

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

SEPTEMBER 2017

		Anomaly	Rank in the past 136 years				
Temperature (°C)							
Mean maximum	18.6	-0.8	59 th lowest				
Mean minimum	9.8	-0.2	43 rd highest				
Daily mean	14.2	-0.5	64 th highest				
Highest maximum	22.4	on 4 th	Lowest maximum	15.7	on 16 th		
Highest minimum	15.6	on 5 th	Lowest minimum	3.5	on 22 nd		
Mean grass minimum	6.6	-0.1	Lowest grass minimum	-0.7	on 22 nd		
Mean earth @30 cm	16.6	+0.2	Earth @100 cm	16.7			
Frost duration (hrs)	0.0		Rain duration (hrs)	53.0			
Rainfall total (mm)	69.7	130 %	37 th highest				
Highest daily fall	13.4	on 24 th					
Number of: Dry days (<0.2mm)	11	Wet days (>0.9mm)	18	days ≥5mm	5		
Sunshine total (hrs)	132.7	Daily mean	4.42	93 %	Sunniest day	10.5 on 1 st , 2 nd	
N° days with: Air frost	0	Ground frost	1	Snow falling	0	Snow lying	0
Thunder	1	Hail ≥5mm	0	Small hail/ice	1	Fog @09	0
						Nil sun	1
Pressure MSL: Mean @09 GMT, mbar	1014.0	-2.7	Highest	1023.9	on 2 nd	Lowest	990.8 on 11 th
Relative humidity: Mean (%)	83.5	Lowest	38 on 1 st	Water vapour (g/kg), mean at 09 and 15 GMT			
				8.5,	8.1		
Overall mean wind speed (mph)	6.0	Windiest day	13.8 on 13 th	Max gust	59	on 13 th	
Wind direction (days)	N 1	NE 2	E 0	SE 3	S 6	SW 11	W 3
						NW 4	
Least windy day (mph)	2.6	on 26 th	Calm; less than 0.5 mph (minutes)				591

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

Notes:

Cooler, Wetter and Duller than Average.

Temperature: This has been a cool September, but not as cool as in 2015. In terms of the mean maximum, this month was nearly 1° below average, but for the mean minimum the anomaly was only -0.2°. In recent years, since 2000, only 4 Septembers have been colder. The daily mean temperature range of 8.8° is lowest for the month since 2001. The highest max is 2.1° below the long-term median, while the lowest max is 1.8° above its median. The highest min is 0.4° above the median and the lowest min is 0.6° above its median. There was not even a hint of a warm spell, and the highest max of 22.4° can be compared with at least 26.4° reached in 30% of Septembers since 1904, and the 30.5° recorded on the 13th last year. Daily max was below normal on 21 days, including each day from the 5th to the 22nd, and was above on 5 of the last 7 days in the month. However, the range of anomalies was small, from -3.5° on the 10th to +3.6° on the 24th. Daily min showed greater variability, with anomalies around +5° on the 5th and 25th, and exceeding -5° on the 17th and 22nd. The mean grass min, the lowest grass min and the mean earth temperatures are all close to average. The first ground frost of the season was on the 22nd after a frost free period of 133 days. **Rainfall:** This September's rainfall is in the wet category, and apart from 2016 is wettest since 2000. The number of wet days, (days with 1 mm or more), is highest since 1974, and the 11 dry days is lowest since 1999, and before that, 1974, the average being 18.5 days. The month's highest daily fall was low for such a wet month, being 6 mm below average. Rainfall duration was 149 % of average and is highest since 2000. The highest rainfall rate was 123 mm/hr in a thunderstorm on the 9th during which ice pellets also fell. Daily rainfall accumulation compared with normal showed a deficit of 5 mm by the 6th, falling to zero by the 9th where it remained until the 17th, becoming a surplus of 6 mm on the 18th, back to zero on the 23rd, then increasing to a surplus of 15 mm by the 30th. **Sunshine:** The total is slightly below average, and is just 2 hours more than in September 2016. There were 8 days when we had over 60 % of the maximum, but also 16 days with less than 30 %. The total on the month's sunniest days, 10.5 hours, is lowest since 2001. Over 13 hours is possible at the start of September, as was seen in 2010 and 2013. The month got off to a sunny start, with an accumulated surplus of 10 hours by the 2nd, though falling back to zero by the 5th and remaining within 5 hours of normal up to the 25th but showing a deficit of 10 hours on the 30th. Overall there were 13 days with <3 hours, 9 with =>6 hours and 3 with =>9 hours. **Wind:** The mean wind speed this month is close to average, but both the highest gust of 59 mph and the highest hourly mean of 24 mph recorded on the 13th are new records for September. Winds were light on the 1st and 2nd then mainly moderate until the 9th, then fresh to the 12th, increasing to very strong on the 13th, after which they were mainly light, occasionally moderate. Directions were N'ly on the 1st backing SE'ly by the 3rd, becoming SW'ly from the 5th to the 13th, veering NW'ly by the 16th, backing W'ly by the 19th, then gradually backing through S to NE'ly by the 25th before veering SW'ly by the 28th.

