

Global temperature for 2017 to be the 3rd highest since 1891 (Preliminary)

The annual anomaly of the global average surface temperature for the year 2017 (i.e., the combined average of the near-surface air temperature over land and the sea surface temperature) is estimated at +0.39°C* above the 1981 – 2010 average, likely to be the third warmest on record, behind 2016 and 2015, for the 127-year period since 1891 and to be the warmest year without an El Niño event (Figure 1).

* Note that this figure (hence its rank in the record, either) is still subject to change, because at the moment of this announcement it is only a preliminary result that was calculated based on temperature observations for the period of January to November in 2017.

Warm temperature deviations are especially seen over wide areas of Eurasia, North America and the North Pacific (Figure 2).

On a longer time scale, the annual global average surface temperature has been rising at a rate of about 0.73°C per century.

The high global average surface temperature observed in 2017 is thought to be attributed to global warming due to increase in anthropogenic greenhouse gas concentrations including carbon dioxide. Moreover the global averaged surface temperature is affected by inter-annual to decadal natural fluctuations intrinsic to the earth's climate.

The final report on the global temperature for 2017 is scheduled to be published early in February 2018.

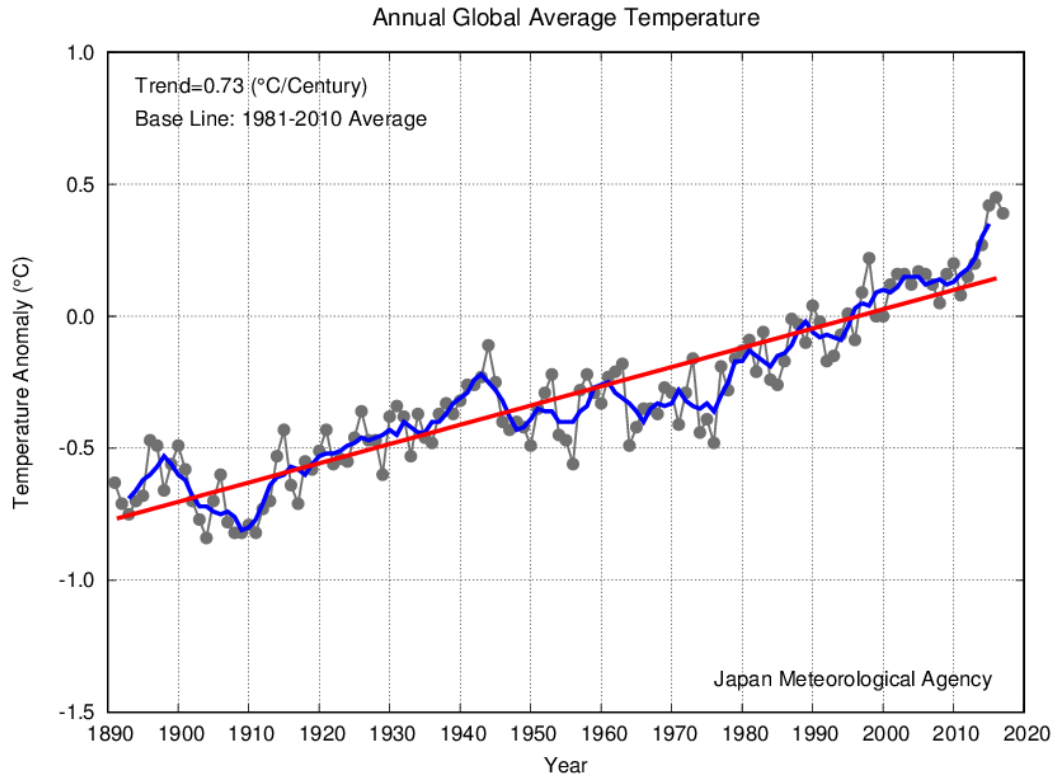


Figure 1 Long-term change in annual mean surface temperature anomalies over the globe

The black line with filled circles indicates anomalies of surface temperature in each year. The blue line indicates five-year running mean, and the red line indicates a long-term linear trend. Anomalies are represented as deviations from the 1981 – 2010 average.

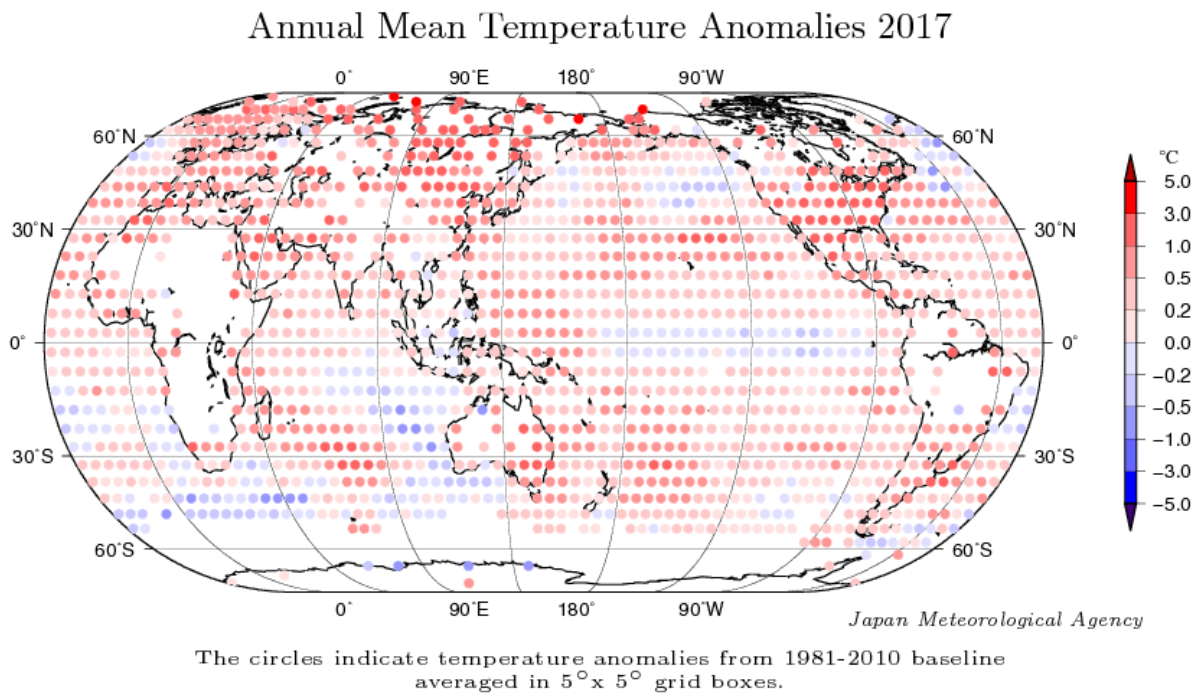


Figure 2 Annual mean temperature anomalies in 2017

The circles indicate anomalies of surface temperature averaged in 5° x 5° grid boxes. Anomalies are deviations from the 1981 – 2010 average.

Ranking of annual global average temperatures

Rank	Year	Temperature Anomaly w.r.t. 1981 – 2010 average
1	2016	+0.45
2	2015	+0.42
3	2017	+0.39 (Preliminary value)
4	2014	+0.27
5	1998	+0.22
6	2013	+0.20
	2010	+0.20
8	2005	+0.17
9	2009	+0.16
	2006	+0.16
	2003	+0.16
	2002	+0.16