

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

June 2011

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 | Res | Res | Peak | | | Minute | |
| | | | | | | | | | | | | | | | | | | | | Speed | Speed | | Dir | Speed | Dir | Speed | Dir |
| 1 | 2 | 3 | 4A | 4B | 5 | 6 | 7 | 8 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | | |
| 1 | 85.6 | 62.6 | 74.1* | 74.8 | 59 | 62 | 0 | 10 | ..3..... | 0 | T | 0.0 | 29.97 | 29.62 | 29.786 | 5.5 | 5.0 | 240 | 30 | WNW | 18 | 286 | 275 | |
| 2 | 64.8 | 47.9 | 56.4 | 53.5 | 43 | 68 | 8 | 0 | ..... | 0 | 0.07 | 0.0 | 29.93 | 29.63 | 29.776 | 5.1 | 4.9 | 297 | 29 | WNW | 16 | 313 | 63 | |
| 3 | 66.1 | 45.4 | 55.8 | 54.4 | 42 | 63 | 9 | 0 | ..... | 0 | 0.00 | 0.0 | 30.04 | 29.92 | 29.994 | 3.4 | 3.3 | 314 | 24 | NNW | 13 | 303 | 274 | |
| 4 | 69.7 | 42.2* | 55.9 | 56.6 | 43 | 64 | 9 | 0 | ..... | 0 | 0.00 | 0.0 | 30.07 | 29.97 | 30.015 | 0.5 | 0.4 | 325 | 15 | WNW | 8 | 288 | 299 | |
| 5 | 64.3 | 43.4 | 53.9* | 55.2 | 50 | 82 | 11 | 0 | ..... | 0 | 0.03 | 0.0 | 30.01 | 29.96 | 29.985 | 0.9 | 0.9 | 217 | 17 | SW | 10 | 224 | 98 | |
| 6 | 79.2 | 46.5 | 62.8 | 62.6 | 54 | 77 | 2 | 0 | ..... | 0 | 0.00 | 0.0 | 30.03 | 29.92 | 29.976 | 0.3 | 0.1 | 1 | 11 | ENE | 5 | 302 | 299 | |
| 7 | 83.9 | 52.1 | 68.0 | 68.0 | 57 | 72 | 0 | 3 | ..... | 0 | 0.00 | 0.0 | 29.92 | 29.74 | 29.837 | 0.6 | 0.5 | 240 | 12 | SW | 6 | 231 | 279 | |
| 8 | 87.7* | 59.0 | 73.3 | 74.4 | 63 | 70 | 0 | 9 | ..3..... | 0 | 0.00 | 0.0 | 29.82 | 29.64 | 29.746 | 2.6 | 2.4 | 227 | 30 | W | 15 | 275 | 277 | |
| 9 | 80.2 | 61.9 | 71.0 | 70.1 | 65 | 84 | 0 | 6 | ..3..... | 0 | 0.23 | 0.0 | 29.85 | 29.68 | 29.728 | 2.6 | 2.2 | 222 | 20 | SW | 11 | 220 | 178 | |
| 10 | 71.9 | 55.5 | 63.7 | 62.6 | 52 | 70 | 1 | 0 | ..... | 0 | 0.00 | 0.0 | 30.03 | 29.84 | 29.969 | 0.9 | 0.7 | 334 | 13 | W | 8 | 308 | 292 | |
| 11 | 64.0 | 52.6 | 58.3 | 57.1 | 52 | 83 | 6 | 0 | ..3..... | 0 | 0.30 | 0.0 | 30.02 | 29.83 | 29.978 | 1.7 | 1.5 | 183 | 22 | SE | 12 | 195 | 67 | |
| 12 | 60.8 | 51.9 | 56.4 | 55.9 | 53 | 90 | 8 | 0 | ..3..... | 0 | 0.28 | 0.0 | 29.90 | 29.75 | 29.811 | 2.2 | 2.2 | 202 | 17 | SSW | 7 | 200 | 89 | |
| 13 | 66.3 | 54.6 | 60.5 | 58.5 | 55 | 88 | 4 | 0 | ..... | 0 | 0.28 | 0.0 | 29.89 | 29.77 | 29.834 | 0.8 | 0.6 | 319 | 16 | ENE | 6 | 295 | 154 | |
| 14 | 69.5 | 48.4 | 59.0 | 57.9 | 50 | 77 | 6 | 0 | ..... | 0 | T | 0.0 | 29.96 | 29.86 | 29.900 | 1.2 | 1.1 | 20 | 15 | NNE | 6 | 17 | 208 | |
| 15 | 79.2 | 49.2 | 64.2 | 63.3 | 55 | 76 | 1 | 0 | ..... | 0 | 0.00 | 0.0 | 29.86 | 29.77 | 29.813 | 0.2 | 0.2 | 305 | 10 | NW | 4 | 274 | 276 | |
| 16 | 85.4 | 58.2 | 71.8 | 70.6 | 57 | 63 | 0 | 7 | ..... | 0 | 0.00 | 0.0 | 29.82 | 29.75 | 29.790 | 1.8 | 1.7 | 220 | 14 | S | 7 | 222 | 303 | |
| 17 | 72.2 | 61.4 | 66.8 | 66.4 | 58 | 76 | 0 | 2 | ..... | 0 | T | 0.0 | 29.84 | 29.75 | 29.799 | 1.3 | 1.3 | 214 | 15 | SSW | 8 | 224 | 120 | |
