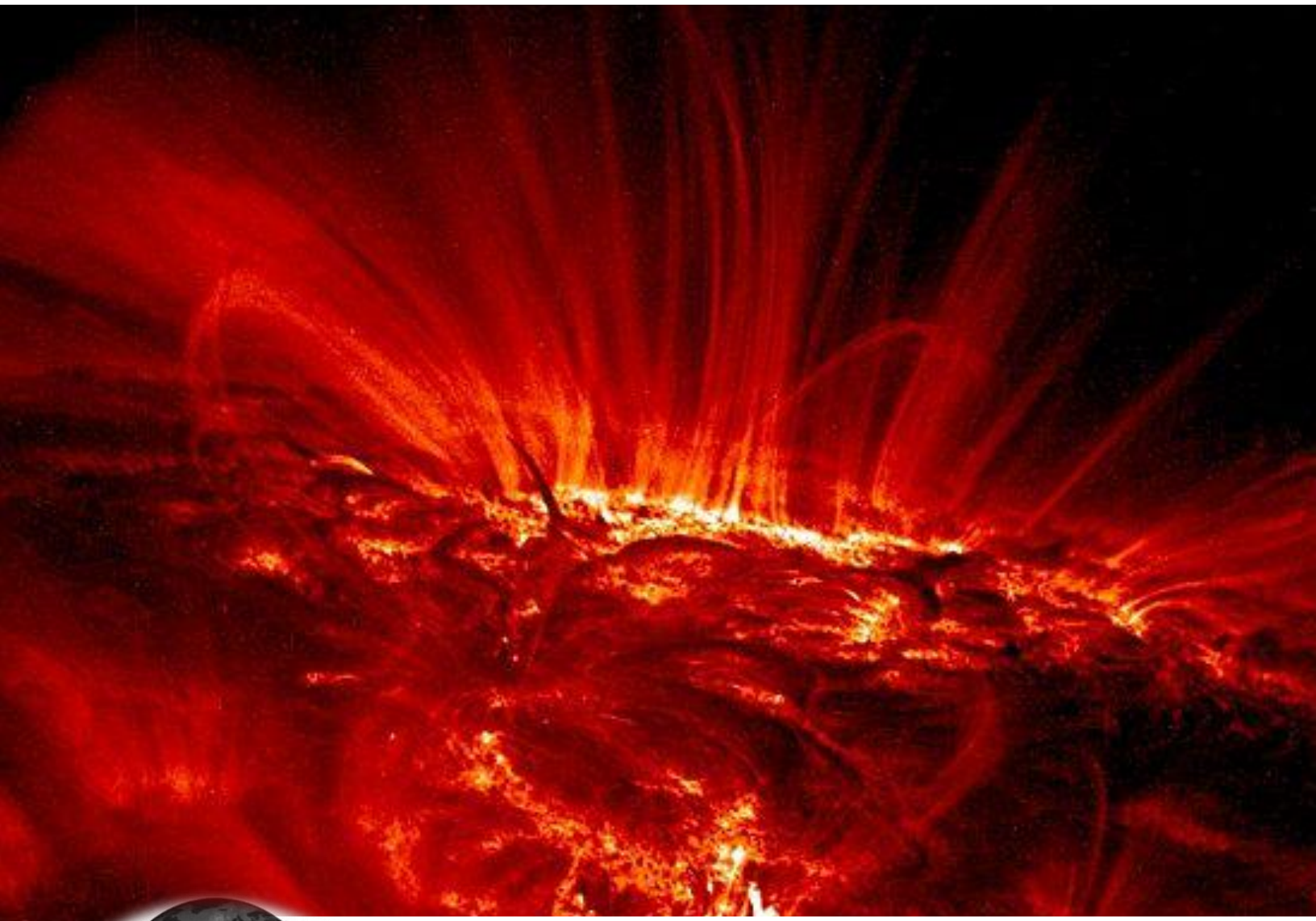


# REWRITING SUNSPOT HISTORY

*by Christopher Monckton of Brenchley*



**SPPI ORIGINAL PAPER**



**August 20, 2014**

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In 2006, when I first made the mistake of writing publicly of my doubts about the Party Line on manmade global warming, I began to receive 100 emails a day from interested members of the public – and of the scientific community. I have been doing my best to answer the best of them ever since.

