

# 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 2015**

Temperature (°C / °F)				Anomaly	Rank in the past <b>134</b> years				
Mean maximum	22.6	72.7	-0.3	46 <sup>th</sup> highest					
Mean minimum	11.7	53.1	-0.9	53 <sup>rd</sup> lowest					
Daily mean	17.1	62.8	-0.6	57 <sup>th</sup> highest					
Highest maximum	33.9	93.0	on 1 <sup>st</sup>	Lowest maximum	14.7	58.5	on 24 <sup>th</sup>		
Highest minimum	16.7	62.1	on 4 <sup>th</sup>	Lowest minimum	4.1	39.4	on 31 <sup>st</sup>		
Mean grass minimum	9.0	48.2	-0.8	Lowest grass minimum	0.0	32.0	on 31 <sup>st</sup>		
Mean earth @30 cm	18.7	65.7	0.0	Earth @100 cm	16.9	62.4			
Frost duration (hrs)	0.0			Rain duration (hrs)	31.5				
Rainfall total (mm / in)	55.4	2.18	123 %	52 <sup>nd</sup> highest					
Highest daily fall	34.6	1.36	on 24 <sup>th</sup>						
Number of: Dry days (<0.2mm)	16	Wet days (>0.9mm)	9	days ≥5mm	1				
Sunshine total (hrs)	154.2	Daily mean	4.97	78 %	Sunniest day	14.6	on 9 <sup>th</sup>		
N <sup>o</sup> days with: Air frost	0	Ground frost	0	Snow falling	0	Snow lying	0		
Thunder	1	Hail ≥5mm	0	Small hail/ice	0	Fog @09	0	Nil sun	2
Pressure MSL : Mean @09 GMT, mbar	1014.6	-2.0	Highest	1026.4	on 3 <sup>rd</sup>	Lowest	996.3	on 26 <sup>th</sup>	
Relative humidity : Mean (%)	69.7	Lowest	19	on 10 <sup>th</sup>		Water vapour (g/kg), mean at 09 and 15 GMT 8.4, 7.8			
Overall mean wind speed (mph)	7.1	Windiest day	11.7	on 27 <sup>th</sup>		Max gust	35	on 7 <sup>th</sup>	
Wind direction (days)	N 0	NE 1	E 2	SE 0	S 4	SW 16	W 6	NW 2	
Least windy day (mph)	4.0 on 31 <sup>st</sup>		Calm; less than 0.5 mph (minutes) 333						

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

Notes:

### Dull with Below Average Temperature and Above Average Rainfall

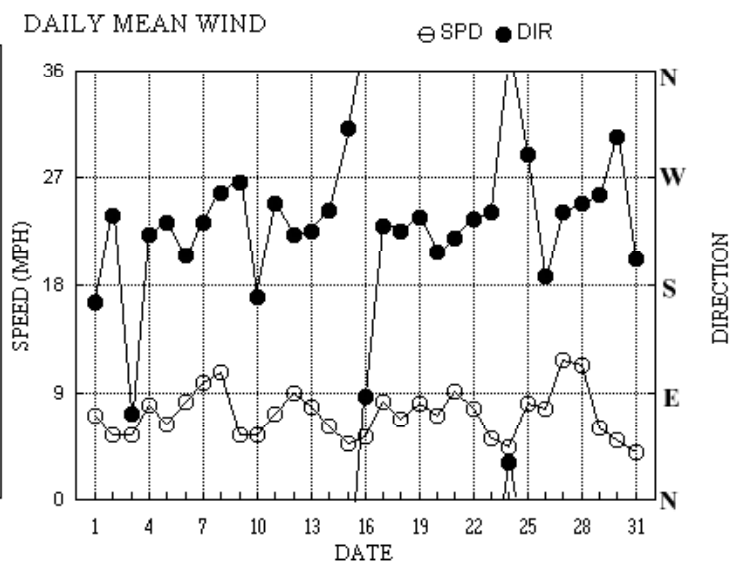
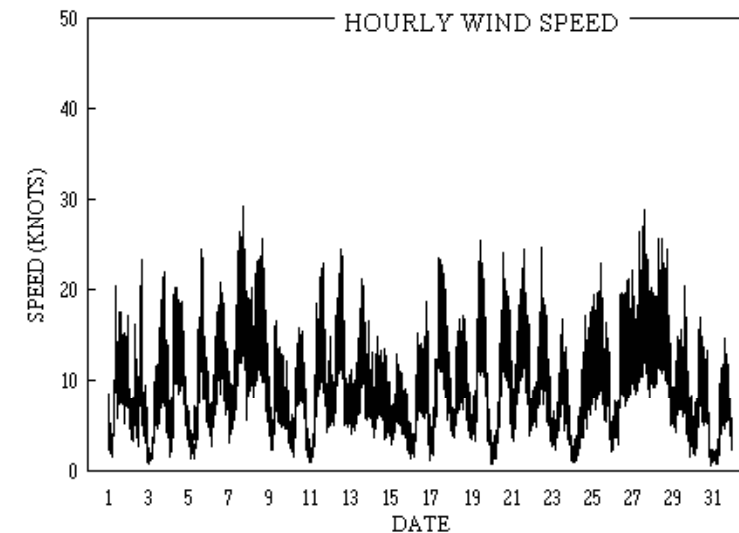
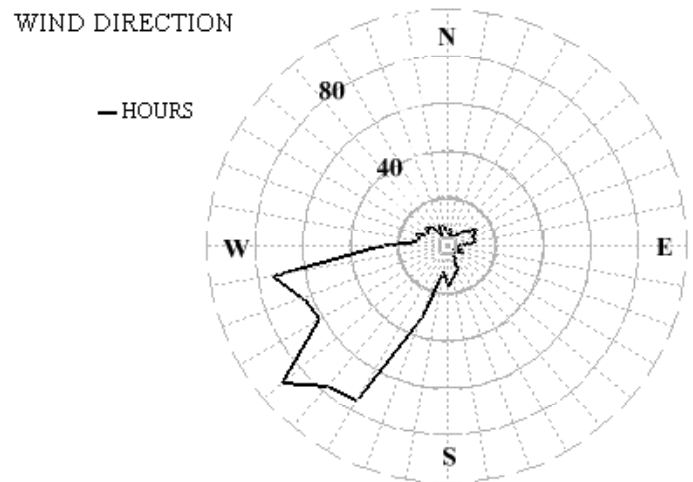
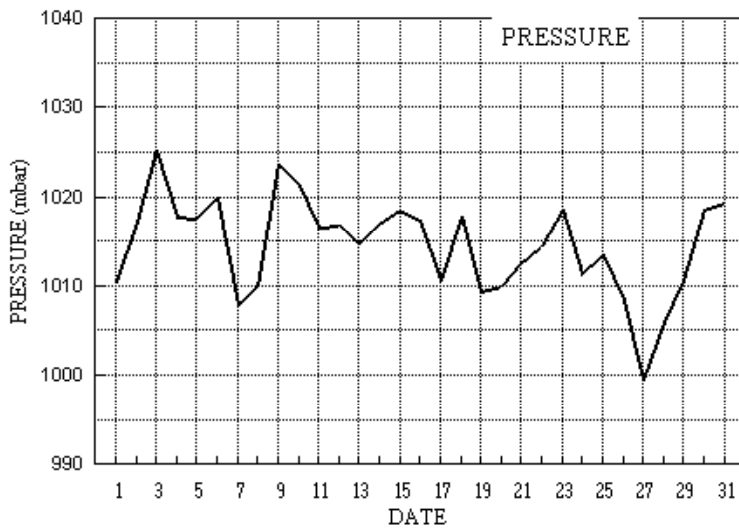
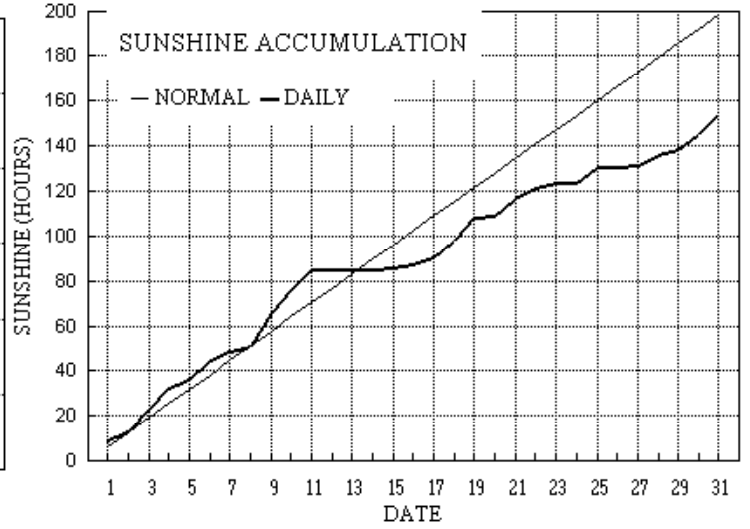
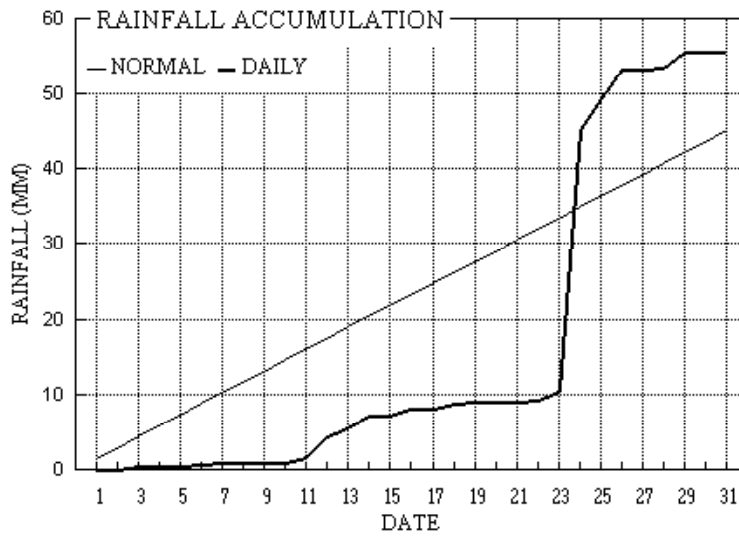
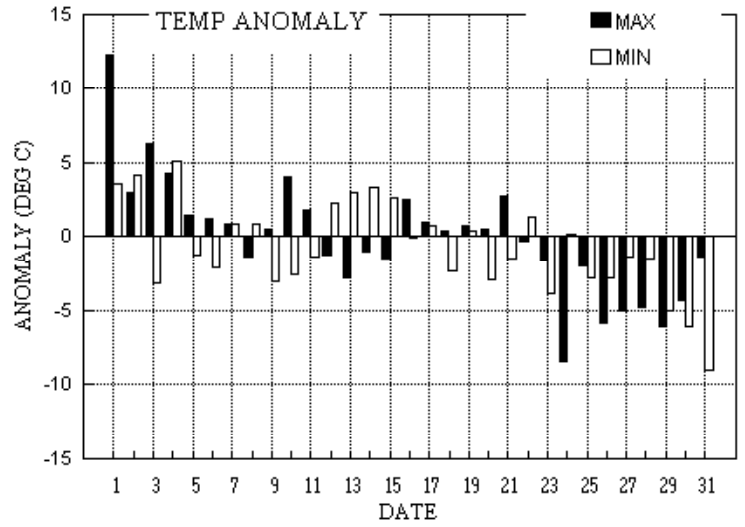
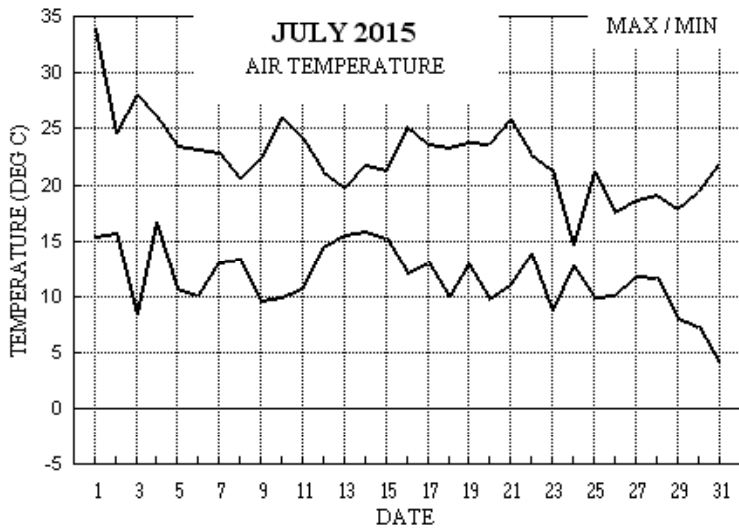
**Temperature:** The month began with a heat wave, the anomaly for the maximum on the 1<sup>st</sup> being +12.3°, but temperatures fell back to near normal on the 5<sup>th</sup>, remaining there until the 24<sup>th</sup>, after which they declined further for a cool end to the month, with the anomaly for daily maximum at least -5° on the 24<sup>th</sup>, 26<sup>th</sup>, 27<sup>th</sup> and 29<sup>th</sup>. The mean temperature this July is 0.6° below the 30 year climatological average, but is 0.2° above the 134 year median. Several recent Julys have been cooler, e.g. 2012, 2011, 2007, 2004 and 2000. Perhaps the most notable feature of this July is that it contained opposite extremes of temperature, and a single high rainfall event. The highest maximum occurred on the 1<sup>st</sup>, and at 33.9° is the 3<sup>rd</sup> highest July temperature in over 100 years, while at the other end of the month, a minimum of 4.1° on the 31<sup>st</sup> is the lowest July temperature since 1907. The lowest maximum, 14.7° on the 24<sup>th</sup>, is 2.1° below the median and is equal lowest with 1980 since 1969. The highest min is 0.4° above its median. The lowest grass min, 0.0° on the 31<sup>st</sup>, is lowest for July since before 1980. Earth temperatures at 30 cm and 1 m depth were close to normal. **Rainfall:** The outstanding feature of this July was the fall of rain on the 24<sup>th</sup> when 34.6 mm was recorded. Although this is the