| 18 | 78.2 | 55.0 | 66.6 | 66.7 | 59 | 78 | 0 | 2 | ..3.5.... | 0 | 0.26 | 0.0 | 29.79 | 29.71 | 29.753 | 1.7 | 1.3 | 283 | 19 | WNW | 9 | 309 | 233 | |
| 19 | 72.1 | 43.5 | 57.8 | 59.7 | 48 | 66 | 7 | 0 | ..... | 0 | 0.00 | 0.0 | 29.87 | 29.79 | 29.831 | 1.5 | 1.5 | 312 | 22 | WNW | 11 | 300 | 313 | |
| 20 | 75.3 | 46.3 | 60.8 | 61.0 | 51 | 73 | 4 | 0 | ..... | 0 | 0.00 | 0.0 | 29.91 | 29.84 | 29.869 | 0.6 | 0.5 | 318 | 13 | WNW | 8 | 291 | 300 | |
| 21 | 79.8 | 49.1 | 64.5 | 65.2 | 53 | 68 | 0 | 0 | ..... | 0 | 0.00 | 0.0 | 29.92 | 29.86 | 29.891 | 0.4 | 0.4 | 311 | 10 | WNW | 7 | 295 | 309 | |
| 22 | 75.2 | 49.3 | 62.2 | 61.6 | 55 | 79 | 3 | 0 | ..... | 0 | 0.22 | 0.0 | 29.92 | 29.81 | 29.884 | 0.3 | 0.2 | 194 | 13 | WNW | 7 | 248 | 144 | |
| 23 | 71.4 | 59.0 | 65.2 | 64.5 | 60 | 87 | 0 | 0 | ..... | 0 | 0.14 | 0.0 | 29.82 | 29.70 | 29.743 | 1.8 | 1.7 | 181 | 18 | S | 8 | 164 | 107 | |
| 24 | 66.1 | 57.6 | 61.8 | 61.1 | 56 | 84 | 3 | 0 | ..... | 0 | 0.10 | 0.0 | 29.71 | 29.66 | 29.682 | 1.4 | 1.4 | 170 | 15 | SSW | 8 | 211 | 135 | |
| 25 | 72.6 | 57.3 | 64.9 | 63.3 | 59 | 86 | 0 | 0 | ..... | 0 | 0.25 | 0.0 | 29.80 | 29.67 | 29.722 | 1.3 | 1.3 | 210 | 15 | SSW | 9 | 223 | 164 | |
| 26 | 74.6 | 60.0 | 67.3 | 65.3 | 62 | 90 | 0 | 3 | ..3..... | 0 | 0.09 | 0.0 | 29.94 | 29.78 | 29.848 | 1.2 | 1.1 | 248 | 14 | S | 9 | 292 | 159 | |
| 27 | 81.0 | 54.2 | 67.6 | 67.3 | 59 | 78 | 0 | 3 | ..3..... | 0 | 0.00 | 0.0 | 30.01 | 29.91 | 29.961 | 0.2 | 0.2 | 295 | 9 | NW | 6 | 300 | 304 | |
| 28 | 78.7 | 55.0 | 66.8 | 67.9 | 62 | 82 | 0 | 2 | ..3..... | 0 | 0.00 | 0.0 | 29.93 | 29.69 | 29.812 | 1.7 | 1.7 | 213 | 19 | SW | 9 | 221 | 203 | |
| 29 | 71.9 | 56.1 | 64.0 | 64.9 | 59 | 83 | 1 | 0 | ..... | 0 | 0.20 | 0.0 | 29.81 | 29.69 | 29.739 | 2.5 | 2.2 | 258 | 17 | W | 9 | 300 | 132 | |
| 30 | 70.3 | 54.7 | 62.5 | 60.7 | 56 | 86 | 2 | 0 | ..... | 0 | 0.20 | 0.0 | 29.90 | 29.80 | 29.841 | 1.7 | 1.6 | 298 | 16 | NW | 9 | 298 | 126 | |
| Sum | Sum | ----- | ----- | --- | ---- | | Ttl | Ttl | Number of Days | | | | For the month: | | | | | | | | | | --- | |
| 2218 | 1590 | | | | | | 85 | 47 | | | 2.65 | 0.0 | 30.07 | 29.62 | 29.844 | 1.6 | 1.0 | 252 | 30 | WNW | 18 | 286 | | |
| Avg | Avg | Avg | Mean | Avg | Avg | ---- | ---- | Precip | | Season Ttl | | Date | Date | ----- | ---- | ---- | --- | Date | Date | Avg | | | | |
| 73.9 | 53.0 | 63.5 | 63.0 | 55 | 76.7 | ---- | ---- | ≥.01 inch | 14 | 28.75 | 170.5 | 4 | 1 | ----- | ---- | ---- | --- | 1+ | 1 | 206 | | | | |
| 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 | | | 7811 | 70 | Thunder | 9 | Precipitation | | | Snow, Ice Plts | | | | | | | | | | | |
| ≥ 90°F | ≤ 32°F | ≤ 32°F | ≤ 0°F | ---- | ---- | Heavy Fog | 0 | 0.53 | 12-13 | 0.0 | - | 0 | | | | | - | | | | | | | |
| 0 | 0 | 0 | 0 | ---- | ---- | Clear | 3 | Partly Cloudy | | | 12 | Cloudy | | | 15 | | | | | | | | | |

