

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 2024

Temperature (°C)		Anomaly		Rank in the past 143 years					
Mean maximum	10.6	-0.5		59th highest					
Mean minimum	4.7	+0.3		33rd highest					
Daily mean	7.7	-0.1		42nd highest					
Highest maximum	16.9	on 24th	Lowest maximum	2.9	on 19th				
Highest minimum	11.1	on 3rd	Lowest minimum	-2.4	on 28th				
Mean grass minimum	2.8	+1.4	Lowest grass minimum	-6.2	on 22nd				
Mean earth @30 cm	10.8	+1.1	Earth @100 cm	12.5	+0.6				
Frost duration (hrs)	47.2		Rain duration (hrs)	58.0					
Rainfall total (mm)	73.8	99 %	50th highest						
Highest daily fall	15.5	on 18th	Highest rate mm/hr	37	on 17th				
Number of: Dry days (<0.2mm)	19	Wet days (>0.9mm)	6	days ≥5mm	5				
Sunshine total (hrs)	68.7	Daily mean	2.29	87 %	Sunniest day	7.6	on 29th		
N° days with: Air frost	6	Ground frost	10	Snow falling	1	Snow lying	0		
Thunder	0	Hail ≥5mm	0	Small hail/ice	0	Fog @09	1	Nil sun	13
Pressure MSL: Mean @09 GMT, mbar	1020.5	+7.0	Highest	1038.4	on 11th	Lowest	992.3	on 24th	
Relative humidity : Mean (%)	88.3	Lowest	55	on 29th	Water vapour (g/kg), mean at 09 and 15 GMT	5.9,	6.0		
Overall mean wind speed (mph)	5.2	Windiest day	17.6	on 24th	Max gust	51	on 24th		
Wind direction (days)	N 4	NE 2	E 6	SE 1	S 3	SW 7	W 4	NW 3	
Least windy day (mph)	1.0	on 9th	Calm; less than 0.5 mph (minutes)	n/a					

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

Notes:

Mean Temperature and Rainfall Near Average, Sunshine Below Average.

This has been a month with strong contrasts, large fluctuations in temperature in the second half, very dry until mid-month, then very wet, and almost no sunshine before the 11th. **Temperature:** The mean this November is close to the current 30 year average, but is 0.8° above the 143 year median, although the mean maximum is 0.5° below average, and is lowest since 2019. The highest max is 1.3° above the median and the lowest max is 1.7° below its median, and is lowest since 2010. The highest min is 0.5° above the median while the lowest min is 1.1° above its median. The first air frost of the winter half year was on the 20th, after a frost free 257 days, 66 days above average, as a result of the last spring frost being the earliest in the past 44 years. Anomalies for daily max were over +7° on the 23rd and 24th and exceeded -5° on the 19th and 21st, with extreme values of +7.3° on the 24th and -6.7° on the 19th. Anomalies for daily min were above +5° on the 3rd, 24th and 25th, and exceeded -4° on the 20th to 22nd and 28th, with extreme values of +5.7 ° on 24th and -5.0° on the 28th.

Rainfall: The total this month is very close to average, but the distribution of rain throughout the month was highly dissimilar, there being almost no rain before the 17th, in fact the 27day period to the 16th received a total of only 1.6 mm, with 21 dry days and 2 dry spells, 7 days to the 4th and 9 days to the 15th. In complete contrast, after mid-month it became very wet at times, with 60.5 mm falling over 4 days between the 18th and 26th, of which 45.0 mm fell between the 23rd and 26th. The number of dry days is 5 above average, but there were also 2 more days than average having 10 mm or more. A few flakes of snow fell during rainfall on the morning of the 19th, the first day with snow since the 8th January. Interestingly this was the only day to have any snow during the whole of last winter. There was no thunder or hail this month. Rainfall accumulation compared with normal was 40 mm in deficit on the 16th but was 10 mm in surplus by the 26th. **Sunshine:** In a similar manner to the rainfall, the distribution of sunshine this November shows marked contrasts, there being almost no sunshine before the 11th, (only 0.2 hours total in the 12 days to the 10th), then 9 days having over 50 % of the maximum, and over 80 % on the 13th, 22nd, 26th and 29th. The total for the month is lowest since 2015, but in this millennium there have been 6 duller Novembers than this year's. The number of days with nil sun is equal highest with 2015 since 1994. Sunshine accumulation was 25 hours in deficit on the 10th, this gradually reducing to 10 hours by the 30th. Overall there were 20 days with <3 hours and 6 with =>6 hours.

