

# 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

## FEBRUARY 2013

Temperature (°C / °F)			Anomaly	Rank in the past 132 years			
Mean maximum	6.6	43.9	-1.6	30 <sup>th</sup> lowest			
Mean minimum	0.1	32.2	-1.4	35 <sup>th</sup> lowest			
Daily mean	3.3	37.9	-1.6	30 <sup>th</sup> lowest			
Highest maximum	10.9	51.6	on 14 <sup>th</sup>	Lowest maximum	1.7	35.1	on 11 <sup>th</sup>
Highest minimum	4.0	39.2	on 1 <sup>st</sup>	Lowest minimum	-4.1	24.6	on 19 <sup>th</sup>
Mean grass minimum	-2.7	27.1	-0.9	Lowest grass minimum	-10.1	13.8	on 19 <sup>th</sup>
Mean earth @30 cm	4.8	40.6	-0.5	Earth @100 cm	6.5	43.7	
Frost duration (hrs)	57.4			Rain duration (hrs)	63.6		
Rainfall total (mm / in)	34.4	1.35	80 %	62 <sup>nd</sup> lowest			
Highest daily fall	16.7	0.66	on 10 <sup>th</sup>				
Number of: Dry days (<0.2mm)	17	Wet days (>0.9mm)	5	days ≥5mm	2		
Sunshine total (hrs) 72.2	Daily mean 2.58	93 %	Sunniest day 9.7		on 18 <sup>th</sup>		
N <sup>o</sup> days with: Air frost 13	Ground frost 21	Snow falling 9	Snow lying 1				
Thunder 0	Hail ≥5mm 0	Small hail/ice 1	Fog @09 2	Nil sun 10			
Pressure MSL : Mean @09 GMT, mbar 1018.4	+1.0	Highest 1035.8	on 27 <sup>th</sup>	Lowest 990.4	on 10 <sup>th</sup>		
Relative humidity : Mean (%) 79.7	Lowest 42	on 17 <sup>th</sup>	Water vapour (g/kg), mean at 09 and 15 GMT 3.9, 3.7				
Overall mean wind speed (mph) 7.7	Windiest day 13.8	on 5 <sup>th</sup>	Max gust 41	on 6 <sup>th</sup>			
Wind direction (days) N 3 NE 7 E 4 SE 1 S 3 SW 2 W 5 NW 3							
Least windy day (mph) 2.0	on 19 <sup>th</sup>	Calm; less than 0.5 mph (minutes) 545					

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

Notes:

### Cold with Below Average Rainfall and Sunshine

**Temperature:** Apart from a week near mid-month and two days near the start, temperatures were below normal by day and night. The resulting monthly mean is lowest since 1996, as are both the mean max and mean min. However, looking 10 years further back we find a mean temperature of -1.1° in February 1986, 4.4° below this month's mean. That, and the -1.5° in 1947 were the coldest Februaries of the 20<sup>th</sup> century. This month, the highest max is 2.1° below the median and is lowest since 1993 while the lowest max is 0.6° below its median, but is higher than last February's value. The highest min is 4.0° below the median and lowest since 1986 while the lowest min is 0.9° above the median. The total range of min temperature, 8.1°, is 5.2° below average and is lowest since before 1976. **Rainfall:** This has been quite a dry month overall, with over half the total falling on just one day, and all but 3.9 mm of the total over just 4 days. A dry spell of 11 days ended on the 24<sup>th</sup>, but only 1 mm fell after the 13<sup>th</sup>. Snow fell on 9 days, 4 above normal, but usually melted as it fell or was short-lived on the ground, and lying snow at 0900 hours was recorded on only the 11<sup>th</sup>, and was only 1 cm deep. Rainfall duration was unusually high compared with the total fall, and was 14.5 hours above normal. The highest rainfall rate was 16.2 mm/hr on the 5<sup>th</sup>.

**Sunshine:** The total this February is close to normal, despite two dull episodes, the 9<sup>th</sup> to the 13<sup>th</sup> and 21<sup>st</sup> to the 28<sup>th</sup>. The number of sunless days is 2 more than average. Overall there were 18 days with <3 hours, 4 with =>6 hours and 2 with =>9 hours. **Commentary:**

**From the 1<sup>st</sup> to the 13<sup>th</sup>:** Temperatures were near normal at first, but it became colder after the 4<sup>th</sup>. Anomalies for daily max ranged from +2.0° on the 3<sup>rd</sup> to -6.3° on the 11<sup>th</sup>, and for daily min, between +2.5° on the 1<sup>st</sup> and -4.0° on the 3<sup>rd</sup>. Dry at first, but wet after the 8<sup>th</sup>, and a total of 27.4 mm by the 13<sup>th</sup>, 80% of the month's total, and with sleet and snow in this period. Sunshine was near or a little above normal until the 8<sup>th</sup>, then nil over the next 5 days. Moderate or fresh winds were from between W and NW, falling light on the 7<sup>th</sup>, backing moderate E'ly on the 10<sup>th</sup>, veering S'ly on the 13<sup>th</sup>. **From the 14<sup>th</sup> to the 28<sup>th</sup>:** Temperatures above normal at first, turning cold after the 20<sup>th</sup>. Anomalies for daily max ranged from +3.6° on the 14<sup>th</sup> to -6.0° on the 24<sup>th</sup>, and for daily min, +2.0° on the 16<sup>th</sup> and -5.3° on the 19<sup>th</sup>. There were 12 dry days in this period, and a total fall of only 1.0 mm. Small amounts of snow fell from the 22<sup>nd</sup> to the 25<sup>th</sup>, but none lay. Sunshine was above normal until the 20<sup>th</sup>, with two outstanding days on the 18<sup>th</sup> and 19<sup>th</sup> having over 85% of the maximum, but it became dull after the 20<sup>th</sup> with a total of only 0.4 hours over 7 of the 8 days. Winds were light until the 19<sup>th</sup>, W'ly backing NE'ly, then moderate or fresh NE or N to the 28<sup>th</sup>.

