

# 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 2010

Temperature (°C / °F)			Anomaly	Rank in the past 129 years			
Mean maximum	8.8	47.8	-1.7	23 <sup>rd</sup> lowest			
Mean minimum	2.7	36.9	-1.0	46 <sup>th</sup> lowest			
Daily mean	5.8	42.4	-1.3	31 <sup>st</sup> lowest			
Highest maximum	18.5	65.3	on 4 <sup>th</sup>	Lowest maximum	0.7	33.3	on 28 <sup>th</sup>
Highest minimum	14.0	57.2	on 5 <sup>th</sup>	Lowest minimum	-7.1	19.2	on 28 <sup>th</sup>
Mean grass minimum	-0.5	31.1	-1.5	Lowest grass minimum	-11.5	11.3	on 28 <sup>th</sup>
Mean earth @30 cm	9.0	48.2	0.0	Earth @100 cm	11.6	52.9	
Frost duration (hrs)	114.7			Rain duration (hrs)	42.5*		
Rainfall total (mm / in)	46.7	1.84	76 %	45 <sup>th</sup> lowest			
Highest daily fall	12.2	0.48	on 8 <sup>th</sup>				
Number of: Dry days (<0.2mm)	15	Wet days (>0.9mm)	10	days ≥5mm	3		
Sunshine total (hrs) 72.7	Daily mean	2.42	90 %	Sunniest day	8.1	on 10 <sup>th</sup>	
N <sup>o</sup> days with: Air frost 11	Ground frost	17	Snow falling	3	Snow lying	1	
Thunder 0	Hail ≥5mm	0	Small hail/ice	0	Fog @09	3	Nil sun 7
Air pressure MSL : Mean @09 GMT (mbar/in)	1006.3		-8.9	29.72			
Absolute highest	1022.9			30.21		on 16 <sup>th</sup>	
Absolute lowest	964.9			28.49		on 8 <sup>th</sup>	

Anomaly = departure from 1971 to 2000 average (degrees C, percent and mbar). \* Excludes snowfall on 29<sup>th</sup> and 30<sup>th</sup>.

