

# 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

### DECEMBER 2014

Temperature (°C / °F)			Anomaly	Rank in the past 133 years				
Mean maximum	8.7	47.7	+0.7	40 <sup>th</sup> highest				
Mean minimum	1.8	35.2	-0.3	66 <sup>th</sup> lowest				
Daily mean	5.3	41.5	+0.3	49 <sup>th</sup> highest				
Highest maximum	13.1	55.6	on 18 <sup>th</sup>	Lowest maximum	3.9	39.0	on 30 <sup>th</sup>	
Highest minimum	10.9	51.6	on 18 <sup>th</sup>	Lowest minimum	-6.5	20.3	on 31 <sup>st</sup>	
Mean grass minimum	-1.5	29.3	-0.9	Lowest grass minimum	-10.4	13.3	on 29 <sup>th</sup>	
Mean earth @30 cm	7.3	45.1	+0.7	Earth @100 cm	9.8	49.6		
Frost duration (hrs)	111.6			Rain duration (hrs)	38.9			
Rainfall total (mm / in)	40.4	1.59	65 %	36 <sup>th</sup> lowest				
Highest daily fall	11.8	0.46	on 16 <sup>th</sup>					
Number of: Dry days (<0.2mm)	20	Wet days (>0.9mm)	8	days ≥5mm	3			
Sunshine total (hrs)	89.6	Daily mean	2.89	162 %	Sunniest day	7.3	on 6 <sup>th</sup>	
N <sup>o</sup> days with: Air frost	12	Ground frost	20	Snow falling	0	Snow lying	0	
Thunder	0	Hail ≥5mm	0	Small hail/ice	0	Fog @09	0	
Pressure MSL : Mean @09 GMT, mbar	1019.8	+4.1	Highest	1043.0	on 29 <sup>th</sup>	Lowest	991.2	on 12 <sup>th</sup>
Relative humidity : Mean (%)	84.7	Lowest	54	on 7 <sup>th</sup>	Water vapour (g/kg), mean at 09 and 15 GMT			
Overall mean wind speed (mph)	8.2	Windiest day	15.0	on 22 <sup>nd</sup>	Max gust	43	on 27 <sup>th</sup>	
Wind direction (days)	N 4	NE 1	E 0	SE 0	S 3	SW 18	W 4	NW 1
Least windy day (mph)	3.2	on 30 <sup>th</sup>	Calm; less than 0.5 mph (minutes)		193			

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

Notes:

#### Dry with Near Normal Temperature and Very Sunny

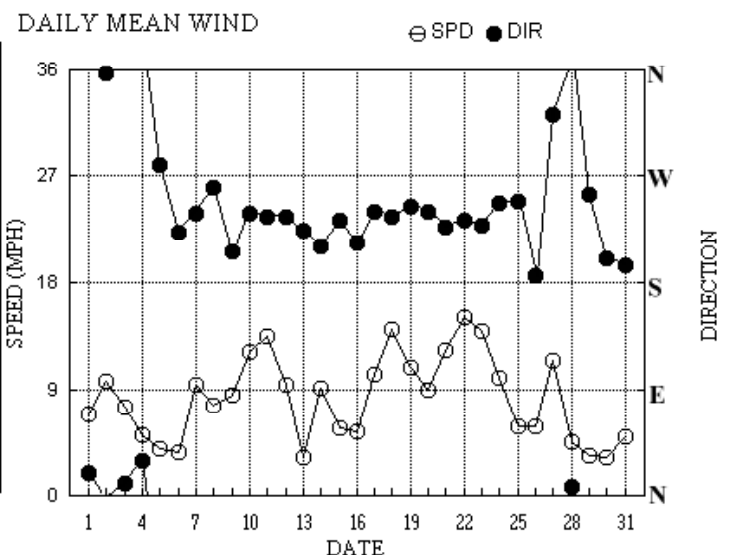
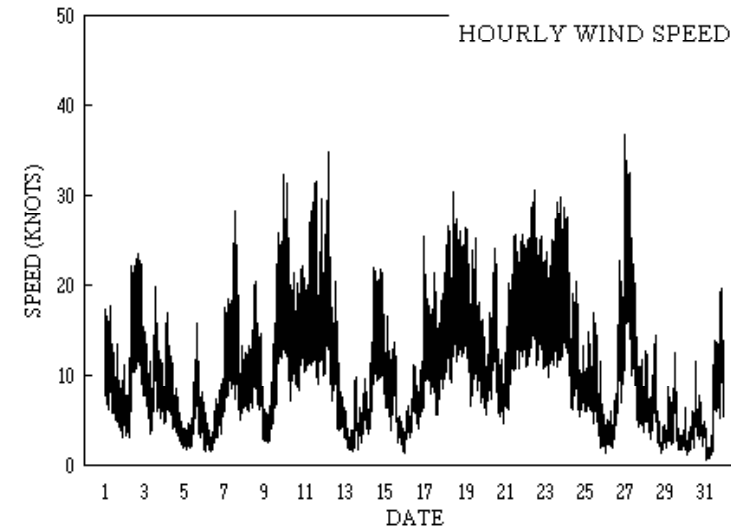
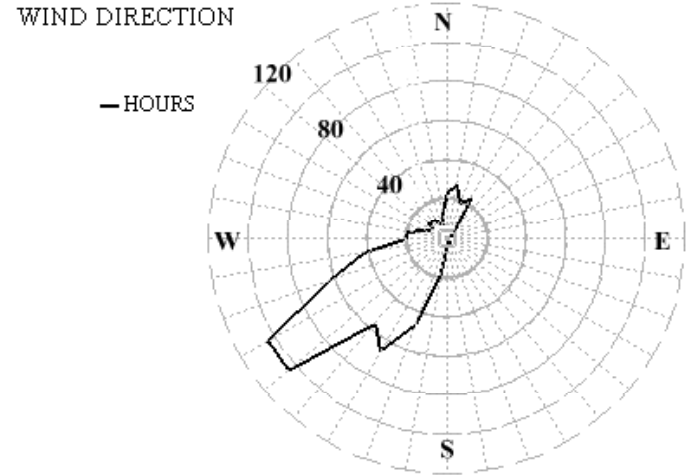
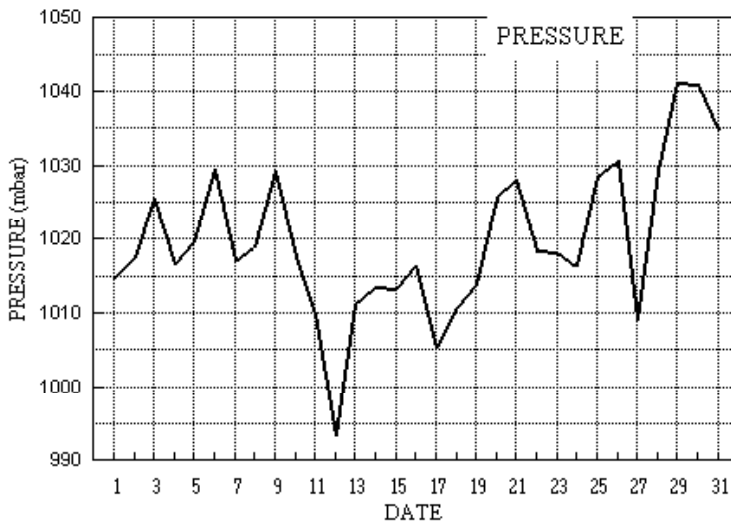
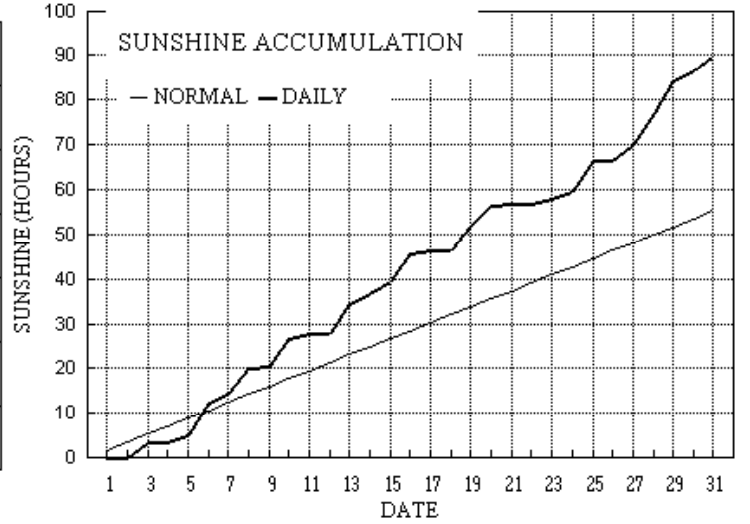
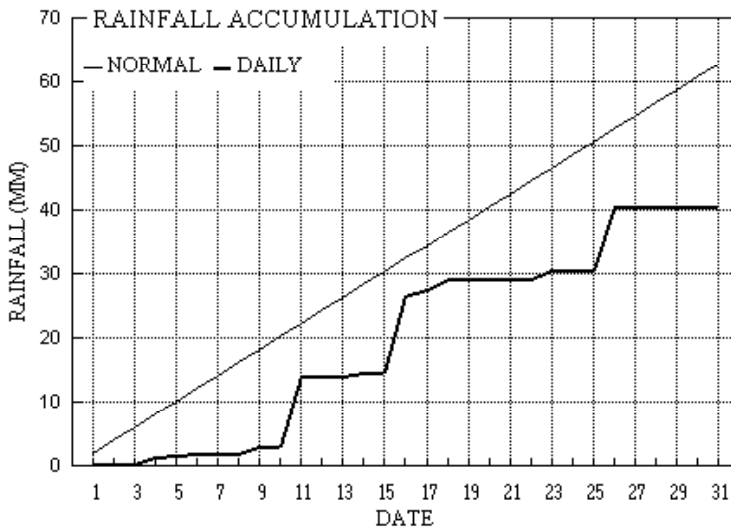
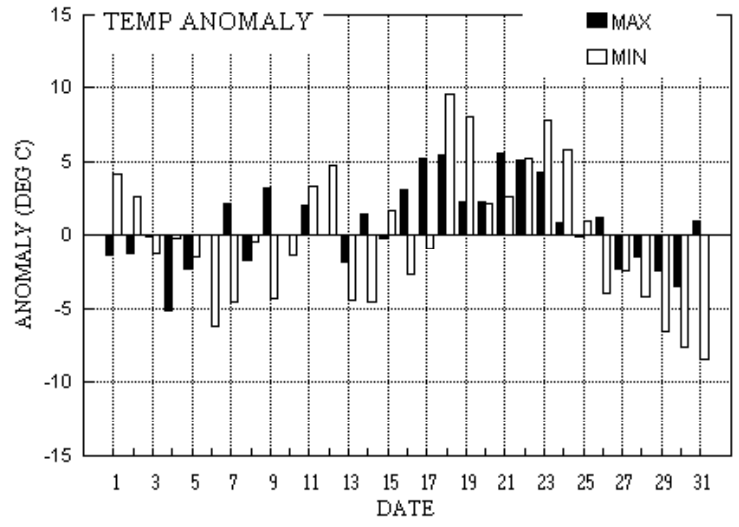
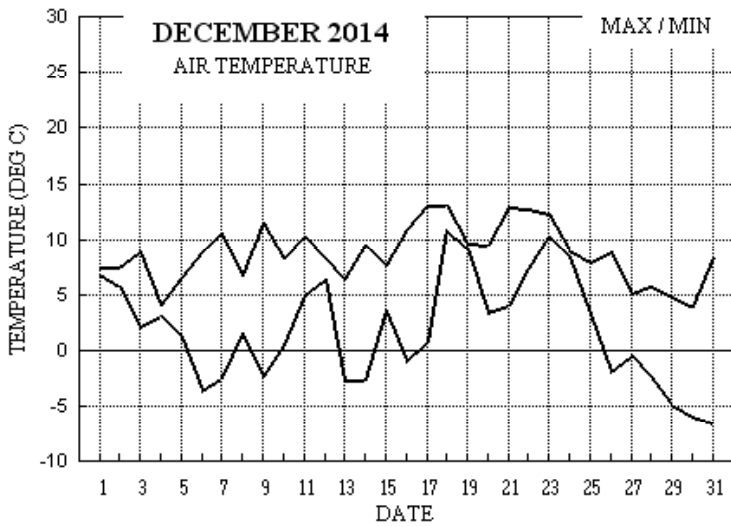
**Temperature:** Both daily maxima and minima were rather variable up to the 15<sup>th</sup>, with one cold day, the 4<sup>th</sup>, anomaly -5°, and 5 cold nights, anomalies between -4° and -6°, the latter on the 6<sup>th</sup>. A mild spell followed lasting until the 23<sup>rd</sup>, with anomalies for daily maxima near +5° on the 17<sup>th</sup>, 18<sup>th</sup>, 21<sup>st</sup> and 22<sup>nd</sup>. Anomalies for daily minima reached +9° on the 18<sup>th</sup>, and +8° on the 19<sup>th</sup> and 23<sup>rd</sup>. The final week was colder, especially by night when there were some sharp frosts, with anomalies for daily max near -3° on the 30<sup>th</sup>, and for daily min between -6° and -8° from the 29<sup>th</sup> to the 31<sup>st</sup>. This is only the 2<sup>nd</sup> month this year to not be in the mild or very mild category. Compared with recent years this December is coldest since 2010, but there have been 7 colder in this millennium. The highest maximum equals the long-term median while the lowest max is 2.5° above its median. The highest min is 1.6° above the median and the lowest min 1.3° below its median. Earth temperatures are a little above average. The duration of air frost is 15 % more than average, and most since 2010. The number of days with air frost is 2 above average. **Rainfall:** This has been a dry December, 35 % below the average and driest since 2010, though 2008 and 2001 were also drier this millennium. Most of this month's rain (81%) fell