

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

AUGUST 2017

Temperature (°C)	Anomaly	Rank in the past 136 years
Mean maximum	21.4	-1.2 64 th highest
Mean minimum	12.0	-0.4 44 th highest
Daily mean	16.7	-0.8 56 th highest
Highest maximum	27.6	on 28 th Lowest maximum 15.1 on 9 th
Highest minimum	15.9	on 12 th Lowest minimum 6.8 on 31 st
Mean grass minimum	9.2	-0.1 Lowest grass minimum 1.8 on 31 st
Mean earth @30 cm	18.9	+0.2 Earth @100 cm 17.8
Frost duration (hrs)	0.0	Rain duration (hrs) 43.1
Rainfall total (mm)	73.1	145 % 39 th highest
Highest daily fall	20.4	on 9 th
Number of: Dry days (<0.2mm)	16	Wet days (>0.9mm) 11 days ≥5mm 6
Sunshine total (hrs)	188.2	Daily mean 6.07 Sunniest day 12.9 on 25 th & 28 th
N° days with: Air frost	0	Ground frost 0 Snow falling 0 Snow lying 0
Thunder	2	Hail ≥5mm 1 Small hail/ice 0 Fog @09 0 Nil sun 3
Pressure MSL: Mean @09 GMT, mbar	1016.7	+0.4 Highest 1024.9 on 10 th Lowest 1005.4 on 3 rd
Relative humidity: Mean (%)	78.5	Lowest 32 on 13 th Water vapour (g/kg), mean at 09 and 15 GMT 9.0, 8.7
Overall mean wind speed (mph)	5.8	Windiest day 12.6 on 3 rd Max gust 41 on 18 th
Wind direction (days)	N 4 NE 0 E 1 SE 1 S 5 SW 12 W 5 NW 3	
Least windy day (mph)	2.3	on 27 th Calm; less than 0.5 mph (minutes) 868

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

Notes:

