

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

NOVEMBER 2018

Temperature (°C)		Anomaly	Rank in the past 137 years						
Mean maximum	11.8	+0.9	16 th highest						
Mean minimum	4.6	+0.5	31 st highest						
Daily mean	8.2	+0.7	24 th highest						
Highest maximum	16.2	on 6 th	Lowest maximum	5.4	on 20 th				
Highest minimum	11.9	on 29 th	Lowest minimum	-3.9	on 22 nd				
Mean grass minimum	1.2	+0.1	Lowest grass minimum	-8.0	on 22 nd				
Mean earth @ 30 cm	9.5	+0.1	Earth @ 100 cm	11.7					
Frost duration (hrs)	18.8		Rain duration (hrs)	62.7					
Rainfall total (mm)	66.6	97 %	58 th highest						
Highest daily fall	11.5	on 10 th	Highest rate mm/hr	78	on 12 th				
Number of: Dry days (<0.2mm)	13	Wet days (>0.9mm)	11	days ≥5mm	6				
Sunshine total (hrs)	97.8	Daily mean	3.26	137 %	Sunniest day	8.6	on 2 nd		
N° days with: Air frost	4	Ground frost	10	Snow falling	1	Snow lying	0		
Thunder	0	Hail ≥5mm	0	Small hail/ice	1	Fog @09	1	Nil sun	6
Pressure MSL: Mean @09 GMT, mbar	1012.3	-2.1	Highest	1029.0	on 2 nd	Lowest	990.9	on 10 th	
Relative humidity : Mean (%)	88.7	Lowest	51	on 2 nd	Water vapour (g/kg), mean at 09 and 15 GMT	6.3,	6.2		
Overall mean wind speed (mph)	6.8	Windiest day	13.0	on 29 th	Max gust	45	on 29 th		
Wind direction (days)	N 1	NE 8	E 3	SE 4	S 10	SW 3	W 1	NW 0	
Least windy day (mph)	2.6	on 22 nd	Calm; less than 0.5 mph (minutes)		255				

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

Notes: **Above Average Temperature, Near Average Rainfall, Well Above Average Sunshine.**

