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Global Temperature Report: May 2010

First five months of 2010  
second warmest on record

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

May temperatures (preliminary)

Global composite temp.: +0.53 C (about 0.95 degrees Fahrenheit) above  
20-year average for May.

Northern Hemisphere: +0.78 C (about 1.40 degrees Fahrenheit) above 20-year  
average for May.

Southern Hemisphere: +0.29 C (about 0.52 degrees Fahrenheit) above 20-year  
average for April.

Tropics: +0.71 C (about 1.28 degrees Fahrenheit) above 20-year average for  
May.

April temperatures (revised):

Global Composite: +0.50 C above 20-year average

Northern Hemisphere: +0.80 C above 20-year average

Southern Hemisphere: +0.20 C above 20-year average

Tropics: +63 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 June 7, 2010:

In the race to become the warmest year in the satellite temperature record, 2010 is running a close second to 1998 but might begin to falter as the El Niño Pacific Ocean warming event continues to fade, according to Dr. John Christy, professor of atmospheric science and director of the Earth System Science Center at The University of Alabama in Huntsville.

Through the first 151 days of the year (Jan. 1 through May 31), 2010 has averaged 0.59 C warmer than season norms. Global average temperatures through the first five months of 1998 were 0.65 C warmer than normal.

The chance that 2010 will set a record drops as the El Niño warming event fades and the Central Pacific Ocean cools. NOAA has issued a "watch" for a La Niña Pacific Ocean cooling event.

For the third time in the past four months a new high temperature has been set for the Arctic. Temperatures in the Arctic -- latitude 60 N (about even with Helsinki and the southern tip of Greenland) to the North Pole -- were a full two and a half degrees Celsius (about 4.5 degrees Fahrenheit) warmer than seasonal norms for that region.

May 2010 set records as the warmest May in the 32-year satellite temperature record for both the Northern Hemisphere (+0.78 C) and the northern temperate zone, also +0.78 C.

Compared to the other 31 Mays in the record, May 2010 was the second warmest

May globally (+0.53 C), and in the tropics (+0.81 C); fourth warmest May in the Southern Hemisphere (+0.29 C); and seventh coolest May in both the Southern Polar region (-0.86 C) and the continental U.S., where the average temperature was 0.47 C cooler than seasonal norms.

January through May Comparison  
Average Global Anomaly (Celsius)

	1998	2010
NH	+0.76	+0.80

SH +0.55 +0.37  
TR +1.07 +0.71

### Global Temperature Anomalies

	Year	Mo	
1.	1998	4	+0.76
2.	1998	2	+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.	2010*	4	+0.5
15.	2009	9	+0.5
16.	2009	11	+0.5
17.	2005	10	+0.47
18.	2005	4	+0.46
19.	2003	12	+0.45
20.	1998	9	+0.45

### Temperature Anomalies in the Tropics

	Year	Mo	
1.	1998	2	+1.3
2.	1998	1	+1.09
3.	1998	4	+1.06
4.	1998	3	+1.05
5.	1998	5	+0.89
6.	2010*	2	+0.81
7.	2010*	3	+0.73
8.	1997	12	+0.73
9.	*2010*	5	+0.72
10.	2010*	1	+0.66
11.	2010*	4	+0.65
12.	1987	12	+0.62

## Arctic Temperature Anomalies

	Year	Mo	NoPol
1.	*2010	5	+2.51
2.	2010*	4	+2.45
3.	2010*	2	+2.3
4.	2007	4	+2.27
5.	1995	4	+2.26
6.	2006	2	+2.24
7.	2009	12	+2.09
8.	2005	12	+2.06
9.	1996	11	+2.01
10.	2001	12	+1.94
11.	2003	10	+1.83
12.	2005	4	+1.81
13.	2005	11	+1.8
14.	2010*	1	+1.79
15.	2002	10	+1.73
16.	1981	1	+1.72
17.	2005	5	+1.72
18.	2010*	3	+1.72
19.	1980	2	+1.72
20.	2002	11	+1.72

A new GTR archive is being created for the start of the Global Temperature Report's 20th year, with the long-term goal of making every Global Temperature Report from the past 19 years available on-line. 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)

