

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

November 2004

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

Date	Temperature					Humidity	Deq F		Precip Ty	Snow Cvr	Precip		Pressure			Wind					Sun										
	Maximum	Minimum	Average	Mean	Dew Point		Mean	Heating Base 65°F			Cooling Base 65°F	Water Equivalent	Ice Pellets Snow	Adj. to Sea Level			Avg	Res	Res	Peak		Minute		Mean Index							
1	2	3	4A	4B	5	6	7	8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	42.1	37.3	39.7	40.1	35	81	26	0	.....	0	0.03	0.0	30.17	29.76	30.017	3.0	3.0	291	19	WNW	8	296								
2	45.2	38.9	42.1	41.6	39	90	23	0	.....	0	0.51	0.0	30.17	29.72	29.958	3.8	3.4	184	24	SSW	0	0								
3	44.2	26.6	35.4	35.5	30	81	30	0	.....	0	0.04	0.0	30.21	29.73	30.051	4.9	4.8	310	24	NW	0	0								
4	44.1	22.9	33.5	34.3	29	81	32	0	.....	0	0.17	0.0	30.21	29.21	29.828	2.5	2.1	178	29	SSW	7	184								
5	43.9	33.1	38.5	37.7	31	78	27	0	.....	0	0.07	T	29.60	29.14	29.335	10.3	9.4	257	33	WNW	0	0								
6	50.5	32.4	41.5	41.2	35	78	24	0	.....	0	0.07	0.0	29.71	29.44	29.540	4.9	4.0	225	28	WSW	0	0								
7	54.7	35.0	44.9	44.8	35	69	21	0	.....	0	0.00	0.0	29.79	29.50	29.637	6.2	3.9	212	28	S	0	0								
8	35.5	22.5	29.0	30.1	22	72	36	0	.....	0	0.00	T	30.22	29.80	30.012	4.4	4.2	298	24	WNW	0	0								
9	26.9	14.4	20.6	22.2	17	81	45	0	.....	0	0.07	1.9	30.50	30.22	30.392	2.0	1.9	303	18	WNW	0	0								
10	37.5	13.3*	25.4	25.4	16	68	40	0	.....	2	0.00	0.0	30.52	30.09	30.363	8.0	7.9	185	38	S	10	174								
11	44.3	24.1	34.2	35.2	26	72	31	0	.....	0	0.01	T	30.37	30.03	30.167	7.2	5.8	192	35	S	0	0								
12	31.9	18.6	25.3	24.5	18	76	40	0	.....	0	0.00	0.0	30.46	30.37	30.413	0.5	0.4	353	8	WNW	0	0								
13	27.0	13.3	20.2*	20.0	16	83	45	0	.....	0	0.00	0.0	30.64	30.45	30.557	1.0	0.8	326	14	NW	0	0								
14	42.5	13.6	28.1	27.7	19	72	37	0	.....	0	0.00	0.0	30.67	30.48	30.580	1.0	0.5	237	12	W	1	325								
15	48.8	30.1	39.4	37.2	28	71	26	0	.....	0	0.00	0.0	30.49	30.32	30.401	1.5	1.1	230	12	W	0	0								
16	47.3	30.4	38.8	36.4	31	81	27	0	.....	0	0.00	0.0	30.34	30.25	30.296	0.2	0.1	339	7	N	0	0								
17	44.8	32.8	38.8	40.0	33	76	27	0	.....	0	0.00	0.0	30.27	30.15	30.225	1.1	0.9	191	8	SSW	0	0								