Wet with Below Average Temperature and Near Average Sunshine

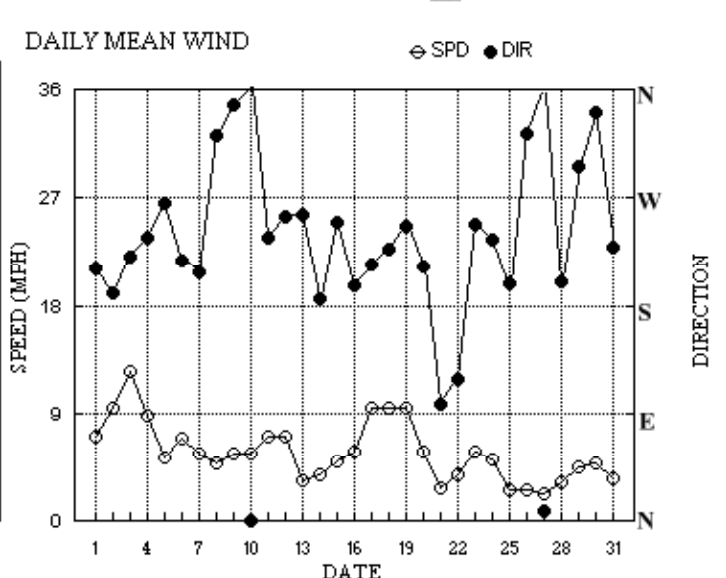
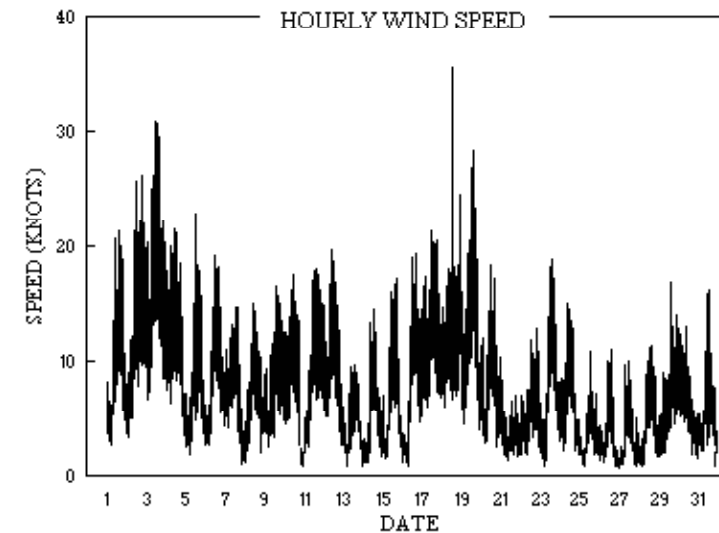
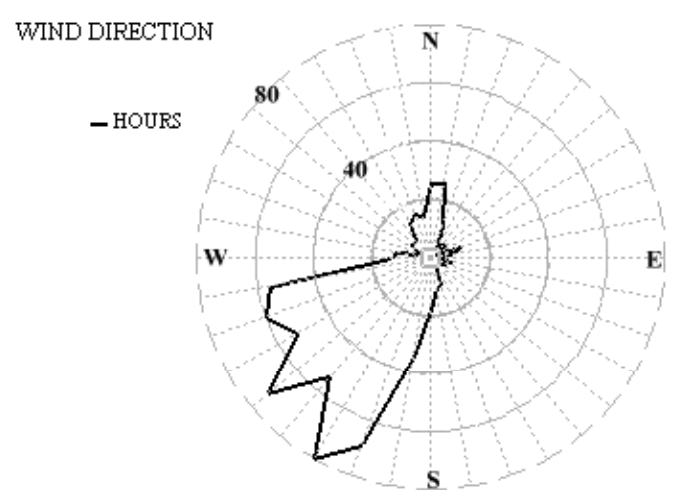
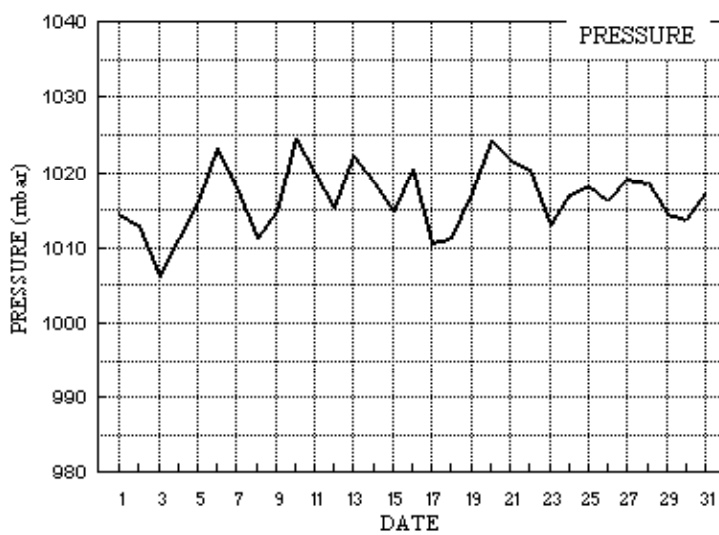
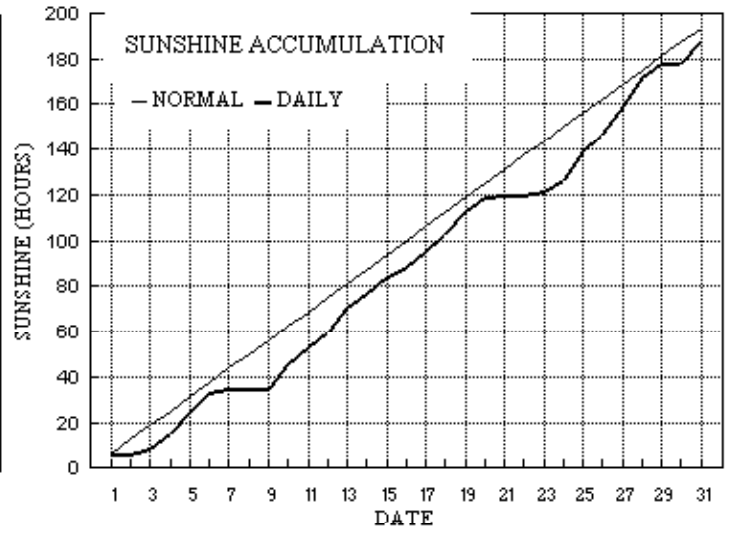
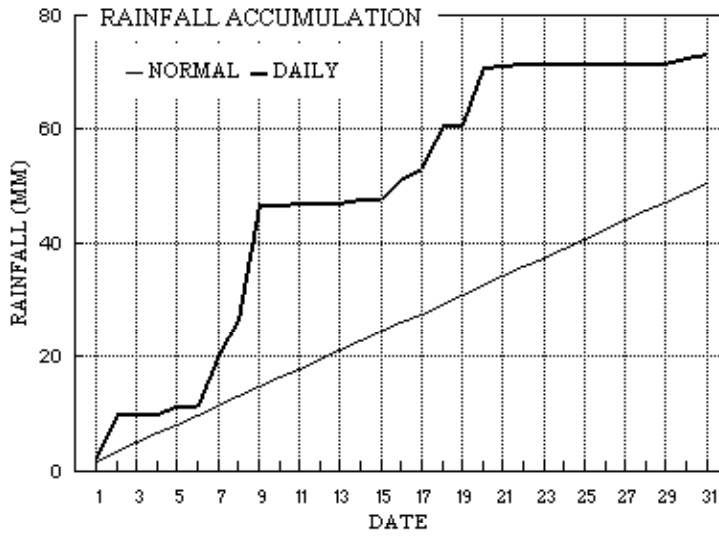
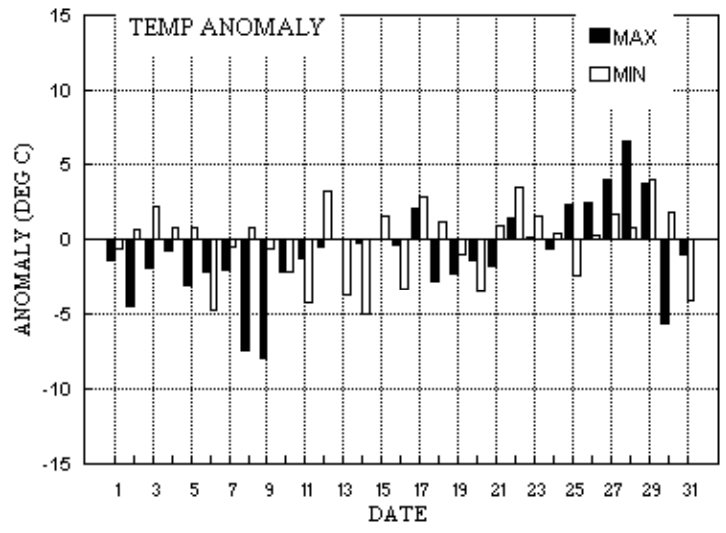
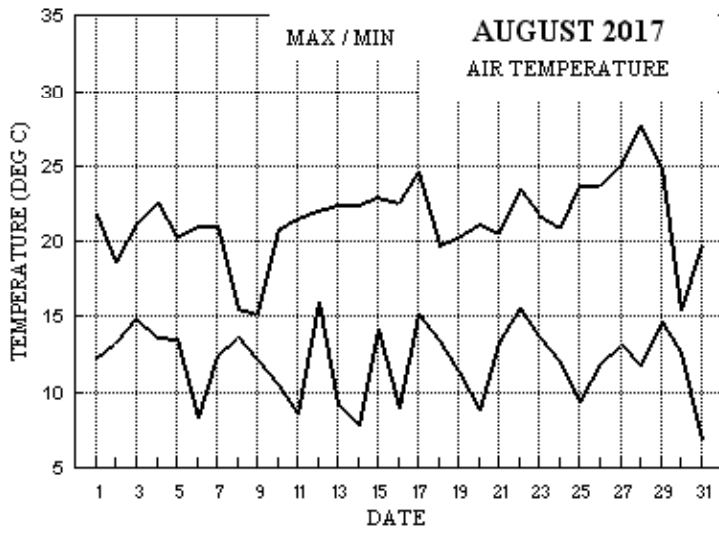
Temperature: This has been an August with the mean temperature below the current climatological average, and in the first 17 years of this millennium, 12 Augusts have been warmer. The mean maximum was particularly disappointing being over 1° below average, though both 2014 and 2015 had lower means. The highest max is 0.3° below the median and the lowest max is 1.8° below its median. The highest min is 0.4° below the median while the highest min is 0.5° above its median. Unlike this year, 30° has been exceeded in 13 Augusts in the past 42 years, including 36.9° in 2003, the highest recorded temperature for any month in Wokingham. While there are not any instances of air frost in August here in the past 100 years, ground frost did occur as recently as 2014, and there have been 12 other similar Augusts in the past 95 years. Anomalies for daily max were all negative until the 12th, with over -7° on the 8th and 9th. From the 13th to the 24th anomalies ranged between +1° on the 22nd and -3° on the 18th. After the 25th there was a short hot spell culminating in an anomaly of +7° on the 28th, but it then turned colder with an anomaly of -6° on the 30th. For daily min, anomalies were close to zero for much of the month, the exceptions being -5° on the 6th and 14th, -4° on the 11th and 31st, +3° on the 12th, 17th and 22nd, and +4° on the 29th. **Rainfall:** This has been a wet August, with the total around 20 mm above the long-term median, and 45% above the climatological average. However, 5 out of the past 10 Augusts have been wetter, including the very wet 2011 when 118.9 mm fell. This August, most of the rain fell before the 21st when it turned markedly drier, with an 8 day dry spell ending on the 29th. Daily rainfall accumulation compared with normal was 9 mm in surplus by the 7th, increasing to 30 mm by the 9th after 35.6 mm fell over the 3 days to the 9th. The surplus decreased to 24 mm by the 15th, but increased to 37 mm by the 21st, decreasing steadily thereafter, ending the month 23 mm in surplus. Thunder occurred on the 5th and 18th, and rainfall rates exceeded violent intensity (50 mm/hr) on the 1st (57mm/hr), 7th (103mm/hr), and 18th (227mm/hr at 1331 GMT), this latter being accompanied by thunder and hail. There were 3 fewer dry days than average and 3 more days with =>5 mm of rain. Rainfall duration is 12.5 hours above normal. **Sunshine:** The total this August is slightly below average, but in this millennium only 5 Augusts have been sunnier. Daily accumulation compared with normal was in deficit throughout the month, reaching -21 hours by the 9th, decreasing to -7 hours by the 20th, then increasing to -24 hours by the 24th, decreasing to -6 hours by the end of the month. There were 13 days with >50% of the maximum, and 7 with >70%, but the 25th, 27th and 28th were outstanding, having over 90 % of the maximum. There were 8 days with 10% or less, 3 of which had zero. Overall there were 9 days with <3 hours, 18 with =>6 hours, 9 with =>9 hours and 3 with =>12 hours. **Wind:** The mean speed is lowest since 2011 but is close to average. Both the speed on the windiest day and the month's highest gust are equal highest with 2016 since 1992. Winds at first were moderate or fresh becoming light or moderate from the 6th to the 23rd, but fresh on the 18th and 19th, becoming light after the 23rd. Directions were generally between S and W, but N'ly for the 8th to 10th, E'ly on the 21st and 22nd, and between W&N on the 26th, 27th, 29th and 30th.

