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   JULY 2023

Temperature (°C)

		Anomaly	Rank in the past **142** years
Mean maximum	22.2	-1.0	61st highest
Mean minimum	12.5	-0.3	39th highest
Daily mean	17.4	-0.5	50th highest

Highest maximum	29.2	on 7th	Lowest maximum	17.8	on	24th
Highest minimum	16.1	on 29th	Lowest minimum	8.0	on	26th
Mean grass minimum	10.0	+0.1	Lowest grass minimum	4.4	on	26th
Mean earth @30 cm	18.6	-0.3	Earth @100 cm	17.6	+0.7	
Frost duration (hrs)	0		Rain duration (hrs)	48.3		

Rainfall total (mm)	79.5	169%	34th highest			
Highest daily fall	22.9	on 4th	Highest rate mm/hr	130	on	15th

Number of: Dry days (<0.2mm) 18   Wet days (>0.9mm) 10   days ≥5mm 5

Sunshine total (hrs) 167.5   Daily mean 5.40   84%   Sunniest day 15.5 on 7th

Nº days with: Air frost 0   Ground frost 0   Snow falling 0   Snow lying 0

Thunder 1   Hail ≥5mm 0   Small hail/ice 0   Fog @09 0   Nil sun 1

Pressure MSL : Mean @09 GMT, mbar 1011.6   -4.3   Highest 1021.7 on 18th   Lowest 998.6 on 15th

Relative humidity : Mean (%) 74.9   Lowest 29 on 7th   Water vapour (g/kg), mean at 09 and 15 GMT 9.0, 8.9

Overall mean wind speed (mph) 6.9   Windiest day 12.9 on 15th   Max gust 44 on 15th

