

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

November 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						Solar Radiation		
	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	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	37.0	31.8	34.4	34.5	30	82	30	0	.....	0	0.05	T	30.38	30.09	30.265	3.3	3.3	315	16	WNW	9	307	28
2	39.8	24.6	32.2	33.3	28	80	32	0	.....	0	0.00	0.0	30.45	30.33	30.396	1.1	1.0	343	12	NW	7	310	53
3	46.2	21.4	33.8	32.3	25	77	31	0	.....	0	0.00	0.0	30.33	29.89	30.121	1.7	1.7	210	17	S	9	215	123
4	44.2	35.8	40.0	39.6	35	83	25	0	.....	0	0.50	0.0	29.89	29.49	29.733	1.7	1.4	192	14	S	8	192	28
5	39.1	37.3	38.2	38.1	36	94	27	0	.....	0	0.42	0.0	29.77	29.34	29.466	1.2	1.1	274	13	WNW	8	266	21
6	37.9	33.5	35.7	35.1	31	84	29	0	.....	0	0.00	0.0	30.31	29.77	30.120	1.1	0.9	319	13	WNW	7	273	26
7	38.8	27.3	33.0	32.0	26	79	32	0	.....	0	0.00	0.0	30.36	30.02	30.251	1.2	1.1	1	13	NE	7	28	70
8	32.7	27.7	30.2	30.3	28	91	34	0	.....6..	0	0.13	0.0	30.03	29.75	29.844	1.5	1.5	3	25	NNW	9	32	9
9	39.1	32.6	35.8	35.8	35	95	29	0	.2.....	0	0.17	0.0	30.12	29.86	30.001	0.6	0.6	19	15	NNE	6	27	15	
10	45.7	29.7	37.7	35.2	31	84	27	0	.....	0	0.01	0.0	30.36	30.11	30.253	1.4	1.4	14	14	NNE	7	36	88
11	49.1	25.7	37.4	34.7	28	77	27	0	.....	0	0.00	0.0	30.51	30.36	30.461	0.3	0.2	321	7	WNW	5	297	111
12	61.7*	27.1	44.4	40.7	27	62	20	0	.....	0	0.01	0.0	30.47	30.31	30.408	0.2	0.1	229	7	S	5	225	108
13	60.2	32.3	46.3	42.3	27	56	19	0	.....	0	0.00	0.0	30.31	30.10	30.195	0.2	0.1	324	6	NW	4	301	106
14	61.3	30.9	46.1	45.5	31	58	19	0	.....	0	0.00	0.0	30.11	29.92	30.005	2.0	2.0	194	18	S	9	181	99
15	47.0	35.5	41.3	42.7	38	83	23	0	.....	0	0.06	0.0	30.02	29.93	29.979	1.4	1.3	205	15	S	8	187	15
16	54.6	36.8	45.7	44.6	39	83	19	0	.....	0	0.08	0.0	30.05	29.78	29.983	0.4	0.3	170	13	W	9	173	85
17	53.3	38.2	45.8	46.9	42	82	19	0	.....	0	0.44	0.0	29.79	29.25	29.436	6.2	4.9	233	33	SW	17	266	30
18	40.7	33.6	37.1	37.4	28	69	27	0	.....	0	0.00	0.0	30.01	29.64	29.895	5.7	5.7	302	28	WNW	19	300	44