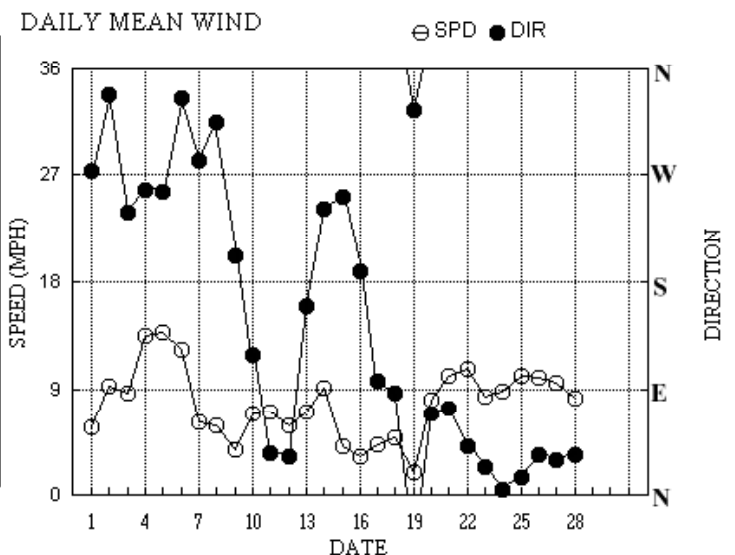
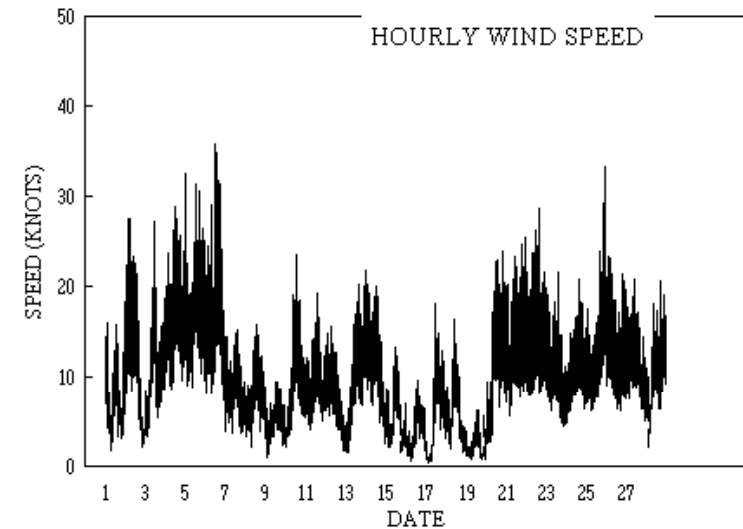
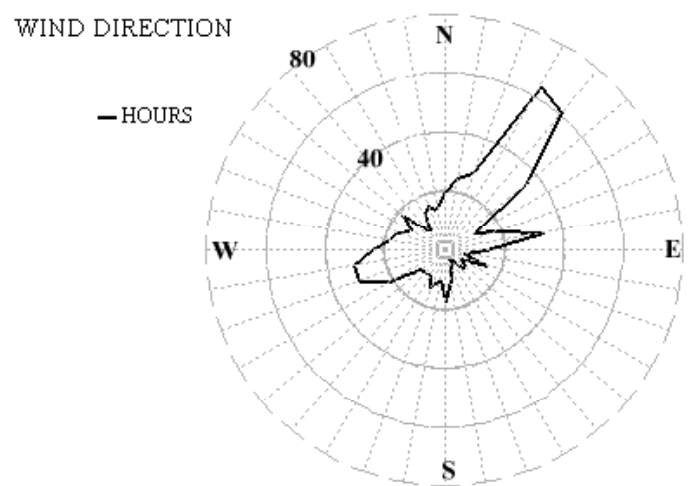
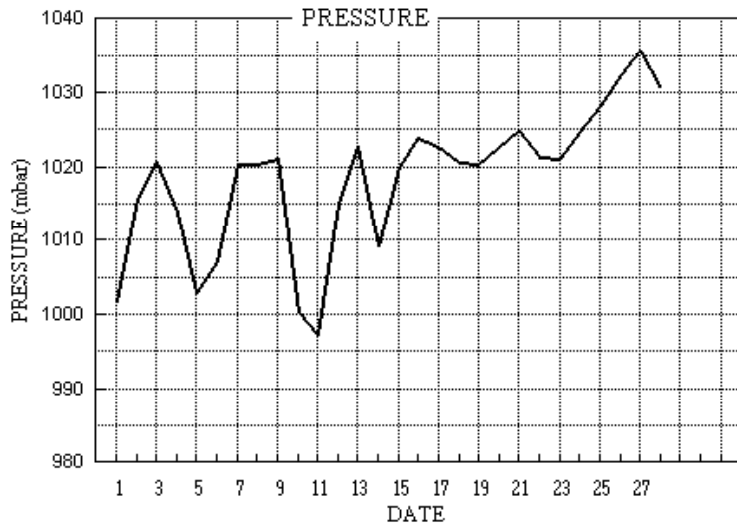
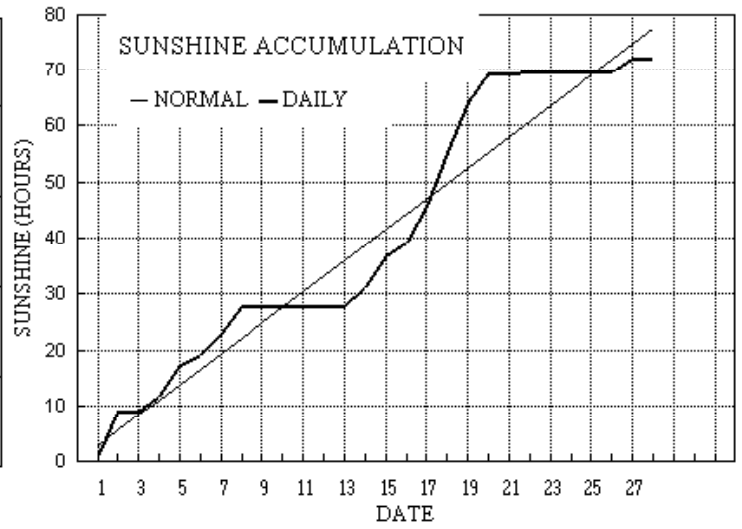
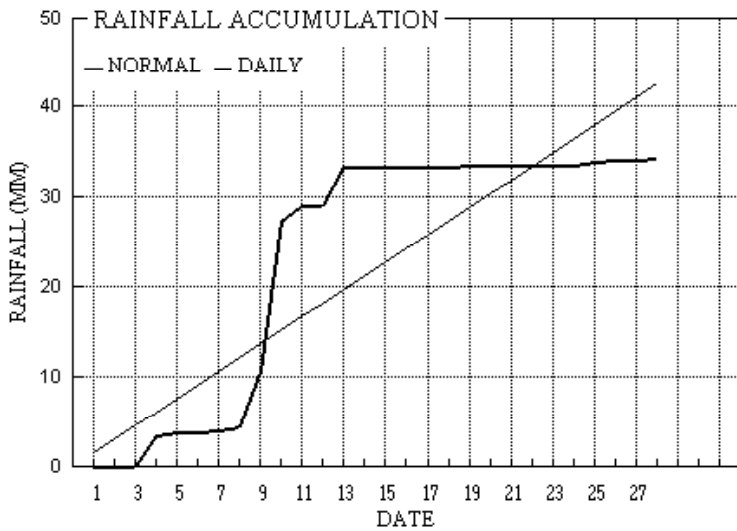
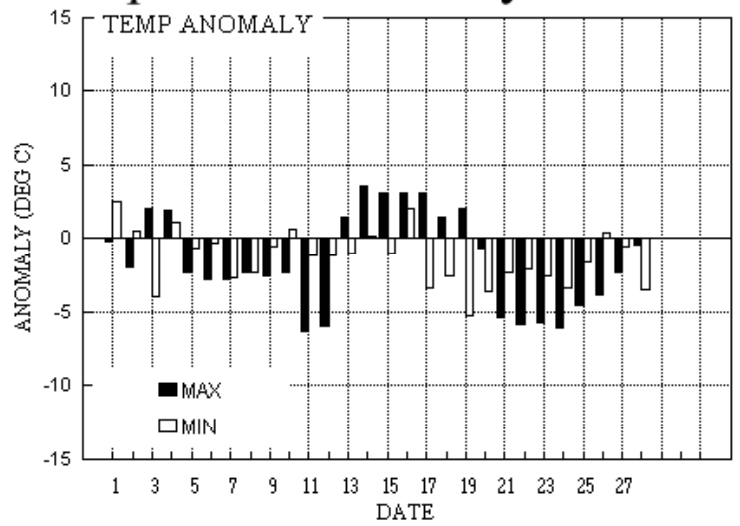
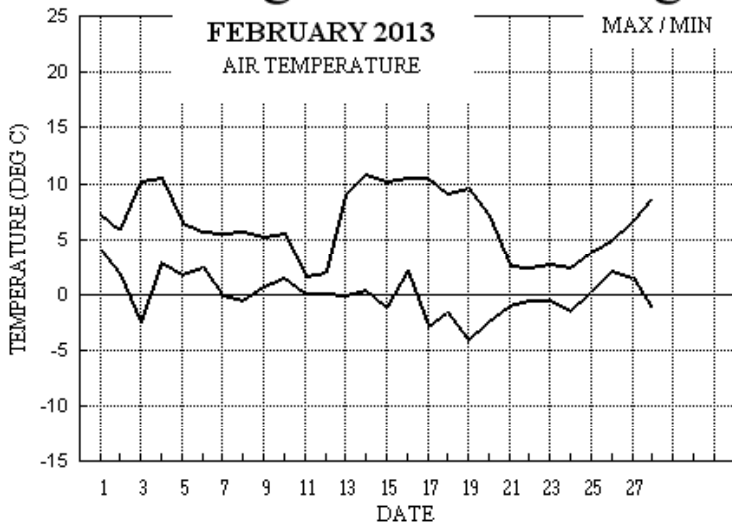
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 <sup>st</sup> to the 10 <sup>th</sup>				From the 11 <sup>th</sup> to the 20 <sup>th</sup>				From the 21 <sup>st</sup> to the 28 <sup>th</sup>			
-1.3°	-0.6°	178%	101%	+0.5°	-1.7°	39%	149%	-4.3°	-1.9°	7%	14%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

