

## Update on Climate Change (20 August 2018)

Many of us living our daily lives without realizing how important climate change is. However we might have noticed changes in the weather patterns, depends on where we live. Those who live in South Florida and the Caribbean might notice that there are more often stronger hurricanes. Recently, people who live in Miami, Florida USA should have noticed that the sea level has been rising. Those who live in the Tornado Alley USA, might have noticed that there are more often tornadoes. Those who live in South Africa notice that there are less rain fall. I live in Vancouver Canada since 1990 and I notice that Vancouver used to have drizzle in the winter, and at that time people who live in Vancouver did not need to use an umbrella most of the time. From now (August 2018) and since about 15 years ago, it has been raining heavy in the winters, we will be very wet without an umbrella. More importantly, many of us should have notice the record breaking hot temperature that has taken place in many parts of the world in July and August of 2018. This is the second year that I have seen a lot of smoke from forest fires. Smokes that hang in the sky for days. According to British Columbia, Canada BC Wildfire Service, there are in total 604,675 hectares (6046.75 square kilometers) of burned area today, which is 20 August 2018. And in California USA, it has now burned 290,692 acres (1176.38 sq km). That is a lot of trees being burned.

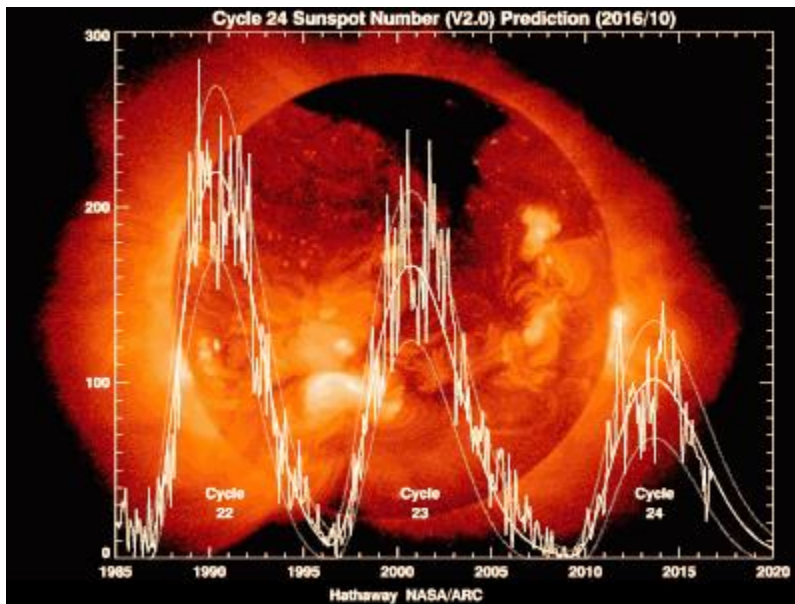
Shockingly, we should also have seen what most recent powerful hurricanes had done to the Caribbean Islands from the beginning of September 2017, two most powerful and catastrophic Category 5 Hurricanes, Irma and Maria had roared through the Caribbean Islands, separated just by about two weeks. They had destroyed many people, houses, buildings, trees and crops. And from August 17 to 29 of 2017, Hurricane Harvey had caused flooding to many houses in Houston, Texas and had inflicted \$125 billion (2017 USD) in damage, according to this article "Hurricane Harvey" in Wikipedia.

It has been quite a wakeup call for many politicians, perhaps still not powerful enough to make politicians to do something about it.

According to recent article "Can we save the corals, by Rebecca Albright" in the Scientific American magazine of January 2018, which shows that the ocean water is warmer than usual. Therefore, there are definite indications that global warming is working.

However due to recent cold winters there was lots of snow in Canada, Europe, U.S.A. and many other places, suggests that global cooling or little ice age is at work. This cooling trend shows that global cooling is working, despite the ongoing global warming (which is created by human beings). Therefore the prediction I made in the year 2000 was quite correct! Please see my paper "The Accelerating Global Climate Change". In

fact I started my research on climate change in 1998 and I had finished writing my first version in 1998 and the latest version was written in the year 2000. Please see one of the illustrations of this paper, page 42 which I attach here (see appendix 1). I predicted that the sunspots count for solar cycle 23 should peaked at 100, but instead it peaked at about 170 according to NASA's data, please see illustration here below. However the sunspots count for solar cycle 24 did peak at 100 between the year 2013 and 2014. It looks like it is a step wise process.