One was from Dr. Dennis Ray Wingo of NASA. He told me the magnetic convection currents beneath both hemispheres of the Sun had slowed to walking pace. This was unprecedented in the record. He expected that solar cycles would lengthen and the vigor of solar activity would decline, perhaps for up to 60 years.

Dr. Willie Soon also wrote to say that solar activity was likely to decline. He had reviewed 250 years of sunspot records and had concluded that the recent lengthening of the solar cycles would weaken them, and that this weakening, for which the models had made little allowance, might be enough to cancel the influence of global warming.

Many others sent similar analyses. Sure enough, the last solar cycle was at least three years longer than average. The present cycle bids fair to be longer still. While there has been much excitement about the recent peak of the present solar cycle, the significance of the peak is not its magnitude (which is considerably below that of the previous cycles) but its lateness.

*Solar activity is declining – and we must pray that it is not declining towards a new Ice Age. One thing is virtually certain: given that solar activity is declining slowly rather than rising steeply, a warming rate of two-thirds of a degree over the next ten years is unlikely.*

If the solar cycle peaks late, it may well end late. If it does, more solar cooling is to be expected. And that is very bad news for the usual suspects. In 1990 the IPCC predicted, with what it called “substantial confidence”, that global warming of 1 Celsius degree (plus 50% or minus 30%) would occur by 2025.

We are only ten years shy of 2025, yet the warming since 1990 is just one-third of a degree. To catch up with the IPCC’s projection, we should need to see two-thirds of a degree in the next decade. Yet the previous record warming rate was just 0.43 degrees per decade, and that record was set when solar activity was increasing rapidly from 1695-1735 at the end of the Maunder Minimum.

Now, however, solar activity is declining – and we must pray that it is not declining towards a new Ice Age. One thing is virtually certain: given that solar activity is declining slowly rather than rising steeply, a warming rate of two-thirds of a degree over the next ten years is unlikely.

We now learn that – yet again – a fundamental climate record is being rewritten long after the event. Let us suppose that the rewriting was genuinely thought to be necessary, rather than yet another attempt, *a la* Hansen, to tamper with the data so as to make the supposed climate problem look worse than it really is.

In that event, the rewriting of the record constitutes a damning admission that the record was not – and perhaps is not – settled science.

On the other hand, let us suppose that the rewriting of the record was malevolent. What would the Party-Liners gain from this latest tampering? First, they would be able to get rid of – or at least to devalue – the inconvenient near-Grand Maximum of 1925-1995, which had – until the latest revisionism – been thought to be among the most active periods of solar activity in the whole of the 11,400 years since the end of the last Ice Age.

This devaluation of the recent quasi-Grand Maximum would be of great publicity value to the usual suspects: they would be emboldened to dismiss suggestions that if only 300 years have elapsed between the Grand Minimum of 1645-1715 and the near-Grand Maximum of 1925-1995, then the rate of increase in solar activity over the past three centuries is unprecedented in the past several thousand years.

If we have gone from Grand Minimum to Grand Maximum that quickly, then it is no surprise that there was global warming over the 20<sup>th</sup> century. After 300 years of warming, one would naturally expect the warmest years to be at the end of the record. By rewriting the sunspot record, the Thermageddonites somewhat weaken that argument.

Indeed, they are not done yet. So far, they have rewritten the record of solar activity only as far back as 1745. But they aim to reach back to 1600. I suspect they will try to underplay the influence of the Grand Minimum of 1645-1715, to complete the undermining of the argument that the Sun has had quite a bit to do with the global warming that stopped in the mid-1990s and has not resumed since.

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Another consequence of the rewriting that will be valuable to the true-believers is the new presentation of the last solar cycle or two as the weakest not in 100 but in 200 years. This helps to support the Party Line by allowing it to be said that but for the exceptional decline in solar activity global warming would have continued.

Expect these and similar excuses to be made. For the one admission that the Druids cannot bring themselves to make is the admission that CO<sub>2</sub> has far less of a warming effect than their wretched machines had been programmed to assert.

