

# 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

### MARCH 2018

		Anomaly	Rank in the past 137 years	
Temperature (°C)				
Mean maximum	9.5	-1.7	44 <sup>th</sup> lowest	
Mean minimum	2.3	-0.9	61 <sup>st</sup> highest	
Daily mean	5.9	-1.3	55 <sup>th</sup> lowest	
Highest maximum	14.5	on 27 <sup>th</sup>	Lowest maximum	-0.9 on 1 <sup>st</sup>
Highest minimum	7.6	on 15 <sup>th</sup>	Lowest minimum	-5.1 on 1 <sup>st</sup>
Mean grass minimum	-0.2	-0.1	Lowest grass minimum	-7.8 on 21 <sup>st</sup>
Mean earth @30 cm	6.1	-1.0	Earth @100 cm	6.6
Frost duration (hrs)	96.9		Rain duration (hrs)	114.2
Rainfall total (mm)	93.2	204 %	10 <sup>th</sup> highest	
Highest daily fall	12.2	on 30 <sup>th</sup>		
Number of: Dry days (<0.2mm)	9	Wet days (>0.9mm)	19	days ≥5mm 7
Sunshine total (hrs) 74.4	Daily mean 2.40	67 %	Sunniest day 9.8	on 21 <sup>st</sup>
N° days with: Air frost 8	Ground frost 18	Snow falling 7	Snow lying 5	
Thunder 0	Hail ≥5mm 0	Small hail/ice 5	Fog @09 0	Nil sun 8
Pressure MSL : Mean @09 GMT, mbar 1002.0	-13.9	Highest 1034.1	on 21 <sup>st</sup>	Lowest 984.3 on 12 <sup>th</sup>
Relative humidity : Mean (%) 82.9	Lowest 33	on 21 <sup>st</sup>	Water vapour (g/kg), mean at 09 and 15 GMT	5.0, 4.8
Overall mean wind speed (mph) 7.7	Windiest day 14.5	on 1 <sup>st</sup>	Max gust 45	on 1 <sup>st</sup>
Wind direction (days)	N 2 NE 7 E 2 SE 5 S 4 SW 7 W 3 NW 1			
Least windy day (mph) 3.6	on 24 <sup>th</sup>	Calm; less than 0.5 mph (minutes)	234	

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

Notes: **Very Wet. Dull. Temperature Below Average. Two Very Cold and Snowy Spells.**

