

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

December 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 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	32.1	10.7	21.4	21.9	16	77	43	0	.....	3	0.02	0.3	30.58	30.33	30.492	1.0	1.0	198	17	S	9	196	21
2	46.1	32.1	39.1	41.5	37	84	26	0	.....	0	0.63	0.0	30.34	29.88	30.065	6.9	6.9	206	29	SSW	15	213	24
3	45.2	36.1	40.6	39.0	36	87	24	0	.....	0	0.03	0.0	30.23	29.89	30.138	1.0	0.7	273	18	W	11	272	23
4	53.5*	36.2	44.9*	47.0	43	85	20	0	.....	0	0.28	0.0	30.19	29.79	30.002	5.9	5.7	202	30	SSW	16	207	32
5	47.7	25.9	36.8	35.5	29	78	28	0	.....	T	0.38	0.1	30.21	29.81	29.974	3.3	3.1	308	29	NW	16	307	13
6	30.9	20.7	25.8	25.9	16	67	39	0	.....	0	0.00	0.0	30.38	30.15	30.275	0.9	0.4	285	21	NW	10	320	58
7	37.2	29.0	33.1	34.3	22	61	32	0	.....	0	0.00	0.0	30.15	29.97	30.030	5.8	5.8	210	24	SSW	12	220	36
8	42.0	30.7	36.4	36.8	33	87	28	0	.....	0	0.02	0.0	29.99	29.73	29.870	1.6	1.5	221	18	SW	10	224	18
9	39.5	27.5	33.5	31.5	26	81	31	0	.....	0	0.02	0.0	30.30	29.94	30.183	0.9	0.7	331	13	WNW	6	276	36
10	49.1	31.5	40.3	39.4	37	91	24	0	.....	0	0.96	0.3	30.03	29.44	29.631	3.2	2.9	213	23	S	12	201	8
11	35.8	21.3	28.5	24.7	20	84	36	0	.....	0	T	T	30.16	29.56	29.898	0.5	0.4	357	16	NW	6	321	29
12	35.5	15.6	25.6	26.2	20	79	39	0	.....	0	T	T	30.36	30.16	30.288	1.5	1.5	213	15	SSW	8	206	45
13	37.8	24.3	31.0	31.3	23	73	34	0	.....	0	T	T	30.43	30.18	30.339	1.5	1.5	209	10	SSW	6	199	55
14	38.9	28.0	33.5	33.8	25	71	31	0	.....	0	T	T	30.21	30.03	30.108	3.4	2.6	228	17	SSW	9	217	31
15	28.0	12.3	20.2	19.2	11	71	45	0	.....	0	0.00	0.0	30.38	30.20	30.314	0.1	0.1	349	9	N	4	293	61
16	32.9	15.3	24.1	24.9	18	76	41	0	.....	1	0.00	0.8	30.28	29.95	30.106	1.4	1.4	181	19	S	8	179	11
17	39.2	30.7	35.0	34.3	29	80	30	0	...4.6...	1	0.25	T	29.95	29.74	29.868	4.1	4.0	190	21	SSW	9	189	13	
18	40.0	33.5	36.8	36.3	34	91	28	0	.....	0	0.50	0.0	29.74	29.42	29.525	0.5	0.4	191	15	SSE	8	164	22
