

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

FEBRUARY 2019

		Anomaly	Rank in the past 138 years				
Temperature (°C)							
Mean maximum	11.8	+3.6	*Highest*				
Mean minimum	1.6	+0.1	59 th highest				
Daily mean	6.7	+1.8	17 th highest				
Highest maximum	20.0	on 26 th	Lowest maximum	1.5	on 1 st		
Highest minimum	7.4	on 18 th	Lowest minimum	-5.9	on 3 rd		
Mean grass minimum	-2.2	-0.4	Lowest grass minimum	-10.4	on 3 rd		
Mean earth @30 cm	5.7	+0.4	Earth @100 cm	7.0			
Frost duration (hrs)	49.3		Rain duration (hrs)	35.2			
Rainfall total (mm)	39.7	93 %					
Highest daily fall	11.8	on 1 st	Highest rate mm/hr	18	on 28 th		
Number of: Dry days (<0.2mm)	17	Wet days (>0.9mm)	8	days ≥5mm	2		
Sunshine total (hrs)	135.5	Daily mean	4.84	165 %	Sunniest day	10.3 on 26 th	
N° days with: Air frost	11	Ground frost	21	Snow falling	1	Snow lying	3
Thunder	0	Hail ≥5mm	0	Small hail/ice	2	Fog @09	4
						Nil sun	4
Pressure MSL: Mean @09 GMT, mbar	1020.3	+2.9	Highest	1037.6	on 25 th	Lowest	983.1 on 1 st
Relative humidity: Mean (%)	85.3	Lowest	26 on 25 th	Water vapour (g/kg), mean at 09 and 15 GMT	5.2,	5.4	
Overall mean wind speed (mph)	6.7	Windiest day	14.7 on 8 th	Max gust	47	on 8 th	
Wind direction (days)	N 1	NE 2	E 1	SE 3	S 7	SW 11	W 2
Least windy day (mph)	2.3 on 24 th	Calm; less than 0.5 mph (minutes)				848	

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

Notes: A Month of Strong Contrasts, Very Mild and Very Sunny Overall with Near Average Rainfall.

