

Deepest Solar Minimum In Nearly a Century

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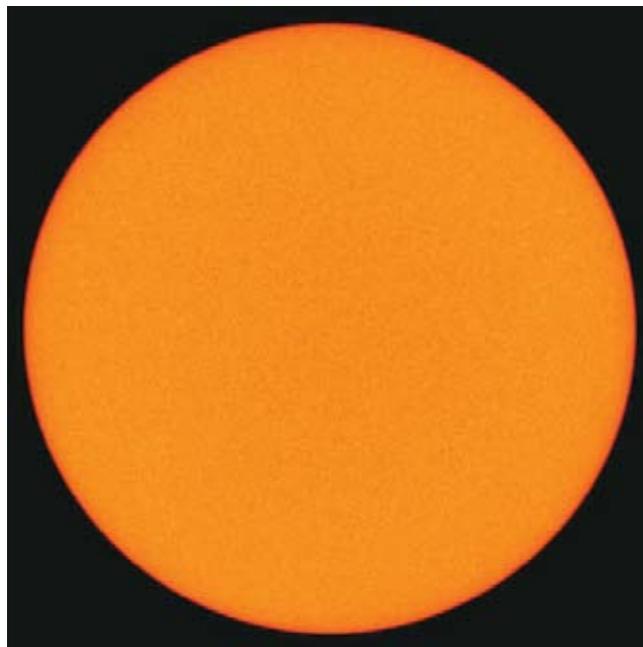
April 9—A continued low in solar activity, as measured by the appearance of irregularities on the Sun's surface known as sunspots, may be responsible for the recent phase of cooling experienced in many parts of the Northern Hemisphere. In the opinion of many specialists, the downturn in solar activity likely marks the beginning of a prolonged cooling period.

The expected cooling will produce many hardships for a human population already stressed by a prolonged downturn in global physical-economic productive capability. But the bright side may be that such bloated windbags as Al Gore and his leaner companion James Hansen, who have led Royal Consort Prince Philip's genocidal global warming promotion, will finally be silenced.

For students of the Sun, the length of the solar cycle, which lasts an average of 11 years but may go longer or shorter, has proven the best historical indicator of short-term climate. At the ends of these solar cycles, sunspot activity first declines, and then picks up markedly, indicating the beginning of a new cycle. The precise relationship between the sunspots, which are thought to be determined by magnetic activity within the Sun, and the energy output of the Sun, is not known. However, long-term studies of the historical record have shown that when the minima in sunspot activity extend beyond the average 11 years, significant declines in temperatures on Earth are experienced. Regular records of sunspot activity go back to the 17th Century.

The current solar cycle, numbered 23, began in 1996, and was expected to reach minimum and transition to solar cycle 24 in January 2007.

It did not. Instead, a prolonged period of excessively



SOHO/MDI

Daily Sun, April 9, 2009: No sunspots.

low solar activity has continued to this moment. In 2008, there were no sunspots observed on 266 of the year's 366 days (73%). "To find a year with more blank suns, you have to go all the way back to 1913," NASA reported in a press release. Since the beginning of the current year, sunspot counts have dropped even lower: As of April 9, there were no sunspots on 89 of the year's 99 days (90%).

The Schwabe Cycle

The approximately 11-year, or Schwabe cycle, was discovered in the mid-1800s by Heinrich Schwabe, a German astronomer and collaborator of Alexander von Humboldt. Schwabe saw that peaks of solar activity were always followed by valleys of relative calm—a pattern that has held true for more than 200 years. The association between longer solar cycles and cooler climate was first demonstrated in 1991 by two Danish researchers, Egil Friis-Christensen, the director of the Danish Space Center, and Knud Lassen, a solar scientist at the Center, in a paper published in *Science*.

