

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 2018

Temperature (°C)		Anomaly	Rank in the past 137 years			
Mean maximum	10.2	+2.2	10 th highest			
Mean minimum	4.3	+2.2	14 th highest			
Daily mean	7.3	+2.3	10 th highest			
Highest maximum	14.9	on 2 nd	Lowest maximum	2.4	on 14 th	
Highest minimum	11.2	on 7 th	Lowest minimum	-4.5	on 14 th	
Mean grass minimum	1.4	+2.0	Lowest grass minimum	-8.6	on 14 th	
Mean earth @30 cm	7.9	+1.3	Earth @100 cm	9.7		
Frost duration (hrs)	29.7		Rain duration (hrs)	60.7		
Rainfall total (mm)	74.8	119%	40 th highest			
Highest daily fall	16.5	on 18 th	Highest rate mm/hr	26	on 7 th	
Number of: Dry days (<0.2mm)	15	Wet days (>0.9mm)	13	days ≥5mm	5	
Sunshine total (hrs) 68.4	Daily mean 2.21	102%	Sunniest day	7.1	on 13 th	
N° days with: Air frost 4	Ground frost 12	Snow falling 0	Snow lying 0			
Thunder 0	Hail ≥5mm 0	Small hail/ice 0	Fog @09 1	Nil sun 9		
Pressure MSL : Mean @09 GMT, mbar 1017.1	+1.4	Highest 1037.3	on 31 st	Lowest 995.0	on 2 nd	
Relative humidity : Mean (%) 89.1	Lowest 63	on 13 th	Water vapour (g/kg), mean at 09 and 15 GMT 5.8, 6.0			
Overall mean wind speed (mph) 7.3	Windiest day 15.3	on 8 th	Max gust 41	on 8 th		
Wind direction (days) N 0	NE 1	E 3	SE 2	S 8	SW 13	W 4
Least windy day (mph) 2.0	on 27 th	Calm; less than 0.5 mph (minutes) 663				

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

Notes :

Very Mild with Rainfall Above and Sunshine Near Average.

Temperature: This has been a very mild December overall with a brief cold snap near mid-month. The mean temperature, which ranks 10th highest since before 1882, is over 2° above the climatological average, but was exceeded as recently as 2015, which had the mildest December on record, and was 3.6° higher than this December. The highest max is 1.8° above the median and is 5th highest in 115 years. The lowest max is 0.8° above the median while the highest min is 1.9° above its median, and the lowest min is 0.7° above the median. The mean grass min is 2° above average and the mean earth temperature at 30cm depth is also well above average, but is closer to average at 1 m depth. The number of air frosts is 6 fewer than average, and the duration of air frost is 62.4 hours below average. Anomalies for daily max were over 4° above normal on the 1st to 3rd, 6th, 20th, 21st, 23rd and 29th, reaching 6.0° above on the 2nd. Only 7 days had negative anomalies, mostly small, the greatest being -5.8° on the 14th. Anomalies for daily min were also above +4° on the 2nd, 3rd, 6th to 10th, 19th to 22nd and 29th to 31st, reaching +9.1° on the 7th. Anomalies were negative on 12 days, and over -4° on the 4th and 14th, reaching -6.4° on the latter date. **Rainfall:** This December has seen an 19 % excess of rain, just sufficient to put it into the wet category. Compared with recent years, since 2000 7 Decembers have been wetter and 11 drier. The number of dry days is exactly average. Rainfall duration was also not far from average, just 5.2 hours or 9 % above. Rainfall rate exceeded the heavy shower threshold, (10 mm/hr), on 7 days with the highest of 26 mm/hr on the 7th. There was no thunder, hail or snow this month, and since 1976 13 other Decembers have been snow-less, the last one to have significant snowfall being in 2010. Compared with normal, daily accumulation was close to level-pegging until the 5th, becoming 7 mm in surplus by the 8th, becoming 4 mm in deficit by the 14th then increasing to 28 mm in surplus by the 23rd, decreasing to 14 mm by the 31st. **Sunshine:** This has been a sunnier than average December, but not by much, just 102 % of the average for the past 20 years. In that time, 9 Decembers have been sunnier and 9 less sunny than this year's. Overall there were 20 days with <3 hours, and 3 with =>6 hours. Daily accumulation compared with normal was 5 hr in deficit by the 7th, becoming a surplus of 6 hr by the 14th then increasing steadily to 12 hr by the 24th, but ending the month with a surplus of just 1 hr. **Wind:** The mean wind speed is close to average but the month's highest gust is 6 mph below average. Daily mean directions were between S and W until the 10th and from the 16th to 31st, but were NE'y on the 24th, and were E or SE from the 11th to 15th. Speeds were mainly moderate or fresh to the 7th, increasing to strong for the 8th and 9th, then falling light until the 14th, increasing moderate or fresh until the 23rd, temporarily strong on the 21st, then falling light or very light to the 31st, apart from moderate on the 29th.

