

# 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 2017

		Anomaly	Rank in the past 136 years				
Temperature (°C)							
Mean maximum	13.9	+2.7	6 <sup>th</sup> highest				
Mean minimum	5.8	+2.6	2 <sup>nd</sup> highest				
Daily mean	9.8	+2.6	* highest *				
Highest maximum	20.8	on 30 <sup>th</sup>	Lowest maximum	9.2	on 1 <sup>st</sup>		
Highest minimum	11.6	on 30 <sup>th</sup>	Lowest minimum	1.2	on 23 <sup>rd</sup>		
Mean grass minimum	2.3	+2.4	Lowest grass minimum	-4.6	on 25 <sup>th</sup>		
Mean earth @30 cm	9.0	+1.9	Earth @100 cm	8.6			
Frost duration (hrs)	0.0		Rain duration (hrs)	33.1			
Rainfall total (mm)	35.3	77%	58 <sup>th</sup> lowest				
Highest daily fall	5.9	on 5 <sup>th</sup>					
Number of: Dry days (<0.2mm)	14	Wet days (>0.9mm)	11	days ≥5mm	1		
Sunshine total (hrs)	123.5	Daily mean	3.98	111%	Sunniest day	12.0 on 25 <sup>th</sup>	
N° days with: Air frost	0	Ground frost	11	Snow falling	0	Snow lying	0
Thunder	1	Hail ≥5mm	0	Small hail/ice	1	Fog @09	0
						Nil sun	4
Pressure MSL: Mean @09 GMT, mbar	1015.1	-0.8	Highest	1035.0	on 15 <sup>th</sup>	Lowest	985.8 on 5 <sup>th</sup>
Relative humidity: Mean (%)	79.1	Lowest	25	on 25 <sup>th</sup>	Water vapour (g/kg), mean at 09 and 15 GMT		
					6.0,	5.7	
Overall mean wind speed (mph)	8.3	Windiest day	13.4	on 19 <sup>th</sup>	Max gust	40	on 19 <sup>th</sup>
Wind direction (days)	N 0	NE 5	E 0	SE 1	S 5	SW 14	W 5
							NW 1
Least windy day (mph)	3.7	on 12 <sup>th</sup>	Calm; less than 0.5 mph (minutes)		149		

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

Notes:

#### Exceptionally Mild with Rainfall Below, and Sunshine Above, Average

**Temperature:** The mean temperature this March is a new record high, 0.1° above the previous highest set in 1957. However, the mean maximum ranks only 6<sup>th</sup> highest in 136 years, 1.7° below the record set in 1938, and is 0.7° below March 2012. The mean minimum, while 2<sup>nd</sup> highest in 136 years is 0.5° below the record set in 1981. March had been mild in 8 years in this millennium, but it is worth remembering that March 2013 was the 6<sup>th</sup> coldest on record with a mean temperature 6.2° lower than the current one. The highest max is 4.1° above the median while the lowest max is 4.6° above its median and is 5<sup>th</sup> highest in 105 years. The highest min is 2.8° above the median and is 3<sup>rd</sup> highest in 105 years while the lowest min is 5.3° above its median and is a new record high in the past 114 years. The mean grass min is highest since 1998, and the lowest grass min is highest since before 1980. The mean earth temperature at 30 cm depth is also highest since before 1980, and the mean at 1 m depth is highest since 2007. This is the first March since before 1956 to register a complete absence of air frost, the average being 6.6 days. The number of days with ground frost is 5 below average and lowest since 1992. Daily anomalies for both max and min were mainly above normal, varying between +8.3° for the max on the 30<sup>th</sup> to -0.4° on the 22<sup>nd</sup>, and +8.3° for the min on the 19<sup>th</sup> and -2.0° on the 23<sup>rd</sup>, with only 3 other days having negative anomalies. **Rainfall:** This has been a dry March overall, but 7 have been drier this millennium. The total is 4 mm below the long-term median, but 10 mm below the current 30 year average. The month got off to a fairly wet start, and the daily accumulation compared with normal was 11 mm in surplus by the 5<sup>th</sup>. Near normal falls kept the surplus near 10 mm until the 12<sup>th</sup>, then dry days eliminated the surplus by the 18<sup>th</sup>, then after the 22<sup>nd</sup>, it was largely dry, leading to a deficit of about 10 mm by the 31<sup>st</sup>. There was one 5 day dry spell ending on the 27<sup>th</sup>. Despite the lowish rainfall total, the number of dry days is 3 fewer than average. Thunder was heard on the 3<sup>rd</sup>, and small ice pellets fell on the 5<sup>th</sup>, but the highest rainfall rate was 30 mm/hr in a heavy rain shower on the 4<sup>th</sup>. **Sunshine:** This has been a relatively sunny March, 11 % above average, but 8 Marches this millennium have been sunnier. Daily accumulation was close to normal up to the 17<sup>th</sup>, but was 12 hours in deficit by the 20<sup>th</sup>. This reduced to 7 hours by the 24<sup>th</sup>, then 3 sunny days pushed it into surplus of 13 hours by the 27<sup>th</sup> where it remained. Individual days with at least 66 % of normal were 9<sup>th</sup>, 13<sup>th</sup>, 15<sup>th</sup>, 21<sup>st</sup>, 25<sup>th</sup> and 26<sup>th</sup>, but there were 17 days with less than 33 % of normal. Overall there were 13 days with <3 hours, 10 with =>6 hours, 3 with =>9 hours and 1 with =>12 hours. **Wind:** The mean speed this March is 0.7 mph above average and is highest for the month since 2008. However, both the windiest day and highest gust are below average, the latter by 6 mph. Winds were mainly fresh until the 5<sup>th</sup>, then moderate decreasing light by the 11<sup>th</sup>, increasing fresh again by the 17<sup>th</sup> and temporarily strong on the 20<sup>th</sup>, before becoming mainly moderate after the 23<sup>rd</sup>. Directions were generally SW'ly to the 21<sup>st</sup>, but SE'ly on the 3<sup>rd</sup>, 10<sup>th</sup> and 11<sup>th</sup>, and W'ly from 14<sup>th</sup> to 16<sup>th</sup>, backing NE'ly by the 23<sup>rd</sup>, veering S'ly on the 28<sup>th</sup>. **Humidity:** The mean water vapour content at both 0900 and 1500 GMT are highest for the month in the past 22 years.

