



# JANUARY 2003

## LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

# MILWAUKEE, WI

GENERAL MITCHELL FIELD (MKE)  
 Lat: 42°56' N Long: 87°53' W Elev (Ground): 677 Feet  
 Time Zone: CENTRAL WBAN: 14839 ISSN #:0198-5752

| 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           | 0600 LST          |   | 1200 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                             | 32             | 25      | 29      | 7               | 21             | 27               | 36      | 0                 | SN                | 0   |                     | T        | T                      | 29.34                             | 30.11                   | 15.5            | 05                                     | 15.9               | 29      | 06                    | 24    | 06      | 01   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 02                             | 30             | 23      | 27      | 5               | 23             | 27               | 38      | 0                 | SN BR             | T   |                     | 0.3      | 0.02                   | 29.30                             | 30.08                   | 12.2            | 05                                     | 13.7               | 24      | 06                    | 21    | 06      | 02   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 03                             | 34             | 17      | 26      | 5               | 19             | 25               | 39      | 0                 | SN                | T   |                     | T        | T                      | 29.29                             | 30.06                   | 7.4             | 32                                     | 7.8                | 20      | 29                    | 14    | 33      | 03   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 04                             | 36             | 15      | 26      | 5               | 18             | 24               | 39      | 0                 | SN BR             | T   |                     | 0.5      | 0.05                   | 29.21                             | 29.98                   | 4.1             | 18                                     | 4.2                | 14      | 19                    | 13    | 19      | 04   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 05                             | 34             | 28      | 31      | 10              | 29             | 31               | 34      | 0                 | SN BR             | 1   |                     | 0.6      | 0.06                   | 29.21                             | 29.98                   | 4.0             | 33                                     | 4.7                | 23      | 34                    | 15    | 35      | 05   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 06                             | 32             | 26      | 29      | 8               | 18             | 26               | 36      | 0                 |                   | 1   |                     | 0.0      | 0.00                   | 29.56                             | 30.33                   | 8.7             | 33                                     | 10.6               | 29      | 36                    | 23    | 36      | 06   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 07                             | 47             | 28      | 38      | 17              | 26             | 33               | 27      | 0                 |                   | 0   |                     | 0.0      | 0.00                   | 29.06                             | 29.83                   | 15.8            | 26                                     | 16.2               | 31      | 24                    | 23    | 26      | 07   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 08                             | 54*            | 40      | 47*     | 26              | 29             | 39               | 18      | 0                 |                   | 0   |                     | 0.0      | 0.00                   | 28.71                             | 29.45                   | 13.1            | 28                                     | 13.8               | 30      | 30                    | 24    | 27      | 08   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 09                             | 46             | 23      | 35      | 14              | 23             | 31               | 30      | 0                 | SN BR             | 0   |                     | 0.2      | 0.02                   | 28.84                             | 29.59                   | 13.1            | 30                                     | 14.7               | 37*     | 31                    | 25    | 30      | 09   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 10                             | 24             | 13      | 19      | -2              | 5              | 16               | 46      | 0                 | SN                | T   |                     | T        | T                      | 29.17                             | 29.94                   | 14.9            | 30                                     | 15.1               | 35      | 30                    | 26    | 31      | 10   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 11                             | 17             | 8       | 13      | -7              | 1              | 11               | 52      | 0                 |                   | 0   |                     | 0.0      | 0.00                   | 29.42                             | 30.21                   | 14.4            | 30                                     | 14.9               | 26      | 30                    | 22    | 32      | 11   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 12                             | 33             | 10      | 22      | 2               | 7              | 18               | 43      | 0                 |                   | 0   |                     | 0.0      | 0.00                   | 29.43                             | 30.22                   | 12.2            | 24                                     | 13.3               | 31      | 23                    | 26    | 23      | 12   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 13                             | 32             | 12      | 22      | 2               | 1              | 14               | 43      | 0                 |                   | 0   |                     | 0.0      | 0.00                   | 29.43                             | 30.21                   | 12.3            | 32                                     | 12.9               | 32      | 33                    | 25    | 33      | 13   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 14                             | 19             | 10      | 15      | -5              | -3             | 11               | 50      | 0                 |                   | 0   |                     | 0.0      | 0.00                   | 29.48                             | 30.27                   | 11.0            | 30                                     | 11.4               | 25      | 31                    | 18    | 29      | 14   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 15                             | 23             | 6       | 15      | -5              | -3             | 11               | 50      | 0                 |                   | 0   |                     | 0.0      | 0.00                   | 29.55                             | 30.35                   | 9.7             | 30                                     | 9.8                | 22      | 31                    | 18    | 30      | 15   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 16                             | 27             | 13      | 20      | 0               | -2             | 15               | 45      | 0                 |                   | 0   |                     | 0.0      | 0.00                   | 29.41                             | 30.19                   | 9.4             | 31                                     | 10.5               | 31      | 02                    | 23    | 01      | 16   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 17                             | 21             | 8       | 15      | -5              | 0              | 11               | 50      | 0                 |                   | 0   |                     | 0.0      | 0.00                   | 29.46                             | 30.25                   | 8.4             | 30                                     | 11.7               | 26      | 36                    | 21    | 36      | 17   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 18                             | 23             | 8       | 16      | -4              | 4              | 12               | 49      | 0                 | SN HZ             | T   |                     | 0.3      | 0.01                   | 29.11                             | 29.89                   | 12.2            | 27                                     | 14.3               | 29      | 23                    | 22    | 23      | 18   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 19                             | 26             | 4       | 15      | -5              | 5              | 12               | 50      | 0                 | SN HZ             | T   |                     | T        | T                      | 29.05                             | 29.83                   | 11.2            | 27                                     | 13.6               | 35      | 23                    | 26*   | 25      | 19   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 20                             | 16             | 8       | 12      | -8              | -5             | 9                | 53      | 0                 |                   | T   |                     | 0.0      | 0.00                   | 29.29                             | 30.07                   | 10.1            | 31                                     | 10.5               | 24      | 34                    | 20    | 33      | 20   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 21                             | 16             | 3       | 10      | -10             | -8             | 6                | 55      | 0                 |                   | 0   |                     | 0.0      | 0.00                   | 29.48                             | 30.28                   | 9.2             | 32                                     | 9.9                | 21      | 33                    | 17    | 33      | 21   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 22                             | 13             | 1       | 7       | -13             | -8             | 4                | 58      | 0                 |                   | 0   |                     | 0.0      | 0.00                   | 29.60                             | 30.41                   | 12.3            | 33                                     | 12.5               | 26      | 33                    | 22    | 33      | 22   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 23                             | 11             | -5*     | 3*      | -18             | -12            | 1                | 62      | 0                 |                   | 0   |                     | 0.0      | 0.00                   | 29.71                             | 30.53                   | 14.8            | 31                                     | 14.9               | 28      | 30                    | 22    | 31      | 23   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 24                             | 16             | 2       | 9       | -12             | -4             | 8                | 56      | 0                 | SN                | 0   |                     | T        | T                      | 29.64                             | 30.44                   | 10.1            | 26                                     | 10.7               | 22      | 25                    | 18    | 25      | 24   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 25                             | 30             | 13      | 22      | 1               | 9              | 18               | 43      | 0                 | SN HZ             | 0   |                     | 0.1      | 0.01                   | 29.37                             | 30.16                   | 10.2            | 27                                     | 13.4               | 29      | 33                    | 23    | 33      | 25   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 26                             | 13             | 2       | 8       | -13             | -9             | 5                | 57      | 0                 |                   | T   |                     | 0.0      | 0.00                   | 29.62                             | 30.42                   | 12.5            | 33                                     | 12.7               | 30      | 32                    | 25    | 32      | 26   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 27                             | 20             | -2      | 9       | -12             | -3             | 7                | 56      | 0                 | SN                | 0   |                     | T        | T                      | 29.53                             | 30.33                   | 9.4             | 21                                     | 10.6               | 26      | 20                    | 22    | 21      | 27   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 28                             | 29             | 19      | 24      | 3               | 17             | 23               | 41      | 0                 | SN FG+ FZFG BR HZ | 1   |                     | 0.7      | 0.08                   | 29.28                             | 30.06                   | 3.7             | 29                                     | 6.3                | 26      | 25                    | 22    | 24      | 28   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 29                             | 25             | 10      | 18      | -3              | 11             | 17               | 47      | 0                 | SN                | 1   |                     | T        | T                      | 29.56                             | 30.35                   | 4.8             | 36                                     | 7.1                | 21      | 36                    | 16    | 01      | 29   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 30                             | 31             | 13      | 22      | 1               | 18             | 23               | 43      | 0                 | BR HZ             | 1   |                     | 0.0      | 0.00                   | 29.40                             | 30.18                   | 9.7             | 21                                     | 10.2               | 25      | 21                    | 21    | 21      | 30   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 31                             | 36             | 27      | 32      | 11              | 29             | 32               | 33      | 0                 | RA SN BR HZ       | 1   |                     | 1.0      | 0.10                   | 29.12                             | 29.89                   | 2.7             | 25                                     | 8.7                | 17      | 33                    | 15    | 35      | 31   |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| 27.3                           |                |         |         |                 |                |                  |         |                   |                   |   | 13.2                | 20.3     | ■ ■                    | 8.3                               | 17.7                    | 44.5            | 0.0                                    | < MONTHLY AVERAGES |         | TOTALS->              |       | 3.7     | 0.35 | 29.34 | 30.12                         | 7.4  | 30 | 11.5 | <- MONTHLY AVERAGES |  |  |  |  |  |  |  |
| -.7                            |                |         |         |                 |                |                  |         |                   |                   |   | -.2                 | -.4      | ■ ■                    | <-----DEPARTURE FROM NORMAL-----> |                         |                 |  |                    |         |                       |       |         |      |       | -1.50                         | SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3 |    |      |                     |  |  |  |  |  |  |  |
| <b>DEGREE DAYS</b>             |                |         |         |                 |                |                  |         |                   |                   | GREATEST 24-HR PRECIPITATION: 0.10 DATE :31 |                     |          |                        |                                   | SEA LEVEL PRESSURE      |                 |  |                    |         | DATE                  |       | TIME    |      |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| MONTHLY TOTAL DEPARTURE        |                |         |         |                 |                |                  |         |                   |                   | GREATEST 24-HR SNOWFALL: 1.0 DATE :31       |                     |          |                        |                                   | MAXIMUM                 |                 |  |                    |         | : 30.58               |       | 23 1952 |      |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| SEASON TO DATE TOTAL DEPARTURE |                |         |         |                 |                |                  |         |                   |                   | GREATEST SNOW DEPTH: 1 DATE :31+            |                     |          |                        |                                   | MINIMUM                 |                 |  |                    |         | : 29.27               |       | 08 1552 |      |       |                               |  |    |      |                     |  |  |  |  |  |  |  |
| HEATING: 1379 -5 3848 -152     |                |         |         |                 |                |                  |         |                   |                   | NUMBER OF DAYS WITH =>                      |                     |          |                        |                                   | MAXIMUM TEMP ≥ 90: 0    |                 |  |                    |         | MINIMUM TEMP ≤ 32: 30 |       |         |      |       | PRECIPITATION ≥ 0.01 INCH : 8 |  |    |      |                     |  |  |  |  |  |  |  |
| COOLING: 0 0 0 0               |                |         |         |                 |                |                  |         |                   |                   |   |                     |          |                        |                                   | MAXIMUM TEMP ≤ 32 :23   |                 |  |                    |         | MINIMUM TEMP ≤ 0 : 2  |       |         |      |       | PRECIPITATION ≥ 0.10 INCH : 1 |  |    |      |                     |  |  |  |  |  |  |  |
|                                |                |         |         |                 |                |                  |         |                   |                   |   |                     |          |                        |                                   | THUNDERSTORMS : 0       |                 |  |                    |         | HEAVY FOG : 1         |       |         |      |       | SNOWFALL ≥ 1.0 INCH : 1       |  |    |      |                     |  |  |  |  |  |  |  |