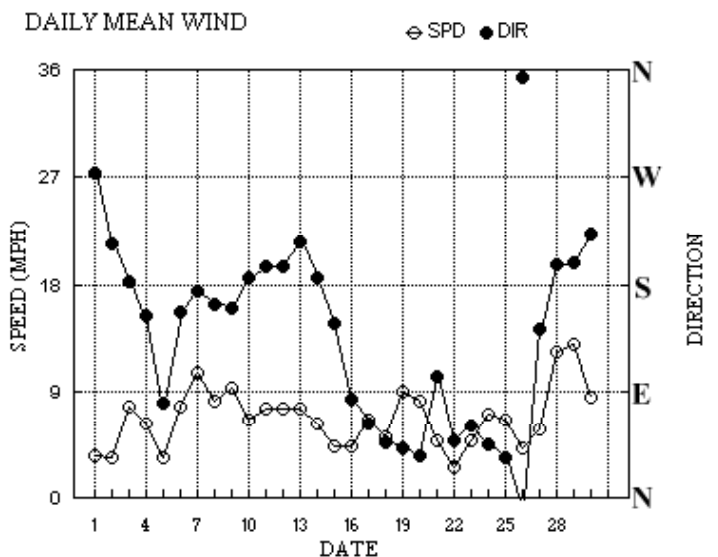
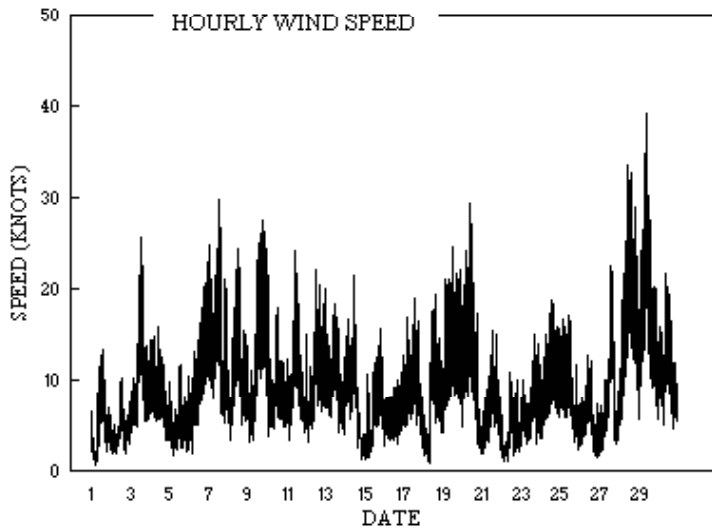
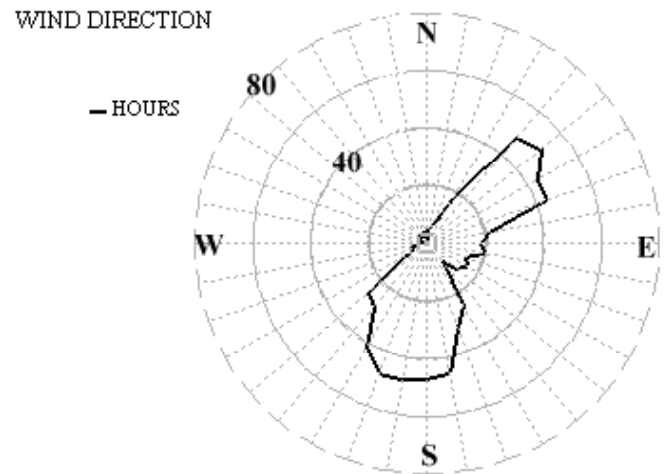
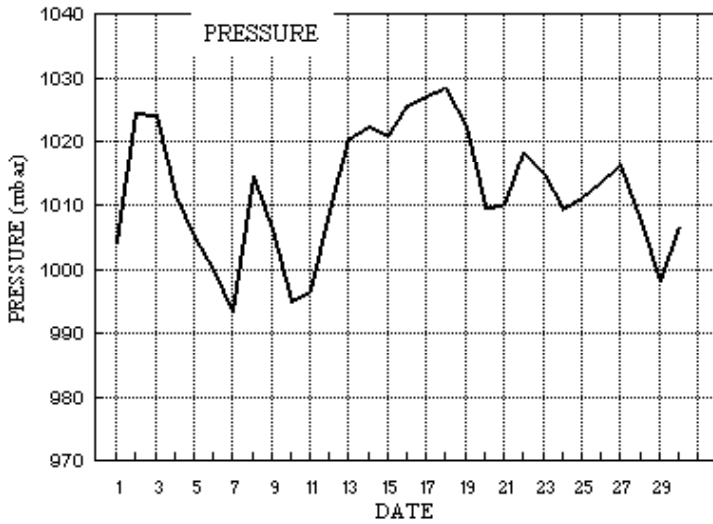
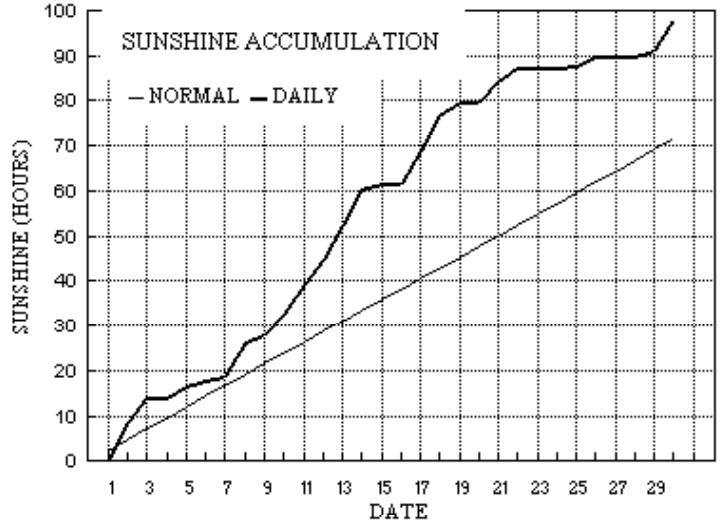
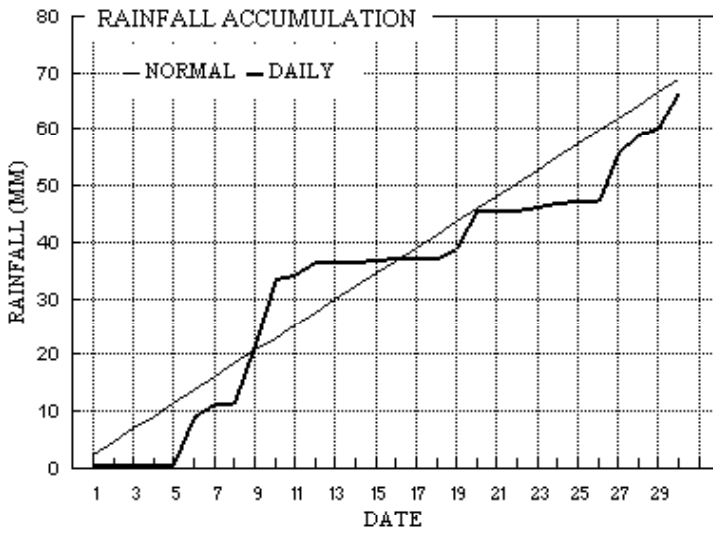
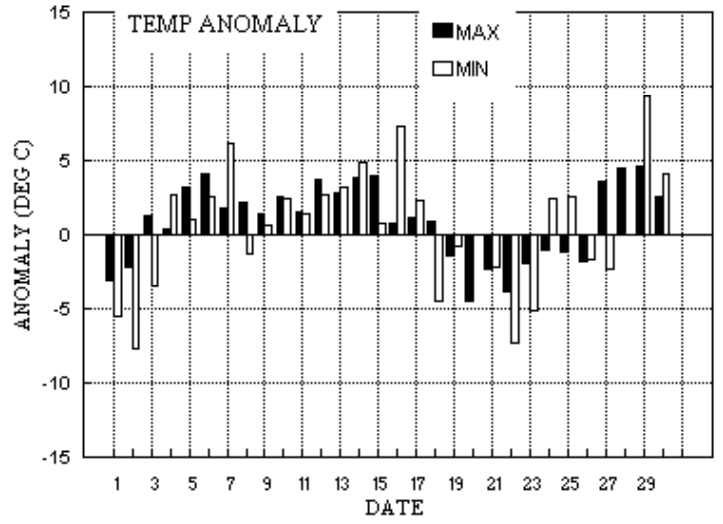
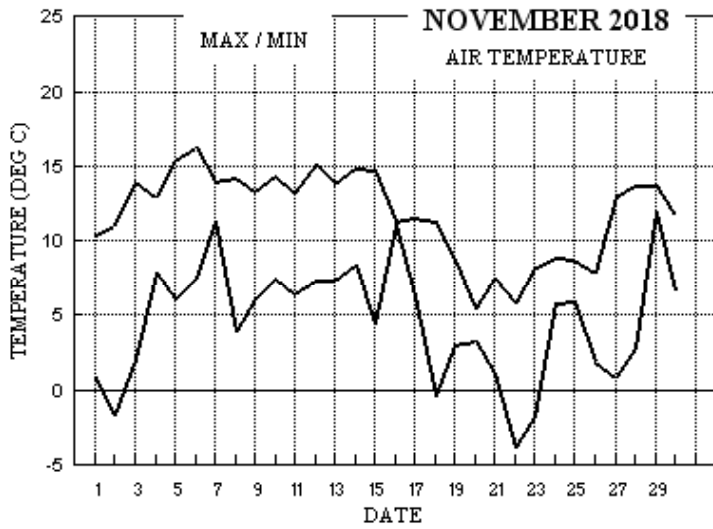
Temperature: This has been a mild November overall, though with a cold snap after mid month. The mean temperature is highest since 2015, and in this millennium 7 Novembers have been milder. Although the mean is 0.7° above the current 30 year climatological average, it is 1.4° above the 138 year median, reminding us that we are living in a period of changing climate. The highest max is 0.6° above the median and the lowest max is 0.7° above its median. The highest min is 1.3° above the median while the lowest min is 0.3° below its median. The mean and lowest grass min are close to average, as are the earth temperatures at both 30 cm and 1 m depth. The number of frosts, both air and ground, are a couple of days below average. The duration of air frost 22 hours below average and lowest since 2011. The month started on a cold note, with anomalies for daily max -3.1° on the 1st, and for daily min, -7.7° on the 2nd. It was mild from the 3rd to the 18th, with anomalies for daily max close to +4° on the 6th, 12th, 14th and 15th, and for daily min over +6° on the 7th and 16th. A cold snap from the 19th to the 26th saw anomalies for daily max down to -4.5° on the 20th, and for daily min, -7.3° on the 22nd. Mild weather returned on the 27th, with anomalies for daily max over +4° on the 28th and 29th, and reaching +9.3° for the min on the 29th. **Rainfall:** The total this November is close to the current 30 year average. Although the first 5 days were mainly dry, the rest of the month saw rain on many days. The wettest period was the two days 9th and 10th which together gave 22.0 mm, but the most prolonged fall was on the 20th which saw 13.1 hours of rain. The total duration of rain is 105 % of average. The number of dry days is 2 below average and there were no dry spells. Ice pellets fell during a shower on the 12th, and there were a few wet snowflakes with the rainfall on the 20th. Daily accumulation compared with normal was 11 mm in deficit on the 5th, becoming 11 mm in surplus on the 10th, decreasing to 4 mm in deficit by the 18th, increasing to 12 mm by the 26th but decreasing to 2 mm in deficit by the 30th. **Sunshine:** This has been a very sunny November, in the top 10 sunniest in the past century, and 4th sunniest this millennium, but with slightly less sun than in last November. Outstanding days having over 80 % of the maximum were the 2nd, 8th, 13th, 14th 17th 18th and 30th. The 23rd to the 28th was the duller period, only 2.4 hours sun, most of which was on just one day. Daily accumulation compared with normal was 2 hours in surplus on the 7th, increasing to 34 hours by the 19th, but decreasing to 21 hours by the 29th. **Wind:** The mean speed is 0.5 mph above average, and is highest since 2015. Both the windiest day and highest gust values are close to normal. Daily winds were mainly light or moderate, but increased to fresh for the 7th and 28th, and to strong on the 29th. Directions were W'ly on the 1st, backing to S'ly for the 4th to the 14th, backing to NE'ly by the 17th, veering SE'ly on the 27th and S'ly on the 28th.