wettest July day since only 2007, it is the 9<sup>th</sup> highest July daily total in 112 years. Apart from this one very wet day, the majority of the month, while not entirely dry, contained generally only small amounts of rain, the rainfall accumulation showing a deficit of 23 mm on the 23<sup>rd</sup>. This had changed to a surplus of 14 mm by the 26<sup>th</sup>. The number of dry days is 3 fewer than average, and there were no dry spells. Thunder occurred on the 16<sup>th</sup>, otherwise the month was thunder and hail free. The duration of measurable rain is 3.8 hours above normal. There were no rainfall rates exceeding 50 mm/hr, the highest being 23 mm/hr on the 29<sup>th</sup>. **Sunshine:** Although sunshine was normal or above early in the month, with 6 days having over 50% of the maximum, it became largely dull after the 11<sup>th</sup>, and only 2 more days had over 50% of the maximum for the rest of the month. The accumulation of daily sunshine was in surplus by 14 hours on the 11<sup>th</sup>, but the following 5 days had a total of only 2.1 hours, causing a deficit of 20 hours by the 17<sup>th</sup>. After that, 6 days with less than 20 % of the maximum allowed the deficit to climb to nearly 50 hours by the 31<sup>st</sup>. Overall there were 12 days with <3 hours, 13 with =>6 hours, 7 with =>9 hours and 1 with =>12 hours. **Wind:** The mean speed is 0.8 mph above average and highest for July since 2009. Winds were predominantly SW'ly through the month, but E'ly on the 3<sup>rd</sup> and 16<sup>th</sup>, and NE'ly on the 24<sup>th</sup>. They were moderate or fresh until the 8<sup>th</sup>, light or moderate until the 11<sup>th</sup>, and again from the 13<sup>th</sup> to the 26<sup>th</sup>, but fresh on the 12<sup>th</sup>, 27<sup>th</sup> and 28<sup>th</sup>, falling light on the 29<sup>th</sup>.

