



# APRIL 1999

## LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

# KNOXVILLE, TN

MC GHEE TYSON AIRPORT (TYS)  
 Lat: 35° 49' N Long: 83° 59' W Elev (Ground): 979 Feet  
 Time Zone: EASTERN WBAN: 13891 ISSN #: 0198-4810

APRIL 1999  
KNOXVILLE, TN

| DATE                       | TEMPERATURE °F |         |         |                 |                |                  | DEG DAYS BASE 65° |         | WEATHER           | SNOW/ICE ON GND(IN)                         |          | PRECIPITATION (INCHES) |          | PRESSURE (INCHES OF HG) |                   | WIND SPEED = MPH DIR = TENS OF DEGREES |         |                                     |         |                              |       |    |    | DATE |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
|----------------------------|----------------|---------|---------|-----------------|----------------|------------------|-------------------|---------|-------------------|---|----------|------------------------|----------|-------------------------|-------------------|--|---------|-------------------------------------|---------|------------------------------|-------|----|----|------|--|-------|--|--|--|--|--|--|--|--|--|--|--|--|--|--------------------------------|--|--|--|--|--|--|--|--|--|
|                            | MAXIMUM        | MINIMUM | AVERAGE | DEP FROM NORMAL | AVERAGE DEW PT | AVERAGE WET BULB | HEATING           | COOLING |                   | 0700 LST                                    | 1300 LST | 2400 LST               | 2400 LST | AVERAGE STATION         | AVERAGE SEA LEVEL | RESULTANT SPEED                        | RES DIR | AVERAGE SPEED                       | MAXIMUM |                              |       |    |    |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
|                            |                |         |         |                 |                |                  |                   |         |                   |   |          |                        |          |                         |                   |  |         |                                     | 5-SEC   |                              | 2-MIN |    |    |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 1                          | 2              | 3       | 4       | 5               | 6              | 7                | 8                 | 9       | 10                | 11  | 12       | 13                     | 14       | 15                      | 16                | 17                                     | 18      | 19                                  | 20      | 21                           | 22    | 23 | 24 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 01                         | 69             | 51      | 60      | 6               | 55             | 56               | 5                 | 0       | RA BR             | 0   |          | 0.0                    | 0.20     | 28.94                   | 29.98             | 2.5                                    | 25      | 3.3                                 | 17      | 22                           | 14    | 23 | 01 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 02                         | 71             | 46      | 59      | 5               | 54             | 57               | 6                 | 0       | FG+ BR HZ         | 0   |          | 0.0                    | 0.00     | 28.99                   | 30.02             | 1.2                                    | 31      | 2.3                                 | 11      | 24                           | 10    | 28 | 02 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 03                         | 83             | 51      | 67      | 13              | 57             | 60               | 0                 | 2       | RA BR             | 0   |          | 0.0                    | 0.01     | 28.93                   | 29.96             | 2.5                                    | 05      | 4.6                                 | 11      | 17                           | 10    | 18 | 03 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 04                         | 80             | 60      | 70      | 15              | 57             | 63               | 0                 | 5       |                   | 0   |          | 0.0                    | 0.00     | 28.93                   | 29.94             | 9.5                                    | 24      | 10.8                                | 31      | 23                           | 28    | 24 | 04 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 05                         | 81             | 53      | 67      | 12              | 54             | 60               | 0                 | 2       |                   | 0   |          | 0.0                    | 0.00     | 28.98                   | 30.00             | 0.8                                    | 10      | 2.3                                 | 15      | 17                           | 11    | 17 | 05 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 06                         | 74             | 59      | 67      | 12              | 59             | 62               | 0                 | 2       | TS TSRA RA BR     | 0   |          | 0.0                    | 0.08     | 29.06                   | 30.09             | 9.9                                    | 23      | 11.5                                | 29      | 18                           | 24    | 18 | 06 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 07                         | 77             | 57      | 67      | 12              | 54             | 59               | 0                 | 2       | FG+ BR HZ         | 0   |          | 0.0                    | 0.00     | 29.10                   | 30.13             | 2.8                                    | 23      | 3.9                                 | 15      | 24                           | 11    | 23 | 07 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 08                         | 71             | 57      | 64      | 8               | 60             | 62               | 1                 | 0       | TS TSRA RA BR     | 0   |          | 0.0                    | 0.33     | 28.91                   | 29.94             | 1.4                                    | 27      | 6.1                                 | 21      | 22                           | 17    | 23 | 08 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 09                         | 83*            | 64      | 74*     | 18              | 56             | 63               | 0                 | 9       |                   | 0   |          | 0.0                    | 0.00     | 28.62                   | 29.62             | 19.8                                   | 23      | 21.5                                | 41      | 23                           | 37    | 24 | 09 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 10                         | 82             | 50      | 66      | 10              | 53             | 60               | 0                 | 1       |                   | 0   |          | 0.0                    | 0.00     | 28.81                   | 29.82             | 0.8                                    | 29      | 4.5                                 | 13      | 26                           | 11    | 26 | 10 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 11                         | 80             | 58      | 69      | 13              | 48             | 60               | 0                 | 4       |                   | 0   |          | 0.0                    | 0.00     | 28.82                   | 29.83             | 15.5                                   | 25      | 16.9                                | 36      | 25                           | 32    | 25 | 11 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 12                         | 61             | 48      | 55      | -2              | 39             | 47               | 10                | 0       |                   | 0   |          | 0.0                    | 0.00     | 29.11                   | 30.15             | 7.2                                    | 33      | 9.6                                 | 26      | 35                           | 17    | 02 | 12 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 13                         | 65             | 41      | 53      | -4              | 37             | 46               | 12                | 0       |                   | 0   |          | 0.0                    | 0.00     | 29.07                   | 30.11             | 5.5                                    | 06      | 6.3                                 | 16      | 02                           | 13    | 03 | 13 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 14                         | 62             | 44      | 53      | -4              | 40             | 47               | 12                | 0       | RA                | 0   |          | 0.0                    | T        | 28.92                   | 29.96             | 6.1                                    | 04      | 6.5                                 | 15      | 04                           | 13    | 04 | 14 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 15                         | 70             | 48      | 59      | 2               | 50             | 54               | 6                 | 0       | RA BR             | 0   |          | 0.0                    | 0.42     | 28.58                   | 29.60             | 7.5                                    | 27      | 13.6                                | 38      | 24                           | 32    | 26 | 15 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 16                         | 61             | 43      | 52      | -6              | 30             | 43               | 13                | 0       |                   | 0   |          | 0.0                    | 0.00     | 28.77                   | 29.80             | 18.6                                   | 25      | 19.0                                | 47*     | 25                           | 38*   | 25 | 16 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 17                         | 54             | 38      | 46*     | -12             | 31             | 40               | 19                | 0       | RA                | 0   |          | 0.0                    | T        | 28.95                   | 29.99             | 11.1                                   | 25      | 11.6                                | 31      | 24                           | 28    | 24 | 17 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 18                         | 56             | 39      | 48      | -10             | 36             | 42               | 17                | 0       | HZ                | 0   |          | 0.0                    | 0.00     | 29.11                   | 30.16             | 7.3                                    | 23      | 7.8                                 | 23      | 24                           | 18    | 24 | 18 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 19                         | 69             | 38*     | 54      | -4              | 39             | 48               | 11                | 0       | TSRA RA           | 0   |          | 0.0                    | 0.09     | 29.03                   | 30.07             | 9.1                                    | 22      | 9.8                                 | 28      | 23                           | 23    | 22 | 19 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 20                         | 74             | 51      | 63      | 5               | 47             | 54               | 2                 | 0       | TS TSRA RA        | 0   |          | 0.0                    | 0.07     | 28.93                   | 29.96             | 3.8                                    | 27      | 5.8                                 | 17      | 24                           | 15    | 27 | 20 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 21                         | 82             | 44      | 63      | 4               | 49             | 56               | 2                 | 0       |                   | 0   |          | 0.0                    | 0.00     | 28.91                   | 29.93             | 9.2                                    | 22      | 10.1                                | 38      | 22                           | 32    | 24 | 21 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 22                         | 82             | 59      | 71      | 12              | 49             | 58               | 0                 | 6       |                   | 0   |          | 0.0                    | 0.00     | 28.94                   | 29.95             | 10.7                                   | 24      | 11.1                                | 29      | 26                           | 25    | 25 | 22 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 23                         | 80             | 61      | 71      | 11              | 62             | 65               | 0                 | 6       | RA                | 0   |          | 0.0                    | 0.01     | 28.98                   | 29.99             | 9.5                                    | 23      | 10.0                                | 23      | 23                           | 20    | 22 | 23 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 24                         | 75             | 59      | 67      | 7               | 53             | 59               | 0                 | 2       | BR                | 0   |          | 0.0                    | 0.00     | 29.07                   | 30.10             | 6.0                                    | 01      | 6.8                                 | 18      | 01                           | 15    | 36 | 24 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 25                         | 73             | 52      | 63      | 3               | 52             | 56               | 2                 | 0       | HZ                | 0   |          | 0.0                    | 0.00     | 29.03                   | 30.06             | 2.4                                    | 30      | 8.4                                 | 20      | 25                           | 16    | 26 | 25 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 26                         | 66             | 60      | 63      | 3               | 58             | 60               | 2                 | 0       | RA BR             | 0   |          | 0.0                    | 0.08     | 28.91                   | 29.94             | 5.4                                    | 24      | 6.7                                 | 21      | 28                           | 17    | 24 | 26 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 27                         | 71             | 58      | 65      | 5               | 62             | 63               | 0                 | 0       | TS TSRA RA FG+ BR | 0   |          | 0.0                    | 0.74     | 28.84                   | 29.86             | 0.9                                    | 06      | 3.1                                 | 17      | 25                           | 15    | 25 | 27 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 28                         | 74             | 54      | 64      | 3               | 60             | 61               | 1                 | 0       | TS TSRA RA FG+ BR | 0   |          | 0.0                    | 0.86     | 28.84                   | 29.86             | 4.1                                    | 06      | 6.7                                 | 20      | 04                           | 17    | 04 | 28 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 29                         | 54             | 42      | 48      | -13             | 48             | 49               | 17                | 0       | RA DZ BR          | 0   |          | 0.0                    | 0.50     | 28.96                   | 29.99             | 9.9                                    | 04      | 10.2                                | 28      | 04                           | 22    | 04 | 29 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 30                         | 66             | 41      | 54      | -7              | 43             | 48               | 11                | 0       | RA BR             | 0   |          | 0.0                    | 0.01     | 29.04                   | 30.09             | 8.9                                    | 05      | 9.0                                 | 30      | 08                           | 21    | 10 | 30 |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| < MONTHLY AVERAGES         |                |         |         |                 |                |                  |                   |         |                   | TOTALS-->                                   |          |                        |          | 3.40                    | 28.94             | 29.96                                  | 3.7     | 25                                  | 8.7     | <- MONTHLY AVERAGES          |       |    |    |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| 1.1                        |                |         |         |                 |                |                  |                   |         |                   | 6.3   |          |                        |          | 3.7                     |                   |  |         | <----- DEPARTURE FROM NORMAL -----> |         |                              |       |    |    |      |  | - .32 |  |  |  | SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3 |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| DEGREE DAYS                |                |         |         |                 |                |                  |                   |         |                   | GREATEST 24-HR PRECIPITATION: 0.86 DATE: 28 |          |                        |          |                         |                   |  |         |                                     |         | SEA LEVEL PRESSURE DATE TIME |       |    |    |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| MONTHLY                    |                |         |         |                 |                |                  |                   |         |                   | GREATEST 24-HR SNOWFALL: 0.0 DATE:          |          |                        |          |                         |                   |  |         |                                     |         | MAXIMUM : 30.22 07 0753      |       |    |    |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| SEASON TO DATE             |                |         |         |                 |                |                  |                   |         |                   | GREATEST SNOW DEPTH: 0 DATE:                |          |                        |          |                         |                   |  |         |                                     |         | MINIMUM : 29.45 15 1453      |       |    |    |      |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| TOTAL DEPARTURE            |                |         |         |                 |                |                  |                   |         |                   | NUMBER OF DAYS WITH =>                      |          |                        |          |                         |                   |  |         |                                     |         | MAXIMUM TEMP ≥ 90: 0         |       |    |    |      |  |       |  |  |  | MINIMUM TEMP ≤ 32: 0                           |  |  |  |  |  |  |  |  |  | PRECIPITATION ≥ 0.01 INCH : 13 |  |  |  |  |  |  |  |  |  |
| HEATING: 149 -85 3191 -652 |                |         |         |                 |                |                  |                   |         |                   | MAXIMUM TEMP ≤ 32 : 0                       |          |                        |          |                         |                   |  |         |                                     |         | MINIMUM TEMP ≤ 0 : 0         |       |    |    |      |  |       |  |  |  | PRECIPITATION ≥ 0.10 INCH : 6                  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |
| COOLING: 41 32 41 32       |                |         |         |                 |                |                  |                   |         |                   | THUNDERSTORMS : 6                           |          |                        |          |                         |                   |  |         |                                     |         | HEAVY FOG : 4                |       |    |    |      |  |       |  |  |  | SNOWFALL ≥ 1.0 INCH : 0                        |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

