



# OCTOBER 1997

## LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

# RICHMOND, VA

R.E.BYRD INTERNATIONAL AP. (RIC)  
 Lat: 37°30' N Long: 77°19' W Elev (Ground): 164 Feet  
 Time Zone: EASTERN WBAN: 13740 ISSN #:0198-537X

| DATE | TEMPERATURE °F |         |         |                 |                |                  | DEG DAYS BASE 65° |         | WEATHER    | SNOW/ICE ON GND(IN) |          | PRECIPITATION (INCHES) |          | PRESSURE (INCHES OF HG) |                   | WIND SPEED = MPH DIR = TENS OF DEGREES |         |               |         |     |       | DATE |  |
|------|----------------|---------|---------|-----------------|----------------|------------------|-------------------|---------|------------|---------------------|----------|------------------------|----------|-------------------------|-------------------|--|---------|---------------|---------|-----|-------|------|--|
|      | MAXIMUM        | MINIMUM | AVERAGE | DEP FROM NORMAL | AVERAGE DEW PT | AVERAGE WET BULB | HEATING           | COOLING |            | 0700 LST            | 1300 LST | 2400 LST               | 2400 LST | AVERAGE STATION         | AVERAGE SEA LEVEL | RESULTANT SPEED                        | RES DIR | AVERAGE SPEED | MAXIMUM |     |       |      |  |
|      |                |         |         |                 |                |                  |                   |         |            |                     |          |                        |          |                         |                   |  |         |               | 5-SEC   |     | 2-MIN |      |  |
| 1    | 2              | 3       | 4       | 5               | 6              | 7                | 8                 | 9       | 11         | 12                  | 13       | 14                     | 15       | 16                      | 17                | 18                                     | 19      | 20            | 21      | 22  | 23    | 24   |  |
| 01   | 74             | 51      | 63      | -1              | 48             | 54               | 2                 | 0       | RA         | 0                   | 0.0      | 0.01                   | 29.71    | 29.91                   | 6.2               | 34                                     | 8.3     | 31*           | 32      | 24  | 32    | 01   |  |
| 02   | 67             | 43      | 55      | -9              | 38             | 46               | 10                | 0       |            | 0                   | 0.0      | 0.00                   | 29.94    | 30.14                   | 2.5               | 01                                     | 4.4     | 14            | 36      | 10  | 05    | 02   |  |
| 03   | 75             | 39      | 57      | -7              | 46             | 52               | 8                 | 0       |            | 0                   | 0.0      | 0.00                   | 29.86    | 30.06                   | 5.8               | 19                                     | 6.4     | 18            | 22      | 15  | 18    | 03   |  |
| 04   | 83             | 53      | 68      | 5               | 53             | 59               | 0                 | 3       |            | 0                   | 0.0      | 0.00                   | 29.87    | 30.08                   | 3.4               | 18                                     | 4.4     | 15            | 17      | 11  | 19    | 04   |  |
| 05   | 90             | 56      | 73      | 10              | 59             | 64               | 0                 | 8       | BR HZ      | 0                   | 0.0      | 0.00                   | 29.90    | 30.10                   | 1.0               | 23                                     | 2.5     | 15            | 01      | 13  | 36    | 05   |  |
| 06   | 92*            | 60      | 76      | 14              | 60             | 66               | 0                 | 11      | BR HZ      | 0                   | 0.0      | 0.00                   | 29.94    | 30.14                   | 0.4               | 25                                     | 3.4     | 13            | 22      | 10  | 22    | 06   |  |
| 07   | 88             | 58      | 73      | 11              | 61             | 66               | 0                 | 8       | BR HZ      | 0                   | 0.0      | 0.00                   | 29.98    | 30.18                   | 3.6               | 04                                     | 4.4     | 16            | 04      | 13  | 03    | 07   |  |
| 08   | 86             | 59      | 73      | 12              | 61             | 65               | 0                 | 8       | BR         | 0                   | 0.0      | 0.00                   | 30.08    | 30.28                   | 4.7               | 13                                     | 5.7     | 20            | 17      | 14  | 12    | 08   |  |
| 09   | 86             | 62      | 74      | 13              | 63             | 66               | 0                 | 9       | BR HZ      | 0                   | 0.0      | 0.00                   | 30.10    | 30.30                   | 5.3               | 21                                     | 5.8     | 18            | 19      | 15  | 21    | 09   |  |
| 10   | 88             | 66      | 77*     | 16              | 63             | 68               | 0                 | 12      | BR HZ      | 0                   | 0.0      | 0.00                   | 30.03    | 30.24                   | 2.2               | 26                                     | 6.3     | 18            | 01      | 15  | 03    | 10   |  |
| 11   | 78             | 52      | 65      | 5               | 49             | 56               | 0                 | 0       |            | 0                   | 0.0      | 0.00                   | 30.09    | 30.29                   | 5.4               | 03                                     | 6.2     | 17            | 01      | 15  | 01    | 11   |  |
| 12   | 76             | 49      | 63      | 4               | 51             | 55               | 2                 | 0       |            | 0                   | 0.0      | 0.00                   | 30.09    | 30.30                   | 1.2               | 06                                     | 3.7     | 11            | 15      | 9   | 03    | 12   |  |
| 13   | 80             | 50      | 65      | 6               | 56             | 60               | 0                 | 0       | FG+ BR     | 0                   | 0.0      | 0.00                   | 30.01    | 30.22                   | 4.0               | 16                                     | 4.7     | 15            | 18      | 13  | 18    | 13   |  |