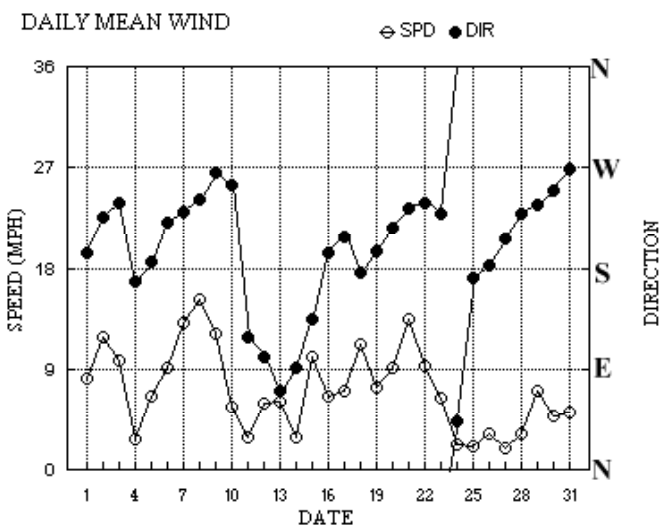
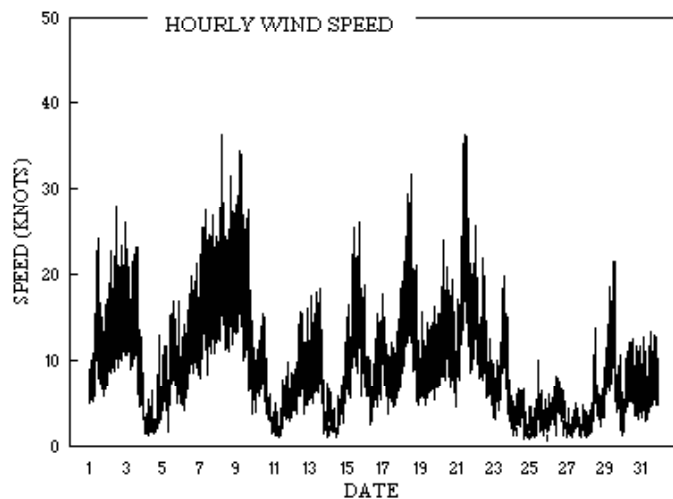
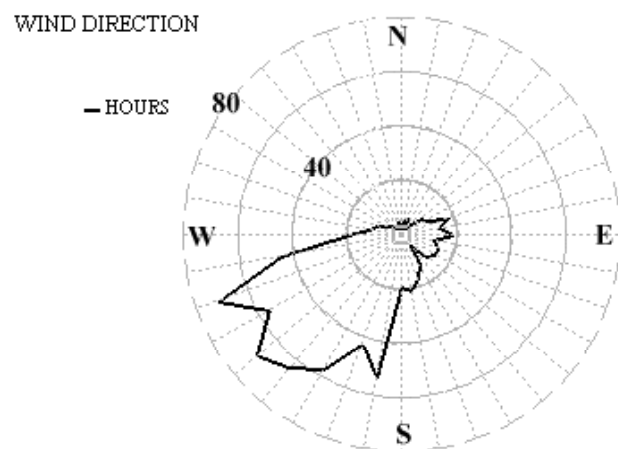
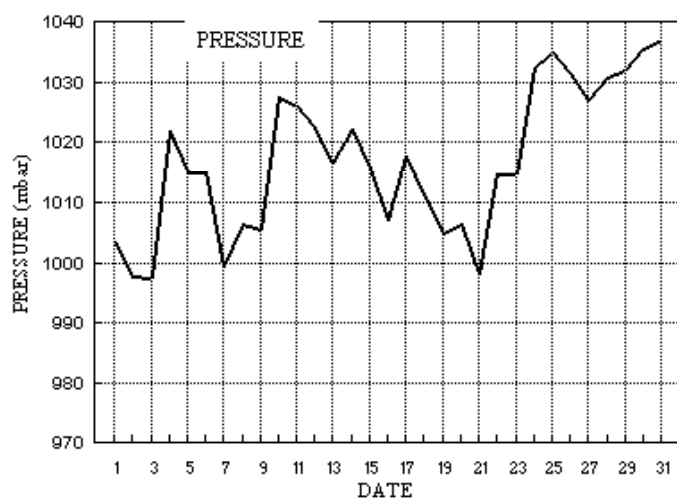
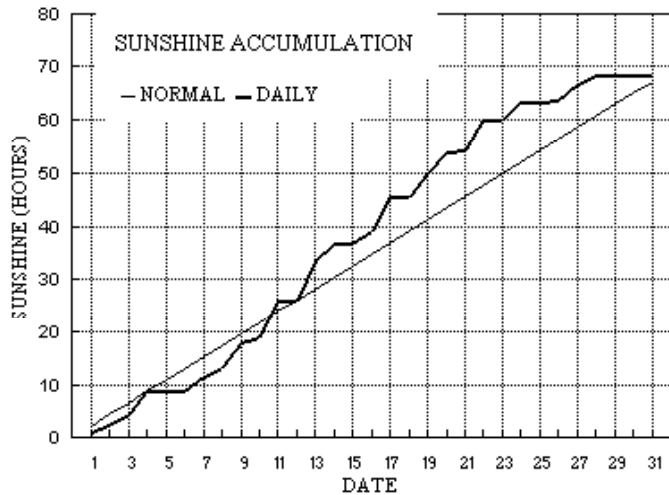
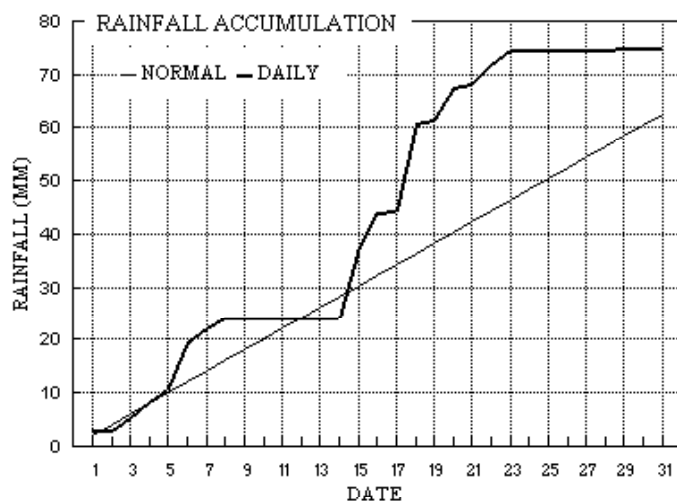
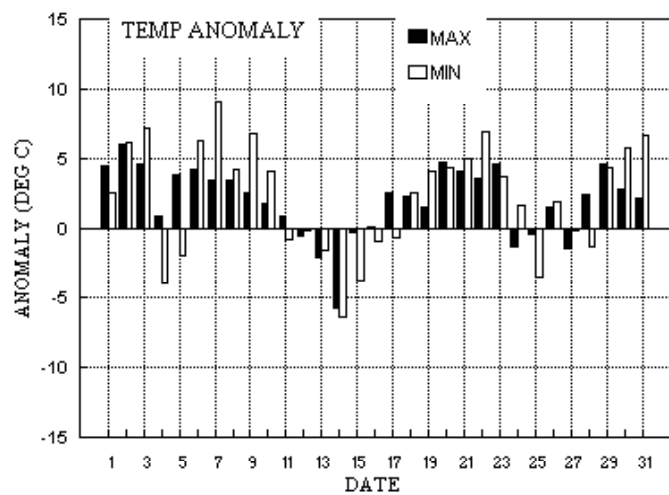