Notes: **Cold with Below Normal Rainfall and Sunshine.**

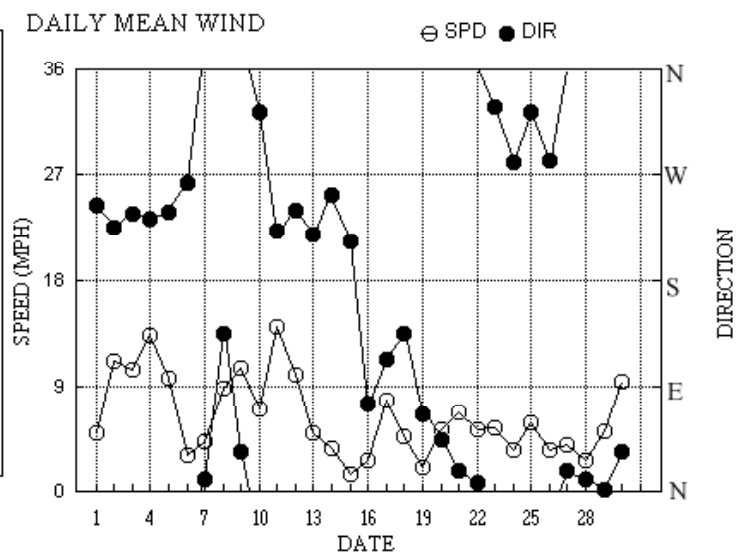
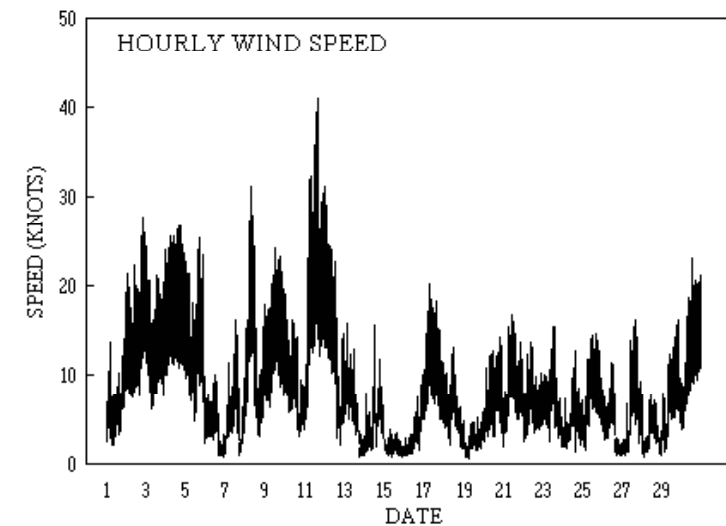
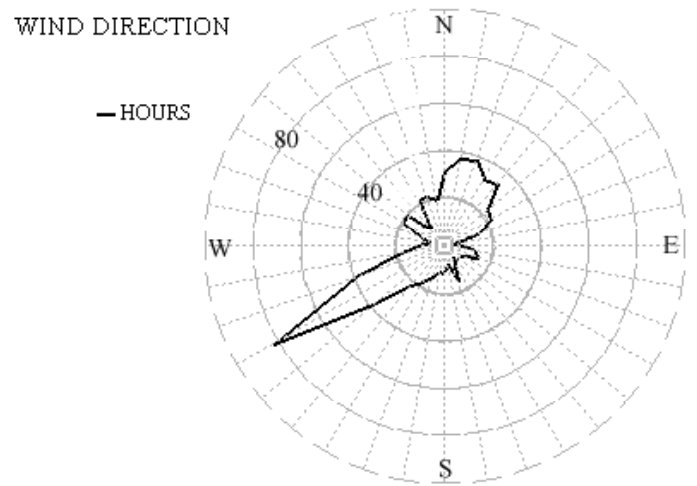
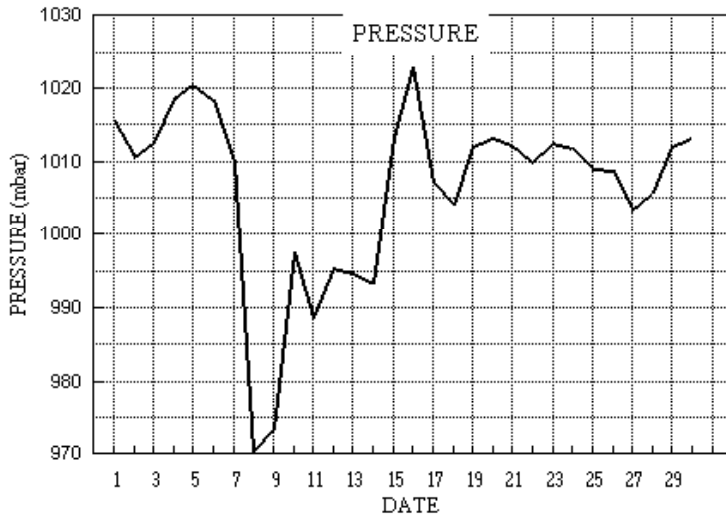
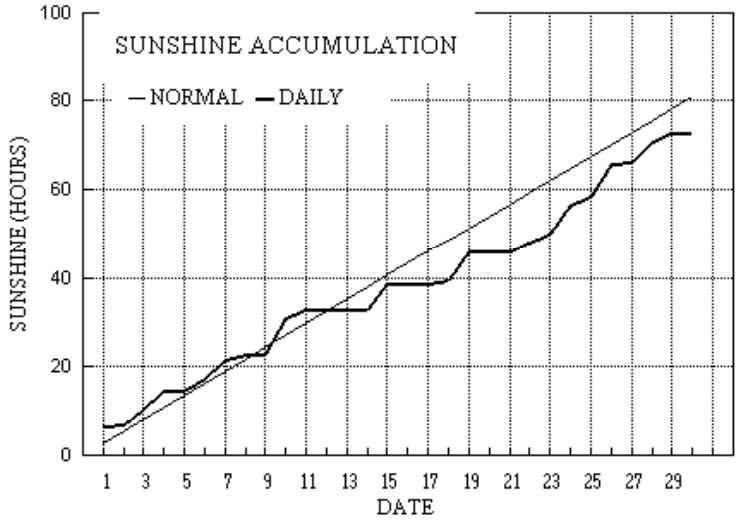
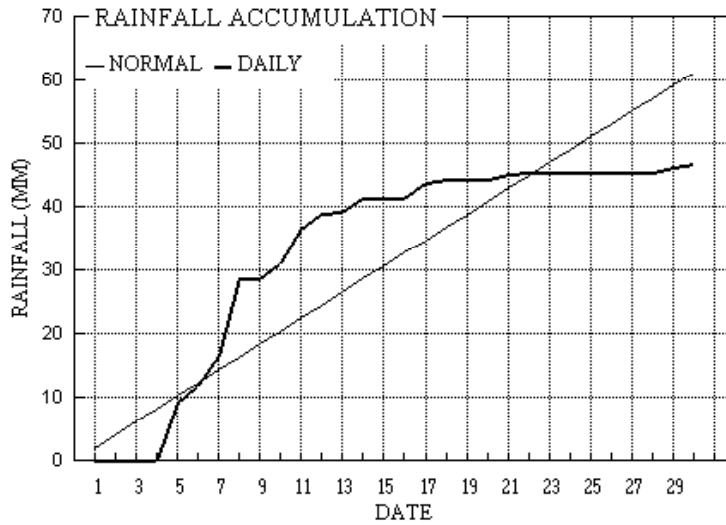
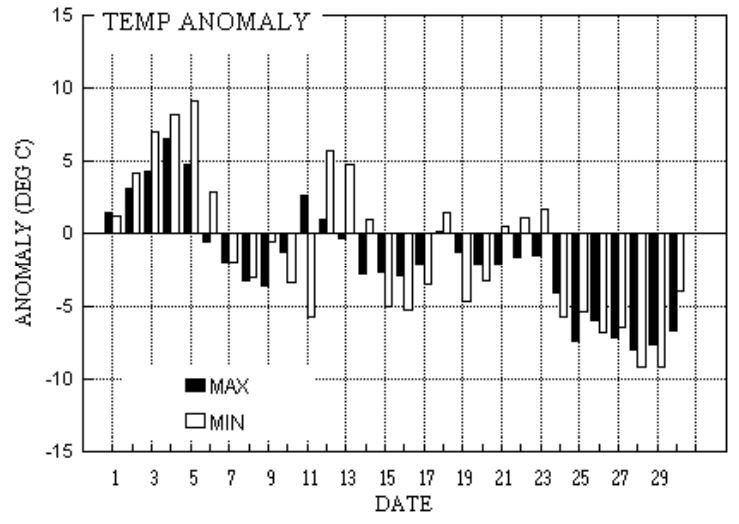
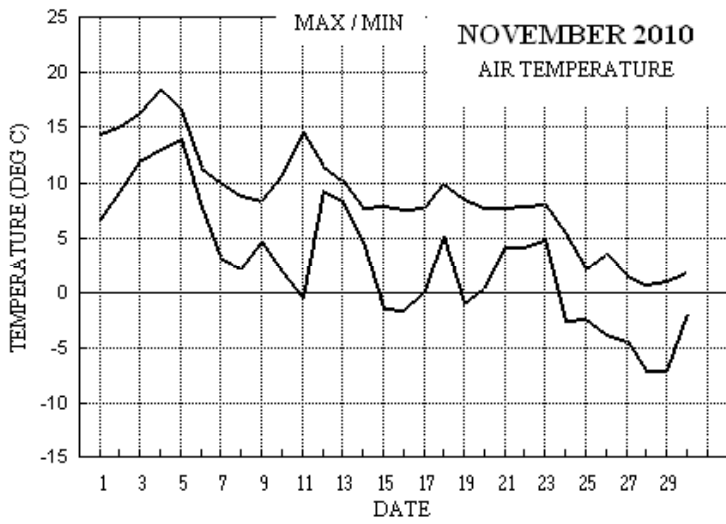
**Temperature:** This has been a remarkable month for extremes, with a mild spell at the start and turning very cold for the final week. The mean max and the overall mean are lowest since 1993, while the mean min is lowest only since 2005. The highest max has been exceeded once, in November 1938, although it was equaled in 1946. The lowest max is 3<sup>rd</sup> lowest in 98 years, and lowest since 1956. The highest min is 3<sup>rd</sup> highest in 98 years and highest since 1996 while the lowest min is 6<sup>th</sup> lowest in 107 years and lowest since 1989. The highest daily mean of 15.8° is highest since before 1976, while the lowest value of -3.2° is lowest in the same period. The lowest grass min is lowest since 1989. Mean earth temperatures at both 30 cm and 1 m depths are close to normal. Air frost duration is 70.9 hours above average, but was exceeded in 2005 and 1993 in the past 30 years. **Rainfall:** This has been quite a dry November overall, driest since 2005, with the most of the rainfall occurring between the 5<sup>th</sup> and the 12<sup>th</sup>. Small amounts of snow fell on the 27<sup>th</sup>, 28<sup>th</sup> and 30<sup>th</sup>, with snow lying on the latter date, but less than 1 cm depth. The number of dry days is equal to the average, and there was a dry spell of 7 days ending on the 28<sup>th</sup>. No thunder was heard, but a violent rain shower on the 11<sup>th</sup> gave the month's highest rainfall rate of 85 mm/hr. **Sunshine:** The total was not far below average, with less than in 2009 but more than in 2008. The period 12<sup>th</sup> to 21<sup>st</sup> contained 5 sunless days and only 2 with more than 1.1 hours. Overall there were 20 days with <3 hours and 5 with =>6 hours. **Wind:** The mean wind speed of 6.3 mph is exactly average, but is lowest since 2007. The 11<sup>th</sup> was the windiest day, mean 14.1 mph, and the month's highest gust of 47 mph was also on that day. The 15<sup>th</sup> was the least windy day, mean 1.5 mph, and there were 997 minutes (16.6 hours) with a mean speed of 0.5 mph or less. Daily mean direction/number of days: N,6 NE,4 E,1 SE,3 S,0 SW,9 W,4 NW,3. **Humidity:** The overall mean relative humidity was 87.8 % with the lowest value recorded 44 % on the 10<sup>th</sup>. The mean water vapour content per kg of air was 5.3 g at 0900 GMT and 5.4 g at 1500 GMT. **Pressure:** The absolute lowest pressure this month is lowest for November since before 1976. **Miscellaneous:** Fog was frequent between the 11<sup>th</sup> and 16<sup>th</sup>, and persisted all day on the 16<sup>th</sup>. Patches also persisted for most of the 19<sup>th</sup>. **Commentary: From the 1<sup>st</sup> to the 5<sup>th</sup>:** Temperatures were above normal, with a daily anomaly of +6.5° for the max on the 4<sup>th</sup>, and +9.1° for the min on the 5<sup>th</sup>. Mostly dry but wet on the 5<sup>th</sup>. Sunshine near normal. Winds were SW'ly, moderate or fresh. **From the 6<sup>th</sup> to the 23<sup>rd</sup>:** Temperatures were mostly below normal, with daily anomalies for max between -3.6° on the 9<sup>th</sup> to +2.6° on the 11<sup>th</sup>. For daily min, the anomalies ranged between -5.7° on the 11<sup>th</sup> and +5.7° on the 12<sup>th</sup>. It was wet at first, with just one dry day up to the 15<sup>th</sup>, then much drier. Sunshine was near normal up to the 10<sup>th</sup>, then mostly below. Light W'ly wind on the 6<sup>th</sup> became fresh SE'ly on the 8<sup>th</sup>, backing moderate NW'ly by the 10<sup>th</sup>, increasing strong SW'ly on the 11<sup>th</sup>, dropping light by the 13<sup>th</sup>, becoming light or moderate E'ly on the 16<sup>th</sup>, backing N'ly by the 22<sup>nd</sup>. **From the 24<sup>th</sup> to the 30<sup>th</sup>:** This period was very cold, with daily anomalies for max in the range of -4.1° on the 24<sup>th</sup> to -7.9° on the 27<sup>th</sup>, and anomalies for min between -3.9° on the 30<sup>th</sup> to -9.1° on the 28<sup>th</sup> and 29<sup>th</sup>. Dry until the 29<sup>th</sup>, then 1.5 mm of melted snow. Sunny on the 24<sup>th</sup>, 26<sup>th</sup> and 28<sup>th</sup>. Mainly light winds were W'ly on the 24<sup>th</sup>, veering N'ly on the 27<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 30 <sup>th</sup>			
+1.0	+2.4°	152 %	115 %	-1.0°	-1.4°	64 %	56 %	-5.2°	-4.3°	10 %	100 %