| 14   | 84             | 57      | 71      | 12              | 62             | 65               | 0                 | 6       | RA BR      | 0                   | 0.0      | 0.70                   | 29.91    | 30.11                   | 1.8               | 28                                     | 7.3     | 24            | 26      | 21  | 27    | 14   |  |
| 15   | 59             | 52      | 56      | -3              | 50             | 52               | 9                 | 0       | RA BR      | 0                   | 0.0      | 0.36                   | 30.00    | 30.21                   | 11.1              | 36                                     | 10.8    | 30            | 01      | 24* | 01    | 15   |  |
| 16   | 55             | 52      | 54      | -4              | 49             | 51               | 11                | 0       | RA DZ BR   | 0                   | 0.0      | 0.05                   | 29.99    | 30.19                   | 8.9               | 36                                     | 9.1     | 23            | 02      | 17  | 03    | 16   |  |
| 17   | 54             | 49      | 52      | -6              | 50             | 51               | 13                | 0       | RA DZ BR   | 0                   | 0.0      | 0.49                   | 29.92    | 30.12                   | 10.2              | 36                                     | 10.3    | 20            | 01      | 16  | 01    | 17   |  |
| 18   | 53             | 50      | 52      | -6              | 52             | 52               | 13                | 0       | RA DZ BR   | 0                   | 0.0      | 0.08                   | 29.86    | 30.06                   | 11.0              | 01                                     | 11.3    | 25            | 01      | 21  | 02    | 18   |  |
| 19   | 54             | 47      | 51      | -6              | 51             | 52               | 14                | 0       | RA BCFG BR | 0                   | 0.0      | 0.54                   | 29.69    | 29.89                   | 10.9              | 36                                     | 11.3    | 23            | 36      | 20  | 01    | 19   |  |
| 20   | 68             | 42      | 55      | -2              | 46             | 50               | 10                | 0       | BR         | 0                   | 0.0      | 0.00                   | 29.78    | 29.98                   | 4.5               | 30                                     | 5.0     | 21            | 29      | 17  | 30    | 20   |  |
| 21   | 64             | 41      | 53      | -4              | 42             | 48               | 12                | 0       | RA         | 0                   | 0.0      | T                      | 29.84    | 30.04                   | 1.8               | 26                                     | 5.5     | 22            | 24      | 15  | 23    | 21   |  |
| 22   | 58             | 36      | 47      | -9              | 36             | 43               | 18                | 0       | RA         | 0                   | 0.0      | T                      | 29.84    | 30.04                   | 5.9               | 35                                     | 8.1     | 24            | 33      | 17  | 32    | 22   |  |
| 23   | 55             | 31*     | 43*     | -13             | 29             | 37               | 22                | 0       |            | 0                   | 0.0      | 0.00                   | 29.95    | 30.16                   | 1.8               | 27                                     | 3.9     | 18            | 30      | 14  | 26    | 23   |  |
| 24   | 59             | 37      | 48      | -8              | 42             | 46               | 17                | 0       | RA DZ BR   | 0                   | 0.0      | 0.10                   | 29.87    | 30.08                   | 6.9               | 16                                     | 8.0     | 28            | 15      | 18  | 26    | 24   |  |
| 25   | 72             | 54      | 63      | 8               | 54             | 56               | 2                 | 0       | RA BR HZ   | 0                   | 0.0      | 0.17                   | 29.74    | 29.94                   | 3.8               | 34                                     | 8.5     | 24            | 27      | 18  | 02    | 25   |  |
| 26   | 54             | 50      | 52      | -3              | 51             | 52               | 13                | 0       | RA FG BR   | 0                   | 0.0      | 0.72                   | 29.79    | 29.99                   | 4.9               | 04                                     | 6.1     | 14            | 02      | 10  | 07    | 26   |  |
| 27   | 67             | 45      | 56      | 1               | 50             | 53               | 9                 | 0       | FG BR      | 0                   | 0.0      | 0.00                   | 29.48    | 29.68                   | 5.5               | 28                                     | 9.6     | 24            | 36      | 18  | 01    | 27   |  |
| 28   | 56             | 34      | 45      | -10             | 30             | 38               | 20                | 0       |            | 0                   | 0.0      | 0.00                   | 29.87    | 30.08                   | 4.0               | 31                                     | 6.4     | 20            | 31      | 15  | 28    | 28   |  |
| 29   | 63             | 34      | 49      | -5              | 36             | 42               | 16                | 0       |            | 0                   | 0.0      | 0.00                   | 29.93    | 30.14                   | 1.6               | 21                                     | 3.1     | 15            | 22      | 13  | 23    | 29   |  |
| 30   | 67             | 36      | 52      | -2              | 40             | 45               | 13                | 0       |            | 0                   | 0.0      | 0.00                   | 29.97    | 30.18                   | 1.9               | 05                                     | 2.8     | 15            | 06      | 11  | 04    | 30   |  |
| 31   | 66             | 38      | 52      | -2              | 50             | 52               | 13                | 0       | RA FG+ BR  | 0                   | 0.0      | 0.03                   | 29.88    | 30.08                   | 2.4               | 10                                     | 3.5     | 14            | 19      | 10  | 15    | 31   |  |

