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   JUNE 2023

Temperature (°C)   Anomaly   Rank in the past **142** years

Mean maximum	25.2	+4.2	* Highest *			
Mean minimum	11.6	+0.9	8th highest			
Daily mean	18.4	+2.6	* Highest *			
Highest maximum	31.9	on 10th	Lowest maximum	18.6	on	6th
Highest minimum	17.3	on 28th	Lowest minimum	5.8	on	3rd
Mean grass minimum	8.4	+0.6	Lowest grass minimum	1.3	on	3rd
Mean earth @30 cm	18.7	+1.7	Earth @100 cm	16.6	+1.7	
Frost duration (hrs)	0.0		Rain duration (hrs)	10.5		
Rainfall total (mm)	37.4	73 %	59th lowest			
Highest daily fall	19.5	on 11th	Highest rate mm/hr	205	on	11th

Number of: Dry days (<0.2mm) 25   Wet days (>0.9mm) 4   days ≥5mm 3

Sunshine total (hrs) 263.0   Daily mean 8.77 135 %   Sunniest day 15.6 on 13th

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

Thunder 3   Hail ≥5mm 0   Small hail/ice 1   Fog @09 0   Nil sun 0

Pressure MSL : Mean @09 GMT, mbar 1018.2 +1.4   Highest 1026.8 on 1st   Lowest 1005.3 on 30th

Relative humidity : Mean (%) 69.4   Lowest 27 on 16th   Water vapour (g/kg), mean at 09 and 15 GMT 9.1, 8.8

Overall mean wind speed (mph) 6.2   Windiest day 9.2 on 1st   Max gust 32 on 25th

Wind direction (days)   N 0   NE 13   E 2   SE 1   S 3   SW 6   W 3   NW 2

Least windy day (mph) 2.8 on 12th   Calm; less than 0.5 mph (minutes) n/a

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

Notes: **New Record Mean Temperature, Very Sunny, Rainfall Below Average**

Temperature: The mean this June is the highest since before 1882, exceeding the previous highest in 1976 by 0.1°. The mean maximum is also the highest for any June in the past 142 years, exceeding the previous highest in 1976 by 0.7°. The mean minimum, however, has been exceeded 5 time in this millennium, the last in 2021. The highest max is 4.8° above the median but is highest only since 2020. The lowest max is 3.8° above its median and is 2nd highest after 2018 in 111 years. The highest min is 2.3° above the median and 4th highest in 111 years while the lowest min is 1.1° above its median. The mean grass min is 0.6° above average but is highest only since 2021. The last June to have a ground frost was in 2015. Earth temperature at 30cm depth is equal highest with 2017 since before 1980, and at 1 m depth is highest since before 1990. Anomalies for daily max were above +9° from the 10th to 13th and on 25th, and exceeded -1° on the 30th only, with extreme values of +12.8° on 10th and -2.6° on 30th. Anomalies for daily min were above +4° on 12th, 18th, 20th and 28th, and exceeded -3° on 3rd and 4th, with extreme values of +5.8° on 28th and -3.8° on 3rd. **Rainfall:** Over half of this month's rain fell in less than 20 minutes on the 11th when 18.7 mm fell in just 14 minutes. This June was dry until that day, and the following 7 days were also dry. Most of the remaining total this month fell on just 3 days, 19th, 22nd and 28th. In recent years June has been drier than this month 6 times since 2010 including the driest on record when only 0.6 mm fell in 2018. This June there were 3 dry spells, a 27 day one ended on the 10th, 7 days on the 18th and 5 days on the 27th. Apart from the brief torrential fall on the 11th only 0.1 mm fell between the 15th May and 18th June. Rainfall duration is 34 % of average, and 3rd lowest in this millennium. Thunder occurred on the 11th, 12th and 20th, with many cloud to ground lightning strokes on the 11th and a church on the SE edge of Wokingham reportedly struck. Rainfall accumulation compared with normal was 17 mm in deficit on the 10th, becoming zero on the 11th, then increasing to 10 mm by the 18th, decreasing to 6 mm by the 22nd, increasing to 12 mm by the 30th. Estimated soil moisture deficit indicates that unirrigated shallow rooted plants would suffer severe stress after the 3rd week in June. **Sunshine:** This has been a very sunny June, the daily mean of 8.77 hours being highest since 1996. Several days had 80% or more of the maximum, including the 4th, 13th to 16th, 23rd and 25th, and over 90% from the 13th to 15th and on the 4th. There were no days with nil sun, but the 28th and 30th combined had only 1.2 hours. At the other extreme, the 4 days to the 16th had 60.0 hours, a daily mean of 15.0 hours. Daily accumulation compared to normal showed a surplus throughout, increasing from 20 hours on the 7th to 59 hours on the 15th, then to 85 hours on the 25th, decreasing to 66 hours by the 30th. Overall there were 6 days with <3 hours, 21 days with =>6 hours and 9 days with =>12 hours. **Wind:** The mean speed is close to average but the highest gust is 4 mph below average. The month's mean vector of 49° (NE) is unusual for June, and resulted from a persistent anticyclone to the north of the UK from the 1st to 17th. Daily mean speeds were moderate until the 9th then mainly light until the 18th, then light or moderate, but fresh on the 25th. Daily mean directions were between N and E from 1st to 10th and 13th to 17th, between E and S on 14th and 18th, between W and N on 11th, 22nd, 26th and 29th, otherwise between S an W.

