

GLOBAL COOLING

by Dr Gerrit J. van der Lingen



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INTRODUCTION

The hypothesis that human emissions of greenhouse gases, especially carbon dioxide (CO₂), are causing, or will be causing, dangerous global warming, has been severely criticised on scientific grounds. The critical literature is substantial, not only peer-reviewed scientific papers, but also several substantial scientific books (to mention just a few: Idso and Singer, 2009; Idso, Carter and Singer, 2013a; Carter, 2010; Plimer, 2009).

The hypothesis of dangerous anthropogenic (= man-made) global warming (DAGW) is driven by the Intergovernmental Panel on Climate Change (IPCC), a United Nations organisation. Since 1990 they have produced five assessment reports. Each of them proclaimed stronger belief that humans are responsible for the observed (miniscule) warming, without producing convincing scientific evidence. The IPCC is basically an ideological-political organisation. It doesn't carry out scientific research itself, but analyses published scientific literature. It has been accused of being selective in its selection of publications, ignoring many that contradict their hypothesis.

The DAGW hypothesis has become a quasi-religious dogma. Its beliefs have penetrated all spheres of political and human life. A whole pantheon of articles of belief has been created around the DAGW hypothesis, even some that have not been put forward by the IPCC. A prominent one is the belief that man-made global warming is causing unusual extreme weather events, such as floods, droughts, bushfires, heat waves and hurricanes. However, historic data on such events refutes this article of belief. Environmentalist's belief that there has been an increase in extreme weather events is therefore based on historic amnesia.

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The hypothesis of dangerous anthropogenic (= man-made) global warming (DAGW) has become a quasi-religious dogma. Its beliefs have penetrated all spheres of political and human life.

In this essay I will look at some recent flooding events and suggest that some, together with other phenomena, such as a change in solar activity, may be an indication that the world is entering a cooling period, rather than further man-made warming, as believed by environmentalists.

FLOODING

Since the beginning of 2013, reports of severe flooding have been pouring in from all over the world. To mention a few: January 2013 – South Africa, Zimbabwe, Mozambique, eastern Australia; February 2013 – Peru, Chile, Bolivia; April 2013 – Buenos Aires (Argentina); May 2013 – southern China; June 2013 – northern India, Calgary (Canada), New Zealand (Otago, Nelson & Tasman districts).

However, most surprising were the torrential rains in Europe (late May-early June 2013), causing rivers like the Danube and the Elbe to inundate or threaten many towns and villages (Figure 1). Historic towns like Budapest, Prague and Dresden were affected.



Figure 1. Photographs of severe flooding in Europe in June 2013. A: Passau, Germany (Danube river); B: Grimme, Germany; C: Dresden, Germany (Elbe river); D: Fischerdorf, Germany. *Source: Google, Internet.*

Several news items mentioned that these were the worst floods in 500 years. This means that similar floods occurred in about 1500 AD. That was during the Little Ice Age (LIA – ca 1300 to 1850). Historic records exist of catastrophic floods during the LIA. For instance, the St Elisabeth Floods in The Netherlands in 1404 and 1421, during which tens of thousands of people drowned. Barbary W. Tuchman, in her famous book *A distant mirror – the calamitous 14th*

century (1978, Balantyne Books, New York), describes the calamitous effects of the LIA. To quote from her Chapter 2: *“A physical chill settled on the 14th century at its very start, initiating the misery to come. The Baltic Sea froze over twice, in 1303 and 1306-07; years followed of unseasonable cold, storms and rains, and a rise in the level of the Caspian Sea [note by GJvdL: the Caspian Sea is an inland sea with no connection to world seas and oceans, its level is therefore directly dependent on water inflow from rivers and from evaporation. More heavy rains will raise the sea level]. Contemporaries could not know it was the onset of what has since been recognized as the Little Ice Age, caused by an advance of polar and alpine glaciers and lasting until about 1700 [note by GJvdL: it is now generally considered that the LIA lasted until 1850, albeit with fluctuations – see Figure 2]. Nor were they yet aware that, owing to the changing climate, communications with Greenland were gradually being lost, that the Norse settlements there were being extinguished, that cultivation of grain was disappearing from Iceland and being severely reduced in Scandinavia. But they could feel the colder weather, and mark with fear its result: a shorter growing season.”*

Of special importance to this essay, she writes a bit further on: *“In 1315, after rains so incessant that they were compared to the Biblical Flood, crops failed all over Europe, and famine, the dark horseman of the Apocalypse, became familiar to all.”*

One scientist, in an unguarded moment, sent an email to a colleague in which he wrote “We have to get rid of the Medieval Warm Period”.

FLOODING A SIGN OF GLOBAL COOLING?

It is therefore legitimate to ask whether these “incessant rains” in many places at present, but especially in Europe, could be one of the signs that we may be entering a cooling period, possibly as severe as some periods of the LIA. Several scientists have been pointing to this possibility of cooling, based on scientific indications, such as the sun entering a quiet period and the Pacific Decadal Oscillation (PDO) having entered a cooling phase.

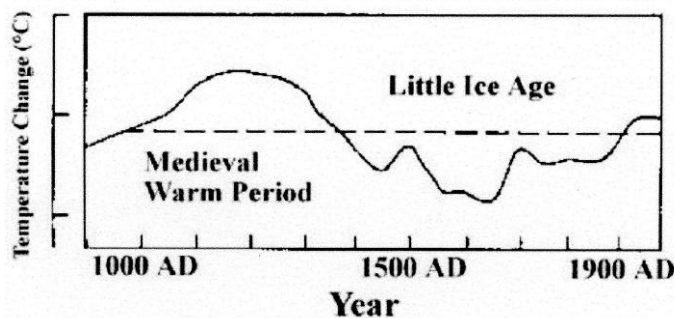


Figure 2. Schematic graph of temperatures during the Medieval Warm Period and Little Ice Age. (Source: IPCC 1st Assessment Report, 1990.)

To explain this, we have to go back in history, to the Medieval Warm Period (MWP, ca 900 to 1300) and the LIA (ca 1300 to 1850).

In the First Assessment Report (1990) of the Intergovernmental Panel on Climate Change (IPCC), Report of Working Group I: “Climate Change” is a graph of temperatures during the MWP and LIA. It is a schematic graph (Figure 2).

Incidentally, the MWP, when it was warmer than today, has been an embarrassment for people promoting the dogma that human emissions of CO₂ are causing dangerous global warming. The warming at that time cannot be blamed on human emissions of CO₂.

One scientist, Dr Jonathan Overpeck, in an unguarded moment, sent an email to a colleague, Dr David Demming, in which he wrote “We have to get rid of the Medieval Warm Period”.

In the third IPCC Assessment Report of 2001 they indeed got rid of the MWP in the now infamous “Hockey Stick” graph.

That the MWP was warmer than today has been shown in several peer-reviewed scientific papers. For instance, a recent paper (24 January 2014) describing paleotemperatures from AD 550 to 1980, deduced from tree ring data from Northern Scandinavia (Rinne et al. 2014) (Figure 3). It clearly shows the MWP.

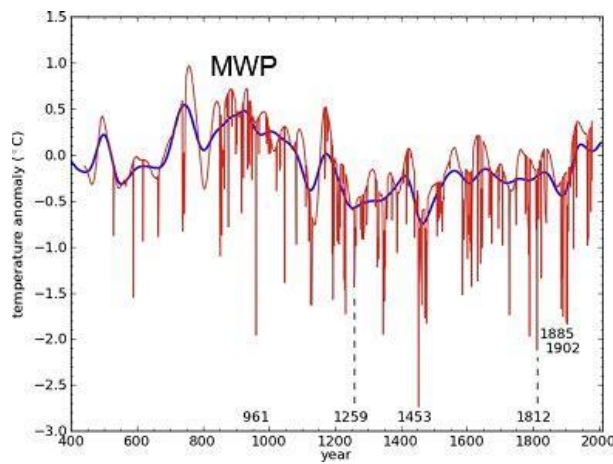


Figure 3. Paleo-temperature record for the past 1600 years, from Scandinavian tree ring data. *Source: Rinne et al., 2014.* (I have indicated the MWP.)

The LIA was not just one cold period. There were several temperature fluctuations. It was found that the coldest periods of the LIA coincided with periods of little or no sunspots, called Minima (Figure 4).

The coldest period was the Maunder Minimum, from about 1645 to 1715, when there were virtually no sunspots. The Dalton Minimum was from about 1790 to 1830.

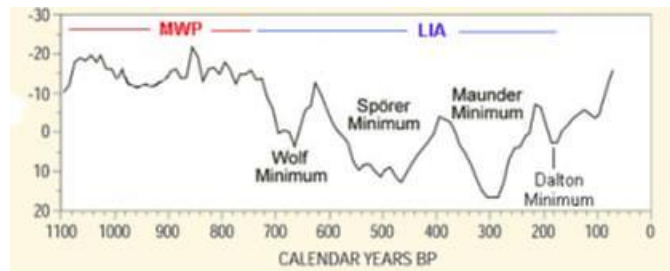


Figure 4. Sunspot minima during the Little Ice Age.

Sunspots have been known for a long time. Chinese astronomers mentioned them in 364

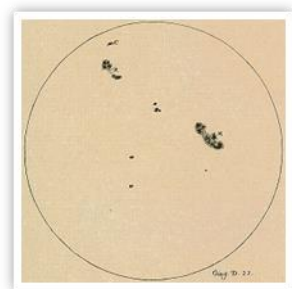


Figure 5. Drawing of sunspots by Galileo (1613).

BCE already. In the western world, the Geek scholar Theophrastus mentioned them in 300 BCE. Dutch (Frysian) astronomers, Johannes and David Fabricius published a description of sunspots in 1611. It is well known that Galileo made drawings of the sunspots he observed through a telescope (a Dutch invention) he constructed himself (Figure 5).

Regular sunspot recordings didn’t start till 1848 (the green line on Figure 6). On average these represent cycles of about 11 years, called Schwabe Cycles. The 11-year cycle is an average. They can vary from 9 to 14 years.

However, it is possible to find out about earlier sunspots thanks to the fact that cosmic rays, when colliding with certain molecules in the atmosphere, create two isotopes, ^{10}Be (Beryllium ten) and ^{14}C (Carbon fourteen). When there are few or no sunspots, more cosmic rays can enter the atmosphere and more ^{10}Be and ^{14}C are being formed. Beryllium ten is found in ocean sediment and ice cores, and carbon fourteen in tree rings. The red line in Figure 6 is determined from ^{14}C measurements. These can only give broad variations, not the small Schwabe cycles.

