Friends of Science

Providing insight into climate science

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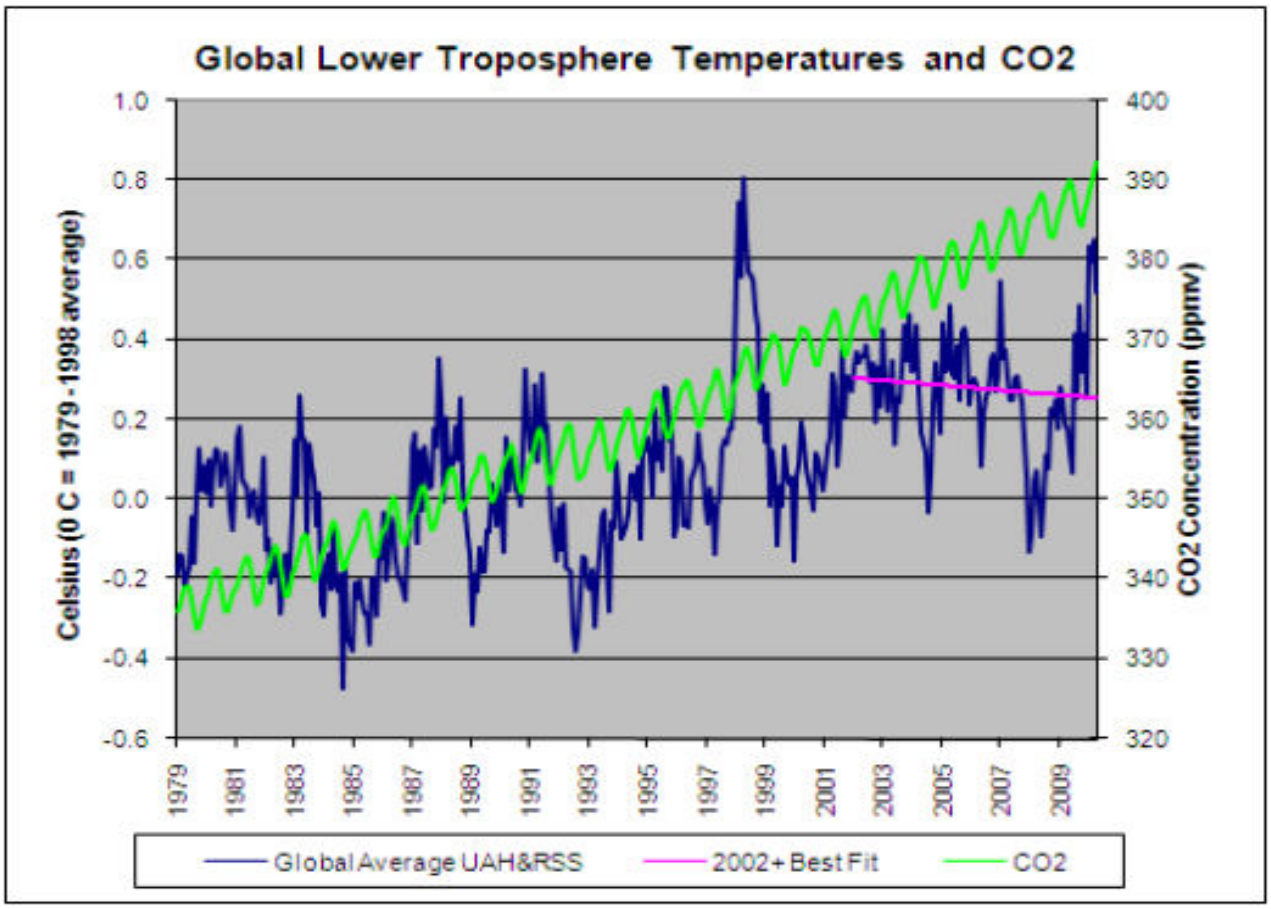
Global warming or cooling?

