

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

November 2008

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						Sun		
	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	Dir		Speed	Dir	Speed	Dir
1	2	3	4A	4B	5	6	7	8		11	12	13	14	15	16	17	18	19	20	21	22	23		
1	47.9	28.2	38.1	36.7	27	69	27	0	.....	0	0.00	0.0	30.36	30.11	30.256	2.3	2.1	340	19	NE	10	288	
2	40.7	22.6	31.7	30.6	19	63	33	0	.....	0	0.00	0.0	30.58	30.36	30.499	1.2	0.1	36	21	S	11	192	
3	48.3	34.0	41.1	42.0	33	70	24	0	.....	0	T	0.0	30.44	30.31	30.362	8.9	8.9	190	32	SSE	19	193	
4	60.9	44.8	52.9	52.1	45	76	12	0	.....	0	0.00	0.0	30.33	30.18	30.259	7.9	7.9	191	24	S	14	193	
5	64.3	48.2	56.3*	55.2	47	75	9	0	.....	0	0.00	0.0	30.19	30.11	30.150	4.7	4.7	191	21	S	14	190	
6	65.0*	43.8	54.4	53.6	48	81	10	0	.....	0	0.00	0.0	30.14	29.98	30.078	0.3	0.3	32	7	NE	5	32	
7	59.5	51.5	55.5	54.9	51	88	9	0	.....	0	0.02	0.0	29.98	29.70	29.847	0.7	0.3	281	11	S	6	164	
8	59.7	42.9	51.3	54.1	51	88	13	0	.....	0	0.14	0.0	29.70	29.51	29.589	4.2	3.2	194	26	S	15	192	
9	49.2	40.5	44.9	43.4	37	80	20	0	.....	0	0.02	0.0	29.75	29.55	29.640	2.7	2.5	228	24	W	14	252	
10	42.4	33.3	37.9	37.1	31	80	27	0	.....	0	0.46	T	29.97	29.75	29.853	3.7	3.6	236	16	W	11	245	
11	36.1	30.1	33.1	33.9	27	75	32	0	.....	0	0.00	T	30.30	29.97	30.155	4.5	4.3	278	25	WNW	14	265	
12	41.9	24.3	33.1	31.1	25	78	32	0	.....	0	0.00	0.0	30.38	30.29	30.340	0.5	0.4	265	12	S	8	197	
13	42.3	24.0	33.1	36.8	32	85	32	0	.....	0	0.10	0.0	30.31	29.98	30.088	3.9	3.8	169	21	S	13	162	
14	56.1	42.3	49.2	49.1	46	89	16	0	.....	0	T	0.0	29.98	29.77	29.862	1.8	1.6	176	18	S	12	177	
15	61.8	50.5	56.1	54.1	52	93	8	0	.....	0	0.50	0.0	29.78	29.20	29.490	2.5	2.2	185	31	WSW	18	256	
16	57.4	33.4	45.4	42.4	36	79	20	0	.....	0	0.15	T	29.66	29.12	29.342	8.6	7.7	233	28	WSW	19	244	
17	37.3	27.2	32.3	31.9	22	68	33	0	.....	0	T	T	30.00	29.66	29.872	5.3	4.9	261	24	SW	15	241	
18	27.2	18.0	22.6	23.4	17	78	42	0	.....	T	0.04	0.6	30.18	29.99	30.100	2.0	1.9	340	16	WNW	8	7	