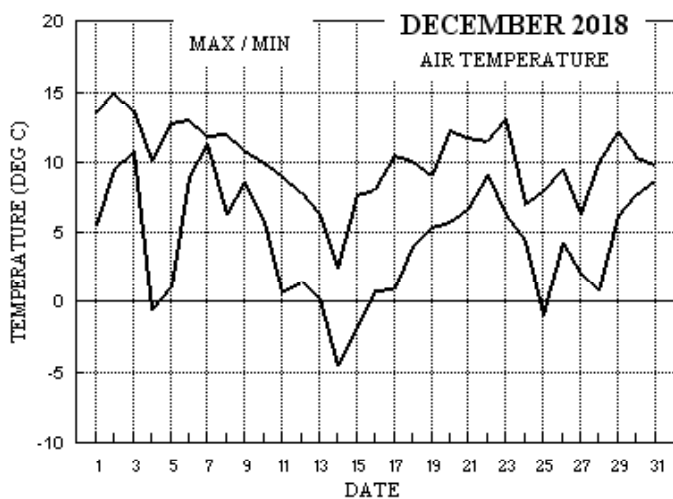
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 st to the 10 th				From the 11 th to the 20 th				From the 21 st to the 31 st			
+3.5°	+4.1°	119%	88%	+0.3°	-0.3°	213%	161%	+2.1°	+2.8°	35%	60%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