JANUARY 2003 MILWAUKEE, WI

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

## MILWAUKEE, WI

JANUARY 2003    MKE    WBAN # 14839

| DATE | FOR HOUR (LST) ENDING AT |   |   |   |   |   |      |   |      |      |    |    | DATE | FOR HOUR (LST) ENDING AT |      |      |      |      |    |      |      |      |      |      |      | DATE | Sum if Different (See Note) | 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   |                          |   |   |   |   |   |      |   |      |      |    |    | 01   |                          |      |      |      |      |    |      |      |      |      |      | 01   |      | T                           |              |
| 02   |                          |   |   |   |   |   |      |   |      |      |    |    | 02   | T                        | T    | T    | T    | T    |    |      |      |      |      |      | 02   | T    | 0.02                        |              |
| 03   | T                        |   |   |   | T | T | T    | T | T    | T    | T  | T  | 03   |                          |      |      |      |      |    |      |      |      |      | T    | 03   | T    | T                           |              |
| 04   |                          |   |   |   |   |   |      |   |      |      |    |    | 04   |                          |      |      |      |      |    |      | T    | T    | 0.01 | 0.01 | 04   | 0.02 | 0.05                        |              |
| 05   | T                        |   |   |   |   |   |      |   |      |      |    |    | 05   | T                        | T    | T    | T    |      | T  | 0.01 | T    | 0.01 | T    | 05   | 0.03 | 0.06 |                             |              |
| 06   |                          |   |   |   |   |   |      |   |      |      |    |    | 06   |                          |      |      |      |      |    |      |      |      |      |      | 06   |      | 0.00                        |              |
| 07   |                          |   |   |   |   |   |      |   |      |      |    |    | 07   |                          |      |      |      |      |    |      |      |      |      |      | 07   |      | 0.00                        |              |
| 08   |                          |   |   |   |   |   |      |   |      |      |    |    | 08   |                          |      |      |      |      |    |      |      |      |      |      | 08   |      | 0.00                        |              |
| 09   |                          |   |   |   |   |   |      |   |      |      |    |    | 09   | T                        | T    | T    | T    | 0.01 | T  | T    |      |      |      | 09   | 0.01 | 0.02 |                             |              |
| 10   |                          |   |   |   |   |   |      |   |      |      |    |    | 10   |                          | T    | T    | T    | T    |    |      |      |      |      | 10   |      | T    |                             |              |
| 11   |                          |   |   |   |   |   |      |   |      |      |    |    | 11   |                          |      |      |      |      |    |      |      |      |      |      | 11   |      | 0.00                        |              |
| 12   |                          |   |   |   |   |   |      |   |      |      |    |    | 12   |                          |      |      |      |      |    |      |      |      |      |      | 12   |      | 0.00                        |              |
| 13   |                          |   |   |   |   |   |      |   |      |      |    |    | 13   |                          |      |      |      |      |    |      |      |      |      |      | 13   |      | 0.00                        |              |
| 14   |                          |   |   |   |   |   |      |   |      |      |    |    | 14   |                          |      |      |      |      |    |      |      |      |      |      | 14   |      | 0.00                        |              |
| 15   |                          |   |   |   |   |   |      |   |      |      |    |    | 15   |                          |      |      |      |      |    |      |      |      |      |      | 15   |      | 0.00                        |              |
| 16   |                          |   |   |   |   |   |      |   |      |      |    |    | 16   |                          |      |      |      |      |    |      |      |      |      |      | 16   |      | 0.00                        |              |
| 17   |                          |   |   |   |   |   |      |   |      |      |    |    | 17   |                          |      |      |      |      |    |      |      |      |      |      | 17   |      | 0.00                        |              |
| 18   |                          |   |   |   |   |   |      |   |      |      |    |    | 18   |                          |      |      |      |      |    |      |      |      |      |      | 18   | T    | 0.01                        |              |
| 19   |                          |   |   |   |   |   |      |   |      |      |    |    | 19   |                          | T    | T    | T    |      |    |      |      |      |      | 19   |      | T    |                             |              |
| 20   |                          |   |   |   |   |   |      |   |      |      |    |    | 20   |                          |      |      |      |      |    |      |      |      |      |      | 20   |      | 0.00                        |              |
| 21   |                          |   |   |   |   |   |      |   |      |      |    |    | 21   |                          |      |      |      |      |    |      |      |      |      |      | 21   |      | 0.00                        |              |
| 22   |                          |   |   |   |   |   |      |   |      |      |    |    | 22   |                          |      |      |      |      |    |      |      |      |      |      | 22   |      | 0.00                        |              |
| 23   |                          |   |   |   |   |   |      |   |      |      |    |    | 23   |                          |      |      |      |      |    |      |      |      |      |      | 23   |      | 0.00                        |              |
| 24   |                          |   |   |   |   |   |      |   |      |      |    |    | 24   |                          |      |      |      |      |    |      |      |      |      |      | 24   |      | T                           |              |
| 25   |                          |   |   | T | T | T |      |   |      |      |    |    | 25   |                          |      |      |      |      |    |      | T    | T    | T    | T    | 25   | T    | 0.01                        |              |
| 26   |                          |   |   |   |   |   |      |   |      |      |    |    | 26   |                          |      |      |      |      |    |      |      |      |      |      | 26   |      | 0.00                        |              |
| 27   |                          |   |   |   |   |   |      |   |      |      |    |    | 27   | T                        | T    | T    | 0.04 | T    | T  |      |      |      |      | 27   |      | T    |                             |              |
| 28   |                          |   |   |   |   |   |      |   |      |      |    |    | 28   | T                        | 0.01 | 0.02 | 0.04 | T    | T  |      | 0.01 |      | T    | 28   |      | 0.08 |                             |              |
| 29   |                          |   |   |   |   |   |      |   |      |      |    |    | 29   |                          |      |      |      |      |    |      |      |      |      |      | 29   |      | T                           |              |
| 30   |                          |   |   |   |   |   |      |   |      |      |    |    | 30   |                          |      |      |      |      |    |      |      |      |      |      | 30   |      | 0.00                        |              |
| 31   |                          |   |   |   |   |   | 0.01 | T | 0.01 | 0.01 | T  | T  | 31   | T                        |      | T    |      |      |    |      |      |      |      | 31   | 0.03 | 0.10 |                             |              |

### MAXIMUM SHORT DURATION PRECIPITATION (See Note)

| Time Period (Minutes)  | 5    | 10   | 15   | 20   | 30   | 45   | 60   | 80   | 100  | 120  | 150  | 180  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Precipitation (Inches) | .01  | .01  | .02  | .02  | .03  | .04  | .05  | .06  | .06  | .06  | .07  | .07  |
| Ending Date            | 31   | 31   | 28   | 28   | 28   | 28   | 28   | 28   | 28   | 28   | 28   | 28   |
| Ending Time (Hour/Min) | 0856 | 0856 | 1523 | 1538 | 1538 | 1538 | 1538 | 1538 | 1538 | 1538 | 1538 | 1538 |

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 1971–2000

### 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            | SQ Squalls                         |
| PR Partial         | RA Rain                           | PY Spray           | SS Sandstorm                       |
| SH Shower(s)       | SG Snow Grains                    | SA Sand            | GL Glaze                           |
| TS Thunderstorm    | SN Snow                           | VA Volcanic Ash    |                                    |
| VC In the Vicinity | UP Unknown Precipitation          |                    |                                    |

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

## MILWAUKEE, WI JANUARY 2003

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 to saturation at constant pressure by evaporation of water into it.