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			
-3.3°	-0.4°	288%	74%	-0.7°	-1.2°	147%	119%	+1.0°	+0.7°	12%	101%

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

Wokingham climatological graphs for August 2017



Month: AUGUST 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	21.8	12.2	2.4	7.9	19.0	18.1	6.4	0.0	1014.5	0	0	0	0	211	6.0	6.2	227	21	1537	204	11	15	0.3
2	18.6	13.3	7.6	10.5	19.2	18.1	0.0	0.0	1013.1	0	0	0	0	190	8.1	8.3	204	26	1931	203	12	19	7.2
3	21.2	14.9	tr	13.0	18.8	18.1	2.5	0.0	1006.2	0	0	0	0	221	10.8	10.9	209	31	1049	221	14	11	0.1
4	22.5	13.6	tr	10.6	19.0	18.0	6.3	0.0	1011.2	0	0	0	0	237	7.5	7.6	271	22	1101	245	10	11	0.0
5	20.3	13.5	1.2	11.7	19.2	18.0	9.1	0.0	1016.1	0	0	0	1	265	4.3	4.7	269	23	1109	300	8	11	0.6
6	21.0	8.3	0.0	4.4	19.0	17.9	9.0	0.0	1023.2	0	0	0	0	217	5.8	6.0	240	19	1032	232	10	12	0.0
7	21.0	12.4	9.4	9.8	19.0	17.9	1.5	0.0	1018.1	0	0	0	0	208	4.4	4.9	166	15	1315	182	8	13	2.7
8	15.5	13.7	5.8	13.8	19.0	17.9	0.0	0.0	1011.3	0	0	0	0	321	3.6	4.2	334	15	0935	344	7	09	3.3
9	15.1	12.1	20.4	9.4	18.7	17.9	0.0	0.0	1014.7	0	0	0	0	346	3.9	4.9	338	17	1321	5	7	14	10.6
10	20.8	10.5	0.0	9.4	17.8	17.8	10.7	0.0	1024.6	0	0	0	0	1	4.6	5.0	22	18	1139	8	9	09	0.0
11	21.5	8.5	0.3	4.7	18.1	17.7	7.9	0.0	1019.9	0	0	0	0	236	5.9	6.1	264	18	1437	255	9	14	0.4
12	22.0	15.9	0.0	14.3	18.5	17.6	6.6	0.0	1015.2	0	0	0	0	254	6.0	6.2	254	20	1040	259	10	10	0.0
13	22.4	9.2	0.0	4.3	18.8	17.6	11.1	0.0	1022.3	0	0	0	0	255	1.4	3.0	228	10	1436	213	5	17	0.0
14	22.4	7.8	0.5	3.5	18.9	17.6	5.6	0.0	1018.6	0	0	0	0	186	2.8	3.4	221	15	1320	193	7	13	1.2
15	22.9	14.2	0.0	11.9	18.8	17.6	8.2	0.0	1014.7	0	0	0	0	249	3.9	4.3	288	17	1723	258	8	15	0.0
16	22.6	8.9	3.3	5.5	18.9	17.6	3.8	0.0	1020.5	0	0	0	0	197	4.9	5.1	224	20	1705	211	9	16	2.5
17	24.6	15.1	2.2	14.5	19.0	17.6	6.5	0.0	1010.6	0	0	0	0	215	7.8	8.2	226	21	1201	228	11	13	1.2
18	19.7	13.4	7.7	11.9	19.4	17.6	7.5	0.0	1011.3	0	0	0	1	227	8.1	8.3	238	36	1332	223	12	21	0.8
19	20.2	11.4	0.0	7.8	18.8	17.7	10.1	0.0	1017.4	0	0	0	0	246	8.1	8.2	256	29	1549	255	13	15	0.0
20	21.2	8.8	10.1	3.3	18.4	17.7	6.5	0.0	1024.3	0	0	0	0	213	4.0	5.1	247	19	1225	230	9	12	9.0
21	20.5	13.2	0.4	13.1	18.5	17.6	0.2	0.0	1021.7	0	0	0	0	98	1.7	2.4	65	10	0031	90	4	00	0.5
22	23.5	15.6	0.1	16.5	18.9	17.6	0.4	0.0	1020.3	0	0	0	0	118	2.4	3.4	101	13	2001	95	5	20	0.1
23	21.8	13.6	0.0	10.8	19.2	17.6	1.4	0.0	1012.9	0	0	0	0	248	4.0	5.0	251	19	1507	260	10	14	0.0
24	20.9	12.0	0.0	8.0	19.0	17.6	5.4	0.0	1017.2	0	0	0	0	235	4.4	4.5	227	15	1047	241	7	11	0.0
25	23.7	9.3	0.0	5.6	18.9	17.7	12.9	0.0	1018.3	0	0	0	0	199	2.0	2.2	271	11	1424	209	4	12	0.0
26	23.7	11.8	tr	7.7	19.0	17.7	7.4	0.0	1016.4	0	0	0	0	323	1.0	2.2	340	11	1407	359	4	14	0.0
27	25.1	13.1	0.0	10.0	19.2	17.7	12.5	0.0	1019.2	0	0	0	0	9	1.2	2.0	62	10	1224	38	4	08	0.0
28	27.6	11.7	0.0	8.7	19.4	17.7	12.9	0.0	1018.6	0	0	0	0	200	2.2	2.8	196	11	1518	200	5	15	0.0
29	24.8	14.7	0.1	10.4	19.6	17.8	5.5	0.0	1014.6	0	0	0	0	295	2.4	4.0	299	17	1631	303	7	16	0.4
30	15.4	12.6	1.2	11.9	19.7	17.8	0.2	0.0	1013.8	0	0	0	0	340	3.0	4.2	320	13	1101	10	6	00	1.9
31	19.8	6.8	0.4	1.8	18.7	17.9	10.1	0.0	1017.4	0	0	0	0	229	2.5	3.2	304	16	1330	300	6	11	0.3

