

# 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 2012

Temperature (°C / °F)				Anomaly	Rank in the past 131 years			
Mean maximum	22.8	73.0	+0.2	29 <sup>th</sup> highest				
Mean minimum	12.7	54.9	+0.3	15 <sup>th</sup> highest				
Daily mean	17.7	63.9	+0.2	23 <sup>rd</sup> highest				
Highest maximum	29.3	84.7	on 19 <sup>th</sup>	Lowest maximum	18.4	65.1	on 31 <sup>st</sup>	
Highest minimum	16.7	62.1	on 17 <sup>th</sup>	Lowest minimum	4.6	40.3	on 31 <sup>st</sup>	
Mean grass minimum	9.7	49.5	+0.4	Lowest grass minimum	-1.4	29.5	on 31 <sup>st</sup>	
Mean earth @30 cm	19.3	66.7	+0.6	Earth @100 cm	17.8	64.0		
Frost duration (hrs)	0.0				Rain duration (hrs)	14.3		
Rainfall total (mm / in)	24.7	0.97	49 %	19 <sup>th</sup> lowest				
Highest daily fall	5.5	0.22	on 15 <sup>th</sup>					
Number of: Dry days (<0.2mm)	19	Wet days (>0.9mm)	9	days ≥5mm	1			
Sunshine total (hrs)	172.8	Daily mean	5.57	89 %	Sunniest day	12.8	on 10 <sup>th</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	0	
Fog @09							Nil sun 0	
Pressure MSL : Mean @09 GMT, mbar	1014.4	-1.9	Highest	1030.8	on 31 <sup>st</sup>	Lowest	998.6 on 25 <sup>th</sup>	
Relative humidity : Mean (%)	75.9	Lowest	31 on 1 <sup>st</sup>		Water vapour (g/kg), mean at 09 and 15 GMT 9.8, 8.6			
Overall mean wind speed (mph)	6.2	Windiest day	8.9 on 16 <sup>th</sup>		Max gust	33 on 29 <sup>th</sup>		
Wind direction (days)	N 1	NE 0	E 2	SE 0	S 12	SW 12	W 2	NW 2
Least windy day (mph)	2.4	on 9 <sup>th</sup>		Calm; less than 0.5 mph (minutes)		582		

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

Notes:

#### Dry with Temperature Above and Sunshine Below Normal

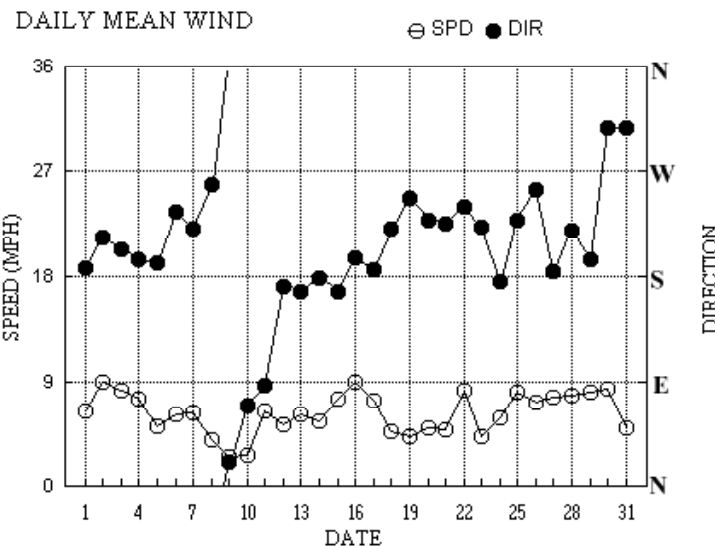
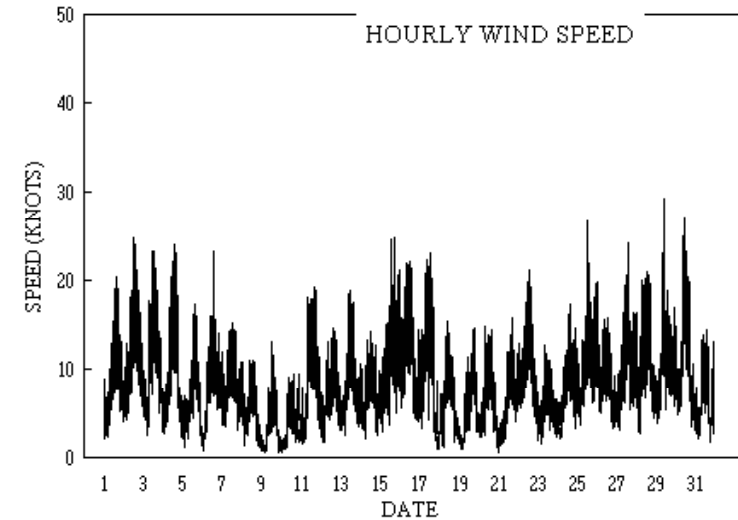
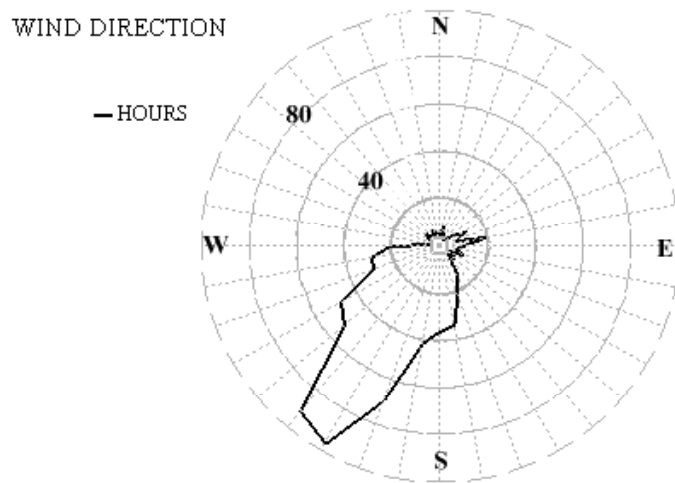
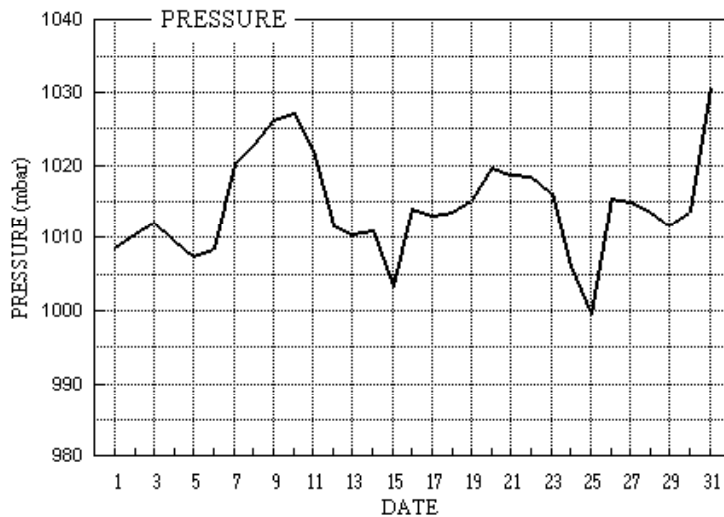
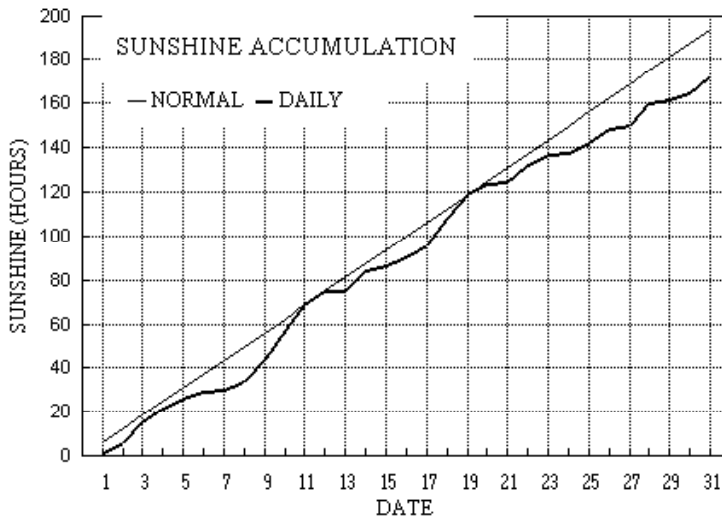
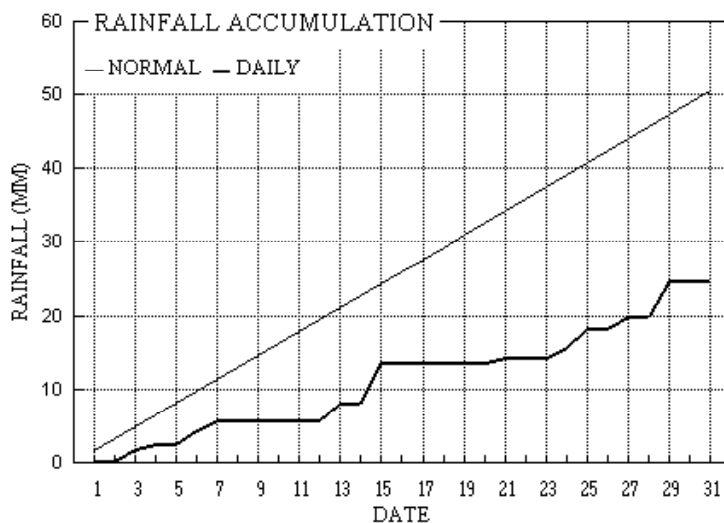
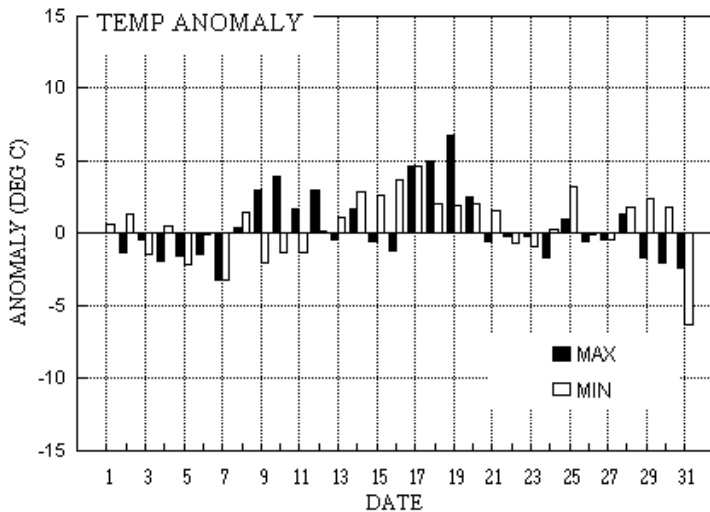
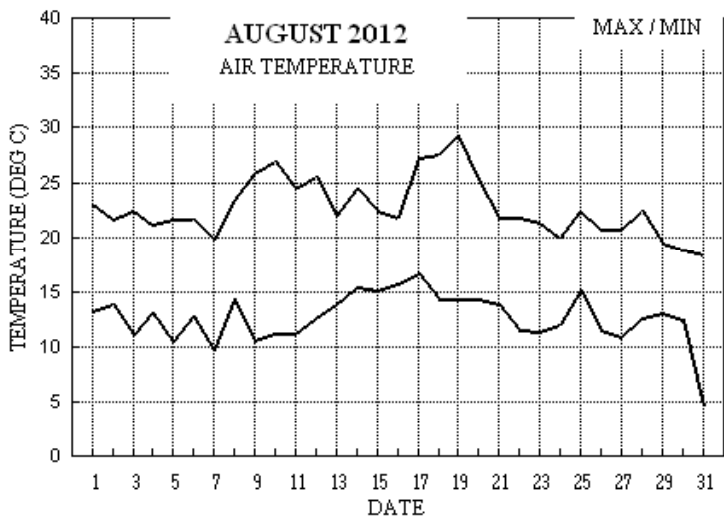
**Temperature:** The mean temperature is just a little above the current climatological average but is highest for the month since 2004. The mean max is equal highest with 2005 since 2004, but the mean min is highest only since 2008. Compared with the long-term, the mean is 1.4° above the median, as is the highest max, while the lowest max is 1.5° above its median. The highest min is 0.5° above the median, but the lowest min is 1.7° below the median and is the lowest August temperature since 1979. This is also the first August since that year to have a ground frost. Earth temperatures are slightly above average. **Rainfall:** This has been a dry August, with the lowest total since 2003, in marked contrast to both 2010 and 2011 which were both very wet. The highest daily fall is very low too, lowest for August since 1995 and 8<sup>th</sup> lowest in 109 years. Rainfall duration is just under half the average, and is also lowest since 2003. Despite the low total, the number of dry days equals the average for the past 37 years. There were two dry spells, both of 5 days, ending on the 12<sup>th</sup> and 20<sup>th</sup>. A rainfall rate of 136 mm/hr was recorded on the 15<sup>th</sup>, and one of 90 mm/hr on the 29<sup>th</sup>, both classed as violent falls. Thunder occurred on the 15<sup>th</sup> and 25<sup>th</sup>, this latter a very electrically active storm. **Sunshine:** Despite the total sunshine being 11% below average, it is the sunniest August since 2009. Although daily values were below normal up to the 8<sup>th</sup>, the accumulated deficit had been eliminated by the 11<sup>th</sup>, and was still close to zero on the 19<sup>th</sup>, after which it slowly increased again up to the month's end. Overall there were 9 days with <3 hours, 12 with =>6 hours, 7 with =>9 hours, and 2 with =>12 hours. **Wind:** The mean speed is 0.3 mph above average, but the