

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

SEPTEMBER 2019

Temperature (°C)		Anomaly	Rank in the past 138 years
Mean maximum	20.6	+1.2	18 th highest
Mean minimum	10.2	+0.2	25 th highest
Daily mean	15.4	+0.7	19 th highest
Highest maximum	26.4	on 21 st	Lowest maximum 15.5 on 9 th
Highest minimum	15.1	on 26 th	Lowest minimum 3.2 on 8 th
Mean grass minimum	6.0	-0.7	Lowest grass minimum -1.6 on 8h
Mean earth @30 cm	16.9	+0.5	Earth @ 100 cm 16.8
Frost duration (hrs)	0.0		Rain duration (hrs) 35.3
Rainfall total (mm)	72.1	134 %	34 th highest
Highest daily fall	28.8	on 23 rd	Highest rate mm/hr 177 on 22 nd
Number of: Dry days (<0.2mm)	16	Wet days (>0.9mm)	10
Sunshine total (hrs)	177.6	Daily mean	5.92
N° days with: Air frost	0	Ground frost	2
Thunder	0	Hail ≥5mm	0
Pressure MSL: Mean @09 GMT, mbar	1018.0	+1.3	Highest 1036.5 on 13 th Lowest 992.8 on 29 th
Relative humidity : Mean (%)	77.4	Lowest	26 on 14 th
Overall mean wind speed (mph)	6.5	Windy day	11.3 on 28 th
Wind direction (days)	N 2 NE 1 E 3 SE 0 S 4 SW 14 W 3 NW 3		
Least windy day (mph)	2.4 on 14 th	Calm; less than 0.5 mph (minutes)	1021

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

Notes:

Mild, Wet and Sunny

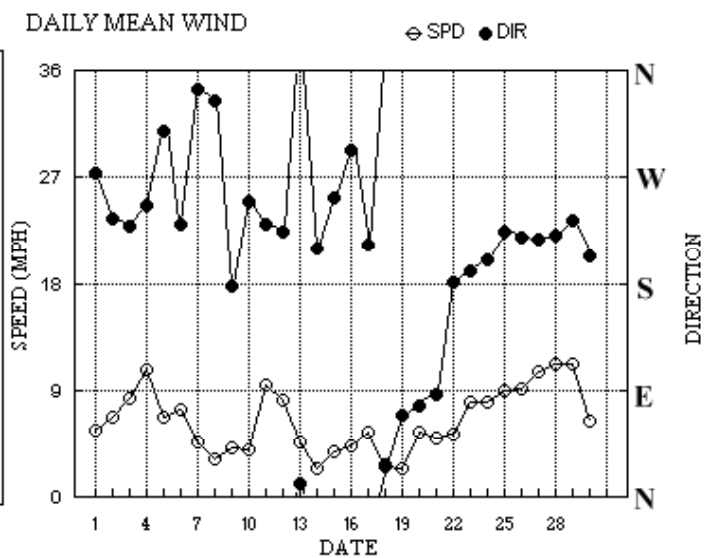
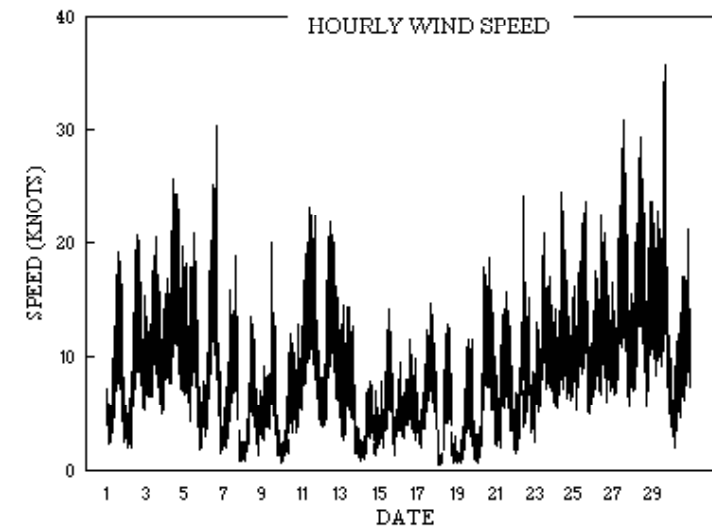
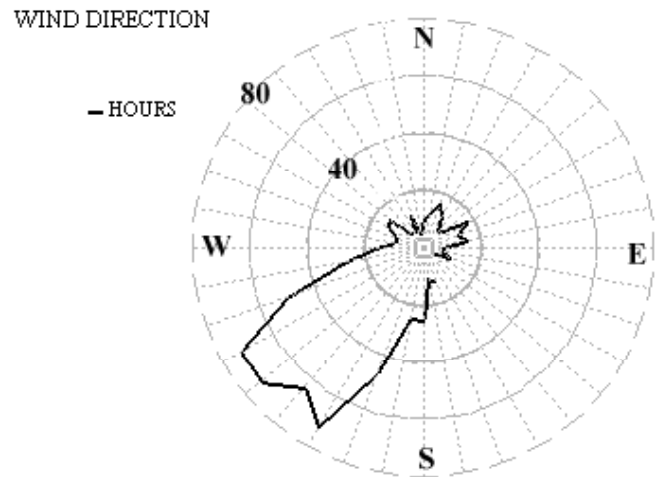
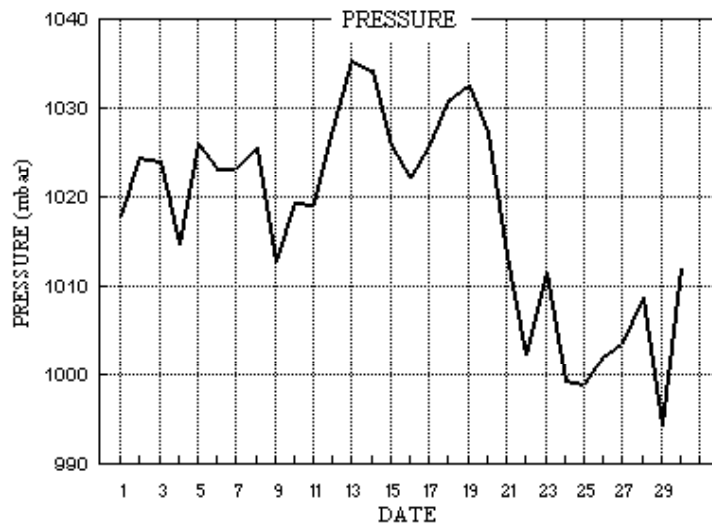
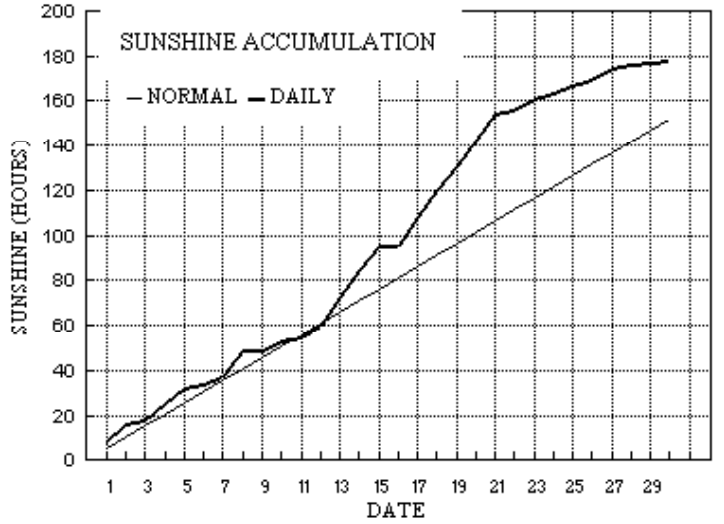
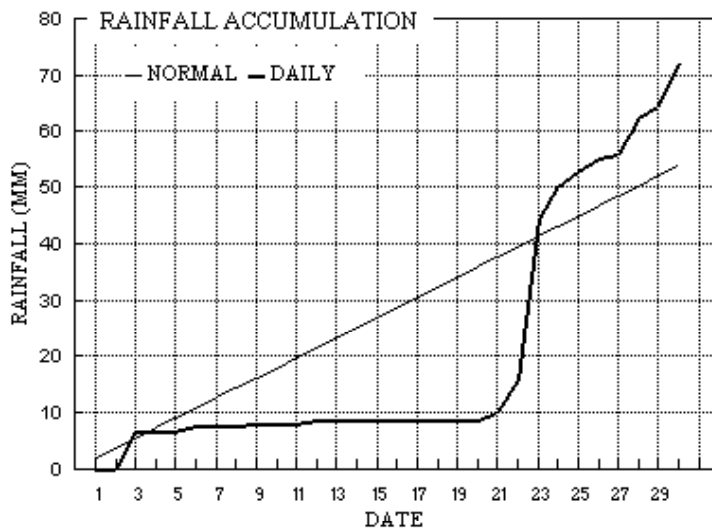
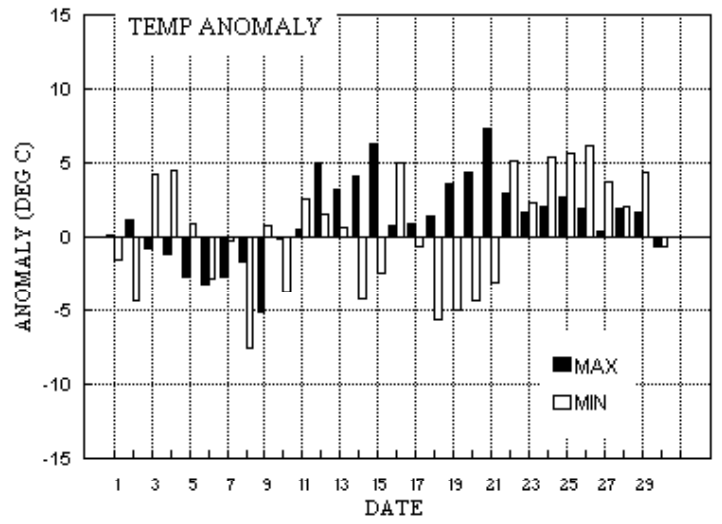
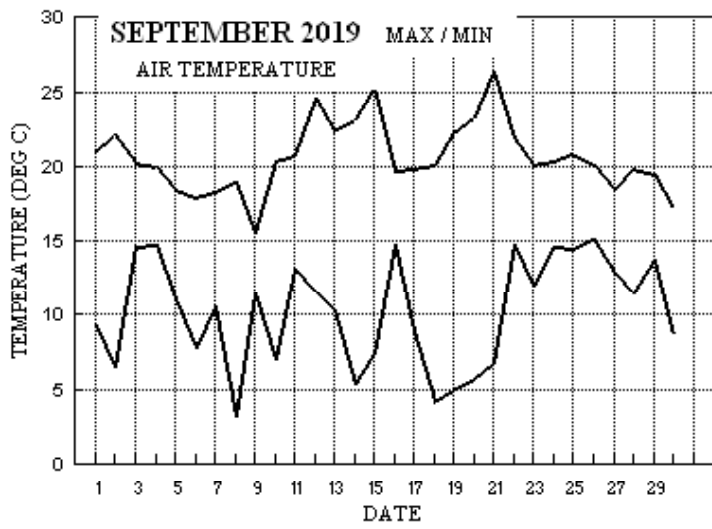
Temperature: The mean this month puts it squarely into the mild category, and in this millennium 6 Septembers have been milder and 12 colder. The highest max is 1.9° above the median, and the lowest max is 1.6° above its median. The highest min is 0.1° below the median and the lowest min is 0.4° above its median. A scattering of cold nights throughout the month up to the 21st produced a mean grass min 0.7° below average, and the first ground frost of the season occurred on the 8th after 114 frost free days. The mean earth temperature at 30cm depth is slightly above average, but is average at 1 m depth. Daily anomalies for max were mainly -ve up to the 9th, with an extreme value of -5° on that date, but were mostly +ve thereafter, reaching or exceeding +5° on the 12th, 15th and 21st. Anomalies for daily min were more variable, exceeding -5° on the 8th, 18th and 19th, with an extreme value of -7.6° on the 8th, and reached or exceeded +5° on the 16th, 22nd and 24th to 26th, extreme value +6.1° on the 26th. **Rainfall:** Apart from a fall of 6.6 mm on the 3rd, the first 20 days of the month were mainly dry, 85% of the month's total occurring from the 21st onward. Compared with recent