

# 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

JUNE 2016

Temperature (°C )		Anomaly	Rank in the past 135 years				
Mean maximum	20.2	-0.3	55 <sup>th</sup> highest				
Mean minimum	11.8	+1.3	2 <sup>nd</sup> highest				
Daily mean	16.0	+0.5	21 <sup>st</sup> highest				
Highest maximum	25.8	on 6 <sup>th</sup>	Lowest maximum	13.4	on 1 <sup>st</sup>		
Highest minimum	16.6	on 23 <sup>rd</sup>	Lowest minimum	8.4	on 28 <sup>th</sup>		
Mean grass minimum	9.6	+2.0	Lowest grass minimum	4.1	on 28 <sup>th</sup>		
Mean earth @30 cm	17.7	+0.9	Earth @100 cm	15.3			
Frost duration (hrs)	0.0		Rain duration (hrs)	39.5			
Rainfall total (mm / in)	81.7	166 %	19 <sup>th</sup> highest				
Highest daily fall	20.5	on 22 <sup>nd</sup>					
Number of: Dry days (<0.2mm)	11	Wet days (>0.9mm)	14	days ≥5mm	6		
Sunshine total (hrs)	104.8	Daily mean	3.49	55 %	Sunniest day	14.2 on 6 <sup>th</sup>	
N <sup>o</sup> days with: Air frost	0	Ground frost	0	Snow falling	0	Snow lying	0
Thunder	6	Hail ≥5mm	0	Small hail/ice	0	Fog @09	0
						Nil sun	3
Pressure MSL : Mean @09 GMT, mbar	1014.5	-2.6	Highest	1025.2	on 8 <sup>th</sup>	Lowest	994.4 on 14 <sup>th</sup>
Relative humidity : Mean (%)	81.2	Lowest	32 on 6 <sup>th</sup>	Water vapour (g/kg), mean at 09 and 15 GMT	8.8,	9.2	
Overall mean wind speed (mph)	6.0	Windiest day	10.9 on 2 <sup>nd</sup>	Max gust	31	on 29 <sup>th</sup>	
Wind direction (days)	N 7	NE 3	E 1	SE 1	S 2	SW 11	W 4
						NW	1
Least windy day (mph)	2.8 on 8 <sup>th</sup>	Calm; less than 0.5 mph (minutes)				365	

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

Notes:

### Wet and Exceptionally Dull with Mean Temperature Above Average.

**Temperature:** Although the mean temperature is above average, the mean maximum is 0.3° below average, and it is the mean minimum, 1.3° above average and 2<sup>nd</sup> highest in 135 years, that produced the positive anomaly for the mean. The reason for this large disparity and corresponding reduced daily temperature range can be found in an exceptionally cloudy June, both by day and night, (see Sunshine below). The highest max is 1.2° below the median while the lowest max is 1.4° below its median. Conversely, the highest min is 1.8° above the median and is 9<sup>th</sup> highest in 104 years, while the lowest min is 3.7° above its median and is a new record for the past 113 years, exceeding the previous highest in 1997 by 0.4°. The mean grass min is highest in the past 37 years, while the lowest grass min is equal highest with 1997 in the same period. Earth temperatures at both 30cm and 1m depth are well above average. The month got off to a cold start, with anomalies for daily max -6° on the 1<sup>st</sup> and -5° on the 3<sup>rd</sup>, although minima were close to normal. From the 5<sup>th</sup> to the 10<sup>th</sup> there was a warm spell, with anomalies for daily max between +4° and +6°, and an anomaly of +5° for the min on the 8<sup>th</sup>. From the 11<sup>th</sup> onward, maxima were generally near or below normal, with anomalies ranging from -5° on the 29<sup>th</sup> to +2° on the 22<sup>nd</sup>. Minima were generally near or above normal, with anomalies between -3° on the 28<sup>th</sup> and +6° on the 23<sup>rd</sup>. **Rainfall:** The total this month is well into the wet category, but is highest only since 2012, which was the 3<sup>rd</sup> wettest June on our 135 year series. Nevertheless, this month's total is 66% above the current climatological average. There was a dry start to the month, with a 6 day dry spell ending on the 6<sup>th</sup>, after which it pretty much rained every day. The rainfall accumulation crossed into surplus on the 12<sup>th</sup>, and was 17 mm above normal by the 21<sup>st</sup>, then a 2 day fall of 26 mm on the 22<sup>nd</sup>/23<sup>rd</sup> lifted the surplus to 37 mm, though smaller daily amounts subsequently allowed the surplus to fall back to 32 mm by the 30<sup>th</sup>. There were 8 fewer dry days than average, the lowest number since 1998. Rainfall duration was 8.8 hours, or 29%, above normal, quite low compared with the anomaly for the total fall. Much of the rain was showery in nature, and was heavy at times, reaching violent intensity (>50 mm/hr) on the 8<sup>th</sup>, 16<sup>th</sup> and 23<sup>rd</sup>. Thunder was much more frequent than average, and the most for a June since 1980, however, hail was not recorded. The highest rainfall rate was 68 mm/hr on the 23<sup>rd</sup>. **Sunshine:** This has been an exceptionally dull June, with only just over half the average sunshine. The total of 104.8 hours is a new record lowest for the month, going back to 1908. Interestingly, the previous lowest occurred as recently as 2012. The daily mean of 3.49 hrs this June is lower than the average for any month in the year apart from November to February inclusive. There was just one sunny period, 5<sup>th</sup> to the 9<sup>th</sup>, when 3 days had over 60 % of the maximum, but the 1<sup>st</sup> to the 4<sup>th</sup> gave only 0.3 hours in total, and from the 10<sup>th</sup> to the 23<sup>rd</sup> only the 15<sup>th</sup> had over 35 % of the maximum, and 9 days had less than 10 %. The accumulation of sunshine stayed in deficit throughout the month, reaching 40 hours by the 15<sup>th</sup> and 85 hours by the 30<sup>th</sup>. Overall there were 15 days with <3 hours, 7 with =>6 hours, 3 with =>9 hours and 1 with =>12 hours. **Wind:** The mean speed is 0.3 mph below average, and the month's highest gust is 6 mph below average. **Humidity:** The overall mean relative humidity is highest for June since before 1998.

