

WOKINGHAM

METEOROLOGICAL

DATA

Wokingham Climatological Station, Emmbrook, Berkshire.

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

Monthly Means and Totals

JUNE 2019

Temperature (°C)	Anomaly		Rank in the past 138 years						
Mean maximum	20.9	+0.4	44 th highest						
Mean minimum	10.7	+0.2	28 th highest						
Daily mean	15.8	+0.3	31 st highest						
Highest maximum	33.6	on 29 th	Lowest maximum	12.6 on 10 th					
Highest minimum	16.7	on 25 th	Lowest minimum	6.0 on 9 th					
Mean grass minimum	8.2	+0.6	Lowest grass minimum	0.5 on 9 th					
Mean earth @30 cm	16.6	-0.2	Earth @100 cm	14.7					
Frost duration (hrs)	0.0		Rain duration (hrs)	54.7					
Rainfall total (mm)	111.7	227 %	6 th highest						
Highest daily fall	57.1	on 10 th	Highest rate mm/hr	72 on 10 th					
Number of: Dry days (<0.2mm)	18	Wet days (>0.9mm)	11	days ≥5mm	5				
Sunshine total (hrs)	174.7	Daily mean	5.82	89 %	Sunniest day	14.8 on 29 th			
N° days with: Air frost	0	Ground frost	0	Snow falling	0	Snow lying	0		
Thunder	0	Hail ≥5mm	0	Small hail/ice	0	Fog @09	0	Nil sun	1
Pressure MSL: Mean @09 GMT, mbar	1014.8	-2.3	Highest	1029.9	On 27 th	Lowest	997.9	on 7 th	
Relative humidity : Mean (%)	77.9	Lowest	25 on 29 th	Water vapour (g/kg), mean at 09 and 15 GMT	8.7, 8.6				
Overall mean wind speed (mph)	6.6	Windiest day	12.1 on 8 th	Max gust	36 on 8 th				
Wind direction (days)	N 4	NE 4	E 2	SE 2	S 7	SW 9	W 2	NW 0	
Least windy day (mph)	2.8 on 18 th	Calm; less than 0.5 mph (minutes)		369					

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

Notes:

Dull and Very Wet with Near Average Temperature. New Record 24 hr Rainfall on 10th.

