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 2020**

Temperature (°C)		Anomaly	Rank in the past **139** years		
Mean maximum	24.7	+2.1	9th highest		
Mean minimum	14.3	+1.9	2nd highest		
Daily mean	19.5	+2.0	5th highest		
Highest maximum	36.1	on 7th	Lowest maximum	15.3	on 29th
Highest minimum	19.7	on 13th	Lowest minimum	6.3	on 31st
Mean grass minimum	12.1	+2.8	Lowest grass minimum	3.0	on 31st
Mean earth @30 cm	19.7	+1.0	Earth @100 cm	18.4	+0.6
Frost duration (hrs)	0.0		Rain duration (hrs)	38.7	
Rainfall total (mm)	73.7	146%	37th highest		
Highest daily fall	18.0	on 27th	Highest rate mm/hr	166	on 13th

Number of: Dry days (<0.2mm) 17 Wet days (>0.9mm) 9 days ≥5mm 6

Sunshine total (hrs) 180.7 Daily mean 5.83 92 % Sunniest day 13.1 on 20th

Nº days with: Air frost 0 Ground frost 0 Snow falling 0 Snow lying 0

Thunder 5 Hail ≥5mm 0 Small hail/ice 0 Fog @09 0 Nil sun 3

Pressure MSL : Mean @09 GMT, mbar 1012.8 -3.5 Highest 1023.1 on 31st Lowest 996.6 on 25th

Relative humidity : Mean (%) 73.8 Lowest 19 on 7th Water vapour (g/kg), mean at 09 and 15 GMT 10.0, 9.4

Overall mean wind speed (mph) 6.8 Windiest day 15.6 on 21st Max gust 45 on 21st

Wind direction (days) N 5 NE 3 E 2 SE 1 S 7 SW 9 W 2 NW 2

Least windy day (mph) 2.1 on 31st Calm; less than 0.5 mph (minutes) 807

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

Notes: **Very Warm with a Notable Heatwave. Rainfall was Above and Sunshine Below Average.**

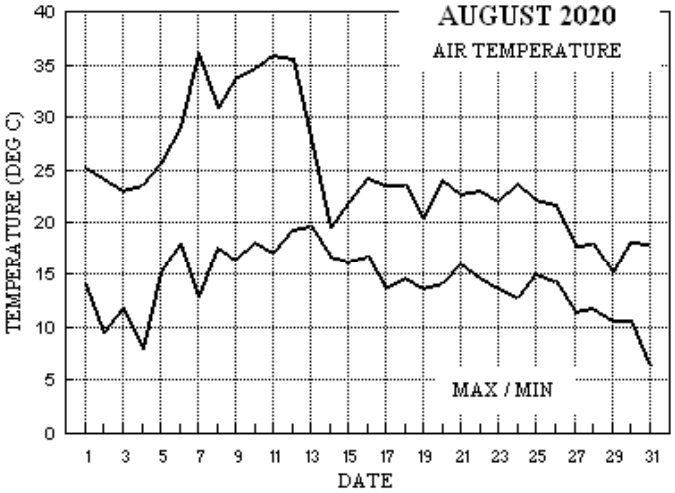
Temperature: This August will be remembered for the heatwave before mid-month during which the daily maximum exceeded 30° on 6 consecutive days to the 12th, and exceeded 35° on three of them. The overall mean maximum and daily mean are highest since 2003, and the mean minimum is 2nd highest after 1997 in the past 139 years. The highest max of 36.1° is 8.1° above the median and is 2nd highest after 2003 since before 1904, and the 3rd highest temperature for any day in that period. The lowest max is 1.6° below its median and the highest min is 3.4° above the median and is a new record, 0.1° above the previous record set in 1997. The lowest min equals its median. The mean grass min is highest since 1997, and 2nd highest in the past 41 years. The mean earth temperature at both 30cm and 1 m depth are well above average. Anomalies for daily max were over +10° on the 7th, and 9th to 12th, and exceeded -3° on the 14th and 27th to 31st, with extreme values of +13.1° on the 11th and -6.0° on the 29th. Anomalies for daily min were over +5° on the 6th, 10th, 12th and 13th, and exceeded -4° on the 4th and 31st with extreme values of +7.0° on the 13th and -4.9° on the 4th. **Rainfall:** While the total this August is nearly 50% above average, the month started dry, with a total of only 1.1 mm by the 12th. A 5 day dry spell ended on the 1st, and one of 9 days on the 11th. However the subsequent 16 days contained 3 with over 10 mm, and another 4 with over 5 mm. Compared with recent years, 2015, 2014, 2011 and 2010 had wetter Augusts here, but our rainfall this month is rather an anomaly, an oasis of relative dry in a sea of much larger totals, e.g 115 mm at Mortimer, 103 mm in Maidenhead and 118 mm in Shiplake, the result of a thundery month with associated heavy downpours, several just missing Wokingham. Daily accumulation compared with normal was in deficit by 18 mm on the 12th, becoming a surplus of 6 mm on the 19th which decreased to 1 mm by the 23rd but subsequently increased to 27 mm by the 28th. The number of days with thunder is most since 2002, but there was no hail. The thunderstorm on the evening of the 13th was notable for the high frequency of its lightning.. **Sunshine:** The total this August is 8% below average making it the least sunny since 2015, though in this millennium 11 Augusts have also had less sun. Sunshine was very unevenly distributed this month, with 9 of the first 12 days having over 50 % of the maximum, while there were only 3 thereafter. Daily accumulation compared with normal shows that by the 13th a surplus of 23 hours had built up, but this reduced to 5 hours by the 19th, and although increasing to 12 hours by the 22nd then decreased steadily becoming a deficit of 15 hours by the 31st. Overall there were 9 days with <3 hours, 15 with =>6 hours, 11 with =>9 hours and 2 with =>12 hours. **Wind:** The mean speed this month is 0.8 mph above average. The mean of 15.6 mph on the windiest day, 21st, is 2nd highest for an August day since before 1988, and the month's highest gust of 45 mph is highest for August since 1992. Daily mean directions were S or SW except NW or N on 3rd, 8th, 13th to 15th and 28th to 30th, and NE or E on 9th to 14th and 31st. Speeds were light from 6th to 16th and on 31st, otherwise mainly moderate, though increasing to fresh for the 20th, 22nd and 26th, and strong on the 21st and 25th.