Wind direction (days) N 1   NE 0   E 0   SE 2   S 3   SW 17   W 6   NW 2

Least windy day (mph) 3.7 on 20th   Calm; less than 0.5 mph (minutes) n/a

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

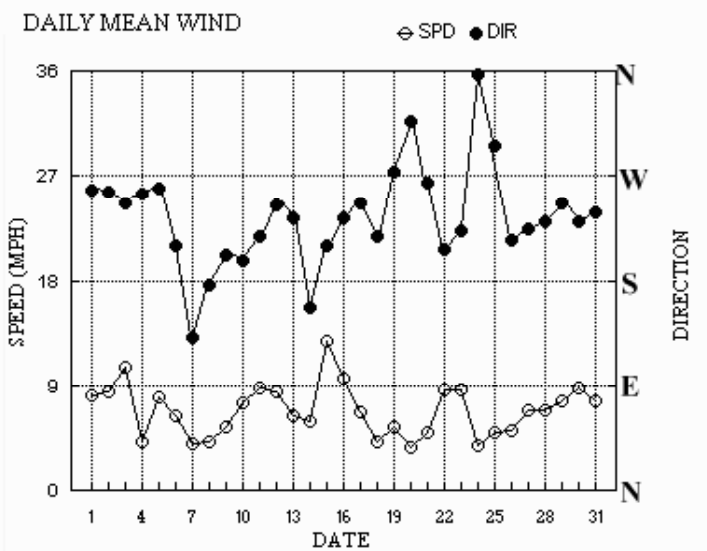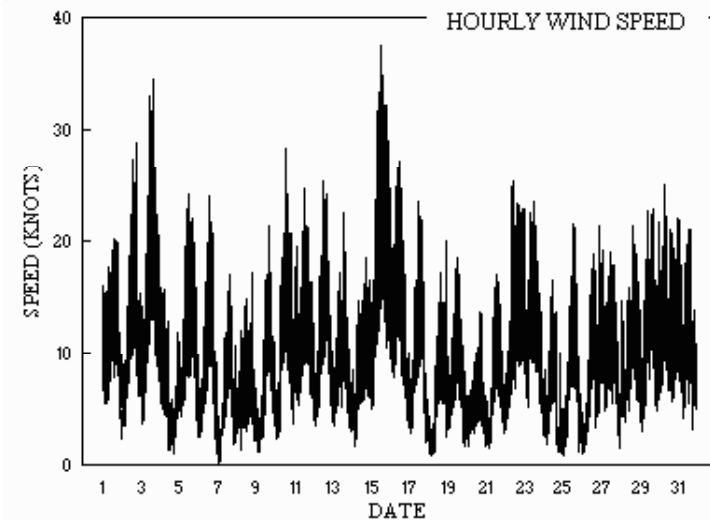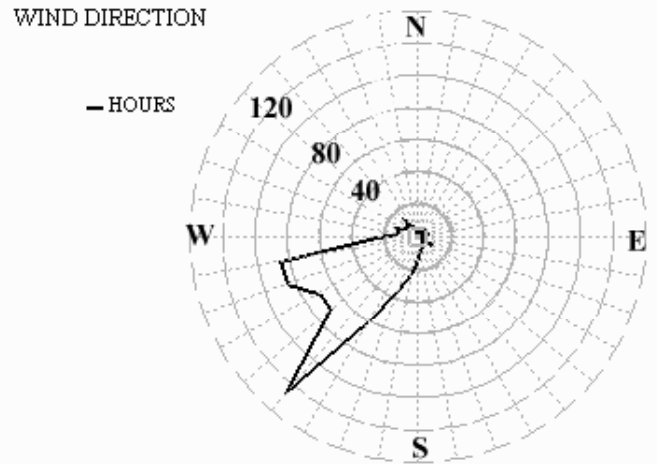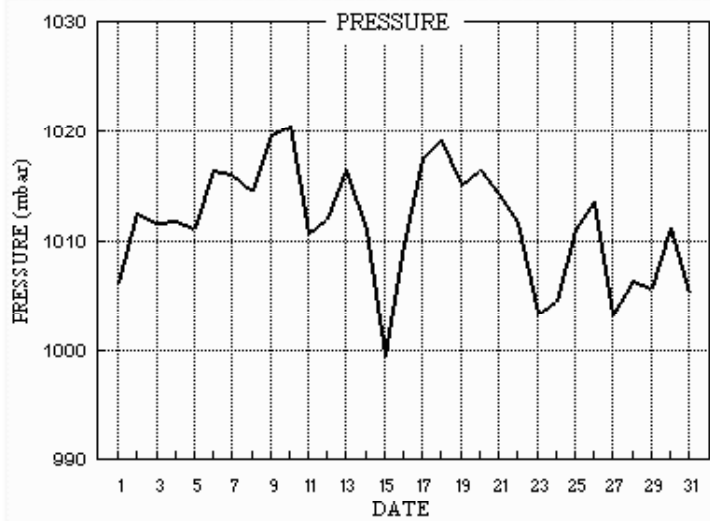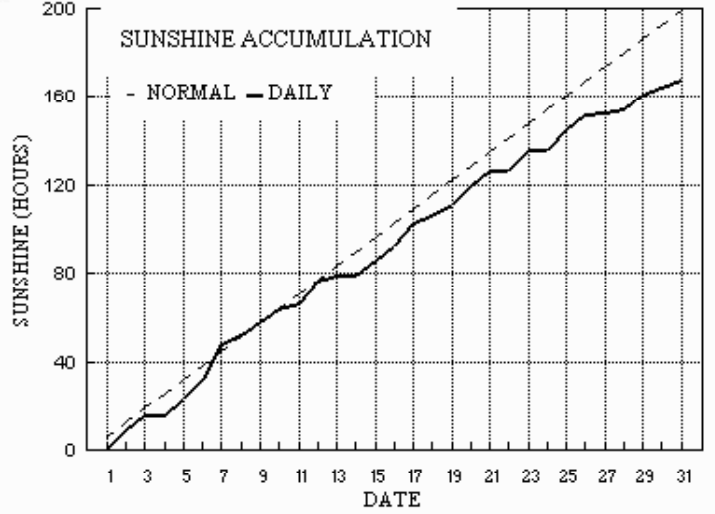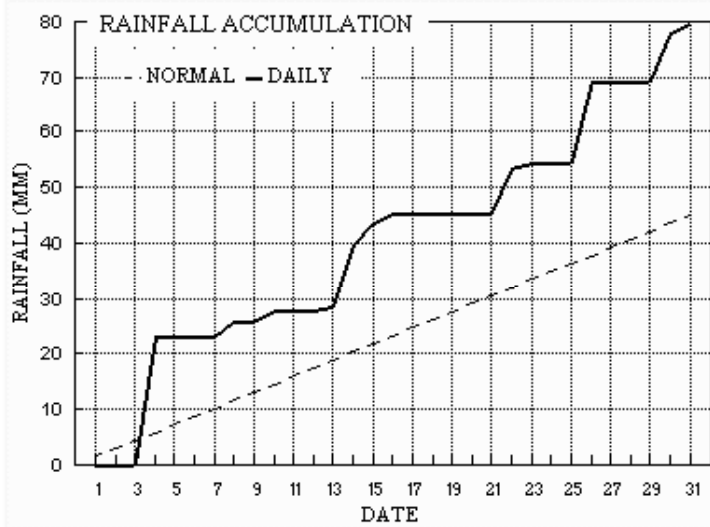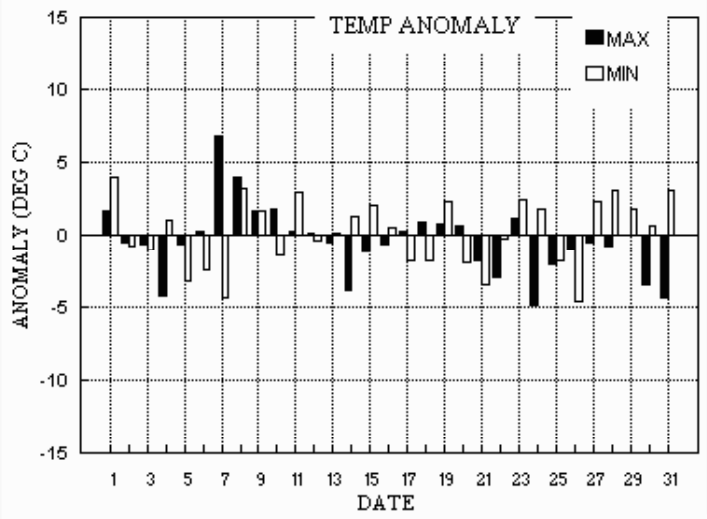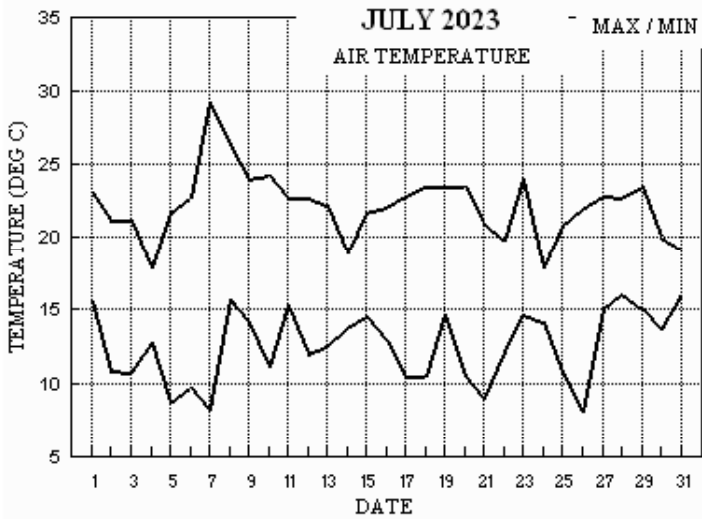Notes: **Wet and Dull with Below Average Temperature**

