

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 2012

Temperature (°C / °F)			Anomaly	Rank in the past 131 years			
Mean maximum	20.8	69.4	-2.1	43 rd lowest			
Mean minimum	12.1	53.8	-0.5	49 th highest			
Daily mean	16.4	61.5	-1.3	53 rd lowest			
Highest maximum	29.6	85.3	on 25 th	Lowest maximum	16.4	61.5	on 6 th
Highest minimum	15.5	59.9	on 4 th	Lowest minimum	7.7	45.9	on 12 th
Mean grass minimum	10.1	50.2	+0.3	Lowest grass minimum	4.4	39.9	on 12 th
Mean earth @30 cm	18.6	65.5	-0.1	Earth @100 cm	16.4	61.5	
Frost duration (hrs)	0.0			Rain duration (hrs)	63.5		
Rainfall total (mm / in)	89.9	3.54	200 %	20 th highest			
Highest daily fall	13.3	0.52	on 6 th				
Number of: Dry days (<0.2mm)	11	Wet days (>0.9mm)	15	days ≥5mm	9		
Sunshine total (hrs)	162.8	Daily mean	5.25	82 %	Sunniest day	15.3	on 23 rd
N ^o days with: Air frost	0	Ground frost	0	Snow falling	0	Snow lying	0
Thunder	2	Hail ≥5mm	0	Small hail/ice	0	Fog @09	0
Pressure MSL : Mean @09 GMT, mbar	1013.9	-2.7	Highest	1027.9	on 22 nd	Lowest	999.5
Relative humidity : Mean (%)	76.7	Lowest	20	on 23 rd	Water vapour (g/kg), mean at 09 and 15 GMT		
Overall mean wind speed (mph)	6.2	Windiest day	9.6	on 16 th	Max gust	38	on 11 th
Wind direction (days)	N 1	NE 3	E 0	SE 1	S 5	SW 13	W 6
Least windy day (mph)	3.1	on 24 th	Calm; less than 0.5 mph (minutes)		398		

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

Notes:

Wet and Dull with Temperatures Well Below Normal, but with a short Heatwave

Temperature: The cool regime we had in June continued into July, with the mean maximum 2.1° below the current 30 year climatological average, and lowest since 2007. However, the mean min was only 0.5° below average, and as such was 1.1° higher than in last July. Although hot weather was not a characteristic of this July, there was a 4 day hot spell when temperatures climbed to 29.6° on the 25th, 1.2° above the median and the highest daily value since 9th July 2010. The lowest max is 0.4° below the median and the highest min is 0.7° below its median, while the lowest min is 0.7° above the median. Earth temperatures are a little below normal. **Rainfall:** With twice the average rainfall this has been the wettest July since 2007 and before that 1988. The majority of the rain fell before mid-month, with the monthly average being reached on the 9th. A 10 day dry spell commenced on the 19th, though with further rain on the final 3 days of the month. There were 8 fewer dry days than average, and 6 more than average with =>5mm. Rainfall duration was 34.5 hours above average and most since before 1993. The highest rainfall rate was 166 mm/hr at 1835 GMT on the 8th, but the rate also exceeded 50 mm/hr on the 11th and 13th. The amount that fell on the wettest day was, surprisingly for such a wet month, 2.2 mm below average. Thunder was slightly less frequent than average, and there was no hail. **Sunshine:** Sunshine was 18% below average, yet a vast improvement on the abysmal June total. However, the sunshine accumulation up to the 20th was very similar to June's, and by that date the total of 60 hours was a deficit of 75 hours. Then, in complete contrast, the 6 days to the 26th gave 81.3 hours, reducing the deficit by the end of the month to 35.6 hours. Overall there were 12 days with <3 hours, 11 with =>6 hours, 6 with =>9 hours, 5 with =>12 hours and 2 with =>15 hours. **Wind:** The mean wind speed is close to average but the mean speed on the windiest day is 1.7 mph below normal and lowest since 2005. **Humidity:** The minimum relative humidity of 20 % is lowest for July since before 1998. **Commentary: From the 1st to the 18th:** Temperatures by day were generally well below normal, with anomalies between -6.0° for the max on the 14th and +0.5° on the 17th. Overnight values were generally near normal, with anomalies between -4.6° for the min on the 12th and +3.7° on the 4th. This period was very wet, just one dry day out of 18, and a total fall of 82.4 mm, and over 10 mm on the 6th, 8th and 12th. Sunshine was very meagre, with no days reaching 50 % of the max, and 9 having <10%. Light or moderate winds were S'yly until the 6th, backing SE'yly on 7th and NW'yly on the 8th, then SW'yly on 9th, temporarily increasing fresh on the 11th and 16th. **From the 19th to the 31st:** Daytime temperatures began and ended below normal but there was a 4 day hot spell from the 23rd to the 26th. Anomalies for daily max ranged from +6.6° on the 25th to -4.5° on the 29th and -4.3° on the 20th. Anomalies for daily min ranged from -3.8° on the 30th to +0.4° on the 26th. This period was dry until the 28th, then 7.5 mm fell over the final 3 days. Sunshine was much improved overall, with 9 days having over 50 % of the max and 4 over 90 %. Light or moderate winds were W'yly on the 19th, veering N'yly by the 21st, backing SW'yly on 22nd, becoming NE'yly on 25th, backing W'yly by the 28th and S'yly by the 31st.

