

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 2013

Temperature (°C / °F)				Anomaly	Rank in the past 132 years					
Mean maximum	9.9	49.8	-1.0	65 th lowest						
Mean minimum	3.2	37.8	-0.9	61 st lowest						
Daily mean	6.5	43.7	-1.0	57 th lowest						
Highest maximum	15.3	59.5	on 2 nd	Lowest maximum	6.1	43.0	on	19 th		
Highest minimum	10.6	51.1	on 1 st	Lowest minimum	-3.5	25.7	on	20 th		
Mean grass minimum	-0.2	31.6	-1.3	Lowest grass minimum	-10.1	13.8	on	20 th		
Mean earth @30 cm	9.8	49.6	+0.4	Earth @100 cm	12.1	53.8				
Frost duration (hrs)	29.5				Rain duration (hrs)	51.6				
Rainfall total (mm / in)	48.3	1.90	70 %	52 nd lowest						
Highest daily fall	15.4	0.61	on 3 rd							
Number of: Dry days (<0.2mm)	18	Wet days (>0.9mm)	9	days ≥5mm	4					
Sunshine total (hrs) 89.4	Daily mean	2.98	125 %	Sunniest day	8.0	on 10 th				
N° days with: Air frost 7	Ground frost	15	Snow falling	0	Snow lying	0				
Thunder 1	Hail ≥5mm	0	Small hail/ice	1	Fog @09	0		Nil sun 7		
Pressure MSL : Mean @09 GMT, mbar	1018.1	+3.7	Highest	1040.8	on	26 th	Lowest	982.6	on	4 th
Relative humidity : Mean (%)	84.2	Lowest	53	on	10 th		Water vapour (g/kg), mean at 09 and 15 GMT 5.3, 5.4			
Overall mean wind speed (mph)	6.0	Windiest day	10.4	on	2 nd		Max gust	40	on 2 nd	
Wind direction (days)	N 6	NE 1	E 0	SE 0	S 2	SW 8	W 8	NW 5		
Least windy day (mph)	1.7	on 7 th		Calm; less than 0.5 mph (minutes)			740			

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

Notes:

Temperature and Rainfall Below Normal, but Sunny Overall.

Temperature: This has been quite a cool November by recent standards, with the mean temperature 3rd lowest in the 21st century, and the mean maximum 2nd lowest after 2010 since 1998. The highest max is 0.3° below the median and the lowest max is 1.5° above its median. The highest min is equal to the long-term median and the lowest min is 0.1° above its median. The mean grass minimum is below zero this month, along with 9 other Novembers in the past 35 years, and it is 3rd lowest since 1998. Earth temperatures at both 30 cm and 1 m depth are slightly above average. Overall, daily maxima were above normal for only 8 days, and minima for 11 days. The greatest +ve anomaly for daily max is 2.9° on the 6th, and the greatest negative one -4.0° on the 9th. Anomalies for daily min ranged from +4.9° on the 12th to -6.7° on the 20th, but anomalies greater than -5° also occurred on the 13th, 16th and 26th. The period 13th to 26th saw no +ve anomalies for daily max and only one for daily min. The duration of air frost is 12.9 hours below average, and the number of days with air frost is 1 more than average. **Rainfall:** The total this month is 30 % below average, although there were drier Novembers in 2001, 2004, 2005, 2010 and 2011. The highest daily fall is 0.7 mm below the median., and there were 3 more dry days than average, with two dry spells, the first ending on the 17th after 6 days, and the second on the 25th after 5 days. The duration of measurable rain is 7.5 hours below average. The highest rainfall rate this month was 50 mm/hr on the 20th, and there was thunder and hail in the accompanying storm. Rainfall was generally above normal until the 11th, by which date 41 mm had accumulated, thereafter it became mainly dry apart from the 5 mm on the 20th. No snow was recorded this month. **Sunshine:** Quite a sunny month, although at this time of year that doesn't represent a lot of sunshine. Nevertheless, the daily mean of 2.98 hours is highest since 2007. Notable sunny Novembers have occurred recently though, with 2006 and 2005 1st and 2nd highest respectively in over 100 years. Sunny days this month include the 3rd, 4th, 10th, 13th, 15th, 19th and 26th, all apart from the 3rd having over 75 % of the daily maximum. The period 5th to the 9th was dull, also the 27th to 29th, with a scattering of dull days otherwise. Overall there were 17 days with <3 hours and 7 with =>6 hours. The number of days with nil sunshine is 1 fewer than average. **Wind:** The mean wind speed this month is slightly below average. Daily mean winds were above 9 mph on the 2nd, 3rd, 6th, 14th and 21st, with the month's windiest day on the 2nd. The highest gust of 40 mph was also on that day, but gusts over 30 mph occurred on the 3rd, 5th, 6th, 14th, 20th, 21st and 29th. Directions were mainly SW'ly until the 9th, then varied between SW and NW up to the 20th, becoming N'ly on the 21st, and backing W or NW on the 26th. **Pressure:** The maximum air pressure for the month, 1040.8 mbar, was reached on the 26th, and is highest for November since 2001.