# Wokingham Climatological Graphs for February 2013



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: FEBRUARY 2013

Date	Max C	Min C	Rain mm	Grass Min	30cm C	100cm C	Sun hrs	Frost hrs	pp09 mbar	Af Gf	Sf Sl	Th Ha	Ic Fg	Vec mean ddd ff sp	Max gust ddd gg HHhh	High hr ddd ff HH	Rain hrs							
1	7.3	4.0	0.1	4.0	6.2	6.8	1.4	0.0	1001.7	0	0	0	0	274	4.1	4.9	270	16	0230	289	8	14	0.2	
2	5.9	1.9	0.0	-2.8	6.0	6.9	7.7	3.0	1015.6	0	1	0	0	338	7.4	8.0	343	28	0610	351	12	03	0.0	
3	10.3	-2.6	tr	-8.7	5.3	6.9	0.0	3.0	1020.7	1	1	0	0	238	7.4	7.5	240	27	1022	237	12	10	0.0	
4	10.5	2.9	3.3	5.8	5.3	6.9	2.6	0.0	1013.8	0	0	0	0	257	11.3	11.7	292	29	1146	259	14	15	1.1	
5	6.5	1.8	0.4	-1.9	5.6	6.9	5.8	0.0	1002.7	0	1	0	0	256	11.8	12.0	275	33	0113	251	16	18	0.6	
6	5.8	2.4	tr	-0.1	5.4	6.9	1.6	0.0	1007.0	0	1	0	0	335	9.9	10.6	332	36	1243	336	14	15	0.0	
7	5.5	-0.1	0.3	-5.7	5.1	6.8	3.9	0.1	1020.3	1	1	0	0	283	5.1	5.4	264	15	1402	291	8	12	1.4	
8	5.7	-0.5	0.4	-4.0	4.9	6.8	5.0	0.2	1020.4	1	1	0	0	315	4.9	5.1	321	16	1457	321	8	13	2.3	
9	5.3	0.8	6.2	-1.6	4.7	6.7	0.0	0.0	1021.0	0	1	1	0	202	2.5	3.2	178	10	1258	189	5	13	20.4	
10	5.6	1.6	16.7	2.3	4.9	6.7	0.0	0.0	1000.3	0	0	1	0	118	5.3	6.0	130	24	1350	122	10	13	20.7	
11	1.7	0.1	1.7	0.0	4.9	6.6	0.0	0.0	997.1	0	0	1	1	35	5.8	6.1	30	20	1454	26	9	15	4.5	
12	2.0	0.2	tr	-0.3	4.7	6.6	0.0	0.0	1014.9	0	1	1	0	32	5.0	5.1	44	16	0720	28	7	08	0.0	
13	9.0	0.0	4.3	-1.0	4.5	6.5	0.0	0.0	1022.6	0	1	1	0	160	5.4	6.1	155	20	1510	188	11	23	6.3	
14	10.9	0.5	tr	0.1	4.6	6.4	3.4	0.0	1009.0	0	0	0	0	242	5.9	7.8	173	22	0059	185	11	00	0.0	
15	10.3	-1.1	0.0	-6.3	5.0	6.4	5.5	2.5	1020.0	1	1	0	0	251	2.9	3.6	313	13	1151	283	6	11	0.0	
16	10.6	2.2	0.0	-1.3	5.0	6.4	2.5	0.0	1024.0	0	1	0	0	189	2.3	2.7	171	10	1426	198	5	14	0.0	
17	10.6	-2.8	0.0	-8.3	5.1	6.4	6.0	7.5	1022.6	1	1	0	0	97	3.2	3.7	162	18	1259	89	8	15	0.0	
18	9.1	-1.6	0.0	-8.2	4.9	6.4	9.7	5.1	1020.6	1	1	0	0	87	3.7	4.1	114	17	1102	106	7	11	0.0	
19	9.6	-4.1	0.1	-10.1	4.5	6.4	9.0	13.1	1020.4	1	1	0	0	325	0.2	1.7	301	6	1458	284	3	15	0.6	
20	7.1	-2.4	tr	-9.1	4.1	6.3	5.2	2.1	1022.6	1	1	0	0	69	6.9	7.1	73	24	2023	68	11	15	0.0	
21	2.6	-0.9	0.0	-3.6	4.1	6.3	0.0	3.4	1024.8	1	1	0	0	73	8.6	8.8	54	25	2059	58	10	20	0.0	
22	2.5	-0.5	tr	-1.8	4.0	6.2	0.2	5.7	1021.4	1	1	1	0	41	9.2	9.3	41	29	1610	34	11	16	0.0	
23	2.8	-0.5	tr	-1.5	4.0	6.1	0.1	7.0	1021.1	1	1	1	0	23	7.1	7.2	21	22	1502	26	10	15	1.8	
24	2.4	-1.4	tr	-5.6	4.0	6.0	0.0	1.8	1024.5	1	1	1	0	4	7.6	7.6	10	21	1518	11	10	17	0.3	
25	3.9	0.3	0.4	-1.9	3.9	6.0	0.0	0.0	1028.1	0	1	1	0	14	8.6	8.8	34	34	2247	29	14	22	1.3	
26	4.9	2.1	0.2	2.0	4.0	5.9	0.0	0.0	1032.2	0	0	0	0	33	8.5	8.6	45	28	0028	32	12	00	0.9	
27	6.7	1.5	tr	1.6	4.3	5.9	2.5	0.0	1035.7	0	0	0	0	29	8.3	8.3	30	21	1113	30	11	10	0.1	
28	8.7	-1.3	0.3	-6.6	4.3	5.8	0.1	2.9	1030.5	1	1	0	0	33	7.0	7.1	29	21	1836	30	11	21	1.1	
Total			34.4				72.2	57.4																63.6
Mean	6.6	0.1		-2.7	4.8	6.5	2.58	2.1	1018.4					360	2.1	6.7								
Anom	-1.6	-1.4	80%	-0.9	-0.5	-0.3	93%																	
Daily mean		3.3																						
Anom		-1.6																						
Number of days with:																								