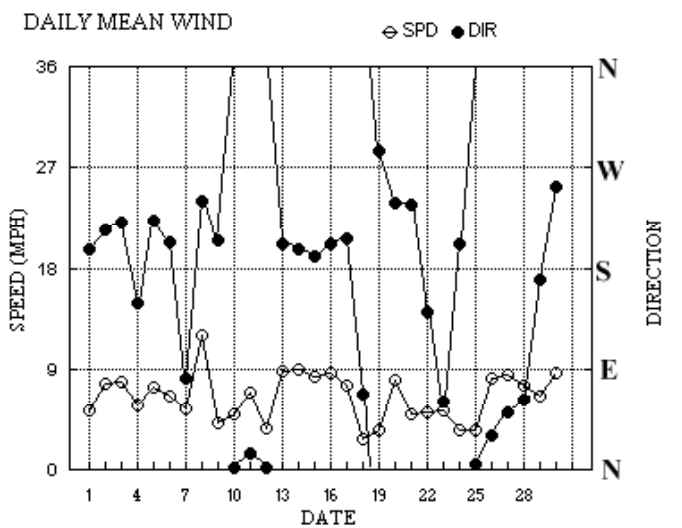
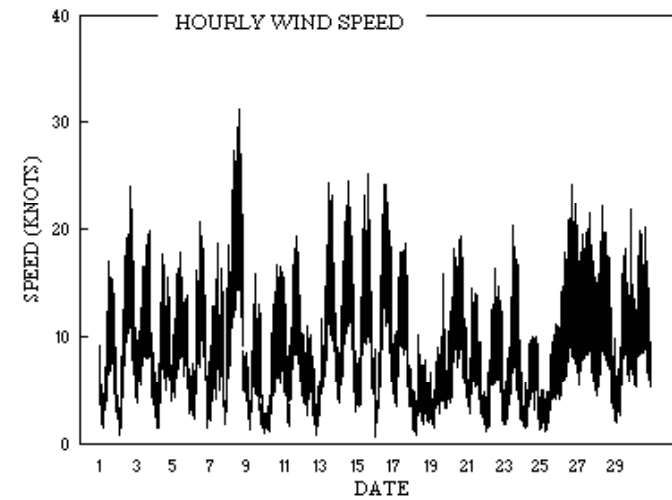
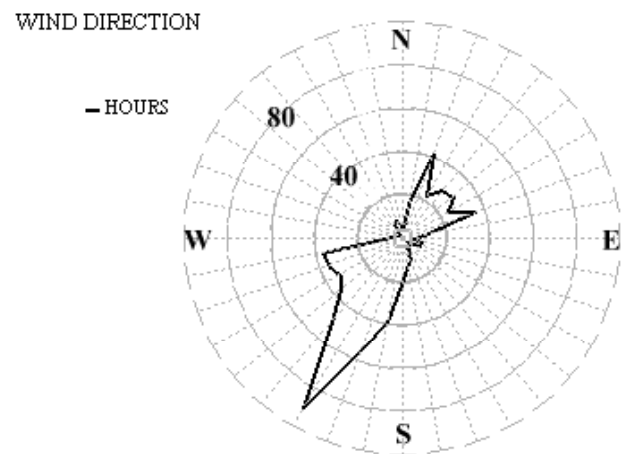
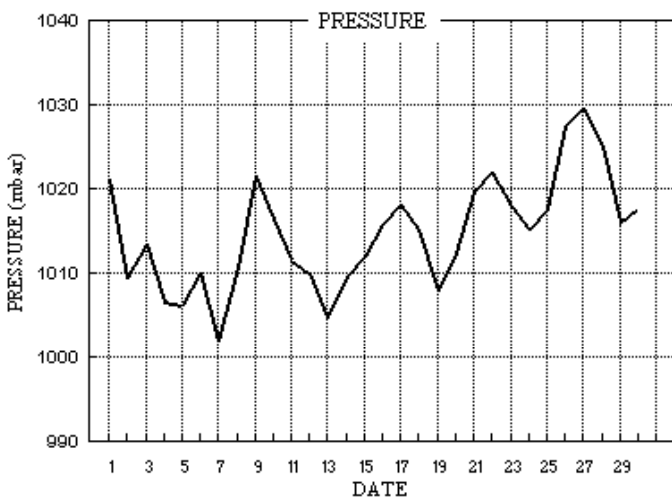
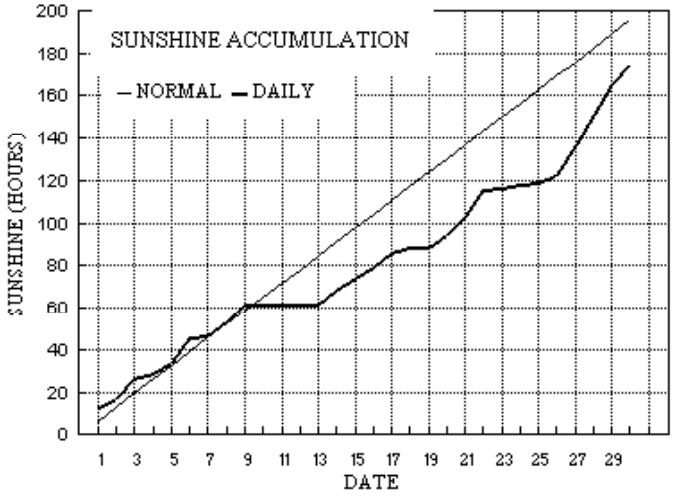
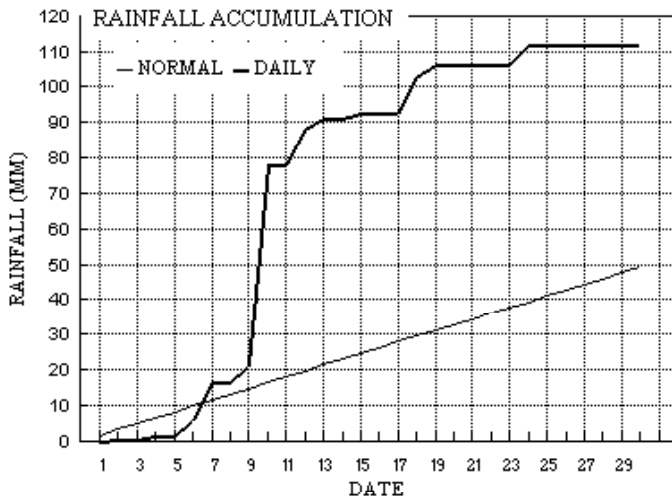
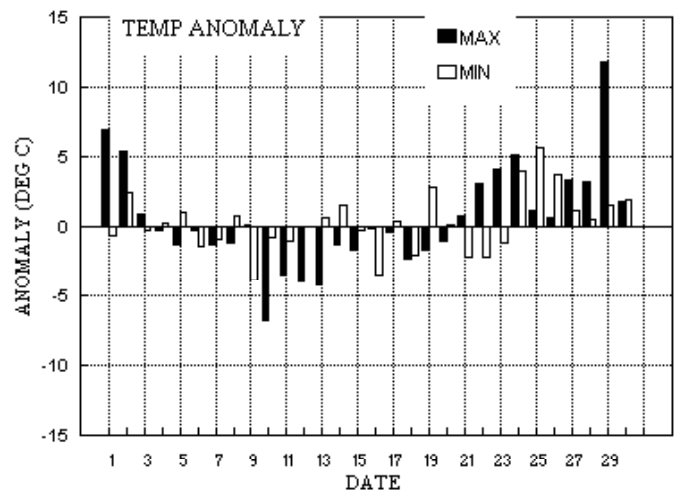
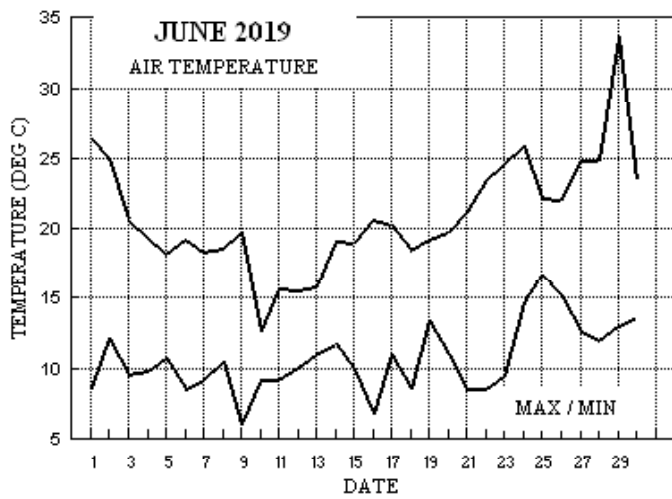
Temperature: While the mean this June is just 0.3° above the current 30 year average, it is 0.7° above the long-term median. In recent years, since 2000, 7 Junes have been cooler and 12 warmer than this year's. The highest max is notable, occurring on an isolated hot day, the 29th, and is 6.6° above the median and the 2nd highest June temperature in 116 years, after 34.6° in 1976. The lowest max is 2.2° below the median. The highest min is 1.8° above the median and the lowest min is 1.3° above its median. The lowest grass min is close to average, and not low enough for a ground frost, the last in June was in 2015. Earth temperatures are also close to average. Anomalies for daily max were positive on the 1st and 2nd, also after the 20th, but otherwise near or below normal. Anomalies were over +4° on the 1st, 2nd, 20th, 21st and 29th, with a peak value of +11.8° on the 29th. Values exceeding -4° occurred on the 10th and 13th with a peak value of -6.8° on the 10th. For daily min, anomalies ranged from +6° on the 25th to -4° on the 9th. **Rainfall:** This has been a very wet June with 227 % of the average, the total ranking 6th highest in 138 years, though in recent years 2012 was wetter, and this month's total is well short of the record 155.1 mm in 1971. This June's notable total mainly resulted from a record 24 hour rainfall of 57.1 mm on the 10th, giving the wettest June day since