



Australian Government

Bureau of Meteorology

IMOS AVHRR SST On-line Validation

Helen Beggs, Christopher Griffin, Janice Sisson and Pallavi Govekar

Bureau of Meteorology, Melbourne, Australia

Presented at the 17th GHRSSST Science Team Meeting, Tysons Corner, USA,
6th – 10th June, 2016



Australian Government

Bureau of Meteorology

IMOS HRPT AVHRR GHRSSST products



<http://imos.org.au/sstproducts.html>

Format: GHRSSST v2.0 L2P/L3U/L3C/L3S netCDF4

Depth: skin (day-only/night-only), foundation (day+night) **1 month day+night L3S SSTfnd**

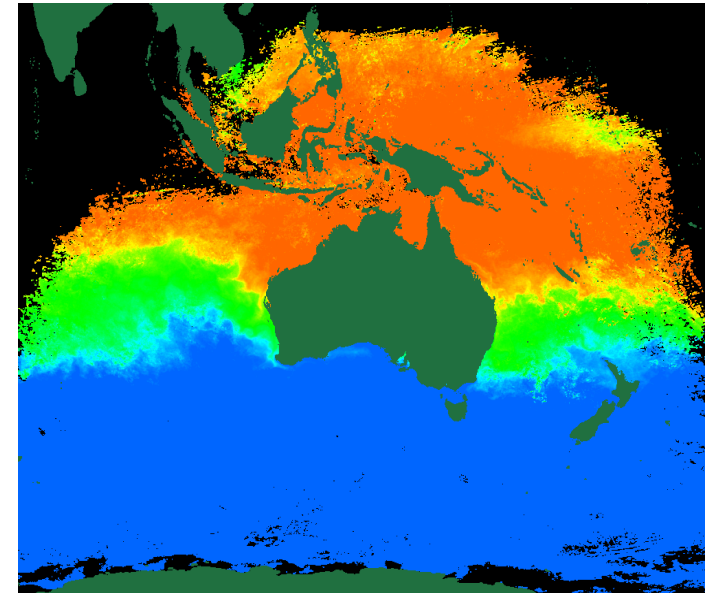
Resolution: swath: 1-4 km, gridded: 0.02° 1/3/6/14-day and 1-month day-only, night-only, day+night

Available: fv01: Jan 2015 to real-time; fv02: 1992 – Dec 2014 (aim to be real-time in 2017)

Inputs: 1-4 km brightness temperatures from AVHRR radiometers on NOAA Polar Orbiting Environmental Satellites (NOAA-11 to NOAA-19)

Method: Skin SSTs derived by regressing brightness temperatures against collocated drifting buoy SSTs (~20 cm depth) followed by **subtracting 0.17 K**. Foundation SSTs derived from skin SSTs by rejecting observations for low NWP wind speeds and **adding 0.17 K**.

Fv02 uses running 1 year calibration window, adjusted monthly.

