

# HadCRUT4's Global Mean Temperature Data Set

The HadCRUT3 data set had been used to keep records of global surface temperatures since the mid-1800s. In it, the original set of data had been adjusted to give warmer historic temperatures. HadCRUT3 was adjusted again to become HadCRUT4, which has become the data that climate scientists use for all their modelling and predictions.

How is HadCRUT4 officially described?

*“HadCRUT4 is a gridded dataset of global historical surface temperature anomalies relative to a 1961-1990 reference period. Data are available for each month since January 1850, on a 5 degree grid. The dataset is a collaborative product of the Met Office Hadley Centre and the Climatic Research Unit at the University of East Anglia. The gridded data are a blend of the CRUTEM4<sup>1</sup> land-surface air temperature dataset and the HadSST3<sup>2</sup> sea-surface temperature (SST) dataset.”<sup>3</sup>*

Why have the climatologists decided to change the records of HadCRUT3 to that of HadCRUT4?

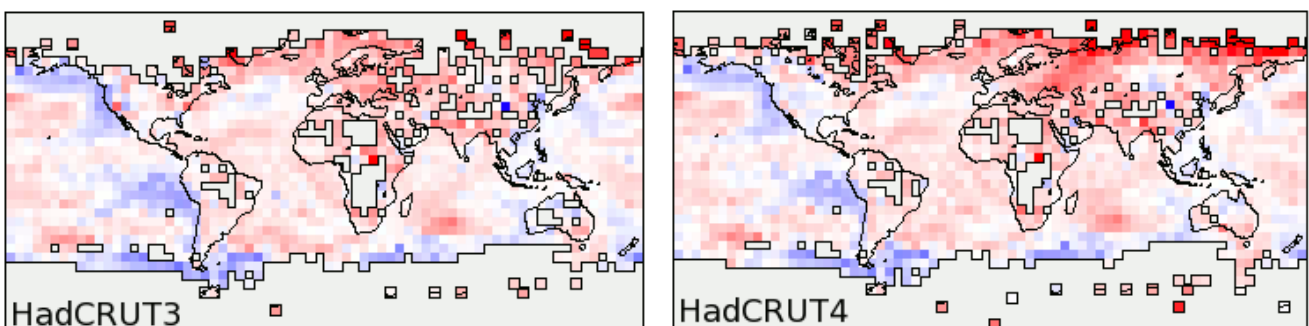
*“Recently a new version of the record, HadCRUT4, has been released running to December 2010, with monthly updates planned in future. This update is a response to several factors. In the case of the CRUTEM land temperature record, coverage has been declining because of the need for current weather stations to have a sufficient number of readings in the baseline period 1960-1990. As weather stations move, continuity back to this period is lost. The impact of this decline in coverage has been assessed by two reports, by the ECMWF and GISS, and also reproduced here, and has led to an underestimation of recent land temperature trends. The CRUTEM4 update introduces a number of new station records to address this coverage issue.*

*A second motivation for the update is the discovery of a bias in the sea surface temperature record, HadSST2, leading to a significant cool bias following the second world war. A new version, HadSST3, addresses this bias, but also has some impact on recent temperature trends. HadSST3 also introduces a new approach to estimating uncertainties in temperature records through the use of an ensemble of realisations; this approach is carried through to HadCRUT4.”<sup>4</sup>*

What have been the implications of this change? **The historic records of global temperatures have been manipulated.**

Here are two graphs to visually show the differences between the old and the new set of data:

*“Figure 1 shows a comparison of the change in temperatures over recent years in HadCRUT3 and HadCRUT4, using the difference between the 5 year means 2006-2010 and 1996-2000, and showing the change in coverage. Note that the rectangular projection used here exaggerates area at high latitudes. (The temperature scale ranges from +2C (red) to -2C (blue).”<sup>5</sup>*



~Figure 1~

1 – [www.metoffice.gov.uk/hadobs/crutem4](http://www.metoffice.gov.uk/hadobs/crutem4)

2 – [www.metoffice.gov.uk/hadobs/hadsst3](http://www.metoffice.gov.uk/hadobs/hadsst3)

