

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

AUGUST 2015

Temperature (°C / °F)			Anomaly	Rank in the past 134 years			
Mean maximum	21.3	70.3	-1.3	65 th highest			
Mean minimum	12.1	53.8	-0.3	39 th highest			
Daily mean	16.7	62.1	-0.8	55 th highest			
Highest maximum	29.8	85.6	on 22 nd	Lowest maximum	15.0	59.0	on 31 st
Highest minimum	17.6	63.7	on 21 st	Lowest minimum	6.2	43.2	on 1 st
Mean grass minimum	9.3	48.7	0.0	Lowest grass minimum	1.7	35.1	on 1 st
Mean earth @30 cm	18.1	64.6	-0.6	Earth @100 cm	16.9	62.4	
Frost duration (hrs)	0.0			Rain duration (hrs)	49.1		
Rainfall total (mm / in)	80.2	3.16	159 %	24 th highest			
Highest daily fall	20.0	0.79	on 24 th				
Number of: Dry days (<0.2mm)	16	Wet days (>0.9mm)	10	days ≥5mm	6		
Sunshine total (hrs) 114.1	Daily mean 3.68	59 %	Sunniest day 11.9		on 2 nd		
N ^o days with: Air frost 0	Ground frost 0	Snow falling 0	Snow lying 0				
Thunder 1	Hail ≥5mm 0	Small hail/ice 0	Fog @09 0	Nil sun 6			
Pressure MSL : Mean @09 GMT, mbar 1014.4	-1.9	Highest 1024.1	on 8 th	Lowest 996.3	on 24 th		
Relative humidity : Mean (%) 75.9	Lowest 21	on 9 th	Water vapour (g/kg), mean at 09 and 15 GMT 8.9,		8.5		
Overall mean wind speed (mph) 5.9	Windiest day 10.1	on 26 th	Max gust 35	on 26 th			
Wind direction (days) N 4 NE 2 E 1 SE 2 S 8 SW 10 W 2 NW 2							
Least windy day (mph) 2.2	on 11 th	Calm; less than 0.5 mph (minutes) 595					

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

Notes:

Wet Cool Very Dull

Temperature: This has been a rather disappointing August, with the mean maximum 1.3° below the 30 year climatological average. The mean minimum is also below average, so that the mean temperature is 0.8° below average, although compared with the 134 year series, this month lies 0.2° above the median. This has been an August with just one hot day, the 22nd, an exception in a month when most days were below normal. Anomalies for daily maximum were below normal on 22 days and above on 9, though the only significant departures, (4 or more degrees C), were for the max , anomaly +7.8° on the 22nd, -4.0° on the 14th, -5.8° on the 24th and -5.9° on the 31st. Anomalies for daily min included -6.7° on the 1st, -4.1° on the 2nd, -4.4° on the 7th, -4.8° on the 16th and +5.3° on the 21st. The highest max is 1.9° above the median, but the lowest max is 1.9° below the median and is lowest since 1986. The highest min is 1.3° above its median and the lowest min equals the median. Earth temperatures at 30 cm and 1 m depth are both well below average, and the mean at the latter depth is lowest since before 1989. **Rainfall:** This has been a wet month with 59 % more rainfall than average. However, only 2 of the past 6 Augusts have been drier, 2012 and 2013. The month got off to a dry start, with a 6 day dry spell ending on the 4th, but it was not until the 13th that the first significant rain fell. By this time, the rainfall accumulation showed a deficit of 10 mm, and there was a similar deficit after the next significant fall on the 19th. By the 23rd the deficit was up to 16 mm, but over the next 4 days a total of 50.9 mm changed this to a surplus of 28 mm over the normal, and a further 10.2 mm over the final 3 days pushed this up to 30 mm on the 31st. It is thus evident that the 3 day wet spell from the 24th to 26th turned what would have been a dry month into a wet one. Rainfall was heavy at times, but the maximum rainfall rate exceeded 10 mm/hr on only 2 days, the 24th and 26th, but on this latter date a rate of 207 mm/hr was recorded, the highest rate since 13th June 2014. Thunder was heard on the 26th, but there was no hail this month. There were 3 fewer dry days than average. The duration of measurable rain is 161 % of average, a very similar anomaly to the total fall. **Sunshine:** This has been an extremely dull August, certainly one of the dullest for over a century, though the Augusts of both 2008 and 2010 had quite similar amounts of sunshine to this month. Overall there were only 6 days with >50 % of the maximum, and 4 of those were in the first 9 days. There were also 15 days with <20 % of the maximum. Sunshine accumulation was close to normal up to the 9th after which there was an increasing deficit which stood at over 40 hours on the 20th, and reached almost 80 hours by the 31st. Overall there were 16 days with <3 hours, 8 with =>6 hours and 4 with =>9 hours. **Wind:** Both the mean wind speed and highest gust are close to average. S to SW winds were light or moderate at first, becoming fresh for the 3rd and 4th, veering NWly on the 11th, backing Sly on the 18th, temporarily becoming Nly on the 24th and again after the 29th, and temporarily increasing fresh on the 26th.