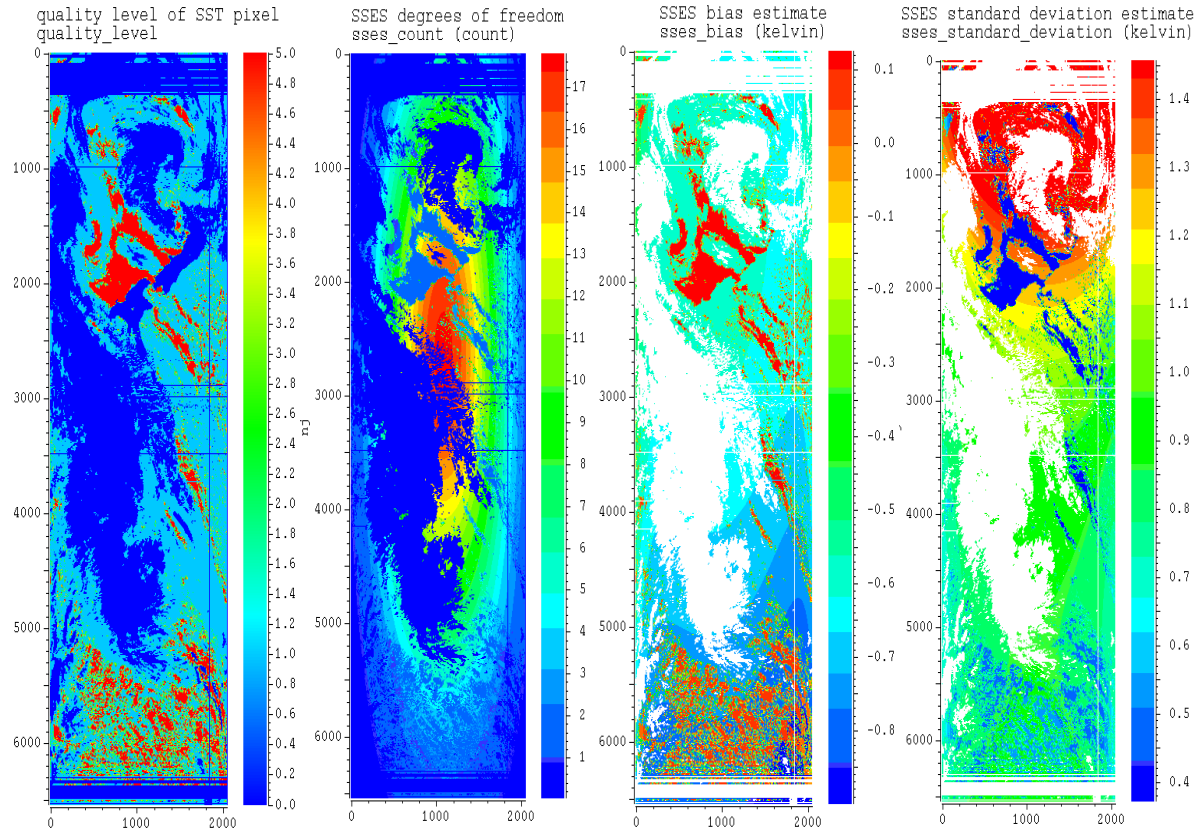


February 2008



New fv02 SSES: "Adaptive Error Statistics"

- Rolling 1 year window adjusted every 5 days
- Measurements are weighted by time (120 day time constant)
- 6-d model based on time of day, satellite zenith angle, quality level, longitude, latitude and age
- Per pixel
- Continuously varying across FOV





