

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 2015

Temperature (°C / °F)			Anomaly	Rank in the past 134 years			
Mean maximum	13.3	55.9	+5.3	*Highest*			
Mean minimum	8.6	47.5	+6.5	*Highest*			
Daily mean	10.9	51.6	+5.9	*Highest*			
Highest maximum	15.9	60.6	on 17 th	Lowest maximum	9.2	48.6	on 13 th
Highest minimum	13.1	55.6	on 27 th	Lowest minimum	2.1	35.8	on 9 th
Mean grass minimum	6.0	42.8	+6.6	Lowest grass minimum	-3.7	25.3	on 9 th
Mean earth @30 cm	10.4	50.7	+3.8	Earth @100 cm	11.4	52.5	
Frost duration (hrs)	0.0			Rain duration (hrs)	51.9		
Rainfall total (mm / in)	57.0	2.24	91%	57 th lowest			
Highest daily fall	11.5	0.45	on 30 th				
Number of: Dry days (<0.2mm)	9	Wet days (>0.9mm)	14	days ≥5mm	3		
Sunshine total (hrs)	46.2	Daily mean	1.49	84%	Sunniest day	6.5	on 9 th
N° days with: Air frost	0	Ground frost	4	Snow falling	0	Snow lying	0
Thunder	0	Hail ≥5mm	0	Small hail/ice	1	Fog @09	0
Pressure MSL : Mean @09 GMT, mbar	1018.5	+2.8	Highest	1034.9	on 9 th	Lowest	1003.3 on 30 th
Relative humidity : Mean (%)	80.8	Lowest	55	on 30 th	Water vapour (g/kg), mean at 09 and 15 GMT	6.6,	6.9
Overall mean wind speed (mph)	10.6	Windiest day	18.4	on 5 th	Max gust	51	on 30 th
Wind direction (days)	N 0	NE 0	E 1	SE 3	S 7	SW 20	W 0
Least windy day (mph)	4.1	on 13 th	Calm; less than 0.5 mph (minutes)		20		

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

Notes:

Incredibly Mild, with Rainfall and Sunshine Below Average, and Strong Winds.

Temperature: The temperatures this December are truly unprecedented. The mean is 5.9° above the climatic average, and is 2.4° above the previous highest in 1934. The departure of the mean from the 134 year median is +5.8°, the previous highest is +3.5°, and the maximum departure for any month in the past 134 years is +4.4° in April 2011, and the average departure for all months being +3.5°, illustrating the highly exceptional nature of this December. Both the mean maximum and mean minimum are new record highs, exceeding the previous highest by 2.3° and 2.7° respectively. Since 1882, a mean of 10.9° that we had this December had not been reached in any of the month's from November to March inc., also in 97% of Aprils, 16% of Mays and 56% of Octobers. The highest max is 2.8° above the median and a new record, 0.2° above the previous highest in 1985. The lowest max is 7.8° above the median and a new record, 3.0° above the previous highest in 2013. The highest min is 3.8° above the median and a new record, 0.4° above the previous highest in 1985. and the lowest min is 7.3° above its median, a new record and 3.0° above the previous highest in 1988. The mean grass min, and earth temperatures at 30 cm and 1 m depth are all new record highs. This is the first December in the past 60 years to have no air frosts, though there was only 1 in 1974. Daily temperature anomalies for both max and min were, without exception, above normal, the anomaly for daily max ranging from +0.3° on the 13th to +8.1° on the 19th, and for daily min ranging from +0.3° on the 9th to +10.9° on the 27th, also above +10° on the 19th and 20th. **Rainfall:** This month's rainfall is a little below average. While wetter than last December, the previous 2 were much wetter, each with nearly twice as much as this month. This millennium 8 Decembers have been wetter and 7 drier than this month. Despite the fact that there were 7 more rain days than average, rainfall accumulation did not reach normal at any time during the month. From the 1st to the 20th, apart from the odd wet day, accumulation was below normal with a deficit 20 mm below by the 20th. There were 2 wetter periods, from the 21st to the 25th and from the 30th, bringing the deficit up to 5 mm by the end of the month. There was no thunder, but ice pellets fell during a violent rain shower on the 3rd where the rain rate reached 66 mm/hr, the highest of the month. **Sunshine:** Sunshine this December is below average and lowest since 2010, and before that 2002. There was a scattering of sunny days especially early in the month, and the sunshine accumulation was 4 hours in surplus by the 9th. However, the period 10th to the 22nd was especially dull, with 8 days having between 0% and 4% of the maximum, and less than 15% on the other 3. This took the accumulation into a deficit of 14 hours by the 21st, and although the 23rd, 28th, 29th and 31st all had above 50 of the maximum, and the deficit still stood at 9 hours on the 31st. Overall there were 23 days with <3 hours and 1 with =>6 hours. **Wind:** The mean wind speed this month is 3.1 mph above average and highest since 1993. The highest daily mean of 18.4 mph is highest for December since 1992, however the highest gust was exceeded as recently as 2013. Daily directions were mainly between S and SW, except E veering SE, 13th to 15th, and SE'ly on 28th. Speeds were moderate or fresh to the 13th, increasing strong on the 5th, 6th and 12th, light or moderate to the 18th, then fresh increasing strong on the 22nd, 24th, 26th and 30th. **Pressure:** The absolute lowest pressure this month is highest for December since before 1976.

