

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

NOVEMBER 2014

Temperature (°C / °F)			Anomaly	Rank in the past 133 years			
Mean maximum	11.7	53.1	+0.8	13 th highest			
Mean minimum	5.3	41.5	+1.2	11 th highest			
Daily mean	8.5	47.3	+1.0	11 th highest			
Highest maximum	17.1	62.8	on 1 st	Lowest maximum	7.0	44.6	on 24 th
Highest minimum	12.9	55.2	on 1 st	Lowest minimum	-2.3	27.9	on 25 th
Mean grass minimum	2.7	36.9	+1.6	Lowest grass minimum	-6.1	21.0	on 25 th
Mean earth @30 cm	11.0	51.8	+1.6	Earth @100 cm	12.9	55.2	
Frost duration (hrs)	23.0			Rain duration (hrs)	88.1		
Rainfall total (mm / in)	102.0	4.02	148 %	17 th highest			
Highest daily fall	12.7	0.50	on 22 nd				
Number of: Dry days (<0.2mm)	11	Wet days (>0.9mm)	16	days ≥5mm	10		
Sunshine total (hrs) 58.6	Daily mean	1.95	82 %	Sunniest day	6.1	on 24 th	
N° days with: Air frost 3	Ground frost	12	Snow falling	0	Snow lying	0	
Thunder 0	Hail ≥5mm	0	Small hail/ice	0	Fog @09	2	Nil sun 7
Pressure MSL : Mean @09 GMT, mbar	1006.7	-7.7	Highest	1028.2	on 24 th	Lowest	988.0 on 7 th
Relative humidity : Mean (%)	92.5	Lowest	49 on 1 st	Water vapour (g/kg), mean at 09 and 15 GMT 6.6, 6.7			
Overall mean wind speed (mph)	5.2	Windiest day	10.4 on 7 th	Max gust	37	on 10 th	
Wind direction (days)	N 1	NE 8	E 3	SE 3	S 6	SW 5	W 1 NW 3
Least windy day (mph)	1.7 on 24 th	Calm; less than 0.5 mph (minutes)				725	

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

Notes: **Very Mild , Wet, Below Normal Sunshine.**

Temperature: Yet another mild month, the 11th in the past year with only August failing to reach the mild or very mild category. The mean temperature this November is highest since 2011, as are both the mean maximum and mean minimum. The highest max is 1.5° above the median and the lowest max is 2.4° above its median. The highest min is 2.3° above the median and the lowest min is 1.3° above its median. The mean grass min is also highest since 2011 and the lowest grass min is 1.8° above average and highest since 2009. Earth temperatures are well above average, and the highest value at 30cm depth, 14.2° on the 1st, is 2.2° above average and highest for the month in the past 36 years. Both daily maxima and minima were above normal for two thirds of the month. There were two periods when maxima were below normal, from the 3rd to the 5th and the 23rd to the 26th, but the greatest anomalies were only -2.9° on the 3rd and -2.8° on the 24th. Over the rest of the month there were no outstandingly warm days, just 2 days with an anomaly above +4°, the 22nd and 29th. For daily minima there was also 2 cool periods, the 4th to the 7th and 24th to the 26th. Individual anomalies were larger than for the maxima, reaching -7.0° on the 6th and -5.5° on the 25th, and were over +4° on 8 days with the greatest anomaly being +7.8° on the 14th. **Rainfall:** This has been a wet November, the wettest since 2009, with a rainfall total over 100 mm, very similar to the wet October we have just experienced. As a result, ground water levels are high and there is standing water again in some local fields. It is interesting to note that in the 25 years between 1975 and 2000 there were no Novembers having over 100 mm of rain, but this is the 6th one in the 15 years since. There was a scattering of dry days which provided some relief this month, notably from the 18th to the 20th and after the 25th. Rainfall accumulation was above normal, reaching 28 mm above by the 16th and 42 mm above by the 25th, though dropping back to a surplus of 33 mm by the 30th. Individual daily falls over 10 mm occurred on the 16th, 22nd and 25th, but the month's highest daily amount of 12.7 mm is 3.4 mm below the median, and falls of 30 mm or more in a day have occurred in 6 Novembers in the past century. **Sunshine:** A dull month overall, 18 % less than average and the lowest total for November since 2008. There were only 4 days having over 50 % of the maximum, and the sunniest day, the 24th, had only 72 %, while 14 days had less than 10 %. Nevertheless, daily accumulations were close to normal up to the 14th, then a succession of dull days produced a deficit of 10 hours by the 25th which increased to 13 hours by the end of the month. Overall there were 19 days with <3 hours and 1 with =>6 hours. **Wind:** The mean speed this month is 1.0 mph below average, and lowest since 2004, as is the highest gust. Winds were fresh SW'ly at first, becoming light or moderate NW'ly on the 4th, backing S'ly moderate or fresh on the 6th and SE'ly on the 11th. From the 15th onwards winds were light and mainly NE'ly, though moderate on the 28th.

