "mass gains from accumulating snow, particularly on the Antarctic Peninsula and within East Antarctica, exceed the ice dynamic mass loss from West Antarctica."

Also publishing in 2006, Ramillien *et al.* derived new estimates of the mass balances of the East and West Antarctic ice sheets from GRACE data for the period July 2002 to March 2005: a loss of 107 ± 23 km^3/year for West Antarctica and a gain of 67 ± 28 km^3/year for East Antarctica, which results yielded a net ice loss for the entire continent of only 40 km^3/year (which translates to a mean sea level rise of 0.11 mm/year), as opposed to the 152 km^3/year ice loss calculated by Velicogna and Wahr (which translates to a nearly four times larger mean sea level rise of 0.40 mm/year). Clearly, Ramillien *et al.*'s mean sea level rise is much less ominous than the much larger value calculated by Velicogna and Wahr; and it is of the same order of magnitude as the 0.08 mm/year Antarctic-induced mean sea level rise calculated by Zwally *et al.* (2005), which was derived from elevation changes based on *nine* years of satellite *radar altimetry data* obtained from the European Remote-sensing Satellites ERS-1 and -2. Even at that, the GRACE approach is still laden with a host of potential errors, as we noted in our discussion of the Velicogna and Wahr paper, and as both they and Ramillien *et al.* readily admit. In addition, as the latter researchers note in their closing paragraph, "the GRACE data time series is still very short and these results must be considered as preliminary since we cannot exclude that the apparent trends discussed in this study only reflect interannual fluctuations."

In yet another contemporary study, Remy and Frezzotti (2006) reviewed "the results given by three different ways of estimating mass balance, first by measuring the difference between mass input and output, second by monitoring the changing geometry of the continent, and third by modeling both the dynamic and climatic evolution of the continent." In describing their findings, the two researchers state that "the East Antarctica ice sheet is nowadays more or less in balance, while the West Antarctica ice sheet exhibits some changes likely to be related to climate change and is in negative balance." In addition, they report that "the current response of the Antarctica ice sheet is dominated by the background trend due to the retreat of the grounding line, leading to a sea-level rise of 0.4 mm/yr over the short-time scale," which they describe in terms of centuries. However, they note that "later, the precipitation increase will counterbalance this residual signal, leading to a thickening of the ice sheet and thus a decrease in sea level."

In one final study from 2006, van den Broeke *et al.* employed a regional atmospheric climate model (RACMO2), with snowdrift-related processes calculated offline, to calculate the flux of solid precipitation (Ps), surface sublimation (SU), sublimation from suspended (drifting/saltating) snow particles, horizontal snow drift transport, and surface melt (ME). In doing so, they found that "even without snowdrift-related processes, modeled (Ps-SU-ME) from RACMO2 strongly correlates with 1900 spatially weighted quality-controlled in situ SSMB *observations* [our italics]," which result they describe as "remarkable," given that the "model and observations are completely independent." Then, to deal with a remaining systematic elevation bias in the model results, they applied a set of empirical corrections (at 500-m intervals) that "largely eliminated" this final deviation from reality. And after analyzing all of the data-driven results for trends over the period 1980-2004, the four Dutch researchers report that "no trend is found in *any* [our italics] of the Antarctic SSMB components, nor in the size of ablation areas."

At long last, we finally move from 2006 to 2007, as we conclude our Summary with a brief review of the paper of Krinner *et al.* (2007), who used the LMDZ4 atmospheric general circulation model (Hourdin *et al.*, 2006) to simulate Antarctic climate for the periods 1981-2000 (to test the model's ability to adequately simulate present conditions) and 2081-2100 (to see what the future might hold for the mass balance of the Antarctic Ice Sheet and its impact on global sea level). This work revealed, first of all, that "the simulated present-day surface mass balance is skilful on continental scales," which gave them confidence that their results for the end of the 21st century would be reasonably skilful as well. Of that latter period a full century from now, they determined that "the simulated Antarctic surface mass balance increases by 32 mm water equivalent per year," which corresponds "to a sea level decrease of 1.2 mm per year by the end of the twenty-first century," which would in turn "lead to a cumulated sea level decrease of about 6 cm." This result, in their words, occurs because the simulated temperature increase "leads to an increased moisture transport towards the interior of the continent because of the higher moisture holding capacity of warmer air," where the extra moisture falls as precipitation, causing the continent's ice sheet to grow.