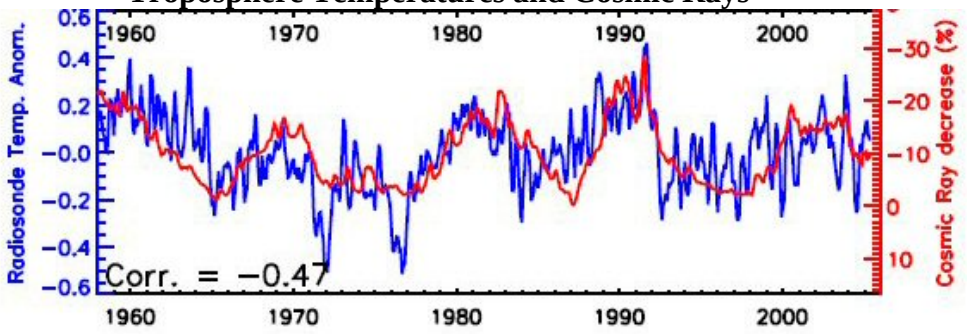


The graph shows the temperature changes of the lower troposphere from the surface to 8 km as determined from the average of two analyses of satellite data.[1] The best-fit line from January 2002 to April 2010 indicates a decline of 0.06 Celsius/decade. The sharp temperature spikes in 1998 and 2010 are El Nino events. The green line shows the CO_2 concentration in the atmosphere. There is no meaningful correlation between CO_2 and temperature. The effects of urban development contaminate surface temperature data. Climate has always changed. The Sun's activity has increased through most of the 20th century, but has recently entered a quiet phase causing a change in the temperature trend.

Consider:

- The Sun is the primary driver of climate change – not CO_2.
- An active Sun diverts cosmic rays from the atmosphere resulting in fewer low clouds and allowing more sunlight to warm the Earth's surface.[2]
- A correlation of the Sun's activity to temperature shows the Sun has caused at least 75% of the warming of the last century.[3]
- Correcting the surface temperature record for the effects of urban development would reduce the warming trend over land from 1980 by half.[4]
- The IPCC computer-modeled trend of the lower atmosphere is 100% to 300% higher than observed.[5]
- Measurements show that heat-trapping high clouds decrease in coverage in response to warming cycles in the tropics. If computer models incorporated this enhanced cooling effect from high clouds, it would reduce estimates of future warming by over 75%.[6]
- Water vapour, the most important greenhouse gas, has declined 17% in the upper troposphere since 1948.[7]
- CO_2 is plant food. A 300-ppm CO_2 increase would raise the forest's productivity by about 50%.[8]

Troposphere Temperatures and Cosmic Rays



The graph shows a correlation of cosmic rays and global troposphere temperatures after removing the effects of El Nino, volcanic aerosols, NAO and a linear trend.[9]

Kyoto Nonsense:

- The Kyoto Accord excludes developing countries. In the decade since the signing of the accord, India and China have increased their emissions by 88% and 77% respectively.
- Current Canadian CO2 emissions are only 2.4% of world emissions.
- Canada plans to spend $2 billion to sequester 0.7% of Canada's CO2 emissions, which represents 0.5% of the world's annual emissions increase. This would have a negligible effect on climate.
- Kyoto CO2 trading schemes transfer wealth from growing, efficient economies to inefficient economies.
- Canada's economy would benefit enormously from a warming climate. Warming would extend the agricultural growing season and increase the productive area.
- CO2 growth in the atmosphere boosts crop yields and forest growth, benefiting humans and animals.
- Kyoto is a wasteful effort with no benefit. Our taxes should be spent to solve real problems.

References:

See Climate Change Science Essay in the Our Position section of the Friends of Science home page: www.friendsofscience.org for a discussion of these issues.

1. UAH satellite temperature data from the University of Alabama in Huntsville. RSS satellite temperature data from Remote Sensing Systems.

2. See H. Svensmark and E. Friis-Christensen of the Center for Sun-Climate Research of the Danish National Space Center in Copenhagen. www.spacecenter.dk/research/sun-climate

3. Based on "Phenomenological reconstructions of the solar signature in the Northern Hemisphere surface temperature records since 1600", by N. Scafetta and B. J. West, November 2007, Journal of Geophysical Research, Volume 112, modified by substituting the surface temperatures since 1979 with the satellite lower troposphere temperatures to eliminate the effects of urban development.

4. "Quantifying the influence of anthropogenic surface processes and inhomogeneities on gridded global climate data", by R. McKitrick and P. Michaels, December 2007, Journal of Geophysical Research, Volume 112.

5. "A comparison of tropical temperature trends with model predictions", by D. Douglass, J. Christy, B. Pearson and F. Singer, December 2007, International Journal of Climatology, Royal Meteorological Society.

6. "Cloud and radiation budget changes associated with tropical intraseasonal oscillations", by R. Spencer, W. Braswell, J. Christy and J. Hnilo, August 2007, Geophysical Research Letters, Volume 34.

7. NOAA Earth System Research Laboratory, NCEP Reanalysis dataset, Specific humidity 400 mb level.

8. "Tree and forest functioning in an enriched CO2 atmosphere", by H. Saxe, D.S. Ellsworth, and J. Heath, 1998, New Phytologist 139; Idso and Kimball, 2001.

9. "Reply to Lockwood and Fröhlich – The persistent role of the Sun in climate forcing", by H. Svensmark and E. Friis-Christensen, October 2007, Danish National Space Center, Scientific report 3-2007.

Friends of Science Society
P.O. Box 23167, Connaught P.O.
Calgary, Alberta, Canada
T2S 3B1
Email: contact@friendsofscience.org
Visit: www.friendsofscience.org