

# 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

### OCTOBER 2021

Temperature (°C )	Anomaly	Rank in the past 140 years
Mean maximum	16.3	+0.8 20 <sup>th</sup> highest
Mean minimum	8.7	+1.2 9 <sup>th</sup> highest
Daily mean	12.5	+1.0 13 <sup>th</sup> highest
Highest maximum	20.0	on 19 <sup>th</sup> Lowest maximum 12.1 on 21 <sup>st</sup>
Highest minimum	13.6	on 8 <sup>th</sup> Lowest minimum 4.3 on 22 <sup>nd</sup>
Mean grass minimum	6.1	+1.8 Lowest grass minimum 0.0 on 22 <sup>nd</sup>
Mean earth @30 cm	14.2	+0.8 Earth @100 cm 15.1 +0.4
Frost duration (hrs)	0.0	Rain duration (hrs) 48.4
Rainfall total (mm)	96.0	131 % 32 <sup>nd</sup> highest
Highest daily fall	17.9	on 20 <sup>th</sup> Highest rate mm/hr 72 on 4 <sup>th</sup>
Number of: Dry days (<0.2mm)	15	Wet days (>0.9mm) 13 days ≥5mm 6
Sunshine total (hrs) 113.8	Daily mean 3.67	99 % Sunniest day 10.9 on 6 <sup>th</sup>
N° days with: Air frost 0	Ground frost 0	Snow falling 0 Snow lying 0
Thunder 0	Hail ≥5mm 0	Small hail/ice 0 Fog @09 1 Nil sun 4
Pressure MSL : Mean @09 GMT, mbar 1015.0	+0.5	Highest 1032.4 on 11 <sup>th</sup> Lowest 983.8 on 2 <sup>nd</sup>
Relative humidity : Mean (%) 86.3	Lowest 46 on 1 <sup>st</sup>	Water vapour (g/kg), mean at 09 and 15 GMT 7.8, 7.8
Overall mean wind speed (mph) 6.7	Windiest day 11.6 on 31 <sup>st</sup>	Max gust 43 on 31 <sup>st</sup>
Wind direction (days)	N 0 NE 1 E 2 SE 0 S 11 SW 11 W 4 NW 2	
Least windy day (mph) 2.0	on 9 <sup>th</sup>	Calm; less than 0.5 mph (minutes) 661

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

Notes:

#### Mild with Above Average Rainfall and Average Sunshine

**Temperature:** The mean this month ranks 13<sup>th</sup> highest since before 1882, which puts it in the warmest 10% of Octobers. However, in this millennium there have been 7 warmer Octobers, including the record holder, 2006, mean 14.1°, 1.6° above this month's. The mean maximum ranks lower than the mean minimum, which can also be seen in the comparison with their record values, this October's mean max being 2.8° below the record holder in 1921, and the mean min 1.9° below its highest in 2001. The lack of seasonally cold nights this month also shows in the stats for the number of ground frosts, average 7, this being only the 6<sup>th</sup> October in the past 100 years to have none. The highest max equals the median and the lowest max is 2.6° above its median. The highest min is 0.4° above the median while the lowest min is 5.3° above its median and is 4<sup>th</sup> highest in 118 years. The mean grass min is highest only since 2017, but the lowest is highest since 2006. Earth temperatures are above average. Anomalies for daily max were above +3° on the 18<sup>th</sup> to 20<sup>th</sup> and 26<sup>th</sup>, and exceeded -2° on the 2<sup>nd</sup> and 21<sup>st</sup>, with extreme values of +5.6° on the 19<sup>th</sup> and -2.5° on the 2<sup>nd</sup>. Anomalies for daily min exceeded -2° on the 11<sup>th</sup>, 12<sup>th</sup> and 22<sup>nd</sup> and were above +5° on the 8<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup>, 28<sup>th</sup> and 29<sup>th</sup>, with extreme values of -3.4° on the 11<sup>th</sup> and +6.8° on the 20<sup>th</sup>. **Rainfall:** This has been quite a wet month, with 31% more rainfall than average, yet still we had much less than in the past 2 Octobers, one of which, 2020, having 171.2 mm is the current record holder. Despite this month's total being in the wet category there were some dry episodes, including a 7 day dry spell ending on the 11<sup>th</sup>, and the number of dry days is only 1 fewer than average. In fact, more than half the month's total fell on just 3 days, the 2<sup>nd</sup>, 19<sup>th</sup> and 20<sup>th</sup>, which together produced 51.1 mm. Also, rainfall duration is only 91% of average, compared with 131% for rainfall total. Rainfall rate reached 72 mm/hr on the 4<sup>th</sup>, 37 mm/hr on the 20<sup>th</sup> and 35 mm/hr on the 31<sup>st</sup>, but there was no thunder or hail this month. Daily accumulation compared with normal showed a surplus of 20 mm by the 4<sup>th</sup> which decreased to zero by the 17<sup>th</sup> but increased to 27 mm by the 20<sup>th</sup>, then although this decreased to 13mm by the 28<sup>th</sup> the month ended with a surplus of 23mm.

**Sunshine:** Despite this October's sunshine being within 1% of the current 30 year average, in this millennium it ranks 7<sup>th</sup> sunniest, and it is worth mentioning that October 2020 was the duller in that period. There were no outstandingly sunny or dull periods, but just 2 days had over 80% of the maximum while 11 had less than 20%. Daily accumulation compared with normal showed a surplus of 10 hours by the 6<sup>th</sup>, and a small surplus of less than 10 hours was maintained until the 19<sup>th</sup> and again between the 21<sup>st</sup> and 27<sup>th</sup>, otherwise it was close to zero.

