

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

July 2010

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

Date	Temperature					Humidity Mean	Deg. Days		Precip Ty 1 fog 2 hv 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						Sun	
	Maximum	Minimum	Average	Mean	Dew Point		Heating Base 65°F	Cooling Base 65°F			Water Equivalent	Ice Pellets Snow	Maximum	Minimum	Mean	Avg Speed	Res Speed	Res Dir	Peak		Minute		
																			Speed	Dir	Speed		Dir	Speed	Dir
1	2	3	4A	4B	5	6	7	8	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	64.8	53.7	59.3	57.4	50	78	5	0	.....	0	0.04	0.0	30.11	29.99	30.040	3.3	3.2	298	19	NW	12	286
2	76.2	51.0	63.6	63.0	53	70	1	0	.....	0	0.00	0.0	30.19	30.05	30.128	0.9	0.8	303	13	WNW	7	310
3	84.5	56.7	70.6	70.9	58	64	0	6	.....	0	0.00	0.0	30.08	29.87	29.980	3.0	2.9	222	15	S	9	207
4	86.5	67.4	77.0	75.6	58	55	0	12	.....	0	0.00	0.0	29.91	29.80	29.862	2.1	2.1	252	14	W	8	252
5	89.4	63.2	76.3	78.3	66	65	0	11	.....	0	0.00	0.0	29.89	29.83	29.861	1.8	1.7	226	16	WSW	9	274
6	91.5	70.2	80.8	81.2	72	74	0	16	.....	0	0.00	0.0	29.97	29.89	29.936	0.8	0.6	280	11	NNE	5	311
7	93.2*	68.9	81.0*	80.6	70	73	0	16	.....	0	0.00	0.0	30.00	29.93	29.962	0.2	0.2	252	8	WSW	5	256
8	92.2	69.7	80.9	81.6	72	74	0	16	.....	0	0.10	0.0	29.97	29.84	29.918	0.9	0.9	212	15	SW	8	214
9	85.7	70.8	78.3	77.0	70	80	0	14	..3.....	0	0.92	0.0	29.91	29.71	29.811	3.4	3.4	215	22	S	12	218	
10	81.7	62.9	72.3	71.6	68	88	0	8	..3.....	0	0.76	0.0	29.85	29.73	29.791	0.4	0.4	313	14	W	8	299	
11	84.9	61.1	73.0	71.8	65	82	0	8	.....	0	0.00	0.0	29.86	29.76	29.817	0.3	0.3	321	9	W	5	319
12	84.2	62.1	73.1	72.5	64	78	0	8	..3.....	0	T	0.0	29.84	29.78	29.810	0.8	0.8	216	19	WNW	9	287	
13	80.2	65.2	72.7	73.8	65	73	0	8	..3.....	0	1.00	0.0	29.89	29.82	29.856	2.0	1.9	210	21	S	10	223	
14	80.7	64.8	72.8	71.1	68	90	0	8	.....	0	0.00	0.0	29.99	29.84	29.917	0.4	0.4	351	11	WNW	5	316
15	87.1	62.2	74.6	75.1	68	80	0	10	.2.....	0	0.00	0.0	30.03	29.88	29.961	0.3	0.3	224	10	S	5	194	
16	77.6	69.7	73.6	73.9	69	84	0	9	.....	0	0.14	0.0	29.89	29.69	29.775	4.1	4.1	216	22	SW	13	217
17	86.5	64.0	75.3	75.3	65	71	0	11	..3.....	0	0.00	0.0	29.76	29.61	29.691	3.5	3.3	233	19	S	10	255	
