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 2021**

Temperature (°C)		Anomaly	Rank in the past **140** years		
Mean maximum	21.4	-1.4	67th highest		
Mean minimum	12.5	-0.1	29th highest		
Daily mean	17.0	-0.7	50th highest		
Highest maximum	24.6	on 14th	Lowest maximum	17.2	on 30th
Highest minimum	15.7	on 23rd	Lowest minimum	8.4	on 28th
Mean grass minimum	9.8	+0.2	Lowest grass minimum	4.4	on 28th
Mean earth @30 cm	19.1	+0.2	Earth @100 cm	18.5	+0.7
Frost duration (hrs)	0.0		Rain duration (hrs)	22.1	
Rainfall total (mm)	29.8	55 %	29th lowest		
Highest daily fall	10.4	on 9th	Highest rate mm/hr	149	on 9th

Number of: Dry days (<0.2mm) 23 Wet days (>0.9mm) 6 days ≥5mm 2

Sunshine total (hrs) 123.4 Daily mean 3.98 69 % Sunniest day 11.0 on 25th

Nº 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 4

Pressure MSL : Mean @09 GMT, mbar 1017.5 +1.7 Highest 1031.8 on 31st Lowest 994.7 on 7th

Relative humidity : Mean (%) 78.7 Lowest 37 on 4th Water vapour (g/kg), mean at 09 and 15 GMT 9.3, 9.2

Overall mean wind speed (mph) 6.1 Windiest day 10.3 on 8th Max gust 31 on 6th

Wind direction (days) N 7 NE 2 E 0 SE 2 S 3 SW 13 W 1 NW 3

Least windy day (mph) 3.6 on 4th Calm; less than 0.5 mph (minutes) 390

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

Notes: **Temperature and Rainfall Below Average, Sunshine Well Below Average**

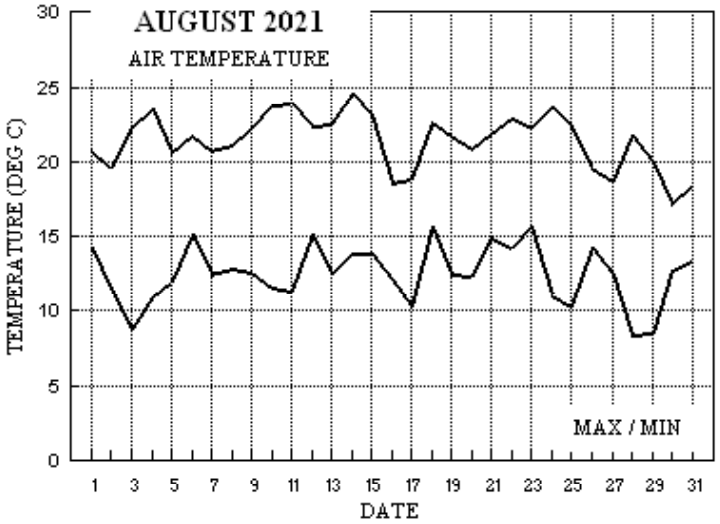
Temperature: The mean this August is 0.7° below average, and is lowest since 2017. In this millennium 15 Augusts have been milder and 6 cooler than this one. The mean maximum was particularly disappointing, 1.4° below average, though several recent years have been cooler in this respect, notably 2008 and 2010, both 2.0° below average. Due to the cloudy nature of this August the mean minimum is close to average. The highest max is 3.3° below the median and is lowest since 1986 while the lowest max is 0.3° above its median. The highest min is 0.6°below the median and the lowest min is 2.1° above its median and is highest since 2002. The mean grass min is close to average but the lowest value is equal highest since 2002. The mean earth temperature at 30cm depth is a little above average but at 1 m depth is over 0.5° above average. Anomalies for daily max were above zero on only 10 days, mostly by <1°, the extreme value being +2.1° on the 24th, but exceeded -3° on the 2nd, 16th, 17th and 30th, with an extreme value of -4.5° on the 16th. Anomalies for daily min were above +3° on the 18th and 23rd, extreme +3.7° on 23rd, and exceeded -3° on the 3rd only, value -3.7°. **Rainfall:** This August's rainfall is only just over half the average, and is lowest since 2016. In this millennium, though, 2000, 2003, 2012 and 2016 were all drier than this August, but apart from 2003 the deficit was less than 6 mm. The majority of the month's fall was between the 5th and 9th, and apart from 4.7 mm on the 19th, the total for the remaining 25 days was only 1.1 mm. A 5 day dry spell ended on the 14th and another was unbroken on the 31st after 12 days. Daily accumulation compared with normal was 7 mm in deficit on the 4th, becoming a surplus of 8 mm by the 9th, but a deficit set in again on the 15th and increased to 23 mm by the 31st. Thunder occurred on the 6th, and violent rain showers on the 9th and 19th gave rain rates of 149 and 96 mm/hr respectively. **Sunshine;** This has been a very dull August, ranking 3rd lowest in 115 years after 2008, the lowest on record, and 1912. The daily mean of 3.98 hours is 1.18 hours less than the average for September, and even 0.07 hours less than that of March. Throughout the month there were only 7 days having >50% of the maximum, and the month's sunniest day managed only 79%, also 15 days had <20%. Daily accumulation compared with normal showed a deficit of 12 hours by the 9th, this increasing to 40 hours by the 21st, and to 57 hours by the 31st. The number of days with nil sun has only been exceeded once in the past 42 years, in 2015. Overall there were 14 days with <3 hours, 8 with =>6 hours and 3 with =>9 hours. **Wind:** The mean speed this August is close to average, but the speed on the windiest day is a little below average and the highest gust is lowest since 2003. Conversely the duration of calm is lowest since 2014. Daily mean wind speed started the month light, but became fresh for the 6th and 7th, then were mainly moderate until the 18th, then mainly light. Daily mean directions were between N and E from the 23rd to the 31st, between E and S from 2nd to 5th and on 21st, between S and W from 6th to 20th except for 16th, and between W and N for the 1st, 16th and 22nd. **Pressure:** The MSL pressure reached the highest in August for the past 46 years late on the 31st. **Humidity:** The mean relative humidity at 15 GMT is 7.6% above average and highest for the month in the past 24 years.