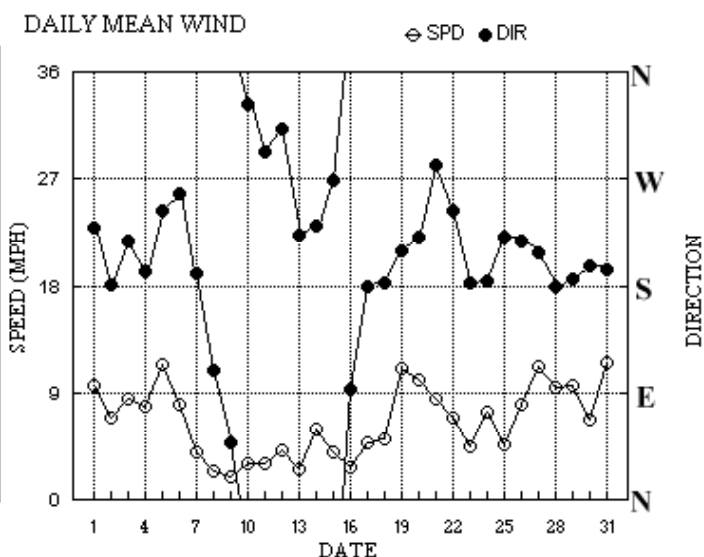
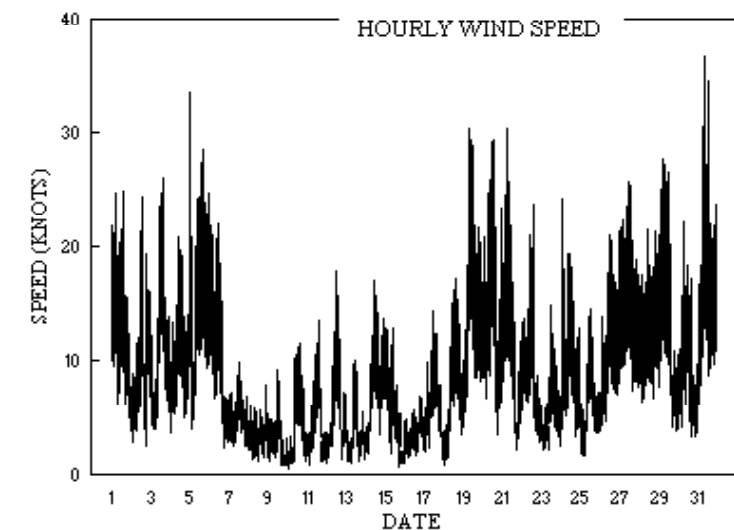
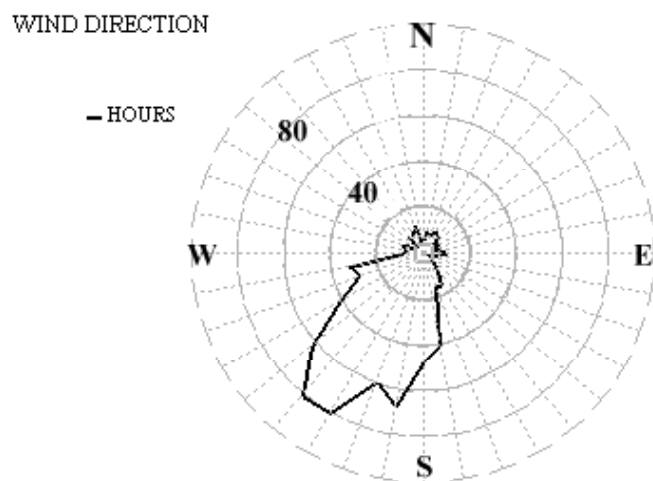
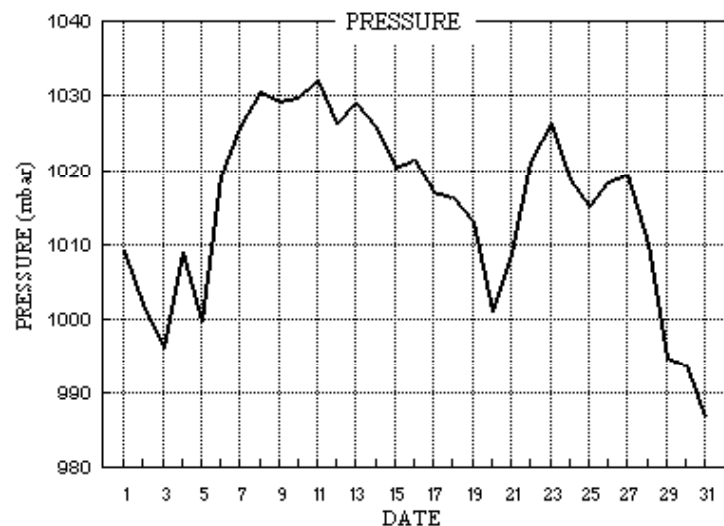
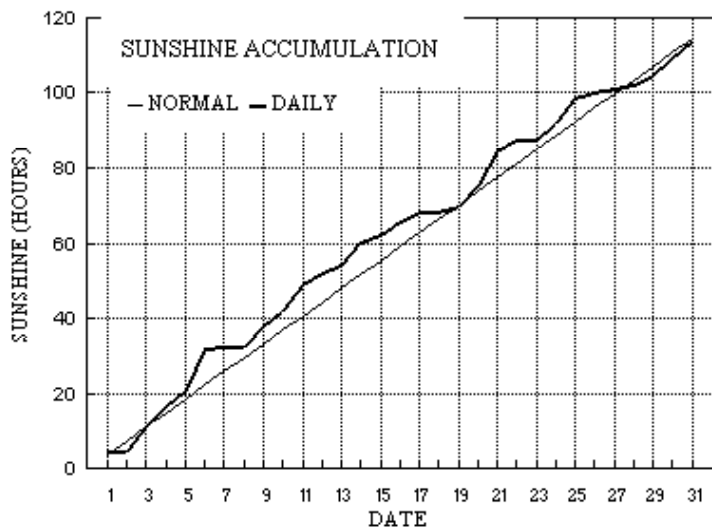
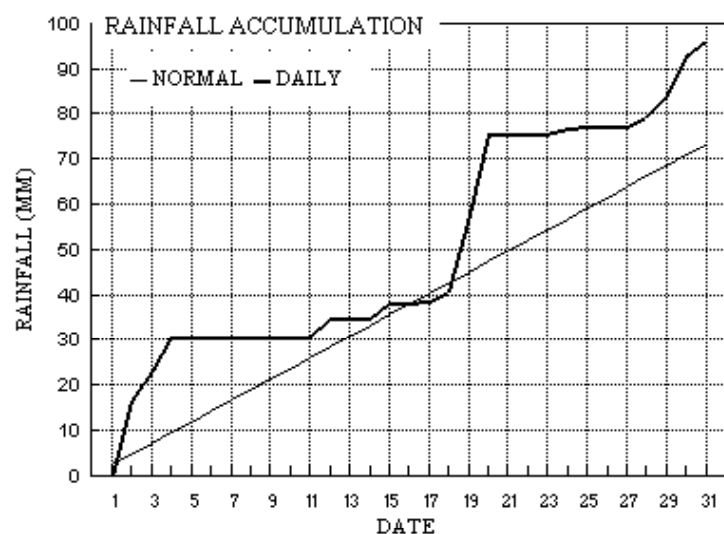
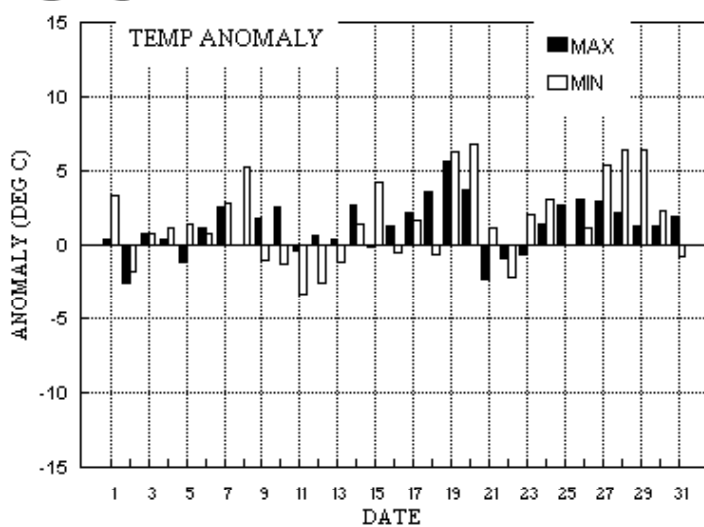
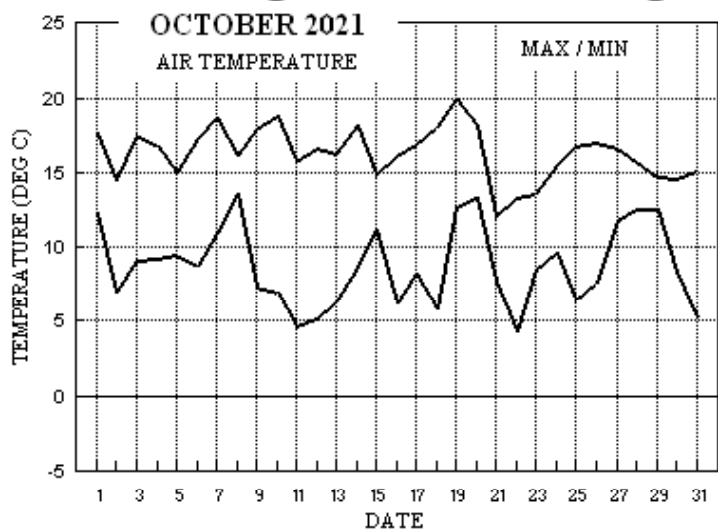
**Wind:** The mean speed is 0.4 mph above average, but is 0.6 mph lower than in last October. The mean speed on the windiest day is 9 mph below average, but the month's highest gust is average. Daily mean speeds were moderate or fresh up to the 6<sup>th</sup> then mainly light until the 18<sup>th</sup>, becoming fresh for the 19<sup>th</sup> to 21<sup>st</sup>, then light or moderate until the 26<sup>th</sup>, then moderate or fresh to the 30<sup>th</sup> and strong on the 31<sup>st</sup>. Daily mean directions were between N and W on the 10<sup>th</sup> to 12<sup>th</sup> and 21<sup>st</sup>, between S and E on the 8<sup>th</sup> and 16<sup>th</sup> and between E and N on the 9<sup>th</sup>, otherwise between S and W.