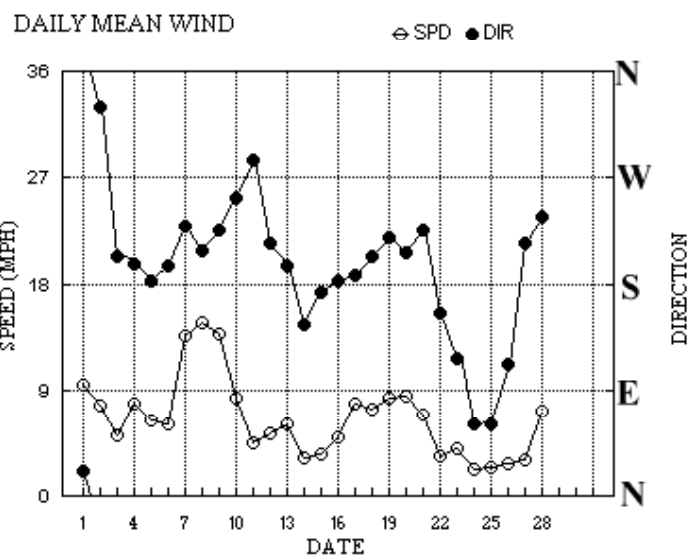
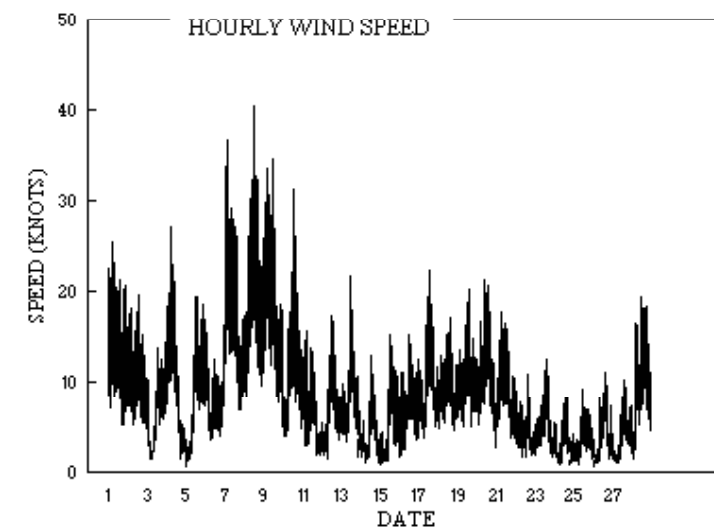
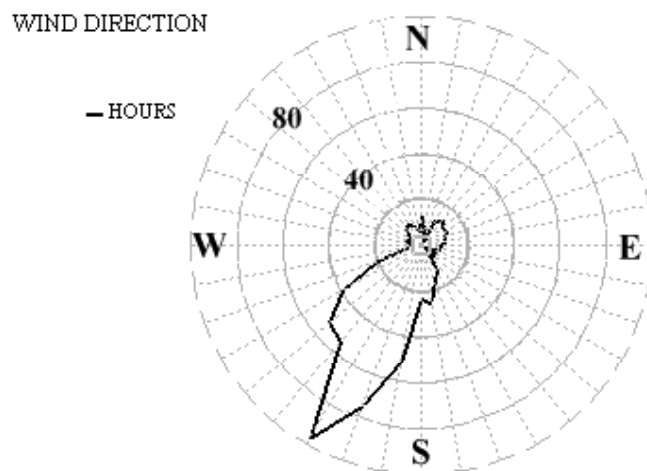
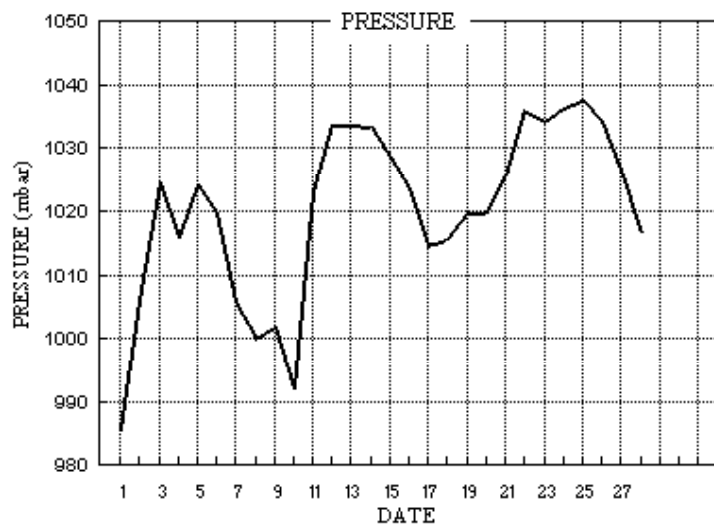
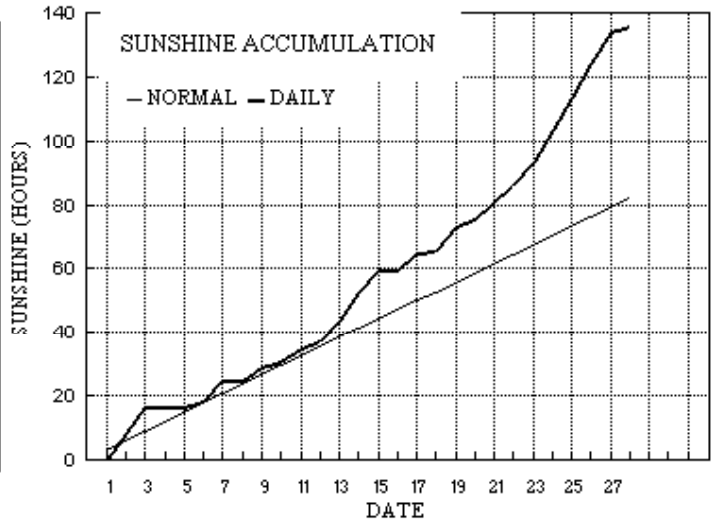
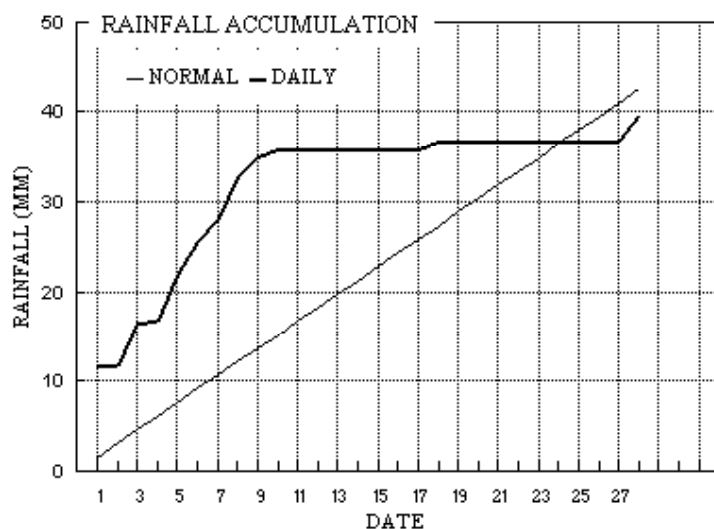
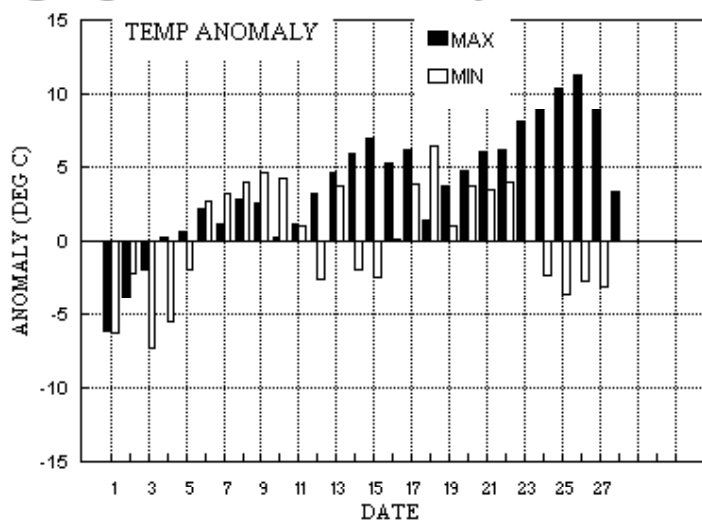
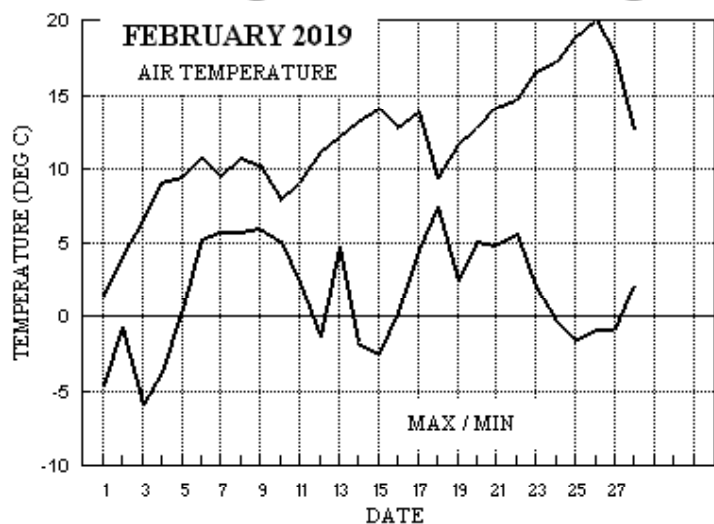
This has been a record breaking February and a month of strong contrasts, cold and snowy to start and ending dry with unseasonable warmth. **Temperature:** Record breaking mean maximum, 3.6° above average and 0.4° above the previous highest set jointly in 1998 and 1990. In contrast, the mean minimum is only 0.1° above average and is 3.6° below the record. The resulting daily mean is 1.6° below the record and is highest only since 2014. The mean daily temperature range of 10.2° is 2nd highest for February in 138 years, and highest since 2008. The highest max is a new February record, 2.2° above the previous record set in 1998, and is 7.0° above the median. Conversely the lowest max is 0.8° below the median, the highest min is 0.6° below the median and the lowest min is 0.8° below its median. Anomalies for daily max were negative only for the first 3 days of the month, anomaly -6° on the 1st, but then exceeded +5° from the 14th to 17th and 21st to 27th, and exceeded +10° on the 25th and 26th, reaching +11.3° on the 26th. Anomalies for daily min were greater than -5° on the 1st, 3rd and 4th, and exceeded +5° on the 18th, with extreme anomalies of -7° on the 3rd and +6° on the 18th. **Rainfall:** The total for the month is just below average, but most days after the 10th were dry, and the period 10th to 27th had only 1.6 mm of rain