18	46.8	41.8	44.3	44.0	40	85	21	0	0	0.02	0.0	30.15	29.98	30.052	3.8	3.7	191	12	S	0	0									
19	47.6	29.7	38.6	41.5	35	80	27	0	.....	0	0.00	0.0	30.20	29.99	30.106	2.1	1.1	311	16	NW	0	338								
20	40.2	23.5	31.9	32.5	28	83	34	0	.....	0	0.25	0.0	30.22	30.08	30.157	0.7	0.4	157	12	SSE	0	0								
21	45.5	33.1	39.3	40.5	39	96	26	0	.....	0	0.13	0.0	30.14	30.06	30.096	3.2	2.7	189	16	S	0	0								
22	45.7	34.7	40.2	38.8	32	77	25	0	.....	0	0.00	0.0	30.10	30.01	30.053	2.0	1.7	254	14	SW	0	0								
23	49.5	30.1	39.8	40.0	29	67	26	0	0	0.00	0.0	30.07	29.93	29.997	5.4	5.3	183	24	S	0	0									
24	49.4	44.6	47.0*	46.5	43	87	18	0	.....	0	0.15	0.0	29.97	29.31	29.777	6.5	6.3	180	22	SSW	0	0								
25	57.8*	22.4	40.1	42.5	40	91	25	0	..3.....	0	1.04	0.6	29.63	29.07	29.271	7.5	3.8	241	34	WNW	16	307									
26	30.6	17.2	23.9	23.6	13	63	42	0	.....	0	0.00	0.0	30.19	29.64	29.947	4.9	4.6	270	24	NW	0	0								
27	39.9	18.3	29.1	31.4	23	71	36	0	.....	0	0.00	0.0	30.32	30.13	30.240	3.0	2.7	160	21	SSE	0	0								
28	46.7	38.2	42.5	41.9	37	82	23	0	.....	0	0.53	0.0	30.13	29.70	29.901	6.7	4.6	169	37	SSE	7	143								
29	38.3	23.6	30.9	30.6	24	77	35	0	.....	0	0.00	0.0	30.30	29.95	30.196	2.8	2.3	290	24	W	0	0								
30	41.2	20.5	30.9	31.7	24	73	35	0	0	0.00	0.0	30.26	29.99	30.173	1.7	1.4	194	14	SSW	0	0									
Sum	Sum	-----	-----	---	----	Ttl	Ttl		For the month:																		---				
1290	817					910	0	Number of Days	3.09	2.5	30.67	29.07	30.058	3.8	2.1	221	38	S	16	307											
Avg	Avg	Avg	Mean	Avg	Avg	----	----	Precip	Season Ttl		Date	Date	-----	----	----	---	Date	Date	Avg												
43.0	27.2	35.1	35.3	29	78.0	----	----	≥.01 inch	14	40.16	2.5	14	25	-----	----	----	---	10	25												
Number of Days							Season to Date		Snow, Ice ≥1.0 inch	Greatest in 24 Hours and Dates					Greatest Depth on Ground of Snow, Ice Pellets or Ice and Date																
Max Temperature			Min Temperature			1690	167	Thunder	1	Precipitation		Snow, Ice Plts																			
≥ 90°F	< 32°F	< 32°F	< 0°F	----	----	Heavy Fog	0	1.04	24-25	1.9	9																				
0	4	20	0	----	----	Clear	4	Partly Cloudy	7	Cloudy	19																				