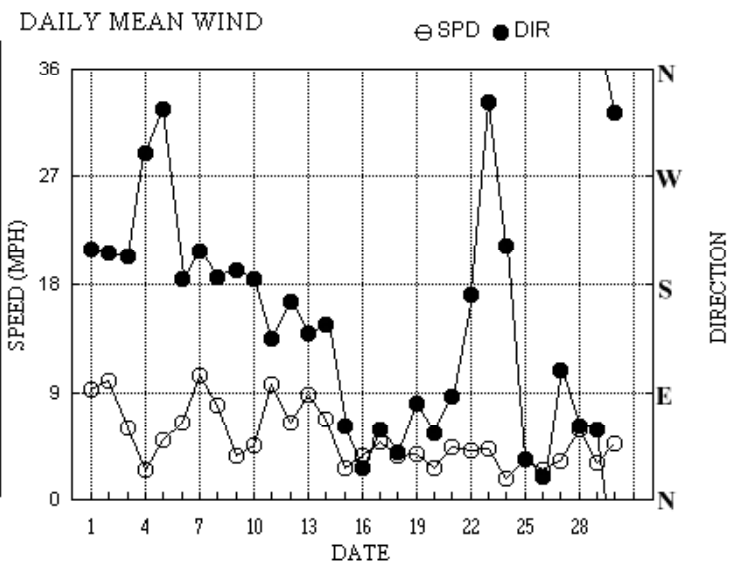
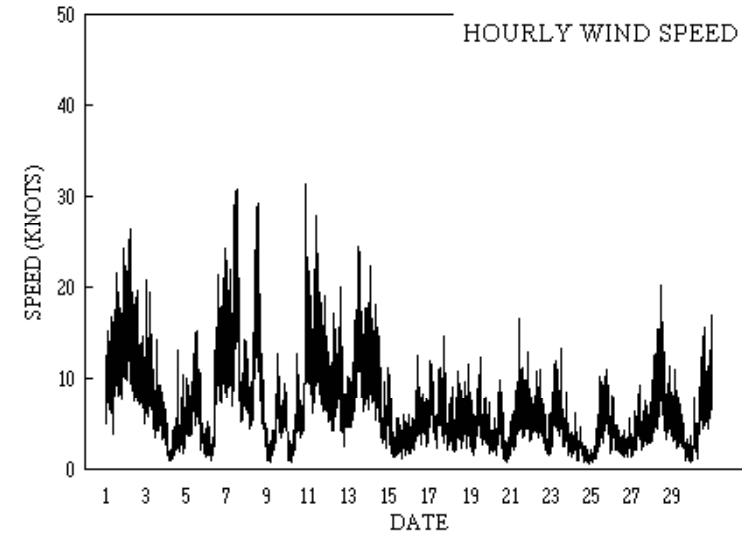
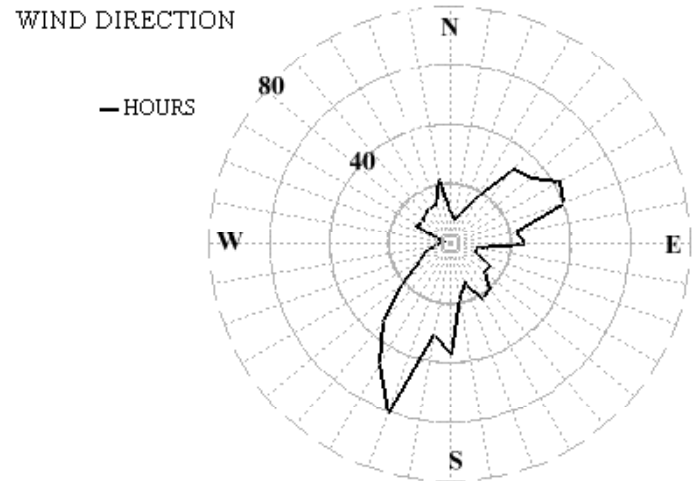
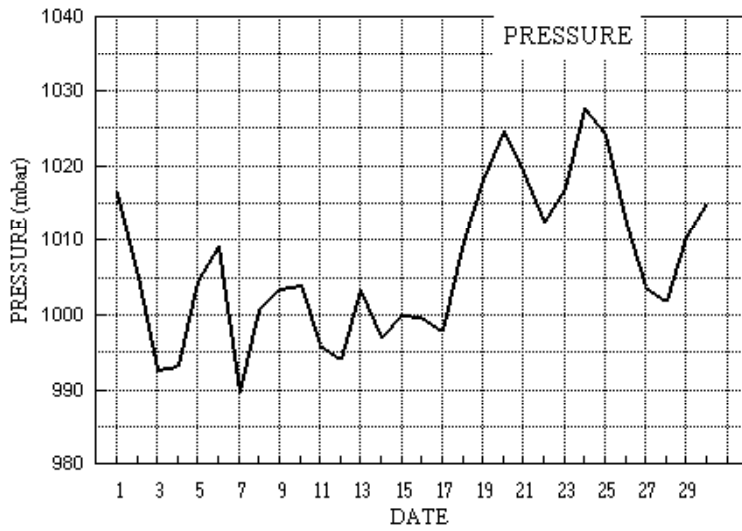
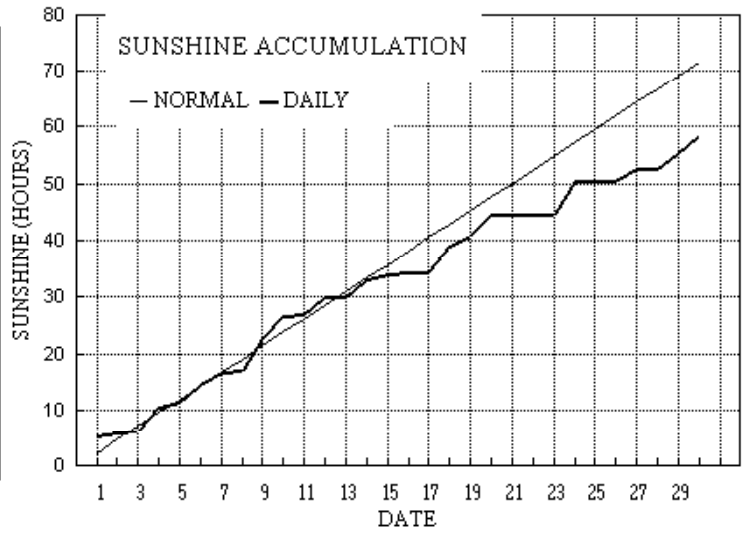
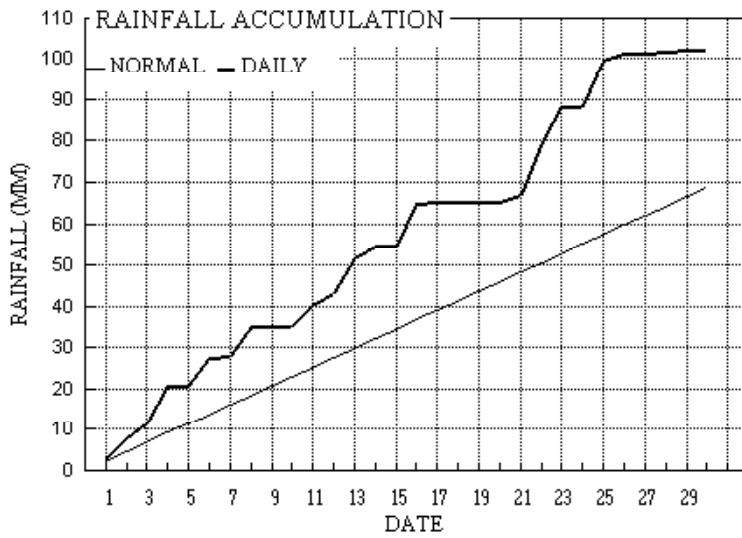
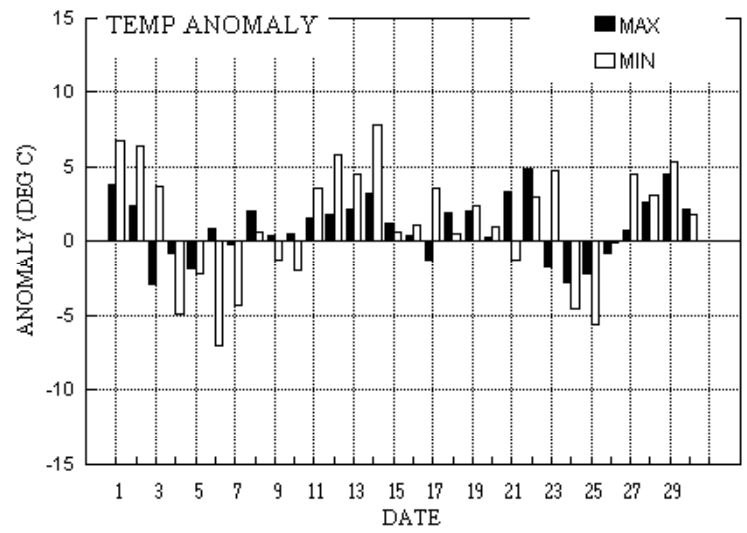
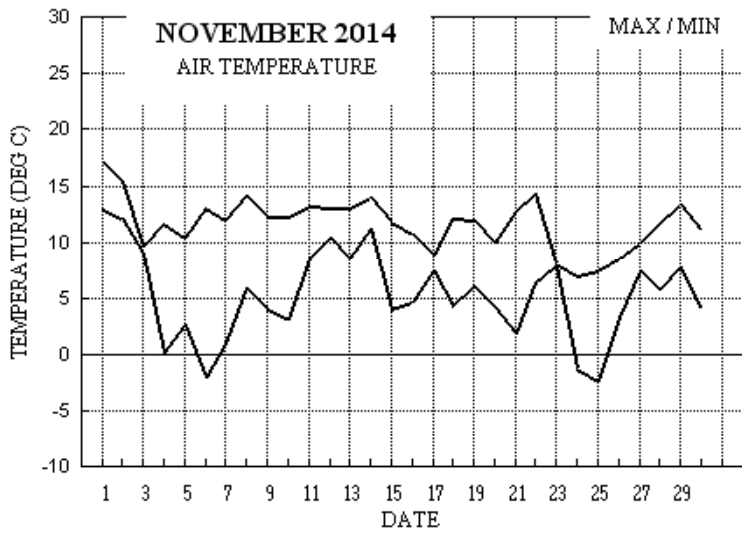
Humidity: The mean relative humidity is highest for any month since before 1998.