windiest day is 1.5 mph below normal and lowest since 2003. **Commentary: From the 1<sup>st</sup> to the 15<sup>th</sup> :** Max temperatures were below normal up to the 7<sup>th</sup>, then near or above, while daily min were within +/-3.0° of normal throughout. Anomalies for daily max ranged from +4.0° on the 10<sup>th</sup> to -3.2° on the 7<sup>th</sup>. Some rain fell every day until the 7<sup>th</sup>, and on the 13<sup>th</sup> and 15<sup>th</sup>, giving a total of 13.7 mm, of which 5.5 mm fell on the 15<sup>th</sup>. Sunshine was generally slightly below normal, but the 3 days 9<sup>th</sup> to 11<sup>th</sup> were sunny, having a mean of 11.7 hours per day, and both the 3<sup>rd</sup> and 14<sup>th</sup> had over 50 % of the maximum. Moderate S'yly winds on the 1<sup>st</sup> temporarily increased fresh on the 2<sup>nd</sup>, becoming light SW'yly on the 7<sup>th</sup>, veering W'yly on the 9<sup>th</sup> and increasing moderate E'yly on the 11<sup>th</sup>, veering S'yly on the 12<sup>th</sup>. **From the 16<sup>th</sup> to the 31<sup>st</sup> :** Daily maxima were generally near or below normal, except for a warm spell from the 17<sup>th</sup> to 20<sup>th</sup>, which gave an anomaly of +6.8° on the 19<sup>th</sup>, otherwise anomalies were between +1.3° on the 28<sup>th</sup> and -2.4° on the 31<sup>st</sup>. Daily minima were also above normal to the 21<sup>st</sup> then near or above, with anomalies between +4.6° on the 17<sup>th</sup> and -0.8° on the 23<sup>rd</sup>, apart from a cold night on the 31<sup>st</sup> which had an anomaly of -6.3°. It was mainly dry until the 23<sup>rd</sup>, just 0.6 mm on the 21<sup>st</sup>, then a total of 10.4 mm to the end of the month, most of which fell on the 29<sup>th</sup>, with contributions on the 24<sup>th</sup>, 25<sup>th</sup> and 27<sup>th</sup>. Sunshine was generally below normal, the best days being the 18<sup>th</sup>, 19<sup>th</sup> and 28<sup>th</sup>, all having over 70 % of the maximum. Light or moderate winds were S'yly on the 16<sup>th</sup>, becoming generally SW'yly after the 18<sup>th</sup>, veering NW'yly and temporarily increasing fresh on the 30<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>			
-0.3°	-0.6°	37%	91%	+2.3°	+2.0°	49%	107%	-0.7°	+0.3°	61%	72%