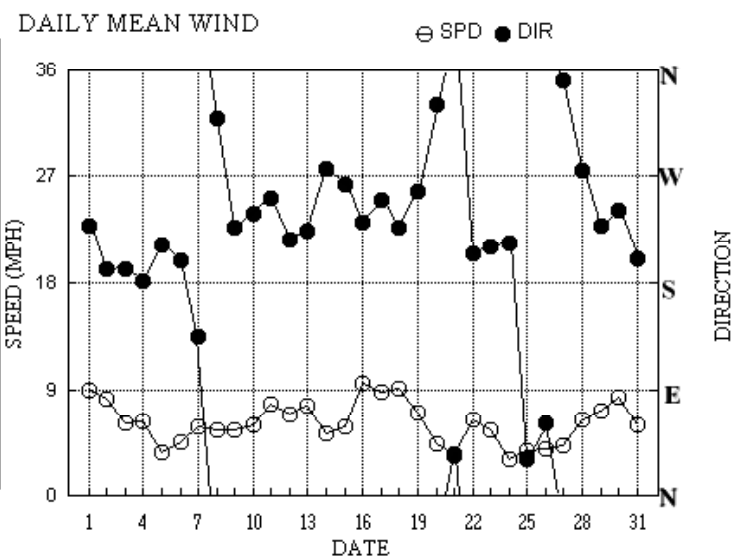
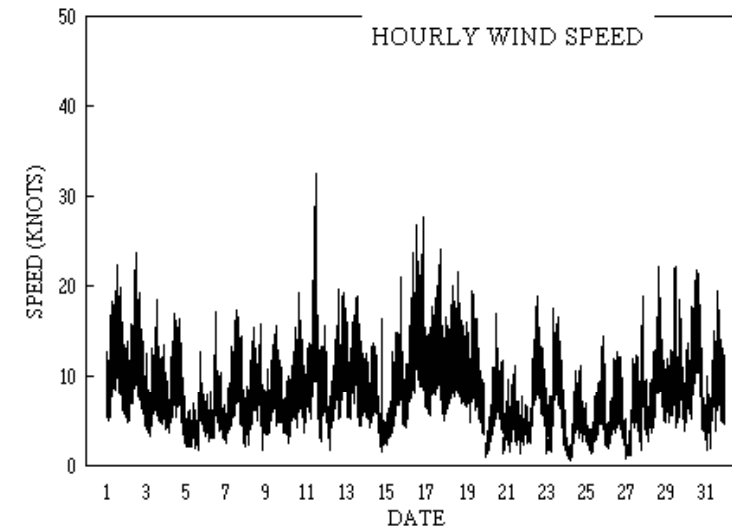
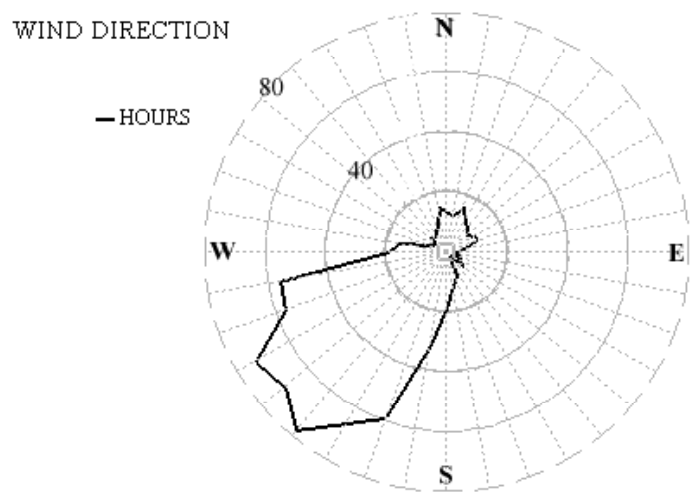
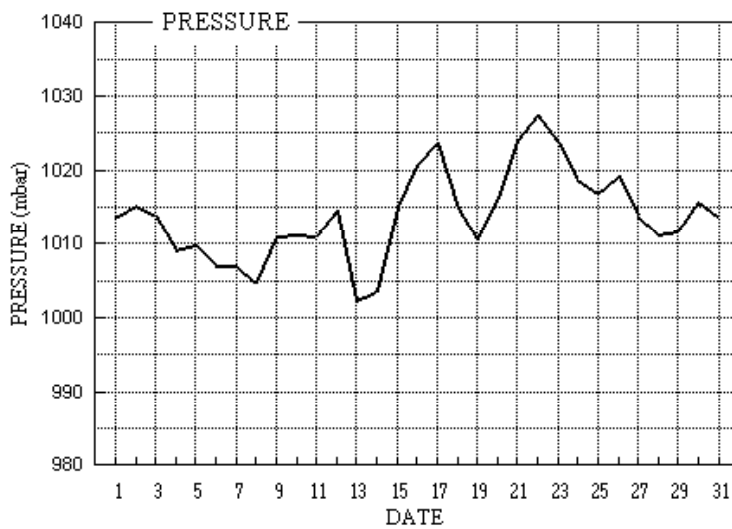
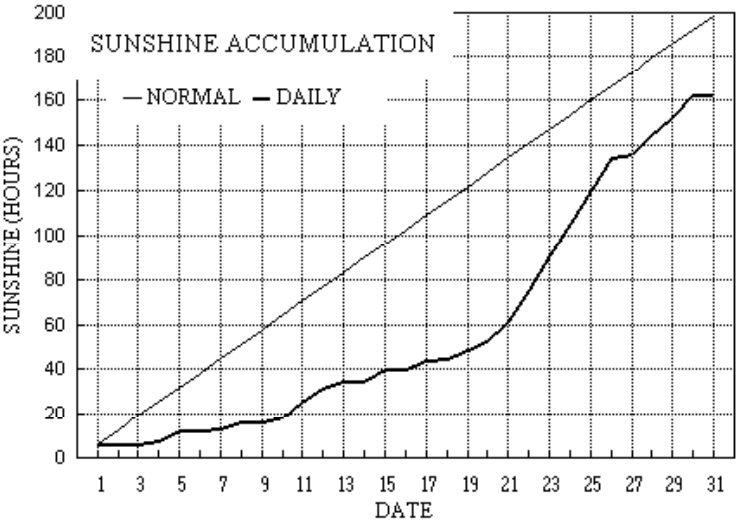
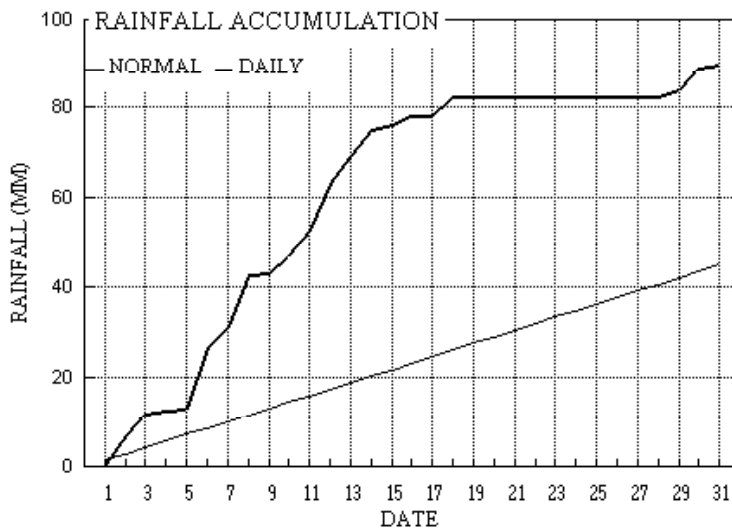
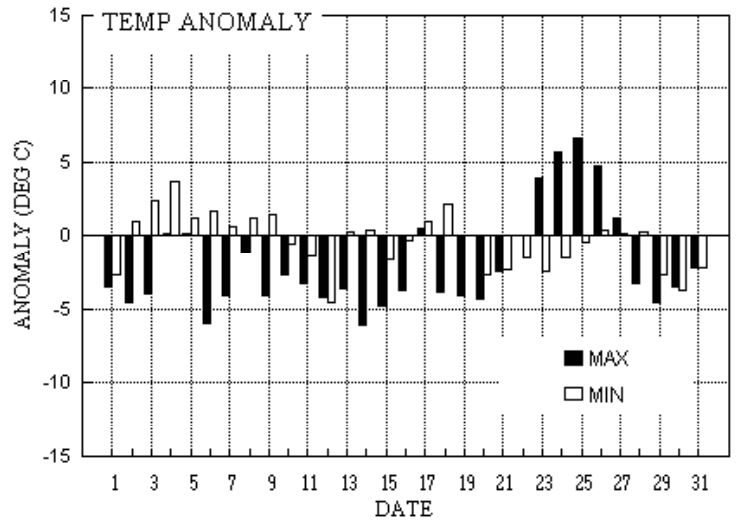