## KNOXVILLE, TN

APRIL 1999

TYS

WBAN # 13891

| DATE | FOR HOUR (LST) ENDING AT |      |      |      |      |      |      |      |      |      |      |      | DATE | FOR HOUR (LST) ENDING AT |      |      |      |      |      |      |      |      |      |      |      | DATE | Sum if Different (See Note 2) | 2400 LST |        |
|------|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|-------------------------------|----------|--------|
|      | 1                        | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   |      | 13                       | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |      |                               | Water    | Equiv. |
| 01   | 0.03                     | 0.07 | T    | T    |      | 0.01 | T    |      |      | 0.04 | 0.05 | T    | 01   |                          |      | T    |      |      |      |      |      |      |      |      | 01   |      | 0.20                          |          |        |
| 02   |                          |      |      |      |      |      |      |      |      |      |      |      | 02   |                          |      |      |      |      |      |      |      |      |      |      | 02   |      | 0.00                          |          |        |
| 03   |                          |      |      |      |      |      |      |      |      |      |      |      | 03   |                          |      |      |      |      |      |      |      |      |      |      | 03   |      | 0.01                          |          |        |
| 04   |                          |      |      |      |      |      |      |      |      |      |      |      | 04   |                          |      |      |      |      |      |      |      |      |      |      | 04   |      | 0.00                          |          |        |
| 05   |                          |      |      |      |      |      |      |      |      |      |      |      | 05   |                          |      |      |      |      |      |      |      |      |      |      | 05   |      | 0.00                          |          |        |
| 06   |                          |      |      |      |      |      |      |      |      |      |      |      | 06   |                          |      |      |      |      |      |      |      |      |      |      | 06   |      | 0.08                          |          |        |
| 07   |                          |      |      |      |      |      | 0.04 | 0.02 | 0.01 |      |      | 0.01 | T    | 07                       |      |      |      |      |      |      |      |      |      |      | 07   |      | 0.00                          |          |        |
| 08   |                          |      |      |      |      |      |      |      |      |      |      |      | T    | 08                       | 0.12 | 0.01 |      |      |      |      |      |      |      |      | 08   |      | 0.33                          |          |        |
| 09   |                          |      |      |      |      |      |      |      |      |      |      |      |      | 09                       |      |      |      |      | 0.20 | T    |      |      |      | T    | 09   |      | 0.00                          |          |        |
| 10   |                          |      |      |      |      |      |      |      |      |      |      |      |      | 10                       |      |      |      |      |      |      |      |      |      |      | 10   |      | 0.00                          |          |        |
| 11   |                          |      |      |      |      |      |      |      |      |      |      |      |      | 11                       |      |      |      |      |      |      |      |      |      |      | 11   |      | 0.00                          |          |        |
| 12   |                          |      |      |      |      |      |      |      |      |      |      |      |      | 12                       |      |      |      |      |      |      |      |      |      |      | 12   |      | 0.00                          |          |        |
| 13   |                          |      |      |      |      |      |      |      |      |      |      |      |      | 13                       |      |      |      |      |      |      |      |      |      |      | 13   |      | 0.00                          |          |        |
| 14   |                          |      |      |      |      |      |      |      |      |      |      |      |      | 14                       | T    |      |      |      |      |      |      |      |      | T    | 14   |      | T                             |          |        |
| 15   |                          | 0.01 | 0.05 | 0.04 | 0.07 | 0.05 | 0.01 |      |      |      |      | T    | 0.09 | 15                       | 0.10 |      |      | T    |      |      |      |      | T    | T    | 15   |      | 0.42                          |          |        |
| 16   |                          |      |      |      |      |      |      |      |      |      |      |      |      | 16                       |      |      |      |      |      |      |      |      |      |      | 16   |      | 0.00                          |          |        |
| 17   |                          |      |      |      |      |      |      |      |      |      |      |      |      | 17                       | T    | T    |      |      |      |      |      |      |      |      | 17   |      | T                             |          |        |
| 18   |                          |      |      |      |      |      |      |      |      |      |      |      |      | 18                       |      |      |      |      |      |      |      |      |      |      | 18   |      | 0.00                          |          |        |
| 19   |                          |      |      |      |      |      |      |      |      |      |      |      |      | 19                       |      |      |      |      |      |      |      |      |      | T    | 19   |      | 0.09                          |          |        |
| 20   | T                        | 0.05 | 0.01 | 0.01 |      |      |      |      |      |      |      |      |      | 20                       |      |      |      |      |      |      |      |      | T    | T    | 20   |      | 0.07                          |          |        |
| 21   |                          |      |      |      |      |      |      |      |      |      |      |      |      | 21                       |      |      |      |      |      |      |      |      |      |      | 21   |      | 0.00                          |          |        |
| 22   |                          |      |      |      |      |      |      |      |      |      |      |      |      | 22                       |      |      |      |      |      |      |      |      |      |      | 22   |      | 0.00                          |          |        |
| 23   |                          |      |      |      |      |      |      |      |      |      |      |      |      | 23                       |      |      | 0.01 | T    |      |      |      |      |      |      | 23   |      | 0.01                          |          |        |
| 24   |                          |      |      |      |      |      |      |      |      |      |      |      |      | 24                       |      |      |      |      |      |      |      |      |      |      | 24   |      | 0.00                          |          |        |
| 25   |                          |      |      |      |      |      |      |      |      |      |      |      |      | 25                       |      |      |      |      |      |      |      |      |      |      | 25   |      | 0.00                          |          |        |
| 26   |                          |      |      |      |      |      |      |      |      | 0.03 | T    | 0.01 | 26   | T                        | T    |      | 0.03 | 0.01 |      |      |      |      |      | 26   |      | 0.08 |                               |          |        |
| 27   |                          |      |      | 0.01 |      |      |      |      |      | 0.14 | 0.03 |      | 27   |                          | 0.06 |      | 0.30 | 0.07 |      |      |      |      |      | 27   | 0.69 | 0.74 |                               |          |        |
| 28   |                          |      |      |      |      |      |      |      |      |      |      |      | 28   |                          |      |      |      | T    | 0.43 | 0.16 | 0.03 | 0.05 | T    | 28   | 0.83 | 0.86 |                               |          |        |
| 29   | 0.16                     | 0.01 | 0.01 | 0.14 | 0.04 | T    |      |      |      |      | T    | 0.02 | 29   | 0.02                     | T    | 0.01 | 0.04 | 0.07 | 0.01 | T    |      |      | 0.12 | 0.12 | 29   | 0.53 | 0.50                          |          |        |
| 30   |                          |      |      | T    | T    | 0.01 | T    |      |      |      |      |      | 30   |                          |      |      |      |      |      |      |      |      |      |      | 30   |      | 0.01                          |          |        |

