

# 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

SEPTEMBER 2010

Temperature (°C / °F)			Anomaly	Rank in the past 129 years			
Mean maximum	19.0	66.2	+0.1	55 <sup>th</sup> highest			
Mean minimum	9.4	48.9	-0.3	49 <sup>th</sup> highest			
Daily mean	14.2	57.6	-0.1	53 <sup>rd</sup> highest			
Highest maximum	23.4	74.1	On 22 <sup>nd</sup>	Lowest maximum	13.5	56.3	On 24 <sup>th</sup>
Highest minimum	16.1	61.0	On 11 <sup>th</sup>	Lowest minimum	2.5	36.5	On 18 <sup>th</sup>
Mean grass minimum	6.2	43.2	-0.6	Lowest grass minimum	-0.7	30.7	On 18 <sup>th</sup>
Mean earth @30 cm	15.9	60.6	-0.2	Earth @100 cm	16.3	61.3	
Frost duration (hrs)	0.0			Rain duration (hrs)	32.0		
Rainfall total (mm / in)	36.8	1.45	59 %	43 <sup>rd</sup> lowest			
Highest daily fall	9.9	0.39	On 29 <sup>th</sup>				
Number of: Dry days (<0.2mm)	17	Wet days (>0.9mm)	9	days ≥5mm	3		
Sunshine total (hrs)	138.8	Daily mean	4.63	96 %	Sunniest day	13.1	On 1 <sup>st</sup>
N <sup>o</sup> days with: Air frost	0	Ground frost	1	Snow falling	0	Snow lying	0
Thunder	2	Hail ≥5mm	0	Small hail/ice	0	Fog @09	1 Nil sun 4
Air pressure MSL : Mean @09 GMT (mbar/in)	1015.5		-1.0	29.99			
Absolute highest	1028.0			30.36		On 13 <sup>th</sup>	
Absolute lowest	999.8			29.52		On 7 <sup>th</sup>	

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

Notes:

**Temperature and Sunshine Near Normal, Rainfall Well Below Normal.**

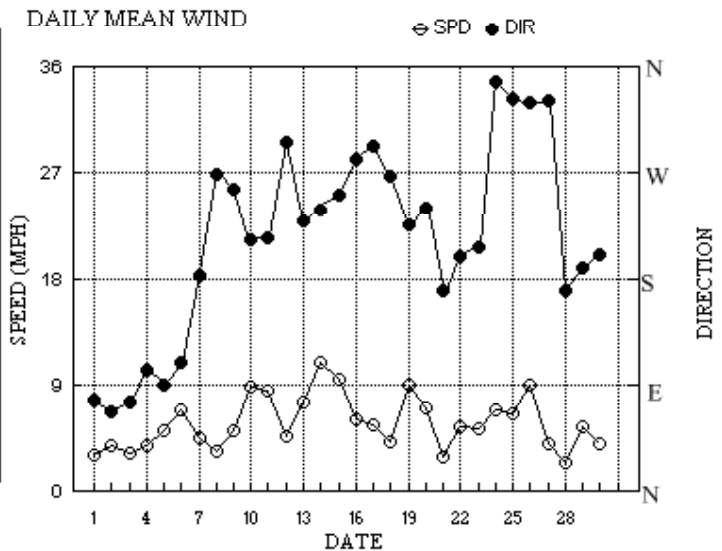
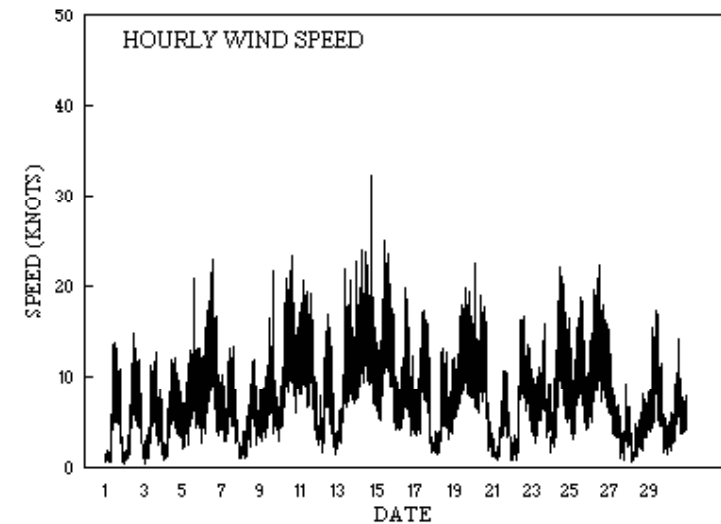
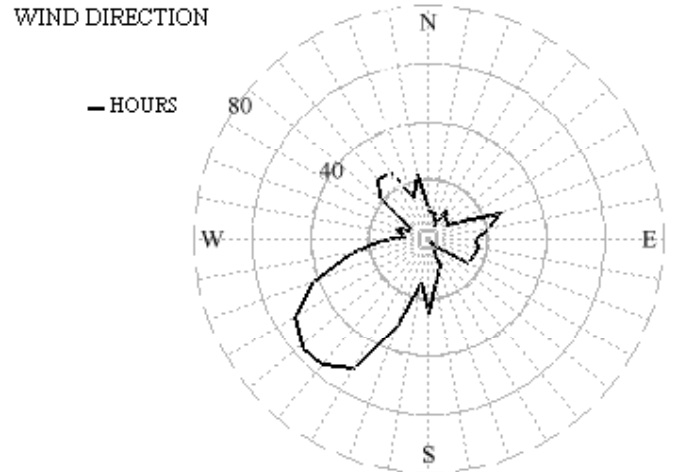
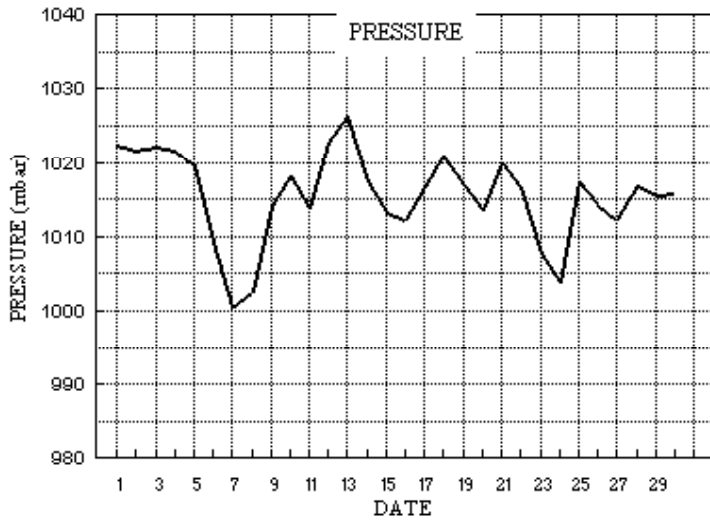
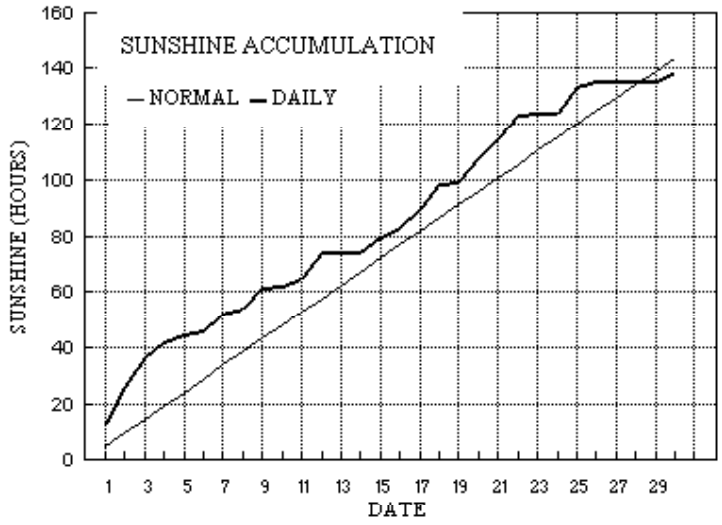
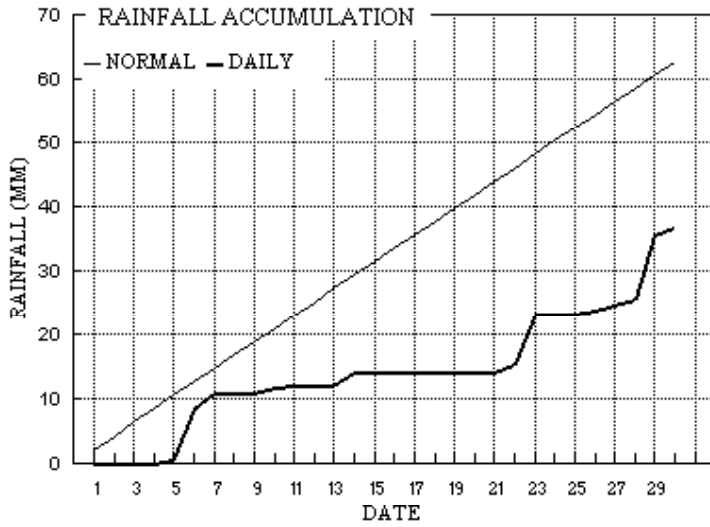
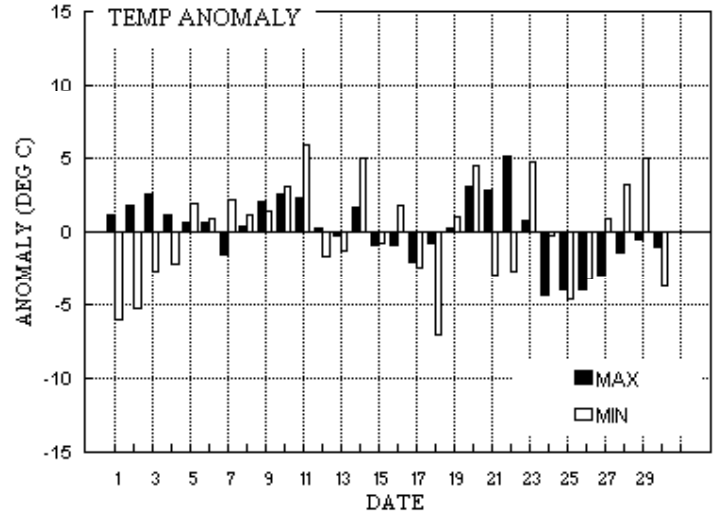
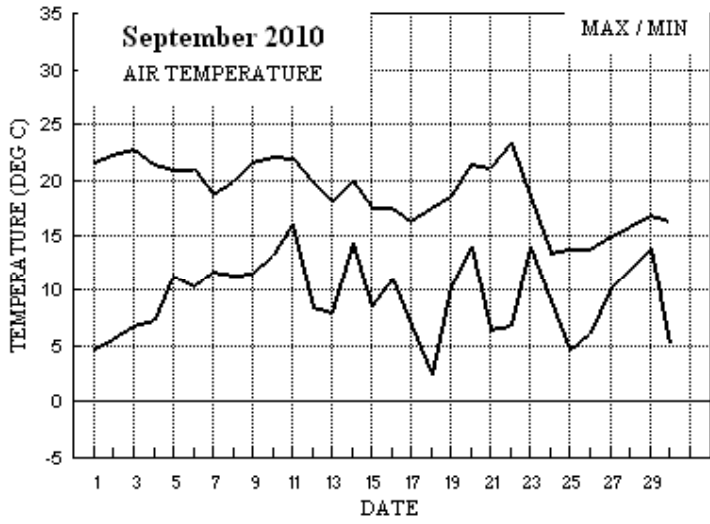
**Temperature:** This September temperatures were generally close to the current 30 year climatological average, and also the long-term median. The mean temperature of 14.2° is, however, second lowest after 2008 in the past 10 years. As recently as 4 years ago September produced record high temperatures, the mean then being 1.0° above the previous highest in 1929. The highest max this month is 0.9° below the median, while the lowest max is 0.4° below its median. The highest min is 0.9° above the median, and the lowest min is 0.2° below its median. The lowest grass min is lowest since 2005. A ground frost has been recorded in 19 of the past 31 Septembers, but only 5 in the past 14. Earth temperatures are a little below normal. **Rainfall:** We had just over half the average rainfall for September, yet the number of dry days was 2 less than normal. There were no large daily falls, and indeed the highest fall of 9.9 mm is lowest since 2004. Also, the total rainfall duration is only 16 % below normal, and is 2<sup>nd</sup> highest in the past 9 years. A dry spell of 6 days ended on the 4<sup>th</sup>, and one of 7 days on the 21<sup>st</sup>. Thunder occurred on the 7<sup>th</sup> and on the 23<sup>rd</sup>, when lightning halted local train services for 3 hours after damaging the signals near Early. **Sunshine:** The total this month was 21 hours less than last year's, but 19 more than the year before. After a very good start, sunshine was generally below normal from the 4<sup>th</sup> to the 16<sup>th</sup>, then slightly above until the 22<sup>nd</sup>, ending the month on a poor note. The sunniest day with 13.1 hours is a new record high for September, the previous being 12.8 hours in 2003. The 4 days with nil sun is most since 1994. Overall there were 14 days with <3 hours, 12 with =>6 hours, 6 with =>9 hours and 2 with =>12 hours. **Wind:** The overall mean wind speed this month of 5.8 mph is exactly average. The 14<sup>th</sup> was the windiest day with a mean of 10.8 mph, and the month's highest gust of 38 mph was also on that day. The least windy day was the 28<sup>th</sup>, mean 2.5 mph, and there were 1319 minutes (22.0 hours) with a mean speed of 0.5 mph or less. Daily mean direction/number of days; N,1 NE,0 E,6 SE,0 S,6 SW,7 W,5 NW,5. **Humidity:** The overall mean relative humidity was 79.2 %, and the lowest value reached was 40 % on the 17<sup>th</sup>. The mean water vapour content per kg of air was 8.4 g at 0900 GMT and 7.8 g at 1500 GMT. **Commentary: From the 1<sup>st</sup> to the 11<sup>th</sup> :** Daily maximum temperatures were near or a little above normal, with anomalies in the range +2.6° to -1.5°. Daily minima were also slightly above normal after the 4<sup>th</sup>, with an isolated anomaly of +5.9° on the 11<sup>th</sup>, but the first few nights were cold with an anomaly of -6.0° on the 1<sup>st</sup>. Dry until the 4<sup>th</sup>, then 12 mm over the next few days, including 8.0 mm on the 6<sup>th</sup>. Very sunny at first, with a mean of 91 % of the maximum for the first 3 days, but rather dull thereafter, with 5 days having <20 %. Winds were light or moderate, E'ly until the 6<sup>th</sup>, veering W'ly by the 8<sup>th</sup>, backing SW'ly by the 10<sup>th</sup>. **From the 12<sup>th</sup> to the 22<sup>nd</sup> :** Daily maxima remained near normal until the 19<sup>th</sup> followed by 3 mild days, with an anomaly of +5.1° on the 22<sup>nd</sup>. Temperatures by night were rather variable but near normal apart for anomalies of +5.0° on the 14<sup>th</sup> and -7.0° on the 18<sup>th</sup>. This period was mainly dry with rain days only on the 14<sup>th</sup> and 22<sup>nd</sup>. Apart from a sunny day on the 12<sup>th</sup>, sunshine was poor until the 16<sup>th</sup>, improving thereafter. Light or moderate winds were SW'ly until the 15<sup>th</sup>, temporarily increasing fresh on the 14<sup>th</sup>, becoming W'ly until the 18<sup>th</sup>, backing S'ly by the 21<sup>st</sup>. **From the 23<sup>rd</sup> to the 30<sup>th</sup> :** Temperatures by day were mostly below normal, with anomalies near -4° from the 24<sup>th</sup> to the 26<sup>th</sup>. Anomalies for daily minima ranged from +5.0° on the 29<sup>th</sup> to -4.6° on the 25<sup>th</sup>. This period was fairly wet, with only 2 dry days, and a fall of 9.9 mm on the 29<sup>th</sup>. Apart from a sunny day on the 25<sup>th</sup>, it was generally dull, with <10 % of the maximum on 5 days. Light or moderate winds were SW'ly on the 23<sup>rd</sup>, veering N'ly on the 24<sup>th</sup> and backing S'ly on the 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 30 <sup>th</sup>			
+1.1°	-0.6°	57 %	131 %	+0.2°	+0.5°	10 %	94 %	-1.0°	-0.4°	110 %	65 %