before 1904, the previous wettest being 52.9 mm in 1971. It is also the 5th highest daily fall for any month since before 1904. This single 24 hour fall exceeded the June monthly average rainfall by 7.9 mm. However, even without this one event, the total for the month would have been 10 % above average. Nonetheless,, the month ended on a dry note with only 1 wet day after the 19th, and a dry spell unbroken on the 30th after 6 days. There has been no thunder or hail this month but there were heavy rain showers on the 7th, 9th, 10th, 11th, 15th, 18th and 19th. Daily rainfall accumulation compared with normal was 8 mm in deficit on the 5th, becoming 5 mm in surplus on the 7th, the surplus increasing to 60 mm on the 10th, and reaching 75 mm by the 19th, but decreasing to 62 mm by the 30th. **Sunshine:** Quite a poor showing this June, with no days between the 7th and 20th having over 50% of the maximum, and 6 of those had less than 10%. In recent Junes, 2016, 2013, 2012 had less sun than this year. Daily accumulation was about normal until the 9th but was in deficit by 25 hours by the 13th, increasing to 35 hours by the 19th and to 50 hours by the 26th, but a sunny end to the month reduced this to 21 hours by the 30th. Overall there were 11 days with <3 hours, 14 with =>6 hours, 8 with =>9 hours and 5 with =>12 hours. **Wind:** The mean speed and highest gust this June are close to average. Daily mean speeds were mostly light or moderate, except for fresh on the 8th, 14th and 16th. Directions were mainly SW'ly to the 21st, except E'ly on the 7th and N'ly from 10th to 12th. SW'ly wind on the 21st backed NE'ly by 23rd, veering S'ly on 24th then N'ly on 25th, veering E'ly by 28th, S'ly on 29th and SW'ly on 30th.

