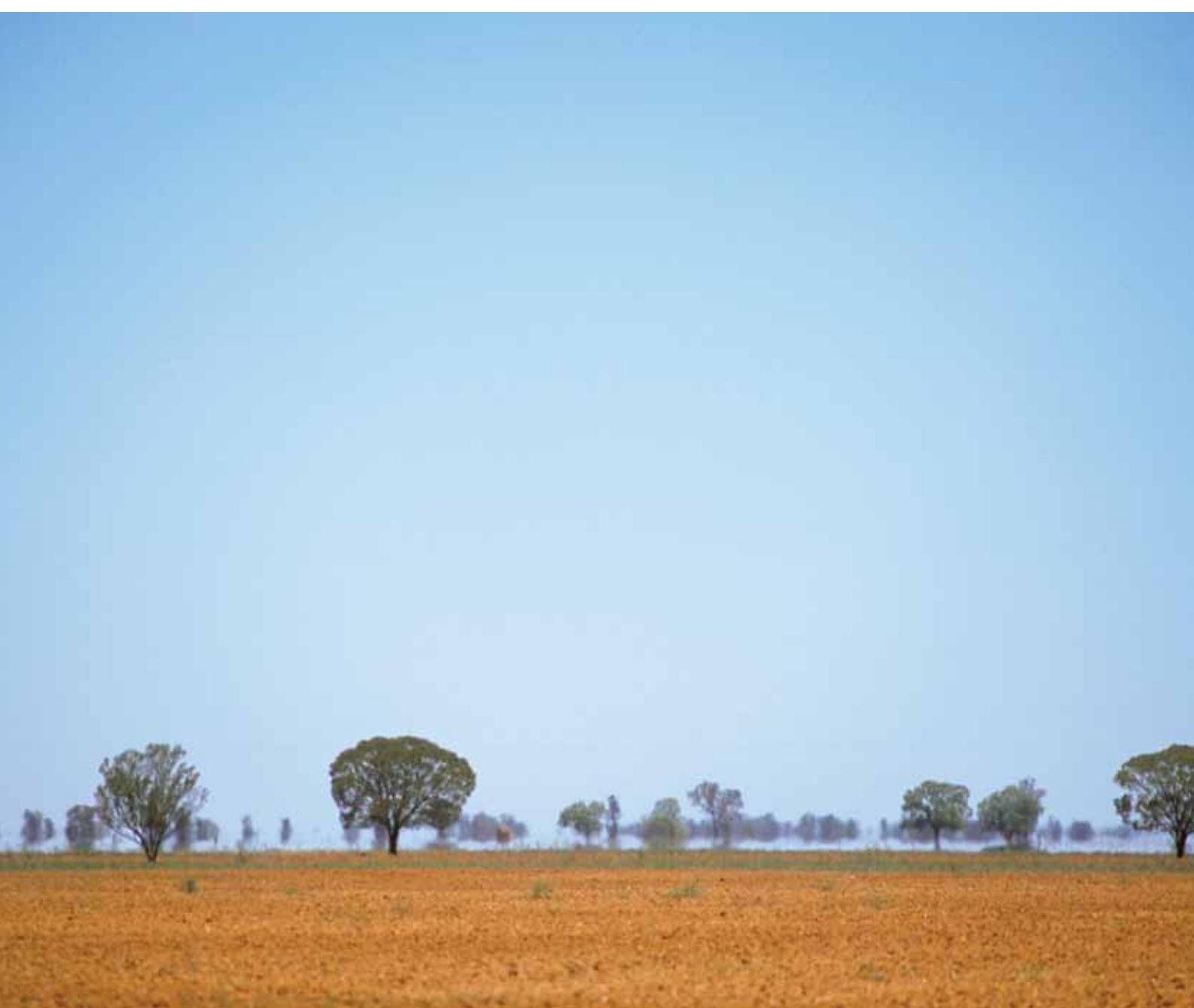




Australian Government  
Bureau of Meteorology

Australian Climate Observations Reference Network – Surface Air Temperature (ACORN-SAT)

## Station catalogue



The Australian Climate Observations Reference Network  
– Surface Air Temperature (ACORN-SAT): Station catalogue

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Cover image: Bare grazing land with mirage in drought conditions near Hillston, NSW.  
Source: CSIRO (Photographer: Gregory Heath)

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# Introduction

## The Australian Climate Observations Reference Network

The Bureau of Meteorology maintains an extensive network of environmental monitoring systems across Australia. These networks are used to provide Australians with the information they need for living in a highly variable and changing climate.

An important part of the climate monitoring system is the Australian Climate Observations Reference Network. It consists of 112 locations across Australia that provide high-quality, ground-based temperature records. The locations are chosen to maximise the length of record and network coverage across the country.

Combined, these stations hold over 100 years of records that are used in the development of the Australian Climate Observations Reference Network – Surface Air Temperature (ACORN-SAT) dataset.

ACORN-SAT is one of the first national homogenised datasets of daily temperatures back to 1910. It allows scientists to better analyse long-term trends and changes in Australia's climate.

This catalogue outlines the location and history of each station used in ACORN-SAT.



# Notes

## Definitions

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ACORN-SAT	Australian Climate Observations Reference Network – Surface Air Temperature
AWS	Automated weather station
Station	Weather station
Site	Weather station site
Screen	The Stevenson screen is a louvre sided instrument enclosure
WST	Western Standard Time

## First year of available data

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At some locations data are available from earlier years than those covered in ACORN-SAT and listed in this publication.

## Photographs

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Photographs included in this Station catalogue refer to the most recently opened site.

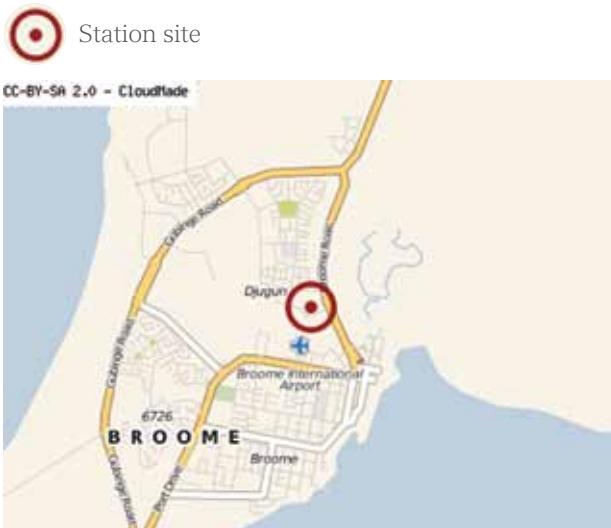
## Station site maps

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Scales vary according to the location of the site.

The large site maps are from OpenStreetMap.

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# Adelaide



## Site information

Site name: ADELAIDE

Site number: 023090

Latitude: 34.92 °S

Longitude: 138.62 °E

Elevation: 48 m

Locality: Adelaide, SA

First year of available data: 1910

## Nearest ACORN-SAT sites

023373 NURIOOTPA (61 km)

021133 SNOWTOWN (134 km)

022823 CAPE BORDA (206 km)

## Adelaide (023090/023000)

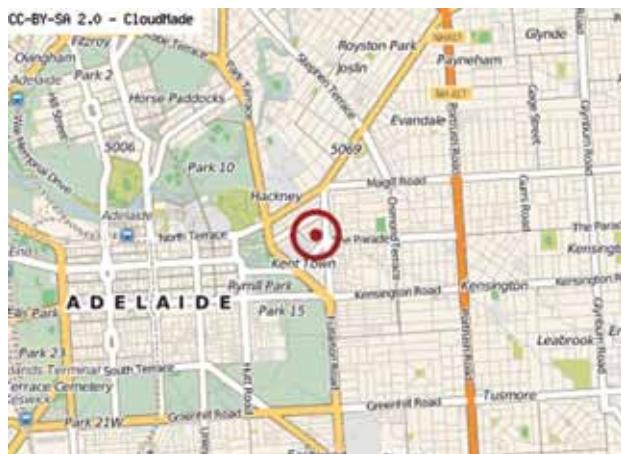
The current site (023090) is located over grass in the grounds of the Bureau's South Australian Regional Office, which is in the inner eastern suburb of Kent Town. There are no buildings or roads in the immediate vicinity (within 10 m) of the site, which is near a back street and away from heavy traffic, but it is still a built-up area.

## History

Prior to 1977, the Regional Office (023000) was located at West Terrace, on the western edge of the central city and 3.2 km west of the current site, and observations were made there, continuing until early 1979. The site was on the edge of the main Adelaide parklands and appears to have been near the top of a small slope. There were site moves in 1944, November 1951 and a small move (15 m west) in 1962.

Until 1948 there were two sets of observations made at Adelaide, one using a Glaisher stand and one using a Stevenson screen. The Glaisher stand observations, which generally had higher maximum temperatures (especially in summer), were the ones publicly reported at the time but the Stevenson screen observations are the ones used in the ACORN-SAT data (and in the Bureau's database more generally). The widely-quoted record high temperature for Adelaide of 47.6 °C, set in January 1939, was measured in a Glaisher stand; the Stevenson screen value on this day was 46.1 °C.

The current site was established in 1977. An automatic weather station was installed on 26 October 1992 and became the primary instrument on 1 November 1996.



# Albany



## Site information

Site name: ALBANY

Site number: 009741

Latitude: 34.94 °S

Longitude: 117.80 °E

Elevation: 68 m

Locality: Albany, WA

First year of available data: 1910

## Albany (009741/009500)

The current site (009741) is at the Meteorological Office on the western side of Albany Airport, about 11 km northwest of the town and several kilometres away from any urban development. The screen is over natural short grass.

## History

The original site (009500) had several locations in the town. The site moved in May 1913, February 1916 (unconfirmed), 1925 and 1950 (only a small move).

Observations commenced at the airport site (009741) in April 1965. There were no overlapping observations at the time. However, in 2002 a site was re-established near the former town site and using its number; and the post-2002 observations have been used to estimate suitable adjustments for the 1965 move.

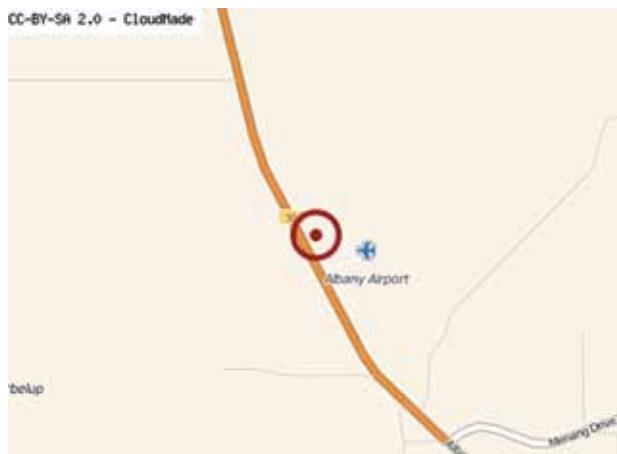
There has been one known move since the site has been located at the airport, 150 m to the northeast on 4 August 1992. An automatic weather station was installed at this time and became the primary instrument on 1 November 1996.

## Nearest ACORN-SAT sites

010579 KATANNING (141 km)

009510 BRIDGETOWN (188 km)

009518 CAPE LEEUWIN (252 km)



# Alice Springs



## Site information

Site name: ALICE SPRINGS

Site number: 015590

Latitude: 23.80 °S

Longitude: 133.89 °E

Elevation: 546 m

Locality: Alice Springs, NT

First year of available data: 1910

## Nearest ACORN-SAT sites

015135 TENNANT CREEK (463 km)

015666 RABBIT FLAT (567 km)

013017 GILES (583 km)

## Alice Springs (015590/015540)

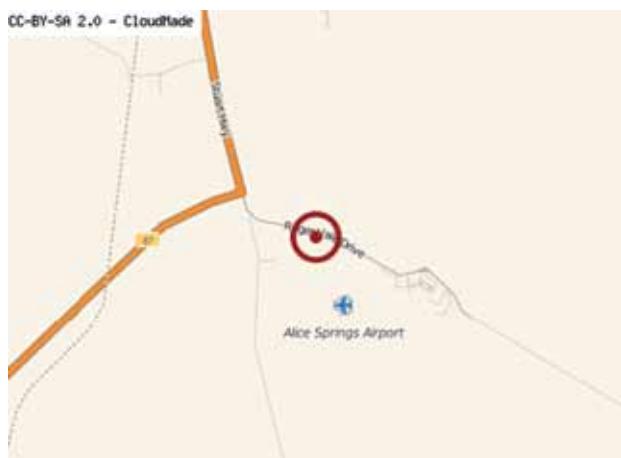
The current site (015590) is at the airport, which is 11 km south of the town centre. The site itself is over bare ground with red soil. Vegetation out to 200 m around the site varies from almost non-existent during dry years to heavy grass growth during wet years, which appears to have some influence on screen-level wind speeds and hence minimum temperatures.

## History

The original site (015540) was at the Telegraph Station, 3 km north of the town. There is no known documentation of the screen type at the Telegraph Station but the observations are consistent with a Stevenson screen having been used there. The site was enclosed by a rock wall about 1 m high and painted white that would have interrupted wind flow and reflected heat. Observations moved to the Post Office on 23 January 1932.

The Post Office site continued until 1953 but data after 1944 were not used in ACORN-SAT as there appear to have been changes at the Post Office site around the time that the airport site opened.

Measurements have been taken at the airport (015590) since 1941. There was a site move (550 m east-northeast) in July 1974. An automatic weather station was installed on 21 March 1991 and became the primary instrument on 1 November 1996. The site moved a few metres west on 27 May 2002.



# Amberley



## Site information

Site name: AMBERLEY

Site number: 040004

Latitude: 27.63° S

Longitude: 152.71° E

Elevation: 24 m

Locality: Amberley, Qld

First year of available data: 1941

## Amberley (040004)

This site is on the grounds of the Amberley RAAF base, west of Ipswich. The instrument enclosure itself is bare ground (black soil) with natural grass surrounding.

## History

The site has been operating since August 1941. No significant moves are evident in documentation but the data indicate a substantial change of some kind at the site in or around 1980. An automatic weather station was installed on 3 July 1997. Manual observations continued under site number 040910 until September 1998.

## Nearest ACORN-SAT sites

040842 BRISBANE AIRPORT (49 km)

040043 CAPE MORETON (100 km)

058012 YAMBA (211 km)



# Barcaldine



## Site information

Site name: BARCALDINE

Site number: 036007

Latitude: 23.55° S

Longitude: 145.29° E

Elevation: 267 m

Locality: Barcaldine, Qld

First year of available data: 1962

## Barcaldine (036007)

The site is located within the town area. It is in a front yard over short grass which appears from station photos to be unwatered. A low wire fence is nearby (within 3 m) on the east and south side, with bitumen roads beyond in both directions.

## History

Pre-1962 data at this site have not yet been digitised and do not currently form part of ACORN-SAT. A temporary small site move took place in January 1953, with another small move in October 1957.

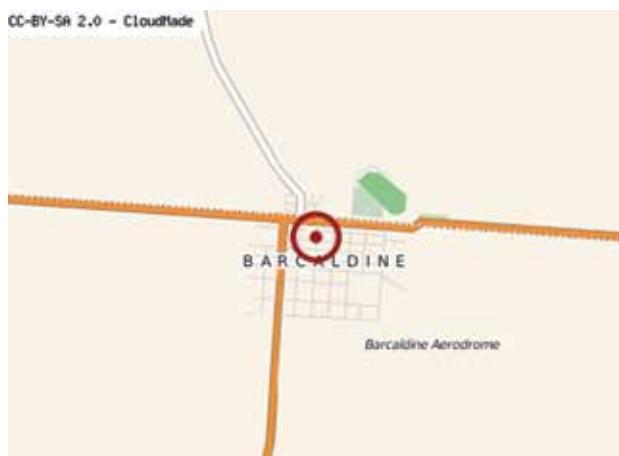
Equipment was reported to have been stored near the screen at times in the mid-1970s. There was a move in September 1985, shortly after a new screen was installed. In July 2000 the site moved 70 m south, to a more open location further from buildings.

## Nearest ACORN-SAT sites

036031 LONGREACH (104 km)

044021 CHARLEVILLE (333 km)

030045 RICHMOND (384 km)



# Bathurst



## Site information

Site name: BATHURST

Site number: 063005

Latitude: 33.43 °S

Longitude: 149.56 °E

Elevation: 713 m

Locality: Bathurst, NSW

First year of available data: 1910

## Bathurst (063005)

The site is on the grounds of the Bathurst Agricultural Research Station near Charles Sturt University. It is about 4 km west-southwest of the town centre and just west of the boundary of the urban area. The area within 20 m of the screen is natural grass, with numerous trees beyond.

## History

Prior to December 1971 the screen did not strictly meet specifications, having single rather than double louvred sides. The site moved 800 m in an unknown direction in July 1950, and 30 m east in November 1978.

On 16 April 1996 the site moved 200 m. Parallel observations continued at the old site for two years. The new site initially took a new number (063305) before adopting the original station number (063005) at the end of the comparison; such a sequence is an unusual practice in Australia.

A site operated at Bathurst Gaol (063004) from 1858 to 1983 but has not been used in ACORN-SAT.

## Nearest ACORN-SAT sites

067105 RICHMOND (115 km)

066062 SYDNEY (160 km)

065070 DUBBO (163 km)



# Birdsville



## Site information

Site name: BIRDSVILLE

Site number: 038026

Latitude: 25.90 °S

Longitude: 139.35 °E

Elevation: 47 m

Locality: Birdsville, Qld

First year of available data: 1954

## Nearest ACORN-SAT sites

038003 BOULIA (337 km)

017043 OODNADATTA (429 km)

017031 MARREE (436 km)

## Birdsville (038026/038002)

The current site (038026) is at the airport, about 800 m west of the town, on level ground over a stony surface which is characteristic of the natural ground condition in this region.

## History

The original site (038002) was in the town area, associated first with the Australian Inland Mission and later with the police station. There is no evidence of any site move between the start of temperature observations in 1954 and 1988. A site move took place in May 1988 to the new police station; the distance of the move is unclear but appears to have been less than 100 m. Station photos from 1998 suggest that another move may have taken place at some point after 1988 but this is unconfirmed. This site continued to operate until 2005.

The current airport site has been operating since June 2000.

Consistently small differences between the minimum temperatures and '9 am' temperatures in the 1970s suggest that the nominal 9 am observation may have been taken earlier, possibly between 7 and 8 am. This ceased in 1979, resulting in an apparent increase of about 0.5 °C in minimum temperatures, due to reduced double-counting of low minimum temperatures. Because of Birdsville's far western location within Queensland, it generally has a later time of minimum temperature than eastern Queensland stations.



# Boulia



## Site information

Site name: BOULIA

Site number: 038003

Latitude: 22.91° S

Longitude: 139.90° E

Elevation: 162 m

Locality: Boulia, Qld

First year of available data: 1910

## Boulia (038003)

The current site is at the airport, about 600 m west of the town. It is an open and well-exposed site, over low natural grass and scrub with bare red soil nearby in some directions.

