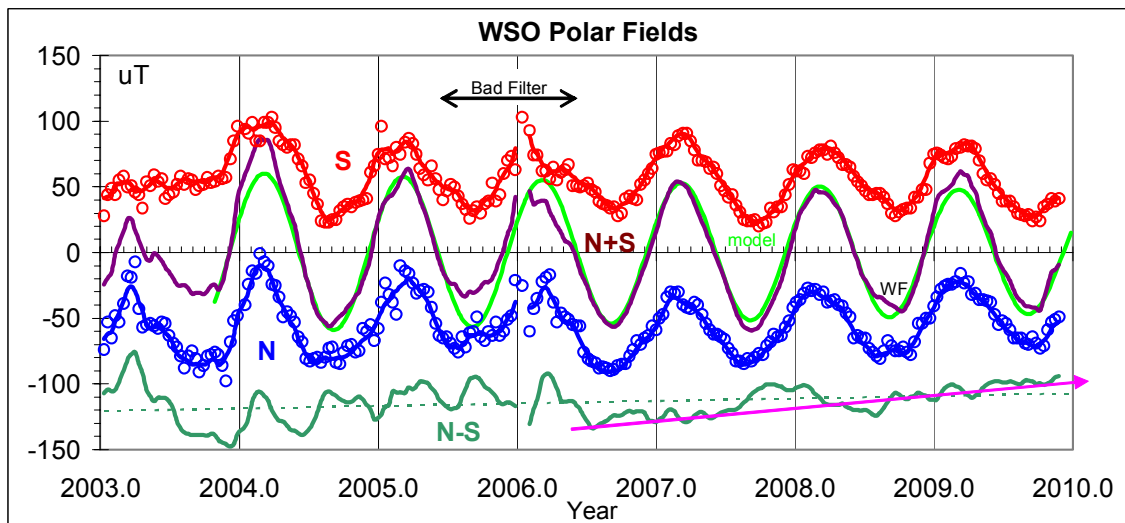
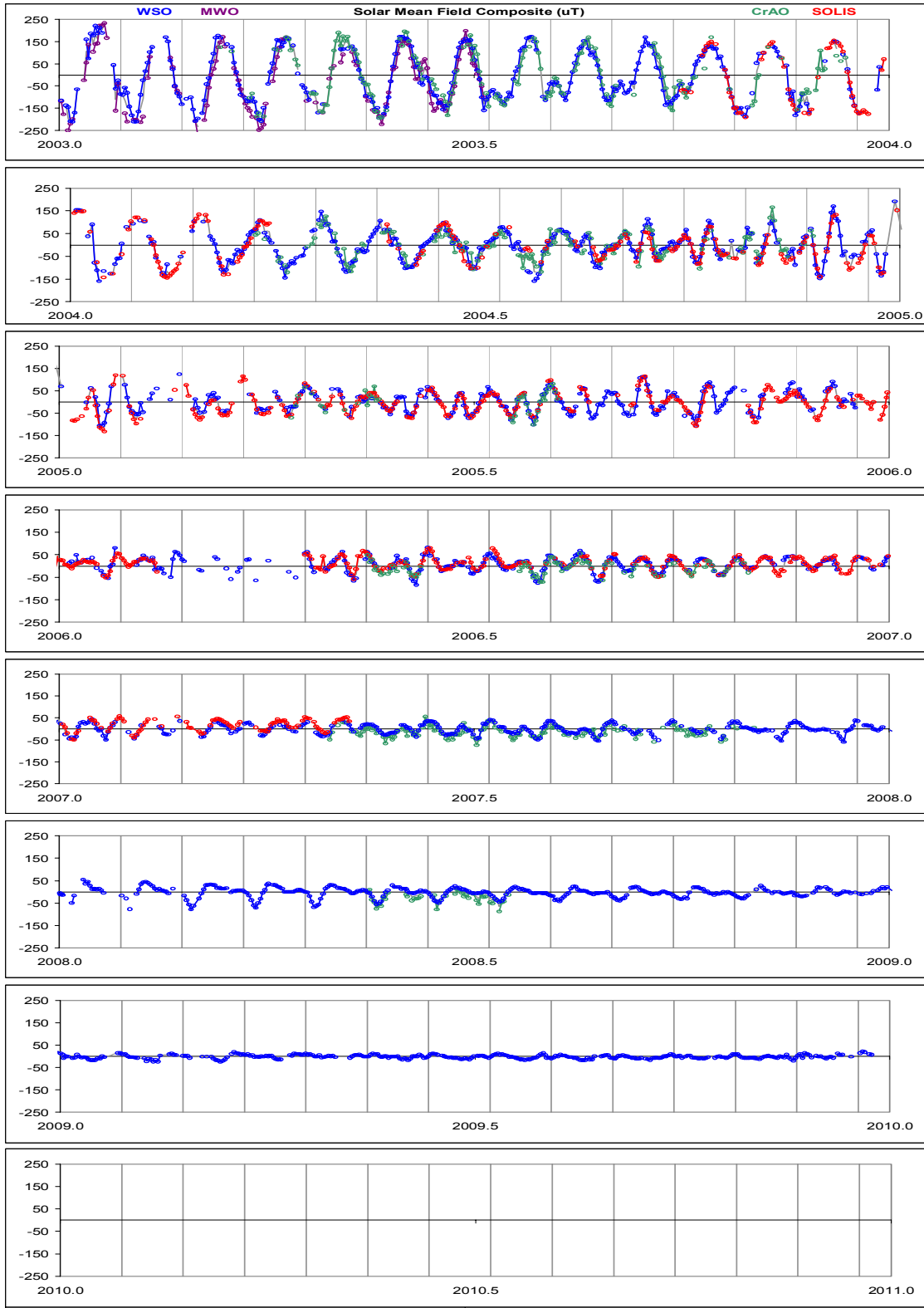