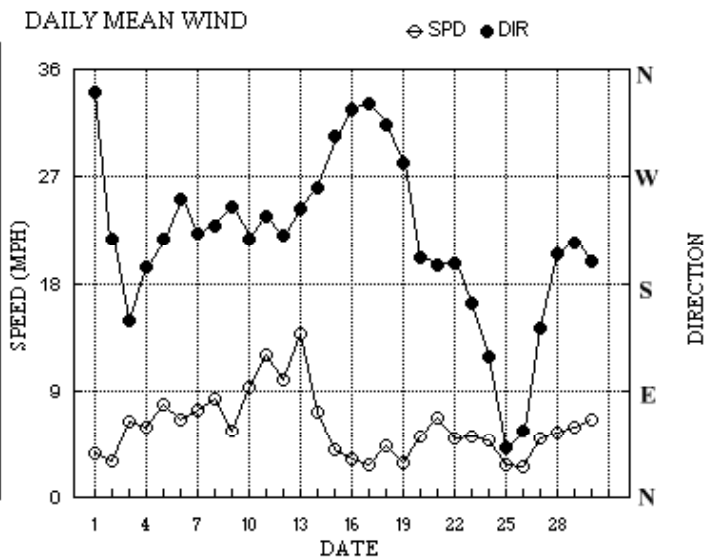
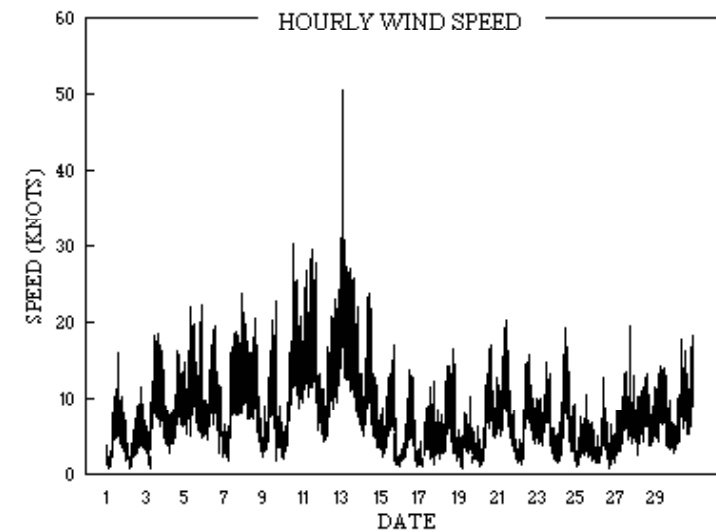
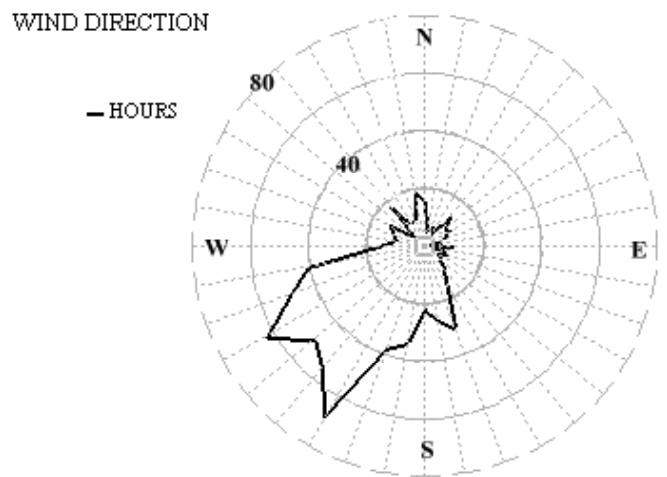
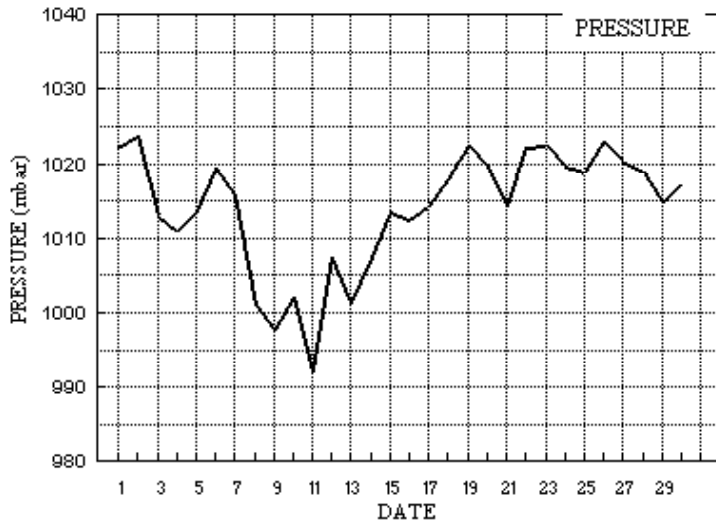
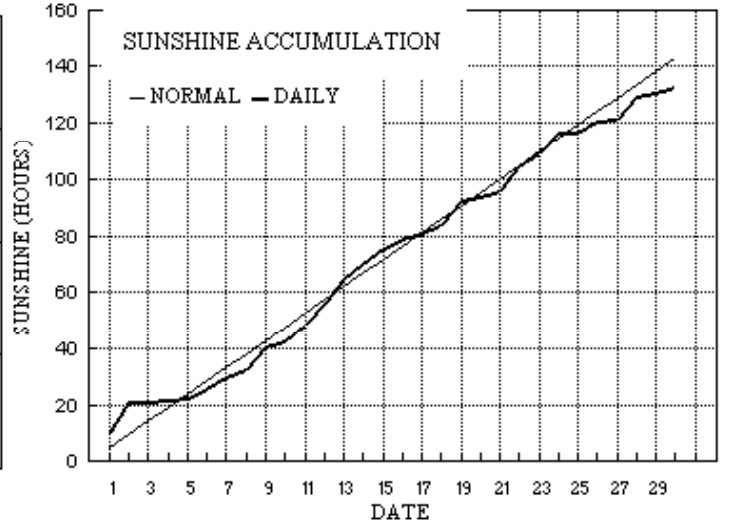
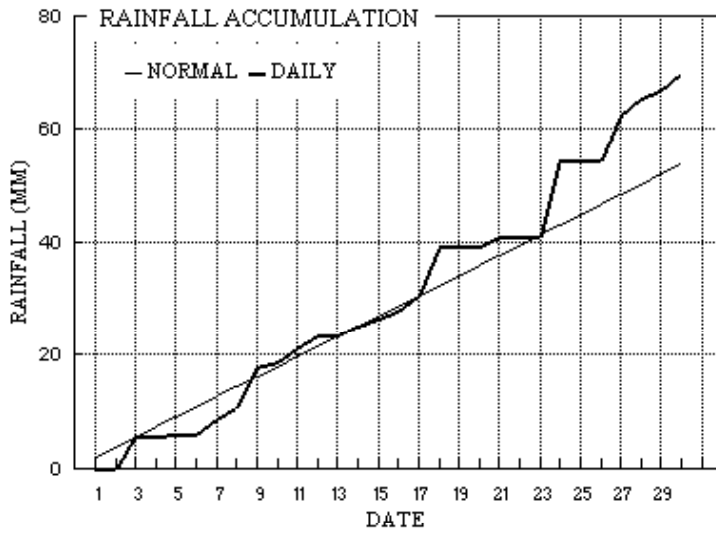
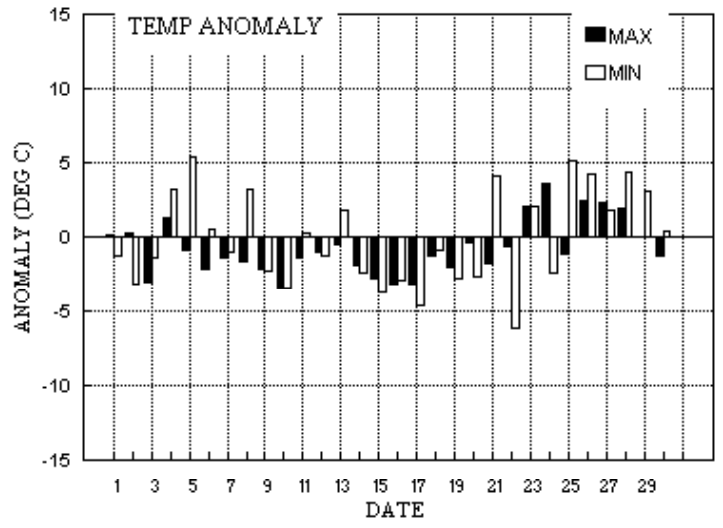