18	79.7	65.0	72.3	71.5	62	73	0	8	.....	0	0.00	0.0	29.81	29.65	29.737	2.0	1.9	270	16	WSW	9	297
19	73.5	61.4	67.5	66.6	63	89	0	3	..3.....	0	0.30	0.0	29.83	29.71	29.759	1.0	0.9	210	12	SSW	7	205	
20	80.9	59.0	70.0	68.2	63	84	0	5	.....	0	0.00	0.0	29.94	29.83	29.895	0.3	0.3	280	9	WNW	6	222
21	80.8	58.3	69.6	66.3	63	90	0	5	..3.5....	0	1.42	0.0	29.92	29.73	29.829	0.8	0.6	230	35	W	22	302	
22	78.4	60.5	69.5	68.0	62	83	0	5	.....	0	0.04	0.0	29.95	29.73	29.833	2.6	2.3	297	17	W	9	306
23	73.1	57.1	65.1	65.7	62	88	0	0	.....	0	0.06	0.0	29.95	29.76	29.872	1.3	1.3	212	19	SSW	11	212
24	84.2	65.8	75.0	73.5	69	88	0	10	.....	0	T	0.0	29.79	29.67	29.740	0.9	0.8	233	16	W	6	212
25	75.5	60.3	67.9	68.6	63	83	0	3	.....	0	0.05	0.0	29.84	29.65	29.731	2.0	1.8	301	18	WNW	12	296
26	76.5	55.8	66.1	65.6	56	72	0	2	.....	0	0.00	0.0	29.93	29.83	29.881	3.6	3.5	309	29	WNW	13	300
27	86.2	56.5	71.3	71.4	60	68	0	7	.....	0	0.00	0.0	30.00	29.92	29.956	0.7	0.5	261	10	NW	5	300
28	84.7	61.6	73.1	72.0	63	73	0	9	.....	0	0.08	0.0	29.94	29.68	29.812	3.4	3.4	215	22	S	12	215
29	73.5	51.6	62.5	66.8	58	74	2	0	.....	0	0.01	0.0	29.87	29.68	29.789	2.6	2.1	296	18	WNW	10	308
30	68.7	48.0	58.3*	58.6	50	76	6	0	.....	0	0.00	0.0	29.96	29.85	29.910	1.2	1.2	316	19	WNW	11	303
31	73.2	45.5*	59.3	59.3	52	79	5	0	.....	0	0.00	0.0	29.99	29.93	29.956	0.5	0.5	302	17	W	9	296
Sum	Sum	-----	-----	---	----	Ttl	Ttl	Number of Days		For the month:													---
2516	1890					19	218			4.92	0.0	30.19	29.61	29.865	1.7	1.2	253	35	W	22	302		
Avg	Avg	Avg	Mean	Avg	Avg	----	----	Precip		Season Ttl		Date	Date	-----	----	----	---	Date	Date	Avg			
81.2	61.0	71.1	70.7	63	77.4	----	----	≥.01 inch 13		26.32	0.0	2	17	-----	----	----	---	21	21				
Number of Days						Season to Date		Snow, Ice ≥1.0 inch 0		Greatest in 24 Hours and Dates						Greatest Depth on Ground of Snow, Ice Pellets or Ice and Date							
Max Temperature			Min Temperature			19	309	Thunder 7		Precipitation			Snow, Ice Plts										
≥ 90°F		≤ 32°F		≤ 32°F		≤ 0°F		----	----	Heavy Fog 1		1.53	9-10		0.0		-		0		-		
3		0		0		0		----	----	Clear 9		Partly Cloudy 14			Cloudy 8								