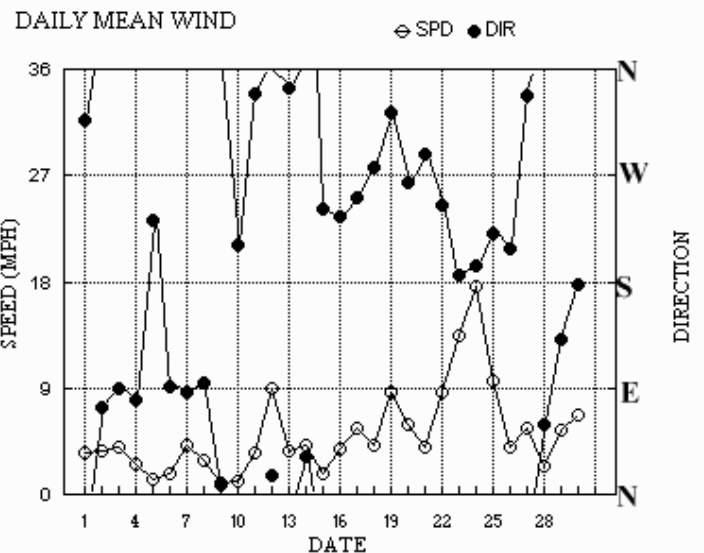
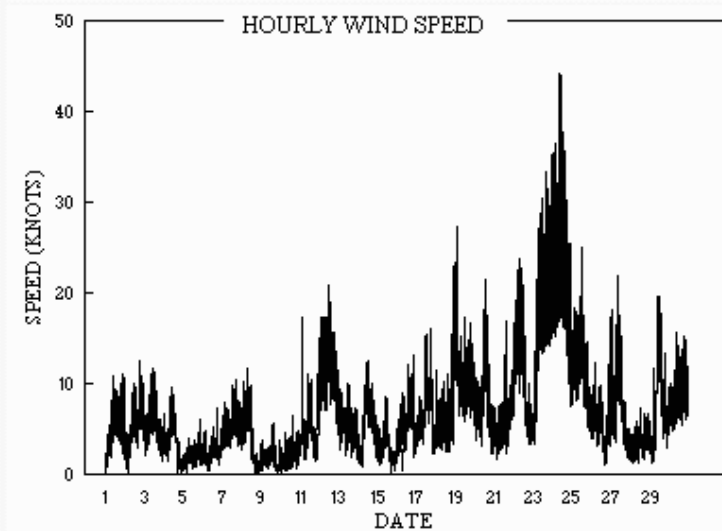
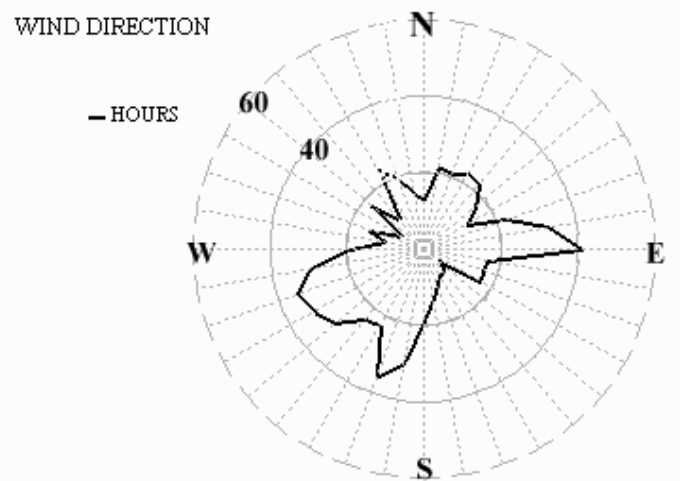
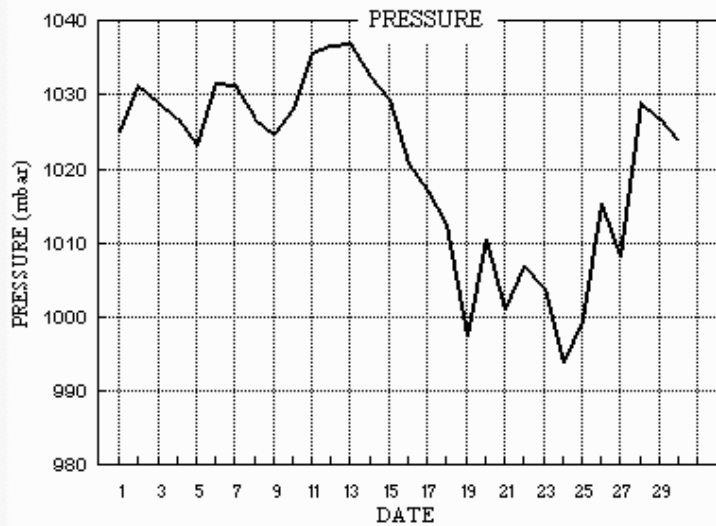
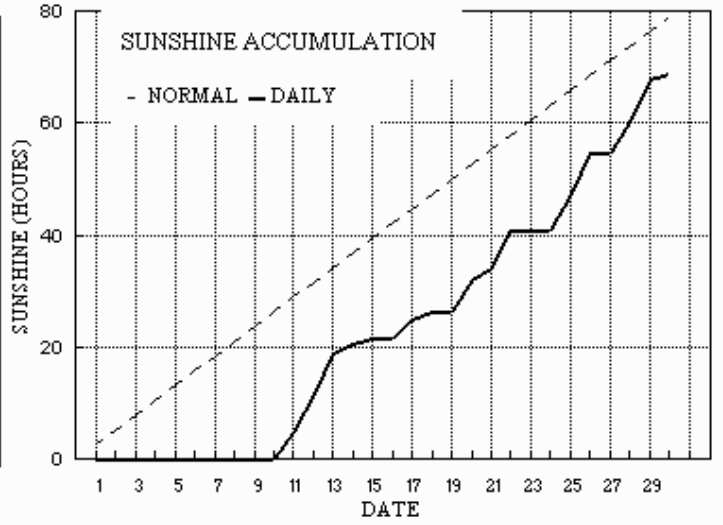
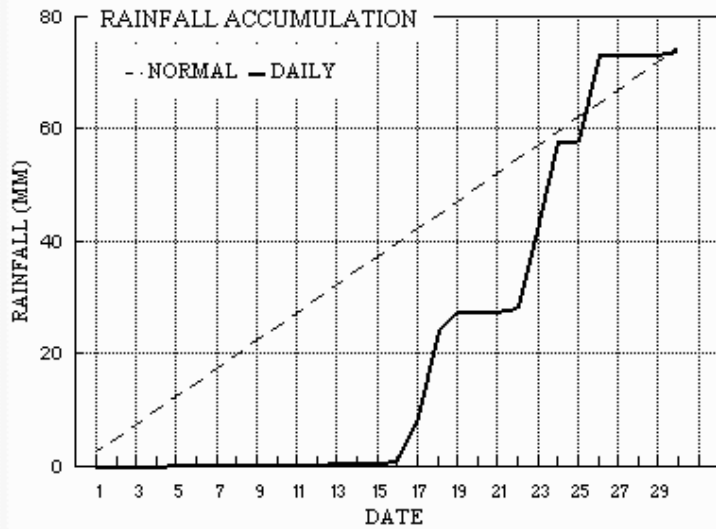
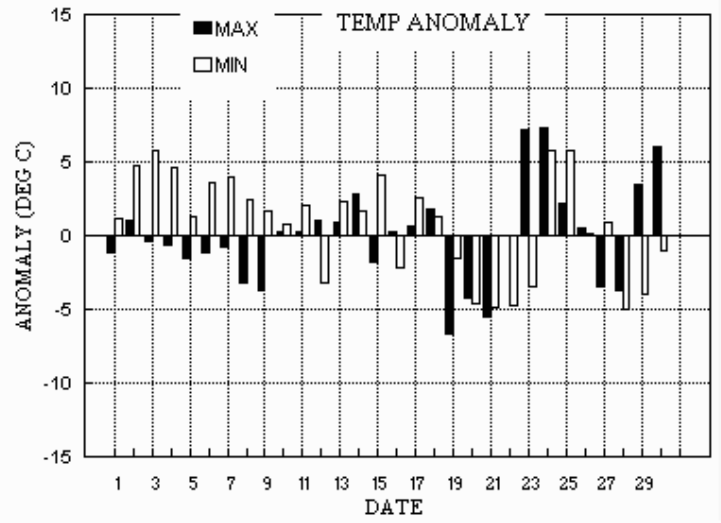
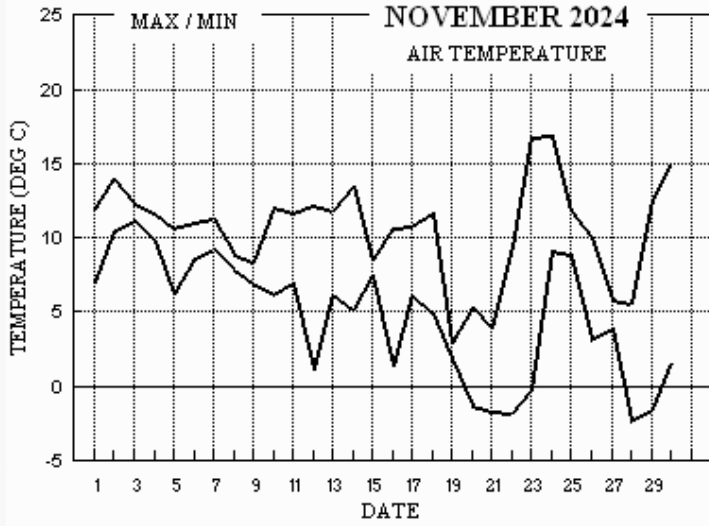
Wind: The mean speed this November is 1.1 mph below average and is equal lowest with 2014 since 2004. However, the daily mean speed of 17.6 mph on the 24th is a new record windiest day for the past 37 Novembers, though this month's highest gust of 51 mph is highest only since 2015. Daily mean speeds were mainly light or very light until the 16th, then moderate, increasing fresh on the 22nd, strong on the 23rd and very strong on the 24th, thereafter light or moderate. Mean directions were between N and E on 2nd to 4th, 6 to 9th, 12th, 14th and 28th, between E and S on 29th and 30th, between W and N on 1st, 11th, 13th 18th to 21st and 27th, otherwise between S and W.

