

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

DECEMBER 2017

Temperature (°C)	Anomaly		Rank in the past 136 years				
Mean maximum	8.4	+0.4	59 th highest				
Mean minimum	2.2	+0.1	59 th highest				
Daily mean	5.3	+0.3	56 th highest				
Highest maximum	13.9	on 30 th	Lowest maximum	2.1	on 10 th		
Highest minimum	9.2	on 7 th	Lowest minimum	-4.1	on 12 th		
Mean grass minimum	-0.4	+0.2	Lowest grass minimum	-9.3	on 12 th		
Mean earth @30 cm	6.5	-0.1	Earth @100 cm	9.1			
Frost duration (hrs)	72.6		Rain duration (hrs)	72.6			
Rainfall total (mm)	82.6	132 %	28 th highest				
Highest daily fall	15.6	on 9 th					
Number of: Dry days (<0.2mm)	11	Wet days (>0.9mm)	14	days ≥5mm	7		
Sunshine total (hrs)	64.5	Daily mean	2.08	117 %	Sunniest day	7.3 on 18 th & 28 th	
N° days with: Air frost	12	Ground frost	18	Snow falling	6	Snow lying	1
Thunder	0	Hail ≥5mm	0	Small hail/ice	1	Fog @09	1
Pressure MSL: Mean @09 GMT, mbar	1013.9	-1.8	Highest	1037.9	on 22 nd	Lowest	971.9 on 10 th
Relative humidity: Mean (%)	86.5	Lowest	54 on 1 st	Water vapour (g/kg), mean at 09 and 15 GMT			4.9, 5.1
Overall mean wind speed (mph)	7.7	Windiest day	13.7 on 31 st	Max gust	45	on 27 th	
Wind direction (days)	N 2	NE 1	E 0	SE 0	S 1	SW 20	W 5
Least windy day (mph)	3.1	on 18 th	Calm; less than 0.5 mph (minutes)			112	

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

Notes:

Wet with Near Average Temperature and Above Average Sunshine

Temperature: The overall mean this December is slightly above average, but it was a month with quite strong contrasts, cold spells being flanked by mild episodes. Compared with recent years it is equal coldest with 2014 since 2010, but it is worth noting that our record mildest December was in 2015, when the mean temperature was 5.6° above this month's. The highest max is 0.8° above the median, and the lowest max is 0.5° above its median. The highest min is close to the median while the lowest min is 1.1° above its median. Earth temperature at 30 cm depth is lowest since 2012, but at 1m depth is the same as last December's. Both the number of air and of ground frosts is 2 above average, but the duration of air frost is 21.1 hours below average. Daily anomalies for max exceeded +4° on the 7th, 21st, 29th and 30th, and was greater than -4° on the 8th to 11th, and 27th, with extreme values of +6.3° on the 30th and -6.1° on the 10th. Anomalies for daily min exceeded +4° on the 6th, 7th, 21st to 25th and 31st, and was greater than -4° on the 12th, 16th, 17th, 28th and 29th, with extreme values of +7.1° on the 7th and -5.7° on the 12th. **Rainfall:** This has been a wet December with 32 % extra rain compared with the climatological average, making it the wettest December since 2013, quite a contrast to last December which was the 6th driest since before 1882. Compared with the long-term median, this December had an extra 22.2 mm of rain. Snow was recorded on 6 days, the most for the month since 2010, but was mainly accompanied by rain. However, there was enough for a 1 cm covering on the morning of the 10th, though this had thawed to just 10 % cover by the following morning. The days with snow or sleet were the 1st, 2nd, 8th, 10th, 11th, and 27th. Heavy rain showers fell on the 13th and 31st and a violent one on the 7th gave a rainfall rate of 74 mm/hr at 1154 hours. Ice pellets fell on the 31st. Rainfall accumulation compared with normal was 12 mm in deficit by the 8th, but wet days then changed this to a surplus of 13 mm by the 13th. Mostly dry conditions followed, leading to a deficit of 3 mm by the 24th, but a wet end to the month led to a surplus of 20 mm by the 31st. **Sunshine:** Sunshine this December has been rather variable, with 2 sunless periods, the second lasting 6 days up to the 25th. Overall the daily mean is above average, due to a scattering of sunny days, with the 1st, 18th and 28th having over 70 % of the maximum, and 7 other days having over 50 %. Compared with recent years, this December was sunnier than 2015 and 2010, but not as sunny as all the others since 2007. The accumulation of daily sunshine compared with normal shows there was a deficit of 5 hours by the 7th, becoming a surplus of 17 hours by the 19th, decreasing to 5 hours by the 25th, but increasing to 10 hours by the 31st. Overall there were 19 days with <3 hours and 2 with =>6 hours. **Wind:** The mean speed is 0.3 mph above average, but the windiest day and highest gust are below average. The duration of calm is low, 446 minutes below normal. SW and W winds combined blew for 81% of the month. Daily directions were mainly SW'ly, but N'ly on the 1st and 11th, NE'ly on the 10th, and NW'ly on the 15th and 27th. Daily mean speed was mostly light until the 5th, then varied between light and fresh until the 14th, becoming mainly light until the 22nd, moderate on 23rd increasing strong on 25th, and apart from dropping light on the 28th were fresh or strong until the 31st. **Pressure:** MSL pressure fell to 971.9 mbar on the 10th, the lowest December value since 1989.