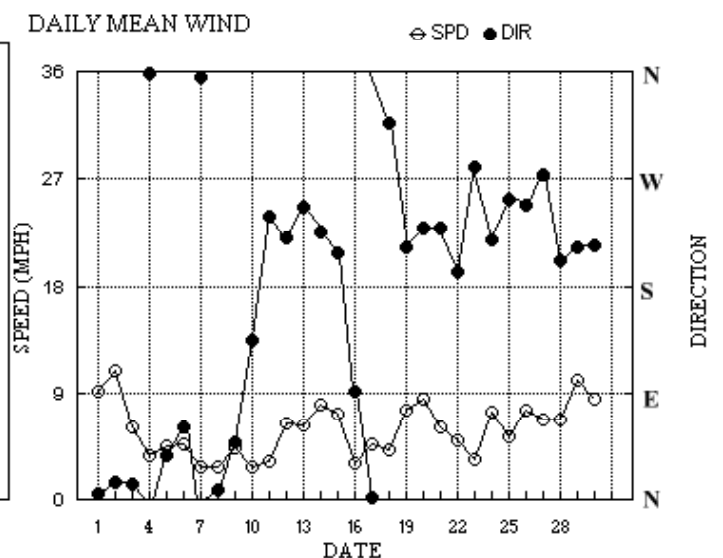
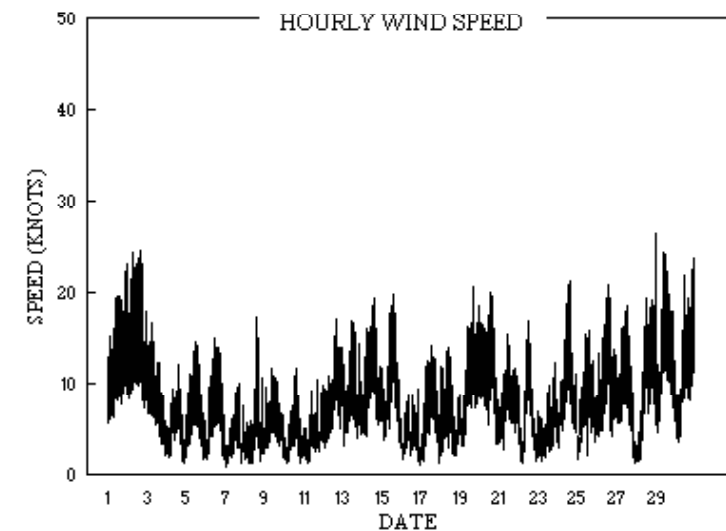
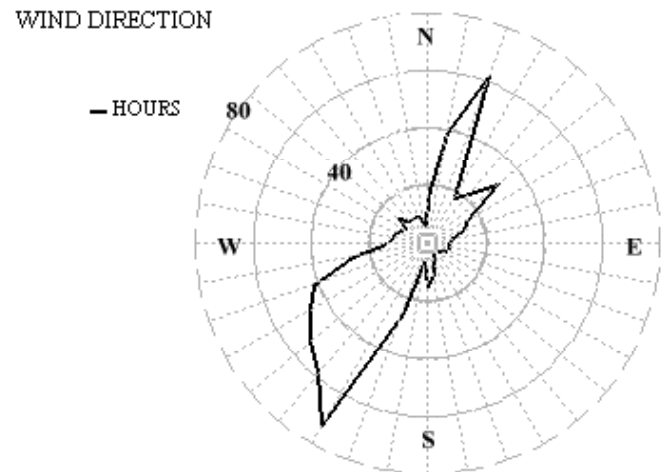
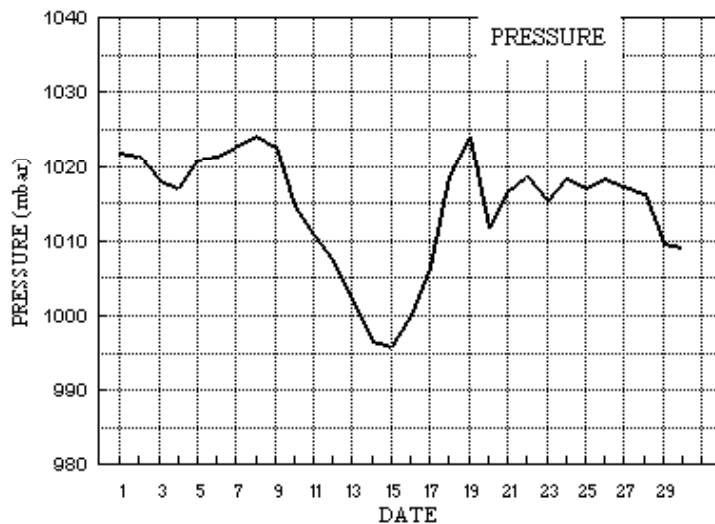
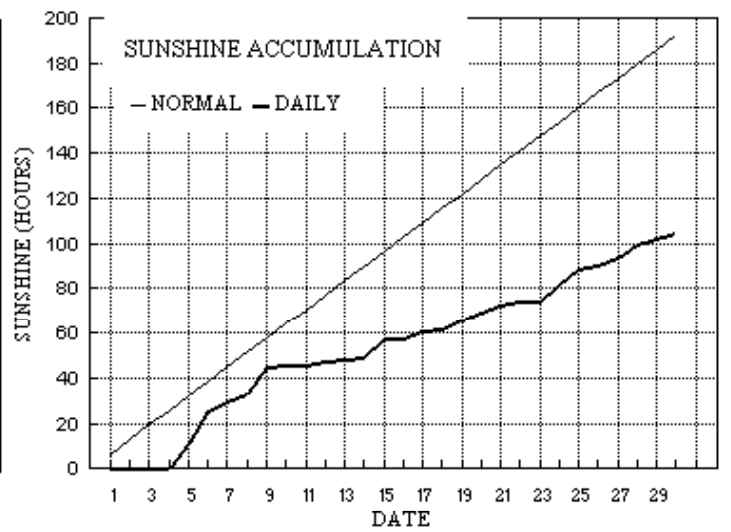
