



GET THE FACTS IN BLACK AND WHITE

LLOYD'S

Economist.com

WORLD
INTERNATIONAL

Green.view

A spotless record

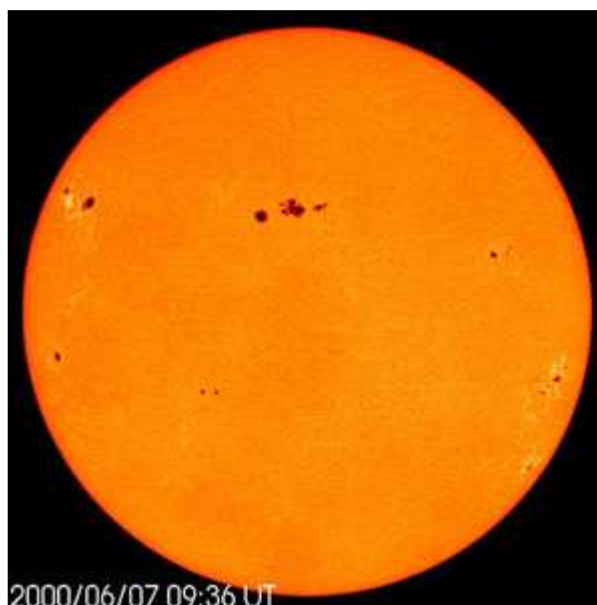
Sep 14th 2009
From Economist.com

The sun has gone quiet

IT IS almost exactly 400 years since Galileo turned his telescope on the sun and saw it to be an imperfect orb covered in spots, quite unlike the teachings of Greek cosmology. If his observations had been made four centuries later, he would have drawn a different conclusion. The sun has recently shed its spots, prompting sceptics to renew their claims that climate change is not anthropogenic but rather heliogenic.

Sunspots are a bit of a mystery. They appear as dark patches in the photosphere—the surface layer of the sun—that come and go. Normally the number of sunspots peaks every 11 years, coinciding with times when the sun's magnetic field is at its strongest. As the field wanes, the number of sunspots falls to a trough at which point the sun's magnetic field reverses direction and starts to regain its strength.

AFP



As early as 1801 William Herschel, a British astronomer, suggested that when sunspots were plentiful the Earth would be warmer. He supported his hypothesis by reference to variations in the price of wheat published in Adam Smith's "Wealth of Nations".

More recently, solar scientists and climatologists have played down the role that sunspots might play in climate change. Certainly they do affect the amount of radiation coming from the sun. The dark sunspots are encircled by brighter areas, so when they are plentiful, the sun shines more brightly than when they are sparse. Yet the overall variation is tiny, just 0.1% of the sun's total output, which seems insufficient to be the cause of a warming Earth.

Yet there is a curious historical correlation between sunspot cycles and global temperatures. Between 1645 and 1715, for reasons unknown, there were very few sunspots. At the same time, Europe and North America experienced bitterly cold winters in what has come to be known as the Little Ice Age. There is also some evidence that the southern hemisphere was similarly affected. But correlation is not causation.

Might the sun be going through another extended period of inactivity? Certainly it is the quietest that it has been for almost a century. Weeks and sometimes months go by without a single sunspot. Solar scientists have been waiting since December 2008 for signs that sunspot activity is picking up but so far without success.

That has prompted some to speculate that the Earth may be entering another cool period that could offset the warming caused by greenhouse gases trapping heat in the planet's atmosphere. Only time will tell, but your correspondent is thankful that any influence of the sun on climate change would be benign.

Copyright © 2009 The Economist Newspaper and The Economist Group. All rights reserved.