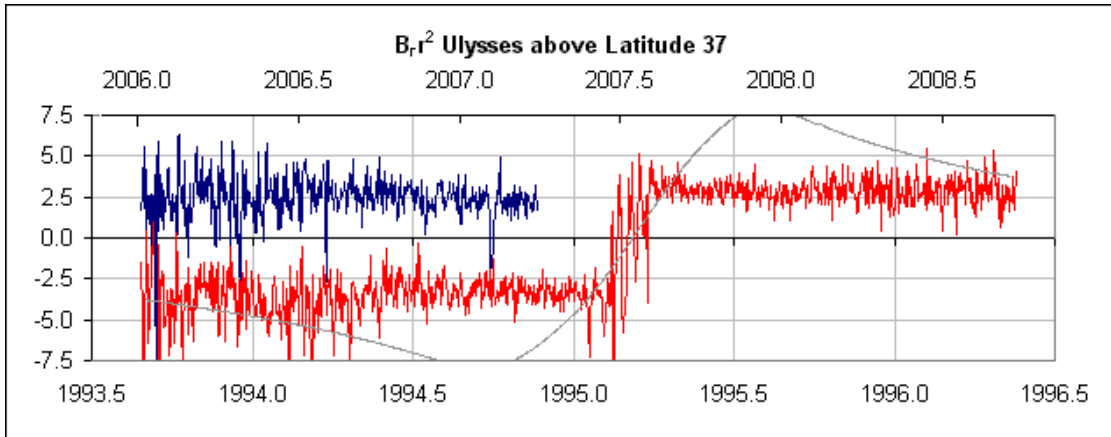
Bartels rotation averages of Interplanetary Magnetic Field Strength, B nT, and Solar Wind Speed, V km/s for the last seven years. Least squares trend lines are shown. The green curve shows a measure of geomagnetic activity calculated from BV^2 .