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

# Wokingham Climatological Graphs for September 2010



Month: September 2010

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	21.7	4.9	0.0	1.6	16.5	16.9	13.1	0.0	1022.4	0 0 0 0	0 0 0 0	0 0 0 0	77	2.2	2.7	42 14 1231	76 5 14	0.0	
2	22.3	5.6	0.0	1.9	16.5	16.8	12.6	0.0	1021.7	0 0 0 0	0 0 0 0	0 0 0 0	68	3.2	3.4	70 15 1121	70 6 12	0.0	
3	22.8	6.8	0.0	3.3	16.6	16.7	11.0	0.0	1022.3	0 0 0 0	0 0 0 0	0 0 0 0	75	2.6	2.8	41 13 1510	64 5 15	0.0	
4	21.5	7.3	tr	3.4	16.7	16.7	5.5	0.0	1021.6	0 0 0 0	0 0 0 0	0 0 0 0	103	3.0	3.3	68 12 1456	115 5 10	0.0	
5	20.9	11.4	0.6	7.4	16.9	16.6	2.6	0.0	1019.7	0 0 0 0	0 0 0 0	0 0 0 0	90	4.4	4.5	92 21 1344	103 8 14	0.7	
6	20.9	10.4	8.0	5.7	16.5	16.6	1.3	0.0	1009.3	0 0 0 0	0 0 0 0	0 0 0 0	109	5.3	6.1	92 23 1315	108 10 11	4.4	
7	18.8	11.7	2.1	6.4	16.4	16.6	6.0	0.0	1000.6	0 0 0 0	1 0 0 0	0 0 0 0	183	3.6	4.0	197 14 1450	168 6 11	1.0	
8	20.0	11.4	tr	8.1	16.6	16.5	2.2	0.0	1002.6	0 0 0 0	0 0 0 0	0 0 0 0	268	1.9	3.0	228 12 1708	241 6 15	0.0	
9	21.6	11.6	0.0	7.3	16.6	16.5	6.9	0.0	1014.0	0 0 0 0	0 0 0 0	0 0 0 0	256	4.0	4.5	257 22 1538	283 8 15	0.0	
10	22.2	13.3	1.1	8.7	16.9	16.5	1.3	0.0	1018.1	0 0 0 0	0 0 0 0	0 0 0 0	212	7.6	7.7	238 24 1522	224 11 15	0.5	
11	21.9	16.1	0.2	15.5	17.3	16.6	2.2	0.0	1013.8	0 0 0 0	0 0 0 0	0 0 0 0	214	7.3	7.4	198 21 0521	207 10 05	0.3	
12	19.8	8.5	0.0	3.3	17.2	16.7	9.5	0.0	1022.7	0 0 0 0	0 0 0 0	0 0 0 0	295	3.2	4.0	319 17 1208	309 8 13	0.0	
13	18.1	8.0	0.1	3.3	16.7	16.7	0.4	0.0	1026.4	0 0 0 0	0 0 0 0	0 0 0 0	228	6.4	6.5	234 23 2347	232 10 23	0.4	
14	20.0	14.3	2.0	12.5	16.6	16.7	0.0	0.0	1017.3	0 0 0 0	0 0 0 0	0 0 0 0	238	9.3	9.4	258 33 1816	229 11 06	2.6	
15	17.5	8.5	0.0	4.5	16.5	16.6	5.2	0.0	1013.2	0 0 0 0	0 0 0 0	0 0 0 0	251	8.1	8.3	248 25 0913	256 12 13	0.0	
16	17.5	11.1	tr	6.9	16.2	16.6	3.4	0.0	1012.2	0 0 0 0	0 0 0 0	0 0 0 0	281	4.8	5.3	342 20 1258	291 8 12	0.0	
17	16.3	6.9	0.0	3.9	15.7	16.5	6.8	0.0	1016.7	0 0 0 0	0 0 0 0	0 0 0 0	293	4.0	5.0	292 17 1153	303 9 09	0.0	
18	17.5	2.5	0.0	-0.7	15.0	16.4	8.4	0.0	1021.0	0 1 0 0	0 0 0 0	0 0 0 0	267	3.0	3.7	318 13 1044	314 6 09	0.0	
19	18.5	10.5	0.1	7.5	15.0	16.2	1.1	0.0	1016.8	0 0 0 0	0 0 0 0	0 0 0 0	225	7.7	7.8	214 20 1520	234 10 14	0.1	
20	21.4	14.0	0.0	13.3	15.4	16.0	8.2	0.0	1013.4	0 0 0 0	0 0 0 0	0 0 0 0	239	5.9	6.2	229 23 0122	224 9 01	0.0	
21	21.1	6.5	0.0	3.2	15.4	16.1	7.1	0.0	1019.8	0 0 0 0	0 0 0 0	0 0 0 0	169	2.1	2.6	190 11 1334	162 5 15	0.0	
22	23.4	6.8	1.0	3.4	15.2	16.0	9.0	0.0	1016.7	0 0 0 0	0 0 0 0	0 0 0 0	199	4.1	4.8	214 17 1535	208 8 12	1.4	
23	18.6	14.0	7.9	11.9	15.7	16.0	0.5	0.0	1007.7	0 0 0 0	1 0 0 0	0 0 0 0	206	4.2	4.6	270 16 1734	217 8 16	2.8	
24	13.5	9.1	tr	4.8	15.6	16.0	0.0	0.0	1003.7	0 0 0 0	0 0 0 0	0 0 0 0	346	4.9	6.1	5 22 1204	357 10 11	0.0	
25	13.9	4.7	0.0	0.5	14.7	16.0	9.2	0.0	1017.3	0 0 0 0	0 0 0 0	0 0 0 0	332	5.6	5.8	319 19 1349	328 9 13	0.0	
26	13.9	6.1	0.6	2.9	14.0	15.9	1.8	0.0	1014.2	0 0 0 0	0 0 0 0	0 0 0 0	329	7.6	7.8	326 22 1244	338 10 13	1.7	
27	15.0	10.2	1.0	10.2	14.0	15.7	0.0	0.0	1012.2	0 0 0 0	0 0 0 0	0 0 0 0	331	3.2	3.6	308 15 0137	319 7 01	3.1	
28	15.9	12.0	0.9	12.8	14.5	15.5	0.1	0.0	1016.8	0 0 0 0	0 0 0 0	0 0 0 0	170	0.8	2.2	165 8 1840	181 4 23	2.1	
29	16.8	13.8	9.9	10.9	14.9	15.5	0.0	0.0	1015.6	0 0 0 0	0 0 0 0	0 0 0 0	189	4.3	4.7	200 17 1150	183 8 10	7.3	
30	16.3	5.1	1.3	1.7	14.7	15.5	3.4	0.0	1015.7	0 0 0 0	0 0 0 1	0 0 0 1	200	3.3	3.6	200 14 1529	207 6 15	3.6	
Total			36.8				138.8	0.0						238	2.1	5.0			32.0
Mean	19.0	9.4		6.2	15.9	16.3	4.63	0.0	1015.5										
Anom	+0.1	-0.3	59%		-0.2	-0.5	96%												-1.0
Daily mean		14.2																	
Anom		-0.1																	