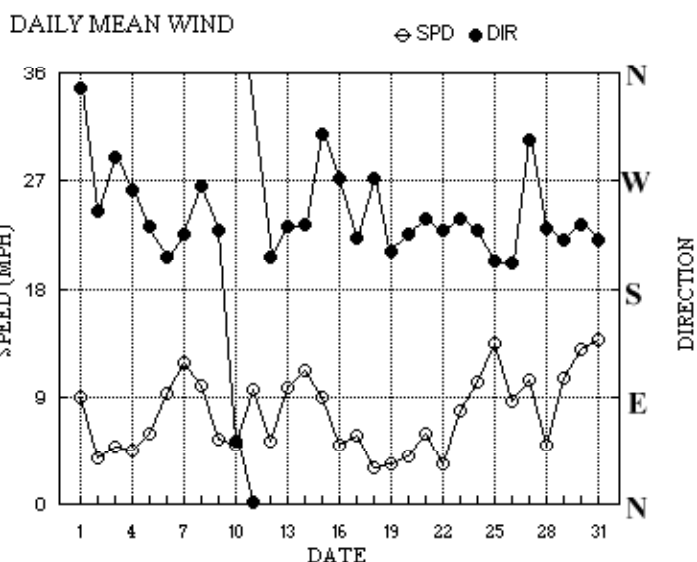
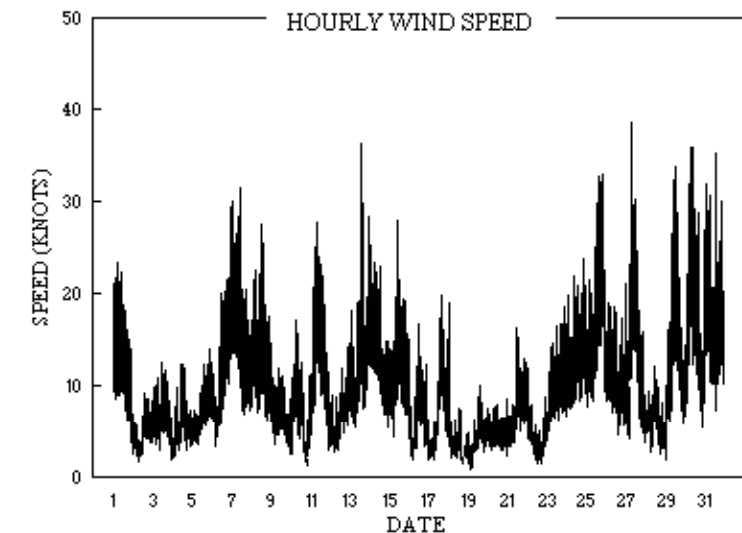
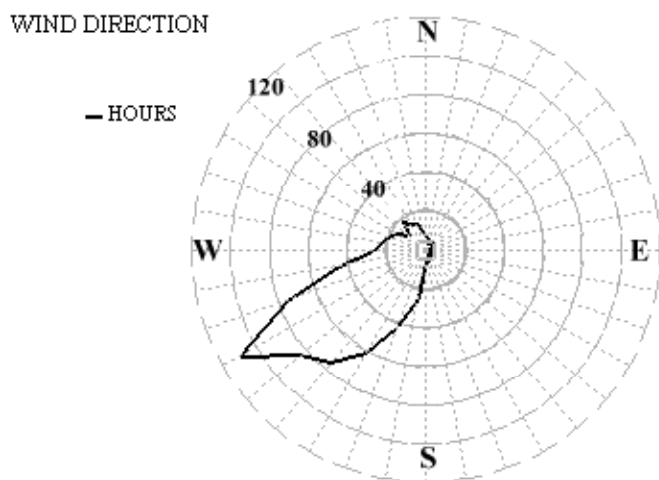
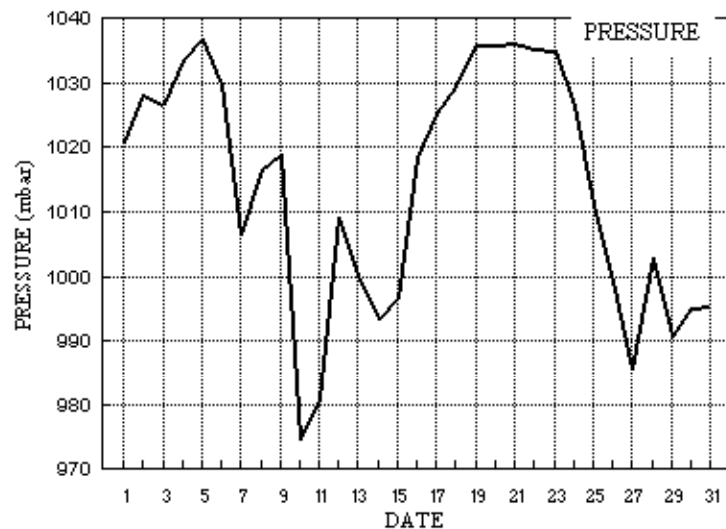
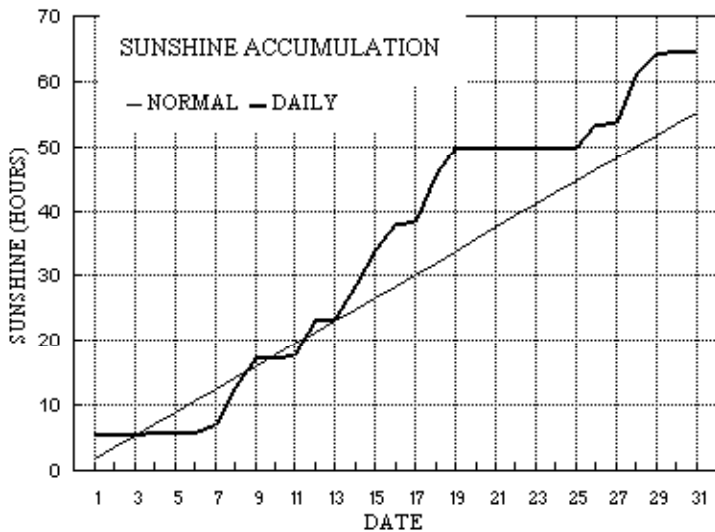
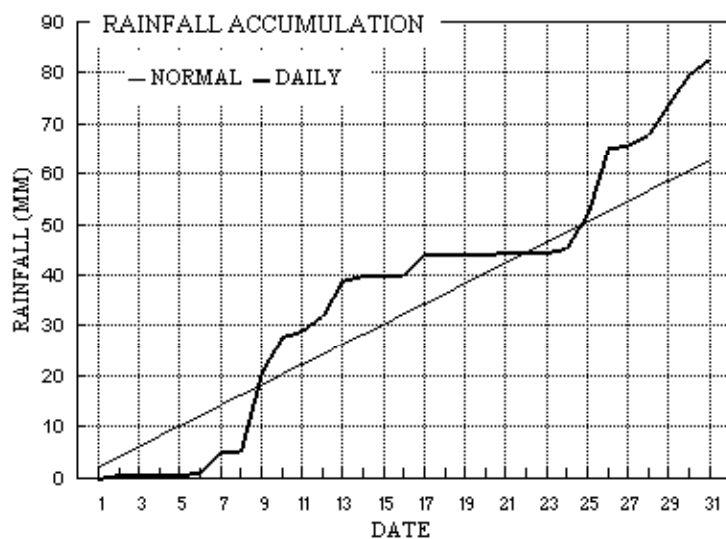
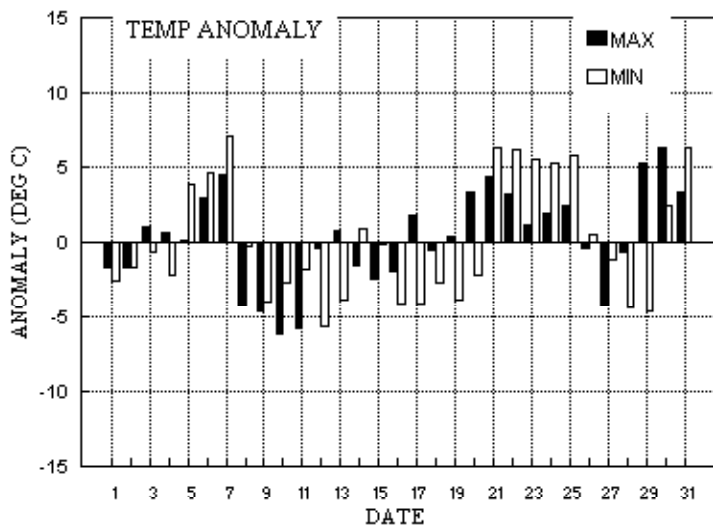