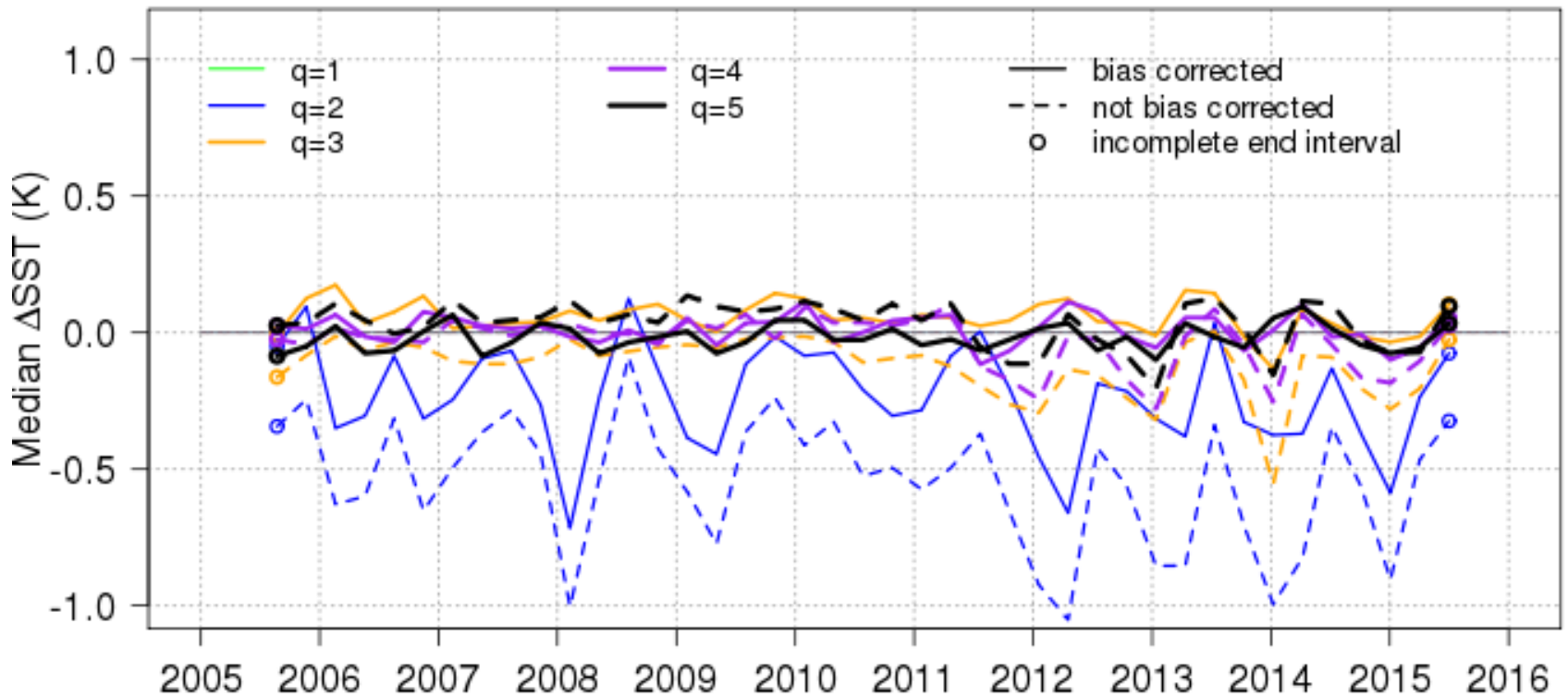
Australian Government

Bureau of Meteorology

IMOS Reprocessed (fv02) L2P SST on-line verification

http://opendap.bom.gov.au:8080/thredds/fileServer/abom_imos_ghrsst_archive/v02.0fv02/Validation/web/index.html