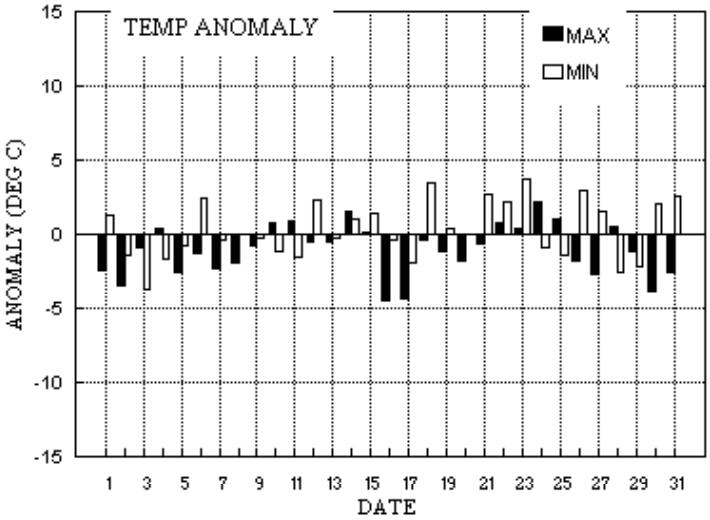
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

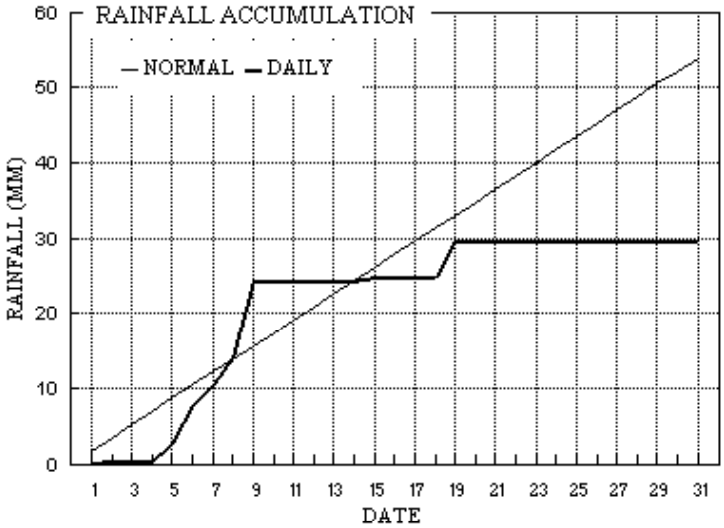
From the 1st to the 10th				From the 11th to the 20th				From the 21st to the 31st			
-1.5°	-0.8°	140%	81%	-1.1°	+0.5°	31%	54%	-0.7°	+0.9°	0 %	71%

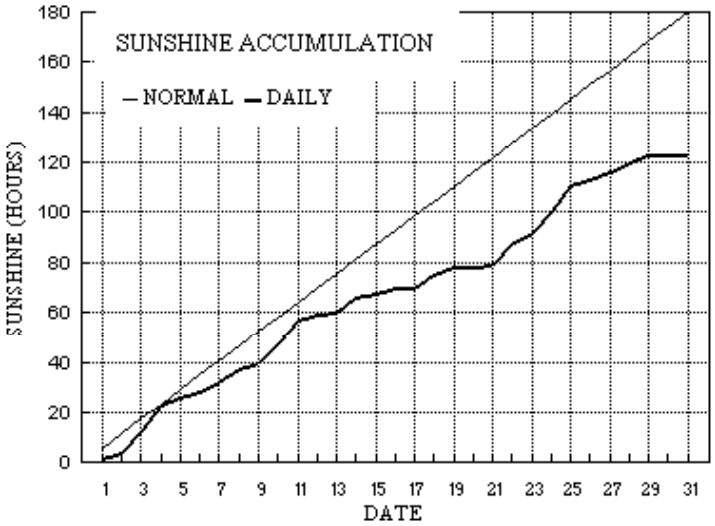
B J Burton FRMetS. Hon. Met. Officer to Wokingham Town Council.

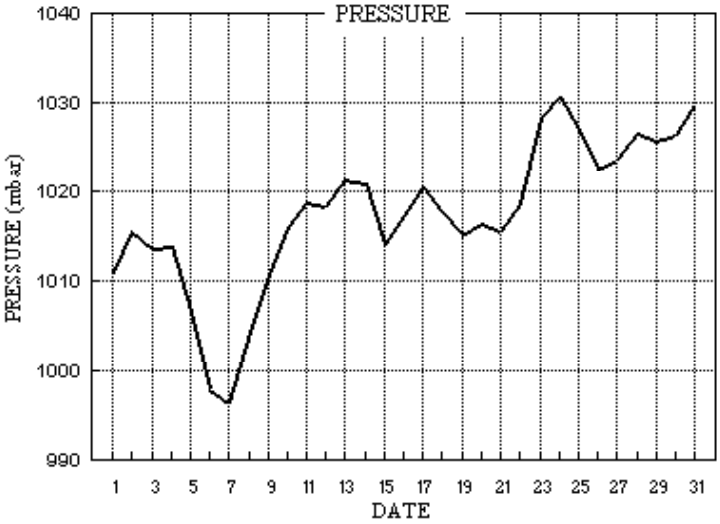
Wokingham climatological graphs for August 2021