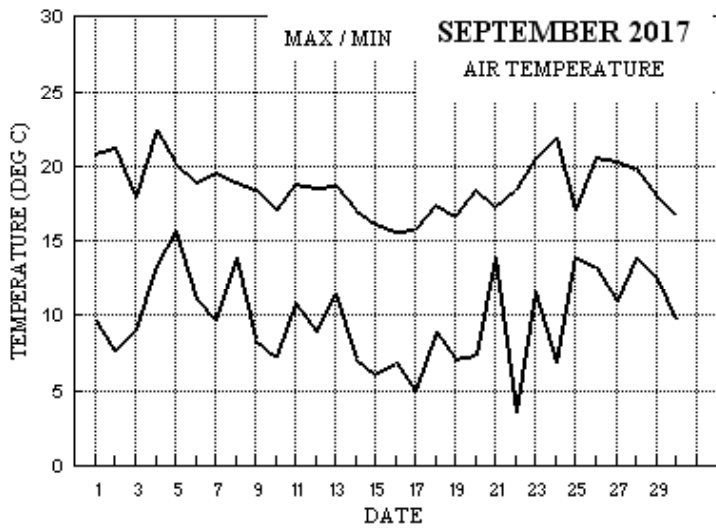
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 st to the 10 th				From the 11 th to the 20 th				From the 21 st to the 30 th			
-1.3°	0.0°	106%	90%	-1.8°	-1.9°	112%	107%	+0.8°	+1.7°	168%	63%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

