

# 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

August 2009

Temperature (°C / °F)			Anomaly	Rank in past 128 years			
Mean maximum	22.7	72.9	+0.5	30 <sup>th</sup> highest			
Mean minimum	12.6	54.7	+0.6	16 <sup>th</sup> highest			
Daily mean	17.6	63.7	+0.5	23 <sup>rd</sup> highest			
Highest maximum	28.0	82.4	on 19 <sup>th</sup>	Lowest maximum	18.4	65.1	on 30 <sup>th</sup>
Highest minimum	15.9	60.6	on 31 <sup>st</sup>	Lowest minimum	7.3	45.1	on 30 <sup>th</sup>
Mean grass minimum	9.4	48.9	0.0	Lowest grass minimum	2.8	37.0	on 30 <sup>th</sup>
Mean earth @30 cm	18.4	65.1	0.0	Earth @100 cm	17.0	62.6	
Frost duration (hrs)	0.0			Rain duration (hrs)	21.2		
Rainfall total (mm / in)	35.0	1.38	68 %	34 <sup>th</sup> lowest			
Highest daily fall	10.8	0.43	on 6 <sup>th</sup>				
Number of: Dry days (<0.2mm)	22	Wet days (>0.9mm)	8	days ≥5mm	2		
Sunshine total (hrs) 176.6	Daily mean	5.70	90 %	Sunniest day	13.4	on 19 <sup>th</sup>	
N° 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 1
Air pressure MSL : Mean @09 GMT (mbar/in)	1016.3	-0.8	30.01				
Absolute highest	1024.0		30.24	on 22 <sup>nd</sup>			
Absolute lowest	1003.7		29.64	on 31 <sup>st</sup>			

Anomaly = departure from 1971 to 2000 average (degrees C, percent and mbar).

Notes:

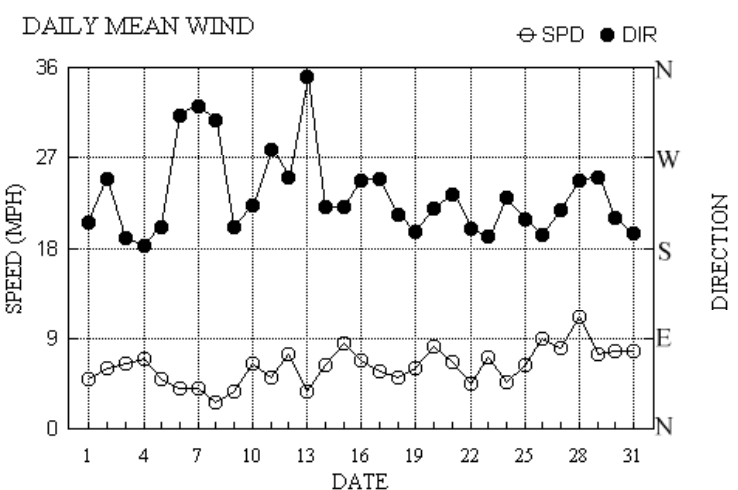
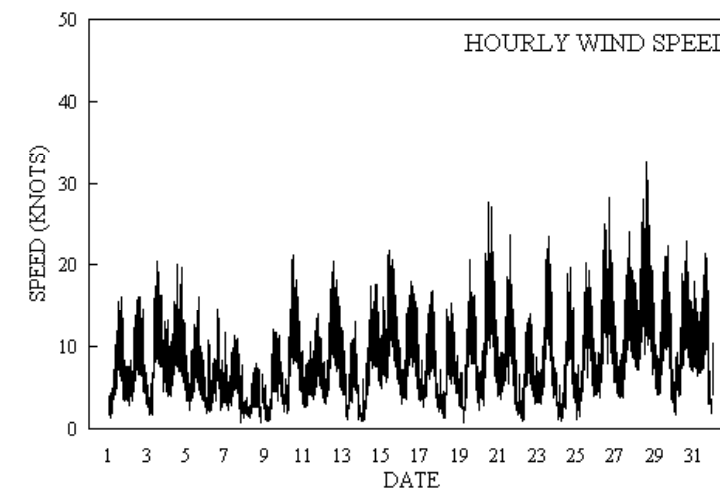
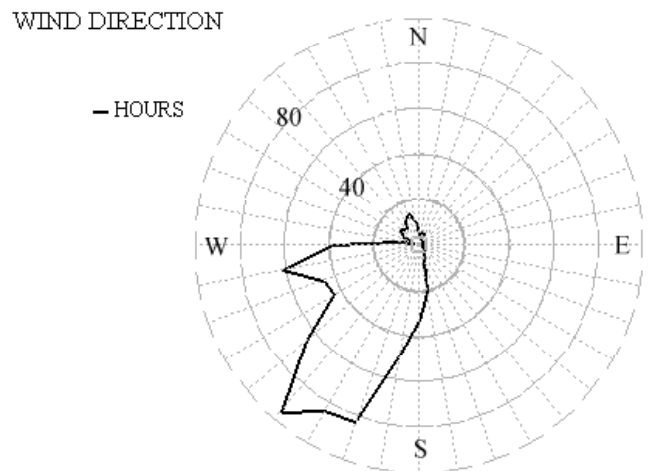
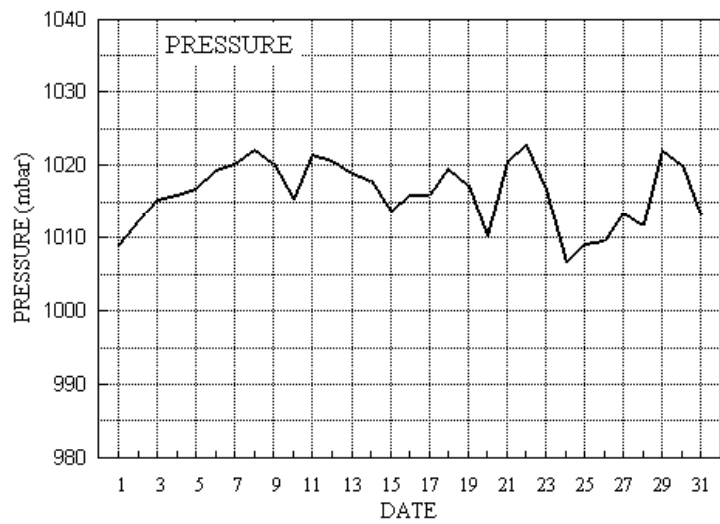
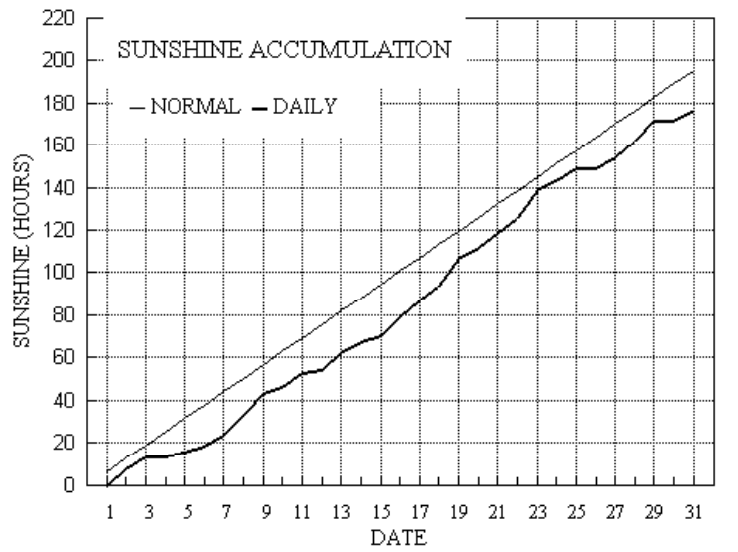
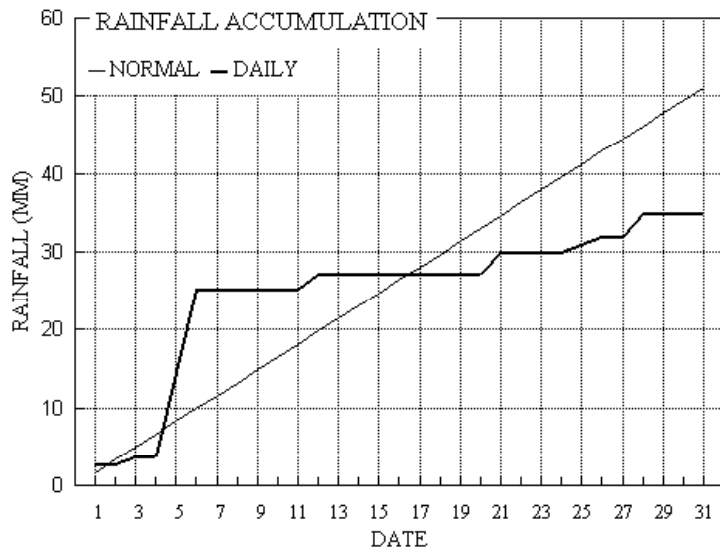
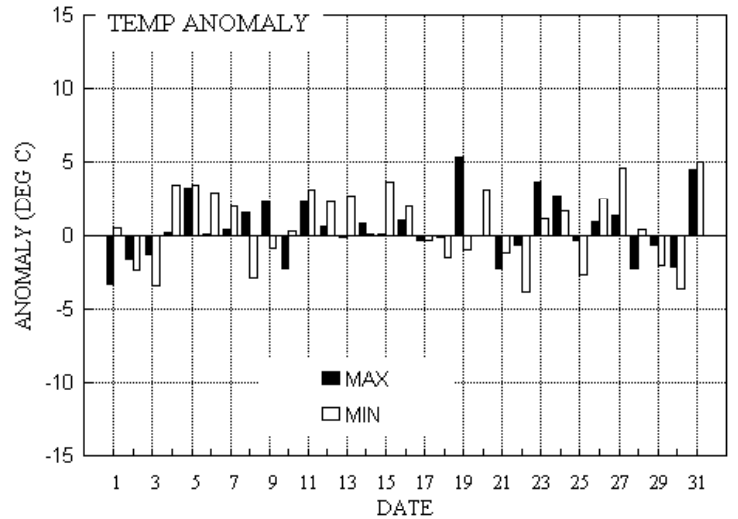
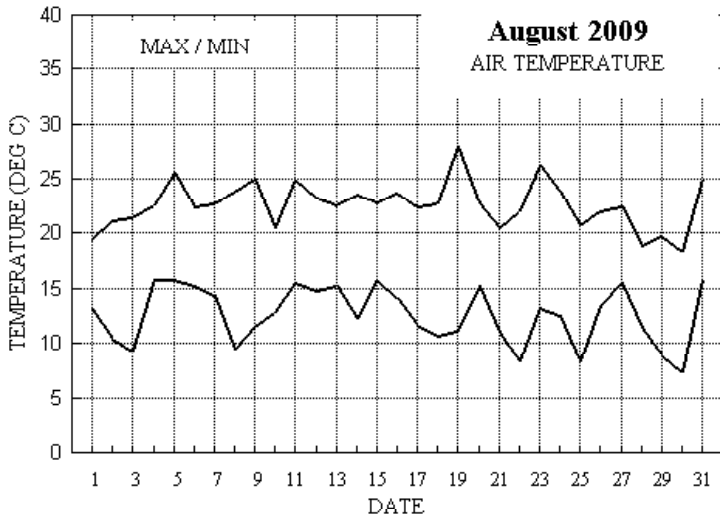
### Warm and Dry with Below Normal Sunshine.