Wokingham climatological graphs for December 2018



Month: DECMEBER 2018

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 mean ddd ff sp	Max gust ddd gg HHhh	High hr ddd ff	Rain HH hrs											
1	13.5	5.5	3.1	-0.1	8.7	10.5	1.0	0.0	1003.4	0	1	0	0	0	0	0	0	193	6.6	7.1	162	24	1102	183	11	11	3.3	
2	14.9	9.5	tr	7.4	9.2	10.5	1.6	0.0	997.8	0	0	0	0	0	0	0	0	226	10.3	10.3	229	28	1136	234	13	11	0.0	
3	13.7	10.7	2.1	8.2	9.8	10.5	2.0	0.0	997.6	0	0	0	0	0	0	0	0	239	7.6	8.5	263	23	1508	233	12	00	1.4	
4	10.1	-0.6	3.2	-4.6	9.5	10.5	4.3	2.5	1021.9	1	1	0	0	0	0	0	0	168	1.5	2.4	195	13	1906	201	6	19	8.0	
5	12.8	1.0	2.4	4.1	8.8	10.6	0.0	0.0	1015.2	0	0	0	0	0	0	0	0	185	3.3	5.7	256	17	2151	188	8	14	2.5	
6	13.0	8.9	8.6	2.7	9.2	10.5	0.0	0.0	1015.2	0	0	0	0	0	0	0	0	220	7.9	7.9	217	21	2019	225	10	19	6.7	
7	11.9	11.2	2.7	11.3	9.8	10.5	2.5	0.0	999.4	0	0	0	0	0	0	0	0	230	10.8	11.4	267	28	0927	209	13	05	1.6	
8	12.0	6.3	2.0	3.4	9.5	10.5	2.0	0.0	1006.4	0	0	0	0	0	0	0	0	242	13.1	13.3	261	36	0550	254	17	05	0.9	
9	10.9	8.6	0.1	6.2	9.3	10.6	4.4	0.0	1005.5	0	0	0	0	0	0	0	0	266	9.9	10.6	257	35	0518	255	16	06	0.2	
10	10.0	5.8	0.0	0.3	9.0	10.5	1.3	0.0	1027.7	0	0	0	0	0	0	0	0	254	4.4	4.9	263	16	1058	263	7	10	0.0	
11	9.1	0.7	0.0	-3.1	8.7	10.5	6.8	0.0	1026.0	0	1	0	0	0	0	0	0	119	1.8	2.5	102	10	1911	109	5	19	0.0	
12	7.8	1.4	0.0	-0.7	8.2	10.4	0.3	0.0	1022.5	0	1	0	0	0	0	0	0	102	4.9	5.2	98	16	2251	118	8	14	0.0	
13	6.3	0.1	0.0	-5.8	7.7	10.3	7.1	5.4	1016.6	0	1	0	0	0	0	0	0	71	5.1	5.3	71	19	1325	72	8	08	0.0	
14	2.4	-4.5	tr	-8.6	6.6	10.2	3.4	16.6	1022.3	1	1	0	0	0	0	0	0	92	1.8	2.6	105	12	2355	111	6	23	0.0	
15	7.7	-1.9	13.3	-6.9	5.9	10.0	0.0	0.0	1015.8	1	1	0	0	0	0	0	0	135	7.3	8.8	159	26	1810	153	13	18	7.5	
16	8.1	0.8	6.6	-3.4	6.0	9.7	2.4	0.0	1007.1	0	1	0	0	0	0	0	0	193	4.8	5.7	241	18	2319	237	10	23	3.0	
17	10.5	0.9	0.1	-2.8	6.2	9.4	6.4	0.0	1017.6	0	1	0	0	0	0	0	0	208	5.8	6.1	174	18	2206	245	10	00	0.0	
18	10.1	4.0	16.5	6.1	6.5	9.2	0.0	0.0	1011.1	0	0	0	0	0	0	0	0	176	9.4	9.8	149	32	1225	156	14	12	9.2	
19	9.1	5.4	0.7	0.3	7.0	9.1	4.4	0.0	1004.8	0	0	0	0	0	0	0	0	195	6.3	6.4	185	16	1946	202	8	23	1.0	
20	12.3	5.8	6.2	2.2	6.9	9.0	4.1	0.0	1006.5	0	0	0	0	0	0	0	0	216	7.8	8.0	236	24	0603	225	10	12	6.1	
21	11.8	6.7	0.5	5.2	7.2	9.0	0.2	0.0	998.2	0	0	0	0	0	0	0	0	234	11.2	11.7	252	36	1144	247	18	12	0.3	
22	11.5	9.1	3.8	5.5	7.7	9.0	5.8	0.0	1014.9	0	0	0	0	0	0	0	0	238	7.9	8.1	250	26	0058	245	13	00	4.4	
23	13.0	6.3	2.6	1.4	7.6	9.0	0.0	0.0	1014.8	0	0	0	0	0	0	0	0	229	2.9	5.6	245	20	1507	250	9	15	3.8	
24	7.1	4.4	0.0	2.6	7.9	9.0	3.6	3.3	1032.3	0	0	0	0	0	0	0	0	44	1.8	2.0	103	7	1525	80	3	15	0.0	
25	8.0	-1.0	0.2	-4.3	7.2	9.1	0.0	1.9	1035.1	1	1	0	0	0	0	0	0	172	1.2	1.9	194	10	1131	188	4	11	0.8	
26	9.5	4.2	tr	5.3	7.4	9.1	0.1	0.0	1031.3	0	0	0	0	0	0	0	0	183	2.6	2.8	174	8	1146	191	4	12	0.0	
27	6.3	2.1	0.0	-1.1	7.4	9.0	3.0	0.0	1026.9	0	1	0	0	0	0	1	0	207	0.9	1.7	254	5	1203	189	3	13	0.0	
28	10.0	0.8	tr	-2.8	7.2	9.0	1.7	0.0	1030.8	0	1	0	0	0	0	0	0	228	2.6	2.8	269	14	1321	262	6	13	0.0	
29	12.1	6.2	0.1	7.6	7.6	9.0	0.0	0.0	1032.1	0	0	0	0	0	0	0	0	237	5.9	6.1	242	22	1310	246	10	13	0.0	
30	10.4	7.7	tr	0.7	7.8	9.0	0.0	0.0	1035.5	0	0	0	0	0	0	0	0	249	3.9	4.2	292	13	1546	255	6	09	0.0	
31	9.9	8.7	0.0	7.7	8.2	9.0	0.0	0.0	1037.0	0	0	0	0	0	0	0	0	268	4.5	4.6	269	13	1302	262	6	21	0.0	
Total			74.8				68.4	29.7																				60.7
Mean	10.2	4.3		1.4	7.9	9.7	2.21	1.0	1017.1									217	4.2	6.3								
Anom	+2.2	+2.2	119%	+2.0	+1.3	+0.4	124%			+1.4																		
Daily mean		7.3																										
Anom		+2.3																										

Number of days with:

Air frost = 4 Ground frost = 12 Nil sun = 9
 Snow falling = 0 Snow lying = 0 Thunder = 0
 Hail=>5mm = 0 Hail<5mm or ice = 0 Fog at 09GMT = 1

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.