Wokingham climatological graphs for September 2017



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: SEPTEMBER 2017

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	20.9	9.6	0.0	5.5	18.4	17.9	10.5	0.0	1022.3	0	0	0	0	341	2.8	3.3	332	16	1418	314	6	14	0.0	
2	21.2	7.6	0.0	2.3	18.3	17.8	10.5	0.0	1023.7	0	0	0	0	217	1.5	2.7	194	12	1905	202	5	19	0.0	
3	17.9	9.0	5.5	4.6	18.1	17.7	0.1	0.0	1013.1	0	0	0	0	149	5.5	5.6	150	19	1422	173	8	11	9.7	
4	22.4	13.4	tr	13.3	17.8	17.6	0.5	0.0	1011.1	0	0	0	0	194	4.8	5.2	199	17	1517	212	8	15	0.0	
5	20.2	15.6	0.5	15.4	18.2	17.5	0.8	0.0	1013.4	0	0	0	0	218	6.4	6.9	271	22	2039	207	10	10	0.7	
6	18.9	11.1	tr	6.0	18.1	17.5	3.6	0.0	1019.5	0	0	0	0	251	5.3	5.7	272	20	1409	264	8	14	0.0	
7	19.6	9.7	2.5	5.7	17.7	17.4	3.7	0.0	1015.8	0	0	0	0	222	6.3	6.5	234	24	2211	223	10	16	2.5	
8	19.0	13.9	2.3	13.6	17.7	17.4	2.9	0.0	1001.0	0	0	0	0	229	7.3	7.3	231	21	0014	229	11	15	1.3	
9	18.4	8.4	6.9	3.6	17.4	17.3	7.7	0.0	997.8	0	0	0	1	244	4.7	4.9	306	23	1522	255	10	12	0.7	
10	17.0	7.2	1.2	3.4	16.9	17.3	2.6	0.0	1002.0	0	0	0	0	217	7.8	8.1	209	31	1454	216	14	13	0.6	
11	18.8	10.8	2.1	8.7	16.5	17.2	5.6	0.0	992.0	0	0	0	0	236	10.1	10.4	234	30	1314	244	13	10	0.8	
12	18.6	8.9	2.3	5.0	16.5	17.0	7.7	0.0	1007.3	0	0	0	0	220	8.2	8.7	252	31	2351	230	14	23	3.2	
13	18.7	11.5	0.1	9.1	16.5	16.9	9.0	0.0	1001.2	0	0	0	0	243	11.9	12.0	247	51	0248	245	21	02	0.2	
14	17.1	7.1	1.9	3.4	16.3	16.8	5.2	0.0	1007.4	0	0	0	0	261	5.9	6.3	309	24	1103	287	10	10	0.2	
15	16.2	6.1	1.3	1.2	15.8	16.7	5.4	0.0	1013.4	0	0	0	0	304	2.2	3.6	21	17	1631	346	7	14	1.4	
16	15.7	6.9	1.3	1.4	15.7	16.6	3.4	0.0	1012.6	0	0	0	0	326	1.9	2.9	344	14	1147	0	6	14	1.4	
17	15.8	5.0	2.7	0.7	15.7	16.5	1.7	0.0	1014.2	0	0	0	0	331	1.9	2.5	308	13	1932	358	4	09	0.8	
18	17.4	8.9	8.7	3.6	15.5	16.4	2.9	0.0	1017.9	0	0	0	0	313	3.5	3.8	285	17	1855	319	7	13	6.3	
19	16.7	7.1	0.0	3.6	15.6	16.3	8.5	0.0	1022.5	0	0	0	0	281	1.2	2.5	339	10	1513	331	4	08	0.0	
20	18.5	7.3	0.0	4.3	15.3	16.2	1.6	0.0	1019.6	0	0	0	0	201	4.4	4.5	210	17	1519	207	8	15	0.0	
21	17.3	13.9	1.8	12.2	15.5	16.1	2.1	0.0	1014.4	0	0	0	0	195	5.4	5.8	177	21	1146	187	9	11	1.9	
22	18.4	3.5	tr	-0.7	15.2	16.0	8.9	0.0	1022.1	0	1	0	0	196	4.2	4.3	181	16	1426	196	8	14	0.0	
23	20.5	11.6	0.0	9.3	15.2	16.0	4.2	0.0	1022.5	0	0	0	0	163	4.2	4.6	152	15	1229	173	8	12	0.0	
24	21.9	6.8	13.4	2.8	15.3	15.9	7.4	0.0	1019.6	0	0	0	0	119	3.7	4.2	135	19	1235	143	8	11	6.7	
25	17.1	14.0	0.0	13.7	15.7	15.8	0.0	0.0	1019.0	0	0	0	0	43	2.2	2.4	67	11	1341	72	5	14	0.0	
26	20.6	13.2	0.0	12.7	16.0	15.8	4.3	0.0	1022.9	0	0	0	0	57	1.7	2.3	60	13	1015	66	4	10	0.0	
27	20.3	10.9	8.0	7.3	16.3	15.8	0.8	0.0	1020.3	0	0	0	0	142	3.8	4.4	179	20	1925	158	8	13	6.8	
28	19.8	13.8	3.1	10.7	16.5	15.9	8.1	0.0	1018.8	0	0	0	0	205	4.0	4.8	175	13	1638	221	7	13	3.0	
29	17.9	12.4	1.3	8.2	16.7	15.9	0.9	0.0	1014.7	0	0	0	0	214	4.6	5.1	197	14	0829	220	7	07	0.6	
30	16.6	9.7	2.8	7.2	16.5	16.0	2.1	0.0	1017.4	0	0	0	0	198	5.5	5.7	175	18	2302	216	9	10	4.2	
Total			69.7				132.7	0.0																53.0
Mean	18.6	9.8		6.6	16.6	16.7	4.42	0.0	1014.0					221	3.3	5.2								
Anom	-0.8	-0.2	130%	-0.1	+0.2	-0.1	93%																	-2.7
Daily mean		14.2																						
Anom		-0.5																						

Number of days with:

Air frost = 0 Ground frost = 1 Nil sun = 1
 Snow falling = 0 Snow lying = 0 Thunder = 1
 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, <.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 SEPTEMBER 2017