Air frost = 13																								
Ground frost = 21																								
Nil sun = 10																								
Snow falling = 9																								
Snow lying = 1																								
Thunder = 0																								
Hail=>5mm = 0																								
Hail<5mm or ice = 1																								
Fog at 09GMT = 2																								

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 FEBRUARY 2013

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cf	NChshs	NChshs	NChshs	Date	Remarks
1	65	7	27	03	05	4.3	3.3	94	4.9	1001.7	6	026	61	6	6	3	8	4	2	/	81812	83625	87540	1	/Sc50 /Ac58 Cu med Ns edge NW
2	88	1	34	08	18	2.3	-1.3	77	3.4	1015.6	2	044	02	0	0	1	1	4	0	0	81815			2	Cu fra
3	82	8	23	09	18	2.9	-0.7	77	3.6	1020.7	8	025	02	2	2	8	5	5	/	/	81625	88645		3	1Sc35
4	75	7	29	11	21	9.5	4.2	70	5.1	1013.8	3	019	01	2	2	7	8	5	/	/	83822	86640		4	/Ci75 Cu hum
5	84	3	25	08	21	2.5	-2.2	71	3.3	1002.7	8	009	03	1	1	1	8	5	0	3	81820	83068		5	1Sc40 COTRA Cu fra Cb tops S-SW
6	80	1	36	08	16	3.5	-0.6	74	3.7	1007.0	1	060	01	6	1	1	8	4	0	2	81818			6	1Sc40 1Ci68 Cu fra
7	81	6	27	05	08	1.9	-2.1	75	3.2	1020.3	2	005	03	1	1	1	0	9	3	2	81367	86072		7	2Ci69 COTRA Hoar slt Parhelia
8	57	5	31	04	09	1.6	0.1	89	3.8	1020.4	1	015	05	2	2	2	0	9	7	1	81362	84072		8	2Ac68 COTRA Hoar slt. Parhelia
9	60	8	25	04	06	1.9	0.9	93	4.0	1021.0	2	002	68	7	6	7	7	2	2	/	83705	86707	88520	9	
10	58	8	14	06	11	5.2	4.7	96	5.4	1000.3	7	037	63	6	6	7	7	2	2	/	83705	87708	88520	10	
11	18	8	04	06	14	0.8	0.5	98	4.0	997.1	2	026	71	7	2	7	7	3	2	/	83708	87712	88525	11	Snly 1cm 60% Thaw
12	56	7	03	07	14	0.9	-1.5	84	3.4	1014.9	2	028	05	2	2	7	5	5	/	/	84625	87635		12	
13	57	8	13	05	12	1.3	-2.5	76	3.1	1022.6	3	012	05	2	2	7	5	5	7	/	82625	87635		13	/Ac62
14	84	7	25	09	14	8.5	7.4	92	6.4	1009.0	3	021	01	6	2	6	8	4	3	1	81710	85650		14	1Cu25 3Ac59 1Ci75 Cu med
15	72	6	20	03	05	2.2	1.8	97	4.3	1020.0	1	018	02	1	1	5	5	7	0	1	85650			15	2Ci75 COTRA Hoar slt
16	70	7	06	02	03	4.5	3.3	91	4.7	1024.0	2	008	02	2	2	7	5	7	/	/	87650			16	/Ci78 COTRA
17	01	9	31	01	02	1.0	1.0	100	3.9	1022.6	0	004	45	4	0	9	/	/	/	/				17	vv150m
18	22	3	07	05	08	2.2	1.8	97	4.3	1020.6	3	009	10	0	0	0	0	9	0	1	83080			18	COTRA Hoar slt. Gnd frzn
19	09	3	04	01	03	-1.0	-1.5	96	3.3	1020.4	1	005	41	4	0	3	6	0	0	0	83701			19	vv2kW Hoar mod Gnd frzn
20	12	8	07	05	10	3.2	2.8	97	4.6	1022.6	1	008	51	5	4	8	6	2	/	/	85704	88705		20	
21	70	7	07	11	21	1.4	-5.3	61	2.5	1024.8	1	005	02	2	2	7	5	6	/	/	87630			21	
22	82	8	04	10	24	0.3	-5.6	65	2.5	1021.4	2	008	14	2	2	8	5	6	/	/	88642			22	jpS&W
23	65	7	02	08	16	0.7	-3.6	73	2.9	1021.1	2	007	70	7	2	7	8	5	/	/	81820	87650		23	2Sc40 Cu hum
24	70	8	01	06	14	0.4	-3.3	76	2.9	1024.5	2	010	22	7	2	8	5	6	/	/	82635	88640		24	Snly <10%<0.5cm
25	57	8	01	07	14	2.3	0.6	89	3.9	1028.1	2	017	60	6	5	8	5	4	/	/	85712	88630		25	
26	20	8	04	09	20	3.2	2.4	95	4.4	1032.2	2	021	50	5	2	8	7	2	/	/	87704	88705		26	
27	30	8	03	10	19	1.8	1.0	95	4.0	1035.7	1	006	51	5	2	8	7	2	/	/	85704	88705		27	
28	67	8	02	09	14	3.3	0.2	80	3.8	1030.5	0	002	14	2	2	8	0	9	7	/	83358	88461		28	As vir