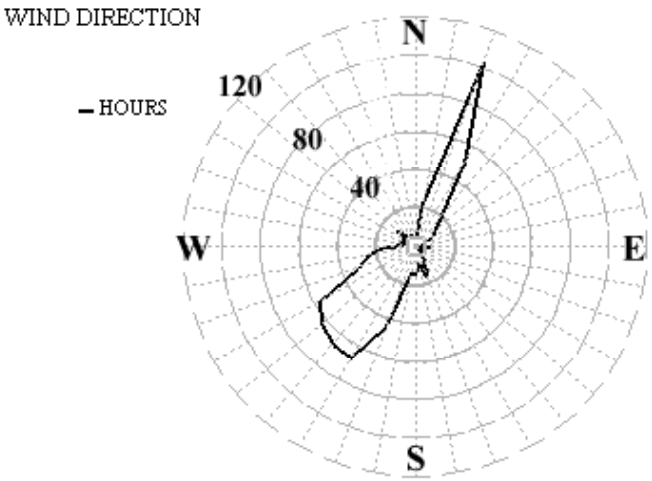


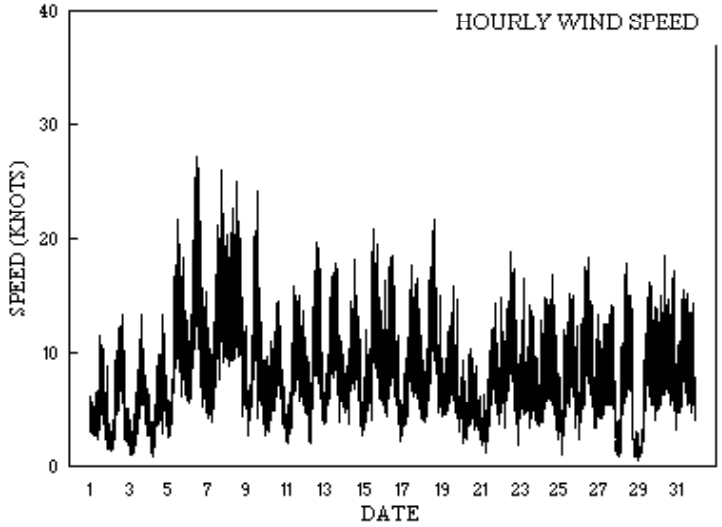


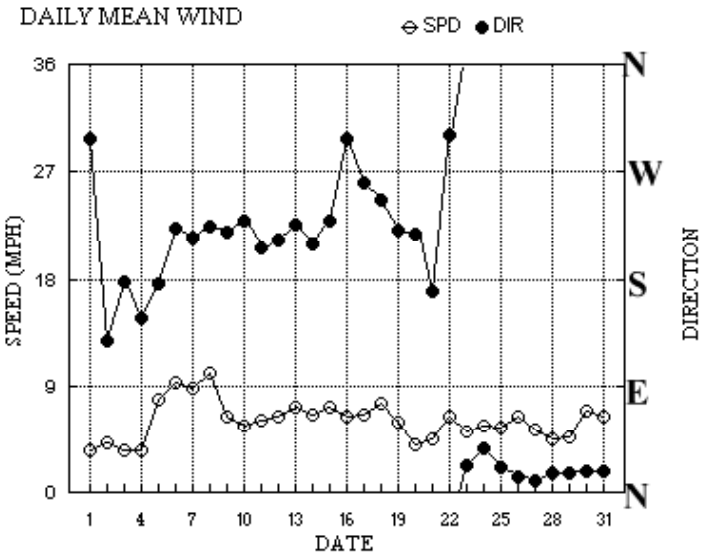












Daily meteorological data. Emmbrook, WOKINGHAM, Berkshire.

Month: AUGUST 2021

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	20.7	14.2	0.3	13.2	19.8	19.1	1.7	0.0	1011.0	0 0 0 0		0 0 0 0		298	1.4	3.2	337	12	1235	324	5	13	0.7
2	19.6	11.4	0.1	8.2	19.7	19.0	2.2	0.0	1015.5	0 0 0 0		0 0 0 0		129	3.0	3.7	130	13	1539	166	7	12	0.6
3	22.3	8.8	0.0	5.4	19.4	18.9	8.7	0.0	1013.6	0 0 0 0		0 0 0 0		178	1.8	3.2	180	13	1525	186	7	15	0.0
4	23.5	10.9	0.0	8.3	19.7	18.9	10.0	0.0	1013.9	0 0 0 0		0 0 0 0		147	1.5	3.1	198	13	1848	197	6	18	0.0
5	20.6	12.0	2.3	8.6	19.8	18.8	3.1	0.0	1006.6	0 0 0 0		0 0 0 0		176	6.6	6.9	155	22	1243	155	10	15	4.1
6	21.8	15.1	5.0	14.0	19.4	18.8	2.9	0.0	997.9	0 0 0 0		1 0 0 0		223	7.9	8.1	255	27	1219	239	13	11	3.3
7	20.7	12.5	2.8	9.7	19.3	18.7	3.5	0.0	996.5	0 0 0 0		0 0 0 0		214	6.6	7.6	252	26	1831	251	13	18	1.6
8	21.1	12.8	3.5	10.7	19.2	18.7	5.0	0.0	1004.3	0 0 0 0		0 0 0 0		224	8.7	8.9	238	25	1315	236	12	12	3.0
9	22.3	12.6	10.4	9.6	19.0	18.6	2.7	0.0	1010.8	0 0 0 0		0 0 0 0		219	5.3	5.6	259	24	1434	236	10	10	4.2
10	23.8	11.6	0.0	7.6	18.9	18.6	7.4	0.0	1016.0	0 0 0 0		0 0 0 0		229	4.8	5.0	266	15	1616	238	8	14	0.0
11	23.9	11.3	0.1	8.2	19.3	18.5	10.0	0.0	1018.7	0 0 0 0		0 0 0 0		206	5.3	5.3	176	16	1109	216	8	16	1.2
12	22.4	15.1	tr	14.0	19.5	18.5	1.8	0.0	1018.3	0 0 0 0		0 0 0 0		212	5.4	5.6	172	20	1543	206	9	16	0.0
13	22.5	12.5	0.0	9.7	19.3	18.5	0.9	0.0	1021.4	0 0 0 0		0 0 0 0		225	6.1	6.3	230	18	1315	235	9	13	0.0
14	24.6	13.8	tr	12.1	19.2	18.5	6.1	0.0	1020.9	0 0 0 0		0 0 0 0		210	5.8	5.8	180	18	1408	207	9	14	0.4
15	23.2	13.9	0.5	10.6	19.5	18.5	1.8	0.0	1014.1	0 0 0 0		0 0 0 0		228	6.0	6.3	212	21	1208	237	10	12	0.6
16	18.6	12.1	tr	9.5	19.5	18.5	2.5	0.0	1017.3	0 0 0 0		0 0 0 0		297	5.1	5.6	265	19	1116	298	9	11	0.0
17	18.8	10.3	tr	6.3	18.8	18.5	0.0	0.0	1020.4	0 0 0 0		0 0 0 0		261	5.2	5.7	272	18	1134	239	8	09	0.0
18	22.6	15.6	0.0	14.1	18.6	18.4	4.6	0.0	1017.8	0 0 0 0		0 0 0 0		247	6.5	6.6	259	22	1446	250	11	14	0.0
19	21.7	12.5	4.7	10.3	19.0	18.3	3.4	0.0	1015.1	0 0 0 0		0 0 0 0		221	5.1	5.2	209	16	1405	232	7	14	1.4
20	20.9	12.3	0.1	8.8	19.1	18.3	0.0	0.0	1016.4	0 0 0 0		0 0 0 0		218	3.3	3.5	238	10	1207	211	5	14	0.1
21	21.9	14.9	tr	14.2	19.2	18.3	1.1	0.0	1015.7	0 0 0 0		0 0 0 0		170	2.9	4.0	225	14	1840	159	7	15	0.1
22	22.9	14.3	tr	11.9	19.2	18.3	8.2	0.0	1018.6	0 0 0 0		0 0 0 0		300	4.8	5.6	288	19	1308	309	8	13	0.1
23	22.3	15.7	0.0	14.5	19.3	18.3	4.6	0.0	1028.3	0 0 0 0		0 0 0 0		23	4.4	4.5	18	17	0508	17	6	02	0.0
24	23.7	11.1	0.0	5.7	19.0	18.4	7.9	0.0	1030.8	0 0 0 0		0 0 0 0		37	4.7	4.9	30	17	1541	36	7	15	0.0
25	22.4	10.3	tr	5.1	18.9	18.4	11.0	0.0	1027.0	0 0 0 0		0 0 0 0		21	4.6	4.7	5	15	1401	12	8	17	0.1
26	19.6	14.3	0.0	11.0	19.1	18.3	2.1	0.0	1022.6	0 0 0 0		0 0 0 0		14	5.5	5.6	6	19	1255	17	9	09	0.0
27	18.7	12.5	0.0	10.8	18.9	18.3	3.1	0.0	1023.6	0 0 0 0		0 0 0 0		11	4.7	4.7	14	14	1708	13	7	17	0.0
28	21.8	8.4	tr	4.4	18.4	18.3	3.6	0.0	1026.7	0 0 0 0		0 0 0 0		17	3.7	3.9	18	18	1222	17	7	13	0.0
29	20.0	8.5	tr	4.8	18.2	18.2	3.5	0.0	1025.7	0 0 0 0		0 0 0 0		16	3.5	4.1	27	16	1606	16	7	12	0.0
30	17.2	12.7	tr	9.7	18.0	18.1	0.0	0.0	1026.5	0 0 0 0		0 0 0 0		18	6.0	6.0	19	19	1035	17	8	10	0.5
31	18.4	13.3	tr	12.3	17.9	18.0	0.0	0.0	1029.8	0 0 0 0		0 0 0 0		19	5.6	5.6	21	16	1042	18	8	09	0.1
Total			29.8				123.4	0.0															22.1
Mean	21.4	12.5		9.8	19.1	18.5	3.98	0.0	1017.5					241	1.7	5.3							
Anom	-1.4	-0.1	55%	+0.2	+0.2	+0.7	69%		+1.7														