## History

The site was originally in the town centre. A damaged screen was replaced in March 1917; there were periods of suspect maximum temperature data in the lead-up to this. Small moves took place in September 1965 and June 1970 (unconfirmed). The town site had a well-watered lawn surface, at least in its later years.

The site moved to its current location at the airport in July 1999.

## Nearest ACORN-SAT sites

038026 BIRDsville (337 km)

037010 CAMOOWEAL (380 km)

030045 RICHMOND (413 km)



# Bourke



## Site information

Site name: BOURKE

Site number: 048245

Latitude: 30.04° S

Longitude: 145.95° E

Elevation: 107 m

Locality: Bourke, NSW

First year of available data: 1910

## Bourke (048245/048239/048013)

The current site (048245) is an automatic weather station on the north side of Bourke Airport, 6 km north-northeast of the town centre. The screen is over natural grass with some low bushes in the vicinity.

## History

Observations were originally made within the Bourke township (048013). This site had trees and buildings nearby and the lawn around the screen was regularly watered. There was a small site move within the Post Office yard in May 1937, and the screen was replaced in November 1964.

A site (048239) was established on the southern side of the airport near the terminal building on 11 November 1994. Observations continued there until January 1999.

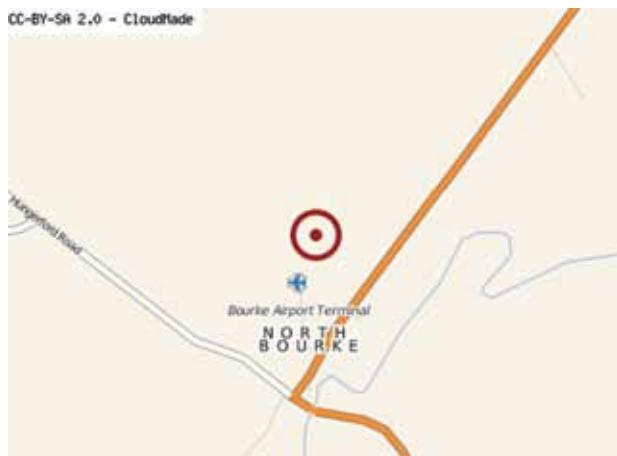
The current site began operations in December 1998, 700 m north of the previous airport location but with only a minimal overlap. These data are used in ACORN-SAT from 1 January 1999.

## Nearest ACORN-SAT sites

048027 COBAR (162 km)

052088 WALGETT (209 km)

046043 WILCANNIA (299 km)



# Bridgetown



## Site information

Site name: BRIDGETOWN

Site number: 009510

Latitude: 33.96° S

Longitude: 116.14° E

Elevation: 150 m

Locality: Bridgetown, WA

First year of available data: 1910

## Bridgetown (009510)

The current site is located on the grounds of the Post Office in the town centre, over lawn with a concrete path nearby and a number of buildings within 20 m.

## History

There was a small move (10 m) in November 1935. The screen was replaced in January 1942 and in January 1998.

An automatic weather station (009617) was installed at the showgrounds, 1.2 km northwest of the current site, in December 1997 and is expected to eventually replace the current site.

## Nearest ACORN-SAT sites

009518 CAPE LEEUWIN (103 km)

010579 KATANNING (135 km)

010917 WANDERING (151 km)



# Brisbane Airport



## Site information

Site name: BRISBANE AIRPORT

Site number: 040842

Latitude: 27.39° S

Longitude: 153.12° E

Elevation: 5 m

Locality: Brisbane, Qld

First year of available data: 1949

## Brisbane Airport (040842/040223)

The current site (040842) is an automatic weather station located on the eastern side of Brisbane Airport, in flat terrain over mown grass.

## History

The original site (040223) was in the southwest corner of the old (Eagle Farm) airport, near the Eagle Farm railway station. It moved about 800 m north in August 1955 to a location on the western side of the old airport, near where the Gateway Motorway now is. An automatic weather station was installed at the southern end of the main runway of the new airport on 30 November 1987, about 3 km east of the previous location. The automatic weather station became the primary instrument on 1 November 1996. The site closed in February 2000.

The current site (040842) was established in April 1994, 3.3 km to the northeast of the previous site (040223).

## Nearest ACORN-SAT sites

040004 AMBERLEY (49 km)

040043 CAPE MORETON (52 km)

058012 YAMBA (228 km)



# Broome Airport



## Site information

Site name: BROOME AIRPORT

Site number: 003003

Latitude: 17.95° S

Longitude: 122.24° E

Elevation: 7 m

Locality: Broome, WA

First year of available data: 1910

## Nearest ACORN-SAT sites

004106 MARBLE BAR (444 km)

004032 PORT HEDLAND

AIRPORT (465 km)

002012 HALLS CREEK (575 km)

## Broome (003003/003089/003002)

The current site (003003) is located at Broome Meteorological Office, on the north side of Broome Airport and about 1.5 km northwest of the town centre. The screen is over short, natural grass with patches of bare ground nearby.

## History

The first observations were at a site operated by the Post Office (003002). It is unclear exactly where this site was (the coordinates are only recorded to the nearest minute, which is about 2 km), but it is presumed to have been in the town centre. There were no documented moves at this location. Observations continued at the site until 1953 but only data up until 1944 were used in ACORN-SAT.

The Meteorological Office site (003003) has been operating since 1939, with no documented moves. Anecdotal reports indicate that the Meteorological Office may have been in the town in its early years but there are no clear indications of this, either in available documentation or in the data. An automatic weather station was installed on 21 July 1995, in a new screen about 10 m away from the original screen. Manual observations were continued in the original screen as a comparison until 2000 under the station number 003089. Some instruments were relocated in 2007, shortly before the commissioning of a new meteorological office building, but the screen appears to have been moved only slightly if at all.



# Bundaberg



## Site information

Site name: BUNDABERG

Site number: 039128

Latitude: 24.91° S

Longitude: 152.32° E

Elevation: 31 m

Locality: Bundaberg, Qld

First year of available data: 1910

## Bundaberg (039128/039015)

The current site (039128) is located on the grounds of Bundaberg Airport, approximately 5.5 km south-southwest of the town centre. The instrument area is over mown natural grass with unmown grass beyond.

## History

The original site (039015) was located at the Post Office in the centre of town. A new screen was installed in June 1913. There was a small move into a new screen in June 1933, and a move of 50 m in July 1953. The site was enclosed, particularly in its later years, and there were bitumen surfaces in the vicinity from 1984 onwards.

Observations began at the airport (039128) in July 1990. An automatic weather station was installed on 19 December 1997. The site moved on 1 July 2010 from the northern to the southern part of the airport, about 2 km south.

There was also a site at the airport (also using the number 039128) between 1959 and 1970 but this has not been used in ACORN-SAT.

## Nearest ACORN-SAT sites

039066 GAYNDAH (106 km)

039083 ROCKHAMPTON (253 km)

040043 CAPE MORETON (263 km)



# Burketown



## Site information

Site name: BURKETOWN

Site number: 029077

Latitude: 17.75 °S

Longitude: 139.54 °E

Elevation: 6 m

Locality: Burketown, Qld

First year of available data: 1910

## Burketown (029077/029004)

The current site (029077) is an automatic weather station at Burketown Airport, 2 km southwest of the town, over an area of mown but unwatered grass.

## History

The original site was at the Post Office (029004). It was located on a watered lawn within the town in its later years. The screen was replaced in May 1966. There were numerous missed observations during the 1970s. Documented site moves took place in August 1986 (50 m north) and September 1995 (25 m east-southeast). The site closed in July 2009.

The current automatic weather station at the airport began observations in October 2001.

The change in surface type from the Post Office (watered lawn) to the airport (natural grassland) is clearly shown in the maximum temperatures, which are substantially higher at the airport during the winter and spring (dry season). There is little difference during the wet season when the vegetation is normally green at both sites.

## Nearest ACORN-SAT sites

029063 NORMANTON (163 km)

037010 CAMOOWEAL (284 km)

030124 GEORGETOWN (427 km)



# Butlers Gorge



## Site information

Site name: BUTLERS GORGE

Site number: 096003

Latitude: 42.28 °S

Longitude: 146.28 °E

Elevation: 667 m

Locality: Butlers Gorge, Tas.

First year of available data: 1944

## Nearest ACORN-SAT sites

094029 HOBART (110 km)

091311 LAUNCESTON AIRPORT  
(112 km)

094010 CAPE BRUNY  
LIGHTHOUSE (153 km)

## Butlers Gorge (096003/096071)

The current site (096003) is an automatic weather station, in the vicinity of the former Hydro-Electric Commission settlement. It is on relatively level ground over natural heath.

## History

The original site at Butlers Gorge (also numbered 096003) operated from 1944 at the Hydro-Electric Commission settlement. The site appears to have been unchanged during the 1944–1993 period. In the early years of observations a HEC-pattern screen (single-louvred and lower than a Bureau standard screen) was used; this was replaced with a Bureau standard screen some time between 1973 and 1976. Observations appear to have been made at non-standard times (earlier than 9 am) on occasions. The settlement was abandoned, with all buildings removed, by 1969. Observations continued until October 1993.

The current site is an automatic weather station which was installed about 150 m east of the previous site. It commenced observations in May 2008.

Data from Lake St Clair (096071) was used in the 1993–2008 period, with the overlaps at both ends of this period used to merge the datasets. Lake St Clair is approximately 20 km north of Butlers Gorge but the overlap data indicates that temperature differences between the two locations are minimal. The site is over marshy tussock grass about 200 m southeast of the visitors' centre.



# Cabramurra



## Site information

Site name: CABRAMURRA

Site number: 072161

Latitude: 35.94° S

Longitude: 148.38° E

Elevation: 1482 m

Locality: Cabramurra, NSW

First year of available data: 1962

## Nearest ACORN-SAT sites

072150 WAGGA WAGGA (120 km)

069018 MORUYA HEADS (160 km)

082039 RUTHERGLEN (169 km)

## Cabramurra (072161/072091)

The current site (072161) is an automatic weather station, over short grass on top of an open high point about 300 m southwest of the Cabramurra township. This is a very exposed location, with slopes dropping several hundred metres in all directions except the northeast quadrant. To the northeast, the ground drops to a saddle in the town area before rising again towards the main Snowy Mountains range.

## History

The original site (072091) was about 400 m east of the township on top of a west-facing spur near the turnoff into the town from the Kiandra-Khancoban road. Data are available from this location since 1962, although there is evidence that observations may have been made from 1954 onwards. There are no indications of any moves at this site during its history, although there were more buildings in the vicinity in the 1950s and 1960s than there are now. The site continued temperature observations until April 1999.

The automatic weather station (072161) is located 600 m west of the previous site and has been operating since 1996.



# Cairns



## Site information

Site name: CAIRNS

Site number: 031011

Latitude: 16.87° S

Longitude: 145.75° E

Elevation: 2 m

Locality: Cairns, Qld

First year of available data: 1910

## Cairns (031011/031010)

The current site (031011) is located at the Meteorological Office, on the western edge of Cairns Airport, on level, open ground over mown grass. A mountain range rises steeply within a few hundred metres to the west.

## History

The original site was at the Cairns Post Office (031010), within the town area. There is a documented move in December 1929 from a relatively enclosed site to a slightly more open one. Observations continued at the Post Office until 1953.

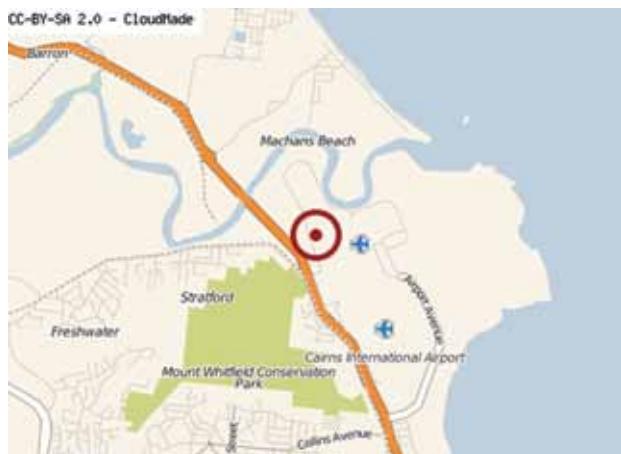
Observations have been made at the airport (031011) since 1943. In December 1992 the site moved 1.5 km northwest (to the other side of the runway). Comparisons of the data with neighbours suggest that this move had no significant effect on temperatures. An automatic weather station was installed at this time and became the primary instrument on 1 November 1996.

## Nearest ACORN-SAT sites

028004 PALMERVILLE (203 km)

030124 GEORGETOWN (284 km)

032040 TOWNSVILLE (285 km)



# Camooweal



## Site information

Site name: CAMOOWEAL

Site number: 037010

Latitude: 19.92° S

Longitude: 138.12° E

Elevation: 231 m

Locality: Camooweal, Qld

First year of available data: 1939

## Camooweal (037010)

The current site is an automatic weather station, in parkland on the southeastern edge of the town, approximately 100 m south of the Barkly Highway (the town's main street). The instrument enclosure is mown grass with natural grass beyond that.

## History

A manual site operated under the same number in the town area. There are no documented moves at this old site, although both the site condition and the standard of observations deteriorated through the 1990s. The site eventually closed altogether in September 1997, leaving a seven-month gap before observations resumed.

The current site commenced in April 1998, about 200 m east of the previous location.

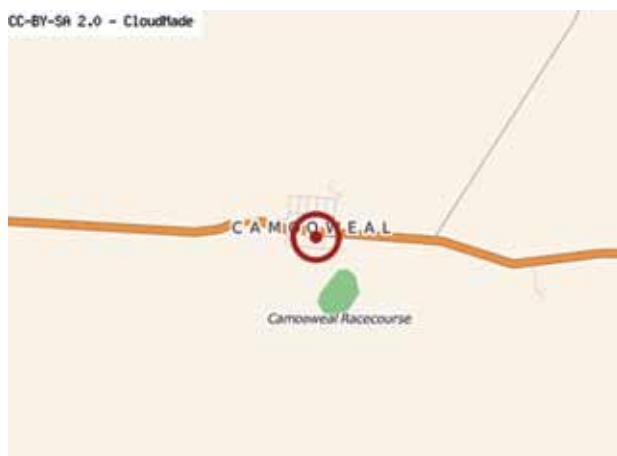
It is known that temperature observations were made in this area as early as 1910, but no pre-1939 observations have yet been located.

## Nearest ACORN-SAT sites

029077 BURKETOWN (284 km)

038003 BOULIA (380 km)

029063 NORMANTON (398 km)



# Canberra



## Site information

Site name: CANBERRA

Site number: 070351

Latitude: 35.30 °S

Longitude: 149.20 °E

Elevation: 577 m

Locality: Canberra, ACT

First year of available data: 1939

## Nearest ACORN-SAT sites

072161 CABRAMURRA (103 km)

069018 MORUYA HEADS (109 km)

063005 BATHURST (211 km)

## Canberra (070351/070014/070338)

The current site (070351) is an automatic weather station over mown grass on the eastern side of the airport grounds. It is about 8 km east of the central city and 3 km away from the nearest suburb, although the airport itself has considerable development about 1 km to the west and RAAF base buildings are a few hundred metres to the north.

## History

The original site (070014) was on the eastern side of the airport. The data indicate an anomalous warming of minimum temperatures, of about 0.4 °C, in or around 1963, although there are no documented moves or other changes in the vicinity of the site at this time. There are indications in documentation of a possible move in about 1975 but no signal of this in the data. In December 1995 an automatic weather station was installed and the site moved 800 m to the northeast. The old site continued as a comparison for two years as number 070338; the data show no significant impact from the site move. A car park was built near the 070014 site in May 2006, which appears to have had a warming impact on minimum temperatures (largely cancelled out by the 2008 site change).

The current site (070351) is about 400 m to the south of the previous site and has been operating since December 2008.

A number of other sites in the Canberra region (Acton, Queanbeyan, CSIRO Forestry Yarralumla, Duntroon) existed prior to the opening of the airport site in 1939 but none yet have any digitised daily data.



# Cape Borda



## Site information

Site name: CAPE BORDA

Site number: 022823

Latitude: 35.75 °S

Longitude: 136.60 °E

Elevation: 158 m

Locality: Cape Borda, SA

First year of available data: 1957

## Cape Borda (022823/022801)

The current site (022823) is an automatic weather station about 300 m southeast of the lighthouse. There is bare, stony ground within about 5 m of the instrument enclosure and coastal heath up to 2 m high beyond this range.

## History

The former site (022801) was over bare ground in the grounds of the Cape Borda lighthouse. There was a small move within the lighthouse grounds at some point in the 1976–1978 period (the exact date is unclear). Observations continued until 2007; the original screen remains in place but contains no instruments.

The current site has been operating since 2002. It is further inland and a less exposed location than the former site.

## Nearest ACORN-SAT sites

018192 PORT LINCOLN (144 km)

023090 ADELAIDE (206 km)

023373 NURIOOTPA (262 km)



# Cape Bruny Lighthouse



## Site information

Site name: CAPE BRUNY LIGHTHOUSE  
 Site number: 094010  
 Latitude: 43.49 °S  
 Longitude: 147.15 °E  
 Elevation: 55 m  
 Locality: Bruny Island, Tas.  
 First year of available data: 1923

## Cape Bruny (094010)

This is a manual site located in the grounds of the Cape Bruny lighthouse. It is in an open block with short grass in between two sets of buildings associated with the lighthouse (the former staff quarters, now used by National Parks), on the east side of a ridge. It is about 200 m away from the lighthouse itself which is on top of a headland.

## History

The site appears to have been close to its current location before a move in April 1939. It also moved on 13 November 1961, and 45 m east in March 1969.

An automatic weather station (094198) has been operating since 1997 at Cape Bruny. This is expected eventually to supersede the current site. It is about 50 m west of the current site, close to the 1961–1969 location of the manual site, but is in a more exposed location on top of the ridge. This exposure has clearly reduced rainfall readings but impacts on temperature are less clear.

## Nearest ACORN-SAT sites

- 094029 HOBART (68 km)
- 096003 BUTLERS GORGE (153 km)
- 091311 LAUNCESTON AIRPORT (216 km)



# Cape Leeuwin



## Site information

Site name: CAPE LEEUWIN

Site number: 009518

Latitude: 34.37° S

Longitude: 115.14° E

Elevation: 13 m

Locality: Augusta, WA

First year of available data: 1910

## Cape Leeuwin (009518)

The current site is on the grounds of the Cape Leeuwin lighthouse, over natural grass in an exposed location, especially from the west. It is 7 km south of the Augusta township and well clear of any development (except the lighthouse buildings themselves).

## History

The site moved 250 m in October 1978. An automatic weather station was installed on 3 February 1993. It moved again to the west-northwest on 14 April 1999; the distance of the move appears to be small but increased the exposure of the site.