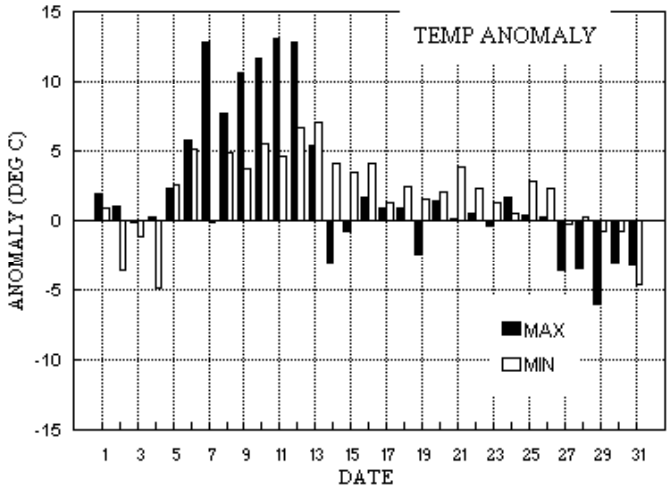
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

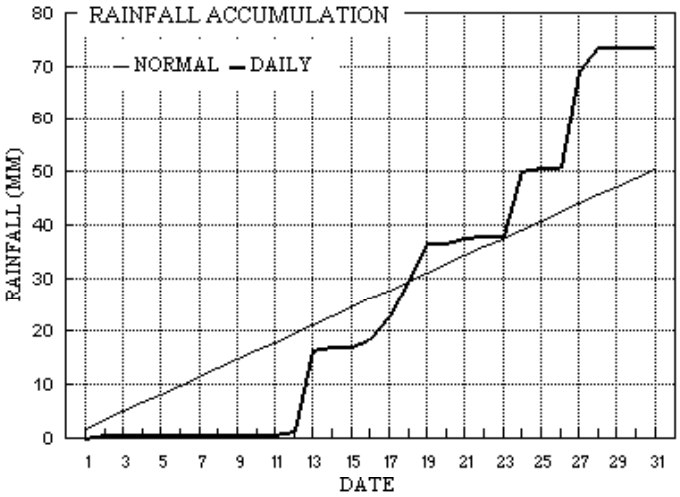
From the 1st to the 10th				From the 11th to the 20th				From the 21st to the 31st			
+5.4°	+1.3°	4%	142%	+3.0°	+3.7°	221%	77%	-1.5°	+0.6°	206%	60%

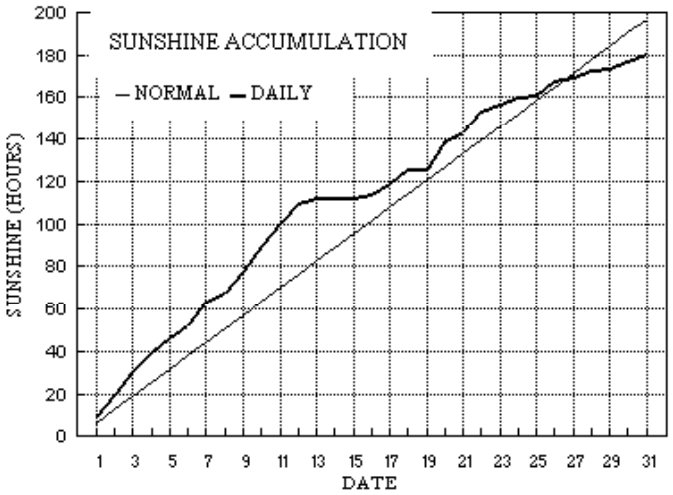
B J Burton FRMetS. Hon. Met. Officer to Wokingham Town Council.

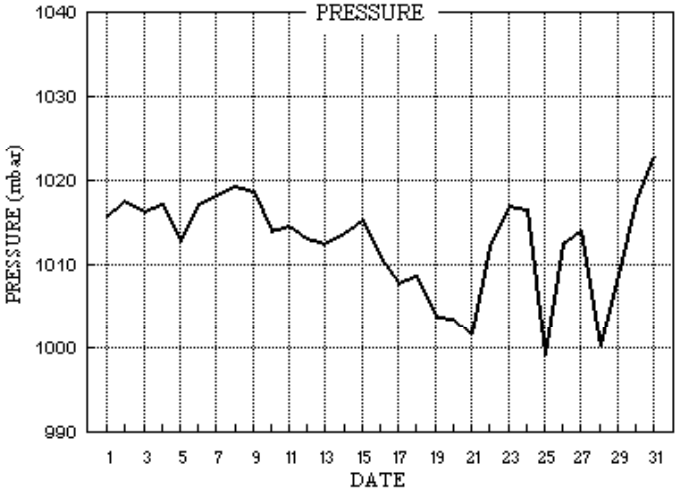
Wokingham climatological graphs for August 2020