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 30th			
+3.9°	-0.7°	0 %	153%	+7.1°	+2.3°	153%	148%	+4.2°	+2.2°	89%	112%

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

Wokingham climatological graphs for June 2023

JUNE 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.
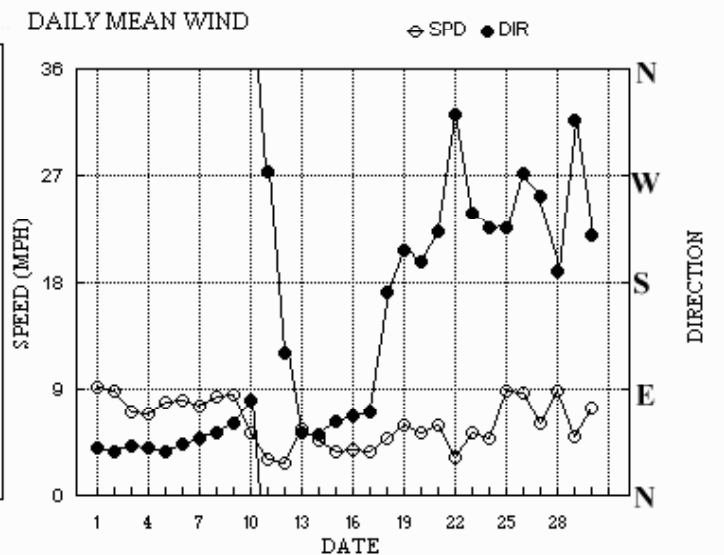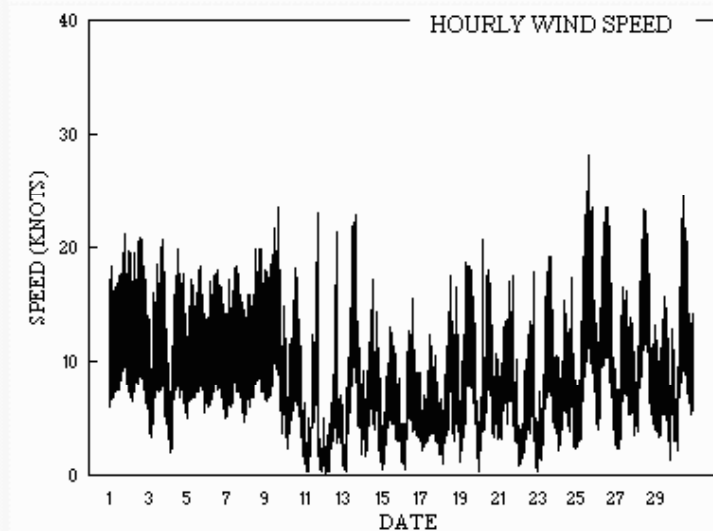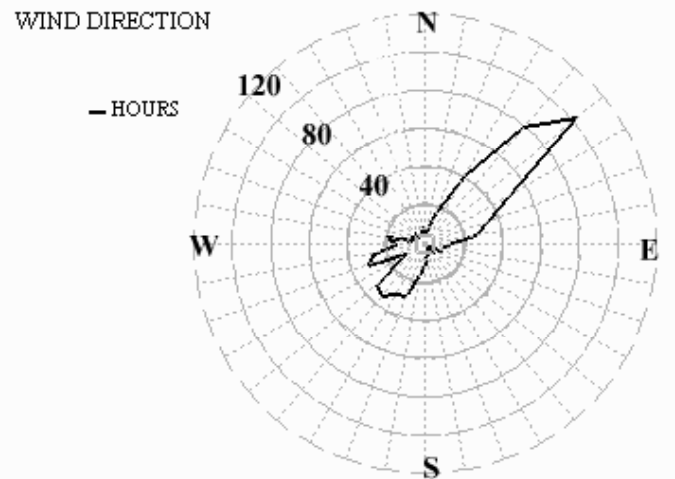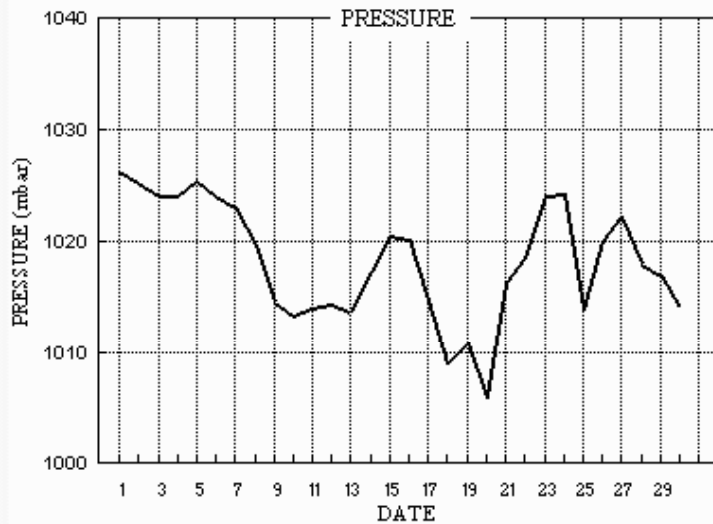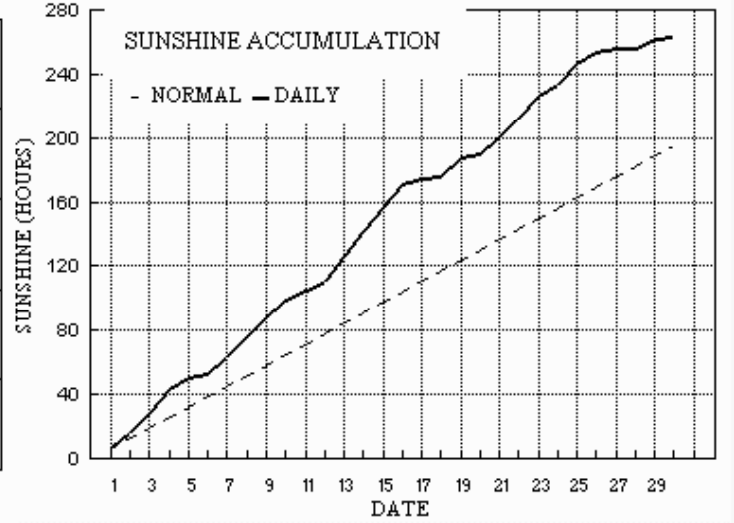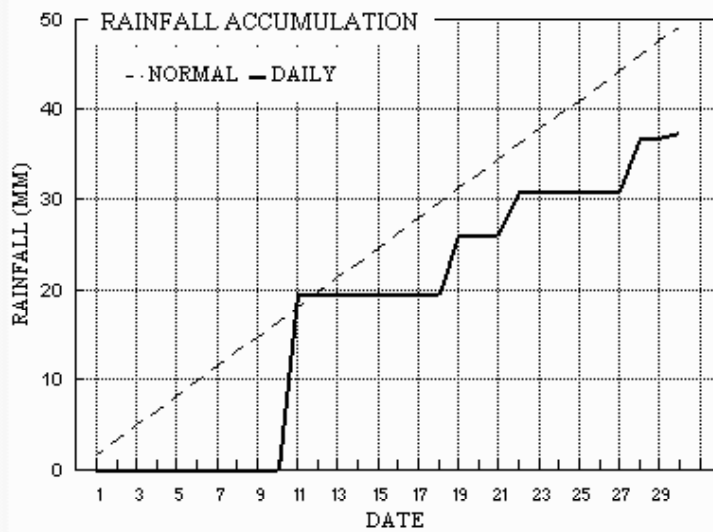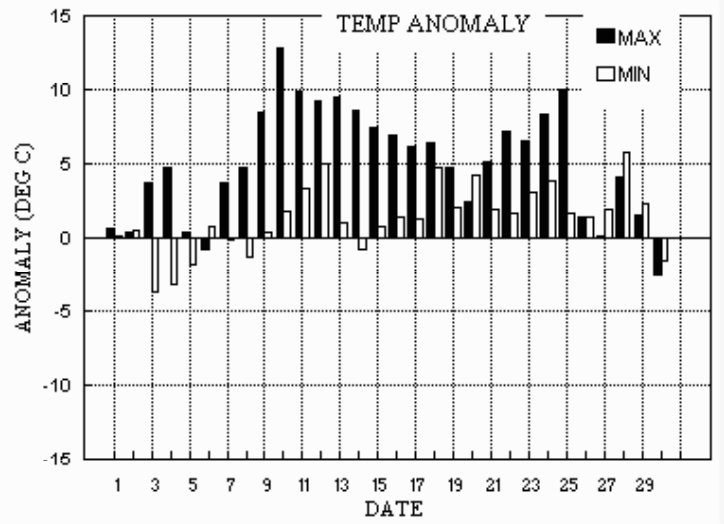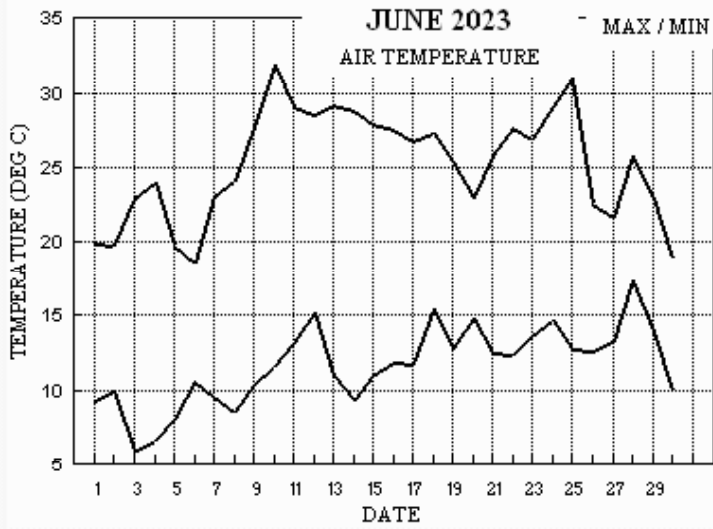
Month: JUNE 2023