### MAXIMUM SHORT DURATION PRECIPITATION (See Note)

| Time Period (Minutes)  | 5 | 10 | 15 | 20 | 30 | 45 | 60 | 80 | 100 | 120 | 150 | 180 |
|------------------------|---|----|----|----|----|----|----|----|-----|-----|-----|-----|
| Precipitation (Inches) |   |    |    |    |    |    |    |    |     |     |     |     |
| Ending Date            |   |    |    |    |    |    |    |    |     |     |     |     |
| Ending Time (Hour/Min) |   |    |    |    |    |    |    |    |     |     |     |     |

Date and time are not entered for TRACE amounts.

Note : The sum of the hourly totals is given when it differs from the daily total. NWS does not edit ASOS hourly values but may edit daily and monthly totals. Hourly, daily, and monthly totals are printed as reported by the ASOS site.

# REFERENCE NOTES & SUPPLEMENTAL SUMMARIES

\* = Extreme for the month (last occurrence if more than one)

T = Trace precipitation amount

+ = also occurs on earlier date

FG+ = Heavy fog, visibility .25 miles or less  
BLANK entries denote missing or unreported data

Resultant wind is the vector sum of the wind speeds and directions divided by the number of observations.

Wind direction is recorded in tens of degrees (2 digits) clockwise from true north. '00' = calm, 'VR' = variable.

Precipitation is for the 24-hour period ending at the time indicated in the column heading.

Water Equivalent of snow on the ground is reported only when the depth is 2 or more inches.

NORMALS ARE FOR THE YEARS 1961 – 1990

## WEATHER NOTATIONS

| QUALIFIER          | WEATHER PHENOMENA                 |                    |                                    |
|--------------------|-----------------------------------|--------------------|------------------------------------|
|                    | PRECIPITATION                     | OBSCURATION        | OTHER                              |
| BC Patches         | DZ Drizzle                        | BR Mist            | DS Duststorm                       |
| BL Blowing         | GR Hail                           | DU Widespread Dust | FC Funnel Cloud                    |
| DR Low Drifting    | GS Small Hail and/or Snow Pellets | FG Fog             | +FC Tornado Waterspout             |
| FZ Freezing        | IC Ice Crystals                   | FU Smoke           | PO Well-Developed Dust/Sand Whirls |
| MI Shallow         | PL Ice Pellets                    | HZ Haze            |                                    |
| PR Partial         | RA Rain                           | PY Spray           | SQ Squalls                         |
| SH Shower(s)       | SG Snow Grains                    | SA Sand            | SS Sandstorm                       |
| TS Thunderstorm    | SN Snow                           | VA Volcanic Ash    | GL Glaze                           |
| VC In the Vicinity | UP Unknown Precipitation          |                    |                                    |

Intensity (as indicated on pages 4 to 6):  
'+' = Heavy    ' ' = Moderate    '- ' = Light

# KNOXVILLE, TN APRIL 1999

Ceilometer (30-second) data are used to derive cloudiness at or below 12,000 feet. This cloudiness is the mean cloud cover detected during sunrise to sunset (SR-SS), or midnight to midnight (MN-MN).

Satellite data are used to derive cloudiness above 12,000 feet. Effective Cloud Amount is based on the cloud cover and the transparency of the clouds within the satellite field of view (approx. 31x31 miles).

Sky Condition is based on the sum (not to exceed 8) of the sunrise to sunset cloud cover below and above 12,000 feet. Both ceilometer and satellite data must be present to compute Sky Condition. Clear = 0-2 oktas, Partly Cloudy = 3-6 oktas, Cloudy = 7-8 oktas.

A Heating (Cooling) Degree Day is the difference between the average daily temperature and 65 degrees F. The HDD season begins July 1, the CDD season begins January 1.

Dew Point is the temperature to which the air must be cooled to achieve 100% relative humidity. Wet Bulb is the temperature the air would have if cooled at constant pressure by evaporation of moisture into it, to 100% relative humidity.

Snow Depth, Snowfall, and Sunshine data may come from nearby sites that the National Weather Service deems Climatologically representative of this site.

## ADDITIONAL NOTES:

ERRATA - Day 13 March, SOD precip total = .96  
SOM Total precip= 4.85 "