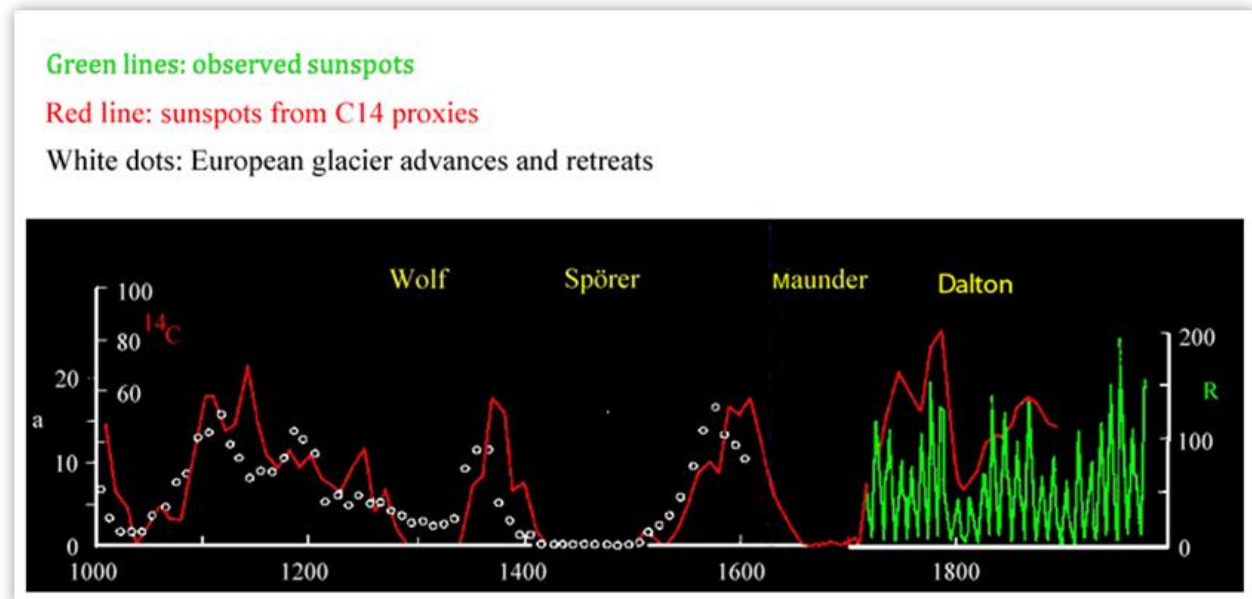


Figure 6. Graph covering the last 1000 years. The green line on the right represents the regular sunspot observations, depicting the 11-year Schwabe Cycles. The red line is created by analysing ^{14}C in tree rings, which is a proxy for sunspots. They clearly depict the sunspot minima during the LIA. The white circles represent the waxing and waning of European Alpine glaciers (down is advance, up is retreat). After *Solanki*.

The white circles in Figure 6 represent the waxing and waning of European Alpine glaciers. Down represents glacier advance, up glacier retreat. There is a reasonable correlation with sunspot minima, which represent colder periods. There are historic records which describe the consequences of advancing glaciers during the LIA. Some Alpine villages were engulfed by glaciers. Priests went onto the glaciers to exorcise them. It was thought that the glaciers were possessed by the devil. The MWP coincided with a sunspot maximum.

There are historic records which describe the consequences of advancing glaciers during the LIA. Some Alpine villages were engulfed by glaciers.

The graph in Figure 6 goes back till 1000 AD. However, paleoclimate research has been able to go back to the beginning of the present interglacial, the Holocene, about 11,500 years ago. Figure 7 (from van Geel and Ziegler, 2013) shows ^{14}C records and Mid-European lake levels.

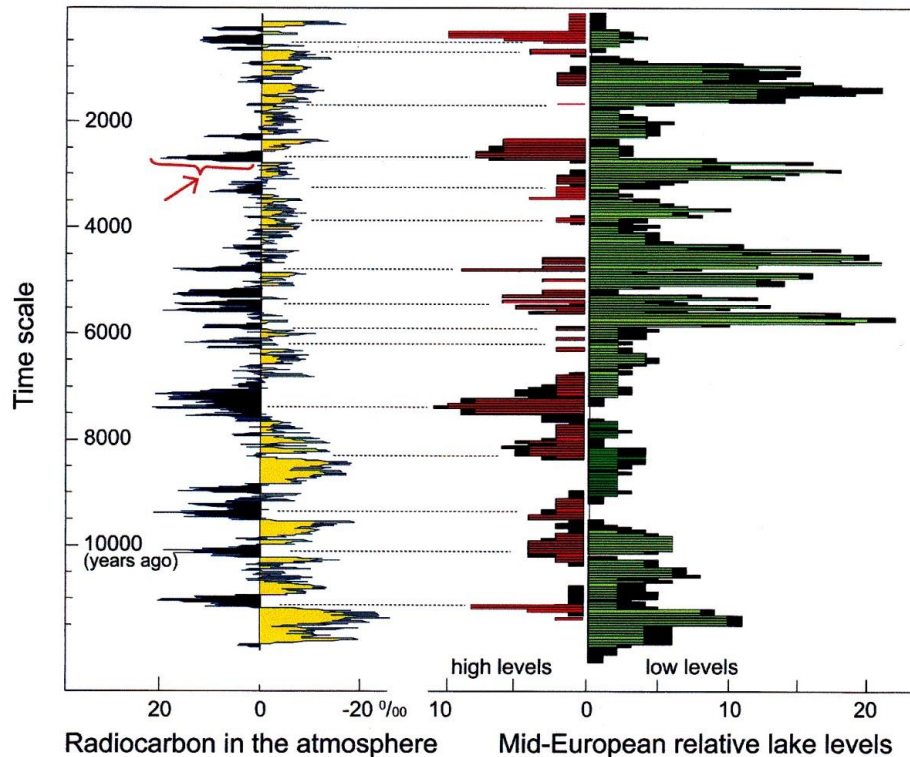


Figure 7. (Figure 1 from van Geel & Ziegler, 2013.) Their caption: “Mid-European lake level changes and atmospheric radiocarbon fluctuations during the last 11,500 years (after Magny, 2007). Periods of low solar activity (high radiocarbon values) [Comment by GJvdL: with radiocarbon they mean carbon 14 – ^{14}C] are linked with high lake levels, while low lake levels occurred during periods of high solar activity (low radiocarbon values). The arrow points to the 850 BC event”.

Van Geel and Ziegler showed that there is a correlation between solar (sunspot) activity and temperature and rainfall. During periods of low solar activity, the climate was cooler and wetter, while during periods of high solar activity, the climate was warmer and dryer. They describe an event in about 850 BC, when there was an “abrupt and intense global climate change” (indicated on Figure 7). This discovery comes from peat profiles. There was “a rapid change from relatively dry and warm to cool, wetter conditions that can be attributed to a major decline in solar activity”. Not only data from peat profiles, but also other lines of research point to the relationship between solar activity and rainfall. For instance, data from stalagmites in Oman show that there is a correlation between oxygen isotopes (as indicators of paleo-temperatures) and monsoonal rainfall (Neff et al. 2001). There are many more studies about the relationship between solar activity and climate (see literature list in van Geel and Ziegler, 2013).

Important research on the relationship between solar activity and climate was also carried out in South Africa by Professor Will Alexander (Alexander et al. 2007). He and his colleagues used numerical analyses of hydrometeorological data in South Africa to show a synchronous linkage between rainfall and solar activity. They also considered the influence of the four major planets: Jupiter, Saturn, Uranus and Neptune (the so-called “Jovian Planets”), on solar activity.

THE IPCC IN DENIAL

Notwithstanding all this published peer-reviewed research, the IPCC keeps maintaining that the influence of the sun on the climate is so small, that it is almost negligible (Figure 8).

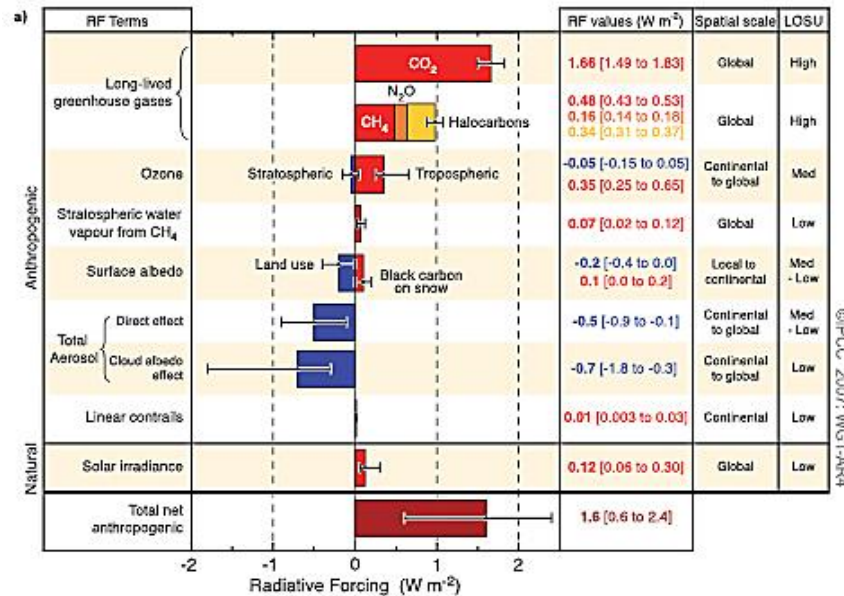


Figure 8. IPCC summary of various radiative forcings of the climate. They only assign high confidence to the effects of anthropogenic (man-made) greenhouse gases. The influence of the sun has been limited to solar irradiance only. Please note that many possible influences are considered as low or medium (far right column). They basically admit that they do not know much about the sun, although there is abundant information in the scientific literature. *Source: IPCC Fourth Assessment Report, Working Group 1, 2007.*

The IPCC ignores all other influences by the sun, such as the effects of UV radiation on the stratosphere, solar wind (particle emissions, magnetic field changes), the effects of cosmic rays on cloud formation, etc. These effects are discussed in detail by Van Geel and Ziegler (2013), who finish their paper with the following statement:

“The IPCC dismisses the important role of the Sun in natural climate change as evidenced by the climate history and blames mankind for climate change without presenting convincing physical evidence that increasing atmospheric CO₂ concentrations are indeed the cause of global warming, a highly controversial subject. The important decline in solar activity that commenced with the end of the Grand Modern Solar Maximum in 2008 will provide the opportunity to clarify the dispute about natural, directly and indirectly solar forced climate change and its relative importance to as yet unproven anthropogenic climate warming”.

They find the fact that the IPCC ignores the paleoclimatic evidence about the sun-climate relationship “inexplicable”.

However, if one looks at the principles guiding the IPCC, which were approved at the Fourteenth Session (Vienna, 1-3 October 1998) on 1 October 1998, amended at the Twenty-First Session (Vienna, 3 and 6-7 November 2003), the Twenty-Fifth Session (Mauritius, 26-28

April 2006) and the Thirty-Fifth Session (Geneva, 6-9 June 2012), it is not at all inexplicable that it ignores the paleoclimate evidence, because its role is defined as follows:

“The role of the IPCC is to assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation. IPCC reports should be neutral with respect to policy, although they may need to deal objectively with scientific, technical and socio-economic factors relevant to the application of particular policies.”

It is therefore clear that the task of the IPCC is to assess information “to understand the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation”. The assessment of possible natural causes of climate change is therefore not explicitly part of its role. They consider *pro forma* only one possible natural cause, solar irradiance, and declare it unimportant. Or, to be more precise, they reject natural causes only for the past 50-odd years. The original idea that humans started to warm the planet from the beginning of the Industrial Revolution, when they started to emit greenhouse gases, could not be maintained, due to the temperature fluctuations since then, which falsified the CO₂ dogma (Figure 9). The IPCC therefore accepts that natural climate variations were active till about 50 years ago, but that since then **only** human CO₂ emissions were to blame for the warming. It does not make sense that those natural causes of (sometimes quite dramatic) climate variations over billions of years, suddenly stopped being active and being displaced by one cause only, human greenhouse gas emissions.

