

Guidelines for Observing

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Meteorological observations have never been more in demand, nor more widely available. However there are growing concerns among both users and providers about the quality of these weather and climate observations. The Society has released a set of guidelines, which can be downloaded here.

[Setting up a Weather Station](#) ^[1]

[Detailed Weather Station Guide](#) ^[2]

[Automatic Weather Station Site Managers' Guide](#) ^[3]

[Automatic Weather Station Site Auditors' Guide](#) ^[4]

Clouds

For assistance over cloud recognition, see [Cloud identification](#) ^[5] The nature of clouds-->. If you would like to buy a cloud identification chart, which is a laminated card for use outside you can find one in our shop - [Buy a cloudchart.](#) ^[6]

Automatic weather stations and electronic instruments

Care is needed when using automatic weather stations or electronic instruments (particularly electronic thermometers). Readings need to be checked and instruments well-calibrated..

Converting meteorological units

Two examples:

$$59^{\circ}\text{F} = (59-32)\times\frac{5}{9} = 27\times\frac{5}{9} = 15^{\circ}\text{C}.$$

$$20^{\circ}\text{C} = (20\times\frac{9}{5})+32 = 36+32 = 68^{\circ}\text{F}.$$

To convert a Fahrenheit temperature reading to Celsius: first deduct 32 and then multiply the value you get by 5/9.

To convert a Celsius temperature reading to Fahrenheit: first multiply by 9/5 and then add 32.

To convert inches to millimetres and vice versa:

$$1 \text{ inch} = 25.4 \text{ mm and } 1 \text{ mm} = 0.03937 \text{ inch.}$$

To convert barometric pressure from inches or millimetres of mercury to millimetres:

$$\text{millibars} = \text{inches} \times 33.8639, \text{ so } 30 \text{ inches} = 1015.9 \text{ mb and } 1000 \text{ mb} = 29.53 \text{ inches;}$$

millibars = millimetres x 1.3332, so 760 mm = 1013.23 mb and 1000 mb = 750.1 mm.
Note that 1 millibar (MB) is equivalent to 1 hectopascal (hPa).

To convert wind-speed units:

[kt = knot; m/s = metres per second; kph = kilometres per hour; mph = miles per hour]

1 kt = 0.515 m/s and 1 m/s = 1.94 kt;

1 kt = 1.853 kph, so 1 kph = 0.54 kt;

1 kt = 1.152 mph, so 1 mph = 0.87 kt.

Other Online guidance on weather observing

For an introduction, see [Weather observations](#). [7] For detailed guidance, see [Watching the weather](#) [8]

Source URL: <https://accsys.rmets.org/weather-and-climate/observing/guidelines-observing-0>

Links

[1] <http://www.rmets.org/pdf/guidelines/weather-station-setting-up.pdf>

[2] <http://www.rmets.org/pdf/guidelines/aws-guide.pdf>

[3] <http://www.rmets.org/pdf/guidelines/aws-site-manager.pdf>

[4] <http://www.rmets.org/pdf/guidelines/aws-site-auditor.pdf>

[5] <https://accsys.rmets.org/weather-and-climate/observing/cloud-identification>

[6] <http://shop/merchandise/key-clouds>

[7] <http://www.metoffice.gov.uk/education/>

[8] <http://www.metoffice.gov.uk/bookshelf/observations/index.html>