# WOKINGHAM METEOROLOGICAL DATA

## Wokingham Climatological Station, Emmbrook, Berkshire.

Lat/Long 51°25′N 00°51′W NGR (SU)798701 Altitude 46m ASL.

**Monthly Means and Totals** **DECEMBER 2022**

| Temperature (°C) | | Anomaly | Rank in the past **141** years | | |
|---|---|---|---|---|---|
| Mean maximum | 7.0 | -1.5 | 39th lowest | | |
| Mean minimum | 0.2 | -2.1 | 21st lowest | | |
| Daily mean | 3.6 | -1.8 | 29th lowest | | |
| Highest maximum | 13.9 | on 30th | Lowest maximum | -0.8 | on 12th |
| Highest minimum | 8.9 | on 31st | Lowest minimum | -8.6 | on 15th |
| Mean grass minimum | -2.4 | -2.0 | Lowest grass minimum | -12.3 | on 15th |
| Mean earth @30 cm | 6.5 | -0.4 | Earth @100 cm | 8.8 | -0.5 |
| Frost duration (hrs) | 229.0 | | Rain duration (hrs) | 60.6 | |
| Rainfall total (mm) | 67.4 | 104 % | 54th highest | | |
| Highest daily fall | 14.0 | on 22nd | Highest rate mm/hr | 22 | on 26th |

Number of: Dry days (<0.2mm) 16 Wet days (>0.9mm) 10 days ≥5mm 5

Sunshine total (hrs) 74.5 Daily mean 2.40 109 % Sunniest day 7.4 on 8th

Nº days with: Air frost 15 Ground frost 20 Snow falling 2 Snow lying 3

Thunder 0 Hail ≥5mm 0 Small hail/ice 0 Fog @09 2 Nil sun 10

Pressure MSL : Mean @09 GMT, mbar 1012.3 -3.3 Highest 1031.1 on 1st Lowest 988.6 on 30th

Relative humidity : Mean (%) 91.3 Lowest 64 on 15th Water vapour (g/kg), mean at 09 and 15 GMT 4.7, 5.2

Overall mean wind speed (mph) 6.3 Windiest day 15.3 on 19th Max gust 37 on 19th

Wind direction (days) N 6 NE 3 E 1 SE 0 S 5 SW 9 W 3 NW 4

Least windy day (mph) 2.2 on 8th Calm; less than 0.5 mph (minutes) 476

Anomaly = departure from 1991 to 2020 average (degrees C, percent and mbar).

Notes: **Cold with Above Average Rainfall and Sunshine.**

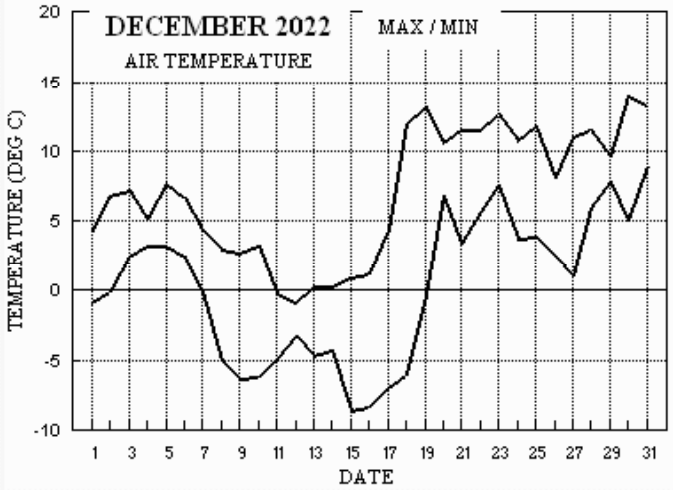
**Temperature:** This has been a month with 2 distinct regimes, up to the 17th, cold and dry, then mild and wet. This is only the 2nd month in 2022 to have below average temperature, the last being January, and it is the coldest December since 2010. Although there was a significant cold spell from the 7th to the 17th, an abrupt change to mild conditions on the 18th prevented records for cold being broken. On both the 11th and 12th, the temperature failed to climb above zero., the last December for this to happen was in 2012. The highest max is 0.8° above the median while the lowest max is 2.4° below its median. The highest min is 0.4° below the median and the lowest min is 3.5° below its median. The mean grass min is lowest since 2010, as is the lowest value which is 2.0° below average. Earth temperature at both 30cm and 1m depth are both around 0.5° below average. The number of days with air frost is 5 above average and most since 2010. The duration of air frost is 137 hours above average and also is most since 2010, and before that, 1981. Anomalies for daily max exceeded -5° from the 8th to 16th, and were above +5° on the 30th and 31st, with extreme values of -9.1° on the 12th and +6.6 on the 30th. Anomalies for daily min exceeded -8° on the 9th, 10th and 15th to 18th, and were above +5° on the 23rd, 29th and 31st, with extreme values of -10.6° on the 15th and +7.3° on 31st. **Rainfall:** This December's rainfall is only slightly above the current 30 year average, but it is 6.7 mm above the long-term median. In recent years, December 2021 was slightly drier, but the previous 4 years were wetter. All but 1.4 mm of this month's total fell after the 17th, and there were two 6 day dry spells starting on the 5th and split by just 0.8 mm on the 11th. Snow fell on the 11th and 12th, and lay to a maximum depth of 1 cm. This persisted for 3 days before decreasing below 50 % cover on the 15th, but there were still patches of snow present until the 18th. Rainfall duration was 105% of average, almost identical to the rainfall anomaly. Daily rainfall accumulation compared with normal was 33 mm in deficit on the 17th, this decreasing to 5 mm on the 22nd, and became a 2 mm surplus on the 31st. **Sunshine:** This December's sunshine was 9 % above the current 30 year average, and in this millennium it ranks 10th highest, though in the past 7 years only 2019 had a sunnier December. This month 24 days had <50 % of the maximum including 14 with <10 %, but 6 had over 80 %, and the 7th, 8th, 10th and 15th had over 90 %. After the 16th, only 2 days had >50 % and 11 had <25 %. Overall there were 21 days with <3 hours and 7 with =>6 hours. Daily accumulation compared with normal was 6 hours in deficit on 5th, becoming a surplus of 10 hours by the 10th, increasing to 16 hours by the 16th, then slowly decreasing to 7 hours by the 31st. **Wind:** The mean speed of 6.3 mph is 1.1 mph below average, and lowest since 2016. The month's highest gust of 37 mph is 10 mph below average, and is also lowest since 2016. Conversely, the 15.3 mph on the windiest day is highest for the month since 2015. Daily mean speeds were light or very light up to the 17th except for moderate on 3rd. After the 17th, speeds were moderate or fresh, but strong on the 19th. Daily mean direction varied between W and N until the 17th, except for S on 10th, were E'ly on 18th then SW'ly to the 31st. **Humidity:** The lowest relative humidity this December is highest in the past 25 years.

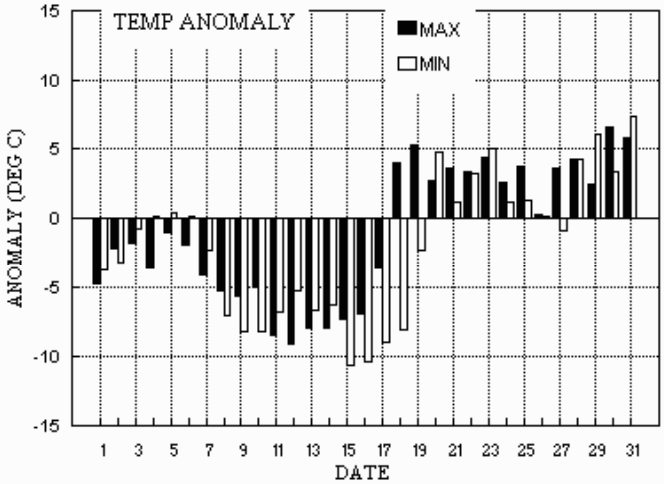
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

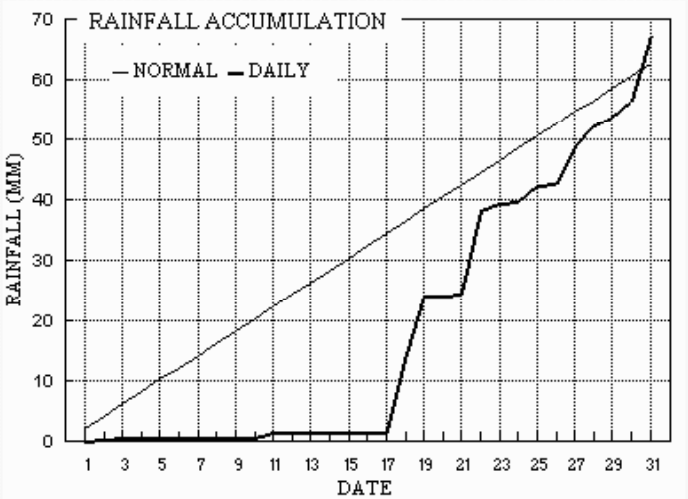
| From the 1st to the 10th | | | | From the 11th to the 20th | | | | From the 21st to the 31st | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -3.5° | -3.3° | 3% | 149% | -3.9° | -6.1° | 113% | 123% | +3.7° | +2.9° | 189% | 61% |

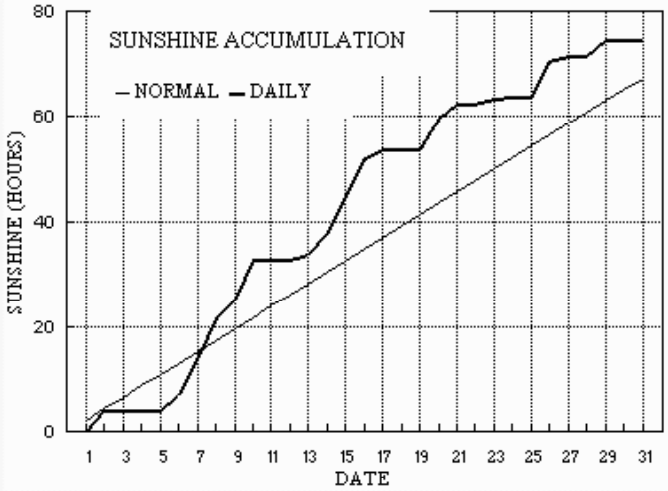
B J Burton FRMetS. Hon. Met. Officer to Wokingham Town Council.