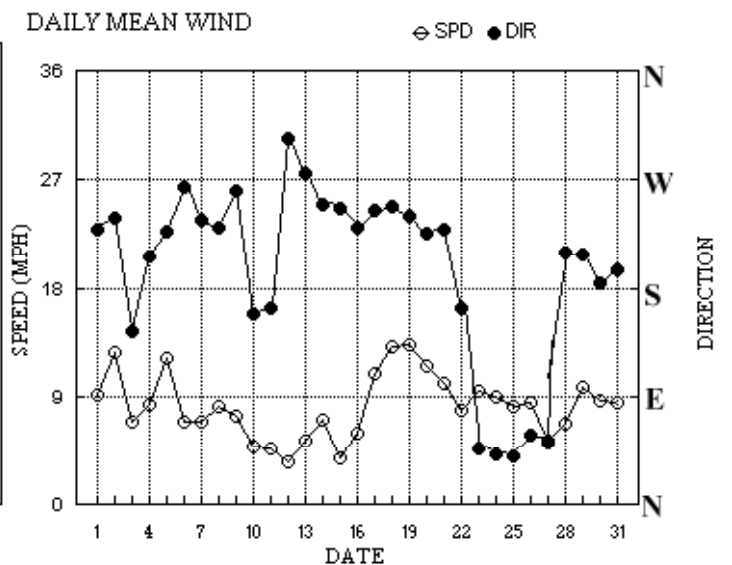
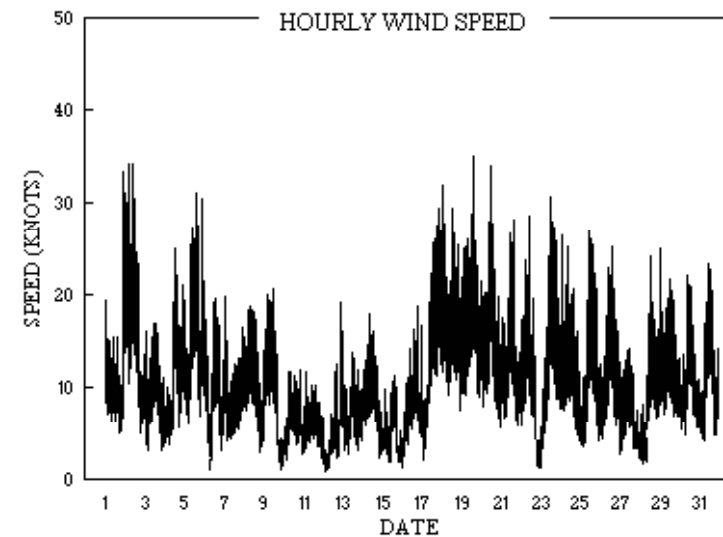
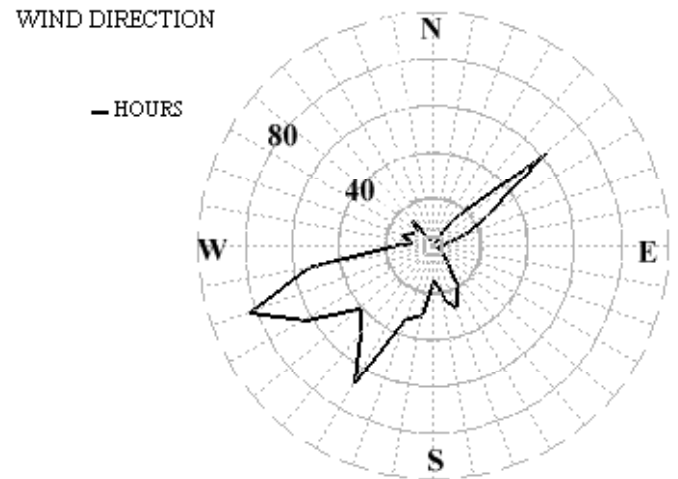
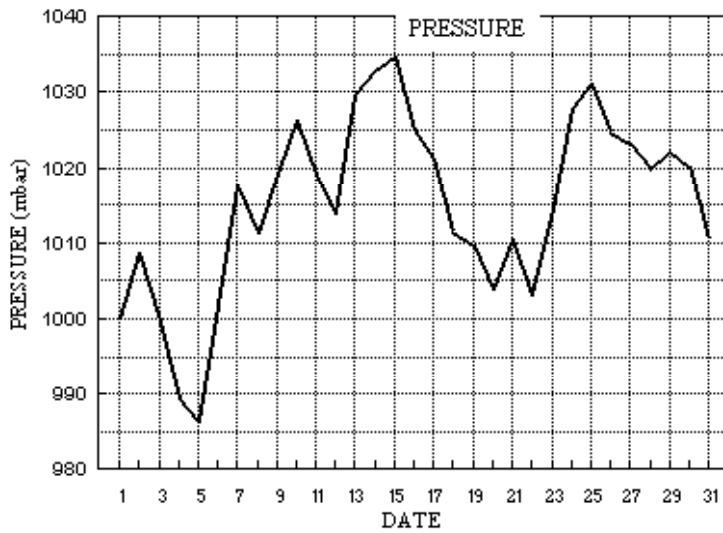
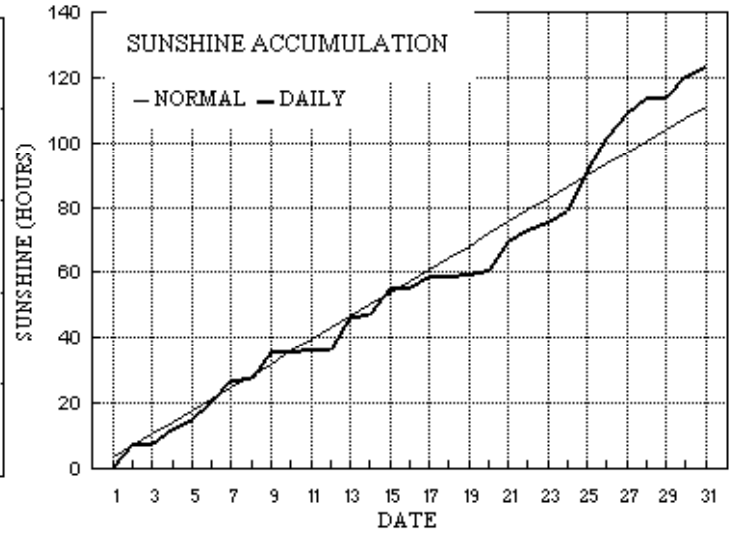
