

# 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

OCTOBER 2020

Temperature (°C)	Anomaly	Rank in the past 139 years
Mean maximum 14.9	-0.3	62 <sup>nd</sup> highest
Mean minimum 8.0	+0.8	19 <sup>th</sup> highest
Daily mean 11.4	+0.2	32 <sup>nd</sup> highest
Highest maximum 18.2	on 20 <sup>th</sup>	Lowest maximum 11.7 on 13 <sup>th</sup>
Highest minimum 13.8	on 21 <sup>st</sup>	Lowest minimum 2.4 on 18 <sup>th</sup>
Mean grass minimum 5.4	+1.3	Lowest grass minimum -0.7 on 10 <sup>th</sup>
Mean earth @30 cm 13.1	0.0	Earth @100 cm 14.3
Frost duration (hrs) 0.0		Rain duration (hrs) 102.2
Rainfall total (mm) 171.2	238 %	4 <sup>th</sup> highest
Highest daily fall 45.4	on 2 <sup>nd</sup>	Highest rate mm/hr 97 on 24 <sup>th</sup>
Number of: Dry days (<0.2mm) 8	Wet days (>0.9mm) 16	days ≥5mm 7
Sunshine total (hrs) 82.6	Daily mean 2.66	71 % Sunniest day 6.8 on 26 <sup>th</sup>
N° days with: Air frost 0	Ground frost 3	Snow falling 0 Snow lying 0
Thunder 0	Hail ≥5mm 0	Small hail/ice 1 Fog @09 0 Nil sun 8
Pressure MSL: Mean @09 GMT, mbar 1008.1	-6.2	Highest 1027.3 on 11 <sup>th</sup> Lowest 980.5 on 4 <sup>th</sup>
Relative humidity: Mean (%) 86.2	Lowest 44 on 1 <sup>st</sup>	Water vapour (g/kg), mean at 09 and 15 GMT 7.4, 7.2
Overall mean wind speed (mph) 7.3	Windiest day 11.5 on 30 <sup>th</sup>	Max gust 40 on 24 <sup>th</sup>
Wind direction (days) N 4 NE 2 E 0 SE 1 S 5 SW 16 W 2 NW 1		
Least windy day (mph) 1.7 on 18 <sup>th</sup>	Calm; less than 0.5 mph (minutes) 405	

Anomaly = departure from 1981 to 2010 average (degrees C, percent and mbar).

Notes:

**Dull and Very Wet with Near Average Temperature.**

**Temperature:** A fairly unremarkable month with the mean temperature equal to the average for the past 45 years. Temperatures by day and night were near or below normal until the 19<sup>th</sup>, near or above thereafter. However, the mean maximum, while 0.1° above that of October 2019, is 4<sup>th</sup> lowest this millennium, while the mean minimum is 7<sup>th</sup> highest in the same period. The highest max is 2.0° below the median, and is lowest since 2012 while the lowest max is 2.3° above its median. The highest min is 0.7° above the median and the lowest min is 3.4° above its median and is highest since 2006. The mean grass min is 1.3° above average and the lowest grass min is also highest since 2006. The first ground frost of the season was on the 9<sup>th</sup> after 145 frost free days, but the number of ground frosts is 4 fewer than average. Earth temperature at 30 cm depth is exactly average but is slightly below average at 1 m depth. There were no air frosts this month after 26 Octobers since 1976 have had at least one. Anomalies for daily max exceeded -4° on the 2<sup>nd</sup>, 4<sup>th</sup> and 13<sup>th</sup> but did not reach +4° on any day. Extreme values were -4.8° on the 13<sup>th</sup> and +3.4° on the 20<sup>th</sup>. For daily min, anomalies exceeded -4° on the 18<sup>th</sup>, but were above +4° on the 20<sup>th</sup> to 22<sup>nd</sup> also 30<sup>th</sup> and 31<sup>st</sup>, with extreme values of -4.6° on 18<sup>th</sup> and +7.2° on 21<sup>st</sup>. **Rainfall:** This has been an extremely wet October, ranking 4<sup>th</sup> wettest in the past 139 years, and is wettest since 1960. The near record amount is mainly due to the remarkable 85.2 mm that fell over 2 consecutive rainfall days on 2<sup>nd</sup>/3<sup>rd</sup>, which is 13.2 mm more than the entire monthly average. There has been no comparable 2 day total at any time since before 1976. Needless to say, this led to the Emm over-topping its banks, causing local flooding. The number of dry days is 8 fewer than average, but surprisingly there was a 5 day dry spell up to the 18<sup>th</sup>. There was no thunder this month but ice pellets fell on the 28<sup>th</sup>. Rain rate exceeded the violent category on just one day, the 24<sup>th</sup>. Daily accumulation compared with normal saw a surplus of 85 mm by the 3<sup>rd</sup>, decreasing to 65 mm by the 19<sup>th</sup> but increasing to 92 mm by the 24<sup>th</sup> and further to 98 mm by the 31<sup>st</sup>. **Sunshine:** A predominance of cloudy days led to a low sunshine total this month, and made it the dullest October since 1991 with only 71 % of the average. Only 5 days had 50 % or more of the maximum, and the sunniest day had only 68 %. 15 days had <20 % and 8 of those had nil sun. Daily sunshine accumulation compared with normal showed a deficit of 8 hours by the 4<sup>th</sup>, increasing to 16 hours by the 18<sup>th</sup>, 26 hours by the 24<sup>th</sup> and 33 hours by the 31<sup>st</sup>. Overall there were 16 days with <3 hours and 3 with => 6 hours. **Wind:** The mean speed is 1.0 mph above average but the month's highest gust is slightly below average. Daily mean speeds were moderate or fresh up to the 10<sup>th</sup> and after the 19<sup>th</sup>, otherwise mainly light. Directions were mainly SW'ly except for N'ly from 13<sup>th</sup> to 17<sup>th</sup>, NE'ly on 2<sup>nd</sup>, W or NW on 3<sup>rd</sup>, 10<sup>th</sup> and 11<sup>th</sup>, and S'ly on 19<sup>th</sup> and 20<sup>th</sup>. **Pressure:** The monthly mean air pressure is lowest for October since 2004, and 2<sup>nd</sup> lowest since 1976.