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

# Wokingham climatological graphs for August 2012



Month: AUGUST 2012

Date	Max C	Min C	Rain mm	Grass Min	30cm C	100cm C	Sun hrs	Frost hrs	pp09 mbar	Af Gf	Sf Sl	Th Ha	Ic Fg	Vec mean ddd ff sp	Max gust ddd gg HHhh	High hr ddd ff HH	Rain hrs		
1	23.0	13.3	0.2	11.2	19.1	17.6	1.6	0.0	1008.6	0 0 0 0	0 0 0 0	0 0 0 0	187	5.0	5.6	195 21 1652	208 10 16	0.1	
2	21.6	13.8	0.1	11.9	19.1	17.6	5.1	0.0	1010.6	0 0 0 0	0 0 0 0	0 0 0 0	213	7.7	7.7	216 25 1318	208 12 13	0.1	
3	22.5	11.0	1.5	6.3	19.0	17.5	8.9	0.0	1012.2	0 0 0 0	0 0 0 0	0 0 0 0	203	6.9	7.1	197 24 1446	212 11 12	0.4	
4	21.2	13.1	0.7	10.0	18.7	17.5	5.9	0.0	1009.5	0 0 0 0	0 0 0 0	0 0 0 0	195	6.3	6.5	212 24 1305	204 11 13	0.6	
5	21.7	10.4	0.1	5.9	18.8	17.5	5.3	0.0	1007.5	0 0 0 0	0 0 0 0	0 0 0 0	191	4.0	4.4	193 17 1511	211 8 16	0.2	
6	21.6	12.8	1.7	10.0	19.0	17.5	3.1	0.0	1008.4	0 0 0 0	0 0 0 0	0 0 0 0	236	5.2	5.4	269 23 1356	255 8 11	0.5	
7	19.8	9.6	1.4	6.3	18.9	17.5	0.6	0.0	1020.1	0 0 0 0	0 0 0 0	0 0 0 0	221	5.2	5.4	216 15 1212	215 7 14	1.8	
8	23.3	14.4	0.0	14.5	18.9	17.5	3.5	0.0	1022.8	0 0 0 0	0 0 0 0	0 0 0 0	259	2.6	3.4	265 11 1014	256 6 10	0.0	
9	25.9	10.6	0.0	8.1	19.2	17.4	10.5	0.0	1026.3	0 0 0 0	0 0 0 0	0 0 0 0	20	1.3	2.1	49 13 1359	34 4 09	0.0	
10	26.9	11.3	0.0	8.7	19.7	17.5	12.8	0.0	1027.2	0 0 0 0	0 0 0 0	0 0 0 0	69	1.1	2.3	209 10 2126	206 4 21	0.0	
11	24.5	11.3	0.0	8.3	20.1	17.6	11.8	0.0	1021.9	0 0 0 0	0 0 0 0	0 0 0 0	86	5.2	5.6	70 19 1716	123 9 10	0.0	
12	25.6	12.7	tr	9.7	19.9	17.7	6.1	0.0	1011.7	0 0 0 0	0 0 0 0	0 0 0 0	171	2.5	4.6	221 15 1658	215 7 17	0.0	
13	22.0	13.9	2.5	11.6	20.0	17.8	0.1	0.0	1010.5	0 0 0 0	0 0 0 0	0 0 0 0	167	5.1	5.4	198 19 1244	190 9 10	2.1	
14	24.4	15.5	tr	14.0	19.7	17.8	9.0	0.0	1011.1	0 0 0 0	0 0 0 0	0 0 0 0	178	4.1	4.8	184 14 1324	170 7 13	0.0	
15	22.5	15.1	5.5	12.0	20.1	17.9	2.3	0.0	1003.3	0 0 0 0	1 0 0 0	0 0 0 0	167	3.5	6.4	212 25 1708	227 11 14	0.9	
16	21.9	15.8	tr	12.5	19.5	17.9	3.9	0.0	1014.1	0 0 0 0	0 0 0 0	0 0 0 0	196	7.0	7.7	187 22 1353	203 12 08	0.0	
17	27.3	16.7	0.0	14.9	19.5	17.9	5.3	0.0	1013.1	0 0 0 0	0 0 0 0	0 0 0 0	186	5.4	6.3	201 23 1323	211 11 13	0.0	
18	27.6	14.3	0.0	10.7	19.7	17.9	12.8	0.0	1013.6	0 0 0 0	0 0 0 0	0 0 0 0	221	3.6	4.1	211 16 1150	234 7 12	0.0	
19	29.3	14.3	0.0	11.0	20.3	17.9	10.4	0.0	1015.1	0 0 0 0	0 0 0 0	0 0 0 0	247	2.0	3.7	309 15 1942	268 8 18	0.0	
20	25.2	14.4	0.0	10.4	20.4	18.0	4.8	0.0	1019.6	0 0 0 0	0 0 0 0	0 0 0 0	228	3.9	4.3	203 15 0933	252 8 14	0.0	
21	21.8	13.9	0.6	11.0	20.1	18.1	1.1	0.0	1018.7	0 0 0 0	0 0 0 0	0 0 0 0	226	4.1	4.2	209 16 1725	225 8 17	0.4	
22	21.9	11.6	0.0	9.6	19.7	18.2	7.2	0.0	1018.6	0 0 0 0	0 0 0 0	0 0 0 0	240	6.9	7.1	259 21 1413	253 10 14	0.0	
23	21.4	11.4	0.0	8.2	19.2	18.2	5.2	0.0	1016.1	0 0 0 0	0 0 0 0	0 0 0 0	223	3.6	3.7	267 13 0941	204 5 14	0.0	
24	19.9	12.0	1.5	9.3	19.3	18.1	0.7	0.0	1006.0	0 0 0 0	0 0 0 0	0 0 0 0	175	4.8	5.1	138 18 1502	179 8 14	1.5	
25	22.4	15.1	2.4	13.7	19.0	18.1	4.2	0.0	999.4	0 0 0 0	1 0 0 0	0 0 0 0	228	6.3	7.0	229 27 1254	223 10 15	1.1	
26	20.8	11.5	0.0	8.9	19.0	18.0	6.8	0.0	1015.5	0 0 0 0	0 0 0 0	0 0 0 0	254	5.7	6.2	264 20 0158	266 9 01	0.0	
27	20.8	10.9	1.6	6.7	18.8	18.0	1.1	0.0	1014.9	0 0 0 0	0 0 0 0	0 0 0 0	185	6.4	6.6	192 25 1413	189 11 13	1.5	
28	22.5	12.6	0.0	7.3	18.7	17.9	9.7	0.0	1013.6	0 0 0 0	0 0 0 0	0 0 0 0	219	6.3	6.7	254 21 1340	207 11 16	0.0	
29	19.4	13.1	4.9	9.8	18.7	17.9	2.3	0.0	1011.6	0 0 0 0	0 0 0 0	0 0 0 0	194	6.7	6.9	228 29 1129	209 11 09	3.1	
30	18.9	12.5	tr	9.4	18.1	17.8	2.5	0.0	1013.5	0 0 0 0	0 0 0 0	0 0 0 0	307	4.1	7.3	291 27 1137	310 13 12	0.0	
31	18.4	4.6	tr	-1.4	17.5	17.8	8.2	0.0	1030.7	0 1 0 0	0 0 0 0	0 0 0 0	307	3.9	4.3	291 15 1521	303 7 16	0.0	
Total			24.7				172.8	0.0						209	3.6	5.4			14.3
Mean	22.8	12.7		9.7	19.3	17.8	5.57	0.0	1014.4										
Anom	+0.2	+0.3	49%	+0.4	+0.6	+0.2	89%			-1.9									
Daily mean		17.7																	
Anom		+0.2																	

Number of days with:

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

Abbreviations.

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

Rain = total rainfall and melted snowfall in 24 hour period ending at 09 GMT, millimetres. (Tr = trace, &lt;.05mm).

Grass min = Lowest overnight temperature at grass tip level.

Sun = hours of bright sunshine, measured electronically. Frost = Number of hours with air temp below 0 deg C.

pp09 = Air pressure corrected to mean sea level at 0900 GMT, millibars.

Af = Air frost. Gf = Ground frost. Sf = Snow falling. Sl = Snow lying at 09 GMT.

Th = Thunder. Ha = Hail =&gt;5mm. Ic = Hail &lt;5mm or ice. Fg = Fog at 09 GMT.

Vec mean = 24 hour mean wind vector, ddd = direction in degrees from true north, ff = speed in knots.

Sp = 24 hour mean wind speed in knots.

Max gust = Highest gust in 24 hours, gg = speed in knots, HHhh = Time, hours and minutes, GMT.

High hr = Highest hourly mean wind, HH = hour commencing. Rain Hrs = Duration of rain, 24 hours to 09 GMT. Excludes snow/hail.

30cm and 100 cm are earth temperatures at those depths, read at 09 GMT.

Anom = Departure from 1981-2010 climatological average.

All temperatures in degrees Celsius.



Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for August 2012

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cf	NCh	shs	NCh	shs	NCh	shs	Date	Remarks
1	82	5	20	10	19	22.4	5.2	33	5.4	1006.4	6	017	03	1	1	5	8	6	8	0	81845	84656					1	2Sc45 1Ac65 Cu hum Ac cas	
2	60	6	23	08	25	18.5	13.5	73	10.5	1010.6	3	003	80	8	1	4	8	5	7	/	83828	85358					2	2Sc40 1Ac65 Cu med	
3	80	2	21	10	24	21.5	9.9	48	7.7	1011.3	8	003	01	1	1	1	2	6	4	2	81845						3	1Ac68 2Ci75 COTRA Cu med	
4	70	7	21	11	20	20.5	11.3	56	8.2	1008.4	7	007	15	1	1	2	9	5	6	2	81925	82835	87072				4	1Sc50 1Ac62 1Ac68 COTRA jpNW Halo 22° part	
5	82	3	20	08	16	20.7	9.1	47	7.3	1005.3	8	010	15	1	1	3	9	6	3	1	81935	83845					5	1Ac60 1Ci75 jp NW&N	
6	58	7	22	08	18	17.3	13.0	75	9.4	1010.2	1	010	25	8	2	3	9	4	7	/	82918	81830	87358				6	1Sc56 /Ac62 jpNW	
7	86	7	20	07	15	17.7	11.5	67	8.3	1021.2	2	008	02	2	2	7	8	5	/	/	82828	87645					7	Cu med	
8	82	6	33	06	11	21.8	13.9	61	9.9	1022.7	7	003	02	2	2	3	8	6	3	0	83830	83362					8	1Sc50 Cu med	
9	78	3	25	03	12	25.3	10.7	40	8.4	1025.2	8	007	01	1	1	1	4	7	0	1	81850						9	1Sc50 2Ci78 COTRA	
10	75	2	36	03	07	25.4	10.5	39	7.7	1024.6	7	014	02	0	0	2	4	7	0	0	81850						10	2Sc50 Cu hum	
11	80	7	11	07	18	23.7	8.6	38	7.1	1017.7	7	021	02	2	2	0	0	9	0	8	87275						11	COTRA Halo 22° part Parhelia	
12	65	7	22	07	14	23.5	15.1	59	10.5	1010.8	2	001	03	2	2	7	8	6	3	/	82833	86650					12	/Ac58 Cu med	
13	62	8	18	08	15	21.1	14.1	64	10.0	1010.2	7	001	60	6	2	7	8	5	2	/	83828	86640	88457				13	Cu med	
14	81	5	18	08	13	23.8	12.8	50	9.1	1010.6	7	007	02	1	1	2	1	6	0	1	82845	84075					14	Absent vv&cld est	
15	75	7	22	08	25	17.0	13.7	81	9.7	1005.1	3	036	25	9	8	6	8	4	/	8	81818	86650	87275				15	2Sc40 Cu fra Clearance SW	
16	75	7	20	10	22	21.2	11.1	52	8.3	1015.3	3	003	03	2	2	1	1	6	3	2	81838	83363	86075				16	Cu hum Absent vv&cld est	
17	81	5	20	09	17	26.6	11.7	39	8.3	1013.3	8	003	02	1	1	1	1	7	3	1	81850	84365					17	3Ci75 Cu hum Absent vv&cld est	
18	84	3	23	06	11	26.7	18.1	59	12.6	1014.1	8	002	02	0	0	1	1	6	3	2	81835						18	2Ac65 1Ci75 COTRA Cu hum	
19	78	6	27	04	07	27.8	16.3	49	11.2	1013.3	5	017	03	1	1	1	2	6	8	2	81840	85358					19	1Cc72 2Ci75 Cu med Ac cas	
20	82	4	28	08	14	23.7	14.0	54	9.8	1019.5	5	002	02	1	1	4	8	6	0	0	83835						20	2Sc50 Cu med	
21	80	7	23	06	11	20.8	13.0	61	9.3	1015.9	8	012	01	2	2	1	2	6	7	/	81830	85362	87365				21	Cu med	
22	80	3	26	10	21	21.2	10.4	50	7.7	1016.9	7	012	15	1	1	1	2	6	6	1	81840						22	2Ac58 1Ci75 Cu med jp SSW	
23	82	7	21	04	11	19.8	8.8	49	6.9	1012.8	7	018	02	2	2	6	8	6	/	8	81845	86650	87275				23	Cu hum/med	
24	65	8	15	08	16	18.1	12.3	69	9.0	1002.7	7	020	60	6	2	2	8	5	7	/	81825	83558	88462				24	2Sc45 /Ac60 Cu hum	
25	65	7	23	10	22	19.1	14.6	75	10.3	1001.0	1	014	29	9	1	3	9	4	6	3	81715	83925	85070				25	1Cu25 1Sc50 1Ac65 jpSE&NW	
26	84	7	26	07	15	20.2	6.7	42	6.3	1017.1	0	006	03	1	1	4	4	7	0	6	82850	83656	87275				26	Cu med Absent vv&cld est	
27	81	7	21	09	25	19.9	12.0	60	8.7	1011.5	6	015	15	2	2	2	2	6	7	/	82832	85358	87362				27	Cu med jpW	
28	80	6	22	10	18	21.5	11.5	53	8.4	1014.0	0	003	02	1	1	3	2	6	0	1	83840	85075					28	1Cc70 COTRA Cu med Cz arc	
29	56	8	20	09	16	13.5	12.1	92	8.7	1011.4	5	004	58	6	5	7	8	3	2	/	82708	85815	88458				29	3Sc30 Cu hum	
30	86	6	32	10	21	18.7	9.5	55	7.3	1019.0	2	030	02	8	1	3	8	6	6	/	82836	84656					30	3Ac58 Cu med	
31	86	6	34	06	14	17.1	5.2	46	5.5	1029.4	7	009	03	1	1	1	4	6	3	1	81848	85078					31	1Sc50 2Ac68 COTRA Cu hum	