Daily mean 17.0 Pressure, abs highest = 1031.8 on 31

Anom -0.7 Pressure, abs lowest = 994.7 on 7

Number of days with:

Air frost = 0 Ground frost = 0 Nil sun = 4

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.

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.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for AUGUST 2021

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	80	7	25	02	07	16.9	13.8	82	9.8	1011.0	0	006	03	2	2	7	8	4	/	/	82813	85640	87656	1	Cu med
2	82	7	15	07	08	16.4	10.5	68	7.8	1015.5	2	003	03	1	1	2	8	5	7	/	81825	87357		2	2Sc50 Cu med
3	70	2	04	03	06	16.2	12.9	81	9.2	1013.6	8	004	03	4	1	2	1	4	0	2	82818			3	1Ci75 Cu hum
4	65	6	01	02	05	16.6	12.8	78	9.1	1013.9	2	003	03	2	2	1	1	4	3	/	81815	86369		4	Cu fra/hum
5	70	7	19	08	17	17.8	12.5	71	9.0	1006.6	7	011	03	2	2	5	1	4	3	/	85818	86362		5	Cu hum
6	60	7	23	11	20	17.8	14.1	79	10.1	997.9	2	015	21	6	2	7	8	4	/	/	81710	85815	87650	6	Cu hum jpNW vv30k ex p
7	62	7	16	06	13	14.4	13.4	94	9.7	996.5	8	012	61	6	6	3	5	3	2	/	81706	83640	86550	7	Cld edge NE-SW to NW vv40k NW Dist Cu top SW
8	56	8	22	10	23	14.9	13.1	89	9.4	1004.3	2	015	64	6	2	6	5	3	2	/	82708	86635	88550	8	
9	82	6	23	09	18	17.0	14.1	83	10.0	1010.8	3	008	15	6	2	5	8	4	0	2	82815	84630		9	2Ci75 Cu med jpE
10	70	7	27	05	09	16.1	12.8	81	9.1	1016.0	2	008	01	2	2	7	5	4	/	/	87610			10	
11	84	2	19	07	11	19.5	12.5	64	8.9	1018.7	0	003	01	1	1	1	1	5	4	1	81825			11	1Ac70 1Ci80 Cu hum
12	62	7	19	03	07	18.2	16.4	89	11.5	1018.3	0	001	20	5	2	7	6	3	/	/	87706			12	/Sc30
13	68	7	22	09	17	17.7	13.8	78	9.7	1021.4	2	010	03	2	2	2	5	4	7	/	82615	87372		13	
14	80	7	22	07	13	18.4	14.3	77	10.0	1020.9	8	002	03	2	2	7	8	4	/	/	81813	85626	87635	14	Cu fra/hum
15	35	8	22	05	10	18.0	16.5	91	11.6	1014.1	7	006	51	5	2	8	5	2	/	/	82705	87707	88620	15	
16	61	7	30	08	18	16.1	10.0	67	7.6	1017.3	2	014	03	2	2	7	8	5	/	/	82826	87642		16	Cu hum
17	81	8	25	07	16	15.9	12.1	78	8.7	1020.4	8	001	02	6	2	8	8	5	/	/	81815	83625	86640	17	8Sc56 Cu fra
18	86	8	25	05	12	18.1	14.6	80	10.2	1017.8	7	006	02	1	1	8	5	4	/	/	85617	88625		18	
19	80	4	25	06	12	16.3	10.4	68	7.8	1015.1	4	000	03	1	1	4	8	5	0	0	81825	84630		19	Absent vv&cld est
20	82	8	24	04	07	17.2	14.5	84	10.2	1016.4	3	008	02	2	2	8	5	4	/	/	85710	88628		20	Absent vv&cld est
21	58	8	09	03	05	16.4	14.6	89	10.3	1015.7	8	002	66	0	2	4	8	6	7	/	81835	83650	87358	21	2Sc40 8As60
22	75	5	29	08	14	19.0	14.1	73	9.9	1018.6	2	019	03	1	1	5	8	4	0	0	81815	84635		22	1Sc22 Cu hum
23	75	8	01	05	09	17.0	13.7	81	9.6	1028.3	2	008	02	2	2	8	5	4	/	/	83613	88620		23	
24	77	7	04	06	15	16.5	13.4	82	9.4	1030.8	1	004	02	1	1	7	5	4	/	/	87613			24	
25	86	6	06	06	12	17.6	13.3	76	9.3	1027.0	7	003	03	1	1	5	5	5	0	1	85625			25	2Ci80 COTRA
26	84	7	02	08	18	16.6	10.5	67	7.8	1022.6	1	004	01	5	2	7	5	5	/	/	87622			26	
27	82	7	01	05	13	15.8	10.6	71	7.8	1023.6	1	003	03	1	1	7	8	5	/	/	83822	86635		27	Cu med
28	63	7	01	07	12	15.7	12.6	82	8.9	1026.7	2	002	01	2	2	7	8	4	/	/	85813	87620		28	Cu hum
29	61	7	02	03	09	15.0	11.8	81	8.5	1025.7	5	001	03	2	2	7	5	4	/	/	86612	88635		29	
30	80	8	02	07	13	14.9	12.0	83	8.6	1026.5	3	007	02	2	2	8	5	4	/	/	87612	88633		30	
31	65	8	02	08	15	14.6	12.1	85	8.6	1029.8	2	006	51	5	2	8	5	3	/	/	87709	88620		31	