| DATE   | SUNSHINE      |                  | CLOUDINESS (OKTAS) |           |            |           | VISIBILITY (MILES) |         | RESERVED |
|--|---------------|------------------|--------------------|-----------|------------|-----------|--------------------|---------|----------|
|  | TOTAL MINUTES | PERCENT POSSIBLE | SR-SS              |           | MN-MN      |           | MINIMUM            | MAXIMUM |          |
|  |               |                  | CEILOMETER         | SATELLITE | CEILOMETER | SATELLITE |                    |         |          |
| 01   | 301           | 40               |                    |           |            |           | .75                | 10.00   |          |
| 02   | 372           | 49               |                    |           |            |           | < .25              | 10.00   |          |
| 03   | 400           |                  |                    |           |            |           | 2.00               | 10.00   |          |
| 04   | 485           |                  |                    |           |            |           | 8.00               | 10.00   |          |
| 05   | 526           |                  |                    |           |            |           | 9.00               | 10.00   |          |
| 06   | 343           | 48               |                    |           |            |           | 5.00               | 10.00   |          |
| 07   | 535           | 70               |                    |           |            |           | 1.00               | 10.00   |          |
| 08   | 150           | 19               |                    |           |            |           | 6.00               | 10.00   |          |
| 09   | 590           | 76               |                    |           |            |           | 9.00               | 10.00   |          |
| 10   | 452           |                  |                    |           |            |           | 7.00               | 10.00   |          |
| 11   | 559           |                  |                    |           |            |           | 7.00               | 10.00   |          |
| 12   | 589           |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 13   | 489           |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 14   | 188           | 24               |                    |           |            |           | 10.00              | 10.00   |          |
| 15   | 335           | 43               |                    |           |            |           | 2.00               | 10.00   |          |
| 16   | 648           | 82               |                    |           |            |           | 10.00              | 10.00   |          |
| 17   | 256           |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 18   | 494           |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 19   | 417           |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 20   | 610           | 77               |                    |           |            |           | 7.00               | 10.00   |          |
| 21   | 640           | 80               |                    |           |            |           | 9.00               | 10.00   |          |
| 22   | 545           | 68               |                    |           |            |           | 10.00              | 10.00   |          |
| 23   | 269           | 34               |                    |           |            |           | 7.00               | 10.00   |          |
| 24   | 558           |                  |                    |           |            |           | 6.00               | 10.00   |          |
| 25   | 462           |                  |                    |           |            |           | 6.00               | 10.00   |          |
| 26   | 228           |                  |                    |           |            |           | 5.00               | 10.00   |          |
| 27   | 167           |                  |                    |           |            |           | .75                | 10.00   |          |
| 28   | 260           | 32               |                    |           |            |           | .25                | 10.00   |          |
| 29   | 0             | 0                |                    |           |            |           | 1.50               | 10.00   |          |
| 30   | 590           | 72               |                    |           |            |           | 6.00               | 10.00   |          |
| MONTHLY AVGS   |               |                  |                    |           |            |           | 6.18               | 10.00   |          |
| <b>SUNSHINE (MINUTES)</b>  |               |                  |                    |           |            |           |                    |         |          |
| Total: 12458    Possible: 23591<br>Percent Possible: 53                  |               |                  |                    |           |            |           |                    |         |          |
| <b>NUMBER OF DAYS WITH:</b>  |               |                  |                    |           |            |           |                    |         |          |
| <b>SKY CONDITION</b>   |               |                  |                    |           |            |           |                    |         |          |
| CLR    PTLY CLDY    CLOUDY    MISSING<br>30                              |               |                  |                    |           |            |           |                    |         |          |
| <b>MINIMUM VISIBILITY (MILES)</b>  |               |                  |                    |           |            |           |                    |         |          |
| <=0.25    <=3.0    >=7.0<br>2                    8                    16 |               |                  |                    |           |            |           |                    |         |          |