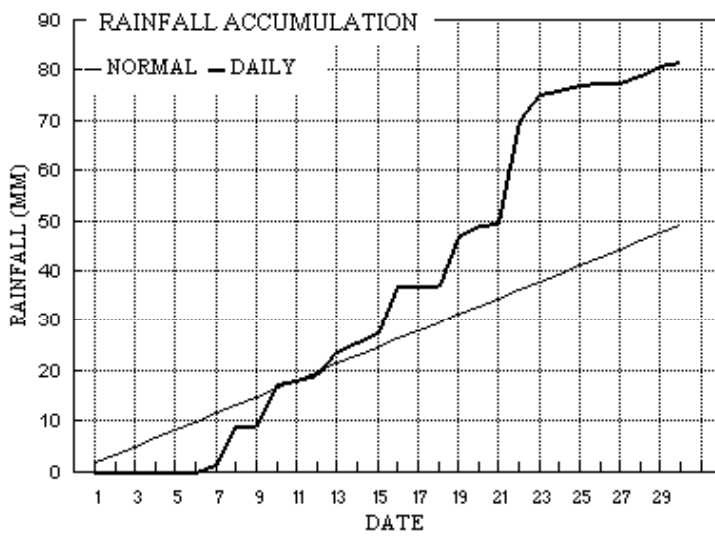
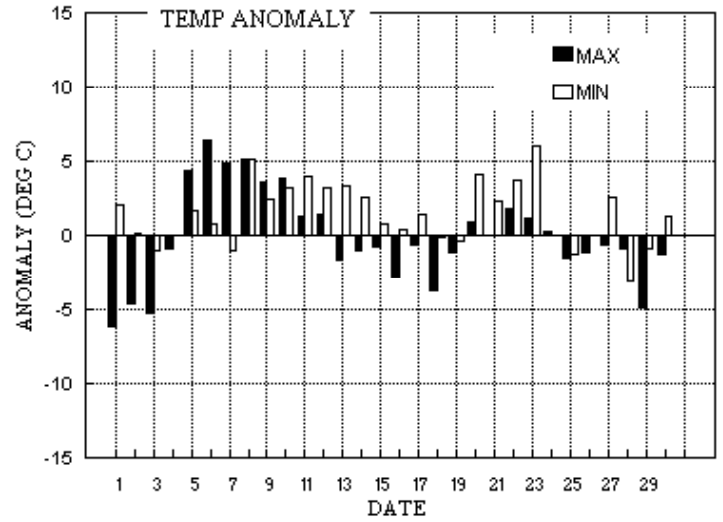
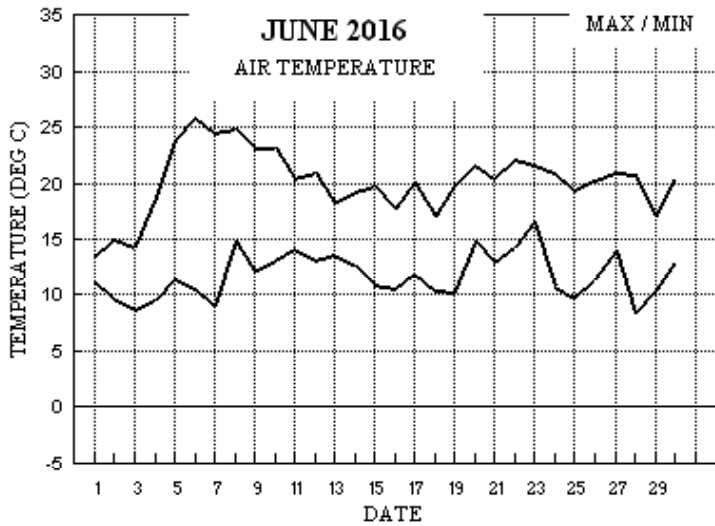
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