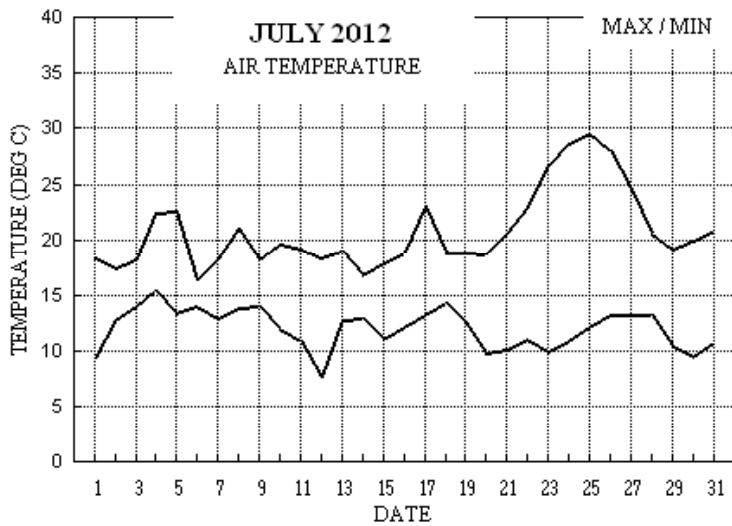
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 st to the 10 th				From the 11 th to the 20 th				From the 21 st to the 31 st			
-3.0°	+1.0°	324%	30%	-3.7°	-0.7°	241%	53%	+0.6°	-1.4°	48%	156%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