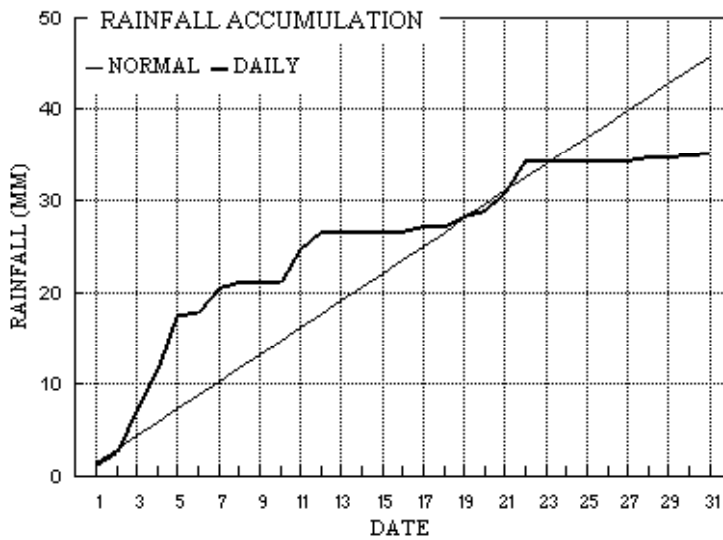
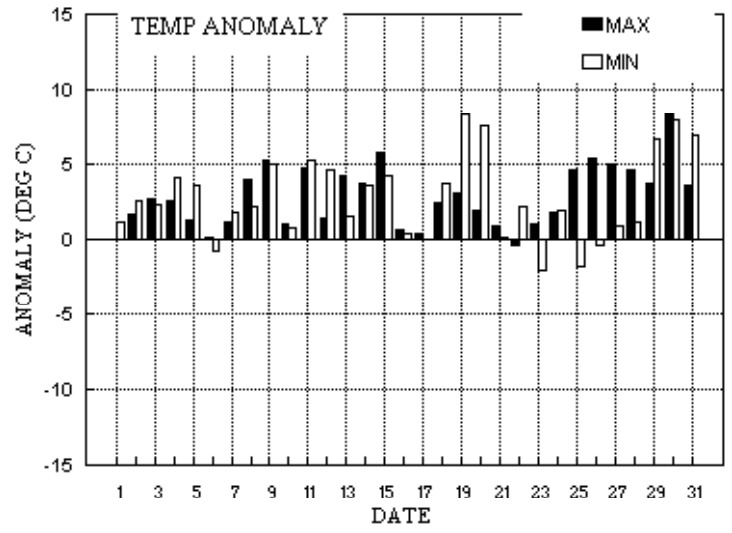
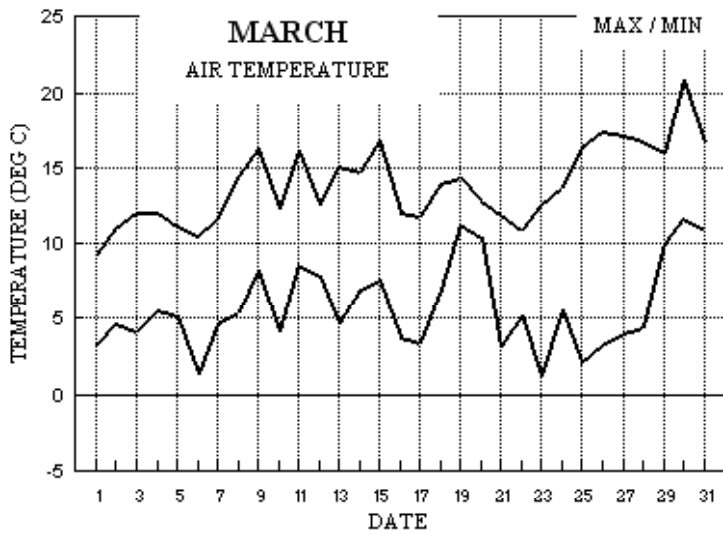
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