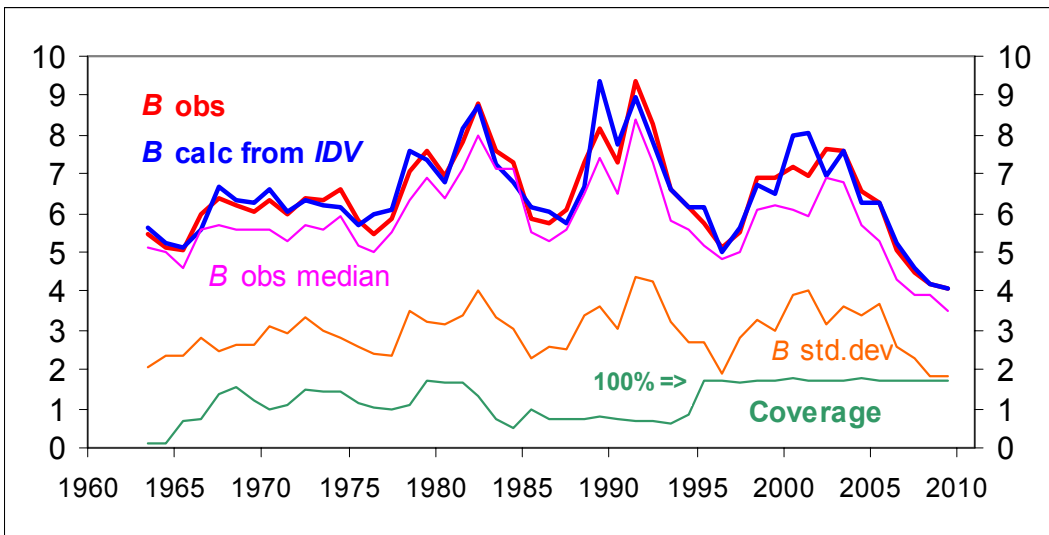
The solar Polar Fields measured at the Wilcox Solar Observatory. The sum (N+S) shows the annual modulation [green curve = calculated from model], while the difference (N-S) is a measure of the dipole moment. The plot shows the field smoothed over one rotation, but plotted every 10 days. The “gap” in early 2006 is due to very bad weather at Stanford. The scatter and weakening polar fields from summer 2005 to summer 2006 are due to a weakening green-light filter causing increased noise-level. The reduced polar fields [WF] late summer 2008 is due to scattered light due to the thousands of wildfires in California.



The Mean Field of the solar disk reduced to the SOLIS scale (which is 1.86 times WSO). The MF is a good proxy for the IMF near the Earth 4.5 days later.