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

### ADDITIONAL NOTES:

| DATE                              | SUNSHINE      |                  | CLOUDINESS (OKTAS) |                   |            |           | VISIBILITY (MILES) |         | RESERVED |
|-----------------------------------|---------------|------------------|--------------------|-------------------|------------|-----------|--------------------|---------|----------|
|                                   | TOTAL MINUTES | PERCENT POSSIBLE | SR–SS              |                   | MN–MN      |           | MINIMUM            | MAXIMUM |          |
|                                   |               |                  | CEILOMETER         | SATELLITE         | CEILOMETER | SATELLITE |                    |         |          |
| 01                                |               |                  |                    |                   |            |           | 9.00               | 10.00   |          |
| 02                                |               |                  |                    |                   |            |           | 1.50               | 10.00   |          |
| 03                                |               |                  |                    |                   |            |           | 10.00              | 10.00   |          |
| 04                                |               |                  |                    |                   |            |           | 1.25               | 10.00   |          |
| 05                                |               |                  |                    |                   |            |           | 1.00               | 7.00    |          |
| 06                                |               |                  |                    |                   |            |           | 7.00               | 10.00   |          |
| 07                                |               |                  |                    |                   |            |           | 7.00               | 10.00   |          |
| 08                                |               |                  |                    |                   |            |           | 10.00              | 10.00   |          |
| 09                                |               |                  |                    |                   |            |           | .50                | 10.00   |          |
| 10                                |               |                  |                    |                   |            |           | 9.00               | 10.00   |          |
| 11                                |               |                  |                    |                   |            |           | 10.00              | 10.00   |          |
| 12                                |               |                  |                    |                   |            |           | 10.00              | 10.00   |          |
| 13                                |               |                  |                    |                   |            |           | 10.00              | 10.00   |          |
| 14                                |               |                  |                    |                   |            |           | 10.00              | 10.00   |          |
| 15                                |               |                  |                    |                   |            |           | 10.00              | 10.00   |          |
| 16                                |               |                  |                    |                   |            |           | 10.00              | 10.00   |          |
| 17                                |               |                  |                    |                   |            |           | 10.00              | 10.00   |          |
| 18                                |               |                  |                    |                   |            |           | .75                | 10.00   |          |
| 19                                |               |                  |                    |                   |            |           | 2.50               | 10.00   |          |
| 20                                |               |                  |                    |                   |            |           | 10.00              | 10.00   |          |
| 21                                |               |                  |                    |                   |            |           | 10.00              | 10.00   |          |
| 22                                |               |                  |                    |                   |            |           | 10.00              | 10.00   |          |
| 23                                |               |                  |                    |                   |            |           | 10.00              | 10.00   |          |
| 24                                |               |                  |                    |                   |            |           | 10.00              | 10.00   |          |
| 25                                |               |                  |                    |                   |            |           | .75                | 10.00   |          |
| 26                                |               |                  |                    |                   |            |           | 10.00              | 10.00   |          |
| 27                                |               |                  |                    |                   |            |           | 2.50               | 10.00   |          |
| 28                                |               |                  |                    |                   |            |           | .50                | 10.00   |          |
| 29                                |               |                  |                    |                   |            |           | 5.00               | 10.00   |          |
| 30                                |               |                  |                    |                   |            |           | 4.00               | 9.00    |          |
| 31                                |               |                  |                    |                   |            |           | .75                | 6.00    |          |
| MONTHLY AVGS                      |               |                  |                    |                   |            |           | 7.02               | 9.74    |          |
| <b>SUNSHINE (MINUTES)</b>         |               |                  |                    |                   |            |           |                    |         |          |
| Total:                            |               | Possible:        |                    | Percent Possible: |            |           |                    |         |          |
| <b>NUMBER OF DAYS WITH:</b>       |               |                  |                    |                   |            |           |                    |         |          |
| <b>SKY CONDITION</b>              |               |                  |                    |                   |            |           |                    |         |          |
| CLR                               |               | PTLY CLDY        |                    | CLOUDY            |            | MISSING   |                    |         |          |
| 31                                |               |                  |                    |                   |            |           |                    |         |          |
| <b>MINIMUM VISIBILITY (MILES)</b> |               |                  |                    |                   |            |           |                    |         |          |
| <=0.25                            |               | <=3.0            |                    | >=7.0             |            |           |                    |         |          |
| 0                                 |               | 8                |                    | 20                |            |           |                    |         |          |