Mean vis = 18.8 km  
 Mean cloud = 6.5 81%  
 Mean wind speed = 6.4 kn  
 Mean gust = 13 kn  
 Mean TT = 2.6 °C  
 Mean TdTd = 0.2 °C  
 Mean RH = 84.9 %  
 Mean r = 3.9 g/kg  
 Mean PPP = 1018.4 mbar

See appendix 2 below for full code details

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

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for FEBRUARY 2013

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ci	NCh	shs	NCh	shs	NCh	shs	Date	Remarks
1	83	7	30	09	16	6.9	1.9	71	4.4	998.9	7 010 02	2 2	2 8 5 0 6	82822	86073												1	1Sc45 1Cs68 COTRA Cu med	
2	89	3	34	09	22	4.6	-3.8	54	2.8	1020.6	1 020 02	0 0	2 8 6 0 1	82832													2	1Sc50 1Ci78 Cu med	
3	67	8	23	07	12	8.0	5.9	87	5.7	1015.5	6 019 02	2 2	8 5 4 / /	82710	87612	88620											3		
4	78	5	27	15	28	9.3	-1.2	48	3.5	1013.6	8 010 02	1 1	2 8 6 0 1	82842	83075												4	1Sc50 Cu hum	
5	84	7	27	15	25	5.7	-4.3	49	2.8	998.8	7 022 03	1 1	1 1 6 1 6	81840	86070												5	2As65 Cu hum	
6	80	7	33	12	36	5.2	-2.0	60	3.3	1012.1	2 024 80	8 2	7 8 6 / 1	83830	86650												6		
7	78	8	27	07	15	4.8	-0.4	69	3.7	1017.4	7 020 02	2 2	3 8 5 7 7	83822	83362	88270											7	1Sc30 3Ac65 Cu hum	
8	65	7	32	08	16	4.9	0.6	74	3.9	1020.1	7 008 25	8 2	7 8 5 / /	85820	87635												8	/Sc50 Cu hum	
9	50	8	17	04	10	3.1	1.9	92	4.3	1017.9	7 021 58	6 6	8 7 2 / /	82703	86705	88710											9		
10	59	8	11	08	22	3.3	2.3	93	4.6	993.1	7 038 63	6 6	7 7 4 2 /	82710	87712	88515											10		
11	56	8	03	09	20	1.4	0.9	96	4.1	1001.8	2 022 71	7 7	8 8 3 / /	83708	86812	88620											11	Cu hum	
12	57	8	04	05	10	1.5	-1.6	80	3.4	1017.0	2 008 05	7 2	8 8 5 / /	81820	86623	88628											12	Cu hum	
13	50	8	17	10	19	2.7	-2.6	68	3.1	1021.1	6 014 70	7 2	8 0 5 2 /	88520													13		
14	80	5	30	08	19	9.8	2.7	61	4.6	1011.4	1 007 15	1 1	5 8 5 6 0	82830	84650												14	1Ac58 Cu med jpW vv50k ex p	
15	84	7	30	04	12	9.3	-0.8	49	3.5	1020.8	2 001 02	2 2	7 8 6 / 1	81835	83640												15	4Sc50 2Ci75 Cu hum	
16	82	7	21	06	10	9.9	0.1	51	3.8	1022.9	7 014 02	2 2	3 8 6 0 1	81835	83645	87078											16	COTRA Cu hum	
17	82	3	11	08	15	10.3	-0.5	47	3.6	1019.6	7 022 02	0 0	2 4 6 0 1	81845													17	2Sc45 2Ci80 Cu hum	
18	65	7	10	06	12	8.7	0.8	57	4.0	1019.3	7 012 02	1 1	0 0 9 0 1	87078													18	COTRA	
19	67	0	30	03	06	9.3	0.1	52	3.8	1018.0	6 019 02	0 0	0 0 9 0 0														19		
20	67	1	07	12	23	5.2	-1.8	61	3.3	1023.2	8 003 01	1 1	1 1 5 0 0	81828													20	Cu hum	
21	80	7	08	09	20	1.8	-6.0	56	2.4	1023.1	6 015 02	2 2	7 5 6 / /	81835	87638												21	Cu hum	
22	84	7	04	12	25	1.9	-6.2	55	2.4	1020.1	6 009 15	8 2	7 8 6 / /	83832	84640	87650											22	Cu med jpW&SE	
23	59	7	02	08	19	2.4	-4.5	60	2.7	1021.1	7 004 22	7 2	6 8 5 3 2	85825	83645	87070											23	/Ac62 Cu med	
24	70	8	36	08	16	2.0	-3.4	68	2.9	1024.6	6 006 26	8 2	8 8 5 / /	83825	88635												24	Cu med	
25	59	8	01	08	17	3.7	0.8	81	4.0	1028.0	6 006 20	5 2	8 5 4 / /	81712	86615	88620											25		
26	28	8	03	08	15	4.5	3.2	91	4.7	1033.4	5 002 20	5 2	8 7 2 / /	83705	88707												26		
27	61	4	03	10	17	5.8	0.7	70	3.9	1033.7	6 013 01	1 1	3 5 5 0 1	83620													27	2Ci75 COTRA	
28	75	7	05	09	17	8.5	0.9	59	4.0	1028.1	7 014 01	2 2	1 1 6 3 8	81830	87272												28	2Ac63 COTRA Cu fra Halo 22° part. Parhelia	

