

# 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

### JANUARY 2017

Temperature (°C)		Anomaly		Rank in the past 136 years					
Mean maximum	7.3	-0.5		62 <sup>nd</sup> highest					
Mean minimum	-0.4	-2.2		26 <sup>th</sup> lowest					
Daily mean	3.4	-1.4		40 <sup>th</sup> lowest					
Highest maximum	11.3	on 31 <sup>st</sup>	Lowest maximum	0.9	on 26 <sup>th</sup>				
Highest minimum	7.5	on 8 <sup>th</sup>	Lowest minimum	-6.7	on 22 <sup>nd</sup>				
Mean grass minimum	-3.3	-2.2	Lowest grass minimum	-10.4	on 21 <sup>st</sup>				
Mean earth @30 cm	4.3	-1.1	Earth @100 cm	7.1					
Frost duration (hrs)	208.8		Rain duration (hrs)	88.5					
Rainfall total (mm)	65.9	106%	53 <sup>rd</sup> highest						
Highest daily fall	14.0	on 29 <sup>th</sup>							
Number of: Dry days (<0.2mm)	17	Wet days (>0.9mm)	11	days ≥5mm	5				
Sunshine total (hrs)	89.3	Daily mean	2.88	143%	Sunniest day	8.1 on 20 <sup>th</sup>			
N° days with: Air frost	20	Ground frost	21	Snow falling	3	Snow lying	0		
Thunder	0	Hail ≥5mm	0	Small hail/ice	1	Fog @09	3	Nil sun	12
Pressure MSL: Mean @09 GMT, mbar	1023.9	+7.2	Highest	1040.0	on 18 <sup>th</sup>	Lowest	994.6	on 12 <sup>th</sup>	
Relative humidity: Mean (%)	90.5	Lowest	41	on 17 <sup>th</sup>	Water vapour (g/kg), mean at 09 and 15 GMT	4.3,	4.7		
Overall mean wind speed (mph)	5.1	Windiest day	11.2	on 13 <sup>th</sup>	Max gust	38	on 13 <sup>th</sup>		
Wind direction (days)	N 2	NE 3	E 4	SE 4	S 5	SW 5	W 8	NW 0	
Least windy day (mph)	1.5	on 18 <sup>th</sup>	Calm; less than 0.5 mph (minutes)	1674					

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

Notes:

#### Cold and Sunny with Rainfall Above Average.

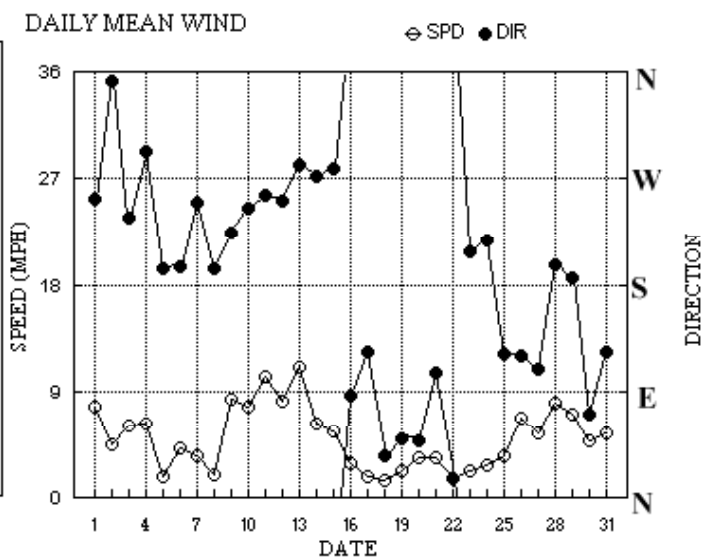
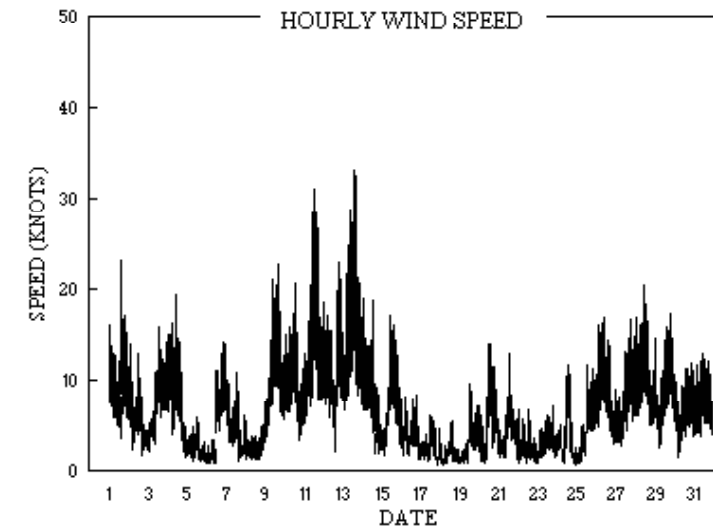
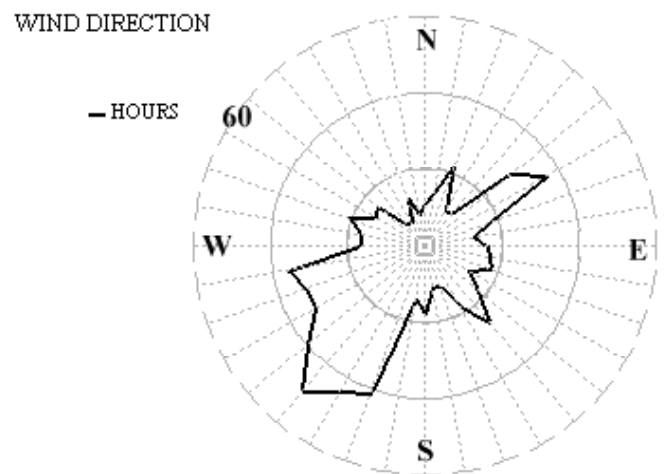
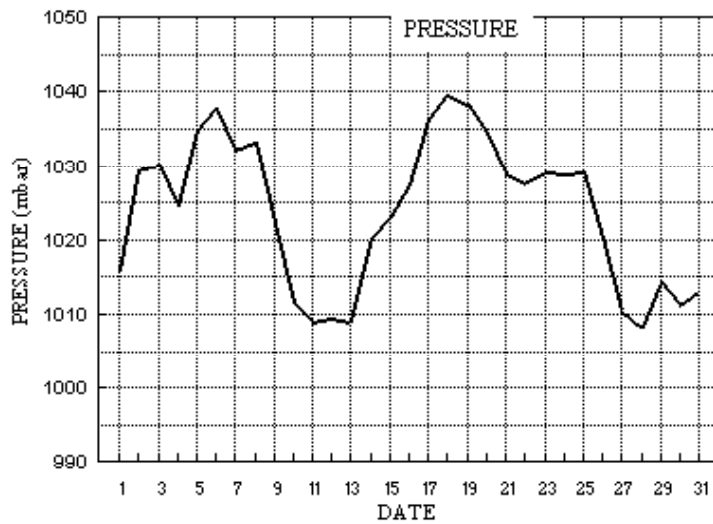
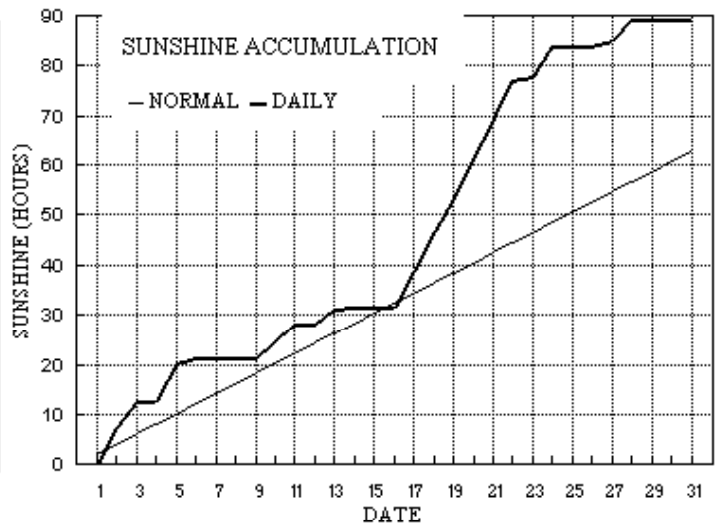
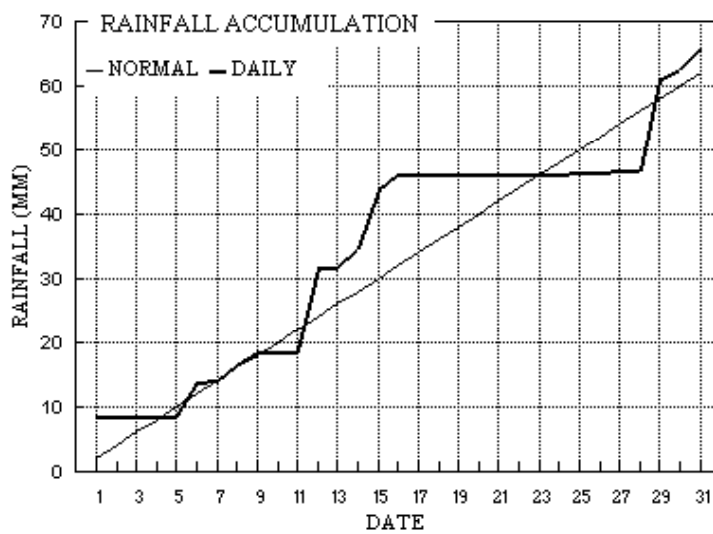
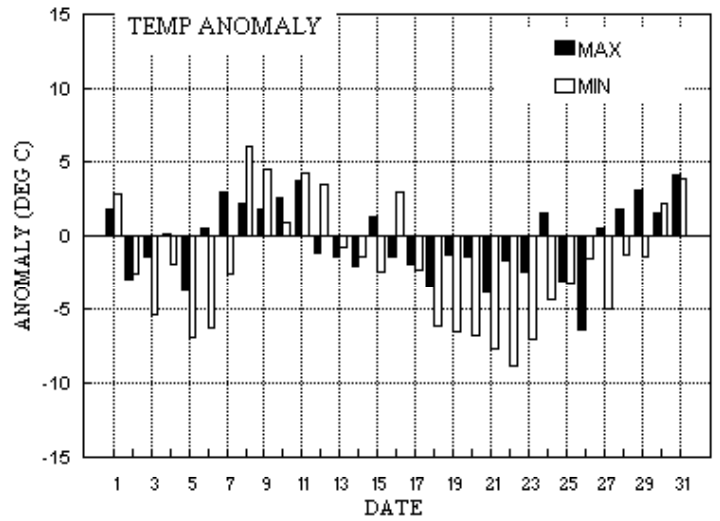
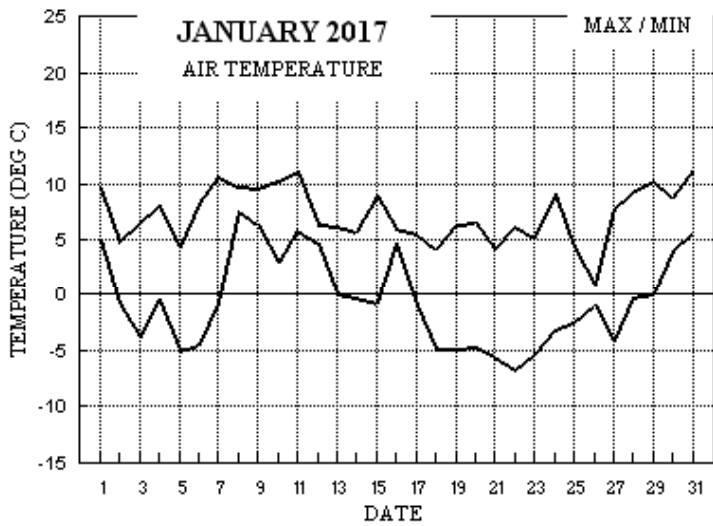
**Temperature:** This has been a cold January, with the daily mean and mean minimum lowest since 2010, although the mean maximum is lowest only since 2013. In the past 42 years, 8 Januaries have been colder than this, but looking further back, the Januaries of 1940 and 1963 had a mean temperature lower than this year's mean minimum. The highest max is 1.2° below the median and the lowest max is exactly on the median. Both the highest and lowest min are 0.8° below their respective medians. The mean daily temperature range, 7.7°, is 1.5° above average and is equal highest with 2015 in the past 42 years. The mean grass min is equal lowest with 2010 since 1997. Earth temperature at both 30 cm and 1 m depth are well below average and lowest since 2010. Daily temperatures were near of below normal up to the 7<sup>th</sup>, then above normal to the 11<sup>th</sup>, followed by a long cold spell until the 27<sup>th</sup>, the month finishing on a slightly milder note. Extreme anomalies for daily max were +4° on the 31<sup>st</sup> and -6° on the 26<sup>th</sup>. For daily min, +6° on the 8<sup>th</sup> and -9° on the 22<sup>nd</sup>, but also exceeded -6° on the 5<sup>th</sup>, 6<sup>th</sup>, and 18<sup>th</sup> to the 23<sup>rd</sup>. The number of days with air frost is 9 above average and equal highest with 1997 since 1985. Days with ground frost is 3 above average. Air frost duration is 109.5 hours above average and highest since 2010. **Rainfall:** The month was notable for a long dry spell lasting from the 17<sup>th</sup> to the 26<sup>th</sup>. The total for the month is not far from average, and is lower than last years but more than in 2015. There were 3 more dry days than average but both the number