The results of this study -- based on sea surface boundary conditions taken from IPCC Fourth Assessment Report simulations (Dufresne *et al.*, 2005) that were carried out with the IPSL-CM4 coupled atmosphere-ocean general circulation model (Marti *et al.*, 2005), of which the LMDZ4 model is the atmospheric component -- argue strongly against climate-alarmist predictions of future catastrophic sea level rise due to mass wastage of the Antarctic Ice Sheet caused by CO2-induced global warming. In fact, they suggest just the *opposite*, i.e., that CO2-induced global warming would tend to *buffer* the world against such an outcome.

And that seems to be the message of most of the other major studies of the subject as well. We have nothing to fear but fear itself ... plus Al Gore and James Hansen, who seem to be its chief purveyors.

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Last updated 1 October 2008

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Varietal Responses of Crops to Atmospheric CO2 Enrichment

http://co2science.org/articles/V11/N40/EDIT.php

Determining how different crop cultivars respond to elevated concentrations of atmospheric CO2 is an essential first step in breeding varieties to best profit from the ongoing rise in the air's CO2 content, which undertaking is an absolute necessity if we ever hope to be able to produce enough food to feed the planet's burgeoning human population without usurping all of the land and freshwater resources that currently provide habitat and sustenance for the rest of the planet's biota, or what we could call "wild nature." However, in the words of James Bunce of the USDA's Agricultural Research Service, "much of the work on intraspecific variation in crops has been done in controlled environment chambers, in glasshouses or with plants in pots, and it is uncertain how those results may extrapolate to field conditions."

In a four-year exploratory study that went a long way toward overcoming these various experimental limitations, Bunce grew adequately fertilized plants of four varieties of the common garden bean (*Phaseolus vulgaris* L.) -- Matterhorn (a great northern bean), Jaguar (a black bean), Red Hawk (a kidney bean), and Brown Beauty (a snap bean) -- from seed to maturity under standard field conditions at Beltsville, Maryland (USA) within open-top chambers, where photosynthetic measurements of mature upper-canopy leaves were made in full sunlight at midday during the pod-filling stages of four growing seasons, and where final seed yields and other plant characteristics were determined at harvest.

This work revealed that the extra 180 ppm of CO2 in the CO2-enriched chambers (a concentration increase of close to 50% during daylight hours) resulted in a mean long-term stimulation of midday net photosynthesis of approximately 18% in the Matterhorn and Jaguar bean varieties, but an increase of fully twice that much (36%) in the Red Hawk and Brown Beauty cultivars. In terms of dry mass *seed yield*, however, the Matterhorn variety led the way with a CO2-induced increase of about 39%, followed by Red Hawk at 21%, Brown Beauty at 18%, and Jaguar with an actual 10% *decline* in seed yield. What is more, as Bunce reports, "the highest yielding variety at ambient CO2 [Jaguar] was out-yielded by a different variety at elevated CO2 [Matterhorn]."

In light of these several observations, it is clear there is significant variability in seed yield response to atmospheric CO2 enrichment among the four bean varieties tested by Bunce. In addition, it is equally clear there was no *a priori* way of knowing which of the four cultivars would prove to be the best responder to an increase in atmospheric CO2 concentration, or that one of them would actually respond *negatively* to an increase in the air's CO2 content. Consequently, Bunce's experiment demonstrates the great need we have to perform a *host* of such experiments on our most important crop plants, in order to identify which of their many varieties should be selected for crop breeding work, in order to take full advantage of the significant increase in the atmosphere's CO2 concentration that will surely occur over the next several decades, irrespective of how rigorously the nations of the world might attempt to curtail their CO2 emissions. These important crop characteristic assessments *must be made*, in spite of everything else we might rightly -- or wrongly -- do concomitantly.

Sherwood, Keith and Craig Idso

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Bunce, J.A. 2008. Contrasting responses of seed yield to elevated carbon dioxide under field conditions within *Phaseolus vulgaris*. *Agriculture, Ecosystems and Environment* **128**: 219-224.