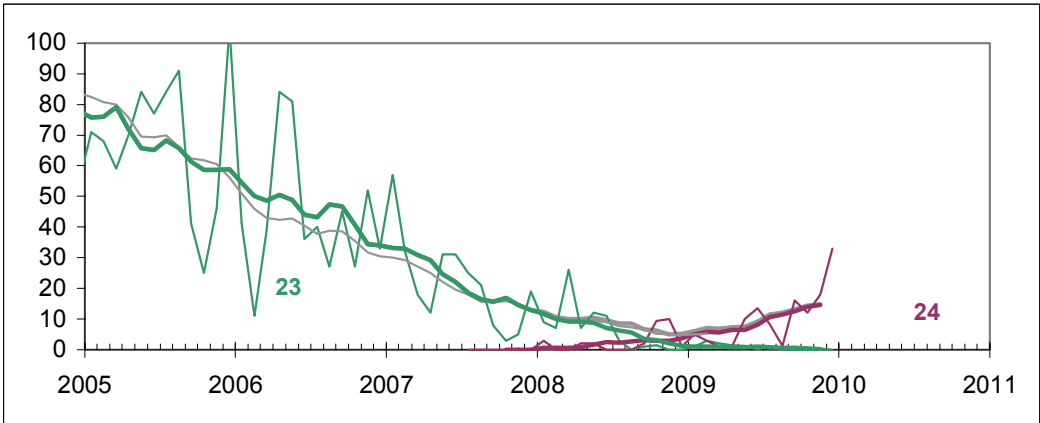
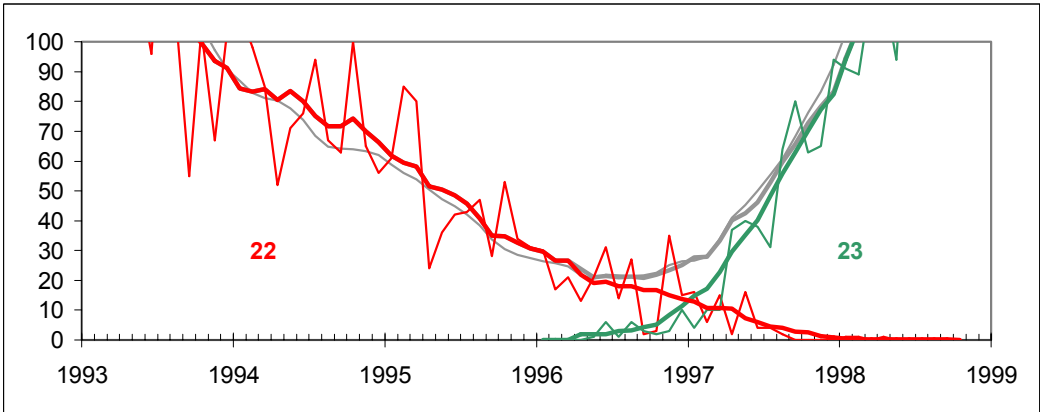
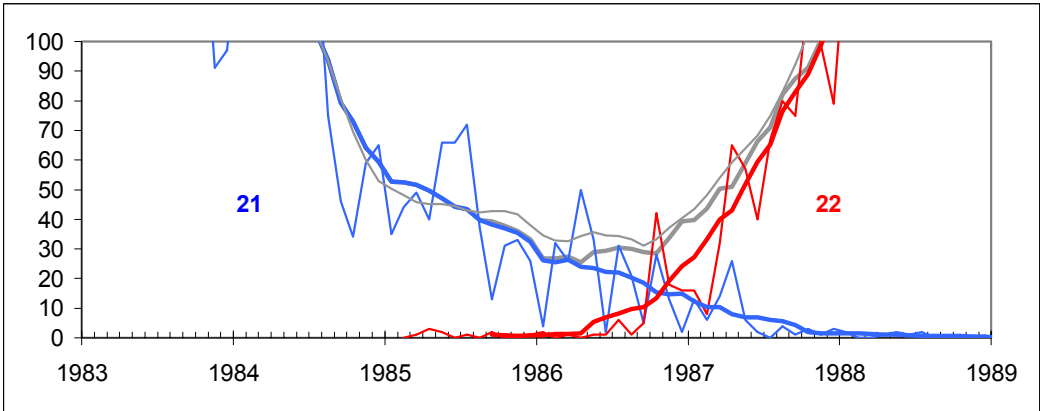
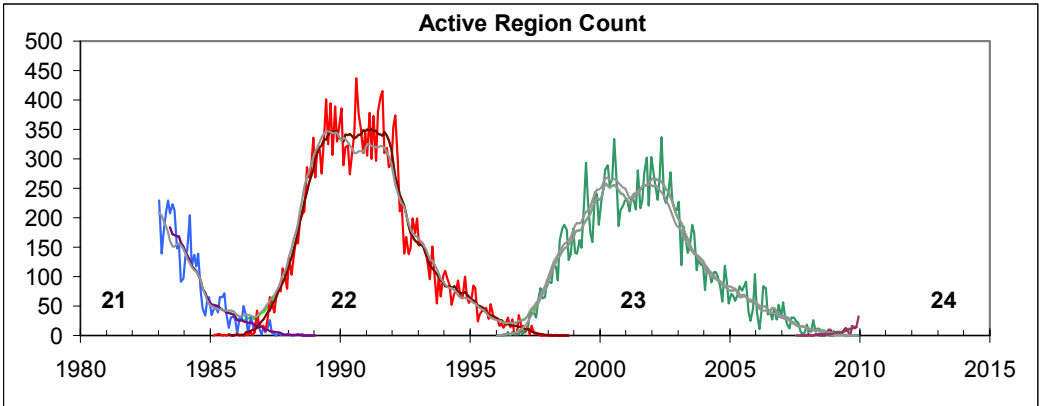


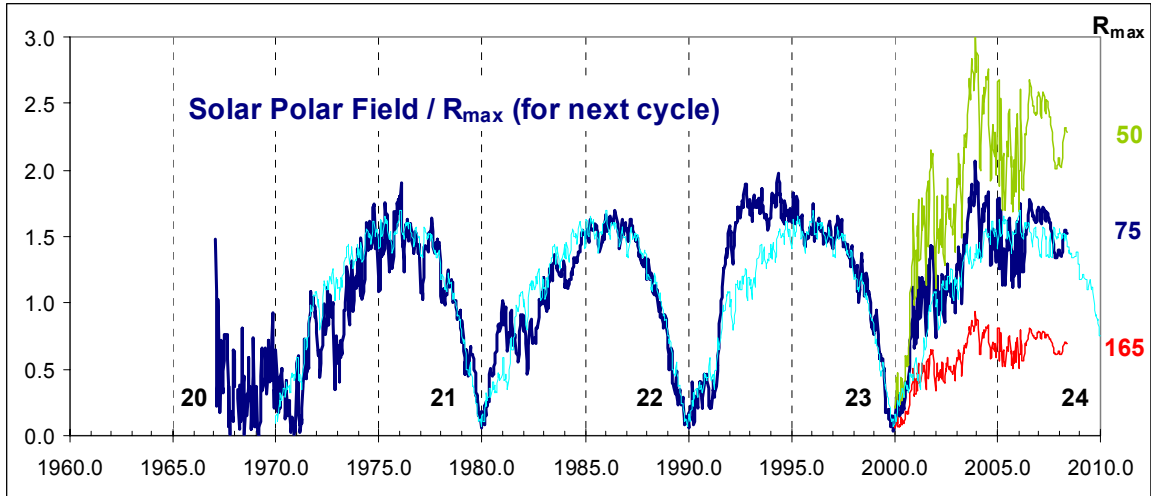
Radial component of IMF measured by Ulysses spacecraft normalized to distance of 1 AU. Recent data (dark blue) compared to data from last minimum (red).