of days with 5 mm or more and 10 mm or more are average. Rainfall duration is 145 % of average and the longest in a rainfall day was 14.5 hours on the 15<sup>th</sup>. The highest rainfall rate was 10 mm/hr on the 29<sup>th</sup>. Sleet and snow fell on the 12<sup>th</sup>, 13<sup>th</sup> and 25<sup>th</sup>, the latter very slight, but lying snow did not survive to 0900 on any day. A cold night after a wet day on the 1<sup>st</sup> led to icy conditions on untreated roads, and again on the 25<sup>th</sup> due to freezing drizzle and fog. There was no thunder or hail this month. **Sunshine:** This has been a sunny January, with 143 % of average sunshine. The total is equal highest with 2014 since 2012, and before that 2003. The month was fairly sunny until the 5<sup>th</sup> by which time there was an accumulated surplus of 10 hours compared with normal. Dull days then reduced this to zero by the 16<sup>th</sup>. The 17<sup>th</sup> to 22<sup>nd</sup> was outstandingly sunny, the 6 day total of 45.6 hours being 71 % of the monthly average, and 4 of the days had over 90 % of the maximum. This lifted the accumulation to 33 hours above normal, but further dull days followed reducing this to 27 hours by the 31<sup>st</sup>. Overall there were 17 days with <3 hours and 9 with =>6 hours. **Wind:** The mean speed is 2.8 mph below average, and is lowest for January since before 1988. The month's windiest day is 2<sup>nd</sup> lowest after 2010 in the same period. The duration of calm is very high for a January, and is about 1000 minutes more than normal. W'ly wind on the 1<sup>st</sup> veered N'ly on the 2<sup>nd</sup>, backed S'ly by the 5<sup>th</sup>, veered W'ly by the 15<sup>th</sup>, was variable or E'ly until the 25<sup>th</sup>, then mainly SE'ly. Speeds were light or moderate up to the 10<sup>th</sup>, but very light on the 5<sup>th</sup> and 8<sup>th</sup>, becoming moderate or fresh on the 11<sup>th</sup>, decreasing very light or light by the 17<sup>th</sup>, becoming light or moderate after the 25<sup>th</sup>. **Pressure:** The mean air pressure is highest since 2000.

