

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 2016

Temperature (°C)		Anomaly		Rank in the past 135 years
Mean maximum	23.9	+1.3		12 th highest
Mean minimum	13.1	+0.7		8 th highest
Daily mean	18.5	+1.0		10 th highest
Highest maximum	30.5	on 24 th	Lowest maximum	18.7 on 1 st
Highest minimum	17.9	on 25 th	Lowest minimum	7.8 on 15 th
Mean grass minimum	9.8	+0.5	Lowest grass minimum	2.8 on 15 th
Mean earth @30 cm	19.5	+0.8	Earth @100 cm	18.1
Frost duration (hrs)	0.0		Rain duration (hrs)	20.2
Rainfall total (mm)	28.2	56 %		23 rd lowest
Highest daily fall	15.7	on 1 st		
Number of: Dry days (<0.2mm)	21	Wet days (>0.9mm)	4	days ≥5mm 2
Sunshine total (hrs) 212.8	Daily mean 6.86	110 %	Sunniest day 14.5	on 6 th
N° days with: Air frost 0	Ground frost 0	Snow falling 0	Snow lying 0	
Thunder 1	Hail ≥5mm 0	Small hail/ice 0	Fog @09 0	Nil sun 1
Pressure MSL : Mean @09 GMT, mbar 1018.7	+2.4	Highest 1027.5	on 6 th	Lowest 1003.6 on 19 th
Relative humidity : Mean (%) 73.0	Lowest 28	on 26 th	Water vapour (g/kg), mean at 09 and 15 GMT 9.5,	9.0
Overall mean wind speed (mph) 6.3	Windiest day 12.6	on 20 th	Max gust 41	on 20 th
Wind direction (days) N 2 NE 1 E 4 SE 0 S 3 SW 13 W 5 NW 3				
Least windy day (mph) 3.0	on 14 th	Calm; less than 0.5 mph (minutes)	838	