Median fv02 L2P NOAA-18 SSTskin - drifting buoys SSTskin for night over 90 days





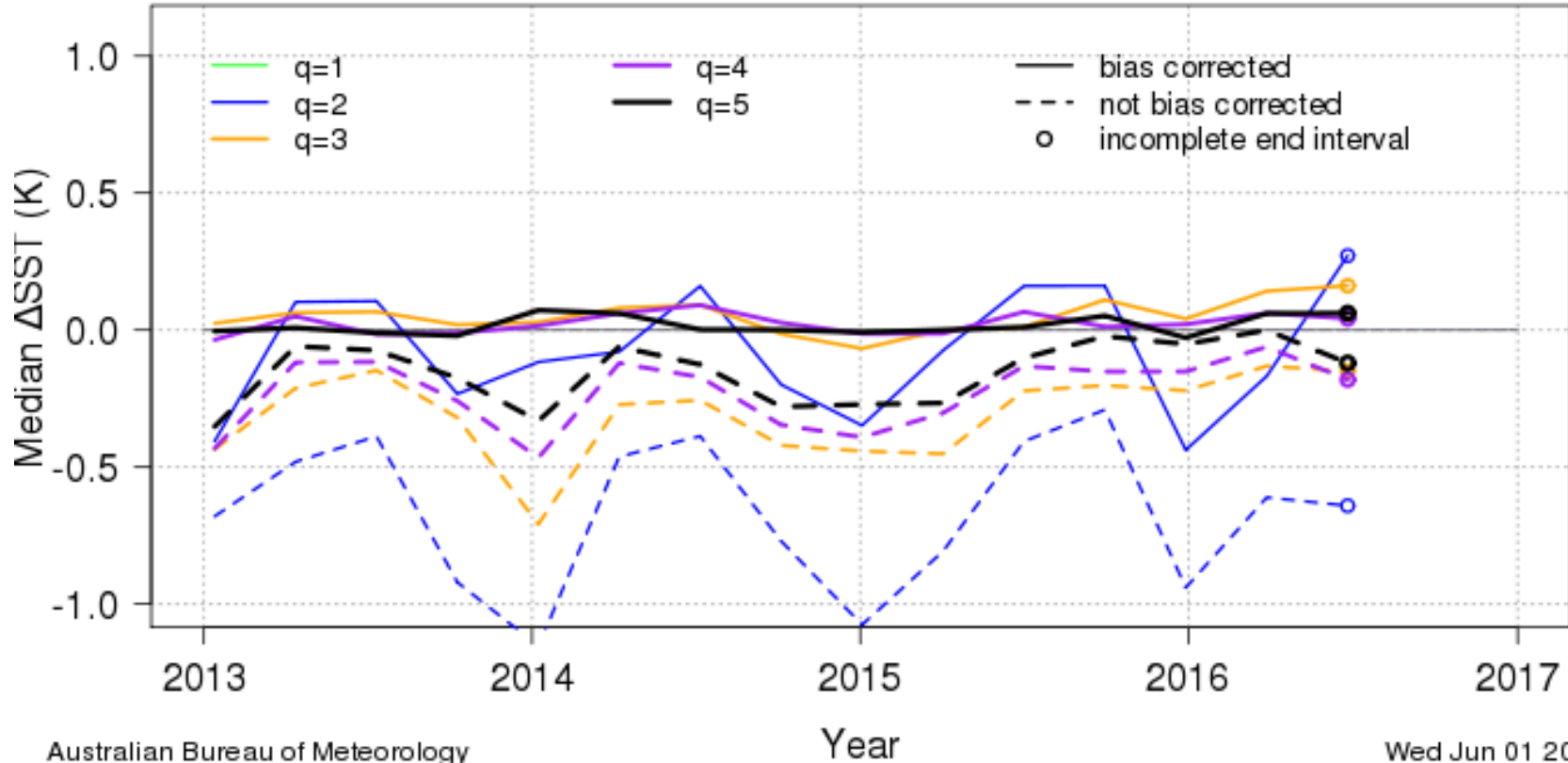
Australian Government

Bureau of Meteorology

IMOS Real-time (fv01) L2P SST on-line verification

http://opendap.bom.gov.au:8080/thredds/fileServer/abom_imos_ghrsst_archive/v02.0fv01/Validation/web/index.html