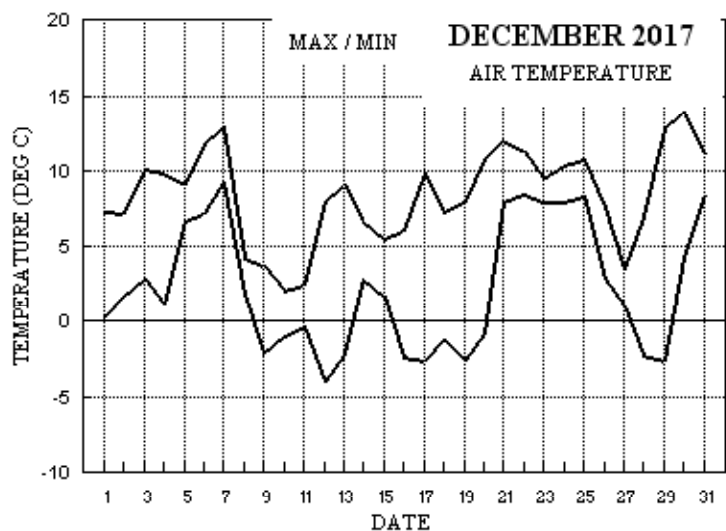
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 st to the 10 th				From the 11 th to the 20 th				From the 21 st to the 31 st			
-0.9°	+0.1°	139%	101%	-0.6°	-2.8°	79%	180%	+2.1°	+2.5°	173%	73%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