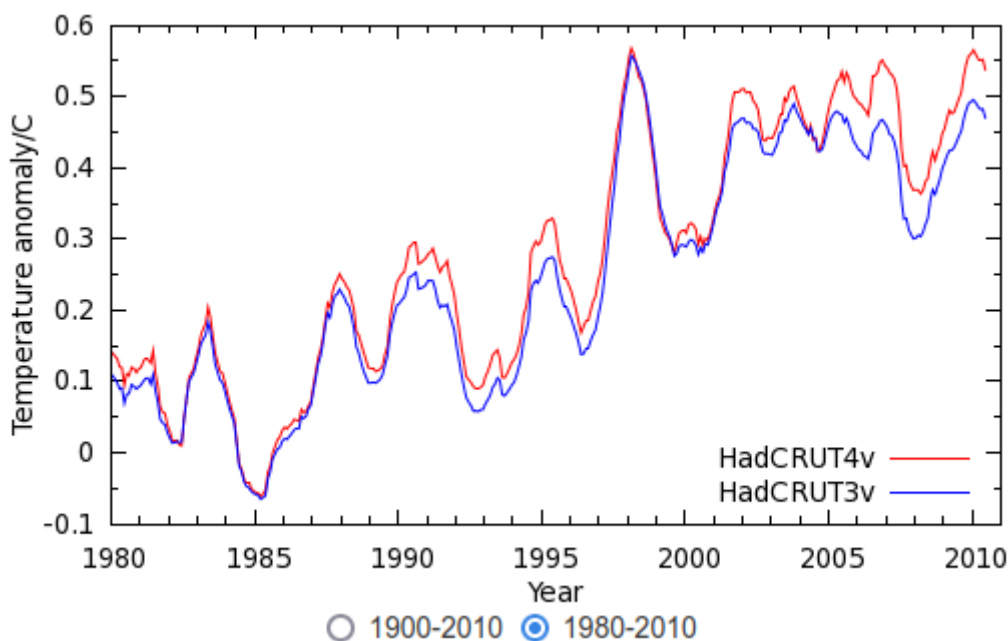
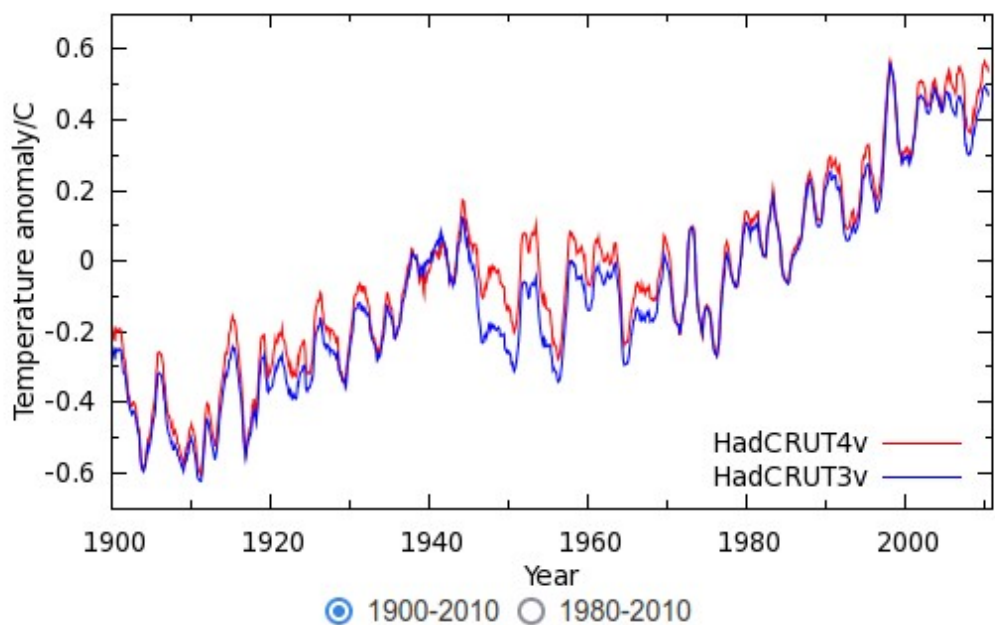
3 – “HadCRUT4” [www.metoffice.gov.uk/hadobs/hadcrut4](http://www.metoffice.gov.uk/hadobs/hadcrut4)

4 – “HadCRUT4: A detailed look” (22-5-2012) [skepticalscience.com/hadcrut4\\_a\\_detailed\\_look.html](http://skepticalscience.com/hadcrut4_a_detailed_look.html)

5 – “HadCRUT4: A detailed look” (22-5-2012) [skepticalscience.com/hadcrut4\\_a\\_detailed\\_look.html](http://skepticalscience.com/hadcrut4_a_detailed_look.html)

The graphs reveal that more of the land surface is being covered, even though this is not obvious to an untrained observer. This is most obvious in the higher Northern latitudes where there are fewer gaps in the coverage, where the readings are now mostly warmer (i.e. red cells). What is quite subtle is the slight increase in sea surface temperatures, right across the whole globe. This can be seen where sea cells have become slightly more red or less blue in HadCRUT4. The combination of these changes has been an increase in global temperatures, although how much changes have been calculated is not apparent.