Septembers this is the third wettest this millennium, after 2016 and 2000. The highest daily fall, 28.8 mm on the 23rd, is 2nd highest for September after 2016 since 1995. Although there was plenty of dry weather in the first two-thirds of the month, including a dry spell of 8 days ending on the 20th, there were 3 fewer dry days than average. Daily rainfall accumulation compared with normal was 27 mm in deficit on the 20th, but this had turned to a small surplus on the 23rd, this increasing to 18 mm by the 30th. There was no thunder or hail this month, but violent rain showers occurred on the 22nd and 24th. **Sunshine:** Overall this has been a sunny September with 17 % more sunshine than average, and since 2004 only 2012 and 2018 have been sunnier. The 9 day period 13th to 21st was outstanding, most days having over 90 % of the maximum, and despite the 16th being sunless, the total of 94.1 hours gave a daily mean of 10.5 hours. Daily accumulation compared with normal was close to normal up to the 12th, after which it was in surplus, this reaching a peak of 50 hours on the 21st, dropping back to 26 hours by the 30th. Overall there were 11 days with <3 hours, 13 with =>6 hours, 10 with =>9 hours and 2 with =>12 hours. **Wind:** The mean speed this month is 0.7 mph above average and is equal highest with 2018 and 2012 since 2011. The highest gust is also slightly above average, but is lower than in September 2018 and 2017. The duration of calm is 173 minutes below average. The direction of the mean vector is 227°, SW.