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 30 th			
+1.5°	-0.3°	144%	139%	+1.3°	+1.7°	52%	197%	+0.3°	0.0°	92%	76%

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

Wokingham climatological graphs for November 2018



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: NOVEMBER 2018

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 ddd	mean ff	sp	Max gust ddd	gg	HHhh	High hr ddd	ff	HH	Rain hrs	
1	10.4	0.8	0.6	0.2	9.7	12.9	0.1	0.0	1003.9	0	0	0	0	0	274	2.0	3.1	323	14	1330	291	6	14	0.4
2	11.0	-1.7	0.0	-6.6	9.6	12.7	8.6	5.5	1024.5	1	1	0	0	0	215	2.6	3.0	248	10	1417	249	5	14	0.0
3	14.0	2.0	0.0	-3.3	8.9	12.6	5.5	0.0	1024.4	0	1	0	0	0	183	6.6	6.7	187	26	1335	196	11	14	0.0
4	12.9	7.8	tr	3.7	9.3	12.4	0.0	0.0	1011.4	0	0	0	0	0	154	4.6	5.5	172	16	1030	179	7	05	0.0
5	15.4	6.0	0.0	0.5	9.8	12.2	2.4	0.0	1005.0	0	0	0	0	0	80	2.7	3.0	107	12	1521	92	4	15	0.0
6	16.2	7.4	8.3	1.7	10.2	12.1	1.3	0.0	999.8	0	0	0	0	0	157	6.5	6.6	176	23	2234	162	11	23	6.6
7	13.9	11.3	2.5	10.9	10.8	12.1	0.9	0.0	993.4	0	0	0	0	0	175	8.2	9.2	178	30	1207	181	12	12	1.2
8	14.2	3.9	0.0	-1.2	10.7	12.1	7.5	0.0	1014.6	0	1	0	0	0	163	6.2	7.1	190	24	1126	186	12	11	0.0
9	13.3	6.0	10.5	0.0	10.3	12.1	1.6	0.0	1006.1	0	0	0	0	0	160	6.9	8.1	180	28	1946	172	12	20	7.2
10	14.3	7.5	11.5	3.5	10.5	12.1	4.7	0.0	995.0	0	0	0	0	0	186	5.5	5.7	188	22	0027	193	8	00	5.9
11	13.2	6.4	0.8	1.0	10.5	12.1	6.5	0.0	996.7	0	0	0	0	0	195	5.9	6.5	227	24	1145	227	11	11	0.9
12	15.1	7.3	2.5	3.8	10.3	12.0	5.5	0.0	1009.0	0	0	0	0	1	195	6.4	6.6	187	22	1243	203	11	12	0.7
13	13.8	7.3	tr	1.8	10.2	12.0	7.7	0.0	1020.5	0	0	0	0	0	216	6.2	6.5	224	19	1118	229	9	12	0.0
14	14.8	8.4	tr	2.8	10.1	12.0	8.2	0.0	1022.6	0	0	0	0	0	186	4.9	5.4	192	22	1051	192	9	11	0.0
15	14.7	4.4	0.3	-0.8	10.0	11.9	1.1	0.0	1021.1	0	1	0	0	0	148	3.5	3.9	151	16	1905	153	8	19	1.4
16	11.3	11.0	0.3	10.6	10.6	11.8	0.0	0.0	1025.8	0	0	0	0	0	83	3.7	3.8	58	11	2228	62	5	22	1.1
17	11.5	6.3	tr	6.4	10.8	11.8	7.0	0.0	1027.3	0	0	0	0	0	63	5.7	5.8	59	19	1408	63	8	13	0.0
18	11.3	-0.5	0.0	-5.6	10.1	11.8	8.1	1.6	1028.5	1	1	0	0	0	47	4.4	4.6	45	19	1412	55	8	11	0.0
19	8.7	3.0	1.6	-2.2	9.1	11.8	3.2	0.0	1022.4	0	1	0	0	0	42	7.8	7.9	51	25	1129	48	11	12	1.6
20	5.4	3.3	6.9	0.4	8.9	11.7	0.0	0.0	1009.7	0	0	1	0	0	36	7.0	7.1	27	30	0953	27	11	09	13.1
21	7.4	1.1	0.0	0.4	8.6	11.5	4.6	2.0	1010.0	0	0	0	0	0	103	4.0	4.3	104	16	1438	113	8	14	0.0
22	5.8	-3.9	tr	-8.0	8.0	11.3	2.8	9.7	1018.4	1	1	0	0	0	48	2.2	2.3	52	11	1147	47	5	11	0.0
23	8.1	-1.8	0.6	-2.4	7.5	11.1	0.0	0.0	1014.9	1	1	0	0	0	62	4.2	4.3	69	15	1754	64	6	17	1.2
24	8.9	5.8	0.7	6.1	8.0	10.9	0.1	0.0	1009.4	0	0	0	0	0	46	6.1	6.2	63	19	1353	52	8	15	1.2
25	8.7	5.9	0.1	4.4	8.4	10.8	0.1	0.0	1011.1	0	0	0	0	0	35	5.6	5.7	38	17	1109	31	7	00	0.2
26	7.8	1.8	tr	-2.3	8.4	10.7	2.2	0.0	1013.7	0	1	0	0	0	353	3.3	3.6	14	13	1058	5	6	10	0.0
27	12.9	0.8	8.5	-3.7	8.1	10.6	0.0	0.0	1016.3	0	1	0	0	0	142	4.1	5.1	143	23	1438	154	11	17	11.1
28	13.7	2.8	3.3	3.5	8.3	10.5	0.0	0.0	1007.2	0	0	0	0	0	197	10.5	10.8	209	34	1230	197	15	14	3.8
29	13.7	11.9	1.0	9.7	9.1	10.4	1.2	0.0	998.2	0	0	0	0	0	198	10.9	11.3	186	39	1029	209	19	11	1.2
30	11.6	6.6	6.6	2.1	9.3	10.4	6.9	0.0	1006.8	0	0	0	0	0	222	7.3	7.4	225	22	1113	230	10	10	3.9
Total			66.6				97.8	18.8																62.7
Mean	11.8	4.6		1.2	9.5	11.7	3.26	0.6	1012.3						155	2.4	5.9							
Anom	+0.9	+0.5	97%	+0.1	+0.1	-0.1	137%																	-2.1
Daily mean		8.2																						
Anom		+0.7																						

