



This is the print version of the [Skeptical Science](#) article '[Global warming stopped in 1998, 1995, 2002, 2007, 2010, ????](#)', which can be found at <http://sks.to/stopped>.

Did global warming stop in 1998, 1995, 2002, 2007, 2010?

What The Science Says:

Global temperatures continue to rise steadily beneath the short-term noise.

Climate Myth: Global warming stopped in 1998, 1995, 2002, 2007, 2010, ????

"January 2008 capped a 12 month period of global temperature drops on all of the major well respected indicators. [HadCRUT](#), [RSS](#), [UAH](#), and [GISS](#) global temperature sets all show sharp drops in the last year" (source: [Watts Up With That](#)).

A common claim amongst climate skeptics is that the Earth has been cooling recently. [1998](#) was the first year claimed by skeptics for 'Global Cooling'. Then [1995](#) followed by [2002](#). Skeptics have [also emphasized](#) the year [2007-2008](#) and most recently the [last half of 2010](#).

NASA and climate scientists throughout the world have said, however, that the years starting since 1998 have been the [hottest in all recorded temperature history](#). Do these claims sound confusing and contradictory? Has the Earth been cooling, lately?

To find out whether there is actually a 'cooling trend,' it is important to consider all of these claims as a whole, since they follow the same pattern. In making these claims, skeptics cherrypick short periods of time, usually about 20 years or less.

The temperature chart below is based on information acquired from NASA heat sensing satellites. It covers a 30 year period from January 1979 to November 2010. The red curve indicates the average temperature throughout the entire Earth.

The red line represents the average temperature. The top of the curves are warmer years caused by El Niño; a weather phenomenon where the Pacific Ocean gives out heat thus warming the Earth. The bottoms of the curves are usually La Niña years which cool the Earth. Volcanic eruptions, like Mount Pinatubo in 1991 will also cool the Earth over short time frames of 2-3 years.

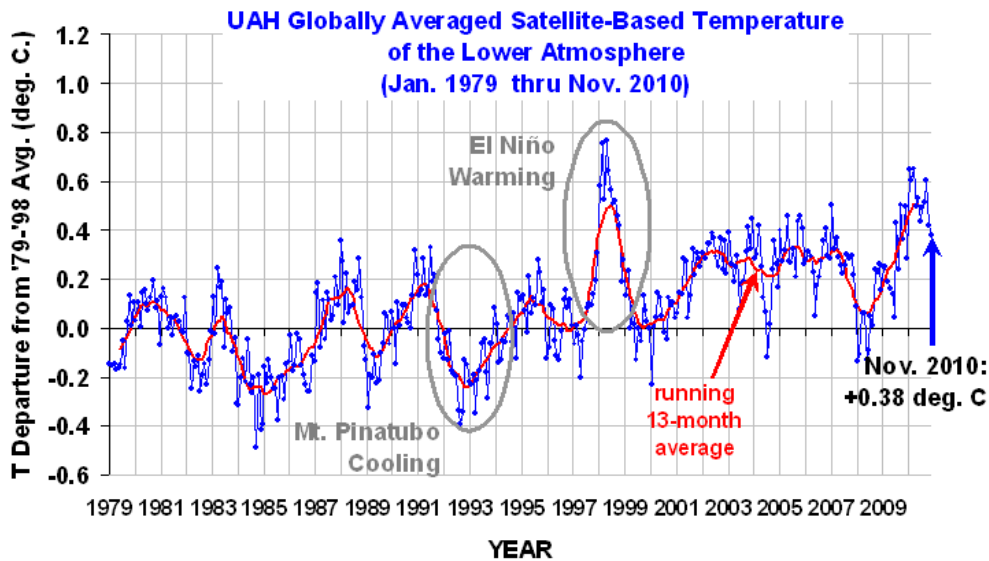


Figure 1: University of Alabama, Huntsville (UAH) temperature chart from January 1979 to November 2010. This chart is shown with no trend lines so the viewer may make his own judgment.

Below is the same temperature chart, showing how skeptics manipulate the data to give the impression of 'Global Cooling'. First they choose the warmest most recent year they can find. Then, in this case, they exclude 20 years of previous temperature records. Next they draw a line from the warmest year (the high peak) to the lowest La Niña they can find. In doing this they falsely give the impression that an ordinary La Niña is actually a cooling trend.