19	33.8	22.3	28.0	29.3	22	75	37	0	.....	0	0.00	0.0	30.19	30.01	30.122	1.9	1.6	318	16	NNW	9	323	45
20	43.4	23.9	33.7	33.8	23	64	31	0	.....	0	0.02	T	30.35	29.82	30.011	7.0	4.2	274	32	WNW	21	298	62
21	33.2	19.6	26.4	25.5	15	65	38	0	.....	0	0.00	0.0	30.56	30.33	30.455	0.5	0.1	49	10	NNE	6	185	57
22	49.7	33.1	41.4	43.1	38	82	23	0	.....	0	0.21	0.0	30.33	29.95	30.104	9.5	9.4	203	37	SW	20	209	13
23	54.2	39.0	46.6*	49.6	44	81	18	0	.....	0	0.16	0.0	29.95	29.59	29.741	6.8	5.5	230	31	W	20	296	20
24	39.1	22.5	30.8	29.9	16	56	34	0	.....	0	T	0.2	30.22	29.81	30.063	7.7	7.5	318	31	NW	19	324	92
25	28.2	13.2*	20.7*	22.2	11	63	44	0	.....	0	0.00	0.0	30.23	29.78	30.099	0.2	0.0	357	10	NW	4	338	40
26	41.9	28.2	35.1	33.4	24	70	30	0	.....6..	0	0.15	0.0	29.78	29.37	29.514	5.1	4.2	238	25	W	18	276	46
27	32.0	17.6	24.8	27.3	19	72	40	0	.....	1	0.18	1.0	29.99	29.39	29.591	6.9	4.5	256	27	WNW	16	298	35
28	31.9	15.2	23.5	26.6	19	73	41	0	.....	1	T	T	30.38	29.99	30.218	3.0	3.0	210	16	S	10	218	32
29	42.4	28.5	35.5	34.2	26	73	29	0	.....	0	0.01	0.0	30.51	30.38	30.444	1.2	1.2	207	12	SE	9	209	77
30	46.1	31.7	38.9	39.6	32	75	26	0	.....	0	0.53	0.0	30.40	30.05	30.251	5.4	5.4	183	22	SE	11	187	34
Sum	Sum	-----	-----	---	----	Ttl	Ttl						For the month:										---	
1304	857					860	0	Number of Days			3.13	1.2	30.56	29.25	30.047	2.9	1.5	252	37	SW	21	298		
Avg	Avg	Avg	Mean	Avg	Avg	----	----	Precip			Season Ttl	Date	Date	-----	----	----	---	Date	Date			Avg		
43.5	28.6	36.0	35.9	28	75.6	----	----	≥.01 inch	17	47.45	1.8	21	17	-----	----	----	---	22	20			53		
Number of Days						Season to Date	Snow, Ice ≥1.0 inch	1	Greatest in 24 Hours and Dates						Greatest Depth on Ground of Snow, Ice Pellets or Ice and Date									
Max Temperature			Min Temperature			1669	482	Thunder	0	Precipitation			Snow, Ice Plts											
≥ 90°F	≤ 32°F	≤ 32°F	≤ 0°F	----	----	Heavy Fog	1	0.81	4- 5	1.0	27							1	27+					
0	3	20	0	----	----	Clear	7	Partly Cloudy			5	Cloudy			18									