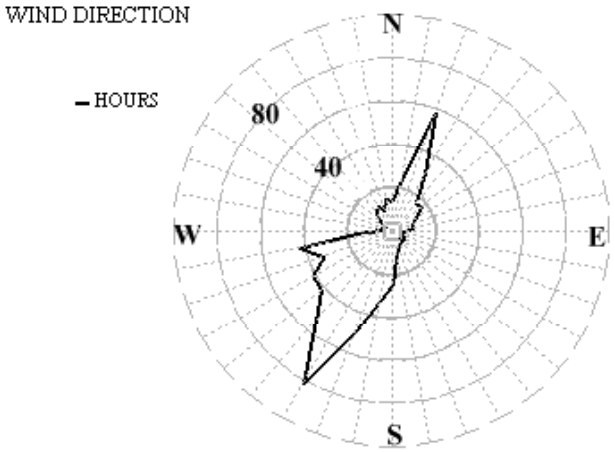


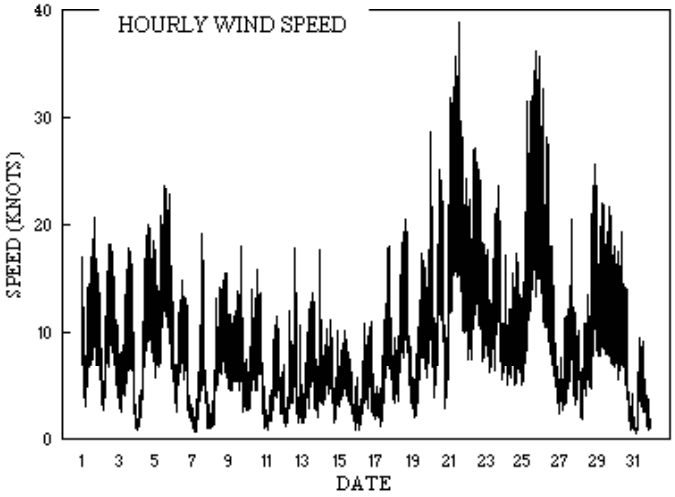


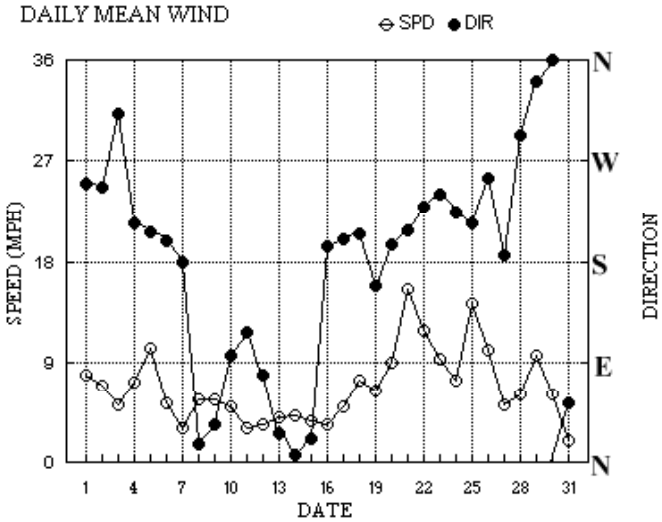












Daily meteorological data. Emmbrook, WOKINGHAM, Berkshire.

Month: AUGUST 2020

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	25.3	14.0	0.0	9.6	19.3	17.5	9.3	0.0	1015.8	0 0 0 0		0 0 0 0		250	6.7	6.8	257	21	1619	258	9	18	0.0
2	24.3	9.4	0.5	5.0	19.1	17.6	9.9	0.0	1017.7	0 0 0 0		0 0 0 0		247	5.8	6.0	262	18	1446	249	9	13	0.8
3	23.1	11.8	0.0	8.9	19.1	17.7	11.5	0.0	1016.5	0 0 0 0		0 0 0 0		312	4.0	4.5	334	18	1330	282	7	16	0.0
4	23.5	8.0	0.0	3.9	18.8	17.8	9.4	0.0	1017.2	0 0 0 0		0 0 0 0		214	6.1	6.2	195	20	1559	209	10	16	0.0
5	25.6	15.3	0.1	14.3	18.9	17.8	6.3	0.0	1012.8	0 0 0 0		0 0 0 0		206	8.9	9.0	187	24	1250	208	13	12	0.8
6	29.0	17.9	tr	17.5	19.4	17.8	6.3	0.0	1017.3	0 0 0 0		0 0 0 0		199	4.6	4.7	218	15	1000	199	7	12	0.1
7	36.1	12.8	tr	8.3	19.6	17.9	10.7	0.0	1018.4	0 0 0 0		0 0 0 0		180	1.6	2.8	128	19	1320	208	8	14	0.0
8	30.9	17.7	0.0	14.1	20.2	18.0	4.1	0.0	1019.5	0 0 0 0		0 0 0 0		16	4.5	4.9	3	16	1842	16	8	18	0.0
9	33.8	16.5	tr	14.8	20.4	18.1	10.0	0.0	1018.8	0 0 0 0		0 0 0 0		35	4.5	4.9	70	18	1700	78	7	16	0.0
10	34.7	18.2	0.0	15.3	21.0	18.3	12.4	0.0	1014.0	0 0 0 0		1 0 0 0		96	1.6	4.3	183	16	1426	162	7	14	0.0
11	35.9	17.2	0.0	14.0	21.3	18.5	10.4	0.0	1014.7	0 0 0 0		0 0 0 0		117	1.7	2.8	67	12	1505	88	5	13	0.0
12	35.6	19.3	0.5	16.6	21.8	18.7	9.1	0.0	1013.3	0 0 0 0		1 0 0 0		79	2.0	3.0	95	18	1522	115	7	15	0.6
13	28.0	19.7	15.4	16.9	22.0	18.9	3.0	0.0	1012.7	0 0 0 0		1 0 0 0		26	3.4	3.6	30	18	2303	13	6	10	2.4
14	19.5	16.8	0.5	17.1	21.6	19.1	0.0	0.0	1013.9	0 0 0 0		0 0 0 0		7	3.3	3.7	46	11	0217	7	6	12	0.8
15	21.9	16.2	tr	16.6	21.0	19.2	0.0	0.0	1015.4	0 0 0 0		0 0 0 0		21	3.0	3.2	19	10	0801	23	5	08	0.4
16	24.3	16.8	1.3	15.7	20.5	19.1	1.6	0.0	1011.0	0 0 0 0		0 0 0 0		193	2.1	3.0	217	11	1815	223	6	17	0.5
17	23.6	13.7	4.6	10.5	20.4	19.1	4.6	0.0	1007.9	0 0 0 0		1 0 0 0		200	4.1	4.4	201	18	1705	202	9	17	1.6
18	23.6	14.8	6.6	13.6	20.2	19.0	7.3	0.0	1008.9	0 0 0 0		0 0 0 0		205	6.3	6.4	206	21	1511	211	10	16	2.7
19	20.3	13.8	7.2	10.9	19.9	19.0	0.0	0.0	1003.9	0 0 0 0		0 0 0 0		159	5.1	5.6	194	20	2324	199	9	23	7.2
20	24.1	14.3	tr	12.7	19.7	18.9	13.1	0.0	1003.6	0 0 0 0		0 0 0 0		195	7.1	7.8	218	29	0019	192	13	11	0.2
21	22.7	16.1	1.0	13.2	19.7	18.8	4.8	0.0	1001.8	0 0 0 0		0 0 0 0		208	13.4	13.5	230	39	1248	213	17	11	0.5
22	23.0	14.7	0.3	13.6	19.5	18.8	9.7	0.0	1012.1	0 0 0 0		0 0 0 0		228	10.2	10.3	231	27	1032	230	13	14	0.5
23	22.0	13.7	tr	12.2	19.4	18.7	3.6	0.0	1017.1	0 0 0 0		0 0 0 0		240	8.0	8.1	251	24	1602	253	12	16	0.0
24	23.7	12.8	12.0	10.3	19.0	18.6	2.9	0.0	1016.6	0 0 0 0		0 0 0 0		224	5.9	6.5	200	18	1629	205	9	16	9.1
25	22.2	15.0	0.7	14.7	19.3	18.5	1.0	0.0	999.2	0 0 0 0		0 0 0 0		214	11.2	12.4	215	36	1744	234	17	20	1.2
26	21.7	14.4	0.0	12.9	19.0	18.5	6.5	0.0	1012.6	0 0 0 0		0 0 0 0		254	8.6	8.8	258	33	0247	248	15	00	0.0
27	17.8	11.6	18.0	9.8	18.7	18.4	2.0	0.0	1014.2	0 0 0 0		1 0 0 0		186	1.5	4.5	68	21	1712	26	8	16	3.3
28	17.9	11.9	5.0	9.3	18.0	18.3	3.6	0.0	1000.3	0 0 0 0		0 0 0 0		293	3.4	5.3	320	26	2237	323	11	22	5.3
29	15.3	10.6	tr	10.1	18.0	18.1	0.8	0.0	1008.9	0 0 0 0		0 0 0 0		340	8.2	8.3	331	24	0113	334	10	00	0.7
30	18.2	10.6	0.0	10.1	17.5	18.0	2.8	0.0	1017.7	0 0 0 0		0 0 0 0		359	5.2	5.4	19	20	1012	12	8	10	0.0
31	18.0	6.3	0.0	3.0	17.3	17.8	4.0	0.0	1023.0	0 0 0 0		0 0 0 0		53	1.2	1.8	20	10	1051	35	4	10	0.0
Total			73.7				180.7	0.0															38.7
Mean	24.7	14.3		12.1	19.7	18.4	5.83	0.0	1012.8					229	2.6	5.9							
Anom	+2.1	+1.9	146%	+2.8	+1.0	+0.8	92%		-3.5														

