

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 2016

Temperature (°C)		Anomaly	Rank in the past 135 years						
Mean maximum	23.2	+0.3	35 th highest						
Mean minimum	13.0	+0.4	14 th highest						
Daily mean	18.1	+0.4	27 th highest						
Highest maximum	33.0	on 19 th	Lowest maximum	18.7	on 12 th				
Highest minimum	18.3	on 20 th	Lowest minimum	8.0	on 6 th				
Mean grass minimum	10.0	+0.2	Lowest grass minimum	4.1	on 6 th				
Mean earth @30 cm	19.6	+0.9	Earth @100 cm	17.3					
Frost duration (hrs)	0.0		Rain duration (hrs)	7.7					
Rainfall total (mm / in)	19.5	43 %	18 th lowest						
Highest daily fall	5.3	on 2 nd							
Number of: Dry days (<0.2mm)	22	Wet days (>0.9mm)	6	days ≥5mm	1				
Sunshine total (hrs)	183.6	Daily mean	5.92	93 %	Sunniest day	15.1	on 19 th		
N° days with: Air frost	0	Ground frost	0	Snow falling	0	Snow lying	0		
Thunder	1	Hail ≥5mm	1	Small hail/ice	0	Fog @09	0	Nil sun	0
Pressure MSL: Mean @09 GMT, mbar	1017.2	+0.6	Highest	1027.1	on 15 th	Lowest	1005.1	on 11 th	
Relative humidity: Mean (%)	72.9	Lowest	32	on 19 th	Water vapour (g/kg), mean at 09 and 15 GMT	9.3,	9.2		
Overall mean wind speed (mph)	6.7	Windiest day	11.2	on 10 th	Max gust	33	on 9 th		
Wind direction (days)	N 0	NE 0	E 0	SE 1	S 1	SW 18	W 9	NW 2	
Least windy day (mph)	2.9	on 18 th	Calm; less than 0.5 mph (minutes)	318					

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

Notes:

Dry with Above Average Temperature and Below Average Sunshine

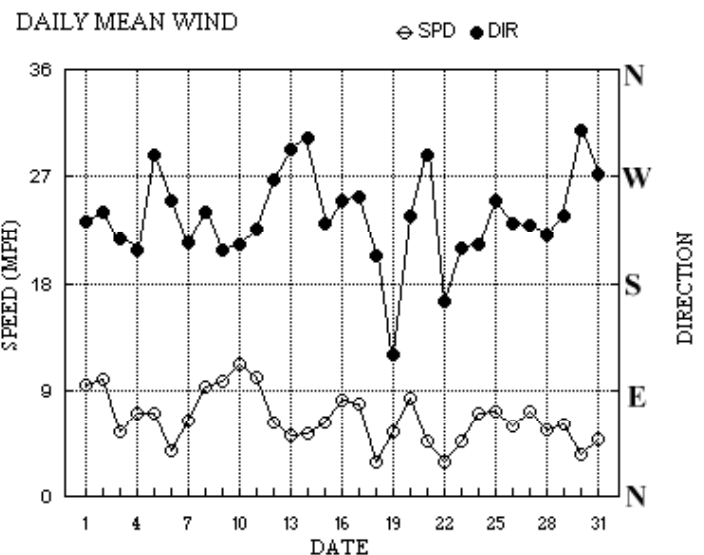
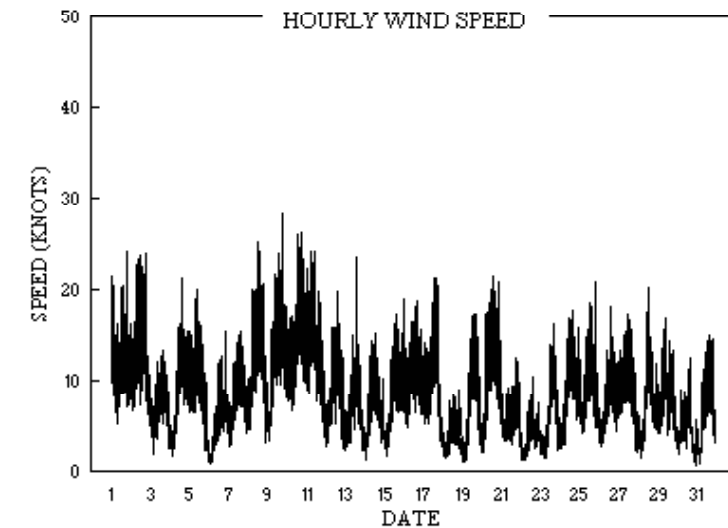
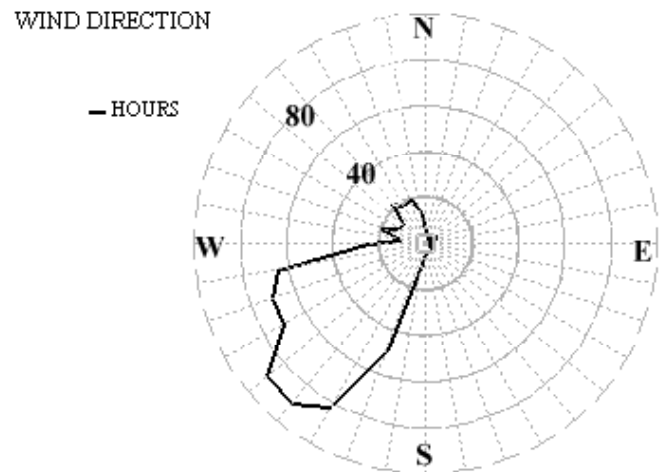
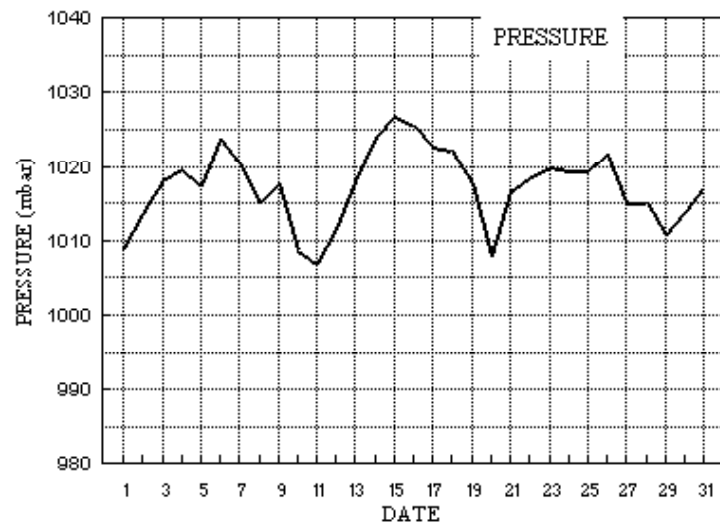
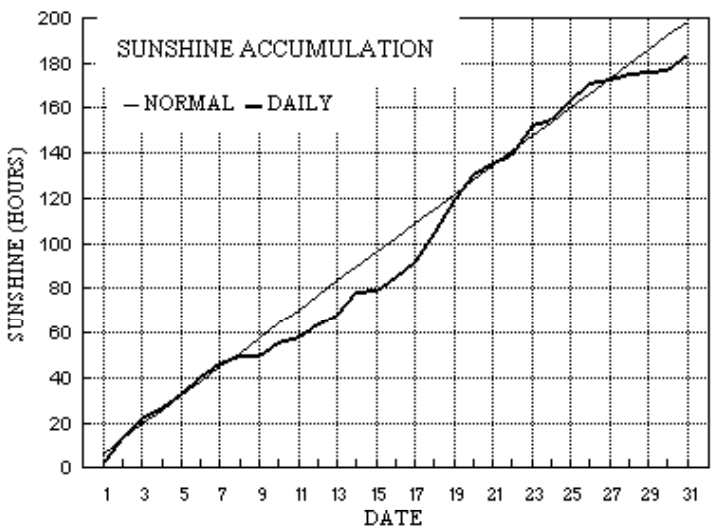
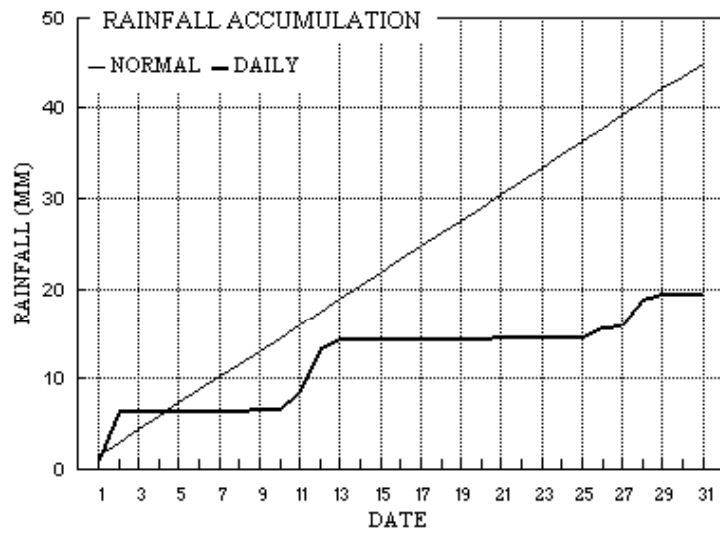
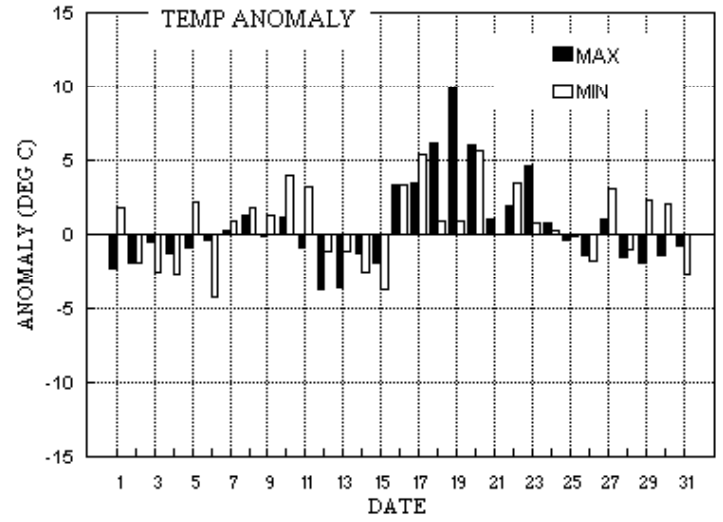
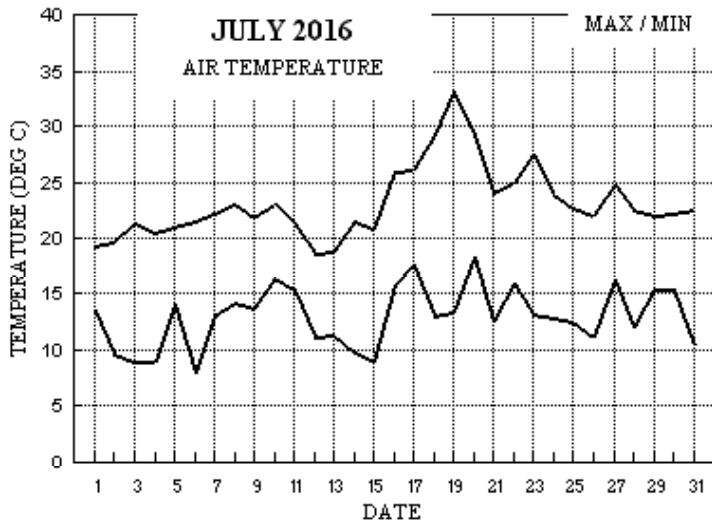
Temperature: Quite a warm month overall, though in recent years both 2014 and 2013 were warmer. Nevertheless, in this millennium 10 Julys have been cooler than this year's. Although the mean is only 0.4° above the current climatological average, it is 1.2° above the long-term median, attesting to our changing climate. The highest max was 33.0° on the 19th, the 3rd highest July temperature this millennium, but 0.9° below last July's maximum. It is also 4.4° above the median and is 8th highest in 113 years. The lowest max and highest min are both 1.9° above their respective medians, while the lowest min is 1.0° above its median. The mean grass min is highest since 2012. The mean earth temperatures at both 30 cm and 1 m depth are both well above average. The first half of the month saw daily anomalies near or below normal, ranging from -3.7° for the max on the 12th to +1.3° on the 8th, and -4.2° for the min on the 6th to +4.0° on the 10th. There was a brief heatwave from the 16th to the 20th, with anomalies for the daily max reaching +9.8° on the 19th and +5.7° for the min on the 20th. The remainder of the month saw daily anomalies generally close to zero, and exception was the max on the 23rd at +4.5°. **Rainfall:** This has been a dry July overall in Wokingham. The total of 19.5 mm is the lowest for the month since 1994. However, there were several days during the month when heavy showers were not far away, but Wokingham escaped most of these. Nevertheless rain showers of violent intensity (at least 50 mm/hour rate) did occur here on the 2nd, 11th and 12th, albeit briefly, and the one on the 2nd included hail of 5 mm diameter and thunder, as well as a peak rainfall rate of 152 mm/hr at 1047 GMT. But there was plenty of dry weather too, with a dry spell of 8 days ending on the 10th and another of 12 days to the 25th. **Sunshine:** The sunshine has not been this July's strongest point, the total being lowest since 2012, and 7 % less than the climatological average for the month. To see just how sunny July can be we only have to look back 10 years when the month clocked up 302.3 hours of sunshine, a daily mean of 9.75 hours compared with 5.92 hours this July. The accumulation of daily sunshine this month was level pegging up to the 8th, then several dull days produced a deficit of 18 hours by the 15th. After some sunny days the accumulation returned to normal by the 20th where it remained until the 27th, but a series of dull days led to a deficit of 14 hours by the 31st. Overall there were 8 days with <3 hours, 12 days with =>6 hours, 7 with =>9 hours, 3 with =>12 hours and 1 with =>15 hours. **Wind:** The mean speed this July is 0.4 mph above average, but both the windiest day and highest gust are exactly average. Winds were generally SW'ly throughout the month, exceptions being W or NW on the 5th, 12th to 14th, 21st, 29th and 30th, and SE'ly on the 19th and 22nd. Speeds were light or moderate, but increased to fresh for the 10th and 11th.

