

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 2013

Temperature (°C / °F)			Anomaly	Rank in the past 132 years	
Mean maximum	23.7	74.7	+1.1	15 th highest	
Mean minimum	12.6	54.7	+0.2	17 th highest	
Daily mean	18.2	64.8	+0.7	13 th highest	
Highest maximum	32.9	91.2	on 1 st	Lowest maximum	18.5 65.3 on 24 th
Highest minimum	16.6	61.9	on 16 th	Lowest minimum	7.5 45.5 on 28 th
Mean grass minimum	9.4	48.9	+0.1	Lowest grass minimum	2.9 37.2 on 28 th
Mean earth @30 cm	19.1	66.4	+0.4	Earth @100 cm	17.8 64.0
Frost duration (hrs)	0.0			Rain duration (hrs)	15.7
Rainfall total (mm / in)	29.8	1.17	59 %	28 th lowest	
Highest daily fall	16.5	0.65	on 5 th		
Number of: Dry days (<0.2mm)	21	Wet days (>0.9mm)	6	days ≥5mm	1
Sunshine total (hrs) 195.0	Daily mean 6.29	101 %		Sunniest day 13.7	on 1 st
N ^o days with: Air frost 0	Ground frost 0	Snow falling 0	Snow lying 0		
Thunder 0	Hail ≥5mm 0	Small hail/ice 0	Fog @09 0	Nil sun 0	
Pressure MSL : Mean @09 GMT, mbar 1018.0	+1.7	Highest 1030.6	on 31 st	Lowest 1004.3	on 1 st
Relative humidity : Mean (%) 70.5	Lowest 30	on 31 st	Water vapour (g/kg), mean at 09 and 15 GMT 9.2, 8.1		
Overall mean wind speed (mph) 6.0	Windiest day 9.6	on 17 th	Max gust 32	on 17 th	
Wind direction (days) N 4 NE 2 E 0 SE 2 S 2 SW 13 W 7 NW 1					
Least windy day (mph) 2.6	on 28 th	Calm; less than 0.5 mph (minutes) 739			

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

Notes:

Dry and Very Warm with Near Normal Sunshine.

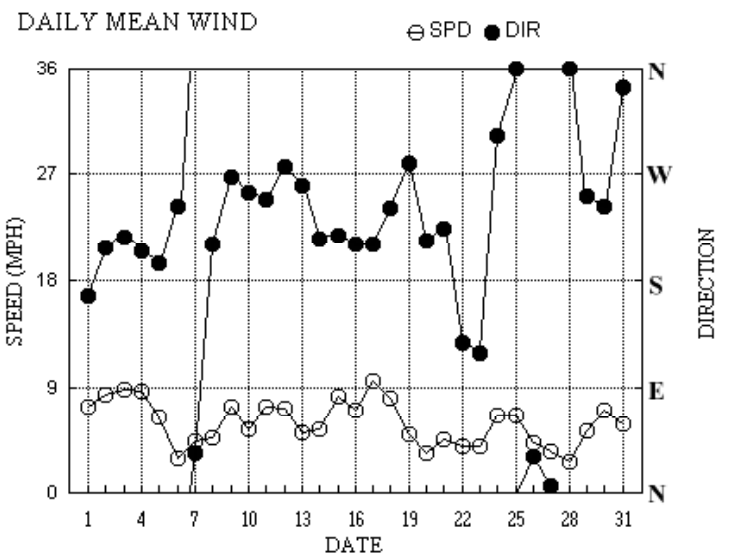
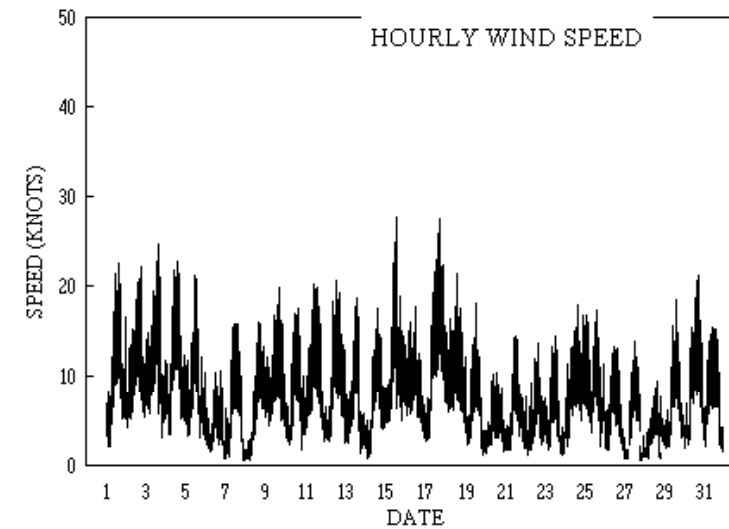
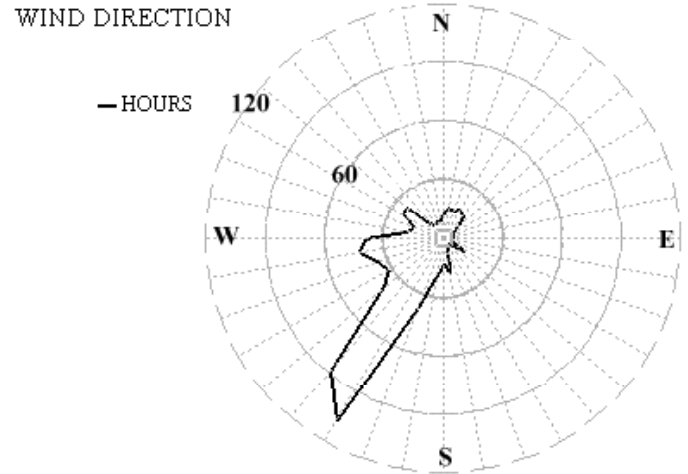
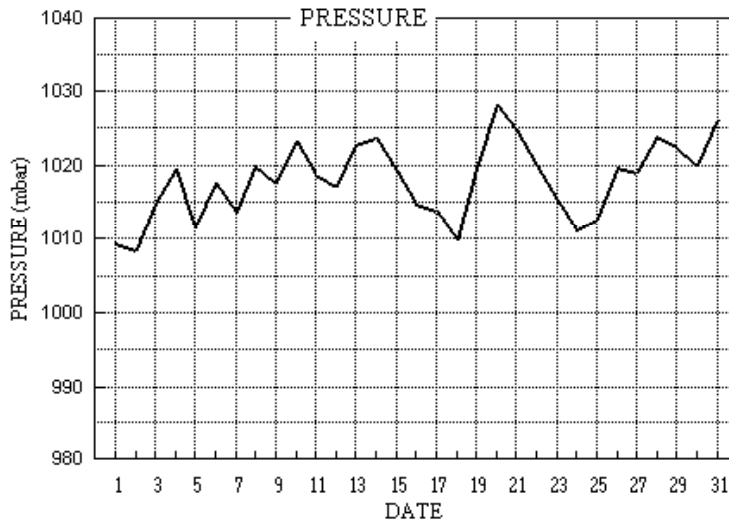
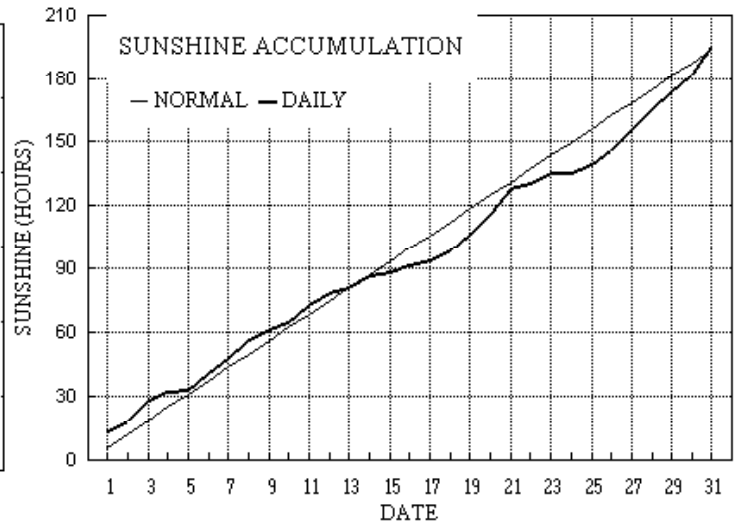
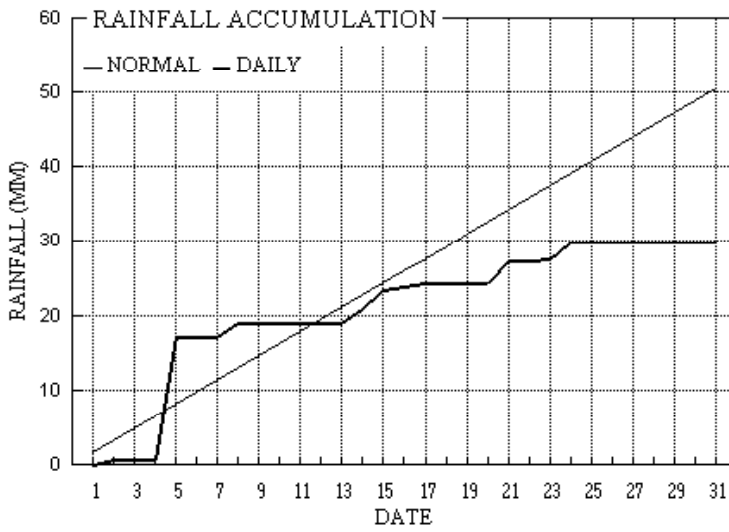
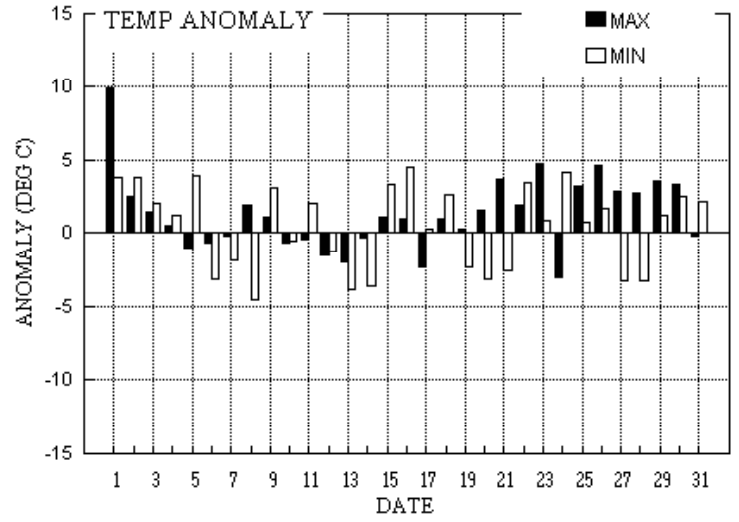
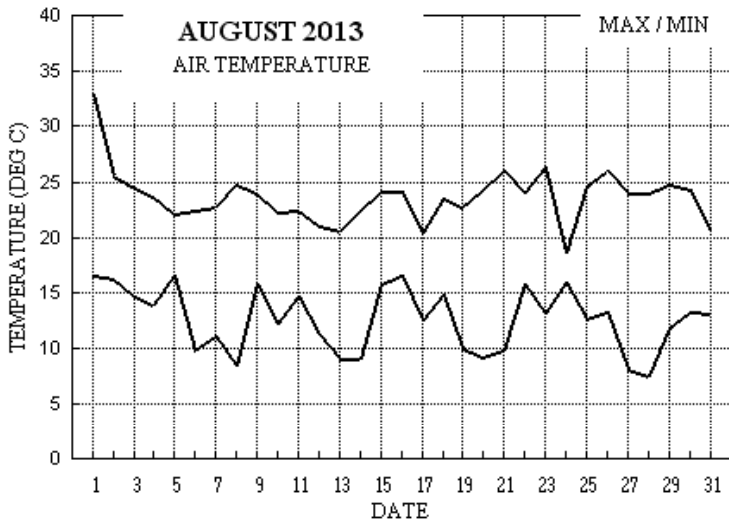
Temperature: The mean maximum is highest since 2003, but the mean minimum is 0.1° below last year's, and has been exceeded every year except 4 since 2000, and equaled in one. The resulting daily mean is highest since 2004, and falls just inside the very warm category, that is the top 10 % of values since 1882. The month's highest max, 32.9°, is 5.0° above the median and is the highest August temperature since 2003, and the highest of the year so far. The lowest max is 1.6° above the median and the highest min is 0.4° above its median, while the lowest min