

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

November 2009

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		11	12	13	14	15	16	17	18	19	20	21	22	23	
1	52.7	33.8	43.3	44.2	34	67	21	0	.....	0	0.00	0.0	30.25	29.77	30.066	3.8	3.4	290	24	W	17	277
2	51.7	28.8	40.3	39.1	31	74	24	0	.....	0	0.00	0.0	30.30	30.05	30.202	1.1	1.0	205	11	SW	7	204
3	49.0	35.8	42.4	40.8	34	76	22	0	.....	0	0.19	0.0	30.09	29.86	29.965	4.9	3.4	239	21	S	12	307
4	41.0	29.2	35.1	35.0	26	71	30	0	.....	0	0.00	0.0	30.25	30.09	30.210	2.0	2.0	313	19	WNW	10	307
5	40.1	27.1	33.6	32.9	28	81	31	0	.....	0	T	T	30.23	29.96	30.079	0.9	0.8	194	13	SW	7	226
6	36.4	30.6	33.5*	32.8	29	85	31	0	.....	0	T	T	30.26	29.97	30.169	1.7	1.6	331	16	N	10	310
7	46.1	23.7	34.9	36.8	27	68	30	0	.....	0	0.00	0.0	30.25	29.91	30.080	6.4	6.4	202	37	SSW	20	197
8	62.2	39.7	51.0	49.4	34	57	14	0	.....	0	0.00	0.0	30.31	29.92	30.140	4.9	4.3	224	30	S	16	208
9	63.8*	38.5	51.1	55.7	39	55	13	0	.....	0	0.00	0.0	30.30	30.05	30.166	6.6	6.4	212	29	S	17	209
10	60.1	39.5	49.8	47.3	39	72	15	0	.....	0	0.00	0.0	30.37	30.13	30.272	1.8	1.6	330	20	WNW	12	319
11	48.5	28.4	38.4	36.4	30	77	26	0	.....	0	0.00	0.0	30.50	30.37	30.442	0.9	0.7	9	13	NE	6	296
12	51.5	26.3	38.9	34.5	26	72	26	0	.....	0	0.00	0.0	30.41	30.26	30.339	0.2	0.2	62	6	E	3	45
13	57.5	24.9	41.2	39.7	20	50	23	0	.....	0	0.00	0.0	30.27	30.16	30.217	1.3	1.0	160	16	SSE	8	168
14	52.9	33.4	43.2	45.2	39	81	22	0	.....	0	1.03	0.0	30.17	29.89	30.054	0.6	0.4	168	11	S	7	188
15	57.7	48.7	53.2*	52.2	50	93	11	0	.2.....	0	0.00	0.0	29.91	29.82	29.870	2.3	2.0	223	13	S	9	217	
16	48.7	33.8	41.3	40.7	30	66	23	0	.....	0	0.00	0.0	30.18	29.91	30.059	3.6	3.5	320	22	WNW	13	319
17	42.9	25.8	34.4	32.5	25	76	30	0	.....	0	0.00	0.0	30.42	30.18	30.328	0.5	0.5	357	9	NE	4	314
