

A Comparison of the Sun 2014 to 2016 What Changes Are Visible?

David DuByne
ADAPT 2030

THANK YOU
TO ALL OF MY PATREON SUPPORTERS

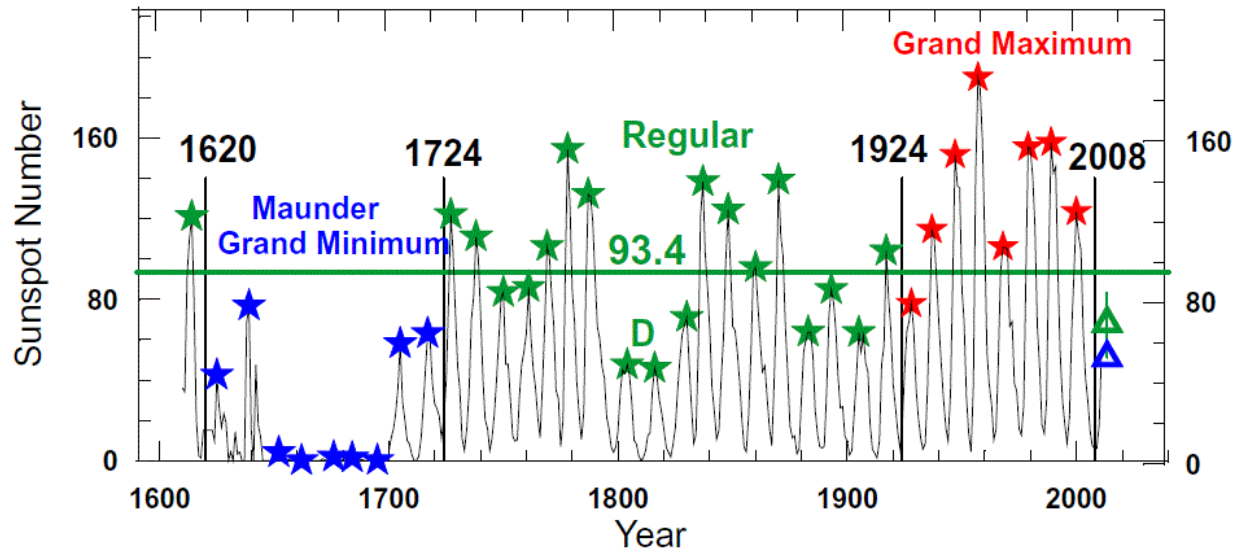
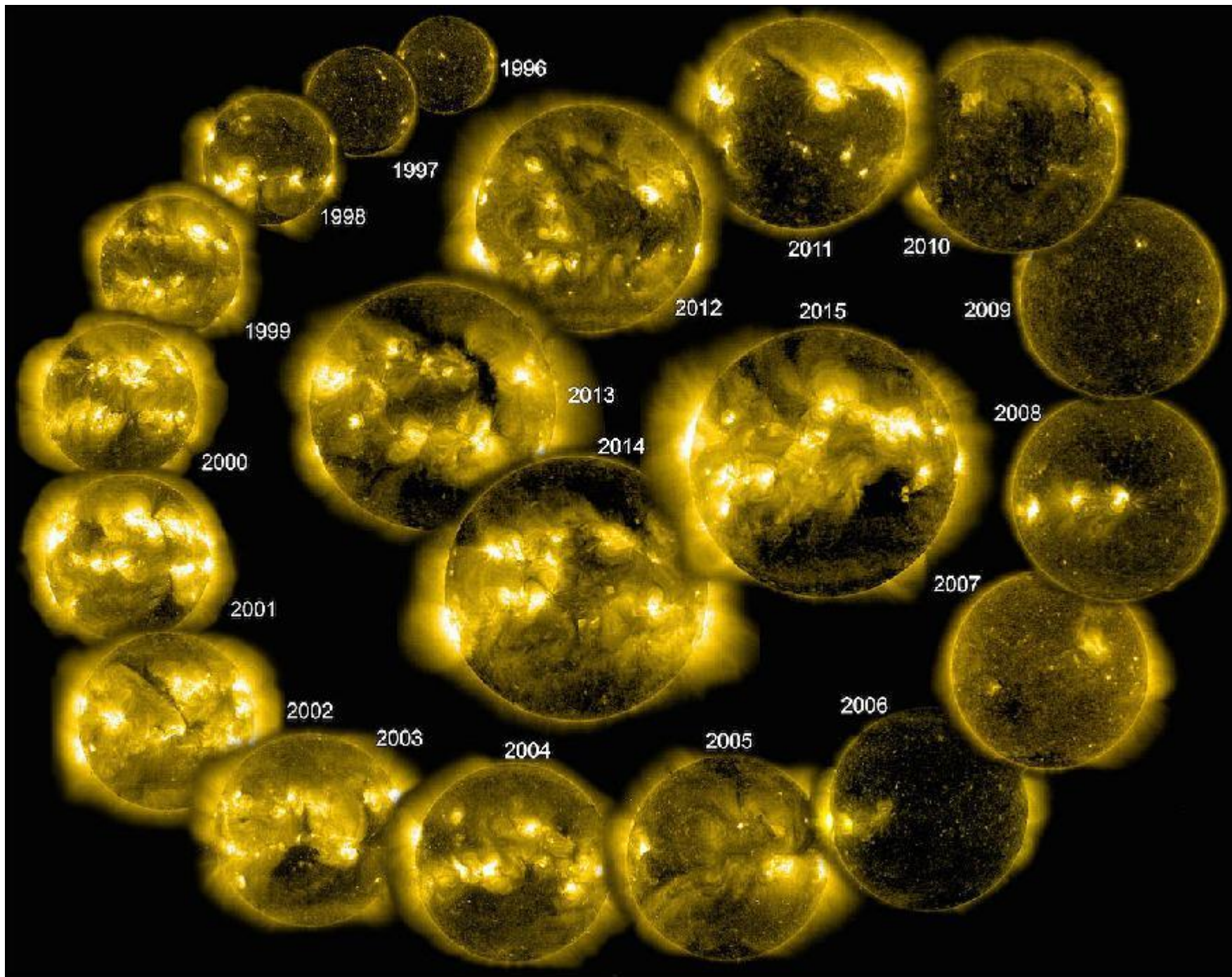


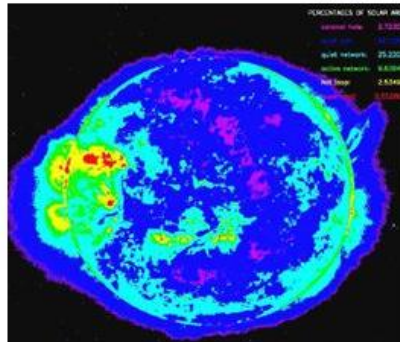
Fig. 4. The sunspot cycles since 1610. The diagram shows the sunspot numbers plotted against time. The stars are the maximum values of the sunspot (Schwabe) cycles. The strong variations are apparent. The three Grand Episodes are marked by their different colours. They are separated by vertical black lines – cf. Figure 5, later this section. The open triangles are our predictions, based on the two types of aa data used, viz. the standard data (green; De Jager & Duhau 2009) and the Lockwood data (blue; Duhau & De Jager 2010). The vertical green line through the green triangle is the estimated error. The horizontal line at sunspot number $R \approx 94$ marks the level of the Transition Point, cf. its definition later in this section.

As the Sun goes through its regular 11 solar cycle there are variances of strength in energy out put. Incredibly low periods are termed “Grand Solar Minimums”

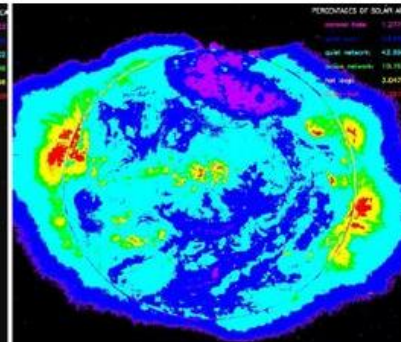


Variability of solar activity features

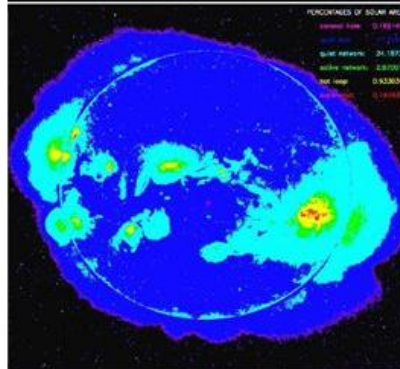
EIT 17.1nm
07/01/2005



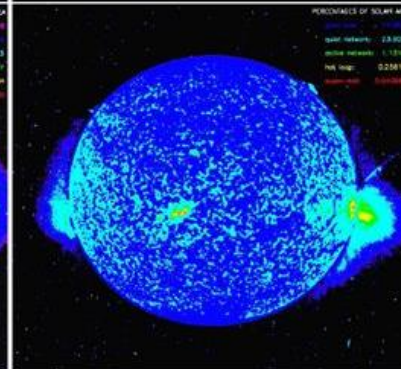
EIT 19.5 nm
10/01/2002



EIT 28.4 nm
10/10/2003



EIT 30.4 nm
07/10/2006



coronal holes – quiet Sun – quiet coronal network –
active coronal network – hot loop – super hot loop

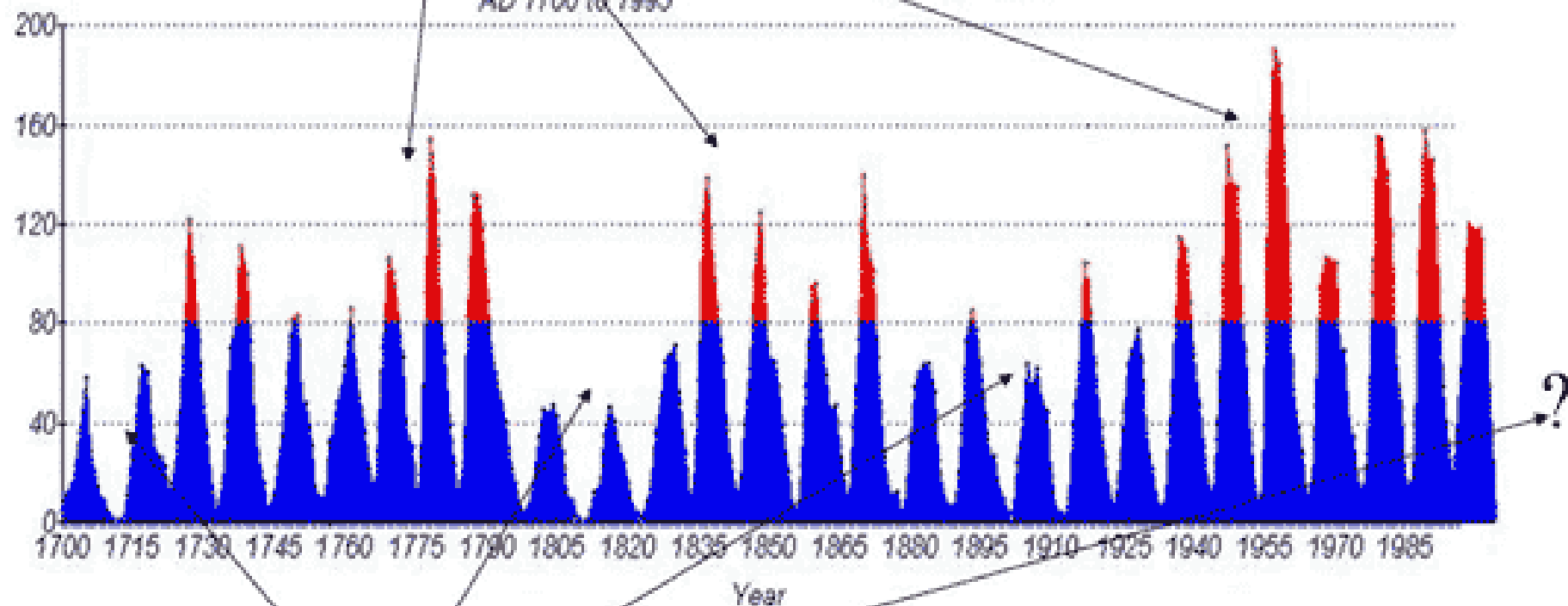
Wavelength output variances of the Sun's energy through the regular 11 year solar cycle. As we enter the grand solar minimum the wavelength color spectrum should change. Meaning look for a color change in the Sun.

11 year solar cycles vary in their strength on a longer term on cycles of 22, 53, 88, 106, 213, 429, etc. years

Active cycle periods

SUNSPOT CYCLE
AD 1700 to 1995

hot sun
cool sun



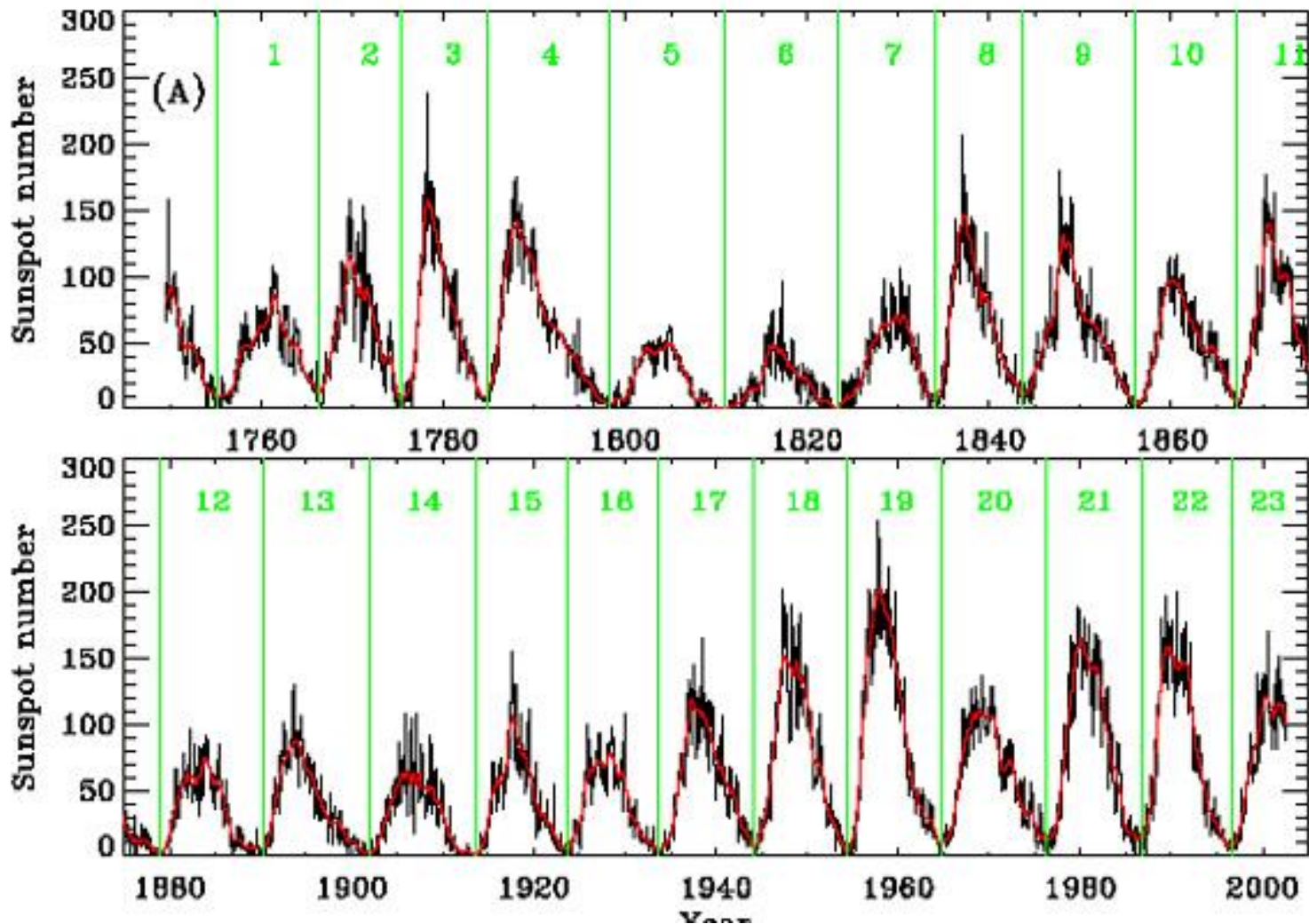
1700

1800 Wolf Sunspot Number

1900

2000

Quieter cycle periods



Solar Cycle by number for reference overlapped with the year, so when you see information compared to SC5 you can see that is 1800-1815