**Temperature :** This has been a relatively warm August, with the highest mean since 2004, although 2006 was only 0.1° cooler. In terms of the mean max, it is warmest since 2005, and 11 out of the past 20 years have been warmer in this respect. The mean min, however, was exceeded last year by a whole degree, although, as with the mean max, 11 out of the past 20 years have had a higher mean min. There were no hot spells, and only the odd hot day, with the highest max very close to the long-term median. The lowest max was 1.5° above the median, and the lowest min was 1.0° above its median, while the highest min was 0.3° below the median. Grass minimum temperatures were near normal, as was the mean earth temp at 30 cm depth, although at 1 m depth the mean is below normal. **Rainfall :** This month's total is in the dry category, and is 17 mm below the long-term median. Indeed, much of the month was dry, with 22 dry days, 2 more than average, and 2 dry spells, one of 5 days ending on the 11<sup>th</sup> and one of 8 days ending on the 20<sup>th</sup>. Much of the rain was showery in nature, as befits a summer month, and a rainfall rate of 55 mm/hr was recorded on the 1<sup>st</sup>, and 49 and 46 mm/hr occurred on the 6<sup>th</sup> and 21<sup>st</sup> resp. Thunder was heard on the 6<sup>th</sup> only, and no hail was recorded. The duration of measurable rain was 7.2 hours below average. **Sunshine:** Was a little below average yet sunnier than last August, not unexpected considering that in 2008 we had the dullest August on record. Overall there were 8 days with <3 hours, 15 with =>6 hours, 6 with =>9 hours and 2 with =>12 hours. **Wind :** The mean wind speed this month is 6.2 mph, 0.3 mph above average. The windiest day was the 28<sup>th</sup>, mean speed 11.1 mph, and the month's highest gust of 38 mph was also on that day. The 8<sup>th</sup> was the least windy day, mean 2.6 mph, and there were 558 minutes (9.30 hours) with a mean speed of 0.5 mph or less. Daily mean direction/number of days : N,1 NE,0 E,0 SE,0 S,9 SW,12 W,6 NW,3. **Humidity :** The overall mean relative humidity was 73.5 %. The lowest value recorded was 22 % on the 31<sup>st</sup>, which is also the lowest humidity since May 2007. The mean water vapour content per kg of air was 9.1 g at 0900 GMT and 8.5 g at 1500 GMT. **Commentary : From the 1<sup>st</sup> to the 6<sup>th</sup> :** Temperatures were slightly below normal until the 3<sup>rd</sup> then slightly above. Although the 2<sup>nd</sup> and 4<sup>th</sup> were dry days, the 5<sup>th</sup> and 6<sup>th</sup> together produced a total of 21.4 mm, the highest 2 day total since early February. Sunshine was poor, with 4 days having <20 % of the max, and the best on the 2<sup>nd</sup> having only 48 %. Winds were light or moderate SW'ly backing S'ly on the 3<sup>rd</sup>, veering NW'ly on the 6<sup>th</sup>. **From the 7<sup>th</sup> to the 20<sup>th</sup> :** Temperatures were generally close to normal, with the exception of the max on the 19<sup>th</sup>, an isolated hot day with a anomaly of +5.3°. Apart from a fall of 2.0 mm on the 12<sup>th</sup>, this period was dry. Sunshine was mostly close to normal, with again the exception of the 19<sup>th</sup> which had 93 % of the max. Winds were light or moderate, NW'ly backing SW'ly on 9<sup>th</sup>, veering W'ly on 11<sup>th</sup>, becoming briefly N'ly on the 13<sup>th</sup> before backing SW'ly on 14<sup>th</sup> and increasing fresh on the 20<sup>th</sup>. **From the 21<sup>st</sup> to the 31<sup>st</sup> :** Temperatures were rather more variable with anomalies for max between -2.2° on the 21<sup>st</sup> and 28<sup>th</sup>, and +4.5° on the 31<sup>st</sup>, and anomalies for min between -3.8° on the 22<sup>nd</sup> and +5.0° on the 31<sup>st</sup>. 7 days were dry, and amounts on the others were not great. Sunshine was rather variable too, with 89 % of the max on the 23<sup>rd</sup>, >60 % on just 2 days and <40 % on 6 days. Winds were generally SW'ly and mostly moderate, but fresh on the 26<sup>th</sup> and 28<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 31 <sup>st</sup>			
-0.1°	+0.3°	152 %	75 %	+1.0°	+1.4°	12 %	103 %	+0.4°	+0.2°	42 %	94 %