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			
-1.6°	-1.0°	44 %	105 %	+3.0°	-1.3°	4 %	177 %	+2.2°	+3.1°	354%	69 %

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

Wokingham climatological graphs for September 2019



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: SEPTEMBER 2019

Date	Max C	Min C	Rain mm	Grass Min	30cm C	100cm C	Sun hrs	Frost hrs	pp09 mbar	Af Gf	Sf Sl	Th Ha	Ic Fg	Vec mean ddd ff sp	Max gust ddd gg HHhh	High hr ddd ff	Rain HH hrs						
1	21.0	9.3	0.0	4.2	18.8	17.9	9.0	0.0	1018.0	0 0 0 0	0 0 0 0	0 0 0 0	273	4.3	4.9	293	19	1404	290	9	15	0.0	
2	22.1	6.5	0.0	1.6	17.9	17.8	7.6	0.0	1024.6	0 0 0 0	0 0 0 0	0 0 0 0	235	5.6	5.9	215	21	1321	235	9	13	0.0	
3	20.2	14.6	6.6	10.9	18.2	17.6	1.4	0.0	1024.2	0 0 0 0	0 0 0 0	0 0 0 0	229	7.0	7.2	263	21	1257	235	10	11	2.6	
4	20.0	14.7	tr	12.7	18.4	17.5	7.1	0.0	1014.8	0 0 0 0	0 0 0 0	0 0 0 0	247	8.6	9.3	264	26	1037	255	13	11	0.0	
5	18.4	11.1	0.1	8.8	18.1	17.5	7.3	0.0	1026.1	0 0 0 0	0 0 0 0	0 0 0 0	309	5.0	5.9	303	21	1250	330	9	12	0.1	
6	18.0	7.8	0.9	2.3	17.4	17.4	1.2	0.0	1023.3	0 0 0 0	0 0 0 0	0 0 0 0	231	6.2	6.4	267	31	1624	232	12	11	0.4	
7	18.3	10.5	tr	5.1	17.0	17.3	3.3	0.0	1023.2	0 0 0 0	0 0 0 0	0 0 0 0	343	3.2	4.1	13	19	1539	11	8	15	0.0	
8	19.0	3.2	tr	-1.6	16.3	17.1	11.8	0.0	1025.6	0 1 0 0	0 0 0 0	0 0 0 0	334	1.2	2.9	10	14	1052	13	6	11	0.1	
9	15.5	11.4	0.4	6.3	16.6	17.0	0.1	0.0	1012.8	0 0 0 0	0 0 0 0	0 0 0 0	177	3.1	3.7	186	20	1239	199	7	12	0.9	
10	20.3	7.0	tr	2.7	16.3	16.9	4.6	0.0	1019.5	0 0 0 0	0 0 0 0	0 0 0 0	250	3.0	3.5	232	13	2125	230	7	21	0.0	
11	20.8	13.1	tr	8.3	16.7	16.8	1.7	0.0	1019.3	0 0 0 0	0 0 0 0	0 0 0 0	230	8.1	8.3	253	23	1002	234	12	12	0.0	
12	24.6	11.6	0.6	6.5	16.8	16.7	5.1	0.0	1027.7	0 0 0 0	0 0 0 0	0 0 0 0	224	7.0	7.1	204	22	1252	225	11	15	0.6	
13	22.4	10.3	0.0	5.7	17.5	16.7	12.3	0.0	1035.4	0 0 0 0	0 0 0 0	0 0 0 0	12	3.4	4.1	360	15	0420	13	7	08	0.0	
14	23.1	5.3	0.0	0.1	17.0	16.7	12.2	0.0	1034.3	0 0 0 0	0 0 0 0	0 0 0 0	210	1.0	2.1	273	8	1318	195	4	20	0.0	
15	25.2	7.3	tr	1.3	16.8	16.7	11.1	0.0	1025.8	0 0 0 0	0 0 0 0	0 0 0 0	252	2.7	3.4	299	14	1209	253	5	13	0.0	
16	19.7	14.8	0.1	9.4	17.2	16.7	0.0	0.0	1022.2	0 0 0 0	0 0 0 0	0 0 0 0	293	2.0	3.8	350	12	1527	334	5	14	0.2	
17	19.9	8.9	0.0	2.4	17.1	16.7	11.9	0.0	1025.9	0 0 0 0	0 0 0 0	0 0 0 0	213	4.6	4.7	233	15	1526	224	8	16	0.0	
18	20.1	4.2	0.0	-1.0	16.5	16.7	11.8	0.0	1030.9	0 1 0 0	0 0 0 0	0 0 0 0	28	1.8	2.3	17	13	1301	12	5	14	0.0	
19	22.3	4.9	0.0	0.6	16.2	16.6	11.7	0.0	1032.5	0 0 0 0	0 0 0 0	0 0 0 0	69	1.6	2.1	101	12	1850	105	4	19	0.0	
20	23.3	5.7	0.0	0.6	16.1	16.5	11.7	0.0	1027.4	0 0 0 0	0 0 0 0	0 0 0 0	77	4.6	4.7	77	19	1611	69	8	16	0.0	
21	26.4	6.7	1.2	0.2	16.0	16.5	11.4	0.0	1013.5	0 0 0 0	0 0 0 0	0 0 0 0	87	4.1	4.4	105	16	1203	111	8	12	0.2	
22	21.9	14.7	5.7	10.5	16.4	16.4	1.9	0.0	1002.5	0 0 0 0	0 0 0 0	0 0 0 0	181	3.6	4.6	250	24	1012	199	8	17	1.5	
23	20.1	11.9	28.8	7.9	16.4	16.4	4.8	0.0	1011.5	0 0 0 0	0 0 0 0	0 0 0 0	190	6.6	7.0	197	21	1319	198	10	12	8.5	
24	20.3	14.6	5.7	14.2	16.6	16.4	2.8	0.0	999.4	0 0 0 0	0 0 0 0	0 0 0 0	200	6.2	6.9	199	25	1005	228	9	12	4.3	
25	20.9	14.5	2.5	13.3	16.9	16.4	3.2	0.0	998.9	0 0 0 0	0 0 0 0	0 0 0 0	224	7.3	7.8	251	24	1625	248	11	14	1.9	
26	20.1	15.1	2.5	12.0	17.0	16.4	2.8	0.0	1002.2	0 0 0 0	0 0 0 0	0 0 0 0	219	7.7	8.0	235	23	1143	228	11	11	0.9	
27	18.4	12.8	0.7	9.8	16.8	16.5	4.7	0.0	1003.6	0 0 0 0	0 0 0 0	0 0 0 0	217	9.0	9.2	204	31	1525	219	13	14	0.6	
28	19.8	11.5	6.7	8.6	16.3	16.5	2.1	0.0	1008.9	0 0 0 0	0 0 0 0	0 0 0 0	221	9.2	9.8	232	29	1129	239	15	10	7.0	
29	19.5	13.7	2.0	13.0	16.4	16.5	0.4	0.0	994.4	0 0 0 0	0 0 0 0	0 0 0 0	233	8.2	9.7	293	36	1707	288	14	17	0.3	
30	17.2	8.6	7.6	4.4	16.3	16.4	0.6	0.0	1012.1	0 0 0 0	0 0 0 0	0 0 0 0	203	5.3	5.6	225	21	2221	225	9	22	5.2	
Total			72.1				177.6	0.0															35.3
Mean	20.6	10.2		6.0	16.9	16.8	5.92	0.0	1018.0					227	3.5	5.6							
Anom	+1.2	+0.2	134%	-0.7	+0.5	+0.0	117%																+1.3
Daily mean		15.4																					
Anom		+0.7																					

Pressure, abs highest = 1036.5 on 13
 Pressure, abs lowest = 992.8 on 29

Number of days with:
 Air frost = 0 Ground frost = 2 Nil sun = 1
 Snow falling = 0 Snow lying = 0 Thunder = 0
 Hail=>5mm = 0 Hail<5mm or ice = 0 Fog at 09GMT = 0