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			
-0.5°	0.0°	48%	86%	+1.7°	+1.1°	55%	119%	+0.2°	+0.5°	34%	75%

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

Wokingham climatological graphs for July 2016



Month: JULY 2016

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	Rain HH hrs						
1	19.3	13.6	1.1	13.5	18.4	16.5	2.8	0.0	1009.0	0 0 0 0	0 0 0 0	0 0 0 0	232	8.1	8.2	267	24	1814	227	11	13	0.2	
2	19.7	9.7	5.3	7.4	18.1	16.5	10.7	0.0	1013.5	0 0 0 0	0 0 0 0	1 1 0 0	240	8.4	8.6	261	24	1750	252	12	17	0.6	
3	21.3	8.9	0.0	4.3	18.0	16.5	8.4	0.0	1018.1	0 0 0 0	0 0 0 0	0 0 0 0	218	4.6	4.8	264	13	1631	206	7	13	0.0	
4	20.6	8.9	0.1	4.2	18.2	16.5	5.0	0.0	1019.6	0 0 0 0	0 0 0 0	0 0 0 0	208	6.1	6.2	227	21	1420	218	10	14	0.2	
5	21.1	14.1	0.0	11.1	18.4	16.5	5.9	0.0	1017.4	0 0 0 0	0 0 0 0	0 0 0 0	287	4.8	6.1	345	20	0908	305	10	08	0.0	
6	21.5	8.0	tr	4.1	18.4	16.5	8.1	0.0	1023.6	0 0 0 0	0 0 0 0	0 0 0 0	250	2.6	3.4	248	15	2023	224	7	20	0.0	
7	22.3	13.1	0.0	11.4	18.9	16.6	5.6	0.0	1020.3	0 0 0 0	0 0 0 0	0 0 0 0	215	5.4	5.6	232	16	1508	223	8	15	0.0	
8	23.1	14.3	0.0	12.7	19.3	16.6	3.0	0.0	1015.0	0 0 0 0	0 0 0 0	0 0 0 0	240	7.7	8.1	250	25	1324	256	12	13	0.0	
9	21.8	13.8	0.1	10.4	19.2	16.7	0.8	0.0	1017.7	0 0 0 0	0 0 0 0	0 0 0 0	208	8.4	8.5	210	29	1831	211	12	18	0.2	
10	23.1	16.5	tr	15.0	19.2	16.8	5.2	0.0	1008.6	0 0 0 0	0 0 0 0	0 0 0 0	212	9.6	9.7	221	27	1727	223	13	16	0.1	
11	21.3	15.4	2.0	13.2	19.2	16.9	3.0	0.0	1006.9	0 0 0 0	0 0 0 0	0 0 0 0	225	8.7	8.8	227	24	0636	228	12	08	0.2	
12	18.7	11.1	4.9	7.4	19.0	17.0	5.8	0.0	1011.4	0 0 0 0	0 0 0 0	0 0 0 0	267	3.5	5.5	316	20	1522	318	9	15	2.7	
13	18.9	11.3	0.9	10.0	18.8	17.0	4.3	0.0	1017.8	0 0 0 0	0 0 0 0	0 0 0 0	292	3.9	4.5	307	24	1437	285	9	14	0.1	
14	21.6	9.9	0.0	5.7	18.6	17.0	9.7	0.0	1023.9	0 0 0 0	0 0 0 0	0 0 0 0	302	4.0	4.6	340	15	1449	322	7	10	0.0	
15	20.8	8.9	0.1	4.4	18.7	17.0	1.5	0.0	1026.7	0 0 0 0	0 0 0 0	0 0 0 0	231	5.3	5.4	254	18	1440	242	8	14	0.2	
16	26.0	15.7	0.0	15.3	18.6	17.0	5.4	0.0	1025.5	0 0 0 0	0 0 0 0	0 0 0 0	249	6.9	7.1	257	19	0048	271	9	16	0.0	
17	26.1	17.7	0.0	15.9	19.5	17.0	7.0	0.0	1022.8	0 0 0 0	0 0 0 0	0 0 0 0	253	6.8	6.9	266	21	1552	255	11	15	0.0	
18	29.1	13.1	0.0	8.1	19.9	17.1	12.8	0.0	1022.3	0 0 0 0	0 0 0 0	0 0 0 0	203	0.7	2.5	196	9	2036	195	5	20	0.0	
19	33.0	13.4	0.0	8.8	20.7	17.2	15.1	0.0	1017.5	0 0 0 0	0 0 0 0	0 0 0 0	121	4.0	4.8	110	17	1430	132	8	11	0.0	
20	29.2	18.3	0.0	14.8	21.1	17.4	11.1	0.0	1008.0	0 0 0 0	0 0 0 0	0 0 0 0	237	5.5	7.3	262	22	1411	257	10	14	0.0	
21	24.1	12.5	0.1	8.8	21.1	17.6	4.8	0.0	1016.5	0 0 0 0	0 0 0 0	0 0 0 0	287	3.2	4.0	313	13	1814	308	6	19	0.2	
22	25.0	16.0	tr	15.4	21.0	17.8	3.0	0.0	1018.3	0 0 0 0	0 0 0 0	0 0 0 0	165	1.0	2.6	149	11	1458	162	5	15	0.0	
23	27.5	13.2	tr	9.1	20.8	18.0	13.5	0.0	1020.0	0 0 0 0	0 0 0 0	0 0 0 0	210	3.9	4.0	203	16	1655	212	8	17	0.0	
24	23.9	12.8	0.1	8.5	21.1	18.1	2.4	0.0	1019.3	0 0 0 0	0 0 0 0	0 0 0 0	213	6.0	6.2	217	18	1510	217	9	15	0.4	
25	22.8	12.6	tr	8.1	20.8	18.2	9.1	0.0	1019.3	0 0 0 0	0 0 0 0	0 0 0 0	249	6.2	6.3	262	21	1947	256	9	15	0.0	
26	22.1	11.1	1.0	6.7	20.5	18.3	6.8	0.0	1021.7	0 0 0 0	0 0 0 0	0 0 0 0	231	5.1	5.2	261	18	1541	232	8	15	1.2	
27	24.7	16.3	0.3	15.0	20.5	18.4	1.9	0.0	1015.0	0 0 0 0	0 0 0 0	0 0 0 0	228	5.8	6.3	209	18	1257	228	8	11	0.2	
28	22.5	12.1	2.9	7.6	20.4	18.4	2.9	0.0	1015.1	0 0 0 0	0 0 0 0	0 0 0 0	220	3.9	4.9	222	20	1307	223	9	13	0.8	
29	22.0	15.4	0.6	13.0	20.2	18.4	0.7	0.0	1010.8	0 0 0 0	0 0 0 0	0 0 0 0	237	5.1	5.3	257	17	1145	240	8	11	0.4	
30	22.3	15.4	0.0	13.5	20.1	18.4	1.2	0.0	1013.8	0 0 0 0	0 0 0 0	0 0 0 0	308	2.3	3.1	342	13	1735	328	5	17	0.0	
31	22.5	10.4	0.0	5.6	19.9	18.4	6.1	0.0	1017.0	0 0 0 0	0 0 0 0	0 0 0 0	272	3.9	4.3	262	15	1625	257	7	14	0.0	
Total			19.5				183.6	0.0															7.7
Mean	23.2	13.0		10.0	19.6	17.3	5.92	0.0	1017.2					235	4.5	5.8							
Anom	+0.3	+0.4	43%	+0.2	+0.9	+0.5	93%			+0.6													
Daily mean		18.1																					
Anom		+0.4																					

