

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 2013

Temperature (°C / °F)			Anomaly	Rank in the past 132 years			
Mean maximum	9.9	49.8	+1.9	9 th highest			
Mean minimum	2.6	36.7	+0.5	37 th highest			
Daily mean	6.2	43.2	+1.2	27 th highest			
Highest maximum	13.1	55.6	on 16 th	Lowest maximum	6.2	43.2	on 11 th
Highest minimum	7.7	45.9	on 16 th	Lowest minimum	-2.9	26.8	on 12 th
Mean grass minimum	-0.6	30.9	0.0	Lowest grass minimum	-7.7	18.1	on 29 th
Mean earth @30 cm	7.2	45.0	+0.6	Earth @100 cm	9.2	48.6	
Frost duration (hrs)	41.8			Rain duration (hrs)	80.6		
Rainfall total (mm / in)	104.8	4.13	167 %	12 th highest			
Highest daily fall	28.1	1.11	on 23 rd				
Number of: Dry days (<0.2mm)	12	Wet days (>0.9mm)	15	days ≥5mm	8		
Sunshine total (hrs)	67.3	Daily mean	2.17	122 %	Sunniest day	6.8	on 29 th
N ^o days with: Air frost	6	Ground frost	20	Snow falling	0	Snow lying	0
Thunder	0	Hail ≥5mm	0	Small hail/ice	0	Fog @09	2 Nil sun 9
Pressure MSL : Mean @09 GMT, mbar	1015.5	-0.2	Highest	1035.8	on 2 nd	Lowest	974.0 on 24 th
Relative humidity : Mean (%)	85.6	Lowest	51	on 5 th	Water vapour (g/kg), mean at 09 and 15 GMT 5.1, 5.5		
Overall mean wind speed (mph)	7.9	Windiest day	16.5	on 23 rd	Max gust	56	on 23 rd
Wind direction (days)	N 0	NE 3	E 0	SE 0	S 8	SW 16	W 4 NW 0
Least windy day (mph)	2.1	on 2 nd	Calm; less than 0.5 mph (minutes)		571		

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

Notes:

Mild and Very Wet with Above Average Sunshine and Windy at Times

Temperature: The mean maximum is highest since 1994, although in 2011 it was only 0.2° lower. The mean minimum, however, as can be seen from the rankings, is closer to average and has been exceeded 7 times since 1994. The resulting mean temperature puts this December in the mild category, but it is 2.0° below the record 8.2° set in 1934. The highest max is equal to the median, but the lowest max of 6.2° is a new record high, 4.8° above the median, exceeding the previous highest in 1934 by 0.2°. The highest min is 1.6° below the median while the lowest min is 2.3° above its median. The number of air frosts is 4 below average, but ground frosts is 3 above average. Earth temperatures at 30 cm depth are above average, but are near average at 1 metre depth. The distribution of daily air temperatures this month shows that maxima were within 3° of normal up to the 11th, then mainly above normal, with an anomaly near +5° on the 15th and 16th. There were a scattering of cold nights up to the 12th, and just one thereafter. The 1st, 5th, 10th, 12th and 29th all had anomalies for minima between -4° and -5°. At the other extreme, anomalies were between +4° and +6° on the 13th, 16th, 22nd and 24th. **Rainfall:** This has been a very wet December, although the total of 104.8 mm is not exceptional, as there have been 4 Decembers in the past 38 years wetter than this, the last in 2009. The highest daily fall, however, ranks 4th highest in any December since before 1904, and was last exceeded in 1995. There were 3 fewer dry days than average, and 3 more with =>5 mm of rain. The duration of measurable rain is 23.1 hours above average, but is 7.5 hours less than in 2012. There was no snow this month, the first such since 2008, joining 9 other snowless Decembers in the past 38 years. Thunder and hail were also absent. The month started dry, and by the 12th there had been a total of only 0.7 mm. In this period there were 2 dry spells, both of 7 days, ending on the 3rd and 12th. A 2 day total of 23 mm on the 15th/16th set the scene for what was to come, with the 27th and 28th the only dry days for the rest of the month. Rainfall accumulation, 25 mm below average on the 13th crossed the average on the 18th and exceeded it by 35 mm on the 25th. Some flooding occurred in the area. **Sunshine:** Although the total is 22 % above average this month, this only represents 2 sunny days worth. There were 6 sunny days, each having over 2/3 of the maximum, the 6th, 9th, 19th, 20th, 28th and 29th. The month started dull with only 1.0 hours total up to the 5th. The 6th to 9th brought the accumulation up to normal where it remained until the 14th, then dropped 6 hours below by the 18th. The next 2 days lifted the accumulation to slightly above normal, and some good sunny spells after the 26th led to a 12 hour surplus by the 31st. Overall there were 21 days with <3 hours and 4 with =>6 hours. **Wind:** This month has been windy at times, although the mean speed is only 0.6 mph above average, and December in both 2012 and 2011 had a higher mean. Apart from strong winds on the 5th, winds were generally light from the 1st to the 13th. Subsequent days with strong winds were 18th, 21st, 24th 27th and 30th, and very strong on the 23rd, with a peak gust of 56 mph in the late evening, and 54 mph early on the 24th, resulting in some tree damage in the area. Wind directions were almost exclusively between W and S, apart from isolated departures to NE on the 2nd, 11th and 17th. **Pressure:** The month's lowest pressure, 974.0 mbar on the 24th, is lowest for December since 1989.