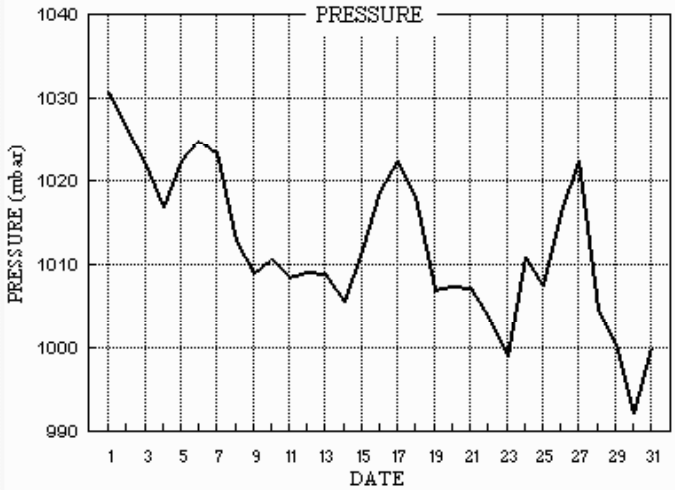
# Wokingham climatological graphs for December 2022

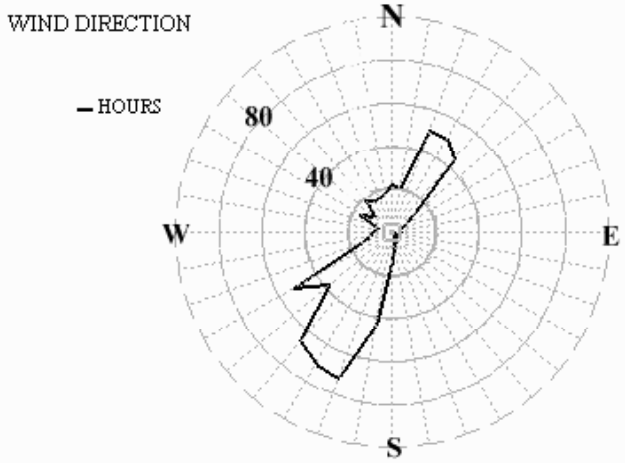


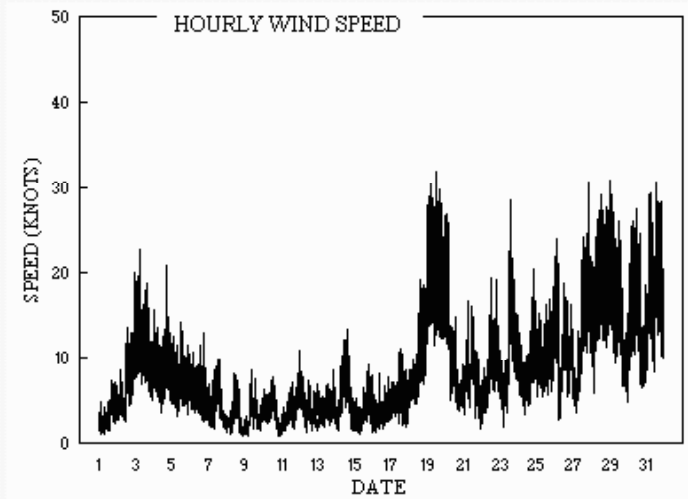



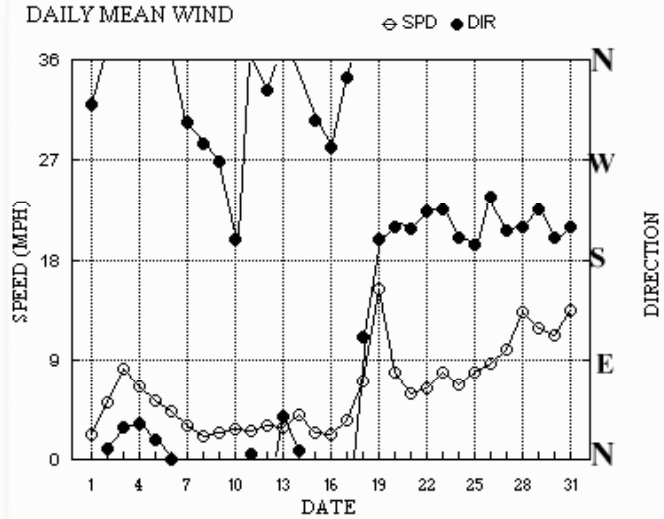



Daily meteorological data. Emmbrook, WOKINGHAM, Berkshire.

Month: DECEMBER 2022

| Date | Max | Min | Rain | Grass | 30cm | 100cm | Sun | Frost | pp09 | Af | Sf | | Th | Ic | | Vec mean | | | Max gust | | | High hr | | | Rain |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | C | C | mm | Min | C | C | hrs | hrs | mbar | Gf | | Sl | Ha | | Fg | ddd | ff | sp | ddd | gg | HHhh | ddd | ff | HH | hrs |
| 1 | 4.2 | -0.8 | tr | -2.8 | 9.4 | 11.2 | 0.2 | 4.1 | 1030.7 | 1 | 1 | 0 | 0 | 0 | 1 | 320 | 1.2 | 2.0 | 321 | 8 | 1716 | 355 | 4 | 17 | 0.1 |
| 2 | 6.8 | -0.1 | 0.1 | 1.5 | 8.9 | 11.1 | 4.0 | 0.0 | 1026.6 | 1 | 0 | 0 | 0 | 0 | 0 | 10 | 4.3 | 4.5 | 39 | 20 | 2232 | 30 | 8 | 22 | 0.5 |
| 3 | 7.2 | 2.5 | 0.3 | -0.1 | 8.7 | 11.0 | 0.0 | 0.0 | 1022.0 | 0 | 1 | 0 | 0 | 0 | 0 | 29 | 7.1 | 7.2 | 25 | 23 | 0608 | 26 | 9 | 05 | 2.2 |
| 4 | 5.1 | 3.2 | 0.2 | 0.9 | 8.8 | 10.8 | 0.0 | 0.0 | 1016.8 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 5.6 | 5.7 | 64 | 21 | 1803 | 45 | 8 | 18 | 2.7 |
| 5 | 7.7 | 3.2 | tr | 3.2 | 8.5 | 10.7 | 0.0 | 0.0 | 1022.5 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 4.6 | 4.6 | 26 | 14 | 1239 | 22 | 6 | 12 | 0.0 |
| 6 | 6.7 | 2.5 | 0.0 | -2.2 | 8.5 | 10.6 | 2.9 | 0.0 | 1024.9 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 3.7 | 3.8 | 337 | 13 | 1823 | 352 | 5 | 14 | 0.0 |
| 7 | 4.4 | -0.1 | 0.0 | -4.1 | 8.2 | 10.5 | 7.3 | 5.4 | 1023.5 | 1 | 1 | 0 | 0 | 0 | 0 | 304 | 2.3 | 2.8 | 328 | 10 | 1425 | 317 | 5 | 13 | 0.0 |
| 8 | 3.0 | -5.1 | 0.0 | -8.6 | 7.2 | 10.4 | 7.4 | 18.1 | 1012.8 | 1 | 1 | 0 | 0 | 0 | 0 | 285 | 0.9 | 1.9 | 321 | 8 | 1039 | 352 | 4 | 12 | 0.0 |
| 9 | 2.7 | -6.3 | 0.0 | -9.3 | 6.1 | 10.1 | 3.6 | 18.5 | 1009.1 | 1 | 1 | 0 | 0 | 0 | 0 | 269 | 1.3 | 2.1 | 316 | 9 | 1015 | 294 | 4 | 14 | 0.0 |
| 10 | 3.2 | -6.2 | tr | -9.0 | 5.5 | 9.8 | 7.4 | 18.6 | 1010.7 | 1 | 1 | 0 | 0 | 0 | 0 | 198 | 2.2 | 2.5 | 190 | 8 | 1312 | 200 | 4 | 13 | 0.0 |
| 11 | -0.2 | -4.9 | 0.8 | -8.3 | 5.1 | 9.4 | 0.0 | 24.0 | 1008.5 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 5 | 1.9 | 2.3 | 314 | 9 | 2344 | 317 | 5 | 23 | 4.4 |
| 12 | -0.8 | -3.3 | 0.0 | -2.2 | 4.9 | 9.0 | 0.0 | 24.0 | 1009.3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 333 | 0.8 | 2.7 | 294 | 11 | 0127 | 296 | 5 | 01 | 0.0 |
| 13 | 0.3 | -4.7 | 0.0 | -9.6 | 4.8 | 8.7 | 1.0 | 23.5 | 1009.1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 39 | 2.5 | 2.5 | 38 | 9 | 2147 | 42 | 4 | 21 | 0.0 |
| 14 | 0.3 | -4.3 | 0.0 | -9.6 | 4.8 | 8.5 | 3.9 | 23.0 | 1005.7 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 3.3 | 3.5 | 2 | 13 | 1503 | 358 | 6 | 14 | 0.0 |
| 15 | 0.9 | -8.6 | 0.0 | -12.3 | 4.4 | 8.3 | 7.2 | 21.0 | 1011.8 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 305 | 1.6 | 2.2 | 348 | 9 | 2013 | 349 | 5 | 20 | 0.0 |
| 16 | 1.2 | -8.4 | 0.0 | -11.4 | 3.9 | 8.0 | 7.0 | 20.8 | 1018.8 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 282 | 1.4 | 2.0 | 209 | 8 | 1044 | 338 | 3 | 22 | 0.0 |
| 17 | 4.4 | -7.0 | 0.0 | -10.7 | 3.6 | 7.8 | 1.7 | 18.5 | 1022.4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 344 | 1.6 | 3.1 | 188 | 11 | 1446 | 16 | 4 | 23 | 0.0 |
| 18 | 11.9 | -6.1 | 12.9 | -9.6 | 3.4 | 7.5 | 0.0 | 9.5 | 1018.1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 111 | 2.6 | 6.2 | 154 | 19 | 1657 | 181 | 9 | 22 | 12.6 |
| 19 | 13.2 | -0.3 | 9.9 | 5.1 | 3.3 | 7.2 | 0.0 | 0.0 | 1007.0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 198 | 13.3 | 13.3 | 191 | 32 | 1109 | 202 | 15 | 06 | 7.2 |
| 20 | 10.6 | 6.8 | tr | 3.2 | 5.5 | 7.0 | 6.2 | 0.0 | 1007.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 210 | 6.6 | 6.9 | 170 | 27 | 0348 | 203 | 13 | 01 | 0.0 |
| 21 | 11.5 | 3.4 | 0.1 | -0.7 | 5.7 | 7.1 | 2.6 | 0.0 | 1007.2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 208 | 4.9 | 5.1 | 197 | 17 | 0602 | 198 | 8 | 06 | 0.3 |
| 22 | 11.5 | 5.7 | 14.0 | 0.9 | 6.2 | 7.3 | 0.0 | 0.0 | 1003.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 224 | 5.0 | 5.5 | 228 | 20 | 1302 | 230 | 8 | 17 | 4.2 |
| 23 | 12.7 | 7.6 | 1.1 | 7.0 | 6.9 | 7.4 | 1.2 | 0.0 | 999.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 225 | 5.2 | 6.9 | 254 | 29 | 1504 | 244 | 12 | 15 | 1.3 |
| 24 | 10.8 | 3.7 | 0.3 | -1.1 | 7.1 | 7.6 | 0.1 | 0.0 | 1010.9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 200 | 5.7 | 5.8 | 193 | 21 | 2118 | 192 | 9 | 23 | 0.4 |
| 25 | 11.8 | 3.8 | 2.6 | 3.7 | 7.1 | 7.7 | 0.0 | 0.0 | 1007.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 194 | 6.8 | 6.8 | 202 | 19 | 2356 | 206 | 9 | 23 | 1.7 |
| 26 | 8.1 | 2.4 | 0.2 | -3.1 | 7.5 | 7.9 | 6.7 | 0.0 | 1016.2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 236 | 7.0 | 7.5 | 233 | 24 | 0228 | 238 | 11 | 02 | 0.1 |
| 27 | 11.0 | 1.0 | 6.3 | -3.7 | 6.6 | 8.0 | 1.0 | 0.0 | 1022.5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 207 | 8.5 | 8.6 | 203 | 31 | 2120 | 209 | 13 | 22 | 8.1 |
| 28 | 11.5 | 5.9 | 3.5 | 7.0 | 7.0 | 8.0 | 0.1 | 0.0 | 1004.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 209 | 11.4 | 11.6 | 200 | 29 | 1416 | 195 | 14 | 13 | 4.0 |
| 29 | 9.6 | 7.8 | 1.6 | 4.5 | 7.5 | 8.0 | 2.9 | 0.0 | 1000.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 226 | 10.1 | 10.3 | 219 | 31 | 0120 | 217 | 14 | 02 | 1.6 |
| 30 | 13.9 | 5.0 | 2.5 | -0.4 | 7.2 | 8.1 | 0.1 | 0.0 | 992.3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 200 | 8.8 | 9.7 | 218 | 28 | 1225 | 233 | 13 | 13 | 2.4 |
| 31 | 13.3 | 8.9 | 11.0 | 7.2 | 7.7 | 8.2 | 0.0 | 0.0 | 1000.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 210 | 11.6 | 11.7 | 209 | 31 | 1350 | 209 | 16 | 14 | 6.8 |
| Total | | | 67.4 | | | | 74.5 | 229.0 | | | | | | | | | | | | | | | | | | | 60.6 |
| Mean | 7.0 | 0.2 | | -2.4 | 6.5 | 8.8 | 2.40 | | 1012.3 | | | | | | | 220 | 2.3 | 5.5 | | | | | | | | | |
| Anom | -1.5 | -2.1 | 104% | -2.0 | -0.4 | -0.5 | 109% | | -3.3 | | | | | | | | | | | | | | | | | | |

