

# 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 2022

Temperature (°C)	Anomaly	Rank in the past 141 years	
Mean maximum	26.4	+3.2	5 <sup>th</sup> highest
Mean minimum	13.4	+0.6	11 <sup>th</sup> highest
Daily mean	19.9	+2.0	4 <sup>th</sup> highest
Highest maximum	<b>38.8</b>	on 19 <sup>th</sup>	Lowest maximum 21.6 on 2 <sup>nd</sup>
Highest minimum	20.2	on 13 <sup>th</sup>	Lowest minimum 7.8 on 5 <sup>th</sup>
Mean grass minimum	10.2	+0.3	Lowest grass minimum 3.0 on 5 <sup>th</sup>
Mean earth @30 cm	19.4	+0.5	Earth @100 cm 17.6 +0.7
Frost duration (hrs)	0.0		Rain duration (hrs) 4.2
Rainfall total (mm)	11.8	25%	11 <sup>th</sup> lowest
Highest daily fall	8.4	on 20 <sup>th</sup>	Highest rate mm/hr 42 on 1 <sup>st</sup>
Number of: Dry days (<0.2mm)	27	Wet days (>0.9mm)	2 days ≥5mm 1
Sunshine total (hrs) 237.4	Daily mean 7.66	119%	Sunniest day 15.2 on 10 <sup>th</sup>
N° days with: Air frost 0	Ground frost 0	Snow falling 0	Snow lying 0
Thunder 0	Hail ≥5mm 0	Small hail/ice 0	Fog @09 0 Nil sun 0
Pressure MSL: Mean @09 GMT, mbar 1021.4	+5.5	Highest 1033.5 on 8 <sup>th</sup>	Lowest 1007.1 on 19 <sup>th</sup>
Relative humidity: Mean (%) 63.0	Lowest 17 on 19 <sup>th</sup>	Water vapour (g/kg), mean at 09 and 15 GMT 8.7, 8.3	
Overall mean wind speed (mph) 5.8	Windiest day 11.5 on 24 <sup>th</sup>	Max gust 33 on 24 <sup>th</sup>	
Wind direction (days) N 2 NE 2 E 2 SE 1 S 3 SW 10 W 6 NW 5			
Least windy day (mph) 3.5 on 16 <sup>th</sup>	Calm; less than 0.5 mph (minutes) 697		

Anomaly = departure from 1991 to 2020 average (degrees C, percent and mbar).

Notes:

### Very Hot. Very Dry. Sunny. Record Breaking Heatwave Near Mid-month.

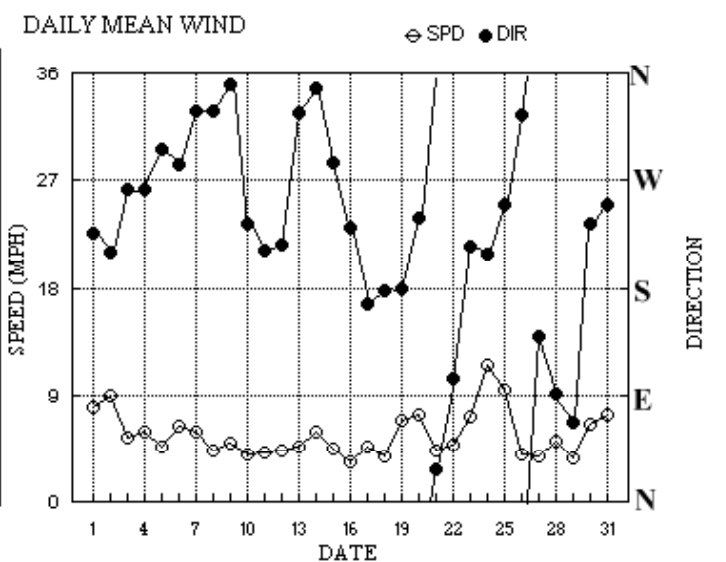
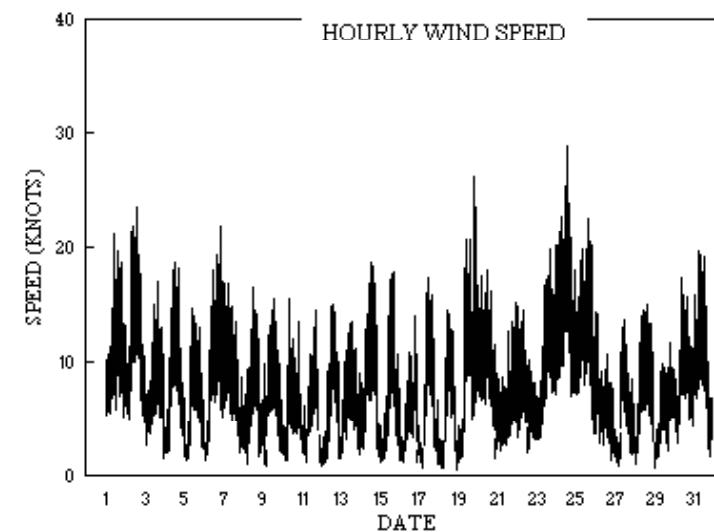
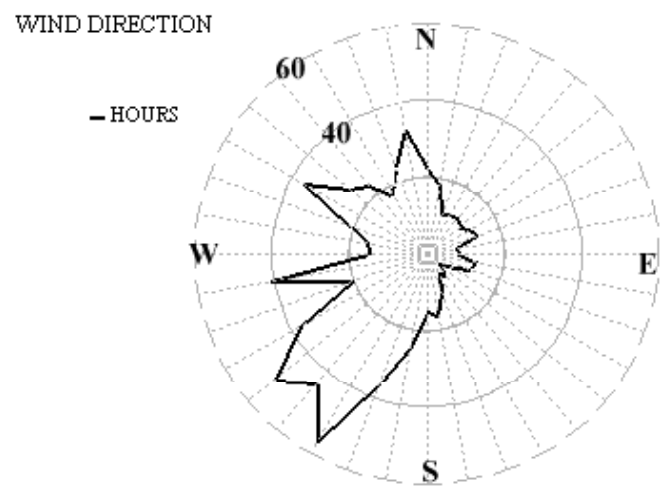
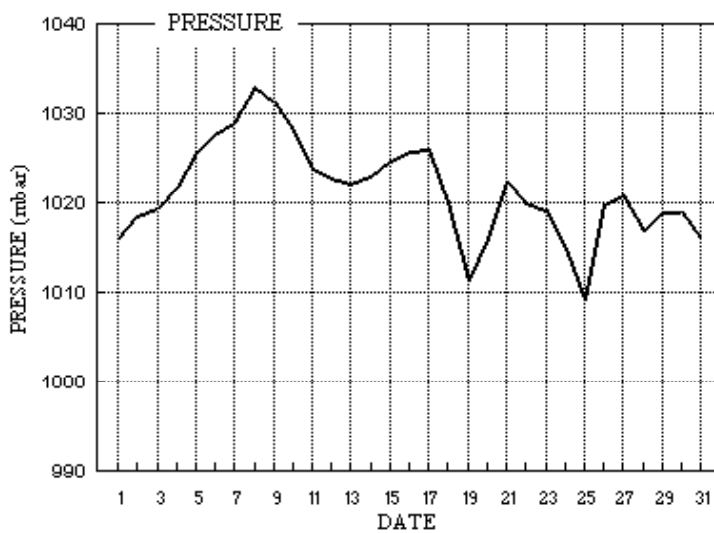
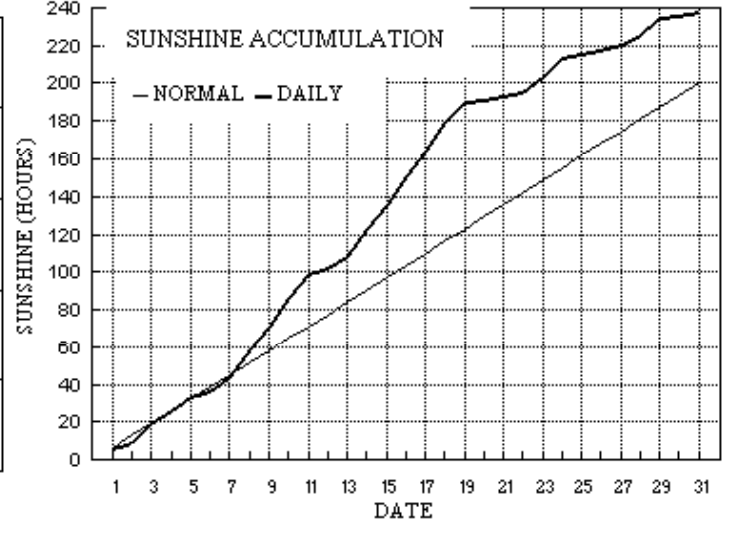
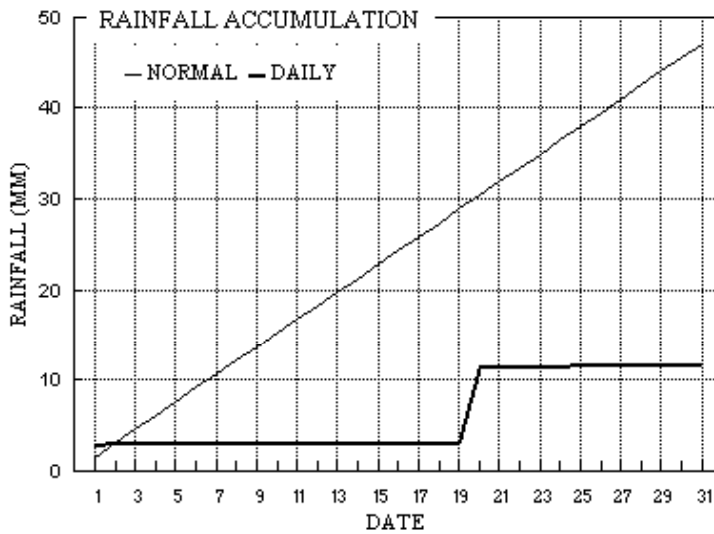
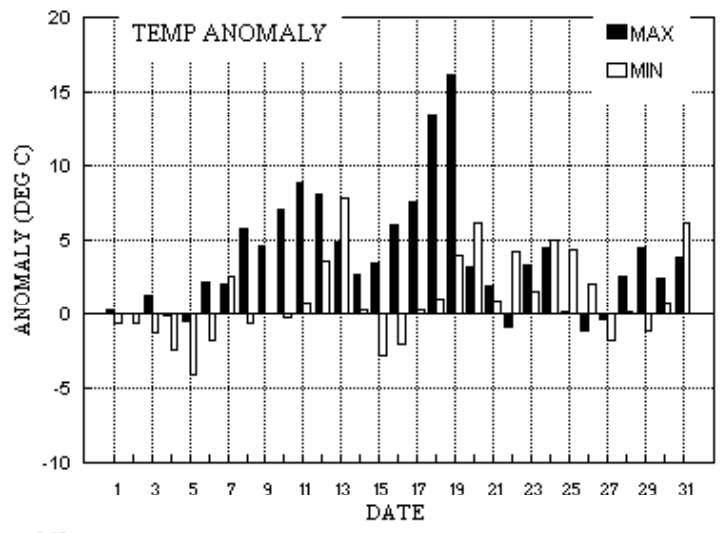
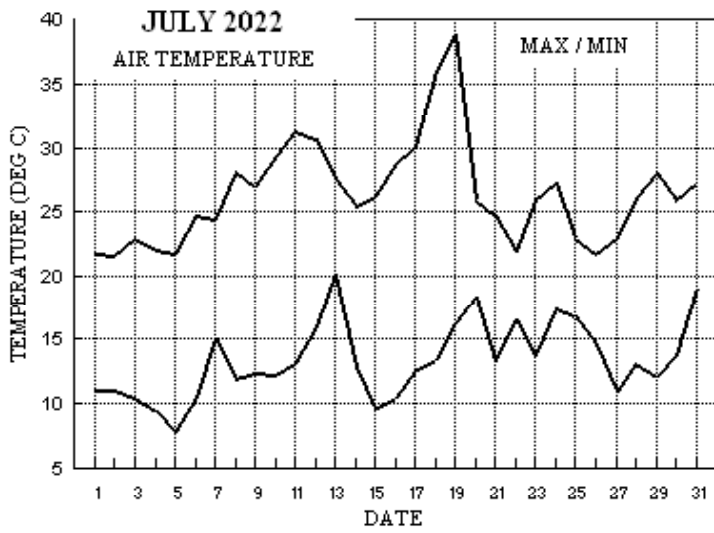
**Temperature:** By day it was well above normal from the 7<sup>th</sup> to the 19<sup>th</sup>, culminating in all-time record heat for Wokingham (as well as many other parts of the country) when the air temperature reached 38.8°. This exceeds the previous highest in 2020 by 1.9°. The mean maximum ranks 5<sup>th</sup> highest in 141 years, but both 2006 and 2018 were hotter. The mean minimum, ranking 11<sup>th</sup> highest, has been exceeded 6 times in this millennium. The resulting mean temperature ranks 4<sup>th</sup> highest after 2018, 2006 and 1983. The highest max, a new all time record for Wokingham, is 10.0° above the long-term median. The lowest max is 4.6° above its median and is 2<sup>nd</sup> highest in 111 years. The highest min is 3.6° above the median and is a new all-time record while the lowest min is 0.8° above its median. The mean grass min is slightly above average. Despite the heat in the air, earth temperatures, while a little above average, are lower at 30cm depth than the recent Julys of 2021, 2019, 2018 and 2017. Anomalies for daily max were over +8° on the 11<sup>th</sup>, 12<sup>th</sup>, 18<sup>th</sup> and 19<sup>th</sup>, and exceeded -1° only on the 26<sup>th</sup>, with peak values of +16.1° on the 19<sup>th</sup> and -1.2° on the 26<sup>th</sup>. Anomalies for daily min were above +5° on the 13<sup>th</sup>, 20<sup>th</sup>, 24<sup>th</sup> and 31<sup>st</sup>, and exceeded -4° only on the 5<sup>th</sup>, with extreme values of +7.8° on the 13<sup>th</sup> and -4.1° on the 5<sup>th</sup>. **Rainfall:** This has been the driest July since 1994 at this weather station. However, the