

# LOCAL CLIMATOLOGICAL DATA

## Monthly Summary September 2012

Station: Westford

Latitude: 44° 37' 39" N Longitude: 73° 02' 29" W Elevation (Ground): 850 feet Time Zone: Eastern

Date	Temperature					Humidity	Deg. Days		Precip Ty 1 fog 2 hvy fog 3 thunder 4 ice plt 5 hail 6 glaze 7 duststm 8 smk, hz 9 blw snw	Snow Cvr	Precip		Pressure Adj. to Sea Level			Wind						Solar Radiation		
	Maximum	Minimum	Average	Mean	Dew Point		Mean	Heating Base 65°F			Cooling Base 65°F	Water Equivalent	Ice Pellets Snow	Maximum	Minimum	Mean	Avg	Res	Res	Peak			Minute	
																				Speed	Speed		Dir	Speed
1	2	3	4A	4B	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	77.5	49.6	63.5	64.9	55	74	1	0	.....	0	0.01	0.0	30.06	29.84	29.999	0.5	0.4	6	11	N	5	344	235	
2	79.6	45.6	62.6	60.7	48	68	2	0	.....	0	0.00	0.0	30.10	30.03	30.058	0.6	0.5	329	11	NW	7	292	224	
3	83.0	45.1	64.0	64.7	52	67	1	0	.....	0	0.00	0.0	30.13	30.00	30.074	1.2	1.2	210	13	SW	7	218	226	
4	73.5	61.3	67.4	66.7	60	80	0	3	.....	0	0.96	0.0	30.02	29.74	29.913	3.3	3.2	209	19	SW	11	216	95	
5	78.4	59.6	69.0	66.6	63	89	0	4	.....	0	2.48	0.0	29.82	29.60	29.745	0.7	0.6	16	16	WNW	6	301	119	
6	82.3	58.0	70.2*	68.6	63	82	0	5	..3.....	0	T	0.0	29.83	29.73	29.787	1.4	1.4	214	12	SW	7	208	175	
7	81.1	58.6	69.8	68.0	59	76	0	5	.....	0	0.01	0.0	29.88	29.76	29.834	0.6	0.5	257	10	W	6	300	206	
8	81.7	57.7	69.7	69.1	61	77	0	5	..3.....	0	0.67	0.0	29.76	29.36	29.566	3.4	3.3	214	33	W	17	277	108	
9	68.8	45.7	57.3	56.9	48	73	7	0	.....	0	0.01	0.0	29.89	29.65	29.793	0.6	0.5	290	20	WNW	10	289	171	
10	59.9	46.9	53.4	53.3	46	76	11	0	.....	0	T	0.0	30.08	29.88	29.974	1.0	1.0	311	18	NW	8	302	95	
11	70.1	39.6	54.8	54.4	44	72	10	0	.....	0	0.00	0.0	30.22	30.08	30.163	0.6	0.5	277	11	WNW	6	307	208	
12	77.3	48.6	63.0	63.1	50	65	2	0	.....	0	0.00	0.0	30.28	30.19	30.232	2.0	2.0	213	15	SSW	9	223	208	
13	80.8	58.1	69.5	67.6	55	66	0	5	.....	0	0.00	0.0	30.26	30.15	30.211	1.9	1.9	215	16	S	8	218	203	
14	81.2	58.8	70.0	68.7	57	68	0	5	.....	0	0.03	0.0	30.17	29.92	30.061	2.4	2.3	215	20	NW	11	301	181	
15	63.1	47.8	55.4	55.7	49	79	9	0	.....	0	0.10	0.0	30.05	29.94	30.012	1.4	1.3	297	19	W	9	304	105	
16	63.4	38.4	50.9	49.0	40	73	14	0	.....	0	0.00	0.0	30.10	29.98	30.035	0.5	0.5	298	12	WNW	6	307	200	
17	75.7	39.5	57.6	58.3	49	72	7	0	.....	0	0.00	0.0	30.02	29.92	29.973	1.4	1.4	214	16	SSW	8	210	191	
18	71.9	55.4	63.7	62.6	57	81	1	0	.....	0	0.70	0.0	29.92	29.42	29.670	2.6	2.5	194	27	W	13	212	48	
19	64.2	37.7	50.9	51.7	43	74	14	0	.....	0	0.30	0.0	30.19	29.52	29.939	1.4	1.4	280	36	W	11	264	165	
20	66.2	34.3*	50.2	49.1	41	76	15	0	.....	0	0.00	0.0	30.22	30.03	30.136	0.9	0.9	212	16	WNW	9	225	198	