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 30 <sup>th</sup>			
+1.1°	+1.3°	104%	72%	-0.8°	+1.9°	195%	36%	-0.7°	+1.1°	201%	56%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

# Wokingham climatological graphs for June 2016



Month: JUNE 2016

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 HH	Rain hrs		
1	13.4	11.3	tr	10.9	15.1	14.1	0.1	0.0	1022.0	0 0 0 0	0 0 0 0	0 0 0 0	6	8.0	8.0	21 22 2245	10 10	21 0.0	
2	15.0	9.8	0.0	9.5	14.7	14.0	0.1	0.0	1021.5	0 0 0 0	0 0 0 0	0 0 0 0	15	9.5	9.5	24 25 1536	17 11	15 0.0	
3	14.4	8.7	tr	8.6	14.7	13.9	0.1	0.0	1018.1	0 0 0 0	0 0 0 0	0 0 0 0	14	5.3	5.3	21 17 0521	17 7	05 0.0	
4	18.7	9.6	0.0	11.0	14.9	13.8	0.0	0.0	1017.2	0 0 0 0	0 0 0 0	0 0 0 0	358	3.0	3.2	25 12 1453	7 5	14 0.0	
5	23.9	11.4	0.0	7.0	15.3	13.8	11.1	0.0	1020.8	0 0 0 0	0 0 0 0	0 0 0 0	38	3.9	4.0	31 15 1231	39 6	10 0.0	
6	25.8	10.6	0.0	6.2	16.7	13.8	14.2	0.0	1021.5	0 0 0 0	0 0 0 0	0 0 0 0	61	4.0	4.1	65 15 1212	61 6	14 0.0	
7	24.5	9.0	1.3	6.1	17.5	14.0	4.2	0.0	1022.7	0 0 0 0	1 0 0 0	0 0 0 0	355	1.0	2.4	331 10 1704	243 5	13 1.1	
8	24.9	14.9	7.7	12.2	17.9	14.2	3.7	0.0	1024.3	0 0 0 0	0 0 0 0	0 0 0 0	9	1.6	2.4	76 17 1546	32 4	15 0.7	
9	23.2	12.2	0.0	8.7	18.3	14.4	11.7	0.0	1022.6	0 0 0 0	0 0 0 0	0 0 0 0	49	2.7	3.7	21 12 0802	30 5	09 0.0	
10	23.2	13.2	8.4	11.5	18.9	14.7	0.9	0.0	1014.5	0 0 0 0	1 0 0 0	0 0 0 0	134	1.8	2.5	261 12 1645	204 5	16 1.8	
11	20.5	14.2	0.5	13.0	18.9	15.0	0.0	0.0	1010.8	0 0 0 0	0 0 0 0	0 0 0 0	239	1.0	2.8	240 10 1713	245 6	17 1.1	
12	20.9	13.2	1.3	11.3	18.9	15.2	1.1	0.0	1007.4	0 0 0 0	0 0 0 0	0 0 0 0	221	4.9	5.6	250 17 1659	232 9	16 1.4	
13	18.3	13.6	4.5	11.4	18.5	15.4	0.8	0.0	1002.3	0 0 0 0	0 0 0 0	0 0 0 0	247	5.2	5.4	249 17 1115	266 8	14 1.5	
14	19.3	12.7	1.9	11.0	18.2	15.6	1.1	0.0	996.6	0 0 0 0	0 0 0 0	0 0 0 0	226	6.9	6.9	211 20 1519	229 10	13 0.7	
15	19.8	11.0	1.8	8.2	18.1	15.7	8.3	0.0	996.0	0 0 0 0	1 0 0 0	0 0 0 0	208	6.1	6.3	196 20 1512	210 11	15 0.3	
16	17.8	10.6	9.6	6.5	18.2	15.8	0.1	0.0	1000.0	0 0 0 0	1 0 0 0	0 0 0 0	91	0.7	2.8	345 10 2140	45 4	09 3.5	
17	20.1	12.0	tr	11.0	18.0	15.9	3.1	0.0	1006.5	0 0 0 0	0 0 0 0	0 0 0 0	2	2.9	4.1	309 14 1454	9 7	07 0.0	
18	17.1	10.5	tr	7.1	18.2	15.9	0.9	0.0	1018.6	0 0 0 0	0 0 0 0	0 0 0 0	317	2.0	3.7	353 14 1007	334 6	07 0.0	
19	19.8	10.2	9.8	5.6	17.8	15.9	4.2	0.0	1024.1	0 0 0 0	0 0 0 0	0 0 0 0	213	6.4	6.5	218 21 1614	210 9	16 8.4	
20	21.6	14.8	2.4	14.4	18.0	16.0	3.6	0.0	1011.7	0 0 0 0	0 0 0 0	0 0 0 0	228	7.0	7.4	257 20 1446	247 10	17 2.0	
21	20.5	13.0	0.1	10.2	18.1	16.0	3.3	0.0	1016.7	0 0 0 0	0 0 0 0	0 0 0 0	229	5.1	5.4	236 16 1132	232 8	11 0.7	
22	22.2	14.4	20.5	12.9	18.3	16.0	1.4	0.0	1018.6	0 0 0 0	0 0 0 0	0 0 0 0	192	3.5	4.3	205 17 1332	200 8	12 5.3	
23	21.6	16.6	5.5	14.5	18.5	16.1	0.0	0.0	1015.2	0 0 0 0	1 0 0 0	0 0 0 0	279	1.8	3.0	238 12 2140	240 6	21 1.6	
24	21.0	10.8	0.8	7.5	18.4	16.2	7.7	0.0	1018.5	0 0 0 0	0 0 0 0	0 0 0 0	219	6.4	6.5	201 22 1537	210 12	15 0.5	
25	19.5	9.7	0.8	5.6	18.5	16.3	6.9	0.0	1017.1	0 0 0 0	1 0 0 0	0 0 0 0	253	4.2	4.6	256 16 1530	247 8	15 0.7	
26	20.2	11.4	0.7	7.9	18.4	16.4	1.7	0.0	1018.5	0 0 0 0	0 0 0 0	0 0 0 0	248	6.1	6.6	261 21 1556	250 10	14 2.1	
27	20.9	14.0	0.0	13.8	18.7	16.4	3.0	0.0	1017.4	0 0 0 0	0 0 0 0	0 0 0 0	274	5.2	5.9	288 19 1428	277 8	13 0.0	
28	20.7	8.4	1.4	4.1	18.8	16.5	6.4	0.0	1016.2	0 0 0 0	0 0 0 0	0 0 0 0	201	5.2	5.8	223 20 1401	231 10	21 1.5	
29	17.0	10.5	1.9	8.4	18.6	16.5	2.1	0.0	1009.7	0 0 0 0	0 0 0 0	0 0 0 0	213	8.6	8.8	269 27 0009	203 12	12 3.7	
30	20.4	13.0	0.8	12.7	18.0	16.6	3.0	0.0	1009.3	0 0 0 0	0 0 0 0	0 0 0 0	215	7.3	7.4	227 24 2330	220 11	23 0.9	
Total			81.7				104.8	0.0										39.5	
Mean	20.2	11.8		9.6	17.7	15.3	3.49	0.0	1014.5					246	1.8	5.2			
Anom	-0.3	+1.3	166%	+2.0	+0.9	+0.7	55%												-2.6
Daily mean		16.0																	
Anom		+0.5																	

Number of days with:

Air frost = 0      Ground frost = 0      Nil sun = 3  
Snow falling = 0      Snow lying = 0      Thunder = 6  
Hail=>5mm = 0      Hail<5mm or ice = 0      Fog at 09GMT = 0

Abbreviations.