Mean vis = 31.2 km

Mean cloud = 5.8 72%

Mean wind speed = 7.7 kn

Mean gust = 17 kn

Mean TT = 21.2 °C

Mean TdTd = 11.6 °C

Mean RH = 56.0 %

Mean r = 8.6 g/kg

Mean PPP = 1013.8 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-Aug	02-Aug	03-Aug	04-Aug	05-Aug	06-Aug	07-Aug	08-Aug	09-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug
2012	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	0.16	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.53	0.62	0.18	0.00	0.00	0.15	0.00	0.94	0.73	0.75	0.22	0.00	0.00	0.24	0.00
	6	0.00	0.40	0.40	0.06	0.00	0.36	0.00	0.00	0.69	0.62	1.00	0.14	0.00	0.31	0.00	0.71
	7	0.08	0.59	0.62	0.01	0.00	0.33	0.00	0.00	0.23	1.00	1.00	0.13	0.00	1.00	0.00	0.97
	8	0.00	0.04	0.42	0.01	0.21	0.44	0.00	0.00	1.00	1.00	1.00	0.13	0.00	0.91	0.00	0.50
	9	0.00	0.41	0.11	0.30	0.00	0.61	0.26	0.06	1.00	1.00	1.00	0.92	0.02	0.72	0.00	0.00
	10	0.00	0.03	0.44	0.55	0.23	0.58	0.00	0.19	0.97	1.00	1.00	0.23	0.05	0.13	0.00	0.00
	11	0.00	0.35	0.87	0.61	0.70	0.14	0.00	0.03	0.30	1.00	1.00	0.82	0.00	0.26	0.00	0.43
	12	0.00	0.48	0.86	0.56	0.19	0.27	0.00	0.03	0.62	0.77	0.98	0.69	0.00	0.39	0.01	0.08
	13	0.01	0.35	0.88	0.42	0.67	0.09	0.03	0.01	0.61	0.83	0.99	0.41	0.00	0.74	0.00	0.23
	14	0.87	0.15	0.89	0.27	0.45	0.04	0.03	0.41	0.82	0.91	0.36	0.11	0.00	0.91	0.00	0.28
	15	0.08	0.51	0.77	0.12	0.70	0.11	0.00	0.41	0.93	0.98	0.81	0.71	0.00	0.89	0.04	0.65
	16	0.00	0.66	0.91	0.61	0.90	0.04	0.00	0.97	0.90	0.79	1.00	0.43	0.00	0.79	0.41	0.02
	17	0.00	0.44	0.79	0.90	0.95	0.00	0.00	0.63	0.57	0.90	0.66	0.84	0.00	1.00	0.75	0.00
	18	0.40	0.19	0.16	0.97	0.28	0.04	0.00	0.32	0.90	1.00	0.26	0.32	0.00	0.99	0.81	0.00
	19	0.12	0.00	0.00	0.32	0.00	0.02	0.00	0.43	0.00	0.26	0.00	0.00	0.00	0.01	0.07	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>1.58</b>	<b>5.12</b>	<b>8.89</b>	<b>5.88</b>	<b>5.29</b>	<b>3.06</b>	<b>0.58</b>	<b>3.49</b>	<b>10.48</b>	<b>12.81</b>	<b>11.82</b>	<b>6.09</b>	<b>0.07</b>	<b>9.04</b>	<b>2.34</b>	<b>3.86</b>

Hour	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug	Mean
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	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	0.01
5	0.00	0.73	0.77	0.00	0.00	0.60	0.03	0.00	0.00	0.26	0.39	0.41	0.32	0.35	0.44	0.28
6	0.00	1.00	1.00	0.00	0.00	0.97	0.72	0.07	0.01	1.00	0.45	1.00	0.41	0.00	1.00	0.40
7	0.00	1.00	1.00	0.00	0.01	0.29	1.00	0.11	0.09	1.00	0.00	1.00	0.01	0.00	1.00	0.40
8	0.00	1.00	1.00	0.00	0.01	0.07	1.00	0.48	0.30	0.99	0.00	1.00	0.20	0.00	1.00	0.41
9	0.11	1.00	0.93	0.04	0.00	0.33	0.99	0.00	0.45	0.84	0.00	0.78	0.18	0.46	1.00	0.44
10	0.65	0.94	0.56	0.00	0.30	0.22	0.80	0.00	0.72	0.96	0.00	0.77	0.00	0.55	0.90	0.41
11	0.93	1.00	0.26	0.08	0.01	0.52	0.40	0.00	0.60	0.43	0.01	0.16	0.00	0.07	0.84	0.38
12	0.34	0.88	0.64	0.28	0.02	0.32	0.11	0.00	0.61	0.32	0.00	0.42	0.00	0.13	0.41	0.34
13	0.40	0.83	0.72	0.30	0.00	0.39	0.18	0.00	0.03	0.46	0.18	0.74	0.00	0.11	0.66	0.36
14	0.80	0.76	0.13	0.70	0.00	0.77	0.02	0.00	0.32	0.49	0.10	0.67	0.00	0.42	0.51	0.39
15	1.00	0.84	0.38	0.72	0.27	0.63	0.00	0.00	0.63	0.07	0.00	0.78	0.00	0.07	0.43	0.44
16	0.65	1.00	1.00	0.76	0.49	0.57	0.00	0.00	0.47	0.00	0.00	0.80	0.16	0.06	0.00	0.46
17	0.36	1.00	1.00	1.00	0.01	0.60	0.00	0.00	0.00	0.00	0.00	0.57	0.70	0.14	0.00	0.45
18	0.06	0.80	0.98	0.97	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.57	0.29	0.13	0.00	0.37
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	0.04
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>5.30</b>	<b>12.78</b>	<b>10.37</b>	<b>4.85</b>	<b>1.11</b>	<b>7.20</b>	<b>5.23</b>	<b>0.66</b>	<b>4.21</b>	<b>6.82</b>	<b>1.14</b>	<b>9.69</b>	<b>2.27</b>	<b>2.49</b>	<b>8.20</b>	<b>172.70</b>