# Wokingham Climatological Graphs for August 2009



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: August 2009

Date	Max C	Min C	Rain mm	Grass Min	30cm C	100cm C	Sun hrs	Frost hrs	pp09 mbar	Af Gf	Sf SI	Th Ha	Ic Fg	Vec mean ddd ff sp	Max gust ddd gg HHhh	High hr ddd ff HH	Rain hrs	
1	19.5	13.2	2.8	11.3	18.1	16.6	0.1	0.0	1009.1	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	206	3.4 4.4	264 16 1631	192 8 13	0.9
2	21.2	10.4	0.0	7.0	17.7	16.6	7.4	0.0	1012.5	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	249	5.0 5.2	266 16 1433	265 7 10	0.0
3	21.5	9.3	0.9	5.3	17.7	16.6	6.2	0.0	1015.4	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	190	5.6 5.7	200 21 1255	198 9 11	1.6
4	22.6	15.8	0.1	14.8	17.9	16.6	0.0	0.0	1015.9	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	183	5.9 6.1	196 20 1300	189 8 13	0.2
5	25.6	15.8	10.6	12.8	18.0	16.6	2.2	0.0	1016.9	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	201	3.9 4.3	214 16 1416	214 7 14	2.4
6	22.5	15.3	10.8	13.9	18.7	16.6	2.7	0.0	1019.4	0 0 0 0	0 0 0 0	1 0 0 0	0 0 0 0	313	2.7 3.5	303 15 1409	302 7 15	7.7
7	22.8	14.4	0.0	13.6	18.8	16.7	5.1	0.0	1020.3	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	321	3.1 3.5	261 12 0008	330 6 10	0.0
8	23.9	9.5	0.0	5.3	18.8	16.8	9.5	0.0	1022.2	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	307	1.4 2.3	25 8 1416	330 3 15	0.0
9	25.0	11.6	0.0	8.2	19.0	16.9	10.1	0.0	1020.2	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	201	2.8 3.2	211 12 1129	185 6 11	0.0
10	20.5	12.8	tr	9.0	19.3	17.0	3.2	0.0	1015.3	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	223	5.4 5.7	226 21 1118	223 10 11	0.0
11	25.0	15.6	0.0	13.0	19.0	17.0	6.6	0.0	1021.4	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	279	3.7 4.4	245 14 1734	257 7 17	0.0
12	23.3	14.8	2.0	12.5	19.2	17.1	1.3	0.0	1020.7	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	250	6.3 6.4	274 21 1233	249 9 11	3.0
13	22.6	15.2	0.0	14.6	19.2	17.2	7.8	0.0	1018.9	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	351	2.4 3.2	340 13 1522	346 6 15	0.0
14	23.6	12.3	tr	8.5	19.2	17.2	5.2	0.0	1017.9	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	221	5.1 5.5	247 18 1744	218 9 10	0.0
15	22.9	15.9	0.0	14.1	19.3	17.3	2.9	0.0	1013.7	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	221	7.3 7.3	247 22 1045	220 11 11	0.0
16	23.8	14.2	0.0	9.7	19.1	17.3	9.0	0.0	1015.9	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	248	5.5 5.9	267 18 1148	244 9 11	0.0
17	22.4	11.8	0.0	7.6	19.1	17.3	8.2	0.0	1016.0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	249	4.7 5.0	273 17 1529	264 8 13	0.0
18	22.7	10.7	0.0	6.8	18.7	17.3	6.1	0.0	1019.5	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	214	4.3 4.4	246 15 1355	207 7 09	0.0
19	28.0	11.2	tr	7.6	18.5	17.3	13.4	0.0	1017.3	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	196	5.0 5.2	181 21 1354	199 9 13	0.0
20	22.7	15.3	tr	11.1	18.8	17.3	4.9	0.0	1010.3	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	220	6.6 7.2	233 28 1144	229 12 15	0.2
21	20.5	11.0	2.7	5.3	18.3	17.3	6.7	0.0	1020.5	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	234	5.3 5.7	245 24 1351	266 9 14	0.7
22	22.0	8.4	0.0	4.0	17.9	17.3	7.6	0.0	1022.8	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	200	3.7 3.9	206 14 1454	217 7 14	0.0
23	26.3	13.3	0.0	8.6	17.9	17.2	12.6	0.0	1016.7	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	192	6.0 6.2	193 24 1336	198 11 13	0.0
24	23.9	12.6	tr	8.7	18.3	17.1	4.5	0.0	1006.7	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	230	3.6 4.0	240 20 1605	225 9 15	0.0
25	20.8	8.3	1.0	3.3	18.1	17.1	5.6	0.0	1009.2	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	209	5.3 5.5	240 21 1144	214 10 15	0.8
26	22.1	13.5	1.0	10.1	17.8	17.1	0.5	0.0	1009.7	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	193	7.5 7.8	203 28 1519	199 12 15	2.1
27	22.5	15.6	0.0	13.6	17.8	17.0	5.2	0.0	1013.5	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	218	6.9 7.0	206 24 1603	217 11 17	0.0
28	19.0	11.4	3.0	9.6	18.1	17.0	7.4	0.0	1011.8	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	247	9.4 9.6	250 33 1332	260 14 16	1.3
29	19.8	8.9	0.0	2.9	17.3	17.0	9.5	0.0	1022.2	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	251	6.3 6.4	260 23 1640	261 10 16	0.0
30	18.4	7.3	0.1	2.8	16.9	16.9	0.3	0.0	1020.0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	210	6.7 6.8	208 23 1415	212 11 14	0.3
31	25.0	15.9	0.0	15.5	17.1	16.9	4.8	0.0	1013.0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	195	6.4 6.7	184 22 1454	195 11 15	0.0
Total			35.0				176.6	0.0										21.2
Mean	22.7	12.6		9.4	18.4	17.0	5.70	0.0	1016.3					223	4.3 5.4			
Anom	+0.5	+0.6	68%		-0.0	-0.6	90%											-0.8
Daily mean		17.6																
Anom		+0.5																