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

Rain = total rainfall and melted snowfall in 24 hour period ending at 09 GMT, millimetres. (Tr = trace, &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 JUNE 2016

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	NCh	shs	NCh	shs	NCh	shs	Date	Remarks
1	58	8	01	08	15	12.1	10.9	92	8.1	1022.0	1	008	51	5	2	8	7	2	/	/	85705	88708					1	Absent vv&cld est	
2	75	8	01	11	22	10.6	8.3	86	6.8	1021.5	0	003	02	2	2	8	6	3	/	/	85708	88712					2	Absent vv&cld est	
3	63	8	01	07	12	9.6	7.3	85	6.3	1018.1	8	001	02	2	2	8	6	4	/	/	88710						3		
4	58	8	01	05	09	14.3	12.7	90	9.1	1017.2	1	005	05	2	2	8	6	3	/	/	88708						4		
5	65	2	05	04	10	16.3	12.1	76	8.7	1020.8	0	005	01	1	1	2	6	4	0	0	82712						5		
6	80	1	04	05	10	18.7	10.0	57	7.6	1021.5	8	003	02	0	0	0	0	9	0	1	81075						6		
7	72	7	03	02	05	18.6	10.2	58	7.7	1022.7	4	000	02	2	2	1	0	9	8	8	81360	83273	87078			7	COTRA Ac cas		
8	50	7	07	01	04	18.2	16.4	89	11.6	1024.3	2	006	60	6	2	5	5	4	7	/	81712	85656	87358			8	1Sc50		
9	61	2	04	05	12	15.7	12.2	79	8.8	1022.6	8	007	01	1	1	1	6	4	0	1	81715					9	2Ci80 COTRA		
10	75	8	10	03	06	17.3	9.2	59	7.2	1014.5	7	003	02	2	2	6	0	9	7	8	84361	84466	88270			10	COTRA		
11	68	8	34	02	07	19.1	15.6	80	11.0	1010.8	0	004	01	6	2	1	1	5	7	7	81820	83357	88270			11	4Ac65 COTRA Cu hum		
12	30	8	17	06	11	14.7	13.8	94	9.8	1007.4	7	011	58	6	5	8	5	2	/	/	82704	87706	88615			12			
13	62	8	25	06	10	16.0	14.2	89	10.0	1002.3	7	007	21	6	2	7	5	4	7	/	85710	85650	88358			13			
14	50	8	23	08	16	15.0	13.7	92	9.7	996.6	6	006	58	6	2	8	5	2	/	/	82705	87708	88625			14			
15	84	7	22	06	12	16.9	12.0	73	8.6	996.0	0	004	03	1	1	3	2	5	3	1	83820	86075				15	1Ac65 COTRA Cu med		
16	82	7	06	03	08	16.4	12.4	77	8.8	1000.0	1	005	03	2	2	7	8	4	/	1	85815	84635	85650			16	/Ci75 Cu med		
17	62	8	02	05	13	13.7	11.7	88	8.6	1006.5	2	021	02	5	2	8	5	4	/	/	87710	88613				17			
18	70	7	34	05	13	15.2	10.5	73	7.8	1018.6	1	018	15	2	2	7	8	4	/	/	84818	83628	87645			18	Cu hum jpN&E		
19	70	7	22	07	12	17.1	10.7	66	7.5	1024.1	8	001	03	1	1	2	1	5	7	1	82820	87075				19	1Ac65 2Ac68 COTRA Cu hum		
20	50	8	20	07	16	15.1	14.0	93	9.9	1011.7	7	017	63	6	6	8	7	3	/	/	87706	88710				20			
21	81	6	25	06	12	17.3	11.3	68	8.2	1016.7	3	009	03	1	1	5	8	5	0	1	85825					21	1Sc35 2Ci75 COTRA Cu hum		
22	58	8	13	05	07	16.6	15.1	91	10.6	1018.6	7	003	20	5	2	8	7	2	/	/	87705	88707				22			
23	62	8	36	02	05	19.5	17.9	90	12.6	1015.2	5	004	01	6	2	8	5	2	/	/	83705	85612	88618			23			
24	81	2	20	07	13	18.1	13.1	72	9.3	1018.5	1	004	03	0	0	2	2	4	3	0	82818					24	1Ac57 Cu med		
25	84	7	25	06	10	15.4	11.0	75	8.1	1017.1	0	000	03	1	1	3	2	4	3	0	83818	85358				25	Cu con		
26	80	6	30	08	15	16.7	11.0	69	8.3	1018.5	1	001	15	2	2	4	8	5	3	0	83825	83358				26	1Sc40 Cu med jpN		
27	84	7	28	07	16	18.4	13.0	71	9.1	1017.4	1	013	03	2	2	7	8	5	/	5	83820	87650				27	/Cs75 Cu med		
28	82	7	19	04	08	17.8	8.4	54	6.7	1016.2	7	017	03	1	1	1	8	6	3	2	81835	87072				28	1Sc50 2Ac65 COTRA Cu med Halo 22° part U/a cont Parh		
29	70	8	21	09	18	15.5	11.1	75	8.1	1009.7	8	009	15	2	2	5	8	5	7	/	84820	85362	88465			29	2Sc40 Cu med jpW		
30	80	7	20	05	10	16.7	13.0	78	9.2	1009.3	2	009	03	2	2	5	8	4	3	1	84815	85365				30	2Sc56 /Ci72 Cu med		

Mean vis = 21.9 km

Mean cloud = 6.7 84%

Mean wind speed = 5.5 kn

Mean gust = 11 kn

Mean TT = 16.1 °C

Mean TdTd = 12.1 °C

Mean RH = 78.0 %

Mean r = 8.8 g/kg

Mean PPP = 1014.5 mbar

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

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation

trails present.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for JUNE 2016