Mean vis = 26.0 km
Mean cloud = 6.7 84%
Mean wind speed = 6.1 kn
Mean gust = 12 kn
Mean TT = 16.7 °C
Mean TdTd = 13.0 °C
Mean RH = 79.1 %
Mean r = 9.3 g/kg
Mean PPP = 1017.5 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 2021

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	82	7	30	03	11	19.1	14.1	73	10.0	1011.6	3	005	80	1	2	6	8	5	7	/	/	83825	85645	87358	1	Cu med
2	80	8	17	06	13	18.3	11.6	65	8.5	1014.5	8	009	03	2	2	3	1	5	7	/	/	81825	83358	88468	2	Cu hum
3	84	5	18	08	13	21.1	8.4	44	6.8	1011.9	6	006	01	1	1	1	2	6	6	1	/	81815	85357		3	1Ci75 Cu med
4	81	2	18	04	10	23.2	10.3	44	7.8	1012.0	7	010	02	0	0	2	2	7	6	0	/	82850			4	1Ac58 Cu med
5	25	8	16	09	18	17.3	15.1	87	10.8	1001.4	8	028	58	6	5	8	5	3	/	/	/	83707	86710	88640	5	
6	70	6	21	08	26	17.9	15.2	84	10.8	1000.0	3	010	29	9	8	4	9	4	6	3	/	82915	81825	85359	6	2Sc50 2Ci70 jp all quads vv50k ex p
7	80	6	23	10	17	19.5	12.8	65	9.3	995.3	0	000	15	8	2	6	8	5	3	/	/	83825	85650		7	4Ac58 Cu med jpSW vv70k ex p
8	58	7	21	09	22	17.9	14.0	78	10.0	1007.3	3	016	80	8	2	7	3	5	3	/	/	81920	83828	85645	8	/Ac58 jpE&SE vv50k ex p
9	50	7	27	08	24	15.0	13.4	90	9.5	1012.5	2	012	81	8	2	5	3	4	7	/	/	81812	85920	87360	9	
10	84	2	25	08	14	23.4	13.0	52	9.2	1015.3	8	002	02	1	1	2	2	6	3	1	/	82838			10	1Ac57 1Ci78 Cu med
11	82	6	20	07	15	21.7	13.1	58	9.3	1017.6	7	005	03	1	1	6	8	6	4	/	/	82836	85642		11	2Ac68 Cu hum
12	75	7	21	08	17	21.2	15.5	70	10.9	1017.9	8	002	20	5	2	7	8	5	/	1	/	85822	87628		12	/Ci80 COTRA Cu hum
13	84	7	21	08	17	22.1	13.5	58	9.5	1021.4	7	003	02	2	2	5	8	6	3	/	/	82835	84650	86365	13	Cu med
14	80	4	23	08	18	23.9	13.7	53	9.7	1018.7	6	015	01	1	1	2	1	6	0	1	/	82835	83075		14	COTRA Cu hum
15	80	7	25	07	18	20.9	12.1	57	8.7	1011.6	7	008	02	2	2	7	8	6	/	/	/	83835	87645		15	Cu hum
16	75	7	33	09	16	18.4	9.5	56	7.3	1019.5	2	011	02	2	2	5	8	6	7	/	/	83836	83650	87361	16	Cu med
17	62	8	30	08	15	18.1	13.4	74	9.5	1019.2	5	001	60	6	2	8	5	5	/	/	/	86620	88625		17	vv40k ex p
18	82	7	24	11	22	22.1	14.0	60	9.9	1015.7	7	010	02	2	2	7	8	5	/	/	/	82828	87640		18	Absent vv&cld est
19	82	5	23	06	16	20.0	15.0	73	10.6	1013.7	7	009	01	2	2	5	8	5	0	0	/	82825	84650		19	Absent vv&cld est
20	84	8	22	05	09	19.8	14.6	72	10.3	1016.6	4	000	02	2	2	8	8	5	/	/	/	83822	88635		20	Absent vv&cld est
21	70	7	16	05	11	20.1	15.7	76	11.1	1014.2	7	009	03	6	2	5	8	4	7	/	/	82817	84650	85358	21	/Ac62 Cu med Cu con NW
22	84	2	31	07	17	22.7	13.2	55	9.3	1020.6	0	008	02	1	1	2	2	6	4	0	/	82833			22	1Ac57 Cu med
23	84	3	02	06	14	21.0	12.4	58	8.8	1028.1	6	007	01	1	1	3	4	6	0	0	/	81840	83645		23	Cu hum
24	85	3	04	06	14	21.8	11.5	52	8.3	1028.3	7	014	02	1	1	3	4	6	0	1	/	81848	83650		24	1Ci75 Cu hum
25	85	1	01	07	15	21.4	13.3	60	9.4	1023.8	7	019	01	0	0	1	5	6	0	0	/	81635			25	
26	83	7	01	05	15	18.3	9.9	58	7.5	1022.0	8	005	02	2	2	7	5	6	/	/	/	87637			26	
27	81	7	35	06	12	18.2	10.8	62	7.9	1023.7	1	002	02	2	2	7	8	6	/	/	/	83832	87640		27	Cu hum
28	83	7	02	07	14	20.7	13.2	62	9.3	1025.6	7	006	02	8	2	7	8	6	/	/	/	83835	86656		28	Cu med
29	82	7	02	08	15	17.1	10.7	66	7.9	1025.0	7	002	02	2	2	7	8	6	/	/	/	82835	87645		29	
30	83	8	02	05	14	16.3	12.3	77	8.7	1026.7	4	000	20	5	2	8	5	4	/	/	/	86617	88622		30	
31	84	8	03	07	13	17.4	12.1	71	8.6	1029.9	6	004	02	2	2	8	8	5	/	/	/	82823	84635	88645	31	Cu hum