on just 3 days, the 11<sup>th</sup>, 16<sup>th</sup> and 26<sup>th</sup>, all having close to 10 mm, and there was an excess of 5 dry days compared with average. A dry spell of 5 days ended on the 31<sup>st</sup>, but there was also very little rain up to the 10<sup>th</sup>, between the 12<sup>th</sup> and 15<sup>th</sup> and from the 17<sup>th</sup> to the 25<sup>th</sup>. No snow fell this December, the 11<sup>th</sup> such in the past 39 years. Rainfall duration is 69% of normal. The month's highest daily fall is 2 mm below the median. The rainfall rate reached 66 mm/hr at 0652 GMT on the 24<sup>th</sup>, the highest value this month. There was no thunder or hail this December. **Sunshine:** This has been a very sunny December, with the highest total since 2001, and 32.7 hours above average. It is also 31 hours more than we received in November this year. Sunshine accumulation was above normal for most of the month after the 5<sup>th</sup>, and all subsequent dull spells were fairly short-lived. Daily sunshine was above 80% of the maximum on the 6<sup>th</sup>, 13<sup>th</sup>, 25<sup>th</sup>, 28<sup>th</sup> and 29<sup>th</sup>. Overall there were 19 days with <3 hours and 6 with =>6 hours. **Wind:** The mean speed of 8.2 mph is 0.8 mph above average and highest since 2011, but the month's highest gust of 43 mph is 5 mph below average and lowest since 2010. Winds were light/moderate N'ly at first, backing fresh SW'ly by the 7<sup>th</sup>, becoming light/moderate from the 13<sup>th</sup> to the 17<sup>th</sup>, increasing fresh on the 18<sup>th</sup> and temporarily strong on the 22<sup>nd</sup>, dropping light on the 25<sup>th</sup>, veering strong N'ly on the 27<sup>th</sup> before dropping light S'ly by the 30<sup>th</sup>. **Pressure:** The month's highest pressure is highest since 2006, and the lowest pressure highest since 2001.