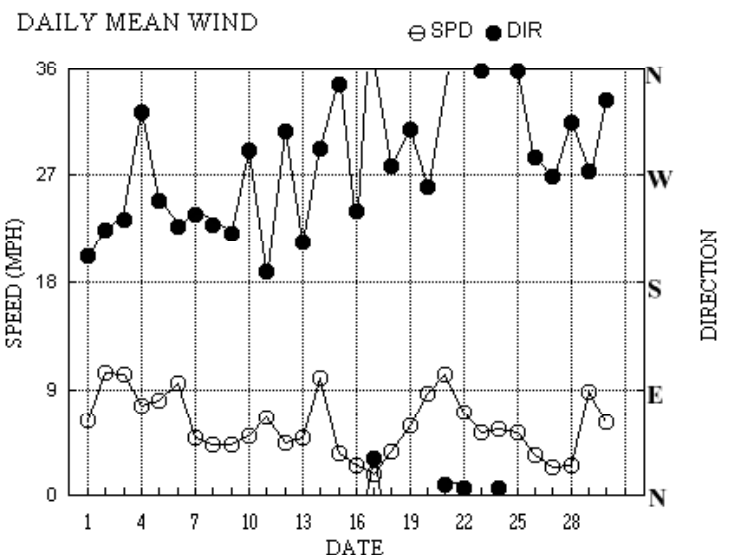
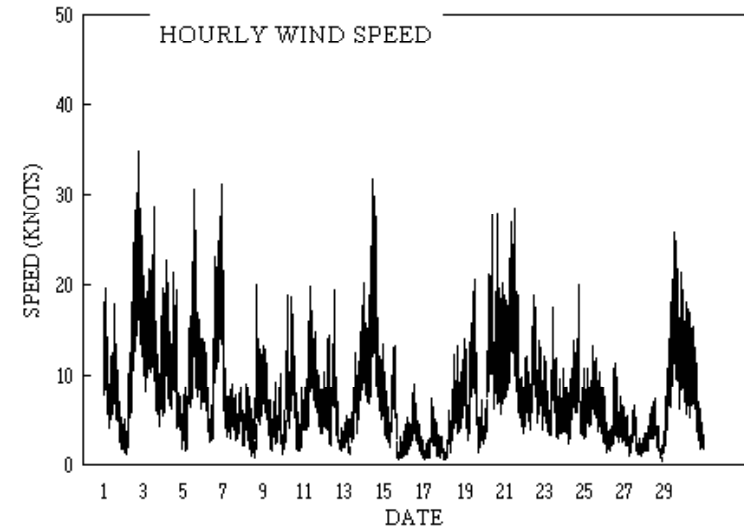
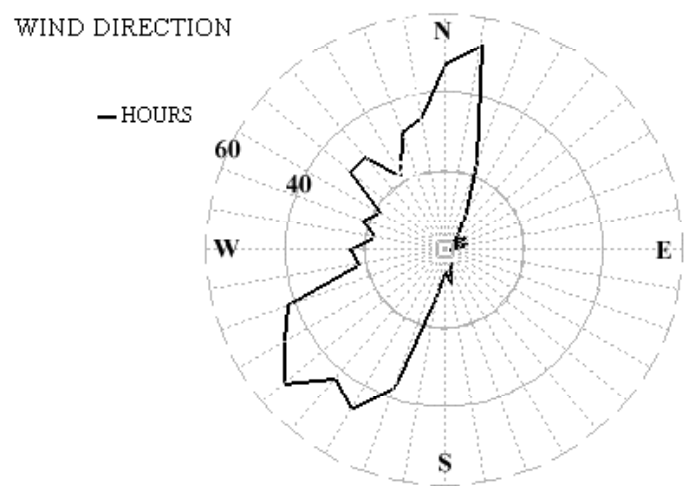
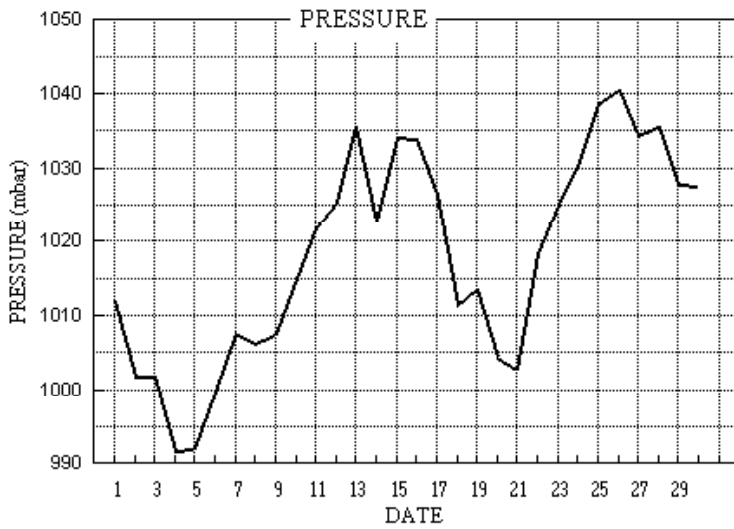
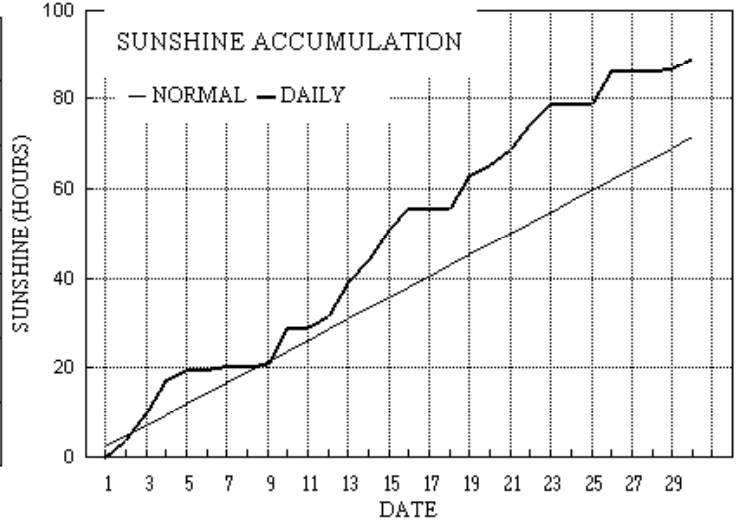
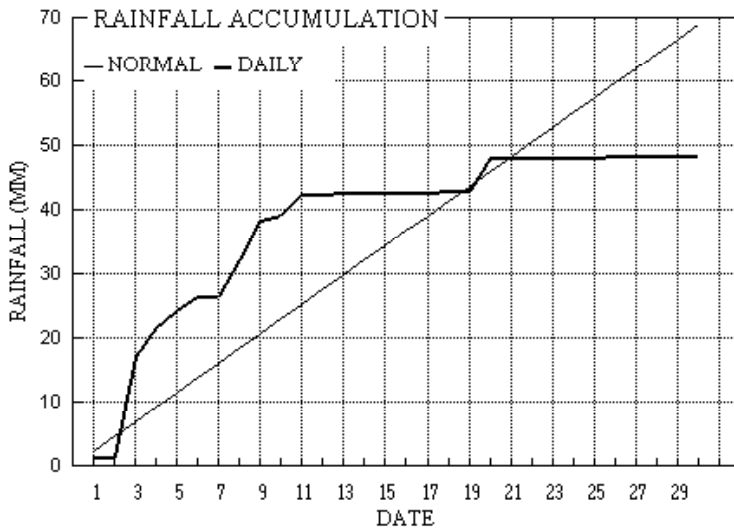
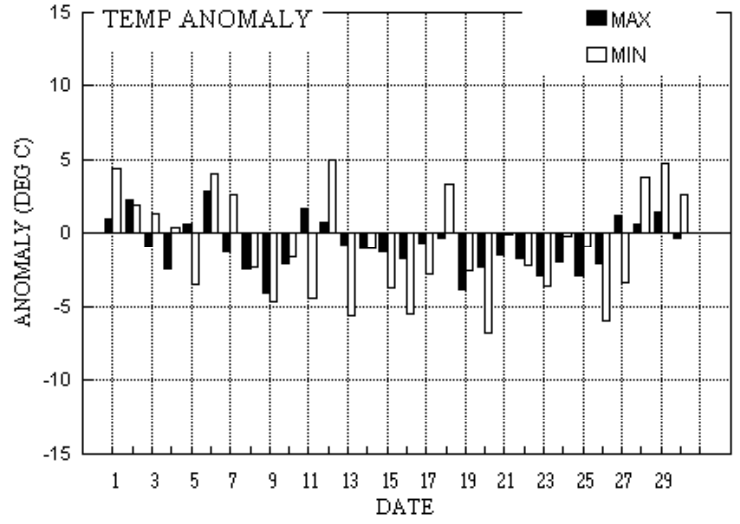