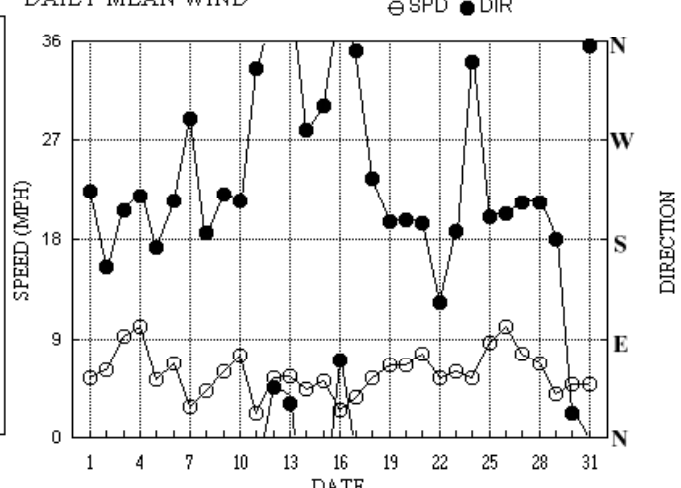
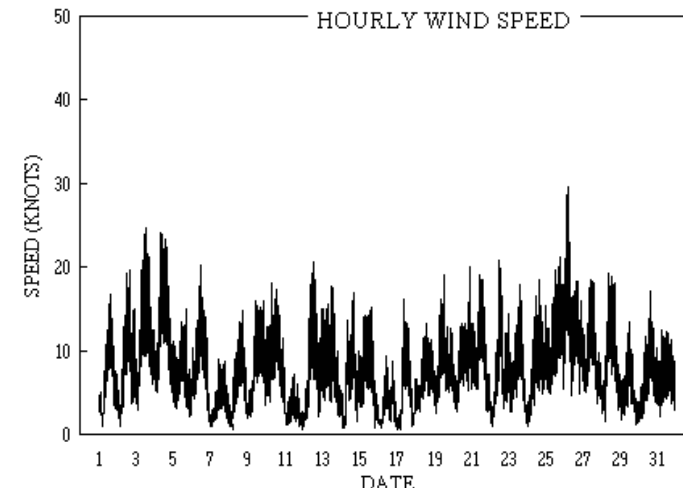
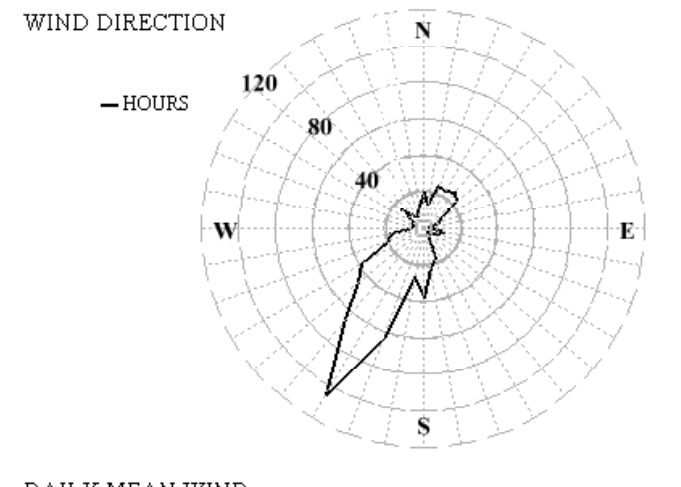
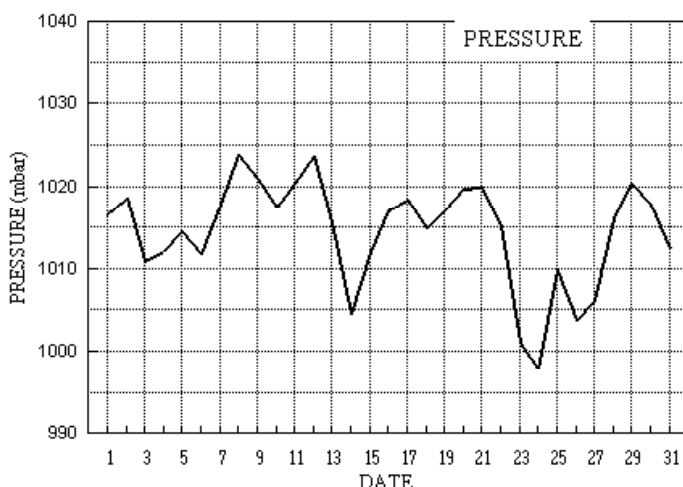
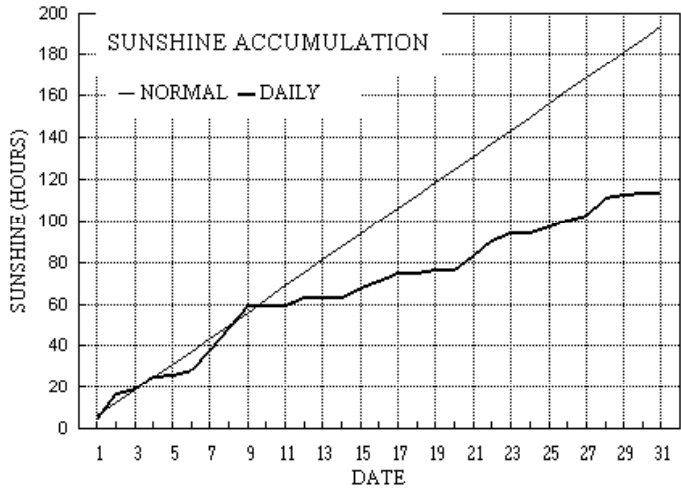
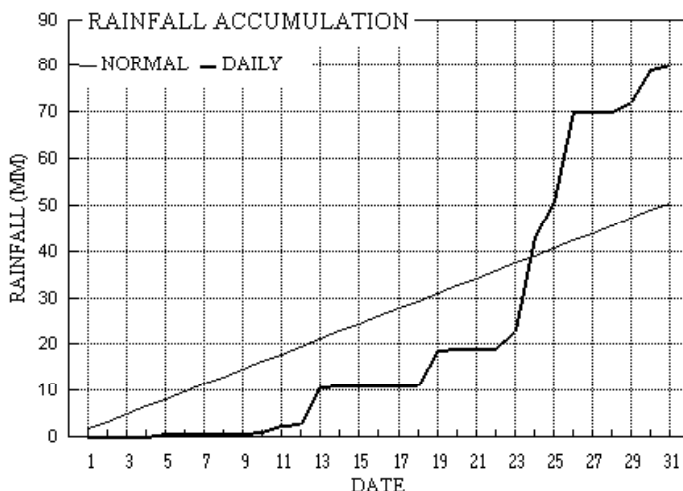
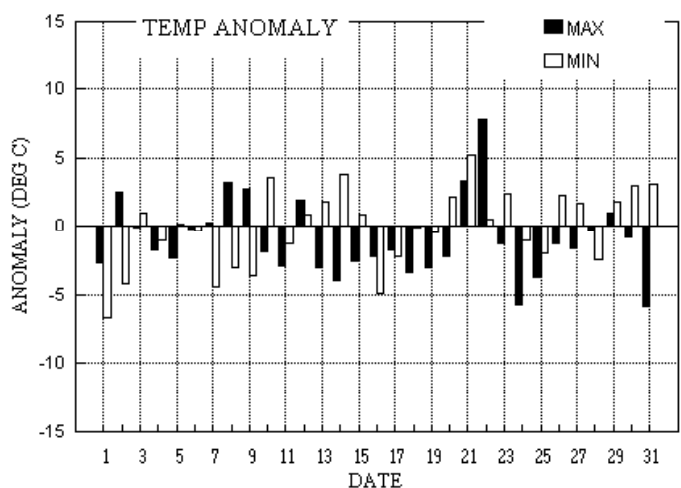
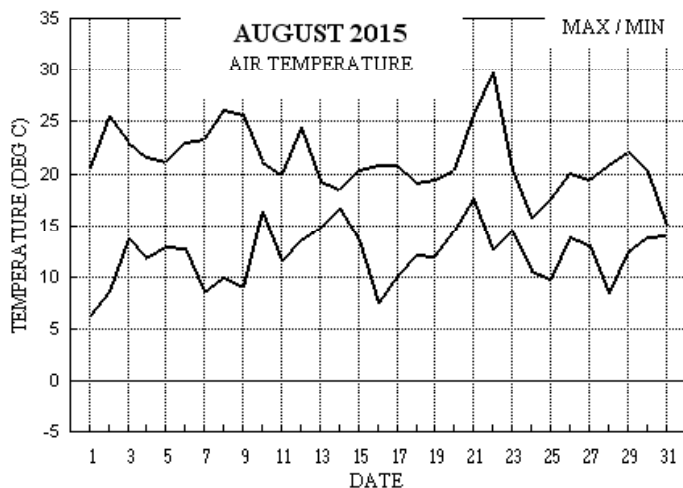
Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 st to the 10 th				From the 11 th to the 20 th				From the 21 st to the 31 st			
0.0°	-1.8°	6%	96%	-2.3°	+0.1°	110%	27%	-0.8°	+1.3°	344%	54%