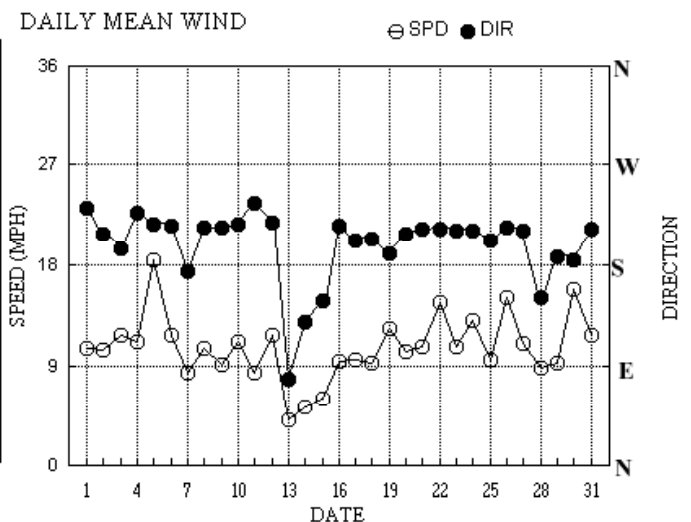
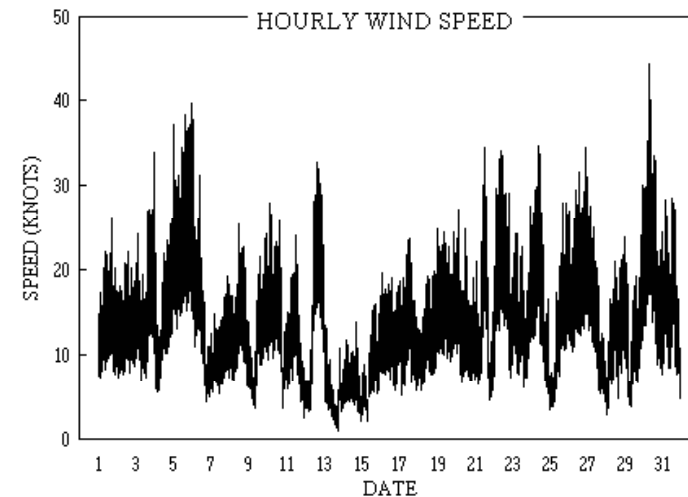
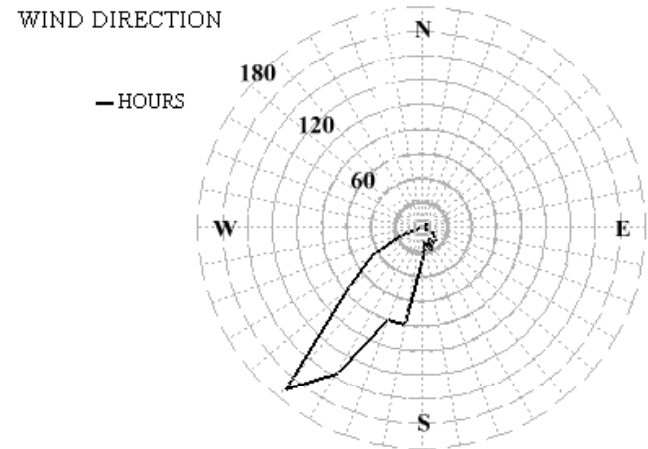
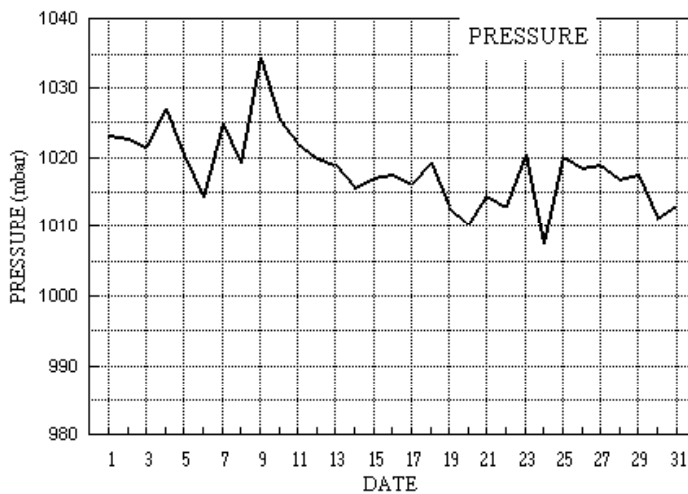
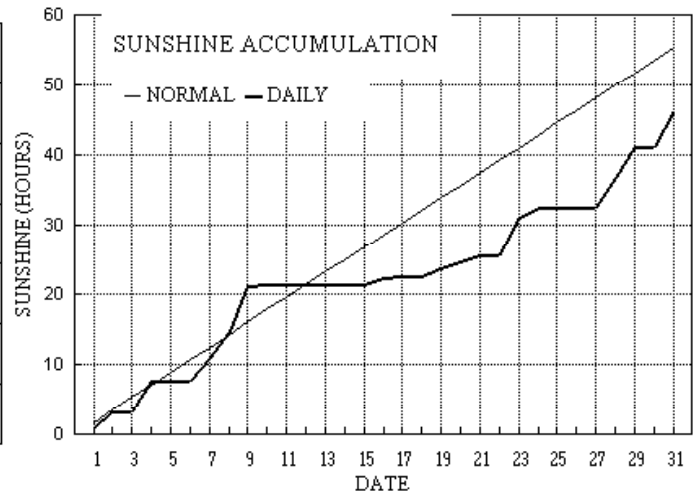
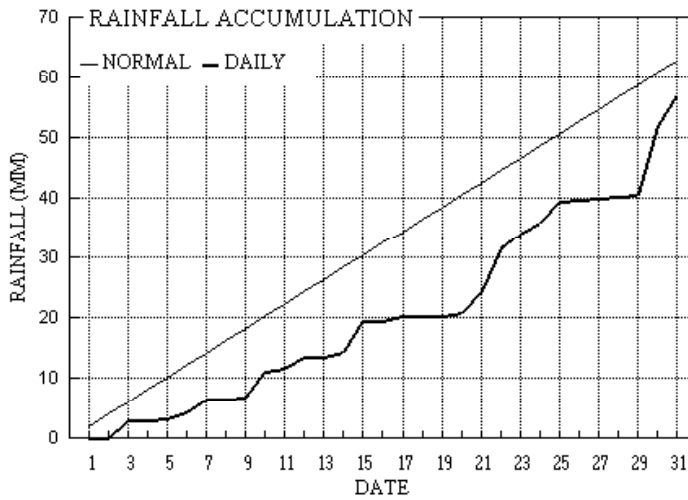
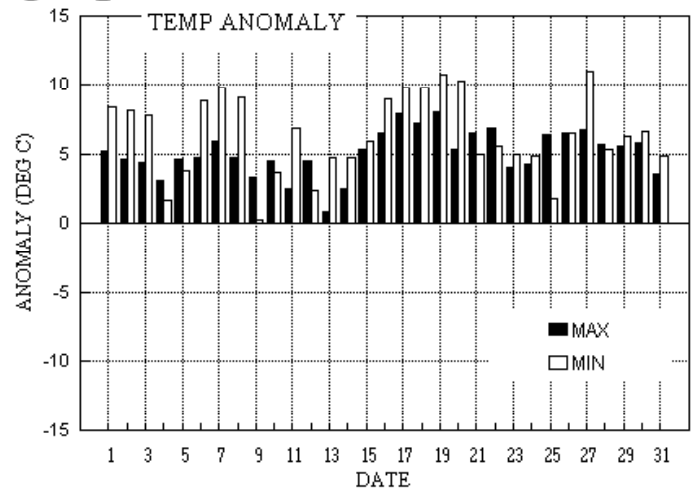