Here are the actual differences between the old data set and the new one, as shown in graphs covering 2 different periods:<sup>6</sup>



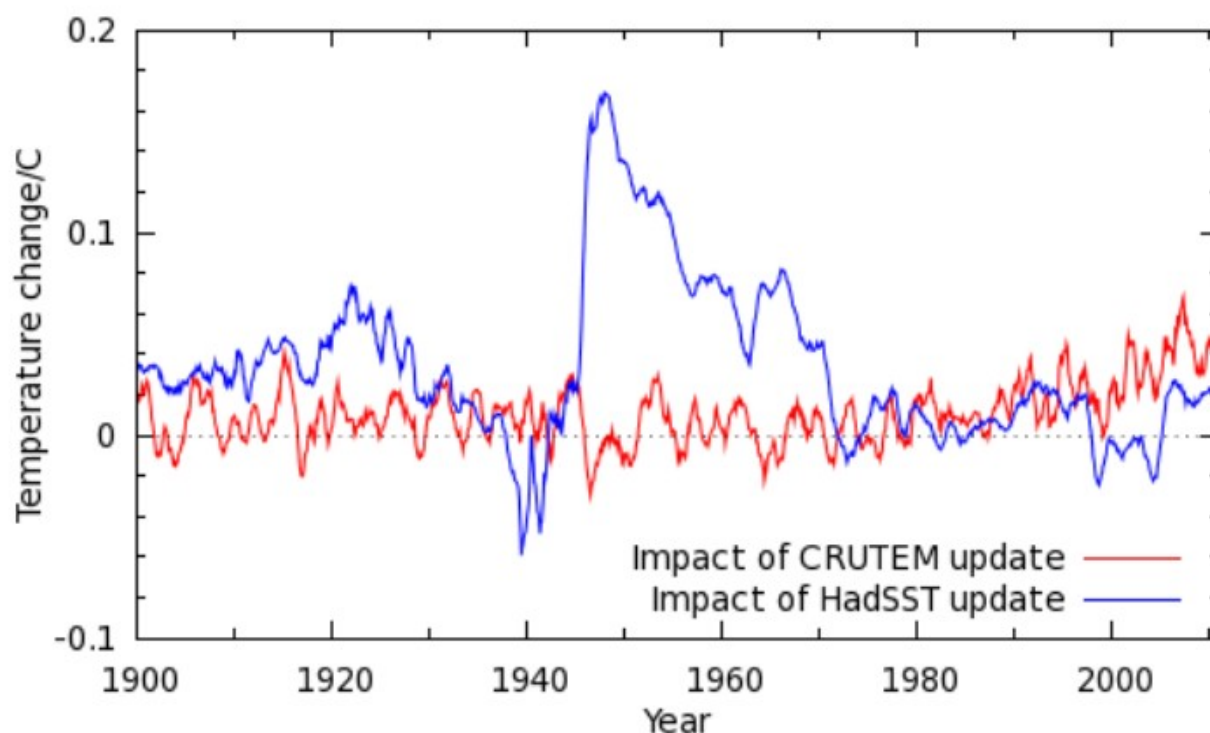
Note that the colder period following WWII has been eliminated by HadCRUT4's readjustment.

Also note that the temperatures for the 21<sup>st</sup> Century are now much warmer than they were in the HadCRUT3 data set. That, of course, is now the data that is used to support the narrative that the world is continually getting warmer (*à la*<sup>7</sup> Anthropogenic Climate Change).

6 – “HadCRUT4: A detailed look” (22-5-2012) [skepticalscience.com/hadcrut4\\_a\\_detailed\\_look.html](http://skepticalscience.com/hadcrut4_a_detailed_look.html)

7 – ‘according to’ (French expression)

Kevin C<sup>8</sup> posted an analysis in Skeptical Science<sup>9</sup> to show how the new CRUTEM (land-surface air temperature) dataset and the HadSST (sea-surface temperature) data contributed to the changes in HadCRUT4.<sup>10</sup>



Note that a vast majority of the mean yearly global temperatures increased by 0.01°C to 0.03°C. Note also that the sea surface temperatures were the most elevated.