Number of days with:

Air frost = 0      Ground frost = 0      Nil sun = 1  
 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. SI = 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 1971-2000 climatological average.  
 All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for August 2009

Date	VV	N	dd	ff	gg	TT	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	Nh	Ch	Nh	Ch	Date	Remarks
1	57	8	18	04	10	16.9	13.2	79	9.3	1009.1	7	012	62	6	2	1	5	6	7	/	81640	87359	88466	1	2Sc56 2Ac58	
2	80	4	27	06	12	17.0	10.2	64	7.6	1012.5	2	010	03	0	0	1	2	5	0	1	81825	83075	2	2Ci80 COTRA Cu hum/med		
3	82	3	19	08	16	18.4	10.1	58	7.7	1015.4	4	000	03	1	1	3	8	5	3	0	83825		3	1Sc35 1Ac60 Cu med		
4	57	8	18	06	16	17.8	16.2	90	11.4	1015.9	2	011	60	6	5	8	5	3	/	/	87708	88615	4			
5	80	7	19	04	10	22.4	14.7	62	10.4	1016.9	0	002	02	2	2	7	5	5	/	/	81625	87656	5	1Sc50 Sc cas		
6	75	7	31	03	05	17.2	14.5	84	10.3	1019.4	2	002	01	2	2	1	2	3	7	1	81708	83361	83075	6	1Cu50 COTRA Cu med	
7	65	8	32	04	09	15.7	13.8	89	9.7	1020.3	2	009	20	6	5	8	8	3	/	/	82708	86812	88625	7	Cu hum vv25k NW	
8	80	4	30	01	06	18.3	12.2	68	8.5	1022.2	0	001	03	0	0	4	8	7	0	1	81850	84650	8	2Ci78 Cu hum Sc cas		
9	65	3	18	03	06	18.8	12.4	66	8.9	1020.2	8	004	01	1	1	1	8	7	0	1	81850	83080	9	1Sc56 COTRA Cu med L/a cont		
10	86	6	22	08	15	19.7	11.3	58	8.3	1015.3	8	011	03	1	1	1	8	5	5	/	81825	83363	85365	10	1Sc30 1Ac60 Cu hum Sc len	
11	63	8	34	04	09	17.7	13.3	75	9.3	1021.4	3	017	01	2	2	8	5	4	/	/	82612	87615	88620	11		
12	73	7	26	08	17	19.4	15.5	78	11.0	1020.7	8	002	02	2	2	7	5	4	3	/	87612			12	/Ac64	
13	65	6	36	02	07	17.8	13.5	76	9.6	1018.9	2	007	03	2	2	6	8	4	0	0	83815	84635		13	Cu med	
14	84	7	22	06	11	19.6	11.5	59	8.3	1017.9	7	001	01	2	2	5	8	5	0	1	81825	85635	85080	14	COTRA Cu hum	
15	75	8	21	11	21	17.7	14.4	81	10.1	1013.7	5	000	20	5	2	8	5	4	/	/	86617	88622		15		
16	88	7	26	08	15	18.6	12.0	65	8.6	1015.9	0	002	01	2	2	3	8	5	0	1	81824	83628	87078	16	COTRA Cu hum	
17	75	5	28	08	12	18.3	12.6	69	9.0	1016.0	2	004	03	2	2	2	2	5	3	1	82822			17	2Ac65 2Ci75 COTRA Cu hum/med Parhelion	
18	80	7	19	07	15	19.9	13.3	66	9.1	1019.5	1	003	03	2	2	2	2	5	3	1	82825	86080		18	1Ac65 COTRA Cu med	
19	80	7	18	04	08	20.4	12.7	61	9.1	1017.3	7	006	02	2	2	0	0	9	0	1	83075	86078		19	COTRA	
20	59	8	20	09	21	19.9	16.3	80	11.5	1010.3	7	002	50	5	2	7	5	4	/	8	82710	84712	87630	20	/Cs75	
21	75	4	22	08	14	17.3	10.8	66	7.9	1020.5	2	006	03	1	1	1	2	5	3	0	81825	84365		21	Cu med	
22	84	4	22	05	12	18.3	10.7	61	8.0	1022.8	2	001	03	1	1	1	8	5	3	1	81825			22	1Sc45 2Ac57 2Ci80 COTRA Cu hum/med	
23	80	6	18	04	12	21.7	13.1	58	9.2	1016.7	7	011	03	2	2	2	8	5	3	1	81828	86081		23	2Sc50 1Ac65 COTRA Cu hum	
24	75	8	25	04	08	18.3	14.1	76	10.1	1006.7	5	005	03	2	2	2	0	9	8	7	82359	86465	88270	24	Ac cas	
25	75	7	21	06	12	16.0	10.7	71	7.8	1009.2	1	004	15	2	2	6	8	5	3	2	81820	85656		25	2Sc45 /Ac58 /Ci72 Cu med jpE vv60k exE	
26	80	7	18	09	17	18.7	13.5	72	9.7	1009.7	7	006	01	6	2	3	8	4	7	/	81818	83650		26	3Ac58 /Ac62 /Ac65 Cu fra	
27	78	7	26	04	09	18.0	13.6	76	9.8	1013.5	2	007	03	1	1	7	8	4	/	/	84818	85635		27	Cu med	
28	80	5	23	13	25	16.4	8.2	58	6.7	1011.8	8	002	03	1	1	5	8	6	0	0	84830			28	2Sc45 Absent 28&29 vv&cld est	
29	82	1	26	07	14	15.4	8.6	64	6.9	1022.2	1	011	03	0	0	1	1	5	0	1	81825			29	1Ci75	
30	82	7	24	07	12	16.3	10.7	69	8.0	1020.0	8	003	03	1	1	3	8	5	7	/	81822	83656	87358	30	1Sc45 Cu hum	
31	60	8	19	07	14	18.1	16.3	89	11.4	1013.0	6	005	05	5	2	8	6	3	/	/	87706	88708		31	vv25k ex NW	