Median fv01 L2P NOAA-18 SSTskin - drifting buoys SSTskin for night over 90 days





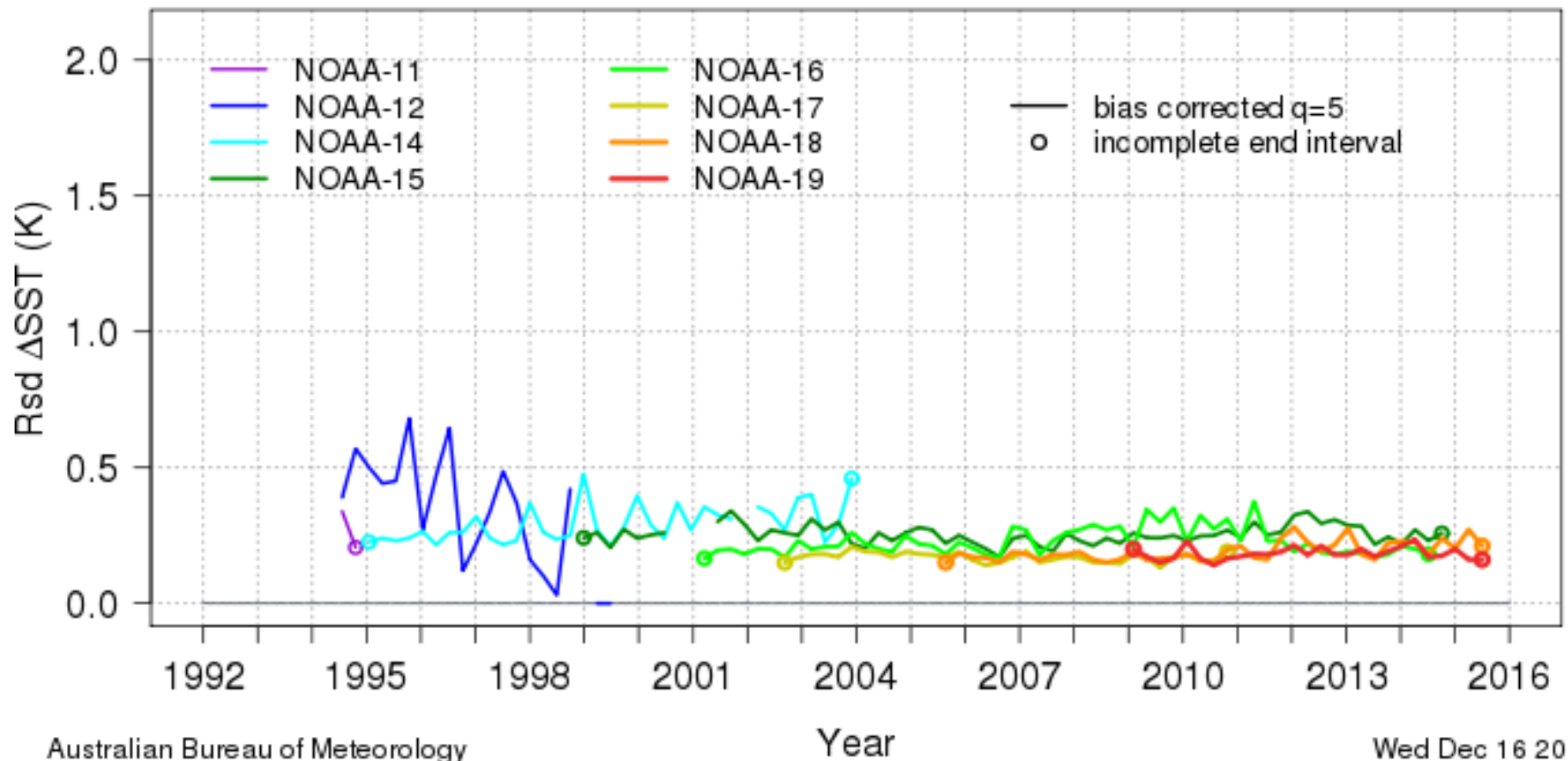
Australian Government

Bureau of Meteorology

fv02 L2P SST on-line routine verification

http://opendap.bom.gov.au:8080/thredds/fileServer/abom_imos_ghrsst_archive/v02.0fv02/Validation/web/index.html

