

# Temperatures from the Last Glacial Maximum to the future

This page shows estimates of past variation in global temperature and model predictions of temperature change in the 21<sup>st</sup> century. Another *FQS* page shows a similar but much longer record, for the last 800 thousand years; that page is called "Temperatures

from the Last Glacial Maximum to the future". Both pages show that the predicted warming is unprecedented in recent geologic history.

Sources, from left to right:

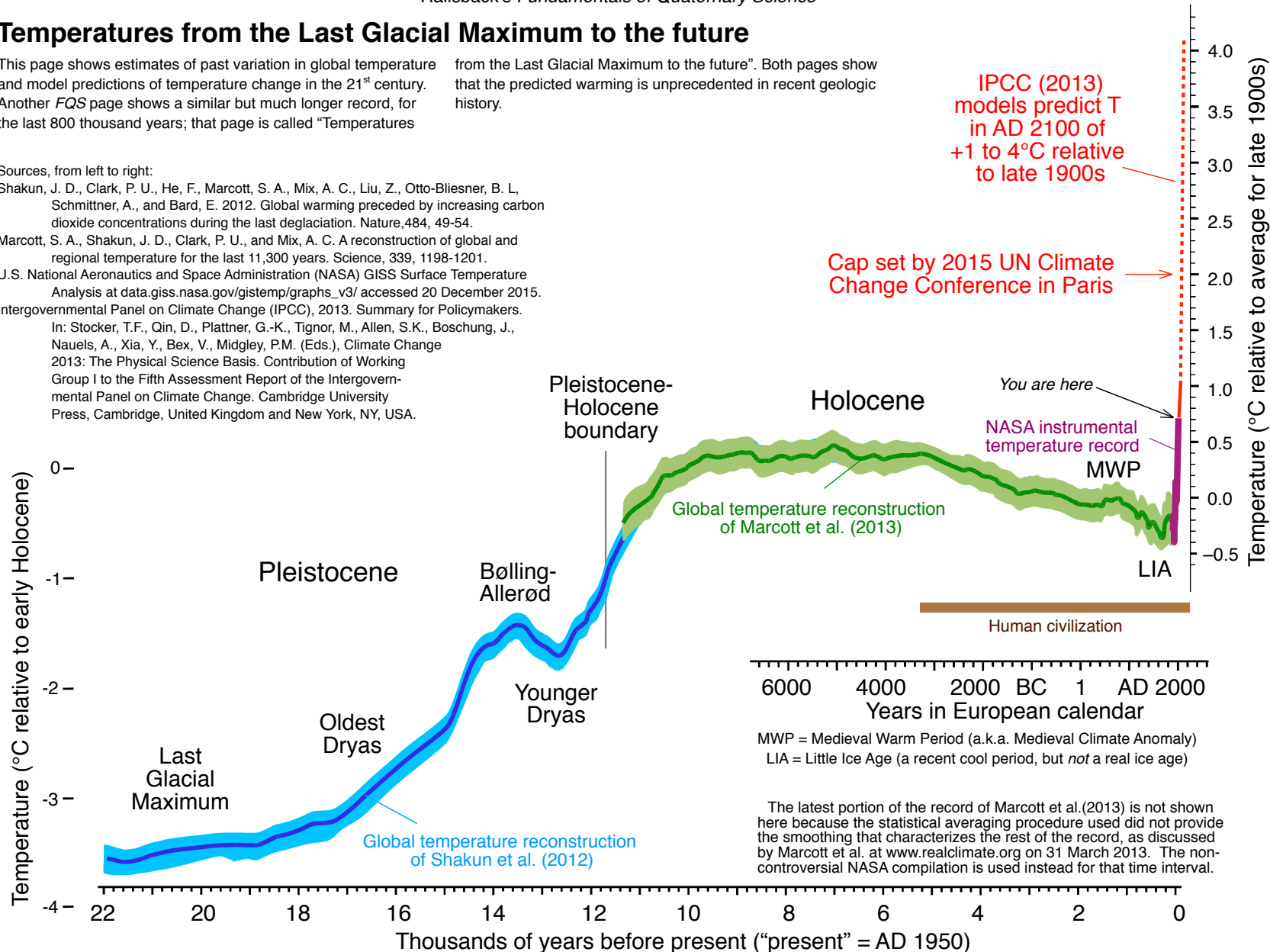
Shakun, J. D., Clark, P. U., He, F., Marcott, S. A., Mix, A. C., Liu, Z., Otto-Bliesner, B. L., Schmittner, A., and Bard, E. 2012. Global warming preceded by increasing carbon dioxide concentrations during the last deglaciation. *Nature*, 484, 49-54.

Marcott, S. A., Shakun, J. D., Clark, P. U., and Mix, A. C. A reconstruction of global and regional temperature for the last 11,300 years. *Science*, 339, 1198-1201.

U.S. National Aeronautics and Space Administration (NASA) GISS Surface Temperature Analysis at [data.giss.nasa.gov/gistemp/graphs\\_v3/](http://data.giss.nasa.gov/gistemp/graphs_v3/) accessed 20 December 2015.

Intergovernmental Panel on Climate Change (IPCC), 2013. Summary for Policymakers.

In: Stocker, T.F., Qin, D., Plattner, G.-K., Tignor, M., Allen, S.K., Boschung, J., Nauels, A., Xia, Y., Bex, V., Midgley, P.M. (Eds.), *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.



6000 4000 2000 BC 1 AD 2000  
Years in European calendar

MWP = Medieval Warm Period (a.k.a. Medieval Climate Anomaly)  
LIA = Little Ice Age (a recent cool period, but *not* a real ice age)

The latest portion of the record of Marcott et al. (2013) is not shown here because the statistical averaging procedure used did not provide the smoothing that characterizes the rest of the record, as discussed by Marcott et al. at [www.realclimate.org](http://www.realclimate.org) on 31 March 2013. The non-controversial NASA compilation is used instead for that time interval.