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

From the 1 st to the 10 th				From the 11 th to the 20 th				From the 21 st to the 30 th			
+0.4°	-0.4°	153%	113%	+1.3°	+3.1°	131%	76%	+1.1°	+1.1°	162%	59%

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

Wokingham climatological graphs for November 2014



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: NOVEMBER 2014

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	17.1	12.9	3.2	11.0	14.2	14.5	5.2	0.0	1016.3	0 0 0 0	0 0 0 0	0 0 0 0	209	7.7 8.1	190 24 2250	197 13 23	2.4	
2	15.4	12.2	5.1	9.0	14.1	14.5	0.6	0.0	1005.1	0 0 0 0	0 0 0 0	0 0 0 0	206	8.6 8.7	202 27 0504	203 12 03	3.4	
3	9.7	9.0	3.3	5.5	13.9	14.5	0.6	0.0	992.8	0 0 0 0	0 0 0 0	0 0 0 0	204	5.1 5.3	221 21 0023	208 8 05	2.0	
4	11.7	0.1	9.2	-2.8	12.8	14.4	4.2	0.0	993.2	0 1 0 0	0 0 0 0	0 0 0 1	289	0.6 2.2	284 13 1345	10 4 18	4.0	
5	10.4	2.7	0.0	3.2	12.2	14.3	0.9	0.0	1004.4	0 0 0 0	0 0 0 0	0 0 0 0	327	4.0 4.3	310 16 1338	339 7 13	0.0	
6	13.0	-2.1	7.0	-6.1	11.5	14.1	3.0	8.0	1009.2	1 1 0 0	0 0 0 0	0 0 0 0	184	5.2 5.6	179 24 2114	185 10 19	6.2	
7	12.0	0.9	0.1	8.6	11.3	13.9	2.3	0.0	989.7	0 0 0 0	0 0 0 0	0 0 0 0	207	8.2 9.0	230 31 1316	241 14 13	0.2	
8	14.1	5.9	7.3	-0.2	11.4	13.7	0.3	0.0	1000.8	0 1 0 0	0 0 0 0	0 0 0 0	186	6.7 6.9	189 30 1315	187 14 12	4.8	
9	12.3	4.1	0.0	-0.9	11.3	13.5	5.5	0.0	1003.4	0 1 0 0	0 0 0 0	0 0 0 0	191	2.9 3.2	215 13 1227	226 6 12	0.0	
10	12.3	3.1	tr	-1.0	10.9	13.3	4.0	0.0	1003.9	0 1 0 0	0 0 0 0	0 0 0 0	184	3.5 3.9	148 32 2217	162 11 22	0.1	
11	13.2	8.6	5.3	8.5	10.9	13.2	0.4	0.0	995.9	0 0 0 0	0 0 0 0	0 0 0 0	135	8.1 8.4	141 28 1107	139 11 11	6.3	
12	13.1	10.4	2.7	9.0	11.3	13.0	3.1	0.0	994.1	0 0 0 0	0 0 0 0	0 0 0 0	166	4.9 5.6	197 20 1450	200 9 14	1.5	
13	13.1	8.6	8.6	4.8	11.3	12.9	0.0	0.0	1003.3	0 0 0 0	0 0 0 0	0 0 0 0	139	7.4 7.6	166 25 1226	145 12 13	4.2	
14	14.0	11.2	2.9	10.1	11.4	12.9	3.1	0.0	997.0	0 0 0 0	0 0 0 0	0 0 0 0	147	4.5 5.9	134 23 0214	119 10 02	1.1	
15	11.9	4.1	0.1	-1.5	11.2	12.8	0.9	0.0	1000.1	0 1 0 0	0 0 0 0	0 0 0 0	61	1.7 2.2	109 11 0121	94 5 00	0.3	
16	10.8	4.6	10.1	-0.5	10.9	12.8	0.2	0.0	999.8	0 1 0 0	0 0 0 0	0 0 0 0	27	2.8 3.2	61 13 1023	56 5 10	14.6	
17	8.9	7.4	0.6	7.2	10.9	12.7	0.0	0.0	997.8	0 0 0 0	0 0 0 0	0 0 0 0	59	0.6 4.1	60 15 1713	247 6 03	1.7	
18	12.1	4.3	tr	-1.5	10.8	12.6	4.8	0.0	1009.9	0 1 0 0	0 0 0 0	0 0 0 0	39	3.2 3.2	58 12 2334	56 5 23	0.0	
19	12.0	6.1	0.0	0.6	10.6	12.5	1.9	0.0	1018.1	0 0 0 0	0 0 0 0	0 0 0 0	80	3.2 3.3	126 13 1326	103 6 13	0.0	
20	9.9	4.2	0.0	-0.6	10.2	12.4	3.5	0.0	1024.7	0 1 0 0	0 0 0 0	0 0 0 0	56	2.1 2.2	69 10 1330	77 5 13	0.0	
21	12.8	1.9	1.6	-2.1	9.7	12.3	0.0	0.0	1019.2	0 1 0 0	0 0 0 0	0 0 0 0	87	3.6 3.9	70 17 1157	136 6 22	2.6	
22	14.3	6.3	12.7	6.7	9.9	12.1	0.0	0.0	1012.3	0 0 0 0	0 0 0 0	0 0 0 0	171	3.1 3.6	167 11 1117	176 5 11	9.3	
23	8.1	8.0	8.3	8.0	10.5	12.0	0.0	0.0	1016.8	0 0 0 0	0 0 0 0	0 0 0 0	332	3.2 3.6	14 13 1220	5 6 12	5.7	
24	7.0	-1.3	0.2	-6.0	10.1	11.9	6.1	9.7	1027.6	1 1 0 0	0 0 0 0	0 0 0 0	212	1.0 1.5	191 6 0621	198 3 06	0.2	
25	7.5	-2.3	11.5	-6.1	8.9	11.9	0.0	5.3	1024.1	1 1 0 0	0 0 0 0	0 0 0 0	34	2.5 2.9	30 11 1910	37 5 19	12.9	
26	8.6	3.2	1.5	6.2	8.8	11.7	0.0	0.0	1012.1	0 0 0 0	0 0 0 0	0 0 0 1	19	2.0 2.2	61 8 0247	53 4 03	3.5	
27	9.9	7.5	tr	7.9	9.2	11.5	2.0	0.0	1003.7	0 0 0 0	0 0 0 0	0 0 0 0	109	0.7 2.9	191 10 1023	203 4 09	0.0	
28	11.7	5.7	0.6	0.5	9.4	11.4	0.1	0.0	1001.9	0 0 0 0	0 0 0 0	0 0 0 0	61	5.0 5.1	64 20 1223	64 8 13	1.0	
29	13.4	7.8	0.1	3.3	9.6	11.3	2.7	0.0	1010.2	0 0 0 0	0 0 0 0	0 0 0 0	58	2.2 2.6	68 11 0438	66 5 04	0.1	
30	11.0	4.1	tr	0.2	9.5	11.3	3.2	0.0	1015.0	0 0 0 0	0 0 0 0	0 0 0 0	324	3.1 4.1	21 17 2354	341 8 14	0.0	
Total			102.0				58.6	23.0										88.1
Mean	11.7	5.3		2.7	11.0	12.9	1.95	0.8	1006.7					160	1.6 4.5			
Anom	+0.8	+1.2	148%	+1.6	+1.6	+1.1	82%			-7.7								
Daily mean		8.5																
Anom		+1.0																