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>			
+2.0°	+2.3°	143%	100%	+2.8°	+3.9°	54%	70%	+3.5°	+2.1°	41%	159%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

# Wokingham climatological graphs for March 2017



Month: MARCH 2017

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	9.2	3.2	1.2	2.0	7.2	7.8	0.9	0.0	1000.1	0 0 0 0	0 0 0 0	0 0 0 0	228	7.5 7.9	251 34 2218	250 16	22 1.5	
2	11.0	4.6	1.5	1.3	7.2	7.8	6.8	0.0	1008.6	0 0 0 0	0 0 0 0	0 0 0 0	239	10.3 11.0	241 34 0336	250 15	08 1.8	
3	12.0	4.1	4.6	0.4	7.1	7.8	0.0	0.0	999.8	0 0 0 0	1 0 0 0	0 0 0 0	144	5.4 6.0	160 17 1136	149 9	11 3.6	
4	12.1	5.6	4.5	2.9	7.4	7.8	4.6	0.0	989.3	0 0 0 0	0 0 0 0	0 0 0 0	206	7.1 7.3	199 25 1256	194 13	13 2.8	
5	11.2	5.1	5.9	1.9	7.5	7.8	3.1	0.0	986.3	0 0 0 0	0 0 1 0	0 0 0 0	227	8.9 10.6	252 31 1444	248 16	14 2.2	
6	10.5	1.3	0.1	-2.5	7.5	7.8	5.4	0.0	1001.7	0 1 0 0	0 0 0 0	0 0 0 0	264	5.4 6.0	260 21 0026	287 10	13 0.1	
7	11.6	4.6	2.8	1.3	7.5	7.8	6.7	0.0	1017.7	0 0 0 0	0 0 0 0	0 0 0 0	237	4.7 6.0	287 20 0034	187 8	23 2.7	
8	14.5	5.4	0.6	3.6	7.8	7.9	0.4	0.0	1011.3	0 0 0 0	0 0 0 0	0 0 0 0	231	6.6 7.1	227 19 0815	235 11	06 0.4	
9	16.2	8.2	tr	2.5	8.3	7.9	8.3	0.0	1019.1	0 0 0 0	0 0 0 0	0 0 0 0	260	5.0 6.5	267 21 1106	248 10	05 0.0	
10	12.3	4.2	tr	-1.7	8.6	8.0	0.0	0.0	1026.2	0 1 0 0	0 0 0 0	0 0 0 0	158	3.7 4.3	155 12 2018	149 7	08 0.0	
11	16.1	8.6	3.6	9.2	8.8	8.1	0.4	0.0	1019.2	0 0 0 0	0 0 0 0	0 0 0 0	164	4.0 4.1	151 12 0402	153 6	10 2.7	
12	12.5	7.9	1.9	5.5	9.2	8.2	0.0	0.0	1013.7	0 0 0 0	0 0 0 0	0 0 0 0	304	2.4 3.2	330 19 2134	329 8	21 3.0	
13	15.1	4.7	0.0	-0.1	9.2	8.3	10.2	0.0	1029.6	0 1 0 0	0 0 0 0	0 0 0 0	275	3.8 4.6	309 14 1227	288 7	12 0.0	
14	14.7	6.9	0.0	1.9	9.2	8.5	0.3	0.0	1033.0	0 0 0 0	0 0 0 0	0 0 0 0	250	6.0 6.2	264 18 0922	262 9	09 0.0	
15	16.8	7.6	0.0	3.0	9.4	8.6	8.5	0.0	1034.7	0 0 0 0	0 0 0 0	0 0 0 0	246	2.7 3.3	254 11 1518	244 6	15 0.0	
16	12.0	3.8	0.0	-1.5	9.7	8.7	0.1	0.0	1024.9	0 1 0 0	0 0 0 0	0 0 0 0	231	4.9 5.2	274 19 1825	269 8	18 0.0	
17	11.8	3.4	0.5	-2.1	9.4	8.8	3.5	0.0	1021.3	0 1 0 0	0 0 0 0	0 0 0 0	245	9.2 9.5	239 30 2101	238 15	20 1.3	
18	14.0	6.9	tr	8.1	9.4	8.8	0.2	0.0	1011.6	0 0 0 0	0 0 0 0	0 0 0 0	248	11.3 11.4	247 32 0232	255 14	13 0.0	
19	14.3	11.3	1.1	10.5	9.9	8.9	0.3	0.0	1009.7	0 0 0 0	0 0 0 0	0 0 0 0	240	11.5 11.6	253 35 1510	249 15	13 2.9	
20	12.8	10.4	0.6	10.0	10.2	8.9	1.4	0.0	1003.7	0 0 0 0	0 0 0 0	0 0 0 0	226	9.9 10.1	227 34 1220	222 17	12 0.4	
21	11.9	3.1	2.0	-0.7	9.9	9.1	8.4	0.0	1010.4	0 1 0 0	0 0 0 0	0 0 0 0	229	7.9 8.7	257 28 1531	237 14	12 1.7	
22	10.9	5.1	3.6	2.2	9.6	9.1	3.6	0.0	1003.1	0 0 0 0	0 0 0 0	0 0 0 0	164	6.1 6.8	200 29 1118	149 11	08 4.7	
23	12.6	1.2	tr	-4.1	9.2	9.2	2.8	0.0	1014.6	0 1 0 0	0 0 0 0	0 0 0 0	47	8.1 8.2	54 31 1358	53 14	15 0.0	
24	13.7	5.5	0.0	1.7	9.2	9.2	3.5	0.0	1027.8	0 0 0 0	0 0 0 0	0 0 0 0	42	7.8 7.8	40 27 0228	45 10	08 0.0	
25	16.4	2.1	0.0	-4.6	9.1	9.2	12.0	0.0	1031.2	0 1 0 0	0 0 0 0	0 0 0 0	41	7.0 7.1	34 27 1156	40 12	14 0.0	
26	17.4	3.2	0.0	-2.5	9.2	9.1	10.2	0.0	1024.8	0 1 0 0	0 0 0 0	0 0 0 0	58	7.2 7.3	67 25 1428	66 11	14 0.0	
27	17.1	4.0	0.0	-1.9	9.5	9.1	7.8	0.0	1023.3	0 1 0 0	0 0 0 0	0 0 0 0	52	4.5 4.6	56 14 1223	48 6	14 0.0	
28	16.8	4.4	0.3	-0.4	9.7	9.2	4.6	0.0	1019.8	0 1 0 0	0 0 0 0	0 0 0 0	210	4.1 5.9	193 24 1419	237 10	11 0.4	
29	16.0	10.0	tr	9.9	10.2	9.2	0.0	0.0	1022.2	0 0 0 0	0 0 0 0	0 0 0 0	208	8.4 8.5	211 25 0113	208 11	16 0.0	
30	20.8	11.6	0.2	9.4	10.5	9.3	6.4	0.0	1020.2	0 0 0 0	0 0 0 0	0 0 0 0	184	7.1 7.5	210 22 1130	205 11	12 0.1	
31	16.6	10.9	0.3	6.8	11.1	9.4	3.1	0.0	1010.4	0 0 0 0	0 0 0 0	0 0 0 0	195	6.9 7.4	199 24 1156	206 12	15 0.8	
Total			35.3				123.5	0.0						224	3.6 7.2			33.1
Mean	13.9	5.8		2.3	9.0	8.6	3.98	0.0	1015.1									
Anom	+2.7	+2.6	77%	+2.4	+1.9	+1.1	111%			-0.8								
Daily mean		9.8																
Anom		+2.6																

Number of days with:

Air frost = 0      Ground frost = 11      Nil sun = 4  
Snow falling = 0      Snow lying = 0      Thunder = 1  
Hail=>5mm = 0      Hail<5mm or ice = 1      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, &lt;.05mm).