Other researchers, including the Australian geologist David Archibald, have confirmed this relationship, and have also found that for every one-year increase in solar cycle length, there is a 0.5° Celsius decline in sur-

face air temperature during the following cycle. Archibald points out that the end of the current solar minimum associated with solar cycle 23 could occur in July 2009, but may continue until January 2010, which agrees with NASA's latest estimate. This means that solar cycle 23 will be 13 years in length and, using the relationship that Archibald found, there would likely be a 1.0-1.5°C (1.8-2.7°F) decline in temperature over the next solar cycle. This possible temperature decrease may not sound like much, but it is twice as large as the 0.6°C increase in average global temperature during the 20th Century. (That small average warming trend was already eliminated by the cooling that occurred in the decade after 1998.)

During the last Little Ice Age, which lasted from the 14th to the 19th centuries, a period of prolonged cold known as the Dalton Minimum (1796-1824), began with a solar cycle that lasted for 13.6 years. That solar cycle, numbered 4, was then followed by two very inactive solar cycles. During this time period, there were reports of wide-scale crop failures and food shortages. If similar conditions occur after this present, ongoing, deep solar minimum, and there is a large drop in temperature due to an inactive Sun, the world could see further stress on the food supply. Areas that had become available for growing food during the recent short period of warming, may become too cold again to grow food over the next two cycles.

The Russian Forecasts

The continued solar inactivity is consistent with forecasts from Russia's Pulkovo Observatory in St. Petersburg, over more than a year. On Jan. 22, 2008 senior scientist Khabibullo Abdusamatov, head of the Space Research Lab at the Pulkovo Observatory, said in an interview with RIA Novosti that, "temperatures on Earth have stabilized in the past decade, and the planet should brace itself for a new Ice Age rather than global warming."

Abdusamatov warned correctly, at the beginning of 2008, that global temperatures would drop slightly that year, rather than rise, due to unprecedentedly low solar radiation in the past 30 years, and would continue decreasing, even if industrial emissions of carbon dioxide reach record levels. According to Abdusamatov's 2008 forecast, "By 2041, solar activity will reach its minimum according to a 200-year cycle, and a deep

cooling period will hit the Earth approximately in 2055-60. It will last for about 45-65 years and by mid-21st Century, the planet will face another Little Ice Age."

Belittling the global warming scare, Abdusamatov pointed out, "According to scientists, the concentration of carbon dioxide in the Earth's atmosphere has risen more than 4% in the past decade—but global warming has practically stopped. Had global temperatures directly responded to concentrations of greenhouse gases in the atmosphere, they would have risen by at least 0.1°C in the past ten years—however, it never happened."

Over a century of climatological studies has demonstrated that longer-term climate is driven by changes in the Earth's orbital relationship to the Sun. Over the past 2 million years, cycles in orbital parameters lasting 20,000, 40,000, and 100,000 years have combined to produce glaciations lasting from 100,000 to 200,000 years over the Northern Hemisphere. The last glacial advance, which ended approximately 12,000 years ago, covered North America, down to the latitude of New York and Chicago, with a blanket of ice estimated to be 1 to 2 miles thick.

The present Earth-Sun orbital relationship is such that the onset of a new glaciation is to be expected at any time soon. The Earth, indeed, has been in a prolonged cooling since the Holocene climatic optimum of 3000 B.C. A descent into a new Little Ice Age, triggered by such short-term variations in sunspot activity as are reported here, is thus a scientific likelihood. For a variety of reasons, the increase in carbon dioxide from human industrial activity has not been able to change the direction of climate dictated by the Sun's output of energy. Carbon dioxide has been much exaggerated as a greenhouse gas. It is not out of the question that the coming Little Ice Age will mark the beginning of a prolonged period of continental glaciation such as the Earth experienced for the 100,000 years prior to the beginning of our current interglacial, about 12,000 to 14,000 years ago.

The immediate possibility of cooling over the next two decades is going to add more challenges in the face of the onrushing global economic crisis. But it is also in times of crisis, that mankind's gift of creativity is of the greatest importance. When mankind uses its creativity, there is no problem or challenge so great that it cannot be solved.