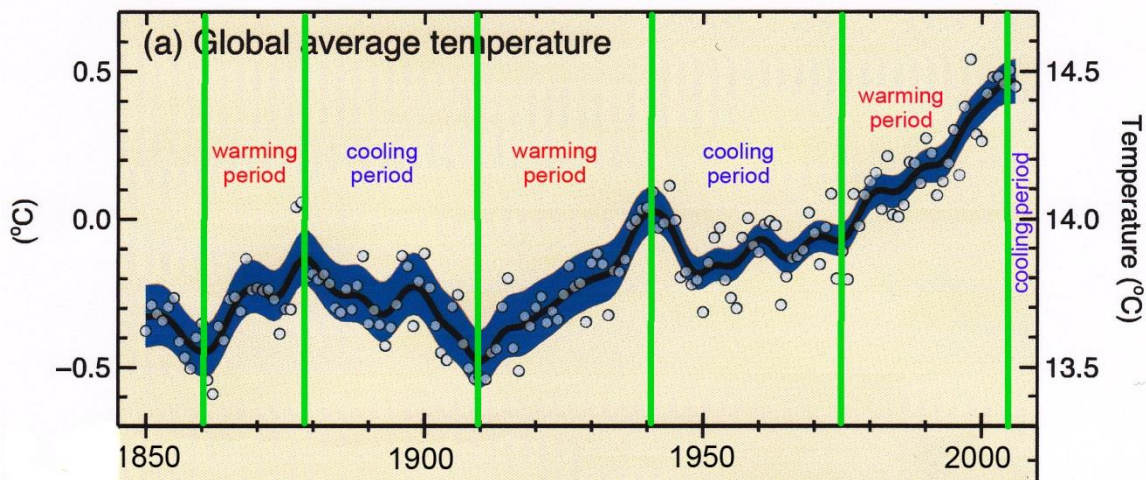


Figure 9. Global temperatures since 1850 (from the IPCC Fourth Assessment Report, 2007). I have added fluctuations of warming and cooling, which coincide with Pacific Decadal Oscillation warm and cool phases (see further). Overall there has been warming since 1850, but that is to be expected, as the planet is coming out of the LIA.

THE “GRAND MODERN SOLAR MAXIMUM” AND COMING SOLAR MINIMUM

The “Grand Modern Solar Maximum”, as mentioned by Van Geel and Ziegler, began in 1924 and ended in 2008 (see also Solanki et al. 2004, de Jager & Duhau, 2010). It can be compared

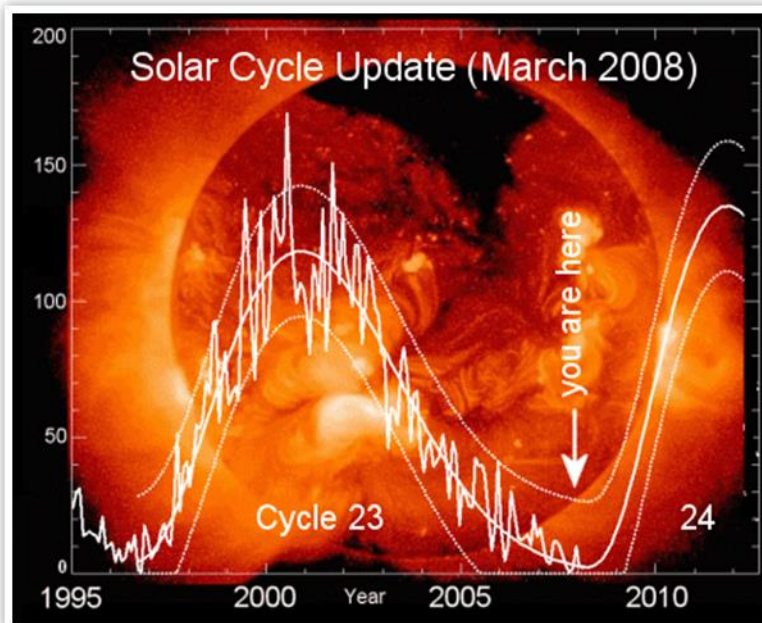


Figure 10. Sunspot cycle 23 and predictions for Cycle 24. This prediction was made in March 2008. *Source: David Hathaway, NASA.*

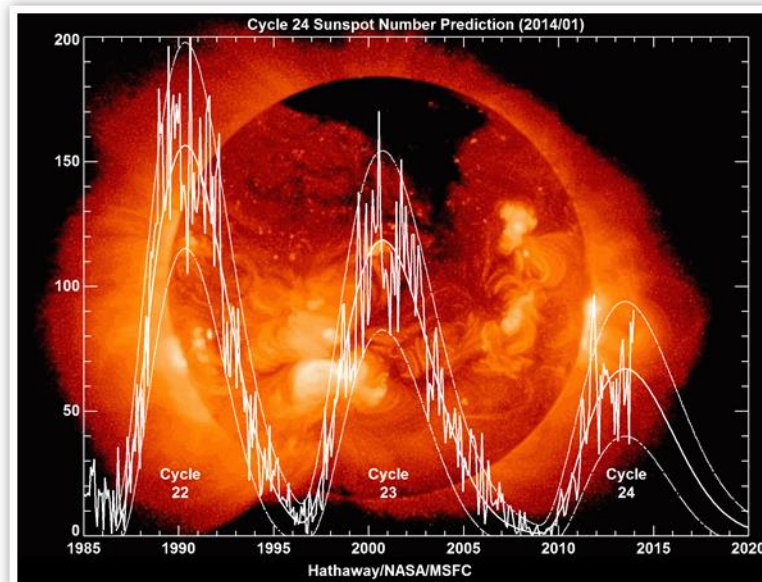


Figure 11. The latest prediction for Cycle 24 was made in January 2014. Cycle 24 is going to be much weaker than expected. In this figure, cycles 22 and 23 are also pictured. *Source: David Hathaway, NASA.*

with the Solar Maximum of the Medieval Warm Period. The solar maximum of Cycle 23, for instance (approximately 1997 to 2008), was quite high. Predictions were that Cycle 24 would be as high, or even higher (Figure 10).

However, it turned out that Cycle 24 was unexpectedly very weak. The predictions for Cycle 24 had to be drastically revised (Figure 11). Also, the minimum between Cycles 23 and 24 lasted much longer than expected.

It is now expected that Cycle 24 will be the smallest since Cycle 14 in 1906 (<http://solarscience.msfc.nasa.gov/predict.shtml>). Based on what we know about the correlation between sunspot minima and cold periods in the LIA, this is really worrying. It is not surprising therefore that several scientists are predicting a cooling period. Such predictions started in about 2006, when it became clear that solar cycle 24 was going to turn out much weaker than predicted. The minimum between cycles 23 and 24 is also longer than normal, which in itself is an indication of lower solar activity.

A few examples (out of many):

1. In a (peer-reviewed) paper of 29 June 2008, the Australian Astronomical Society warned of global cooling because of the significant reduction in solar activity (Wilson et al. 2008). Although this paper is a highly technical discussion of possible interactions between the sun and the Jovian (large) planets, their comments at the end of the paper are of interest for the present discussion:

“Interestingly, the Sun’s solar cycle has been in the phase locked mode for the last 105 yr (1900–2005) and the indications are that it is about to suffer another phase catastrophe in the later part of cycle 24 (i.e. the solar cycle that will peak in ~2011–2012). If this is the case, then we should expect that in the two decades following the phase catastrophe, the world’s mean temperature should be noticeably cooler i.e. the cooling should start in the late 2010s. This claim is based on the precedent that there were noticeable decreases in the world’s mean temperature following the last two phase catastrophes. The cool period known as the Dalton Minimum (1800–1820) that followed the phase catastrophe in the early 1790s and a similar cool period called the Victorian Minimum (1880–1900) that followed the phase catastrophe in the late 1870s”.

2. Australian geologist David Archibald wrote a (peer-reviewed) scientific paper in 2006, titled “Solar Cycle 24 and 25 and Predicted Climate Response” (Archibald, 2006). Its abstract reads:

“Projections of weak solar maxima for solar cycles 24 and 25 are correlated with the terrestrial climate response to solar cycles over the last three hundred years, derived from a review of the literature. Based on solar maxima of approximately 50 for solar cycles 24 and 25, a global temperature decline of 1.5°C is predicted to 2020, equating to the experience of the Dalton Minimum. To provide a baseline for projecting temperature to the projected maximum of solar cycle 25, data from five rural, continental US stations with data from 1905 to 2003 was averaged and smoothed. The profile indicates that temperatures remain below the average over the first half of the twentieth century”.

3. Canadian climatologist Dr Timothy Ball told an International Conference on Climate Change in New York in March 2008: *“If we are facing [a crisis] at all, I think it is that we are preparing for warming when it is looking like we are cooling. We are preparing for the wrong thing.”*

We are now seven years further since Archibald’s paper, and, as explained above, it is now certain that solar cycle 24 is a very weak one. Thanks to satellite observations we now know a lot more about the workings of the sun. Astrophysicists can make predictions with much greater confidence.

Again, a few examples (out of many):

1. The Dutch astronomer Professor C. de Jager and his Argentinian colleague S. Duhau, wrote a (peer-reviewed) paper in 2010, titled *The Forthcoming Grand Minimum of Solar Activity* (de Jager and Duhau, 2010). Its abstract reads:

“We summarize recent findings about periodicities in the solar tachocline and their physical interpretation. These lead us to conclude that solar variability is presently entering into a long Grand Minimum, this being an episode of very low solar activity, not shorter than a century. A consequence is an improvement of our earlier forecast of the strength at maximum of the present Schwabe cycle (#24). The maximum will be late (2013.5), with a sunspot number as low as 55”.

2. Russian scientists have been predicting global cooling for some time. Foremost are scientists of the Pulkovo Observatory in St. Petersburg. Its Head of Space Research and Russian Director of the International Space Station, Dr Abdussamatov, recently wrote in his blog:

"The last global decrease of temperature (the most cold phase of the Little Ice Age) was observed not only in Europe, North America and Greenland, but also in any other part of the world during the Maunder minimum of sunspot activity and of the total solar irradiance in 1645–1715 years. All channels in the Netherlands were frozen, glaciers were on the advance in Greenland and people were forced to leave their settlements, inhabited for several centuries. The Thames river in London and Seine in Paris were frozen over every year. Humanity has always been prospering during the warm periods and suffering during the cold ones. The climate has never been and will never be stable."

He published the adjacent graph, in which he confidently indicated the "Beginning of the new Little Ice Age", beginning at the end of solar cycle 24 (Figure 12).

3. A recent US workshop, titled "The effects of solar variability on Earth's climate" brought together many solar scientists with different expertises to discuss the possible influences of the sun's variability on climate (Phillips, 2013). One of the most interesting conclusions of the workshop was the realisation that the Sun's influence is extremely complicated, and that much more research is required to understand its workings. The workshop realised that the sun could indeed be on the threshold of a mini Maunder Minimum. It was reported that two scientists (Penn and Livingstone, not participants of the workshop) of the National Solar Observatory had predicted that, when Solar Cycle 25 arrives, the magnetic fields of the sun will be so weak that few if any sunspots will be formed.