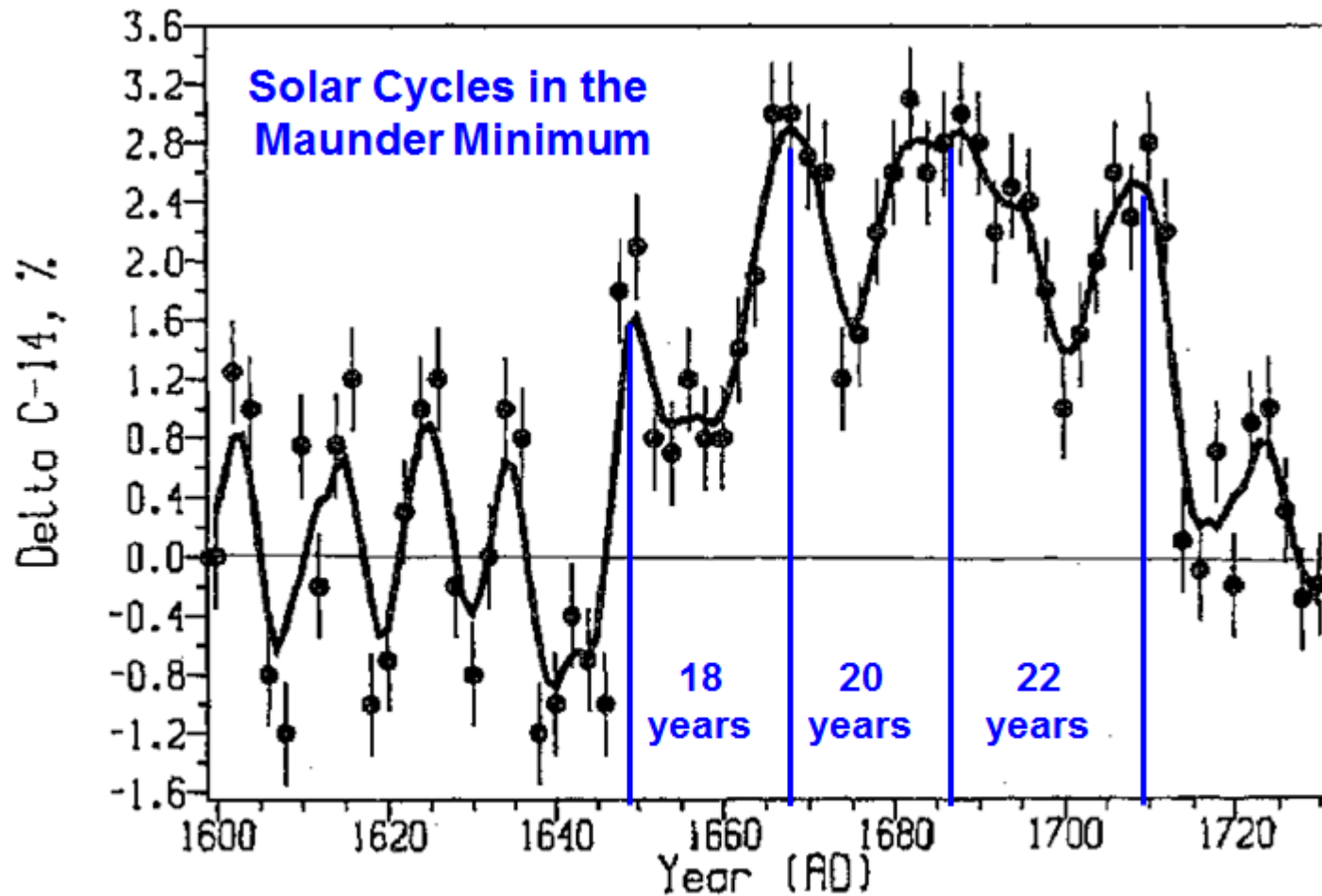
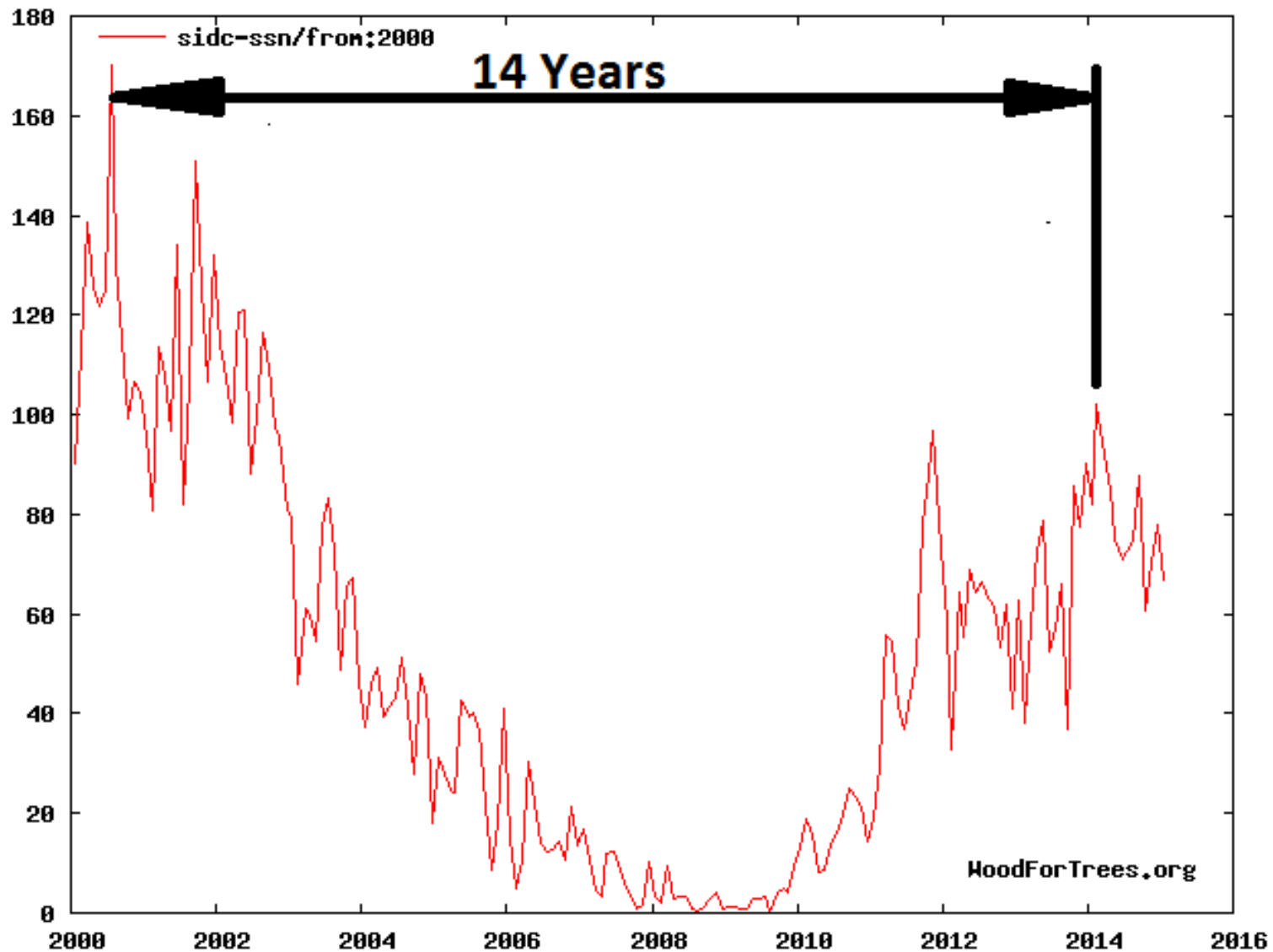
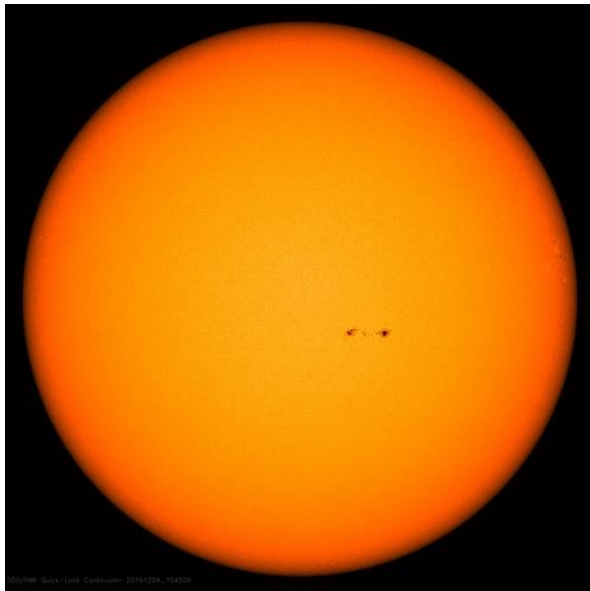
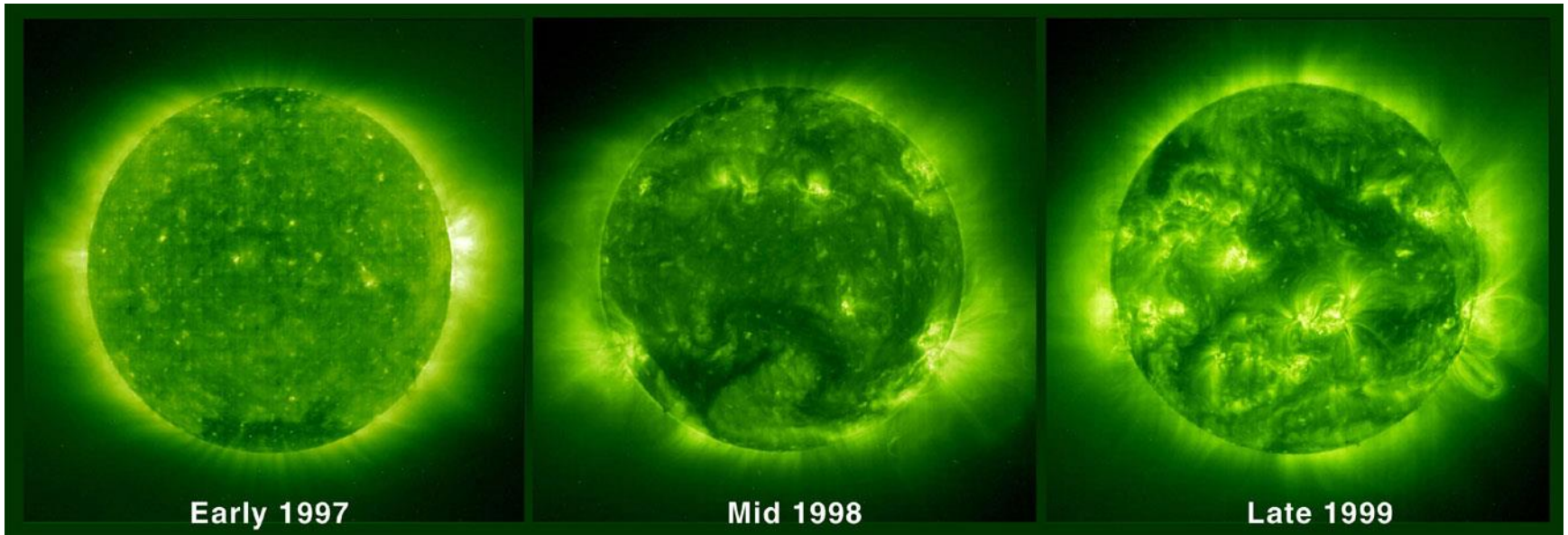


Figure 2. ^{14}C content variations in the bi-annual rings of the pine-trees from South Urals for AD 1600–1730. (By courtesy of Kocharov *et al.* 1995).

Counter-intuitive the solar cycles during a grand solar minimum at its coolest are longer than average, preceded by an incredibly short solar cycle in the 7-8 year range.



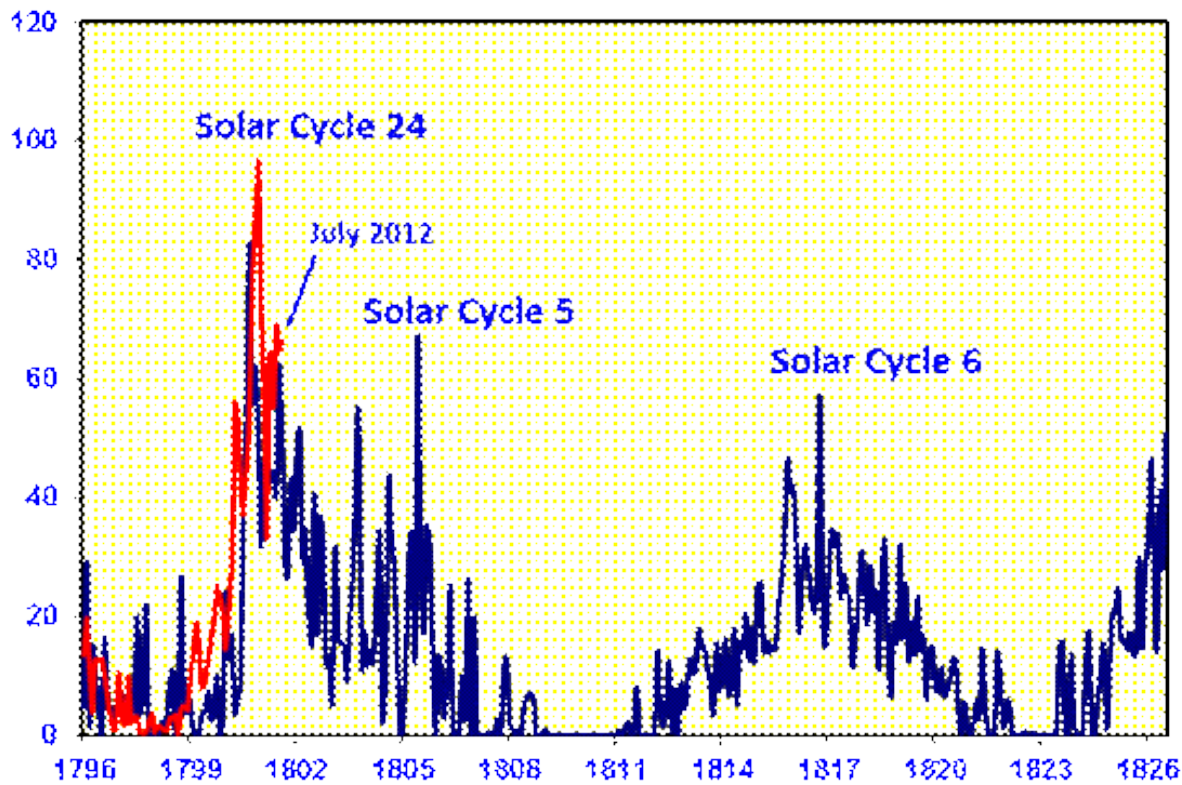
From peak to peak, not trough to trough, the number of years has increased to 14 above the 11 year average.



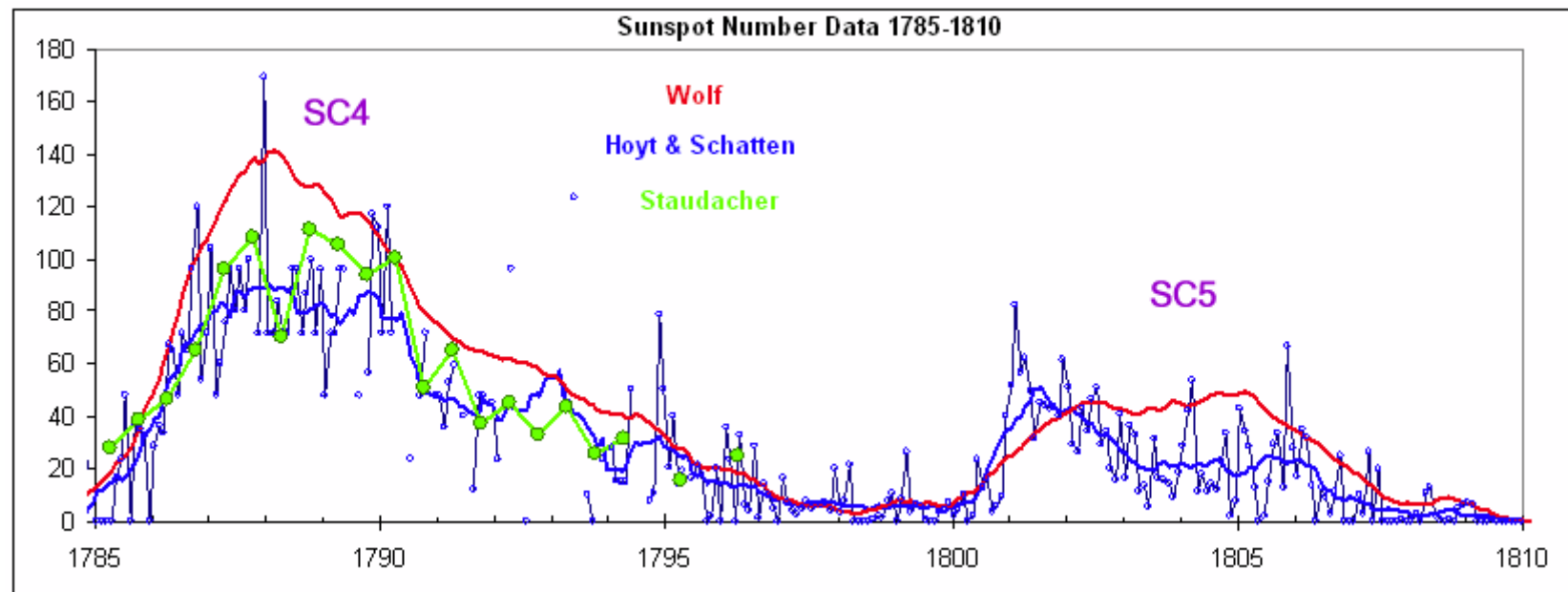
December 04, 2016

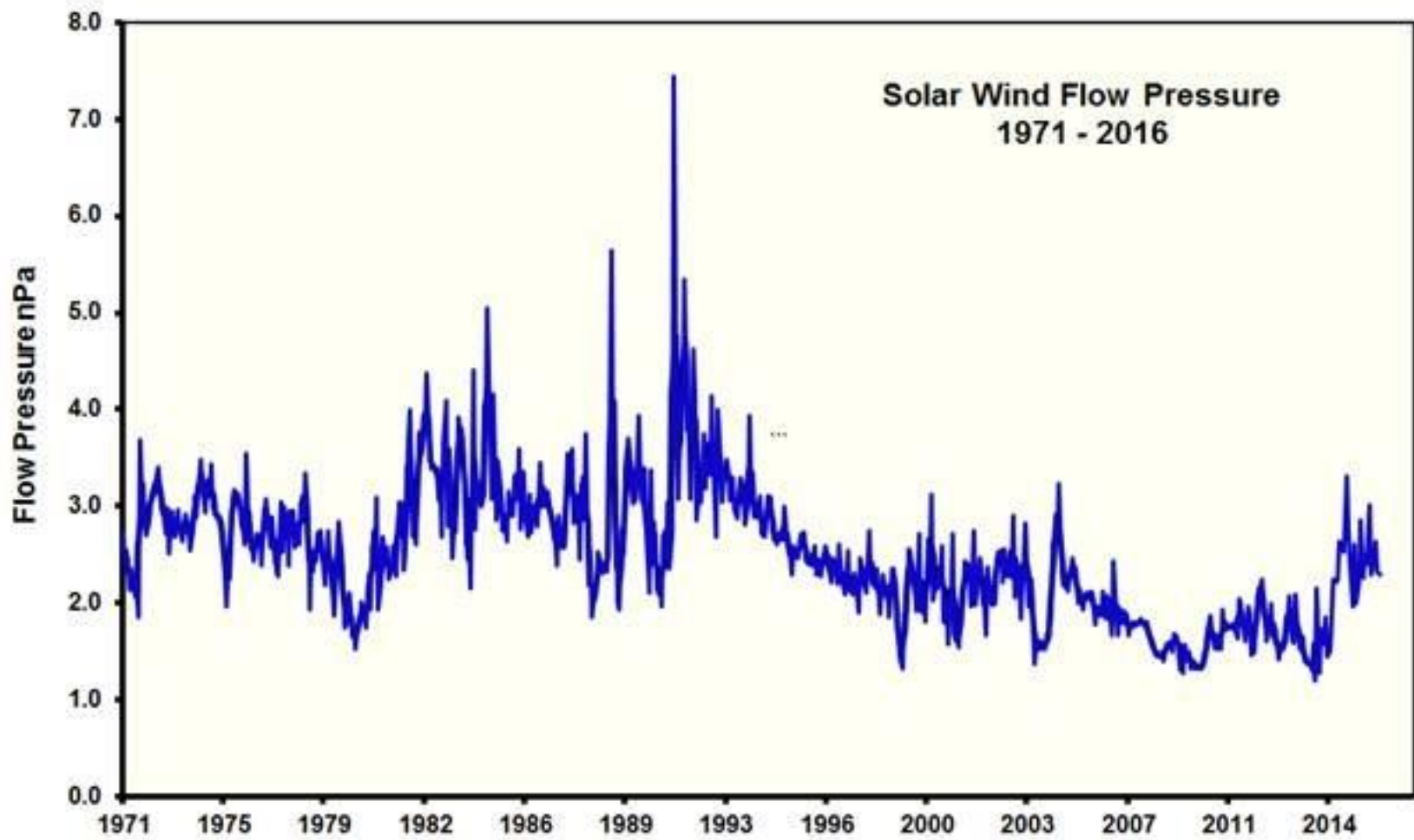
The current solar cycle should be around 75-80 sunspots average, but we are under 25 with several sun-spotless days to this point.

Three years ahead of schedule

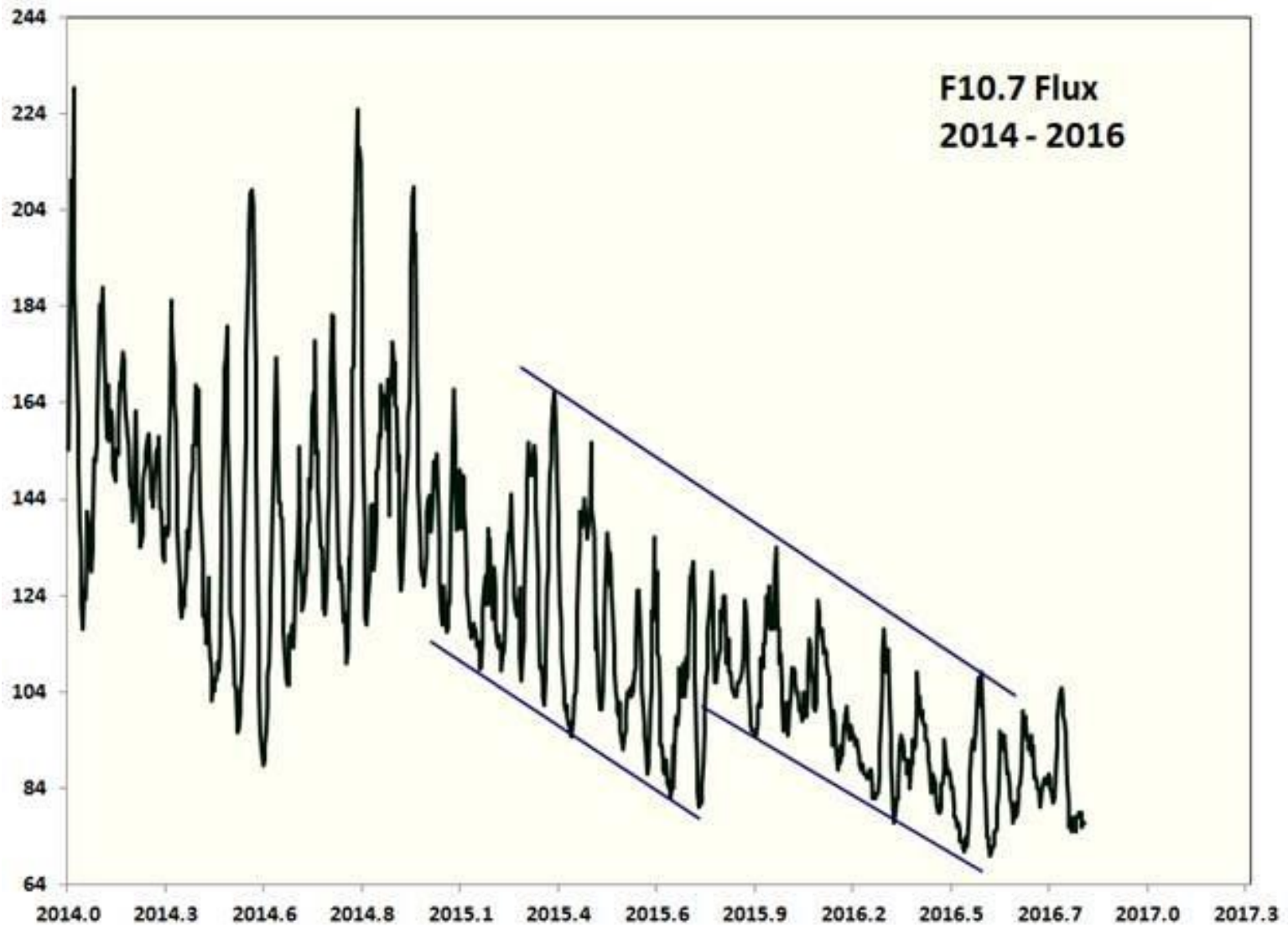


Current Solar Cycle 24 overlaid with SC5 which was the Dalton Minimum.