## Nearest ACORN-SAT sites

009510 BRIDGETOWN (103 km)

010579 KATANNING (236 km)

009741 ALBANY (252 km)



# Cape Moreton



## Site information

Site name: CAPE MORETON

Site number: 040043

Latitude: 27.03 °S

Longitude: 153.47 °E

Elevation: 100 m

Locality: Cape Moreton, Qld

First year of available data: 1910

## Nearest ACORN-SAT sites

040842 BRISBANE AIRPORT (52 km)

040004 AMBERLEY (100 km)

039066 GAYNDAH (243 km)

## Cape Moreton (040043)

The site is located north of the buildings of Cape Moreton, on the eastern side of Moreton Island. It is over short grass with low (less than 0.5 m) natural scrub to the north. A steep escarpment within 15 m east of the screen drops about 100 m to the ocean.

## History

The location is mostly unchanged since observations began. A new screen was installed in April 1939. The only documented site move was a small one (less than 50 m) when an automatic weather station was installed on 3 August 1995. This move has had a large impact on rainfall but has had little impact on temperatures.



# Cape Otway Lighthouse



## Site information

Site name: CAPE OTWAY LIGHTHOUSE

Site number: 090015

Latitude: 38.86 °S

Longitude: 143.51 °E

Elevation: 82 m

Locality: Cape Otway, Vic.

First year of available data: 1910

## Cape Otway (090015)

The site is now an automatic weather station, in the grounds of the Cape Otway lighthouse. It is over short grass with lighthouse buildings about 15 m to the north and coastal scrub a similar distance away to the east and south.

## History

This site has been in the grounds of the Cape Otway lighthouse throughout its history. The screen was reported as being in poor condition, and replaced, in July 1954. There was a small site move in September 1966.

The first automatic weather station was installed on 15 April 1994, but this proved unreliable and it was replaced in March 1995.

## Nearest ACORN-SAT sites

087031 LAVERTON RAAF (155 km)

086071 MELBOURNE REGIONAL  
OFFICE (173 km)

085096 WILSONS PROMONTORY  
(254 km)



# Carnarvon



## Site information

Site name: CARNARVON

Site number: 006011

Latitude: 24.89 °S

Longitude: 113.67 °E

Elevation: 4 m

Locality: Carnarvon, WA

First year of available data: 1910

## Carnarvon (006011/006062)

The current site (006011) is at the Meteorological Office, which is on the eastern side of the airport and about 2 km east of the town centre. The instrument enclosure contains mown unwatered grass with natural grass beyond the enclosure boundary.

## History

The first observations were made at the Post Office (006062) in town, where they continued until 1950.

The Meteorological Office site (006011) opened in 1945. The site moved about 800 m southeast at an unclear date; the data are consistent with it taking place around 1974. An automatic weather station was installed on 22 October 1990 and became the primary instrument on 1 November 1996. There are indications of a possible site move around 1996–1997 but no evidence of any impact on the data.

## Nearest ACORN-SAT sites

005007 LEARMONT (298 km)

008051 GERALDTON (446 km)

007045 MEEKATHARRA (524 km)



# Ceduna



## Site information

Site name: CEDUNA

Site number: 018012

Latitude: 32.13 °S

Longitude: 133.70 °E

Elevation: 15 m

Locality: Ceduna, SA

First year of available data: 1939

## Ceduna (018012)

The current site is at the Meteorological Office on the north side of the airport and 2 km to the east of town. It is over natural grass.

## History

The site has been operating since 1939. An automatic weather station has been in place since July 1990 and has been the primary instrument since 1 November 1996. A new Meteorological Office building was opened in June 2010 but the thermometer screen does not appear to have moved.

There was also a site (018011) at the Post Office in town between 1939 and 1951 but this was not used for ACORN-SAT as it did not provide a useful extension of the record; there is no indication of temperature observations at the Post Office prior to 1939.

## Nearest ACORN-SAT sites

016098 TARCOOLA (179 km)

018044 KYANCUTTA (207 km)

016001 WOOMERA (314 km)



# Charleville



## Site information

Site name: CHARLEVILLE

Site number: 044021

Latitude: 26.41 °S

Longitude: 146.26 °E

Elevation: 302 m

Locality: Charleville, Qld

First year of available data: 1910

## Nearest ACORN-SAT sites

043109 ST GEORGE (294 km)

045025 THARGOMINDAH (298 km)

036007 BARCALDINE (333 km)

## Charleville (044021/044221/044022)

The current site (044021) is at the Meteorological Office at Charleville Airport about 1.5 km southeast of the town centre. The area where the instruments are located is bare red soil with only very limited and patchy grass growth.

## History

The original site (044022) was in town, at the school. In September 1914 it moved to the Post Office. This site continued until 1953 but is not used in ACORN-SAT after 1948.

Observations commenced at the Meteorological Office at the airport (044021) in 1943, although only data from January 1949 onwards have been used in ACORN-SAT. There was a move in or shortly before April 1961. In August 1990 an automatic weather station was installed, followed by a site move 150 m east on 12 September 1990. The automatic weather station became the primary instrument on 1 November 1996.

In October 2003 the airport site was moved about 600 m west, to its current location. Observations from the previous site continued until February 2006, under number 044221.

Neighbours rather than the overlapping data are used to merge the two main Charleville sites, as the data indicate substantial changes at both sites in or near 1949, although there is no documentation of what those changes might have been for either site.



# Charters Towers



## Site information

Site name: CHARTERS TOWERS

Site number: 034084

Latitude: 20.05 °S

Longitude: 146.27 °E

Elevation: 290 m

Locality: Charters Towers, Qld

First year of available data: 1910

## Charters Towers (034084/034002)

The current site (034084) is located at the airport, 4 km north-northeast of the town centre. The site is on open flat ground at the southern edge of the airport area. The screen is over short natural grass although a dirt track (used by vehicles) is very close by.

## History

The original site (034002) was located in the town area. A new screen was installed in April 1939. Small moves took place in June 1947 (15 m south), December 1953 and April 1975 (10 m), the 1953 move taking place after a shed and incinerator were built nearby. The site closed in December 1992.

The airport site opened in December 1992, with no overlap with the previous site. A new screen was installed in October 2000.

## Nearest ACORN-SAT sites

032040 TOWNSVILLE (103 km)

033119 MACKAY (329 km)

030045 RICHMOND (335 km)



# Cobar



## Site information

Site name: COBAR

Site number: 048027

Latitude: 31.48 °S

Longitude: 145.83 °E

Elevation: 260 m

Locality: Cobar, NSW

First year of available data: 1910

## Cobar (048027/048030)

The current site (048027) is at the Meteorological Office, just outside the northern edge of town and about 1.5 km northwest of the centre. The site is over patchy short grass with some areas of bare red soil.

## History

The original site (048030) was at the Post Office in town, 1.7 km southeast of the current site. There are no clearly documented moves but there is evidence that the Post Office re-opened after a period of closure in 1924, and the data are consistent with a site move at around that time.

The Meteorological Office site has been operating since 21 May 1962. An automatic weather station was installed on 1 May 1997. The site moved from the south to the north side of the office on 15 November 2000 (exact distance unclear, but appears to be about 100 m). A new Meteorological Office building was opened in 2005 but the instruments appear to have remained in the same place.

There is a separate site (048237) at the airport which is not used in ACORN-SAT.

## Nearest ACORN-SAT sites

048245 BOURKE (162 km)

046043 WILCANNIA (233 km)

052088 WALGETT (272 km)



# Coffs Harbour



## Site information

Site name: COFFS HARBOUR

Site number: 059040

Latitude: 30.31 °S

Longitude: 153.12 °E

Elevation: 5 m

Locality: Coffs Harbour, NSW

First year of available data: 1943

## Nearest ACORN-SAT sites

058012 YAMBA (101 km)

060139 PORT MACQUARIE (127 km)

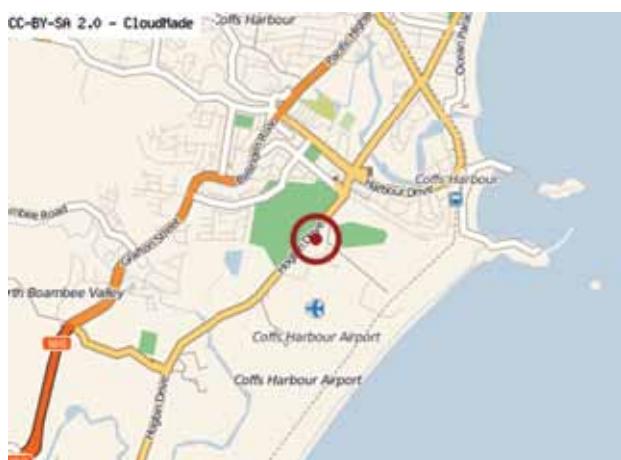
056242 INVERELL (202 km)

## Coffs Harbour (059040)

The site is located at the Meteorological Office, on flat ground over mown grass on the northwest side of Coffs Harbour Airport, which is about 2 km south of the town centre and several hundred metres clear of suburban development (the airport is on one side and a racecourse and golf course on the other). The ocean is approximately 2 km to the southeast.

## History

The site performed temperature observations briefly in 1943 but did not start continuous observations until 1951. There are no clearly documented moves. A new Meteorological Office was opened on 25 September 1967 but it is unclear whether the instruments moved at this time. An automatic weather station was installed on 31 January 1995 and became the primary instrument on 1 November 1996.



# Cunderdin



## Site information

Site name: CUNDERDIN

Site number: 010286

Latitude: 31.62 °S

Longitude: 117.22 °E

Elevation: 217 m

Locality: Cunderdin, WA

First year of available data: 1950

## Cunderdin (010286/010035)

The current site (010286) is an automatic weather station over short natural grass on the grounds of Cunderdin Airport, approximately 3 km northwest of the town centre.

## History

Observations were originally made at a site in the town (010035). It moved about 400 m east on 26 August 1993 to a location on the southeastern edge of town, about 1 km from the centre. Temperature observations continued until 2005. The site number 010035 continues to be used for rainfall observations but these are in a different location to the pre-2005 temperature observations.

The airport site (010286) has been operating since August 1996.

## Nearest ACORN-SAT sites

010092 MERREDIN (102 km)

009021 PERTH (123 km)

010917 WANDERING (128 km)



# Dalwallinu



## Site information

Site name: DALWALLINU

Site number: 008039

Latitude: 30.28 °S

Longitude: 116.66 °E

Elevation: 335 m

Locality: Dalwallinu, WA

First year of available data: 1957

## Dalwallinu (008039)

The site is located on a vacant lot within the Dalwallinu township, over a surface which is partly natural grass and partly bare red earth. The nearest buildings are about 15 m away to the north and east.

## History

The site's only known move was 150 m north on 10 May 1996.

An automatic weather station (008297) has also been operating since 1997, just outside the town area about 1 km east of the centre, and is expected to eventually replace the current site.

## Nearest ACORN-SAT sites

008296 MORAWA (134 km)

010286 CUNDERDIN (159 km)

009021 PERTH (195 km)



# Darwin



## Site information

Site name: DARWIN

Site number: 014015

Latitude: 12.42 °S

Longitude: 130.89 °E

Elevation: 30 m

Locality: Darwin, NT

First year of available data: 1910

## Nearest ACORN-SAT sites

014825 VICTORIA RIVER

DOWNS (443 km)

001019 KALUMBURU (505 km)

002012 HALLS CREEK (733 km)

## Darwin (014015/014040/014016)

The current site (014015) is located on the southern edge of Darwin Airport, about 7 km northeast of the central city and well away from any parts of suburban Darwin. It is over natural grass with some shrubs about 20 m away to the west and east.

## History

Earlier observations were made at the Post Office (014016), in the central city area. This is on a peninsula in Darwin Harbour which means that the prevailing dry-season southeasterlies have a trajectory over Darwin Harbour (whereas at the airport they are over land). The site deteriorated progressively from the mid-1930s, becoming overshadowed by trees, especially after 1937. The site (along with the remainder of the Post Office) was destroyed in the Japanese air raids of February 1942 and never rebuilt.

The airport site (014015) has been operating since February 1941. An automatic weather station was installed on 1 October 1990 and became the primary instrument on 1 November 1996. The site moved about 900 m east (along the southern edge of the airport) on 7 August 2001, with observations at the original site continuing under the station number 014040 until June 2007.



# Deniliquin



## Site information

Site name: DENILINUIN

Site number: 074258

Latitude: 35.56 °S

Longitude: 144.95 °E

Elevation: 94 m

Locality: Deniliquin, NSW

First year of available data: 1910

## Deniliquin (074258/074128)

The current site (074258) is an automatic weather station located in flat terrain over natural grass at the Deniliquin Airport, about 4 km south of the town and well clear of the urban boundary.

## History

The original site (074128) was located in the town area, with the site becoming built up from about 1950 onwards. The site moved 1 km northwest in September 1971, then moved to the airport (3.7 km south) in September 1984. Temperature observations continued at this location until 2003. The site number continues to be used for rainfall observations but these are made at a different location.

The current site is about 500 m south of the last position of the previous site. It has been operating since May 1997.

## Nearest ACORN-SAT sites

080023 KERANG (95 km)

082039 RUTHERGLEN (154 km)

072150 WAGGA WAGGA (213 km)



# Dubbo



## Site information

Site name: DUBBO

Site number: 065070

Latitude: 32.22 °S

Longitude: 148.58 °E

Elevation: 284 m

Locality: Dubbo, NSW

First year of available data: 1921

## Dubbo (065070/065012)

The current site (065070) is an automatic weather station located over short grass on the southern part of the grounds of Dubbo Airport, approximately 4 km northwest of the town centre and well outside the suburban boundary.

## History

The original site (065012) was in numerous locations near the town centre. Site moves are documented in 1921, April 1929, April 1938 (probably very small with installation of a new screen), July 1953 ('next door', probably less than 30 m), November 1969 (15 m), January 1978 (150 m west) and February 1982 (300 m southwest). Most of these moves were necessitated by buildings in the vicinity of the site. There was a more significant move of 5 km northwest on 22 October 1986, placing it on the outer fringe of Dubbo where it remained until ceasing observations in January 2000.

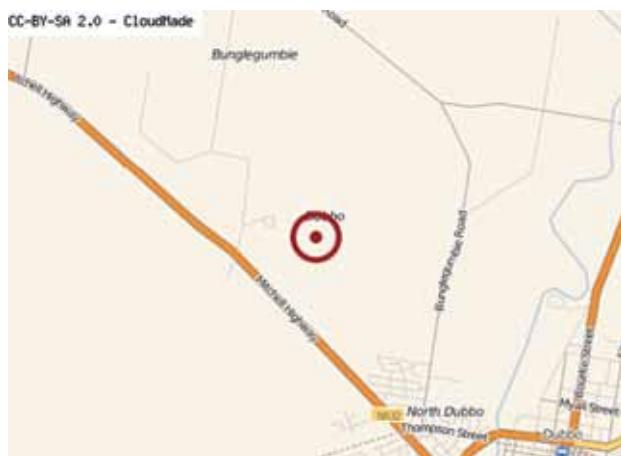
The airport site (065070) has been operating since 16 January 1993, about 1 km southeast of the previous site's final location.

## Nearest ACORN-SAT sites

063005 BATHURST (163 km)

055024 GUNNEDAH (208 km)

061363 SCONE (213 km)



# Eddystone Point



## Site information

Site name: EDDYSTONE POINT

Site number: 092045

Latitude: 40.99 °S

Longitude: 148.35 °E

Elevation: 20 m

Locality: Eddystone Point, Tas.

First year of available data: 1910

## Eddystone Point (092045)

This site is located near the Eddystone Point lighthouse, an exposed coastal location in the Mount William National Park, about 50 km north of St Helens. The current site is somewhat sheltered by vegetation growth with extensive shrub growth (up to 3 m high) in all directions. The screen itself is over low natural shrubs.

## History

There is little documentation on the site prior to the 1990s, but it is believed that there were no significant site moves between 1908 and 1996.

An automatic weather station was installed in late 1996, with an associated site move about 70 m southeast. Parallel observations were carried out with the former site (using the station number 092115), but some observations from the new site were incorrectly recorded against the comparison number, making it impracticable to use the parallel observations to assess the impact of the move.

## Nearest ACORN-SAT sites

091311 LAUNCESTON AIRPORT  
(113 km)

091293 LOW HEAD (131 km)

096003 BUTLERS GORGE (224 km)



# Esperance



## Site information

Site name: ESPERANCE

Site number: 009789

Latitude: 33.83 °S

Longitude: 121.89 °E

Elevation: 25 m

Locality: Esperance, WA

First year of available data: 1910

## Esperance (009789/009541)

The current site (009789) is located at the Meteorological Office, which is on a small hill 4 km north of the town centre. The instrument enclosure has patchy cover of natural grass and low plants with some patches of bare red soil.

## History

Observations were made at a site at the Post Office (009541) up to 1969.

The Meteorological Office site (009789) opened in 1969, with no useful overlap with the previous site. It has not moved. An automatic weather station was installed in April 1996 and became the primary instrument on 1 November 1996. There are indications that vegetation was removed near the site in late 1998 or 1999.

## Nearest ACORN-SAT sites

010579 KATANNING (401 km)

012038 KALGOORLIE-BOULDER  
(341 km)

009741 ALBANY (395 km)



# Eucla



## Site information

Site name: EUCLA

Site number: 011003

Latitude: 31.68 °S

Longitude: 128.88 °E

Elevation: 93 m

Locality: Eucla, WA

First year of available data: 1913

## Nearest ACORN-SAT sites

011052 FORREST (118 km)

018012 CEDUNA (458 km)

009789 ESPERANCE (696 km)

## Eucla (011003)

The current site is at the Meteorological Office. This is on the eastern edge of the settlement, at the top of the escarpment on which Eucla is located. The area within 20 m of the instruments is largely bare white (sandy) earth with scattered stones and some low scrub. Outside this radius there is extensive mallee vegetation in all directions.

## History

The original Eucla site was at the old telegraph station, near the coast approximately 5 km south of the settlement. A Stevenson screen was installed in 1913 and observations are not used in ACORN-SAT before that date. This site was abandoned in October 1962, with site moves taking place on that date (4.8 km north), August 1967 (400 m west) and 5 October 1976 (1.6 km east, into the settlement) before the final 1995 move to the Meteorological Office (1 km east).

The Meteorological Office and its associated site opened on 25 March 1995. An automatic weather station was installed at this time and became the primary instrument on 1 November 1996.



# Forrest



## Site information

Site name: FORREST

Site number: 011052

Latitude: 30.85 °S

Longitude: 128.11 °E

Elevation: 159 m

Locality: Forrest, WA

First year of available data: 1946

## Forrest (011052/011004)

The current site (011052) is an automatic weather station located over natural desert vegetation with some bare ground and some low saltbush.

## History

The original site (011004) was at the now-closed Meteorological Office at the airport. It was listed with the coordinates of the runway rather than those of the instruments, a common practice prior to the 1990s. The same screen was used when the automatic weather station (011052) was installed in 1993.