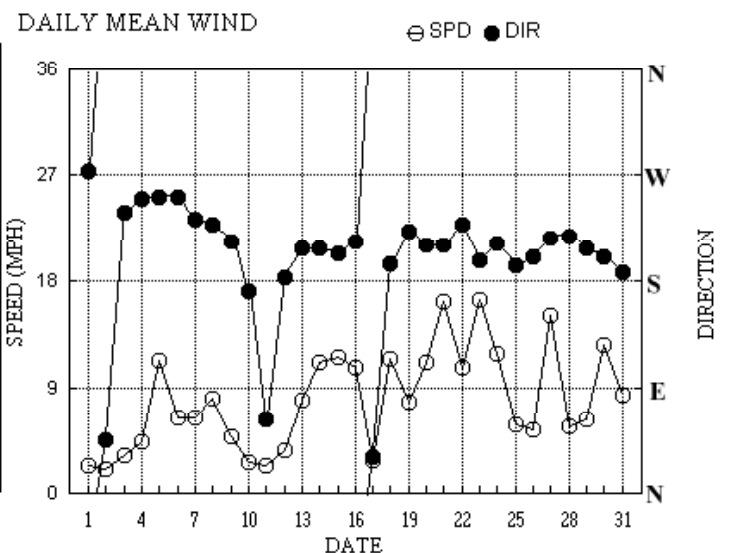
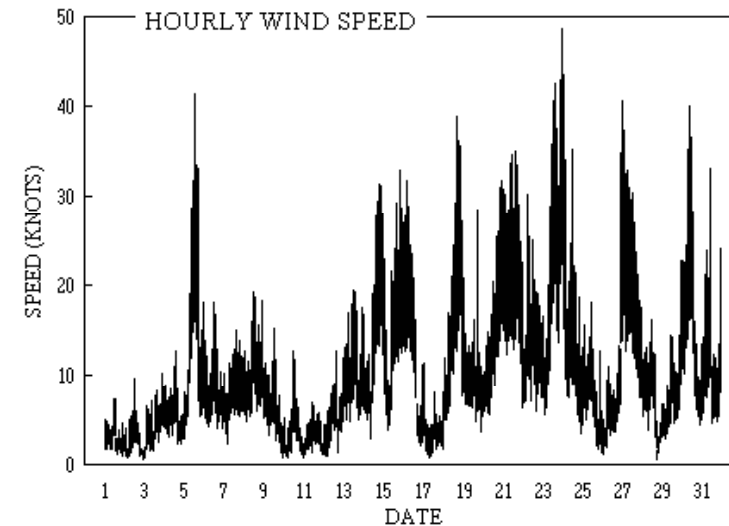
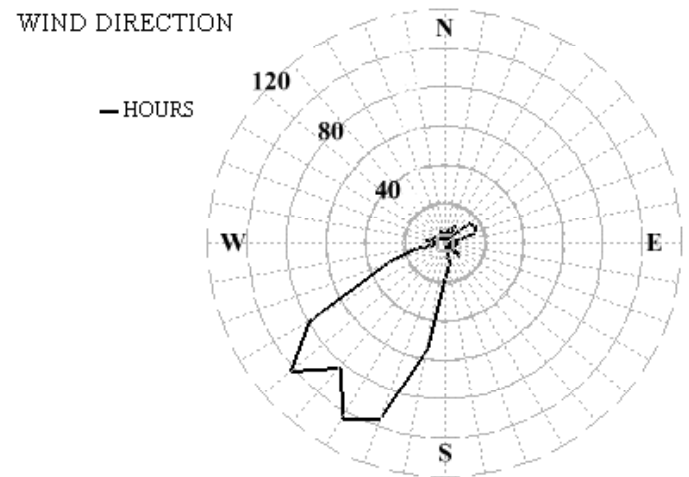
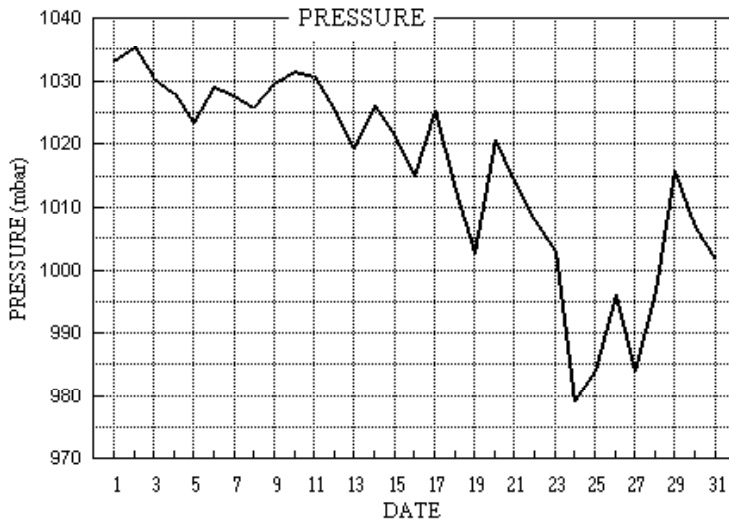
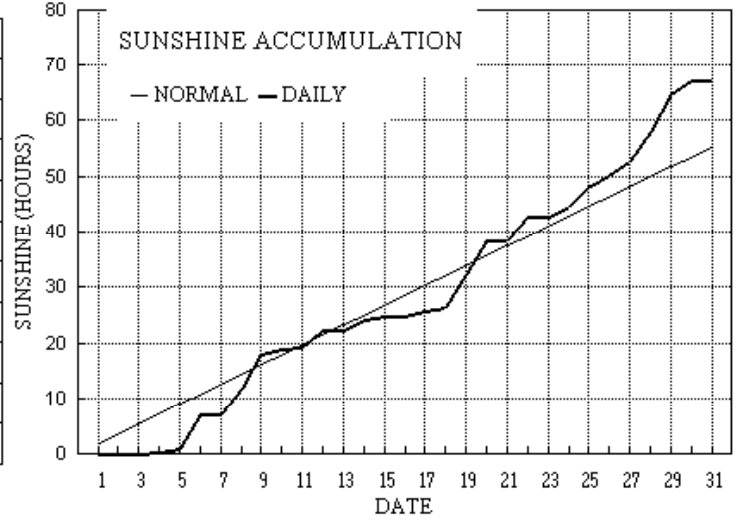
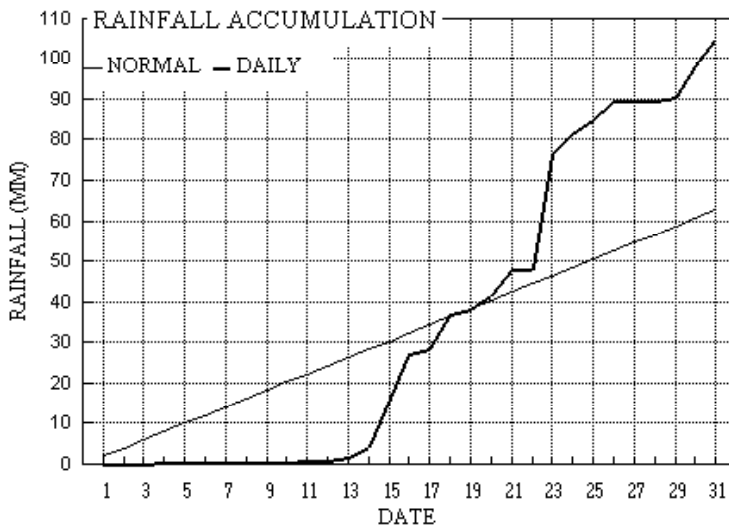
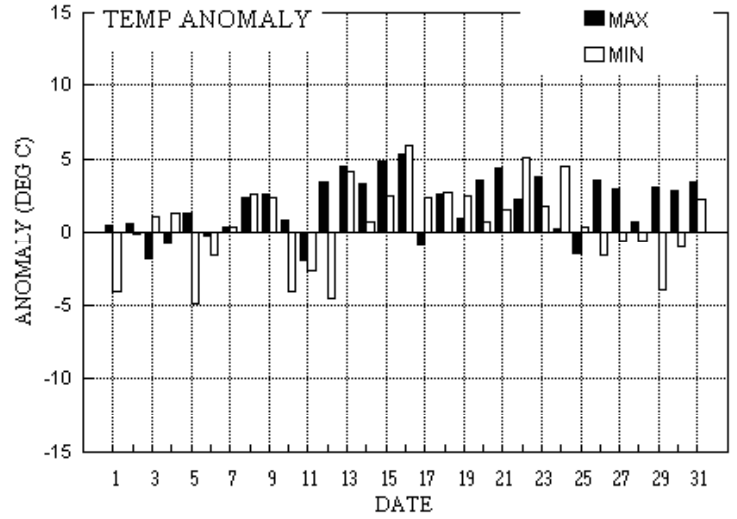