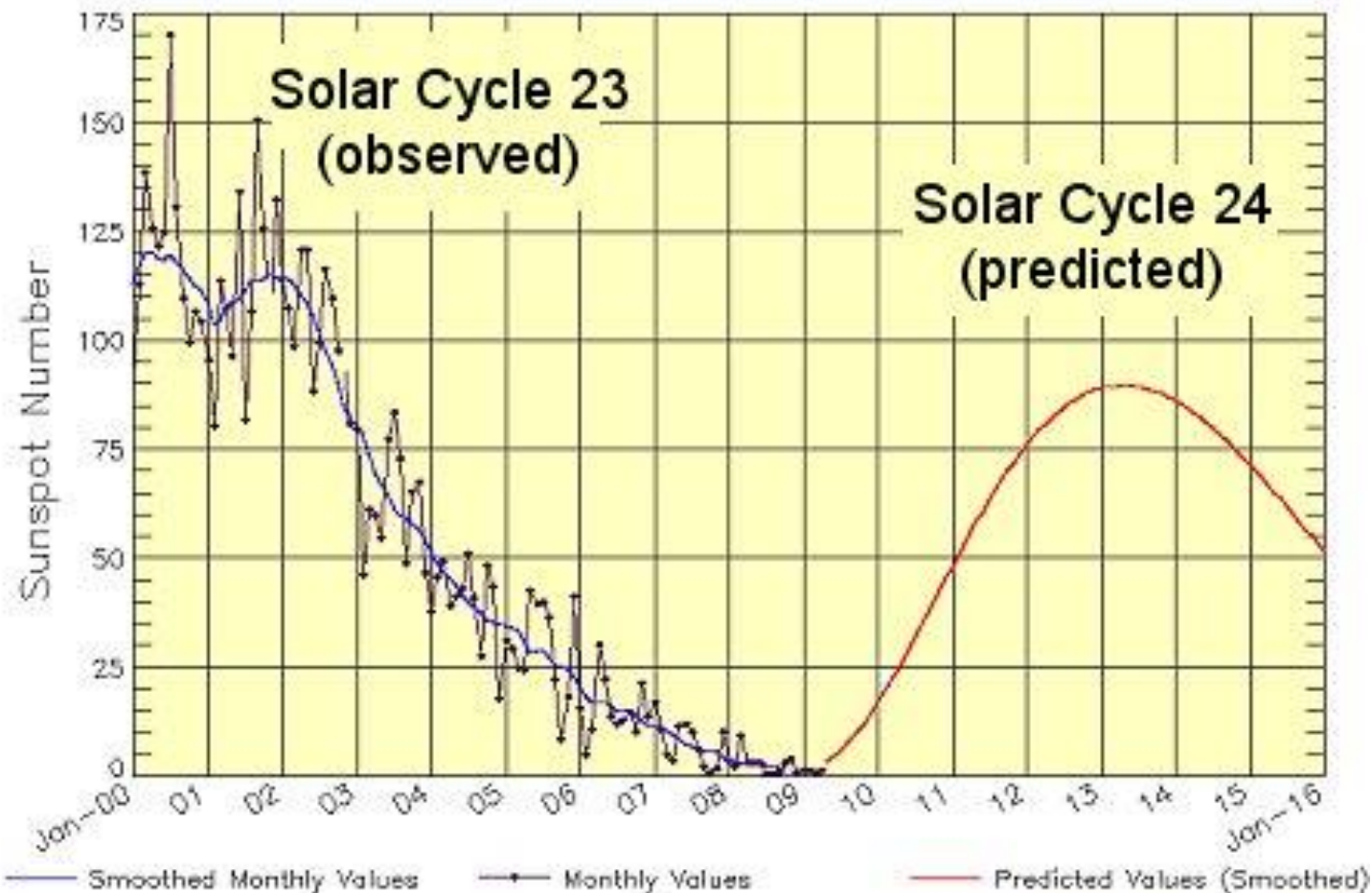
One sign would be to look for decreasing solar wind pressure. Low solar wind pressure is known to effect the Earth's atmosphere allowing the jet stream to wander and increase earthquakes.



Another sign is the actual out put of the Sun's energy to decrease.

ISES Solar Cycle Sunspot Number Progression

Data Through Apr 09



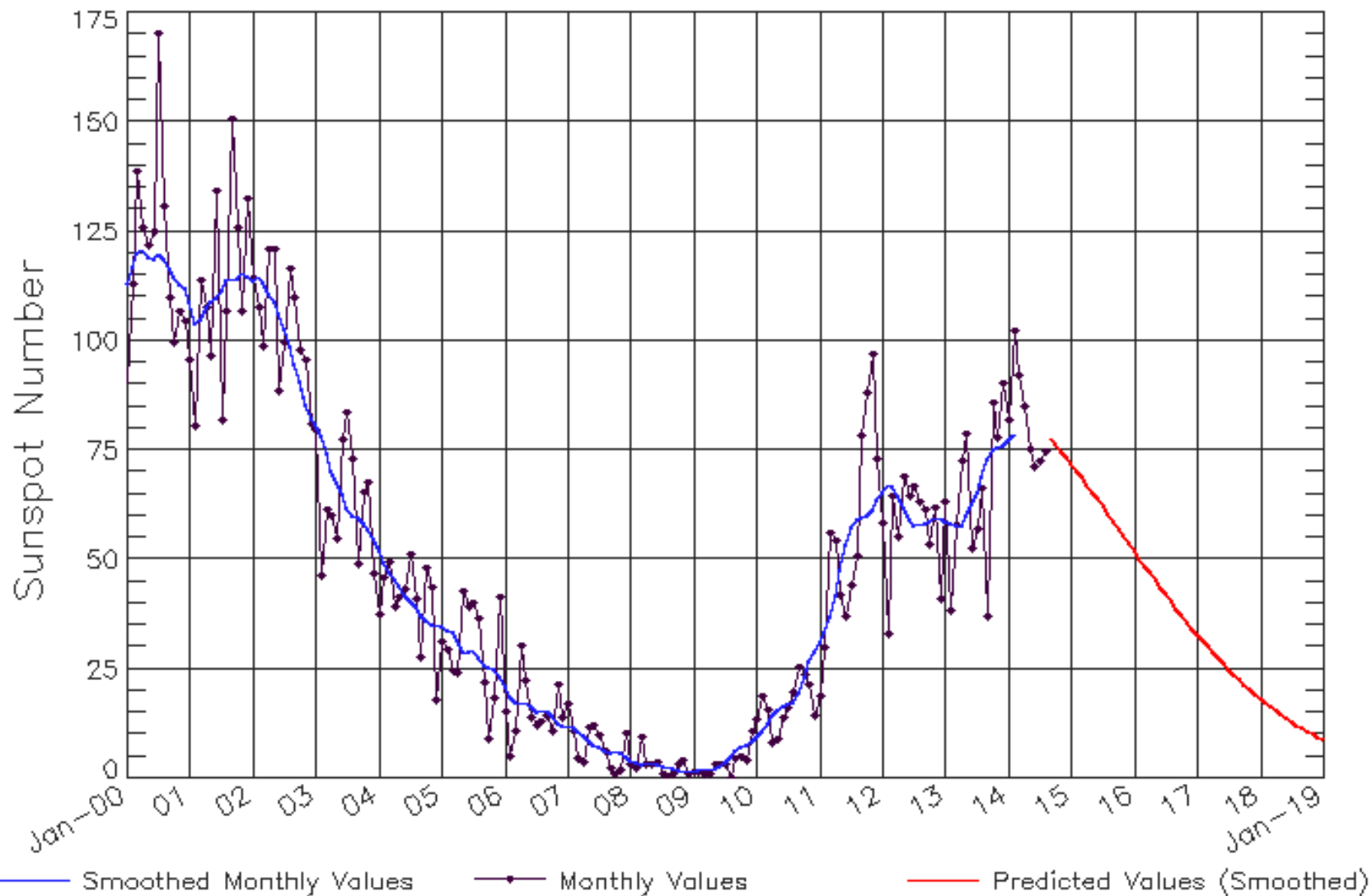
Updated 2009 May 8

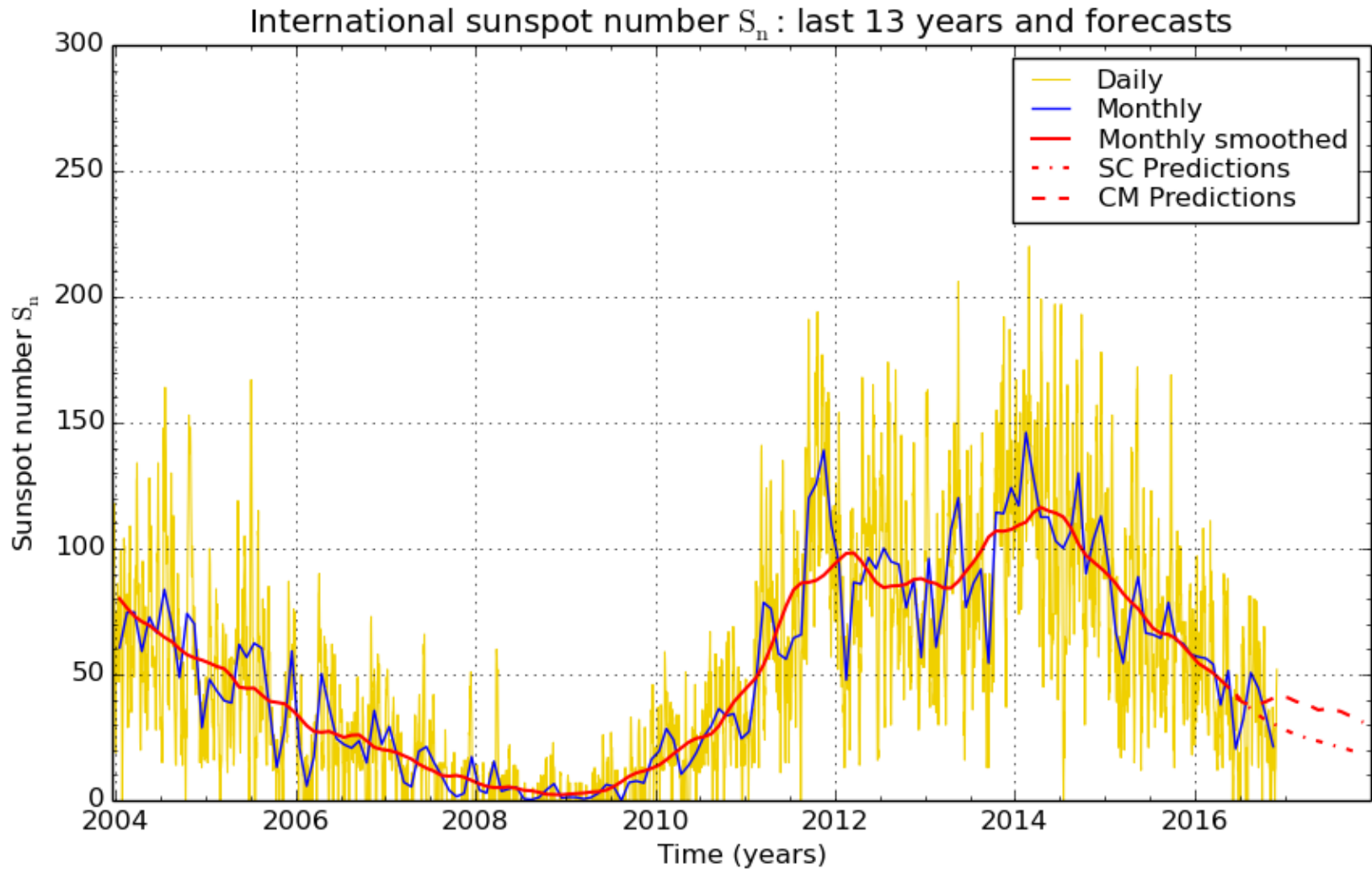
NOAA/SWPC Boulder, CO USA

How good are the NASA, ESA forecasters in seeing the changes or forecasting a grand solar minimum with the solar cycle forecast?

ISES Solar Cycle Sunspot Number Progression

Observed data through Aug 2014

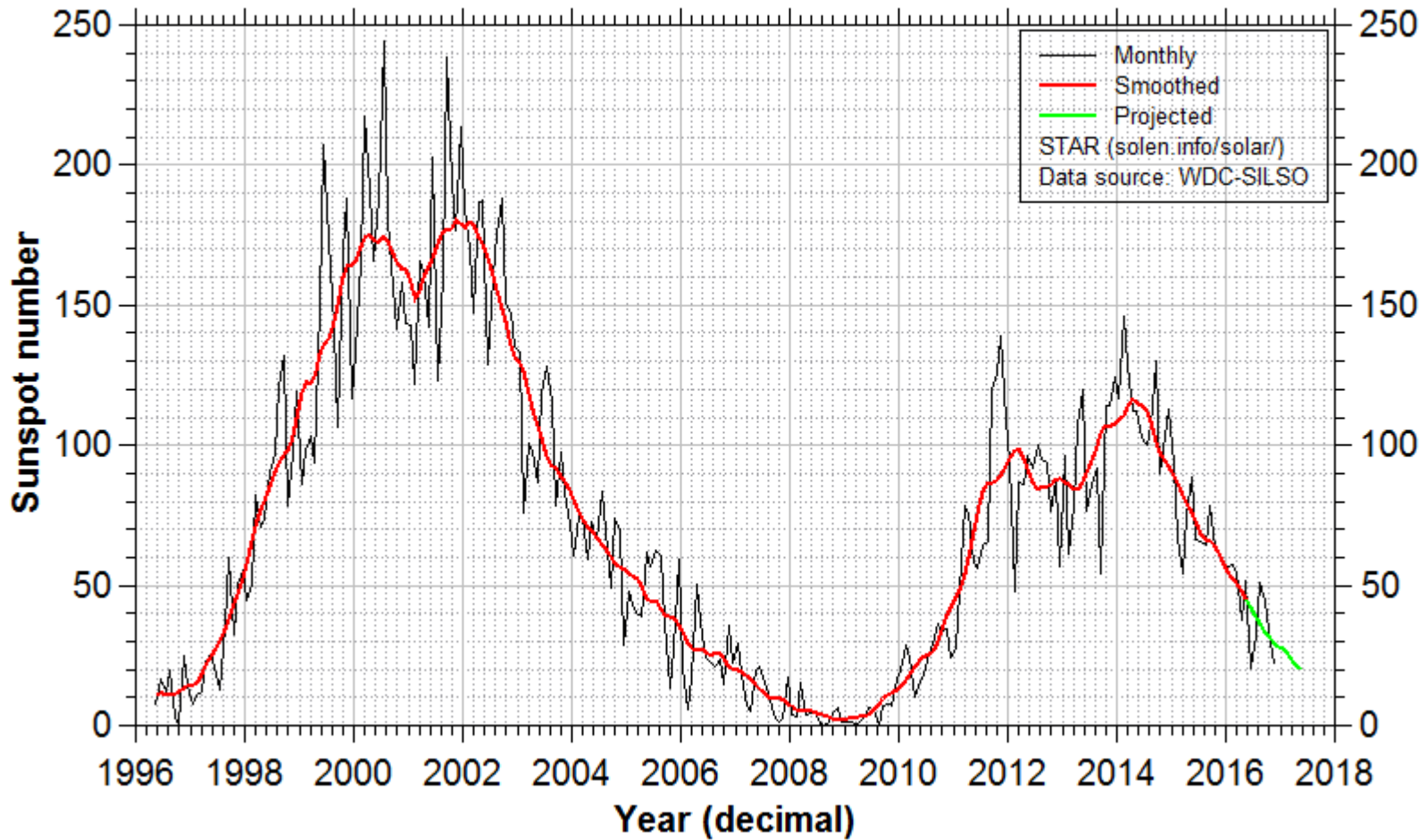




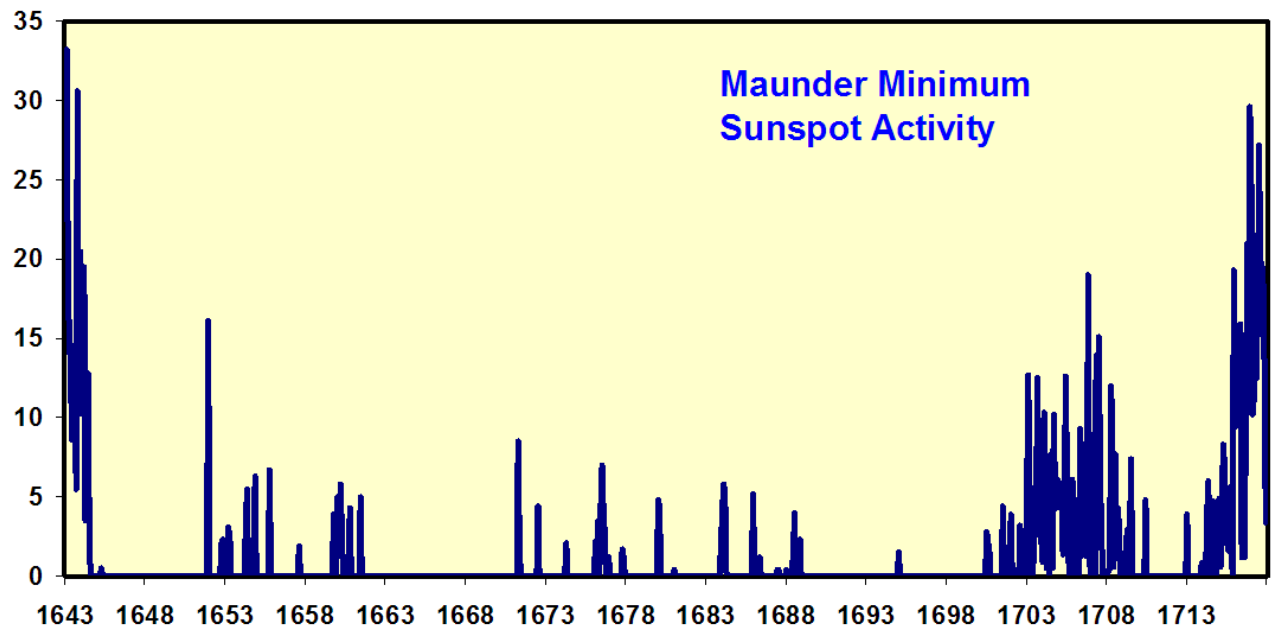
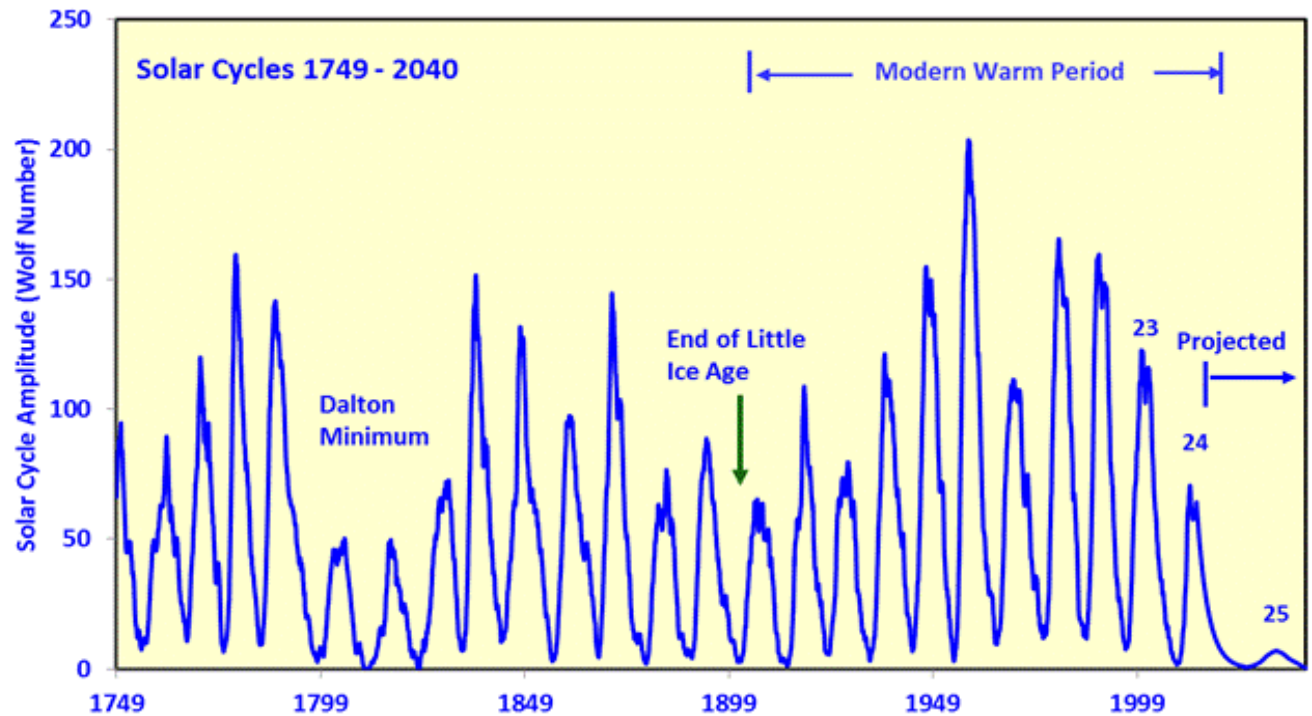
SILSO graphics (<http://sidc.be/silso>) Royal Observatory of Belgium 2016 December 1

NASA and ESA were off by three years on the length of the Solar Cycle.
Independent researcher John Casey was the only one to call it correctly.