Wokingham climatological graphs for July 2012



Month: JULY 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	18.4	9.3	0.5	7.1	17.9	15.4	6.5	0.0	1013.5	0	0	0	0	228	7.5	7.7	235	22	1432	240	11	14	1.1	
2	17.4	12.8	6.4	11.3	17.8	15.6	0.2	0.0	1015.2	0	0	0	0	191	7.0	7.1	197	24	1111	190	10	11	5.5	
3	18.2	14.1	5.2	14.4	17.5	15.6	0.0	0.0	1013.9	0	0	0	0	191	5.2	5.4	200	19	1308	211	8	12	8.2	
4	22.5	15.5	0.8	15.4	17.6	15.6	1.4	0.0	1009.1	0	0	0	0	182	5.3	5.4	189	17	0941	196	8	09	0.5	
5	22.6	13.4	0.3	11.9	18.0	15.7	4.1	0.0	1009.9	0	0	0	0	212	1.6	3.1	205	13	1805	213	6	18	0.8	
6	16.4	14.1	13.3	13.5	18.6	15.8	0.7	0.0	1007.1	0	0	0	0	199	3.7	3.9	195	17	1138	195	7	11	10.2	
7	18.3	13.0	4.8	11.7	18.1	15.9	0.2	0.0	1007.1	0	0	0	0	134	4.4	5.0	151	17	1355	155	9	11	3.5	
8	21.0	13.8	11.6	13.2	18.1	16.0	3.1	0.0	1004.7	0	0	0	0	319	2.5	4.8	251	16	1837	348	7	09	0.6	
9	18.2	14.0	0.2	11.9	18.3	16.1	0.0	0.0	1011.1	0	0	0	0	227	4.6	4.8	259	16	1332	237	7	11	0.3	
10	19.6	12.0	4.0	10.6	18.1	16.2	2.8	0.0	1011.3	0	0	0	0	238	4.8	5.2	263	20	1658	215	8	12	1.1	
11	19.2	10.9	5.9	9.3	18.3	16.2	7.0	0.0	1011.0	0	0	0	1	252	6.3	6.8	264	33	1340	270	11	11	1.2	
12	18.4	7.7	10.3	4.4	18.2	16.3	5.8	0.0	1014.4	0	0	0	0	217	5.2	6.0	208	20	1439	209	10	14	8.7	
13	19.0	12.8	5.9	13.2	18.1	16.3	3.2	0.0	1002.4	0	0	0	0	224	6.5	6.6	205	19	1301	225	10	11	2.8	
14	16.8	13.0	6.0	12.1	18.4	16.4	0.3	0.0	1003.5	0	0	0	0	277	2.0	4.6	303	17	1834	228	7	00	2.7	
15	17.9	11.1	1.2	8.3	18.1	16.4	4.9	0.0	1015.0	0	0	0	0	263	4.7	5.1	254	21	1826	255	9	18	3.5	
16	18.9	12.1	1.9	9.5	18.0	16.4	0.2	0.0	1020.6	0	0	0	0	231	8.1	8.3	255	28	2032	261	12	20	2.4	
17	23.0	13.3	tr	11.6	17.7	16.4	4.2	0.0	1023.7	0	0	0	0	250	7.5	7.6	261	24	1717	259	10	17	0.0	
18	18.9	14.4	4.1	14.4	18.3	16.4	0.2	0.0	1014.7	0	0	0	0	227	7.7	7.9	221	22	1505	234	10	08	3.1	
19	18.9	12.6	tr	10.4	18.1	16.4	3.8	0.0	1010.6	0	0	0	0	257	5.8	6.1	255	20	0831	250	9	07	0.0	
20	18.7	9.9	tr	6.5	17.9	16.5	4.5	0.0	1016.1	0	0	0	0	330	2.9	3.8	325	17	1342	341	7	13	0.0	
21	20.5	10.1	0.0	6.4	18.1	16.5	8.5	0.0	1024.0	0	0	0	0	33	1.5	3.1	30	11	1006	41	5	08	0.0	
22	22.9	11.0	0.0	6.9	18.5	16.5	13.5	0.0	1027.5	0	0	0	0	205	5.5	5.6	202	19	1450	217	8	14	0.0	
23	26.7	10.0	0.0	6.4	18.9	16.6	15.3	0.0	1023.6	0	0	0	0	210	4.7	4.8	204	18	0953	220	8	12	0.0	
24	28.6	10.9	0.0	7.6	19.4	16.7	15.2	0.0	1018.8	0	0	0	0	214	2.4	2.7	221	11	1858	211	5	19	0.0	
25	29.6	12.1	0.0	8.4	20.0	16.8	14.3	0.0	1016.9	0	0	0	0	30	1.3	3.3	22	15	2002	32	6	20	0.0	
26	28.0	13.2	0.0	10.3	20.5	17.0	14.5	0.0	1019.3	0	0	0	0	61	3.4	3.5	104	13	1320	75	5	11	0.0	
27	24.6	13.3	tr	11.0	20.8	17.3	1.9	0.0	1013.7	0	0	0	0	351	3.4	3.6	351	19	2014	351	8	20	0.0	
28	20.5	13.3	tr	10.8	20.3	17.5	8.1	0.0	1011.3	0	0	0	0	275	4.4	5.6	262	22	1649	249	8	17	0.0	
29	19.2	10.4	1.7	6.8	19.7	17.6	8.2	0.0	1011.6	0	0	0	1	229	5.9	6.2	249	22	1239	209	10	11	0.7	
30	19.9	9.5	5.1	6.0	19.2	17.7	9.9	0.0	1015.6	0	0	0	0	242	7.1	7.3	245	22	1340	244	11	13	5.6	
31	20.9	10.8	0.7	11.0	19.1	17.7	0.3	0.0	1013.6	0	0	0	0	201	4.6	5.2	218	20	1552	222	8	16	1.0	
Total			89.9				162.8	0.0						229	3.5	5.4								63.5
Mean	20.8	12.1		10.1	18.6	16.4	5.25	0.0	1013.9															
Anom	-2.1	-0.5	200%	+0.3	-0.1	-0.4	82%																	-2.7
Daily mean		16.4																						
Anom		-1.3																						

Number of days with:

Air frost = 0 Ground frost = 0 Nil sun = 2
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, <.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.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for JULY 2012