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

June 2011: Westford

| Hour | JUN 01 | | | | | | | | | JUN 02 | | | | | | | | | JUN 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 | 0 | 29.96 | 0.00 | 72 | 62 | 71 | 21 | 4 | 11 | 0 | 29.70 | 0.00 | 63 | 46 | 53 | 31 | 0 | 10 | 0 | 29.92 | 0.00 | 49 | 41 | 74 | 31 | 1 | 9 |
| 04 | 0 | 29.92 | 0.00 | 72 | 64 | 77 | 21 | 2 | 8 | 0 | 29.63 | 0.00 | 61 | 44 | 52 | 25 | 4 | 15 | 0 | 29.94 | 0.00 | 47 | 40 | 77 | 34 | 0 | 12 |
| 07 | 14 | 29.91 | 0.00 | 69 | 64 | 85 | 22 | 8 | 18 | 69 | 29.69 | 0.00 | 56 | 43 | 63 | 31 | 10 | 28 | 62 | 29.99 | 0.00 | 47 | 40 | 77 | 30 | 5 | 14 |
| 10 | 696 | 29.82 | 0.00 | 76 | 69 | 78 | 22 | 9 | 16 | 141 | 29.75 | 0.00 | 52 | 43 | 71 | 29 | 6 | 13 | 821 | 30.03 | 0.00 | 56 | 43 | 63 | 31 | 6 | 13 |
| 13 | 870 | 29.73 | 0.00 | 83 | 71 | 68 | 23 | 7 | 18 | 227 | 29.81 | 0.00 | 49 | 41 | 74 | 28 | 3 | 15 | 355 | 30.03 | 0.00 | 60 | 44 | 57 | 32 | 6 | 14 |
| 16 | 684 | 29.64 | 0.00 | 85 | 55 | 36 | 25 | 7 | 24 | 54 | 29.82 | 0.00 | 49 | 43 | 79 | 31 | 5 | 13 | 689 | 30.01 | 0.00 | 64 | 44 | 48 | 32 | 1 | 17 |
| 19 | 130 | 29.68 | 0.00 | 76 | 48 | 37 | 25 | 9 | 21 | 26 | 29.86 | 0.00 | 50 | 42 | 73 | 33 | 6 | 13 | 107 | 29.99 | 0.00 | 63 | 40 | 42 | 29 | 3 | 11 |
| 22 | 0 | 29.72 | 0.00 | 69 | 44 | 41 | 26 | 4 | 9 | 0 | 29.92 | 0.00 | 48 | 42 | 80 | 32 | 3 | 13 | 0 | 30.01 | 0.00 | 53 | 39 | 59 | 30 | 0 | 5 |
| JUN 04 | | | | | | | | | JUN 05 | | | | | | | | | JUN 06 | | | | | | | | | |
| 01 | 0 | 30.01 | 0.00 | 53 | 40 | 61 | 02 | 0 | 1 | 0 | 29.97 | 0.00 | 48 | 44 | 86 | 29 | 0 | 1 | 0 | 30.00 | 0.00 | 51 | 49 | 95 | 15 | 0 | 0 |
| 04 | 0 | 30.02 | 0.00 | 44 | 40 | 88 | 02 | 0 | 0 | 0 | 29.96 | 0.00 | 44 | 41 | 89 | 29 | 0 | 0 | 0 | 29.99 | 0.00 | 48 | 46 | 95 | 15 | 0 | 0 |
| 07 | 181 | 30.06 | 0.00 | 47 | 43 | 87 | 03 | 0 | 0 | 25 | 30.00 | 0.00 | 54 | 46 | 74 | 21 | 1 | 5 | 91 | 30.02 | 0.00 | 51 | 50 | 96 | 24 | 0 | 0 |
| 10 | 708 | 30.05 | 0.00 | 63 | 44 | 51 | 31 | 0 | 3 | 401 | 29.98 | 0.00 | 61 | 50 | 68 | 22 | 7 | 17 | 708 | 30.02 | 0.00 | 71 | 60 | 68 | 01 | 2 | 4 |
| 13 | 599 | 30.03 | 0.00 | 66 | 46 | 49 | 02 | 1 | 8 | 163 | 29.98 | 0.00 | 64 | 52 | 67 | 21 | 0 | 4 | 937 | 29.99 | 0.00 | 75 | 59 | 58 | 12 | 1 | 7 |
| 16 | 701 | 29.98 | 0.00 | 67 | 42 | 40 | 05 | 1 | 9 | 97 | 29.99 | 0.00 | 60 | 55 | 85 | 09 | 1 | 3 | 742 | 29.95 | 0.00 | 78 | 60 | 54 | 33 | 0 | 4 |
| 19 | 77 | 29.98 | 0.00 | 67 | 45 | 45 | 31 | 0 | 1 | 74 | 29.98 | 0.00 | 63 | 56 | 78 | 20 | 0 | 4 | 86 | 29.92 | 0.00 | 71 | 58 | 63 | 33 | 0 | 0 |
| 22 | 0 | 29.99 | 0.00 | 50 | 45 | 83 | 29 | 0 | 1 | 0 | 30.00 | 0.00 | 52 | 50 | 92 | 15 | 0 | 0 | 0 | 29.93 | 0.00 | 57 | 53 | 85 | 30 | 0 | 0 |
| JUN 07 | | | | | | | | | JUN 08 | | | | | | | | | JUN 09 | | | | | | | | | |
| 01 | 0 | 29.92 | 0.00 | 55 | 52 | 92 | 30 | 0 | 0 | 0 | 29.79 | 0.00 | 63 | 58 | 84 | 21 | 0 | 0 | 0 | 29.70 | 0.00 | 67 | 62 | 85 | 24 | 1 | 7 |
| 04 | 0 | 29.88 | 0.00 | 53 | 51 | 94 | 29 | 0 | 0 | 0 | 29.78 | 0.00 | 61 | 58 | 90 | 21 | 0 | 0 | 0 | 29.73 | 0.10 | 66 | 61 | 83 | 20 | 5 | 12 |
| 07 | 135 | 29.89 | 0.00 | 57 | 56 | 94 | 22 | 0 | 4 | 56 | 29.81 | 0.00 | 67 | 60 | 81 | 20 | 1 | 7 | 67 | 29.74 | 0.00 | 65 | 63 | 95 | 21 | 4 | 10 |
| 10 | 805 | 29.88 | 0.00 | 73 | 61 | 65 | 21 | 3 | 10 | 628 | 29.78 | 0.00 | 77 | 66 | 69 | 22 | 3 | 10 | 550 | 29.72 | 0.00 | 73 | 66 | 79 | 21 | 4 | 17 |
| 13 | 916 | 29.83 | 0.00 | 80 | 59 | 49 | 30 | 4 | 7 | 835 | 29.75 | 0.00 | 85 | 68 | 58 | 19 | 6 | 10 | 306 | 29.70 | 0.00 | 77 | 68 | 74 | 23 | 5 | 12 |
| 16 | 837 | 29.77 | 0.00 | 83 | 58 | 42 | 24 | 0 | 1 | 592 | 29.67 | 0.00 | 87 | 71 | 60 | 21 | 3 | 12 | 229 | 29.70 | 0.00 | 78 | 71 | 79 | 30 | 2 | 5 |
| 19 | 70 | 29.76 | 0.00 | 78 | 66 | 67 | 24 | 0 | 0 | 53 | 29.68 | 0.00 | 84 | 65 | 53 | 26 | 10 | 21 | 79 | 29.71 | 0.00 | 72 | 68 | 86 | 23 | 4 | 10 |
| 22 | 0 | 29.80 | 0.00 | 64 | 59 | 86 | 08 | 0 | 0 | 0 | 29.72 | 0.00 | 70 | 57 | 64 | 23 | 1 | 5 | 0 | 29.82 | 0.00 | 65 | 61 | 88 | 02 | 0 | 3 |