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/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 2010: 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						
NOV 19									NOV 20									NOV 21									
01	0	30.01	0.00	33	27	78	30	4	9	0	30.00	0.00	30	21	68	20	3	9	0	30.36	0.00	25	15	67	35	2	6
04	0	30.07	0.00	32	27	81	34	4	11	0	29.89	0.00	33	23	66	20	10	19	0	30.45	0.00	23	14	68	34	0	6
07	5	30.13	0.00	30	24	79	31	2	7	0	29.84	0.00	34	26	70	21	9	15	7	30.52	0.00	20	14	77	03	0	1
10	128	30.17	0.00	31	23	74	32	2	9	40	29.84	0.00	38	30	72	23	6	13	137	30.56	0.00	25	14	62	07	0	3
13	128	30.19	0.00	31	21	65	31	4	9	388	29.92	0.00	43	25	49	32	5	24	186	30.49	0.00	28	14	57	04	0	2
16	19	30.17	0.00	30	19	64	28	0	3	14	30.05	0.00	37	19	48	29	12	29	14	30.47	0.00	28	15	57	06	0	0
19	0	30.16	0.00	24	18	80	31	0	0	0	30.19	0.00	31	20	62	33	4	16	0	30.43	0.00	27	16	63	06	0	1
22	0	30.07	0.00	24	18	78	20	0	1	0	30.29	0.00	26	15	65	00	1	9	0	30.38	0.00	28	17	64	21	0	4
NOV 22									NOV 23									NOV 24									
01	0	30.30	0.00	34	25	70	19	10	20	0	29.92	0.00	50	48	91	20	4	10	0	29.82	0.00	39	26	61	27	8	14
04	0	30.21	0.00	38	28	69	19	16	31	0	29.86	0.00	50	49	94	20	4	11	0	29.91	0.00	31	23	71	31	8	20
07	0	30.15	0.00	41	34	76	20	18	28	0	29.79	0.00	51	49	90	20	5	11	0	30.01	0.00	29	20	69	31	13	31
10	32	30.13	0.00	43	37	80	20	13	28	51	29.69	0.00	53	48	84	20	6	17	366	30.09	0.00	31	18	58	34	7	22
13	35	30.06	0.00	46	41	83	20	11	24	97	29.63	0.00	53	50	90	21	6	16	380	30.08	0.00	33	12	41	33	9	20
16	0	30.03	0.00	46	44	93	20	5	18	11	29.62	0.04	52	48	87	24	6	17	12	30.14	0.00	30	8	39	31	6	14
19	0	30.01	0.00	47	46	94	19	6	15	0	29.67	0.00	48	33	56	25	10	19	0	30.19	0.00	26	9	48	34	3	10
22	0	29.98	0.00	49	47	91	20	4	10	0	29.77	0.00	40	28	61	28	4	16	0	30.21	0.00	25	9	52	31	7	17
NOV 25									NOV 26									NOV 27									
01	0	30.20	0.00	21	8	58	34	2	6	0	29.72	0.00	30	14	53	20	1	8	0	29.45	0.00	30	21	69	21	4	10
04	0	30.20	0.00	18	9	66	00	0	3	0	29.54	0.06	33	29	86	18	2	11	0	29.43	0.00	31	23	73	21	8	13
07	0	30.21	0.00	14	8	78	03	0	0	0	29.40	0.00	33	31	91	20	7	15	0	29.41	0.00	30	21	69	21	9	23
10	148	30.20	0.00	21	10	62	03	0	4	84	29.47	0.00	39	36	89	23	8	16	394	29.41	0.00	31	24	75	19	9	22
13	144	30.15	0.00	24	11	56	21	0	4	81	29.49	0.00	37	22	54	27	9	20	128	29.49	0.00	27	23	85	28	2	14
16	5	30.09	0.00	25	12	58	20	0	1	0	29.53	0.00	32	20	59	26	8	18	11	29.68	0.00	26	17	69	30	8	22
19	0	29.99	0.00	26	14	60	07	0	0	0	29.53	0.00	30	20	64	26	0	10	0	29.85	0.00	23	14	68	32	10	20
22	0	29.86	0.00	27	14	59	08	0	3	0	29.50	0.00	31	21	67	19	4	13	0	29.94	0.00	22	14	71	30	2	9
NOV 28									NOV 29									NOV 30									
01	0	30.01	0.00	18	11	74	33	0	2	0	30.39	0.00	32	26	77	20	0	2	0	30.40	0.00	33	25	72	21	1	6
04	0	30.10	0.00	23	15	71	20	2	6	0	30.44	0.00	32	25	78	20	2	4	0	30.36	0.00	35	25	66	17	4	9
07	0	30.16	0.00	23	15	74	21	4	10	0	30.48	0.00	32	25	78	28	1	2	0	30.34	0.00	36	26	69	16	2	12
10	90	30.21	0.00	27	18	69	20	5	10	294	30.51	0.00	38	28	67	23	1	4	137	30.31	0.00	42	32	67	17	7	14
13	98	30.23	0.00	31	21	68	21	6	13	213	30.46	0.00	41	28	60	20	4	7	100	30.24	0.00	45	35	67	18	6	15
16	0	30.28	0.00	31	22	71	21	3	6	12	30.45	0.00	37	27	67	20	0	2	0	30.19	0.00	41	38	86	17	5	12
19	0	30.33	0.00	30	23	75	17	1	3	0	30.43	0.00	31	25	79	20	0	2	0	30.16	0.07	41	38	88	17	7	12
22	0	30.36	0.00	32	25	75	19	1	4	0	30.41	0.00	36	26	68	20	3	7	0	30.09	0.06	42	40	92	18	6	22