19	33.6	29.6	31.6	32.0	31	95	33	0	.....	2	0.24	1.7	30.09	29.49	29.777	0.8	0.8	326	15	NNW	6	320	5
20	33.2	27.5	30.4	29.8	27	89	34	0	.....	0	0.05	0.0	30.21	29.84	30.079	0.4	0.3	171	19	SSE	8	176	25
21	49.4	32.4	40.9	37.9	33	83	24	0	.2.....	0	0.30	T	29.84	28.89	29.251	3.9	3.6	186	38	SSE	15	180	24	
22	34.5	18.0	26.3	25.1	20	80	38	0	.....	3	0.25	3.2	29.68	29.02	29.340	5.6	4.9	268	25	NW	15	297	24
23	27.4	14.6	21.0	20.3	15	80	44	0	.....	4	0.13	1.0	29.85	29.68	29.759	1.3	1.1	276	19	WNW	11	306	27
24	26.3	13.5	19.9	18.7	13	79	45	0	.....	3	0.01	0.4	30.06	29.85	30.008	1.1	1.0	279	22	W	9	283	48
25	21.3	5.7	13.5	14.3	9	79	51	0	.....	2	0.00	0.0	30.34	29.99	30.159	0.1	0.1	333	8	NW	5	295	58
26	22.4	5.6*	14.0	14.1	9	79	51	0	.....	2	0.00	0.0	30.39	30.00	30.264	0.1	0.1	47	10	N	4	28	55
27	25.3	15.1	20.2	20.8	17	87	45	0	.....	11	0.88	11.0	30.00	29.63	29.742	0.9	0.9	22	18	NW	6	15	2
28	24.1	10.6	17.4	20.0	16	86	47	0	.....	10	0.06	0.9	30.04	29.79	29.961	0.6	0.6	340	15	NNW	6	326	8
29	23.8	9.9	16.8	19.0	16	86	48	0	.....	12	0.26	3.0	30.02	29.60	29.826	0.1	0.1	17	7	ENE	4	306	4
30	14.2	8.7	11.4*	12.1	7	79	53	0	.....	15	0.12	6.6	30.09	29.61	29.859	1.8	1.8	329	22	NNW	10	328	24
31	28.1	12.3	20.2	21.3	17	82	45	0	.....	13	0.02	0.6	30.08	29.64	29.890	2.6	2.6	213	17	SW	10	219	4
Sum	Sum	-----	-----	---	----	Ttl	Ttl						For the month:										---	
1075	665					1137	0						5.41	29.9	30.58	28.89	29.968	2.0	1.3	226	38	SSE	16	307
Avg	Avg	Avg	Mean	Avg	Avg	----	----						Season Ttl	Date	Date	-----	----	---	Date	Date	Avg			
34.7	21.4	28.1	28.0	23	80.8	----	----						45.01	35.3	1	21	-----	----	---	21	5	27		
Number of Days						Season to Date	Snow, Ice ≥1.0 inch	6	Greatest in 24 Hours and Dates						Greatest Depth on Ground of Snow, Ice Pellets or Ice and Date									
Max Temperature			Min Temperature			2701	461	Thunder	0	Precipitation			Snow, Ice Plts											
≥ 90°F	≤ 32°F	≤ 32°F	≤ 0°F	----	----	Heavy Fog	1	0.96	10	11.0	27	15			30									
0	12	28	0	----	----	Clear	1	Partly Cloudy			7	Cloudy			22									