Therefore sunspots counts do indeed have effects on Earth's climate. As you can see when the sunspot counts were very low between 2007 and 2010, where it is at the bottom of the trough, Europe and North America had experience several extreme cold spell. And now a trough period of solar cycle 24 is in progress, it will last about 5 years from 2018 to 2023, this means some extreme cold spell for these few years. Then the next trough period will be due between 2031 and 2035. The last trough period before the end of global cooling will be between 2043 and 2046 (see appendix 2). My prediction is that there will be more often powerful hurricanes at the trough periods, because of low sunspots count, and that means less Sun light.

On the other hand is that when the sunspots count is peaking, that means the Sun is more active, and it gives off more Sun light. My prediction for the coming solar cycle 25 is that it will peak at maximum sunspot count of 100, perhaps lower at about 80, and it will peak somewhere around 2027. Then solar cycle 26 will peak at about 2039, and the sunspots count will be about the same as solar cycle 25 (see appendix 2).

At this moment I don't have in possession of a more sophisticated software program that will assist me in predicting sunspot's count of solar cycles beyond 2045. Because my prediction of solar cycles 23 and 24 was quite correct, therefore I am quite confident that my prediction of solar cycles 25 and 26 should be correct. Since the sunspot's count is low for solar cycles 25 and 26, this suggests that global cooling will still be with us until 2045. But sooner or later it will come to an end.

At that time, when I was working on my paper "The Accelerating Global Climate Change" in the year 1998, I think I am the only one who found out the correlation between sunspots counts and climate change. Yes indeed, sunspot counts were low during the little ice age in the 1600's. Europe was very cold for about 70 years, and of course this is one of the important hint for me to write my paper. And I was asking why the sunspots counts were very low during this little ice age.

In fact, we have to thank Galileo for his observation and analysis of the sunspots. Because the sunspot's counts were low for a few solar cycles during the 1600's, scientists call that period the Maunder Minimum.

Another hint was from the orbital period of Jupiter, which is 11.8 years. It coincides with the cyclical period of the solar cycles. One of my findings is that when solar cycle peaks, it often happen that planet Jupiter is at perihelion (nearest to Sun), and when sunspot counts are low, it often happens that Jupiter is at aphelion (farthest away from Sun).

In my paper regarding "The Accelerating Global Climate Change (AGCC)", I mentioned that a little ice age coincides with when there is an alignment of the big outer planets. Now the question is why an alignment of outer big giant planets and the position of Jupiter could affect the sunspot counts? In fact, I do have a possible explanation for this matter in my paper, and it might explain how gravity works on the Sun.

After I finished writing my paper, I decided to send my paper "AGCC" to many dignitaries in the world, such as Queen Beatrix of The Netherlands, Queen Elizabeth of England, Emperor Akihito of Japan, King Abdullah of Jordan, King Fahd of Saudi Arabia, President Jiang Zemin of China, President Bill Clinton of U.S.A., Prime Minister Ehud Barak of Israel, Prime Minister Benazir Bhutto of Pakistan, German Chancellor Helmut Khol, Prime Minister Jean Chretien and Prime Minister Stephen Harper of Canada. Besides I also send a copy of my paper to the Swedish Nobel Prize Academy. I sure hope that many scientists have learned new science from my paper, and I certainly hope that we can find out the real answer for this phenomenon sooner than later.

My recent prediction is that global cooling or the little ice age will end soon, and this global cooling has been helping the Earth to offset the warming trend, which is caused

by global warming. If there was no global cooling, we could have seen more often unusual hot temperature in many parts of the world, and the ice cap on North Pole and Antarctica could have melted a great deal by now. Sometime I do think about it, why this on-going global cooling occurs at a critical time of humanity?

Now the question is “Can we save humanity, when global cooling ends?”