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>			
+0.4°	-1.1°	95%	124%	-0.9°	-1.6°	140%	183%	-0.5°	-3.1°	90%	124%

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

# Wokingham climatological graphs for January 2017



Month: JANUARY 2017

Date	Max C	Min C	Rain mm	Grass Min	30cm C	100cm C	Sun hrs	Frost hrs	pp09 mbar	Af Gf	Sf SI	Th Ha	Ic Fg	Vec ddd	mean ff	sp	Max gust ddd	gg	HHhh	High hr ddd	ff	Rain HH	hrs
1	9.6	5.0	8.4	3.9	5.7	8.3	0.0	0.0	1015.9	0	0	0	0	253	0.7	6.7	16	23	1426	13	11	14	9.3
2	4.9	-0.8	0.0	-6.2	5.9	8.2	7.3	6.8	1029.3	1	1	0	0	351	2.5	3.9	13	14	0114	12	7	00	0.0
3	6.5	-3.8	tr	-8.5	5.1	8.2	5.5	9.3	1030.2	1	1	0	0	236	5.1	5.4	265	16	1256	254	8	12	0.0
4	8.1	-0.5	tr	-2.6	4.6	8.1	0.0	4.2	1024.5	1	1	0	0	292	3.9	5.5	280	20	0959	257	9	04	0.0
5	4.4	-5.0	0.0	-10.0	4.7	7.9	7.3	17.9	1034.8	1	1	0	0	194	0.8	1.6	50	6	1255	201	2	08	0.0
6	8.3	-4.5	5.5	-8.6	3.9	7.9	1.4	9.9	1037.7	1	1	0	0	195	2.7	3.6	188	14	2059	202	7	22	11.9
7	10.6	-0.8	0.2	-3.3	4.1	7.6	0.0	0.0	1032.2	1	0	0	0	250	2.7	3.1	291	11	1256	212	5	00	0.9
8	9.8	7.5	2.2	6.8	5.2	7.5	0.0	0.0	1033.2	0	0	0	0	194	0.8	1.7	194	8	2323	212	4	23	2.7
9	9.6	6.4	2.2	0.4	5.9	7.4	0.0	0.0	1022.3	0	0	0	0	224	6.9	7.3	279	23	1718	218	11	15	3.5
10	10.3	2.9	0.0	-0.6	6.0	7.5	3.1	0.0	1011.4	0	1	0	0	245	6.3	6.7	263	21	1204	262	9	11	0.0
11	11.2	5.8	0.0	0.5	5.9	7.5	3.7	0.0	1009.0	0	0	0	0	256	8.1	8.9	301	31	1231	284	14	14	0.0
12	6.4	4.6	13.3	0.9	5.9	7.6	0.0	0.0	1009.6	0	0	1	0	251	5.0	7.2	327	23	1808	333	10	18	8.7
13	6.2	0.1	tr	-3.0	5.5	7.6	3.0	0.0	1008.9	0	1	1	0	281	9.2	9.7	307	33	1319	307	15	13	0.1
14	5.7	-0.2	2.9	-3.2	5.0	7.5	0.3	2.4	1020.1	1	1	0	0	272	5.0	5.4	283	19	0108	308	9	13	5.5
15	8.9	-0.8	9.0	-5.0	4.6	7.5	0.0	0.8	1023.1	1	1	0	0	278	3.8	4.9	253	17	1135	257	9	11	14.5
16	6.1	4.7	2.4	5.2	5.2	7.3	0.0	0.0	1027.3	0	0	0	0	87	1.9	2.5	127	8	1816	120	4	18	4.5
17	5.6	-0.9	0.0	-5.5	5.5	7.3	7.3	10.5	1036.3	1	1	0	0	123	1.0	1.6	107	6	1238	138	3	17	0.0
18	4.1	-4.8	0.0	-8.7	4.8	7.3	8.0	18.2	1039.7	1	1	0	0	36	0.9	1.3	30	6	1523	14	3	13	0.0
19	6.4	-4.8	0.0	-8.1	3.9	7.2	6.4	13.8	1038.3	1	1	0	0	50	1.4	2.0	57	10	1210	48	4	12	0.0
20	6.6	-4.6	0.0	-9.6	3.4	7.1	8.1	14.4	1034.6	1	1	0	0	49	2.8	2.9	60	14	1255	60	6	13	0.0
21	4.1	-5.5	0.0	-10.4	3.0	6.9	8.0	17.4	1029.0	1	1	0	0	106	1.8	2.9	113	13	1418	110	7	14	0.0
22	6.2	-6.7	0.0	-10.0	2.7	6.7	7.8	18.4	1027.5	1	1	0	0	17	0.3	1.5	187	7	0050	155	3	13	0.0
23	5.2	-5.3	0.0	-9.1	2.5	6.5	0.7	10.8	1029.1	1	1	0	0	208	2.0	2.1	196	7	1842	207	3	12	0.0
24	9.1	-3.1	0.1	-7.6	2.3	6.2	6.1	14.2	1029.0	1	1	0	0	217	2.0	2.5	233	12	1447	238	7	14	0.0
25	4.3	-2.4	0.1	-7.2	2.3	6.1	0.0	10.6	1029.1	1	1	1	0	122	2.5	3.1	135	12	1327	128	6	21	0.0
26	0.9	-0.9	0.0	-0.7	2.3	5.9	0.0	20.1	1020.3	1	1	0	0	120	5.3	5.9	154	17	1042	138	8	09	0.0
27	7.8	-4.1	0.3	-8.5	2.3	5.8	0.9	9.1	1010.4	1	1	0	0	109	4.0	4.8	137	17	1914	137	7	19	1.1
28	9.3	-0.2	0.2	3.6	2.5	5.7	4.3	0.0	1008.3	1	0	0	0	197	5.6	7.0	204	21	1101	222	10	11	0.2
29	10.3	0.1	14.0	-5.1	3.1	5.6	0.1	0.0	1014.4	0	1	0	0	185	5.6	6.1	182	17	1959	188	9	19	9.3
30	8.7	4.0	1.9	5.8	3.8	5.6	0.0	0.0	1011.2	0	0	0	0	71	2.1	4.2	99	12	2216	246	6	02	6.0
31	11.3	5.7	3.2	5.6	4.6	5.7	0.0	0.0	1013.1	0	0	0	0	124	4.5	4.8	145	13	1151	147	7	11	10.3
Total			65.9				89.3	208.8															88.5
Mean	7.3	-0.4		-3.3	4.3	7.1	2.88	6.7	1023.9					227	2	4.4							
Anom	-0.5	-2.2	106%	-2.2	-1.1	-0.4	143%																