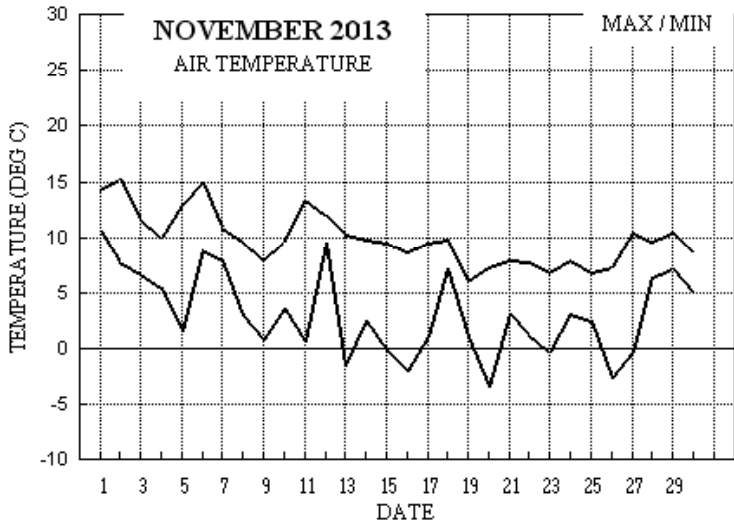
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 st to the 10 th				From the 11 th to the 20 th				From the 21 st to the 30 th			
-0.6°	+0.3°	170%	122%	-1.0°	-2.4°	39%	151%	-1.0°	-0.5°	1%	101%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