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

Wokingham climatological graphs for August 2015



Month: AUGUST 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	20.5	6.2	0.0	1.7	17.0	16.5	5.2	0.0	1016.6	0 0 0 0	0 0 0 0	0 0 0 0	224	4.5	4.7	227	17	1552	233	8	13	0.0	
2	25.6	8.5	0.0	4.1	17.1	16.5	11.9	0.0	1018.6	0 0 0 0	0 0 0 0	0 0 0 0	155	4.8	5.4	149	20	1604	164	9	16	0.0	
3	23.1	13.7	tr	8.5	17.7	16.5	2.6	0.0	1010.9	0 0 0 0	0 0 0 0	0 0 0 0	206	7.8	8.0	237	25	1329	212	12	12	0.0	
4	21.6	11.8	tr	9.7	18.0	16.5	6.1	0.0	1012.2	0 0 0 0	0 0 0 0	0 0 0 0	220	8.6	8.8	227	24	0824	225	13	09	0.0	
5	21.1	12.9	0.7	10.2	17.9	16.6	0.7	0.0	1014.4	0 0 0 0	0 0 0 0	0 0 0 0	173	4.1	4.6	176	15	1604	176	7	12	0.7	
6	23.0	12.7	tr	9.2	17.8	16.6	2.5	0.0	1011.7	0 0 0 0	0 0 0 0	0 0 0 0	215	5.2	5.8	240	21	1125	239	10	12	0.0	
7	23.4	8.5	0.0	4.1	18.0	16.6	9.4	0.0	1017.8	0 0 0 0	0 0 0 0	0 0 0 0	289	1.2	2.4	12	9	1126	312	4	16	0.0	
8	26.2	9.9	0.0	6.5	18.2	16.7	10.9	0.0	1023.8	0 0 0 0	0 0 0 0	0 0 0 0	186	2.4	3.7	190	15	1720	196	7	14	0.0	
9	25.7	9.1	0.0	4.1	18.6	16.7	10.5	0.0	1020.9	0 0 0 0	0 0 0 0	0 0 0 0	221	5.0	5.2	239	16	1041	234	8	18	0.0	
10	21.1	16.3	0.5	14.5	19.0	16.8	0.1	0.0	1017.4	0 0 0 0	0 0 0 0	0 0 0 0	215	6.2	6.5	219	18	0823	222	9	08	0.3	
11	19.9	11.5	1.3	9.2	18.7	16.9	0.0	0.0	1020.4	0 0 0 0	0 0 0 0	0 0 0 0	335	0.7	1.9	18	7	1235	359	3	16	5.3	
12	24.5	13.6	0.2	12.6	18.7	17.0	3.7	0.0	1023.6	0 0 0 0	0 0 0 0	0 0 0 0	46	4.6	4.7	21	21	1339	62	8	11	1.5	
13	19.3	14.8	7.9	11.3	19.1	17.0	0.0	0.0	1015.6	0 0 0 0	0 0 0 0	0 0 0 0	30	4.7	4.9	23	18	1248	25	8	13	6.2	
14	18.6	16.6	0.4	16.5	18.9	17.1	0.0	0.0	1004.6	0 0 0 0	0 0 0 0	0 0 0 0	279	2.5	3.8	308	17	1655	302	8	16	0.9	
15	20.4	13.5	0.0	11.1	18.6	17.1	5.0	0.0	1012.0	0 0 0 0	0 0 0 0	0 0 0 0	301	4.1	4.4	316	15	1537	294	7	13	0.0	
16	20.8	7.4	tr	3.7	18.3	17.2	2.8	0.0	1017.0	0 0 0 0	0 0 0 0	0 0 0 0	70	0.2	2.2	7	10	1150	141	5	19	0.0	
17	20.8	10.1	0.0	6.4	18.3	17.2	3.6	0.0	1018.4	0 0 0 0	0 0 0 0	0 0 0 0	351	2.6	3.1	42	16	1053	12	7	10	0.0	
18	19.2	12.2	tr	10.7	18.2	17.1	0.0	0.0	1014.8	0 0 0 0	0 0 0 0	0 0 0 0	236	4.5	4.7	269	14	1404	251	7	14	0.0	
19	19.5	12.0	7.9	7.4	17.8	17.1	1.8	0.0	1017.1	0 0 0 0	0 0 0 0	0 0 0 0	196	5.4	5.7	202	19	1341	207	9	13	5.6	
20	20.4	14.5	0.2	12.7	17.7	17.1	0.2	0.0	1019.7	0 0 0 0	0 0 0 0	0 0 0 0	197	5.6	5.7	193	20	2214	204	9	22	0.2	
21	25.7	17.6	0.0	17.0	18.2	17.0	6.7	0.0	1019.9	0 0 0 0	0 0 0 0	0 0 0 0	195	6.4	6.6	192	19	1039	208	10	14	0.0	
22	29.8	12.6	tr	8.5	18.5	17.0	7.5	0.0	1015.2	0 0 0 0	0 0 0 0	0 0 0 0	123	3.6	4.7	147	21	1320	157	10	13	0.0	
23	20.4	14.5	3.8	9.6	19.1	17.1	3.2	0.0	1001.0	0 0 0 0	0 0 0 0	0 0 0 0	187	3.4	5.2	219	18	1513	223	9	15	4.2	
24	15.8	10.6	20.0	5.8	18.5	17.2	0.0	0.0	997.8	0 0 0 0	0 0 0 0	0 0 0 0	341	2.7	4.7	327	19	1623	20	8	12	6.1	
25	17.6	9.8	7.8	6.5	17.7	17.2	3.1	0.0	1009.7	0 0 0 0	0 0 0 0	0 0 0 0	200	6.8	7.5	215	21	1944	212	11	17	3.4	
26	20.1	13.8	19.3	14.3	17.5	17.2	3.6	0.0	1003.8	0 0 0 0	1 0 0 0	0 0 0 0	203	8.6	8.8	193	30	0520	195	13	05	3.4	
27	19.5	13.1	tr	10.9	17.5	17.1	2.2	0.0	1006.0	0 0 0 0	0 0 0 0	0 0 0 0	214	6.4	6.5	230	19	1045	205	10	14	0.0	
28	20.8	8.4	tr	3.0	17.4	17.0	8.6	0.0	1016.0	0 0 0 0	0 0 0 0	0 0 0 0	214	5.7	5.8	256	20	1038	221	11	14	0.0	
29	22.1	12.5	2.3	10.9	17.5	17.0	1.8	0.0	1020.4	0 0 0 0	0 0 0 0	0 0 0 0	180	2.8	3.4	134	14	1209	162	7	12	3.6	
30	20.2	13.8	6.7	13.3	17.9	16.9	0.7	0.0	1017.7	0 0 0 0	0 0 0 0	0 0 0 0	22	4.0	4.1	22	17	1540	12	8	15	5.2	
31	15.0	14.0	1.2	13.9	18.2	16.9	0.0	0.0	1012.4	0 0 0 0	0 0 0 0	0 0 0 0	355	4.0	4.2	24	13	0632	14	6	09	2.5	
Total			80.2				114.1	0.0															49.1
Mean	21.3	12.1		9.3	18.1	16.9	3.68	0.0	1014.4					210	2.6	5.1							
Anom	-1.3	-0.3	159%	-0.0	-0.6	-0.7	59%																
Daily mean		16.7																					
Anom		-0.8																					