The atmospheric CO<sub>2</sub> level is still rising exponentially, due to human activity. Therefore, our last window of opportunity to reduce and to remove excessive atmospheric carbon dioxide is from 2018 until about 2045. However, due to the increasing forest fires in California, U.S.A. and British Columbia, Canada in July and August 2018, suggest that atmospheric CO<sub>2</sub> level of 410 ppm at present time has contribute to a great deal in extreme or record breaking hot spell. Therefore we should reduce the CO<sub>2</sub> emission to zero as soon as possible, preferably by 2030. If we do not do anything about it, then atmospheric CO<sub>2</sub> will increase to about 450 ppm by 2030. There will be more often and longer extreme hot spell than now. Therefore reducing the emission of CO<sub>2</sub> to zero is very important, and at the same time we should start removing the excessive atmospheric CO<sub>2</sub> to 350 ppm before global cooling ends, if we want our children to have a normal and good future.

To see how this ongoing ice age or global cooling will end, we should look back at how the last little ice age ended.

According to my prediction, the sunspot’s count will return to its normal high within two solar cycles, because it might happen in a stepwise process as well, just like what happened at the beginning of the ongoing little ice age. After that it might switch back to lower sunspot’s count again for a couple of solar cycles. As I said before, I don’t have a sophisticated software program to do the prediction.

If we do not reduce and remove the excessive atmospheric CO<sub>2</sub> from the Earth’s atmosphere, then I can generate some scenarios here, which could happen between 2045 and 2060. There will be many people leaving their own countries, because it is too hot to live there, millions of refugee’s claimants in North America and Europe. Food shortages becoming more frequent in certain countries and United Nation (UN) begins to have problems with distributing humanitarian aids, crime rates becoming uncontrollable in certain countries, which implies that the rule of law do not apply anymore to certain countries.

You might be wondering how much CO<sub>2</sub> we have put into the atmosphere since the industrialization started, since the year 1800. At that time CO<sub>2</sub> was at about 290 ppm (parts per million), and just 3 years ago 2015, the atmospheric CO<sub>2</sub> was at 400 ppm.

Therefore, in  $(2015 - 1800 = 215)$  215 years we were able to emit  $(400 \text{ ppm} - 290 \text{ ppm} = 110 \text{ ppm})$  110 ppm X 2 billion tons/ppm of CO<sub>2</sub> = 220 billion tons of CO<sub>2</sub> into the atmosphere.

My estimate is that 75 % of this excess of CO<sub>2</sub> (75% of 220 billion tons) was due to burning of fossil fuel for generating electricity, heating and cooking, and about 25% of 220 billion tons was due to the consumption of fossil fuel for propelling cars and trucks.

By the way, the atmospheric CO<sub>2</sub> of about 400 ppm corresponds to  $400 \text{ ppm} \times 2 \text{ billion tons / ppm} = 800 \text{ billion metric tons of carbon}$ .

The data on page 50 and 51 in this article “Meltdown: The Arctic climate is shattering record after record, altering weather worldwide (by Jennifer A Francis)” in the Scientific American magazine of April 2018, suggest that despite the now ongoing global cooling the winter air temperature is above normal, the winter sea ice extent has declined and the winter sea ice volume has dropped.

And according to Ted Schuur who wrote this article “The Permafrost Prediction” in the Scientific American magazine of December 2016, that the Northern Hemisphere permafrost region contains about 1450 billion metric tons of organic carbon, almost twice as much carbon as exists in Earth’s atmosphere (1450 billion tons corresponds to about  $1450 \text{ billion tons} / 2 \text{ billion tons per ppm} = 725 \text{ ppm}$ ).

Scientists predicted that about 10 percent, 130 billion to 160 billion tons of carbon (which corresponds to 65 ppm to 80 ppm) would enter the atmosphere, accelerating global warming (please see page 57 of this article).

Therefore my message to the world is very urgent, and people has to realize the dire consequences of doing nothing to reduce and to remove green house gases, especially carbon dioxide (CO<sub>2</sub>) is a recipe of disaster.

Let me reiterate here that, if we want to save the North Pole and Antarctic ice cap we must reduce the emission of CO<sub>2</sub> to zero by 2030, and we should start removing CO<sub>2</sub> from the atmosphere as soon as possible.

My advice to the world is that we should focus on fighting climate change in this coming decade with all our mighty power, set aside all political differences and hostilities to the back burner.



Appendix 2

Solar Cycles 24, 25 and 26