Mean vis = 28.5 km

Mean cloud = 6.2 77%

Mean wind speed = 6.1 kn

Mean gust = 13 kn

Mean TT = 18.3 °C

Mean TdTd = 12.7 °C

Mean RH = 70.6 %

Mean r = 9.1 g/kg

Mean PPP = 1016.3 mbar

See page 10 below for decodes

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 August 2009

Date	VV	N	dd	ff	gg	TT	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NChs	hshs	NChs	Date	Remarks
1	30	8	22	06	13	18.3	16.0	87	11.3	1006.8	6	008	58	6	5	8	5	3	/	/	83708	87612	88620	1		
2	83	6	27	07	16	20.5	5.3	37	5.5	1013.2	0	000	02	2	2	4	7	0	1	81850	85080		2	2Sc56 1Ci75 COTRA Cu hum/med		
3	84	6	19	09	19	21.5	9.5	46	7.3	1015.1	7	002	02	2	2	5	8	6	0	82838	84645		3	1Sc56 3Ci80 COTRA Cu hum		
4	72	8	19	07	15	20.4	16.1	76	11.3	1016.1	2	002	02	2	2	8	8	4	/	/	81815	87618	88625	4	Cu fra/hum	
5	82	7	21	07	16	23.9	16.1	61	11.3	1017.0	0	003	15	8	2	7	8	6	/	/	83830	87656		5	2Sc50 Cu med jpS	
6	65	8	29	06	15	18.4	14.8	80	10.4	1018.8	3	002	60	6	2	1	8	5	7	/	81820	87358	88465	6	1Sc56 Cu fra/hum	
7	82	3	33	05	11	21.4	9.6	47	7.3	1020.1	7	003	02	1	1	3	8	6	0	0	82838			7	2Sc45 Cu hum/med	
8	80	6	19	01	08	23.2	9.4	41	7.3	1020.2	7	009	02	2	2	2	2	6	6	1	82848	86078		8	1Ac57 COTRA Cu med	
9	81	3	17	02	10	24.6	9.4	38	7.4	1018.1	7	017	02	0	0	3	2	7	6	0	83850			9	1Ac58 Cu med	
10	70	8	22	08	18	18.5	14.1	76	10.0	1014.6	4	000	50	5	2	8	5	4	/	/	82715	87618	88625	10		
11	81	2	25	04	12	23.8	12.9	50	9.1	1021.3	8	012	02	1	1	2	1	6	0	0	82835			11	Cu hum	
12	82	7	25	08	16	22.5	15.5	64	10.9	1019.0	7	008	01	2	2	5	8	5	3	/	84820	87357		12	2Sc30	
13	81	4	36	05	11	22.4	11.5	50	8.1	1018.5	8	004	02	1	1	2	8	6	0	1	82840	83078		13	1Sc50 COTRA Cu med	
14	85	7	24	08	16	22.9	12.6	52	9.2	1016.0	8	009	02	2	2	7	8	6	/	1	84838	85648		14	/Ci75 Cu hum	
15	84	7	22	09	20	21.5	14.7	65	10.5	1013.2	7	002	02	2	2	7	8	5	/	1	82825	87632		15	/Ci75 Cu hum	
16	84	2	27	08	16	23.2	11.2	49	8.6	1015.1	6	004	02	1	1	1	1	6	0	1	81840			16	2Ci75 COTRA Cu hum	
17	78	5	26	07	16	21.4	10.5	50	7.7	1016.5	0	000	02	2	2	5	8	6	0	1	82840	84650		17	1Ci80 COTRA Cu med	
18	83	7	21	06	13	21.8	11.1	51	8.2	1018.4	8	007	02	2	2	7	8	6	/	1	81840	87645		18	/Ci80 COTRA Cu hum	
19	80	2	21	08	16	27.8	11.8	37	8.6	1014.6	6	009	02	0	0	0	0	9	0	1	82080			19	COTRA	
20	81	6	23	12	24	21.9	9.4	45	7.4	1013.5	1	015	03	2	2	3	8	6	0	1	83845	84075		20	1Sc56 Cu hum/med	
21	65	6	27	08	20	17.6	9.5	59	7.2	1020.5	5	005	15	8	2	4	9	6	6	3	81930	82835	84070	21	2Sc50 2Ac60 jpW vv50k ex p	
22	80	7	21	08	14	20.1	11.0	56	8.2	1022.6	5	004	15	2	2	7	8	6	/	/	81835	83650	87656	22	Cu med jpW	
23	84	6	21	11	21	25.7	11.8	42	8.8	1012.7	6	018	02	2	2	1	1	6	4	1	81848	86081		23	1Ac65 COTRA Cu hum	
24	78	7	23	09	16	22.3	13.0	56	9.4	1004.5	6	005	02	2	2	7	8	6	/	1	81832	85835		24	3Sc50 COTRA Cu med	
25	82	6	21	11	19	20.1	10.8	55	7.9	1009.2	6	007	15	8	2	4	2	6	6	1	84835	83358		25	1Ci78 Cu con jpN vv60k exN	
26	62	8	18	08	17	18.5	15.3	81	10.8	1008.4	8	006	58	6	5	8	5	4	/	/	82618	86625	88630	26		
27	82	3	21	11	20	20.8	11.5	55	8.4	1012.1	7	005	01	1	1	3	4	6	0	0	82835			27	2Sc40 Absent 27-29, vv&cld est	
28	75	5	28	12	24	16.0	9.3	65	7.3	1013.0	3	007	80	8	1	4	9	5	6	0	81928	83835		28	2Ac60	
29	84	3	26	10	21	19.3	5.4	40	5.4	1020.9	7	010	02	1	1	3	4	7	0	1	82850			29	2Sc56 1Ci75	
30	70	8	21	10	23	16.5	12.7	78	9.1	1017.9	6	009	20	5	2	8	5	4	/	/	84712	88615		30	Absent vv.wx&cld est	
31	86	1	19	12	21	25.0	3.2	24	4.9	1008.2	7	031	02	1	1	1	8	6	0	1	81845			31	1Sc56 1Ci78 COTRA Cu hum Sc len Ci edge WNW	

Mean vis = 34.6 km  
 Mean cloud = 5.5 69%  
 Mean wind speed = 7.8 kn  
 Mean gust = 17 kn  
 Mean TT = 21.3 °C  
 Mean TdDd = 11.5 °C  
 Mean RH = 55.3 %  
 Mean r = 8.5 g/kg  
 Mean PPP = 1015.4 mbar

See page 10 below for decodes  
 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  
 TdDd = 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.