Wokingham climatological graphs for November 2013



Month: NOVEMBER 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	Rain HH hrs					
1	14.3	10.6	1.5	9.1	12.8	14.0	0.1	0.0	1011.9	0 0 0 0	0 0 0 0	0 0 0 0	202	4.5	5.5	232	20 0244	221	10	02	2.4	
2	15.3	7.7	tr	2.3	12.9	13.9	3.7	0.0	1001.8	0 0 0 0	0 0 0 0	0 0 0 0	224	8.2	9.0	227	35 1912	230	16	19	0.1	
3	11.7	6.7	15.4	2.9	12.6	13.9	6.4	0.0	1001.8	0 0 0 0	0 0 0 0	0 0 0 0	233	6.6	8.8	268	29 1226	246	13	12	10.5	
4	10.0	5.4	4.6	3.5	12.1	13.8	7.4	0.0	991.7	0 0 0 0	0 0 0 0	0 0 0 0	324	3.9	6.6	13	23 0353	17	11	03	4.1	
5	12.9	1.5	2.9	-3.2	11.3	13.7	2.2	0.0	992.0	0 1 0 0	0 0 0 0	0 0 0 0	248	6.1	7.0	282	31 1313	277	14	13	4.4	
6	15.0	8.9	2.0	6.4	11.3	13.5	0.0	0.0	999.7	0 0 0 0	0 0 0 0	0 0 0 0	227	8.2	8.2	217	31 2149	226	14	19	2.5	
7	10.9	7.9	0.0	2.7	11.9	13.3	0.7	0.0	1007.7	0 0 0 0	0 0 0 0	0 0 0 0	237	3.7	4.1	254	20 0030	249	10	00	0.0	
8	9.6	2.9	5.6	-2.5	11.5	13.2	0.1	0.0	1006.3	0 1 0 0	0 0 0 0	0 0 0 0	228	2.8	3.6	259	20 1627	231	7	23	4.3	
9	7.9	0.7	6.4	-3.6	10.9	13.1	0.5	0.0	1007.3	0 1 0 0	0 0 0 0	0 0 0 0	221	2.3	3.7	220	13 0135	229	7	00	5.7	
10	9.7	3.5	0.7	-1.8	10.5	13.0	8.0	0.0	1015.0	0 1 0 0	0 0 0 0	0 0 0 0	291	2.9	4.3	331	19 0412	310	8	10	2.1	
11	13.3	0.6	3.4	-4.8	10.0	12.8	0.0	0.0	1021.8	0 0 0 0	0 0 0 0	0 0 0 0	189	5.5	5.8	163	20 0814	189	9	11	8.8	
12	12.0	9.5	0.0	9.6	10.6	12.6	2.8	0.0	1025.1	0 0 0 0	0 0 0 0	0 0 0 0	307	2.5	3.8	327	20 1335	350	7	12	0.0	
13	10.2	-1.5	0.1	-6.3	10.3	12.5	7.3	4.3	1035.6	1 1 0 0	0 0 0 0	0 0 0 0	214	4.1	4.2	220	18 2224	216	9	22	0.1	
14	9.8	2.4	0.0	0.2	9.9	12.4	4.9	0.0	1022.7	0 0 0 0	0 0 0 0	0 0 0 0	292	7.4	8.6	296	32 1041	307	14	11	0.0	
15	9.4	-0.2	0.0	-5.2	9.6	12.2	7.0	1.4	1034.1	1 1 0 0	0 0 0 0	0 0 0 0	347	2.5	3.1	348	14 0019	9	7	12	0.0	
16	8.7	-2.0	tr	-5.7	8.9	12.1	4.6	8.5	1033.8	1 1 0 0	0 0 0 0	0 0 0 0	240	1.8	2.2	274	9 1301	263	4	12	0.0	
17	9.5	1.1	tr	6.0	8.9	11.8	0.0	0.0	1026.5	0 0 0 0	0 0 0 0	0 0 0 0	31	1.1	1.5	61	8 1055	42	3	10	0.0	
18	9.8	7.2	0.4	6.9	9.4	11.7	0.0	0.0	1011.5	0 0 0 0	0 0 0 0	0 0 0 0	278	2.6	3.2	314	14 1736	268	6	13	1.5	
19	6.1	1.1	tr	-4.4	9.5	11.6	7.3	5.7	1013.4	0 1 0 0	0 0 0 0	0 0 0 0	309	4.6	5.1	335	21 1315	323	10	11	0.0	
20	7.3	-3.5	5.0	-10.1	8.5	11.5	2.3	4.5	1004.4	1 1 0 0	1 0 1 0	0 0 0 0	260	5.9	7.5	263	28 1716	229	12	09	3.7	
21	8.0	3.1	tr	0.4	8.3	11.4	3.6	0.0	1002.6	0 0 0 0	0 0 0 0	0 0 0 0	9	8.4	8.8	26	29 1321	22	14	13	0.0	
22	7.8	1.2	tr	-5.0	8.1	11.2	5.3	0.0	1018.2	0 1 0 0	0 0 0 0	0 0 0 0	6	6.1	6.1	10	19 1310	16	10	13	0.0	
23	6.9	-0.3	0.1	-5.6	7.8	11.0	4.6	0.2	1024.9	1 1 0 0	0 0 0 0	0 0 0 0	358	4.5	4.5	3	18 1101	5	7	10	0.2	
24	7.9	3.1	tr	-1.6	7.7	10.8	0.2	0.0	1030.2	0 1 0 0	0 0 0 0	0 0 0 0	6	4.7	4.8	31	20 1903	25	7	19	0.1	
25	6.8	2.4	tr	-3.4	7.9	10.6	0.0	0.0	1038.5	0 1 0 0	0 0 0 0	0 0 0 0	358	4.5	4.6	7	14 1054	7	6	11	0.0	
26	7.3	-2.6	0.2	-7.7	7.9	10.5	7.1	4.9	1040.5	1 1 0 0	0 0 0 0	0 0 0 0	286	2.2	2.9	330	12 1304	332	6	13	1.1	
27	10.4	-0.4	tr	4.1	7.7	10.4	0.0	0.0	1034.3	1 0 0 0	0 0 0 0	0 0 0 0	269	1.4	2.0	331	7 1339	329	4	13	0.0	
28	9.7	6.4	0.0	3.2	8.1	10.3	0.0	0.0	1035.6	0 0 0 0	0 0 0 0	0 0 0 0	314	1.6	2.2	330	7 1322	342	4	13	0.0	
29	10.4	7.2	tr	6.3	8.4	10.2	0.4	0.0	1027.7	0 0 0 0	0 0 0 0	0 0 0 0	274	6.8	7.6	264	26 1336	267	11	13	0.0	
30	8.5	5.0	0.0	0.0	8.4	10.2	2.9	0.0	1027.5	0 0 0 0	0 0 0 0	0 0 0 0	334	4.9	5.4	325	18 0213	3	8	10	0.0	
Total			48.3				89.4	29.5						279	2.5	5.2						51.6
Mean	9.9	3.2		-0.2	9.8	12.1	2.98	1.0	1018.1													
Anom	-1.0	-0.9	70%	-1.3	+0.4	+0.3	125%															+3.7
Daily mean		6.5																				
Anom		-1.0																				

Number of days with:

Air frost = 7 Ground frost = 15 Nil sun = 7
Snow falling = 0 Snow lying = 0 Thunder = 1
Hail=>5mm = 0 Hail<5mm or ice = 1 Fog at 09GMT = 0

Abbreviations.

Max/min = highest and lowest air temperature at 1.2m in 24 hour period ending at 09 GMT

Rain = total rainfall and melted snowfall in 24 hour period ending at 09 GMT, millimetres. (Tr = trace, <.05mm).

Grass min = Lowest overnight temperature at grass tip level.

Sun = hours of bright sunshine, measured electronically. Frost = Number of hours with air temp below 0 deg C.

pp09 = Air pressure corrected to mean sea level at 0900 GMT, millibars.

Af = Air frost. Gf = Ground frost. Sf = Snow falling. Sl = Snow lying at 09 GMT.

Th = Thunder. Ha = Hail =>5mm. Ic = Hail <5mm or ice. Fg = Fog at 09 GMT.

Vec mean = 24 hour mean wind vector, ddd = direction in degrees from true north, ff = speed in knots.

Sp = 24 hour mean wind speed in knots.

Max gust = Highest gust in 24 hours, gg = speed in knots, HHhh = Time, hours and minutes, GMT.

High hr = Highest hourly mean wind, HH = hour commencing. Rain Hrs = Duration of rain, 24 hours to 09 GMT. Excludes snow/hail.

30cm and 100 cm are earth temperatures at those depths, read at 09 GMT.

Anom = Departure from 1981-2010 climatological average.