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 31 <sup>st</sup>			
-0.6°	-1.3°	15%	152%	+2.0°	+1.7°	129%	169%	+0.7°	-1.0°	49%	169%

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

# Wokingham climatological graphs for December 2014



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: DECEMBER 2014

Date	Max		Rain mm	Grass Min	30cm		100cm		Sun hrs	Frost hrs	pp09 mbar	Af	Sf	Th	Ic	Vec mean			Max gust			High hr		Rain hrs	
	C	C			C	C	ddd	ff								sp	ddd	gg	HHhh	ddd	ff	HH			
1	7.5	6.9	0.2	6.6	9.6	11.2	0.0	0.0	1014.7	0	0	0	0	0	0	19	5.9	6.0	23	18	0640	18	9	06	0.9
2	7.5	5.8	tr	5.6	9.5	11.2	0.0	0.0	1017.4	0	0	0	0	0	0	357	8.2	8.3	353	24	1656	4	12	17	0.0
3	8.8	2.1	0.1	-2.7	9.1	11.1	3.4	0.0	1025.4	0	1	0	0	0	0	11	6.4	6.5	15	20	1254	18	10	12	0.3
4	4.0	3.1	1.1	2.0	8.8	11.1	0.0	0.0	1016.5	0	0	0	0	0	0	29	4.2	4.4	62	17	0309	50	8	04	7.4
5	6.6	1.3	0.3	-3.2	8.6	10.9	1.9	0.1	1019.5	0	1	0	0	0	0	279	3.1	3.5	303	16	1455	308	7	15	0.1
6	8.8	-3.6	0.1	-9.1	8.0	10.8	7.3	9.4	1029.4	1	1	0	0	0	0	222	2.8	3.1	206	11	2345	214	6	23	0.3
7	10.5	-2.5	0.1	-5.2	7.2	10.7	1.7	0.0	1017.0	1	1	0	0	0	0	239	7.3	8.1	299	29	1339	276	12	13	0.3
8	6.7	1.6	0.0	-4.5	7.2	10.5	5.7	0.0	1018.8	0	1	0	0	0	0	260	5.8	6.6	276	21	1313	284	9	11	0.0
9	11.5	-2.4	1.1	-7.4	6.8	10.3	0.6	7.5	1029.2	1	1	0	0	0	0	206	7.1	7.3	225	32	2318	224	14	23	1.9
10	8.2	0.5	tr	-0.3	7.0	10.1	6.2	0.0	1017.4	0	1	0	0	0	0	238	10.4	10.6	268	32	0201	257	15	02	0.0
11	10.2	5.0	11.1	1.3	6.9	10.0	1.0	0.0	1009.8	0	0	0	0	0	0	235	11.3	11.6	254	32	1400	253	15	13	7.0
12	8.3	6.4	0.0	5.3	7.1	9.8	0.0	0.0	993.3	0	0	0	0	0	0	236	7.5	8.1	252	35	0506	220	15	04	0.0
13	6.4	-2.7	0.0	-7.4	7.1	9.7	6.5	13.1	1011.2	1	1	0	0	0	0	224	2.1	2.8	315	10	1309	315	5	13	0.0
14	9.5	-2.6	0.5	-8.2	6.1	9.6	2.5	5.3	1013.4	1	1	0	0	0	0	211	7.8	7.9	228	22	1130	214	11	11	1.6
15	7.6	3.6	0.0	-0.9	6.3	9.5	2.9	0.0	1013.3	0	1	0	0	0	0	232	4.9	5.0	263	17	0022	232	8	12	0.0
16	10.9	-0.9	11.8	-6.4	6.3	9.3	5.9	4.8	1016.3	1	1	0	0	0	0	213	4.4	4.7	209	16	2349	189	7	23	5.6
17	13.0	0.7	1.0	-1.0	6.2	9.2	0.9	0.0	1005.3	0	1	0	0	0	0	240	8.6	8.9	200	26	0040	210	11	01	1.5
18	13.1	10.9	1.7	9.9	7.2	9.1	0.0	0.0	1010.8	0	0	0	0	0	0	235	12.1	12.2	215	31	1119	246	14	05	2.5
19	9.7	9.2	tr	6.7	8.1	9.1	5.2	0.0	1013.8	0	0	0	0	0	0	245	8.9	9.5	231	27	0044	225	13	00	0.0
20	9.5	3.4	tr	-1.2	7.9	9.2	5.0	0.0	1025.7	0	1	0	0	0	0	240	7.3	7.7	264	24	1327	255	12	12	0.0
21	12.9	4.1	tr	-1.6	7.4	9.2	0.1	0.0	1028.1	0	1	0	0	0	0	227	10.6	10.7	229	26	2109	229	14	20	0.0
22	12.8	7.3	0.0	7.8	7.8	9.2	0.0	0.0	1018.5	0	0	0	0	0	0	233	13.0	13.0	247	31	1205	234	16	11	0.0
23	12.3	10.2	1.4	7.7	8.4	9.2	1.1	0.0	1018.2	0	0	0	0	0	0	228	12.0	12.1	234	30	1950	225	15	23	1.0
24	9.0	8.4	tr	7.7	8.6	9.3	1.9	0.0	1016.3	0	0	0	0	0	0	247	7.7	8.6	235	28	0427	225	14	00	0.0
25	8.0	3.2	0.0	-2.6	8.2	9.4	6.9	2.7	1028.6	0	1	0	0	0	0	248	4.9	5.1	256	17	1141	248	7	07	0.0
26	8.9	-1.9	9.9	-7.0	7.2	9.4	0.0	9.5	1030.6	1	1	0	0	0	0	186	4.3	5.1	276	34	2359	151	12	18	8.5
27	5.1	-0.5	0.0	1.1	6.9	9.3	3.2	0.6	1009.1	1	0	0	0	0	0	322	9.5	9.9	301	37	0127	321	17	05	0.0
28	5.7	-2.4	0.0	-8.6	6.4	9.2	7.1	14.2	1029.2	1	1	0	0	0	0	8	3.0	4.0	28	15	1310	39	6	12	0.0
29	4.8	-4.9	0.0	-10.4	5.4	9.1	7.2	16.8	1041.2	1	1	0	0	0	0	254	2.1	2.9	323	13	1313	326	6	13	0.0
30	3.9	-5.9	0.0	-10.2	4.6	8.8	2.6	16.7	1040.9	1	1	0	0	0	0	201	2.7	2.8	232	12	1332	229	5	14	0.0
31	8.4	-6.5	tr	-10.3	4.1	8.6	2.8	10.9	1034.6	1	1	0	0	0	0	195	3.7	4.3	193	20	2127	195	10	21	0.0
Total			40.4				89.6	111.6																	38.9
Mean	8.7	1.8		-1.5	7.3	9.8	2.89	3.6	1019.8							243	4.8	7.1							
Anom	+0.7	-0.3	65%	-0.9	+0.7	+0.5	162%		+4.1																
Daily mean		5.3							Pressure, abs highest =	1043.0	on	29													
Anom		+0.3							Pressure, abs lowest =	991.2	on	12													

Number of days with:

Air frost = 12      Ground frost = 20      Nil sun = 7  
 Snow falling = 0      Snow lying = 0      Thunder = 0  
 Hail=>5mm = 0      Hail<5mm or ice = 0      Fog at 09GMT = 0

Abbreviations.

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

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

Grass min = Lowest overnight temperature at grass tip level.

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

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

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

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

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

Sp = 24 hour mean wind speed in knots.