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 NOVEMBER 2014

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cf	NCh	shs	NCh	shs	NCh	shs	Date	Remarks
1	86	4	20	05	09	13.3	11.8	90	8.6	1016.3	1	020	21	6	1	3	5	4	7	1	81615	83625					1	4Ac58 /Ci75 COTRA Cld edge ovhd, clear W	
2	62	8	20	10	21	14.2	13.1	93	9.4	1005.1	7	006	63	6	2	5	8	4	2	/	82710	83818	88557				2	2Sc35 Cu med	
3	82	7	22	04	11	9.0	6.3	83	6.0	992.8	0	002	15	6	2	2	5	6	7	/	81630	83360	87463				3	2Sc50 jpSE vv60k ex p Cld edge NW	
4	03	0	22	02	04	2.9	2.8	99	4.7	993.2	3	022	42	4	4	0	0	0	9	0	0						4	Fogbow	
5	56	7	33	07	12	5.4	4.3	93	5.2	1004.4	1	025	05	2	2	6	6	2	3	2	86705	84070					5	/Ac65	
6	40	3	04	01	04	0.9	0.8	99	4.0	1009.2	8	009	10	0	0	1	5	6	4	1	81640	83080					6	1Ac65 COTRA Hoar mod Parhelion	
7	84	3	22	10	19	11.6	9.6	87	7.6	989.7	3	010	01	6	1	2	3	4	6	3	81615	81920					7	1Cu20 2Sc50 1Ac58 1Ci68	
8	62	6	17	09	15	11.2	9.3	88	7.3	1000.8	8	011	25	8	2	4	8	4	3	0	82712	83640	85360				8	1Cu15	
9	30	6	20	03	05	5.4	5.3	99	5.6	1003.4	1	017	11	4	1	2	0	9	7	2	82462	86068					9	1Ac65	
10	61	1	20	03	05	8.6	7.6	93	6.5	1003.9	0	001	02	0	0	1	5	6	7	1	81640						10	1Ac58 1Ci75	
11	70	7	12	11	22	11.6	7.4	75	6.5	995.9	8	007	02	2	2	1	1	4	7	1	81812	83358	85362				11	6Ac66 /Ci75 Cu fra	
12	65	7	17	06	13	10.7	9.2	90	7.4	994.1	3	020	25	8	2	5	8	4	6	0	81712	83820					12	2Sc50 3Ac60 Cu med jpNW, NE&S	
13	65	8	15	09	17	11.4	10.1	91	7.7	1003.3	0	000	03	2	2	6	1	3	2	/	82708	85812	88465				13	Cu hum	
14	60	8	16	04	14	11.8	11.2	96	8.4	997.0	0	007	63	6	6	4	8	4	2	/	81810	83630	88550				14	2Sc20	
15	20	7	04	02	03	7.0	6.8	99	6.2	1000.1	1	012	10	2	2	2	5	7	6	8	82650	87275					15	1Ac62 1Ci70 COTRA Cb top SSW	
16	20	7	06	03	08	9.1	9.1	100	7.2	999.8	1	013	10	2	2	7	6	2	/	/	87703						16	/Sc56	
17	28	8	19	03	05	8.0	7.7	98	6.6	997.8	3	006	58	6	6	8	5	2	/	/	83705	85708	88615				17		
18	82	5	05	02	05	6.7	6.6	99	6.0	1009.9	1	018	03	1	1	5	8	3	0	1	81708	84650					18	1Cu20 1Ci78 COTRA Cu med	
19	30	8	06	03	06	8.2	8.0	99	6.6	1018.1	1	020	10	2	2	6	5	7	/	7	86656	88270					19		
20	18	8	07	02	04	5.5	5.4	99	5.5	1024.7	2	008	10	2	2	1	5	7	3	7	81650	83368	88272				20	COTRA	
21	30	8	08	05	09	6.4	6.2	99	5.8	1019.2	7	009	10	2	2	8	5	4	/	/	87710	88615					21		
22	40	8	16	04	11	12.8	12.5	98	9.0	1012.3	2	011	60	6	6	2	8	7	2	/	85704	87706	88710				22		
23	58	8	35	05	11	8.0	7.3	95	6.3	1016.8	2	010	63	6	6	2	7	3	2	/	82707	88535					23	1Sc20	
24	75	7	15	01	04	0.6	0.6	100	3.9	1027.6	2	022	03	1	1	0	0	9	0	1	87078						24	COTRA Hoar mod U/a contact	
25	65	8	05	03	06	3.3	2.6	94	4.7	1024.1	8	006	60	6	2	8	5	5	/	/	81620	88656					25	1Sc45 vv30k ex S	
26	07	8	05	02	05	7.5	7.5	99	6.4	1012.1	7	001	50	5	4	8	7	2	/	/	88702						26		
27	10	7	19	05	08	7.8	7.8	99	6.6	1003.7	3	002	28	5	4	7	6	0	3	/	82701	85703	87705				27	/Ac62	
28	59	8	08	09	16	9.9	9.0	94	7.2	1001.9	0	002	10	2	2	8	6	4	/	/	85710	88713					28		
29	56	6	01	02	08	8.5	8.1	97	6.7	1010.2	2	019	10	2	2	5	0	9	8	2	81360	83362	85077				29	3Ac65 COTRA Ac cas	
30	11	8	28	03	05	8.2	7.8	98	6.7	1015.0	2	008	40	4	2	8	6	1	/	/	88702						30	jpSE-SW	

