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## **Renaissance in Climate Physics Plus Political Reform**

There have been two great experiments in authoritarian government and each burdened society with bad science and confiscatory taxation. In the early 1600s the establishment insisted that the universe rotated around the Earth. More recently, the establishment insists that violent weather and global warming are due to society's incorrect behavior. Climate alarmists from Maurice Strong, in the 1990s, to today's Christiana Figueres have advised using the UN to basically change the Western World to a political system dominated by bureaucrats. This article reviews that the political reformation that began in the early 1600s was accompanied by a renaissance in physics. And observes that today's popular uprisings could be the early stages of another great reformation accompanied by another renaissance in the physics of the solar system.

The 1500s suffered from cool and wet weather as part of the Little Ice Age and the establishment not only turned to bad science it became murderous. Witches "caused" the bad weather and thousands were tried, convicted and executed by highly educated magistrates.

<https://www.youtube.com/watch?v=s3CjSBCahBc>

Today's climate control freaks such as Kennedy, Suzuki and Krugman have been calling for "deniers" to be imprisoned for "heresy".

Indeed, this week a Danish professor suggests that his personal anxieties could be relieved by military hostilities against heretics. Highly motivated, the professor stated ***"this is your emission target, it's not negotiable."***

<https://thefederalistpapers.org/opinion/danish-professor-says-united-nations-use-military-enforce-climate-change-agenda>

But the intensity of today's fears and protests could be "ending action". Perhaps the last great reformation can provide not just guidance but hope. And Galileo's own writings reveal both the political and scientific struggle. It wasn't easy.

Indeed, Galileo was frustrated with official obstinance: ***"My dear Kepler, I wish that we might laugh at the remarkable stupidity of the common herd. What do you have to say about the principal philosophers of this academy who are filled with the stubbornness of an asp and do not want to look at either the planets, the moon or the telescope..."***

– Favero, (1900, 10:423)

In 1633 he slammed politics with: ***"When...others... say the Earth moves is heresy, while demonstrations, observations, and necessary conclusions show that it does move, in what swamp will he have lost himself and his Holy Church?"***

[http://articles.adsabs.harvard.edu/cgi-bin/nph-article\\_query?bibcode=1989JHA....20....1W&db\\_key=AST&page\\_ind=19&plate\\_select=NO&ata\\_type=GIF&type=SCREEN\\_GIF&classic=YES](http://articles.adsabs.harvard.edu/cgi-bin/nph-article_query?bibcode=1989JHA....20....1W&db_key=AST&page_ind=19&plate_select=NO&ata_type=GIF&type=SCREEN_GIF&classic=YES)

That authoritarian experiment prevailed into the early 1600s, when it was bypassed by a renaissance in physics and the reformation of in-your-face and in-your-wallet government. In physics, there were two key “Eurekas”. In 1610 when Galileo observed that moons were rotating around Jupiter. Establishment dogma was that all heavenly objects revolved around the Earth. The other breakthrough was when Kepler in 1605 discovered the real shape of planetary orbits. This was ironical because he had spent years trying to fit the observed orbits into certain geometric “models”. Seems familiar.

Some 40 “models” were tried and seen to fail. Then he tried the ellipse.

Our world of political conflict is the result of more than a hundred years of increasingly abusive bureaucratic ambition. This is provoking popular uprisings that could lead to another great reformation. And with remarkable finesse it is accompanied by a renaissance in physics. Also, about the Solar System, with authorities unrelenting in their condemnation of today’s heresy.

In the 1990s physicists, Penn and Livingston, determined that the long trend in the Sun’s increasing activity would reverse to declining. It has with Solar Cycles 23 and 24 being the weakest since the early 1900s.

<https://www.sciencemag.org/news/2010/09/say-goodbye-sunspots>

Researchers in the 1970s observed that cooling trends were associated with declining solar activity. And vice versa. However, changes in the Sun’s heat output have been small relative to changes in the Earth’s temperature. Something else has been in play.

Water, in ocean and atmospheric currents, has been the main conveyor of surface heat from hot to cold places. And clouds beyond providing cooling shade reflect the Sun’s heat to outer space.

Cosmic rays have more than enough energy to force changes in cloud cover.

Energy!

In the world of particle physics, these are relatively big, fast and furious. Indeed, one detected in 1991 had so much energy that researchers called it the “Oh-My-God” particle. So, even average ones hitting our atmosphere produce a fascinating series of collisions. An atmospheric shower of secondary radiation that cascades down, creating X-rays as well as ions of nitrogen and oxygen.

<https://www.sciencemag.org/news/2014/07/physicists-spot-potential-source-oh-my-god-particles>

And ions can be the nuclei for cloud formation.

When solar activity is increasing the strengthening magnetic field reduces cosmic ray penetration. Going the other way, diminishing solar activity reduces field strength allowing more rays through. Supercooled water vapor needs a little something to condense out on. Like jet exhaust from airliners forming condensation trails. Or from cosmic rays.

Physicist Henrik Svensmark in the late 1990s theorized that such rays could prompt cooling cloud formation. Investigation required the tools of science. Logic, determination, instrumentation and time.

<https://www.nature.com/articles/s41467-017-02082-2>

And when investigating particle physics a good place to start was with the powerful accelerator CERN located near Geneva. Concerned about the threat to its CO2 theories, the establishment tried to block the experiment. But Svensmark in the appropriately named CLOUD experiment eventually got the time and in 2011 it supported his theory.

What is terrific about this is the ability to measure cloud cover. Next, it is significant to come up with a theory. And of historical importance is that the theory has been supported in “the lab”, which is very short term. And in the great outdoors.

The latter includes brief surges in solar activity. Called coronal mass ejections (CME), they are associated with substantial changes in the Earth’s magnetic field. The pulse of energy prompts a decline in cosmic rays, called the “Forbush decrease” (FD). The hit can be over hours with the recovery taking a few days. Occurrence of FDs relates to the 11-year solar cycle.

<https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2018SW001941>

Each event influences cloud formation, providing is on-going confirmation.

Nir Shaviv is an astrophysicist who had accepted the CO2 and warming story. <https://www.youtube.com/watch?v=oYhCQv5tNsQ> (at 0:20 seconds from start) Why? Because the media was going on about it. Then looking into it, changed his mind and then accomplished some significant research. In 2014 he was awarded the Einstein Fellowship at Princeton.

His research observed cosmic ray influence from vast changes in our – the Milky Way – galaxy. With a periodicity from 22 years out to 32 million years.

So, with evidence from over millions of years to this year’s late spring and early winter, the Cosmic Ray Theory seems to be another significant breakthrough in physics. The establishment is hostile about skepticism natural to science, again. And is trying to quell popular uprisings against big and bullying governments, again. And political history seems in the early stages of a great reformation, again.