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks					
1	70	1	02	04	08	16.1	10.2	68	7.7	1022.3	2	010	02	1	1	0	0	9	0	1	81078	1			
2	61	1	25	03	06	15.3	11.1	76	8.1	1023.7	2	005	03	0	0	1	1	4	0	0	81815	2	Cu fra		
3	61	8	15	05	12	15.7	12.3	80	8.8	1013.1	6	014	15	2	2	1	8	5	7	/	81820	83360	88464	3	1Sc40 Cu med jpW
4	58	8	20	04	08	17.9	16.9	94	11.9	1011.1	2	018	05	5	2	8	6	2	/	/	85704	88706		4	
5	75	7	20	08	16	17.6	15.0	85	10.5	1013.4	0	002	60	6	5	7	5	4	7	/	87612			5	/Ac62
6	64	7	26	08	17	17.0	11.3	69	8.2	1019.5	1	007	03	1	1	2	8	5	0	1	81820	87080		6	2Sc56 COTRA Cu hum
7	62	4	24	08	13	16.5	12.5	77	8.9	1015.8	7	012	03	1	1	2	8	4	0	1	82815	83080		7	1Sc35 COTRA Cu hum
8	62	7	23	09	16	15.7	13.5	87	9.6	1001.0	7	010	15	6	2	7	5	4	7	/	83712	84625	87468	8	3Sc50 /Ac63 jpN vv30k ex N
9	86	1	27	08	14	15.1	9.2	68	7.2	997.8	3	009	03	1	1	1	8	5	0	1	81822			9	1Sc50 1Ci72 Cu hum
10	75	7	21	06	14	13.8	11.7	87	8.5	1002.0	8	013	03	1	1	7	5	4	7	1	81712	87650		10	2Sc40 /Ac65 /Ci75
11	65	3	21	10	21	14.5	11.8	84	8.5	992.0	3	009	25	8	1	2	8	4	0	1	81812			11	2Sc45 1Ci71 Absent, vv&cld est
12	84	2	25	10	17	14.4	9.8	74	7.5	1007.3	2	015	03	0	0	2	8	5	0	0	81820			12	2Sc56 Cu hum
13	88	1	25	13	26	15.5	9.0	65	7.1	1001.2	2	020	03	0	0	1	8	5	0	1	81825			13	1Sc45 1Ci75 Cu hum
14	86	6	26	09	18	13.3	8.4	72	6.8	1007.4	3	026	03	1	1	2	8	5	1	8	81822	86270		14	1Sc35 1Sc50 2As62 COTRA Cu hum
15	86	2	30	06	11	12.2	8.5	78	6.8	1013.4	3	001	01	1	1	2	8	4	0	1	81818			15	1Sc35 2Sc50 1Ci75 COTRA Cu hum
16	65	7	30	03	07	11.2	9.8	91	7.5	1012.6	2	006	03	1	1	7	8	4	/	/	81810	83630	87656	16	Cu fra
17	60	8	36	04	06	10.6	10.0	96	7.6	1014.2	1	011	20	5	2	8	6	3	/	/	86707	88712		17	
18	70	5	33	06	12	13.3	10.1	81	7.6	1017.9	1	006	03	1	1	5	8	4	0	1	85815			18	1Sc40 1Ci75 Cu hum
19	63	6	36	03	08	11.3	9.2	87	7.2	1022.5	2	012	03	1	1	2	1	4	0	1	82810	85080		19	COTRA Cu hum
20	57	7	20	04	09	13.9	13.0	94	9.2	1019.6	5	004	10	2	2	2	5	3	7	1	81707	83361	86365	20	1Sc35 2Sc56 /Ci80 COTRA
21	82	7	19	09	18	15.9	11.7	76	8.5	1014.4	8	001	03	2	2	6	8	4	3	2	81815	86630		21	/Ac67 /Ci72 COTRA Cu hum
22	82	0	19	03	04	11.9	10.1	89	7.6	1022.1	1	005	02	0	0	0	0	9	0	0				22	
23	77	7	16	05	08	15.1	12.2	83	8.8	1022.5	0	010	02	6	2	7	5	6	/	/	81640	87650		23	
24	64	7	10	05	11	16.7	12.8	78	9.1	1019.6	2	007	03	1	1	1	0	9	8	1	81362	87080		24	COTRA Ac cas
25	20	8	05	03	06	15.1	14.8	98	10.4	1019.0	1	007	21	6	5	8	5	2	/	/	85705	88650		25	
26	40	7	03	04	08	15.7	13.9	89	9.8	1022.9	2	010	05	2	2	7	6	2	3	/	87708	85357		26	
27	20	8	12	03	07	14.8	13.7	93	9.6	1020.3	7	003	05	2	2	8	6	2	/	/	88705			27	
28	65	7	26	06	11	15.7	13.4	86	9.5	1018.8	2	020	02	2	2	3	5	3	0	1	81708	83625	86078	28	COTRA
29	77	7	19	06	14	17.4	14.5	83	10.2	1014.7	8	001	03	6	2	2	5	4	7	1	81712	86366		29	2Sc56 2Ac60 /Ci75 COTRA
30	84	2	21	06	11	14.6	10.0	74	7.6	1017.4	7	002	01	6	1	1	5	7	7	1	81656			30	1Ac58 1Ci75

Mean vis = 24.6 km

Mean cloud = 5.3 66%

Mean wind speed = 6.0 kn

Mean gust = 12 kn

Mean TT = 14.8 °C

Mean TdTd = 11.7 °C

Mean RH = 82.1 %

Mean r = 8.5 g/kg

Mean PPP = 1014.0 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

dd = Direction from which wind is blowing, tens of degrees true

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

r = Humidity mixing ratio at 1.2 m, g/kg

PPP = Air pressure reduced to sea level, mbar

a = Characteristic of pressure tendency (Code FM12-0200)

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

W1, W2 = Past weather code (Code FM12-4561)- covers past 3 hours.

Nh = Amount of low cloud present, oktas

Cl = Type of low cloud (Code Fm12-0513)

h = Height of low cloud (Code FM12-1600)

Cm = Type of medium cloud (Code FM12-0515)

Ch = Type of high cloud (Code FM12-0509)