# OBSERVATIONS AT 3-HOURLY INTERVALS

# KNOXVILLE, TN

APRIL 1999

TYS

WBAN # 13891

| HOUR (LST)    | SATELLITE |                     | WEATHER     | TEMPERATURE °F         |                   |                    | RELATIVE HUMIDITY (PCT) | WIND     |               | PRESSURE (INCHES, HG) |             | HOUR (LST) | SATELLITE             |              | WEATHER       | TEMPERATURE °F |           |                     | RELATIVE HUMIDITY (PCT) | WIND                   |                   | PRESSURE (INCHES, HG) |          |
|---------------|-----------|---------------------|-------------|------------------------|-------------------|--------------------|-------------------------|----------|---------------|-----------------------|-------------|------------|-----------------------|--------------|---------------|----------------|-----------|---------------------|-------------------------|------------------------|-------------------|-----------------------|----------|
|               | SKY COVER | CEILING 100'S OF FT |             | OBSERVATION TIME (LST) | EFF CLD AMT Oktas | VISIBILITY (MILES) |                         | DRY BULB | DEW POINT     | WET BULB              | SPEED (MPH) |            | DIRECTION TENS OF DEG | STATION      |               | SEA LEVEL      | SKY COVER | CEILING 100'S OF FT |                         | OBSERVATION TIME (LST) | EFF CLD AMT Oktas | VISIBILITY (MILES)    | DRY BULB |
| SUNRISE: 0623 |           |                     |             | APR 01                 | SUNSET: 1857      |                    |                         |          | SUNRISE: 0614 |                       |             |            | APR 07                | SUNSET: 1902 |               |                |           |                     |                         |                        |                   |                       |          |
| 01            | OVC       | 055                 | 2.50 -RA BR | 51                     | 51                | 51                 | 100                     | 6        | 32            | 28.94                 | 29.98       | 01         | OVC                   | 018          | 4.00 BR       | 60             | 59        | 59                  | 96                      | 6                      | 22                | 29.14                 | 30.17    |
| 04            | OVC       | 002                 | 1.75 BR     | 51                     | 51                | 51                 | 100                     | 3        | 10            | 28.90                 | 29.94       | 04         | FEW                   | NC           | 4.00 BR       | 58             | 58        | 58                  | 100                     | 5                      | 21                | 29.15                 | 30.17    |
| 07            | OVC       | 026                 | 1.50 BR     | 52                     | 52                | 52                 | 100                     | 0        | 00            | 28.94                 | 29.98       | 07         | SCT                   | NC           | 1.00 BR       | 58             | 58        | 58                  | 100                     | 6                      | 28                | 29.18                 | 30.22    |
| 10            | OVC       | 004                 | 1.25 -RA BR | 54                     | 54                | 54                 | 100                     | 3        | 32            | 28.97                 | 30.01       | 10         | FEW                   | NC           | 10.00         | 66             | 56        | 60                  | 70                      | 0                      | 00                | 29.18                 | 30.21    |
| 13            | OVC       | 055                 | 4.00 BR     | 61                     | 59                | 60                 | 93                      | 6        | 22            | 28.96                 | 30.00       | 13         | SCT                   | NC           | 10.00         | 73             | 56        | 63                  | 55                      | 7                      | 23                | 29.14                 | 30.17    |
| 16            | SCT       | NC                  | 10.00       | 67                     | 60                | 63                 | 79                      | 13       | 23            | 28.92                 | 29.95       | 16         | SCT                   | NC           | 10.00         | 77             | 52        | 62                  | 42                      | 7                      | 24                | 29.05                 | 30.08    |
| 19            | FEW       | NC                  | 10.00       | 66                     | 56                | 60                 | 70                      | 3        | 25            | 28.91                 | 29.95       | 19         | FEW                   | NC           | 10.00         | 70             | 49        | 58                  | 47                      | 6                      | 23                | 29.03                 | 30.06    |
| 22            | CLR       | NC                  | 10.00       | 59                     | 56                | 57                 | 90                      | 0        | 00            | 28.95                 | 29.99       | 22         | CLR                   | NC           | 10.00         | 67             | 48        | 57                  | 51                      | 0                      | 00                | 29.04                 | 30.06    |
| SUNRISE: 0621 |           |                     |             | APR 02                 | SUNSET: 1858      |                    |                         |          | SUNRISE: 0613 |                       |             |            | APR 08                | SUNSET: 1902 |               |                |           |                     |                         |                        |                   |                       |          |
| 01            | CLR       | NC                  | 5.00 BR     | 54                     | 54                | 54                 | 100                     | 0        | 00            | 28.96                 | 30.00       | 01         | FEW                   | NC           | 10.00         | 59             | 52        | 55                  | 78                      | 0                      | 00                | 28.98                 | 30.01    |
| 04            | VV        | 001                 | < .25 FG    | 49                     | 49                | 49                 | 100                     | 3        | 05            | 28.96                 | 29.99       | 04         | FEW                   | NC           | 10.00         | 62             | 53        | 57                  | 73                      | 7                      | 26                | 28.97                 | 29.99    |
| 07            | OVC       | 001                 | < .25 FG    | 48                     | 48                | 48                 | 100                     | 0        | 00            | 29.02                 | 30.06       | 07         | BKN                   | 045          | 10.00         | 62             | 55        | 58                  | 78                      | 6                      | 33                | 29.03                 | 30.06    |
| 10            | CLR       | NC                  | 10.00       | 62                     | 55                | 58                 | 78                      | 0        | 00            | 29.05                 | 30.09       | 10         | SCT                   | NC           | 10.00         | 70             | 61        | 64                  | 73                      | 9                      | 24                | 29.00                 | 30.03    |
| 13            | SCT       | NC                  | 10.00       | 71                     | 58                | 63                 | 63                      | 9        | 30            | 29.03                 | 30.06       | 13         | BKN                   | 050          | 7.00          | 65             | 63        | 64                  | 93                      | 5                      | 15                | 28.94                 | 29.97    |
| 16            | BKN       | 120                 | 10.00       | 70                     | 58                | 63                 | 66                      | 0        | 00            | 28.95                 | 29.98       | 16         | BKN                   | 080          | 10.00         | 69             | 63        | 65                  | 81                      | 12                     | 08                | 28.90                 | 29.92    |
| 19            | SCT       | NC                  | 10.00       | 68                     | 57                | 61                 | 68                      | 5        | 04            | 28.95                 | 29.98       | 19         | BKN                   | 065          | 6.00 -TSRA BR | 65             | 65        | 65                  | 100                     | 6                      | 10                | 28.84                 | 29.85    |
| 22            | FEW       | NC                  | 6.00 BR     | 60                     | 56                | 58                 | 86                      | 0        | 00            | 28.99                 | 30.02       | 22         | FEW                   | NC           | 7.00          | 64             | 63        | 63                  | 96                      | 7                      | 29                | 28.74                 | 29.76    |
| SUNRISE: 0620 |           |                     |             | APR 03                 | SUNSET: 1859      |                    |                         |          | SUNRISE: 0612 |                       |             |            | APR 09                | SUNSET: 1903 |               |                |           |                     |                         |                        |                   |                       |          |
| 01            | FEW       | NC                  | 5.00 BR     | 54                     | 54                | 54                 | 100                     | 5        | 05            | 28.95                 | 29.98       | 01         | FEW                   | NC           | 10.00         | 70             | 62        | 65                  | 76                      | 16                     | 21                | 28.71                 | 29.72    |
| 04            | BKN       | 120                 | 5.00 BR     | 54                     | 54                | 54                 | 100                     | 0        | 00            | 28.94                 | 29.98       | 04         | OVC                   | 060          | 10.00         | 71             | 61        | 65                  | 71                      | 23                     | 21                | 28.63                 | 29.64    |
| 07            | CLR       | NC                  | 4.00 BR     | 54                     | 53                | 53                 | 97                      | 3        | 01            | 28.97                 | 30.00       | 07         | BKN                   | 049          | 9.00          | 69             | 61        | 64                  | 76                      | 26                     | 22                | 28.63                 | 29.64    |
| 10            | SCT       | NC                  | 4.00 BR     | 59                     | 55                | 57                 | 87                      | 3        | 08            | 29.00                 | 30.03       | 10         | BKN                   | 049          | 9.00          | 73             | 63        | 67                  | 71                      | 28                     | 23                | 28.62                 | 29.63    |
| 13            | CLR       | NC                  | 10.00       | 72                     | 59                | 64                 | 64                      | 6        | 03            | 28.94                 | 29.97       | 13         | SCT                   | NC           | 10.00         | 79             | 60        | 67                  | 52                      | 29                     | 22                | 28.54                 | 29.54    |
| 16            | CLR       | NC                  | 10.00       | 82                     | 59                | 67                 | 46                      | 6        | 02            | 28.87                 | 29.90       | 16         | SCT                   | NC           | 10.00         | 81             | 52        | 64                  | 37                      | 28                     | 24                | 28.52                 | 29.51    |
| 19            | OVC       | 100                 | 10.00       | 76                     | 59                | 65                 | 56                      | 6        | 04            | 28.87                 | 29.90       | 19         | FEW                   | NC           | 10.00         | 79             | 48        | 61                  | 34                      | 17                     | 25                | 28.55                 | 29.56    |
| 22            | CLR       | NC                  | 10.00       | 73                     | 57                | 63                 | 57                      | 8        | 18            | 28.89                 | 29.91       | 22         | CLR                   | NC           | 10.00         | 71             | 45        | 57                  | 39                      | 13                     | 29                | 28.68                 | 29.68    |
| SUNRISE: 0619 |           |                     |             | APR 04                 | SUNSET: 1860      |                    |                         |          | SUNRISE: 0610 |                       |             |            | APR 10                | SUNSET: 1904 |               |                |           |                     |                         |                        |                   |                       |          |
| 01            | CLR       | NC                  | 8.00        | 68                     | 57                | 61                 | 68                      | 8        | 24            | 28.88                 | 29.90       | 01         | CLR                   | NC           | 10.00         | 62             | 49        | 55                  | 62                      | 8                      | 01                | 28.76                 | 29.77    |
| 04            | CLR       | NC                  | 8.00        | 71                     | 57                | 63                 | 61                      | 21       | 24            | 28.92                 | 29.93       | 04         | CLR                   | NC           | 10.00         | 58             | 48        | 53                  | 70                      | 0                      | 00                | 28.80                 | 29.81    |
| 07            | CLR       | NC                  | 10.00       | 68                     | 59                | 63                 | 73                      | 12       | 21            | 28.96                 | 29.98       | 07         | CLR                   | NC           | 10.00         | 51             | 49        | 50                  | 92                      | 6                      | 07                | 28.85                 | 29.86    |
| 10            | FEW       | NC                  | 9.00        | 74                     | 59                | 65                 | 60                      | 16       | 24            | 28.94                 | 29.96       | 10         | CLR                   | NC           | 10.00         | 68             | 51        | 58                  | 55                      | 0                      | 00                | 28.85                 | 29.86    |
| 13            | FEW       | NC                  | 10.00       | 78                     | 58                | 66                 | 50                      | 15       | 22            | 28.93                 | 29.95       | 13         | CLR                   | NC           | 9.00          | 76             | 50        | 61                  | 40                      | 5                      | 06                | 28.83                 | 29.84    |
| 16            | SCT       | NC                  | 10.00       | 79                     | 56                | 65                 | 45                      | 12       | 26            | 28.89                 | 29.91       | 16         | CLR                   | NC           | 10.00         | 81             | 54        | 65                  | 39                      | 6                      | VR                | 28.76                 | 29.78    |
| 19            | FEW       | NC                  | 10.00       | 76                     | 54                | 63                 | 47                      | 8        | 29            | 28.90                 | 29.92       | 19         | SCT                   | NC           | 7.00          | 76             | 60        | 66                  | 58                      | 7                      | 20                | 28.77                 | 29.79    |
| 22            | CLR       | NC                  | 10.00       | 70                     | 53                | 60                 | 55                      | 5        | 27            | 28.96                 | 29.98       | 22         | CLR                   | NC           | 9.00          | 75             | 61        | 66                  | 62                      | 5                      | 24                | 28.83                 | 29.84    |
| SUNRISE: 0617 |           |                     |             | APR 05                 | SUNSET: 1901      |                    |                         |          | SUNRISE: 0609 |                       |             |            | APR 11                | SUNSET: 1905 |               |                |           |                     |                         |                        |                   |                       |          |
| 01            | CLR       | NC                  | 10.00       | 64                     | 55                | 59                 | 73                      | 6        | 35            | 28.97                 | 29.99       | 01         | CLR                   | NC           | 10.00         | 70             | 61        | 64                  | 73                      | 5                      | 23                | 28.78                 | 29.79    |
| 04            | CLR       | NC                  | 10.00       | 58                     | 53                | 55                 | 84                      | 0        | 00            | 28.99                 | 30.02       | 04         | BKN                   | 090          | 7.00          | 74             | 61        | 66                  | 64                      | 17                     | 22                | 28.75                 | 29.75    |
| 07            | CLR       | NC                  | 10.00       | 55                     | 53                | 54                 | 93                      | 0        | 00            | 29.01                 | 30.04       | 07         | BKN                   | 100          | 10.00         | 73             | 63        | 67                  | 71                      | 21                     | 22                | 28.75                 | 29.75    |
| 10            | CLR       | NC                  | 10.00       | 69                     | 58                | 62                 | 68                      | 3        | VR            | 29.03                 | 30.06       | 10         | SCT                   | NC           | 10.00         | 76             | 64        | 68                  | 67                      | 16                     | 24                | 28.80                 | 29.80    |
| 13            | CLR       | NC                  | 10.00       | 75                     | 54                | 63                 | 48                      | 0        | 00            | 28.99                 | 30.01       | 13         | CLR                   | NC           | 10.00         | 79             | 38        | 57                  | 23                      | 21                     | 26                | 28.83                 | 29.84    |
| 16            | CLR       | NC                  | 10.00       | 80                     | 51                | 63                 | 37                      | 0        | 00            | 28.94                 | 29.96       | 16         | CLR                   | NC           | 10.00         | 79             | 29        | 54                  | 16                      | 26                     | 26                | 28.80                 | 29.81    |
| 19            | CLR       | NC                  | 10.00       | 74                     | 55                | 63                 | 52                      | 6        | 10            | 28.94                 | 29.97       | 19         | CLR                   | NC           | 10.00         | 74             | 31        | 53                  | 21                      | 14                     | 28                | 28.84                 | 29.85    |
| 22            | CLR       | NC                  | 10.00       | 68                     | 55                | 60                 | 63                      | 5        | 10            | 28.97                 | 29.99       | 22         | CLR                   | NC           | 10.00         | 65             | 39        | 52                  | 39                      | 10                     | 27                | 28.96                 | 29.98    |
| SUNRISE: 0616 |           |                     |             | APR 06                 | SUNSET: 1901      |                    |                         |          | SUNRISE: 0608 |                       |             |            | APR 12                | SUNSET: 1906 |               |                |           |                     |                         |                        |                   |                       |          |
| 01            | CLR       | NC                  | 10.00       | 72                     | 54                | 61                 | 53                      | 12       | 16            | 28.96                 | 29.97       | 01         | CLR                   | NC           | 10.00         | 60             | 40        | 50                  | 48                      | 12                     | 26                | 29.00                 | 30.02    |
| 04            | SCT       | NC                  | 10.00       | 66                     | 55                | 60                 | 68                      | 6        | 18            | 28.99                 | 30.01       | 04         | FEW                   | NC           | 10.00         | 54             | 41        | 48                  | 62                      | 10                     | 28                | 29.04                 | 30.06    |
| 07            | BKN       | 041                 | 7.00        | 63                     | 59                | 61                 | 87                      | 12       | 21            | 29.05                 | 30.07       | 07         | FEW                   | NC           | 10.00         | 49             | 39        | 44                  | 69                      | 0                      | 00                | 29.11                 | 30.14    |
| 10            | BKN       | 095                 | 10.00       | 66                     | 60                | 62                 | 81                      | 15       | 24            | 29.09                 | 30.11       | 10         | BKN                   | 039          | 10.00         | 53             | 37        | 46                  | 55                      | 12                     | 34                | 29.14                 | 30.18    |
| 13            | BKN       | 110                 | 10.00       | 67                     | 62                | 64                 | 84                      | 10       | 25            | 29.10                 | 30.13       | 13         | SCT                   | NC           | 10.00         | 57             | 39        | 48                  | 51                      | 8                      | 34                | 29.13                 | 30.16    |
| 16            | SCT       | NC                  | 10.00       | 74                     | 61                | 66                 | 64                      | 18       | 25            | 29.05                 | 30.07       | 16         | BKN                   | 049          | 10.00         | 59             | 40        | 50                  | 49                      | 10                     | 01                | 29.10                 | 30.14    |
| 19            | CLR       | NC                  | 10.00       | 68                     | 61                | 64                 | 78                      | 15       | 24            | 29.06                 | 30.09       | 19         | BKN                   | 046          | 10.00         | 53             | 38        | 46                  | 57                      | 12                     | 36                | 29.14                 | 30.18    |
| 22            | CLR       | NC                  | 7.00        | 62                     | 60                | 61                 | 93                      | 8        | 26            | 29.13                 | 30.16       | 22         | OVC                   | 039          | 10.00         | 51             | 39        | 45                  | 64                      | 8                      | 01                | 29.17                 | 30.22    |