Number of days with:
 Air frost = 4 Ground frost = 10 Nil sun = 6
 Snow falling = 1 Snow lying = 0 Thunder = 0
 Hail=>5mm = 0 Hail<5mm or ice = 1 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 NOVEMBER 2018

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NChs	NChshs	Date	Remarks
1	58	8	18	03	09	9.9	9.8	99	7.5	1003.9	2	008	21	6	5	7	8	2	2	/	82705	85625	88550	1	2Cu015 Cu hum
2	82	5	20	03	04	3.2	2.9	98	4.6	1024.5	2	028	02	1	1	0	0	9	0	1	85080			2	COTRA Mod hoar
3	75	5	19	05	09	9.8	7.7	87	6.5	1024.4	2	005	01	2	2	1	5	4	7	1	81715	85080		3	1Sc30 2Ac61 COTRA
4	62	8	17	06	15	10.5	7.4	81	6.4	1011.4	8	005	02	2	2	8	5	4	/	/	87712	88640		4	
5	30	7	06	02	07	9.4	9.1	98	7.2	1005.0	2	009	10	2	2	2	6	2	7	2	82705	83367	87075	5	1Ac64 COTRA
6	50	7	16	05	12	12.4	12.1	98	8.9	999.8	1	004	10	1	1	5	5	2	7	1	82704	84648		6	3Ac57 /Ci75
7	65	7	15	11	20	12.1	11.0	93	8.3	993.4	7	001	80	8	6	6	8	4	/	1	81712	85817		7	1Sc30 3Ci75 COTRA Cu med
8	64	3	18	11	18	11.3	8.2	81	6.7	1014.6	1	013	01	1	1	1	8	4	0	1	81818	83070		8	1Sc40 COTRA Cu fra
9	61	6	11	06	10	10.8	9.4	91	7.3	1006.1	8	019	01	2	2	6	5	3	/	1	81708	86656		9	1Sc20 /Ci75
10	58	1	16	06	09	9.8	9.5	98	7.5	995.0	1	011	10	0	0	1	8	5	0	3	81820			10	1Sc50 1Ci70 Cu fra Cb top W
11	82	3	21	07	17	9.8	8.6	92	7.0	996.7	3	029	15	8	1	2	8	5	6	3	81820			11	1Sc45 2Sc56 1Ac63 1Ci70 Cu con jpSE
12	62	2	19	05	11	9.5	8.9	96	7.1	1009.0	1	020	15	0	1	1	8	5	6	3	81820			12	1Sc50 1Ac65 2Ci72 Cu con jpSE Parhelia
13	73	1	23	08	16	9.3	6.6	85	6.0	1020.5	2	033	02	0	0	1	5	7	0	0	81656			13	
14	80	5	19	06	14	11.0	8.9	87	7.0	1022.6	1	006	03	1	1	2	6	4	4	1	82712	83075		14	1Ac68 COTRA
15	61	7	08	02	04	11.5	10.7	95	7.9	1021.1	0	008	02	2	2	7	5	4	/	/	87618			15	
16	20	8	08	04	08	11.1	10.9	99	8.0	1025.8	1	020	51	5	5	8	6	2	/	/	86703	88704		16	
17	50	7	06	06	13	6.5	5.3	92	5.4	1027.3	1	010	05	2	2	7	6	4	/	/	87710			17	
18	45	2	05	05	09	3.3	3.3	100	4.7	1028.5	2	008	10	0	0	0	0	9	0	1	82075			18	COTRA Hoar mod
19	84	7	05	08	18	7.2	3.1	75	4.7	1022.4	7	004	01	2	2	7	5	6	/	/	82635	87640		19	
20	70	8	03	09	25	4.9	1.7	80	4.3	1009.7	7	010	25	8	2	8	8	4	/	/	82818	88640		20	Cu hum
21	40	7	07	03	07	2.1	2.0	99	4.4	1010.0	2	026	21	6	2	6	5	3	7	/	81708	83630	85650	21	1Sc20 3Ac58
22	25	0	29	01	02	-1.8	-1.9	99	3.3	1018.4	7	003	10	0	0	0	0	9	0	0				22	Hoar thk Gnd frzn
23	15	8	06	04	07	5.7	5.3	97	5.5	1014.9	0	002	50	5	2	8	6	2	/	/	88703			23	
24	30	8	03	07	14	7.9	7.3	96	6.4	1009.4	1	004	61	6	5	8	5	3	/	/	87707	88615		24	
25	57	8	03	06	13	6.4	4.6	88	5.2	1011.1	3	010	20	5	2	8	5	4	/	/	86615	88625		25	
26	67	7	01	04	09	5.4	3.6	88	4.9	1013.7	2	014	15	2	2	7	5	6	/	1	81635	87650		26	jpN
27	08	8	12	04	10	2.8	2.8	100	4.6	1016.3	6	010	42	5	4	8	6	1	/	/	88702			27	
28	57	8	20	10	19	12.9	12.1	95	8.8	1007.2	1	002	51	6	5	8	5	3	/	/	85707	87710	88618	28	
29	65	8	19	14	30	12.3	10.9	91	8.2	998.2	6	024	21	6	5	8	5	4	/	/	87615	88640		29	
30	68	1	22	07	13	7.7	5.8	88	5.8	1006.8	2	024	02	0	0	1	8	5	0	1	81825			30	1Sc45 1Ci75 Cu hum Cb top S