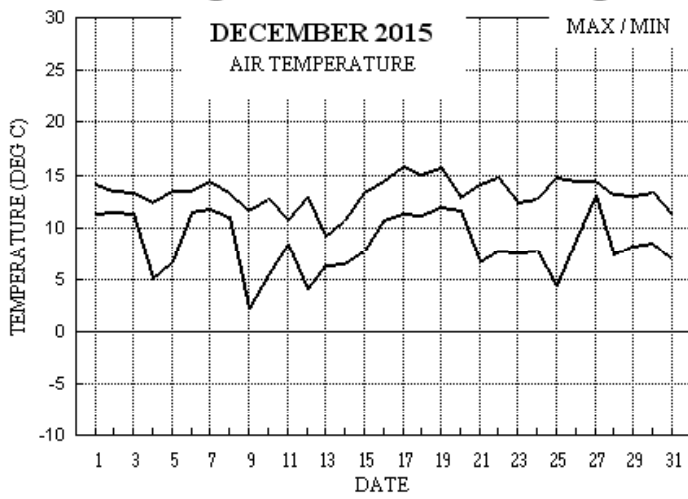
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 st to the 10 th				From the 11 th to the 20 th				From the 21 st to the 31 st			
+4.5°	+6.2°	54%	118%	+5.1°	+7.4°	49%	17%	+5.6°	+5.7°	163%	112%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