is 1.2° above the median. The mean grass min is close to normal. Earth temperatures at both 30 cm and 1 m depth are slightly above normal. **Rainfall:** Although slightly wetter than last August, this has been a dry month overall, with a total just over half the average, and with 55 % of the month's total falling on just one day. In this millennium, only the Augusts of 2000, 2003 and 2012 have been drier. A dry spell of 5 days ended on the 13th, and another was unbroken on the 31st after 7 days. The highest rainfall rate of 52 mm/hr occurred on the 5th. Thunder and hail were absent this month, and this is only the 6th thunder-free August in the past 38 years. **Sunshine:** This has been a reasonable sunny August, with the daily mean close to average, making it the sunniest August since 2007, which had 13,3 hours more sunshine than this month. Overall there were 6 days with <3 hours, 15 with =>6 hours, 8 with =>9 hours and 2 with =>12 hours. **Humidity:** The mean relative humidity is lowest for August since 2003. **Commentary: From the 1st to the 17th:** Apart from a hot day on the 1st, anomaly +9.9° for the maximum, temperatures in this period were generally close to normal, with anomalies for daily max between +2.5° on the 2nd and -2.3° on the 17th. Anomalies for daily min were more variable, ranging from +4.5° on the 16th to -4.5° on the 8th. Rainfall in this period was dominated by the 16.5 mm on the 5th, the rest of the period contributing only another 7.7 mm, and with 10 dry days. After the month's sunniest day on the 1st, sunshine accumulation was about average until the 12th, thence falling back, to end the period 15 hours below normal. Winds were mainly moderate SW'ly, but light N'ly on the 7th, and fresh on the 17th. **From the 18th to the 31st:** Daily maxima were above normal on most days apart from the 24th, with anomalies between +4.8° on the 23rd and +0.3° on the 19th, but -3.1° on the 24th. Anomalies for daily min were more variable, ranging from around -3° on the 20th, 27th and 28th, and over +3° on the 22nd and 24th. There were 11 dry days and only a little rain on the 21st, 23rd and 24th, amounting to 5.6 mm in total. Winds were mainly light, occasionally moderate, W'ly on the 18th backing SE'ly by the 22nd, becoming N'ly on the 25th, backing W'ly on the 29th and veering N'ly again on the 31st.