18	53.1	23.4*	38.2	35.2	27	73	27	0	.....	0	0.00	0.0	30.48	30.36	30.421	1.1	1.1	205	15	SSW	9	213
19	56.7	31.2	44.0	44.9	35	70	21	0	.....	0	0.00	0.0	30.37	30.05	30.251	2.9	2.9	204	14	S	8	194
20	53.3	44.3	48.8	47.8	43	82	16	0	.....	0	0.79	0.0	30.05	29.80	29.857	5.3	4.8	253	25	W	16	287
21	48.9	36.1	42.5	43.6	38	82	22	0	.....	0	0.00	0.0	30.20	29.86	30.029	2.0	1.8	286	17	W	10	281
22	45.8	30.0	37.9	38.4	33	82	27	0	.....	0	0.00	0.0	30.43	30.19	30.341	0.4	0.4	3	10	WNW	6	311
23	47.3	27.4	37.3	37.5	32	82	28	0	.....	0	0.01	0.0	30.49	30.32	30.426	1.6	1.6	199	18	SW	11	202
24	55.7	37.0	46.4	43.2	39	85	18	0	.....	0	0.01	0.0	30.32	30.11	30.218	0.5	0.2	143	7	S	4	204
25	52.9	34.8	43.9	44.2	41	89	21	0	.....	0	0.02	0.0	30.11	29.84	29.966	2.2	2.2	199	23	SSW	14	208
26	51.0	38.1	44.5	45.6	42	87	20	0	.....	0	0.00	0.0	29.89	29.65	29.809	3.1	3.0	203	16	S	10	194
27	39.3	33.0	36.1	37.3	36	95	29	0	.2.....	0	0.97	0.0	29.66	29.17	29.424	3.7	3.6	338	33	NW	18	341	
28	42.1	35.1	38.6	37.8	32	80	26	0	.....	0	0.90	0.0	29.72	29.17	29.466	9.3	9.2	322	37	NW	23	308
29	44.3	34.9	39.6	38.9	32	75	25	0	.....	0	0.06	0.0	29.81	29.56	29.728	2.3	1.8	272	16	WNW	10	289
30	44.4	27.8	36.1	34.2	31	88	29	0	.....	0	0.23	T	29.75	29.47	29.606	3.4	2.1	297	17	NNW	9	315
Sum	Sum	-----	-----	---	----	Ttl	Ttl																---
1498	981					701	0		Number of Days	4.21	T	30.50	29.17	30.073	2.7	1.5	256	37	SSW	23	308		
Avg	Avg	Avg	Mean	Avg	Avg	----	----		Precip	Season Ttl	Date	Date	-----	----	----	---	Date	Date	Avg				
49.9	32.7	41.3	40.8	33	76.4	----	----		≥.01 inch	10	42.80	T	11	28	-----	----	----	---	7+	28			
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			1636	271	Thunder	0	Precipitation			Snow, Ice Plts										
≥ 90°F	≤ 32°F	≤ 32°F	≤ 0°F	----	----	Heavy Fog	2	1.87	27-28	T	5+	0						-					
0	0	14	0	----	----	Clear	9	Partly Cloudy			9	Cloudy			12								