|      |      |      |     |      |      |     |     |                    |           |     |      |       |       |     |    |     |                     |
|------|------|------|-----|------|------|-----|-----|--------------------|-----------|-----|------|-------|-------|-----|----|-----|---------------------|
| 70.0 | 47.8 | 58.9 | ■ ■ | 49.3 | 53.6 | 8.0 | 2.1 | < MONTHLY AVERAGES | TOTALS--> | 0.0 | 3.25 | 29.90 | 30.10 | 1.9 | 35 | 6.4 | <- MONTHLY AVERAGES |
|------|------|------|-----|------|------|-----|-----|--------------------|-----------|-----|------|-------|-------|-----|----|-----|---------------------|

- .7 1.3 0.3 ■ ■ <----- DEPARTURE FROM NORMAL -----> -.28 SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3

|                    |     |                 |      |  |                       |                      |                      |                               |  |           |  |
|--------------------|-----|-----------------|------|--|-----------------------|----------------------|----------------------|-------------------------------|--|-----------|--|
| <b>DEGREE DAYS</b> |     |                 |      | GREATEST 24-HR PRECIPITATION: 1.05 DATE: 14-15 |                       |                      |                      | SEA LEVEL PRESSURE DATE TIME  |  |           |  |
| MONTHLY            |     | SEASON TO DATE  |      | GREATEST 24-HR SNOWFALL: 0.0 DATE:             |                       | MAXIMUM              |                      | MINIMUM                       |  | DATE TIME |  |
| TOTAL DEPARTURE    |     | TOTAL DEPARTURE |      | GREATEST SNOW DEPTH: 0 DATE:                   |                       | : 30.37              |                      | : 29.60                       |  | 12 0957   |  |
| HEATING:           | 247 | 14              | 266  | 10   | NUMBER OF DAYS WITH → | MAXIMUM TEMP ≥ 90: 2 | MINIMUM TEMP ≤ 32: 1 | PRECIPITATION ≥ 0.01 INCH: 11 |  |           |  |
| COOLING:           | 65  | 31              | 1303 | -45  |                       | MAXIMUM TEMP ≤ 32: 0 | MINIMUM TEMP ≤ 0: 0  | PRECIPITATION ≥ 0.10 INCH: 7  |  |           |  |
|                    |     |                 |      |  |                       | THUNDERSTORMS: 0     | HEAVY FOG: 2         | SNOWFALL ≥ 1.0 INCH: 0        |  |           |  |