August 2009	T mn	Tx	Time	Tn	Time	RHmn	RH x	Time	RH n	Time	Tdmn	r mn	r x	Time	r n	Time	p mn	p x	Time	p n	Time	R tot
1	15.92	19.5	1217	13.0	122	85.0	92.6	2357	68.4	1058	13.36	9.57	12.0	1546	8.2	441	1009.05	1014.4	0	1006.2	1623	3.2
2	15.64	21.4	1511	10.2	438	66.9	94.1	251	33.6	1513	8.77	7.06	8.8	5	5.1	1438	1012.77	1015.3	2150	1009.4	1	0.1
3	16.57	21.8	1403	9.2	359	67.8	94.7	611	42.6	1407	10.10	7.67	9.6	2359	6.6	1407	1015.35	1016.2	2103	1014.6	1617	0.3
4	18.60	20.8	1641	15.6	13	83.6	91.6	744	73.6	1710	15.74	11.06	12.1	943	9.5	1	1015.84	1016.9	2239	1014.4	341	0.7
5	20.84	25.6	1221	15.7	445	72.7	92.3	504	48.6	1223	15.57	10.93	13.6	1555	9.7	2359	1017.27	1019.3	2333	1016.2	346	1.1
6	17.29	22.5	1308	14.6	2359	83.1	93.8	2340	57.7	1318	14.27	10.02	11.7	932	9.2	308	1019.23	1019.9	2142	1018.4	1310	17.8
7	17.22	22.9	1519	12.4	2327	74.8	93.9	215	40.0	1610	12.18	8.77	10.4	1215	6.7	1646	1020.21	1022.3	2327	1018.5	236	0.4
8	16.96	23.7	1452	9.5	422	68.4	94.6	542	38.0	1712	10.44	7.79	10.0	1353	6.6	1648	1021.17	1022.3	836	1019.5	1739	0.0
9	18.24	25.1	1512	11.5	433	62.4	93.3	605	33.5	1441	10.07	7.62	9.7	856	6.4	1436	1019.17	1021.0	7	1017.0	1737	0.0
10	17.22	20.6	930	12.5	502	76.7	89.8	541	50.5	931	12.97	9.31	11.2	1841	7.3	25	1015.70	1018.3	0	1013.9	1705	0.0
11	19.35	25.0	1659	15.5	419	69.7	88.9	400	42.5	1726	13.30	9.40	10.9	1149	8.0	1601	1020.38	1022.5	1147	1016.9	8	0.0
12	18.92	23.5	1613	14.6	413	77.7	90.6	417	59.5	1614	14.84	10.40	11.7	1456	9.2	322	1019.62	1021.3	2	1017.7	1748	0.0
13	18.08	22.9	1541	12.6	2328	72.8	94.2	543	42.2	1640	12.62	9.06	11.3	103	7.0	1640	1018.63	1019.5	2126	1017.8	456	1.7
14	18.14	23.6	1342	12.3	8	72.1	94.7	544	48.4	1051	12.61	9.02	10.3	1313	8.0	921	1016.95	1019.0	0	1015.3	1703	0.0
15	18.57	23.3	1634	15.8	554	78.9	93.8	731	60.7	1607	14.73	10.38	11.4	1737	9.5	135	1014.00	1015.6	2359	1012.7	1638	0.0
16	18.35	24.1	1258	14.0	408	71.8	96.7	405	44.5	1258	12.69	9.09	10.8	105	8.0	1456	1015.57	1016.6	2105	1014.6	1730	0.0
17	17.21	22.5	1429	11.5	454	71.3	95.8	501	44.1	1405	11.55	8.41	9.9	803	7.2	1409	1016.49	1019.3	2359	1014.9	441	0.0
18	16.85	23.0	1436	10.6	502	73.0	96.8	525	45.6	1435	11.52	8.38	10.1	1307	7.5	227	1018.86	1019.9	1004	1017.4	1735	0.0
19	19.77	28.1	1405	11.3	436	67.6	97.5	542	31.8	1423	12.53	9.00	10.9	1113	7.3	1746	1015.95	1018.4	1	1013.7	2358	0.0
20	17.99	22.9	1443	13.1	2359	72.2	95.8	422	40.1	1507	12.39	9.06	13.1	1014	6.6	1902	1013.52	1019.0	2359	1009.9	658	0.1
21	14.60	20.7	1404	9.2	2347	74.5	94.7	247	38.3	1404	9.80	7.47	9.7	1230	5.6	1416	1020.55	1022.8	2359	1018.7	48	2.5
22	15.75	21.7	1646	8.4	104	71.9	97.1	406	46.4	1644	10.17	7.63	9.2	1327	6.5	104	1022.67	1024.0	917	1020.7	2357	0.0
23	20.07	26.5	1355	13.2	434	63.3	89.6	2357	37.6	1355	12.29	8.85	10.0	2145	7.8	250	1014.75	1020.9	0	1009.6	2358	0.0
24	17.01	24.1	1411	10.2	2358	76.3	97.1	535	44.7	1411	12.53	9.09	10.8	1148	7.1	2114	1006.53	1009.8	10	1004.2	1409	0.0
25	14.81	20.8	1112	8.3	315	76.4	97.8	542	41.5	1118	10.29	7.81	10.1	1303	6.2	1118	1009.60	1012.1	2303	1007.4	105	0.4
26	16.89	22.1	1108	13.5	150	83.5	94.4	1826	46.3	1110	13.95	9.95	11.9	1932	7.5	1118	1009.70	1012.1	6	1007.8	1657	1.3
27	17.81	22.5	1315	15.4	611	73.9	91.5	610	49.1	1413	12.82	9.21	10.5	904	7.5	1632	1012.02	1013.7	744	1010.4	2255	0.0
28	14.50	19.0	1436	10.7	2359	70.4	90.1	1200	48.3	1601	8.95	7.12	10.2	1223	6.1	955	1013.24	1018.9	2358	1010.7	36	2.7
29	13.91	19.8	1445	8.9	517	66.5	93.5	435	38.2	1443	7.09	6.22	7.8	908	5.0	1749	1021.04	1022.4	937	1018.6	3	0.0
30	14.43	18.2	1341	7.2	136	82.9	95.8	222	60.4	1006	11.44	8.45	11.1	2356	5.9	136	1018.57	1021.4	17	1015.4	2359	0.1
31	19.03	25.3	1448	14.5	2311	71.3	95.7	5	22.3	1450	12.72	9.36	11.7	810	4.4	1450	1009.99	1015.6	0	1003.7	2251	0.0
Total																						32.4
Mean	17.31	22.69		12.10		73.5	93.96		45.77		12.07	8.81	10.73		7.19		1015.95	1018.41		1013.75		
Max	20.84	28.14		15.77		85.0	97.80		73.60		15.74	11.06	13.57		9.69		1022.67	1024.03		1020.71		
Min	13.91	18.16		7.23		62.4	88.90		22.33		7.09	6.22	7.81		4.44		1006.53	1009.79		1003.69		

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  
 Rtot = 00-24 GMT rainfall total from AWS tipping bucket raingauge, mm  
 Time = hours and minutes in GMT of extreme values

# WOKINGHAM METEOROLOGICAL DATA

Wokingham Climatological Station, Emmbrook, Berkshire.

Lat 51°25'N 00°51'W NGR (SU)798701 Altitude 46m ASL

## Seasonal Means and Totals

SUMMER 2009

Temperature (°C)				Rank in the past <b>128</b> years			
Mean maximum	22.1	(+0.6)	30 <sup>th</sup>	highest			
Mean minimum	11.9	(+0.4)	13 <sup>th</sup>	highest			
Daily mean	17.0	(+0.5)	23 <sup>rd</sup>	highest			
Rainfall total (mm)	125.5	(85 %)	44 <sup>th</sup>	lowest			
Sunshine total (hours)	541.7	(93 %)					
N <sup>o</sup> of:							
Dry days	53	(-6)	Wet days	39	(+6)		
Days with: Air frost	0 (0)		Ground frost	1 (-1)		Snow falling	0 (0)
						Snow lying	0 (0)
Thunder	9 (+2)		Hail ≥5mm	0		Small hail/ice	0
						Fog @09 GMT	0 (0)
						Nil sun	3
Air pressure MSL : Mean @09 GMT (mbar)	1015.6						(-1.5)

Departure from 1971 to 2000 average shown in brackets.