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			
-1.1°	+3.0°	2%	1%	-0.5°	+0.2°	109%	121%	+1.4°	-1.1°	187%	139%

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

Wokingham climatological graphs for November 2024



Month: NOVEMBER 2024

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	11.9	7.0	tr	10.0	13.1	13.8	0.0	0.0	1025.0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	317	1.9	3.1	40	11	2300	286	5	09	0.0	
2	13.9	10.4	tr	10.4	13.1	13.7	0.0	0.0	1031.3	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	74	3.2	3.3	93	13	1920	79	6	17	0.1	
3	12.3	11.1	0.0	10.8	13.3	13.7	0.0	0.0	1029.2	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	90	3.4	3.5	55	13	1155	45	6	11	0.0	
4	11.7	9.8	0.0	9.6	13.2	13.7	0.1	0.0	1026.9	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	80	2.2	2.3	115	10	1020	103	5	10	0.0	
5	10.7	6.2	0.2	2.8	13.0	13.7	0.0	0.0	1023.1	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	232	0.1	1.1	271	6	2100	293	3	21	0.4	
6	11.0	8.6	0.2	9.0	13.0	13.7	0.0	0.0	1031.6	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	91	1.3	1.6	105	7	1855	95	4	18	1.4	
7	11.3	9.2	tr	9.5	13.0	13.6	0.0	0.0	1031.4	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	87	3.4	3.6	95	11	1725	96	5	17	0.0	
8	8.9	7.8	tr	8.0	12.8	13.6	0.0	0.0	1026.9	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	95	2.3	2.5	104	12	0900	90	6	08	0.1	
9	8.3	7.0	tr	7.3	12.6	13.5	0.0	0.0	1024.7	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	9	0.4	0.9	303	6	1530	308	2	14	0.3	
10	12.0	6.2	tr	3.4	12.3	13.5	0.1	0.0	1028.1	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	211	1.0	1.1	211	7	1525	210	3	15	0.5	
11	11.7	6.9	0.0	2.3	12.3	13.4	4.7	0.0	1035.8	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	339	2.7	3.2	340	17	0315	2	5	11	0.0	
12	12.2	1.1	tr	-1.9	11.5	13.3	6.6	0.0	1036.7	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	16	7.7	7.8	28	21	1140	26	11	12	0.4	
13	11.8	6.2	0.1	3.0	11.3	13.1	7.4	0.0	1037.0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	343	2.7	3.3	15	12	0100	19	5	00	0.1	
14	13.4	5.2	0.0	1.3	11.1	12.9	1.9	0.0	1032.3	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	33	3.2	3.6	40	13	1500	31	7	11	0.0	
15	8.5	7.4	0.0	7.2	11.3	12.8	0.9	0.0	1029.3	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	241	1.0	1.6	271	9	1200	254	3	11	0.0	
16	10.6	1.3	0.3	-2.3	10.9	12.7	0.0	0.0	1020.6	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	235	2.9	3.3	331	13	2019	236	6	14	1.0	
17	10.8	6.2	7.7	2.8	10.8	12.6	3.4	0.0	1017.1	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	251	4.8	4.9	241	16	1820	260	9	12	6.0	
18	11.6	4.9	15.5	0.6	10.7	12.4	1.2	0.0	1012.6	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	276	1.2	3.7	235	23	2358	227	8	23	12.2	
19	2.9	1.8	3.4	2.5	10.7	12.3	0.0	0.0	997.4	0 0 1 0	0 0 0 0	0 0 0 0	0 0 0 0	323	6.4	7.6	326	28	0236	281	11	02	5.1	
20	5.3	-1.3	0.0	-5.2	9.7	12.2	5.8	11.8	1010.4	1 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	264	4.6	5.2	293	22	1430	301	10	14	0.0	
21	3.9	-1.7	0.0	-5.4	8.6	12.0	1.9	17.9	1000.9	1 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	287	1.2	3.6	348	17	1516	237	6	23	0.0	
22	9.4	-1.8	0.8	-6.2	7.8	11.6	6.9	1.6	1006.8	1 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	244	7.1	7.6	255	24	0944	243	12	05	1.7	
23	16.7	-0.3	15.0	-3.6	7.5	11.3	0.0	0.0	1003.9	1 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	185	11.2	11.7	203	36	2349	199	16	23	9.2	
24	16.9	9.1	14.7	12.2	8.9	10.9	0.0	0.0	993.9	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	194	15.0	15.3	192	44	0820	190	19	08	8.8	
25	11.8	8.9	0.0	6.9	10.0	10.8	6.4	0.0	999.6	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	221	8.1	8.3	222	25	1425	239	12	13	0.0	
26	10.0	3.1	15.3	-1.9	9.5	10.9	7.3	0.0	1015.4	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	208	2.7	3.6	224	13	0536	224	6	05	9.6	
27	5.8	3.9	0.0	-1.5	8.9	10.9	0.0	1.5	1008.2	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	337	3.5	4.9	336	22	1019	337	8	10	0.0	
28	5.5	-2.4	0.0	-6.0	8.3	10.8	5.6	10.6	1029.1	1 1 0 0	0 0 0 1	0 0 0 1	0 0 0 1	59	1.3	2.1	106	7	1352	50	4	18	0.0	
29	12.5	-1.6	0.1	-3.9	7.5	10.6	7.6	3.8	1026.9	1 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	132	3.8	4.8	148	20	1313	157	10	13	0.1	
30	15.0	1.6	0.5	1.3	7.6	10.3	0.9	0.0	1023.8	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	177	5.8	5.9	207	16	1000	179	8	20	1.0	
Total			73.8				68.7	47.2																58.0
Mean	10.6	4.7		2.8	10.8	12.5	2.29	1.6	1020.5					218	1.0	4.5								
Anom	-0.5	+0.3	99%	+1.4	+1.1	+0.6	87%																	+7.0
Daily mean		7.7																						
Anom		-0.1																						

Number of days with:

Air frost = 6 Ground frost = 10 Nil sun = 13
 Snow falling = 1 Snow lying = 0 Thunder = 0
 Hail=>5mm = 0 Hail<5mm or ice = 0 Fog at 09GMT = 1

Abbreviations.

Max/min = highest and lowest air temperature at 1.2m in 24 hour period ending at 09 GMT

Rain = total rainfall and melted snowfall in 24 hour period ending at 09 GMT, millimetres. (Tr = trace, <.05mm).

Grass min = Lowest overnight temperature at grass tip level.

Sun = hours of bright sunshine, measured electronically. Frost = Number of hours with air temp below 0 deg C.

pp09 = Air pressure corrected to mean sea level at 0900 GMT, millibars.

Af = Air frost. Gf = Ground frost. Sf = Snow falling. Sl = Snow lying at 09 GMT.

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

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

Sp = 24 hour mean wind speed in knots.

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

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

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

Maximum daily rain rate in mm/hr

All temperatures in degrees Celsius.