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 30 th			
+0.2°	-0.3°	476%	94%	-2.0°	-0.1°	171%	51%	+3.5°	+1.3°	30%	123%

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

Wokingham climatological graphs for June 2019



Month: JUNE 2019

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 ddd	mean ff	sp	Max gust ddd	gg	HHhh	High hr ddd	ff	HH	Rain hrs
1	26.4	8.6	0.0	4.3	15.7	13.7	12.7	0.0	1021.1	0	0	0	0	197	4.5	4.6	228	17	1214	208	8	15	0.0
2	25.0	12.1	0.4	8.1	16.4	13.8	4.8	0.0	1009.4	0	0	0	0	215	6.4	6.7	219	24	1650	216	12	16	0.2
3	20.6	9.5	tr	4.6	16.4	14.0	9.0	0.0	1013.4	0	0	0	0	220	6.6	6.8	242	20	1726	200	10	14	0.0
4	19.4	9.8	1.0	5.0	16.3	14.2	2.4	0.0	1006.6	0	0	0	0	149	3.2	5.1	104	18	1040	209	8	18	0.9
5	18.2	10.7	0.0	7.8	16.0	14.3	5.1	0.0	1006.2	0	0	0	0	222	6.2	6.4	236	18	0911	229	9	09	0.0
6	19.2	8.5	4.8	3.4	15.9	14.4	11.5	0.0	1010.1	0	0	0	0	203	5.0	5.8	234	21	1205	204	10	12	2.6
7	18.3	9.2	10.4	4.1	15.8	14.4	0.8	0.0	1001.9	0	0	0	0	82	2.7	4.7	91	19	1113	130	8	16	5.6
8	18.6	10.5	tr	10.1	15.6	14.4	7.4	0.0	1010.7	0	0	0	0	240	10.3	10.5	256	31	1407	250	15	14	0.0
9	19.8	6.0	4.6	0.5	15.6	14.4	7.8	0.0	1021.6	0	0	0	0	205	2.7	3.6	154	16	1201	159	6	15	2.9
10	12.6	9.2	57.1	8.3	15.9	14.5	0.0	0.0	1016.5	0	0	0	0	2	4.0	4.4	25	17	1513	10	8	23	14.7
11	15.7	9.2	tr	9.1	14.9	14.5	0.3	0.0	1011.6	0	0	0	0	15	5.9	6.1	14	19	1622	13	10	16	0.3
12	15.5	10.1	9.6	10.0	14.9	14.5	0.2	0.0	1010.0	0	0	0	0	3	2.4	3.3	66	11	0616	15	5	02	11.4
13	15.8	10.9	3.3	10.7	15.1	14.4	0.1	0.0	1004.8	0	0	0	0	202	7.6	7.7	218	25	1203	203	12	12	4.7
14	19.1	11.7	tr	11.1	15.0	14.3	6.7	0.0	1009.6	0	0	0	0	197	7.7	7.8	180	25	1248	202	12	12	0.0
15	19.0	10.0	1.3	6.6	15.4	14.3	5.4	0.0	1012.0	0	0	0	0	191	7.2	7.3	174	25	1415	191	12	10	1.1
16	20.6	6.8	tr	3.4	15.4	14.3	5.2	0.0	1015.9	0	0	0	0	202	7.5	7.6	220	24	1351	210	13	13	0.0
17	20.3	11.0	0.0	6.8	15.8	14.4	7.0	0.0	1018.2	0	0	0	0	207	6.3	6.6	204	19	1620	201	10	09	0.0
18	18.5	8.6	10.4	5.5	16.1	14.4	1.9	0.0	1015.2	0	0	0	0	68	0.4	2.4	216	10	0949	224	4	09	3.5
19	19.3	13.4	3.5	11.3	16.3	14.5	0.1	0.0	1007.9	0	0	0	0	285	2.3	3.1	264	16	1713	262	4	18	1.6
20	19.7	10.9	tr	8.5	16.7	14.6	6.5	0.0	1012.5	0	0	0	0	239	6.9	7.1	231	19	1620	221	10	16	0.1
21	21.2	8.5	0.0	4.6	16.7	14.7	8.5	0.0	1019.6	0	0	0	0	236	4.0	4.4	242	15	0758	249	6	08	0.0
22	23.4	8.5	0.0	4.9	17.0	14.9	12.3	0.0	1021.9	0	0	0	0	141	3.6	4.5	132	17	1203	154	7	08	0.0
23	24.6	9.4	tr	6.8	17.4	15.0	1.0	0.0	1017.9	0	0	0	0	61	4.5	4.6	68	20	1337	78	8	15	0.0
24	25.9	14.7	5.3	12.5	17.7	15.1	1.8	0.0	1015.1	0	0	0	0	202	1.7	3.2	225	10	1313	189	6	13	5.1
25	22.2	16.7	tr	16.4	18.2	15.3	0.6	0.0	1017.5	0	0	0	0	6	2.4	3.1	20	11	1940	21	5	23	0.0
26	22.0	15.1	0.0	15.8	18.5	15.5	3.6	0.0	1027.6	0	0	0	0	31	7.1	7.1	22	24	1854	27	10	18	0.0
27	24.8	12.6	0.0	13.0	18.7	15.7	13.9	0.0	1029.7	0	0	0	0	52	7.3	7.5	75	22	1603	67	9	16	0.0
28	24.8	12.0	0.0	10.5	19.2	15.9	14.1	0.0	1025.1	0	0	0	0	63	6.6	6.6	62	22	0945	60	9	10	0.0
29	33.6	13.0	0.0	11.4	19.7	16.2	14.8	0.0	1016.1	0	0	0	0	169	2.8	5.7	268	22	2144	161	10	14	0.0
30	23.5	13.7	0.0	11.2	20.3	16.4	9.2	0.0	1017.7	0	0	0	0	252	7.4	7.5	258	20	1853	266	10	16	0.0
Total			111.7				174.7	0.0															54.7
Mean	20.9	10.7		8.2	16.6	14.7	5.82	0.0	1014.8					208	2.0	5.7							
Anom	+0.4	+0.2	227%	+0.6	-0.2	+0.1	89%																
Daily mean		15.8																					
Anom		+0.3																					

Number of days with:

Air frost = 0 Ground frost = 0 Nil sun = 1
Snow falling = 0 Snow lying = 0 Thunder = 0
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 JUNE 2019