Temperature: The mean this July, while 0.5° below the current 30 year average, is still 0.4° above the 142 year median. While some of this difference can be ascribed to global warming, some is also likely to be the result of creeping urbanization in Wokingham. In terms of the mean maximum, this is the coolest July since 2012, while the mean minimum is lowest only since 2020. The highest max is 0.6° above the median, but this is the first July since 2014 which has failed to reach 30°. The lowest max is 0.8°above its median. The highest min is 0.4° below the median, and is lowest since 2012, while the lowest min is 1.0° above its median. Earth temperature at 30 cm depth is lowest since 2020, but at 1 m depth is the same as in last July. Anomalies for daily max were above +3° on the 7th and 8th, and exceeded -3° on the 4th, 14th, 24th and 31st, with extreme values of +6.8° on 7th and -4.9° on 24th. Anomalies for daily min were above +3°on the 1st, 8th, 28th and 31st, and exceeded -3° on the 5th, 7th, 21st and 26th, with extreme values of +4.0° on 1st and -4.6° on 26th. **Rainfall:** This has been a wet July overall, with a total 69% above average. However, there have been 3 wetter Julys in this millennium, two of which had over 100 mm, namely 2007 and 2017. While the total this July is quite high, there was a fair amount of dry weather, and only 2 fewer dry days than average, also a dry spell of 5 days ending on the 21st. There were 2 thunderstorms, both on the 8th, and violent rain showers on the 15th and 27th, but no hail. Estimated soil moisture deficit, while indicating stress for unirrigated shallow rooted plants at the end of June, decreased slightly through July, the rainfall roughly keeping up with the evapotranspiration. Rainfall accumulation was 17 mm in surplus on 4th, decreasing to 10 mm by 13th, increasing to 16 mm by 16th, then an unsteady increase to 33 mm by the 31st.. **Sunshine:** This is the dullest July since 2012, with only 84% of the average, but there have been 4 others with even less sunshine in this millennium. There was a general lack of sunny days throughout the month, the sunniest day on the 7th had 95% of the maximum, but the next best was 67% on the 17th, and there were 23 days with less than 50%, and 10 with less than 20 %. Daily accumulation was close to or a little below normal until the 12th, then there was a deficit of 10 hours until the 21st, then a steady increase to a deficit of 33 hours by the 31st. Overall there were 9 days with <3 hours, 15 with =>6 hours and 1 with =>12 hours. **Wind:** The mean speed is 0.6 mph above average and the month's highest gust is highest for July since 2001 (but note: Wind data is being estimated from measurements at Reading University due to failure of the Wokingham instrument). Daily mean directions were between S and W, except for between E and S on 7th, 8th and 14th, and between W and N on 19th, 20th, 24th and 25th. Mean speeds were light or moderate, except for fresh on the 2nd, 3rd, 10th and 16th, and strong on 15th. **Pressure:** The mean pressure at 09 GMT is equal lowest for July with 1988 in the past 48 years. The month's highest pressure is also lowest for any July in the same period.

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

From the 1st to the 10th				From the 11th to the 20th				From the 21st to the 31st			
+1.0°	-0.3°	183%	99%	-0.3°	+0.3°	116%	87%	-1.9°	+0.4°	204%	67%

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

Wokingham climatological graphs for July 2023

JULY 2023 — MAX / MIN
AIR TEMPERATURE

TEMP ANOMALY — MAX, MIN

RAINFALL ACCUMULATION — NORMAL — DAILY

SUNSHINE ACCUMULATION — NORMAL — DAILY

PRESSURE

WIND DIRECTION — HOURS

HOURLY WIND SPEED

DAILY MEAN WIND — SPD, DIR

Daily meteorological data.   Emmbrook, WOKINGHAM, Berkshire.