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cf	NCh	shs	NCh	shs	NCh	shs	Date	Remarks
1	62	8	36	07	17	13.2	11.6	90	8.4	1022.5	1	005	50	5	2	8	5	3	/	/	85707	88615					1	Absent vv&cl d est	
2	81	7	02	13	24	13.5	8.7	72	6.9	1020.1	5	007	02	2	2	7	5	4	/	/	87618						2		
3	65	7	01	05	12	12.8	8.5	75	6.9	1016.9	7	009	02	2	2	7	5	4	/	/	87617						3		
4	60	8	02	06	12	18.2	15.2	82	10.7	1017.2	5	002	05	2	2	8	5	4	/	/	83613	88616					4		
5	68	1	05	05	13	23.7	14.9	58	10.5	1019.8	8	010	02	0	0	1	1	7	0	0	81856						5	Cu hum	
6	80	5	07	07	14	25.3	11.8	43	8.6	1019.7	7	009	03	1	1	1	8	7	0	1	81850	85080					6	1Sc50 COTRA Cu hum	
7	70	7	30	03	08	23.1	12.6	52	9.1	1022.0	8	005	03	2	2	5	2	6	7	/	81840	85850	87360				7	Cu con	
8	65	3	28	04	09	24.3	13.5	51	9.6	1023.0	8	009	15	1	1	1	9	6	6	1	81935	81840	83078				8	1Ac62 Cu con jpE vv30k ex p	
9	67	7	03	04	08	23.1	15.3	61	10.7	1019.4	7	017	03	1	1	1	1	6	0	1	81835	87073					9	Cu hum U/a cont	
10	81	7	17	05	11	22.5	12.9	54	9.2	1011.3	7	013	03	2	2	1	2	6	8	8	82838	83468	87272				10	1Ac58 2Ac64 Cu med U/a cont	
11	82	7	34	02	07	19.9	14.0	69	9.9	1010.0	8	010	60	6	2	1	8	6	7	8	81830	85363	87272				11	1Sc56 2Ac58 /Ac66 Cu med	
12	80	7	22	08	14	19.7	15.1	74	10.6	1004.9	7	014	25	8	2	7	8	4	/	/	83818						12	2Sc50 Cu med jpNE vv60k ex p	
13	65	8	27	07	17	17.0	12.2	73	8.8	1001.4	6	004	15	8	2	8	8	5	/	/	81822	83645	88656				13	Cu med jp W&NW vv50k ex p	
14	82	7	24	10	19	18.9	12.8	68	9.1	994.9	7	008	25	8	2	4	8	5	7	1	83822	87357					14	/Ci75 Cu med jpSW	
15	63	6	20	10	19	18.9	11.3	61	8.2	996.2	4	000	15	8	1	4	9	5	6	3	82925	82830					15	2Ac58 1Ci75 jp E,SW,NW. vv60k ex p	
16	80	7	18	04	09	17.6	14.3	81	9.9	999.9	5	004	15	8	2	5	9	6	6	3	82820	82825	84360				16	2Sc50 /Ci75 jp W, NW, E. vv60k ex p	
17	65	5	35	07	14	20.1	12.3	61	8.4	1008.8	2	011	15	2	2	2	9	5	6	3	81925	82830					17	2Ac57 1Ci72 1Ci75 jpSE vv30k ex p	
18	82	8	33	06	10	16.3	10.5	69	7.8	1021.3	2	010	02	2	2	8	8	5	/	/	81825	83635	88645				18	Cu med	
19	84	8	20	07	16	18.0	12.9	72	9.1	1021.8	8	016	02	2	2	8	5	5	/	/	86620	88625					19		
20	84	7	26	10	20	20.1	15.1	73	10.6	1012.0	3	006	03	2	2	7	8	5	/	/	85822	87640					20	Cu med	
21	86	7	26	06	12	19.1	12.1	64	8.7	1017.6	1	003	02	2	2	7	8	6	/	/	82830	87642					21	Cu med	
22	84	7	21	09	14	21.7	16.2	71	11.4	1018.1	8	003	02	2	2	7	8	4	3	1	85818	83630					22	/Ac63 /Ci75 Cu hum	
23	60	8	33	02	10	19.6	18.2	91	12.9	1015.3	8	002	80	8	2	7	9	2	2	/	81705	81912	86630				23	2Cu15 8Ns50	
24	80	3	22	12	21	20.2	13.4	65	9.0	1016.6	8	009	25	8	1	2	2	5	6	0	82825						24	1Ac58 1Ac65 Cu med	
25	70	6	22	08	14	17.6	11.4	67	8.7	1016.4	7	005	80	8	2	2	9	5	6	3	82920	81828	85070				25	1Ac58 2Ac62 jpW&SW vv60k ex p	
26	83	7	25	10	19	18.1	10.9	63	8.2	1017.9	3	001	03	2	2	1	8	6	5	6	81832	85368	87272				26	1Sc50 Cu med	
27	84	5	30	07	19	20.3	10.1	52	7.6	1018.0	7	001	01	2	2	2	1	6	0	1	82842	84078					27	COTRA Cu hum	
28	65	8	21	06	20	16.7	9.1	61	7.1	1011.8	6	016	60	6	2	3	8	6	2	/	81840	83656	88557				28	Cu hum	
29	64	8	21	12	22	14.4	12.7	90	9.2	1007.5	7	006	58	6	5	7	7	4	2	/	83710	87715	88457				29		
30	82	7	21	10	18	19.3	13.1	68	9.5	1009.3	7	002	80	8	2	5	8	5	7	/	84828	83360	87365				30	2Sc50 Cu med	

Mean vis = 28.8 km

Mean cloud = 6.5 82%

Mean wind speed = 7.1 kn

Mean gust = 15 kn

Mean TT = 19.1 °C

Mean TdTd = 12.8 °C

Mean RH = 67.7 %

Mean r = 9.2 g/kg

Mean PPP = 1013.7 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation  
trails present.

Wokingham	Hour	01-Jun	02-Jun	03-Jun	04-Jun	05-Jun	06-Jun	07-Jun	08-Jun	09-Jun	10-Jun	11-Jun	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun
Sunshine	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hourly	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
analysis	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	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	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00
	5	0.00	0.00	0.00	0.00	0.00	0.79	0.12	0.00	0.14	0.00	0.00	0.00	0.01	0.00	1.00	0.00
	6	0.00	0.00	0.00	0.00	0.00	1.00	0.19	0.00	0.01	0.00	0.00	0.00	0.00	0.12	0.87	0.00
	7	0.00	0.00	0.00	0.00	0.00	1.00	0.96	0.00	0.06	0.00	0.00	0.00	0.00	0.16	0.15	0.00
	8	0.00	0.00	0.00	0.00	0.89	1.00	0.85	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.40	0.00
	9	0.00	0.00	0.00	0.00	1.00	1.00	0.59	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00
	10	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.03	1.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
	11	0.00	0.01	0.00	0.00	0.92	1.00	0.00	0.00	1.00	0.63	0.00	0.00	0.00	0.00	0.51	0.00
	12	0.00	0.01	0.00	0.00	0.96	1.00	0.00	0.00	1.00	0.19	0.00	0.00	0.03	0.00	0.34	0.00
	13	0.04	0.05	0.00	0.00	1.00	0.83	0.00	0.09	1.00	0.00	0.00	0.10	0.07	0.00	0.39	0.00
	14	0.00	0.02	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	0.04	0.07	0.08	0.79	0.00
	15	0.00	0.02	0.00	0.00	1.00	1.00	0.24	0.76	1.00	0.00	0.00	0.11	0.00	0.07	0.42	0.04
	16	0.00	0.00	0.01	0.00	1.00	1.00	0.41	0.00	0.50	0.00	0.00	0.53	0.00	0.28	0.34	0.00
	17	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.81	0.80	0.00	0.00	0.27	0.18	0.05	0.50	0.00
	18	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.53	0.97	0.00	0.00	0.00	0.01	0.19	0.08	0.00
	19	0.00	0.00	0.00	0.00	0.33	0.55	0.00	0.02	0.09	0.00	0.00	0.00	0.24	0.00	0.00	0.05
	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>0.04</b>	<b>0.11</b>	<b>0.01</b>	<b>0.00</b>	<b>11.11</b>	<b>14.18</b>	<b>3.78</b>	<b>3.25</b>	<b>10.52</b>	<b>0.83</b>	<b>0.00</b>	<b>1.05</b>	<b>0.61</b>	<b>0.93</b>	<b>6.59</b>	<b>0.09</b>