Number of days with:

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

Abbreviations.

Max/min = highest and lowest air temperature at 1.2m in 24 hour period ending at 09 GMT

Rain = total rainfall and melted snowfall in 24 hour period ending at 09 GMT, millimetres. (Tr = trace, <.05mm).

Grass min = Lowest overnight temperature at grass tip level.

Sun = hours of bright sunshine, measured electronically. Frost = Number of hours with air temp below 0 deg C.

pp09 = Air pressure corrected to mean sea level at 0900 GMT, millibars.

Af = Air frost. Gf = Ground frost. Sf = Snow falling. Sl = Snow lying at 09 GMT.

Th = Thunder. Ha = Hail =>5mm. Ic = Hail <5mm or ice. Fg = Fog at 09 GMT.

Vec mean = 24 hour mean wind vector, ddd = direction in degrees from true north, ff = speed in knots.

Sp = 24 hour mean wind speed in knots.

Max gust = Highest gust in 24 hours, gg = speed in knots, HHhh = Time, hours and minutes, GMT.

High hr = Highest hourly mean wind, HH = hour commencing. Rain Hrs = Duration of rain, 24 hours to 09 GMT. Excludes snow/hail.

30cm and 100 cm are earth temperatures at those depths, read at 09 GMT.

Anom = Departure from 1981-2010 climatological average.

All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for AUGUST 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	84	7	20	05	09	15.9	9.3	65	7.2	1016.6	0	003	03	2	2	1	1	5	3	8	81822	87272					1	1Ac65 COTRA Cu hum Halo 22°	
2	75	7	17	09	13	18.1	11.6	66	8.4	1018.6	7	002	03	2	2	4	1	5	3	1	84822	87075					2	1Ac68 COTRA Cu hum irisation	
3	77	7	21	12	21	20.7	14.5	67	10.1	1010.9	2	008	02	2	2	6	8	5	0	1	85822	87078					3	2Sc40 COTRA Cu med Halo 22° part	
4	75	2	23	14	24	19.1	9.4	53	7.3	1012.2	1	004	03	0	0	2	8	6	0	0	82830						4	1Sc50 Cu hum	
5	72	7	16	05	10	17.5	11.3	67	8.3	1014.4	7	005	03	2	2	4	8	5	7	/	81825	84640	86359				5	/Ac65 Cu med	
6	59	8	21	07	14	18.1	14.6	80	10.4	1011.7	1	012	50	5	2	8	8	3	/	/	81708	84812	88625				6	Cu hum	
7	80	2	22	02	05	17.9	9.9	59	7.5	1017.8	2	008	01	1	1	2	8	5	0	0	81825						7	2Sc50 Cu med	
8	61	2	06	03	08	18.9	14.1	74	9.9	1023.8	0	009	01	1	1	1	1	4	0	0	82815						8	Cu hum	
9	86	2	24	05	12	20.0	9.6	51	7.3	1020.9	8	006	02	0	0	1	5	7	4	1	81656						9	2Ac59 1Ac62 1Ac68 1Ci75 COTRA Sc len Ac len	
10	84	8	22	08	18	19.3	15.4	78	10.8	1017.4	5	000	03	2	2	8	5	4	/	/	85710	88615					10		
11	80	8	36	01	03	15.7	10.3	70	7.7	1020.4	3	015	02	2	2	1	8	5	7	/	81822	83358	88465				11	1Sc56 Cu hum	
12	84	7	03	07	15	18.4	13.1	71	9.2	1023.6	0	000	01	2	2	4	5	6	3	1	82635	83656	87075				12	3Ac62 COTRA Halo 22° part	
13	58	8	02	07	14	17.1	15.1	88	10.6	1015.6	7	015	05	6	2	8	6	3	/	/	86709	88711					13		
14	40	8	20	07	13	17.1	16.6	97	11.8	1004.6	5	004	20	5	4	8	7	2	/	/	82704	86706	88712				14		
15	82	3	34	05	14	16.3	8.7	61	6.9	1012.0	2	016	01	1	1	1	8	5	0	1	81825	83080					15	1Sc56 COTRA Cu hum	
16	86	7	04	03	07	15.7	8.8	64	7.0	1017.0	1	001	02	2	2	6	5	7	0	1	86656						16	1Ci80 COTRA	
17	82	6	02	05	11	18.6	8.1	50	6.7	1018.4	8	002	03	2	2	5	8	6	0	1	81835	85656					17	3Ci75 COTRA Cu hum	
18	78	7	26	05	09	15.0	9.0	67	7.1	1014.8	7	001	03	2	2	7	0	9	7	2	83462	87465					18	1Ac65 /Ci70	
19	82	6	22	08	14	17.4	12.2	71	8.7	1017.1	1	005	03	1	1	2	1	4	3	4	82818	85075					19	1Ac65 COTRA Cu hum Halo 22° part	
20	75	7	19	04	10	16.5	14.1	85	9.9	1019.7	1	011	01	2	2	6	8	4	7	/	81810	86620	87357				20		
21	75	7	16	06	10	18.9	16.0	83	11.2	1019.9	0	001	21	6	2	7	5	4	3	/	86613	87635					21	/Ac62	
22	72	6	08	04	10	18.7	15.2	80	10.7	1015.2	8	015	01	2	2	1	6	4	0	1	81710	86078					22	COTRA U/A cont parhelion	
23	70	7	18	07	12	19.5	12.6	64	9.1	1001.0	5	008	03	2	2	3	5	5	8	8	83625	83358	85362				23	8Cs72 Ac cas	
24	56	8	06	05	12	12.6	11.9	96	8.8	997.8	6	019	64	6	2	2	5	7	7	/	81706	83650	85358				24	8As60	
25	82	7	18	06	12	15.8	11.3	74	8.3	1009.7	8	003	03	1	1	5	8	4	5	1	82816	84650	85357				25	/Ci75 Cu med	
26	80	7	21	09	20	15.8	13.6	87	9.7	1003.8	3	012	62	6	2	1	8	4	7	/	81815	87462					26	1Sc56 1Ac58 Cu fra Cld edge NNW vv50k exS	
27	80	7	22	09	15	14.2	12.5	89	9.0	1006.0	2	010	02	6	2	2	2	4	7	8	82710	87272					27	1Cu15 1As65 2Ac68 COTRA Cu med Halo 22° part	
28	81	1	24	08	14	16.7	10.8	68	8.0	1016.0	1	014	03	0	0	1	1	5	3	1	81822						28	1Ac57 1Ci78 Cu hum	
29	82	7	22	04	10	17.6	12.4	71	8.8	1020.4	0	002	03	2	2	2	1	5	7	1	82820	83365	85078				29	1Ac62 COTRA Cu hum	
30	75	6	05	04	10	17.1	13.6	80	9.6	1017.7	0	000	02	2	2	6	8	4	7	/	81812	84645	85360				30	2Sc35 Cu hum	
31	59	8	35	04	10	14.2	12.6	90	9.1	1012.4	6	007	61	6	6	8	7	2	/	/	82705	87707	88712				31		