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 SEPTEMBER 2019

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	pppww	W1W2	NhCl	hCrCl	NChshs	NChshs	NChshs	Date	Remarks					
1	84	1	26	05	10	16.1	9.5	65	7.3	1018.0	1	014	03	1	1	1	2	5	0	0	81825	1	Cu med		
2	84	2	26	07	12	17.1	10.5	65	7.8	1024.6	1	002	03	0	0	1	1	5	0	1	81825	2	2Ci75 Cu hum		
3	84	7	23	07	15	17.0	12.1	73	8.7	1024.2	1	004	03	2	2	6	8	5	/	1	81825	86640	3	2Ci75 COTRA Cu med	
4	84	6	26	10	21	17.8	13.5	76	9.6	1014.8	3	003	01	6	2	3	8	5	3	1	82825	83368	4	2Sc50 1Ci75 COTRA Cu med	
5	82	4	33	11	18	14.3	6.4	59	5.9	1026.1	2	018	03	8	1	3	2	6	0	1	83830		5	2Ci80 Cu med	
6	68	7	23	11	20	13.9	10.5	80	7.8	1023.3	6	019	01	6	2	1	7	3	7	8	81709	86358	87272	6	/Ac65
7	80	7	35	06	15	14.3	10.3	77	7.7	1023.2	1	010	03	2	2	7	8	4	/	/	81818	87656		7	Cu med, con N
8	82	2	33	04	08	12.0	7.5	74	6.4	1025.6	7	005	03	0	0	1	1	4	0	1	81818			8	1Ci72 2Ci80 COTRA Cu hum
9	75	7	15	05	08	14.4	10.8	79	8.0	1012.8	7	015	15	2	2	6	8	5	7	/	81822	86635	87360	9	Cu med jpSW
10	58	1	27	01	03	13.3	12.4	94	8.8	1019.5	1	016	10	4	1	1	8	2	0	1	81705			10	1Cu010 1Sc060 1Ci300 COTRA Cu med
11	75	8	23	11	20	17.3	14.6	84	10.2	1019.3	3	003	20	5	2	8	4	5	/	/	87612	88618		11	
12	65	7	23	09	17	18.6	16.0	85	11.1	1027.7	2	010	15	1	1	7	5	4	/	/	86710	876358	jpNW v	12	
13	84	3	02	06	13	15.8	9.2	65	7.1	1035.4	2	016	02	0	0	1	5	7	0	1	81650	83080		13	COTRA Parhelia
14	80	2	03	02	03	14.0	10.4	79	7.7	1034.3	8	008	02	0	0	0	0	9	0	1	82080			14	COTRA
15	81	3	23	04	09	16.5	11.4	72	8.3	1025.8	4	000	01	1	1	0	0	9	0	1	83080			15	COTRA
16	62	7	24	04	07	17.0	14.5	85	10.1	1022.2	2	007	21	6	2	7	5	3	7	/	83708	86645	87360	16	
17	84	1	01	07	12	13.7	7.5	66	6.3	1025.9	1	011	03	0	0	1	8	5	0	1	81820			17	1Sc35 1Ci75 Cu hum Sc len
18	80	0	02	04	09	12.8	7.3	69	6.2	1030.9	2	011	02	0	0	0	0	9	0	0				18	
19	78	2	32	02	04	14.3	8.7	69	6.8	1032.5	0	006	01	1	1	0	0	9	0	1	82080			19	COTRA
20	65	1	09	07	16	15.7	9.6	67	7.3	1027.4	8	008	03	0	0	0	0	9	0	1	81080			20	COTRA
21	82	0	07	05	14	16.6	8.8	60	7.0	1013.5	7	015	02	0	0	0	0	9	0	0				21	
22	70	6	17	06	13	21.1	16.7	76	11.9	1002.5	6	005	01	2	2	2	8	5	8	2	81820	83359	85362	22	2Sc45 2Ci70 Cu hum Ac cas
23	84	5	21	06	11	17.0	12.3	74	8.9	1011.5	1	009	03	1	1	3	8	4	0	1	81817	83075		23	1Sc30 2Sc50 COTRA Cu hum Parhelia
24	84	7	19	08	17	16.9	16.1	95	11.5	999.4	6	012	21	6	2	2	8	4	7	3	81810	83358	85465	24	2Sc30 1Ci70 Cb tops SW
25	62	7	22	09	17	16.5	15.0	91	10.7	998.9	2	012	20	5	2	7	5	3	/	/	83709	86630		25	/Sc50 vv40k NW
26	80	7	22	06	15	17.4	15.2	87	10.8	1002.2	2	014	21	6	5	7	8	4	/	/	83815	87630		26	Absent vv&cld est
27	75	5	21	10	21	16.7	12.3	75	8.9	1003.6	0	000	03	1	1	3	1	4	3	1	83818			27	2Ac62 2Ci75 COTRA Cu fra/hum
28	65	7	23	13	27	16.5	11.9	74	8.6	1008.9	2	013	15	2	2	7	8	5	/	1	83822	85630		28	/Sc50 /Ci75 COTRA Cu hum jpNW
29	70	7	22	09	21	17.1	15.4	90	11.1	994.4	6	006	20	5	2	7	5	4	/	/	85710	87618		29	
30	75	7	23	05	11	14.9	12.2	84	8.8	1012.1	0	007	03	2	2	1	8	4	7	1	81810	86363		30	1Sc56 1Ci75 COTRA Cu fra Ac vir

Mean vis = 31.3 km

Mean cloud = 4.5 57%

Mean wind speed = 6.7 kn

Mean gust = 14 kn

Mean TT = 15.9 °C

Mean TdTd = 11.6 °C

Mean RH = 76.3 %

Mean r = 8.6 g/kg

Mean PPP = 1018.0 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation trails present