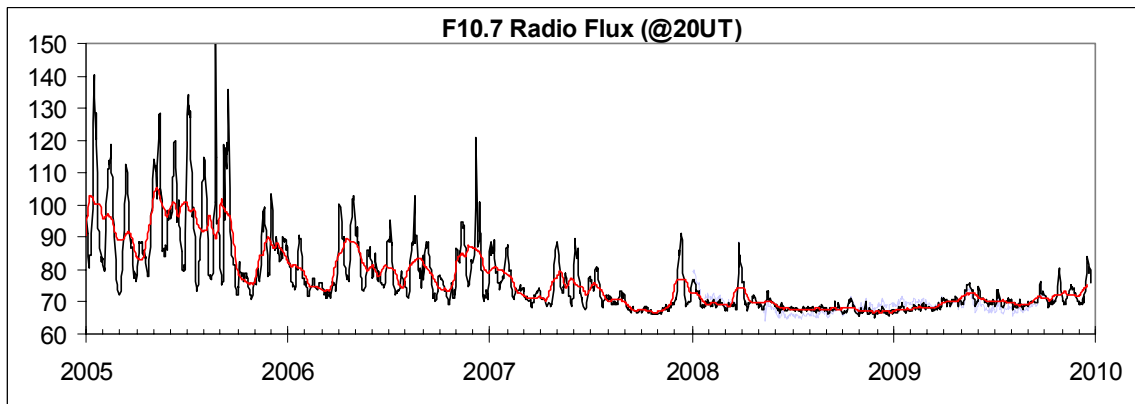
Observed (red) and calculated from *IDV* (blue) yearly averages of IMF strength *B*.

Next page: Count of ‘active regions with spots’ for the past few cycles. The count is really a count of days in each full month the region was visible [and no more than 70 degrees from central meridian] and then summed for every region. Yearly smoothed values are also shown as the ‘smoother’ curves. Different cycles are coded with a different color. The detailed figures show the transitions between cycles. Note that cycle 24 has just barely (but certainly) begun.

