WOKINGHAM METEOROLOGICAL DATA

Wokingham Climatological Station, Emmbrook, Berkshire.

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

Monthly Means and Totals — AUGUST 2023

Temperature (°C)		Anomaly	Rank in the past **142** years			
Mean maximum	22.4	-0.4	44th highest			
Mean minimum	12.6	0.0	25th highest			
Daily mean	17.5	-0.2	36th highest			
Highest maximum	26.9	on 23rd	Lowest maximum	17.0	on	31st
Highest minimum	17.1	on 11th	Lowest minimum	8.6	on	7th
Mean grass minimum	10.1	+0.5	Lowest grass minimum	4.9	on	7th
Mean earth @30 cm	19.0	+0.1	Earth @100 cm	18.0	+0.2	
Frost duration (hrs)	0.0		Rain duration (hrs)	37.8		
Rainfall total (mm)	65.8	122 %	57th highest			
Highest daily fall	26.3	on 2nd	Highest rate mm/hr	73	on	2nd
Number of: Dry days (<0.2mm)	16	Wet days (>0.9mm) 10	days ≥5mm	4		
Sunshine total (hrs)	181.7	Daily mean 5.86	101 %	Sunniest day	11.7	on 9th
N° days with: Air frost	0	Ground frost 0	Snow falling 0	Snow lying 0		
Thunder	1	Hail ≥5mm 0	Small hail/ice 0	Fog @09 0	Nil sun 1	
Pressure MSL : Mean @09 GMT, mbar	1013.9	-1.9	Highest 1024.8	on 21st	Lowest 983.9	on 2nd
Relative humidity : Mean (%)	78.3	Lowest 41	on 16th	Water vapour (g/kg), mean at 09 and 15 GMT	9.4,	9.5
Overall mean wind speed (mph)	5.4	Windiest day 9.0	on 12th	Max gust 32	on 12th	
Wind direction (days)	N 0	NE 1	E 2	SE 1	S 3	SW 12 W 10 NW 2
Least windy day (mph)	2.3	on 23rd	Calm; less than 0.5 mph (minutes)	n/a		

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

Notes: **Above Average Rainfall with Near Average Temperature and Sunshine**

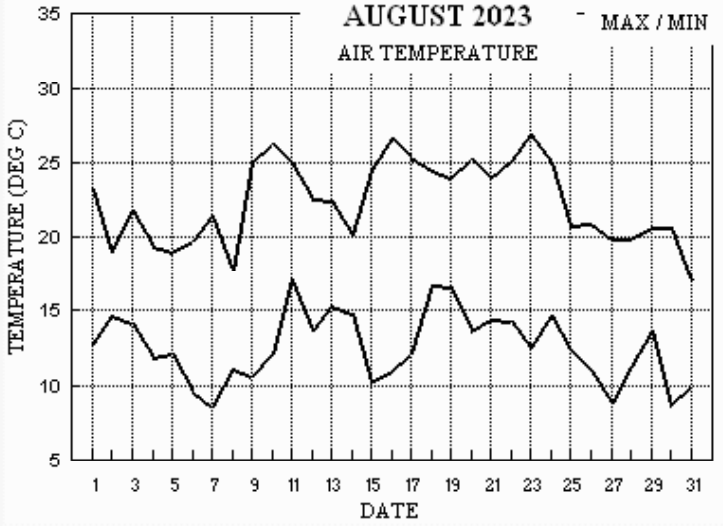
Temperature: The mean this August is very slightly below the current 30 year average, but it is 0.8° above the mean for the past 142 years. The mean maximum is 0.4° below the 30 year average, and despite the trend towards higher maxima in the summer months, several recent Augusts have been cooler, namely 2011, 2014, 2015 and 2017. Although 30° has been exceeded in 10 Augusts in this millennium it was not the case this year, and the highest max of 26.9° is 1.0° below the long-term median, while the lowest max is 0.1° above its median. The highest min is 0.8° above the median but the lowest min is 2.3° above its median and is highest since 2002 and 5th highest in 120 years. Daily temperature was generally below normal for the first week, then near or above, with anomalies for daily max ranging from -5.4° on the 8th to +5.0° on the 23rd. Anomalies for daily min ranged from -4.3° on 7th to +4.6° on 18th. The lowest grass min is 2.2° above average and is highest since 2002. Ground frost is not unknown in August, the last was in 2014, but only 12 Augusts in the past 100 years have had one. Mean earth temperature at 30cm and 1m depth is close to average. **Rainfall:** The month got off to a wet start, with 73% of the month's total in the first week. The 26.2 mm that fell on the 2nd made it the wettest August day since 2011, though it ranks only 18th highest in 120 years. After the 8th there were only 4 wet days (having at least 1 mm of rain). The number of dry days is 3 fewer than average and there were no dry spells. Thunder was heard on the 5th and there was a violent rain shower on the 2nd, but no hail this month. Rainfall accumulation compared with normal was 35 mm in surplus by the 5th, decreasing to 30 mm by the 18th, and to 15 mm by the 31st. Estimated soil moisture deficit shows that unirrigated shallow rooted plants would suffer slight to moderate stress after mid-month. **Sunshine:** The daily mean this August is close to average. In recent years, August has been sunnier in 2013, 2016 to 2019 and 2022. The 11.7 hours on the month's sunniest day is 1.1 hours below average, and is 2nd lowest after 2021 in the past 10 years. Up to the 15th, 5 days had >50% of the maximum, and 8 thereafter, but the highest percentage was only 78%, and was on the month's sunniest day, the 9th. Daily accumulation compared with normal was 9 hours in deficit on the 5th, then remained close to normal until the 20th, then becoming a surplus of 15 hours by the 23rd, decreasing to 4 hours by the 31st. Overall there were 8 days with <3 hours and 16 with =>6 hours. **Wind:** The overall mean speed of 5.4 mph is 0.5 mph below average. The month's highest gust is slightly below average. The dominant direction was SSW, with a secondary peak from W. Daily mean direction was between S and W, except from between N and E on 16th to 18th, between E and S on 10th, 14th and 31st, and between W and N on 2nd to 6th, 27th, 28th and 30th. Daily mean speeds were light or moderate throughout. **Pressure:** The MSL pressure fell to 983.9 mbar on the 2nd, the lowest August value since before 1976.