Mean vis = 12.8 km

Mean cloud = 6.5 81%

Mean wind speed = 4.6 kn

2853

Mean gust = 10 kn

94.767

Mean TT = 8.2 °C

Mean Td = 7.4 °C

Mean RH = 94.8 %

Mean r = 6.6 g/kg

Mean PPP = 1006.7 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

Td = 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 NOVEMBER 2014

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	Date	Remarks
1	75	2	21	10	22	15.2	7.1	58	6.2	1014.9	6	013	03	0	0	1	8	6	0	4	81835				1	1Sc45 2Ci73 Cu hum
2	75	7	21	09	20	14.6	10.1	74	7.7	1002.7	7	013	15	8	2	5	8	5	7	2	81820	85650			2	3Ac58 /Ci70 Cu med jpSW
3	88	6	15	05	08	8.3	6.6	89	6.2	988.6	8	016	21	6	2	1	8	4	7	1	81812	83357	85360		3	1Sc40 1Ci72 Cu fra
4	70	7	07	02	09	8.1	6.8	91	6.3	993.8	2	009	21	6	1	7	8	4	/	/	82812	83630	87640		4	Cu med jpSE vv60k ex p
5	80	6	33	05	10	9.8	5.7	76	5.7	1006.5	3	009	01	2	2	6	8	5	0	0	81820	85650			5	2Sc40 Cu med
6	82	7	19	08	22	10.9	4.5	65	5.3	1004.7	7	020	03	2	2	6	5	7	7	/	86656	87358			6	
7	75	7	26	08	21	10.0	5.3	72	5.6	995.0	1	030	80	8	2	3	8	5	1	8	81825	83635	87270		7	3As65 Cu med Parhelion+u/a cont vv40k ex p
8	58	7	21	09	25	12.2	10.7	91	8.1	997.9	5	007	80	8	2	5	8	4	7	/	81712	83815	87360		8	2Sc35 Cu con
9	75	2	19	06	10	11.4	6.2	71	6.0	1003.6	7	002	03	0	0	1	8	5	7	0	81825				9	1Sc30 1Ac58 Cu med
10	75	6	19	06	10	11.9	8.2	78	6.8	1001.9	7	015	25	8	2	6	8	4	0	1	85818	83078			10	2Sc40 1Sc56 Cu med
11	65	8	13	08	20	11.1	9.5	90	7.5	993.9	7	010	61	6	6	8	5	4	/	/	87612	88620			11	pptn v slt
12	75	1	20	10	20	11.5	6.0	69	5.9	998.7	1	021	15	1	1	1	9	5	6	3	81925				12	1Cu30 1Sc50 1Ac62 1Ci70 Cb&jp A vv50k ex p
13	72	8	15	10	22	12.4	10.2	86	7.8	1001.1	5	009	02	6	2	7	5	3	2	/	81709	83713	87620		13	8As60
14	84	2	21	04	12	12.8	7.2	69	6.4	999.5	2	006	01	1	1	1	2	5	0	2	81822				14	2Ci72 Cu med
15	56	5	02	01	04	10.7	10.1	96	7.8	998.0	6	009	10	2	2	4	8	4	0	1	81708	83650			15	2Cu15 2Ci75 COTRA Cu med/conE
16	59	8	03	03	08	10.2	9.8	97	7.6	999.6	2	001	60	6	2	2	8	4	7	/	81812	88463			16	2Sc50 1Ac60
17	75	7	06	05	10	8.2	7.6	96	6.5	1000.7	2	017	20	6	5	7	8	4	/	/	84815	86635			17	Absent vv&cld est
18	65	6	03	02	07	11.7	8.4	80	6.8	1010.9	3	005	15	1	1	6	8	5	0	0	82820	85650			18	2Sc40 Cu med jpNE vv30k ex p Rainbow
19	59	1	09	03	08	9.8	7.6	86	6.4	1019.8	3	011	05	1	1	1	2	4	4	0	81818				19	1Ac62 Cu med
20	58	7	07	04	09	8.7	6.2	84	5.8	1023.7	7	011	05	2	2	1	5	4	0	1	81615	87075			20	COTRA
21	40	8	08	04	10	7.5	6.8	95	6.1	1015.3	6	026	21	6	5	8	7	3	/	/	83708	87710	88712		21	
22	58	7	17	05	08	14.1	13.2	94	9.4	1012.9	2	002	60	6	2	7	5	3	3	/	85708	85650			22	2Sc20 /Ac65
23	70	8	36	03	07	7.3	6.7	95	6.0	1017.3	5	001	21	6	2	7	8	4	2	/	81810	87650	88460		23	Cu med
24	78	2	02	02	03	6.7	4.6	86	5.2	1026.9	7	011	02	1	1	0	0	9	0	1	82078				24	COTRA
25	59	8	04	04	09	6.9	6.7	98	6.1	1019.4	6	027	60	6	2	8	5	4	/	/	81715	88650			25	
26	06	8	02	01	04	8.7	8.6	99	6.9	1009.9	6	012	41	5	4	8	6	0	/	/	88701				26	vv1400 W
27	61	7	07	02	05	8.9	8.1	95	6.7	1001.9	7	008	21	6	1	7	5	5	/	/	81620	83630	87645		27	
28	58	7	06	07	15	10.9	9.4	90	7.4	1002.7	3	008	05	2	2	6	6	4	0	1	86712	84075			28	
29	58	1	06	02	05	12.2	10.1	87	7.7	1010.2	3	001	05	1	1	1	0	9	0	1	81365				29	1Ci75
30	65	2	35	06	15	10.5	7.5	82	6.4	1014.3	5	000	01	1	1	2	8	4	0	1	81815				30	1Sc25 1Ci75 Parhelion

Mean vis = 19.6 km

Mean cloud = 5.6 70%

Mean wind speed = 5.1 kn

Mean gust = 12 kn

Mean TT = 10.4 °C

Mean TdTd = 7.9 °C

Mean RH = 84.6 %

Mean r = 6.7 g/kg

Mean PPP = 1006.2 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

covers past 3 hours.

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs = Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation

trails present.