Daily mean 19.5 Pressure, abs highest = 1023.1 on 31

Anom +2.0 Pressure, abs lowest = 996.6 on 25

Number of days with:

Air frost = 0 Ground frost = 0 Nil sun = 3

Snow falling = 0 Snow lying = 0 Thunder = 5

Hail=>5mm = 0 Hail<5mm or ice = 0 Fog at 09GMT = 0

Abbreviations.

Max/min = highest and lowest air temperature at 1.2m in 24 hour period ending at 09 GMT

Rain = total rainfall and melted snowfall in 24 hour period ending at 09 GMT, millimetres. (Tr = trace, <.05mm).

Grass min = Lowest overnight temperature at grass tip level.

Sun = hours of bright sunshine, measured electronically. Frost = Number of hours with air temp below 0 deg C.

pp09 = Air pressure corrected to mean sea level at 0900 GMT, millibars.

Af = Air frost. Gf = Ground frost. Sf = Snow falling. Sl = Snow lying at 09 GMT.

Th = Thunder. Ha = Hail =>5mm. Ic = Hail <5mm or ice. Fg = Fog at 09 GMT.

Vec mean = 24 hour mean wind vector, ddd = direction in degrees from true north, ff = speed in knots.

Sp = 24 hour mean wind speed in knots.

Max gust = Highest gust in 24 hours, gg = speed in knots, HHhh = Time, hours and minutes, GMT.

High hr = Highest hourly mean wind, HH = hour commencing. Rain Hrs = Duration of rain, 24 hours to 09 GMT. Excludes snow/hail.

30cm and 100 cm are earth temperatures at those depths, read at 09 GMT.

Anom = Departure from 1981-2010 climatological average.

All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for AUGUST 2020

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cm	Ch	NChshs	NChshs	NChshs	Date	Remarks
1	83	4	26	07	14	20.8	13.7	64	9.7	1015.8	2	003	03	0	0	4	8	5	0	0		83822			1	2Sc35 Cu med
2	86	4	26	08	14	18.5	10.3	59	7.7	1017.7	8	002	03	1	1	4	8	5	0	0		84828			2	1Sc35 Cu med
3	89	1	28	04	11	18.3	9.4	56	7.3	1016.5	1	004	03	0	0	1	2	6	0	0		81830			3	Cu hum/med El hz lyr E
4	88	3	21	06	11	18.9	8.3	50	6.7	1017.2	8	004	03	0	0	3	0	9	7	1		82362			4	1Ac65 1Ci80 COTRA Cu top E
5	84	7	20	11	21	20.3	12.5	61	9.0	1012.8	0	001	03	2	2	7	8	5	0	2		81822	87650		5	1Sc40 1Ci75 Cu hum
6	62	8	21	06	12	20.5	17.3	82	12.2	1017.3	1	012	20	5	2	8	5	3	/	/		86708	88615		6	
7	89	1	09	02	06	25.0	15.1	54	10.5	1018.4	7	003	02	0	0	1	0	9	8	0		81365			7	Ac cas, distant ~130km
8	75	5	02	06	13	24.1	16.9	64	11.8	1019.5	0	004	02	2	2	5	0	9	8	0		85362			8	Ac cas
9	60	2	01	05	12	21.1	15.4	70	10.8	1018.8	8	008	05	1	1	1	6	4	8	1		81715			9	2Ac60 1Ci80 COTRA Ac cas
10	59	3	03	06	12	23.7	17.7	69	12.5	1014.0	8	003	29	9	1	2	9	9	8	5		81959	82361		10	1Cs75 Cb cap Ac cas jpNW t 0835
11	57	4	06	02	04	25.9	18.1	62	12.8	1014.7	8	001	05	2	2	4	0	9	8	1		81362	84364		11	1Ci80 Ac cas
12	57	3	11	05	12	28.5	17.7	52	12.5	1013.3	5	001	05	0	0	1	0	9	8	1		81363	83080		12	COTRA Ac cas
13	40	7	03	04	08	20.7	18.6	88	13.3	1012.7	3	006	21	9	6	3	6	3	7	/		83706	86360		13	T 0726-45
14	56	8	01	05	10	17.2	15.9	92	11.2	1013.9	1	017	05	2	2	8	6	3	/	/		88706			14	
15	56	8	03	04	10	16.9	15.9	94	11.2	1015.4	0	004	20	5	2	8	6	2	/	/		86705	88707		15	
16	59	7	06	04	08	21.9	17.3	75	12.2	1011.0	8	002	05	2	2	2	8	4	3	2		82812	87075		16	1Sc35 1Ac68 COTRA Cu med
17	60	7	01	02	05	18.5	16.1	86	11.4	1007.9	0	001	25	8	2	3	9	3	7	3		81908	83812	86072	17	1Ac62 2As65 jpNW&S
18	84	7	20	09	16	20.6	14.9	70	10.6	1008.9	8	001	03	1	1	3	2	4	7	2		83818	83365	86072	18	1Ac59 Cu med
19	57	8	10	04	11	17.7	17.4	98	12.4	1003.9	7	014	63	6	2	7	7	2	2	/		83705	87707	88550	19	
20	70	1	20	07	13	19.7	13.2	66	9.5	1003.6	1	012	03	0	0	1	1	5	0	0		81820			20	Cu fra/hum
21	80	3	22	16	32	19.7	14.3	71	10.2	1001.8	2	023	25	8	1	3	8	5	0	1		83825			21	1Sc45 2Ci80 COTRA Cu med
22	83	4	25	12	24	18.2	11.7	66	8.5	1012.1	2	014	03	0	0	3	8	5	0	1		83825			22	1Sc45 2Ci75 Cu med
23	82	7	24	07	13	17.9	13.4	75	9.5	1017.1	1	009	03	1	1	7	8	4	/	/		83815	87650		23	Cu med
24	84	7	25	06	12	17.3	13.2	77	9.4	1016.6	0	002	02	6	2	2	8	4	7	/		81812	85358	87362	24	2Sc30 Cu hum/fra
25	20	8	18	13	27	16.0	15.0	94	10.7	999.2	7	042	51	6	5	8	7	2	/	/		85705	88707		25	
26	86	5	27	14	28	19.1	10.7	58	7.9	1012.6	3	033	03	1	1	2	8	6	0	2		82832	83075		26	1Sc45 Cu hum
27	77	7	22	05	11	16.6	10.5	67	7.8	1014.2	6	016	03	2	2	1	8	5	7	/		81822	83366	87468	27	1Sc40 Cu fra/hum
28	84	4	27	05	10	15.9	11.9	77	8.7	1000.3	8	002	03	1	1	4	8	4	0	0		83813			28	2Sc56 Cu med. Cu con NW
29	82	7	36	09	22	12.5	8.4	76	6.9	1008.9	1	018	02	2	2	7	5	5	/	1		87620			29	/Ci72
30	81	6	36	07	13	13.6	8.2	70	6.7	1017.7	2	011	02	2	2	6	5	5	0	0		83620	85650		30	
31	84	7	06	03	06	13.3	9.2	76	7.1	1023.0	1	008	02	2	2	7	8	6	/	/		81835	87650		31	Cu hum

