# Has global cooling taken place now instead of global warming?

**by Victor Christianto[1], email: victorchristianto@gmail.com**

**Abstract**

This file is summary of discussion in researchgate.net concerning global warming. In January 7th, 2014 I saw a news in television that says in U.S.A. the temperature in many regions go down as low as minus 51 degree Celsius, and the bad weather has caused about 2,500 flights have been cancelled. I don,t know whether such bad weather also happens in europe, russia, and other countries. My question is: does it mean that what happens in the world nowadays is global cooling rather than global warming? For an introduction to global cooling, see an article by Frum at

http://edition.cnn.com/2013/11/19/opinion/frum-global-cooling-impact/. I have also read some articles by Dr. Hathaway who says that global cooling is caused by low solar activity in recent years.

**Answers:**

[1] **Elliott Roberts**

2013 was the hottest year on record on Australia. Global warming, in literature, has been theorized to intensify heat waves and cold snaps (such as one in the United States). You need to be cautious when differentiating weather from climate, and from which regions you base your perspective from.
I can message you the literature if you wish.

[2] **Victor Christianto**

Thank you, Elliott, for your answer. Yes perhaps some countries experience hot temperature, but what i mean is tendency of global cooling all over the world as an effect of low solar cycle. According to Dr. David Hathaway from Marshall Solar Physics/Nasa, the solar cycle is the lowest in 200 years. See for example
http://www.activistpost.com/2013/11/the-link-between-sunspots-global.html.

[1] URL: http://www.sciprint.org, http://independent.academia.edu/VChristianto

[3] **Samuel Arba Mosquera**

There are some theories that global warming may cause a new ice age.
"Ocean currents are partially responsible for distributing heat around the Earth. The Gulf Stream, for example, is a current that directs warm water to northern Europe from the Gulf of Mexico. By doing so, the Gulf Stream makes temperatures in Great Britain and the rest of northwestern Europe warmer than they otherwise would be. As global temperatures rise, Arctic ice melts and massive amounts of fresh water pour into the North Atlantic and slow the Gulf Stream down. By slowing or stopping this ocean current, global warming actually would cool Europe down dramatically. If other ocean currents were disrupted, the entire planet could experience the same cooling effect and cause an ice age." (from Discovery Channel)

A study of circulation in the North Atlantic has discovered that there already has been a 30 percent reduction in currents flowing north from the Gulf Stream [source: Pearce]

Thom Hartmann put it this way:
http://www.commondreams.org/views04/0130-11.htm

and yes, NASA already back in 2004 also warnt on that:
http://science1.nasa.gov/science-news/science-at-nasa/2004/05mar_arctic/

[4] **Pietro Armienti**

The sensitivity of Earth's climate durig Quaternary to very small differences of the thermal budget imposed by Milanchovich cycles , demands for an intrinsic instability due to a general physical effect. If you make a a compilation of sea Level and Temperature data ( see attached figure) and compare them with a sea water equation of state, you can realize the cause of instability may be found in the maximum in density reached by the Ocean Bottom Water in this period.
As a matter of fact the ocean bottom water has never been so cold as in Quaternary and the consequences are very simple: both if you cool or warm the Ocean Bottom Water you may induce huge swells of a mass of water that is anyway very cold. We are on the edge of an instability that will inevitably drive the climate in a situation controlled by the persence of huge swells of cold waters at the surface. I cannot make previsions but I strongly suspect tha a new ice age is inevitable.

You may find further considerations in this note: P. Armienti, AGU 2011: A thermodynamic

model for Earth's hydrosphere
http://labs.adsabs.harvard.edu/adsabs/abs/2011AGUFM.C53C0689A/

[5] **Victor Christianto** ·

Thank you, Pietro, for your answer. I agree with you that we are going into a new ice age, although my data comes from solar cycle observation. Do you know how bad is it going to be? See also an article saying that some scientists also predict global cooling, at http://www.telegraph.co.uk/earth/environment/climatechange/10294082/Global-warming-No-actually-were-cooling-claim-scientists.html

[6] **Łukasz Pawlik**

Dear colleagues, this is really fascinating discussion. Please see fig. 5 (p. 187) under the link below (paper by L. Starkel).
"Naturalna tendencja" means "natural tendency" and "faktyczna tendecja" means "actual tendency". The author referred to a paper by Mitchelta from 1972! URL:
http://kosmos.icm.edu.pl/PDF/2008/183.pdf

[7] **Kamal Sharma**

I am agree with Samuel Arba's view the global warming triggers extreme cooling effect. A lot of evaporation and change in sensitive earth's climatic condition will ultimately prevail ice age conditions.

[8] **Marcel Lambrechts**

Just think about the scale of analysis. If samples from all over the world are pooled trends can be measured at a global scale without identification of underlying physical mechanisms. Given that Earth is moving fast in space, not only factors on Earth but also 'space' factors might be important to explain climate cycles. If I remember well, historical factors related to continental drift or volcanic activity influencing levels of dust in the atmosphere were also taken into account.

[9] **Kenneth Towe**

Climatologist, Dr. REID BRYSON was asked (back in 1976):
“How soon will we find ourselves in the next ice age?" One hundred years from now, or 9,000 years from now?”

BRYSON replied: “The odds are very small for 100 years and approach a certainty for 9,000 years. There is, to put it another way, just the barest hint of a possibility that we could start a transition into a glacial epoch during the next century. The difference between the climate we have now and the climate we'll have as we enter a new ice age will be so small here in North America that, for the most part, you won't even notice the change.”