Month: JULY 2023

Date	Max C	Min C	Rain mm	Grass Min	30cm C	100cm C	Sun hrs	Frost hrs	pp09 mbar	Af Gf	Sf Sl	Th Ha	Ic Fg	Vec mean ddd	ff	sp	Max gust ddd	gg	HHhh	High hr ddd	ff	HH	Rain hrs
1	23.1	15.6	0.0	15.7	19.2	17.9	1.3	0.0	1006.3	0 0	0 0	0 0	0 0	258	7.1	7.1	270	20	1303	270	10	12	0.0
2	21.1	10.8	0.0	5.9	19.0	17.9	8.4	0.0	1012.6	0 0	0 0	0 0	0 0	256	7.4	7.4	250	29	1730	255	13	17	0.0
3	21.1	10.7	0.1	6.7	18.5	17.8	6.7	0.0	1011.6	0 0	0 0	0 0	0 0	247	9.1	9.3	250	35	1606	260	14	16	0.3
4	17.9	12.8	22.9	10.9	18.3	17.7	0.2	0.0	1011.9	0 0	0 0	0 0	0 0	254	2.6	3.7	240	16	0017	240	6	00	9.8
5	21.7	8.7	tr	4.9	17.7	17.6	7.6	0.0	1011.2	0 0	0 0	0 0	0 0	259	6.9	7.0	260	24	1246	260	10	16	0.0
6	22.7	9.7	0.0	5.1	17.7	17.5	8.2	0.0	1016.5	0 0	0 0	0 0	0 0	209	5.5	5.6	200	24	1430	200	10	17	0.0
7	29.2	8.2	0.1	4.9	18.1	17.4	15.5	0.0	1016.1	0 0	0 0	0 0	0 0	132	2.7	3.6	160	17	1510	150	8	15	0.0
8	26.3	15.7	2.8	12.3	18.9	17.4	4.8	0.0	1014.6	0 0	0 0	1 0	0 0	176	2.2	3.7	250	17	1950	240	6	19	1.3
9	24.0	14.1	0.0	9.9	19.2	17.4	5.3	0.0	1019.6	0 0	0 0	0 0	0 0	202	4.6	4.8	220	22	1639	220	9	16	0.0
10	24.2	11.1	1.9	6.7	19.1	17.5	5.9	0.0	1020.5	0 0	0 0	0 0	0 0	197	6.5	6.6	210	29	1407	210	12	14	1.9
11	22.7	15.3	0.1	14.5	19.1	17.6	3.1	0.0	1010.7	0 0	0 0	0 0	0 0	218	7.5	7.7	220	26	1238	220	10	15	0.1
12	22.7	12.0	tr	10.4	19.0	17.6	9.9	0.0	1012.0	0 0	0 0	0 0	0 0	245	7.3	7.4	240	25	1259	240	11	12	0.1
13	22.2	12.5	0.7	10.0	18.8	17.7	2.9	0.0	1016.5	0 0	0 0	0 0	0 0	234	5.4	5.6	220	23	1432	235	10	14	1.1
14	18.8	13.8	11.0	10.6	18.8	17.7	0.0	0.0	1010.9	0 0	0 0	0 0	0 0	157	4.1	5.2	200	19	1855	190	7	18	8.2
15	21.6	14.5	4.1	13.6	18.3	17.6	6.1	0.0	999.4	0 0	0 0	0 0	0 0	209	11.0	11.2	210	38	1221	215	16	13	0.2
16	22.0	12.9	1.7	11.4	18.5	17.6	6.6	0.0	1009.6	0 0	0 0	0 0	0 0	233	8.2	8.4	230	27	1147	230	12	11	0.9
17	22.8	10.4	tr	7.9	18.3	17.6	10.7	0.0	1017.5	0 0	0 0	0 0	0 0	246	5.7	5.9	250	24	1152	250	10	14	0.1
18	23.5	10.5	tr	7.4	18.6	17.5	3.5	0.0	1019.1	0 0	0 0	0 0	0 0	217	3.4	3.6	240	20	2132	220	7	16	0.1
19	23.5	14.6	0.0	12.9	18.9	17.6	4.7	0.0	1015.0	0 0	0 0	0 0	0 0	273	4.3	4.8	300	19	1325	290	8	12	0.0
20	23.4	10.4	0.0	6.3	19.0	17.6	8.7	0.0	1016.5	0 0	0 0	0 0	0 0	317	3.1	3.2	300	14	1640	310	6	16	0.0
21	21.0	8.9	tr	4.9	18.9	17.7	6.1	0.0	1014.3	0 0	0 0	0 0	0 0	263	4.3	4.4	290	17	1213	270	7	14	0.0
22	19.8	12.1	8.0	9.1	18.4	17.7	0.1	0.0	1011.7	0 0	0 0	0 0	0 0	207	7.4	7.5	210	25	1057	220	10	10	7.3
23	23.9	14.7	0.9	14.5	18.1	17.6	9.1	0.0	1003.3	0 0	0 0	0 0	0 0	223	7.5	7.6	240	24	1122	240	10	11	1.0
24	17.8	14.1	0.2	12.0	18.8	17.6	0.1	0.0	1004.6	0 0	0 0	0 0	0 0	356	1.6	3.4	20	17	1259	10	6	12	1.2
25	20.8	10.7	0.0	7.7	18.4	17.6	9.3	0.0	1011.0	0 0	0 0	0 0	0 0	296	4.2	4.4	300	22	1337	290	9	13	0.0
26	21.9	8.0	14.8	4.4	18.1	17.6	7.3	0.0	1013.6	0 0	0 0	0 0	0 0	215	4.1	4.5	220	22	2231	220	8	22	8.0
27	22.8	15.0	tr	15.1	18.3	17.6	0.6	0.0	1003.1	0 0	0 0	0 0	0 0	224	5.9	6.0	220	19	0300	215	8	09	0.0
28	22.7	16.1	tr	13.4	18.9	17.5	1.4	0.0	1006.4	0 0	0 0	0 0	0 0	230	5.7	6.0	210	22	1627	210	9	16	0.1
29	23.5	15.0	tr	14.2	19.1	17.6	7.3	0.0	1005.7	0 0	0 0	0 0	0 0	246	6.5	6.8	260	23	1726	255	11	16	0.2
30	20.0	13.7	8.5	11.6	19.1	17.7	3.4	0.0	1011.1	0 0	0 0	0 0	0 0	231	7.5	7.6	250	25	0816	245	11	08	5.1
31	19.1	16.0	1.7	15.6	18.9	17.7	2.7	0.0	1005.2	0 0	0 0	0 0	0 0	239	6.4	6.6	220	22	0244	240	10	16	1.3
Total			79.5				167.5	0.0															48.3
Mean	22.2	12.5		10.0	18.6	17.6	5.40	0.0	1011.6					232	4.9	6.0							
Anom	-1.0	-0.3	169%	+0.1	-0.3	+0.7	84%		-4.3														

Daily mean   17.4   Pressure, abs highest =   1021.7 on 18
Anom   -0.5   Pressure, abs lowest =   998.6 on 15
Number of days with:
Air frost = 0   Ground frost = 0   Nil sun = 1
Snow falling = 0   Snow lying = 0   Thunder = 1
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.
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 JULY 2023