## COMMENTS

**NOTE:** The original data collected since 1850 remains the same, but it's never used. What happens now is that climate scientists will use the manipulated HadCRUT4 data, not the original.

It is true that there were concerns that the past records that were used to create HadCRUT3 had some deficiencies. These have been stated:

*“This update is a response to several factors. In the case of the CRUTEM land temperature record, coverage has been declining because of the need for current weather stations to have a sufficient number of readings in the baseline period 1960-1990. As weather stations move, continuity back to this period is lost. The impact of this decline in coverage has been assessed by two reports, by the ECMWF and GISS, and also reproduced here, and has led to an underestimation of recent land temperature trends. The CRUTEM4 update introduces a number of new station records to address this coverage issue.*

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8 – A pen name to maintain his anonymity while producing a controversial science article.

9 – [skepticalscience.com](http://skepticalscience.com)

10 – “HadCRUT4: A detailed look” (22-5-2012) [skepticalscience.com/hadcrut4\\_a\\_detailed\\_look.html](http://skepticalscience.com/hadcrut4_a_detailed_look.html)

11 – “HadCRUT4: A detailed look” (22-5-2012) [skepticalscience.com/hadcrut4\\_a\\_detailed\\_look.html](http://skepticalscience.com/hadcrut4_a_detailed_look.html)

The technical paper describing the statistical manipulation of the HadCRUT4 data is available on the Internet.<sup>12</sup>

This type of manipulation is often used by statisticians, mathematicians and scientists to meet what they cognitively view as the answer to an insurmountable data problem. However, the outcome of the changes can always be justified in their minds, but not those of concerned peers. The anomalies could have been accounted for without mathematically manipulating all the data using a blanket procedure. So why do it?

A similar statistical ‘war’ emerged in ACT college system with the standardizing of unit and course scores. The method takes all of the student cohort and standardized their scores using a mean of 60 and standard deviation of 15. This brought the bottom scores up to around 40% and lowered the top scores somewhat. Class teachers were often horrified at what the statistical method had done, but the Department of Education justified the changes (for example) as “better for comparison between units and courses”. Few agreed with the Department, but the standardizing continues year after year.

This fiddling with surface temperatures is not confined to global data, it has happened in Australia as well.<sup>13</sup> (*See resources at the end of this article*)

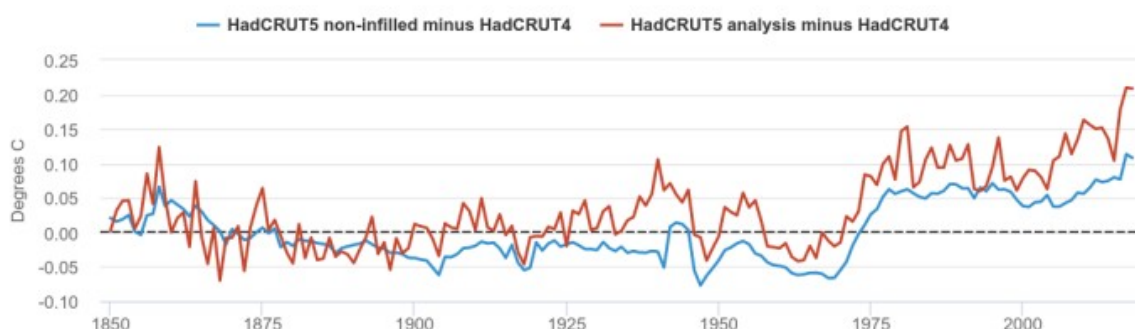
What is of concern is that the changes in Australia’s data and with HadCRUT4 have both led to historic records being hotter than they were in the original records. That should be of interest to us because these changes support Anthropogenic Climate Change, not global cooling, which we would expect as we enter a new Grand Solar Minimum.<sup>14</sup> Analysis of data that shows cooling rather than warming has been produced by various climate scientists, but the results are always contested. In the case of the BOM’s alteration of Australia’s temperature records and of HadCRUT4, there isn’t (hasn’t been) the same furore from climatologists, scientists and the news media which criticized that alterations. Those who criticize occasions at temperature rewriting are called “climate change deniers”, and their concerns are dismissed.