Anom = Departure from 1981-2010 climatological average.

All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for DECEMBER 2018

Date	VV	N	dd	ff	gg	TT	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	Nh	Ch	Nh	Ch	Date	Remarks
1	56	8	16	09	19	9.5	8.9	96	7.1	1003.4	7	034	63	6	6	7	7	3	2	/	85707	87712	88540	1		
2	30	7	23	09	22	12.9	12.1	95	8.9	997.8	2	014	52	5	2	7	7	2	/	/	85705	88712		2		
3	65	5	22	09	22	12.4	9.6	83	7.5	997.6	7	011	25	8	2	4	5	4	3	4	82618	83635		3	2Ac66 2Ci72	
4	80	2	21	01	03	1.0	1.0	100	4.0	1021.9	1	029	02	0	0	0	0	9	0	1	82070			4	COTRA Hoar mod	
5	40	8	18	04	08	10.1	9.9	99	7.6	1015.2	6	014	28	5	4	8	5	2	/	/	82705	86612	88650	5		
6	70	8	23	07	14	11.2	9.9	92	7.6	1015.2	3	008	02	2	2	7	6	4	2	/	87710	88465		6		
7	57	8	21	11	22	11.9	11.1	95	8.3	999.4	7	037	63	6	6	7	7	3	2	/	83709	87712	88520	7		
8	73	2	25	15	28	9.2	4.8	74	5.4	1006.4	0	011	02	0	0	2	8	5	0	0	81825			8	2Sc45 Cu hum	
9	75	7	26	11	24	9.5	6.6	82	6.1	1005.5	2	041	25	8	2	7	8	4	/	3	81715	84630		9	2Cu020 2Sc045 /Ci200 Cu med	
10	82	7	25	07	14	7.0	4.5	84	5.1	1027.7	2	014	02	2	2	7	5	6	/	/	81635	87640		10		
11	35	1	22	01	02	1.4	1.3	99	4.1	1026.0	8	004	10	0	0	1	5	6	0	1	81635			11	1Ci80 COTRA	
12	58	6	10	05	10	6.3	5.4	94	5.5	1022.5	1	011	05	2	2	4	8	5	3	1	81828	84638	86075	12	2Ac65 COTRA	
13	58	7	07	09	18	1.2	0.0	92	3.8	1016.6	3	007	05	2	2	0	0	9	0	1	83075	87080		13	COTRA Hoar slt	
14	57	4	33	01	05	-1.6	-2.0	97	3.2	1022.3	5	007	10	1	1	2	5	6	0	1	82635	83080		14	COTRA Hoar mod	
15	59	8	12	10	21	2.4	-1.2	77	3.5	1015.8	7	022	60	6	2	2	7	4	2	/	82715	88550		15		
16	75	1	17	03	05	0.9	0.5	97	3.9	1007.1	1	008	03	0	0	0	0	9	0	3	81068			16	1Cs75 Cb topSSW Frzn dew	
17	75	4	22	05	11	4.0	3.4	96	4.8	1017.6	1	028	03	0	0	1	5	6	3	1	81640	84081		17	1Ac58 COTRA Hoar slt	
18	70	8	18	11	26	9.7	6.4	80	6.0	1011.1	7	016	21	6	2	5	5	4	7	7	82618	84650	85362	18	8Cs70	
19	82	6	21	05	12	6.7	6.0	95	5.8	1004.8	3	016	25	8	2	4	5	4	0	3	81712	83650	85068	19	2Sc40 jpE	
20	70	1	23	10	17	6.7	5.3	91	5.6	1006.5	3	019	03	8	1	1	8	5	6	0	81820			20	1Sc45 1Ac62 Cu med	
21	70	7	25	17	30	11.6	9.0	84	7.2	998.2	3	030	25	8	6	4	8	4	0	8	83812	87275		21	2Sc40 COTRA Cu med	
22	68	5	23	08	14	9.1	7.1	87	6.2	1014.9	3	026	01	8	1	2	1	5	0	8	82820	84278		22	COTRA Cu hum	
23	59	8	19	06	09	9.5	9.2	98	7.2	1014.8	6	021	20	6	5	8	5	3	/	/	87706	88612		23		
24	35	7	05	03	07	4.6	4.5	99	5.1	1032.3	1	025	10	2	2	5	0	9	7	8	82360	85362	87275	24	COTRA	
25	50	8	24	01	04	4.3	4.2	99	5.0	1035.1	2	002	10	2	2	8	5	4	/	/	88618			25		
26	40	7	19	04	07	7.6	7.2	97	6.2	1031.3	8	003	10	5	2	2	5	5	3	8	82628	87273		26	1Ac67 COTRA	
27	01	9	32	02	03	2.4	2.4	100	4.4	1026.9	2	005	45	4	4	9	/	/	/	/				27	Vis 120m	
28	70	7	22	02	04	6.2	5.9	98	5.7	1030.8	2	018	02	2	2	7	5	5	/	/	87628			28	Sc edge W	
29	72	8	21	08	16	9.3	7.4	88	6.3	1032.1	7	001	02	2	2	8	5	4	/	/	88611			29		
30	58	8	25	06	11	9.1	8.8	98	6.9	1035.5	2	006	10	2	2	8	6	2	/	/	88704			30		
31	86	7	30	02	06	8.9	6.0	82	5.7	1037.0	1	009	02	2	2	7	5	5	/	/	87620			31		