Rsd of fv02 L2P NOAA SSTskin - drifting buoys SSTskin for night over 90 days





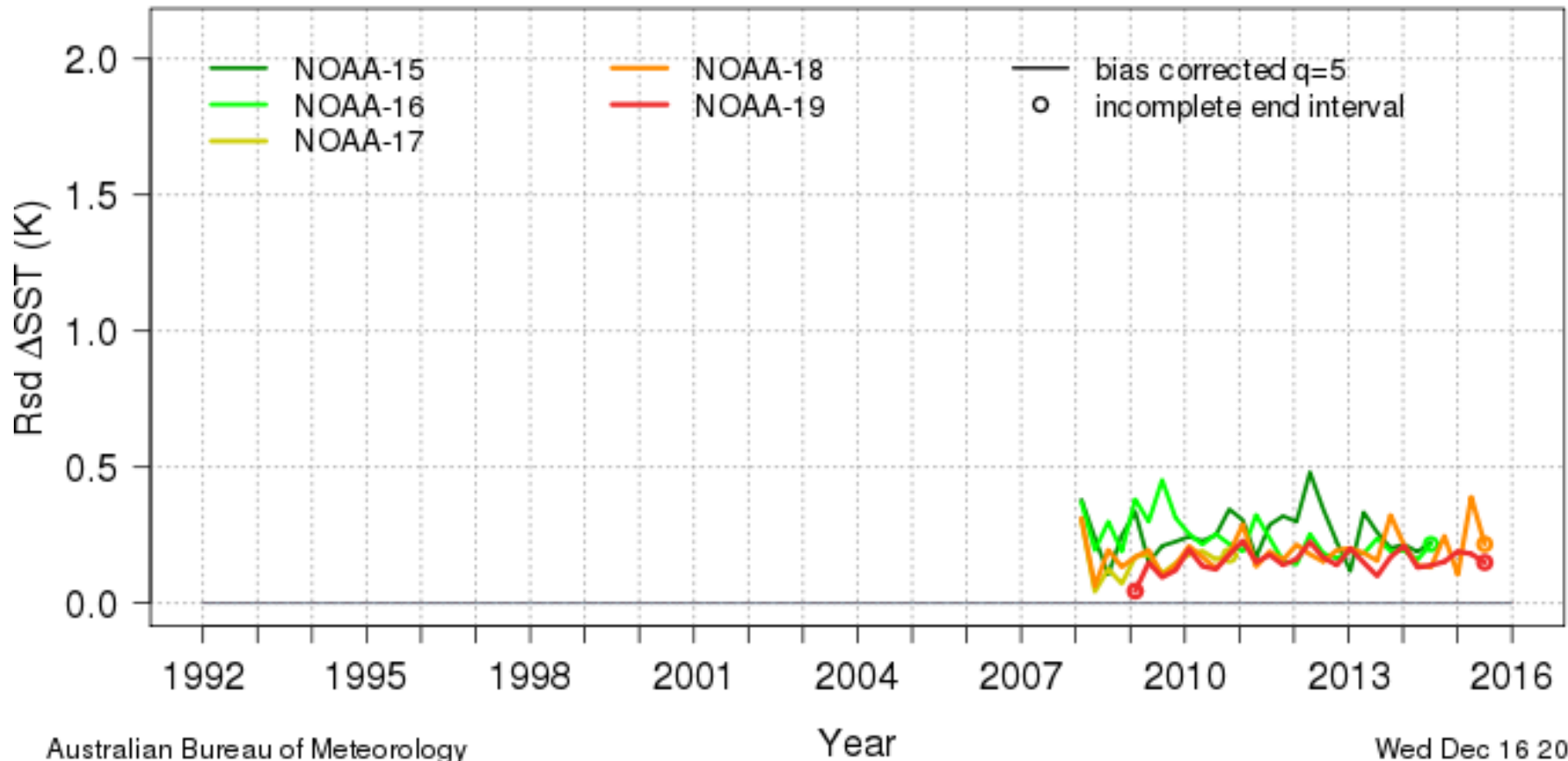
Australian Government

Bureau of Meteorology

fv02 L2P SST on-line routine verification

http://opendap.bom.gov.au:8080/thredds/fileServer/abom_imos_ghrsst_archive/v02.0fv02/Validation/web/index.html

Rsd of fv02 L2P NOAA SSTskin - imos ships SSTskin for night over 90 days





Australian Government

Bureau of Meteorology

For further information contact:

Helen Beggs,
Ocean Remote Sensing Scientist,
Ocean Modeling Research Team,
Research and Development Branch,
Bureau of Meteorology,
Melbourne, Australia

Email: h.beggs@bom.gov.au