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NChs	NChs	NChs	Date	Remarks
1	83	7	25	07	18	14.2	7.9	66	6.6	1013.5	2	006	25	8	1	7	8	5	7	/	84822	83650			1	2Sc35 2Ac62 Cu med	
2	61	8	18	07	16	14.3	12.4	88	8.9	1015.2	4	000	61	6	2	7	5	3	2	/	82709	86618	88540		2	3Sc025	
3	65	8	20	06	12	17.3	16.0	92	11.1	1013.9	0	000	02	6	2	8	5	3	/	/	82708	85612	87620		3	8Sc30	
4	70	7	21	05	14	17.3	16.3	93	11.5	1009.1	4	000	80	8	6	7	8	3	/	/	82707	86810	87650		4	Cu med vv40k ex p	
5	84	6	05	03	07	17.3	10.7	65	8.0	1009.9	7	001	03	2	2	1	8	5	3	0		81825	86357		5	1Sc45 Cu hum	
6	62	8	21	04	06	16.0	12.5	80	9.1	1007.1	7	001	60	6	2	3	8	6	2	/	81840	83645	88458		6	Cu med	
7	65	7	15	06	13	16.2	14.6	91	10.2	1007.1	0	000	25	8	2	2	2	4	7	2		81712	85365		7	2Cu18 2Ac58 /Ci75 Cu con	
8	62	7	35	07	14	15.4	13.9	91	10.0	1004.7	2	013	80	8	6	7	8	3	/	/	81708	84812	87625		8	Cu med	
9	58	8	23	07	13	15.6	13.1	85	9.4	1011.1	3	008	80	8	2	8	8	3	/	/	81708	86812	88625		9	Cu med	
10	62	8	23	05	11	14.4	11.3	82	8.4	1011.3	0	000	60	6	2	8	8	4	/	/	83818	87645		10	2Sc35 /Sc56 Cu med		
11	84	7	26	09	20	16.7	9.0	61	7.1	1011.0	2	001	03	1	1	7	8	5	3	1		82828	85650		11	1Sc35 1Ac58 1Ci75 Cu con	
12	86	5	26	06	10	15.9	8.8	62	7.0	1014.4	1	006	03	1	1	1	2	5	3	4		81825	84072		12	1Ac68 COTRA Cu med	
13	82	3	23	07	16	16.9	11.1	68	8.3	1002.4	8	007	03	1	1	3	8	5	0	1		83820			13	1Sc40 1Ci75 Cu med	
14	58	7	30	03	13	14.9	12.7	87	9.2	1003.5	2	022	80	8	2	7	8	3	/	/	81708	86815	87640		14	Cu med vv30k N	
15	82	5	31	05	12	14.9	9.3	69	7.2	1015.0	1	015	03	1	1	2	2	5	7	1		82820	83075		15	2Ac58 1Ac68 COTRA Cu med	
16	61	8	22	08	21	15.3	13.6	89	9.6	1020.6	8	002	63	6	6	7	5	4	2	/	81712	85615	88550		16	4Sc25	
17	80	7	25	09	18	18.7	12.8	68	9.1	1023.7	0	007	03	1	1	6	8	5	0	1		85822	84075		17	2Sc35 COTRA Cu hum	
18	75	8	24	11	20	16.4	11.9	75	8.6	1014.7	7	012	15	2	2	6	5	5	7	/		86620	88360		18	jpNW vv40k ex NW	
19	80	7	25	07	20	17.2	11.2	68	8.3	1010.6	1	010	03	1	1	7	8	5	3	/		86825			19	2Sc50 1Ac58 Cu med	
20	82	5	32	03	08	16.8	11.3	70	8.3	1016.1	0	007	03	2	2	5	8	5	0	0		82820	84656		20	Cu med	
21	82	5	03	04	11	16.0	9.6	66	7.3	1024.0	1	012	03	1	1	5	2	5	0	1		85825			21	1Ci78 Cu med	
22	82	4	20	05	12	18.9	9.9	56	7.5	1027.5	0	002	03	1	1	1	1	6	7	1		81833	83078		22	1Ac62 1Ac65 COTRA Cu hum	
23	84	0	23	04	10	20.9	12.6	59	8.8	1023.6	8	009	02	0	0	0	0	9	0	0					23		
24	81	0	14	01	05	22.7	11.7	50	8.6	1018.8	8	012	02	0	0	0	0	9	0	0					24		
25	81	1	07	01	04	22.8	12.4	52	8.9	1016.9	3	003	03	0	0	0	0	9	0	1		81078			25	1Ci81 COTRA	
26	62	3	04	03	07	21.3	14.2	64	10.0	1019.3	8	001	03	0	0	1	5	7	3	0		81656	83357		26		
27	50	7	33	06	12	18.6	15.1	80	10.6	1013.7	7	001	05	2	2	7	0	9	7	/		81358	83362	87365	27		
28	84	1	30	03	10	17.1	8.6	57	7.2	1011.3	8	002	01	1	1	1	8	6	3	0		81832			28	1Sc56 1Ac58 Cu hum	
29	80	7	25	04	12	16.3	10.0	66	7.9	1011.6	8	001	15	8	1	4	8	5	6	0		82822	83645	85358	29	Cu con jpS	
30	83	4	25	09	18	16.5	7.7	56	6.5	1015.6	1	005	03	0	0	2	2	6	0	5		82833	83275		30		
31	61	7	20	05	12	16.0	14.6	91	10.3	1013.6	6	005	01	6	5	6	6	3	7	1		83708	84715	87359	31	/Ci75	

Mean vis = 28.6 km

Mean cloud = 5.6 71%

Mean wind speed = 5.5 kn

Mean gust = 13 kn

Mean TT = 17.1 °C

Mean TdDd = 11.8 °C

Mean RH = 72.5 %

Mean r = 8.7 g/kg

Mean PPP = 1013.9 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

TdDd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

covers past 3 hours.

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs = Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation

trails present.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for JULY 2012