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/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
November 2004: Westford**

Hour	Sunshine	Pressure	Rainfall rate	Temperature	Dew Point	Humidity	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 01																											NOV 02									NOV 03								
01		29.79	0.00	42	35	76	29	6	11		30.16	0.00	39	36	89	00	0	0		29.76	0.00	42	41	97	31	5	16																	
04		29.86	0.00	40	33	77	27	6	11		30.14	0.00	39	35	85	00	0	0		29.86	0.00	38	36	91	31	4	10																	
07		29.95	0.00	39	33	80	29	4	8		30.12	0.00	40	35	84	18	1	3		29.98	0.00	36	31	83	31	7	14																	
10		30.03	0.00	39	36	89	29	4	11		30.03	0.00	42	37	83	15	3	7		30.07	0.00	37	30	76	29	10	18																	
13		30.05	0.00	40	35	80	27	2	6		29.90	0.01	42	40	94	22	3	8		30.12	0.00	36	28	72	31	7	15																	
16		30.10	0.00	41	35	78	31	2	6		29.84	0.01	41	40	96	18	9	19		30.15	0.00	36	27	68	31	5	12																	
19		30.14	0.00	41	35	79	29	1	5		29.79	0.00	44	42	93	20	8	18		30.20	0.00	32	25	75	31	1	7																	
22		30.15	0.00	40	36	83	00	0	0		29.73	0.00	45	44	94	22	5	10		30.21	0.00	29	25	84	02	0	1																	
NOV 04									NOV 05									NOV 06																										
01		30.21	0.00	27	25	90	00	0	0		29.15	0.00	44	41	91	20	12	21		29.60	0.00	36	26	69	24	2	6																	
04		30.14	0.00	25	23	92	00	0	0		29.17	0.00	41	33	72	22	9	17		29.56	0.00	33	31	93	18	2	7																	
07		30.11	0.00	25	23	91	18	1	3		29.20	0.00	38	32	80	24	8	20		29.53	0.00	37	34	91	20	4	8																	
10		29.98	0.00	33	27	79	04	1	3		29.24	0.00	35	31	86	27	11	22		29.50	0.00	41	36	80	20	7	16																	
13		29.83	0.00	44	28	55	20	1	5		29.30	0.00	36	30	79	27	17	30		29.45	0.00	45	37	73	22	7	17																	
16		29.66	0.00	40	30	67	18	1	4		29.43	0.00	36	31	80	27	11	26		29.46	0.00	51	38	61	24	9	21																	
19		29.51	0.00	36	33	87	15	3	7		29.54	0.00	36	27	69	27	13	30		29.55	0.00	50	40	69	24	8	17																	
22		29.32	0.00	40	38	93	18	6	11		29.59	0.00	36	24	63	27	10	16		29.66	0.00	41	32	70	31	3	7																	
NOV 07									NOV 08									NOV 09																										
01		29.72	0.00	40	31	71	29	0	2		29.81	0.00	34	26	73	29	7	12		30.23	0.00	22	16	77	29	0	2																	
04		29.71	0.00	38	31	75	02	0	1		29.86	0.00	31	26	80	29	7	17		30.28	0.00	24	18	80	31	4	11																	
07		29.67	0.00	40	31	71	18	3	8		29.93	0.00	29	24	80	31	4	11		30.35	0.00	22	17	82	29	4	8																	
10		29.61	0.00	48	38	69	18	13	28		29.99	0.00	35	23	61	29	6	15		30.40	0.00	26	18	71	33	3	10																	
13		29.53	0.00	52	39	62	20	10	18		30.01	0.00	33	24	71	29	4	11		30.41	0.00	25	21	84	31	4	10																	
16		29.51	0.00	54	41	61	20	10	19		30.08	0.00	29	24	81	29	4	7		30.44	0.00	24	19	84	00	0	2																	
19		29.58	0.00	54	41	62	24	8	17		30.16	0.00	28	15	59	31	1	5		30.49	0.00	19	15	84	00	0	0																	
