

# 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

JANUARY 2020

Temperature (°C)	Anomaly	Rank in the past 139 years
Mean maximum	9.4	+1.6 13 <sup>th</sup> highest
Mean minimum	4.1	+2.3 8 <sup>th</sup> highest
Daily mean	6.8	+2.0 9 <sup>th</sup> highest
Highest maximum	12.8	on 9 <sup>th</sup> , 14 <sup>th</sup> Lowest maximum 6.3 on 20 <sup>th</sup>
Highest minimum	9.3	on 9 <sup>th</sup> Lowest minimum -3.7 on 19 <sup>th</sup>
Mean grass minimum	1.1	+2.2 Lowest grass minimum -7.5 on 19 <sup>th</sup>
Mean earth @30 cm	6.9	+1.5 Earth @100 cm 8.0
Frost duration (hrs)	49.2	Rain duration (hrs) 55.6
Rainfall total (mm)	61.6	99 % 64 <sup>th</sup> highest
Highest daily fall	16.8	on 16 <sup>th</sup> Highest rate mm/hr 46 on 17 <sup>th</sup>
Number of: Dry days (<0.2mm)	16	Wet days (>0.9mm) 10 days ≥5mm 4
Sunshine total (hrs) 70.3	Daily mean 2.27	97 % Sunniest day 8.0 on 19 <sup>th</sup>
N° days with: Air frost 5	Ground frost 14	Snow falling 0 Snow lying 0
Thunder 0	Hail ≥5mm 0	Small hail/ice 0 Fog @09 1 Nil sun 10
Pressure MSL: Mean @09 GMT, mbar 1020.4	+3.7	Highest 1050.0 on 19 <sup>th</sup> Lowest 989.6 on 28 <sup>th</sup>
Relative humidity : Mean (%) 87.9	Lowest 58	on 3 <sup>rd</sup> Water vapour (g/kg), mean at 09 and 15 GMT 5.3, 5.6
Overall mean wind speed (mph) 7.7	Windiest day 14.5	on 14 <sup>th</sup> Max gust 46 on 13 <sup>th</sup>
Wind direction (days) N 0 NE 1 E 0 SE 1 S 5 SW 19 W 4 NW 1		
Least windy day (mph) 2.0	on 22 <sup>nd</sup>	Calm; less than 0.5 mph (minutes) 563

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

Notes:

### Very Mild with Near Average Rainfall and Sunshine.

**Temperature:** This is the mildest January since 2008, with the mean 0.8° below the record set in 2007. Most of the month was mild with a coldish snap from the 18<sup>th</sup> to 24<sup>th</sup>. The highest max is 0.3° above the median and the lowest max is 5.3° above its median, and is highest since 1916, which holds the record, 0.4° above this month's value. The highest min is 0.9° above the median and the lowest min is 2.2° above its median. The mean grass min is highest since 2008 but the lowest this month is highest only since 2018. Mean earth temperature at 30 cm depth is 1.5° above average, but is closer to average at 1m depth. Anomalies for daily max were +ve except for the 18<sup>th</sup> to 24<sup>th</sup> and the 28<sup>th</sup>, and were over +4° on the 7<sup>th</sup> to 9<sup>th</sup>, 14<sup>th</sup>, 16<sup>th</sup>, 30<sup>th</sup> and 31<sup>st</sup>, with a peak value of +5.1° on the 14<sup>th</sup>. Anomalies for daily min were also only -ve from the 18<sup>th</sup> to 22<sup>nd</sup>, and were over +5° on the 3<sup>rd</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 12<sup>th</sup>, 14<sup>th</sup>, 17<sup>th</sup> and 31<sup>st</sup>, with a peak value of +7.5° on the 9<sup>th</sup>. A peak -ve anomaly of -5° occurred on the 19<sup>th</sup>. **Rainfall:** The total this January is close to average, but in the past 10 years only 3 have been drier, and in that period, in 2014 we had our wettest January on record, 153.9 mm, which is two and a half times the amount that fell this year. The 16.8 mm that fell on the month's wettest day, the 16<sup>th</sup>, is the wettest January day since 2014. This fall together with 15.1 mm on the 14<sup>th</sup> account for over half of this month's total. The duration of measurable rain is 93 % of average. There was no thunder or hail this month, but the rainfall rate came close to the violent category on the 17<sup>th</sup>. Snow was also absent this month for the first time since 2014, and only 6 Januaries in the past 45 years have had no snow falling. Daily accumulation compared with normal was 13 mm in deficit by the 12<sup>th</sup>, but this became a surplus of 17 mm by the 16<sup>th</sup>, then a largely dry spell reduced this to zero by the 25<sup>th</sup>, and after a temporary surplus of 6 mm on the 27<sup>th</sup>, it ended the month near zero again. **Sunshine:** The total this month is a little below the average for the past 20 years, since the current electronic recorder has been in use. In that time, 13 Januaries have been sunnier than this one. There were some marked contrasts during the month, with a sunny episode from the 18<sup>th</sup> to 21<sup>st</sup>, with over 80 % of the maximum on 3 of those days, but also rather dull ones, a total of just 0.9 hours over 6 days to the 27<sup>th</sup>, and none after the 29<sup>th</sup>. Daily accumulation compared with normal was in deficit by 9 hours on the 8<sup>th</sup>, 10 hours on the 17<sup>th</sup>, turning into a surplus of 8 hours by the 21<sup>st</sup>, falling back to a deficit of 4 hours on the 27<sup>th</sup>, but ending the month just 2 hours in deficit. Overall there were 19 days with <3 hours and 4 with =>6 hours. **Wind:** The mean speed this month is 0.2 mph below average. The mean speed on the windiest day is 1.6 mph below average and the highest gust is 5 mph below average. The month's mean direction was 214°, SW'S, and winds below from this direction for 43.6% of the time. Daily winds were mainly moderate up to the 8<sup>th</sup>, then fresh or strong until the 17<sup>th</sup>, becoming light or very light until the 25<sup>th</sup>, then moderate or fresh. Directions were mainly SW'ly, except SE'ly on 1<sup>st</sup>, W'ly on 3<sup>rd</sup>, 10<sup>th</sup>, 18<sup>th</sup> and 19<sup>th</sup>, S'ly on 16<sup>th</sup>, 25<sup>th</sup> and 26<sup>th</sup>, NE'ly on 22<sup>nd</sup> and NW'ly on 23<sup>rd</sup>. **Pressure:** Air pressure reduced to MSL reached an unusually high value of 1050.0 mbar on the 19<sup>th</sup>, the highest recorded here at any time since before 1976, the previous highest being 1046.8 mbar on 26<sup>th</sup> January 1992.