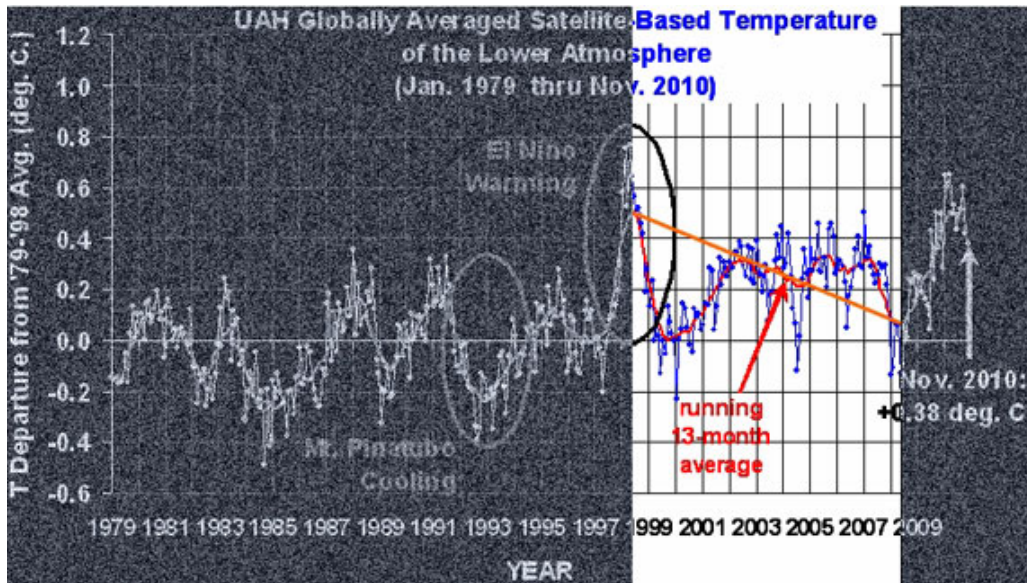


Figure 2: Representation of how skeptics distort the temperature chart. Even though the chart clearly indicates increased warming, skeptics take small portions of out of context to claim the opposite.

What do the past 30 years of temperature data really show? Below is the answer.

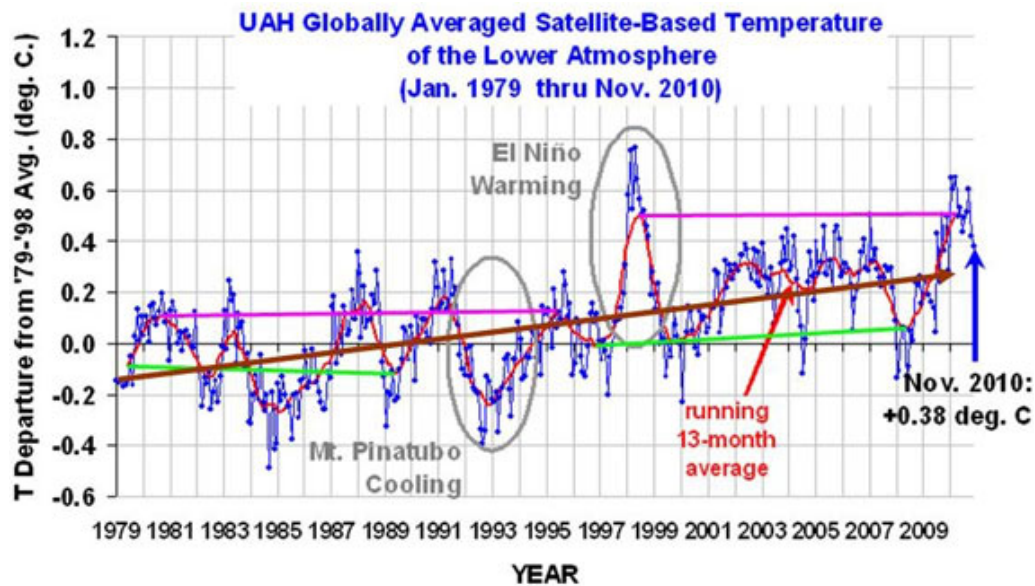


Figure 3: Trend lines showing the sudden jump in temperatures in the 1995 La Niña (Green lines) and the 1998 (Pink lines) El Niño events. Brown line indicates overall increase in temperatures.

