

# 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

## JULY 2014

Temperature (°C / °F)			Anomaly	Rank in the past 133 years			
Mean maximum	24.9	76.8	+2.0	11 <sup>th</sup> highest			
Mean minimum	13.0	55.4	+0.4	11 <sup>th</sup> highest			
Daily mean	18.9	66.0	+1.2	10 <sup>th</sup> highest			
Highest maximum	29.2	84.6	on 24 <sup>th</sup>	Lowest maximum	18.8	65.8	on 8 <sup>th</sup>
Highest minimum	17.9	64.2	on 19 <sup>th</sup>	Lowest minimum	7.1	44.8	on 2 <sup>nd</sup>
Mean grass minimum	9.8	49.6	0.0	Lowest grass minimum	3.3	37.9	on 2 <sup>nd</sup>
Mean earth @30 cm	20.3	68.5	+1.6	Earth @100 cm	17.9	64.2	
Frost duration (hrs)	0.0			Rain duration (hrs)	15.6		
Rainfall total (mm / in)	28.3	1.11	63 %	31 <sup>st</sup> lowest			
Highest daily fall	7.7	0.30	on 17 <sup>th</sup>				
Number of: Dry days (<0.2mm)	21	Wet days (>0.9mm)	6	days ≥5mm	2		
Sunshine total (hrs) 250.3	Daily mean 8.07	126 %		Sunniest day	15.2	on 3 <sup>rd</sup>	
N <sup>o</sup> days with: Air frost 0	Ground frost 0	Snow falling 0	Snow lying 0				
Thunder 4	Hail ≥5mm 0	Small hail/ice 1	Fog @09 0	Nil sun	0		
Pressure MSL : Mean @09 GMT, mbar 1015.7	-0.9	Highest 1023.7	on 2 <sup>nd</sup>	Lowest 998.7	on 5 <sup>th</sup>		
Relative humidity : Mean (%) 70.0	Lowest 30	on 29 <sup>th</sup>	Water vapour (g/kg), mean at 09 and 15 GMT 9.5, 8.8				
Overall mean wind speed (mph) 5.6	Windiest day 9.2	on 9 <sup>th</sup>	Max gust 30	on 25 <sup>th</sup>			
Wind direction (days) N 3 NE 3 E 2 SE 1 S 1 SW 9 W 4 NW 8							
Least windy day (mph) 3.3	on 8 <sup>th</sup>	Calm; less than 0.5 mph (minutes) 770					

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

Notes:

**Very warm, Dry, and Sunny.**

**Temperature:** The mean temperature this month is lower than last year's, but higher than any other July back to 2006, which holds the long-term record for the hottest July. The mean maximum is also 2<sup>nd</sup> highest since 2006, and ranks 11<sup>th</sup> hottest in the past 133 years. Daily maxima were within 3° of normal up to the 16<sup>th</sup>, then generally above, with anomalies over +5° on the 17<sup>th</sup>, 18<sup>th</sup>, 23<sup>rd</sup>, 24<sup>th</sup> and 26<sup>th</sup>, before falling back to near normal for the final 5 days of the month. Daily minima were also above normal after the 17<sup>th</sup>, reaching 5° above on the 19<sup>th</sup>, but there were some cool nights, especially near the start of the month, with anomalies over -4° on the 1<sup>st</sup> and 2<sup>nd</sup>. The highest max is 0.7° above the median, but has been exceeded in 12 out of the past 20 years. Also, a maximum of at least 30° has occurred in 17 out of the past 39 Julys, but was not reached this year. The lowest max is 2.0° above the median, while the highest min is 1.6° above its median. The lowest min is just 0.1° above the median. Compared with the average for the past 35 years, both the mean and lowest grass min are close to that average. Earth temperatures at both 30cm and 1m depth are well above average. **Rainfall:** This month's rainfall, while around 2/3 of average, is 2<sup>nd</sup> lowest after 2013 since 1998. The highest daily fall is also on the low side at 7.5 mm below average, and is also lowest since 1998. As befits a summer month, much of the rain was showery in nature, and as a result large variations in daily and monthly rainfall in places relatively close together is to be expected. Thunder was more frequent than average, and occurred on the 8<sup>th</sup>, 18<sup>th</sup>, 25<sup>th</sup> and 28<sup>th</sup>, the storm overnight on the 18<sup>th</sup> giving a spectacular lightning display. Rain rates reached 88 mm/hr in that storm, and a similar 90 mm/hr in the storm on the 25<sup>th</sup>, with small hail also. Although there was plenty of dry weather, with 2 more dry days than average, and 76% of the month's total fell on just 4 days, the 4<sup>th</sup>, 17<sup>th</sup>, 18<sup>th</sup> and 25<sup>th</sup>, but there was only one dry spell, of 5 days ending on the 3<sup>rd</sup>, a dry spell being defined as 5 or more consecutive dry days. **Sunshine:** This has been a sunny month overall, with 59 hours more sunshine than the July average since 2000. Although the month got off to a good start, with the first 4 days all having over 60 % of the maximum. The following 9 days had below normal sunshine, but after the 13<sup>th</sup> sunshine accumulation was near or above normal, with over 10 hours sunshine on the 17<sup>th</sup>, 18<sup>th</sup>, 22<sup>nd</sup> to 24<sup>th</sup>, 29<sup>th</sup> and 30<sup>th</sup>. Overall there was 1 day with <3 hours, 20 with =>6 hours, 13 with =>9 hours, 5 with =>12 hours, and 1 with =>15 hours.

