

National Aeronautics and Space Administration
Goddard Space Flight Center
Goddard Institute for Space Studies
2880 Broadway
New York, NY 10025



Dr. Gavin A. Schmidt, Director

November 18, 2016

Mr. Malcolm Roberts,

Thank you for your letter of the 14th November requesting information about the NASA GISTEMP analysis of global surface temperature history. Much of what you ask for is available directly from our website:

<http://data.giss.nasa.gov/gistemp>

and, in particular, from the FAQ which is available here:

<http://data.giss.nasa.gov/gistemp/faq>

Links there will lead you to the entirety of the raw data we use, all of which is public domain, along with our analysis code, which is also public.

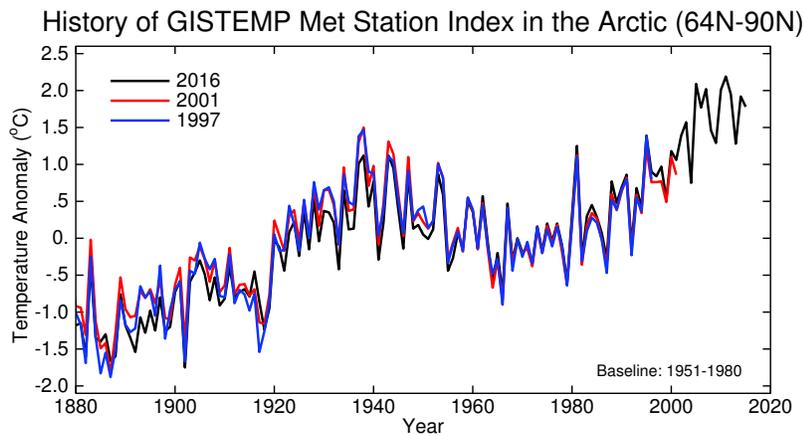
However, you appear to hold a number of misconceptions which I am happy to clarify at this time. Firstly, in the graphs you show the data is quite clearly (and correctly) labelled as originating from GHCN. For your information, GHCN stands for the Global Historical Climatology Network and is a project of the NOAA National Center for Environmental Information (NCEI):

<https://www.ncdc.noaa.gov/data-access/land-based-station-data/land-based-datasets/global-historical-climatology-network-ghcn>

Perhaps you may not be aware, but NOAA (the National Ocean and Atmospheric Administration) is a different US Govt. agency than NASA, and questions relating to their activities or products might be more usefully addressed to them. The methodology for the GHCN adjustments and the code used are available at the NOAA website.

Secondly, you appear to be mistaken as to the effect of homogeneity adjustments (from whatever source) on Arctic temperatures. The figure below shows the estimates over time (from 1997 to the present day) of temperature changes in the Arctic in the GISTEMP analysis (which defines the Arctic as 64°N-90°N). The small differences over time are due to increases in the number of available stations, small differences in methodology, as well as improved homogenization. Please see the GISTEMP history page for more information and method and data source changes over time.

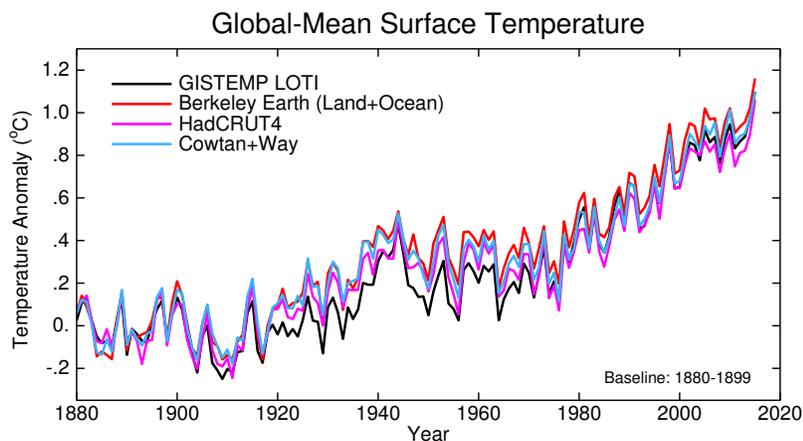
<http://data.giss.nasa.gov/gistemp/history/>



Thus the claim that GISS has ‘removed the 1940s warmth’ in the Arctic is not correct.

As Dr. Jónsson has already indicated, homogenization of the raw temperature records is a necessary task to ensure that non-climatic influences in the analysis are minimised as much as possible. These adjustments (for station moves, instrumentation changes, urban heat island effects etc.) are estimated via comparisons with neighboring stations and using relevant metadata. If we were not to adjust for these effects, we would be rightly criticized for using uncorrected data. The net effect of all adjustments on the global temperature trends is actually to reduce the long-term warming (see, for instance, figure 2b in Karl et al (2015)).

We are certainly gratified by the attention Australia pays to our analysis, but in case you have remaining questions, I urge you to perform your own analyses. As I mentioned above, all the raw data we use are in the public domain, as is our code. Please also look at the independent analyses performed by the Berkeley Earth group, the UK’s Hadley Centre and Climate Research Unit and the analysis from Cowtan and Way (2013). The figure below shows their coherence at the global scale:



Finally, might I suggest that you avail yourself of the resources provided by the Bureau

of Meteorology or CSIRO in Australia for further details on this topic? I'm sure they will be delighted to help.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Gavin Schmidt". The signature is written in a cursive, flowing style with some loops and flourishes.

Gavin Schmidt