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

Notes: **A Splendid Summer Month, Warm, Dry and Sunny.**

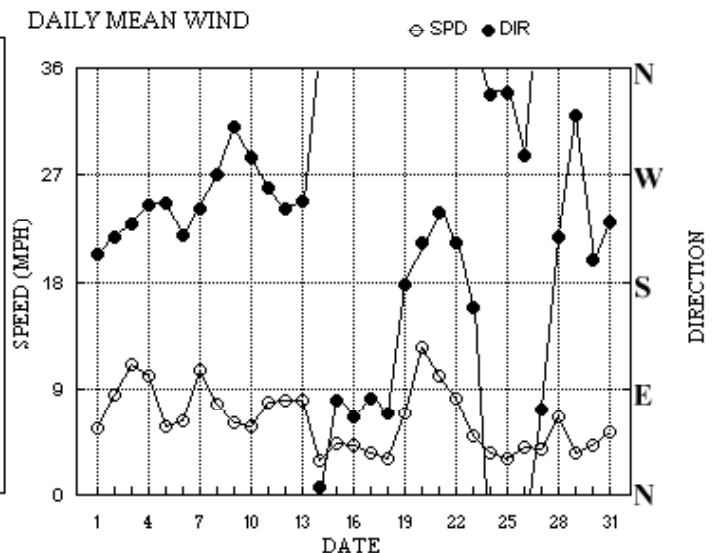
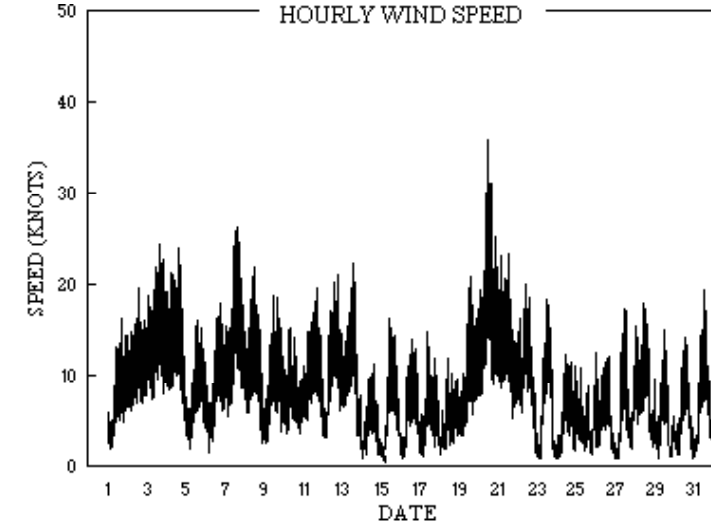
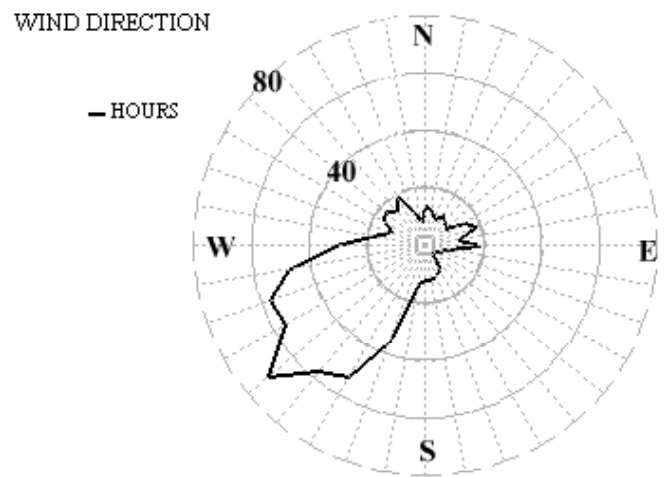
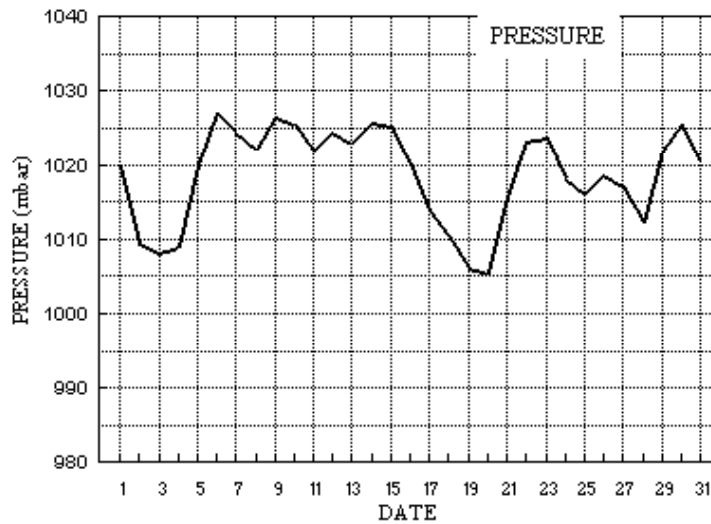
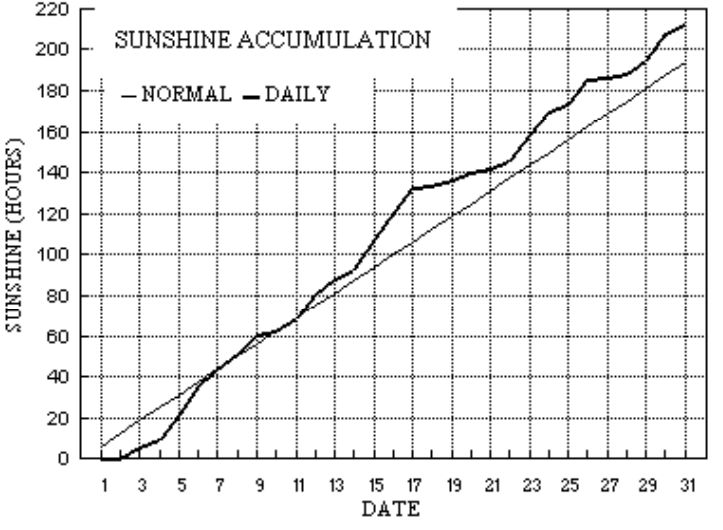
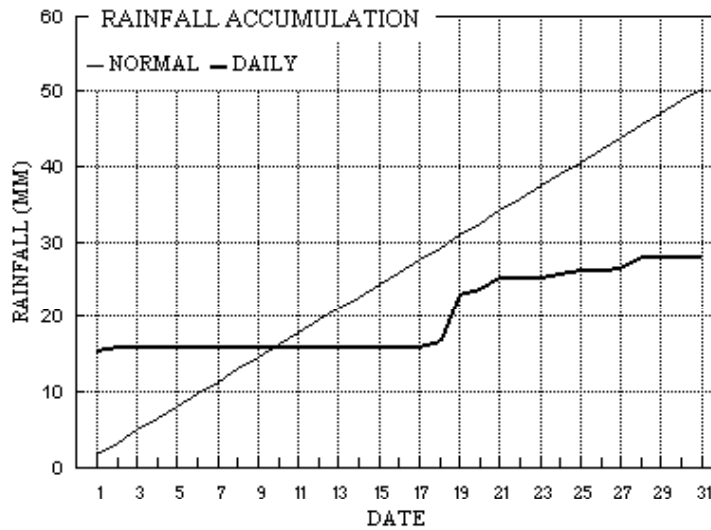
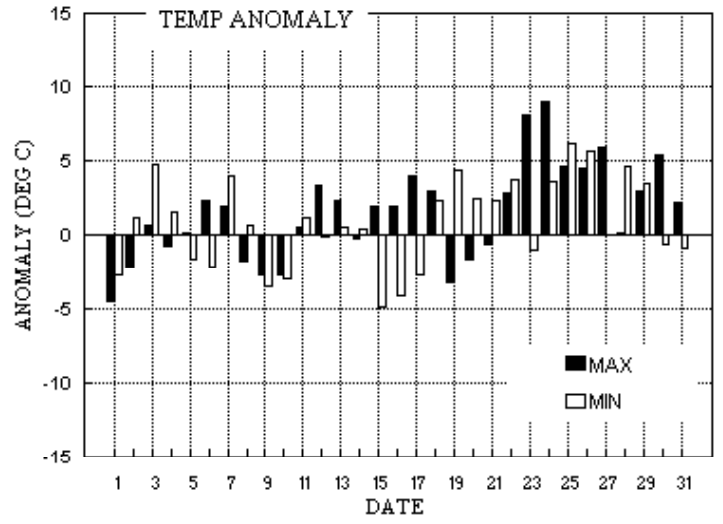
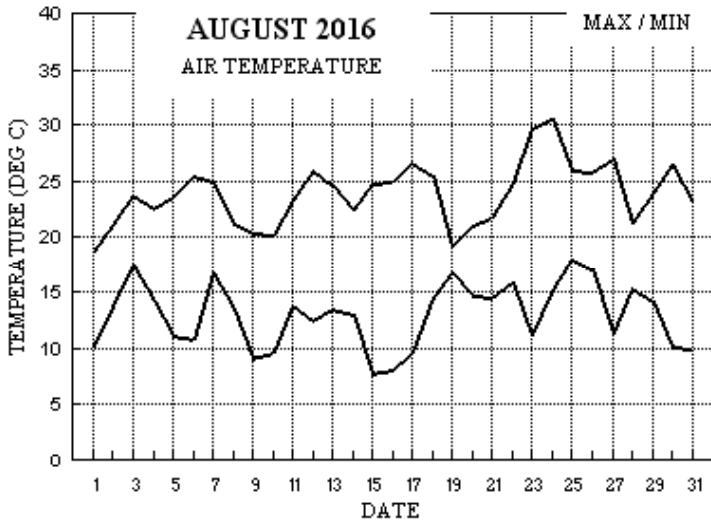
Temperature: This has been a very warm August, ranking in the top 10% for warmth in the past 135 years. The mean temperature is highest for the month since 2004, but is 1.5° lower than the record set in 1997. The mean maximum is highest since 2003. The highest max is 2.6° above the 113 year median, but is well below the record of 36.9° set in 2003. The lowest max is 1.8° above the median, the highest min is 1.6° above the median and the lowest min is 1.5° above its median, all three parameters being in the top 10% of their ranked values. The mean grass minimum is highest since 2008. Earth temperatures are above average, and the temperature range at 1 m depth is only 0.3° for the whole month, equal lowest with 2005 in the past 28 years. August started with the coldest day of the month, the anomaly for the max on the 1st being -4.5°, but daily anomalies then fluctuated between +4° and -3° until the 22nd, there being 11 days above and 10 below normal. For daily min, anomalies varied between +5° on the 3rd and -5° on the 15th, the 15th to 17th having the coldest nights of the month. After the 22nd there was a heat-wave, peaking on the 23rd and 24th, with some unpleasantly humid weather, and anomalies for max of +8° on the 23rd and +9° on the 24th. During this period anomalies for overnight min reached +6° on the 25th, though returning close to normal on the 30th. **Rainfall:** This has been a dry August with just over half the average rainfall, and the fall on the wettest day, the 1st, accounted for 56% of the month's total. A 15 day dry spell ended on the 17th, and the final 10 days had only 2.8 mm in total with 6 dry days. The duration of measurable rain was 10 hours below the average of 30 hours, but is lowest only since 2013. Rainfall rate reached 31 mm/hr on the 19th, this month's highest. There was no hail, but thunder was recorded in the evening of the 24th. The accumulation of daily rainfall compared with normal was 14 mm in surplus after the rain on the 1st, but the dry spell changed this to a deficit of 12 mm by the 17th, and despite a temporary recovery to 8 mm in deficit by the 19th, it ended the month 22 mm below normal. **Sunshine:** This has been a sunny August, the total of 212.8 hours being highest for the month since 2005. After a dull start with just 0.2 hours over the first two days, the accumulation of daily sunshine returned to normal by the 6th where it remained until the 11th, but the period 12th to 17th was sunny, having an average of 10.5 hours per day, lifting the accumulation to a surplus of 30 hours on the 17th. This reduced to 5 hours by the 22nd after a series of fairly dull days, all having less than 25% of the maximum. However, the 23rd to 26th were mainly sunny, lifting the surplus to 20 hours on the 26th and it remained close to this until the end of the month. Overall there were 8 days with <3 hours, 16 with =>6 hours, 11 with =>9 hours, and 6 with =>12 hours. **Wind:** The mean wind speed this August is 0.5 mph above average, but is highest only since 2014. The windiest day is 2.1 mph above average and is highest for the month since 1992. The highest gust is 6 mph above average and is highest for the month since 1993. Conversely, the number of calm minutes is highest since 2007.