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation trails present

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for SEPTEMBER 2017

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks												
1	85	4	30	06	16	20.6	8.9	47	7.0	1021.4	6	006	15	1	1	2	2	7	6	1	82850	83073	1	2Ac57	Cu con	COTRA	jpE					
2	85	2	08	03	05	20.7	9.9	50	7.5	1020.5	7	020	02	0	0	2	2	6	6	1	82848		2	1Ac58	1Ci80	Cu med						
3	50	8	14	06	19	13.7	12.4	92	5.9	1010.8	8	013	63	6	6	7	7	3	2	/	82708	87712	88530	3								
4	82	7	20	07	13	21.7	17.5	77	12.3	1011.9	0	001	03	8	2	6	8	4	0	1	83817	84635	87075	4	COTRA	Cu med						
5	25	8	20	06	13	18.4	16.6	89	11.6	1012.0	7	007	58	6	5	8	5	3	/	/	83708	86612	88630	5								
6	72	8	26	07	20	18.2	7.6	50	6.4	1019.3	7	002	01	2	2	3	8	6	0	7	81842	83656	88278	6	COTRA	Cu hum						
7	81	8	24	07	17	18.8	11.6	63	8.4	1012.0	8	019	02	2	2	7	8	6	/	8	83835	87645		7	/Cs75	Cu hum						
8	82	5	23	09	18	18.8	13.6	72	9.6	997.3	7	014	15	6	2	2	9	4	6	3	81918	82823	83070	8	1Sc40	1Ac62	COTRA	jpN				
9	62	6	22	08	18	17.1	12.0	72	8.6	997.6	0	001	16	8	1	4	9	4	6	3	81712	83920	83070	9	1Cu30	1Sc50	1Ac60	jp all quads	Rainbow part			
10	59	8	20	13	31	14.8	11.9	83	8.6	995.7	8	035	58	6	5	8	5	4	/	/	86615	88630		10	Absent	vv&cld	est					
11	80	2	25	13	26	17.7	10.6	63	7.9	994.6	2	015	15	8	1	2	9	5	6	3	81925	81830		11	1Sc50	1Ac60	1Ci70	1Ci78	COTRA	jpN, E, SW	VV60k	ex p
12	65	7	21	10	21	14.9	10.1	73	7.6	1007.0	6	008	80	8	2	7	8	6	/	/	84832	83650	86657	12								
13	84	2	23	12	26	16.0	9.0	63	7.1	1000.6	8	006	25	8	1	1	8	6	6	0	81830			13	1Sc50	2Ac58	Cu med					
14	65	6	26	06	22	12.8	10.2	84	7.6	1011.8	2	021	25	8	1	3	9	5	6	3	83925	81830	83458	14	1Sc56	2Ac62	3Ci70	jpS	vv80k	ex S		
15	75	7	33	05	15	14.1	9.7	75	7.4	1012.7	7	002	25	8	2	5	8	5	7	1	82825	84656	86358	15	/Ac61	/Ci75	Cu med	jpS&SW				
16	82	2	35	04	13	15.5	8.0	61	6.6	1010.7	7	013	15	1	1	2	9	5	6	3	81925	81828		16	1Sc50	1Ac62	1Ci70	jpN				
17	80	5	30	03	12	13.9	10.5	80	7.8	1014.1	5	004	25	8	2	3	8	5	6	1	81820	83656		17	2Ac58	3Ci80	COTRA	Cu con	jpSW&N			
18	84	7	31	06	13	16.3	8.3	59	6.7	1018.0	5	000	03	8	1	1	2	6	6	8	81835	87272		18	1Ac58	1Ac69	Cu con					
19	86	4	27	03	08	15.7	6.7	55	6.0	1021.7	8	006	02	1	1	1	8	6	3	1	81833			19	1Sc45	2Ac68	2Ci75	COTRA	Cu hum			
20	82	7	20	09	17	17.2	10.1	63	7.6	1017.5	8	008	02	2	2	3	8	6	3	1	81830	83640	85362	20	3Ci75	Cu hum						
21	58	8	19	06	12	15.5	14.5	94	10.2	1014.5	3	003	61	6	5	5	8	3	2	/	81707	84630	88558	21	1Cu12	Cu med						
22	84	4	20	07	16	16.8	9.0	60	7.1	1020.8	6	004	02	1	1	2	8	6	3	0	82833	83361		22	1Sc45	Cu med						
23	88	4	18	07	12	20.0	7.1	43	6.2	1020.4	7	012	01	1	1	3	0	9	3	5	83358			23	2Cs80	COTRA						
24	75	7	14	06	15	19.8	10.8	56	8.0	1017.8	7	007	60	6	2	2	5	7	7	8	82656	86361	87272	24								
25	58	8	05	03	10	16.8	13.4	83	9.8	1019.8	1	004	05	2	2	8	8	4	/	/	81812	85630	88640	25	Cu hum							
26	63	6	07	03	07	18.8	13.6	72	9.6	1021.5	6	008	03	1	1	3	8	6	0	1	81830	83650	85078	26	COTRA	Cu med						
27	59	8	15	06	13	18.8	13.9	73	9.8	1017.0	7	016	05	2	2	2	8	5	7	/	81825	86362	88468	27	2Sc25	Cu hum	Absent	vv&cld	est			
28	84	7	21	05	12	18.6	11.2	62	8.2	1018.7	8	003	02	1	1	2	1	6	0	8	82832	87078		28	2Cs74	COTRA						
29	75	8	24	05	13	16.4	11.6	73	8.4	1015.9	1	008	02	2	2	1	8	5	2	/	81825	88468		29	1Sc56	Cu hum						
30	70	7	20	07	17	16.5	11.2	71	8.2	1015.3	6	012	15	8	2	4	8	6	7	/	82830	83645	86361	30	Cu med	jpW	vv40k	ex W				