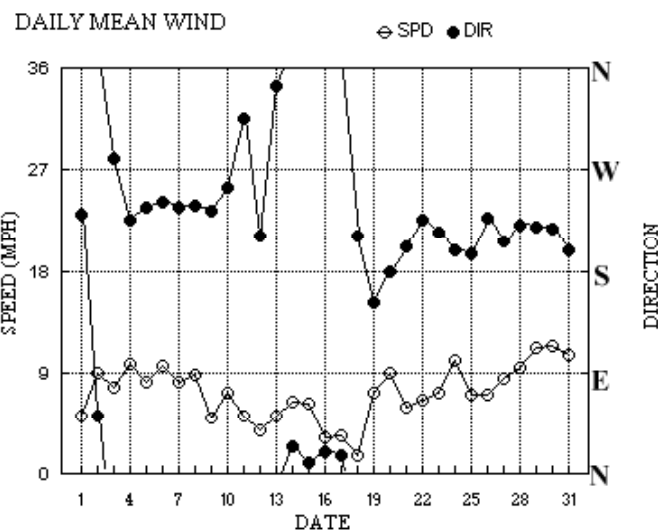
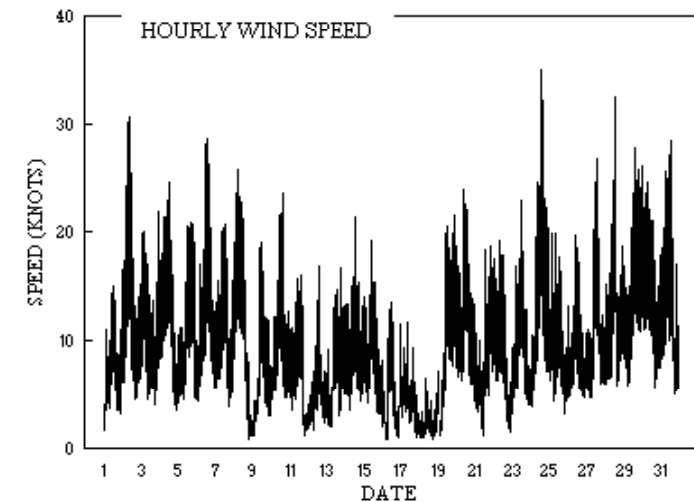
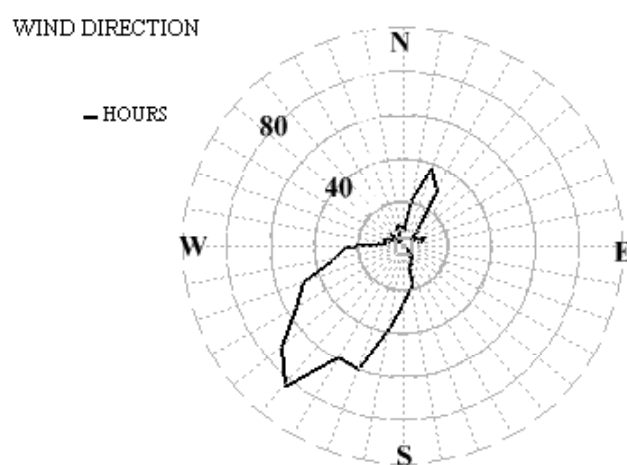
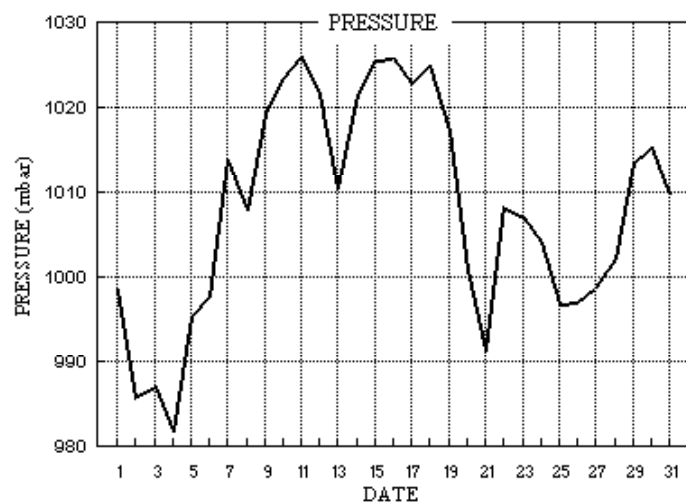
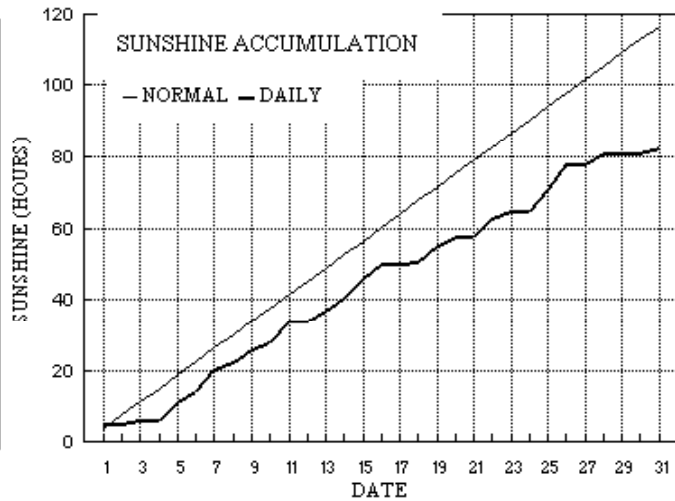
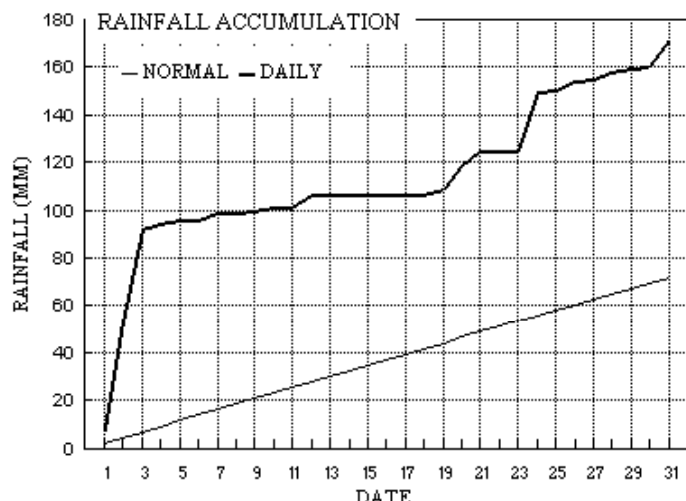
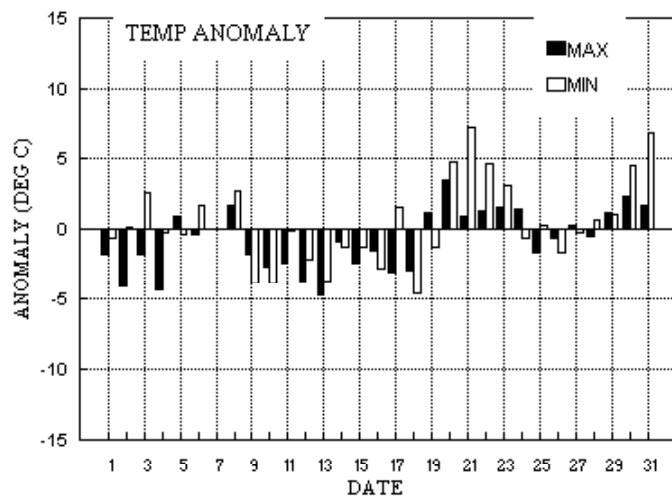
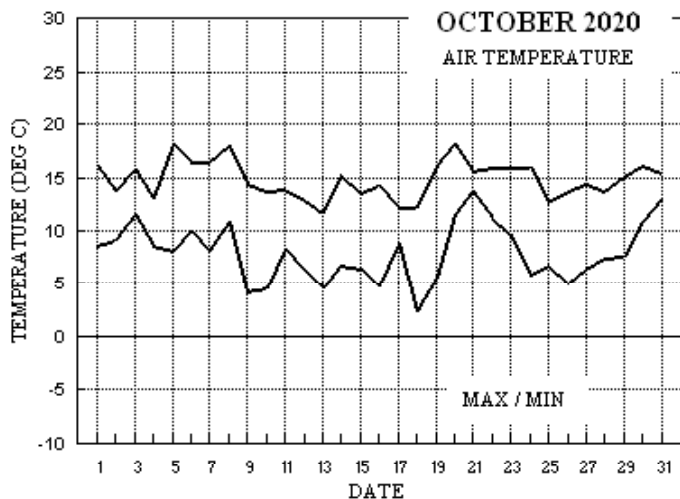
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 <sup>st</sup> to the 10 <sup>th</sup>				From the 11 <sup>th</sup> to the 20 <sup>th</sup>				From the 21 <sup>st</sup> to the 31 <sup>st</sup>			
-1.4°	-0.2°	437%	72%	-1.7°	-1.1°	75%	80%	+0.7°	+2.3°	205%	60%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