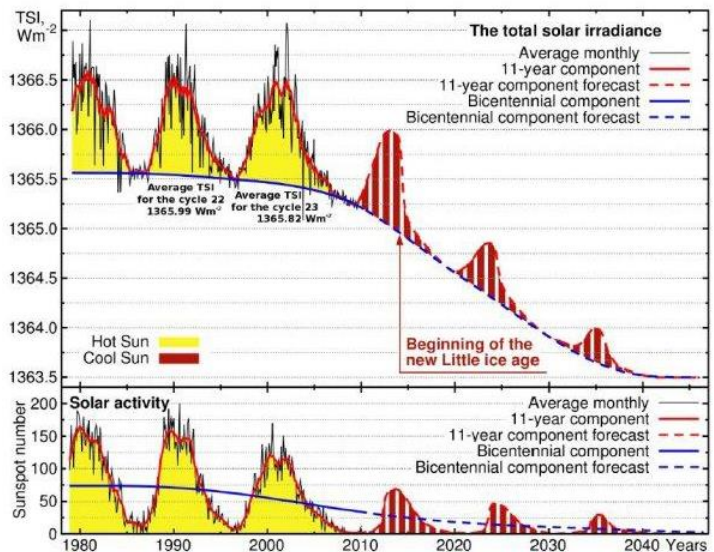


Figure 12. Graphs of total solar irradiance (top) and solar (sunspot) activity (bottom), from about 1980 to 2045 into the future. The author confidently indicated what he considers could be the beginning of the "new Little Ice Age". Source: H. Abdussamatov, 2012.

HAS GLOBAL COOLING STARTED ALREADY?

It is reasonable to ask whether there are indications that a cooling period may have started already. Some scientists think there are. To begin with, there has been no warming for the last 17 years, notwithstanding the fact that CO₂ kept rising, and contrary to IPCC climate computer model predictions (Figure 13). Global temperature records are published by three organisations, the UK Hadlee Centre, NASA's Goddard Institute for Space Studies (GISS), and NOAA's National Climate Data Centre (NCDC). The record in Figure 13 finishes in 2012. However, on January 21, 2014, Gavin A. Schmidt, Deputy Chief, NASA's GISS and Thomas R. Karl, Director of NOAA's NCDC, jointly announced that their temperature records showed zero

net global warming since 1997. The UK Met Office confirmed that their newly revised HadCRUT4 global temperature dataset (from the Hadlee Centre) also showed zero net global warming since 1997. That makes it 17 years without warming.

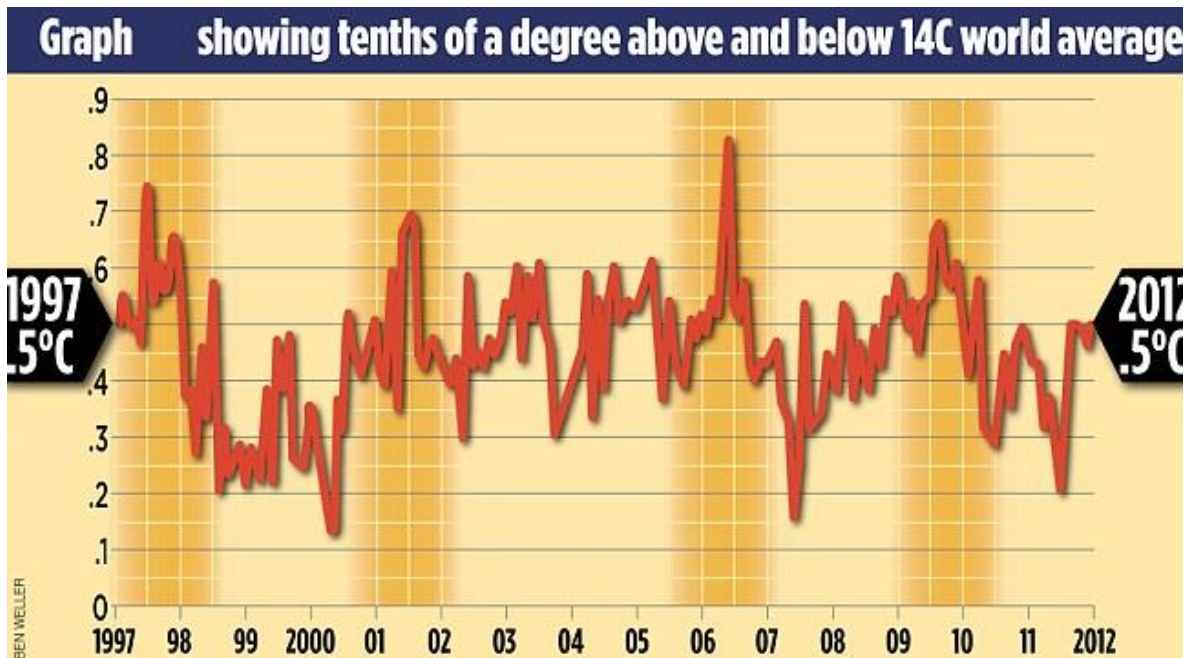


Figure 13. Temperature record since 1997, showing zero net warming. Source: UK Met Office.

This produced some panic among DAGW promoters. They had to come up with *ad hoc* explanations. One was that the heat had gone into the deep ocean (Trenberth, 2013; Balmaseda et al., 2013). No explanation how this could happen is given. To preserve their scientifically unfounded belief in the DAGW hypothesis they have to fall back on *Deus ex Machina* explanations for the standstill (Merriam-Webster dictionary: *Deus ex Machina* - a person or thing (as in fiction or drama) that appears or is introduced suddenly and unexpectedly and provides a contrived solution to an apparently insoluble difficulty).

In an open letter to the Royal Meteorological Society, Bob Tisdale comprehensively rebutted Trenberth's theory. Idso et al. (2013b) comment that "*The IPCC ... fails to explain how heat can be transferred to the deep ocean without first passing through the shallow ocean, which has not warmed since at least 2003 (Pielke, 2008).*" The year 2003 refers to the beginning of the use of the Argo floats that measure temperature and salinity to a depth of 2000 metres in all ocean and seas.

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Two other scientists also struggled with the lack of warming over the last 16 years (Kosaka and Xie, 2013). They blame a La Niña event, which caused cooling of surface waters in the central to east Pacific. In their abstract they write: *“Our results show that the current hiatus is part of natural climate variability, tied specifically to a La-Niña-like decadal cooling. Although similar decadal hiatus events may occur in the future, the multi-decadal warming trend is very likely to continue with greenhouse gas increase”*. The latter part of this comment is interesting. It is a bow to the dogma of greenhouse gas global warming. Their study is not based on observations, but on computer modelling. They must be scraping the bottom of the barrel. First, La Niña – El Niño events occur regularly. They have never before been brought into the DAGW picture. Two, a basic tenet of the IPCC dogma is that natural variations do not, or almost not, play a role in man-made global warming over the last 50 years (see Figure 8).

In an article published in *Nature Geoscience* in November 2013, Estrada et al. (2013) suggested a third reason why there has been a warming standstill – a decrease in the emissions of ozone-depleting chlorofluorocarbons (CFCs). CFCs are also greenhouse gases. To quote from their abstract: *“Our statistical analysis suggests that the reduction in the emissions of ozone-depleting substances under the Montreal Protocol, as well as a reduction in methane emissions, contributed to a lower rate of warming since the 1990s”*.

Incidentally, their comment on the reduction in methane emissions is intriguing. Data from the Hawaiian Mona Loa observatory show that it's growth rate slowed in the 1990's, and that it had a near-zero growth rate for the last few years. This puts in doubt the scare stories about increasing methane emissions due to warming of the Arctic permafrost and the like.

A fourth explanation was published on 14 February 2014 by England et al. in *Nature Climate Change*. They blame the trade winds in the Pacific having become stronger. They write that East-West equatorial winds have been unusually strong in the past two decades and they have pushed warmed surface water towards Asia where it has pooled and diffused its heat into surface waters. They didn't mention that in 2006 we were told that the pause was due to the *weakening* of Pacific trade winds (www.ucar.edu/news/releases/2006/walker.shtml).

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On September 23, 2013, Government representatives will meet in Stockholm to debate and approve a draft version of the Summary for Policy Makers (SPM) of the upcoming fifth IPCC climate science report (AR5) [I am writing this part on September 14]. As has been usual for recent IPCC reports, the SPM will be published many months before the final scientific report. The SPM is a political report that has to be approved line by line by government representatives. Both the U.S. and the EU have requested that more details about the warming “hiatus” be included in the SPM. “The recent slowing of the temperature trend is currently a key issue, yet it has not been adequately addressed in the SPM”, the EU has said. The draft report apparently (it has been leaked) includes reasons for the slowing rate [please note that they talk about a “slowing” rate, not of a standstill], including natural variability, volcanic eruptions and a drop in solar energy reaching the earth. The EU comments that “*Much of the information is present but it requires a lot of effort on the part of the reader to piece it all together*” (Morales, 2013). Norway, Denmark and China have asked for information on the role of the oceans in the slowdown.

It will be interesting to see how the “hiatus” will be treated in the SPM.

[Comment added after the release of the final version of the SPM: Apparently, there was a lot of discussion on the warming standstill by the government representatives. Some wanted it addressed; others considered it totally unimportant, just a small blip in the continuous warming.]

An in-depth critique on the IPCC SPM was released by the NIPCC (Idso et al. 2013b).

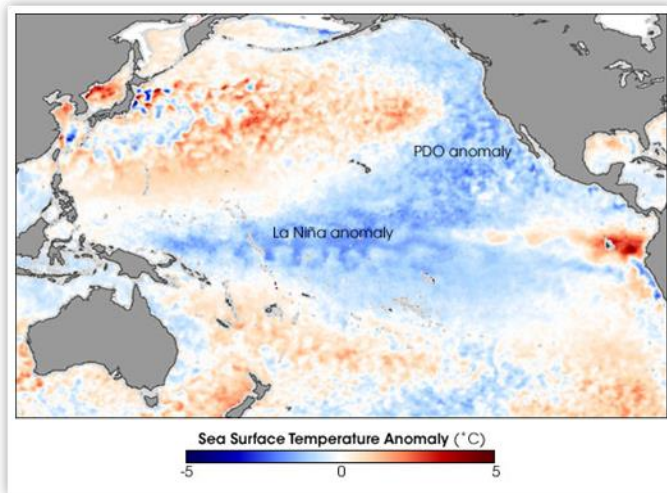


Figure 14. Pacific sea surface temperatures (SST) in May 2008. The cooling of the SST in the north-east Pacific is a sign that the Pacific Decadal Oscillation has entered a cool phase (indicated as “PDO anomaly”). *Source: NASA Jet Propulsion Laboratory (press release of November 15, 2008).*

Another addition to cooling comes from the Pacific Decadal Oscillation (PDO). This oscillation alternates between warm and cool periods, each lasting about 25 to 35 years (see also Figure 9). Although not yet clear, the PDO may have an astronomical-physical cause.

The PDO has entered a cool phase in about 2008 (Figure 14; NASA Jet propulsion Laboratory, news release on November 15, 2008; D’Aleo & Easterbrook, 2010). This cool period could last till about 2040.

Another indication that cooling may have started is the fact that Arctic sea-ice cover in August 2013 was 2.9 million square kilometres *larger* than in August 2012, an increase of 60% (Figure 15).



Figure 15. Satellite photographs comparing Arctic sea-ice cover in August 2012 with August 2013. *Source: Mail Online, 7 September 2013.*

The BBC has always been a staunch advocate of DAGW. They have always swallowed the IPCC dogma hook, line and sinker. In December 2007 they published an article predicting that the Arctic would be ice-free in the summer of 2013.

A comical anecdote was reported about more than 20 DAGW-believing yacht owners planning to sail the NW Passage, from the Atlantic to the Pacific Ocean, in the 2013 summer. Not surprisingly, they all got stuck in the ice and had to be rescued by Canadian icebreakers. A cruise ship that wanted to do the same had to turn back. That happens when you believe in fairy stories.