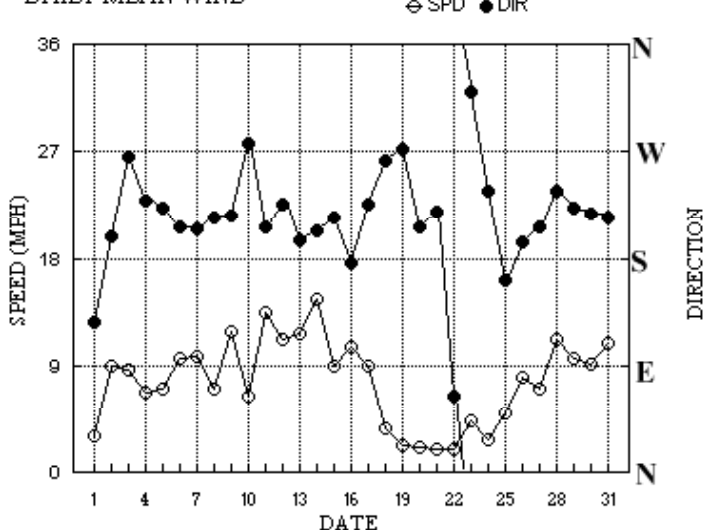
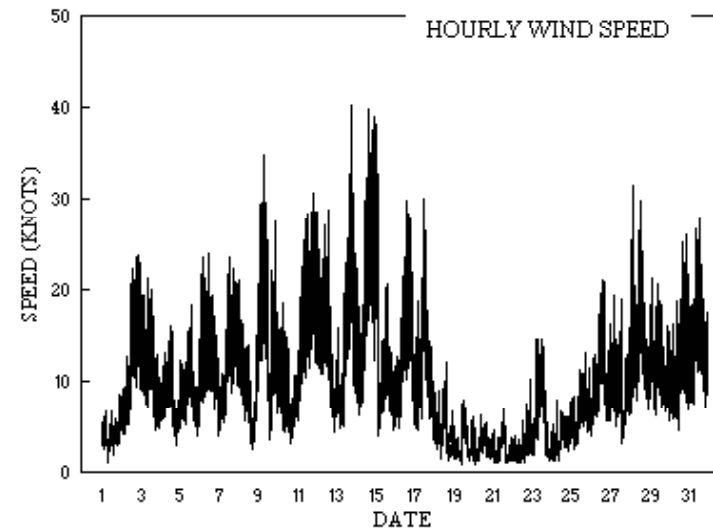
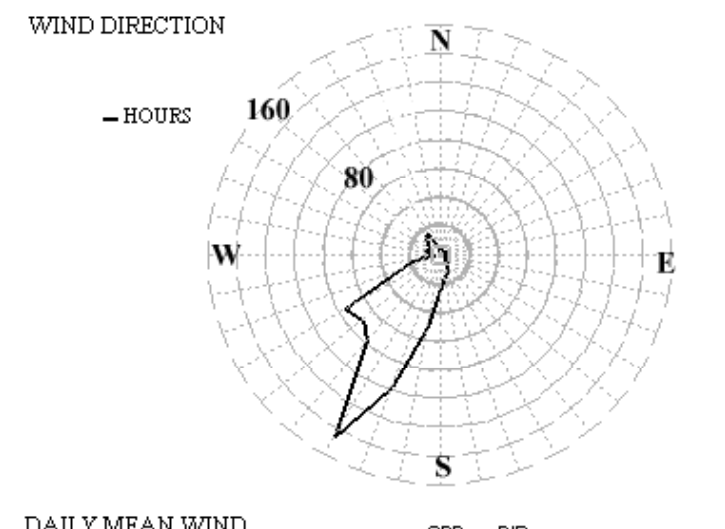
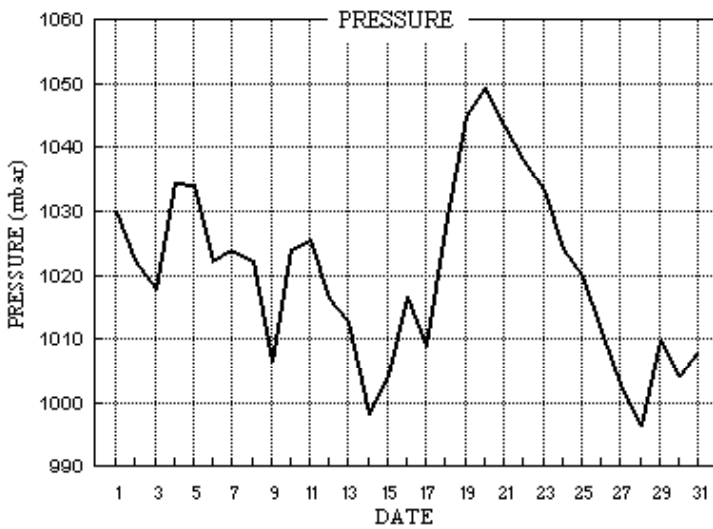
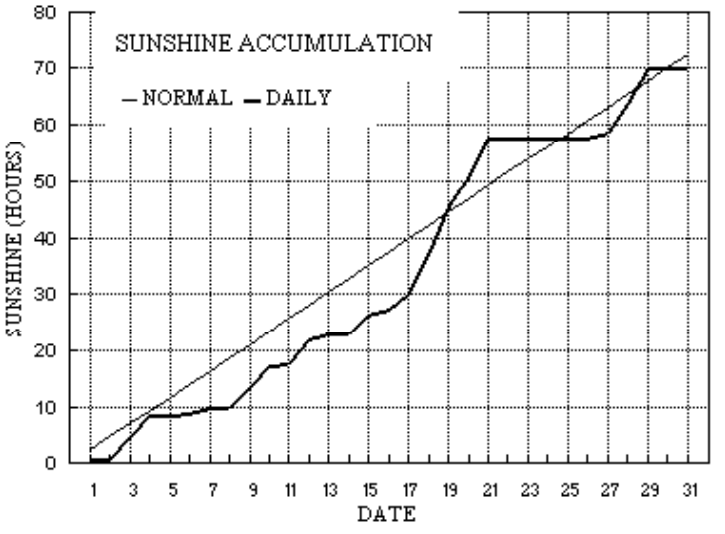
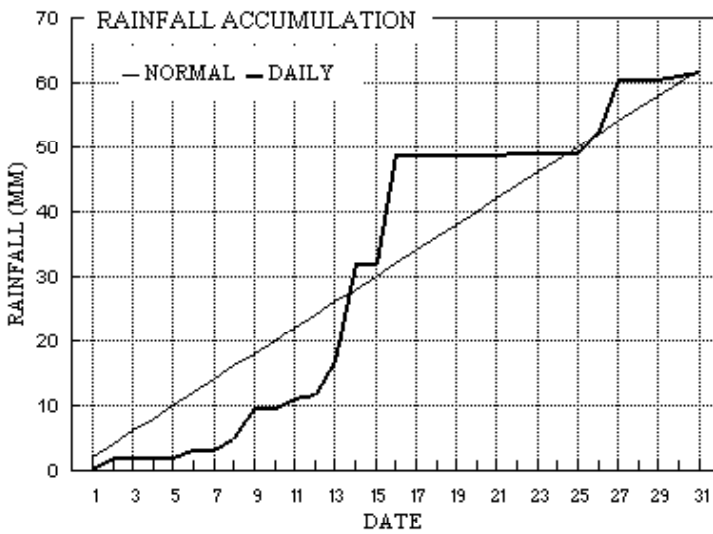
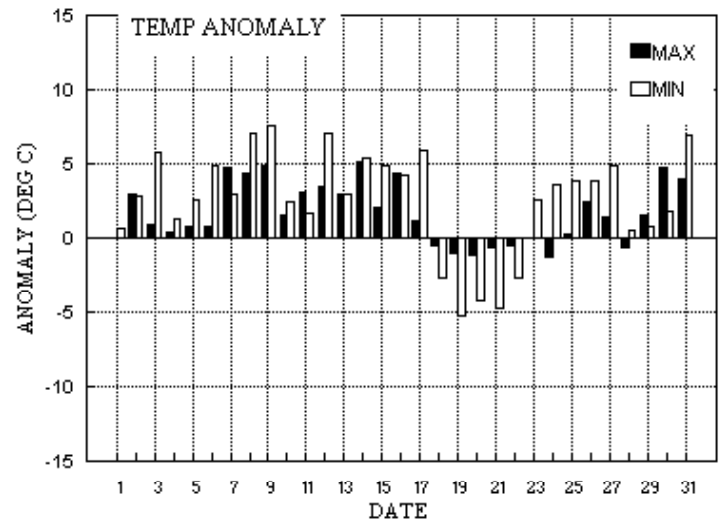
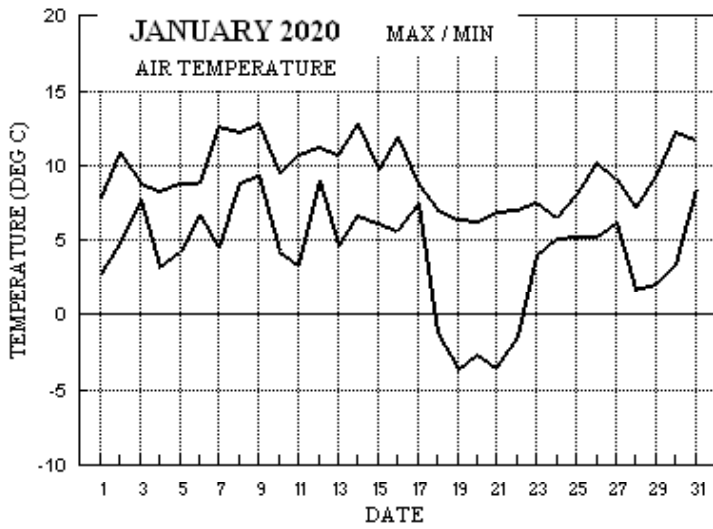
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 <sup>st</sup> to the 10 <sup>th</sup>				From the 11 <sup>th</sup> to the 20 <sup>th</sup>				From the 21 <sup>st</sup> to the 31 <sup>st</sup>			
+2.1°	+3.8°	48%	74%	+1.9°	+2.0°	196%	143%	+1.0°	+1.9°	58%	75%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