There is no indication of any site changes at Forrest. However, the data suggest the observations may have been made according to the unofficial 'local Nullarbor time' (Western Standard Time [WST] plus 45 minutes) rather than WST at times prior to 1972.

## Nearest ACORN-SAT sites

011003 EUCLA (118 km)

018012 CEDUNA (549 km)

012038 KALGOORLIE-BOULDER  
(636 km)



# Gabo Island



## Site information

Site name: GABO ISLAND

Site number: 084016

Latitude: 37.57 °S

Longitude: 149.92 °E

Elevation: 15 m

Locality: Gabo Island, Vic.

First year of available data: 1910

## Gabo Island (084016)

This site is an automatic weather station on Gabo Island, an island about 2 km north to south and 1 km east to west in Bass Strait, approximately 1 km off the coast east of Mallacoota. The screen is over natural grass and low coastal heath but there are buildings associated with the lighthouse about 10 m away to the southeast.

## History

The site has been in the general vicinity of the island's lighthouse throughout its history. New screens were installed in September 1927 and July 1961. On 13 March 1981 the site was moved away from the lighthouse buildings. The automatic weather station was installed in August 2000 but only used for wind observations until August 2007.

## Nearest ACORN-SAT sites

084030 ORBOST (129 km)

069018 MORUYA HEADS (186 km)

072161 CABRAMURRA (228 km)



# Gayndah



## Site information

Site name: GAYNDAH

Site number: 039066

Latitude: 25.62 °S

Longitude: 151.62 °E

Elevation: 111 m

Locality: Gayndah, Qld

First year of available data: 1910

## Gayndah (039066/039039)

The current site (039066) is an automatic weather station at Gayndah Airport, over natural grass in flat terrain, about 1 km northeast of the town.

## History

The original site (039039) was on a block next to the Post Office in the main town area, about 10 m from the main street. There are no documented moves at the site but overhanging trees were a problem at times. New screens were supplied in October 1945 and June 1999. This site closed in July 2009.

The current site, about 1.2 km northeast of the previous site, has been operating since January 2003.

## Nearest ACORN-SAT sites

039128 BUNDABERG (106 km)

042112 MILES (184 km)

040043 CAPE MORETON (243 km)



# Georgetown



## Site information

Site name: GEORGETOWN

Site number: 030124

Latitude: 18.30 °S

Longitude: 143.53 °E

Elevation: 302 m

Locality: Georgetown, Qld

First year of available data: 1910

## Georgetown (030124/030018)

The current site (030124) is an automatic weather station at the airport, about 2 km southwest of the town. The screen is over short (possibly mown) natural grass with some bare ground in the area.

## History

The original site (030018) was in the town area. A new screen was supplied in November 1922. There are no documented moves; however, there were numerous changes in site condition over the years as the site became overgrown at times. This was a particular problem in the early 1960s and at one point vines were reported as growing through the screen; much data from this period has been flagged as suspect. These issues ceased with the appointment of a new observer in 1965.

The current site began operating in May 2004. The old site continued until 2007 but deteriorated rapidly in its last years due to encroaching trees, so the overlapping data were not used in merging the two sites.

## Nearest ACORN-SAT sites

028004 PALMERVILLE (263 km)

029063 NORMANTON (269 km)

030045 RICHMOND (273 km)



# Geraldton



## Site information

Site name: GERALDTON

Site number: 008051

Latitude: 28.80 °S

Longitude: 114.70 °E

Elevation: 33 m

Locality: Geraldton, WA

First year of available data: 1910

## Geraldton (008051/008050)

The current site (008051) is located on the western side of Geraldton Airport, approximately 8 km east (inland) of the town centre. The site is over mown natural grass, with an open paddock with natural grass 10 m away to the north, east and south.

## History

The original site (008050) was in the town area near the coast, with a small move in 1927. Observations at this location continued until 1953 but it was not used in ACORN-SAT after 1942. Rainfall observations continue to be made under this site number, but at a different location to that used for the pre-1942 temperature observation.

Observations from the airport site commenced in 1941. An automatic weather station was installed at the site on 20 June 1990 and became the primary instrument on 1 November 1996. A new site (008315) opened approximately 1 km to the south in July 2011 and is expected to become the main Geraldton site after completion of a comparison period.

## Nearest ACORN-SAT sites

008296 MORAWA (137 km)

008039 DALWALLINU (252 km)

009021 PERTH (370 km)



# Giles



## Site information

Site name: GILES

Site number: 013017

Latitude: 25.03 °S

Longitude: 128.30 °E

Elevation: 598 m

Locality: Giles, SA

First year of available data: 1956

## Nearest ACORN-SAT sites

015666 RABBIT FLAT (568 km)

015590 ALICE SPRINGS (583 km)

011052 FORREST (647 km)

## Giles (013017)

This site is located at the Giles Meteorological Office, in an extremely remote area near the Western Australia/South Australia/Northern Territory border. The screen area is mostly bare red soil and gravel with some patches of dry grass. There are areas of spinifex and low desert shrubs once outside a 20-metre radius from the site.

## History

There are no known substantial moves since the site opened in 1956. An automatic weather station was installed in June 1992 and became the primary instrument on 1 November 1996.

Although it is located in Western Australia, the Giles office is managed by South Australia and makes observations according to South Australian time, so the '9 am' observation is made at 7.30 am Western Standard Time (WST) in winter and 6.30 am WST in summer. Prior to 1 July 1978, these observation times were 30 minutes earlier (7 am WST in winter and 6 am WST in summer), following a practice that had been used at other South Australian stations but had become obsolete at those stations in the 1950s.



# Grove



## Site information

Site name: GROVE

Site number: 094220

Latitude: 42.99 °S

Longitude: 147.07 °E

Elevation: 65 m

Locality: Grove, Tas.

First year of available data: 1952

## Grove (094220/094069)

The current site (094220) is an automatic weather station on the grounds of the Grove Research Station, a horticultural research facility in the Huon Valley. It is over mown natural grass with unmown grass in paddocks beyond the site. There are gravel roads 5–10 m away to the south and east.

## History

The original site (094069) was also on the Research Station grounds and began operating in 1952. New buildings had been built approximately 15 m away from the site at some point between 1966 and 1985, most likely after 1980. The instruments were relocated 100 m west on 17 January 1990 in anticipation of a new building which was never constructed. The site closed in 2010.

The current automatic weather station was established 190 m southwest of the previous site, and has been operating since June 2004.

## Nearest ACORN-SAT sites

094029 HOBART (23 km)

094010 CAPE BRUNY

LIGHTHOUSE (57 km)

096003 BUTLERS GORGE (103 km)



# Gunnedah



## Site information

Site name: GUNNEDAH

Site number: 055024

Latitude: 31.03 °S

Longitude: 150.27 °E

Elevation: 307 m

Locality: Gunnedah, NSW

First year of available data: 1948

## Gunnedah (055024)

The site is on a research farm 5 km south-southeast of the town centre. It is over mown unwatered grass and is on a gentle north-facing slope with a substantial hill rising steeply within a few hundred metres to the south and west. There are scattered trees 15 to 30 m away, except to the northeast.

## History

There is no evidence of any moves at this site since its opening in 1948.

Two other sites have operated in the Gunnedah area: an automatic weather station at the airport (055202), and a town site (055023) which is currently at the swimming pool and ceased temperature measurements at the end of 2011. The town site had been operating since the 19th century but suffered from repeated and persistent problems, especially before 1950, and was not considered suitable to extend the record from the research farm backwards in time.

## Nearest ACORN-SAT sites

061363 SCONE (124 km)

056242 INVERELL (161 km)

053115 MOREE (176 km)



# Halls Creek



## Site information

Site name: HALLS CREEK

Site number: 002012

Latitude: 18.23 °S

Longitude: 127.66 °E

Elevation: 422 m

Locality: Halls Creek, WA

First year of available data: 1910

## Nearest ACORN-SAT sites

015666 RABBIT FLAT (329 km)

001019 KALUMBURU (451 km)

003003 BROOME (575 km)

## Halls Creek (002012/002071/002011)

The current site (002012) is an automatic weather station at the Halls Creek Meteorological Office, on the southwest edge of the town about 800 m from the centre. The instrument enclosure contains mown unwatered grass, with natural savannah woodland/grassland outside the enclosure boundary.

## History

The first site (002011) was located in the old Halls Creek township (the town itself was moved in the 1950s). Observations continued at this location until 1952. Observations resumed briefly in the late 1960s and early 1970s but these were not used in ACORN-SAT.

The original Meteorological Office site opened in 1944, 11 km west-northwest of the previous site. Maximum and minimum temperatures were archived only from November 1949 onwards. In about 1967, there was a site move of about 650 m west-northwest.

The current site is an automatic weather station installed in a new screen about 10 m from the old screen on 25 August 1996. Parallel manual observations continued in the old screen until 2001 under the site number 002071.



# Hobart



## Site information

Site name: HOBART

Site number: 094029

Latitude: 42.89 °S

Longitude: 147.33 °E

Elevation: 51 m

Locality: Hobart, Tas.

First year of available data: 1918

## Hobart (094029)

This site is located in Ellerslie Road, Battery Point, an inner suburb of Hobart, about 1 km south of the central city. As would be expected of a central-city site, the site is quite enclosed with numerous buildings in the vicinity, the closest about 10 m away. The screen itself is over lawn.

## History

The site has been on the same property since its establishment in 1882. A new building was built in the area in 1966 and the screen was moved approximately 5 m to be clear of this. An automatic weather station was installed on 29 June 1992, and became the primary instrument on 1 November 1996.

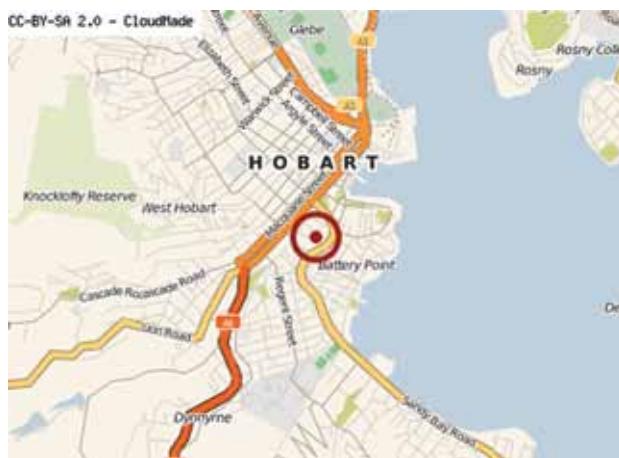
## Nearest ACORN-SAT sites

094010 CAPE BRUNY

LIGHTHOUSE (68 km)

096003 BUTLERS GORGE (110 km)

091311 LAUNCESTON AIRPORT  
(150 km)



# Horn Island



## Site information

Site name: HORN ISLAND

Site number: 027058

Latitude: 10.58 °S

Longitude: 142.29 °E

Elevation: 4 m

Locality: Horn Island, Qld

First year of available data: 1950

## Nearest ACORN-SAT sites

027045 WEIPA (236 km)

028004 PALMERVILLE (633 km)

031011 CAIRNS (794 km)

## Horn Island (027058/027022/027021)

The current site (027058) is an automatic weather station at the Horn Island airport. It is on level ground in the northern part of the island, with a ground surface which is partly low grass and partly sand. Horn Island is relatively flat and the site is approximately 1.5 km from the nearest water to the north and 6 to 8 km to the nearest water to the south.

## History

The main early site was the Thursday Island Meteorological Office (027022). This operated from 1950 until February 1993. The Meteorological Office was on top of a hill (elevation 58 m) on the site of a former fort, in a relatively exposed location. The data suggest that the Meteorological Office may also have been in the town rather than on the hilltop until about 1958, but there is no documentation of this.

Observations were made in the Thursday Island township (027021) from the closure of the Meteorological Office until 1996. There were previously observations under this site number in the town prior to the opening of the Meteorological Office in 1950, but no daily data from the pre-1951 site have yet been digitised and it is not included in ACORN-SAT.

The current site at Horn Island airport opened in 1995.



# Inverell



## Site information

Site name: INVERELL

Site number: 056242

Latitude: 29.78 °S

Longitude: 151.11 °E

Elevation: 582 m

Locality: Inverell, NSW

First year of available data: 1910

## Nearest ACORN-SAT sites

053115 MOREE (127 km)

055024 GUNNEDAH (161 km)

059040 COFFS HARBOUR (202 km)

## Inverell (056242/056017)

The current site (056242) is on vacant land on the southwest side of the Macintyre River (the opposite side from most of the town), with no buildings within 30 m. The screen is over short natural grass.

## History

The original site (056017) was within the Post Office grounds. Louvres on the screen were repaired in July 1940. Site diagrams indicate that a new building was built just to the south at some point between 1944 and 1950; data and comments on file suggest 1949. There was a move of a few metres (into a more enclosed location) within the Post Office grounds on 7 July 1961. On 20 September 1967 it moved about 100 m southwest to a more open location near the library on the northeast bank of the river.

The current site (056242) has been operating at its present location since 1 March 1995.

The Inverell town is located in a valley which is well-suited for cold air drainage. Another site (056018) operates at a research farm on a ridge approximately 2 km west of the town. That site has minimum temperatures which are consistently warmer than the town, especially in winter when typical differences are 3–4°C.



# Kalgoorlie-Boulder



## Site information

Site name:	KALGOORLIE-BOULDER
Site number:	012038
Latitude:	30.78 °S
Longitude:	121.45 °E
Elevation:	365 m
Locality:	Kalgoorlie, WA
First year of available data:	1910

## Kalgoorlie-Boulder (012038/012039)

The current site (012038) is located at the Meteorological Office on the grounds of Kalgoorlie Airport, which is about 4 km south of the town centre and a few hundred metres from the suburban boundary. The ground surface is partly natural grass and partly bare red soil.

## History

Observations were made at the Post Office (012039), about 4 km north-northeast of the current site until 1953. This site moved approximately 90 m in December 1936.

The Meteorological Office site (012038) has been operating since 1939. An automatic weather station was installed on 12 August 1992 and became the primary instrument on 1 November 1996. The office moved 300 m to the south on 7 September 1993; it is unclear whether the instruments also moved although the data suggest that any move had no significant impact on observations.

## Nearest ACORN-SAT sites

- 011092 MERREDIN (312 km)
- 009789 ESPERANCE (341 km)
- 010286 CUNDERDIN (413 km)



# Kalumburu



## Site information

Site name: KALUMBURU

Site number: 001019

Latitude: 14.30 °S

Longitude: 126.65 °E

Elevation: 23 m

Locality: Kalumburu, WA

First year of available data: 1941

## Kalumburu (001019/001021)

The current site is an automatic weather station (001019) located in a paddock on level ground just outside the Aboriginal community of Kalumburu. The instrument enclosure is mown unwatered grass with unmown grass beyond. The current site opened in 1998.

## History

The original site (001021) operated from 1941. It is suspected from the data that the first two years of observations were made at a site closer to the coast—possibly the World War II airfield, or the Pago Mission about 20 km away—but no documentary evidence of this has been found. After this it was located on lawn in the main courtyard of the Kalumburu Mission. The Mission site moved 30 m west (still within the Mission grounds) on 23 August 1991. The site closed in 2005.

The automatic weather station (001019) was established about 200 m from the Mission site and began reporting in September 1998.

## Nearest ACORN-SAT sites

002012 HALLS CREEK (451 km)

014015 DARWIN (505 km)

003003 BROOME AIRPORT (623 km)



# Katanning



## Site information

Site name: KATANNING

Site number: 010579

Latitude: 33.69 °S

Longitude: 117.56 °E

Elevation: 310 m

Locality: Katanning, WA

First year of available data: 1910

## Katanning (010579)

The current site is located on the grounds of a church hall within the central town area, over patchy natural grass. The nearest buildings are about 15 m away.

An interesting feature of the current site is that it is on a gentle east-facing slope with wooden fences below and to the sides; the data suggest that the fences may act as a trap for cold-air drainage under certain conditions, making the site more susceptible to extreme low minimum temperatures.

## History

There are documented site moves in July 1987 (100 m north), January 1952 (200 m) and December 1942 (10 m north). A new screen was installed on 11 February 1980.

An automatic weather station (010916) has been operating since December 1998 about 5 km east of the town, and is expected to eventually replace the existing site.

## Nearest ACORN-SAT sites

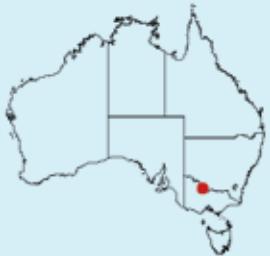
009510 BRIDGETOWN (135 km)

010917 WANDERING (140 km)

009741 ALBANY (141 km)



# Kerang



## Site information

Site name: KERANG

Site number: 080023

Latitude: 35.72 °S

Longitude: 143.92 °E

Elevation: 78 m

Locality: Kerang, Vic.

First year of available data: 1910

## Kerang (080023)

This site is located on a strip of vacant land within the northern part of the Kerang town area, with buildings 15–20 m away to the northwest and east. The screen is over natural unwatered grass.

## History

The site has been within the township since it was established. It moved in August 1932, June 1956 and June 1957; the latter placed it in a yard within a built-up area which was cluttered from time to time. The screen was noted as being incorrectly oriented in November 1945 and again in February 1968.

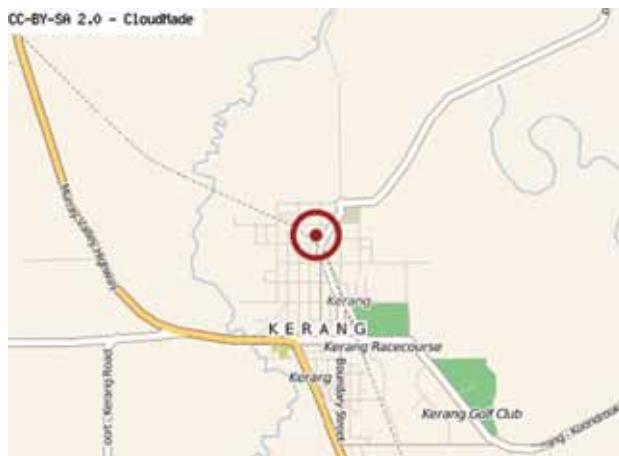
The site moved 1 km north to its current location on 18 January 2000.

## Nearest ACORN-SAT sites

074258 DENILINUIN (95 km)

078015 NHILL (215 km)

076031 MILDURA (235 km)



# Kyancutta



## Site information

Site name: KYANCUTTA

Site number: 018044

Latitude: 33.13 °S

Longitude: 135.56 °E

Elevation: 57 m

Locality: Kyancutta, SA

First year of available data: 1930

## Kyancutta (018044)

This site is located over short grass on a vacant block within the Kyancutta township. There are single-storey buildings about 10 m away to the northwest and southeast, and a bitumen road (with little traffic) about 10 m to the southwest.

## History

There is limited documentation prior to 1979. There was a small site move (less than 50 m) on 1 March 1994.