21	73.6	49.0	61.3	60.6	51	70	3	0	.....	0	0.00	0.0	30.04	29.90	29.976	2.4	2.4	206	22	SSW	11	213	174	
22	70.2	53.7	61.9	60.1	54	80	3	0	.....	0	0.22	0.0	29.93	29.69	29.786	1.7	1.6	213	22	SW	11	208	97	
23	63.3	42.9	53.1	53.0	43	72	12	0	.....	0	0.01	0.0	30.04	29.76	29.911	1.7	1.6	271	22	WNW	10	281	178	
24	60.8	40.8	50.8	48.7	41	76	14	0	.....	0	0.00	0.0	30.09	29.97	30.029	0.6	0.6	230	12	SSW	6	224	144	
25	67.6	43.4	55.5	55.4	42	63	9	0	.....	0	0.00	0.0	30.00	29.94	29.968	3.2	3.2	210	24	SW	12	217	171	
26	62.9	52.6	57.8	57.4	52	82	7	0	..3.....	0	0.23	0.0	30.02	29.88	29.931	2.4	2.3	214	18	SW	10	210	62	
27	60.2	36.1	48.1	47.9	41	79	17	0	.....	0	0.01	0.0	30.23	30.01	30.159	0.4	0.4	330	13	WNW	8	298	150	
28	57.8	34.4	46.1*	45.8	42	88	19	0	.....	0	0.02	0.0	30.22	30.00	30.108	0.3	0.3	200	13	SSE	6	195	77	
29	54.7	49.6	52.1	51.2	49	94	12	0	.....	0	0.14	0.0	30.00	29.89	29.931	0.1	0.1	26	10	NE	4	7	40	
30	52.7	49.8	51.3	50.9	50	96	13	0	.....	0	0.40	0.0	29.90	29.58	29.768	0.5	0.5	282	11	WSW	5	226	23	
<b>Sum</b>	<b>Sum</b>	-----	-----	---	----		<b>Ttl</b>	<b>Ttl</b>					<b>For the month:</b>										----	
2103	1439						203	32					6.30	0.0	30.28	29.36	29.958	1.4	1.1	226	36	W	17	277
<b>Avg</b>	<b>Avg</b>	<b>Avg</b>	<b>Mean</b>	<b>Avg</b>	<b>Avg</b>	----	----		<b>Precip</b>				<b>Season Ttl</b>	<b>Date</b>	<b>Date</b>	-----	----	----	---	<b>Date</b>	<b>Date</b>	<b>Avg</b>		
70.1	48.0	59.0	58.4	50	76.2	----	----		≥.01 inch	17	31.92	0.0	12	8	-----	----	----	---	19	8	149			
<b>Number of Days</b>							<b>Season to Date</b>	<b>Snow, Ice ≥1.0 inch</b>	0	<b>Greatest in 24 Hours and Dates</b>					<b>Greatest Depth on Ground of Snow, Ice Pellets or Ice and Date</b>									
<b>Max Temperature</b>			<b>Min Temperature</b>			229	461	<b>Thunder</b>	3	<b>Precipitation</b>			<b>Snow, Ice Plts</b>											
≥ 90°F	≤ 32°F	≤ 32°F	≤ 0°F	----	----			<b>Heavy Fog</b>	0	3.43	4- 5	0.0	-	0			-							
0	0	0	0	----	----			<b>Clear</b>	9	<b>Partly Cloudy</b>		11	<b>Cloudy</b>		10									

**NOTES:**

Units are: Temperature=°F, Wind=mph, Pressure=Inches Hg, Precipitation=inches.  
 Data in column 4A are (MAX+MIN) ÷ 2, whereas columns 4B, 5, 6, 15, 16, 23 are means via continuous observations for 24 hours.  
 Column 5: Dew point is calculated from temperature and humidity and is continuously averaged for 24 hours.  
 Data in columns 9, 10, 12 are entered manually by the station observer.  
 Columns 17-18: Resultant wind is calculated by the vector sum of continuous wind observations.  
 Column 23: Solar Radiation is measured in Watts/m^2 and is continuously averaged for 24 hours.  
 Data in columns 4B, 5, 6, 15, 16, 23 are updated continuously, there by achieving a "true" mean.