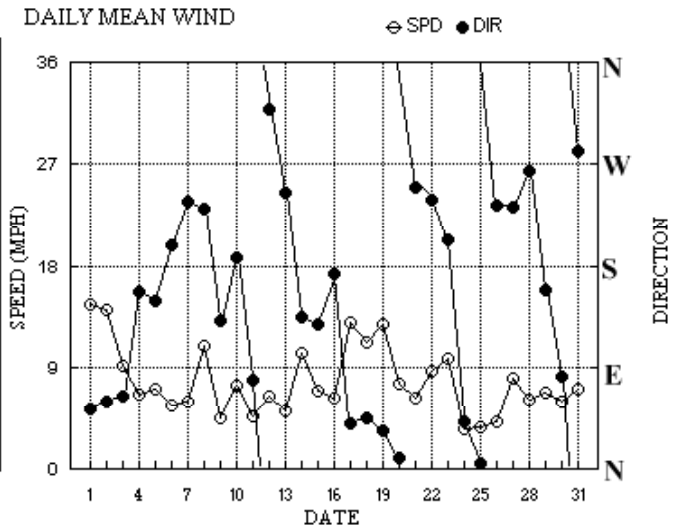
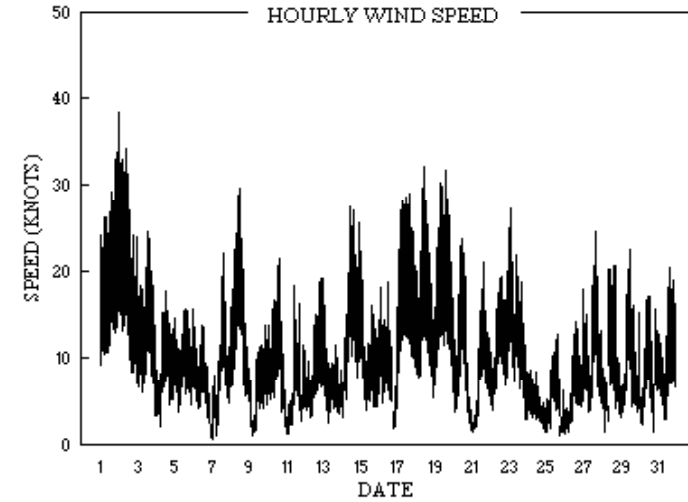
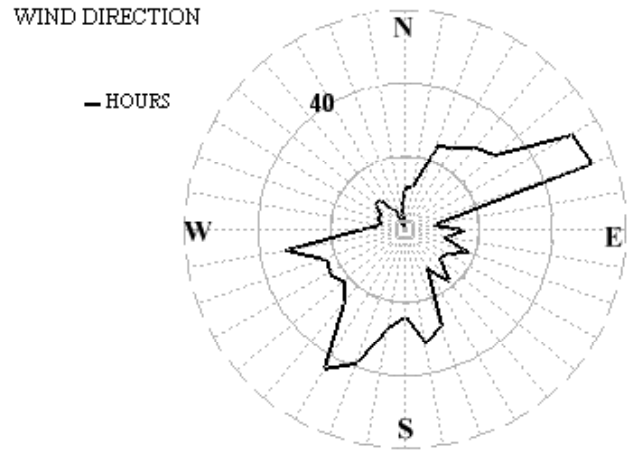
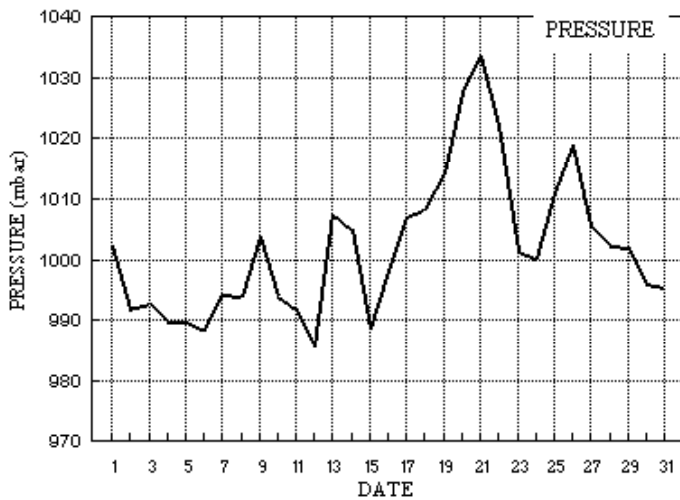
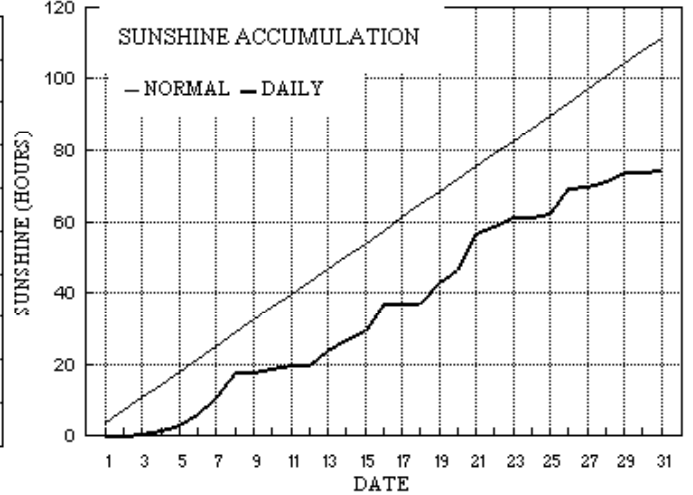
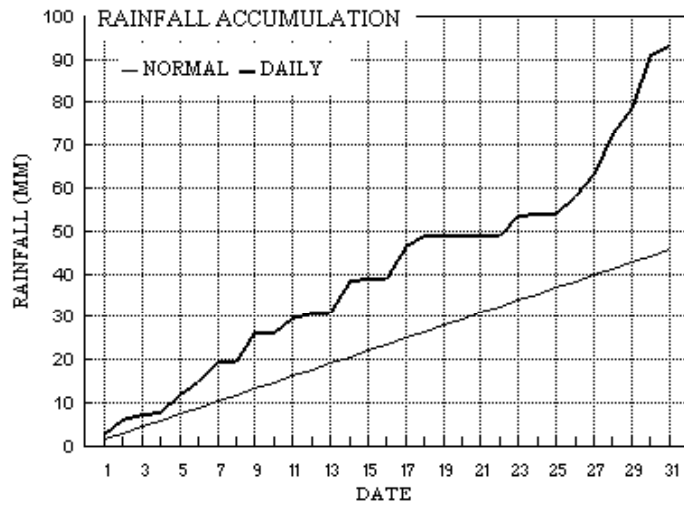
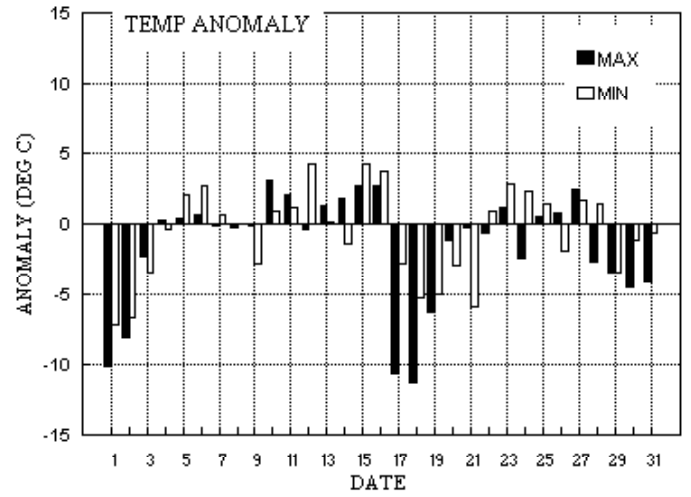
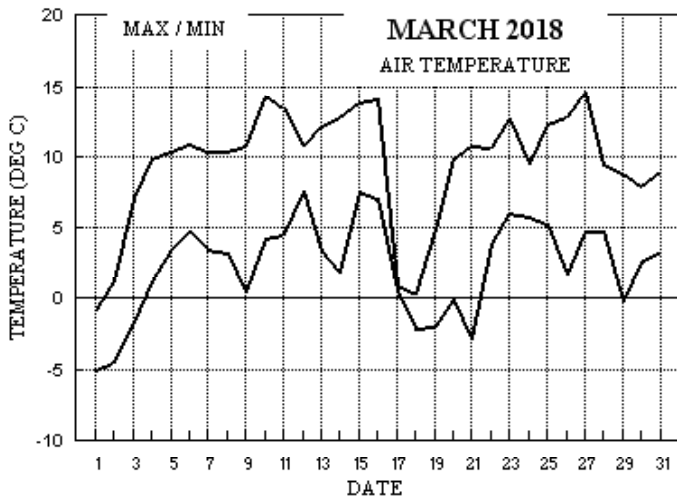
**Temperature:** This has been a cold March overall, the daily mean 1.3° below average, and the mean maximum 1.7° below average. There have been only 2 colder Marches in the past 20 years, 2013 and 2006. An unusual feature of this March are the 2 quite extreme cold episodes, from the 1<sup>st</sup> to the 2<sup>nd</sup> and 17<sup>th</sup> to 19<sup>th</sup>. At the start of the latter, the daily maximum fell from 14.1° on the 16<sup>th</sup> to 0.9° on the 17<sup>th</sup>. The highest max was 2.1° below the median, and the lowest max of -0.9° on the 1<sup>st</sup> was 5.4° below its median, giving the lowest March maximum in over 100 years. This was also the windiest day of the month with 45 mph gusts. The highest min was 1.2° below the median and the lowest min was 1.0° below its median. The mean grass min is close to average, but earth temperatures at 30 cm and 1 m depth are well below average. From the 3<sup>rd</sup> to the 16<sup>th</sup> and 20<sup>th</sup> to 28<sup>th</sup>, anomalies for daily max and min were generally within +/- 3°. During the cold snaps, anomalies for max were -10° on the 1<sup>st</sup> and -11° on the 17<sup>th</sup> and 18<sup>th</sup>, and anomalies for min -7° on the 1<sup>st</sup> and 2<sup>nd</sup> and -5° on the 18<sup>th</sup> and 19<sup>th</sup>. **Rainfall:** This has been a very wet March. wettest since 2001 and before that 1981, with the total over twice the average. There were 8 fewer dry days than average, and the 7 days with =>5 mm is 4 more than average, and most since 2001. The duration of measurable rain at 114.2 hours is 258% of average and most for March in the past 25 years. The rainfall rate reached 33 mm/hr on the 28<sup>th</sup>, the highest this month. Snow fell on the 1<sup>st</sup> to 3<sup>rd</sup> and 17<sup>th</sup> to 20<sup>th</sup>, with the following snow depths recorded at 0900 GMT (date/depth cm): 1<sup>st</sup>/3, 2<sup>nd</sup>/4, 3<sup>rd</sup>/3, 18<sup>th</sup>/7, 19<sup>th</sup>/7. Freezing rain occurred on the 2<sup>nd</sup> and ice pellets on the 2<sup>nd</sup>, 8<sup>th</sup>, 28<sup>th</sup> and 31<sup>st</sup>, with snow pellets on the 17<sup>th</sup>. The Eden Snow Index gives a value of 24 for this month, the most for any March since before 1977, the previous highest was 7 in 1986. Daily rainfall accumulation compared with normal showed a surplus of 13 mm by the 9<sup>th</sup>, 22 mm by the 17<sup>th</sup>, 17 mm by the 25<sup>th</sup> and 43 mm by the 31<sup>st</sup>. **Sunshine:** This has been one of the dullest Marches this millennium, only 2013 and 2001 have had less sunshine. The 8 sunless days is 3 above average, but in 2013 there were 13. The total this month is only about two thirds of average, a deficit of 39 hours. Sunshine accumulation compared with normal was already 15 hours in deficit by the 5<sup>th</sup>, and had reached 24 hours by the 15<sup>th</sup>, 27 hours by the 25<sup>th</sup> and 39 hours on the 31<sup>st</sup>. Only 4 days this month had over 50% of the maximum, and 20 had less than 20 %. The 21<sup>st</sup> was the sunniest day with 80 % of the maximum. Overall there were 22 days with <3 hours, 4 with =>6 hours and 1 with =>9 hours. **Wind:** The mean wind speed and highest gust this month are close to average. Daily mean directions were NE'ly from the 1<sup>st</sup> to the 3<sup>rd</sup>, 17<sup>th</sup> to 20<sup>th</sup>, 24<sup>th</sup> and 25<sup>th</sup>, and from between SE and SW from the 4<sup>th</sup> to 10<sup>th</sup>, 13<sup>th</sup> to 16<sup>th</sup>, 21<sup>st</sup> to 23<sup>rd</sup> and 26<sup>th</sup> to 29<sup>th</sup>, E'ly on the 11<sup>th</sup> and 30<sup>th</sup> and W'ly on the 12<sup>th</sup> and 31<sup>st</sup>. Daily mean speeds were strong on the 1<sup>st</sup> and 2<sup>nd</sup>, then light or moderate, apart from fresh on the 8<sup>th</sup>, 14<sup>th</sup>, 17<sup>th</sup> to 19<sup>th</sup> and 23<sup>rd</sup>. **Pressure:** The mean air pressure at 0900 GMT reduced to mean sea level of 1002.0 mbar is 13.9 mbar below average and lowest in any March for at least 43 years.