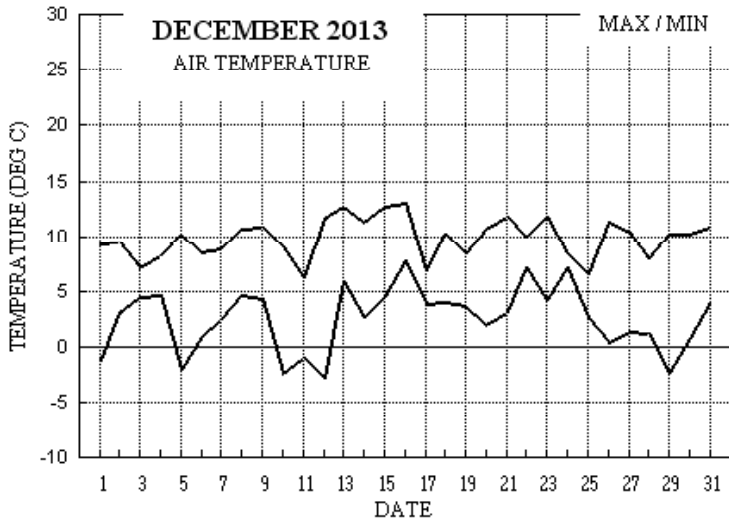
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 st to the 10 th				From the 11 th to the 20 th				From the 21 st to the 31 st			
+0.6°	-0.7°	3%	107%	+2.6°	+1.5°	203%	107%	+2.4°	+0.7°	282%	146%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