Mean vis = 35.6 km
Mean cloud = 5.9 74%
Mean wind speed = 7.1 kn
Mean gust = 16 kn
Mean TT = 19.9 °C
Mean TdTd = 12.8 °C
Mean RH = 64.8 %
Mean r = 9.2 g/kg
Mean PPP = 1016.8 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

Wokingham Sunshine Hourly analysis

2021

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	0.00	0.05	0.00	0.27	0.02	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.14	0.02	0.60	0.75	0.00	0.00	0.79	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.51
6	0.00	1.00	0.20	0.67	1.00	0.00	0.00	0.01	0.00	0.00	0.56	0.00	0.00	0.35	0.00	0.09
7	0.00	0.71	0.01	0.00	0.88	0.07	0.00	0.00	0.26	0.12	1.00	0.00	0.00	0.06	0.00	0.04
8	0.00	0.00	1.00	0.00	0.09	0.01	0.00	0.00	0.26	0.34	1.00	0.01	0.00	0.00	0.03	0.20
9	0.03	0.00	0.65	0.91	0.06	0.08	0.56	0.00	0.52	0.21	0.98	0.00	0.00	0.27	0.04	0.22
10	0.25	0.10	0.42	0.48	0.12	0.32	0.64	0.00	0.65	0.47	0.79	0.00	0.00	0.09	0.31	0.01
11	0.03	0.19	0.61	0.17	0.10	0.63	0.23	0.17	0.70	0.94	0.90	0.00	0.00	0.19	0.75	0.00
12	0.29	0.01	0.82	0.75	0.00	0.56	0.75	0.08	0.26	0.73	0.57	0.03	0.02	0.39	0.34	0.00
13	0.41	0.02	0.51	0.94	0.00	0.45	0.21	0.54	0.02	0.68	0.60	0.00	0.08	0.61	0.23	0.00
14	0.00	0.00	0.55	0.89	0.00	0.15	0.44	0.22	0.04	0.84	0.15	0.01	0.19	0.85	0.00	0.00
15	0.06	0.00	0.93	0.99	0.00	0.32	0.11	0.29	0.00	0.70	0.58	0.33	0.17	0.97	0.00	0.00
16	0.01	0.00	0.87	1.00	0.00	0.36	0.02	0.62	0.00	0.75	0.87	0.42	0.00	1.00	0.00	0.04
17	0.02	0.00	0.76	1.00	0.00	0.00	0.15	0.96	0.00	0.57	1.00	0.63	0.29	1.00	0.00	0.65
18	0.40	0.00	1.00	1.00	0.09	0.00	0.24	1.00	0.00	0.71	0.80	0.34	0.16	0.28	0.01	0.73
19	0.23	0.00	0.37	0.28	0.00	0.00	0.17	0.19	0.00	0.32	0.25	0.05	0.00	0.00	0.04	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	**1.73**	**2.22**	**8.73**	**9.96**	**3.10**	**2.92**	**3.52**	**5.00**	**2.71**	**7.36**	**10.04**	**1.82**	**0.90**	**6.12**	**1.75**	**2.50**

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	0.01
5	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.63	0.67	0.00	0.66	0.00	0.47	0.00	0.00	0.17
6	0.00	0.17	0.00	0.00	0.00	0.57	0.00	1.00	1.00	0.05	1.00	0.00	0.30	0.00	0.00	0.26
7	0.00	0.01	0.01	0.00	0.00	1.00	0.00	0.28	0.92	0.15	1.00	0.00	0.87	0.00	0.00	0.24
8	0.00	0.00	0.30	0.00	0.00	0.79	0.00	0.02	0.32	0.00	0.34	0.02	0.61	0.00	0.00	0.17
9	0.00	0.00	0.67	0.00	0.00	0.04	0.00	0.04	0.21	0.53	0.00	0.47	0.00	0.00	0.00	0.21
10	0.00	0.12	0.75	0.00	0.00	0.23	0.00	0.52	0.45	0.18	0.00	0.16	0.63	0.00	0.00	0.25
11	0.00	0.47	0.14	0.00	0.00	0.48	0.00	0.49	0.84	0.68	0.00	0.34	0.35	0.00	0.00	0.30
12	0.00	0.66	0.00	0.01	0.00	0.29	0.33	0.66	1.00	0.20	0.00	0.06	0.05	0.00	0.01	0.29
13	0.00	0.48	0.00	0.00	0.05	0.14	0.51	0.60	1.00	0.01	0.00	0.01	0.15	0.00	0.00	0.27
14	0.00	0.48	0.01	0.00	0.01	1.00	0.41	0.54	0.99	0.03	0.04	0.22	0.00	0.00	0.00	0.26
15	0.00	0.93	0.93	0.00	0.08	0.80	0.72	0.89	0.99	0.10	0.00	0.45	0.01	0.00	0.00	0.37
16	0.00	0.60	0.58	0.00	0.33	1.00	1.00	0.83	1.00	0.13	0.01	0.74	0.08	0.00	0.00	0.40
17	0.02	0.09	0.00	0.00	0.56	1.00	1.00	0.73	1.00	0.03	0.01	0.58	0.00	0.00	0.00	0.39
18	0.00	0.49	0.00	0.00	0.05	0.87	0.61	0.68	0.57	0.00	0.00	0.54	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	**0.02**	**4.58**	**3.39**	**0.01**	**1.08**	**8.22**	**4.58**	**7.90**	**10.97**	**2.09**	**3.06**	**3.59**	**3.51**	**0.00**	**0.01**	**123.45**