Daily mean 3.4 Pressure, abs highest = 1040.0 on 18

Anom -1.4 Pressure, abs lowest = 994.6 on 12

Number of days with:

Air frost = 20 Ground frost = 21 Nil sun = 12  
 Snow falling = 3 Snow lying = 0 Thunder = 0  
 Hail=>5mm = 0 Hail<5mm or ice = 1 Fog at 09GMT = 3

Abbreviations.

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

Rain = total rainfall and melted snowfall in 24 hour period ending at 09 GMT, millimetres. (Tr = trace, <.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. SI = 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 JANUARY 2017

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	NCh	shs	NCh	shs	Date	Remarks
1	50	7	20	07	12	7.6	6.9	95	6.1	1015.9	6	015	60	6	2	7	5	3	/	/	83706	85645	87656		1		
2	65	1	36	05	08	0.7	0.1	96	3.8	1029.3	1	025	02	0	0	0	0	9	0	1	81080				2	COTRA Hoar mod lcy patches	
3	82	6	23	04	07	-0.5	-1.5	93	3.4	1030.2	3	002	03	1	1	1	0	9	3	1	81368	86075			3	COTRA Hoar thk Glaze slt	
4	82	7	28	08	14	6.5	3.5	81	4.8	1024.5	2	007	21	6	2	7	5	5	/	/	83620	87635			4		
5	70	2	22	01	05	-3.8	-4.1	98	2.8	1034.8	3	016	02	0	0	0	0	9	0	1	82080				5	COTRA Hoar mod	
6	40	7	28	01	03	-0.8	-1.1	98	3.5	1037.7	3	005	10	2	2	7	5	6	/	1	81635	87638			6	/Ci75 Hoar mod	
7	18	7	25	03	06	8.3	8.2	99	6.7	1032.2	2	010	20	5	2	7	7	2	/	/	85705	87708			7		
8	10	8	01	01	03	8.1	8.0	99	6.6	1033.2	3	011	51	5	2	8	6	1	/	/	85702	88704			8		
9	82	7	22	08	13	8.7	7.2	90	6.2	1022.3	6	021	01	2	2	4	5	4	7	5	82612	83618	85362		9	2Cs75	
10	80	6	26	08	13	6.1	3.3	82	4.8	1011.4	1	017	01	2	2	2	5	6	0	1	82635	85075			10	COTRA	
11	86	6	25	07	12	9.8	7.2	84	6.3	1009.0	3	010	01	2	2	6	1	6	0	0	86830				11	Cu hum	
12	72	8	22	07	15	5.8	3.0	82	4.7	1009.6	8	028	15	2	2	4	5	6	7	/	81635	84656	88462		12	3Ac58 jpSW	
13	86	6	26	12	21	1.9	-2.2	74	3.2	1008.9	1	016	03	1	1	2	5	6	7	2	82645	84357			13	2Ac62 1Ci72 Hoar slt. lcy patches	
14	86	7	25	08	13	1.7	-0.2	87	3.7	1020.1	3	012	03	1	1	7	0	9	7	/	87362				14	Ac vir Hoar slt	
15	57	8	23	05	09	4.7	4.4	98	5.2	1023.1	8	007	63	6	6	5	7	4	2	/	85710	88520			15		
16	30	8	09	01	03	5.5	5.4	99	5.5	1027.3	2	015	63	6	6	7	7	2	2	/	83703	86705	88515		16		
17	08	1	01	02	03	-0.6	-0.6	100	3.6	1036.3	2	019	41	4	0	1	0	9	7	1	81358				17	1Ac65 1Ci75 COTRA Hoar slt	
18	30	6	05	01	02	-3.8	-4.1	98	2.8	1039.7	2	015	10	2	2	1	0	9	3	1	81362	86080			18	COTRA Hoar thk	
19	57	4	20	02	03	-3.3	-3.7	97	2.9	1038.3	3	007	10	0	0	4	5	7	0	1	84656				19	1Ci75 Hoar mod	
20	65	1	04	01	03	-3.7	-4.0	98	2.8	1034.6	5	000	02	0	0	0	0	9	0	1	81080				20	COTRA Hoar thk Gnd frzn	
21	50	1	03	01	03	-4.5	-4.8	98	2.6	1029.0	5	001	10	0	0	0	0	9	0	1	81080				21	COTRA Hoar thk	
22	20	1	02	01	05	-5.3	-5.8	96	2.4	1027.5	3	014	10	0	0	0	0	9	0	1	81075				22	Hoar thk	
23	04	8	20	02	04	-2.1	-2.1	100	3.2	1029.1	2	004	48	4	2	8	5	7	/	/	88650				23	Hoar+rime mod Gnd frzn	
24	20	5	35	01	02	-2.4	-2.5	99	3.1	1029.0	3	013	10	4	1	2	5	6	0	1	82630	85071			24	Hoar mod Gnd frzn	
25	01	9	02	02	04	-0.6	-0.6	100	3.6	1029.1	3	005	45	4	4	9	/	/	/	/					25	vv120 Rime slt. Glaze.	
26	56	8	14	07	16	-0.0	-1.7	88	3.3	1020.3	6	008	05	2	2	8	6	3	/	/	88709				26		
27	20	7	06	04	07	-0.2	-0.3	99	3.7	1010.4	2	004	10	2	2	7	5	4	/	/	87615				27	Hoar thk. Gnd frzn	
28	82	7	25	07	17	6.4	3.9	84	5.0	1008.3	3	021	21	6	2	6	5	4	7	/	81712	85650	87358		28	2Sc20 CF 0830	
29	62	7	17	06	10	4.0	3.6	97	4.9	1014.4	0	001	03	1	1	3	5	6	7	1	81645	83656	87358		29	/Ci72	
30	15	8	04	03	05	7.1	7.0	99	6.2	1011.2	2	019	20	5	2	8	5	2	/	/	81703	87705	88615		30		
31	22	8	11	04	10	6.3	6.0	98	5.8	1013.1	2	005	20	5	2	8	7	1	/	/	82702	86703	88705		31		