Wokingham climatological graphs for December 2013



Month: DECEMBER 2013

Date	Max	Min	Rain	Grass	30cm	100cm	Sun	Frost	pp09	Af	Sf	Th	Ic	Vec	mean			Max gust			High hr		Rain				
	C	C	mm	Min	C	C	hrs	hrs	mbar	Gf	Sl	Ha	Fg	ddd	ff	sp	ddd	gg	HHhh	ddd	ff	HH	hrs				
1	9.3	-1.3	0.0	-5.0	7.9	10.2	0.0	2.3	1033.2	1	1	0	0	0	0	0	273	0.6	2.0	321	8	1308	313	4	12	0.0	
2	9.4	3.1	0.0	-2.0	7.9	10.1	0.0	0.0	1035.4	0	1	0	0	0	0	0	45	1.6	1.8	123	10	1336	80	3	13	0.0	
3	7.1	4.5	tr	2.4	8.1	10.0	0.0	0.0	1030.6	0	0	0	0	0	0	0	239	1.0	2.7	216	10	2134	230	5	22	0.0	
4	8.3	4.6	0.3	4.0	8.0	10.0	0.4	2.1	1028.0	0	0	0	0	0	0	0	250	2.5	3.8	354	13	1413	331	6	12	0.8	
5	10.3	-2.1	0.2	-7.0	7.3	9.9	0.6	1.4	1023.3	1	1	0	0	0	0	0	251	8.9	9.8	262	42	1227	253	19	12	0.3	
6	8.6	0.9	0.0	-3.6	7.0	9.8	6.2	0.0	1029.0	0	1	0	0	0	0	0	252	5.1	5.6	264	18	1244	282	8	12	0.0	
7	8.8	2.5	tr	-0.6	6.9	9.7	0.0	0.0	1027.7	0	1	0	0	0	0	0	233	5.6	5.6	242	15	1511	233	7	15	0.0	
8	10.8	4.7	tr	0.9	7.2	9.6	4.5	0.0	1025.9	0	0	0	0	0	0	0	229	6.9	6.9	236	19	1153	242	10	13	0.0	
9	10.9	4.3	tr	-0.1	7.2	9.5	6.4	2.1	1029.6	0	1	0	0	0	0	0	213	3.7	4.1	219	15	1318	224	7	13	0.0	
10	9.0	-2.3	0.1	-6.4	6.7	9.4	0.9	8.8	1031.6	1	1	0	0	0	0	0	171	1.5	2.4	199	13	1225	196	6	12	1.1	
11	6.2	-1.0	0.1	-5.0	6.4	9.3	0.1	10.2	1030.7	1	1	0	0	0	0	1	63	1.6	2.0	166	7	1054	49	3	13	0.0	
12	11.7	-2.9	tr	-6.6	6.2	9.2	3.1	6.2	1025.2	1	1	0	0	0	0	0	183	2.8	3.2	193	13	1452	193	6	14	0.0	
13	12.7	5.9	1.2	2.0	6.6	9.1	0.0	0.0	1019.3	0	0	0	0	0	0	0	207	6.5	6.8	205	20	1244	205	10	13	1.7	
14	11.4	2.7	2.3	-0.3	7.1	9.0	2.0	0.0	1026.0	0	1	0	0	0	0	0	208	9.5	9.7	210	32	2057	210	16	21	3.4	
15	12.7	4.5	11.9	-0.3	7.4	9.0	0.6	0.0	1021.1	0	1	0	0	0	0	0	204	9.7	10.0	209	33	1954	203	14	23	7.3	
16	13.1	7.7	11.1	11.2	8.1	9.0	0.0	0.0	1014.8	0	0	0	0	0	0	0	214	8.6	9.3	203	32	0541	208	15	05	10.2	
17	6.9	3.9	1.4	2.7	8.5	9.0	0.9	0.0	1025.2	0	0	0	0	0	0	0	30	1.6	2.4	358	12	0116	2	6	00	3.3	
18	10.2	4.1	8.1	1.2	8.1	9.1	0.7	0.0	1012.7	0	0	0	0	0	0	0	194	9.7	10.0	172	39	1725	194	17	21	4.9	
19	8.4	3.7	1.3	-0.2	8.1	9.2	5.8	0.0	1002.5	0	1	0	0	0	0	0	223	6.6	6.8	239	29	1825	234	11	18	0.6	
20	10.8	2.0	3.7	-1.9	7.2	9.2	6.1	0.0	1020.6	0	1	0	0	0	0	0	211	9.6	9.7	210	32	2319	214	17	22	6.0	
21	11.8	3.1	6.2	7.0	7.3	9.1	0.0	0.0	1014.1	0	0	0	0	0	0	0	211	13.8	14.1	193	35	1553	208	17	17	4.4	
22	10.0	7.1	0.2	2.5	7.8	9.0	4.4	0.0	1007.9	0	0	0	0	0	0	0	228	8.9	9.2	210	31	0644	208	15	06	0.6	
23	11.9	4.2	28.1	1.0	7.3	9.0	0.0	0.0	1003.0	0	0	0	0	0	0	0	198	14.2	14.3	204	49	2319	197	22	23	16.7	
24	8.4	7.1	5.1	4.7	7.9	9.0	1.9	0.0	979.2	0	0	0	0	0	0	0	212	9.9	10.2	198	47	0026	197	22	00	3.3	
25	6.6	2.7	3.7	-0.6	7.6	9.0	3.4	0.0	984.0	0	1	0	0	0	0	0	193	4.2	5.1	238	18	1109	232	8	11	2.4	
26	11.3	0.5	4.5	-3.8	6.9	9.0	2.2	0.0	996.1	0	1	0	0	0	0	1	201	4.1	4.7	200	35	2223	181	14	23	1.8	
27	10.4	1.4	0.0	-0.6	6.7	8.9	2.3	0.0	984.0	0	1	0	0	0	0	0	217	12.7	13.1	171	41	0100	187	20	01	0.0	
28	8.0	1.3	0.0	-4.3	6.6	8.7	5.4	3.3	996.7	0	1	0	0	0	0	0	218	4.8	4.9	227	16	1219	230	8	11	0.0	
29	10.3	-2.3	0.9	-7.7	5.8	8.6	6.8	5.4	1015.7	1	1	0	0	0	0	0	208	5.1	5.4	193	23	2335	196	11	23	2.6	
30	10.2	0.7	7.6	-2.2	5.4	8.5	2.6	0.0	1006.7	0	1	0	0	0	0	0	200	10.3	10.9	188	40	1039	194	18	11	4.6	
31	10.9	4.1	6.8	-0.8	6.0	8.3	0.0	0.0	1001.4	0	1	0	0	0	0	0	188	6.9	7.2	205	33	1104	187	12	10	4.6	
Total			104.8				67.3	41.8																			80.6
Mean	9.9	2.6		-0.6	7.2	9.2	2.17	1.3	1015.5								212	5.8	6.9								
Anom	+1.9	+0.5	167%	-0.0	+0.6	-0.1	122%																				
Daily mean		6.2																									
Anom		+1.2																									

Number of days with:

Air frost = 6 Ground frost = 20 Nil sun = 9
Snow falling = 0 Snow lying = 0 Thunder = 0
Hail=>5mm = 0 Hail<5mm or ice = 0 Fog at 09GMT = 2

Abbreviations.

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

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

Grass min = Lowest overnight temperature at grass tip level.

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

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

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

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

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

Sp = 24 hour mean wind speed in knots.

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

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

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

Anom = Departure from 1981-2010 climatological average.