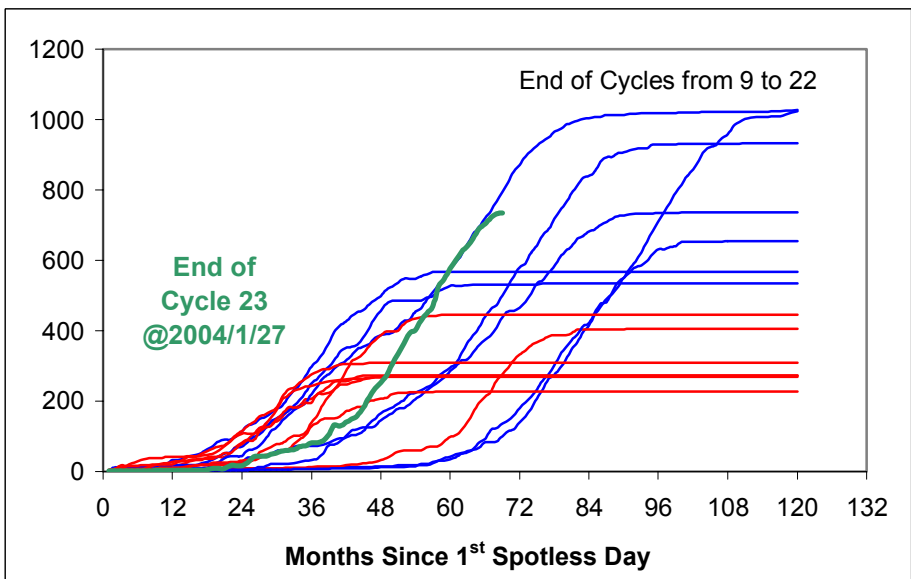
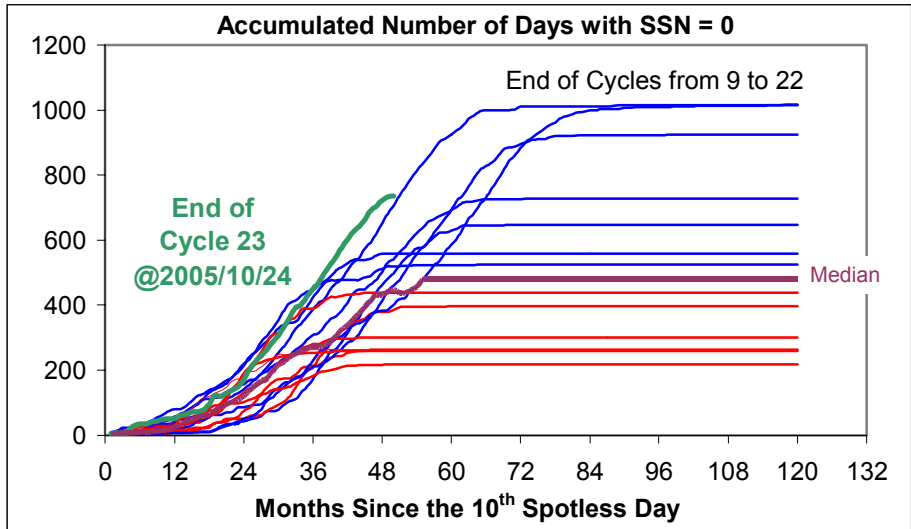




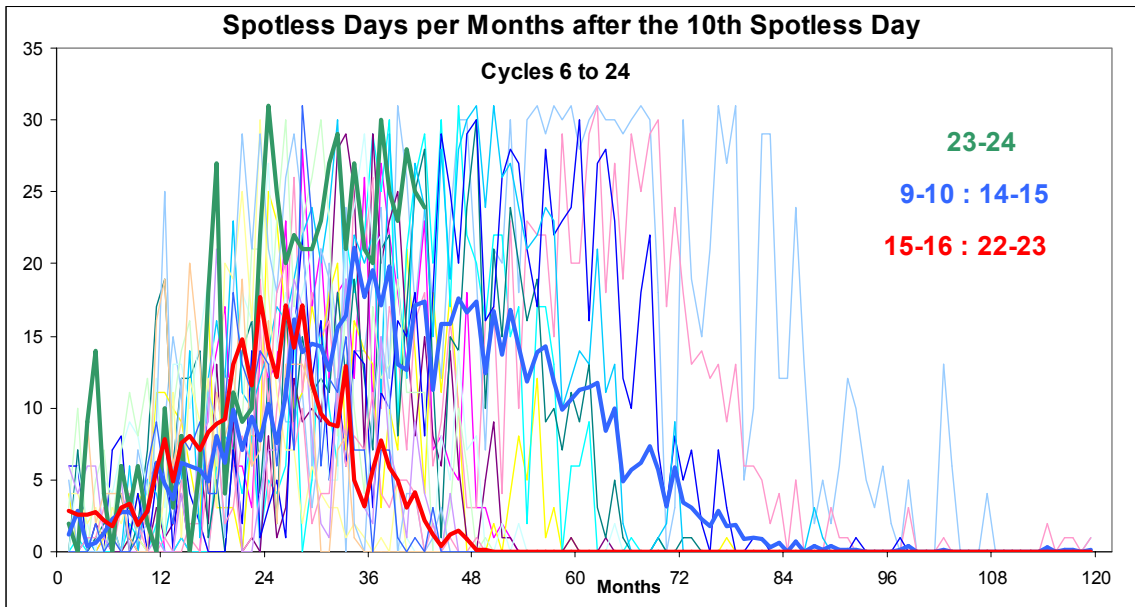
As a measure of the solar polar field we take the absolute difference between the North and South polar fields in the WSO standard 3' aperture, using MWO averaged into the WSO aperture and scaled to fit WSO [for 1976-1982] before the start of the WSO observations. A 'polar field cycle' can be defined from one reversal to the next [roughly from solar maximum to the next solar maximum]. The 'run' of the polar field values from each polar cycle is then divided by the 'size' [R_{max}] of the next sunspot cycle. If the polar fields were controlling R_{max} , this procedure would make all the so normalized polar cycles look alike. The above plot shows the normalized polar cycles in dark blue. The light blue curve is the average normalized polar cycle. For the latest polar cycle [from 2000 to 2013] we don't know R_{max} for cycle 24, so we divide by representative guesses [50, olive; 75, dark blue; 165, red]. Our prediction [75] would be the divisor that makes the latest polar cycle most like the other ones.