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

December 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						
DEC 01																											
01	0	30.56	0.00	12	5	74	07	0	0	0	30.33	0.00	33	28	82	20	8	14	0	29.91	0.00	45	43	95	21	2	12
04	0	30.56	0.00	14	6	72	06	0	0	0	30.27	0.00	36	31	83	21	6	17	0	30.01	0.00	44	43	95	31	5	14
07	0	30.56	0.00	16	8	70	10	0	0	0	30.20	0.00	41	36	83	20	7	22	0	30.12	0.00	38	35	92	00	0	9
10	111	30.55	0.00	20	14	76	10	0	0	141	30.13	0.00	43	38	80	20	10	22	65	30.20	0.00	37	33	87	33	1	7
13	42	30.48	0.00	26	19	77	20	0	3	54	29.99	0.00	45	38	77	20	12	24	149	30.19	0.00	39	33	78	01	0	0
16	0	30.47	0.00	27	21	78	19	4	9	0	29.89	0.00	44	40	86	20	7	16	5	30.21	0.00	39	33	79	06	0	0
19	0	30.43	0.00	29	23	80	19	3	8	0	29.90	0.09	44	41	89	19	8	17	0	30.22	0.00	37	33	86	10	0	0
22	0	30.36	0.00	31	26	81	19	6	14	0	29.90	0.00	44	42	93	20	7	15	0	30.22	0.00	37	34	88	10	0	0
DEC 02																											
DEC 03																											
DEC 04																											
DEC 05																											
DEC 06																											
DEC 07																											
DEC 08																											
DEC 09																											
DEC 10																											
DEC 11																											
DEC 12																											
DEC 13																											
DEC 14																											
DEC 15																											
DEC 16																											
DEC 17																											
DEC 18																											