Mean vis = 31.8 km
Mean cloud = 5.3 66%
Mean wind speed = 6.6 kn
Mean gust = 14 kn
Mean TT = 19.3 °C
Mean TdTd = 13.8 °C
Mean RH = 71.6 %
Mean r = 10.0 g/kg
Mean PPP = 1012.8 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

Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for AUGUST 2020

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	5	26	08	19	23.8	13.1	51	9.3	1015.1	6	006	02	1	1	3	8	6	0	1	83842			1	1Sc56 2Ci78 Cu med
2	89	7	25	08	18	23.5	8.4	38	6.8	1015.3	7	015	02	8	1	2	2	7	6	1	82850	87080		2	1Ac58 COTRA Cu med
3	89	5	28	07	15	21.2	4.3	33	5.1	1015.5	5	006	02	1	1	3	2	7	6	1	83856			3	2Ac59 1Ci80 Cu med/con
4	86	6	21	11	18	22.7	9.1	42	7.2	1014.7	8	015	01	2	2	3	5	7	4	2	83650	85359		4	3Ci72 Sc len Ac len
5	86	6	21	11	24	24.2	12.2	47	8.8	1012.0	7	002	03	1	1	2	5	6	8	2	82634	83364	85078	5	1Ac68 Ac cas
6	81	3	19	07	13	27.8	15.5	47	10.8	1016.7	7	010	01	1	1	1	1	6	8	1	81840			6	1Ac58 2Ci80 Cu hum Ac cas
7	86	6	21	09	16	33.6	10.3	24	7.7	1016.2	6	005	15	1	1	7	0	9	8	/	81362	86367		7	2Ac65 Ac cas jpSW
8	81	7	01	05	12	30.0	17.1	46	12.0	1018.3	8	012	01	2	2	4	0	9	8	1	84362	86078		8	Ac cas
9	65	2	06	04	14	32.4	15.0	35	10.5	1015.3	7	018	02	0	0	2	0	9	8	1	81359			9	1Ac62 1Ci80 COTRA Ac cas
10	80	2	18	07	16	34.0	13.5	29	9.6	1011.9	7	009	02	1	1	1	1	8	8	1	81857			10	1Ac62 2Ci80 Cu hum Ac cas
11	80	2	11	05	10	35.5	13.6	27	9.7	1012.3	7	015	03	0	0	2	2	8	3	0	82857			11	1Ac64 Cu med/con
12	65	4	07	06	11	33.0	15.9	36	11.3	1010.6	7	016	17	0	0	4	9	7	6	1	82950	82856		12	1Ac62 1Ci80 T to S
13	65	7	03	05	14	24.2	18.4	70	13.1	1011.8	5	004	17	6	2	3	9	6	7	3	82930	87362		13	2Sc35 /Ci75 T to S
14	56	8	02	05	10	19.4	16.6	84	11.7	1014.1	2	001	05	2	2	8	5	3	/	/	87709	88615		14	
15	63	8	02	03	08	18.6	16.4	87	11.5	1014.6	8	009	02	6	5	8	6	3	/	/	88709			15	
16	81	8	17	04	10	22.4	14.5	61	10.3	1009.8	8	009	03	2	2	1	2	6	7	/	81830	87362	88465	16	2Ac59 Cu med
17	75	7	20	07	13	22.1	13.7	59	9.8	1006.9	7	011	15	2	2	6	9	5	6	3	81925	83830		17	3Sc50 1Ac62 /Ci72 jp NE&W vv50k ex NE
18	58	5	21	08	20	21.0	17.2	79	12.2	1008.4	6	007	80	8	1	3	9	5	6	3	82920	83072		18	1Cu30 1Sc50 2Ac62
19	50	8	16	08	17	19.2	18.2	94	13.1	1000.0	6	017	51	6	5	7	5	2	/	/	83705	87707	88615	19	
20	84	1	21	12	24	23.2	8.9	40	7.1	1003.7	4	000	02	0	0	1	4	6	0	9	81645			20	1Cc78 1Ci81 COTRA
21	65	7	20	15	35	22.1	14.5	62	10.3	1005.0	2	015	80	8	2	7	8	5	0	0	86827			21	2Sc40 Cu med
22	86	4	24	14	25	21.3	11.1	52	8.2	1012.5	0	001	03	8	1	3	8	6	5	1	82835			22	1Sc50 2Ac69 1Ci72 Cu med
23	84	7	25	10	22	20.8	12.2	58	8.8	1016.6	8	008	02	8	2	3	2	6	3	1	83835	84357		23	3Ci75 Cu med
24	70	7	34	05	14	21.5	14.4	64	10.2	1014.0	7	014	25	8	2	6	8	6	7	/	85830	83358		24	2Sc50 jpNE vv50k ex p
25	62	7	23	14	32	21.6	14.5	64	10.4	997.3	6	001	15	2	2	7	3	5	/	/	82928	83835	83645	25	jpNW vv40k ex p
26	89	7	27	10	18	20.1	10.8	55	8.0	1016.5	2	018	02	2	2	7	8	6	/	/	81840	87650		26	Cu hum
27	60	8	08	05	12	14.9	13.8	93	9.8	1006.5	7	046	63	6	2	7	8	4	2	/	81715	83645	86656	27	1Cu25 8Ns60
28	80	7	31	07	12	15.6	11.8	78	8.7	1000.6	3	007	25	8	2	7	9	4	6	3	81915	81820	86656	28	/Ac60 /Ci70 jp all quads
29	84	7	34	08	17	14.6	8.1	65	6.7	1011.3	1	010	02	8	2	7	8	5	7	/	81825	84640	87650	29	/Ac59 Cu med
30	88	6	02	06	12	16.8	6.6	51	6.0	1019.0	1	004	02	2	2	6	8	6	0	1	81838	86643		30	1Ci80 Cu hum
31	86	7	06	02	09	16.2	4.9	47	5.3	1021.8	6	005	02	0	2	7	8	6	/	1	82845	86650		31	/Ci78 Cu hum