# Wokingham climatological graphs for January 2020



Month: JANUARY 2020

Date	Max C	Min C	Rain mm	Grass Min	30cm C	100cm C	Sun hrs	Frost hrs	pp09 mbar	Af Gf	Sf Sl	Th Ha	Ic Fg	Vec mean ddd ff sp	Max gust ddd gg HHhh	High hr ddd ff	Rain HH hrs								
1	7.8	2.7	0.2	-1.4	7.0	8.1	0.7	0.0	1030.0	0	1	0	0	0	126	1.8	2.8	169	9	2118	177	5	23	0.5	
2	10.9	4.8	1.7	5.6	7.1	8.1	0.0	0.0	1022.3	0	0	0	0	0	199	7.6	7.8	202	24	2103	204	12	20	3.8	
3	8.8	7.7	0.0	8.4	7.6	8.1	4.2	0.0	1017.7	0	0	0	0	0	266	5.6	7.6	308	21	0931	312	10	09	0.0	
4	8.3	3.2	0.1	-1.7	7.2	8.2	3.6	0.0	1034.5	0	1	0	0	0	229	5.6	5.8	259	16	1341	253	8	13	0.3	
5	8.8	4.3	tr	-1.4	6.9	8.2	0.1	0.0	1034.2	0	1	0	0	0	222	6.0	6.1	236	19	1327	237	9	13	0.0	
6	8.8	6.7	1.2	5.7	7.1	8.1	0.1	0.0	1022.2	0	0	0	0	0	206	8.1	8.3	175	24	1021	192	11	10	0.6	
7	12.6	4.5	tr	-1.8	7.0	8.1	1.1	0.0	1024.0	0	1	0	0	0	205	8.3	8.5	200	24	1203	214	12	20	0.0	
8	12.2	8.8	1.6	6.4	7.5	8.1	0.0	0.0	1022.4	0	0	0	0	0	215	5.0	6.2	229	21	0004	222	10	01	2.0	
9	12.8	9.3	4.8	7.5	8.0	8.2	3.9	0.0	1006.5	0	0	0	0	0	216	9.1	10.3	202	35	0727	206	15	07	2.7	
10	9.4	4.3	tr	1.1	8.1	8.3	3.6	0.0	1024.0	0	0	0	0	0	276	3.4	5.6	332	19	0616	312	7	01	0.0	
11	10.8	3.4	1.5	-1.6	7.6	8.4	0.3	0.0	1025.4	0	1	0	0	0	207	11.7	11.7	216	31	2047	209	16	20	4.2	
12	11.2	8.9	0.5	6.7	7.9	8.4	4.4	0.0	1016.4	0	0	0	0	0	225	9.2	9.8	263	29	1337	257	13	13	0.7	
13	10.7	4.6	5.2	-0.4	7.7	8.4	0.9	0.0	1012.6	0	1	0	0	0	195	9.9	10.1	203	40	1949	197	19	19	5.5	
14	12.8	6.7	15.1	2.7	7.7	8.4	0.0	0.0	998.2	0	0	0	0	0	203	12.5	12.6	198	40	1607	203	19	19	16.5	
15	9.7	6.2	0.0	5.5	8.2	8.4	3.5	0.0	1004.0	0	0	0	0	0	214	7.5	7.8	197	38	0036	206	20	00	0.0	
16	11.9	5.6	16.8	-0.1	7.9	8.5	1.0	0.0	1016.5	0	1	0	0	0	176	8.8	9.1	184	30	1509	185	13	17	7.1	
17	8.7	7.4	tr	3.5	8.0	8.5	2.7	0.0	1008.9	0	0	0	0	0	225	7.3	7.8	232	30	1137	243	15	11	0.0	
18	7.0	-1.2	0.0	-6.6	7.5	8.5	7.5	6.5	1027.2	1	1	0	0	0	262	2.4	3.3	337	12	1408	324	6	14	0.0	
19	6.4	-3.7	0.0	-7.5	6.4	8.4	8.0	16.0	1044.9	1	1	0	0	0	271	1.1	2.1	335	8	1239	324	4	14	0.0	
20	6.3	-2.7	0.0	-6.7	5.5	8.2	5.3	13.1	1049.3	1	1	0	0	0	207	1.7	1.9	272	6	1024	206	3	14	0.0	
21	6.9	-3.5	tr	-6.9	5.0	7.8	6.9	13.6	1043.5	1	1	0	0	0	219	1.4	1.7	269	7	1405	281	3	13	0.0	
22	7.1	-1.5	0.3	-4.9	4.6	7.5	0.0	0.0	1038.0	1	1	0	0	0	64	0.6	1.7	97	10	2315	93	4	23	1.5	
23	7.6	4.0	0.1	5.5	5.2	7.3	0.0	0.0	1033.4	0	0	0	0	0	320	3.3	3.9	326	15	1219	332	8	11	0.5	
24	6.5	5.1	tr	4.5	5.7	7.2	0.0	0.0	1024.0	0	0	0	0	0	236	1.5	2.4	325	8	0653	237	3	12	0.0	
25	8.1	5.2	tr	4.3	6.1	7.2	0.0	0.0	1020.0	0	0	0	0	0	162	4.2	4.4	180	13	1800	160	7	17	0.0	
26	10.2	5.2	3.4	2.2	6.3	7.2	0.0	0.0	1011.2	0	0	0	0	0	193	6.8	7.0	176	21	1558	195	10	13	3.5	
27	9.1	6.1	8.1	1.6	6.6	7.3	0.9	0.0	1002.8	0	0	0	0	0	206	6.1	6.2	189	20	0547	221	8	01	3.9	
28	7.2	1.7	tr	-1.4	6.5	7.4	5.2	0.0	996.4	0	1	0	0	0	237	9.6	9.8	261	32	0340	243	14	14	0.0	
29	9.3	2.1	tr	-3.0	6.0	7.4	6.4	0.0	1009.9	0	1	0	0	0	223	8.2	8.4	234	22	0314	230	12	03	0.0	
30	12.3	3.3	0.5	2.4	5.9	7.3	0.0	0.0	1004.2	0	0	0	0	0	218	7.2	8.0	251	26	2244	258	13	22	0.9	
31	11.7	8.5	0.5	5.5	6.6	7.3	0.0	0.0	1008.0	0	0	0	0	0	215	9.4	9.5	227	28	1352	213	13	10	1.4	
Total			61.6				70.3	49.2																	55.6
Mean	9.4	4.1		1.1	6.9	8.0	2.27	1.6	1020.4						214	5.5	6.7								
Anom	+1.6	+2.3	99%	+2.2	+1.5	+0.5	97%				+3.7														
Daily mean		6.8																							
Anom		+2.0																							

Number of days with:

Air frost = 5      Ground frost = 14      Nil sun = 10  
 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. Sl = Snow lying at 09 GMT.

