

WOKINGHAM

METEOROLOGICAL

DATA

Wokingham Climatological Station, Emmbrook, Berkshire.

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

Monthly Means and Totals

JULY 2013

Temperature (°C / °F)			Anomaly	Rank in the past 132 years				
Mean maximum	26.2	79.2	+3.3	3 rd highest				
Mean minimum	13.0	55.4	+0.4	11 th highest				
Daily mean	19.6	67.3	+1.9	3 rd highest				
Highest maximum	32.4	90.3	on 22 nd	Lowest maximum	17.1	62.8	on 2 nd	
Highest minimum	18.1	64.6	on 23 rd	Lowest minimum	8.6	47.5	on 11 th	
Mean grass minimum	9.5	49.1	-0.3	Lowest grass minimum	3.3	37.9	on 11 th	
Mean earth @30 cm	19.7	67.5	+1.0	Earth @100 cm	16.8	62.2		
Frost duration (hrs)	0.0			Rain duration (hrs)	11.3			
Rainfall total (mm / in)	21.1	0.83	47 %	21 st lowest				
Highest daily fall	9.7	0.38	on 27 th					
Number of: Dry days (<0.2mm)	24	Wet days (>0.9mm)	5	days ≥5mm	1			
Sunshine total (hrs)	285.7	Daily mean	9.22	144 %	Sunniest day	15.3	on 19 th	
N ^o days with: Air frost	0	Ground frost	0	Snow falling	0	Snow lying	0	
Thunder	3	Hail ≥5mm	0	Small hail/ice	0	Fog @09	0	
Nil sun	0							
Pressure MSL : Mean @09 GMT, mbar	1020.3	+3.7	Highest	1034.2	on 8 th	Lowest	1002.4	on 27 th
Relative humidity : Mean (%)	67.4	Lowest	18	on 15 th	Water vapour (g/kg), mean at 09 and 15 GMT	9.4,	8.6	
Overall mean wind speed (mph)	5.6	Windiest day	9.8	on 28 th	Max gust	31	on 29 th	
Wind direction (days)	N 1	NE 10	E 1	SE 1	S 4	SW 10	W 2	NW 2
Least windy day (mph)	2.5	on 6 th	Calm; less than 0.5 mph (minutes)	605				

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

Notes: **Dry, Very Sunny, Very Hot**

Temperature: This is the third hottest July since before 1882, the mean temperature having only been exceeded in 1983 and 2006, and equaled in 1995. Likewise, the mean maximum is 3rd highest after 1983 and 2006, but is 1.3° below the record. The mean minimum, however, is 1.7° below its record, set in 1983, and is below that of recent years such as 2010, 2006, 2003 and 1995. The highest max of 32.4° is 3.9° above the median, and 3.4° below the record set in 2006, while the lowest max is 0.3° above its median. The highest min is 1.8° above the median and 1.3° below the record set in 1968. The lowest min is 1.6° above the median. Earth temperature at 30cm depth is highest since 2006. **Rainfall:** This has been a dry July, with a long 20 day dry spell broken on the 23rd, and with all but 1.4 mm of the month's total falling after this date. The total is just under half the average, and combined with a dry June, the two month total is also only 41 % of average. We have to look back to 1994 to find a drier July, but there have been 6 drier than this month in the past 38 Julys. The number of dry days is 5 more than average, and most since 1990. Rainfall duration is 40% of average and lowest since 1999. Thunder occurred on the 17th, 23rd and 29th, but there was no hail here. A rainfall rate of 114 mm/hr was recorded on the 27th, and is highest for any day since the 17th October last. **Sunshine:** This has been a very sunny July, probably in the top 5 in the past century. The daily mean of 9.22 hours was exceeded in 1928, 2006 and in 1911, by an amazing margin of 2.2 hours per day in that year. In this July, the period from the 5th to the 19th was outstanding, with 198.8 hours of sunshine over 15 consecutive days, a mean of 13.25 hours per day, with no day having less than 60% of the maximum, and 5 having over 90%. Overall there were 4 days with <3 hours, 23 with =>6 hours, 17 with =>9 hours, 11 with =>12 hours and 4 with =>15 hours. **RH:** The relative humidity fell to 18% near midday on the 15th, the lowest July value since before 1998. **Pressure:** The mean pressure is highest for July since 1989, and the maximum pressure is the highest value for July since before 1976. **Commentary: From the 1st to the 15th:** After a cool start, with anomalies for daily max of -4.8° on the 2nd, this period was characterized by fine and sometimes hot weather, with anomalies for daily max up to +7.9° on the 13th and +6.4° on the 7th, though with a cooler interlude from the 10th to the 12th, anomaly +0.5° on the 10th. Anomalies for daily min were generally negative, ranging from +3.7° on the 14th to -3.6° on the 11th. The 2nd was the only day with rain, then only 1.3 mm. After the 4th sunshine was outstanding, and was over 90% of the maximum from the 7th to the 9th. Moderate SW'ly winds dropped light on the 5th, became light or moderate NE'ly on 7th, backing NW'ly on the 13th. **From the 16th to the 31st:** Daily maxima were again generally above normal until the 27th, with anomalies of +9.6° on the 22nd and +8.1° on the 17th. After the 27th maxima were near normal with anomalies between -1.6° and +2.7°. Daily minima were near or above normal, with anomalies between +5.7° on the 23rd and -2.1° on the 27th. Dry until the 22nd, then 6 days with rain before the end of the month giving a total of 19.7 mm. Very sunny at first with over 90% of the maximum on the 18th and 19th, but rather closer to normal after this, and dull from the 27th on. Light or moderate W'ly winds on the 16th became NE'ly on the 17th, veering S'ly on the 22nd and increasing fresh for the 28th and 29th.