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	4	15	03	07	19.7	12.2	62	8.7	1021.1	8	008	02	1	1	1	0	9	4	1	81365	83080					1	1Cc72 COTRA Anhelion	
2	86	7	22	09	16	21.5	12.9	58	9.2	1009.4	6	005	02	2	2	2	0	9	7	8	81365	87272					2	2Ac68 COTRA L/a cont	
3	78	6	25	07	15	15.5	9.8	69	7.5	1013.4	1	008	03	1	1	7	8	5	/	/	83825	85640					3	3Sc50 Cu med	
4	80	7	09	07	13	15.1	9.7	70	7.5	1006.6	8	034	60	6	2	5	5	5	7	/	82625	84635	87358				4		
5	84	5	23	11	17	16.4	7.6	56	6.5	1006.2	2	010	03	1	1	3	2	6	3	4	83832	83075					5	1Ac65 Cu med	
6	88	3	24	07	15	14.9	7.9	63	6.6	1010.1	1	003	03	0	0	3	8	6	0	0	83830						6	1Sc56 Cu con	
7	57	8	06	04	11	13.0	12.7	98	9.2	1001.9	8	025	61	6	2	6	5	6	2	/	81640	86650	88557				7		
8	75	7	24	13	28	13.7	9.9	78	7.6	1010.7	2	038	03	6	2	7	8	5	/	/	85820	83630	87650				8	Cu med	
9	84	6	25	05	13	14.4	7.2	62	6.2	1021.6	8	001	03	1	1	3	2	6	0	1	83830	85072					9	COTRA Cu med	
10	58	8	03	04	08	11.9	11.0	94	8.1	1016.5	8	004	63	6	6	4	5	3	2	/	82706	83635	88550				10		
11	62	8	01	06	11	12.0	11.1	94	8.2	1011.6	1	013	60	6	2	8	5	3	/	/	82708	86612	87635				11	/Sc50	
12	82	7	33	03	07	11.8	9.5	86	7.4	1010.0	8	009	01	5	2	7	5	4	/	/	86612	87618					12		
13	82	8	19	08	15	12.7	10.9	89	8.2	1004.8	7	001	21	6	2	4	8	3	7	/	82708	83640	88358				13	1Cu12 Cu med jp NW&E	
14	78	7	20	10	19	15.8	12.2	79	8.8	1009.6	1	008	01	6	2	7	8	4	/	/	83818	83640	87656				14	Cu med	
15	84	6	19	09	20	16.8	9.5	62	7.4	1012.0	4	000	03	8	1	5	8	5	4	2	82828	85656					15	3Ac63 /Ci75 Cu med	
16	75	7	20	09	16	15.7	13.7	88	9.7	1015.9	1	004	61	6	2	7	8	4	/	/	83815	87620					16	/Sc56 Cu med	
17	82	6	22	08	18	16.3	9.7	65	7.4	1018.2	0	002	03	1	1	6	8	6	0	1	82830	85638					17	2Ci75 Cu hum	
18	80	7	22	03	06	16.3	11.2	72	8.2	1015.2	7	009	03	2	2	1	8	5	8	8	81820	83358	87275				18	1Sc56 4Ac64 Cu hum Ac cas	
19	58	8	33	03	08	16.3	14.3	88	10.1	1007.9	3	005	05	2	2	4	8	4	7	/	82812	83620	86359				19	8As65 Cu fra	
20	82	5	26	09	17	17.4	10.1	62	7.6	1012.5	1	005	03	1	1	5	8	5	0	1	82823	84656					20	1Ci75 Cu med	
21	83	2	25	06	13	16.4	8.6	60	6.9	1019.6	1	007	03	0	0	2	8	6	0	0	82830						21	1Sc50 Cu med	
22	88	2	16	07	12	18.0	8.8	55	7.0	1021.9	0	002	03	0	0	1	1	6	0	1	81830						22	2Ci80 Cu hum	
23	61	8	05	04	09	20.1	15.7	76	11.0	1017.9	8	003	02	2	2	3	0	9	7	7	81366	83368	88272				23		
24	58	8	22	04	07	20.5	17.5	83	12.4	1015.1	2	014	60	6	2	8	0	9	7	/	83359	86362	88564				24		
25	28	8	09	01	04	18.7	18.2	97	12.9	1017.5	3	007	21	6	2	8	5	2	/	/	83705	87707	88615				25		
26	63	8	03	06	14	16.2	14.6	90	10.1	1027.6	3	007	02	2	2	8	6	3	/	/	87708	88712					26		
27	82	0	04	08	20	18.0	12.0	68	8.6	1029.7	2	005	01	1	1	0	0	9	0	0							27		
28	70	2	07	08	21	19.2	12.9	67	9.1	1025.1	8	009	01	1	1	0	0	9	0	9	81175						28	1Ci75	
29	61	1	07	03	07	23.9	17.9	69	12.6	1016.1	8	019	02	0	0	0	0	9	0	1	81075						29	COTRA El hz lyr	
30	75	7	24	07	18	18.4	12.8	70	9.1	1017.7	0	018	03	1	1	7	8	5	/	/	83823	87630					30	Cu hum	

Mean vis = 30.9 km
 Mean cloud = 5.9 73%
 Mean wind speed = 6.4 kn
 Mean gust = 14 kn
 Mean TT = 16.6 °C
 Mean TdTd = 11.7 °C
 Mean RH = 74.3 %
 Mean r = 8.7 g/kg
 Mean PPP = 1014.8 mbar