## Nearest ACORN-SAT sites

018192 PORT LINCOLN (166 km)

018012 CEDUNA (207 km)

016001 WOOMERA (250 km)



# Launceston Airport



## Site information

Site name: LAUNCESTON AIRPORT

Site number: 091311

Latitude: 41.55 °S

Longitude: 147.21 °E

Elevation: 167 m

Locality: Launceston Airport, Tas.

First year of available data: 1910

## Launceston Airport (091311/091104/091049)

The current site (091311) is an automatic weather station on the grounds of Launceston Airport, over short grass on the east side of the airport towards the southern end of the runway. The airport is on essentially level ground. It is about 15 km southeast of the city centre, well clear of the urban boundary.

## History

The original site (091049) was at several locations around the centre of Launceston. There was a site move in December 1929 and further site moves on 29 March 1941, 29 September 1942 and 26 February 1948. Temperature observations continued at this location until 1959 but they were not used in ACORN-SAT after 1947.

The first airport site (091104) was close to the terminal building and operated from 1939. It moved at some point in 1968–1969 to a location on the western side of the runway and north of the terminal. An automatic weather station was installed at this location on 19 May 1992 and became the primary instrument on 1 November 1996. The site continued until June 2009.

The current site (091311) began operating at its current location 1.4 km southeast of the previous site on 12 July 2004.

The airport is 160 m higher in elevation than the town, and is also further from the ocean. This results in markedly lower temperatures than those in the town, especially overnight.

## Nearest ACORN-SAT sites

091293 LOW HEAD (66 km)

096003 BUTLERS GORGE (112 km)

092045 EDDYSTONE POINT (113 km)



# Laverton RAAF



## Site information

Site name: LAVERTON RAAF

Site number: 087031

Latitude: 37.86 °S

Longitude: 144.76 °E

Elevation: 20 m

Locality: Laverton, Vic.

First year of available data: 1943

## Laverton RAAF (087031)

This site is on the grounds of the former RAAF base at Laverton, about 20 km west-southwest of central Melbourne. The site is over short unwatered grass.

## History

The site was originally a Meteorological Office; there is no clear evidence of moves before 1997.

An automatic weather station was installed on 22 February 1997, about 1.2 km northeast of the previous site (which continued until July 1998 under the station number 087177).

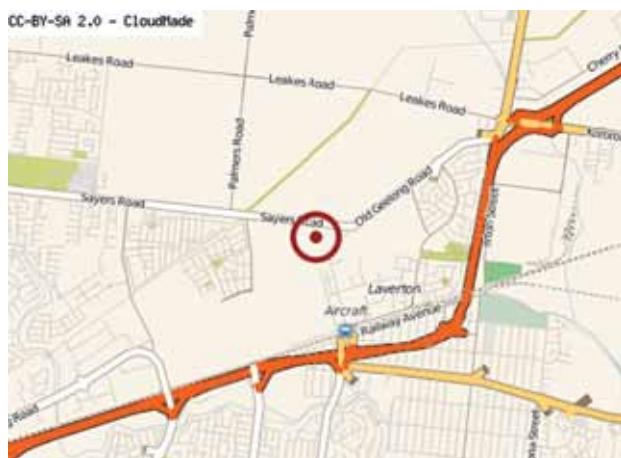
Whilst there has been no significant building on the base grounds, the surrounding region is a major urban growth corridor and a new housing development has been built in recent years a few hundred metres west of the site. There is evidence of recent anomalous urban warming in the minimum temperature data.

## Nearest ACORN-SAT sites

086071 MELBOURNE REGIONAL OFFICE (20 km)

090015 CAPE OTWAY LIGHTHOUSE (155 km)

085096 WILSONS PROMONTORY (203 km)



# Learmonth



## Site information

Site name: LEARMONTH

Site number: 005007

Latitude: 22.24 °S

Longitude: 114.10 °E

Elevation: 5 m

Locality: Learmonth, WA

First year of available data: 1975

## Learmonth (005007)

The current site is over short natural grass at the Meteorological Office on the eastern side of Learmonth Airport, about 40 km south of Exmouth. A distinguishing feature of this site is that the Cape Range lies between the airport and the ocean, cutting it off to some extent from sea breezes and making it a more continental site than its location might suggest.

## History

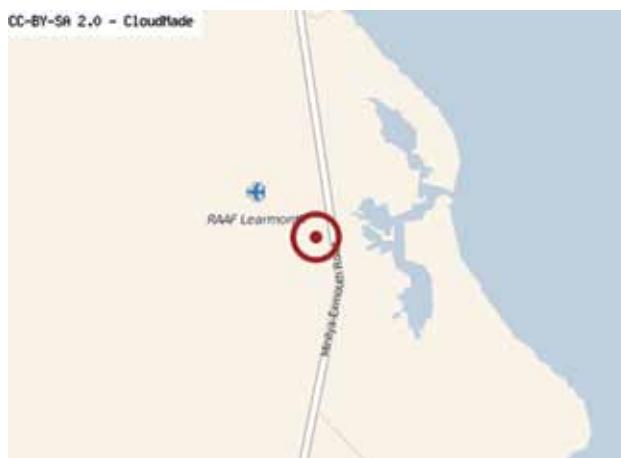
There have been no known moves at the site since it began recording maximum and minimum temperatures in 1975. An automatic weather station was installed on 29 August 1994 and became the primary instrument on 1 November 1996.

## Nearest ACORN-SAT sites

006011 CARNARVON (298 km)

005026 WITTENOOM (436 km)

004032 PORT HEDLAND (514 km)



# Longreach



## Site information

Site name: LONGREACH

Site number: 036031

Latitude: 23.44 °S

Longitude: 144.28 °E

Elevation: 192 m

Locality: Longreach, Qld

First year of available data: 1910

## Longreach (036031/036167/036030)

The current site (036031) is located at the Meteorological Office, which is at the airport 3 km east of the town centre. The instrument enclosure surface is partly mown unwatered grass and partly black soil, with natural grass outside the enclosure.

## History

The first observations were made at the Post Office (036030). There were no documented moves at this site. New screens were installed in October 1911 and November 1924, and building works were reported in the vicinity in September 1949. This site continued until 1973 but was not used in ACORN-SAT beyond 1969.

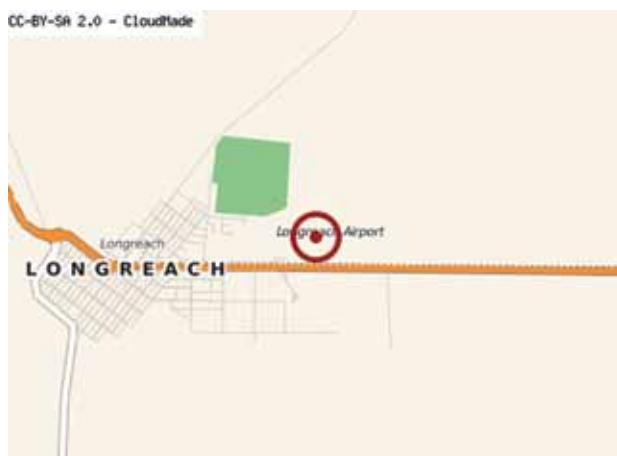
The Meteorological Office (036031) has been in operation since 1966. An automatic weather station and a new screen were installed in May 1996, with manual observations continuing for a year under the site number 036167.

## Nearest ACORN-SAT sites

036007 BARCALDINE (104 km)

030045 RICHMOND (323 km)

044021 CHARLEVILLE (387 km)



# Low Head



## Site information

Site name: LOW HEAD

Site number: 091293

Latitude: 41.05 °S

Longitude: 146.79 °E

Elevation: 3 m

Locality: Low Head, Tas.

First year of available data: 1910

## Nearest ACORN-SAT sites

091311 LAUNCESTON AIRPORT  
(66 km)

092045 EDDYSTONE POINT (131 km)

096003 BUTLERS GORGE (142 km)

## Low Head (091293/091057)

The current site (091293) is an automatic weather station on Low Head, on the eastern side of the entrance to the Tamar River. It is on low ground very close to the water's edge (about 15 m from the high-tide mark), with grass and some low coastal shrubs. Water has been observed to wash over the site during very high seas.

## History

The original site (091057) was in the grounds of the Low Head lighthouse, which is on a small hill south of the headland. Prior to June 1937 the screen did not strictly meet Stevenson screen specifications, and was painted brown for a time around 1933, a period when the standard of observations was poor for a few years.

Comparison of documentation from 1933 and 1940 indicate either a site move or new buildings during that time, with the latter being more likely. The site moved by 8 m in April 1949. At some point between 1968 and 1986 a gravel driveway was built in close proximity to the screen (the data suggest this occurred in about 1970). The site moved by 25 m on 15 August 1988.

The automatic weather station (091293) began operating on 8 January 1998 at a site 200 m north of the previous location.



# Mackay



## Site information

Site name: MACKAY

Site number: 033119

Latitude: 21.12 °S

Longitude: 149.22 °E

Elevation: 30 m

Locality: Mackay, Qld

First year of available data: 1910

## Nearest ACORN-SAT sites

039083 ROCKHAMPTON (283 km)

034084 CHARTERS TOWERS (329 km)

032040 TOWNSVILLE (330 km)

## Mackay (033119/033297/033047/033046)

The current site (033119) is located at the Meteorological Office, about 4 km northeast of the town centre and 600 m from the ocean to the east. This is on top of a small hill (approximately 30 m high). The instrument enclosure is over short grass, with the Meteorological Office buildings about 30 m east, and trees a similar distance away to the north and south.

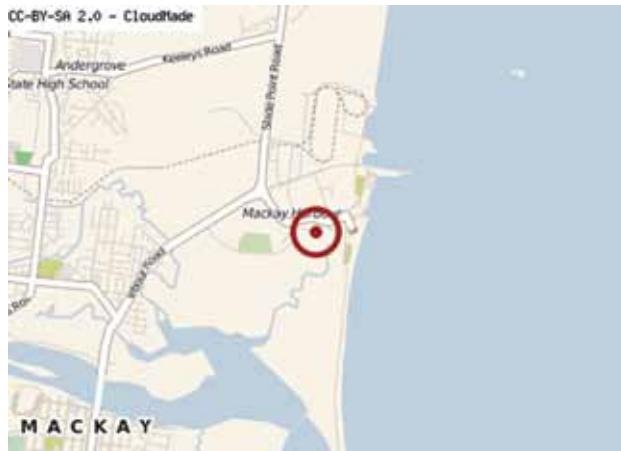
## History

The earlier part of the Mackay dataset uses data from the Post Office (033046). This site had a temporary move due to building in late 1922, and further moves in 1939 and 1941, the latter placing it in a rather enclosed location. The Post Office site closed in 1950.

Data from the Te Kowai Experimental Station (033047) located 5 km west of the town were used between 1948 and 1965. This is a small but apparently good-quality subset of the full record from this site.

The Meteorological Office site (033119) commenced observations in 1959, and no known site moves have taken place. An automatic weather station was installed in October 1995, although manual observations continued until 2001 under the site number 033297.

Because of its greater proximity to the coast and its hilltop location, the Meteorological Office has substantially lower maximum temperatures, and higher minimum temperatures (especially in winter) than any of the other sites that have existed historically in the Mackay area.



# Marble Bar



## Site information

Site name: MARBLE BAR

Site number: 004106

Latitude: 21.18 °S

Longitude: 119.75 °E

Elevation: 182 m

Locality: Marble Bar, WA

First year of available data: 1910

## Marble Bar (004106/004020)

The current automatic weather station (004106) is located in natural scrubland on the southeastern edge of the town.

## History

The station has been located in or near the settlement of Marble Bar throughout its history. There is documentation from November 1944 of a proposed move but no firm documentation that it was carried out, although the data suggest that it was. The minimum thermometer was reported to have been reading low in January 1965 and was replaced. The site moved in May 1967 (small), on 1 August 1984 (500 m east), on 19 July 1988 (1 km east) and on 2 October 1997 (300 m southwest).

The automatic weather station opened in September 2000, with instruments in the same screen as the former manual site (004020). The manual site continued until 2006 but was only used in ACORN-SAT until the end of 2002 because of deteriorating data quality after that.

## Nearest ACORN-SAT sites

004032 PORT HEDLAND (147 km)

003003 BROOME (444 km)

005007 LEARMONT (597 km)



# Marree



## Site information

Site name: MARREE

Site number: 017031

Latitude: 29.65 °S

Longitude: 138.06 °E

Elevation: 50 m

Locality: Marree, SA

First year of available data: 1910

## Marree (017031/017024)

The current site (017031) is in the yard of a house within the town. The current ground surface is largely bare ground with some patchy grass, typical of the surrounding desert environment.

## History

The first observations were made at Farina (017024), about 50 km to the south. Little documentation is available about the Farina site.

The Marree site opened in 1939. There were issues with the enclosed nature of the site in the late 1980s and early 1990s, as well as with reports of metal sheets and motor vehicles near the screen. This improved in April 1993 when a shed to the west was demolished, a tree was removed and gravel was removed from around the screen area.

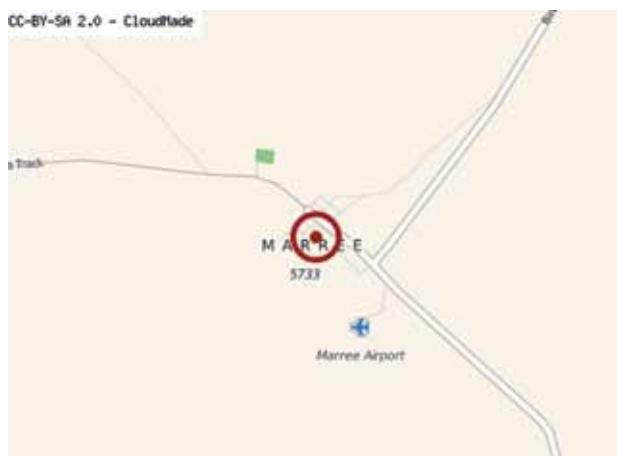
An automatic weather station (017126) has been operating since July 1998 at Marree Airport, about 1 km southeast of the town. This is expected to eventually replace the current site.

## Nearest ACORN-SAT sites

016001 WOOMERA (207 km)

017043 OODNADATTA (346 km)

016098 TARCOOLA (355 km)



# Meekatharra



## Site information

Site name: MEEKATHARRA

Site number: 007045

Latitude: 26.61 °S

Longitude: 118.54 °E

Elevation: 517 m

Locality: Meekatharra, WA

First year of available data: 1926

## Meekatharra (007045/007204/007046)

The current site (007045) is at the Meteorological Office, on the western side of the airport about 5 km east-southeast of the town centre. The screen is over bare red soil with patchy low grass.

## History

Observations were taken at a site at the Post Office (007046) until 1950.

The Meteorological Office site (007045) began operating in 1950, with no significant overlap with the Post Office site. It moved 1.1 km east in about 1975. An automatic weather station was installed on 7 February 1991 and became the primary instrument on 1 November 1996.

A new type of automatic weather station using the same screen was commenced under the site number 007204 in 1998 and took over the main site number in 2001 (with the old automatic weather station ceasing). There are no documented site moves

## Nearest ACORN-SAT sites

008296 MORAWA (380 km)

008039 DALWALLINU (447 km)

008051 GERALDTON (449 km)



# Melbourne Regional Office



## Site information

Site name: MELBOURNE

REGIONAL OFFICE

Site number: 086071

Latitude: 37.81 °S

Longitude: 144.97 °E

Elevation: 31 m

Locality: Melbourne, Vic.

First year of available data: 1910

## Nearest ACORN-SAT sites

087031 LAVERTON RAAF (20 km)

090015 CAPE OTWAY

LIGHTHOUSE (173 km)

085072 SALE (193 km)

## Melbourne Regional Office (086071)

The site is adjacent to two major roads and there are large buildings within 50–100 m to the south and west (in addition to the smaller buildings on the block itself which have been there for many years). The instrument enclosure, a triangle approximately 10 by 20 m, has a short grass surface.

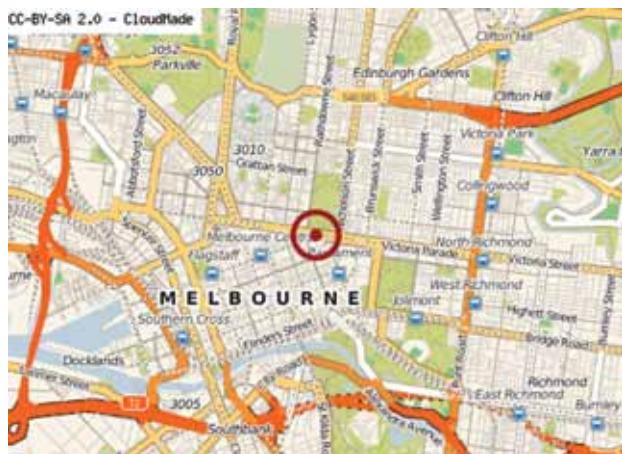
## History

The site has been in its current location, on the northeastern edge of the junction of Victoria and La Trobe streets, since January 1908.

There were strong rises in minimum temperature through the late 1950s and 1960s, possibly associated with increasing levels of road traffic (the lack of further increases after 1970 may indicate that by then the traffic was at saturation level from the viewpoint of its effect on the observations).

An automatic weather station has been in place since August 1986 and became the primary instrument on 1 November 1996. A large apartment building was built across the street to the south of the site in 1996–1997, which coincides with a discernible rise in minimum temperatures.

Earlier observations were made at the old Melbourne Observatory (in the Domain south of the Yarra River) from 1863 to 1907, and in a number of locations in the vicinity of Flagstaff Hill prior to 1863.



# Merredin



## Merredin (010092/010093)

The current site (010092) is located over natural unwatered grass at the showgrounds, about 1 km northeast of the town centre.

### History

The original site (010093) was at a research farm about 5 km west of town. It moved 150 m southeast in May 1957. The Research Station continued to make observations until 1985 and these observations were used to merge the two datasets.

The current site has been operating since 1966. It became overgrown for a time but was cleared in March 1986.

### Site information

Site name: MERREDIN

Site number: 010092

Latitude: 31.48 °S

Longitude: 118.28 °E

Elevation: 315 m

Locality: Merredin, WA

First year of available data: 1912

### Nearest ACORN-SAT sites

010286 CUNDERDIN (102 km)

010917 WANDERING (202 km)

009021 PERTH (623 km)



# Mildura



## Site information

Site name: MILDURA

Site number: 076031

Latitude: 34.24 °S

Longitude: 142.09 °E

Elevation: 50 m

Locality: Mildura, Vic.