total this month was bolstered by a fall of 8.4 mm on the 20<sup>th</sup>, the only other wet day being the 1<sup>st</sup>, while many other locations in the area had an even lower total, e.g. Stratfield Mortimer had only 3.6 mm and their driest July on record. While there were 7 more dry days than average, the 27 we had is equal highest with July in 2018, 1990, 1983 and 1979. All but 0.4 mm of this month's rain fell on just 2 days, 20<sup>th</sup> and 1<sup>st</sup>, and a dry spell of 17 days ended on the 19<sup>th</sup>, and another was ongoing on the 31<sup>st</sup> after 6 days. Rainfall duration is lowest for any July since before 1993. Estimated soil moisture deficit was so high that shallow rooted unirrigated plants would suffer severe stress throughout July. Thunder was absent this month, along with only 5 other Julys in the past 47 years. Rainfall accumulation compared with normal was in deficit by 27mm on the 19<sup>th</sup> and 36 mm by the 31<sup>st</sup>. **Sunshine:** This has been a sunny July overall, 19% above average, due mainly to a number of sunny days between the 8<sup>th</sup> and 19<sup>th</sup>. It is the sunniest July since 2018, and only 3 other Julys have been sunnier in this millennium. The 4 day period to the 11<sup>th</sup> and the 6 days to the 19<sup>th</sup> were outstanding, having an average of 13.9 and 13.7 hours per day respectively. Overall there were 10 days with <3 hours, 19 with =>6 hours and 9 with =>12 hours. Daily accumulation compared with normal was in balance to the 7<sup>th</sup>, this becoming a surplus of 68 hours by the 19<sup>th</sup>, decreasing to 39 hours by the 31<sup>st</sup>. **Wind:** The mean speed this July is 0.5 mph below average, but is slightly higher than in 2021. The month's highest gust is close to average. **Humidity:** The mean relative humidity is 2<sup>nd</sup> lowest for July after 2018 since 1998. The lowest value is a new July record for the same period. **Pressure:** The month's lowest MSL pressure is highest for July since 1994.