over 2 days. Snow and sleet which commenced in the evening of 31st January continued through the 1st, resulting in 10 cm cover on the 1st which thawed to 5 cm by the 3rd and had gone completely by the 5th. Daily rainfall accumulation compared with normal was already 10 mm in surplus on the 1st, climbing to a surplus of 21 mm by the 10th. The ensuing dry spell reduced this to zero by the 24th, the month ending with a deficit of 3 mm. There was no thunder this month but ice pellets fell on the 1st and 10th. **Sunshine:** This has been a near record breaking February, 2nd only to 2008, the current record holder. Compared with the 20 year average for the present recorder, this February had 165% of average. Days having over 80 % of the maximum were the 2nd, 3rd, 14th and 24th to 27th, these last 4 days producing a total of 40.5 hours, a mean of 10.1 hours per day. Daily accumulations compared with normal were close to zero up to the 12th, then increased steadily to end up with a surplus of 52 hours on the 28th. Overall there were 11 days with less than 3 hours, 12 with =>6 hours and 4 with =>9 hours. **Wind:** The mean speed is 1.3 mph below average and lowest for the month since 2012, but the month's highest gust is close to normal. The duration of calm is highest since 2008. Daily mean directions were mainly between S and W, except N'ly on the 1st and 2nd, SE'ly on the 23rd and 26th, and NE'ly on the 24th and 25th. Speeds were light of moderate, except for fresh on the 4th and 10th, strong for the 7th to 9th, and very light on the 24th and 25th. **Humidity:** The relative humidity fell to 26 % on the 25th, the lowest February value in the past 22 years.