Mean vis = 13.8 km
 Mean cloud = 5.7 71%
 Mean wind speed = 5.9 kn
 Mean gust = 12 kn
 Mean TT = 8.2 °C
 Mean TdTd = 6.9 °C
 Mean RH = 92.2 %
 Mean r = 6.3 g/kg
 Mean PPP = 1012.3 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 NOVEMBER 2018

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cl	NCh	shs	NCh	shs	NCh	shs	Date	Remarks	
1	65	7	20	07	13	9.8	7.4	85	6.4	1006.9	2	017	25	8	6	7	8	4	/	/	82815	84630	87650						1	Cu med
2	84	1	26	04	10	10.1	1.7	56	4.2	1026.4	1	007	02	0	0	1	0	9	3	1	81372								2	1Ci80 COTRA
3	75	3	20	13	23	11.8	5.9	67	5.7	1020.6	6	020	01	1	1	1	8	5	0	1	81825	83075						3	1Sc35 Cu hum	
4	82	7	15	07	13	12.2	7.9	75	6.6	1008.2	7	016	01	6	2	1	1	5	7	/	81820	83361	87365					4	1Ac57 Cu hum	
5	60	7	09	03	06	14.6	12.1	85	8.8	1002.5	6	013	02	2	2	7	0	9	7	1	83359	85366						5	/Ci75	
6	84	7	16	09	16	14.7	11.7	82	8.6	997.7	6	014	03	6	2	7	5	4	/	/	82618	83635	87650					6		
7	80	7	20	09	27	12.1	10.0	87	7.7	996.6	3	032	25	8	2	3	8	4	1	8	82818	83462	86268					7	2Sc56 Cb top E jpS vv60k ex S	
8	75	7	17	07	23	12.4	6.7	68	6.1	1013.6	7	013	03	2	2	1	1	6	4	2	81830	87072						8	1Ac68 COTRA Cu hum	
9	75	7	19	10	25	12.2	6.7	69	6.1	1001.5	8	020	03	8	2	1	8	6	1	6	81825	83465	87270					9	1Sc30	
10	65	7	20	07	16	10.5	8.4	87	7.0	994.2	8	002	25	8	2	5	9	5	6	3	81825	83930	86070					10	2Sc56 1Ac60 jpW-SE vv60k ex p	
11	80	1	21	08	18	12.4	7.9	74	6.7	1001.1	1	015	01	8	1	1	8	5	0	3	81825								11	1Sc35 1Ci70 Cu med Cb top S
12	75	2	21	08	18	12.3	7.4	72	6.4	1009.7	2	008	25	8	1	2	9	5	0	3	81822	82925							12	1Ci70
13	82	4	22	10	16	12.4	6.2	66	5.8	1023.4	1	009	02	0	0	1	8	6	0	2	81832	83073							13	1Sc50 COTRA Cu hum Parhelion
14	86	6	18	06	13	13.3	7.5	68	6.4	1020.9	5	010	03	1	1	0	0	9	0	1	86078								14	COTRA
15	58	2	14	04	11	14.3	12.3	88	8.8	1019.6	7	009	05	1	1	2	6	4	0	1	82710								15	1Ci75
16	18	8	06	04	09	10.1	9.5	96	7.3	1025.2	6	004	51	5	5	8	6	2	/	/	88703								16	
17	61	0	06	06	19	10.3	3.6	63	4.8	1025.7	6	011	02	0	0	0	0	9	0	0									17	
18	70	0	05	06	19	9.7	3.4	65	4.8	1026.4	6	006	02	0	0	0	0	9	0	0									18	
19	82	3	04	08	19	7.7	2.6	70	4.5	1018.7	7	022	25	8	1	3	8	6	0	0	81830	83656							19	Cu med jpN
20	61	8	04	07	19	3.6	2.6	93	4.6	1006.0	6	017	61	6	6	7	8	4	2	/	83812	86620	88540					20	Cu fra/hum	
21	62	2	12	08	16	6.3	1.0	69	4.1	1014.1	2	017	01	1	1	2	5	6	0	1	81630								21	2Sc45 1Ci75 COTRA
22	18	6	04	03	08	4.2	3.5	95	4.8	1016.5	7	013	10	4	2	5	6	2	0	1	84705	84078							22	2Sc15 COTRA
23	45	8	06	06	12	7.5	6.6	94	6.0	1012.8	6	012	05	5	2	8	6	3	/	/	88706								23	
24	58	8	06	08	16	8.5	6.3	86	5.9	1009.5	3	001	05	2	2	8	5	4	/	/	86615	88623							24	
25	75	7	03	05	15	7.3	4.8	84	5.3	1011.1	3	004	80	8	2	7	5	5	/	/	82620	85640	87650					25		
26	67	2	36	05	12	7.1	3.7	79	4.9	1014.4	0	005	01	1	1	2	8	4	3	5	81817								26	2Sc45 1Ac57 1Cs75 Cu hum
27	58	8	15	10	23	8.1	7.3	95	6.4	1009.8	7	038	63	6	6	7	7	3	2	/	87706	88525							27	
28	50	8	20	14	32	12.8	11.7	93	8.6	1004.2	6	018	51	5	5	8	5	3	/	/	87707	88615							28	
29	80	7	21	10	28	11.5	7.2	75	6.4	1000.1	1	019	15	8	1	7	8	5	/	8	83825	86635							29	/Cs70 Cu hum jpSW
30	82	2	24	09	20	10.0	4.2	67	5.1	1008.7	3	008	02	0	0	2	8	6	0	0	81833								30	2Sc40 Cu hum