The chart above clearly shows that temperatures have gone up. When temperatures for the warm El Niño years (pink lines) during 1980-1995 are compared to 1998-2010, there is a sudden increase of at least 0.2° Centigrade (0.36° Fahrenheit). Temperatures also jumped up by about 0.15°C (0.27°F) between the cool La Niña years (Green lines) of 1979-1989 and those of 1996-2008 (the eruption of Mount Pinatubo in 1991 lowered the Earth's temperatures in the midst of an El Niño cycle). The overall trend from 1979 through November 2010 (Brown line) shows an unmistakable rise.

This is particularly clear when we statistically remove the short-term influences from the temperature record, [as Kevin C did here](#):

In spite of these facts, skeptics simply keep changing their dates for 'Global Cooling', constantly confusing short-term noise and long-term trends (Figure 4).

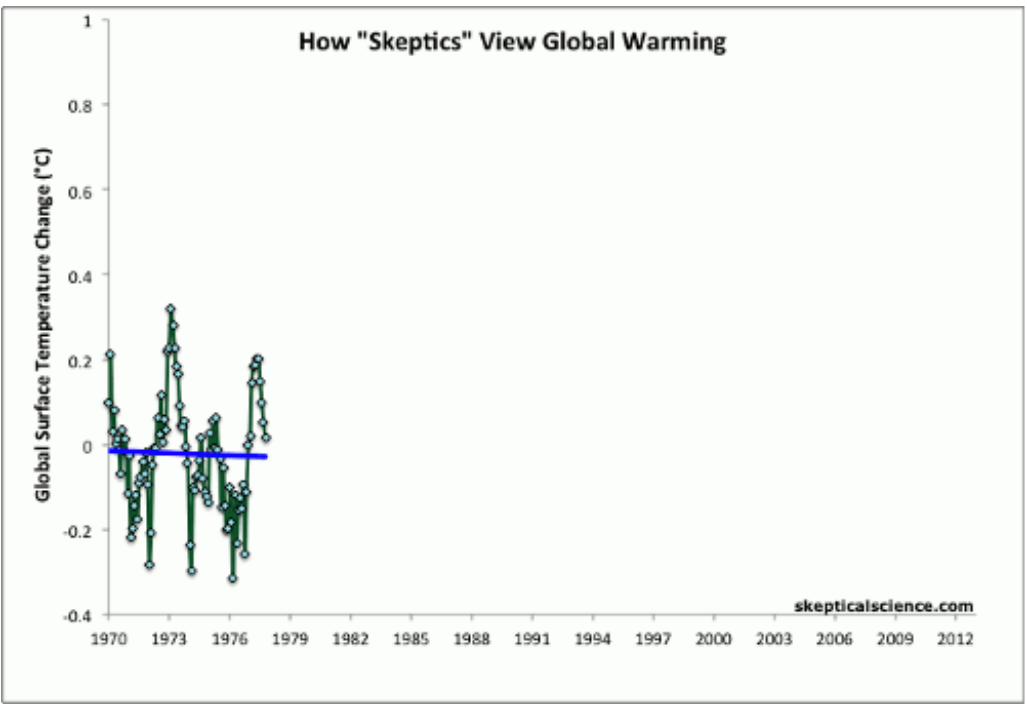


Figure 4: Average of [NASA GISS](#), [NOAA NCDC](#), and [HadCRUT4](#) monthly global surface temperature anomalies from January 1970 through November 2012 (green) with linear trends applied to the timeframes Jan '70 - Oct '77, Apr '77 - Dec '86, Sep '87 - Nov '96, Jun '97 - Dec '02, and Nov '02 - Nov '12.

Basic rebuttal written by dana1981

Update July 2015:

Here is a related lecture-video from [Denial101x - Making Sense of Climate Science Denial](#)



Skeptical Science explains the science of global warming and examines climate misinformation through the lens of peer-reviewed research. The website won the Australian Museum 2011 Eureka Prize for the Advancement of Climate Change Knowledge. Members of the Skeptical Science team have authored peer-reviewed papers, a [college textbook on climate change](#) and the book [Climate Change Denial: Heads in the Sand](#). Skeptical Science content has been used in university courses, textbooks, government reports on climate change, television documentaries and numerous books.



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