Grass min = Lowest overnight temperature at grass tip level.

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

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

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

Th = Thunder. Ha = Hail =&gt;5mm. Ic = Hail &lt;5mm or ice. Fg = Fog at 09 GMT.

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

Sp = 24 hour mean wind speed in knots.

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

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

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

Anom = Departure from 1981-2010 climatological average.

All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for MARCH 2017

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks					
1	65	7	21	06	13	6.5	3.3	80	4.8	1000.1	0	005	03	2	2	6	0	9	7	8	82362	85367	87275	1	2Ac65 COTRA Parhelia
2	70	7	25	16	34	7.5	0.5	61	3.9	1008.6	2	033	02	1	1	7	5	6	/	/	87635			2	
3	57	8	14	07	15	6.6	5.7	94	5.6	999.8	7	033	63	6	6	7	7	3	2	/	83706	87708	88525	3	
4	65	7	21	05	09	7.8	5.9	88	5.7	989.3	2	001	01	2	2	1	0	9	3	1	81363	83070	87075	4	COTRA
5	50	8	15	13	23	5.9	4.9	93	5.3	986.3	7	048	63	6	6	7	7	3	2	/	83708	87712	88540	5	
6	72	7	32	03	06	5.5	3.2	85	4.7	1001.7	3	010	02	1	1	2	0	9	1	8	82467	87272		6	COTRA U/a cont Parhelia
7	84	7	25	03	09	5.5	1.8	77	4.3	1017.7	0	009	02	2	2	3	0	9	1	8	83468	87272		7	Cld edge NE. Halo 22° part
8	59	8	25	08	19	11.5	10.6	94	7.9	1011.3	3	018	62	6	2	7	7	3	2	/	87708	88520		8	
9	82	4	25	10	19	13.0	8.7	75	6.9	1019.1	1	019	01	1	1	1	1	4	7	1	81815	84072		9	1Ac60 1Ac68 COTRA Cu hum
10	50	8	15	07	12	8.6	7.5	93	6.4	1026.2	5	000	05	5	2	8	6	2	/	/	88705			10	
11	15	8	16	04	08	10.3	9.5	95	7.3	1019.2	2	004	10	2	2	8	6	2	/	/	88703			11	
12	20	8	24	02	04	8.7	8.3	97	6.7	1013.7	1	014	63	6	6	7	7	3	2	/	83707	87712	88530	12	
13	75	7	29	05	09	8.7	5.4	80	5.5	1029.6	1	024	02	2	2	0	0	9	0	1	87075			13	COTRA
14	62	8	26	07	17	10.3	7.9	85	6.6	1033.0	2	008	02	2	2	8	6	4	/	/	87711	88713		14	
15	60	7	01	02	04	9.8	7.6	86	6.4	1034.7	0	006	05	2	2	7	6	3	/	1	87707			15	/Ci80 COTRA
16	20	8	21	06	11	7.8	7.7	99	6.5	1024.9	8	007	10	4	2	8	6	2	/	/	88703			16	
17	82	7	25	08	17	6.9	2.0	71	4.4	1021.3	2	006	03	2	2	3	0	9	7	8	81362	83368	87275	17	COTRA
18	56	8	24	11	20	11.4	10.0	91	7.6	1011.6	2	016	50	5	6	8	5	4	/	/	86710	88625		18	
19	81	7	24	10	23	12.1	7.8	75	6.5	1009.7	8	003	02	5	2	6	5	5	7	8	86620	87365		19	/Cs72
20	80	8	22	11	22	11.9	9.6	86	7.4	1003.7	7	013	15	5	2	7	5	4	/	/	87611	88618		20	Pptrn NW
21	82	1	24	10	17	7.4	1.0	64	4.1	1010.4	1	013	03	0	0	1	1	5	0	1	81820			21	1Ci75 COTRA Cu fra
22	60	8	15	11	21	6.4	5.2	92	5.4	1003.1	3	002	61	6	2	7	7	4	2	/	83710	87715	88530	22	
23	56	8	05	07	17	7.7	6.6	93	6.0	1014.6	2	027	61	6	2	8	5	3	/	/	81708	83712	88650	23	
24	45	8	04	12	26	8.0	5.6	85	5.6	1027.8	1	020	05	2	2	8	6	4	/	/	88711			24	
25	80	7	04	07	15	9.1	3.5	68	4.8	1031.2	8	003	02	2	2	0	0	9	0	1	87080			25	COTRA
26	70	7	05	08	18	8.7	5.6	81	5.6	1024.8	1	005	02	1	1	6	6	4	0	1	86612	85080		26	COTRA
27	30	8	04	05	13	7.9	6.0	88	5.8	1023.3	4	000	05	2	2	8	6	3	/	/	88707			27	
28	22	1	20	02	05	10.0	6.7	80	6.1	1019.8	3	006	05	1	1	0	0	9	0	1	81072			28	
29	82	8	20	08	14	12.3	10.2	87	7.7	1022.2	1	010	02	2	2	8	5	4	/	/	87711	88615		29	
30	80	7	20	07	12	16.0	9.4	65	7.3	1020.2	8	001	02	2	2	1	5	6	7	1	81645	83070	85075	30	1Ac58 1Ac62 COTRA
31	82	8	21	06	17	12.3	9.9	85	7.5	1010.4	3	012	02	6	2	8	8	4	/	/	83818	88630		31	Cu med