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NCh	shs	NCh	shs	Date	Remarks
1	83	2	26	10	22	17.7	8.5	55	7.0	1015.4	1	007	01	8	1	2	8	6	6	4	82835					1	1Sc50 1Ac58 1Ci78 Cu med	
2	61	8	19	07	19	15.9	14.1	89	10.0	1014.1	6	005	61	6	6	7	7	3	2	/	83707	87712	88520			2		
3	65	8	20	05	13	17.3	15.3	88	10.7	1013.3	8	002	21	6	2	7	8	3	2	/	83708	83812	87625			3	8As58 Cu med	
4	86	7	17	07	14	21.6	14.1	62	10.0	1008.0	8	008	03	8	2	7	8	4	3	/	81818	84822				4	2Sc40 1Ac58 Cu fra/con	
5	81	3	33	01	06	20.9	11.3	54	8.4	1008.8	7	010	02	1	1	3	8	6	0	0	83838					5	1Sc56 Cu med	
6	58	8	24	05	11	15.6	14.5	93	10.4	1006.6	7	002	63	6	6	4	2	3	2	/	81706	84808	88560			6	Cu med	
7	70	7	16	07	15	17.7	11.9	69	8.7	1006.5	8	009	80	8	2	5	8	5	7	/	84822	87358				7	2Sc56 Cu med	
8	65	7	28	06	12	19.1	12.5	65	9.1	1007.0	2	011	15	8	2	2	2	5	6	/	82828	86360				8	2Ac58 Cu con jp SE-SW vv30k ex p	
9	62	8	26	08	13	16.6	12.4	76	9.0	1011.9	5	000	80	8	2	8	8	4	/	/	81818	83825	85635			9	8Sc45 Cu med vv40k NW	
10	70	4	22	05	13	18.0	14.7	81	10.5	1009.6	6	009	25	8	1	2	9	4	6	3	81915	82820				10	2Ac58 1Ac65 1Ci70 1Ci75 COTRA jpNE vv50k ex p	
11	62	6	26	06	16	14.5	10.1	75	7.7	1011.0	7	002	81	8	1	5	9	6	6	3	82930	83835				11	2Ac62 2Ci72 pr vis 60k ex p	
12	60	8	21	09	20	13.7	9.7	77	7.5	1012.6	5	009	60	6	2	1	5	5	2	/	81625	88550				12		
13	58	7	28	03	15	15.4	13.8	90	9.9	1000.8	7	010	80	8	2	7	9	4	/	/	82915	83820	86650			13	pR2 1415z	
14	80	7	36	04	08	15.2	11.0	76	8.3	1007.9	1	017	25	8	2	5	8	4	7	/	81818	85645	87357			14	Cu med	
15	86	7	28	05	14	17.5	5.9	47	5.7	1017.3	2	013	02	2	2	7	8	6	/	1	81845	87656				15	2Sc50 /Ci75 COTRA Cu med	
16	45	8	22	11	24	16.4	14.3	87	10.1	1018.2	7	014	50	6	5	8	7	3	/	/	87708	88712				16		
17	81	7	24	08	20	21.8	15.7	68	10.9	1022.7	6	008	02	2	2	7	8	5	/	/	81825	86628	87645			17	Cu hum	
18	58	8	23	08	20	17.4	15.1	86	10.7	1010.6	6	019	62	6	2	6	8	4	2	/	82815	85625	88458			18	2Sc50 R 1447-50	
19	86	7	26	07	15	17.9	9.8	59	7.5	1012.3	1	007	02	2	2	7	8	6	/	1	82832	83645	87656			19	/Ci75 Cu med	
20	80	5	34	06	12	17.5	10.0	62	7.9	1017.4	3	008	15	8	2	3	9	5	6	0	81925	81830	83359			20	2Sc56 jpE&S	
21	82	7	03	01	07	19.4	6.3	42	5.8	1024.7	2	004	02	2	2	1	2	7	6	8	81850	87272				21	1Ac57 COTRA Cu med Halo 22°	
22	82	1	22	08	19	22.9	8.9	41	7.0	1025.8	7	010	01	0	0	1	4	7	3	0	81850					22	1Sc50 1Ac65 Cu hum	
23	86	1	21	07	17	26.5	5.5	26	6.1	1021.1	7	014	02	0	0	1	0	9	3	0	81362					23		
24	82	0	22	05	09	28.1	9.8	32	7.5	1015.8	6	017	02	0	0	0	0	9	0	0							24	Wnd dir vrb
25	75	2	36	03	08	28.6	12.0	36	9.0	1015.8	7	005	02	0	0	2	1	7	0	0	82856					25	Wnd dir vrb	
26	70	1	08	05	10	27.4	12.5	40	9.0	1016.2	7	018	03	0	0	1	1	7	0	1	81850					26	Cu hum COTRA	
27	80	6	32	05	10	23.9	14.0	54	10.2	1011.2	8	016	02	2	2	1	8	6	8	/	81840	85358				27	1Sc50 Cu hum Ac flo Sky turbid	
28	81	7	26	08	17	19.3	6.8	44	6.2	1010.2	7	003	02	2	2	4	8	7	3	/	82850	83656	86358			28	Cu med	
29	60	6	18	06	13	14.7	11.9	83	8.6	1011.6	1	004	29	9	8	5	9	4	6	3	81712	83925				29	2Cu30 1Sc50 2Ac60 1Ci72 vv50k ex E-S	
30	82	7	25	10	21	19.5	3.7	35	4.8	1015.4	7	002	02	1	1	1	2	7	4	1	81850	87073				30	1Ac69 COTRA Cu med Halo 22° part	
31	68	8	22	08	17	19.7	15.7	77	11.1	1013.3	8	006	02	6	5	6	8	4	1	/	83818	84640	88465			31	Cu med	

Mean vis = 27.6 km

Mean cloud = 5.7 72%

Mean wind speed = 6.3 kn

Mean gust = 15 kn

Mean TT = 19.3 °C

Mean TdTd = 11.3 °C

Mean RH = 63.5 %

Mean r = 8.6 g/kg

Mean PPP = 1013.3 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.