19	26.7	15.8	21.3	20.5	12	70	43	0	.....	T	T	T	30.17	29.89	30.074	2.0	2.0	349	19	WNW	10	19	
20	23.4	15.6	19.5	21.1	12	67	45	0	.....	T	T	T	29.89	29.78	29.823	3.9	3.9	305	24	WSW	14	275	
21	22.0	17.2	19.6	19.4	12	74	45	0	.....	1	0.05	1.5	30.18	29.84	30.033	4.5	4.4	300	20	WNW	11	303	
22	19.3	15.2	17.2*	17.1	12	80	48	0	.....	6	0.15	6.3	30.23	30.13	30.191	6.9	6.9	300	26	NW	17	291	
23	24.7	10.6*	17.7	18.7	10	69	47	0	.....	4	0.00	0.0	30.30	30.19	30.258	4.8	4.6	262	23	W	13	272	
24	35.2	21.6	28.4	29.4	19	67	36	0	.....	3	T	T	30.28	29.98	30.177	4.2	4.1	175	20	SE	12	163	
25	40.8	33.3	37.0	37.1	33	86	28	0	.....	T	0.23	T	29.98	29.58	29.710	3.1	2.6	170	21	S	12	197	
26	39.3	30.7	35.0	34.1	29	83	30	0	.....	0	T	T	29.83	29.58	29.737	6.1	6.0	185	31	S	15	195	
27	36.5	32.7	34.6	34.5	29	79	30	0	.....	0	T	T	29.86	29.80	29.839	5.4	5.3	188	20	SSW	12	199	
28	38.6	33.3	35.9	35.3	29	78	29	0	.....	0	0.02	T	29.80	29.60	29.662	4.8	4.6	192	27	S	17	195	
29	35.5	24.4	29.9	30.3	24	79	35	0	.....	0	0.02	0.2	29.92	29.68	29.825	3.0	2.6	253	17	SW	11	241	
30	35.4	22.9	29.2	30.1	23	76	36	0	.....	1	0.02	0.6	29.95	29.55	29.835	2.1	1.7	163	18	S	9	179	
Sum	Sum	-----	-----	---	----		Ttl	Ttl					For the month:										---	
1275	913						851	0	Number of Days				1.92	9.2	30.58	29.12	29.965	3.9	2.3	223	32	SSE	19	193
Avg	Avg	Avg	Mean	Avg	Avg	----	----		Precip				Season Ttl	Date	Date	-----	----	----		Date	Date		Avg	
42.5	30.4	36.5	36.3	30	77.4	----	----		≥.01 inch	14			41.14	12.2	2	16	-----	----	----		3	3		
Number of Days							Season to Date	Snow, Ice ≥1.0 inch	2	Greatest in 24 Hours and Dates						Greatest Depth on Ground of Snow, Ice Pellets or Ice and Date								
Max Temperature			Min Temperature			1684	315	Thunder	0	Precipitation			Snow, Ice Plts											
≥ 90°F	≤ 32°F	≤ 32°F	≤ 0°F	----	----	Heavy Fog	0	0.65	15-16	6.3	22													
0	6	16	0	----	----	Clear	3	Partly Cloudy			4	Cloudy			23									

