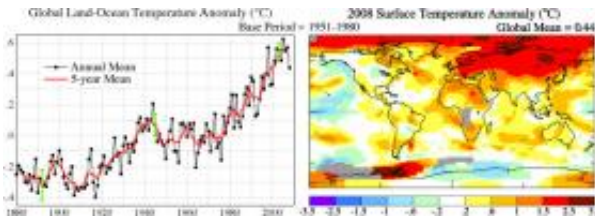


2008 Was Earth's Coolest Year Since 2000

February 23 2009, by Leslie McCarthy



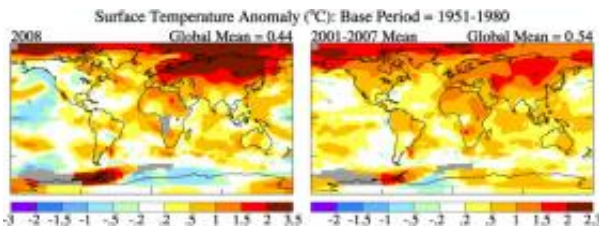
Left: Annual-mean global-mean anomalies. Right: Global map of surface temperature anomalies for 2008. Credit: NASA GISS

(PhysOrg.com) -- Climatologists at the NASA Goddard Institute for Space Studies (GISS) in New York City have found that 2008 was the coolest year since 2000. The GISS analysis also showed that 2008 is the ninth warmest year since continuous instrumental records were started in 1880. The ten warmest years on record have all occurred between 1997 and 2008.

The GISS analysis found that the global average surface air temperature was 0.44°C (0.79°F) above the global mean for 1951 to 1980, the baseline period for the study. Most of the world was either near normal or warmer in 2008 than the norm. Eurasia, the Arctic, and the Antarctic Peninsula were exceptionally warm (see figures), while much of the Pacific Ocean was cooler than the long-term average.

The relatively low temperature in the tropical Pacific was due to a strong La Niña that existed in the first half of the year, the research team noted.

La Niña and El Niño are opposite phases of a natural oscillation of equatorial Pacific Ocean temperatures over several years. La Niña is the cool phase. The warmer El Niño phase typically follows within a year or two of La Niña.



Comparison of 2008 temperature anomalies with the mean 2001-2007 anomalies. Note that this figure uses a slightly different color bar than that of the figure above in order to show more structure in the right-hand map. Credit: NASA GISS

The temperature in the United States in 2008 was not much different than the 1951-1980 mean, which makes it cooler than all the previous years this decade.

“Given our expectation that the next El Niño will begin this year or in 2010, it still seems likely that a new global surface air temperature record will be set within the next one to two years, despite the moderate cooling effect of reduced solar irradiance,” said James Hansen, director of GISS. The Sun is just passing through solar minimum, the low point in its 10- to 12-year cycle of electromagnetic activity, when it transmits its lowest amount of radiant energy toward Earth.

The GISS analysis of global surface temperature incorporates data from the Global Historical Climatology Network of the National Oceanic and Atmospheric Administration’s National Climate Data Center; the

satellite analysis of global sea surface temperature of Richard Reynolds and Thomas Smith of NOAA; and Antarctic records of the international Scientific Committee on Antarctic Research.

"GISS provides the ranking of global temperature for individual years because there is a high demand for it from journalists and the public," said Hansen. "The rank has scientific significance in some cases, such as when a new record is established. But rank can also be misleading because the difference in temperature between one year and another is often less than the uncertainty in the global average."

Provided by Goddard Institute for Space Studies

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