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: Sunshine index is measured in Watts/m² 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 July 2010: Westford

Hour	JUL 01									JUL 02									JUL 03								
	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																											
04																											
07																											
10																											
13																											
16																											
19																											
22																											
JUL 04									JUL 05									JUL 06									
01																											
04																											
07																											
10																											
13																											
16																											
19																											
22																											
JUL 07									JUL 08									JUL 09									
01																											
04																											
07																											
10																											
13																											
16																											
19																											
22																											
JUL 10									JUL 11									JUL 12									
01																											
04																											
07																											
10																											
13																											
16																											
19																											
22																											
JUL 13									JUL 14									JUL 15									
01																											
04																											
07																											
10																											
13																											
16																											
19																											
22																											
JUL 16									JUL 17									JUL 18									
01																											
04																											
07																											
10																											
13																											
16																											
19																											
22																											

MAXIMUM SHORT DURATION PRECIPITATION

Time Period (minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation	0.61	0.98	1.14	1.22	1.31	1.32	1.33	1.37	1.37	1.37	1.37	1.37
Ended: Date	21	21	21	21	21	21	21	21	21	21	21	21
Ended: Time	1512	1515	1515	1517	1523	1523	1522	1523	1523	1523	1523	1523

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

July 2010: Westford

Hour	JUL 19									JUL 20									JUL 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		29.79	0.00	67	62	84	20	1	3	29.84	0.00	60	58	95	02	0	0	29.92	0.00	60	59	95	31	0	0		
04		29.76	0.00	65	59	81	21	1	6	29.85	0.00	59	58	96	02	0	0	29.91	0.00	59	58	96	31	0	0		
07		29.75	0.00	66	61	83	21	0	6	29.89	0.00	63	62	97	02	0	0	29.91	0.00	62	61	97	31	0	0		
10		29.73	0.00	65	63	93	21	4	8	29.92	0.00	68	66	93	20	0	1	29.87	0.00	75	67	77	20	2	6		
13		29.72	0.00	68	65	89	21	2	8	29.92	0.00	76	67	73	20	1	5	29.81	0.00	80	67	65	20	4	9		
16		29.72	0.00	70	67	89	22	0	1	29.91	0.00	80	67	63	31	0	4	29.75	0.00	64	63	95	10	2	6		