# OBSERVATIONS AT 3-HOUR INTERVALS September 2012: Westford

Hour	Wind			Sunshine	Pressure	Rainfall rate	Temperature	Dew Point	Humidity	Wind			Sunshine	Pressure	Rainfall rate	Temperature	Dew Point	Humidity	Wind								
	Direction	Speed	Gust							Direction	Speed	Gust							Direction	Speed	Gust						
SEP 01																											
01	0	29.86	0.00	64	63	96	06	0	0	0	30.05	0.00	49	44	83	04	0	0	0	30.11	0.00	48	44	87	01	0	0
04	0	29.92	0.00	59	58	96	02	0	0	0	30.04	0.00	48	45	89	04	0	0	0	30.10	0.00	46	44	91	01	0	0
07	21	29.99	0.00	57	56	96	02	0	1	16	30.05	0.00	47	45	94	04	0	0	18	30.13	0.00	46	44	94	01	0	0
10	524	30.05	0.00	70	61	73	28	0	5	527	30.07	0.00	70	54	58	05	0	0	520	30.12	0.00	70	57	62	22	2	7
13	738	30.05	0.00	76	56	50	00	0	9	580	30.06	0.00	76	52	44	34	2	7	729	30.08	0.00	79	56	45	20	5	12
16	522	30.02	0.00	77	54	45	35	1	9	522	30.04	0.00	79	52	39	02	1	5	501	30.04	0.00	83	54	38	21	4	8
19	25	30.02	0.00	68	51	54	04	0	3	21	30.06	0.00	69	50	50	01	0	0	18	30.00	0.00	74	55	51	19	0	3
22	0	30.06	0.00	53	46	78	04	0	0	0	30.09	0.00	52	46	80	01	0	0	0	30.02	0.00	68	55	63	19	3	8
SEP 02																											
SEP 03																											
SEP 04																											
SEP 05																											
SEP 06																											
SEP 07																											
SEP 08																											
SEP 09																											
SEP 10																											
SEP 11																											
SEP 12																											
SEP 13																											
SEP 14																											
SEP 15																											
SEP 16																											
SEP 17																											
SEP 18																											

## MAXIMUM SHORT DURATION PRECIPITATION

Time Period (minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation	0.32	0.41	0.52	0.61	0.63	0.84	1.02	1.26	1.58	1.78	1.98	2.12
Ended: Date	08	08	08	08	08	05	05	05	05	05	05	05
Ended: Time	1651	1655	1701	1705	1707	0210	0219	0242	0307	0318	0318	0318

The precipitation amounts may occur at any time during the month. The time indicated is the ending time of the interval. Date and time are not entered for trace amounts.