# Wokingham climatological graphs for October 2020



Month: OCTOBER 2020

Date	Max C	Min C	Rain mm	Grass Min	30cm C	100cm C	Sun hrs	Frost hrs	pp09 mbar	Af Gf	Sf Sl	Th Ha	Ic Fg	Vec ddd	mean ff	sp	Max gust ddd	gg	HHhh	High hr ddd	ff	Rain HH	hrs	
1	16.2	8.6	7.2	4.2	15.0	15.8	5.2	0.0	998.5	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	230	2.3	4.5	280	15	1144	259	7	12	8.4	
2	13.8	9.2	45.4	7.1	14.9	15.8	0.0	0.0	985.9	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	51	7.4	7.8	67	31	0806	67	13	08	21.6	
3	15.8	11.5	39.8	12.4	14.7	15.7	0.8	0.0	987.2	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	279	1.6	6.7	261	22	2140	13	10	03	16.6	
4	13.1	8.6	1.9	8.4	14.6	15.5	0.0	0.0	981.7	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	226	8.1	8.5	210	25	1312	204	12	12	3.7	
5	18.1	8.2	1.6	4.6	13.9	15.4	5.1	0.0	995.3	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	236	7.0	7.1	244	21	1713	237	10	14	1.4	
6	16.5	10.0	0.2	8.0	14.3	15.2	3.1	0.0	997.8	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	242	8.2	8.4	247	29	1400	247	13	12	0.4	
7	16.5	8.2	2.5	3.9	14.2	15.1	6.4	0.0	1013.9	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	237	6.5	7.1	253	21	1233	250	10	13	4.2	
8	18.0	10.8	0.3	11.4	14.4	15.1	1.7	0.0	1008.0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	239	5.5	7.6	215	26	0629	221	13	05	0.3	
9	14.5	4.3	0.6	-0.3	14.2	15.0	3.8	0.0	1019.2	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	234	4.1	4.4	246	19	1216	238	8	12	0.6	
10	13.7	4.5	1.9	-0.7	13.5	15.0	1.8	0.0	1023.5	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	254	5.9	6.2	262	24	1504	266	10	11	0.8	
11	13.9	8.3	0.0	4.4	13.2	14.8	5.9	0.0	1025.9	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	315	3.9	4.5	341	16	1433	330	7	09	0.0	
12	12.9	6.2	4.8	3.1	13.0	14.6	0.0	0.0	1021.5	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	211	3.0	3.4	232	17	1431	217	7	11	7.0	
13	11.7	4.6	0.5	0.4	13.0	14.5	3.1	0.0	1010.5	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	343	3.5	4.5	7	17	1933	10	7	19	1.7	
14	15.3	6.8	tr	2.6	12.9	14.3	3.6	0.0	1021.5	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	24	5.5	5.6	23	22	1409	22	9	14	0.1	
15	13.5	6.5	0.1	3.1	12.8	14.2	5.4	0.0	1025.6	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	11	5.4	5.4	9	19	1140	19	9	11	0.5	
16	14.2	4.8	tr	0.8	12.5	14.1	4.4	0.0	1025.7	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	20	2.6	2.8	54	14	1122	37	6	10	0.0	
17	12.2	8.8	0.0	8.1	12.5	13.9	0.0	0.0	1022.9	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	16	2.4	2.9	64	12	0907	19	5	04	0.0	
18	12.2	2.4	0.0	-0.5	12.5	13.8	0.3	0.0	1025.0	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	211	0.9	1.5	259	7	0925	244	3	09	0.0	
19	16.1	5.6	1.7	2.9	12.4	13.7	4.8	0.0	1017.3	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	153	6.0	6.3	153	22	2203	174	10	12	2.1	
20	18.2	11.5	10.4	11.1	12.5	13.6	2.4	0.0	1001.0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	180	7.5	7.8	201	24	1056	196	12	10	6.9	
21	15.6	13.8	5.9	13.1	13.1	13.6	0.0	0.0	991.3	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	202	2.8	5.3	216	19	2133	216	9	20	4.6	
22	15.9	11.2	tr	9.0	13.3	13.6	4.9	0.0	1008.3	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	226	5.3	5.7	253	19	0953	239	9	09	0.1	
23	16.0	9.6	0.1	5.9	13.2	13.7	2.0	0.0	1007.1	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	214	5.9	6.3	222	23	1223	230	11	12	0.2	
24	15.9	5.9	24.6	1.9	12.9	13.7	0.0	0.0	1004.0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	199	8.5	8.8	195	35	1423	195	15	14	6.9	
25	12.7	6.8	0.9	4.2	12.8	13.7	6.2	0.0	996.9	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	195	6.1	6.1	197	20	0359	201	9	14	0.6	
26	13.7	5.0	4.1	0.7	12.1	13.6	6.8	0.0	997.1	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	227	5.8	6.2	233	20	1118	234	10	11	2.4	
27	14.5	6.4	0.6	2.4	11.5	13.4	0.1	0.0	998.7	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	207	6.7	7.3	264	27	1459	185	11	11	1.5	
28	13.7	7.4	2.9	4.2	11.4	13.2	3.2	0.0	1002.3	0 0 0 0	0 0 0 0	0 0 1 0	0 0 0 0	220	8.2	8.3	267	33	1444	219	13	13	2.0	
29	15.1	7.6	1.6	5.2	11.2	13.0	0.0	0.0	1013.5	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	219	9.6	9.7	221	28	1612	221	13	16	2.9	
30	16.1	10.9	0.7	12.7	11.7	12.8	0.0	0.0	1015.3	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	217	9.9	10.0	209	26	0020	222	13	07	1.6	
31	15.4	13.1	10.9	12.1	12.5	12.8	1.6	0.0	1009.7	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	199	8.3	9.2	253	29	1345	175	13	09	3.1	
Total			171.2				82.6	0.0																102.2
Mean	14.9	8.0		5.4	13.1	14.3	2.66	0.0	1008.1					223	3.5	6.3								
Anom	-0.3	+0.8	238%	+1.3	+0.0	-0.4	71%																	-6.2
Daily mean		11.4																						
Anom		+0.2																						