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	19.9	9.3	0.0	9.7	16.8	14.8	7.4	0.0	1026.2	0	0	0	0	0	0	0	0	40	7.9	8.0	40	21	1838	35	10	18	0.0
2	19.7	9.9	0.0	9.8	16.8	14.9	9.4	0.0	1025.3	0	0	0	0	0	0	0	0	38	7.6	7.6	30	21	1424	40	9	14	0.0
3	23.0	5.8	0.0	1.3	16.8	15.0	11.7	0.0	1024.1	0	0	0	0	0	0	0	0	42	6.1	6.2	50	21	1742	50	8	17	0.0
4	23.9	6.6	0.0	1.8	16.9	15.1	15.5	0.0	1024.1	0	0	0	0	0	0	0	0	41	5.9	6.0	60	20	1221	50	8	08	0.0
5	19.7	8.0	0.0	4.0	17.1	15.2	7.2	0.0	1025.4	0	0	0	0	0	0	0	0	38	6.8	6.9	30	18	1610	30	8	17	0.0
6	18.6	10.6	0.0	8.1	17.0	15.3	2.5	0.0	1024.0	0	0	0	0	0	0	0	0	44	6.9	7.0	50	18	1342	45	9	10	0.0
7	23.1	9.6	0.0	5.9	16.8	15.4	10.3	0.0	1023.0	0	0	0	0	0	0	0	0	49	6.5	6.6	50	19	1337	30	8	10	0.0
8	24.1	8.6	0.0	5.2	17.2	15.5	12.5	0.0	1019.6	0	0	0	0	0	0	0	0	54	7.3	7.3	60	20	1209	70	9	15	0.0
9	27.7	10.3	0.0	7.4	17.7	15.6	12.1	0.0	1014.5	0	0	0	0	0	0	0	0	61	7.3	7.5	70	24	0000	55	10	11	0.0
10	31.9	11.6	0.0	8.2	18.3	15.7	10.6	0.0	1013.3	0	0	0	0	0	0	0	0	80	3.8	4.7	110	18	1300	115	7	12	0.0
11	29.0	13.1	19.5	9.5	18.6	15.9	6.2	0.0	1014.0	0	0	0	0	1	0	1	0	273	1.7	2.7	80	23	1627	190	7	16	0.3
12	28.6	15.1	0.0	12.7	18.7	16.1	5.5	0.0	1014.4	0	0	0	0	1	0	0	0	120	1.0	2.4	70	22	1635	200	6	15	0.0
13	29.2	11.0	0.0	6.9	19.0	16.3	15.6	0.0	1013.7	0	0	0	0	0	0	0	0	54	4.5	4.9	70	23	1528	75	10	14	0.0
14	28.8	9.3	0.0	4.1	19.2	16.5	15.3	0.0	1017.2	0	0	0	0	0	0	0	0	51	3.4	4.1	80	17	0000	60	7	11	0.0
15	27.9	11.0	0.0	4.6	19.3	16.7	15.1	0.0	1020.4	0	0	0	0	0	0	0	0	63	3.1	3.3	50	13	1147	50	6	14	0.0
16	27.5	11.8	0.0	7.4	19.5	16.8	14.0	0.0	1020.1	0	0	0	0	0	0	0	0	67	3.3	3.4	120	16	1515	40	5	12	0.0
17	26.8	11.7	tr	7.6	19.6	17.0	3.4	0.0	1014.7	0	0	0	0	0	0	0	0	71	3.0	3.3	50	12	1247	90	5	18	0.1
18	27.2	15.4	tr	13.4	19.8	17.2	2.1	0.0	1008.9	0	0	0	0	0	0	0	0	171	2.7	4.2	190	18	1242	190	8	12	0.2
19	25.4	12.7	6.5	8.8	19.5	17.3	11.1	0.0	1010.8	0	0	0	0	0	0	0	0	207	5.1	5.2	210	19	0849	200	9	13	1.9
20	23.0	14.8	0.0	11.7	19.6	17.4	2.8	0.0	1005.9	0	0	0	0	1	0	0	0	196	2.4	4.7	110	21	0543	200	8	11	0.0
21	25.7	12.5	0.0	8.7	19.3	17.4	10.8	0.0	1016.3	0	0	0	0	0	0	0	0	222	5.1	5.2	190	18	1329	220	8	14	0.0
22	27.6	12.3	4.8	8.5	19.6	17.5	11.8	0.0	1018.4	0	0	0	0	0	0	0	0	321	1.9	2.9	40	18	1907	30	6	19	0.9
23	26.9	13.7	0.0	10.8	19.8	17.5	13.3	0.0	1024.0	0	0	0	0	0	0	0	0	239	4.5	4.7	220	19	1618	235	9	15	0.0
24	29.0	14.6	0.0	11.4	20.1	17.6	7.8	0.0	1024.3	0	0	0	0	0	0	0	0	226	3.6	4.3	170	17	1832	240	7	10	0.0
25	31.0	12.8	tr	9.5	20.3	17.8	13.3	0.0	1013.8	0	0	0	0	0	0	0	0	225	5.2	7.6	185	28	1511	204	13	14	0.0
26	22.5	12.6	0.0	8.4	20.1	17.9	6.5	0.0	1020.0	0	0	0	0	0	0	0	0	271	7.4	7.5	248	24	1411	267	11	14	0.0
27	21.6	13.2	tr	9.3	19.6	18.0	2.5	0.0	1022.1	0	0	0	0	0	0	0	0	252	5.2	5.3	274	17	1043	263	8	10	0.1
28	25.7	17.3	5.9	16.3	19.5	17.9	0.4	0.0	1017.9	0	0	0	0	0	0	0	0	189	7.3	7.6	196	23	1229	199	12	14	5.8
29	22.9	13.9	0.0	14.5	19.8	17.9	5.5	0.0	1016.9	0	0	0	0	0	0	0	0	316	4.0	4.4	340	16	1202	350	6	11	0.0
30	18.8	10.0	0.7	5.4	19.7	17.9	0.8	0.0	1014.0	0	0	0	0	0	0	0	0	219	6.1	6.4	210	25	1329	210	10	13	1.2
Total			37.4				263.0	0.0																			10.5
Mean	25.2	11.6		8.4	18.7	16.6	8.77	0.0	1018.2									49	1.1	5.4							
Anom	+4.2	+0.9	73%	+0.6	+1.7	+1.7	135%		+1.4																		