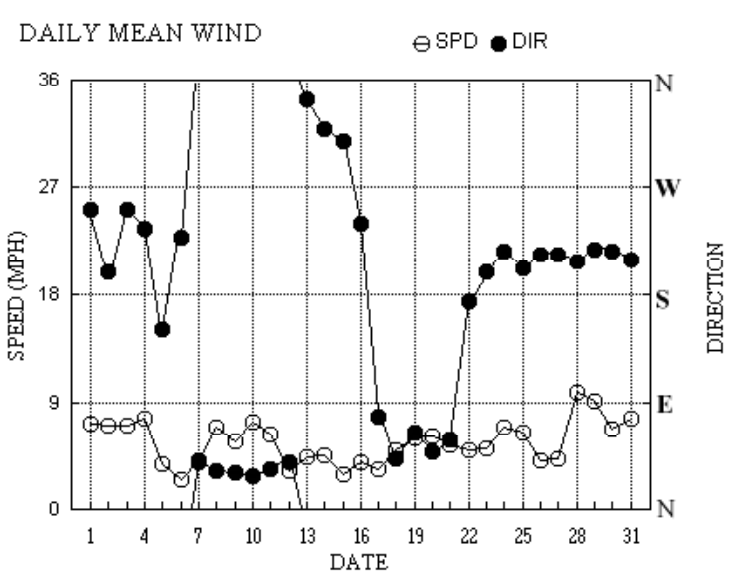
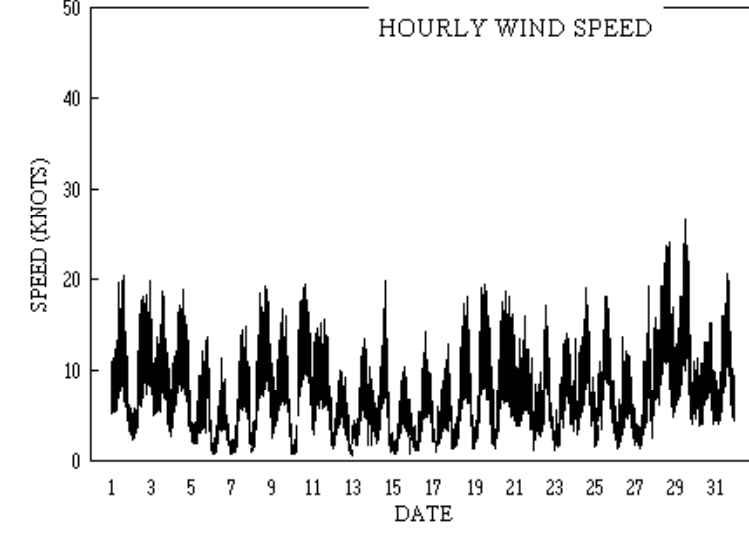
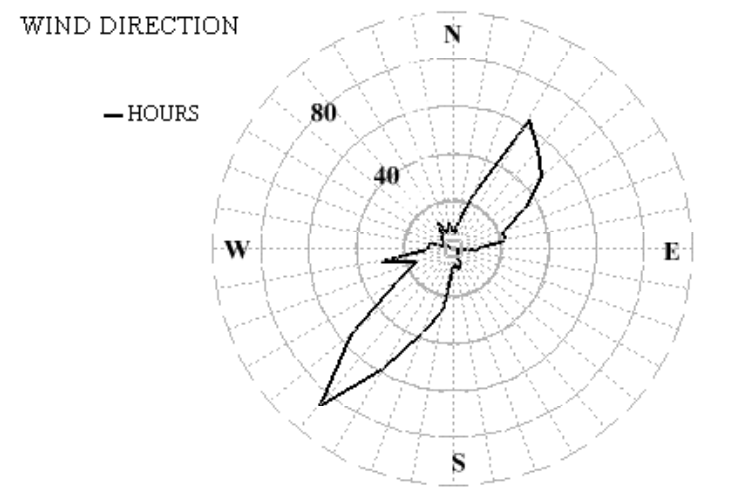
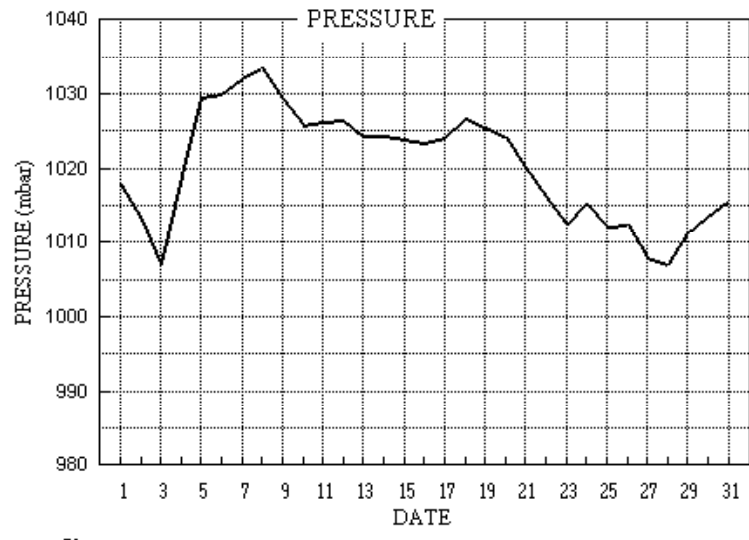
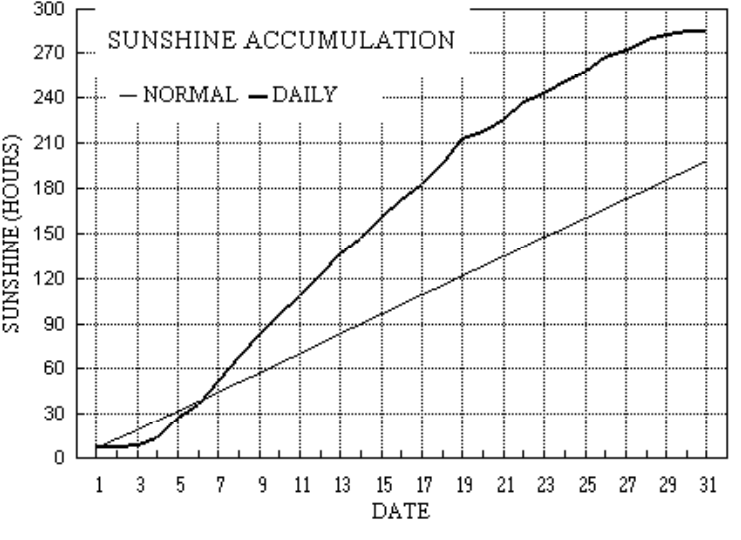
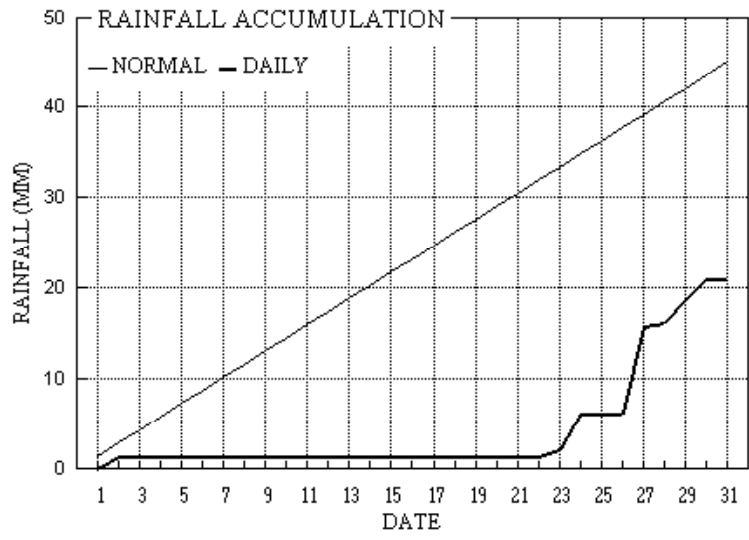
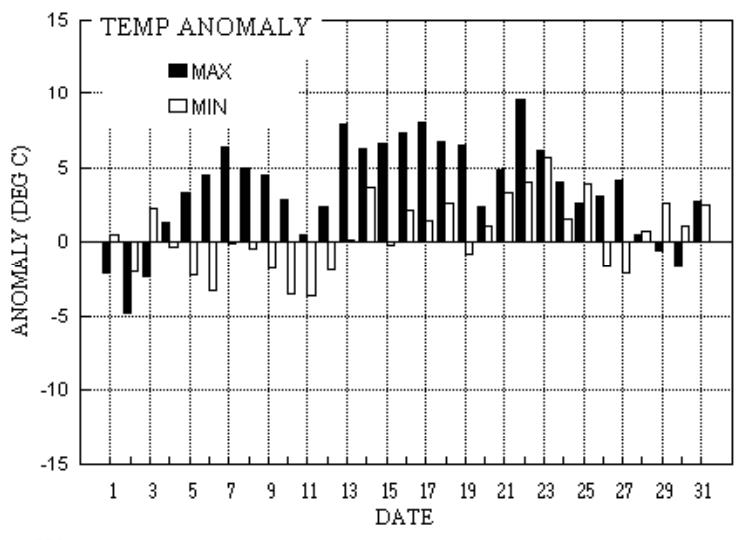