Mean vis = 37.4 km
Mean cloud = 5.8 73%
Mean wind speed = 7.6 kn
Mean gust = 16 kn
Mean TT = 23.1 °C
Mean TdTd = 12.7 °C
Mean RH = 55.4 %
Mean r = 9.4 g/kg
Mean PPP = 1011.8 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)
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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

2020

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	0.23	0.30	0.10	0.27	0.04	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	1.00	1.00	0.75	1.00	0.00	0.00	1.00	0.00	0.00	0.86	0.65	0.65	0.00	0.00	0.00	0.00
6	1.00	1.00	0.93	1.00	0.00	0.05	1.00	0.06	0.00	0.56	0.29	1.00	0.00	0.00	0.00	0.00
7	0.88	1.00	1.00	1.00	0.00	0.00	1.00	0.31	0.00	0.81	1.00	1.00	0.00	0.00	0.00	0.20
8	0.88	0.95	0.98	1.00	0.46	0.00	1.00	0.75	0.80	0.65	0.14	1.00	0.00	0.00	0.00	0.38
9	0.55	0.42	0.88	0.94	0.78	0.00	1.00	0.10	1.00	1.00	0.69	1.00	0.69	0.00	0.00	0.30
10	0.23	0.75	0.68	0.13	1.00	0.00	1.00	0.02	1.00	1.00	1.00	1.00	0.96	0.00	0.00	0.12
11	0.20	0.44	0.58	0.06	0.57	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.95	0.00	0.01	0.07
12	0.30	0.65	0.41	0.04	0.99	0.62	1.00	0.09	1.00	1.00	1.00	0.99	0.42	0.00	0.00	0.00
13	0.25	1.00	0.59	0.00	0.95	0.26	1.00	0.11	0.67	1.00	1.00	0.88	0.00	0.00	0.00	0.09
14	0.54	0.78	0.54	0.17	0.43	0.86	0.63	0.23	0.82	1.00	1.00	0.58	0.00	0.00	0.00	0.00
15	0.41	0.56	0.69	0.91	0.19	1.00	0.00	0.51	0.76	1.00	0.72	0.00	0.00	0.00	0.00	0.00
16	0.48	0.63	0.92	1.00	0.42	1.00	0.00	0.04	1.00	1.00	0.35	0.00	0.00	0.00	0.00	0.06
17	0.75	0.35	0.97	1.00	0.00	1.00	0.22	0.74	0.75	1.00	1.00	0.00	0.00	0.00	0.00	0.36
18	0.99	0.04	0.97	0.84	0.47	1.00	0.57	1.00	0.99	0.48	0.49	0.00	0.00	0.00	0.00	0.04
19	0.63	0.00	0.49	0.00	0.02	0.55	0.00	0.15	0.19	0.00	0.08	0.00	0.00	0.00	0.00	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	**9.32**	**9.86**	**11.49**	**9.37**	**6.32**	**6.33**	**10.67**	**4.10**	**9.98**	**12.36**	**10.41**	**9.11**	**3.03**	**0.00**	**0.01**	**1.63**

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	0.04
5	0.00	0.57	0.00	0.36	0.00	0.55	0.00	0.00	0.00	0.52	0.00	0.01	0.00	0.00	0.22	0.29
6	0.00	0.83	0.00	1.00	0.07	1.00	0.86	0.00	0.00	0.99	0.05	0.00	0.00	0.04	0.00	0.38
7	0.05	0.62	0.00	1.00	0.35	0.94	0.00	0.08	0.00	1.00	1.00	0.81	0.02	0.27	0.00	0.46
8	0.25	0.27	0.00	1.00	0.43	0.85	0.00	0.02	0.00	0.98	0.42	0.79	0.09	0.20	0.00	0.46
9	0.19	0.02	0.00	1.00	0.58	0.72	0.04	0.00	0.00	0.51	0.02	0.57	0.29	0.78	0.41	0.47
10	0.00	0.00	0.00	0.96	0.78	0.75	0.45	0.38	0.01	0.21	0.00	0.20	0.19	0.48	0.90	0.46
11	0.43	0.00	0.00	1.00	0.21	0.53	0.02	0.31	0.15	0.39	0.00	0.02	0.11	0.00	0.01	0.36
12	0.84	0.75	0.00	1.00	0.22	0.84	0.00	0.51	0.01	0.42	0.00	0.56	0.04	0.06	0.00	0.44
13	0.43	0.50	0.00	1.00	0.39	0.50	0.02	0.44	0.09	0.14	0.01	0.03	0.00	0.00	0.43	0.38
14	0.38	0.26	0.00	1.00	0.73	0.97	0.26	0.49	0.18	0.15	0.00	0.30	0.00	0.20	0.58	0.42
15	0.27	0.88	0.00	1.00	0.59	0.70	0.72	0.07	0.18	0.02	0.00	0.00	0.00	0.26	0.33	0.38
16	0.47	0.79	0.00	1.00	0.29	0.46	0.85	0.09	0.17	0.22	0.00	0.00	0.00	0.43	0.55	0.39
17	0.70	0.99	0.00	1.00	0.16	0.57	0.41	0.48	0.08	0.71	0.45	0.26	0.01	0.05	0.42	0.47
18	0.59	0.81	0.00	0.82	0.00	0.33	0.00	0.00	0.12	0.29	0.04	0.00	0.00	0.00	0.17	0.36
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	0.07
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	**4.61**	**7.30**	**0.00**	**13.14**	**4.80**	**9.71**	**3.63**	**2.88**	**0.99**	**6.53**	**1.99**	**3.56**	**0.77**	**2.77**	**4.02**	**180.62**

