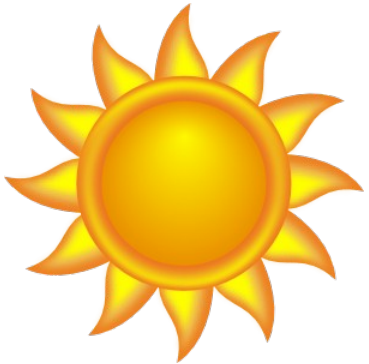


How the Sun Causes Climate Change

Laurence Smart
3-2-2019
(www.CanberraForerunners.org)

Kingdom citizens can be distracted by things in their culture just like any other person.

Emotive ones are the biggest distractions.

These need to be personally eliminated as they remove focus from the essentials – the King and his Kingdom.

A few of the very emotive issues in our culture today are:

- Women’s rights
- Gay rights
- Aboriginal rights
- Refugees
- Left-wing ideology
- Climate change

All these need to be approached from a Kingdom perspective so we have the King’s mind on them. They will then cease to tug at our hearts and not be a distraction from our lives in the Kingdom.

Are you familiar with this?

"A soldier on duty doesn't get caught up in making deals at the marketplace. He concentrates on carrying out orders. An athlete who refuses to play by the rules will never get anywhere. It's the diligent farmer who gets the produce. Think it over."

2 Timothy 2:3-7 (The Message)

Having Kingdom knowledge on all questions and issues relating to our society allows us to converse with people without being ignorant.

It also allows us to give Heaven's perspective on any question. This is our responsibility as sons of the Most High God.

We will not be able to impact our culture without interacting with people and speaking what we know to be the truth because we’ve been given it by the King himself

I would like to eliminate **Climate Change** from the list of emotive ideas you are being manipulated by.

I want you to see that it’s a natural phenomenon and not something caused by human activity.

You will then stop allowing yourself to be pressured by the media and others to fight desperately to save the planet for future generations. The existence and extent of Climate Change cannot be influenced by human intervention.

Let's begin

What <u>really</u> affects our climate is:

- how much of the sun's energy is blocked by clouds,
- how much reaches the Earth's surface, &
- how much is reflected back into space by ice and snow.

Water vapour is a greenhouse gas 10x more effective than carbon dioxide. It creates a mechanism for warming and for stable, fair weather.

Fair weather has higher humidity and a bigger difference between day and night temperatures. This results in more dew being formed which nourished grasses and cereals.

The total amount of energy from the sun that reaches Earth is called Total Solar Irradiance (TSI). This is not the same as heat and light.

TSI is a good indicator for climate, but it is part of the effect, rather than the main cause.

The difference between the TSI in the coldest part of the Little Ice Age (1645-1715) and the warmest part of the modern warm period (1950-2000) is only **0.3%**.

This means that more energy from the sun does very little to heat the planet.

This means something else about the sun impacts our climate in a major way.

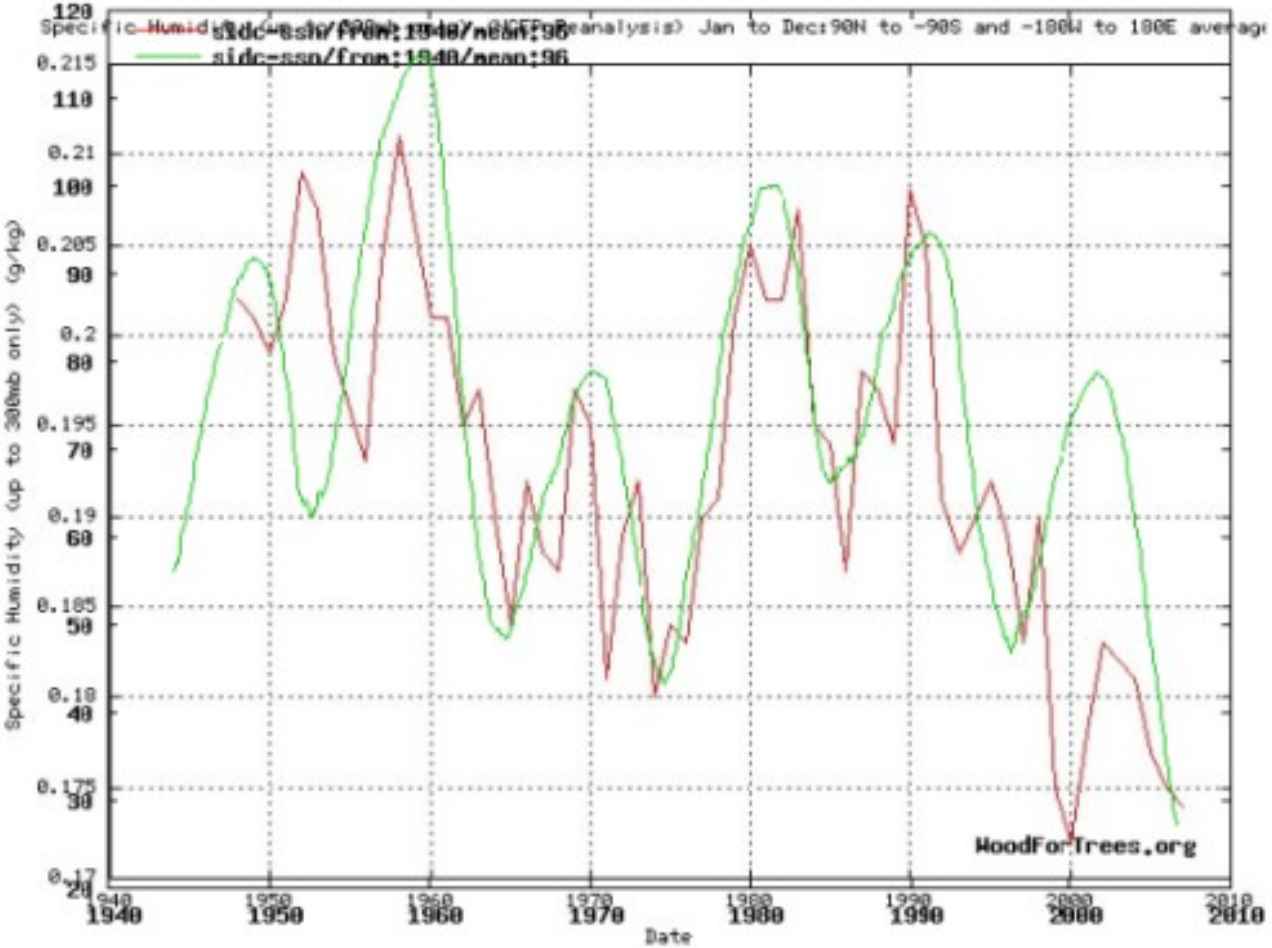
If it’s not TSI, what is it?