22		29.74	0.00	38	29	69	31	9	16		30.20	0.00	23	16	72	00	0	0		30.50	0.00	15	12	86	00	0	0																	
NOV 10									NOV 11									NOV 12																										
01		30.49	0.00	17	13	84	15	1	3		30.08	0.00	38	22	53	18	14	26		30.39	0.00	24	19	82	00	1	5																	
04		30.52	0.00	14	10	86	15	0	2		30.06	0.00	38	26	60	18	13	25		30.38	0.00	22	18	82	02	0	2																	
07		30.52	0.00	18	15	85	18	1	5		30.05	0.00	40	27	61	18	10	19		30.43	0.00	19	16	87	00	0	0																	
10		30.47	0.00	24	17	75	18	6	12		30.03	0.00	43	30	59	18	9	19		30.42	0.00	26	17	69	00	2	5																	
13		30.36	0.00	27	13	54	18	11	21		30.13	0.00	37	34	89	31	7	16		30.39	0.00	32	20	62	00	0	3																	
16		30.27	0.00	30	17	58	18	10	18		30.27	0.00	31	28	90	31	3	9		30.38	0.00	31	20	64	29	0	3																	
19		30.19	0.00	34	18	51	18	16	29		30.33	0.00	29	25	84	31	1	4		30.45	0.00	24	18	78	00	0	0																	
22		30.13	0.00	36	21	54	18	15	25		30.35	0.00	26	22	84	00	0	1		30.46	0.00	20	16	85	00	0	0																	
NOV 13									NOV 14									NOV 15																										
01		30.46	0.00	19	16	88	00	0	0		30.64	0.00	15	10	78	02	0	2		30.47	0.00	32	27	84	18	1	2																	
04		30.48	0.00	18	14	83	00	0	0		30.65	0.00	14	8	77	00	0	0		30.45	0.00	32	28	87	20	2	3																	
07		30.53	0.00	14	12	88	00	0	0		30.67	0.00	15	12	88	02	0	2		30.48	0.00	31	28	88	18	1	2																	
10		30.56	0.00	25	20	80	29	3	6		30.63	0.00	31	17	55	18	3	8		30.45	0.00	42	31	66	22	4	8																	
13		30.56	0.00	25	20	81	00	2	10		30.53	0.00	42	26	54	27	3	7		30.35	0.00	47	26	43	24	5	11																	
16		30.59	0.00	24	17	75	00	2	6		30.51	0.00	40	26	57	31	0	3		30.35	0.00	44	27	50	00	0	0																	
19		30.63	0.00	20	14	78	00	0	0		30.53	0.00	30	25	81	00	0	0		30.36	0.00	35	27	73	09	0	1																	
22		30.63	0.00	14	10	85	00	0	0		30.50	0.00	30	25	82	00	0	0		30.33	0.00	38	31	76	24	3	6																	
NOV 16									NOV 17									NOV 18																										
01		30.31	0.00	36	31	81	24	1	6		30.25	0.00	34	31	91	00	0	0		30.13	0.00	42	34	73	18	4	10																	
04		30.31	0.00	34	31	88	00	0	0		30.25	0.00	34	31	90	00	0	0		30.11	0.00	42	36	80	20	4	7																	
07		30.33	0.00	31	29	92	00	0	0		30.26	0.00	36	32	88	00	0	0		30.10	0.00	43	37	80	18	3	6																	
10		30.33	0.00	40	33	76	00	0	0		30.26	0.00	42	33	69	20	2	5		30.08	0.00	44	40	84	20	4	8																	
13		30.28	0.00	45	32	60	06	2	6		30.22	0.00	44	33	65	15	2	5		30.01	0.00	46	42	87	18	4	8																	
16		30.27	0.00	40	32	72	00	0	0		30.20	0.00	44	35	71	00	0	0		29.99	0.00	44	43	96	20	3	7																	
19		30.27	0.00	33	30	88	00	0	0		30.19	0.00	42	34	71	18	2	5		30.00	0.00	45	42	87	20	5	10																	
22		30.26	0.00	33	31	92	00	0	0		30.18	0.00	43	32	67	20	1	3		29.99	0.00	46	44	91	20	5	8																	