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	30.048	33	27	77	2.8	26	1.6
04	0	30.042	33	27	80	3.4	23	1.8
07	3	30.049	33	27	81	3.3	24	2.0
10	176	30.058	38	30	76	3.0	23	1.7
13	219	30.031	41	30	67	3.6	26	1.9
16	25	30.041	39	30	69	2.9	27	1.7
19	0	30.057	35	28	75	2.5	27	1.5
22	0	30.056	34	27	77	1.8	25	1.1

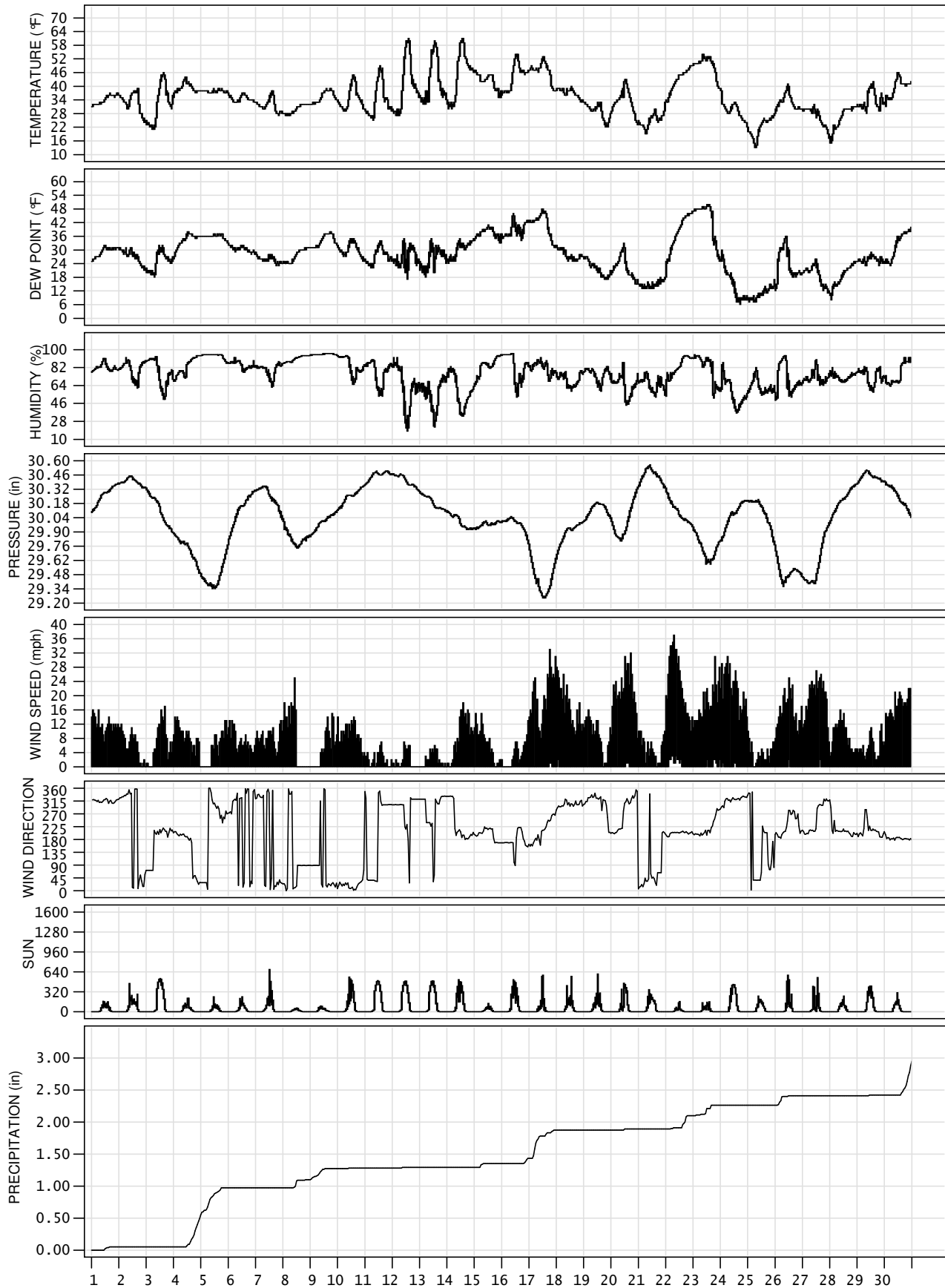
HOURLY PRECIPITATION (Water Equivalent) November 2010: Westford

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	0.01	0.01		0.01								01		
02																									02	
03																									03	
04												0.02	0.02		0.04	0.04	0.03	0.04	0.06	0.05	0.05	0.05	0.05	0.05	04	
05	0.04	0.01	0.02		0.01	0.04	0.06	0.06	0.03	0.01	0.02	0.03	0.01	0.01	0.01	0.01	0.02	0.03						05		
06																									06	
07																									07	
08											0.01	0.02	0.08	0.01						0.01					08	
09	0.01	0.02	0.01	0.01		0.01	0.01	0.03	0.02	0.01	0.02	0.01	0.01												09	
10										0.01	0.01	0.01													10	
11																									11	
12									0.01																12	
13																									13	
14																									14	
15						0.04	0.01	0.01																	15	
16																									16	
17				0.04	0.11	0.09	0.04	0.02	0.04	0.01					0.03	0.02				0.01	0.02	0.03	0.02	16		
18																				0.02	0.01	0.01		17		
19																									18	
20												0.02													19	
21																									20	
22					0.01		0.01									0.05	0.02	0.02	0.08	0.02					21	
23			0.01				0.01				0.01	0.08													22	
24							0.01									0.05									23	
25																									24	
26			0.01	0.04	0.02	0.06	0.01					0.01													25	
27																									26	
28																									27	
29										0.01															28	
30																0.03	0.02	0.04	0.02	0.04	0.06	0.09	0.05	0.11	0.07	29
																									30	
Sum	0.05	0.03	0.05	0.09	0.15	0.24	0.15	0.12	0.10	0.06	0.08	0.26	0.06	0.02	0.16	0.17	0.11	0.17	0.12	0.15	0.17	0.14	0.18	0.12	Sum	