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			
+1.5°	+0.8°	117%	104%	-0.1°	-0.1°	31%	82%	+2.3°	+0.7°	31%	114%

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

Wokingham climatological graphs for August 2013



Month: AUGUST 2013

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	32.9	16.5	0.1	13.5	19.8	18.1	13.7	0.0	1009.3	0 0 0 0	0 0 0 0	0 0 0 0	167	5.9	6.4	154	23	1535	165	10	16	0.1	
2	25.5	16.2	0.5	12.0	20.5	18.0	5.1	0.0	1008.4	0 0 0 0	0 0 0 0	0 0 0 0	207	7.2	7.3	203	22	1822	215	10	15	0.4	
3	24.4	14.6	tr	12.3	20.3	18.1	9.5	0.0	1014.8	0 0 0 0	0 0 0 0	0 0 0 0	217	7.4	7.7	270	25	1513	212	12	14	0.0	
4	23.7	13.9	0.1	10.8	20.0	18.1	4.3	0.0	1019.4	0 0 0 0	0 0 0 0	0 0 0 0	205	7.4	7.5	209	23	1439	218	12	15	0.1	
5	22.2	16.5	16.5	14.9	20.0	18.1	0.5	0.0	1011.4	0 0 0 0	0 0 0 0	0 0 0 0	194	4.6	5.6	171	21	1138	187	10	11	2.8	
6	22.5	9.8	0.0	5.3	19.3	18.1	8.3	0.0	1017.5	0 0 0 0	0 0 0 0	0 0 0 0	243	1.5	2.6	203	11	1854	202	4	19	0.0	
7	22.8	11.0	0.0	7.2	19.4	18.1	6.6	0.0	1013.6	0 0 0 0	0 0 0 0	0 0 0 0	34	3.5	3.8	1	16	1258	21	7	13	0.0	
8	24.8	8.4	1.8	4.0	19.1	18.0	9.1	0.0	1020.0	0 0 0 0	0 0 0 0	0 0 0 0	210	3.7	4.1	208	16	1542	216	8	15	1.0	
9	24.0	15.7	tr	14.4	19.4	18.0	4.9	0.0	1017.6	0 0 0 0	0 0 0 0	0 0 0 0	268	4.8	6.3	294	20	1659	279	8	15	0.0	
10	22.3	12.1	tr	6.5	19.3	17.9	3.3	0.0	1023.1	0 0 0 0	0 0 0 0	0 0 0 0	254	4.4	4.8	253	18	1644	266	8	16	0.2	
11	22.4	14.7	0.0	9.7	19.3	17.9	7.9	0.0	1018.7	0 0 0 0	0 0 0 0	0 0 0 0	249	6.0	6.3	303	20	1133	261	9	10	0.0	
12	21.1	11.3	0.0	8.2	19.2	17.9	5.6	0.0	1017.1	0 0 0 0	0 0 0 0	0 0 0 0	276	5.4	6.2	282	21	1202	294	10	17	0.0	
13	20.5	9.0	tr	4.9	18.7	17.9	2.3	0.0	1022.7	0 0 0 0	0 0 0 0	0 0 0 0	261	4.1	4.5	253	19	1326	264	9	13	0.1	
14	22.4	9.0	1.9	5.7	18.2	17.8	5.7	0.0	1023.6	0 0 0 0	0 0 0 0	0 0 0 0	215	4.6	4.7	237	18	1518	221	8	15	1.5	
15	24.1	15.8	2.5	15.4	18.6	17.7	1.6	0.0	1019.3	0 0 0 0	0 0 0 0	0 0 0 0	218	7.0	7.1	259	28	1336	229	11	12	2.3	
16	24.1	16.6	0.4	15.2	19.0	17.6	3.4	0.0	1014.8	0 0 0 0	0 0 0 0	0 0 0 0	211	6.1	6.1	230	18	1304	221	8	12	0.6	
17	20.4	12.4	0.4	8.6	19.0	17.6	2.4	0.0	1013.7	0 0 0 0	0 0 0 0	0 0 0 0	210	8.2	8.3	196	28	1712	206	13	16	0.8	
18	23.6	14.8	tr	13.0	18.7	17.6	5.0	0.0	1009.9	0 0 0 0	0 0 0 0	0 0 0 0	241	6.9	7.0	243	22	1436	236	9	14	0.0	
19	22.8	10.0	0.0	5.2	18.6	17.6	7.7	0.0	1019.4	0 0 0 0	0 0 0 0	0 0 0 0	280	3.9	4.4	314	18	1339	299	7	11	0.0	
20	24.3	9.2	0.0	4.5	18.4	17.6	9.5	0.0	1028.1	0 0 0 0	0 0 0 0	0 0 0 0	214	2.8	3.0	247	11	1451	186	5	10	0.0	
21	26.0	9.8	3.1	6.1	18.5	17.6	11.8	0.0	1024.9	0 0 0 0	0 0 0 0	0 0 0 0	224	3.7	3.9	253	15	1453	242	7	14	3.0	
22	24.0	15.7	tr	15.1	19.1	17.6	2.5	0.0	1020.0	0 0 0 0	0 0 0 0	0 0 0 0	128	2.4	3.4	133	14	1704	128	6	16	0.0	
23	26.4	13.1	0.3	8.9	19.1	17.6	4.9	0.0	1015.2	0 0 0 0	0 0 0 0	0 0 0 0	118	2.5	3.4	153	15	1350	147	6	11	0.6	
24	18.5	15.9	2.2	15.1	19.2	17.6	0.2	0.0	1011.2	0 0 0 0	0 0 0 0	0 0 0 0	303	5.3	5.7	316	18	1659	302	8	16	2.2	
25	24.6	12.6	tr	12.0	18.5	17.7	3.9	0.0	1012.6	0 0 0 0	0 0 0 0	0 0 0 0	360	4.9	5.7	32	18	1521	18	8	12	0.0	
26	26.0	13.2	0.0	9.3	18.6	17.6	6.5	0.0	1019.6	0 0 0 0	0 0 0 0	0 0 0 0	30	3.1	3.7	69	14	1218	11	6	10	0.0	
27	24.0	8.1	0.0	3.4	18.6	17.6	10.2	0.0	1019.0	0 0 0 0	0 0 0 0	0 0 0 0	6	2.5	3.0	26	14	1222	16	6	12	0.0	
28	24.0	7.5	0.0	2.9	18.3	17.6	9.1	0.0	1023.8	0 0 0 0	0 0 0 0	0 0 0 0	360	0.5	2.3	271	10	1528	4	4	16	0.0	
29	24.7	11.9	0.0	8.0	18.6	17.6	8.3	0.0	1022.4	0 0 0 0	0 0 0 0	0 0 0 0	251	4.2	4.5	264	19	1511	262	9	15	0.0	
30	24.3	13.3	0.0	8.8	18.6	17.6	8.6	0.0	1019.9	0 0 0 0	0 0 0 0	0 0 0 0	243	5.7	6.0	268	21	1757	265	11	17	0.0	
31	20.6	13.1	0.0	10.1	18.8	17.6	12.6	0.0	1026.3	0 0 0 0	0 0 0 0	0 0 0 0	344	4.5	5.0	6	16	1137	7	7	07	0.0	
Total			29.8				195.0	0.0						235	2.9	5.2							15.7
Mean	23.7	12.6		9.4	19.1	17.8	6.29	0.0	1018.0														
Anom	+1.1	+0.2	59%	+0.1	+0.4	+0.2	101%																+1.7
Daily mean		18.2																					
Anom		+0.7																					

Number of days with:

Air frost = 0 Ground frost = 0 Nil sun = 0
Snow falling = 0 Snow lying = 0 Thunder = 0
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 2013

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ci	NCh	shs	NCh	shs	NCh	shs	Date	Remarks
1	84	1	14	07	14	25.7	16.8	58	11.9	1009.3	7	021	02	0	0	0	0	9	0	1	81075						1	COTRA	
2	65	7	21	09	16	20.1	16.2	78	11.5	1008.4	7	007	02	6	2	7	5	4	3	/	87615						2	/Ac60	
3	86	5	25	08	17	18.5	12.1	66	8.7	1014.8	2	023	03	1	1	5	2	5	0	0	85825						3	Cu med	
4	82	6	21	11	18	20.2	11.4	57	8.3	1019.4	7	001	03	2	2	2	6	7	1	82832	83363					4	2Ac60 2Ci75 Cu med Ac len		
5	84	7	17	06	13	19.5	13.4	68	9.5	1011.4	8	013	21	6	2	1	1	5	7	/	81822	85359	87362			5	/Ac65 Cu hum		
6	84	6	23	02	05	17.4	12.5	73	8.9	1017.5	1	006	03	1	1	5	8	4	0	1	81818	85650				6	4Ci78 COTRA Cu hum		
7	82	7	04	07	14	19.9	12.6	63	9.1	1013.6	8	001	02	2	2	1	1	5	8	8	81825	83270	86075			7	1Ac58 2Ac59 COTRA Cu hum Ac cas U/a cont		
8	72	5	30	02	04	19.2	10.7	58	7.9	1020.0	1	004	03	1	1	1	1	6	3	4	81830	85075				8	1Ac68 COTRA Cu hum		
9	84	6	23	06	13	19.7	14.8	73	10.4	1017.6	1	005	03	6	2	6	8	4	0	0	83818	84645				9	Cu med		
10	86	7	28	05	12	17.3	10.1	63	7.6	1023.1	2	002	02	2	2	7	8	5	/	/	81827	87650				10	1Cu045 Cu hum/med		
11	86	7	26	06	12	18.4	12.4	68	8.9	1018.7	8	002	03	5	2	7	8	5	/	/	83822	86645				11	Cu med		
12	84	5	27	08	17	18.3	10.1	59	7.6	1017.1	0	002	03	2	2	4	8	5	0	2	81828	83656				12	2Ci70 Cu med		
13	86	7	28	05	10	15.8	8.8	63	6.9	1022.7	1	009	03	2	2	1	1	5	8	1	81825	83358	86360			13	6Ci75 Cu hum Ac cas		
14	84	1	21	05	10	18.6	11.8	65	8.5	1023.6	4	000	03	0	0	1	8	5	3	0	81825					14	1Sc35 1Ac62 Cu med		
15	68	7	23	08	16	19.4	16.4	83	11.5	1019.3	7	001	60	6	2	7	5	4	/	/	83712	87650				15			
16	59	8	21	05	13	17.3	15.8	91	11.1	1014.8	2	001	61	6	2	7	7	3	2	/	81709	85712	88558			16	4Sc20		
17	70	7	22	10	16	17.1	13.0	77	9.3	1013.7	6	012	03	2	2	3	1	4	7	1	83815	84363	85075			17	COTRA Cu fra/hum		
18	78	7	24	07	15	18.7	13.6	72	9.7	1009.9	2	016	03	1	1	7	8	4	/	/	84818	87650				18	Cu med		
19	84	1	31	06	10	18.0	9.9	59	7.5	1019.4	1	023	03	1	1	1	8	6	3	0	81830					19	1Sc45 1Ac57 Cu med		
20	82	2	23	03	07	19.0	9.8	55	7.4	1028.1	8	001	01	1	1	1	1	6	3	1	81830					20	1Ac65 2Ci80 COTRA Cu hum		
21	75	5	22	04	07	19.2	10.2	56	7.6	1024.9	8	007	01	2	2	1	0	9	8	1	81366	84075				21	1Cc72 COTRA Ac cas Halo 22 part		
22	63	7	19	01	05	18.4	16.9	91	11.8	1020.0	5	000	21	6	2	1	7	2	8	/	81705	83362	87365			22	1Ac60 Ac cas jp SW&SE		
23	58	5	11	06	10	20.1	16.5	79	11.6	1015.2	8	010	05	1	1	5	0	9	8	0	81365	85368				23	Ac cas vir		
24	58	8	30	07	13	16.1	14.1	88	10.0	1011.2	1	007	60	6	2	8	7	3	/	/	87708	88712				24			
25	40	8	36	04	09	14.8	13.7	93	9.7	1012.6	3	012	21	6	5	8	7	3	/	/	87706	88708				25			
26	60	7	02	06	10	18.1	14.6	80	10.2	1019.6	2	007	05	2	2	7	6	4	/	/	87712					26			
27	65	3	35	03	08	15.5	12.8	84	9.1	1019.0	0	001	01	1	1	3	1	4	0	1	83812					27	1Ci75 COTRA Cu hum		
28	56	3	32	02	05	15.4	13.0	86	9.2	1023.8	1	009	05	1	1	2	6	4	0	1	82710					28	2Ci75		
29	84	4	25	04	09	19.5	9.6	53	7.3	1022.4	8	006	02	1	1	1	1	6	8	1	81835					29	1Ac65 2Cc73 2Ci78 COTRA Cu hum Parhelion		
30	84	5	25	07	13	19.3	14.1	72	9.9	1019.9	7	005	03	1	1	5	5	5	0	0	85620					30	2Sc56		
31	70	1	36	06	15	15.7	6.6	55	6.0	1026.3	1	014	03	0	0	1	8	6	0	0	81835	81640				31			