Daily mean　　18.4　　　　　Pressure, abs highest =　　　1026.8 on 1
Anom　　　　　+2.6　　　　　Pressure, abs lowest =　　　1005.3 on 30

Number of days with:

Air frost = 0　　　　　　Ground frost = 0　　　　Nil sun = 0
Snow falling = 0　　　　Snow lying = 0　　　　　Thunder = 3
Hail=>5mm = 0　　　　Hail<5mm or ice = 1　　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 JUNE 2023

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cm	Ch	NChshs	NChshs	NChshs	Date	Remarks
1	78	8	05	08	15	11.7	7.8	77	6.5	1026.2	4	000	02	2	2	8	5	4	/	/	88615			1	Wind estimated
2	80	7	05	08	16	12.4	6.7	68	6.0	1025.3	0	002	01	2	2	7	5	5	/	/	87625			2	Wind est
3	81	2	03	07	14	14.8	8.7	67	6.9	1024.1	8	002	01	1	1	1	1	4	0	1	81818			3	1Ci75 Cu hum Ci unc Wind est
4	86	1	06	08	15	17.7	7.7	52	6.5	1024.1	1	002	02	0	0	0	0	9	0	1	81080			4	COTRA Sky turbid Wind est
5	81	8	04	07	15	12.4	7.7	73	6.4	1025.4	0	003	02	2	2	8	5	4	/	/	87617	88620		5	Wind est
6	84	8	04	08	16	13.0	8.5	74	6.8	1024.0	2	002	02	2	2	8	5	4	/	/	87618	88623		6	Wind est
7	68	7	05	06	14	13.0	8.7	75	6.9	1023.0	1	005	01	2	2	7	5	4	/	/	87615			7	Wind est
8	75	1	05	07	14	15.5	9.6	68	7.4	1019.6	8	007	01	1	1	1	5	4	0	0	81618			8	Wind est
9	68	1	04	08	15	18.2	12.4	69	8.9	1014.5	8	008	01	1	1	0	0	9	0	2	81075			9	Wind est. Ci to S
10	63	2	06	05	09	21.5	14.4	64	10.2	1013.3	4	000	00	0	0	0	0	9	0	1	82080			10	COTRA Ci unc/fib Wind est
11	64	6	22	02	04	22.1	13.7	59	9.7	1014.0	4	000	14	1	1	6	0	9	8	1	83358	84361		11	/Ci75 Ac cas jpSW Wind est
12	58	6	27	01	04	22.3	18.5	79	13.2	1014.4	7	002	05	2	2	1	1	5	3	1	81820	83362	85080	12	COTRA Cu fra Ac str U/a cont Wind est
13	63	1	02	06	11	21.8	13.9	61	9.9	1013.7	7	008	02	0	0	0	0	9	0	1	81080			13	Wind est
14	82	0	02	04	11	21.3	13.5	61	9.5	1017.2	7	002	02	0	0	0	0	9	0	0				14	Wind est
15	81	5	05	04	11	22.0	13.9	60	9.8	1020.4	0	002	02	2	2	0	0	9	0	1	85080			15	COTRA Wind est
16	82	1	06	05	10	22.8	11.2	48	8.2	1020.1	0	000	02	0	0	0	0	9	0	1	81078			16	Ci unc Sky turbid Wind est
17	75	8	03	04	08	19.0	10.6	58	7.9	1014.7	8	007	15	2	2	2	5	7	7	/	82656	85360	88468	17	Sc cas jpNW vis 45k ex p Wind est
18	61	7	11	03	08	22.5	16.5	69	11.7	1008.9	7	013	01	2	2	1	5	6	3	8	81645	85366	87275	18	COTRA Sky turbid Wind est
19	82	5	21	09	18	20.1	13.3	65	9.5	1010.8	1	002	03	2	2	5	2	5	0	1	85825			19	1Ci75 Cu med Wind est
20	57	7	13	07	12	20.3	18.2	88	13.1	1005.9	7	005	05	6	2	4	8	3	3	/	83807	87362		20	2Sc15 Cu fra wind est
21	84	5	25	06	13	19.5	13.7	69	9.7	1016.3	1	012	03	2	2	5	2	4	0	2	85818			21	1Ci75 Cu med Wind est
22	80	2	33	04	08	21.8	14.9	65	10.5	1018.4	7	006	03	1	1	1	2	5	0	1	81825			22	2Ci78 Cu med COTRA Wind est
23	81	7	27	04	07	20.1	14.9	72	10.4	1024.0	0	006	03	2	2	1	1	4	8	8	81815	83367	87272	23	1Ac63 COTRA Cu fra Ac cas Parhelia Wind est
24	81	6	26	06	13	22.7	16.9	70	11.8	1024.3	8	003	03	1	1	6	8	5	0	0	82822	85640		24	Absent vv&cld est
25	84	2	19	07	17	26.2	15.3	51	10.7	1013.8	7	020	02	0	0	0	0	9	0	9	82173			25	Absent vv&cld est
26	86	7	29	10	19	19.6	9.5	52	7.3	1020.0	1	011	03	2	2	3	2	6	0	2	83835	86078		26	2Ci70 Cu med Ci spi
27	82	7	27	06	14	19.0	12.3	65	8.8	1022.1	0	001	03	2	2	4	2	5	7	1	84826	83360	86366	27	/Ci75 Cu med
28	63	8	26	07	14	19.4	16.4	83	11.5	1017.9	0	003	20	5	2	8	5	4	/	/	87610	88615		28	
29	82	7	34	11	17	15.5	13.7	89	9.7	1016.9	1	007	01	6	2	7	5	3	3	/	85709	87612		29	/Ac58
30	82	8	21	08	16	17.1	11.4	69	8.3	1014.0	7	010	03	2	2	5	8	5	7	/	81822	85656	88359	30	Cu hum Wind est