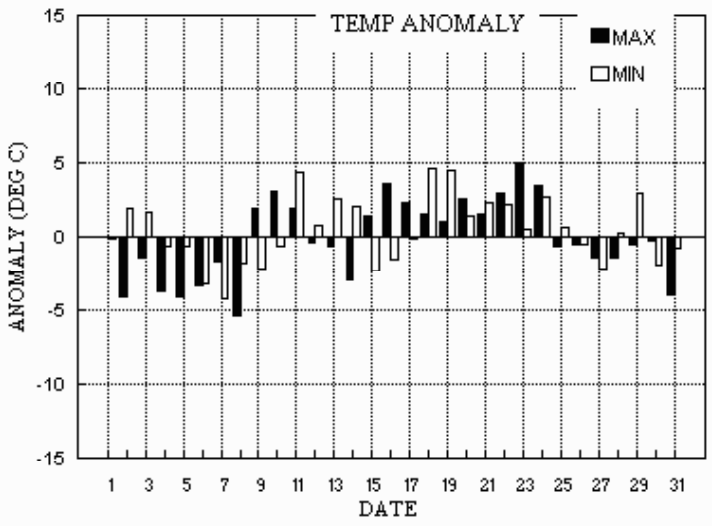
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

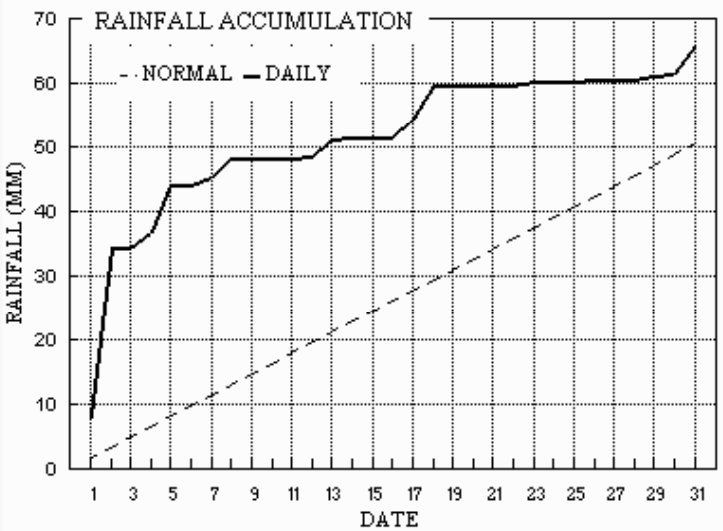
From the 1st to the 10th				From the 11th to the 20th				From the 21st to the 31st			
-1.9°	-1.0°	278%	99%	+1.0°	+1.6°	65%	108%	+0.4°	+0.5°	32%	97%

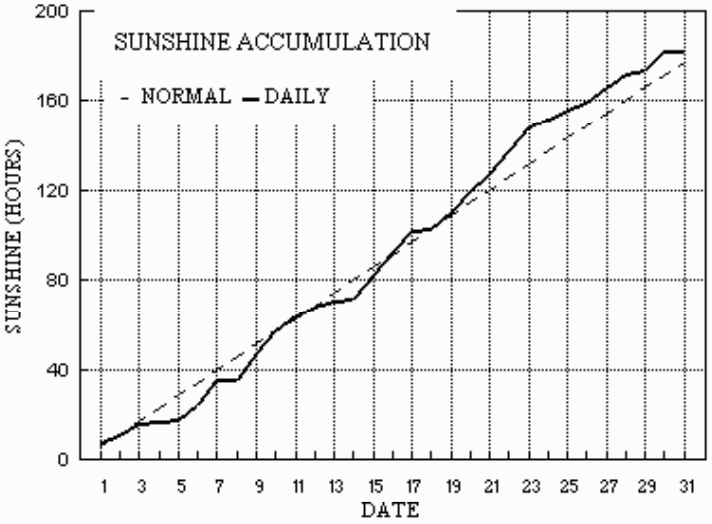
B J Burton FRMetS. Hon. Met. Officer to Wokingham Town Council.

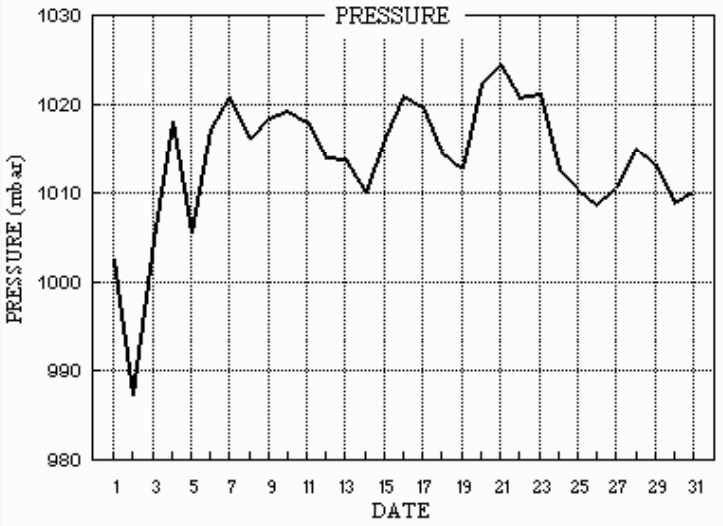
Wokingham climatological graphs for August 2023