Number of days with:

Air frost = 0      Ground frost = 3      Nil sun = 8  
Snow falling = 0      Snow lying = 0      Thunder = 0  
Hail=>5mm = 0      Hail<5mm or ice = 1      Fog at 09GMT = 0

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, &lt;.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 =&gt;5mm. Ic = Hail &lt;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.

Anom = Departure from 1981-2010 climatological average.

All temperatures in degrees Celsius.



Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for OCTOBER 2020

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks					
1	86	5	22	06	11	14.2	5.0	54	5.5	997.0	7	013	03	1	1	4	8	6	0	5	83840	1	2Sc56 2Cs75 COTRA Cu med Cs edge SW		
2	30	8	06	06	16	12.6	12.0	96	8.9	988.7	2	014	53	6	5	7	7	2	2	/	83704	87706	88540	2	
3	84	7	23	06	14	14.5	10.5	77	8.1	986.0	6	012	03	2	2	3	8	4	7	/	83815	85359	87365	3	1Sc40 Cu med
4	20	8	21	10	19	10.5	9.6	94	7.6	982.2	3	003	58	6	5	7	7	3	2	/	83706	87710	88530	4	
5	80	8	24	10	21	14.8	11.8	82	8.7	996.6	1	005	60	6	1	7	8	4	7	/	85815	87630		5	/Ac65
6	65	6	25	10	29	14.5	10.9	79	8.2	998.2	3	004	25	8	2	6	8	4	/	3	81815	83825		6	4Sc45 1Ci70 Cu fra/med Cb topN jp NW vv 50k ex p
7	82	7	26	07	18	15.1	7.2	59	6.3	1015.0	0	000	03	1	1	2	1	6	7	/	82835	87368		7	2Ac62 Cu hum
8	86	7	32	07	16	15.2	8.7	65	7.0	1013.8	1	040	03	2	2	7	8	6	3	2	82830	85645	85368	8	/Ci72 Cu med
9	70	7	24	06	16	12.3	9.5	83	7.3	1017.6	6	006	25	8	2	7	8	4	7	/	82818	86645	87358	9	Cu fra/med jpS vv50k ex p
10	62	6	27	08	21	13.3	7.5	68	6.4	1022.3	6	008	80	8	2	5	8	6	3	/	84830	83358		10	2Sc45 Cu med vv50k ex p
11	86	2	33	05	16	13.5	6.1	61	5.8	1025.9	7	003	02	1	1	2	8	6	0	0	81830			11	1Sc48 Cu med
12	56	8	22	06	17	10.8	9.7	93	7.4	1016.0	7	024	61	6	6	4	7	3	2	/	84706	88530		12	
13	70	7	35	06	15	11.4	5.7	68	5.7	1009.6	7	003	21	6	2	7	8	5	7	/	81822	83635	87650	13	/Ac57 Cu hum jpE vv50k ex p
14	65	8	02	07	22	11.8	7.5	75	6.4	1022.3	3	002	25	8	2	3	8	6	7	7	81835	83650	88270	14	3Ac59 3Ac62 Cu med jpNW Parhelion
15	80	3	01	06	15	10.7	7.2	79	6.2	1024.9	7	005	25	8	1	3	8	5	0	1	81825	83656		15	1Sc45 1Ci80 COTRA Cu med jpN
16	84	7	03	03	07	11.7	5.3	65	5.5	1024.0	7	007	03	2	2	7	8	6	/	/	81830	83645	87650	16	Cu hum
17	82	8	35	02	05	11.5	6.8	73	6.1	1022.1	6	005	02	2	2	8	8	5	/	/	81822	88640		17	2Sc35 Cu med
18	70	8	22	02	04	12.0	7.5	74	6.4	1023.3	6	015	03	2	2	8	8	5	/	/	81820	88650		18	1Sc45 Cu med
19	81	7	17	10	18	13.6	5.7	59	5.7	1011.8	7	029	03	2	2	7	0	9	8	1	84366	86369	87072	19	Ac cas vir
20	82	6	20	09	22	17.3	11.6	69	8.5	1000.8	5	001	02	2	2	6	8	5	3	0	85825			20	2Sc40 1Ac67 Cu med
21	75	7	24	07	18	14.7	13.9	95	10.0	997.1	3	051	21	6	8	7	8	4	7	2	83810	85625	86365	21	/Ci70 Cu fra/med
22	84	5	24	04	14	14.4	9.8	74	7.5	1009.0	2	003	02	1	1	5	8	5	0	1	83820	83635		22	1Ci75 Cu med
23	65	7	23	08	18	13.8	9.3	74	7.3	1007.7	3	005	21	6	2	7	8	5	7	/	83825	85635	87656	23	/Ac65 Cu med jp E-SW vv70k NW
24	60	8	19	16	35	15.1	12.8	86	9.3	997.6	8	038	60	6	5	8	5	4	/	/	82713	87618	88630	24	
25	75	5	20	07	17	11.3	7.4	77	6.5	995.6	6	008	15	1	1	4	9	5	6	3	83920	81825		25	1Ac62 2Ci70 jpSW&NW vv50k ex p
26	84	2	25	07	13	11.8	7.7	76	6.6	998.3	1	009	25	8	1	1	8	5	4	3	81825			26	1Sc45 1Ac62 1Ci70 Cb tops N-E
27	56	7	25	13	27	13.5	11.4	87	8.5	993.9	5	012	63	6	5	7	5	3	7	/	81706	84615	86640	27	7Ac58 vv50k NW Clearance NW
28	60	7	25	09	33	8.4	6.2	86	5.9	1002.3	3	003	80	8	1	6	3	5	7	/	82925	85640	86360	28	Line sh N-S to E vv60k ex E Re pRho
29	30	8	23	12	27	14.0	12.0	88	8.7	1011.6	5	005	50	6	5	7	5	4	2	/	85712	87620	88557	29	
30	68	8	21	08	21	15.3	13.5	89	9.5	1017.2	2	008	20	5	2	8	5	3	/	/	87707	88615		30	
31	78	2	25	11	27	12.6	8.1	74	6.7	1007.8	3	016	01	8	6	1	8	4	0	2	81818			31	1Sc50 1Ci70 Cu hum