All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for December 2013

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cl	N	Ch	shs	N	Ch	shs	Date	Remarks
1	75	7	26	02	04	5.3	3.5	88	4.8	1033.2	2	012	02	2	2	7	5	5	/	/	87625						1	
2	57	7	05	03	06	7.0	6.0	94	5.7	1035.4	0	002	05	2	2	7	5	6	/	1	87633						2	/Ci75
3	66	8	06	02	07	5.7	2.0	77	4.3	1030.6	3	001	02	2	2	8	5	5	/	/	82620	88622					3	
4	50	8	23	04	08	7.1	4.6	84	5.2	1028.0	3	014	60	6	2	8	5	6	/	/	83630	86640	88650				4	
5	82	8	23	12	23	4.5	0.8	77	4.0	1023.3	7	041	03	2	2	2	0	9	7	7	82365	83072	88275				5	
6	80	5	22	05	10	2.5	-1.6	74	3.3	1029.0	2	014	02	1	1	1	5	6	0	1	81640	85080					6	COTRA Hoar slit
7	59	7	24	06	11	6.9	5.4	90	5.5	1027.7	2	003	05	2	2	7	5	6	/	/	81640	87645					7	
8	75	6	23	05	09	6.1	4.1	87	5.0	1025.9	3	009	15	1	1	5	8	5	/	1	81820	83640	85656				8	1Sc30 /Ci78 COTRA Cu med jpN
9	63	7	20	04	08	5.4	4.6	94	5.2	1029.6	2	013	02	2	2	3	5	5	3	2	83620	86073					9	1Ac68 COTRA
10	35	7	06	01	05	1.5	1.2	98	4.0	1031.6	3	011	10	2	2	7	5	5	/	/	87625						10	
11	01	9	08	02	05	1.0	0.8	99	3.9	1030.7	3	005	45	4	4	9	/	/	/	/							11	vv150
12	17	7	19	03	08	6.2	6.0	98	5.7	1025.2	6	002	10	2	2	7	6	2	/	1	87705						12	/Ci70 COTRA
13	75	7	20	07	12	11.7	6.9	72	6.1	1019.3	6	006	01	6	2	1	5	7	7	2	81650	86362	85367				13	/Ci75
14	65	6	21	01	08	4.3	2.5	87	4.5	1026.0	3	009	03	1	1	2	5	4	7	0	81715	86367					14	2Sc20 Ac str vir
15	60	7	18	06	09	7.7	7.0	95	6.2	1021.1	8	002	10	1	1	1	5	5	3	1	81625	87078					15	2Ac68 COTRA
16	58	8	21	13	25	12.1	10.8	92	8.0	1014.8	1	007	61	6	2	7	7	3	2	/	82708	87712	88520				16	
17	82	7	17	01	04	4.3	3.7	96	4.9	1025.2	2	021	01	2	2	1	6	3	7	/	81708	87360					17	2As58 Cld edge NW
18	68	2	19	07	15	6.9	5.8	93	5.7	1012.7	7	018	03	0	0	1	8	4	0	1	81815						18	1Sc56 2Ci70Cu fra/hum
19	78	1	23	07	13	4.1	1.2	81	4.2	1002.5	2	033	02	8	1	1	0	9	3	1	81365						19	1Ci68 Parhelion Meteor 0758
20	75	5	21	07	13	3.1	1.2	87	4.1	1020.6	2	031	03	1	1	0	0	9	0	1	85080						20	COTRA Hoar slit
21	56	8	20	14	34	10.8	9.6	92	7.4	1014.1	7	008	51	6	5	8	5	4	/	/	87710	88620					21	
22	80	5	24	08	22	8.2	4.7	78	5.3	1007.9	3	008	15	8	1	1	9	4	6	1	81915	83362					22	1Cu20 1Sc50 1Ci70 jpS vv60k ex S
23	63	8	19	13	23	9.3	6.6	83	6.1	1003.0	8	053	60	6	2	7	5	4	2	/	82712	87618	88550				23	
24	67	6	22	09	21	8.1	4.6	78	5.4	979.2	2	010	03	8	1	2	5	4	7	6	81715	83363	85270				24	2Sc35
25	82	3	19	06	15	3.8	1.6	85	4.4	984.0	2	016	15	0	0	1	9	5	6	3	81920	83070					25	1Ac58 jpSW Cb top SW-SE Hoar slit
26	03	9	24	02	10	1.6	1.3	98	4.2	996.1	2	034	43	4	1	9	/	/	/	/							26	
27	62	7	22	15	29	9.7	3.5	65	5.0	984.0	3	013	21	6	2	1	5	6	7	/	81630	85362	87465				27	2Ac58 Cld edge distant NW
28	86	2	21	06	08	3.3	0.9	84	4.1	996.7	3	031	02	0	0	1	8	6	6	3	81830						28	1Sc40 1Ac62 2Ci70 Cu ned Cb top NW, S-SE Hoar slit
29	64	0	22	04	07	0.7	0.1	96	3.8	1015.7	1	035	02	0	0	0	0	9	0	0							29	Hoar mod
30	65	8	19	16	35	10.1	7.7	85	6.6	1006.7	7	030	61	6	2	7	5	4	2	/	85712	87615	88525				30	
31	72	7	18	10	19	9.6	7.2	85	6.4	1001.4	6	019	03	6	2	2	8	4	3	8	82818	87275					31	1Sc50 1Ac68 COTRA Cu med

Mean vis = 18.5 km

Mean cloud = 6.1 77%

Mean wind speed = 6.5 kn

Mean gust = 14 kn

Mean TT = 6.1 °C

Mean TdTd = 4.0 °C

Mean RH = 86.8 %

Mean r = 5.1 g/kg

Mean PPP = 1015.5 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation
trails present.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for December 2013