First year of available data: 1910

## Nearest ACORN-SAT sites

078015 NHILL (234km)

080023 KERANG (235 km)

082039 NURIOOTPA (284 km)

## Mildura (076031/076077)

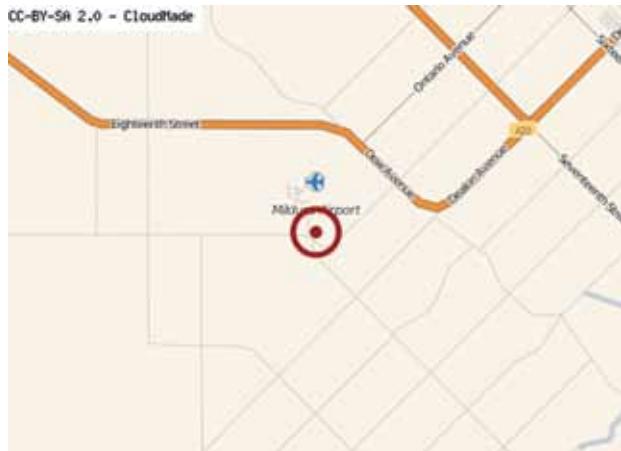
The current site (076031) is an automatic weather station at the Meteorological Office, in flat terrain on the grounds of Mildura Airport, south of the main terminal and 9 km southwest of the town. The ground surface in the instrument enclosure and surrounds is red soil with patchy short natural grass.

## History

The original site (076077) was within the Mildura town area. It moved in August 1927. After this move the screen was oriented northeast, but it was realigned to face south in July 1933. There was a small site move in March 1943. Temperature observations continued until 1949.

Observations have been made at the airport site (076031) since 1946. Site moves took place on 11 August 1992 (from the aerodrome apron to the Meteorological Office) and in July 1989 (only a small move). The automatic weather station was installed on 1 October 1989, and became the primary instrument on 1 November 1996.

There was rapid development of irrigated agriculture in the Mildura region in the period between the two World Wars, and this appears to be associated with an anomalous cooling trend in maximum temperature at Mildura over this period (amounting to 0.3–0.4°C over 30 years). The non-ACORN-SAT site of Griffith, which has a similar history of irrigation development, shows a similar trend.



# Miles



## Site information

Site name:	MILES
Site number:	042112
Latitude:	26.66 °S
Longitude:	150.18 °E
Elevation:	305 m
Locality:	Miles, Qld
First year of available data:	1910

## Miles (042112/042023)

The current site (042112) is located in a vacant lot on the western edge of the small town of Miles, with no buildings within 30 m. The instrument enclosure contains mown unwatered grass, with natural grass and small trees beyond.

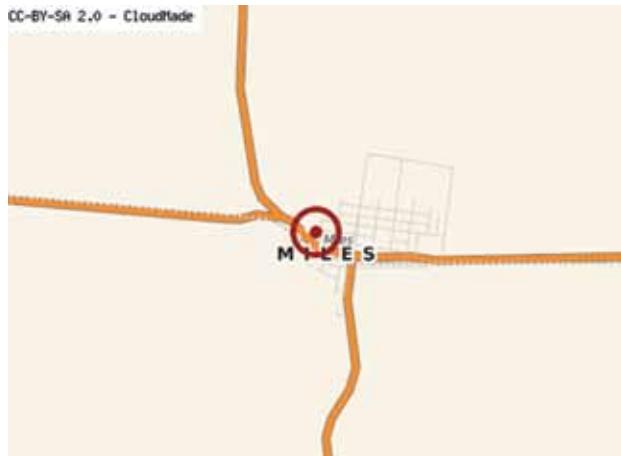
## History

The former site (042023) was located in the town. The screen was reported in September 1929 as having numerous missing louvres. It became somewhat overgrown from about 1990 onwards, but continued to measure temperatures until 2005. Rainfall continues to be measured at this site.

The current site has been operating since July 1997, about 300 m west-northwest of the previous site.

## Nearest ACORN-SAT sites

039066	GAYNDAH (184 km)
043109	ST GEORGE (221 km)
040004	AMBERLEY (273 km)



# Morawa



## Morawa (008296/008093)

The current site (008296) is an automatic weather station on the grounds of Morawa Airport, over natural grass and low shrubs with some sandy patches, and no substantial trees or buildings in the vicinity.

### History

The original site (008093) was within the town area, and closed in 2005. The current site has been operating since February 1997.

#### Site information

Site name: MORAWA

Site number: 008296

Latitude: 29.20 °S

Longitude: 116.02 °E

Elevation: 271 m

Locality: Morawa, WA

First year of available data: 1925

#### Nearest ACORN-SAT sites

008039 DALWALLINU (134 km)

008051 GERALDTON (137 km)

010286 CUNDERDIN (293 km)



# Moree



## Site information

Site name: MOREE

Site number: 053115

Latitude: 29.49 °S

Longitude: 149.85 °E

Elevation: 213 m

Locality: Moree, NSW

First year of available data: 1910

## Moree (053115/053048/053027)

The current site (053115) is an automatic weather station at the Meteorological Office, on the southern edge of town 3 km southeast of the town centre and just north of the airport. The area around the instruments is covered with short unwatered grass.

## History

Early Moree observations were associated with the Post Office in the town area (053027). There is evidence of a possible small move when the screen was replaced in June 1950 but otherwise there are no documented moves. Observations have been made at the Post Office since the 19th century, but pre-1957 data are not currently included in ACORN-SAT as the digitisation of the daily data is being redone. Observations at the Post Office ceased at the end of 1965.

The first airport site (053048) commenced operations in March 1964 and continued until August 1998.

The current automatic weather station has been operating since 17 May 1995, 1.2 km southeast of the previous site.

## Nearest ACORN-SAT sites

056242 INVERELL (127 km)

055024 GUNNEDAH (176 km)

052088 WALGETT (177 km)



# Moruya Heads



## Site information

Site name: MORUYA HEADS

Site number: 069018

Latitude: 35.91 °S

Longitude: 150.15 °E

Elevation: 17 m

Locality: Moruya Heads, NSW

First year of available data: 1910

## Nearest ACORN-SAT sites

068151 POINT PERPENDICULAR  
(108 km)

068072 NOWRA (113 km)

072161 CABRAMURRA (160 km)

## Moruya Heads (069018)

The site (069018) is in the grounds of the (now former) Moruya Heads Pilot Station, on an elevated headland on the south side of the entrance of the Moruya River, with ground sloping gently to the north and more steeply to the west. The ground surface around the instruments is mown grass, with the pilot station buildings a few metres to the southeast; there is coastal scrub to the north and west but it is below the horizon.

## History

The site has been in the Pilot Station grounds since at least the start of ACORN-SAT in 1910. The only documented move was 'a few feet' south, in October 1966.

An automatic weather station was installed at Moruya Airport (069148) in 1999. While the airport site (which is on flat ground on the other side of the Moruya River) is less than 2 km inland, under certain conditions the temperature differences between Moruya Airport and Moruya Heads can be dramatic due to the role the coastal ridge can play in blocking marine air from penetrating further inland. Minimum temperature differences of 5 °C or more between the sites on cold nights in the cooler months are a regular occurrence. Due to these large climatic differences it is unlikely the airport site will supersede the current Moruya Heads site in the foreseeable future.



# Mount Gambier



## Site information

Site name: MOUNT GAMBIER

Site number: 026021

Latitude: 37.75 °S

Longitude: 140.77 °E

Elevation: 63 m

Locality: Mount Gambier, SA

First year of available data: 1910

## Mount Gambier (026021/026020)

The current site (026021) is at the Meteorological Office on the western side of the airport, about 9 km north of the town. It is over mown unwatered grass on a gentle north-facing slope. The nearest buildings are about 30 m away. There has been some shrub growth about 30 m to the south over the last 20 years, which appears to have affected low-level winds and evaporation but had little influence on temperature.

## History

Observations were originally made at the Post Office (026020). There are conflicting accounts of what type of screen may have been in use prior to 1913 and the possibility that a Glaisher stand may have been used in 1910–1912 cannot be discounted, although the data suggest it is unlikely. Observations from the Post Office ceased in 1952.

The current site has been operating since 1941. It moved 800 m southwest in April 1964. An automatic weather station was installed in July 1993 and became the primary instrument on 1 November 1996.

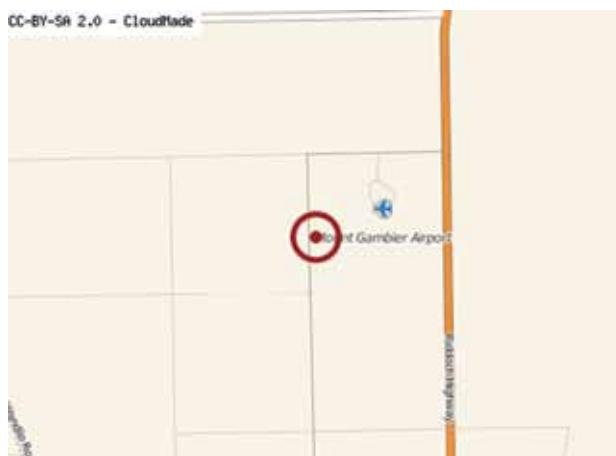
## Nearest ACORN-SAT sites

026026 ROBE (111 km)

078015 NHILL (178 km)

090015 CAPE OTWAY

Lighthouse (269 km)



# Nhill



## Site information

Site name: NHILL

Site number: 078015

Latitude: 36.31 °S

Longitude: 141.65 °E

Elevation: 139 m

Locality: Nhill, Vic.

First year of available data: 1910

## Nearest ACORN-SAT sites

026021 MOUNT GAMBIER (178 km)

026026 ROBE (194 km)

080023 KERANG (215 km)

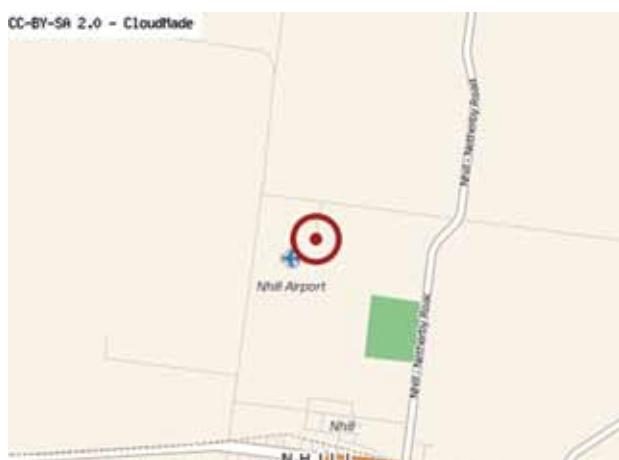
## Nhill (078015/078031)

The current site (078015) is an automatic weather station at Nhill Airport, approximately 3 km north of the town centre, on top of a small ridge. The ground surface around the screen is natural grass, with the nearest trees and buildings about 30 m away.

## History

The original site (078031) has been in a number of locations in and around Nhill. Starting within the township, the site moved in July 1930, August 1949 (town to airport), March 1966 (airport back into town), November 1970 (across the street), March 1976, August 1992 (only a small move) and the start of 1995 (about 500 m). The final location was on the southwestern edge of the town area, 1.2 km west of the centre.

The current site at the airport (078015) has been operating since 2003. It is about 1 km northeast of the location used by 078031 from 1949 to 1966.



# Normanton



## Site information

Site name: NORMANTON

Site number: 029063

Latitude: 17.69°S

Longitude: 141.07°E

Elevation: 18 m

Locality: Normanton, Qld

First year of available data: 1910

## Normanton (029063/029041)

The current site (029063) is an automatic weather station over natural grass on the east side of the airport, about 2 km south of the town centre.

## History

The original site was in the town (029063). Screens which had been in poor condition were replaced in May 1917 and November 1940. The only documented move in this site took place in October 1956 (45 m southwest). In its later years, there was a watered lawn and trees and a car park nearby.

The current site replaced the previous site in 2001; there are only three months of overlapping data, insufficient to be used in adjustment.

## Nearest ACORN-SAT sites

029077 BURKETOWN (163 km)

030124 GEORGETOWN (269 km)

028004 PALMERVILLE (371 km)



# Nowra



## Site information

Site name: NOWRA

Site number: 068072

Latitude: 34.95 °S

Longitude: 150.54 °E

Elevation: 109 m

Locality: Nowra, NSW

First year of available data: 1955

## Nearest ACORN-SAT sites

068151 POINT PERPENDICULAR  
(30 km)

069018 MORUYA HEADS (113 km)

066062 SYDNEY (136 km)

## Nowra (068072/068076)

The current site (068072) is an automatic weather station on the grounds of the Royal Australian Navy airbase, approximately 9 km southwest of the Nowra town area and well clear of any urban development. The area around the site is short natural grass with the airport runway about 75 m away at its closest point.

## History

There is no evidence of any moves during the lifetime of the original site (068076). The first available data are from 1955, although there are indications in station documentation that observations were already being made in 1949. It closed in November 2000 with no overlap with the new site, but comparisons with neighbouring sites indicate no evidence of any significant differences in data between the two sites.

The current site has been operating since November 2000, about 800 m west-southwest of the previous site.

There are suggestions in the documentation that an automatic weather station had been operating near the present location for some time prior to 2000, but no data have been archived and it is unknown if the system was consistent with Bureau specifications.



# Nuriootpa



## Site information

Site name: NURIOOTPA

Site number: 023373

Latitude: 34.48 °S

Longitude: 139.01 °E

Elevation: 275 m

Locality: Nuriootpa, SA

First year of available data: 1957

## Nuriootpa (023373/023321)

The current site (023373) is an automatic weather station, located on a vineyard research farm about 2 km east of the town. The site is an open area of natural grass about 25 m wide between rows of vines, and is quite bare in summer. The vines are irrigated using drip-watering.

## History

The original manual site (023321), which continued until 1999, was about 30 m away from the current site, in the same strip of open ground between rows of vines. There was some earth and rock near this site, at least in its later years. This site moved about 300 m south in August 1983.

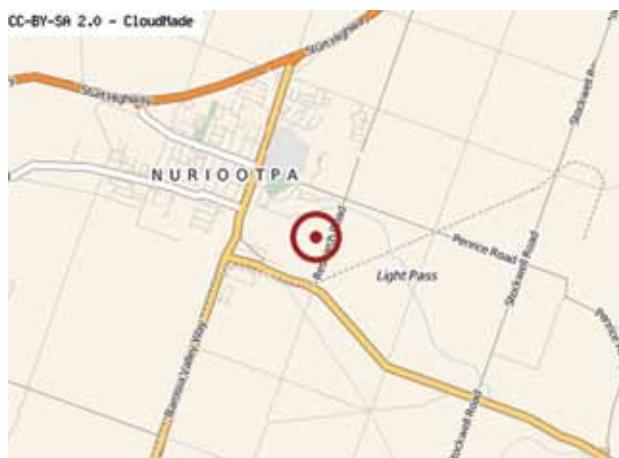
The current site has been operating since August 1996.

## Nearest ACORN-SAT sites

023090 ADELAIDE (61 km)

021133 SNOWTOWN (107 km)

022823 CAPE BORDA (262 km)



# Oodnadatta



## Site information

Site name: OODNADATTA

Site number: 017043

Latitude: 27.56 °S

Longitude: 135.45 °E

Elevation: 117 m

Locality: Oodnadatta, SA

First year of available data: 1940

## Oodnadatta (017043/017114)

The current site (017043) is an automatic weather station at the airport, which is about 2 km south of the town. The ground surface is typical desert terrain with mostly bare red soil and stony ground, with some patchy dry grass.

## History

Observations from 1940 until 1985 came from the former Meteorological Office at the airport, using the current site number (017043).

After the closure of the Meteorological Office in 1985, observations were made at the police station (017114) in the town. These observations became increasingly intermittent and ceased altogether in 1991.

The automatic weather station, in almost exactly the same location as the original Meteorological Office, began operating in November 1994.

## Nearest ACORN-SAT sites

017031 MARREE (346 km)

016098 TARCOOLA (360 km)

016001 WOOMERA (422 km)



# Orbost



## Site information

Site name: ORBOST

Site number: 084145

Latitude: 37.69 °S

Longitude: 148.47 °E

Elevation: 63 m

Locality: Orbost, Vic.

First year of available data: 1938

## Orbost (084145/084030)

The current site is an automatic weather station (084145). It is over short natural grass adjacent to a reservoir on a southwest-facing slope, near the Bonang road 2 km northeast of the town centre and 700 m east of the manual site. The reservoir embankment (earth) is about 50 m to the northeast at its closest point and the nearest trees are about 100 m away.

## History

The original site (084030) was in a number of locations within the Orbost town area. It moved on 23 November 1966 and again on 4 March 1976. A move on 18 April 1984 placed it in a small paddock on the northern edge of town, where it continued until its closure in November 2011.

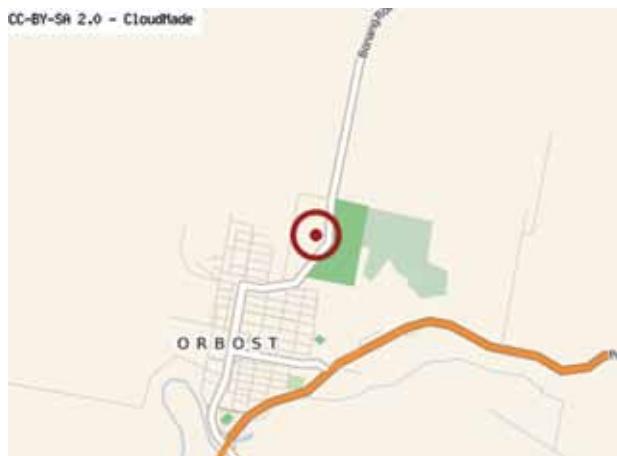
The current site has been operating since November 2000.

## Nearest ACORN-SAT sites

085072 SALE (126 km)

084016 GABO ISLAND (129 km)

072161 CABRAMURRA (195 km)



# Palmerville



## Site information

Site name: PALMERVILLE

Site number: 028004

Latitude: 16.00 °S

Longitude: 144.08 °E

Elevation: 204 m

Locality: Palmerville, Qld

First year of available data: 1910

## Palmerville (028004)

This site is an automatic weather station over natural grass, located in a remote location (a former gold mining settlement) in the southern interior of Cape York Peninsula.

## History

There are no clearly documented moves at the original manual site although the screen was replaced on a number of occasions (October 1926, July 1988 and September 1994). The same observer performed observations for 63 years from 1936 to 1999, and was the area's sole remaining resident during the later part of that period. Observations did not resume until the automatic station was commissioned.

The automatic weather station was installed in mid-2000, 160 m south-east of the former site, but did not begin transmitting data until July 2001.

## Nearest ACORN-SAT sites

031011 CAIRNS (203 km)

030124 GEORGETOWN (263 km)

029063 NORMANTON (371 km)

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# Perth



## Site information

Site name: PERTH

Site number: 009021

Latitude: 31.93 °S

Longitude: 115.98 °E

Elevation: 15 m

Locality: Perth, WA

First year of available data: 1910

## Nearest ACORN-SAT sites

010917 WANDERING (106 km)

010286 CUNDERDIN (123 km)

008039 DALWALLINU (195 km)

## Perth (009021/009250/009034)

The current site (009021) is on the northern part of the grounds of Perth Airport, about 10 km east of central Perth. The ground surface is mown unwatered grass with some sandy patches, with a drain about 15 m to the south and scrub 15 m to the north. The airport grounds have suburban development on most sides, but the observing site is about 500 m from any runways and 1.5 km from the nearest significant buildings.