# OBSERVATIONS AT 3-HOURLY INTERVALS

# KNOXVILLE, TN

APRIL 1999

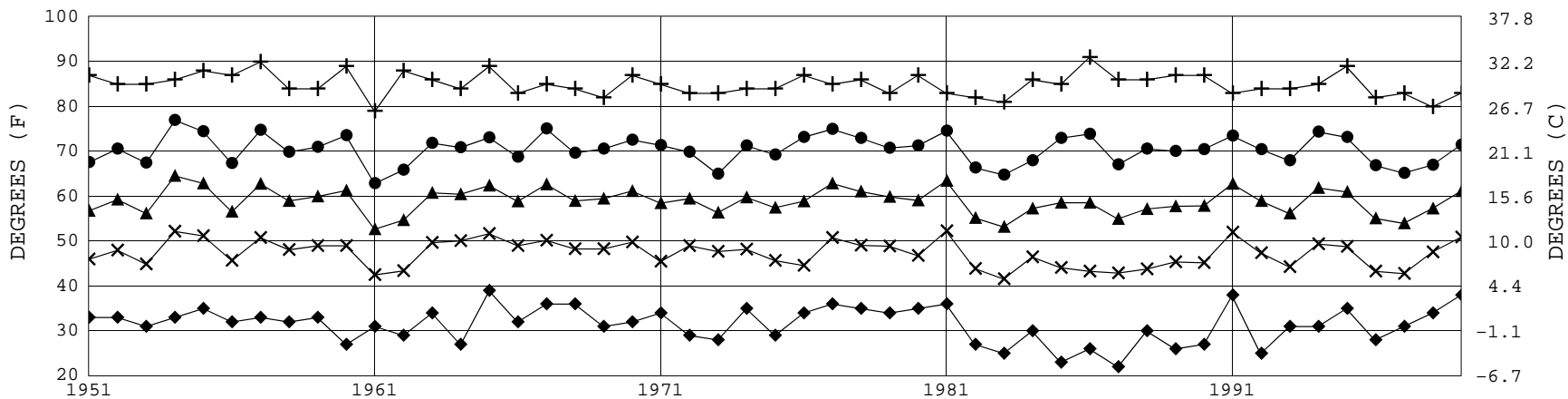
TYS

WBAN # 13891

| HOUR (LST)                               | SATELLITE |                     | WEATHER | TEMPERATURE °F         |                   |                    | RELATIVE HUMIDITY (PCT) | WIND     |           | PRESSURE (INCHES, HG) |             | HOUR (LST) | SATELLITE             |         | WEATHER | TEMPERATURE °F |           |                     | RELATIVE HUMIDITY (PCT) | WIND                   |                   | PRESSURE (INCHES, HG) |          |           |          |
|--|-----------|---------------------|---------|------------------------|-------------------|--------------------|-------------------------|----------|-----------|-----------------------|-------------|------------|-----------------------|---------|---------|----------------|-----------|---------------------|-------------------------|------------------------|-------------------|-----------------------|----------|-----------|----------|
|  | SKY COVER | CEILING 100'S OF FT |         | OBSERVATION TIME (LST) | EFF CLD AMT Oktas | VISIBILITY (MILES) |                         | DRY BULB | DEW POINT | WET BULB              | SPEED (MPH) |            | DIRECTION TENS OF DEG | STATION |         | SEA LEVEL      | SKY COVER | CEILING 100'S OF FT |                         | OBSERVATION TIME (LST) | EFF CLD AMT Oktas | VISIBILITY (MILES)    | DRY BULB | DEW POINT | WET BULB |
| <b>SUNRISE: 0606 APR 13 SUNSET: 1907</b> |           |                     |         |                        |                   |                    |                         |          |           |                       |             |            |                       |         |         |                |           |                     |                         |                        |                   |                       |          |           |          |
| 01                                       | SCT       | NC                  |         | 10.00                  | 49                | 39                 | 44                      | 69       | 12        | 02                    | 29.15       | 30.19      | 01                    | BKN     | 085     |                | 10.00     | 46                  | 35                      | 41                     | 66                | 6                     | 23       | 29.14     | 30.18    |
| 04                                       | CLR       | NC                  |         | 10.00                  | 41                | 36                 | 39                      | 82       | 6         | 05                    | 29.12       | 30.16      | 04                    | CLR     | NC      |                | 10.00     | 42                  | 34                      | 39                     | 73                | 5                     | 21       | 29.12     | 30.16    |
| 07                                       | CLR       | NC                  |         | 10.00                  | 43                | 39                 | 41                      | 86       | 5         | 01                    | 29.17       | 30.22      | 07                    | CLR     | NC      |                | 10.00     | 42                  | 37                      | 40                     | 82                | 0                     | 00       | 29.13     | 30.19    |
| 10                                       | FEW       | NC                  |         | 10.00                  | 53                | 38                 | 46                      | 57       | 8         | 08                    | 29.14       | 30.19      | 10                    | SCT     | NC      |                | 10.00     | 56                  | 40                      | 48                     | 55                | 12                    | 24       | 29.13     | 30.18    |
| 13                                       | CLR       | NC                  |         | 10.00                  | 60                | 37                 | 49                      | 42       | 12        | 10                    | 29.07       | 30.11      | 13                    | SCT     | NC      |                | 10.00     | 65                  | 40                      | 52                     | 40                | 15                    | 22       | 29.05     | 30.09    |
| 16                                       | CLR       | NC                  |         | 10.00                  | 64                | 35                 | 50                      | 34       | 5         | 06                    | 29.00       | 30.04      | 16                    | BKN     | 080     |                | 10.00     | 68                  | 39                      | 53                     | 35                | 18                    | 20       | 28.95     | 29.98    |
| 19                                       | CLR       | NC                  |         | 10.00                  | 61                | 35                 | 49                      | 38       | 3         | 09                    | 28.97       | 30.01      | 19                    | OVC     | 100     |                | 10.00     | 65                  | 40                      | 52                     | 40                | 10                    | 21       | 28.90     | 29.94    |
| 22                                       | CLR       | NC                  |         | 10.00                  | 55                | 37                 | 46                      | 51       | 7         | 01                    | 28.97       | 30.01      | 22                    | BKN     | 095     |                | 10.00     | 63                  | 42                      | 52                     | 47                | 13                    | 21       | 28.87     | 29.91    |
| <b>SUNRISE: 0605 APR 14 SUNSET: 1907</b> |           |                     |         |                        |                   |                    |                         |          |           |                       |             |            |                       |         |         |                |           |                     |                         |                        |                   |                       |          |           |          |
| 01                                       | CLR       | NC                  |         | 10.00                  | 49                | 37                 | 43                      | 64       | 3         | 07                    | 28.96       | 30.00      | 01                    | OVC     | 085     |                | 10.00     | 53                  | 51                      | 52                     | 93                | 6                     | 21       | 28.88     | 29.91    |
| 04                                       | CLR       | NC                  |         | 10.00                  | 45                | 42                 | 44                      | 90       | 3         | 06                    | 28.96       | 30.00      | 04                    | OVC     | 060     |                | 10.00     | 54                  | 52                      | 53                     | 93                | 9                     | 22       | 28.88     | 29.91    |
| 07                                       | BKN       | 095                 |         | 10.00                  | 50                | 37                 | 44                      | 61       | 8         | 02                    | 28.98       | 30.02      | 07                    | FEW     | NC      |                | 10.00     | 53                  | 51                      | 52                     | 93                | 6                     | 26       | 28.92     | 29.95    |
| 10                                       | FEW       | NC                  |         | 10.00                  | 55                | 38                 | 47                      | 53       | 8         | 04                    | 29.03       | 30.07      | 10                    | SCT     | NC      |                | 10.00     | 61                  | 54                      | 57                     | 78                | 3                     | 27       | 28.96     | 29.99    |
| 13                                       | BKN       | 080                 |         | 10.00                  | 56                | 43                 | 49                      | 62       | 8         | 04                    | 28.99       | 30.03      | 13                    | SCT     | NC      |                | 10.00     | 70                  | 49                      | 58                     | 47                | 6                     | 30       | 28.95     | 29.98    |
| 16                                       | BKN       | 110                 |         | 10.00                  | 62                | 40                 | 51                      | 44       | 6         | 36                    | 28.87       | 29.90      | 16                    | FEW     | NC      |                | 10.00     | 73                  | 40                      | 56                     | 30                | 9                     | 27       | 28.91     | 29.94    |
| 19                                       | OVC       | 090                 |         | 10.00                  | 58                | 42                 | 50                      | 56       | 7         | 06                    | 28.83       | 29.86      | 19                    | FEW     | NC      |                | 10.00     | 70                  | 38                      | 54                     | 31                | 3                     | 28       | 28.93     | 29.96    |
| 22                                       | OVC       | 100                 |         | 10.00                  | 56                | 41                 | 49                      | 57       | 6         | 06                    | 28.82       | 29.85      | 22                    | CLR     | NC      |                | 10.00     | 57                  | 43                      | 50                     | 60                | 3                     | 08       | 28.94     | 29.98    |
| <b>SUNRISE: 0604 APR 15 SUNSET: 1908</b> |           |                     |         |                        |                   |                    |                         |          |           |                       |             |            |                       |         |         |                |           |                     |                         |                        |                   |                       |          |           |          |
| 01                                       | SCT       | NC                  |         | 10.00                  | 55                | 39                 | 47                      | 55       | 9         | 03                    | 28.69       | 29.71      | 01                    | CLR     | NC      |                | 10.00     | 53                  | 44                      | 49                     | 72                | 0                     | 00       | 28.93     | 29.96    |
| 04                                       | OVC       | 070                 | RA      | 7.00                   | 49                | 47                 | 48                      | 93       | 6         | 06                    | 28.67       | 29.69      | 04                    | CLR     | NC      |                | 9.00      | 44                  | 43                      | 44                     | 96                | 6                     | 07       | 28.91     | 29.94    |
| 07                                       | OVC       | 050                 |         | 7.00                   | 50                | 49                 | 49                      | 96       | 9         | 03                    | 28.59       | 29.62      | 07                    | CLR     | NC      |                | 10.00     | 49                  | 47                      | 48                     | 93                | 0                     | 00       | 28.92     | 29.96    |
| 10                                       | SCT       | NC                  |         | 10.00                  | 57                | 54                 | 55                      | 90       | 6         | 36                    | 28.53       | 29.54      | 10                    | CLR     | NC      |                | 10.00     | 67                  | 52                      | 58                     | 59                | 9                     | 23       | 28.95     | 29.98    |
| 13                                       | BKN       | 070                 | BR      | 5.00                   | 60                | 58                 | 59                      | 93       | 5         | VR                    | 28.50       | 29.51      | 13                    | SCT     | NC      |                | 10.00     | 77                  | 54                      | 63                     | 45                | 22                    | 23       | 28.91     | 29.93    |
| 16                                       | BKN       | 047                 |         | 10.00                  | 65                | 56                 | 60                      | 73       | 20        | 26                    | 28.46       | 29.48      | 16                    | FEW     | NC      |                | 10.00     | 81                  | 54                      | 65                     | 39                | 20                    | 21       | 28.87     | 29.89    |