AUGUST 2021	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	16.42	20.7	1303	12.7	2356	82.8	95.9	2359	61.6	1309	13.3	9.5	11.0	1522	8.5	1053	1011.54	1014.7	2314	1009.7	244	0.1
2	15.10	19.6	1110	11.4	216	82.2	97.5	625	55.9	1111	11.8	8.6	9.4	1145	7.5	1054	1014.84	1015.7	814	1014.0	1724	0.5
3	15.75	22.3	1326	8.8	418	75.5	98.8	815	41.8	1442	10.8	8.0	9.8	1128	6.7	1432	1013.02	1014.3	0	1011.6	1528	0
4	16.85	23.5	1447	10.9	451	73.4	97.5	540	36.6	1448	11.4	8.4	10.3	1105	6.5	1450	1012.63	1014.0	847	1010.8	1743	0
5	16.14	20.6	1122	12.0	503	84.2	95.7	516	57.8	1048	13.3	9.6	11.4	1753	7.9	125	1003.84	1011.4	3	996.8	2332	1.9
6	16.65	21.8	1238	13.2	2345	81.8	93.9	426	51.2	1305	13.4	9.7	11.5	1515	8.0	1305	998.70	1001.0	2128	995.9	435	3.6
7	15.97	20.7	1243	12.5	523	81.4	95.5	530	56.3	1257	12.6	9.2	10.6	1052	8.3	2358	997.82	1002.1	2358	994.7	1248	2.2
8	15.71	21.1	1404	12.8	325	79.7	93.8	925	56.9	1643	12.1	8.8	10.9	1357	7.3	1917	1006.03	1011.1	2209	1001.8	9	3.7
9	15.43	22.3	1219	12.6	114	87.8	97.2	2342	50.3	1221	13.3	9.5	10.8	1412	8.1	1221	1011.77	1014.5	2317	1009.6	357	11.1
10	17.18	23.8	1558	11.5	403	78.5	98.4	433	47.5	1611	13.0	9.2	10.5	1255	8.2	403	1015.68	1018.2	2341	1014.1	35	0.1
11	17.42	23.9	1327	11.3	449	72.9	95.4	511	48.8	1328	12.1	8.7	10.3	1347	7.7	1900	1018.14	1018.9	750	1017.1	1641	0
12	17.90	22.4	1542	13.8	2351	83.2	94.7	456	63.0	1539	14.9	10.5	11.9	1013	9.1	2351	1018.25	1019.9	2346	1017.2	1556	0.1
13	17.25	22.5	1533	12.5	229	79.1	96.5	147	57.0	1535	13.4	9.4	10.5	1448	8.5	329	1021.04	1022.0	2357	1019.5	25	0
14	18.55	24.6	1530	13.8	457	75.6	94.7	338	49.3	1516	13.8	9.7	11.2	1212	9.1	1516	1019.59	1022.0	8	1016.8	2359	0
15	17.68	23.2	1155	13.9	355	79.4	94.0	424	51.7	1332	13.8	9.8	12.1	1018	8.1	1332	1013.34	1017.1	10	1011.2	1759	0.7
16	15.35	18.6	1505	11.5	2340	72.4	92.1	3	54.8	1426	10.2	7.7	9.9	0	7.1	1014	1018.04	1022.3	2344	1012.6	0	0
17	15.94	18.8	1555	10.3	57	78.5	93.3	104	69.2	1702	12.1	8.7	9.8	1549	7.1	56	1019.97	1022.3	10	1018.7	1903	0
18	17.90	22.6	1400	14.2	2356	76.3	89.7	605	58.0	1519	13.5	9.6	11.0	1422	8.0	2344	1017.02	1019.8	0	1014.8	1653	0
19	16.59	21.7	1633	12.5	235	79.3	96.9	2305	54.4	1111	12.8	9.2	11.8	1759	7.3	800	1014.36	1015.8	7	1012.6	1819	4.5
20	16.94	20.9	1300	12.3	352	84.6	98.0	415	63.4	1302	14.2	10.0	10.8	1258	8.6	352	1016.26	1017.5	2111	1014.5	123	0.2
21	17.58	21.9	1615	14.9	511	85.1	96.8	635	68.8	1347	15.0	10.5	11.5	1343	9.6	1912	1015.19	1017.2	0	1013.4	1719	0
22	18.50	22.9	1512	14.3	624	76.3	92.8	38	52.9	1654	14.0	9.9	10.9	1201	8.8	1633	1019.68	1025.3	2349	1014.7	0	0
23	16.86	22.3	1537	11.1	2359	77.9	93.2	2359	49.0	1538	12.8	9.0	10.8	1251	7.5	2334	1028.02	1030.4	2357	1025.0	0	0
24	16.80	23.7	1439	11.1	0	74.7	94.4	605	43.5	1559	11.8	8.5	10.3	1144	7.2	1559	1029.46	1031.0	817	1027.4	1643	0
25	16.25	22.4	1235	10.3	431	77.1	98.2	557	50.9	1236	11.9	8.5	9.6	1102	7.4	443	1025.58	1029.0	10	1022.9	2358	0.1
26	16.60	19.6	1120	13.9	2301	69.5	91.1	555	51.9	1120	10.8	8.0	9.5	556	7.0	1226	1022.41	1023.5	2307	1021.4	1558	0
27	14.76	18.7	1451	9.4	2343	74.7	96.1	2359	58.7	1449	10.2	7.6	8.3	1337	6.9	2346	1023.89	1026.2	2346	1022.5	418	0
28	14.73	21.8	1452	8.4	303	80.4	97.6	406	47.3	1634	11.0	8.1	9.6	1451	6.5	303	1026.25	1027.2	2201	1025.2	1612	0
29	14.11	20.0	1316	8.5	520	78.2	97.5	602	52.0	1317	10.1	7.6	8.8	1155	6.6	520	1025.61	1027.0	3	1024.5	1627	0
30	15.17	17.2	1046	13.4	458	78.5	90.2	2359	67.8	2015	11.4	8.3	9.2	1124	7.2	2102	1026.62	1028.4	2351	1025.4	228	0
31	15.15	18.4	1419	13.3	18	79.8	91.6	58	63.2	1258	11.6	8.3	9.4	953	7.6	2154	1029.82	1031.8	2324	1028.0	117	0
Total																						28.8
Mean	16.43	21.43		12.02		78.7	95.13		54.57		12.47	8.97	10.43		7.74		1017.24	1019.72		1014.98		
Max	18.55	24.61		14.85		87.8	98.80		69.21		14.96	10.52	12.08		9.61		1029.82	1031.82		1028.03		
Min	14.11	17.17		8.35		69.5	89.70		36.59		10.08	7.56	8.34		6.50		997.82	1000.97		994.65		

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 2021

Temperature (°C)			Rank in the past **140** years
Mean maximum	22.4	(+0.1)	30th highest
Mean minimum	12.8	(+0.8)	2nd highest
Daily mean	17.6	(+0.4)	12th highest
Rainfall total (mm)	205.4	(135 %)	38th highest
Sunshine total (hours)	507.2	(88 %)	

Nº of:	Dry days	56 (0)	Wet days	25 (+1)							
Days with: Air frost	0 (0)	Ground frost	0 (-1)	Snow falling	0 (0)	Snow lying	0 (0)				
Thunder	4 (-3)	Hail ≥5mm	0 (0)	Small hail/ice	1 (+1)	Fog @09 GMT	0 (0)	Nil sun	8 (+5)		
Air pressure MSL : Mean @09 GMT (mbar)	1017.0	(+0.8)									

Departure from 1991 to 2020 average shown in brackets.