AUGUST 2020	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	19.61	25.3	1419	14.0	424	65.5	92.8	428	43.2	1615	12.6	9.0	12.0	0	7.7	2226	1015.41	1017.3	2325	1013.4	0	0
2	17.46	24.3	1526	9.4	423	63.8	94.1	434	35.2	1302	9.8	7.5	8.7	739	6.3	1303	1016.54	1018.1	535	1014.7	1720	0.4
3	16.89	23.1	1537	10.7	2354	59.7	85.8	2355	30.7	1512	8.2	6.7	8.4	0	4.9	1501	1016.18	1018.2	2325	1015.1	1641	0.1
4	16.39	23.5	1538	8.0	456	64.1	94.2	317	34.5	1010	8.7	7.0	9.2	2359	5.2	1010	1015.86	1018.1	16	1013.2	2357	0
5	19.72	25.6	1305	15.3	58	67.5	87.8	2358	35.1	1103	13.0	9.3	11.3	2359	6.7	1104	1012.82	1014.9	2359	1011.5	1455	0
6	21.68	29.0	1352	16.6	2325	73.1	95.0	459	43.4	1624	16.1	11.3	12.8	735	9.6	1838	1016.76	1018.7	2309	1014.5	57	0.1
7	23.89	36.1	1410	12.8	437	58.7	98.0	608	19.4	1340	13.0	9.3	11.4	941	6.8	1313	1017.62	1018.8	734	1015.5	1607	0
8	23.35	30.9	1514	17.4	2359	67.4	89.4	211	44.0	1448	16.5	11.6	12.5	1518	10.3	2359	1018.95	1020.2	2331	1017.8	1636	0
9	23.52	33.8	1634	16.5	156	65.0	89.4	234	30.9	1621	15.7	11.0	12.4	1340	9.7	1621	1017.25	1020.2	156	1014.1	1657	0
10	24.89	34.7	1515	18.2	357	62.5	90.5	358	28.2	1431	16.1	11.3	13.3	1226	9.4	1423	1013.59	1015.4	18	1011.3	1602	0
11	26.10	35.9	1403	17.2	318	58.2	92.0	458	26.4	1444	15.8	11.1	13.3	931	9.4	1444	1013.71	1015.4	742	1011.5	1618	0
12	25.53	35.6	1413	19.3	526	63.4	87.8	2336	30.8	1216	17.2	12.2	14.0	1755	9.9	1209	1012.50	1013.7	301	1010.5	1506	0.1
13	21.36	28.0	1212	18.0	2342	83.3	96.6	2359	56.6	1216	18.2	13.0	14.3	1012	12.2	523	1012.31	1013.8	2300	1011.3	1405	12.6
14	18.03	19.5	1457	16.8	630	91.8	97.1	122	81.9	1348	16.6	11.7	12.4	2211	11.1	1302	1013.96	1015.1	2113	1012.6	333	0.4
15	17.85	19.3	1751	16.2	645	92.9	97.5	355	85.7	1623	16.7	11.7	12.8	2358	11.0	648	1014.51	1015.7	943	1012.4	2336	0.1
16	19.83	24.3	1359	14.4	2352	80.6	97.7	603	55.3	1543	16.1	11.4	12.8	1	9.3	1543	1010.39	1012.7	2	1008.3	1733	0
17	17.70	23.6	1403	13.7	328	84.4	97.9	720	56.4	1447	14.8	10.5	12.9	1138	9.5	328	1007.83	1008.8	2108	1006.5	1620	5.8
18	18.77	23.6	1635	14.8	603	80.2	95.3	619	60.6	1636	15.1	10.7	13.6	1234	9.8	1108	1008.75	1009.6	2251	1007.7	1539	3.4
19	17.88	20.3	2219	13.8	434	95.6	99.1	503	92.5	2351	17.2	12.3	13.9	2200	9.7	434	1002.44	1009.0	5	998.1	2154	9.5
20	19.21	24.1	1314	14.3	537	66.6	93.7	530	34.4	1512	12.2	9.0	13.6	0	6.1	1512	1002.41	1003.9	1211	998.5	10	0.8
21	19.47	22.7	1411	16.1	2358	69.7	85.9	1932	56.7	1412	13.7	9.8	10.9	944	9.1	2302	1003.45	1009.4	2330	998.6	242	0
22	17.77	23.0	1237	14.7	331	71.6	93.0	346	45.9	1237	12.3	8.9	10.2	1336	7.2	1146	1012.08	1014.9	2233	1008.8	11	1.4
23	16.78	22.0	1426	13.0	2359	73.9	92.8	504	50.7	1522	11.9	8.6	10.2	1342	6.7	1753	1016.65	1018.0	2032	1014.2	218	0.2
24	17.05	23.7	1415	12.8	37	79.4	94.4	2246	52.7	1415	13.3	9.4	10.8	1336	7.9	36	1014.93	1017.5	0	1010.4	2359	0.2
25	17.57	22.2	1514	15.0	703	82.1	95.9	246	61.0	1515	14.3	10.3	12.5	1051	8.5	2328	1001.07	1010.5	1	996.6	1427	12.9
26	17.34	21.7	1226	12.5	2357	66.3	89.8	2358	49.3	1409	10.8	8.0	9.1	110	7.5	937	1013.10	1018.6	2145	1002.6	0	0
27	14.33	17.8	1302	11.6	312	87.2	97.2	2358	64.8	928	12.1	8.8	10.4	1728	7.7	901	1010.11	1018.2	0	1001.4	1737	18.2
28	13.71	17.9	1256	10.7	2307	88.4	98.2	614	69.3	1034	11.8	8.7	10.2	1246	7.3	2232	1001.46	1004.5	2353	999.6	1251	4.5
29	12.45	15.3	1228	10.6	429	79.1	91.3	3	61.8	1613	8.8	7.0	7.6	2034	6.5	1543	1009.90	1014.8	2350	1004.3	0	0.8
30	13.24	18.2	1532	10.6	547	70.9	88.8	2321	46.3	1533	7.9	6.6	7.2	925	5.7	1527	1018.35	1022.2	2350	1014.6	1	0
31	11.77	18.0	1619	6.3	506	76.5	97.6	606	41.0	1321	7.2	6.2	7.6	810	4.9	1321	1022.02	1023.1	809	1021.2	1811	0.4
Total																						71.9
Mean	18.75	24.60		13.92		73.8	93.44		49.18		13.33	9.68	11.37		8.18		1012.35	1015.14		1009.38		
Max	26.10	36.14		19.34		95.6	99.10		92.50		18.25	12.99	14.27		12.18		1022.02	1023.12		1021.17		
Min	11.77	15.27		6.35		58.2	85.80		19.37		7.18	6.24	7.15		4.90		1001.07	1003.93		996.63		