Although these changes in HadCRUT4 were only small, climate scientists, climate change advocates, the media and politicians will use the changes to make exaggerated claims. Such as: “The rise in temperature is worse than we thought.”

Be alert. Be watchful. The juggernaut of world manipulation and control is working in every area of life. Be prepared to speak what you know to others in grace, but without fear of recriminations.

## UPDATE

The data set has been readjusted again and is now available as HadCRUT5. This data has the global temperatures are getting warmer, faster, by an average of around 0.1°C since 1975.<sup>15</sup>



12 – Colin P. Morice et. al. (c. 2012) "Quantifying uncertainties in global and regional temperature change using an ensemble of observational estimates: the HadCRUT4 data set" [www.metoffice.gov.uk/hadobs/hadcrut4/HadCRUT4\\_accepted.pdf](http://www.metoffice.gov.uk/hadobs/hadcrut4/HadCRUT4_accepted.pdf)

13 – Jennifer Marohasy (17-5-2014) "Corrupting Australia's Temperature Record" [jennifermarohasy.com/2014/05/corrupting-australias-temperature-record](http://jennifermarohasy.com/2014/05/corrupting-australias-temperature-record)

14 – "The Sun is Asleep: Deep Solar Minimum Feared"

[www.forbes.com/sites/jamiecartereurope/2020/05/12/the-sun-is-asleep-deep-solar-minimum-feared-as-2020-sees-record-setting-100-day-slump](http://www.forbes.com/sites/jamiecartereurope/2020/05/12/the-sun-is-asleep-deep-solar-minimum-feared-as-2020-sees-record-setting-100-day-slump)

15 – "Why the new Met Office temperature record shows faster warming since 1970s"

[www.carbonbrief.org/analysis-why-the-new-met-office-temperature-record-shows-faster-warming-since-1970s](http://www.carbonbrief.org/analysis-why-the-new-met-office-temperature-record-shows-faster-warming-since-1970s)

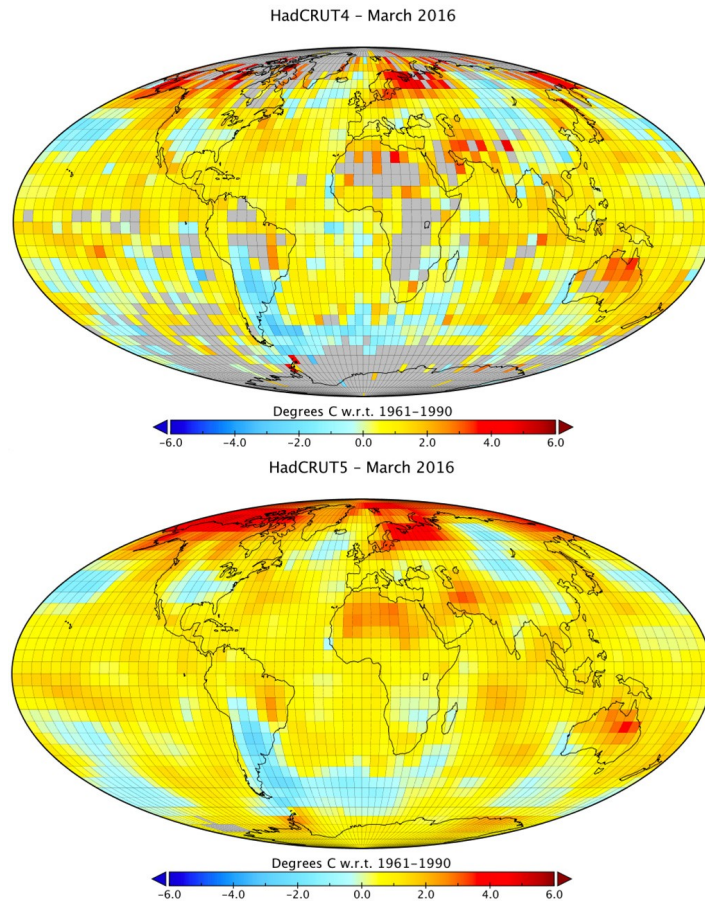


The changes brought in to the new data set have been acknowledged:

*“First, the new record includes an update in the sea surface temperature (SST) record it uses – from HadSST3 to HadSST4. Among other revisions, this new SST dataset corrected some issues in ship-based measurements by using more reliable data from buoys, increasing warming by around 0.1 °C in recent years.*

