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## **Global Temperature Report: September 2018**

Global climate trend since Dec. 1 1978: +0.13 C per decade

### **September Temperatures (preliminary)**

Global composite temp.: +0.14 C (+0.25 °F) above seasonal average

Northern Hemisphere.: +0.15 C (+0.27°F) above seasonal average

Southern Hemisphere.: +0.14 C (+0.25 °F) above seasonal average

Tropics.: +0.24 C (+0.43 °F) above seasonal average

### **August Temperatures (final)**

Global composite temp.: +0.19 C (+0.34 °F) above seasonal average

Northern Hemisphere.: +0.21 C (+0.38°F) above seasonal average

Southern Hemisphere.: +0.17 C (+0.31 °F) above seasonal average

Tropics.: +0.12 C (+0.22 °F) above seasonal average

### **Notes on data released October 1, 2018**

The global average bulk-layer atmospheric temperature fell slightly in September to +0.14°C (+0.25°F). This is the coolest September value in 10 years, though Septembers in 2011 (+0.18°C) and 2014 (+0.16°C) were so close as to not be statistically different. The seasonally-adjusted warmest air was found over far Eastern Russia near Nutepelmen (+5.9 °C, 10.6°F) and the coolest to the east near Hudson Bay (-4.8°C, -6.8°F). The area of very warm air over far Eastern Russia to the Bering Sea and the very cool air over northern

Canada stood out as the main anomalous features of the global temperature map this month.

The conterminous US was above average (+0.9°C, +1.6°F) as was a broad band from Europe to eastern Russia, while cooler than average air was found in NW Africa and southern Russia. Antarctica was mostly below average with areas in the south Pacific Ocean and Argentina above average.

There is still evidence for a warming tropical atmosphere as the air in this region gained heat over the past month. As well, NOAA reports greater than average heat content in the tropical Pacific Ocean. If coming events transpire as typical, some of this surplus ocean heat will be transferred to the atmosphere in the next several months, warming things up quite a bit in the atmospheric layer we monitor.

As part of an ongoing joint project between UAH, 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.

The complete version 6 lower troposphere dataset is available here:

[http://www.nsstc.uah.edu/data/msu/v6.0/tlt/uahncdc\\_lt\\_6.0.txt](http://www.nsstc.uah.edu/data/msu/v6.0/tlt/uahncdc_lt_6.0.txt)

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

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

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