Mean vis = 16.4 km

Mean cloud = 5.8 73%

Mean wind speed = 4.2 kn

Mean gust = 8 kn

Mean TT = 2.2 °C

Mean TdTd = 1.2 °C

Mean RH = 93.7 %

Mean r = 4.3 g/kg

Mean PPP = 1023.9 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 JANUARY 2017

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NChs	hNChs	Date	Remarks
1	58	8	02	11	23	4.1	3.4	95	4.8	1016.6	3	017	63	6	6	7	7	3	2	/	83708	87712	88525	1		
2	80	1	34	04	10	4.1	0.6	78	3.9	1030.3	5	001	02	0	0	1	8	4	0	0		81818		2	1Sc25 Cu fra	
3	80	7	24	07	14	4.2	1.4	82	4.2	1027.4	6	014	03	2	2	3	8	4	7	1		81818	83625	87075	3	2Ac62 1Ac66 COTRA Cu fra
4	78	7	02	05	11	6.7	3.5	80	4.8	1026.2	3	008	02	8	2	7	5	6	/	/		83630	87645	4	CF 1350	
5	65	1	35	02	03	4.2	-0.4	72	3.7	1034.7	7	006	02	0	0	0	0	9	0	1		81080		5	COTRA Hoar slt in shade	
6	60	8	20	06	11	5.6	2.3	79	4.4	1035.3	5	011	60	6	2	5	5	6	2	/		85640	88550	6		
7	65	7	31	02	09	10.3	9.2	93	7.2	1031.9	5	002	20	5	2	7	5	3	/	/		81707	87623	7		
8	30	8	02	01	03	9.3	8.8	97	7.0	1031.9	6	008	16	2	2	8	6	2	/	/		83703	87705	88710	8	pptn to N (dz) vv 6km SW
9	59	8	22	10	22	9.4	8.0	91	6.6	1013.7	7	050	61	6	2	7	5	3	2	/		82709	87612	88540	9	
10	65	1	26	06	15	8.3	3.6	72	4.9	1011.7	2	001	01	1	1	1	0	9	4	1		81358		10	1Ac62 1Ci72 COTRA	
11	80	5	29	13	29	9.0	-0.9	50	3.5	1012.4	2	018	02	1	1	5	8	6	3	0		81840	85645	11	1Ac68 Cu hum	
12	56	8	15	01	05	4.8	4.2	96	5.1	996.3	8	080	63	6	6	5	7	3	2	/		81707	85810	88525	12	Cu fra/hum
13	82	7	30	14	29	5.8	-0.5	64	3.6	1012.8	3	025	03	1	1	6	8	6	0	1		83832	84640	87075	13	Cu hum
14	80	7	31	03	13	4.4	2.9	90	4.6	1021.3	3	009	25	8	2	7	8	5	7	/		82820	85640	14	2Sc56 3Ac60 Cu med	
15	57	8	29	07	16	8.3	7.7	96	6.5	1021.2	5	003	58	6	5	7	7	3	2	/		87707	88515	15		
16	20	8	09	03	08	5.0	4.7	98	5.3	1028.0	3	003	51	6	5	8	7	2	/	/		84703	87705	88708	16	
17	62	5	18	03	06	5.0	-4.8	49	2.6	1036.6	5	002	02	1	1	1	0	9	3	1		81363	85080	17	COTRA	
18	65	2	03	03	05	3.1	-2.8	65	3.1	1038.7	5	006	02	1	1	1	0	9	3	1		81366		18	2Ci80 COTRA Hoar mod in shade	
19	70	5	05	03	09	5.2	-2.8	56	3.1	1036.2	6	014	02	2	2	1	5	5	0	1		81620	85080	19	COTRA Hoar mod in shade	
20	73	1	05	04	14	5.1	-1.8	61	3.3	1031.7	7	019	02	0	0	0	0	9	0	1		81075		20	COTRA Hoar mod in shade	
21	68	0	11	05	13	3.1	-6.1	51	2.4	1025.9	6	018	02	0	0	0	0	9	0	0				21	Hoar mod in shade	
22	40	1	36	03	06	4.4	0.5	76	3.9	1026.7	5	010	05	0	0	0	0	9	0	1		81075		22	Hoar thk in shade	
23	35	7	27	03	06	4.8	3.3	90	4.8	1027.9	5	009	05	2	2	7	5	7	/	/		87650		23		
24	77	4	24	08	12	8.0	4.0	76	5.0	1027.8	6	012	01	1	1	0	0	9	0	1		84073		24	COTRA Parhelion	
25	56	8	15	03	10	3.7	2.8	94	4.6	1026.6	6	016	05	2	2	8	6	3	/	/		88708		25		
26	56	7	14	06	14	0.8	-2.2	80	3.2	1017.8	7	013	05	2	2	7	6	4	/	/		87614		26		
27	57	8	11	05	12	6.1	3.4	83	4.8	1008.5	7	011	05	2	2	7	5	4	2	/		85615	87630	88460	27	
28	75	3	23	10	18	9.0	3.4	68	4.8	1010.9	3	006	15	1	1	3	9	5	6	1		81925	82830	28	1Ac57 1Ci75 jpNW&SE vv60k ex p	
29	61	8	17	08	13	8.0	6.8	92	6.1	1010.6	7	025	61	6	6	6	7	3	2	/		83709	88545	29		
30	59	8	08	06	11	7.9	6.5	91	6.0	1011.4	6	006	05	2	2	8	5	4	/	/		84610	88618	30		
31	58	8	14	06	11	9.0	8.2	95	6.7	1011.8	7	011	10	6	2	8	5	2	/	/		83704	87706	88610	31	