MAXIMUM SHORT DURATION PRECIPITATION

Time Period (minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ended: Date	00	00	00	00	00	00	00	00	00	00	00	00
Ended: Time	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000

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 2004: Westford**

Hour	Sunshine	Pressure	Rainfall rate	Temperature	Dew Point	Humidity			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	Direction	Speed	Gust						Direction	Speed	Gust			
NOV 19									NOV 20									NOV 21															
01		29.99	0.00	45	44	97	18	5	10	30.20	0.00	28	25	89	00	0	0	30.07	0.00	38	37	96	18	4	10								
04		30.01	0.00	46	45	97	29	1	4	30.21	0.00	27	24	91	00	0	0	30.08	0.00	39	38	96	20	5	8								
07		30.08	0.00	40	38	92	31	1	3	30.22	0.00	25	23	93	00	0	0	30.09	0.00	41	40	96	20	5	9								
10		30.12	0.00	44	35	71	33	4	9	30.20	0.00	32	28	86	02	0	3	30.11	0.00	42	41	96	18	7	12								
13		30.10	0.00	47	31	55	31	4	12	30.15	0.00	38	27	64	04	1	5	30.06	0.00	46	44	94	20	4	9								
16		30.13	0.00	43	32	65	33	1	3	30.11	0.00	38	27	65	00	0	0	30.10	0.00	45	44	97	00	0	0								
19		30.18	0.00	38	32	81	02	1	5	30.11	0.00	36	29	78	00	0	0	30.13	0.00	41	39	94	33	0	2								
22		30.19	0.00	34	29	81	02	1	3	30.09	0.00	36	34	95	15	6	12	30.12	0.00	34	34	97	00	0	0								
NOV 22									NOV 23									NOV 24															
01		30.09	0.00	37	36	98	20	1	3	30.02	0.00	36	31	83	18	0	2	29.93	0.00	45	38	77	20	11	21								
04		30.08	0.00	38	35	86	22	1	3	30.05	0.00	32	30	92	18	2	4	29.92	0.00	45	39	80	18	10	19								
07		30.09	0.00	38	32	80	24	3	7	30.05	0.00	32	28	85	18	3	7	29.95	0.00	45	43	92	18	7	14								
10		30.09	0.00	40	33	75	24	3	7	30.05	0.00	40	31	70	18	7	12	29.94	0.00	46	42	86	18	8	16								
13		30.03	0.00	42	30	62	24	7	11	29.96	0.00	46	26	46	18	5	8	29.83	0.00	48	44	86	18	3	6								
16		30.01	0.00	42	30	63	22	0	2	29.94	0.00	46	19	34	18	10	20	29.76	0.00	46	43	92	15	3	8								
19		30.03	0.00	37	29	71	18	1	3	29.95	0.00	45	30	57	18	7	22	29.57	0.00	47	44	89	18	6	12								
22		30.03	0.00	37	33	84	00	0	0	29.93	0.00	45	35	68	18	9	21	29.35	0.00	49	46	90	15	8	18								
NOV 25									NOV 26									NOV 27															
01		29.26	0.00	53	52	97	18	11	21	29.68	0.00	21	13	71	29	6	17	30.21	0.00	21	16	80	22	0	1								
04		29.19	0.00	57	55	91	18	10	18	29.79	0.00	20	13	74	27	4	8	30.26	0.00	22	19	88	00	0	0								
07		29.14	0.00	57	55	93	18	9	21	29.87	0.00	18	9	69	22	4	12	30.31	0.00	19	16	87	00	0	0								
10		29.14	0.00	53	52	97	18	5	8	29.93	0.00	24	13	62	27	9	17	30.31	0.00	34	25	69	18	4	9								
13		29.13	0.00	38	37	96	31	2	10	29.95	0.00	29	13	51	24	8	12	30.25	0.00	38	24	58	18	5	13								
16		29.30	0.00	31	29	94	31	5	13	30.03	0.00	29	12	50	24	5	8	30.22	0.00	38	24	57	15	2	5								
19		29.45	0.00	28	24	85	31	7	18	30.11	0.00	25	12	58	27	0	2	30.19	0.00	39	28	64	13	2	7								
22		29.54	0.00	26	19	74	29	14	21	30.16	0.00	25	13	62	22	2	6	30.16	0.00	40	29	66	15	5	12								
NOV 28									NOV 29									NOV 30															
01		30.12	0.00	40	33	76	15	6	11	29.97	0.00	38	32	80	27	9	17	30.24	0.00	25	23	92	00	0	0								
04		30.07	0.00	40	34	79	15	4	10	30.06	0.00	36	29	74	29	9	19	30.22	0.00	27	23	86	00	0	0								
07		29.97	0.00	42	35	75	15	8	17	30.16	0.00	29	23	76	29	4	10	30.24	0.00	21	19	91	00	0	0								
10		29.85	0.00	45	36	73	15	16	33	30.26	0.00	32	23	70	00	3	8	30.25	0.00	34	25	70	20	4	10								
13		29.75	0.00	45	42	91	15	9	18	30.26	0.00	32	22	67	33	1	3	30.15	0.00	41	25	54	18	2	6								
16		29.75	0.00	45	43	92	20	3	10	30.28	0.00	30	22	72	00	0	2	30.14	0.00	36	25	63	20	0	2								
19		29.86	0.00	40	39	94	27	0	2	30.27	0.00	26	22	83	00	0	0	30.12	0.00	33	25	72	13	0	2								
22		29.90	0.00	39	31	74	27	6	11	30.25	0.00	26	22	84	00	0	0	30.04	0.00	34	24	66	18	2	5								