Wokingham Sunshine Hourly analysis	Hour	01-Jul	02-Jul	03-Jul	04-Jul	05-Jul	06-Jul	07-Jul	08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul
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	0.44	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00
	5	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.93	1.00	0.26	0.00	0.08	0.00
	6	1.00	0.00	0.00	0.00	0.20	0.00	0.01	0.00	0.00	0.00	0.44	1.00	0.43	0.00	0.30	0.00
	7	0.95	0.00	0.00	0.00	0.58	0.00	0.04	0.00	0.00	0.00	1.00	1.00	0.97	0.01	1.00	0.00
	8	0.32	0.00	0.00	0.00	0.63	0.00	0.01	0.00	0.00	0.00	0.22	0.97	0.57	0.00	0.54	0.00
	9	0.16	0.00	0.00	0.10	0.86	0.00	0.00	0.02	0.00	0.00	0.49	0.93	0.11	0.03	0.79	0.00
	10	0.04	0.00	0.00	0.06	0.00	0.00	0.00	0.13	0.00	0.00	0.67	0.26	0.44	0.00	0.04	0.00
	11	0.00	0.00	0.00	0.05	0.00	0.00	0.01	0.52	0.00	0.00	0.22	0.28	0.00	0.00	0.00	0.00
	12	0.03	0.00	0.00	0.00	0.17	0.00	0.00	0.33	0.00	0.48	0.48	0.02	0.11	0.00	0.00	0.00
	13	0.00	0.00	0.00	0.03	0.43	0.00	0.00	0.12	0.00	0.30	0.22	0.00	0.00	0.00	0.00	0.00
	14	0.63	0.00	0.00	0.30	0.16	0.00	0.07	0.36	0.00	0.62	0.37	0.00	0.00	0.00	0.07	0.00
	15	0.31	0.00	0.00	0.21	0.29	0.00	0.02	0.22	0.00	0.52	0.11	0.00	0.04	0.00	0.01	0.00
	16	0.38	0.00	0.00	0.34	0.42	0.00	0.00	0.52	0.00	0.48	0.52	0.00	0.13	0.21	0.25	0.01
	17	0.28	0.00	0.00	0.00	0.39	0.16	0.00	0.62	0.00	0.00	0.50	0.00	0.00	0.00	0.20	0.00
	18	0.55	0.00	0.00	0.00	0.00	0.47	0.00	0.25	0.00	0.00	0.86	0.00	0.08	0.00	0.96	0.00
	19	0.41	0.00	0.00	0.32	0.00	0.07	0.00	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.68	0.17
	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		6.49	0.21	0.00	1.40	4.12	0.70	0.16	3.10	0.00	2.77	7.03	5.82	3.16	0.25	4.90	0.17
	Hour	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	Mean
	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.39	0.00	0.38	0.00	0.35	0.01	0.39	0.38	0.28	0.07	0.00	0.00	0.26	0.27	0.00	0.12
	5	1.00	0.00	0.80	0.00	0.99	0.72	1.00	1.00	1.00	1.00	0.00	0.00	0.83	0.89	0.00	0.41
	6	0.27	0.00	1.00	0.09	1.00	0.61	1.00	1.00	1.00	1.00	0.01	0.29	0.56	1.00	0.00	0.39
	7	0.41	0.11	0.86	0.13	0.95	1.00	1.00	1.00	1.00	1.00	0.00	0.99	0.51	1.00	0.00	0.50
	8	0.60	0.00	0.43	1.00	0.46	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.58	1.00	0.00	0.43
	9	0.44	0.00	0.03	0.13	0.74	1.00	1.00	1.00	1.00	1.00	0.00	0.99	0.27	0.54	0.00	0.37
	10	0.06	0.00	0.01	0.00	0.55	0.86	1.00	1.00	1.00	1.00	0.00	0.63	0.39	0.42	0.00	0.28
	11	0.00	0.00	0.02	0.01	0.45	0.53	1.00	1.00	1.00	1.00	0.00	0.07	0.32	0.86	0.00	0.24
	12	0.33	0.00	0.02	0.08	0.00	0.86	1.00	1.00	1.00	1.00	0.03	0.29	0.33	0.80	0.00	0.27
	13	0.12	0.00	0.07	0.02	0.00	1.00	1.00	1.00	0.97	1.00	0.20	0.39	0.29	0.95	0.00	0.26
	14	0.06	0.00	0.00	0.14	0.72	1.00	1.00	1.00	0.86	1.00	0.00	0.01	0.42	0.84	0.00	0.31
	15	0.00	0.00	0.00	0.96	0.40	1.00	1.00	1.00	0.78	1.00	0.73	0.35	0.23	0.92	0.18	0.33
	16	0.11	0.00	0.16	0.71	0.65	1.00	1.00	1.00	0.87	1.00	0.05	0.38	0.46	0.36	0.00	0.36
	17	0.10	0.00	0.00	0.80	0.70	1.00	1.00	1.00	1.00	1.00	0.46	1.00	1.00	0.00	0.00	0.36
	18	0.26	0.00	0.00	0.15	0.00	1.00	1.00	1.00	1.00	1.00	0.39	0.94	1.00	0.03	0.15	0.36
	19	0.00	0.04	0.00	0.31	0.49	0.89	0.87	0.77	0.58	0.39	0.00	0.73	0.70	0.00	0.00	0.24
	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		4.15	0.16	3.78	4.51	8.45	13.47	15.26	15.16	14.35	14.46	1.86	8.05	8.16	9.88	0.34	162.36