The amount of water vapour (humidity) in the atmosphere is correlated directly with the sunspot activity of the sun.

This means that the sun's activity directly affects the amount of water vapour in our atmosphere.

(see graphic over page)

Specific Humidity vs Sunspot Number



Correlation of specific humidity and Sunspot Numbers:

Specific humidify - Red (smoothed over 100 months) 1940 to 2010, around 30,000 feet (tropopause).

Sun spot count - Green.

Source: tall bloke blog 'solar system dynamics' August 8, 2010

IMAGE: abruptearthchanges

abruptearthchanges.files.wordpress.com/2018/01/specific-numibity-sunspot-shumidity-ssn96.png

The remainder of this lecture is a summary of:

“The Next Grand Solar Minimum, Cosmic Rays and Earth Changes (an introduction)”

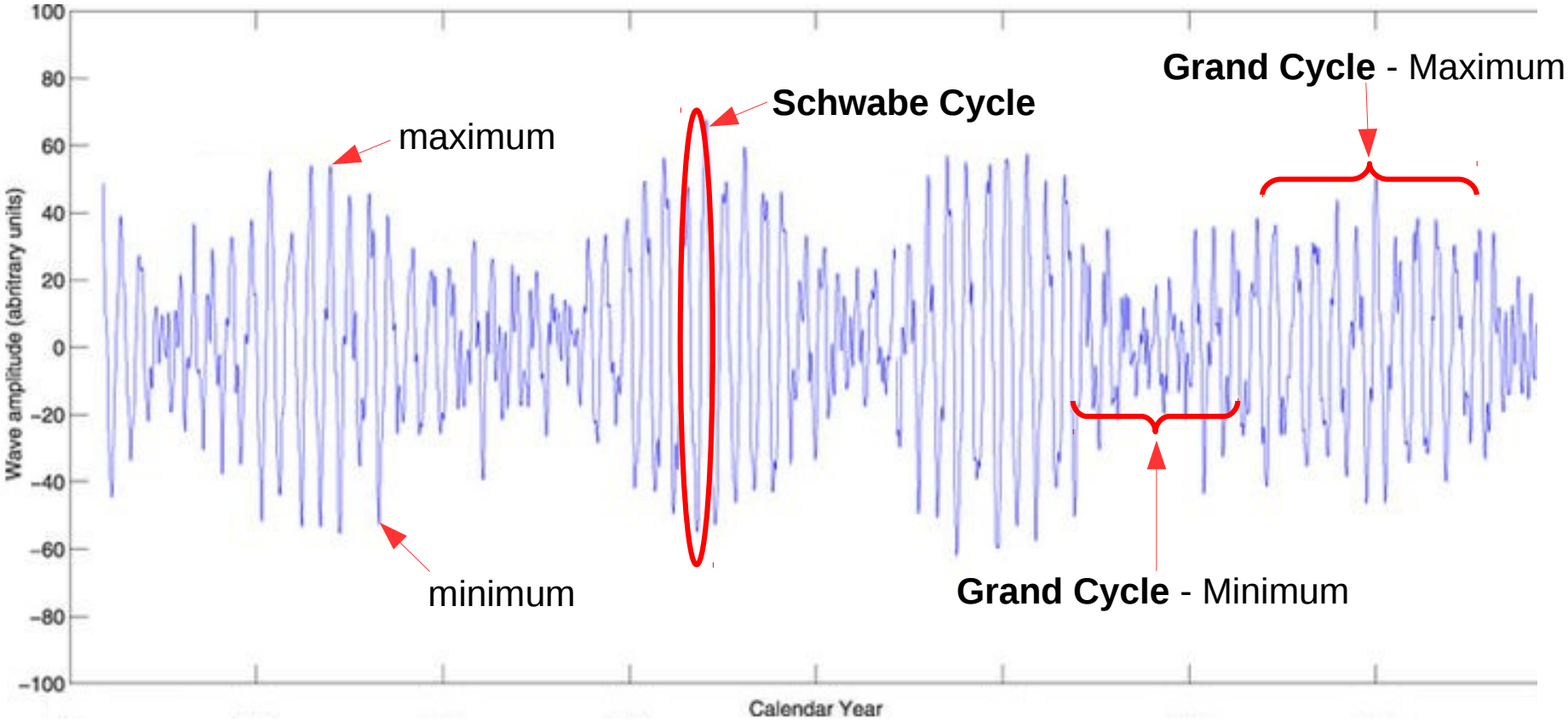
By Sacha Dobler [14th January 2018]

abruptearthchanges.com/2018/01/14/climate-change-grand-solar-minimum-and-cosmic-rays

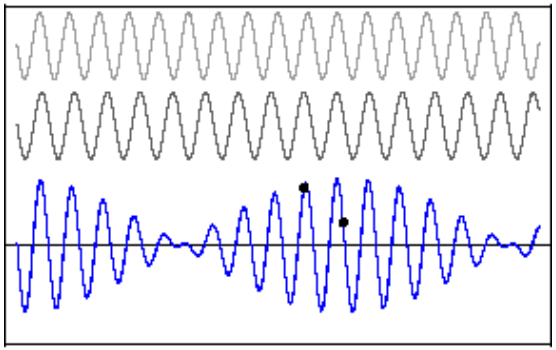
To fully understand how the sun causes Climate Change, it’s important to know that the sun goes through 2 types of activity cycles.

(see graphic over page)

Solar Cycles



NOTE: This shape is caused by 2 sine waves out of synch.



www.physics.usyd.edu.au/teach_res/hsp/sp/mod31/ag_beats.gif

A **solar maximum** is the period within the 11-year solar cycle (Schwabe Cycle) of high solar magnetic field and high sunspot count.

A **solar minimum** is the low activity trough of the 11-year solar cycle.

A **Grand Solar Minimum** is approximately a 200-year set of low Schwab Cycles.

A **Grand Solar Maximum** is approximately a 200-year set of high Schwab Cycles.

What effect do these cycles have on the Earth's climate?

This was answered by scientists in 2017 →

“Finally, we have the last piece of the puzzle of why the particles from space are important for climate on Earth.”