All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for NOVEMBER 2013

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NCh	shs	NCh	shs	Date	Remarks
1	82	7	20	06	09	11.5	9.8	89	7.5	1011.9	7	001	60	6	2	2	5	7	7	/	82650	85358	87365			1		
2	57	7	21	06	13	9.8	9.1	96	7.3	1001.8	2	012	10	2	2	7	6	2	/	1	87705					2	/Ci80 COTRA	
3	86	1	24	10	22	8.5	4.6	76	5.3	1001.8	2	015	02	0	0	1	1	4	6	3	81818					3	1Ac65 1Ci70 Cb tops W-SE	
4	68	2	31	06	15	6.0	3.9	86	5.1	991.7	2	051	01	1	1	1	1	4	0	2	81812					4	2Ci72 Cu fra	
5	60	8	23	08	17	9.3	8.5	94	7.0	992.0	6	009	62	6	2	5	5	3	2	/	81708	85635	88550			5		
6	57	8	21	03	05	10.3	9.4	94	7.4	999.7	8	008	61	6	5	8	5	3	/	/	82706	86709	88630			6		
7	89	7	26	02	07	8.7	6.7	87	6.1	1007.7	2	024	02	2	2	2	0	9	7	8	81365	83270	86075			7	2Ac68 COTRA Halo 22° part	
8	60	7	36	01	08	5.2	4.6	96	5.3	1006.3	7	008	10	1	1	1	8	5	7	8	81825	87272				8	1Sc50 1Ac62 1As68 Cu med S	
9	80	7	16	02	07	4.0	3.4	95	4.8	1007.3	8	011	15	1	1	1	5	7	/	/	81656	83458	87365			9	jpW	
10	88	2	28	04	09	5.6	4.0	89	5.0	1015.0	2	046	02	0	0	0	0	9	0	1	82080					10	COTRA	
11	56	8	18	08	20	9.7	8.5	92	6.8	1021.8	7	004	51	6	5	8	5	3	/	/	82708	87712	88620			11		
12	63	7	30	02	05	10.0	9.4	96	7.2	1025.1	2	025	21	6	2	7	5	3	/	/	81708	87645				12	2Sc35	
13	65	6	20	03	05	2.4	2.0	97	4.3	1035.6	1	009	02	1	1	0	0	9	0	1	82075	85080				13	COTRA Hoar mod	
14	70	1	27	08	18	8.5	3.4	70	4.8	1022.7	2	014	02	8	1	1	5	5	0	0	81625					14		
15	75	1	31	03	05	3.7	1.1	83	4.0	1034.1	2	015	02	0	0	0	0	9	0	1	81075					15	Hoar slt	
16	56	5	20	03	04	1.1	0.7	97	3.9	1033.8	1	009	10	1	1	0	0	9	0	1	85080					16	COTRA Hoar mod	
17	57	8	01	02	03	7.9	6.9	93	6.1	1026.5	8	003	05	2	2	8	5	3	/	/	81708	85712	88625			17		
18	20	8	22	02	04	7.7	7.2	96	6.3	1011.5	6	006	10	5	2	8	5	2	/	/	82704	87635	88640			18		
19	86	1	31	07	14	3.0	0.5	83	3.9	1013.4	2	016	02	0	0	1	8	4	0	1	81815					19	1Sc40 1Ci68 Cu fra Hoar slt	
20	80	8	22	11	21	5.5	2.8	83	4.7	1004.4	7	059	60	6	2	5	5	4	2	/	81715	85625	88458			20		
21	70	8	02	14	27	5.5	2.5	81	4.6	1002.6	2	034	01	6	2	8	5	5	/	/	81620	87625				21	/Sc50	
22	80	3	36	05	09	2.9	0.2	82	3.8	1018.2	2	017	03	0	0	1	5	4	3	0	81712	83358				22	1Sc50 Hoar slt	
23	70	3	01	04	07	3.1	1.9	91	4.3	1024.9	1	013	15	1	1	2	8	5	0	1	81828					23	2Sc35 1Ci78 COTRA jpNW	
24	60	7	36	04	10	5.6	1.9	77	4.3	1030.2	2	014	15	5	2	7	5	4	/	1	82615	85625	87640			24	/Ci78 jpS&NW Rainbow part	
25	65	7	01	05	10	4.6	2.0	83	4.3	1038.5	2	015	02	2	2	7	5	6	/	/	87645					25		
26	58	3	21	02	04	-0.4	-1.3	93	3.4	1040.5	3	005	10	0	0	1	0	9	3	1	81368	83075				26	Hoar slt Gnd sfc frzn	
27	59	8	28	01	03	7.3	6.2	93	5.8	1034.3	3	006	05	6	2	8	5	3	/	/	85708	88620				27		
28	57	8	36	03	06	8.3	6.7	90	6.0	1035.6	2	009	05	2	2	8	5	4	/	/	83710	88620				28		
29	75	7	25	07	16	8.6	5.6	81	5.5	1027.7	7	019	01	2	2	6	5	6	7	1	86630	87075				29	2Ac65	
30	84	7	35	05	11	5.6	0.5	70	3.9	1027.5	2	021	01	2	2	7	5	5	/	1	85620	86630				30	/Ci75	