Mean vis = 31.3 km

Mean cloud = 5.0 63%

Mean wind speed = 6.2 kn

Mean gust = 13 kn

Mean TT = 18.8 °C

Mean TdTd = 12.5 °C

Mean RH = 67.3 %

Mean r = 9.1 g/kg

Mean PPP = 1018.2 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 JUNE 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	75	1	03	09	17	19.5	10.0	54	7.5	1024.1	8	016	01	1	1	1	1	6	0	0	81835			1	Cu fra Wind estimated
2	81	1	03	10	20	19.2	8.2	49	6.7	1023.4	7	009	02	0	0	1	5	6	0	0	81640			2	Wind est
3	81	4	04	08	18	22.4	11.8	51	8.5	1022.1	7	013	02	1	1	4	4	6	0	1	82842	83650		3	1Ci73 Cu hum Wind est
4	86	0	04	07	17	23.5	8.8	39	6.9	1022.9	7	008	02	0	0	0	0	9	0	0				4	Wind est
5	82	2	03	07	17	19.1	9.6	54	7.3	1023.2	7	016	02	1	1	2	5	6	0	0	82635			5	Wind est
6	81	5	03	07	16	17.4	9.6	60	7.3	1022.8	7	009	01	2	2	5	5	5	0	0	85628			6	Wind est
7	75	0	07	08	15	21.9	11.9	53	8.6	1020.1	7	016	02	0	0	0	0	9	0	0				7	Wind est
8	80	0	06	08	16	24.0	11.7	46	8.5	1016.0	7	019	02	0	0	0	0	9	0	0				8	Wind est
9	75	1	07	09	19	27.3	14.3	45	10.1	1011.6	7	012	03	0	0	1	1	6	4	2	81848			9	1Ac69 1Ci75 Cu hum Ac len Ci spi Wind est
10	68	4	12	07	16	30.3	12.2	33	8.8	1011.1	6	011	15	1	1	3	2	8	7	1	83857			10	1Ac62 2Ci80 COTRA Cu con jpNW Wind est
11	65	7	28	06	12	28.2	18.6	56	13.3	1012.6	8	014	15	1	1	2	9	7	6	1	82956	86080		11	1Ac60 Cb NE-S. jpE Wind est
12	65	6	19	07	13	28.4	17.0	50	12.0	1013.2	8	009	15	1	1	1	2	6	7	3	81840			12	COTRA 2Ac62 2As65 1Ci75 /Ci80 Cu con jpN Wind est
13	72	1	08	09	19	28.0	10.7	34	8.0	1013.0	5	002	03	0	0	1	1	7	8	0	81856			13	1Ac59 Cu hum Ac cas Wind est
14	72	2	07	05	11	28.7	9.9	31	7.5	1016.2	6	004	03	0	0	2	2	8	0	0	82857			14	Cu hum/med NW Wind est
15	83	2	08	07	11	26.0	9.4	35	7.2	1019.1	7	008	02	0	0	2	2	6	6	1	82856			15	1Ac58 1Ci80 COTRA Cu med Wind est
16	84	2	04	04	10	27.3	10.5	35	7.8	1017.4	7	017	02	0	0	2	4	8	0	1	82857			16	1Sc57 1Ci80 Cu hum Sky turbid Wind est
17	72	8	12	04	09	25.9	11.6	41	8.5	1012.1	7	014	02	2	2	1	8	7	7	7	81850	83365	88270	17	COTRA Cu hum Halo 22° part+U/a cont Wind est
18	82	8	19	05	13	22.9	13.9	57	9.9	1007.1	8	006	03	2	2	8	0	9	7	/	82359	85362	88465	18	Wind est
19	86	3	20	09	18	24.8	12.1	45	8.8	1010.1	8	004	02	1	1	2	2	6	4	1	82840			19	2Ac69 1Ci73 Cu med Ac vir Wind est
20	86	7	25	07	16	20.5	14.6	69	10.4	1008.0	2	019	01	2	2	7	8	5	/	/	83822	87640		20	Cu med Wind est
21	83	3	22	09	16	24.1	13.0	50	9.3	1016.6	2	002	02	1	1	3	8	6	0	1	83838			21	1Sc50 1Ci80 Cu con Wind est
22	86	2	31	04	10	25.6	12.4	44	8.9	1017.6	6	005	02	0	0	2	2	7	0	0	82850			22	Cu con Sky W turbid Cb distant N (125km) Wind est
23	88	3	23	08	18	26.7	13.4	44	9.5	1023.3	7	006	02	1	1	2	2	7	0	1	82850	83072		23	Absent vv&cld est
24	84	6	21	04	12	27.8	15.5	47	10.8	1021.2	7	017	01	2	2	6	8	6	0	0	83848	85656		24	Absent vv&cld est
25	82	2	21	13	25	28.6	11.6	35	8.5	1011.4	7	007	03	0	0	3	8	7	0	0	81850			25	2Sc56 Absent vv&cld est
26	88	7	27	10	24	21.5	7.3	40	6.3	1020.8	5	001	01	2	2	2	8	7	4	8	81850	87275		26	2Sc56 1Ac68 COTRA Cu med Halo 22° faint
27	82	8	25	07	16	21.0	11.9	56	8.6	1020.0	7	013	03	2	2	8	5	6	/	/	87632	88640		27	
28	65	8	23	08	15	23.7	15.5	60	10.7	1016.1	6	012	03	2	2	8	8	6	/	/	81832	87650		28	2Sc40 /Sc56 Cu med
29	89	5	35	05	14	22.8	9.9	44	7.5	1016.4	7	004	02	2	2	4	8	6	6	0	82848	83656		29	2Ac58 Cu med
30	60	8	21	10	21	17.8	14.1	79	10.0	1009.9	7	021	15	6	2	8	5	4	/	/	87615	88620		30	Wind est jp NW