Mean vis = 15.2 km

Mean cloud = 5.6 70%

Mean wind speed = 5.5 kn

Mean gust = 12 kn

Mean TT = 6.0 °C

Mean TdTd = 2.5 °C

Mean RH = 79.4 %

Mean r = 4.7 g/kg

Mean PPP = 1022.6 mbar

**See appendix 2 below for full code details**

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

W1, W2 = Past weather code (Code FM12-4561)-

covers past 3 hours.

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs = Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation

trails present.

Wokingham	Hour	01-Jan	02-Jan	03-Jan	04-Jan	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	
Sunshine	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Hourly	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	
analysis	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	
2017	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	0.34	0.20	0.00	0.41	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.12	0.02	0.00	0.00	
	9	0.00	1.00	1.00	0.00	1.00	0.58	0.00	0.00	0.00	0.95	0.50	0.00	0.06	0.00	0.00	0.00	
	10	0.00	1.00	1.00	0.00	1.00	0.57	0.00	0.00	0.00	0.39	0.58	0.00	0.00	0.00	0.00	0.00	
	11	0.00	1.00	0.96	0.00	1.00	0.20	0.00	0.00	0.00	0.13	0.69	0.00	0.55	0.04	0.00	0.00	
	12	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.72	0.00	0.00	0.00	
	13	0.00	1.00	0.81	0.00	1.00	0.00	0.00	0.00	0.00	0.10	0.17	0.00	1.00	0.00	0.00	0.00	
	14	0.00	1.00	0.56	0.00	1.00	0.00	0.00	0.00	0.00	0.94	0.79	0.00	0.50	0.08	0.00	0.00	
	15	0.00	0.94	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.45	0.42	0.00	0.00	0.11	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>7.28</b>	<b>5.53</b>	<b>0.00</b>	<b>7.33</b>	<b>1.35</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3.13</b>	<b>3.68</b>	<b>0.00</b>	<b>2.97</b>	<b>0.25</b>	<b>0.00</b>	<b>0.00</b>

Hour	17-Jan	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan	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	0.16	0.63	0.00	0.61	0.69	0.67	0.00	0.34	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.14
9	0.84	1.00	0.18	1.00	1.00	1.00	0.00	0.05	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.34
10	1.00	1.00	0.79	1.00	1.00	1.00	0.00	0.83	0.00	0.00	0.79	1.00	0.00	0.00	0.00	0.42
11	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.08	0.92	0.00	0.00	0.00	0.41
12	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.99	0.00	0.00	0.01	0.61	0.00	0.00	0.00	0.38
13	1.00	1.00	1.00	1.00	1.00	1.00	0.02	1.00	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.37
14	1.00	1.00	1.00	1.00	1.00	1.00	0.70	1.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.41
15	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.92	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.34
16	0.33	0.37	0.39	0.44	0.25	0.18	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.07
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>7.32</b>	<b>8.00</b>	<b>6.36</b>	<b>8.05</b>	<b>7.95</b>	<b>7.84</b>	<b>0.73</b>	<b>6.13</b>	<b>0.00</b>	<b>0.00</b>	<b>0.88</b>	<b>4.31</b>	<b>0.09</b>	<b>0.00</b>	<b>0.00</b>	<b>89.18</b>