# OBSERVATIONS AT 3-HOURLY INTERVALS

# MILWAUKEE, WI

JANUARY 2003

MKE

WBAN # 14839

| HOUR (LST)    | SATELLITE |                     | OBSERVATION TIME (LST) | EFF CLD AMT<br>Okta | VISIBILITY<br>(MILES) | WEATHER | TEMPERATURE °F |           |          |                         | WIND        |                       | PRESSURE (INCHES, HG) |           | HOUR (LST)    | SATELLITE |                     | OBSERVATION TIME (LST) | EFF CLD AMT<br>Okta | VISIBILITY (MILES) | WEATHER | TEMPERATURE °F |           |          |                         | WIND        |                       | PRESSURE (INCHES, HG) |           |
|---------------|-----------|---------------------|------------------------|---------------------|-----------------------|---------|----------------|-----------|----------|-------------------------|-------------|-----------------------|-----------------------|-----------|---------------|-----------|---------------------|------------------------|---------------------|--------------------|---------|----------------|-----------|----------|-------------------------|-------------|-----------------------|-----------------------|-----------|
|               | SKY COVER | CEILING 100'S OF FT |                        |                     |                       |         | DRY BULB       | DEW POINT | WET BULB | RELATIVE HUMIDITY (PCT) | SPEED (MPH) | DIRECTION TENS OF DEG | STATION               | SEA LEVEL |               | SKY COVER | CEILING 100'S OF FT |                        |                     |                    |         | DRY BULB       | DEW POINT | WET BULB | RELATIVE HUMIDITY (PCT) | SPEED (MPH) | DIRECTION TENS OF DEG | STATION               | SEA LEVEL |
| SUNRISE: 0723 |           |                     |                        |                     |                       |         | JAN 01         |           |          | SUNSET: 1628            |             |                       |                       |           | SUNRISE: 0722 |           |                     |                        |                     |                    |         | JAN 07         |           |          | SUNSET: 1633            |             |                       |                       |           |
| 03            | CLR       | NC                  |                        |                     | 10.00                 |         | 29             | 20        | 26       | 69                      | 17          | 03                    | 29.32                 | 30.09     | 03            | BKN       | 110                 |                        |                     | 10.00              |         | 28             | 21        | 26       | 75                      | 20          | 26                    | 29.36                 | 30.14     |
| 06            | BKN       | 024                 |                        |                     | 10.00                 |         | 30             | 22        | 27       | 72                      | 16          | 05                    | 29.31                 | 30.09     | 06            | OVC       | 075                 |                        |                     | 10.00              |         | 30             | 22        | 27       | 72                      | 17          | 25                    | 29.24                 | 30.01     |
| 09            | OVC       | 022                 |                        |                     | 9.00                  | -SN     | 30             | 23        | 28       | 75                      | 17          | 05                    | 29.35                 | 30.13     | 09            | BKN       | 250                 |                        |                     | 7.00               |         | 30             | 24        | 28       | 79                      | 18          | 26                    | 29.15                 | 29.91     |
| 12            | OVC       | 022                 |                        |                     | 10.00                 |         | 29             | 20        | 26       | 69                      | 16          | 05                    | 29.32                 | 30.10     | 12            | BKN       | 250                 |                        |                     | 9.00               |         | 36             | 27        | 33       | 70                      | 13          | 27                    | 29.05                 | 29.82     |
| 15            | BKN       | 022                 |                        |                     | 10.00                 |         | 30             | 21        | 27       | 69                      | 16          | 04                    | 29.32                 | 30.10     | 15            | BKN       | 240                 |                        |                     | 10.00              |         | 41             | 28        | 36       | 60                      | 17          | 27                    | 28.91                 | 29.67     |
| 18            | OVC       | 024                 |                        |                     | 10.00                 |         | 30             | 22        | 27       | 72                      | 16          | 04                    | 29.34                 | 30.12     | 18            | SCT       | NC                  |                        |                     | 10.00              |         | 42             | 30        | 37       | 62                      | 15          | 28                    | 28.89                 | 29.65     |
| 21            | OVC       | 026                 |                        |                     | 10.00                 |         | 31             | 21        | 28       | 67                      | 15          | 05                    | 29.34                 | 30.12     | 21            | FEW       | NC                  |                        |                     | 10.00              |         | 46             | 30        | 39       | 54                      | 15          | 29                    | 28.88                 | 29.64     |
| 24            | OVC       | 021                 |                        |                     | 10.00                 |         | 29             | 20        | 26       | 69                      | 17          | 08                    | 29.34                 | 30.12     | 24            | FEW       | NC                  |                        |                     | 10.00              |         | 44             | 30        | 38       | 58                      | 12          | 27                    | 28.85                 | 29.61     |
| SUNRISE: 0723 |           |                     |                        |                     |                       |         | JAN 02         |           |          | SUNSET: 1629            |             |                       |                       |           | SUNRISE: 0722 |           |                     |                        |                     |                    |         | JAN 08         |           |          | SUNSET: 1634            |             |                       |                       |           |
| 03            | OVC       | 021                 |                        |                     | 10.00                 |         | 28             | 20        | 25       | 72                      | 16          | 06                    | 29.34                 | 30.12     | 03            | FEW       | NC                  |                        |                     | 10.00              |         | 44             | 31        | 39       | 60                      | 13          | 29                    | 28.90                 | 29.65     |
| 06            | OVC       | 026                 |                        |                     | 7.00                  | -SN     | 28             | 21        | 26       | 75                      | 15          | 05                    | 29.33                 | 30.11     | 06            | FEW       | NC                  |                        |                     | 10.00              |         | 42             | 30        | 37       | 62                      | 10          | 29                    | 28.87                 | 29.63     |
| 09            | OVC       | 021                 |                        |                     | 8.00                  |         | 28             | 24        | 27       | 85                      | 20          | 06                    | 29.34                 | 30.11     | 09            | OVC       | 250                 |                        |                     | 10.00              |         | 40             | 30        | 36       | 68                      | 9           | 25                    | 28.81                 | 29.55     |
| 12            | OVC       | 028                 |                        |                     | 8.00                  | -SN     | 29             | 23        | 27       | 78                      | 17          | 05                    | 29.30                 | 30.07     | 12            | BKN       | 250                 |                        |                     | 10.00              |         | 47             | 31        | 40       | 54                      | 13          | 23                    | 28.67                 | 29.41     |
| 15            | OVC       | 026                 |                        |                     | 3.00                  |         | 30             | 23        | 28       | 75                      | 15          | 02                    | 29.29                 | 30.06     | 15            | SCT       | NC                  |                        |                     | 10.00              |         | 54             | 30        | 43       | 40                      | 16          | 26                    | 28.54                 | 29.27     |
| 18            | OVC       | 034                 |                        |                     | 10.00                 |         | 31             | 23        | 28       | 72                      | 15          | 03                    | 29.29                 | 30.05     | 18            | SCT       | NC                  |                        |                     | 10.00              |         | 51             | 27        | 41       | 39                      | 18          | 28                    | 28.55                 | 29.28     |
| 21            | OVC       | 027                 |                        |                     | 10.00                 |         | 31             | 25        | 29       | 79                      | 8           | 36                    | 29.27                 | 30.04     | 21            | CLR       | NC                  |                        |                     | 10.00              |         | 48             | 24        | 38       | 39                      | 15          | 27                    | 28.60                 | 29.34     |
| 24            | OVC       | 026                 |                        |                     | 4.00                  | -SN BR  | 28             | 24        | 27       | 85                      | 9           | 33                    | 29.27                 | 30.03     | 24            | CLR       | NC                  |                        |                     | 10.00              |         | 46             | 21        | 36       | 37                      | 18          | 30                    | 28.65                 | 29.39     |
| SUNRISE: 0723 |           |                     |                        |                     |                       |         | JAN 03         |           |          | SUNSET: 1630            |             |                       |                       |           | SUNRISE: 0722 |           |                     |                        |                     |                    |         | JAN 09         |           |          | SUNSET: 1636            |             |                       |                       |           |
| 03            | OVC       | 028                 |                        |                     | 10.00                 |         | 27             | 20        | 25       | 75                      | 10          | 33                    | 29.27                 | 30.04     | 03            | CLR       | NC                  |                        |                     | 10.00              |         | 42             | 25        | 35       | 51                      | 12          | 30                    | 28.72                 | 29.46     |
| 06            | OVC       | 029                 |                        |                     | 10.00                 |         | 26             | 19        | 24       | 75                      | 10          | 32                    | 29.29                 | 30.06     | 06            | CLR       | NC                  |                        |                     | 10.00              |         | 38             | 26        | 33       | 62                      | 8           | 29                    | 28.75                 | 29.49     |
| 09            | FEW       | NC                  |                        |                     | 10.00                 |         | 25             | 20        | 23       | 81                      | 12          | 31                    | 29.31                 | 30.09     | 09            | CLR       | NC                  |                        |                     | 10.00              |         | 37             | 26        | 33       | 65                      | 13          | 27                    | 28.75                 | 29.49     |
| 12            | SCT       | NC                  |                        |                     | 10.00                 |         | 32             | 22        | 28       | 66                      | 10          | 31                    | 29.28                 | 30.04     | 12            | OVC       | 030                 |                        |                     | 9.00               | -SN     | 38             | 27        | 34       | 65                      | 18          | 28                    | 28.77                 | 29.51     |
| 15            | BKN       | 250                 |                        |                     | 10.00                 |         | 34             | 20        | 29       | 56                      | 8           | 30                    | 29.27                 | 30.03     | 15            | BKN       | 090                 |                        |                     | 10.00              |         | 38             | 27        | 34       | 65                      | 18          | 29                    | 28.81                 | 29.56     |
| 18            | FEW       | NC                  |                        |                     | 10.00                 |         | 31             | 16        | 26       | 54                      | 5           | 29                    | 29.30                 | 30.07     | 18            | OVC       | 025                 |                        |                     | 5.00               | -SN     | 31             | 26        | 29       | 82                      | 12          | 01                    | 28.94                 | 29.70     |