Wokingham climatological graphs for December 2015



Month: DECEMBER 2015

Date	Max C	Min C	Rain mm	Grass Min	30cm C	100cm C	Sun hrs	Frost hrs	pp09 mbar	Af Gf	Sf Sl	Th Ha	Ic Fg	Vec mean ddd ff sp	Max gust ddd gg HHhh	High hr ddd ff	Rain HH hrs
1	14.2	11.3	tr	10.8	10.0	11.5	0.9	0.0	1023.1	0 0 0 0	0 0 0 0	0 0 0 0	231	9.0 9.1	212 26 1807	230 11	16 0.0
2	13.5	11.5	0.0	8.9	10.4	11.4	2.3	0.0	1022.7	0 0 0 0	0 0 0 0	0 0 0 0	208	9.0 9.0	200 22 1411	207 11	14 0.0
3	13.4	11.3	3.1	9.8	10.5	11.5	0.0	0.0	1021.6	0 0 0 0	0 0 1 0	195	9.9 10.2	270 34 2318	188 14	18 1.5	
4	12.4	5.1	0.0	-0.5	10.6	11.5	4.5	0.0	1026.9	0 1 0 0	0 0 0 0	227	9.1 9.7	224 26 2233	215 13	23 0.0	
5	13.6	6.7	0.3	8.4	10.2	11.5	0.0	0.0	1020.3	0 0 0 0	0 0 0 0	216	16.0 16.0	202 40 2316	215 19	15 0.3	
6	13.6	11.5	1.0	9.1	10.2	11.5	0.1	0.0	1014.2	0 0 0 0	0 0 0 0	215	10.1 10.1	216 38 0140	219 18	01 2.4	
7	14.4	11.9	2.2	11.0	10.7	11.5	3.2	0.0	1024.9	0 0 0 0	0 0 0 0	174	6.8 7.2	184 19 2105	155 9	18 2.5	
8	13.3	11.1	0.0	9.0	10.8	11.5	3.6	0.0	1019.3	0 0 0 0	0 0 0 0	213	8.6 9.1	230 26 1145	220 12	13 0.0	
9	11.6	2.1	0.2	-3.7	10.3	11.6	6.5	0.0	1034.5	0 1 0 0	0 0 0 0	213	7.8 7.9	204 24 2339	213 12	20 0.3	
10	12.7	5.4	4.4	7.7	9.8	11.6	0.3	0.0	1025.3	0 0 0 0	0 0 0 0	216	9.6 9.7	218 28 0249	215 12	04 4.7	
11	10.7	8.4	0.5	7.4	10.0	11.5	0.0	0.0	1021.9	0 0 0 0	0 0 0 0	235	7.2 7.3	240 24 1201	235 11	10 0.8	
12	12.9	4.0	1.7	-1.6	9.7	11.5	0.0	0.0	1019.9	0 1 0 0	0 0 0 0	218	9.6 10.2	224 33 1417	225 17	18 6.9	
13	9.2	6.3	0.1	5.9	9.9	11.4	0.0	0.0	1019.0	0 0 0 0	0 0 0 0	77	1.8 3.6	240 20 0027	234 10	00 0.0	
14	10.7	6.6	0.9	3.1	9.9	11.3	0.1	0.0	1015.7	0 0 0 0	0 0 0 0	129	4.4 4.6	154 14 1744	131 6	04 1.2	
15	13.3	7.8	4.9	5.8	10.0	11.3	0.0	0.0	1017.2	0 0 0 0	0 0 0 0	148	4.8 5.2	162 16 1750	151 9	17 5.2	
16	14.5	10.7	0.0	10.6	10.4	11.3	0.8	0.0	1017.6	0 0 0 0	0 0 0 0	215	8.0 8.2	200 20 0241	224 10	15 0.0	
17	15.9	11.3	1.0	7.1	10.8	11.3	0.1	0.0	1016.1	0 0 0 0	0 0 0 0	202	8.2 8.3	205 24 1404	203 11	13 0.8	
18	15.1	11.2	tr	7.3	10.8	11.3	0.1	0.0	1019.1	0 0 0 0	0 0 0 0	204	7.9 8.0	178 20 2144	204 10	12 0.0	
19	15.7	12.0	tr	9.8	11.0	11.4	1.2	0.0	1012.9	0 0 0 0	0 0 0 0	190	10.6 10.7	200 25 0146	186 13	22 0.0	
20	12.9	11.7	0.5	9.2	11.3	11.4	1.0	0.0	1010.3	0 0 0 0	0 0 0 0	207	8.8 8.9	216 27 0315	198 12	02 0.4	
21	14.1	6.7	3.4	3.2	10.8	11.5	0.8	0.0	1014.5	0 0 0 0	0 0 0 0	212	9.0 9.2	207 35 1313	209 16	13 3.1	
22	14.8	7.8	7.3	2.5	10.4	11.5	0.1	0.0	1012.9	0 0 0 0	0 0 0 0	212	12.5 12.7	226 34 0915	211 16	10 4.3	
23	12.4	7.6	2.6	3.1	10.8	11.5	5.5	0.0	1020.4	0 0 0 0	0 0 0 0	211	8.9 9.2	235 24 0523	195 12	23 1.2	
24	12.7	7.7	1.7	7.1	10.4	11.5	1.4	0.0	1007.6	0 0 0 0	0 0 0 0	210	10.8 11.4	187 35 0940	197 16	10 1.8	
25	14.7	4.3	3.5	-2.8	9.8	11.5	0.0	0.0	1020.2	0 1 0 0	0 0 0 0	202	7.7 8.2	223 28 2135	219 14	23 4.8	
26	14.5	8.8	0.4	11.7	10.0	11.4	0.0	0.0	1018.6	0 0 0 0	0 0 0 0	213	13.0 13.0	207 35 2211	212 16	23 0.7	
27	14.4	13.1	0.2	11.8	10.6	11.3	0.0	0.0	1018.9	0 0 0 0	0 0 0 0	210	9.0 9.5	198 31 0133	216 15	01 0.3	
28	13.2	7.4	0.4	0.8	10.8	11.3	4.2	0.0	1016.9	0 0 0 0	0 0 0 0	150	6.9 7.6	182 24 2326	160 11	12 0.8	
29	13.1	8.2	0.1	1.8	10.5	11.4	4.3	0.0	1017.6	0 0 0 0	0 0 0 0	188	7.9 8.0	191 30 2307	179 13	22 0.2	
30	13.4	8.6	11.5	6.9	10.3	11.4	0.0	0.0	1011.2	0 0 0 0	0 0 0 0	184	13.6 13.7	190 44 0756	183 18	09 6.7	
31	11.2	7.0	5.1	3.5	10.2	11.3	5.2	0.0	1013.1	0 0 0 0	0 0 0 0	212	9.9 10.1	204 29 1249	194 14	14 1.0	
Total			57.0				46.2	0.0									51.9
Mean	13.3	8.6		6.0	10.4	11.4	1.49	0.0	1018.5					205	8.3 9.2		
Anom	+5.3	+6.5	91%	+6.6	+3.8	+2.1	84%			+2.8							
Daily mean		10.9															
Anom		+5.9															

Number of days with:

Air frost = 0 Ground frost = 4 Nil sun = 10
 Snow falling = 0 Snow lying = 0 Thunder = 0
 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.

