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## **Climate: Back to Normal: Maybe**

Things get a whole lot calmer when you consider climate studies as a subset of Geophysics, rather than a political tool of ambitious bureaucracies. And for geologists and geophysicists familiar with the subject there is nothing new going on. Whatever is happening now has basically happened before. Just as the seasons change regularly, so does the climate. Both driven by implacable forces of nature. More specifically, by orbital mechanics of our solar system which quite regularly changes the amount of heat our old Earth receives. And it is mainly water in ocean or atmospheric currents that transports the heat to cold places. Or as with clouds reflects it back to pace.

This writer completed a degree in geology and physics in 1962 and has been fascinated to watch the Milankovitch theory of periodic change confirmed by a continuous stream of evidence. Over the past decade, evidence has been confirming the work by Svensmark and Shaviv on cosmic rays, clouds and cooling.

Neither theory incorporates CO<sub>2</sub>. The empirical evidence is that changes to warming trends precede increases in atmospheric concentrations of carbon dioxide. Quite simply, heat forces CO<sub>2</sub>. Not the other way around.

And then there is the fanciful side with the politicization of climate studies. Which has turned fear into a government growth industry, ambitious for taxes and power.

For the first time in the long history of life on our planet a warming trend is a threat. When our Earth was a great frozen orb of ice (called “Snowball Earth”) most life forms found it uncongenial.

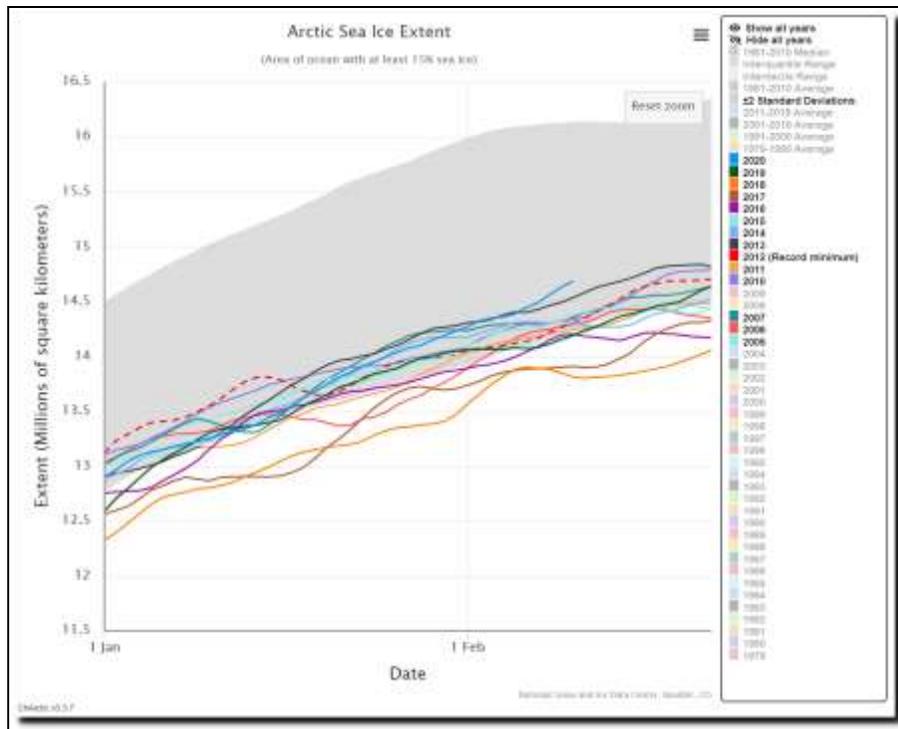
Going the other way, during the very warming trend of the Cambrian period, life thrived. That’s in absolute numbers of critters as well as in variety. Evolution was exceedingly popular and it is in the textbooks as the “Cambrian Explosion”. Carbon dioxide concentrations soared to 7,000 PPM, or 17 times today’s levels of 400 PPM. Geologically speaking, this is very low, but the political science side of climate insists that it is dangerously high. So dangerous that an “Extinction Rebellion” has been generating a lot of attention. As with street protesters in Germany in the 1930s, they include professional disrupters.