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for SEPTEMBER 2019

Date	VV	N	dd	ff	gg	TT	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NCh	shs	NCh	shs	Date	Remarks
1	88	3	28	07	19	19.8	3.9	35	5.0	1018.5	3	005	15	1	1	1	2	7	6	0	81850	83358			1	Cu med jpW	
2	84	7	25	09	17	19.6	9.8	53	7.4	1023.4	6	006	03	1	1	7	8	6	/	2	81840	87650			2	/Ci73 Cu hum	
3	86	7	24	09	15	19.3	13.3	68	9.3	1022.7	7	011	02	2	2	7	8	5	/	/	85825	87630			3	Cu hum	
4	83	4	26	12	25	19.6	7.4	45	6.3	1015.3	8	002	02	1	1	4	8	6	0	0	82848				4	2Sc50 Cu hum	
5	82	5	33	08	18	16.7	7.1	53	6.2	1027.3	2	006	01	1	1	5	8	6	0	1	82838	83650			5	1Sc56 2Ci75 Cu med	
6	82	7	25	10	25	17.4	12.7	74	9.0	1019.9	7	015	01	6	2	6	8	5	4	2	84820	83635	87072		6	/Ac65 Cu med	
7	88	7	01	07	14	17.0	6.2	49	5.8	1024.1	2	003	02	2	2	7	8	6	/	/	82835	83650	87657		7	Cu med	
8	86	3	30	03	12	17.0	4.0	42	5.0	1021.9	8	018	03	0	0	1	4	7	3	0	81850	83363			8	1Sc50 Cu hum	
9	67	8	17	06	10	15.3	9.4	68	7.3	1010.7	8	010	15	6	2	8	8	5	/	/	81820	85635	88645		9	Cu hum jpNW&SW	
10	84	8	26	05	10	18.1	10.7	62	7.9	1020.1	3	004	02	2	2	8	8	6	/	/	82835	88650			10	Cu med	
11	80	7	24	09	18	20.2	16.4	79	11.5	1020.0	3	003	21	6	2	7	8	4	/	/	86815	87635			11	Cu hum vv60k NW	
12	88	5	22	12	20	23.5	15.5	61	10.8	1026.7	8	006	02	2	2	5	5	6	0	1	85630				12	1Ci80 COTRA	
13	84	1	03	05	12	21.9	5.3	34	5.4	1034.4	7	007	02	0	0	0	0	9	0	1	81080				13	COTRA	
14	82	6	24	03	07	22.8	2.8	27	4.6	1029.6	6	026	03	1	1	0	0	9	0	1	86075				14		
15	88	5	27	06	12	24.9	14.1	51	9.9	1022.8	6	016	03	1	1	1	1	6	4	1	81840	85080			15	1Ac68 1Cs75 COTRA Cu hum	
16	56	8	33	05	11	18.8	14.9	78	10.4	1021.8	4	000	50	5	2	8	5	4	/	/	84710	88625			16		
17	82	0	01	07	15	19.7	5.4	39	5.5	1025.2	5	003	02	0	0	0	0	9	0	0					17		
18	80	1	01	05	13	19.8	5.1	38	5.4	1028.8	7	010	02	0	0	0	0	9	0	1	81080				18	COTRA	
19	80	1	03	04	10	21.6	9.2	45	7.1	1029.5	7	019	02	0	0	0	0	9	0	1	81080				19	COTRA	
20	80	1	06	06	16	22.8	7.8	38	6.5	1021.9	7	027	02	0	0	0	0	9	0	1	81080				20		
21	81	1	09	06	14	26.2	9.5	35	7.4	1008.8	7	020	03	0	0	0	0	9	0	5	81275				21	1Ci80 COTRA	
22	82	7	20	05	10	17.1	15.4	90	11.0	1004.1	0	007	02	2	2	5	8	4	2	/	83815	83645	87465		22	Cu med	
23	56	8	18	06	16	15.9	14.1	89	10.0	1010.2	6	005	62	6	2	6	8	3	2	/	81708	84645	88557		23	2Cu15 Cu med	
24	75	3	23	08	19	18.7	14.6	77	10.4	999.9	1	005	25	8	1	2	9	5	6	3	81920	81825			24	2Sc45 1Ac59 1Ci70 jpE vv50k ex p	
25	84	5	25	12	23	20.2	12.4	61	9.0	1000.9	3	006	02	1	1	5	8	6	0	0	82830	84650			25	Absent vv&cld est	
26	81	2	24	06	21	17.8	12.7	72	9.2	1003.3	2	005	25	8	1	2	8	5	6	0	81825				26	1Sc45 1Ac57 Cu con E	
27	58	7	22	10	27	17.0	12.5	75	9.1	1002.1	5	007	80	8	2	5	9	5	6	3	83920				27	2Cu25 2Ac65 /Ci72 jpW vv50k ex p	
28	88	7	23	10	26	17.9	10.5	62	7.9	1009.5	3	001	03	8	2	2	8	6	7	1	82833	83465	87368		28	1Sc50 /Ci75 COTRA Cu med	
29	75	6	26	13	23	16.9	14.9	88	10.7	994.1	3	007	25	8	2	6	8	4	/	/	83812	84625			29	Cu med jpE vv50k ex p	
30	58	8	19	07	15	16.9	12.0	73	8.7	1008.8	8	024	60	6	2	6	8	5	2	/	81822	85650	88458		30	1Sc35 Cu hum	

Mean vis = 40.0 km

Mean cloud = 4.9 62%

Mean wind speed = 7.4 kn

Mean gust = 16 kn

Mean TT = 19.3 °C

Mean TdTd = 10.3 °C

Mean RH = 58.7 %

Mean r = 8.0 g/kg

Mean PPP = 1016.9 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 Sunshine Hourly analysis 2019	Hour	01-Sep	02-Sep	03-Sep	04-Sep	05-Sep	06-Sep	07-Sep	08-Sep	09-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep
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
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
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	0.44	0.00	0.00	0.34	0.00	0.00	0.00	0.30	0.00	0.15	0.00	0.07	0.06	0.02	0.00	0.00
6	0.72	1.00	0.00	0.00	0.07	0.03	0.00	1.00	0.00	0.07	0.00	0.00	0.92	0.84	0.64	0.00	0.00
7	1.00	1.00	0.02	0.35	0.09	0.00	0.24	1.00	0.01	0.00	0.00	0.84	1.00	1.00	1.00	1.00	0.00
8	1.00	1.00	0.51	0.97	0.86	0.02	0.11	1.00	0.00	0.94	0.00	0.27	1.00	1.00	1.00	1.00	0.00
9	0.51	1.00	0.31	0.38	0.65	0.01	0.18	1.00	0.00	0.84	0.18	0.05	1.00	1.00	1.00	1.00	0.00
10	0.33	0.96	0.21	0.86	0.98	0.00	0.00	1.00	0.00	0.65	0.00	0.27	1.00	1.00	1.00	1.00	0.00
11	0.25	0.94	0.10	1.00	0.97	0.00	0.02	1.00	0.00	0.91	0.00	0.29	1.00	1.00	1.00	1.00	0.00
12	0.66	0.68	0.14	0.62	0.91	0.00	0.00	0.80	0.00	0.91	0.00	0.99	1.00	1.00	1.00	1.00	0.00
13	0.48	0.31	0.02	0.52	0.03	0.00	0.00	0.97	0.00	0.06	0.00	0.43	1.00	1.00	1.00	1.00	0.00
14	0.55	0.00	0.00	0.77	0.14	0.05	0.35	1.00	0.00	0.00	0.00	0.67	1.00	1.00	1.00	1.00	0.00
15	0.95	0.00	0.00	0.28	0.34	0.00	0.15	1.00	0.00	0.00	0.00	0.31	1.00	1.00	1.00	1.00	0.00
16	0.80	0.01	0.07	0.45	0.89	0.03	0.79	0.98	0.00	0.00	0.63	0.29	1.00	1.00	1.00	1.00	0.00
17	1.00	0.23	0.00	0.89	0.48	0.65	1.00	0.53	0.00	0.01	0.49	0.66	1.00	1.00	0.41	0.09	0.00
18	0.76	0.00	0.00	0.05	0.54	0.43	0.47	0.21	0.00	0.07	0.35	0.00	0.34	0.31	0.09	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	9.01	7.57	1.38	7.13	7.29	1.23	3.33	11.78	0.01	4.62	1.66	5.13	12.32	12.17	11.14	0.00	0.00

