

Southern Ocean Clouds, Radiation, Aerosol Transport Experimental Study (SOCRATES) High Resolution Australia BUFR Format Radiosonde Data Set

1.0 Contacts:

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Original Data Source:

Bureau of Meteorology via the Global Telecommunications System

2.0 Dataset Overview

The Australian Bureau of Meteorology (BoM) routinely releases radiosondes at stations throughout continental Australia as well as nearby islands. This data set includes data from Perth, Albany, Esperance, Kalgoorlie, Ceduna, Woomera, Adelaide, Melbourne, Wagga Wagga, Sydney, and Williamtown on the Australian continent and from Lord Howe Island, Macquarie Island, and Tasmania. The stations release soundings and pilot balloons (wind only) at a variety of times, most frequently at 00 and or 12 UTC. This data set includes the real time high vertical resolution (2 second) BoM Australian soundings released from these 14 sites (Figure 1) during the SOCRATES field phase (1 January to 28 February 2018).

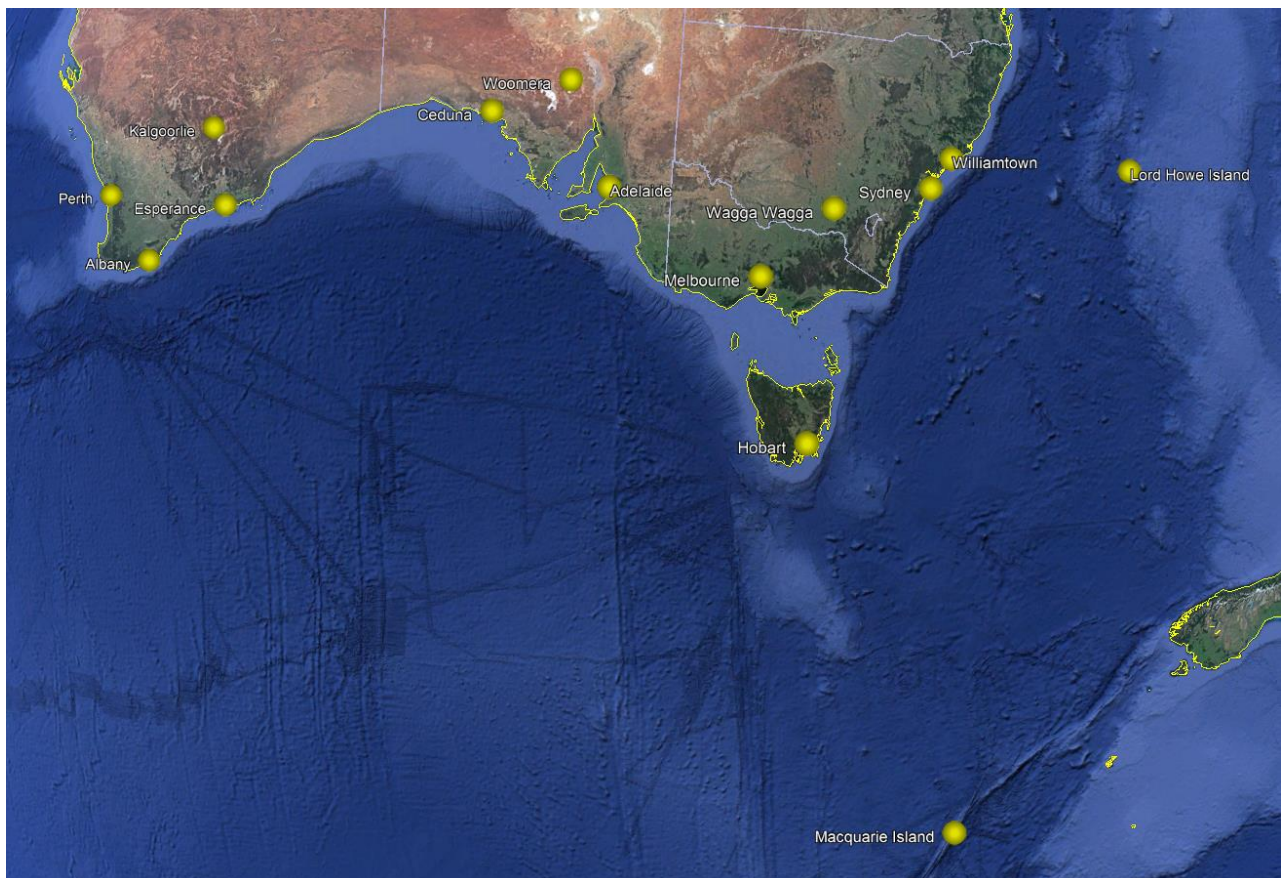


Figure 1. Location of Australian BoM continental and island radiosonde sites included in this data set.

3.0 Project Overview

The **Southern Ocean Clouds, Radiation, Aerosol Transport Experimental Study (SOCRATES)** project was conducted over the Southern Ocean to improve our understanding of clouds, aerosols, air-sea exchanges, and their interactions over the Southern Ocean. Further information on SOCRATES is available at the SOCRATES web site at NCAR/EOL: https://www.eol.ucar.edu/field_projects/socrates and information on the SOCRATES deployments is available at the SOCRATES Field Catalog: <http://catalog.eol.ucar.edu/socrates/tools/missions>.

4.0 Data Format and Remarks

These data are in the Binary Universal Form for the Representation of meteorological data (**BUFR**) format. Software such as the ECMWF ecCodes (<https://software.ecmwf.int/wiki/display/ECC/ecCodes+Home>) or NCEP BUFRLIB (<http://www.nco.ncep.noaa.gov/sib/decoders/BUFRLIB/>) can manipulate these data.

The files contain data at two-second intervals.

These stations used a variety of radiosondes, details are included in the BUFR files. They also released soundings at a variety of times, most frequently at 00 and or 12 UTC. Some of the soundings contain only the wind data.

The file naming convention is:

YYYYMMDDHHmm.site_cc_sounding.bufr

Where YYYYMMDDHHmm is the UTC date and time; site is the station name; cc is the country code.

4.1 Station List

Site ID	WMO ID	Site Name	Country	Latitude	Longitude	Elev (m)
YPAD	94672	Adelaide	AU	-34.9524	138.52	2
	94802	Albany	AU	-34.95	117.8	68.4
YCDU	94653	Ceduna	AU	-32.1297	133.698	15.3
	94638	Esperance	AU	-33.831	121.891	25
YMHB	94975	Hobart	AU	-42.8389	147.499	4
YPKG	94637	Kalgoorlie	AU	-30.7844	121.454	365.3
	94995	Lord Howe Island	AU	-31.5417	159.077	5
YMMQ	94998	Macquarie Island	AU	-54.4994	158.937	6
YMML	94866	Melbourne	AU	-37.67	144.83	113.4
YPPH	94610	Perth	AU	-31.9275	115.976	15.4
YSSY	94767	Sydney	AU	-33.9477	151.173	6
YSWG	94910	Wagga Wagga	AU	-35.16	147.46	212
	94776	Williamstown	AU	-32.7931	151.836	8
YPWR	94659	Woomera	AU	-31.1562	136.805	166.6

5.0 Data Quality Control Procedures

Information on which corrections were applied by the source are included in the data files.

These data are as they were retrieved from the real time Global Telecommunications System. No additional quality control has been performed by NCAR/EOL.