19		29.77	0.00	71	67	86	30	0	0	29.91	0.00	79	65	63	31	0	1	29.76	0.00	67	66	96	27	0	4		
22		29.81	0.00	65	63	93	02	0	0	29.93	0.00	62	59	90	31	0	0	29.76	0.00	63	62	96	21	0	5		
JUL 22									JUL 23									JUL 24									
01		29.75	0.00	63	62	97	23	1	5	29.94	0.00	61	58	90	25	0	0	29.76	0.00	66	65	96	22	2	6		
04		29.74	0.00	63	62	96	27	4	11	29.94	0.00	59	57	93	20	0	0	29.75	0.00	67	66	96	22	1	8		
07		29.77	0.00	63	61	93	29	3	6	29.95	0.00	61	59	96	20	0	4	29.77	0.00	68	67	97	21	1	3		
10		29.82	0.00	65	63	94	32	1	11	29.92	0.00	71	64	80	20	4	11	29.79	0.00	75	72	91	23	0	7		
13		29.86	0.00	72	64	74	30	4	10	29.88	0.00	73	65	75	22	4	12	29.76	0.00	82	71	70	29	3	7		
16		29.88	0.00	78	65	64	31	4	9	29.82	0.00	69	64	85	19	1	6	29.73	0.00	83	73	72	21	1	5		
19		29.89	0.00	74	63	69	32	1	6	29.79	0.00	67	64	88	21	0	4	29.69	0.00	77	72	86	23	0	1		
22		29.92	0.00	65	59	82	26	0	0	29.77	0.00	65	64	95	21	0	4	29.69	0.00	72	69	92	21	0	0		
JUL 25									JUL 26									JUL 27									
01		29.66	0.00	73	69	87	25	1	5	29.84	0.00	58	53	84	31	0	3	29.93	0.00	58	53	84	27	0	0		
04		29.66	0.00	71	68	91	24	1	7	29.84	0.00	58	54	85	31	2	8	29.96	0.00	58	53	83	20	1	4		
07		29.72	0.00	68	66	93	31	0	3	29.89	0.00	59	53	82	30	6	8	29.98	0.00	60	55	83	21	3	5		
10		29.71	0.00	70	64	83	30	5	13	29.90	0.00	69	57	64	29	10	18	30.00	0.00	75	63	66	26	0	5		
13		29.73	0.00	72	64	77	31	3	12	29.88	0.00	74	59	61	29	6	14	29.97	0.00	81	60	49	28	1	5		
16		29.75	0.00	69	60	75	31	5	13	29.88	0.00	76	59	56	29	9	17	29.94	0.00	85	62	47	27	3	7		
19		29.78	0.00	68	59	72	29	3	7	29.89	0.00	73	56	55	31	6	12	29.93	0.00	81	68	65	26	0	1		
22		29.82	0.00	63	57	81	25	0	3	29.91	0.00	60	54	78	32	1	4	29.94	0.00	73	60	65	27	0	7		
JUL 28									JUL 29									JUL 30									
01		29.92	0.00	63	57	82	19	0	3	29.69	0.00	69	66	89	21	2	9	29.88	0.00	51	49	91	06	0	0		
04		29.92	0.00	64	59	85	22	1	5	29.69	0.00	67	64	92	25	2	7	29.85	0.00	48	46	92	06	0	0		
07		29.90	0.00	64	58	81	20	2	6	29.74	0.00	67	61	83	28	5	11	29.90	0.00	52	51	94	06	0	0		
10		29.85	0.00	76	63	64	20	8	16	29.80	0.00	69	55	63	30	6	15	29.91	0.00	64	53	67	28	4	8		
13		29.81	0.00	81	68	64	22	5	17	29.82	0.00	71	56	58	30	4	15	29.90	0.00	67	53	60	31	4	10		
16		29.73	0.00	82	67	62	24	3	13	29.83	0.00	73	59	61	31	3	13	29.92	0.00	68	50	53	01	5	14		
19		29.71	0.00	77	62	60	21	9	14	29.84	0.00	67	53	61	02	1	4	29.93	0.00	64	49	57	07	0	4		
22		29.69	0.00	69	65	89	20	4	13	29.86	0.00	54	49	84	06	0	0	29.95	0.00	52	48	88	01	0	0		
JUL 31																											
01		29.95	0.00	49	46	89	01	0	0																		
04		29.95	0.00	47	45	94	01	0	0																		
07		29.98	0.00	48	46	95	01	0	0																		
10		29.98	0.00	67	57	70	05	0	4																		
13		29.95	0.00	70	56	62	02	1	5																		
16		29.95	0.00	71	55	57	31	2	7																		
19		29.94	0.00	65	57	75	31	0	0																		
22		29.96	0.00	57	54	88	31	0	0																		