Number of days with:

Air frost = 0      Ground frost = 1      Nil sun = 4  
 Snow falling = 0      Snow lying = 0      Thunder = 2  
 Hail=>5mm = 0      Hail<5mm or ice = 0      Fog at 09GMT = 1

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 1971-2000 climatological average.  
 All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for September 2010

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	NCh	shs	NCh	shs	NCh	shs	Date	Remarks
1	78	6	06	03	06	15.1	9.7	70	7.3	1022.4	8 005	02	2	2	0	0	0	0	0	1	82075	85080					1	COTRA	
2	72	7	06	05	10	16.3	12.4	78	8.9	1021.7	1 006	03	1	1	1	1	4	3	1	81815	85075	86080					2	1Ac68 COTRA U/a cont+parhelia	
3	68	3	08	05	10	17.2	13.1	77	9.1	1022.3	0 001	03	4	0	3	2	4	0	1	83815								3	1Ci80 Cu med
4	65	7	11	05	08	16.3	12.7	79	9.0	1021.6	0 001	03	2	2	1	1	4	0	8	81818	85275	87080					4	COTRA Halo 22° part Parhelia	
5	62	8	10	03	11	15.5	11.4	76	8.3	1019.7	1 006	60	6	2	7	0	9	7	8	82360	87362						5	/Cs70	
6	80	7	11	08	18	17.6	9.3	58	7.3	1009.3	7 020	02	2	2	4	0	9	8	8	81362	84365	87272					6	COTRA Ac cas Halo 22° part	
7	65	7	19	04	11	16.3	13.7	85	9.9	1000.6	3 004	03	1	1	3	2	4	3	1	83810	86072							7	2Ac68 Cu med
8	58	8	34	03	06	14.7	13.7	93	9.8	1002.6	3 007	05	6	2	7	6	2	7	/	82705	86708							8	/Ac60 /As65
9	75	1	27	03	10	16.7	13.6	82	9.7	1014.0	2 020	01	1	1	1	8	4	3	2	81815								9	1Sc30 1Ac58 1Ci72 Cu hum
10	68	7	22	09	21	18.3	14.5	78	10.1	1018.1	4 000	02	2	2	7	5	4	3	/	87615								10	/Ac62
11	62	8	21	08	17	17.6	16.1	91	11.3	1013.8	3 007	60	6	2	8	5	3	/	/	81708	86712	88635						11	
12	84	1	31	07	12	15.7	11.0	73	8.1	1022.7	2 020	03	0	0	1	1	4	0	0	81818								12	Cu hum
13	67	7	23	08	15	15.1	11.6	79	8.3	1026.4	8 002	01	2	2	2	5	4	7	8	81712	85365	87275					13	2Sc45 2Ac58 COTRA U/a cont+Parheliion	
14	82	8	23	10	19	17.9	14.9	83	10.5	1017.3	7 008	02	2	2	8	5	4	/	/	87612	88618							14	
15	75	1	26	09	18	14.2	8.3	68	6.9	1013.2	6 006	03	0	0	1	8	5	0	0	81822								15	1Sc50 Cu fra
16	82	7	27	06	11	13.9	9.7	76	7.6	1012.2	3 007	03	2	2	7	8	4	/	/	81815	87650							16	Cu fra/medN
17	83	1	30	10	17	13.1	6.1	62	5.8	1016.7	2 012	03	0	0	1	8	5	0	0	81825								17	1Sc35 Cu hum
18	84	5	31	04	11	12.5	7.8	73	6.6	1021.0	1 005	03	1	1	1	5	5	3	1	81625	85072							18	1Ac65 COTRA
19	85	8	23	08	17	14.0	9.3	73	7.2	1016.8	1 005	02	2	2	1	8	4	7	/	81818	85358	88462					19	1Sc40 Cu fra	
20	80	7	24	08	17	17.4	12.7	74	9.1	1013.4	2 009	03	2	2	6	8	4	4	1	82816	85650	86078					20	1Ac65 COTRA Cu hum	
21	60	7	02	02	03	14.1	12.4	89	8.9	1019.8	1 009	05	2	2	1	0	9	3	1	81365	87080							21	COTRA Parhelia
22	58	7	16	03	07	16.3	14.1	87	9.9	1016.7	7 005	05	2	2	1	0	9	3	8	81368	87275							22	COTRA Halo 22 part
23	50	8	19	05	10	15.6	14.5	93	10.3	1007.7	6 006	60	6	2	3	7	3	7	/	82706	83357	87360					23	2Sc35 8As65	
24	57	8	32	07	14	12.9	11.7	93	8.7	1003.7	3 013	60	6	5	8	5	3	/	/	83708	86712	88618						24	
25	86	1	35	06	16	8.7	3.0	67	4.7	1017.3	2 006	03	0	0	1	1	5	0	0	81820								25	Cu fra
26	72	5	33	08	17	10.5	5.2	70	5.5	1014.2	6 008	03	2	2	5	5	5	0	0	84620								26	2Sc56
27	60	8	32	03	07	12.2	11.3	94	8.3	1012.2	2 010	05	5	2	8	6	2	/	/	88705								27	
28	50	8	03	01	04	13.8	13.1	95	9.3	1016.8	2 011	10	2	2	8	6	2	/	/	84705	88710							28	
29	75	7	18	08	14	15.1	13.4	90	9.5	1015.6	8 003	02	6	2	2	6	4	7	/	82710	83357	87362					29	1Sc50	
30	03	7	22	03	06	8.3	8.2	99	6.7	1015.7	1 003	42	4	4	7	6	0	/	/	87701								30	

Mean vis = 23.6 km

Mean cloud = 6.0 75%

Mean wind speed = 5.7 kn

Mean gust = 12 kn

Mean TT = 14.8 °C

Mean TdTd = 11.3 °C

Mean RH = 80.2 %

Mean r = 8.4 g/kg

Mean PPP = 1015.5 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

covers past 3 hours.