Hour	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep	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	0.05
6	0.66	0.70	0.72	0.68	0.67	0.05	0.64	0.00	0.00	0.00	0.62	0.00	0.00	0.00	0.33
7	1.00	1.00	1.00	1.00	1.00	0.68	1.00	0.00	0.00	0.00	1.00	0.19	0.00	0.00	0.51
8	1.00	1.00	1.00	1.00	1.00	0.20	1.00	0.00	0.42	0.17	0.95	0.21	0.00	0.55	0.61
9	1.00	1.00	1.00	1.00	1.00	0.36	0.65	0.04	0.11	0.22	0.05	0.42	0.00	0.05	0.50
10	1.00	1.00	1.00	1.00	1.00	0.00	0.81	0.06	0.03	1.00	0.06	0.18	0.01	0.00	0.51
11	1.00	1.00	1.00	1.00	1.00	0.00	0.47	0.42	0.12	0.12	0.08	0.49	0.01	0.00	0.51
12	1.00	1.00	1.00	1.00	1.00	0.04	0.26	0.29	0.28	0.15	0.02	0.38	0.21	0.00	0.51
13	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.55	0.81	0.03	0.33	0.05	0.01	0.00	0.42
14	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.21	0.72	0.48	0.37	0.14	0.04	0.00	0.45
15	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.32	0.12	0.65	0.07	0.00	0.08	0.00	0.41
16	1.00	1.00	1.00	1.00	1.00	0.13	0.00	0.70	0.42	0.02	0.65	0.00	0.00	0.00	0.50
17	1.00	1.00	1.00	1.00	0.72	0.47	0.00	0.19	0.12	0.00	0.46	0.00	0.09	0.00	0.48
18	0.23	0.07	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
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	11.89	11.77	11.74	11.70	11.39	1.93	4.84	2.77	3.16	2.84	4.68	2.07	0.44	0.60	177.58