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

From the 1 <sup>st</sup> to the 10 <sup>th</sup>				From the 11 <sup>th</sup> to the 20 <sup>th</sup>				From the 21 <sup>st</sup> to the 31 <sup>st</sup>			
+0.6°	+1.1°	130%	114%	+1.9°	+1.2°	189%	91%	+1.2°	+2.3°	78%	94%

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

# Wokingham climatological graphs for October 2021



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: OCTOBER 2021

Date	Max C	Min C	Rain mm	Grass Min	30cm C	100cm C	Sun hrs	Frost hrs	pp09 mbar	Af Gf	Sf SI	Th Ha	Ic Fg	Vec ddd	mean ff	sp	Max gust ddd	gg	HHhh	High hr ddd	ff	Rain HH	hrs
1	17.6	12.3	0.1	13.3	15.7	16.6	4.7	0.0	1009.2	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	229	8.0	8.4	273	25	1325	259	11	13	0.5
2	14.5	6.9	16.3	2.8	15.4	16.5	0.0	0.0	1002.1	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	181	4.2	6.1	179	24	1348	173	11	13	9.3
3	17.5	9.1	6.6	7.1	15.1	16.3	6.8	0.0	996.2	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	218	7.4	7.5	213	26	1554	223	13	11	2.0
4	16.8	9.2	7.7	5.1	15.0	16.2	5.3	0.0	1009.0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	192	6.4	6.9	227	21	1016	169	10	23	3.3
5	15.0	9.5	tr	7.0	14.9	16.0	4.2	0.0	999.7	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	243	8.7	9.9	156	34	0134	166	14	01	0.1
6	17.3	8.7	0.0	5.9	14.5	15.9	10.9	0.0	1019.2	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	257	6.4	7.0	258	25	0002	257	11	03	0.0
7	18.7	10.9	0.0	7.6	14.6	15.7	0.4	0.0	1025.9	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	190	3.3	3.5	226	10	1251	206	5	12	0.0
8	16.1	13.6	tr	9.1	15.1	15.6	0.0	0.0	1030.5	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	109	0.8	2.1	73	8	2226	91	3	22	0.2
9	17.9	7.3	tr	2.3	15.3	15.6	5.5	0.0	1029.4	0 0 0 0	0 0 0 0	0 0 0 1	48	1.1	1.7	59	9	1223	75	4	12	0.1	
10	18.8	6.9	0.0	3.5	15.1	15.6	4.4	0.0	1029.9	0 0 0 0	0 0 0 0	0 0 0 0	332	1.9	2.6	323	12	1635	342	5	15	0.0	
11	15.8	4.7	0.0	1.8	14.6	15.6	6.9	0.0	1032.2	0 0 0 0	0 0 0 0	0 0 0 0	292	1.9	2.7	329	14	1434	315	6	15	0.0	
12	16.6	5.2	4.0	1.9	14.0	15.5	3.2	0.0	1026.2	0 0 0 0	0 0 0 0	0 0 0 0	312	2.2	3.6	319	18	1146	319	7	14	2.7	
13	16.2	6.3	0.0	3.3	14.2	15.3	1.8	0.0	1029.1	0 0 0 0	0 0 0 0	0 0 0 0	223	1.4	2.3	283	10	1137	248	5	11	0.0	
14	18.2	8.6	0.0	5.6	14.2	15.2	6.4	0.0	1025.8	0 0 0 0	0 0 0 0	0 0 0 0	230	5.0	5.2	262	17	1157	234	8	11	0.0	
15	14.9	11.1	3.5	8.8	14.4	15.0	1.7	0.0	1020.4	0 0 0 0	0 0 0 0	0 0 0 0	268	0.3	3.5	231	13	0023	229	7	00	1.9	
16	16.1	6.2	0.0	2.9	14.2	15.0	3.8	0.0	1021.5	0 0 0 0	0 0 0 0	0 0 0 0	94	1.0	2.4	163	7	1951	162	4	19	0.0	
17	16.9	8.2	0.4	4.8	14.2	15.0	2.5	0.0	1017.0	0 0 0 0	0 0 0 0	0 0 0 0	180	4.1	4.2	169	15	1242	193	7	12	0.3	
18	18.0	5.8	2.1	2.8	13.9	14.9	0.0	0.0	1016.3	0 0 0 0	0 0 0 0	0 0 0 0	182	4.1	4.5	176	17	1615	187	8	17	2.5	
19	20.0	12.7	16.9	15.1	14.2	14.8	1.3	0.0	1012.9	0 0 0 0	0 0 0 0	0 0 0 0	210	9.5	9.6	211	30	0843	220	15	08	8.3	
20	18.2	13.3	17.9	12.0	14.9	14.8	5.8	0.0	1001.1	0 0 0 0	0 0 0 0	0 0 0 0	220	6.2	8.8	230	29	1307	226	14	11	4.5	
21	12.1	7.7	0.0	5.7	14.6	14.8	8.9	0.0	1008.7	0 0 0 0	0 0 0 0	0 0 0 0	282	6.1	7.4	256	30	0631	268	12	06	0.0	
22	13.3	4.3	tr	0.0	13.4	14.9	3.2	0.0	1021.1	0 0 0 0	0 0 0 0	0 0 0 0	243	5.7	6.0	262	24	1402	276	9	12	0.0	
23	13.6	8.5	0.0	8.0	13.1	14.7	0.0	0.0	1026.3	0 0 0 0	0 0 0 0	0 0 0 0	183	3.8	3.9	173	15	1246	192	7	13	0.0	
24	15.5	9.6	1.4	6.9	13.2	14.5	4.5	0.0	1018.6	0 0 0 0	0 0 0 0	0 0 0 0	184	6.2	6.5	180	24	0320	181	10	10	0.9	
25	16.8	6.5	0.2	3.1	13.2	14.4	6.3	0.0	1015.0	0 0 0 0	0 0 0 0	0 0 0 0	220	3.5	4.1	219	15	1243	232	7	12	0.9	
26	17.0	7.6	0.2	2.6	12.9	14.3	1.8	0.0	1018.5	0 0 0 0	0 0 0 0	0 0 0 0	218	6.9	7.0	217	22	2359	230	11	12	0.7	
27	16.6	11.8	tr	12.0	13.3	14.1	0.9	0.0	1019.3	0 0 0 0	0 0 0 0	0 0 0 0	208	9.5	9.7	192	26	1203	212	12	14	0.0	
28	15.7	12.6	2.2	11.0	13.6	14.1	1.1	0.0	1009.9	0 0 0 0	0 0 0 0	0 0 0 0	179	8.1	8.2	168	22	1204	182	10	21	2.4	
29	14.7	12.5	4.3	11.2	13.6	14.1	2.4	0.0	995.0	0 0 0 0	0 0 0 0	0 0 0 0	186	7.5	8.4	156	28	0630	161	12	06	3.3	
30	14.6	8.3	9.0	5.3	13.3	14.1	4.4	0.0	993.8	0 0 0 0	0 0 0 0	0 0 0 0	196	4.1	5.8	194	22	0743	184	11	07	3.5	
31	15.1	5.2	3.2	1.2	12.8	14.1	4.7	0.0	986.6	0 0 0 0	0 0 0 0	0 0 0 0	194	8.6	10.1	197	37	0936	183	17	09	1.0	
Total			96.0				113.8	0.0															48.4
Mean	16.3	8.7		6.1	14.2	15.1	3.67	0.0	1015.0					213	4.1	5.8							
Anom	+0.8	+1.2	131%	+1.8	+0.8	+0.4	99%			+0.5													

Daily mean 12.5 Pressure, abs highest = 1032.4 on 11

Anom +1.0 Pressure, abs lowest = 983.8 on 2

Number of days with:

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

Snow falling = 0 Snow lying = 0 Thunder = 0

Hail=>5mm = 0 Hail<5mm or ice = 0 Fog at 09GMT = 1

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. SI = Snow lying at 09 GMT.

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

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

Sp = 24 hour mean wind speed in knots.

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

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

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

Maximum daily rain rate in mm/hr

All temperatures in degrees Celsius.