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>			
-1.7°	-1.4°	177%	53%	-1.9°	-0.4°	156%	78%	-1.2°	-0.2°	272%	70%

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

# Wokingham climatological graphs for MARCH 2018



Month: MARCH 2018

Date	Max C	Min C	Rain mm	Grass Min	30cm C	100cm C	Sun hrs	Frost hrs	pp09 mbar	Af Gf	Sf Sl	Th Ha	Ic Fg	Vec mean ddd ff sp	Max gust ddd gg HHhh	High hr ddd ff	Rain HH hrs		
1	-0.9	-5.1	2.9	-5.8	3.0	6.2	0.0	24.0	1002.3	1	1	1	1	0	0	0	0	23	11.6
2	1.2	-4.6	3.2	-3.9	3.0	6.0	0.0	24.0	991.8	1	1	1	1	0	0	1	0	01	6.0
3	7.0	-1.7	1.4	-1.8	3.1	5.9	0.4	0.5	992.6	1	1	1	1	0	0	0	0	15	2.1
4	9.8	1.2	0.2	1.3	3.4	5.8	1.5	0.0	989.8	0	0	0	0	0	0	0	0	13	0.1
5	10.3	3.5	4.4	-1.1	4.1	5.7	1.5	0.0	989.9	0	1	0	0	0	0	0	0	12	2.6
6	10.9	4.8	3.1	3.4	4.7	5.7	2.9	0.0	988.2	0	0	0	0	0	0	0	0	00	5.7
7	10.4	3.5	4.3	-0.2	5.2	5.8	4.6	0.0	994.1	0	1	0	0	0	0	0	0	16	2.5
8	10.3	3.2	tr	-0.3	5.4	5.9	7.1	0.0	993.8	0	1	0	0	0	0	1	0	12	0.0
9	10.8	0.4	6.8	-4.7	5.4	6.0	0.0	0.0	1003.6	0	1	0	0	0	0	0	0	22	8.7
10	14.3	4.3	0.1	6.8	5.7	6.1	0.9	0.0	993.8	0	0	0	0	0	0	0	0	15	0.2
11	13.4	4.5	3.2	0.8	6.3	6.2	1.2	0.0	991.8	0	0	0	0	0	0	0	0	12	4.0
12	10.7	7.5	1.3	5.5	6.8	6.3	0.0	0.0	985.5	0	0	0	0	0	0	0	0	22	1.4
13	12.1	3.3	tr	-1.6	7.1	6.5	3.6	0.0	1007.6	0	1	0	0	0	0	0	0	00	0.0
14	12.8	1.8	7.7	-4.3	7.0	6.6	3.4	0.0	1004.8	0	1	0	0	0	0	0	0	11	6.7
15	13.8	7.6	0.2	6.8	7.1	6.8	2.3	0.0	988.6	0	0	0	0	0	0	0	0	00	0.5
16	14.1	7.1	0.1	1.0	7.4	6.9	7.8	0.0	998.0	0	0	0	0	0	0	0	0	03	0.6
17	0.9	0.6	7.5	-1.6	7.6	7.0	0.0	10.0	1007.0	0	1	1	0	0	0	1	0	08	14.5
18	0.3	-2.1	2.5	-1.3	7.0	7.1	0.0	20.7	1008.1	1	1	1	1	0	0	0	0	11	4.5
19	4.9	-2.0	tr	-1.6	6.3	7.2	5.9	9.2	1014.3	1	1	1	1	0	0	0	0	14	0.0
20	9.8	-0.1	tr	-5.5	5.8	7.1	3.7	0.6	1027.7	1	1	1	0	0	0	0	0	10	0.0
21	10.7	-2.9	0.0	-7.8	5.8	7.1	9.8	7.5	1033.4	1	1	0	0	0	0	0	0	16	0.0
22	10.6	3.8	tr	0.8	6.0	7.0	2.1	0.0	1022.1	0	0	0	0	0	0	0	0	12	0.1
23	12.7	6.0	4.7	5.7	6.5	6.9	2.8	0.0	1001.5	0	0	0	0	0	0	0	0	02	9.8
24	9.4	5.8	0.5	5.4	7.0	7.0	0.0	0.0	1000.2	0	0	0	0	0	0	0	0	04	2.8
25	12.3	5.3	0.0	2.3	7.2	7.0	0.9	0.0	1010.8	0	0	0	0	0	0	0	0	12	0.0
26	12.8	1.7	4.2	-3.0	7.4	7.1	6.9	0.0	1019.0	0	1	0	0	0	0	0	0	13	7.4
27	14.5	4.8	5.1	-0.4	7.5	7.2	0.6	0.0	1005.4	0	1	0	0	0	0	0	0	14	5.1
28	9.5	4.7	9.0	2.2	7.8	7.3	1.6	0.0	1002.4	0	0	0	0	0	0	1	0	12	3.9
29	8.8	-0.2	6.4	-5.0	7.6	7.4	2.2	0.4	1002.1	1	1	0	0	0	0	0	0	13	3.3
30	8.0	2.6	12.2	-2.2	7.3	7.5	0.0	0.0	996.0	0	1	0	0	0	0	0	0	13	8.3
31	8.9	3.3	2.2	3.1	7.3	7.5	0.7	0.0	995.3	0	0	0	0	0	0	1	0	22	1.8
Total			93.2				74.4	96.9						108	1.1	6.7		114.2	
Mean	9.5	2.3		-0.2	6.1	6.6	2.40	3.1	1002.0										
Anom	-1.7	-0.9	204%	-0.1	-1.0	-0.9	67%												
Daily mean		5.9																	
Anom		-1.3																	

Number of days with:

Air frost = 8      Ground frost = 18      Nil sun = 8  
 Snow falling = 7      Snow lying = 5      Thunder = 0  
 Hail=>5mm = 0      Hail<5mm or ice = 5      Fog at 09GMT = 0

Abbreviations.

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

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

Grass min = Lowest overnight temperature at grass tip level.

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

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

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

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

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

Sp = 24 hour mean wind speed in knots.

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

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

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

Anom = Departure from 1981-2010 climatological average.