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

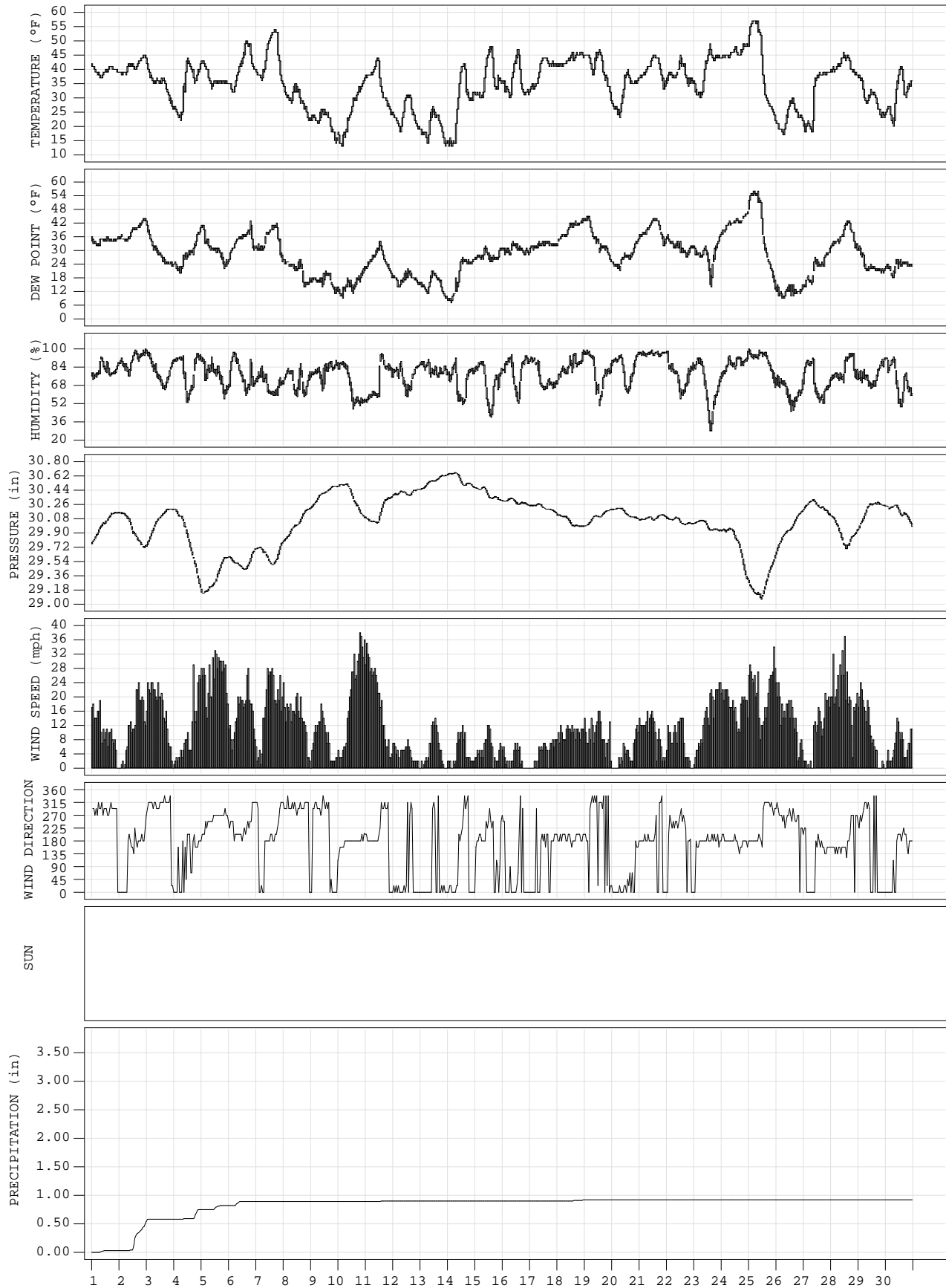
Hour	Averages						Resultant Wind	
	Sunshine	Pressure	Temperature	Dew Point	Humidity	Wind Speed	Direction	Speed
01		30.047	34	29	83	3.6	21	2.3
04		30.057	33	28	84	3.2	22	2.0
07		30.080	32	28	84	3.2	21	2.0
10		30.078	37	30	75	5.4	21	3.1
13		30.036	40	30	70	4.7	24	2.7
16		30.043	38	29	72	3.3	23	1.9
19		30.062	36	29	76	3.0	22	2.0
22		30.056	34	28	79	3.7	22	2.0