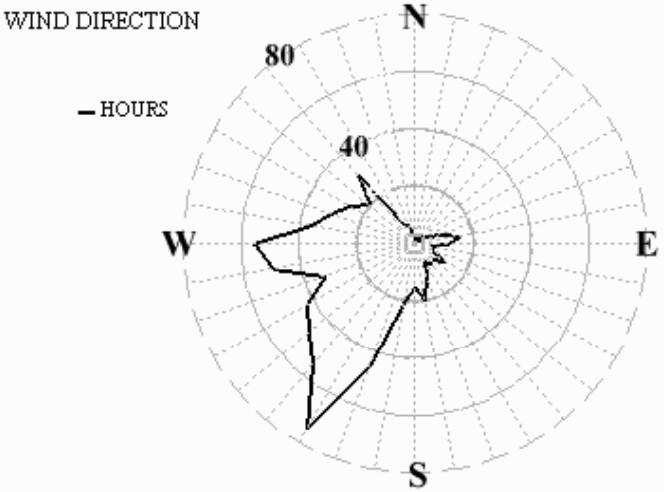


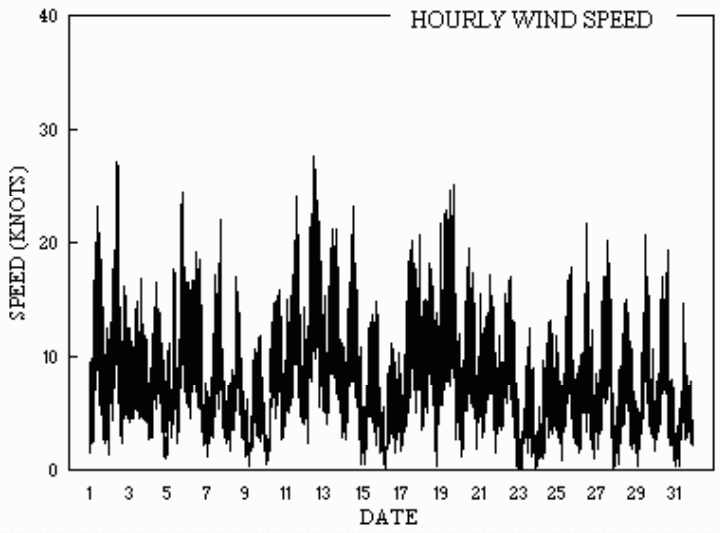


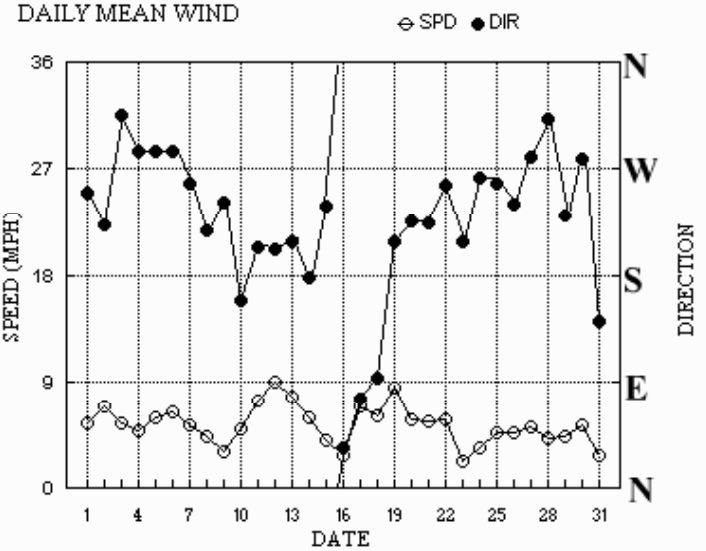












Daily meteorological data. Emmbrook, WOKINGHAM, Berkshire.

Month: AUGUST 2023

Date	Max	Min	Rain	Grass	30cm	100cm	Sun	Frost	pp09	Af	Sf	Th	Ic	Vec mean			Max gust			High hr			Rain
	C	C	mm	Min	C	C	hrs	hrs	mbar	Gf	Sl	Ha	Fg	ddd	ff	sp	ddd	gg	HHhh	ddd	ff	HH	hrs
1	23.2	12.8	8.0	11.1	18.6	17.8	7.8	0.0	1002.6	0 0	0 0	0 0	0 0	250	4.3	4.7	280	23	0957	270	9	10	3.9
2	19.0	14.7	26.3	14.9	18.9	17.7	3.1	0.0	987.4	0 0	0 0	0 0	0 0	223	3.9	6.1	220	27	0927	220	10	09	5.3
3	21.8	14.2	0.0	13.4	18.7	17.8	5.2	0.0	1004.8	0 0	0 0	0 0	0 0	314	4.7	4.8	300	17	1644	315	6	10	0.0
4	19.4	11.9	2.5	8.9	18.7	17.8	1.3	0.0	1018.1	0 0	0 0	0 0	0 0	284	4.1	4.2	290	17	0936	280	7	09	2.5
5	19.0	12.1	7.2	12.0	18.5	17.8	0.4	0.0	1005.7	0 0	0 0	1 0	0 0	284	2.2	5.3	330	25	1850	330	10	19	4.3
6	19.8	9.5	0.1	7.3	18.0	17.7	7.2	0.0	1017.3	0 0	0 0	0 0	0 0	285	5.4	5.6	300	19	1259	280	8	12	0.3
7	21.4	8.6	1.1	4.9	17.8	17.7	10.6	0.0	1020.9	0 0	0 0	0 0	0 0	257	4.4	4.6	270	22	1752	270	9	17	2.2
8	17.7	11.1	3.1	7.8	17.9	17.6	0.1	0.0	1016.2	0 0	0 0	0 0	0 0	217	3.5	3.8	200	17	1156	210	7	14	3.9
9	25.0	10.6	0.0	7.7	17.7	17.5	11.7	0.0	1018.5	0 0	0 0	0 0	0 0	242	1.9	2.7	190	12	1937	200	5	19	0.0
10	26.2	12.1	tr	9.7	18.6	17.5	10.2	0.0	1019.5	0 0	0 0	0 0	0 0	159	4.0	4.3	180	16	1855	165	9	15	0.1
11	25.0	17.1	0.0	15.3	19.0	17.5	6.8	0.0	1018.1	0 0	0 0	0 0	0 0	203	6.2	6.5	210	24	1544	215	10	12	0.0
12	22.6	13.6	0.1	10.1	19.4	17.6	4.0	0.0	1014.0	0 0	0 0	0 0	0 0	201	7.6	7.8	210	28	1217	210	12	15	0.2
13	22.4	15.3	2.6	14.0	19.2	17.8	2.2	0.0	1013.9	0 0	0 0	0 0	0 0	208	6.4	6.7	220	21	1515	235	10	14	2.2
14	20.1	14.8	0.3	14.7	19.2	17.9	1.0	0.0	1010.0	0 0	0 0	0 0	0 0	178	4.9	5.3	180	23	1329	175	9	11	0.5
15	24.5	10.2	tr	6.9	18.8	17.9	11.0	0.0	1016.2	0 0	0 0	0 0	0 0	238	3.2	3.5	270	15	1648	245	7	18	0.0
16	26.6	10.9	0.0	7.9	19.1	17.9	10.1	0.0	1021.2	0 0	0 0	0 0	0 0	35	1.7	2.5	15	11	1259	25	4	14	0.0
17	25.4	12.1	3.0	8.4	19.4	17.9	9.0	0.0	1019.9	0 0	0 0	0 0	0 0	76	6.0	6.1	70	21	2235	70	9	14	2.0
18	24.5	16.7	5.3	14.2	19.9	18.0	1.1	0.0	1014.7	0 0	0 0	0 0	0 0	94	4.8	5.3	80	18	1143	80	9	11	2.3
19	23.9	16.6	0.0	15.0	20.1	18.1	7.5	0.0	1012.9	0 0	0 0	0 0	0 0	208	7.3	7.4	218	25	1648	215	12	10	0.0
20	25.2	13.7	0.0	10.2	20.0	18.3	9.8	0.0	1022.4	0 0	0 0	0 0	0 0	225	4.9	5.0	211	20	1255	234	8	15	0.0
21	24.0	14.4	0.0	11.8	19.9	18.4	7.6	0.0	1024.6	0 0	0 0	0 0	0 0	224	4.7	4.9	236	17	1300	201	9	00	0.0
22	25.1	14.3	0.0	11.2	20.0	18.4	9.9	0.0	1021.0	0 0	0 0	0 0	0 0	255	4.7	5.1	264	17	1454	264	8	'14	0.0
23	26.9	12.5	0.5	9.3	20.1	18.5	10.7	0.0	1021.3	0 0	0 0	0 0	0 0	208	1.3	2.0	137	13	1432	133	5	12	0.7
24	25.0	14.7	0.0	12.0	20.4	18.6	3.2	0.0	1012.6	0 0	0 0	0 0	0 0	262	2.2	3.0	275	13	1726	253	5	11	0.0
25	20.8	12.3	0.1	8.9	20.2	18.6	4.4	0.0	1010.4	0 0	0 0	0 0	0 0	257	3.2	4.1	224	18	1730	228	8	16	0.2
26	20.9	10.9	0.4	8.0	19.6	18.7	3.4	0.0	1008.8	0 0	0 0	0 0	0 0	240	3.6	4.0	290	22	1255	290	10	12	0.3
27	19.9	8.8	tr	5.7	19.0	18.6	6.8	0.0	1010.6	0 0	0 0	0 0	0 0	280	4.3	4.5	298	20	1515	275	7	17	0.2
28	19.9	11.2	0.0	7.3	18.4	18.5	5.6	0.0	1015.2	0 0	0 0	0 0	0 0	311	3.4	3.7	298	15	1359	343	7	10	0.0
29	20.6	13.6	0.5	12.1	18.4	18.3	2.1	0.0	1013.2	0 0	0 0	0 0	0 0	231	3.4	3.9	243	21	1231	243	8	12	1.1
30	20.7	8.7	0.2	5.6	18.4	18.2	7.9	0.0	1009.1	0 0	0 0	0 0	0 0	278	4.4	4.7	286	19	1652	286	10	16	0.3
31	17.0	10.0	4.5	6.4	18.1	18.1	0.0	0.0	1010.3	0 0	0 0	0 0	0 0	141	2.1	2.4	152	15	1205	136	6	13	5.3
Total			65.8				181.7	0.0															37.8
Mean	22.4	12.6		10.1	19.0	18.0	5.86	0.0	1013.9					233	2.6	4.7							
Anom	-0.4	-0.0	122%	+0.5	+0.1	+0.2	101%		-1.9														