Not only Arctic sea-ice cover has increased, at the same time winter sea-ice cover in the Antarctic reached its largest extent since records began in 1978. The Washington Post of September 23, 2013 reported: "Antarctic sea ice has grown to a record large extent for a second straight year, baffling scientists seeking to

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understand why this ice is expanding rather than shrinking in a warming world". Even last October 2013, being Southern Hemisphere springtime, Antarctic sea ice extent reached a new record, beating that of September, still being 998,000 sq km above normal (Figure 16).

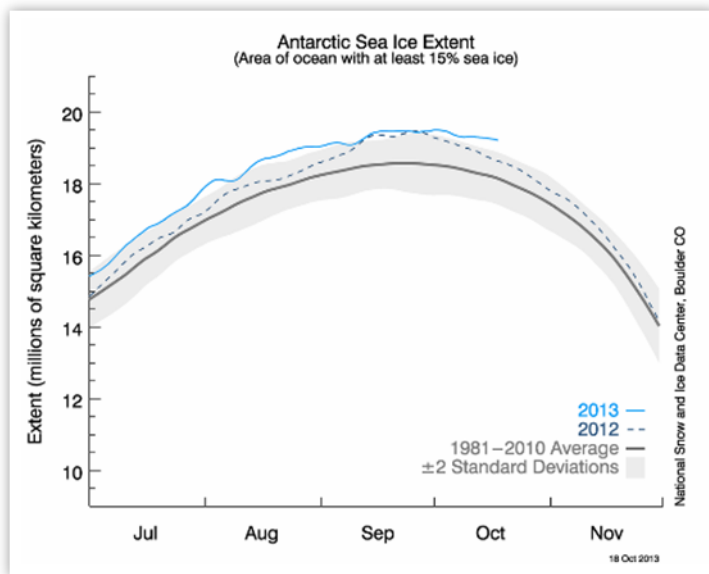


Figure 16. Graph of Antarctic sea ice extent. The blue line represents the 2013 sea ice record up till October. This is well above the 1981-2010 average and more than the 2011 record. Source: National Snow and ice Data Center, Boulder, CO, USA.

Again, when the Washington Post comments that scientists are baffled to understand why Antarctic sea ice is growing in a supposedly warming world, good scientists would wonder whether global warming is taking place at all.

On 10 December 2013, the *Science Daily* reported that satellites had measured the coldest record ever on a plateau in East Antarctica (<http://www.sciencedaily.com/releases/2013/12/131210111039.htm>). They found temperatures between -92 and -94 degrees Celsius. The former coldest measured record, of -89.2 degrees Celsius, was recorded at the Vostok Research Station in

East Antarctica. Incidentally, the warmest temperature ever recorded, was thought to be +58 degrees Celsius, Measured at Al Aziziya in Libya on September 13, 1922. However, the World Meteorological Organisation recently reported that this was a misreading (or miscalculation). The new record, of +56.7 degrees Celsius, now goes to Death Valley in California, measured on July 10, 1913. This means that the difference between warmest and coldest temperature measured on the planet is 150.7 degrees Celsius! One has to wonder what all the fuss is about over the 0.8 degrees Celsius warming over the last 150 years.

OPERA BUFFA

In December 2013, an Australian expedition set out for Antarctica. It was called the Australasian Antarctic Expedition. Its website was called www.spiritofmawson.com. The expedition was planning to trace the route of the 1911-1914 expedition by the Australian geologist Douglas Mawson. It was going to compare the observations made by Mawson with present-day conditions, expecting to show the effects of climate change (aka global warming) on the Antarctic. The leader was Chris Turney, Professor of Climate Change at the University of New South Wales. Co-leaders were Dr Chris Fogwill, glaciologist, oceanographer and paleoclimatologist, also from the University of New South Wales, and Greg Mortimer, Australian geologist and mountaineer. (I remember Greg, as he was for a while attached to the NZ Geological Survey in Christchurch where I worked.)

The main objective of the expedition, to study the effects of man-made climate change (aka global warming) on the melting of Antarctic ice, was clearly a PR exercise to alert the world to the growing perils of global warming. To this end there were four media people on board, two from the UK *Guardian newspaper* and one from the UK *BBC* (both organisations well known for their propaganda of the DAGW dogma) and one from *Radio New Zealand*. There were altogether 24 scientists on board, from Australia, the UK, New Zealand and the US. There were also tourists on board (called “volunteers” by Turney), such as Janet Rice, a Green Party MP, and the wife and two children of Chris Turney. Apart from the crew, there were 85 people in the expedition party. Hardly a normal Antarctic scientific expedition.

The expedition had chartered a Russian ice-strengthened ship (not an icebreaker, as Turney called it in a *Nature* article on 6 January 2014), the *Akademik Shokalskiy*.

On day 16 of the expedition, on 24 December 2013, the *Akademik Shokalskiy* became stuck in floating pack ice (not a “*mass breakout of multiyear ice*”, as Turney wrote in his *Nature* apologia). That pack ice had been blown to the area of the *Akademik Shokalskiy* by a south-eastern gale. This gale had been forecast, but Turney nevertheless allowed the tourists and scientists to leave the vessel for an excursion to the mainland. For this they used four amphibian Argo vehicles. These had to cross the ice shelf attached to the land (so-called “land ice”). Because of the bad weather forecast the captain of the ship was getting worried and wanted the passengers back on board as soon as possible. This was delayed due to a mishap with one of the Argo vehicles, which swamped. Having only three vehicles left, the repatriation

of the passengers took quite a long time. When the vessel at last could leave, it was too late and they got trapped (Figure 17). As the Green MP blogged: “*I’m sure the Captain would have been much happier if we had got away a few hours earlier*”.



Figure 17. The Russian ship of the Australasian Antarctic Expedition, the *Akademik Shokalskiy*, stuck in pack ice.

The ship sent out a distress call. A Chinese icebreaker, the *Xue Long* (Snow Dragon) was the first to come to their rescue. Unfortunately, it could not reach the stricken ship and got stuck itself. Other vessels came to their rescue, the Australian icebreaker *Aurora Australis*, which was on its way to bring scientific equipment

to the Australian Casey Bay station, and the French *Astrolabe*, which was on its way to resupply the *Dumont d’Urville* station. Eventually, a helicopter from the *Xue Long* took the passengers to the edge of the pack ice, from where they were ferried by boat to the *Aurora Australis*. The Russian crew of the *Akademik Shokalskiy* stayed with the stricken vessel. A fourth vessel, the

US icebreaker *Polar Star*, on its way to McMurdo Sound, was also diverted to assist the two vessels stuck in pack ice.

On 8 January, cracks in the sea ice had started to open around the stricken vessels and they managed to free themselves. The three icebreakers that came to the rescue were able to continue their interrupted voyages to supply various scientific research stations. The *Aurora Australis*, with the rescued passengers of the *Akademik Shokalskiy* on board, first went to deliver its supplies to the Australian Antarctic base, before delivering the passengers to Hobart in Tasmania.

The *Akademik Shokalskiy* becoming trapped in pack ice became world news. The irony of the expedition that set out to alert the world that Antarctic ice was melting dramatically due to man-made climate change (aka global warming) caused by human emissions of CO₂, and becoming trapped in ice, was not lost on many observers. The blogosphere had a field day, but even some newspapers wrote critical articles. For instance, *The Australian* newspaper wrote a news item on 2 January under the title “Stuck on a ship of (cold) fools”. On 1 January, the UK *Daily Mail* published comments by James Dellingpole under the heading “A dose of COLD reality : The ironic saga of the eco-campaigners trying to highlight global warming and melting ice caps trapped in the freezing Antarctic”. Most comments were highly critical. The expedition was called a *pleasure cruise, adventure tourism, joy ride, etc.* But other Antarctic scientists were also very annoyed, as the rescue efforts impacted on their own planning, by delaying delivery of essential supplies to their bases. They depend on a narrow window in summer to get the necessary supplies. For instance, the head of France’s Polar Institute, Yves Frenot, called the *Akademik Shokalskiy* trip a “pseudo-scientific expedition”. Because it had run into difficulties, it had drained resources from the French, Chinese and Australian scientific missions. Because of the rescue operation, French scientists had to scrap a two-week oceanographic expedition in January, for which they were going to use the *Astrolabe*. He mentioned that the Chinese had to cancel their entire scientific program and that his Australian counterpart “was spitting tacks with anger” (this is surprising, as, according to Turney, the Australian Antarctic Division was one of his supporters). “If we want these

The Akademik Shokalskiy becoming trapped in pack ice became world news. The irony of the expedition that set out to alert the world that Antarctic ice was melting dramatically due to man-made climate change (aka global warming) caused by human emissions of CO₂, and becoming trapped in ice, was not lost on many observers. The blogosphere had a field day, but even some newspapers wrote critical articles.

(Antarctic) bases to operate all year round, it is essential to resupply with food and fuel during the brief window of opportunity” he said. He called for this kind of tourism to be monitored and regulated.

Not surprisingly, Chris Turney and others involved in the expedition, tried to put a brave face on it. The science magazine *Nature* (a well-known supporter of the DAGW dogma) published an article by Turney under the heading “*This was no Antarctic pleasure cruise*”. In it, he called the pack ice in which they were trapped “*a mass breakout of multiyear ice*”, implying that the trapping ice was broken away from ice shelf ice (“land ice”). He also states that “*our findings include many first for the region*”. Maybe so, but he does not mention that from 3 February to 13 March 2013 (almost a year before Turney’s expedition), the research ship *Tangaroa* of NIWA (New Zealand Institute of Water and Atmosphere) had visited the same area with an extensive scientific program (details here: <http://www.niwa.co.nz/blog/antarctic-voyage-the-mertz-polynya>). An intriguing question therefore is: what scientific “firsts” did they achieve? To maintain their dogmatic belief in DAGW, the expedition’s communication director, Alvin Stone, stated that “*indications are that it is precisely climate warming that led to the vessel’s awkward predicament*”.

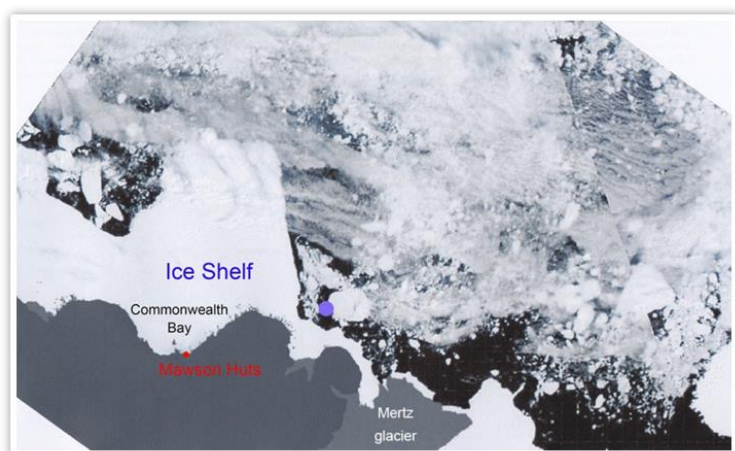


Figure 18. MODIS satellite photo (taken 3 December 2013) of area of *Akademik Shokalskiy* expedition, showing ice shelf in front of Commonwealth Bay. Blue dot – approximate position where the ship was trapped in pack ice on 24 December 2013. Basic photo from <http://climateaudit.org/2014/01/15/ship-of-fools/>.