MAXIMUM SHORT DURATION PRECIPITATION

Time Period (minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation	0.06	0.10	0.14	0.17	0.19	0.22	0.26	0.28	0.31	0.35	0.40	0.44
Ended: Date	04	04	04	04	04	05	05	05	02	02	02	02
Ended: Time	2334	2338	2343	2346	2351	0008	0020	0036	1751	1811	1836	1918

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

December 2012: Westford

Hour	DEC 19									DEC 20									DEC 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	29.51	0.00	33	31	94	34	0	0	0	30.10	0.00	29	28	94	00	0	6	0	29.81	0.00	33	29	86	15	1	14
04	0	29.57	0.00	32	31	95	34	0	0	0	30.12	0.00	29	27	93	08	0	0	0	29.64	0.00	34	29	85	14	1	13
07	0	29.64	0.00	32	30	94	32	0	0	0	30.18	0.00	28	26	93	04	0	0	0	29.46	0.00	37	31	80	22	1	11
10	12	29.71	0.00	32	31	95	36	0	0	53	30.20	0.00	29	26	89	07	0	3	37	29.31	0.00	40	34	78	19	0	15
13	23	29.78	0.00	33	31	95	31	0	8	230	30.11	0.00	31	27	83	08	0	3	139	29.01	0.00	49	39	69	14	6	28
16	0	29.89	0.00	32	31	95	34	1	13	9	30.08	0.00	31	27	87	19	0	3	5	28.94	0.18	42	39	89	23	0	0
19	0	29.98	0.00	32	31	95	32	1	9	0	29.98	0.00	29	26	89	16	0	2	0	28.96	0.00	36	32	86	20	9	22
22	0	30.04	0.00	31	29	94	31	2	7	0	29.91	0.00	32	28	84	15	2	7	0	29.01	0.00	35	31	85	20	8	15
DEC 22									DEC 23									DEC 24									
01	0	29.03	0.00	34	30	83	20	4	11	0	29.70	0.00	18	13	79	29	5	13	0	29.88	0.00	19	15	85	02	0	3
04	0	29.06	0.00	33	30	88	20	5	13	0	29.75	0.00	16	9	74	21	0	3	0	29.94	0.00	16	11	80	28	0	2
07	0	29.18	0.00	29	22	76	26	5	24	0	29.78	0.00	15	10	80	30	0	0	0	30.00	0.00	18	12	78	27	1	6
10	84	29.30	0.00	25	19	78	27	6	14	63	29.79	0.00	18	12	77	09	0	0	91	30.05	0.00	22	16	79	23	1	5
13	105	29.36	0.00	22	17	80	26	6	16	105	29.75	0.00	24	16	71	24	0	5	431	30.03	0.00	26	16	66	25	6	15
16	9	29.47	0.00	20	15	78	30	5	18	7	29.73	0.00	24	19	80	22	0	4	7	30.05	0.00	21	14	73	01	0	0
19	0	29.57	0.00	20	13	72	29	8	17	0	29.73	0.00	26	23	88	21	3	9	0	30.05	0.00	15	12	85	08	0	0
22	0	29.64	0.00	19	14	83	30	4	15	0	29.81	0.00	21	17	87	35	1	5	0	30.03	0.00	17	13	84	08	0	0
DEC 25									DEC 26									DEC 27									
01	0	30.03	0.00	12	8	83	08	0	0	0	30.33	0.00	7	3	83	08	0	0	0	29.98	0.00	15	11	82	18	0	0
04	0	30.02	0.00	14	10	84	06	0	0	0	30.38	0.00	10	6	83	08	0	0	0	29.83	0.00	19	15	85	31	0	2
07	0	30.07	0.00	16	11	83	32	0	0	0	30.35	0.00	9	4	82	13	0	0	0	29.71	0.00	23	20	87	02	2	9
10	121	30.15	0.00	16	11	81	32	1	5	294	30.35	0.00	15	10	82	07	0	2	5	29.69	0.00	25	22	88	03	0	17
13	313	30.14	0.00	20	12	69	01	0	5	227	30.27	0.00	22	13	69	05	0	2	12	29.64	0.00	21	18	87	01	5	17
16	21	30.22	0.00	17	9	71	33	0	0	11	30.22	0.00	19	12	74	00	0	2	0	29.66	0.00	22	19	88	03	0	9
19	0	30.30	0.00	11	6	79	06	0	0	0	30.17	0.00	17	11	79	04	0	0	0	29.70	0.00	20	16	87	34	0	0
22	0	30.32	0.00	8	4	83	08	0	0	0	30.07	0.00	16	11	81	18	0	0	0	29.75	0.00	19	16	87	34	0	5
DEC 28									DEC 29									DEC 30									
01	0	29.81	0.00	22	19	88	28	0	6	0	30.00	0.00	11	7	84	10	0	0	0	29.63	0.00	13	9	84	00	0	0
04	0	29.90	0.00	21	18	88	02	0	7	0	30.00	0.00	17	13	86	10	0	0	0	29.69	0.00	13	9	83	34	0	0
07	0	29.93	0.00	22	19	88	34	0	0	0	29.95	0.00	18	15	86	10	0	0	0	29.74	0.00	13	9	83	33	3	16
10	18	30.00	0.00	22	18	87	34	0	0	18	29.93	0.00	21	17	86	10	0	0	19	29.83	0.00	12	8	82	31	7	18
13	58	29.97	0.00	23	19	83	31	0	0	14	29.78	0.00	22	19	87	07	1	5	116	29.86	0.00	13	6	74	32	5	17
16	0	29.99	0.00	23	18	83	04	0	0	0	29.72	0.00	23	20	87	04	0	0	14	29.94	0.00	11	5	74	32	1	11
19	0	30.02	0.00	17	13	85	04	0	0	0	29.65	0.00	22	19	87	03	0	0	0	30.05	0.00	11	4	74	28	2	7
22	0	30.02	0.00	12	8	84	10	0	0	0	29.60	0.00	16	13	85	31	0	0	0	30.08	0.00	10	3	75	28	0	0
DEC 31																											
01	0	30.07	0.00	13	8	79	28	0	0																		
04	0	30.04	0.00	14	10	82	17	0	0																		
07	0	30.00	0.00	18	13	82	21	0	0																		
10	18	29.97	0.00	20	16	82	20	2	7																		
13	23	29.87	0.00	23	18	82	19	1	10																		
16	0	29.81	0.00	26	21	84	20	6	11																		
19	0	29.74	0.00	26	22	83	20	5	9																		
22	0	29.67	0.00	28	23	83	21	8	16																		