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			
-1.0°	-0.1°	98%	101%	+1.2°	-0.1°	49%	123%	+4.1°	+2.5°	25%	106%

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

Wokingham climatological graphs for August 2016



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: AUGUST 2916

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 HH	Rain hrs	
1	18.7	10.2	15.7	6.6	19.6	18.3	0.2	0.0	1020.0	0 0 0 0	0 0 0 0	0 0 0 0	204	4.2 4.9	194 16 1624	168 8	23 10.5	
2	21.0	13.8	0.3	13.5	19.1	18.3	0.0	0.0	1009.5	0 0 0 0	0 0 0 0	0 0 0 0	218	7.3 7.4	227 20 1436	228 9	14 0.4	
3	23.8	17.5	tr	16.5	19.4	18.2	5.3	0.0	1008.1	0 0 0 0	0 0 0 0	0 0 0 0	228	9.6 9.6	240 25 1421	228 12	14 0.0	
4	22.5	14.3	tr	12.6	19.6	18.1	4.3	0.0	1008.9	0 0 0 0	0 0 0 0	0 0 0 0	244	8.5 8.8	259 24 1552	245 11	09 0.0	
5	23.5	11.1	0.0	6.9	19.4	18.1	11.4	0.0	1019.9	0 0 0 0	0 0 0 0	0 0 0 0	246	4.8 5.0	216 16 1435	243 8	15 0.0	
6	25.5	10.8	tr	6.4	19.5	18.1	14.5	0.0	1027.0	0 0 0 0	0 0 0 0	0 0 0 0	219	5.1 5.4	191 18 1709	197 10	17 0.2	
7	25.0	16.8	0.0	14.8	20.1	18.1	8.3	0.0	1024.4	0 0 0 0	0 0 0 0	0 0 0 0	241	8.8 9.1	281 27 1508	251 13	12 0.0	
8	21.2	13.6	tr	9.3	20.0	18.1	7.5	0.0	1022.2	0 0 0 0	0 0 0 0	0 0 0 0	270	6.3 6.7	266 22 1209	285 9	09 0.0	
9	20.3	9.2	tr	3.7	19.4	18.2	9.4	0.0	1026.6	0 0 0 0	0 0 0 0	0 0 0 0	310	5.1 5.4	325 19 1144	331 9	18 0.0	
10	20.2	9.7	tr	5.6	19.0	18.2	1.6	0.0	1025.6	0 0 0 0	0 0 0 0	0 0 0 0	284	4.3 5.0	325 15 0851	316 7	08 0.2	
11	23.3	13.9	0.0	12.2	19.0	18.1	6.6	0.0	1022.0	0 0 0 0	0 0 0 0	0 0 0 0	259	6.7 6.8	280 20 1715	261 9	17 0.0	
12	25.9	12.5	0.0	8.4	19.3	18.0	12.0	0.0	1024.5	0 0 0 0	0 0 0 0	0 0 0 0	242	6.7 7.0	262 21 1822	252 10	14 0.0	
13	24.6	13.5	0.0	11.6	19.7	18.0	7.3	0.0	1023.0	0 0 0 0	0 0 0 0	0 0 0 0	248	6.3 6.9	260 23 1452	253 11	14 0.0	
14	22.4	13.1	0.0	9.8	19.6	18.0	4.9	0.0	1025.8	0 0 0 0	0 0 0 0	0 0 0 0	7	2.4 2.6	75 11 1505	354 4	11 0.0	
15	24.8	7.8	0.0	2.8	19.3	18.0	14.2	0.0	1025.3	0 0 0 0	0 0 0 0	0 0 0 0	80	3.6 3.8	28 16 1059	86 7	12 0.0	
16	25.0	8.2	0.0	2.9	19.3	18.0	13.5	0.0	1020.1	0 0 0 0	0 0 0 0	0 0 0 0	66	3.5 3.6	70 14 1328	78 6	09 0.0	
17	26.6	9.6	tr	4.8	19.3	18.0	11.3	0.0	1013.7	0 0 0 0	0 0 0 0	0 0 0 0	82	2.7 3.2	58 15 0933	83 6	10 0.0	
18	25.4	14.6	0.8	11.3	19.6	18.0	1.6	0.0	1010.4	0 0 0 0	0 0 0 0	0 0 0 0	69	1.5 2.7	25 12 1045	18 4	10 1.3	
19	19.2	16.7	6.3	13.3	19.7	18.0	2.3	0.0	1006.2	0 0 0 0	0 0 0 0	0 0 0 0	177	5.4 6.0	170 21 1434	183 9	13 2.7	
20	21.0	14.7	0.7	13.3	19.0	18.1	3.5	0.0	1005.4	0 0 0 0	0 0 0 0	0 0 0 0	212	10.7 10.9	216 36 1252	212 14	11 1.2	
21	21.7	14.6	1.6	13.7	18.9	18.0	2.5	0.0	1015.5	0 0 0 0	0 0 0 0	0 0 0 0	238	8.5 8.8	248 23 1207	248 12	12 1.5	
22	24.8	15.9	0.0	14.8	18.9	18.0	3.4	0.0	1023.2	0 0 0 0	0 0 0 0	0 0 0 0	212	7.0 7.2	214 20 1038	216 11	10 0.0	
23	29.7	11.1	0.0	7.2	19.1	18.0	13.5	0.0	1023.6	0 0 0 0	0 0 0 0	0 0 0 0	158	4.1 4.4	205 18 1313	162 10	14 0.0	
24	30.5	15.2	0.6	11.7	19.3	18.0	10.4	0.0	1018.1	0 0 0 0	1 0 0 0	0 0 0 0	337	2.2 3.2	300 12 1101	310 5	17 0.5	
25	26.0	17.9	0.3	16.4	20.1	18.0	4.1	0.0	1016.0	0 0 0 0	0 0 0 0	0 0 0 0	339	1.2 2.7	68 11 0643	65 4	06 0.5	
26	25.8	17.2	0.0	13.8	20.3	18.1	11.8	0.0	1018.6	0 0 0 0	0 0 0 0	0 0 0 0	286	3.0 3.5	294 13 0009	251 6	13 0.0	
27	27.0	11.4	0.4	6.7	20.0	18.2	1.4	0.0	1017.1	0 0 0 0	0 0 0 0	0 0 0 0	72	1.8 3.4	66 18 1254	78 8	13 0.2	
28	21.2	15.5	1.5	12.9	20.0	18.3	1.6	0.0	1012.2	0 0 0 0	0 0 0 0	0 0 0 0	218	5.6 5.8	235 18 1026	214 8	15 1.0	
29	24.0	14.2	0.0	10.6	19.7	18.3	6.7	0.0	1022.0	0 0 0 0	0 0 0 0	0 0 0 0	320	2.5 3.1	306 15 1257	332 6	14 0.0	
30	26.4	10.2	0.0	5.7	19.4	18.3	12.9	0.0	1025.6	0 0 0 0	0 0 0 0	0 0 0 0	198	3.6 3.6	199 14 1507	195 7	17 0.0	
31	23.1	10.0	tr	5.0	19.3	18.3	4.8	0.0	1020.5	0 0 0 0	0 0 0 0	0 0 0 0	231	4.4 4.6	245 19 1407	234 8	16 0.0	
Total			28.2				212.8	0.0										20.2
Mean	23.9	13.1		9.8	19.5	18.1	6.86	0.0	1018.7					235	3.3 5.5			
Anom	+1.3	+0.7	56%	+0.5	+0.8	+0.5	110%											
Daily mean		18.5							1027.5									
Anom		+1.0							1003.6									