| 21            | CLR       | NC                  |                        |                     | 10.00                 |         | 25             | 15        | 22       | 66                      | 0           | 00                    | 29.30                 | 30.07     | 21            | FEW       | NC                  |                        |                     | 10.00              |         | 27             | 13        | 23       | 55                      | 16          | 33                    | 29.03                 | 29.80     |
| 24            | CLR       | NC                  |                        |                     | 10.00                 |         | 17             | 11        | 15       | 77                      | 0           | 00                    | 29.28                 | 30.05     | 24            | FEW       | NC                  |                        |                     | 10.00              |         | 23             | 11        | 20       | 60                      | 8           | 32                    | 29.06                 | 29.82     |
| SUNRISE: 0723 |           |                     |                        |                     |                       |         | JAN 04         |           |          | SUNSET: 1630            |             |                       |                       |           | SUNRISE: 0722 |           |                     |                        |                     |                    |         | JAN 10         |           |          | SUNSET: 1637            |             |                       |                       |           |
| 03            | CLR       | NC                  |                        |                     | 10.00                 |         | 16             | 11        | 15       | 80                      | 0           | 00                    | 29.29                 | 30.06     | 03            | BKN       | 150                 |                        |                     | 10.00              |         | 24             | 7         | 19       | 48                      | 12          | 29                    | 29.06                 | 29.83     |
| 06            | CLR       | NC                  |                        |                     | 10.00                 |         | 18             | 12        | 16       | 77                      | 0           | 00                    | 29.26                 | 30.03     | 06            | SCT       | NC                  |                        |                     | 10.00              |         | 21             | 4         | 17       | 47                      | 21          | 30                    | 29.08                 | 29.85     |
| 09            | OVC       | 075                 |                        |                     | 10.00                 |         | 25             | 18        | 23       | 75                      | 5           | 22                    | 29.27                 | 30.04     | 09            | SCT       | NC                  |                        |                     | 10.00              |         | 20             | 4         | 16       | 50                      | 16          | 32                    | 29.13                 | 29.90     |
| 12            | BKN       | 090                 |                        |                     | 10.00                 |         | 32             | 21        | 28       | 64                      | 9           | 19                    | 29.21                 | 29.98     | 12            | BKN       | 043                 |                        |                     | 10.00              |         | 21             | 4         | 17       | 47                      | 20          | 30                    | 29.15                 | 29.92     |
| 15            | OVC       | 130                 |                        |                     | 10.00                 |         | 35             | 16        | 29       | 46                      | 7           | 19                    | 29.17                 | 29.94     | 15            | OVC       | 031                 |                        |                     | 9.00               | -SN     | 20             | 5         | 16       | 52                      | 24          | 30                    | 29.18                 | 29.95     |
| 18            | OVC       | 034                 |                        |                     | 10.00                 |         | 33             | 21        | 29       | 61                      | 6           | 16                    | 29.17                 | 29.94     | 18            | FEW       | NC                  |                        |                     | 10.00              |         | 18             | 2         | 14       | 49                      | 12          | 29                    | 29.24                 | 30.02     |
| 21            | OVC       | 020                 |                        |                     | 2.50                  | -SN BR  | 30             | 26        | 29       | 85                      | 10          | 19                    | 29.17                 | 29.94     | 21            | CLR       | NC                  |                        |                     | 10.00              |         | 16             | 0         | 12       | 49                      | 13          | 29                    | 29.29                 | 30.06     |
| 24            | OVC       | 016                 |                        |                     | 1.25                  | -SN BR  | 29             | 28        | 29       | 96                      | 0           | 00                    | 29.14                 | 29.90     | 24            | CLR       | NC                  |                        |                     | 10.00              |         | 13             | 0         | 10       | 56                      | 16          | 28                    | 29.29                 | 30.07     |
| SUNRISE: 0723 |           |                     |                        |                     |                       |         | JAN 05         |           |          | SUNSET: 1631            |             |                       |                       |           | SUNRISE: 0721 |           |                     |                        |                     |                    |         | JAN 11         |           |          | SUNSET: 1638            |             |                       |                       |           |
| 03            | OVC       | 050                 |                        |                     | 3.00                  | BR      | 30             | 27        | 29       | 88                      | 0           | 00                    | 29.12                 | 29.88     | 03            | CLR       | NC                  |                        |                     | 10.00              |         | 11             | -1        | 9        | 58                      | 15          | 29                    | 29.30                 | 30.08     |
| 06            | OVC       | 012                 |                        |                     | 4.00                  | BR      | 30             | 27        | 29       | 88                      | 3           | 29                    | 29.14                 | 29.90     | 06            | CLR       | NC                  |                        |                     | 10.00              |         | 10             | 1         | 8        | 67                      | 10          | 28                    | 29.32                 | 30.12     |
| 09            | OVC       | 009                 |                        |                     | 2.50                  | -SN BR  | 31             | 28        | 30       | 89                      | 0           | 00                    | 29.16                 | 29.93     | 09            | FEW       | NC                  |                        |                     | 10.00              |         | 10             | -1        | 8        | 61                      | 14          | 29                    | 29.35                 | 30.14     |
| 12            | OVC       | 009                 |                        |                     | 1.00                  | -SN BR  | 32             | 29        | 31       | 88                      | 5           | 30                    | 29.17                 | 29.93     | 12            | FEW       | NC                  |                        |                     | 10.00              |         | 15             | 1         | 12       | 53                      | 15          | 28                    | 29.36                 | 30.16     |
| 15            | OVC       | 020                 |                        |                     | 1.25                  | -SN BR  | 33             | 29        | 31       | 85                      | 5           | 29                    | 29.19                 | 29.96     | 15            | SCT       | NC                  |                        |                     | 10.00              |         | 17             | 2         | 14       | 51                      | 20          | 32                    | 29.42                 | 30.22     |
| 18            | OVC       | 013                 |                        |                     | 3.00                  | -SN BR  | 33             | 30        | 32       | 89                      | 9           | 33                    | 29.27                 | 30.03     | 18            | BKN       | 036                 |                        |                     | 10.00              |         | 16             | 2         | 13       | 54                      | 18          | 32                    | 29.51                 | 30.31     |
| 21            | OVC       | 008                 |                        |                     | 1.75                  | -SN BR  | 32             | 31        | 32       | 96                      | 8           | 34                    | 29.31                 | 30.09     | 21            | CLR       | NC                  |                        |                     | 10.00              |         | 14             | 3         | 12       | 61                      | 15          | 31                    | 29.55                 | 30.35     |
| 24            | OVC       | 043                 |                        |                     | 7.00                  |         | 32             | 28        | 31       | 85                      | 9           | 34                    | 29.38                 | 30.16     | 24            | CLR       | NC                  |                        |                     | 10.00              |         | 14             | 4         | 12       | 64                      | 12          | 30                    | 29.60                 | 30.40     |
| SUNRISE: 0723 |           |                     |                        |                     |                       |         | JAN 06         |           |          | SUNSET: 1632            |             |                       |                       |           | SUNRISE: 0721 |           |                     |                        |                     |                    |         | JAN 12         |           |          | SUNSET: 1639            |             |                       |                       |           |
| 03            | BKN       | 035                 |                        |                     | 10.00                 |         | 30             | 25        | 28       | 82                      | 13          | 34                    | 29.47                 | 30.24     | 03            | CLR       | NC                  |                        |                     | 10.00              |         | 12             | 4         | 10       | 70                      | 7           | 29                    | 29.61                 | 30.41     |
| 06            | BKN       | 031                 |                        |                     | 10.00                 |         | 29             | 20        | 26       | 69                      | 13          | 36                    | 29.53                 | 30.31     | 06            | CLR       | NC                  |                        |                     | 10.00              |         | 11             | 6         | 10       | 81                      | 7           | 26                    | 29.61                 | 30.40     |
| 09            | FEW       | NC                  |                        |                     | 10.00                 |         | 26             | 16        | 23       | 66                      | 16          | 35                    | 29.62                 | 30.40     | 09            | CLR       | NC                  |                        |                     | 10.00              |         | 14             | 6         | 12       | 71                      | 8           | 22                    | 29.58                 | 30.38     |
| 12            | FEW       | NC                  |                        |                     | 10.00                 |         | 29             | 16        | 25       | 58                      | 13          | 34                    | 29.61                 | 30.39     | 12            | FEW       | NC                  |                        |                     | 10.00              |         | 25             | 3         | 19       | 39                      | 17          | 24                    | 29.49                 | 30.28     |
| 15            | SCT       | NC                  |                        |                     | 10.00                 |         | 32             | 13        | 26       | 45                      | 12          | 31                    | 29.60                 | 30.37     | 15            | FEW       | NC                  |                        |                     | 10.00              |         | 29             | 4         | 22       | 34                      | 21          | 23                    | 29.36                 | 30.14     |
| 18            | SCT       | NC                  |                        |                     | 10.00                 |         | 29             | 15        | 25       | 56                      | 5           | 28                    | 29.62                 | 30.40     | 18            | FEW       | NC                  |                        |                     | 10.00              |         | 28             | 11        | 23       | 49                      | 15          | 21                    | 29.25                 | 30.02     |
| 21            | BKN       | 250                 |                        |                     | 10.00                 |         | 27             | 17        | 24       | 66                      | 3           | 25                    | 29.56                 | 30.34     | 21            | CLR       | NC                  |                        |                     | 10.00              |         | 31             | 13        | 25       | 47                      | 24          | 23                    | 29.19                 | 29.97     |
| 24            | OVC       | 150                 |                        |                     | 10.00                 |         | 28             | 20        | 25       | 72                      | 13          | 25                    | 29.45                 | 30.23     | 24            | CLR       | NC                  |                        |                     | 10.00              |         | 32             | 14        | 26       | 47                      | 14          | 28                    | 29.19                 | 29.96     |

