

From: Judy Ryan judyryan@grapevine.com.au
Subject: RE: DIR 16 0030 - MC15-043361 Response to your email [SEC=UNCLASSIFIED] (Response by JR and MC 2)
Date: 24 February 2016 4:03 pm
To:



From: Judy Ryan [<mailto:judyryan@grapevine.com.au>]
Sent: Monday, 22 February 2016 2:23 PM
To: Rob Vertessy
Subject: Re: DIR 16 0030 - MC15-043361 Response to your email [SEC=UNCLASSIFIED] (Response by JR and MC 2)

Dear Professor Vertessy,

Thank you for replying to our public email http://www.galileomovement.com.au/docs/jr/1Why_did_Greg_Hunt_stop_the_investigation_into_the_Australian_Bureau_of_Meteorologys_possibly_faked_temperature_data.pdf to the Hon Greg Hunt, Minister for the Environment on his behalf.

However, in you email below, you have not answered any of the questions that we raised with the Minister. Please respond to them specifically now.

To reiterate they are:

- The BOM's ACORN data for Eucla in 1920 show the maximum temperature for the 23rd December and the previous four days as significantly cooler than was reported by the meteorologist of the day

ACORN data file

<http://www.bom.gov.au/climate/change/acorn/sat/data/acorn.sat.maxT.011003.daily.txt>

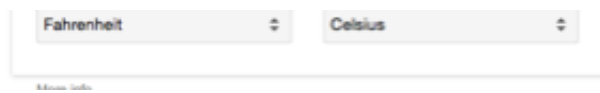
-
- 19201219 31.2
- 19201220 37.4
- 19201221 30.8
- 19201222 39.4
- 19201223 41.9

Quoting from the meteorologist of the day <http://trove.nla.gov.au/ndp/del/article/55153761> and converting to Celsius

the eastern depressions. The spell of cool weather gave place to warmer conditions on the 19th, and during the next four days the passage across the State of a slowly moving and shallow "low" (chiefly monsoonal in character) was associated with intense heat, and for three days the shade readings at many stations were in the neighbourhood of 110 deg., with a maximum of 114 deg.

Temperature		
110	=	43.3333
Fahrenheit		Celsius
Temperature		
114	=	45.5556

at Lucia on the 23rd. Cloudy, sultry, and un-



- As displayed in the linked poster, <http://www.galileomovement.com.au/docs/jr/NonInteracticePosterForDecember1931.pdf> the BOMs map <http://www.bom.gov.au/jsp/awap/temp/archive.jsp?colour=colour&map=maxextrm%2Fhi&year=1933&month=12&period=month&area=n> at indicates that the summer temperature in central Australia for most of the 1930s was somewhere between 33 and 39 degrees Celsius. This contradicts the historical evidence that Central Australia was experiencing such extreme heat (120 (48.8 Celsius) in the shade) that the birds were dying.

Also, further down the poster a survey of the weather stations, in that area, shows that they had no temperature data for that time period. Can you please clarify how your homogenisation practices could possibly produce this data. Please click “Reply All” when you respond.

- Professor Vertessy, Are the temperature records in the left hand panel of this poster <http://www.galileomovement.com.au/docs/jr/SystemGeneratedFakeData-2.pdf> examples of system generated fake data? Please click “Reply All” when you respond.

We recommend that the Turnbull Government reopen the technical forum enquiry instigated by the Abbott Government, which was effectively closed by Minister Greg Hunt. We recommend that its terms of reference be broadened. The examples above are only a few of hundreds that should be investigated.

In the interests of openness and transparency this email has been openly copied to many public entities and blind copied to many individuals.

We look forward to receiving your response within 2 weeks of the date of these emails.