Number of days with:

Air frost = 0 Ground frost = 0 Nil sun = 0
Snow falling = 0 Snow lying = 0 Thunder = 1
Hail=>5mm = 1 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 2015

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cl	NCh	shs	NCh	shs	NCh	shs	Date	Remarks		
1	58	8	23	07	14	15.9	12.6	81	9.1	1009.0	1	002	80	8	6	8	8	4	/	/	81712	85815	88640				1	4Sc30	Cu med		
2	84	5	25	11	22	15.1	8.5	65	6.9	1013.5	2	013	03	1	1	5	8	5	0	0	85825						2	1Sc50	Cu med		
3	82	3	25	05	10	17.2	11.0	67	8.2	1018.1	1	005	03	0	0	3	2	5	4	0	83825						3	1Ac57	Cu med		
4	86	5	23	06	11	18.9	10.9	60	8.1	1019.6	4	000	03	1	1	4	8	5	0	1	81828	83650				4	1Sc32	2Ci80	COTRA	Cu hum	
5	84	7	31	10	19	16.5	10.5	67	7.7	1017.4	2	023	01	2	2	7	8	5	/	1	83822	87640				5				Cu med	
6	88	7	29	03	07	16.6	9.5	63	6.9	1023.6	2	006	03	2	2	1	2	5	3	8	81825	87278				6	1Ac69	2Ci72	COTRA	Cu med Halo 22°	
7	82	7	21	06	12	17.9	12.1	69	8.7	1020.3	7	003	03	2	2	1	8	5	7	2	81822	85363				7	1Sc30	2Ac60	4Ci75	COTRA	Cu hum Irisation
8	84	8	23	09	17	17.5	13.9	79	9.7	1015.0	2	004	03	2	2	8	5	4	/	/	86616	88620				8					
9	83	7	21	11	19	20.9	14.4	66	10.5	1017.7	7	004	02	2	2	1	5	6	7	8	81640	83358	87272			9	3Ac67				
10	50	8	20	06	14	17.6	16.0	90	11.3	1008.6	7	008	50	6	5	8	5	2	/	/	83704	87706	88612			10					
11	82	7	23	11	23	17.7	12.8	73	9.3	1006.9	2	012	03	2	2	7	8	5	/	/	86820	87625				11				Cu hum	
12	70	6	22	09	14	17.3	12.2	72	8.8	1011.4	8	001	15	1	1	5	8	4	3	/	83818	83650	85357			12				Cu med jpN	
13	84	3	32	07	14	16.5	8.9	61	7.1	1017.8	2	010	03	1	1	1	8	5	3	1	81828					13	1Sc50	2Ac60	1Ci72	Cu med	
14	86	2	31	07	15	14.9	9.1	68	7.2	1023.9	2	007	03	0	0	2	2	5	0	0	82825					14				Cu med	
15	88	6	24	06	12	16.4	10.5	68	7.7	1026.7	0	000	03	2	2	1	8	5	7	1	81820	84358				15	1Sc56	3Ac62	3Ci75	Cu hum	
16	86	5	23	08	14	20.4	15.8	75	11.5	1025.5	8	001	01	2	2	2	5	4	4	2	82615	84075				16	1Sc56	1Ac62			
17	82	7	24	06	11	21.2	17.0	77	11.8	1022.8	0	000	02	2	2	7	8	4	/	/	81818	87650				17	2Sc40			Cu med	
18	80	6	03	02	06	20.3	15.3	73	10.1	1022.3	0	000	01	4	2	1	1	4	0	2	81818	86078				18	COTRA	Cu hum	Ci flo	Halo 22° part	
19	80	0	14	04	11	26.7	16.6	54	11.6	1017.5	8	012	02	0	0	0	0	9	0	0						19					
20	59	8	20	09	19	21.0	17.0	78	12.0	1008.0	3	016	05	1	1	8	5	4	/	/	86612	88618				20					
21	84	6	31	03	09	19.3	13.5	69	9.8	1016.5	1	008	03	2	2	1	8	5	3	1	81825	86078				21	1Sc50	2Ac64	COTRA	Cu hum	
22	68	7	26	02	04	20.1	15.2	73	11.0	1018.3	0	005	01	2	2	1	1	5	7	2	81820	84358	87075			22	2Ac63	/Ac68	COTRA	Cu hum	
23	70	3	18	02	05	22.7	15.5	64	11.0	1020.0	2	002	03	0	0	1	2	6	0	1	81830	83078				23	COTRA			Cu med	
24	62	7	20	07	13	19.8	15.4	75	10.6	1019.3	0	000	15	6	2	7	8	4	3	/	82815	83625	87630			24	/Ac68	Cu med	jpSE	vv30k ex p	
25	80	7	26	07	12	18.7	12.1	65	8.8	1019.3	0	003	03	2	2	2	2	5	0	1	82822	87078				25	COTRA	Cu med	U/a	cont	
26	80	7	26	05	10	18.5	12.2	66	8.6	1021.7	8	001	03	2	2	1	1	5	4	1	81822	87075				26	1Ac59	COTRA	Cu hum	Halo 22° part	
27	65	8	22	09	15	18.0	16.0	88	11.3	1015.0	7	001	02	6	2	8	5	3	/	/	82708	86712	88620			27					
28	84	7	18	03	07	18.5	15.3	59	7.7	1015.1	8	004	03	2	2	2	8	5	3	2	81825	86072				28	2Sc35	2Ac61	COTRA	Cu hum	
29	82	8	24	07	12	18.2	15.6	85	10.8	1010.8	8	001	01	5	2	8	5	4	/	/	86615	88645				29					
30	80	7	31	03	07	16.2	12.1	77	8.6	1013.8	1	006	21	6	2	7	8	4	7	/	81815	86645	87357			30	2Sc35	Cu fra	Cld edge	N	
31	89	1	30	04	10	17.5	9.7	60	7.4	1017.0	1	004	03	1	1	1	1	6	3	1	81830						31	1Ac57	1Ci72		Cu hum