Even more ironic for the expedition was the fact that, according to photographs taken during Mawson’s expedition, Commonwealth Bay (where Mawson’s huts are) was free of ice, while, during the *Akademik Shokalskiy* expedition, they encountered a substantial ice shelf (“land ice”) which they had to cross with their Argo vehicles to reach land (Figure 18). They could have foreseen all this, as winter Antarctic sea ice had increased substantially over recent years (as discussed above). There was still maximum sea ice cover as late as October, only two months before the *Akademik Shokalskiy* expedition.

Steve McIntyre, who in the past exposed, among others, the scientific fraud of the so-called *Hockey Stick* and the *Yamal Peninsula tree ring* data, has done it again. He analysed in detail the fiasco of the *Akademik Shokalskiy* expedition (<http://climateaudit.org/2014/01/15/ship-of-fools/>).

A baffling observation was that most of the world media omitted to mention that the main objective of the expedition was to show the effects of climate change (aka global warming) on the Antarctic. Baffling, but not surprising.

There remains the question of costs. The expedition itself cost 1.5 million dollars. However, the costs of the rescue could be substantial. A Dutch climate blog (climategate.nl) wrote on 27 January 2014 that “*Redding klimaatactivisten uit ijs kost 2.4 miljoen Aussiedollars*” (the rescuing of climate activists from the ice costs 2.4 million Australian dollars). As insurance companies will be involved, it will be fascinating to follow the financial aftermath of this expedition of the *Ship of Fools*.

The whole saga is indeed an ***Opera Buffa*** (comic opera).

MORE INDICATORS OF COOLING

Another indication that we may be entering a cooling period would be the fact that the Northern Hemisphere has in recent years experienced five severe winters in a row, with record snowfalls and low temperatures. The following are a few illustrative examples.



Figure 19. Heavy snowfall in the Ukraine, December 2012.

The winter of 2012-2013 was especially severe. More than 600 people died from the cold in Eastern Europe and Russia. It was the worst cold snap in Russia in over 70 years.

Figure 19 shows people digging out cars after an exceptional heavy snowfall in the Ukraine last December (2012).

In January 2010 a heavy snowfall covered most of Great Britain, as a satellite photograph dramatically showed (Figure 20).



Figure 21. In Japan, a bullet train derailed in heavy snow on 3 March 2013.

Figure 20. Great Britain under snow. Satellite photograph taken in January 2010.



On 3 March 2013, Japan was hit by a heavy snowstorm. Eight people died and a bullet train derailed. One hundred and thirty passengers had to be rescued (Figure 21).



Figure 22. Cycle race in a snow storm, Milan – San Remo 17 March 2013. (Screen shot from Dutch TV.)



Figure 23. Snowfall a thing of the past. Article in *The Independent*, 20 March 2000.

In the second week of March 2013 NW Europe was hit by an unexpected cold blast, with severe frosts and heavy snowfalls. Such a cold snap at this time of year had not occurred since 1888. A snow storm disrupted the famous cycle race Milan – San Remo (Figure 22). It had to be stopped. Cyclists were freezing.

In this context, it is interesting to mention an article from 2000 in *The Independent*, titled *Snowfalls are now just a thing of the past* (Figure 23).

To quote a few sentences:

“Britain’s winter ends tomorrow with further indications of a striking environmental change: snow is starting to disappear from our lives.

Sledges, snowmen, snowballs and the excitement of waking to find that the stuff has settled outside are all a rapidly diminishing part of Britain’s culture, as warmer winters - which scientists are attributing to global climate change - produce not only fewer white Christmases, but fewer white Januaries and Februaries.

According to Dr David Viner, a senior research scientist at the climatic research unit (CRU) of the University of East Anglia, within a few years winter snowfall will become “a very rare and exciting event”. “Children just aren’t going to know what snow is,” he said”. [Please note that this CRU was the research institute whose emails were leaked, resulting in the famous “Climategate”].

David Parker, at the Hadley Centre for Climate Prediction and Research in Berkshire, says ultimately, British children could have only virtual experience of snow. Via the internet, they might wonder at polar scenes - or eventually “feel” virtual cold.”

While working on this essay (October 2013), news on Dutch TV reported unseasonably early snow storms in the European Alps, causing traffic chaos and problems to farmers. This seems a repeat of recent years. Between 30 to 80 cm of snow fell in Austria, Germany, Switzerland and France. In Bavaria, about 12,000 people were without electricity, while in Tyrol (Austria) 30,000 lost their power. In Bavaria, Deutsche Bahn (German Rail) had to suspend operations around Munich. Germany’s weather service reported that this was the largest snow fall at this time of

the year since measurements began in 1800. Fortunately, children in these countries will still know what snow is. It was the most severe start of winter in 200 years.

A funny, but also sad story, developed in Europe. Municipalities use salt in winter to spread on roads to keep them free of snow and frost. Trusting the predictions of climate scientists that winters would become shorter and warmer (one newspaper, inspired by DAGW activists, even predicted that spring would arrive in January), made them order less road salt. When severe winters started in 2009, they were caught out. They had insufficient salt supplies to keep roads cleared and chaos ensued. The municipalities learned their lesson and they no longer heed the foolish forecasts of warm winters. They now order plenty of road salt.

A heart breaking story comes from Chile. In late September 2013, a severe cold snap caused about one billion dollars damage in the central fruit-growing region, the worst in 84 years. An emergency was declared. The frost damaged between 35 and 61 percent of stone fruits, 57 percent of almonds, 48 percent of Kiwi fruit and 20 percent of table grapes. A total of 10,000 hectares was affected. Between 100,000 and 150,000 jobs will be affected in the next half year. Many were critical that meteorologists had not warned about this cold snap.



Figure 24. Orthodox Jews helping a taxi driver in Jerusalem who was stuck in the snow (13 December 2013). *Source: Google.*

On 13 December 2013, the Middle East was hit by a record-breaking snow storm. Jerusalem was blanketed by more than 30 cm of snow. The Minister of Defence, Moshe Ya'alon, commented that Jerusalem had never seen anything like this. Traffic was severely disrupted (Figure 24), 25,000 homes were without electricity.

In Iran, thousands of drivers were stranded in snow blizzards. Even in Egypt, people were showing photographs on social media of rare snow. In the Sinai desert, snow blanketed mountainous areas around the famous St Catherine's monastery. But this snow storm was especially disastrous for the hundreds of thousands of Syrian refugees living in tents and under plastic tarpaulins, often without any heating. It will be of little consolation to them that on November 14, 2013, the World Meteorological Organization reported that 2013 would be one of the warmest years on record.

In October 2013, a heavy snow storm hit Wyoming and South Dakota in the US, dumping more than 150 cm of snow in places, causing millions of dollars in damage. The "record-breaking blizzard" killed 75,000 cattle. Another cold blast occurred in December that year. CNN commented on 11 December 2013: *Look at what we're experiencing now. We're experiencing below-zero temperatures in Chicago earlier than any time in the last two decades, a record snowfall for today in New York. Tomorrow morning, 90 percent of the country will face below normal temperatures. If this isn't climate change, then what is it?*

But worse was to come. Early January 2014, a large part of North America was hit by an extreme polar blast. On January 3, the Midwest and north-eastern US were hit by heavy snowstorms. Some towns got about 60 cm of snow. This was accompanied by dangerously low temperatures. Temperatures dropped in places to below minus 40 degrees Celsius, with wind chills to below 50 degrees. Schools were closed, thousands of flights cancelled, de-icing fluids froze and fluid pumps worked sluggishly. Many cars got stranded in the snow. Authorities warned against frostbite on exposed skin, which could set in within just five minutes. It was not



Figure 25. Large parts of the Niagara Falls froze over. This picture was taken on 9 January 2014. *Source: Internet.*

possible to have a beer outside, as it would freeze very quickly. Patrols went out to look for homeless people, to take them to shelters. In Canada, 110,000 customers were without power. About half the US population was in the grip of the Arctic blast. Temperatures were the lowest in more than two decades. The cold weather moved to the south, as far as Florida.

Large parts of the Niagara Falls froze over (Figure 25).

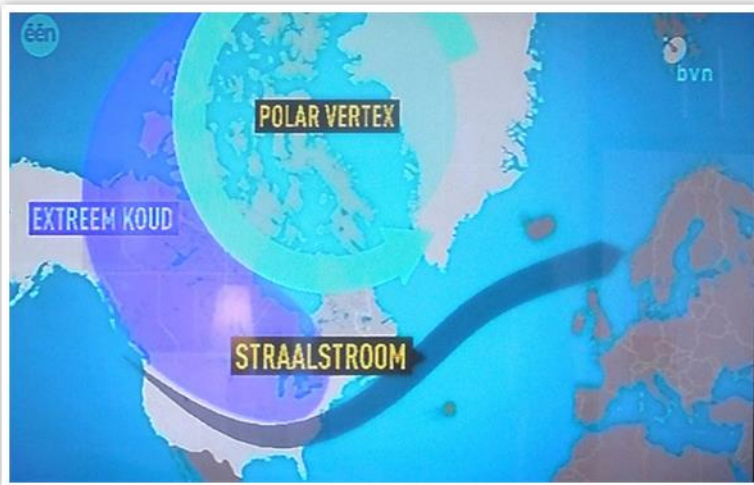


Figure 26. Picture of the “Polar Vortex” on Belgian VRT News (BVN TV), 7 January 2014. EXTREEM KOUD = Extreme Cold; STRAALSTROOM = Jet stream; POLAR VERTEX = Polar Vortex. *Screenshot by GJvdL.*

Meteorologists and the media commented that this cold blast was caused by a *Polar Vortex*.

On 7 January 2014, Belgian VRT news showed a picture of the “Polar Vortex” (Figure 26), note spelling mistake: Vertex i.s.o. Vortex).

The Polar Vortex is part of the *Circumpolar Vortex (CV)*. Air masses move around the poles, anti-clockwise in the northern hemisphere, clockwise in the southern hemisphere. The boundary

between cold polar air and warm tropical air is called the *Polar Front*. The faster moving part of the CV, above the Polar Front, is called the *Jet stream*.

There are two types of Jet stream, the *Polar Jet* and the *Subtropical Jet* (Figure 27).

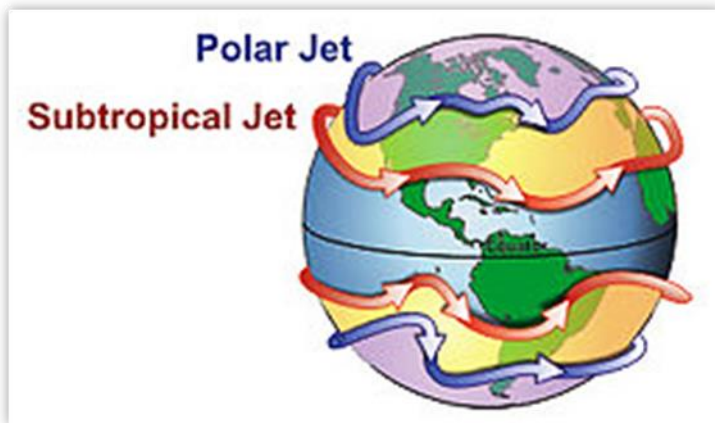


Figure 27. Jetstreams. Source: Wikipedia.

The Polar Jets occur around 7 to 12 km above sea level. The Subtropical Jets are higher, around 10 to 16 km above sea level (Figure 28). The width of a Jetstream is typically a few hundred kilometres and is less than 5 km thick.

Jet streams develop near the boundaries between cold and warm air, in the upper area of the Troposphere. The Polar Jet in the Northern Hemisphere is commonly found between latitudes 30°N and 60°N. It marks the boundary between cold and warm air. The wind speeds of jet streams are generally faster than 92 km/hr, although speeds of over 398 km/hr have been measured.