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

# Wokingham Climatological Graphs for November 2010



Month: November 2010

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	14.5	6.6	0.1	1.4	11.3	12.7	6.6	0.0	1015.5	0 0 0 0	0 0 0 0	0 0 0 0	245	2.7	4.3	209	20	2319	215	8	23	0.5	
2	15.1	9.1	tr	3.5	11.3	12.7	0.5	0.0	1010.7	0 0 0 0	0 0 0 0	0 0 0 0	225	9.5	9.7	207	28	2019	228	14	23	0.0	
3	16.3	11.9	0.0	9.1	11.7	12.7	3.3	0.0	1012.4	0 0 0 0	0 0 0 0	0 0 0 0	237	8.8	9.0	220	25	0050	227	12	01	0.0	
4	18.5	13.1	tr	13.1	12.2	12.7	4.3	0.0	1018.6	0 0 0 0	0 0 0 0	0 0 0 0	232	11.6	11.6	224	27	1508	235	13	06	0.2	
5	16.7	14.0	9.2	12.3	12.6	12.8	0.1	0.0	1020.5	0 0 0 0	0 0 0 0	0 0 0 0	238	7.7	8.3	263	26	1724	236	11	00	6.1	
6	11.4	7.8	2.7	4.2	12.9	13.0	2.5	0.0	1018.4	0 0 0 0	0 0 0 0	0 0 0 0	264	1.8	2.6	287	10	1230	320	5	13	2.8	
7	10.1	3.3	4.4	-0.9	12.0	13.1	4.6	0.0	1009.9	0 1 0 0	0 0 0 0	0 0 0 0	10	1.8	3.6	27	16	1358	23	7	12	3.2	
8	8.8	2.2	12.2	-2.1	11.0	13.1	1.0	0.0	970.2	0 1 0 0	0 0 0 0	0 0 0 0	134	6.2	7.6	142	31	0719	136	13	09	8.6	
9	8.4	4.7	0.1	-0.3	10.4	12.9	0.0	0.0	973.4	0 1 0 0	0 0 0 0	0 0 0 0	34	8.8	9.1	32	25	1252	32	12	14	0.7	
10	10.7	1.8	2.4	-0.5	10.1	12.7	8.1	0.3	997.6	0 1 0 0	0 0 0 0	0 0 0 0	324	3.9	6.1	6	19	0118	1	8	02	4.0	
11	14.6	-0.5	5.3	-5.7	9.1	12.5	2.0	0.0	988.6	1 1 0 0	0 0 0 0	0 0 0 0	223	10.9	12.2	265	41	1651	250	17	14	2.7	
12	11.5	9.3	2.6	7.0	9.6	12.2	0.0	0.0	995.3	0 0 0 0	0 0 0 0	0 0 0 0	240	8.6	8.6	250	31	0134	245	14	02	3.6	
13	10.2	8.4	0.2	6.2	9.9	12.1	0.1	0.0	994.7	0 0 0 0	0 0 0 0	0 0 0 0	220	3.7	4.3	233	16	0352	227	7	03	0.6	
14	7.7	4.6	2.0	1.9	9.8	12.0	0.0	0.0	993.2	0 0 0 0	0 0 0 1	0 0 0 1	253	2.3	3.2	303	16	1253	305	7	13	2.2	
15	7.9	-1.4	0.2	-5.5	9.3	11.9	5.5	9.3	1013.1	1 1 0 0	0 0 0 1	0 0 0 1	213	0.2	1.3	202	5	0041	207	3	00	0.0	
16	7.6	-1.6	tr	-5.1	8.4	11.7	0.0	8.8	1022.7	1 1 0 0	0 0 0 1	0 0 0 1	75	1.5	2.2	102	10	2311	107	6	22	0.0	
17	7.7	0.1	2.2	-1.8	8.3	11.5	0.0	0.0	1007.0	0 1 0 0	0 0 0 0	0 0 0 0	113	6.6	6.8	124	20	0756	128	9	08	5.0	
18	10.0	5.1	0.6	3.6	8.4	11.3	1.1	0.0	1004.0	0 0 0 0	0 0 0 0	0 0 0 0	134	3.3	4.1	151	13	1300	157	6	13	0.7	
19	8.6	-1.0	0.1	-3.7	8.4	11.2	6.2	3.9	1011.9	1 1 0 0	0 0 0 0	0 0 0 0	66	1.2	1.8	85	6	1851	94	3	18	1.0	
20	7.7	0.4	0.0	-2.7	7.9	11.0	0.0	0.0	1013.3	0 1 0 0	0 0 0 0	0 0 0 0	44	4.4	4.5	19	14	2138	30	7	17	0.0	
21	7.7	4.1	0.8	0.9	8.2	10.9	0.1	0.0	1012.2	0 0 0 0	0 0 0 0	0 0 0 0	17	5.8	5.8	16	17	1206	17	9	12	0.3	
22	7.9	4.2	0.1	1.5	8.3	10.8	2.0	0.0	1009.9	0 0 0 0	0 0 0 0	0 0 0 0	7	4.5	4.5	12	14	1027	18	7	10	0.3	
23	8.0	4.8	0.0	3.0	8.3	10.7	2.0	0.0	1012.5	0 0 0 0	0 0 0 0	0 0 0 0	328	4.3	4.7	307	16	1305	323	7	13	0.0	
24	5.4	-2.6	0.0	-7.4	7.9	10.6	6.4	6.5	1011.8	1 1 0 0	0 0 0 0	0 0 0 0	281	2.7	3.1	313	13	1508	313	5	13	0.0	
25	2.2	-2.3	0.0	-6.7	7.1	10.5	2.1	6.8	1009.0	1 1 0 0	0 0 0 0	0 0 0 0	324	4.8	5.1	334	15	1628	336	8	11	0.0	
26	3.6	-3.7	tr	-8.7	6.4	10.3	7.5	17.9	1008.7	1 1 0 0	0 0 0 0	0 0 0 0	282	2.5	3.0	332	12	1232	306	5	13	0.0	
27	1.5	-4.4	tr	-8.4	5.7	10.1	0.1	18.8	1003.3	1 1 1 0	0 0 0 0	0 0 0 0	18	2.8	3.4	25	16	1739	18	7	18	0.0	
28	0.7	-7.1	tr	-11.5	5.2	9.8	4.8	23.3	1005.7	1 1 1 0	0 0 0 0	0 0 0 0	10	2.0	2.3	10	8	1206	22	4	12	0.0	
29	1.0	-7.1	1.0	-11.4	4.6	9.5	1.8	14.5	1012.1	1 1 0 0	0 0 0 0	0 0 0 0	2	4.1	4.4	355	16	2041	2	7	19	xx	
30	1.9	-1.9	0.5	-1.4	4.3	9.1	0.0	4.6	1013.1	1 1 1 1	0 0 0 0	0 0 0 0	34	8.1	8.2	34	23	1448	31	11	23	xx	
Total			46.7				72.7	114.7															42.5
Mean	8.8	2.7		-0.5	9.0	11.6	2.42	3.8	1006.3					272	1.1	5.5							
Anom	-1.7	-1.0	76%	-1.5	+0.0	-0.2	90%		-8.9														
Daily mean		5.8																					
Anom		-1.3																					