Mean vis = 22.8 km
 Mean cloud = 5.1 63%
 Mean wind speed = 7.4 kn
 Mean gust = 17 kn
 Mean TT = 10.3 °C
 Mean TdTd = 6.6 °C
 Mean RH = 78.4 %
 Mean r = 6.2 g/kg
 Mean PPP = 1011.5 mbar

See appendix 2 below for full code details

- VV = Visibility code (Code FM12-4377)
- N = Total cloud amount, oktas
- dd = Direction from which wind is blowing, tens of degrees true
- ff = 10 minute mean wind speed, knots
- gg = Highest gust in past hour, knots
- TT = Air temperature at 1.2 m, deg Celsius
- TdTd = Dew point temperature at 1.2 m, deg Celsius
- RH = Relative humidity at 1.2 m
- r = Humidity mixing ratio at 1.2 m, g/kg
- PPP = Air pressure reduced to sea level, mbar
- a = Characteristic of pressure tendency (Code FM12-0200)
- ppp = 3 hr pressure tendency, tenths of mbar
- ww = Present weather code (Code FM12-4677)
- W1, W2 = Past weather code (Code FM12-4561)- covers past 3 hours.
- Nh = Amount of low cloud present, oktas
- Cl = Type of low cloud (Code Fm12-0513)
- h = Height of low cloud (Code FM12-1600)
- Cm = Type of medium cloud (Code FM12-0515)
- Ch = Type of high cloud (Code FM12-0509)
- 8 groups. 8 = indicator for cloud detail
- N = Amount of cloud, oktas
- C = Type of cloud (FM12-0500)
- hshs= Height of cloud (FM12-1677)
- Remarks : COTRA = persistent condensation trails present

Wokingham Sunshine Hourly analysis	Hour	01-Nov	02-Nov	03-Nov	04-Nov	05-Nov	06-Nov	07-Nov	08-Nov	09-Nov	10-Nov	11-Nov	12-Nov	13-Nov	14-Nov	15-Nov	16-Nov
2018	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	0.45	0.00	0.00	0.00	0.21	0.00	0.28	0.02	0.22	0.00	0.00	0.23	0.11	0.00	0.00
	8	0.00	1.00	0.58	0.00	0.00	0.10	0.00	1.00	0.18	0.95	0.51	0.00	1.00	1.00	0.00	0.00
	9	0.00	1.00	1.00	0.00	0.01	0.01	0.17	1.00	0.06	1.00	1.00	0.97	1.00	1.00	0.04	0.00
	10	0.00	1.00	0.98	0.00	0.36	0.00	0.13	1.00	0.07	0.99	1.00	1.00	1.00	1.00	0.00	0.00
	11	0.00	0.90	0.65	0.00	0.81	0.00	0.04	0.87	0.09	0.68	1.00	1.00	1.00	1.00	0.00	0.00
	12	0.00	1.00	0.31	0.00	0.66	0.00	0.03	0.94	0.08	0.52	0.64	0.74	1.00	1.00	0.02	0.00
	13	0.00	1.00	0.46	0.00	0.56	0.59	0.18	0.93	0.91	0.09	0.77	0.44	0.95	1.00	0.00	0.00
	14	0.04	1.00	0.57	0.00	0.00	0.35	0.14	0.78	0.22	0.24	0.54	0.49	1.00	1.00	0.44	0.00
	15	0.00	1.00	0.83	0.00	0.00	0.00	0.07	0.70	0.00	0.00	0.99	0.83	0.55	1.00	0.56	0.00
	16	0.04	0.29	0.14	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.04	0.00	0.00	0.13	0.00	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		0.08	8.63	5.52	0.00	2.40	1.26	0.92	7.49	1.63	4.69	6.50	5.48	7.73	8.24	1.05	0.00

Wokingham Sunshine Hourly analysis	Hour	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov	23-Nov	24-Nov	25-Nov	26-Nov	27-Nov	28-Nov	29-Nov	30-Nov	Mean
2018	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
	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
	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	0.06	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
	8	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.31
	9	0.94	1.00	0.00	0.00	0.44	1.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	1.00	0.43
	10	1.00	1.00	0.29	0.00	1.00	0.74	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.49
	11	1.00	1.00	0.22	0.00	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.41
	12	1.00	1.00	0.24	0.00	0.32	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.07	1.00	0.35
	13	1.00	1.00	0.76	0.00	0.11	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.47	0.76	0.40
	14	1.00	1.00	0.63	0.00	0.98	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.69	0.94	0.42
	15	1.00	1.00	1.00	0.00	0.73	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.00	0.34	0.36
	16	0.07	0.08	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	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
	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		7.02	8.13	3.19	0.00	4.55	2.76	0.00	0.05	0.00	2.23	0.00	0.00	1.24	6.90	97.68