SEPTEMBER 2019	T mn	Tx	Time	Tn	Time	RHmn	RH x	Time	RH n	Time	Tdmn	r mn	r x	Time	r n	Time	p mn	p x	Time	p n	Time	R tot
1	14.34	21.0	1248	8.2	2359	64.5	95.9	414	34.2	1500	6.9	6.2	8.0	805	4.7	1505	1018.53	1023.8	2356	1015.1	49	0
2	14.76	22.1	1153	6.5	408	70.0	95.0	634	39.5	1153	8.8	7.0	8.3	2221	5.3	50	1023.80	1024.8	833	1022.4	1831	0
3	16.93	20.2	1632	14.6	512	73.7	82.4	718	60.2	1056	12.1	8.7	9.6	1433	7.8	924	1022.61	1024.5	831	1018.3	2352	0
4	16.40	20.0	1410	13.2	2359	71.9	96.4	634	40.5	1441	10.8	8.1	11.0	739	5.7	1441	1016.03	1019.7	2359	1014.2	532	8.7
5	13.43	18.4	1231	8.7	2258	67.3	89.0	2258	38.6	1232	7.0	6.2	7.2	732	4.5	1100	1025.59	1028.0	2114	1019.5	0	0
6	12.72	18.0	1420	7.8	149	84.7	97.1	2144	68.6	1110	10.1	7.7	9.4	1419	5.8	11	1022.44	1027.3	11	1018.7	1623	1.2
7	12.62	18.3	1443	5.4	2341	75.2	94.8	2358	47.4	1450	8.0	6.6	7.9	920	5.2	2340	1023.84	1027.1	2257	1021.3	314	0
8	11.21	19.0	1353	3.2	501	69.9	98.5	539	37.3	1353	5.1	5.4	6.7	837	4.6	1438	1023.36	1026.9	22	1018.3	2359	0
9	12.90	15.5	1452	10.0	2302	85.6	98.7	2326	66.1	1138	10.4	7.8	8.7	1706	6.7	0	1013.38	1018.4	0	1010.6	1505	0.4
10	13.65	20.3	1259	7.0	532	80.4	99.5	746	54.8	1301	10.0	7.6	9.3	943	6.1	532	1019.12	1021.3	2132	1015.0	0	0.1
11	16.71	20.8	1611	13.1	356	80.2	89.3	2353	73.1	1046	13.3	9.5	11.9	1407	7.0	304	1020.52	1024.7	0	1018.4	636	0
12	17.91	24.6	1312	11.6	502	81.2	97.2	516	55.9	1312	14.4	10.1	11.5	932	7.9	502	1027.22	1030.0	2359	1024.5	5	0
13	15.50	22.4	1501	8.6	2357	64.6	95.9	203	30.2	1536	8.0	6.7	11.0	158	4.6	1631	1034.24	1036.5	2216	1029.8	1	0
14	13.86	23.1	1502	5.3	558	68.5	98.4	651	25.8	1546	6.7	6.0	8.1	921	4.3	1546	1031.94	1036.3	114	1027.5	2355	0
15	16.51	25.2	1311	7.3	546	76.4	98.0	624	47.7	1311	11.7	8.6	10.4	1819	6.0	543	1024.37	1027.6	1	1021.9	1716	0
16	16.53	19.7	1247	14.7	2357	85.9	94.2	129	72.5	1249	14.1	9.9	11.3	1611	8.0	2357	1022.26	1023.7	2234	1021.0	448	0.1
17	13.41	19.9	1421	8.2	2345	68.2	93.1	319	38.1	1500	7.0	6.2	8.0	1	5.3	1512	1025.67	1028.9	2359	1023.5	2	0
18	11.66	20.1	1443	4.2	554	71.5	97.8	655	37.1	1343	5.8	5.6	6.4	857	4.8	1259	1029.75	1031.3	2357	1028.4	1538	0
19	13.04	22.4	1359	4.8	529	71.4	96.0	636	40.1	1404	7.2	6.2	7.7	1534	5.0	529	1030.83	1032.6	808	1029.0	1744	0
20	13.73	23.3	1426	5.7	605	71.6	99.0	716	33.7	1320	7.6	6.4	8.1	825	5.5	1300	1024.44	1030.3	6	1017.8	2358	0
21	16.69	26.4	1426	6.7	558	65.4	93.8	619	33.7	1429	9.1	7.2	8.8	2359	5.6	546	1011.39	1018.0	0	1005.5	2359	0
22	16.02	21.9	936	12.4	2359	88.3	97.7	623	70.9	937	14.0	10.1	12.1	907	8.6	2359	1004.21	1007.4	2359	1002.3	909	6.9
23	15.36	20.1	1204	11.9	633	87.0	97.7	111	57.3	1236	13.0	9.4	11.1	2357	8.0	1236	1009.37	1011.7	812	1006.1	2359	3.4
24	16.59	20.3	1216	14.5	2347	90.6	97.4	645	73.0	1317	15.0	10.7	12.1	1141	9.4	1525	1001.19	1006.3	1	998.9	1208	28.4
25	16.53	20.9	1307	14.5	14	85.1	95.9	507	61.4	1503	13.9	10.0	11.5	942	9.0	1505	1000.49	1003.7	2102	997.4	514	1.5
26	16.26	20.1	1058	13.0	2231	84.6	95.8	634	58.3	1104	13.5	9.7	11.5	658	8.3	1104	1002.90	1005.3	2233	1000.6	508	4.9
27	14.51	18.4	1428	11.6	2359	83.7	91.9	2355	68.5	1225	11.7	8.6	10.2	1315	7.8	2359	1004.13	1007.4	2359	1001.4	1521	0.9
28	15.11	19.8	1132	11.5	16	79.7	95.9	2225	56.6	1254	11.4	8.4	10.1	2348	7.5	1548	1007.86	1009.7	1200	1001.6	2357	0
29	15.71	19.5	1256	11.2	2358	86.9	95.3	444	67.5	1657	13.5	9.8	12.2	1255	7.4	2359	998.36	1009.0	2358	992.8	1256	2.1
30	13.81	17.2	1448	8.6	342	89.1	96.7	2043	70.1	1301	12.0	8.8	11.5	2146	6.6	342	1008.37	1012.3	749	1001.4	2207	7.1

Total	Mean	Max	Min	Tn	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
	14.81	20.62	11.21	9.46	77.4	95.48	51.94	51.94	10.42	7.97	9.72	6.44	6.44	6.44	1017.61	1021.16	1014.11	1014.11	1014.11	1014.11	65.7
	17.91	26.44	11.21	14.69	90.6	99.50	73.10	73.10	14.99	10.70	12.17	9.39	9.39	9.39	1034.24	1036.47	1029.80	1029.80	1029.80	1029.80	
	11.21	15.49	11.21	3.16	64.5	82.40	25.75	25.75	5.09	5.40	6.37	4.34	4.34	4.34	998.36	1003.68	992.75	992.75	992.75	992.75	

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

Near the end of September it was noticed that the 100 cm earth temperature probe had drifted off calibration. Comparison with the nearby sites at Stratfield Mortimer and Maidenhead has allowed a corrected set of values for Wokingham to be constructed. These are listed below, and should be substituted in the relevant monthly reports for July and August 2019, and the report for the summer season.

100 cm temperature degrees C				
Date	July	August		
	1	16.4	18.4	In the summer season report, line 7, the 1 m temperature should read 16.8, anomaly +0.3
	2	16.6	18.3	
	3	16.8	18.3	
	4	16.9	18.4	
	5	17.0	18.4	
	6	17.1	18.4	In the monthly reports for July and August, the 100 cm values and anomalies should be as given below left.
	7	17.3	18.4	
	8	17.4	18.3	
	9	17.5	18.3	
	10	17.6	18.3	
	11	17.7	18.3	
	12	17.7	18.2	
	13	17.8	18.1	
	14	17.9	18.0	
	15	17.9	18.0	
	16	17.8	17.9	
	17	17.8	17.8	
	18	17.8	17.7	
	19	17.8	17.6	
	20	17.7	17.5	
	21	17.7	17.4	
	22	17.7	17.3	
	23	17.7	17.3	
	24	17.8	17.3	
	25	18.1	17.4	
	26	18.2	17.5	
	27	18.4	17.6	
	28	18.5	17.7	
	29	18.5	17.8	
	30	18.4	17.9	
	31	18.4	17.8	
Mean		17.5	18.0	
Anomaly		+0.7	+0.3	

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.