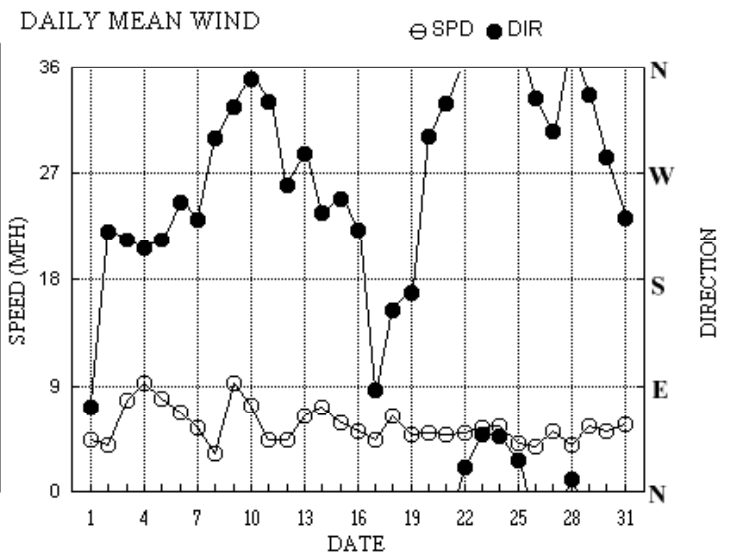
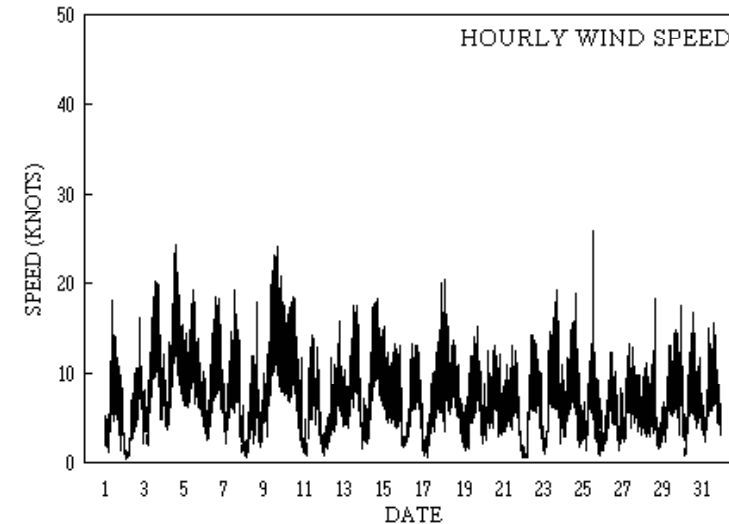
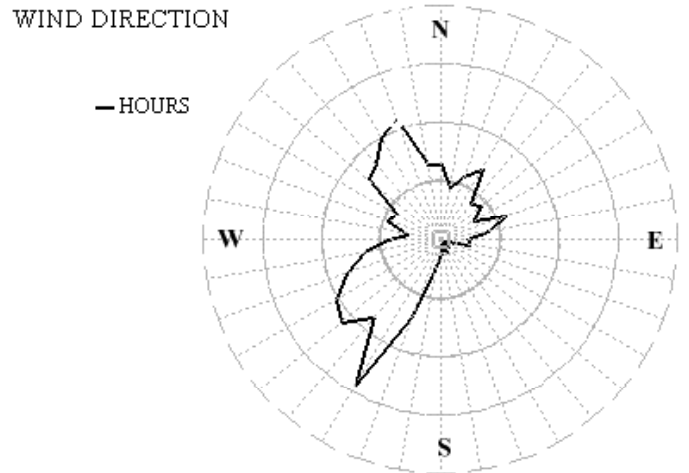
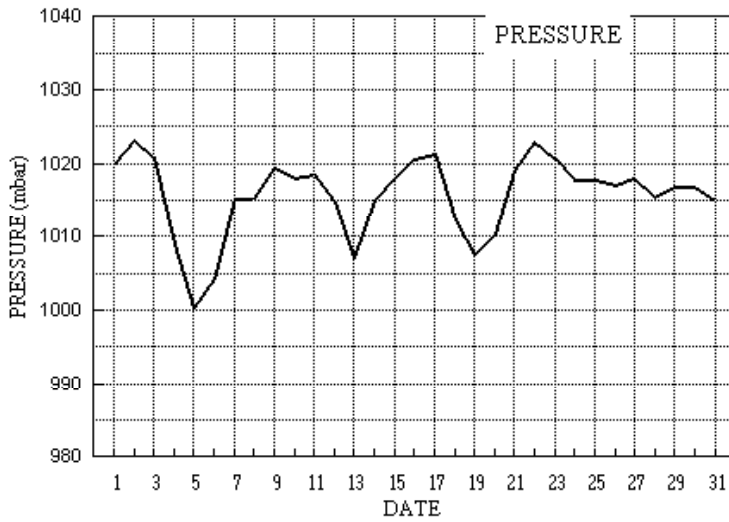
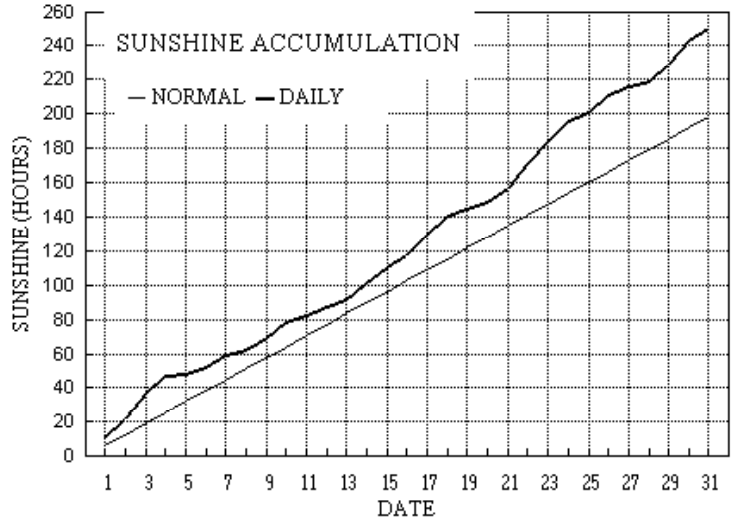
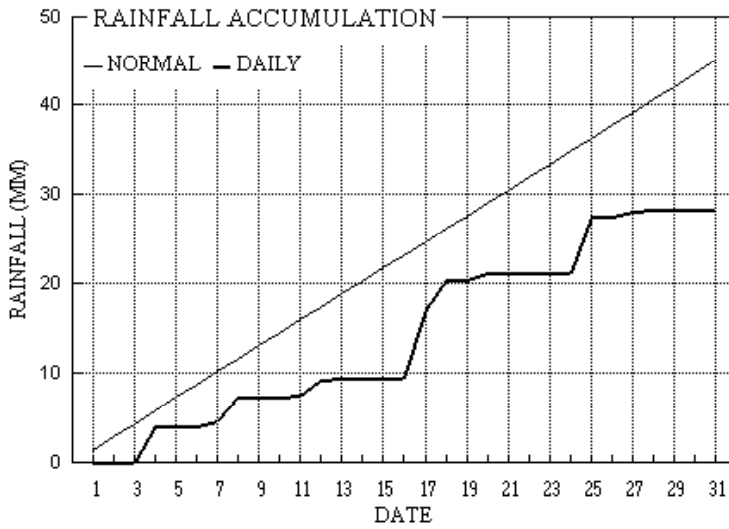
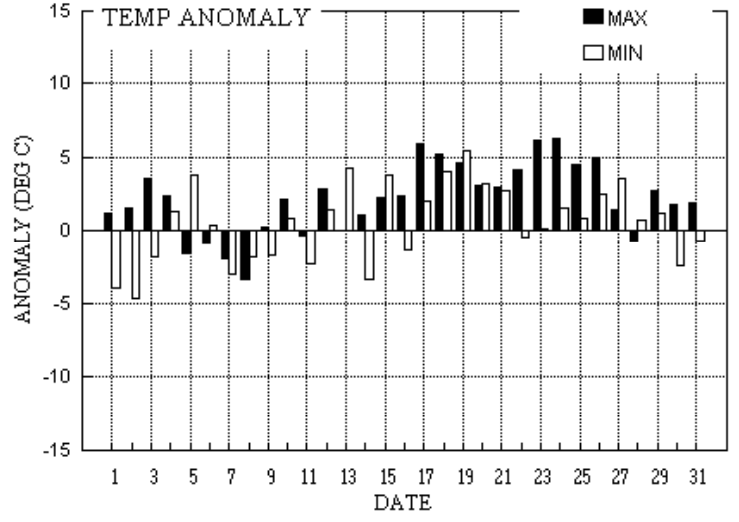
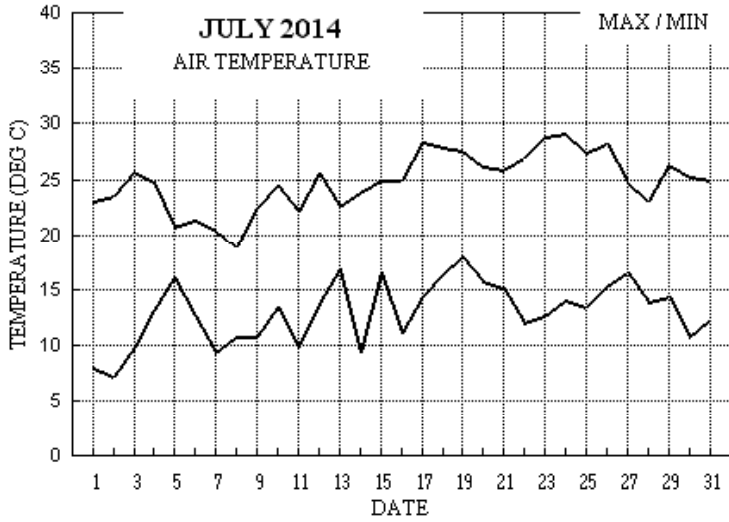
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 <sup>st</sup> to the 10 <sup>th</sup>				From the 11 <sup>th</sup> to the 20 <sup>th</sup>				From the 21 <sup>st</sup> to the 31 <sup>st</sup>			
+0.3°	-1.1°	48%	122%	+2.7°	+1.7°	97%	111%	+3.3°	+0.9°	41%	144%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