NOVEMBER 2018	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	7.92	10.4	956	2.1	2310	94.5	99.9	822	84.1	1455	7.1	6.4	7.8	957	4.1	2345	1006.94	1016.0	2359	1002.8	438	2.6
2	3.79	11.0	1416	-1.7	628	86.2	99.9	839	51.3	1440	1.4	4.2	5.3	1119	3.3	628	1024.58	1029.0	2115	1015.9	2	0.1
3	8.62	14.0	1142	3.2	240	79.3	92.7	244	61.7	1229	5.1	5.4	7.0	1006	4.3	240	1022.09	1028.0	0	1014.8	2359	0.0
4	10.61	12.9	1302	7.8	2358	80.8	95.8	2359	66.7	1406	7.4	6.4	6.9	1700	5.4	1	1009.98	1014.9	0	1005.7	2345	0.0
5	10.67	15.4	1339	6.0	332	92.6	99.5	808	76.5	1158	9.5	7.5	8.9	1501	5.8	332	1003.54	1005.9	11	1001.2	2322	0.0
6	12.49	16.2	1407	7.4	20	90.1	100.0	519	73.2	1406	10.8	8.2	9.1	1307	6.3	19	998.78	1001.5	2	996.4	2348	0.0
7	11.25	13.9	1102	6.6	2359	90.4	96.4	512	80.3	1104	9.7	7.6	8.4	736	5.3	2358	997.56	1010.2	2359	992.6	1126	11.0
8	9.15	14.2	1127	3.9	311	82.2	96.3	328	56.9	1305	6.1	5.9	7.0	1016	4.8	311	1013.24	1015.3	1048	1010.1	0	0.0
9	10.22	13.3	1120	6.0	436	87.6	98.1	513	66.3	1414	8.2	6.8	8.0	1221	5.6	312	1002.71	1011.4	2	991.2	2359	10.1
10	10.24	14.3	1202	7.5	736	93.4	98.9	850	74.5	1230	9.2	7.4	8.2	1159	6.4	736	993.88	995.1	843	990.9	54	7.8
11	9.58	13.2	1226	6.4	407	87.5	99.1	417	65.0	1149	7.5	6.5	7.3	722	6.0	1302	999.33	1006.4	2348	993.5	631	3.9
12	10.49	15.1	1247	8.2	328	86.3	97.7	818	63.7	1247	8.2	6.8	7.7	1115	5.7	2353	1009.14	1012.7	2355	1005.7	15	3.5
13	9.93	13.8	1229	7.3	630	83.5	96.1	2243	65.4	1253	7.2	6.2	7.0	2359	5.7	1515	1020.75	1025.2	2235	1012.6	0	0.1
14	10.25	14.8	1250	4.4	2210	84.9	99.3	2326	61.4	1327	7.7	6.5	7.3	941	5.0	2210	1021.82	1024.5	6	1020.6	1440	0.0
15	11.50	14.7	1410	6.6	3	93.7	99.8	351	84.6	1056	10.5	7.8	8.9	1402	5.9	0	1020.62	1022.7	2338	1019.4	1508	0.0
16	10.41	11.5	27	8.4	2329	97.5	99.1	2341	93.1	1326	10.0	7.5	8.1	143	6.7	2329	1024.94	1026.4	2326	1022.3	11	0.5
17	7.69	11.5	1307	3.2	2336	89.1	99.4	225	62.6	1420	5.9	5.7	6.9	239	4.6	2336	1026.64	1027.7	2357	1025.5	1419	0.2
18	4.99	11.3	1251	-0.5	710	86.0	100.0	841	60.8	1407	2.7	4.6	6.1	1111	3.6	731	1026.93	1028.5	852	1025.1	2358	0.0
19	5.99	8.7	1243	3.0	9	80.7	94.3	2026	69.3	1451	2.9	4.6	5.3	1134	3.8	9	1020.21	1025.3	5	1014.5	2357	1.5
20	3.79	5.4	926	1.8	1814	88.9	98.2	2259	76.7	647	2.1	4.4	4.9	1222	4.1	647	1008.64	1014.6	2	1005.6	2348	6.1
21	2.89	7.4	1359	-1.5	2356	89.8	99.1	840	68.0	1309	1.3	4.2	5.1	1056	3.3	2356	1012.10	1018.8	2357	1005.5	110	0.6
22	0.81	4.7	1408	-3.9	626	97.9	99.9	432	94.5	1501	0.5	4.0	5.0	1408	2.8	627	1017.58	1019.0	46	1016.2	1606	0.0
23	6.17	7.8	1419	3.6	6	95.5	98.3	1121	92.8	2345	5.5	5.6	6.3	1305	4.7	17	1013.60	1016.6	16	1010.3	2359	0.1
24	7.74	8.9	1300	6.3	2348	90.0	97.2	1039	83.1	2339	6.2	5.9	6.6	1046	5.0	2349	1009.78	1010.7	2153	1008.9	658	1.1
25	6.21	8.7	1152	1.8	2323	85.9	96.9	2332	77.3	1159	4.0	5.1	5.6	1315	4.1	2302	1010.80	1012.0	2251	1009.6	324	0.1
26	4.96	7.8	1436	0.8	2043	89.1	98.9	2204	76.8	1409	3.3	4.8	5.2	1152	3.9	2043	1014.31	1018.0	2328	1011.3	408	0.0
27	5.72	10.2	1824	2.3	654	97.4	99.9	853	94.9	1856	5.3	5.6	7.4	1824	4.4	654	1013.11	1018.5	156	1007.1	1735	5.0
28	12.11	13.7	1631	7.7	25	91.7	98.8	1	78.8	2112	10.8	8.1	8.9	802	6.4	25	1006.38	1009.2	0	1003.6	1422	2.4
29	11.58	13.7	1130	8.1	2356	85.6	96.1	244	69.3	1415	9.2	7.3	8.6	316	6.0	2212	1000.93	1006.4	2	996.2	1112	3.9
30	8.35	11.6	1253	5.5	2245	81.6	92.0	809	65.8	1326	5.3	5.6	6.2	255	4.9	2243	1007.25	1011.3	2351	1002.4	20	0.2

Total	Mean	Max	Min	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
	8.20	11.67	4.28			88.7	97.92		73.18		6.35	6.08	7.03		4.93		1011.94	1016.06		1007.91		60.8
	12.49	16.22	8.43			97.9	100.00		94.90		10.84	8.18	9.10		6.68		1026.93	1029.02		1025.50		
	0.81	4.65	-3.86			79.3	92.00		51.31		0.51	3.98	4.88		2.80		993.88	995.13		990.90		

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

AUTUMN 2018

Temperature (°C)									Rank in the past 137 years	
Mean maximum	16.1	(+0.9)							9 th highest	
Mean minimum	6.8	(-0.3)							44 th highest	
Daily mean	11.4	(+0.3)							20 th highest	
Rainfall total (mm)	176.2	(91%)							58 th lowest	
Sunshine total (hours)	448.1	(137%)								
N° of:	Dry days	54 (+4)		Wet days	25 (-5)					
Days with:	Air frost	6 (-2)		Ground frost	29 (+7)		Snow falling	1 (0)	Snow lying	0 (0)
	Thunder	0 (-3)		Hail ≥5mm	0 (0)		Small hail/ice	2 (+1)	Fog @09 GMT	1 (-3)
									Nil sun	11 (-4)
Air pressure MSL : Mean @09 GMT (mbar)	1017.7 (+2.6)									

Departure from 1981 to 2010 average shown in brackets.