Daily mean 17.5 Pressure, abs highest = 1024.8 on 21

Anom -0.2 Pressure, abs lowest = 983.9 on 2

Number of days with:

Air frost = 0 Ground frost = 0 Nil sun = 1

Snow falling = 0 Snow lying = 0 Thunder = 1

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. Note: Wind estimated from data at Reading Uni.

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 August 2023

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cm	Ch	NChshs	NChshs	NChshs	Date	Remarks
1	86	2	26	10	21	18.7	10.8	60	8.1	1002.6	0	003	03	1	1	2	8	6	0	2	82832			1	1Sc50 1Ci75 Cu med Wind est
2	65	6	23	10	20	16.5	14.7	89	10.6	987.4	8	001	25	8	1	6	8	4	3	/	83815			2	1Sc30 2Sc50 2Ac62 Cu med Wind est
3	84	6	31	06	11	17.9	13.0	73	9.4	1004.8	2	029	03	1	1	4	2	5	3	0	84825	83363		3	Cu med Wind est
4	82	8	30	07	14	15.6	11.2	75	8.2	1018.1	2	016	02	2	2	8	5	4	/	/	86618	88625		4	Wind est
5	40	8	15	08	17	12.8	11.9	94	8.7	1005.7	7	051	51	6	5	8	5	3	/	/	87706	88615		5	Wind est
6	86	7	30	08	16	14.8	10.6	76	7.9	1017.3	1	011	03	2	2	7	8	4	/	/	85817	86650		6	Cu med Wind est
7	88	3	27	04	09	16.7	11.6	72	8.4	1020.9	4	000	03	0	0	1	1	5	0	1	81825	83080		7	1Sc50 COTRA Cu hum Halo 22° part Wind est
8	30	8	21	03	08	13.1	12.3	95	8.8	1016.2	8	003	58	6	5	8	7	2	/	/	87705	88710		8	Wind est
9	86	1	23	03	05	17.7	11.9	69	8.6	1018.5	2	011	03	1	1	1	8	4	0	1	81818			9	1Sc35 1Ci80 COTRA Cu med Wind est
10	88	1	16	05	10	21.2	13.9	63	9.8	1019.5	5	004	03	0	0	1	5	5	8	2	81625			10	1Ac65 1Ci78 Sc len Ac cas Wind est
11	82	6	22	08	15	21.0	16.6	76	11.6	1018.1	1	004	02	2	2	5	5	4	3	1	85618			11	1Ac59 1Cc72 2Ci78 Cc cas Wind est
12	70	7	23	10	21	19.3	13.7	70	9.7	1014.0	8	004	15	2	2	7	8	5	/	/	84825	85650		12	Cu med jpW Wind est
13	82	7	21	09	18	18.4	13.9	75	9.8	1013.9	1	001	03	2	2	7	8	4	3	/	83818	86645		13	/Ac68 Cu med Wind est
14	65	7	18	07	13	18.2	15.6	85	11.0	1010.0	6	003	21	6	2	6	5	4	8	/	82712	85615	87362	14	2Ac58 Ac cas Wind est
15	81	3	25	06	12	17.9	13.4	75	9.5	1016.2	1	011	03	1	1	3	1	4	0	0	83815			15	Cu him wind est
16	84	3	02	03	08	19.0	14.1	73	9.9	1021.2	2	004	02	0	0	1	5	7	0	1	81656	83080		16	COTRA Wind est
17	65	5	07	09	18	20.2	15.8	76	11.1	1019.9	8	004	01	2	2	5	1	4	0	1	85816			17	1Ci75 Cu hum Wind est
18	50	8	09	05	12	17.4	16.9	97	11.9	1014.7	0	007	61	6	2	1	5	3	7	/	81708	83359	88462	18	1Sc56 Wind est
19	70	6	22	09	20	19.8	15.0	74	10.6	1012.9	2	026	03	2	2	6	8	4	/	/	83818	84630		19	Cu med jpSE Wind est
20	82	5	22	07	14	18.8	14.5	76	10.1	1022.4	2	008	03	1	1	5	8	4	0	0	85818			20	1Sc25 Cu med Wind est
21	86	7	23	05	12	18.3	13.4	73	9.4	1024.6	7	002	01	2	2	7	5	5	/	/	87620			21	Wind est
22	86	5	24	07	14	19.8	15.0	74	10.5	1021.0	0	006	03	1	1	5	8	4	0	9	85817			22	1Sc30 1Cc72 Cu med Wind est
23	82	3	27	02	05	19.2	13.2	68	9.3	1021.3	4	000	02	1	1	1	1	4	7	1	81815			23	2Ac57 1Ac63 1Ci80 COTRA Cu hum Wind est
24	58	7	27	01	04	17.7	16.6	93	11.7	1012.8	5	012	21	6	2	1	7	2	7	2	81703	86360	87366	24	/Ci72 Av vir Dir var Wind est
25	89	6	30	04	08	16.0	9.4	65	7.3	1010.4	6	006	02	2	2	6	0	9	8	/	82464	86369		25	1Ac66 Ac cas Ac str vir Fallstreak holes Wind est
26	84	8	23	06	10	14.4	11.9	85	8.7	1008.8	3	004	02	2	2	8	6	3	/	/	88708			26	Wind est
27	89	6	31	07	15	15.9	11.5	75	8.4	1010.6	2	002	03	1	1	4	8	4	3	4	84817			27	1Sc30 1Ac57 2Ci78 COTRA Cu med Wind est
28	89	7	32	06	12	16.1	11.5	74	8.4	1015.2	1	006	03	1	1	7	8	4	/	1	81815	87630	85075	28	Cu med Wind est
29	86	7	20	04	07	16.1	11.7	75	8.5	1013.2	8	009	02	2	2	7	5	7	/	/	87650			29	Wind est
30	84	4	31	06	15	15.7	10.5	71	7.9	1009.1	1	003	03	0	0	4	8	5	0	0	82820	83656		30	Cu med Wind est
31	63	8	12	02	04	13.1	11.5	90	8.4	1010.3	8	001	61	6	2	2	8	5	2	/	81820	88557		31	1Sc40 2Sc56 Cu fra Wind est