# Wokingham climatological graphs for July 2014



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: JULY 2014

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	23.1	7.9	0.0	3.8	18.8	17.3	11.5	0.0	1019.8	0 0 0 0	0 0 0 0	0 0 0 0	72 3.7 3.8	63 18 1000	79 6 10	0.0	
2	23.5	7.1	0.0	3.3	18.9	17.2	10.4	0.0	1023.2	0 0 0 0	0 0 0 0	0 0 0 0	221 2.9 3.4	243 16 1907	232 8 19	0.0	
3	25.7	9.8	0.0	5.0	19.5	17.3	15.2	0.0	1020.8	0 0 0 0	0 0 0 0	0 0 0 0	214 6.6 6.8	207 20 1244	209 10 13	0.0	
4	24.7	13.1	4.1	9.7	19.8	17.3	10.7	0.0	1008.9	0 0 0 0	0 0 0 0	0 0 0 0	206 7.9 8.0	212 25 1346	212 14 13	4.6	
5	20.8	16.0	tr	16.0	20.1	17.4	0.2	0.0	1000.3	0 0 0 0	0 0 0 0	0 0 0 0	213 6.4 6.9	235 19 1145	240 9 11	0.1	
6	21.4	12.7	0.0	12.2	19.8	17.5	4.6	0.0	1004.3	0 0 0 0	0 0 0 0	0 0 0 0	246 5.5 5.8	234 19 1354	247 9 17	0.0	
7	20.4	9.4	0.6	4.5	19.5	17.6	6.8	0.0	1015.1	0 0 0 0	0 0 0 0	0 0 0 0	231 4.0 4.6	204 19 1202	237 7 17	0.5	
8	18.8	10.7	2.6	7.9	19.4	17.6	3.6	0.0	1015.2	0 0 0 0	1 0 0 0	0 0 0 0	300 2.0 2.9	263 18 1553	280 7 16	2.2	
9	22.5	10.8	0.0	6.5	19.0	17.6	6.5	0.0	1019.4	0 0 0 0	0 0 0 0	0 0 0 0	327 7.9 8.0	321 24 1634	318 11 15	0.0	
10	24.4	13.4	tr	12.0	18.9	17.6	8.8	0.0	1018.0	0 0 0 0	0 0 0 0	0 0 0 0	350 5.5 6.3	4 19 1225	4 9 12	0.0	
11	22.1	9.9	0.2	5.6	18.9	17.4	4.7	0.0	1018.6	0 0 0 0	0 0 0 0	0 0 0 0	331 3.5 3.9	337 14 1137	326 7 12	0.2	
12	25.5	13.7	1.8	9.4	18.8	17.4	4.7	0.0	1014.7	0 0 0 0	0 0 0 0	0 0 0 0	260 2.8 3.8	234 16 1930	215 8 18	1.4	
13	22.6	16.8	0.1	16.8	19.7	17.3	4.4	0.0	1007.1	0 0 0 0	0 0 0 0	0 0 0 0	287 3.9 5.6	251 18 1228	334 9 15	0.2	
14	23.9	9.3	tr	5.2	19.5	17.4	9.7	0.0	1015.0	0 0 0 0	0 0 0 0	0 0 0 0	237 5.5 6.2	238 19 1600	232 10 16	0.1	
15	25.0	16.5	0.0	14.7	19.7	17.3	8.7	0.0	1018.1	0 0 0 0	0 0 0 0	0 0 0 0	249 4.6 5.1	233 15 0126	224 7 01	0.0	
16	25.0	11.0	tr	7.5	19.9	17.4	7.1	0.0	1020.7	0 0 0 0	0 0 0 0	0 0 0 0	223 4.3 4.5	201 13 1000	229 7 17	0.0	
17	28.4	14.4	7.7	10.8	20.1	17.5	12.1	0.0	1021.3	0 0 0 0	0 0 0 0	0 0 0 0	87 3.0 3.8	73 20 2233	70 7 22	1.3	
18	27.9	16.3	3.4	14.5	20.7	17.6	10.9	0.0	1012.2	0 0 0 0	1 0 0 0	0 0 0 0	153 2.5 5.6	68 21 0354	89 8 03	3.3	
19	27.6	17.9	0.0	16.0	21.4	17.7	4.5	0.0	1007.6	0 0 0 0	0 0 0 0	0 0 0 0	168 2.6 4.2	175 16 1723	194 7 17	0.0	
20	26.1	15.8	0.8	12.3	21.4	17.9	4.3	0.0	1010.3	0 0 0 0	0 0 0 0	0 0 0 0	301 3.9 4.3	274 13 1453	305 6 14	0.1	
21	25.9	15.2	0.0	12.5	21.3	18.1	7.1	0.0	1019.0	0 0 0 0	0 0 0 0	0 0 0 0	329 4.0 4.2	306 13 1034	293 6 10	0.0	
22	27.0	12.0	0.0	8.4	21.1	18.3	14.4	0.0	1022.9	0 0 0 0	0 0 0 0	0 0 0 0	21 4.0 4.3	26 14 1034	14 7 12	0.0	
23	28.9	12.6	0.0	8.6	21.3	18.4	13.2	0.0	1020.6	0 0 0 0	0 0 0 0	0 0 0 0	49 4.4 4.7	76 19 1731	70 7 17	0.0	
24	29.2	14.0	0.0	10.2	21.5	18.5	11.7	0.0	1017.7	0 0 0 0	0 0 0 0	0 0 0 0	47 4.6 4.9	65 19 1520	81 8 16	0.0	
25	27.5	13.4	6.2	9.3	21.6	18.6	5.9	0.0	1017.8	0 0 0 0	1 0 1 0	0 0 0 0	26 2.4 3.6	94 26 1335	105 8 13	1.0	
26	28.2	15.3	0.0	11.2	21.5	18.8	9.3	0.0	1017.0	0 0 0 0	0 0 0 0	0 0 0 0	333 2.6 3.3	13 13 1042	11 7 10	0.0	
27	24.8	16.6	0.7	12.9	21.7	18.9	4.9	0.0	1018.1	0 0 0 0	0 0 0 0	0 0 0 0	306 3.6 4.4	332 13 0940	352 6 07	0.4	
28	23.1	13.8	0.1	12.6	21.5	19.0	3.2	0.0	1015.4	0 0 0 0	1 0 0 0	0 0 0 0	11 2.9 3.5	29 18 1507	28 6 15	0.2	
29	26.4	14.3	0.0	11.8	21.1	19.0	10.4	0.0	1016.9	0 0 0 0	0 0 0 0	0 0 0 0	336 4.6 4.8	340 18 2325	309 7 16	0.0	
30	25.2	10.8	0.0	5.9	21.3	19.0	13.7	0.0	1016.8	0 0 0 0	0 0 0 0	0 0 0 0	284 3.8 4.4	243 17 1310	262 6 12	0.0	
31	25.0	12.3	0.0	6.9	21.3	19.0	7.1	0.0	1015.0	0 0 0 0	0 0 0 0	0 0 0 0	232 4.7 4.9	250 16 1520	231 7 15	0.0	
Total			28.3				250.3	0.0									15.6
Mean	24.9	13.0		9.8	20.3	17.9	8.07	0.0	1015.7					279 1.6 4.9			
Anom	+2.0	+0.4	63%	+0.0	+1.6	+1.1	126%										
Daily mean	18.9								1023.7 on 2								
Anom	+1.2								998.7 on 5								

Number of days with:

Air frost = 0      Ground frost = 0      Nil sun = 0  
 Snow falling = 0      Snow lying = 0      Thunder = 4  
 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, <.05mm).  
 Grass min = Lowest overnight temperature at grass tip level.  
 Sun = hours of bright sunshine, measured electronically. Frost = Number of hours with air temp below 0 deg C.  
 pp09 = Air pressure corrected to mean sea level at 0900 GMT, millibars.  
 Af = Air frost. Gf = Ground frost. Sf = Snow falling. Sl = Snow lying at 09 GMT.  
 Th = Thunder. Ha = Hail =>5mm. Ic = Hail <5mm or ice. Fg = Fog at 09 GMT.  
 Vec mean = 24 hour mean wind vector, ddd = direction in degrees from true north, ff = speed in knots.  
 Sp = 24 hour mean wind speed in knots.  
 Max gust = Highest gust in 24 hours, gg = speed in knots, HHhh = Time, hours and minutes, GMT.  
 High hr = Highest hourly mean wind, HH = hour commencing. Rain Hrs = Duration of rain, 24 hours to 09 GMT. Excludes snow/hail.  
 30cm and 100 cm are earth temperatures at those depths, read at 09 GMT.  
 Anom = Departure from 1981-2010 climatological average.  
 All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for JULY 2014