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

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

Sp = 24 hour mean wind speed in knots.

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

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

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

Anom = Departure from 1981-2010 climatological average.

All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for JANUARY 2020

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks					
1	35	8	04	01	04	4.8	3.8	93	4.9	1030.0	0	000	05	2	2	8	5	4	/ /	88615	1				
2	68	7	18	05	10	7.7	6.8	94	6.1	1022.3	8	006	01	6	5	7	5	3	/ /	81706	87630	2			
3	57	7	29	10	20	8.8	7.4	91	6.4	1017.7	2	037	21	6	5	7	8	3	/ /	83706	87630	3	2Cu12 vv20k NW CF 0850		
4	70	7	21	05	12	5.6	3.3	85	4.7	1034.5	2	010	03	2	2	7	5	6	/ /	87630		4			
5	82	7	23	07	11	6.7	4.7	87	5.2	1034.2	7	005	02	5	2	7	5	4	/ /	82612	87625	5			
6	82	7	19	08	20	6.8	2.9	76	4.6	1022.2	8	024	02	2	2	7	5	5	/ /	87620		6			
7	56	7	20	08	13	8.8	7.6	92	6.4	1024.0	6	003	05	2	2	1	6	3	7	2	81708	85359	7	1Ac57 4Ac63 /Ci75	
8	58	6	23	06	11	10.3	8.1	86	6.6	1022.4	2	020	05	2	2	1	5	4	7	/	81615	83362	85368	8	
9	75	4	21	13	30	10.9	8.0	82	6.7	1006.5	5	002	01	1	1	3	5	4	3	8	83615			9	1Ac68 1Cs70
10	84	7	30	04	10	5.5	2.7	82	4.5	1024.0	2	040	02	2	2	7	8	5	/ /	82820	87628		10	Cu hum	
11	50	8	21	13	23	8.9	6.9	87	6.1	1025.4	5	005	20	5	2	8	5	3	/ /	86707	88625		11		
12	84	2	24	12	24	9.8	7.1	83	6.2	1016.4	3	010	25	8	1	2	8	4	0	1	82815			12	1Sc35 1Ci80 COTRA Cu med
13	62	4	18	06	10	6.8	6.1	95	5.8	1012.6	8	025	80	8	1	3	8	4	6	1	82812			13	2Sc30 1Ac57 1Ci80 COTRA Cu med vv30k exp
14	63	7	19	07	15	8.6	6.2	85	6.0	998.2	7	003	03	1	1	1	6	4	7	/	81712	86460		14	/Ac65
15	84	8	20	07	14	6.2	4.2	87	5.2	1004.0	3	026	21	6	2	1	5	6	2	/	81635	88550		15	
16	75	7	17	08	17	8.2	5.8	85	5.7	1016.5	6	012	03	2	2	4	5	4	3	2	84615	87072		16	2Ac65 COTRA
17	63	3	21	08	13	7.6	5.9	89	5.8	1008.9	3	005	15	8	1	2	9	4	6	3	81918	81822		17	1Sc40 1Ac60 2Ci70 jpN SW W Rainbow
18	65	1	22	03	05	-0.4	-0.8	97	3.5	1027.2	2	022	02	0	0	0	0	9	0	1	81075			18	COTRA Hoar mod lcy patches
19	60	0	14	01	02	-2.7	-3.1	97	2.9	1044.9	2	032	10	0	0	0	0	9	0	0				19	Hoar thk Gnd sfc frzn
20	70	7	20	02	04	0.5	0.1	97	3.7	1049.3	5	001	03	2	2	7	0	9	7	1	82359	87361		20	/Ci75 Hoar sft
21	40	7	24	01	03	-1.5	-1.9	97	3.2	1043.5	3	003	10	1	1	7	5	5	/ /	87620			21	Hoar thk Gnd sfc frzn	
22	03	9	20	02	04	4.0	4.0	100	4.9	1038.0	4	000	50	5	4	9	/ / / /							22	
23	58	8	03	02	05	6.3	5.3	93	5.4	1033.4	7	004	05	2	2	8	5	4	/ /	83615	88618		23		
24	58	8	21	02	03	5.5	4.9	96	5.3	1024.0	1	002	20	5	2	8	5	4	/ /	85610	88615		24		
25	35	8	18	03	07	5.2	4.0	92	5.0	1020.0	2	003	51	5	2	8	6	3	/ /	86708	88710		25		
26	50	7	19	05	11	8.1	6.9	92	6.2	1011.2	6	005	60	6	2	7	5	3	/ /	87708	87645		26		
27	82	6	19	06	10	6.3	4.8	90	5.4	1002.8	7	004	01	2	2	1	5	4	3	8	81712	83270	86073	27	1Sc20 1Ac67 COTRA
28	82	3	24	08	14	2.5	0.6	87	4.0	996.4	2	032	03	0	0	1	5	5	1	2	81625	83068		28	2As63
29	70	6	23	08	14	3.3	0.9	84	4.0	1009.9	2	024	03	1	1	0	0	9	0	1	86075			29	COTRA Hoar sft
30	40	8	14	06	11	8.5	7.9	96	6.7	1004.2	8	019	20	5	2	8	6	2	/ /	86703	88705		30		
31	62	8	22	09	19	9.6	8.7	94	7.0	1008.0	0	001	02	5	2	8	6	2	/ /	88705			31		