Mean vis = 41.2 km
Mean cloud = 5.6 71%
Mean wind speed = 6.0 kn
Mean gust = 13 kn
Mean TT = 17.3 °C
Mean TdTd = 13.1 °C
Mean RH = 77.0 %
Mean r = 9.4 g/kg
Mean PPP = 1013.9 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)
N = Total cloud amount, oktas
dd = Direction from which wind is blowing, tens of degrees true
ff = 10 minute mean wind speed, knots
gg = Highest gust in past hour, knots
TT = Air temperature at 1.2 m, deg Celsius
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 August 2023

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cm	Ch	NChshs	NChshs	NChshs	Date	Remarks
1	75	7	26	08	18	22.6	12.0	51	8.8	1001.7	8	010	15	1	1	6	8	6	6	1	84845	83645	85357	1	/Ac65 /Ci75 Cu med Sc len jpSW vv70k ex p Wind est
2	30	7	13	04	07	16.7	16.1	96	11.6	984.0	7	021	80	6	2	7	8	1	7	/	82702	84810	87625	2	/Ac62 Cu med Wind est
3	84	7	33	05	11	20.3	11.2	56	8.3	1008.0	1	013	03	2	2	3	8	6	7	1	82848	85360		3	2Sc56 /Ci78 Cu con Wind est
4	86	7	29	07	14	18.6	10.7	60	7.9	1018.8	1	004	02	2	2	7	8	6	/	/	82833	87645		4	Cu med Wind est
5	60	7	30	04	11	17.4	15.2	87	10.8	1001.3	5	001	15	6	2	5	9	4	7	3	82912	83818		5	1Sc40 1Ac62 4As64 /Ci72 jpE vv40k ex E Wind est
6	70	5	32	05	15	17.8	10.9	64	8.0	1018.0	2	006	25	8	2	5	8	5	6	0	82828	83656		6	1Ac58 Cu con jpW-N vv80k ex p Wind est
7	86	7	26	06	14	20.3	10.4	53	7.8	1018.8	6	008	03	1	1	2	8	6	3	8	82843	87273		7	1Sc56 1Ac69 Cu med Halo 22° part Wind est
8	63	8	21	07	15	17.0	15.7	92	11.0	1013.8	7	011	50	6	2	8	5	3	/	/	87708	88615		8	Wind est
9	88	3	26	04	10	23.4	13.0	52	9.2	1018.5	0	000	02	0	0	3	4	6	0	0	82840			9	2Sc45 Cu hum Wind est
10	82	4	16	07	15	25.8	16.4	56	11.5	1017.7	8	008	02	1	1	3	4	6	8	0	81833	83638		10	1Ac65 Cu hum Ac cas Wind est
11	85	6	21	09	22	24.3	15.5	58	10.9	1016.5	7	011	02	1	1	2	1	6	0	8	82838	85272		11	/Ci78 Cu hum Halo 22° part Wind est
12	68	6	21	13	24	21.2	14.8	67	10.4	1013.3	8	001	15	8	2	5	8	5	0	1	82827	84645		12	3Ci78 COTRA Cu med jpNW Wind est
13	80	7	22	11	19	21.2	12.3	57	8.9	1013.2	1	002	15	2	2	7	8	6	7	1	83835	87650		13	/Ac58 /Ci72 Cu med jpNW vv60k ex p Wind est
14	65	7	19	08	18	18.9	17.0	89	12.1	1009.6	3	004	25	8	2	7	8	3	7	/	84708	84635	87360	14	2Cu12 Cu med jpE vv40k W Wind est
15	88	6	27	05	11	22.4	12.6	54	9.0	1016.3	2	004	02	1	1	4	8	6	6	0	82840	83656	85358	15	Cu med Wind est
16	84	5	05	04	09	26.1	13.6	46	9.6	1019.4	7	009	03	1	1	3	2	7	6	1	83850	83075		16	1Ac58 COTRA Cu con Wind est
17	81	7	08	09	19	23.9	13.7	53	9.7	1017.6	7	015	03	1	1	1	1	6	8	1	81845	86359		17	2Ci78 COTRA Cu hum Ac cas Wind est
18	61	7	09	07	16	24.5	18.7	70	13.4	1010.6	7	019	03	2	2	7	8	5	/	1	82822	83635	85645	18	/Ci75 Cu hum Wind est
19	81	2	20	10	19	22.2	14.6	62	10.3	1015.9	2	013	01	1	1	2	2	5	0	1	82828			19	1Ci78 Vu med Wind est Absent vv%cld est
20	80	6	22	08	15	23.1	13.8	56	9.7	1021.3	7	004	15	1	1	3	2	6	6	0	83840	84357		20	Cu med jpNW vv50k ex p Wind est
21	86	3	23	08	16	23.4	13.9	55	9.7	1021.8	7	019	02	0	0	2	1	6	0	9	82837			21	1Cc72 1Ci78 COTRA Cu hum Wind est
22	88	1	26	08	17	24.8	12.7	47	9.1	1019.9	8	004	01	0	0	1	4	6	0	1	81845			22	1Sc48 1Ci80 COTRA Cu hum ElHz lyr SW Wind est
23	88	3	23	05	12	26.1	13.6	46	9.6	1018.0	6	012	02	0	0	1	4	6	0	1	81645	83080		23	1Cc72 COTRA Wind est
24	82	7	25	04	08	23.6	16.1	63	11.4	1009.4	7	019	15	6	2	1	2	6	8	1	81835	85358		24	3Ac63 /Ci75 COTRA Cu med Ac cas jpS Wind est
25	80	6	27	07	16	19.4	10.1	55	7.7	1009.1	8	010	15	2	2	5	8	6	3	/	81838	85656		25	3Ac65 Cu med jpNW vv70k ex p Wind est
26	75	6	28	06	13	17.1	12.2	73	8.9	1008.4	0	001	25	8	2	3	9	5	6	3	81920	83830		26	2Ac58 3As65 /Ci72 Cu con Cb&jp all quads Wind est
27	89	6	29	07	18	19.1	10.1	56	7.7	1011.2	0	003	02	8	2	6	8	6	4	5	82835	85656		27	1Ac65 1Cs72 Cu med Cs edge W Wind est
28	84	7	30	06	15	19.2	9.7	54	7.4	1014.9	0	000	02	2	2	7	8	6	/	1	81835	87656		28	1Sc45 /Ci80 Cu hum/med Wind est
29	86	7	23	07	14	19.4	11.4	60	8.4	1010.8	7	009	03	2	2	7	5	6	/	/	85632	87640		29	El hz lyr Wind est
30	88	4	28	08	17	19.4	8.1	48	6.7	1008.3	8	004	02	1	1	2	2	6	6	1	82848			30	2Ac57 1Ci80 Cu med Wind est
31	59	8	15	04	10	14.6	13.0	90	9.3	1009.0	6	004	21	6	2	8	5	3	/	/	86608	88615		31	jp NW Wind est