Cycles 23-24

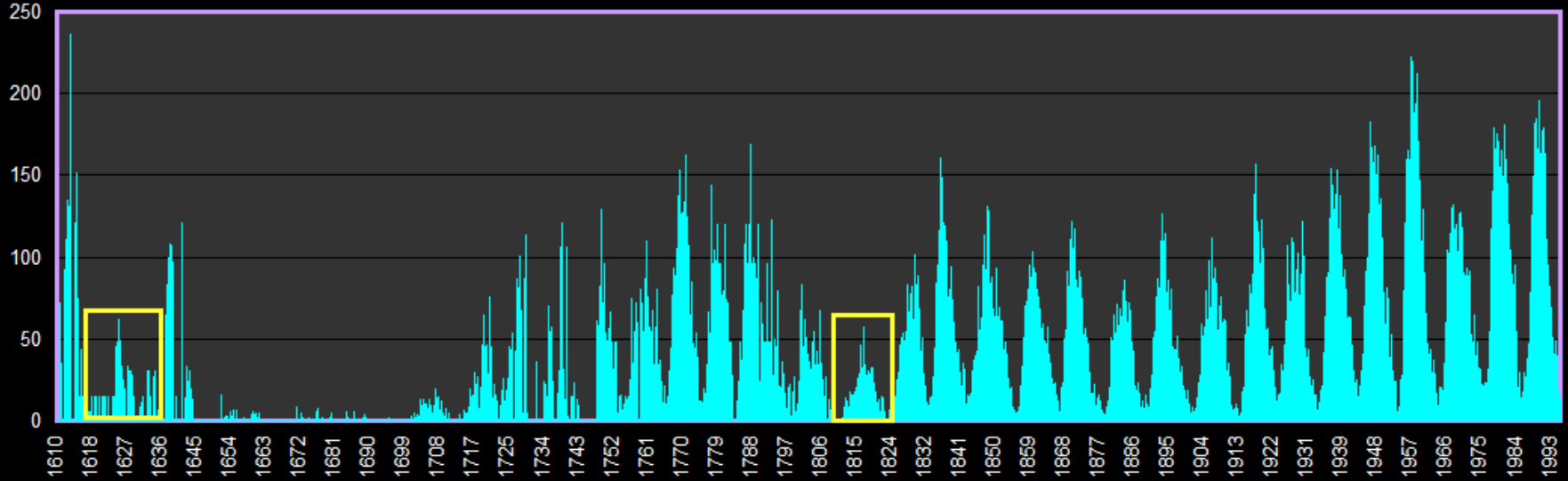


Lack of Sun Spots in the Maunder Minimum 1600's and Dalton Minimum early 1800's



Hoyt/Schatten Group Sunspot Numer

■ GSN

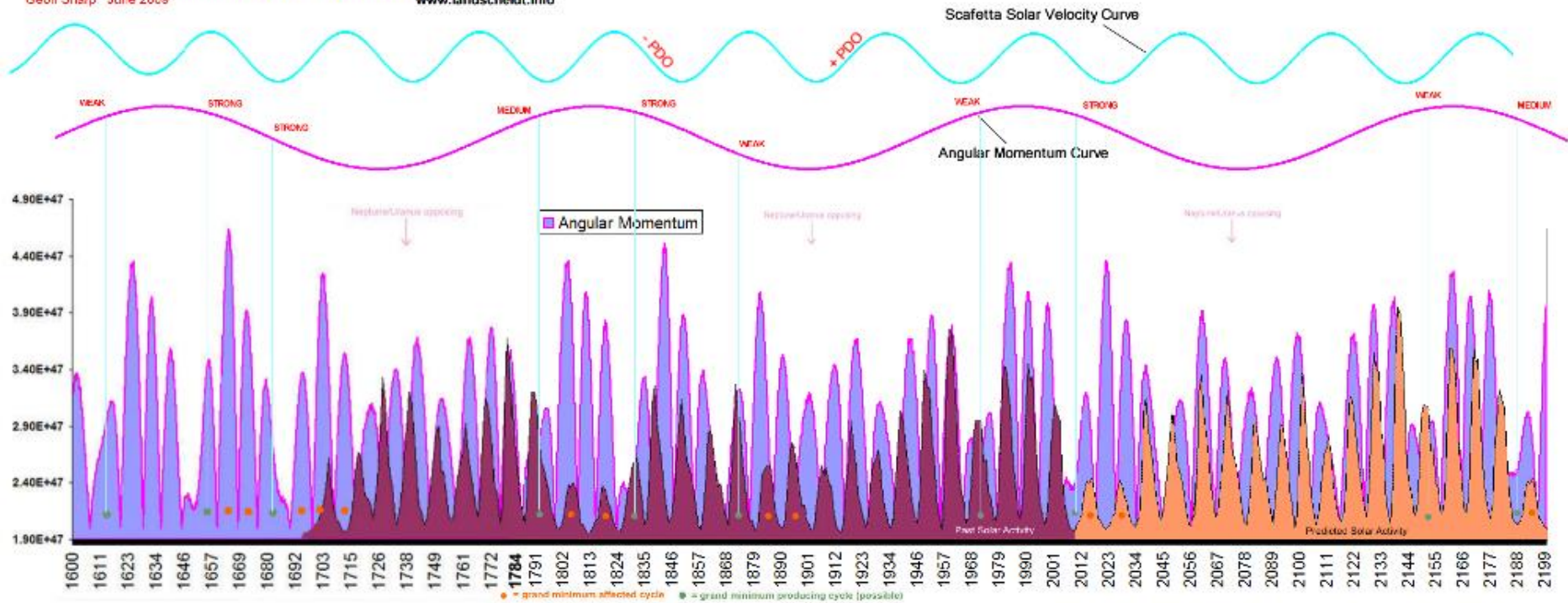


A look over the longest sun spot counts in the western world, Chinese, Arab and Japanese records go back further.

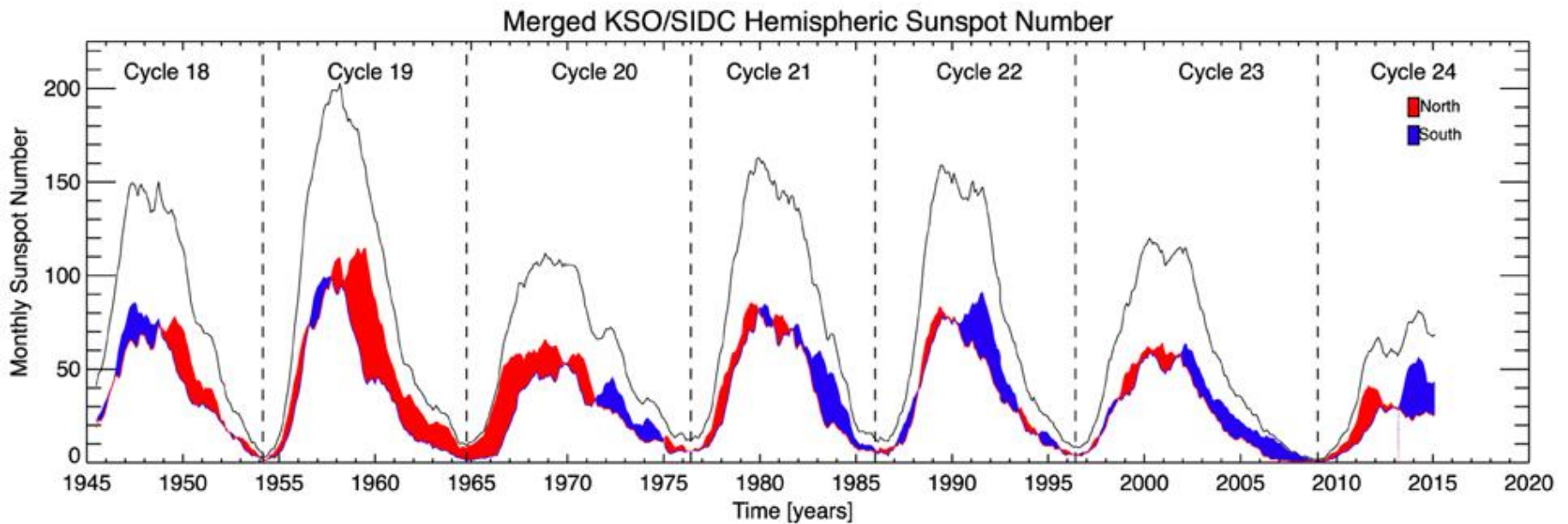
Angular Momentum & Past/Future Solar Activity

Geoff Sharp June 2009

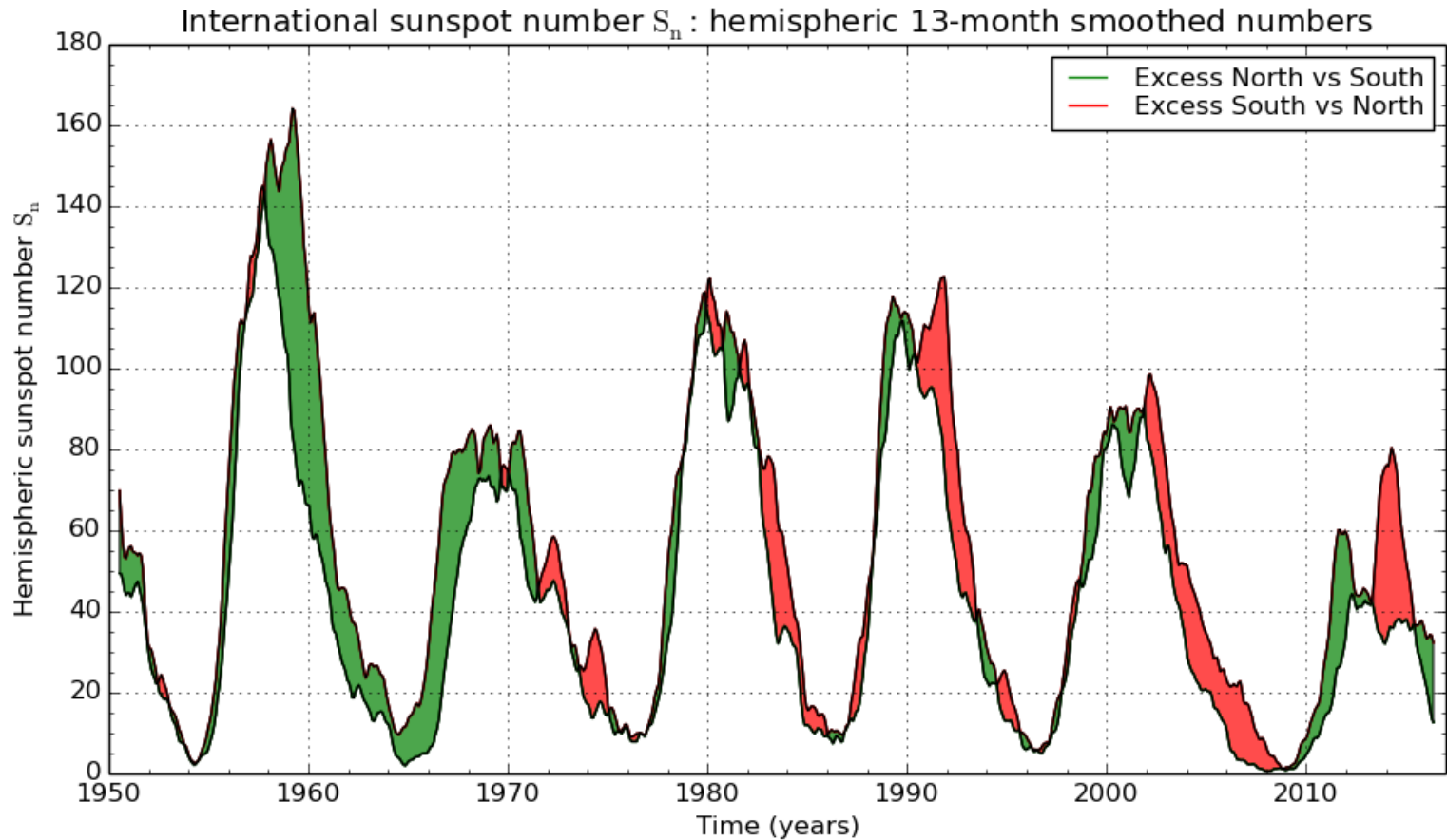
www.landscheidt.info



Changes caused by magnetic and gravitational forces on Earth by the outer planets. By knowing how the planets move you can forecast into the future and look to the past. We match with 1611

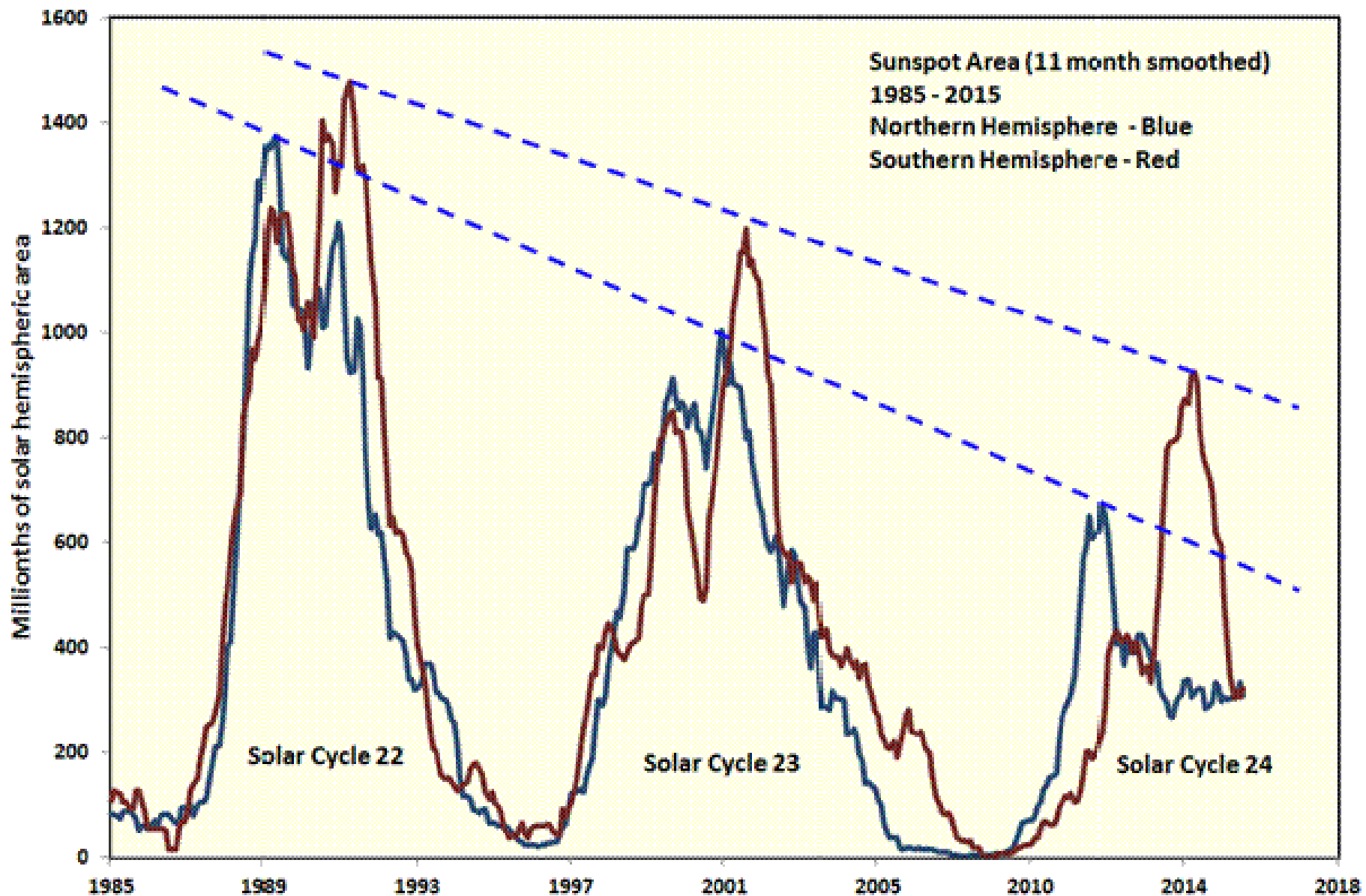


Hemispheric number simply means which hemisphere did the sunspots originate. There are far more in the southern hemisphere on the downside of this SC.

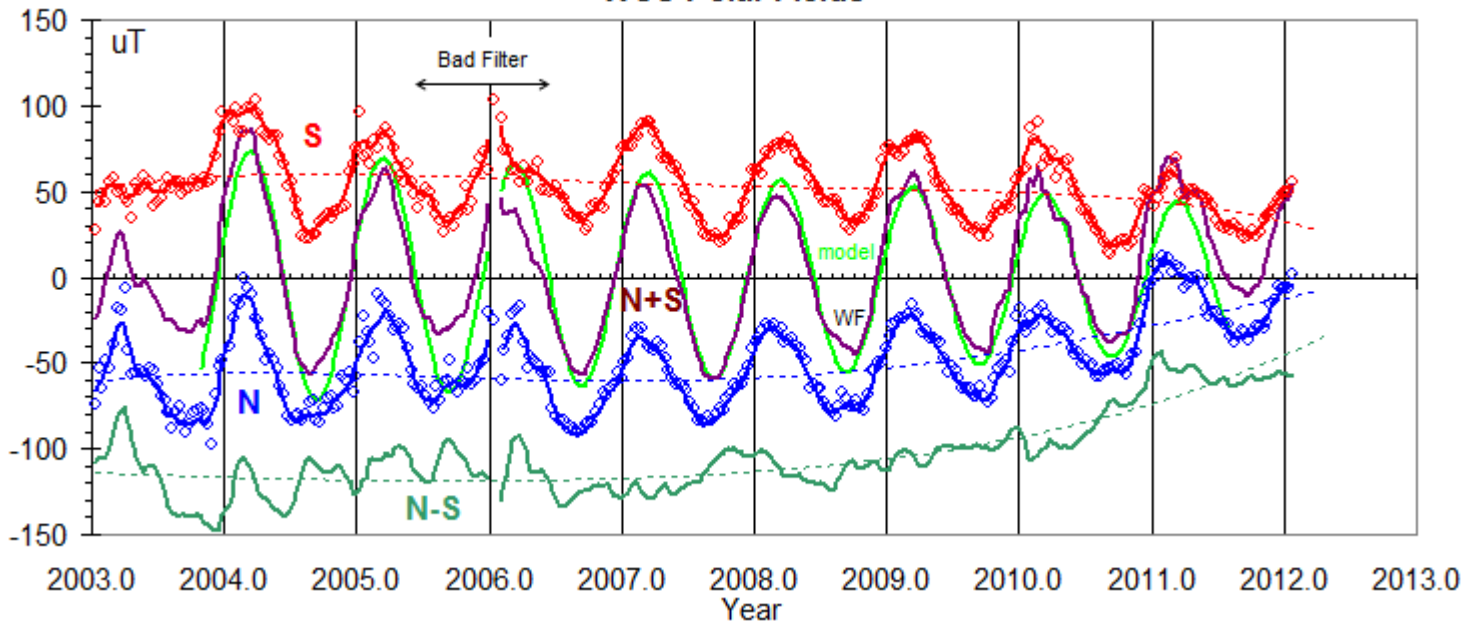


SILSO graphics (<http://sidc.be/silso>) Royal Observatory of Belgium 2016 December 1

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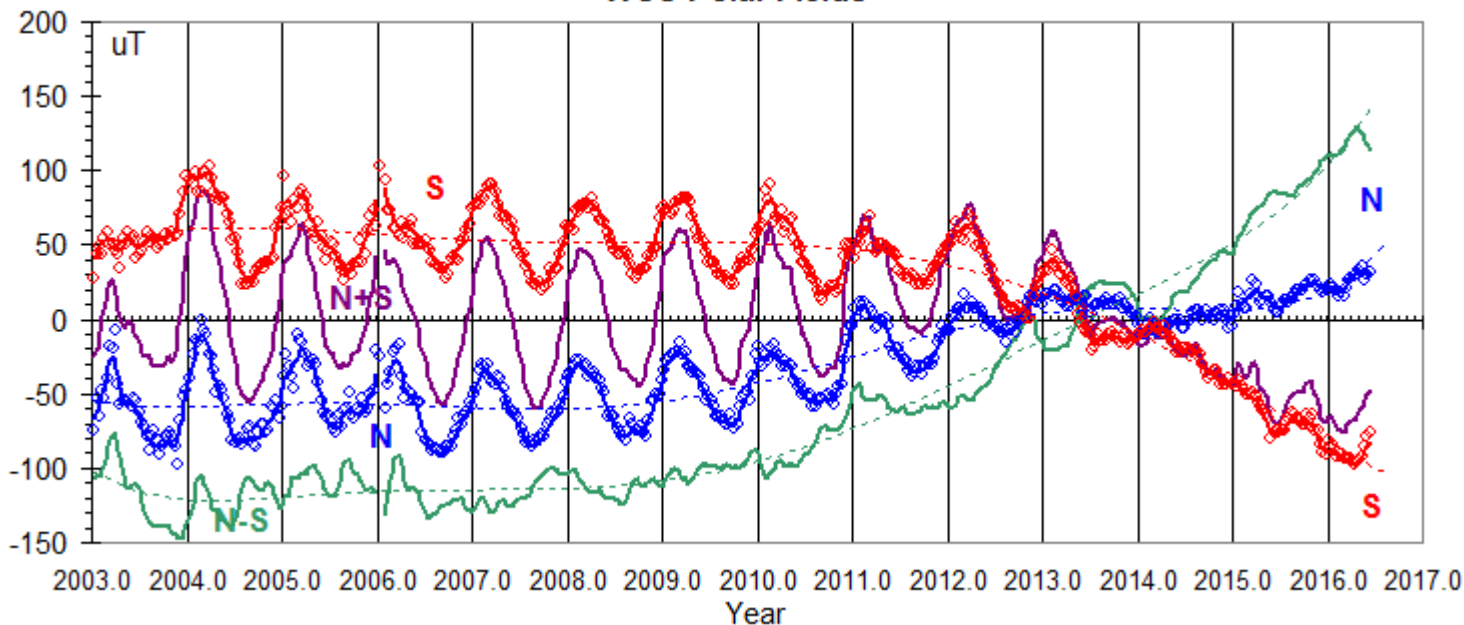


WSO Polar Fields



Solar Polar Field is how the Sun flips it's North and South poles every 22 years.