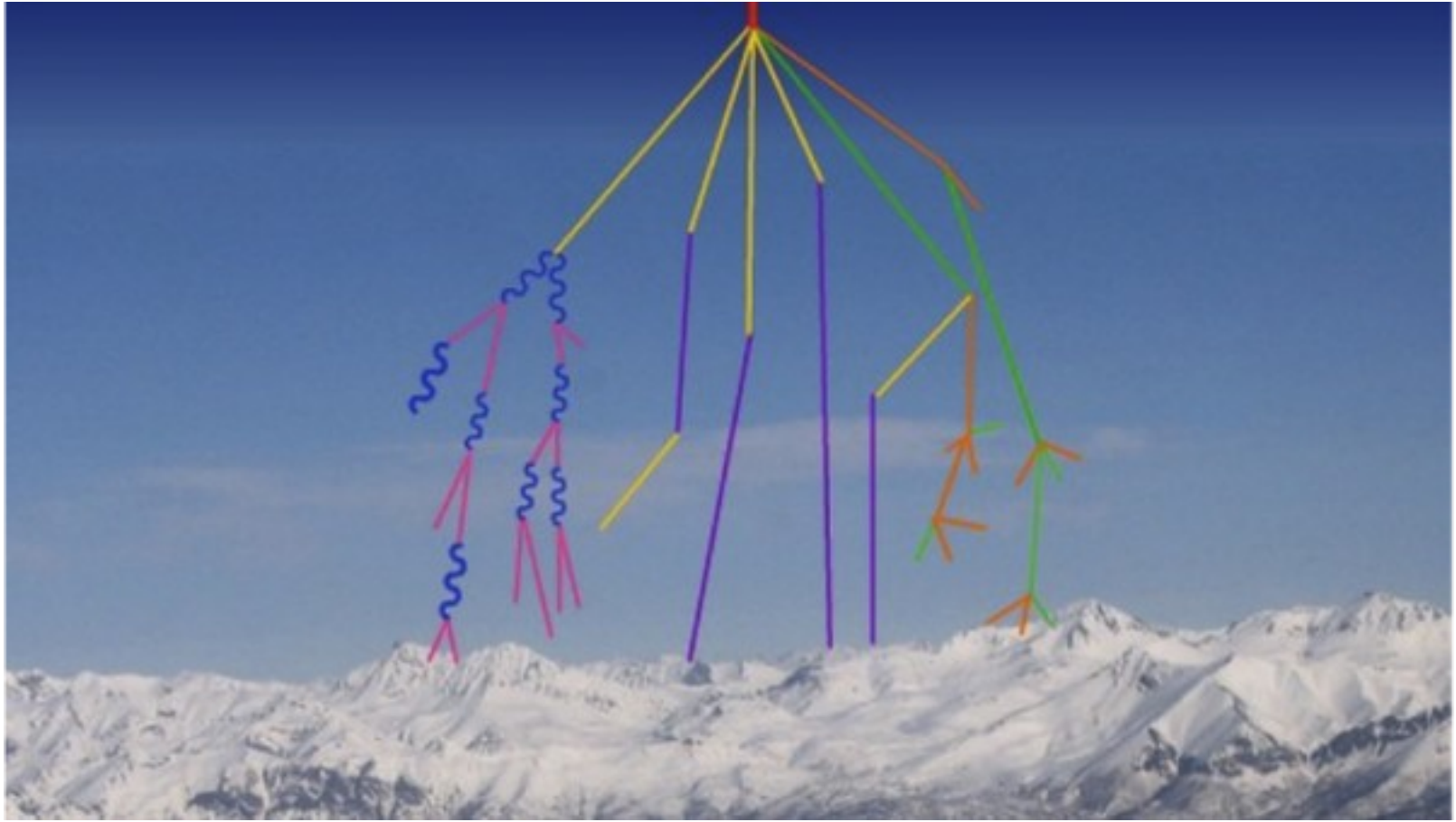
Professor Henrik Svensmark
wattsupwiththat.com/2017/12/19/new-svensmark-paper-the-missing-link-between-cosmic-rays-clouds-and-climate-on-earth
(scientific paper)

What they discovered was that it’s the entry of space particles (mainly cosmic rays) into Earth’s atmosphere which cause dramatic changes to our climate.

These particles are predominantly influenced by <u>the sun’s activity and it’s magnetic field</u>. (More on magnetic fields later)

When solar activity is low during a **solar minimum**, <u>particularly</u> in a **Grand Solar Minimum**, more cosmic rays enter Earth's atmosphere. These collide with atoms in the atmosphere splitting them into smaller sub-atomic particles. These tiny particles act as cloud nuclei (called 'cloud seeding') which produce low level clouds.

(see graphic over page)