# OBSERVATIONS AT 3-HOUR INTERVALS

## September 2012: Westford

Hour	SEP 19									SEP 20									SEP 21								
	Sunshine	Pressure	Rainfall rate	Temperature	Dew Point	Humidity	Direction	Speed	Gust	Sunshine	Pressure	Rainfall rate	Temperature	Dew Point	Humidity	Direction	Speed	Gust	Sunshine	Pressure	Rainfall rate	Temperature	Dew Point	Humidity	Direction	Speed	Gust
01	0	29.58	0.05	59	55	87	27	7	23	0	30.19	0.00	37	35	92	04	0	0	0	30.04	0.00	52	46	80	21	0	6
04	0	29.71	0.04	52	48	86	25	2	13	0	30.19	0.00	35	33	93	05	0	0	0	30.02	0.00	52	47	81	21	1	6
07	11	29.84	0.00	48	42	80	28	3	13	11	30.22	0.00	34	33	94	05	0	0	12	30.03	0.00	53	47	81	20	2	10
10	121	29.94	0.00	51	43	73	28	3	7	469	30.20	0.00	54	45	73	20	0	6	431	30.03	0.00	61	52	71	20	5	15
13	772	30.02	0.00	57	43	58	30	2	7	673	30.13	0.00	63	44	50	19	0	8	638	29.97	0.00	70	55	60	20	4	15
16	450	30.06	0.00	61	40	45	30	0	6	429	30.08	0.00	65	45	47	20	4	11	397	29.92	0.00	73	57	56	20	3	9
19	0	30.11	0.00	49	41	74	06	0	0	0	30.07	0.00	54	45	72	22	0	0	0	29.90	0.00	64	50	61	19	3	9
22	0	30.16	0.00	40	37	88	06	0	0	0	30.04	0.00	46	42	86	21	0	0	0	29.94	0.00	59	50	70	19	1	7
SEP 22									SEP 23									SEP 24									
01	0	29.90	0.00	57	49	76	17	0	2	0	29.76	0.00	56	54	94	27	0	0	0	30.05	0.00	44	40	87	25	0	0
04	0	29.87	0.00	56	50	79	18	0	1	0	29.80	0.00	52	47	84	26	4	12	0	30.04	0.00	42	39	89	25	0	0
07	12	29.82	0.00	54	49	82	19	0	5	11	29.87	0.00	47	42	82	18	0	1	14	30.07	0.00	44	42	93	25	0	3
10	432	29.76	0.00	65	54	68	17	3	7	489	29.93	0.00	55	43	63	29	4	12	657	30.08	0.00	52	45	78	22	1	5
13	227	29.73	0.00	69	57	66	21	4	19	788	29.93	0.00	60	41	50	25	5	11	793	30.05	0.00	57	42	59	23	0	5
16	56	29.73	0.00	60	57	88	23	0	3	197	29.93	0.00	60	38	45	30	4	10	137	30.00	0.00	59	42	53	19	0	8
19	0	29.74	0.00	60	57	92	20	1	7	0	29.98	0.00	50	43	78	30	0	0	0	29.98	0.00	48	41	75	23	0	0
22	0	29.77	0.00	58	56	94	23	0	6	0	30.03	0.00	43	39	86	23	0	0	0	29.99	0.00	44	40	85	23	0	0
SEP 25									SEP 26									SEP 27									
01	0	30.00	0.00	44	38	80	19	0	4	0	29.97	0.00	56	43	61	19	0	6	0	30.02	0.00	51	49	91	03	0	4
04	0	29.97	0.00	45	39	78	20	2	10	0	29.93	0.00	58	45	63	20	4	12	0	30.07	0.00	44	41	91	03	0	0
07	19	29.97	0.00	47	39	74	21	4	14	0	29.93	0.00	53	50	90	20	2	11	9	30.14	0.00	39	37	93	03	0	0
10	592	29.98	0.00	57	42	59	20	6	18	51	29.94	0.00	56	53	92	22	5	15	520	30.20	0.00	53	45	75	01	0	1
13	617	29.95	0.00	64	46	52	21	3	21	179	29.90	0.00	61	55	80	20	4	16	715	30.21	0.00	55	42	60	35	0	8
16	422	29.95	0.00	67	47	48	21	3	13	90	29.90	0.00	62	56	82	21	2	7	81	30.18	0.00	56	40	56	02	1	6
19	0	29.97	0.00	59	44	58	20	2	10	0	29.90	0.00	60	55	85	21	4	8	0	30.20	0.00	45	38	79	02	0	0
22	0	30.00	0.00	59	43	56	19	2	9	0	29.97	0.00	55	51	89	06	0	3	0	30.22	0.00	38	35	89	02	0	0
SEP 28									SEP 29									SEP 30									
01	0	30.21	0.00	36	34	93	02	0	0	0	29.99	0.00	50	48	91	17	0	0	0	29.88	0.00	50	49	95	32	0	0
04	0	30.19	0.00	34	33	94	02	0	0	0	29.95	0.00	50	48	94	12	0	0	0	29.87	0.00	50	49	96	32	0	0
07	9	30.15	0.00	35	34	94	02	0	0	0	29.95	0.00	50	48	95	12	0	0	0	29.85	0.00	50	49	96	32	0	0
10	318	30.13	0.00	48	47	95	22	1	4	88	29.95	0.00	51	50	95	00	0	4	83	29.84	0.00	52	51	96	32	0	0
13	102	30.10	0.00	52	46	79	17	0	5	104	29.92	0.00	55	52	92	34	0	0	51	29.77	0.00	52	50	95	33	0	6
16	113	30.06	0.00	52	48	87	20	2	7	69	29.89	0.00	53	51	92	03	0	4	23	29.70	0.04	52	51	95	31	0	1
19	0	30.03	0.00	51	46	83	20	0	1	0	29.91	0.00	51	49	94	02	0	2	0	29.66	0.00	50	49	96	29	3	8
22	0	30.01	0.00	51	47	87	16	0	6	0	29.90	0.00	50	49	95	04	0	4	0	29.61	0.04	50	49	96	24	1	6