| 19                                       | BKN       | 085                 |         | 10.00                  | 63                | 50                 | 56                      | 63       | 20        | 24                    | 28.53       | 29.55      | 19                    | FEW     | NC      |                | 10.00     | 73                  | 48                      | 59                     | 41                | 10                    | 22       | 28.87     | 29.89    |
| 22                                       | BKN       | 075                 |         | 10.00                  | 57                | 48                 | 52                      | 72       | 30        | 26                    | 28.64       | 29.66      | 22                    | CLR     | NC      |                | 10.00     | 65                  | 49                      | 56                     | 56                | 9                     | 22       | 28.89     | 29.91    |
| <b>SUNRISE: 0602 APR 16 SUNSET: 1909</b> |           |                     |         |                        |                   |                    |                         |          |           |                       |             |            |                       |         |         |                |           |                     |                         |                        |                   |                       |          |           |          |
| 01                                       | OVC       | 050                 |         | 10.00                  | 52                | 41                 | 47                      | 66       | 15        | 24                    | 28.69       | 29.72      | 01                    | CLR     | NC      |                | 10.00     | 63                  | 48                      | 55                     | 58                | 8                     | 24       | 28.89     | 29.91    |
| 04                                       | BKN       | 050                 |         | 10.00                  | 49                | 35                 | 43                      | 59       | 15        | 26                    | 28.72       | 29.74      | 04                    | CLR     | NC      |                | 10.00     | 64                  | 50                      | 56                     | 61                | 5                     | 19       | 28.88     | 29.90    |
| 07                                       | CLR       | NC                  |         | 10.00                  | 44                | 34                 | 40                      | 68       | 17        | 21                    | 28.75       | 29.78      | 07                    | CLR     | NC      |                | 10.00     | 61                  | 52                      | 56                     | 72                | 3                     | VR       | 28.96     | 29.98    |
| 10                                       | CLR       | NC                  |         | 10.00                  | 52                | 31                 | 43                      | 45       | 22        | 24                    | 28.79       | 29.82      | 10                    | FEW     | NC      |                | 10.00     | 74                  | 46                      | 58                     | 37                | 18                    | 22       | 29.01     | 30.03    |
| 13                                       | FEW       | NC                  |         | 10.00                  | 58                | 25                 | 44                      | 28       | 29        | 24                    | 28.77       | 29.80      | 13                    | FEW     | NC      |                | 10.00     | 82                  | 44                      | 61                     | 26                | 16                    | 23       | 28.94     | 29.96    |
| 16                                       | CLR       | NC                  |         | 10.00                  | 61                | 25                 | 45                      | 25       | 26        | 23                    | 28.73       | 29.76      | 16                    | SCT     | NC      |                | 10.00     | 81                  | 48                      | 62                     | 32                | 25                    | 25       | 28.91     | 29.93    |
| 19                                       | CLR       | NC                  |         | 10.00                  | 56                | 23                 | 42                      | 28       | 14        | 27                    | 28.78       | 29.82      | 19                    | CLR     | NC      |                | 10.00     | 74                  | 50                      | 60                     | 43                | 12                    | 24       | 28.90     | 29.92    |
| 22                                       | BKN       | 085                 |         | 10.00                  | 50                | 30                 | 41                      | 46       | 10        | 27                    | 28.87       | 29.91      | 22                    | CLR     | NC      |                | 10.00     | 68                  | 49                      | 57                     | 51                | 9                     | 24       | 28.94     | 29.96    |
| <b>SUNRISE: 0601 APR 17 SUNSET: 1910</b> |           |                     |         |                        |                   |                    |                         |          |           |                       |             |            |                       |         |         |                |           |                     |                         |                        |                   |                       |          |           |          |
| 01                                       | CLR       | NC                  |         | 10.00                  | 42                | 30                 | 37                      | 62       | 7         | 23                    | 28.90       | 29.95      | 01                    | BKN     | 065     |                | 10.00     | 65                  | 51                      | 57                     | 61                | 7                     | 25       | 28.96     | 29.98    |
| 04                                       | FEW       | NC                  |         | 10.00                  | 40                | 31                 | 36                      | 70       | 7         | 22                    | 28.88       | 29.92      | 04                    | CLR     | NC      |                | 10.00     | 63                  | 52                      | 57                     | 68                | 8                     | 20       | 28.96     | 29.98    |
| 07                                       | FEW       | NC                  |         | 10.00                  | 41                | 33                 | 38                      | 74       | 6         | 23                    | 28.89       | 29.93      | 07                    | FEW     | NC      |                | 10.00     | 66                  | 56                      | 60                     | 70                | 12                    | 23       | 28.99     | 30.02    |
| 10                                       | BKN       | 065                 |         | 10.00                  | 51                | 32                 | 43                      | 48       | 18        | 26                    | 28.89       | 29.94      | 10                    | OVC     | 022     |                | 9.00      | 71                  | 64                      | 67                     | 79                | 16                    | 22       | 29.01     | 30.03    |
| 13                                       | BKN       | 065                 |         | 10.00                  | 50                | 31                 | 42                      | 48       | 17        | 27                    | 28.91       | 29.96      | 13                    | BKN     | 042     |                | 8.00      | 77                  | 66                      | 70                     | 69                | 17                    | 22       | 28.98     | 30.00    |
| 16                                       | BKN       | 075                 |         | 10.00                  | 50                | 31                 | 42                      | 48       | 16        | 25                    | 28.95       | 30.00      | 16                    | SCT     | NC      |                | 8.00      | 80                  | 70                      | 73                     | 71                | 13                    | 25       | 28.93     | 29.95    |
| 19                                       | OVC       | 060                 |         | 10.00                  | 48                | 31                 | 41                      | 52       | 9         | 27                    | 29.00       | 30.05      | 19                    | FEW     | NC      |                | 9.00      | 75                  | 67                      | 70                     | 76                | 13                    | 22       | 28.94     | 29.96    |
| 22                                       | OVC       | 060                 |         | 10.00                  | 47                | 32                 | 40                      | 56       | 8         | 25                    | 29.07       | 30.11      | 22                    | FEW     | NC      |                | 10.00     | 69                  | 63                      | 65                     | 81                | 0                     | 00       | 28.99     | 30.01    |
| <b>SUNRISE: 0560 APR 18 SUNSET: 1911</b> |           |                     |         |                        |                   |                    |                         |          |           |                       |             |            |                       |         |         |                |           |                     |                         |                        |                   |                       |          |           |          |
| 01                                       | OVC       | 070                 |         | 10.00                  | 44                | 35                 | 40                      | 71       | 5         | 24                    | 29.08       | 30.13      | 01                    | OVC     | 033     | BR             | 6.00      | 65                  | 63                      | 64                     | 93                | 0                     | 00       | 29.01     | 30.03    |
| 04                                       | OVC       | 075                 |         | 10.00                  | 45                | 34                 | 40                      | 66       | 0         | 00                    | 29.09       | 30.14      | 04                    | BKN     | 085     |                | 10.00     | 62                  | 56                      | 59                     | 81                | 9                     | 36       | 29.05     | 30.07    |
| 07                                       | BKN       | 075                 |         | 10.00                  | 41                | 36                 | 39                      | 82       | 5         | 22                    | 29.11       | 30.16      | 07                    | OVC     | 080     |                | 10.00     | 60                  | 53                      | 56                     | 78                | 7                     | 02       | 29.13     | 30.16    |
| 10                                       | BKN       | 042                 |         | 10.00                  | 50                | 37                 | 44                      | 61       | 3         | VR                    | 29.14       | 30.18      | 10                    | CLR     | NC      |                | 10.00     | 64                  | 53                      | 58                     | 68                | 6                     | VR       | 29.12     | 30.15    |
| 13                                       | BKN       | 055                 |         | 10.00                  | 53                | 37                 | 46                      | 55       | 12        | 21                    | 29.13       | 30.17      | 13                    | CLR     | NC      |                | 10.00     | 71                  | 54                      | 61                     | 55                | 6                     | 01       | 29.07     | 30.10    |
| 16                                       | OVC       | 050                 |         | 10.00                  | 56                | 37                 | 47                      | 49       | 12        | 21                    | 29.09       | 30.14      | 16                    | CLR     | NC      |                | 10.00     | 74                  | 54                      | 62                     | 50                | 6                     | 03       | 29.03     | 30.05    |
| 19                                       | SCT       | NC                  |         | 10.00                  | 50                | 35                 | 43                      | 57       | 12        | 23                    | 29.12       | 30.17      | 19                    | CLR     | NC      |                | 10.00     | 69                  | 51                      | 59                     | 53                | 9                     | 35       | 29.03     | 30.06    |
| 22                                       | FEW       | NC                  |         | 10.00                  | 44                | 35                 | 40                      | 71       | 9         | 22                    | 29.14       | 30.19      | 22                    | CLR     | NC      |                | 10.00     | 62                  | 48                      | 54                     | 60                | 9                     | 36       | 29.10     | 30.13    |