See appendix 2 below for full code details

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

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for JUNE 2019

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cf	Ch	shs	NChs	NChshs	Date	Remarks
1	85	7	18	07	14	26.3	12.0	41	8.7	1017.5	7	019	02	2	2	1	1	7	8	2	81850	87072	1	1Ac68	Cu hum Ac flo Halo 22 part	
2	75	7	20	11	19	20.6	13.1	62	9.4	1008.9	3	001	21	6	2	6	5	6	7	/	86632	87360	2			
3	82	7	19	09	19	18.3	8.8	54	7.0	1012.3	6	008	03	2	2	7	8	6	/	/	82840	83645	86656	3	Cu med	
4	58	7	13	05	12	15.9	14.4	91	10.3	1001.6	7	019	61	6	2	6	8	3	7	/	82708	83812	87362	4	3Sc50	Cu med vv20k SW
5	88	8	22	07	13	16.7	8.7	59	7.0	1006.6	6	003	02	2	2	2	8	6	1	/	82835	88465		5	1Sc56	Cu med
6	88	2	22	08	19	17.9	3.4	38	4.8	1010.6	0	000	01	1	1	2	2	7	0	0	82850			6	Cu med	
7	80	5	13	07	16	17.7	12.2	70	8.9	999.2	8	013	01	6	2	3	2	5	3	2	83825	83072		7	1Ac65	Cu med
8	80	5	26	16	31	17.4	5.7	46	5.6	1015.7	1	024	15	2	2	5	8	6	0	1	83845	83656		8	1Ci75	Cu med jpS vv70k ex S
9	75	7	23	03	10	18.5	6.4	45	5.9	1019.1	7	013	15	2	2	4	8	6	6	1	83845	83358	87073	9	2Sc56	Cu med jpE,S,SW vv50k ex p
10	59	8	02	06	14	11.0	10.1	94	7.6	1014.3	6	006	63	6	6	6	8	3	2	/	83808	84635	88550	10	Cu med	
11	84	8	02	10	18	13.3	11.0	86	8.1	1012.7	2	004	02	6	2	8	5	4	/	/	87615	88620		11		
12	59	8	02	02	06	13.4	11.6	89	8.5	1009.5	7	003	63	6	2	3	2	4	2	/	83812	88550		12	Cu med	
13	75	8	21	11	23	13.0	11.4	90	8.4	1005.1	2	001	50	6	5	8	5	4	/	/	83610	86620	88630	13		
14	81	5	21	10	21	17.9	9.0	56	7.1	1010.7	1	007	02	2	2	5	8	6	0	0	83830	83645		14	Cu med	
15	81	7	19	11	25	17.8	12.5	71	9.0	1012.6	8	002	25	8	2	7	8	5	/	/	84820	84650		15	Cu med	
16	82	7	21	12	23	18.4	12.2	67	8.7	1017.0	2	011	02	2	2	7	8	5	/	/	83828	86635		16		
17	83	7	21	09	17	19.6	10.0	54	7.6	1016.8	6	006	02	2	2	3	4	6	7	1	82835	84365		17	2Sc40	/Ci75 Cu hum
18	40	8	13	02	08	15.8	14.2	90	10.0	1013.5	5	004	65	6	6	5	5	6	2	/	81645	85656	88559	18		
19	40	7	28	04	09	17.1	14.9	87	10.6	1008.0	2	004	81	8	6	3	3	4	7	/	81712	83925	87359	19	1Sc40	vis 30k ex p
20	86	5	22	08	17	19.2	9.9	55	7.6	1013.4	4	000	01	8	2	3	8	6	0	1	82833	83075		20	2Sc56	COTRA Cu med
21	84	6	20	04	12	19.7	7.4	45	6.4	1019.8	2	002	02	1	1	6	4	7	0	0	83850	85656		21	Cu hum	
22	88	3	16	05	13	23.1	9.1	41	7.1	1019.5	7	015	02	0	0	2	4	7	0	1	81850			22	2Sc50	2Ci80 Cu hum
23	72	8	07	09	17	21.7	14.6	64	10.3	1014.7	7	014	02	2	2	1	5	7	7	/	81656	87362	88465	23		
24	78	6	26	04	10	25.3	17.8	63	12.6	1015.6	8	005	01	2	2	1	1	5	7	1	81828	84363	85075	24	2Ac57	COTRA Cu hum
25	58	7	36	04	08	21.7	18.7	83	13.3	1019.3	1	008	05	2	2	7	8	4	/	/	86810	87635		25	Cu med	
26	73	3	03	09	20	21.8	15.9	69	11.0	1027.1	6	010	01	1	1	3	5	4	0	1	83618			26	1Ci75	
27	84	1	06	09	19	24.6	12.9	48	9.1	1026.9	7	016	02	0	0	1	0	9	3	0	81370			27		
28	80	3	06	07	18	24.2	14.6	55	10.2	1022.1	6	012	02	0	0	0	0	9	0	1	83075			28	COTRA	Parhelia Anthelion EI hz lyr
29	70	1	16	09	18	33.1	11.6	27	8.5	1011.5	7	022	02	0	0	0	0	9	0	1	81075			29		
30	82	4	23	09	16	22.5	12.4	53	8.9	1016.9	6	006	02	1	1	4	8	6	0	0	84840			30	1Sc50	Cu med

Mean vis = 33.7 km

Mean cloud = 5.8 73%

Mean wind speed = 7.6 kn

Mean gust = 16 kn

Mean TT = 19.5 °C

Mean TdTd = 11.6 °C

Mean RH = 63.1 %

Mean r = 8.6 g/kg

Mean PPP = 1014.0 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 2019	Hour	01-Jun	02-Jun	03-Jun	04-Jun	05-Jun	06-Jun	07-Jun	08-Jun	09-Jun	10-Jun	11-Jun	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun
	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.36	0.38	0.44	0.00	0.30	0.45	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.31	0.14
	5	1.00	0.98	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.40	0.35
	6	1.00	0.76	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.39	0.27	0.00
	7	1.00	0.51	0.71	0.00	0.95	1.00	0.00	0.00	1.00	0.00	0.02	0.00	0.00	0.12	0.87	0.00
	8	1.00	0.56	0.51	0.00	0.69	0.54	0.00	0.04	0.64	0.00	0.00	0.00	0.00	0.00	0.57	0.05
	9	1.00	0.00	0.72	0.02	0.35	0.49	0.00	0.02	0.43	0.00	0.00	0.10	0.00	0.41	0.51	0.32
	10	1.00	0.43	0.78	0.00	0.31	0.60	0.00	0.27	0.90	0.00	0.08	0.09	0.00	0.08	0.14	0.39
	11	1.00	0.40	0.74	0.00	0.00	0.51	0.00	0.43	0.56	0.00	0.21	0.00	0.00	0.45	0.00	0.60
	12	0.90	0.62	0.49	0.28	0.00	0.42	0.00	0.50	0.78	0.00	0.00	0.00	0.00	0.49	0.00	0.39
	13	0.98	0.03	0.42	0.00	0.00	0.28	0.00	0.61	0.44	0.00	0.00	0.00	0.00	0.10	0.03	0.37
	14	0.88	0.00	0.75	0.00	0.00	0.56	0.23	0.78	0.14	0.00	0.00	0.00	0.00	0.28	0.05	0.09
	15	1.00	0.17	0.00	0.00	0.00	0.83	0.56	0.67	0.18	0.00	0.00	0.00	0.00	0.50	0.48	0.10
	16	0.99	0.02	0.04	0.01	0.00	0.87	0.00	0.98	0.08	0.00	0.00	0.00	0.00	0.65	0.33	0.73
	17	0.30	0.00	0.68	0.23	0.45	1.00	0.00	0.96	0.10	0.00	0.00	0.00	0.00	0.94	0.02	0.41
	18	0.03	0.00	0.68	1.00	0.02	1.00	0.00	0.96	0.00	0.00	0.00	0.00	0.02	1.00	0.56	0.51
	19	0.26	0.00	0.07	0.82	0.00	0.74	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.76	0.67
	20	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.18	0.04	0.00	0.00	0.00	0.00	0.23	0.10	0.03
	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		12.70	4.84	9.02	2.36	5.07	11.45	0.78	7.41	7.75	0.00	0.32	0.19	0.02	6.65	5.40	5.16