### WEATHER NOTES

NOTES:  
 Units are: Temperature=°F, Wind=mph, Pressure=Inches Hg, Precipitation=inches.  
 Wind Direction: Directions are those from which the wind is blowing, indicated in tens of degrees from true north: i.e., 09 for East, 18 for South, 27 for West, and 00 or 36 for North.  
 Wind Speed: The observed one-minute average speed in miles-per-hour.  
 Wind Gust: The maximum instantaneous wind speed for the 10-minute period preceding the observation.  
 Rainfall Rate: The instantaneous rainfall rate at the time of observation, calculated by timing consecutive 0.01" pulses from the electronic rain gauge and interpolating this rate for one hour.

### SUMMARY BY HOUR

Hour	Averages						Resultant Wind	
	Sunshine	Pressure	Temperature	Dew Point	Humidity	Wind Speed	Direction	Speed
01	0	29.962	53	49	85	0.6	26	0.4
04	0	29.959	52	48	86	1.2	23	0.9
07	14	29.981	51	47	87	0.8	23	0.6
10	370	29.992	61	52	75	2.2	22	1.9
13	522	29.966	66	53	63	2.2	23	1.7
16	279	29.927	68	52	60	1.9	22	1.5
19	6	29.928	61	51	72	1.0	21	0.9
22	0	29.949	55	49	83	0.5	20	0.5