Mean vis = 16.4 km

Mean cloud = 6.1 76%

Mean wind speed = 6.5 kn

Mean gust = 13 kn

Mean TT = 6.9 °C

Mean TdD = 5.7 °C

Mean RH = 91.9 %

Mean r = 5.8 g/kg

Mean PPP = 1017.1 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

TdD = 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 2018

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ci	NChs	hshs	NChs	Date	Remarks
1	84	6	21	10	16	12.6	11.2	91	8.3	999.0	7	014	21	6	2	1	8	4	0	8	81812	86080	1	1Sc20 1Cs75 COTRA Cu hum Parhelion	
2	82	7	22	09	19	13.5	11.7	89	8.7	998.1	8	005	20	5	2	7	5	4	7	/	83612	87620	2	/Ac65	
3	40	7	27	11	23	11.3	9.7	90	7.6	999.9	3	029	81	8	2	7	8	4	/	/	81710	85818	87645	3	Cu med
4	77	8	09	01	03	6.5	4.3	86	5.1	1023.1	6	003	14	2	2	8	0	9	2	/	88462		4		
5	50	8	19	08	17	11.8	10.9	94	8.1	1009.8	7	026	63	6	2	7	7	3	2	/	83707	87712	88540	5	
6	81	8	21	09	20	12.5	10.2	86	7.7	1014.0	6	011	03	2	2	8	5	4	/	/	87711	88656	6		
7	82	2	25	13	23	9.0	3.6	69	5.0	1002.3	2	016	15	1	1	2	8	6	6	0	82830		7	1Sc50 1Ac62 Cu med Cb top N jpW	
8	80	6	25	10	25	11.8	9.4	85	7.4	1000.3	6	041	25	8	2	5	8	4	6	0	82812	83650	8	3Ac58 Cu hum	
9	86	6	29	11	27	10.7	9.6	66	5.2	1014.6	2	039	03	1	1	6	8	6	0	0	83833	85640	9	Cu med	
10	80	7	28	05	11	8.9	4.1	72	5.0	1028.2	3	002	02	2	2	2	8	5	7	/	81820	87360	10	2Sc45	
11	62	2	13	03	07	8.3	4.3	76	5.1	1023.3	8	016	03	0	0	2	0	9	3	1	82365		11	1Ci80 COTRA	
12	68	4	12	08	16	5.8	-0.3	65	3.7	1021.0	6	015	01	1	1	3	5	6	0	1	83635		12	2Ci78	
13	75	3	07	06	16	3.2	-1.0	74	3.5	1017.3	3	006	01	1	1	1	1	5	0	1	81825	83080	13	1Ci75 COTRA Cu fra	
14	56	5	10	02	05	1.2	-0.7	87	3.6	1023.3	6	005	05	1	1	1	5	6	0	2	81640	84075	14	COTRA	
15	35	8	12	10	22	3.0	2.4	96	4.5	1006.4	7	049	63	6	6	7	7	3	2	/	87708	88520	15	Past hvy ra	
16	67	8	14	05	10	7.7	6.2	90	5.9	1005.3	6	015	03	8	2	1	5	5	7	/	81620	88462	16	1Sc56 2Ac58	
17	70	7	19	05	12	9.1	6.4	83	5.9	1018.4	5	002	03	2	2	1	5	4	1		81625	87080	17	1Ac68 2Ci75 COTRA	
18	58	8	17	11	21	8.4	6.4	87	6.0	1004.6	7	029	63	6	2	7	7	4	2	/	86715	83650	88556	18	
19	82	7	20	06	14	7.7	5.0	83	5.4	1005.1	6	008	15	1	1	1	9	5	6	3	81925	86075	19	1Sc50 1Ac62 2Ci70 jpS Parhelion	
20	68	8	21	08	17	9.3	6.0	80	5.8	1007.7	2	001	80	8	2	5	8	5	7	/	81825	83640	86656	20	/Ac65 Cu med
21	67	6	25	15	26	11.3	5.6	68	5.7	1004.3	3	033	02	2	2	6	5	6	4	0	86630		21	1Ac68	
22	70	6	25	07	15	10.0	6.5	79	6.0	1018.7	2	020	02	1	1	1	8	5	0	8	81822	86278	22	1Sc45 COTRA Cu hum	
23	65	8	24	10	19	12.9	11.5	91	8.4	1015.1	3	007	15	2	2	7	5	4	7	/	85612	87620	23	/Ac62 /As65 jpNW vv40k ex p	
24	50	5	06	03	06	5.8	4.9	94	5.3	1033.8	3	002	05	2	2	1	0	9	3	1	81362	85073	24	COTRA	
25	56	8	14	03	06	8.0	6.8	92	6.0	1033.6	6	008	20	5	2	8	5	4	/	/	88615		25		
26	61	7	21	03	07	9.2	7.5	89	6.3	1029.8	6	009	02	2	2	7	5	4	/	/	83610	87625	26		
27	04	6	20	03	04	5.0	4.7	98	5.2	1026.0	5	005	41	4	2	1	5	6	0	1	81630	86078	27	2Ci68 COTRA vv2km N	
28	65	8	25	05	09	8.9	6.2	83	5.8	1031.9	3	012	02	2	2	8	5	5	/	/	88623		28		
29	81	7	25	09	22	11.7	9.6	87	7.3	1031.5	3	002	01	2	2	1	8	4	3	1	81812	87075	29	1Sc20 2Ac68 COTRA Cu fra	
30	65	8	26	05	11	10.2	8.6	90	6.8	1035.5	5	001	02	5	2	8	6	5	/	/	88710		30		
31	82	8	26	06	13	9.6	5.2	74	5.4	1035.8	7	004	02	2	2	8	5	5	/	/	88620		31		