Mean vis = 40.6 km
Mean cloud = 5.8 72%
Mean wind speed = 6.8 kn
Mean gust = 15 kn
Mean TT = 21.1 °C
Mean TdTd = 13.2 °C
Mean RH = 62.1 %
Mean r = 9.5 g/kg
Mean PPP = 1012.7 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

2023

Hour	01-Aug	02-Aug	03-Aug	04-Aug	05-Aug	06-Aug	07-Aug	08-Aug	09-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug
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	0.15	0.00	0.00	0.00	0.00	0.14	0.26	0.05	0.00	0.17	0.00	0.00	0.00	0.00	0.08	0.00
5	0.66	0.09	0.74	0.00	0.00	1.00	1.00	0.03	0.00	1.00	0.00	0.55	0.13	0.00	1.00	0.94
6	0.77	0.00	0.98	0.00	0.00	1.00	1.00	0.00	0.49	1.00	0.00	0.59	0.00	0.03	0.97	1.00
7	0.99	0.46	0.33	0.00	0.00	0.35	1.00	0.00	1.00	1.00	0.48	0.59	0.00	0.09	1.00	1.00
8	0.93	0.55	0.69	0.00	0.00	0.32	1.00	0.00	1.00	1.00	0.43	0.25	0.23	0.12	0.99	1.00
9	0.74	0.26	0.58	0.00	0.00	0.11	0.97	0.00	1.00	0.87	0.46	0.00	0.17	0.00	0.58	1.00
10	0.73	0.11	0.61	0.04	0.00	0.09	0.46	0.00	0.94	0.31	0.57	0.19	0.29	0.00	0.90	1.00
11	0.58	0.00	0.00	0.00	0.00	0.22	0.38	0.00	0.85	0.44	0.51	0.28	0.53	0.00	0.74	0.98
12	0.76	0.00	0.00	0.00	0.00	0.22	0.94	0.00	0.73	0.31	0.15	0.35	0.06	0.00	0.94	0.60
13	0.48	0.00	0.20	0.00	0.15	0.09	0.48	0.00	0.57	0.00	0.35	0.03	0.00	0.00	0.91	0.76
14	0.77	0.00	0.65	0.01	0.23	0.26	0.11	0.00	0.87	0.85	0.34	0.46	0.17	0.00	0.11	0.84
15	0.12	0.00	0.20	0.05	0.00	0.40	0.19	0.00	1.00	0.68	0.83	0.68	0.00	0.44	0.30	0.36
16	0.11	0.00	0.00	0.04	0.00	0.97	0.42	0.00	0.91	1.00	0.96	0.01	0.44	0.05	0.77	0.37
17	0.00	0.72	0.17	0.20	0.00	1.00	1.00	0.00	0.99	0.76	0.78	0.00	0.00	0.07	0.87	0.07
18	0.00	0.93	0.00	0.87	0.00	0.67	1.00	0.00	1.00	0.79	0.76	0.00	0.16	0.01	0.61	0.16
19	0.00	0.00	0.03	0.10	0.00	0.39	0.44	0.00	0.38	0.05	0.16	0.00	0.00	0.18	0.20	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	**7.80**	**3.14**	**5.18**	**1.31**	**0.38**	**7.24**	**10.64**	**0.08**	**11.73**	**10.23**	**6.77**	**3.97**	**2.18**	**0.99**	**10.96**	**10.09**

Hour	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug	Mean
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
5	0.71	0.00	0.00	0.84	0.06	0.00	0.33	0.00	0.00	0.00	0.69	0.64	0.00	0.49	0.00	0.35
6	1.00	0.00	0.00	1.00	0.00	0.00	0.20	0.00	0.72	0.00	1.00	1.00	0.00	1.00	0.00	0.44
7	0.97	0.00	0.00	1.00	0.42	0.31	0.83	0.00	0.80	0.02	1.00	1.00	0.00	1.00	0.00	0.50
8	0.92	0.00	0.16	0.70	0.15	0.86	1.00	0.01	0.13	0.03	0.83	0.45	0.00	0.79	0.00	0.47
9	0.26	0.00	0.58	0.72	0.63	0.20	0.59	0.64	0.08	0.23	0.35	0.10	0.02	0.71	0.00	0.38
10	0.82	0.00	0.59	0.66	0.79	0.67	0.92	0.97	0.55	0.29	0.48	0.47	0.84	0.62	0.00	0.48
11	0.90	0.08	0.97	0.95	0.86	1.00	1.00	0.45	0.68	0.28	0.14	0.44	0.91	0.44	0.00	0.47
12	0.91	0.22	0.51	0.98	0.88	0.98	1.00	0.12	0.29	0.90	0.02	0.18	0.30	0.41	0.00	0.41
13	0.84	0.24	0.77	0.60	0.48	1.00	1.00	0.03	0.16	0.10	0.15	0.10	0.00	0.27	0.00	0.31
14	0.52	0.49	0.33	0.29	0.54	1.00	1.00	0.09	0.43	0.17	0.51	0.26	0.00	0.50	0.00	0.38
15	0.39	0.01	0.84	0.41	0.84	1.00	1.00	0.47	0.19	0.07	0.33	0.03	0.00	0.62	0.00	0.37
16	0.13	0.00	0.99	0.23	0.86	1.00	1.00	0.02	0.39	0.77	0.39	0.60	0.00	0.44	0.00	0.41
17	0.40	0.00	1.00	0.66	0.92	1.00	0.79	0.02	0.01	0.52	0.46	0.32	0.00	0.63	0.00	0.43
18	0.19	0.00	0.75	0.79	0.21	0.89	0.00	0.33	0.00	0.00	0.48	0.00	0.00	0.00	0.00	0.34
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	**8.95**	**1.05**	**7.49**	**9.83**	**7.64**	**9.92**	**10.66**	**3.15**	**4.42**	**3.40**	**6.82**	**5.58**	**2.08**	**7.93**	**0.00**	**181.63**