Anom = Departure from 1981-2010 climatological average.

All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for DECEMBER 2015

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ci	NCh	shs	NCh	shs	NCh	shs	Date	Remarks
1	82	8	24	08	19	12.7	10.4	86	7.8	1023.1	2	020	20	5	2	7	5	4	/	/	83615	88622					1		
2	80	6	21	08	17	11.7	7.0	73	6.2	1022.7	3	007	01	2	2	6	5	4	0	0	81715	86650					2	Cld edge N	
3	61	8	19	09	20	12.6	9.8	83	7.5	1021.6	4	000	02	2	2	8	5	4	/	/	83713	88618					3		
4	70	1	22	08	13	6.7	4.2	84	5.1	1026.9	1	023	03	0	0	1	5	6	0	0	81630						4		
5	67	8	21	14	29	11.5	6.4	71	6.0	1020.3	6	007	02	2	2	3	5	5	3	7	83628	83368	88272				5		
6	65	7	23	14	26	13.6	8.7	72	7.0	1014.2	3	011	03	6	2	6	8	5	7	1	81820	85650	86362				6	2Sc30 /Ci75	
7	59	8	18	06	11	12.5	11.4	93	8.4	1024.9	2	013	05	5	2	8	6	3	/	/	85706	88708					7		
8	72	7	20	08	15	12.4	10.3	87	7.8	1019.3	3	006	21	6	2	5	8	4	7	/	81812	85656	87365				8	1Sc25 Cu fra Pptn SE	
9	68	1	20	04	11	5.4	3.9	90	5.0	1034.5	1	007	02	0	0	1	5	6	0	1	81630						9	1Ci80 COTRA	
10	68	7	20	09	18	11.3	6.4	72	6.0	1025.3	7	009	02	2	2	3	8	5	3	1	82825	87075					10	2Sc45 1Ac68 COTRA Cu hum	
11	65	8	23	07	12	9.2	6.6	84	6.1	1021.9	1	008	15	5	2	3	8	4	2	/	82818	88460					11	1Sc35 2Sc50 Cu med jpNW	
12	62	8	18	07	13	7.4	5.9	90	5.8	1019.9	7	026	60	6	2	8	5	3	/	/	82708	86612	87625				12	/Sc40	
13	25	8	07	04	10	6.6	6.0	96	5.8	1019.0	2	010	51	5	5	8	7	1	/	/	83702	87703	88705				13		
14	58	8	12	05	09	7.8	6.4	91	6.0	1015.7	5	000	21	6	2	7	5	5	/	1	81625	87635					14	/Ci75	
15	35	8	11	03	06	10.7	10.2	97	7.8	1017.2	2	007	10	5	2	8	6	2	/	/	85704	88706					15		
16	80	7	23	10	17	12.7	10.9	89	8.1	1017.6	2	026	20	5	2	7	5	4	/	1	83710	87615					16	/Ci75	
17	67	7	21	09	16	13.5	7.1	65	6.2	1016.1	7	003	02	2	2	3	0	9	3	2	83368	87072					17	COTRA	
18	62	7	20	07	13	12.3	10.2	87	7.7	1019.1	2	008	02	2	2	7	5	4	/	1	82615	87635					18	/Ci75 COTRA	
19	65	7	18	10	20	14.2	11.4	83	8.3	1012.9	4	000	01	2	2	6	5	4	4	2	81715	83620					19	3Sc40 2Ac65 COTRA	
20	62	7	20	09	18	11.8	9.0	83	7.1	1010.3	2	018	03	2	2	4	8	4	0	1	81815	84645	87070				20	Absent vv&cld est	
21	82	5	20	08	15	7.7	5.3	85	5.5	1014.5	0	003	03	1	1	4	5	7	7	0	84650						21	1Ac62 2Ac68 Absent vv&cld est	
22	80	7	22	14	33	14.1	10.7	80	8.0	1012.9	5	002	01	6	2	7	5	4	3	/	81617	87622					22	/Ac68	
23	72	1	21	08	15	7.7	4.1	78	5.1	1020.4	2	033	02	0	0	0	0	9	0	1	81075						23		
24	75	7	20	14	28	12.4	7.5	72	6.4	1007.6	7	021	03	2	2	6	5	5	7	1	86620	84363					24	/Ci75 COTRA	
25	65	7	18	08	18	8.9	6.5	85	6.0	1020.2	7	009	03	2	2	1	5	7	7	1	81656	85357	87362				25	/Ci70	
26	65	7	21	12	26	13.9	10.5	80	7.9	1018.6	3	002	80	8	2	7	8	4	/	/	81715	83820	87635				26	Cu med	
27	59	8	22	12	25	14.2	11.9	86	8.6	1018.9	2	027	20	6	5	8	5	4	/	/	82712	87615	88620				27		
28	70	7	14	07	16	9.9	6.1	77	5.8	1016.9	6	019	02	2	2	2	0	9	3	8	82369	87278					28	2Ci72 COTRA	
29	68	5	13	04	08	8.6	7.4	92	6.4	1017.6	3	028	15	1	1	2	8	5	6	3	81820	83068					29	2Sc40 2Ac63 Cu med jpW	
30	82	8	18	18	38	13.0	5.4	60	5.6	1011.2	6	014	02	5	2	8	5	6	/	/	85635	87640	88650				30		
31	81	1	22	08	20	7.2	2.7	73	4.6	1013.1	2	046	02	0	0	1	5	6	0	3	81630						31	1Ci68 Cb top distant NW	