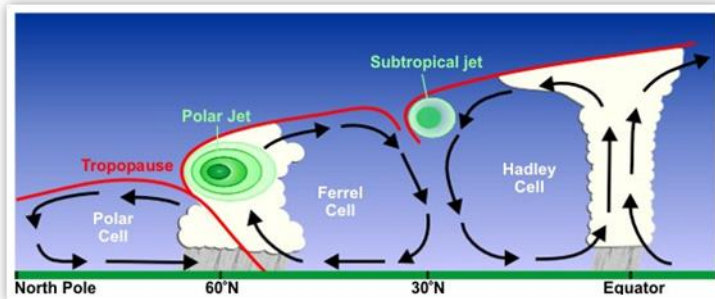


Figure 28. Schematic illustration of atmospheric circulation between equator and North Pole. Note the positions of the Polar and Subtropical jets. Source: Wikipedia.

Jet streams have generally a meandering shape. Each meander is called a *Rossby Wave* (Figure 29).

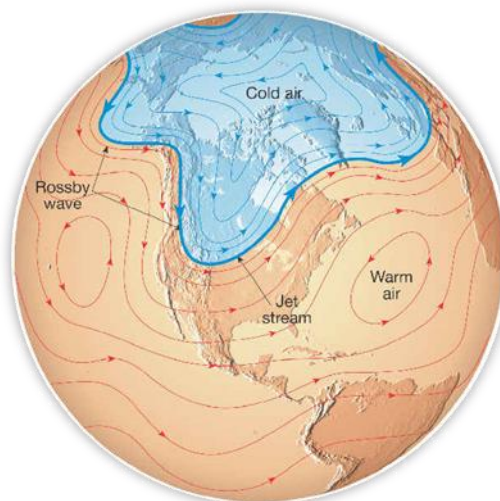


Figure 29. Illustration of the Circumpolar Vortex. The polar jet stream forms the boundary between cold and warm air. Its meandering shape creates the Rossby Waves. Source: Google.

When the jet stream is moving more or less parallel to latitudinal lines, the flow is called *Zonal*. When the meandering is more pronounced, it is called *Meridional* (Figure 30).

The meandering flow can become so pronounced that it can produce cold “outbreaks” (Figure 30c).

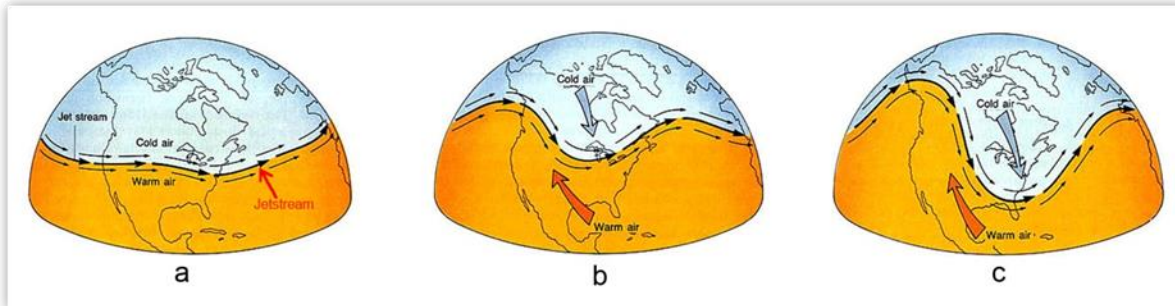


Figure 30. Development Circumpolar Vortex. A: Zonal Flow; B: Meridional Flow; C: High-amplitude Rossby Waves, causing an outbreak of cold air (this was the situation during the recent cold snap in North America). After illustrations from J. Namias, NOAA, copied from Google.

These cold outbreaks can become “blocked” and become semi-stationary. These can last for many weeks or months.

The recent extremely cold winters in the Northern Hemisphere (and the January 2014 one in North America) were caused by such cold polar outbreaks. Over recent years the Rossby Waves have moved steadily further south, as far as within 10° of the equator.

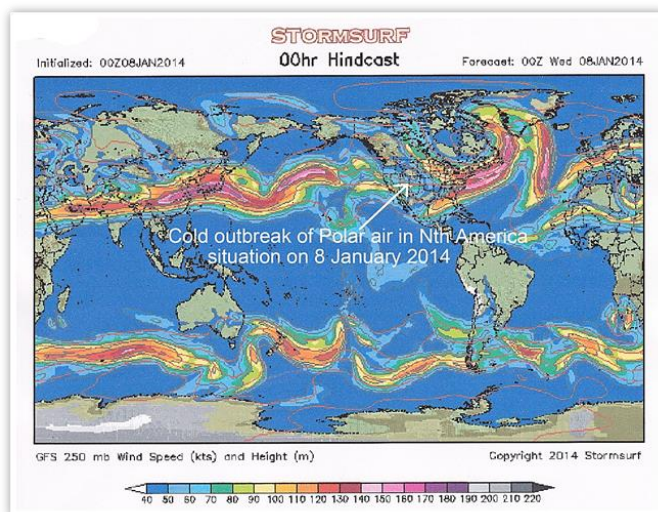


Figure 31. This picture clearly depicts the Jetstream (red to pink colours) on 8 January 2014. The shape of the meandering Jetstream represent the Rossby Waves. I have indicated (white arrow) the situation during the cold outbreak in North America. Note also that Australia is on the warm side of the Rossby Waves. Source: www.stormsurfing.com/cgi/display_alt.cgi?a=glob_250.

Illustrations of Jetstreams and Rossby Waves from actual observations can be found in the website www.stormsurfing.com/cgi/display_alt.cgi?a=glob_250. This website produces both hindcasts and forecasts over nine days. Figure 31 is from 8 January 2014, at the height of the US cold blast. A week later, Australia was hit by a heat wave. On Figure 31 can be seen that Australia was on the warm side of the Rossby Waves. The heat wave was caused by a blocking high in the Tasman Sea (east of Australia) forcing hot tropical air to flow to south-east Australia, causing the heat wave during the beginning (13 – 17 January 2014) of the Australian Tennis Open in Melbourne (temperatures as high as 43 degrees).

Several commentators blamed the heat wave on climate change (aka global warming). All this can be very confusing. Extreme cold in the US and extreme warmth in Australia. The main question is whether these extremes are due to the amplitudes of the Rossby Waves increasing and why this is happening. In a posting on 7 January 2011, the Canadian climatologist Dr Tim Ball wrote the following:

*“The current situation of high amplitude Rossby Waves ... is being caused **because the world is cooling** [my emphasis]. Similar situations have been occurring in the Southern Hemisphere for some time now resulting in record low temperatures and as usual ignored by the media. Incidentally you can have predominance of Zonal or Meridional flow for decades or even centuries. For example, the 14th century seems to have had predominantly Meridional flow with confused conditions in Europe so that cool wet summers meant harvest failures and hungry peasants while warm wet winters allowed diseases to survive thus resulting in the outbreaks of plague with the worst being in 1347 with the Black Death. Barbara Tuchman wrote about the conditions in her book “A Distant Mirror “which chronicled the history of a man whose life literally spanned the full 100 years. Notice this was a transitional century because it was pivotal in moving out of the Medieval Warm Period into the Little Ice Age. **It appears we are in a similar transition now** [my emphasis]”, and “As cooling continues with declining solar activity the intensity and frequency of these outbreaks of intensely cold polar air will continue. Unfortunately, the excessive focus on global warming means this critical area is receiving little research attention”.*

As cooling continues with declining solar activity the intensity and frequency of these outbreaks of intensely cold polar air will continue. Unfortunately, the excessive focus on global warming means this critical area is receiving little research attention.

On 21 January 2014, Dr Ball reiterated his analysis in an interview with America’s Independent Network WND. The following is a report on this interview (<http://www.wnd.com/2014/01/big-chill-expected-to-stay-until-2040/#k0dUlvzajETXMWbh.99>):

Dr. Tim Ball taught climatology for many years at the University of Winnipeg and is the author of the newly released book, “The Deliberate Corruption of Climate Science.” He told WND it’s foolhardy to draw conclusions on overall climate trends based on one weather system or even one winter, but he believes the harsher winter is part of a cooling cycle.

“What happens as the cooling begins, the jet stream moves from west to east in very large waves, but the amplitude, that is the north-south orientation of those waves, increases. It’s

called a Meridional pattern of weather, and that's why you see the record colds that you had in the U.S. recently, but also record warmes," Ball explained.

"Look at eastern Australia as an example or Siberia earlier in the winter. So if you imagine these waves where you've got cold air pushing toward the equator in one area, you've also got warmer air pushing further toward the poles in other areas. That's why you've got this increasing variability of the weather," said Ball, who noted that history tells us exactly what these conditions mean.

"If you look at the historic record, and I mean going over 10,000 years, this pattern occurs as the earth starts its cooling down process. And that's what's going to happen," he said. "We're going to be in this cooling until at least 2040."

The cooling started 10 years earlier near the South Pole, according to Ball, who **said the growth in Antarctic ice is why we witnessed the research vessel and its rescue ship trapped in ice in the middle of summer in the southern hemisphere.** [My emphasis. See also *OPERA BUFFA* – page 17.]

Ball said the cooling for us will not only continue for nearly 30 more years, but the depths of the cooling cycle could mean we experience some historic chills.

"There's a debate about how much cooling will occur, but it's related to the changes in the sun, the sunspot cycles," Ball explained. "That's the predominant control of long-term temperature patterns. The scientists that I've been working with a lot, we think, as I said, that's it's going to continue cooling until 2040, certainly getting to cooler temperatures than we experienced around 1800 or 1820 and possibly get as cold as it was back in what's called the 'Little Ice Age' when you had three feet of ice on the Thames in England in 1683."

Note by GJvdL: The period 1800 to 1820 mentioned by Dr Ball was during the so-called Dalton Minimum (see Figures 2 and 4).

A major question requires answering: What is the influence of solar activity on the movements (outbreaks) of polar highs and lows? Bryant (1997) writes, in relation to the development of the Rossby waves, that: *"There is evidence that both the intensification of the looping [meandering], and the amplitude of the planetary wave, are affected by either the 18.6-year lunar tide (the M_N component) or the 22-year Hale sunspot cycle."*

The meteorology of the Circumpolar Vortex is extremely complex. A more in-depth analysis, titled: *A sober look at the Northern Polar Vortex*, can be found on the *Watts Up With That?* Website: <http://wattsupwiththat.com/2014/01/07/a-sober-look-at-the-northern-polar-vortex/>.

More research is required to elucidate the climatic influence of solar activity on polar air masses. It is sad that billions of dollars are being spent in a vain attempt to try to prove that human CO₂ emissions are causing dangerous global warming rather than trying to study the real workings of the climate system.

Because of the (scientifically-unfounded) axiom that human CO₂ emissions are causing dangerous global warming, the scientific advisor to President Obama, Dr Holdren, commented that the January 2014 cold blast was caused by climate change. Cartoonists had a field day with this (Figures 32 and 33).



Figure 32. Cartoon by the New Zealand cartoonist Tremain. Source: Otago Daily Times of 9 January 2014.



Figure 33. Cartoon by Michael Ramirez. Source: De Dagelijkse Standaard of 14 January 2014.

Please note that these cartoonists are still using the term *global warming*. However, DAGW activists, like Dr Holdren, have long since abandoned that term. They use the term *Climate Change*. It is a catch-all term that can cover everything, warming, cooling, “extreme” weather events, floods, etc, etc.