August 2023	T mn	Tx	Time	Tn	Time	RHmn	RH x	Time	RH n	Time	Tdmn	r mn	r x	Time	r n	Time	p mn	p x	Time	p n	Time	R tot
1	17.42	23.2	1443	12.8	442	74.8	94.9	425	44.3	1249	12.5	9.1	10.9	1605	7.4	944	1001.22	1003.1	816	995.0	2359	0.3
2	16.27	19.0	1020	14.7	204	90.9	97.8	1450	69.8	1015	14.7	10.7	12.0	1450	9.3	1007	988.46	995.7	2358	983.9	1511	34.4
3	17.19	21.8	1541	14.0	2353	73.3	95.4	54	48.4	1600	12.0	8.8	10.2	28	7.4	1600	1005.91	1014.2	2354	995.5	0	0
4	15.55	19.4	1705	11.9	221	75.6	92.1	437	54.5	1657	11.1	8.1	9.0	1006	7.2	1657	1017.45	1019.0	1505	1014.1	1	0
5	13.89	19.0	1405	11.9	2354	89.3	97.2	1332	80.5	0	12.2	8.9	12.1	1402	7.4	2358	1008.02	1016.7	3	1000.6	1312	10.2
6	14.56	19.8	1534	9.5	455	76.2	93.7	2343	50.7	1302	10.2	7.7	9.4	1603	6.7	1304	1017.47	1020.7	2337	1013.2	0	0.1
7	15.27	21.4	1244	8.6	410	71.2	98.0	531	44.5	1246	9.5	7.3	8.9	957	6.1	1820	1019.55	1021.4	906	1017.7	2359	0.1
8	14.42	17.3	1546	11.1	434	92.2	97.6	2356	81.7	4	13.2	9.5	11.2	1539	7.1	153	1015.20	1017.8	0	1012.8	1653	4.6
9	17.79	25.0	1623	10.6	325	77.2	99.4	630	49.8	1624	13.2	9.4	11.0	1245	7.8	325	1018.06	1020.5	2359	1014.7	4	0
10	19.54	26.2	1616	12.1	442	76.0	98.8	546	53.2	1624	14.8	10.4	12.5	1423	8.5	450	1018.78	1020.4	11	1017.1	1524	0
11	20.24	25.0	1552	15.1	2357	75.6	94.1	535	50.2	1531	15.5	10.9	12.0	1031	9.4	1531	1017.00	1018.9	904	1015.5	1729	0
12	17.73	22.6	1511	13.6	433	78.9	94.9	155	60.3	1512	13.9	9.8	11.3	1100	9.0	433	1014.22	1016.0	4	1012.9	1650	0.2
13	18.08	22.4	1157	15.3	258	73.6	88.6	458	51.8	1146	13.1	9.3	10.3	1044	8.2	1701	1013.53	1014.7	40	1012.5	2355	0
14	17.21	20.1	1539	13.6	2359	86.4	96.0	430	76.1	1623	14.9	10.5	12.2	1122	8.4	2358	1010.65	1012.9	2334	1008.9	1314	3.2
15	17.51	24.5	1317	10.2	425	76.3	98.1	548	43.7	1359	12.8	9.2	10.5	1129	7.4	1359	1016.14	1019.6	2359	1012.5	23	0
16	18.00	26.6	1515	10.9	509	75.6	98.7	612	40.8	1504	13.1	9.3	11.2	1327	7.5	2146	1020.18	1021.4	745	1018.9	1618	0
17	18.68	25.4	1447	12.1	246	76.1	98.1	536	47.5	1432	13.9	9.8	12.0	945	8.4	243	1018.98	1021.1	20	1016.9	2344	0
18	19.71	24.5	1500	16.7	406	87.1	97.6	1023	68.3	1459	17.4	12.4	13.9	1357	10.5	1	1012.35	1017.3	0	1007.5	2240	8.7
19	19.46	23.9	1337	15.1	2359	75.7	93.8	2355	55.0	1147	14.8	10.4	13.2	0	9.4	1115	1013.98	1019.9	2323	1007.7	0	0.1
20	18.71	25.2	1301	13.7	517	77.6	97.8	528	49.5	1302	14.3	10.0	10.9	1116	9.3	1337	1021.78	1023.9	2356	1019.6	0	0
21	18.40	24.0	1409	14.3	2353	77.5	95.9	123	53.3	1414	14.1	9.9	11.0	1237	9.3	913	1022.96	1024.8	602	1020.9	1756	0
22	19.18	25.1	1346	14.4	226	73.4	94.7	236	43.6	1341	13.8	9.7	11.1	1131	8.5	1341	1020.55	1021.5	2219	1019.5	1640	0
23	19.37	26.9	1535	12.5	520	72.3	97.4	610	41.5	1257	13.6	9.6	11.1	1440	7.3	1206	1019.24	1021.5	22	1016.1	2359	0
24	18.95	25.0	1157	14.7	256	78.0	96.5	519	47.8	1118	14.7	10.4	12.6	1528	8.5	1121	1011.91	1016.4	16	1008.8	1702	0.6
25	15.69	20.8	1434	12.2	2344	70.6	93.2	2354	48.1	1125	10.1	7.7	9.2	1435	6.3	1006	1009.98	1011.3	735	1008.3	1615	0.10
26	14.20	20.9	1254	10.9	316	82.4	97.5	529	52.2	1251	11.0	8.2	9.4	1004	7.3	1701	1008.74	1010.1	2303	1007.8	1231	0.6
27	14.23	19.9	1424	8.8	522	77.8	97.3	529	51.7	1544	10.1	7.7	9.4	1320	6.8	1600	1011.31	1014.2	2226	1009.5	59	0.1
28	15.60	19.9	1616	11.2	552	73.7	96.2	626	50.9	1452	10.6	7.9	9.4	1000	6.6	1747	1014.84	1015.6	2130	1013.7	339	0
29	15.80	20.6	1147	13.2	2357	78.2	95.6	2110	46.6	1119	11.7	8.5	9.9	2112	6.8	1119	1011.93	1014.9	1	1008.8	2141	0.7
30	14.64	20.7	1514	8.7	534	74.4	97.2	128	45.4	1417	9.6	7.5	8.8	4	6.5	1323	1009.06	1010.7	2333	1008.1	1503	0
31	13.37	16.3	1140	10.0	202	90.7	95.9	2359	69.1	1158	11.9	8.7	10.1	2350	7.2	129	1009.63	1010.6	701	1008.7	1831	0.6
Total																						64.6
Mean	16.99	22.33		12.39		78.3	96.13		53.89		12.84	9.26	10.86		7.86		1013.52	1016.35		1010.57		
Max	20.24	26.90		16.69		92.2	99.40		81.70		17.41	12.36	13.89		10.51		1022.96	1024.81		1020.85		
Min	13.37	16.34		8.56		70.6	88.60		40.79		9.52	7.33	8.78		6.13		988.46	995.68		983.91		

Wokingham Automatic Weather Station
AWS samples taken every 0.5 seconds
x and n refer to maximum and minimum respectively

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

Readings taken at Wokingham Climatological Station, Emmbrook, Berkshire
Lat 51.425 N, Long 0.853 W, NGR (SU) 798701
Altitude 45 m ASL.

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

WOKINGHAM METEOROLOGICAL DATA

Wokingham Climatological Station, Emmbrook, Berkshire.