Daily mean 3.6 Pressure, abs highest = 1031.1 on 1

Anom -1.8 Pressure, abs lowest = 988.6 on 30

Number of days with:

Air frost = 15 Ground frost = 20 Nil sun = 10

Snow falling = 2 Snow lying = 3 Thunder = 0

Hail=>5mm = 0 Hail<5mm or ice = 0 Fog at 09GMT = 2

Abbreviations.

Max/min = highest and lowest air temperature at 1.2m in 24 hour period ending at 09 GMT

Rain = total rainfall and melted snowfall in 24 hour period ending at 09 GMT, millimetres. (Tr = trace, <.05mm).

Grass min = Lowest overnight temperature at grass tip level.

Sun = hours of bright sunshine, measured electronically. Frost = Number of hours with air temp below 0 deg C.

pp09 = Air pressure corrected to mean sea level at 0900 GMT, millibars.

Af = Air frost. Gf = Ground frost. Sf = Snow falling. Sl = Snow lying at 09 GMT.

Th = Thunder. Ha = Hail =>5mm. Ic = Hail <5mm or ice. Fg = Fog at 09 GMT.

Vec mean = 24 hour mean wind vector, ddd = direction in degrees from true north, ff = speed in knots.

Sp = 24 hour mean wind speed in knots.

Max gust = Highest gust in 24 hours, gg = speed in knots, HHhh = Time, hours and minutes, GMT.

High hr = Highest hourly mean wind, HH = hour commencing. Rain Hrs = Duration of rain, 24 hours to 09 GMT. Excludes snow/hail.

30cm and 100 cm are earth temperatures at those depths, read at 09 GMT.

Maximum daily rain rate in mm/hr

All temperatures in degrees Celsius.

Anomaly - Departure from the 1991 to 2020 climatological average

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for December 2022

| Date | VV | N | dd | ff | gg | TT | TdTd | RH | r | PPP | a | ppp | ww | W1 | W2 | Nh | Cl | h | Cr | Cm | NChshs | NChshs | NChshs | Date | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 01 | 9 | 30 | 03 | 04 | -0.1 | -0.1 | 100 | 3.7 | 1030.7 | 2 | 009 | 45 | 4 | 4 | 9 | / | / | / | / | | | | 1 | VV130m |
| 2 | 40 | 8 | 32 | 03 | 05 | 2.5 | 2.4 | 99 | 4.4 | 1026.6 | 4 | 000 | 10 | 4 | 2 | 6 | 6 | 2 | 7 | / | 86703 | 88359 | | 2 | |
| 3 | 80 | 8 | 02 | 08 | 15 | 4.9 | 2.3 | 83 | 4.4 | 1022.0 | 7 | 010 | 02 | 8 | 2 | 7 | 5 | 4 | / | / | 83619 | 88623 | | 3 | |
| 4 | 28 | 8 | 04 | 04 | 10 | 3.5 | 2.8 | 95 | 4.6 | 1016.8 | 3 | 006 | 51 | 5 | 5 | 8 | 5 | 3 | / | / | 87706 | 88615 | | 4 | |
| 5 | 62 | 8 | 36 | 03 | 06 | 5.1 | 3.0 | 86 | 4.6 | 1022.5 | 2 | 015 | 01 | 2 | 2 | 8 | 8 | 5 | / | / | 82825 | 88640 | | 5 | Cu fra |
| 6 | 86 | 7 | 01 | 05 | 08 | 4.3 | 2.2 | 86 | 4.4 | 1024.9 | 2 | 008 | 01 | 2 | 2 | 7 | 5 | 6 | / | / | 83632 | 87640 | | 6 | Cld edge N |
| 7 | 56 | 2 | 25 | 01 | 05 | 0.4 | 0.0 | 97 | 3.7 | 1023.5 | 4 | 000 | 10 | 1 | 1 | 2 | 5 | 7 | 0 | 0 | 82650 | | | 7 | Hoar slt |
| 8 | 62 | 0 | 20 | 01 | 03 | -3.4 | -3.7 | 98 | 2.9 | 1012.8 | 7 | 006 | 02 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | | | | 8 | Hoar thk. Gnd sfc frzn. |
| 9 | 25 | 7 | 30 | 03 | 07 | -0.4 | -0.7 | 98 | 3.6 | 1009.1 | 0 | 001 | 10 | 2 | 2 | 7 | 6 | 2 | / | / | 86703 | 86615 | | 9 | Hoar mod. Gnd sfc frzn. |
| 10 | 40 | 1 | 18 | 03 | 05 | -4.9 | -5.3 | 97 | 2.6 | 1010.7 | 2 | 006 | 10 | 0 | 0 | 1 | 0 | 9 | 3 | 1 | 81365 | | | 10 | 1Ci72 COTRA Hoar thk Gnd sfc frzn |
| 11 | 01 | 9 | 03 | 03 | 05 | -3.6 | -3.9 | 98 | 2.9 | 1008.5 | 4 | 000 | 49 | 4 | 4 | 9 | / | / | / | / | | | | 11 | Vis 150m Rime mod. |
| 12 | 30 | 8 | 27 | 01 | 05 | -0.8 | -1.1 | 98 | 3.5 | 1009.3 | 1 | 003 | 10 | 7 | 2 | 8 | 7 | 3 | / | / | 88706 | | | 12 | Sn ly 1cm 100% |
| 13 | 30 | 8 | 04 | 02 | 05 | -3.3 | -3.4 | 99 | 2.9 | 1009.1 | 0 | 003 | 10 | 2 | 2 | 8 | 0 | 9 | 1 | / | 88463 | | | 13 | Hoar thk. Snly <1cm 80% lcy patches |
| 14 | 58 | 4 | 01 | 03 | 08 | -3.6 | -4.6 | 93 | 2.7 | 1005.7 | 2 | 012 | 05 | 1 | 1 | 0 | 0 | 9 | 0 | 1 | 84075 | | | 14 | COTRA Hoar slt Snly <1cm 60% |
| 15 | 62 | 1 | 25 | 01 | 03 | -7.6 | -8.3 | 95 | 2.0 | 1011.8 | 2 | 009 | 02 | 0 | 0 | 0 | 0 | 9 | 0 | 8 | 81272 | | | 15 | Cld edge S Hoar mod Snly <1cm 40% |
| 16 | 35 | 1 | 28 | 02 | 05 | -7.0 | -7.5 | 96 | 2.1 | 1018.8 | 2 | 015 | 10 | 0 | 0 | 0 | 0 | 9 | 0 | 1 | 81075 | | | 16 | COTRA Hoar mod. Snly <1cm 40% |
| 17 | 40 | 7 | 36 | 05 | 07 | -5.9 | -6.4 | 96 | 2.3 | 1022.4 | 2 | 007 | 10 | 2 | 2 | 5 | 0 | 9 | 1 | 8 | 85465 | 87270 | | 17 | COTRA U/a cont Hoar thk snly <1cm 40% |
| 18 | 58 | 8 | 03 | 05 | 09 | -0.2 | -0.8 | 96 | 3.6 | 1018.1 | 6 | 011 | 10 | 2 | 2 | 8 | 0 | 7 | 2 | / | 88556 | | | 18 | Hoar mod Snly <1cm 10% |
| 19 | 50 | 8 | 20 | 13 | 27 | 11.9 | 10.8 | 93 | 8.1 | 1007.0 | 2 | 010 | 61 | 6 | 5 | 8 | 5 | 3 | / | / | 85708 | 87612 | 88620 | 19 | |
| 20 | 82 | 1 | 23 | 06 | 11 | 6.8 | 5.9 | 94 | 5.8 | 1007.5 | 2 | 033 | 01 | 6 | 1 | 1 | 5 | 5 | 0 | 2 | 81620 | | | 20 | 1Sc50 1Ci72 |
| 21 | 63 | 7 | 22 | 05 | 08 | 8.6 | 7.5 | 93 | 6.5 | 1007.2 | 2 | 004 | 21 | 6 | 2 | 5 | 5 | 4 | 7 | / | 83710 | 83630 | 87357 | 21 | |
| 22 | 11 | 8 | 16 | 03 | 09 | 7.6 | 7.5 | 99 | 6.5 | 1003.8 | 7 | 011 | 50 | 5 | 4 | 8 | 7 | 1 | / | / | 88702 | | | 22 | Fog 800m in past hr |
| 23 | 35 | 8 | 08 | 05 | 10 | 8.2 | 7.9 | 98 | 6.7 | 999.0 | 7 | 040 | 63 | 6 | 6 | 7 | 7 | 2 | 2 | / | 84703 | 87706 | 88515 | 23 | Re hvy ra |
| 24 | 61 | 6 | 18 | 03 | 06 | 3.8 | 3.4 | 97 | 4.8 | 1010.9 | 2 | 014 | 11 | 1 | 1 | 0 | 0 | 9 | 0 | 8 | 82275 | 86078 | | 24 | COTRA Ci fib Ci flo |
| 25 | 80 | 8 | 19 | 05 | 11 | 10.3 | 9.1 | 92 | 7.2 | 1007.6 | 3 | 003 | 02 | 2 | 2 | 5 | 5 | 4 | 7 | / | 85610 | 85361 | 88465 | 25 | |
| 26 | 86 | 1 | 24 | 05 | 09 | 3.9 | 2.6 | 91 | 4.5 | 1016.2 | 2 | 039 | 02 | 0 | 0 | 1 | 5 | 7 | 0 | 0 | 81650 | | | 26 | Hoar slt |
| 27 | 65 | 7 | 19 | 07 | 13 | 5.9 | 4.7 | 92 | 5.2 | 1022.5 | 5 | 006 | 25 | 8 | 2 | 4 | 8 | 4 | 7 | 1 | 83815 | 83367 | 87075 | 27 | Cu med 2Sc45 2Ac58 |
| 28 | 57 | 8 | 21 | 13 | 27 | 9.7 | 8.8 | 94 | 7.1 | 1004.8 | 7 | 018 | 61 | 6 | 5 | 7 | 7 | 3 | 2 | / | 87708 | 88530 | | 28 | |
| 29 | 70 | 6 | 23 | 11 | 19 | 8.4 | 5.7 | 83 | 5.7 | 1000.5 | 2 | 030 | 15 | 1 | 1 | 6 | 5 | 4 | 3 | 2 | 81618 | 83635 | | 29 | 1Ac60 2Ci72 jpN |
| 30 | 56 | 8 | 16 | 11 | 22 | 8.9 | 7.8 | 93 | 6.7 | 992.3 | 7 | 060 | 63 | 6 | 2 | 7 | 5 | 3 | 2 | / | 83709 | 86612 | 88540 | 30 | |
| 31 | 59 | 8 | 22 | 12 | 25 | 13.2 | 11.4 | 89 | 8.5 | 1000.0 | 3 | 022 | 21 | 6 | 2 | 5 | 7 | 4 | 2 | / | 85710 | 88557 | | 31 | |