Hour	17-Jun	18-Jun	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	Mean
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.52	0.00	0.00	0.46	0.44	0.40	0.30	0.01	0.00	0.00	0.00	0.00	0.33	0.43	0.19
5	1.00	0.57	0.00	1.00	1.00	1.00	0.00	0.48	0.00	0.00	0.00	0.16	1.00	1.00	0.46
6	0.57	0.71	0.00	1.00	1.00	1.00	0.00	0.17	0.00	0.00	0.90	1.00	1.00	1.00	0.49
7	0.50	0.44	0.00	1.00	1.00	1.00	0.03	0.00	0.00	0.00	1.00	1.00	1.00	0.72	0.46
8	0.06	0.20	0.00	0.94	0.89	1.00	0.27	0.00	0.00	0.00	1.00	1.00	1.00	0.01	0.37
9	0.60	0.00	0.00	0.10	0.63	1.00	0.38	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.34
10	0.22	0.00	0.00	0.19	0.64	0.94	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.01	0.34
11	0.07	0.00	0.02	0.03	0.59	0.70	0.00	0.00	0.00	0.19	1.00	1.00	1.00	0.18	0.32
12	0.39	0.00	0.00	0.00	0.65	0.82	0.00	0.00	0.00	0.10	1.00	1.00	1.00	0.30	0.34
13	0.21	0.00	0.00	0.16	0.37	0.40	0.00	0.00	0.00	0.60	1.00	1.00	1.00	0.60	0.29
14	0.17	0.00	0.00	0.45	0.33	0.94	0.00	0.47	0.00	0.77	1.00	1.00	1.00	0.28	0.34
15	0.43	0.00	0.01	0.58	0.04	0.65	0.00	0.38	0.00	0.95	1.00	1.00	1.00	0.39	0.36
16	0.34	0.00	0.00	0.11	0.15	0.93	0.00	0.27	0.00	0.83	1.00	1.00	1.00	0.99	0.38
17	0.47	0.00	0.00	0.00	0.27	1.00	0.00	0.00	0.42	0.13	1.00	1.00	1.00	1.00	0.38
18	0.77	0.00	0.00	0.02	0.00	0.46	0.00	0.00	0.14	0.00	1.00	1.00	0.98	1.00	0.37
19	0.67	0.00	0.00	0.22	0.29	0.00	0.00	0.00	0.00	0.00	1.00	0.93	0.47	1.00	0.33
20	0.00	0.00	0.00	0.28	0.16	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.31	0.05
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	6.99	1.92	0.03	6.52	8.46	12.25	0.99	1.76	0.57	3.56	13.92	14.09	14.78	9.23	174.21