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ci	NCh	shs	NCh	shs	NCh	shs	Date	Remarks
1	77	4	06	06	13	18.9	10.7	59	7.9	1019.8	2	005	03	0	0	1	1	6	3	1	81830	83075					1	1Ac57 COTRA Cu hum	
2	82	7	25	03	07	19.0	9.7	55	7.4	1023.2	0	000	03	1	1	0	0	9	0	1	87073						2	COTRA U/a cont	
3	83	4	25	08	15	21.0	9.5	48	7.3	1020.8	6	003	03	0	0	4	0	9	4	0	84362						3	Ac len	
4	80	3	23	07	13	19.3	12.3	64	8.9	1008.9	7	018	02	0	0	1	1	5	8	2	81825	83069					4	1Ac64 1Ac71 Cu fra Ac cas vir	
5	75	7	24	09	17	18.0	14.7	81	10.5	1000.3	2	013	15	6	5	7	8	4	/	/	86815	87640					5	Cu fra/hum jpN	
6	88	7	30	04	11	16.8	8.6	58	7.0	1004.3	2	004	01	2	2	1	8	5	7	8	81825	83359	87270			6	1Sc40 4As62 Cu med distant NW		
7	82	3	22	06	12	18.4	10.1	58	7.6	1015.1	1	005	03	0	0	2	2	6	0	1	82830					7	2Ci73 COTRA Cu med U/a cont		
8	75	6	32	06	09	17.0	9.8	63	7.5	1015.2	8	003	15	2	2	4	8	5	3	0	83825	83359				8	2Sc060 Cu med jpSW vv40k ex p		
9	70	7	32	07	18	16.5	11.9	74	8.6	1019.4	1	004	03	2	2	3	2	4	7	1	83818	86362				9	/Ci75 Cu med		
10	84	5	35	08	18	17.8	11.0	64	8.1	1018.0	0	000	03	1	1	1	1	5	7	1	81825	85360				10	2Ac59 /Ci75 COTRA Cu fra		
11	70	7	31	06	10	15.2	10.7	74	7.9	1018.6	8	001	60	6	1	7	8	5	7	/	81818	86645	87360			11	1Sc30 Cu fra vv30kW		
12	65	3	35	03	07	20.1	15.2	73	10.6	1014.7	8	011	02	4	1	0	0	9	0	1	83075						12	COTRA	
13	65	7	28	05	12	20.3	17.5	84	12.4	1007.1	7	007	25	8	2	7	8	4	/	1	84815	85650				13	/Ci75 Cu med jpE vv30k ex p		
14	88	1	28	05	12	18.4	9.1	55	7.1	1015.0	2	008	03	0	0	1	1	6	3	1	81835						14	1Ac150 1Ci280 COTRA Cu hum	
15	82	5	27	05	11	20.4	13.6	65	9.6	1018.1	2	012	02	1	1	5	8	5	0	0	85825						15	1Sc40 Cu med.	
16	86	2	20	05	10	21.6	12.9	58	9.2	1020.7	8	007	03	0	0	1	5	6	0	4	81645						16	2Ci75 COTRA U/a cont+parhelia	
17	82	3	07	03	06	21.2	15.4	69	10.7	1021.3	8	005	03	1	1	3	8	5	0	0	83825						17	1Sc35 Cu med	
18	59	7	10	07	11	23.7	19.4	77	14.0	1012.2	7	007	05	2	2	1	1	4	8	1	81818	83075	86080			18	1Ac59 COTRA Cu fra		
19	62	8	08	06	10	20.4	19.8	96	14.3	1007.6	0	001	21	6	2	3	5	7	7	/	83656	88465				19	2Ac62 Sc cas Pptn N		
20	62	8	31	05	08	18.7	16.5	87	11.7	1010.3	1	013	01	2	2	8	6	3	/	/	88709						20		
21	59	7	32	04	08	17.8	14.7	82	10.3	1019.0	2	016	05	2	2	7	6	4	/	/	87712						21		
22	75	2	36	05	10	22.0	14.1	61	9.9	1022.9	0	000	03	0	0	1	1	6	0	1	81830						22	2Ci80 COTRA	
23	75	1	03	07	14	21.4	15.5	69	10.8	1020.6	8	011	03	0	0	1	8	5	0	0	81820						23	1Sc50 Cu fra/hum	
24	61	1	02	05	12	21.7	15.8	69	11.1	1017.7	8	002	01	1	1	1	1	4	0	0	81818						24	Cu fra	
25	59	6	03	08	12	21.5	16.9	75	11.9	1017.8	1	003	05	2	2	5	5	4	0	9	85615	83170				25			
26	80	3	02	05	10	22.5	14.0	59	9.9	1017.0	7	002	02	1	1	0	0	9	0	1	81075	83080				26	COTRA		
27	89	7	33	05	10	19.3	12.1	63	8.7	1018.1	1	007	02	2	2	2	8	5	8	2	81825	85357	85072			27	2Sc50 Cu fra Ac cas		
28	75	7	02	04	07	15.4	12.7	83	9.1	1015.4	0	003	21	6	2	1	8	4	7	8	81815	84462	86270			28	1Sc56 2Ac65 Ci fra jpSE vv40k ex p		
29	84	5	35	06	12	19.9	11.8	60	8.6	1016.9	5	003	01	2	2	1	0	9	3	1	81358	84078				29	2Ci75 COTRA		
30	80	7	29	05	09	18.9	8.7	51	6.9	1016.8	0	002	03	1	1	2	1	6	0	1	82835	86080				30	1Cc72 Cotra Cu hum		
31	68	7	25	05	12	19.2	13.3	69	9.5	1015.0	8	002	03	1	1	5	1	5	0	1	85822	87077				31	COTRA Cu hum		

Mean vis = 31.4 km

Mean cloud = 5.1 63%

Mean wind speed = 5.6 kn

Mean gust = 11 kn

Mean TT = 19.4 °C

Mean TdTd = 13.2 °C

Mean RH = 67.8 %

Mean r = 9.5 g/kg

Mean PPP = 1015.7 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.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for JULY 2014

