Oct. 4, 2016

Vol. 26, No. 6

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Global Temperature Report: September 2016

2016 and 1998 in near tie for hottest year

Global climate trend since Nov. 16, 1978: +0.12 C per decade

September temperatures (preliminary)

Global composite temp.: +0.44 C (about 0.79 degrees Fahrenheit) above 30-year average for September.

Northern Hemisphere: +0.50 C (about 0.90 degrees Fahrenheit) above 30-year average for September.

Southern Hemisphere: +0.39 C (about 0.70 degrees Fahrenheit) above 30-year average for September.

Tropics: +0.37 C (about 0.67 degrees Fahrenheit) above 30-year average for September.

August temperatures (revised):

Global Composite: +0.44 C above 30-year average

Northern Hemisphere: +0.55 C above 30-year average

Southern Hemisphere: +0.32 C above 30-year average

Tropics: +0.50 C above 30-year average

(All temperature anomalies are based on a 30-year average (1981-2010) for the month reported.)

Notes on data released October 4, 2016:

The tropics continued a broad cooling trend from March, but this was counterbalanced by warming elsewhere, resulting in no change to the global average from August to September, according to Dr. John Christy, director of the Earth System Science Center at The University of Alabama in Huntsville. "For the January through September average, 1998 was +0.56 and 2016 is +0.55. The two years are running neck and neck.

"In 1998 global temperatures fell substantially through the last three months of the year, so we will wait and see whether 2016 will follow suit or stay warm and become the warmest calendar year in the 38-year satellite temperature record."

Compared to seasonal norms, the warmest average temperature anomaly on Earth in September was over the Kara Sea (between Siberia and the Arctic Ocean) near

Severny Island. September temperatures there averaged 4.33 C (about 7.79 degrees F) warmer than seasonal norms. Compared to seasonal norms, the coolest average temperature on Earth in September was in the North Atlantic Ocean off the southeastern coast of Greenland. September's temperatures there averaged 2.63 C (about 4.73 degrees F) cooler than seasonal norms.

The complete version 6 beta lower troposphere dataset is available here:

http://vortex.nsstc.uah.edu/data/msu/v6.0beta/tlt/uahncdc_lt_6.0beta5.txt

Archived color maps of local temperature anomalies are available on-line at:

http://nsstc.uah.edu/climate/

As part of an ongoing joint project between UAHuntsville, NOAA and NASA, Christy and Dr. Roy Spencer, an ESSC principal scientist, use data gathered by advanced microwave sounding units on NOAA and NASA satellites to get accurate temperature readings for almost all regions of the Earth. This includes remote desert, ocean and rain forest areas where reliable climate data are not otherwise available.

The satellite-based instruments measure the temperature of the atmosphere from the surface up to an altitude of about eight kilometers above sea level. Once the monthly temperature data are collected and processed, they are placed in a "public" computer file for immediate access by atmospheric scientists in the U.S. and abroad.

Neither Christy nor Spencer receives any research support or funding from oil, coal or industrial companies or organizations, or from any private or special interest groups.

All of their climate research funding comes from federal and state grants or contracts.

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