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	NChshs	NChshs	NChshs	Date	Remarks
1	70	7	26	08	18	17.1	14.0	82	10.0	1006.3	2	011	25	8	2	7	8	4	/	/	81710	87635		1	1Cu18 Cu med jpSE VV50k ex p Wind est
2	78	6	26	10	18	17.3	8.7	57	7.0	1012.6	0	004	03	1	1	6	8	6	0	1	84830	83640		2	1Ci75 Cu med Wind est
3	83	6	25	10	19	17.0	8.7	58	7.0	1011.6	0	000	03	1	1	4	8	5	0	4	83828	85072		3	2Sc40 COTRA Cu med Wind est
4	70	7	23	06	12	16.9	10.3	65	7.8	1011.9	0	003	15	2	2	7	8	5	3	/	81825	86650		4	2Sc40 /Ac65 Cu med jpNW vv40k ex NW Wind est
5	86	7	28	07	19	14.9	11.7	81	8.5	1011.2	2	015	03	1	1	7	8	4	3	/	87813			5	/Sc50 /Ac57 Cu med Wind est
6	84	7	21	05	11	17.6	10.2	62	7.7	1016.5	1	004	03	2	2	7	8	5	/	1	81822	87650		6	/Ci80 Cu med Wind est
7	86	1	08	04	10	21.7	12.3	55	8.8	1016.1	8	005	02	0	0	0	0	9	0	2	81078			7	Wind est
8	65	7	22	02	11	21.9	16.4	71	11.5	1014.6	1	017	25	8	2	1	2	7	8	8	81856	83358	85465	8	/Cs72 Cu med Ac cas jp SW-NW Wind est
9	70	7	22	03	06	16.9	14.5	86	10.2	1019.6	3	004	21	6	2	7	0	9	7	/	82359	83363	88466	9	Wind est
10	78	6	20	09	17	19.7	12.5	63	8.9	1020.5	7	006	03	1	1	3	2	5	5	2	83823	84070		10	2Ac65 Cu med Wind est
11	75	6	22	08	17	19.2	13.8	71	9.8	1010.7	7	003	03	2	2	4	2	5	3	9	84822	83365		11	1Cc75 1Ci80 COTRA Cu med Wind est
12	80	6	25	08	16	18.6	12.4	67	8.9	1012.0	1	010	25	8	1	6	8	5	0	1	81820	83645	85656	12	1Ci75 Cu med jpN vv60k ex p Wind est
13	86	7	22	07	16	18.8	13.0	69	9.2	1016.5	0	008	03	1	1	5	8	4	3	1	82818	84645		13	3Ac58 3Ci75 Cu med Wind est
14	56	8	13	05	14	15.5	14.4	93	10.2	1010.9	7	019	61	6	2	7	5	4	7	/	82710	83630	85650	14	8Ac60 Wind est
15	75	6	21	13	28	18.8	13.2	70	9.5	999.4	0	000	15	1	1	4	9	4	3	3	81915	84820		15	1Sc45 1Ac65 1Ci70 jpS Wind est
16	81	3	23	11	24	19.1	10.9	59	8.1	1009.6	2	016	03	1	1	2	8	6	0	1	82832			16	1Sc45 1Ci75 COTRA Cu med Wind est
17	86	5	24	07	14	18.5	12.3	67	8.8	1017.5	1	011	03	1	1	4	8	5	3	0	84827			17	1Sc56 1Ac60 Cu con Wind est
18	82	7	14	03	06	17.3	11.3	68	8.3	1019.1	8	009	01	6	2	7	0	9	7	/	83362	87366		18	Wind est
19	84	5	26	07	13	19.4	13.3	68	9.5	1015.0	0	002	03	2	2	5	8	5	0	1	83820	83640		19	1Ci75 Cu med Wind est
20	88	2	33	03	08	18.4	10.5	60	7.8	1016.5	7	002	02	0	0	1	2	6	3	1	81840			20	qAc59 2Ci80 COTRA Cu hum/med El hz lyr N Wind est
21	80	6	30	05	13	16.9	9.3	61	7.3	1014.5	4	000	03	2	2	1	2	6	7	8	81830	86075		21	1Ac58 2Ac69 2Cs70 COTRA Cu med Wind est
22	80	8	22	12	21	16.8	11.9	73	8.7	1011.7	7	011	03	6	2	6	5	5	7	/	86620	83362	88465	22	Wind est
23	70	5	24	10	22	19.6	15.3	76	10.8	1003.3	3	011	15	1	1	5	8	4	0	1	85813			23	1Sc25 1Ci75 Cu med jpN vv50k ex N
24	20	8	03	05	11	14.3	13.3	94	9.6	1004.6	3	012	59	6	2	5	7	2	2	/	85704	88512		24	Wind est
25	83	6	30	06	12	16.6	9.3	62	7.3	1011.0	1	006	03	1	1	1	2	5	3	0	81825	86358		25	Cu med Wind est
26	86	5	24	04	09	18.1	8.7	54	6.9	1013.6	7	005	03	1	1	1	1	6	0	4	81835	85072		26	COTRA Cu hum Wind est
27	50	7	22	07	14	18.9	17.2	90	12.3	1003.1	4	000	50	5	2	7	7	2	7	/	83705	87708	87612	27	/Ac65 Wind est
28	70	7	25	06	11	18.7	15.0	79	10.6	1006.4	2	005	15	2	2	7	8	4	3	/	86815	87625		28	/Ac58 jpW vv80k ex p Wind est
29	82	5	25	08	18	18.7	12.7	68	9.2	1005.7	4	000	03	2	2	5	8	5	0	1	85825			29	1Sc35 1Ci78 COTRA Cu med Wind est
30	83	2	23	11	25	19.4	11.9	62	8.7	1011.1	0	007	03	1	1	2	8	5	4	1	82827			30	1Sc50 1Ac180 1Ci280 COTRA Cu med Wind est
31	40	8	27	05	09	16.9	16.3	96	11.5	1005.2	7	009	58	6	5	8	5	2	/	/	85704	88610		31	Wind est

Mean vis = 33.8 km

Mean cloud = 5.9 74%

Mean wind speed = 6.9 kn

Mean gust = 15 kn

Mean TT = 18.0 °C

Mean TdTd = 12.4 °C

Mean RH = 70.5 %

Mean r = 9.0 g/kg

Mean PPP = 1011.6 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 JULY 2023