The temperature record of the early 20<sup>th</sup> century has been rewritten, in many English-speaking countries worldwide and almost nowhere else, to make it appear that the early part of the century was cooler than those who measured the temperatures at the time thought. That dodge has had the effect of artificially steepening the apparent rate of 20<sup>th</sup>-century global warming.

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They have rewritten the:

- *Ice-core temperature record* – to pretend that the temperature reconstructions from it harmonize seamlessly with modern-day measured temperatures when they do not.

They have rewritten the:

- *Sea-level record* – to make it look as though sea-level rise has accelerated since 1993 and that the accelerated rate has continued since the late 1990s, even though there has been no global warming since then.

They have rewritten the:

- *Arctic sea-ice record* – by beginning the present-day satellite series conveniently at the sea-ice maximum of 1979. The record, however, began about a decade before that – and there was a sharp increase from the beginning of the record till 1979. Factor in that conveniently omitted decade and the Arctic sea-ice record looks a lot less exciting.

They have attempted recently to rewrite the:

- *Antarctic sea-ice record* – to try to wipe out last month's record high Antarctic sea-ice extent. They failed: for people have lost patience with these increasingly obvious attempts to revise the record to fit the Party Line rather than dumping the Party Line to fit the record.

They have also attempted to rewrite the record to claim that:

- *Floods, droughts, and tropical cyclones* – are more frequent or more intense than ever before. Yet again, they have failed. The IPCC, harried by independent expert reviewers such as me, is no longer getting away with making stuff up.

The IPCC has had to admit that its attempt to rewrite the record so as to suggest that the Himalayan glaciers were declining so fast that they would all be gone by 2035 was incorrect, and based on a journalistic article by a propagandist.

It has also had to admit that floods and droughts are not increasing. Indeed, a recent paper shows that the global area under drought has declined for 30 years.

As for hurricanes, typhoons, and tropical cyclones, one of the most maladroit attempts to rewrite that record came when Tom Karl, head of the National Climatic Data Center, appeared alongside me to give testimony before a Committee of the House of Representatives.

He tried to maintain that there had been an increase in the frequency and intensity of landfalling Atlantic hurricanes over the past 100 years. I did not let him get away with this, telling him there had been no change over the century. He produced a graph that appeared to show increased activity over the past 30 years.

I looked a little closer and noticed that the graph was of tropical storms, not of major hurricanes. I told him, bluntly, that the apparent increase in minor tropical storms coincided precisely with the advent of satellites. Before then, the smaller storms went largely unobserved.

Hurricanes, I said, were a different matter. You did not need a satellite to tell you when a hurricane had hit you. I was wrong after all, though: I had said there had been no trend in landfalling Atlantic hurricanes in 100 years. Tom Karl's graph showed there had actually been no trend for 150 years.

The worst of all the attempts to rewrite the record of past climatic data is the cynical manipulation of the official sea-level record. One of the keepers of that record once admitted to Professor Niklas Mörner that the true record (which shows no recent increase in sea level whatsoever) was very carefully calculated, then the whole graph was tilted to give governments the result they paid for.

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Professor Mörner tilted the graph back again, for he could see no increase in the rate of sea-level rise in the raw data. Then he checked his calculations against several uncorrupted sea-level records. Then he published the straightened-out graph – to howls of rage from true-believers furious that they had been caught out yet again.

They are still at it, though. The gravitational-anomaly satellites not only show no increase in sea level: they show it falling through 2009. However, a neat fiddle known as the “glacial isostatic adjustment” was introduced and – *hey presto!* – the rate of sea-level rise magically appeared to conform to the tilted satellite record.

Then came Envisat, the \$3.5 bn satellite capable of measuring and reporting sea-level changes in real time. This huge satellite conked out after only eight years of producing data and – perhaps coincidentally – just after I had begun regularly reporting its monthly graphs, which showed that from 2004-2012 sea level had risen by a dizzying 1.3 inches per century – not even enough to cover my spats.

The inconvenient satellite broke down after I had been reporting its results for a couple of months. A few days later, its record was tilted – without the slightest explanation – to match the tilted satellite record.

But here’s the thing. There has been no global warming in a decade and a half – indeed, none clearly distinguishable from the measurement uncertainties for a couple of decades. And since the only mechanism that can cause systemic sea-level rise is warmer weather, *what is causing sea level to rise?*

Answer: nothing – unless one assumes that the 3.5 million undersea volcanoes not one of which is comprehensively monitored have become more active than before and are heating the oceans from below. If the atmosphere is not warming, and the Sun is less active, then the oceans are certainly not being warmed from above.