Mean vis = 21.5 km

Mean cloud = 6.5 81%

Mean wind speed = 7.1 kn

Mean gust = 15 kn

Mean TT = 8.9 °C

Mean TdTd = 6.3 °C

Mean RH = 83.7 %

Mean r = 6.0 g/kg

Mean PPP = 1016.7 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 2018	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	0.30	0.75	0.00	0.00	0.00	0.37	0.00	0.00	0.51	0.00	0.55	0.39	0.00	0.46
	9	0.00	0.09	0.67	1.00	0.00	0.00	0.00	0.63	0.02	0.00	1.00	0.00	1.00	1.00	0.00	1.00
	10	0.00	0.49	0.00	1.00	0.00	0.00	0.00	0.44	0.72	0.00	1.00	0.00	1.00	0.19	0.00	0.97
	11	0.00	0.50	0.14	1.00	0.00	0.00	0.00	0.00	0.66	0.75	1.00	0.00	0.95	0.47	0.00	0.00
	12	0.00	0.53	0.53	0.38	0.00	0.00	0.74	0.01	1.00	0.35	1.00	0.00	1.00	0.04	0.00	0.00
	13	0.00	0.00	0.37	0.20	0.00	0.00	0.72	0.00	0.82	0.14	1.00	0.00	1.00	0.80	0.00	0.00
	14	0.52	0.00	0.02	0.00	0.00	0.00	0.75	0.19	0.86	0.00	1.00	0.23	1.00	0.48	0.00	0.00
	15	0.44	0.00	0.00	0.00	0.00	0.00	0.28	0.31	0.25	0.10	0.31	0.04	0.60	0.00	0.00	0.00
	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		0.95	1.61	2.03	4.34	0.00	0.00	2.51	1.95	4.35	1.34	6.82	0.25	7.10	3.39	0.00	2.42

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	0.47	0.00	0.00	0.45	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14
9	1.00	0.00	0.30	0.99	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30
10	1.00	0.00	0.99	0.93	0.00	0.97	0.00	0.00	0.00	0.04	0.00	0.21	0.00	0.00	0.00	0.32
11	1.00	0.00	0.42	0.91	0.07	0.88	0.00	0.34	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.29
12	1.00	0.00	0.81	0.74	0.00	0.82	0.00	1.00	0.00	0.00	0.36	1.00	0.00	0.00	0.00	0.36
13	1.00	0.00	1.00	0.10	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.46	0.00	0.00	0.00	0.34
14	0.86	0.00	0.66	0.00	0.02	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.31
15	0.04	0.00	0.25	0.00	0.05	0.31	0.00	0.22	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.12
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	6.36	0.00	4.44	4.11	0.15	5.77	0.00	3.56	0.00	0.04	2.95	1.71	0.00	0.00	0.00	68.12