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cl	N	Ch	shs	N	Ch	shs	Date	Remarks
1	82	7	05	05	13	20.6	8.7	46	6.9	1019.4	3	001	02	2	2	3	8	6	6	/	82845	87358						1	2Sc56 Cu med
2	82	7	20	04	11	23.3	6.4	34	5.9	1021.9	7	009	02	2	2	1	1	7	0	8	81856	85270	87080					2	COTRA Cu hum
3	84	1	21	10	19	25.3	10.4	39	7.8	1017.3	6	021	02	0	0	1	1	7	4	0	81856							3	1Ac64 Cu hum
4	83	5	22	10	24	22.3	12.7	54	9.2	1004.6	6	017	03	1	1	2	1	6	3	2	82830	84075						4	1Ac68 COTRA Cu hum Halo 22° part
5	70	7	19	08	14	17.7	13.7	77	9.8	1003.2	2	014	25	8	2	7	8	5	/	/	81825	87656						5	2Sc40 Vu med jpE-S vv50k ex p
6	88	6	26	08	16	19.4	6.9	44	6.2	1005.7	3	008	15	2	2	2	2	6	6	2	82848	85358						6	1Ac57 1Ac62 Cu med jpSW
7	70	7	24	08	17	19.0	9.6	54	7.4	1014.8	6	003	25	8	2	3	2	6	7	2	83840	85368						7	1Ac57 2Ac62 /Ci70 Cu med jpE vv40k ex p
8	65	6	18	04	07	17.2	12.3	73	8.9	1014.4	7	006	25	8	2	4	9	6	6	3	82930	82835	84362					8	2Ci70 Cu con jpW,NW&SE vv50k ex p
9	80	7	33	10	23	21.1	9.9	49	7.5	1017.7	7	008	02	2	2	3	8	6	0	1	82845	86075						9	2Sc56 COTRA
10	82	4	02	08	16	24.2	7.4	34	6.4	1016.8	7	009	02	1	1	2	1	7	7	1	82850	83360						10	1Ac58 2Ci75 Cu hum
11	70	8	01	05	10	17.9	14.5	80	10.2	1017.4	6	003	21	6	2	8	5	5	/	/	88625							11	jpW
12	82	7	20	05	09	25.3	13.4	47	9.5	1011.7	7	016	03	1	1	3	8	6	3	1	82845	83368	87072					12	2Sc56 Cu med
13	84	7	31	09	17	21.4	13.6	61	9.7	1007.6	1	010	02	8	2	7	8	6	/	1	83830	86656						13	/Ci75 Cu med
14	86	6	22	09	18	22.2	10.0	46	7.6	1014.1	6	005	03	1	1	5	8	6	3	0	81848	85650						14	2Ac65 Cu hum
15	83	3	30	04	11	23.7	10.4	43	7.8	1018.5	4	000	02	1	1	3	4	7	0	0	81850	83650						15	Cu hum
16	88	7	23	09	13	24.3	13.7	52	9.6	1019.9	6	005	02	2	2	7	8	6	/	1	81835	87645						16	/Ci75 Cu hum, base lower to W
17	82	7	11	03	10	27.4	14.2	44	10.0	1018.6	6	015	02	1	1	1	2	6	0	1	81848	87075						17	Cotra Cu med U/a cont
18	80	3	21	06	13	27.7	14.7	45	10.4	1011.2	8	005	02	1	1	0	0	9	0	1	83075							18	Absent. vv&cld est.
19	80	3	15	05	14	26.9	17.8	57	12.7	1006.6	7	008	03	1	1	1	2	6	0	1	81830	83075						19	Cu con W
20	82	7	27	07	13	26.0	14.1	48	10.0	1010.3	4	000	03	1	1	2	2	6	3	1	82840	87075						20	1Ac68 Cu con U/a cont
21	77	5	33	05	11	25.2	14.8	52	10.4	1018.8	7	004	01	2	2	1	2	6	6	1	81838	83357						21	3Ci78 Cu med
22	84	2	01	05	12	26.4	13.5	45	9.5	1021.5	7	011	02	0	0	2	1	6	0	0	82848							22	Cu hum
23	75	4	03	07	15	26.5	15.9	52	11.1	1017.0	7	022	03	1	1	3	2	6	6	0	83845							23	1Ac57 1Ac64 Cu con
24	77	2	07	07	15	28.7	10.7	33	7.9	1015.4	6	013	02	0	0	2	2	7	0	0	82850							24	Cu med
25	70	7	21	05	13	19.3	17.6	90	12.4	1016.8	0	005	29	9	8	2	9	6	7	3	82935	81840	85365					25	2Ac58 4Ci75 Cb cap mam jpS-W
26	80	6	31	04	09	27.3	12.6	40	9.0	1015.5	7	007	03	2	2	1	2	7	3	2	81856	85070						26	2Ac68 COTRA Cu med
27	86	7	29	04	10	23.7	7.2	35	6.3	1015.7	7	015	03	1	1	2	4	7	3	8	82856	87270						27	1Sc56 1Ac68 Cu hum U/a cont
28	70	7	07	04	08	20.6	11.2	55	8.2	1015.1	0	000	15	8	2	4	8	6	6	/	83840	87361						28	2Sc56 Cu med jpN-E vv60k ex p
29	84	2	29	05	12	26.3	9.3	34	7.2	1014.5	6	014	02	0	0	1	4	7	3	1	81856							29	1Sc56 1Ac65 1Ci78 Cu hum
30	75	1	27	06	13	24.5	11.4	44	8.3	1014.9	7	011	02	0	0	1	1	7	0	1	81850							30	1Ci75 COTRA Cu hum
31	78	7	25	07	12	23.5	12.6	50	9.0	1012.6	7	007	03	2	2	2	8	6	1	8	81840	87270						31	2Sc56 2As65 Cu med Halo 22°

Mean vis = 37.3 km  
 Mean cloud = 5.3 67%  
 Mean wind speed = 6.3 kn  
 Mean gust = 13 kn  
 Mean TT = 23.4 °C  
 Mean TdTd = 12.0 °C  
 Mean RH = 50.2 %  
 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.