Mean vis = 23.5 km

Mean cloud = 5.7 71%

Mean wind speed = 4.9 kn

Mean gust = 10 kn

Mean TT = 6.3 °C

Mean Td = 4.4 °C

Mean RH = 87.8 %

Mean r = 5.3 g/kg

Mean PPP = 1018.1 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

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 2013

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks					
1	65	8	20	07	16	13.4	11.0	85	8.2	1007.0	8	025	02	6	5	7	5	4	7	83615	87640	1	/Ac65		
2	68	1	22	12	29	13.0	6.6	65	6.2	996.0	6	025	01	6	1	1	1	5	0	1	81825	2	1Ci75 Cu hum COTRA		
3	86	5	23	10	20	10.0	4.4	68	5.2	1001.2	7	010	03	1	1	2	8	6	5	1	81830	83368	3	2Sc45 1Ac66 /Ci75 Cu hum	
4	88	1	29	10	18	9.7	2.4	61	4.6	996.1	2	017	01	0	0	1	8	6	0	0	81830	4	1Sc35		
5	84	7	28	07	26	11.3	4.6	63	5.3	994.3	3	027	03	2	2	2	8	6	7	7	82830	87367	5	1Sc40 1Ac65 Ac du vir	
6	65	7	23	09	22	14.8	13.0	88	9.4	999.0	7	005	50	5	2	7	5	4	7	7	83710	85715	87625	6	
7	84	7	21	04	08	10.5	5.7	72	5.7	1007.8	6	006	02	2	2	2	0	9	7	8	82465	87270	7	1Ac68 COTRA Halo 22° part5	
8	50	8	05	01	03	8.6	7.9	96	6.7	1002.3	6	018	61	6	6	7	8	2	7	7	82705	86630	88358	8	2Cu20 Cu med
9	65	7	32	04	10	6.3	5.4	94	5.6	1004.4	5	009	60	6	2	7	5	3	7	7	81708	83612	85620	9	7Sc30
10	88	2	32	04	11	8.7	0.7	57	3.9	1021.4	1	026	02	0	0	1	0	9	3	2	81368	10	2Ci75 COTRA Parhelia		
11	25	8	19	07	15	12.5	11.7	95	8.5	1020.5	6	007	58	6	5	8	7	2	7	7	87705	88708	11		
12	75	6	35	05	10	10.8	6.2	73	5.8	1027.4	2	011	02	2	2	1	2	5	7	2	81825	86072	12	2Ac67 Cu med Parhelion	
13	80	7	23	06	13	9.0	3.3	67	4.7	1031.3	6	027	03	2	2	1	1	5	8	1	81825	83072	87080	13	1Ac68 COTRA Cu hum Ac cas vir Parhelia
14	81	3	31	09	28	7.9	1.6	64	4.2	1025.2	2	008	14	1	1	1	1	5	7	0	81825	83359	14	Cu fra jpE	
15	72	7	01	04	11	8.5	0.7	58	3.9	1033.3	5	005	03	1	1	1	0	9	3	2	81368	87078	15	COTRA Parhelion	
16	58	7	27	03	07	7.9	5.1	83	5.4	1030.9	7	015	20	5	2	8	5	4	7	7	87612	16			
17	57	8	04	02	05	9.1	7.3	88	6.3	1022.5	7	023	05	5	2	8	8	4	7	7	81815	87625	88630	17	Cu fra
18	62	8	26	05	09	9.7	6.9	83	6.2	1008.6	6	013	02	2	2	7	8	4	7	7	82715	85820	87630	18	/Ac62 Cu hum
19	86	1	33	07	18	4.8	-1.8	62	3.3	1015.6	3	007	02	0	0	1	8	6	0	0	81830	19	1Sc40 Cu hum		
20	75	1	30	07	16	6.2	2.5	77	4.6	998.1	6	024	03	6	1	1	1	5	6	0	81825	20	1Ac60 Cu fra		
21	80	3	03	10	22	7.0	1.0	66	4.1	1008.0	2	020	03	0	0	3	8	6	0	1	81830	83650	21	1Ci75 COTRA Cu med	
22	84	2	01	10	18	6.9	0.3	63	3.8	1019.2	3	007	02	0	0	2	1	6	0	1	82830	22	1Ci75 Cu hum		
23	75	3	01	05	12	6.3	1.7	72	4.2	1025.0	5	000	01	1	1	1	8	4	0	1	81818	83078	23	1Sc40 COTRA Cu hum	
24	59	7	01	06	12	7.5	4.5	81	5.1	1031.5	3	006	21	6	2	7	8	4	7	7	83815	87645	24	2Sc25 Cu hum jpS&W	
25	70	7	36	06	11	6.2	1.4	71	4.1	1038.1	6	003	02	5	2	7	8	5	7	7	81825	87640	25	Cu fra	
26	65	7	29	03	08	7.1	0.2	61	3.7	1038.1	8	018	03	2	2	5	5	6	0	1	85635	85075	26		
27	60	7	32	01	05	9.9	7.7	86	6.4	1033.0	6	010	05	2	2	3	6	4	7	1	83712	85362	27	/Ac65 /Ci75	
28	58	8	35	03	07	9.1	6.0	81	5.7	1034.4	7	006	05	2	2	8	5	5	7	7	88625	28			
29	80	8	29	09	25	9.8	5.2	73	5.4	1023.8	6	017	60	6	2	7	8	5	2	7	81820	83825	87640	29	/As60 Cu med/fra CF ovhd
30	67	7	34	05	12	7.7	2.2	68	4.4	1029.7	3	011	02	1	1	7	5	5	7	7	87328	30			

Mean vis = 27.0 km
 Mean cloud = 5.6 70%
 Mean wind speed = 6.0 kn
 Mean gust = 14 kn
 Mean TT = 9.0 °C
 Mean TdTd = 4.5 °C
 Mean RH = 74.0 %
 Mean r = 5.4 g/kg
 Mean PPP = 1017.5 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	2013	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	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	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	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	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	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	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	0.00
7	0.00	0.00	0.12	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.25	0.00	0.14	0.18	0.00
8	0.01	0.00	0.88	0.93	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
9	0.00	0.35	1.00	1.00	0.00	0.00	0.41	0.00	0.00	1.00	0.00	0.15	1.00	1.00	1.00	1.00	1.00	1.00
10	0.00	0.39	0.73	1.00	0.00	0.00	0.02	0.01	0.00	1.00	0.00	0.56	1.00	0.63	1.00	1.00	1.00	1.00
11	0.00	0.50	0.94	0.99	0.87	0.00	0.00	0.09	0.00	1.00	0.00	1.00	1.00	0.10	1.00	0.83	1.00	0.83
12	0.04	0.38	0.99	0.96	0.34	0.00	0.00	0.00	0.45	1.00	0.00	0.23	0.89	0.49	1.00	0.00	1.00	0.00
13	0.00	0.07	1.00	0.22	0.44	0.00	0.21	0.00	0.00	1.00	0.00	0.04	0.76	0.65	1.00	0.43	1.00	0.43
14	0.00	0.90	0.76	0.77	0.47	0.00	0.04	0.00	0.00	1.00	0.00	0.38	0.94	0.59	0.73	0.13	1.00	0.13
15	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.38	0.42	0.41	0.16	0.00	1.00	0.00
16	0.00	0.12	0.00	0.35	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	1.00	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	1.00	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	1.00	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	1.00	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	1.00	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	1.00	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	1.00	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	1.00	0.00
Tot	0.05	3.72	6.43	7.36	2.17	0.00	0.68	0.10	0.45	8.03	0.00	2.76	7.30	4.87	7.05	4.57	7.05	4.57

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	0.10	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
8	0.00	0.00	1.00	0.00	0.00	0.11	0.58	0.16	0.00	0.89	0.00	0.00	0.00	0.01	0.32
9	0.00	0.00	1.00	0.00	0.01	0.37	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.20	0.38
10	0.00	0.00	1.00	0.00	0.03	0.26	0.89	0.05	0.00	1.00	0.00	0.00	0.00	0.32	0.36
11	0.00	0.00	0.90	0.00	0.04	1.00	0.60	0.00	0.00	1.00	0.00	0.00	0.31	0.78	0.43
12	0.00	0.00	0.87	0.00	0.91	1.00	0.12	0.00	0.00	1.00	0.00	0.00	0.11	1.00	0.39
13	0.00	0.00	0.86	0.35	0.99	1.00	0.06	0.00	0.00	1.00	0.00	0.00	0.00	0.45	0.35
14	0.00	0.00	0.81	1.00	0.93	0.98	0.69	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.40
15	0.00	0.00	0.70	0.94	0.71	0.54	0.68	0.00	0.00	0.24	0.00	0.00	0.00	0.14	0.27
16	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
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	0.00	7.26	2.28	3.65	5.29	4.61	0.21	0.00	7.12	0.00	0.00	0.42	2.89	89.21