Mean vis = 38.5 km

Mean cloud = 3.9 48%

Mean wind speed = 7.4 kn

Mean gust = 16 kn

Mean TT = 24.2 °C

Mean TdTd = 12.0 °C

Mean RH = 47.9 %

Mean r = 8.8 g/kg

Mean PPP = 1016.6 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

Wokingham
Sunshine
Hourly
analysis

2023

Hour	01-Jun	02-Jun	03-Jun	04-Jun	05-Jun	06-Jun	07-Jun	08-Jun	09-Jun	10-Jun	11-Jun	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.47	0.48	0.00	0.00	0.00	0.00	0.00	0.47	0.47	0.28	0.46	0.46	0.47	0.45
5	0.00	0.00	0.55	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.23	1.00	1.00	1.00	1.00
6	0.00	0.00	0.02	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.11	1.00	1.00	1.00	1.00
7	0.00	0.00	0.38	1.00	0.00	0.00	0.00	0.41	0.19	1.00	1.00	0.69	1.00	1.00	1.00	1.00
8	0.00	0.00	0.99	1.00	0.00	0.00	0.00	1.00	0.93	1.00	0.21	0.80	1.00	1.00	1.00	1.00
9	0.00	0.01	1.00	1.00	0.00	0.00	0.30	1.00	1.00	1.00	0.33	0.93	1.00	1.00	1.00	1.00
10	0.00	0.45	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.27	1.00	1.00	1.00	1.00
11	0.17	0.97	0.98	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.37	1.00	1.00	1.00	1.00
12	0.49	1.00	0.82	1.00	0.38	0.00	1.00	1.00	1.00	1.00	0.01	0.00	1.00	1.00	0.76	0.97
13	0.99	1.00	0.58	1.00	0.85	0.19	1.00	1.00	1.00	0.55	0.40	0.05	1.00	0.91	0.97	1.00
14	1.00	1.00	0.46	1.00	0.99	0.42	1.00	1.00	1.00	0.50	1.00	0.55	1.00	1.00	0.84	0.85
15	1.00	1.00	0.51	1.00	1.00	0.65	1.00	1.00	1.00	0.64	0.80	0.75	1.00	1.00	0.95	0.65
16	1.00	1.00	0.98	1.00	1.00	0.57	1.00	1.00	1.00	0.17	0.00	0.42	1.00	1.00	1.00	0.81
17	1.00	1.00	1.00	1.00	1.00	0.67	1.00	1.00	1.00	0.31	0.00	0.00	1.00	1.00	1.00	1.00
18	1.00	1.00	1.00	1.00	1.00	0.01	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00
19	0.76	0.92	0.93	1.00	0.93	0.00	0.95	1.00	0.98	0.00	0.00	0.00	1.00	0.98	1.00	0.29
20	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.12	0.00	0.09	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	7.41	9.35	11.66	15.52	7.16	2.50	10.26	12.45	12.10	10.62	6.22	5.45	15.58	15.34	15.07	14.01

Hour	17-Jun	18-Jun	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	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	0.14	0.00	0.00	0.00	0.46	0.09	0.23	0.00	0.44	0.45	0.00	0.00	0.00	0.07	0.20
5	0.07	0.00	0.04	0.00	0.07	0.38	0.55	0.00	1.00	1.00	0.36	0.00	0.00	0.44	0.39
6	0.11	0.03	0.38	0.00	0.58	0.85	0.61	0.00	1.00	1.00	0.13	0.00	0.00	0.19	0.40
7	0.00	0.32	0.83	0.00	0.41	1.00	0.42	0.72	1.00	0.81	0.77	0.00	0.00	0.12	0.50
8	0.00	0.36	0.22	0.00	0.64	1.00	0.49	0.78	1.00	0.30	0.62	0.00	0.01	0.00	0.51
9	0.17	0.87	0.82	0.52	0.55	0.92	0.94	0.90	0.99	0.13	0.52	0.00	0.26	0.01	0.61
10	0.35	0.42	0.55	0.42	0.85	0.73	1.00	0.39	0.71	0.06	0.08	0.00	0.76	0.00	0.57
11	0.99	0.11	0.78	0.12	0.54	0.86	0.99	0.10	1.00	0.57	0.02	0.00	0.60	0.00	0.61
12	0.72	0.00	0.79	0.00	0.43	0.96	1.00	0.00	1.00	0.29	0.00	0.09	0.78	0.00	0.58
13	0.30	0.00	0.79	0.00	0.67	0.67	1.00	0.00	0.89	0.01	0.00	0.22	0.17	0.00	0.57
14	0.04	0.00	0.90	0.00	0.81	0.64	0.97	0.35	1.00	0.00	0.00	0.03	0.55	0.00	0.63
15	0.09	0.00	0.89	0.53	0.94	0.68	1.00	0.88	0.97	0.61	0.00	0.00	0.29	0.00	0.69
16	0.46	0.00	0.98	0.46	0.81	0.97	1.00	0.71	1.00	0.74	0.00	0.00	0.62	0.00	0.69
17	0.00	0.00	1.00	0.48	0.95	1.00	1.00	0.95	0.22	0.53	0.00	0.01	0.61	0.00	0.66
18	0.00	0.00	1.00	0.29	1.00	1.00	1.00	1.00	0.18	0.00	0.00	0.00	0.64	0.00	0.60
19	0.00	0.00	1.00	0.00	1.00	0.01	0.95	0.97	0.68	0.00	0.00	0.00	0.18	0.00	0.52
20	0.00	0.00	0.18	0.00	0.12	0.00	0.19	0.09	0.26	0.00	0.00	0.00	0.00	0.00	0.04
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	3.43	2.11	11.13	2.83	10.84	11.75	13.35	7.84	13.34	6.53	2.51	0.35	5.47	0.82	263.06