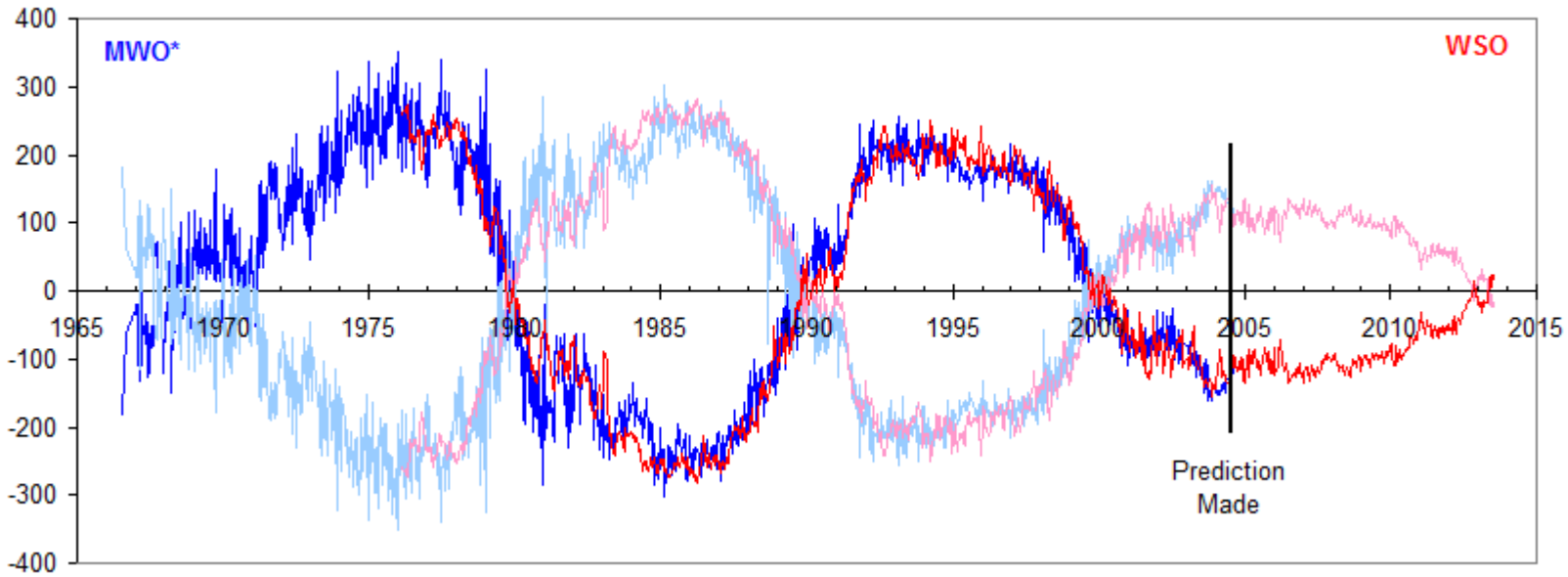
WSO Polar Fields



Every two solar cycles.

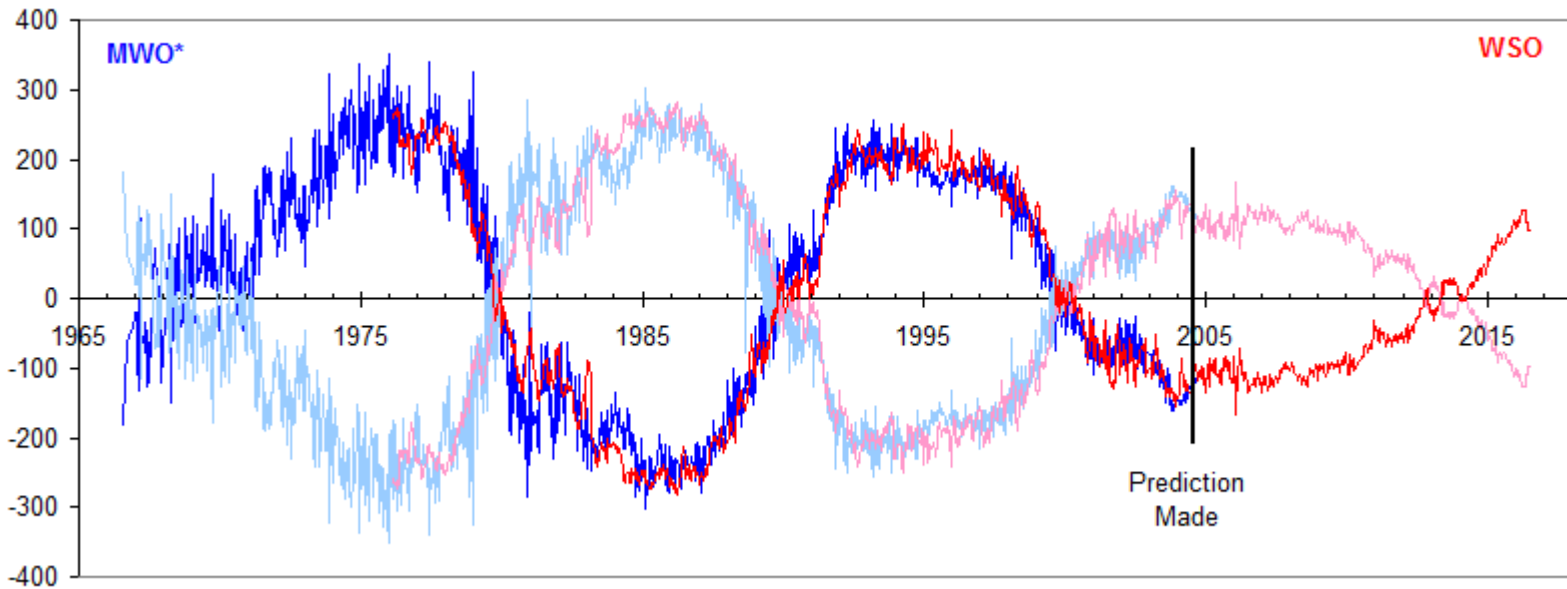
Notice how weak the current cycle is compared to the past.

North - South Solar Polar Fields [microTesla]



Solar Polar Field is how the Sun flips it's North and South poles every 22 years.

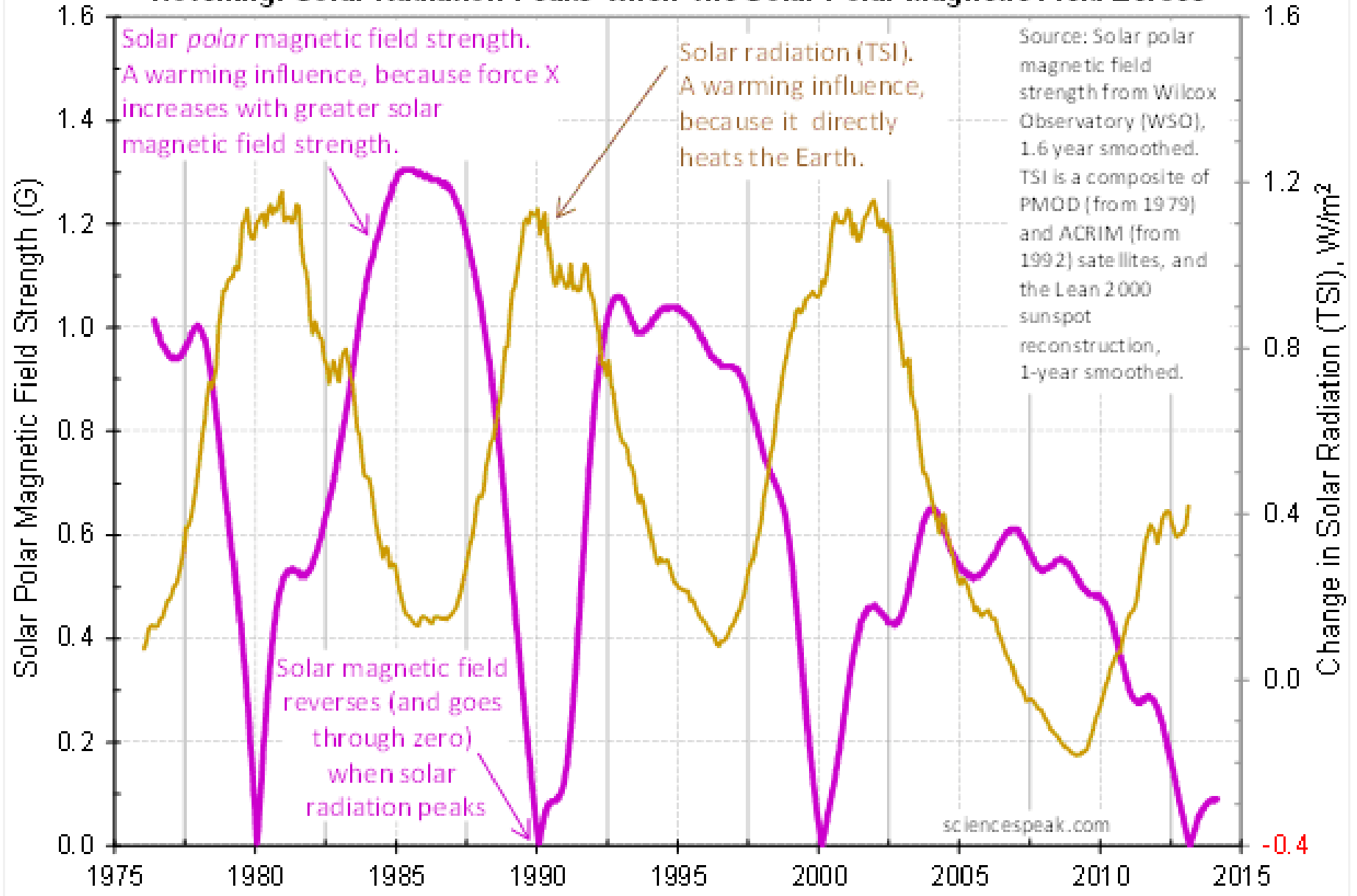
North - South Solar Polar Fields [microTesla]



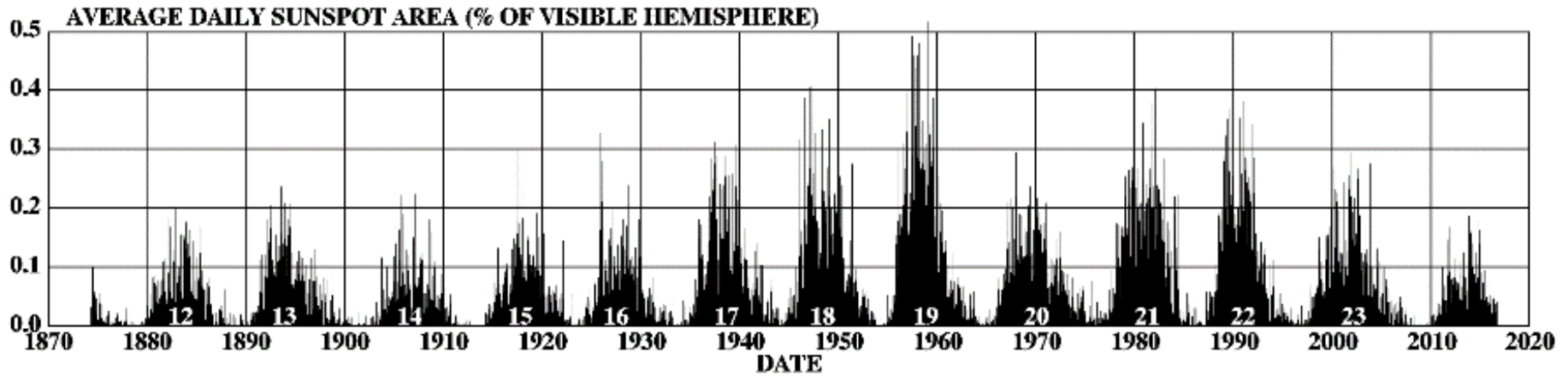
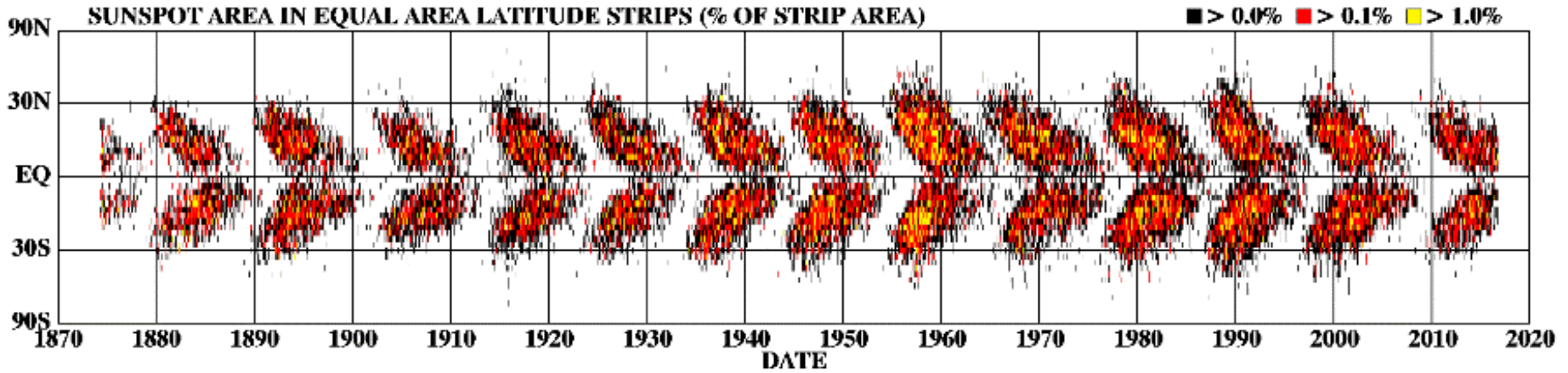
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Notching: Solar Radiation Peaks when the Solar Polar Magnetic Field Zeroes



DAILY SUNSPOT AREA AVERAGED OVER INDIVIDUAL SOLAR ROTATIONS

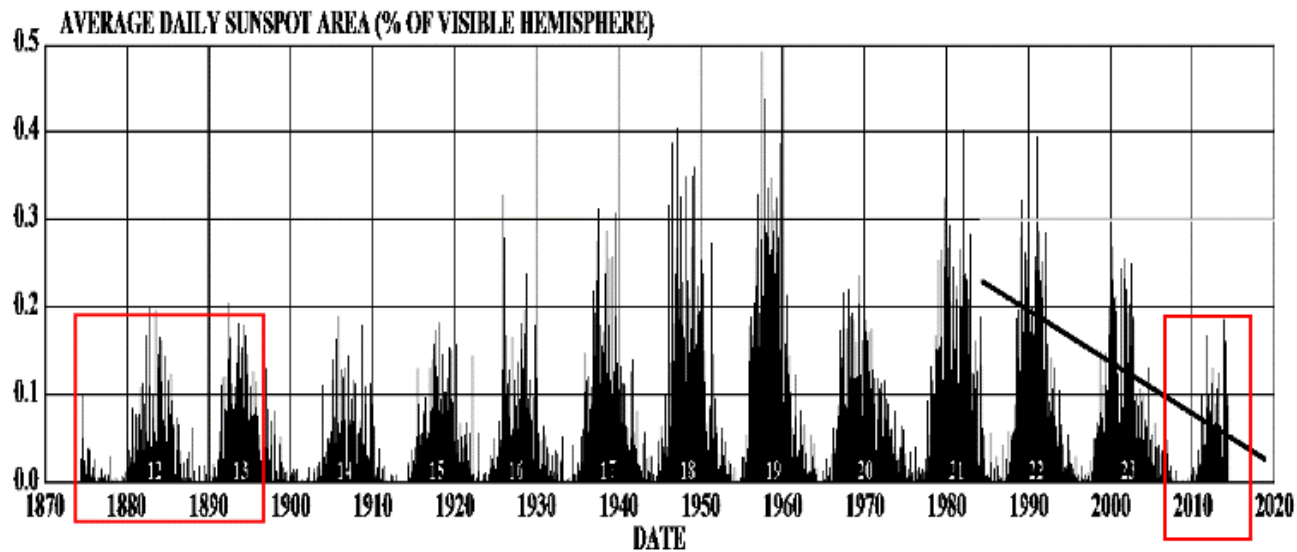
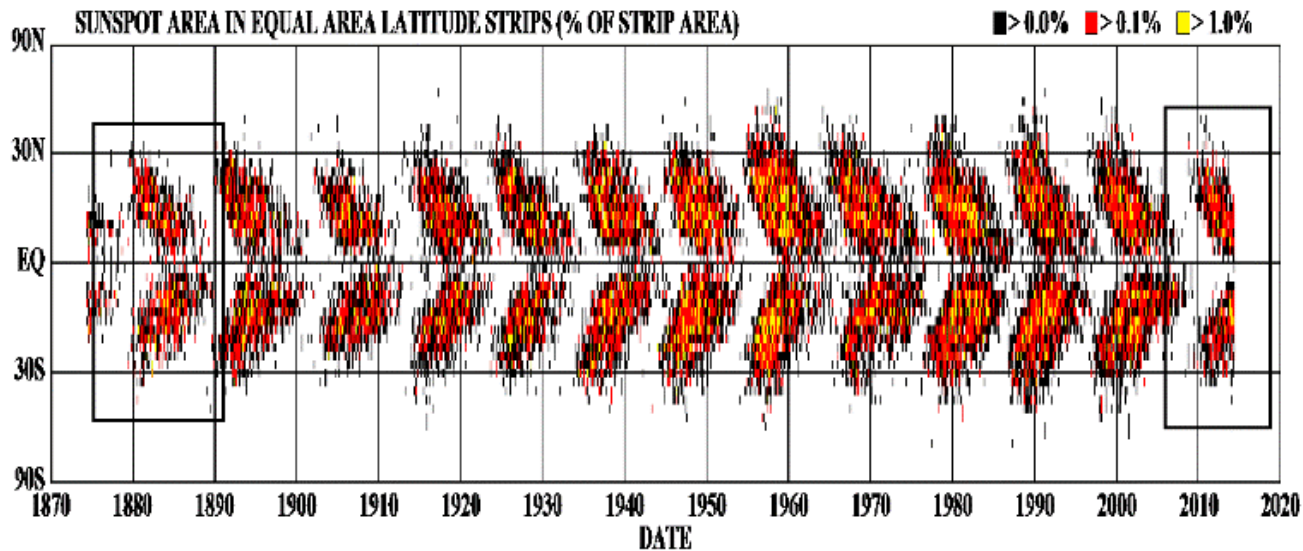