If the oceans are indeed warming (and the best record, though still inadequate, is that of the 3500 ARGO bathythermograph buoys deployed throughout the world’s oceans and reporting temperature and salinity by satellite), they are not warming by much. Indeed, they are warming by between one-quarter and one-sixth of the predicted rate.

If that warming is volcanic, then some fraction of the warming of the atmosphere over the 20<sup>th</sup> century may have been volcanic too. Professor Ian Plimer has noticed that in the six months

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preceding the warming of the Pacific Ocean that is known as el Niño there is an unusually high number of earth tremors around the Pacific Ring of Fire.

Indeed, this phenomenon has become so troubling to the Party Liners that the USGS earthquake data system – available online – allows the specification of annular data, chiefly so as to allow the very quiet study of this phenomenon.

And don't get me started on the rewriting of the paleoclimate record. Remember the now-discredited "hockey-stick" graph? Amusingly, a Chinese corporation contacted me recently, noticing that I had written a lot about hockey-sticks, and offered to manufacture and supply them to me in large quantities at very reasonable prices.

Let us put two records together and see what we can learn from them. Jevrejeva *et al.* and Grinsted *et al.* have produced reconstructions of sea level going back 1000 years. Sea level rose by 8 inches during the medieval warm period, fell back to normal, then fell by 8 inches during the little ice age, and has now risen back to normal.

That curve precisely matches the IPCC's original 1990 curve showing the Middle Ages as considerably warmer than the present, and the Little Ice Age as considerably cooler. It does not match the hockey-stick graph at all. It is they who say sea-level rise follows temperature change. By Their own argument, the Middle Ages must have been warmer than today. Case closed. Nobel Prize please (till I looked at this, no one had spotted it).

What is significant about the numerous attempts at rewriting the data that I have come across – and the latest tampering with the sunspot record is no exception – is that they very nearly always conjure a manmade climate "problem" into being where none exists, or magnify a problem where it might genuinely be imagined to exist.

Very, very seldom do any of these revisions point in the direction of diminishing the imaginary threat of dangerous manmade global warming. They nearly always point towards magnifying it.

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Applying the usual rules of probability theory, it is very likely that at least most of these tamperings – and perhaps nearly all of them – are influenced to some degree or another either by the smell of cash or by Marxist politics or by confirmation bias.

Since most, if not all, of these tamperings are scientifically unmeritorious, it does not seem likely that most of them are genuine, independent results.

What we can say for certain is that, if all of these records have genuinely required such drastic revisions over the past decade or so, it can no longer be asserted by anyone that *The Science Is Settled*.

For The Science has its *fons et origo* in the data: and if the data are not settled, then The Science Is Not Settled, and there is not the slightest justification for spending a single red cent more on trying to make recently-non-existent global warming go away.