Anomaly - Departure from the 1991 to 2020 climatological average

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for OCTOBER 2021

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks					
1	84	7	23	07	14	14.9	13.1	89	9.4	1009.2	3	010	21	6	2	6	8	4	7	82811	84648	1	3Ac58	Cu med	
2	62	8	15	06	12	11.2	8.9	86	7.2	1002.1	8	039	60	6	2	1	5	6	2	81635	88556	2			
3	89	7	22	05	10	11.0	8.2	83	6.9	996.2	1	028	01	2	2	7	0	9	2	87464		3	1Ci70	Cld edge W. Dist Cb top W 150km	
4	82	1	22	08	15	13.0	10.9	87	8.1	1009.0	2	010	03	0	0	1	1	4	3	81810		4	1Ac68	1Ci72 Cu fra/hum	
5	82	2	24	10	20	11.7	8.7	82	7.1	999.7	1	013	03	0	0	2	1	4	4	82816		5	1Ac60	Cu fra/hum	
6	84	1	27	08	21	12.8	7.5	70	6.4	1019.2	2	026	03	0	0	1	1	4	4	81820		6	1Ac65	1Ci72 Cu fra	
7	25	8	19	04	06	15.1	14.6	97	10.2	1025.9	3	008	10	2	2	8	6	2	88705		7	Absent	vv&cld est		
8	50	8	18	03	06	14.1	13.3	95	9.3	1030.4	2	005	10	2	2	8	6	2	88705		8	Absent	vv&cld est		
9	01	9	02	02	04	10.7	10.7	100	7.8	1029.4	1	009	45	5	4	9	9	9	9	88705		9	Vis	100m	
10	40	7	28	01	04	13.2	12.7	97	9.0	1029.9	2	009	20	5	2	7	5	3	85706	85625	87640	10			
11	68	7	32	04	08	10.3	8.9	91	6.9	1032.2	1	010	02	2	2	0	0	9	0	82172	87075	11	COTRA	Parhelion	
12	67	7	26	05	10	9.6	8.5	93	6.8	1026.2	7	005	02	2	2	2	0	9	7	82362	86272	12	1Ac66	/Ci80 COTRA Halo 22° part+Parhelion+Cz arc	
13	59	7	19	03	05	10.3	10.1	99	7.6	1029.1	2	008	10	2	2	7	5	3	81707	83618	87635	13			
14	61	1	22	06	10	12.7	11.8	94	8.4	1025.8	7	005	01	1	1	1	5	2	0	81705		14	1Sc30	1Cc73 1Ci80 COTRA	
15	80	8	02	06	12	12.1	9.8	86	7.3	1020.4	2	023	03	2	2	8	5	3	83708	88612	15				
16	50	7	05	01	03	9.8	9.5	98	7.3	1021.5	2	006	10	6	2	7	8	2	83703	83635	85656	16	1Cu025	Cu med	
17	57	8	18	06	11	12.0	11.7	98	8.5	1017.0	0	001	16	2	2	8	0	8	7	86357	88462	17	jpNW		
18	57	8	16	06	10	12.7	12.4	98	8.9	1016.3	7	015	10	2	2	1	5	6	7	81635	86368	88272	18		
19	58	7	22	14	30	18.0	14.3	79	10.1	1012.9	1	001	05	5	2	6	5	4	3	83618	84625	19	3Ac68	/Ci72 COTRA	
20	84	3	21	09	19	14.8	12.5	86	9.1	1001.1	1	005	25	8	1	1	8	4	6	81815		20	1Sc25	1Ac65 1Ci68 2Cs70 Cb top W Cu fra/con	
21	88	2	31	11	26	8.1	2.4	67	4.5	1008.7	1	064	02	1	1	2	8	5	0	81825		21	2Sc33	Cu hum	
22	86	7	24	07	14	8.6	4.8	77	5.3	1021.1	3	017	03	1	1	7	5	6	83640	87645	22				
23	86	8	16	03	06	10.1	7.0	81	6.1	1026.3	2	008	02	2	2	8	5	6	88640		23				
24	82	2	16	06	12	11.5	6.6	72	6.0	1018.6	7	003	01	1	1	1	5	6	4	81635		24	1Ac69	2Ci72 COTRA	
25	60	5	21	04	08	11.7	11.5	99	8.4	1015.0	1	007	10	1	1	1	5	3	6	81708	83359	25	1Sc20	2Ci69 COTRA	
26	62	7	20	06	12	11.8	10.5	92	7.8	1018.5	0	002	03	2	2	5	5	3	81707	85625	87358	26			
27	72	7	21	10	20	14.8	11.4	80	8.3	1019.3	1	009	02	2	2	7	5	4	83615	87625	27				
28	80	7	18	07	15	13.9	11.2	84	8.3	1009.9	7	014	02	2	2	7	5	4	83615	87621	28				
29	62	6	18	13	24	14.2	11.5	84	8.6	995.0	6	007	21	6	2	3	8	4	7	82815	84357	29	2Sc45	1Ci68 Cu fra/med Cb top W	
30	80	7	20	06	18	10.4	9.5	94	7.5	993.8	3	014	21	6	2	2	8	4	7	82812	83357	86362	30	1Sc35	Cu fra/med jpS&E vv70kex p
31	40	8	16	16	31	12.3	11.2	93	8.5	986.6	8	065	63	6	6	7	7	4	2	87710	88550	31			

Mean vis = 25.2 km

Mean cloud = 6.0 75%

Mean wind speed = 6.5 kn

Mean gust = 13 kn

Mean TT = 12.2 °C

Mean TdTd = 10.2 °C

Mean RH = 88.1 %

Mean r = 7.8 g/kg

Mean PPP = 1015.0 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 OCTOBER 2021