JANUARY 2017	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	5.79	9.64	1151	2.75	2319	93.7	97.4	1810	85.1	1154	4.85	5.357	6.641	1358	4.421	2319	1018.66	1023.9	1	1014.5	1257	
2	1.15	5.01	1305	-3.07	2344	92.5	100.0	605	72.4	1326	-0.00	3.746	4.545	2	2.935	2344	1029.03	1031.3	2105	1023.8	2	
3	0.70	5.23	1250	-3.86	309	90.0	100.0	838	73.6	1250	-0.82	3.552	4.205	1433	2.745	656	1028.51	1031.1	17	1025.1	2344	
4	4.11	8.20	1331	-2.65	2317	81.3	96.9	2319	56.4	1615	1.10	4.115	5.523	1346	2.941	2332	1026.35	1031.4	2359	1023.8	557	
5	-1.57	4.48	1317	-5.14	732	92.5	99.3	2228	70.5	1323	-2.72	3.056	4.007	1259	2.462	732	1034.85	1037.9	2310	1031.3	6	
6	1.69	6.63	2348	-4.59	326	93.4	99.5	43	69.1	1331	0.67	4	5.815	2359	2.573	326	1035.99	1037.9	843	1032.6	2358	
7	8.75	10.68	1413	6.40	0	97.7	99.6	818	92.7	1421	8.41	6.72	7.4	1312	5.72	0	1032.25	1033.2	2229	1031.1	616	
8	8.43	9.93	1320	7.44	458	99.0	100.0	1129	95.9	1348	8.29	6.66	7.29	1320	6.222	458	1031.98	1033.6	1052	1029.1	2350	
9	7.37	9.71	1444	2.93	2353	92.3	99.9	13	80.3	1804	6.19	5.889	7.05	1702	4.374	2315	1018.86	1029.3	0	1011.1	2246	
10	6.24	8.56	1318	2.83	125	85.8	97.8	2318	71.2	1504	3.99	5.068	6.257	2124	4.387	111	1011.55	1013.2	1838	1009.5	556	
11	7.97	11.26	1132	4.53	2220	73.1	97.3	159	47.8	1454	3.13	4.886	6.998	535	3.357	1725	1011.74	1015.8	2239	1007.8	604	
12	4.09	6.47	1007	0.42	1726	85.8	98.3	1730	71.8	251	1.88	4.406	5.494	1323	3.396	2356	1004.89	1015.7	15	994.6	1648	
13	2.52	6.29	1429	0.01	158	76.4	88.8	244	59.6	1324	-1.30	3.459	4.117	1620	3.083	655	1010.68	1018.6	2347	1001.5	0	
14	2.37	5.77	1403	-0.85	2245	85.4	99.4	2315	73.8	1124	0.13	3.818	4.731	1422	3.145	156	1020.92	1024.5	2358	1018.4	2	
15	5.83	9.08	1848	-0.68	0	96.8	100.0	317	93.2	1312	5.36	5.575	6.737	1806	3.532	16	1023.08	1024.7	231	1020.9	1404	
16	5.58	8.59	113	3.31	2325	97.9	99.5	915	92.9	2011	5.28	5.463	6.596	133	4.596	2013	1027.83	1032.6	2333	1024.4	45	
17	1.02	5.75	1315	-2.65	2333	91.5	100.0	253	40.8	1355	-0.46	3.614	4.783	0	2.141	1355	1036.06	1038.7	2357	1032.3	42	
18	-1.53	4.21	1328	-4.92	728	90.9	99.9	49	54.2	1506	-2.97	2.979	3.868	1258	2.502	728	1038.83	1040.0	1029	1038.2	549	
19	-0.47	6.53	1341	-4.85	635	86.1	99.2	233	49.7	1333	-2.77	3.034	4.106	1144	2.512	735	1037.24	1038.6	149	1035.9	2345	
20	-0.11	6.67	1325	-4.72	817	84.7	99.1	341	50.4	1312	-2.62	3.075	3.877	1104	2.547	759	1033.29	1036.0	0	1031.1	2357	
21	-1.75	4.24	1332	-5.60	816	85.3	99.3	934	46.0	1421	-4.23	2.745	3.687	1132	2.231	1421	1027.89	1031.2	7	1025.7	1613	
22	-2.47	6.26	1346	-6.79	707	92.6	99.1	2208	67.5	1347	-3.60	2.916	4.115	1317	2.152	707	1027.32	1029.1	2312	1026.0	551	
23	0.32	5.26	1441	-4.55	4	97.1	100.0	203	88.3	1443	-0.09	3.774	4.869	1440	2.596	27	1028.40	1029.5	1039	1027.5	1400	
24	0.79	9.23	1341	-3.21	725	94.8	100.0	153	69.8	1346	-0.05	3.771	5.305	1304	2.941	723	1028.39	1029.5	1055	1027.5	405	
25	0.68	4.40	1331	-2.52	20	97.5	100.0	0	91.7	1947	0.32	3.851	5.04	1315	3.101	20	1027.46	1029.5	936	1024.7	2357	
26	-0.76	0.95	1447	-3.83	2340	88.9	98.3	2347	79.0	1430	-2.37	3.167	3.558	0	2.764	2339	1019.39	1024.9	3	1014.6	2355	
27	2.28	6.79	2256	-4.26	301	91.7	99.6	337	82.2	1426	1.02	4.193	5.534	2337	2.718	259	1010.15	1014.7	0	1008.4	2354	
28	6.61	9.43	1331	2.60	2210	82.4	91.6	615	65.0	1534	3.78	5.009	6.007	809	4.093	2203	1010.08	1014.2	2204	1006.2	556	
29	6.01	10.43	2243	-0.03	646	95.0	100.0	744	87.1	0	5.27	5.622	7.72	2243	3.736	646	1011.23	1014.8	740	1005.6	2102	
30	7.48	10.19	2	5.64	2316	96.5	99.6	844	88.7	1415	6.96	6.224	7.59	3	5.494	2334	1010.95	1013.3	2352	1006.7	2	
31	7.64	10.85	2345	5.61	20	97.6	98.9	327	94.7	1514	7.29	6.376	7.96	2359	5.509	23	1012.26	1013.6	1037	1010.0	2358	
Total																						
Mean	3.12	7.31		-0.78		90.5	98.65		72.95		1.61	4.39	5.53		3.45		1023.42	1026.85		1019.99		
Max	8.75	11.26		7.44		99.0	100.00		95.90		8.41	6.72	7.96		6.22		1038.83	1039.95		1038.22		
Min	-2.47	0.95		-6.79		73.1	88.80		40.82		-4.23	2.75	3.56		2.14		1004.89	1013.18		994.60		

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

## **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 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.