Wokingham Sunshine Hourly analysis 2014	Hour	01-Nov	02-Nov	03-Nov	04-Nov	05-Nov	06-Nov	07-Nov	08-Nov	09-Nov	10-Nov	11-Nov	12-Nov	13-Nov	14-Nov	15-Nov	16-Nov
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.00	0.02	0.20	0.24	0.03	0.00	0.00	0.00	0.00	0.00
8	0.15	0.01	0.00	0.55	0.00	1.00	0.66	0.26	0.04	1.00	0.23	0.12	0.00	0.00	0.00	0.00	0.00
9	0.09	0.01	0.00	1.00	0.22	1.00	0.53	0.00	0.30	1.00	0.10	0.13	0.00	0.00	0.63	0.15	
10	1.00	0.02	0.00	1.00	0.06	0.63	0.01	0.00	0.86	1.00	0.00	0.12	0.00	0.00	0.01	0.01	
11	0.96	0.15	0.00	1.00	0.00	0.00	0.02	0.00	1.00	0.23	0.02	0.22	0.00	0.40	0.00	0.00	
12	0.91	0.00	0.00	0.61	0.12	0.00	0.40	0.01	1.00	0.00	0.00	0.60	0.00	0.56	0.00	0.00	
13	0.78	0.03	0.05	0.07	0.03	0.00	0.07	0.04	1.00	0.32	0.00	0.92	0.00	0.41	0.17	0.00	
14	0.88	0.34	0.05	0.00	0.00	0.00	0.00	0.00	0.51	0.23	0.00	0.47	0.00	1.00	0.10	0.00	
15	0.41	0.00	0.44	0.00	0.42	0.00	0.67	0.00	0.61	0.02	0.00	0.55	0.00	0.75	0.00	0.00	
16	0.00	0.00	0.09	0.00	0.09	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tot	5.19	0.58	0.63	4.24	0.94	3.00	2.34	0.33	5.54	4.04	0.39	3.12	0.00	3.13	0.92	0.16	

Hour	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov	23-Nov	24-Nov	25-Nov	26-Nov	27-Nov	28-Nov	29-Nov	30-Nov	Mean
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.03
8	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.16
9	0.00	0.99	0.00	0.06	0.00	0.00	0.00	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.23
10	0.00	0.31	0.00	0.75	0.00	0.00	0.00	0.53	0.00	0.00	0.52	0.00	0.00	0.21	0.23
11	0.00	0.32	0.00	0.61	0.00	0.00	0.00	0.68	0.00	0.00	0.88	0.00	0.00	0.91	0.25
12	0.00	1.00	0.22	0.24	0.00	0.00	0.00	0.67	0.00	0.00	0.54	0.00	0.33	0.53	0.26
13	0.00	1.00	0.84	0.90	0.00	0.00	0.00	1.00	0.00	0.00	0.06	0.00	0.99	0.31	0.30
14	0.00	0.68	0.40	0.78	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.90	0.98	0.28
15	0.00	0.15	0.44	0.16	0.00	0.00	0.00	0.75	0.00	0.00	0.00	0.02	0.52	0.28	0.21
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	0.00	4.76	1.91	3.49	0.00	0.00	0.00	6.09	0.00	0.00	2.00	0.02	2.74	3.22	58.77

NOVEMBER 2014	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	14.58	17.2	1324	12.0	2030	77.3	92.1	855	49.3	1428	10.51	7.96	10.5	324	5.5	1428	1014.17	1016.6	1049	1009.9	2359
2	13.24	15.5	1402	9.5	2234	84.8	94.6	636	73.0	1415	10.72	8.11	9.5	637	6.1	2225	1004.03	1010.1	1	998.6	2358
3	7.97	10.7	19	3.4	2355	89.7	97.1	2357	74.1	1101	6.36	6.10	7.2	501	4.8	2355	991.55	998.8	4	988.5	1502
4	5.44	11.9	1307	0.3	628	94.7	99.9	807	62.6	1310	4.59	5.42	7.2	1120	4.0	628	993.38	999.1	2358	988.7	1
5	5.74	10.5	1301	0.2	2357	90.0	98.6	2350	70.0	1556	4.16	5.17	6.3	1257	3.8	2357	1005.30	1010.8	2359	999.0	0
6	6.04	11.7	1307	-1.9	650	87.7	100.2	756	63.8	1438	3.96	5.25	8.1	2359	3.3	650	1005.72	1010.9	232	994.9	2359
7	10.54	13.1	437	7.7	1935	84.6	95.7	200	62.0	1239	8.00	6.89	9.0	430	5.3	1322	993.80	1001.1	2359	988.0	719
8	9.76	14.2	1209	5.5	416	89.0	98.7	2339	72.3	1321	7.99	6.78	8.2	1535	5.2	415	1000.24	1002.1	423	997.5	1358
9	7.35	12.3	1308	4.1	801	92.0	99.9	944	62.8	1321	6.02	5.88	7.8	1144	5.1	802	1003.33	1005.1	2336	1000.8	0
10	9.19	12.4	2154	3.1	408	87.1	99.2	435	72.0	1105	7.07	6.34	7.3	1311	4.7	409	1002.65	1005.1	0	999.2	2359
11	11.42	13.3	1124	10.1	726	83.6	95.5	2324	70.3	1126	8.70	7.11	8.1	2058	6.4	913	995.27	999.5	1	992.2	2359
12	10.54	13.2	1312	8.5	1933	89.7	97.7	2351	68.1	1453	8.87	7.18	8.0	22	5.7	1503	996.91	1003.7	2359	991.5	324
13	11.62	13.2	2133	9.3	434	89.4	97.9	217	79.2	1232	9.91	7.64	8.2	1956	7.1	435	1002.43	1004.1	135	999.7	2359
14	10.56	14.1	1304	4.2	2240	88.0	99.0	2335	64.7	1444	8.57	7.07	8.5	1144	5.0	2240	998.83	1001.3	2030	996.0	638
15	7.57	12.0	1351	4.6	2029	98.3	99.7	2343	95.2	144	7.33	6.48	8.6	1351	5.3	2030	999.02	1000.7	0	997.6	1627
16	8.59	10.9	1318	5.2	59	98.4	100.0	924	95.9	1746	8.37	6.94	8.1	1244	5.5	59	999.52	1000.8	2138	998.0	150
17	7.86	9.0	1132	4.9	2232	96.4	98.6	2316	94.5	403	7.33	6.44	7.1	1132	5.3	2232	1000.54	1006.3	2359	997.1	556
18	8.55	12.2	1323	4.3	725	93.2	99.3	918	76.8	1257	7.47	6.45	7.4	1054	5.1	725	1010.35	1014.3	2156	1006.2	40
19	7.62	12.1	1308	4.6	2028	95.0	99.1	815	76.8	1315	6.85	6.13	7.5	1030	5.1	2028	1018.84	1023.7	2346	1014.0	1
20	5.93	10.0	1410	2.1	2357	96.2	99.6	1017	80.4	1412	5.35	5.51	7.1	1152	4.3	2357	1024.16	1025.7	1019	1023.1	2353
21	6.64	10.5	2355	2.1	2	97.5	99.4	633	94.3	1603	6.28	5.92	7.6	2355	4.3	2	1017.47	1023.3	19	1011.7	2359
22	12.61	14.4	1428	10.2	33	97.1	98.7	2219	94.2	1457	12.17	8.81	9.6	1428	7.5	15	1012.84	1015.7	2331	1010.4	457
23	7.63	11.6	0	1.1	2356	96.4	98.8	2350	94.9	902	7.10	6.29	8.1	0	4.0	2356	1017.77	1023.0	2359	1014.7	240
24	1.50	7.1	1428	-1.2	2341	97.6	100.3	707	81.8	1432	1.15	4.10	5.5	1255	3.4	2346	1026.67	1028.2	1939	1023.0	0
25	3.87	7.3	1708	-2.1	310	99.1	100.5	329	98.1	1416	3.75	5.03	6.2	1708	3.2	311	1021.53	1027.1	3	1015.3	2353
26	7.84	8.7	1557	6.8	3	99.2	99.7	1158	98.7	24	7.74	6.55	7.0	1502	6.1	3	1010.94	1015.4	1	1006.6	2359
27	7.92	9.9	1308	5.7	2224	98.0	99.9	803	92.4	1315	7.63	6.55	7.4	1139	5.7	2225	1002.96	1006.8	0	1001.3	2359
28	9.59	11.8	1327	7.0	52	96.3	99.6	135	89.5	1335	9.03	7.21	7.9	1327	6.2	52	1002.95	1006.7	2346	1001.1	336
29	8.71	13.5	1357	4.1	2155	95.3	99.2	2358	78.5	1329	7.97	6.70	7.8	1341	5.0	2156	1010.08	1013.4	2225	1006.1	12
30	8.42	11.1	1433	4.8	3	92.4	100.0	855	78.9	1426	7.20	6.31	7.6	1155	5.3	3	1014.24	1015.3	925	1012.9	16
Total																					
Mean	8.49	11.84		4.68		92.5	98.62		78.84		7.27	6.48	7.81		5.11		1006.58	1010.48		1002.78	
Max	14.58	17.18		12.04		99.2	100.50		98.70		12.17	8.81	10.46		7.46		1026.67	1028.17		1023.07	
Min	1.50	7.11		-2.08		77.3	92.10		49.25		1.15	4.10	5.50		3.22		991.55	998.77		988.00	