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks					
1	89	3	26	08	20	16.3	7.0	54	6.2	1010.0	3	010	14	8	1	1	8	6	6	0	81840	1	2Sc56 1Ac58 Cu hum/med jpSE		
2	50	8	18	06	19	14.3	13.5	95	9.8	989.8	6	057	63	6	6	7	7	4	2	/	87710	88520	2		
3	75	3	21	10	24	15.5	10.5	72	8.0	999.8	3	021	25	8	1	1	9	5	6	3	81925	83068	3	1Cu30 1Ac60 jpE&SE vv60k ex p	
4	65	7	19	08	19	12.6	10.3	86	7.8	1008.9	5	000	80	8	2	7	8	6	2	2	82830	83645	85656	4	/As62 /Ci70 Cu med vv40k NW
5	84	7	26	12	28	14.3	7.8	65	6.6	1004.5	2	027	02	8	2	7	8	6	/	/	82833	87645	5	Cu med	
6	84	5	28	06	15	17.1	7.4	53	6.3	1021.7	2	011	03	1	1	3	0	9	3	1	83361	84073	6	Absent vv&cld est	
7	70	8	20	05	08	18.6	16.4	87	11.4	1025.9	4	000	02	2	2	8	5	3	/	/	83609	88620	7	Absent vv&cld est	
8	59	8	36	02	05	16.0	14.4	90	10.0	1029.4	7	010	05	5	2	8	5	3	/	/	85706	88615	8		
9	62	2	06	04	07	16.8	11.3	70	8.2	1027.9	7	012	02	0	0	2	5	5	0	1	82625		9	1Ci80 COTRA	
10	84	3	34	05	11	18.0	10.9	63	7.9	1029.2	7	007	01	1	1	1	2	5	0	1	81828	83075	10	Cu med	
11	81	7	30	06	14	15.5	8.0	61	6.5	1030.6	6	014	02	2	2	1	4	6	0	1	81833	87078	11	1Sc35 COTRA Cu hum	
12	80	7	32	06	15	15.7	10.7	72	7.9	1024.4	6	008	03	2	2	7	8	5	/	1	82822	84635	87650	12	/Ci75 Cu med
13	86	7	34	02	05	15.3	11.9	80	8.5	1027.8	6	004	02	2	2	7	8	5	/	/	82820	87640	13	Cu med	
14	84	4	25	07	15	17.0	9.7	62	7.4	1021.8	6	021	03	0	0	3	4	6	0	9	82833	83173	14	1Sc35 Cu hum	
15	82	7	05	03	07	14.1	9.3	73	7.2	1021.5	8	002	02	2	2	7	8	5	3	/	82825	85645	86357	15	Cu med
16	62	7	06	02	05	15.5	13.3	87	9.4	1018.6	6	017	03	1	1	2	8	4	0	2	81818	87075	16	2Sc56 COTRA Cu med	
17	81	3	17	07	12	16.5	11.2	71	8.2	1016.5	6	004	01	1	1	1	1	5	7	0	81825	83358	17	Cu hum	
18	65	8	18	07	15	16.2	14.6	90	10.3	1014.3	7	013	60	6	2	8	5	3	/	/	83708	87711	88620	18	
19	40	8	22	11	22	17.6	15.2	86	10.7	1010.9	6	012	50	5	2	8	5	3	/	/	86709	88612	19		
20	84	2	30	11	25	15.6	9.5	67	7.5	997.8	7	015	15	1	1	1	8	5	6	1	81828		20	1Sc50 1Ac65 1Ci75 Cu med jpW	
21	89	2	22	07	16	11.2	2.2	54	4.4	1014.9	3	028	02	0	0	1	1	6	0	1	81840		21	2Ci75 COTRA Cu hum	
22	82	7	27	07	24	12.5	7.0	69	6.1	1022.4	3	006	15	2	2	7	8	5	/	/	81825	87645	22	jpS vv 80k ex S	
23	88	7	15	06	12	13.2	7.6	69	6.4	1024.0	7	015	02	2	2	7	8	5	/	/	81828	87642	23	Cu med	
24	80	8	18	07	13	14.0	10.0	77	7.6	1015.7	6	015	03	2	2	7	5	4	7	/	85618	87625	24	/Ac59	
25	84	4	26	06	15	14.9	9.1	68	7.1	1014.2	5	003	15	1	1	1	8	6	6	1	81830		25	1Sc45 2Ac57 1Ci75 Cu med jpNW SE&E	
26	65	7	23	09	21	15.9	12.8	82	9.1	1017.9	5	003	01	6	2	3	8	4	0	1	81816	83625	87075	26	1Sc35 COTRA Cu hum Parhelia
27	80	6	22	10	25	15.7	10.7	72	7.9	1017.4	7	014	01	2	2	5	5	5	0	1	85626	83075	27		
28	70	7	17	08	18	14.4	11.0	80	8.2	1005.8	7	025	02	2	2	7	5	4	/	1	85615	87620	28	/Ci80	
29	84	7	23	10	20	13.2	7.9	70	6.7	998.4	1	025	25	8	2	1	8	5	0	2	81828	87073	29	1Sc50 COTRA Cu med Halo 22° part+Parhelia	
30	88	7	23	05	16	13.1	6.9	66	6.3	997.4	3	018	15	8	1	2	8	6	0	2	81833	87073	30	2Sc50 Cu med jpN U/a cont	
31	80	2	21	11	24	12.2	8.9	80	7.2	990.1	1	013	25	8	1	1	9	5	6	3	81920	81830	31	1Sc56 1Ac61 2Ci68 Cb&jpSE	

Mean vis = 36.2 km

Mean cloud = 5.7 72%

Mean wind speed = 6.9 kn

Mean gust = 16 kn

Mean TT = 15.1 °C

Mean TdTd = 10.2 °C

Mean RH = 73.3 %

Mean r = 7.8 g/kg

Mean PPP = 1014.5 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.