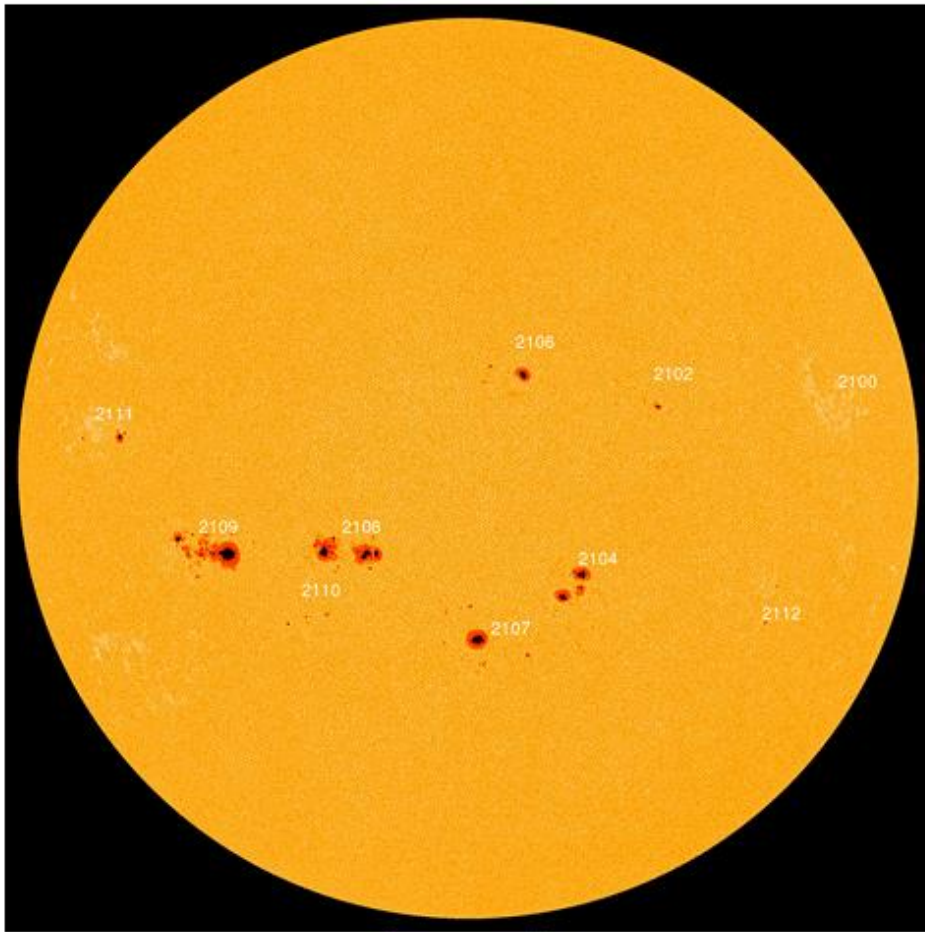
<http://solarscience.msfc.nasa.gov/>

HATHAWAY NASA/ARC 2016/10

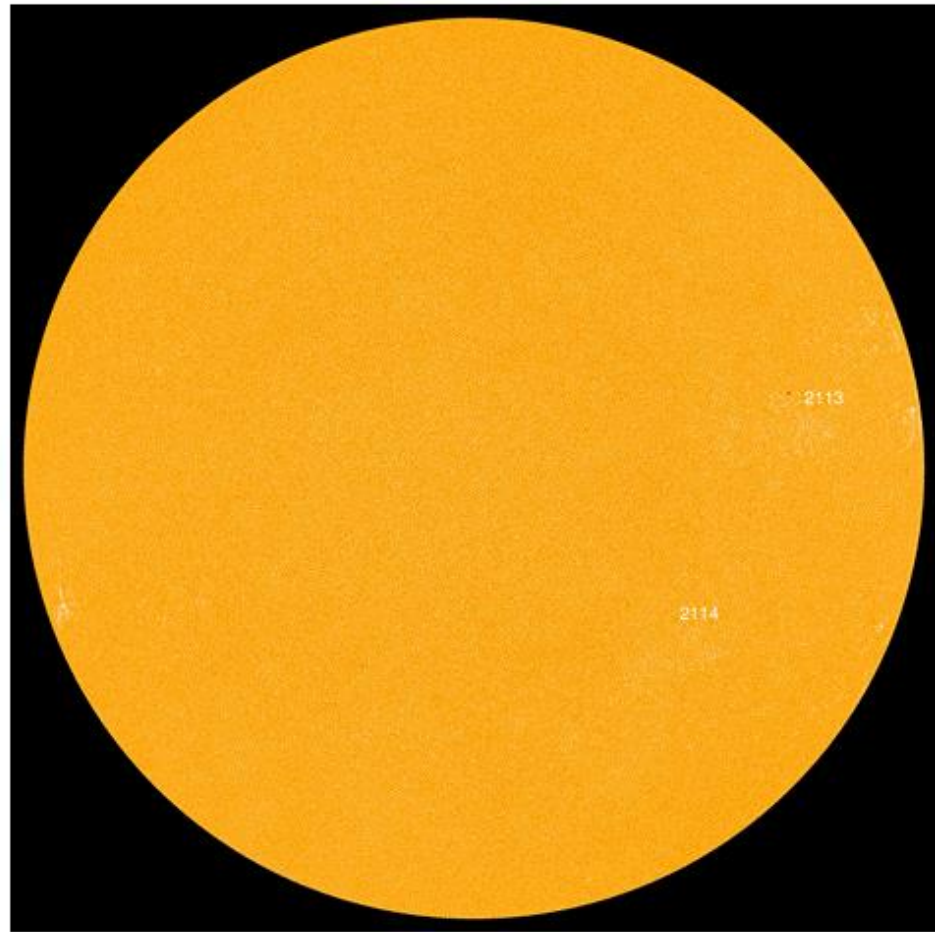
A different way to view which hemisphere the sunspots originate and move to the equator of the Sun. This cycle matches 1900 era, that's why so many 100 year records are being broken. We will have less sunspots next cycle, putting Earth into the 200-300 year records falling.

DAILY SUNSPOT AREA AVERAGED OVER INDIVIDUAL SOLAR ROTATIONS





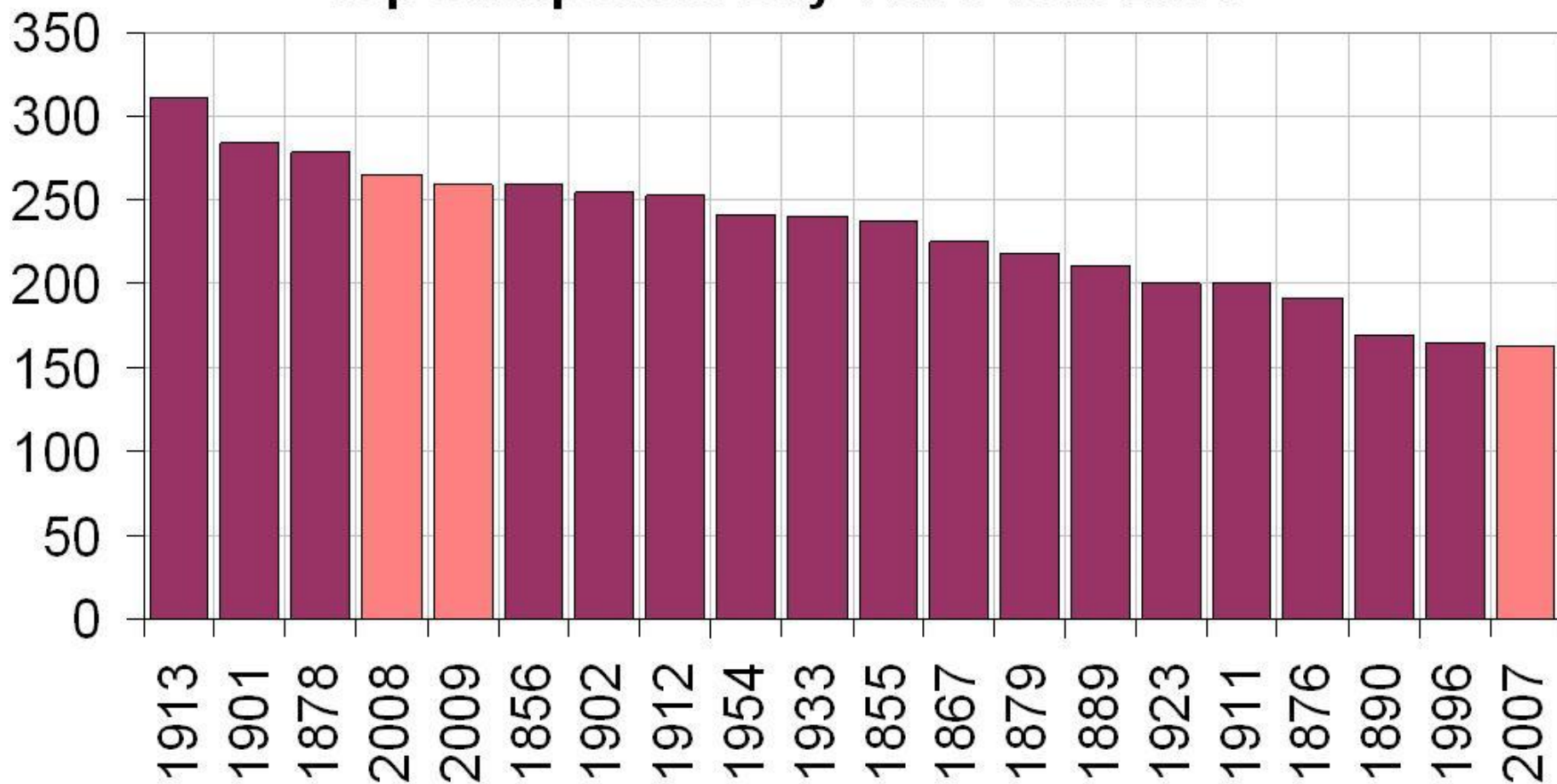
July 6th



July 17th, 2014

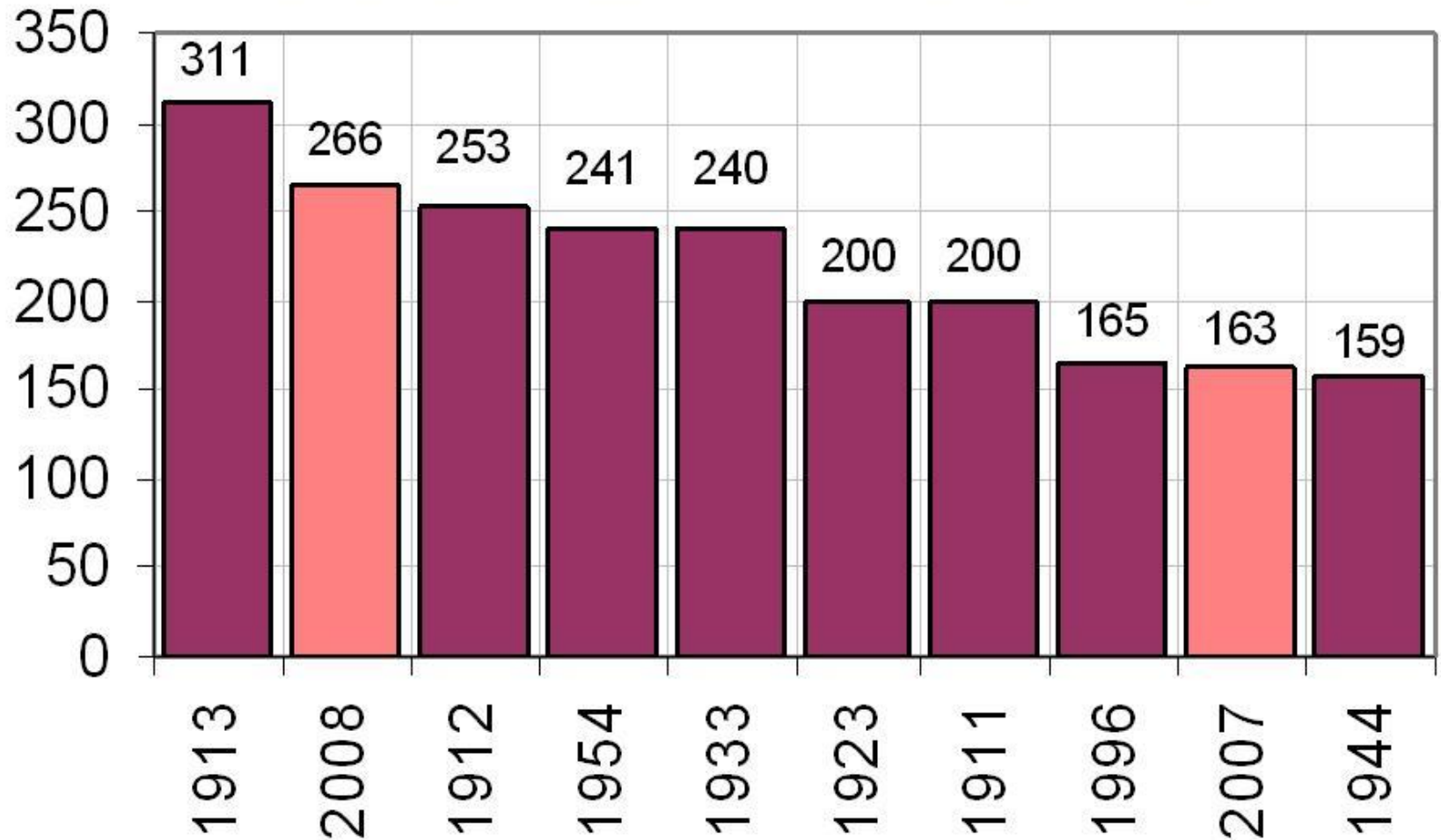
There should not be sun-spotless days at solar Maximum but there were.

Top Sunspotless Day Years 1849-2009

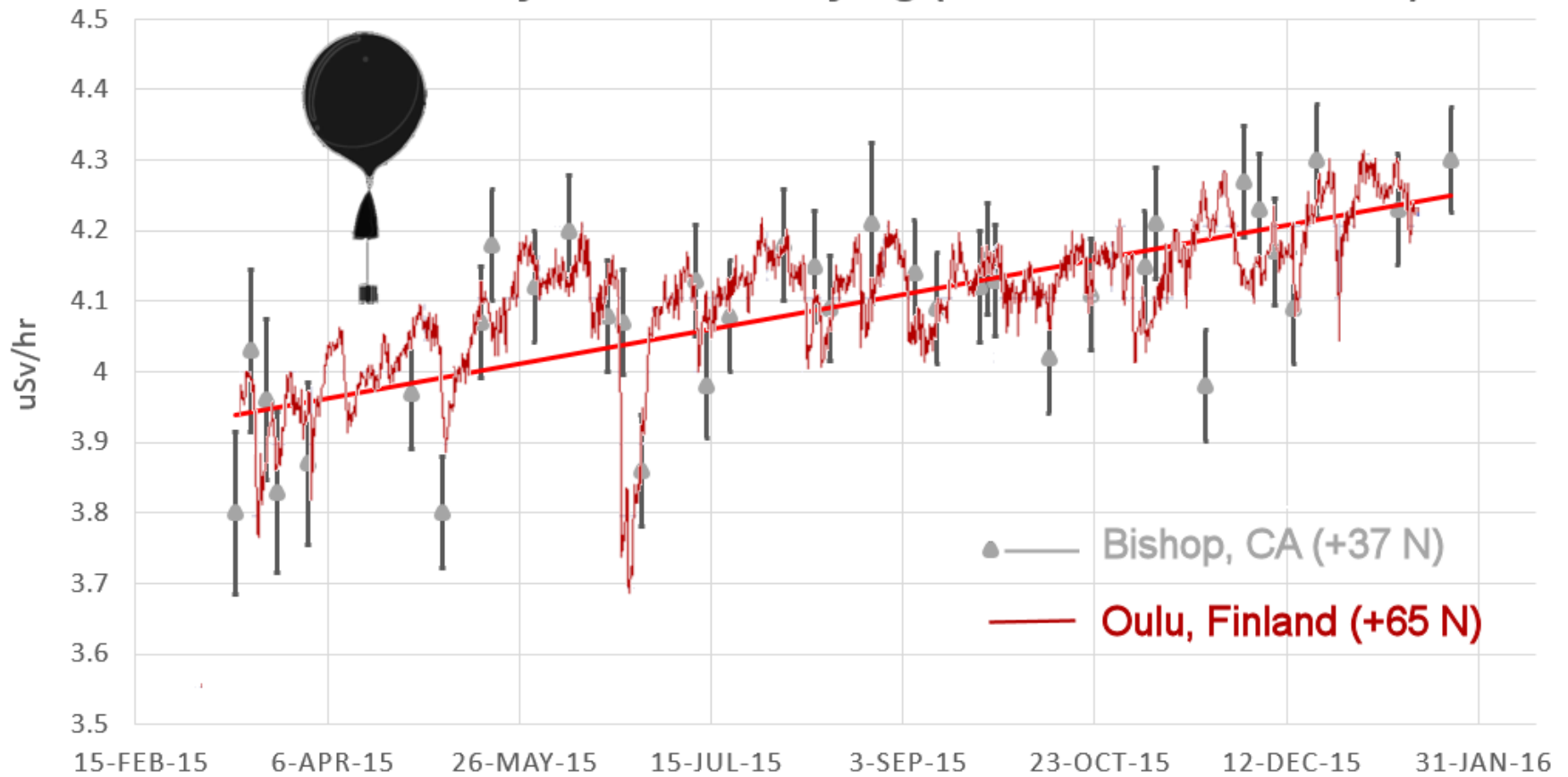


Sunspotless Days (SIDC) Since 1901

A total of over 564 so far this transition 23 to 24

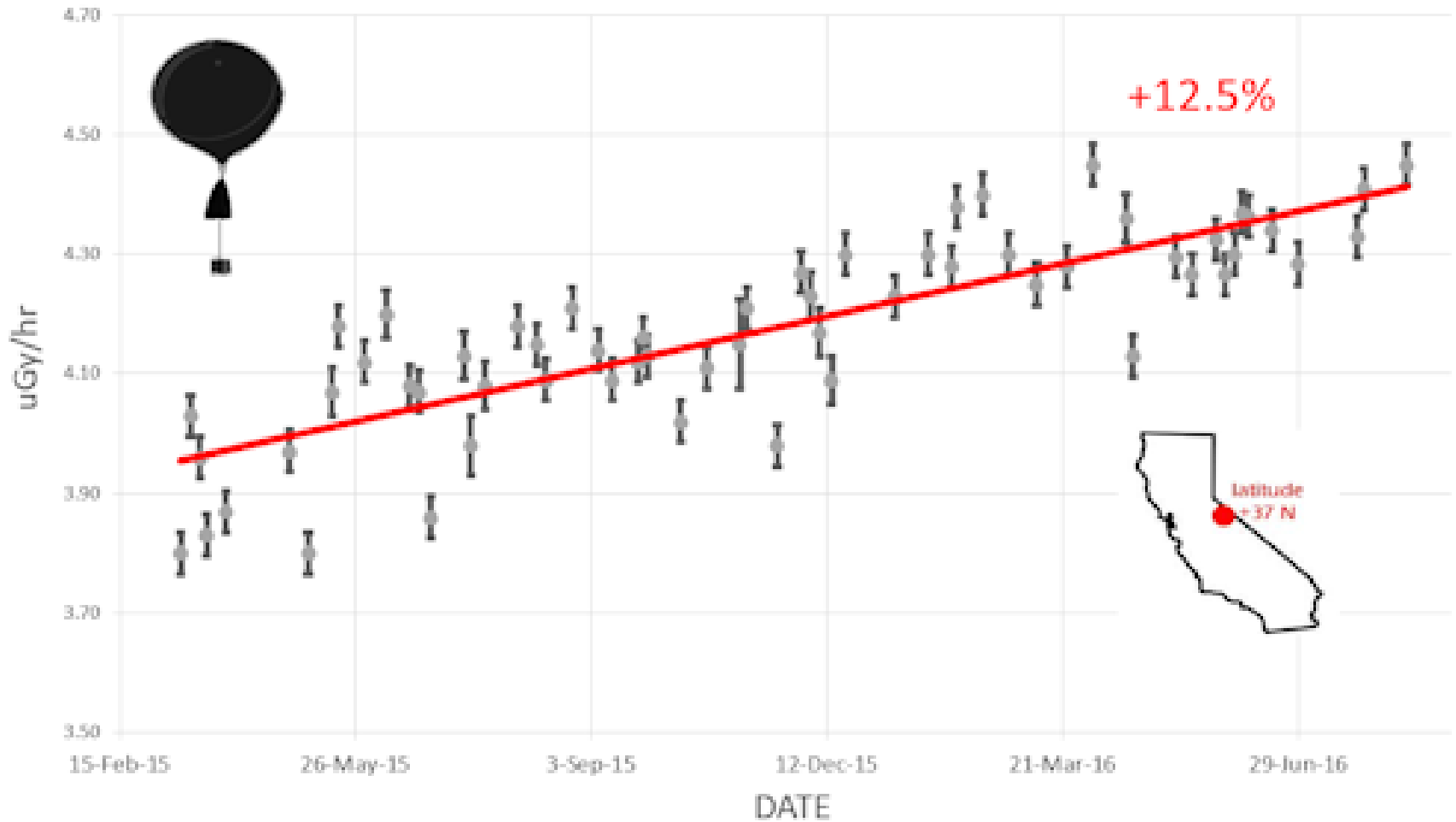


Cosmic Rays are Intensifying (Mar. 2015 - Jan. 2016)