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

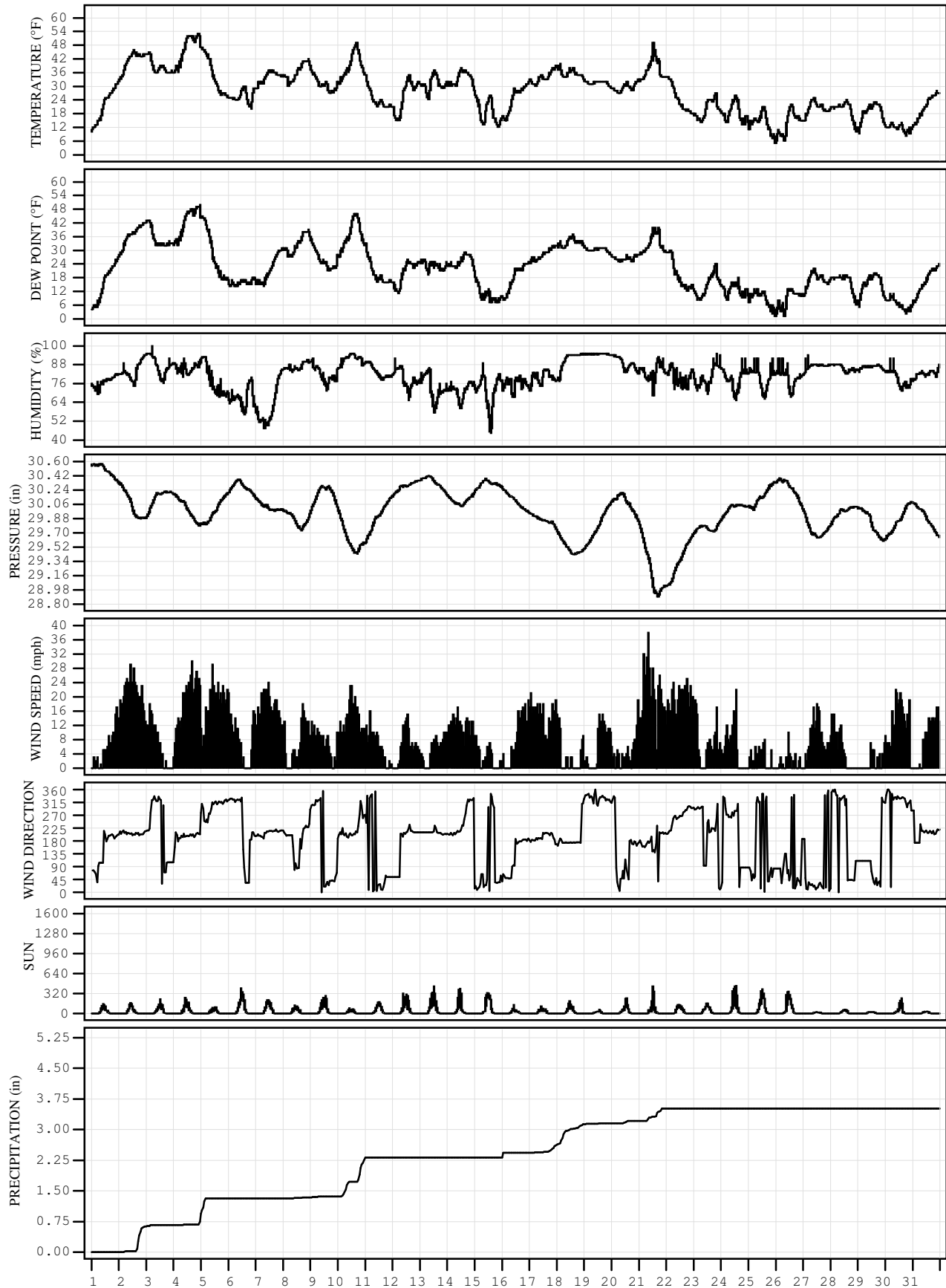
Hour	Averages						Resultant Wind	
	Sunshine	Pressure	Temperature	Dew Point	Humidity	Wind Speed	Direction	Speed
01	0	29.981	27	22	82	1.5	21	1.1
04	0	29.983	26	22	82	1.1	23	0.7
07	0	29.987	26	21	82	1.5	23	1.0
10	90	29.999	28	23	80	2.1	23	1.2
13	133	29.948	31	24	76	2.8	22	1.8
16	5	29.946	30	24	79	2.3	22	1.6
19	0	29.944	28	23	83	2.3	22	1.9
22	0	29.954	28	23	82	2.4	22	1.8