Mean vis = 12.8 km
Mean cloud = 6.0 75%
Mean wind speed = 5.0 kn
Mean gust = 10 kn
Mean TT = 2.8 °C
Mean TdTd = 1.9 °C
Mean RH = 94.1 %
Mean r = 4.7 g/kg
Mean PPP = 1012.3 mbar

**See appendix 2 below for full code details**

VV = Visibility code (Code FM12-4377)
N = Total cloud amount, oktas
dd = Direction from which wind is blowing, tens of degrees true
ff = 10 minute mean wind speed, knots
gg = Highest gust in past hour, knots
TT = Air temperature at 1.2 m, deg Celsius
TdTd = Dew point temperature at 1.2 m, deg Celsius
RH = Relative humidity at 1.2 m
r = Humidity mixing ratio at 1.2 m, g/kg
PPP = Air pressure reduced to sea level, mbar
a = Characteristic of pressure tendency (Code FM12-0200)
ppp = 3 hr pressure tendency, tenths of mbar
ww = Present weather code (Code FM12-4677)
W1, W2 = Past weather code (Code FM12-4561)-
covers past 3 hours.
Nh = Amount of low cloud present, oktas
Cl = Type of low cloud (Code Fm12-0513)
h = Height of low cloud (Code FM12-1600)
Cm = Type of medium cloud (Code FM12-0515)
Ch = Type of high cloud (Code FM12-0509)
8 groups. 8 = indicator for cloud detail
N = Amount of cloud, oktas
C = Type of cloud (FM12-0500)
hshs= Height of cloud (FM12-1677)
Remarks : COTRA = persistent condensation trails present

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for December 2022

| Date | VV | N | dd | ff | gg | TT | TdTd | RH | r | PPP | a | ppp | ww | W1 | W2 | Nh | Cl | h | Cr | Cm | Ch | NChshs | NChshs | NChshs | Date | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 01 | 9 | 27 | 01 | 05 | 3.5 | 3.4 | 99 | 4.7 | 1029.1 | 6 | 008 | 45 | 4 | 4 | 9 | / | / | / | / | | | | | 1 | VV130m |
| 2 | 58 | 7 | 02 | 07 | 14 | 6.1 | 4.3 | 88 | 5.1 | 1025.0 | 6 | 006 | 05 | 2 | 2 | 6 | 8 | 4 | 3 | / | | 81810 | 86640 | | 2 | 3Ac60 Cu fra |
| 3 | 70 | 7 | 03 | 09 | 19 | 6.6 | 3.2 | 79 | 4.7 | 1018.4 | 7 | 018 | 02 | 2 | 2 | 4 | 8 | 5 | 3 | / | | 82822 | 83630 | 86358 | 3 | Cu hum |
| 4 | 58 | 8 | 02 | 05 | 13 | 4.5 | 2.7 | 88 | 4.6 | 1016.7 | 5 | 003 | 05 | 5 | 2 | 8 | 5 | 4 | / | / | | 85613 | 88623 | | 4 | |
| 5 | 80 | 6 | 02 | 06 | 13 | 7.0 | 4.3 | 83 | 5.1 | 1022.9 | 3 | 001 | 02 | 2 | 2 | 6 | 8 | 4 | 0 | 0 | | 82815 | 83628 | 85645 | 5 | Cu hum |
| 6 | 86 | 1 | 35 | 05 | 10 | 5.4 | 1.7 | 77 | 4.2 | 1023.3 | 7 | 015 | 01 | 1 | 1 | 1 | 8 | 5 | 0 | 0 | | 81820 | | | 6 | 1Sc30 Cu hum |
| 7 | 75 | 2 | 30 | 03 | 10 | 3.9 | 0.6 | 79 | 3.9 | 1020.0 | 7 | 023 | 02 | 0 | 0 | 2 | 8 | 4 | 3 | 1 | | 81815 | | | 7 | 1Sc20 1Ac65 1Ci70 Cu hum |
| 8 | 70 | 1 | 32 | 03 | 06 | 2.5 | -1.7 | 74 | 3.4 | 1010.4 | 7 | 011 | 03 | 0 | 0 | 1 | 0 | 9 | 7 | 0 | | 81360 | | | 8 | Cld edge W. Hoar thk in shade |
| 9 | 61 | 0 | 31 | 04 | 08 | 2.2 | -1.2 | 78 | 3.5 | 1008.6 | 6 | 006 | 02 | 1 | 1 | 0 | 0 | 9 | 0 | 0 | | | | | 9 | |
| 10 | 73 | 1 | 21 | 04 | 06 | 2.4 | -0.4 | 82 | 3.7 | 1010.0 | 5 | 003 | 02 | 0 | 0 | 1 | 0 | 9 | 4 | 1 | | 81362 | | | 10 | 1Ci75 Hoar mod in shade. |
| 11 | 06 | 8 | 03 | 03 | 07 | -1.8 | -1.9 | 99 | 3.3 | 1007.3 | 5 | 005 | 48 | 4 | 4 | 8 | 7 | 0 | / | / | | 88701 | | | 11 | Rime mod |
| 12 | 20 | 8 | 06 | 02 | 07 | -0.8 | -1.1 | 98 | 3.5 | 1008.8 | 5 | 005 | 10 | 2 | 2 | 8 | 6 | 2 | / | / | | 88703 | | | 12 | snly 1cm 90% |
| 13 | 59 | 8 | 04 | 02 | 06 | -0.2 | -1.6 | 90 | 3.4 | 1006.3 | 6 | 012 | 05 | 2 | 2 | 8 | 0 | 9 | 1 | / | | 88460 | | | 13 | Snly <1cm 75% |
| 14 | 30 | 8 | 03 | 06 | 12 | -1.5 | -2.3 | 94 | 3.2 | 1007.4 | 3 | 009 | 10 | 1 | 1 | 8 | 6 | 2 | / | / | | 88703 | | | 14 | Snly <1cm 50% |
| 15 | 65 | 0 | 31 | 03 | 06 | 0.1 | -4.9 | 69 | 2.6 | 1011.6 | 5 | 008 | 02 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | | | | | 15 | Hoar mod in shade. Snly <1cm 40% |
| 16 | 61 | 2 | 22 | 02 | 04 | 0.7 | -1.4 | 86 | 3.4 | 1019.5 | 3 | 001 | 03 | 0 | 0 | 0 | 0 | 9 | 0 | 1 | | 82072 | | | 16 | COTRA Parhelion Hoar mod in shade Snly <1cm 40% |
| 17 | 67 | 7 | 20 | 05 | 11 | 4.4 | 1.3 | 80 | 4.1 | 1022.3 | 5 | 001 | 02 | 2 | 2 | 1 | 5 | 7 | 7 | 2 | | 81650 | 83365 | 87072 | 17 | Thaw. Snly <1cm 25% |
| 18 | 35 | 8 | 13 | 07 | 17 | 3.9 | 3.3 | 96 | 4.8 | 1012.3 | 7 | 034 | 61 | 6 | 6 | 7 | 7 | 3 | 2 | / | | 87706 | 88540 | | 18 | |
| 19 | 61 | 8 | 20 | 14 | 29 | 12.3 | 10.9 | 91 | 8.1 | 1004.8 | 6 | 001 | 51 | 5 | 6 | 8 | 5 | 3 | / | / | | 87609 | 88620 | | 19 | |
| 20 | 67 | 2 | 21 | 05 | 13 | 9.3 | 5.8 | 79 | 5.8 | 1008.3 | 5 | 000 | 03 | 0 | 0 | 1 | 0 | 9 | 3 | 2 | | 81368 | | | 20 | 1Ci72 |
| 21 | 83 | 5 | 22 | 06 | 13 | 10.3 | 7.7 | 84 | 6.6 | 1004.9 | 5 | 011 | 03 | 1 | 1 | 5 | 8 | 5 | 0 | 1 | | 82820 | | | 21 | 2Sc40 1Sc50 1Ci75 COTRA Cu med Sc len |
| 22 | 58 | 8 | 22 | 07 | 13 | 11.2 | 10.1 | 93 | 7.8 | 1001.7 | 6 | 007 | 50 | 5 | 2 | 8 | 5 | 3 | / | / | | 83706 | 86709 | 88615 | 22 | |
| 23 | 80 | 7 | 25 | 12 | 25 | 11.8 | 8.6 | 81 | 7.0 | 1000.7 | 3 | 019 | 25 | 8 | 2 | 7 | 5 | 4 | / | / | | 87618 | | | 23 | |
| 24 | 56 | 7 | 19 | 06 | 11 | 10.5 | 9.1 | 91 | 7.2 | 1010.3 | 7 | 009 | 80 | 2 | 2 | 7 | 8 | 3 | / | 1 | | 81709 | 83625 | 85650 | 24 | 2Cu015 /Ci250 Cu med |
| 25 | 75 | 7 | 19 | 07 | 14 | 11.3 | 8.3 | 82 | 6.8 | 1006.5 | 6 | 006 | 02 | 2 | 2 | 3 | 5 | 6 | 7 | 2 | | 83645 | 85360 | 86364 | 25 | /Ci72 |
| 26 | 89 | 3 | 24 | 08 | 17 | 6.9 | 2.8 | 75 | 4.6 | 1018.9 | 3 | 008 | 03 | 0 | 0 | 1 | 8 | 5 | 5 | 0 | | 81820 | 83358 | | 26 | 1Sc35 Cu hum |
| 27 | 60 | 8 | 22 | 12 | 24 | 10.3 | 7.4 | 82 | 6.3 | 1017.4 | 7 | 028 | 60 | 6 | 2 | 3 | 7 | 4 | 2 | / | | 83715 | 88540 | | 27 | |
| 28 | 70 | 8 | 21 | 13 | 29 | 11.3 | 10.4 | 94 | 7.9 | 996.2 | 6 | 040 | 60 | 6 | 2 | 8 | 5 | 4 | / | / | | 85710 | 87615 | 88625 | 28 | |
| 29 | 82 | 7 | 23 | 10 | 23 | 9.0 | 3.4 | 68 | 4.9 | 1003.8 | 2 | 010 | 02 | 2 | 2 | 5 | 8 | 5 | 7 | 1 | | 83825 | 83640 | 85363 | 29 | /Ci70 Cu hum |
| 30 | 75 | 7 | 21 | 10 | 22 | 13.1 | 9.9 | 81 | 7.7 | 992.7 | 2 | 036 | 16 | 2 | 2 | 7 | 5 | 4 | / | / | | 86613 | 87620 | | 30 | jpW |
| 31 | 57 | 8 | 20 | 15 | 30 | 12.5 | 11.1 | 91 | 8.3 | 998.4 | 7 | 016 | 61 | 6 | 6 | 7 | 5 | 3 | 2 | / | | 82708 | 87612 | 88556 | 31 | |