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			
+3.3°	+0.3°	7%	119%	0.0°	+0.6°	55%	52%	-3.4°	-2.9°	290%	64%

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

# Wokingham climatological graphs for July 2015



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: JULY 2015

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	33.9	15.4	0.0	12.3	19.3	16.0	9.7	0.0	1010.3	0 0 0 0	0 0 0 0	0 0 0 0	166 4.4 6.1	154 21 0910	158 10 09	0.0	
2	24.6	15.8	0.1	12.5	19.8	16.2	3.6	0.0	1017.2	0 0 0 0	0 0 0 0	0 0 0 0	239 3.7 4.7	255 24 1622	227 10 15	0.1	
3	28.1	8.4	0.4	3.7	19.1	16.4	10.2	0.0	1025.3	0 0 0 0	0 0 0 0	0 0 0 0	71 4.4 4.7	58 22 1959	78 9 18	0.2	
4	26.2	16.7	0.0	15.6	19.8	16.5	9.0	0.0	1017.8	0 0 0 0	0 0 0 0	0 0 0 0	222 5.9 6.8	241 21 0939	231 11 08	0.0	
5	23.5	10.7	0.0	6.7	19.9	16.7	4.2	0.0	1017.6	0 0 0 0	0 0 0 0	0 0 0 0	233 5.2 5.4	263 25 1534	230 11 14	0.0	
6	23.2	10.1	0.2	5.5	19.0	16.8	8.0	0.0	1019.9	0 0 0 0	0 0 0 0	0 0 0 0	205 6.9 7.1	211 21 1425	213 11 11	0.4	
7	22.9	13.1	0.3	9.5	19.1	16.9	4.4	0.0	1007.9	0 0 0 0	0 0 0 0	0 0 0 0	232 7.6 8.5	249 30 1624	254 13 16	0.3	
8	20.5	13.4	tr	11.4	18.9	16.9	2.0	0.0	1009.9	0 0 0 0	0 0 0 0	0 0 0 0	258 8.5 9.2	328 26 1510	252 12 11	0.1	
9	22.4	9.6	0.0	4.5	18.4	17.0	14.6	0.0	1023.7	0 0 0 0	0 0 0 0	0 0 0 0	266 3.6 4.7	323 17 0803	327 8 08	0.0	
10	26.0	10.0	tr	5.7	18.9	16.9	10.4	0.0	1021.3	0 0 0 0	0 0 0 0	0 0 0 0	170 4.5 4.7	153 16 1215	161 8 12	0.0	
11	24.1	10.8	0.7	6.6	19.2	16.9	9.3	0.0	1016.6	0 0 0 0	0 0 0 0	0 0 0 0	248 5.9 6.3	249 23 1627	261 10 13	2.0	
12	21.2	14.5	2.8	13.3	19.5	16.9	0.1	0.0	1016.8	0 0 0 0	0 0 0 0	0 0 0 0	223 7.6 7.7	221 25 1217	229 12 13	3.4	
13	19.7	15.5	1.0	14.5	19.2	17.0	0.0	0.0	1014.7	0 0 0 0	0 0 0 0	0 0 0 0	226 6.6 6.8	217 21 1413	219 10 15	1.3	
14	21.8	15.9	1.6	15.1	18.8	17.0	0.1	0.0	1017.0	0 0 0 0	0 0 0 0	0 0 0 0	243 5.2 5.4	257 15 0808	245 7 02	2.1	
15	21.3	15.3	tr	16.0	19.0	17.0	0.5	0.0	1018.5	0 0 0 0	0 0 0 0	0 0 0 0	311 2.9 4.1	317 13 0748	333 7 08	0.0	
16	25.2	12.2	1.0	9.4	19.2	17.0	1.4	0.0	1017.4	0 0 0 0	1 0 0 0	0 0 0 0	86 3.9 4.6	73 19 1938	68 7 19	0.6	
17	23.6	13.1	0.0	10.7	19.2	17.1	3.4	0.0	1010.6	0 0 0 0	0 0 0 0	0 0 0 0	230 6.6 7.2	238 24 0935	206 12 12	0.0	
18	23.3	10.0	0.8	6.2	19.0	17.1	7.3	0.0	1017.8	0 0 0 0	0 0 0 0	0 0 0 0	226 5.6 5.8	253 17 1407	211 9 17	0.7	
19	23.9	12.9	0.2	12.5	19.1	17.2	10.5	0.0	1009.4	0 0 0 0	0 0 0 0	0 0 0 0	237 6.4 7.0	260 26 1159	259 12 14	0.4	
20	23.7	9.8	tr	6.3	19.1	17.2	0.8	0.0	1009.9	0 0 0 0	0 0 0 0	0 0 0 0	208 4.8 6.0	228 24 1456	207 12 15	0.2	
21	25.9	11.1	tr	6.9	18.8	17.2	7.5	0.0	1012.6	0 0 0 0	0 0 0 0	0 0 0 0	220 7.8 7.9	217 25 1623	208 12 15	0.0	
22	22.7	13.8	0.1	11.1	19.3	17.2	4.9	0.0	1014.4	0 0 0 0	0 0 0 0	0 0 0 0	236 5.7 6.6	254 25 1329	213 9 12	0.1	
23	21.3	8.7	1.3	4.1	18.7	17.2	1.6	0.0	1018.5	0 0 0 0	0 0 0 0	0 0 0 0	241 4.1 4.4	255 17 1315	216 7 11	1.6	
24	14.7	12.7	34.6	11.6	18.7	17.2	0.0	0.0	1011.4	0 0 0 0	0 0 0 0	0 0 0 0	30 3.5 3.9	340 18 2358	347 8 23	13.5	
25	21.2	9.9	4.2	9.0	17.6	17.2	7.4	0.0	1013.4	0 0 0 0	0 0 0 0	0 0 0 0	290 6.1 7.0	274 23 1111	290 10 11	1.6	
26	17.6	10.2	3.9	6.7	17.6	17.1	0.1	0.0	1008.5	0 0 0 0	0 0 0 0	0 0 0 0	187 5.9 6.7	220 21 2003	228 11 23	2.0	
27	18.7	11.8	0.1	13.2	17.2	17.0	0.3	0.0	999.5	0 0 0 0	0 0 0 0	0 0 0 0	242 10.1 10.2	249 29 1451	246 13 14	0.1	
28	19.2	11.7	0.1	10.8	17.5	16.9	4.7	0.0	1005.8	0 0 0 0	0 0 0 0	0 0 0 0	248 9.5 9.8	257 26 1214	254 12 12	0.1	
29	17.9	8.1	2.0	3.7	17.1	16.8	2.8	0.0	1010.5	0 0 0 0	0 0 0 0	0 0 0 0	256 4.9 5.2	295 21 1525	262 8 07	0.7	
30	19.4	7.3	0.0	3.4	16.8	16.7	7.1	0.0	1018.5	0 0 0 0	0 0 0 0	0 0 0 0	304 3.5 4.3	313 17 0903	305 8 09	0.0	
31	22.0	4.1	0.0	0.0	16.7	16.6	8.3	0.0	1019.4	0 0 0 0	0 0 0 0	0 0 0 0	202 3.0 3.5	190 15 1425	225 6 16	0.0	
Total			55.4				154.2	0.0									31.5
Mean	22.6	11.7		9.0	18.7	16.9	4.97	0.0	1014.6					233 4.3 6.2			
Anom	-0.3	-0.9	123%	-0.8	-0.0	+0.1	78%										-2.0
Daily mean		17.1							1026.4								on 3
Anom		-0.6							996.3								on 26

Number of days with:

Air frost = 0            Ground frost = 0            Nil sun = 2  
 Snow falling = 0        Snow lying = 0            Thunder = 1  
 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, <.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 2015