Mean vis = 30.3 km

Mean cloud = 6.0 75%

Mean wind speed = 6.6 kn

Mean gust = 16 kn

Mean TT = 17.2 °C

Mean TdTd = 11.1 °C

Mean RH = 68.6 %

Mean r = 8.1 g/kg

Mean PPP = 1013.0 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 2017	Hour	01-Sep	02-Sep	03-Sep	04-Sep	05-Sep	06-Sep	07-Sep	08-Sep	09-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep
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	0.41	0.21	0.00	0.00	0.00	0.14	0.00	0.00	0.05	0.03	0.00	0.05	0.00	0.00	0.00	0.00	0.00
6	1.00	1.00	0.06	0.00	0.00	0.11	0.66	0.00	0.39	0.96	0.00	1.00	0.91	0.57	0.34	0.46	0.46
7	1.00	1.00	0.00	0.00	0.07	1.00	1.00	0.00	1.00	1.00	0.11	1.00	1.00	0.30	0.46	0.78	0.78
8	1.00	1.00	0.03	0.00	0.11	1.00	1.00	0.00	1.00	0.57	0.34	0.99	1.00	0.44	0.66	0.00	0.00
9	1.00	1.00	0.00	0.00	0.00	0.46	0.34	0.00	0.96	0.00	0.66	0.99	0.96	0.69	1.00	0.00	0.00
10	1.00	1.00	0.00	0.00	0.00	0.00	0.06	0.00	0.80	0.00	0.51	0.74	0.52	0.44	0.74	0.04	0.04
11	1.00	0.82	0.00	0.00	0.00	0.06	0.36	0.00	0.25	0.00	0.72	0.66	0.42	0.41	0.72	0.04	0.04
12	0.86	0.60	0.00	0.00	0.05	0.02	0.00	0.00	0.67	0.00	0.51	0.84	0.69	0.22	0.32	0.06	0.06
13	0.86	0.93	0.00	0.06	0.00	0.00	0.02	0.03	0.38	0.00	0.61	0.30	0.10	0.36	0.14	0.16	0.16
14	0.93	0.50	0.00	0.20	0.00	0.26	0.24	0.59	0.60	0.00	0.59	0.17	0.20	0.00	0.32	0.77	0.77
15	0.57	0.98	0.00	0.01	0.00	0.05	0.00	1.00	0.28	0.00	0.44	0.31	0.96	0.12	0.44	1.00	1.00
16	0.74	0.66	0.00	0.20	0.19	0.34	0.00	0.70	0.55	0.00	0.42	0.66	0.95	0.55	0.00	0.10	0.10
17	0.11	0.77	0.00	0.00	0.10	0.14	0.00	0.60	0.53	0.02	0.52	0.00	0.99	0.97	0.27	0.02	0.02
18	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.18	0.00	0.16	0.00	0.30	0.09	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	10.48	10.45	0.09	0.48	0.77	3.60	3.68	2.92	7.65	2.59	5.58	7.72	8.99	5.16	5.44	3.44	

Hour	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep	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
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
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
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
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
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	0.03
6	0.00	0.00	0.69	0.17	0.13	0.60	0.00	0.65	0.00	0.00	0.00	0.39	0.00	0.00	0.34
7	0.00	0.01	1.00	0.00	0.70	1.00	0.00	1.00	0.00	0.00	0.00	0.57	0.05	0.00	0.47
8	0.00	0.29	0.95	0.07	0.53	1.00	0.00	1.00	0.00	0.01	0.00	0.92	0.62	0.82	0.51
9	0.00	0.23	1.00	0.79	0.00	1.00	0.00	1.00	0.00	0.48	0.00	0.80	0.13	0.74	0.47
10	0.00	0.52	0.87	0.23	0.00	1.00	0.00	0.78	0.00	0.74	0.16	0.48	0.00	0.24	0.36
11	0.00	0.75	0.54	0.05	0.00	0.90	0.00	0.74	0.00	1.00	0.25	0.74	0.00	0.00	0.35
12	0.00	0.56	0.03	0.00	0.00	0.57	0.05	1.00	0.00	0.76	0.35	1.00	0.00	0.17	0.31
13	0.01	0.52	0.17	0.00	0.00	0.68	0.93	1.00	0.00	1.00	0.00	0.84	0.00	0.10	0.31
14	0.15	0.04	0.61	0.08	0.00	0.39	1.00	0.25	0.00	0.26	0.00	0.98	0.00	0.04	0.31
15	0.78	0.00	0.87	0.20	0.00	0.34	1.00	0.00	0.00	0.04	0.00	0.97	0.00	0.00	0.35
16	0.30	0.00	1.00	0.05	0.04	0.88	1.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.32
17	0.43	0.00	0.73	0.00	0.74	0.59	0.18	0.00	0.00	0.00	0.00	0.21	0.13	0.00	0.27
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	0.03
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
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
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
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
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
Tot	1.65	2.92	8.45	1.64	2.14	8.94	4.16	7.41	0.00	4.29	0.76	8.09	0.93	2.11	132.54

