July 9, 2013

Vol. 23, No. 3

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: June 2013

Satellite dataset now includes data from European METOP-A

Global climate trend since Nov. 16, 1978: +0.14 C per decade

June temperatures (preliminary)

Global composite temp.: +0.30 C (about 0.54 degrees Fahrenheit) above 30-year average for June.

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

Southern Hemisphere: +0.26 C (about 0.47 degrees Fahrenheit) above 30-year average for June.

Tropics: +0.22 C (about 0.40 degrees Fahrenheit) above 30-

year average for June.

May temperatures (revised):

Global Composite: +0.08 C above 30-year average

Northern Hemisphere: +0.18 C above 30-year average

Southern Hemisphere: -0.02 C below 30-year average

Tropics: +0.11 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 July 9, 2013:

Global temperatures warmed in June to their warmest level since January, compared to seasonal norms, said Dr. John Christy, a professor of atmospheric science and director of the Earth System Science Center (ESSC) at The University of Alabama in Huntsville.

Compared to seasonal norms, during June the coldest area on the globe was off the coast of West Antarctica in the Amundsen Sea (between South America and New Zealand), where the average temperature was as much as 4.52 C (about 8.14 degrees Fahrenheit) cooler than the Antarctic's winter seasonal norms. Compared to seasonal norms, the "warmest" area on the globe in June was also in the Antarctic. Temperatures just south of the Brunt Ice Shelf (along the coast between South America and Africa) were as much as 4.38 C (about 7.88 degrees Fahrenheit) warmer than seasonal norms for June.

Processing notes:

In the past month we were able to access microwave sounding unit data from two operational satellites: the European METOP-A, with data from 2007 to the present, and the newest NOAA polar orbiter, NOAA-19, with data from 2009 to the present. We have merged observations from these two satellites into the data stream. Because there are some global differences — up to 0.04 C during any given month after 2007 — we decided to call this a new version of the dataset, v5.6. The only procedural difference is that we have added new satellite data into the current product, leaving all of the other satellites as they have been through May 2013. From June 2013 forward, METOP-A and NOAA-19 will be the two satellites on which we rely for monitoring global climate for v5.6.

As part of a contract with NOAA, we will continue to produce v5.5 as before, which will not include data from the two new satellites. In general, there is a very slight warming of global temperatures in v5.6, which reflects a correction for what we believe is a spurious cooling due to NOAA-18's orbital drift. Regional differences can be a bit larger. Between the two datasets, the overall global trend difference since Nov. 1978 is +0.001 C per decade: +0.139 C v5.6 vs. +0.138 in v5.5.

Both versions of the dataset will be available on our website. We encourage the use of v5.6, as it employs the data in which we have the higher confidence.

The most popular datasets -- the monthly temperature anomalies for the globe and various global sections — will now be found online at:

v5.5:
http://vortex.nsstc.uah.edu/data/msu/t2lt/uahncdc_lt_5.5

v5.6:
http://vortex.nsstc.uah.edu/data/msu/t2lt/uahncdc_lt_5.6

Other datasets of daily or monthly grids can be found through the same higher level directory, i.e.

http://vortex.nsstc.uah.edu/data/msu/t2lt

Below are data showing the differences between the two datasets for the first six months of 2013:

Version 5.6

YYYY	MM	GL	NH	SH	TROPCS
2013	01	0.50	0.51	0.48	0.39
2013	02	0.20	0.37	0.03	0.20
2013	03	0.20	0.33	0.07	0.24
2013	04	0.11	0.13	0.10	0.17
2013	05	0.08	0.18	-0.02	0.11
2013	06	0.30	0.34	0.26	0.22

Version 5.5

YYYY	MM	GL	NH	SH	TROPCS
2013	01	0.50	0.56	0.45	0.37
2013	02	0.18	0.37	-0.02	0.17
2013	03	0.18	0.33	0.04	0.23
2013	04	0.10	0.12	0.09	0.17
2013	05	0.08	0.16	-0.01	0.12
2013	06	0.27	0.32	0.23	0.19

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.

-- 30 --