Mean vis = 24.5 km  
 Mean cloud = 6.4 79%  
 Mean wind speed = 8.5 kn  
 Mean gust = 18 kn  
 Mean TT = 5.5 °C  
 Mean TdTd = -0.6 °C  
 Mean RH = 66.4 %  
 Mean r = 3.7 g/kg  
 Mean PPP = 1017.7 mbar

See appendix 2 below for full code details

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

Wokingham	Hour	01-Feb	02-Feb	03-Feb	04-Feb	05-Feb	06-Feb	07-Feb	08-Feb	09-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb
Sunshine	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hourly analysis	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	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
2013	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	0.04	0.00	0.00	0.00	0.00	0.04	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	8	0.00	1.00	0.00	0.00	0.89	0.58	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.54	0.15
	9	0.00	1.00	0.00	0.45	1.00	0.43	0.85	1.00	0.00	0.00	0.00	0.00	0.00	0.80	0.89
	10	0.00	1.00	0.00	0.14	0.74	0.00	0.99	0.95	0.00	0.00	0.00	0.00	0.00	0.64	0.98
	11	0.00	1.00	0.00	0.42	0.74	0.01	0.85	1.00	0.00	0.00	0.00	0.00	0.00	0.22	0.87
	12	0.21	0.85	0.00	0.01	0.96	0.02	0.15	0.61	0.00	0.00	0.00	0.00	0.00	0.06	0.92
	13	0.37	0.78	0.00	0.45	0.56	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.41	0.18
	14	0.75	0.44	0.00	0.41	0.69	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.47
	15	0.00	0.98	0.00	0.43	0.24	0.18	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.36	0.47
	16	0.00	0.66	0.00	0.28	0.01	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.56
	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		<b>1.36</b>	<b>7.74</b>	<b>0.00</b>	<b>2.56</b>	<b>5.83</b>	<b>1.59</b>	<b>3.88</b>	<b>5.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3.38</b>	<b>5.50</b>

Hour	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	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	<b>0.00</b>
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	<b>0.00</b>
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	<b>0.00</b>
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	<b>0.00</b>
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	<b>0.00</b>
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	<b>0.00</b>
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	<b>0.00</b>
7	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.02</b>
8	0.00	0.00	1.00	0.75	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	<b>0.25</b>
9	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.30</b>
10	0.31	0.13	1.00	1.00	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.28</b>
11	0.10	1.00	1.00	1.00	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.31</b>
12	0.01	0.99	1.00	1.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.26</b>
13	0.56	0.65	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.25</b>
14	0.79	0.98	1.00	1.00	1.00	0.00	0.05	0.11	0.00	0.00	0.00	0.24	0.00	<b>0.29</b>
15	0.75	1.00	1.00	1.00	1.00	0.00	0.06	0.00	0.00	0.00	0.00	0.90	0.00	<b>0.31</b>
16	0.00	1.00	1.00	1.00	1.00	0.00	0.04	0.00	0.00	0.00	0.00	1.00	0.09	<b>0.25</b>
17	0.00	0.24	0.27	0.26	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.00	<b>0.05</b>
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	<b>0.00</b>
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	<b>0.00</b>
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	<b>0.00</b>
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	<b>0.00</b>
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	<b>0.00</b>
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	<b>0.00</b>
Tot	<b>2.52</b>	<b>5.99</b>	<b>9.66</b>	<b>9.01</b>	<b>5.18</b>	<b>0.00</b>	<b>0.16</b>	<b>0.14</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.55</b>	<b>0.09</b>	<b>72.18</b>