Mean vis = 18.9 km
Mean cloud = 5.6 71%
Mean wind speed = 6.5 kn
Mean gust = 14 kn
Mean TT = 6.1 °C
Mean TdTd = 3.7 °C
Mean RH = 84.9 %
Mean r = 5.2 g/kg
Mean PPP = 1011.1 mbar

**See appendix 2 below for full code details**

VV = Visibility code (Code FM12-4377)
N = Total cloud amount, oktas
dd = Direction from which wind is blowing, tens of degrees true
ff = 10 minute mean wind speed, knots
gg = Highest gust in past hour, knots
TT = Air temperature at 1.2 m, deg Celsius
TdTd = Dew point temperature at 1.2 m, deg Celsius
RH = Relative humidity at 1.2 m
r = Humidity mixing ratio at 1.2 m, g/kg
PPP = Air pressure reduced to sea level, mbar
a = Characteristic of pressure tendency (Code FM12-0200)
ppp = 3 hr pressure tendency, tenths of mbar
ww = Present weather code (Code FM12-4677)
W1, W2 = Past weather code (Code FM12-4561)-
covers past 3 hours.
Nh = Amount of low cloud present, oktas
Cl = Type of low cloud (Code Fm12-0513)
h = Height of low cloud (Code FM12-1600)
Cm = Type of medium cloud (Code FM12-0515)
Ch = Type of high cloud (Code FM12-0509)
8 groups. 8 = indicator for cloud detail
N = Amount of cloud, oktas
C = Type of cloud (FM12-0500)
hshs= Height of cloud (FM12-1677)
Remarks : COTRA = persistent condensation trails present

Wokingham Sunshine Hourly analysis

2022

| Hour | 01-Dec | 02-Dec | 03-Dec | 04-Dec | 05-Dec | 06-Dec | 07-Dec | 08-Dec | 09-Dec | 10-Dec | 11-Dec | 12-Dec | 13-Dec | 14-Dec | 15-Dec | 16-Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.66 | 0.65 | 0.00 | 0.60 | 0.00 | 0.00 | 0.00 | 0.57 | 0.43 | 0.54 |
| 9 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.18 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| 10 | 0.00 | 0.49 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| 11 | 0.15 | 0.92 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.08 | 1.00 | 0.00 | 0.00 | 0.65 | 0.86 | 1.00 | 1.00 |
| 12 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.47 | 1.00 | 1.00 | 0.75 | 1.00 | 0.00 | 0.00 | 0.04 | 0.09 | 1.00 | 1.00 |
| 13 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.90 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.29 | 0.42 | 1.00 | 1.00 |
| 14 | 0.00 | 0.45 | 0.00 | 0.00 | 0.00 | 0.62 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| 15 | 0.00 | 0.14 | 0.00 | 0.00 | 0.00 | 0.75 | 0.64 | 0.77 | 0.74 | 0.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.77 | 0.47 |
| 16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Tot | **0.15** | **4.00** | **0.00** | **0.00** | **0.00** | **2.92** | **7.30** | **7.42** | **3.56** | **7.37** | **0.00** | **0.00** | **0.97** | **3.94** | **7.20** | **7.00** |

| Hour | 17-Dec | 18-Dec | 19-Dec | 20-Dec | 21-Dec | 22-Dec | 23-Dec | 24-Dec | 25-Dec | 26-Dec | 27-Dec | 28-Dec | 29-Dec | 30-Dec | 31-Dec | Mean |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.13 |
| 9 | 0.00 | 0.00 | 0.00 | 0.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.49 | 0.00 | 0.21 | 0.00 | 0.00 | 0.28 |
| 10 | 0.00 | 0.00 | 0.00 | 1.00 | 0.69 | 0.00 | 0.15 | 0.00 | 0.00 | 1.00 | 0.27 | 0.00 | 0.74 | 0.00 | 0.00 | 0.33 |
| 11 | 0.90 | 0.00 | 0.00 | 1.00 | 0.28 | 0.00 | 0.26 | 0.00 | 0.00 | 1.00 | 0.26 | 0.00 | 0.73 | 0.00 | 0.00 | 0.39 |
| 12 | 0.70 | 0.00 | 0.00 | 1.00 | 0.14 | 0.00 | 0.37 | 0.03 | 0.00 | 1.00 | 0.00 | 0.00 | 0.44 | 0.00 | 0.00 | 0.36 |
| 13 | 0.08 | 0.00 | 0.00 | 1.00 | 0.68 | 0.00 | 0.08 | 0.03 | 0.00 | 1.00 | 0.00 | 0.00 | 0.36 | 0.02 | 0.00 | 0.38 |
| 14 | 0.00 | 0.00 | 0.00 | 1.00 | 0.79 | 0.00 | 0.16 | 0.01 | 0.01 | 1.00 | 0.00 | 0.00 | 0.40 | 0.00 | 0.00 | 0.34 |
| 15 | 0.00 | 0.00 | 0.00 | 0.44 | 0.00 | 0.00 | 0.14 | 0.06 | 0.00 | 0.24 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.19 |
| 16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Tot | **1.73** | **0.00** | **0.00** | **6.23** | **2.60** | **0.00** | **1.15** | **0.13** | **0.01** | **6.70** | **1.02** | **0.03** | **2.89** | **0.02** | **0.00** | **74.33** |