Mean vis = 27.4 km

Mean cloud = 6.4 80%

Mean wind speed = 7.5 kn

Mean gust = 18 kn

Mean TT = 13.1 °C

Mean TdTd = 9.0 °C

Mean RH = 76.7 %

Mean r = 7.2 g/kg

Mean PPP = 1007.6 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  2020	Hour	01-Oct	02-Oct	03-Oct	04-Oct	05-Oct	06-Oct	07-Oct	08-Oct	09-Oct	10-Oct	11-Oct	12-Oct	13-Oct	14-Oct	15-Oct	16-Oct
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	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	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	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	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	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	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.21	0.00	0.00	0.15	0.21	0.18	0.21
7	0.69	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.53	0.71	0.37	0.00	1.00	0.62	1.00	1.00
8	0.57	0.00	0.00	0.00	0.70	0.21	0.37	0.00	1.00	0.00	1.00	0.00	0.98	0.55	1.00	1.00	1.00
9	0.59	0.00	0.00	0.00	1.00	0.05	1.00	0.00	1.00	0.30	0.97	0.00	0.29	0.91	0.98	1.00	1.00
10	0.53	0.00	0.00	0.00	1.00	0.01	1.00	0.09	0.76	0.40	0.79	0.00	0.49	0.30	0.43	0.96	0.96
11	0.66	0.00	0.00	0.00	0.81	0.25	0.92	0.61	0.00	0.02	0.13	0.00	0.15	0.43	0.42	0.23	0.23
12	0.82	0.00	0.00	0.00	0.99	0.63	0.97	0.02	0.00	0.00	0.18	0.00	0.02	0.14	0.49	0.00	0.00
13	0.42	0.00	0.23	0.00	0.59	0.40	0.99	0.33	0.00	0.20	0.14	0.00	0.01	0.15	0.05	0.00	0.00
14	0.27	0.00	0.31	0.00	0.00	0.48	0.79	0.61	0.00	0.00	0.32	0.00	0.03	0.01	0.50	0.00	0.00
15	0.28	0.00	0.21	0.00	0.00	0.30	0.39	0.01	0.00	0.00	1.00	0.00	0.00	0.07	0.36	0.00	0.00
16	0.35	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.50	0.00	0.81	0.00	0.00	0.16	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.20	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	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	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	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	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	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	0.00
Tot		<b>5.19</b>	<b>0.00</b>	<b>0.76</b>	<b>0.00</b>	<b>5.09</b>	<b>3.11</b>	<b>6.44</b>	<b>1.68</b>	<b>3.80</b>	<b>1.83</b>	<b>5.88</b>	<b>0.00</b>	<b>3.12</b>	<b>3.55</b>	<b>5.40</b>	<b>4.40</b>

