

Solar physicist sees global cooling ahead



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Via [the GWPF](#): Recent research by Professor Valentina Zharkova (Northumbria University) and colleagues has shed new light on the inner workings of the Sun. If correct, this new discovery means that future solar cycles and variations in the Sun's activity can be predicted more accurately.

The research suggests that the next three solar cycles will see solar activity reduce significantly into the middle of the century, producing conditions similar to those last seen in the 1600s – during the Maunder Minimum. This may have implications for temperatures here on Earth. Future solar cycles will serve as a test of the astrophysicists' work, but some climate scientists have not welcomed the research and even tried to suppress the new findings.

New Solar Research Raises Climate Questions, Triggers Attacks

To most of us the sun seems unchanging. But if you observe its surface, it is seething with vast explosions and ejections. This activity has its origin in intense magnetic fields generated by swirling currents in the sun's outer layer – scientists call it the solar dynamo.

It produces the well-known 11-year solar cycle which can be seen as sunspots come and go on the sun's surface.

But models of the solar dynamo have only been partially successful in predicting the solar cycle – and that might be because a vital component is missing.

After studying full-disc images of the sun's magnetic field, Professor Valentina Zharkova of Northumbria University and colleagues, discovered that the sun's dynamo is actually made of two components – coming from different depths inside the sun.

The interaction between these two magnetic waves either amplifies solar activity or damps it down. Professor Zharkova's observations suggest we are due for a prolonged period of low solar activity.

Professor Valentina Zharkova:

We will see it from 2020 to 2053, when the three next cycles will be very reduced magnetic field of the sun. Basically what happens is these two waves, they separate into the opposite hemispheres and they will not be interacting with each other, which means that resulting magnetic field will drop dramatically nearly to zero. And this will be a similar conditions like in Maunder Minimum.

What will happen to the Earth remains to be seen and predicted because nobody has developed any program or any models of terrestrial response – they are based on this period when the sun has maximum activity — when the sun has these nice fluctuations, and its magnetic field [is] very strong. But we're approaching to the stage when the magnetic field of the sun is going to be very, very small.

She suggests it could be a repeat of the so-called Maunder Minimum – a period in the 17th century with little solar activity that may have influenced a cooling on Earth.

Whatever we do to the planet, if everything is done only by the sun, then the temperature should drop similar like it was in the Maunder Minimum. At least in the Northern hemisphere, where this temperature is well protocolled and written. We didn't have many measurements in the Southern hemisphere, we don't know what will happen with that, but in the Northern hemisphere, we know it's very well protocolled. The rivers are frozen. There are winters and no summers, and so on.

So we only hope because these Maunder Minima will be shorter, the Maunder Minimum of the 17th century was about 65 years, the Maunder Minimum which we expect will be lasting not longer than 30-35

years.

Of course things are not the same as they were in the 17th century – we have a lot more greenhouse gas in the atmosphere. And it will be interesting to see how the terrestrial and the solar influences play out.

This is promising research – a new insight into our sun with predictions as to its future behavior, yet Professor Zharkova relates that some climatologists resented her discovery.

Professor Valentina Zharkova:

Some of them were welcoming and discussing. But some of them were quite — I would say — pushy. They were trying to actually silence us. Some of them contacted the Royal Astronomical Society, demanding, behind our back, that they withdraw our press release. The Royal Astronomical Society replied to them and CCed to us and said, 'Look, this is the work by the scientists who we support, please discuss this with them.' We had about 8 or 10 exchanges by email, when I tried to prove my point, and I'm saying, I'm willing to look at what you do, I'm willing to see how our results we produced and what the sun has explained to us. So how this is transformed into climate we do not produce; we can only assume it should be. So we're happy to work with you, and add to your data our results. So don't take the sunspots which you get, we can give you our curve. Work with our curve. So they didn't want to.

Professor Zharkova's work may have significantly improved our ability to forecast solar activity. If we do enter a new Maunder Minimum, then we are bound to discover new things about our sun and its influences on our climate.

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