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

From the 1 st to the 10 th				From the 11 th to the 20 th				From the 21 st to the 28 th			
-0.2°	-0.4°	237%	105%	+4.3°	+1.3°	6%	153%	+7.9°	-0.5°	26%	255%

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

Wokingham climatological graphs for February 2019



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: FEBRUARY 2019

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 HH	Rain hrs											
1	1.5	-4.7	11.8	-0.9	3.8	7.2	0.0	0.0	985.5	1	1	1	0	0	1	0	22	7.8	8.2	35	26	0408	34	11	05	7.7		
2	4.1	-0.7	0.0	-3.4	3.9	7.0	8.5	3.6	1006.0	1	1	0	1	0	0	0	0	329	6.4	6.7	337	20	1427	324	9	11	0.0	
3	6.5	-5.9	4.7	-10.4	3.9	6.8	8.1	10.5	1024.5	1	1	0	1	0	0	0	0	203	3.9	4.6	193	14	2124	192	8	21	2.7	
4	9.1	-3.8	0.3	-0.3	3.6	6.7	0.0	0.0	1015.7	1	1	0	0	0	0	0	0	197	6.6	6.9	196	27	0521	195	13	05	0.7	
5	9.5	0.5	5.0	-3.8	4.1	6.5	0.0	0.0	1024.3	0	1	0	0	0	0	0	0	182	5.4	5.6	190	20	1208	192	10	13	4.0	
6	10.7	5.3	3.7	-1.0	4.8	6.4	1.7	0.0	1019.8	0	1	0	0	0	0	0	0	195	4.7	5.3	191	16	2354	198	8	01	2.6	
7	9.4	5.8	2.6	3.2	5.4	6.4	6.4	0.0	1005.8	0	0	0	0	0	0	0	0	229	11.5	11.8	237	37	0318	234	17	03	4.0	
8	10.7	5.8	4.6	3.8	5.6	6.5	0.0	0.0	1000.1	0	0	0	0	0	0	0	0	208	12.6	12.8	203	41	1138	202	19	12	4.1	
9	10.2	6.0	2.4	3.0	6.0	6.6	4.3	0.0	1001.7	0	0	0	0	0	0	0	0	226	11.7	12.0	243	35	1210	230	18	05	4.5	
10	7.9	5.1	0.7	4.1	6.1	6.7	2.1	0.0	991.9	0	0	0	0	0	1	0	0	252	6.1	7.3	285	32	1444	282	12	14	1.0	
11	9.1	2.3	0.0	-2.1	5.9	6.8	4.0	0.0	1023.0	0	1	0	0	0	0	0	0	284	2.7	4.0	324	16	0503	319	7	11	0.0	
12	11.1	-1.3	0.0	-5.2	5.7	6.9	2.4	4.5	1033.8	1	1	0	0	0	0	1	0	215	4.5	4.7	253	17	1248	235	9	14	0.0	
13	12.1	4.7	0.0	-1.7	5.9	6.9	6.2	0.0	1033.6	0	1	0	0	0	0	0	0	195	5.3	5.4	198	22	1233	209	11	12	0.0	
14	13.1	-1.7	0.0	-6.6	5.9	6.9	8.9	8.2	1033.4	1	1	0	0	0	0	1	0	146	2.1	2.9	161	13	1333	148	7	14	0.0	
15	14.1	-2.5	tr	-6.6	5.4	7.0	6.9	8.9	1028.6	1	1	0	0	0	0	1	0	173	2.2	3.2	171	15	1309	185	7	14	0.0	
16	12.8	0.3	tr	-4.0	5.2	7.0	0.1	0.0	1023.5	0	1	0	0	0	0	0	0	182	4.2	4.4	196	15	1239	202	7	14	0.0	
17	13.8	4.5	tr	-1.7	5.9	6.9	5.6	0.0	1014.6	0	1	0	0	0	0	0	0	187	6.3	6.9	198	22	1444	202	10	11	0.0	
18	9.3	7.4	0.9	1.5	6.2	6.9	0.3	0.0	1015.5	0	0	0	0	0	0	0	0	204	6.4	6.4	201	17	1433	208	9	14	2.6	
19	11.6	2.4	tr	-3.3	6.1	7.0	7.5	0.0	1019.7	0	1	0	0	0	0	0	0	219	7.0	7.2	231	20	1450	233	10	14	0.0	
20	12.8	5.1	0.0	4.2	6.3	7.1	2.6	0.0	1019.6	0	0	0	0	0	0	0	0	206	7.4	7.4	218	21	1013	211	11	10	0.0	
21	14.2	4.9	tr	-1.6	6.6	7.1	5.3	0.0	1025.6	0	1	0	0	0	0	0	0	226	6.0	6.1	216	18	0620	220	9	05	0.0	
22	14.7	5.6	tr	0.0	7.0	7.2	5.6	0.0	1036.1	0	0	0	0	0	0	1	0	155	1.8	2.9	105	11	1511	113	6	15	0.0	
23	16.6	2.1	0.0	-2.4	7.0	7.3	7.0	0.0	1034.3	0	1	0	0	0	0	0	0	117	2.3	3.5	171	13	1503	155	6	13	0.0	
24	17.2	-0.3	0.0	-5.3	7.0	7.4	9.8	0.9	1036.4	1	1	0	0	0	0	0	0	61	1.4	2.0	102	8	1524	90	4	15	0.0	
25	18.9	-1.6	0.0	-6.3	6.6	7.4	10.2	6.0	1037.5	1	1	0	0	0	0	0	0	61	1.7	2.2	85	9	1117	26	4	14	0.0	
26	20.0	-0.9	0.0	-5.2	6.4	7.5	10.3	3.6	1034.4	1	1	0	0	0	0	0	0	112	1.3	2.5	186	11	1429	172	6	15	0.0	
27	17.8	-0.9	0.0	-5.9	6.3	7.5	10.2	3.1	1026.7	1	1	0	0	0	0	0	0	215	2.0	2.6	252	10	1450	232	5	15	0.0	
28	12.5	2.2	3.0	-3.0	6.4	7.5	1.5	0.0	1016.4	0	1	0	0	0	0	0	0	236	6.0	6.3	236	19	1220	248	10	15	1.3	
Total			39.7				135.5	49.3																				35.2
Mean	11.8	1.6		-2.2	5.7	7.0	4.84	1.8	1020.3									212	3.7	5.8								
Anom	+3.6	+0.1	93%	-0.4	+0.4	+0.2	165%																					+2.9
Daily mean		6.7																										
Anom		+1.8																										

Number of days with:

Air frost = 11 Ground frost = 21 Nil sun = 4
 Snow falling = 1 Snow lying = 3 Thunder = 0
 Hail=>5mm = 0 Hail<5mm or ice = 2 Fog at 09GMT = 4