Total			73.1				188.2	0.0															43.1
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Mean	21.4	12.0		9.2	18.9	17.8	6.07	0.0	1016.7					232	3.2	5.0								
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Anom	-1.2	-0.4	145%	-0.1	+0.2	+0.2	97%		+0.4														
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Daily mean	16.7								Pressure, abs highest = 1024.9 on 10														
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Anom	-0.8								Pressure, abs lowest = 1005.4 on 3														
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Number of days with:

Air frost = 0	Ground frost = 0	Nil sun = 3
Snow falling = 0	Snow lying = 0	Thunder = 2
Hail=>5mm = 1	Hail<5mm or ice = 0	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 AUGUST 2017

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks					
1	81	4	24	06	14	17.2	12.7	75	9.1	1014.5	8	001	03	1	1	3	2	5	3	1	83823	1	2Ac57 1Ci78 COTRA Cu med		
2	82	8	19	12	21	17.7	11.9	69	8.6	1013.1	7	009	21	6	2	7	8	5	2	/	82820	86650	88458	2	Cu fra
3	70	7	22	12	25	18.2	13.5	74	9.5	1006.2	1	004	15	2	2	7	8	5	/	/	85820	83630		3	Cu med jpW
4	82	4	25	10	19	18.4	11.9	66	8.6	1011.2	1	013	03	1	1	4	2	5	0	0	84825			4	Cu med
5	84	5	29	04	09	18.3	10.4	60	7.8	1016.1	1	010	03	1	1	2	8	6	3	0	81830	84360		5	1Sc40 2Sc56 Cu med
6	80	7	23	07	14	17.4	11.4	68	8.3	1023.2	0	005	03	1	1	2	2	5	0	1	82820	87080		6	COTRA Cu med
7	70	8	21	06	12	17.1	13.6	80	7.6	1018.1	8	002	03	2	2	7	5	4	7	8	83615	87620		7	/Ac62 /Cs70
8	75	7	33	05	12	14.8	12.7	87	9.0	1011.3	6	002	15	5	2	4	8	4	7	/	83810	86462		8	2Sc45 /Ac65 Cu med jpN
9	58	8	35	04	09	13.5	12.9	96	9.2	1014.7	1	016	63	6	2	7	5	3	2	/	82706	86709	87612	9	8Ns20
10	80	3	01	08	16	15.1	10.5	74	7.8	1024.6	2	004	03	0	0	3	1	4	3	0	83818			10	1Ac57 Cu hum
11	86	3	26	06	11	17.3	10.7	65	7.9	1019.9	7	010	03	0	0	1	1	5	0	4	81825	83080		11	1Ci75 COTRA Cu hum
12	83	5	25	09	17	19.8	13.5	67	9.5	1015.2	1	005	03	1	1	4	8	5	0	1	83822			12	2Sc30 1Ci75Cu med
13	88	5	03	03	06	16.8	8.7	59	7.0	1022.3	2	008	03	1	1	0	0	9	0	1	85080			13	COTRA
14	75	7	17	02	05	17.7	12.4	71	8.9	1018.6	8	007	03	2	2	2	8	5	5	1	81820	87075		14	2Sc40 1Sc56 1Ac65 COTRA Cu hum Parhelion
15	82	6	27	06	11	18.7	14.2	75	10.0	1014.7	2	013	03	2	2	3	8	4	8	0	81818	83656	85359	15	Cu hum Ac cas
16	80	7	20	04	07	16.3	12.5	78	8.9	1020.5	0	002	02	2	2	1	8	4	7	/	81816	87363		16	1Sc40 Cu hum
17	80	7	22	07	14	19.3	17.3	88	12.1	1010.6	2	009	01	2	2	6	2	4	7	1	86812			17	/Ac65 /Ci75
18	82	1	24	08	18	17.8	10.7	63	7.9	1011.3	3	011	03	0	0	1	1	5	0	0	81825			18	Absent 18 to 24 vv&cld est
19	82	2	25	10	20	16.9	11.0	68	8.1	1017.4	1	013	03	0	0	2	1	5	3	0	82824			19	1Ac58
20	82	6	24	07	13	16.4	10.7	69	7.9	1024.3	1	008	03	1	1	5	8	5	3	1	81820	85650		20	1Ac65 2Ci80
21	62	8	04	02	03	16.0	15.2	95	10.6	1021.7	2	008	20	6	5	8	6	2	/	/	82705	86707	88710	21	
22	56	8	19	02	04	18.1	16.6	91	11.6	1020.3	0	000	05	2	2	8	6	2	/	/	88704			22	
23	56	8	24	04	07	18.5	17.2	92	12.1	1012.9	3	006	05	2	2	8	6	3	/	/	86706	88710		23	
24	84	7	25	06	11	17.8	12.9	73	9.2	1017.2	1	006	03	2	2	7	8	5	/	1	81825	87650		24	/Ci75
25	80	5	01	02	05	16.7	11.8	73	8.5	1018.3	0	000	02	1	1	1	1	4	0	1	81815	85080		25	COTRA Cu fra
26	63	7	03	02	05	19.4	13.3	68	9.4	1016.4	2	001	03	2	2	2	0	9	8	1	81361	83075	87078	26	2Ac64 COTRA
27	86	2	02	04	10	19.2	12.7	66	9.0	1019.2	1	009	01	1	1	2	0	9	8	1	82362			27	1Ac65 1Ci75 COTRA Ac cas parhelion
28	62	7	15	03	06	20.7	14.8	69	10.4	1018.6	0	000	02	2	2	0	0	9	0	1	87077			28	COTRA
29	61	7	27	04	09	18.3	14.2	77	10.0	1014.6	5	004	02	2	2	4	5	3	3	1	81708	84648		29	3Ac58 /Ci75 COTRA
30	68	8	33	05	11	13.1	9.5	79	7.3	1013.8	1	009	60	6	2	2	5	6	2	/	81635	88560		30	2Sc56
31	70	1	21	03	06	15.4	11.4	77	8.3	1017.4	2	011	03	0	0	1	8	5	3	0	81820			31	1Sc50 1Ac60 Cu con W