Mean vis = 29.5 km

Mean cloud = 6.1 77%

Mean wind speed = 6.1 kn

Mean gust = 12 kn

Mean TT = 17.2 °C

Mean TdTd = 12.2 °C

Mean RH = 73.1 %

Mean r = 8.9 g/kg

Mean PPP = 1014.4 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 AUGUST 2015

Date	VV	N	dd	ff	gg	TT	Td	Td	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cf	NCh	shs	NCh	shs	NCh	shs	Date	Remarks
1	86	7	25	09	15	19.0	8.7	51	6.9	1016.6	3	005	02	2	2	7	8	6	/	/	83840	87650					1		
2	84	2	15	11	18	25.3	6.5	30	6.0	1014.4	7	024	02	0	0	0	0	9	0	1	82075						2		
3	80	7	20	11	20	22.8	13.1	54	9.3	1010.4	8	006	21	6	2	4	8	6	0	1	83835	87075					3	2Sc45 COTRA Cu hum	
4	80	7	22	09	24	20.3	8.8	47	7.0	1012.9	2	002	02	2	2	7	8	6	/	1	82845	87650					4	/Ci75 Cu med	
5	70	8	19	05	12	17.7	11.3	66	8.3	1011.7	6	009	60	6	2	1	5	6	7	/	81630	83360	86460				5	/Ac63	
6	86	7	24	08	15	22.3	10.3	46	7.7	1013.1	1	007	01	2	2	2	1	6	3	1	82840	86075					6	2Ac68 COTRA Cu hum	
7	82	5	31	03	08	21.5	8.1	42	6.7	1017.9	2	004	02	1	1	4	4	7	0	1	83850						7	1Sc56 2Ci75 COTRA Cu hum	
8	81	4	19	07	14	25.3	12.0	43	8.6	1022.4	6	010	02	1	1	4	8	7	0	0	82850	83657					8	Cu med	
9	84	5	23	08	14	25.2	11.5	42	8.4	1018.5	7	011	02	1	1	4	8	6	4	1	82845	83656					9	3Ac59 1Ci75 Cu hum Sc len Ac len	
10	62	7	20	10	17	19.3	15.7	79	11.0	1016.2	5	003	20	6	5	7	8	3	/	1	81808	86612	87618				10	/Ci75 Cu fra	
11	75	8	12	01	05	19.5	11.2	59	8.2	1020.3	6	001	61	6	2	1	4	6	7	/	81835	86359	88462				11	1Sc40 Cu hum	
12	81	7	07	07	17	23.0	13.1	54	9.3	1021.7	7	014	02	2	2	6	8	6	/	1	81835	86650					12	2Sc45 /Ci75 Cu hum	
13	58	8	05	06	18	18.5	17.1	92	12.1	1011.7	5	026	21	6	2	8	5	3	/	/	81706	86708	88615				13		
14	62	8	28	05	12	15.8	13.7	87	9.8	1005.6	2	005	21	6	5	8	8	3	/	/	81708	85812	88630				14	jp E	
15	84	7	29	05	13	18.7	6.3	44	5.9	1013.9	1	012	02	2	2	7	8	6	/	/	81845	87656					15	Cu med	
16	84	7	06	02	05	19.8	6.5	42	6.0	1016.3	7	004	02	2	2	7	8	6	3	1	82848	86656					16	/Ac58 /Ci75	
17	82	7	35	06	14	19.6	5.5	40	5.6	1016.8	8	008	02	2	2	6	8	7	/	1	81850	83650	85657				17	7Ci75 COTRA Cu hum	
18	75	8	25	06	14	18.8	9.5	55	7.4	1014.2	6	003	02	2	2	1	1	6	7	/	81835	86361	88465				18	1Ac59 Cu hum	
19	65	8	18	06	18	15.6	13.3	86	9.4	1017.4	2	002	61	6	2	1	8	4	7	/	81815	83358	88460				19	1Sc45 Cu fra	
20	80	8	18	05	13	18.3	16.1	86	11.2	1019.6	8	002	61	6	2	8	5	3	/	/	82709	86712	88650				20	Absent vv&cld est	
21	86	1	22	11	19	24.9	13.5	49	9.8	1017.9	6	011	01	1	1	1	1	6	8	1	81838						21	1Ac65 1Ci75 COTRA Cu hum Ac flo	
22	86	2	18	09	20	29.3	12.0	34	8.4	1010.9	6	015	03	0	0	2	8	7	8	0	81850						22	1Sc56 1Ac60 Cu con Sc len	
23	84	7	23	06	16	18.8	11.6	63	8.6	1001.2	7	003	15	6	2	6	8	6	6	8	85830						23	2Sc50 1Ac58 2Cs72 Cu med jpW	
24	65	8	33	06	12	14.7	13.6	94	9.7	997.5	3	008	61	6	2	7	5	3	2	/	82708	85612	87640				24	8Ns58	
25	30	8	18	07	14	15.7	14.1	90	10.1	1004.9	7	031	51	6	5	8	7	2	/	/	85703	88706					25		
26	80	5	20	09	17	19.4	13.5	69	9.7	1002.7	2	002	02	6	2	4	2	5	4	2	84822						26	1Ac65 2Ci70 Cu med	
27	60	5	22	10	18	18.6	9.8	56	7.5	1006.9	1	004	15	8	1	4	8	6	3	2	83833						27	1Sc50 1Ac65 1Ci75 Cu con jpNW vv50k ex p	
28	86	3	20	10	19	19.5	9.8	54	7.5	1016.7	2	003	15	8	1	2	8	6	6	1	81840						28	2Sc56 1Ac58 1Ci78 Cu med jpW	
29	80	8	17	04	10	19.5	13.0	66	9.2	1018.6	8	006	60	6	2	1	8	6	7	/	81835	85363	88465				29	1Sc45 Cu hum	
30	62	8	36	06	14	17.2	14.0	81	9.9	1017.1	4	000	15	6	2	8	8	4	/	/	83815	88625					30	Cu hum jpNW	
31	35	8	34	05	11	14.3	13.5	95	9.6	1013.6	3	010	58	6	5	8	5	3	/	/	87706	88615					31		