Nh = Amount of low cloud present, oktas

Cl = Type of low cloud (Code FM12-0513)

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs = Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation

trails present.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for September 2010

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	NCh	shs	NChs	NChshs	Date	Remarks
1	75	7	06	04	13	20.9	8.3	45	6.6	1019.8	8	014	02	2	2	0	0	9	0	1	84075	86080		1	COTRA parhelia	
2	82	6	07	04	12	20.6	8.6	46	7.4	1019.8	7	010	02	2	2	1	1	6	0	1	81840	85075		2	1Cc72 COTRA Parhelic circ part Paranthelion	
3	82	3	08	05	11	21.8	8.5	42	6.7	1020.5	7	013	01	1	1	1	4	7	0	1	81650	83081		3	1Ci78 COTRA	
4	80	7	09	05	12	21.2	11.3	53	8.6	1020.1	7	009	03	2	2	4	2	6	3	8	84840	87275		4	1Ac65 Absent vv&cld est	
5	78	7	11	07	17	18.9	8.3	50	6.8	1017.2	6	018	02	6	2	7	0	9	8	/	81359	85361	87364	5	Ac cas	
6	78	8	09	08	22	17.7	10.2	61	7.7	1003.8	7	025	02	6	2	8	0	9	7	/	81358	86360	88465	6		
7	80	7	18	07	14	18.4	12.0	66	8.8	1000.2	5	006	15	8	2	3	2	5	6	1	83825	87075		7	2Ac60 COTRA Cu con jpS vv60k exS	
8	84	7	26	04	10	18.5	11.9	66	8.5	1003.7	2	005	60	6	2	1	8	5	7	/	81825	83461	86363	8	1Sc56 1Ac59 /Ci72 Cu con Cld edge WSW	
9	84	5	30	05	13	20.5	10.8	54	8.0	1015.5	2	004	02	2	2	2	2	6	6	1	82840	83360		9	1Ci75 Cu con	
10	65	7	22	11	22	21.5	14.5	64	10.0	1016.5	7	011	02	2	2	6	8	5	/	1	83828	85656		10	1Sc35 /Ci75 COTRA Cu hum	
11	82	5	22	09	19	21.0	12.9	60	9.2	1014.1	8	004	02	2	2	2	2	6	0	7	82832	83078		11	1Ac62 2Ac65 COTRA Cu med Iridescence	
12	84	5	33	07	15	18.4	8.4	52	6.7	1023.7	1	004	02	1	1	5	8	6	0	0	82845	84657		12	1Sc56 Cu med	
13	65	8	23	08	18	17.3	11.9	71	8.5	1024.2	6	011	60	6	5	8	5	5	/	/	81620	83625	86630	13	8Sc40	
14	58	8	23	10	23	18.1	16.5	90	11.6	1014.0	6	015	51	6	5	8	5	3	/	/	83708	87712	88620	14		
15	80	7	25	12	23	16.5	7.5	55	6.4	1010.1	6	019	15	2	2	7	8	6	/	/	82836	87650		15	Cu med jpN	
16	80	6	32	07	20	14.7	9.8	72	7.5	1011.6	7	003	80	8	2	5	8	6	6	0	83835	83656		16	2Ac58 Cu med vv 50k ex p	
17	84	6	30	10	16	15.1	3.2	45	4.8	1017.5	2	001	02	2	2	6	8	6	/	/	82848	85656		17	Cu med	
18	84	3	29	05	12	16.3	4.5	45	5.1	1019.3	7	010	02	1	1	2	4	6	3	1	82648			18	1Ac65 2Ci73	
19	82	8	22	10	18	18.1	10.2	60	7.8	1014.5	7	013	02	2	2	3	2	6	7	7	83830	83462	88272	19	2Ac60 2Ac65 Cu med	
20	82	7	26	07	16	20.6	9.5	49	7.5	1013.7	3	002	01	2	2	2	8	6	0	1	81845	87080		20	2Sc50 COTRA Cu hum U/a cont+parhelia	
21	75	2	16	04	09	19.7	11.9	60	8.6	1018.6	7	011	01	1	1	2	8	6	0	1	81832			21	2Sc45 1Ci78 Cu hum	
22	75	7	21	08	15	21.9	10.4	48	8.0	1013.8	6	013	02	2	2	1	1	6	0	8	81845	87278		22	COTRA Cu hum U/a cont	
23	85	7	22	07	14	17.7	12.8	73	9.4	1004.4	7	016	02	2	2	2	8	5	1	8	82820	83465	87270	23	1Sc50 Cu con	
24	75	8	36	09	20	12.3	8.0	75	6.8	1008.9	3	029	02	6	2	8	5	5	/	/	83620	88625		24		
25	84	5	33	08	16	13.8	3.2	49	4.7	1017.0	7	003	01	2	2	4	8	6	0	1	81840	84650		25	2Ci75 COTRA Cu hum	
26	65	8	32	08	18	11.2	8.9	85	7.1	1013.2	6	004	60	6	2	8	5	4	/	/	82712	85620	88625	26		
27	61	7	21	01	04	14.2	12.9	92	9.2	1013.1	2	001	02	2	2	7	5	3	/	/	83706	86712	87620	27		
28	56	8	22	02	05	15.1	13.6	91	9.6	1017.6	0	000	20	5	2	8	6	3	/	/	81706	86708	88612	28		
29	57	8	18	05	09	15.0	13.9	93	9.8	1014.2	7	010	63	6	2	7	5	4	2	/	83712	87615	88530	29		
30	82	7	20	06	11	15.4	9.9	69	7.5	1013.1	7	016	15	2	2	2	8	5	7	/	81825	85357	87465	30	2Sc50 Cu med jpS	

Mean vis = 31.6 km

Mean cloud = 6.5 81%

Mean wind speed = 6.8 kn

Mean gust = 15 kn

Mean TT = 17.7 °C

Mean TdTd = 10.1 °C

Mean RH = 62.7 %

Mean r = 7.8 g/kg

Mean PPP = 1014.5 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

covers past 3 hours.

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs = Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation

trails present.