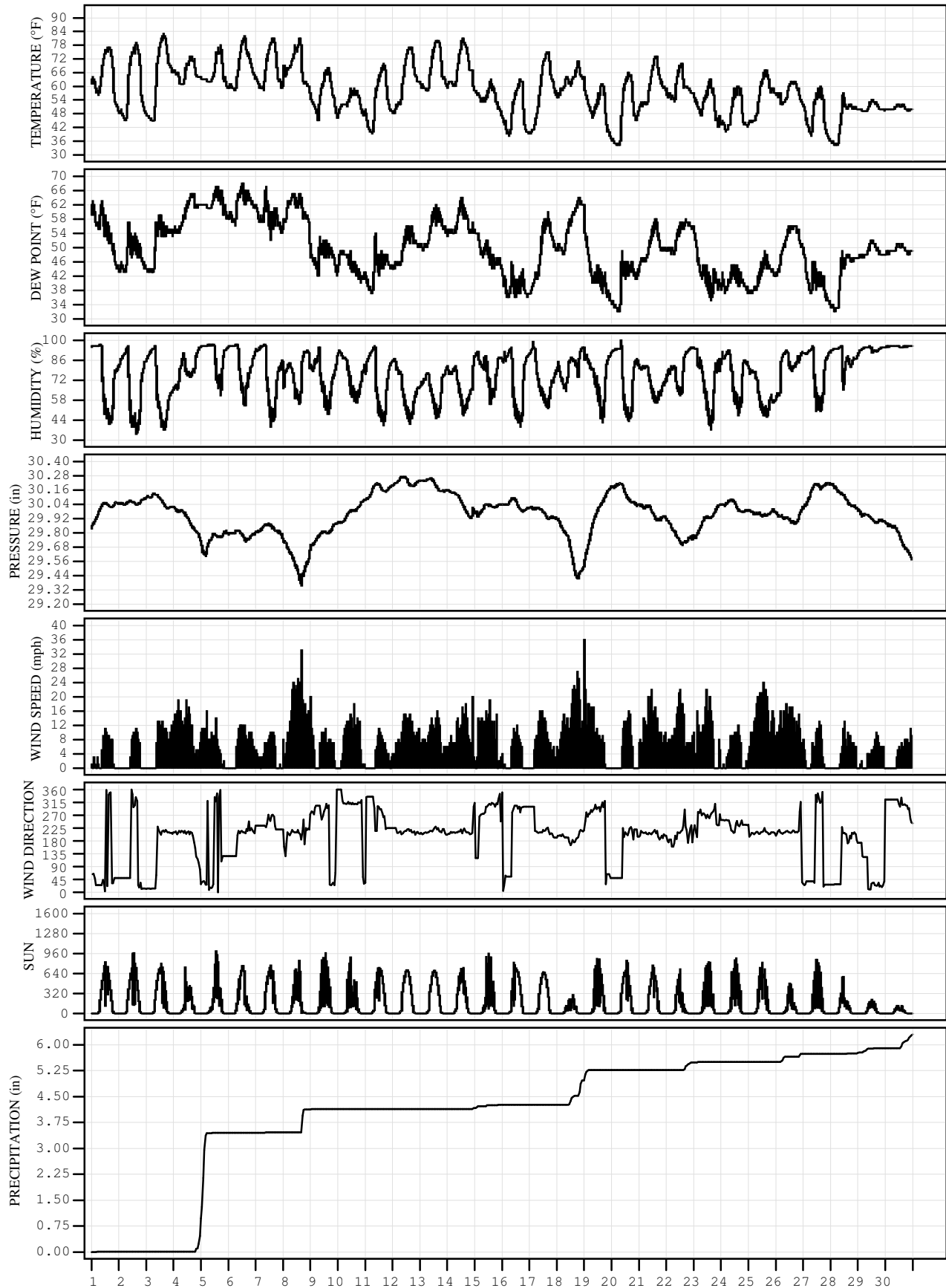
## HOURLY PRECIPITATION (Water Equivalent) September 2012: Westford

Date	A.M. Hour Ending at												P.M. Hour Ending at												Date
	01	02	03	04	05	06	07	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12	
01					0.01																			01	
02																									02
03																									03
04								0.01											0.08	0.01	0.12	0.24	0.50		04
05	0.34	0.84	0.81	0.41	0.06				0.01	0.01															05
06																									06
07									0.01																07
08																0.49	0.16	0.02							08
09	0.01																								09
10																									10
11																									11
12																									12
13																									13
14																							0.03		14
15		0.02	0.03						0.01		0.02									0.02					15
16																									16
17																									17
18										0.01	0.09	0.09	0.03	0.02	0.01	0.01			0.11	0.23	0.10				18
19	0.18	0.07	0.03	0.02																					19
20																									20
21																									21
22																0.02	0.09	0.01	0.04	0.02	0.02	0.02			22
23				0.01																					23
24																									24
25																									25
26					0.03	0.03	0.06	0.03													0.04	0.04			26
27									0.01																27
28																								0.01	28
29	0.01	0.01			0.03	0.01	0.01	0.05	0.01					0.01	0.01										29
30														0.05	0.09	0.03	0.02	0.02	0.01	0.03	0.05	0.05	0.02	0.03	30
<b>Sum</b>	0.54	0.94	0.87	0.44	0.13	0.04	0.07	0.09	0.05	0.01	0.03	0.09	0.09	0.09	0.12	0.06	0.61	0.19	0.07	0.24	0.37	0.33	0.29	0.54	<b>Sum</b>