Mean vis = 18.6 km

Mean cloud = 6.2 77%

Mean wind speed = 6.0 kn

Mean gust = 12 kn

Mean TT = 6.0 °C

Mean TdTd = 4.5 °C

Mean RH = 90.0 %

Mean r = 5.3 g/kg

Mean PPP = 1020.4 mbar

**See appendix 2 below for full code details**

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation trails present

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for JANUARY 2020

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks					
1	59	7	11	02	05	6.9	4.4	84	5.1	1028.5	5	009	05	1	1	7	5	4	/ /	87612	1				
2	68	8	21	11	21	9.8	6.7	81	6.1	1017.6	6	020	03	2	2	8	5	4	/ /	86615	88625	2			
3	75	1	30	09	17	7.9	1.7	65	4.2	1026.1	2	033	02	0	0	1	1	6	0	1	81832	3	1Ci75 Cu hum		
4	86	2	26	07	16	8.0	3.1	71	4.6	1034.5	5	008	02	1	1	1	8	5	4	1	81825	4	1Sc30 1Ac65 1Ci75 COTRA Cu hum		
5	86	7	25	08	16	8.5	3.7	72	4.9	1032.6	6	012	02	2	2	7	5	5	/ /	87620	5				
6	40	8	19	11	19	8.3	5.6	83	5.6	1016.7	7	030	62	6	2	5	5	4	2	/	81712	85620	88550	6	
7	57	8	20	10	20	10.5	9.4	93	7.3	1020.5	6	023	05	6	2	8	6	2	/ /	87705	88707	7			
8	60	8	25	04	10	11.1	7.6	79	6.4	1022.8	5	001	05	2	2	6	8	4	2	/	81815	86656	88458	8	Cu hum
9	56	8	17	02	11	10.9	10.0	94	7.7	1003.5	7	027	62	6	6	7	5	3	2	/	82708	84615	87620	9	8Ns30
10	88	6	25	04	09	6.9	1.4	68	4.1	1028.3	3	019	03	1	1	6	5	6	0	0	86630	10			
11	82	8	20	11	24	10.4	7.3	81	6.3	1022.1	6	016	02	2	2	8	5	4	/ /	86618	88630	11	Absent vv&cld est		
12	86	5	25	08	25	9.8	3.8	66	4.9	1019.6	2	014	03	1	1	5	8	5	0	1	82827	84640	12	1Ci80 COTRA Cu med	
13	40	8	18	11	25	8.2	6.7	90	6.1	1001.6	7	064	50	5	2	7	5	4	2	/	85710	87615	88540	13	
14	35	8	21	16	32	12.7	11.6	93	8.6	992.4	5	020	58	6	5	7	7	3	2	/	82707	87710	88530	14	
15	80	1	24	10	21	9.2	2.8	64	4.6	1010.1	3	029	01	1	1	1	8	5	6	0	81825	15	1Sc45 1Ac58 Cu med		
16	62	7	19	12	27	11.4	6.1	70	5.9	1010.4	6	026	60	6	2	7	5	4	2	/	81715	83540	87650	16	
17	80	5	24	10	21	6.3	2.2	75	4.4	1015.3	2	030	15	1	1	2	9	5	6	3	82920	85068	17	1Cu25 1Ac60 Cb & jp S	
18	81	6	31	06	12	6.3	0.8	68	4.0	1030.1	2	014	03	1	1	1	1	5	3	4	81820	86075	18	1Ac65 COTRA Parhelia	
19	80	0	32	04	07	5.8	0.8	70	3.9	1046.8	3	007	02	0	0	0	0	0	0	0	19				
20	70	3	22	03	05	6.0	1.5	73	4.1	1047.2	7	014	02	0	0	1	0	9	3	1	81362	83081	20		
21	68	1	25	02	07	6.8	2.1	72	4.3	1040.8	6	019	02	0	0	1	5	4	0	1	81615	21	1Ci80 COTRA		
22	30	8	04	01	04	6.9	6.6	98	5.9	1036.8	6	012	51	5	5	8	6	2	/ /	88703	22	Absent vv&cld est			
23	65	8	06	03	09	7.1	5.1	87	5.3	1029.4	7	025	02	2	2	8	5	4	/ /	88613	23				
24	58	8	23	03	07	6.4	5.2	92	5.4	1022.1	6	016	20	5	2	8	5	4	/ /	86612	88615	24			
25	56	8	13	06	09	6.8	5.3	90	5.5	1016.7	7	024	05	2	2	8	6	3	/ /	86708	88712	25			
26	56	8	19	10	19	9.3	8.1	92	6.7	1007.1	7	025	63	6	2	7	5	3	2	/	83708	87615	88530	26	
27	57	8	20	03	18	5.6	4.9	95	5.4	997.4	7	032	63	6	6	6	5	5	2	/	81625	86635	88540	27	
28	86	6	24	15	27	6.4	1.0	72	4.1	997.6	7	002	25	8	1	2	8	5	6	3	82828	83363	85070	28	1Sc35 Cu hum jpE Cb top W
29	75	6	22	07	18	8.5	3.7	72	5.0	1011.2	7	003	02	1	1	5	8	5	0	1	81827	85640	29	2Sc35 3Ci78 COTRA Cu hum	
30	35	8	23	09	19	11.8	11.0	95	8.2	1000.2	5	017	50	5	2	8	7	2	/ /	87705	88707	30			
31	82	8	22	12	27	11.2	9.8	91	7.6	1005.5	6	020	20	5	2	8	6	3	/ /	87708	88710	31			