HOURLY PRECIPITATION (Water Equivalent)
November 2004: Westford

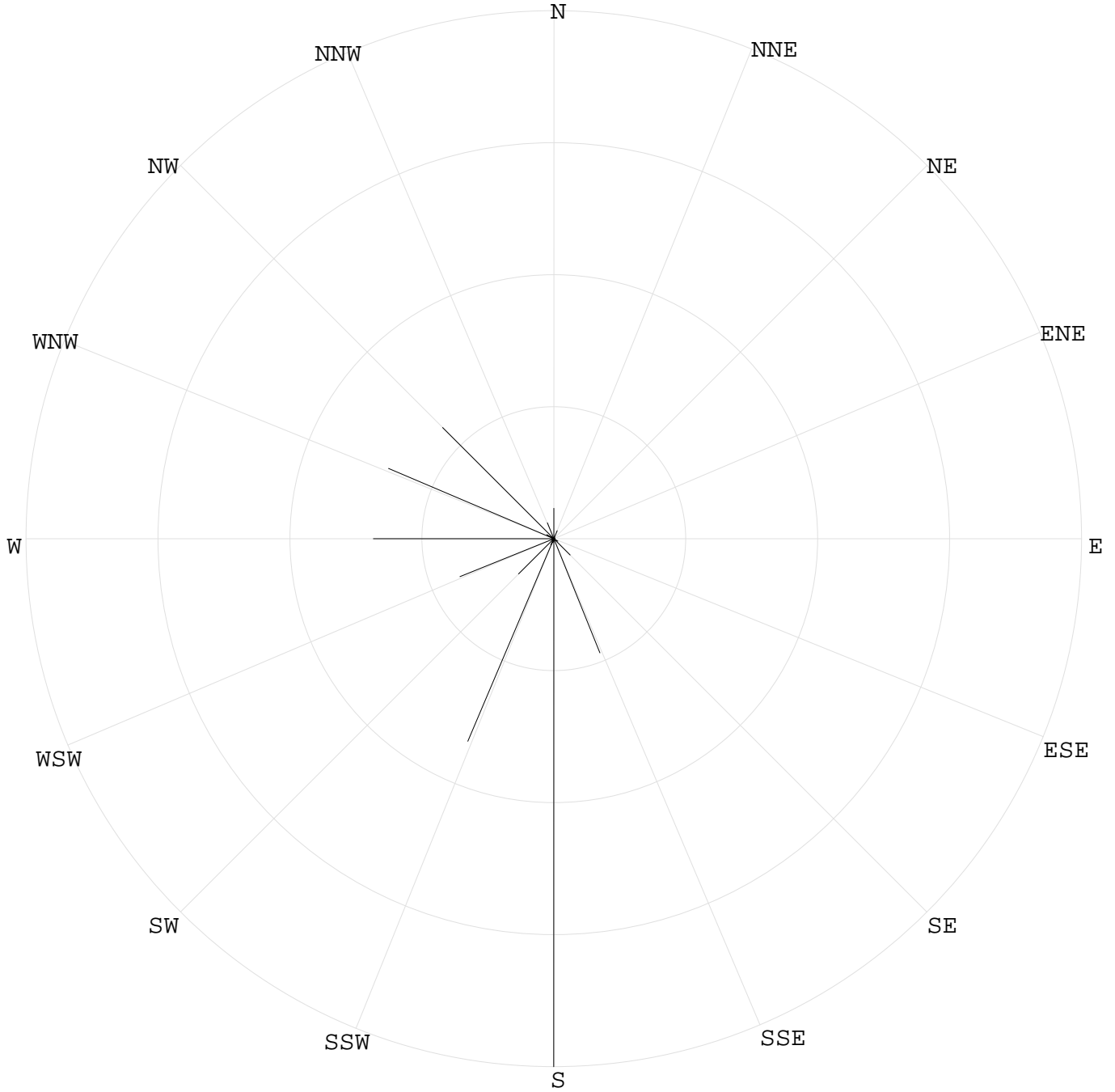
Date	A.M. Hour Ending at												P.M. Hour Ending at												Date
	01	02	03	04	05	06	07	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12	
01							0.01	0.01		0.01														01	
02									0.01				0.08	0.13	0.05	0.03	0.01	0.02	0.02	0.02	0.04	0.01	0.05	0.04	02
03	0.04																								03
04								0.01										0.01	0.06	0.04	0.04	0.01			04
05											0.02	0.02	0.01	0.01		0.01									05
06							0.03	0.01	0.02	0.01															06
07																									07
08																									08
09																									09
10																									10
11														0.01											11
12																									12
13																									13
14																									14
15																									15
16																									16
17																									17
18															0.01								0.01		18
19																									19
20																									20
21																									21
22																									22
23																									23
24																									24
25																									25
26																									26
27																									27
28																									28
29																									29
30																									30
Sum	0.04	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.04	0.02	0.01	0.02	0.10	0.15	0.07	0.03	0.02	0.03	0.08	0.06	0.08	0.02	0.06	0.04	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.)

HOURLY-BY-HOURLY DATA
November 2004: Westford



Wind Rose: November 2004
Westford



Maximum direction of wind: 864.0 miles from 180°.
2705.7 total miles of wind.