Notes: **Temperature Above Average, Especially by Night. Wet. Dull.**

Temperature: While the mean is above average, it is lowest in the past 4 years, but in this millennium only 5 summers have been warmer. The mean maximum is only 0.1° above the current 30 year climatological average, but is 1.3° above the long-term median. The mean minimum ranks equal 2nd highest with 2006 and 2003, with the record holder 1997 only 0.1° higher. The season's highest max, 31.3° on 20th July, is 1.0° above the median, but is lowest since 2014. The lowest max, 13.7° on 18th June, is 0.8° below its median. The highest min, 16.8° on 20th July is 0.3° below the median while the lowest min, 5.2° on 23rd June, is 0.8° above its median. The mean grass min, 10.3°, is 1.2° above average and is highest since 1997, while the lowest grass min, 1.2° on 23rd June, is highest only since 2018. There was no ground frost this summer. The mean earth temperature at 30 cm depth was 19.0°, anomaly +0.8°, while at 1 m depth the mean of 17.4° is 0.9° above average. July was the warmest month, mean 18.8°, anomaly +0.9°, August next with 17.0°, anomaly -0.7°, then June with a similar 16.9°. anomaly +1.1°. A daily max of 25° was exceeded 7 times in June, 10 in July but zero in August, while 30° was reached on just 3 days, all in July. **Rainfall:** This has been quite a wet summer season, with a 35 % excess of rainfall compared with average. This is the wettest summer since 2017, and in this millennium there have been only 4 wetter summers, though in the longer 140 year series it ranks only 38th wettest, the record being held by 1917 when 347.2 mm fell, about 142 mm more than in this summer. The 27th June was the wettest day with 36.9 mm, but also in that month 58.1 mm fell over 2 days, 17th/18th. June was the wettest month with 114.3 mm, anomaly 225 %, then July at 61.3 mm, 130 %, and August the driest, 29.8 mm, 55 %. Despite the high total in June the first half was relatively dry, similarly in July the mid/month was also dry, and in August there was plenty of dry weather except in the first 10 days. Dry spells of 11 days ended on 15th June, 10 days on 22nd July, 5 days on 14th August, and an unbroken 12 days on 31st August. Thunder was absent in June but occurred on the 24th, 27th and 28th July, and the 6th August, and ice pellets (small hail) on the 6th July. There were violent rain showers (rate at least 50 mm/hr) on the 18th and 27th June, 6th and 28th July and 9th and 19th August, with the highest rate of 203 mm/hr at 1505 GT on 6th July. Rainfall duration was 122.8 hours, 140 % of average. Estimated soil moisture deficit was highest in mid June, but did not reach severe stress levels for unirregated shallow rooted plants this summer. An index of stress gives a value of 146 for this season, compared with a median value of 621 for the past 45 years. In that time only 2012, 2007 and 1985 have had a lower stress value. **Sunshine:** This is one commodity that was in short supply this summer, only 88 % of average. There have been only 4 duller summers this millennium, the last in 2016. The season's sunniest day was the 13th June with 15.6 hours, and there were notable sunny spells in both June and July. The 5 days to the 16th June gave a daily mean of 12.44 hours, and the 8 days to the 23rd July had a daily mean of 14.34 hours. The sunniest month was July, daily mean 6.66 hours, anomaly 103 %, followed by June with 5.91 hours, 91 %, then a near record dull August with just 3.98 hours, 69 % of average. A notable dull episode was the 5 days to 21st June with a total of just 0.2 hours. Overall there were 36 days with <3 hours, 31 with =>6 hours, 23 with =>9 hours, 16 with =>12 hours and 3 with =>15 hours. **Wind:** The mean speed this summer of 5.6 mph is 0.6 mph below average and equal lowest for the season since 2005. The mean speed on the season's windiest day was 10.7 mph on the 20th July, lowest since 2003. The highest gust was 39 mph on 6th July. The 18th July was the least windy day, mean 2.4 mph, and there were 1873 minutes of calm this summer. Daily mean direction/number of days: N,18 NE,13 E,2 SE,3 S,7 SW.34 W,5 NW,10. Compared with average, winds from N and NE combined were 15.6% more frequent, at the expense of S and W combined, 14.6% less frequent. **Pressure:** The season's highest pressure was 1031.8 mbar on 31st August, and the lowest was 992.5 mbar on 6th July, a span of 39.3 mbar, average 35.2 mbar. **Humidity:** The overall mean relative humidity was 77.7 % and the lowest value was 23 % on the 9th June. The mean water vapour content per kg of air was 9.5 g at 0900 GMT and 9.4 g at 1500 GMT. **June:** Mild overall and very wet with below average sunshine. Mean min 3rd highest in 140 years, mean temp. 9th highest. 5th wettest in the same period. Wind speed equal 2nd lowest for June in 24 years. Highest gust lowest for any June in that period. **July:** Warm overall especially by night. Rainfall above average and sunshine near average. Heatwave from 16th to 23rd. Lowest min 2nd highest in 118 years. Mean and lowest grass min highest in past 42 years. Violent rain showers on 4th, 6th and 28th, and 3 days with thunder. **August:** Temperature and rainfall below average, sunshine well below average. Highest max lowest since 1986. Lowest min equal highest since 2002. Very dull, 3rd lowest sunshine in 115 years.

Month	Mean Max	Anom	Mean Min	Anom	Rain mm	Anom	Sun hrs	Anom	Mean Wind mph	Max gust	Mean pressure	Anom
June	21.9°	+0.9°	11.9°	+1.2°	114.3	225%	177.3	91%	5.2	26	1018.8	+2.0
July	23.7°	+0.5°	13.9°	+1.1°	61.3	130%	206.5	103%	5.5	39	1014.8	-1.1
August	21.4°	-1.4°	12.5°	-0.1°	29.8	55%	123.4	69%	6.1	31	1017.5	+1.7

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.