Mean vis = 23.4 km

Mean cloud = 6.2 77%

Mean wind speed = 7.4 kn

Mean gust = 16 kn

Mean TT = 8.4 °C

Mean TdTd = 5.2 °C

Mean RH = 80.5 %

Mean r = 5.6 g/kg

Mean PPP = 1019.1 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation trails present

Wokingham Sunshine Hourly analysis	Hour	01-Jan	02-Jan	03-Jan	04-Jan	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan
2020	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	8	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00
	9	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.74	0.00	0.00	0.61	0.39	0.00	0.00	0.43
	10	0.00	0.00	0.09	0.00	0.00	0.00	0.52	0.00	0.81	0.79	0.00	0.63	0.38	0.00	0.00	0.45
	11	0.00	0.00	0.22	0.00	0.01	0.00	0.39	0.00	0.87	0.90	0.10	0.49	0.11	0.00	0.51	0.14
	12	0.62	0.00	1.00	0.62	0.00	0.11	0.00	0.00	1.00	1.00	0.20	0.47	0.02	0.00	0.78	0.00
	13	0.00	0.00	1.00	1.00	0.01	0.02	0.00	0.00	0.48	0.56	0.00	0.80	0.00	0.00	0.46	0.00
	14	0.09	0.00	1.00	1.00	0.01	0.00	0.00	0.00	0.00	0.12	0.00	0.97	0.00	0.00	0.90	0.00
	15	0.00	0.00	0.90	0.95	0.01	0.00	0.00	0.00	0.00	0.17	0.00	0.36	0.00	0.00	0.79	0.00
	16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.11	0.00	0.00	0.09	0.00
	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	0.00
	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>0.71</b>	<b>0.00</b>	<b>4.22</b>	<b>3.57</b>	<b>0.03</b>	<b>0.13</b>	<b>1.14</b>	<b>0.00</b>	<b>3.91</b>	<b>3.64</b>	<b>0.30</b>	<b>4.44</b>	<b>0.89</b>	<b>0.00</b>	<b>3.53</b>	<b>1.02</b>

Hour	17-Jan	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.40	0.71	0.69	0.15	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.84	0.00	0.00	0.13
9	0.75	1.00	1.00	0.31	0.23	0.00	0.00	0.00	0.00	0.00	0.30	0.51	1.00	0.00	0.00	0.24
10	0.18	1.00	1.00	0.24	1.00	0.00	0.00	0.00	0.00	0.00	0.60	1.00	1.00	0.00	0.00	0.31
11	0.16	1.00	1.00	0.44	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.30
12	0.42	1.00	1.00	0.79	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	0.98	0.00	0.00	0.39
13	0.77	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.65	0.00	0.00	0.32
14	0.06	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.19	0.00	0.00	0.28
15	0.00	0.64	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.53	0.00	0.00	0.24
16	0.00	0.18	0.31	0.34	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.23	0.00	0.00	0.06
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	0.00
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>2.74</b>	<b>7.52</b>	<b>8.00</b>	<b>5.28</b>	<b>6.86</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.90</b>	<b>5.24</b>	<b>6.40</b>	<b>0.00</b>	<b>0.00</b>	<b>70.48</b>