Anomaly - Departure from the 1991 to 2020 climatological average

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for NOVEMBER 2024

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	Nh	Ch	Nh	Ch	Date	Remarks
1	62	7	28	05	09	11.7	8.6	81	6.8	1025.0	3	008	02	2	2	7	5	4	/	/	87618						
2	60	8	04	05	08	11.6	10.5	93	7.7	1031.3	2	012	50	5	2	8	5	3	/	/	86706	88623			2		
3	60	8	10	06	12	11.4	9.0	85	7.0	1029.2	1	005	05	2	2	8	5	4	/	/	86615	88618			3		
4	60	8	07	03	08	10.1	7.7	85	6.4	1026.9	0	004	05	2	2	8	5	4	/	/	88614				4		
5	35	8	05	03	04	9.4	8.3	93	6.7	1023.1	1	009	05	2	2	8	6	3	/	/	88707				5		
6	18	8	22	01	04	9.5	9.4	99	7.2	1031.6	2	025	50	5	2	8	6	1	/	/	88702				6		
7	20	8	09	04	07	10.2	9.9	98	7.4	1031.4	1	005	51	5	2	8	6	2	/	/	88703				7		
8	50	8	10	07	12	8.0	6.0	87	5.7	1026.9	0	003	05	2	2	8	6	4	/	/	88711				8		
9	40	8	05	01	02	7.2	6.1	93	5.8	1024.7	1	011	20	5	2	8	5	4	/	/	86617	88620			9		
10	56	8	18	01	02	8.3	6.8	90	6.0	1028.1	1	010	05	5	2	8	5	5	/	/	84620	88628			10		
11	60	7	33	03	06	8.5	7.9	96	6.5	1035.8	2	016	10	2	2	1	0	9	8	2	81368	86070			11	/Ci78 COTRA Ac cas Parheliion U/a cont	
12	65	3	02	07	12	7.2	5.3	88	5.4	1036.7	7	002	01	1	1	2	5	6	0	1	82640				12	2Ci70	
13	68	3	35	02	04	6.9	5.8	93	5.6	1037.0	2	006	01	1	1	1	0	9	3	9	81363	83172			13		
14	56	8	04	05	08	10.1	9.5	96	7.2	1032.3	2	008	20	5	2	8	6	3	/	/	87706	88710			14		
15	68	8	27	04	06	7.6	4.0	78	5.0	1029.3	6	004	02	2	2	8	5	4	/	/	88618				15		
16	57	7	22	02	03	7.3	5.9	91	5.7	1020.6	8	004	05	2	2	7	5	6	/	/	87633				16		
17	82	7	26	03	06	6.7	5.3	91	5.5	1017.1	1	009	01	2	2	7	0	9	7	1	85359	87361			17	/Ci80 COTRA	
18	61	7	28	02	05	6.9	6.8	99	6.1	1012.6	1	009	03	2	2	1	5	2	4	9	81703	85172	85080		18	1Sc50 1Ac63 COTRA Parheliion	
19	50	8	36	06	14	1.8	1.5	98	4.3	997.4	1	010	61	6	6	7	7	2	2	/	87705	88515			19		
20	86	3	26	04	09	-0.2	-1.6	90	3.4	1010.4	1	009	01	1	1	2	5	5	4	2	82628				20	2Ac63 1Ci68 Hoar mod	
21	80	7	02	03	08	-0.3	-1.0	95	3.6	1000.9	7	027	14	2	2	7	0	7	2	/	87556				21	Cld edge N vv60k N Hoar mod Gnd sfc frzn	
22	86	1	26	09	16	3.9	-0.7	72	3.6	1006.8	2	024	02	1	1	2	5	6	0	1	81630				22	1Sc56 1Ci68 Hoar slt	
23	61	8	18	13	27	9.3	6.9	85	6.2	1003.9	6	033	50	5	2	7	7	4	2	/	87713	88540			23		
24	59	7	19	21	42	16.7	11.4	71	8.5	993.9	3	002	15	2	2	7	5	5	7	/	85628	86635			24	/Ac62 jpNW	
25	72	4	23	09	15	9.6	7.2	85	6.4	999.6	2	031	01	1	1	1	8	5	3	1	81820	84075			25	1Sc30 1Ac66 COTRA Cu fra Parheliion	
26	86	1	22	03	06	5.1	3.1	87	4.7	1015.4	2	021	01	0	0	1	0	9	4	0	81360				26		
27	62	8	33	08	17	5.7	5.4	98	5.6	1008.2	3	024	21	6	2	8	5	3	/	/	87707	88612			27		
28	02	9	28	02	05	-1.6	-1.6	100	3.3	1029.1	2	019	49	4	1	9	/	/	/	/					28	Hoar/Rime thk Gnd sfc frzn	
29	81	6	03	02	06	1.6	1.6	100	4.2	1026.9	5	000	02	2	2	1	0	9	4	1	81362	86080			29	COTRA Hoar mod Gnd sfc frzn	
30	58	7	19	05	11	12.5	11.9	96	8.5	1023.8	0	004	10	2	2	7	6	2	/	/	87704				30	/Sc35	

Mean vis = 16.7 km

Mean cloud = 6.6 82%

Mean wind speed = 5.0 kn

Mean gust = 10 kn

Mean TT = 7.4 °C

Mean TdTd = 5.9 °C

Mean RH = 90.4 %

Mean r = 5.9 g/kg

Mean PPP = 1020.5 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation trails present

