

# Submission to Bob Baldwin for Panel established to audit ACORN-SAT

Nobbys Weather Station is one of the longest running weather collection stations in Australia. It began service in 1862. Yet the current list of Bureau of Meteorology weather sites does not include Nobbys Station:

[ftp://ftp.bom.gov.au/anon/home/ncc/www/change/HQdailyT/HQdailyT\\_info.pdf](ftp://ftp.bom.gov.au/anon/home/ncc/www/change/HQdailyT/HQdailyT_info.pdf)

The [criteria for inclusion](#) in the Reference Climate Station Network is:

- *high quality and long climate records*
- *a location in an area away from large urban centres*
- *a reasonable likelihood of continued, long-term operation*

Nobbys fulfils all three of these criteria.

The temperature data from Nobbys is at the Bureau of Meteorology website:

[http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p\\_nccObsCode=36&p\\_display\\_type=dataFile&p\\_startYear=&p\\_stn\\_num=061055](http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_nccObsCode=36&p_display_type=dataFile&p_startYear=&p_stn_num=061055)

This shows the mean maximum temperature at Nobbys. A cursory look at the data shows the hottest periods were before 1900. Using the *highlight of the highest mean maximums* shows that all the highest maximums were before 1890.

Nobbys has always been a scientific site with reliable weather recordings. However, the early data has been adjusted because the Bureau of Meteorology claims the early measurements were not correctly done and gave false warm readings. This is not correct.

The main reason the BoM gives for adjusting the early years and making them cooler is that the temperature was measured with a Glaisher thermometer screen and not a Stevenson screen. The bureau says the Glaisher gave a temperature measurement 0.2C warmer than the Stevenson: see page 709:

HISTORICAL THERMOMETER EXPOSURES IN AUSTRALIA

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*Received 10 July 1995*

*Accepted 19 September 1995*

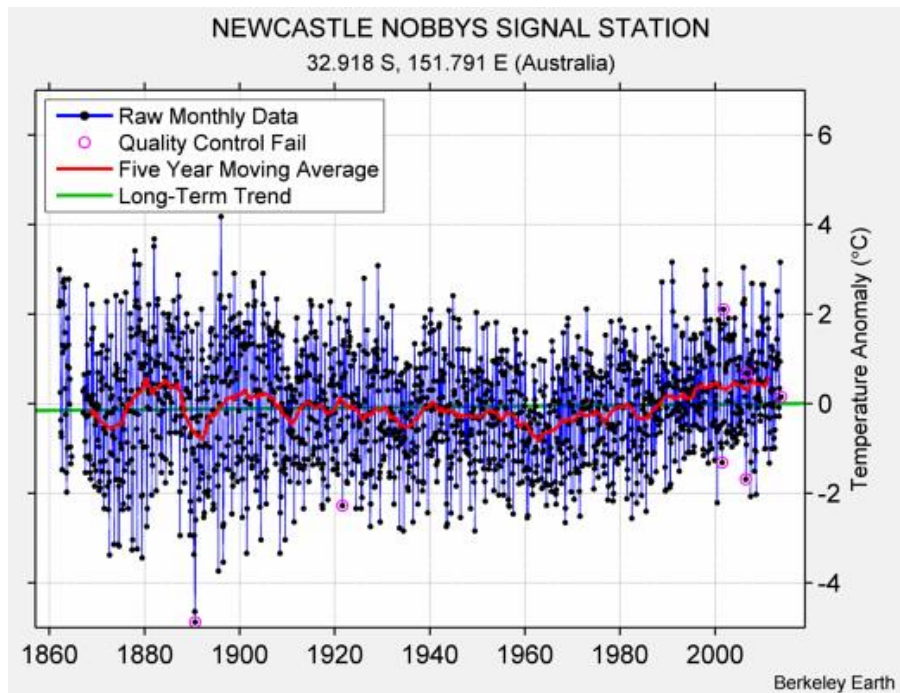
Like other stations, at Nobbys the adjustments making early temperatures cooler are justified by comparisons with neighbouring sites. This is clearly shown by reference to the Berkeley temperature site for Nobbys:

<http://berkeleyearth.lbl.gov/auto/Stations/TAVG/Text/152044-TAVG-Data.txt>

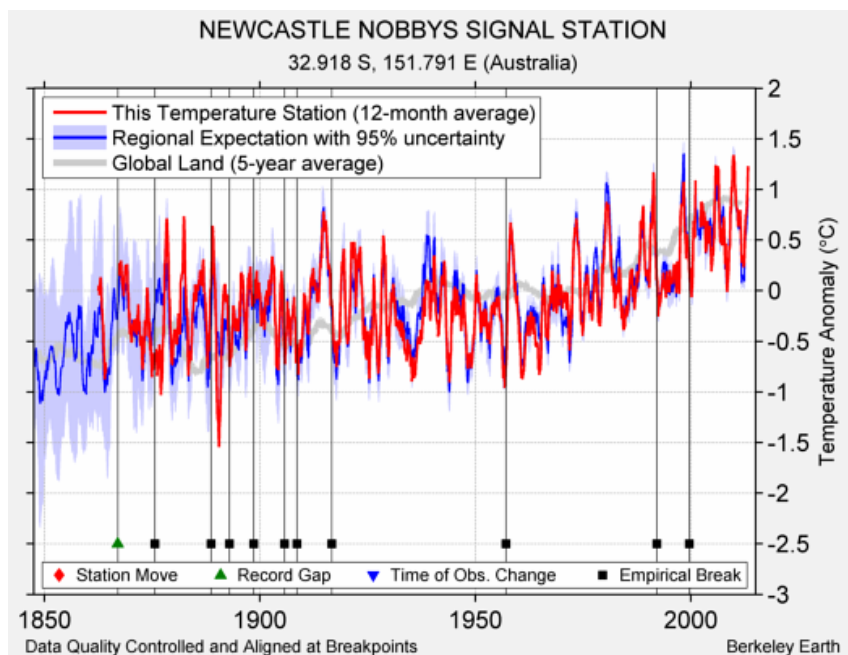
And shown in graphical form:

<http://berkeleyearth.lbl.gov/stations/152044>

Berkeley obtains its raw data from the BoM and employs similar methods of adjusting temperatures as the bureau. Berkeley uses a comparison with neighbouring sites to justify the temperature adjustments which change the trend at Nobbys. The original temperature data shows no increase in trend:



The adjusted data shows a step increase in trend:



Berkeley says this adjustment is necessary because of regional expectations and the global average.

In respect of regional expectations, pre 1900 raw temperature data is scarce. However, old newspaper stories suggest sites surrounding Nobbys also showed the period up to 1890 being the hottest - as shown in a survey at the Jo Nova website:

<http://joannenova.com.au/2015/01/forgotten-extreme-heat-el-nino-of-1878-when-miners-yearned-for-the-years-when-theyd-knock-off-at-44-4c/>

For instance, *January 1878 was described as “intensely hot” in many places, with temperatures recorded “in the shade” at Walgett of 120F, Coonamble, 113F, Sydney 114F and at Hay 117F. Later in January it reach 119 at Gunnedah, and 129F at Coonamble.*

The point is if regional temperatures are as hot as Nobbys how can those regional temperatures be used by the Bureau and Berkeley to justify cooling Nobbys’ temperature?

Based on the analysis of Nobbys, the questions for the panel are:

1 Why isn’t Nobbys on the ACORN list of temperature sites?

2 If regional and neighbouring sites were just as hot as Nobbys why should Nobbys be cooled?