[10] **Stanislav Franciskovic-Bilinski**

I am sure that human influence in climate is overestimated and that climate is much more determined by natural factors. It really seems that about 15 last years we are really entering a much colder period. I hope that it will not be beginning of a new ice age, as that would be terrible and much more dangerous than any possible heating!
The thing that really worries me is the current situation at SOUTH pole! There is now mid of summer. And the sea ice cover is extremely widespread and extremely thick - remember all those Russian, Chinese and Australian icebreaker ships, which were jammed in the ice - NOW, IN SUMMER!
Also a very strange thing are those unusual winter events in North America, but also don't forget recent snows and strong winter in Egypt, Israel, Saudi Arabia... It seems that this winter only Europe is spared from the severe winter until now.
Really interesting things are happening in climate this winter and we will see the future trends...

[11] **Marcel Lambrechts**

One of the so-called scientific predictions is that climate becomes less predictable! Climate research in natural settings is currently only methodologically based on description of patterns without experimental approaches. There is in addition only one global data point per year to estimate the global trends across years! If we would apply these comparative approaches to other scientific questions, would we be able to publish the results?

[12] **Cathal Broin**

You appear to confuse local weather with the global average temperature. It is cold in the US because the cold air is coming from the Arctic region. Warm air is moving north, cold air south. http://science.time.com/2014/01/06/climate-change-driving-cold-weather/

Marcel, specific predictions for a current year are for meteorologists, so it would not make sense for climate scientists to make a prediction for this year. Climate scientists predict trends over 10 year periods, and the IPCC reports look back at past models and how effective they were at predicting the average change in parameters such as global temperature, sea temperatures etc. See the reports.

Edit: I would say meteorology can not make reliable predictions over a year, but I'm no expert. To make an analogy with the properties of a a liquid, meteorology seems to be equivalent to trying to track the motion of every particle, while climatology is like measuring the temperature and volume (bulk properties). Individual motions can't easily be simulated over a long period of time, but bulk properties can.

[13] **Pietro Armienti**

Total enthalpy of the hydrosphere is four orders of magnitude larger than that of the atmosphere: at most a rise of atmospheric temperature may induce a faster transport of water from the see to the poles and some more intense storm, not a glaciation, even if you add much more CO2 than we are currently doing.
What really matters for climate evolution is the thermal budget of the oceans that is controlled by the energy received by the sun (that is several orders of magnitude higher than the Earth's heat flux).
This balance id controlled by the albedo of our planet which is in turn influenced by the amount of ice that may form in winters at the poles , a factor which, in turn, depends from the possibility than ocean circulation may be able to redistribute enthalpy from the lower to the higher latitudes.

As a matter of fact this redistribution has become progressively more difficult during Ceonozoic due the insulation of Antartica in a polar position and to the consequent development of the circum-antarctic current that become able to control the temperature of the Ocean Bottom Water ( OBW). OBW at least reached its minimum temperature in Quaternary and the associated maximum in density made the Earth very sensitive to Milancovitch cycles…
We are still in that condition: this means that both if OBW warms or cools huge masses of cold water will reach the surface of the oceans. Recent increase in the frequency of El Nino

swell are but an aspect of this instability. The mean distance of the Earth-Sun system has to be taken under control to make previsions on the forthcoming glaciation, unless we start to think to some Geology Engineering that allows to control at a global scale enthalpy redistribution.

[14] **Zeiri Asma**

Interesting subject, can this have a relation to the sunspots captured by the NASA in January the 7th? See attached link: http://www.nasa.gov/content/goddard/giant-january-sunspots/

[15] **Lisa Fisher**

Climate is very complex, and climate change has become very much politicized. There's no doubt there are cycles of all magnitudes, very large to very small. People see a change over 30-50 years and think it's not 'normal' - yet cycles ARE normal. I saw the pictures of Chicago in the news last week, with all of the accompanying panic about the cold. Yet I lived just outside Chicago in the 1960s when it was just as cold.

There are many factors to control of these cycles. Long term is the Earth's rotation around the galaxy, which has been proposed to affect the long term cycles of when ice age periods occur on the planet (due to the planet passing through dusty areas which decreases heat from the sun?). Short term is the 11 year sunspot cycle. Many others inbetween. How they all interact determines the climate.

If you have not already seen this, I think you will find the Vostok Ice Core records interesting. A chart and an introductory explanation are good ones at
http://www.am.ub.edu/~jmiralda/fsgw/lect5.html
When you look at this, we are at the peak of the high temperature part of the interglacial cycle. Warming is followed by cooling and initiation of another glacial period. How this timing works is still a question.

There's no question that climate change is occurring - but which way will it go and on what time scale? And how much, if any, has industrial CO2 affected it? Data shows that CO2 follows temperature rise, and did not cause it in previous cycles. Not everyone has jumped on the anthropogenic global warming bandwagon. Still, we should be responsible about pollution.

[16] **Lisa Fisher**

Victor -

Yes, whether or not our pollution has affected the normal cycle of climate change, this planet is our only home, and there is no reason to trash it. By caring for the Earth, its water, skies, ground, we'll all be healthier. I saw a Linkedin posting yesterday that highlighted a NASA news article about the use of supercritical water in treating organic waste. Interesting. With a concerted effort and new technologies, I hope we can clean up some of our mess.

A note - Being responsible does not mean that we cannot use resources - but again, good practices and new technology should be used to lessen impact.

**Concluding remarks**

From this discussion, it seems likely that the Earth will enter into a period of Little Ice Age, although the exact cause remains an open question.

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