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

From the 1 <sup>st</sup> to the 10 <sup>th</sup>				From the 11 <sup>th</sup> to the 20 <sup>th</sup>				From the 21 <sup>st</sup> to the 31 <sup>st</sup>			
+2.3°	-0.9°	21%	134%	+7.4°	+1.9°	55%	163%	+1.9°	+2.0°	1%	64%

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

# Wokingham climatological graphs for July 2022



Month: JULY 2022

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 ddd	mean ff	sp	Max gust ddd	gg	HHhh	High hr ddd	ff	Rain HH	hrs
1	21.7	11.0	3.0	7.7	17.6	16.6	6.2	0.0	1016.0	0	0	0	0	225	6.9	7.0	258	21	1003	215	11	14	0.4
2	21.6	11.0	0.2	8.7	17.6	16.6	3.6	0.0	1018.6	0	0	0	0	209	7.5	7.9	234	24	1328	208	11	13	0.6
3	23.0	10.4	0.0	6.2	17.5	16.6	9.3	0.0	1019.5	0	0	0	0	262	4.2	4.7	316	17	1525	295	7	14	0.0
4	22.0	9.4	0.0	4.4	17.8	16.6	7.1	0.0	1021.7	0	0	0	0	262	4.9	5.2	262	19	1345	255	8	13	0.0
5	21.8	7.8	0.0	3.0	17.6	16.6	7.7	0.0	1025.5	0	0	0	0	296	3.7	4.1	267	15	0930	312	6	14	0.0
6	24.7	10.4	tr	5.9	17.6	16.6	2.7	0.0	1027.8	0	0	0	0	283	5.2	5.5	314	22	2030	301	9	19	0.2
7	24.5	15.1	0.0	14.7	18.0	16.6	7.5	0.0	1029.0	0	0	0	0	327	4.7	5.3	333	17	0523	299	8	03	0.0
8	28.1	11.9	0.0	7.1	18.2	16.7	14.7	0.0	1033.1	0	0	0	0	327	3.6	3.8	330	17	1339	337	6	14	0.0
9	27.0	12.4	0.0	7.8	18.8	16.8	12.4	0.0	1031.4	0	0	0	0	350	4.0	4.3	330	16	1333	339	6	11	0.0
10	29.4	12.2	0.0	7.9	19.0	16.9	15.2	0.0	1028.2	0	0	0	0	233	2.4	3.5	183	16	0945	201	6	20	0.0
11	31.3	13.2	0.0	8.8	19.5	17.1	13.4	0.0	1023.8	0	0	0	0	211	3.4	3.6	195	15	1724	209	8	17	0.0
12	30.7	16.0	tr	12.8	20.0	17.3	2.2	0.0	1022.9	0	0	0	0	216	2.9	3.8	189	15	1423	205	8	14	0.1
13	27.6	20.2	0.0	16.4	20.3	17.5	6.8	0.0	1022.1	0	0	0	0	326	3.4	4.0	296	14	1315	326	6	09	0.0
14	25.4	12.8	0.0	7.6	20.3	17.7	14.1	0.0	1023.0	0	0	0	0	347	5.1	5.2	341	19	1412	350	8	16	0.0
15	26.2	9.6	0.0	4.4	19.8	17.8	12.7	0.0	1024.8	0	0	0	0	285	3.0	4.0	306	18	1622	272	8	16	0.0
16	28.7	10.4	0.0	6.5	19.6	17.9	14.9	0.0	1025.7	0	0	0	0	231	1.2	3.0	179	14	1908	189	7	19	0.0
17	30.1	12.5	0.0	9.2	20.0	17.9	13.8	0.0	1026.1	0	0	0	0	167	3.8	4.1	170	17	1213	167	8	11	0.0
18	36.0	13.4	0.0	9.8	20.0	18.0	14.5	0.0	1020.0	0	0	0	0	178	2.7	3.4	177	15	1151	204	8	13	0.0
19	38.8	16.3	tr	12.4	20.5	18.1	11.9	0.0	1011.3	0	0	0	0	179	4.7	6.1	203	26	1806	183	11	14	0.1
20	25.9	18.4	8.4	17.5	21.1	18.2	1.0	0.0	1016.1	0	0	0	0	238	5.4	6.4	271	18	1135	217	9	10	2.0
21	24.7	13.3	tr	12.0	20.6	18.4	1.8	0.0	1022.3	0	0	0	0	28	1.7	3.8	112	15	2228	95	7	22	0.0
22	21.9	16.6	tr	16.1	20.4	18.5	1.5	0.0	1020.0	0	0	0	0	105	3.6	4.2	100	15	0000	95	6	08	0.0
23	26.0	13.8	0.0	10.4	19.9	18.5	8.6	0.0	1019.3	0	0	0	0	215	6.2	6.4	219	20	1616	215	10	16	0.0
24	27.2	17.4	tr	16.4	20.1	18.4	10.4	0.0	1015.0	0	0	0	0	208	10.0	10.0	242	29	1445	204	14	13	0.0
25	23.0	16.9	0.2	14.9	20.4	18.5	1.4	0.0	1009.2	0	0	0	0	250	7.3	8.2	255	23	1555	237	11	08	0.4
26	21.8	14.7	0.0	13.5	20.0	18.5	2.2	0.0	1019.9	0	0	0	0	324	3.0	3.6	284	14	0154	299	6	01	0.0
27	23.0	10.9	0.0	6.8	19.4	18.5	2.8	0.0	1020.9	0	0	0	0	140	2.5	3.5	161	14	1145	169	7	10	0.0
28	26.1	13.1	0.0	10.1	19.2	18.4	5.5	0.0	1016.9	0	0	0	0	91	4.2	4.5	67	15	1534	80	7	16	0.0
29	28.0	12.1	0.0	8.1	19.5	18.3	8.8	0.0	1018.9	0	0	0	0	67	1.0	3.2	208	12	2031	202	6	20	0.0
30	25.9	13.8	tr	10.4	19.9	18.3	1.5	0.0	1019.1	0	0	0	0	234	5.2	5.8	195	18	1059	258	8	17	0.0
31	27.2	19.1	tr	18.0	20.2	18.4	1.2	0.0	1016.0	0	0	0	0	249	5.2	6.5	239	20	0843	244	9	10	0.4
Total			11.8					0.0															4.2
Mean	26.4	13.4		10.2	19.4	17.6	7.66		1021.4					243	2.2	5.0							
Anom	+3.2	+0.6	25%	+0.3	+0.5	+0.7	119%			+5.5													

Daily mean 19.9 Pressure, abs highest = 1033.5 on 8

Anom +2.0 Pressure, abs lowest = 1007.1 on 19

Number of days with:

Air frost = 0 Ground frost = 0 Nil sun = 0  
 Snow falling = 0 Snow lying = 0 Thunder = 0  
 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.

Maximum daily rain rate in mm/hr

All temperatures in degrees Celsius.