| JUN 10 | | | | | | | | | JUN 11 | | | | | | | | | JUN 12 | | | | | | | | | |
| 01 | 0 | 29.86 | 0.00 | 61 | 56 | 86 | 04 | 1 | 6 | 0 | 30.02 | 0.00 | 57 | 50 | 76 | 02 | 0 | 2 | 0 | 29.88 | 0.00 | 53 | 50 | 91 | 20 | 3 | 11 |
| 04 | 0 | 29.87 | 0.00 | 60 | 54 | 81 | 03 | 1 | 5 | 0 | 29.99 | 0.00 | 55 | 49 | 82 | 00 | 0 | 0 | 0 | 29.85 | 0.00 | 53 | 50 | 91 | 18 | 2 | 10 |
| 07 | 121 | 29.94 | 0.00 | 57 | 50 | 76 | 06 | 0 | 4 | 54 | 29.99 | 0.00 | 59 | 51 | 74 | 11 | 0 | 1 | 40 | 29.84 | 0.00 | 53 | 51 | 92 | 21 | 3 | 9 |
| 10 | 459 | 30.00 | 0.00 | 64 | 49 | 59 | 29 | 3 | 7 | 170 | 30.00 | 0.00 | 63 | 55 | 75 | 18 | 3 | 8 | 206 | 29.82 | 0.00 | 58 | 53 | 85 | 20 | 6 | 10 |
| 13 | 895 | 30.02 | 0.00 | 67 | 52 | 59 | 28 | 4 | 12 | 214 | 30.01 | 0.01 | 58 | 55 | 89 | 18 | 1 | 5 | 172 | 29.81 | 0.00 | 58 | 54 | 86 | 18 | 2 | 8 |
| 16 | 666 | 30.00 | 0.00 | 71 | 52 | 51 | 32 | 2 | 9 | 100 | 29.98 | 0.00 | 56 | 52 | 85 | 15 | 3 | 11 | 118 | 29.76 | 0.00 | 56 | 54 | 92 | 20 | 3 | 12 |
| 19 | 83 | 30.01 | 0.00 | 67 | 53 | 61 | 01 | 0 | 4 | 19 | 29.94 | 0.00 | 57 | 52 | 83 | 20 | 1 | 9 | 113 | 29.75 | 0.00 | 60 | 56 | 86 | 19 | 4 | 12 |
| 22 | 0 | 30.02 | 0.00 | 57 | 51 | 81 | 01 | 0 | 0 | 0 | 29.93 | 0.00 | 55 | 50 | 83 | 20 | 3 | 7 | 0 | 29.78 | 0.00 | 56 | 54 | 92 | 21 | 3 | 8 |
| JUN 13 | | | | | | | | | JUN 14 | | | | | | | | | JUN 15 | | | | | | | | | |
| 01 | 0 | 29.79 | 0.00 | 55 | 54 | 95 | 20 | 0 | 1 | 0 | 29.87 | 0.00 | 54 | 52 | 93 | 01 | 0 | 2 | 0 | 29.85 | 0.00 | 51 | 47 | 87 | 36 | 0 | 0 |
| 04 | 0 | 29.78 | 1.17 | 56 | 54 | 93 | 25 | 2 | 7 | 0 | 29.87 | 0.00 | 51 | 48 | 91 | 02 | 0 | 2 | 0 | 29.83 | 0.00 | 50 | 48 | 95 | 36 | 0 | 0 |
| 07 | 69 | 29.82 | 0.00 | 56 | 54 | 95 | 28 | 1 | 5 | 84 | 29.92 | 0.00 | 51 | 48 | 92 | 01 | 1 | 8 | 65 | 29.83 | 0.00 | 52 | 51 | 96 | 36 | 0 | 0 |
| 10 | 352 | 29.84 | 0.00 | 61 | 57 | 86 | 29 | 0 | 7 | 353 | 29.95 | 0.00 | 59 | 49 | 70 | 02 | 3 | 9 | 670 | 29.84 | 0.00 | 70 | 58 | 67 | 02 | 1 | 7 |
| 13 | 503 | 29.84 | 0.00 | 63 | 58 | 82 | 35 | 0 | 9 | 664 | 29.95 | 0.00 | 62 | 49 | 62 | 05 | 3 | 11 | 870 | 29.81 | 0.00 | 76 | 61 | 60 | 29 | 0 | 6 |
| 16 | 508 | 29.84 | 0.00 | 65 | 58 | 76 | 30 | 1 | 10 | 155 | 29.91 | 0.00 | 68 | 52 | 58 | 31 | 2 | 12 | 656 | 29.79 | 0.00 | 78 | 59 | 52 | 30 | 3 | 8 |
| 19 | 16 | 29.88 | 0.00 | 58 | 54 | 86 | 32 | 0 | 5 | 77 | 29.87 | 0.00 | 67 | 52 | 58 | 31 | 1 | 7 | 60 | 29.78 | 0.00 | 76 | 61 | 59 | 30 | 0 | 0 |
| 22 | 0 | 29.89 | 0.00 | 56 | 54 | 92 | 02 | 0 | 2 | 0 | 29.87 | 0.00 | 58 | 50 | 74 | 32 | 0 | 0 | 0 | 29.79 | 0.00 | 58 | 54 | 86 | 30 | 0 | 0 |
| JUN 16 | | | | | | | | | JUN 17 | | | | | | | | | JUN 18 | | | | | | | | | |
| 01 | 0 | 29.79 | 0.00 | 60 | 53 | 79 | 20 | 3 | 6 | 0 | 29.80 | 0.00 | 67 | 57 | 70 | 21 | 4 | 9 | 0 | 29.75 | 0.00 | 62 | 61 | 95 | 21 | 0 | 0 |
| 04 | 0 | 29.80 | 0.00 | 60 | 52 | 75 | 22 | 4 | 7 | 0 | 29.81 | 0.00 | 62 | 54 | 73 | 20 | 0 | 4 | 0 | 29.75 | 0.00 | 62 | 61 | 96 | 23 | 1 | 7 |
| 07 | 70 | 29.81 | 0.00 | 62 | 54 | 75 | 20 | 4 | 9 | 70 | 29.83 | 0.00 | 64 | 53 | 69 | 20 | 0 | 3 | 223 | 29.77 | 0.00 | 63 | 62 | 96 | 23 | 3 | 7 |
| 10 | 666 | 29.81 | 0.00 | 74 | 61 | 63 | 20 | 2 | 7 | 366 | 29.82 | 0.00 | 70 | 58 | 66 | 22 | 5 | 12 | 336 | 29.77 | 0.00 | 70 | 65 | 85 | 30 | 2 | 7 |
| 13 | 868 | 29.80 | 0.00 | 81 | 64 | 57 | 22 | 1 | 9 | 241 | 29.81 | 0.00 | 70 | 60 | 71 | 21 | 3 | 10 | 403 | 29.74 | 0.00 | 76 | 66 | 72 | 29 | 0 | 5 |
| 16 | 656 | 29.77 | 0.00 | 84 | 57 | 40 | 25 | 2 | 9 | 95 | 29.78 | 0.00 | 70 | 62 | 77 | 21 | 1 | 3 | 707 | 29.71 | 0.00 | 78 | 65 | 64 | 30 | 4 | 12 |
| 19 | 84 | 29.76 | 0.00 | 79 | 58 | 49 | 21 | 0 | 6 | 105 | 29.77 | 0.00 | 70 | 62 | 77 | 21 | 1 | 5 | 39 | 29.73 | 0.00 | 71 | 51 | 48 | 30 | 4 | 11 |
| 22 | 0 | 29.79 | 0.00 | 66 | 55 | 69 | 20 | 0 | 3 | 0 | 29.78 | 0.00 | 62 | 60 | 93 | 21 | 0 | 0 | 0 | 29.78 | 0.00 | 58 | 45 | 62 | 29 | 0 | 1 |