Mean vis = 38.6 km

Mean cloud = 5.9 74%

Mean wind speed = 6.3 kn

Mean gust = 13 kn

Mean TT = 18.5 °C

Mean TdTd = 13.0 °C

Mean RH = 70.5 %

Mean r = 9.3 g/kg

Mean PPP = 1017.2 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 2016

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cf	NChshs	NChshs	NChshs	Date	Remarks
1	84	7	24	10	20	17.3	10.2	63	7.6	1007.8	6	005	25	8	2	7	8	6	/	/	84830	85645	86656	1	Cu med jpSW
2	84	3	23	12	23	18.8	9.4	54	7.5	1014.1	2	001	15	8	1	3	2	6	6	3	83840			2	1Ac58 1Ci70 Cu con jpS
3	84	7	20	06	12	19.4	10.7	57	8.2	1018.1	5	002	02	2	2	7	8	6	/	1	83835	85656		3	/Ci78 COTRA Cu med
4	84	8	22	10	21	18.6	13.5	72	9.5	1017.6	7	010	03	5	2	8	5	4	/	/	86618	88635		4	
5	86	5	32	06	16	20.3	8.7	47	7.1	1019.0	2	004	01	2	2	3	1	6	0	1	83845	84080		5	COTRA Cu hum
6	86	7	24	04	10	20.4	7.7	44	6.9	1022.5	7	005	02	1	1	2	4	7	3	8	81850	83272	85075	6	2Sc50 1Ac68 COTRA Cu hum
7	82	7	21	08	14	21.8	12.8	57	9.3	1018.2	5	008	02	2	2	3	1	6	7	8	83832	85361	87275	7	2Ac63 COTRA Cu hum U/a cont
8	81	7	25	10	24	20.5	12.3	59	8.9	1016.5	1	005	02	2	2	1	8	6	7	/	81833	85360	87363	8	1Sc40 Cu hum
9	84	7	20	10	23	21.2	14.9	67	10.7	1015.7	8	015	02	2	2	1	1	5	7	8	81825	83367	85469	9	7Cs72 Cu hum
10	80	5	21	12	23	22.6	13.4	56	9.1	1006.6	8	011	01	2	2	3	2	6	0	1	83833	83080		10	COTRA Cu med
11	62	7	23	08	20	18.1	15.8	86	11.2	1008.5	2	007	25	8	2	4	8	6	6	/	81825	83835	85359	11	1Sc45 Cu fra/con jpE-SW vv70k exp p
12	88	6	33	09	18	18.2	11.7	66	8.6	1012.0	2	002	01	8	2	3	8	6	3	1	82830	85359		12	2Sc50 /Ci75 Cu med
13	70	7	31	09	24	15.6	9.3	66	7.2	1019.5	3	008	25	8	2	5	8	6	7	/	82835	84645	87358	13	Cu med jpN-SE vv60k ex p
14	88	5	33	08	15	20.1	7.6	44	6.8	1024.6	1	001	02	1	1	5	4	7	0	0	82850	84656		14	Cu hum
15	35	8	25	07	18	16.0	14.4	90	10.1	1026.5	7	003	58	6	5	8	5	3	/	/	85708	88615		15	
16	86	7	27	06	15	25.3	16.6	58	11.7	1023.5	6	012	02	2	2	6	8	6	/	2	82835	85656		16	1Sc45 4Ci75 COTRA Cu med
17	86	3	26	12	21	25.7	16.3	56	11.3	1021.3	7	008	01	1	1	2	8	6	0	1	82835			17	1Sc56 2Ci75 Cu med
18	88	1	26	02	08	28.2	15.0	45	10.9	1020.1	7	016	01	1	1	1	1	7	0	2	81850			18	1Ci75 Cu hum
19	84	0	13	08	17	32.8	16.3	37	11.4	1014.2	7	016	02	0	0	0	0	9	0	0				19	
20	82	1	24	09	22	28.8	15.0	43	10.3	1009.1	3	004	01	0	0	1	2	6	3	0	81845			20	1Ac62 Cu con N
21	86	8	34	03	08	22.4	12.0	52	8.2	1016.0	7	001	03	2	2	7	8	6	/	7	82845	86656	88275	21	Cu med
22	86	7	17	06	11	25.0	14.2	51	9.5	1018.3	2	003	02	8	2	3	8	6	6	1	82840	86358		22	2Sc56 /Ci75 Cu med
23	82	2	20	07	14	27.3	13.1	42	9.4	1018.6	8	009	01	0	0	2	2	7	3	0	82850			23	1Ac62 Cu med
24	65	7	22	09	17	22.2	15.3	65	10.6	1017.8	6	004	21	6	2	7	5	5	/	/	81622	85628	87645	24	jpN vv50k ex p
25	84	7	25	08	17	21.1	10.5	51	7.7	1019.1	7	003	02	2	2	7	8	7	/	/	83848	87656		25	Cu hum Absent vv&cld est
26	82	7	23	08	14	21.3	12.4	57	8.7	1020.4	7	005	02	2	2	7	8	6	/	1	83845	87656		26	/Ci75 Cu med
27	82	6	23	08	16	22.5	15.1	63	10.4	1014.2	6	010	02	2	2	6	8	6	0	1	83835	84656		27	1Ci75 Cu med Absent vv&cld est
28	80	8	22	07	17	18.2	14.7	80	10.5	1012.9	8	011	02	6	2	8	5	4	/	/	86611	88615		28	
29	80	7	24	05	11	20.2	14.9	72	10.6	1010.6	6	005	15	8	2	3	8	6	7	2	82830	87357		29	2Sc45 /Ci70 Cu med jpS vv60k ex p
30	84	7	35	05	11	20.9	10.1	50	7.5	1013.4	6	004	02	2	2	4	8	6	7	2	82845	83650	86357	30	/Ci70 Cu hum
31	88	7	24	08	15	21.3	9.2	46	7.1	1017.1	7	002	02	2	2	3	2	6	3	/	83848	87357		31	Cu med