All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for MARCH 2018

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks					
1	18	8	05	11	22	-4.6	-6.1	89	2.4	1002.3	7	020	71	7	7	8	5	4	/ /	88612	1	Snly 3cm 100%			
2	57	8	06	17	34	-1.4	-4.6	79	2.8	991.8	2	003	22	7	2	8	5	4	/ /	87615	88630	2	Snly 4cm 100%		
3	12	8	07	09	16	1.2	0.9	98	4.1	992.6	2	009	28	4	2	8	6	2	/ /	88703		3	Snly 3cm 100% Thaw		
4	58	7	17	07	15	7.0	5.8	92	5.8	989.8	5	001	05	2	2	7	6	3	/ /	87707		4	Snly tr Thaw		
5	58	4	16	05	11	6.9	5.1	88	5.5	989.9	0	001	05	1	1	1	6	3	5	1	81708	83072	5	1Ac65 COTRA	
6	63	7	21	06	10	6.1	4.4	89	5.3	988.2	2	012	21	6	2	7	5	3	/ /	81707	87640	6			
7	25	8	24	04	08	4.9	4.3	96	5.2	994.1	2	023	21	6	2	8	7	2	/ /	87704	88706	7			
8	86	4	23	14	24	5.7	1.8	76	4.4	993.8	2	014	03	0	0	3	5	5	3	0	83623		8	2Ac63	
9	63	7	02	03	05	4.3	2.8	90	4.7	1003.6	8	004	02	2	2	7	0	9	7	/	81358	83360	87362	9	
10	62	7	19	06	13	10.8	9.2	90	7.4	993.8	3	007	21	6	2	2	5	4	7	8	81710	86358		10	2Sc56 /Ac62 /Cs70
11	30	7	05	04	06	7.8	7.5	98	6.6	991.8	7	010	10	6	2	7	5	2	7	/	81703	83640	85650	11	7Ac57
12	58	7	36	03	06	8.5	8.1	97	6.8	985.5	3	010	50	6	5	7	5	2	/ /	85705	87615		12		
13	68	7	25	05	08	6.5	4.0	84	5.1	1007.6	2	027	03	1	1	7	5	6	/ 1	82635	87645		13	1Ci70	
14	68	7	13	11	20	7.9	4.8	81	5.4	1004.8	7	019	03	2	2	5	5	7	4	8	85650	87275		14	1Ac65
15	62	8	15	06	10	9.0	8.1	94	6.8	988.6	3	016	21	6	2	8	7	3	/ /	83706	87709		15	/Sc35	
16	65	6	19	07	14	9.4	5.8	78	5.8	998.0	2	032	02	1	1	5	5	4	0	1	85612			16	2Ci75 COTRA
17	35	8	04	13	28	0.6	-1.3	87	3.5	1007.0	1	010	71	7	5	7	5	4	2	/	83610	87615	88525	17	
18	62	8	06	13	24	0.0	-3.2	79	3.0	1008.1	2	022	02	7	3	8	5	5	/ /	88620			18	Snly 7cm 100%	
19	75	7	04	11	30	-0.1	-5.7	66	2.5	1014.3	2	019	02	2	2	7	8	6	/ /	81830	87635		19	Cu hum Snly 7cm 100%	
20	65	7	01	08	19	4.6	1.1	78	4.0	1027.7	3	018	21	6	2	7	5	4	/ /	87613			20	Thaw Snly 2cm 10%	
21	56	4	25	03	06	4.9	1.4	78	4.1	1033.4	8	001	05	1	1	0	0	9	0	1	84075			21	COTRA U/a cont
22	68	7	25	08	14	8.3	4.1	75	5.0	1022.1	6	010	01	2	2	3	5	4	0	1	81715	83640	86080	22	COTRA
23	75	4	23	09	15	9.6	4.6	71	5.3	1001.5	6	012	25	8	2	2	8	4	0	1	81815	83075		23	2Sc35 COTRA jpSE
24	30	8	06	04	07	7.0	6.6	97	6.1	1000.2	3	021	61	6	6	8	7	2	/ /	86704	88706		24		
25	56	7	36	05	09	8.2	6.2	87	5.9	1010.8	2	025	05	2	2	6	6	4	3	/	86612	87357		25	
26	82	2	29	02	05	7.8	1.9	66	4.3	1019.0	1	010	02	1	1	1	5	7	0	1	81656			26	2Ci80 COTRA
27	50	8	21	03	08	8.1	7.5	96	6.5	1005.4	6	020	58	6	5	8	7	2	/ /	82703	87704	88706	27		
28	58	8	18	02	05	4.9	3.6	91	4.9	1002.4	6	015	63	6	6	4	8	2	2	/	81705	83625	88535	28	1Cu015 Cu hum
29	80	6	17	08	14	6.9	3.7	80	5.0	1002.1	7	011	15	2	2	2	8	4	7	6	81818	83360	85462	29	2Sc35 /Cs70 jpSW
30	56	8	07	06	11	6.5	6.1	97	5.9	996.0	8	011	60	6	2	8	5	2	/ /	82705	86615	88656	30	Absent vv&cld est	
31	30	8	19	03	09	5.1	4.4	95	5.3	995.3	2	016	58	6	5	8	7	2	/ /	87704	88706		31	Absent vv&cld est	

Mean vis = 13.1 km

Mean cloud = 6.8 85%

Mean wind speed = 7.0 kn

Mean gust = 14 kn

Mean TT = 5.6 °C

Mean TdTd = 3.3 °C

Mean RH = 85.9 %

Mean r = 5.0 g/kg

Mean PPP = 1002.0 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 MARCH 2018