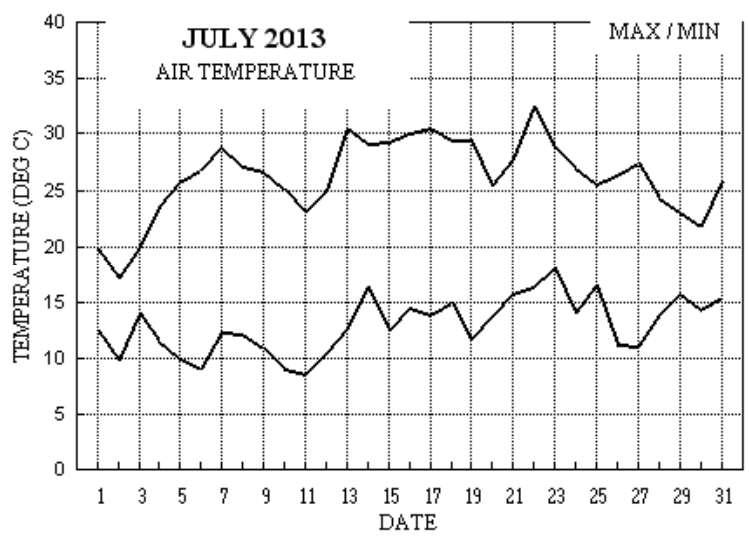
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 st to the 10 th				From the 11 th to the 20 th				From the 21 st to the 31 st			
+1.9°	-1.1°	7%	152%	+5.5°	+0.5°	0%	191%	+3.2°	+2.0°	124%	95%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