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ci	N	Ch	shs	N	Ch	shs	Date	Remarks
1	81	1	14	10	20	30.8	12.1	32	8.8	1010.3	7	014	02	0	0	1	0	9	3	1							1	1Ac75 COTRA	
2	65	8	12	07	16	18.4	14.4	77	10.1	1017.2	0	002	15	2	2	1	5	4	7	/							2	1Sc25 1Ac59 jpS&SW dd var 120-300	
3	84	5	07	05	12	20.9	10.3	51	7.7	1025.3	8	007	02	1	1	0	0	9	0	1							3	COTRA	
4	80	5	24	10	20	20.9	14.2	65	10.0	1017.8	2	020	03	1	1	5	1	5	0	1							4	2Ci75 Absent vv&cld est	
5	72	7	24	04	07	15.2	11.4	78	8.3	1017.6	8	008	02	2	2	7	8	4	/	2							5	/Ci70 Absent vv&cld est	
6	81	6	22	06	15	17.9	9.7	59	7.4	1019.9	8	006	03	1	1	3	2	5	3	1							6	1Ac70 Cu med	
7	75	7	22	08	17	17.9	14.9	83	10.5	1007.9	7	022	01	6	5	6	2	3	3	/							7	4Ac60 Cu med	
8	82	7	26	11	22	18.0	11.2	64	8.3	1009.9	3	016	02	2	2	7	8	5	/	/							8	Cu med	
9	86	1	30	07	17	16.4	4.4	45	5.1	1023.7	2	013	03	0	0	1	1	6	0	0							9	Cu hum Elev hz lyr	
10	82	2	18	06	12	20.2	7.9	45	6.6	1021.3	7	010	03	0	0	2	0	9	8	1							10	1Ci75 Ac cas	
11	82	7	27	10	16	20.4	11.7	57	8.5	1016.6	1	014	03	1	1	2	8	5	0	1							11	1Cu035 COTRA Cu hum	
12	78	8	23	10	18	18.1	13.1	72	9.3	1016.8	5	000	03	6	2	7	5	4	7	/							12	/Ac58	
13	61	8	19	05	12	16.3	15.1	93	10.6	1014.7	8	006	60	6	5	8	5	3	/	/							13		
14	62	8	24	05	15	16.5	14.1	86	10.1	1017.0	2	009	20	5	2	8	5	3	/	/							14		
15	58	8	33	06	13	15.1	13.5	90	9.5	1018.5	3	014	50	5	2	8	6	3	/	/							15	CF 0735	
16	59	8	11	07	12	18.2	14.7	80	10.3	1017.4	8	010	05	2	2	8	6	4	/	/							16		
17	80	7	24	06	13	19.2	15.3	78	10.8	1010.6	2	001	25	8	2	5	2	4	3	1							17	2Ac65 COTRA Cu med	
18	82	3	27	07	14	18.2	7.2	49	6.3	1017.8	2	002	03	0	0	1	1	6	0	1							18	COTRA Cu hum	
19	88	1	23	09	17	19.4	9.2	52	7.2	1009.4	6	007	01	1	1	1	1	6	4	0							19	1Ac58 Cu hum Ac len	
20	40	8	15	05	08	16.3	15.1	93	10.7	1009.9	8	004	51	6	5	8	7	3	/	/							20		
21	78	3	22	09	19	19.5	12.1	62	8.7	1012.6	0	002	02	1	1	3	1	5	0	0							21	Cu hum	
22	80	4	23	08	14	19.9	11.3	58	8.3	1014.4	2	001	03	1	1	4	8	5	0	0							22	1Sc40 2Sc56 Cu med	
23	80	7	23	05	08	16.3	10.5	69	7.8	1018.5	1	001	03	2	2	1	8	5	7	/							23	1Sc40 Cu med	
24	58	8	04	02	06	14.2	12.7	91	9.1	1011.4	7	010	63	6	6	5	6	2	/								24		
25	81	6	28	08	19	14.1	9.8	75	7.5	1013.4	2	026	03	1	1	6	8	4	0	0							25	2Sc40 Cu med	
26	56	8	12	03	07	12.4	11.6	95	8.5	1008.5	8	026	65	6	2	5	8	2	2	/							26	3Sc50 Cu med	
27	86	7	25	11	21	17.2	11.9	71	8.6	999.5	2	011	01	8	2	7	8	5	/	/							27	Cu hum	
28	84	7	25	12	26	15.0	7.9	63	6.7	1005.8	1	005	03	1	1	6	8	5	/	2							28	Cu hum	
29	86	4	26	08	14	15.4	8.2	62	6.8	1010.5	2	009	03	1	1	4	8	5	0	0							29	Cu med	
30	84	6	31	08	16	14.7	6.3	57	5.9	1018.5	1	009	03	1	1	6	8	6	0	0							30	1Sc50 Cu med	
31	82	2	19	04	07	17.1	7.6	53	6.4	1019.4	8	010	02	0	0	1	2	5	0	1							31	2Ci80 COTRA Cu med	

Mean vis = 32.3 km

Mean cloud = 5.7 71%

Mean wind speed = 7.2 kn

Mean gust = 15 kn

Mean TT = 17.7 °C

Mean TdTd = 11.3 °C

Mean RH = 67.9%

Mean r = 8.4 g/kg

Mean PPP = 1014.6 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

covers past 3 hours.

