

The astrophysics of Earth climate: Why are the modellers so wrong?

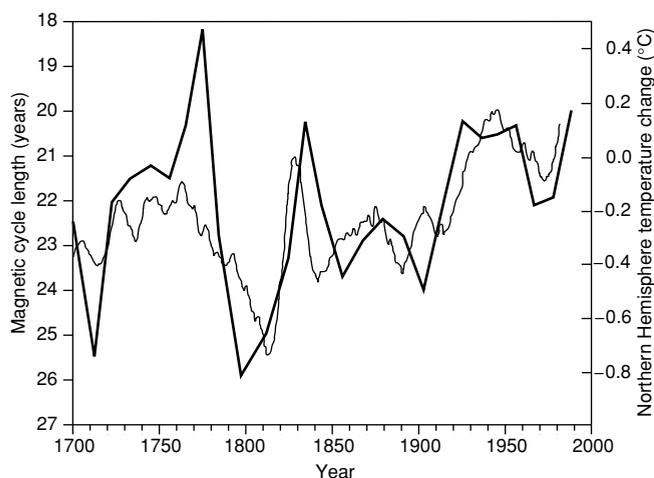
by Elijah C. Boyd

If most of the warming this century occurred before the smokestacks of widespread industrialization appeared, how is it that the computer modellers of climate continue to claim that the same industrialization produced the observed warming? Dr. Sallie Baliunas, Senior Staff Physicist at the Harvard Smithsonian Center for Astrophysics, posed this, and similar embarrassing questions, during her presentation at the Economic Strategy Institute's weekly seminar in Washington, D.C., on April 8.

Industrialization cannot have caused the warming, said Dr. Baliunas. "But, then, what caused the warming of the Earth's temperature up until the 1940s, if not industrialization?"

In answer to this second question, Dr. Baliunas proceeded to examine the variations in the power output of the Sun. More precisely, she scrutinized the long record of variations in the Sun's magnetic turbulence, commonly known as sunspots, and treated these observed variations as a proxy for temperature measurements.

FIGURE 1
Terrestrial climate change and solar activity variation



Courtesy of Dr. Sallie Baliunas

Sunspot cycles are a proxy for temperature, and the variations in the sunspot cycles (solid dark line) cohere almost perfectly with global temperature variations (solid line).

In the last 100 years, she said, the global average surface temperature of the Earth has risen about 0.5°C. While the magnitude of the rise, as predicted after the fact, by the computer simulations, seems to agree with the observed temperature rise of 0.5°C, the timing of the rise is off, and therefore, most of the 0.5°C rise must be attributed to natural causes. Only a small part of the 0.5°C rise—no more than a few tenths of a degree—could have been caused by man-made "greenhouse gases."

Since the warming occurred before there was an increase in man-made carbon dioxide, in the form of industrial emissions, such as fossil fuel burning, what did cause a rise in the Earth's temperature? And, where does the heat originate which is causing this alleged global temperature increase? Is the source (the Sun) getting hotter, or is there some magic catalytic power, previously unknown to chemistry, causing carbon dioxide gas, to act like some hyper-catalytic gaseous superman?

Furthermore, the question arises, is there a cooling cycle to match the alleged global warming? As Baliunas noted, in response to a question from this reporter, we are due for a new ice age, and yes, parts of the northeast United States are once again due to be covered by a sheet of ice a mile thick. Before the onset of the well-paid computer modellers, she said, climate scientists were preoccupied with the task of discerning the perfection of the Milankovitch Cycles, the long-term solar-astronomical cycles of solar insolation, worked out by the Yugoslav climatologist Milutin Milankovitch, which determined the ice ages.

Baliunas reminded the audience that the Milankovitch Cycles of solar insolation have tracked the Earth's glacier formation and melting for millions of years. "We astronomers are used to thinking in terms of millions and hundreds of millions of years, if not billions of years—these tens of decades of data [of the computer modellers] are but as an instant in the astronomers' view of the universe," she said.

The role of sunspots

An astrophysicist by training, Baliunas discussed why she originally became interested in understanding the "why" behind the 11-year sunspot cycles. Our star also has an enormous magnetic envelope, the magnetosphere, which partially shields the Earth from barrages of cosmic rays (but that very



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interesting part of the story, how cosmic rays contribute to the formation of the Earth’s clouds, and how this relates to real climate change, will have to wait for a future issue).

Baliunas said that if the Sun has changed brightness in the way the magnetic records have indicated, then changes in the Sun explain more than half of the variance of the temperature record from 1880 to 1993. A brighter Sun, she said, may be the explanation for a substantial part of, and possibly most of, the 0.5°C global warming observed in the last 100 years.

Baliunas’s presentation also reviewed the close fit of the variations in the sunspot cycle to the global temperature variations from the 1700s to the 1980s (**Figure 1**). The length of the sunspot cycle is an interesting proxy for changes in the Sun’s brightness, she said. Figure 2 compares the sunspot cycle length with surface temperatures going back to the 1700s, and the correlation is nearly perfect.

Baliunas’s attack on the insufficient scientific support for the proclamations of the latter-day, computer-model-equipped doomsayers of the United Nations Intergovernmental Panel on Climate Change, the IPCC, was refreshing. Given the propaganda barrage of the climate modellers and their media and greenie support groups, it is good to have some science presented in Washington to counter the catastrophist Malthusians. It would be even better to have qualified scientists, such as Baliunas, force a return to the real climate science, which considers the long-range solar-astronomical cycles that show that the Earth is headed into a period of global cooling.

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