*Second, the new HadCRUT5 dataset uses statistical analysis to fill in gaps in data collection in the Arctic and other regions that were not covered in HadCRUT4. As the Arctic is the fastest warming region of the world, its more complete inclusion also increases global temperatures by up to an additional 0.1 °C.”*<sup>16</sup>

You can visually see below what the HadCRUT5 changes have done to the 1916 records.<sup>17</sup>



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21-1-2022  
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***{List of resource over the page}***

16 – “Why the new Met Office temperature record shows faster warming since 1970s”

[www.carbonbrief.org/analysis-why-the-new-met-office-temperature-record-shows-faster-warming-since-1970s](http://www.carbonbrief.org/analysis-why-the-new-met-office-temperature-record-shows-faster-warming-since-1970s)

17 – GRAPHIC: [www.carbonbrief.org/wp-content/uploads/2020/12/Gridded-global-surface-temperatures-in-HadCRUT4-and-HadCRUT5-analysis-for-March-2016.jpg](http://www.carbonbrief.org/wp-content/uploads/2020/12/Gridded-global-surface-temperatures-in-HadCRUT4-and-HadCRUT5-analysis-for-March-2016.jpg)

## RESOURCES

- Joanne Nova (2017) “Mysterious Revisions of Australia’s Long Hot History”  
IPA (2017) “Climate Change: The facts 2017” p:117-131
- Joanne Nova (18-6-2015) “If it can’t be replicated, it isn’t science: BOM admits temperature adjustments are secret”  
[joannenova.com.au/2015/06/if-it-cant-be-replicated-it-isnt-science-bom-admits-temperature-adjustments-are-secret](http://joannenova.com.au/2015/06/if-it-cant-be-replicated-it-isnt-science-bom-admits-temperature-adjustments-are-secret)
- Jennifer Marohasy (2020) “Rewriting Australia’s Temperature History”  
IPA (2020) “Climate Change: The facts 2020” p:241-252
- Jennifer Marohasy (17-5-2014) “Corrupting Australia’s Temperature Record”  
[jennifermarohasy.com/2014/05/corrupting-australias-temperature-record](http://jennifermarohasy.com/2014/05/corrupting-australias-temperature-record)
- Jennifer Marohasy (29-3-2014) “Fiddling Temperatures for Bourke: Part 1, Hot Days”  
[jennifermarohasy.com/2014/03/fiddling-temperatures-for-bourke-part-1-hot-days](http://jennifermarohasy.com/2014/03/fiddling-temperatures-for-bourke-part-1-hot-days)
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[jennifermarohasy.com/2014/04/rewriting-the-history-of-bourke-part-2-adjusting-maximum-temperatures-both-down-and-up-and-then-changing-them-altogether](http://jennifermarohasy.com/2014/04/rewriting-the-history-of-bourke-part-2-adjusting-maximum-temperatures-both-down-and-up-and-then-changing-them-altogether)
- Jennifer Marohasy (9-4-2014) “Rewriting the History of Bourke: Part 3, Shortening an Already Shortened Record”  
[jennifermarohasy.com/2014/04/rewriting-the-history-of-bourke-part-3-shortening-an-already-shortened-record](http://jennifermarohasy.com/2014/04/rewriting-the-history-of-bourke-part-3-shortening-an-already-shortened-record)
- Jennifer Marohasy (10-3-2019) “The hottest summer on record except for the ones that we’ve changed”  
[www.spectator.com.au/2019/03/the-hottest-summer-on-record-except-for-the-ones-that-weve-changed](http://www.spectator.com.au/2019/03/the-hottest-summer-on-record-except-for-the-ones-that-weve-changed)
- Chris White (31-7-2017) “Australia Weather Bureau Caught Tampering With Climate Numbers”  
[dailycaller.com/2017/07/31/australia-weather-bureau-caught-tampering-with-climate-numbers](http://dailycaller.com/2017/07/31/australia-weather-bureau-caught-tampering-with-climate-numbers)
- BOM (?) “Long-term Temperature Record: Australian Climate Observations Reference Network – Surface Air Temperature (ACORN-SAT)” *[Statistical adjustments to model temperature trends]*  
[www.bom.gov.au/climate/data/acorn-sat](http://www.bom.gov.au/climate/data/acorn-sat)