OCTOBER 1997  
RICHMOND, VA

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

## RICHMOND, VA

OCTOBER 1997

RIC

WBAN # 13740

| DATE | FOR HOUR (LST) ENDING AT |      |      |      |      |      |      |      |      |      |    |      | DATE | FOR HOUR (LST) ENDING AT |      |      |      |      |      |      |      |      |      |      |      | DATE | Sum if Different (See Note 2) | 2400 LST |        |
|------|--------------------------|------|------|------|------|------|------|------|------|------|----|------|------|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|-------------------------------|----------|--------|
|      | 1                        | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11 | 12   |      | 13                       | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |      |                               | Water    | Equiv. |
| 01   |                          |      |      |      |      |      |      |      |      |      |    |      | 01   | T                        | T    |      |      |      |      |      |      |      |      |      | 01   |      | 0.01                          |          |        |
| 02   |                          |      |      |      |      |      |      |      |      |      |    |      | 02   |                          |      |      |      |      |      |      |      |      |      |      | 02   |      | 0.00                          |          |        |
| 03   |                          |      |      |      |      |      |      |      |      |      |    |      | 03   |                          |      |      |      |      |      |      |      |      |      |      | 03   |      | 0.00                          |          |        |
| 04   |                          |      |      |      |      |      |      |      |      |      |    |      | 04   |                          |      |      |      |      |      |      |      |      |      |      | 04   |      | 0.00                          |          |        |
| 05   |                          |      |      |      |      |      |      |      |      |      |    |      | 05   |                          |      |      |      |      |      |      |      |      |      |      | 05   |      | 0.00                          |          |        |
| 06   |                          |      |      |      |      |      |      |      |      |      |    |      | 06   |                          |      |      |      |      |      |      |      |      |      |      | 06   |      | 0.00                          |          |        |
| 07   |                          |      |      |      |      |      |      |      |      |      |    |      | 07   |                          |      |      |      |      |      |      |      |      |      |      | 07   |      | 0.00                          |          |        |
| 08   |                          |      |      |      |      |      |      |      |      |      |    |      | 08   |                          |      |      |      |      |      |      |      |      |      |      | 08   |      | 0.00                          |          |        |
| 09   |                          |      |      |      |      |      |      |      |      |      |    |      | 09   |                          |      |      |      |      |      |      |      |      |      |      | 09   |      | 0.00                          |          |        |
| 10   |                          |      |      |      |      |      |      |      |      |      |    |      | 10   |                          |      |      |      |      |      |      |      |      |      |      | 10   |      | 0.00                          |          |        |
| 11   |                          |      |      |      |      |      |      |      |      |      |    |      | 11   |                          |      |      |      |      |      |      |      |      |      |      | 11   |      | 0.00                          |          |        |
| 12   |                          |      |      |      |      |      |      |      |      |      |    |      | 12   |                          |      |      |      |      |      |      |      |      |      |      | 12   |      | 0.00                          |          |        |
| 13   |                          |      |      |      |      |      |      |      |      |      |    |      | 13   |                          |      |      |      |      |      |      |      |      |      |      | 13   |      | 0.00                          |          |        |
| 14   |                          |      |      |      |      |      |      |      |      |      |    |      | 14   |                          |      |      |      |      |      |      |      |      |      |      | 14   | 0.69 | 0.70                          |          |        |
| 15   | 0.08                     | 0.02 | 0.04 | 0.02 | T    | T    | 0.07 | 0.04 | 0.04 | 0.05 | T  | 0.01 | 15   |                          |      |      |      |      |      | T    | 0.58 | 0.10 | T    | T    | 15   | 0.37 | 0.36                          |          |        |
| 16   |                          |      |      |      |      |      |      |      |      |      |    |      | 16   |                          |      | 0.02 | T    |      |      | T    | 0.01 |      |      | 0.01 | 16   |      | 0.05                          |          |        |
| 17   |                          |      |      |      |      |      |      |      |      |      |    |      | 17   | T                        | T    | T    | 0.01 | 0.01 | T    | T    | T    | 0.01 | T    | 0.01 | 17   |      | 0.49                          |          |        |
| 18   | 0.02                     | 0.04 | 0.01 | T    | 0.03 | 0.05 | 0.01 | 0.01 | 0.15 | 0.04 | T  | 0.01 | 18   |                          | T    | T    | T    |      |      |      |      | 0.12 | 0.02 | 0.02 | 18   |      | 0.08                          |          |        |
| 19   |                          |      |      |      |      |      |      |      |      |      |    |      | 19   | 0.10                     | 0.04 | T    | T    |      |      | T    | T    | T    |      |      | 19   |      | 0.54                          |          |        |
| 20   |                          |      |      |      |      |      |      |      |      |      |    |      | 20   |                          |      |      |      |      |      |      |      |      |      |      | 20   |      | 0.00                          |          |        |
| 21   |                          |      |      |      |      |      |      |      |      |      |    |      | 21   |                          |      |      |      |      |      |      |      |      |      |      | 21   |      | T                             |          |        |
| 22   | T                        | T    | T    |      |      |      |      |      |      |      |    |      | 22   |                          |      |      |      |      |      |      |      |      |      | T    | 22   |      | T                             |          |        |
| 23   |                          |      |      |      |      |      |      |      |      |      |    |      | 23   |                          |      |      |      |      |      |      |      |      |      |      | 23   |      | 0.00                          |          |        |
| 24   |                          |      |      |      |      |      |      |      |      |      |    |      | 24   |                          |      |      |      |      |      |      |      |      |      |      | 24   |      | 0.10                          |          |        |
| 25   | 0.15                     | 0.02 |      |      |      |      |      |      |      |      |    |      | 25   |                          |      |      |      |      |      | 0.01 | 0.02 | 0.02 | 0.02 | T    | 0.03 | 25   |                               | 0.17     |        |
| 26   |                          |      |      |      |      |      |      |      |      |      |    |      | 26   | 0.06                     | 0.08 | 0.08 | 0.08 | 0.06 | 0.08 | 0.07 | 0.02 | 0.01 |      |      | 26   |      | 0.72                          |          |        |
| 27   |                          |      |      |      |      |      |      |      |      |      |    |      | 27   |                          |      |      |      |      |      |      |      |      |      |      | 27   |      | 0.00                          |          |        |
| 28   |                          |      |      |      |      |      |      |      |      |      |    |      | 28   |                          |      |      |      |      |      |      |      |      |      |      | 28   |      | 0.00                          |          |        |
| 29   |                          |      |      |      |      |      |      |      |      |      |    |      | 29   |                          |      |      |      |      |      |      |      |      |      |      | 29   |      | 0.00                          |          |        |
| 30   |                          |      |      |      |      |      |      |      |      |      |    |      | 30   |                          |      |      |      |      |      |      |      |      |      |      | 30   |      | 0.00                          |          |        |
| 31   |                          |      |      |      |      |      |      |      |      |      |    |      | 31   |                          |      | T    | T    | T    |      | T    | 0.03 | T    |      |      | 31   |      | 0.03                          |          |        |