Number of days with:

Air frost = 0 Ground frost = 0 Nil sun = 1
 Snow falling = 0 Snow lying = 0 Thunder = 1
 Hail=>5mm = 0 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 2016

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NCh	shs	NCh	shs	Date	Remarks
1	82	7	23	05	09	15.7	11.6	77	8.6	1020.0	3	005	03	2	2	1	1	4	7	/	81818	87465					1	2Ac60 Cu hum Cld edge NE
2	50	8	22	08	16	18.4	17.2	93	12.2	1009.5	2	002	58	6	5	8	5	2	/	/	83705	87707	88612				2	Hvy ra 0845-46
3	86	7	23	09	16	19.0	14.4	75	10.3	1008.1	4	000	03	2	2	7	8	5	3	2	85820	83635	85072				3	3Ac69 Cu hum
4	82	7	25	11	21	18.4	12.6	69	9.2	1008.9	2	009	02	1	1	5	1	5	0	1	85820	84072					4	Cu hum
5	86	7	28	04	08	18.6	11.5	64	8.2	1019.9	2	017	03	2	2	1	1	5	0	1	81825	87078					5	1Cc71 COTRA Cu hum iridescence
6	88	1	22	03	07	19.4	12.9	66	9.1	1027.0	1	008	03	0	0	1	1	5	0	0	81825						6	Cu hum
7	82	7	23	09	17	21.5	17.6	79	12.3	1024.4	5	005	01	2	2	7	8	4	/	1	85815	84645					7	/Ci75 Cu med
8	82	5	27	09	19	17.8	8.5	54	7.1	1022.2	1	006	03	0	0	1	1	6	3	2	81832						8	2Ac67 2Ci70 COTRA Cu hum
9	80	2	35	06	14	16.3	7.5	56	6.6	1026.6	1	006	03	0	0	1	1	6	0	1	81830						9	2Ci75 COTRA Cu hum
10	80	7	31	07	15	15.0	8.4	65	6.7	1025.6	0	005	02	2	2	4	8	5	7	1	82828	83645	85357				10	/Ci75 Cu med
11	80	7	26	07	14	17.2	10.6	65	8.0	1022.0	4	000	01	2	2	1	8	5	8	8	81825	85362	86275				11	1Sc56 2Ac59 COTRA Cu hum Ac cas Halo 22°
12	75	3	24	07	15	19.0	14.1	73	10.2	1024.5	1	004	01	1	1	3	5	4	0	0	83615						12	
13	81	8	24	08	17	17.9	13.5	75	9.6	1023.0	1	005	03	2	2	8	5	4	/	/	88615						13	
14	86	7	02	03	07	17.8	10.2	61	7.7	1025.8	1	007	02	2	2	7	8	5	/	/	81828	87645					14	Cu hum
15	81	5	07	05	10	19.3	11.7	62	8.3	1025.3	8	005	03	1	1	2	1	5	0	1	82825	84080					15	COTRA Cu hum
16	70	7	07	06	10	19.2	14.6	75	10.7	1020.1	7	005	03	1	1	2	1	4	0	1	82815	87080					16	COTRA Cu hum U/a cont
17	61	4	08	05	11	19.7	14.6	73	10.2	1013.7	7	004	02	1	1	4	8	4	0	0	81812	84640					17	Cu hum
18	65	7	34	03	05	18.3	13.6	74	9.6	1010.4	2	003	02	2	2	7	0	9	7	/	83358	87361					18	
19	50	8	15	05	10	16.8	15.5	92	10.8	1006.2	6	009	61	6	5	8	5	3	/	/	83706	87712	88630				19	Absent 19 to 23 vv/cld/wx est
20	75	7	21	13	23	16.8	13.1	79	9.3	1005.4	3	008	25	8	2	4	8	4	7	/	82815	83625	87358				20	
21	82	6	25	10	21	16.9	12.2	74	8.8	1015.5	1	024	03	2	2	6	8	5	0	0	83820	86630					21	
22	70	7	22	09	17	18.6	14.7	78	10.3	1023.2	2	010	03	2	2	7	8	4	3	1	85815	83630	85362				22	/Ci75
23	82	1	15	07	12	22.1	11.8	52	8.5	1023.6	8	008	02	0	0	0	0	9	0	1	81080						23	
24	75	1	36	04	07	23.8	16.5	63	11.7	1018.1	8	003	01	1	1	1	0	9	3	2	81368						24	1Ci75 COTRA
25	60	7	35	03	07	21.3	17.3	78	12.1	1016.0	5	000	05	2	2	6	0	9	7	1	82362	85368	86075				25	
26	82	1	30	05	10	19.6	11.9	61	8.4	1018.6	3	020	01	1	1	1	1	5	0	1	81820						26	1Ci78 COTRA Cu hum
27	62	7	04	06	13	20.7	15.9	74	11.1	1017.1	8	012	03	2	2	6	5	6	7	1	82640	85650					27	2Ac65 /Ci75 COTRA
28	82	8	21	06	13	18.5	15.0	80	10.5	1012.2	1	007	02	2	2	8	5	4	/	/	86615	88620					28	
29	62	7	30	03	08	18.3	14.3	77	10.0	1022.0	1	017	03	2	2	4	2	4	3	1	84813	83357					29	3Ci75 COTRA Cu med
30	78	2	19	03	05	20.4	13.7	65	9.5	1025.6	1	003	02	0	0	0	0	9	0	1	82080						30	COTRA
31	78	7	24	05	09	17.4	12.8	75	9.1	1020.5	2	004	03	2	2	4	8	4	0	2	81818	84635	85075				31	COTRA Cu hum