Wokingham climatological graphs for December 2017



Daily meteorological data.

Emmbrook, WOKINGHAM, Berkshire.

Month: DECEMBER 2017

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	7.3	0.3	tr	-0.3	7.0	10.7	5.7	0.0	1020.7	0	1	1	0	0	0	0	0	346	7.6	7.9	342	23	0522	343	10	05	0.0	
2	7.2	1.7	0.5	-2.1	6.9	10.5	0.0	0.0	1028.2	0	1	1	0	0	0	0	0	244	2.9	3.4	240	9	1456	228	5	14	1.5	
3	10.1	2.8	0.1	3.3	7.1	10.3	0.0	0.0	1026.8	0	0	0	0	0	0	0	0	290	4.0	4.3	300	13	1155	307	6	11	0.3	
4	9.9	1.2	tr	-3.8	7.5	10.1	0.3	0.0	1033.4	0	1	0	0	0	0	0	0	262	3.5	3.9	291	13	1120	290	6	11	0.0	
5	9.1	6.7	tr	5.7	7.7	10.1	0.0	0.0	1036.8	0	0	0	0	0	0	0	0	232	5.1	5.1	234	14	2033	233	7	20	0.0	
6	11.8	7.2	0.6	6.3	7.9	10.0	0.0	0.0	1029.6	0	0	0	0	0	0	0	0	207	7.9	8.0	199	30	2324	203	14	23	1.5	
7	12.9	9.2	4.0	8.5	8.2	10.0	1.3	0.0	1006.5	0	0	0	0	0	0	0	0	226	8.5	10.3	283	32	1154	201	14	02	2.4	
8	4.3	1.8	tr	-1.2	8.2	10.0	5.4	0.0	1016.6	0	1	1	0	0	0	0	0	266	8.3	8.6	282	28	1338	278	12	13	0.1	
9	3.7	-2.1	15.6	-8.3	7.3	10.0	4.9	9.7	1018.9	1	1	0	0	0	0	0	0	228	4.5	4.8	259	14	0005	243	7	10	6.7	
10	2.1	-1.0	7.0	-5.5	6.5	9.9	0.0	1.0	974.7	1	1	1	1	0	0	0	0	54	2.0	4.3	86	17	0657	79	8	06	8.3	
11	2.4	-0.3	1.3	-1.9	6.2	9.7	0.2	3.7	980.8	1	1	1	0	0	0	0	0	2	7.0	8.3	22	28	0847	21	13	08	3.8	
12	8.0	-4.1	3.1	-9.3	5.8	9.5	5.5	10.2	1009.0	1	1	0	0	0	0	0	0	206	4.1	4.6	172	14	2257	186	7	23	4.4	
13	9.1	-2.3	6.6	-0.6	5.4	9.3	0.1	0.0	1000.2	1	1	0	0	0	0	0	0	232	8.0	8.6	247	36	1456	256	14	22	2.6	
14	6.7	2.8	1.2	-0.5	5.7	9.1	5.4	0.0	993.2	0	1	0	0	0	0	0	0	234	9.7	9.8	254	26	0022	230	13	07	1.3	
15	5.5	1.7	tr	-2.1	5.5	8.9	5.1	0.0	996.6	0	1	0	0	0	0	0	0	308	6.1	7.8	321	28	1055	327	11	11	0.0	
16	6.0	-2.4	tr	-7.8	5.3	8.8	4.3	4.4	1018.3	1	1	0	0	0	0	0	0	271	4.1	4.4	284	17	1224	285	7	12	0.0	
17	9.8	-2.6	4.0	-7.4	5.0	8.6	0.3	9.0	1025.2	1	1	0	0	0	0	0	0	222	4.4	5.0	219	20	1607	227	10	16	3.4	
18	7.3	-1.2	0.0	-6.1	5.2	8.5	7.3	8.1	1029.4	1	1	0	0	0	0	0	0	271	1.5	2.7	347	19	0021	349	6	00	0.0	
19	8.0	-2.6	0.2	-6.5	4.8	8.3	4.0	9.7	1035.9	1	1	0	0	0	0	0	0	211	2.9	3.0	207	10	1459	213	5	14	1.2	
20	10.8	-0.8	tr	1.2	4.9	8.2	0.0	0.0	1035.9	1	0	0	0	0	0	1	0	226	3.4	3.5	252	9	2308	198	4	07	0.0	
21	12.0	8.0	0.2	3.3	5.8	8.1	0.0	0.0	1036.1	0	0	0	0	0	0	0	0	238	5.1	5.2	253	16	1142	248	8	11	1.3	
22	11.2	8.4	tr	4.9	6.7	8.1	0.0	0.0	1035.4	0	0	0	0	0	0	0	0	229	2.5	2.9	235	12	0031	227	6	00	0.0	
23	9.5	8.0	0.1	7.9	7.1	8.1	0.0	0.0	1035.1	0	0	0	0	0	0	0	0	238	6.7	6.8	254	19	2109	232	9	17	0.4	
24	10.3	8.0	0.7	7.8	7.5	8.2	0.0	0.0	1026.5	0	0	0	0	0	0	0	0	228	8.9	9.0	229	24	2025	230	11	14	1.8	
25	10.8	8.3	7.0	8.3	7.7	8.3	0.0	0.0	1011.2	0	0	0	0	0	0	0	0	203	11.3	11.7	183	33	1943	199	17	21	5.8	
26	7.6	2.8	13.1	-0.1	7.8	8.4	3.6	0.0	999.3	0	1	0	0	0	0	0	0	201	5.6	7.6	240	19	0451	218	10	11	8.7	
27	3.5	1.0	0.5	0.3	7.4	8.5	0.3	0.1	985.6	0	0	1	0	0	0	0	0	303	6.9	9.0	333	39	0750	332	14	08	1.4	
28	6.9	-2.3	2.1	-7.7	6.6	8.6	7.3	14.1	1002.8	1	1	0	0	0	0	0	0	231	4.2	4.4	252	12	1017	248	6	12	1.8	
29	12.8	-2.7	5.9	-7.8	5.6	8.5	3.2	2.6	990.7	1	1	0	0	0	0	0	0	220	7.3	9.1	250	34	1301	244	16	11	6.6	
30	13.9	4.3	5.9	0.6	5.7	8.4	0.3	0.0	995.1	0	0	0	0	0	0	0	0	233	10.0	11.2	253	36	0906	251	17	08	6.3	
31	11.0	8.4	2.9	8.0	6.6	8.2	0.0	0.0	995.5	0	0	0	0	0	1	0	0	221	11.7	11.9	258	35	1425	223	16	03	1.0	
Total			82.6				64.5	72.6																				72.6
Mean	8.4	2.2		-0.4	6.5	9.1	2.08	2.3	1013.9									240	4.6	6.7								
Anom	+0.4	+0.1	132%	+0.2	-0.1	-0.2	117%																					
Daily mean		5.3																										
Anom		+0.3																										

Number of days with:

Air frost = 12 Ground frost = 18 Nil sun = 12
 Snow falling = 6 Snow lying = 1 Thunder = 0
 Hail=>5mm = 0 Hail<5mm or ice = 1 Fog at 09GMT = 1

Abbreviations.