Number of days with:

Air frost = 11      Ground frost = 17      Nil sun = 7  
Snow falling = 3      Snow lying = 1      Thunder = 0  
Hail=>5mm = 0      Hail<5mm or ice = 0      Fog at 09GMT = 3

## 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, &lt;.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 =&gt;5mm. Ic = Hail &lt;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 1971-2000 climatological average.

All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for November 2010

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1	W2	Nh	Cl	h	Cr	Ch	NChs	NChshs	NChshs	Date	Remarks	
1	58	6	26	03	05	10.1	8.5	90	6.9	1015.5	2	020	05	1	1	6	5	3	/	1	81708	86618	1	1Sc12 /Ci75	
2	63	8	23	08	16	12.0	9.2	83	7.2	1010.7	2	018	02	2	2	4	0	9	3	7	84368	88275	2	COTRA	
3	72	7	24	07	16	13.2	9.9	80	7.5	1012.4	2	033	02	2	2	1	0	9	3	1	81368	87080	3	COTRA Parhelion	
4	70	7	23	11	23	15.3	11.7	79	8.5	1018.6	1	021	02	2	2	1	1	5	4	1	81820	87075	4	1Ac57 COTRA Cu fra	
5	82	7	24	08	18	15.9	13.8	88	9.7	1020.5	1	007	03	5	2	7	5	3	/	1	81708	86656	5	2Sc50 /Ci75 COTRA	
6	60	7	24	03	07	9.1	8.4	96	6.8	1018.4	2	009	10	1	1	7	5	3	/	1	81708	86615	85645	6	/Ci75
7	50	3	35	04	08	4.0	3.2	95	4.8	1009.9	1	011	10	6	1	1	8	6	7	2	81830	83068	7	1Sc50 1Ac62 1As64 Cu med	
8	58	8	14	13	30	5.6	4.0	89	5.3	970.2	7	054	63	6	6	7	5	4	2	/	81710	87612	88520	8	
9	62	8	04	08	17	7.8	7.2	96	6.6	973.4	2	034	21	6	2	8	5	3	/	/	83708	87615	88630	9	
10	82	1	32	06	12	3.4	-1.4	71	3.5	997.6	2	031	02	0	0	1	5	6	0	0	81645		10	10	
11	56	8	20	12	31	10.5	9.4	93	7.5	988.6	7	061	61	6	6	7	7	3	2	/	82708	87712	88520	11	
12	68	7	24	10	21	10.3	5.9	74	5.9	995.3	1	021	25	8	2	3	8	5	7	/	81820	83625	86368	12	3Ac65 Cu fra jpNW
13	86	7	23	07	12	8.6	6.5	87	6.2	994.7	3	007	14	2	2	1	5	4	7	/	81712	87465		13	1Sc35 1Ac62 As op vir Cld edge NNW
14	03	7	31	02	04	6.1	5.8	98	5.8	993.2	1	013	44	4	4	5	6	0	3	/	85701			14	/Ac62
15	02	5	20	01	03	-0.2	-0.4	99	3.7	1013.1	2	026	44	4	4	0	0	9	0	2	85070			15	Hoar mod/Rime slt
16	01	0	12	01	03	0.1	0.0	100	3.8	1022.7	2	015	42	4	4	0	0	9	0	0				16	Rime slt
17	67	8	13	08	17	7.3	4.4	82	5.2	1007.0	7	007	03	2	2	7	5	4	2	/	82618	87630	88556	17	
18	40	6	07	02	06	6.7	6.2	97	6.0	1004.0	2	006	10	2	2	6	5	2	3	/	84705	85625		18	/Ac58
19	20	5	06	02	03	0.9	0.8	99	4.0	1011.9	1	015	40	4	1	2	0	9	1	1	82465	84078		19	COTRA jf N&NW Hoar slt
20	50	8	06	06	12	6.7	6.6	99	6.0	1013.3	1	007	60	6	2	8	5	3	/	/	86708	88612		20	
21	80	7	02	09	15	6.7	4.8	88	5.3	1012.2	0	005	02	2	2	7	5	4	/	/	87610			21	
22	58	7	01	06	11	5.7	4.2	90	5.1	1009.9	2	003	15	2	2	7	8	4	/	1	81818	87656		22	2Sc40 /Ci75 Cu med jpW
23	61	7	30	02	06	5.0	3.3	88	4.8	1012.5	3	007	14	2	2	7	0	9	7	/	82359	87362		23	Ac op du vir Anticrepuscular rays
24	57	7	27	02	04	0.5	-0.2	95	3.7	1011.8	2	001	10	1	1	2	0	9	7	2	81362	86070		24	2Ac65 COTRA Hoar mod
25	61	1	32	05	09	-0.2	-2.4	85	3.2	1009.0	3	006	01	1	1	1	6	4	0	0	81712			25	1Sc40 Hoar slt Gnd part frzn
26	65	5	26	04	07	-2.0	-4.0	86	2.8	1008.7	8	003	02	1	1	1	0	9	3	1	81365	85075		26	COTRA Hoar slt Gnd frzn
27	25	7	22	01	04	-1.6	-2.2	96	3.3	1003.3	3	006	70	7	2	7	5	3	/	/	85706	87615		27	Hoar mod Gnd frzn
28	58	6	29	01	03	-4.4	-5.4	93	2.6	1005.7	3	009	14	2	2	4	0	9	7	1	82362	83365	85070	28	Ac du vir Hoar mod Gnd frzn
29	59	4	36	03	06	-1.8	-3.8	86	2.9	1012.1	2	017	05	1	1	1	8	6	0	1	81835	83075		29	1Sc45 COTRA Hoar thk Gnd frzn
30	20	8	04	08	16	0.5	0.0	97	3.8	1013.1	2	005	70	7	2	8	7	3	/	/	87706	88710		30	Sn ly 0.5cm 90% Gnd frzn