Wokingham Sunshine Hourly analysis	Hour	01-Sep	02-Sep	03-Sep	04-Sep	05-Sep	06-Sep	07-Sep	08-Sep	09-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep
2010	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.45	0.22	0.00	0.15	0.00	0.07	0.22	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.03	0.00
	6	1.00	1.00	0.76	1.00	0.93	0.18	0.74	0.00	0.22	0.00	0.00	1.00	0.00	0.00	0.90	0.05
	7	1.00	1.00	1.00	0.68	0.39	0.00	1.00	0.00	0.22	0.02	0.00	1.00	0.00	0.00	1.00	0.29
	8	1.00	1.00	0.97	0.49	0.00	0.45	0.46	0.00	1.00	0.07	0.00	1.00	0.32	0.00	1.00	0.01
	9	1.00	1.00	0.70	0.97	0.00	0.06	0.34	0.00	0.86	0.00	0.01	0.92	0.10	0.00	0.91	0.00
	10	1.00	1.00	0.77	0.60	0.00	0.49	0.19	0.00	0.21	0.00	0.01	0.83	0.00	0.00	0.55	0.00
	11	1.00	1.00	0.31	0.25	0.00	0.03	0.12	0.00	0.54	0.01	0.00	0.72	0.00	0.00	0.02	0.04
	12	1.00	1.00	1.00	0.46	0.00	0.00	0.37	0.00	0.74	0.01	0.12	0.73	0.00	0.00	0.36	0.06
	13	1.00	1.00	0.97	0.34	0.50	0.00	0.65	0.06	0.30	0.29	0.56	0.96	0.00	0.00	0.34	0.01
	14	1.00	1.00	0.96	0.53	0.53	0.00	0.25	0.24	0.50	0.54	0.75	0.57	0.00	0.00	0.05	0.60
	15	1.00	1.00	0.98	0.05	0.00	0.00	0.53	0.34	0.61	0.07	0.51	0.13	0.00	0.00	0.00	0.95
	16	1.00	1.00	1.00	0.00	0.00	0.00	0.26	1.00	0.96	0.10	0.17	0.79	0.00	0.00	0.00	0.39
	17	1.00	1.00	1.00	0.00	0.00	0.00	0.63	0.60	0.70	0.18	0.09	0.48	0.00	0.00	0.00	0.90
	18	0.63	0.43	0.55	0.00	0.19	0.00	0.21	0.00	0.07	0.00	0.00	0.22	0.00	0.00	0.00	0.12
	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot		<b>13.08</b>	<b>12.65</b>	<b>10.96</b>	<b>5.51</b>	<b>2.56</b>	<b>1.29</b>	<b>5.97</b>	<b>2.25</b>	<b>6.93</b>	<b>1.31</b>	<b>2.23</b>	<b>9.51</b>	<b>0.42</b>	<b>0.00</b>	<b>5.16</b>	<b>3.43</b>

Hour	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep	Mean
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
6	0.81	0.79	0.30	0.10	0.12	0.08	0.00	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.35
7	1.00	1.00	0.10	0.37	0.79	0.67	0.00	0.00	1.00	0.39	0.00	0.00	0.00	0.31	0.44
8	1.00	1.00	0.35	0.73	1.00	0.92	0.00	0.00	1.00	0.61	0.00	0.00	0.00	0.01	0.48
9	0.89	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.42	0.00	0.00	0.00	0.21	0.45
10	0.81	0.45	0.00	0.78	0.89	1.00	0.00	0.00	1.00	0.10	0.00	0.00	0.00	0.95	0.39
11	0.10	0.58	0.00	0.25	0.10	1.00	0.00	0.00	0.79	0.26	0.00	0.00	0.00	0.94	0.27
12	0.48	0.50	0.00	0.70	0.00	1.00	0.00	0.00	0.77	0.00	0.00	0.00	0.00	0.42	0.32
13	0.23	0.82	0.00	0.64	0.22	1.00	0.00	0.00	0.12	0.02	0.00	0.00	0.00	0.00	0.33
14	0.38	0.81	0.09	0.83	0.77	1.00	0.09	0.00	0.53	0.00	0.00	0.00	0.00	0.00	0.40
15	0.29	0.62	0.23	0.92	0.56	1.00	0.24	0.00	0.81	0.00	0.00	0.00	0.00	0.10	0.37
16	0.50	0.67	0.04	1.00	0.95	0.39	0.12	0.00	0.91	0.00	0.00	0.09	0.00	0.36	0.39
17	0.26	0.11	0.00	0.84	0.70	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.08	0.31
18	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	<b>6.77</b>	<b>8.36</b>	<b>1.10</b>	<b>8.18</b>	<b>7.13</b>	<b>9.04</b>	<b>0.46</b>	<b>0.00</b>	<b>9.17</b>	<b>1.80</b>	<b>0.00</b>	<b>0.09</b>	<b>0.00</b>	<b>3.37</b>	<b>138.66</b>