Mean vis = 32.6 km

Mean cloud = 6.4 80%

Mean wind speed = 6.9 kn

Mean gust = 15 kn

Mean TT = 19.9 °C

Mean TdTd = 11.5 °C

Mean RH = 61.2%

Mean r = 8.5 g/kg

Mean PPP = 1013.5 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-Aug	02-Aug	03-Aug	04-Aug	05-Aug	06-Aug	07-Aug	08-Aug	09-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug
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	0.06	0.12	0.09	0.14	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.70	0.54	0.55	1.00	0.49	0.00	0.00	0.02	0.70	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.70	0.01	0.23	1.00	0.00	0.00	0.00	0.30	0.92	1.00	0.00	0.00	0.00	0.00	0.00	0.06	0.24
7	0.49	0.92	0.21	0.94	0.00	0.00	0.00	0.77	0.06	1.00	0.00	0.00	0.00	0.00	0.00	0.75	0.81
8	0.03	0.93	0.40	0.95	0.00	0.00	0.00	1.00	0.88	0.95	0.01	0.00	0.29	0.00	0.00	1.00	0.17
9	0.09	1.00	0.04	0.38	0.00	0.00	0.00	1.00	0.95	1.00	0.00	0.00	0.63	0.00	0.00	1.00	0.09
10	0.12	0.95	0.05	0.23	0.00	0.17	0.71	0.77	0.78	0.00	0.00	0.21	0.00	0.00	0.75	0.15	
11	0.39	0.55	0.00	0.09	0.00	0.21	0.50	0.71	0.05	0.00	0.00	0.78	0.00	0.00	0.30	0.63	
12	0.00	0.16	0.01	0.38	0.01	0.19	0.15	0.62	0.01	0.00	0.00	0.21	0.00	0.00	0.19	0.39	
13	0.00	0.99	0.00	0.01	0.00	0.35	0.97	0.75	0.74	0.04	0.00	0.66	0.00	0.00	0.00	0.01	
14	0.00	1.00	0.47	0.09	0.00	0.33	0.84	0.65	0.51	0.00	0.00	0.22	0.00	0.00	0.00	0.05	
15	0.05	1.00	0.09	0.07	0.00	0.71	0.48	0.98	0.50	0.00	0.00	0.16	0.00	0.00	0.20	0.00	
16	0.72	1.00	0.00	0.22	0.00	0.13	0.79	0.62	0.23	0.00	0.00	0.00	0.00	0.00	0.28	0.00	
17	0.29	0.97	0.18	0.00	0.00	0.19	0.42	0.66	0.60	0.06	0.00	0.21	0.00	0.00	0.00	0.00	
18	0.56	0.65	0.11	0.00	0.05	0.06	0.55	0.59	0.88	0.01	0.00	0.00	0.00	0.00	0.00	0.00	
19	0.50	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.14	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	4.72	10.81	2.43	5.50	0.55	2.32	8.54	9.87	9.46	0.11	0.00	3.36	0.00	0.00	4.53	2.54	

	Hour	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug	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	0.02
5	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.58	0.00	0.72	0.00	0.00	0.60	0.00	0.00	0.00	0.23
6	0.08	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.04	0.00	0.21
7	0.59	0.00	0.37	0.00	0.00	0.03	0.00	0.00	0.48	0.00	0.00	0.00	1.00	0.16	0.06	0.00	0.28
8	0.84	0.00	0.86	0.00	0.00	0.69	0.00	0.00	0.17	0.00	0.00	0.00	1.00	0.23	0.44	0.00	0.35
9	0.71	0.00	0.15	0.05	0.09	1.00	0.00	0.00	0.00	0.00	0.00	0.03	0.82	0.46	0.00	0.00	0.31
10	0.79	0.00	0.00	0.06	0.03	1.00	0.00	0.00	0.00	0.00	0.00	0.09	0.79	0.29	0.00	0.00	0.26
11	0.14	0.00	0.00	0.00	0.03	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.34	0.00	0.00	0.20
12	0.11	0.00	0.00	0.00	0.57	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.07	0.00	0.00	0.14
13	0.02	0.00	0.00	0.00	0.58	0.70	0.11	0.00	0.00	0.36	0.04	0.26	0.00	0.00	0.00	0.00	0.21
14	0.00	0.00	0.00	0.00	0.97	1.00	0.47	0.00	0.00	0.46	0.70	0.87	0.00	0.00	0.00	0.00	0.28
15	0.00	0.00	0.00	0.00	0.97	0.31	0.10	0.00	0.00	0.68	0.09	0.53	0.00	0.00	0.00	0.00	0.22
16	0.00	0.00	0.00	0.11	0.95	0.02	0.22	0.00	0.04	0.41	0.10	0.06	0.00	0.00	0.00	0.00	0.19
17	0.00	0.00	0.00	0.00	0.99	0.00	0.57	0.00	0.43	0.78	0.50	0.00	0.00	0.00	0.00	0.00	0.22
18	0.00	0.00	0.00	0.00	0.92	0.00	0.85	0.00	0.00	0.65	0.41	0.00	0.00	0.00	0.00	0.00	0.20
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	0.02
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	3.26	0.00	1.62	0.22	6.10	6.76	2.91	0.00	2.84	3.34	1.97	7.75	1.55	0.55	0.00	103.58	