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

AUTUMN 2014

Temperature (°C)									Rank in the past 133 years
Mean maximum	16.6	(+1.4)	4 th highest						
Mean minimum	8.5	(+1.4)	3 rd highest						
Daily mean	12.5	(+1.4)	3 rd highest						
Rainfall total (mm)	216.7	(112 %)	44 th highest						
Sunshine total (hours)	281.0	(86 %)							
N° of:	Dry days	48 (-2)	Wet days	37 (0)					
Days with:	Air frost	3 (-5)	Ground frost	16 (-6)	Snow falling	0 (-1)	Snow lying	0 (0)	
Thunder	2 (-1)	Hail ≥5mm	0 (0)	Small hail/ice	0 (-1)	Fog @09 GMT	2 (-2)	Nil sun	16 (+1)
Air pressure MSL : Mean @09 GMT (mbar)	1013.1								(-2.0)

Departure from 1981 to 2010 average shown in brackets.

Notes:

Dull and Very Mild with Above Average Rainfall.

Temperature: This has been a very mild autumn season, ranking 3rd mildest in the past 133 years, after 2006, the record holder, and 2011. Interestingly, of the 10 mildest autumns in 133 years, all except one, 1949, have occurred since 1995, and 7 have been in this millennium, attesting to a warming climate. The mean temperature is 1.0° below the record and is 2.1° above the long-term median. Each month this season had above average temperature, with October having the greatest relative warmth at 2.2° above average, with both September and November at 1.0° above average. The season's highest air temperature, 26.4° on the 18th September, is 1.9° above the median. The lowest air temperature, -2.3° on the 25th November, is 1.6° above the median. The lowest daily max, 7.0° on the 24th November, is 2.4° above the median, and the highest min, 16.0° on the 20th September, is 0.7° above its median. The mean grass min is 5.3°, anomaly +1.3°, and the lowest is -6.1° on the 25th November. The mean earth temperature at 30cm depth is 14.4°, anomaly +1.4°, and at 1 m depth the mean is 15.0°. There were 23.0 hours with and air frost, all in November, 28 hours fewer than average. The first air frost of the season was on the 6th November after 186 frost free days, close to the average of 189 days. **Rainfall:** The rainfall this autumn is 12 % above the average, and this despite a very dry September. So both October and November had a surplus of rain, and similar totals of 104.5 mm and 102.0 mm respectively, and both almost one and a half times the average. This millennium there have been 4 wetter autumn seasons, 2000, 2002, 2006 and 2012, and in the longer term, while this autumn's total is 36 mm above the median, there have been 43 wetter autumns since 1882. September's total of just 10.1 mm ranked 6th lowest in 133 years, and of the season's 48 dry days, 26 were in that month and 22 shared between the other two. There were just 2 dry spells, both in September, the first of 16 days ended on the 17th and the second of 6 days on the 29th. Thunder occurred on the 19th September and 8th October. There was no hail this season, and the highest rainfall rate was 89 mm/hr on the 8th October. The duration of measurable rain was 161.8 hours, 109 % of average. The wettest day was the 12th October, total 17.7 mm, which is quite a low value for an autumn, being 7.0 mm below the median. Wokingham's wettest day was in the autumn of 1980 when 71.6 mm fell, but there have been 3 other autumns since 1904 having more than 50 mm in a day. Notably, the 12 month total rainfall to the end of November is 948 mm, 300 mm above average. **Sunshine:** This was not a strong feature of this autumn. The daily mean of 3.09 hours is about 14 % below average, and is lowest since 2000. Sunshine totals in each month were below average, and November fared worst with 82 % of average and October the best with 91 %. The season's sunniest day was the 9th September with 11.0 hours. There were 16 sunless days, equal highest with 2010 since 2008. Overall there were 47 days with <3 hours, 15 with =>6 hours and 4 with =>9 hours. **Humidity:** The overall mean relative humidity was 86.7 %. The lowest value recorded was 38 % on the 8th September. The mean water vapour content per kg of air was 8.2 g at 0900 GMT and 7.8 g at 1500 GMT. **Pressure:** The highest air pressure reduced to mean sea level was 1029.7 mbar on the 2nd October and the lowest was 988.0 mbar on the 7th November, a span of 41.7 mbar, quite low compared with the average of 55.9 mbar. **Wind:** The overall mean wind speed of 5.2 mph is 0.9 mph below average and lowest for the autumn season since 2007. The season's windiest day was the 21st October, mean 13.6 mph, and the highest gust of 48 mph was also on that day. The least windy day was the 24th November, mean 1.7 mph, and there were 3343 minutes of calm. Daily mean wind direction/number of days; N,7 NE,22 E,4 SE,7 S,16 SW,25 W,7 NW,3. Winds from the NE were 14.9 % more frequent than average at the expense of SW to NW combined, down 12.9 % and E, down 3.5 %.

September: Very warm, very dry, dull and very calm. Mean temperature 9th highest in 133 years. Lowest max 2nd highest in 102 years. Rainfall 6th lowest in 133 years. Most dry days since 1986. Mean wind speed lowest for any month since before 1988.

October: Wet and very mild with below normal sunshine. Mean temperature 5th highest in 133 years. Max of 22.0° on the 31st probably a record for so late in the season. Lowest max 6th highest in 102 years. Highest min 8th highest in same period.

November: Very mild, wet, below normal sunshine. The mean temperature 11th highest in 133 years, The mean relative humidity is highest for any month since before 1998.