Notes:

**Warm, with both Rainfall and Sunshine Below Normal.**

**Temperature :** In terms of both the mean temperature and the mean maximum it is the warmest summer since 2006. Compared with the long-term the mean temperature is 0.9° above the median, in fact all the summers since 1988 have been warmer than the median. The season's highest max was 31.0° on the 1<sup>st</sup> July, and is 0.7° above the median. This summer's lowest min was 4.0° on the 4<sup>th</sup> June, 0.3° below the median. The lowest max was 13.6° on the 6<sup>th</sup> June, 0.7° below the median, while the highest min was 17.9° on the 1<sup>st</sup> July, 0.9° above the median. The mean grass min was 8.6°, 0.3° below average, and the lowest was -1.5° on the 4<sup>th</sup> June, 2.1° below average. 11 of the past 29 summers have also had at least one ground frost. Mean earth temperatures at both 30 cm and 1 m depth are near normal. August was the warmest month, mean 17.6°, and June the coolest, mean 15.9°. **Rainfall :** This has been a drier than average summer, with a rainfall deficit of 15 %. In recent years, 2006, 2003 and 2000 were drier, and this year's total, while 33 mm below the median, is still 5.8 mm too much to qualify for the dry category. Despite the low rainfall total, the number of dry days is surprising low and is 6 fewer than average. Also, the highest daily fall of 10.9 mm on the 6<sup>th</sup> June is 13 mm less than the median, and ranks 8<sup>th</sup> lowest in 106 years. July was by far the wettest month, with 63.3 mm, while June with 27.2 mm was the driest. There were 4 dry spells, the first of 8 days ending on the 4<sup>th</sup> June, one of 12 days ending on the 1<sup>st</sup> July, one of 5 days ending on the 11<sup>th</sup> August and lastly one of 8 days ending on the 20<sup>th</sup> August. The total duration of measurable rain was 88.8 hours, about 4 hours more than average. Thunder was slightly more frequent than average, and most since 2001. No hail was recorded this summer. Rainfall rates exceeding 50 mm/hr were recorded on the 6<sup>th</sup>, 7<sup>th</sup>, 15<sup>th</sup>, 24<sup>th</sup> and 29<sup>th</sup> of July and on the 1<sup>st</sup> of August, the highest being 85 mm/hr on the 24<sup>th</sup> July at 1235 GMT. **Sunshine:** Despite being below normal, the sunshine total this summer is higher than in either 2008 or 2007. Since 2000, 5 summers have had more sunshine and 4 less than this one. Statistics for the past 10 years, since the current electronic recorder has been in use, show an average of 27.9 days each summer having at least 9 hours of sunshine. This year we had 21, divided between June, July and August in the ratio 11:4:6. The sunniest day was the 2<sup>nd</sup> of June with 15.5 hours, again highest since 2006. Overall there were 28 days with <3 hours, 44 with =>6 hours, 21 with =>9 hours, 9 with =>12 hours and 1 with =>15 hours. June was the sunniest month, daily mean 6.94 hours, and July the dullest, mean 5.06 hours. The only outstandingly sunny period is worth a mention although it was partly in the spring season. Between the 29<sup>th</sup> May and 4<sup>th</sup> June there were 95.0 hours of sunshine, a mean of 13.6 hours per day. **Wind :** The overall mean wind speed of 6.2 mph this summer is close to average. The windiest day was the 28<sup>th</sup> August, mean 11.1 mph, and the season's highest gust of 38 mph was also on that day. The least windy day was the 8<sup>th</sup> August, mean 2.6 mph, and there were 1687 minutes (28.1 hours) with mean speed of 0.5 mph or less. Daily mean direction/number of days: N,4 NE,5 E,4 SE,3 S,16 SW,36 W,19 NW,5. This summer, winds from between S and W were 14.6 % more frequent, while those from between NW and NE were 12.5 % less frequent, than average. **Humidity :** The overall mean relative humidity was 69.7 %. The minimum value recorded was 22 % on the 31<sup>st</sup> August, the lowest humidity in a summer season since 2006. The mean water vapour content per kg of air was 8.3 g at 0900 GMT and 7.6 g at 1500 GMT, both values lowest in the past 11 years.

**June :** Warm and dry with near normal sunshine. Lowest max lowest since 1997. Mean daily temp range 2<sup>nd</sup> highest since 1996. Mean grass min lowest since 1996. Rainfall only 50 % of average.

**July :** Above normal rainfall and dull. Temperature in the warm category. Lowest min highest since 1994 and 3<sup>rd</sup> highest in over 100 years. Fewest dry days since 1988, yet rainfall total lowest for 3 years. Highest daily fall lowest since 1998. Sunshine lowest since 2002. Windiest since 1993.

**August :** Warm and dry with below normal sunshine.

Month	Mean Max	Anom	Mean Min	Anom	Rain mm	Anom %	Sun hrs	Anom %	Wind Mn mph	Max gust	Mean pressure	Anom
June	21.7°	+1.9°	10.1°	0.0°	27.2	50 %	208.1	110 %	5.2	35	1017.9	+0.9
July	21.9°	-0.6°	12.9°	+0.6°	63.3	153 %	157.0	80 %	7.4	33	1012.6	-4.8
August	22.7°	+0.5°	12.6°	+0.6°	35.0	68 %	176.6	90 %	6.2	38	1016.3	-0.8

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.



## 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 1971 to 2000. This will be next updated in 2010. 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 instrument used to detect sunshine amount in July 1999, and the data produced by the new instrument is not strictly comparable with that obtained prior to July 1999, 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 of instrument, due to a combination of faster reaction and higher sensitivity than the old type. Thus the average used in this case is for a theoretical equivalent average for the 1971 to 2000 climatological period for this new instrument, based on comparisons with Met Office published tables of departure from the 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 the 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 "half (max+min)". A true daily 24 hour (00 to 24 GMT) mean temperature is available from the AWS, and is currently published on page 7 of the Wokingham Monthly Weather Report on the Wokingham Weather Web Site, page1. <http://www.woksat.info/wwp1.html>

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

- a): The departure of a mean from the current climatological average.
- b): The departure of a value from the a long-term average for a particular day.

When the word anomaly is used in respect to temperature, any values given are in degrees C. In respect to rainfall, percent. In respect of sunshine, percent. In respect to wind, mph. In respect to 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 mild/cold are used in the winter half year, and warm/cool in the summer half.

The term normal is defined as being 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 for sunshine follow the same rules as for temperature.

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

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

The term wet is used for values lying between 10% and 30% below the highest value in the ranked series.

the term very wet is used for values lying within 10% of the highest value in the ranked series.

The term dry is used for values lying between 10% and 30% of the lowest value in the ranked series.

The term very dry is used for values lying 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 the records of various station in the Wokingham area in the years prior to the establishment of a weather station at Emmbrook in 1976.

In the case of monthly max, min and mean temperature and of rainfall total the 'long-term' goes from the present back to 1882. For extremes of temperature, highest max and lowest min are back to 1904, and for 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 values of the entire series. The central value in the ranked series is known as the median. This value may be different from the 'average' if the population of values is skewed. Also, as the median considers all values in the series, and the average refers to a 30 year climatological period, during periods of climatic change, the median will also be expected to differ from the average.

**Month:** Calendar month.

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

Summer, June to August

Autumn, September to November

Winter, December to February.