On 12 December 2013, MARC MORANO, editor-in-chief of Climatedepot.com, wrote on his website:

So record cold is now evidence of man-made global warming? What evidence would disprove climate change? It seems like no matter the weather, everything that happens proves it. The bottom line is, in 2013, we’re having one of the least extreme weather years on record. This report came out about a month ago. And if you look at the longer-term trend, there’s actually a declining or no trend in U.S. droughts or global droughts. There’s no trend in floods going back I think up to 127 years. One study was the journal Nature on the droughts. Tornadoes, big tornadoes, F-3 and larger have been on decline since the 1950s. Hurricanes, the U.S. has gone almost eight years now, over eight years without a major category 3 or larger hurricane hitting, the longest period since before 1900. So on every measure of extreme weather, it ain’t there. “Global weirding” is nothing more than a pseudoscientific expression. And in the 1970s, the global cooling scare, as popularized in the media and by many scientists, they blamed extreme weather, in fact, specifically “Newsweek”, the 1974 tornado outbreaks, on global cooling.

ADDENDUM

Since the severe cold blast hitting North America at the beginning of January 2014, more cold storms have affected the area. On February 17, newspapers and TV reported on another severe winter storm hitting the US, dumping heavy snow from eastern Texas to North Carolina. It moved from the south-east to the north-east. More than 20 cm of snow fell on Washington DC and New York. Traffic was again disrupted; many schools closed; more than 6500 flights were cancelled on February 16; about 1.2 million homes and businesses lost power.

But an even worse weather disaster hit the south of England. It started in December 2013 and lasted well into February 2014. Severe storms (with wind speeds up to 150 km/hr) and heavy rains caused severe flooding, especially in Somerset (the so-called Somerset Levels, Figure 34). Hundreds of houses had to be evacuated. Thousands had no electricity. According to some

news reports January was the wettest since 1766 (that was during the Little Ice Age). The Prime Minister, David Cameron, called the floods “biblical” and he “very much suspects” that the flooding affecting Britain is linked to climate change, which is bringing more “abnormal weather events”.



Figure 34. Flooding in Somerset (January 2014). *Source: Google.*

In the beginning of February 2014, the river Thames, upstream from London, also burst its banks (Figure 35). While writing this (on February 17) another severe storm was on its way.



Figure 35. Left: The Thames before the flooding (November 2013), the island in the middle is Pharaoh’s Island. Right: the same (flooded) area in February 2014. *Source: GWPF newsletter of 14 February 2014.*

The Met Office tried to link these floods to climate change (aka global warming). Their Chief Scientist, Dame Julio Slingo, said that all the evidence suggested that climate change was a contributing factor. They also said that there was evidence that the jet stream was making greater excursions, north and south, and was becoming more locked in one position, bringing

storms to Britain and exceptionally cold weather in Canada and the United States. This fits with the analysis above (see pages 25-30). However, a senior expert of the Met Office, Professor Mat Collins, commented that the storms driven by the jet stream had been stuck further south than usual, but that there was no evidence that global warming caused this.

However, what many newspapers did not mention was the fact that the rivers in Somerset Levels had not been dredged since 2003, causing silting up of the rivers, adding to the flood risk. The decision not to dredge anymore was revealed by the Mail Online, which cited a 250-page Environment Agency document, showing that increased flooding was deliberately planned (<http://www.mailonsunday.co.uk/news/article-2554940/Agency-flooding-puts-greater-water-parsnips-voles-local-people.html>). The Somerset Levels were first drained 250 years ago (by Dutch engineers during the reign of King Charles I). The landscape is an artificial-cultural one, used for farming and housing. Regularly dredged rivers and pumping stations kept flooding risk to a minimum. However, the decision to stop dredging (and not to maintain some pumping stations) was made “to increase the frequency of flooding”. This would benefit wildlife. Among the species it listed as expected to benefit were voles, parsnips, insects and various birds. Since 2003, the water-carrying capacity of the rivers has halved due to the silting up. They also stated that, under European Union directives, they had the obligation to protect the habitats that have developed hand in hand with the man-made flood-risk infrastructure. This is yet another example of putting nature before humans and the pernicious influence of the European Union’s all-pervading regulations. A similar history was revealed for the Thames River. The Environment Agency (a quango outside the control of parliament) had also decided to stop dredging the river, to protect an endangered mussel (the “Depressed River Mussel”). It should come as no surprise that people affected by the floods are extremely angry. Such policies, to put nature before people, are strongly encouraged by the European Union. This is not to say that the heavy rains would not have caused some flooding, but had the rivers been dredged and the pumping station been maintained, the effects would have been much less severe.

It should come as no surprise that people affected by the floods are extremely angry. Such policies, to put nature before people, are strongly encouraged by the European Union.

Even more disturbing is the fact that the Met Office, at the end of November 2013, predicted a drier than usual winter. No doubt this prediction was based on computer modelling. The Met Office is famous for its inaccurate weather forecasts. A few examples:

- ✓ For the last 13 out of 14 years, their temperature predictions were too warm (no doubt based on their belief in DAGW).
- ✓ In 2013 they forecast that February-March would experience above average temperatures. As it turned out March was the coldest month in more than 50 years.

- ✓ In 2009 they said that: “Despite the cold winter this year, the trend to milder and wetter winters is expected to continue, with snow and frost becoming less of a feature in the future. The famous cold winter of 1962/63 is now expected to occur about once every 1,000 [yes, one thousand! - my comment] years or more, compared with approximately every 100 to 200 years before 1850.” It turned out that the winter of 2009/10 was the coldest winter for over 30 years.
- ✓ Their most (in)famous forecast was in 2009, when they predicted a dry and warm “barbecue summer”, which turned out to be a very wet summer, spoiling the holidays of many people who had decided to stay at home, believing the “good” forecast.

In its defence, the Met Office said that seasonal forecasting is still a new science. They are using a £33 million supercomputer to help them in their forecasting (and it was announced in June 2013 that they would get a new £100 million computer). If they find seasonal forecasting already so difficult, how come they confidently predict the climate in a hundred years time? I have somehow a suspicion that they use the same algorithms as used by the IPCC to predict DAGW. As the saying goes: “rubbish in, gospel out”.

Not only the Met Office suggested a link between the floods and climate change (aka global warming), other DAGW fundamentalists could not stop themselves blaming DAGW either. For instance, Lord Stern, the author of a highly criticised 2006 report on the economics of DAGW, wrote in *The Guardian* that the floods and storms were a clear indication of the dangers of climate change. He said: “If we do not cut emissions, we face even more devastating consequences, as unchecked they could raise global average temperature to 4C or more above pre-industrial levels by the end of the century”. The good Lord forgot to explain what caused

similar severe flooding 250 years ago.



Figure 36. A picture of the jet stream responsible for the severe flooding in England. Note the excursion further south than usual, creating a “conveyor belt” of storms in England. This severe meandering of the jet stream (Rossby Waves) is called “Meridional Flow” (see Figure 30). *Source: New Zealand TV One channel of 17 February 2014.* [I have indicated the jet stream with a yellow arrow.]

I cannot remember that the jet stream ever featured in weather forecasts before. This has changed now. It was not only the Belgian TV that mentioned the jet stream in relation to the cold blast in North America (Figure 26), on 17 February, the weather program on the New Zealand TV One channel, showed pictures of the jet stream to explain the reason of the flooding in England (Figure 36).

Some people blame the southern excursion (meandering) of the jet stream on climate change (aka global warming). It seems that DAGW alarmists say whatever comes into their minds, hoping that nobody will check their utterances. Just to keep the DAGW dogma alive. Mainstream media cannot be relied on to do some proper investigative journalism. Fortunately, we have an active blogosphere to keep these alarmists honest. The blog *The Hockey Schtick* discovered that climate models had actually predicted the opposite, that Arctic warming would draw the jet stream north (less meandering) and cause a decrease in jet stream blocking.

GLACIERS. Whether glaciers advance or retreat is often more dependent on snow fall in their catchment areas than on global temperatures. Because of the very heavy snowfalls in Europe in the past five years one can eventually expect Alpine glaciers to advance again. The first signs may be visible already. Swiss glaciologists study many glaciers in the Alps. This year they found that seven glaciers have gained in ice mass and the retreat of others has slowed or stopped.

The French newspaper *La Dépêche du Midi* of 28 October 2013 reports that the small Pyrenean glacier of Arcouzan has grown for the second year in succession. It has grown from 2.2 hectares in 2012 to 2.5 hectares in 2013. The glacier has profited from heavy snow falls over the last two winters. The paper also reports that other glaciers in the Pyrenees have gained mass as well. One comment in the paper sounds interesting. The exact sentence in French is: *Les exceptionnelles chutes de neige survenues l'hiver dernier ont permis aux glaciers des Pyrénées de recharger.* Translation: The exceptional unexpected snow falls of last winter have allowed the Pyrenean glaciers to recharge.

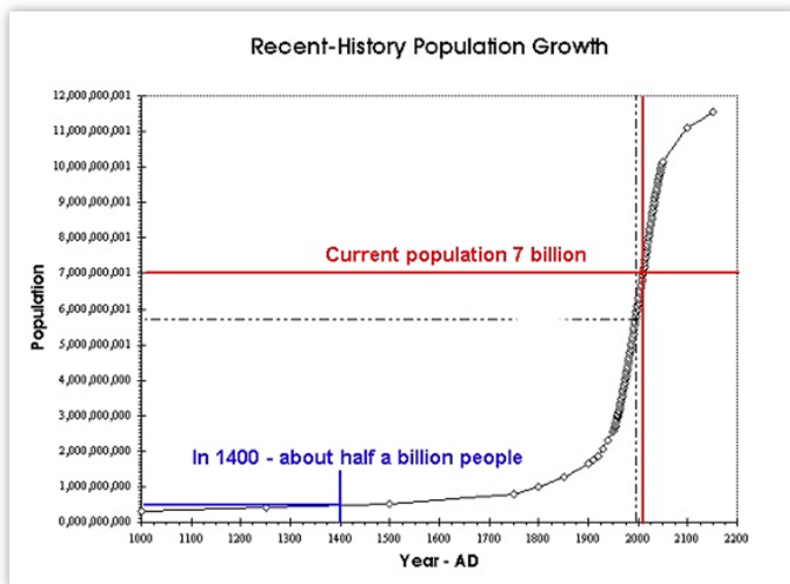


Figure 37. Population growth over the last 1000 years. Source: Google.

However, predicting future climate has built-in uncertainties. The predicted cooling may not happen, or it may not be as severe as some scientists think. On the other hand, even when the here described observations not necessarily mean that we are entering a cooling period, they certainly don't support the DAGW dogma.

If cooling would happen, the consequences would be absolutely disastrous, worse than those described by Barbara Tuchman about the Little Ice Age. Because there

are now 7 billion people on this planet, while in 1400 there were only half a billion (Figure 37).

CONCLUDING REMARKS

There are many scientific indications that we may be entering a period of global cooling. The most important indicator is the fact that the sun has become very quiet, not experienced for a hundred years.

The main question now is: how long will the present 17 year warming standstill continue? An associated question is: will global cooling become more obvious in the coming years? The final question then will have to be: provided these two questions will be answered in the positive, how long will the DAGW promoters, especially the IPCC, persevere in maintaining that their hypothesis is the correct one? Time will tell.

I want to finish with an appropriate comment attributed to the US Senator Daniel Patrick Moynihan: *"You are entitled to your own opinions, but not to your own facts."*

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