June 2019	T mn	Tx	Time	Tn	Time	RHmn	RH x	Time	RH n	Time	Tdmn	r mn	r x	Time	r n	Time	p mn	p x	Time	p n	Time	R tot	
1	18.51	26.4	1503	8.6	421	67.5	97.9	510	37.0	1503	11.5	8.4	10.0	1348	6.6	1048	1018.86	1022.2	10	1013.7	2358	0	
2	17.74	25.0	1158	10.5	2357	73.8	97.5	437	42.1	1249	12.6	9.1	10.4	1118	6.8	2320	1010.08	1013.9	0	1008.3	1323	0.2	
3	14.39	20.6	1252	9.5	344	70.6	93.1	2359	42.3	1253	8.7	7.0	8.2	1350	6.0	1247	1012.53	1013.6	1002	1011.1	11	0	
4	13.93	19.4	1229	9.8	139	83.7	97.3	430	62.1	955	11.1	8.3	10.7	1509	7.2	917	1005.54	1012.5	0	1000.8	1610	1	
5	14.27	18.2	1312	10.1	2358	68.9	92.6	311	46.5	1258	8.3	6.8	8.1	153	5.8	1258	1006.12	1008.4	2341	1002.9	19	0.1	
6	13.47	19.2	1433	8.5	433	63.5	91.7	453	34.3	1509	5.9	5.8	7.1	1048	4.6	1455	1010.12	1011.3	1309	1008.1	7	0	
7	12.89	18.3	1550	10.1	256	86.5	97.9	902	64.2	1549	10.6	8.1	10.5	1339	5.9	48	1002.03	1010.2	0	997.9	1858	14.9	
8	13.65	18.6	1352	9.1	2315	72.1	96.6	29	43.7	1554	8.2	6.8	8.3	1006	5.3	1639	1012.33	1021.1	2334	1001.2	1	0.3	
9	12.95	19.8	1404	6.0	415	75.8	99.0	2329	35.8	1233	8.1	6.7	8.1	2027	4.8	1233	1020.32	1022.2	804	1018.6	1733	3.4	
10	10.47	12.6	1043	9.2	1659	95.9	99.2	151	87.0	1053	9.8	7.5	8.3	857	6.9	1700	1014.88	1018.7	1	1010.3	2349	50.8	
11	11.92	15.7	1053	10.1	2328	91.9	98.9	718	79.5	1055	10.6	7.9	9.6	1050	7.1	2050	1011.90	1013.9	2040	1009.5	319	6	
12	12.02	15.5	1035	10.1	125	90.2	98.3	2317	69.1	1031	10.4	7.8	8.8	1647	7.2	1045	1009.72	1012.6	0	1006.7	2357	8.8	
13	12.27	13.9	1605	10.9	353	91.1	98.3	8	82.6	1143	10.8	8.1	8.8	1042	7.7	2122	1005.75	1008.6	2257	1004.5	759	0.9	
14	14.69	19.1	1214	10.6	2332	76.6	96.8	359	52.5	1653	10.3	7.8	9.1	908	6.8	1807	1010.07	1012.4	2320	1008.0	219	3.1	
15	14.23	19.0	944	10.0	423	77.2	94.9	437	51.4	944	10.1	7.7	9.5	1448	6.9	949	1012.67	1015.2	2358	1011.5	303	1	
16	14.46	20.6	1316	6.8	338	80.2	99.5	503	57.2	1317	10.8	8.1	10.1	948	6.0	403	1016.54	1018.6	2207	1015.1	5	0.4	
17	15.66	20.3	1357	11.0	342	71.0	95.1	437	50.5	1540	10.0	7.6	8.4	1223	6.6	1922	1017.41	1018.6	717	1016.1	1849	0	
18	14.12	18.5	1235	8.6	328	89.0	98.6	2330	65.0	934	12.2	8.9	10.7	1648	6.7	327	1013.69	1016.7	2	1009.5	2252	10.3	
19	15.94	19.3	1136	13.4	259	89.7	99.1	514	71.3	1151	14.2	10.1	11.9	1515	9.3	1900	1008.16	1010.2	2359	1006.8	420	3.7	
20	14.83	19.7	1526	10.4	2359	74.6	92.7	437	48.7	1531	10.1	7.7	9.3	0	6.4	1216	1013.16	1017.0	2359	1009.9	32	0	
21	14.94	21.2	1705	8.5	359	69.6	94.6	2359	38.3	1306	8.8	7.0	8.4	1151	5.5	1306	1019.60	1022.0	2359	1016.8	18	0	
22	16.08	23.4	1525	8.5	435	65.0	98.1	504	36.6	1301	8.6	6.9	8.4	1138	5.6	2103	1020.70	1022.5	733	1018.4	1814	0	
23	17.37	24.6	1342	9.4	300	78.3	96.2	429	55.8	1343	13.4	9.6	11.8	1333	6.6	223	1016.45	1019.8	0	1013.7	1912	0	
24	19.86	25.9	1614	14.7	408	81.0	96.6	424	51.0	1616	16.3	11.5	13.6	1446	9.9	408	1015.61	1018.7	2335	1013.0	325	0.2	
25	18.88	22.2	1450	16.6	2355	91.6	98.5	544	80.6	1757	17.4	12.3	14.0	1118	10.8	2332	1019.10	1024.3	2359	1016.0	315	5	
26	17.09	22.0	1456	13.8	2359	84.6	95.4	341	67.1	1456	14.4	10.0	11.8	1428	8.2	2312	1027.24	1029.7	2355	1024.1	0	0	
27	17.73	24.8	1430	12.6	425	70.9	88.2	58	41.5	1511	12.0	8.6	10.7	1323	7.5	1511	1028.18	1029.9	729	1025.8	1759	0	
28	18.06	24.8	1352	12.0	155	72.3	94.1	2355	47.8	1355	12.6	9.0	11.1	1218	7.7	142	1023.57	1027.1	4	1020.3	1924	0	
29	23.50	33.6	1426	13.0	327	64.5	98.0	431	25.1	1440	14.8	10.5	13.7	1044	8.0	1441	1014.48	1020.7	0	1009.9	1814	0	
30	18.31	23.5	1449	13.7	345	69.1	92.6	337	49.0	1353	12.3	8.8	10.7	1333	7.5	2144	1016.55	1018.7	2244	1012.2	1	0	
Total																						110.1	
Mean	15.47	20.85		10.52		77.9	96.24		53.85		11.17	8.34	10.00		6.93		1014.44	1017.71		1011.36			
Max	23.50	33.61		16.60		95.9	99.50		87.00		17.45	12.29	14.03		10.84		1028.18	1029.91		1025.84			
Min	10.47	12.56		5.98		63.5	88.20		25.09		5.93	5.81	7.13		4.58		1002.03	1008.41		997.87			

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

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

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

Temperature and humidity are from an aspirated Vaisala HMP45 unit
 Pressure is from a Setra CS100 sensor
 Data is logged on a Campbell Scientific CR10X measurement and control system

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Month: Calendar month.

Season: Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Appendix 2.

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

VV : Visibility.

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

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

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

Code figure 89 = visibility above 70 km.

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

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

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

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

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

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

RH : Relative humidity at 1.2m, %.

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

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

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

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

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

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

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

4 = Steady, pressure the same as 3 hours ago

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

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

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

ppp : 3 hour pressure tendency in tenths of a millibar

ww : Present weather code figures, 00 to 99.

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Hail includes large hail, small hail and snow pellets.

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

Code figures:

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

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

Cl : Type of low cloud

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

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

Cm : Type of medium cloud.

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

Ch : Type of high cloud

0 = No high cloud

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

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

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

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

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

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

7 = Veil of Cirrostratus covering the celestial dome.

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

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

/ = Types of high cloud invisible owing to darkness, fog, blowing dust 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.