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

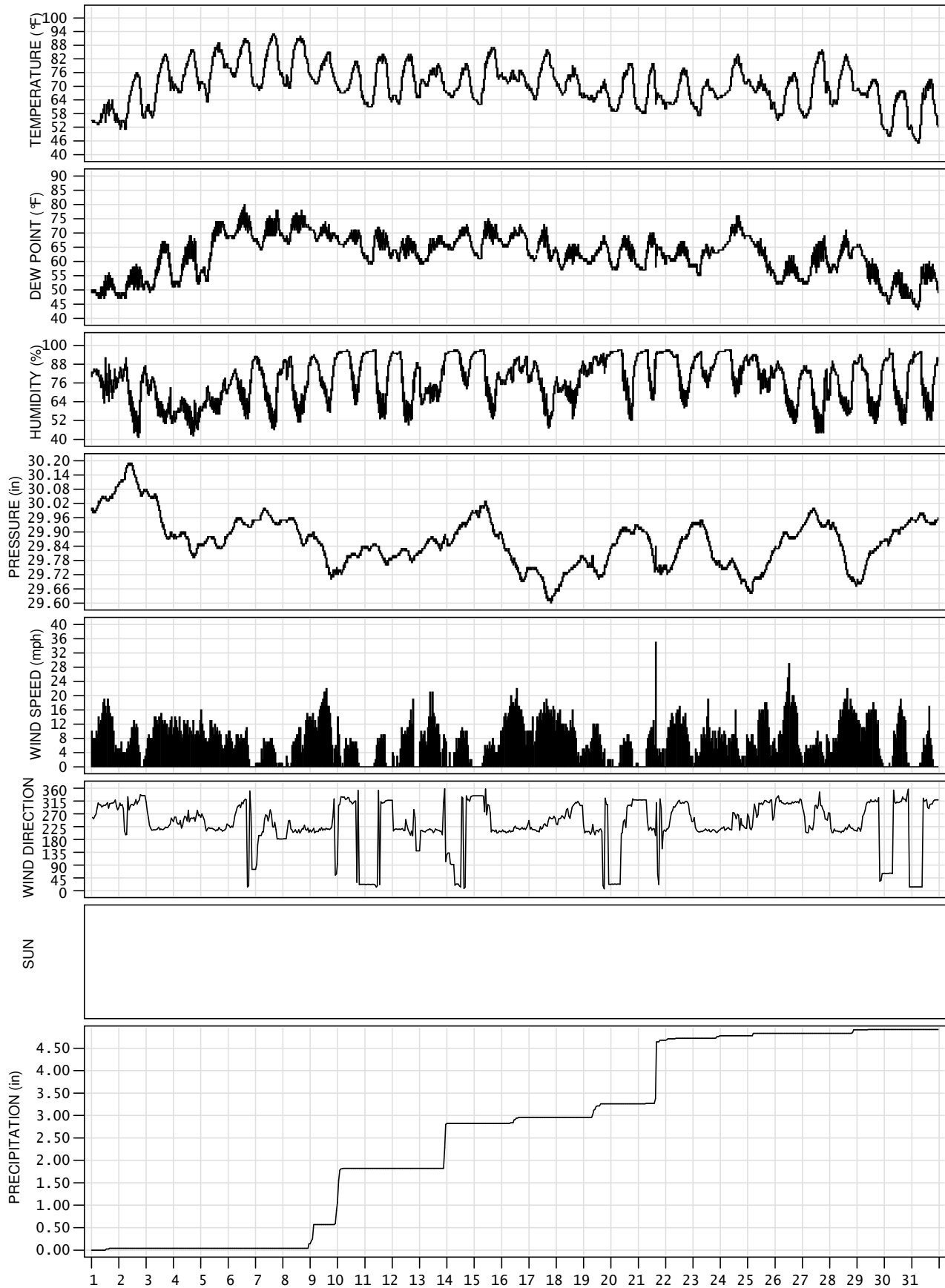
Hour	Averages						Resultant Wind	
	Sunshine	Pressure	Temperature	Dew Point	Humidity	Wind Speed	Direction	Speed
01		29.865	65	60	85	1.2	25	1.1
04		29.863	64	59	85	1.2	24	1.0
07		29.885	65	61	87	1.4	25	1.0
10		29.888	73	64	75	2.6	25	1.9
13		29.871	78	66	67	3.1	25	2.1
16		29.848	79	66	65	2.4	27	1.3
19		29.840	76	65	71	0.9	26	0.7
22		29.862	67	61	83	0.7	24	0.7