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 2009: 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		30.36	0.00	37	28	69	20	4	10		30.02	0.00	46	42	88	08	0	0		29.88	0.00	46	40	82	26	7	10
04		30.35	0.00	37	27	67	21	3	7		29.91	0.12	53	50	90	18	5	11		29.92	0.00	45	40	84	24	3	8
07		30.34	0.00	32	27	82	22	0	0		29.83	0.14	52	50	94	17	1	2		29.96	0.00	45	40	82	28	2	6
10		30.32	0.00	48	37	68	20	6	11		29.84	0.00	46	43	90	26	7	14		30.03	0.00	46	39	78	33	3	7
13		30.25	0.00	56	40	55	22	3	7		29.81	0.00	50	41	72	26	4	12		30.03	0.00	48	39	72	01	1	4
16		30.19	0.00	51	39	64	20	3	9		29.83	0.00	47	37	68	25	6	12		30.06	0.00	45	37	75	29	0	0
19		30.16	0.00	48	38	67	19	4	7		29.81	0.00	46	37	72	25	13	20		30.12	0.00	39	36	89	35	0	0
22		30.10	0.00	50	42	73	21	1	5		29.83	0.00	45	41	86	26	11	24		30.18	0.00	37	34	91	36	0	3
NOV 22									NOV 23									NOV 24									
01		30.21	0.00	41	37	85	00	0	2		30.43	0.00	28	27	93	02	0	0		30.30	0.00	39	35	86	19	1	5
04		30.24	0.00	41	36	85	05	0	6		30.47	0.00	31	30	94	21	0	5		30.28	0.00	40	38	91	21	0	0
07		30.31	0.00	40	35	83	04	0	4		30.49	0.00	29	28	94	19	0	0		30.27	0.00	39	37	91	11	0	0
10		30.37	0.00	41	34	77	06	1	3		30.48	0.00	40	35	82	19	4	8		30.28	0.00	44	40	84	05	0	5
13		30.35	0.00	46	35	66	34	2	6		30.43	0.00	46	33	59	18	7	12		30.20	0.00	54	43	68	19	0	3
16		30.37	0.00	40	33	74	02	0	3		30.41	0.00	43	34	71	17	0	4		30.16	0.00	49	42	76	11	0	1
19		30.42	0.00	33	31	90	02	0	0		30.39	0.00	42	36	78	21	0	2		30.16	0.00	42	40	92	11	0	0
22		30.42	0.00	31	29	93	02	0	0		30.34	0.00	41	36	81	22	1	7		30.13	0.00	41	39	93	11	0	4
NOV 25									NOV 26									NOV 27									
01		30.11	0.00	37	35	94	17	0	0		29.84	0.00	47	44	90	20	7	16		29.63	0.00	37	35	93	07	0	1
04		30.08	0.00	36	35	95	17	0	0		29.84	0.00	44	42	92	20	5	7		29.59	0.00	34	33	94	05	0	0
07		30.06	0.00	38	37	95	07	2	6		29.86	0.00	44	42	93	20	4	8		29.51	0.00	36	34	95	08	0	0
10		30.02	0.00	43	42	95	11	0	3		29.88	0.00	47	43	88	20	6	14		29.49	0.00	39	38	95	06	1	2
13		29.92	0.00	52	45	76	21	4	11		29.82	0.00	50	43	79	22	4	9		29.37	0.04	38	37	95	31	6	15
16		29.89	0.00	50	44	81	20	3	7		29.78	0.00	48	42	79	18	0	0		29.35	0.00	38	36	95	33	5	16
19		29.85	0.00	48	45	89	18	2	6		29.76	0.00	45	41	85	19	1	4		29.28	0.04	39	37	95	32	13	24
22		29.85	0.00	47	45	92	20	7	16		29.70	0.00	41	38	89	07	0	0		29.21	0.13	39	38	95	35	9	23
NOV 28									NOV 29									NOV 30									
01		29.18	0.21	37	36	94	34	5	21		29.72	0.00	36	29	77	31	4	9		29.54	0.00	41	38	89	20	4	10
04		29.25	0.23	38	37	94	33	9	26		29.75	0.00	36	28	73	29	6	10		29.47	0.00	44	40	86	21	6	12
07		29.35	0.00	38	35	88	32	12	26		29.78	0.00	35	30	81	29	0	2		29.50	0.04	37	36	93	31	4	7
10		29.44	0.00	39	31	74	32	15	32		29.80	0.00	40	32	73	24	4	12		29.58	0.00	32	31	94	31	1	9
13		29.49	0.00	42	31	66	31	8	20		29.76	0.00	42	31	66	27	2	9		29.61	0.00	32	31	94	34	0	8
16		29.57	0.00	38	29	69	31	6	13		29.73	0.00	41	32	71	27	0	3		29.65	0.00	31	29	92	32	6	16
19		29.64	0.00	35	29	77	27	4	9		29.70	0.00	41	34	76	20	3	9		29.73	0.00	29	24	83	31	7	13
22		29.70	0.00	36	29	74	29	4	8		29.62	0.05	40	36	86	18	1	2		29.74	0.00	28	22	78	31	4	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