September 2010

	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	13.18	21.5	1455	5.2	518	73.5	97.9	640	40.0	1504	7.76	6.52	8.4	1125	5.3	518	1021.41	1023.5	7	1019.3	1708	0.0
2	13.97	22.2	1414	5.9	548	75.6	98.0	648	42.1	1603	9.07	7.14	9.5	937	5.5	548	1020.94	1022.3	2307	1019.6	1709	0.0
3	14.52	22.6	1450	7.1	507	76.6	98.3	646	40.8	1551	9.81	7.49	10.3	851	6.0	507	1021.39	1022.4	841	1019.6	1651	0.0
4	14.95	21.6	1453	7.6	433	76.3	97.9	624	48.4	1430	10.36	7.77	9.9	1126	6.2	433	1020.83	1021.7	831	1019.5	1655	0.0
5	15.24	21.1	1334	11.4	458	74.0	95.7	618	47.7	1423	10.31	7.76	9.6	1054	6.3	1844	1018.36	1020.7	2	1014.8	2354	0.5
6	15.64	20.9	1138	10.5	418	71.8	96.3	2349	43.7	1210	10.25	7.87	10.3	2031	6.4	231	1006.79	1015.1	4	1000.1	2234	7.4
7	14.70	18.7	1612	11.5	2244	87.4	97.9	644	65.2	1103	12.52	9.11	10.7	819	8.2	2244	1000.74	1002.1	2223	999.8	339	2.1
8	14.94	20.1	1554	11.5	123	84.4	98.2	508	48.9	1558	12.14	8.87	10.7	1028	6.9	1558	1003.72	1008.6	2358	1001.1	356	0.1
9	16.09	21.7	1244	11.7	403	76.8	96.8	624	47.0	1536	11.66	8.50	10.5	1114	7.4	1536	1014.62	1019.4	2303	1008.4	8	0.1
10	17.49	22.3	1449	13.7	100	79.0	87.7	619	61.9	1450	13.76	9.74	11.4	1409	7.9	12	1017.42	1019.4	14	1014.9	2356	0.0
11	17.69	21.9	1526	12.6	2359	80.0	93.0	815	56.8	1431	14.10	9.98	11.9	1258	8.2	2331	1014.62	1018.1	2344	1012.8	524	1.2
12	14.10	19.9	1308	8.3	2347	75.7	97.7	624	43.0	1435	9.35	7.23	8.7	820	6.0	1316	1023.12	1027.7	2321	1017.9	0	0.1
13	14.21	17.7	1413	8.2	35	81.0	94.6	55	66.5	1347	10.93	8.07	9.7	1623	6.2	35	1024.94	1028.0	26	1019.9	2341	0.1
14	16.32	20.0	1152	12.6	2331	84.6	93.4	1623	77.3	1153	13.72	9.78	11.9	1601	7.5	0	1015.96	1021.2	37	1012.2	1757	1.7
15	13.41	17.6	1317	8.6	538	70.9	88.1	603	47.7	1318	8.02	6.68	7.8	2323	5.4	1103	1012.10	1014.2	217	1009.7	1517	0.1
16	13.56	17.6	1549	9.5	2354	72.1	88.7	601	50.3	1429	8.45	6.90	7.9	309	5.6	2338	1012.10	1014.7	2358	1010.6	423	0.0
17	10.76	16.3	1429	5.5	2358	71.4	93.4	2356	39.9	1532	5.29	5.51	6.5	730	4.4	1533	1017.20	1020.3	2355	1014.4	16	0.0
18	10.81	17.3	1537	2.7	608	71.5	97.6	651	41.0	1548	5.29	5.51	6.7	900	4.4	608	1019.68	1021.0	848	1017.9	2342	0.0
19	14.41	18.3	1455	10.4	606	73.1	82.4	2139	58.4	1438	9.59	7.42	8.7	2359	6.3	45	1015.35	1018.2	16	1012.4	2353	0.0
20	16.32	21.2	1400	9.2	2358	72.5	94.9	2347	45.1	1553	11.00	8.17	9.7	823	6.6	1553	1013.99	1017.7	2313	1011.7	253	0.0
21	13.47	21.0	1405	6.6	526	82.7	97.5	648	54.6	1534	10.27	7.77	9.7	955	5.8	523	1019.01	1020.0	919	1017.4	4	0.0
22	15.14	23.0	1144	7.0	312	78.4	98.0	629	41.3	1322	10.82	8.12	10.2	930	6.0	313	1015.53	1019.3	0	1012.1	2359	0.0
23	14.78	18.6	1423	11.2	2347	89.8	96.3	2223	68.3	1604	13.06	9.41	11.3	1133	7.7	1738	1006.56	1012.3	58	1002.3	2329	7.5
24	11.04	13.6	815	7.4	2358	84.7	97.9	137	65.1	1858	8.48	7.03	9.0	814	4.8	2051	1007.31	1015.2	2321	1001.7	436	0.4
25	8.94	14.0	1501	4.7	603	66.4	84.5	332	45.5	1444	2.77	4.61	5.3	1111	4.2	601	1016.95	1018.0	2012	1014.9	2	0.0
26	10.10	14.0	1312	6.1	29	77.8	87.6	1859	64.9	1315	6.35	6.01	7.3	1530	4.5	6	1013.92	1016.8	0	1012.3	2354	0.3
27	12.76	14.9	1551	10.4	426	92.6	97.4	2326	84.7	0	11.60	8.51	9.7	2105	6.9	49	1012.92	1015.4	2353	1011.0	356	1.2
28	14.10	15.7	1635	12.7	517	92.8	97.7	644	84.6	1259	12.94	9.21	9.8	1630	8.7	2029	1016.91	1018.4	2027	1015.0	54	0.2
29	13.62	16.7	1155	7.4	2340	92.1	97.9	2354	73.4	1157	12.34	8.92	10.0	1635	6.2	2341	1015.48	1017.8	0	1013.8	1539	9.0
30	10.81	16.0	1425	5.1	505	90.1	99.2	907	67.5	1615	9.15	7.25	9.3	1225	5.4	505	1013.80	1015.9	811	1009.5	2356	0.3

Total																							32.3
Mean	13.90	18.93		8.74		79.2	94.75		55.38		10.04	7.76	9.41		6.23		1015.12	1018.19		1012.23			
Max	17.69	22.95		13.70		92.8	99.20		84.70		14.10	9.98	11.93		8.72		1024.94	1027.97		1019.93			
Min	8.94	13.60		2.71		66.4	82.40		39.89		2.77	4.61	5.32		4.20		1000.74	1002.05		999.83			

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

Change to the Wokingham Monthly Report pages.

With effect from the August 2010 report, page 6 containing RH statistics from the 1 minute AWS readings will be replaced with a page containing hourly values of sunshine for each day of the month, derived from the R&D electronic sunshine detector.

If any user of these reports has a requirement for the monthly table of RH statistics, they should notify me by e-mail to [b.j.burton@btinternet.com](mailto:b.j.burton@btinternet.com)

Bernard Burton 1 September 2010



### **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 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 1971 to 2000 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/www1.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.