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
November 2008: Westford**

Hour	NOV 01									NOV 02									NOV 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																											
NOV 04									NOV 05									NOV 06									
01																											
04																											
07																											
10																											
13																											
16																											
19																											
22																											
NOV 07									NOV 08									NOV 09									
01																											
04																											
07																											
10																											
13																											
16																											
19																											
22																											
NOV 10									NOV 11									NOV 12									
01																											
04																											
07																											
10																											
13																											
16																											
19																											
22																											
NOV 13									NOV 14									NOV 15									
01																											
04																											
07																											
10																											
13																											
16																											
19																											
22																											
NOV 16									NOV 17									NOV 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	0.09	0.13	0.19	0.24	0.27	0.28	0.28	0.28	0.28	0.29	0.29	0.29
Ended: Date	15	15	15	15	15	15	15	15	15	15	15	15
Ended: Time	2026	2028	2025	2027	2030	2030	2030	2030	2030	2148	2148	2148

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

November 2008: Westford

Hour	NOV 19									NOV 20									NOV 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	30.14	0.00	20	12	70	00	2	8	29.87	0.00	16	12	82	00	0	0	29.85	0.00	20	12	68	29	5	10			
04	30.16	0.00	19	15	83	00	1	4	29.84	0.00	19	10	70	00	0	3	29.89	0.00	19	14	79	30	4	10			
07	30.16	0.00	19	15	83	33	1	12	29.82	0.00	19	10	69	36	0	1	29.96	0.00	18	12	78	32	5	15			
10	30.14	0.00	24	11	58	00	6	19	29.81	0.00	22	12	64	30	3	11	30.02	0.00	19	13	77	29	4	10			
13	30.08	0.00	24	12	59	35	6	14	29.79	0.00	23	13	64	30	4	14	30.06	0.00	21	11	65	28	10	14			
16	30.04	0.00	20	9	61	33	1	9	29.81	0.00	23	14	67	30	4	15	30.11	0.00	20	12	70	32	2	10			
19	30.00	0.00	20	10	65	02	0	3	29.83	0.00	23	15	71	30	3	14	30.17	0.00	19	12	73	30	4	13			
22	29.92	0.00	20	11	68	00	0	2	29.84	0.00	23	11	60	31	11	21	30.16	0.00	18	14	86	28	4	10			
NOV 22									NOV 23									NOV 24									
01	30.15	0.00	17	14	87	32	2	10	30.20	0.00	17	10	75	27	8	13	30.27	0.00	23	16	76	20	4	9			
04	30.17	0.00	17	14	87	30	4	12	30.23	0.00	15	8	73	25	5	13	30.27	0.00	22	16	77	18	5	14			
07	30.19	0.00	15	12	87	30	3	11	30.26	0.00	12	7	79	24	4	10	30.27	0.00	25	18	76	19	5	10			
10	30.20	0.00	17	12	83	29	8	14	30.30	0.00	20	8	61	26	8	15	30.25	0.00	30	18	61	16	5	13			
13	30.17	0.00	19	12	73	31	5	18	30.25	0.00	24	8	51	26	8	18	30.17	0.00	33	19	55	16	5	11			
16	30.20	0.00	19	12	77	29	13	21	30.25	0.00	22	9	56	25	1	11	30.14	0.00	33	19	57	19	3	5			
19	30.21	0.00	18	10	73	27	10	16	30.29	0.00	22	13	70	25	4	9	30.06	0.00	34	20	56	16	2	6			
22	30.21	0.00	17	10	73	28	8	17	30.27	0.00	19	13	79	21	1	4	30.04	0.00	33	26	73	16	5	12			
NOV 25									NOV 26									NOV 27									
01	29.95	0.00	34	29	81	16	6	14	29.59	0.00	34	32	92	19	7	15	29.83	0.00	34	30	84	18	4	13			
04	29.85	0.00	37	32	82	17	6	18	29.65	0.00	32	30	91	18	4	9	29.83	0.00	34	29	81	18	6	13			
07	29.79	0.00	38	33	81	10	4	16	29.70	0.00	31	28	89	19	5	11	29.85	0.00	33	28	82	19	6	13			
10									29.75	0.00	35	29	78	16	10	22	29.85	0.00	34	30	86	19	10	19			
13	29.65	0.00	38	34	86	06	1	4	29.74	0.00	39	28	64	18	12	20	29.83	0.00	36	29	76	19	7	15			
16	29.60	0.00	39	35	85	07	1	4	29.78	0.00	35	29	77	19	8	17	29.84	0.00	35	29	77	18	5	13			
19	29.59	0.00	37	35	93	21	0	2	29.81	0.00	34	30	86	17	6	16	29.86	0.00	35	27	75	19	5	11			
22	29.59	0.05	35	33	93	20	4	13	29.82	0.00	34	30	84	18	5	13	29.84	0.00	33	27	77	17	3	9			
NOV 28									NOV 29									NOV 30									
01	29.79	0.00	34	27	77	17	3	10	29.70	0.00	32	29	91	18	4	9	29.93	0.00	29	21	74	18	3	10			
04	29.71	0.00	34	27	76	17	2	7	29.74	0.00	32	28	87	23	4	10	29.92	0.00	25	19	77	18	4	7			
07	29.64	0.00	34	26	71	18	4	12	29.79	0.00	30	26	86	30	2	6	29.91	0.00	24	19	82	18	1	4			
10	29.64	0.00	34	30	83	18	8	19	29.83	0.00	32	23	71	23	7	11	29.94	0.00	29	23	78	12	0	0			
13	29.61	0.00	38	30	75	18	5	14	29.83	0.00	32	26	78	24	2	6	29.86	0.00	35	20	54	14	4	10			
16	29.64	0.00	38	30	74	23	3	7	29.87	0.00	31	22	68	27	1	5	29.82	0.00	34	23	64	11	4	11			
19	29.64	0.00	36	30	78	20	4	8	29.90	0.00	28	21	75	25	3	6	29.75	0.00	33	29	87	14	2	10			
22	29.67	0.00	34	31	89	18	2	9	29.90	0.00	27	22	83	23	0	2	29.64	0.00	33	30	91	03	1	4			