# OBSERVATIONS AT 3-HOURLY INTERVALS

# MILWAUKEE, WI

JANUARY 2003

MKE

WBAN # 14839

| HOUR (LST) | SATELLITE |                     | WEATHER              | TEMPERATURE °F         |                   |                    |               | WIND      |                     | PRESSURE (INCHES, HG)   |             | HOUR (LST) | SATELLITE             |                      | WEATHER | TEMPERATURE °F |           |                     |                        | WIND                |                    | PRESSURE (INCHES, HG) |           |          |                         |             |                       |         |           |       |       |
|------------|-----------|---------------------|----------------------|------------------------|-------------------|--------------------|---------------|-----------|---------------------|-------------------------|-------------|------------|-----------------------|----------------------|---------|----------------|-----------|---------------------|------------------------|---------------------|--------------------|-----------------------|-----------|----------|-------------------------|-------------|-----------------------|---------|-----------|-------|-------|
|            | SKY COVER | CEILING 100'S OF FT |                      | OBSERVATION TIME (LST) | EFF CLD AMT Otkas | VISIBILITY (MILES) | DRY BULB      | DEW POINT | WET BULB            | RELATIVE HUMIDITY (PCT) | SPEED (MPH) |            | DIRECTION TENS OF DEG | STATION              |         | SEA LEVEL      | SKY COVER | CEILING 100'S OF FT | OBSERVATION TIME (LST) | EFF CLD AMT Otkas   | VISIBILITY (MILES) | DRY BULB              | DEW POINT | WET BULB | RELATIVE HUMIDITY (PCT) | SPEED (MPH) | DIRECTION TENS OF DEG | STATION | SEA LEVEL |       |       |
|            |           |                     |                      |                        |                   |                    |               |           |                     |                         |             |            |                       |                      |         |                |           |                     |                        |                     |                    |                       |           |          |                         |             |                       |         |           |       |       |
|            |           |                     | <b>SUNRISE: 0721</b> |                        |                   |                    | <b>JAN 13</b> |           | <b>SUNSET: 1640</b> |                         |             |            |                       | <b>SUNRISE: 0718</b> |         |                |           | <b>JAN 19</b>       |                        | <b>SUNSET: 1647</b> |                    |                       |           |          |                         |             |                       |         |           |       |       |
| 03         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 22                  | 1                       | 17          | 40         | 21                    | 33                   | 29.31   | 30.09          |           |                     | 7                      | -1                  | 5                  | 70                    | 5         | 26       | 29.20                   | 29.98       |                       |         |           |       |       |
| 06         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 14                  | -1                      | 11          | 51         | 17                    | 33                   | 29.40   | 30.19          |           |                     | 5                      | -2                  | 4                  | 72                    | 9         | 25       | 29.15                   | 29.94       |                       |         |           |       |       |
| 09         | SCT       | NC                  |                      |                        | 10.00             |                    |               |           | 13                  | -2                      | 10          | 51         | 12                    | 32                   | 29.46   | 30.25          |           |                     | 7                      | -1                  | 5                  | 70                    | 17        | 24       | 29.09                   | 29.88       |                       |         |           |       |       |
| 12         | BKN       | 200                 |                      |                        | 10.00             |                    |               |           | 16                  | -2                      | 12          | 45         | 13                    | 28                   | 29.46   | 30.24          |           |                     | 16                     | 1                   | 13                 | 51                    | 16        | 26       | 28.99                   | 29.78       |                       |         |           |       |       |
| 15         | BKN       | 100                 |                      |                        | 10.00             |                    |               |           | 21                  | -1                      | 16          | 38         | 13                    | 30                   | 29.44   | 30.22          |           |                     | 22                     | 12                  | 19                 | 66                    | 17        | 25       | 28.90                   | 29.68       |                       |         |           |       |       |
| 18         | OVC       | 060                 |                      |                        | 10.00             |                    |               |           | 21                  | 0                       | 16          | 39         | 8                     | 30                   | 29.46   | 30.25          |           |                     | 18                     | OVC                 | 032                | 5.00                  | -SN       | 25       | 17                      | 22          | 72                    | 10      | 29        | 28.91 | 29.69 |
| 21         | BKN       | 080                 |                      |                        | 10.00             |                    |               |           | 18                  | 1                       | 14          | 47         | 9                     | 34                   | 29.48   | 30.27          |           |                     | 21                     | SCT                 | NC                 | 10.00                 |           | 21       | 8                       | 18          | 57                    | 17      | 32        | 29.02 | 29.80 |
| 24         | OVC       | 085                 |                      |                        | 10.00             |                    |               |           | 16                  | -1                      | 12          | 47         | 8                     | 33                   | 29.49   | 30.28          |           |                     | 24                     | CLR                 | NC                 | 10.00                 |           | 16       | 2                       | 13          | 54                    | 12      | 33        | 29.09 | 29.87 |
|            |           |                     | <b>SUNRISE: 0720</b> |                        |                   |                    | <b>JAN 14</b> |           | <b>SUNSET: 1641</b> |                         |             |            |                       | <b>SUNRISE: 0717</b> |         |                |           | <b>JAN 20</b>       |                        | <b>SUNSET: 1648</b> |                    |                       |           |          |                         |             |                       |         |           |       |       |
| 03         | BKN       | 060                 |                      |                        | 10.00             |                    |               |           | 15                  | 1                       | 12          | 53         | 8                     | 31                   | 29.48   | 30.27          |           |                     | 03                     | CLR                 | NC                 | 10.00                 |           | 12       | -3                      | 9           | 51                    | 10      | 32        | 29.18 | 29.96 |
| 06         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 13                  | 0                       | 10          | 56         | 9                     | 31                   | 29.50   | 30.29          |           |                     | 06                     | SCT                 | NC                 | 10.00                 |           | 9        | -5                      | 6           | 52                    | 10      | 30        | 29.23 | 30.01 |
| 09         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 12                  | 0                       | 10          | 58         | 12                    | 31                   | 29.50   | 30.29          |           |                     | 09                     | BKN                 | 250                | 10.00                 |           | 8        | -5                      | 6           | 55                    | 14      | 31        | 29.31 | 30.09 |
| 12         | SCT       | NC                  |                      |                        | 10.00             |                    |               |           | 16                  | -5                      | 12          | 39         | 14                    | 29                   | 29.48   | 30.27          |           |                     | 12                     | OVC                 | 230                | 10.00                 |           | 14       | -6                      | 10          | 40                    | 10      | 29        | 29.32 | 30.11 |
| 15         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 19                  | -13                     | 13          | 23         | 16                    | 28                   | 29.44   | 30.23          |           |                     | 15                     | BKN                 | 250                | 10.00                 |           | 15       | -8                      | 11          | 35                    | 10      | 30        | 29.29 | 30.08 |
| 18         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 16                  | -6                      | 12          | 37         | 13                    | 27                   | 29.45   | 30.24          |           |                     | 18                     | BKN                 | 140                | 10.00                 |           | 14       | -7                      | 10          | 38                    | 6       | 28        | 29.33 | 30.12 |
| 21         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 13                  | -6                      | 10          | 42         | 10                    | 29                   | 29.47   | 30.27          |           |                     | 21                     | BKN                 | 140                | 10.00                 |           | 13       | -6                      | 9           | 42                    | 8       | 29        | 29.35 | 30.15 |
| 24         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 10                  | -4                      | 7           | 53         | 12                    | 31                   | 29.49   | 30.28          |           |                     | 24                     | BKN                 | 100                | 10.00                 |           | 10       | -6                      | 7           | 48                    | 15      | 33        | 29.40 | 30.19 |
|            |           |                     | <b>SUNRISE: 0720</b> |                        |                   |                    | <b>JAN 15</b> |           | <b>SUNSET: 1642</b> |                         |             |            |                       | <b>SUNRISE: 0716</b> |         |                |           | <b>JAN 21</b>       |                        | <b>SUNSET: 1650</b> |                    |                       |           |          |                         |             |                       |         |           |       |       |
| 03         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 8                   | -2                      | 6           | 63         | 14                    | 30                   | 29.51   | 30.31          |           |                     | 03                     | CLR                 | NC                 | 10.00                 |           | 8        | -3                      | 6           | 60                    | 12      | 33        | 29.42 | 30.21 |
| 06         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 6                   | -4                      | 4           | 63         | 10                    | 30                   | 29.53   | 30.33          |           |                     | 06                     | CLR                 | NC                 | 10.00                 |           | 5        | -6                      | 3           | 60                    | 9       | 33        | 29.45 | 30.25 |
| 09         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 7                   | -4                      | 5           | 60         | 13                    | 30                   | 29.57   | 30.37          |           |                     | 09                     | FEW                 | NC                 | 10.00                 |           | 4        | -8                      | 2           | 57                    | 13      | 31        | 29.51 | 30.31 |
| 12         | FEW       | NC                  |                      |                        | 10.00             |                    |               |           | 16                  | -3                      | 12          | 43         | 12                    | 30                   | 29.57   | 30.37          |           |                     | 12                     | FEW                 | NC                 | 10.00                 |           | 11       | -9                      | 8           | 40                    | 6       | VR        | 29.51 | 30.31 |
| 15         | SCT       | NC                  |                      |                        | 10.00             |                    |               |           | 22                  | -5                      | 16          | 30         | 10                    | 31                   | 29.53   | 30.32          |           |                     | 15                     | FEW                 | NC                 | 10.00                 |           | 15       | -11                     | 11          | 30                    | 6       | 36        | 29.46 | 30.26 |
| 18         | SCT       | NC                  |                      |                        | 10.00             |                    |               |           | 21                  | -1                      | 16          | 38         | 6                     | 30                   | 29.56   | 30.36          |           |                     | 18                     | BKN                 | 200                | 10.00                 |           | 12       | -10                     | 8           | 36                    | 9       | 31        | 29.49 | 30.29 |