Anomaly - Departure from the 1991 to 2020 climatological average

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for JULY 2022

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks						
1	84	4	23	08	15	18.2	12.4	69	8.9	1016.0	1	004	03	0	0	4	8	5	3	1	83825	1	1Sc40 1Ac59 1Ci75	Cu hum		
2	85	7	22	10	19	17.2	10.1	63	7.6	1018.6	8	003	03	1	1	6	8	5	/	9	83827	85630	2	/Ci72	Cu hum	
3	83	6	26	05	10	16.1	11.9	76	8.6	1019.5	2	005	03	1	1	5	8	5	3	2	85820	3	1Sc45 1Ac68 1Ci72	Cu med		
4	88	4	26	08	15	18.6	9.4	55	7.2	1021.7	7	006	03	1	1	1	1	6	3	0	81833	84368	4		Cu hum	
5	85	5	29	05	12	18.2	8.7	54	6.9	1025.5	0	005	03	1	1	3	8	6	4	1	82830	83359	5	2Sc42 1Ci75	Cu hum	
6	88	7	30	08	15	19.1	13.1	68	9.2	1027.8	8	002	01	2	2	3	8	5	7	8	81824	83645	86365	6	/Cs75	Cu hum
7	84	8	33	06	14	17.4	11.9	70	8.5	1029.0	1	018	01	5	2	8	8	5	/	/	82822	88630	7		Cu hum	
8	82	1	35	03	07	21.1	14.3	65	9.9	1033.1	8	001	03	0	0	1	1	5	0	1	81825		8	1Ci75	Cu hum	
9	84	7	34	07	13	19.5	12.8	65	9.0	1031.4	0	001	02	1	1	7	8	5	/	1	84825	86635	9	/Ci78	Cu hum	
10	82	0	24	04	11	21.1	13.8	63	9.6	1028.2	8	005	02	1	1	0	0	9	0	0			10			
11	88	1	25	05	08	25.2	13.1	47	9.2	1023.8	8	004	02	0	0	1	0	9	3	1	81365		11	1Ci80	Cu fib	
12	83	7	20	03	06	24.2	14.3	54	10.0	1022.9	5	001	02	2	2	3	0	9	7	8	81363	83465	87270	12		
13	81	7	32	05	12	22.5	14.6	61	10.2	1022.1	2	003	03	2	2	1	1	5	8	1	81825	86366	13	2Ac61 /Ci75	Cu hum Ac cas	
14	88	2	01	08	14	20.6	8.3	45	6.7	1023.0	0	002	03	0	0	0	0	9	0	2	82075		14		Ci spi	
15	88	5	01	03	07	20.3	9.5	50	7.3	1024.8	8	006	02	1	1	0	0	9	0	1	85080		15	COTRA	Ci fib Halo 22° part	
16	86	3	32	03	06	20.1	10.8	55	7.9	1025.7	1	005	02	0	0	0	0	9	0	1	83080		16		COTRA	
17	84	2	15	07	12	24.8	10.7	41	7.8	1026.1	8	004	02	0	0	0	0	9	0	1	81175		17	2Ci81	COTRA	
18	83	1	20	02	06	28.7	11.7	35	8.5	1020.0	8	008	02	0	0	1	0	9	8	1	81360		18	1Ci80	COTRA Ac cas Sky turbid	
19	80	4	16	11	18	33.0	10.4	25	7.8	1011.3	7	019	02	1	1	0	0	9	0	1	84081		19	COTRA	Ci fib/unc Sky turbid	
20	75	7	24	07	12	21.2	15.3	69	10.7	1016.1	0	014	01	2	2	7	8	4	/	/	84818	87625	20		Cu hum	
21	75	7	33	03	08	18.7	14.2	75	9.9	1022.3	1	006	03	1	1	7	8	5	/	/	81820	86656	21	1Sc30	Cu hum	
22	84	6	10	06	15	20.5	12.5	60	8.9	1020.0	7	006	01	2	2	2	8	6	7	2	81835	83368	85072	22	2Sc50 1Ac58	Cu hum Ci spi
23	80	6	26	06	12	20.4	12.1	59	8.7	1019.3	4	000	03	1	1	1	1	6	3	1	81830	86080	23	1Ac62 1Cc72	Cu hum Ci fib U/a cont	
24	86	1	21	10	21	22.7	13.7	57	9.1	1015.0	7	008	01	1	1	1	8	5	0	1	81828		24	1Sc40 1Ci75	Cu hum Sc len	
25	86	7	24	09	20	19.3	12.6	65	9.0	1009.2	2	009	03	2	2	7	5	5	/	/	86626	87632	25			
26	82	8	36	03	09	16.3	11.5	73	8.3	1019.9	1	010	02	6	2	8	5	4	/	/	86618	88630	26			
27	80	6	21	06	11	19.7	12.7	64	9.0	1020.9	8	001	03	1	1	4	8	5	3	1	83825	85078	27	2Sc56 2Ac58	COTRA Cu med	
28	80	7	11	08	13	22.3	9.1	43	7.1	1016.9	8	003	01	2	2	3	0	9	7	8	83360	87275	28	COTRA	U/a cont	
29	86	1	05	04	09	20.9	9.8	49	7.5	1018.9	0	002	01	1	1	1	0	9	4	0	81363		29			
30	83	7	23	06	11	20.6	13.1	62	9.3	1019.1	2	004	02	2	2	1	8	5	7	8	81825	84464	87272	30	1Sc35 1Ac60	COTRA Cu hum U/a cont
31	86	8	23	10	20	21.1	16.1	73	11.3	1016.0	6	002	02	2	2	8	5	5	/	/	86620	88625	31			