Galactic cosmic rays entering the atmosphere

IMAGE: NOAA

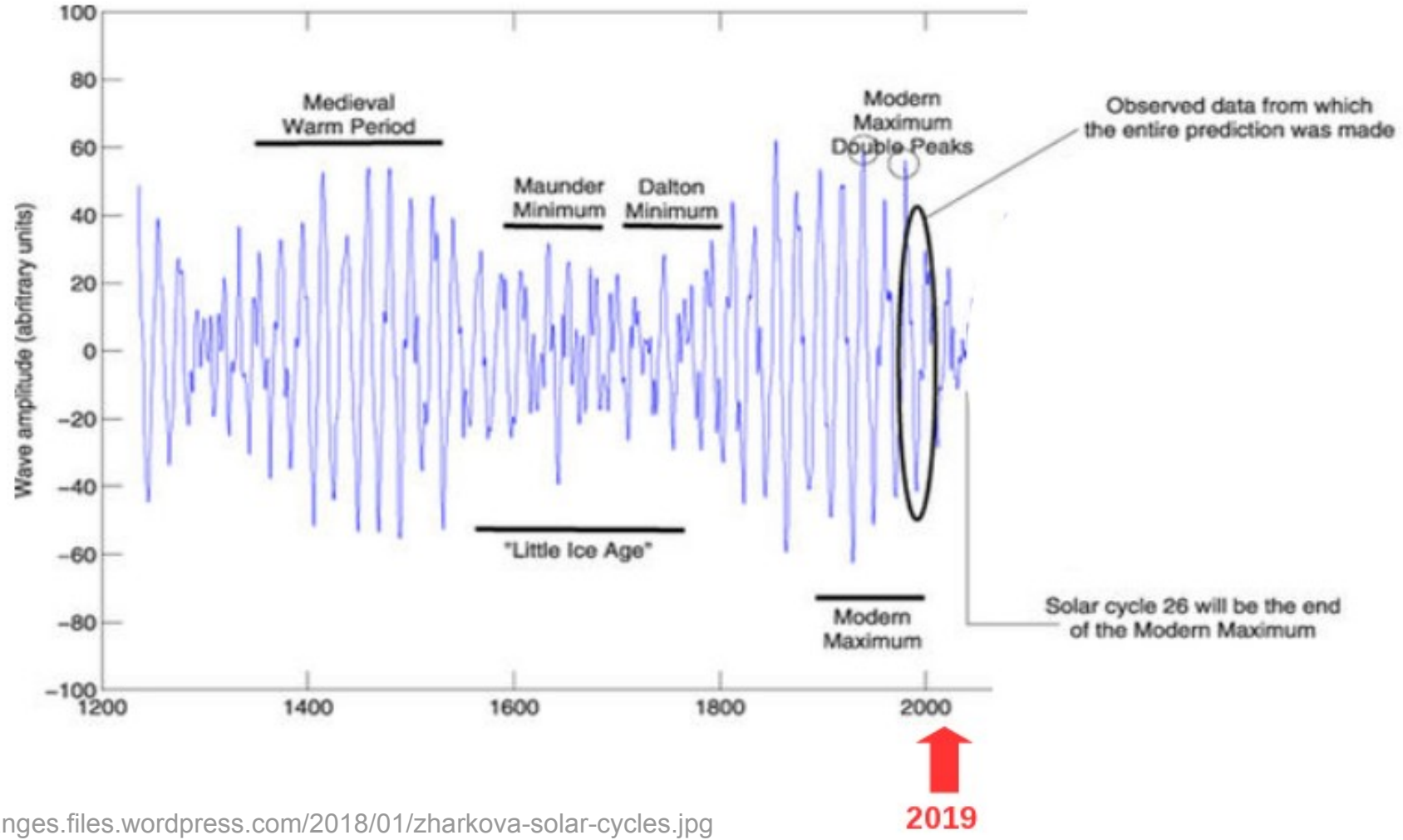
abruptearthchanges.files.wordpress.com/2018/01/galactic-cosmic-rays-noaa.png

An increase in cosmic rays entering the atmosphere accelerates storm formation, along with snowstorms, hail, and local flooding. It also results in erratic rainfall and in the long run, global cooling.

So what’s actually been happing with Earth’s climate in the recent past?

Prediction of solar activity on a millennial time-scale

IMAGE: V. V. Zharkova et al



abruptearthchanges.files.wordpress.com/2018/01/zharkova-solar-cycles.jpg

This graph is based on modelling. This means that it is constructed to predict the past and the future using data gathered over the past 200 years or so.

As our solar system and the movement of the sun & planets in frictionless/weightless space is extremely stable, we can put added confidence in these predictions.

“During a succession of several strong 11-year cycles (Schwabe) cycles – a **Grand Solar Maximum** – we see a more benign and stable climate, less variability in precipitation/wind and a trend of general warming, as in the Roman Warm Period, the Medieval Climate Optimum and the recent Modern Grand Solar Maximum between the 1940s and around 2000.”

During a **Solar Maximum** there are less cosmic rays entering the atmosphere. This means less clouds and more sunshine even though there’s more water vapour in the atmosphere.

"A **Grand Solar Minimum** – as a succession of several very low solar cycles – occurs approx. every 200 years. The last notable one was the Dalton Minimum c. 1790-1820, which was followed by the end of the Little Ice Age, the 2nd Industrial Revolution, population expansion and the beginning of the modern global warming trend (which began c. 1850 and lasted until c. 2000)."

NOTE: *'c.' stands for 'circa' meaning "around about"*

During the ‘Little Ice Age’, temperatures across the Northern Hemisphere only declined by 0.6°C compared to the average temperature from 1000-2000 AD. However, frost, snow events and crop failures were devastating during that period.

Within a **Grand Solar Minimum**, there are solar maxima stages. These will be the warmer but wetter periods of generally <u>benign (stable) climate</u>.

In a **Grand Solar Minimum**, cosmic rays trigger larger flash floods, hailstorms and local long-duration rain events due to jet stream disturbance and the mixing of atmospheric layers.

At the same time as the local flooding increases there’s more cloud cover and less sea surface water heating up. This means less evaporation of sea water and lower humidity. The overall amounts of rainfall is reduced, despite regional rainfall records and flooding.

In general, water tends to remain in the cloud cover for longer periods of time.

When clouds are rained out, rain events are more violent, even though the transfer of moisture into the continents is diminished. As a result, droughts are historically more prevalent in <u>many areas</u> during **Grand Solar Minima**.

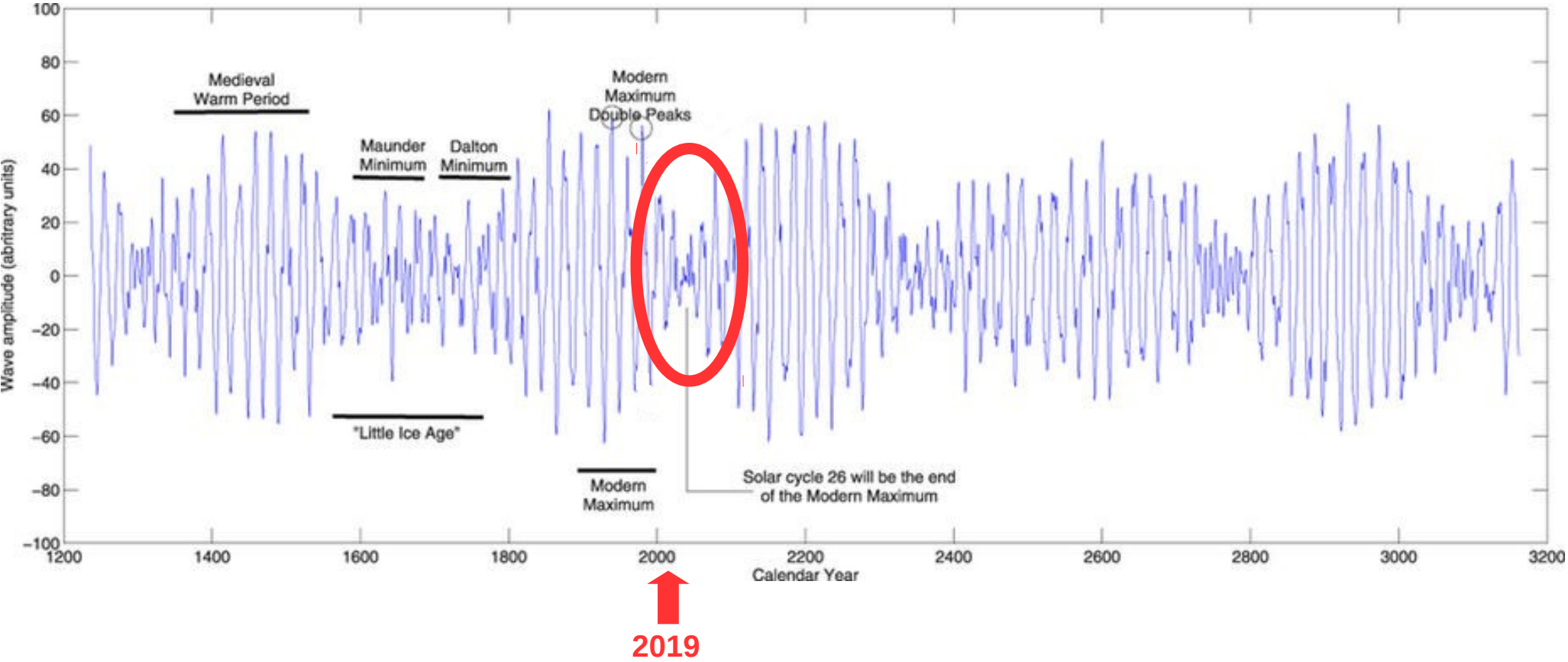
Due to shifting jet streams and changing wind patterns, more heat waves and wild fires are to be expected.