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks					
1	10	8	06	16	29	-2.4	-4.1	88	2.8	997.3	6	028	71	7	3	8	0	4	2	/	88512	1	Snly 3cm 100%		
2	13	8	06	08	20	-1.5	-2.6	92	3.2	991.8	7	004	71	7	6	8	7	2	/	/	83705	88708	2	Snly 5cm 100%	
3	40	8	06	12	21	4.0	1.5	84	4.3	991.0	6	010	05	2	2	8	5	4	/	/	85710	88656	3	Snly 2cm 60%. Thaw	
4	80	8	18	08	16	8.6	5.0	78	5.5	988.4	6	005	02	2	2	5	8	4	2	/	84815	88467	4	2Sc25 Cu hum Snly tr	
5	62	8	14	06	16	8.3	4.5	77	5.4	987.2	7	019	60	6	2	1	5	4	2	/	81715	88550	5	1Sc25	
6	84	5	17	05	14	9.3	3.5	67	5.0	988.4	6	003	02	8	2	3	8	6	0	4	81830	83650	6	3Ci72 Cu med	
7	80	4	26	10	18	9.2	-0.7	50	3.7	996.0	3	006	15	1	1	4	8	6	0	0	83840		7	2Sc50 Cu med jpW vv50h exW	
8	84	2	26	14	24	10.1	-1.9	43	3.3	997.8	1	016	01	1	1	2	2	6	0	1	82845		8	1Ci75 Cu med	
9	56	8	10	05	11	7.7	6.8	94	6.2	1000.0	7	019	61	6	2	7	5	2	2	/	84705	87612	88525	9	
10	80	7	19	10	21	12.8	10.7	87	8.1	993.8	5	002	21	6	2	7	5	3	/	/	86609	87620		10	
11	61	7	07	05	11	11.7	8.7	82	7.2	988.4	6	012	01	2	2	5	8	4	0	8	82815	84630	87270	11	COTRA Cu med
12	65	8	27	05	11	9.4	8.2	92	6.9	989.9	2	023	25	8	6	8	8	4	/	/	82810	83620	88630	12	Cu med jpS
13	70	6	19	04	08	10.7	5.9	72	5.8	1009.1	4	000	25	8	2	6	8	5	0	0	83823	84656		13	Cu med jpSE vv40k exSE
14	80	7	14	13	25	12.4	4.1	57	5.2	998.4	7	035	02	2	2	1	1	6	7	8	81835	85467	87270	14	1Ac65 Cu hum
15	84	4	12	07	13	12.6	6.9	68	6.3	988.8	8	002	01	8	1	3	8	5	0	1	83828			15	1Sc45 2Ci72 Cu med
16	81	3	15	03	13	12.6	5.0	60	5.5	1000.2	1	005	15	8	1	2	8	5	3	1	82828			16	1Sc50 1Ac62 2Ci72 Cu med jpNE
17	62	8	04	13	27	-0.1	-3.8	76	2.9	1006.5	6	006	71	7	7	8	5	5	/	/	87620	88625		17	Snly tr
18	63	8	05	12	25	-0.3	-4.5	73	2.7	1009.8	2	004	02	7	2	8	5	5	/	/	88623			18	Snly 6cm 100%
19	80	2	03	14	31	4.8	-5.3	48	2.5	1015.9	5	000	01	1	1	1	1	6	0	1	81840			19	1Ci75 COTRA Cu hum Snly 3cm 30% Thaw
20	77	6	02	08	22	8.1	-2.2	48	3.2	1030.2	1	010	03	1	1	4	5	6	0	1	84640	85080		20	COTRA
21	81	6	27	08	18	9.9	-4.1	37	2.7	1029.6	7	021	02	1	1	1	1	6	0	1	81845	86078		21	COTRA Cu hum
22	80	7	26	10	19	9.1	0.8	56	4.0	1017.6	7	029	02	2	2	6	5	6	/	/	86635	86080		22	COTRA
23	82	7	20	07	17	11.6	2.4	53	4.5	998.2	7	022	01	2	2	2	8	6	0	8	82838	83270	86075	23	1Sc45 COTRA Cu hum Halo 22° part
24	50	8	01	03	07	8.7	6.3	85	6.0	1002.0	2	007	05	2	2	8	5	3	/	/	82708	87615	88625	24	
25	67	7	01	05	10	11.8	3.6	57	4.9	1012.5	1	004	02	2	2	3	8	6	7	/	82835	87358		25	2Sc56
26	86	7	22	05	14	11.2	-1.9	40	3.3	1017.7	8	007	03	1	1	6	8	7	0	6	81850	86656	86075	26	2Cs72 Cu hum
27	75	7	25	12	21	12.9	9.0	77	7.1	1004.9	3	004	15	2	2	7	8	4	/	/	83815	86630		27	Cu med jpW
28	82	3	31	07	18	8.5	2.3	65	4.5	1002.9	0	001	15	6	1	3	8	5	0	0	83828			28	1Sc35 Cu med jp NW&SW
29	57	8	12	06	16	6.1	5.1	93	5.5	997.9	8	021	61	6	6	7	5	4	2	/	82710	86620	88525	29	Absent vv&cld est
30	58	8	05	03	16	5.5	4.6	94	5.4	992.4	7	018	63	6	6	7	7	3	2	/	83708	87712	88530	30	Absent vv&cld est
31	75	7	31	05	14	8.4	4.2	75	5.2	999.2	2	015	25	8	2	7	8	4	/	/	85818	83635	87650	31	Absent vv&cld est