August 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	14.36	20.6	1659	6.2	445	70.3	96.3	557	43.8	1136	8.49	6.88	8.3	1055	5.5	445	1016.58	1018.7	2358	1015.7	1253	
2	17.88	25.7	1534	8.1	440	61.2	98.0	532	27.3	1513	8.81	7.06	9.3	1028	5.4	1717	1015.70	1019.0	615	1009.6	2355	
3	18.82	23.3	1452	13.6	314	66.5	86.2	607	49.9	1452	12.28	8.92	11.6	1406	6.8	35	1010.30	1011.6	1401	1008.5	209	
4	16.53	21.8	1408	11.4	433	64.5	90.9	403	40.0	1408	9.39	7.32	8.7	1312	6.0	1608	1013.00	1015.7	2215	1010.5	20	
5	15.88	21.2	1304	12.8	534	74.1	93.4	2053	45.1	1304	11.04	8.17	9.8	1537	6.2	1721	1012.97	1015.4	22	1010.0	2350	
6	17.45	23.1	1433	11.5	2359	71.3	92.7	18	41.7	1732	11.77	8.63	11.4	1018	6.5	2042	1012.73	1016.7	2312	1009.6	401	
7	16.39	23.5	1537	8.4	348	64.7	95.7	416	33.2	1539	8.79	6.99	8.6	903	5.8	1659	1017.93	1021.3	2348	1015.9	223	
8	18.19	26.3	1349	9.8	458	69.1	97.7	601	32.9	1703	11.46	8.34	10.6	1243	6.5	1725	1022.55	1024.1	758	1021.1	0	
9	17.91	25.8	1447	9.0	440	66.4	97.1	531	21.5	1101	10.41	7.89	10.1	2356	3.8	1058	1020.08	1022.8	15	1017.5	1727	
10	17.99	21.3	1349	13.9	2352	80.3	90.0	412	63.3	2115	14.52	10.25	12.3	1258	7.3	2254	1017.07	1018.9	3	1015.3	1714	
11	15.48	20.0	1230	11.3	454	78.3	95.9	2356	53.2	1203	11.46	8.36	10.1	1907	7.4	1049	1020.22	1023.0	2358	1017.9	2	
12	17.71	24.6	1344	12.7	453	73.5	97.6	229	45.2	1350	12.46	8.88	10.6	1511	7.9	2331	1022.42	1024.0	717	1019.6	2354	
13	16.71	19.4	1615	14.7	404	90.3	97.0	2359	75.8	0	15.11	10.68	12.5	1515	8.1	1	1013.89	1019.9	9	1007.7	2357	
14	15.88	17.4	927	14.5	2243	92.2	98.5	614	80.9	1700	14.61	10.39	12.0	913	9.0	2351	1006.02	1008.4	2339	1004.3	820	
15	15.89	20.5	1223	12.4	2359	65.4	87.9	510	37.0	1642	8.96	7.15	9.2	1	5.3	1642	1012.60	1016.5	2323	1008.2	0	
16	14.64	20.9	1426	7.0	354	69.8	96.3	446	36.9	1428	8.59	6.93	8.5	2210	5.4	1335	1017.03	1018.5	2256	1016.1	1451	
17	15.83	20.9	1347	9.3	521	63.5	97.3	552	31.7	1352	7.92	6.65	8.3	39	4.7	1221	1017.44	1018.8	759	1016.0	2330	
18	15.72	19.3	1517	12.1	544	67.0	78.6	547	49.3	1357	9.50	7.36	8.7	2052	6.4	1145	1014.78	1016.2	3	1013.8	1727	
19	14.82	19.6	1038	11.5	449	83.2	96.4	2355	56.1	1107	11.84	8.59	9.8	2357	7.3	1108	1016.91	1017.6	1447	1015.4	12	
20	16.94	20.5	1608	14.2	453	88.1	97.4	244	70.6	1156	14.90	10.44	11.8	1542	9.6	5	1019.18	1020.4	2306	1016.8	131	
21	19.59	25.9	1413	13.6	2359	73.4	94.5	2358	45.0	1416	14.31	10.06	11.9	1216	8.7	1910	1019.00	1020.2	1	1017.5	1600	
22	20.80	30.0	1312	11.6	303	67.5	97.8	326	32.5	1452	13.50	9.62	12.7	1140	8.2	303	1012.86	1018.3	0	1005.3	2359	
23	16.96	21.1	20	9.9	2331	73.6	97.0	2358	55.4	19	12.00	8.81	11.2	1041	7.4	2331	1002.06	1005.6	0	1000.3	956	
24	12.39	14.7	1219	10.1	8	94.4	98.0	529	82.9	1909	11.53	8.54	9.8	1202	7.5	9	1000.20	1006.7	2353	996.3	1223	
25	13.70	17.6	1708	8.5	538	87.3	95.4	235	66.6	1057	11.58	8.58	11.0	1556	6.5	538	1007.55	1010.6	733	1004.2	1523	
26	16.06	20.2	1517	13.3	2321	83.7	96.6	1111	61.4	1517	13.21	9.52	11.5	1348	8.3	1821	1003.54	1006.9	0	1001.9	1054	
27	14.55	19.6	1423	11.4	2359	80.0	94.8	731	52.6	1424	10.97	8.17	9.4	1017	7.1	1514	1007.08	1012.0	2359	1004.5	39	
28	14.77	20.8	1437	7.5	537	73.6	98.0	625	42.8	1407	9.59	7.39	8.4	832	6.2	549	1016.23	1020.2	2218	1011.8	1	
29	16.10	22.2	1215	11.7	145	80.8	97.6	2339	49.3	1215	12.50	8.95	10.3	1826	7.7	1146	1019.42	1020.8	705	1018.1	1541	
30	15.67	20.3	1208	12.0	524	86.1	97.5	111	65.7	1104	13.27	9.41	10.7	1058	8.4	544	1017.14	1018.6	4	1014.7	2354	
31	13.13	14.5	0	11.7	2311	93.6	97.2	732	89.3	1811	12.14	8.77	9.4	1045	7.8	2308	1013.92	1016.5	2305	1011.5	630	
Total																						
Mean	16.28	21.37		11.15		75.9	95.01		50.93		11.51	8.51	10.27		6.92		1014.14	1016.90		1011.47		
Max	20.80	29.97		14.67		94.4	98.50		89.30		15.11	10.68	12.65		9.63		1022.55	1024.13		1021.07		
Min	12.39	14.53		6.17		61.2	78.60		21.50		7.92	6.65	8.26		3.76		1000.20	1005.60		996.34		

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

WOKINGHAM METEOROLOGICAL DATA

Wokingham Climatological Station, Emmbrook, Berkshire.