| 21         | FEW       | NC                  |                      |                        | 10.00             |                    |               |           | 18                  | 1                       | 14          | 47         | 6                     | 28                   | 29.56   | 30.36          |           |                     | 21                     | FEW                 | NC                 | 10.00                 |           | 10       | -10                     | 7           | 39                    | 9       | 32        | 29.51 | 30.31 |
| 24         | OVC       | 210                 |                      |                        | 10.00             |                    |               |           | 16                  | 0                       | 12          | 49         | 0                     | 00                   | 29.56   | 30.35          |           |                     | 24                     | BKN                 | 150                | 10.00                 |           | 8        | -9                      | 5           | 45                    | 13      | 32        | 29.53 | 30.33 |
|            |           |                     | <b>SUNRISE: 0719</b> |                        |                   |                    | <b>JAN 16</b> |           | <b>SUNSET: 1644</b> |                         |             |            |                       | <b>SUNRISE: 0716</b> |         |                |           | <b>JAN 22</b>       |                        | <b>SUNSET: 1651</b> |                    |                       |           |          |                         |             |                       |         |           |       |       |
| 03         | OVC       | 200                 |                      |                        | 10.00             |                    |               |           | 16                  | 0                       | 12          | 49         | 6                     | 29                   | 29.54   | 30.33          |           |                     | 03                     | FEW                 | NC                 | 10.00                 |           | 5        | -8                      | 3           | 55                    | 12      | 33        | 29.55 | 30.35 |
| 06         | OVC       | 180                 |                      |                        | 10.00             |                    |               |           | 15                  | 0                       | 12          | 51         | 6                     | 28                   | 29.49   | 30.27          |           |                     | 06                     | SCT                 | NC                 | 10.00                 |           | 3        | -8                      | 1           | 60                    | 10      | 32        | 29.56 | 30.36 |
| 09         | OVC       | 160                 |                      |                        | 10.00             |                    |               |           | 16                  | 2                       | 13          | 54         | 10                    | 27                   | 29.45   | 30.24          |           |                     | 09                     | BKN                 | 250                | 10.00                 |           | 5        | -6                      | 3           | 60                    | 14      | 32        | 29.60 | 30.41 |
| 12         | OVC       | 180                 |                      |                        | 10.00             |                    |               |           | 23                  | -1                      | 17          | 35         | 14                    | 30                   | 29.37   | 30.16          |           |                     | 12                     | BKN                 | 250                | 10.00                 |           | 11       | -7                      | 8           | 44                    | 15      | 31        | 29.61 | 30.41 |
| 15         | BKN       | 220                 |                      |                        | 10.00             |                    |               |           | 27                  | -5                      | 20          | 24         | 10                    | 30                   | 29.30   | 30.07          |           |                     | 15                     | SCT                 | NC                 | 10.00                 |           | 12       | -7                      | 9           | 42                    | 10      | 35        | 29.60 | 30.40 |
| 18         | FEW       | NC                  |                      |                        | 10.00             |                    |               |           | 23                  | -6                      | 17          | 27         | 12                    | 31                   | 29.31   | 30.09          |           |                     | 18                     | FEW                 | NC                 | 10.00                 |           | 8        | -7                      | 6           | 50                    | 17      | 32        | 29.63 | 30.44 |
| 21         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 21                  | -7                      | 15          | 28         | 15                    | 34                   | 29.34   | 30.13          |           |                     | 21                     | FEW                 | NC                 | 10.00                 |           | 4        | -10                     | 2           | 52                    | 15      | 33        | 29.64 | 30.45 |
| 24         | FEW       | NC                  |                      |                        | 10.00             |                    |               |           | 13                  | -1                      | 10          | 54         | 20                    | 35                   | 29.42   | 30.21          |           |                     | 24                     | FEW                 | NC                 | 10.00                 |           | 1        | -13                     | -1          | 51                    | 14      | 33        | 29.66 | 30.47 |
|            |           |                     | <b>SUNRISE: 0719</b> |                        |                   |                    | <b>JAN 17</b> |           | <b>SUNSET: 1645</b> |                         |             |            |                       | <b>SUNRISE: 0715</b> |         |                |           | <b>JAN 23</b>       |                        | <b>SUNSET: 1652</b> |                    |                       |           |          |                         |             |                       |         |           |       |       |
| 03         | FEW       | NC                  |                      |                        | 10.00             |                    |               |           | 11                  | -1                      | 9           | 58         | 12                    | 35                   | 29.47   | 30.26          |           |                     | 03                     | CLR                 | NC                 | 10.00                 |           | -2       | -15                     | -3          | 53                    | 15      | 31        | 29.66 | 30.47 |
| 06         | FEW       | NC                  |                      |                        | 10.00             |                    |               |           | 9                   | -2                      | 7           | 61         | 15                    | 34                   | 29.52   | 30.31          |           |                     | 06                     | CLR                 | NC                 | 10.00                 |           | -4       | -15                     | -5          | 59                    | 16      | 30        | 29.69 | 30.50 |
| 09         | FEW       | NC                  |                      |                        | 10.00             |                    |               |           | 10                  | 0                       | 8           | 63         | 15                    | 33                   | 29.56   | 30.36          |           |                     | 09                     | CLR                 | NC                 | 10.00                 |           | -3       | -15                     | -4          | 56                    | 21      | 31        | 29.72 | 30.53 |
| 12         | FEW       | NC                  |                      |                        | 10.00             |                    |               |           | 17                  | 1                       | 13          | 49         | 12                    | 31                   | 29.54   | 30.33          |           |                     | 12                     | CLR                 | NC                 | 10.00                 |           | 6        | -11                     | 4           | 45                    | 14      | 30        | 29.72 | 30.53 |
| 15         | FEW       | NC                  |                      |                        | 10.00             |                    |               |           | 21                  | 0                       | 16          | 39         | 12                    | 24                   | 29.48   | 30.27          |           |                     | 15                     | FEW                 | NC                 | 10.00                 |           | 11       | -9                      | 8           | 40                    | 15      | 30        | 29.71 | 30.52 |
| 18         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 17                  | 0                       | 13          | 47         | 8                     | 25                   | 29.45   | 30.24          |           |                     | 18                     | CLR                 | NC                 | 10.00                 |           | 7        | -9                      | 4           | 47                    | 14      | 30        | 29.76 | 30.57 |
| 21         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 13                  | 2                       | 11          | 61         | 12                    | 24                   | 29.35   | 30.15          |           |                     | 21                     | CLR                 | NC                 | 10.00                 |           | 5        | -9                      | 3           | 52                    | 15      | 31        | 29.76 | 30.58 |
| 24         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 13                  | -1                      | 10          | 54         | 15                    | 24                   | 29.26   | 30.03          |           |                     | 24                     | CLR                 | NC                 | 10.00                 |           | 4        | -9                      | 2           | 54                    | 10      | 31        | 29.75 | 30.56 |
|            |           |                     | <b>SUNRISE: 0718</b> |                        |                   |                    | <b>JAN 18</b> |           | <b>SUNSET: 1646</b> |                         |             |            |                       | <b>SUNRISE: 0714</b> |         |                |           | <b>JAN 24</b>       |                        | <b>SUNSET: 1653</b> |                    |                       |           |          |                         |             |                       |         |           |       |       |
| 03         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 9                   | 3                       | 8           | 77         | 16                    | 23                   | 29.16   | 29.94          |           |                     | 03                     | BKN                 | 250                | 10.00                 |           | 3        | -7                      | 1           | 62                    | 8       | 29        | 29.75 | 30.55 |
| 06         | FEW       | NC                  |                      |                        | 10.00             |                    |               |           | 10                  | -2                      | 8           | 58         | 16                    | 24                   | 29.08   | 29.86          |           |                     | 06                     | SCT                 | NC                 | 10.00                 |           | 3        | -7                      | 1           | 62                    | 8       | 28        | 29.73 | 30.54 |
| 09         | BKN       | 022                 |                      |                        | 2.00              |                    |               |           | 11                  | 6                       | 10          | 81         | 12                    | 25                   | 29.07   | 29.86          |           |                     | 09                     | BKN                 | 150                | 10.00                 |           | 6        | -6                      | 4           | 57                    | 13      | 28        | 29.73 | 30.53 |
| 12         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 20                  | 9                       | 17          | 62         | 14                    | 29                   | 29.04   | 29.82          |           |                     | 12                     | OVC                 | 110                | 10.00                 |           | 13       | -5                      | 10          | 44                    | 13      | 26        | 29.67 | 30.47 |
| 15         | OVC       | 050                 |                      |                        | 10.00             |                    |               |           | 22                  | 7                       | 18          | 52         | 14                    | 28                   | 29.05   | 29.83          |           |                     | 15                     | OVC                 | 070                | 10.00                 |           | 15       | -7                      | 11          | 36                    | 13      | 23        | 29.59 | 30.39 |
| 18         | SCT       | NC                  |                      |                        | 10.00             |                    |               |           | 19                  | 6                       | 16          | 57         | 16                    | 32                   | 29.12   | 29.90          |           |                     | 18                     | OVC                 | 065                | 10.00                 |           | 14       | 0                       | 11          | 53                    | 13      | 24        | 29.55 | 30.35 |
| 21         | BKN       | 037                 |                      |                        | 10.00             |                    |               |           | 15                  | 2                       | 12          | 56         | 12                    | 30                   | 29.18   | 29.97          |           |                     | 21                     | OVC                 | 046                | 10.00                 |           | 15       | 3                       | 12          | 59                    | 8       | 25        | 29.52 | 30.32 |
| 24         | CLR       | NC                  |                      |                        | 10.00             |                    |               |           | 11                  | 0                       | 9           | 61         | 12                    | 31                   | 29.20   | 29.98          |           |                     | 24                     | OVC                 | 030                | 10.00                 |           | 16       | 5                       | 13          | 62                    | 12      | 24        | 29.49 | 30.28 |