NOVEMBER 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	12.04	14.3	1237	10.5	2356	89.0	95.9	2359	83.2	259	10.28	7.80	9.3	1237	7.1	626	1008.31	1013.8	3	1000.8	2357	1.3
2	10.98	15.3	1224	7.7	421	80.5	97.3	451	59.2	1925	7.52	6.61	9.1	1054	5.0	1932	998.50	1001.8	824	994.9	1739	0.1
3	8.54	11.7	1200	6.5	604	75.4	95.6	2332	58.0	1230	4.33	5.26	6.6	2338	4.6	458	998.32	1002.6	1042	983.8	2345	8.6
4	6.47	10.1	1257	1.8	2307	82.2	96.1	211	57.6	1526	3.47	4.99	6.5	8	4.0	2251	992.60	999.5	2034	982.6	151	4.4
5	8.51	13.0	1336	1.6	43	82.0	96.5	556	58.2	1408	5.43	5.73	7.9	1131	4.0	43	995.02	1000.3	2348	990.8	1111	5.1
6	12.12	15.1	2201	8.8	549	89.0	95.5	1220	78.4	0	10.34	7.98	9.8	1309	5.7	0	999.45	1000.9	508	997.8	2047	2.2
7	9.32	14.4	3	4.1	2359	83.0	91.5	649	68.6	1418	6.55	6.10	9.2	12	4.7	2359	1006.76	1008.9	2329	999.9	0	0.2
8	6.02	9.7	1228	2.9	615	94.7	96.8	1102	90.8	0	5.25	5.59	7.2	1228	4.4	225	1005.59	1008.8	26	1002.0	1523	4.3
9	4.86	8.0	1259	0.8	717	94.6	96.4	1220	92.8	1420	4.08	5.13	6.4	1255	3.9	717	1006.00	1008.6	421	1003.1	2230	4.8
10	5.15	9.8	1315	0.6	1954	84.9	96.3	33	52.9	1318	2.59	4.58	5.7	37	3.7	1953	1016.85	1025.5	2134	1003.6	0	0.4
11	9.98	13.4	2123	2.5	27	92.5	97.0	2114	80.0	331	8.82	7.15	9.1	2123	4.2	27	1021.95	1025.0	0	1020.2	1443	2.0
12	9.06	13.0	15	0.7	2348	89.8	96.9	446	71.0	1402	7.41	6.49	8.9	115	3.8	2348	1026.91	1034.3	2345	1021.1	318	1.4
13	4.77	10.3	1254	-1.2	714	85.0	98.1	806	64.0	1418	2.29	4.44	5.8	1127	3.3	714	1031.84	1036.0	904	1023.1	2358	0.1
14	7.41	9.8	1147	4.4	2342	74.5	85.4	429	59.6	1351	3.10	4.70	5.8	134	3.9	2359	1024.81	1031.0	2355	1020.6	403	0.1
15	3.87	9.5	1244	-0.6	2351	78.8	95.9	2357	54.1	1427	0.31	3.81	4.4	1147	3.3	737	1033.35	1034.8	2233	1030.8	0	0.0
16	4.04	8.8	1409	-1.8	522	91.9	97.3	721	77.6	1410	2.80	4.66	5.9	2127	3.1	522	1031.97	1034.5	2	1029.0	2352	0.1
17	7.98	9.7	1331	6.7	559	92.6	94.6	317	88.0	1451	6.85	6.09	6.6	1331	5.6	549	1024.02	1029.2	4	1016.8	2359	0.0
18	7.90	9.9	1450	5.8	2327	92.0	96.6	723	82.3	1514	6.67	6.09	6.7	1211	4.9	2359	1011.03	1016.9	0	1008.1	1522	0.3
19	2.56	6.2	1250	-2.7	2352	80.6	92.1	520	60.5	1436	-0.55	3.67	5.0	7	2.8	2352	1014.68	1019.0	2006	1009.9	12	0.1
20	3.29	7.4	1138	-3.2	105	84.5	94.1	221	70.5	1616	0.89	4.14	5.6	1142	2.7	105	1003.78	1018.3	2	996.2	2236	3.4
21	5.07	8.1	1315	2.3	2346	79.6	89.6	107	58.4	1343	1.75	4.34	5.0	607	3.8	1343	1005.50	1014.5	2355	996.8	3	0.7
22	4.04	7.9	1326	1.0	749	80.0	92.0	2344	58.9	1334	0.79	4.00	4.7	2357	3.5	749	1018.62	1022.4	2256	1014.3	7	0.1
23	4.42	7.0	1152	-0.2	704	83.0	95.5	728	65.2	1154	1.70	4.24	4.8	105	3.5	705	1024.95	1027.6	2342	1022.0	26	0.2
24	5.70	8.0	1431	2.6	2109	80.1	87.5	2124	73.1	1930	2.53	4.48	5.3	1424	3.8	2047	1031.25	1036.0	2355	1027.3	103	0.0
25	5.06	6.8	1356	3.4	126	79.7	88.2	326	70.8	1346	1.81	4.22	4.4	1144	3.9	2117	1038.20	1040.2	2359	1035.8	28	0.0
26	3.74	7.3	1510	-2.1	701	78.2	94.8	813	60.7	1414	0.17	3.76	4.4	1149	3.0	701	1039.11	1040.8	923	1036.0	2356	0.1
27	7.46	10.5	1347	5.4	240	90.2	96.1	2353	78.6	3	5.95	5.69	6.6	1318	4.4	1	1034.20	1036.2	25	1032.8	1446	0.2
28	8.31	9.8	1304	7.2	2319	88.8	96.1	11	80.5	1450	6.57	5.90	6.4	156	5.5	1919	1034.90	1036.0	1020	1033.9	322	0.0
29	8.18	10.5	1200	5.9	2342	75.1	91.3	26	56.1	1658	3.92	4.98	5.8	115	3.8	1641	1027.02	1034.2	0	1023.0	2309	0.0
30	5.48	8.6	1308	-0.1	2359	74.0	92.3	2357	64.8	1316	1.15	4.06	4.6	134	3.4	2359	1028.26	1032.7	2340	1023.4	14	0.0