Mean vis = 33.3 km

Mean cloud = 5.3 67%

Mean wind speed = 5.7 kn

Mean gust = 11 kn

Mean TT = 18.4 °C

Mean TdTd = 12.7 °C

Mean RH = 70.5 %

Mean r = 9.2 g/kg

Mean PPP = 1018.0 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

W1, W2 = Past weather code (Code FM12-4561)-

covers past 3 hours.

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs = Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation

trails present.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for AUGUST 2013

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NChs	NChs	NChs	Date	Remarks
1	86	2	18	09	20	31.7	14.5	35	10.3	1005.9	7	015	02	0	0	2	0	9	8	0	82363					1	Ac cas
2	84	1	21	08	21	25.0	11.5	43	8.5	1008.0	7	008	01	1	1	1	1	6	8	0	81848					2	1Ac59 1Ac62 Cu hum Ac cas
3	65	5	21	14	23	23.4	10.7	45	8.0	1016.6	3	009	15	1	1	3	2	6	0	1	83845	83075			3	COTRA Cu con jpNW vv60k ex p	
4	82	7	21	11	23	22.4	10.7	47	7.9	1018.0	7	005	15	2	2	7	8	6	/	1	82840	85645			4	3Sc56 /Ci72 Cu hum jpW distant	
5	35	8	17	06	15	17.9	15.2	84	10.7	1008.8	5	016	64	8	6	6	5	4	2	/	81715	86620	88525		5		
6	84	7	16	02	08	21.0	8.1	43	6.7	1015.6	6	011	02	2	2	5	8	7	0	1	82850	84656	85072		6	Cu med	
7	82	7	02	06	13	21.5	8.1	42	6.7	1014.0	2	002	02	2	2	2	2	7	7	1	82850	84365	86072		7	1Ac59 Cu med	
8	70	4	21	08	14	24.1	9.3	39	7.2	1019.0	7	006	01	1	1	3	8	7	3	1	81850	83656			8	1Ac68 2Ci75 Cu med	
9	86	5	28	08	18	23.8	6.9	34	6.1	1018.8	0	005	02	2	2	5	4	7	0	1	81856	85656			9	1Ci78 COTRA	
10	84	6	27	07	15	20.7	8.1	44	6.6	1021.4	7	011	02	2	2	6	8	6	0	0	82848	85650			10	Cu hum	
11	84	3	27	08	20	19.6	7.5	45	6.4	1017.4	6	004	02	0	0	3	1	6	0	0	83848				11	Cu hum	
12	86	7	29	09	16	19.1	5.1	40	5.4	1016.7	5	000	02	2	2	7	8	7	/	/	82850	87656			12	Cu hum	
13	75	7	26	07	18	17.7	8.6	55	6.9	1022.4	0	004	25	8	2	7	8	6	7	/	83838	87645			13	/Ac58 Cu med jpW,NW,E vv60k ex p	
14	84	8	21	09	15	20.6	11.9	57	8.5	1021.9	7	009	03	8	2	8	5	6	/	/	88635				14		
15	82	7	21	06	14	22.9	17.6	72	12.4	1017.0	7	012	25	8	2	6	8	5	0	1	83820	83656	86075		15	2Sc40 Cu med Absent vv&cld est	
16	84	7	21	06	12	22.4	16.0	67	11.3	1013.6	7	009	03	6	2	3	2	5	0	1	83824	86075			16	COTRA Cu med	
17	70	8	21	10	19	16.8	13.7	81	9.7	1010.9	7	009	21	6	2	7	8	4	2	/	82812	84656	88458		17	Cu hum	
18	80	7	23	07	22	19.7	11.4	58	8.4	1010.6	3	004	25	8	2	5	8	6	6	/	82835	84650	85357		18	Cu med jpS&E vv60k ex p	
19	86	6	26	07	13	21.8	7.3	39	6.3	1022.0	2	012	02	1	1	3	4	7	0	4	81850	83656	85080		19	COTRA Cu hum	
20	80	6	25	04	11	22.4	7.5	38	6.3	1026.8	8	011	02	1	1	2	4	7	0	1	81856	85080			20	2Sc56 COTRA Cu hum	
21	78	7	26	07	15	25.7	8.3	33	6.7	1021.9	6	012	02	2	2	2	0	9	8	1	82366	83075	86080		21	COTRA Ac cas vir	
22	75	7	13	04	12	22.9	16.4	67	11.5	1018.4	7	010	02	8	2	2	8	5	8	/	82825	83360	85365		22	1Sc45 Cu med Ac cas vir	
23	78	8	17	05	13	25.5	9.6	37	7.4	1012.6	7	012	03	2	2	8	0	9	7	/	81362	88464			23		
24	60	8	30	05	12	17.2	15.0	87	10.5	1011.8	2	002	58	6	5	7	5	4	2	/	82712	86620	88535		24		
25	70	3	01	07	15	23.2	14.6	58	10.3	1013.6	2	005	25	8	1	3	8	6	0	0	82832				25	2Sc50 Cu med Absent vv&cld est	
26	75	5	04	05	13	24.4	10.6	42	7.9	1017.5	6	009	02	1	1	2	8	7	6	0	82850	84358			26	1Sc56 Cu med	
27	81	3	04	05	12	22.8	6.0	34	5.8	1017.7	6	006	02	0	0	1	1	7	0	1	81856	83075			27	COTRA Cu hum	
28	80	5	32	04	09	23.7	7.9	36	6.6	1022.0	8	008	02	1	1	1	1	7	0	1	81850	85078			28	Cu hum	
29	82	6	27	11	17	21.7	12.8	57	9.1	1021.0	5	007	03	1	1	4	8	6	0	1	82840	83656			29	3Ci78 Absent vv&cld est	
30	84	5	25	07	16	23.9	12.4	49	8.9	1018.0	7	013	03	1	1	1	1	6	4	4	81845	85080			30	1Ac60 1Ac68 COTRA Cu hum	
31	82	1	33	07	15	20.2	2.9	32	4.6	1026.0	7	003	02	0	0	1	1	7	0	1	81856				31	1Ci80 Cu hum	

Mean vis = 36.6 km

Mean cloud = 5.7 71%

Mean wind speed = 7.1 kn

Mean gust = 15 kn

Mean TT = 22.1 °C

Mean TdTd = 10.5 °C

Mean RH = 49.7 %

Mean r = 8.1 g/kg

Mean PPP = 1017.0 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

W1, W2 = Past weather code (Code FM12-4561)-

covers past 3 hours.

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation

trails present.