Mean vis = 45.7 km

Mean cloud = 5.8 73%

Mean wind speed = 7.7 kn

Mean gust = 17 kn

Mean TT = 21.7 °C

Mean TdTd = 12.7 °C

Mean RH = 57.9 %

Mean r = 9.2 g/kg

Mean PPP = 1016.6 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 2016	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
	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.13	0.50	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.34	0.36	0.00
	5	0.00	1.00	1.00	1.00	0.00	0.52	0.00	0.00	0.04	0.00	0.01	0.94	0.00	0.99	0.38	0.00
	6	0.00	1.00	1.00	1.00	0.00	1.00	0.06	0.08	0.08	0.00	0.15	0.42	0.54	1.00	0.01	0.00
	7	0.40	0.83	0.99	1.00	0.00	0.88	0.45	0.00	0.32	0.00	0.21	0.84	1.00	1.00	0.05	0.02
	8	0.00	0.75	0.72	1.00	0.06	1.00	0.63	0.00	0.15	0.00	0.01	0.60	1.00	0.77	0.71	0.50
	9	0.00	0.51	0.52	0.15	0.16	0.76	0.25	0.00	0.00	0.00	0.00	0.03	0.75	0.61	0.01	0.95
	10	0.00	0.01	0.04	0.07	0.23	0.41	0.26	0.09	0.00	0.00	0.02	0.01	0.28	0.53	0.00	0.85
	11	0.00	0.40	0.05	0.06	0.38	0.54	0.44	0.13	0.00	0.00	0.24	0.04	0.00	0.58	0.00	0.58
	12	0.02	0.36	0.15	0.02	0.23	0.56	0.41	0.01	0.00	0.29	0.12	0.00	0.06	0.67	0.00	0.59
	13	0.51	0.27	0.37	0.00	0.49	0.77	0.11	0.00	0.00	0.47	0.15	0.00	0.01	0.47	0.00	0.12
	14	0.00	0.57	0.07	0.00	0.66	0.54	0.02	0.00	0.00	0.52	0.18	0.18	0.27	0.54	0.00	0.05
	15	0.03	0.64	0.05	0.00	0.57	0.81	0.03	0.00	0.00	0.78	0.01	0.46	0.14	0.51	0.00	0.09
	16	0.01	0.96	0.10	0.00	0.48	0.29	0.39	0.30	0.00	0.93	0.16	0.01	0.09	0.22	0.00	0.64
	17	0.55	1.00	0.43	0.00	0.49	0.00	0.16	0.69	0.00	0.64	0.43	0.57	0.03	0.28	0.00	0.38
	18	0.16	1.00	0.78	0.02	0.73	0.00	0.48	1.00	0.00	0.74	0.67	1.00	0.03	0.85	0.00	0.61
	19	0.78	1.00	0.69	0.23	0.51	0.00	0.00	0.66	0.13	0.71	0.43	0.37	0.06	0.34	0.00	0.00
	20	0.16	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.19	0.00	0.03	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		2.64	10.49	7.48	4.99	4.99	8.09	3.69	2.96	0.76	5.05	2.97	5.78	4.30	9.69	1.51	5.39

	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	0.00	0.00	0.42	0.09	0.00	0.00	0.43	0.46	0.48	0.47	0.00	0.02	0.00	0.00	0.00	0.14
	5	0.22	0.00	1.00	0.63	0.00	0.00	1.00	0.35	1.00	1.00	0.00	0.32	0.00	0.00	0.23	0.38
	6	0.00	0.02	1.00	0.91	0.20	0.00	1.00	0.03	0.99	1.00	0.00	0.58	0.00	0.00	0.60	0.41
	7	0.00	0.72	1.00	0.59	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.05	0.00	0.00	1.00	0.50
	8	0.00	0.99	1.00	0.07	1.00	0.41	1.00	0.05	0.78	1.00	0.00	0.52	0.00	0.00	0.99	0.51
	9	0.00	0.99	1.00	0.00	0.96	1.00	0.93	0.56	0.83	0.88	0.00	0.26	0.00	0.00	0.91	0.42
	10	0.00	1.00	1.00	0.30	0.79	0.14	0.64	0.47	0.35	0.63	0.03	0.05	0.08	0.00	0.36	0.28
	11	0.52	1.00	1.00	0.99	0.32	0.31	0.55	0.14	0.48	0.63	0.00	0.09	0.00	0.00	0.04	0.31
	12	0.67	1.00	1.00	0.90	0.47	0.09	0.87	0.13	0.83	0.11	0.11	0.00	0.00	0.00	0.04	0.31
	13	0.17	1.00	1.00	0.84	0.01	0.00	0.87	0.02	0.46	0.01	0.32	0.00	0.00	0.03	0.09	0.28
	14	0.61	1.00	1.00	1.00	0.00	0.30	0.98	0.01	0.05	0.00	0.34	0.00	0.00	0.25	0.31	0.30
	15	1.00	1.00	1.00	1.00	0.00	0.16	0.96	0.02	0.48	0.04	0.50	0.00	0.05	0.21	0.11	0.34
	16	0.91	1.00	1.00	1.00	0.00	0.00	0.96	0.09	0.90	0.01	0.24	0.00	0.13	0.06	0.30	0.36
	17	0.82	1.00	1.00	1.00	0.00	0.00	1.00	0.08	0.31	0.00	0.18	0.85	0.22	0.42	0.80	0.43
	18	0.95	1.00	1.00	1.00	0.00	0.31	0.97	0.00	0.18	0.00	0.05	0.13	0.21	0.14	0.30	0.46
	19	1.00	1.00	0.69	0.78	0.00	0.21	0.37	0.00	0.00	0.00	0.07	0.00	0.04	0.08	0.02	0.33
	20	0.10	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	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		6.97	12.79	15.10	11.12	4.76	2.93	13.53	2.43	9.12	6.77	1.85	2.89	0.74	1.20	6.12	179.09