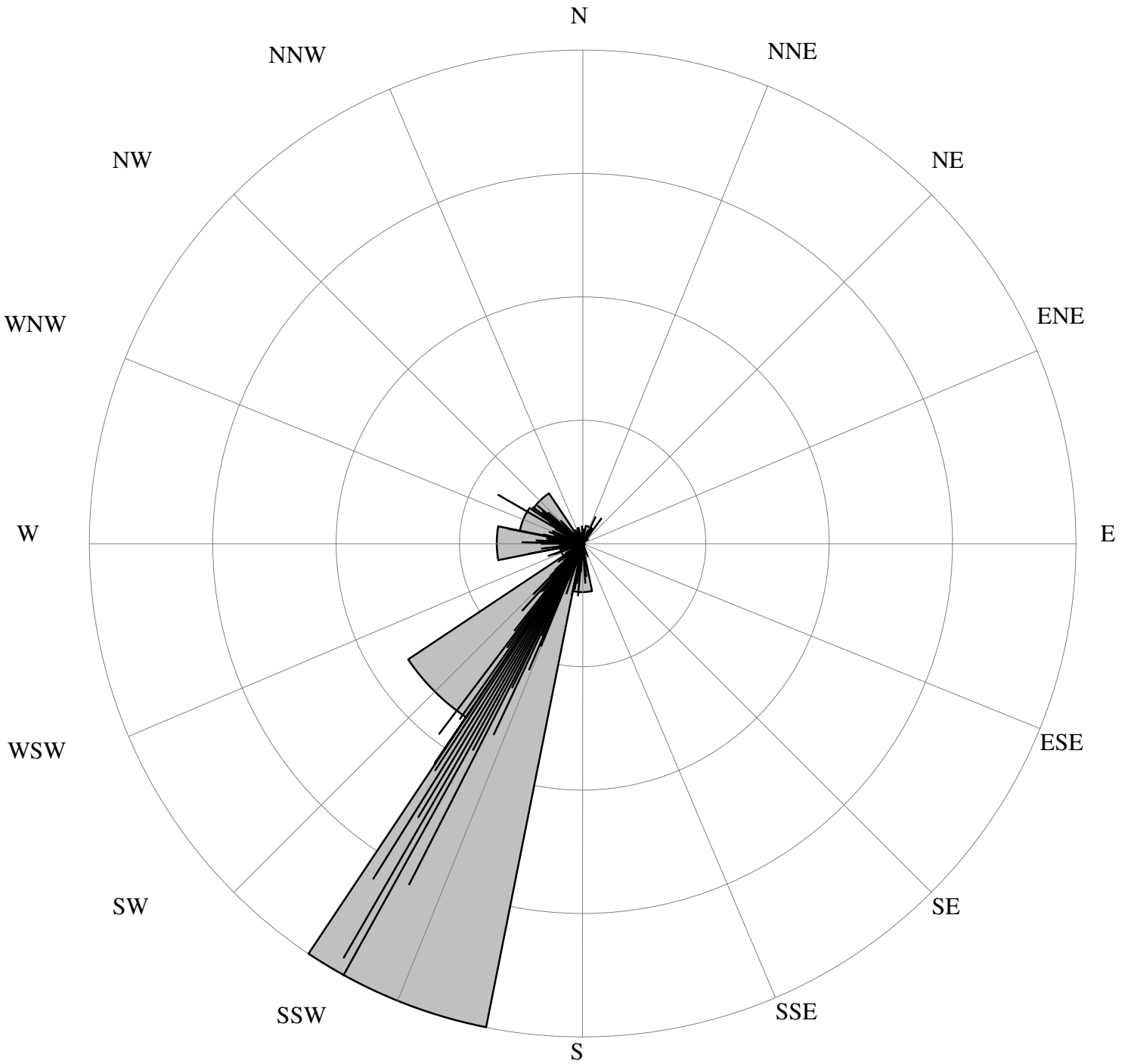
During a frozen precipitation event, hourly precipitation totals may not be recorded. In this case, daily amounts are typically entered in the last column (hour ending at 12 A.M.)

# HOUR-BY-HOUR DATA

## September 2012: Westford



Wind Rose: September 2012  
Westford



Maximum direction of wind: 66.5 miles from 209°  
Maximum sector of wind: 476.3 miles from SSW  
995.1 total miles of wind