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

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

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

Anom = Departure from 1981-2010 climatological average.

All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for DECEMBER 2014

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NChs	shs	NChs	shs	Date	Remarks
1	59	7	02	05	14	7.1	4.5	84	5.2	1014.7	1 009 05	2 2	7 5 4	/ /	87615												1	
2	57	8	36	11	22	7.1	6.2	94	5.9	1017.4	3 023 51	6 5	8 5 3	/ /	82708	86710	88615										2	
3	75	1	35	04	08	3.1	1.1	86	4.0	1025.4	3 005 03	0 0	1 5 6 0 1		81640											3	1Ci78 COTRA	
4	58	8	05	05	12	3.9	1.6	84	4.2	1016.5	6 004 50	5 2	8 5 4	/ /	85645	88620										4		
5	25	4	25	03	05	2.2	1.9	97	4.3	1019.5	2 012 10	1 1	4 5 6 0 0		81640	84650										5		
6	75	0	21	02	03	-2.5	-2.6	99	3.1	1029.4	1 013 02	0 0	0 0 9 0 0													6	Hoar thk	
7	75	7	22	08	18	8.8	7.4	91	6.4	1017.0	6 019 21	6 2	4 5 4 7	/	82710	83650	87358									7	1Sc25	
8	82	3	24	07	13	2.5	0.9	89	4.0	1018.8	2 011 01	1 1	1 5 6 3 2		81630	83067										8	1Ac64 Parhelion	
9	65	8	19	06	09	0.5	-0.3	95	3.7	1029.2	0 002 03	1 1	2 0 9 3 7		82364	88275										9	Hoar slt	
10	80	1	24	09	16	5.5	0.5	70	3.9	1017.4	2 017 02	0 0	1 5 7 0 1		81656											10	1Ci75	
11	82	7	24	10	23	6.4	2.3	75	4.5	1009.8	3 005 03	1 1	1 8 5 7 2		81820	83357	86075									11	1Sc40 COTRA Cu hum	
12	84	8	24	08	15	8.1	6.6	90	6.2	993.3	3 016 21	6 2	8 5 5	/ /	85620	85635	88656									12		
13	68	1	22	02	03	-2.0	-2.3	98	3.2	1011.2	3 023 01	0 0	1 0 9 7 2		81367											13	1Ci75 Hoar slt Gnd frzn	
14	70	7	20	07	12	3.7	1.5	86	4.2	1013.4	7 002 03	2 2	1 5 6 7 1		81640	84358	87072									14	COTRA Hoar slt Gnd frzn	
15	80	2	23	04	07	4.4	3.1	91	4.7	1013.3	3 016 02	1 1	1 5 7 0 1		81656											15	2Ci80 COTRA	
16	59	3	21	04	07	0.7	0.7	99	4.0	1016.3	3 016 10	0 0	3 5 7 0 1		83650											16	1Ci75 Hoar mod Gnd frzn	
17	75	8	25	08	14	10.9	9.5	91	7.4	1005.3	2 014 01	2 2	5 5 4 7	/	82715	83620	88358									17	2Sc40	
18	80	8	23	10	19	12.5	10.5	87	7.9	1010.8	3 009 02	2 2	8 5 4	/ /	88612											18		
19	89	6	27	09	17	9.2	5.8	80	5.7	1013.8	2 045 01	6 2	6 8 4 0 0		83818	85635										19	Cu hum	
20	81	7	24	10	15	7.3	2.8	73	4.6	1025.7	3 011 02	2 2	7 5 6	/ /	87645											20	Absent vv&cld est	
21	82	7	23	12	21	7.4	5.1	86	5.4	1028.1	7 010 02	5 2	7 5 4	/ /	82715	87630										21	Absent vv&cld est	
22	86	8	23	12	29	12.5	8.4	76	6.8	1018.5	3 004 02	2 2	5 5 5 7	/	85620	83362	88465									22		
23	82	7	24	12	25	11.6	6.5	71	6.0	1018.2	2 005 02	2 2	6 5 5 0 1		83625	85635	87080									23	COTRA	
24	84	7	29	06	13	8.4	6.5	88	6.0	1016.3	1 034 21	6 2	7 8 4	/ /	82815	87635										24	Cu med	
25	75	1	24	06	11	3.5	1.4	86	4.1	1028.6	2 019 01	0 0	0 0 9 0 8		81270											25	Cs edge S	
26	57	8	19	02	05	-0.5	-0.7	98	3.5	1030.6	7 008 10	2 2	8 0 9 2	/	88462											26	Hoar mod Gnd frzn.	
27	72	1	31	11	24	2.4	-0.5	81	3.7	1009.1	2 020 01	6 1	1 5 4 0 0		81615											27	1Sc50	
28	82	1	01	04	06	-2.2	-3.2	93	3.0	1029.2	2 050 02	0 0	1 5 6 0 0		81640											28	Hoar mod. Gnd frzn	
29	63	0	21	03	04	-3.7	-4.1	97	2.7	1041.2	3 017 02	0 0	0 0 9 0 0													29	Hoar thk Gnd frzn	
30	35	3	20	02	04	-4.4	-4.8	97	2.6	1040.9	0 003 10	0 0	3 5 6 0 1		83635											30	1Ci80 Hoar thk. Gnd frzn	
31	40	4	05	01	04	-4.8	-5.3	96	2.5	1034.6	5 000 10	1 1	4 5 5 0 0		84620											31	Hoar thk. Gnd frzn	

Mean vis = 26.5 km

Mean cloud = 4.9 61%

Mean wind speed = 6.5 kn

Mean gust = 13 kn

Mean TT = 4.2 °C

Mean TdTd = 2.3 °C

Mean RH = 88.0 %

Mean r = 4.6 g/kg

Mean PPP = 1019.8 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 DECEMBER 2014