FEBRUARY 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	5.36	7.8	214	2.6	2032	86.1	94.7	800	69.5	1449	3.18	4.82	5.3	426	4.1	1936	1002.37	1011.6	0	998.2	1746	6.4
2	3.11	5.9	1403	-2.6	2332	69.7	89.5	2350	51.6	1550	-2.04	3.29	4.6	29	2.6	2100	1017.07	1025.3	2349	1003.4	0	0.0
3	5.05	9.5	1827	-1.5	2	82.8	88.7	2104	74.6	412	2.38	4.66	6.4	1826	2.7	244	1018.72	1025.4	43	1013.2	2358	0.0
4	8.56	10.5	1318	5.9	2228	69.5	87.2	2	46.7	1449	3.10	4.82	6.5	546	3.4	1454	1012.69	1015.3	1122	1006.7	2358	0.0
5	4.37	6.6	11	1.8	629	68.9	89.6	308	46.0	1312	-1.03	3.61	4.6	2359	2.6	1312	1000.29	1007.1	17	994.5	2145	3.1
6	4.43	5.9	1	1.7	2355	68.9	86.0	618	55.6	1638	-0.91	3.62	4.7	159	2.7	2115	1008.53	1019.4	2359	995.5	15	0.4
7	2.62	5.5	1138	-0.1	802	75.0	89.9	2300	59.4	1201	-1.44	3.42	4.2	1923	2.7	53	1018.49	1020.6	942	1016.1	1722	0.2
8	2.88	5.7	1240	-0.5	725	83.2	95.2	729	65.9	1243	0.23	3.83	4.3	1837	3.4	725	1020.08	1021.8	2247	1017.5	33	0.1
9	2.24	3.3	1447	0.8	331	92.3	96.3	2354	84.3	122	1.12	4.10	4.6	2356	3.6	157	1018.51	1021.9	140	1011.2	2359	2.3
10	3.56	5.6	949	0.6	2354	95.5	97.0	818	92.3	1428	2.91	4.75	5.5	949	3.9	2344	998.03	1011.2	0	990.4	1941	13.4
11	0.80	1.7	1312	0.1	517	96.9	98.2	715	94.5	1915	0.36	3.94	4.2	1314	3.7	2019	999.72	1008.9	2358	991.7	0	4.0
12	0.92	2.0	1225	0.1	2323	85.0	96.0	0	77.7	1149	-1.35	3.43	3.9	124	3.1	2234	1015.65	1021.0	2358	1008.8	0	0.1
13	1.48	4.9	2358	-0.0	243	80.7	93.6	2144	59.9	1131	-1.57	3.39	5.0	2359	2.6	1131	1020.56	1022.8	1135	1014.8	2352	1.0
14	7.79	10.9	1153	2.7	2339	81.1	96.3	423	58.9	1448	4.60	5.31	6.8	639	4.0	2338	1011.42	1016.1	2359	1006.9	606	2.4
15	4.82	10.3	1426	-1.1	629	78.3	97.4	827	44.8	1423	0.99	4.06	5.3	1043	3.4	629	1020.27	1023.5	2353	1016.0	0	0.1
16	5.83	10.6	1342	1.0	2358	77.5	94.0	751	42.6	1440	1.92	4.32	5.4	1228	3.3	1443	1023.43	1024.6	1122	1022.5	1711	0.0
17	2.95	10.6	1431	-2.8	715	83.7	97.8	807	41.7	1436	0.03	3.81	5.6	1149	3.0	715	1021.20	1023.2	30	1019.0	1651	0.0
18	2.97	9.1	1405	-1.6	655	83.0	98.1	732	55.0	1535	0.07	3.80	4.8	953	3.2	2342	1020.09	1021.3	2059	1019.1	1526	0.1
19	1.35	9.6	1506	-4.1	642	83.8	97.0	532	41.9	1523	-1.46	3.42	4.7	1120	2.7	642	1019.55	1021.0	0	1017.7	1525	0.1
20	2.06	7.1	1331	-2.4	117	81.9	97.7	759	56.5	1436	-0.93	3.56	4.8	942	2.8	1906	1022.93	1025.1	2057	1019.6	4	0.2
21	0.89	2.6	1346	-0.9	518	61.0	72.2	529	51.9	1412	-5.83	2.44	2.9	50	2.1	2056	1023.69	1024.9	1012	1021.8	2353	0.0
22	0.63	2.5	1423	-0.5	621	61.4	68.9	745	52.3	1324	-5.96	2.42	2.7	2102	2.1	19	1020.63	1022.0	1	1019.5	1559	0.0
23	0.55	2.8	1452	-1.4	2224	72.1	89.0	2311	58.2	1530	-3.95	2.82	3.5	1240	2.5	0	1021.35	1023.8	2357	1019.5	234	0.0
24	0.89	2.1	1505	-0.5	5	73.3	87.8	7	59.5	1738	-3.42	2.92	3.3	228	2.5	1737	1024.73	1026.5	2223	1023.2	442	0.0
25	2.72	3.9	1601	0.7	0	82.2	89.1	903	70.1	16	-0.03	3.74	4.2	2217	2.8	0	1027.79	1029.5	2336	1025.3	257	0.0
26	3.53	4.9	1314	2.1	212	91.8	94.8	754	84.6	0	2.32	4.40	4.9	1314	3.9	8	1032.56	1035.5	2359	1029.1	302	0.4
27	2.87	6.7	1511	0.9	2327	86.4	94.9	855	65.1	1512	0.74	3.92	4.4	6	3.4	2327	1034.33	1035.8	859	1032.5	1920	0.2
28	3.69	8.7	1447	-1.3	447	79.1	95.5	537	57.8	1502	0.23	3.80	4.4	1345	3.2	445	1029.75	1032.9	1	1027.2	1645	0.0

Total																						34.5
Mean	3.18	6.33		-0.01		79.7	91.87		61.40		-0.21	3.80	4.69		3.06		1018.02	1022.08			1013.60	
Max	8.56	10.93		5.91		96.9	98.20		94.50		4.60	5.31	6.82		4.05		1034.33	1035.80			1032.50	
Min	0.55	1.74		-4.05		61.0	68.93		41.69		-5.96	2.42	2.69		2.10		998.03	1007.07			990.45	

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

## WINTER 2012/2013

Temperature (°C)						Rank in the past 131 years
Mean maximum	7.2	(-0.9)	51 <sup>st</sup> lowest			
Mean minimum	1.2	(-0.6)	58 <sup>th</sup> lowest			
Daily mean	4.2	(-0.8)	53 <sup>rd</sup> lowest			
Rainfall total (mm)	195.0	(116%)	35 <sup>th</sup> highest			
Sunshine total (hours)	187.1	(95%)				
N° of:	Dry days	40 (-5)	Wet days	33 (+2)		
Days with:	Air frost	37 (+6)	Ground frost	60 (+9)	Snow falling	23 (+13) Snow lying 10 (+5)
Thunder	0 (-1)	Hail ≥5mm	0 (-1)	Small hail/ice	4 (+1)	Fog @09 GMT 5 (-1) Nil sun 34 (+5)
Air pressure MSL : Mean @09 GMT (mbar)	1013.3 (-3.3)					

Departure from 1981 to 2010 average shown in brackets.