JULY 2016	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	
1	14.97	19.42	1319	10.43	2353	78.5	92.7	533	57	1512	11.15	8.3	10.42	919	6.456	2350	1008.72	1010.6	2346	1007.4	1441	
2	14.19	19.81	1436	9.61	252	68.82	89.9	1124	40.7	1615	8.18	6.746	9.86	1159	5.468	1855	1013.76	1017.4	2358	1010.4	2	
3	15.41	21.42	1337	8.85	345	73.1	94.6	459	47.79	1339	10.28	7.73	10.61	1132	6.511	345	1018.27	1020.4	2232	1017.0	46	
4	15.58	20.7	1233	8.82	343	79.8	95.8	406	56.39	901	11.92	8.65	10.56	1231	6.643	343	1018.20	1020.6	859	1015.2	2359	
5	16.69	21.27	1442	10.57	2358	69.42	92.1	159	42.17	1444	10.67	7.96	9.83	149	6.37	1307	1017.95	1022.1	2358	1014.0	221	
6	15.4	21.58	1524	7.91	311	67.18	95	427	39.3	1335	8.75	6.95	8.71	920	5.617	1159	1022.48	1023.8	1019	1020.9	1721	
7	17.55	22.37	1405	12.97	256	70.9	85	257	51.97	1357	12.06	8.69	11.04	1059	7.46	409	1019.07	1021.7	5	1016.6	2354	
8	17.98	23.2	1232	14.22	139	72.6	88.3	504	51.14	1254	12.79	9.14	11.82	1102	8.1	2112	1016.42	1020.3	2324	1014.2	639	
9	18.44	21.93	1042	13.63	241	73.2	87.6	244	59.87	1655	13.47	9.55	11.47	1406	8.21	144	1016.61	1020.1	0	1012.5	2359	
10	18.32	23.16	1536	15.29	2218	77.6	92.8	625	49.7	1544	14.12	10.08	12.08	1246	8.36	1544	1008.16	1012.7	0	1005.9	1801	
11	17.21	21.46	1311	12.51	2356	75.8	89.9	1501	57.02	1842	12.88	9.29	12.8	1311	7.51	2352	1007.85	1011.4	2316	1005.1	446	
12	14.59	18.83	1516	11.01	431	80.4	95	1101	55.65	1521	11.15	8.24	11.11	1101	7.16	1521	1012.30	1015.4	2358	1010.8	0	
13	14.21	18.95	1420	10.12	2351	75	94.2	107	48.3	1013	9.54	7.35	8.72	1416	5.92	1749	1018.47	1021.8	2313	1015.2	3	
14	15.48	21.7	1414	9.77	330	67.25	94.2	132	36.58	1404	8.86	6.984	8.53	934	5.396	1248	1024.18	1026.8	2355	1021.4	4	
15	15.27	18.33	1253	8.79	419	82	95.8	450	54.27	936	12.1	8.71	10.55	2301	6.456	936	1026.27	1027.1	723	1025.1	1845	
16	20.44	26.17	1516	16.48	236	76	89.1	2352	54.48	1517	15.89	11.07	13.8	1455	10.05	406	1024.50	1026.0	712	1022.9	1753	
17	21.28	26.2	1453	16.77	2357	74.1	91.7	2357	51.03	1701	16.21	11.32	13.78	1442	10.05	1727	1022.22	1023.6	37	1020.6	1736	
18	21.15	29.51	1624	13.04	350	69.98	96.7	649	35.32	1625	14.56	10.22	12.66	2026	7.29	1116	1021.09	1022.7	817	1018.9	1823	
19	24.3	33.19	1501	13.2	359	63.65	96.1	538	32.04	1518	15.72	11.07	14.8	1022	8.93	354	1015.75	1020.2	13	1010.6	2357	
20	22.39	29.27	1350	14.58	2353	67.31	88.5	316	32.93	1636	15.62	11.11	15.24	1149	7.7	1636	1009.50	1014.4	2331	1005.8	654	
21	18.58	24.3	1232	12.43	400	68.99	91.8	402	42.56	1438	12.37	8.89	12.12	1231	7.33	1419	1016.11	1018.0	2340	1014.0	9	
22	19.83	25.14	1458	15.92	359	71.6	89.7	446	46.92	1044	14.32	10.06	12.58	938	8.03	1044	1018.24	1020.1	2306	1016.9	339	
23	20.69	27.66	1520	13.08	438	69.09	95.9	534	36.25	1521	14.1	9.92	12.95	1209	8.19	1521	1019.57	1020.4	2253	1018.0	1626	
24	18.58	24.05	1221	12.69	413	78.2	93.8	420	52.1	1221	14.56	10.25	12.93	1344	8.38	413	1018.60	1020.4	11	1016.9	1701	
25	17.84	22.93	1304	12.49	418	67.34	92.2	419	39.6	1550	11.23	8.22	10.43	1258	6.587	1540	1019.40	1021.3	2352	1018.2	207	
26	17.48	22.28	1225	10.95	431	71.9	93.7	435	47.36	1216	12.07	8.68	10.66	1108	7.32	1209	1020.59	1022.2	719	1018.0	2355	
27	19.23	24.77	1645	15.92	2334	77.2	92.4	704	50.16	1645	14.93	10.51	13.38	1308	8.75	2351	1015.18	1018.2	10	1013.6	1641	
28	17.41	22.69	1150	11.93	440	76.9	93	2351	48.03	1152	13.13	9.46	12.03	1743	7.28	847	1013.70	1015.8	236	1011.2	2359	
29	18.1	22.17	1538	15.27	312	79.5	94	134	57.67	1717	14.34	10.16	12.72	1240	8.73	1814	1010.98	1012.6	2335	1010.1	1640	
30	17.12	22.45	1416	12.78	2313	71.1	89.7	356	39.58	1742	11.51	8.44	10.38	1331	6.181	1758	1013.58	1015.5	2348	1012.2	7	
31	16.96	22.66	1437	10.26	506	64.12	91.3	513	38.69	1438	9.71	7.44	9.39	1451	6.482	1438	1017.11	1019.5	2333	1015.3	128	
Total																						
Mean	17.83	23.21		12.33		72.9	92.34		46.86		12.52	9.07	11.55		7.38		1016.93	1019.46		1014.68		
Max	24.30	33.19		16.77		82.0	96.70		59.87		16.21	11.32	15.24		10.05		1026.27	1027.14		1025.10		
Min	14.19	18.33		7.91		63.7	85.00		32.04		8.18	6.75	8.53		5.40		1007.85	1010.58		1005.09		

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
 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

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 2020. For some parameters, notably wind, the climatological average is not available, and if the word average is used in the context of wind, it refers to the average for the period for which data is held, namely 1988 to present.