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs = Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation

trails present.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for JULY 2015

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	75	4	17	06	18	33.2	13.3	30	9.5	1009.3	7	010	03	1	1	3	0	9	8	1	81362	83363					1	1Ci75 Ac cas	
2	75	6	22	08	15	23.5	15.3	60	10.7	1018.4	3	002	03	6	2	5	2	5	3	0	85828						2	2Ac62 Cu med	
3	82	7	08	07	16	27.6	12.8	40	9.1	1020.9	7	023	03	1	1	1	0	9	8	6	81362	87272					3	Absent vv&cld est	
4	80	5	21	10	19	24.6	11.8	44	8.5	1018.5	3	003	02	2	2	5	4	6	0	1	83840	83650					4	2Ci75 Absent vv&cld est	
5	80	5	22	11	22	23.0	10.5	45	7.8	1015.5	5	008	03	1	1	4	8	6	3	0	82840	83650					5	2Ac58 Absent vv&cld est	
6	86	5	19	11	21	22.3	7.5	38	6.4	1017.3	7	015	01	6	2	1	1	7	8	1	81850	83363					6	2Ac60 2Ci80 COTRA Cu hum Ac cas Ac len	
7	84	4	25	11	25	21.4	7.4	40	6.4	1007.3	7	004	15	8	1	4	8	7	3	0	82850	83656					7	1Ac58 Cu med jpS	
8	80	7	32	11	24	17.7	11.7	68	8.5	1013.2	3	020	25	8	2	7	8	5	/	/	81822	84828	86650				8	2Sc40 Cu med jpE vv60k ex p	
9	88	1	23	04	13	21.9	3.7	30	4.9	1022.8	8	005	02	0	0	1	1	7	0	1	81856						9	1Ci78 Cu hum	
10	82	4	16	07	15	25.9	1.3	20	4.1	1016.7	7	026	03	0	0	4	0	9	8	0	81366	84368					10	Ac cas	
11	81	6	27	10	21	23.6	8.3	37	6.8	1017.8	3	006	02	2	2	1	1	6	0	2	81848	85075					11	1Cc72 COTRA Cu hum 22° halo part	
12	60	7	22	12	24	20.8	14.2	66	10.0	1015.9	6	004	15	2	2	7	9	4	/	/	81715	81920	85825				12	6Sc50 jpNW-N	
13	65	8	22	11	21	18.9	14.9	78	10.5	1014.1	7	007	02	2	2	8	5	4	/	/	87616	88622					13		
14	84	7	24	05	12	20.8	14.6	66	10.0	1017.7	8	001	02	2	2	7	8	5	/	/	83828	87640					14	Cu hum	
15	81	7	34	03	10	21.1	12.7	59	9.0	1018.2	7	004	15	2	2	7	8	6	/	/	83832	87645					15	Cu hum jpSW	
16	75	6	11	06	13	23.9	14.3	55	10.1	1013.2	8	026	01	2	2	5	8	6	8	/	84832	83359					16	2Sc38 Cu hum Ac cas	
17	84	6	25	12	22	21.5	11.0	51	8.1	1012.1	1	012	01	2	2	2	2	6	7	/	82835	85366					17	Cu med Ac edge NE-SW ovhd	
18	86	6	24	07	17	22.7	5.9	34	5.8	1015.5	8	016	02	1	1	1	4	7	3	1	81856	86075					18	1Sc56 1Ac68 COTRA Halo 22° part	
19	89	1	27	12	23	23.2	7.1	35	6.3	1009.8	2	007	01	1	1	1	2	6	3	0	81848						19	1Ac60 Cu med	
20	84	7	22	11	24	22.8	16.8	69	11.9	1008.6	5	005	01	2	2	7	8	4	3	/	81715	83818					20	2Sc40 1Ac58 Cu hum	
21	82	3	21	12	23	24.8	10.2	40	7.7	1011.2	5	005	02	0	0	2	8	7	0	1	82850						21	1Sc56 2Ci75 COTRA Cu hum	
22	80	7	25	09	18	19.7	10.9	57	8.0	1014.6	1	008	15	8	2	5	8	6	7	/	81830	85656	87358				22	Cu med jpSE-SW vv60k ex p	
23	82	7	27	06	13	19.8	6.4	42	5.9	1016.3	8	012	02	2	2	2	8	7	7	1	82850	85357					23	1Sc56 4Ac65 /Ci75 Cu hum	
24	40	8	06	04	12	13.0	12.5	97	9.1	1007.1	7	018	65	6	6	7	7	2	2	/	83704	86706	88520				24		
25	86	5	31	05	13	19.1	7.4	47	6.4	1015.6	2	004	02	2	2	4	8	6	0	1	82848	83657					25	2Ci78 Cu med	
26	50	8	17	09	20	14.2	12.6	90	9.2	998.8	7	053	51	6	5	8	5	3	/	/	87707	88612					26		
27	84	7	25	13	29	18.4	9.7	57	7.5	1001.9	2	009	02	8	2	7	8	6	/	/	84835	87650					27		
28	84	7	27	13	22	17.9	6.9	49	6.2	1006.7	3	003	02	2	2	7	8	6	/	/	82840	87656					28	Cu med	
29	75	7	25	07	14	17.7	7.2	50	6.3	1012.1	1	006	15	8	2	7	8	5	/	/	81822	84840	87657				29	Cu med jpNW vv50k ex p Absent vv&cld est	
30	84	4	32	04	12	18.2	4.5	40	5.2	1019.0	2	001	01	1	1	4	8	7	0	0	81850	84656					30	Cu hum	
31	82	5	23	05	15	20.1	7.0	43	6.2	1016.4	7	014	02	1	1	4	8	7	0	1	82850	83656					31	1Ci75 Cu hum Absent vv&cld est	

Mean vis = 38.7 km

Mean cloud = 5.7 71%

Mean wind speed = 8.5 kn

Mean gust = 18 kn

Mean TT = 21.4 °C

Mean TdTd = 10.0 °C

Mean RH = 50.9 %

Mean r = 7.8 g/kg

Mean PPP = 1013.6 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

covers past 3 hours.

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs = Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation

trails present.