Mean vis = 19.2 km

Mean cloud = 6.4 80%

Mean wind speed = 8.8 kn

Mean gust = 18 kn

Mean TT = 10.8 °C

Mean TdTd = 7.8 °C

Mean RH = 82.1 %

Mean r = 6.6 g/kg

Mean PPP = 1018.5 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

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

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs = Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation

trails present.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for DECEMBER 2015

Date	VV	N	dd	ff	gg	TT	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ci	NCh	shs	NCh	shs	NCh	shs	Date	Remarks
1	78	7	23	11	21	13.2	8.9	73	7.1	1023.2	6	005	02	2	2	7	8	5	/	/	82825	87640					1	Cu hum
2	65	7	20	12	22	12.5	8.8	78	7.0	1021.8	7	006	03	1	1	1	8	5	4	2	81820	86075					2	1Sc50 2Ac68 Cu fra/hum
3	75	8	18	08	18	12.4	8.3	76	6.8	1017.6	7	028	02	2	2	7	8	5	7	8	81820	87650					3	/Ac60 /Cs72 Cu fra
4	80	7	21	10	21	12.0	6.7	70	6.1	1027.2	8	007	02	1	1	7	5	6	/	1	82630	87640					4	/Ci75 COTRA
5	70	7	22	16	36	12.0	7.7	75	6.5	1016.9	6	017	60	6	2	7	5	5	7	/	87620						5	/Sc40 /Ac68
6	58	8	21	10	16	12.7	11.1	90	8.2	1017.5	2	015	50	5	2	8	5	3	/	/	83707	87710	88620				6	
7	70	6	15	08	14	13.2	10.0	81	7.6	1022.9	7	013	01	2	2	1	8	4	0	1	81818	86075					7	1Sc50 Cu fra
8	82	1	25	11	22	11.2	5.3	67	5.5	1021.1	3	009	01	1	1	1	8	6	0	0	81830						8	1Sc56 Cu med
9	80	7	21	08	22	10.6	4.9	68	5.4	1032.1	8	020	03	1	1	1	8	6	4	1	81830	87075					9	1Sc35 2Ac68 COTRA
10	61	8	21	12	23	12.1	6.8	70	6.1	1022.0	6	019	15	2	2	8	5	5	/	/	87625	88630					10	jp SW-NW
11	84	7	25	08	21	9.3	6.6	83	6.0	1021.2	5	003	21	6	5	7	8	4	/	/	81815	85635	87650				11	
12	70	8	22	17	33	12.7	8.8	77	7.0	1014.2	7	024	02	2	2	7	5	5	1	/	82620	87625	88465				12	
13	13	8	10	02	04	9.2	8.6	96	6.9	1018.2	7	007	20	5	2	8	6	1	/	/	88702						13	
14	61	8	13	05	10	10.1	7.7	85	6.5	1014.3	6	008	60	6	2	1	5	4	7	8	81615	86458					14	3Ac62 /Cs70
15	40	8	14	04	13	11.7	10.9	95	8.1	1014.8	7	010	58	6	5	7	7	2	2	/	82704	87706	88515				15	
16	80	7	22	09	17	14.2	11.4	83	8.3	1020.0	2	009	02	2	2	7	5	4	/	1	82615	87625					16	/Ci75
17	60	8	20	12	24	14.6	9.6	72	7.4	1013.8	5	014	15	2	2	6	5	5	2	/	86620	88460					17	jp W-NW
18	70	7	20	08	19	12.8	9.8	82	7.5	1017.7	7	010	21	6	2	1	8	4	7	/	81815	83362	87465				18	1Sc30 Cu hum
19	70	7	19	11	21	14.7	9.7	72	7.5	1009.8	8	018	03	8	2	3	5	7	7	2	83650	86365					19	2Ac59 /Ci75 Absent vv&cld est
20	80	6	21	08	22	11.3	7.6	78	6.5	1010.9	5	003	25	8	2	5	8	5	6	3	81825	85645					20	2Ac62 /Ci72 Absent vv&cld est
21	40	8	21	15	28	12.0	10.9	93	8.1	1010.9	5	011	58	6	5	8	5	3	/	/	84707	87712	88620				21	Absent vv&cld est
22	65	7	21	14	26	13.5	11.2	86	8.3	1011.7	6	010	50	5	2	7	5	4	7	2	84613	83625					22	4Sc50 /Ac59 /Ci75
23	70	7	21	07	18	10.7	5.3	69	5.5	1021.2	5	004	03	1	1	2	8	6	0	1	81830	87075					23	2Sc56 COTRA Cu hum Sc len
24	80	1	24	14	27	9.2	2.5	63	4.6	1012.2	2	030	15	6	1	1	2	6	6	0	81830						24	1Ac57 Cu med jpN&SW
25	65	8	21	11	22	13.3	11.5	89	8.4	1016.7	5	013	21	6	5	8	5	4	/	/	83615	87620	88630				25	
26	75	8	21	13	32	13.9	9.5	75	7.4	1017.4	5	007	02	2	2	7	8	5	/	8	85825	86635					26	/Cs78 Cu hum
27	50	8	22	07	18	14.0	12.4	90	8.9	1021.8	3	010	50	5	2	8	5	3	/	/	83708	87712	88620				27	
28	68	8	15	05	18	11.3	7.0	75	6.2	1013.2	6	618	02	2	2	1	0	9	3	7	81368	88275					28	2Ci72
29	82	6	20	10	20	10.9	6.3	73	5.9	1020.0	1	010	03	1	1	3	8	5	0	1	82822	85075					29	1Sc35 1Sc45 Cu med COTRA
30	61	8	19	18	34	11.8	6.7	71	6.1	1007.2	6	021	60	6	2	2	5	5	2	/	82625	88540					30	
31	70	6	19	14	28	10.5	4.4	66	5.2	1012.2	6	013	15	1	1	5	2	6	5	1	85830						31	2Ac65 1Ci75 Cu med jpSW