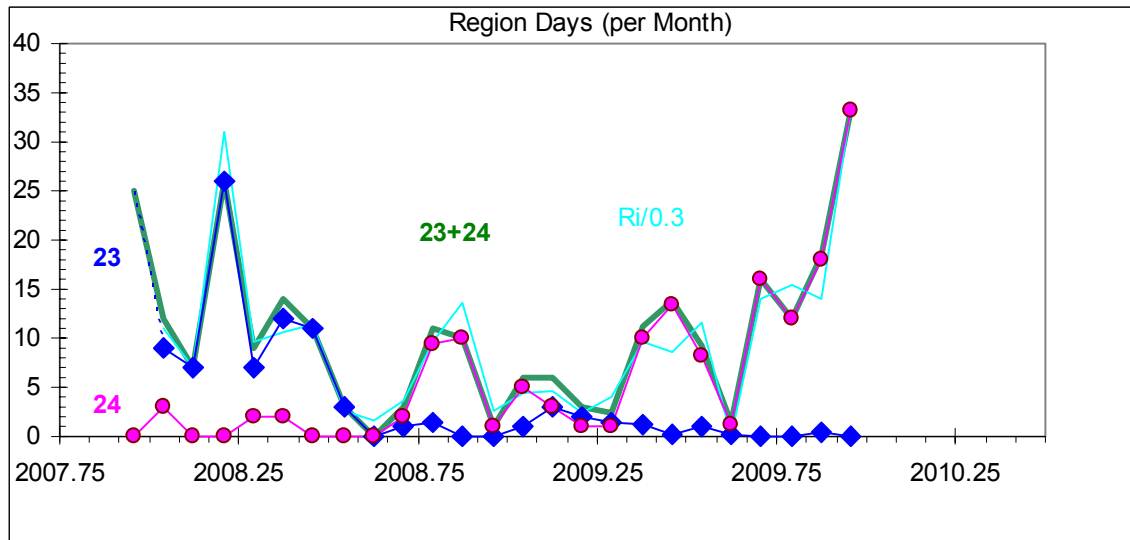
Daily values of the F10.7 cm radio flux at 20 UT.



At some point on the decline of every solar cycle comes the *first spotless day*, then more and more spotless days until the minimum is passed and the number of spotless days [say per month] begins to decrease. So, a plot of the number of spotless days will be an S-shaped curve with the minimum close to the ‘inflection point’. The lower panel shows the number of spotless days per month as a function of the number of months since the first spotless day for cycles 9 thru 23. The smaller cycles being in blue [many spotless days after the inflection point] and larger cycles being in red [few spotless days], while cycle 23 is shown in green. As there is wide scatter, we should use perhaps the 10th spotless day. This is shown in the top panel [with a lot less scatter]. If the new cycle 24 would turn out to be large [i.e. the green curve should turn red] we would seem to be well past the inflection point (and the minimum), contrary to other evidence. Should cycle 24 be small, the green curve will only turn blue after, perhaps, another year or so. This seems to have happened.



The accumulated count is hard to interpret. Above we plot the number of spotless days per month after the 10th spotless day for cycles 6 to 24. A few missing days in the earlier cycles have been interpolated using the 27-day recurrence of sunspots. [not updating]



The number of days per month where a NOAA numbered region was on the disk within 70 degrees of Central Meridian, separately for cycle 23 [blue] and cycle 24 [pink]. A minimum in December 2008 is suggested.

The data on these pages will be updated about every few weeks.