Wokingham climatological graphs for July 2013



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: JULY 2013

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	19.8	12.4	0.0	7.8	18.1	14.9	8.3	0.0	1017.8	0	0	0	0	251	6.1	6.2	264	21	1527	267	9	13	0.0	
2	17.1	9.8	1.3	5.6	17.8	15.1	0.1	0.0	1013.0	0	0	0	0	199	6.0	6.1	217	20	2249	213	10	22	1.1	
3	19.9	14.0	0.1	13.9	17.2	15.2	1.1	0.0	1007.0	0	0	0	0	251	5.6	6.1	265	19	1404	274	9	13	0.2	
4	23.6	11.5	tr	7.2	17.2	15.3	4.9	0.0	1018.9	0	0	0	0	236	6.3	6.6	242	19	1320	239	10	13	0.0	
5	25.7	10.0	0.0	5.7	17.3	15.3	13.3	0.0	1029.4	0	0	0	0	150	1.0	3.4	197	14	1907	194	7	19	0.0	
6	26.8	9.1	0.0	5.3	17.9	15.3	10.2	0.0	1030.0	0	0	0	0	228	0.4	2.2	203	12	1134	220	4	12	0.0	
7	28.8	12.3	0.0	9.0	18.4	15.4	15.0	0.0	1032.0	0	0	0	0	39	3.4	3.6	6	15	1655	29	7	16	0.0	
8	27.1	12.1	0.0	7.6	19.0	15.6	15.3	0.0	1033.5	0	0	0	0	32	5.9	6.0	24	20	1643	24	9	17	0.0	
9	26.7	10.9	0.0	8.4	19.2	15.8	15.3	0.0	1029.2	0	0	0	0	31	4.9	4.9	20	17	1328	31	7	13	0.0	
10	25.1	9.1	0.0	4.4	19.2	16.0	13.3	0.0	1025.8	0	0	0	0	28	6.2	6.3	12	20	1632	23	10	14	0.0	
11	23.0	8.6	0.0	3.3	19.1	16.2	12.9	0.0	1026.3	0	0	0	0	34	5.3	5.4	24	16	1505	22	7	18	0.0	
12	25.0	10.4	0.0	5.8	19.2	16.3	13.2	0.0	1026.4	0	0	0	0	39	2.6	2.8	100	10	0956	29	5	11	0.0	
13	30.5	12.7	0.0	9.0	19.4	16.4	14.3	0.0	1024.3	0	0	0	0	344	1.3	3.8	27	14	1325	181	6	21	0.0	
14	29.1	16.3	0.0	12.5	20.1	16.5	10.7	0.0	1024.3	0	0	0	0	319	2.7	4.0	335	20	1406	309	8	14	0.0	
15	29.3	12.5	0.0	7.9	20.3	16.7	13.7	0.0	1024.0	0	0	0	0	309	1.6	2.6	299	11	1302	336	4	11	0.0	
16	30.0	14.5	0.0	11.2	20.5	16.9	10.9	0.0	1023.5	0	0	0	0	240	2.9	3.4	231	14	1413	240	6	15	0.0	
17	30.6	13.8	tr	9.9	20.7	17.1	10.7	0.0	1024.1	0	0	0	1	77	0.1	3.0	143	13	1835	179	6	18	0.0	
18	29.5	14.9	0.0	11.1	20.9	17.2	14.7	0.0	1026.7	0	0	0	0	42	4.2	4.4	38	18	1632	27	7	18	0.0	
19	29.5	11.7	0.0	6.9	20.9	17.4	15.3	0.0	1025.5	0	0	0	0	65	5.1	5.2	69	20	1458	78	9	14	0.0	
20	25.4	13.7	0.0	8.9	20.9	17.6	5.3	0.0	1024.1	0	0	0	0	48	5.3	5.3	64	19	1517	61	8	10	0.0	
21	27.7	15.8	0.0	14.0	20.7	17.7	7.6	0.0	1020.1	0	0	0	0	59	4.5	4.7	61	16	1357	73	6	14	0.0	
22	32.4	16.4	0.0	13.4	20.9	17.8	11.4	0.0	1016.2	0	0	0	0	174	2.4	4.4	203	17	1501	197	9	15	0.0	
23	28.9	18.1	0.8	14.9	21.3	17.8	6.0	0.0	1012.4	0	0	0	1	199	3.4	4.5	196	14	1427	221	7	17	0.2	
24	27.0	14.0	3.9	11.5	21.1	17.9	8.3	0.0	1015.3	0	0	0	0	217	5.7	5.9	229	19	1453	224	9	14	1.5	
25	25.6	16.5	0.0	12.9	21.1	18.0	6.8	0.0	1012.2	0	0	0	0	202	5.0	5.6	212	18	1551	217	10	13	0.0	
26	26.3	11.2	0.0	6.7	20.7	18.1	9.8	0.0	1012.5	0	0	0	0	214	3.3	3.5	143	14	0958	222	6	17	0.0	
27	27.5	11.0	9.7	6.5	20.5	18.1	4.1	0.0	1007.9	0	0	0	0	214	1.0	3.7	250	19	1731	235	8	17	3.9	
28	24.3	13.8	0.5	12.1	20.4	18.2	7.4	0.0	1007.1	0	0	0	0	207	7.9	8.5	197	24	1700	210	13	14	0.3	
29	23.1	15.7	2.4	14.0	20.3	18.2	3.3	0.0	1011.2	0	0	0	1	218	7.7	7.9	218	27	1255	213	13	12	2.1	
30	21.8	14.4	2.4	12.3	20.0	18.2	2.4	0.0	1013.5	0	0	0	0	217	5.7	5.9	235	15	1802	227	8	17	2.0	
31	25.8	15.5	tr	13.6	19.7	18.1	0.1	0.0	1015.7	0	0	0	0	209	6.6	6.6	218	21	1524	219	10	15	0.0	
Total			21.1				285.7	0.0																11.3
Mean	26.2	13.0		9.5	19.7	16.8	9.22	0.0	1020.3					223	0.8	4.9								
Anom	+3.3	+0.4	47%	-0.3	+1.0	-0.0	144%		+3.7															
Daily mean		19.6																						
Anom		+1.9																						

Number of days with:

Air frost = 0 Ground frost = 0 Nil sun = 0
 Snow falling = 0 Snow lying = 0 Thunder = 3
 Hail=>5mm = 0 Hail<5mm or ice = 0 Fog at 09GMT = 0

Abbreviations.

Max/min = highest and lowest air temperature at 1.2m in 24 hour period ending at 09 GMT
 Rain = total rainfall and melted snowfall in 24 hour period ending at 09 GMT, millimetres. (Tr = trace, <.05mm).
 Grass min = Lowest overnight temperature at grass tip level.
 Sun = hours of bright sunshine, measured electronically. Frost = Number of hours with air temp below 0 deg C.
 pp09 = Air pressure corrected to mean sea level at 0900 GMT, millibars.
 Af = Air frost. Gf = Ground frost. Sf = Snow falling. Sl = Snow lying at 09 GMT.
 Th = Thunder. Ha = Hail =>5mm. Ic = Hail <5mm or ice. Fg = Fog at 09 GMT.
 Vec mean = 24 hour mean wind vector, ddd = direction in degrees from true north, ff = speed in knots.
 Sp = 24 hour mean wind speed in knots.
 Max gust = Highest gust in 24 hours, gg = speed in knots, HHhh = Time, hours and minutes, GMT.
 High hr = Highest hourly mean wind, HH = hour commencing. Rain Hrs = Duration of rain, 24 hours to 09 GMT. Excludes snow/hail.
 30cm and 100 cm are earth temperatures at those depths, read at 09 GMT.
 Anom = Departure from 1981-2010 climatological average.
 All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for JULY 2013