Mean vis = 48.9 km

Mean cloud = 4.9 61%

Mean wind speed = 6.1 kn

Mean gust = 12 kn

Mean TT = 21.0 °C

Mean TdTd = 12.1 °C

Mean RH = 58.4 %

Mean r = 8.7 g/kg

Mean PPP = 1021.4 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 2022

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks			
1	84	7	21	12	20	19.2	9.1	52	7.1	1017.0	3	003	15	1	3	2	6	7	83842	87357	1	jpNW	
2	62	7	20	11	20	20.4	11.1	55	8.1	1017.2	7	007	15	2	2	7	8	6	82840	83650	87656	2	Cu med jpNW vv50k ex NW
3	86	7	30	07	16	20.5	10.9	54	8.0	1019.7	3	001	15	1	1	6	8	6	82837	85650	86358	3	Cu med jpN
4	88	7	25	08	17	20.1	11.6	58	8.4	1021.1	6	002	02	2	2	7	8	6	82835	87645		4	Cu hum
5	88	7	32	07	14	20.5	10.3	52	7.7	1025.6	5	001	02	2	2	7	8	6	82840	87645		5	Cu hum
6	89	6	27	08	15	24.1	13.0	50	9.2	1025.8	7	016	01	2	2	3	8	6	81840	83645		6	2Ac65 4Ci75 COTRA Cu hum
7	83	2	32	06	12	23.9	10.2	42	7.6	1030.4	6	002	01	1	1	2	4	6	82645			7	
8	88	2	33	07	12	27.5	10.2	34	7.6	1030.8	7	013	03	0	0	0	0	9	81175			8	2Ci80 COTRA Ci fib Ci flo
9	88	3	36	07	16	26.9	9.7	34	7.3	1029.1	7	017	02	0	0	0	0	9	83078			9	COTRA Ci fib
10	88	3	21	03	08	29.0	9.7	30	7.4	1024.9	6	015	02	0	0	0	0	9	83078			10	Ci spi
11	84	6	19	06	13	30.4	12.3	33	8.8	1021.5	8	010	03	1	1	1	1	7	81856	86080		11	COTRA Cu hum Ci fib U/a cont
12	82	7	21	07	15	29.5	14.1	39	9.9	1020.9	7	007	02	6	2	1	1	7	81850	85362	87365	12	Cu hum
13	83	6	30	04	12	26.6	12.3	41	8.8	1021.3	6	009	03	1	1	1	1	7	81850	85275		13	1Ac68 2Cc72 /Ci80 COTRA Cu hum Halo 22°
14	84	3	35	07	19	22.9	7.1	36	6.2	1025.1	3	002	02	0	0	2	4	7	82856			14	1Sc56 2Ci75 Cu hum
15	85	6	28	08	15	24.1	8.9	38	7.0	1022.8	5	006	03	1	1	6	8	7	82856	85656		15	Cu hum
16	86	5	22	03	09	28.5	7.7	27	6.4	1024.1	8	011	02	1	1	0	0	9	85080			16	COTRA Ci fib
17	88	7	16	08	14	29.5	7.4	25	6.3	1023.5	8	010	02	2	2	1	0	9	81368	83277	87080	17	COTRA Halo 22° part
18	82	2	17	05	13	35.3	8.9	20	7.1	1017.4	8	012	02	0	0	2	0	9	81365			18	1Ac69 1Ci80 Ac cas
19	81	2	19	11	21	36.9	11.0	21	8.2	1009.2	5	002	03	0	0	1	0	9	81368			19	2Ci78 Ci unc Ac edge W Sky turbid
20	65	6	24	06	12	24.9	15.2	55	10.7	1016.1	0	001	15	2	2	5	8	6	83832	83656		20	2Ac59 Cu med jpNW
21	78	7	02	03	08	22.6	14.7	61	10.3	1021.8	5	001	02	2	2	7	8	6	82835	87656		21	Cu med
22	65	7	32	02	05	20.3	13.5	65	9.5	1018.9	7	005	25	8	2	7	8	5	81825	83635	87650	22	/Ac58 Cu hum jp N&NW vv 40k ex p
23	88	7	21	09	18	23.6	14.0	55	9.9	1018.2	5	006	02	1	1	6	8	6	83840	84650	87359	23	Cu med
24	86	4	19	13	29	26.7	12.0	40	8.7	1011.8	8	017	03	0	0	4	0	9	83361			24	2Ac64 Absent VV&cld est
25	75	7	25	08	18	22.3	12.3	53	8.9	1011.1	2	012	15	8	2	4	8	6	82837	83650	87357	25	Cu med jpSW&E vv80k ex p
26	84	7	31	03	09	20.2	11.7	58	8.4	1020.2	7	002	01	2	2	4	8	6	82830	83650	85357	26	Cu med
27	82	8	18	04	11	22.3	10.1	46	7.6	1019.0	7	011	03	2	2	5	8	6	83842	83656	86359	27	/Cs72 Cu med
28	84	7	10	05	15	23.4	8.3	38	6.8	1015.6	6	005	03	2	2	4	1	7	84856	86358		28	Cu hum
29	85	4	34	05	09	27.5	9.8	33	7.5	1017.5	8	008	03	0	0	3	4	7	83856			29	2Sc57 Cu hum
30	86	7	26	05	14	25.0	15.3	55	10.7	1017.5	7	010	03	2	2	7	8	6	82835	86645	87365	30	Cu hum
31	82	7	25	10	19	26.4	16.1	53	11.3	1015.3	6	007	15	6	2	7	8	6	83840	85656		31	2Ci75 COTRA Cu med jpNW vv70k ex NW

Mean vis = 49.8 km

Mean cloud = 5.6 70%

Mean wind speed = 6.7 kn

Mean gust = 14 kn

Mean TT = 25.2 °C

Mean TdTd = 11.2 °C

Mean RH = 43.6 %

Mean r = 8.3 g/kg

Mean PPP = 1020.3 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation trails present

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
2022	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	0.42	0.43	0.00	0.43	0.00	0.00	0.42	0.39	0.33	0.34	0.00	0.07	0.31	0.31	0.14
	5	0.70	0.98	1.00	0.23	1.00	0.07	0.00	1.00	1.00	1.00	1.00	0.48	0.00	1.00	1.00	1.00
	6	1.00	0.67	0.80	1.00	1.00	0.00	0.00	1.00	0.65	0.87	1.00	0.00	0.00	1.00	1.00	1.00
	7	0.95	0.44	0.85	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.25	0.63	1.00	1.00	1.00
	8	0.87	0.32	0.31	0.95	0.99	0.00	0.00	1.00	0.12	1.00	1.00	0.01	0.52	1.00	1.00	1.00
	9	0.26	0.02	0.58	0.41	0.53	0.35	0.00	0.96	0.25	1.00	1.00	0.68	1.00	1.00	1.00	1.00
	10	0.00	0.00	0.87	0.56	0.19	0.40	0.00	1.00	0.81	1.00	1.00	0.58	0.19	0.93	1.00	1.00
	11	0.01	0.03	0.74	0.31	0.36	0.00	0.00	1.00	1.00	1.00	1.00	0.09	0.21	0.99	1.00	1.00
	12	0.19	0.07	0.96	0.00	0.17	0.00	0.41	1.00	1.00	1.00	0.97	0.02	0.74	0.92	0.93	1.00
	13	0.65	0.29	0.58	0.14	0.26	0.01	0.99	1.00	1.00	0.88	0.86	0.00	1.00	0.84	0.84	1.00
	14	0.50	0.07	0.00	0.00	0.00	0.22	0.92	1.00	1.00	1.00	1.00	0.00	0.57	0.50	0.20	1.00
	15	0.24	0.25	0.10	0.56	0.00	0.45	1.00	1.00	1.00	1.00	0.90	0.00	0.47	0.71	0.57	1.00
	16	0.02	0.03	0.29	0.19	0.00	0.32	1.00	1.00	1.00	1.00	0.72	0.11	0.67	1.00	0.69	1.00
	17	0.00	0.00	0.59	0.17	0.25	0.42	1.00	1.00	1.00	1.00	0.26	0.00	0.64	1.00	0.37	1.00
	18	0.28	0.00	0.27	0.47	0.95	0.31	0.99	0.55	1.00	1.00	0.71	0.00	0.00	1.00	1.00	1.00
	19	0.37	0.00	0.90	0.82	0.52	0.21	1.00	0.67	1.00	0.97	0.68	0.00	0.08	0.86	0.83	0.72
	20	0.11	0.07	0.04	0.29	0.06	0.00	0.17	0.13	0.19	0.11	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot		<b>6.17</b>	<b>3.64</b>	<b>9.32</b>	<b>7.10</b>	<b>7.72</b>	<b>2.75</b>	<b>7.48</b>	<b>14.72</b>	<b>12.41</b>	<b>15.16</b>	<b>13.44</b>	<b>2.22</b>	<b>6.79</b>	<b>14.07</b>	<b>12.74</b>	<b>14.86</b>