Max/min = highest and lowest air temperature at 1.2m in 24 hour period ending at 09 GMT
 Rain = total rainfall and melted snowfall in 24 hour period ending at 09 GMT, millimetres. (Tr = trace, <.05mm).
 Grass min = Lowest overnight temperature at grass tip level.
 Sun = hours of bright sunshine, measured electronically. Frost = Number of hours with air temp below 0 deg C.
 pp09 = Air pressure corrected to mean sea level at 0900 GMT, millibars.
 Af = Air frost. Gf = Ground frost. Sf = Snow falling. Sl = Snow lying at 09 GMT.
 Th = Thunder. Ha = Hail =>5mm. Ic = Hail <5mm or ice. Fg = Fog at 09 GMT.
 Vec mean = 24 hour mean wind vector, ddd = direction in degrees from true north, ff = speed in knots.
 Sp = 24 hour mean wind speed in knots.
 Max gust = Highest gust in 24 hours, gg = speed in knots, HHhh = Time, hours and minutes, GMT.
 High hr = Highest hourly mean wind, HH = hour commencing. Rain Hrs = Duration of rain, 24 hours to 09 GMT. Excludes snow/hail.
 30cm and 100 cm are earth temperatures at those depths, read at 09 GMT.
 Anom = Departure from 1981-2010 climatological average.
 All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for December 2017

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NChs	NChs	Date	Remarks
1	82	1	36	09	17	2.5	-0.4	81	3.6	1020.7	1	015	25	8	1	1	5	4	0	0	81715			1	1Sc35
2	68	7	23	02	04	2.8	-0.1	81	3.7	1028.2	2	007	02	7	2	6	5	6	7	1	81635	86640	87362	2	/Ci70
3	18	8	28	03	08	7.2	6.6	96	5.9	1026.8	3	011	51	5	2	8	7	2	/	/	83704	87705	88707	3	
4	80	7	26	03	06	6.7	4.5	86	5.1	1033.4	3	015	20	5	2	7	5	4	/	/	83612	87615		4	
5	84	8	23	04	07	7.2	3.8	79	4.9	1036.8	1	003	02	2	2	8	5	5	/	/	88625			5	
6	84	7	20	06	11	9.1	4.7	74	5.2	1029.6	8	011	02	2	2	7	5	6	/	/	82634	87638		6	
7	25	8	20	11	25	11.8	11.0	95	8.2	1006.5	6	026	58	6	5	7	7	2	2	/	83705	87707	88515	7	
8	80	3	27	08	17	2.0	-0.9	81	3.5	1016.6	3	029	15	1	1	3	8	4	6	0	81715			8	1Cu25 2Sc35 1Ac58 Cu med jpNW vv60k ex p Hoar slt
9	84	1	22	05	09	-0.8	-2.4	89	3.2	1018.9	8	001	03	0	0	1	5	7	0	5	81650			9	1Cs80 COTRA Cs edge SW Hoar slt Gnd sfc frzn
10	35	8	04	04	10	0.2	-0.1	98	3.9	974.7	6	083	68	7	6	7	7	2	2	/	87704	88510		10	sn ly 1cm 90%
11	62	8	02	13	28	2.0	1.4	96	4.3	980.8	3	016	61	7	6	7	5	4	2	/	83710	87615	88520	11	Sn ly <1cm 10% Thaw
12	65	1	19	03	06	-2.3	-3.1	94	3.0	1009.0	1	025	03	0	0	0	0	9	0	1	81080			12	COTRA Hoar mod. Gnd sfc frzn
13	62	8	22	08	15	6.3	5.1	92	5.5	1000.2	8	013	61	6	2	1	5	4	2	/	81710	88550		13	1Sc40
14	75	2	23	11	21	3.2	0.9	85	4.1	993.2	6	003	15	1	1	1	9	4	6	3	81912	81635		14	1Ac62 1Ci68 jpS vv50k ex p Hoar slt
15	68	6	34	08	20	2.5	1.0	90	4.1	996.6	3	056	01	6	2	4	6	4	7	8	84710	83365	85270	15	
16	80	1	26	03	08	0.4	-0.7	92	3.6	1018.3	2	023	03	0	0	1	0	9	3	1	81359			16	1Ci70 Hoar mod Gnd frzn
17	50	7	21	03	06	-0.1	-0.5	97	3.6	1025.2	3	001	10	1	1	7	0	9	7	1	82358	84362	85365	17	/Ci75 COTRA Hoar mod Gnd frzn
18	59	7	26	02	05	0.3	0.0	98	3.7	1029.4	2	028	10	1	1	0	0	9	0	1	87080			18	COTRA Hoar slt lcy patches
19	58	6	20	04	06	-0.9	-1.2	98	3.4	1035.9	3	009	10	2	2	2	5	7	0	1	82656	85080		19	1Ci75 COTRA Hoar thk. Gnd frzn
20	08	8	24	04	07	8.0	7.7	98	6.4	1035.9	3	012	50	5	4	8	6	1	/	/	88702			20	
21	30	8	23	05	08	10.5	10.0	97	7.5	1036.1	2	006	10	5	2	8	6	2	/	/	88703			21	
22	50	7	23	03	05	9.6	9.1	97	7.0	1035.4	2	007	20	5	2	7	6	2	/	/	87703			22	/Sc35
23	30	8	24	07	13	8.3	7.7	96	6.4	1035.1	5	002	51	5	2	8	6	2	/	/	86704	88705		23	
24	62	7	22	09	16	8.3	6.9	91	6.1	1026.5	8	012	02	2	2	7	6	3	3	/	87706			24	/Ac180
25	58	8	20	08	18	9.4	8.3	93	6.8	1011.2	7	018	21	6	5	8	5	3	/	/	83708	86615	88635	25	
26	82	6	22	06	13	3.3	1.0	85	4.1	999.3	2	007	03	1	1	2	5	6	0	4	81630	86072		26	2Sc35 COTRA
27	65	8	33	15	33	2.1	0.6	90	4.1	985.6	2	062	61	7	6	6	7	4	2	/	83712	88530		27	
28	88	2	20	03	06	-1.4	-2.0	96	3.3	1002.8	1	010	02	0	0	1	0	9	3	1	81368			28	2Ci75 COTRA Hoar mod
29	70	7	19	12	27	6.9	4.4	84	5.3	990.7	6	069	21	6	2	5	5	4	7	2	81712	83635	85362	29	2Sc25 /Ci72 jpSE
30	61	7	26	16	36	12.4	7.5	72	6.5	995.1	3	041	02	2	2	7	5	5	3	/	87625			30	/Ac66
31	82	8	21	11	22	10.3	8.6	89	7.0	995.5	1	006	21	6	2	3	5	4	7	/	81712	83656	88465	31	2Ac100