Mean vis = 13.1 km

Mean cloud = 6.1 76%

Mean wind speed = 5.4 kn

Mean gust = 12 kn

Mean TT = 5.4 °C

Mean TdTd = 3.8 °C

Mean RH = 90.0 %

Mean r = 5.3 g/kg

Mean PPP = 1006.3 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 November 2010

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cl	NCh	shs	NCh	shs	NCh	shs	Date	Remarks
1	65	2	24	04	09	12.9	8.1	73	6.7	1014.7	6	007	02	0	0	1	1	4	0	1	81818						1	2Ci78 COTRA Cu fra	
2	66	7	23	09	20	14.6	9.2	70	7.3	1009.8	8	012	02	2	2	8	5	0	8	82822	87275					2	1Sc40 2Ci70 COTRA Cu hum		
3	82	7	23	10	17	15.5	10.6	72	7.9	1012.7	8	007	02	2	2	7	8	5	/	1	83820	87630				3	/Ci75 Cu hum		
4	63	7	23	13	26	16.4	12.7	79	9.1	1018.9	8	002	02	2	2	3	8	5	3	1	81820	83656	87080			4	2Ac65 Cu hum		
5	60	8	22	12	23	16.4	14.0	86	9.9	1017.8	7	024	50	5	2	8	5	3	/	/	81708	86615	88620			5			
6	84	7	01	03	07	10.2	3.7	64	4.9	1015.3	7	023	02	8	2	7	8	5	/	8	81825	87650				6	2Sc35 1Cs75 Cu med		
7	86	3	01	03	14	7.9	3.0	71	4.8	1006.3	7	025	02	1	1	3	8	5	0	0	81822	83645				7	Cu med		
8	75	4	26	06	15	8.5	5.1	79	5.7	965.7	5	003	15	6	5	2	8	4	3	2	82818					8	1Sc30 1Ac65 2Ci72 jpNE vv70k exNE		
9	80	7	03	12	22	7.6	5.3	85	5.7	979.7	2	031	60	6	2	7	8	4	/	/	85818	86625	87645			9			
10	84	1	31	06	13	6.9	-2.6	51	3.1	1001.7	2	028	02	0	0	1	5	7	0	0	81650					10	Absent vv&cld est		
11	58	5	25	16	35	13.5	6.9	64	6.3	983.3	5	004	15	8	6	5	9	5	/	1	82920	83640				11	1Cu25 1Ci70 jpNW&N Rainbow		
12	80	8	22	07	16	10.2	8.1	87	6.8	993.2	8	025	61	6	2	7	5	4	2	/	82715	86625	88550			12			
13	84	7	18	03	06	9.3	5.9	79	5.8	993.7	7	009	02	2	2	7	0	9	7	/	81363	87468				13	2Ac65 As edge NNW		
14	80	7	35	01	06	5.6	4.7	94	5.4	996.3	1	025	61	6	6	1	5	6	7	/	81640	87362				14	2As58		
15	75	1	34	02	03	6.7	5.2	90	5.5	1015.1	1	002	01	4	1	1	0	9	8	1	81365					15	1Ci70 Ac cas		
16	01	9	05	03	06	3.9	3.7	99	4.9	1019.8	7	022	45	4	4	9	/	/	/	/						16			
17	63	8	11	07	17	7.1	3.4	77	4.9	1004.6	6	011	60	6	2	7	5	4	2	/	82618	87625	88550			17			
18	75	7	16	05	10	9.5	8.2	91	6.8	1003.9	4	000	02	6	2	6	8	4	3	1	82815	84625				18	2Sc40 2Ac60 2Ci68 Cu med		
19	18	7	03	02	04	7.2	7.0	98	6.2	1011.7	6	005	40	1	1	6	8	6	0	1	81830	86650				19	/Ci75 Cu med jfNW vv10k SW		
20	59	8	05	03	10	7.2	6.7	97	6.1	1013.0	6	002	10	2	2	8	5	4	/	/	86710	88612				20			
21	84	7	02	08	15	6.7	3.2	78	4.8	1011.3	7	006	02	2	2	7	8	4	3	/	83815	86650				21	1Sc25 /Ac58 Cu fra/hum		
22	75	7	01	04	08	6.8	4.8	87	5.3	1009.5	7	001	25	8	2	5	8	4	7	/	82815	84640	87357			22			
23	78	7	35	05	15	6.9	2.0	71	4.4	1012.2	5	005	03	1	1	7	8	5	/	/	85822	83630				23	Cu hum Crepuscular rays		
24	78	7	28	05	10	4.8	0.4	73	3.9	1009.9	7	012	02	2	2	1	1	5	3	2	81820	87075				24	1Ac63 Absent vv&cld est		
25	75	7	32	06	13	1.8	-2.6	73	3.2	1008.9	6	002	02	2	2	7	5	5	/	/	83620	87628				25			
26	80	5	28	03	09	2.6	-3.8	63	2.9	1006.0	7	015	03	1	1	2	0	9	7	1	81362	84070				26	1Ac65 COTRA Hoar slt Parhalion		
27	70	7	01	08	15	1.0	-1.4	84	3.4	1004.1	4	000	03	2	2	7	5	4	3	1	83612	86625				27	/Ac65 /Ci70		
28	72	7	01	04	06	-0.4	-5.0	71	2.6	1006.0	4	000	02	2	2	2	0	9	7	1	82458	83068	86075			28	1Ac62 COTRA Hoar slt Gnd frzn		
29	63	7	01	05	11	0.6	-1.8	84	3.3	1012.1	6	006	01	2	2	7	5	4	/	/	81712	87615				29	Hoar slt Gnd frzn		
30	50	8	04	10	23	1.0	-1.2	85	3.5	1011.8	6	011	85	8	7	8	8	4	/	/	82715	86820	88630			30	vv 20kN Sonly 10% <1cm		
																											31		