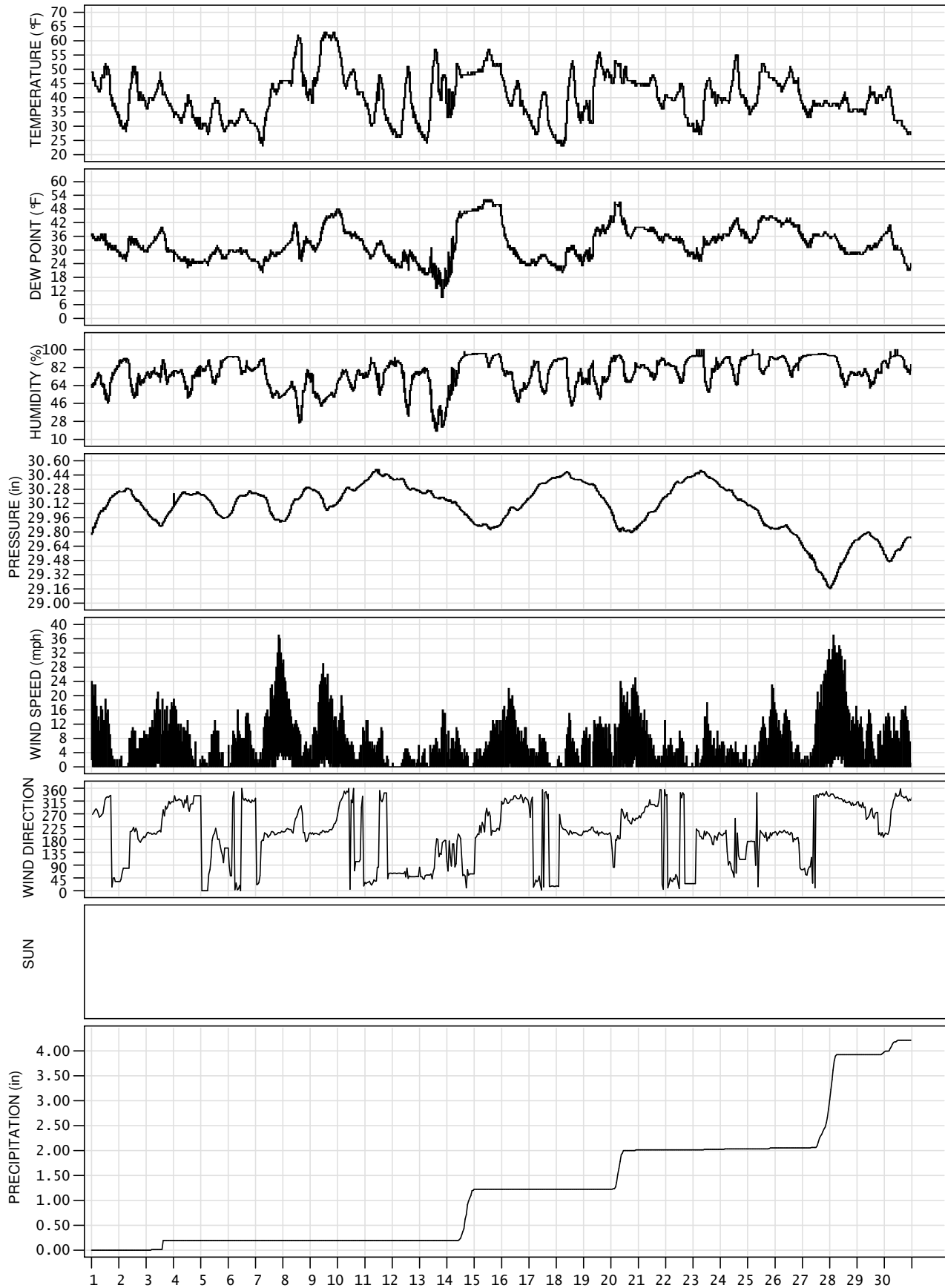
Hour	Averages						Resultant Wind	
	Sunshine	Pressure	Temperature	Dew Point	Humidity	Wind Speed	Direction	Speed
01		30.061	38	32	81	2.4	25	1.4
04		30.070	38	33	82	2.5	26	1.3
07		30.093	37	32	85	1.9	28	0.9
10		30.106	43	35	76	3.8	25	2.0
13		30.065	47	35	64	3.3	25	1.9
16		30.058	45	34	68	2.4	25	1.3
19		30.070	40	33	76	2.8	25	1.8
22		30.065	39	33	79	2.7	25	1.6