MAXIMUM SHORT DURATION PRECIPITATION

| Time Period (minutes) | 5 | 10 | 15 | 20 | 30 | 45 | 60 | 80 | 100 | 120 | 150 | 180 |
|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Precipitation | 0.16 | 0.19 | 0.19 | 0.19 | 0.20 | 0.23 | 0.24 | 0.26 | 0.28 | 0.28 | 0.28 | 0.28 |
| Ended: Date | 09 | 09 | 09 | 09 | 09 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| Ended: Time | 0455 | 0459 | 0459 | 0459 | 0459 | 0430 | 0436 | 0459 | 0526 | 0526 | 0526 | 0526 |

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

June 2011: Westford

| Hour | JUN 19 | | | | | | | | | JUN 20 | | | | | | | | | JUN 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 | 29.80 | 0.00 | 56 | 46 | 69 | 31 | 0 | 8 | 0 | 29.85 | 0.00 | 51 | 48 | 89 | 03 | 0 | 1 | 0 | 29.87 | 0.00 | 54 | 50 | 86 | 03 | 0 | 0 |
| 04 | 0 | 29.83 | 0.00 | 49 | 42 | 75 | 02 | 0 | 2 | 0 | 29.87 | 0.00 | 48 | 46 | 93 | 03 | 0 | 0 | 0 | 29.87 | 0.00 | 51 | 48 | 91 | 03 | 0 | 0 |
| 07 | 51 | 29.85 | 0.00 | 49 | 45 | 86 | 02 | 0 | 2 | 53 | 29.89 | 0.00 | 51 | 50 | 96 | 03 | 0 | 0 | 63 | 29.91 | 0.00 | 53 | 52 | 95 | 03 | 0 | 0 |
| 10 | 707 | 29.84 | 0.00 | 63 | 47 | 56 | 01 | 2 | 10 | 647 | 29.89 | 0.00 | 67 | 55 | 64 | 31 | 0 | 4 | 684 | 29.91 | 0.00 | 74 | 58 | 56 | 31 | 2 | 6 |
| 13 | 912 | 29.83 | 0.00 | 69 | 51 | 53 | 30 | 3 | 11 | 933 | 29.87 | 0.00 | 71 | 54 | 54 | 32 | 2 | 10 | 958 | 29.90 | 0.00 | 78 | 55 | 46 | 31 | 0 | 6 |
| 16 | 689 | 29.83 | 0.00 | 72 | 51 | 49 | 03 | 1 | 7 | 689 | 29.85 | 0.00 | 74 | 55 | 52 | 29 | 1 | 11 | 677 | 29.89 | 0.00 | 79 | 54 | 43 | 03 | 0 | 8 |
| 19 | 51 | 29.83 | 0.00 | 68 | 53 | 57 | 29 | 0 | 4 | 46 | 29.85 | 0.00 | 71 | 55 | 57 | 02 | 0 | 4 | 74 | 29.88 | 0.00 | 75 | 53 | 47 | 03 | 0 | 2 |
| 22 | 0 | 29.83 | 0.00 | 56 | 49 | 78 | 29 | 0 | 1 | 0 | 29.86 | 0.00 | 53 | 48 | 83 | 03 | 0 | 0 | 0 | 29.90 | 0.00 | 59 | 51 | 73 | 04 | 0 | 1 |
| JUN 22 | | | | | | | | | JUN 23 | | | | | | | | | JUN 24 | | | | | | | | | |
| 01 | 0 | 29.91 | 0.00 | 55 | 50 | 85 | 04 | 0 | 0 | 0 | 29.79 | 0.00 | 60 | 58 | 95 | 15 | 0 | 1 | 0 | 29.69 | 0.00 | 63 | 57 | 82 | 20 | 2 | 11 |
| 04 | 0 | 29.91 | 0.00 | 50 | 47 | 88 | 10 | 0 | 0 | 0 | 29.78 | 0.00 | 60 | 58 | 95 | 13 | 0 | 0 | 0 | 29.67 | 0.00 | 61 | 57 | 86 | 20 | 1 | 8 |
| 07 | 105 | 29.92 | 0.00 | 58 | 52 | 81 | 05 | 0 | 4 | 72 | 29.76 | 0.00 | 63 | 61 | 93 | 16 | 0 | 3 | 77 | 29.68 | 0.00 | 59 | 56 | 90 | 17 | 1 | 8 |
| 10 | 645 | 29.91 | 0.00 | 72 | 58 | 62 | 27 | 0 | 1 | 84 | 29.74 | 0.05 | 64 | 61 | 92 | 20 | 1 | 9 | 132 | 29.69 | 0.00 | 61 | 57 | 87 | 18 | 0 | 9 |
| 13 | 410 | 29.88 | 0.00 | 75 | 54 | 48 | 16 | 1 | 7 | 403 | 29.73 | 0.00 | 69 | 64 | 85 | 15 | 4 | 13 | 540 | 29.69 | 0.00 | 60 | 57 | 90 | 18 | 2 | 8 |
| 16 | 169 | 29.87 | 0.00 | 67 | 59 | 76 | 20 | 2 | 6 | 190 | 29.72 | 0.00 | 68 | 61 | 77 | 16 | 7 | 15 | 202 | 29.67 | 0.00 | 65 | 57 | 75 | 14 | 2 | 8 |