Mean vis = 24.9 km  
 Mean cloud = 6.3 78%  
 Mean wind speed = 6.2 kn  
 Mean gust = 13 kn  
 Mean TT = 7.6 °C  
 Mean TdTd = 4.1 °C  
 Mean RH = 79.2%  
 Mean r = 5.4 g/kg  
 Mean PPP = 1005.6 mbar

See appendix 2 below for full code details

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

Wokingham	Hour	01-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
Sunshine	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hourly analysis	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	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
	7	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00
	8	0.25	0.00	1.00	0.87	0.02	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
	9	1.00	0.00	1.00	0.92	0.00	0.40	0.69	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.58	0.00
	10	0.80	0.00	0.04	0.47	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.08	0.00	0.71	0.00
	11	0.39	0.00	0.62	0.96	0.00	0.29	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.42	0.00
	12	0.99	0.00	0.63	0.29	0.00	0.00	0.69	0.00	0.00	0.62	0.00	0.00	0.00	0.00	0.72	0.00
	13	1.00	0.15	0.00	0.39	0.00	0.12	0.66	0.00	0.00	0.93	0.59	0.00	0.00	0.00	1.00	0.00
	14	1.00	0.26	0.00	0.25	0.00	0.09	0.55	0.31	0.00	1.00	0.99	0.00	0.00	0.00	1.00	0.00
	15	1.00	0.08	0.00	0.18	0.00	0.57	0.04	0.59	0.00	1.00	0.40	0.00	0.00	0.00	1.00	0.00
	16	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.20	0.00	0.00	0.00	0.00	0.08	0.00
	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot		<b>6.64</b>	<b>0.47</b>	<b>3.30</b>	<b>4.32</b>	<b>0.02</b>	<b>2.47</b>	<b>4.62</b>	<b>0.97</b>	<b>0.00</b>	<b>8.11</b>	<b>1.98</b>	<b>0.00</b>	<b>0.08</b>	<b>0.00</b>	<b>5.52</b>	<b>0.00</b>

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	0.06	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.02
8	0.00	0.27	0.95	0.00	0.00	0.55	0.00	0.46	0.45	0.96	0.00	0.00	0.88	0.00	0.25
9	0.00	0.56	1.00	0.00	0.00	0.35	0.00	0.62	1.00	1.00	0.00	0.32	0.92	0.00	0.38
10	0.00	0.00	1.00	0.00	0.00	0.64	0.32	1.00	0.61	1.00	0.00	1.00	0.05	0.00	0.36
11	0.00	0.00	1.00	0.00	0.00	0.46	0.19	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.31
12	0.00	0.04	1.00	0.00	0.01	0.00	0.30	1.00	0.00	1.00	0.04	1.00	0.00	0.00	0.28
13	0.00	0.01	0.99	0.00	0.00	0.00	0.93	1.00	0.00	1.00	0.05	1.00	0.00	0.00	0.33
14	0.00	0.02	0.11	0.00	0.02	0.00	0.25	1.00	0.00	1.00	0.00	0.49	0.00	0.00	0.28
15	0.00	0.25	0.07	0.00	0.00	0.00	0.00	0.29	0.00	0.53	0.00	0.00	0.00	0.00	0.20
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
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	<b>0.00</b>	<b>1.15</b>	<b>6.18</b>	<b>0.00</b>	<b>0.02</b>	<b>2.00</b>	<b>2.00</b>	<b>6.39</b>	<b>2.06</b>	<b>7.49</b>	<b>0.09</b>	<b>4.82</b>	<b>1.85</b>	<b>0.00</b>	<b>72.56</b>