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

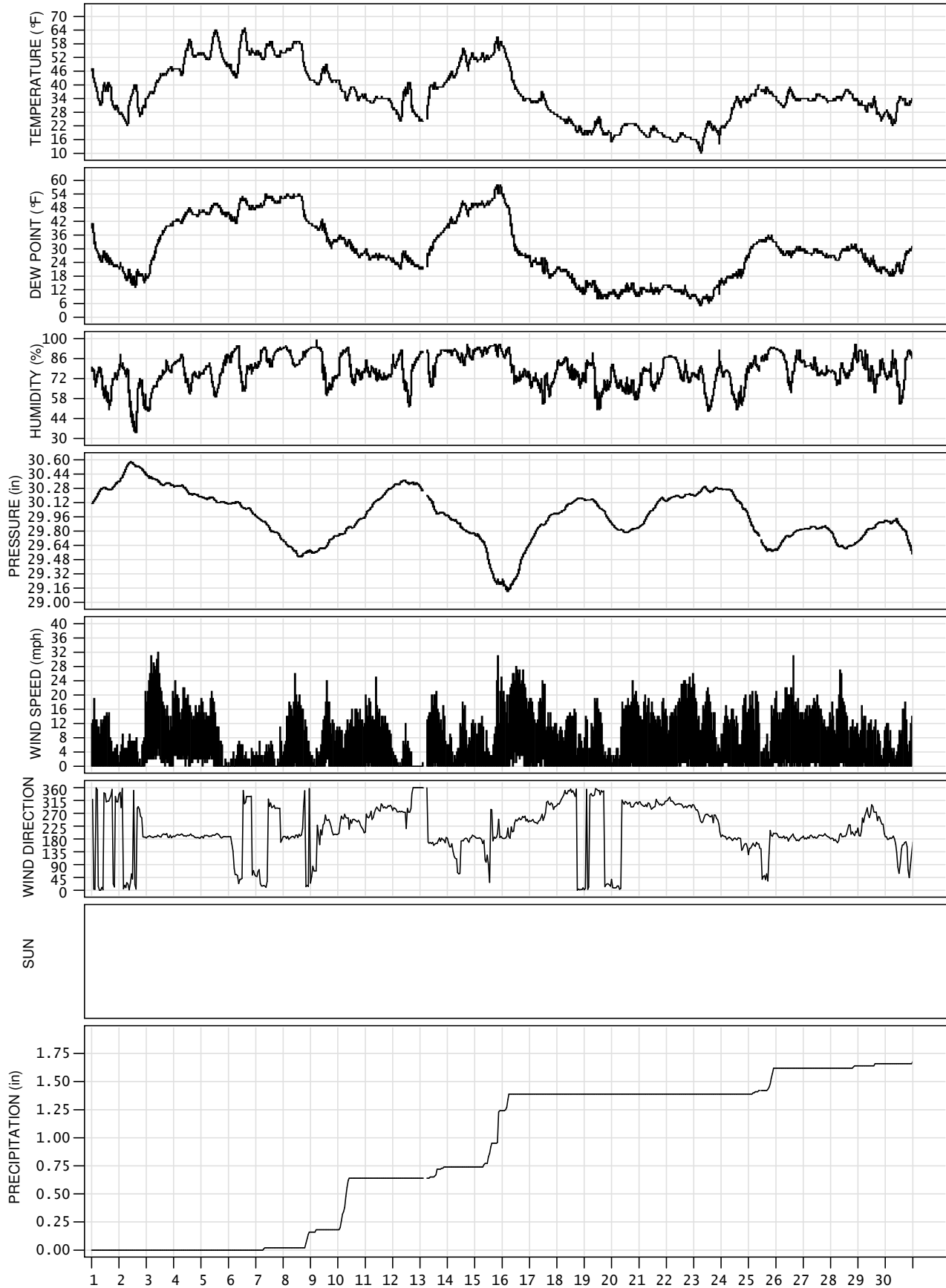
Hour	Averages						Resultant Wind	
	Sunshine	Pressure	Temperature	Dew Point	Humidity	Wind Speed	Direction	Speed
01		29.966	36	30	81	3.6	21	2.5
04		29.957	35	30	82	3.4	21	2.3
07		29.978	34	29	83	3.5	20	2.4
10		29.996	38	30	75	5.4	22	2.9
13		29.952	40	30	69	5.4	23	3.2
16		29.955	38	30	72	4.5	24	2.7
19		29.966	36	29	77	2.8	24	1.8
22		29.957	36	30	79	3.3	22	1.8