HOURLY PRECIPITATION (Water Equivalent) November 2009: Westford

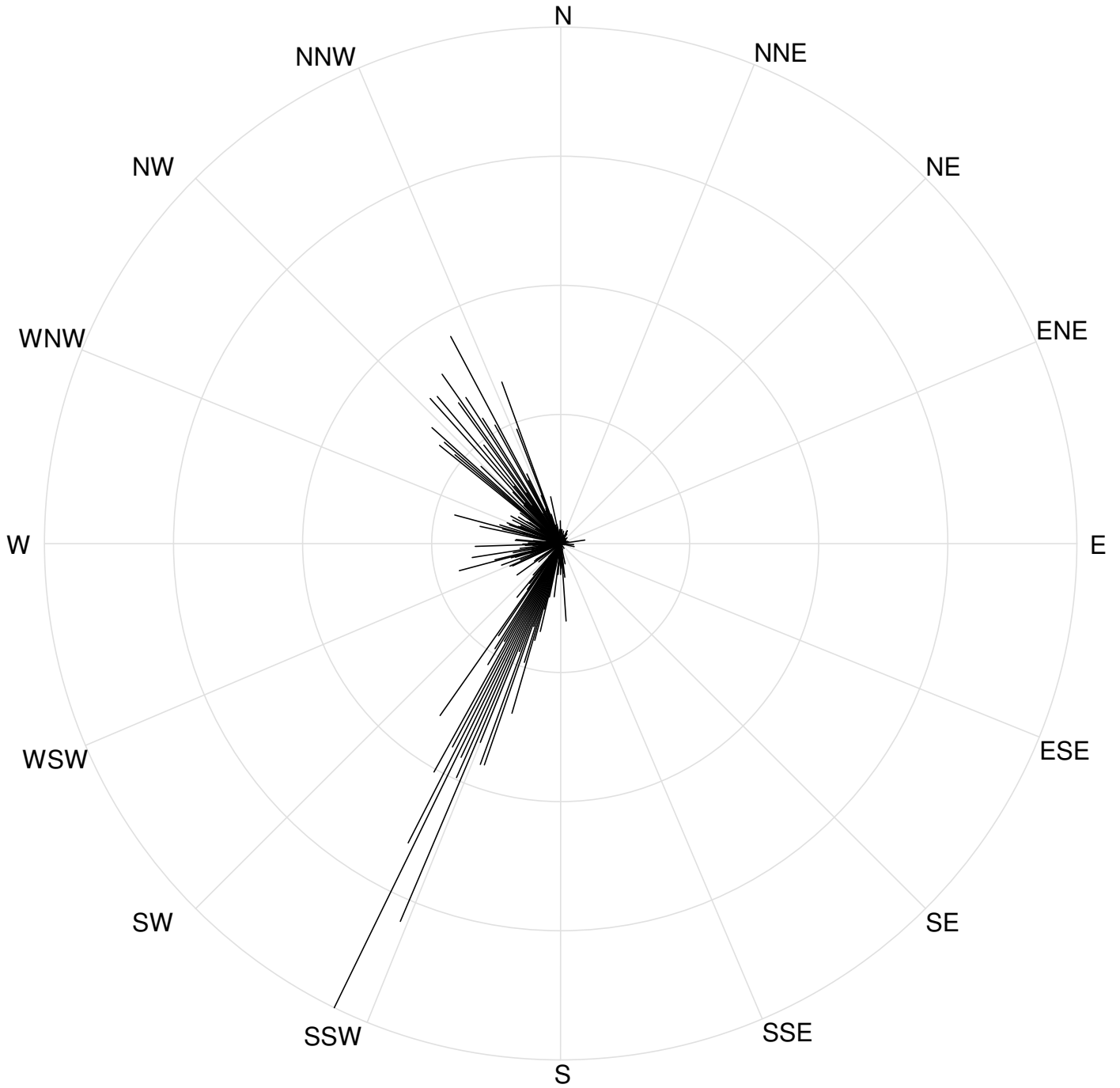
Date	A.M. Hour Ending at												P.M. Hour Ending at												Date
	01	02	03	04	05	06	07	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12	
01																								01	
02					0.01																				02
03																									03
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14																									14
15																									15
16																									16
17																									17
18																									18
19																									19
20		0.01		0.04	0.09	0.16	0.12	0.14	0.14	0.02	0.06												0.01	20	
21																									21
22																									22
23																									23
24																									24
25																									25
26																									26
27																									27
28	0.20	0.20	0.19	0.19	0.09	0.03		0.01																	28
29																									29
30	0.01			0.01	0.04	0.04	0.05	0.04	0.01		0.02	0.01													30
Sum	0.21	0.21	0.19	0.25	0.23	0.23	0.17	0.19	0.15	0.03	0.10	0.04	0.10	0.14	0.32	0.23	0.12	0.26	0.13	0.11	0.14	0.23	0.20	0.23	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 2009: Westford



Wind Rose: November 2009
Westford



Maximum direction of wind: 87.2 miles from 206°.
1948.5 total miles of wind.