Mean vis = 30.8 km

Mean cloud = 5.7 72%

Mean wind speed = 5.6 kn

Mean gust = 11 kn

Mean TT = 17.4 °C

Mean TdTd = 12.7 °C

Mean RH = 74.6 %

Mean r = 9.0 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

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for AUGUST 2017

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cf	NChshs	NChshs	NChshs	Date	Remarks
1	86	5	20	09	18	21.0	12.4	58	8.9	1013.9	6	004	25	8	1	4	8	6	0	5	82835	83656	1	1Cs75 2Ci80 COTRA Cu med Cs edge W	
2	30	8	19	11	21	16.9	16.1	95	11.3	1009.6	7	016	53	6	5	8	5	2	/	/	83705	87707	88615	2	
3	80	7	23	11	30	20.6	13.1	62	9.3	1007.3	1	003	02	8	2	7	8	6	/	/	83830	86645	3	Cu med	
4	86	6	26	10	17	20.7	11.3	55	8.3	1012.2	1	006	15	2	2	4	8	6	6	0	83840	85357	4	2Sc56 Cu med jpSW	
5	84	2	28	06	14	18.6	9.1	54	7.1	1018.5	1	013	25	9	8	1	9	6	6	3	81930	81835	5	1Sc50 1Ac60 1Ci70 jpSE vv80K ex p	
6	86	7	23	07	18	20.0	9.3	50	7.2	1021.6	7	007	03	2	2	6	8	6	0	1	83845	84656	6	3Ci78 Cu med	
7	30	8	22	05	15	16.7	15.4	92	10.8	1016.3	5	008	80	8	2	8	3	4	/	/	82912	83815	87630	7	vv30k NW Vio rash 1432&1451
8	70	8	33	05	13	15.3	12.4	83	8.9	1011.0	4	000	21	6	2	7	8	4	2	/	83812	86650	88463	8	2Sc35 jpSW vv40k ex SW
9	59	8	36	07	15	13.8	12.4	91	8.8	1018.2	2	019	63	6	6	7	5	3	2	/	84707	87630	88550	9	
10	83	3	34	07	14	20.4	9.9	51	7.5	1023.3	8	014	02	0	0	2	1	6	0	1	82842		10	2Ci78 Cu hum	
11	80	7	26	08	18	18.1	12.1	68	8.7	1018.2	6	005	03	2	2	3	8	6	7	/	81830	85357	87463	11	2Sc35 1Sc45 Cu hum
12	88	5	27	08	17	21.3	10.8	51	8.0	1016.4	2	005	02	1	1	5	4	6	0	0	82840	84645	12	Cu hum	
13	84	5	25	02	10	21.7	5.6	35	5.6	1020.8	8	008	03	1	1	3	4	7	0	1	81850	83656	13	3Ci80 Cu hum	
14	82	8	20	05	11	21.2	11.5	54	8.4	1015.6	6	007	02	6	2	4	8	6	7	/	81840	84645	87358	14	/As60 Cu hum
15	84	4	25	06	14	21.7	10.8	50	8.0	1015.7	2	005	02	1	1	3	2	6	6	0	83845		15	1Ac57 Cu med	
16	80	6	21	08	17	21.9	11.0	50	8.1	1017.9	8	010	02	2	2	1	1	6	7	1	81842	86362	16	2Ac59 2Ci80 COTRA Cu hum	
17	84	4	24	10	20	23.5	13.1	52	9.3	1011.2	3	002	02	1	1	4	8	6	0	0	83840		17	1Sc56 Cu hum Absent 17 to 23 vv&cld est	
18	84	7	20	07	17	12.7	10.9	89	8.1	1012.1	3	013	01	9	8	2	9	6	6	3	82930	85360	18	1Sc50 /Ci70 tIR2h 1330	
19	84	3	24	13	25	19.3	7.1	45	6.2	1018.4	2	008	02	0	0	3	8	6	0	0	82848		19	1Sc56	
20	86	7	20	06	14	19.4	11.2	59	8.2	1023.0	8	008	03	2	2	3	8	6	7	/	81835	83645	87359	20	
21	75	8	12	02	06	19.5	16.3	82	11.5	1020.8	7	006	02	2	2	8	5	4	/	/	82615	88618	21		
22	81	7	06	04	08	21.4	17.8	80	12.6	1017.1	8	016	02	2	2	7	8	5	3	/	82822	87635	22	/Ac65	
23	84	7	27	09	19	20.4	12.1	59	8.7	1014.1	2	008	03	2	2	1	4	6	7	8	81835	84365	87270	23	1Sc40
24	86	7	26	06	13	19.9	11.1	57	8.2	1017.2	0	002	02	2	2	7	8	6	/	8	82835	87650	24	/Cs78 Cu med	
25	81	2	14	04	11	23.0	11.4	48	8.3	1016.0	7	013	02	0	0	1	1	6	0	1	81840		25	2Ci80 Cu hum	
26	81	7	32	03	11	21.9	13.5	59	9.6	1016.0	2	001	03	2	2	1	1	6	7	1	81842	83364	87075	26	1Ac60 COTRA Cu hum
27	88	1	34	04	07	24.2	11.9	46	8.6	1018.0	7	006	02	0	0	1	1	6	8	0	81848		27	1Ac69 Cu hum Ac flo El hz lyr SW	
28	75	6	19	04	11	27.5	14.9	46	10.4	1015.7	7	017	02	2	2	0	0	9	0	1	82072	86078	28	COTRA Ci flo Parhelion	
29	83	7	25	05	10	24.1	15.6	59	10.9	1011.6	6	011	03	2	2	7	8	6	/	1	83835	86645	29	/Ci75 Cu hum	
30	82	7	33	04	09	13.7	9.9	78	7.5	1014.1	4	000	21	6	2	2	8	5	1	8	82825	84462	87270	30	1Sc45 2Ns50 Cu med Cld edge WNW vv70k ex E
31	80	4	25	04	08	19.3	11.1	59	8.1	1017.1	7	005	15	8	1	2	3	6	6	1	81930	82835	31	1Sc50 1Ac59 1Ci75 Cu con jpN vv60k ex N	