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	NChshs	NChshs	NChshs	Date	Remarks
1	86	6	27	07	19	21.5	11.5	53	8.5	1006.4	8	004	02	2	2	6	8	6	0	0	83839	85650		1	Cu med Wind est
2	80	6	26	12	24	20.6	6.2	39	5.9	1011.8	8	004	02	2	2	5	4	7	0	1	85650			2	2Ci75 Sc cugen Wind est
3	65	6	24	12	32	17.6	10.5	63	7.9	1010.2	8	002	15	8	2	5	8	5	3	1	82825	83650		3	2Sc35 3Ac65 /Ci80 COTRA Cu med jpS VV30k ex S Wind
4	50	8	07	03	06	14.7	14.2	97	10.1	1009.0	8	020	61	6	2	6	5	5	7	/	85625	83650	88465	4	3Ac60 Wind est
5	84	6	27	09	18	19.5	8.8	50	7.0	1012.9	2	008	25	8	2	3	8	6	6	0	83848	85358		5	1Sc56 Cu med/con jpN Wind est
6	88	6	20	09	23	22.6	9.0	42	7.1	1015.4	7	006	02	2	2	3	1	6	0	1	83848	85080		6	COTRA
7	85	1	16	07	16	29.0	10.6	32	7.9	1013.5	7	017	02	0	0	1	1	8	0	0	81857			7	Cu hum Wind est
8	82	3	13	04	09	24.8	17.5	64	12.4	1015.4	0	000	21	6	1	1	2	5	8	3	81825			8	2Ac59 2Ci72 Cu hum/con W Ac cas Cb top SW Wind est
9	84	6	19	08	15	23.5	13.9	55	9.8	1018.5	7	010	03	2	2	3	8	6	3	2	83835			9	1Sc50 1Ac68 2Ci75 Cu con Wind est
10	80	7	20	11	28	22.1	10.9	49	8.0	1017.5	8	013	15	2	2	5	8	5	3	1	82840	84656	87365	10	2Ac58 Cu hum jpSW Wind est
11	81	7	21	11	20	21.3	13.7	62	9.8	1009.0	8	005	02	8	2	4	2	5	7	/	84825	86360		11	1Sc50 Cu med Wind est
12	70	5	24	09	19	21.7	12.3	55	8.8	1012.0	1	003	15	2	2	2	8	6	6	1	81835	84357		12	1Sc56 1Ci75 Cu con jpSE vv60k ex p Wind est
13	82	7	25	11	23	17.6	14.1	80	9.9	1016.4	5	000	25	8	2	6	8	5	6	1	82828	85650	85358	13	/Ci75 Cu med jpS,E&N vv70k ex p Wind est
14	57	8	13	07	14	16.4	15.6	95	11.1	1002.9	7	042	61	6	6	7	5	5	2	/	82628	87635	88550	14	Wind est
15	81	6	22	15	34	19.8	11.0	57	8.3	1000.1	1	009	25	8	2	6	8	6	0	3	85830			15	1Sc50 1Ci70 Cu con jpSW Wind est
16	80	7	22	11	24	19.5	10.0	54	7.6	1011.2	1	010	25	8	2	7	8	6	0	8	84838	85656	87270	16	Cu med jpN vv60k ex p Wind est
17	89	2	25	09	21	22.2	10.4	47	7.7	1018.3	1	003	01	1	1	2	8	6	6	4	82848			17	1Sc56 1Ac59n 1Ci80 Cu med/con Wind est
18	88	7	22	06	12	23.4	12.7	51	9.1	1015.8	7	016	02	2	2	2	8	6	8	/	82840	87365		18	1Sc50 2Ac62 Cu med Ac cas Wind est
19	89	7	29	06	16	21.3	10.8	51	8.0	1015.4	1	002	02	2	2	3	8	6	6	/	82840	86358		19	2Sc56 Cu med Wind est
20	89	5	30	04	10	22.3	9.1	43	7.2	1014.2	7	014	02	1	1	2	8	7	7	0	81850	83359		20	2Sc56 Cu med Wind est
21	89	7	27	07	16	18.3	9.6	57	7.4	1014.1	3	001	03	2	2	4	8	6	7	/	81840	84650	87357	21	Cu med Wind est
22	60	8	20	10	23	15.6	14.5	93	10.3	1008.8	7	020	61	6	6	7	5	3	2	/	83708	87612	88540	22	Wind est
23	88	7	23	11	20	23.1	13.8	56	9.9	1003.1	8	005	03	1	1	3	2	6	0	2	83832	86075		23	Cu med
24	75	7	03	05	13	16.9	12.2	74	8.9	1007.4	1	009	21	6	5	6	8	4	7	/	84815	86645	87358	24	Cu med jpN&W vv50k ex p Wind est
25	84	6	29	08	18	18.9	7.7	48	6.5	1010.9	2	002	02	2	2	4	8	6	6	1	82845	83656	85358	25	Cu med Wind est
26	82	8	21	08	18	19.5	10.5	56	7.9	1011.4	7	009	21	6	2	1	4	6	7	/	81635	85358	88462	26	Wind est
27	75	7	23	06	13	21.3	17.7	80	12.7	1003.2	3	001	15	5	2	7	8	4	/	/	84815	85625	87640	27	Cu hum jpE&SE vv50k ex p Wind est
28	89	7	22	07	14	21.0	13.9	64	9.9	1006.1	5	005	02	2	2	7	8	6	/	/	82835	87645		28	Cu med Wind est
29	84	3	26	11	21	23.2	9.9	43	7.6	1006.5	1	005	02	8	1	2	2	6	6	0	82845			29	2Ac57 Cu med Wind est
30	62	8	25	08	16	18.3	16.6	90	11.7	1011.0	5	002	61	6	2	7	5	3	2	/	83706	87612	88550	30	Wind est
31	70	7	22	06	14	17.1	14.2	83	10.1	1003.4	8	015	15	6	2	1	8	4	7	/	81815	84362	87365	31	1Sc56 Cu fra/hum jpN vv40k ex N Wind est

Mean vis = 42.4 km

Mean cloud = 6.2 77%

Mean wind speed = 8.3 kn

Mean gust = 18 kn

Mean TT = 20.5 °C

Mean TdTd = 12.1 °C

Mean RH = 60.7 %

Mean r = 8.9 g/kg

Mean PPP = 1010.7 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

2023

Hour	01-Jul	02-Jul	03-Jul	04-Jul	05-Jul	06-Jul	07-Jul	08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.41	0.40	0.00	0.46	0.08	0.43	0.37	0.00	0.25	0.00	0.39	0.34	0.00	0.00	0.33
5	0.00	1.00	1.00	0.00	0.87	0.00	1.00	1.00	0.00	1.00	0.20	0.93	0.88	0.00	0.23	0.99
6	0.00	1.00	1.00	0.00	0.08	0.06	1.00	0.89	0.00	0.99	0.08	1.00	0.05	0.00	0.37	0.71
7	0.00	0.65	0.64	0.00	0.19	0.11	1.00	0.25	0.00	0.75	0.46	0.90	0.02	0.00	0.42	0.41
8	0.00	0.78	0.49	0.12	0.05	0.03	1.00	0.00	0.00	0.45	0.71	0.28	0.26	0.00	0.35	0.98
9	0.17	0.03	0.34	0.06	0.24	0.57	1.00	0.00	0.00	0.47	0.47	0.63	0.00	0.00	0.57	0.97
10	0.08	0.06	0.46	0.00	0.75	0.29	1.00	0.00	0.14	0.40	0.01	0.32	0.36	0.00	0.71	0.58
11	0.03	0.10	0.61	0.00	0.30	0.31	1.00	0.00	0.39	0.17	0.04	0.11	0.29	0.00	0.78	0.68
12	0.01	0.09	0.15	0.00	0.26	0.41	1.00	0.07	0.51	0.68	0.20	0.66	0.16	0.00	0.61	0.45
13	0.32	0.19	0.00	0.00	0.45	0.65	1.00	0.00	0.23	0.59	0.00	0.03	0.09	0.00	0.82	0.08
14	0.21	0.21	0.00	0.00	0.12	0.90	1.00	0.50	0.19	0.15	0.13	0.27	0.04	0.00	0.39	0.12
15	0.23	0.80	0.34	0.00	0.52	0.87	1.00	0.94	0.37	0.00	0.18	0.80	0.16	0.00	0.33	0.00
16	0.09	0.63	0.38	0.00	0.88	0.99	1.00	0.80	0.90	0.00	0.26	0.65	0.19	0.00	0.27	0.05
17	0.05	0.77	0.42	0.00	1.00	0.95	1.00	0.00	0.98	0.00	0.00	0.96	0.00	0.00	0.14	0.09
18	0.10	0.96	0.48	0.00	0.39	1.00	1.00	0.00	0.84	0.00	0.01	0.99	0.00	0.00	0.05	0.00
19	0.00	0.69	0.00	0.00	0.95	1.00	1.00	0.00	0.65	0.00	0.31	0.97	0.00	0.00	0.02	0.19
20	0.00	0.00	0.00	0.00	0.09	0.02	0.08	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	1.29	8.38	6.69	0.18	7.59	8.23	15.51	4.82	5.26	5.90	3.07	9.87	2.85	0.00	6.08	6.63