| December 2022 | T mn | Tx | Time | Tn | Time | RHmn | RH x | Time | RH n | Time | Tdmn | r mn | r x | Time | r n | Time | p mn | p x | Time | p n | Time | R tot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.84 | 4.2 | 1626 | -0.8 | 251 | 99.4 | 100.0 | 846 | 98.6 | 2 | 1.8 | 4.2 | 5.0 | 1642 | 3.5 | 251 | 1029.51 | 1031.1 | 954 | 1028.6 | 2359 | 0.1 |
| 2 | 4.03 | 6.8 | 1404 | 2.3 | 704 | 95.0 | 99.8 | 711 | 86.1 | 1406 | 3.3 | 4.7 | 5.5 | 1219 | 4.4 | 706 | 1025.99 | 1028.6 | 0 | 1024.3 | 2345 | 0.1 |
| 3 | 5.26 | 7.2 | 1312 | 3.6 | 2215 | 82.3 | 89.2 | 13 | 76.6 | 1535 | 2.5 | 4.5 | 5.1 | 1242 | 4.0 | 501 | 1020.63 | 1024.5 | 15 | 1017.0 | 2353 | 0 |
| 4 | 3.96 | 4.9 | 36 | 3.2 | 621 | 87.3 | 95.5 | 719 | 79.2 | 308 | 2.0 | 4.4 | 4.7 | 1127 | 4.0 | 309 | 1017.36 | 1020.0 | 2315 | 1015.8 | 404 | 0.3 |
| 5 | 5.36 | 7.7 | 1256 | 3.3 | 25 | 89.0 | 95.4 | 318 | 81.1 | 1259 | 3.7 | 4.9 | 5.4 | 1256 | 4.3 | 5 | 1022.53 | 1025.0 | 2233 | 1019.8 | 100 | 0.2 |
| 6 | 4.52 | 6.7 | 1347 | 2.2 | 2357 | 85.4 | 94.8 | 404 | 69.1 | 1349 | 2.3 | 4.4 | 4.8 | 912 | 4.1 | 1349 | 1024.32 | 1025.4 | 1030 | 1023.2 | 1503 | 0 |
| 7 | 1.04 | 4.4 | 1304 | -3.2 | 2352 | 91.4 | 98.0 | 409 | 75.3 | 1305 | -0.3 | 3.7 | 4.1 | 3 | 2.9 | 2352 | 1021.38 | 1024.4 | 16 | 1016.4 | 2359 | 0.1 |
| 8 | -2.31 | 3.0 | 1310 | -5.5 | 2357 | 92.2 | 98.5 | 837 | 73.4 | 1444 | -3.5 | 3.0 | 3.7 | 1241 | 2.4 | 2357 | 1012.02 | 1016.5 | 0 | 1009.8 | 2350 | 0.2 |
| 9 | -1.98 | 2.7 | 1413 | -6.3 | 213 | 94.3 | 97.9 | 853 | 77.7 | 1505 | -2.8 | 3.1 | 4.0 | 1217 | 2.3 | 213 | 1009.27 | 1010.3 | 2340 | 1008.4 | 1437 | 0 |
| 10 | -2.75 | 3.2 | 1259 | -6.2 | 803 | 93.8 | 98.3 | 2241 | 79.1 | 1306 | -3.6 | 2.9 | 3.9 | 1251 | 2.3 | 803 | 1010.23 | 1011.0 | 1007 | 1009.7 | 2249 | 0.1 |
| 11 | -2.10 | -0.2 | 1920 | -4.3 | 127 | 98.7 | 99.6 | 2014 | 97.6 | 344 | -2.8 | 3.1 | 3.6 | 1936 | 2.6 | 118 | 1008.13 | 1010.0 | 0 | 1007.0 | 1353 | 0.1 |
| 12 | -1.45 | -0.8 | 1922 | -4.2 | 2359 | 98.0 | 99.4 | 2303 | 96.3 | 1156 | -1.7 | 3.3 | 3.5 | 1922 | 2.8 | 2359 | 1009.04 | 1009.7 | 2321 | 1008.1 | 46 | 0.5 |
| 13 | -2.29 | 0.3 | 1349 | -4.7 | 405 | 95.8 | 99.2 | 110 | 89.1 | 1514 | -2.9 | 3.1 | 3.6 | 1146 | 2.6 | 405 | 1007.24 | 1009.6 | 13 | 1004.1 | 2129 | 0.1 |
| 14 | -2.19 | 0.3 | 1832 | -5.5 | 2353 | 92.1 | 97.5 | 443 | 76.2 | 1132 | -3.3 | 3.0 | 3.5 | 1832 | 2.4 | 2353 | 1006.67 | 1010.3 | 2353 | 1004.0 | 404 | 0.1 |
| 15 | -4.48 | 0.9 | 1313 | -8.6 | 756 | 89.2 | 97.4 | 34 | 64.3 | 1316 | -6.1 | 2.4 | 2.9 | 1146 | 1.9 | 805 | 1012.10 | 1015.2 | 2359 | 1009.9 | 27 | 0.1 |
| 16 | -4.56 | 1.2 | 1314 | -8.4 | 709 | 93.7 | 97.5 | 1941 | 82.7 | 1317 | -5.4 | 2.6 | 3.5 | 1452 | 1.9 | 721 | 1018.95 | 1021.8 | 2307 | 1015.1 | 0 | 0 |
| 17 | -2.89 | 4.4 | 1507 | -7.0 | 134 | 92.6 | 98.2 | 2257 | 78.1 | 1533 | -4.0 | 2.9 | 4.2 | 1445 | 2.1 | 445 | 1022.31 | 1023.3 | 2218 | 1021.2 | 433 | 0.1 |
| 18 | 1.79 | 9.9 | 2357 | -6.1 | 148 | 96.5 | 98.2 | 537 | 94.6 | 1101 | 1.3 | 4.4 | 7.4 | 2357 | 2.3 | 300 | 1015.00 | 1022.4 | 8 | 1006.8 | 2359 | 10.3 |
| 19 | 12.20 | 13.2 | 2309 | 9.9 | 0 | 93.3 | 97.0 | 2 | 89.1 | 1311 | 10.9 | 8.1 | 8.6 | 1908 | 7.4 | 0 | 1005.80 | 1007.3 | 846 | 1004.0 | 2335 | 6.6 |
| 20 | 8.80 | 13.2 | 247 | 4.0 | 2207 | 90.2 | 95.8 | 707 | 75.3 | 1306 | 6.9 | 6.3 | 8.4 | 205 | 4.8 | 2209 | 1007.21 | 1010.3 | 2209 | 1002.0 | 455 | 2.5 |
| 21 | 8.20 | 11.5 | 1357 | 3.7 | 149 | 91.5 | 97.6 | 155 | 78.9 | 1355 | 6.5 | 6.1 | 6.9 | 1110 | 4.6 | 135 | 1005.97 | 1009.9 | 0 | 1003.3 | 2215 | 0.1 |
| 22 | 9.10 | 11.5 | 1351 | 5.9 | 636 | 94.3 | 99.1 | 934 | 87.7 | 2358 | 7.8 | 6.6 | 7.6 | 1429 | 5.5 | 637 | 1003.41 | 1005.6 | 2351 | 1001.3 | 1425 | 0.3 |
| 23 | 9.60 | 12.7 | 1225 | 7.9 | 507 | 90.4 | 98.8 | 1044 | 79.0 | 1511 | 7.6 | 6.5 | 8.1 | 1206 | 5.9 | 1941 | 1002.69 | 1006.6 | 2359 | 998.4 | 938 | 12.5 |
| 24 | 8.60 | 10.8 | 2210 | 3.7 | 857 | 92.2 | 98.1 | 1010 | 86.8 | 2343 | 6.9 | 6.2 | 7.0 | 1511 | 4.6 | 857 | 1009.60 | 1011.3 | 1156 | 1006.4 | 0 | 0.4 |
| 25 | 10.40 | 11.8 | 1145 | 9.1 | 1930 | 89.3 | 94.3 | 2036 | 80.7 | 1439 | 8.2 | 6.8 | 7.3 | 1134 | 6.4 | 2331 | 1007.46 | 1009.2 | 13 | 1006.4 | 1435 | 1.3 |
| 26 | 6.00 | 10.6 | 214 | 2.4 | 714 | 83.6 | 95.0 | 812 | 65.2 | 1257 | 2.9 | 4.7 | 6.7 | 225 | 3.8 | 556 | 1016.37 | 1023.2 | 2338 | 1006.4 | 145 | 1 |
| 27 | 6.90 | 10.8 | 1426 | 1.0 | 444 | 90.3 | 97.4 | 533 | 78.0 | 1357 | 4.9 | 5.4 | 7.3 | 2357 | 3.7 | 440 | 1018.80 | 1023.8 | 243 | 1009.5 | 2358 | 3.1 |
| 28 | 10.35 | 11.5 | 1555 | 9.1 | 2340 | 91.7 | 97.8 | 421 | 81.4 | 2312 | 9.1 | 7.2 | 7.9 | 1515 | 6.1 | 2313 | 1001.25 | 1009.9 | 2 | 994.5 | 2255 | 5.5 |
| 29 | 8.18 | 10.3 | 424 | 5.2 | 2357 | 78.2 | 89.6 | 2358 | 65.8 | 1449 | 4.6 | 5.3 | 6.3 | 452 | 4.7 | 1825 | 1001.44 | 1006.9 | 2052 | 993.9 | 307 | 0 |
| 30 | 10.08 | 13.4 | 1359 | 5.0 | 43 | 88.0 | 95.6 | 1127 | 77.1 | 1358 | 8.2 | 6.9 | 8.8 | 1208 | 4.9 | 43 | 996.63 | 1005.9 | 0 | 988.6 | 1144 | 3 |
| 31 | 12.29 | 13.9 | 604 | 10.3 | 155 | 90.2 | 96.4 | 1247 | 81.5 | 2210 | 10.7 | 8.1 | 8.8 | 1251 | 7.0 | 2210 | 999.25 | 1003.3 | 2354 | 996.6 | 430 | 8.2 |
| Total | | | | | | | | | | | | | | | | | | | | | | 56.9 |
| Mean | 3.92 | 7.17 | | 0.67 | | 91.3 | 97.00 | | 80.69 | | 2.43 | 4.80 | 5.73 | | 3.94 | | 1011.89 | 1015.23 | | 1008.40 | | |
| Max | 12.29 | 13.90 | | 10.30 | | 99.4 | 100.00 | | 98.60 | | 10.86 | 8.11 | 8.84 | | 7.37 | | 1029.51 | 1031.10 | | 1028.59 | | |
| Min | -4.56 | -0.84 | | -8.61 | | 78.2 | 89.20 | | 64.25 | | -6.11 | 2.42 | 2.85 | | 1.88 | | 996.63 | 1003.31 | | 988.56 | | |

Wokingham Automatic Weather Station
AWS samples taken every 0.5 seconds
x and n refer to maximum and minimum respectively

Tmn = 00 to 24 GMT mean air temperature at 1.2 m, deg C
RHmn = 00-24 GMT mean relative humidity at 1.2 m, percent
TDmn = 00-24 GMT mean dew point at 1.2 m, deg C
rmn = 00-24 GMT mean humidity mixing ratio, g/kg
pmn = 00-24 GMT mean air pressure reduced to mean sea level, mbar
Time = hours and minutes in GMT of extreme values

**Readings taken at Wokingham Climatological Station, Emmbrook, Berkshire**
**Lat 51.425 N, Long 0.853 W, NGR (SU) 798701**
**Altitude 45 m ASL.**

Temperature and humidity are from an aspirated Vaisala HMP45 unit
Pressure is from a Setra CS100 sensor
Data is logged on a Campbell Scientific CR10X measurement and control system
R tot = Rainfall from TBR, uncorrected

Appendix 1.