Mean vis = 41.0 km

Mean cloud = 5.8 73%

Mean wind speed = 6.5 kn

Mean gust = 15 kn

Mean TT = 20.0 °C

Mean TdTd = 12.0 °C

Mean RH = 61.8 %

Mean r = 8.7 g/kg

Mean PPP = 1016.1 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation trails present

Wokingham Sunshine Hourly analysis 2017	Hour	01-Aug	02-Aug	03-Aug	04-Aug	05-Aug	06-Aug	07-Aug	08-Aug	09-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug
	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	0.20	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
	5	0.58	0.00	0.22	0.88	0.08	1.00	0.10	0.00	0.00	0.00	0.91	0.11	0.95	0.93	0.00	0.00
	6	0.45	0.00	0.25	1.00	0.59	1.00	0.00	0.00	0.00	0.52	1.00	1.00	1.00	0.94	0.00	0.00
	7	0.51	0.00	0.18	0.98	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.49	1.00	1.00	0.15	0.05
	8	0.63	0.00	0.24	0.37	0.99	1.00	0.00	0.00	0.00	0.84	1.00	0.88	1.00	0.92	0.24	0.00
	9	0.54	0.00	0.48	0.18	0.63	0.81	0.12	0.00	0.00	0.86	1.00	0.21	1.00	0.96	0.87	0.06
	10	0.34	0.00	0.26	0.68	0.54	0.91	0.00	0.00	0.00	0.59	0.98	0.24	1.00	0.47	0.36	0.00
	11	0.58	0.00	0.19	0.25	0.28	0.69	0.00	0.00	0.00	0.65	0.54	0.41	1.00	0.10	0.80	0.35
	12	0.21	0.00	0.04	0.12	1.00	0.65	0.38	0.00	0.00	0.65	0.68	0.12	0.64	0.20	0.91	0.04
	13	0.48	0.00	0.21	0.36	0.10	0.43	0.77	0.00	0.00	0.96	0.80	0.27	0.97	0.00	0.61	0.43
	14	0.39	0.00	0.02	0.14	0.58	0.41	0.17	0.00	0.00	0.71	0.00	0.51	1.00	0.00	0.34	0.61
	15	0.94	0.00	0.16	0.00	1.00	0.12	0.00	0.00	0.00	0.84	0.00	0.36	1.00	0.00	0.70	0.76
	16	0.74	0.00	0.06	0.15	0.65	0.18	0.00	0.00	0.00	0.95	0.00	0.56	0.42	0.00	0.95	1.00
	17	0.00	0.00	0.18	0.01	0.60	0.29	0.00	0.00	0.00	0.98	0.00	0.74	0.00	0.07	1.00	0.53
	18	0.00	0.00	0.00	0.79	0.69	0.08	0.00	0.00	0.00	0.78	0.00	0.59	0.00	0.00	1.00	0.00
	19	0.00	0.00	0.00	0.17	0.32	0.22	0.00	0.00	0.00	0.39	0.00	0.15	0.00	0.00	0.27	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	6.40	0.00	2.51	6.30	9.05	9.00	1.53	0.00	0.00	10.72	7.91	6.64	11.08	5.60	8.21	3.84

Hour	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug	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	0.02
5	0.00	0.60	0.83	0.79	0.00	0.00	0.00	0.50	0.50	0.21	0.22	0.00	0.01	0.00	0.44	0.32
6	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.04	1.00	1.00	0.52	0.93	0.30	0.00	1.00	0.50
7	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.01	1.00	1.00	0.90	1.00	1.00	0.00	1.00	0.56
8	0.01	0.95	0.96	1.00	0.00	0.00	0.00	0.84	1.00	1.00	1.00	1.00	0.80	0.00	1.00	0.57
9	0.68	0.92	0.59	1.00	0.00	0.00	0.00	0.90	1.00	0.84	1.00	1.00	0.29	0.00	0.97	0.55
10	0.91	0.80	0.36	0.63	0.00	0.00	0.00	0.52	1.00	0.34	1.00	1.00	0.43	0.00	0.40	0.44
11	0.69	0.32	0.50	0.61	0.00	0.00	0.00	0.36	0.93	0.84	1.00	1.00	0.96	0.00	0.15	0.43
12	0.87	0.17	0.22	0.41	0.00	0.03	0.03	0.06	1.00	0.94	1.00	1.00	0.26	0.00	0.77	0.40
13	0.67	0.00	0.49	0.01	0.00	0.27	0.42	0.10	0.99	0.25	1.00	1.00	0.33	0.00	0.63	0.41
14	0.42	0.00	0.83	0.01	0.00	0.00	0.48	0.01	0.96	0.45	1.00	1.00	0.39	0.00	0.87	0.36
15	0.67	0.34	0.62	0.00	0.00	0.06	0.00	0.11	0.91	0.19	1.00	1.00	0.32	0.00	0.98	0.39
16	0.51	0.88	0.86	0.00	0.17	0.03	0.13	0.84	1.00	0.38	1.00	1.00	0.44	0.00	0.64	0.44
17	0.63	0.51	1.00	0.00	0.00	0.00	0.04	0.88	1.00	0.00	1.00	1.00	0.00	0.14	0.66	0.36
18	0.41	0.00	0.88	0.00	0.00	0.00	0.26	0.24	0.56	0.00	0.91	0.92	0.00	0.02	0.58	0.28
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	0.05
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	6.47	7.49	10.14	6.46	0.17	0.38	1.37	5.43	12.85	7.44	12.54	12.85	5.53	0.15	10.11	188.20