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	72	6	26	08	16	16.3	8.6	60	6.9	1017.8	8	002	03	1	1	5	8	5	0	1	83828	83635					1	3Ci75 COTRA Cu hum	
2	66	8	19	06	12	14.1	8.6	70	6.9	1013.0	7	014	03	2	2	7	0	9	7		88360						2		
3	80	8	25	05	11	16.2	13.7	85	9.8	1007.0	1	030	02	2	2	8	5	4	/	/	83712	87618	88640				3		
4	88	7	24	09	17	18.5	14.4	77	10.1	1018.9	3	013	50	5	2	7	5	4	/	/	87615						4	/Ci75 Pptn v slt	
5	80	1	07	03	10	19.4	11.2	59	8.1	1029.4	0	009	02	0	0	1	1	6	0	1	81830						5	1Ci78	
6	62	5	18	02	06	19.7	12.7	64	8.9	1030.0	6	002	01	1	1	5	8	5	0	1	81820	85630					6	/Ci75 Cu hum	
7	57	1	02	05	09	22.9	16.2	66	11.2	1032.0	0	004	05	0	0	1	1	5	0	0	81820						7	Cu hum	
8	70	0	03	09	14	22.1	12.0	53	8.5	1033.5	8	006	02	0	0	0	0	9	0	0							8		
9	88	1	06	06	12	18.7	5.8	43	5.6	1029.2	8	012	02	0	0	0	0	9	0	1	81080						9	COTRA	
10	84	2	05	06	15	21.1	11.3	53	8.2	1025.8	8	001	02	0	0	0	0	9	0	1	82080						10	COTRA	
11	80	2	04	06	14	15.3	8.2	62	6.7	1026.3	0	003	01	1	1	2	5	5	0	1	82628						11	1Ci80 COTRA	
12	67	7	05	04	08	15.2	10.1	71	7.6	1026.4	1	006	03	1	1	6	5	4	/	1	86618						12	/Ci80 COTRA	
13	62	1	31	04	08	23.2	15.0	60	10.4	1024.3	0	002	02	0	0	0	0	9	0	1	81080						13	COTRA	
14	65	6	32	03	09	23.5	15.9	62	11.0	1024.3	8	001	02	2	2	0	0	9	0	1	81075	86080					14	COTRA	
15	88	5	01	03	07	22.6	7.1	37	6.2	1024.0	0	000	02	1	1	0	0	9	0	1	81075	85080					15	COTRA	
16	60	7	01	03	07	22.1	14.5	62	10.2	1023.5	0	000	05	2	2	0	0	9	0	8	83278	87081					16	COTRA U/a cont	
17	61	2	36	02	06	23.9	15.9	61	11.0	1024.1	0	001	02	0	0	0	0	9	0	1	82080						17	COTRA	
18	65	2	04	05	11	23.9	14.3	55	9.9	1026.7	1	002	02	0	0	0	0	9	0	1	82080						18	COTRA	
19	82	1	06	07	14	23.3	12.1	49	8.6	1025.5	8	004	02	0	0	0	0	9	0	1	81078						19	COTRA	
20	80	6	06	06	14	21.0	14.2	65	9.9	1024.1	0	001	03	2	2	6	8	5	/	/	84825	85630					20	Cu hum	
21	60	8	05	05	10	18.5	14.4	77	10.0	1020.1	6	005	05	2	2	8	8	4	/	/	84815	88622					21	Cu hum	
22	59	7	05	03	07	22.5	16.5	69	11.6	1016.2	8	005	05	1	1	0	0	9	0	1	87080						22	COTRA U/a cont	
23	60	7	14	05	09	24.9	16.1	58	11.3	1012.4	8	006	17	9	2	2	9	7	8	1	82956	83358					23	2Ac62 /Ci75 COTRA jtSW jp SW-NW	
24	70	7	25	06	13	18.6	15.1	80	10.6	1015.3	0	004	01	2	2	1	1	4	7	/	81812	83362	86465				24	Cu fra	
25	59	8	20	02	07	19.2	17.2	88	12.1	1012.2	0	001	05	2	2	8	5	3	/	/	81708	87712	88630				25		
26	70	3	20	02	06	20.0	13.0	64	9.3	1012.5	7	008	03	0	0	2	8	5	0	1	81825						26	2Sc50 2Ci78 COTRA Cu hum	
27	86	7	21	02	05	20.4	11.1	55	8.3	1007.9	7	013	02	2	2	7	0	9	8	2	81358	87365					27	/Cu72 Ac cas	
28	78	4	21	11	19	20.3	14.2	68	10.1	1007.1	2	011	03	1	1	4	8	5	0	0	84823						28	1Sc30 Absent vv&cld est	
29	80	6	22	08	17	20.6	14.0	66	9.9	1011.2	2	014	03	2	2	6	8	5	0	0	81820	84825					29	3Sc50 Cu fra/med	
30	30	8	19	05	09	15.6	14.3	92	10.1	1013.5	7	009	51	6	5	8	5	2	/	/	83705	87708	88615				30	Hvy ra in past hr.	
31	75	8	20	07	16	18.4	16.0	86	11.3	1015.7	3	001	20	6	5	8	5	3	/	/	83708	88612					31		

Mean vis = 25.8 km

Mean cloud = 4.9 61%

Mean wind speed = 5.1 kn

Mean gust = 11 kn

Mean TT = 20.1 °C

Mean TdTd = 13.0 °C

Mean RH = 65.1 %

Mean r = 9.4 g/kg

Mean PPP = 1020.3 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

W1, W2 = Past weather code (Code FM12-4561)- covers past 3 hours.