## History

The first observations are from the Perth Regional Office (009034). This site was at the Perth Observatory, to the west of the current city centre.

The airport site (009021) opened in 1944. ACORN-SAT uses Perth Regional Office until 1944 and utilises the overlap period between 1944 and 1962 to merge this into the Airport data. Regional Office data after a site move in 1963 were not used for ACORN-SAT.

The airport site moved about 1.5 km to the south-southeast on 3 March 1988. An automatic weather station was installed on 20 June 1994 and became the primary instrument on 1 November 1996. The site move 1.7 km to the north on 27 October 1997; observations continued at the old site under station number 009250 until 2001.

A more recent Perth Metro site (009225), installed on a golf course north of the city centre after the Regional Office site closed, is not used in ACORN-SAT.



# Point Perpendicular



## Site information

Site name: POINT PERPENDICULAR

Site number: 068151

Latitude: 35.09 °S

Longitude: 150.80 °E

Elevation: 85 m

Locality: Jervis Bay, NSW

First year of available data: 1946

## Point Perpendicular (068151/068034)

The current site (068151) is an automatic weather station at the Point Perpendicular lighthouse, on a high headland at the northern entrance to Jervis Bay. The ground surface is short natural grass with some protruding rocks, with coastal scrub about 20 m away and the lighthouse buildings 30–40 m away.

## History

There are no documented moves at the original site (068034) during the course of ACORN-SAT. Digitised data at this location commence in 1946 but it is believed that observations extend back to at least 1924. A new screen was installed in November 1960, replacing one in poor repair.

The current automatic weather station was established on 21 May 2001, just 3 m from the previous site. Overlapping observations continued until 15 August 2003; the comparison revealed no differences between the two sites, despite the presence of a concrete slab under the screen of the old site. The manual thermometers were transferred to the screen of 068151 and continued to be read as 068034 until June 2004.

## Nearest ACORN-SAT sites

068072 NOWRA (30 km)

069018 MORUYA (108 km)

066062 SYDNEY (142 km)



# Port Hedland Airport



## Site information

Site name:	PORT HEDLAND AIRPORT
Site number:	004032
Latitude:	20.37 °S
Longitude:	118.63 °E
Elevation:	6 m
Locality:	Port Hedland, WA
First year of available data:	1912

## Nearest ACORN-SAT sites

- 004106 MARBLE BAR (147 km)
- 004032 BROOME (465 km)
- 005007 LEARMONT (514 km)

## Port Hedland (004032/004104/004002)

The current site (004032) is located at Port Hedland Meteorological Office, on the northern side of Port Hedland Airport, 9 km southeast of the town centre. The ground surface is low natural grass with some patches of bare red soil, and no buildings or trees within 50 m.

## History

The first observations were made at the Post Office (004002) in the town. The Post Office site had a small move (less than 10 m) in May 1943.

The airport site (004032) opened in 1948. There was no useful overlap of maximum and minimum temperature observations between it and the Post Office site, although some temperature observations at fixed hours were made at the airport during World War II. The site moved within the airport grounds (585 m north-northeast) on 27 March 1981. An automatic weather station was installed on 24 November 1994 and became the primary instrument on 1 November 1996. A different type of automatic weather station was operated a few metres away under the site number 004104 as part of a comparison program.



# Port Lincoln



## Site information

Site name: PORT LINCOLN

Site number: 018192

Latitude: 34.60 °S

Longitude: 135.88 °E

Elevation: 9 m

Locality: North Shields, SA

First year of available data: 1910

## Port Lincoln (018192/018070)

The current site (018192) is an automatic weather station at the airport, about 14 km north of the town, with a surface of mown natural grass.

## History

The original site (018070) was in the town centre. In its later years this site was quite built-up, with buildings, a fence and a concrete surface in the vicinity. There were numerous small moves in its history, with documented moves in October 1924, December 1941, July 1962, February 1975 and October 1986 (40 m east). It closed in March 2002.

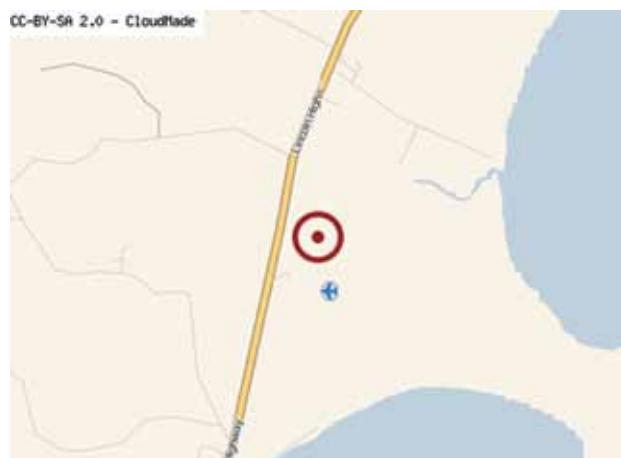
The current site has been operating since 1992.

## Nearest ACORN-SAT sites

022823 CAPE BORDA (144 km)

018044 KYANCUTTA (166 km)

021133 SNOWTOWN (235 km)



# Port Macquarie



## Site information

Site name: PORT MACQUARIE

Site number: 060139

Latitude: 31.43 °S

Longitude: 152.87 °E

Elevation: 4 m

Locality: Port Macquarie, NSW

First year of available data: 1910

## Nearest ACORN-SAT sites

059040 COFFS HARBOUR (127 km)

061078 WILLIAMSTOWN (181 km)

061363 SCONE (208 km)

## Port Macquarie (060139/060026)

The current site (060139) is an automatic weather station at Port Macquarie Airport. It is on flat ground with short natural grass approximately 5 km west of the town centre and a similar distance from the ocean. The airport lies just outside the suburban boundary.

## History

The original site (060026) was located near the Pilot Station, close to the ocean on the eastern edge of the town centre. There was a move 90 m seaward (the exact direction is unclear) in January 1939, and a move 18 m to the southwest on 4 September 1968.

On 6 October 1983, the site moved about 1 km south to a location in suburban Hill Street, about 1.5 km south of the city centre and approximately 700 m inland from the ocean. This location was less exposed to the ocean than this distance suggests because it was in a local hollow, and a ridge separated it from the beach. Temperature observations there ceased in October 2003. The site number 060026 continues to be used for rainfall observations but these are in a different location to the pre-2003 temperature observations.

The current site (060139) is located on the southeast side of the airport runway. It began operations in 1995 but has only been used in the ACORN-SAT dataset from January 2000 because of some issues with its early data.



# Rabbit Flat



## Site information

Site name: RABBIT FLAT

Site number: 015666

Latitude: 20.18 °S

Longitude: 130.01 °E

Elevation: 340 m

Locality: Tanami, NT

First year of available data: 1969

## Rabbit Flat (015666/015548)

The current site (015666) is an automatic weather station in a remote area near the Rabbit Flat roadhouse, over natural grass and scrubland, with some shrubs 20–30 m away to the north and west.

## History

The first site (015548) has no indication of any moves between 1969 and 1998 but did become rather overgrown over time.

The automatic weather station was installed about 200 m to the west in 1996. The two sites operated in parallel from 1996 to 1998. There is no indication of any moves at the new site.

## Nearest ACORN-SAT sites

002012 HALLS CREEK (329 km)

014825 VICTORIA RIVER DOWNS  
(433 km)

015135 TENNANT CREEK (440 km)



# Richmond (NSW)



## Site information

Site name:	RICHMOND (NSW)
Site number:	067105
Latitude:	33.60 °S
Longitude:	150.78 °E
Elevation:	19 m
Locality:	Richmond, NSW
First year of available data:	1939

## Richmond (067105/067033)

The current site (067105) is an automatic weather station on the grounds of the Richmond RAAF base, on the northwest fringe of Sydney. It is over short natural grass north of the western end of the main runway.

## History

The original site (067033) was also within the grounds of the RAAF base. It moved in May 1969.

The automatic weather station (067105) was installed in late 1993 about 400 m northwest of the previous site. It was initially erratic and is not used in ACORN-SAT until the old site closed on 1 November 1994.

There is another site (067021) which operated in the first half of the century at Windsor, and may be able to be used to extend the dataset back in time once its data are digitised. The region is a major growth corridor for Sydney and there is evidence of anomalous warming of minimum temperatures in recent years.

## Nearest ACORN-SAT sites

- 066062 SYDNEY (49 km)
- 063005 BATHURST (115 km)
- 068072 WILLIAMTOWN (134 km)



# Richmond (Qld)



## Site information

Site name:	RICHMOND (Qld)
Site number:	030045
Latitude:	20.73 °S
Longitude:	143.14 °E
Elevation:	211 m
Locality:	Richmond, Qld
First year of available data:	1910

## Nearest ACORN-SAT sites

- 030124 GEORGETOWN (273 km)
- 036031 LONGREACH (323 km)
- 034084 CHARTERS TOWERS (335 km)

## Richmond (030045)

The site is within the town area, on vacant land behind the Post Office and one block back from the town's main street, on a gentle northeast-facing slope. The ground surface is natural grass with some bare clay patches. The closest buildings are about 15 m to the southwest. There is a bluestone path leading to the screens, and shrubs have grown in the vicinity on occasions.

## History

The only known station move was one of 30 m in September 1965. New screens were known to have been supplied in December 1928 and September 1991; the screen in use in September 1944 was reported to have had an iron roof.

An automatic weather station (030161) was installed at the airport, approximately 4 km north of the town, in 1998 and may eventually replace the existing site.



# Robe



## Site information

Site name: ROBE

Site number: 026026

Latitude: 37.16 °S

Longitude: 139.76 °E

Elevation: 3 m

Locality: Robe, SA

First year of available data: 1910

## Nearest ACORN-SAT sites

026021 MOUNT GAMBIER (111 km)

078015 NHILL (194 km)

023090 ADELAIDE (270 km)

## Robe (026026)

The current site is over lawn in a vacant lot within the town of Robe, across the street from the waterfront. The site is quite built-up with buildings to the west, east and south, with the nearest buildings about 15 m away, and a metal fence about 10 m away at its closest point. Robe is an unusual location as there is water to the north, reducing its susceptibility to extreme high temperatures on days with northerly winds.

## History

There were issues with the screen door for some years prior to repairs in 1930. There was a very small move (3 m) in October 1943, and documentation also suggests a small move at some point in the decade prior to 1956 but there is no clear evidence of its nature or timing. There was a move 200 m east in November 1968

An automatic weather station (026105) was installed at Robe Airport, 5 km east-southeast of the town, in 2003. It is at an inland location quite different climatically from the town site, so is not expected to be a direct replacement for the town site.



# Rockhampton



## Site information

Site name: ROCKHAMPTON

Site number: 039083

Latitude: 23.38 °S

Longitude: 150.48 °E

Elevation: 10 m

Locality: Rockhampton, Qld

First year of available data: 1939

## Rockhampton (039083)

The current site is near the Meteorological Office, on the eastern side of Rockhampton Airport, approximately 3 km west of the town centre. It is on level ground but there are low hills to the east. The ground surface is mown unwatered grass.

## History

The site has been operating since 1939. A site move (80 m northeast) took place on 1 April 1993; an automatic weather station was installed at this time and became the primary instrument on 1 November 1996.

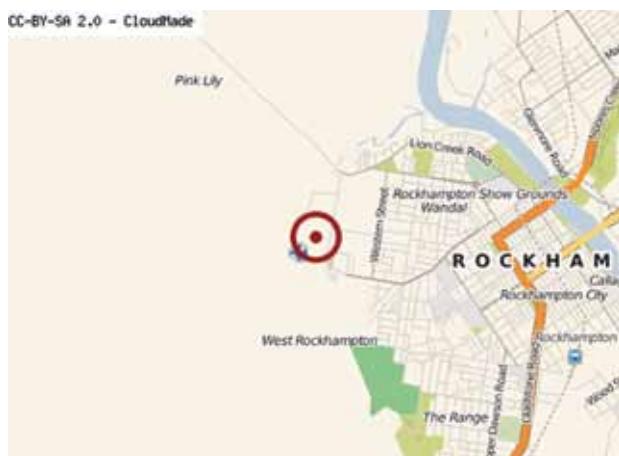
Prior to the opening of the airport site, observations were made at the Post Office (039082), but no daily data from this location have yet been digitised.

## Nearest ACORN-SAT sites

039128 BUNDABERG (253 km)

039066 GAYNDAH (275 km)

033119 MACKAY (283 km)



# Rutherglen



## Site information

Site name: RUTHERGLEN

Site number: 082039

Latitude: 36.10 °S

Longitude: 146.51 °E

Elevation: 175 m

Locality: Rutherglen, Vic.

First year of available data: 1912

## Rutherglen (082039)

This site is an automatic weather station located on the grounds of a research farm, about 7 km southeast of Rutherglen and well outside the town area, on flat ground over grass (farm paddocks) but with low hills a few hundred metres to the north. A gravel road (carrying farm traffic only) is a few metres to the west of the site.

## History

There have been no documented site moves during the site's history. The automatic weather station began operations on 29 January 1998.

## Nearest ACORN-SAT sites

072150 WAGGA WAGGA (136 km)

074258 DENILINUIN (154 km)

072161 CABRAMURRA (170 km)



# Sale



## Site information

Site name: SALE

Site number: 085072

Latitude: 38.12 °S

Longitude: 147.13 °E

Elevation: 5 m

Locality: Sale, Vic.

First year of available data: 1945

## Sale (085072/085298)

This site (085072) is an automatic weather station, on flat open ground on the southern edge of the East Sale RAAF base, about 8 km east of the town. A concrete path leads to the screen area but otherwise the ground surface is short unwatered grass, with a small shed about 25 m to the southeast and a bitumen road 20 m to the south.

## History

The automatic weather station has been operating in its present location since 11 June 1996. The previous site was 900 m north of the current site. It continued making observations as a comparison until 2005 under the station number 085298. There is no clear documentation of any moves at the RAAF base site prior to 1996.

Prior to the opening of the Meteorological Office at the RAAF base in 1945, observations were made in the Sale township (085133), but no data from this location had been digitised at the time of ACORN-SAT compilation.

## Nearest ACORN-SAT sites

084030 ORBOST (126 km)

085096 WILSONS PROMONTORY  
(129 km)

086071 MELBOURNE REGIONAL  
OFFICE (193 km)



# Scone



## Site information

Site name: SCONE

Site number: 061363

Latitude: 32.03 °S

Longitude: 150.83 °E

Elevation: 221 m

Locality: Scone, NSW

First year of available data: 1965

## Scone (061363/061089)

The current site at Scone (061363) is an automatic weather station at Scone Airport, 4 km west-northwest of the town. It is over natural grass with the nearest trees about 30 m away.

## History

The original site (061089) was at the Scone Soil Conservation Research station, a research farm 8 km east-southeast of the town. There was only one small move (90 m east) in January 1978, which had no significant effect on the observations. This site continues to operate but has only been used in ACORN-SAT to the end of 2000.

The airport site (061363) is about 10 km from the previous site. It has been operating since 1988 and has been used in ACORN-SAT since January 1997. It moved 500 m west on 9 December 2004.

There was also a site (061069) in the town area which operated until 1991. This site has not been used in ACORN-SAT but might be used to extend the record back once its pre-1965 data have been digitised.

## Nearest ACORN-SAT sites

055024 GUNNEDAH (124 km)

061078 WILLIAMTOWN (132 km)

067105 RICHMOND (NSW) (175 km)



# Snowtown



## Snowtown (021133/021046)

The current site (021133) is an automatic weather station. It is located in cropland about 2 km north of the town. The site is subject to large seasonal vegetation changes, being surrounded by green vegetation (grain crops) during the growing season and bare soil in summer and autumn; the data suggest that, relative to the town site (which had a similar ground surface all year), this has led to an increase in summer maximum temperatures and a decrease in winter maximum temperatures.

## History

The former site (021046), which continued until June 2001, was located in the town. Small moves within the town are documented in April 1948, July 1971 and on 4 August 1993 (15 m).

The current site has been operating since 1998.

## Site information

Site name: SNOWTOWN

Site number: 021133

Latitude: 33.77 °S

Longitude: 138.22 °E

Elevation: 109 m

Locality: Snowtown, SA

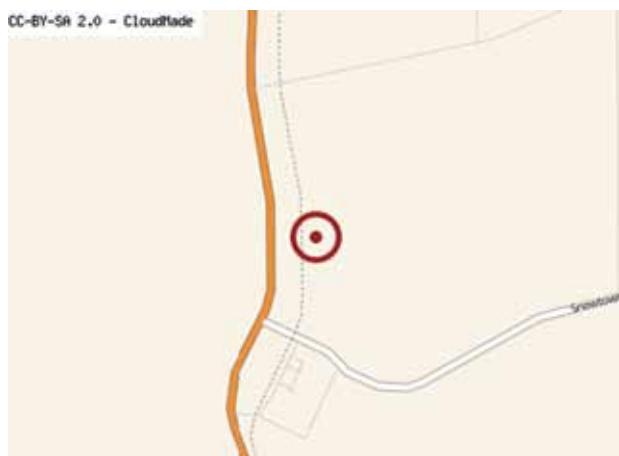
First year of available data: 1910

## Nearest ACORN-SAT sites

023373 NURIOOTPA (107 km)

023090 ADELAIDE (134 km)

018192 PORT LINCOLN (235 km)



# St George



## Site information

Site name: ST GEORGE

Site number: 043109

Latitude: 28.05 °S

Longitude: 148.59 °E

Elevation: 199 m

Locality: St George, Qld

First year of available data: 1913

## St George (043109/043034)

The current site (043109) is an automatic weather station on level ground over short natural grass (with some bare patches) at St George Airport, about 3 km southwest of the town centre.

## History

The original site (043034) was located at the rear of a building in the town centre. There is no evidence of any site moves between 1964 and 1997. There was a car park nearby in the later years of observations, and dense tree growth nearby after 1992, but this does not appear to have resulted in any artificial temperature trends at this location after 1940 (although minimum temperatures at the airport are substantially lower). The site closed in July 1997

The airport site (043109) began operating on 10 May 1997, providing no useful overlap with the town site.

## Nearest ACORN-SAT sites

053115 MOREE (202 km)

042112 MILES (221 km)

052088 WALGETT (226 km)



# Sydney



## Site information

Site name: SYDNEY

Site number: 066062

Latitude: 33.86 °S

Longitude: 151.21 °E

Elevation: 39 m

Locality: Sydney, NSW

First year of available data: 1910

## Sydney (066062)

The current site is located on Observatory Hill, in a small grassed enclosure (about 10 by 10 m) about 100 m south of the main Sydney Observatory complex. There is a freeway immediately east of the site but it is in a deep cutting at this point.

## History

Originally the site was in the main Observatory grounds. It moved about 100 m south to its current location in 1917. The earlier site was a more exposed location on a hilltop and had lower maximum and higher minimum temperatures than the current location. An automatic weather station was installed at the current site on 8 August 1990.