Mean vis = 20.6 km
 Mean cloud = 6.1 76%
 Mean wind speed = 6.7 kn
 Mean gust = 14 kn
 Mean TT = 4.8 °C
 Mean TdTd = 3.2 °C
 Mean RH = 90.0 %
 Mean r = 4.9 g/kg
 Mean PPP = 1013.9 mbar

See appendix 2 below for full code details

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

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for December 2017

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NChs	NChs	Date	Remarks	
1	81	7	32	08	18	5.5	0.9	72	4.0	1024.1	2	016	03	1	1	7	8	5	/	/	84822	83645	1	/Ci75	Cu hum	
2	61	8	23	05	09	5.0	3.7	91	4.8	1027.0	6	009	21	6	2	8	6	2	/	/	83705	88706	2			
3	70	7	31	05	11	9.8	7.4	85	6.3	1027.5	3	003	25	8	2	7	8	4	/	/	82813	83630	87640	3	Cu hum	jpN&SE vv40k ex p
4	83	7	29	04	12	9.2	6.3	82	5.8	1034.1	6	002	02	2	2	8	7	4	/	/	83815	87630	4		Cu med	
5	72	7	23	06	11	7.9	5.4	84	5.4	1035.1	6	011	03	2	2	7	8	4	/	/	82815	87625	5		Cu hum	
6	84	7	20	08	14	10.2	4.8	69	5.3	1025.2	8	028	02	6	2	7	8	5	/	/	81820	83638	87645	6		Cu hum
7	80	7	28	08	20	8.3	2.3	66	4.5	1009.2	1	024	03	6	1	1	1	5	7	8	81825	83365	87273	7		COTRA Cu fra
8	89	2	28	09	26	3.0	-2.1	69	3.2	1018.1	3	007	15	1	1	2	8	5	6	3	81825		8	1Sc35	1Ac61 1Ci68 jpW Cu hum	
9	81	7	22	05	10	2.4	-0.7	80	3.6	1013.7	7	032	03	2	2	1	5	7	1	8	81656	87272	9		2As68	
10	62	8	29	06	12	1.0	0.3	95	4.0	977.8	1	050	22	7	2	8	7	2	/	/	87705	88708	10		snly 2cm 80% Thaw	
11	88	7	35	11	21	2.1	-0.5	83	3.7	987.2	2	038	01	6	2	4	0	9	2	8	84165	87270	11		COTRA Cs edge WNW	
12	82	7	20	06	11	3.0	-0.6	77	3.6	1010.0	0	000	03	2	2	3	0	9	7	8	83367	87271	12		COTRA Hoar slit in shade	
13	58	8	24	15	36	8.3	6.6	89	6.2	991.5	5	048	81	6	8	7	5	4	2	/	81712	86618	88535	13		
14	82	1	23	09	18	4.0	1.4	83	4.3	989.7	7	022	01	0	0	1	8	4	6	3	81818		14	1Sc35	1Ac65 1Ci70 Cu fra	
15	84	1	31	09	19	4.9	0.7	74	4.0	1003.0	3	032	02	0	0	1	8	5	0	0	81825		15	1Sc30	1Sc40 Cu hum	
16	82	7	26	06	13	6.0	1.3	72	4.1	1019.4	3	001	02	6	2	6	5	6	0	6	85630	84272	16		2Sc50	
17	61	8	21	08	17	7.3	6.7	96	6.0	1020.8	7	032	61	6	6	7	5	3	2	/	85706	87615	88550	17		
18	63	6	25	03	08	6.0	3.2	82	4.7	1031.1	3	003	02	1	1	1	0	9	3	1	81368	86080	18		2Ci72	
19	59	7	21	06	10	5.7	3.5	86	4.8	1034.9	7	009	05	2	2	3	5	6	7	2	83640	83364	87070	19		Parhelion
20	68	8	24	04	06	10.5	9.3	92	7.1	1035.0	5	003	01	2	2	8	5	3	/	/	81709	88612	20			
21	81	8	24	07	14	11.5	8.5	82	6.7	1035.5	7	006	01	2	2	7	5	4	2	/	87618	88465	21			
22	70	8	27	02	05	10.9	8.7	86	6.8	1036.3	5	001	02	5	2	8	5	3	/	/	82709	88615	22			
23	84	7	23	06	13	9.3	7.6	89	6.3	1032.2	7	020	02	5	2	7	6	3	/	/	87708		23			
24	83	8	23	10	21	9.8	7.7	87	6.5	1022.4	7	021	20	5	2	8	5	4	/	/	87712	88615	24			
25	64	8	20	15	30	10.7	7.9	83	6.7	1003.9	7	041	20	5	2	8	5	4	/	/	83613	87618	88650	25		
26	60	8	18	05	12	7.1	2.8	74	4.7	993.5	7	043	60	6	2	3	5	5	2	/	81628	83635	88550	26		
27	86	7	30	11	21	3.2	-1.0	74	3.6	994.2	2	040	01	6	2	3	0	9	7	8	81362	83465	87270	27		COTRA Cs edge NW
28	88	1	25	06	10	4.1	-0.7	71	3.6	1004.9	3	008	02	0	0	0	0	9	0	1	81075		28		COTRA Hoar slit in shade	
29	81	4	26	14	27	7.2	1.3	66	4.2	995.9	2	034	01	8	1	4	5	6	0	0	81635	84645	29			
30	62	7	24	11	26	13.1	8.2	72	6.8	999.9	2	024	02	2	2	2	8	5	7	/	82827	87366	30	1Sc40	2Ac62 Cu med	
31	70	7	21	11	35	8.5	6.3	86	6.0	993.1	6	022	25	8	2	1	8	4	2	/	81815	83550	87460	31	1Sc40	jpE vv60k ex p