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation trails present.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for JULY 2013

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	70	4	27	06	20	19.2	7.7	47	6.5	1016.5	7	002	01	1	1	4	8	6	0	2	84842						1	1Sc48 1Ci70 Cu hum	
2	65	8	20	07	15	16.9	10.5	66	7.9	1008.7	7	024	21	6	2	5	8	5	7	/	81825	85640	86358			2	8Ac62 Cu fra Sc cas		
3	89	7	28	07	19	19.1	11.0	60	8.2	1011.4	2	024	02	2	2	7	8	6	/	/	83832	87650				3	2Sc40 Cu hum		
4	88	5	24	07	16	21.7	15.2	66	10.6	1020.1	2	006	01	2	2	5	2	5	0	0	85825					4	Cu med		
5	75	1	06	02	11	24.4	9.6	39	7.3	1028.5	8	007	02	0	0	1	1	7	0	1	81850					5	1Ci80 Cu hum		
6	67	1	23	04	09	26.0	11.5	40	8.3	1027.8	7	012	01	0	0	1	1	7	0	0	81850					6	Cu hum		
7	75	1	01	08	13	27.9	12.8	39	9.0	1030.7	6	007	02	0	0	1	1	7	0	1	81856					7	1Ci78 COTRA Cu hum		
8	65	1	02	09	15	26.5	13.4	44	9.3	1030.9	7	013	02	0	0	1	1	7	0	0	81850					8	Cu hum		
9	88	1	04	06	14	26.2	6.5	28	5.9	1026.0	7	017	02	0	0	0	0	9	0	1	81080					9	Elevated hz lyr		
10	75	5	02	10	19	23.6	12.6	50	8.9	1024.9	7	002	02	1	1	5	8	6	0	0	84840					10	1Sc48 Cu hum		
11	82	1	02	06	14	22.1	7.8	40	6.5	1024.3	6	009	02	0	0	0	0	9	0	1	81080					11			
12	75	6	33	03	09	23.8	11.6	46	8.4	1024.2	7	013	02	1	1	0	0	9	0	1	86080					12	COTRA U/a cont		
13	75	3	01	04	14	29.5	13.3	37	9.3	1023.1	7	004	02	0	0	1	1	7	0	1	81856	83080				13	COTRA Cu hum		
14	78	7	32	07	20	28.1	10.7	34	7.9	1022.7	6	008	02	2	2	1	2	7	0	1	81856	87080				14	1Ci75 COTRA Cu med U/a cont		
15	88	6	22	04	10	28.8	4.2	21	5.0	1022.4	6	010	02	2	2	0	0	9	0	1	83075	85081				15	COTRA Ci flo		
16	82	7	22	04	10	28.8	11.0	33	8.1	1021.7	7	009	02	2	2	1	1	7	0	8	81857	87081				16	1Ci75 2Cs80 COTRA Cu hum U/a cont		
17	67	2	34	05	11	29.5	13.0	36	9.2	1022.7	7	007	03	0	0	2	2	7	0	0	82856					17	Cu con		
18	78	1	01	07	15	28.5	11.0	34	8.0	1024.9	8	009	02	0	0	1	4	7	0	0	81856					18	1Sc56 Cu hum		
19	82	1	08	09	20	29.0	10.6	32	7.8	1023.2	8	012	02	0	0	1	1	7	0	1	81857					19	1Ci80 Cu hum		
20	83	5	05	06	17	22.8	14.7	60	10.2	1022.1	8	012	01	2	2	5	8	6	0	0	85832					20	1Sc38 Cu hum		
21	72	1	06	05	15	26.5	13.8	46	9.7	1017.8	7	015	02	1	1	0	0	9	0	1	81081					21	COTRA		
22	78	5	20	08	15	31.8	13.6	33	9.7	1013.9	6	010	03	2	2	1	1	7	8	1	81857	85075				22	1Ac60 1Ac65 COTRA Cu hum Ac cas		
23	78	7	22	07	14	26.5	15.5	51	10.9	1012.2	5	008	14	1	1	1	2	6	7	/	81845	83360	87365			23	Cu med jpS		
24	83	3	22	11	19	25.8	12.6	44	9.0	1013.6	6	005	02	0	0	3	2	6	3	0	83845					24	1Ac63 Cu med		
25	82	2	23	10	18	24.9	12.4	46	8.9	1011.8	7	001	01	1	1	2	8	6	0	1	82840					25	1Sc50 1Ci78 COTRA Cu hum		
26	84	6	24	03	11	24.0	10.0	41	7.6	1011.4	8	007	02	1	1	2	2	7	0	1	82850	85075				26	Cu med COTRA		
27	81	7	09	04	10	26.3	11.8	40	8.6	1003.2	8	030	03	1	1	1	2	7	7	8	81850	83362	85465			27	7Cs70 Absent vv&cld est		
28	75	7	20	13	24	22.6	10.7	47	8.0	1007.7	3	005	15	1	1	2	2	6	7	2	82835	86070				28	2Ac59 Cu med jpE vv 50k ex p		
29	80	5	23	10	24	22.4	12.7	54	9.1	1011.6	3	003	25	8	2	4	9	6	6	3	81930	83835				29	2Ac58 1Ci70 jpN&NW vv60k ex p		
30	86	7	23	07	13	21.0	16.3	75	11.5	1011.2	6	005	03	2	2	7	8	4	3	1	83818	86640				30	/Ac65 /Ci75 COTRA Cu med		
31	75	7	23	11	20	22.0	16.3	70	11.4	1015.0	6	007	80	8	2	7	8	5	/	/	83825	87650				31	Cu med vv50k ex p		

Mean vis = 35.6 km

Mean cloud = 4.2 52%

Mean wind speed = 6.8 kn

Mean gust = 15 kn

Mean TT = 25.0 °C

Mean TdTd = 11.8 °C

Mean RH = 45.1 %

Mean r = 8.6 g/kg

Mean PPP = 1018.9 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

W1, W2 = Past weather code (Code FM12-4561)- covers past 3 hours.

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation trails present.