Hour	17-Oct	18-Oct	19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct	26-Oct	27-Oct	28-Oct	29-Oct	30-Oct	31-Oct	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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
7	0.00	0.00	0.05	0.01	0.00	0.54	0.68	0.00	0.00	0.85	0.00	0.32	0.00	0.00	0.00	0.27
8	0.00	0.13	0.49	0.13	0.00	0.87	0.54	0.00	0.51	0.68	0.00	0.37	0.00	0.00	0.01	0.36
9	0.00	0.00	0.49	0.80	0.00	0.46	0.07	0.00	0.01	0.66	0.00	0.76	0.00	0.00	0.00	0.37
10	0.00	0.00	0.77	0.20	0.00	0.97	0.00	0.00	0.93	1.00	0.00	0.14	0.00	0.00	0.00	0.35
11	0.00	0.00	1.00	0.11	0.00	0.34	0.02	0.00	1.00	0.73	0.00	0.23	0.00	0.00	0.00	0.26
12	0.00	0.00	1.00	0.03	0.00	0.16	0.53	0.00	0.98	0.57	0.00	0.06	0.00	0.00	0.00	0.24
13	0.00	0.10	0.84	0.24	0.00	0.16	0.18	0.00	0.96	0.07	0.00	0.84	0.00	0.00	0.13	0.23
14	0.00	0.06	0.16	0.82	0.00	0.08	0.00	0.00	0.61	0.65	0.00	0.36	0.00	0.00	0.27	0.20
15	0.00	0.00	0.00	0.01	0.00	0.88	0.00	0.00	0.84	1.00	0.00	0.11	0.00	0.00	1.00	0.21
16	0.00	0.00	0.00	0.00	0.00	0.41	0.02	0.00	0.33	0.59	0.10	0.00	0.00	0.00	0.18	0.13
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	0.01
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	<b>0.00</b>	<b>0.29</b>	<b>4.80</b>	<b>2.36</b>	<b>0.00</b>	<b>4.88</b>	<b>2.04</b>	<b>0.00</b>	<b>6.19</b>	<b>6.79</b>	<b>0.10</b>	<b>3.19</b>	<b>0.00</b>	<b>0.00</b>	<b>1.58</b>	<b>82.42</b>