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cl	N	Ch	shs	N	Ch	shs	Date	Remarks
1	59	8	02	05	10	6.8	3.6	80	4.9	1013.5	7	007	05	2	2	8	5	4	/	/	88615							1	
2	80	8	36	12	22	7.3	3.7	78	4.9	1020.4	3	014	02	2	2	8	5	5	/	/	87620	88630						2	
3	82	7	02	09	20	7.6	2.5	70	4.5	1022.7	6	015	03	1	1	7	8	5	/	/	81825	85635	87650				3	Cu hum	
4	16	8	02	03	09	3.3	2.9	97	4.7	1014.8	6	009	51	5	5	8	7	2	/	/	82703	87705	88710				4		
5	80	2	31	08	16	6.5	3.2	80	4.7	1020.6	3	002	01	6	1	2	8	5	0	0	81820	82656					5	Cu hum	
6	80	4	22	03	06	5.3	1.6	77	4.2	1028.0	6	009	03	0	0	0	0	9	0	1	84080						6	COTRA Hoar slt in shade Halo 22° part	
7	80	3	28	08	25	7.9	1.5	64	4.2	1018.3	3	014	01	8	1	3	8	6	3	0	81830	83656					7	1Ac58 Cu hum	
8	82	5	28	06	18	6.6	-0.4	61	3.7	1020.7	3	012	02	1	1	5	8	6	0	2	81830	84635					8	1Ci66 Cu hum	
9	72	8	20	09	17	7.9	3.6	74	4.9	1023.8	7	030	03	2	2	8	5	6	/	/	82630	88650					9		
10	72	1	23	09	17	6.9	1.9	70	4.3	1016.1	6	010	02	1	1	1	5	7	0	3	81820						10	1Sc56 1Ci68 Cu fra	
11	82	7	24	11	32	7.9	2.2	67	4.4	1009.8	7	004	03	2	2	1	8	5	7	8	81828	85465	87272				11	1Sc50 2Ac61 Cu hum	
12	88	7	29	06	16	5.9	1.9	75	4.4	998.1	2	031	02	2	2	1	2	5	3	8	81820	87272					12	1Ac68 Cu med Cld edge N Halo 22° part	
13	72	0	30	04	08	5.2	0.4	71	3.9	1013.0	3	006	02	0	0	0	0	9	0	0								13	Hoar slt in shade
14	72	7	21	10	21	8.6	5.1	79	5.5	1009.7	8	017	02	2	2	2	5	4	7	1	81715	84358	85362				14	2Sc50 /Ci72	
15	77	6	22	03	10	7.1	4.9	86	5.4	1012.4	6	010	02	2	2	2	5	5	8	1	81620	84362					15	2Sc56 1Ac58 1Ac68 3Ci75 COTR Ac cas vir	
16	78	8	23	04	09	6.1	3.1	81	4.7	1015.6	5	006	03	1	1	1	5	7	0	7	81650	88275					16	2Cs72 COTRA Parhelion	
17	84	8	24	06	12	12.2	9.7	85	7.5	1007.1	1	015	02	2	2	7	5	4	/	8	87618							17	/Cs70
18	70	8	23	11	28	12.6	10.5	87	7.9	1010.2	6	006	50	5	2	8	5	4	/	/	87615	88620					18		
19	81	4	25	11	25	8.2	1.6	63	4.2	1017.9	2	010	02	1	1	4	4	6	0	0	81830	84640					19	Cu hum Absent vv&cld est	
20	82	6	26	08	23	8.5	2.9	68	4.6	1027.7	3	014	03	1	1	2	8	5	0	2	81825	85075					20	2Sc30 Absent vv&cld est	
21	84	8	24	11	25	9.9	5.9	76	5.7	1025.1	7	022	02	2	2	8	5	5	/	/	85620	88625					21	Absent vv&cld est	
22	68	8	23	12	25	12.3	8.4	77	6.8	1017.6	5	005	02	2	2	8	5	4	/	/	86618	88622					22		
23	82	7	23	10	23	12.1	8.0	76	6.6	1016.0	7	013	02	8	2	7	8	5	/	1	82820	86640					23	/Ci80 Cu med	
24	82	5	27	13	21	7.5	0.9	63	4.0	1020.0	2	016	15	8	1	3	8	5	0	9	81828	83645					24	3Cc75 Cu med jp NE&S	
25	78	5	27	07	15	7.3	1.2	65	4.1	1030.4	2	004	01	1	1	1	8	6	0	1	81830	85078					25	1Sc40 Cu hum	
26	57	8	13	05	08	3.8	2.7	93	4.6	1022.0	8	056	63	6	2	2	5	5	2	/	82625	88535					26		
27	65	7	35	06	14	4.2	-0.1	74	3.8	1008.6	5	006	15	1	1	4	8	5	3	0	81818	84625					27	4Ac65 Cu hum jpW	
28	80	1	02	04	11	4.1	-2.5	62	3.1	1034.0	2	020	02	0	0	1	5	6	0	0	81635							28	Hoar slt in shade
29	65	5	29	03	08	4.1	0.5	77	3.8	1041.3	7	001	03	1	1	1	5	6	0	1	81635	85080					29	COTRA Hoar slt in shade	
30	70	1	23	04	09	3.7	0.9	81	3.9	1037.6	6	019	02	1	1	1	5	6	3	1	81635							30	1Ac65 1Ci78
31	65	7	18	07	14	6.8	3.7	80	4.8	1032.1	6	014	03	1	1	5	5	4	3	1	81615	85625	85075				31	1Ac68 COTRA	

Mean vis = 28.6 km

Mean cloud = 5.7 71%

Mean wind speed = 7.4 kn

Mean gust = 17 kn

Mean TT = 7.2 °C

Mean Td = 3.1 °C

Mean RH = 75.4 %

Mean r = 4.8 g/kg

Mean PPP = 1019.5 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

Td = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

W1, W2 = Past weather code (Code FM12-4561)- covers past 3 hours.