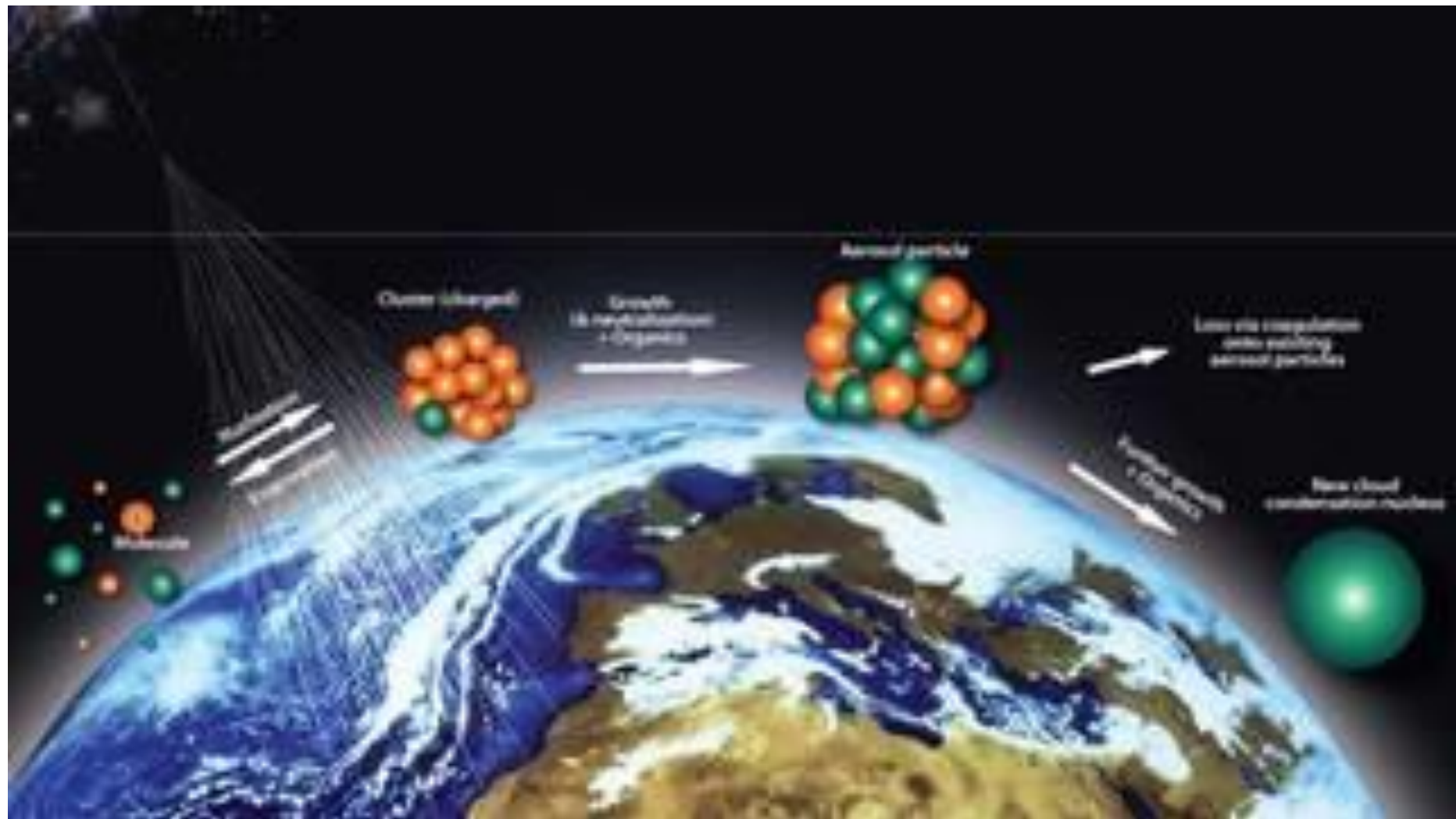


As cosmic rays increase due to lower solar wind hitting out planet's atmosphere, low cloud formation from 15,000-18,500 ft increases, leading to more rainfall / snowfall.

STRATOSPHERIC RADIATION (MAR 2015 - AUG 2016)

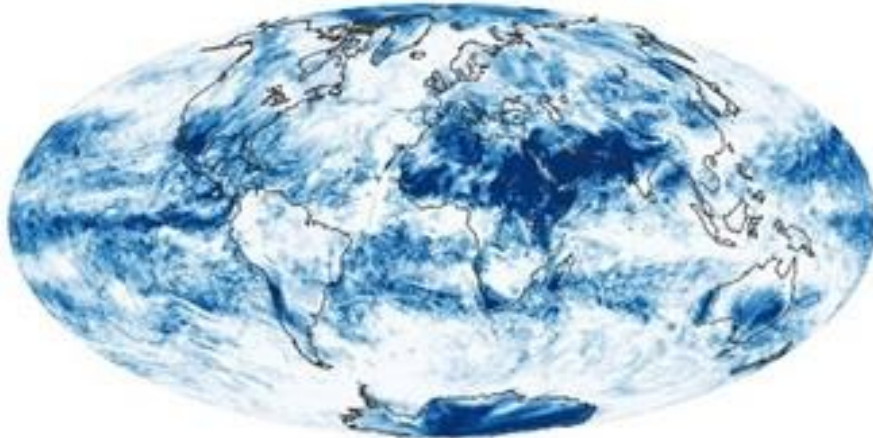


Watch Svensmark's "The Cloud Mystery" for an easy to understand explanation of the phenomenon.

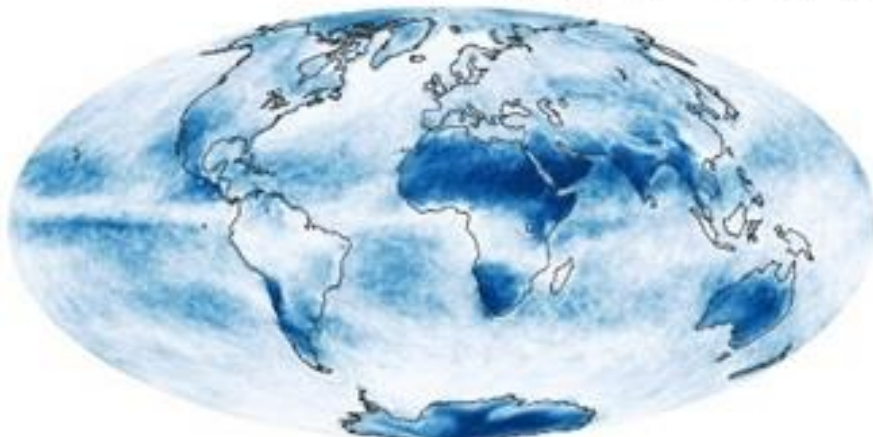


Galactic Cosmic Rays act as cloud Nuclei.

Cloud Fraction



Cloud Fraction

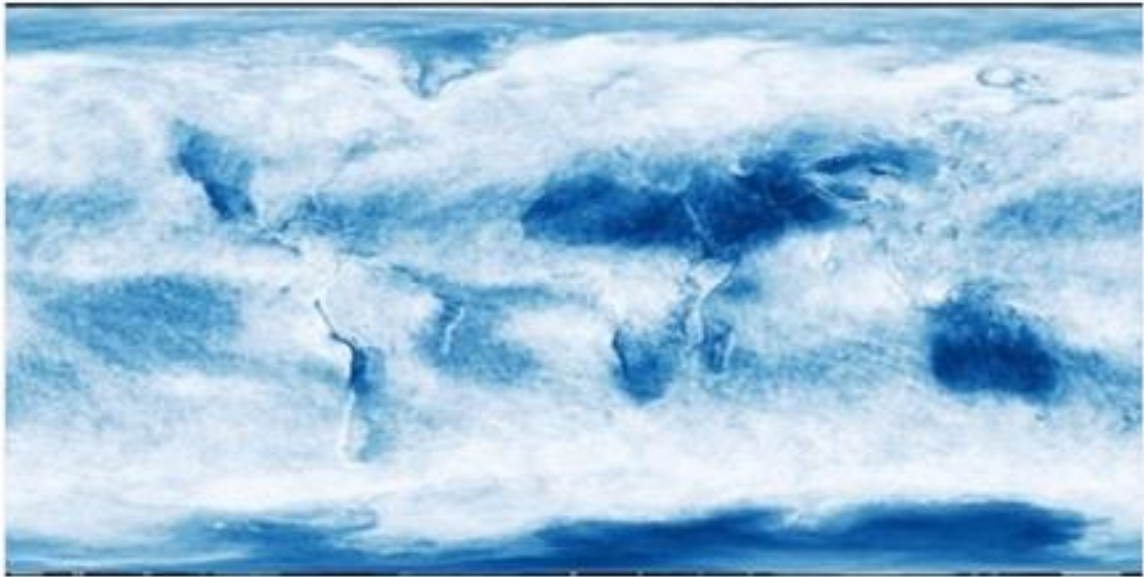


There should be differences in the Earth's cloud coverage if changes are happening.

Dataset you are currently viewing: October 2002

Select Year 2002 ▼

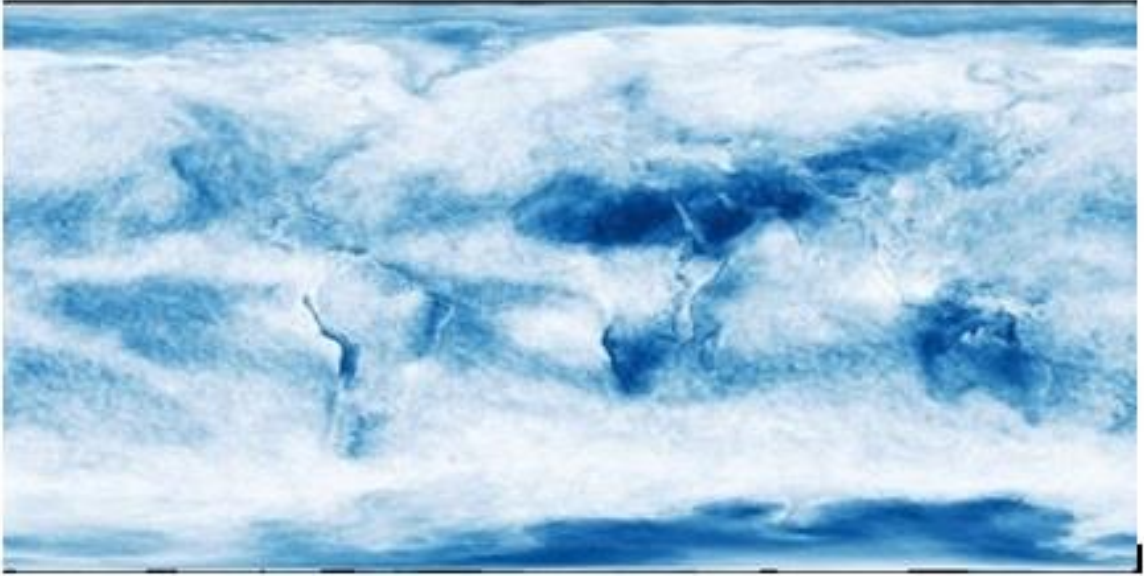
CLOUD FRACTION (1 MONTH - AQUA/MODIS)



Dataset you are currently viewing: October 2015

Select Year 2015 ▼

CLOUD FRACTION (1 MONTH - AQUA/MODIS)

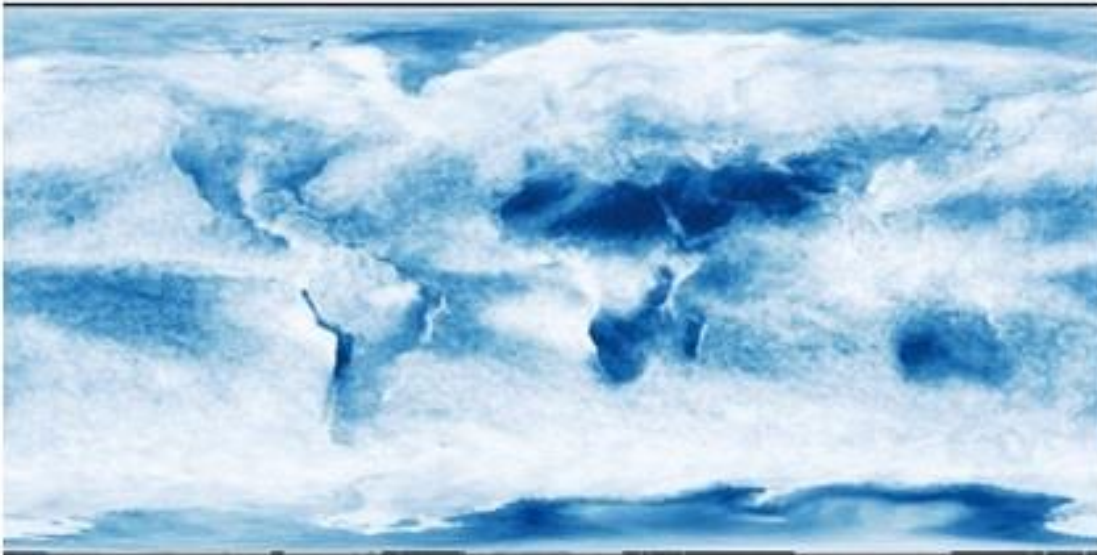


There should be differences in the Earth's cloud coverage if changes are happening.

Dataset you are currently viewing: October 2000

Select Year 2000 ▼

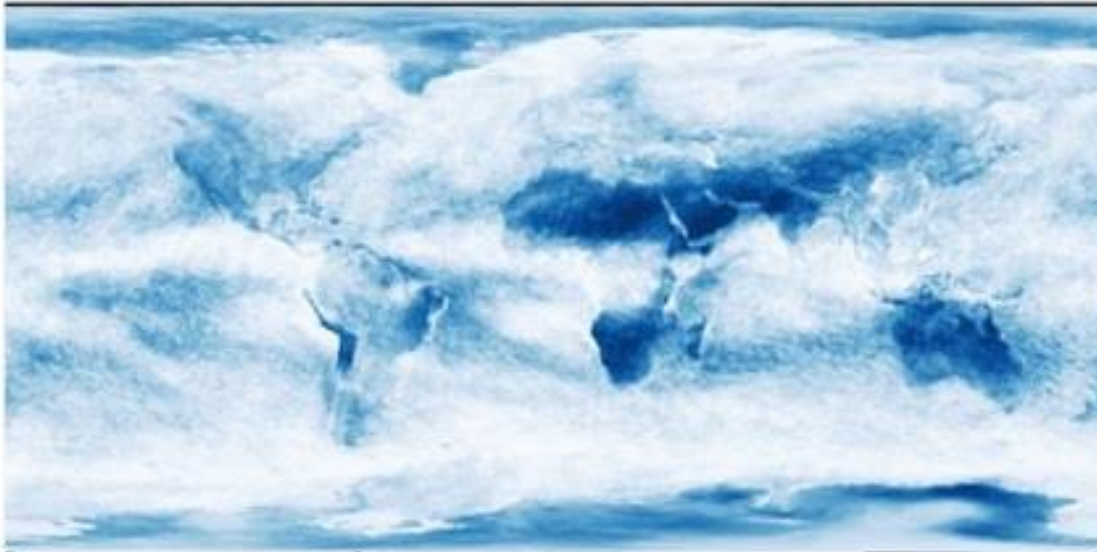
CLOUD FRACTION (1 MONTH - TERRA/MODIS)



Dataset you are currently viewing: October 2015

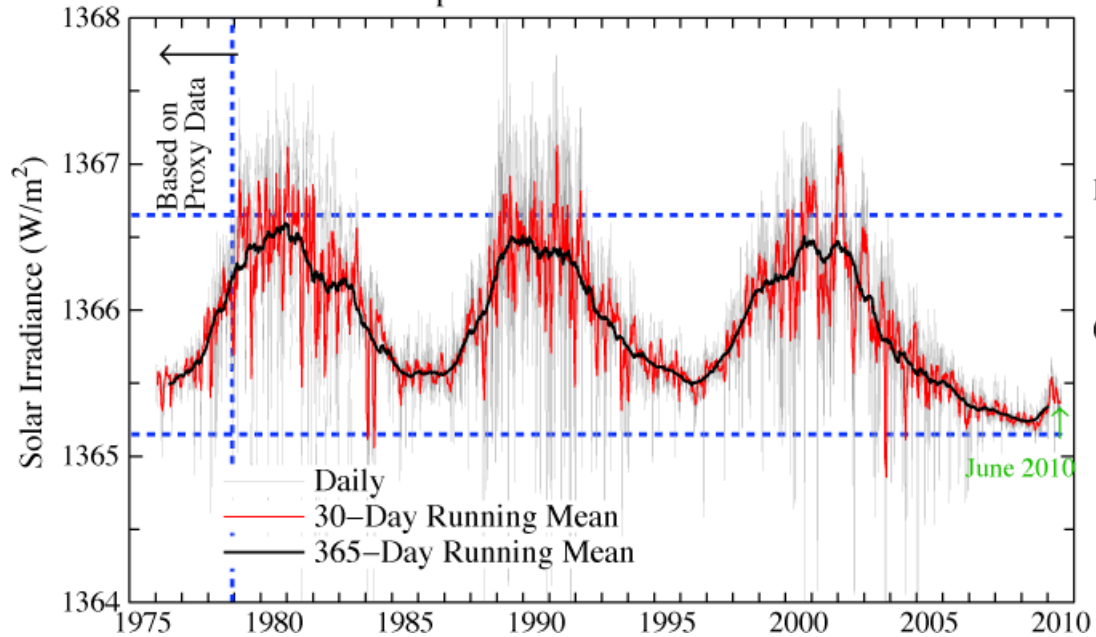
Select Year 2015 ▼

CLOUD FRACTION (1 MONTH - TERRA/MODIS)