OCTOBER 2020	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	11.45	16.2	1318	8.6	220	81.1	98.7	244	44.2	1321	8.0	6.8	8.0	251	4.9	1321	996.94	1000.3	9	989.5	2357	2.7
2	11.66	13.0	2256	9.5	32	96.3	97.6	2159	92.5	807	11.1	8.4	9.3	2309	7.3	33	987.76	990.2	1850	984.3	643	22.1
3	12.73	15.8	1402	9.0	2352	92.4	97.4	834	74.2	1611	11.5	8.7	9.8	833	7.0	2352	985.87	989.1	0	982.3	2335	43
4	9.46	10.6	1345	8.3	2246	94.3	96.9	2311	88.6	1240	8.6	7.1	7.7	1859	6.7	2302	983.09	989.9	2358	980.5	447	19.7
5	12.35	18.1	1207	8.2	35	84.7	97.1	49	58.3	1130	9.7	7.6	8.9	1524	6.6	35	995.69	999.4	1959	989.7	0	0.4
6	12.67	16.5	1315	10.1	2348	83.3	96.2	246	63.8	1317	9.8	7.6	8.5	1443	6.7	2348	998.91	1006.7	2359	995.1	332	1.7
7	12.10	16.5	1310	8.2	511	79.0	96.3	2358	52.5	1312	8.3	6.8	9.2	2359	5.7	1158	1012.95	1015.7	1836	1006.5	3	1.8
8	13.85	18.0	1127	5.8	2359	85.4	97.0	2348	61.3	1530	11.3	8.5	10.8	1056	5.5	2359	1012.32	1019.4	2305	1007.2	635	1.2
9	8.67	14.5	1043	4.3	525	86.0	98.3	744	65.8	1046	6.3	5.9	7.9	1348	4.8	2310	1019.30	1022.5	2357	1017.4	1509	0.6
10	9.10	13.7	1333	4.5	317	83.2	92.2	343	65.2	1333	6.3	5.9	7.2	1638	4.7	145	1023.17	1024.1	2305	1022.0	1445	2
11	10.12	13.9	1506	6.8	2317	80.3	95.4	2341	56.4	1517	6.7	6.0	6.5	26	5.3	1525	1025.75	1027.3	2104	1023.7	9	0
12	9.41	12.9	1332	6.2	138	90.3	97.1	2036	69.2	1136	7.8	6.6	7.6	2051	5.5	138	1018.98	1026.6	0	1012.1	2353	4.6
13	8.90	11.7	1449	4.6	527	86.8	97.1	722	67.3	1411	6.7	6.1	7.1	2118	5.0	521	1011.03	1015.1	2359	1009.4	1439	0.7
14	10.03	15.3	1344	6.8	643	84.8	95.9	721	60.3	1345	7.5	6.4	7.3	1001	5.8	2210	1021.04	1024.3	2137	1014.9	3	0.2
15	9.08	13.5	1228	6.5	602	84.7	93.2	653	64.7	1229	6.6	6.0	6.6	1102	5.4	547	1025.03	1026.2	2127	1023.7	330	0.2
16	9.14	14.2	1125	4.8	507	83.4	97.7	745	54.2	1118	6.3	5.9	6.8	2354	5.1	1437	1024.89	1026.2	47	1023.5	2354	0
17	9.79	12.2	1319	7.1	2122	85.2	93.9	2215	70.2	1323	7.4	6.3	6.8	21	5.7	2104	1022.98	1024.3	2242	1021.8	1524	0
18	8.20	12.2	1354	2.4	637	90.7	97.8	755	71.2	1416	6.7	6.1	6.9	1259	4.3	637	1023.84	1025.5	945	1021.8	2348	0
19	11.26	16.1	1307	5.6	459	75.9	97.3	550	50.1	1310	6.8	6.1	7.0	1004	5.4	1147	1013.98	1021.9	3	1003.9	2342	0
20	14.94	18.2	1410	12.1	9	82.8	95.1	542	65.5	1416	12.0	8.8	9.7	1018	6.7	0	1000.75	1004.3	1	998.9	2339	1.7
21	13.97	15.6	1257	11.7	2300	93.7	98.2	1012	84.4	2155	13.0	9.4	10.8	1257	7.7	2257	996.96	1004.2	2354	990.8	952	15.8
22	12.61	15.9	1048	10.7	2359	84.5	94.4	2352	68.5	1259	10.0	7.6	8.3	852	7.2	1250	1008.24	1010.8	2058	1004.1	1	0.3
23	11.63	16.0	1315	5.9	2356	86.5	97.3	243	64.7	1319	9.4	7.4	8.8	1024	5.3	2356	1008.45	1010.9	2148	1006.5	1225	0
24	11.58	15.9	1420	6.0	0	90.0	94.6	1901	78.5	1419	10.0	7.8	9.6	1558	5.4	0	1001.23	1010.1	0	994.3	1937	23.8
25	8.96	12.7	1258	5.0	2221	87.0	96.7	2256	69.0	1432	6.8	6.3	7.1	16	5.2	2221	996.33	997.6	927	995.3	1527	1.1
26	8.40	13.7	1243	5.3	246	86.9	96.4	0	68.4	1256	6.3	6.0	7.4	1425	5.3	246	998.31	1002.2	2341	995.8	318	3.6
27	9.50	14.5	1434	6.4	21	89.2	94.7	239	72.2	1714	7.8	6.7	9.5	1425	5.6	18	998.36	1002.0	146	992.7	1400	1.3
28	9.22	13.7	1201	7.4	136	82.4	90.8	2005	65.2	1422	6.3	6.0	6.8	1130	5.5	2359	1002.89	1009.1	2359	1000.2	158	2.3
29	11.93	14.5	2023	7.6	18	87.0	94.0	1054	82.3	314	9.8	7.6	8.8	1256	5.4	4	1012.12	1013.7	803	1009.0	0	1.9
30	14.73	16.1	1244	14.0	2329	89.1	95.6	1936	82.8	800	12.9	9.2	9.8	1224	8.5	251	1016.21	1019.4	2054	1012.7	117	0.5
31	12.53	14.6	1328	9.4	1952	84.2	94.9	1234	66.0	1528	9.9	7.7	9.8	1328	5.7	2153	1011.12	1018.3	9	1005.1	1330	10.4
Total																						163.6
Mean	10.97	14.70		7.38		86.2	95.99		67.65		8.63	7.07	8.27		5.83		1008.21	1012.18		1004.35		
Max	14.94	18.15		13.96		96.3	98.70		92.50		12.97	9.43	10.79		8.55		1025.75	1027.29		1023.73		
Min	8.20	10.56		2.44		75.9	90.80		44.19		6.27	5.85	6.51		4.34		983.09	989.09		980.54		

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

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

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

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

## **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, 1<sup>st</sup> January to 31<sup>st</sup> 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  $-0.1^{\circ}\text{C}$  or below. A ground frost day is recorded when the grass minimum temperature read at 0900 GMT on that day is  $-0.1^{\circ}\text{C}$  or lower.

Duration of air frost is defined as the number of minutes that the AWS one minute average temperature is below  $0.0^{\circ}\text{C}$ , 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.

## 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 or 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 or 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.