DECEMBER 2018	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	10.03	13.0	1412	5.7	0	92.5	97.0	1331	86.0	226	8.9	7.2	9.0	1335	5.1	2	1002.62	1011.2	0	996.3	2359	7.8
2	13.32	14.9	1222	12.0	0	90.2	96.7	33	76.7	1225	11.7	8.7	9.1	311	7.6	2357	997.44	999.0	2353	995.0	326	0.7
3	10.54	13.7	1219	4.8	2356	85.2	94.4	2252	74.7	1954	8.1	6.8	8.6	1203	4.9	2356	1001.81	1013.3	2359	996.8	1204	2
4	3.94	7.5	1307	-0.6	735	92.6	100.0	741	78.0	1403	2.8	4.6	5.3	1250	3.6	735	1021.04	1024.2	1946	1013.2	0	1.3
5	9.94	12.8	1221	5.3	57	95.6	99.6	807	87.4	1323	9.3	7.3	8.5	2013	5.3	21	1013.62	1021.4	0	1008.7	1651	3.5
6	11.63	13.0	2205	8.9	136	92.1	96.9	148	82.8	1346	10.4	7.8	8.7	2358	6.8	136	1013.72	1015.9	904	1010.6	2357	0.6
7	9.74	12.8	128	6.3	1858	84.7	96.9	400	64.1	1418	7.2	6.5	8.8	102	4.4	1702	1004.01	1010.8	2	999.1	918	8.6
8	9.54	12.2	1422	7.1	21	76.7	87.6	1903	66.7	558	5.6	5.7	7.6	1432	4.9	558	1002.87	1006.8	742	998.8	1901	2.2
9	9.18	10.9	1246	5.8	2353	75.8	88.7	2224	63.2	1530	5.1	5.5	6.2	837	4.9	1547	1010.65	1023.6	2359	999.9	352	0.1
10	7.29	10.0	1205	3.5	2356	82.1	95.5	2358	69.1	1206	4.4	5.1	5.3	1139	4.5	2303	1027.24	1028.9	1717	1023.5	1	0
11	4.47	9.1	1340	0.7	816	92.6	99.5	818	73.0	1408	3.3	4.8	5.7	1310	3.9	801	1024.86	1028.1	2	1022.2	2136	0
12	4.68	7.8	1214	1.0	2354	84.4	96.9	218	63.4	1434	2.2	4.5	5.5	918	3.3	2056	1021.16	1022.6	1020	1018.0	2347	0
13	1.12	6.3	1207	-3.1	2357	86.1	97.0	2239	62.6	1256	-1.0	3.5	4.1	1138	2.9	2357	1017.80	1021.7	2344	1015.6	506	0
14	-1.22	2.3	1311	-4.5	458	92.2	98.2	348	79.1	2352	-2.4	3.2	3.9	1310	2.6	458	1023.05	1024.3	1047	1021.4	14	0
15	3.37	7.7	2118	0.6	45	85.8	98.3	2042	73.9	206	1.2	4.2	6.2	2052	3.0	143	1011.09	1022.1	0	1000.8	1845	12.1
16	6.13	8.1	1610	0.8	839	92.1	98.6	906	84.2	2	4.9	5.4	6.4	1646	3.9	809	1005.93	1008.5	2358	1004.0	0	6.2
17	7.10	10.3	2357	2.7	713	89.8	97.5	732	77.2	1324	5.5	5.6	6.8	2357	4.4	713	1016.41	1018.9	1753	1008.5	0	0
18	8.96	10.5	536	5.4	2247	87.0	96.9	2303	75.0	1356	6.9	6.2	6.8	0	5.4	2246	1008.18	1016.9	24	1001.2	1955	9.9
19	7.16	9.1	1313	5.7	15	91.0	97.2	230	79.0	1411	5.8	5.8	6.3	1039	5.3	1803	1004.42	1006.2	1046	1003.0	521	5.9
20	7.94	10.1	1208	5.8	303	85.8	97.0	2358	77.7	1358	5.7	5.7	7.1	2358	5.1	253	1005.95	1007.9	1124	1002.1	2359	1.5
21	11.03	12.3	551	9.3	3	83.6	98.0	108	66.6	1249	8.2	6.9	8.7	710	5.7	1503	1001.65	1007.1	2358	995.1	610	4.5
22	9.36	11.5	1235	6.7	2335	84.4	94.3	2338	72.3	1353	6.8	6.1	6.9	2	5.6	2323	1016.19	1021.9	2116	1006.7	1	0.1
23	9.08	13.0	1437	6.2	2357	95.5	97.9	819	90.3	1512	8.4	6.8	8.5	1347	5.6	157	1018.11	1025.5	2359	1014.3	1304	5.9
24	3.85	7.1	1300	-1.0	2328	97.9	100.0	2347	90.4	1330	3.5	4.8	5.7	1250	3.4	2326	1032.29	1036.0	2309	1025.4	105	0
25	5.10	8.0	1526	-1.0	0	96.9	100.0	37	90.3	1202	4.6	5.2	6.1	2025	3.4	0	1034.30	1035.7	0	1032.7	2355	0
26	7.43	9.5	1255	3.1	2348	95.1	99.0	2351	87.6	1606	6.7	6.0	6.7	1115	4.6	2359	1030.47	1032.8	0	1027.9	2341	0.1
27	3.08	5.8	1311	0.8	1849	99.5	100.0	1906	97.7	1512	3.0	4.6	5.6	1311	4.0	1849	1026.82	1028.0	19	1025.5	1354	0.1
28	7.36	10.0	1239	4.2	0	91.3	99.2	15	74.7	1317	6.0	5.7	6.2	2321	5.0	12	1031.02	1034.3	2225	1027.4	0	0
29	9.51	12.1	1427	7.7	2248	91.0	99.3	2353	83.5	607	8.1	6.6	7.4	1343	5.9	611	1032.96	1035.6	2352	1030.5	1334	0
30	9.32	10.4	1643	7.9	4	93.9	100.0	337	84.8	2124	8.4	6.7	7.0	551	6.3	2224	1035.55	1036.2	2237	1034.4	514	0.1
31	9.13	9.9	1241	8.5	2211	79.8	89.2	246	71.9	1406	5.8	5.6	6.4	1	5.1	2357	1036.03	1037.3	934	1035.1	2230	0
Total																						73.2
Mean	7.39	10.05		4.07		89.1	97.01		77.55		5.65	5.78	6.81		4.72		1017.07	1021.38		1012.70		
Max	13.32	14.92		11.95		99.5	100.00		97.70		11.73	8.67	9.14		7.63		1036.03	1037.33		1035.09		
Min	-1.22	2.29		-4.52		75.8	87.60		62.57		-2.35	3.17	3.87		2.58		997.44	999.05		994.98		

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

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.

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.