July 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	14.01	18.7	1648	9.3	424	72.7	89.5	457	48.6	1651	9.01	7.12	8.9	1205	6.2	1651	1014.57	1017.7	2152	1011.5	10	0.3
2	14.81	16.4	1142	12.7	305	86.8	93.2	1855	75.5	1140	12.62	9.08	10.4	1732	7.5	514	1014.70	1017.1	0	1013.5	1856	2.4
3	16.22	18.4	1313	14.8	311	92.0	96.2	554	77.4	1314	14.92	10.51	11.5	858	9.8	1329	1013.10	1014.2	2	1010.8	2359	5.9
4	17.76	22.8	1615	14.1	2359	86.7	96.7	439	62.0	1459	15.39	10.88	12.7	938	9.4	2359	1008.92	1010.9	0	1007.2	1621	2.7
5	17.25	22.6	1557	13.3	431	73.6	94.9	30	47.9	1613	12.21	8.85	10.0	1712	7.5	855	1009.27	1010.1	501	1008.0	1640	0.0
6	14.91	16.4	1100	13.2	2337	88.8	95.8	2357	77.5	838	13.08	9.39	10.7	1721	8.6	616	1007.23	1008.8	0	1006.2	1720	8.3
7	15.03	18.5	1506	13.0	53	88.0	96.8	208	66.2	1534	12.98	9.34	10.6	1043	8.1	1647	1006.46	1007.8	3	1004.2	2344	4.8
8	16.22	21.1	1556	13.8	450	84.9	97.3	326	55.5	1719	13.45	9.63	10.8	1328	8.2	1646	1006.07	1010.0	2357	1002.8	335	13.5
9	15.45	18.4	1439	13.7	2339	86.8	94.4	45	68.6	1435	13.23	9.44	10.3	936	8.7	1334	1011.23	1012.3	2138	1009.7	101	0.2
10	14.76	19.9	1606	12.0	436	82.6	94.0	145	55.7	1620	11.73	8.58	11.1	1444	7.6	1649	1010.76	1012.0	0	1009.1	1612	4.1
11	14.45	19.5	1330	11.0	404	75.2	93.6	421	40.2	1306	9.82	7.56	9.3	1627	5.4	1257	1011.14	1012.5	2359	1010.4	1048	5.3
12	13.38	18.4	1257	7.9	416	82.1	96.6	502	46.9	1255	10.04	7.70	9.6	2320	5.9	1237	1011.59	1014.6	837	1005.1	2354	9.6
13	15.39	19.1	1204	13.5	530	85.9	96.3	306	60.0	1106	12.94	9.36	11.0	1612	7.9	1037	1001.64	1005.2	0	999.5	1748	5.1
14	14.08	16.5	1714	12.2	2359	87.7	96.2	2357	66.3	1654	12.01	8.77	10.4	954	7.5	1654	1005.58	1011.4	2351	1000.0	115	5.1
15	14.33	18.1	1643	11.0	442	69.6	96.7	33	42.9	1412	8.33	6.84	8.7	57	5.1	1159	1016.19	1021.2	2359	1011.2	9	0.1
16	15.07	17.3	1700	12.0	25	86.6	91.9	949	75.1	2028	12.85	9.18	11.1	1700	6.7	12	1019.82	1021.3	45	1017.6	1723	3.1
17	18.20	23.0	1346	13.4	430	77.1	91.8	511	58.5	1245	13.94	9.80	11.3	1409	8.3	919	1022.39	1024.2	1054	1019.9	2345	0.0
18	16.03	19.0	1409	14.2	2357	86.5	93.2	1830	71.6	840	13.76	9.77	11.4	1621	8.3	844	1012.86	1020.2	0	1008.2	1929	3.9
19	15.52	19.1	1308	10.8	2357	75.2	93.1	433	54.9	1639	10.95	8.13	9.1	718	7.1	1654	1011.22	1014.2	2340	1008.3	300	0.0
20	14.64	18.8	1201	10.1	101	74.2	95.6	135	47.5	1722	9.82	7.50	8.7	843	6.1	1722	1016.91	1020.9	2359	1014.0	59	0.0
21	15.24	20.0	1449	10.0	439	72.3	96.0	502	39.5	1708	9.67	7.40	8.8	854	5.4	1708	1024.10	1027.6	2356	1020.7	0	0.0
22	17.38	23.2	1413	11.0	24	66.1	94.9	28	38.8	1426	10.31	7.67	9.2	1210	6.6	1834	1026.45	1027.9	804	1024.7	1702	0.0
23	19.21	27.0	1545	10.1	256	59.8	95.6	529	20.0	1202	9.54	7.40	9.7	854	3.9	1202	1022.54	1025.8	3	1019.6	1750	0.0
24	20.58	28.7	1443	11.1	449	61.3	96.8	546	29.3	1416	11.50	8.39	10.6	1231	6.5	1024	1017.75	1020.9	10	1014.8	1704	0.0
25	21.44	29.5	1530	12.3	439	60.2	95.0	522	29.8	1326	12.42	8.93	11.8	1546	7.2	1326	1016.63	1019.0	2359	1015.6	1536	0.0
26	20.37	27.7	1443	13.5	445	66.0	92.5	447	35.3	1241	13.16	9.35	12.3	1424	7.6	1241	1017.41	1019.5	801	1014.8	1758	0.0
27	18.56	24.8	1512	13.6	112	72.6	93.6	234	45.6	1729	13.24	9.48	12.7	1130	6.8	2359	1012.52	1015.7	48	1009.9	1809	0.0
28	15.98	20.6	1216	10.8	2346	57.2	79.8	2359	32.6	1728	7.09	6.30	8.0	834	4.4	1728	1010.90	1011.9	8	1009.5	1746	0.0
29	13.92	19.3	1222	10.3	427	70.2	87.1	1501	38.4	1733	8.36	6.88	9.7	1653	4.8	1733	1011.89	1014.6	2325	1010.7	1220	1.5
30	14.81	20.1	1315	9.6	237	60.3	87.5	2359	32.5	1542	6.53	6.04	8.0	2359	4.5	1615	1015.40	1016.8	2253	1014.3	24	0.7
31	15.73	21.0	1548	10.7	233	87.3	97.0	609	69.7	1556	13.57	9.69	12.5	1404	7.4	213	1013.99	1016.8	1	1013.0	2338	5.1
Total																						81.7
Mean	16.15	20.76		11.90		76.7	93.86		51.93		11.56	8.55	10.34		6.93		1013.59	1016.23		1011.12		
Max	21.44	29.45		14.80		92.0	97.30		77.50		15.39	10.88	12.73		9.78		1026.45	1027.87		1024.74		
Min	13.38	16.35		7.94		57.2	79.80		19.96		6.53	6.04	7.96		3.90		1001.64	1005.19		999.45		

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.