Mean vis = 24.2 km

Mean cloud = 6.5 81%

Mean wind speed = 8.0 kn

Mean gust = 18 kn

Mean TT = 8.1 °C

Mean TdTd = 2.5 °C

Mean RH = 69.9 %

Mean r = 4.8 g/kg

Mean PPP = 1001.4 mbar

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

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation trails present

Wokingham Sunshine Hourly analysis  2018	Hour	01-Mar	02-Mar	03-Mar	04-Mar	05-Mar	06-Mar	07-Mar	08-Mar	09-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar	16-Mar
	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	0.05	0.00	0.00	0.00	0.00	0.13	0.26	0.00	0.00
	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.93	0.23	0.00	0.56
	8	0.00	0.00	0.00	0.16	0.58	0.00	0.00	0.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61
	9	0.00	0.00	0.00	0.76	0.72	0.00	0.14	0.23	0.00	0.00	0.20	0.00	0.00	0.49	0.00	0.75
	10	0.00	0.00	0.00	0.12	0.00	0.19	0.04	0.01	0.00	0.00	0.80	0.00	0.37	0.96	0.05	0.77
	11	0.00	0.00	0.21	0.00	0.01	0.01	0.55	0.35	0.00	0.00	0.09	0.00	0.00	0.78	0.03	0.42
	12	0.00	0.00	0.03	0.00	0.09	0.52	0.46	0.42	0.00	0.00	0.06	0.00	0.04	0.00	0.00	0.51
	13	0.00	0.00	0.07	0.00	0.13	0.69	0.70	0.74	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.76
	14	0.00	0.00	0.00	0.00	0.00	0.38	0.61	0.94	0.00	0.08	0.00	0.00	0.10	0.03	0.78	0.70
	15	0.00	0.00	0.08	0.00	0.00	0.86	0.37	0.98	0.00	0.00	0.00	0.00	0.71	0.66	0.77	0.82
	16	0.00	0.00	0.02	0.34	0.00	0.23	0.98	0.97	0.00	0.05	0.00	0.00	0.74	0.02	0.68	0.96
	17	0.00	0.00	0.00	0.11	0.00	0.00	0.79	0.43	0.00	0.63	0.00	0.00	0.56	0.00	0.00	0.96
	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot		<b>0.00</b>	<b>0.00</b>	<b>0.41</b>	<b>1.49</b>	<b>1.53</b>	<b>2.89</b>	<b>4.63</b>	<b>7.11</b>	<b>0.00</b>	<b>0.89</b>	<b>1.15</b>	<b>0.00</b>	<b>3.57</b>	<b>3.41</b>	<b>2.32</b>	<b>7.82</b>

Hour	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar	26-Mar	27-Mar	28-Mar	29-Mar	30-Mar	31-Mar	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	0.49	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.70	0.00	0.00	0.07
7	0.00	0.00	0.00	0.00	1.00	0.00	0.36	0.00	0.06	0.99	0.00	0.00	0.60	0.00	0.00	0.19
8	0.00	0.00	0.00	0.10	1.00	0.88	0.20	0.00	0.26	1.00	0.00	0.00	0.64	0.00	0.00	0.21
9	0.00	0.00	0.00	0.11	1.00	0.78	0.58	0.00	0.00	1.00	0.00	0.00	0.08	0.00	0.00	0.22
10	0.00	0.00	0.00	0.01	0.86	0.00	0.07	0.00	0.00	1.00	0.00	0.00	0.06	0.00	0.00	0.17
11	0.00	0.00	0.11	0.13	0.89	0.00	0.03	0.00	0.00	0.72	0.00	0.00	0.03	0.00	0.17	0.15
12	0.00	0.00	0.61	0.30	0.95	0.05	0.27	0.00	0.00	0.01	0.03	0.08	0.00	0.00	0.13	0.15
13	0.00	0.00	0.99	0.76	1.00	0.03	0.15	0.00	0.00	0.18	0.48	0.12	0.00	0.00	0.04	0.23
14	0.00	0.00	1.00	0.51	1.00	0.30	0.67	0.00	0.01	0.08	0.11	0.52	0.00	0.00	0.17	0.26
15	0.00	0.00	1.00	0.64	1.00	0.03	0.24	0.00	0.00	0.02	0.02	0.61	0.00	0.00	0.10	0.29
16	0.00	0.00	1.00	0.58	0.61	0.00	0.17	0.00	0.12	0.58	0.00	0.00	0.08	0.00	0.12	0.27
17	0.00	0.00	1.00	0.52	0.01	0.00	0.05	0.00	0.22	0.73	0.00	0.31	0.00	0.00	0.00	0.20
18	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.01
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	<b>0.00</b>	<b>0.00</b>	<b>5.90</b>	<b>3.66</b>	<b>9.81</b>	<b>2.07</b>	<b>2.79</b>	<b>0.00</b>	<b>0.90</b>	<b>6.91</b>	<b>0.64</b>	<b>1.63</b>	<b>2.17</b>	<b>0.00</b>	<b>0.73</b>	<b>74.49</b>