AUGUST 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	16.68	22.0	1516	12.1	534	75.4	97	536	52	1317	12.05	8.72	12.6	1109	7.4	1947	1014.54	1016.1	2150	1013.5	412	2.1
2	16.50	18.5	1804	13.2	120	89.5	96	2301	66	905	14.75	10.49	12.5	1804	8.3	905	1011.16	1015.9	1	1005.9	2325	7.8
3	17.69	21.3	1519	14.8	305	77.0	94	0	58	1520	13.48	9.64	12.1	1	8.6	1437	1007.14	1009.6	2238	1005.4	457	0.1
4	17.55	22.7	1358	13.4	500	71.1	89	455	47	1400	12.05	8.74	10.8	1059	7.3	1618	1011.53	1013.9	2220	1008.9	101	0.0
5	15.96	20.4	1036	10.5	2335	70.9	93	452	41	1619	10.34	7.80	10.5	1206	5.8	1619	1017.31	1021.8	2359	1013.4	112	1.3
6	15.29	21.2	1228	8.1	507	73.0	98	533	38	1229	9.93	7.53	9.7	917	5.7	1152	1021.90	1023.4	805	1020.1	2341	0.0
7	15.88	21.1	1405	12.3	234	87.7	98	2328	66	1407	13.77	9.75	11.5	1541	8.1	138	1017.11	1020.3	4	1013.8	2359	7.8
8	14.30	15.7	1517	12.2	2355	88.4	98	57	77	1617	12.39	8.94	10.3	104	8.0	1829	1011.71	1013.9	1	1010.8	1615	0.3
9	13.31	14.8	1225	12.0	6	94.0	97	625	86	2354	12.37	8.88	9.9	1206	7.9	2354	1016.61	1022.6	2358	1012.1	349	24.3
10	14.69	20.9	1506	9.7	2355	75.4	98	2358	42	1724	9.91	7.49	9.6	1141	6.1	1754	1023.54	1024.9	1012	1022.2	1813	0.0
11	15.18	21.6	1323	8.4	457	79.8	99	527	49	1337	11.36	8.35	10.5	2359	6.6	1010	1018.91	1022.5	2	1014.7	2349	0.1
12	17.96	22.1	1650	12.4	2350	71.5	96	332	43	1618	12.35	8.95	11.0	339	6.9	1526	1016.19	1020.0	2344	1014.1	412	0.2
13	15.72	22.5	1409	9.1	511	67.6	97	522	32	1505	8.91	7.05	8.8	1328	5.1	1158	1021.08	1022.5	909	1019.7	17	0.0
14	15.83	22.5	1331	7.7	451	75.9	99	552	49	1527	11.10	8.20	11.0	1159	6.3	451	1016.95	1020.6	5	1013.9	2312	0.1
15	17.36	23.1	1400	10.4	2358	71.6	98	356	38	1738	11.52	8.49	10.7	739	5.9	1738	1015.63	1020.3	2341	1012.8	219	0.4
16	15.80	22.7	1428	8.8	404	74.9	98	506	41	1432	10.85	8.04	10.2	949	6.7	404	1018.42	1020.8	810	1013.4	2359	2.8
17	19.00	24.7	1334	15.1	5	78.5	96	341	45	1511	14.84	10.51	13.1	944	8.0	1517	1011.06	1013.5	0	1009.4	555	0.6
18	15.22	19.8	1054	11.9	1427	79.2	95	353	54	1053	11.54	8.49	10.6	1116	6.9	1958	1011.23	1012.9	2354	1009.2	354	9.2
19	15.30	20.3	1405	11.1	2231	70.0	96	242	40	1447	9.38	7.30	9.0	1250	5.7	1447	1017.75	1022.0	2338	1012.5	6	0.0
20	14.51	21.3	1230	8.8	528	79.8	98	2359	42	1231	10.64	7.91	9.5	2359	6.2	1238	1023.23	1024.5	936	1021.8	2	8.1
21	16.82	20.6	1653	13.5	8	93.1	99	627	80	1218	15.69	11.00	12.7	1653	9.3	8	1020.99	1022.0	1025	1020.2	253	1.8
22	18.94	23.6	1307	16.0	2325	88.4	98	443	69	1308	16.92	11.90	14.3	1137	10.7	2259	1018.08	1020.6	3	1013.6	2359	0.1
23	17.28	21.9	1320	12.9	2351	81.5	99	525	55	1446	13.82	9.84	12.4	908	8.2	1528	1013.75	1016.1	2228	1011.7	500	0.0
24	16.32	21.1	1341	12.0	509	77.5	97	311	52	1342	12.07	8.70	10.3	845	7.6	1440	1017.07	1018.5	2235	1015.7	1	0.0
25	16.27	23.9	1508	9.3	536	77.7	99	652	44	1446	11.81	8.57	10.5	1412	7.1	536	1017.10	1018.7	803	1015.1	1637	0.0
26	17.36	23.8	1402	11.6	539	78.4	98	555	48	1356	13.13	9.34	11.4	1233	8.2	1126	1016.34	1017.9	2357	1015.6	327	0.0
27	18.36	25.2	1544	12.9	535	75.7	98	604	42	1555	13.33	9.44	11.9	1209	8.0	1555	1018.38	1019.4	853	1017.3	1709	0.0
28	19.70	27.7	1504	11.6	522	73.7	98	417	40	1713	14.09	9.95	12.9	1211	8.2	523	1017.16	1019.1	47	1014.9	1745	0.0
29	18.38	24.9	1401	14.6	255	79.1	97	204	51	1359	14.44	10.19	12.6	1112	8.4	2358	1013.39	1016.0	33	1010.9	1611	0.0
30	13.05	15.1	3	8.7	2357	80.4	97	2359	66	1659	9.71	7.47	8.7	1242	6.5	514	1013.69	1015.4	2301	1011.9	247	1.3
31	13.26	19.9	1543	6.7	600	78.2	99	622	44	1701	9.10	7.16	10.2	1310	5.9	1712	1017.31	1020.1	2308	1014.9	132	0.4
Total																						68.8
Mean	16.31	21.50		11.35		78.5	96.88		51.46		12.18	8.87	11.02		7.27		1016.33	1018.89		1013.85		
Max	19.70	27.66		15.98		94.0	99.00		86.30		16.92	11.90	14.25		10.73		1023.54	1024.92		1022.20		
Min	13.05	14.78		6.67		67.6	88.60		32.20		8.91	7.05	8.68		5.10		1007.14	1009.56		1005.40		

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

WOKINGHAM METEOROLOGICAL DATA

Wokingham Climatological Station, Emmbrook, Berkshire.