Wokingham		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
2013		4	0.00	0.00	0.18	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		5	0.67	0.00	1.00	0.30	0.00	0.98	0.26	0.85	0.00	0.00	0.08	0.00	0.55	0.99	0.00	0.00
		6	1.00	0.00	0.80	0.25	0.00	1.00	0.59	1.00	0.08	0.00	0.01	0.00	0.04	1.00	0.00	0.00
		7	1.00	0.00	0.81	0.47	0.00	1.00	0.36	1.00	0.12	0.00	0.01	0.43	0.04	1.00	0.00	0.00
		8	1.00	0.00	0.59	0.82	0.00	0.99	0.88	0.97	0.33	0.00	0.37	1.00	0.16	1.00	0.00	0.00
		9	1.00	0.03	0.81	0.77	0.00	1.00	0.45	0.51	0.32	0.09	0.13	0.19	0.02	0.77	0.07	0.00
		10	1.00	0.00	0.57	0.31	0.00	0.78	0.00	1.00	0.17	0.26	0.62	0.39	0.07	0.18	0.02	0.00
		11	1.00	0.21	0.53	0.14	0.03	0.12	0.00	0.97	0.52	0.29	0.74	0.46	0.58	0.45	0.14	0.00
		12	0.90	0.90	0.53	0.16	0.31	0.83	0.02	0.81	0.59	0.36	0.99	0.34	0.25	0.32	0.25	0.06
		13	0.80	0.94	0.69	0.31	0.00	0.53	0.48	0.44	0.42	0.15	0.68	0.32	0.00	0.00	0.24	0.01
		14	0.84	0.97	0.59	0.17	0.08	0.43	0.24	0.32	0.40	0.24	0.84	0.10	0.00	0.01	0.60	0.51
		15	1.00	1.00	0.13	0.62	0.00	0.09	0.28	0.59	0.55	0.69	0.63	0.00	0.00	0.02	0.10	0.68
		16	1.00	0.37	0.58	0.00	0.00	0.47	0.91	0.26	0.43	0.56	0.96	0.46	0.00	0.00	0.04	0.50
		17	1.00	0.00	0.79	0.00	0.04	0.04	1.00	0.39	0.07	0.38	0.80	0.98	0.00	0.00	0.05	0.92
		18	1.00	0.10	0.60	0.00	0.06	0.00	1.00	0.00	0.87	0.11	0.94	0.71	0.41	0.00	0.08	0.57
		19	0.55	0.54	0.25	0.00	0.00	0.00	0.15	0.00	0.01	0.20	0.09	0.25	0.19	0.00	0.00	0.15
		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		13.75	5.06	9.47	4.34	0.52	8.30	6.62	9.12	4.88	3.32	7.90	5.62	2.31	5.74	1.58	3.39

	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	0.00
	5	0.17	0.02	0.60	0.00	0.06	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.30	0.97
	6	0.82	0.57	0.34	0.03	0.97	0.00	1.00	0.00	0.00	0.00	0.26	0.00	0.44	0.86	1.00	2.00
	7	0.68	0.98	0.56	1.00	0.91	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	2.00
	8	0.32	0.15	1.00	1.00	0.97	0.05	0.85	0.00	0.00	0.00	0.54	0.48	1.00	0.99	1.00	2.00
	9	0.30	0.01	0.65	1.00	1.00	0.00	0.51	0.00	0.00	0.26	1.00	1.00	0.98	0.09	0.98	1.98
	10	0.06	0.13	0.48	0.90	1.00	0.00	0.37	0.00	0.00	0.74	1.00	1.00	0.93	0.04	1.00	2.00
	11	0.00	0.18	0.52	0.16	1.00	0.03	0.80	0.00	0.10	1.00	1.00	1.00	0.63	0.21	1.00	2.00
	12	0.00	0.82	0.31	0.52	1.00	0.11	0.08	0.00	0.58	1.00	1.00	1.00	0.41	1.00	1.00	1.90
	13	0.00	0.13	0.57	0.61	0.82	0.16	0.00	0.00	0.61	0.85	1.00	0.98	0.59	1.00	1.00	1.80
	14	0.00	0.06	0.70	0.81	0.84	0.14	0.00	0.00	0.59	0.44	1.00	1.00	0.27	1.00	1.00	1.84
	15	0.00	0.64	0.29	0.67	0.88	0.13	0.00	0.00	0.71	0.58	1.00	1.00	0.12	0.82	1.00	2.00
	16	0.00	0.72	0.72	0.88	1.00	0.66	0.00	0.00	0.46	0.79	1.00	1.00	0.57	0.74	0.92	1.92
	17	0.00	0.39	0.83	1.00	1.00	0.65	0.00	0.00	0.88	0.65	1.00	0.66	0.99	0.68	0.88	1.88
	18	0.00	0.05	0.13	0.88	0.31	0.56	0.00	0.21	0.00	0.22	0.38	0.00	0.37	0.03	0.50	1.50
	19	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55
	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	2.36	4.99	7.72	9.48	11.76	2.51	4.92	0.21	3.94	6.53	10.18	9.12	8.29	8.58	12.56	194.98

AUGUST 2013	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	24.64	32.9	1615	16.3	334	61.1	93.2	554	30.2	1557	15.48	10.97	12.7	1006	9.1	1736	1008.50	1013.7	15	1004.3	1727	0.0
2	19.67	25.5	1448	16.1	2341	71.7	90.3	2353	37.4	1536	14.00	9.99	12.0	1127	7.2	1536	1008.58	1010.4	2246	1007.3	621	0.6
3	18.56	24.4	1449	14.6	511	68.8	90.6	9	41.1	1449	12.21	8.82	10.5	12	7.3	1748	1015.20	1019.5	2315	1009.7	59	0.1
4	18.77	23.7	1523	13.9	401	67.1	91.9	431	40.4	1129	12.06	8.70	10.1	606	6.8	1129	1018.37	1019.7	755	1016.1	2358	0.0
5	17.68	22.2	1212	13.5	2357	80.1	93.7	2124	57.2	1212	14.06	9.97	12.0	1406	8.8	2355	1011.79	1016.2	5	1008.2	1713	15.2
6	16.10	22.5	1653	9.8	453	72.4	97.0	553	38.5	1605	10.40	7.83	9.9	815	5.8	1201	1015.78	1017.7	830	1013.8	2358	0.2
7	16.50	22.8	1605	10.4	2351	69.2	95.2	549	37.2	1650	10.06	7.67	10.5	750	6.0	1658	1014.53	1018.1	2358	1013.1	431	0.0
8	17.14	24.8	1453	8.4	450	66.5	96.2	621	31.7	1305	9.95	7.57	9.2	721	5.7	1256	1019.29	1020.4	938	1017.8	238	0.0
9	18.67	24.0	1457	14.5	2358	63.3	94.3	559	33.3	1521	10.88	8.19	11.7	758	5.7	1639	1019.07	1022.8	2307	1016.7	531	1.7
10	16.95	22.3	1555	12.1	426	58.4	80.0	452	34.8	1551	8.29	6.74	8.2	838	5.3	1146	1022.02	1023.3	848	1020.2	2341	0.0
11	17.84	22.4	1314	13.0	2339	61.5	84.2	646	34.3	1231	9.74	7.53	10.1	837	5.5	1231	1018.08	1020.5	5	1016.2	1715	0.0
12	16.01	21.1	1318	11.3	354	60.7	89.4	418	32.3	1321	7.70	6.54	8.8	751	4.8	1322	1017.35	1020.1	2357	1016.2	1325	0.0
13	14.43	20.5	1201	9.0	416	72.8	92.6	2358	37.4	1238	9.24	7.20	8.7	1752	5.1	1243	1022.18	1023.6	2347	1019.9	2	0.0
14	15.87	22.4	1237	9.0	507	80.3	96.6	541	44.7	1238	12.00	8.70	11.3	2359	6.7	507	1022.63	1023.9	657	1020.6	2358	1.8
15	19.16	24.1	1300	16.2	507	81.3	95.3	205	58.3	1301	15.70	11.00	13.9	1447	10.2	2138	1018.19	1020.8	0	1016.1	2248	1.3
16	18.82	24.1	1517	15.2	2359	82.1	92.5	2220	56.8	1638	15.58	10.96	12.6	1117	9.6	2359	1014.74	1016.5	0	1013.3	1512	1.5
17	16.27	20.4	1053	12.4	555	82.8	94.2	312	58.3	1055	13.21	9.44	11.6	2354	8.3	555	1011.81	1016.0	101	1006.5	2358	0.5
18	18.15	23.6	1238	13.3	2356	68.8	93.0	8	41.7	1239	11.92	8.75	11.6	13	6.8	1725	1009.92	1013.9	2356	1006.3	11	0.1
19	16.12	22.8	1450	10.0	424	63.7	91.1	445	36.5	1450	8.55	6.87	8.4	841	5.8	1650	1020.63	1027.4	2359	1013.7	3	0.0
20	16.77	24.3	1536	9.2	328	65.6	95.0	435	32.6	1537	9.26	7.16	9.2	745	5.8	1556	1027.34	1028.7	730	1025.7	1753	0.0
21	18.45	26.0	1459	9.8	435	64.3	95.1	445	30.4	1427	10.41	7.78	10.8	2359	6.0	1330	1023.40	1026.6	6	1020.9	1743	2.1
22	18.94	24.1	1639	15.5	2357	83.1	96.1	635	58.0	1631	15.79	11.05	13.2	1355	10.2	1714	1019.24	1021.3	12	1017.2	2351	0.9
23	19.71	26.5	1330	13.1	438	71.6	97.6	633	35.8	1458	13.54	9.66	12.9	815	7.3	1458	1013.96	1017.4	7	1011.1	2352	0.0
24	17.06	18.6	1702	15.1	2356	80.8	90.6	533	63.2	1839	13.68	9.77	11.3	1243	7.2	2357	1011.35	1012.4	2200	1009.7	240	1.0
25	17.54	24.7	1529	12.6	341	75.8	93.7	911	46.5	1555	12.95	9.35	12.4	1200	6.3	125	1013.64	1018.1	2348	1011.0	416	1.6
26	18.41	26.2	1545	11.5	2348	70.9	95.0	309	34.1	1554	12.35	8.90	11.1	1156	7.0	1554	1018.36	1019.7	857	1016.8	1717	0.0
27	15.32	24.1	1508	8.1	518	68.9	96.4	642	30.2	1414	8.48	6.88	10.7	840	5.1	1344	1018.81	1021.1	2359	1017.4	1456	0.0
28	16.18	24.1	1502	7.8	530	69.3	95.9	601	33.7	1436	9.56	7.36	9.6	915	5.8	1242	1022.39	1024.0	826	1020.9	7	0.0
29	18.01	24.8	1404	11.9	325	69.3	94.3	534	37.9	1408	11.77	8.50	9.4	544	6.9	1342	1021.77	1023.2	633	1020.3	1755	0.0
30	18.45	24.4	1539	13.3	242	73.9	93.2	622	45.4	1536	13.31	9.41	10.5	819	8.1	1353	1019.69	1021.2	22	1017.5	1620	0.0
31	15.48	20.7	1452	8.1	2359	59.7	93.1	202	29.8	1519	6.81	6.27	10.4	242	4.2	1519	1026.01	1030.6	2358	1020.8	0	0.0
Total																						28.6
Mean	17.67	23.71		12.10		70.5	93.14		40.64		11.58	8.57	10.81		6.79		1017.57	1020.29		1015.02		
Max	24.64	32.93		16.28		83.1	97.60		63.21		15.79	11.05	13.90		10.18		1027.34	1030.63		1025.74		
Min	14.43	18.62		7.78		58.4	80.00		29.78		6.81	6.27	8.24		4.23		1008.50	1010.44		1004.27		