Regards

Dr Judy Ryan
Dr Marjorie Curtis

On 16 Feb 2016, at 9:00 am, Rob Vertessy <R.Vertessy@bom.gov.au> wrote:

Good Morning,
Please find enclosed, and below, a response to your email.
Dr Judy Ryan and Dr Marjorie Curtis
judyryan@grapevine.com.au

Dear Dr Ryan and Dr Curtis
I refer to your email of 20 October 2015 to the Minister for the Environment, the Hon Greg Hunt MP, concerning Bureau of Meteorology temperature data. Minister Hunt has forwarded your email to me to respond on his behalf. I apologise for the delay in responding.

The Bureau is one of Australia's most fundamental and widely used government services and the information it provides is essential for the daily operations of the economy.

The Bureau welcomes robust scientific assessment of its work and relies on the best practice peer reviewed science and international guidance, including from the World Meteorological Organization, to support its work.

The Bureau has been collecting daily temperature records in Australia for over 100 years. Technological advancement and changes to observation methods means that much data is not collected in the same way as a century ago. In addition, many weather stations have been moved, new weather stations have been installed and the sites around weather stations have changed. All these changes introduce biases into the historical temperature record. In order to adjust for this to measure temperature data throughout time, meteorological authorities around the world carry out a process known as homogenisation.

The Australian adjusted temperature data is called the Australian Climate Observations Reference Network – Surface Air Temperature (ACORN-SAT). This is a stand-alone, high quality, homogenised dataset that can be used in climate analysis. The raw data remains unaltered and is also available. Details of the Bureau's homogenisation methods can be found at www.bom.gov.au/climate/change/acorn-sat/.

In August 2011, the Bureau convened a panel of international experts to undertake an independent peer review of the methods and procedures used to develop the ACORN-SAT dataset. The panel expressed overall confidence with the methodologies used by the Bureau, ranking the Bureau's procedures and data analysis as amongst the best in the world. The panel recommended that an independent Technical Advisory Forum be established, comprised of respected external scientists, statisticians and stakeholders, to periodically review progress on the development and operation of the ACORN-SAT dataset and advise on further possible developments.

The Technical Advisory Forum met for the first time in March 2015. In its first report released in June 2015, the Forum concluded that that homogenisation plays an essential role in eliminating artificial non-climate systematic errors in temperature observations, so that a meaningful and consistent set of records can be maintained over time. It also found that the analyses conducted by the Bureau reflect good practice in addressing the problem of how to adjust the raw temperature series for systematic errors. The Technical Advisory Forum will reconvene annually for the next few years.

The observations of the ACORN-SAT dataset indicate that seven of the ten warmest years on record (for Australia) have occurred since 1998 and the mean surface air temperature has warmed by 0.9°C since 1910. Most of Australia's warming has occurred since 1955 and during this period the trends in the adjusted and the unadjusted temperatures are virtually identical. From 1910 to approximately 1950 there are small differences—generally less than 0.2°C—in annual-mean Australian temperatures between adjusted and unadjusted datasets. There are no trends in temperatures over this period and the inherent uncertainty in the data is largest at this time due to a sparser observing network. Since the unadjusted data contain non-climate biases, the adjusted data are far more reliable.

The warming trend is clear in the data, although occurring against a background of year to year variability, mostly associated with El Niño and La Niña events in the tropical Pacific. That means that not every year is warmer than the previous year. As stated on 25 November 2015 by the World Meteorological Organization in its Provisional Statement on the Status of the Global Climate, it is expected that global average temperatures for 2015 exceeded those of 2014, which is the current warmest year on record.

Thank you for writing on this matter.

Yours sincerely
Vicki Middleton

A/Director of Meteorology

Enc.

Sent on behalf of A/Director of Meteorology by

Maggie Harvey – acting Executive Assistant to the Director of Meteorology and CEO

<image001.gif>

Bureau of Meteorology

GPO Box 2234

Level 3, 14 Childers Street, Civic

Tel: +61 02 6232 3502 | m.harvey@bom.gov.au

www.bom.gov.au

<DIR 16 0030 - MC15-043361 - Judy Ryan - Independent Audit of BoM.pdf>