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	0.16	0.31	0.00	0.00	0.00	0.00	0.28	0.04	0.07	0.00	0.04	0.00	0.07	0.00	0.15
5	0.90	0.83	1.00	0.00	0.29	0.00	0.87	0.00	0.07	0.00	0.16	0.11	0.16	0.54	0.08	0.53
6	1.00	1.00	1.00	0.00	0.08	0.22	1.00	0.56	0.38	0.00	0.14	0.52	0.58	0.65	0.00	0.58
7	1.00	1.00	1.00	0.00	1.00	0.02	1.00	1.00	0.25	0.01	0.69	0.59	1.00	0.01	0.00	0.63
8	1.00	1.00	1.00	0.00	0.35	0.73	1.00	1.00	0.00	0.00	0.89	0.66	1.00	0.10	0.00	0.61
9	1.00	1.00	1.00	0.12	0.00	0.42	1.00	1.00	0.00	0.00	0.40	0.70	1.00	0.09	0.00	0.57
10	1.00	1.00	1.00	0.37	0.00	0.00	1.00	1.00	0.00	0.00	0.17	0.76	1.00	0.00	0.00	0.54
11	1.00	1.00	1.00	0.04	0.00	0.00	1.00	0.90	0.02	0.00	0.26	0.61	0.98	0.00	0.00	0.50
12	0.68	0.90	1.00	0.05	0.05	0.00	0.64	1.00	0.11	0.00	0.02	0.37	1.00	0.13	0.12	0.50
13	0.84	1.00	1.00	0.02	0.00	0.00	0.10	1.00	0.00	0.00	0.04	0.94	0.28	0.00	0.04	0.50
14	0.98	1.00	1.00	0.19	0.00	0.00	0.04	1.00	0.00	0.37	0.00	0.28	0.65	0.00	0.27	0.44
15	0.81	1.00	1.00	0.21	0.00	0.02	0.10	1.00	0.00	0.27	0.00	0.00	0.85	0.00	0.14	0.47
16	1.00	1.00	0.39	0.00	0.00	0.00	0.37	0.77	0.07	0.53	0.00	0.00	0.19	0.00	0.20	0.44
17	1.00	1.00	0.00	0.00	0.00	0.11	0.02	0.15	0.01	0.30	0.00	0.00	0.00	0.00	0.15	0.37
18	1.00	1.00	0.03	0.00	0.00	0.00	0.18	0.00	0.29	0.37	0.00	0.00	0.00	0.00	0.25	0.41
19	0.57	0.66	0.14	0.00	0.00	0.00	0.00	0.00	0.10	0.33	0.00	0.00	0.00	0.00	0.01	0.37
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	0.04
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	<b>13.79</b>	<b>14.54</b>	<b>11.88</b>	<b>0.99</b>	<b>1.77</b>	<b>1.52</b>	<b>8.59</b>	<b>10.41</b>	<b>1.38</b>	<b>2.18</b>	<b>2.82</b>	<b>5.54</b>	<b>8.76</b>	<b>1.52</b>	<b>1.24</b>	<b>237.55</b>