Mean vis = 32.4 km
 Mean cloud = 6.5 81%
 Mean wind speed = 7.7 kn
 Mean gust = 17 kn
 Mean TT = 7.0 °C
 Mean TdTd = 3.8 °C
 Mean RH = 80.5 %
 Mean r = 5.1 g/kg
 Mean PPP = 1013.7 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 2017	Hour	01-Dec	02-Dec	03-Dec	04-Dec	05-Dec	06-Dec	07-Dec	08-Dec	09-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	15-Dec	16-Dec
	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	8	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.57	0.00	0.00	0.56	0.00	0.00	0.00	0.47
	9	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.29	1.00	0.00	0.00	1.00	0.00	0.65	0.01	0.99
	10	0.98	0.00	0.00	0.00	0.00	0.00	0.00	0.72	1.00	0.00	0.00	1.00	0.00	0.84	0.62	1.00
	11	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.69
	12	1.00	0.00	0.00	0.09	0.00	0.00	0.00	0.95	1.00	0.00	0.00	1.00	0.00	0.77	1.00	0.86
	13	1.00	0.00	0.00	0.20	0.00	0.00	0.76	1.00	0.28	0.00	0.00	0.56	0.01	0.63	1.00	0.27
	14	0.47	0.00	0.00	0.00	0.00	0.00	0.56	0.91	0.00	0.00	0.00	0.35	0.05	1.00	1.00	0.00
	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.24	0.00	0.04	0.52	0.46	0.00
	16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot		5.72	0.00	0.00	0.28	0.00	0.00	1.33	5.36	4.86	0.00	0.24	5.47	0.10	5.41	5.09	4.28

	Hour	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	8	0.00	0.46	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.41	0.00	0.00	0.00	0.12
	9	0.24	1.00	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	1.00	0.00	0.01	0.00	0.26
	10	0.01	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.58	0.00	0.00	0.35
	11	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.38	0.15	0.00	0.35
	12	0.00	1.00	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.00	1.00	0.00	0.08	0.00	0.34
	13	0.00	1.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	1.00	0.75	0.10	0.00	0.29
	14	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.86	0.01	0.00	0.23
	15	0.00	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.90	0.59	0.00	0.00	0.14
	16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot		0.25	7.32	3.97	0.00	0.00	0.00	0.00	0.00	0.00	3.57	0.33	7.31	3.16	0.34	0.00	64.37