The area is heavily built-up and has been since at least the late 19th century. An analysis of minimum temperature trends in the ACORN-SAT data showed no evidence of an abnormal warming trend relative to non-urban sites in the region, indicating that any urban influence on the data was already fully developed by the time ACORN-SAT begins in 1910.

## Nearest ACORN-SAT sites

067105 RICHMOND (NSW) (49 km)

061078 WILLIAMSTOWN (132 km)

068072 NOWRA (136 km)



# Tarcoola



## Site information

Site name: TARCOOLA

Site number: 016098

Latitude: 30.71 °S

Longitude: 134.58 °E

Elevation: 123 m

Locality: Tarcoola, SA

First year of available data: 1921

## Tarcoola (016098/016044)

The current site is an automatic weather station (016098). The ground surface is low saltbush with some bare patches.

## History

The original site (016044) was in the settlement. No documentation is available prior to 1995. A new building was erected in its vicinity in early 1998 and observations ended in August 1999.

The current site has been operating since 1997, on mostly flat ground 1.4 km northeast of the original site and at a slightly higher. In its early years the automatic station suffered from numerous data outages due to power supply problems.

## Nearest ACORN-SAT sites

018012 CEDUNA (179 km)

016001 WOOMERA (218 km)

018044 KYANCUTTA (286 km)



# Tennant Creek



## Site information

Site name: TENNANT CREEK

Site number: 015135

Latitude: 19.64 °S

Longitude: 134.18 °E

Elevation: 376 m

Locality: Tennant Creek, NT

First year of available data: 1910

## Tennant Creek (015135/015087)

The current site (015135) is at the Meteorological Office at the airport 2 km northwest of the town centre. The instrument enclosure is largely bare red soil with short unwatered grass around. The Meteorological Office buildings are about 40 m to the south.

## History

The original site (015087) was based in the town. There was a major move (12 km south) in June 1935 and a smaller move of about 20 m in November 1963. This later site was quite close to a road. New screens were installed to replace damaged ones in May 1945 and November 1958. Observations ceased in 1970.

This airport site has been operating since 1969. An automatic weather station was installed on 8 July 1990 and has been the primary instrument since 1 November 1996. There are no known substantial moves at this location.

## Nearest ACORN-SAT sites

015666 RABBIT FLAT (440 km)

015590 ALICE SPRINGS (463 km)

014825 VICTORIA RIVER DOWNS  
(492 km)



# Thargomindah



## Site information

Site name: THARGOMINDAH

Site number: 045025

Latitude: 27.99°S

Longitude: 143.81°E

Elevation: 131 m

Locality: Thargomindah, Qld

First year of available data: 1957

## Thargomindah (045025/045017)

The current site (045025) is an automatic weather station at Thargomindah Airport, about 1 km northwest of the town. The ground surface is mostly bare red soil with a few patches of grass, and some scrub about 30 m away.

## History

The original site (045017) had been located at a number of closely-spaced sites within the Thargomindah township, moves having taken place on 14 July 1983 (75 m north) and 23 June 1994 (25 m southeast), although neither had a significant impact on the observations. Temperature measurements at the site are believed to have commenced in 1888 but data prior to 1957 are not currently digitised. The town site closed in 2005.

The current site has been operating since 27 July 1999.

## Nearest ACORN-SAT sites

046037 TIBOOBURRA (239 km)

044021 CHARLEVILLE (298 km)

048245 BOURKE (309 km)



# Tibooburra



## Site information

Site name: TIBOOBURRA

Site number: 046037

Latitude: 29.43 °S

Longitude: 142.01 °E

Elevation: 183 m

Locality: Tibooburra, NSW

First year of available data: 1910

## Nearest ACORN-SAT sites

045025 THARGOMINDAH (239 km)

046043 WILCANNIA (271 km)

017031 MARREE (383 km)

## Tibooburra (046037)

The current site is located in the front yard of a house in the small settlement of Tibooburra. It is about 10 m from the nearest buildings. The ground surface is a mixture of bare earth and crushed stone.

## History

The site has had a number of moves over time. There is evidence of a move in November 1944 and a small move in 1960. A 500 m move to the southwest occurred in August 1980, and there is evidence of a move of a few metres some time between 1981 and 1984. There were moves of a few metres in September 1994 and of 15 m to the south in July 1996, to place the screen away from areas of bluestone landscaping and concrete, although neither move has had a significant impact on the observations. Minimum temperatures at Tibooburra suffered from persistent problems (most likely instrument faults) in the 1940s and most 1941–1949 minimum temperature data have not been used.

An automatic weather station (046126) has been operating at Tibooburra Airport, about 5 km to the east, since September 1997. This may eventually supersede the existing manual site.



# Townsville



## Site information

Site name: TOWNSVILLE

Site number: 032040

Latitude: 19.25 °S

Longitude: 146.77 °E

Elevation: 5 m

Locality: Townsville, Qld

First year of available data: 1940

## Townsville (032040/032178)

The current site (032040) is located at the Meteorological Office, on the west side of the airport. It is about 5 km west of the city centre and 500 m west of the main runway. There are some buildings nearby but no major urban development within 1 km. Because of flood risk, the site is on a pad (about 20 by 20 m) raised about 2 m above the general ground surface, with short natural grass as the ground surface.

## History

Observations have been made at Townsville Airport since 1942. There are no documented moves until one of 200 m northeast on 8 December 1994, at which time an automatic weather station was installed. Observations at the new site were made under the original number, while the old site continued until December 2000 under the station number 032178.

## Nearest ACORN-SAT sites

034084 CHARTERS TOWERS (103 km)

031011 CAIRNS (285 km)

033119 MACKAY (330 km)



# Victoria River Downs



## Site information

Site name: VICTORIA RIVER DOWNS

Site number: 014825

Latitude: 16.40 °S

Longitude: 131.01 °E

Elevation: 89 m

Locality: Victoria North, NT

First year of available data: 1965

## Victoria River Downs (014825)

The site is located on the grounds of the Victoria River Downs homestead, over natural grass (which becomes bare ground during dry seasons), about 60 m away from the nearest building.

## History

The site moved 250 m northwest in August 1987. An automatic weather station was installed on 9 May 1997.

Station photos indicate that the grass was watered up until around 2007; data indicate a marked increase in maximum temperatures around this time, especially during the dry season.

## Nearest ACORN-SAT sites

002012 HALLS CREEK (410 km)

015666 RABBIT FLAT (433 km)

014015 DARWIN (443 km)



# Wagga Wagga



## Site information

Site name: WAGGA WAGGA

Site number: 072150

Latitude: 35.16 °S

Longitude: 147.46 °E

Elevation: 212 m

Locality: Wagga Wagga, NSW

First year of available data: 1910

## Nearest ACORN-SAT sites

072161 CABRAMURRA (120 km)

082039 RUTHERGLEN (136 km)

073054 WYALONG (139 km)

## Wagga Wagga (072150/072151)

The current site (072150) is an automatic weather station on the grounds of the Wagga Wagga Airport, in generally flat terrain approximately 10 km east of the main urban area, and 400 m south of the southern edge of the suburb of Forest Hill. The site is over short unwatered grass with the nearest building about 60 m to the west.

## History

The original site (072151) was in the Wagga Wagga town area. It was initially at the Post Office but moved to police station grounds in July 1925. There was a further move in April 1928. The screen was initially facing east before being reoriented in October 1933. Temperatures were observed at this location until 1953. Rainfall observations continued under the same site number until 1984 but moved to a different location in the suburb of Kooringal, southeast of the town centre.

The airport site (072150) started operating in 1943. A grain shed to the northeast, built in 1969 and removed in 1999, cast shadows over the site after sunrise in mid-winter. The automatic weather station was installed on 21 October 1994 and became the primary instrument on 1 November 1996.



# Walgett



## Site information

Site name: WALGETT

Site number: 052088

Latitude: 30.04 °S

Longitude: 148.12 °E

Elevation: 133 m

Locality: Walgett, NSW

First year of available data: 1910

## Walgett (052088/052026)

The current site (052088) is an automatic weather station over natural grass on the southeast side of Walgett Airport, about 1 km southeast of the town centre. Its current location is surrounded on three sides by the town's levee bank, making it susceptible to cold air ponding under certain conditions and therefore relatively low minimum temperatures on colder nights.

## History

The original site (052026) was located within the town area. There may have been a small move in August 1960 when the screen was replaced. There are documented moves in November 1962 and October 1971, the latter putting it near the shire offices where it remained until closing in 1993.

The airport site (052088) began operations on 2 June 1993, with no useful overlap with the town site. There was a site move to the other side of the airport on 21 May 1997 when the automatic weather station was installed.

## Nearest ACORN-SAT sites

053115 MOREE (177 km)

048245 BOURKE (209 km)

043109 ST GEORGE (226 km)



# Wandering



## Site information

Site name: WANDERING

Site number: 010917

Latitude: 32.67 °S

Longitude: 116.67 °E

Elevation: 275 m

Locality: Wandering, WA

First year of available data: 1910

## Wandering (010917/010648)

The current site (010917) is an automatic weather station, over short unwatered grass approximately 1 km north of the settlement.

## History

The original site (010648) had moves in July 1987 (20 m, to achieve better exposure after trees had grown around the site) and in November 1988. It continued to operate until 2003.

An automatic weather station (010917) was installed in 1998 about 1 km north of the original site.

## Nearest ACORN-SAT sites

009021 PERTH (106 km)

010286 CUNDERDIN (128 km)

010579 KATANNING (140 km)



# Weipa



## Site information

Site name: WEIPA

Site number: 027045

Latitude: 12.68 °S

Longitude: 141.92 °E

Elevation: 18 m

Locality: Weipa, Qld

First year of available data: 1959

## Weipa (027045/027042)

The current site (027045) is at the Meteorological Office at the airport, 7 km southeast of the town, over short grass with no buildings or trees nearby. The enclosure has been watered at times which means it may not have natural-vegetation surface properties during the dry season.

## History

The original site (027042) was within the town area, although it is unclear from documentation where the original site was. It moved on 12 May 1972 to a location in Eastern Avenue, and continued until February 1994.

The current site started making temperature observations in December 1992. An automatic weather station was in place at this location throughout and became the primary instrument on 1 November 1996. The instrument enclosure was realigned in late 2000 or early 2001, but it appears that no actual relocation took place.

## Nearest ACORN-SAT sites

027058 HORN ISLAND (236 km)

028004 PALMERVILLE (437 km)

029063 NORMANTON (565 km)



# Wilcannia



## Site information

Site name: WILCANNIA

Site number: 046043

Latitude: 31.56 °S

Longitude: 143.37 °E

Elevation: 75 m

Locality: Wilcannia, NSW

First year of available data: 1957

## Wilcannia (046043)

The site is located in a vacant lot on Reid Street, in the southwestern part of the town. The ground surface is natural grass and low scrub, with the nearest trees about 20 m away and the nearest buildings about 40 m away.

## History

The site was originally in the town centre. It is possible that there were site moves at points in the 1960s and the 1980s. The documentation is inconclusive but the data indicate a move or other event around 1965–1966. The site became somewhat cluttered with nearby buildings, fences and cars in its later years, before a move about 700 m southwest to its present location on 1 December 1993.

An automatic weather station (046012) has been operating at Wilcannia Airport, 4.5 km north of the town, since January 2000. It may eventually supersede the existing manual site.

## Nearest ACORN-SAT sites

048027 COBAR (233 km)

046037 TIBOOBURRA (271 km)

048245 BOURKE (299 km)



# Williamtown



## Site information

Site name: WILLIAMTOWN

Site number: 061078

Latitude: 32.79 °S

Longitude: 151.84 °E

Elevation: 9 m

Locality: Williamtown, NSW

First year of available data: 1942

## Williamtown (061078)

This site is an automatic weather station located at Williamtown airport, on the northeastern side of the runway (the RAAF base side). The instrument area surface is mown unwatered grass with longer grass surrounding.

## History

There is little available documentation prior to the 1990s. A comparison site (061379) operated in the late 1990s in anticipation of a site move which never took place.

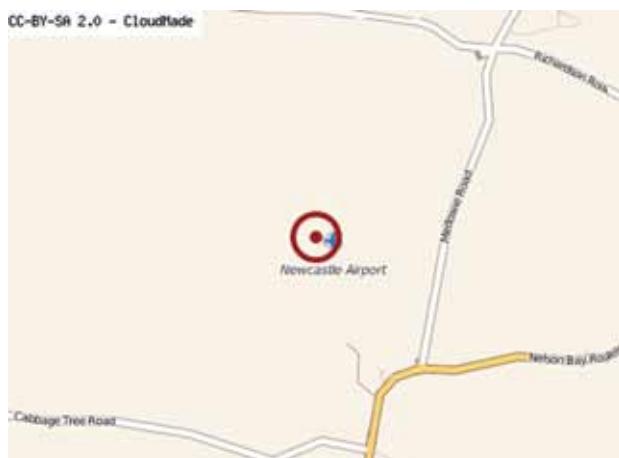
The automatic weather station was installed on 9 July 1999. There was a site move of about 250 m southwest on 15 February 2005. The old site continued as a comparison under the number 061407 but the comparison was terminated after a few months because development around the old site made it no longer representative of its former state, and the overlap data were not used to merge the sites.

## Nearest ACORN-SAT sites

061363 SCONE (127 km)

066062 SYDNEY (132 km)

067105 RICHMOND (NSW) (133 km)



# Wilsons Promontory



## Wilsons Promontory (085096)

The site is at the Wilsons Promontory lighthouse, a very exposed location on the southeast tip of Wilsons Promontory, about 80 m above sea level with cliffs to the west, south and east and with a narrow peninsula joining onto the main land area a few hundred metres to the north. The screen is in the lighthouse grounds, about 10 m south of the main lighthouse buildings and north of the lighthouse itself. The ground surface around the screen is partly short grass and partly bare rock.

## History

This site has been located at the Wilsons Promontory lighthouse throughout its history, with no documented moves during the ACORN-SAT period. Bushfires affected the area in February 1951; the instrument enclosure was not directly affected but observations stopped for several months while staff housing was rebuilt. The screen was blown down in a June 1959 storm and had to be replaced.

An automatic weather station was installed on 18 September 2000. Another bushfire in April 2005 also had no direct impact on the enclosure.

## Site information

Site name:	WILSONS PROMONTORY
Site number:	085096
Latitude:	39.13 °S
Longitude:	146.42 °E
Elevation:	95 m
Locality:	Wilsons Promontory, Vic.
First year of available data:	1910

## Nearest ACORN-SAT sites

085072	SALE (129 km)
086071	MELBOURNE REGIONAL OFFICE (194 km)
087031	LAVERTON RAAF (203 km)



# Wittenoom



## Site information

Site name: WITTENOOM

Site number: 005026

Latitude: 22.24 °S

Longitude: 118.34 °E

Elevation: 463 m

Locality: Wittenoom, WA

First year of available data: 1951

## Wittenoom (005026)

The site is located on what is now vacant land on the western side of the former town of Wittenoom. It is on a gentle north-facing slope, with an escarpment rising to the south, and the outlet of Wittenoom Gorge to the west. The ground surface is mown unwatered grass (with some patches of bare, stony red soil) with longer natural grass and scattered trees beyond the enclosure boundary.

## History

The site moved west in August 1989; the exact distance of the move is unclear but it appears to be a few hundred metres.

## Nearest ACORN-SAT sites

004106 MARBLE BAR (188 km)

004032 PORT HEDLAND (210 km)

005007 LEARMONT (436 km)



# Woomera



## Site information

Site name: WOOMERA

Site number: 016001

Latitude: 31.16 °S

Longitude: 136.81 °E

Elevation: 167 m

Locality: Woomera, SA

First year of available data: 1949

## Woomera (016001)

This site is at the Meteorological Office, 5 km north-northwest of the town centre. The instrument enclosure has a gravel/bluestone surface rather than being in natural terrain. The surrounding area is largely bare stony red soil (gibber plain) with some scattered low saltbush.

## History

The site has been operating since 1949, with a documented move of about 75 m in January 1980, and another about 2 km south on 16 May 1991. An automatic weather station was installed in June 1991 and became the primary instrument on 1 November 1996.

## Nearest ACORN-SAT sites

017031 MARREE (207 km)

016098 TARCOOLA (218 km)

018044 KYANCUTTA (250 km)



# Wyalong



## Site information

Site name: WYALONG

Site number: 073054

Latitude: 33.93 °S

Longitude: 147.24 °E

Elevation: 245 m

Locality: Wyalong, NSW

First year of available data: 1965

## Wyalong (073054)

The site is in the back yard of the Post Office building in Wyalong, a small town east of the larger centre of West Wyalong. The screen is over a lawn, with fences within a few metres, but is about 10 m clear of the main Post Office building.

## History

The site moved about 90 m on 14 December 1966, and there was a small move within the same yard on 26 February 1986.

An automatic weather station (050017) has been operating since April 1999 at West Wyalong Airport, 2 km south of West Wyalong and 4.4 km west-southwest of the current site.

## Nearest ACORN-SAT sites

072150 WAGGA WAGGA (139 km)

063005 BATHURST (221 km)

065070 DUBBO (213 km)



# Yamba



## Site information

Site name: YAMBA

Site number: 058012

Latitude: 29.43 °S

Longitude: 153.36 °E

Elevation: 27 m

Locality: Yamba, NSW

First year of available data: 1910

## Yamba (058012)

The station is on a headland on the north side of the town of Yamba, and on the southern side of the outlet of the Clarence River. It is in parkland on a gentle slope over short grass, with the nearest buildings about 40 m away and the nearest trees at a similar distance.

## History

The site has been on the headland throughout its history. A site move, probably of less than 50 m, took place on 22 November 1943 to opposite side of Pilot Station building. There was another move at some point between 1975 and 1980, probably of only a few metres.

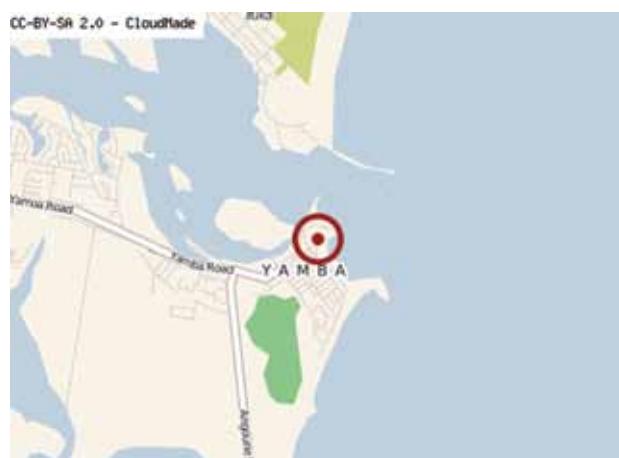
The current site was established on 16 October 2007, with the screen only 1.5 m from the screen for the previous site.

## Nearest ACORN-SAT sites

059040 COFFS HARBOUR (101 km)

040004 AMBERLEY (211 km)

056242 INVERELL (221 km)







**Australian Government**  
**Bureau of Meteorology**

**For more information**

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