Month	Mean	Anom	Mean	Anom	Rain	Anom	Sun	Anom	Wind	Max	Mean	Anom
	Max		Min		mm		hrs		Mn mph	gust	pressure	
September	21.2°	+1.8°	10.2°	+0.2°	10.1	19%	120.9	84%	3.8	25	1020.1	+3.4
October	16.8°	+1.6°	10.0°	+2.8°	104.6	145%	101.5	91%	6.7	48	1012.4	-1.9
November	11.7°	+0.8°	5.3°	+1.2°	102.0	148%	58.6	82%	5.2	37	1006.7	-7.7

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

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

Average: Generally refers to the 30 year climatological average, currently 1981 to 2010. This will be next updated in 2020. For some parameters, notably wind, the climatological average is not available, and if the word average is used in the context of wind, it refers to the average for the period for which data is held, namely 1988 to present.

For sunshine, there was a change, in July 1999, in the type of instrument used to detect sunshine amount, making the climatological average based on the old instrument of little use. In general, the new instrument produces higher values in the winter half year, and lower ones in the summer half, than the old type, due to a combination of faster reaction and higher sensitivity than the old type. The average used in this case is based on a theoretical equivalent 1981 to 2010 average, drawn from comparison with the Met Office published tables of departure from climatological average sunshine in the months since 2000 for their area 'Southern England'. Users of the Wokingham Monthly Weather reports should be aware of this, and regard anomalies for sunshine published therein as a guide only, until such time has elapsed since the introduction of the new instrument that a genuine average becomes available.

Mean: The mean of the data under discussion, often the monthly mean of daily data. The mean is obtained by summation of the individual values and dividing by the number of values. The term 'daily mean' in respect of temperature is defined as '(max + min) / 2'. A true daily 24 hour (00 to 24 GMT) mean temperature is available from the Automatic Weather Station (AWS), and is currently published on page 7 of the Wokingham Monthly Weather report, on the Wokingham Weather web site, page 1. <http://www.woksat.info/wwp1.html>

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

- a): The departure of a mean from the current climatological average.
- b): The departure of a value on a particular day from the average for that day, (this need not be a climatological average).

When the word anomaly is used in respect of temperature, any values given are in °C. In respect of rainfall or sunshine, percent. In respect of wind, mph. In respect of pressure, millibars (hpa).

Categories: Reference may be made in the reports to 'categories'. Each category has a strict statistical range, as outlined below.

Temperature: The terms cold/mild are used in the winter half year, and cool/warm in the summer half. The term 'normal' is used when the individual mean (monthly, seasonal or annual) value is within 20 % of the median of all ranked values for that month/season/year.

Mild/warm: The value lies between 10 % and 30 % below the highest value in the ranked series.

Very mild/very warm: The value lies within 10 % of the highest value in the ranked series.

Cold/cool: The value lies between 10 % and 30 % above the lowest value in the ranked series.

Very cold/very cool: The value lies within 10 % of the lowest value in the ranked series.

Sunshine: The terms for sunshine are very sunny, sunny, normal, dull and very dull.

The definition of these terms follow the same rules as for temperature.

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

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

Wet: The value lies between 10 % and 30% of the highest value in the ranked series.

Very wet: The value lies within 10 % of the highest value in the ranked series.

Dry: The value lies between 10 % and 30 % above the lowest value in the ranked series.

Very dry: The value lies within 10 % of the lowest value in the ranked series.

Long-term: Mention may be made in the reports to the 'long-term'. The long-term record comprises a temperature/rainfall/sunshine data series compiled from records of various weather stations in the Wokingham area in the years prior to the establishment of the weather station at Emmbrook in 1976 together with data from this station.

In the case of monthly max, min and mean temperature and of rainfall total the series starts in 1882. For temperature extremes, the highest max and lowest min go back to 1904, and lowest max and highest min to 1913.

Rank: The word rank refers to the position of a value for a particular month/season/year in the ranked series, and may be expressed relative to either the highest or lowest value in the series. The central value in the ranked series is known as the **median**. This value may be different from the average of the whole series if the population is skewed. It can also be different from the climatological average which only refers to a 30 year period.

Month: Calendar month.

Season: Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

When discussing 'winter', if a single year is given this refers to the year in which the January/February fall.

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

The climatological day: runs from 0900 to 0900 GMT. The max temperature and rainfall read at 0900 hours are attributed to the previous day (thrown back), as is the duration of measurable rain. The min temperature and grass min read at 0900 hours are attributed to the day of reading. Pressure read at 0900 GMT, and the monthly mean pressure is the mean of the 0900 GMT readings. Sunshine data, wind data, rainfall rate data and 24 hour data from the AWS use the normal 00-24 GMT day.

Frost: An air frost day is recorded when the minimum temperature read at 0900 GMT on that day is -0.1°C or below. A ground frost day is recorded when the grass minimum temperature read at 0900 GMT on that day is -0.1°C or lower.

Duration of air frost is defined as the number of minutes that the AWS one minute average temperature is below 0.0°C , and the day runs from midnight to midnight.

Snow: A day with snow falling is triggered if snow falls at any time in the 24 hours from midnight on that day. A day with snow lying is entered if there is at least 50% snow cover at the 0900 GMT observation.

Snow depth is the depth of undrifted snow. Snow that collects in the raingauge funnel is melted and the amount recorded as rainfall.

Hail: A day of hail is recorded if hailstones 5 mm or more in diameter are observed or recorded on the hail pad in a 24 hour period starting at midnight.

A day of small hail is recorded if hailstones less than 5 mm diameter are observed or recorded in a 24 hour period starting at midnight. The term small hail also includes various other types of ice meteor such as ice pellets, snow grains and some types of snow pellets.

Fog: A day with fog is recorded if the horizontal visibility at 0900 GMT is below 1000 m.

Thunder: A day of thunder is recorded if thunder is heard in the 24 hour period from midnight on that day. The appearance of lightning without thunder being heard does not qualify as a thunder day.

Trace of rainfall: A trace of rain, entered as 'tr' in the daily log, is recorded if rain is observed to fall but is of insufficient quantity to collect in the raingauge, or if the amount of rain in the gauge is less than 0.05 mm.

Dry spell: A dry spell is defined as a period of 5 or more consecutive dry days.

Dry day: A dry day is one with less than 0.2 mm of rainfall.

Rain day: A rain day is one with 0.2 mm or more of rainfall.

Wet day: A wet day is one having 1.0 mm or more of rainfall.

Appendix 2.

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

VV : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

RH : Relative humidity at 1.2m, %.

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

ppp : 3 hour pressure tendency in tenths of a millibar

ww : Present weather code figures, 00 to 99.

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

Cl : Type of low cloud

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

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

Cm : Type of medium cloud.

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

Ch : Type of high cloud

0 = No high cloud

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

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

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

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

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

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

7 = Veil of Cirrostratus covering the celestial dome.

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

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

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

8 Groups

N = Amount of cloud reported by C, okta.

C = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

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

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

00 to 50 = Height in hundreds of feet

51 to 55 Not used

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

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