Mean vis = 20.2 km

Mean cloud = 6.9 87%

Mean wind speed = 10.3 kn

Mean gust = 22 kn

Mean TT = 12.1 °C

Mean TdTd = 8.3 °C

Mean RH = 78.1 %

Mean r = 6.9 g/kg

Mean PPP = 1017.5 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

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

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

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

PPP = Air pressure reduced to sea level, mbar

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

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

W1, W2 = Past weather code (Code FM12-4561)-

covers past 3 hours.

Nh = Amount of low cloud present, oktas

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

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

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

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

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs = Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation

trails present.

Wokingham Sunshine Hourly analysis 2015	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	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.79	0.00	0.09	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.32	0.00	0.43	0.00	0.00	0.00	0.00	1.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.19	0.00	0.67	0.00	0.00	0.00	0.00	1.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.31
11	0.12	0.39	0.00	1.00	0.00	0.00	0.00	0.54	1.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.44
12	0.76	0.93	0.00	1.00	0.00	0.00	0.49	0.75	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.43	0.00	0.55	0.00	0.00	1.00	0.78	0.81	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
14	0.00	0.02	0.00	0.06	0.00	0.00	0.97	0.96	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.60	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	0.88	2.28	0.00	4.51	0.00	0.09	3.15	3.63	6.52	0.30	0.00	0.00	0.00	0.00	0.02	0.00	0.75

	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	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.11	0.00	0.43	0.00	0.00	0.00	0.00	0.31	0.19	0.00	0.38	0.09	
9	0.00	0.00	0.11	0.00	0.65	0.00	1.00	0.00	0.00	0.00	0.00	0.74	0.15	0.00	1.00	0.18	
10	0.10	0.04	0.52	0.56	0.00	0.04	1.00	0.00	0.00	0.00	0.00	1.00	0.41	0.00	1.00	0.22	
11	0.00	0.00	0.57	0.19	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.97	0.00	0.94	0.27	
12	0.00	0.00	0.00	0.08	0.00	0.00	1.00	0.08	0.00	0.00	0.00	1.00	0.94	0.00	1.00	0.29	
13	0.00	0.00	0.05	0.00	0.00	0.00	0.53	0.40	0.00	0.00	0.00	0.12	0.54	0.00	0.71	0.19	
14	0.00	0.00	0.00	0.02	0.00	0.00	0.50	0.91	0.00	0.00	0.00	0.00	0.68	0.00	0.12	0.17	
15	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.07	
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	0.10	0.04	1.24	0.97	0.75	0.04	5.47	1.40	0.00	0.00	0.00	4.17	4.33	0.00	5.16	45.78	