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ci	NChs	shs	NChs	shs	Date	Remarks
1	80	7	03	01	03	9.0	5.0	76	5.3	1032.9	6	002	02	2	2	7	8	5	/	/	81825	87630			1	Cu hum
2	68	8	03	03	06	8.6	3.6	70	4.8	1033.0	6	011	02	2	2	8	5	5	/	/	88625				2	
3	68	8	26	04	08	5.7	0.5	69	3.9	1028.6	6	012	02	2	2	8	5	5	/	/	88622				3	
4	84	6	33	05	13	6.8	1.0	66	4.0	1031.0	3	013	01	2	2	1	0	9	3	1	81368	86078			4	2Ci72 COTRA Parhelion
5	75	7	25	15	34	10.2	4.8	69	5.3	1017.5	5	021	02	2	2	7	8	5	/	/	82822	87630			5	Cu hum
6	82	5	30	04	12	8.5	2.5	66	4.5	1029.1	5	004	02	1	1	4	8	5	8	1	82825	83635			6	1Ac68 1Ci80 COTRA Cu hum Ac cas vir
7	84	7	24	07	12	8.7	5.5	80	5.5	1025.8	7	014	01	2	2	7	8	5	/	1	81820	87640			7	/Ci75 Cu hum
8	82	7	24	09	16	10.7	6.5	75	5.9	1025.2	5	002	03	1	1	1	8	4	0	2	81818	87078			8	1Sc50 Cu hum
9	66	6	22	04	12	9.8	7.1	83	6.1	1028.9	7	005	01	2	2	1	8	4	0	1	81815	86078			9	1Sc30 Cu hum
10	61	7	20	03	08	8.9	6.9	87	6.1	1031.2	5	000	02	2	2	7	5	5	/	/	87620				10	
11	01	9	06	03	05	4.3	4.0	98	5.0	1028.2	7	015	47	4	4	9	/	/	/	/					11	
12	35	7	20	07	13	8.7	8.2	97	6.7	1023.4	7	012	10	2	2	2	5	6	4	1	82635	87075			12	2Ac68 COTRA U/a cont
13	58	8	20	10	17	11.0	9.2	88	7.2	1016.8	6	609	51	5	2	8	7	3	/	/	85708	88712			13	
14	68	7	21	13	28	11.3	7.3	77	6.3	1021.8	7	025	01	2	2	3	1	4	7	2	83818	85363	86466		14	/Ci75 Cu hum irisation
15	61	8	20	13	24	12.2	11.0	92	8.1	1017.3	7	019	58	6	5	8	5	3	/	/	87708	88615			15	
16	59	7	22	08	17	12.8	10.2	84	7.7	1016.0	3	009	15	2	2	6	8	4	7	2	82815	85640	85365		16	7Ci70 Cu med jpNW
17	59	7	05	03	07	5.4	4.4	94	5.2	1021.6	6	027	10	1	1	2	6	3	7	2	82708	85357	86360		17	/Ci70
18	68	8	19	14	26	9.9	7.0	82	6.3	1005.0	7	048	50	5	2	8	5	4	/	/	81712	87615	88650		18	
19	80	6	21	07	15	7.5	1.4	65	4.2	1003.9	5	000	03	1	1	1	5	7	7	6	81656	83465	86268		19	1Ac60
20	70	6	21	09	19	8.8	3.9	71	5.0	1021.3	8	007	03	1	1	1	5	7	0	2	81650	83070	85075		20	COTRA Parhelion
21	60	8	21	16	29	11.5	9.7	88	7.5	1008.8	7	021	58	6	5	7	7	3	2	/	81708	87712	88550		21	
22	82	1	24	11	21	8.3	1.5	62	4.2	1008.8	0	002	02	8	1	1	8	6	6	3	81830				22	1Sc45 1Ac62 1Ci70
23	57	8	20	20	39	11.0	8.9	87	7.2	989.1	7	073	63	6	6	7	5	4	2	/	83615	87620	88530		23	
24	84	5	21	09	17	6.9	2.7	75	4.8	980.7	3	002	02	8	1	1	1	5	3	8	81825	85072			24	1Ac59 COTRA Cu fra Halo 22° part
25	80	6	14	04	10	5.0	2.3	83	4.6	985.4	1	005	15	1	1	1	9	5	6	3	81925	86070			25	1Sc45 1Ac65 jpS vv60k ex S
26	65	1	21	05	09	4.8	3.9	94	5.1	998.3	1	004	02	4	1	1	5	0	1		81620				26	1Ci80
27	80	2	24	13	27	9.5	1.3	57	4.3	986.9	3	012	01	1	1	1	8	6	3	8	81835				27	1Sc45 1Ac65 2Cs70 Cu fra Cs edge SE
28	86	6	21	06	13	7.2	1.8	68	4.4	998.8	3	008	03	1	1	1	8	5	6	3	81825	85070			28	1Sc50 2Ac65 Cu med
29	80	1	23	07	12	6.3	1.6	72	4.2	1018.6	2	012	03	0	0	1	0	9	4	1	81368				29	1Ci75 Ci edge W
30	82	2	24	09	26	8.7	4.4	75	5.2	1009.3	2	047	01	6	1	2	8	5	0	0	81823				30	2Sc35
31	81	7	20	04	13	6.9	5.3	90	5.6	1001.4	6	003	21	6	2	1	8	4	7	/	81812	83359	87462		31	1Sc56 Cu fra/hum Cld edge W VV60k ex E

Mean vis = 24.9 km

Mean cloud = 6.0 75%

Mean wind speed = 7.9 kn

Mean gust = 16 kn

Mean TT = 8.5 °C

Mean TdTd = 4.9 °C

Mean RH = 78.7 %

Mean r = 5.5 g/kg

Mean PPP = 1014.3 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.

Wokingham Sunshine Hourly analysis	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
2013	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	0.00	0.00	0.64	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.18	0.30	0.00
	9	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00	0.84	0.00	0.00	0.08	0.00	0.71	0.19	0.00
	10	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.30	1.00	0.00	0.00	0.53	0.00	0.73	0.08	0.00
	11	0.00	0.00	0.00	0.00	0.44	1.00	0.00	0.61	1.00	0.21	0.00	1.00	0.00	0.35	0.00	0.00
	12	0.00	0.00	0.00	0.00	0.12	0.86	0.00	0.98	1.00	0.71	0.01	0.99	0.00	0.00	0.00	0.00
	13	0.00	0.00	0.00	0.00	0.00	0.62	0.00	1.00	0.93	0.01	0.00	0.23	0.00	0.00	0.00	0.00
	14	0.00	0.00	0.00	0.14	0.00	0.98	0.00	1.00	0.92	0.00	0.00	0.02	0.00	0.00	0.00	0.00
	15	0.00	0.00	0.00	0.23	0.00	0.34	0.00	0.34	0.70	0.00	0.00	0.20	0.00	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		0.00	0.00	0.00	0.37	0.57	6.18	0.00	4.53	6.39	0.93	0.01	3.06	0.00	1.97	0.57	0.00

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	0.08	0.36	0.47	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.13	0.44	0.00	0.00	0.10
9	0.00	0.56	1.00	1.00	0.00	0.19	0.00	0.00	0.40	0.00	0.00	1.00	1.00	0.00	0.00	0.25
10	0.28	0.06	1.00	1.00	0.00	1.00	0.00	0.00	0.53	0.00	0.00	1.00	1.00	0.00	0.00	0.31
11	0.56	0.00	1.00	1.00	0.00	0.86	0.00	0.00	0.13	0.00	0.00	1.00	1.00	0.00	0.00	0.33
12	0.09	0.00	1.00	1.00	0.00	0.66	0.00	0.23	0.82	0.00	0.27	0.90	1.00	0.34	0.00	0.35
13	0.00	0.00	1.00	1.00	0.00	0.62	0.00	0.33	1.00	0.71	0.89	1.00	1.00	0.81	0.00	0.36
14	0.00	0.00	0.48	0.60	0.00	0.65	0.00	0.66	0.49	1.00	0.81	0.32	1.00	0.66	0.00	0.31
15	0.00	0.00	0.02	0.00	0.00	0.42	0.00	0.65	0.00	0.46	0.30	0.00	0.37	0.79	0.00	0.16
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	0.93	0.70	5.85	6.08	0.00	4.39	0.00	1.89	3.42	2.18	2.27	5.36	6.81	2.60	0.00	67.03