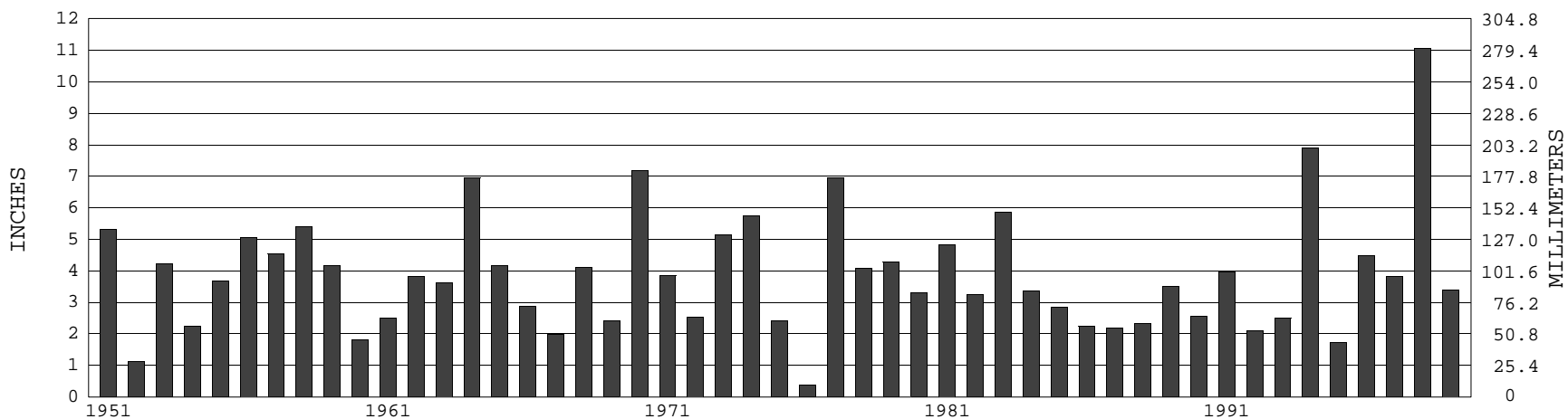
### KNOXVILLE, TN APRIL TEMPERATURES



+ Extreme Max.      ● Mean Max.      ▲ Mean      × Mean Min.      ◆ Extreme Min.

Long-Term (1951-1999) Mean: 58.9      1961-1990 Normal: 57.5

### KNOXVILLE, TN APRIL PRECIPITATION



Long-Term (1951-1999) Mean Monthly Total: 3.88

1961-1990 Normal: 3.72



**APRIL 1999  
KNOXVILLE, TN**

# LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

*I certify that this is an official publication of the National Oceanic and Atmospheric Administration (NOAA). It is compiled using information from weather observing sites operated by NOAA – National Weather Service / Department Of Transportation – Federal Aviation Administration and received at the National Climatic Data Center (NCDC), Asheville, North Carolina 28801.*

DIRECTOR

## NOTICE

Effective July 1, 1996, the National Weather Service & Federal Aviation Administration began using the METAR format for Hourly Observations.

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