



instruments

Instruments in the Weather Kit were purchased at the following suppliers (April 2002).

Haines Learning Centre
301 Waverley Road, MALVERN EAST VIC 3145
tel: (03) 9572 4744 fax: (03) 9572 4377
e-mail: Maria@haines.com.au
website: <http://www.haines.com.au>

Prospectors Earth Sciences Pty Ltd
39 / 195 Prospect H'way, SEVEN HILLS NSW 2147
tel: (02) 9838 7899 fax (02) 9838 7073
website: <http://www.prospectors.com.au>

Optix Tech Inc
1100 17th Street, N.W. Suite 1101,
Washington D.C. 20036 USA
tel: 1 (202) 737 6641 e-mail: info@safesun.com
website: <http://www.safesun.com>

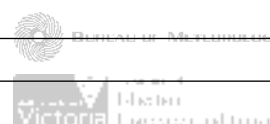
Mark Bedson, Cloudworld
PO Box 619, CEDUNA SA 5690
tel: (08) 8625 2195 mob: 0428 252 195
e-mail: clouds@tpg.com.au

Wika Instruments Pty Ltd
17 Summer Lane, RINGWOOD VIC 3134
tel: (03) 9870 0666 fax: (03) 9879 5055
website: <http://www.wika.com.au>

Free cloud charts from the Bureau of Meteorology
Contact: Fern Francey, tel: (03) 9669 4312
email: f.francey@bom.gov.au



Instrument	Cost	Supplier
Cup anemometer	\$220	Prospectors Earth Sciences Pty Ltd
Venturi meter	\$49	Haines Learning Centre
Thermometer	\$6	Haines Learning Centre
Psychrometer	\$100	Prospectors Earth Sciences Pty Ltd
Compass	\$6	Haines Learning Centre
Aneroid barometer (plastic)	\$40	Haines Learning Centre
Aneroid barometer (brass)	\$70	Prospectors Earth Sciences Pty Ltd
Rain gauge	\$15	Prospectors Earth Sciences Pty Ltd
Hygrometer	\$46	Haines Learning Centre
Sky chart	\$10 (\$100/pack of25)	Mark Bedson, Cloudworld
UV meter	\$US109	Optix Tech Inc.





making a weather station

The elements usually observed and recorded in a home or school weather station are:

- ◆ Dry bulb temperature. Thermometers must be housed in an instrument enclosure (see the plans in Section 3). An official enclosure is called a Stevenson screen.
- ◆ Wet bulb temperature.
- ◆ Daily maximum and minimum air temperature. A "Sixes" pattern thermometer can measure the temperature extremes, and can also serve as the dry bulb thermometer.
- ◆ Rainfall - standard 203mm collector. The rain gauge can be attached to the instrument enclosure.
- ◆ Surface wind direction and velocity. Use a simple wind vane, correctly oriented. The vane should be about 10 metres above ground level. A relatively inexpensive, hand-held Venturi meter can be used to determine wind speed.
- ◆ Estimate of surface (horizontal) visibility.
- ◆ Noting phenomena such as hail and severe squalls
- ◆ Barometric pressure. A dial-type aneroid barometer is appropriate.
- ◆ Terrestrial (ground) minimum temperature. The lowest temperature reached overnight at grass level is referred to as the terrestrial minimum temperature. This is measured on a separate minimum thermometer, re-set and placed on the grass at, say, the 3pm observation, read at the 9am observation, and left in the screen for safety during the day
- ◆ Autographic records. Continuous readings of air temperature and humidity charted against a time

scale can be obtained from thermographs, hygrographs, or thermo-hygrographs. The "weekly" types are most suitable, requiring a chart change once a week.

A range of meteorological instruments suitable for amateur use are stocked by those companies listed previously and others.

It is almost impossible to select a site for an instrument enclosure in city and suburban areas that satisfies the strict criteria imposed on official observation sites. But be prepared to compromise, and try to find a grassed area as far away from buildings, trees and fences as possible. Where security is a problem, consider erecting a high fence with a locked gate. The site should be about 10 metres by 10 metres, but the dictates of space and finance may necessitate something smaller.



Observations are generally made every three hours, from 3am to 9pm, but most climate stations make observations twice a day, at 9am and 3pm. This is sufficient to establish the average values of various elements – such as rainfall and temperature – for a district.

Further information:

Observations Section

Bureau of Meteorology, Victorian Regional Office
Level 11, 700 Collins Street (GPO Box 1636M)
DOCKLANDS VIC 3008

tel: 9669 4950, 9669 4951 or 9669 4952
(8.30am-5pm, Monday to Friday)

e-mail: j.cornall-reilly@bom.gov.au