### MAXIMUM SHORT DURATION PRECIPITATION (See Note 1)

| Time Period (Minutes)  | 5    | 10   | 15   | 20   | 30   | 45   | 60   | 80   | 100  | 120  | 150  | 180  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Precipitation (Inches) | .18  | .29  | .37  | .40  | .44  | .49  | .58  | .61  | .62  | .68  | .68  | .68  |
| Ending Date            | 14   | 14   | 14   | 14   | 14   | 14   | 14   | 14   | 14   | 14   | 14   | 14   |
| Ending Time (Hour/Min) | 2046 | 2048 | 2050 | 2052 | 2052 | 2057 | 2054 | 2108 | 2133 | 2152 | 2152 | 2152 |

Date and time are not entered for TRACE amounts.

Note 1: NCDC derives these data from one-minute ASOS values. The table is not printed when inconsistent with ASOS hourly totals.

Note 2: The sum of the hourly totals is given when it differs from the daily total. NWS does not edit ASOS hourly values but may edit daily and monthly totals. Hourly, daily, and monthly totals are printed as reported by the ASOS site.

## REFERENCE NOTES & SUPPLEMENTAL SUMMARIES

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

T = Trace precipitation amount

+ = also occurs on earlier date

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

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

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

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

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

NORMALS ARE FOR THE YEARS 1961–1990

### WEATHER NOTATIONS

| QUALIFIER  | WEATHER PHENOMENA                 |                    |                                    |
|--|-----------------------------------|--------------------|------------------------------------|
|  | PRECIPITATION                     | OBSCURATION        | OTHER                              |
| BC Patches   | DZ Drizzle                        | BR Mist            | DS Duststorm                       |
| BL Blowing   | GR Hail                           | DU Widespread Dust | FC Funnel Cloud                    |
| DR Low Drifting  | GS Small Hail and/or Snow Pellets | FG Fog             | +FC Tornado Waterspout             |
| FZ Freezing  | IC Ice Crystals                   | FU Smoke           | PO Well-Developed Dust/Sand Whirls |
| MI Shallow   | PE 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):<br>'+' = Heavy    '' = Moderate    '-' = Light |                                   |                    |                                    |

## RICHMOND, VA OCTOBER 1997

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

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

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

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

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

### ADDITIONAL NOTES:

ERRATA-August 1997-Make the following changes to column 5 (DEP FROM NORMAL) for the days indicated: 11=0, 20=-3, 23=-8

