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Global Temperature Report: July 2010

Second hottest July on record

as El Nino continues to fade

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

July temperatures (preliminary)

Global composite temp.: +0.49 C (about 0.88 degrees Fahrenheit) above

20-year average for July.

Northern Hemisphere: +0.63 C (about 1.13 degrees Fahrenheit) above 20-year

average for July.

Southern Hemisphere: +0.34 C (about 0.58 degrees Fahrenheit) above 20-year

average for July.

Tropics: +0.48 C (about 0.61 degrees Fahrenheit) above 20-year average for

July.

June temperatures (revised):

Global Composite: +0.44 C above 20-year average

Northern Hemisphere: +0.55 C above 20-year average

Southern Hemisphere: +0.32 C above 20-year average

Tropics: +48 C above 20-year average

(All temperature anomalies are based on a 20-year average (1979-1998) for

the month reported.)

Notes on data released Aug. 3, 2010:

July 2010 was the second hottest July in the 32-year satellite temperature

dataset, with a global average temperature that was only 0.03 C cooler than

the record set in July 1998, according to Dr. John Christy, professor of

atmospheric science and director of the Earth System Science Center at The

University of Alabama in Huntsville.

July Temperature Anomalies

    Year  Mo  Degrees C

1.  1998  7   +0.52

2.  2010  7   +0.49

3.  2009  7   +0.44

4.  2005  7   +0.35

5.  2002  7   +0.3

6.  2007  7   +0.26

7.  2006  7   +0.22

8.  1991  7   +0.2

9.  1988  7   +0.19

10.  2003  7   +0.18

Average temperatures for the globe, as well as the northern and southern

hemispheres, went up in July despite the continued cooling of the El Nino

Pacific Ocean warming event and the apparent transition to a La Nina Pacific

Ocean cooling event.

"If you look at how much sea surface temperatures are falling, no one would

have predicted this," Christy said.

July 2010 was the second hottest July globally and in the Northern

Hemisphere; third hottest in the Southern Hemisphere; and fourth hottest in

the tropics.

Compared to seasonal norms, July 2010 was also the 17th warmest of all of

the months since the satellite temperature dataset began in December 1978.

Warmest months, global

    Year  Mth  Anomaly

1.  1998   2   +0.76

2.  1998   4   +0.76

3.  2010   3   +0.66

4.  1998   5   +0.65

5.  2010   1   +0.64

6.  2010   2   +0.61

7.  1998   1   +0.58

8.  1998   6   +0.57

9.  2010   5   +0.54

10.  1998   3   +0.53

11.  1998   7   +0.52

12.  1998   8   +0.52

13.  2007   1   +0.51

14.  2009   9   +0.5

15.  2009  11   +0.5

16.  2010   4   +0.5

17.\* 2010   7   +0.49

18.  2005  10   +0.47

19.  2005   4   +0.46

20.  1998   9   +0.45

The first seven months of 2010 were only 0.07 C (about 0.13 degrees

Fahrenheit) cooler than the record set in 1998 during another El Nino

Pacific Ocean warming event.

  Jan-July Temp Anomalies

       GL     NH     SH    TRP

1998  +0.62  +0.73  +0.51  +0.90

2010  +0.55  +0.74  +0.36  +0.63

Color maps of local temperature anomalies may soon be available on-line on

the new site at:

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

The processed temperature data is available on-line at:

[vortex.nsstc.uah.edu/data/msu/t2lt/uahncdc.lt](http://vortex.nsstc.uah.edu/data/msu/t2lt/uahncdc.lt)

As part of an ongoing joint project between UAHuntsville, NOAA and NASA,

Christy and Dr. Roy Spencer, a principal research scientist in the ESSC, 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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