June 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	13.15	19.9	1539	9.3	442	74.0	87.4	420	53.2	1606	8.4	6.8	8.4	1442	5.9	2358	1025.38	1026.8	13	1023.0	1744	0
	2	13.60	19.7	1412	9.3	2358	65.2	84.2	2359	45.4	1601	6.9	6.1	7.5	1407	5.4	656	1024.40	1025.7	809	1022.4	1712	0
	3	14.69	23.0	1502	5.8	355	70.0	96.2	403	43.0	1631	8.7	7.0	8.8	1254	5.3	355	1023.31	1024.6	123	1021.2	1753	0
	4	15.60	23.9	1423	6.6	425	64.4	96.0	428	36.1	1521	8.1	6.6	8.1	1424	5.7	39	1023.77	1025.5	2359	1022.0	1714	0
	5	13.07	19.7	1538	8.0	154	72.6	91.9	158	51.2	1539	8.0	6.6	8.1	1537	5.8	331	1024.36	1025.7	19	1022.3	1706	0
	6	13.12	18.6	1344	10.1	2358	71.2	80.3	2359	53.2	1345	7.9	6.6	7.7	1324	5.9	137	1023.42	1024.4	16	1021.8	1708	0
	7	15.15	23.1	1622	9.6	42	71.2	86.8	2227	48.6	1551	9.7	7.4	9.8	1430	6.0	39	1021.39	1023.2	46	1018.9	1719	0
	8	16.05	24.1	1436	8.6	126	66.5	90.2	131	37.6	1625	9.3	7.2	9.2	1432	6.1	126	1017.90	1020.9	37	1014.5	1733	0
	9	18.65	27.7	1537	10.3	215	68.3	89.7	219	39.9	1538	12.1	8.8	11.6	1203	6.7	7	1013.55	1015.9	0	1011.0	1603	0
	10	21.11	31.9	1256	11.6	404	64.5	95.6	450	28.2	1447	13.1	9.3	12.0	1122	7.7	1533	1012.82	1014.5	2138	1010.9	1546	0
	11	19.42	29.0	1531	13.1	355	78.8	98.5	2331	49.9	1537	15.2	10.8	13.5	1506	8.7	354	1013.94	1015.0	2137	1012.3	1540	16.9
	12	20.28	28.6	1610	15.1	359	81.3	99.3	455	47.1	1628	16.5	11.7	14.8	1110	9.7	1641	1014.18	1015.0	2330	1012.9	1519	0
	13	19.97	29.2	1334	11.0	448	63.4	98.9	422	30.3	1645	11.6	8.6	12.3	1142	6.4	1645	1014.13	1016.9	2347	1012.5	1252	0
	14	19.64	28.8	1452	9.3	421	56.2	83.6	443	27.7	1442	9.8	7.6	10.6	1203	5.3	234	1017.25	1020.0	2347	1015.8	1635	0
	15	20.15	27.9	1443	11.0	347	59.6	93.6	449	30.7	1601	11.0	8.1	10.5	1032	6.5	1500	1019.81	1020.9	2344	1018.3	1700	0
	16	20.20	27.5	1503	11.8	419	56.8	91.7	448	27.0	1504	10.3	7.8	9.5	1216	6.0	1504	1018.71	1021.0	19	1016.2	1915	0
	17	19.71	26.8	1348	11.7	353	63.8	87.5	353	35.1	1313	12.1	8.9	11.7	2145	6.4	1	1013.57	1017.4	0	1010.9	1728	0
	18	19.58	27.2	1214	15.4	344	75.9	92.9	2358	44.8	1213	14.9	10.5	13.3	1031	9.4	1426	1008.65	1011.3	4	1006.9	1748	0
	19	19.47	25.4	1454	12.7	306	69.4	97.0	311	40.2	1519	13.0	9.3	10.8	1051	7.9	1514	1010.27	1011.3	2116	1008.6	1	0
	20	18.76	23.0	1615	14.8	120	80.6	97.6	643	57.3	1755	15.1	10.7	13.4	907	9.4	31	1007.94	1012.2	2359	1005.3	1023	0
	21	19.37	25.7	1513	12.5	358	72.0	97.5	421	46.3	1514	13.7	9.7	10.9	1415	8.6	1136	1016.03	1019.1	2348	1012.0	26	0
	22	20.08	27.7	1532	12.2	411	70.0	96.6	2350	32.0	1539	13.4	9.5	12.1	2212	7.3	1447	1018.94	1021.8	2209	1017.5	1541	4.7
	23	20.01	26.9	1456	13.7	346	72.0	99.0	140	38.6	1517	14.0	9.8	11.5	845	8.0	1243	1023.48	1024.7	2309	1021.5	1	0.1
	24	21.61	29.0	1618	14.6	335	69.1	95.6	338	40.9	1610	15.2	10.6	12.6	955	9.4	2316	1022.31	1024.8	710	1018.4	2355	0
	25	21.50	31.0	1308	12.8	359	63.4	96.2	442	34.8	1458	13.4	9.5	11.9	1646	7.4	2027	1014.29	1018.6	0	1011.0	1649	0
	26	17.76	22.5	1526	12.6	417	61.0	92.1	332	37.0	1527	9.4	7.3	8.7	611	5.9	1454	1020.09	1022.8	2351	1016.4	2	0
	27	17.91	21.6	1108	13.2	400	70.6	87.2	455	51.5	1235	12.3	8.8	10.7	2329	7.1	3	1020.88	1022.7	53	1018.8	1849	0
	28	20.12	25.7	1356	17.3	314	78.5	90.9	302	55.8	1358	16.1	11.3	12.4	1328	10.5	1423	1016.91	1019.0	4	1015.1	1728	0
	29	18.00	22.9	1433	13.9	602	70.9	97.1	322	40.3	1433	12.0	8.7	11.7	42	6.1	2353	1016.16	1017.1	933	1015.0	140	5.9
	30	15.63	18.8	930	10.0	411	80.2	94.0	1932	58.9	1	12.1	9.0	11.2	1927	6.1	20	1011.54	1016.7	19	1005.3	2358	0.3

		T mn	Tx	Time			RHmn	RH x		RH n		Tdmn	r mn	r x		r n		p mn	p x		p n		R tot
Total																							27.9
Mean		18.11	25.21		11.58		69.4	92.84		42.08		11.79	8.69	10.84		7.09		1017.65	1019.84		1015.28		
Max		21.61	31.85		17.27		81.3	99.30		58.91		16.54	11.67	14.82		10.46		1025.38	1026.76		1022.97		
Min		13.07	18.57		5.79		56.2	80.30		27.02		6.93	6.11	7.51		5.27		1007.94	1011.26		1005.29		

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.