Lat 51°25'N 00°51'W NGR (SU)798701 Altitude 46m ASL

Seasonal Means and Totals

SUMMER 2015

Temperature (°C)				Rank in the past 134 years					
Mean maximum	21.7	(-0.3)	40 th	highest					
Mean minimum	11.2	(-0.6)	62 nd	highest					
Daily mean	16.5	(-0.4)	47 th	highest					
Rainfall total (mm)	162.8	(113%)	64 th	highest					
Sunshine total (hours)	451.9	(77%)							
N° of:									
Dry days	54 (-4)		Wet days	25 (+1)					
Days with: Air frost	0 (0)	Ground frost	1 (0)	Snow falling	0 (0)	Snow lying	0 (0)		
Thunder	4 (-3)	Hail ≥5mm	0 (0)	Small hail/ice	0 (0)	Fog @09 GMT	0 (0)	Nil sun	8 (+5)
Air pressure MSL : Mean @09 GMT (mbar)	1016.4								(-0.2)

Departure from 1981 to 2010 average shown in brackets.

Notes: **Cooler, Wetter, and Duller, than Average**

Temperature: This has been quite a cool summer with the mean temperature 0.4° below average. However, there was a scattering of warm days, and 3 hot ones, namely the 30th June, 1st July and 22nd August, but there were no hot spells, and the period 24th to 30th July could be regarded as a cool spell. Compared with summers since 2000, in terms of the mean maximum, 9 have been warmer and 6 cooler than this one. The highest temperature was 33.9° on the 1st July, 3.6° above the long-term median and 8th highest in the past 112 years, and the highest summer temperature since 35.8° in July 2006. The lowest max was 14.7° on the 24th July, 0.2° above the median. The highest min was 17.6° on the 21st August, 0.5° above the median, and the lowest min was 4.1° on the 31st July, 0.2° below its median. The mean grass min was 8.3°, 0.6° above average, and the lowest grass min was -0.3° on the 4th June. The mean earth temperature at 30 cm depth was 17.8°, 0.2° below average, and at 1 m depth, 16.2°, also 0.2° below normal. July was the warmest month, mean 17.1° and June the coolest, mean 15.5°. **Rainfall:** The rainfall this summer has been slightly above average overall, and compared with recent years it was wetter than 2013, 2010 and 2009, but drier than 2014, 2012 and 2011. Since 2000 nine summers have been drier and 6 wetter than this year's. Looking at individual months, it can be seen that it got increasingly wet as the summer progressed, with June having just over half the average, July 23 % above average and August 59 % above average. The season's wettest day was the 24th July when 34.6 mm fell during this summer's longest duration of 13.5 hours. June had 3 dry spells, 6 days ending on the 10th, 7 ending on the 19th and 5 ending on the 27th, but the only other dry spell was of 6 days to the 4th of August. Thunder was recorded on the 20th and 30th of June, the 16th of July and the 26th of August but there was no hail this season. Although rain was heavy at times, there were only two occasions when the rate exceeded 50 mm/hr, June the 20th with 85 mm/hr and August the 26th, 207 mm/hr. The duration of measurable rain was 102.7 hours, 117 % of average. The estimated soil moisture deficit for unirrigated shallow rooted plants reached a maximum of 116 mm on the 9th July. Any value over 100 mm indicates severe stress, and this was the case from the 14th June to the 19th July, and from the 3rd to 18th August. An index of plant stress gives a value of 864 for this summer season, compared with an average of 652, (0 indicating no stress). **Sunshine:** This has been one of the poorest summers in this respect in over 100 years, although as recently as 2012 we had slightly less summer sunshine. June produced the best figures with close to average sunshine, but July then August fell further and further below the average. The sunniest day was the 30th June with 15.0 hours. Overall there were 37 days with <3 hours, 35 with =>6 hours, 19 with =>9 hours, 5 with =>12 hours and 1 with =>15 hours. The number of sunless days, 8, is most since 1992. **Wind:** The mean wind speed of 6.7 mph is 0.8 mph above average. The 2nd of June was the windiest day, mean 15.0 mph, and the season's highest gust of 41 mph was also on that day. The 11th August was the least windy day, mean 2.2 mph, and there were 1155 minutes of calm. Daily mean direction/number of days; N,8 NE,7 E,3 SE,4 S,12 SW,38 W,13 NW,7. Compared with average, SW winds were 6.4 % more frequent, at the expense of most other directions, including NW and E combined, down 4.5%. **Pressure:** The season's pressure extremes were 1034.7 mbar on the 9th June and 996.3 mbar on the 26th July, a span of 38.4 mbar, slightly above the average of 35.3 mbar. **Humidity:** The overall mean relative humidity was 70.9%, and the mean water vapour content per kg of air was 8.2 g at 0900 GMT and 7.8 g at 1500 GMT.

June: Dry with average temperature and near average sunshine. The daily mean temperature range is 7th highest in 40 years.

July: Dull with below average temperature and above average rainfall. 33.9° on the 1st is 3rd highest for July in over 100 years, and 4.1° on the 31st is lowest for July since 1907. The lowest max is equal lowest with 1980 since 1969. The lowest grass min is lowest for July since before 1980. A daily rainfall of 34.6 mm is 9th highest for July in 112 years.

August: Wet, cool and very dull. The lowest max is lowest since 1986. One of the dullest Augusts for over a century.

Month	Mean Max	Anom	Mean Min	Anom	Rain mm	Anom	Sun hrs	Anom	Wind Mn mph	Max gust	Mean pressure	Anom
June	21.3°	+0.8	9.7°	-0.8	27.2	55%	183.6	95%	7.0	41	1020.3	+3.2
July	22.6°	-0.3	11.7°	-0.9	55.4	123%	154.2	78%	7.1	35	1014.6	-2.0
August	21.3°	-1.3	12.1°	-0.3	80.2	159%	114.1	59%	5.9	35	1014.4	-1.9

B J Burton FRMetS.

Hon. Met. Officer to Wokingham Town Council.

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.