Mean vis = 18.6 km

Mean cloud = 7.0 88%

Mean wind speed = 7.3 kn

Mean gust = 15 kn

Mean TT = 9.1 °C

Mean TdTd = 6.4 °C

Mean RH = 83.6 %

Mean r = 6.0 g/kg

Mean PPP = 1015.1 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 2017

Date	VV	N	dd	ff	gg	TT	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cf	NChs	shs	NChs	shs	Date	Remarks
1	67	8	22	09	15	8.3	4.3	76	5.1	998.0	6	013	61	6	2	1	1	5	2	/	81820	88550			1	Cu hum
2	82	6	25	13	23	10.6	-5.0	33	2.6	1012.0	1	006	02	1	1	1	1	6	0	1	81845	86073			2	COTRA Cu hum Halo 22° part+parhelion
3	75	8	17	09	16	11.8	7.9	77	6.6	993.7	7	030	01	2	2	2	8	4	3	7	81815	88270			3	2Sc30 1Ac58 1Ac65 COTRA Cu fra
4	80	7	19	11	22	9.9	3.6	65	4.9	988.0	5	008	80	8	2	7	8	5	/	/	82825	86645			4	/Ci72 Cu med
5	62	6	25	15	31	10.4	2.5	58	4.5	989.8	3	020	15	8	2	4	9	6	6	3	83930	82835	83070		5	1Ac60 jp SW&NW vv40k ex p
6	83	7	29	07	20	10.0	-0.2	49	3.7	1006.8	2	024	02	2	2	1	1	6	1	8	81845	87272			6	2As68 COTRA Cu hum Cld edge N
7	86	7	21	06	11	10.9	1.2	51	4.1	1016.7	8	012	02	2	2	1	1	6	3	1	81838	87075			7	2Ac58 COTRA Cu hum
8	86	8	25	07	17	12.3	8.2	76	6.7	1013.0	1	012	21	6	2	8	8	5	/	/	81820	88640			8	2Cu030 Cu hum/fra
9	88	6	31	07	16	15.9	2.3	40	4.5	1022.4	2	013	02	1	1	1	1	6	3	1	81845	83368	85072		9	COTRA Cu hum Fall str
10	78	8	19	06	09	12.1	9.5	84	7.3	1023.7	7	017	02	2	2	8	5	4	/	/	87610	88613			10	
11	65	7	15	05	10	15.8	10.3	70	7.7	1016.0	7	019	02	2	2	2	5	5	1	8	82625	83465	87270		11	COTRA
12	72	8	31	03	09	12.3	9.0	80	7.1	1013.9	1	011	21	6	2	8	8	4	/	/	81812	83630	88650		12	Cu med
13	84	6	25	04	11	14.6	4.9	52	5.3	1029.9	5	000	02	2	2	1	5	6	0	1	81635	86078			13	COTRA
14	82	8	27	08	15	14.2	8.8	70	7.0	1032.3	4	000	03	2	2	8	5	5	/	/	88623				14	
15	80	1	23	06	11	16.1	7.6	57	6.4	1031.6	7	018	02	0	0	1	1	6	0	0	81832				15	Cu hum
16	57	7	24	09	16	11.5	8.5	82	6.9	1020.3	7	024	05	2	2	7	5	4	/	/	85612	87618			16	
17	84	8	25	15	26	10.4	3.0	60	4.7	1017.2	7	029	03	2	2	7	5	6	1	/	87635				17	/Sc56 /As68
18	70	7	25	13	23	13.3	9.7	79	7.4	1011.3	7	006	02	2	2	7	5	4	/	/	87615				18	/Sc50
19	82	7	25	17	33	14.0	8.2	68	6.7	1008.5	7	006	02	8	2	7	5	5	/	1	87625				19	/Ci75 COTRA
20	80	7	24	07	26	10.6	8.4	86	6.8	1002.7	3	002	61	6	2	3	7	4	2	/	83712	87550			20	vv60k exSE CF 1412
21	65	6	24	09	22	11.4	-1.4	41	3.4	1009.4	8	012	15	1	1	2	9	6	6	3	81945	82850	84070		21	1Sc56 1Ac65 jpW vv80k ex p
22	60	6	21	10	17	9.7	3.4	65	4.8	1005.8	2	008	16	6	1	4	3	5	6	3	81925	83830			22	1Sc50 1Ac62 1Ci70 jpS&NW vv60k ex p
23	70	7	05	12	25	11.0	3.5	60	4.9	1015.3	1	004	01	2	2	1	1	6	7	2	81830	83460	87072		23	2Ac65 Cu hum U/a cont
24	58	6	04	09	20	12.9	6.9	67	6.1	1029.4	7	004	05	2	2	6	5	5	/	/	86624				24	
25	88	4	04	11	26	15.5	-0.3	34	3.7	1026.6	7	023	01	1	1	0	0	9	0	1	82075	83080			25	COTRA
26	88	7	06	10	25	16.8	6.3	50	5.9	1022.4	8	010	03	1	1	1	1	6	0	1	81840	83078	87081		26	COTRA Cu hum
27	58	6	06	07	12	16.9	4.6	44	5.2	1019.7	7	024	05	2	2	0	0	9	0	1	86080				27	COTRA
28	80	7	21	11	24	15.6	7.9	60	6.6	1019.7	5	006	15	2	2	3	8	6	6	6	82830	85270			28	2Sc56 2Ac58 Cu med jpSW
29	70	8	22	08	17	13.3	10.8	85	8.0	1021.6	8	007	20	5	2	8	5	4	/	/	86710	88615			29	
30	84	7	19	11	21	20.3	8.0	45	6.6	1016.6	7	020	02	2	2	3	0	9	8	2	82861	87075			30	2Ac68 Ac cas
31	80	4	21	12	22	15.4	6.9	57	6.1	1009.8	6	002	02	1	1	3	8	6	0	1	83832				31	1Sc45 1Ci75 Cu med

Mean vis = 33.0 km

Mean cloud = 6.6 83%

Mean wind speed = 9.3 kn

Mean gust = 19 kn

Mean TT = 13.0 °C

Mean Td = 5.5 °C

Mean RH = 62.0 %

Mean r = 5.7 g/kg

Mean PPP = 1014.3 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

Td = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

covers past 3 hours.