DECEMBER 2015	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
1	12.30	14.2	1240	11.5	201	77.6	94.8	229	57.3	2014	8.33	6.80	8.1	28	5.0	2014	1022.60	1024.6	2017	1018.7	0
2	12.13	13.6	1249	11.1	929	72.6	79.8	1645	56.4	44	7.32	6.32	7.2	2314	4.9	40	1022.37	1023.6	1	1021.5	1446
3	12.26	13.1	2257	10.4	2335	79.9	89.9	2218	67.8	1750	8.88	7.03	8.3	2257	6.0	1753	1018.24	1022.6	3	1010.6	2208
4	9.39	12.6	1311	4.6	716	76.1	87.6	0	66.4	1330	5.35	5.51	7.0	7	4.3	606	1025.23	1028.5	1030	1013.6	1
5	11.70	12.6	1848	10.8	517	67.9	75.3	1509	58.3	2012	5.96	5.75	6.4	1505	5.1	2015	1018.48	1024.3	1	1012.8	2312
6	12.26	13.6	854	11.4	348	84.5	94.9	2201	65.4	2	9.66	7.43	8.1	2219	5.8	1	1016.71	1022.6	2355	1012.2	448
7	11.83	14.1	1325	10.5	2013	87.7	94.0	344	76.5	1327	9.84	7.47		1159	6.6	2150	1023.07	1025.4	1025	1020.4	2359
8	10.61	13.4	1216	5.8	2358	78.7	92.4	434	62.4	1435	6.98	6.27	8.1	712	4.5	2210	1021.87	1030.7	2359	1018.4	624
9	7.73	11.6	1333	1.5	731	78.6	93.7	741	62.9	1333	4.14	5.03	6.0	2307	3.8	731	1032.38	1034.9	1001	1028.9	2349
10	10.42	12.9	1058	7.9	2023	79.0	93.7	2055	61.7	708	6.83	6.09	7.1	1835	5.0	720	1024.21	1029.2	19	1020.6	2323
11	8.17	10.7	1300	3.2	2301	82.8	93.3	28	73.2	1109	5.41	5.55	6.5	55	4.1	2253	1021.95	1024.5	2302	1020.3	146
12	9.68	12.8	1625	4.4	0	81.1	90.8	949	72.0	1351	6.56	6.06	7.2	1105	4.5	0	1018.08	1024.5	26	1013.2	1817
13	7.43	12.2	2	5.6	632	94.7	97.3	1950	78.9	1	6.63	6.04	7.1	108	5.4	632	1018.05	1019.4	1054	1015.0	0
14	8.25	10.1	1323	6.8	725	89.4	96.2	3	81.2	1430	6.60	6.03	6.7	2347	5.5	746	1015.57	1017.8	0	1014.1	1609
15	10.39	12.5	2312	8.8	49	94.4	96.4	820	90.6	1140	9.54	7.37	8.4	2303	6.6	12	1015.59	1017.3	846	1014.0	2111
16	12.58	14.0	1314	11.2	733	87.6	93.9	19	80.8	1130	10.58	7.88	8.5	2137	7.3	810	1017.92	1020.8	1848	1013.8	44
17	13.00	15.9	1227	10.5	2201	77.3	92.0	1758	59.6	1020	8.97	7.10	8.4	1757	6.1	920	1015.99	1019.5	3	1013.3	1418
18	12.08	13.3	1200	10.9	23	83.1	88.5	331	74.0	1202	9.30	7.23	7.9	2359	6.8	549	1017.87	1019.5	1055	1015.3	2359
19	14.10	15.8	1138	12.8	105	78.7	92.6	348	66.5	2348	10.39	7.85	9.1	433	6.7	2353	1011.24	1015.4	0	1006.2	2357
20	11.40	14.7	18	8.3	2357	76.1	83.6	1911	64.3	18	7.33	6.39	7.3	257	5.3	2133	1010.34	1013.8	2300	1005.7	141
21	9.07	12.3	1537	6.2	621	83.7	91.9	1503	75.1	1700	6.44	6.02	8.1	1537	5.0	701	1014.50	1018.6	2108	1010.2	1455
22	12.52	14.9	1019	9.4	2225	86.6	93.2	2109	70.1	1018	10.32	7.79	8.6	348	6.7	2358	1012.47	1017.5	0	1009.6	1918
23	9.72	12.0	1319	7.1	825	75.4	89.3	0	61.6	1320	5.53	5.61	6.8	0	4.7	825	1018.32	1022.0	1044	1012.5	1
24	9.30	12.7	930	5.3	2359	72.6	86.1	1130	58.2	1536	4.60	5.36	7.0	1049	3.9	2049	1012.95	1020.7	2315	1006.6	1034
25	9.63	14.5	2355	3.5	101	86.0	94.3	1332	74.2	0	7.40	6.53	8.5	1844	3.9	101	1019.22	1021.7	223	1016.2	1348
26	13.73	14.6	24	12.8	454	78.2	92.1	516	68.9	1423	9.98	7.58	8.6	515	6.8	1423	1017.70	1019.6	7	1015.4	2351
27	13.14	14.2	1315	9.7	2356	86.2	93.5	2359	75.5	0	10.87	8.02	8.7	1233	6.9	2356	1019.92	1023.8	2129	1015.3	46
28	10.36	13.3	1208	6.9	402	78.3	96.9	417	62.6	1213	6.63	6.04	7.1	14	5.5	820	1015.69	1023.0	13	1011.0	1954
29	10.27	11.7	1244	7.8	828	80.0	91.8	830	68.8	1401	6.94	6.17	7.1	230	5.5	1616	1017.31	1020.9	1750	1011.3	122
30	11.50	13.5	1000	8.2	2358	74.2	92.0	2118	55.2	1306	6.84	6.20	7.1	2151	5.0	1306	1009.29	1017.4	0	1003.3	2207
31	7.70	11.3	1250	3.1	2343	75.1	89.0	35	58.4	1254	3.48	4.88	6.1	1	4.0	2259	1012.06	1021.0	2359	1004.6	0
Total																					
Mean	10.80	13.18		8.00		80.8	91.32		67.89		7.54	6.50	7.32		5.40		1017.97	1022.10		1013.70	
Max	14.10	15.92		12.81		94.7	97.30		90.60		10.87	8.02	9.07		7.34		1032.38	1034.92		1028.90	
Min	7.43	10.09		1.52		67.9	75.30		55.18		3.48	4.88	0.00		3.82		1009.29	1013.83		1003.28	

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

Appendix 1.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Month: Calendar month.

Season: Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Appendix 2.

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

VV : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

RH : Relative humidity at 1.2m, %.

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

ppp : 3 hour pressure tendency in tenths of a millibar

ww : Present weather code figures, 00 to 99.

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

Cl : Type of low cloud

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

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

Cm : Type of medium cloud.

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

Ch : Type of high cloud

0 = No high cloud

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

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

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

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

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

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

7 = Veil of Cirrostratus covering the celestial dome.

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

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

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

8 Groups

N = Amount of cloud reported by C, okta.

C = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

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

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

00 to 50 = Height in hundreds of feet

51 to 55 Not used

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

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