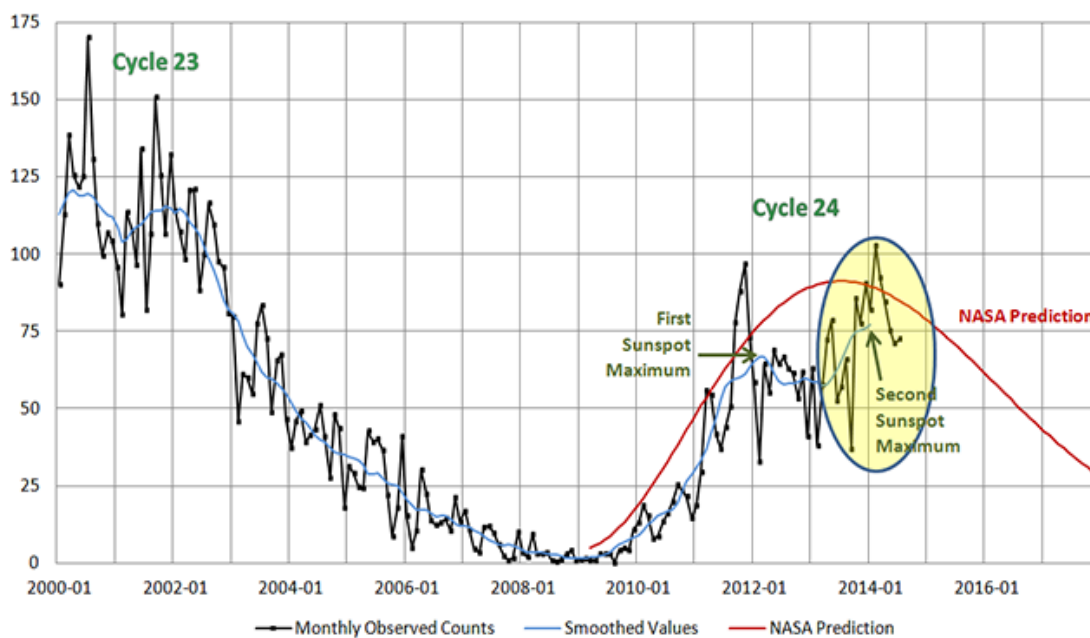
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A rare spotless day on the sun on July 17-18, 2014 triggered public speculation that an already stunted Cycle 24 was nearly over. Such is not the case. Defying the odds for so late in a sunspot cycle, another solar sunspot maximum was set last month. Another one is coming this month.

In other major news, a long needed revision to the 400-year sunspot record was proposed. It'll be the first change made to the sunspot record since it was first established by Rudolf Wolf back in 1849. The changes will affect long-term climate and other dependent scientific studies. One effect of the proposal will be to reduce modern sunspot totals. That will wipe out the so-called "Modern Maximum" and make the current sunspot cycle, Cycle 24, the weakest in 200 years.

### Cycle 24 Solar Sunspot Progression

SILSO Solar Cycle Sunspot Number Progression  
Measured thru July 2014 (Updated August 1, 2014)



*New solar maximum set in July. Credit/SILSO data, Royal Observatory of Belgium, Brussels.*



After four straight months of steep declines in monthly sunspot counts, July reversed the trend and increased slightly.

The Royal Observatory of Belgium released July's average monthly sunspot count on August 1, 2014. Despite the mid-month spotless day, the sunspot number increased and it grew solar maximum again for the sixth straight month.

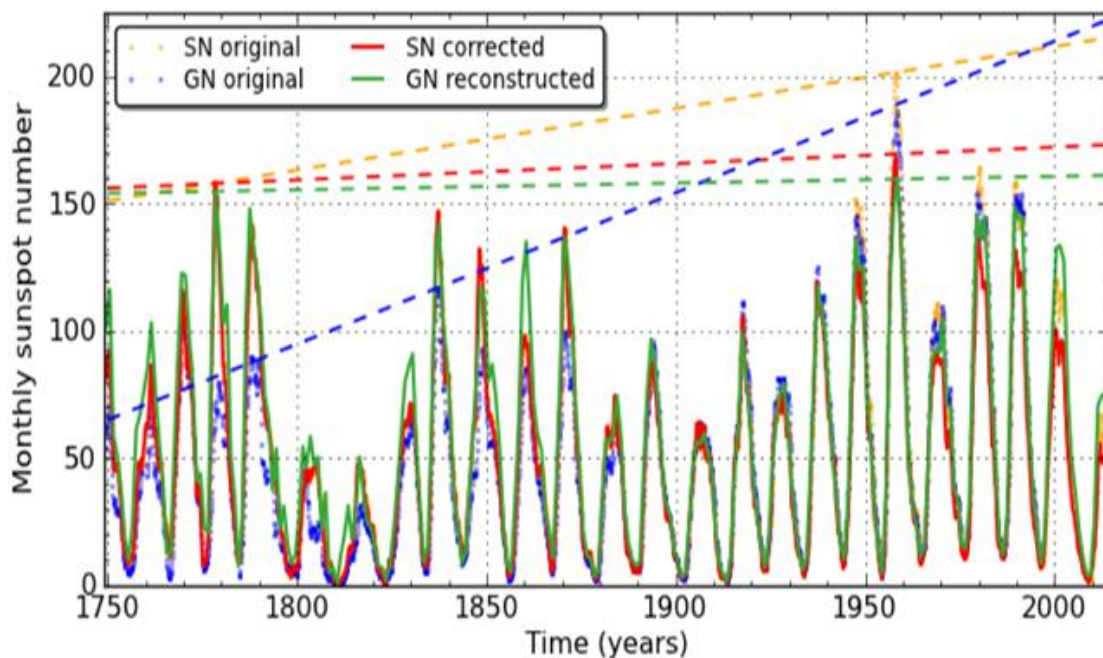
Cycle 24 still remains the weakest solar cycle in 100 years. It's nowhere near NASA's forecast smoothed peak. Data indicating weak sunspot activity over the next couple cycles remain strong.