Notes: **Mean Temperature Above and Rainfall Below Average with Near Record Sunshine.**

Temperature: In terms of the mean maximum, this has been a very mild autumn, ranking 9th highest since 1882. However, the mean minimum ranks only 44th highest, and is lowest since 2012. The resulting daily mean is just 0.3° above average. Since 2000, 9 autumns have been milder, 2 the same and 7 colder. 2006 is the warmest autumn in our records and the mean was 2.1° higher than this autumn's. The warmest autumn month was September, mean 14.7°, then October, 11.4°, then November 8.2°. The highest maximum was 25.3° on the 17th September, 0.8° above the median, and the lowest maximum, 5.4° on the 20th November, is 0.7° above the median. The highest minimum was 17.2° on the 17th September, 1.8° above the median and 8th highest on record. The lowest min was -3.9° on the 22nd November, exactly on the median. The mean grass min of 3.1° is 0.9° below average, but the lowest grass min, -8.0° on the 22nd November is average. The mean earth temperature at 30 cm depth is 13.1°, exactly average, and at 1 m depth the mean of 14.4° is just 0.1° below average. There were 2 fewer air frosts, but 7 more ground frosts, than average. The duration of air frost is 64 % of average. The first ground frost of the season was on the 13th September after 116 frost-free days, while the first air frost was on the 29th October after 213 frost-free days. **Rainfall:** This has not been a very wet autumn, with the total 9% below average. None of the season's months had an excess of rain, November with 97% of average has the highest, then October with 94% and September with 79 %, but in actual amount October with 67.4 mm just exceeded November's 66.6 mm. Notable wet days were the 22nd September with 19.8 mm, the 13th/14th October, 47.2 mm over 2 days, and 9th/10th November, 22.0 mm over 2 days. The wettest day was the 14th October, 24.4 mm, and that day also had the longest duration, 17.0 hours. The highest rainfall rate was 88 mm/hr on the 21st September at 0015 GMT. The number of dry days is 4 more than average and most since 2007. There were 4 dry spells, 8 days to the 5th, and 6 days to the 17th September, 12 days to the 5th, and 7 days to the 24th October. Snow was recorded on the 20th November, but consisted of a few wet flakes during prolonged rainfall. Ice pellets fell on the 26th October and 12th November. Thunder was not heard for the first autumn since 2003 and before that 1986. **Sunshine:** This has been a very sunny autumn overall, the total highest since 2003 which was the sunniest on record. Interestingly, the sunshine anomaly for each month was almost identical, 139 % in September, 136 % in October and 137 % in November. There were some noteworthy sunny periods, 24th to 29th September had 64.5 hours, a mean of 10.8 hours per day, and 19th to 22nd October gave 38.1 hours, 9.5 hours per day, but there were also many examples of individual sunny days having 80 % or 90 % of the maximum. The 14th to 17th October was a dull episode, just 1.7 hours over 4 days, 3 of which had nil sun, and the 6 days to the 28th November had only 2.4 hours, 2.2 of which were on one day. Overall there were 35 days with <3 hours, 37 with =>6 hours, 18 with =>9 hours and 2 with =>12 hours. **Wind:** The mean speed this autumn was 6.3 mph, 0.2 mph above average. The windiest day was the 12th October, 14.6 mph, but the highest gust was 50 mph on the 21st September. The least windy day was the 19th October, mean 1.8 mph and there were 2110 calm minutes. Daily mean direction/number of days : N,12 NE,11 E,4 SE,6 S,20 SW,21 W,12 NW,5. Compared with average, winds from N and NE combined were 6.8 % more frequent, and from S, 5.7 % more frequent, at the expense of SW, 8.6% less frequent and E, 3.0 % less frequent. **Pressure:** The highest air pressure was on the 24th September, 1040.1 mbar, and the lowest, 990.9 mbar was on the 10th November, a span of 49.2 mbar, compared with the average of 55.6 mbar. **Humidity:** The overall mean relative humidity was 81.9 %, and the lowest was 20 % on the 26th September. The mean water vapour content per kg of air was 7.1 g at 0900 GMT and 6.8 g at 1500 GMT. **September:** Very sunny with below average rainfall and average mean temperature. Mean daily temperature range 2nd highest after 2003 in 43 years. The lowest max is lowest since 1994. The lowest min is lowest since 1959. The lowest grass min is lowest in at least 39 years. Number of ground frosts most since 1986. Sunniest since 2003, with daily mean sun higher than in August. Maximum gust 2nd highest for the month since before 1988. Highest pressure highest for month since before 1976. **October:** Temperature and rainfall near average, very sunny. Highest max 10th highest in 115 years. Lowest max 10th lowest in 106 years. Highest min a new October high. Lowest grass min lowest since 1997. 48 hr rainfall total 2nd highest for Oct since before 1976. Sunniest since 2011. Month's highest pressure highest since 1985. **November:** Above average temperature, near average rainfall and well above average sunshine. Sunshine total in the top 10 in the past century.

Month	Mean Max	Anom	Mean Min	Anom	Rain mm	Anom	Sun hrs	Anom	Mean Wind mph	Max gust	Mean pressure	Anom
Sep	20.5°	+1.1°	9.0°	-1.0°	42.2	79%	198.3	139%	6.5	50	1021.9	+5.2
Oct	15.9°	+0.7°	6.8°	-0.4°	67.4	94%	152.0	136%	5.9	43	1019.0	+4.7
Nov	11.8°	+0.9°	4.6°	+0.5°	66.6	97%	97.8	137%	6.8	45	1012.3	-2.1

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Month: Calendar month.

Season: Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Appendix 2.

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

VV : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

RH : Relative humidity at 1.2m, %.

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

ppp : 3 hour pressure tendency in tenths of a millibar

ww : Present weather code figures, 00 to 99.

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

Cl : Type of low cloud

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

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

Cm : Type of medium cloud.

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

Ch : Type of high cloud

0 = No high cloud

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

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

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

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

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

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

7 = Veil of Cirrostratus covering the celestial dome.

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

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

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

8 Groups

N = Amount of cloud reported by C, okta.

C = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

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

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

00 to 50 = Height in hundreds of feet

51 to 55 Not used

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

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