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
 Rtot = 00-24 GMT rainfall total from AWS tipping bucket raingauge, mm
 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 2013

Temperature (°C)	Rank in the past 132 years						
Mean maximum	23.2	(+1.2)	13 th	highest			
Mean minimum	11.8	(0.0)	16 th	highest			
Daily mean	17.5	(+0.6)	12 th	highest			
Rainfall total (mm)	68.3	(47 %)	6 th	lowest			
Sunshine total (hours)	641.5	(110%)					
N° of:	Dry days	67 (+9)	Wet days	18 (-6)			
Days with: Air frost	0 (0)	Ground frost	2 (+1)	Snow falling	0 (0)	Snow lying	0 (0)
Thunder	3 (-4)	Hail ≥5mm	0 (0)	Small hail/ice	0 (0)	Fog @09 GMT	0 (0)
		Nil sun	1 (-2)				
Air pressure MSL : Mean @09 GMT (mbar)	1019.1	(+2.5)					

Departure from 1981 to 2010 average shown in brackets.

Notes: **Very Warm. Very Dry. Sunny.**

Temperature: Although this summer got off to a slow start, once June was passed there was plenty of warm weather and a few hot days. The mean temperature for the season is highest since 2006, as is the mean maximum. The mean minimum, however, has been equalled several times in recent years, in fact for 10 of the past 15 summers it has been within 0.1° of this year's mean. June was the coolest month, mean temperature 14.7°, anomaly -0.8°, and July the warmest, mean 19.6°, anomaly +1.9°. 25° was reached for the first time on the 30th June, and by the end of the season 29 days had equalled or bettered 25°, with 5 having topped 30°. The season's highest temperature was 32.9° on the 1st August, 2.6° above the median. The lowest was 3.9° on the 4th June, 0.4° below the median. The highest min was 18.1° on the 23rd July, 1.1° above the median, and the lowest max was 16.0° on the 10th June, 1.6° above the median. The mean grass minimum was 8.6°, 0.3° below average, and the lowest was -1.0° on the 4th June. Ground frost is not unusual in the summer season, and usually occurs in June, and 15 of the past 34 summers have had at least one. Earth temperatures at 30cm depth were below average in June, but above in July and August, the mean for the whole season being 18.2°, anomaly +0.2°. At 1 m depth the mean was 16.1°, slightly below average. The mean daily range of air temperature, 11.5°, is 1.4° above average, and equal highest with 2006 since 1995. **Rainfall:** This has been a very dry summer season, the total rainfall at under half the average being lowest since 1995, and 6th lowest since before 1882. The highest daily fall was 16.5 mm on the 5th August, 8.2 mm below the median. The number of dry days, 67, is most since 1995. August was the wettest month with 29.8 mm, but this is only 59% of average, and June the driest with 17.4 mm, 35% of average. There were several dry spells, a 12 day one ended on the 11th June, a 20 day one on the 22nd July, a 5 day one on the 13th August, and one unbroken after 7 days on the 31st August. Estimated soil moisture deficit was at stress level for unirrigated shallow rooted plants at the start of the season, and reached severe stress level after the 4th July, and remained severe for the rest of the season. An index of plant stress gave a value of 926 this summer, compared with a 30 year average of 652. We had a value of 972 in 2010 and 1183 in 1990. There was no hail recorded this summer, and the 3 occasions with thunder were all in the 2nd half of July. Rain rates over 50 mm/hr occurred on the 15th June (53 mm/hr), 25th July (70 mm/hr), 27th July (114 mm/hr) and 5th August (52 mm/hr). On the 27th July we recorded 5.3 mm in 10 minutes and on the 5th August 9.3 mm in an hour. **Sunshine:** This has been a sunny summer season, with daily mean sunshine of 6.97 hours, highest since 2006 and 10% above average. However, it was not sunshine all the way, and June contained a good deal of dull weather, ending up with only 84% of average. August had a mixed bag but ended up close to average, but July had a prolonged spell of sunny days, ending up with 144% of average. The season's sunniest day was the 4th June with 15.4 hours, but 15.3 hours was also recorded on the 8th, 9th and 19th of July. Overall there were 23 days with <3 hours, 48 with =>6 hours, 33 with =>9 hours, 19 with =>12 hours and 5 with =>15 hours. The number of days with 12 or more hours is 7 above average and most since 2006. **Wind:** The overall mean wind speed of 6.2 mph is close to average. The windiest day was the 22nd June, mean 12.3 mph, and the season's highest gust was 40 mph on the 13th June. The 6th July was the least windy day, mean 2.5 mph, and there were 1701 minutes of calm (less than 0.5 mph). Daily mean wind direction/number of days: N,8 NE,20 E,1 SE,5 S,8 SW,29 W,13 NW,8. Compared with average, NE'y winds were 13.4% more frequent, at the expense of all directions except SE, with S and SW winds combined 8.3% less frequent. **Pressure:** The season's mean pressure is highest since 1983. The highest pressure was 1034.2 mbar on the 8th July, and the lowest was 1002.4 mbar on the 27th July, this last being highest for the summer since 1995. **Humidity:** The overall mean relative humidity was 69.9%, and the lowest was 18% on the 15th July.

June: Cool, dry and dull. Coolest since 1991. Highest max lowest since 1991. Earth temperatures have not been lower since 1991. Least rain since 2006. Highest daily rainfall 6th lowest in 110 years.

July: Dry, sunny and very warm. The third hottest July since before 1882. Driest since 1994. Most dry days since 1990. Sunshine in the top 5 in the past century. 15 consecutive very sunny days gave a mean of 13.25 hours per day. Mean pressure highest since 1989.

August: Dry and very warm with near normal sunshine. Mean maximum highest since 2003. Highest max highest for the month since 2003. Only the 6th thunder-free August in 38 years.

Month	Mean Max	Anom	Mean Min	Anom	Rain mm	Anom	Sun hrs	Anom	Wind Mn mph	Max gust	Mean pressure	Anom
June	19.7°	-0.8°	9.7°	-0.8°	17.4	35%	160.8	84%	6.9	40	1018.9	+1.8
July	26.2°	+3.3°	13.0°	+0.4°	21.1	47%	285.7	144%	5.6	31	1020.3	+3.7
August	23.7°	+1.1°	12.6°	+0.2°	29.8	59%	195.0	101%	6.0	32	1018.0	+1.7

Appendix 1.

Explanation and definition of some of the terms used in the Wokingham Weather Reports.

Average: Generally refers to the 30 year climatological average, currently 1981 to 2010. This will be next updated in 2010. 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 instrument used to detect sunshine amount in July 1999, and the data produced by the new instrument is not strictly comparable with that obtained prior to July 1999, 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 of instrument, due to a combination of faster reaction and higher sensitivity than the old type. Thus the average used in this case is for a theoretical equivalent average for the 1981 to 2010 climatological period for this new instrument, based on comparisons with Met Office published tables of departure from the 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 the 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 "half (max+min)". A true daily 24 hour (00 to 24 GMT) mean temperature is available from the AWS, and is currently published on page 7 of the Wokingham Monthly Weather Report on the Wokingham Weather Web Site, page1. <http://www.woksat.info/wwp1.html>

Anomaly : When a value is given for anomaly, this will have the following meanings:

- a): The departure of a mean from the current climatological average.
- b): The departure of a value from the a long-term average for a particular day.