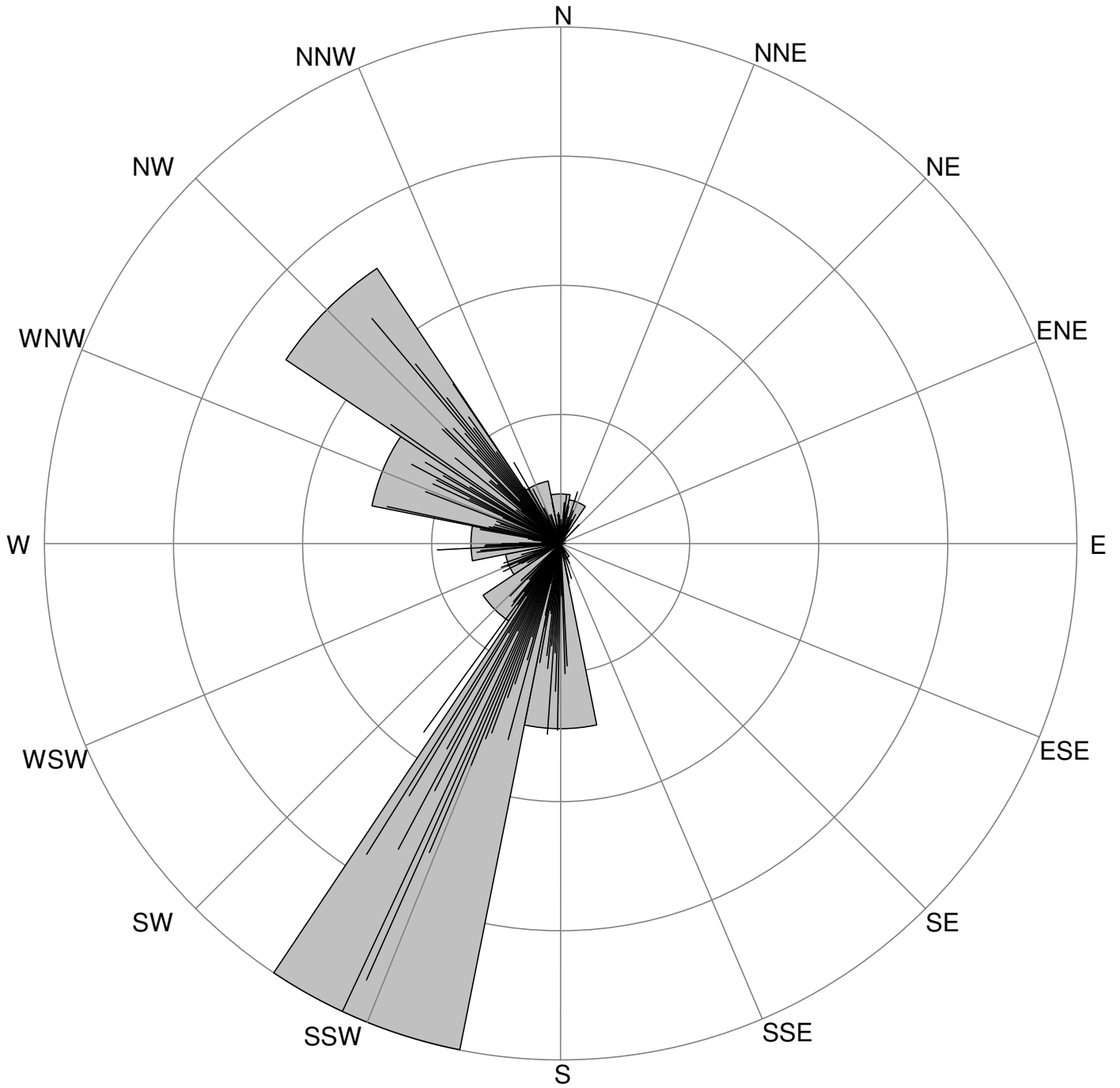
During a frozen precipitation event, hourly precipitation totals may not be recorded. In this case, daily amounts are typically entered in the last column (hour ending at 12 A.M.)

HOUR-BY-HOUR DATA

November 2010: Westford



Wind Rose: November 2010
Westford



Maximum direction of wind: 72.9 miles from 205°
Maximum sector of wind: 650.7 miles from SSW
2072.6 total miles of wind