The solar cycle prediction graph shows that Earth is entering the next **Grand Solar Minimum**

(see graphic over page)

Prediction of solar activity on a millennial time-scale

IMAGE: V. V. Zharkova et al



abruptearthchanges.files.wordpress.com/2018/01/zharkova-solar-cycles.jpg

All the climatic conditions we are seeing these days suggest that we have already entered the next **Grand Solar Minimum**.

Some of the symptoms for this shift that we are seeing now are:

- The Antarctic ice has been increasing
- The Arctic sea ice is recovering
- The all-time US record for natural disasters was broken in 2017
- Every year recently, 100-year records for various climate phenomena are broken
- Earthquakes have been increasing over the past decades

NOTE

The exact progress of the change to a **Grand Solar Minimum** this century is hard to predict.

What we know is this:

Solar cycle #24 which began in 2008 is already the third weakest solar cycle since 1755 in terms of sunspot numbers.[‡] This puts us about ten years into the current **Grand Solar** cycle…

As solar cycle #24 declines to a minimum over the next two years, we should see longer and more numerous periods with no sunspots.

‡ www.vencoreweather.com/blog/2017/12/4/300-pm-historically-quiet-sun-headed-towards-next-solar-minimum

Within the next 2 years, the current very weak solar cycle (#24) will give us an idea of the next one (i.e. the trough of #25).

Even in early 2018 sunspot activity was at the level of the predicted minimum set to be in 2 years. It is expected that we will reach the trough of solar cycle #25 in 2029/2030.

“But – somewhat counter-intuitively – **Grand Solar Minima**, the cooler phases, are historically prone to drought and, due to jet stream disturbances, also singular heat waves and wild fires increase.

It is primarily the climate instabilities and erratic weather, rather than the actual drop in temperature, that initially disrupts agriculture and civilization.”

In **Grand Solar Minimum**, local droughts and crop failure can be caused not only by less rain and more winds, but also lower humidity which reduces the important dew that grasses and cereals use.

This effect may not show up on climate records of temperature and rainfall. So these droughts will most likely be misinterpreted as being caused by heat and high evaporation.

Summary of the cycle of climate downturn during a **Grand Solar Minimum**:

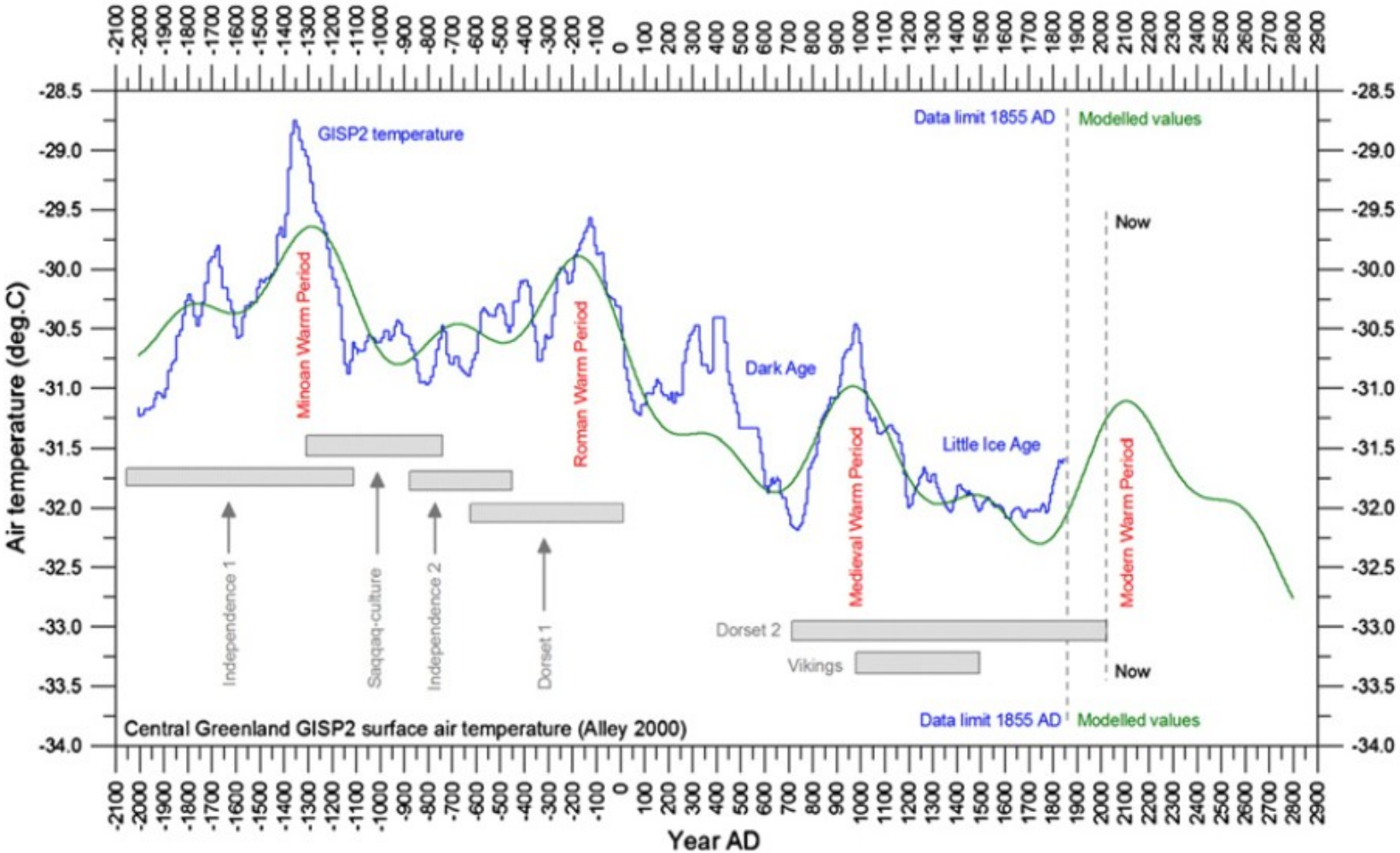
- Weak Solar Magnetic field
- →More cosmic ray entering from space
- →Splitting of more atmospheric molecules
- →Increased cloud seeding
- →More cloud formation and erratic precipitation
- →Long-term cooling
- More clouds → reflection of solar radiation
- More snow and ice reflect solar radiation → more long-term cooling