Hour	17-Jun	18-Jun	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	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
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
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
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
4	0.00	0.00	0.51	0.00	0.13	0.00	0.00	0.56	0.54	0.00	0.00	0.49	0.41	0.00	0.12
5	0.00	0.05	0.97	0.00	0.96	0.00	0.00	0.76	1.00	0.15	0.00	1.00	0.82	0.16	0.26
6	0.00	0.01	0.99	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.50	0.28	0.27
7	0.08	0.09	0.18	0.00	0.41	0.00	0.00	0.87	0.25	0.11	0.00	1.00	0.31	0.39	0.20
8	0.05	0.01	0.66	0.00	0.16	0.00	0.00	0.92	0.05	0.47	0.00	0.72	0.00	0.16	0.24
9	0.00	0.00	0.63	0.00	0.02	0.00	0.00	0.33	0.34	0.30	0.03	0.27	0.00	0.48	0.21
10	0.00	0.00	0.14	0.00	0.01	0.00	0.00	0.13	0.30	0.16	0.09	0.61	0.00	0.04	0.15
11	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.24	0.19	0.27	0.20	0.12	0.00	0.09	0.17
12	0.00	0.00	0.08	0.03	0.00	0.00	0.00	0.34	0.00	0.19	0.04	0.51	0.00	0.00	0.16
13	0.15	0.00	0.00	0.20	0.00	0.00	0.00	0.18	0.16	0.01	0.47	0.08	0.00	0.00	0.16
14	0.66	0.00	0.00	0.02	0.02	0.01	0.00	0.62	0.72	0.00	0.61	0.00	0.00	0.00	0.26
15	0.74	0.00	0.00	0.00	0.05	0.00	0.00	0.55	0.40	0.00	0.34	0.00	0.00	0.01	0.22
16	0.49	0.00	0.00	0.16	0.15	0.00	0.00	0.17	0.02	0.00	0.33	0.00	0.00	0.00	0.18
17	0.33	0.00	0.00	0.95	0.04	0.00	0.00	0.45	0.18	0.00	0.00	0.00	0.00	0.00	0.22
18	0.33	0.53	0.00	1.00	0.03	0.58	0.00	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.21
19	0.00	0.18	0.00	0.84	0.00	0.80	0.00	0.31	0.35	0.00	0.00	0.05	0.00	0.00	0.13
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.01
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
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
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
Tot	<b>2.83</b>	<b>0.88</b>	<b>4.17</b>	<b>3.20</b>	<b>2.99</b>	<b>1.38</b>	<b>0.00</b>	<b>7.68</b>	<b>5.61</b>	<b>1.67</b>	<b>2.11</b>	<b>5.84</b>	<b>2.05</b>	<b>1.61</b>	<b>95.16</b>