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs = Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation trails present.

Wokingham Sunshine Hourly analysis  2014	Hour	01-Dec	02-Dec	03-Dec	04-Dec	05-Dec	06-Dec	07-Dec	08-Dec	09-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	15-Dec	16-Dec
	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	8	0.00	0.00	0.66	0.00	0.34	0.68	0.00	0.28	0.07	0.58	0.13	0.00	0.16	0.04	0.54	0.50
	9	0.00	0.00	0.62	0.00	0.24	1.00	0.00	1.00	0.49	1.00	0.29	0.00	0.65	0.33	1.00	0.68
	10	0.00	0.00	0.23	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.39	0.00	1.00	0.34	1.00	1.00
	11	0.00	0.00	0.36	0.00	0.00	1.00	0.26	1.00	0.00	1.00	0.06	0.00	1.00	0.47	0.16	1.00
	12	0.00	0.00	1.00	0.00	0.00	1.00	0.12	0.98	0.00	0.68	0.14	0.00	1.00	0.37	0.00	1.00
	13	0.00	0.00	0.55	0.00	0.00	1.00	0.34	0.45	0.00	0.63	0.00	0.00	1.00	0.71	0.00	1.00
	14	0.00	0.00	0.00	0.00	0.59	1.00	0.43	0.29	0.00	1.00	0.00	0.00	1.00	0.29	0.20	0.68
	15	0.00	0.00	0.00	0.00	0.77	0.67	0.59	0.67	0.00	0.33	0.00	0.00	0.72	0.00	0.00	0.00
	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	0.00	0.00
	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot		<b>0.00</b>	<b>0.00</b>	<b>3.41</b>	<b>0.00</b>	<b>1.93</b>	<b>7.35</b>	<b>1.74</b>	<b>5.65</b>	<b>0.56</b>	<b>6.22</b>	<b>1.01</b>	<b>0.00</b>	<b>6.53</b>	<b>2.55</b>	<b>2.90</b>	<b>5.88</b>

	Hour	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec	Mean
	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	8	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.44	0.00	0.22	0.42	0.40	0.08	0.02	0.18
	9	0.00	0.00	0.13	0.24	0.00	0.00	0.05	0.01	1.00	0.00	1.00	1.00	1.00	0.48	0.71	0.42
	10	0.20	0.00	1.00	0.36	0.07	0.00	0.18	0.34	1.00	0.00	1.00	0.93	1.00	0.00	0.64	0.44
	11	0.53	0.00	1.00	1.00	0.02	0.00	0.35	0.61	1.00	0.00	0.90	1.00	1.00	0.00	0.85	0.47
	12	0.22	0.00	0.97	1.00	0.00	0.00	0.47	0.15	0.95	0.00	0.05	1.00	1.00	0.00	0.54	0.41
	13	0.00	0.00	0.88	1.00	0.00	0.00	0.00	0.02	1.00	0.00	0.00	1.00	1.00	0.12	0.05	0.35
	14	0.00	0.00	0.79	1.00	0.00	0.00	0.03	0.14	1.00	0.00	0.04	1.00	1.00	1.00	0.00	0.37
	15	0.00	0.00	0.46	0.42	0.00	0.00	0.00	0.68	0.56	0.00	0.00	0.74	0.80	0.87	0.00	0.27
	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	0.00	0.00
	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot		<b>0.94</b>	<b>0.00</b>	<b>5.23</b>	<b>5.03</b>	<b>0.09</b>	<b>0.00</b>	<b>1.09</b>	<b>1.95</b>	<b>6.95</b>	<b>0.00</b>	<b>3.21</b>	<b>7.10</b>	<b>7.20</b>	<b>2.56</b>	<b>2.81</b>	<b>89.90</b>

