

Easterbrook, D.J., 2008, *Correlation of climatic and solar variations over the past 500 years and predicting global climate changes from recurring climate cycles*: International Geological Congress, Oslo, Norway.

## **CORRELATION OF CLIMATIC AND SOLAR VARIATIONS OVER THE PAST 500 YEARS AND PREDICTING GLOBAL CLIMATE CHANGES FROM RECURRING CLIMATE CYCLES**

[EASTERBROOK, Don J.](mailto:dbunny@cc.wvu.edu), Dept. of Geology, Western Washington Univ, Bellingham, WA 98225, dbunny@cc.wvu.edu

Recurring cycles of global climate change over the past several centuries are apparent in glacier fluctuations, oxygen isotope ratios in ice cores, and historic observations and clearly show that natural climatic warming and cooling have occurred many times, long before increases in anthropogenic atmospheric CO<sub>2</sub> levels. Cyclic, decadal, climate patterns can be traced over the past several centuries, showing that climate changes occur without increased human CO<sub>2</sub> emissions and casting doubt on increasing CO<sub>2</sub> as the cause of warming over the past 30 years. Global climate changes show exceptionally good correlation with solar variation since the Little Ice Age.

Based on past recurring climate patterns, the Earth is now near the end of a 30-year warm cycle that began in 1977 and is poised to enter a 30-year cool cycle of about 0.3–0.5 ° C that should continue until about 2040. This is in sharp contrast to the drastic global warming of about 2° C predicted by the IPCC. Past warm/cool cycles suggest a succeeding warm period (2040–2070) may be somewhat warmer than the past 30years, but well below temperatures predicted by the IPCC. The projected cool cycle from 2070 to 2100 would cool climates slightly, so by 2100, the temperature increase above the present would amount to only ~0.5 C (1° F), compared to as much as 6° C (10° F) predicted by the IPCC.

The IPCC has predicted a global temperature increase of 0.6° C (1° F) by 2011 and 1.2° C (2° F) by 2038, whereas Easterbrook (2001) predicted the beginning of global cooling by 2007 (± 3–5 yrs) and cooling of about 0.3–0.5° C by 2040. The predicted cooling may have already begun. Recent measurements of global temperatures suggest a gradual cooling trend since 2002 and the winter of 2007–2008 was one of global, record-breaking cooling and snow. The cooling trend may continue as the sun enters a cycle of lower irradiance.

International Geological Congress, Oslo, Norway. Aug. 2008