HOURLY PRECIPITATION (Water Equivalent) July 2010: Westford

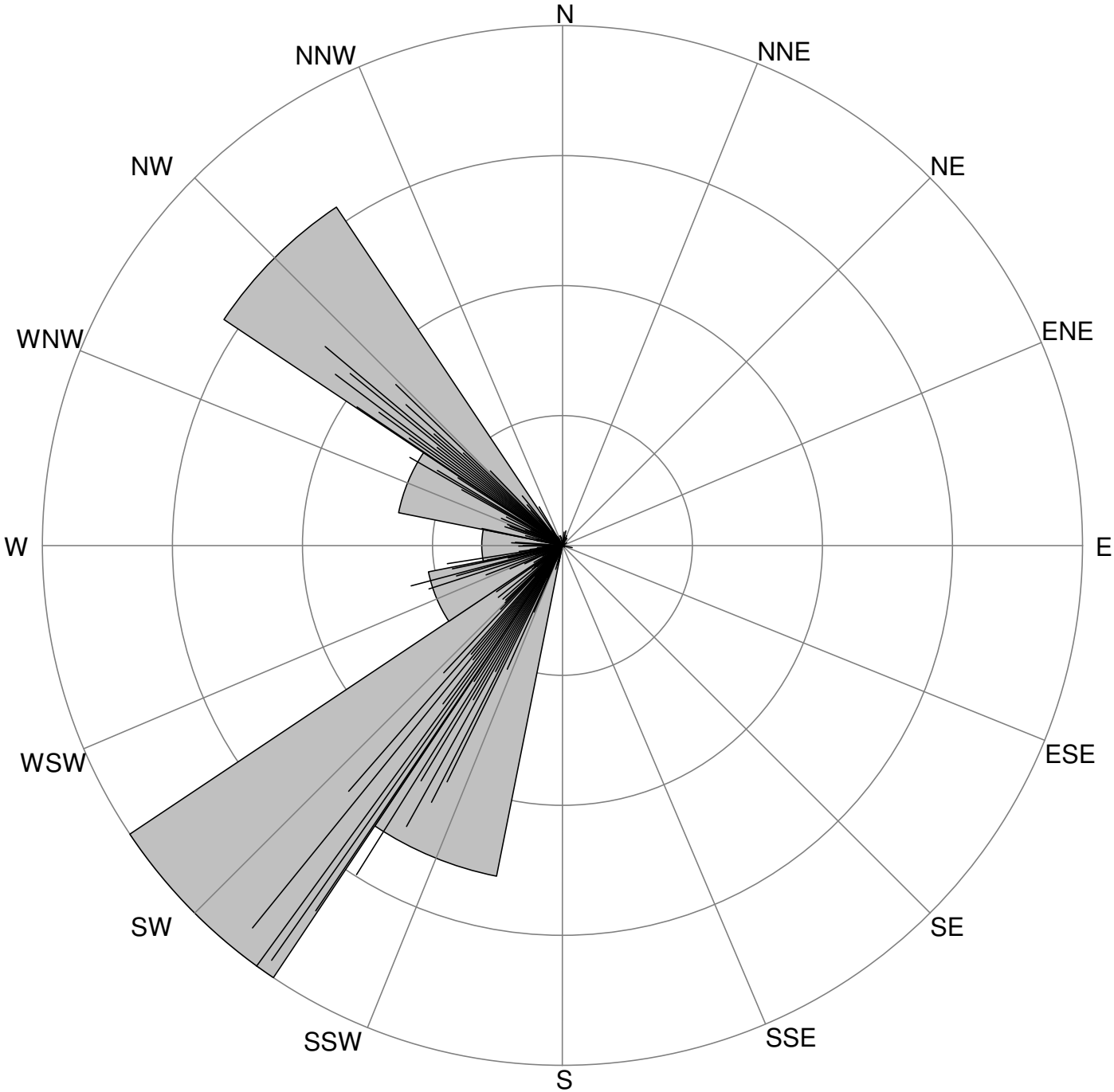
Date	A.M. Hour Ending at												P.M. Hour Ending at												Date
	01	02	03	04	05	06	07	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12	
01													0.02			0.02									01
02																									02
03																									03
04																									04
05																									05
06																									06
07																									07
08																									08
09	0.06	0.05	0.32																			0.02	0.10		09
10	0.48	0.24	0.03		0.01																	0.02	0.29	0.18	10
11																									11
12																									12
13																						0.46	0.52	0.02	13
14																									14
15																									15
16								0.02			0.06	0.01	0.03		0.02										16
17																									17
18																									18
19								0.07	0.09	0.02	0.06	0.01			0.05										19
20																									20
21								0.01							0.11	1.26			0.04						21
22	0.01	0.02								0.01															22
23																				0.01	0.03		0.01	0.01	23
24																									24
25					0.05																				25
26																									26
27																									27
28																				0.02	0.06				28
29																									29
30										0.01															30
31																									31
Sum	0.55	0.31	0.35	0.00	0.06	0.00	0.01	0.09	0.10	0.03	0.12	0.02	0.05	0.00	0.18	1.28	0.00	0.00	0.04	0.03	0.09	0.48	0.92	0.21	Sum

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 July 2010: Westford



Wind Rose: July 2010
Westford



Maximum direction of wind: 54.9 miles from 216°
Maximum sector of wind: 382.7 miles from SW
1231.9 total miles of wind