**HOURLY PRECIPITATION (Water Equivalent)
December 2012: Westford**

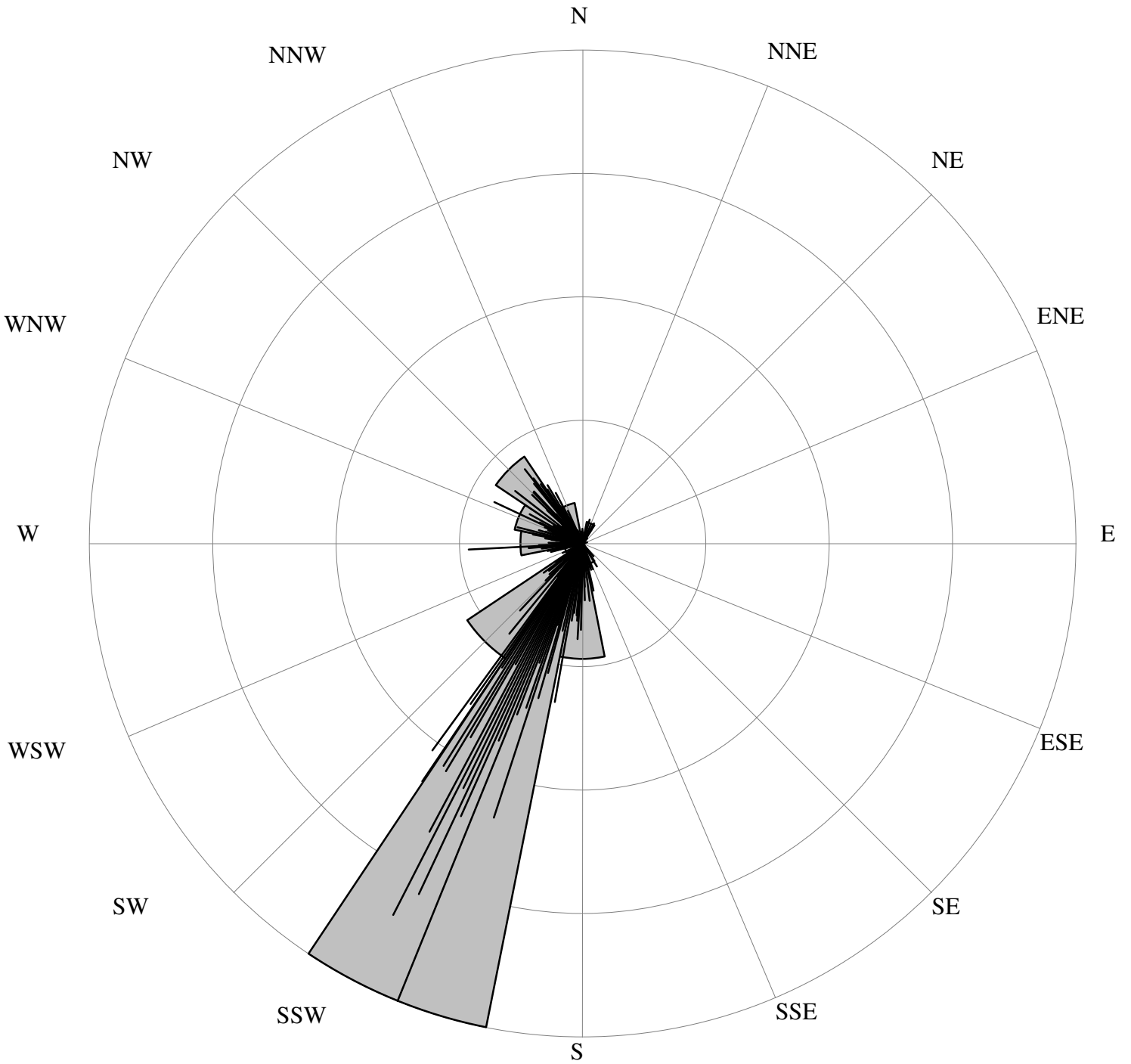
Date	A.M. Hour Ending at												P.M. Hour Ending at												Date
	01	02	03	04	05	06	07	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12	
01																								01	
02					0.01	0.01										0.06	0.19	0.14	0.09	0.08	0.03	0.01	0.01	02	
03	0.01			0.02																				03	
04									0.02													0.06	0.20	04	
05	0.08	0.08	0.14	0.08																				05	
06																								06	
07																								07	
08										0.01							0.01							08	
09		0.01					0.01																	09	
10				0.02	0.04	0.04	0.08	0.10	0.06	0.02							0.05	0.12	0.17	0.08	0.05	0.05	0.08	10	
11																								11	
12																								12	
13																								13	
14																								14	
15																								15	
16	0.11																							16	
17					0.01							0.01	0.01				0.01	0.01	0.02	0.02	0.03	0.04	0.02	17	
18	0.01	0.01	0.02	0.06	0.06	0.10	0.06	0.02		0.01	0.01	0.02	0.01	0.01	0.01			0.01	0.01	0.03	0.02	0.01	0.02	18	
19		0.01														0.01								19	
20										0.01	0.01		0.01	0.02										20	
21								0.05	0.03			0.02	0.01			0.01	0.08	0.02	0.02	0.01	0.05			21	
22																								22	
23																								23	
24																								24	
25																								25	
26																								26	
27																								27	
28																								28	
29																								29	
30										0.01														30	
31																								31	
Sum	0.21	0.11	0.16	0.18	0.12	0.15	0.15	0.17	0.11	0.04	0.05	0.04	0.04	0.03	0.02	0.15	0.24	0.22	0.25	0.35	0.16	0.11	0.16	0.30	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 December 2012: Westford



Wind Rose: December 2012
Westford



Maximum direction of wind: 70.8 miles from 202°
Maximum sector of wind: 676.4 miles from SSW
1511.1 total miles of wind