And if things weren’t so serious, the next novelty is that for the first time – ever – the solar system is threatened by a runaway event. Which is the extrapolation of a positive feedback mechanism. The reality is that out of 85,000 molecules of CO<sub>2</sub> in the atmosphere only one (1) is emitted by human activity, and it is the threat. And, get this, grant and tax seekers really believe that this forces a positive feedback such that the ***“World is going to fry!”***. Those who haven’t a clue about positive feedback mechanisms in a periodic world are into “Tipping Points”.

Special molecules of an essential life-supporting gas have the ability to destroy the Earth, thereby altering the solar system. Sure!

And now for something almost completely normal.

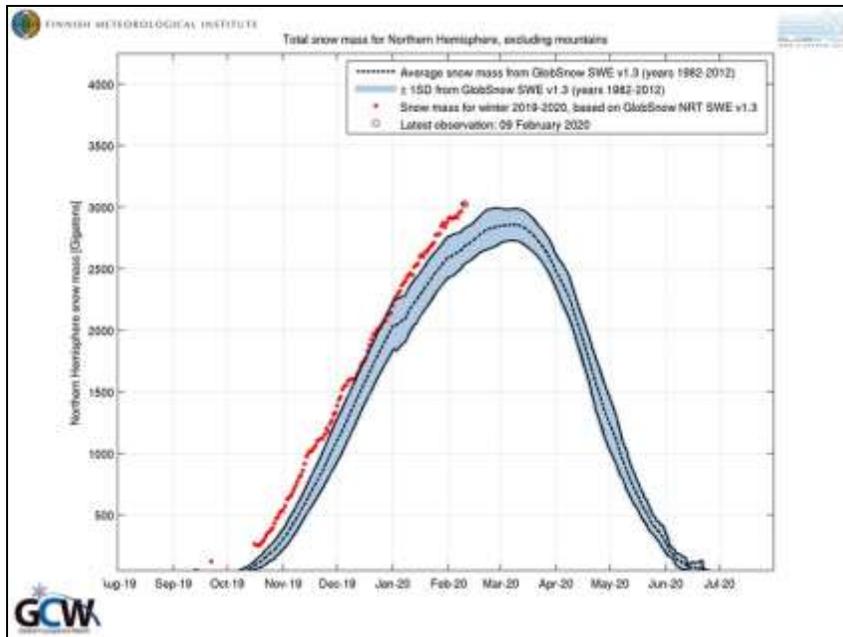
Global Sea Ice Extent is back to the standard deviation band. Heating from the strong El Nino of 2016 drove it to the lowest in many years. Much the same holds for Antarctica which has returned to inside the deviation band. And the Arctic Cover has increased to the third highest plot in 15 years.



The point in using these numbers is that unlike various measures of the Earth's temperature the establishment has not been altering the raw data of ice or snow coverage to make it fit the climate "models".

If those with the audacity to "manage" the temperature of the nearest planet were serious they would go about it in a different way. Fussing with CO2 won't do anything, so the extremely ambitious should alter the solar cycle and ban cosmic rays from hitting the Earth.

Beyond Sea Ice Extent, there is this winter's Total Mass of Snow over the Northern Hemisphere. As for the new normal, this is beyond normal. Mother Nature is messing up the exclamations that "Children just aren't going to know what snow is". The warning was made in 2000 by Dr. David Verner, senior research scientist at the CRU in East Anglia.



After setting a strong warming in 2016, the El Nino diminished but over the past year has been trending positive. This helps spread warming to many regions, but recently it has been declining. While not yet a cooling La Nina last year's warming influence is diminishing. The two names describe periodic action.



And there is another nearer-term force for cooling, which is increasing volcanic activity. Recently there is research linking increasing volcanic and seismic activity to the increase in cosmic rays during weakening solar activity. And this seems to be happening with impressive eruptions in Kamchatka and Mexico.

The explosion of particulates and aerosols to high elevations screens energy from the Sun. The main thing is that such activity is increasing around the world and is a near-term cooling influence.