JANUARY 2020	T mn	Tx	Time	Tn	Time	RHmn	RH x	Time	RH n	Time	Tdmn	r mn	r x	Time	r n	Time	p mn	p x	Time	p n	Time	R tot
1	5.70	7.8	1239	2.9	0	90.2	96.6	9	77.8	1242	4.2	5.0	5.7	2234	4.4	0	1029.18	1030.9	0	1026.4	2358	0
2	8.79	10.5	1317	6.9	0	88.3	95.6	755	76.7	1341	6.9	6.1	7.2	2359	5.6	331	1019.89	1026.5	0	1013.9	2358	0.2
3	7.77	10.9	313	3.2	2320	81.0	95.9	840	58.4	1234	4.6	5.4	7.6	207	3.9	2233	1022.37	1033.6	2332	1011.5	245	1.4
4	5.59	8.3	1303	3.2	138	84.2	91.8	1927	68.8	1417	3.1	4.6	5.4	2358	4.0	14	1034.64	1036.0	2011	1033.2	33	0
5	7.35	8.8	1317	6.0	701	83.6	93.6	424	71.2	1319	4.7	5.2	5.4	102	4.9	1459	1033.22	1035.6	4	1028.8	2357	0
6	7.35	8.8	1717	4.7	2357	82.1	95.2	2359	72.7	237	4.4	5.2	6.5	1726	4.4	308	1021.99	1029.0	0	1016.5	1459	1.2
7	9.25	12.6	2142	4.5	11	92.1	96.6	227	78.9	1145	8.0	6.7	8.2	1832	4.9	4	1021.76	1024.7	442	1017.7	1905	0.1
8	10.78	12.3	114	9.3	2255	87.2	96.0	2351	78.3	1352	8.7	6.9	7.9	302	6.3	1521	1020.62	1023.4	1026	1012.9	2359	0.6
9	10.38	12.8	1315	4.8	2359	86.0	96.1	9	68.4	1321	8.1	6.8	8.1	227	4.8	2357	1006.69	1013.0	0	1002.2	1610	5.5
10	5.44	8.0	1245	3.4	1956	80.3	91.0	28	63.7	1407	2.3	4.4	5.0	249	3.9	919	1024.07	1029.9	2007	1010.5	12	0
11	9.31	10.7	1248	5.2	14	81.7	90.8	1029	76.6	449	6.3	5.9	6.5	1806	4.6	7	1023.82	1029.0	3	1018.3	2359	0
12	8.74	11.2	1307	4.6	2234	83.8	95.0	508	62.4	1414	6.1	5.8	7.4	615	4.6	2240	1018.40	1021.1	1903	1015.0	738	1.4
13	7.87	10.7	1908	5.5	0	87.9	94.6	849	77.2	1208	6.0	5.8	7.3	2028	4.9	2	1006.98	1020.0	0	994.7	1957	5.3
14	10.02	12.8	1516	7.1	117	88.3	94.4	2223	77.6	715	8.2	6.9	8.6	1525	5.0	658	995.70	998.8	528	991.8	1440	7.1
15	7.69	12.0	59	5.9	2353	84.1	95.5	458	63.2	1510	5.1	5.5	8.0	47	4.4	1611	1007.43	1018.6	2342	995.4	17	6.9
16	9.07	11.9	1713	5.6	30	85.4	92.6	2103	70.3	1453	6.7	6.1	7.5	2110	5.0	30	1013.58	1019.4	214	1008.4	1918	5.7
17	6.47	10.2	1	1.3	2319	85.8	95.9	325	62.8	1338	4.2	5.2	7.0	144	3.9	2317	1013.01	1021.1	2359	1007.8	433	10.1
18	1.84	7.0	1337	-1.5	2352	89.7	98.7	507	62.6	1301	0.2	3.8	4.5	1110	3.2	2352	1028.82	1037.1	2359	1021.0	0	0.1
19	0.04	6.4	1308	-3.7	752	90.7	98.2	504	65.5	1326	-1.4	3.3	4.2	1118	2.7	752	1045.12	1050.0	2314	1037.1	0	0
20	1.05	6.3	1333	-1.8	2249	91.8	98.0	2255	71.6	1334	-0.2	3.6	4.2	1333	3.1	2249	1047.92	1049.9	5	1045.0	2351	0
21	0.35	6.9	1500	-3.5	753	94.2	99.9	2154	74.0	1501	-0.6	3.6	4.5	1248	2.8	745	1042.16	1045.1	2	1040.0	2221	0
22	4.91	7.1	1433	0.7	1	98.8	99.8	1038	94.7	2341	4.7	5.2	6.0	1442	3.8	1	1037.68	1040.3	1	1036.4	2202	0.2
23	6.50	7.6	1225	5.6	2343	91.1	97.2	2349	83.2	1233	5.1	5.4	5.6	42	5.2	1759	1031.38	1036.6	0	1026.5	2359	0
24	5.84	6.5	1218	5.1	531	94.7	98.2	227	90.6	1252	5.0	5.4	5.5	1218	5.2	802	1023.33	1026.7	0	1021.4	2245	0.1
25	6.07	7.1	2354	5.2	905	90.5	96.1	1944	83.9	416	4.6	5.2	5.9	2359	4.6	530	1018.19	1021.6	10	1014.0	2359	0
26	8.24	10.2	1200	6.6	408	92.3	97.0	2111	78.1	1215	7.0	6.3	6.9	1822	5.7	408	1009.21	1014.1	0	1005.5	1700	2.2
27	6.70	9.1	1209	4.8	2010	91.6	97.0	1749	80.8	1348	5.4	5.6	6.3	103	5.1	2241	999.32	1005.9	3	990.7	2359	7.2
28	3.84	7.2	1252	1.7	824	82.9	94.1	453	66.1	1252	1.2	4.2	5.3	21	3.7	2058	996.82	1004.0	2359	989.6	49	1
29	5.48	9.3	1331	2.1	623	81.6	92.1	2132	66.6	1343	2.5	4.6	5.9	2341	3.8	622	1009.50	1011.7	1246	1004.0	14	0
30	9.86	12.3	1633	7.4	100	91.8	96.7	930	83.0	341	8.6	7.0	8.4	1754	5.6	345	1004.29	1010.9	0	999.9	1438	0.5
31	10.29	11.7	1136	8.7	225	92.1	97.6	2104	85.4	1138	9.0	7.2	8.0	2126	6.2	222	1006.13	1008.4	650	1002.5	2227	0.5
Total																						57.3
Mean	6.73	9.52		3.92		87.9	95.74		73.91		4.80	5.42	6.47		4.54		1019.78	1024.93		1014.16		
Max	10.78	12.84		9.28		98.8	99.90		94.70		9.05	7.20	8.60		6.33		1047.92	1050.03		1045.05		
Min	0.04	6.32		-3.73		80.3	90.80		58.44		-1.44	3.32	4.19		2.70		995.70	998.79		989.62		

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

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

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

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

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

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

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

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

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

**Temperature:** The terms cold/mild are used in the winter half year, and cool/warm in the summer half. The term 'normal' is used when the individual mean (monthly, seasonal or annual) value is within 20 % of the median of all ranked values for that month/season/year.

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

**Month:** Calendar month.

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

Summer, June to August

Autumn, September to November

Winter, December to February.

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

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

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

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

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

**Snow:** A day with snow falling is triggered if snow falls at any time in the 24 hours from midnight on that day. A day with snow lying is entered if there is at least 50% snow cover at the 0900 GMT observation. Snow depth is the depth of undrifted snow. Snow that collects in the raingauge funnel is melted and the amount recorded as rainfall.

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

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

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

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

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

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

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

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

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

## Appendix 2.

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

**VV** : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

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

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

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

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

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

**Cl :** Type of low cloud

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

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

**Cm :** Type of medium cloud.

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

**Ch :** Type of high cloud

0 = No high cloud

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

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

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

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

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

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

7 = Veil of Cirrostratus covering the celestial dome.

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

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

/ = Types of high cloud invisible owing to darkness, fog, blowing dust or sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

**8 Groups**

**N** = Amount of cloud reported by C, okta.

**C** = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

/ = Cloud type not visible owing to darkness, fog, duststorm, or other analogous phenomena.

**hshs** = Height of cloud above station level reported by type C

00 to 50 = Height in hundreds of feet

51 to 55 Not used

56 to 80 = Subtract 50 to obtain cloud height in thousands of feet

81 to 88 = Height of cloud between 35000 and 70000 ft in 5000 ft steps.