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Global Temperature Report: September 2015

In the tropics, warmest September in the satellite temperature record

Global climate trend since Nov. 16, 1978: +0.11 C per decade

September temperatures (preliminary)

Global composite temp.: +0.25 C (about 0.45 degrees Fahrenheit) above 30-year average for September.

Northern Hemisphere: +0.34 C (about 0.61 degrees Fahrenheit) above 30-year average for September.

Southern Hemisphere: +0.17 C (about 0.31 degrees Fahrenheit) above 30-year average for September.

Tropics: +0.55 C (about 0.99 degrees Fahrenheit) above 30-year average for September.

August temperatures (revised):

Global Composite: +0.28 C above 30-year average

Northern Hemisphere: +0.25 C above 30-year average

Southern Hemisphere: +0.30 C above 30-year average

Tropics: +0.52 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 Oct. 7, 2015:

An El Niño Pacific Ocean warming event continues to heat the tropics, although there is significant heat that has yet to be transferred from the ocean into the atmosphere, said Dr. John Christy, director of the Earth System Science Center at The University of Alabama in Huntsville. Temperatures in the tropics averaged 0.55 C (about 0.99° F) warmer than seasonal norms in September, a new record for tropical Septembers surpassing the previous record of +0.52 C set in September 2009.

Globally it was the fifth warmest September in the satellite record. It was also the fourth warmest September in the Northern Hemisphere.

While it is too early in the year to make any meaningful forecast or prediction about where 2015 will finish in the rankings of warm and cold years, it is reasonable to expect

the heat from the El Niño to continue to spread across more of the globe during the next three months. Through the first nine months of the year, comparing January through September throughout the satellite temperature record starting in 1979, the first nine months of 2015 ranked fourth overall, with an average global temperature that was 0.22 C warmer than seasonal norms. The first nine months of 1998 were warmest at 0.56 C, followed by 2010 at 0.41 C and 2002 at 0.24 C warmer than seasonal norms.

Compared to seasonal norms, the warmest average temperature anomaly on Earth in September was over the Black Sea, near the city of Odessa. The September temperature there averaged 3.57 C (about 6.43 degrees F) warmer than seasonal norms. Compared to seasonal norms, the coolest average temperature on Earth in September was in East Antarctica, southwest of McMurdo Station along the Transarctic Mountains, where the average September 2015 temperature was 3.95 C (about 7.11 degrees F) cooler than normal.

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

http://vortex.nsstc.uah.edu/data/msu/v6.0beta/tlt/uahncdc_it_6.0beta3

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 is collected and processed, it is 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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