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

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 2020

Rank in the past **139** years

Temperature (°C)			
Mean maximum	23.3	(+1.3)	12th highest
Mean minimum	12.5	(+0.7)	8th highest
Daily mean	17.9	(+1.0)	8th highest
Rainfall total (mm)	155.9	(108 %)	68th lowest
Sunshine total (hours)	577.9	(101 %)	

Nº of: Dry days 49 (-9) Wet days 29 (+5)

Days with: Air frost 0 (0) Ground frost 0 (-1) Snow falling 0 (0) Snow lying 0 (0)

Thunder 8 (+1) Hail ≥5mm 0 (0) Small hail/ice 0 (0) Fog @09 GMT 0 (0) Nil sun 6 (+3)

Air pressure MSL : Mean @09 GMT (mbar) 1014.3 (-2.6)

Departure from 1981 to 2010 average shown in brackets.

Notes: **Very Warm with some Notable Hot Days. Rainfall Above and Sunshine Near Average.**

Temperature: The mean this season is almost identical to that of last year's summer. Despite some very hot days this summer, the mean maximum ranks only 12th highest in the 139 year series, though the mean minimum and daily mean rank 8th highest. In this millennium only 3 summers have been hotter, those of 2018, 2006 and 2003. August was by far the hottest month this summer, daily mean 19.5°, while July was 2° cooler and second hottest, leaving June with a mean of 16.6° the coolest. 30° was exceeded on 9 days, 2 in June, 1 in July and 6 in August, with the highest maximum of 36.9° on the 31st July, 6.6° above the median and equal highest temperature on record with 10th August 2003. The lowest max, 15.3° on 29th August, is 0.8°above the median. The highest min was 19.7° on the 13th August, 2.6° above the median and a new all-time record, 0.1° above the previous highest in August 1997. The lowest min was 5.8° on 7th June, 1.4° above its median. The mean grass min, 10.1°, is equal highest with 2003 since 1997, but the lowest grass min, 0.3° on the 7th June, is very close to average. Mean earth temperature at 30 cm and 1 m depth were 18.5° and 17.1°, both about 0.5°above average, but the lowest value at 1 m depth, 15.1°, is a new 31 year highest. There was no ground frost this summer, the last was in 2015, but at least one can be expected in about 40% of summers. **Rainfall:** The total this summer is 8 % above average, but in this millennium 9 summers have been wetter. July with 26.5 mm and 59% of average was the driest month and August with 73.7 mm and 146 % the wettest, June having 55.7 mm and 113 %. The season's wettest day was the 27th August with 18.0 mm, quite a low value, 6.7 mm below the median. Interestingly, the 3 highest daily falls in our records all occurred in September. The highest rainfall rate was 166 mm/hr on the 13th August, but rates also exceeded the violent category (50 mm/hr) on 12th and 15th June and 27th August. The duration of measurable rain was 106.8 hours, 123 % of average. Thunder incidence was near average, and was reported on the 15th, 16th and 17th June and the 10th, 12th, 13th, 17th and 27th August. Estimated soil moisture deficit stands at 260 mm at the end of the season, which is well above average. Unirrigated shallow rooted plants would have suffered severe stress throughout, except near 19th June and after 20th August. An index of plant stress is 1023 this summer, 45 year median value 648. 2018 was slightly higher at 1077, but the next previous summer to have over 1000 was 2003 and before that 1995. There were 3 dry spells entirely in the summer season, 5 days ending 23rd July, 5 days ending 1st August and 9 days ending 11th August, but a 30 day spell ended on 2nd June. **Sunshine:** The total this summer is close to average, but only 8 summers this millennium have been sunnier, including the last 3. June was the sunniest month, daily mean 6.64 hours, 102 % of average, and August the least sunny, 5.83 hours, 92 5%, while July had 6.39 hours, 100%. The 24th June was the sunniest day with 15.5 hours, but the period 22nd to 26th June was outstanding, having 75.5 hours, daily mean 15.1 hours, also the period 29th July to 4th August, mean 10.7 hours/day. Overall there were 29 days with <3 hours, 45 with =>6 hours, 29 with =>9 hours, 15 with =>12 hours and 7 with =>15 hours. **Wind:** The mean speed this summer was 6.8 mph, 0.6 mph above average and equal highest for the season with 2012 since 1994. The 5th July was the windiest day, mean 15.8 mph, but the season's highest gust was 45 mph on the 21st August. The 31st August was the least windy day, mean 2.1 mph, and there were 1873 minutes of calm. Daily mean direction/number of days: N,11 NE,6 E,4 SE,4 S,15 SW,36 W,8 NW,8. Compared with average S and SW winds combined were 5.6 % more frequent, also N 2.8 % more frequent, mainly at the expense of W down 5.5% and NE down 1.9%. **Pressure:** This season's highest MSL pressure was 1029.4 mbar on 12th July, and the lowest 995.9 mbar on 5th June, a span of 33.5 mbar, average 35.2 mbar. **Humidity:** The mean relative humidity was 71.7% and the lowest was 19 % on the 7th August. The mean water vapour content per kg of air was 8.8 g at 09 GMT and 8.5 g at 15 GMT. **June:** Very warm with rainfall above and sunshine near average. Highest max 4th highest in 117 years. 7 fewer dry days than average. **July:** Dry with temperature and sunshine near average, but with extreme heat on 31st. Coolest July in past 5 years, yet an extremely hot day on 31st set a new July record, and equalled the all-time highest for this station. 15.8 mph on 5th was windiest July day since before 1988. **August:** Very warm with a notable heatwave. Rainfall was above and sunshine below average. Daily max exceeded 30° on 6 consecutive days to the 12th. Highest max 2nd highest for August in 117 years, and 3rd highest for any day in that period. Highest min a new record. Rainfall 46% above average but much less than in other local areas which bore the brunt of several thunderstorms. Highest gust for August since 1992.

Month	Mean Max	Anom	Mean Min	Anom	Rain mm	Anom	Sun hrs	Anom	Mean Wind mph	Max gust	Mean pressure	Anom
Jun	22.1°	+1.6°	11.2°	+0.7°	55.7	113%	199.1	102%	6.7	38	1012.8	-4.3
Jul	23.1°	+0.2°	12.0°	-0.6°	26.5	59%	198.1	100%	7.0	41	1017.1	+0.5
Aug	24.7°	+2.1°	14.3°	+1.9°	73.7	146%	180.7	92%	6.8	45	1012.8	-3.5

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.