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Global Temperature Report: July 2016

July 2016 ties as warmest July in tropics

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

July temperatures (preliminary)

Global composite temp.: +0.39 C (about 0.70 degrees Fahrenheit) above 30-year average for July.

Northern Hemisphere: +0.48 C (about 0.86 degrees Fahrenheit) above 30-year average for July.

Southern Hemisphere: +0.30 C (about 0.54 degrees Fahrenheit) above 30-year average for July.

Tropics: +0.48 C (about 0.86 degrees Fahrenheit) above 30-

year average for July.

June temperatures (revised):

Global Composite: +0.34 C above 30-year average

Northern Hemisphere: +0.51 C above 30-year average

Southern Hemisphere: +0.17 C above 30-year average

Tropics: +0.38 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 August 2, 2016:

The El Niño Pacific Ocean warming event didn't continue to fade in July, and global average temperatures — as well as averaged temperatures in both hemispheres and the tropics — rebounded slightly during the month, according to Dr. John Christy, director of the Earth System Science Center at The University of Alabama in Huntsville. "Temperatures tend to bounce around a little from month to month, even during general trends such as what we see as El Niños and La Niñas come and go. July's warming isn't unique. These little bumps also were seen in the cooling after other ENSOs."

NOAA's El Niño region sea surface temperature measurements indicate a pause in the recent El Niño's cooling since its peak in February. Sea surface temperatures in the eastern equatorial Pacific are a little cooler than the overall average for this time of year. NOAA forecasters say the likelihood a La Niña Pacific Ocean cooling event will form between August through October has dropped to between 55 and 60 percent.

Temperature shifts in the atmosphere above the Pacific Ocean tend to lag several months behind shifts in sea surface temperatures.

In the tropics, July 2016 tied July 2015 as the warmest July in the 38-year satellite temperature record. In the tropics the past two Julys were 0.02 C warmer than the July on either side of the 1997-1998 El Niño Pacific Ocean warming event. Globally, July 2016 was the second warmest July in the satellite record, behind July 1998 at 0.51 C warmer than seasonal norms.

Compared to seasonal norms, the warmest average temperature anomaly on Earth in July was near the town of Palana on the Kamchatka Peninsula in eastern Russia. July temperatures there averaged 3.72 C (about 6.70 degrees F) warmer than seasonal norms. Compared to seasonal norms, the coolest average temperature on Earth in July was in the eastern Antarctic, north of Dome F (the kind of name you give a place where there are no places to name). July's temperatures there averaged 3.39 C (about 6.10 degrees F) cooler than seasonal Antarctic winter norms.

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

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