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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  2021	Hour	01-Oct	02-Oct	03-Oct	04-Oct	05-Oct	06-Oct	07-Oct	08-Oct	09-Oct	10-Oct	11-Oct	12-Oct	13-Oct	14-Oct	15-Oct	16-Oct
	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	0.00
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6	0.00	0.00	0.00	0.22	0.32	0.53	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00
	7	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.49	0.00	0.21	0.04	0.00	0.00
	8	0.01	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.83	0.24	0.00	0.98	0.00	0.04
	9	0.07	0.00	0.43	1.00	0.67	1.00	0.00	0.00	0.00	0.00	0.26	0.14	0.02	1.00	0.00	0.35
	10	0.17	0.00	1.00	0.84	0.10	1.00	0.00	0.00	0.00	0.00	0.03	0.67	0.17	1.00	0.00	0.71
	11	0.36	0.00	0.95	0.55	0.02	1.00	0.00	0.00	0.93	0.22	0.31	0.92	0.82	0.56	0.00	0.99
	12	0.14	0.00	0.66	0.47	0.00	1.00	0.00	0.00	1.00	0.70	1.00	0.34	0.49	0.67	0.00	0.73
	13	0.95	0.00	0.79	0.12	0.09	1.00	0.00	0.00	0.92	0.58	1.00	0.39	0.05	0.93	0.72	0.85
	14	0.74	0.00	0.58	0.00	0.13	0.97	0.00	0.00	1.00	0.86	1.00	0.30	0.00	0.40	0.69	0.17
	15	0.85	0.00	0.96	0.00	0.20	1.00	0.00	0.00	0.88	0.93	0.87	0.15	0.00	0.49	0.29	0.00
	16	1.00	0.00	1.00	0.00	0.43	1.00	0.35	0.00	0.73	1.00	0.79	0.04	0.00	0.33	0.00	0.00
	17	0.37	0.00	0.44	0.04	0.20	0.34	0.08	0.00	0.00	0.11	0.14	0.00	0.00	0.00	0.00	0.00
	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	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	0.00
	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		<b>4.65</b>	<b>0.00</b>	<b>6.81</b>	<b>5.25</b>	<b>4.16</b>	<b>10.85</b>	<b>0.43</b>	<b>0.00</b>	<b>5.46</b>	<b>4.42</b>	<b>6.87</b>	<b>3.19</b>	<b>1.77</b>	<b>6.38</b>	<b>1.69</b>	<b>3.84</b>

Hour	17-Oct	18-Oct	19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct	26-Oct	27-Oct	28-Oct	29-Oct	30-Oct	31-Oct	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	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
7	0.00	0.00	0.00	0.04	0.27	0.54	0.00	0.48	0.62	0.04	0.00	0.12	0.00	0.00	0.00	0.19
8	0.00	0.00	0.08	0.46	0.90	0.11	0.00	0.71	1.00	0.25	0.00	0.01	0.00	0.00	0.00	0.28
9	0.00	0.00	0.14	0.78	1.00	0.00	0.00	1.00	0.94	0.29	0.00	0.00	0.12	0.46	0.01	0.31
10	0.00	0.00	0.07	0.50	1.00	0.28	0.00	1.00	0.46	0.00	0.01	0.00	0.04	0.63	0.55	0.33
11	0.05	0.00	0.84	0.67	1.00	0.65	0.00	0.58	0.55	0.28	0.06	0.06	0.00	0.88	0.97	0.46
12	0.00	0.00	0.20	0.56	1.00	0.47	0.00	0.74	0.44	0.32	0.06	0.04	0.70	0.67	0.76	0.42
13	0.00	0.00	0.00	0.92	0.96	0.49	0.00	0.02	0.41	0.00	0.18	0.49	0.06	0.90	0.55	0.43
14	0.54	0.00	0.00	1.00	1.00	0.08	0.00	0.00	0.90	0.49	0.52	0.32	0.84	0.81	0.94	0.46
15	1.00	0.00	0.00	0.83	1.00	0.22	0.00	0.00	0.59	0.13	0.08	0.07	0.43	0.08	0.86	0.38
16	0.92	0.00	0.00	0.00	0.80	0.28	0.00	0.00	0.35	0.00	0.00	0.00	0.20	0.00	0.08	0.30
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	0.00
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	<b>2.50</b>	<b>0.00</b>	<b>1.33</b>	<b>5.76</b>	<b>8.94</b>	<b>3.24</b>	<b>0.00</b>	<b>4.52</b>	<b>6.25</b>	<b>1.78</b>	<b>0.91</b>	<b>1.09</b>	<b>2.38</b>	<b>4.43</b>	<b>4.72</b>	<b>113.64</b>