Notes: **Cooler than Average and Wet, with Above Normal Sunshine.**

**Temperature:** Despite the mean this winter being 0.8° below average, it is the 2<sup>nd</sup> highest in the past 5 years, only 2012 being milder. In the longer term, the mean is 0.3° below the 131 year median. February was the coldest month, mean 3.3°, 1.6° below average, and December the mildest with a mean of 5.4°, 0.4° above average. Outbreaks of cold snowy weather occurred in both January and February, the most significant near mid-January when snow lay 12 cm deep on the 19<sup>th</sup> and did not thaw entirely until the 26<sup>th</sup>. There were 3 'ice' days in January, days when the temperature fails to reach 0.0°, these were the 16<sup>th</sup>, 18<sup>th</sup> and 20<sup>th</sup>. The season's highest temperature was 13.4° on the 29<sup>th</sup> January, 0.5° below the long-term median. The lowest temperature was -6.8° on the 22<sup>nd</sup> January, 0.7° above the median. The highest min was 9.1° on the 4<sup>th</sup> February, 0.8° below the median, and the lowest max was -1.7° on the 12<sup>th</sup> December, 1.4° below the median. The mean grass min of -1.4° is 0.2° below average, and the lowest grass min was -11.8° on the 22<sup>nd</sup> January. Mean earth temperature at 30 cm and 1m depth were 5.4° and 7.4° respectively, both around half a degree below normal. There were 319.2 hours with an air frost, about 9% above average. **Rainfall:** The total this winter is highest since 2010. At 42 mm above the long-term median, it is 7 mm inside the wet category. Since the turn of the millennium, 2001, 2003, 2007 and 2010 have, like this year, all had wet or very wet winters. December provided 53% of the season's total with its 103 mm, 165 % of the average, and that on top of the previous two wet months. February was the driest month with a total of 34.4 mm, and both January and February had below average rainfall. The highest daily fall was 21.3 mm on the 19<sup>th</sup> December, 3.7 mm above the median. The second half of December was notably wet, with the period 14<sup>th</sup> to the 31<sup>st</sup> having only 2 dry days and a rainfall total of 92.5 mm, 58.8 mm of which fell in 6 days ending on the 24<sup>th</sup>. The duration of measurable rain this season is 238.1 hours, 148 % of average. The highest rainfall rate was 30.5 mm/hr on the 30<sup>th</sup> January. Snow fell on the 5<sup>th</sup> and 7<sup>th</sup> of December, the 12<sup>th</sup> to 14<sup>th</sup> and 17<sup>th</sup> to 25<sup>th</sup> of January, the 9<sup>th</sup> to 13<sup>th</sup> and 22<sup>nd</sup> to 25<sup>th</sup> of February. On the days with more than 50% snow cover at 0900 GMT, the depth was, (date/depth cm): Jan 14/1, 18/1, 19/12, 20/9, 21/8, 22/6, 23/7, 24/4, 25/3, and Feb 11/1. Small hail occurred on the 16<sup>th</sup> December and other days with ice precipitation were 19<sup>th</sup> and 24<sup>th</sup> of January and the 23<sup>rd</sup> February. A rainfall surplus, compared with the long-term average, of 195 mm built up in the 12 months to the end of February. There were 3 dry spells, one of 5 days ending on the 12<sup>th</sup> December, one of 7 days ending on the 7<sup>th</sup> January and one of 11 days ending on the 24<sup>th</sup> February. **Sunshine:** The total this winter is 3<sup>rd</sup> lowest since 2000, the first year of use of the present type of detector. December, especially the first half, was quite sunny, with a daily mean 44% above average, but January was particularly dull, 43% below average, and two periods with almost no sunshine, from the 2<sup>nd</sup> to the 8<sup>th</sup> and the 16<sup>th</sup> to the 25<sup>th</sup>. February ended up a little below average, but only by dint of 4 sunny days, there also being two periods with next to no sunshine, from the 9<sup>th</sup> to the 13<sup>th</sup> and 21<sup>st</sup> to the 26<sup>th</sup>. The 18<sup>th</sup> February was the sunniest day of the season with 9.7 hours. Overall there were 63 days with <3 hours, 10 days with =>6 hours and 2 with =>9 hours. **Wind:** The overall mean wind speed of 7.8 mph is close to the 25 year average. The 30<sup>th</sup> January was the windiest day, mean 15.1 mph, and the season's highest gust of 51 mph was also on that day. The least windy day was the 19<sup>th</sup> February, mean speed 2.0 mph, and there were 1100 minutes, (18.3 hours), of calm. Daily mean direction/number of days: N,7 NE,14 E,8 SE,2 S,8 SW,27 W,14 NW,10. Compared with average, winds from NE&E were 5.0% more frequent, also from W&NW were 7.6% more frequent, at the expense of SE, S&SW winds combined, down 12.5%. **Humidity:** The overall mean relative humidity was 84.5%, and the lowest value was 42% on the 17<sup>th</sup> February. The mean water vapour content per kg of air was 4.5g at 0900 GMT and 4.6g at 1500 GMT. **Pressure:** The season's highest pressure was 1038.6 mbar on the 14<sup>th</sup> January, and the lowest was 974.2 mbar on the 14<sup>th</sup> December.

**December:** Very wet with near average temperature, and quite sunny. The lowest max is 8<sup>th</sup> lowest in 101 years, and giving the coldest December day since 1991. Wettest since 2009. 6 fewer dry days than average. Month's lowest pressure is lowest since 1989.

**January:** Very dull with below average temperature and near normal rainfall, plus a cold and snowy episode. Coldest January since only 2010. 12 days with snow falling and 9 with snow lying, max depth 12cm. Eden snow index of 51 is 2<sup>nd</sup> highest for January since 1982.

**February:** Cold with below average rainfall and sunshine. Coldest February since 1996. The highest max is lowest since 1993. The highest min is lowest since 1986. Snow fell on 9 days but lay only on 1, max depth 1 cm on the 11<sup>th</sup>.

Month	Mean Max	Anom	Mean Min	Anom	Rain mm	Anom	Sun hrs	Anom	Wind Mn mph	Max gust	Mean pressure	Anom
December	8.8°	+0.8°	1.9°	-0.2°	103.1	165%	79.2	144%	8.1	44	1008.0	-7.7
January	6.3°	-1.5°	1.5°	-0.3°	57.5	93%	35.7	57%	7.6	51	1014.0	-2.7
February	6.6°	-1.6°	0.1°	-1.4°	34.4	80%	72.2	93%	7.7	41	1018.4	+1.0



## 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, 1<sup>st</sup> January to 31<sup>st</sup> 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  $-0.1^{\circ}\text{C}$  or below. A ground frost day is recorded when the grass minimum temperature read at 0900 GMT on that day is  $-0.1^{\circ}\text{C}$  or lower.

Duration of air frost is defined as the number of minutes that the AWS one minute average temperature is below  $0.0^{\circ}\text{C}$ , 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 =  $360^{\circ}$  and  $22.5^{\circ}$  either side.

NE = NorthEast =  $045^{\circ}$  and  $22.5^{\circ}$  either side.

E = East =  $090^{\circ}$  and  $22.5^{\circ}$  either side.

SE = SouthEast =  $135^{\circ}$  and  $22.5^{\circ}$  either side.

S = South =  $180^{\circ}$  and  $22.5^{\circ}$  either side.

SW = SouthWest =  $225^{\circ}$  and  $22.5^{\circ}$  either side.

W = West =  $270^{\circ}$  and  $22.5^{\circ}$  either side.

NW = NorthWest =  $315^{\circ}$  and  $22.5^{\circ}$  either side.

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

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

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

## Appendix 2.

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

**VV** : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

**RH** : Relative humidity at 1.2m, %.

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

**ppp** : 3 hour pressure tendency in tenths of a millibar

**ww** : Present weather code figures, 00 to 99.

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

**Cl :** Type of low cloud

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

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

**Cm :** Type of medium cloud.

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

**Ch :** Type of high cloud

0 = No high cloud

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

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

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

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

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

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

7 = Veil of Cirrostratus covering the celestial dome.

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

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

/ = Types of high cloud invisible owing to darkness, fog, blowing dust 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.