November 2010	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	10.47	13.7	1339	6.7	1	86.8	97.3	6	70.0	1355	8.31	6.79	7.5	2226	5.9	1	1013.72	1015.9	1030	1009.5	6	0.0
2	13.17	15.1	1328	11.6	803	80.8	93.6	507	68.9	1405	9.92	7.60	9.0	500	7.0	1557	1009.70	1012.0	0	1007.1	2359	0.1
3	14.62	16.0	1935	12.4	705	78.7	87.0	319	63.1	1240	10.94	8.14	9.4	1919	6.4	1045	1011.78	1015.4	2334	1007.1	130	0.0
4	15.48	18.2	1211	14.0	2049	80.0	85.7	106	67.9	1150	12.03	8.67	9.3	125	8.2	718	1018.06	1020.0	2151	1014.8	40	0.0
5	14.51	16.7	1441	9.2	2358	89.3	95.8	2323	80.6	31	12.76	9.13	10.2	1356	6.8	2139	1018.72	1021.1	1045	1016.0	2055	8.0
6	8.19	11.2	1227	3.5	2320	88.3	96.9	2354	61.2	1514	6.25	5.92	7.3	1008	4.7	2320	1015.80	1018.6	829	1010.4	2347	0.3
7	4.97	9.6	1316	2.3	2017	90.9	97.4	144	69.9	1435	3.54	4.92	5.8	1316	4.3	1846	1005.88	1010.5	0	991.9	2359	2.3
8	6.23	8.7	1428	4.3	5	89.0	95.9	2054	70.8	524	4.53	5.48	6.6	1347	4.6	528	971.54	991.9	0	964.9	1323	5.8
9	6.74	8.2	1205	4.6	2343	89.6	96.8	755	79.2	1714	5.13	5.69	6.7	946	4.5	2340	977.09	989.2	2359	967.6	0	8.6
10	3.70	8.0	1224	-0.4	2044	71.7	84.8	42	44.5	1245	-1.16	3.56	4.6	1	2.9	1238	999.21	1005.8	2106	989.1	4	0.0
11	9.45	14.5	1219	0.4	0	78.9	93.7	1049	62.7	1427	5.91	6.10	9.3	1246	3.1	0	990.02	1004.7	0	982.2	1403	6.9
12	10.27	11.4	1036	9.2	2324	81.9	97.1	2150	68.4	144	7.21	6.47	7.8	1810	5.5	141	992.95	996.2	1049	988.9	0	2.6
13	8.20	10.2	1152	4.8	2022	88.9	96.5	2357	76.4	1401	6.44	6.12	7.4	103	5.2	2022	993.59	995.6	1037	991.4	2359	0.1
14	5.86	7.6	1236	2.9	2357	95.4	98.3	923	89.6	1333	5.19	5.59	6.4	1236	4.5	2357	996.45	1006.6	2357	991.1	128	2.0
15	1.34	6.9	1430	-1.1	351	97.5	99.6	2357	89.8	1507	0.98	4.10	5.7	1403	3.4	351	1014.15	1020.5	2359	1006.5	0	0.1
16	1.64	5.0	2319	-1.7	338	99.4	100.0	209	98.6	2358	1.56	4.26	5.4	2319	3.3	338	1019.66	1022.9	900	1012.9	2359	0.2
17	6.30	7.6	1134	4.6	5	88.3	98.9	2	76.5	1529	4.46	5.24	5.9	555	4.8	1614	1006.61	1012.9	0	1003.9	2359	2.1
18	6.72	10.0	1416	3.0	2336	95.2	98.5	2322	88.3	1054	6.02	5.88	7.0	1410	4.6	2336	1004.66	1008.3	2359	1003.2	417	0.5
19	2.79	8.0	1314	-0.8	740	98.9	100.0	809	96.7	1322	2.65	4.66	6.5	1314	3.6	740	1011.47	1013.1	2004	1008.1	0	0.2
20	5.81	7.6	1134	1.1	1	97.2	99.6	0	93.6	2106	5.41	5.58	6.3	1135	4.1	1	1013.15	1013.9	2209	1012.2	420	0.1
21	6.11	7.6	1242	4.0	31	87.9	96.9	122	76.5	1435	4.23	5.14	5.7	625	4.7	1553	1011.70	1013.4	6	1010.4	2359	0.0
22	5.74	7.5	1130	4.1	615	89.3	95.7	643	78.8	1135	4.10	5.10	5.5	1428	4.8	615	1010.01	1011.3	2316	1009.3	1422	0.8
23	5.32	8.0	1255	0.6	2356	82.5	94.5	2359	67.5	1304	2.55	4.57	5.0	617	3.6	2329	1012.21	1012.9	1027	1011.3	12	0.0
24	1.48	5.1	1305	-2.3	530	87.1	98.4	556	69.4	1308	-0.51	3.66	4.2	1105	3.1	531	1010.87	1012.7	6	1009.0	2359	0.1
25	0.55	2.1	1705	-2.2	404	81.1	94.9	416	71.5	1418	-2.37	3.20	3.6	505	3.0	336	1009.14	1010.5	2303	1008.1	548	0.0
26	-0.84	3.1	1257	-3.5	753	82.7	96.5	2347	60.9	1324	-3.56	2.94	3.2	1849	2.6	753	1007.25	1010.4	0	1004.2	2358	0.1
27	-1.59	1.5	1444	-4.2	338	90.5	97.9	348	77.8	2054	-2.97	3.09	3.7	1209	2.4	2342	1004.14	1005.5	2057	1002.6	546	0.0
28	-3.41	0.3	1336	-6.7	306	87.6	95.8	411	69.6	1406	-5.24	2.59	2.9	1202	2.2	306	1006.24	1009.4	2358	1004.4	455	0.0
29	-1.74	0.8	1625	-6.7	622	88.6	96.5	135	81.5	1629	-3.40	2.98	3.4	1401	2.2	622	1011.84	1013.4	2042	1009.3	0	0.0
30	0.36	1.7	1401	-0.9	2357	90.0	97.0	943	81.0	2242	-1.11	3.51	3.9	1031	2.9	2349	1012.21	1013.2	1005	1010.8	2343	0.2
Total																						41.1
Mean	5.62	8.40		2.42		87.8	95.92		75.04		3.66	5.22	6.18		4.30		1005.99	1010.26		1001.93		
Max	15.48	18.17		13.96		99.4	100.00		98.60		12.76	9.13	10.24		8.17		1019.66	1022.86		1015.96		
Min	-3.41	0.27		-6.72		71.7	84.80		44.47		-5.24	2.59	2.93		2.16		971.54	989.19		964.94		

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

# 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 2010

Temperature (°C)									Rank in the past 129 years
Mean maximum	14.3	(-0.4)							52 <sup>nd</sup> lowest
Mean minimum	6.3	(-0.4)							53 <sup>rd</sup> highest
Daily mean	10.3	(-0.4)							57 <sup>th</sup> lowest
Rainfall total (mm)	144.9	(76 %)							36 <sup>th</sup> lowest
Sunshine total (hours)	331.1	(98 %)							
N <sup>o</sup> of:									
	Dry days	50 (-1)		Wet days	28 (-1)				
Days with:	Air frost	15 (+7)	Ground frost	26 (0)	Snow falling	3 (+2)	Snow lying	1 (+1)	
Thunder	3 (0)	Hail ≥5mm	0	Small hail/ice	0	Fog @09 GMT	4 (-1)	Nil sun	16
Air pressure MSL : Mean @09 GMT (mbar)			1011.8						(-3.8)

Departure from 1971 to 2000 average shown in brackets.