A ‘normal’ **Grand Solar Minimum**
initially begins as a
“Bad Weather Age”
<u>not</u> a
“Mini Ice Age”

“Our simple cyclic model *(see over page)* is able to forecast the main features of this recorded warming until 2010, underlining that a significant part of the 20th century warming may be interpreted as the result of natural climatic variations, known to characterise at least the previous 4,000 years.”‡

‡ Ole Humlum et al (2011) “Identifying natural contributions to late Holocene climate change” (scientific paper)

O. Humlum et al. / Global and Planetary Change 79 (2011) 145–156



Global Temperature Changes: Surface temperature of the past 4,000 years (blue line). Natural cycle modelled and forecasted data (green line).
(2011 Central Greenland, GISP2)
IMAGE: O. Humlum et al

abruptearthchanges.files.wordpress.com/2018/01/o-humlum-et-al-global-and-planetary-change-79-2011.png

Changes in Earth Movements

A further complication that occurs with the increase of cosmic rays that penetrate the Earth’s surface during a **Grand Solar Minimum** is that these make magma in the planet’s core more fluid. This can trigger earthquakes, volcanic activity, and tectonic changes.

A consequence of these eruptions is an increase in the amounts of volcanic particles (aerosols) and gases in the atmosphere. These seed more clouds leading to more cooling and crop failure.

As volcanic activity is observed to increase, so to do underwater volcanoes which make up ⅔ of all volcanoes. These erupt mostly unnoticed.

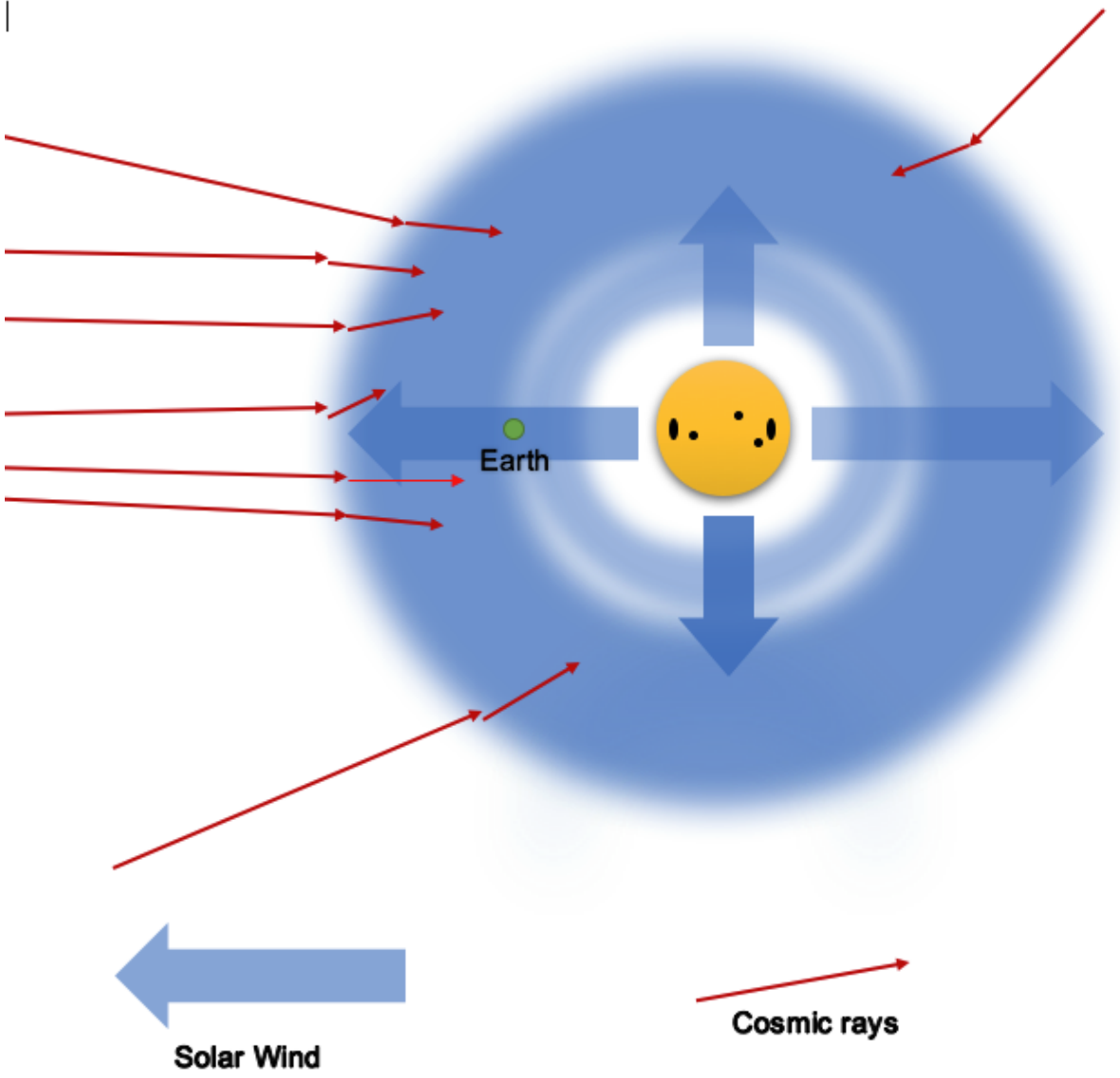
This is most likely why the floating sea ice of the Arctic has been shrinking while the land locked Antarctic ice has been growing.