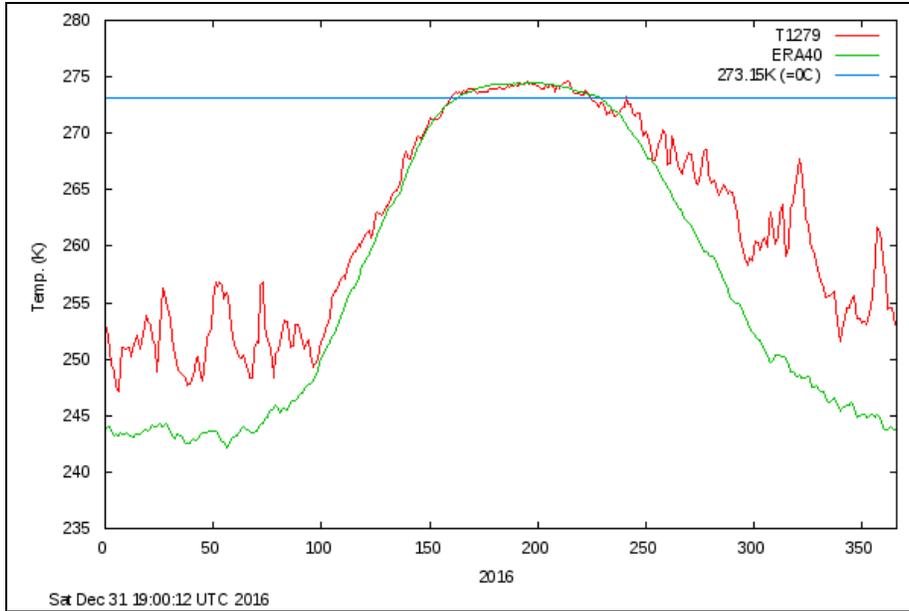


By way of summary, the long-trend in warming from the long trend in increasing solar activity seems to have reached its best in the 1990s. The decline in activity to levels of the early 1900s is a major change. Possibly to significant cooling assisted by increasing cosmic rays and clouds. As part of this, volcanic eruptions have a near-term cooling influence with each big event. But it could become a trend.

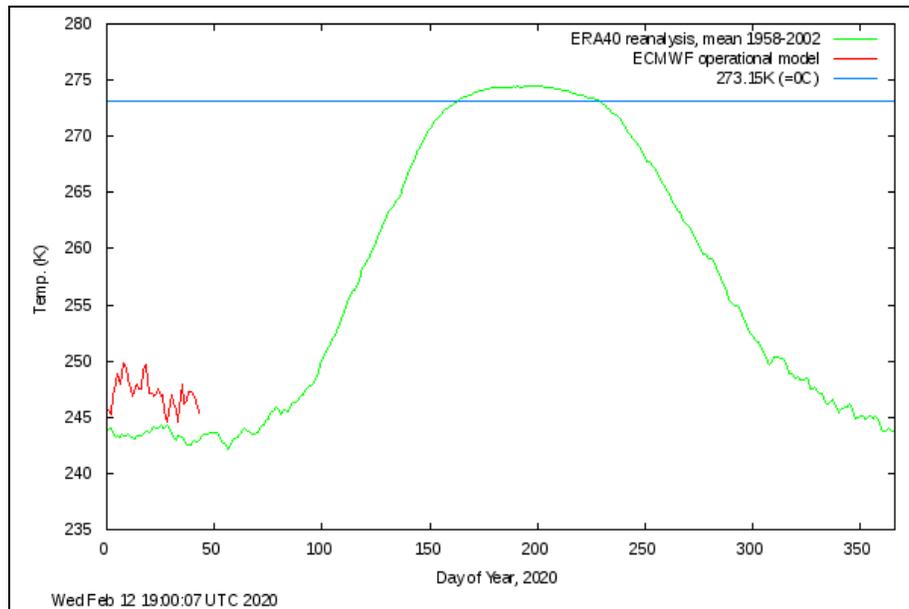
For those who appreciate voyages of discovery, one need not be directly involved in the theories or assembling the confirming evidence. But it is still a wonderful trip just as an observer. Which we all are and it is worth having a grasp on how the physics of climate really works.

## El Nino Warm Winters

This is an example of an unaltered temperature record. Of north of 80 latitude.



## Winter: Diminishing El Nino



– Source: Danish Meteorological Institute