Wokingham		Hour	01-Jul	02-Jul	03-Jul	04-Jul	05-Jul	06-Jul	07-Jul	08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul
Sunshine	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hourly analysis	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	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	0.00
2013	4	0.40	0.00	0.05	0.00	0.30	0.11	0.33	0.36	0.38	0.37	0.00	0.25	0.00	0.00	0.00	0.34	0.00
	5	1.00	0.09	0.00	0.04	1.00	0.86	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.86	0.37	1.00	0.00
	6	0.92	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.09	1.00	1.00	1.00	1.00	0.76
	7	0.88	0.00	0.00	0.01	1.00	0.57	1.00	1.00	1.00	1.00	1.00	0.68	1.00	1.00	1.00	1.00	1.00
	8	0.49	0.00	0.00	0.18	1.00	0.16	1.00	1.00	1.00	1.00	1.00	1.00	0.71	1.00	1.00	1.00	1.00
	9	0.20	0.00	0.00	0.20	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	0.84	1.00	1.00	1.00	1.00
	10	0.32	0.00	0.00	0.12	0.72	0.55	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00
	11	0.23	0.00	0.00	0.00	0.73	0.43	0.98	1.00	1.00	0.54	1.00	1.00	1.00	0.91	1.00	1.00	1.00
	12	0.00	0.00	0.00	0.00	0.94	0.43	0.98	1.00	1.00	0.55	1.00	1.00	1.00	0.95	1.00	1.00	1.00
	13	0.00	0.00	0.00	0.01	0.98	0.47	0.93	1.00	1.00	0.72	1.00	1.00	1.00	0.98	0.78	1.00	0.86
	14	0.57	0.00	0.00	0.27	1.00	0.99	1.00	1.00	1.00	0.53	1.00	1.00	1.00	1.00	0.75	1.00	0.96
	15	0.69	0.00	0.00	0.64	0.99	0.99	1.00	1.00	1.00	0.75	1.00	1.00	1.00	1.00	0.91	1.00	1.00
	16	0.21	0.00	0.03	0.61	0.99	0.41	1.00	0.99	1.00	0.97	1.00	1.00	1.00	1.00	0.62	1.00	0.53
	17	0.77	0.00	0.00	0.88	1.00	0.46	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.30	1.00	0.12
	18	1.00	0.00	0.16	1.00	0.65	1.00	1.00	0.99	1.00	1.00	1.00	1.00	0.41	1.00	0.00	0.33	0.34
	19	0.63	0.00	0.86	0.95	0.00	0.90	0.77	0.94	0.94	0.91	1.00	0.00	0.67	0.00	0.00	0.00	0.35
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	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	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	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	0.00
Tot		8.30	0.09	1.10	4.91	13.30	10.22	14.98	15.28	15.32	13.35	12.90	13.21	14.26	10.74	13.67	10.92	
	Hour	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	Mean	
	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	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	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	0.00
	4	0.14	0.21	0.40	0.00	0.00	0.00	0.00	0.35	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.14
	5	1.00	1.00	1.00	0.14	0.00	0.17	0.00	0.16	0.01	0.02	0.00	0.67	0.03	0.00	0.00	0.00	0.47
	6	1.00	1.00	1.00	0.00	0.00	1.00	0.07	0.04	0.25	0.60	0.27	0.71	0.13	0.00	0.00	0.00	0.58
	7	1.00	1.00	1.00	0.58	0.00	1.00	0.44	0.00	0.00	1.00	0.37	0.48	0.09	0.00	0.00	0.00	0.62
	8	1.00	1.00	1.00	0.68	0.00	1.00	0.79	0.00	0.00	1.00	0.46	0.91	0.39	0.00	0.00	0.00	0.64
	9	1.00	1.00	1.00	0.04	0.00	1.00	0.02	0.18	0.03	0.98	0.57	0.51	0.43	0.00	0.00	0.00	0.61
	10	1.00	1.00	1.00	0.02	0.00	1.00	0.04	0.92	0.01	0.64	1.00	0.34	0.23	0.00	0.00	0.00	0.61
	11	1.00	1.00	1.00	0.00	0.07	1.00	0.84	0.96	0.31	0.01	0.99	0.60	0.57	0.00	0.01	0.00	0.62
	12	0.87	0.83	1.00	0.00	0.86	1.00	0.91	0.51	0.38	0.08	0.41	0.62	0.41	0.00	0.02	0.00	0.60
	13	0.71	0.92	1.00	0.07	1.00	0.98	0.86	0.35	0.83	0.68	0.01	0.31	0.14	0.03	0.03	0.00	0.60
	14	0.88	0.94	1.00	0.20	1.00	0.53	0.37	0.48	1.00	0.53	0.00	0.69	0.15	0.20	0.00	0.00	0.65
	15	0.33	1.00	1.00	0.64	1.00	1.00	0.00	0.89	1.00	0.87	0.00	0.36	0.34	0.04	0.00	0.00	0.69
	16	0.36	1.00	1.00	0.76	1.00	1.00	0.00	0.91	0.93	0.36	0.00	0.40	0.09	0.05	0.00	0.00	0.62
	17	0.16	1.00	1.00	0.78	1.00	0.75	0.30	1.00	0.83	1.00	0.00	0.16	0.07	0.72	0.00	0.00	0.65
	18	0.20	1.00	0.99	0.97	1.00	0.00	0.95	0.87	1.00	1.00	0.00	0.55	0.00	1.00	0.00	0.00	0.66
	19	0.00	0.81	0.93	0.38	0.66	0.00	0.40	0.64	0.22	0.80	0.00	0.08	0.21	0.34	0.00	0.00	0.46
	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	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	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	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	0.00
Tot		10.66	14.71	15.32	5.26	7.59	11.42	6.00	8.26	6.80	9.84	4.08	7.39	3.27	2.38	0.05	285.55	