The Influence of Magnetic Fields

Much of the in-coming cosmic rays are blocked from entering the solar system by the heliosphere (sun’s magnetic field).

More of these Gamma-rays and X-rays from space are blocked in the inner solar system where Earth is located.

(See diagram over page)



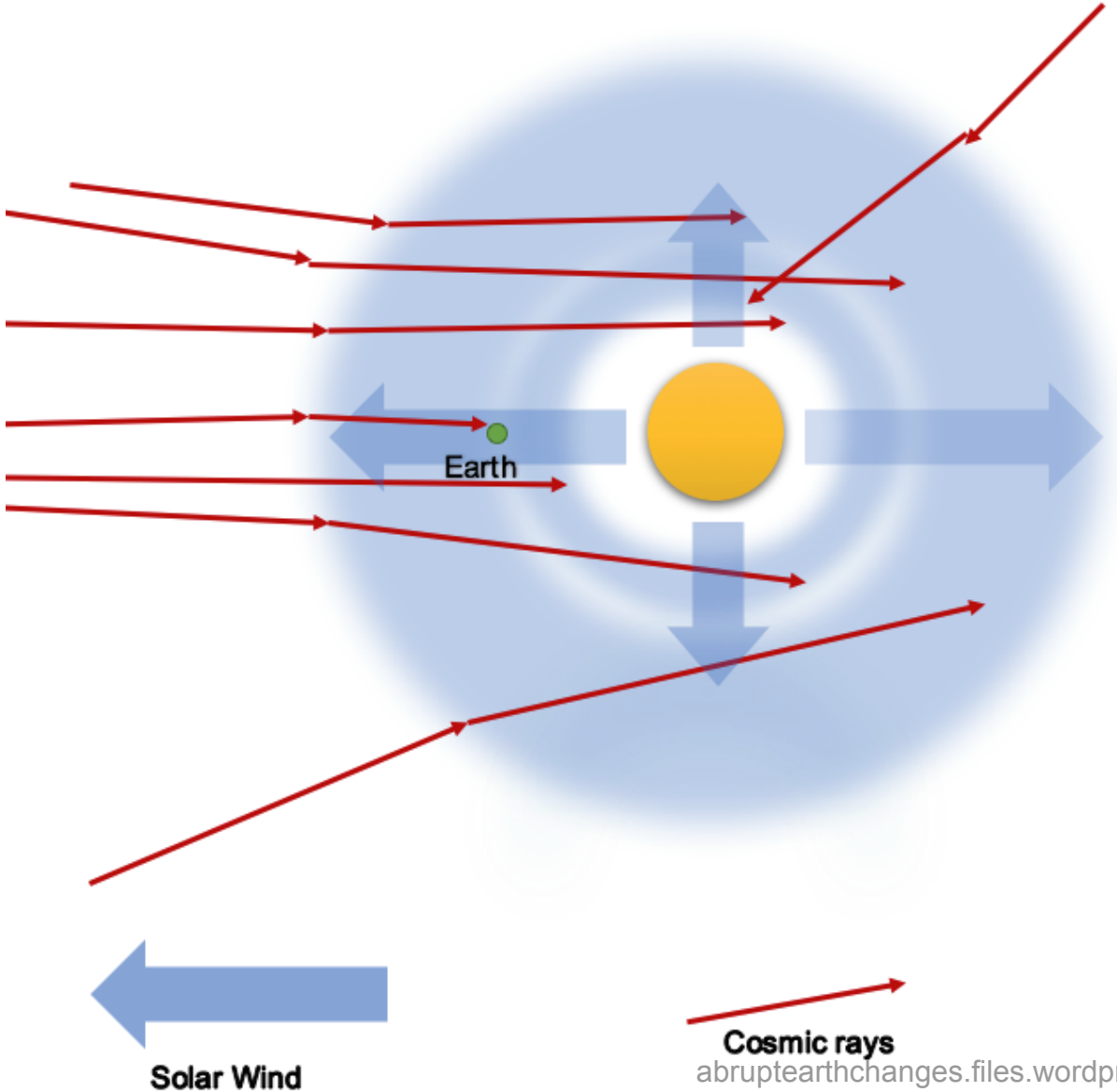
Graphic: Sacha Dobler, AbruptEarthChanges.com

abruptearthchanges.files.wordpress.com/2018/01/cosmic-rays-solar-maximum.png

During a **Solar Maximum** the solar wind is strong and the strength of the sun’s magnetic field is high.

During a **Solar Minimum** the Sun’s magnetic field is weak. This allows more galactic cosmic rays to reach Earth’s atmosphere and surface.

(See diagram over page)



Graphic: Sacha Dobler, AbruptEarthChanges.com

abruptearthchanges.files.wordpress.com/2018/01/cosmic-rays-solar-minimu.png

For example:

The period of modern global warming from about 1850-2000, peaked in 1950-2000. This warming event was closely correlated with very strong solar sunspot activity. Also occurring in this period, the sun’s magnetic field was the strongest in the last 400 years enabling it to block out more cosmic rays.

As we are entering a **Grand Solar Minimum**, the sun’s magnetic field is weakening allowing more cosmic rays to impact Earth

Earth’s magnetic field also helps to ward off cosmic rays

BUT…from the mid 1800s until 2000 (about 150 yrs) the Earth's magnetic field weakened by 10%.

Then, from 2000-2010 it weakened another 5%. This is a rapid, exponential decline.

Since Earth’s magnetic field is weakening, more space radiation will enter our atmosphere increasing the effects of the **Grand Solar Minimum**.

The long-term temperature change on Earth from the combination of all the phenomena which increase cosmic radiation is <u>unknown</u>.

What do we need to know?