Mean vis = 31.3 km
 Mean cloud = 5.6 71%
 Mean wind speed = 6.3 kn
 Mean gust = 12 kn
 Mean TT = 18.7 °C
 Mean TdTd = 13.2 °C
 Mean RH = 71.1 %
 Mean r = 9.5 g/kg
 Mean PPP = 1018.7 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 2016

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	NChs	hNChs	NChshs	Date	Remarks
1	80	8	22	05	11	16.3	13.3	82	9.4	1018.6	6	010	61	6	6	4	8	5	7	/	82820	83635	86357	1	8As62 Cu med
2	58	8	23	09	20	20.4	17.9	85	12.7	1009.9	2	001	50	6	5	8	5	3	/	83708	87710	88620	2		
3	82	4	23	13	25	23.4	14.7	58	10.7	1006.3	7	012	02	1	1	4	8	6	0	0	84835			3	1Sc56 Cu med
4	88	6	24	11	21	22.3	11.3	50	8.0	1009.5	1	004	15	8	2	3	8	6	6	1	82840	85358		4	2Sc56 3Ci75 COTRA Cu med jpSW
5	84	7	23	09	16	23.2	12.7	52	8.6	1020.5	4	000	02	2	2	4	8	6	7	1	83840	86358		5	2Sc56 /Ac68 /Ci78 COTRA Cu med
6	88	1	22	09	15	25.3	10.7	40	8.2	1026.4	8	006	01	0	0	1	1	7	4	0	81850			6	1Ac58 Cu hum
7	81	1	27	12	22	23.4	12.1	49	8.8	1022.0	7	013	01	1	1	1	4	6	0	1	81840			7	1Sc45 1Ci80 COTRA Cu hum
8	84	7	27	09	17	20.1	6.9	42	6.0	1021.5	2	007	02	2	2	2	8	7	6	1	81850	83357	85075	8	2Sc56 COTRA Cu med
9	80	7	28	08	15	20.0	6.9	43	5.8	1024.5	8	012	02	2	2	7	8	7	/	/	82850	87657		9	Cu med
10	82	7	30	06	14	18.2	6.3	46	5.8	1024.6	8	008	02	2	2	6	8	6	3	1	82848	85656		10	2Ac65 /Ci75 COTRA Cu med
11	82	7	29	08	17	23.2	13.3	53	9.5	1021.0	7	005	02	2	2	5	5	6	3	1	85635	84363	87075	11	COTRA
12	82	1	25	10	20	25.5	10.9	40	8.0	1022.5	6	006	02	0	0	1	1	7	0	0	81850			12	Cu hum
13	86	7	26	12	23	23.8	12.8	50	9.1	1021.7	6	007	01	2	2	2	1	6	0	1	82845	86080		13	COTRA Cu hum
14	84	5	08	05	10	21.8	9.2	44	7.1	1025.1	8	003	01	2	2	5	5	6	0	0	85645			14	
15	82	2	08	06	14	24.7	11.6	44	8.4	1022.5	7	012	02	0	0	0	0	9	0	1	82081			15	COTRA
16	72	7	28	05	13	24.4	11.5	44	8.3	1017.0	7	016	02	2	2	1	1	6	0	1	81845	87075		16	COTRA Cu hum. Parhelia
17	67	2	20	04	10	25.7	11.5	41	8.3	1010.8	7	013	02	1	1	2	4	7	0	0	81850			17	1Sc50 Cu hum
18	70	5	06	04	10	24.0	13.5	52	9.6	1009.1	8	009	01	2	2	3	8	6	7	0	81840	83656		18	3Ac62 Absent 18 to 22. vv/cld/wx est
19	70	8	18	07	21	16.1	14.3	89	10.0	1004.6	7	007	21	6	2	8	5	3	/	/	85709	85620	88630	19	
20	65	7	22	11	30	17.9	12.1	69	8.7	1006.4	2	009	80	8	2	7	8	6	/	/	83835	87650		20	
21	84	3	24	10	19	21.4	11.1	52	8.2	1018.9	1	013	02	1	1	3	1	6	3	0	83840			21	1Ac62
22	80	6	21	09	17	23.9	15.4	59	10.8	1023.0	5	001	02	2	2	6	8	6	/	/	83835	85640		22	
23	86	1	16	09	17	29.3	11.4	33	8.3	1019.5	7	020	02	0	0	0	0	9	0	2	81075			23	
24	78	3	35	04	09	30.2	15.5	41	10.8	1016.6	6	007	03	0	0	1	0	9	8	1	81365	83075		24	COTRA
25	56	7	30	04	08	23.6	19.3	77	13.8	1013.9	7	008	60	6	2	1	1	6	7	/	81835	87360		25	2Ac58 Cu hum
26	88	2	27	06	11	25.4	7.5	32	6.4	1018.0	7	004	02	0	0	1	1	7	0	1	81850			26	2Ci78 COTRA Cu hum
27	70	7	08	06	17	24.4	17.0	63	12.2	1012.6	6	017	15	8	2	7	5	6	/	/	87630			27	/Sc50 jpSW
28	75	7	21	08	18	19.8	15.9	78	11.3	1013.3	2	006	25	8	2	7	8	4	/	/	81815	84818	86640	28	Cu fra/med jpS vv50k ex p
29	88	2	35	05	13	23.5	8.5	38	6.9	1022.3	7	002	01	1	1	2	1	7	0	1	82850			29	1Ci78 Cu hum
30	82	1	21	05	12	25.5	9.8	37	7.4	1022.3	7	019	02	0	0	1	4	7	0	1	81850			30	1Sc56 1Ci80 COTRA Cu hum
31	80	6	22	08	19	21.8	15.3	67	10.9	1019.8	8	001	21	6	2	6	8	5	0	1	81825	86650		31	1Sc35 1Ci75 Cu med