# OBSERVATIONS AT 3-HOURLY INTERVALS

# MILWAUKEE, WI

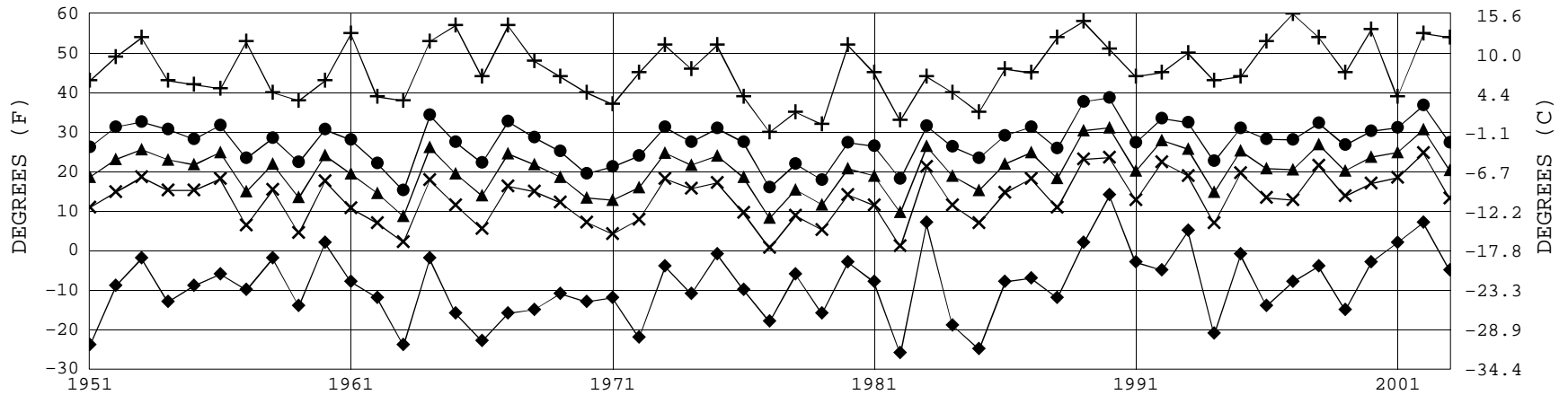
JANUARY 2003

MKE

WBAN # 14839

| HOUR (LST)                        | SATELLITE |                     | WEATHER | TEMPERATURE °F         |                   |                    |          | WIND      |          | PRESSURE (INCHES, HG)   |             | HOUR (LST)                        | SATELLITE  |         | WEATHER | TEMPERATURE °F |                        |                   |                    | 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 | RELATIVE HUMIDITY (PCT) | SPEED (MPH) |                                   | DIRECTION TENS OF DEG  | STATION |         | SEA LEVEL      | OBSERVATION TIME (LST) | EFF CLD AMT Oktas | VISIBILITY (MILES) | DRY BULB | DEW POINT | WET BULB              | RELATIVE HUMIDITY (PCT) | 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 | RELATIVE HUMIDITY (PCT) |
| SUNRISE: 0713 JAN 25 SUNSET: 1655 |           |                     |         |                        |                   |                    |          |           |          |                         |             | SUNRISE: 0708 JAN 31 SUNSET: 1703 |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 03                                | OVC       | 027                 |         | 9.00                   | 17                | 7                  | 15       | 64        | 10       | 24                      | 29.43       | 30.22                             | 03   | OVC     | 060     |                | 4.00                   | BR                | 31                 | 27       | 29        | 85                    | 8                       | 15          | 29.18                 | 29.94   |           |           |                     |                        |                   |                    |          |           |          |                         |
| 06                                | OVC       | 023                 |         | 10.00                  | 17                | 6                  | 14       | 62        | 12       | 22                      | 29.40       | 30.19                             | 06   | OVC     | 035     |                | 6.00                   | HZ                | 35                 | 27       | 32        | 72                    | 9                       | 17          | 29.11                 | 29.88   |           |           |                     |                        |                   |                    |          |           |          |                         |
| 09                                | SCT       | NC                  |         | 9.00                   | 19                | 9                  | 16       | 65        | 13       | 23                      | 29.41       | 30.20                             | 09   | OVC     | 006     |                | 1.00                   | -SN BR            | 33                 | 31       | 32        | 92                    | 10                      | 19          | 29.09                 | 29.85   |           |           |                     |                        |                   |                    |          |           |          |                         |
| 12                                | OVC       | 027                 |         | 9.00                   | 25                | 8                  | 20       | 48        | 13       | 24                      | 29.32       | 30.10                             | 12   | OVC     | 008     |                | 3.00                   | -SN BR            | 35                 | 31       | 33        | 85                    | 9                       | 22          | 29.06                 | 29.83   |           |           |                     |                        |                   |                    |          |           |          |                         |
| 15                                | OVC       | 180                 |         | 7.00                   | 30                | 13                 | 25       | 49        | 12       | 26                      | 29.27       | 30.04                             | 15   | OVC     | 014     |                | 3.00                   | BR                | 35                 | 31       | 33        | 85                    | 5                       | 24          | 29.06                 | 29.82   |           |           |                     |                        |                   |                    |          |           |          |                         |
| 18                                | OVC       | 018                 |         | 1.75                   | 25                | 19                 | 23       | 78        | 17       | 32                      | 29.31       | 30.10                             | 18   | OVC     | 014     |                | 4.00                   | HZ                | 35                 | 30       | 33        | 82                    | 12                      | 32          | 29.12                 | 29.88   |           |           |                     |                        |                   |                    |          |           |          |                         |
| 21                                | OVC       | 026                 |         | 6.00                   | 19                | 9                  | 16       | 65        | 15       | 34                      | 29.36       | 30.15                             | 21   | OVC     | 012     |                | 3.00                   | BR                | 32                 | 28       | 31        | 85                    | 13                      | 34          | 29.15                 | 29.91   |           |           |                     |                        |                   |                    |          |           |          |                         |
| 24                                | OVC       | 200                 |         | 10.00                  | 13                | 2                  | 11       | 61        | 17       | 34                      | 29.43       | 30.22                             | 24   | OVC     | 012     |                | 3.00                   | BR                | 32                 | 28       | 31        | 85                    | 9                       | 33          | 29.15                 | 29.91   |           |           |                     |                        |                   |                    |          |           |          |                         |
| SUNRISE: 0712 JAN 26 SUNSET: 1656 |           |                     |         |                        |                   |                    |          |           |          |                         |             | 3-HOURLY OBSERVATION NOTES        |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 03                                | OVC       | 075                 |         | 10.00                  | 11                | -1                 | 9        | 58        | 16       | 33                      | 29.48       | 30.27                             | Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, VV = Vertical Visibility = 8/8. |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 06                                | FEW       | NC                  |         | 10.00                  | 5                 | -8                 | 3        | 55        | 14       | 33                      | 29.56       | 30.35                             | Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.   |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 09                                | FEW       | NC                  |         | 10.00                  | 4                 | -11                | 2        | 49        | 12       | 34                      | 29.61       | 30.41                             | NC= No ceiling detected.   |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 12                                | FEW       | NC                  |         | 10.00                  | 9                 | -11                | 6        | 39        | 15       | 34                      | 29.64       | 30.44                             | & = Original observation contained additional weather elements.  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 15                                | FEW       | NC                  |         | 10.00                  | 11                | -13                | 7        | 33        | 18       | 33                      | 29.63       | 30.43                             | See page 3 for additional notes.   |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 18                                | CLR       | NC                  |         | 10.00                  | 8                 | -11                | 5        | 41        | 10       | 31                      | 29.70       | 30.50                             | SUNRISE: 0712 JAN 27 SUNSET: 1657  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 21                                | CLR       | NC                  |         | 10.00                  | 4                 | -11                | 2        | 49        | 7        | 34                      | 29.73       | 30.54                             | 03   | CLR     | NC      |                | 10.00                  | 1                 | -11                | -1       | 56        | 0                     | 00                      | 29.72       | 30.52                 |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 24                                | CLR       | NC                  |         | 10.00                  | 2                 | -11                | 0        | 54        | 7        | 32                      | 29.73       | 30.53                             | 06   | CLR     | NC      |                | 10.00                  | -1                | -10                | -2       | 65        | 5                     | 23                      | 29.71       | 30.52                 |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| SUNRISE: 0712 JAN 28 SUNSET: 1659 |           |                     |         |                        |                   |                    |          |           |          |                         |             | SUMMARY BY HOUR                   |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 03                                | CLR       | NC                  |         | 10.00                  | 1                 | -11                | -1       | 56        | 0        | 00                      | 29.72       | 30.52                             | AVERAGES   |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 06                                | CLR       | NC                  |         | 10.00                  | -1                | -10                | -2       | 65        | 5        | 23                      | 29.71       | 30.52                             | RESULTANT WIND (MPH)   |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 09                                | BKN       | 230                 |         | 10.00                  | 6                 | -7                 | 4        | 54        | 8        | 20                      | 29.67       | 30.48                             | HOUR (LST)   |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 12                                | OVC       | 070                 |         | 10.00                  | 12                | -5                 | 9        | 46        | 12       | 19                      | 29.54       | 30.35                             | CEILOMETER   |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 15                                | OVC       | 040                 |         | 10.00                  | 14                | -3                 | 11       | 47        | 12       | 19                      | 29.43       | 30.23                             | EFF CLD AMT  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 18                                | SCT       | NC                  |         | 10.00                  | 15                | 0                  | 12       | 51        | 13       | 20                      | 29.34       | 30.14                             | DRY BULB   |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 21                                | OVC       | 041                 |         | 10.00                  | 17                | 6                  | 14       | 62        | 15       | 21                      | 29.34       | 30.13                             | DEW POINT  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 24                                | OVC       | 032                 |         | 10.00                  | 20                | 7                  | 17       | 57        | 17       | 25                      | 29.29       | 30.07                             | WET BULB   |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| SUNRISE: 0711 JAN 29 SUNSET: 1700 |           |                     |         |                        |                   |                    |          |           |          |                         |             | RELATIVE HUMIDITY                 |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 03                                | OVC       | 035                 |         | 10.00                  | 22                | 10                 | 19       | 60        | 9        | 24                      | 29.24       | 30.02                             | PRESSURE (INCHES, HG)  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 06                                | OVC       | 150                 |         | 10.00                  | 22                | 11                 | 19       | 63        | 8        | 25                      | 29.25       | 30.02                             | STATION  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 09                                | OVC       | 120                 |         | 9.00                   | 24                | 12                 | 21       | 60        | 3        | VR                      | 29.25       | 30.03                             | SEA LEVEL  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 12                                | OVC       | 120                 |         | 7.00                   | 28                | 14                 | 24       | 56        | 5        | 26                      | 29.26       | 30.03                             | VISIBILITY (MILES)   |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 15                                | OVC       | 008                 |         | 0.50                   | 26                | 25                 | 26       | 96        | 3        | 32                      | 29.26       | 30.03                             | WIND SPEED (MPH)   |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 18                                | OVC       | 060                 |         | 4.00                   | 28                | 24                 | 27       | 85        | 0        | 00                      | 29.29       | 30.06                             | SPEED  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 21                                | OVC       | 011                 |         | 4.00                   | 28                | 24                 | 27       | 85        | 10       | 35                      | 29.33       | 30.11                             | DIRECTION  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 24                                | OVC       | 020                 |         | 7.00                   | 25                | 17                 | 23       | 72        | 9        | 01                      | 29.37       | 30.15                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| SUNRISE: 0710 JAN 30 SUNSET: 1701 |           |                     |         |                        |                   |                    |          |           |          |                         |             |                                   |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 03                                | OVC       | 016                 |         | 8.00                   | 24                | 18                 | 22       | 77        | 9        | 35                      | 29.43       | 30.21                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 06                                | OVC       | 025                 |         | 10.00                  | 20                | 13                 | 18       | 74        | 9        | 35                      | 29.51       | 30.29                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 09                                | BKN       | 027                 |         | 9.00                   | 18                | 9                  | 16       | 68        | 9        | 34                      | 29.59       | 30.37                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 12                                | FEW       | NC                  |         | 10.00                  | 20                | 9                  | 17       | 62        | 12       | 02                      | 29.62       | 30.41                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 15                                | FEW       | NC                  |         | 10.00                  | 21                | 10                 | 18       | 62        | 7        | 08                      | 29.62       | 30.41                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 18                                | CLR       | NC                  |         | 10.00                  | 16                | 8                  | 14       | 71        | 3        | 13                      | 29.62       | 30.41                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 21                                | CLR       | NC                  |         | 9.00                   | 16                | 11                 | 15       | 80        | 5        | 25                      | 29.59       | 30.39                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 24                                | FEW       | NC                  |         | 9.00                   | 13                | 4                  | 11       | 67        | 5        | 24                      | 29.57       | 30.36                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| SUNRISE: 0709 JAN 31 SUNSET: 1701 |           |                     |         |                        |                   |                    |          |           |          |                         |             |                                   |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 03                                | OVC       | 038                 |         | 8.00                   | 17                | 12                 | 16       | 80        | 6        | 22                      | 29.54       | 30.33                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 06                                | OVC       | 035                 |         | 7.00                   | 19                | 15                 | 18       | 85        | 9        | 22                      | 29.49       | 30.27                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 09                                | BKN       | 250                 |         | 5.00                   | 22                | 17                 | 20       | 82        | 12       | 23                      | 29.49       | 30.28                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 12                                | BKN       | 220                 |         | 6.00                   | 26                | 19                 | 24       | 75        | 14       | 22                      | 29.42       | 30.21                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 15                                | OVC       | 090                 |         | 6.00                   | 30                | 20                 | 27       | 66        | 13       | 20                      | 29.33       | 30.11                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 18                                | OVC       | 100                 |         | 7.00                   | 29                | 23                 | 27       | 78        | 13       | 19                      | 29.30       | 30.07                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 21                                | OVC       | 065                 |         | 6.00                   | 29                | 22                 | 27       | 75        | 12       | 19                      | 29.25       | 30.02                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |
| 24                                | OVC       | 060                 |         | 5.00                   | 29                | 24                 | 27       | 82        | 3        | 15                      | 29.26       | 30.03                             |  |         |         |                |                        |                   |                    |          |           |                       |                         |             |                       |         |           |           |                     |                        |                   |                    |          |           |          |                         |

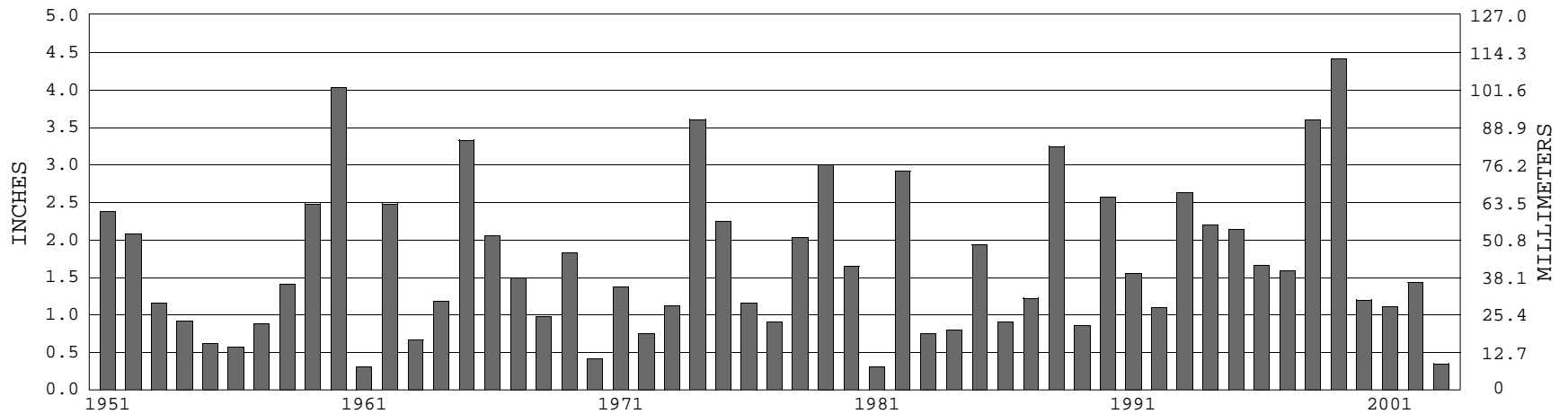
### MILWAUKEE, WI JANUARY TEMPERATURES



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

Long-Term (1951-2003) Mean: 20.4      1961-1990 Normal: 20.7

### MILWAUKEE, WI JANUARY PRECIPITATION



Long-Term (1951-2003) Mean Monthly Total: 1.69

1961-1990 Normal: 1.85



JANUARY 2003

MILWAUKEE, WI

# 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.*

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