The year number given when discussing 'winter' is usually the year in which the majority of the period lies, i.e. January/February

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

**The climatological day :** runs from 09 to 09 GMT. The max temperature and rainfall read at 0900 are attributed to the previous day, as is the duration of measurable rain calculated up to 0900 GMT. The min temperature and grass min read at 0900 are attributed to the day of reading . Pressure is read at 0900 GMT, and the monthly mean pressure is the mean of the 0900 readings. Sunshine data, wind data, rainfall rates and 24 hour data from the AWS use the normal 00 to 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 % cover of snow at the 0900 GMT observation.

**Hail :** A day of hail is recorded if hailstones of 5 mm diameter or more are observed or recorded on the hail pad on 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. Note, various types of other ice meteors such as ice pellets, snow grains, and some types of snow pellets are included in this category.

**Fog:** A day of 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.

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

03 = State of sky on the whole unchanged

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

05 = Haze

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

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

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

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

- 10 = Mist
- 11 = Patches of shallow fog not deeper than 2 metres on land
- 12 = More or less continuous shallow fog not deeper than 2 metres on land
- 13 = Lightning visible, no thunder heard
- 14 = Precipitation within sight, not reaching the ground
- 15 = Precipitation within sight, reaching the ground more than 5 km from the station
- 16 = Precipitation within sight, reaching the ground, near to but not at the station
- 17 = Thunderstorm, but no precipitation at the time of the observation
- 18 = Squalls at or within sight of the station at the time of the observation or during the preceding hour
- 19 = Funnel cloud(s) at or within sight of the station at the time of the observation or during the preceding hour
  
- 20 = Drizzle (not freezing) at the station during the preceding hour but not at the time of the observation
- 21 = Rain (not freezing) at the station during the preceding hour but not at the time of the observation
- 22 = Snow at the station during the preceding hour but not at the time of the observation
- 23 = Rain and snow or ice pellets at the station during the preceding hour but not at the time of the observation
- 24 = Freezing drizzle or freezing rain at the station during the preceding hour but not at the time of the observation
- 25 = Shower(s) of rain at the station during the preceding hour but not at the time of the observation
- 26 = Shower(s) of snow or rain and snow at the station during the preceding hour but not at the time of the observation
- 27 = Shower(s) of hail or rain and hail at the station during the preceding hour but not at the time of the observation
- 28 = Fog or ice fog at the station during the preceding hour but not at the time of the observation
- 29 = Thunderstorm, with or without precipitation at the station during the preceding hour but not at the time of the observation
  
- 30 = Slight or moderate duststorm or sandstorm has decreased during the preceding hour
- 31 = Slight or moderate duststorm or sandstorm with no appreciable change during the past hour
- 32 = Slight or moderate duststorm or sandstorm has begun or increased during the past hour
- 33 = Severe duststorm or sandstorm has decreased during the preceding hour
- 34 = Severe duststorm or sandstorm with no appreciable change during the past hour
- 35 = Severe duststorm or sandstorm has begun or increased during the past hour
- 36 = Slight or moderate drifting snow generally below eye level
- 37 = Heavy drifting snow generally below eye level
- 38 = Slight or moderate blowing snow generally above eye level
- 39 = Heavy blowing snow generally above eye level
  
- 40 = Fog or ice fog at a distance at the time of the observation, but not at the station during the preceding hour, the fog extending to a level above that of the observer.
- 41 = Fog or ice fog in patches
- 42 = Fog or ice fog, sky visible has become thinner during the past hour
- 43 = Fog or ice fog, sky invisible has become thinner during the past hour
- 44 = Fog or ice fog, sky visible no appreciable change during the past hour
- 45 = Fog or ice fog, sky invisible no appreciable change during the past hour
- 46 = Fog or ice fog, sky visible has begun or become thicker during the past hour
- 47 = Fog or ice fog, sky invisible has begun or become thicker during the past hour
- 48 = Fog, depositing rime, sky visible
- 49 = Fog depositing rime, sky invisible
  
- 50 = Drizzle, not freezing, intermittent slight at time of observation
- 51 = Drizzle, not freezing, continuous slight at time of observation
- 52 = Drizzle, not freezing, intermittent moderate at time of observation
- 53 = Drizzle, not freezing, continuous moderate at time of observation
- 54 = Drizzle, not freezing, intermittent heavy at time of observation
- 55 = Drizzle, not freezing, continuous heavy at time of observation
- 56 = Drizzle, freezing, slight
- 57 = Drizzle, freezing, moderate or heavy (dense)
- 58 = Drizzle and rain, slight
- 59 = Drizzle and rain, moderate or heavy

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

**Cl** : Type of low cloud

0 = No low cloud

1 = Cumulus with little vertical extent and seemingly flattened, or ragged Cumulus other than bad weather, or both

2 = Cumulus of moderate or strong vertical extent, either accompanied or not by other Cumulus or Stratocumulus all having their bases at the same level

3 = Cumulonimbus whose summits, at least partially, lack sharp outline, but are neither clearly fibrous (cirriform), nor in the form of an anvil; Cumulus, Stratocumulus or Stratus may also be present

4 = Stratocumulus formed by the spreading out of Cumulus; Cumulus may also be present

6 = Stratus in a more or less continuous sheet or layer, or ragged shreds, or both, but no Stratus fractus of bad weather

7 = Stratus fractus of bad weather or Cumulus fractus of bad weather or both (pannus), usually below Altostratus or Nimbostratus

8 = Cumulus and Stratocumulus other than that formed by the spreading out of Cumulus, the bases of the Cumulus and Stratocumulus are not at the same level.

9 = Cumulonimbus, the upper part of which is clearly fibrous (cirriform), often in the form of an anvil, either accompanied or not by any other type(s) of low cloud

/ = Types of low cloud invisible due to darkness, fog, blowing dust or sand or other similar phenomena.

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

**Cm** : Type of medium cloud.

0 = No medium cloud.

1 = Altostratus, the greater part of which is semi-transparent; through this part the sun or moon may be weakly visible, as through ground glass

2 = Altostratus, the greater part of which is sufficiently dense to hide the sun or moon, or Nimbostratus

3 = Altocumulus, the greater part of which is semi-transparent; the various elements of the cloud change only slowly and are all at a single level

4 = Altocumulus in patches (often in the form of almonds or fishes), the greater part of which is semi-transparent ; the clouds occur at one or more levels and the elements are continually changing in appearance

5 = Altocumulus in bands semi-transparent, of Altocumulus in one or more fairly continuous layers (semi-transparent or opaque), progressively invading the sky; these Altocumulus clouds generally thicken as a whole

6 = Altocumulus resulting from the spreading out of Cumulus (or Cumulonimbus)

7 = Altocumulus in two or more layers, usually opaque in places, and not progressively invading the sky; or opaque layer of Altocumulus not progressively invading the sky; or Altocumulus together with Altostratus or Nimbostratus

8 = Altocumulus with sproutings in the form of small towers or battlements, or Altocumulus having the appearance of cumuliform tufts

9 – Altocumulus of a chaotic sky, generally at several levels

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

**Ch** : Type of high cloud

0 = No high cloud

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

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

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

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

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

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

7 = Veil of Cirrostratus covering the celestial dome.

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

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

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

### **8 Groups**

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

**C** = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altcumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

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

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

00 to 50 = Height in hundreds of feet

51 to 55 Not used

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

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