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Planet Gore: Even the Sun's Not as Bright as It Used to Be

http://planetgore.nationalreview.com/

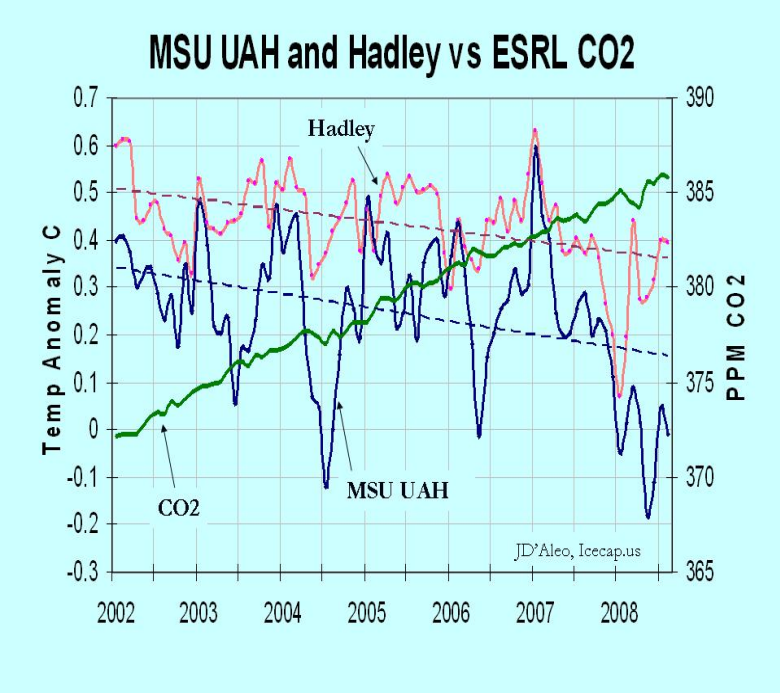
Wednesday, October 01, 2008

by Chris Horner

In February, the geniuses at Mensa will host keynote speaker James Hansen, among others, to frighten them with scary stories. How can bright people believe, like the UN Secretary General, that computer model scenarios of the future are more frightening than Hollywood movies? Because they're . . . real?

Well, apparently because they also accept observed, um, truths like "It is now firmly established that Earth's global surface temperature is increasing and that human emissions of greenhouse gases (GHGs) are the primary cause of that global warming."

Ahem.



Back to my point about this nerdy "second life" and avatar business going too far, when things that only happen in computer models are the new reality. Something about this is just odd. Methinks I smell another membership group being hijacked by a few activist members, a la the American Meteorological Society and all of those others now invoked as proof of a consensus, though their members never were asked to vote on whether they agreed to lend the group's name to the cause. So going along with the crowd to be cool and — who knows, pocket some of the billions — is also the *smart* thing to do.

Urgent Is as Urgent

The text of the amendment the Senate will consider today regarding the Economic Rescue Plan is out.

This is an emergency financial rescue plan. They have to do it. Voting against it is irresponsible.

As part of Congress's financial rescue, we see the following hobby horse:
SEC. 117. CARBON AUDIT OF THE TAX CODE.
a) STUDY. — The Secretary of the Treasury shall enter into an agreement with the National Academy of Sciences to undertake a comprehensive review of the Internal Revenue Code of 1986 to identify the types of and specific tax provisions that have the largest effects on carbon and other greenhouse gas emissions and to estimate the magnitude of those effects.
(b) REPORT. — Not later than 2 years after the date of enactment of this Act, the National Academy of Sciences shall submit to Congress a report containing the results of study authorized under this section.
(c) AUTHORIZATION OF APPROPRIATIONS. — There is authorized to be appropriated to carry out this section $1,500,000 for the period of fiscal years 2009 and 2010.
Surely the home-mortgage interest deduction for those people we're about to bail out — for now — will turn up in this report, right Chairman Dingell? Are congressional junkets in the tax code? Or the notion that we need to fly our bossiest members to and from California dozens of times each year for mostly wasted time?

Yeah, yeah, I know: per a Senate aide passing the language along, this is part of "H.R. 6049 as passed in the Senate (which includes AMT/Energy extenders — Keep in mind the extenders package passed 93-2 on September 23)" but stalled in the House. A measure that, apparently, cannot survive on its merits. Much like the green programs it is bailing out, like the windmill boondoggle. So it is being stuck in here.

Anyone sick of these people yet?

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