| DATE                              | SUNSHINE         |                     | CLOUDINESS<br>(OKTAS) |           |            |           | VISIBILITY<br>(MILES) |         | RESERVED |
|-----------------------------------|------------------|---------------------|-----------------------|-----------|------------|-----------|-----------------------|---------|----------|
|                                   | TOTAL<br>MINUTES | PERCENT<br>POSSIBLE | SR-SS                 |           | MN-MN      |           | MINIMUM               | MAXIMUM |          |
|                                   |                  |                     | CEILOMETER            | SATELLITE | CEILOMETER | SATELLITE |                       |         |          |
| 01                                |                  |                     |                       |           |            |           | 10.00                 | 10.00   |          |
| 02                                |                  |                     |                       |           |            |           | 10.00                 | 10.00   |          |
| 03                                |                  |                     |                       |           |            |           | 10.00                 | 10.00   |          |
| 04                                |                  |                     |                       |           |            |           | 9.00                  | 10.00   |          |
| 05                                |                  |                     |                       |           |            |           | 4.00                  | 10.00   |          |
| 06                                |                  |                     |                       |           |            |           | 5.00                  | 10.00   |          |
| 07                                |                  |                     |                       |           |            |           | 3.00                  | 9.00    |          |
| 08                                |                  |                     |                       |           |            |           | .50                   | 10.00   |          |
| 09                                |                  |                     |                       |           |            |           | 4.00                  | 10.00   |          |
| 10                                |                  |                     |                       |           |            |           | 6.00                  | 10.00   |          |
| 11                                |                  |                     |                       |           |            |           | 10.00                 | 10.00   |          |
| 12                                |                  |                     |                       |           |            |           | 7.00                  | 10.00   |          |
| 13                                |                  |                     |                       |           |            |           | <.25                  | 10.00   |          |
| 14                                |                  |                     |                       |           |            |           | 1.75                  | 10.00   |          |
| 15                                |                  |                     |                       |           |            |           | 6.00                  | 10.00   |          |
| 16                                |                  |                     |                       |           |            |           | 6.00                  | 10.00   |          |
| 17                                |                  |                     |                       |           |            |           | 1.50                  | 10.00   |          |
| 18                                |                  |                     |                       |           |            |           | 1.50                  | 10.00   |          |
| 19                                |                  |                     |                       |           |            |           | 5.00                  | 10.00   |          |
| 20                                |                  |                     |                       |           |            |           | 4.00                  | 10.00   |          |
| 21                                |                  |                     |                       |           |            |           | 10.00                 | 10.00   |          |
| 22                                |                  |                     |                       |           |            |           | 8.00                  | 10.00   |          |
| 23                                |                  |                     |                       |           |            |           | 10.00                 | 10.00   |          |
| 24                                |                  |                     |                       |           |            |           | 6.00                  | 10.00   |          |
| 25                                |                  |                     |                       |           |            |           | 3.00                  | 10.00   |          |
| 26                                |                  |                     |                       |           |            |           | .25                   | 10.00   |          |
| 27                                |                  |                     |                       |           |            |           | <.25                  | 10.00   |          |
| 28                                |                  |                     |                       |           |            |           | 10.00                 | 10.00   |          |
| 29                                |                  |                     |                       |           |            |           | 10.00                 | 10.00   |          |
| 30                                |                  |                     |                       |           |            |           | 10.00                 | 10.00   |          |
| 31                                |                  |                     |                       |           |            |           | <.25                  | 10.00   |          |
| <b>MONTHLY AVGS</b>               |                  |                     |                       |           |            |           | 5.54                  | 9.97    |          |
| <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     |            |           |                       |         |          |
| 4                                 |                  | 10                  |                       | 12        |            |           |                       |         |          |