JULY 2022

	T mn	Tx	Time	Tn	Time	RHmn	RH x	Time	RH n	Time	Tdmn	r mn	r x	Time	r n	Time	p mn	p x	Time	p n	Time	R tot
1	15.30	21.7	1341	11.0	503	73.6	92.6	457	45.8	1353	10.3	7.7	10.1	1058	6.8	1603	1016.79	1019.9	2346	1014.1	39	2.6
2	15.72	21.6	1326	11.0	411	75.4	94.2	417	47.8	1326	11.0	8.1	9.7	1828	7.2	1332	1018.26	1019.8	3	1016.6	1718	0.3
3	16.42	23.0	1347	10.4	438	68.1	94.6	225	39.3	1348	10.0	7.6	9.1	1204	6.3	1352	1019.69	1021.9	2221	1018.5	31	0.1
4	16.12	22.0	1557	9.4	302	64.9	90.7	244	47.9	1349	9.2	7.2	8.5	1550	6.4	356	1021.83	1024.1	2358	1020.6	1553	0
5	16.26	21.8	1237	7.8	412	66.8	96.2	454	46.7	1238	9.6	7.4	8.5	1151	6.2	412	1025.55	1028.4	2350	1023.8	17	0
6	18.46	24.7	1524	10.4	209	65.6	88.3	248	45.8	1525	11.6	8.4	9.8	1013	6.6	128	1026.84	1028.6	724	1024.4	1844	0
7	19.16	24.5	1533	14.9	2359	65.2	90.1	559	41.9	1549	12.1	8.6	9.5	1357	7.6	1538	1029.18	1032.6	2317	1024.9	52	0
8	20.37	28.1	1520	11.9	419	62.6	96.1	507	32.1	1601	12.0	8.5	10.4	921	7.1	1749	1031.72	1033.5	720	1029.6	1722	0
9	19.93	27.0	1457	12.4	402	60.2	94.3	427	31.1	1629	11.0	8.0	9.6	956	6.3	1759	1030.24	1031.9	802	1028.1	1813	0
10	20.92	29.4	1457	12.2	434	61.5	97.8	441	28.7	1458	11.9	8.5	10.2	1049	6.4	1323	1026.47	1029.5	50	1023.4	1823	0
11	22.64	31.3	1548	13.2	355	54.6	84.6	321	30.8	1552	12.1	8.7	10.1	922	7.7	1129	1023.02	1024.7	6	1020.9	1631	0
12	23.65	30.7	1159	16.0	402	57.5	86.0	525	34.2	1630	14.1	9.9	11.3	940	8.7	1619	1021.93	1023.2	903	1020.3	1605	0
13	22.47	27.6	1550	16.7	2250	54.3	69.0	510	37.0	1557	12.5	9.0	10.9	1001	6.6	2344	1021.56	1022.7	1052	1020.5	1746	0
14	18.50	25.4	1340	12.3	2351	52.2	75.5	452	32.0	1529	7.9	6.5	7.4	1341	5.8	1539	1023.23	1025.8	2353	1021.9	28	0
15	18.37	26.2	1355	9.6	351	57.6	89.0	458	30.6	1322	9.0	7.0	8.2	2206	5.9	1042	1024.02	1025.8	630	1021.7	1836	0
16	20.00	28.7	1515	10.4	432	59.3	93.7	434	25.6	1635	10.5	7.8	9.4	2140	5.8	1818	1024.96	1026.5	2359	1023.5	1655	0
17	21.98	30.1	1428	12.5	434	50.4	90.9	436	20.5	1841	9.4	7.3	9.1	816	4.2	1921	1024.56	1026.7	17	1022.0	2358	0
18	25.59	36.0	1303	13.4	439	44.1	81.1	438	18.3	1651	0.0	7.7	9.4	902	6.5	1240	1018.70	1022.3	5	1015.5	2355	0
19	27.17	38.8	1302	16.3	332	47.3	83.0	2348	17.0	1247	12.7	9.2	11.9	1841	7.1	1223	1011.47	1015.7	2	1007.1	1707	0
20	20.47	25.9	1535	15.4	2359	76.3	97.4	2201	51.4	1535	15.9	11.1	13.0	1803	9.8	2345	1016.15	1020.2	2349	1012.7	7	0
21	18.87	24.7	1303	13.3	506	73.2	97.3	119	52.6	1251	13.7	9.7	11.3	1302	8.2	346	1021.54	1023.0	901	1020.0	0	2.3
22	18.95	21.9	1643	16.6	531	69.1	80.6	342	54.0	921	13.1	9.3	10.7	1531	8.3	1036	1019.73	1022.0	0	1017.8	1729	0
23	19.67	26.0	1222	13.8	441	69.0	93.9	400	41.7	1223	13.4	9.5	10.7	157	7.5	923	1018.45	1019.6	750	1016.9	2307	0
24	21.54	27.2	1413	17.4	358	63.6	82.2	304	39.7	1535	13.8	9.8	11.3	2249	8.3	1803	1013.32	1017.2	0	1009.3	2336	0
25	19.03	23.0	1516	15.8	2335	68.6	90.4	1051	49.8	1641	12.9	9.3	11.3	1057	8.0	2310	1011.17	1017.1	2343	1007.9	441	0.2
26	16.84	21.8	1616	12.8	2344	69.3	90.2	2345	50.0	1617	11.0	8.1	8.8	1525	7.3	153	1019.53	1021.2	2340	1016.8	0	0
27	17.27	23.0	1143	10.9	356	68.5	98.4	427	44.1	1012	10.8	8.0	9.6	839	6.6	2232	1019.79	1021.3	754	1018.0	1901	0
28	19.09	26.1	1329	13.1	255	57.9	84.7	424	29.1	1409	9.9	7.5	9.2	633	5.9	1410	1017.06	1018.7	14	1015.5	1458	0
29	20.06	28.0	1527	12.1	226	57.2	87.8	226	30.1	1527	10.3	7.7	9.6	802	6.7	1232	1018.35	1019.3	2357	1017.3	1723	0
30	20.54	25.9	1243	13.8	433	66.5	90.7	435	47.9	1113	13.8	9.8	11.1	1448	8.4	949	1018.25	1019.3	12	1016.8	1701	0
31	21.54	27.2	1504	17.8	2359	71.9	86.0	2359	50.2	1504	16.1	11.3	12.5	1232	10.5	2214	1016.36	1018.4	2323	1015.1	1404	0
Total																						5.5
Mean	19.77	26.43		13.05		63.0	89.27		38.50		11.34	8.52	10.07		7.13		1020.96	1023.26		1018.76		
Max	27.17	38.80		17.82		76.3	98.40		53.95		16.10	11.29	12.97		10.51		1031.72	1033.52		1029.57		
Min	15.30	21.61		7.80		44.1	68.98		16.99		0.00	6.53	7.44		4.24		1011.17	1015.73		1007.09		

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  
 R tot = Rainfall from TBR, uncorrected

## 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 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, 1<sup>st</sup> January to 31<sup>st</sup> December.

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

**Frost:** An air frost day is recorded when the minimum temperature read at 0900 GMT on that day is  $-0.1^{\circ}\text{C}$  or below. A ground frost day is recorded when the grass minimum temperature read at 0900 GMT on that day is  $-0.1^{\circ}\text{C}$  or lower.

Duration of air frost is defined as the number of minutes that the AWS one minute average temperature is below  $0.0^{\circ}\text{C}$ , and the day runs from midnight to midnight.

**Snow:** A day with snow falling is triggered if snow falls at any time in the 24 hours from midnight on that day. A day with snow lying is entered if there is at least 50% snow cover at the 0900 GMT observation.

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

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

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

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

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

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

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

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

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

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

## Appendix 2.

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

**VV** : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

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

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

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

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

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

**Cl :** Type of low cloud

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

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

**Cm :** Type of medium cloud.

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

**Ch :** Type of high cloud

0 = No high cloud

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

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

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

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

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

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

7 = Veil of Cirrostratus covering the celestial dome.

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

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

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