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs = Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation

trails present.

Wokingham Sunshine Hourly analysis  2017	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	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	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	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	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	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	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.21	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.72	0.00	0.00	0.00	0.69	0.00	0.00	0.00
8	0.56	0.02	0.00	0.38	0.00	0.44	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.09	0.00
9	0.16	0.06	0.00	0.94	0.32	1.00	0.72	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.49	0.00
10	0.00	0.45	0.00	0.69	0.63	1.00	0.72	0.16	0.75	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
11	0.00	0.98	0.00	0.35	0.26	1.00	0.91	0.24	0.91	0.00	0.00	0.00	0.00	1.00	0.03	1.00	0.00
12	0.00	0.98	0.00	0.97	0.33	0.65	1.00	0.00	0.91	0.00	0.10	0.00	0.00	1.00	0.27	1.00	0.00
13	0.00	0.99	0.00	0.87	0.45	0.43	0.94	0.00	0.55	0.00	0.12	0.00	0.00	1.00	0.00	1.00	0.00
14	0.00	1.00	0.00	0.37	0.66	0.18	0.98	0.00	0.93	0.00	0.21	0.00	0.00	1.00	0.00	1.00	0.00
15	0.00	1.00	0.00	0.00	0.38	0.46	0.77	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.11
16	0.00	0.92	0.00	0.02	0.04	0.14	0.54	0.00	0.28	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
17	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.52	0.00	0.90	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	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	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	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	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	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	0.00
Tot		<b>0.93</b>	<b>6.79</b>	<b>0.00</b>	<b>4.57</b>	<b>3.07</b>	<b>5.38</b>	<b>6.66</b>	<b>0.40</b>	<b>8.33</b>	<b>0.00</b>	<b>0.44</b>	<b>0.00</b>	<b>10.21</b>	<b>0.30</b>	<b>8.48</b>	<b>0.11</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	0.09	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.74	0.50	0.00	0.00	0.00	0.17	0.00	0.07	
7	0.53	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.98	0.00	0.40	0.00	0.15	0.00	0.19	
8	0.90	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.18	0.00	1.00	0.00	0.45	0.00	0.26	
9	0.81	0.01	0.01	0.00	0.92	0.00	0.08	0.00	1.00	0.99	0.00	1.00	0.00	0.54	0.00	0.36	
10	0.81	0.01	0.00	0.00	0.87	0.00	0.19	0.00	1.00	1.00	0.72	1.00	0.00	0.99	0.00	0.42	
11	0.02	0.00	0.00	0.00	0.85	0.00	0.11	0.00	1.00	1.00	1.00	0.50	0.00	1.00	0.10	0.40	
12	0.14	0.01	0.15	0.00	0.75	0.09	0.14	0.00	1.00	1.00	1.00	0.09	0.00	1.00	0.27	0.41	
13	0.22	0.02	0.00	0.00	0.44	0.41	0.14	0.08	1.00	1.00	1.00	0.27	0.00	1.00	0.72	0.41	
14	0.01	0.00	0.00	0.00	0.27	0.46	0.00	0.35	1.00	1.00	1.00	0.35	0.00	0.98	0.65	0.40	
15	0.00	0.03	0.01	0.35	0.16	0.81	0.68	0.71	1.00	0.91	1.00	0.00	0.00	0.06	0.17	0.37	
16	0.00	0.07	0.09	0.15	1.00	0.59	0.40	1.00	1.00	1.00	1.00	0.00	0.00	0.05	0.27	0.34	
17	0.00	0.00	0.00	0.74	0.69	1.00	1.00	1.00	1.00	0.46	1.00	0.00	0.00	0.00	0.72	0.31	
18	0.00	0.00	0.00	0.17	0.00	0.20	0.08	0.38	0.29	0.20	0.03	0.00	0.00	0.00	0.21	0.05	
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>3.52</b>	<b>0.15</b>	<b>0.26</b>	<b>1.40</b>	<b>8.38</b>	<b>3.57</b>	<b>2.81</b>	<b>3.51</b>	<b>12.03</b>	<b>10.21</b>	<b>7.75</b>	<b>4.60</b>	<b>0.00</b>	<b>6.40</b>	<b>3.10</b>	<b>123.35</b>