# OBSERVATIONS AT 3-HOURLY INTERVALS

# RICHMOND, VA

OCTOBER 1997

RIC

WBAN # 13740

| HOUR (LST)    | ≤ 12K FEET |                     | SATELLITE              |                   | WEATHER | TEMPERATURE °F     |              |           | RELATIVE HUMIDITY (PCT) | WIND     |             | PRESSURE (INCHES, HG) |               | HOUR (LST) | ≤ 12K FEET |           | SATELLITE           |                        | WEATHER | TEMPERATURE °F    |                    |          | RELATIVE HUMIDITY (PCT) | WIND      |          | PRESSURE (INCHES, HG) |                       |         |           |
|---------------|------------|---------------------|------------------------|-------------------|---------|--------------------|--------------|-----------|-------------------------|----------|-------------|-----------------------|---------------|------------|------------|-----------|---------------------|------------------------|---------|-------------------|--------------------|----------|-------------------------|-----------|----------|-----------------------|-----------------------|---------|-----------|
|               | SKY COVER  | CEILING 100'S OF FT | OBSERVATION TIME (LST) | EFF CLD AMT Oktas |         | VISIBILITY (MILES) | DRY BULB     | DEW POINT |                         | WET BULB | SPEED (MPH) | DIRECTION TENS OF DEG | STATION       |            | SEA LEVEL  | SKY COVER | CEILING 100'S OF FT | OBSERVATION TIME (LST) |         | EFF CLD AMT Oktas | VISIBILITY (MILES) | DRY BULB |                         | DEW POINT | WET BULB | SPEED (MPH)           | DIRECTION TENS OF DEG | STATION | SEA LEVEL |
|               |            |                     |                        |                   |         |                    |              |           |                         |          |             |                       |               |            |            |           |                     |                        |         |                   |                    |          |                         |           |          |                       |                       |         |           |
| SUNRISE: 0605 |            |                     |                        |                   |         | OCT 01             | SUNSET: 1752 |           |                         |          |             |                       | SUNRISE: 0610 |            |            |           |                     |                        | OCT 07  | SUNSET: 1743      |                    |          |                         |           |          |                       |                       |         |           |
| 01            | SCT        | NC                  |                        |                   | 10.00   |                    | 54           | 49        | 51                      | 83       | 5           | 25                    | 29.61         | 29.81      | 01         | CLR       | NC                  |                        |         | 8.00              |                    | 64       | 60                      | 62        | 87       | 0                     | 00                    | 29.94   | 30.14     |
| 04            | BKN        | 090                 |                        |                   | 10.00   |                    | 54           | 51        | 52                      | 90       | 8           | 12                    | 29.60         | 29.80      | 04         | CLR       | NC                  |                        |         | 6.00              | BR                 | 60       | 58                      | 59        | 93       | 0                     | 00                    | 29.96   | 30.16     |
| 07            | BKN        | 080                 |                        |                   | 10.00   |                    | 56           | 53        | 54                      | 90       | 5           | 14                    | 29.63         | 29.83      | 07         | CLR       | NC                  |                        |         | 3.00              | BR                 | 61       | 60                      | 60        | 97       | 0                     | 00                    | 29.99   | 30.19     |
| 10            | OVC        | 100                 |                        |                   | 10.00   |                    | 67           | 50        | 58                      | 55       | 8           | 27                    | 29.67         | 29.87      | 10         | CLR       | NC                  |                        |         | 9.00              |                    | 80       | 62                      | 69        | 54       | 12                    | 04                    | 30.01   | 30.21     |
| 13            | BKN        | 250                 |                        |                   | 10.00   | -RA                | 67           | 50        | 58                      | 55       | 16          | 36                    | 29.69         | 29.89      | 13         | FEW       | NC                  |                        |         | 6.00              | HZ                 | 87       | 62                      | 71        | 43       | 5                     | VR                    | 29.96   | 30.16     |
| 16            | BKN        | 075                 |                        |                   | 10.00   |                    | 69           | 48        | 57                      | 47       | 16          | 33                    | 29.72         | 29.92      | 16         | FEW       | NC                  |                        |         | 9.00              |                    | 86       | 62                      | 71        | 45       | 9                     | 03                    | 29.95   | 30.14     |
| 19            | FEW        | NC                  |                        |                   | 10.00   |                    | 63           | 49        | 55                      | 60       | 8           | 34                    | 29.78         | 29.98      | 19         | CLR       | NC                  |                        |         | 9.00              |                    | 77       | 63                      | 68        | 62       | 8                     | 09                    | 29.98   | 30.18     |
| 22            | CLR        | NC                  |                        |                   | 10.00   |                    | 54           | 42        | 48                      | 64       | 10          | 01                    | 29.88         | 30.09      | 22         | CLR       | NC                  |                        |         | 8.00              |                    | 69       | 62                      | 65        | 78       | 0                     | 00                    | 30.03   | 30.23     |
| SUNRISE: 0606 |            |                     |                        |                   |         | OCT 02             | SUNSET: 1751 |           |                         |          |             |                       | SUNRISE: 0611 |            |            |           |                     |                        | OCT 08  | SUNSET: 1742      |                    |          |                         |           |          |                       |                       |         |           |
| 01            | CLR        | NC                  |                        |                   | 10.00   |                    | 50           | 39        | 45                      | 66       | 10          | 01                    | 29.92         | 30.13      | 01         | CLR       | NC                  |                        |         | 5.00              | BR                 | 63       | 62                      | 62        | 97       | 0                     | 00                    | 30.04   | 30.24     |
| 04            | CLR        | NC                  |                        |                   | 10.00   |                    | 45           | 39        | 42                      | 80       | 7           | 35                    | 29.93         | 30.13      | 04         | BKN       | 060                 |                        |         | 5.00              | BR                 | 63       | 62                      | 62        | 97       | 0                     | 00                    | 30.05   | 30.25     |