JUNE 2016	T mn	Tx	Time	Tn	Time	RHmn	RH x	Time	RH n	Time	Tdmn	r mn	r x	Time	r n	Time	p mn	p x	Time	p n	Time
1	12.45	13.70	1558	11.20	2336	92.2	96.9	4	86.7	1600	11.2	8.2	8.7	1346	7.4	2327	1021.74	1022.7	2256	1020.0	250
2	11.30	15.28	1348	9.33	2358	83.7	93.9	123	66.1	1348	8.6	6.9	8.9	1347	6.0	2358	1020.78	1022.5	5	1019.4	2357
3	11.24	14.26	1716	8.79	451	83.1	90.9	2334	68.2	1604	8.5	6.8	8.1	1855	6.0	104	1017.60	1019.5	0	1016.1	1727
4	15.40	19.01	1554	11.76	245	90.5	99.0	502	77.2	1551	13.8	9.8	11.5	1505	7.9	7	1017.37	1019.3	2245	1016.3	439
5	17.49	24.23	1456	11.46	300	80.9	99.0	315	49.4	1534	13.8	9.8	13.0	1510	7.9	524	1020.29	1022.2	2317	1019.0	57
6	18.06	26.08	1401	10.72	357	63.0	99.0	358	31.6	1554	9.8	7.6	11.8	1401	4.0	2152	1021.05	1022.1	2258	1019.5	1611
7	17.80	24.89	1554	9.09	404	70.1	97.8	2359	46.7	1550	11.9	8.8	12.0	2148	5.3	1	1022.46	1023.8	2312	1021.3	1559
8	18.51	25.20	1545	12.81	2356	87.8	99.0	502	46.6	1538	16.1	11.3	14.1	1707	8.8	1153	1023.44	1025.2	904	1022.4	1821
9	17.54	23.47	1459	12.25	51	79.5	99.0	316	50.1	1706	13.6	9.6	12.5	1304	8.3	745	1020.75	1023.8	3	1017.1	2357
10	17.61	23.54	1236	13.24	343	79.6	99.0	2239	34.1	1242	13.3	9.6	12.7	1736	5.6	1242	1013.02	1017.2	6	1010.4	1637
11	17.86	20.80	1349	14.26	401	80.7	99.0	258	55.3	1655	14.3	10.1	12.2	1004	8.3	1655	1010.38	1011.2	735	1009.7	1948
12	16.66	21.25	1652	13.27	356	84.9	97.9	1000	66.2	1905	14.0	10.0	12.9	1601	8.6	510	1006.51	1010.2	12	1003.8	1813
13	15.89	18.63	1359	13.60	2352	85.0	98.5	2323	64.7	1359	13.3	9.6	10.9	908	8.6	1359	1002.03	1004.6	0	999.9	2359
14	15.28	19.57	1455	12.58	2336	86.4	99.2	511	61.0	1455	12.9	9.4	11.8	1052	7.9	2202	996.27	1000.0	1	994.4	1717
15	14.72	19.84	1405	11.06	2248	76.2	92.8	2250	58.2	1455	11.5	8.6	10.6	1137	7.7	1034	996.54	999.3	2352	994.9	636
16	14.39	17.96	1501	10.48	225	86.9	96.1	2328	70.5	1358	12.2	8.9	11.2	1344	7.6	225	1000.23	1002.4	2343	998.7	352
17	15.22	20.16	1459	12.12	28	81.3	96.4	55	52.4	1559	11.8	8.6	10.1	1409	7.5	1559	1007.74	1014.4	2359	1002.2	4
18	14.07	16.85	1328	10.42	413	80.9	93.4	30	65.8	1525	10.8	8.0	9.2	1740	7.0	403	1019.65	1023.8	2357	1014.2	1
19	15.30	19.96	1240	10.66	415	81.6	94.1	426	58.6	1242	12.1	8.7	10.2	2200	7.0	415	1022.25	1024.5	628	1017.0	2359
20	16.91	21.74	1354	13.99	2341	84.4	94.7	1010	60.4	1713	14.1	10.0	13.5	1353	8.6	2313	1013.40	1017.1	17	1010.7	1140
21	16.60	20.70	1637	12.84	304	74.5	87.6	304	56.1	1121	11.9	8.6	10.3	1009	7.6	854	1016.96	1019.1	2255	1014.9	104
22	17.79	22.24	1455	14.28	236	84.2	94.6	2245	68.6	1458	15.0	10.6	12.4	1400	8.8	3	1018.29	1019.3	126	1016.3	2356
23	18.21	21.67	1139	12.58	2351	90.3	96.0	517	76.7	1233	16.6	11.7	13.7	1138	8.1	2351	1015.77	1017.5	2348	1014.7	1701
24	15.69	21.17	1305	10.68	235	78.1	95.8	245	55.4	1514	11.7	8.5	11.3	1418	7.5	233	1017.68	1018.7	734	1016.3	1540
25	14.21	19.66	1107	9.54	306	79.4	95.0	250	51.9	1424	10.6	7.9	10.2	1132	6.9	334	1016.99	1018.2	2200	1016.0	1711
26	15.19	20.34	1206	11.24	29	78.8	94.2	101	49.6	1130	11.3	8.3	10.1	953	6.9	1144	1017.71	1018.7	749	1015.9	2359
27	17.06	21.03	1428	11.62	2359	70.1	94.4	220	44.4	1350	11.1	8.3	10.4	324	6.1	1932	1017.58	1020.0	2304	1015.1	246
28	14.18	20.86	1228	8.29	352	76.9	96.2	518	38.8	1244	9.7	7.5	9.1	2319	5.6	1242	1013.33	1019.7	1	1005.9	2012
29	13.79	15.70	745	10.35	224	85.9	92.2	420	72.3	903	11.5	8.5	9.6	1530	7.0	223	1008.60	1010.7	224	1006.1	1755
30	16.37	20.51	1353	12.81	346	78.8	94.8	530	56.3	1337	12.6	9.1	10.7	1102	8.0	1122	1008.77	1009.8	1112	1007.5	103
Total																					
Mean	15.76	20.34		11.56		81.2	95.88		57.99		12.33	8.97	11.12		7.27		1014.17	1016.59		1011.85	
Max	18.51	26.08		14.28		92.2	99.20		86.70		16.60	11.73	14.10		8.80		1023.44	1025.16		1022.38	
Min	11.24	13.70		8.29		63.0	87.60		31.56		8.45	6.85	8.12		3.96		996.27	999.26		994.39	

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

**Note : 1st to 15th all temperatures 0.2C high due to a calibration error**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

**Month:** Calendar month.

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

Summer, June to August

Autumn, September to November

Winter, December to February.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## Appendix 2.

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

**VV** : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

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

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

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

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

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

**Cl :** Type of low cloud

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

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

**Cm :** Type of medium cloud.

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

**Ch :** Type of high cloud

0 = No high cloud

1 = Cirrus in the form of filaments, strands or hooks, not progressively invading the sky.

2 = Dense cirrus, in patches or entangled sheaves, which usually do not increase and sometimes seem to be the remains of the upper part of a Cumulonimbus; or Cirrus with sproutings in the form of small turrets or battlements, or Cirrus having the appearance of cumuliform tufts

3 = Dense Cirrus, often in the form of an anvil, being the remains of the upper part of Cumulonimbus, or where the rest of the Cumulonimbus is below the horizon

4 = Cirrus in the form of hooks or filaments, or both, progressively invading the sky; they generally become denser as a whole

5 = Cirrus (often in bands converging towards one or two opposite points on the horizon) and Cirrostratus, or Cirrostratus alone; in either case they are progressively invading the sky, and generally growing denser as a whole, but the continuous veil does not reach 45 degrees above the horizon.

6 = Cirrus (often in bands converging towards one or two opposite points on the horizon) and Cirrostratus, or Cirrostratus alone; in either case they are progressively invading the sky, and generally growing denser as a whole; the continuous veil extends more than 45 degrees above the horizon, without the sky being totally covered

7 = Veil of Cirrostratus covering the celestial dome.

8 = Cirrostratus not progressively invading the sky and not completely covering the celestial dome

9 = Cirrocumulus alone, or accompanied by Cirrus or Cirrostratus, or both, but Cirrocumulus is predominant.

/ = Types of high cloud invisible owing to darkness, fog, blowing dust of sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

**8 Groups**

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

**C** = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

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

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

00 to 50 = Height in hundreds of feet

51 to 55 Not used

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

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