Cycle 24's new smoothed solar maximum peak inched up from 76.0 spots/day to 77.3 spots/day. With the increase in sunspot activity in July there will probably be two or three more months setting new sunspot maximums before the sun starts fading inexorably towards minimum.

When that change finally arrives, long-term indicators suggest the next sunspot cycle will be much weaker than this one. That could portend a general cooling trend for earth, if history serves as a guide to future behavior.

Extended periods of inactivity – like the Spörer, Maunder and Dalton minimums – were all accompanied by cooler earth temperatures. Conditions today mimic Cycles 3, 4 and 5 which marked the beginning of the Dalton Minimum.

### Revising the 400-Year Sunspot Record



*First revision to sunspot record since 1849. Credit/"Revising the Sunspot Number".*

The 400-year sunspot record is the longest continuously recorded daily measurement made in science. It's used in many scientific disciplines, including climate science studies. It hasn't been adjusted since Rudolf Wolf created it over 160 years ago.

Over the centuries errors have crept into the record, degrading its value for long-term studies. New data and discoveries now allow scientists to detect and correct errors. The first serious look back at the long-term record since Wolf in 1849 came without even a press release last month. It's a modestly titled new paper called "Revising the Sunspot Number" by Frédéric Clette, *et al.*, submitted for publication to the journal *Solar and Stellar Astrophysics* on July 11, 2014.

Some outcomes of the new paper include:

- The so-called "Modern Maximum" disappears
- Sunspot activity is steady over the last 250 years
- Three detected "inhomogeneities" since 1880 are corrected
- Cycle 24 will become the weakest in 200 years.

The new paper describes the current state of understanding of the long term record. It isn't a complete revision of the entire record, but a first level recalibration going back to 1749. The Royal Observatory of Belgium plans to release this and other revisions incrementally over time. Solar physicist, Dr. Leif Svalgaard of Stanford University, organized a series of four workshops beginning in 2011 designed to review and revise the long term record. This new paper is the first fruit of that labor. Primarily, it removes "inhomogeneities" and brings the International Sunspot Number and newer Group Count record and solar magnetic history in sync.

Ultimately, Svalgaard seeks to extend the official record back to the early 1600s, before the Maunder Minimum. The paper outlines what needs to occur to make that happen. For now the proposed revision stops at Wolf's 1749 starting point.

## Conclusions

The sun continues to confound observers. Albeit exceptionally weak, Cycle 24 continues to set solar maximums each month long after its forecast peak of activity should have passed.

Dr. Svalgaard's landmark physics-based 2004 paper<sup>1</sup> forecasting  $75 \pm 8$  for the Cycle 24 peak is spot on. Everyone else predicted higher numbers, some as high as 144. Back in 2004 he also said solar max would come in "~2011". By 2009 NASA revised their forecast saying solar max would be in mid-2013. Both are wrong. It hasn't arrived yet.

The newly proposed revisions to the sunspot record going back to 1749 will have some effect on global warming predictions. Exactly what that effect will be remains to be seen. Based on reduced solar activity, the smart money says the current 14-year "pause" in global warming will last for many more years to come, perhaps accompanied by some cooling.

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<sup>1</sup> <http://www.leif.org/research/Cycle%2024%20Smallest%20100%20years.pdf>.

Cover photo of a large sunspot group by NASA/TRACE (Public domain) as found on [Wikimedia Commons](#).

The bright glowing gas flowing around the sunspots has a temperature of over one million degrees Celsius (1.8 million degrees Fahrenheit). The high temperatures are thought to be related to the rapidly changing magnetic field loops that channel solar plasma.

