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Our mission is to restore our constitutional republic and its defense of our unalienable rights as individuals to life, liberty and property.

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The Year of the Quiet Sun, Part I

by Bob Bowman

For a basic explanation of earth's climate system, in this year of the quiet sun, read *Climate Confusion*, a 2008 book by Dr. Roy W. Spencer, climatologist, NASA weather satellite scientist, and computer modeler. He lucidly describes how climate is driven by (1) the sun [the source of nearly all our heat], (2) the earth's surface [both land and ocean], and (3) earth's atmosphere [the air and its greenhouse gases]. The usual story is that save for our greenhouse gases, earth would be locked in an **ice age** and humans would not likely exist. True, but Spencer takes a more useful viewpoint. He notes that save for our atmosphere and its weather, our greenhouse gases would make the earth **too hot** for us to exist here.

Simply put, the sun warms the earth, and as earth warms, it sends its heat out into space; i.e., heat moves from where it's more to where it's less. The oceans (which are 2/3 of the earth's surface) are reservoirs for huge amounts of heat, and also for water vapor, our main greenhouse gas (it accounts for almost all of our greenhouse effect). As water evaporates, it absorbs a large amount of heat and carries it into the atmosphere. As that warm moist air rises, it expands with altitude, thereby cooling and eventually condensing the water vapor back into water (either as tiny cloud droplets or as rain or snow). That condensation releases the heat of evaporation high in the atmosphere, where much of it can escape back out into space. Thus the atmosphere **via water vapor** conveys a large amount of heat from earth's surface out into space. The earth's surface also directly radiates heat through the oxygen and nitrogen of air and thus into space.

Let's look again at Spencer's point. If one takes the solar input, and adds to it the calculated greenhouse warming from each of the greenhouse gases in our atmosphere, one gets a calculated temperature of **140 degrees F** for air at the surface of the earth. If one then adds to that the effect of the air and its weather, by measuring the actual air temperature with thermometers, one finds that the surface air temperature is only **57 degrees F**.

In other words, the effect of atmospheric weather is to **reduce** the greenhouse effect. That's a negative feedback. It's hard to see how the negative feedback could be different for different greenhouse gases, which very powerfully implies that weather acts to **reduce** any greenhouse effect that is due to CO₂.

Why is this important? It's because the CO₂ warming alarmists admit that CO₂ is a very weak greenhouse gas. By itself, it cannot warm earth enough to be of concern.

To overcome this, Spencer notes, the alarmists' computer models are all set so that water vapor exerts **positive** feedback on CO₂ warming; i.e., they thus make the CO₂ greenhouse so strong that its warming would be catastrophic. By that, all those models appear wrong, since thermodynamic laws and data combine to show that water vapor clearly has a **negative** feedback effect via weather. Negative feedback acts as a control to reduce temperature rises whenever more heat enters the atmosphere. If it did not, then earth would long ago have had a runaway greenhouse effect and be too hot for life.

How about the 1976-1998 rise in air temperature, which CO₂ alarmists attribute to concurrent rises of man-made CO₂ in air? Climatologists point to data showing that the Pacific Ocean upwelling of cold deep water off South America slowed down abruptly in 1976, leading since then to **El Nino conditions** (warmer Pacific surface waters), thereby warming the surface air.

More recently, another factor has come into play. The sun, after being unusually active magnetically during the 1976-1998 warming period, has gone magnetically quiet. There have been virtually no sunspots for over a year. History says that as long as sunspot counts stay low earth will have cooler weather. For example, prolonged low sunspot activity accompanied earth's recent Little Ice Age. Going back for hundreds of thousands of years – i.e., longer than humankind has existed – the earth has alternately experienced ice ages and warm spells. Hence, it is most likely that current weather is mainly following its historic cyclical pattern, and we are seeing climate cycles driven by natural causes, rather than seeing a cataclysmic human effect on climate.

Thus, it seems that earth's weather cycles may be driven by solar magnetic cycles (the 11 year sunspot cycle and the 22 year double-sunspot cycle called the Hale cycle), given that earth's global temperature has come down since its 1998 El Nino spike, and has declined more in the last few years coincident with the sun becoming magnetically quiet. A British PhD astrophysicist, Piers Corbyne, has recently made very accurate weather forecasts based on the sun's magnetic activity. So, he argues against CO₂ in air as being a significant driver of earth's climate, noting that CO₂ has continued rising unabated ever since 1976, but that earth's global temperature **stopped rising** after 1998. Two other laboratories have predicted, based on the sun's rotation around the solar system's center of mass, that the sun will continue to be magnetically quiet during most of the present century. In sum, of all the processes that drive climate, science strongly says that a CO₂ greenhouse effect plays only a minor role at most. (*To be continued in Part II*)

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