| 19 | 19 | 29.86 | 0.00 | 62 | 59 | 89 | 16 | 0 | 0 | 114 | 29.71 | 0.00 | 66 | 60 | 82 | 17 | 1 | 13 | 74 | 29.68 | 0.00 | 61 | 55 | 81 | 16 | 1 | 7 |
| 22 | 0 | 29.82 | 0.00 | 60 | 57 | 89 | 17 | 0 | 4 | 0 | 29.73 | 0.00 | 63 | 58 | 82 | 15 | 2 | 8 | 0 | 29.68 | 0.00 | 59 | 53 | 83 | 15 | 0 | 7 |
| JUN 25 | | | | | | | | | JUN 26 | | | | | | | | | JUN 27 | | | | | | | | | |
| 01 | 0 | 29.69 | 0.00 | 58 | 53 | 84 | 21 | 0 | 8 | 0 | 29.79 | 0.00 | 62 | 61 | 96 | 22 | 1 | 5 | 0 | 29.95 | 0.00 | 60 | 59 | 96 | 29 | 0 | 1 |
| 04 | 0 | 29.68 | 0.00 | 58 | 53 | 84 | 17 | 0 | 6 | 0 | 29.78 | 0.00 | 62 | 61 | 96 | 21 | 1 | 4 | 0 | 29.97 | 0.00 | 55 | 54 | 96 | 29 | 0 | 0 |
| 07 | 79 | 29.70 | 0.00 | 60 | 55 | 84 | 17 | 1 | 5 | 47 | 29.82 | 0.00 | 62 | 61 | 96 | 22 | 1 | 4 | 47 | 30.00 | 0.00 | 59 | 58 | 97 | 29 | 0 | 1 |
| 10 | 309 | 29.72 | 0.00 | 63 | 58 | 86 | 20 | 2 | 9 | 390 | 29.85 | 0.00 | 67 | 64 | 91 | 21 | 0 | 7 | 689 | 30.01 | 0.00 | 72 | 62 | 71 | 24 | 0 | 4 |
| 13 | 984 | 29.72 | 0.00 | 68 | 63 | 82 | 23 | 6 | 12 | 575 | 29.84 | 0.00 | 73 | 65 | 77 | 24 | 2 | 6 | 958 | 29.98 | 0.00 | 78 | 64 | 62 | 30 | 0 | 3 |
| 16 | 332 | 29.71 | 0.00 | 71 | 65 | 80 | 21 | 1 | 7 | 111 | 29.85 | 0.00 | 69 | 63 | 83 | 29 | 6 | 14 | 693 | 29.95 | 0.00 | 80 | 61 | 53 | 29 | 0 | 5 |
| 19 | 76 | 29.74 | 0.00 | 66 | 63 | 91 | 20 | 0 | 4 | 93 | 29.88 | 0.00 | 69 | 64 | 83 | 29 | 1 | 3 | 84 | 29.92 | 0.00 | 76 | 64 | 68 | 30 | 0 | 0 |
| 22 | 0 | 29.80 | 0.04 | 63 | 62 | 95 | 21 | 1 | 4 | 0 | 29.92 | 0.00 | 61 | 59 | 93 | 29 | 0 | 0 | 0 | 29.93 | 0.00 | 62 | 59 | 91 | 30 | 0 | 0 |
| JUN 28 | | | | | | | | | JUN 29 | | | | | | | | | JUN 30 | | | | | | | | | |
| 01 | 0 | 29.93 | 0.00 | 57 | 55 | 94 | 30 | 0 | 0 | 0 | 29.69 | 0.00 | 69 | 65 | 87 | 21 | 5 | 15 | 0 | 29.81 | 0.00 | 56 | 53 | 91 | 31 | 0 | 4 |
| 04 | 0 | 29.88 | 0.00 | 56 | 55 | 96 | 30 | 0 | 0 | 0 | 29.70 | 0.00 | 64 | 61 | 90 | 20 | 0 | 5 | 0 | 29.81 | 0.09 | 55 | 53 | 95 | 30 | 6 | 15 |
| 07 | 100 | 29.87 | 0.00 | 59 | 58 | 96 | 30 | 0 | 0 | 44 | 29.73 | 0.00 | 64 | 61 | 90 | 23 | 1 | 8 | 28 | 29.83 | 0.00 | 56 | 54 | 95 | 21 | 1 | 5 |
| 10 | 410 | 29.86 | 0.00 | 71 | 64 | 78 | 21 | 0 | 7 | 272 | 29.74 | 0.00 | 71 | 59 | 65 | 26 | 6 | 12 | 276 | 29.85 | 0.00 | 60 | 55 | 84 | 30 | 0 | 6 |
| 13 | 446 | 29.81 | 0.00 | 79 | 66 | 65 | 21 | 4 | 9 | 404 | 29.74 | 0.00 | 68 | 60 | 75 | 24 | 1 | 9 | 373 | 29.84 | 0.00 | 66 | 58 | 77 | 28 | 2 | 8 |
| 16 | 267 | 29.76 | 0.00 | 77 | 65 | 66 | 19 | 6 | 17 | 120 | 29.75 | 0.00 | 66 | 59 | 80 | 23 | 0 | 3 | 306 | 29.83 | 0.00 | 68 | 59 | 74 | 29 | 4 | 8 |
| 19 | 65 | 29.72 | 0.00 | 73 | 65 | 75 | 19 | 3 | 15 | 37 | 29.76 | 0.00 | 62 | 57 | 85 | 28 | 6 | 9 | 21 | 29.86 | 0.00 | 62 | 57 | 84 | 01 | 0 | 2 |
| 22 | 0 | 29.72 | 0.00 | 70 | 63 | 78 | 17 | 1 | 5 | 0 | 29.78 | 0.14 | 59 | 57 | 92 | 23 | 2 | 6 | 0 | 29.90 | 0.00 | 60 | 57 | 90 | 05 | 0 | 0 |

