

## Five-Year Forecast: Faster-Than-Expected Warming

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World will warm faster than predicted in next five years, study warns

New estimate based on the forthcoming upturn in solar activity and El Niño southern oscillation cycles is expected to silence global warming sceptics

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The world faces record-breaking temperatures as the sun's activity increases, leading the planet to heat up significantly faster than scientists had predicted for the next five years, according to a study.

The hottest year on record was 1998, and the relatively cool years since have led to some global warming skeptics claiming that temperatures have levelled off or started to decline. But new research firmly rejects that argument.

The research, to be published in Geophysical Research Letters, was carried out by Judith Lean, of the US Naval Research Laboratory, and David Rind, of Nasa's Goddard Institute for Space Studies.

The work is the first to assess the combined impact on global temperature of four factors: human influences such as CO2 and aerosol emissions; heating from the sun; volcanic activity and the El Niño southern oscillation, the phenomenon by which the Pacific Ocean flips between warmer and cooler states every few years.

The analysis shows the relative stability in global temperatures in the last seven years is explained primarily by the decline in incoming sunlight associated with the downward phase of the 11-year solar cycle, together with a lack of strong El Niño events. These trends have masked the warming caused by CO2 and other greenhouse gases.

As

solar activity picks up again in the coming years, the research suggests, temperatures will shoot up at 150% of the rate predicted by the UN's Intergovernmental Panel on Climate Change. Lean and Rind's research also sheds light on the extreme average temperature in 1998. The paper confirms that the temperature spike that year was caused primarily by a very strong El Niño episode. A future episode could be expected to create a spike of equivalent magnitude on top of an even higher baseline, thus shattering the 1998 record.

The

study comes within days of announcements from climatologists that the world is entering a new El Niño warm spell. This suggests that temperature rises in the next year could be even more marked than Lean and Rind's paper suggests. A particularly hot autumn and winter could add to the pressure on policy makers to reach a meaningful deal at December's climate-change negotiations in Copenhagen.

Bob

Henson, of the National Centre for Atmospheric Research in Colorado, said: "To claim that global temperatures have cooled since 1998 and therefore that man-made climate change isn't happening is a bit like saying spring has gone away when you have a mild week after a scorching Easter."