Generalizing for any given region of the world during the coming **Grand Solar Minimum**:

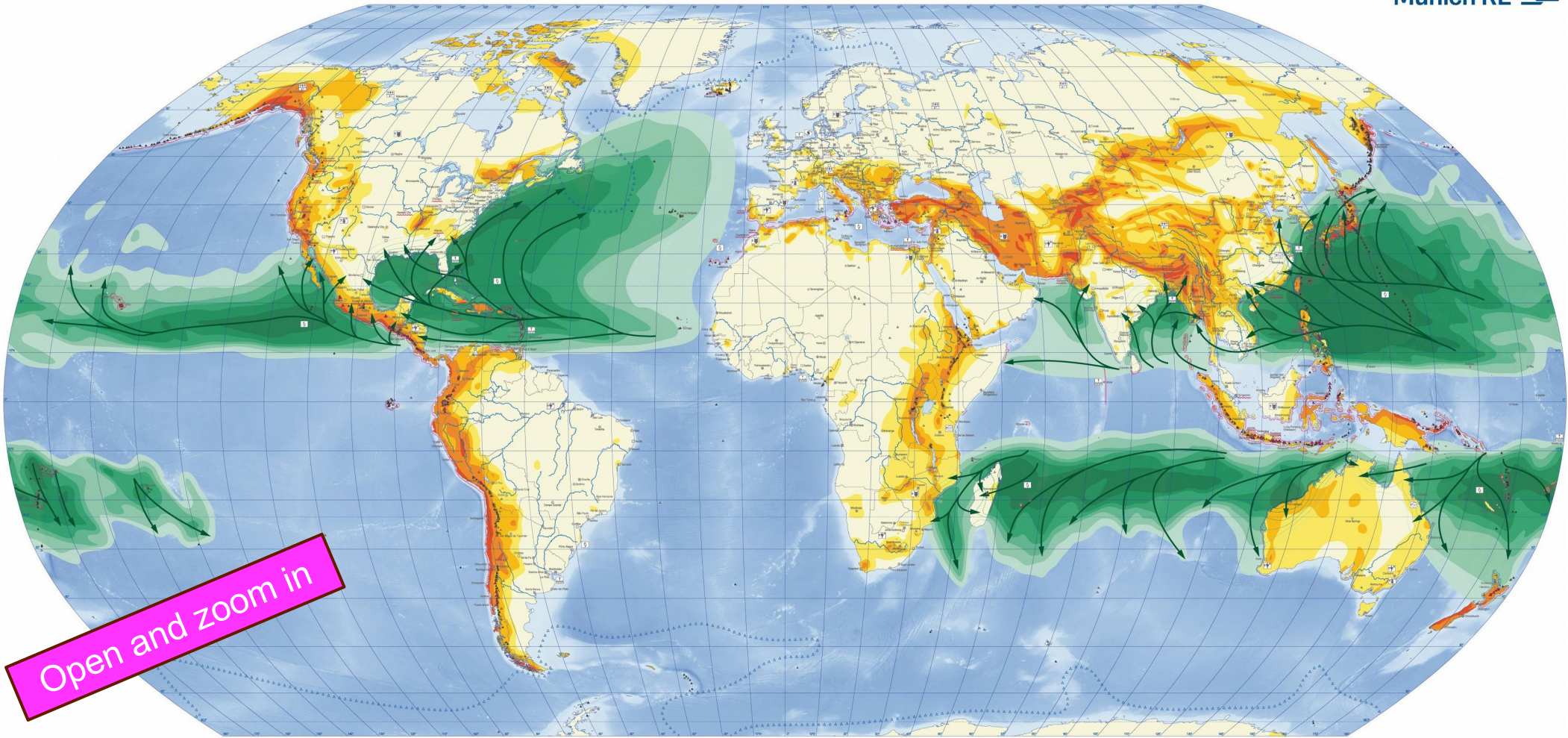
- Expect more of the same as we are having now, but, in the long run, overall cooling and droughts.

These changes (including earthquakes and volcanoes) can be expected to increase within the usual risk zones for natural disasters.

(see map on next page)

NATHAN WORLD MAP OF NATURAL HAZARDS

Munich RE



Seismic and meteorologic hazards in every area are expected to increase during a Grand Solar Minimum. General high risk zones can be expected to be affected in major ways.

abruptearthchanges.files.wordpress.com/2017/12/munich-re-hazard-map-big.jpg

“It may be counter-intuitive: **Grand Solar Maxima**, with a stable and more favorable climate – are also periods of increased mass excitability, war and genocide.

In fact, throughout the last millennium, there were 4.6 times as many deaths from war, genocide and persecution during **Grand Solar Maxima** than there were in **Grand Solar Minimum**.”

“In contrast, **Grand Solar Minima** – the ‘bad-weather periods’ – were times of relative peace, reason and of improvements of human rights.”

“Whenever the final drop into the next **Grand Solar Minimum** will turn out to be, we are a society in need to prepare and re-organize our infrastructure and way of life to a changing environment.”

Sacha Dobler 2018

(abruptearthchanges.com/2018/01/14/climate-change-grand-solar-minimum-and-cosmic-rays)

“Abrupt climate and geological changes will not be stopped by humans, but rather the belief in this is likely to hinder us from preparing for future Earth changes and from adapting to an altering environment.”

Sacha Dobler 2018

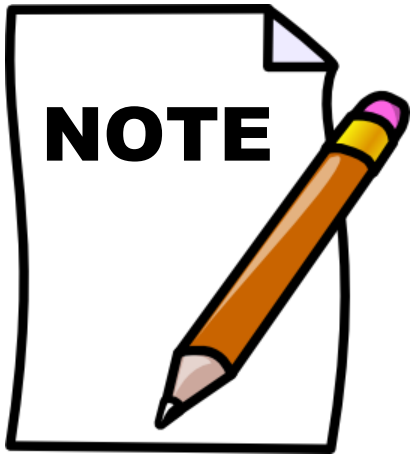
(abruptearthchanges.com/2017/07/30/climate-change)

All the climatic phenomena for a Grand Solar Minimum can be marketed as being caused by anthropogenic climate change, even though there has been no global warming since 2000

“The proponents of the false dogma of anthropogenic climate change or ‘Global Warming’ are predicting the <u>same</u> climate extremes as are expected in a **Grand Solar Minimum** – <u>except the long-term cooling</u>. But they attribute them to the wrong causes.”

That should now take the pressure off you.

You also have tons of information with which to chat to climate change proponents if they start pressuring you.



You'll need to deal with all the other goings-on in society that are tugging on your emotions

Nothing must distract you from focussing on the Kingdom