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 FEBRUARY 2019

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cf	NCh	shs	NCh	shs	NCh	shs	Date	Remarks
1	59	8	04	09	23	0.5	0.4	99	4.0	985.5	2	022	70	7	2	8	7	3	/	/	88706						1	Snly 10cm 100% Thaw	
2	59	2	33	05	13	0.0	-1.7	88	3.4	1006.0	1	037	05	1	1	1	5	7	0	1	81656						2	2Ci75 COTRA Snly 6cm 100%	
3	82	2	19	03	05	-3.8	-4.2	97	2.7	1024.5	2	012	03	0	0	0	0	9	0	4	82070						3	Ci cas. Hoar slt. Snly 5cm90%	
4	56	8	20	11	23	6.5	5.6	94	5.6	1015.7	6	010	58	6	5	8	5	2	/	/	83705	87707	88615			4	Snly2cm10% Thaw		
5	60	8	16	03	06	6.3	6.3	100	5.8	1024.3	1	004	10	2	2	8	5	4	/	/	85615	88620				5			
6	50	8	23	04	07	7.8	7.7	99	6.4	1019.8	1	006	10	2	2	8	6	2	/	/	87704	88705				6			
7	82	3	23	16	27	6.5	2.6	76	4.6	1005.8	2	018	25	8	1	3	8	5	0	3	83822					7	1Sc30 1Ci70 Cu hum		
8	50	8	20	15	30	9.4	8.3	93	6.9	1000.1	7	026	51	6	5	7	5	3	2	/	86708	87615	88550			8			
9	84	5	23	11	26	6.7	3.0	77	4.7	1001.7	1	034	03	8	1	3	8	5	0	5	81825	83635				9	3Cs70 COTRA Cu hum		
10	80	8	25	09	16	5.2	4.0	92	5.1	991.9	3	015	60	6	2	7	5	4	2	/	84710	87615	88550			10			
11	86	5	29	03	08	5.2	2.2	81	4.4	1023.0	2	052	03	1	1	5	8	5	0	1	81825	85630				11	1Ci75 COTRA Cu fra		
12	09	8	21	04	08	5.2	5.1	99	5.3	1033.8	3	009	42	4	2	8	6	1	/	/	88702					12			
13	58	7	18	06	10	6.2	5.6	96	5.5	1033.6	3	003	10	2	2	1	6	3	0	2	81706	83072	87078			13	COTRA		
14	01	1	35	01	03	-0.8	-0.8	100	3.5	1033.4	3	003	48	4	4	0	0	9	0	1	81075					14	vv150m Rime slt		
15	01	9	36	01	03	0.2	0.2	100	3.8	1028.6	2	002	45	4	4	9	/	/	/	/						15	vv150m Rime/hoar slt		
16	25	8	16	04	09	8.9	8.3	96	6.7	1023.5	2	008	50	5	2	8	5	2	/	/	85705	88618				16			
17	56	2	16	06	11	7.4	6.0	91	5.8	1014.6	8	011	05	0	0	0	0	9	0	1	81072					17	1Ci78 COTRA		
18	59	8	20	05	12	9.2	7.5	89	6.4	1015.5	3	008	60	6	2	2	7	4	2	/	82712	88545				18			
19	64	1	22	07	13	5.1	3.8	91	4.9	1019.7	2	013	02	0	0	0	0	9	0	1	81080					19	COTRA		
20	80	7	21	07	15	8.2	6.0	86	5.8	1019.6	3	014	02	2	2	7	5	4	/	/	85612	87616				20			
21	61	8	23	07	14	9.6	8.0	90	6.6	1025.6	1	020	02	2	2	8	6	3	/	/	87708	88710				21			
22	05	8	22	01	04	6.1	6.1	100	5.7	1036.1	3	023	50	5	4	8	6	1	/	/	88702					22	Fog thinning		
23	11	8	13	04	07	8.3	8.3	100	6.6	1034.3	0	005	28	4	2	8	6	1	/	/	88702					23	Fog until 0840		
24	30	0	05	01	03	4.2	4.1	99	4.9	1036.4	2	014	10	0	0	0	0	9	0	0						24	Hoar slt		
25	35	3	01	02	03	3.7	2.8	94	4.5	1037.5	3	006	05	0	0	0	0	9	0	1	83080					25	COTRA Hoar slt		
26	50	0	05	03	08	4.7	1.7	81	4.2	1034.4	1	005	05	0	0	0	0	9	0	0						26	Hoar slt		
27	45	0	33	01	03	4.3	3.3	93	4.7	1026.7	8	003	05	0	0	0	0	9	0	0						27	Hoar slt		
28	28	7	21	06	09	9.2	8.3	94	6.8	1016.4	8	008	05	2	2	7	5	2	/	/	84705	87630				28			

Mean vis = 13.1 km
 Mean cloud = 5.3 67%
 Mean wind speed = 5.5 kn
 Mean gust = 11 kn
 Mean TT = 5.4 °C
 Mean TdTd = 4.2 °C
 Mean RH = 92.7 %
 Mean r = 5.2 g/kg
 Mean PPP = 1020.3 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 FEBRUARY 2019

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks					
1	58	8	02	09	17	1.3	0.7	96	4.1	989.1	3	017	21	6	7	8	5	4	/ /	87611	88620	1	Snly 7cm 100% Thaw		
2	81	1	32	07	20	4.0	-2.0	65	3.3	1010.5	3	020	02	0	0	1	8	5	0	0	81825	2	1Sc35 Cu hum Snly 5cm90%		
3	82	4	22	07	12	4.9	-1.5	63	3.3	1024.5	5	004	03	0	0	1	5	6	0	4	81640	84080	3	COTRA Snly4cm90% Thaw	
4	50	8	21	06	11	8.9	8.5	97	6.8	1017.1	3	010	51	5	5	8	5	2	/ /	84704	87706	88612	4		
5	25	8	17	07	18	5.6	5.0	96	5.4	1022.8	8	015	20	5	2	8	6	2	/ /	88703			5		
6	80	8	20	05	09	10.4	5.8	73	5.7	1016.0	7	028	03	2	2	1	8	5	1	7	81825	83465	88270	6	.1Sc50 Cu hum Halo 22° part+parhelion
7	81	2	26	09	26	8.9	2.7	65	4.6	1008.0	1	007	15	8	1	1	9	5	6	3	81925	81830		7	1Sc50 1Ac65 1Ci70 CbS,SW,NW
8	58	8	21	16	33	10.5	8.3	86	6.9	994.1	7	027	62	6	5	5	5	4	2	/	82712	84620	88550	8	
9	75	8	23	10	23	9.4	4.0	69	5.1	1004.0	1	006	15	2	2	4	8	6	0	7	82835	83645	88275	9	Cu med jpW&N
10	70	5	30	12	32	5.3	2.3	81	4.5	1001.0	2	051	27	8	2	3	9	4	6	3	82915	81820	83365	10	2Sc45 1Ci70 jpE vv60k exE
11	84	7	31	04	11	9.1	2.7	64	4.5	1028.6	2	020	02	2	2	4	4	6	0	1	81830	84633	86080	11	COTRA Cu hum
12	82	7	24	11	17	10.4	4.5	67	5.1	1033.2	6	005	03	2	2	7	5	5	/ /	87627			12		
13	75	7	20	08	17	11.4	5.3	66	5.4	1032.4	7	008	02	2	2	1	1	5	3	1	81827	87075		13	2Ac69 COTRA Cu hum
14	70	4	15	07	12	12.8	3.7	54	4.9	1030.7	6	019	02	0	0	0	0	9	0	1	84080			14	COTRA
15	65	1	18	07	14	14.0	4.8	54	5.3	1025.1	7	023	02	0	0	0	0	9	0	1	81080			15	COTRA
16	62	8	20	08	14	12.3	10.0	86	7.5	1022.2	6	011	02	2	2	8	8	4	/ /	83811	88620		16	Cu hum	
17	63	7	21	12	22	11.7	8.6	81	6.9	1014.5	5	000	03	1	1	7	5	4	/ /	87614			17		
18	62	8	21	09	17	9.2	6.5	83	6.0	1014.3	7	009	15	6	2	5	8	4	2	/	83815	84622	88458	18	Cu hum jpNW
19	82	7	23	11	20	10.3	4.4	67	5.2	1019.1	6	008	80	8	2	5	8	5	0	1	82828	84650	85080	19	COTRA Cu med
20	81	4	21	10	21	11.8	5.7	66	5.6	1020.1	8	003	01	1	1	2	1	6	3	0	82830	83368		20	Cu hum
21	68	3	24	09	15	14.2	8.4	68	6.7	1026.9	7	001	01	1	1	1	1	5	0	1	81825	83080		21	Cu hum
22	65	6	11	06	10	14.6	7.4	62	6.2	1034.5	8	012	02	2	2	1	0	9	4	1	81368	86080		22	COTRA
23	63	1	15	07	12	16.5	6.6	52	5.9	1032.2	7	012	02	0	0	0	0	9	0	1	81075			23	
24	65	1	09	03	08	17.1	1.1	34	4.0	1034.9	7	011	02	0	0	0	0	9	0	1	81080			24	
25	61	1	04	03	07	18.9	1.0	30	4.0	1035.1	6	016	02	0	0	0	0	9	0	1	81080			25	
26	62	0	15	07	11	19.8	3.1	33	4.6	1030.4	6	019	02	0	0	0	0	9	0	0				26	
27	59	0	24	05	10	17.7	5.9	46	5.7	1022.8	6	026	05	0	0	0	0	9	0	0				27	
28	80	7	25	09	17	11.5	9.1	85	7.1	1014.5	7	008	25	8	2	7	8	4	/ /	85815	84635		28	3Sc45 Cu med	