Hour	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	Mean
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.09	0.20	0.00	0.24	0.33	0.00	0.00	0.00	0.24	0.40	0.00	0.00	0.00	0.36	0.00	0.17
5	0.79	0.52	0.00	0.85	0.78	0.00	0.50	0.00	0.92	1.00	0.00	0.00	0.00	0.45	0.00	0.48
6	0.83	0.09	0.00	1.00	1.00	0.08	0.36	0.00	1.00	1.00	0.00	0.00	0.00	0.68	0.00	0.43
7	0.83	0.00	0.00	1.00	1.00	0.00	0.65	0.00	1.00	1.00	0.00	0.05	0.17	0.73	0.00	0.39
8	0.69	0.23	0.38	1.00	1.00	0.00	0.89	0.00	0.97	1.00	0.00	0.02	0.61	0.74	0.00	0.42
9	0.77	0.39	0.40	1.00	0.47	0.00	0.53	0.00	1.00	0.98	0.06	0.00	0.31	0.23	0.00	0.38
10	0.65	0.03	0.44	0.79	0.29	0.00	0.90	0.00	0.47	0.80	0.00	0.00	0.28	0.14	0.00	0.32
11	0.92	0.01	0.67	0.55	0.09	0.00	0.44	0.00	0.45	0.50	0.00	0.00	0.54	0.00	0.00	0.29
12	0.60	0.26	0.59	0.79	0.05	0.00	0.22	0.00	0.15	0.61	0.00	0.12	0.42	0.00	0.00	0.29
13	0.71	0.03	0.53	0.42	0.05	0.00	0.54	0.00	0.08	0.06	0.01	0.07	0.22	0.00	0.00	0.23
14	0.66	0.24	0.36	0.34	0.00	0.00	0.75	0.00	0.53	0.00	0.00	0.00	0.84	0.00	0.01	0.26
15	0.89	0.10	0.08	0.42	0.00	0.00	0.48	0.07	0.28	0.00	0.01	0.06	0.67	0.00	0.11	0.31
16	0.96	0.61	0.68	0.00	0.00	0.00	0.87	0.00	0.69	0.00	0.03	0.54	0.53	0.00	0.52	0.40
17	1.00	0.33	0.42	0.29	0.00	0.00	0.92	0.00	0.50	0.00	0.26	0.43	1.00	0.00	1.00	0.40
18	0.33	0.44	0.19	0.00	0.41	0.00	0.95	0.00	0.59	0.00	0.09	0.07	0.97	0.00	0.89	0.35
19	0.00	0.00	0.00	0.00	0.67	0.00	0.06	0.00	0.48	0.00	0.11	0.00	0.76	0.00	0.14	0.26
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	0.01
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	10.72	3.46	4.73	8.67	6.14	0.08	9.05	0.07	9.33	7.33	0.58	1.37	7.31	3.35	2.68	167.27