Lat 51°25′N 00°51′W NGR (SU)798701 Altitude 46m ASL

Seasonal Means and Totals — SUMMER 2023

Temperature (°C)			Rank in the past **142** years
Mean maximum	23.2	(+0.9)	16th highest
Mean minimum	12.3	(+0.3)	11th highest
Daily mean	17.7	(+0.5)	12th highest
Rainfall total (mm)	182.7	(120%)	50th highest
Sunshine total (hours)	612.2	(106%)	

Nº of:	Dry days	59 (+3)	Wet days	24 (-1)				
Days with: Air frost	0 (0)	Ground frost	0 (-1)	Snow falling	0 (0)	Snow lying	0 (0)	
Thunder	5 (-2)	Hail ≥5mm	0 (0)	Small hail/ice	1 (0)	Fog @09 GMT	0 (0)	Nil sun 2 (-2)

Air pressure MSL : Mean @09 GMT (mbar) 1014.5 (-1.7)

Departure from 1991 to 2020 average shown in brackets.

Notes: **Above Average Temperature, Rainfall and Sunshine.**

Temperature: The mean this summer is 0.5° above the climatological average, and in the longer-term it is in the very warm category (in the top 10% of ranked values since 1882). In this millennium, 6 summers have been warmer, including the 2 warmest on record in 2018 and 2022. In terms of the mean maximum, the situation is similar, again with 6 summers with a higher mean maximum in this millennium, including the record holder, 25.3° in 2022. The mean minimum, which ranks 11th highest in 142 years, has been exceeded 8 times in this millennium, but only twice before 2000, and not at all before 1976. June was the warmest month, mean 18.4° (+2.6°), and with a mean maximum anomaly of +4.2°. This was the warmest June on record with a mean temperature 0.1° above the previous highest in 1976. July and August had a similar mean temperature, 17.4° and 17.5° respectively, and both were a little below average. The season's highest max was 31.9° on 10th June, 1.9° above the median, and the lowest max was 17.0° on the 31st August, 2.5° above its median and 3rd highest in 120 years. The highest min was 17.3° on 28th June, 0.1° above the median, and the lowest min was 5.8° on 3rd June, 1.4° above its median. The mean grass min was 9.5°, anomaly +0.5°, and the lowest was 1.3° on 3rd June. The last summer to have a ground frost was in 2015. Mean earth temperature at 30 cm depth was 18.8°, anomaly +0.6°, and at 1 m depth, 17.4°, anomaly +0.8°. **Rainfall:** This summer's rainfall is 32.5 mm above the average for the past 48 years, and ranks 7th highest in this millennium. July was the wettest month with 79.5 mm, anomaly 169%, then August with 65.8 mm, anomaly 122 %, and June the driest with 37.4 mm, anomaly 73%. The wettest day was the 2nd August with 26.3 mm. There were 25 dry days in June, but only 18 in July and 16 in August, giving a total of 59 for the summer, anomaly +1 day. A 27 day dry spell ended on the 10th June, a 7 day one on the 18th June, a 5 day one on the 27th June, a 5 day one on the 21st July, and none in August. Rainfall duration was 96.6 hours, anomaly +9.1 hours. There was thunder on the 11th, 12th and 20th June, 8th July and 5th August, and ice pellets also fell on the 11th June. Rainfall rate reached the violent category on the 11th and 20th June, 15th and 27th July, and 2nd August, with a maximum rate of 205 mm/hr at 1603 GMT on the 11th June. Estimated soil moisture deficit shows that for shallow rooted unirrigated plants, stress was highest between the 20th and 29th June. An index of plant stress for the whole season gives a figure of 614, which is close to the 48 year average (maximum 1183 in 1990). **Sunshine:** This has been quite a sunny summer with a total 6 % above average, and it ranks 9th sunniest in this millennium. June was by far the sunniest month, daily mean 8.77 hours per day, anomaly 135%, next a near average August, mean 5.86 hours per day, anomaly 101 %, then a dull July, mean 5.40 hours per day, anomaly 84%. The 13th June was the sunniest day with 15.6 hours, but July 7th with 15.5 hours was a close second. The 4 day period to 16th June was especially sunny giving a total of 60.0 hours, a daily mean of 15.0 hours. Overall there were 23 days with <3 hours, 52 with =>6 hours and 10 with =>12 hours. **Wind:** The anemometer for the Wokingham weather station became unreliable during the summer, but to maintain continuity some wind data is estimated using data from Reading University, 7km to the northwest. The men speed this summer of 6.2 mph is close to average. The windiest day was 15th July, mean 12.9 mph, and the highest gust of 44 mph was also on that day. Daily mean direction/number of days: N,1 NE,14 E,4 SE,4 S,9 SW,35 W,19 NW,6. Compared with average, winds from the NE and W were 6.2 % and 6.6 % more frequent respectively, while those from NW and N combined were 11.1 % less frequent. **Humidity:** The overall men relative humidity was 74.3% and the lowest was 27 % on the 16th June. The mean water vapour content per kg of air was 9.2 g at 0900 GMT and 9.1 g at 1500 GMT. **Pressure:** The season's highest MSL pressure was 1026.8 mbar on 1st June and the lowest was 983.9 mbar on the 2nd August, span 42.9 mbar, average 35.2 mbar. This season's lowest pressure is the lowest for any summer season since before 1976. **June:** New record mean temperature. Very sunny. Rainfall below average. Daily mean temperature and mean maximum highest in the past 142 years. The lowest max is 2nd highest in 111 years. The highest min is 4th highest in the same period. Mean earth temperature at 1m depth highest since before 1990 . Over half the month's rain fell in less than 20 minutes. Sunniest since 1996. **July:** Wet and dull with below average temperature. Mean maximum 3.0° lower than in June this year. Rainfall 69% above average. Dullest since 2012. Mean pressure equal lowest with 1988 for July in the past 48 years. **August:** Above average rainfall with near average temperature and sunshine. Lowest min 5th highest in 120 years. MSL pressure fell to 983.9 mbar on 2nd, the lowest far any August since before 1976.

Month	Mean Max	Anom	Mean Min	Anom	Rain mm	Anom	Sun hrs	Anom	Mean Wind mph	Max gust	Mean pressure	Anom
June	25.2°	+4.2°	11.6°	+0.9°	37.4	73%	263.0	135%	6.2	32	1018.2	+1.4
July	22.2°	-1.0°	12.5°	-0.3°	79.5	169%	167.5	84%	6.9	44	1011.6	-4.3
August	22.4°	-0.4°	12.6°	0.0°	65.8	122%	181.7	101%	5.4	32	1013.9	-1.9

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

Appendix 1.

Explanation and definition of some of the terms used in the Wokingham Weather Reports.

Average: Generally refers to the 30 year climatological average, currently 1981 to 2010. This will be next updated in 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.

B J Burton. 3 August 2009. Updated 4 May 2014.

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 of 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 of 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.