DECEMBER 2017	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	3.61	7.4	1252	1.7	2302	76.9	87.5	2303	54.5	1256	-0.1	3.7	4.2	1921	3.2	0	1021.97	1027.6	2358	1014.4	7	0
2	4.08	6.4	2314	1.6	132	86.6	96.4	1913	75.8	1048	2.0	4.4	5.7	2314	3.5	648	1027.33	1028.6	1008	1026.4	2354	0.2
3	7.55	10.2	1425	2.9	2357	89.9	96.7	931	76.9	2132	6.0	5.7	6.7	1242	4.2	2356	1027.54	1031.3	2358	1025.1	428	0.5
4	6.93	10.0	1303	1.1	207	83.1	97.9	257	69.4	2132	4.2	5.0	6.0	1244	3.9	154	1033.88	1036.7	2253	1031.2	22	0
5	7.52	8.2	2301	6.7	621	80.4	88.6	1553	70.2	2350	4.3	5.1	5.6	1549	4.6	2338	1035.57	1037.0	829	1033.5	2350	0
6	9.26	10.8	1249	7.6	524	73.8	88.0	2349	66.5	1141	4.8	5.3	6.5	2354	4.5	216	1026.82	1033.6	0	1016.8	2359	0
7	8.64	13.0	1151	2.9	2355	82.4	95.9	1104	61.5	1433	5.7	5.9	8.9	1150	3.7	2353	1010.54	1017.0	0	1005.3	1145	4.3
8	2.31	4.4	1131	0.2	2340	75.5	84.6	1813	61.2	1400	-1.6	3.4	3.9	1210	3.1	1400	1016.67	1019.8	2352	1012.7	305	0
9	0.64	3.8	1248	-2.3	805	82.9	93.1	816	70.8	1246	-2.0	3.3	3.7	1243	2.8	538	1014.97	1020.1	236	1002.7	2359	0
10	0.80	2.5	544	-0.4	1919	95.6	99.1	2040	75.8	34	0.1	4.0	4.5	546	3.2	44	981.79	1002.8	0	971.9	1128	18.6
11	0.97	2.5	1350	-2.4	2309	91.0	99.3	404	72.4	1957	-0.4	3.8	4.4	919	2.8	2009	986.31	1000.2	2359	978.4	435	3.6
12	0.82	6.0	2359	-4.2	544	87.3	96.8	549	70.8	1244	-1.1	3.6	5.6	2359	2.7	544	1007.42	1010.5	1112	1000.2	3	1.2
13	5.96	9.3	1354	2.7	2129	88.7	97.0	211	77.0	1608	4.2	5.3	6.6	1354	3.7	2355	996.60	1004.0	0	990.5	2116	7.9
14	3.52	6.8	1210	1.6	2351	83.4	95.1	2353	70.5	1211	0.9	4.1	4.7	1209	3.7	34	991.59	994.4	224	988.6	1739	0.1
15	3.54	5.6	1244	1.6	2356	83.5	96.0	636	69.7	1317	1.0	4.1	4.8	642	3.6	2359	999.98	1012.6	2359	990.6	500	1
16	2.48	6.1	1458	-2.5	521	84.6	97.8	551	69.6	1215	0.1	3.8	4.5	2001	3.0	521	1018.61	1024.1	2354	1012.6	3	0
17	3.71	9.8	2300	-2.7	654	95.9	98.6	924	83.6	2359	3.1	4.9	7.1	2256	3.0	654	1022.88	1025.4	920	1019.5	1843	3.8
18	2.33	8.5	0	-1.9	2359	92.3	99.6	905	73.0	1321	1.1	4.1	5.7	0	3.2	2359	1029.75	1034.6	2332	1022.1	0	0
19	2.66	7.4	2359	-2.7	450	93.2	99.5	230	81.3	1248	1.6	4.3	5.8	2359	3.0	524	1035.38	1036.5	1050	1034.2	53	0.1
20	9.04	10.9	1333	7.1	0	95.9	98.6	853	91.0	1538	8.4	6.7	7.3	1241	5.7	0	1035.42	1036.4	2328	1034.6	322	0.1
21	10.39	12.1	1407	8.3	2352	91.3	97.6	658	79.8	1432	9.0	7.0	7.6	1053	6.1	2349	1035.79	1036.5	1110	1035.1	506	0
22	9.91	11.3	1421	8.3	7	92.0	97.6	817	83.9	1944	8.7	6.8	7.5	1241	6.1	5	1036.06	1037.9	2306	1034.2	437	0.1
23	8.90	9.7	400	7.9	745	91.7	96.1	945	88.2	2204	7.6	6.4	6.7	222	6.0	1751	1033.78	1037.4	0	1030.5	2359	0.1
24	9.04	10.2	2358	7.9	209	88.8	93.9	320	79.7	1729	7.3	6.3	6.7	1210	6.0	1728	1024.49	1030.7	0	1017.8	2357	0
25	9.44	10.9	1417	4.3	2308	88.0	94.3	719	79.4	2149	7.5	6.5	7.0	1124	4.7	2308	1006.70	1018.0	2	993.9	2116	6.9
26	5.37	7.7	1249	2.7	730	87.2	95.3	2100	69.7	1327	3.4	5.0	6.3	2216	4.1	826	992.96	999.5	847	978.1	2355	7.8
27	2.53	7.0	0	-0.3	2354	85.6	95.3	641	71.7	1555	0.3	4.0	5.8	0	3.2	2254	989.21	1000.9	2355	977.6	301	4.3
28	0.68	5.0	1326	-2.4	751	87.3	97.6	921	68.3	1431	-1.3	3.5	4.0	1156	3.1	751	1004.00	1007.4	2127	1000.6	5	0
29	4.63	9.0	1123	-2.8	103	82.3	98.5	117	64.9	1538	1.7	4.4	5.6	830	3.0	116	997.72	1006.1	4	990.4	929	5.3
30	11.02	14.0	1334	5.1	6	80.4	97.0	245	66.1	1340	7.7	6.6	8.1	2358	4.9	0	996.84	1002.3	1841	989.1	409	2.9
31	10.11	13.2	421	6.5	2359	84.8	93.9	0	71.8	1948	7.7	6.7	8.6	156	4.8	2158	994.75	998.4	0	991.4	1936	7.2
Total																						76.0
Mean	5.43	8.37		2.08		86.5	95.59		73.06		3.29	4.95	6.00		3.97		1013.98	1019.63		1008.07		
Max	11.02	14.01		8.33		95.9	99.60		91.00		9.00	6.97	8.93		6.14		1036.06	1037.91		1035.05		
Min	0.64	2.50		-4.20		73.8	84.60		54.46		-1.96	3.28	3.68		2.68		981.79	994.43		971.93		

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Month: Calendar month.

Season: Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Appendix 2.

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

VV : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

RH : Relative humidity at 1.2m, %.

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

ppp : 3 hour pressure tendency in tenths of a millibar

ww : Present weather code figures, 00 to 99.

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

Cl : Type of low cloud

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

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

Cm : Type of medium cloud.

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

Ch : Type of high cloud

0 = No high cloud

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

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

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

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

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

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

7 = Veil of Cirrostratus covering the celestial dome.

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

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

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

8 Groups

N = Amount of cloud reported by C, okta.

C = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

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

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

00 to 50 = Height in hundreds of feet

51 to 55 Not used

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

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