OCTOBER 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	14.05	17.6	1143	7.5	2359	77.2	93.8	701	46.4	1532	9.9	7.8	10.3	239	5.2	1542	1010.18	1012.6	2100	1007.8	544	1.5
2	11.29	14.5	1358	6.9	50	91.4	98.4	1829	80.1	815	9.9	7.8	10.0	1618	5.5	0	997.18	1011.8	4	983.8	1751	15.4
3	12.00	17.5	1238	9.1	639	82.4	95.4	345	54.4	1242	8.9	7.2	8.3	1430	6.6	1253	998.59	1007.4	2357	991.4	3	0.5
4	12.26	16.8	1151	9.2	643	87.4	97.1	716	61.3	1153	10.1	7.7	8.7	2313	6.9	1109	1007.55	1009.5	1029	1000.9	2357	7.2
5	12.19	15.0	1427	9.5	640	80.0	97.1	456	59.6	1546	8.7	7.1	9.2	204	5.9	1704	1003.25	1012.4	2359	997.0	132	5.8
6	12.42	17.3	1453	8.7	612	74.5	89.4	614	49.7	1357	7.8	6.5	7.5	2359	5.9	1404	1019.79	1024.8	2304	1012.1	0	0
7	15.22	18.7	1511	12.0	52	92.4	98.2	737	83.4	1313	14.0	9.8	11.3	1459	7.5	2	1026.08	1028.6	2359	1024.1	257	0
8	14.59	16.1	1431	11.1	2359	93.4	97.1	644	82.5	2316	13.5	9.5	10.1	1431	7.5	2359	1029.57	1030.8	1031	1028.4	17	0.1
9	11.09	17.9	1354	7.3	259	92.7	99.8	952	63.3	1440	9.8	7.4	9.4	1147	6.1	259	1028.85	1029.9	2324	1027.7	1507	0
10	11.75	18.8	1423	6.2	2356	87.5	99.0	249	59.3	1419	9.5	7.3	9.5	927	5.6	2356	1029.92	1031.8	2232	1028.9	534	0
11	9.13	15.8	1429	4.7	458	88.1	98.9	709	59.7	1430	7.1	6.1	7.3	1405	5.1	458	1030.96	1032.4	914	1029.1	2356	0
12	10.83	16.6	1405	5.2	32	89.7	99.1	607	66.9	1406	9.1	7.1	8.8	2003	5.3	32	1026.32	1029.4	18	1024.3	1509	3.9
13	11.11	16.2	1241	6.3	534	92.7	99.5	732	73.1	1237	9.9	7.5	9.0	1622	5.8	534	1028.04	1029.4	906	1027.2	0	0
14	13.21	18.2	1126	8.9	0	84.5	99.3	513	58.7	1243	10.4	7.7	8.4	1124	6.9	0	1023.60	1027.6	0	1018.8	2359	0.1
15	11.27	14.9	1351	6.2	2345	88.0	97.8	2353	68.6	1350	9.3	7.2	8.2	814	5.7	2348	1020.66	1022.9	2233	1017.7	317	0
16	10.70	16.1	1342	6.3	0	94.8	99.0	2354	80.0	1350	9.9	7.6	9.6	1453	5.7	0	1020.17	1022.8	30	1018.1	2356	3.4
17	11.83	16.9	1442	7.8	2358	92.0	99.9	406	68.8	1528	10.5	7.8	9.3	1111	6.4	2358	1017.28	1018.7	2217	1016.3	1444	0.5
18	12.51	16.2	2343	5.8	328	95.7	100.1	738	86.8	1148	11.8	8.8	11.2	2343	5.6	328	1015.80	1018.4	135	1013.4	1804	1.9
19	17.06	20.0	1204	15.8	2354	90.2	98.4	107	71.5	1204	15.4	10.8	11.5	700	9.9	846	1011.27	1014.2	0	1005.7	2351	8.9
20	14.36	18.2	1144	8.9	2359	86.4	96.8	2058	60.9	1310	12.0	8.9	10.8	6	6.7	2359	997.87	1005.9	0	988.0	2145	23.1
21	8.37	12.1	1418	4.3	2007	75.2	95.2	2030	50.8	1409	3.9	5.1	6.6	53	4.1	954	1009.80	1019.6	2337	992.9	0	0.5
22	8.93	13.3	1209	4.8	607	80.9	90.5	549	60.4	1204	5.7	5.7	6.5	2052	4.7	148	1021.88	1025.9	2320	1018.8	310	0
23	10.80	13.6	1314	8.5	336	79.7	94.1	342	61.6	1248	7.3	6.3	6.7	1752	5.6	1112	1024.69	1026.4	901	1021.9	2345	0
24	12.21	15.5	1225	9.6	125	79.7	97.6	2027	61.0	1051	8.7	7.0	8.8	1810	5.5	336	1017.47	1022.1	1	1015.1	2005	1.3
25	10.54	16.8	1253	6.5	635	89.5	99.8	811	62.5	1429	8.7	7.0	9.0	943	5.9	635	1015.34	1017.7	2148	1014.0	1404	0.1
26	12.82	17.0	1239	8.0	14	90.6	97.9	722	79.2	1239	11.3	8.3	9.6	1237	6.4	14	1018.27	1019.5	2110	1016.8	323	0.4
27	14.78	16.6	1401	13.8	501	81.4	94.0	38	67.1	1415	11.6	8.4	9.3	27	7.8	1412	1017.77	1019.6	38	1013.9	2359	0.1
28	13.98	15.7	1222	12.6	551	81.8	88.0	552	75.5	2053	10.9	8.1	8.7	1220	7.7	1758	1007.70	1014.1	0	1000.2	2357	0
29	12.12	14.7	1253	8.5	1901	85.6	94.4	2359	68.9	1504	9.7	7.6	8.9	829	6.3	1655	997.92	1000.7	1908	994.6	912	3.5
30	10.09	14.6	1247	5.2	2252	87.3	97.4	2358	60.7	1419	7.9	6.8	8.1	659	5.3	2254	996.97	1002.1	2254	991.4	713	3.6
31	11.06	15.1	1247	5.9	33	82.0	97.7	43	60.8	1340	8.0	6.8	8.8	930	5.2	2329	992.16	1001.3	1	986.0	912	10.2
Total																						92.0
Mean	12.08	16.26		8.09		86.3	96.80		65.91		9.72	7.57	9.01		6.13		1014.93	1019.03		1010.52		
Max	17.06	20.02		15.75		95.7	100.10		86.80		15.38	10.85	11.53		9.89		1030.96	1032.41		1029.13		
Min	8.37	12.05		4.30		74.5	88.00		46.41		3.95	5.07	6.49		4.12		992.16	1000.68		983.78		

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

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

Tmn = 00 to 24 GMT mean air temperature at 1.2 m, deg C  
 RHmn = 00-24 GMT mean relative humidity at 1.2 m, percent  
 Tdmn = 00-24 GMT mean dew point at 1.2 m, deg C  
 rmn = 00-24 GMT mean humidity mixing ratio, g/kg  
 pmn = 00-24 GMT mean air pressure reduced to mean sea level, mbar  
 Time = hours and minutes in GMT of extreme values

Temperature and humidity are from an aspirated Vaisala HMP45 unit  
 Pressure is from a Setra CS100 sensor  
 Data is logged on a Campbell Scientific CR10X measurement and control system  
 R tot = Rainfall from TBR, uncorrected

## Appendix 1.

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

**Average:** Generally refers to the 30 year climatological average, currently 1981 to 2010. This will be next updated in 2020. For some parameters, notably wind, the climatological average is not available, and if the word average is used in the context of wind, it refers to the average for the period for which data is held, namely 1988 to present.

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

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

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

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

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

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

Temperature: The terms cold/mild are used in the winter half year, and cool/warm in the summer half.

The term 'normal' is used when the individual mean (monthly, seasonal or annual) value is within 20 % of the median of all ranked values for that month/season/year.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**Month:** Calendar month.

**Season:** Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

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

**Annual or Year:** The calendar year, 1<sup>st</sup> January to 31<sup>st</sup> December.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## Appendix 2.

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

**VV** : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

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

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

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

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

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

**Cl :** Type of low cloud

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

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

**Cm :** Type of medium cloud.

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

**Ch :** Type of high cloud

0 = No high cloud

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

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

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

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

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

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

7 = Veil of Cirrostratus covering the celestial dome.

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

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

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