**Explanation and definition of some of the terms used in the Wokingham Weather Reports.**

**Average:** Generally refers to the 30 year climatological average, currently 1981 to 2010. This will be next updated in 2020. For some parameters, notably wind, the climatological average is not available, and if the word average is used in the context of wind, it refers to the average for the period for which data is held, namely 1988 to present.

For sunshine, there was a change, in July 1999, in the type of instrument used to detect sunshine amount, making the climatological average based on the old instrument of little use. In general, the new instrument produces higher values in the winter half year, and lower ones in the summer half, than the old type, due to a combination of faster reaction and higher sensitivity than the old type. The average used in this case is based on a theoretical equivalent 1981 to 2010 average, drawn from comparison with the Met Office published tables of departure from climatological average sunshine in the months since 2000 for their area 'Southern England'. Users of the Wokingham Monthly Weather reports should be aware of this, and regard anomalies for sunshine published therein as a guide only, until such time has elapsed since the introduction of the new instrument that a genuine average becomes available.

**Mean:** The mean of the data under discussion, often the monthly mean of daily data. The mean is obtained by summation of the individual values and dividing by the number of values. The term 'daily mean' in respect of temperature is defined as '(max + min) / 2' . A true daily 24 hour (00 to 24 GMT) mean temperature is available from the Automatic Weather Station (AWS), and is currently published on page 7 of the Wokingham Monthly Weather report, on the Wokingham Weather web site, page 1. http://www.woksat.info/wwp1.html

**Anomaly:** When a value is given for anomaly, this will have one of the following meanings:

a): The departure of a mean from the current climatological average.

b): The departure of a value on a particular day from the average for that day, (this need not be a climatological average).

When the word anomaly is used in respect of temperature, any values given are in °C. In respect of rainfall or sunshine, percent. In respect of wind, mph. In respect of pressure, millibars (hpa).

**Categories:** Reference may be made in the reports to 'categories'. Each category has a strict statistical range, as outlined below.

Temperature: The terms cold/mild are used in the winter half year, and cool/warm in the summer half.
The term 'normal' is used when the individual mean (monthly, seasonal or annual) value is within 20 % of the median of all ranked values for that month/season/year.
Mild/warm: The value lies between 10 % and 30 % below the highest value in the ranked series.
Very mild/very warm: The value lies within 10 % of the highest value in the ranked series.
Cold/cool: The value lies between 10 % and 30 % above the lowest value in the ranked series.
Very cold/very cool: The value lies within 10 % of the lowest value in the ranked series.

Sunshine: The terms for sunshine are very sunny, sunny, normal, dull and very dull.
The definition of these terms follow the same rules as for temperature.

Rainfall: The terms for rainfall are very dry, dry, normal, wet and very wet.
The definition of the term 'normal' follows the same rule as for temperature and sunshine.
Wet: The value lies between 10 % and 30% of the highest value in the ranked series.
Very wet: The value lies within 10 % of the highest value in the ranked series.
Dry: The value lies between 10 % and 30 % above the lowest value in the ranked series.
Very dry: The value lies within 10 % of the lowest value in the ranked series.

**Long-term:** Mention may be made in the reports to the 'long-term'. The long-term record comprises a temperature/rainfall/sunshine data series compiled from records of various weather stations in the Wokingham area in the years prior to the establishment of the weather station at Emmbrook in 1976 together with data from this station.
In the case of monthly max, min and mean temperature and of rainfall total the series starts in 1882. For temperature extremes, the highest max and lowest min go back to 1904, and lowest max and highest min to 1913.

**Rank:** The word rank refers to the position of a value for a particular month/season/year in the ranked series, and may be expressed relative to either the highest or lowest value in the series. The central value in the ranked series is known as the **median**. This value may be different from the average of the whole series if the population is skewed. It can also be different from the climatological average which only refers to a 30 year period.

**Month:** Calendar month.
**Season:** Spring, March to May.
Summer, June to August
Autumn, September to November
Winter, December to February.
When discussing 'winter', if a single year is given this refers to the year in which the January/February fall.
**Annual or Year:** The calendar year, 1st January to 31st December.

**The climatological day:** runs from 0900 to 0900 GMT. The max temperature and rainfall read at 0900 hours are attributed to the previous day (thrown back), as is the duration of measurable rain. The min temperature and grass min read at 0900 hours are attributed to the day of reading. Pressure read at 0900 GMT, and the monthly mean pressure is the mean of the 0900 GMT readings. Sunshine data, wind data, rainfall rate data and 24 hour data from the AWS use the normal 00-24 GMT day.

**Frost:** An air frost day is recorded when the minimum temperature read at 0900 GMT on that day is –0.1°C or below. A ground frost day is recorded when the grass minimum temperature read at 0900 GMT on that day is –0.1 °C or lower.
Duration of air frost is defined as the number of minutes that the AWS one minute average temperature is below 0.0°C, and the day runs from midnight to midnight.

**Snow:** A day with snow falling is triggered if snow falls at any time in the 24 hours from midnight on that day. A day with snow lying is entered if there is at least 50% snow cover at the 0900 GMT observation.
Snow depth is the depth of undrifted snow. Snow that collects in the raingauge funnel is melted and the amount recorded as rainfall.

**Hail:** A day of hail is recorded if hailstones 5 mm or more in diameter are observed or recorded on the hail pad in a 24 hour period starting at midnight.
A day of small hail is recorded if hailstones less than 5 mm diameter are observed or recorded in a 24 hour period starting at midnight. The term small hail also includes various other types of ice meteor such as ice pellets, snow grains and some types of snow pellets.

**Fog:** A day with fog is recorded if the horizontal visibility at 0900 GMT is below 1000 m.

**Thunder:** A day of thunder is recorded if thunder is heard in the 24 hour period from midnight on that day. The appearance of lightning without thunder being heard does not qualify as a thunder day.

**Trace of rainfall:** A trace of rain, entered as 'tr' in the daily log, is recorded if rain is observed to fall but is of insufficient quantity to collect in the raingauge, or if the amount of rain in the gauge is less than 0.05 mm.

**Dry spell:** A dry spell is defined as a period of 5 or more consecutive dry days.
**Dry day:** A dry day is one with less than 0.2 mm of rainfall.
**Rain day:** A rain day is one with 0.2 mm or more of rainfall.
**Wet day:** A wet day is one having 1.0 mm or more of rainfall.

B J Burton. 3 August 2009. Updated 4 May 2014.

Appendix 2.

Explanation and decode for code figures used in the Wokingham 0900 and 1500 GMT observations

**VV** : Visibility.
Code figures 00 to 50 are in km and tenths e.g. 01 = 0.1 km = 100 m, 33 = 3.3 km, 50 = 5.0 km
Code figures 60 to 80. Subtract 50 to obtain visibility in km. e.g. 56 = 6 km, 65 = 15 km, 77 = 27 km.
Code figures 81 to 89. Subtract 50 and add 5 for every one above 80. e.g. 83 = 45 km, 86 = 60 km.
Code figure 89 = visibility above 70 km.

**N** : Total cloud amount in okta (eighths of sky covered). 9 = sky obscured (e.g. by fog or snow)

**dd :** Wind direction in tens of degrees from true north. Wind is measured at a height of 10 m, and the direction is the mean over a period of 10 minutes ending at the observation time.

**ff :** Wind speed in knots, measured at 10 m, and is the mean over a period of 10 minutes ending at observation time.

**gg :** Wind gust in knots at 10 m. The highest gust in the 60 minutes up to observation time.

**TT :** Air temperature at 1.2m, degrees C and tenths.

**TdTd :** Dew point temperature at 1.2m, degrees C and tenths.

**RH :** Relative humidity at 1.2m, %.

**r :** Humidity mixing ratio (amount of water vapour per kg of air), grams and tenths.

**PPP :** Air pressure reduced to MSL, millibars and tenths.

**a :** Characteristic of pressure tendency during the past 3 hours.
Code figures 0 to 3, pressure higher than 3 hours ago, 5 to 8, pressure lower than 3 hours ago

Code figure 0 = Increasing then decreasing, pressure the same as or higher than 3 hours ago
1 = Increasing then steady or increasing more slowly
2 = Increasing steadily or unsteadily
3 = Decreasing or steady then increasing, or increasing then increasing more rapidly
4 = Steady, pressure the same as 3 hours ago
5 = Decreasing then increasing, pressure lower than 3 hours ago
6 = Decreasing then steady or decreasing more slowly
7 = Decreasing steadily or unsteadily
8 = Steady or increasing then decreasing, or decreasing then decreasing more rapidly

**ppp :** 3 hour pressure tendency in tenths of a millibar

**ww :** Present weather code figures, 00 to 99.

Present weather decode:
00 = Cloud development not observed or not observable
01 = Clouds generally dissolving or becoming less developed
02 = State of sky on the whole unchanged
03 = Clouds generally increasing or becoming more developed
04 = Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes.
05 = Haze, visibility reduced by extremely small dry particles (RH less than appx. 95 %)
06 = Widespread dust in suspension, not raised by the wind near the station at the time of the observation
07 = Dust or sand raised by the wind at or near the station at the time of the observation, but no well-developed dust whirls or sand whirls, and no duststorm or sandstorm seen: In marine environments, blowing spray at the station.
08 = Well-developed dust or sand whirls seen at or near the station during the preceding hour or at the time of the observation, but no duststorm or sandstorm.
09 = Duststorm or sandstorm within sight at the time of the observation, or at the station during the preceding hour

10 = Mist
11 = Patches of shallow fog not deeper than 2 metres on land
12 = More or less continuous shallow fog not deeper than 2 metres on land
13 = Lightning visible, no thunder heard
14 = Precipitation within sight, not reaching the ground
15 = Precipitation within sight , reaching the ground more than 5 km from the station
16 = Precipitation within sight, reaching the ground, near to but not at the station
17 = Thunderstorm, but no precipitation at the time of the observation
18 = Squalls at or within sight of the station at the time of the observation or during the preceding hour
19 = Funnel cloud(s) at or within sight of the station at the time of the observation or during the preceding hour