December 2013	T mn	Tx	Time	Tn	Time	RHmn	RH x	Time	RH n	Time	Tdmn	r mn	r x	Time	r n	Time	p mn	p x	Time	p n	Time
1	4.89	9.4	1414	-1.2	155	87.7	95.2	202	72.7	1312	2.98	4.64	5.4	1528	3.2	155	1033.29	1035.6	2359	1031.5	519
2	6.77	9.6	1146	4.5	2241	85.2	94.2	642	66.9	1341	4.38	5.09	5.9	1047	4.5	1722	1033.94	1035.8	20	1031.7	2351
3	5.44	6.3	1214	4.6	2115	76.9	91.9	55	68.9	1501	1.67	4.22	5.0	137	3.7	1722	1029.58	1031.9	2	1027.3	2315
4	4.65	8.4	1314	-0.9	2125	82.3	96.0	2133	60.4	1412	1.80	4.29	5.9	1022	3.2	2355	1029.84	1033.7	2314	1026.4	606
5	5.10	10.4	1509	-2.0	43	75.1	96.2	125	51.3	1747	0.79	4.02	5.8	1620	3.0	43	1024.18	1033.0	0	1017.3	1458
6	5.46	8.7	1454	0.7	557	73.0	92.2	2314	60.4	1159	0.91	4.04	5.2	2326	3.0	729	1028.23	1029.7	1105	1025.0	0
7	6.94	8.9	1404	4.4	134	89.2	93.5	400	79.9	1440	5.27	5.44	5.9	2052	4.7	134	1026.89	1028.7	18	1025.3	1834
8	7.42	10.9	1313	4.6	508	86.2	91.4	220	74.8	1448	5.24	5.45	6.2	1308	4.6	716	1025.64	1027.3	2359	1024.7	250
9	5.52	10.9	1324	-1.3	2347	91.6	97.1	2359	80.4	1329	4.23	5.11	6.6	1320	3.3	2356	1028.99	1030.4	2348	1026.9	109
10	2.36	9.1	1259	-2.1	204	94.4	98.2	803	82.9	1626	1.53	4.27	6.6	1208	3.1	204	1031.16	1032.1	2129	1030.2	30
11	1.03	6.0	1301	-2.3	2350	98.5	99.8	2223	96.5	0	0.83	4.00	5.6	1301	3.1	2352	1029.19	1031.5	2	1026.6	2357
12	4.91	9.8	2332	-2.6	44	96.5	99.6	422	89.3	2359	4.38	5.29	6.9	1322	3.1	44	1024.49	1026.9	16	1022.6	2357
13	10.26	12.7	1236	6.4	2342	82.5	93.4	1654	65.8	1201	7.35	6.34	7.6	1648	5.0	0	1019.32	1022.8	0	1016.4	1515
14	7.88	11.4	1445	2.6	715	83.0	92.5	2356	72.9	1854	5.14	5.49	7.2	2358	4.0	715	1022.12	1026.2	918	1017.3	2320
15	10.81	12.6	2112	5.7	736	92.4	95.4	827	87.4	533	9.64	7.43	8.3	1918	5.3	736	1018.68	1021.8	706	1015.4	2219
16	11.00	13.2	1408	6.6	2359	90.9	94.7	2204	82.8	1507	9.58	7.42	8.4	113	5.6	2359	1016.52	1021.1	2358	1013.6	610
17	5.07	6.8	0	3.9	806	95.0	97.1	2323	90.2	130	4.33	5.12	5.7	0	4.7	806	1021.54	1025.7	952	1015.8	2358
18	7.94	10.3	2217	4.1	555	90.1	97.3	223	80.3	1133	6.39	6.02	7.1	2207	4.9	555	1006.46	1015.8	210	991.0	2219
19	5.77	9.3	39	2.4	2223	79.2	92.0	2309	59.8	1422	2.36	4.56	6.5	14	4.0	2223	1002.60	1012.0	2359	993.0	16
20	6.38	10.5	2203	1.9	145	80.7	92.5	41	67.6	1307	3.24	4.81	6.5	2357	3.8	717	1018.76	1022.2	1054	1011.9	4
21	10.56	11.9	1733	7.9	2345	87.1	92.5	625	70.4	2105	8.49	6.92	7.9	1723	4.8	2359	1011.79	1017.5	26	1005.5	1745
22	7.38	10.1	1258	4.1	2336	74.2	81.8	514	58.7	1326	3.05	4.76	5.9	725	3.9	2311	1009.84	1013.6	2233	1006.1	649
23	9.11	12.0	2139	4.4	0	85.2	91.7	2042	77.7	147	6.77	6.34	8.0	2115	4.1	2	996.46	1013.5	0	975.9	2359
24	7.53	11.8	146	4.3	2358	81.2	93.2	2353	67.6	1614	4.49	5.48	7.9	140	4.1	1620	979.25	981.8	1744	974.0	100
25	3.77	6.7	1106	1.1	2030	88.3	96.8	2054	74.9	1239	1.98	4.50	5.2	1056	4.0	2030	984.57	988.3	2145	980.1	25
26	3.48	7.7	2213	0.4	530	94.6	98.1	925	79.5	2251	2.68	4.69	5.7	2209	3.9	530	995.02	999.2	1646	988.2	23
27	8.86	11.4	409	5.9	2359	71.2	92.1	342	55.7	1440	3.81	5.18	7.9	409	4.0	2359	986.27	991.3	2320	981.7	353
28	3.75	8.1	1217	-1.6	2248	80.8	97.3	2311	65.7	1218	0.64	4.04	4.6	1433	3.3	2248	997.94	1007.1	2356	991.1	5
29	3.13	8.7	2355	-2.3	433	87.0	97.9	503	72.2	1459	1.09	4.12	5.5	2351	3.1	429	1015.17	1018.9	1546	1007.0	0
30	8.24	10.4	643	4.2	2219	84.6	92.3	2247	70.7	1325	5.78	5.76	6.8	1212	4.6	2213	1010.01	1015.5	0	1003.7	1115
31	7.41	11.1	1039	4.3	1851	87.5	93.3	122	77.7	1048	5.47	5.67	6.7	629	4.6	2012	1003.27	1010.8	0	1000.4	1052
Total																					
Mean	6.41	9.84		2.35		85.6	94.43		72.97		4.07	5.18	6.45		4.02		1014.87	1019.41		1009.79	
Max	11.00	13.24		7.93		98.5	99.80		96.50		9.64	7.43	8.36		5.60		1033.94	1035.77		1031.75	
Min	1.03	6.04		-2.64		71.2	81.80		51.28		0.64	4.00	4.58		3.04		979.25	981.78		973.96	