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

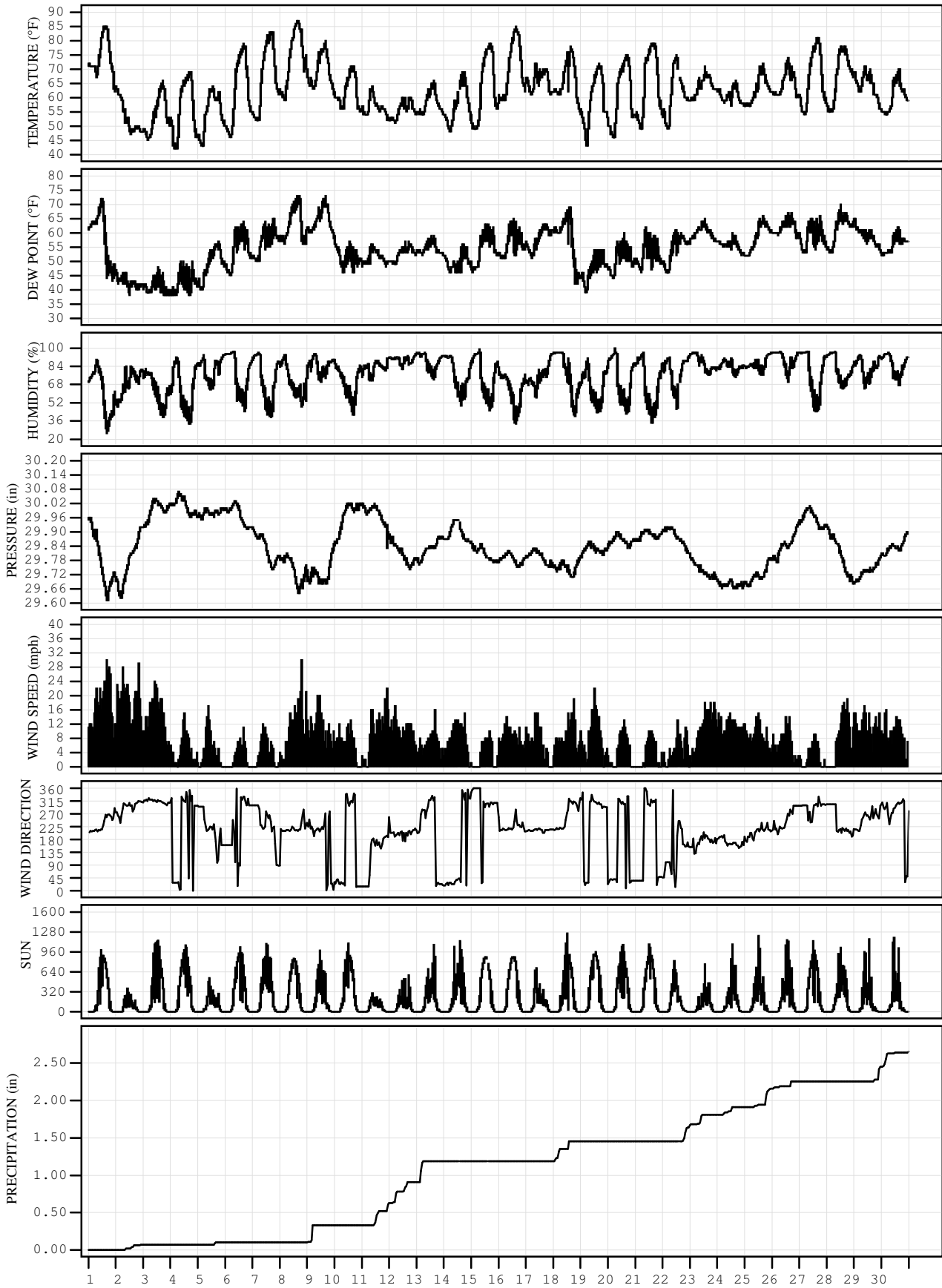
| Hour | Averages | | | | | | Resultant Wind | |
|------|----------|----------|-------------|-----------|----------|------------|----------------|-------|
| | Sunshine | Pressure | Temperature | Dew Point | Humidity | Wind Speed | Direction | Speed |
| 01 | 0 | 29.846 | 58 | 53 | 84 | 0.9 | 21 | 0.7 |
| 04 | 0 | 29.839 | 56 | 52 | 87 | 1.0 | 24 | 0.7 |
| 07 | 75 | 29.861 | 57 | 53 | 87 | 1.6 | 25 | 1.0 |
| 10 | 476 | 29.863 | 66 | 57 | 72 | 2.6 | 25 | 1.6 |
| 13 | 598 | 29.848 | 70 | 58 | 67 | 2.5 | 24 | 1.4 |
| 16 | 424 | 29.825 | 71 | 57 | 64 | 2.4 | 26 | 1.2 |
| 19 | 68 | 29.824 | 68 | 56 | 68 | 1.9 | 26 | 1.4 |
| 22 | 0 | 29.847 | 59 | 53 | 81 | 0.7 | 23 | 0.4 |