Mean vis = 37.9 km
 Mean cloud = 4.9 61%
 Mean wind speed = 7.6 kn
 Mean gust = 16 kn
 Mean TT = 22.9 °C
 Mean TdTd = 12.3 °C
 Mean RH = 53.2 %
 Mean r = 9.0 g/kg
 Mean PPP = 1017.6 mbar

See appendix 2 below for full code details

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

Wokingham	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
Sunshine	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
Hourly analysis	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
2016	4	0.22	0.00	0.00	0.04	0.19	0.23	0.00	0.01	0.12	0.05	0.00	0.04	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.26	1.00	1.00	0.00	1.00	1.00	0.01	0.01	0.67	0.71	0.00	1.00	0.90
	6	0.00	0.00	0.56	0.52	1.00	1.00	0.06	1.00	1.00	0.00	0.00	0.17	0.99	0.00	1.00	1.00
	7	0.00	0.00	0.39	0.19	1.00	1.00	0.00	1.00	0.99	0.20	0.09	0.05	0.36	0.00	1.00	1.00
	8	0.00	0.00	0.00	0.30	1.00	1.00	0.02	1.00	0.98	0.14	0.17	0.87	0.00	0.00	0.98	0.97
	9	0.00	0.00	0.23	0.83	0.96	0.97	0.23	0.56	1.00	0.00	0.23	0.99	0.00	0.00	0.91	0.84
	10	0.00	0.00	0.59	0.14	0.76	1.00	0.40	0.57	0.91	0.00	0.37	1.00	0.19	0.00	1.00	0.93
	11	0.00	0.00	0.56	0.13	0.88	1.00	0.53	0.53	0.79	0.00	0.69	1.00	0.06	0.00	1.00	1.00
	12	0.00	0.00	0.88	0.11	0.72	0.98	0.80	0.26	0.50	0.00	1.00	1.00	0.34	0.02	1.00	0.87
	13	0.00	0.00	0.13	0.08	0.51	0.97	0.78	0.46	0.02	0.19	0.73	1.00	0.73	0.11	1.00	0.99
	14	0.00	0.00	0.48	0.37	0.38	0.98	0.98	0.40	0.07	0.27	0.30	1.00	0.91	0.69	1.00	1.00
	15	0.00	0.00	0.22	0.40	0.10	1.00	1.00	0.33	0.14	0.27	0.35	1.00	0.94	0.88	1.00	1.00
	16	0.00	0.00	0.22	0.75	0.58	1.00	1.00	0.01	0.54	0.12	0.47	1.00	0.96	1.00	1.00	1.00
	17	0.00	0.00	0.19	0.00	0.69	1.00	1.00	0.41	0.95	0.25	1.00	1.00	0.86	1.00	1.00	1.00
	18	0.00	0.00	0.76	0.00	1.00	1.00	1.00	0.00	0.16	0.12	0.97	1.00	0.23	1.00	1.00	1.00
	19	0.00	0.00	0.07	0.20	0.65	0.40	0.49	0.00	0.21	0.00	0.23	0.19	0.00	0.22	0.30	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		0.22	0.00	5.28	4.30	11.41	14.52	8.30	7.53	9.36	1.63	6.60	11.98	7.27	4.92	14.19	13.54

	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	0.03
	5	0.33	0.00	0.00	0.19	0.08	0.00	0.83	0.73	0.00	0.13	0.14	0.02	0.00	0.47	0.43	0.35
	6	0.89	0.00	0.00	0.00	0.05	0.00	1.00	0.85	0.35	0.98	0.08	0.14	0.00	1.00	0.60	0.46
	7	0.89	0.00	0.00	0.01	0.25	0.26	1.00	1.00	0.29	0.29	0.00	0.00	0.20	1.00	0.76	0.43
	8	0.55	0.00	0.00	0.70	0.06	0.02	1.00	1.00	0.26	0.69	0.44	0.00	0.17	1.00	0.64	0.45
	9	1.00	0.01	0.00	0.04	0.00	0.43	1.00	1.00	0.41	1.00	0.09	0.00	0.07	1.00	0.83	0.47
	10	0.91	0.56	0.00	0.84	0.05	0.19	1.00	1.00	0.39	1.00	0.00	0.01	0.22	1.00	0.42	0.50
	11	0.94	0.00	0.00	0.58	0.62	0.11	1.00	1.00	0.00	1.00	0.00	0.00	0.73	0.87	0.34	0.50
	12	1.00	0.00	0.00	0.64	0.29	0.00	1.00	1.00	0.00	1.00	0.06	0.19	0.69	0.94	0.14	0.50
	13	0.84	0.14	0.00	0.39	0.04	0.46	1.00	1.00	0.01	1.00	0.18	0.17	0.74	1.00	0.01	0.47
	14	0.87	0.81	0.00	0.00	0.89	0.52	1.00	1.00	0.00	1.00	0.12	0.10	0.94	0.97	0.03	0.55
	15	1.00	0.08	0.00	0.16	0.18	0.91	1.00	0.79	0.41	1.00	0.16	0.22	0.85	1.00	0.49	0.54
	16	1.00	0.00	0.46	0.01	0.00	0.47	1.00	0.00	0.70	1.00	0.06	0.74	0.73	0.93	0.01	0.54
	17	0.98	0.00	0.94	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.04	0.03	0.79	1.00	0.13	0.56
	18	0.05	0.00	0.95	0.00	0.00	0.00	0.70	0.00	0.23	0.73	0.00	0.00	0.52	0.71	0.02	0.42
	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	0.10
	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		11.26	1.61	2.34	3.55	2.51	3.37	13.54	10.36	4.07	11.81	1.37	1.62	6.65	12.90	4.84	212.87