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for NOVEMBER 2024

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks					
1	66	8	33	04	09	11.7	9.4	86	7.2	1025.4	1	002	02	2	2	8	5	4	/ /	88613	1				
2	80	8	08	05	08	13.6	11.8	89	8.4	1029.6	5	007	02	5	2	8	8	4	/ /	82810	83615	88620	2	Cu hum	
3	61	8	12	04	08	11.7	8.6	81	6.8	1027.4	8	009	02	2	2	8	5	4	/ /	88618			3		
4	59	7	08	04	07	11.5	8.2	80	6.6	1024.1	7	017	05	2	2	2	5	4	0	2	82615	87072		4	COTRA
5	40	8	21	01	03	10.4	8.7	89	6.9	1023.4	3	001	05	2	2	8	6	4	/ /	88710			5		
6	56	8	12	02	05	10.4	9.5	94	7.2	1031.5	5	000	05	5	2	8	6	2	/ /	88705			6		
7	30	8	13	04	08	10.9	9.2	89	7.1	1029.2	7	011	05	2	2	8	6	4	/ /	88710			7		
8	50	8	14	01	05	8.8	6.1	83	5.8	1024.4	6	012	05	2	2	8	5	4	/ /	85614	88617		8		
9	58	8	32	03	06	7.9	4.5	79	5.2	1024.4	4	000	05	2	2	8	5	4	/ /	83616	88619		9		
10	61	7	21	02	05	11.7	9.9	89	7.5	1028.3	5	000	01	6	5	7	5	4	4	1	82712	83630	86645	10	/Ac68 /Ci75 Sc edge W
11	81	6	36	05	11	11.1	6.2	72	5.8	1036.3	3	001	01	2	2	1	1	5	3	0	81820	86368		11	Cu hum
12	75	3	03	10	20	11.1	6.4	73	5.9	1034.9	7	006	03	1	1	2	8	5	0	1	82825			12	1Sc50 1Ci80 COTRA Cu hum Crepuscular rays
13	72	7	35	04	09	10.2	6.0	75	5.7	1035.1	7	007	01	2	2	1	0	9	7	1	81357	87080		13	COTRA
14	81	7	04	07	13	11.4	6.5	72	5.9	1031.7	6	006	02	2	2	7	5	5	/ /	87627			14		
15	63	6	31	02	05	8.4	4.6	77	5.2	1026.0	7	019	01	2	2	6	5	4	/ 1	86618			15	/Ci80 COTRA	
16	72	7	24	05	12	10.4	8.2	86	6.7	1017.4	6	016	20	5	2	7	5	6	/ /	82630	87635		16		
17	82	7	24	08	14	9.2	5.2	76	5.5	1014.7	6	017	60	1	1	1	5	7	/ /	81650	84358	86360	17	Ac vir/pra	
18	62	8	14	02	04	8.1	7.0	93	6.2	1010.3	7	024	61	6	6	3	4	3	2	/	82807	88545		18	1Sc30 Cu fra/med
19	62	8	34	06	10	2.7	2.3	97	4.5	999.5	3	013	61	6	7	7	2	2	/	84705	86708	88515	19		
20	88	1	30	08	20	3.6	-1.2	71	3.5	1010.8	3	003	01	1	1	1	1	5	0	0	81825			20	Cu hum
21	89	1	35	04	10	3.1	-2.4	67	3.2	998.0	5	006	01	1	1	1	0	9	4	8	81360			21	1Cs70 1Ci75 Cs edge SSE
22	88	6	25	05	15	6.7	0.6	65	4.0	1010.9	2	017	03	1	1	1	8	6	0	4	81832	86075		22	1Sc40 COTRA Cu hum Ci billows
23	50	8	19	15	27	11.9	11.0	94	8.2	997.1	7	026	63	6	6	7	7	3	2	/	87708	88520		23	
24	58	8	19	18	38	15.4	12.3	82	9.1	993.5	6	009	62	6	2	6	5	5	2	/	86628	88540		24	
25	81	5	24	09	25	10.7	4.0	63	5.1	1004.3	2	023	03	1	1	5	4	6	0	1	82837	83645		25	1Ci75 Cu hum
26	84	3	20	04	08	8.9	3.9	71	5.0	1016.9	2	007	03	0	0	1	5	5	3	1	81825	83077		26	1Ac68 1Ci72 COTRA Cu hum
27	86	7	32	05	13	5.6	2.9	83	4.7	1015.9	2	035	02	2	2	7	5	4	/ /	86613	87618		27	Cld edge distant N	
28	61	7	09	03	07	4.6	2.9	89	4.6	1028.7	7	008	03	1	1	1	0	9	4	5	81368	87081		28	2Cs77 COTRA
29	82	1	14	07	17	9.6	2.4	61	4.5	1023.8	7	015	01	1	1	1	0	9	4	1	81362			29	1Ci75
30	70	7	19	07	13	13.9	11.2	84	8.2	1022.4	7	011	02	2	2	7	8	4	/ /	82818	83625	86630	30	Cu hum	

Mean vis = 25.4 km

Mean cloud = 6.4 80%

Mean wind speed = 5.5 kn

Mean gust = 12 kn

Mean TT = 9.5 °C

Mean TdTd = 6.2 °C

Mean RH = 80.3 %

Mean r = 6.0 g/kg

Mean PPP = 1019.9 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-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	
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	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	0.00	0.00	
2024	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	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	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	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	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	0.00	
	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	
	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.72	0.67	0.00	0.00	0.00	
	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	1.00	1.00	0.00	0.00	0.00	
	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	1.00	1.00	0.14	0.00	0.00	
	11	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	1.00	1.00	0.87	0.00	0.00	
	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.86	0.94	0.61	0.00	0.00	
	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.35	0.86	0.22	0.05	0.00	
	14	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.83	0.78	0.02	0.05	0.00	
	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.88	0.61	0.99	0.06	0.81	0.00
	16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.11	0.00	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	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	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	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	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	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	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	0.00	
	Tot		0.00	0.01	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.05	4.68	6.55	7.36	1.92	0.90	0.00

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
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	0.09	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
8	0.00	1.00	0.00	0.01	0.00	1.00	0.00	0.00	0.02	0.83	0.00	0.00	0.93	0.00	0.18
9	0.40	0.02	0.00	0.86	0.00	1.00	0.00	0.00	0.97	1.00	0.00	0.10	1.00	0.00	0.26
10	1.00	0.03	0.00	0.87	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.33
11	0.85	0.00	0.00	1.00	0.00	0.99	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.34
12	0.84	0.00	0.00	0.99	0.00	0.49	0.00	0.00	0.92	1.00	0.00	1.00	1.00	0.24	0.30
13	0.30	0.00	0.00	0.80	0.25	0.67	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.65	0.30
14	0.00	0.00	0.00	0.42	0.91	1.00	0.00	0.00	0.89	1.00	0.00	1.00	1.00	0.00	0.29
15	0.00	0.00	0.00	0.86	0.76	0.69	0.00	0.00	0.61	0.44	0.00	0.52	0.69	0.00	0.27
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
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	3.39	1.15	0.00	5.80	1.92	6.92	0.00	0.00	6.40	7.27	0.00	5.62	7.62	0.89	68.56