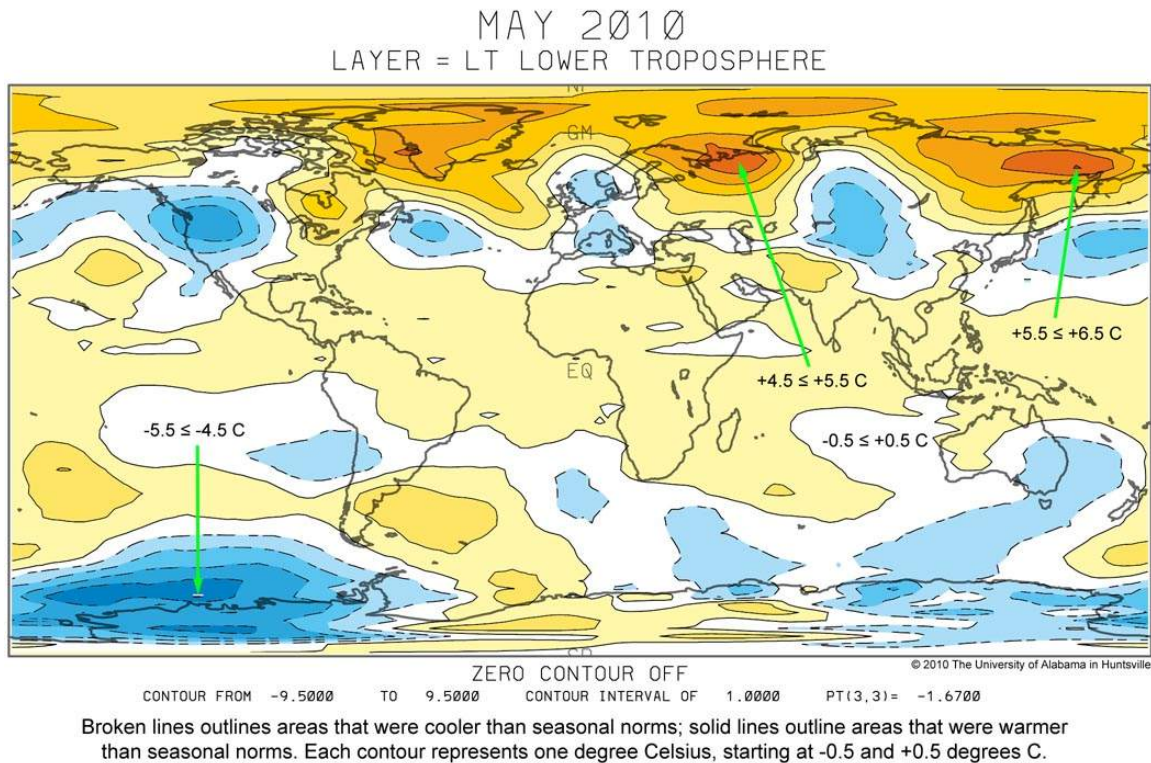
As part of an ongoing joint project between UAHuntsville, NOAA and NASA, Christy and Dr. Roy Spencer, a principal research scientist in the ESSC, use data gathered by advanced microwave sounding units on NOAA and NASA satellites to get accurate temperature readings for almost all regions of the Earth. 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.

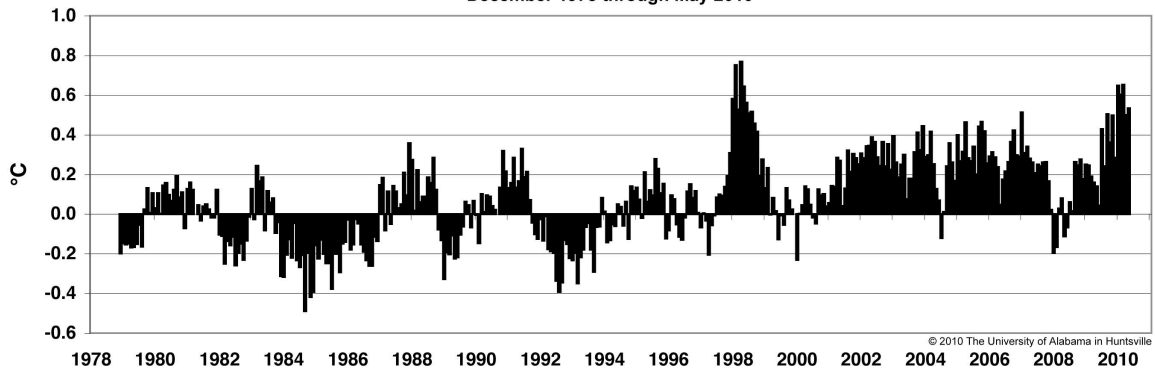
Neither Christy nor Spencer receives any research support or funding from oil, coal or industrial companies or organizations, or from any private or special interest groups. All of their climate research funding comes from federal and state grants or contracts.

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### Global Lower Troposphere v5.3

December 1978 through May 2010



### 1998 vs. 2010 GL LT