August 2012	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	17.22	23.2	1436	13.2	511	80.1	97.1	537	30.8	1456	13.42	9.62	11.1	736	5.2	1456	1008.69	1013.2	0	1006.1	1417	0.0
2	17.21	21.8	1235	13.7	526	75.8	94.2	530	51.4	1236	12.66	9.10	10.5	926	8.0	1254	1010.26	1012.6	2358	1007.8	27	0.3
3	16.74	22.7	1329	11.0	451	72.3	96.8	518	41.0	1356	11.21	8.28	10.5	707	6.7	1403	1012.00	1013.0	227	1010.9	1634	0.0
4	16.55	21.3	1150	11.6	2308	76.7	93.5	2347	52.0	1309	12.19	8.86	11.3	944	7.8	1912	1009.23	1011.7	0	1008.0	1754	1.3
5	16.15	21.9	1404	10.5	319	77.4	97.3	430	41.2	1546	11.67	8.61	11.2	1046	6.5	1555	1006.70	1008.7	0	1004.6	1810	0.8
6	15.96	21.9	1317	12.7	2359	79.5	96.5	331	49.0	1314	12.22	8.86	10.7	1414	7.3	2358	1009.79	1016.3	2359	1006.0	41	1.5
7	14.68	19.8	1356	9.6	440	82.7	95.4	2344	55.1	1209	11.58	8.45	10.6	2339	6.8	440	1019.95	1021.8	1821	1016.1	1	1.3
8	18.46	23.5	1619	13.8	2359	79.6	96.3	554	46.9	1725	14.53	10.17	12.2	930	8.1	1731	1022.74	1024.7	2359	1021.3	15	0.1
9	18.43	25.9	1444	10.9	459	70.9	97.9	600	35.6	1440	12.07	8.65	10.8	803	7.0	1057	1025.68	1027.1	2342	1024.4	33	0.0
10	19.00	26.9	1535	11.4	502	69.5	97.8	559	33.3	1535	12.34	8.80	11.4	836	7.0	1538	1025.68	1027.6	641	1023.3	1755	0.0
11	18.14	24.5	1533	11.5	504	69.2	95.9	550	34.2	1522	11.58	8.43	10.3	714	6.1	1522	1019.73	1024.4	9	1014.6	2359	0.0
12	18.84	25.7	1259	12.8	504	74.4	96.8	548	43.9	1300	13.79	9.79	11.8	1505	8.6	1245	1011.72	1014.7	2	1010.1	1728	0.0
13	17.79	22.1	1057	14.0	151	84.0	95.2	2349	57.0	1040	14.84	10.52	12.0	2340	9.0	1114	1010.54	1011.9	30	1009.8	1908	1.9
14	19.60	24.6	1343	15.5	555	75.5	96.7	622	47.9	1450	14.73	10.43	12.4	940	8.6	1557	1010.63	1011.7	2048	1009.4	312	0.1
15	18.12	22.6	1315	15.4	413	78.3	92.5	443	57.1	1804	14.19	10.19	14.2	1217	7.8	1818	1005.78	1009.8	0	1001.0	1118	4.9
16	18.37	22.0	1358	15.7	203	70.2	88.6	606	50.0	1539	12.68	9.09	10.3	743	7.5	1721	1013.79	1015.9	1810	1009.0	6	0.1
17	20.75	27.5	1544	16.0	2345	65.7	91.4	2346	33.3	1550	13.53	9.65	12.1	1010	7.5	1553	1013.04	1014.3	0	1011.9	531	0.0
18	21.32	27.8	1516	14.4	510	76.5	95.7	541	53.6	1549	16.66	11.79	14.1	1149	9.5	503	1013.93	1016.7	2235	1011.2	257	0.0
19	21.83	29.0	1346	14.4	541	73.0	98.0	621	41.6	1528	16.18	11.41	14.8	839	9.2	1755	1015.28	1017.9	2348	1012.9	1408	0.0
20	19.06	25.5	1429	14.5	300	77.3	94.8	321	46.6	1702	14.61	10.26	12.2	1343	8.2	1817	1019.43	1020.9	2200	1017.5	10	0.0
21	17.15	21.8	1613	14.1	52	80.8	96.9	340	53.8	1245	13.55	9.58	10.5	720	8.2	1245	1017.49	1020.5	3	1014.8	1711	0.3
22	16.14	22.1	1411	11.6	518	74.1	94.5	525	43.1	1419	11.10	8.17	10.2	952	6.7	1419	1017.54	1019.0	903	1016.2	115	0.2
23	16.20	21.5	1325	11.5	437	72.0	94.0	513	41.9	1327	10.71	7.98	9.6	826	6.4	1331	1013.94	1017.9	8	1009.0	2356	0.0
24	15.94	19.9	1310	12.1	443	80.8	95.1	2246	56.6	1156	12.48	9.08	11.1	2327	7.9	1156	1004.24	1009.2	0	999.7	2343	0.5
25	16.88	22.3	1243	13.9	2327	84.0	94.9	606	59.2	1244	14.07	10.08	11.6	1153	8.2	2350	1001.40	1008.5	2357	998.6	459	3.1
26	16.02	21.1	1341	11.6	549	67.6	92.1	558	38.5	1607	9.52	7.39	8.9	834	5.4	1607	1015.58	1019.0	2256	1008.3	0	0.0
27	16.39	21.0	1339	11.0	307	80.6	96.0	333	58.5	1340	12.86	9.22	10.8	2325	7.7	250	1013.06	1018.8	6	1008.3	2348	1.6
28	17.14	22.6	1443	12.4	455	77.1	95.9	458	47.2	1534	12.75	9.15	10.9	141	7.7	1244	1013.03	1015.4	2048	1008.1	13	0.0
29	14.73	19.3	916	13.0	1151	86.0	94.8	242	56.4	1009	12.31	8.89	10.4	808	7.4	1009	1011.97	1014.6	5	1009.7	1352	4.1
30	14.01	19.2	1438	6.9	2352	77.2	95.0	434	52.4	1456	9.86	7.61	9.8	810	4.8	2348	1017.60	1027.8	2359	1010.8	123	0.5
31	12.43	18.5	1431	4.9	540	64.2	90.8	603	39.0	1428	5.36	5.50	7.4	2110	4.2	1020	1029.33	1030.8	832	1027.7	7	0.0
Total																						22.6
Mean	17.33	22.88		12.43		75.9	95.11		46.70		12.62	9.15	11.14		7.32		1014.19	1017.31		1011.20		
Max	21.83	29.02		15.95		86.0	98.00		59.16		16.66	11.79	14.76		9.52		1029.33	1030.80		1027.66		
Min	12.43	18.52		4.88		64.2	88.60		30.79		5.36	5.50	7.44		4.24		1001.40	1008.50		998.65		

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

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

# 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 2012

Temperature (°C)

Rank in the past 131 years

Mean maximum	20.8	(-1.2)	49 <sup>th</sup> lowest
Mean minimum	11.8	( 0.0)	16 <sup>th</sup> highest
Daily mean	16.3	(-0.6)	49 <sup>th</sup> highest
Rainfall total (mm)	238.8	(165%)	14 <sup>th</sup> highest
Sunshine total (hours)	444.1	( 76%)	
N° of:			
Dry days	44	(-14)	Wet days 37 (+13)
Days with: Air frost	0 (0)	Ground frost 1 (0)	Snow falling 0 (0)      Snow lying 0 (0)
Thunder 4 (-3)	Hail ≥5mm 0 (0)	Small hail/ice 0 (0)	Fog @09 GMT 0 (0)      Nil sun 6 (+3)
Air pressure MSL : Mean @09 GMT (mbar)	1013.1 (-3.5)		

Departure from 1981 to 2010 average shown in brackets.

Notes: **Wet and Very Dull with Mean Temperature Above Normal, and a Gradual Improvement Through the Season**