HOURLY PRECIPITATION (Water Equivalent) June 2011: Westford

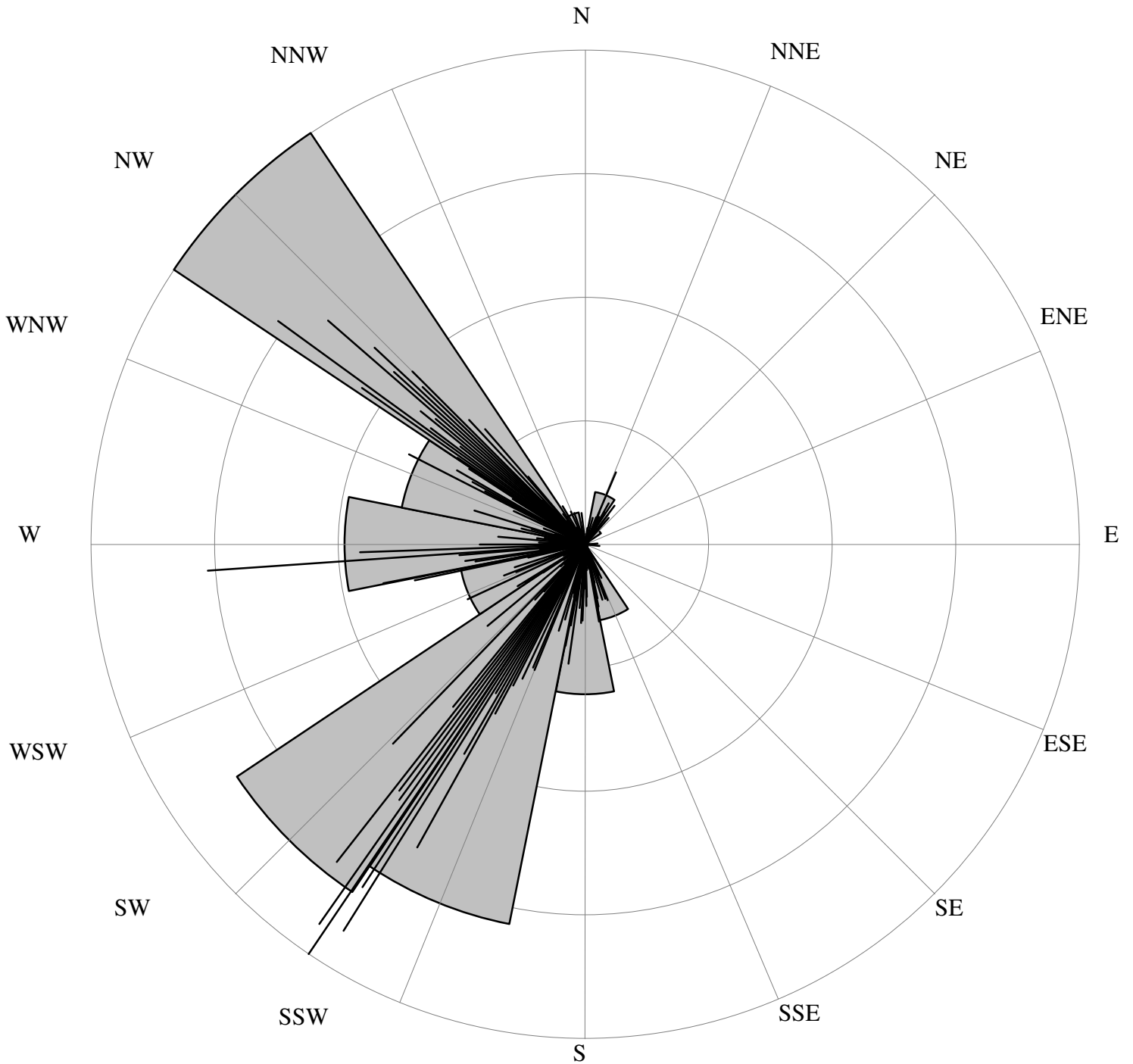
| Date | A.M. Hour Ending at | | | | | | | | | | | | P.M. Hour Ending at | | | | | | | | | | | | Date |
|------------|---------------------|------|------|------|------|------|------|------|------|------|------|------|---------------------|------|------|------|------|------|------|------|------|------|------|------|------------|
| | 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 | | | | | | | | | 0.02 | | | | | | 0.02 | | 0.02 | | | | | 0.01 | | 02 | |
| 03 | | | | | | | | | | | | | | | | | | | | | | | | 03 | |
| 04 | | | | | | | | | | | | | | | | | | | | | | | | 04 | |
| 05 | | | | | | | | | | | | | | | | 0.02 | 0.01 | | | | | | | 05 | |
| 06 | | | | | | | | | | | | | | | | | | | | | | | | 06 | |
| 07 | | | | | | | | | | | | | | | | | | | | | | | | 07 | |
| 08 | | | | | | | | | | | | | | | | | | | | | | | | 08 | |
| 09 | 0.01 | | | 0.02 | 0.20 | | | | | | | | | | | | | | | | | | | 09 | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | 10 | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | 11 | |
| 12 | | | | 0.01 | | 0.12 | 0.02 | | | | 0.01 | 0.03 | 0.09 | 0.03 | 0.03 | | | | | | | 0.09 | 0.02 | 12 | |
| 13 | | | | 0.14 | 0.12 | 0.02 | | | | | | | 0.01 | 0.05 | 0.01 | 0.06 | | | | | | | | 13 | |
| 14 | | | | | | | | | | | | | | | | | | | | | | | | 14 | |
| 15 | | | | | | | | | | | | | | | | | | | | | | | | 15 | |
| 16 | | | | | | | | | | | | | | | | | | | | | | | | 16 | |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | 17 | |
| 18 | | 0.03 | 0.01 | | 0.09 | 0.03 | | | | | | | | 0.10 | | | | | | | | | | 18 | |
| 19 | | | | | | | | | | | | | | | | | | | | | | | | 19 | |
| 20 | | | | | | | | | | | | | | | | | | | | | | | | 20 | |
| 21 | | | | | | | | | | | | | | | | | | | | | | | | 21 | |
| 22 | | | | | | | | | | | | | | | | | 0.01 | 0.04 | 0.07 | 0.06 | 0.01 | | | 22 | |
| 23 | 0.01 | | | | | | | | | | | | | | | | | | | | | | 0.03 | 23 | |
| 24 | | | | | | 0.02 | 0.01 | | | 0.01 | 0.09 | 0.01 | 0.01 | 0.01 | 0.05 | | | | | | | | | 24 | |
| 25 | | | | | | | | | | 0.02 | | | | | | | | | 0.14 | 0.04 | 0.01 | 0.02 | 0.01 | 25 | |
| 26 | | 0.01 | 0.01 | | | | 0.01 | | | | | | | | | | 0.06 | | | | | | | 26 | |
| 27 | | | | | | | | | | | | | | | | | | | | | | | | 27 | |
| 28 | | | | | | | | | | | | | | | | | | | | | | | | 28 | |
| 29 | | | | | | | | | | | | | | | | | | 0.03 | | | | 0.14 | 0.03 | 29 | |
| 30 | | 0.01 | 0.03 | 0.07 | 0.06 | 0.01 | | | | | 0.01 | | | | | | | | | | | | 0.01 | 30 | |
| Sum | 0.02 | 0.05 | 0.05 | 0.24 | 0.47 | 0.20 | 0.05 | 0.00 | 0.05 | 0.10 | 0.03 | 0.06 | 0.15 | 0.20 | 0.06 | 0.09 | 0.06 | 0.04 | 0.18 | 0.11 | 0.07 | 0.18 | 0.13 | 0.06 | 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
June 2011: Westford



Wind Rose: June 2011
Westford



Maximum direction of wind: 36.0 miles from 214°
Maximum sector of wind: 256.8 miles from NW
1143.7 total miles of wind