For sunshine, there was a change, in July 1999, in the type of instrument used to detect sunshine amount, making the climatological average based on the old instrument of little use. In general, the new instrument produces higher values in the winter half year, and lower ones in the summer half, than the old type, due to a combination of faster reaction and higher sensitivity than the old type. The average used in this case is based on a theoretical equivalent 1981 to 2010 average, drawn from comparison with the Met Office published tables of departure from climatological average sunshine in the months since 2000 for their area 'Southern England'. Users of the Wokingham Monthly Weather reports should be aware of this, and regard anomalies for sunshine published therein as a guide only, until such time has elapsed since the introduction of the new instrument that a genuine average becomes available.

Mean: The mean of the data under discussion, often the monthly mean of daily data. The mean is obtained by summation of the individual values and dividing by the number of values. The term 'daily mean' in respect of temperature is defined as '(max + min) / 2'. A true daily 24 hour (00 to 24 GMT) mean temperature is available from the Automatic Weather Station (AWS), and is currently published on page 7 of the Wokingham Monthly Weather report, on the Wokingham Weather web site, page 1. <http://www.woksat.info/wwp1.html>

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

- a): The departure of a mean from the current climatological average.
- b): The departure of a value on a particular day from the average for that day, (this need not be a climatological average).

When the word anomaly is used in respect of temperature, any values given are in °C. In respect of rainfall or sunshine, percent. In respect of wind, mph. In respect of pressure, millibars (hpa).

Categories: Reference may be made in the reports to 'categories'. Each category has a strict statistical range, as outlined below.

Temperature: The terms cold/mild are used in the winter half year, and cool/warm in the summer half. The term 'normal' is used when the individual mean (monthly, seasonal or annual) value is within 20 % of the median of all ranked values for that month/season/year.

Mild/warm: The value lies between 10 % and 30 % below the highest value in the ranked series.

Very mild/very warm: The value lies within 10 % of the highest value in the ranked series.

Cold/cool: The value lies between 10 % and 30 % above the lowest value in the ranked series.

Very cold/very cool: The value lies within 10 % of the lowest value in the ranked series.

Sunshine: The terms for sunshine are very sunny, sunny, normal, dull and very dull.

The definition of these terms follow the same rules as for temperature.

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

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

Wet: The value lies between 10 % and 30% of the highest value in the ranked series.

Very wet: The value lies within 10 % of the highest value in the ranked series.

Dry: The value lies between 10 % and 30 % above the lowest value in the ranked series.

Very dry: The value lies within 10 % of the lowest value in the ranked series.

Long-term: Mention may be made in the reports to the 'long-term'. The long-term record comprises a temperature/rainfall/sunshine data series compiled from records of various weather stations in the Wokingham area in the years prior to the establishment of the weather station at Emmbrook in 1976 together with data from this station.

In the case of monthly max, min and mean temperature and of rainfall total the series starts in 1882. For temperature extremes, the highest max and lowest min go back to 1904, and lowest max and highest min to 1913.

Rank: The word rank refers to the position of a value for a particular month/season/year in the ranked series, and may be expressed relative to either the highest or lowest value in the series. The central value in the ranked series is known as the **median**. This value may be different from the average of the whole series if the population is skewed. It can also be different from the climatological average which only refers to a 30 year period.

Month: Calendar month.

Season: Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

When discussing 'winter', if a single year is given this refers to the year in which the January/February fall.

Annual or Year: The calendar year, 1st January to 31st December.

The climatological day: runs from 0900 to 0900 GMT. The max temperature and rainfall read at 0900 hours are attributed to the previous day (thrown back), as is the duration of measurable rain. The min temperature and grass min read at 0900 hours are attributed to the day of reading. Pressure read at 0900 GMT, and the monthly mean pressure is the mean of the 0900 GMT readings. Sunshine data, wind data, rainfall rate data and 24 hour data from the AWS use the normal 00-24 GMT day.

Frost: An air frost day is recorded when the minimum temperature read at 0900 GMT on that day is -0.1°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% snow cover at the 0900 GMT observation.

Snow depth is the depth of undrifted snow. Snow that collects in the raingauge funnel is melted and the amount recorded as rainfall.

Hail: A day of hail is recorded if hailstones 5 mm or more in diameter are observed or recorded on the hail pad in a 24 hour period starting at midnight.

A day of small hail is recorded if hailstones less than 5 mm diameter are observed or recorded in a 24 hour period starting at midnight. The term small hail also includes various other types of ice meteor such as ice pellets, snow grains and some types of snow pellets.

Fog: A day with fog is recorded if the horizontal visibility at 0900 GMT is below 1000 m.

Thunder: A day of thunder is recorded if thunder is heard in the 24 hour period from midnight on that day. The appearance of lightning without thunder being heard does not qualify as a thunder day.

Trace of rainfall: A trace of rain, entered as 'tr' in the daily log, is recorded if rain is observed to fall but is of insufficient quantity to collect in the raingauge, or if the amount of rain in the gauge is less than 0.05 mm.

Dry spell: A dry spell is defined as a period of 5 or more consecutive dry days.

Dry day: A dry day is one with less than 0.2 mm of rainfall.

Rain day: A rain day is one with 0.2 mm or more of rainfall.

Wet day: A wet day is one having 1.0 mm or more of rainfall.

Appendix 2.

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

VV : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

RH : Relative humidity at 1.2m, %.

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

ppp : 3 hour pressure tendency in tenths of a millibar

ww : Present weather code figures, 00 to 99.

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

Cl : Type of low cloud

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

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

Cm : Type of medium cloud.

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

Ch : Type of high cloud

0 = No high cloud

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

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

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

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

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

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

7 = Veil of Cirrostratus covering the celestial dome.

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

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

/ = Types of high cloud invisible owing to darkness, fog, blowing dust 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.