JULY 2013	T mn	Tx	Time	Tn	Time	RHmn	RH x	Time	RH n	Time	Tdmn	r mn	r x	Time	r n	Time	p mn	p x	Time	p n	Time	R tot
1	15.88	19.8	1511	12.0	2341	63.6	84.1	346	40.6	1720	8.66	6.95	8.3	1021	5.5	1736	1016.99	1018.8	0	1015.4	1855	0.0
2	13.92	17.1	1453	9.8	318	76.8	88.4	324	59.1	1352	9.83	7.57	9.1	2352	6.4	225	1010.58	1016.2	14	1003.9	2347	0.1
3	16.11	19.9	1304	11.8	2349	78.7	94.7	528	58.0	1625	12.21	8.87	10.6	1016	7.4	2349	1009.36	1017.2	2353	1002.9	250	1.3
4	17.50	23.6	1600	11.5	37	73.9	91.6	521	53.0	1832	12.58	9.03	11.5	1454	6.9	2252	1019.93	1025.7	2358	1017.0	0	0.0
5	18.06	25.7	1624	10.0	304	67.0	95.2	512	34.8	1454	11.02	8.04	9.9	1846	6.6	1445	1028.64	1030.5	2327	1025.7	0	0.0
6	18.42	26.8	1512	9.1	455	69.9	96.7	523	37.6	1542	12.09	8.64	10.9	1446	6.7	455	1029.24	1030.5	2359	1027.4	1600	0.0
7	20.81	28.8	1535	12.3	414	66.4	96.9	505	33.2	1539	13.25	9.30	12.0	914	7.7	1539	1031.46	1033.6	2359	1030.2	1655	0.0
8	19.83	27.1	1413	12.1	324	67.9	95.4	443	39.3	1415	13.00	9.13	11.0	1616	7.2	926	1032.33	1034.2	730	1030.0	1712	0.0
9	18.67	26.7	1511	10.9	509	53.7	93.1	228	21.5	1651	7.37	6.36	8.8	2	4.3	1107	1027.89	1031.3	36	1024.7	1753	0.0
10	17.12	25.1	1321	9.1	413	65.9	88.1	451	43.3	1041	10.34	7.77	11.5	1321	6.1	413	1025.53	1026.7	2335	1024.1	1728	0.0
11	15.81	23.0	1534	8.6	59	61.0	90.0	102	36.9	1550	7.76	6.47	8.1	1532	5.8	452	1025.31	1026.8	22	1023.3	1738	0.0
12	16.97	25.0	1702	10.4	456	70.7	92.1	211	43.1	1553	11.13	8.14	10.1	1759	6.9	456	1024.89	1026.5	926	1022.9	1745	0.0
13	22.26	30.5	1537	12.7	401	64.3	95.9	530	33.2	1700	14.14	9.92	12.7	1117	8.5	1700	1023.77	1024.8	2349	1022.5	1749	0.0
14	22.54	29.1	1517	16.3	308	60.7	88.5	436	32.8	1439	13.81	9.71	12.2	853	7.8	1450	1023.38	1024.7	3	1021.5	1813	0.0
15	21.61	29.3	1506	12.5	444	50.4	92.8	518	18.0	1202	8.75	7.10	9.9	2359	4.0	1142	1023.10	1024.4	737	1021.7	1711	0.0
16	22.35	30.0	1543	14.5	424	57.7	91.8	516	28.5	1543	12.43	8.90	11.4	955	6.9	1742	1022.66	1023.8	725	1021.2	1702	0.0
17	22.63	30.6	1316	13.8	424	58.8	89.3	536	30.2	1308	13.41	9.46	12.8	936	7.6	1233	1023.64	1025.5	2358	1022.2	1652	0.0
18	21.90	29.5	1340	14.6	2356	61.2	92.9	239	31.9	1536	13.00	9.19	11.0	1212	7.5	1621	1025.85	1026.9	824	1024.2	1701	0.0
19	21.16	29.5	1525	11.7	401	59.3	92.8	311	29.2	1429	11.81	8.50	10.2	1253	7.3	1429	1024.65	1026.6	0	1022.1	1711	0.0
20	19.38	25.4	1527	13.7	310	70.3	94.2	432	48.4	1524	13.56	9.54	10.9	735	8.3	2358	1022.91	1024.5	204	1020.7	1926	0.0
21	20.56	27.7	1607	15.8	412	65.9	83.5	2350	40.1	1702	13.63	9.64	11.6	1157	7.9	142	1019.05	1022.1	34	1016.3	1821	0.0
22	23.56	32.4	1349	16.4	252	63.1	90.7	500	29.8	1352	15.09	10.62	13.2	1038	8.6	1546	1015.33	1018.4	9	1013.5	1618	0.0
23	21.80	28.9	1400	16.4	2350	69.4	88.5	226	42.7	1351	15.64	11.04	13.7	945	9.1	2350	1013.01	1014.5	10	1011.8	1421	0.7
24	19.63	27.0	1412	14.0	410	69.0	90.4	646	40.0	1354	13.25	9.43	11.2	930	8.0	1218	1014.20	1015.6	904	1013.1	1656	0.0
25	19.67	25.6	1426	14.1	2327	75.6	95.4	427	42.1	1417	14.84	10.51	13.0	922	8.2	1417	1012.56	1014.0	35	1011.5	1431	3.6
26	18.93	26.3	1535	11.2	501	63.7	95.6	510	34.8	1525	10.84	8.09	10.6	713	6.6	1833	1012.16	1013.6	518	1010.7	1658	0.0
27	18.31	27.5	1213	11.0	455	71.8	95.0	2353	29.9	1149	12.11	8.92	11.4	1903	6.3	1056	1006.27	1011.4	34	1002.4	2023	9.0
28	18.74	24.3	1308	13.8	411	72.4	95.1	20	41.5	1414	13.14	9.45	11.0	3	7.4	1445	1006.72	1008.3	2345	1003.0	54	0.7
29	18.29	23.1	1537	15.0	2349	74.8	92.3	2356	46.1	1553	13.46	9.59	10.8	1133	7.8	1555	1011.46	1015.4	2142	1008.1	7	1.6
30	17.30	21.8	1435	14.4	414	84.9	94.3	1015	64.2	1743	14.64	10.35	12.9	1426	9.0	2223	1013.30	1015.4	129	1011.0	1437	2.7
31	18.97	23.2	1415	15.5	419	79.5	88.0	542	65.0	1416	15.29	10.76	12.6	1221	9.1	2	1015.05	1016.0	1028	1013.5	2354	0.0
Total																						19.7
Mean	19.31	26.14		12.73		67.4	92.04		39.64		12.33	8.94	11.12		7.20		1019.72	1022.07		1017.37		
Max	23.56	32.40		16.41		84.9	96.90		65.00		15.64	11.04	13.73		9.11		1032.33	1034.15		1030.24		
Min	13.92	17.05		8.56		50.4	83.50		18.04		7.37	6.36	8.09		3.98		1006.27	1008.33		1002.36		

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

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, 1st January to 31st 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°C or below. A ground frost day is recorded when the grass minimum temperature read at 0900 GMT on that day is -0.1°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°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° and 22.5° either side.

NE = NorthEast = 045° and 22.5° either side.

E = East = 090° and 22.5° either side.

SE = SouthEast = 135° and 22.5° either side.

S = South = 180° and 22.5° either side.

SW = SouthWest = 225° and 22.5° either side.

W = West = 270° and 22.5° either side.

NW = NorthWest = 315° and 22.5° 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.