MARCH 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	R tot
1	6.75	9.3	1325	4.5	722	81.8	98	1939	65	2359	3.81	5.1	6.0	1939	3.8	2359	998.70	1001.0	2350	995.8	1	1.3
2	7.31	11.1	1327	4.5	430	62.9	87	2134	27	1514	0.29	3.9	5.0	2248	2.1	1514	1008.92	1012.7	1918	1000.8	0	0
3	8.10	12.2	1519	4.0	354	88.7	99	2234	75	1533	6.31	6.1	7.2	1349	4.7	348	997.75	1010.1	0	989.4	2330	6.1
4	7.84	12.2	1247	5.4	2357	83.2	98	11	47	1307	4.91	5.5	6.6	18	4.1	1306	989.39	993.1	2359	987.5	1414	1.9
5	7.11	11.3	1423	5.0	759	79.6	94	1801	50	1436	3.68	5.0	6.2	935	4.2	1436	991.56	999.9	2359	985.8	915	8.5
6	6.64	10.5	1514	1.2	630	76.9	99	731	46	1509	2.60	4.6	5.3	2352	3.5	1454	1005.25	1013.4	2351	999.9	4	0
7	7.24	11.1	1412	4.5	759	73.5	96	2359	47	1622	2.58	4.6	6.1	2359	3.6	1622	1016.67	1018.5	1326	1013.3	0	1.5
8	10.61	14.6	1252	7.3	0	89.2	97	2103	64	1327	8.82	7.1	8.6	1057	6.1	2	1012.80	1016.5	2155	1009.1	546	2
9	11.71	16.4	1401	4.8	2359	73.1	95	45	35	1422	6.62	6.1	7.8	149	3.9	1422	1020.97	1026.9	2359	1015.8	333	0
10	9.17	12.4	1301	4.1	57	88.7	96	2259	76	331	7.39	6.4	7.5	1553	4.6	55	1024.79	1027.1	57	1022.0	2331	0
11	11.73	16.2	1401	8.7	2306	85.8	96	925	63	1515	9.34	7.3	8.3	1342	6.3	2234	1017.80	1022.3	0	1014.3	2352	0
12	9.95	12.6	1431	7.8	424	89.3	99	635	78	2105	8.22	6.7	8.0	1258	5.5	2357	1015.56	1023.2	2358	1012.0	543	5.4
13	9.76	15.2	1511	4.5	637	75.1	95	2358	42	1346	5.16	5.4	6.7	1927	4.1	1301	1029.07	1032.4	2202	1023.2	0	0
14	10.91	14.8	1339	6.8	3	84.6	98	201	66	1237	8.29	6.7	7.6	1547	5.7	3	1032.56	1033.8	2126	1031.5	450	0
15	10.81	16.9	1439	5.5	2359	83.3	99	453	54	1456	7.80	6.4	7.9	1254	5.3	2359	1032.55	1035.0	803	1029.1	2355	0
16	8.06	12.1	1533	3.6	259	90.2	100	727	74	1835	6.47	6.0	7.1	1336	4.7	254	1023.02	1029.2	0	1019.2	2008	0
17	8.04	11.9	1327	3.3	614	75.7	95	306	53	1405	3.81	5.0	6.8	2359	4.1	939	1017.49	1021.4	858	1009.1	2358	0
18	11.91	14.2	1303	9.5	3	86.3	97	635	74	1305	9.67	7.5	8.1	1009	6.7	0	1011.04	1013.3	2113	1008.1	215	0.5
19	12.08	14.4	1354	10.6	2109	82.1	96	2114	61	1340	9.03	7.2	8.0	1221	6.1	1340	1009.39	1012.3	0	1007.6	2350	0.4
20	10.19	12.9	1143	5.6	2304	85.3	97	254	71	1138	7.80	6.7	7.7	713	4.9	2006	1004.57	1007.9	2	1001.4	1401	1.5
21	6.90	12.0	1251	3.0	610	68.3	88	13	38	1254	1.12	4.1	5.2	26	3.1	1348	1009.13	1010.9	944	1006.1	3	0
22	6.25	11.0	1510	1.1	2224	80.3	98	2242	51	1724	2.95	4.7	6.3	1328	3.7	1731	1006.01	1011.1	2347	1002.4	644	3.9
23	7.73	12.7	1237	2.2	2	82.1	99	431	54	1532	4.64	5.3	6.9	931	4.3	2	1015.42	1022.8	2356	1011.0	2	1.8
24	8.34	13.8	1447	4.3	2353	79.9	92	24	56	1636	4.95	5.3	6.9	1446	4.4	2351	1028.22	1032.8	2237	1022.7	0	0
25	8.51	16.5	1414	2.0	425	58.9	96	430	25	1631	-0.39	3.7	5.8	1113	2.1	2151	1028.86	1032.6	6	1025.2	1715	0
26	9.45	17.6	1324	3.1	344	67.4	92	648	41	1435	3.34	4.9	7.2	1500	2.3	15	1023.87	1025.8	2	1022.0	1634	0
27	9.51	17.2	1453	3.8	204	77.5	95	549	41	1540	5.35	5.5	7.1	1237	4.3	137	1021.72	1024.1	4	1019.0	1624	0
28	10.44	17.0	1420	4.3	623	82.4	99	647	52	1421	7.32	6.3	8.1	1251	5.0	4	1020.00	1021.3	2057	1019.0	537	0.2
29	12.58	14.5	1153	11.0	144	84.7	92	141	74	1214	10.07	7.6	8.4	1734	6.9	0	1021.48	1022.9	1029	1019.9	330	0.1
30	15.78	20.9	1449	11.5	221	62.1	84	35	36	1204	8.11	6.7	8.0	905	5.3	1153	1017.74	1021.5	0	1011.3	2355	0
31	12.31	16.7	1307	8.7	2312	74.2	89	831	49	1343	7.71	6.6	7.8	847	5.6	1711	1009.71	1011.4	8	1007.5	2359	0.2
Total																						35.3
Mean	9.47	13.94		5.36		79.1	95.25		54.35		5.73	5.80	7.11		4.55		1014.90	1018.95		1011.01		
Max	15.78	20.89		11.47		90.2	99.70		77.50		10.07	7.59	8.56		6.92		1032.56	1035.01		1031.51		
Min	6.25	9.30		1.12		58.9	83.80		25.14		-0.39	3.74	5.05		2.07		989.39	993.12		985.76		

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

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

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

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

## Appendix 1.

### **Explanation and definition of some of the terms used in the Wokingham Weather Reports.**

**Average:** Generally refers to the 30 year climatological average, currently 1981 to 2010. This will be next updated in 2020. For some parameters, notably wind, the climatological average is not available, and if the word average is used in the context of wind, it refers to the average for the period for which data is held, namely 1988 to present.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

**Month:** Calendar month.

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

Summer, June to August

Autumn, September to November

Winter, December to February.

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

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

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

**Frost:** An air frost day is recorded when the minimum temperature read at 0900 GMT on that day is  $-0.1^{\circ}\text{C}$  or below. A ground frost day is recorded when the grass minimum temperature read at 0900 GMT on that day is  $-0.1^{\circ}\text{C}$  or lower.

Duration of air frost is defined as the number of minutes that the AWS one minute average temperature is below  $0.0^{\circ}\text{C}$ , and the day runs from midnight to midnight.

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

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

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

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

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

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

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

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

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

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

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

## Appendix 2.

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

**VV** : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

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

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

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

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

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

**Cl :** Type of low cloud

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

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

**Cm :** Type of medium cloud.

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