**Temperature:** This has been another disappointing summer season following last year's poor showing. Daily maximum temperatures were 1.2° below the current climatological average, and second lowest after 2011 since 1988. Nevertheless, 25° was exceeded on 12 days, though this is compared to an average of 18 days. Temperatures by night were relatively mild, and the season's mean min exactly equals the average. The resulting mean temperature is 0.6° below average, but is 0.2° above the long-term median. The 57 place difference in ranked order for max and min points to an unusual temperature regime, depressed by day but elevated by night, probably the result of more persistent cloud than normal. August was the warmest month, mean 17.7°, and June the coolest, mean 14.7°. Mean maxima for June and July were well below average, but were near average in August. The season's highest max was 29.6° on the 25<sup>th</sup> July, 0.7° below the median, and the lowest min was 4.6° on the 31<sup>st</sup> August, 0.3° above the median. The lowest max was 12.1° on the 11<sup>th</sup> June, 2.3° below the median and lowest since 1971. The highest min was 16.7° on the 17<sup>th</sup> August, 0.3 below the median. The mean grass minimum was 9.4°, anomaly +0.5°, and the lowest grass min was -1.4° on the 31<sup>st</sup> August. The mean earth temperature at 30cm depth was 18.1°, anomaly +0.1°, and at 1m depth was 16.3°. **Rainfall:** This has been a wet summer, only escaping the very wet category by just 0.6mm. As it is, it ranked 14<sup>th</sup> wettest in 131 years, and apart from 2007 is wettest since 1971. However, for such a wet summer, the highest daily fall of 26.0 mm on the 10<sup>th</sup> June is only 1.3 mm above the median. The number of dry days is equal lowest with 2007 since 1985, and the number of days with 5 mm or more is most since before 1976. June, with 124.2 mm, was the wettest month and August, with 24.7 mm, the driest. Both June and July had twice the average rainfall, but August had only about half. Rainfall duration of 166.8 hours is highest since before 1993. Despite all this wetness, there were some dry spells, one of 14 days ended on the 1<sup>st</sup> June, one of 10 days on the 28<sup>th</sup> July and 2 of 5 days on the 12<sup>th</sup> and 20<sup>th</sup> August. Rainfall rate reached 166 mm/hr on the 8<sup>th</sup> July, the highest of the season, but 136 mm/hr was also recorded on the 15<sup>th</sup> August. Thunder was less frequent than average and there was no hail. **Sunshine:** Sunshine totals failed to reach average in any of this summer's months, and the total of 444 hours is one of the 5 lowest summer sunshine totals in the past 105 years. June fared worst with just 56 % of average, then July with 82 % and August with 89 %. The 23<sup>rd</sup> July was the sunniest day with 15.3 hours. Overall there were 37 days with <3 hours, 30 with =>6 hours, 27 with =>9 hours, 7 with =>12 hours and 2 with =>15 hours. **Wind:** The overall mean wind speed of 6.8 mph is 0.7 mph above the 24 year average and is highest since 1994. The 8<sup>th</sup> June was the windiest day, mean 16.2 mph, and the season's highest gust of 47 mph, the highest summer gust since 1999, was also on that day. The 9<sup>th</sup> August was the least windy day, mean 2.4 mph, and there were 1543 minutes of calm this season. Daily mean direction/number of days: N,5 NE,3 E,7 SE,2 S,20 SW,42 W,8 NW,5. Compared with normal, S and SW winds combined were 18.5 % more frequent, at the expense of all other directions except E (+1.9%). **Humidity:** The overall mean relative humidity was 76.9 %, and the lowest value reached was 20 % on the 23<sup>rd</sup> July. The mean water vapour content per kg of air was 8.9 g at 0900 GMT and 8.4 g at 1500 GMT. **Pressure:** The mean pressure is lowest since before 1976.

**June:** The dullest and 3<sup>rd</sup> wettest June in over 100 years with below normal temperature and quite windy. Mean max lowest since 1991. Lowest max lowest since 1989. Wettest since 1971, and before that 1903. Dullest June for over a century. Windiest since 1994.

**July:** Wet and dull with temperatures well below normal. Twice the average rainfall, and the monthly average reached by the 9<sup>th</sup>. Sunshine an improvement on June but still 18 % below normal.

**August:** Dry with temperature above and sunshine below normal. The lowest min lowest since 1979. First August ground frost since 1979. Driest since 2003.

Month	Mean Max	Anom	Mean Min	Anom	Rain mm	Anom	Sun hrs	Anom	Wind Mn mph	Max gust	Mean pressure	Anom
Jun	18.9°	-1.6°	10.5°	0.0°	124.2	252%	108.5	56%	7.8	47	1011.1	-6.0
Jul	20.8°	-2.1°	12.1°	-0.5°	89.9	200%	162.8	82%	6.2	38	1013.9	-2.7
Aug	22.8°	+0.2°	12.7°	+0.3°	24.7	49%	172.8	89%	6.2	33	1014.4	-1.9

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 1981 to 2010. 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 1981 to 2010 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.

**Rainfall :** Rainfall is given in mm and tenths. "tr" ( trace) is entered when: a) precipitation has occurred but there is no water in the gauge. b) There is water in the gauge but it is less than 0.05 mm.

**Dry Spell :** A dry spell, for the purposes of the Wokingham climatological data and reports, is defined as a period of 5 or more consecutive dry days. A dry day is defined as one where the 24 hour precipitation measured at 09 GMT is not greater than 0.1 mm.

**Wind:** The following abbreviations may be used to denote wind directions :

Degrees are from true north

N = North =  $360^{\circ}$  and  $22.5^{\circ}$  either side.

NE = NorthEast =  $045^{\circ}$  and  $22.5^{\circ}$  either side.

E = East =  $090^{\circ}$  and  $22.5^{\circ}$  either side.

SE = SouthEast =  $135^{\circ}$  and  $22.5^{\circ}$  either side.

S = South =  $180^{\circ}$  and  $22.5^{\circ}$  either side.

SW = SouthWest =  $225^{\circ}$  and  $22.5^{\circ}$  either side.

W = West =  $270^{\circ}$  and  $22.5^{\circ}$  either side.

NW = NorthWest =  $315^{\circ}$  and  $22.5^{\circ}$  either side.

**Wind – terms for speed used in monthly reports:** When the following terms are used in the monthly reports, they will be based on the following unofficial criteria, (the day runs from 00 to 24 GMT) :

Term	Daily mean speed, knots		Highest hourly mean speed, knots		24 hour maximum gust, knots
Very light	3 or less	and	4 or less	and	8 or less
Light	3 to 6	or	4 to 8	or	8 to 16
Moderate	6 to 9	or	8 to 12	or	16 to 24
Fresh	9 to 12	or	12 to 16	or	24 to 32
Strong	12 to 15	or	16 to 20	or	32 to 40
Very strong	15 to 18	or	20 to 24	or	40 to 48
Near gale	18 to 21	or	24 to 28	or	48 to 56
Gale	21 to 24	or	28 to 32	or	56 to 64
Severe gale	24 to 27	or	32 to 36	or	64 to 72

B.J.Burton. 3 August 2009  
 Updated 8 Sept 2009,  
 4 Nov 2011

## Appendix 2.

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

**VV** : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

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

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

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

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

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

**Cl :** Type of low cloud

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

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

**Cm :** Type of medium cloud.

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

**Ch :** Type of high cloud

0 = No high cloud

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

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

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

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

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

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

7 = Veil of Cirrostratus covering the celestial dome.

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

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

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

**8 Groups**

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

**C** = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

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

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

00 to 50 = Height in hundreds of feet

51 to 55 Not used

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

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