When the word anomaly is used in respect to temperature, any values given are in degrees C. In respect to rainfall, percent. In respect of sunshine, percent. In respect to wind, mph. In respect to 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 mild/cold are used in the winter half year, and warm/cool in the summer half.

The term normal is defined as being 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 for sunshine follow the same rules as for temperature.

Rainfall: The terms for rainfall are very dry, dry, normal, wet and very wet.

The term normal follows the same rule as for temperature and sunshine.

The term wet is used for values lying between 10% and 30% below the highest value in the ranked series.

the term very wet is used for values lying within 10% of the highest value in the ranked series.

The term dry is used for values lying between 10% and 30% of the lowest value in the ranked series.

The term very dry is used for values lying 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 the records of various station in the Wokingham area in the years prior to the establishment of a weather station at Emmbrook in 1976.

In the case of monthly max, min and mean temperature and of rainfall total the 'long-term' goes from the present back to 1882. For extremes of temperature, highest max and lowest min are back to 1904, and for 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 values of the entire series. The central value in the ranked series is known as the median. This value may be different from the 'average' if the population of values is skewed. Also, as the median considers all values in the series, and the average refers to a 30 year climatological period, during periods of climatic change, the median will also be expected to differ from the average.

Month: Calendar month.

Season: Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

The year number given when discussing 'winter' is usually the year in which the majority of the period lies, i.e. January/February

Annual or Year : The calendar year, 1st January to 31st December.

The climatological day : runs from 09 to 09 GMT. The max temperature and rainfall read at 0900 are attributed to the previous day, as is the duration of measurable rain calculated up to 0900 GMT. The min temperature and grass min read at 0900 are attributed to the day of reading . Pressure is read at 0900 GMT, and the monthly mean pressure is the mean of the 0900 readings. Sunshine data, wind data, rainfall rates and 24 hour data from the AWS use the normal 00 to 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 % cover of snow at the 0900 GMT observation.

Hail : A day of hail is recorded if hailstones of 5 mm diameter or more are observed or recorded on the hail pad on 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. Note, various types of other ice meteors such as ice pellets, snow grains, and some types of snow pellets are included in this category.

Fog: A day of 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.

Rainfall : Rainfall is given in mm and tenths. "tr" (trace) is entered when: a) precipitation has occurred but there is no water in the gauge. b) There is water in the gauge but it is less than 0.05 mm.

Dry Spell : A dry spell, for the purposes of the Wokingham climatological data and reports, is defined as a period of 5 or more consecutive dry days. A dry day is defined as one where the 24 hour precipitation measured at 09 GMT is not greater than 0.1 mm.

Wind: The following abbreviations may be used to denote wind directions :

Degrees are from true north

N = North = 360° and 22.5° either side.

NE = NorthEast = 045° and 22.5° either side.

E = East = 090° and 22.5° either side.

SE = SouthEast = 135° and 22.5° either side.

S = South = 180° and 22.5° either side.

SW = SouthWest = 225° and 22.5° either side.

W = West = 270° and 22.5° either side.

NW = NorthWest = 315° and 22.5° either side.

Wind – terms for speed used in monthly reports: When the following terms are used in the monthly reports, they will be based on the following unofficial criteria, (the day runs from 00 to 24 GMT) :

Term	Daily mean speed, knots		Highest hourly mean speed, knots		24 hour maximum gust, knots
Very light	3 or less	and	4 or less	and	8 or less
Light	3 to 6	or	4 to 8	or	8 to 16
Moderate	6 to 9	or	8 to 12	or	16 to 24
Fresh	9 to 12	or	12 to 16	or	24 to 32
Strong	12 to 15	or	16 to 20	or	32 to 40
Very strong	15 to 18	or	20 to 24	or	40 to 48
Near gale	18 to 21	or	24 to 28	or	48 to 56
Gale	21 to 24	or	28 to 32	or	56 to 64
Severe gale	24 to 27	or	32 to 36	or	64 to 72

B.J.Burton. 3 August 2009
 Updated 8 Sept 2009,
 4 Nov 2011

Appendix 2.

Explanation and decode for code figures used in the Wokingham 0900 and 1500 GMT observations

VV : Visibility.

Code figures 00 to 50 are in km and tenths e.g. 01 = 0.1 km = 100 m, 33 = 3.3 km, 50 = 5.0 km

Code figures 60 to 80. Subtract 50 to obtain visibility in km. e.g. 56 = 6 km, 65 = 15 km, 77 = 27 km.

Code figures 81 to 89. Subtract 50 and add 5 for every one above 80. e.g. 83 = 45 km, 86 = 60 km.

Code figure 89 = visibility above 70 km.

N : Total cloud amount in okta (eighths of sky covered). 9 = sky obscured (e.g. by fog or snow)

dd : Wind direction in tens of degrees from true north. Wind is measured at a height of 10 m, and the direction is the mean over a period of 10 minutes ending at the observation time.

ff : Wind speed in knots, measured at 10 m, and is the mean over a period of 10 minutes ending at observation time.

gg : Wind gust in knots at 10 m. The highest gust in the 60 minutes up to observation time.

TT : Air temperature at 1.2m, degrees C and tenths.

TdTd : Dew point temperature at 1.2m, degrees C and tenths.

RH : Relative humidity at 1.2m, %.

r : Humidity mixing ratio (amount of water vapour per kg of air), grams and tenths.

PPP : Air pressure reduced to MSL, millibars and tenths.

a : Characteristic of pressure tendency during the past 3 hours.

Code figures 0 to 3, pressure higher than 3 hours ago, 5 to 8, pressure lower than 3 hours ago

Code figure 0 = Increasing then decreasing, pressure the same as or higher than 3 hours ago

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

3 = Decreasing or steady then increasing, or increasing then increasing more rapidly

4 = Steady, pressure the same as 3 hours ago

5 = Decreasing then increasing, pressure lower than 3 hours ago

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

8 = Steady or increasing then decreasing, or decreasing then decreasing more rapidly

ppp : 3 hour pressure tendency in tenths of a millibar

ww : Present weather code figures, 00 to 99.

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

04 = Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes.

05 = Haze, visibility reduced by extremely small dry particles (RH less than appx. 95 %)

06 = Widespread dust in suspension, not raised by the wind near the station at the time of the observation

07 = Dust or sand raised by the wind at or near the station at the time of the observation, but no well-developed dust whirls or sand whirls, and no duststorm or sandstorm seen: In marine environments, blowing spray at the station.

08 = Well-developed dust or sand whirls seen at or near the station during the preceding hour or at the time of the observation, but no duststorm or sandstorm.

09 = Duststorm or sandstorm within sight at the time of the observation, or at the station during the preceding hour

10 = Mist
11 = Patches of shallow fog not deeper than 2 metres on land
12 = More or less continuous shallow fog not deeper than 2 metres on land
13 = Lightning visible, no thunder heard
14 = Precipitation within sight, not reaching the ground
15 = Precipitation within sight, reaching the ground more than 5 km from the station
16 = Precipitation within sight, reaching the ground, near to but not at the station
17 = Thunderstorm, but no precipitation at the time of the observation
18 = Squalls at or within sight of the station at the time of the observation or during the preceding hour
19 = Funnel cloud(s) at or within sight of the station at the time of the observation or during the preceding hour

20 = Drizzle (not freezing) at the station during the preceding hour but not at the time of the observation
21 = Rain (not freezing) at the station during the preceding hour but not at the time of the observation
22 = Snow at the station during the preceding hour but not at the time of the observation
23 = Rain and snow or ice pellets at the station during the preceding hour but not at the time of the observation
24 = Freezing drizzle or freezing rain at the station during the preceding hour but not at the time of the observation
25 = Shower(s) of rain at the station during the preceding hour but not at the time of the observation
26 = Shower(s) of snow or rain and snow at the station during the preceding hour but not at the time of the observation
27 = Shower(s) of hail or rain and hail at the station during the preceding hour but not at the time of the observation
28 = Fog or ice fog at the station during the preceding hour but not at the time of the observation
29 = Thunderstorm, with or without precipitation at the station during the preceding hour but not at the time of the observation

30 = Slight or moderate duststorm or sandstorm has decreased during the preceding hour
31 = Slight or moderate duststorm or sandstorm with no appreciable change during the past hour
32 = Slight or moderate duststorm or sandstorm has begun or increased during the past hour
33 = Severe duststorm or sandstorm has decreased during the preceding hour
34 = Severe duststorm or sandstorm with no appreciable change during the past hour
35 = Severe duststorm or sandstorm has begun or increased during the past hour
36 = Slight or moderate drifting snow generally below eye level
37 = Heavy drifting snow generally below eye level
38 = Slight or moderate blowing snow generally above eye level
39 = Heavy blowing snow generally above eye level