NOVEMBER 2024	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	11.05	11.9	1518	10.4	243	87.3	96.6	101	79.1	923	9.0	7.0	7.6	105	6.6	635	1025.78	1029.3	2349	1023.8	446	0
2	12.02	13.9	1227	10.4	503	90.0	94.7	1040	83.3	1912	10.4	7.7	8.5	1110	7.0	55	1030.01	1031.3	845	1029.0	257	0
3	11.49	12.3	1132	10.5	2354	85.4	90.0	320	77.3	1313	9.1	7.0	7.5	132	6.7	1314	1028.30	1030.0	8	1026.9	1610	0
4	9.54	11.7	1446	6.2	2147	88.1	98.6	2223	78.0	1242	7.6	6.4	6.9	1438	5.7	2147	1025.32	1027.4	0	1022.9	2358	0
5	9.46	10.7	1437	8.3	5	93.3	98.0	2354	87.2	1402	8.4	6.7	7.0	1438	6.5	1056	1023.78	1027.3	2359	1021.9	425	0
6	9.62	11.0	1132	8.6	153	96.9	99.0	835	92.7	1414	9.2	7.0	7.5	1132	6.7	334	1030.80	1032.8	2111	1027.1	4	0.3
7	9.82	11.3	1227	8.8	2340	95.1	98.3	507	87.6	1334	9.1	7.0	7.7	1039	6.5	2354	1030.46	1032.6	34	1028.9	2356	0.1
8	8.31	8.9	1521	7.8	721	87.2	94.8	14	80.2	1519	6.3	5.8	6.6	9	5.4	2356	1025.69	1028.9	0	1023.8	2053	0
9	7.41	8.2	1415	6.7	2008	86.9	95.8	822	75.9	1405	5.4	5.5	5.9	825	5.0	1236	1024.66	1026.6	2359	1023.4	452	0
10	9.05	11.9	1528	6.2	117	92.7	99.1	2013	86.4	1039	7.9	6.5	8.2	2042	5.2	113	1028.44	1031.3	2349	1025.9	124	0
11	8.27	12.0	1429	1.4	2358	88.2	98.8	2339	67.9	1439	6.3	5.9	8.2	15	4.0	2358	1035.63	1038.4	2127	1031.1	16	0
12	7.92	12.2	1244	1.1	105	85.4	99.6	138	64.4	1233	5.5	5.5	6.2	2041	3.9	118	1036.37	1037.7	0	1034.7	1418	0.2
13	8.04	11.8	1236	5.2	1912	87.9	97.1	1955	69.0	1237	6.1	5.7	6.4	2355	5.1	1939	1035.44	1037.2	911	1033.2	2356	0.1
14	9.92	13.4	1227	8.1	2335	85.5	98.7	700	67.2	1241	7.5	6.3	7.3	1035	5.3	2140	1031.97	1033.2	0	1031.2	513	0.1
15	6.63	8.5	1431	1.3	2327	84.3	98.8	2355	75.4	1045	4.1	5.0	5.6	214	4.0	2327	1027.70	1031.4	0	1023.7	2359	0
16	7.53	10.6	1444	2.1	1	92.1	98.7	12	85.2	1215	6.3	5.9	7.2	2015	4.3	1	1019.19	1023.8	0	1016.2	2009	0.3
17	7.91	10.8	1308	6.2	318	88.0	97.5	2235	66.4	1321	6.0	5.8	6.7	1955	5.1	1336	1015.23	1017.4	1035	1012.6	2315	3.1
18	7.68	11.1	2359	4.9	759	96.6	99.8	847	86.5	1304	7.2	6.3	8.1	2359	5.3	759	1009.08	1013.5	1020	996.6	2359	10.8
19	3.51	11.6	228	0.1	2358	95.7	98.2	910	88.8	2347	2.9	4.8	8.2	108	3.4	2357	999.61	1007.5	2352	995.3	221	8.5
20	0.94	5.3	1332	-1.7	519	85.4	96.8	2259	68.4	1437	-1.3	3.4	4.0	1332	3.2	539	1010.25	1012.4	1847	1007.3	7	0.3
21	-0.22	3.1	1253	-1.8	1723	88.7	97.8	609	60.7	1512	-1.9	3.3	3.8	1245	2.8	1516	1002.15	1010.3	0	997.8	1403	0.1
22	3.30	7.1	1342	-0.5	39	74.7	94.4	2337	61.3	1339	-0.8	3.6	4.0	1140	3.1	9	1008.99	1015.0	2126	1002.8	0	0
23	9.31	14.7	2254	0.3	45	91.9	95.3	541	83.2	848	8.1	7.0	10.0	2305	3.5	18	1002.15	1014.4	4	995.4	2237	8.9
24	14.77	16.9	921	8.9	2344	83.8	95.7	2055	70.3	921	12.0	8.8	9.9	209	6.6	2338	994.30	996.3	4	992.3	1834	15.2
25	9.14	11.8	1223	5.2	2342	79.9	94.7	30	58.3	1356	5.7	5.8	7.1	205	4.6	2351	1002.14	1010.9	2359	995.1	133	0.8
26	5.98	10.0	1224	3.0	300	85.6	98.8	2357	63.2	1238	3.6	4.9	5.6	2300	4.4	400	2015.20	1017.8	1945	2010.9	0	1.5
27	4.53	6.8	453	-0.9	2350	93.6	99.6	2357	82.2	1530	3.6	4.9	6.0	453	3.5	2350	1013.98	1024.5	2359	1005.7	555	11.3
28	0.58	5.5	1427	-2.4	733	98.3	100.0	219	84.2	1424	0.3	3.8	5.0	1242	3.1	733	1028.20	1029.9	1114	1024.4	0	0.2
29	5.21	11.0	1248	-0.6	1543	83.5	100.0	141	55.2	1302	2.3	4.4	5.8	1007	3.5	1543	1025.44	1029.1	0	1022.9	1742	0.2
30	12.01	15.0	1138	8.5	1137	76.8	98.0	613	79.0	1137	10.7	7.9	8.7	1138	5.7	1137	1022.68	1026.7	954	1019.5	2359	0
Total																						62.0
Mean	7.69	10.70		4.41		88.3	97.44		75.48		5.88	5.85	6.91		4.86		1053.63	1024.17		1050.07		
Max	14.77	16.90		10.54		98.3	100.00		92.70		11.98	8.82	9.98		6.95		2015.20	1038.40		2010.90		
Min	-0.22	3.09		-2.44		74.7	90.00		55.18		-1.92	3.31	3.77		2.84		994.30	996.29		992.31		

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

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

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

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

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 2024

Temperature (°C)		Rank in the past 143 years	
Mean maximum	15.2 (-0.3)	42nd highest	
Mean minimum	7.7 (+0.4)	16th highest	
Daily mean	11.5 (+0.1)	19th highest	
Rainfall total (mm)	270.4 (134%)	13th highest	
Sunshine total (hours)	291.1 (84%)		
N° of: Dry days	42 (-6)	Wet days	33 (+2)
Days with: Air frost	6 (-1)	Ground frost	15 (-6)
		Snow falling	1 (0)
		Snow lying	0 (0)
Thunder	6 (+3)	Hail ≥5mm	0 (0)
		Small hail/ice	1 (0)
		Fog @09 GMT	3 (0)
		Nil sun	23 (+10)
Air pressure MSL : Mean @09 GMT (mbar)	1016.5 (+1.6)		

Departure from 1991 to 2020 average shown in brackets.