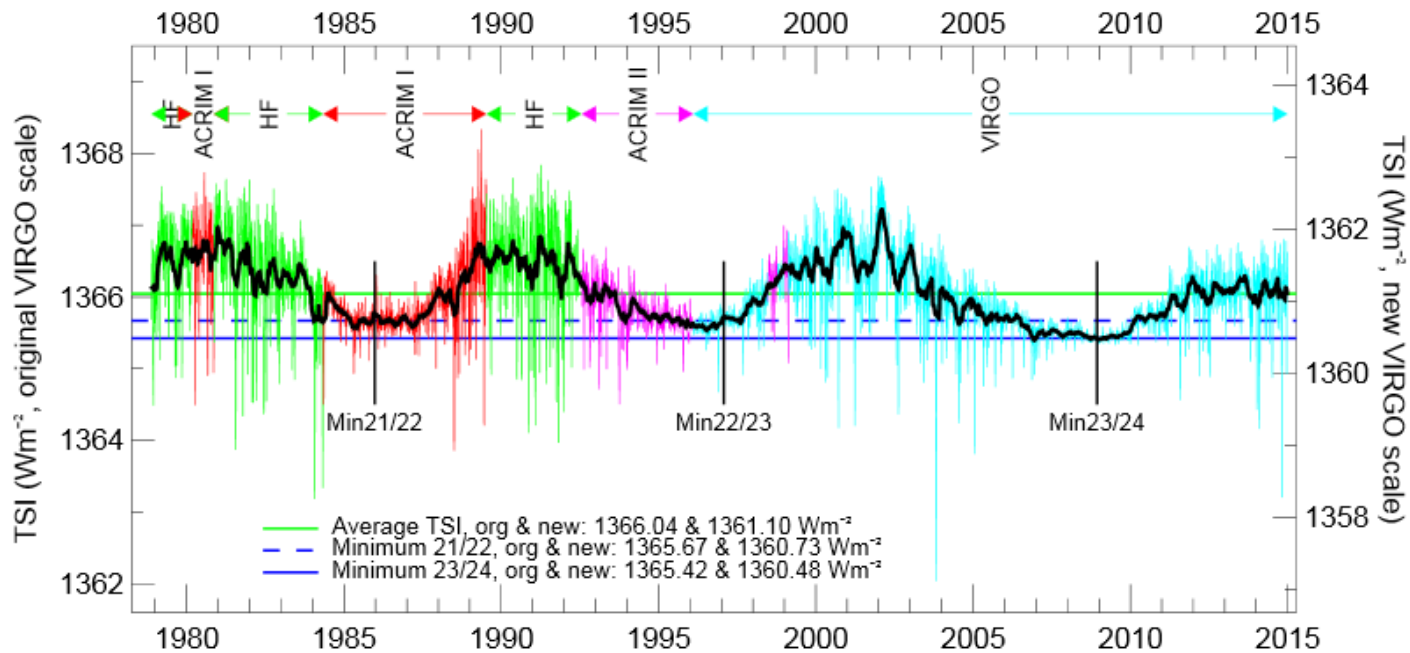


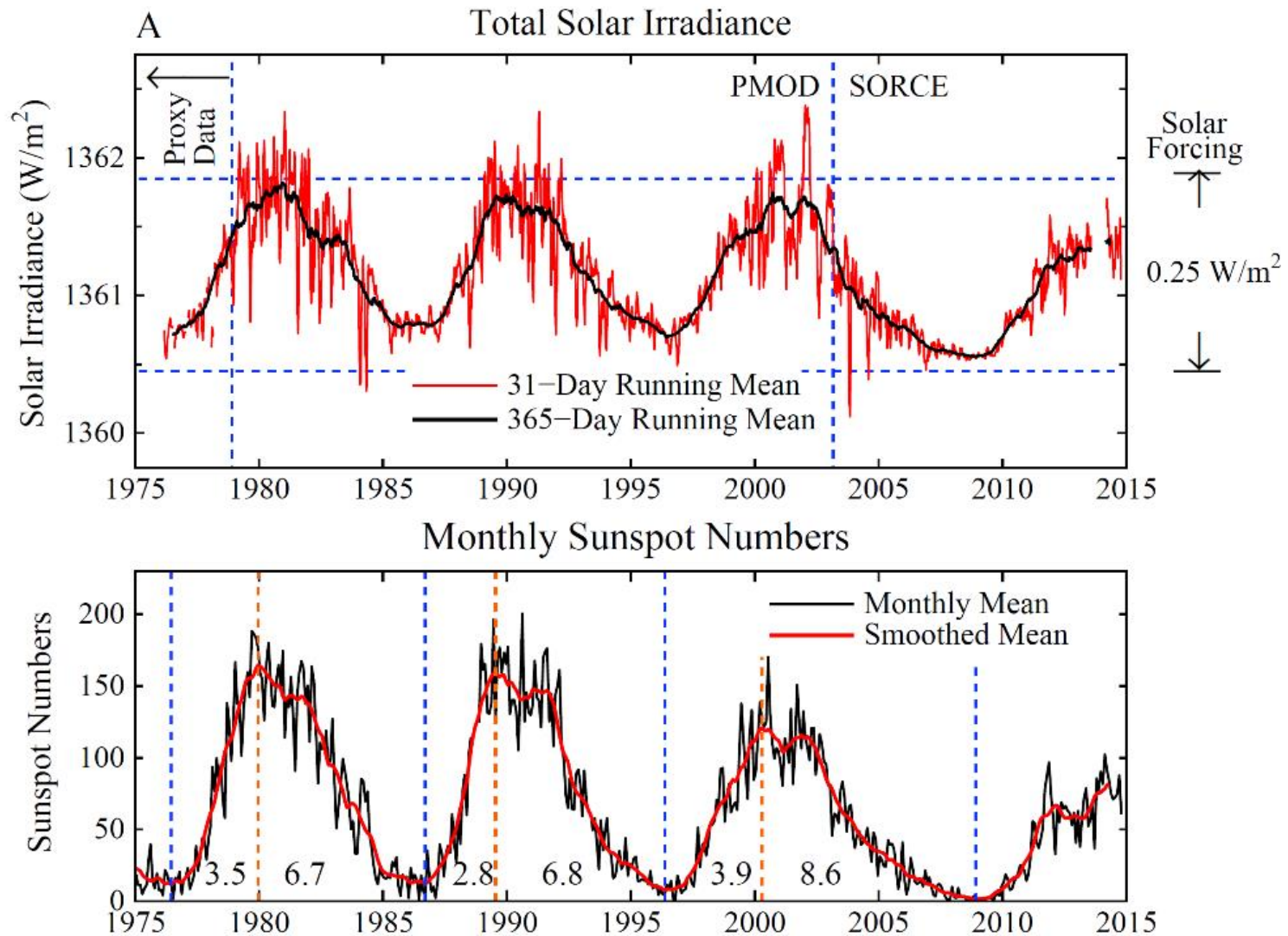
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Composite Total Solar Irradiance

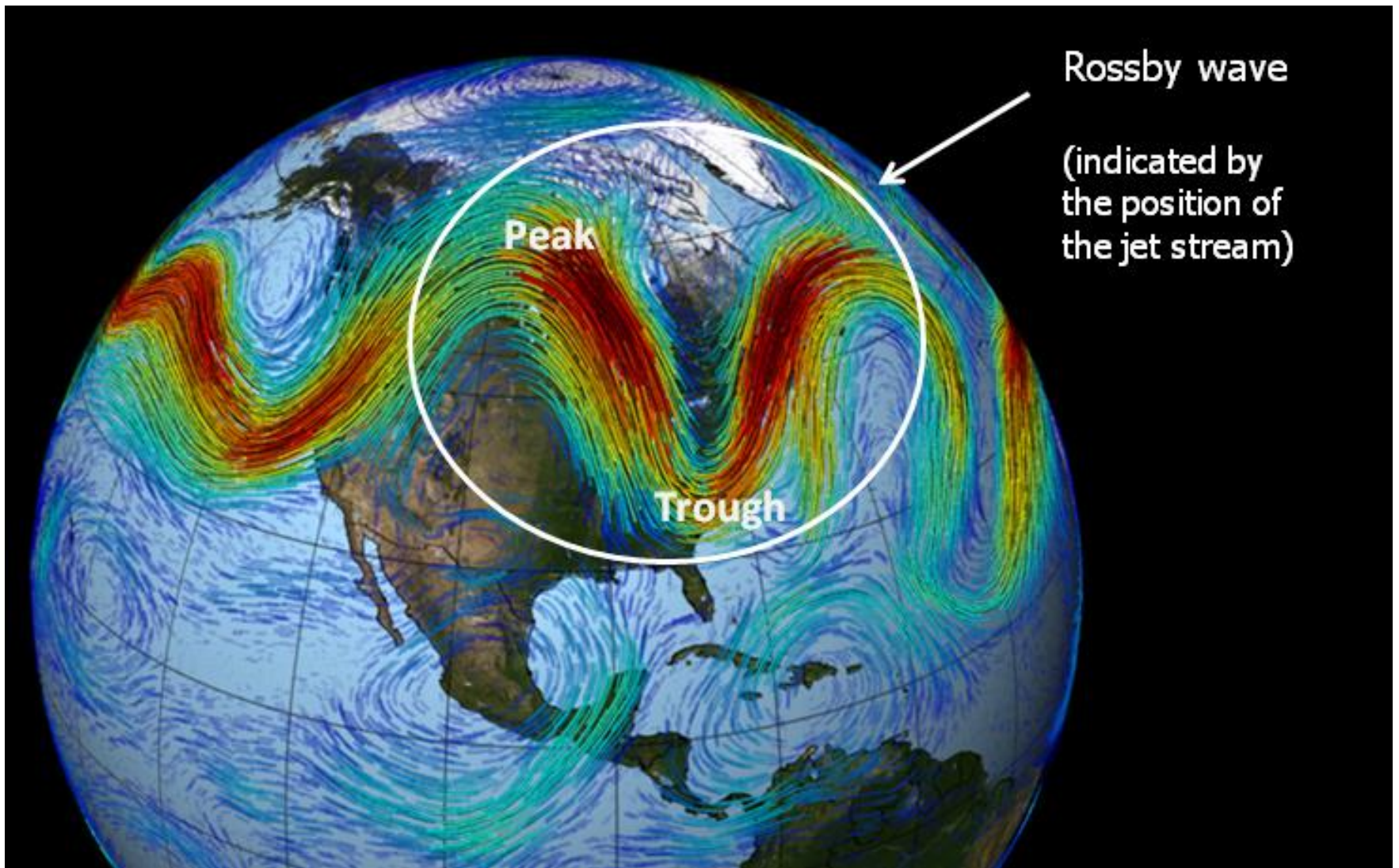


Do you see the decline?





TSI is a measure of how many watts per square meter hit the Earth's surface. Solar panels rely on the same measurements to know where to get the highest output.



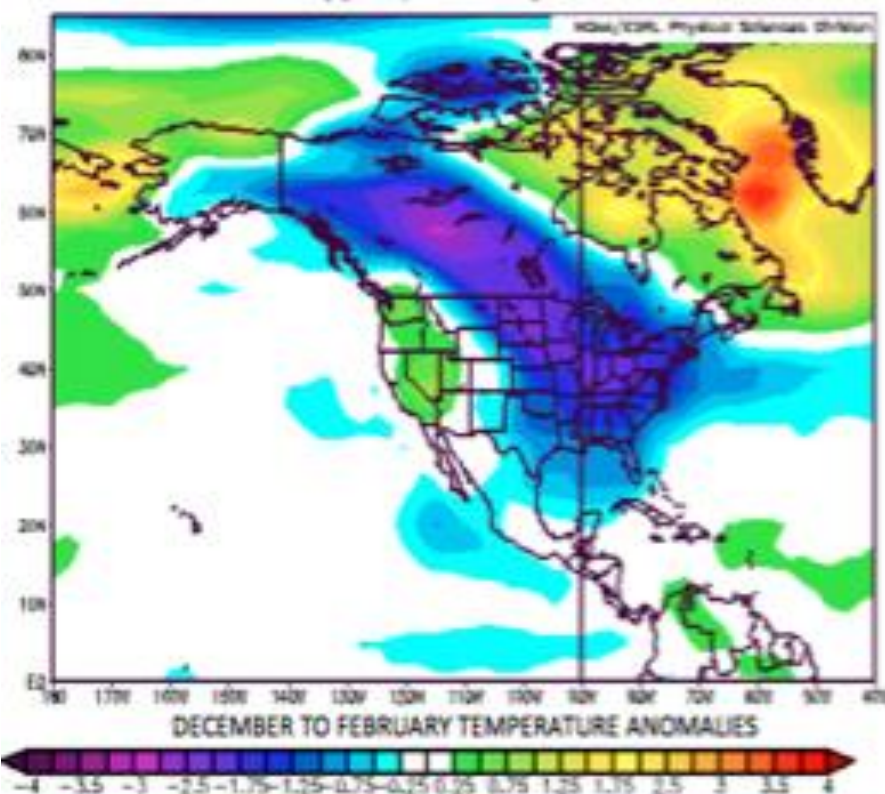
Decreases solar wind pressure allows the jet stream to move out of place. The polar vortex is the way they are spinning it so as not to alarm everyone.

2013/14 Winter Anomalies

Forecast Winter Anomalies

NCEP/NCAR Reanalysis

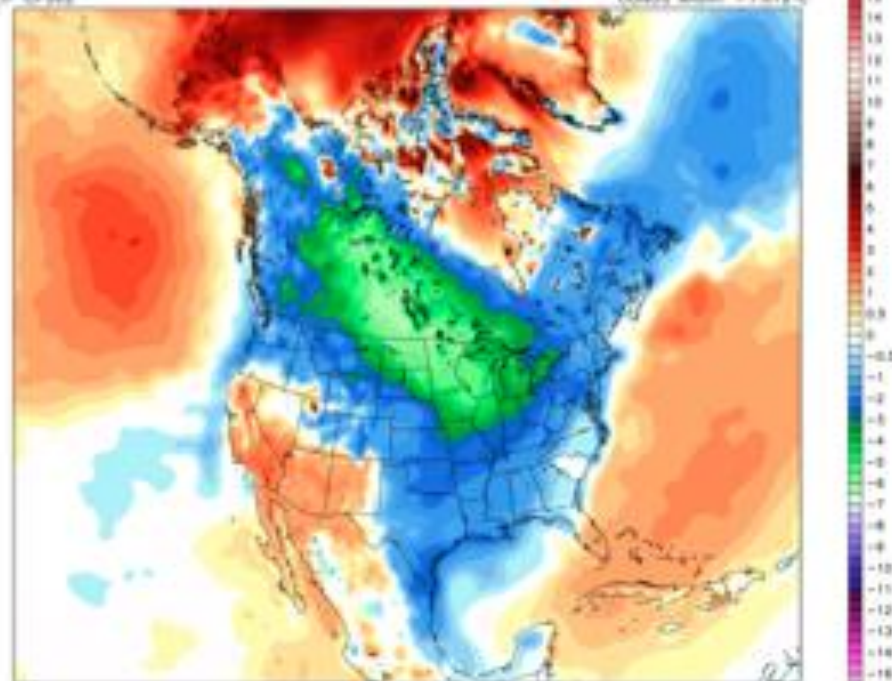
Surface air (C) Composite Anomaly 1981-2010 climo



Actual Winter Anomalies

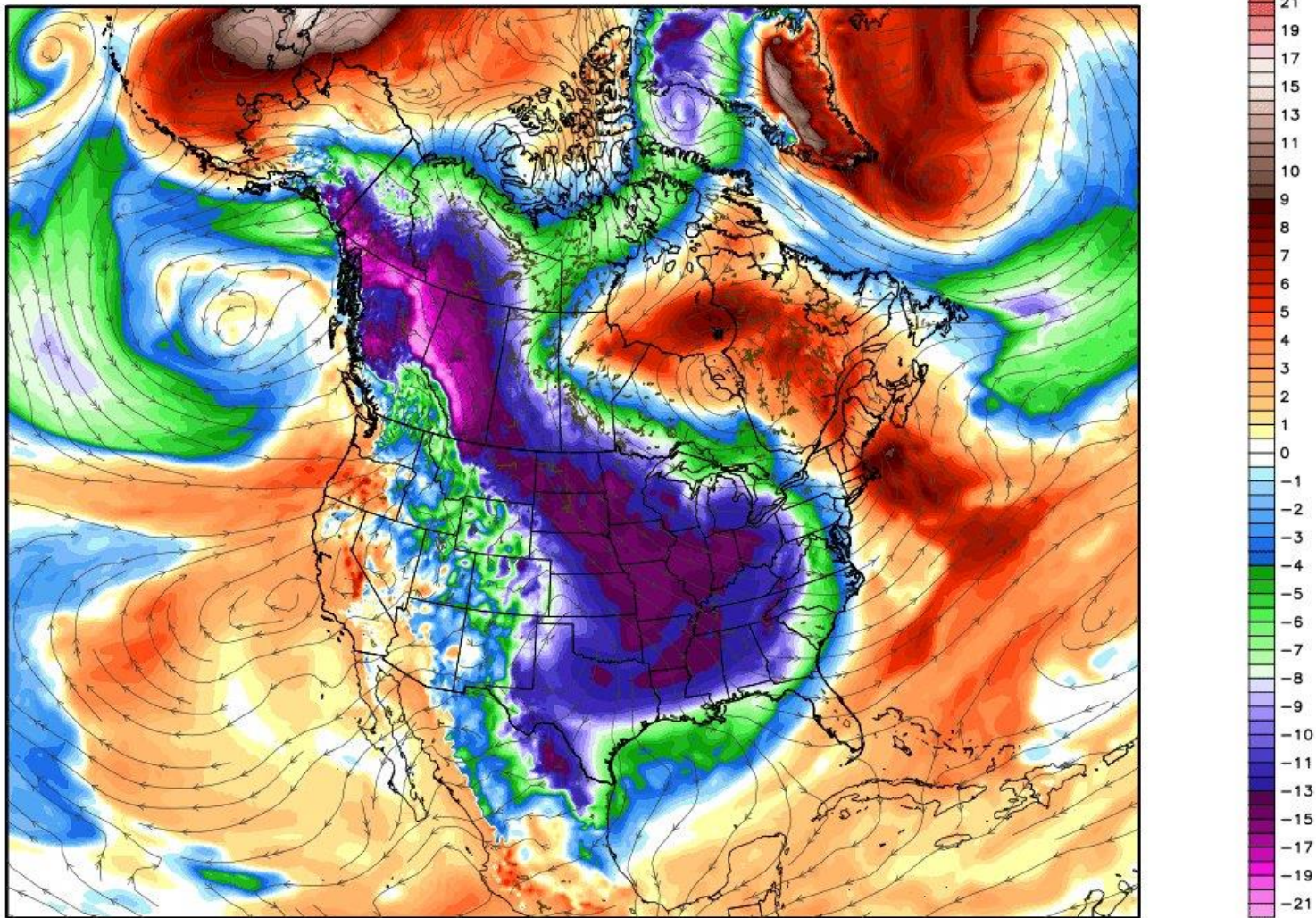
Temperature (2-meter) Anomaly [°C] 00201DEC2013 ---> 00201MAR2014 | Average
(F OFSv2)

COADS Anom. -1.872°C

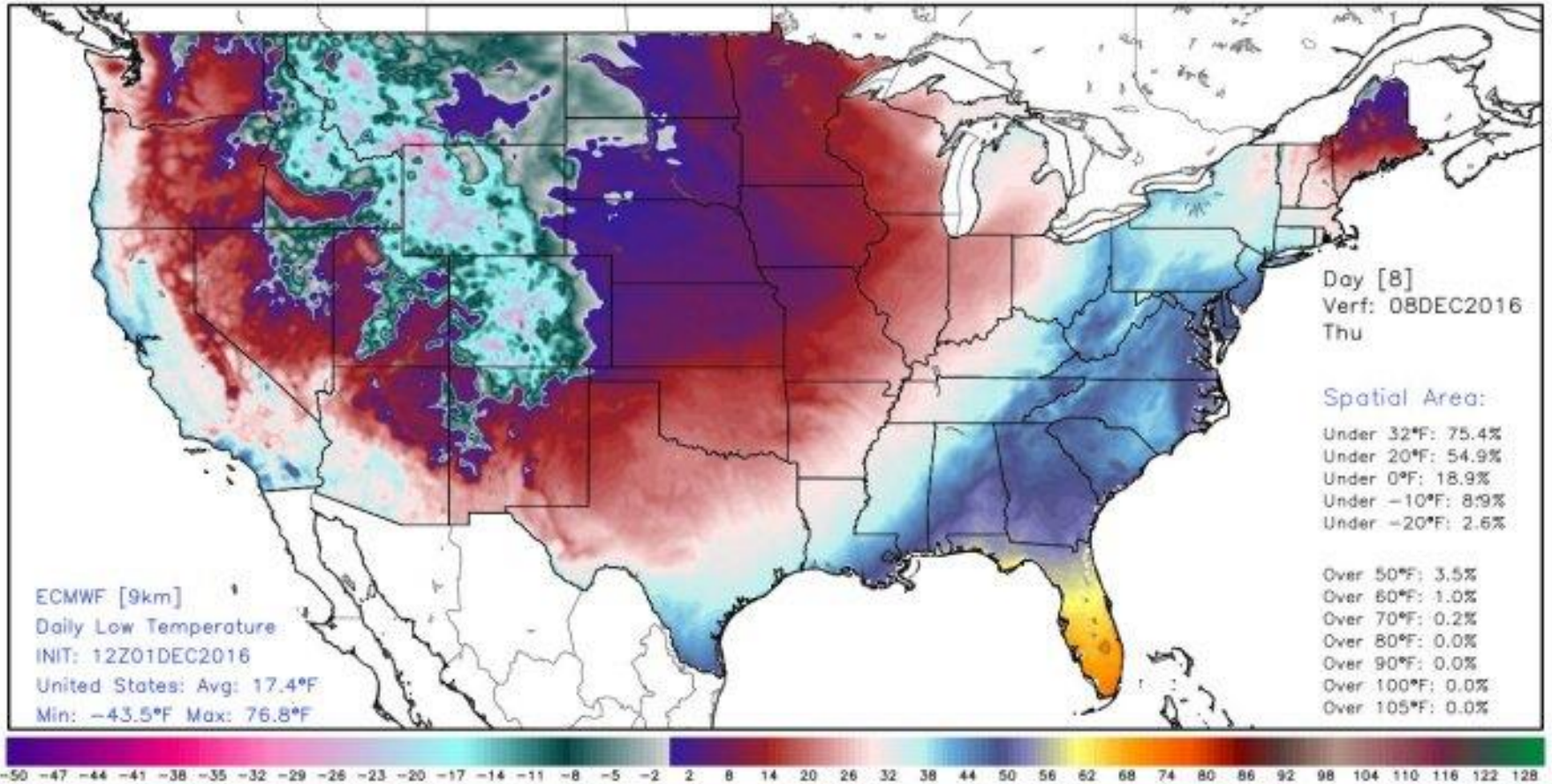


P OFSv2 1981-2010 Climatology | 1979 OFSv2 Analysis Data | Ryan N. Meade | WeatherBLL

*Chicago had its coldest December to March on record - since 1872,
Detroit its snowiest - since 1880*



Pattern is repeating but intensifying each year. 2017-2018 winter will be more intense than 2016-2017



I hope this report is helpful for you to inform others, and inform yourself. All of the key words you need for information searching is included in the slides.

Again THANK YOU FOR YOUR SUPPOORT
on PATREON.

An aerial photograph of a tropical beach. The water is a vibrant turquoise color, transitioning to a deeper blue at the horizon. The sand is bright white and appears soft and powdery. The waves are gentle and create a rhythmic pattern of white foam as they wash onto the shore.

Next Weeks Report

Solar Forecast of Astrophysists.
Can we put a timeline on this?