August 2016	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	
1	14.33	18.01	1050	10.04	317	81.7	93.8	2248	61.71	1315	11.18	8.25	9.66	1500	6.363	247	1017.93	1020.1	904	1010.8	2359	
2	18.36	21.11	1430	14.29	0	89.6	94.9	118	82.1	1433	16.62	11.79	13.59	1221	9.43	0	1009.67	1011.0	0	1008.6	2329	
3	19.29	23.93	1220	15.62	2328	72.5	90.9	337	47.85	1255	14.03	10.01	12.03	2	8.37	1137	1007.48	1009.1	0	1005.8	1621	
4	17.56	22.62	1454	13.43	2357	70.4	90.1	2357	42.18	1519	11.9	8.66	11.02	1210	6.866	1519	1009.98	1015.3	2356	1007.4	242	
5	17.52	23.62	1456	11.01	450	70.9	95.7	540	45.35	1248	11.76	8.51	10.9	1623	7.35	1248	1019.93	1024.3	2329	1015.1	5	
6	18.65	25.64	1456	10.68	447	69.51	95.5	530	37.09	1504	12.36	8.81	11.07	1210	7.34	1504	1026.32	1027.5	2025	1023.9	5	
7	19.85	25.2	1422	15.51	2314	70.9	91.9	433	42.85	1423	14.09	9.96	13.24	909	7.84	1621	1023.20	1026.2	0	1020.6	1805	
8	16.65	21.34	1411	11.41	2332	60.98	89.5	359	36.37	1728	8.7	6.955	8.78	244	5.227	1725	1021.97	1024.6	2348	1019.7	308	
9	14.82	20.44	1624	9.1	503	60.94	89.7	505	36.85	1217	6.836	6.076	8.1	1119	5.056	1217	1025.28	1026.8	920	1023.7	1703	
10	15.18	20.31	1525	9.55	331	63.92	84.8	332	40.08	1525	8.11	6.643	8.77	2359	5.586	1638	1024.86	1025.7	807	1023.5	2350	
11	17.88	23.76	1457	13.76	341	71.6	88.1	215	48.12	1254	12.44	8.88	10.49	1718	7.42	938	1022.25	1023.9	2355	1020.8	1355	
12	18.67	26.27	1431	12.33	447	69.96	94.2	454	36.53	1303	12.5	8.9	11.33	950	7.27	1303	1023.44	1024.9	826	1022.2	1522	
13	18.68	24.94	1426	13.41	430	67.64	88.6	510	41.08	1715	12.24	8.77	11.84	1247	7.41	1715	1022.58	1024.3	2354	1021.3	1545	
14	16.87	22.68	1455	10.56	2357	67.67	92.1	2358	41.34	1647	10.46	7.76	9.11	1350	6.766	1538	1025.17	1026.2	2208	1023.8	130	
15	16.53	25.07	1450	7.68	517	70.4	95.9	612	38.12	1432	10.33	7.73	10.26	1259	6.12	517	1023.92	1026.3	52	1021.2	1756	
16	16.63	25.39	1444	8.08	446	72.8	96.1	602	39.55	1552	11.1	8.19	11.13	1433	6.308	446	1018.75	1022.1	0	1015.8	1812	
17	18.15	26.89	1532	9.52	428	69.07	96.1	517	36.92	1518	11.6	8.51	11.21	856	6.977	353	1012.74	1016.9	1	1010.0	1739	
18	19.13	25.5	1446	14.5	522	71.5	90.1	524	44.8	1609	13.60	9.69	11.5	1323	8.0	1610	1009.90	1011.1	24	1008.9	1632	
19	17.02	19.3	1719	14.9	2331	86.0	92.8	950	76.1	1318	14.66	10.43	11.8	1716	8.9	2331	1005.98	1009.5	2	1003.6	1709	
20	16.59	21.3	1214	14.6	439	77.9	91.7	801	52.9	1214	12.62	9.12	10.9	847	8.0	1331	1006.29	1009.7	2352	1004.4	615	
21	16.91	21.9	1458	14.5	559	78.9	90.8	1906	46.7	1437	13.05	9.30	10.7	2314	7.4	1439	1016.55	1020.9	2241	1009.4	0	
22	19.11	25.1	1356	13.5	2359	77.5	94.3	2348	53.2	1359	14.88	10.39	12.8	1155	8.9	2355	1022.94	1024.9	2331	1020.5	10	
23	20.57	30.1	1457	11.0	515	69.2	96.6	608	32.2	1458	13.57	9.59	11.8	1019	7.7	515	1021.60	1024.9	6	1018.3	2351	
24	22.28	30.78	1544	15.08	406	71.8	94.9	216	37.76	1544	16.16	11.36	13.51	1235	9.95	406	1017.48	1018.6	717	1015.7	2337	
25	21.41	26.15	1318	17.79	556	82	94.7	2141	59.59	1327	18.1	12.86	15.22	1552	11.51	553	1014.87	1017.7	203	1012.9	1536	
26	19.66	26.17	1523	11.61	2359	64.7	94	231	27.88	1341	11.73	8.71	12.96	0	5.438	1124	1017.73	1020.3	2311	1014.1	227	
27	18.96	27.27	1308	11.29	426	80.3	93.6	427	52.49	1311	15.29	10.9	15	1544	7.4	7	1015.05	1020.1	2	1011.3	2329	
28	17.96	21.6	1214	15.34	523	84.3	93.3	2245	71	1649	15.26	10.75	13.51	1318	9.67	514	1013.15	1017.3	2345	1011.1	39	
29	17.73	24.28	1515	11.8	2353	72.5	94.7	354	33.74	1515	12.01	8.7	10.93	1	6.16	1556	1021.85	1025.3	2312	1016.9	46	
30	18.07	26.76	1419	10.11	519	67.29	95	524	33.77	1425	10.88	8	10.31	928	7.09	1425	1023.68	1025.8	827	1021.1	2357	
31	16.26	23.41	1523	9.84	331	78.6	95.5	550	54.68	1159	12.3	8.87	11.83	1439	7.07	331	1020.64	1022.6	2357	1019.4	1248	
Total																						
Mean	17.98	24.09		12.31		73.0	92.90		46.15		12.59	9.13	11.46		7.45		1018.17	1020.77		1015.54		
Max	22.28	30.78		17.79		89.6	96.60		82.10		18.10	12.86	15.22		11.51		1026.32	1027.50		1023.86		
Min	14.33	18.01		7.68		60.9	84.80		27.88		6.84	6.08	8.10		5.06		1005.98	1009.15		1003.58		

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 2016

Temperature (°C)					Rank in the past 135 years				
Mean maximum	22.4	(+0.4)			26 th highest				
Mean minimum	12.6	(+0.8)			5 th highest				
Daily mean	17.5	(+0.6)			11 th highest				
Rainfall total (mm)	129.4	(89%)			47 th lowest				
Sunshine total (hours)	501.2	(86%)							
N° of:	Dry days	54 (-4)	Wet days	24 (0)					
Days with:	Air frost	0 (0)	Ground frost	0 (-1)	Snow falling	0 (0)	Snow lying	0 (0)	
Thunder	8 (+1)	Hail ≥5mm	1 (0)	Small hail/ice	0 (0)	Fog @09 GMT	0 (0)	Nil sun	4 (+1)
Air pressure MSL : Mean @09 GMT (mbar)	1016.8								(+0.2)

Departure from 1981 to 2010 average shown in brackets.

