Some Comments on This Solar Minimum

Carl Luetzelschwab K9LA

"Sun Goes Longer Than Normal Without Producing Sunspots" – ScienceDaily, June 9, 2008

"Sun Makes History: First Spotless Month in a Century" – Michael Asher blog, September 1, 2008

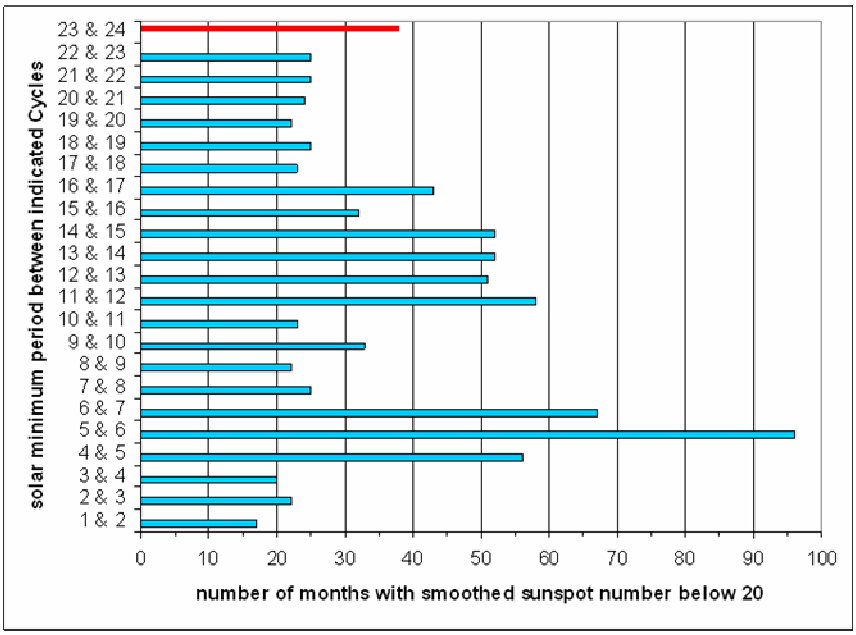
"Solar Wind Loses Power, Hits 50-year Low" – NASA Headline News, September 23, 2008

"Spotless Sun: Blankest Year of the Space Age" – NASA Headline News, September 30, 2008

These recent headlines hint that something unusual may be afoot with Cycle 24. They all suggest we're seeing a longer-than-normal solar minimum period. One way to assess these headlines is to look at historical solar minimum periods.

For each solar minimum period let's calculate the number of months when the smoothed sunspot number was below 20. The value of 20 is appropriate, as once the smoothed sunspot number descends below 20, it only ascends above 20 when the next cycle is truly on its way to its maximum.

The following shows the results for all solar minimum periods. The current solar minimum period is in red.



The most obvious characteristic of the plot is that solar minimum periods are highly variable. The shortest solar minimum period per my definition is 17 months (between Cycles 1 and 2). The longest is a whopping 96 months (between Cycles 5 and 6). The average solar minimum period is 37 months. Note that the current solar minimum period is around 36 months and counting, which is right around the average.

A more subtle characteristic is that the solar minimum periods during our lifetime (back to the one between Cycles 17 and 18) have been around 25 months. This is about one year less than the average, and means we've been spoiled by short solar minimum periods. So when a solar minimum period comes along that is close to the average, we're biased by our lifetime experiences and wonder what's going on.

In a nutshell, historical data indicates nothing unusual is going on – it simply says the Sun is highly variable. So don't take down your 15m and 10m antennas just yet. We will have a Cycle 24. It may not be a real biggie like Cycles 21 and 22, but nonetheless we'll again see consistent 15m and 10m F_2 openings.