Lat 51°25'N 00°51'W NGR (SU)798701 Altitude 46m ASL

Seasonal Means and Totals

SUMMER 2017

Temperature (°C)		Rank in the past 136 years	
Mean maximum	22.5 (+0.5)	24 th highest	
Mean minimum	12.6 (+0.8)	5 th highest	
Daily mean	17.6 (+0.7)	10 th highest	
Rainfall total (mm)	226.6 (157 %)	24 th highest	
Sunshine total (hours)	579.4 (99 %)		
N° of: Dry days	52 (-6)	Wet days	23 (-1)
Days with: Air frost	0 (0)	Ground frost	0 (0)
		Snow falling	0 (0)
		Snow lying	0 (0)
Thunder	4 (-3)	Hail ≥5mm	1 (+1)
		Small hail/ice	0 (0)
		Fog @09 GMT	0 (0)
		Nil sun	5 (+2)
Air pressure MSL : Mean @09 GMT (mbar)		1015.0 (-1.6)	

Departure from 1981 to 2010 average shown in brackets.

Notes: **Warm and Wet with Near Average Sunshine.**

Temperature: In terms of the mean, this is the warmest summer season since 2006. It ranks 10th highest since 1882, and is 1.0° below the record summer of 1976. The mean maximum however, is highest only since 2013, and ranks 24th highest in 136 years, 1.4° below the record 1976. The mean minimum, however, ranks 5th highest, only 0.3° below the record set in 1997. July was the warmest month, mean 18.4°, and August the coolest, 16.7°, while June had a mean of 17.6°. Compared with average though, June was outstanding with an anomaly of +2.1°, and was 2nd warmest on record, followed by July with +0.7° and August with -0.8°. So it was a downhill summer, with the best weather in June. The season's highest max was 33.4° on the 21st June, 3.1° above the median, while the lowest max was 15.1° on the 9th August, 0.6° above its median. The highest min was 16.9° on the 22nd June and the 8th July, 0.1° below the median, while the lowest min of 6.8° was on the 31st August, 2.5° above its median and 4th highest in 114 years. The mean grass min was 9.8°, anomaly +0.9°, and the lowest grass min was 1.5° on the 4th June. The mean earth temperature at 30 cm depth was 19.1°, anomaly +1.1°, and at 1 m depth the mean was 17.3°, 0.9° above the 28 year average. There were hot spells in each month, most intense and prolonged in June. From the 17th to 21st June anomalies for daily max were over +10° on 3 consecutive days. In July the hot spell peaked with an anomaly of +9° on the 6th, and in August a short spell saw an anomaly of +7° on the 28th. The period 11th July to 24th August saw 35 days with daily max below normal, with anomalies over -7° on the 8th and 9th of August. **Rainfall:** The total this summer is highest since 2012, and its ranking of 24th highest in 136 years puts this season firmly into the wet category. The total is 67.3 mm above the long-term median. July the 18th was the wettest day with 35.0 mm falling in just over 3 hours, accompanied by a heavy thunderstorm, and a rain rate of 185 mm/hr. But July also saw a fall of 33.5 mm on the 11th. To have two falls over 30 mm in one month is unusual, and there have been only 9 in the past 200 months to have one day with at least 30 mm, with July 2017 the only example of 2 such falls in a single month in that period. Thunder occurred on 4 days, the 18th and 19th July and the 5th and 18th of August. June was the driest month, the only one with a below average total, while July and August were both above average with July's 118.0 mm the wettest. A large part of June was dry with a 15 day dry spell ending on the 25th, and the dry weather extended into July with an 8 day spell ending on the 10th. The next and final dry spell was 8 days to the 29th August. Overall there were 6 fewer dry days than average. Estimated soil moisture deficit peaked at 160 mm on the 9th July and decreased to 82 mm by the 23rd August. For shallow rooted plants, an index of stress for the season as a whole was 384, compared with a 42 year median of 595, and stress dropped to zero from the 24th July onwards. **Sunshine:** The number of hours with sunshine this summer is close to average. It is highest since 2014, and in this millennium only 5 summers have been sunnier. June was the sunniest month with a daily mean of 6.93 hours, followed by August, 6.07 hours, then July with 5.92 hours. Notable sunny periods were 14th to 21st June, daily mean 12.76 hours, the 5th to 10th July, mean 11.61 hours, also the 4 days to the 28th August, mean 11.42 hours. The sunniest day was the 5th July with 15.2 hours. Overall there were 27 days with <3 hours, 47 with =>6 hours, 30 with =>9 hours, 13 with =>12 hours and 1 with =>15 hours. **Wind:** The mean speed of 6.6 mph is 0.4 mph above average, but was exceeded in 2015 and 2012 in recent years. The windiest day was the 6th June, mean 15.1 mph, and the season's highest gust of 51 mph was also on that day. The least windy day was the 27th August, mean 2.3 mph, and there were 1738 minutes of calm. Daily mean direction/number of days : N,7 NE,5 E,3 SE,3 S,13 SW,38 W,15 NW,8. Compared with average, winds from the SW and W combined were 8 % more frequent, at the expense of winds from N, NE and E combined, 7 % less frequent. **Humidity:** The overall mean relative humidity was 74.9 %, and the lowest value was 28 % on the 17th July. The mean water vapour content per kg of air was 9.0 g at 0900 GMT and 8.7 g at 1500 GMT, both close to normal. **Pressure:** The season's highest pressure was 1027.9 mbar on the 17th June and the lowest was 987.1 mbar on the 6th June, a span of 40.8 mbar, 5.3 mbar above average. **June:** Near record warmth and a heatwave with sunshine above and rainfall below average. The warmest June since 1976 and 2nd warmest since before 1882. Highest max 2nd highest in 114 years, lowest max 8th highest in 105 years, highest min 6th highest in 105 years, lowest min 9th highest in 114 years. 30 cm temperature reached 21.5°, a new June record. Wind gust 51 mph is highest for June since before 1988. **July:** Warm, especially by night, and very wet with below average sunshine. Mean min 4th highest in 136 years. Lowest min 7th highest in 114 years. Mean 1 m earth temperature highest for July in the past 29 years. 9th wettest in 136 years. Highest daily fall 8th highest in 114 years. **August:** Wet with below average temperature and near average sunshine. 12 of the past 17 Augusts have been warmer.

Month	Mean	Anom	Mean	Anom	Rain	Anom	Sun	Anom	Mean	Max	Mean	Anom
	Max		Min		mm		hrs		Wind mph	gust	pressure	
June	22.8°	+2.3°	12.4°	+1.9°	35.5	72 %	207.8	108 %	7.4	51	1013.7	-3.4
July	23.2°	+0.3°	13.6°	+1.0°	118.0	262 %	183.4	92 %	6.6	32	1014.5	-2.1
August	21.4°	-1.2°	12.0°	-0.4°	73.1	145 %	188.2	97 %	5.8	41	1016.7	+0.4

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

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.