Notes: **Wet and Dull with Temperature Near Average.**

Temperature: Despite the near average mean, it is the coolest autumn since 2019. While the mean is only 0.1° above the current 30 year average, it is 0.9° above the long-term median. The mean maximum is slightly below average while the mean minimum is slightly above, indicating a lower than average daily temperature range of 7.5°, which is lowest since 2004. Monthly mean temperature followed the normal autumn decline, from 14.9° in September to 7.7° in November, and each month had a value close to average. The highest maximum this autumn was 30.2° on the 1st September, 5.6° above the median and 7th highest in 121 years, though it is 1.8° lower than in 2023. The lowest maximum was 2.9° on the 19th November, 1.7° below the median and 2nd lowest after 2010 in this millennium. The highest minimum was 17.7° on the 2nd September, 2.3° above the median and 4th highest in 112 years. The lowest minimum was -2.4° on the 28th November, 1.3° above the median. The mean grass min was 5.4°, 1.3° above the 44 year average, and the lowest value was -6.2° on the 22nd November, 1.7° above the average for the same period. The mean earth temperature at 30 cm depth was 13.8°, anomaly +0.6°, while at 1 m depth the mean was 14.7°, anomaly +0.1°. The duration of air frost was 47.2 hours, very close to average but highest since 2016. The first ground frost of the season was on 13th September after 140 frost-free days, and the first air frost was on the 20th November after 257 days, 66 above average and a new 44 year record. **Rainfall:** The total for this autumn is in the very wet category and is 34 % above average. It is, however, slightly drier than in 2022, but it ranks 3rd wettest in this millennium. This surplus resulted from the very wet September which had over 2.5 times the average rainfall, while October had a drier than average 69 % and November's rain was average. The wettest day was the 26th September when 30.1 mm fell. The duration of measurable rain this season was 180.4 hours, 124 % of average and highest since 2019. There were 12 days with a fall of 10 mm or more, 7 above average and equal highest with 2006 since 1976. The highest rainfall rate was 167 mm/hr on the 26th September at 1408 GMT, but 154 mm/hr was also recorded on the 5th September, and a rate in the violent category (50 mm/hr or more) also occurred on the 6th and 8th September and 7th and 8th of October. Snow fell on the 19th November, the first since January 8th last, but was only of a few flakes along with steady rain. Estimated soil moisture deficit reached a maximum of 207 mm on the 2nd September (49 year median 190 mm). There were 3 more thunder days than average, and the most since 2006, and before that 1993. All the thunder this autumn was in September. Ice pellets were recorded on the 12th September. **Sunshine:** This has been a dull autumn with 16% less sunshine than average. The mean daily sunshine of 3.20 hours is lowest since 2015, and is 4th lowest in this millennium. Sunshine failed to reach the average in any of the season's months, the anomalies ranging from 81% in September to 87% in November. The sunniest day was the 16th September with 11.7 hours, and the best sunshine for this season was found near that date, the 5 days to the 17th having a total of 52.1 hours, a mean of 10.4 hours/day. There was a very notable dull spell, the 14 days to the 10th November produced a total of just 1.0 hours, 10 of those days were sunless, and 2 had only 0.1 hours. There were 23 sunless days this autumn, 10 above average and most since 1994. Overall there were 53 days with <3 hours and 25 with =>6 hours. **Wind:** The overall mean speed of 5.2 mph is 0.9 mph below average, and is lowest since 2014. September was the windiest month, mean 5.6 mph, and October the least windy, mean 4.6 mph. The windiest day was the 24th November, mean 17.6 mph, and the season's highest gust of 51 mph was on that day. The 31st October was the least windy day, mean 0.3 mph. Daily mean direction/number of days: N,7 NE,12 E,11 SE,7 S,10 SW,22 W,14 NW,8. Compared with average, S and SW winds combined were 13.7% less frequent while those from NE, E and W combined were 11.4% more frequent. **Pressure:** The season's highest MSL pressure was 1038.4 mbar on the 11th November, and the lowest was 982.1 mbar on the 26th September, span 56.3 mbar, average 56.0 mbar. **Humidity:** The overall mean relative humidity was 87.6% and the lowest was 39% on the 13th September. The mean water vapour content at 09 and 15 GMT was 7.7 g and 7.6 g respectively. **September:** Dull, very wet with near average temperature. Highest max 7th highest in 121 years and highest min 4th highest in 112 years. 2nd wettest after 1918 in 143 years. Number of dry days equal lowest, and number of days with =>10 mm equal highest, both in the past 49 years. Most thunder since 1976. Dullest since 2014. Minimum pressure lowest since 1995. Humidity highest in past 27 years. **October:** Rainfall and sunshine below average but temperature slightly above. 4th dullest in this millennium. **November:** Mean temperature and rainfall near average, sunshine below average. Almost no rainfall before the 17th, and no sunshine before the 11th.

Month	Mean Max	Anom	Mean Min	Anom	Rain mm	Anom	Sun hrs	Anom	Mean Wind mph	Max gust	Mean pressure	Anom
Sep	19.3°	-0.4°	10.4°	+0.4°	146.0	272%	125.5	81%	5.6	38	1014.6	-2.1
Oct	15.7°	+0.2°	8.0°	+0.5°	50.6	69%	96.9	85%	4.6	38	1014.4	-0.1
Nov	10.6°	-0.5°	4.7°	+0.3°	73.8	99%	68.7	87%	5.2	51	1020.5	+7.0

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Hon. Met. Officer to Wokingham Town Council.

Appendix 1.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Month: Calendar month.

Season: Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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.