Mean vis = 21.2 km

Mean cloud = 5.0 62%

Mean wind speed = 8.0 kn

Mean gust = 16 kn

Mean TT = 11.2 °C

Mean TdTd = 4.7 °C

Mean RH = 67.5 %

Mean r = 5.4 g/kg

Mean PPP = 1020.0 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

Wokingham	Hour	01-Feb	02-Feb	03-Feb	04-Feb	05-Feb	06-Feb	07-Feb	08-Feb	09-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb
Sunshine	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
Hourly analysis	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
	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
	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
2019	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
	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
	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
	7	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.06	0.00	0.02	0.00	0.00
	8	0.00	0.75	1.00	0.00	0.00	0.00	0.67	0.00	0.27	0.00	0.46	0.00	0.00	0.68	0.00
	9	0.00	1.00	0.85	0.00	0.00	0.08	0.74	0.00	0.51	0.00	0.55	0.03	0.16	1.00	0.00
	10	0.00	1.00	0.96	0.00	0.00	0.04	0.81	0.00	0.72	0.00	0.78	0.27	1.00	1.00	0.68
	11	0.00	1.00	1.00	0.00	0.00	0.13	0.51	0.00	0.83	0.00	0.55	0.75	0.95	1.00	1.00
	12	0.00	1.00	1.00	0.00	0.00	0.72	0.78	0.00	0.88	0.12	0.21	0.91	0.94	1.00	1.00
	13	0.00	1.00	1.00	0.00	0.00	0.57	0.41	0.00	0.48	0.03	0.30	0.30	0.96	1.00	1.00
	14	0.00	1.00	1.00	0.00	0.00	0.17	1.00	0.00	0.59	0.19	0.59	0.10	1.00	1.00	1.00
	15	0.00	1.00	0.85	0.00	0.00	0.00	1.00	0.00	0.00	0.93	0.51	0.00	0.44	1.00	1.00
	16	0.00	0.78	0.41	0.00	0.00	0.00	0.51	0.00	0.00	0.81	0.00	0.00	0.64	1.00	1.00
	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.05	0.17	0.18
	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
	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
	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
	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
	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
	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
Tot		0.00	8.53	8.10	0.00	0.00	1.72	6.42	0.00	4.33	2.10	3.99	2.35	6.15	8.85	6.86

Hour	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	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
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
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
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
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
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
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
7	0.00	0.17	0.00	0.62	0.15	0.00	0.00	0.00	0.54	0.68	0.77	0.75	0.00	0.14
8	0.00	1.00	0.00	1.00	0.02	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.35
9	0.00	1.00	0.00	1.00	0.16	0.00	0.00	0.10	1.00	1.00	1.00	1.00	0.00	0.40
10	0.00	1.00	0.00	1.00	0.01	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.51
11	0.00	1.00	0.00	0.99	0.43	0.17	0.23	1.00	1.00	1.00	1.00	1.00	0.11	0.56
12	0.00	0.99	0.00	0.94	0.66	0.84	1.00	1.00	1.00	1.00	1.00	1.00	0.04	0.64
13	0.02	0.40	0.00	0.60	0.38	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.02	0.55
14	0.00	0.04	0.00	0.33	0.40	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.26	0.56
15	0.00	0.00	0.00	0.77	0.35	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.70	0.56
16	0.00	0.01	0.05	0.28	0.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.34	0.45
17	0.00	0.00	0.25	0.00	0.00	0.32	0.34	0.00	0.24	0.56	0.49	0.41	0.00	0.11
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
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
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
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
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
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
Tot	0.02	5.60	0.30	7.52	2.55	5.32	5.57	7.01	9.78	10.24	10.26	10.16	1.47	135.23