Wokingham	Hour	01-Jul	02-Jul	03-Jul	04-Jul	05-Jul	06-Jul	07-Jul	08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul
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 analysis	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
2014	4	0.49	0.54	0.38	0.02	0.01	0.00	0.38	0.27	0.00	0.00	0.00	0.00	0.00	0.38	0.00	0.34
	5	1.00	1.00	1.00	0.71	0.00	0.00	1.00	0.00	0.08	0.58	0.90	0.00	0.00	1.00	0.25	1.00
	6	1.00	1.00	1.00	0.93	0.00	0.00	1.00	0.73	0.85	1.00	1.00	0.05	0.00	1.00	0.92	1.00
	7	1.00	1.00	1.00	0.92	0.00	0.21	0.87	1.00	0.25	0.68	0.13	0.66	0.24	1.00	0.23	1.00
	8	1.00	1.00	1.00	0.93	0.00	0.71	0.83	0.63	0.00	0.99	0.00	1.00	0.32	1.00	0.39	1.00
	9	0.94	1.00	1.00	1.00	0.00	0.00	0.86	0.12	0.35	0.58	0.00	1.00	0.00	0.70	0.36	1.00
	10	0.77	1.00	1.00	1.00	0.00	0.04	0.65	0.00	0.75	0.00	0.00	0.86	0.00	0.73	0.56	0.70
	11	0.94	0.75	1.00	0.98	0.02	0.03	0.24	0.17	0.29	0.05	0.00	0.30	0.49	0.86	0.44	0.31
	12	0.22	0.76	1.00	1.00	0.06	0.33	0.00	0.00	0.25	0.15	0.00	0.29	0.22	0.80	0.51	0.10
	13	0.76	0.50	1.00	1.00	0.00	0.19	0.06	0.00	0.58	0.44	0.00	0.23	0.18	0.56	0.55	0.02
	14	0.12	1.00	1.00	0.99	0.00	0.52	0.00	0.00	0.66	0.94	0.00	0.26	0.27	0.55	0.23	0.00
	15	0.18	0.83	1.00	0.57	0.00	0.58	0.34	0.00	0.46	0.93	0.00	0.05	0.16	0.35	0.72	0.00
	16	0.76	0.00	1.00	0.30	0.12	0.63	0.31	0.00	0.60	0.85	0.22	0.00	0.72	0.74	0.75	0.01
	17	0.54	0.00	1.00	0.38	0.00	0.25	0.00	0.23	0.30	0.79	0.62	0.00	0.72	0.01	0.92	0.27
	18	1.00	0.00	1.00	0.00	0.00	1.00	0.20	0.13	0.50	0.43	0.95	0.00	0.74	0.00	1.00	0.37
	19	0.83	0.00	0.80	0.00	0.00	0.09	0.00	0.24	0.60	0.38	0.85	0.00	0.38	0.00	0.82	0.00
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	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>11.55</b>	<b>10.38</b>	<b>15.17</b>	<b>10.74</b>	<b>0.20</b>	<b>4.60</b>	<b>6.76</b>	<b>3.57</b>	<b>6.54</b>	<b>8.78</b>	<b>4.68</b>	<b>4.70</b>	<b>4.44</b>	<b>9.69</b>	<b>8.66</b>	<b>7.13</b>
	Hour	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	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	0.33	0.00	0.00	0.04	0.00	0.37	0.40	0.38	0.07	0.14	0.00	0.00	0.09	0.36	0.21	0.17
	5	0.60	0.22	0.00	0.04	0.00	1.00	1.00	0.77	0.00	0.02	0.00	0.00	0.02	0.97	1.00	0.46
	6	0.77	0.38	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.70	0.42	0.00	0.01	1.00	1.00	0.57
	7	0.64	0.35	0.00	0.00	0.00	1.00	1.00	0.23	0.07	1.00	0.31	0.00	1.00	0.56	1.00	0.56
	8	0.88	0.93	0.00	0.00	0.00	1.00	1.00	1.00	0.32	1.00	0.02	0.00	1.00	0.98	0.77	0.64
	9	0.68	0.77	0.21	0.00	0.12	1.00	1.00	1.00	1.00	1.00	0.71	0.96	1.00	0.96	0.71	0.65
	10	0.94	0.68	0.00	0.00	0.50	1.00	1.00	1.00	1.00	0.99	1.00	0.94	0.99	0.99	0.93	0.65
	11	0.72	0.91	0.00	0.25	0.53	1.00	0.68	0.93	0.83	1.00	0.98	0.62	0.92	1.00	0.62	0.58
	12	0.76	1.00	0.00	0.05	0.04	1.00	0.36	0.87	0.40	0.62	0.58	0.04	0.50	1.00	0.62	0.44
	13	0.85	1.00	0.46	0.59	0.75	0.99	0.84	0.77	0.06	0.02	0.24	0.07	0.85	1.00	0.03	0.47
	14	0.79	1.00	0.94	0.86	0.66	0.93	0.80	0.79	0.00	0.65	0.13	0.56	0.73	0.95	0.00	0.53
	15	0.86	1.00	0.83	0.63	0.92	0.76	0.48	0.87	0.11	0.85	0.35	0.00	0.94	0.88	0.20	0.51
	16	0.86	1.00	0.98	0.25	0.87	0.57	0.96	1.00	0.24	0.43	0.00	0.00	1.00	0.88	0.00	0.52
	17	0.87	1.00	0.98	0.30	0.86	0.90	1.00	1.00	0.90	0.31	0.00	0.00	0.82	0.71	0.08	0.51
	18	0.98	0.65	0.06	0.97	0.83	1.00	1.00	0.99	0.65	0.48	0.00	0.00	0.54	0.98	0.00	0.53
	19	0.58	0.00	0.00	0.34	1.00	0.89	0.65	0.09	0.28	0.08	0.16	0.04	0.00	0.46	0.00	0.31
	20	0.00	0.00	0.00	0.00	0.03	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>12.10</b>	<b>10.88</b>	<b>4.46</b>	<b>4.30</b>	<b>7.09</b>	<b>14.41</b>	<b>13.18</b>	<b>11.69</b>	<b>5.94</b>	<b>9.31</b>	<b>4.91</b>	<b>3.24</b>	<b>10.41</b>	<b>13.70</b>	<b>7.15</b>	<b>250.31</b>