Wokingham Sunshine Hourly analysis	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
2015	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	0.21	0.00	0.49	0.00	0.17	0.28	0.00	0.00	0.03	0.32	0.35	0.00	0.00	0.00	0.00	0.00
	5	0.95	0.06	1.00	0.00	0.36	0.97	0.00	0.00	0.92	0.98	1.00	0.00	0.00	0.00	0.00	0.00
	6	1.00	0.20	1.00	0.92	0.00	1.00	0.00	0.19	1.00	0.99	1.00	0.00	0.00	0.00	0.00	0.00
	7	1.00	0.00	1.00	0.99	0.00	0.64	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
	8	1.00	0.00	1.00	0.91	0.00	0.67	0.00	0.00	1.00	1.00	0.89	0.00	0.00	0.00	0.00	0.00
	9	1.00	0.00	1.00	0.25	0.00	0.37	0.01	0.00	1.00	1.00	0.05	0.00	0.00	0.00	0.00	0.00
	10	0.42	0.00	1.00	0.47	0.00	0.26	0.01	0.00	0.99	0.59	0.00	0.00	0.00	0.00	0.00	0.00
	11	0.00	0.09	1.00	0.41	0.00	0.11	0.25	0.04	1.00	0.97	0.39	0.00	0.00	0.00	0.02	0.00
	12	0.57	0.00	0.93	0.42	0.42	0.00	0.17	0.00	1.00	1.00	0.90	0.00	0.00	0.00	0.28	0.01
	13	0.68	0.08	0.00	0.58	0.34	0.06	0.61	0.03	1.00	1.00	1.00	0.04	0.00	0.00	0.16	0.05
	14	0.73	0.54	0.33	0.89	0.50	0.80	0.76	0.04	1.00	1.00	0.75	0.00	0.00	0.06	0.00	0.16
	15	0.73	0.10	0.46	0.77	0.27	0.68	0.24	0.23	1.00	0.29	0.91	0.00	0.00	0.00	0.00	0.05
	16	0.79	0.01	0.60	0.42	0.06	0.95	0.88	0.58	1.00	0.19	0.46	0.00	0.00	0.00	0.00	0.00
	17	0.19	0.52	0.42	0.87	0.47	0.84	0.70	0.72	1.00	0.02	0.46	0.00	0.00	0.00	0.00	0.36
	18	0.32	1.00	0.00	0.98	0.64	0.24	0.47	0.14	1.00	0.00	0.03	0.00	0.00	0.00	0.00	0.79
	19	0.06	0.97	0.00	0.14	0.99	0.15	0.29	0.00	0.70	0.00	0.09	0.00	0.00	0.00	0.00	0.00
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot		<b>9.66</b>	<b>3.57</b>	<b>10.22</b>	<b>9.03</b>	<b>4.21</b>	<b>8.02</b>	<b>4.38</b>	<b>1.96</b>	<b>14.64</b>	<b>10.36</b>	<b>9.28</b>	<b>0.04</b>	<b>0.00</b>	<b>0.07</b>	<b>0.46</b>	<b>1.43</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	0.00	0.36	0.00	0.00	0.37	0.00	0.35	0.00	0.09	0.00	0.00	0.09	0.31	0.07	0.25	0.12
	5	0.00	1.00	0.00	0.00	1.00	0.23	0.89	0.00	0.98	0.00	0.00	0.85	0.99	0.21	1.00	0.43
	6	0.17	1.00	0.26	0.00	0.71	1.00	0.00	0.00	1.00	0.00	0.00	0.99	0.30	0.90	1.00	0.47
	7	0.07	0.98	1.00	0.00	0.13	0.48	0.00	0.00	1.00	0.00	0.03	0.88	0.29	0.97	1.00	0.43
	8	0.04	0.97	0.98	0.00	0.71	0.67	0.00	0.00	0.22	0.00	0.04	0.31	0.74	0.44	1.00	0.41
	9	0.56	0.76	1.00	0.00	0.65	0.11	0.00	0.00	0.25	0.00	0.10	0.00	0.13	0.48	0.95	0.31
	10	0.34	0.69	0.94	0.00	0.70	0.00	0.07	0.00	0.25	0.00	0.12	0.00	0.00	0.28	0.16	0.24
	11	0.12	0.48	0.25	0.00	0.67	0.07	0.06	0.00	0.28	0.00	0.01	0.01	0.00	0.16	0.62	0.23
	12	0.21	0.18	0.10	0.00	0.39	0.09	0.15	0.00	0.38	0.00	0.00	0.01	0.00	0.04	0.44	0.25
	13	0.01	0.06	0.52	0.00	0.35	0.00	0.00	0.00	0.55	0.00	0.00	0.08	0.00	0.37	0.48	0.26
	14	0.00	0.11	0.92	0.27	0.52	0.00	0.01	0.00	0.05	0.00	0.00	0.00	0.04	0.09	0.07	0.31
	15	0.01	0.73	0.99	0.28	0.66	0.00	0.00	0.00	0.41	0.00	0.02	0.12	0.00	0.52	0.38	0.32
	16	0.04	0.00	1.00	0.22	0.40	0.85	0.02	0.00	0.38	0.00	0.01	0.20	0.00	0.51	0.68	0.33
	17	0.32	0.00	1.00	0.00	0.26	0.48	0.00	0.00	0.65	0.01	0.00	0.57	0.00	0.57	0.04	0.34
	18	0.97	0.00	1.00	0.00	0.01	0.52	0.00	0.00	0.77	0.00	0.00	0.53	0.04	1.00	0.19	0.34
	19	0.53	0.00	0.58	0.00	0.00	0.41	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.52	0.03	0.18
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot		<b>3.38</b>	<b>7.30</b>	<b>10.53</b>	<b>0.77</b>	<b>7.53</b>	<b>4.92</b>	<b>1.55</b>	<b>0.00</b>	<b>7.41</b>	<b>0.01</b>	<b>0.33</b>	<b>4.65</b>	<b>2.84</b>	<b>7.13</b>	<b>8.29</b>	<b>153.98</b>