MARCH 2018	T mn	Tx	Time	Tn	Time	RHmn	RH x	Time	RH n	Time	Tdmn	r mn	r x	Time	r n	Time	p mn	p x	Time	p n	Time	R tot
1	-3.22	-0.9	1920	-5.2	14	85.2	91.1	1745	76.9	1918	-5.4	2.6	3.0	2013	2.2	522	1000.33	1009.6	1	993.6	2359	2.8
2	-1.24	-0.0	2354	-1.8	1231	85.7	95.4	2355	73.7	222	-3.4	3.0	3.7	2357	2.6	232	992.24	994.0	18	991.3	906	2.9
3	2.19	5.0	1307	-0.2	0	92.9	98.6	735	78.6	1308	1.1	4.2	5.0	2350	3.6	0	991.60	992.9	1032	990.7	2030	1.2
4	6.29	9.9	1135	3.4	108	89.5	98.5	656	77.1	1520	4.6	5.4	6.4	1034	4.8	106	989.21	991.7	2	987.5	1645	0.4
5	6.61	10.3	1341	3.3	542	88.1	96.4	712	67.8	1241	4.7	5.5	6.3	2340	4.7	542	987.88	990.2	808	984.6	2259	3.9
6	6.84	11.0	1327	3.3	2342	81.5	95.7	2346	55.4	1328	3.7	5.1	6.1	0	4.5	1337	988.16	990.6	2359	984.8	0	0.1
7	5.74	10.5	1319	3.1	2134	81.9	97.1	656	46.3	1446	2.6	4.7	5.7	1152	3.5	1446	994.62	998.0	2019	990.4	1	2.9
8	6.47	10.4	1501	3.8	607	71.7	94.9	422	38.3	1525	1.3	4.3	5.6	431	2.9	1525	996.92	1003.4	2343	991.4	443	3.7
9	6.07	10.4	2317	0.3	359	91.3	97.4	2020	71.0	1244	4.7	5.5	7.6	2318	3.7	358	1000.74	1004.2	818	994.6	2347	6.2
10	10.48	14.4	1404	4.8	2333	90.3	97.4	2359	79.4	1405	8.9	7.3	8.6	1303	5.3	2332	994.53	997.3	2048	992.9	642	0.1
11	8.38	13.3	1132	4.4	229	92.2	98.6	830	71.3	1132	7.1	6.5	7.6	1038	5.1	227	990.33	995.7	9	986.5	2356	1.7
12	8.36	10.9	1333	6.4	2359	91.6	97.8	751	83.2	1855	7.1	6.4	7.4	1153	5.1	2319	989.43	999.9	2359	984.3	600	2.7
13	7.11	12.1	1513	2.2	2249	79.8	95.1	721	53.6	1716	3.7	5.0	6.2	1520	4.1	2249	1007.35	1010.8	2338	999.9	0	0
14	8.26	12.9	1537	1.7	108	73.6	97.5	304	53.7	1111	3.4	4.9	5.8	2358	4.1	106	1001.25	1010.6	12	989.7	2357	0.2
15	9.45	13.9	1437	7.0	2147	84.9	96.3	727	59.3	1540	6.9	6.3	7.4	1345	5.5	1635	988.89	991.0	2356	986.6	450	7.7
16	8.95	14.2	1530	4.1	2236	77.9	95.0	2247	44.7	1556	5.0	5.5	6.5	140	4.3	1556	998.33	1004.1	2354	990.8	1	0
17	1.05	7.0	138	-1.9	2253	85.8	94.7	0	74.2	1346	-1.1	3.6	5.8	22	2.8	1715	1006.06	1007.4	959	1003.9	11	1.2
18	-1.00	0.4	1045	-2.2	240	85.1	96.4	353	70.6	1455	-3.3	3.0	3.4	543	2.6	1555	1008.63	1011.8	2250	1004.6	342	7.1
19	0.89	5.0	1516	-1.2	547	66.9	86.7	1	43.4	1601	-4.8	2.7	3.1	1433	2.1	1702	1016.00	1023.6	2357	1011.4	311	0.1
20	4.04	9.9	1321	-0.8	2350	70.0	90.1	2355	43.2	1549	-1.2	3.4	4.3	1159	2.9	123	1028.97	1034.0	2359	1023.5	8	0
21	4.27	10.8	1441	-3.0	603	72.5	97.4	719	32.7	1451	-0.9	3.5	4.4	1006	2.5	1451	1031.13	1034.1	126	1026.1	2359	0
22	6.94	10.7	1241	3.7	257	72.3	88.5	623	51.3	1445	2.1	4.4	5.4	945	3.8	1727	1019.36	1026.2	0	1009.4	2357	0
23	8.53	12.8	1448	5.9	2359	73.0	93.0	2359	49.1	1420	3.7	5.0	6.2	743	4.2	1649	1000.72	1009.6	0	996.5	2320	0.6
24	7.11	9.5	1327	5.6	118	94.1	97.7	749	82.9	1332	6.2	6.0	6.6	1318	5.4	8	1000.98	1006.0	2358	996.6	320	4.7
25	7.74	12.4	1444	2.6	2242	83.1	97.8	136	52.2	1522	4.8	5.4	6.3	911	4.3	2242	1011.31	1016.3	2320	1005.8	14	0
26	7.42	12.9	1348	1.6	519	65.6	95.3	601	33.7	1257	0.7	4.0	5.0	955	2.8	1257	1017.33	1019.1	847	1014.4	2356	0
27	8.62	14.6	1348	4.8	340	82.1	96.6	835	58.1	1859	5.6	5.8	8.0	1354	4.0	27	1007.34	1014.5	0	1004.0	1356	4.1
28	5.33	9.6	1551	2.1	2359	87.9	94.8	2357	60.7	1549	3.4	4.9	5.3	444	4.2	2359	1004.25	1007.8	0	1002.3	859	13.2
29	4.30	8.9	1006	-0.3	529	91.0	98.2	556	70.8	1150	2.9	4.8	5.7	1715	3.6	529	1000.64	1005.4	2	997.1	1624	4.9
30	5.10	8.1	1120	2.5	321	95.4	98.2	727	88.7	1137	4.4	5.3	6.4	1120	4.4	318	994.23	998.2	24	990.5	1829	12
31	5.41	9.0	1504	3.2	255	88.2	96.1	952	69.0	1504	3.6	5.0	6.1	1219	4.3	2355	998.21	1007.8	2359	991.7	20	2.4
Total																						86.8
Mean	5.56	9.67		2.04		82.9	95.62		61.64		2.67	4.80	5.83		3.87		1001.84	1006.64		997.33		
Max	10.48	14.57		6.98		95.4	98.60		88.70		8.94	7.25	8.57		5.54		1031.13	1034.13		1026.10		
Min	-3.22	-0.92		-5.19		65.6	86.70		32.73		-5.35	2.59	3.00		2.07		987.88	990.24		984.27		

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 or sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

**8 Groups**

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

**C** = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

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

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

00 to 50 = Height in hundreds of feet

51 to 55 Not used

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

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