Total																						40.2
Mean	6.74	10.13		2.72		84.2	94.31		69.15		4.16	5.22	6.45		4.11		1017.79	1022.35		1012.68		
Max	12.12	15.29		10.49		94.7	98.10		92.80		10.34	7.98	9.84		7.13		1039.11	1040.85		1035.98		
Min	2.56	6.22		-3.20		74.0	85.40		52.89		-0.55	3.67	4.40		2.74		992.60	999.46		982.59		

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

AUTUMN 2013

Temperature (°C)				Rank in the past 132 years
Mean maximum	15.2	(0.0)		20 th highest
Mean minimum	7.4	(+0.3)		14 th highest
Daily mean	11.3	(+0.2)		21 st highest
Rainfall total (mm)	179.1	(92 %)		60 th lowest
Sunshine total (hours)	306.3	(94 %)		
N ^o of:				
Dry days	46 (-4)		Wet days	29 (-1)
Days with: Air frost	7 (-1)	Ground frost	20 (-2)	Snow falling 0 (-1) Snow lying 0 (0)
Thunder 3 (0)	Hail ≥5mm 0 (0)	Small hail/ice 1 (0)	Fog @09 GMT 1 (-3)	Nil sun 12 (-3)
Air pressure MSL : Mean @09 GMT (mbar)	1015.2		(+0.1)	

Departure from 1981 to 2010 average shown in brackets.

Notes:

Temperature Near Average, Rainfall and Sunshine Below Average

Temperature: The mean temperature this autumn is close to the current climatological average, However, looked at in the longer term, it is 0.9° above the median since 1882. In the recent past, 8 of the 13 autumns since 2000 have been milder than this year's. Both the mean maximum and mean minimum this season were exceeded as recently as 2011, the mean maximum by 2.0°. Compared with average, November has the largest negative anomaly, -1.0°, and October the largest positive, +1.8°, although in actual temperature September's mean of 14.4 made that the mildest month. Notably, the mean min in October, 9.6°, is 0.1° higher than that of September. The season's highest temperature was 28.3° on the 5th September, 3.8° above the median and highest since 2006. The lowest max was 6.1° on the 19th November, 1.5° above the median. The highest min was on the 4th October, 15.9°, 0.6° above the median and the season's lowest temperature was -3.5° on the 20th November, 0.4° above the median. The mean daily temperature range of 7.8° is slightly below average and lowest since 2004. The mean grass min is 4.3°, 0.3° above average, and the lowest grass min is -10.1°, 2.0° below average. There have been only 5 other autumns in the past 33 years to have a grass min below -10°. The mean temperature at 30cm depth is 13.5°, 0.5° above average, and at 1 m depth, 14.6°, close to average. There were 29.5 hours with air frost, down 22.4 hours on the average. **Rainfall:** The total this autumn is 8 % below the average, and in the longer term it is just 2 mm below the median. Also, the season's highest daily fall of 25.6 mm on the 27th October is within 1 mm of the median. October was the only month to have a surplus of rain, its 86.4 mm being 120 % of average, while September's 44.4 mm is 83 % and November's 48.3 mm is 70 % of average. The duration of measurable rain is 147.1 hours, just 1.4 hours below average. The highest rainfall rate was 133 mm/hr on the 22nd October. Thunder occurred on the 20th and 22nd of October and the 20th November, this latter storm accompanied by hail. There were 5 dry spells, 11 days ending on the 4th September, 5 days on the 24th September, 6 days on the 9th October, 6 days on the 17th November and 5 days on the 25th November. It was predominantly wet from the 8th to the 13th September, the 11th to 27th October and the 3rd to 11th November. **Sunshine:** The sunshine total this autumn is 21 hours below average. The daily mean sun of 3.37 hours is lowest since 2001. November was the only month to have above average sunshine, while September and October were 17 % and 12 % below average respectively. In real terms, September with 118.6 hours had the most sunshine and November with 89.4 hours the least. The season's sunniest day was the 2nd September with 13.1 hours, an autumn day value equal highest with 2010 in at least 34 years. There were no prolonged spells of sunny days, these occurring mostly in ones or twos this season. Overall there were 47 days with <3 hours, 18 with =>6 hours, 4 with =>9 hours and 2 with =>12 hours. **Wind:** The overall mean wind speed is 6.2 mph, close to the average. The windiest day was the 11th October, mean 13.6 mph, and the season's highest gust was 64 mph on the 28th October. This is the second highest autumn gust, after 66 mph in 2000, since before 1988. The 17th November was the least windy day, mean 1.7 mph, and there were 2222 minutes of calm. Daily mean direction/number of days: N,9 NE,7 E,3 SE,5 S,10 SW,30 W,17 NW,10. This autumn winds from W and NW combined were 9.4 % more frequent at the expense of E, down 4.7 % and S, down 5.3 %. **Pressure:** The season's highest pressure was 1040.8 mbar on the 26th November, highest for the season since 1999. The lowest pressure was 977.8 mbar on the 28th October. **Humidity:** The overall mean relative humidity was 82.6 %. The lowest value reached was 24 % on the 4th September. The mean water vapour content per kg of air was 7.3 g at 0900 GMT and 7.1 g at 1500 GMT.

September: Temperature, rainfall and sunshine below average. Dullest since 2001.

October: Wet and very mild with sunshine below average, and quite windy. Mean min 4th highest in 132 years. Highest min 3rd highest in 101 years. Windiest since 1998, with a gust of 64 mph, 2nd highest for the month since before 1988.

November: Temperature and rainfall below average, but sunny overall. Mean max 2nd lowest since 1998.

Month	Mean Max	Anom	Mean Min	Anom	Rain mm	Anom	Sun hrs	Anom	Wind Mn mph	Max gust	Mean pressure	Anom
Sept	19.2°	-0.2°	9.5°	-0.5°	44.4	83%	118.6	83%	5.0	37	1016.4	-0.3
Oct	16.5°	+1.3°	9.6°	+2.4°	86.4	120%	98.3	88%	7.6	64	1011.3	-3.0
Nov	9.9°	-1.0°	3.2°	-0.9°	48.3	70%	89.4	125%	6.0	40	1018.1	+3.7

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 of 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.