JULY 2015	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	25.40	34.1	1601	15.2	433	52.8	87.0	434	24.2	1614	13.79	9.81	11.9	1312	7.8	1614	1011.28	1014.5	2355	1008.7	1610	
2	18.34	24.7	1450	11.7	2354	76.0	93.4	2358	53.2	1437	13.91	9.83	12.6	1330	7.8	2354	1018.90	1024.4	2340	1014.2	2	
3	18.93	28.2	1508	8.4	406	65.3	98.1	526	30.6	1233	11.15	8.19	11.1	2358	6.1	1023	1022.33	1026.4	647	1015.0	2359	
4	20.36	26.3	1435	14.6	2357	67.0	96.0	432	39.6	1436	13.45	9.60	11.8	621	7.3	2158	1017.74	1020.5	2259	1014.0	234	
5	16.35	23.6	1444	10.7	416	69.0	95.0	430	35.6	1421	10.21	7.70	9.5	1058	6.3	1421	1017.70	1020.5	46	1015.2	1356	
6	17.01	23.3	1415	10.1	428	64.5	96.3	431	33.3	1434	9.55	7.37	8.8	1315	5.7	1429	1017.91	1020.6	630	1013.1	2355	
7	17.17	23.0	1447	12.8	211	67.3	93.8	801	36.0	1631	10.56	8.05	11.6	825	5.6	1634	1009.01	1013.5	36	1007.0	1612	
8	16.52	20.6	1351	13.0	503	64.0	90.3	521	41.9	1708	9.42	7.39	9.4	651	5.6	2242	1012.18	1019.7	2359	1007.5	318	
9	16.29	22.6	1521	9.4	424	53.4	85.5	502	27.2	1334	5.77	5.70	7.3	2359	4.2	1334	1022.51	1023.9	1103	1019.5	2	
10	18.57	26.2	1444	9.9	412	52.7	94.0	419	19.0	1459	6.93	6.23	8.0	647	3.9	1459	1019.02	1023.4	20	1014.3	2332	
11	18.11	24.2	1340	10.7	428	62.3	93.0	435	34.0	1244	10.13	7.68	9.7	1115	6.0	1244	1016.78	1018.6	2231	1014.1	205	
12	16.98	21.3	1310	14.1	229	82.9	95.5	1947	63.3	1442	13.95	9.85	11.2	1802	8.6	14	1016.67	1018.3	5	1015.6	1511	
13	16.77	19.9	1341	14.9	50	89.8	95.1	635	74.7	1432	15.06	10.59	11.9	1317	9.8	422	1014.97	1016.4	2	1013.6	1706	
14	17.53	21.9	1510	15.4	424	83.4	95.6	2135	60.4	1513	14.58	10.26	12.0	1903	9.4	1528	1017.06	1018.3	2056	1015.2	341	
15	17.55	21.5	1518	13.6	2326	78.2	97.2	448	55.5	1538	13.42	9.56	11.5	626	6.8	2350	1018.11	1019.5	2358	1016.7	339	
16	18.27	25.3	1514	12.1	311	74.2	96.2	2356	50.2	1443	13.38	9.57	11.7	1354	6.8	33	1015.00	1019.5	35	1009.4	2352	
17	18.12	23.7	1128	13.0	228	70.7	98.1	401	43.3	1622	12.13	8.86	11.9	853	6.8	1909	1011.69	1016.1	2357	1009.3	4	
18	16.51	23.4	1502	9.9	418	60.6	92.0	421	29.3	1517	7.92	6.64	7.9	734	5.0	1049	1016.03	1018.0	817	1012.2	2358	
19	17.92	24.1	1437	10.7	2350	54.6	92.3	554	21.9	1712	7.51	6.62	9.2	640	3.8	1712	1010.42	1012.4	0	1008.9	1151	
20	16.76	23.9	1514	9.9	136	81.0	93.8	818	63.4	2201	13.43	9.82	12.8	1715	5.8	0	1009.65	1011.7	0	1007.9	1612	
21	18.34	26.0	1425	10.9	242	66.8	93.4	243	33.7	1328	11.36	8.35	9.7	955	6.8	1328	1012.21	1014.1	2359	1010.9	1421	
22	17.31	22.9	1120	11.9	2359	66.0	88.5	546	38.4	1656	10.52	7.90	9.5	1232	6.1	1914	1014.94	1018.5	2359	1013.6	1109	
23	15.65	21.4	1208	8.6	336	64.8	95.3	508	38.1	1533	8.37	6.81	8.4	855	5.6	1536	1017.18	1018.9	718	1014.8	2353	
24	13.04	15.0	810	11.2	2355	90.4	97.4	1503	73.4	0	11.47	8.44	9.6	1041	7.5	156	1009.27	1015.0	1	1004.1	1917	
25	14.71	21.2	1650	9.8	440	68.9	93.6	0	32.6	1651	8.40	6.86	8.3	1056	5.0	1633	1013.31	1016.8	2242	1006.2	0	
26	13.23	17.8	1741	10.0	417	87.4	95.5	908	75.7	534	11.19	8.39	10.9	1709	6.5	513	1004.43	1015.7	16	996.3	1847	
27	15.82	18.8	1504	13.3	2325	75.3	92.6	439	53.8	1347	11.25	8.40	10.7	1042	7.0	1715	1000.67	1004.2	2330	996.8	202	
28	15.04	19.4	1345	10.5	2359	64.7	86.0	526	41.1	1240	8.07	6.75	8.2	1	5.5	1411	1006.33	1009.3	2328	1003.9	122	
29	12.92	18.0	1440	8.0	351	75.4	93.0	352	47.9	1341	8.42	6.87	8.6	1703	5.8	1341	1011.81	1016.2	2359	1008.8	108	
30	13.09	19.5	1538	6.7	2359	66.1	96.7	317	33.6	1812	6.05	5.81	6.9	1052	4.4	1815	1018.64	1021.1	2351	1016.1	36	
31	13.82	22.1	1336	3.9	444	64.2	97.4	503	31.1	1214	6.03	5.80	7.8	814	4.6	1004	1018.08	1021.1	27	1015.0	1753	
Total																						
Mean	16.85	22.71		11.13		69.7	93.79		43.10		10.56	8.05	10.01		6.24		1014.25	1017.66		1010.90		
Max	25.40	34.05		15.43		90.4	98.10		75.70		15.06	10.59	12.81		9.76		1022.51	1026.44		1019.51		
Min	12.92	15.03		3.95		52.7	85.50		18.97		5.77	5.70	6.92		3.80		1000.67	1004.21		996.28		

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

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

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

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

## Appendix 1.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

**Month:** Calendar month.

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

Summer, June to August

Autumn, September to November

Winter, December to February.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## Appendix 2.

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

**VV** : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

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

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

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

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

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

**Cl :** Type of low cloud

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

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

**Cm :** Type of medium cloud.

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