JULY 2014	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	15.77	23.3	1352	8.3	336	68.0	97.0	549	31.7	1357	9.03	7.11	9.4	721	5.3	1645	1019.73	1022.7	2357	1018.4	238	
2	16.75	23.6	1441	7.5	357	64.9	96.1	526	33.7	1459	9.23	7.19	8.9	1847	5.8	1411	1022.58	1023.7	909	1021.1	1709	
3	19.08	25.8	1545	10.0	408	59.3	93.4	442	30.7	1708	10.22	7.69	9.5	1348	5.9	1708	1018.87	1022.8	10	1014.8	2351	
4	18.55	24.8	1230	13.1	227	71.4	92.5	2354	36.2	1338	12.77	9.22	11.0	2353	6.8	1338	1007.46	1015.0	17	1001.6	2357	
5	17.32	20.9	1157	15.4	2305	81.9	94.9	629	58.1	1243	14.09	10.10	11.6	732	8.6	1252	1001.71	1004.2	2201	998.7	514	
6	16.34	21.5	1705	11.9	2338	63.4	89.6	102	37.1	1746	8.98	7.19	9.8	102	5.6	1746	1005.74	1012.0	2359	1002.9	425	
7	15.45	20.6	1556	9.5	311	69.6	93.7	2357	43.2	1037	9.54	7.38	9.4	1305	6.2	1027	1014.77	1016.2	2339	1011.8	4	
8	14.47	18.9	1312	10.7	440	82.0	96.3	458	51.9	1309	11.23	8.25	10.0	1440	6.7	1255	1015.62	1017.9	2354	1014.1	1515	
9	16.80	22.7	1432	10.9	348	68.4	93.5	523	41.0	1432	10.50	7.80	8.9	842	6.6	1337	1018.40	1020.1	906	1017.3	1701	
10	17.82	24.6	1510	13.3	500	63.1	87.4	2158	32.2	1515	10.14	7.67	9.1	1914	5.9	1515	1017.82	1019.2	2314	1016.6	1620	
11	16.29	22.3	1722	10.2	424	77.7	97.8	526	54.5	1716	12.17	8.77	10.5	1440	7.4	424	1017.70	1019.4	903	1016.0	1828	
12	19.66	25.7	1440	13.7	451	74.7	98.4	551	44.0	1452	14.46	10.22	12.0	2346	8.7	1447	1013.37	1016.7	19	1010.0	2358	
13	18.50	22.8	1214	10.8	2341	76.4	96.5	440	49.4	1738	13.97	10.08	12.9	743	6.7	2159	1008.61	1012.6	2359	1006.5	1212	
14	17.31	24.1	1417	9.5	420	67.7	93.1	458	36.8	1325	10.66	8.02	10.7	2354	6.0	1103	1014.31	1015.8	2356	1012.4	51	
15	19.90	25.2	1542	14.3	2352	65.1	91.1	51	37.1	1541	12.57	9.02	11.0	50	7.1	1758	1018.12	1020.9	2208	1015.5	218	
16	19.18	25.1	1351	11.2	403	71.2	97.3	433	45.7	1110	13.36	9.47	11.0	1039	7.9	403	1020.62	1021.5	2316	1019.6	1746	
17	21.49	28.6	1448	14.5	427	69.4	97.3	526	38.7	1453	15.03	10.52	12.2	1818	8.8	1328	1019.54	1022.2	905	1015.5	1742	
18	22.34	28.0	1443	16.3	237	72.0	97.2	556	40.2	1522	16.40	11.63	14.7	1146	9.1	1734	1012.32	1018.3	32	1009.7	2350	
19	21.46	27.7	1611	17.8	511	79.5	97.1	829	46.6	1655	17.36	12.37	15.3	935	10.3	1656	1007.82	1010.5	2	1005.2	1652	
20	20.62	26.2	1500	15.8	424	74.2	94.8	628	42.1	1506	15.39	10.89	12.7	11	8.6	1836	1010.47	1015.0	2359	1007.8	248	
21	19.76	25.9	1523	14.8	2357	73.5	93.2	2359	46.2	1618	14.48	10.17	11.9	1259	9.1	1821	1018.58	1021.9	2359	1014.8	10	
22	20.01	27.2	1544	12.2	437	71.3	98.4	557	39.3	1532	13.92	9.78	11.3	1452	8.2	1229	1022.41	1023.4	2211	1021.1	1544	
23	20.83	29.0	1527	12.8	435	70.6	98.4	533	34.4	1653	14.63	10.28	13.6	1342	8.2	1653	1019.44	1023.1	0	1016.4	1622	
24	21.38	29.3	1438	14.1	442	63.1	91.3	507	31.2	1432	13.38	9.53	12.4	1122	7.4	1432	1016.97	1018.7	905	1015.0	1753	
25	18.85	27.6	1238	13.6	436	81.7	96.0	524	43.5	1241	15.41	10.85	13.4	1743	8.7	26	1016.92	1018.0	748	1015.5	1241	
26	21.51	28.3	1520	15.3	253	64.2	96.5	259	32.7	1700	13.55	9.62	11.2	1344	7.3	1700	1016.39	1017.5	905	1015.0	1646	
27	20.30	24.8	1250	16.5	408	58.8	87.2	418	31.4	1555	11.40	8.39	10.6	506	5.7	1555	1016.50	1018.4	903	1015.1	2351	
28	17.36	23.2	1227	13.5	533	73.0	90.0	536	42.0	1440	12.29	8.87	10.9	1038	7.0	1441	1015.63	1017.3	2359	1014.3	411	
29	20.27	26.5	1454	14.1	419	61.4	90.6	421	30.5	1600	11.85	8.61	9.9	1108	6.4	1600	1015.91	1017.9	908	1013.7	1732	
30	19.00	25.4	1632	11.1	446	62.2	95.6	525	38.7	1439	10.97	8.11	9.5	2209	6.8	859	1015.84	1017.8	905	1014.2	1745	
31	18.74	25.1	1236	12.3	358	71.4	95.2	509	42.9	1237	13.01	9.29	10.5	806	8.1	1304	1013.72	1016.0	18	1011.6	1845	
Total																						
Mean	18.81	24.99		12.74		70.0	94.43		40.11		12.64	9.16	11.16		7.32		1015.29	1017.96		1012.98		
Max	22.34	29.34		17.80		82.0	98.40		58.13		17.36	12.37	15.31		10.28		1022.58	1023.71		1021.15		
Min	14.47	18.92		7.46		58.8	87.20		30.49		8.98	7.11	8.90		5.26		1001.71	1004.23		998.73		

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

**Month:** Calendar month.

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

Summer, June to August

Autumn, September to November

Winter, December to February.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## Appendix 2.

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

**VV** : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

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

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

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

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

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

**Cl :** Type of low cloud

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

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

**Cm :** Type of medium cloud.

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

**Ch :** Type of high cloud

0 = No high cloud

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

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

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

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

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

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

7 = Veil of Cirrostratus covering the celestial dome.

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

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

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

**8 Groups**

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

**C** = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

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

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

00 to 50 = Height in hundreds of feet

51 to 55 Not used

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

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