Notes: **Dry with Temperature and Sunshine Near Normal**

**Temperature:** The mean max is lowest since 1993 but the mean min is lowest only since 2003. The resulting daily mean is also lowest since 1993. The highest max, 23.4° on the 22<sup>nd</sup> September, is 1.1° below the long-term median. The lowest max was 0.7° on the 28<sup>th</sup> November, 3<sup>rd</sup> lowest in 98 years after 1956 and 1923. It is also worth noting that this is one of only 3 autumns in the past 35 when the lowest max has been below 2.0°. The highest min, 16.1° on the 11<sup>th</sup> September is 0.9° above the median, and the lowest min, -7.1° on the 28<sup>th</sup> November, is 6<sup>th</sup> lowest in 107 years. The mean grass min, 3.3°, is 0.7° below normal and lowest since 2003. The lowest grass min, -11.5° on the 28<sup>th</sup> November, is lowest since 1989. Mean earth temperatures at both 30 cm and 1 m depth are a little below normal. There were 139 hours with air frost, 88.5 hours above normal and most since 1993. Compared with average, both September and October were close to normal but November was a cold month with an anomaly of -1.3°. The first ground frost of the season was on the 18<sup>th</sup> September, 92 days after the last one in spring. The first air frost was on the 17<sup>th</sup> October after 156 frost free days, compared with a normal 189 days. **Rainfall:** This has been quite a dry autumn with rainfall total 24 % below average, and driest since 1997. All three of the season's months had a deficit of rainfall, with September driest at 41 % below average, and October the wettest with 8 % below average. The duration of measurable rain (excluding snowfall in late November) was 122.7 hours, about 30 hours below normal. The wettest day was the 2<sup>nd</sup> October when 18.1 mm fell. The highest rainfall rate of 85 mm/hr was recorded on the 11<sup>th</sup> November. The number of dry days is close to average. There were a number of dry spells, one of 6 days ending on the 4<sup>th</sup> Sep, one of 7 days on the 21<sup>st</sup> Sep, one of 9 days on the 14<sup>th</sup> Oct and one of 7 days ending on the 28<sup>th</sup> Nov. Snow fell on the 27<sup>th</sup>, 28<sup>th</sup> and 30<sup>th</sup> November, with 0.5 cm lying at 0900 GMT on the 30<sup>th</sup>. Thunder was heard on the 7<sup>th</sup> and 23<sup>rd</sup> Sep, and the 19<sup>th</sup> Oct. **Sunshine:** The total this autumn is a little less than in 2009, but a little more than in 2008. Compared with the average for the past 12 years (when the current sunshine detector has been in use) there were 19 fewer hours sunshine, with each of the past 2 years also having less than average. September was the sunniest month with 138.8 hours, and November the least sunny with 72.7 hours. The number of days with nil sun is 1 more than average. The sunniest day was the 1<sup>st</sup> Sep with 13.1 hours, creating a new record for the past 32 autumns, the previous highest being 12.8 hours in 2003. Overall there were 48 days with <3 hours, 28 with =>6 hours, 10 with =>9 hours and 2 with =>12 hours. **Wind:** The overall mean wind speed of 6.1 mph is exactly average. November was the windiest month with a mean of 6.3 mph, and September the least windy, mean 5.8 mph. The windiest day was the 11<sup>th</sup> Nov, mean 14.1 mph, and the season's highest gust of 47 mph was also on that day. The least windy day was the 15<sup>th</sup> November, mean 1.5 mph, and there were 2853 minutes (47.5 hours) with a mean speed of 0.5 mph or less. Daily mean direction/number of days: N,10 NE,10 E,9 SE,3 S,13 SW,23 W,13 NW,10. Compared with the 23 year average, winds from between W through N to E were more frequent, (NW +3.1 %, N +2.2%), while those from between SE and SW were less frequent (SW -5.3%, SE -3.1%). **Humidity:** The overall mean relative humidity was 83.5 %. The lowest value was 38 % on the 20<sup>th</sup> October. The mean water vapour content per kg of air was 7.0 g at 0900 GMT and 6.6 g at 1500 GMT. **Pressure:** The lowest pressure recorded this autumn was 964.9 mbar on the 8<sup>th</sup> November, lowest for the season since 1987. The highest pressure was 1030.2 mbar on the 25<sup>th</sup> October.

**September:** Temperature and sunshine near normal, rainfall well below. The sunniest day a new record high for the month.

**October:** Temperature above normal, rainfall near normal, sunny. The lowest min equal second lowest with 1983 in the past 35 years. Only 3 sunnier Octobers since 1998.

**November:** Cold with below normal rainfall and sunshine. Coldest since 1993, yet the highest max has only been exceeded once in 107 years, in 1938. The lowest max is 3<sup>rd</sup> lowest in 98 years and lowest since 1956. The highest min is 3<sup>rd</sup> highest in 98 years while the lowest min is 6<sup>th</sup> lowest in the last 107 years. The highest daily mean of 15.8° is highest since before 1976 while the lowest, -3.2°, is lowest in the same period. The lowest grass min is lowest since 1989.

Month	Mean Max	Anom	Mean Min	Anom	Rain mm	Anom	Sun hrs	Anom	Wind Mn mph	Max gust	Mean pressure	Anom
September	19.0°	+0.1°	9.4°	-0.3°	36.8	59 %	138.8	96 %	5.8	38	1015.5	-1.0
October	15.2°	+0.4°	6.8°	+0.1°	61.4	92 %	119.6	104 %	6.1	32	1013.5	-1.7
November	8.8°	-1.7°	2.7°	-1.0°	46.7	76 %	72.7	90 %	6.3	47	1006.3	-8.9

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.



Change to the Wokingham Monthly Report pages.

With effect from the August 2010 report, page 6 containing RH statistics from the 1 minute AWS readings will be replaced with a page containing hourly values of sunshine for each day of the month, derived from the R&D electronic sunshine detector.

If any user of these reports has a requirement for the monthly table of RH statistics, they should notify me by e-mail to [b.j.burton@btinternet.com](mailto:b.j.burton@btinternet.com)

Bernard Burton 1 September 2010

## 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 1971 to 2000. 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 July 1999, in the type of instrument used to detect sunshine amount, making the climatological average based on the old instrument of little use. In general, the new instrument produces higher values in the winter half year, and lower ones in the summer half, than the old type, due to a combination of faster reaction and higher sensitivity than the old type. The average used in this case is based on a theoretical equivalent 1971 to 2000 average, drawn from comparison with the Met Office published tables of departure from climatological average sunshine in the months since 2000 for their area 'Southern England'. Users of the Wokingham Monthly Weather reports should be aware of this, and regard anomalies for sunshine published therein as a guide only, until such time has elapsed since the introduction of the new instrument that a genuine average becomes available.

**Mean:** The mean of the data under discussion, often the monthly mean of daily data. The mean is obtained by summation of the individual values and dividing by the number of values. The term 'daily mean' in respect of temperature is defined as '(max + min) / 2'. A true daily 24 hour (00 to 24 GMT) mean temperature is available from the Automatic Weather Station (AWS), and is currently published on page 7 of the Wokingham Monthly Weather report, on the Wokingham Weather web site, page 1. <http://www.woksat.info/www1.html>

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**Month:** Calendar month.

**Season:** Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

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

**Annual or Year:** The calendar year, 1<sup>st</sup> January to 31<sup>st</sup> December.

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

**Frost:** An air frost day is recorded when the minimum temperature read at 0900 GMT on that day is  $-0.1^{\circ}\text{C}$  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% snow cover at the 0900 GMT observation.

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

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

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

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

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

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

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

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

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

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

## Appendix 2.

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

**VV** : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

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

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

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

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

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

**Cl :** Type of low cloud

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

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

**Cm :** Type of medium cloud.

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

**Ch :** Type of high cloud

0 = No high cloud

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

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

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

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

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

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

7 = Veil of Cirrostratus covering the celestial dome.

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

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

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

**8 Groups**

**N** = Amount of cloud reported by C, okta.

**C** = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

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

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

00 to 50 = Height in hundreds of feet

51 to 55 Not used

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

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