HOURLY PRECIPITATION (Water Equivalent) November 2008: Westford

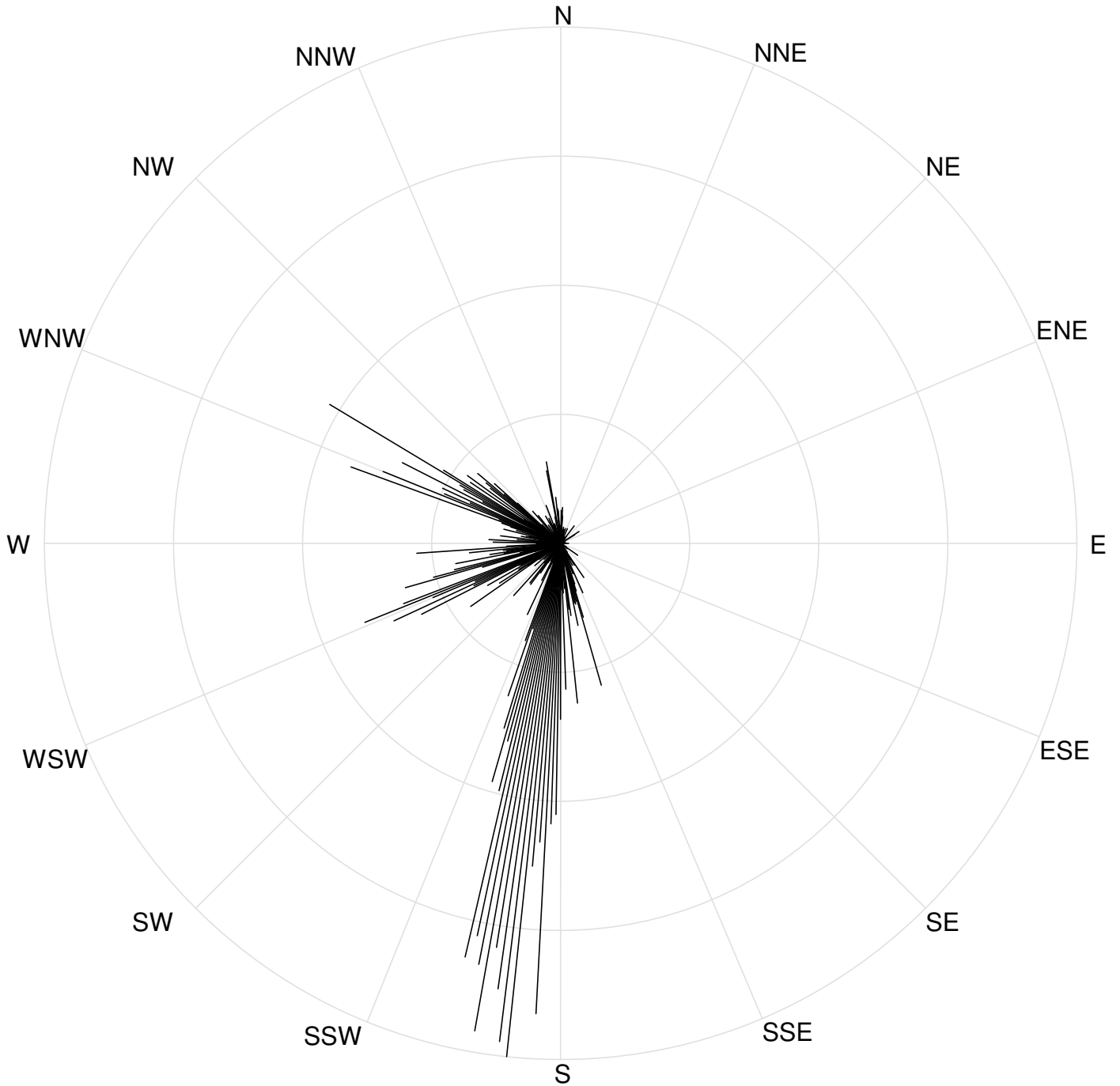
Date	A.M. Hour Ending at												P.M. Hour Ending at												Date
	01	02	03	04	05	06	07	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12	
01																								01	
02																									02
03																									03
04																									04
05																									05
06																									06
07							0.01	0.01																	07
08																			0.04	0.04	0.04	0.02			08
09					0.02																				09
10		0.02	0.06	0.06	0.02	0.04	0.10	0.08	0.06	0.02															10
11																									11
12																									12
13								0.01					0.01	0.01	0.05				0.01		0.01				13
14																									14
15							0.02	0.01				0.06	0.03	0.06	0.03					0.01	0.27	0.01			15
16			0.01	0.02	0.07	0.05																			16
17																									17
18																									18
19																									19
20																									20
21																									21
22																									22
23																									23
24																									24
25				0.01		0.01		0.01							0.01	0.02	0.03	0.05	0.04	0.05					25
26																									26
27																				0.01	0.01				27
28																									28
29															0.02										29
30																							0.02		30
Sum	0.00	0.02	0.07	0.09	0.11	0.10	0.11	0.11	0.09	0.02	0.00	0.06	0.04	0.07	0.10	0.00	0.01	0.02	0.04	0.11	0.37	0.10	0.02	0.02	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 November 2008: Westford



Wind Rose: November 2008
Westford



Maximum direction of wind: 89.6 miles from 186°.
2779.9 total miles of wind.