40 = Fog or ice fog at a distance at the time of the observation, but not at the station during the preceding hour, the fog extending to a level above that of the observer.
41 = Fog or ice fog in patches
42 = Fog or ice fog, sky visible has become thinner during the past hour
43 = Fog or ice fog, sky invisible has become thinner during the past hour
44 = Fog or ice fog, sky visible no appreciable change during the past hour
45 = Fog or ice fog, sky invisible no appreciable change during the past hour
46 = Fog or ice fog, sky visible has begun or become thicker during the past hour
47 = Fog or ice fog, sky invisible has begun or become thicker during the past hour
48 = Fog, depositing rime, sky visible
49 = Fog depositing rime, sky invisible

50 = Drizzle, not freezing, intermittent slight at time of observation
51 = Drizzle, not freezing, continuous slight at time of observation
52 = Drizzle, not freezing, intermittent moderate at time of observation
53 = Drizzle, not freezing, continuous moderate at time of observation
54 = Drizzle, not freezing, intermittent heavy at time of observation
55 = Drizzle, not freezing, continuous heavy at time of observation
56 = Drizzle, freezing, slight
57 = Drizzle, freezing, moderate or heavy (dense)
58 = Drizzle and rain, slight
59 = Drizzle and rain, moderate or heavy

60 = Rain, not freezing, intermittent slight at time of observation
61 = Rain, not freezing, continuous slight at time of observation
62 = Rain, not freezing, intermittent moderate at time of observation
63 = Rain, not freezing, continuous moderate at time of observation
64 = Rain, not freezing, intermittent heavy at time of observation
65 = Rain, not freezing, continuous heavy at time of observation
66 = Rain, freezing, slight
67 = Rain, freezing, moderate or heavy
68 = Rain or drizzle and snow, slight
69 = Rain or drizzle and snow, moderate or heavy

70 = Intermittent fall of snowflakes slight at time of observation
71 = Continuous fall of snowflakes slight at time of observation
72 = Intermittent fall of snowflakes moderate at time of observation
73 = Continuous fall of snowflakes moderate at time of observation
74 = Intermittent fall of snowflakes heavy at time of observation
75 = Continuous fall of snowflakes heavy at time of observation
76 = Diamond dust (with or without fog)
77 = Snow grains (with or without fog)
78 = Isolated star-like snow crystals (with or without fog)
79 = Ice pellets

80 = Rain shower(s), slight
81 = Rain shower(s), moderate or heavy
82 = Rain shower(s), violent
83 = Shower(s) of rain and snow mixed, slight
84 = Shower(s) of rain and snow mixed, moderate or heavy
85 = Snow shower(s), slight
86 = Snow shower(s), moderate or heavy
87 = Shower(s) of snow pellets or small hail, with or without rain or rain and snow mixed, slight
88 = Shower(s) of snow pellets or small hail, with or without rain or rain and snow mixed, moderate or heavy
89 = Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder, slight
90 = Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder, moderate or heavy

91 = Slight rain at time of observation, thunderstorm during the past hour but not at time of observation
92 = Moderate or heavy rain at time of observation, thunderstorm during the past hour but not at time of observation
93 = Slight snow, or rain and snow mixed, or hail at time of observation, thunderstorm during the past hour but not at time of observation
94 = Moderate or heavy snow, or rain and snow mixed, or hail at time of observation, thunderstorm during the past hour but not at time of observation
95 = Thunderstorm, slight or moderate, without hail but with rain and or snow at time of observation
96 = Thunderstorm, slight or moderate, with hail at time of observation
97 = Thunderstorm, heavy, without hail but with rain and or snow at time of observation
98 = Thunderstorm combined with duststorm or sandstorm at time of observation
99 = Thunderstorm, heavy, with hail at time of observation

Hail includes large hail, small hail and snow pellets.

W1, W2 : Past weather (for 0900 and 1500 GMT observations, the period covered is 3 hours)

Code figures:

- 0 = Cloud covering half or less of the sky throughout the period
- 1 = Cloud covering more than half the sky during only part of the period
- 2 = Cloud covering more than half the sky throughout the period
- 3 = Sandstorm, duststorm or blowing snow
- 4 = Fog or ice fog or thick haze (visibility less than 1000 m)
- 5 = Drizzle
- 6 = Rain
- 7 = Snow or rain and snow mixed
- 8 = Shower(s)
- 9 = Thunderstorm(s) with or without precipitation

Nh : Amount of low cloud, or medium cloud if no low cloud present, okta

Cl : Type of low cloud

- 0 = No low cloud
- 1 = Cumulus with little vertical extent and seemingly flattened, or ragged Cumulus other than bad weather, or both
- 2 = Cumulus of moderate or strong vertical extent, either accompanied or not by other Cumulus or Stratocumulus all having their bases at the same level
- 3 = Cumulonimbus whose summits, at least partially, lack sharp outline, but are neither clearly fibrous (cirriform), nor in the form of an anvil; Cumulus, Stratocumulus or Stratus may also be present
- 4 = Stratocumulus formed by the spreading out of Cumulus; Cumulus may also be present
- 6 = Stratus in a more or less continuous sheet or layer, or ragged shreds, or both, but no Stratus fractus of bad weather
- 7 = Stratus fractus of bad weather or Cumulus fractus of bad weather or both (pannus), usually below Altostratus or Nimbostratus
- 8 = Cumulus and Stratocumulus other than that formed by the spreading out of Cumulus, the bases of the Cumulus and Stratocumulus are not at the same level.
- 9 = Cumulonimbus, the upper part of which is clearly fibrous (cirriform), often in the form of an anvil, either accompanied or not by any other type(s) of low cloud
- / = Types of low cloud invisible due to darkness, fog, blowing dust or sand or other similar phenomena.

'Bad weather' denotes the conditions which generally exist during precipitation and a short time before and after.

Cm : Type of medium cloud.

- 0 = No medium cloud.
- 1 = Altostratus, the greater part of which is semi-transparent; through this part the sun or moon may be weakly visible, as through ground glass
- 2 = Altostratus, the greater part of which is sufficiently dense to hide the sun or moon, or Nimbostratus
- 3 = Altocumulus, the greater part of which is semi-transparent; the various elements of the cloud change only slowly and are all at a single level
- 4 = Altocumulus in patches (often in the form of almonds or fishes), the greater part of which is semi-transparent ; the clouds occur at one or more levels and the elements are continually changing in appearance
- 5 = Altocumulus in bands semi-transparent, of Altocumulus in one or more fairly continuous layers (semi-transparent or opaque), progressively invading the sky; these Altocumulus clouds generally thicken as a whole
- 6 = Altocumulus resulting from the spreading out of Cumulus (or Cumulonimbus)
- 7 = Altocumulus in two or more layers, usually opaque in places, and not progressively invading the sky; or opaque layer of Altocumulus not progressively invading the sky; or Altocumulus together with Altostratus or Nimbostratus
- 8 = Altocumulus with sproutings in the form of small towers or battlements, or Altocumulus having the appearance of cumuliform tufts
- 9 = Altocumulus of a chaotic sky, generally at several levels
- / = Types of medium cloud invisible owing to darkness, fog, blowing dust or sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

Ch : Type of high cloud

0 = No high cloud

1 = Cirrus in the form of filaments, strands or hooks, not progressively invading the sky.

2 = Dense cirrus, in patches or entangled sheaves, which usually do not increase and sometimes seem to be the remains of the upper part of a Cumulonimbus; or Cirrus with sproutings in the form of small turrets or battlements, or Cirrus having the appearance of cumuliform tufts

3 = Dense Cirrus, often in the form of an anvil, being the remains of the upper part of Cumulonimbus, or where the rest of the Cumulonimbus is below the horizon

4 = Cirrus in the form of hooks or filaments, or both, progressively invading the sky; they generally become denser as a whole

5 = Cirrus (often in bands converging towards one or two opposite points on the horizon) and Cirrostratus, or Cirrostratus alone; in either case they are progressively invading the sky, and generally growing denser as a whole, but the continuous veil does not reach 45 degrees above the horizon.

6 = Cirrus (often in bands converging towards one or two opposite points on the horizon) and Cirrostratus, or Cirrostratus alone; in either case they are progressively invading the sky, and generally growing denser as a whole; the continuous veil extends more than 45 degrees above the horizon, without the sky being totally covered

7 = Veil of Cirrostratus covering the celestial dome.

8 = Cirrostratus not progressively invading the sky and not completely covering the celestial dome

9 = Cirrocumulus alone, or accompanied by Cirrus or Cirrostratus, or both, but Cirrocumulus is predominant.

/ = Types of high cloud invisible owing to darkness, fog, blowing dust of sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

8 Groups

N = Amount of cloud reported by C, okta.

C = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

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

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

00 to 50 = Height in hundreds of feet

51 to 55 Not used

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

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