JULY 2023

	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	18.03	23.1	1553	14.0	2358	72.0	95.1	311	47.7	1554	12.5	9.1	11.3	27	6.3	2042	1006.81	1010.9	2359	1004.4	333	0.6
2	15.81	21.1	1547	10.8	353	63.7	93.7	227	37.0	1536	8.3	6.8	8.4	722	5.6	1451	1011.93	1012.9	746	1010.6	46	0
3	15.54	21.1	1206	10.7	335	65.9	88.2	341	43.1	1634	8.9	7.1	9.1	1323	5.8	1808	1011.22	1012.3	2349	1009.7	1520	0.2
4	13.58	17.9	931	10.9	2358	85.4	97.3	1922	56.4	934	11.1	8.2	10.1	1502	7.0	927	1009.96	1012.3	153	1005.8	2019	23.3
5	14.95	21.7	1409	8.7	351	71.4	98.0	607	37.9	1639	9.1	7.2	9.4	823	5.8	1640	1011.75	1015.9	2340	1006.9	20	0.1
6	16.31	22.7	1503	9.7	213	66.4	95.1	418	38.8	1617	9.4	7.3	8.7	1354	6.1	1617	1015.91	1016.8	2303	1015.0	1704	0
7	20.07	29.2	1439	8.2	400	61.4	96.7	438	29.2	1402	11.0	8.2	10.4	1133	6.4	358	1014.82	1016.9	211	1012.4	2358	0
8	20.40	26.3	1640	15.7	457	76.4	96.0	1129	53.1	1656	15.9	11.2	14.0	1312	8.9	1	1014.86	1017.8	2359	1011.5	211	2.7
9	18.37	24.0	1439	14.1	220	74.8	97.4	242	46.8	1620	13.4	9.5	11.1	5	8.2	1722	1019.03	1020.8	2359	1017.5	17	0.1
10	18.14	24.2	1326	11.1	408	75.0	98.1	432	44.1	1259	13.2	9.4	11.1	2235	7.6	1450	1018.39	1021.2	600	1012.5	2359	0.4
11	18.37	22.7	1237	14.3	2358	76.6	95.3	322	56.5	1135	14.0	9.9	11.4	310	8.9	957	1009.80	1012.7	1	1007.7	1917	1.7
12	17.29	22.7	1537	12.0	420	71.0	95.3	425	46.0	1711	11.5	8.4	9.5	929	7.3	1934	1011.96	1015.1	2349	1009.4	0	0.1
13	16.70	22.2	1212	12.5	438	74.7	91.3	457	54.8	1121	12.0	8.7	10.7	1506	7.4	2149	1016.10	1017.1	2237	1014.7	239	0
14	15.73	17.8	1847	13.8	314	91.9	96.1	1241	80.3	0	14.4	10.3	12.2	1847	8.1	0	1007.27	1016.4	8	999.8	1848	12.1
15	17.21	21.6	1153	14.5	109	76.3	91.3	1232	55.2	1155	12.8	9.3	10.8	1255	8.1	1541	1000.64	1004.2	2332	998.6	1022	5.4
16	16.43	22.0	1114	11.8	2333	71.6	96.5	2334	46.2	1116	10.9	8.1	9.3	1244	7.0	1207	1009.97	1014.7	2333	1003.7	8	1.8
17	16.68	22.8	1443	10.4	343	70.6	98.8	514	39.6	1621	10.6	7.9	9.8	1059	6.6	1614	1017.97	1021.7	2352	1014.5	0	0.3
18	17.00	23.5	1615	10.5	404	70.1	94.8	407	45.0	1633	11.0	8.1	9.5	1456	7.3	1256	1017.73	1021.7	3	1014.5	1751	0
19	18.60	23.5	1320	14.6	202	67.0	90.4	251	44.5	1758	11.9	8.6	9.9	822	7.2	1814	1015.29	1017.1	2355	1014.3	402	0
20	16.68	23.4	1358	10.4	428	65.8	92.4	455	35.4	1259	9.7	7.4	8.3	1026	5.9	1255	1015.52	1017.2	28	1013.5	1749	0
21	15.18	21.0	1259	8.9	432	71.3	96.2	528	48.1	1258	9.6	7.4	8.7	1034	6.7	1235	1014.41	1015.3	2237	1013.6	1343	0
22	14.89	17.8	950	12.1	17	87.2	95.3	2336	66.5	1003	12.7	9.2	10.5	1716	7.5	3	1009.81	1014.8	6	1003.2	2359	8.5
23	18.86	23.9	1404	14.5	2354	77.3	95.4	102	54.7	1404	14.5	10.3	11.3	1326	9.5	2354	1003.07	1004.4	2149	1001.5	405	0
24	14.89	17.8	1533	11.9	2353	86.6	95.1	906	69.9	1534	12.7	9.1	10.2	752	8.1	2353	1006.07	1009.8	2352	1002.7	321	1.2
25	15.33	20.8	1445	10.7	457	69.2	97.0	501	41.5	1438	9.1	7.2	8.2	951	5.9	1617	1011.09	1013.5	2358	1009.1	158	0
26	15.15	21.9	1326	8.0	433	78.7	97.7	533	40.6	1146	10.8	8.2	11.0	2159	6.1	1104	1011.49	1014.1	619	1004.9	2359	13.3
27	18.76	22.8	1323	15.3	0	87.8	96.1	3	73.2	1324	16.6	11.9	13.4	1320	10.4	14	1003.51	1005.6	2341	1002.7	456	1.8
28	18.62	22.7	1333	16.1	437	77.7	91.6	59	58.6	1417	14.5	10.3	11.5	1241	9.7	1347	1005.98	1006.8	1000	1005.1	55	0
29	18.34	23.5	1505	15.0	500	69.2	91.8	503	42.3	1453	12.2	8.9	10.4	1429	7.3	1453	1006.64	1009.6	2349	1005.2	406	0
30	16.66	20.0	922	13.7	435	82.9	95.1	1615	57.4	923	13.6	9.8	12.1	1438	7.9	4	1010.66	1011.6	1118	1008.8	2355	5.2
31	16.88	19.1	1725	13.6	2340	86.6	96.7	929	70.1	1737	14.6	10.4	12.6	936	9.0	2338	1004.34	1008.9	0	1001.4	2359	5.7
Total																						84.5
Mean	16.95	22.09		12.21		74.9	95.03		50.33		12.02	8.82	10.48		7.40		1011.10	1013.87		1008.23		
Max	20.40	29.24		16.10		91.9	98.80		80.30		16.63	11.85	13.95		10.43		1019.03	1021.69		1017.49		
Min	13.58	17.77		8.02		61.4	88.20		29.19		8.30	6.82	8.22		5.63		1000.64	1004.22		998.62		

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

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

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

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

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.

B J Burton. 3 August 2009. Updated 4 May 2014.

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 of sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

Ch : Type of high cloud

0 = No high cloud
1 = Cirrus in the form of filaments, strands or hooks, not progressively invading the sky.
2 = Dense cirrus, in patches or entangled sheaves, which usually do not increase and sometimes seem to be the remains of the upper part of a Cumulonimbus; or Cirrus with sproutings in the form of small turrets or battlements, or Cirrus having the appearance of cumuliform tufts
3 = Dense Cirrus, often in the form of an anvil, being the remains of the upper part of Cumulonimbus, or where the rest of the Cumulonimbus is below the horizon
4 = Cirrus in the form of hooks or filaments, or both, progressively invading the sky; they generally become denser as a whole
5 = Cirrus (often in bands converging towards one or two opposite points on the horizon) and Cirrostratus, or Cirrostratus alone; in either case they are progressively invading the sky, and generally growing denser as a whole, but the continuous veil does not reach 45 degrees above the horizon.
6 = Cirrus (often in bands converging towards one or two opposite points on the horizon) and Cirrostratus, or Cirrostratus alone; in either case they are progressively invading the sky, and generally growing denser as a whole; the continuous veil extends more than 45 degrees above the horizon, without the sky being totally covered
7 = Veil of Cirrostratus covering the celestial dome.
8 = Cirrostratus not progressively invading the sky and not completely covering the celestial dome
9 = Cirrocumulus alone, or accompanied by Cirrus or Cirrostratus, or both, but Cirrocumulus is predominant.
/ = Types of high cloud invisible owing to darkness, fog, blowing dust of sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

8 Groups
N = Amount of cloud reported by C, okta.

C = Type of cloud
0 = Cirrus (Ci)
1 = Cirrocumulus (Cc)
2 = Cirrostratus (Cs)
3 = Altocumulus (Ac)
4 = Altostratus (As)
5 = Nimbostratus (Ns)
6 = Stratocumulus (Sc)
7 = Stratus (St)
8 = Cumulus (Cu)
9 = Cumulonimbus (Cb)
/ = Cloud type not visible owing to darkness, fog, duststorm, or other analogous phenomena.

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

00 to 50 = Height in hundreds of feet
51 to 55 Not used
56 to 80 = Subtract 50 to obtain cloud height in thousands of feet
81 to 88 = Height of cloud between 35000 and 70000 ft in 5000 ft steps.