FEBRUARY 2019	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	0.63	1.5	1526	0.1	8	97.3	99.1	726	92.0	2355	0.2	3.9	4.1	1250	3.8	111	988.35	997.5	2359	983.1	351	18.5
2	1.51	4.1	1526	-0.7	751	81.1	92.4	32	64.0	1522	-1.5	3.4	3.9	25	3.0	2344	1008.30	1019.5	2359	997.4	0	0
3	0.68	5.0	1436	-5.9	713	83.3	98.1	723	56.5	1333	-2.0	3.3	4.9	2359	2.3	709	1023.33	1025.8	1109	1019.4	13	0
4	5.83	9.1	1601	0.5	2230	94.6	100.0	2307	83.9	345	5.0	5.4	6.9	1601	3.9	2230	1018.46	1023.2	2358	1015.4	929	4.8
5	5.60	8.3	2346	2.3	0	97.8	100.0	717	92.6	1231	5.3	5.5	6.5	2351	4.4	0	1022.89	1024.9	1057	1019.1	2327	3
6	8.68	10.7	1258	6.2	658	91.3	99.1	803	69.8	1516	7.3	6.3	7.2	251	5.4	1516	1015.85	1020.1	948	1003.6	2359	4.2
7	7.21	9.2	1507	5.8	559	77.1	95.4	0	63.3	1443	3.4	4.9	6.7	9	4.2	521	1006.52	1009.5	1840	1001.4	214	0.8
8	8.98	10.7	1409	6.6	2353	89.2	95.2	805	79.8	2249	7.3	6.4	7.4	1400	5.0	2347	998.51	1008.6	0	992.0	1622	7
9	7.68	10.2	1148	6.0	620	75.4	94.6	2328	61.6	1151	3.5	5.0	5.7	2113	4.4	447	1000.69	1004.3	1352	995.1	26	0.6
10	5.43	7.9	1415	3.0	2347	84.8	97.1	543	62.5	1803	3.0	4.8	5.7	632	3.6	1801	998.67	1011.1	2359	989.7	657	2.5
11	5.41	9.2	1310	0.0	2355	77.9	95.7	2359	58.2	1544	1.7	4.2	4.8	1118	3.5	2358	1024.33	1033.2	2359	1011.1	2	0
12	5.40	11.1	1313	-1.3	512	89.7	100.0	657	66.5	1446	3.7	4.9	6.0	1136	3.3	512	1033.44	1034.3	2239	1032.7	519	0
13	7.36	12.1	1303	2.0	2331	86.5	98.6	2357	64.4	1303	5.1	5.4	6.1	1122	4.1	2243	1033.07	1034.2	36	1031.8	1702	0
14	3.95	13.1	1327	-1.7	606	85.4	100.0	940	50.1	1331	1.3	4.1	6.0	1154	3.3	606	1031.84	1033.7	925	1029.9	2351	0
15	4.47	14.1	1505	-2.5	556	84.2	100.0	1056	51.4	1555	1.6	4.3	6.3	1116	3.1	555	1026.86	1030.1	29	1023.5	2344	0
16	8.07	12.8	1305	0.7	254	93.4	98.7	402	83.9	1317	7.0	6.3	7.7	1304	3.8	254	1022.50	1023.9	1101	1020.2	2346	0
17	9.15	13.8	1234	4.5	744	86.3	98.0	731	62.2	1136	6.8	6.1	7.0	1428	5.0	744	1015.69	1020.3	0	1013.8	1425	0
18	7.41	9.3	1430	3.7	2335	91.1	96.6	2233	82.8	1512	6.0	5.8	6.5	930	4.6	2355	1015.42	1017.0	2357	1014.1	1424	1
19	6.61	11.6	1305	2.4	721	83.4	97.0	740	59.4	1306	3.8	5.0	5.6	1148	4.3	722	1018.85	1020.3	1123	1016.9	0	0
20	8.80	12.8	1441	4.9	2330	82.3	96.9	2336	61.2	1357	5.9	5.7	6.2	1111	5.0	2326	1020.04	1022.8	2305	1018.0	358	0
21	9.79	14.2	1442	5.6	49	86.0	97.6	2353	67.2	1443	7.5	6.3	7.0	1226	5.2	47	1026.74	1032.3	2343	1022.6	0	0
22	7.85	14.7	1455	3.3	2351	89.5	100.0	939	53.5	1504	6.0	5.7	6.8	1449	4.6	2351	1034.59	1036.3	1117	1032.2	2	0
23	8.67	16.6	1415	2.1	220	85.0	100.0	848	50.4	1507	5.9	5.7	7.7	1221	4.2	222	1033.76	1035.0	2258	1031.9	1556	0
24	6.77	17.2	1521	-0.3	721	78.7	100.0	803	32.0	1524	2.5	4.5	6.1	1137	3.6	1321	1035.63	1037.3	2354	1034.0	53	0
25	6.96	18.9	1459	-1.6	637	72.9	99.1	642	26.1	1342	1.2	4.1	5.7	1107	3.2	1335	1036.15	1037.6	852	1034.4	1721	0
26	7.66	20.0	1422	-0.9	632	72.9	97.7	649	32.3	1434	2.0	4.3	5.7	1325	3.4	632	1032.27	1035.7	153	1029.4	2206	0
27	7.43	17.8	1451	-0.9	643	80.4	98.9	723	45.0	1506	3.7	5.0	6.4	1321	3.4	643	1024.72	1029.6	0	1020.1	2356	0
28	8.37	12.5	1526	2.2	211	90.3	100.0	505	75.0	1618	6.8	6.2	7.8	1415	4.3	211	1016.10	1020.3	0	1013.7	1613	3

Total																						45.4
Mean	6.51	11.74		1.64		85.3	98.06		62.41		3.93	5.09	6.24		4.01		1020.13	1024.23		1015.94		
Max	9.79	19.98		6.59		97.8	100.00		92.60		7.47	6.45	7.85		5.42		1036.15	1037.61		1034.43		
Min	0.63	1.47		-5.92		72.9	92.40		26.09		-2.02	3.29	3.86		2.34		988.35	997.52		983.08		

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

WOKINGHAM METEOROLOGICAL DATA

Wokingham Climatological Station, Emmbrook, Berkshire.

