

Researchers Use Sun Cycle to Predict Rainfall Fluctuations

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(PhysOrg.com) -- The sun's magnetic field may have a significant impact on weather and climatic parameters in Australia and other countries in the northern and southern hemispheres.

According to a study in *Geographical Research* published by Wiley-Blackwell, the droughts in eastern Australia are related to the solar magnetic phases and not the greenhouse effect.

The study titled "Exploratory Analysis of Similarities in Solar Cycle Magnetic Phases with Southern Oscillation Index Fluctuation in Eastern Australia" uses data from 1876 to the present to examine the correlation between solar cycles and the extreme rainfall in Australia.

It finds that the Southern Oscillation Index (SOI) – the basic tool for forecasting variations in global and oceanic patterns – and rainfall fluctuations recorded over the last decade are similar to those in 1914-1924.

Author Professor Robert G. V. Baker from the School of Environmental Studies, University of New England, Australia, says, "The interaction between the directionality in the Sun's and Earth's magnetic fields, the incidence of ultraviolet radiation over the tropical Pacific, and changes in sea surface temperatures with cloud cover, could contribute to an explanation of substantial changes in the SOI from solar cycle fluctuations. If solar cycles continue to show relational values to climate patterns, there is the potential for more accurate forecasting through to

2010 and possibly beyond.”

The SOI-solar association has been investigated recently due to increasing interest in the relationship between the sun’s cycles and the climate. The solar application offers the potential for the long-range prediction of SOI behavior and associated rainfall variations, since quasi-periodicity in solar activity results in an expected cycle of situations and phases that are not random events.

Professor Baker adds, “This discovery could substantially advance forecasting from months to decades. It should result in much better long-term management of agricultural production and water resources, in areas where rainfall is correlated to SOI and El Niño (ENSO) events.”

This paper is published in the December 2008 issue of *Geographical Research* Vol. 46 Issue 4.

www.interscience.wiley.com/jo ... 1/121542494/abstract

Provided by Wiley

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