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For Additional Information:
Dr. John Christy, (256) 961-7763
john.christy@nsstc.uah.edu
Dr. Roy Spencer, (256) 961-7960
roy.spencer@nsstc.uah.edu

## **Global Temperature Report: November 2016**

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

## **November temperatures (preliminary)**

Global composite temp.: +0.45 C (about 0.81 degrees Fahrenheit) above 30-year average for November.

Northern Hemisphere: +0.41 C (about 0.74 degrees Fahrenheit) above 30-year average for November.

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

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

## October temperatures (revised):

Global Composite: +0.41 C above 30-year average

Northern Hemisphere: +0.42 C above 30-year average

Southern Hemisphere: +0.39 C above 30-year average

Tropics: +0.46 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 Dec. 28, 2016:

Compared to seasonal norms, the warmest average temperature anomaly on Earth in November was western central Manitoba, near the town of "The Pas." November temperatures there averaged 5.12 C (about 9.22 degrees F) warmer than seasonal norms. Compared to seasonal norms, the coolest average temperature on Earth in November was near the town of Kozhevnikovo in south central Russia. November temperatures there averaged 3.49 C (about 6.28 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, Dr. John Christy, director of the Earth

System Science Center at The University of Alabama in Huntsville, 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.

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