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

Seasonal Means and Totals

WINTER 2018/19

Temperature (°C)		Rank in the past 137 years	
Mean maximum	9.7 (+1.6)	8 th highest	
Mean minimum	2.4 (+0.6)	32 nd highest	
Daily mean	6.0 (+1.0)	14 th highest	
Rainfall total (mm)	152.9 (91%)	69 th highest	
Sunshine total (hours)	282.1 (127%)		
N ^o of:			
Dry days	53 (+8)	Wet days	27 (-5)
Days with: Air frost	27 (-4)	Ground frost	54 (+3)
Thunder	0 (-1)	Snow falling	6 (-4)
Hail ≥5mm	0 (-1)	Snow lying	4 (-1)
Small hail/ice	2 (-1)	Fog @09 GMT	5 (-1)
Air pressure MSL : Mean @09 GMT (mbar)	1018.9 (+2.3)	Nil sun	22 (-7)

Departure from 1981 to 2010 average shown in brackets.

Notes: **Mild and Very Sunny with Below Average Rainfall.**
Temperature: This has been a mild winter overall, with record breaking warmth in February, and only short cold snaps in mid-December, the 2nd half of January, and the start of February. The daily mean is highest only since 2016. The 1° difference in anomalies for mean max and mean min indicates a larger than average mean daily temperature range, and it is indeed highest for the season since 2008 and 2nd highest since before 1976. December was the mildest month, mean 7.3°, and January the coldest, mean 4.1°, although in terms of the mean maximum, February with 11.8° was mildest with December only managing 10.2°. The season's highest temperature was 20.0° on the 26th February, a new monthly and seasonal record, the previous highest of 17.8° was in 1998. The lowest air temperature was -6.5° on the 31st January, 1.0° above the median. The highest min was 11.2° on 7th December, 1.3° above the median and the lowest max was 1.5° on 1st February, 1.7° above its median. The record breaking warm spell at the end of February is worth another mention, daily max temperatures were over 5° above normal from the 21st to the 27th, and over 10° above normal on the 25th and 26th. The mean grass min was -1.0°, close to average, and the lowest value was -10.4° on the 3rd February. Mean earth temperature at 30cm depth was 6.7°, anomaly +0.9°, and at 1m depth 8.4°, anomaly +0.3°. Although there were 4 fewer air frosts, there were 3 more ground frosts, than average. The duration of air frost was 164.0 hours, 116 hours below average. **Rainfall:** The total this winter is 9% below average, and in this millennium 12 winters have been wetter and 7 drier. December was the wettest month with 74.8 mm, anomaly 119%, and January the driest, 38.4 mm, 62%, but February with 39.7 mm was only a little below average. The wettest day was the 18th December, 16.5 mm, and the wettest 48 hours was 23.1 mm on the 31st January/1st February. notable as this fall was largely of sleet or snow. The highest rainfall rate was 26 mm/hr on the 7th December. There were 8 more dry days than average and a notable 20 day dry spell ending on the 14th January. Other dry spells were 6 days to the 14th December, 7 days to the 17th February and 9 days to the 27th February, with only 0.9 mm falling in the 17 days to the 27th. Sleet or snow fell on the 17th, 22nd, 23rd, 29th and 31st January and the 1st February, with 1cm of snow lying at 0900 hours on the 23rd January, 10cm on the 1st, 6cm on the 2nd and 5 cm on the 3rd February. Ice pellets fell on the 1st and 10th February but there was no thunder this winter. **Sunshine:** This has been the sunniest winter since 2008 which itself was a record. The 282.1 hours of sun recorded is 61 hours above average. February was the sunniest month with 135.5 hours, January next with 78.2 hours and December with 68.4 hours was the least sunny. The sunniest day was the 26th February with 10.3 hours, but the period 24th to 27th February clocked up 40.5 hours, a mean of 10.1 hours per day. The period 25th December to 3rd January was dull, only 5.3 hours over 10 days, 6 of which had nil sun. Overall there were 51 days with <3 hours, 21 with =>6 hours and 4 with =>9 hours. **Wind:** The mean speed of 6.7 mph is 1.1 mph below average but is lowest only since 2017. The windiest day was the 8th December 15.3 mph, and the season's highest gust was 47 mph on the 8th February. The 27th December was the least windy day, mean 2.0 mph and there were 2068 minutes calm. Daily mean direction/number of days: N,5 NE,3 E,6 SE,6 S,17 SW,32 W,15 NW,6. Compared with average, winds from NE and N combined were 11.1% less frequent while those from W were 5.0% more frequent as were those from SE and S combined, 5.1% more frequent. **Pressure:** The season's highest pressure was 1044.7 mbar on 2nd January and the lowest was 983.1 mbar on the 1st February, a range of 61.6 mbar, 2.2 mbar below average. **December:** Very mild with rainfall above and sunshine near average. Mean temperature 10th highest in 137 years. Highest max 5th highest in 115 years. 6 fewer air frosts than average. **January:** Colder and drier than average but quite sunny. Driest since 2012, no rain before mid month. Max air pressure highest for January since 1992. **February:** A month of strong contrasts, very mild and very sunny overall with near average rainfall. Record breaking warmth, mean max 3.6° above average and a new record. Also the month's highest max of 20.0° is a new record. Near record sunshine, 165% of average.

Month	Mean Max	Anom	Mean Min	Anom	Rain mm	Anom	Sun hrs	Anom	Mean Wind mph	Max gust	Mean pressure	Anom
December	10.2°	+2.2°	4.3°	+2.2°	74.8	119%	68.4	102%	7.3	41	1017.1	+1.4
January	7.2°	-0.6°	1.1°	-0.7°	38.4	62%	78.2	108%	6.0	38	1019.4	+2.7
February	11.8°	+3.6°	1.6°	+0.1°	39.7	93%	135.5	165%	6.7	47	1020.3	+2.9

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Month: Calendar month.

Season: Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

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

Annual or Year: The calendar year, 1st January to 31st December.

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

Frost: An air frost day is recorded when the minimum temperature read at 0900 GMT on that day is -0.1°C or below. A ground frost day is recorded when the grass minimum temperature read at 0900 GMT on that day is -0.1°C or lower.

Duration of air frost is defined as the number of minutes that the AWS one minute average temperature is below 0.0°C , and the day runs from midnight to midnight.

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

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

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

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

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

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

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

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

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

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

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

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.