DECEMBER 2014	T mn	Tx	Time	Tn	Time	RHmn	RH x	Time	RH n	Time	Tdmn	r mn	r x	Time	r n	Time	p mn	p x	Time	p n	Time
1	7.06	9.5	0	5.9	1943	83.0	89.3	3	75.8	1400	4.37	5.18	6.6	1	4.7	1400	1014.12	1015.0	1037	1013.3	1514
2	6.40	7.6	1444	4.1	2341	82.5	96.4	807	72.4	2138	3.59	4.90	6.1	817	3.9	2334	1018.97	1024.5	2320	1014.4	12
3	5.17	8.9	1315	2.1	742	81.6	90.9	2326	61.2	1308	2.23	4.43	5.1	2045	3.7	204	1023.44	1025.5	853	1019.7	2359
4	3.87	5.6	49	3.0	1709	90.2	97.9	2301	75.1	512	2.35	4.48	5.0	46	3.9	634	1016.29	1019.8	1	1014.6	1408
5	3.46	6.7	1448	-0.3	2316	90.4	97.9	110	78.2	1553	2.00	4.36	5.0	1357	3.4	2315	1020.38	1025.4	2353	1016.4	0
6	1.27	6.1	1336	-3.3	651	91.2	99.7	656	70.9	1339	-0.09	3.74	4.8	2359	2.9	651	1027.45	1029.8	1005	1023.8	2347
7	6.59	10.6	1222	1.9	2309	79.1	92.5	702	53.8	1537	3.10	4.84	6.8	1036	3.2	1816	1019.33	1024.1	0	1016.4	1001
8	3.89	6.8	1240	0.0	2358	76.7	90.1	2359	59.9	1453	0.07	3.79	4.3	1024	3.3	2352	1020.97	1027.7	2359	1017.5	549
9	4.58	11.5	2245	-2.3	607	88.8	98.2	646	73.9	1456	2.83	4.81	7.8	2340	3.0	607	1024.30	1029.7	800	1012.9	2357
10	7.01	11.6	59	4.9	1804	73.2	93.5	138	57.0	1216	2.48	4.60	7.8	139	3.7	1225	1015.34	1017.9	1045	1011.9	125
11	7.13	9.4	2356	4.8	50	75.7	86.7	1802	59.2	1348	3.06	4.75	5.5	1957	4.1	1348	1008.91	1013.0	2	1000.7	2359
12	6.50	10.3	456	1.0	2347	81.9	93.6	815	66.9	1545	3.59	5.10	7.3	503	3.5	2341	997.53	1005.8	2359	991.2	710
13	0.61	6.5	1235	-2.4	826	90.6	98.9	2305	67.9	1333	-0.85	3.58	4.5	1212	3.1	2241	1011.60	1015.5	2256	1005.7	35
14	5.22	9.6	1316	-2.1	4	87.0	99.2	9	71.9	1317	3.15	4.87	6.8	2250	3.2	4	1011.57	1015.3	3	1007.8	2241
15	5.73	8.9	4	0.0	2337	88.3	98.9	2356	76.4	27	3.91	5.03	5.9	0	3.7	2337	1012.28	1014.0	2252	1008.4	4
16	3.30	7.6	2359	-1.1	748	92.3	100.0	807	77.9	1336	2.12	4.44	6.3	2359	3.5	748	1014.62	1016.5	921	1008.4	2355
17	11.11	13.1	1232	7.5	0	91.2	96.4	2015	79.0	1243	9.71	7.52	8.1	2129	6.2	1	1006.53	1009.6	2317	1003.4	502
18	12.36	13.2	1402	11.5	2138	87.6	93.9	2239	80.6	1250	10.36	7.81	8.1	206	7.4	1216	1010.44	1011.6	2004	1009.2	53
19	8.87	12.3	6	4.0	2358	77.0	94.7	626	55.4	1312	4.89	5.56	8.2	315	4.0	1357	1015.90	1024.2	2358	1008.5	421
20	6.35	9.5	1231	3.3	141	77.5	90.7	151	62.2	1222	2.62	4.51	4.8	1026	4.2	5	1027.27	1031.6	2359	1023.9	14
21	8.49	11.8	2348	4.1	37	84.2	91.5	2007	74.7	1308	5.96	5.75	7.3	2111	4.4	8	1026.71	1032.2	42	1021.1	2359
22	12.02	13.0	747	10.9	1909	79.0	91.8	457	70.5	2009	8.46	6.85	8.0	505	5.8	2011	1018.60	1021.3	0	1017.3	1355
23	11.02	12.3	1226	9.8	2006	75.7	83.8	2359	66.3	1725	6.88	6.15	6.8	1418	5.3	1728	1016.81	1018.8	241	1013.7	2354
24	7.68	11.3	338	3.4	1934	78.1	95.4	719	55.3	1528	3.98	5.21	7.8	651	3.4	1918	1018.12	1025.0	2356	1012.2	348
25	4.03	8.1	1233	-1.4	2351	81.5	97.8	2354	64.2	1252	1.05	4.03	4.5	1117	3.3	2229	1029.38	1033.3	2246	1024.9	3
26	2.53	9.0	2129	-1.8	149	96.1	98.9	625	87.6	1345	1.96	4.45	6.9	2123	3.2	150	1022.37	1033.1	24	999.7	2352
27	2.73	7.5	0	-0.2	2328	82.6	95.3	2352	71.2	1257	0.03	3.82	5.9	0	3.4	1749	1008.67	1016.3	2359	1000.5	0
28	0.04	5.8	1314	-4.5	2335	85.3	97.4	2350	57.8	1258	-2.31	3.16	3.8	12	2.5	2335	1030.40	1039.2	2302	1016.3	1
29	-1.09	4.9	1245	-4.8	211	91.5	98.4	2321	72.8	1338	-2.38	3.12	3.9	1155	2.5	211	1041.09	1043.0	2201	1038.8	41
30	-1.70	4.0	1415	-5.7	747	95.1	99.0	2333	81.0	1455	-2.39	3.15	4.4	1311	2.3	747	1039.27	1042.5	0	1035.9	2355
31	1.18	7.7	1341	-6.5	632	90.3	99.0	226	76.7	1359	-0.32	3.79	5.2	1941	2.2	632	1033.72	1036.1	9	1031.7	2133
Total																					
Mean	5.27	9.06		1.48		84.7	95.09		69.48		2.79	4.77	6.11		3.77		1019.43	1023.79		1014.20	
Max	12.36	13.24		11.50		96.1	100.00		87.60		10.36	7.81	8.20		7.40		1041.09	1043.00		1038.82	
Min	-1.70	3.98		-6.48		73.2	83.80		53.82		-2.39	3.12	3.81		2.21		997.53	1005.84		991.19	

Wokingham Automatic Weather Station  
 AWS samples taken every 0.5 seconds  
 x and n refer to maximum and minimum respectively

**Readings taken at Wokingham Climatological Station, Emmbrook, Berkshire**  
**Lat 51.425 N, Long 0.853 W, NGR (SU) 798701**  
**Altitude 45 m ASL.**

Tmn = 00 to 24 GMT mean air temperature at 1.2 m, deg C  
 RHmn = 00-24 GMT mean relative humidity at 1.2 m, percent  
 TDmn = 00-24 GMT mean dew point at 1.2 m, deg C  
 rmn = 00-24 GMT mean humidity mixing ratio, g/kg  
 pmn = 00-24 GMT mean air pressure reduced to mean sea level, mbar  
 Time = hours and minutes in GMT of extreme values

Temperature and humidity are from an aspirated Vaisala HMP45 unit  
 Pressure is from a Setra CS100 sensor  
 Data is logged on a Campbell Scientific CR10X measurement and control system

## 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 2020. For some parameters, notably wind, the climatological average is not available, and if the word average is used in the context of wind, it refers to the average for the period for which data is held, namely 1988 to present.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

**Month:** Calendar month.

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

Summer, June to August

Autumn, September to November

Winter, December to February.

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

**Annual or Year:** The calendar year, 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.