SEPTEMBER 2017	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	15.07	21.1	1336	9.5	446	70.5	97.7	524	38.0	1255	9.16	7.14	9.04	935	5.43	1255	1021.70	1023.8	2324	1019.7	4	0	
2	14.30	21.3	1510	7.5	521	74.7	98.5	652	39.8	1540	9.35	7.24	9.33	1107	6.08	1537	1021.71	1023.9	214	1018.4	2358	0	
3	12.98	16.4	918	8.9	539	90.6	98.4	634	63.6	1136	11.42	8.41	9.89	1039	6.75	1156	1012.51	1018.6	3	1008.9	2355	5	
4	17.86	22.5	1416	13.9	0	89.7	97.8	502	73.5	1417	16.09	11.38	13.94	1350	9.59	5	1011.67	1015.0	2313	1008.6	341	0.7	
5	16.92	20.3	1227	11.8	2325	87.0	94.4	611	73.9	1209	14.74	10.43	12.44	1408	7.54	2325	1013.77	1017.8	2358	1011.6	1611	0.7	
6	14.96	19.0	1452	11.0	215	72.4	95.0	548	45.4	1341	9.65	7.41	9.05	813	5.91	1341	1019.17	1020.1	2020	1017.6	0	0	
7	15.06	19.7	1418	9.6	440	80.8	96.8	453	56.4	1419	11.63	8.50	10.14	2103	7.04	440	1013.55	1019.5	0	1005.9	2356	0.1	
8	14.96	19.2	1456	9.5	2342	86.1	97.2	2344	60.3	1629	12.57	9.17	10.84	1357	7.17	2329	999.67	1006.2	0	996.3	1808	4.8	
9	12.29	18.5	1344	8.3	153	86.0	98.5	2327	51.6	1203	9.79	7.63	9.68	1332	6.53	1130	998.37	1002.9	2345	996.3	116	6.9	
10	12.56	17.2	1249	7.0	406	87.3	99.0	426	63.0	1250	10.41	7.99	10.33	1705	6.17	406	998.31	1003.6	152	992.0	1805	0.4	
11	13.66	18.9	1220	10.3	2338	78.9	93.0	2345	57.5	1402	9.95	7.75	10.36	1256	6.59	248	994.81	1002.3	2354	990.8	601	3.3	
12	13.44	18.8	1234	8.8	446	79.7	96.0	2232	45.8	1231	9.70	7.57	10.51	2310	5.80	1207	1003.79	1007.9	1127	993.0	2357	2.4	
13	13.77	18.8	1301	9.3	2211	68.1	87.3	2148	46.2	1302	7.86	6.70	8.82	14	5.41	1646	999.68	1002.6	2136	992.5	221	0.2	
14	11.22	17.2	1154	7.0	439	80.3	94.7	446	53.2	1252	7.79	6.60	8.17	1607	5.81	2355	1008.98	1014.8	2219	1001.8	32	2	
15	10.43	16.3	1341	6.0	543	85.3	98.6	2348	53.2	1213	7.86	6.60	7.87	1519	5.54	543	1013.35	1014.2	0	1012.4	1420	1.4	
16	10.63	15.8	1547	6.8	513	88.1	99.0	134	54.1	1541	8.54	6.91	8.19	1037	5.95	1549	1012.01	1013.2	0	1010.4	1556	1.4	
17	10.48	15.9	1539	4.9	432	92.2	99.1	629	67.5	1521	9.20	7.25	9.22	1639	5.30	432	1014.21	1016.7	2212	1012.2	41	2.6	
18	12.50	17.5	1314	8.8	238	83.5	97.6	310	53.2	1408	9.50	7.33	8.45	840	6.10	1408	1018.04	1020.3	2117	1016.1	210	8.1	
19	10.90	16.9	1437	7.0	415	85.8	98.8	448	50.2	1438	8.33	6.76	8.13	939	5.23	1125	1021.54	1022.6	1228	1019.9	217	0.4	
20	13.25	18.6	1153	7.2	614	83.6	99.1	642	58.1	1521	10.34	7.79	9.71	1105	6.13	614	1018.52	1021.5	1	1015.6	2355	0	
21	14.22	17.5	1148	7.9	2358	86.5	97.7	2329	72.9	844	11.97	8.69	10.40	1425	6.40	2358	1015.63	1020.3	2359	1013.8	1238	1.7	
22	11.50	18.6	1347	3.4	609	81.0	99.2	803	50.8	1329	7.97	6.64	8.39	1155	4.72	609	1021.43	1022.5	2351	1020.1	0	0.1	
23	14.55	20.7	1444	9.5	2306	77.5	96.0	2351	40.0	1438	10.23	7.70	9.49	1137	5.84	1341	1021.22	1022.6	835	1020.0	1534	0	
24	14.93	22.0	1343	6.7	603	79.6	99.3	716	49.4	1321	11.01	8.15	10.58	1004	5.92	603	1018.86	1020.3	7	1017.4	1439	0.2	
25	15.12	17.2	1342	13.9	137	94.3	98.4	808	79.6	1458	14.20	9.98	11.14	1138	9.32	1458	1019.66	1022.0	2036	1017.9	223	12.6	
26	15.34	20.8	1323	11.6	2351	88.1	98.3	2357	56.2	1311	13.22	9.34	10.98	1023	8.11	1312	1022.07	1023.1	821	1021.2	1509	0	
27	15.13	20.4	1242	10.8	144	89.6	98.9	251	64.6	1244	13.30	9.43	10.62	1228	7.79	144	1018.90	1022.1	7	1016.0	2258	7.4	
28	15.70	19.9	1410	12.3	1944	84.4	97.7	454	55.6	1411	12.88	9.20	10.90	459	7.74	1543	1017.96	1019.7	1859	1015.1	315	0.6	
29	15.33	18.0	922	10.4	2340	88.1	97.3	253	67.8	1441	13.31	9.52	11.58	350	7.22	2328	1015.98	1017.9	2324	1014.1	925	4.4	
30	13.26	16.7	1453	9.6	410	84.2	95.8	2127	62.6	917	10.56	7.90	9.27	2302	6.82	917	1016.13	1018.0	56	1012.5	2359	2.7	
Total																						70.1	
Mean	13.74	18.72		8.97		83.5	97.17		56.79		10.75	8.10	9.92		6.53		1013.44	1016.53		1010.27			
Max	17.86	22.52		13.93		94.3	99.30		79.60		16.09	11.38	13.94		9.59		1022.07	1023.90		1021.17			
Min	10.43	15.80		3.39		68.1	87.30		37.99		7.79	6.60	7.87		4.72		994.81	1002.26		990.76			

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, 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 of sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

8 Groups

N = Amount of cloud reported by C, okta.

C = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

/ = Cloud type not visible owing to darkness, fog, duststorm, or other analogous phenomena.

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

00 to 50 = Height in hundreds of feet

51 to 55 Not used

56 to 80 = Subtract 50 to obtain cloud height in thousands of feet

81 to 88 = Height of cloud between 35000 and 70000 ft in 5000 ft steps.