Notes: **Very Warm Overall, with Rainfall and Sunshine Below Normal.**

Temperature: The overall mean temperature this summer is in the very warm category. The mean of 17.5° is however 1.0° below the record set in 2006, and is 1.0° above the mean for the summer of 2015. The difference between the rankings for the mean maximum and mean minimum, 26th and 5th highest, points to it having been a summer with more cloudy nights than normal, resulting in a reduced diurnal temperature range. In this respect the mean cloud amount at 0900 GMT is the highest in the past 21 years. The resulting mean minimum is only 0.3° below the record set in 1997. The season's highest temperature was 33.0° on the 19th July, 2.7° above the long-term median. The lowest max was 13.4° on the 1st June, 1.1° below the median. The highest min was 18.3° on the 20th July, 1.2° above the median, and the lowest min was 7.8° on the 15th August, 3.5° above the median and 2nd highest after 1997 in 113 years. The mean grass min was 9.8°, 0.9° above average, and the lowest grass min was 2.8° on the 15th August, making this the first summer since 2008 without a ground frost. The mean earth temperature at 30 cm was 18.9°, 0.9° above average, and at 1 m depth, was 16.9°, 0.5° above the 26 year average. August was the warmest month, mean 18.5°, and June the coolest, 16.0°, but the mean for each summer month was above average. **Rainfall:** This season's rainfall is 11% short of the current 30 year average, and is 29.5 mm below the 135 year median. In this millennium, 11 summers have been wetter and 5 drier than this year's. June was the wettest month with 81.7 mm, 166 % of average, and July the driest with 19.5 mm, 43 % of average. The season's wettest day was the 22nd June when 20.5 mm fell, and the only other day to have over 10 mm was the 1st August, which had 15.7 mm. The longest duration in a rainfall day was 10.5 hours on the 1st August. The highest rainfall rate was 152 mm/hr at 1047 GMT on the 2nd July, but other days with 50 mm/hr or more were the 8th, 16th and 23rd June and the 11th and 12th July. Thunder was quite frequent in June, but not so in the other months, and was recorded on the 7th, 10th, 15th, 16th, 23rd, and 25th June, the 2nd of July and the 24th August. The storm on the 2nd July was accompanied by 5 mm diameter hail. There were 4 dry spells, one of 6 days ended on the 6th June, 8 days on the 10th July, 12 days on the 25th July and 15 days on the 17th August. Because of ample moisture in the Spring and the wet June the estimated soil moisture deficit for most of the summer was low, and shallow rooted unirrigated plants did not experience stress until after mid July, though this did become severe after mid August. A plant stress index, where the higher the index the greater the stress, for this summer season is 365, compared with a 40 year average of 638. This index can reach over 1100 in particularly stressful summers such as 1976, 1990 and 1995. **Sunshine:** The below normal sunshine for this summer is essentially due to an exceptionally dull June, which had just 55 % of average sunshine. Things improved a little in July, with 93 % of average, but the sunniest month was August where the 110 % of average failed to make up for the earlier lack of sunshine. The 19th of July was the sunniest day with 15.1 hours. The duller period was the 6 days up to the 4th June when only 0.3 hours of sunshine was recorded. Two 3 day sunny periods occurred, the 18th to 20th of July and the 15th to 17th August, both having a mean of 13.0 hours per day. Overall there were 31 days with <3 hours, 35 with =>6 hours, 21 with =>9 hours, 10 with =>12 hours and 1 with =>15 hours. **Wind:** The mean speed this summer was 6.3 mph, close to the 28 year average. The windiest day was the 20th August, mean 12.6 mph, and the season's highest gust of 41 mph was on that day. The calmest day was the 8th June, mean 2.8 mph, and there were 1521 minutes of calm. Daily mean direction/number of days: N,9 NE,4 E,5 SE,2 S,6 SW,42 W,18 NW,6. Compared with average, winds from the SW and W combined were 16.6% more frequent, at the expense of winds from the S, 7.6%, NE, 4.2 % and NW 3.7%, less frequent. **Humidity:** The overall mean relative humidity was 75.6 %, and the lowest value was 28 % on the 26th August. The mean water vapour content per kg of air was 9.2 g at 0900 GMT and 9.1 g at 1500 GMT. **Pressure:** The pressure extremes this summer were 1027.5 mbar on the 6th August and 994.4 mbar on the 14th June, a span of 33.1 mbar, compared with a 40 year average of 35.4 mbar. **June:** Wet and exceptionally dull with mean temperature above average. Mean min is 2nd highest in 135 years. Highest min is 9th highest in 104 years. Lowest min 3.7° above the median and a new record for the past 113 years. Mean grass min highest in past 37 years. Fewest dry days since 1998. Most thunder since 1980. Lowest sunshine on record for June. **July:** Dry with above average temperatures and below average sunshine. Highest max 3rd highest this millennium and 8th highest in 113 years. Driest July since 1994. **August:** Warm, dry and sunny. Mean min 8th highest in 135 years. The lowest max, highest and lowest min all in the highest 10%. Sunniest since 2005. The windiest day highest for the month since 1992 and highest gust since 1993.

Month	Mean	Anom	Mean	Anom	Rain	Anom	Sun	Anom	Mean	Max	Mean	Anom
	Max		Min		mm		hrs		Wind mph	gust	pressure	
June	20.2°	-0.3°	11.8°	+1.3°	81.7	166%	104.8	55%	6.0	31	1014.5	-2.6
July	23.2°	+0.3°	13.0°	+0.4°	19.5	43%	183.6	93%	6.7	33	1017.2	+0.6
August	23.9°	+1.3°	13.1°	+0.7°	28.2	56%	212.8	110%	6.3	41	1018.7	+2.4

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.