20 = Drizzle (not freezing) at the station during the preceding hour but not at the time of the observation
21 = Rain (not freezing) at the station during the preceding hour but not at the time of the observation
22 = Snow at the station during the preceding hour but not at the time of the observation
23 = Rain and snow or ice pellets at the station during the preceding hour but not at the time of the observation
24 = Freezing drizzle or freezing rain at the station during the preceding hour but not at the time of the observation
25 = Shower(s) of rain at the station during the preceding hour but not at the time of the observation
26 = Shower(s) of snow or rain and snow at the station during the preceding hour but not at the time of the observation
27 = Shower(s) of hail or rain and hail at the station during the preceding hour but not at the time of the observation
28 = Fog or ice fog at the station during the preceding hour but not at the time of the observation
29 = Thunderstorm, with or without precipitation at the station during the preceding hour but not at the time of the observation

30 = Slight or moderate duststorm or sandstorm has decreased during the preceding hour
31 = Slight or moderate duststorm or sandstorm with no appreciable change during the past hour
32 = Slight or moderate duststorm or sandstorm has begun or increased during the past hour
33 = Severe duststorm or sandstorm has decreased during the preceding hour
34 = Severe duststorm or sandstorm with no appreciable change during the past hour
35 = Severe duststorm or sandstorm has begun or increased during the past hour
36 = Slight or moderate drifting snow generally below eye level
37 = Heavy drifting snow generally below eye level
38 = Slight or moderate blowing snow generally above eye level
39 = Heavy blowing snow generally above eye level

40 = Fog or ice fog at a distance at the time of the observation, but not at the station during the preceding hour, the fog extending to a level above that of the observer.
41 = Fog or ice fog in patches
42 = Fog or ice fog, sky visible has become thinner during the past hour
43 = Fog or ice fog, sky invisible has become thinner during the past hour
44 = Fog or ice fog, sky visible no appreciable change during the past hour
45 = Fog or ice fog, sky invisible no appreciable change during the past hour
46 = Fog or ice fog, sky visible has begun or become thicker during the past hour
47 = Fog or ice fog, sky invisible has begun or become thicker during the past hour
48 = Fog, depositing rime, sky visible
49 = Fog depositing rime, sky invisible

50 = Drizzle, not freezing, intermittent slight at time of observation
51 = Drizzle, not freezing, continuous slight at time of observation
52 = Drizzle, not freezing, intermittent moderate at time of observation
53 = Drizzle, not freezing, continuous moderate at time of observation
54 = Drizzle, not freezing, intermittent heavy at time of observation
55 = Drizzle, not freezing, continuous heavy at time of observation
56 = Drizzle, freezing, slight
57 = Drizzle, freezing, moderate or heavy (dense)
58 = Drizzle and rain, slight
59 = Drizzle and rain, moderate or heavy

60 = Rain, not freezing, intermittent slight at time of observation
61 = Rain, not freezing, continuous slight at time of observation
62 = Rain, not freezing, intermittent moderate at time of observation
63 = Rain, not freezing, continuous moderate at time of observation
64 = Rain, not freezing, intermittent heavy at time of observation
65 = Rain, not freezing, continuous heavy at time of observation
66 = Rain, freezing, slight
67 = Rain, freezing, moderate or heavy
68 = Rain or drizzle and snow, slight
69 = Rain or drizzle and snow, moderate or heavy

70 = Intermittent fall of snowflakes slight at time of observation
71 = Continuous fall of snowflakes slight at time of observation
72 = Intermittent fall of snowflakes moderate at time of observation
73 = Continuous fall of snowflakes moderate at time of observation
74 = Intermittent fall of snowflakes heavy at time of observation
75 = Continuous fall of snowflakes heavy at time of observation
76 = Diamond dust (with or without fog)
77 = Snow grains (with or without fog)
78 = Isolated star-like snow crystals (with or without fog)
79 = Ice pellets

80 = Rain shower(s), slight
81 = Rain shower(s), moderate or heavy
82 = Rain shower(s), violent
83 = Shower(s) of rain and snow mixed, slight
84 = Shower(s) of rain and snow mixed, moderate or heavy
85 = Snow shower(s), slight
86 = Snow shower(s), moderate or heavy
87 = Shower(s) of snow pellets or small hail, with or without rain or rain and snow mixed, slight
88 = Shower(s) of snow pellets or small hail, with or without rain or rain and snow mixed, moderate or heavy
89 = Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder, slight
90 = Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder, moderate or heavy

91 = Slight rain at time of observation, thunderstorm during the past hour but not at time of observation
92 = Moderate or heavy rain at time of observation, thunderstorm during the past hour but not at time of observation
93 = Slight snow, or rain and snow mixed, or hail at time of observation, thunderstorm during the past hour but not at time of observation
94 = Moderate or heavy snow, or rain and snow mixed, or hail at time of observation, thunderstorm during the past hour but not at time of observation
95 = Thunderstorm, slight or moderate, without hail but with rain and or snow at time of observation
96 = Thunderstorm, slight or moderate, with hail at time of observation
97 = Thunderstorm, heavy, without hail but with rain and or snow at time of observation
98 = Thunderstorm combined with duststorm or sandstorm at time of observation
99 = Thunderstorm, heavy, with hail at time of observation

Hail includes large hail, small hail and snow pellets.

**W1, W2 :** Past weather (for 0900 and 1500 GMT observations, the period covered is 3 hours)

Code figures:
0 = Cloud covering half or less of the sky throughout the period
1 = Cloud covering more than half the sky during only part of the period
2 = Cloud covering more than half the sky throughout the period
3 = Sandstorm, duststorm or blowing snow
4 = Fog or ice fog or thick haze (visibility less than 1000 m)
5 = Drizzle
6 = Rain
7 = Snow or rain and snow mixed
8 = Shower(s)
9 = Thunderstorm(s) with or without precipitation

**Nh :** Amount of low cloud, or medium cloud if no low cloud present, okta

**Cl :** Type of low cloud

0 = No low cloud
1 = Cumulus with little vertical extent and seemingly flattened, or ragged Cumulus other than bad weather, or both
2 = Cumulus of moderate or strong vertical extent, either accompanied or not by other Cumulus or Stratocumulus all having their bases at the same level
3 = Cumulonimbus whose summits, at least partially, lack sharp outline, but are neither clearly fibrous (cirriform), nor in the form of an anvil; Cumulus, Stratocumulus or Stratus may also be present
4 = Stratocumulus formed by the spreading out of Cumulus; Cumulus may also be present
6 = Stratus in a more or less continuous sheet or layer, or ragged shreds, or both, but no Stratus fractus of bad weather
7 = Stratus fractus of bad weather or Cumulus fractus of bad weather or both (pannus), usually below Altostratus or Nimbostratus
8 = Cumulus and Stratocumulus other than that formed by the spreading out of Cumulus, the bases of the Cumulus and Stratocumulus are not at the same level.
9 = Cumulonimbus, the upper part of which is clearly fibrous (cirriform), often in the form of an anvil, either accompanied or not by any other type(s) of low cloud
/ = Types of low cloud invisible due to darkness, fog, blowing dust or sand or other similar phenomena.

'Bad weather' denotes the conditions which generally exist during precipitation and a short time before and after.

**Cm :** Type of medium cloud.

0 = No medium cloud.
1 = Altostratus, the greater part of which is semi-transparent; through this part the sun or moon may be weakly visible, as through ground glass
2 = Altostratus, the greater part of which is sufficiently dense to hide the sun or moon, or Nimbostratus
3 = Altocumulus, the greater part of which is semi-transparent; the various elements of the cloud change only slowly and are all at a single level
4 = Altocumulus in patches (often in the form of almonds or fishes), the greater part of which is semi-transparent ; the clouds occur at one or more levels and the elements are continually changing in appearance
5 = Altocumulus in bands semi-transparent, of Altocumulus in one or more fairly continuous layers (semi-transparent or opaque), progressively invading the sky; these Altocumulus clouds generally thicken as a whole
6 = Altocumulus resulting from the spreading out of Cumulus (or Cumulonimbus)
7 = Altocumulus in two or more layers, usually opaque in places, and not progressively invading the sky; or opaque layer of Altocumulus not progressively invading the sky; or Altocumulus together with Altostratus or Nimbostratus
8 = Altocumulus with sproutings in the form of small towers or battlements, or Altocumulus having the appearance of cumuliform tufts
9 – Altocumulus of a chaotic sky, generally at several levels
/ = Types of medium cloud invisible owing to darkness, fog, blowing dust of sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

**Ch :** Type of high cloud

0 = No high cloud
1 = Cirrus in the form of filaments, strands or hooks, not progressively invading the sky.
2 = Dense cirrus, in patches or entangled sheaves, which usually do not increase and sometimes seem to be the remains of the upper part of a Cumulonimbus; or Cirrus with sproutings in the form of small turrets or battlements, or Cirrus having the appearance of cumuliform tufts
3 = Dense Cirrus, often in the form of an anvil, being the remains of the upper part of Cumulonimbus, or where the rest of the Cumulonimbus is below the horizon
4 = Cirrus in the form of hooks or filaments, or both, progressively invading the sky; they generally become denser as a whole
5 = Cirrus (often in bands converging towards one or two opposite points on the horizon) and Cirrostratus, or Cirrostratus alone; in either case they are progressively invading the sky, and generally growing denser as a whole, but the continuous veil does not reach 45 degrees above the horizon.
6 = Cirrus (often in bands converging towards one or two opposite points on the horizon) and Cirrostratus, or Cirrostratus alone; in either case they are progressively invading the sky, and generally growing denser as a whole; the continuous veil extends more than 45 degrees above the horizon, without the sky being totally covered
7 = Veil of Cirrostratus covering the celestial dome.
8 = Cirrostratus not progressively invading the sky and not completely covering the celestial dome
9 = Cirrocumulus alone, or accompanied by Cirrus or Cirrostratus, or both, but Cirrocumulus is predominant.
/ = Types of high cloud invisible owing to darkness, fog, blowing dust of sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

**8 Groups**
**N =** Amount of cloud reported by C, okta.

**C =** Type of cloud
0 = Cirrus (Ci)
1 = Cirrocumulus (Cc)
2 = Cirrostratus (Cs)
3 = Altocumulus (Ac)
4 = Altostratus (As)
5 = Nimbostratus (Ns)
6 = Stratocumulus (Sc)
7 = Stratus (St)
8 = Cumulus (Cu)
9 = Cumulonimbus (Cb)
/ = Cloud type not visible owing to darkness, fog, duststorm, or other analogous phenomena.

**hshs =** Height of cloud above station level reported by type C

00 to 50 = Height in hundreds of feet
51 to 55 Not used
56 to 80 = Subtract 50 to obtain cloud height in thousands of feet
81 to 88 = Height of cloud between 35000 and 70000 ft in 5000 ft steps.