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 (Not included wef. Dec 2013)
 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 2010. For some parameters, notably wind, the climatological average is not available, and if the word average is used in the context of wind, it refers to the average for the period for which data is held, namely 1988 to present.

For sunshine, there was a change in instrument used to detect sunshine amount in July 1999, and the data produced by the new instrument is not strictly comparable with that obtained prior to July 1999, making the climatological average based on the old instrument of little use. In general, the new instrument produces higher values in the winter half year, and lower ones in the summer half, than the old type of instrument, due to a combination of faster reaction and higher sensitivity than the old type. Thus the average used in this case is for a theoretical equivalent average for the 1981 to 2010 climatological period for this new instrument, based on comparisons with Met Office published tables of departure from the climatological average sunshine in the months since 2000 for their area 'Southern England'. Users of the Wokingham Monthly Weather reports should be aware of this, and regard the anomalies for sunshine published therein as a guide only, until such time has elapsed since the introduction of the new instrument that a genuine average becomes available.

Mean: The mean of the data under discussion, often the monthly mean of daily data. The mean is obtained by summation of the individual values and dividing by the number of values. The term 'daily mean' in respect of temperature is defined as "half (max+min)". A true daily 24 hour (00 to 24 GMT) mean temperature is available from the AWS, and is currently published on page 7 of the Wokingham Monthly Weather Report on the Wokingham Weather Web Site, page1. <http://www.woksat.info/wwp1.html>

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

- a): The departure of a mean from the current climatological average.
- b): The departure of a value from the a long-term average for a particular day.

When the word anomaly is used in respect to temperature, any values given are in degrees C. In respect to rainfall, percent. In respect of sunshine, percent. In respect to wind, mph. In respect to pressure, millibars/hpa.

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

Temperature: The terms mild/cold are used in the winter half year, and warm/cool in the summer half.

The term normal is defined as being when the individual mean (monthly, seasonal or annual) value is within 20% of the median of all ranked values for that month/season/year.

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

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

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

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

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

The definition for sunshine follow the same rules as for temperature.

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

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

The term wet is used for values lying between 10% and 30% below the highest value in the ranked series.

the term very wet is used for values lying within 10% of the highest value in the ranked series.

The term dry is used for values lying between 10% and 30% of the lowest value in the ranked series.

The term very dry is used for values lying within 10% of the lowest value in the ranked series.

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

In the case of monthly max, min and mean temperature and of rainfall total the 'long-term' goes from the present back to 1882. For extremes of temperature, highest max and lowest min are back to 1904, and for lowest max and highest min, to 1913.

Rank : The word rank refers to the position of a value for a particular month/season/year in the ranked values of the entire series. The central value in the ranked series is known as the median. This value may be different from the 'average' if the population of values is skewed. Also, as the median considers all values in the series, and the average refers to a 30 year climatological period, during periods of climatic change, the median will also be expected to differ from the average.

Month: Calendar month.

Season: Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

The year number given when discussing 'winter' is usually the year in which the majority of the period lies, i.e. January/February

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

The climatological day : runs from 09 to 09 GMT. The max temperature and rainfall read at 0900 are attributed to the previous day, as is the duration of measurable rain calculated up to 0900 GMT. The min temperature and grass min read at 0900 are attributed to the day of reading . Pressure is read at 0900 GMT, and the monthly mean pressure is the mean of the 0900 readings. Sunshine data, wind data, rainfall rates and 24 hour data from the AWS use the normal 00 to 24 GMT day.

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

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

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

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

A day of small hail is recorded if hailstones less than 5 mm diameter are observed or recorded in a 24 hour period starting at midnight. Note, various types of other ice meteors such as ice pellets, snow grains, and some types of snow pellets are included in this category.

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

Thunder: A day of thunder is recorded if thunder is heard in the 24 hour period from midnight on that day.

Rainfall : Rainfall is given in mm and tenths. "tr" (trace) is entered when: a) precipitation has occurred but there is no water in the gauge. b) There is water in the gauge but it is less than 0.05 mm.

Dry Spell : A dry spell, for the purposes of the Wokingham climatological data and reports, is defined as a period of 5 or more consecutive dry days. A dry day is defined as one where the 24 hour precipitation measured at 09 GMT is not greater than 0.1 mm.

Wind: The following abbreviations may be used to denote wind directions :

Degrees are from true north

N = North = 360° and 22.5° either side.

NE = NorthEast = 045° and 22.5° either side.

E = East = 090° and 22.5° either side.

SE = SouthEast = 135° and 22.5° either side.

S = South = 180° and 22.5° either side.

SW = SouthWest = 225° and 22.5° either side.

W = West = 270° and 22.5° either side.

NW = NorthWest = 315° and 22.5° either side.

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

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

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

Appendix 2.

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

VV : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

RH : Relative humidity at 1.2m, %.

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

ppp : 3 hour pressure tendency in tenths of a millibar

ww : Present weather code figures, 00 to 99.

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

Cl : Type of low cloud

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

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

Cm : Type of medium cloud.

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