| 07            | CLR        | NC                  |                        |                   | 10.00   |                    | 45           | 40        | 43                      | 83       | 6           | 01                    | 29.99         | 30.19      | 07         | FEW       | NC                  |                        |         | 0.50              | BR                 | 61       | 61                      | 61        | 100      | 3                     | 04                    | 30.10   | 30.29     |
| 10            | SCT        | NC                  |                        |                   | 10.00   |                    | 56           | 38        | 47                      | 51       | 5           | VR                    | 30.02         | 30.22      | 10         | CLR       | NC                  |                        |         | 10.00             |                    | 77       | 58                      | 65        | 52       | 6                     | 14                    | 30.12   | 30.32     |
| 13            | BKN        | 250                 |                        |                   | 10.00   |                    | 62           | 34        | 49                      | 35       | 0           | 00                    | 29.96         | 30.16      | 13         | FEW       | NC                  |                        |         | 10.00             |                    | 83       | 60                      | 69        | 46       | 9                     | 09                    | 30.08   | 30.27     |
| 16            | FEW        | NC                  |                        |                   | 10.00   |                    | 66           | 31        | 50                      | 27       | 3           | VR                    | 29.90         | 30.10      | 16         | FEW       | NC                  |                        |         | 10.00             |                    | 84       | 59                      | 68        | 43       | 7                     | 15                    | 30.05   | 30.24     |
| 19            | CLR        | NC                  |                        |                   | 10.00   |                    | 55           | 37        | 47                      | 51       | 0           | 00                    | 29.90         | 30.11      | 19         | CLR       | NC                  |                        |         | 10.00             |                    | 72       | 55                      | 62        | 55       | 8                     | 13                    | 30.08   | 30.28     |
| 22            | CLR        | NC                  |                        |                   | 10.00   |                    | 47           | 40        | 44                      | 77       | 5           | 14                    | 29.92         | 30.12      | 22         | CLR       | NC                  |                        |         | 10.00             |                    | 67       | 62                      | 64        | 84       | 7                     | 14                    | 30.11   | 30.31     |
| SUNRISE: 0607 |            |                     |                        |                   |         | OCT 03             | SUNSET: 1749 |           |                         |          |             |                       | SUNRISE: 0612 |            |            |           |                     |                        | OCT 09  | SUNSET: 1741      |                    |          |                         |           |          |                       |                       |         |           |
| 01            | CLR        | NC                  |                        |                   | 10.00   |                    | 47           | 43        | 45                      | 86       | 3           | 16                    | 29.91         | 30.11      | 01         | FEW       | NC                  |                        |         | 10.00             |                    | 64       | 62                      | 63        | 93       | 3                     | 13                    | 30.12   | 30.32     |
| 04            | CLR        | NC                  |                        |                   | 10.00   |                    | 44           | 41        | 43                      | 89       | 3           | 14                    | 29.89         | 30.09      | 04         | BKN       | 070                 |                        |         | 10.00             |                    | 63       | 62                      | 62        | 97       | 0                     | 00                    | 30.13   | 30.33     |
| 07            | SCT        | NC                  |                        |                   | 10.00   |                    | 45           | 43        | 44                      | 93       | 5           | 20                    | 29.92         | 30.12      | 07         | SCT       | NC                  |                        |         | 4.00              | BR                 | 63       | 63                      | 63        | 100      | 0                     | 00                    | 30.15   | 30.35     |
| 10            | SCT        | NC                  |                        |                   | 10.00   |                    | 64           | 45        | 54                      | 50       | 9           | 19                    | 29.90         | 30.10      | 10         | BKN       | 250                 |                        |         | 10.00             |                    | 76       | 67                      | 70        | 74       | 8                     | 22                    | 30.14   | 30.34     |
| 13            | BKN        | 250                 |                        |                   | 10.00   |                    | 73           | 45        | 58                      | 37       | 9           | 19                    | 29.84         | 30.04      | 13         | SCT       | NC                  |                        |         | 10.00             |                    | 84       | 64                      | 71        | 51       | 12                    | 22                    | 30.08   | 30.28     |
| 16            | SCT        | NC                  |                        |                   | 10.00   |                    | 74           | 47        | 59                      | 38       | 12          | 21                    | 29.79         | 29.99      | 16         | FEW       | NC                  |                        |         | 10.00             |                    | 84       | 61                      | 69        | 46       | 12                    | 24                    | 30.04   | 30.24     |
| 19            | SCT        | NC                  |                        |                   | 10.00   |                    | 63           | 50        | 56                      | 63       | 6           | 18                    | 29.82         | 30.02      | 19         | SCT       | NC                  |                        |         | 9.00              |                    | 72       | 63                      | 66        | 73       | 3                     | 20                    | 30.06   | 30.26     |
| 22            | FEW        | NC                  |                        |                   | 10.00   |                    | 58           | 50        | 54                      | 75       | 6           | 20                    | 29.83         | 30.03      | 22         | OVC       | 250                 |                        |         | 7.00              |                    | 69       | 63                      | 65        | 81       | 3                     | 18                    | 30.07   | 30.27     |
| SUNRISE: 0608 |            |                     |                        |                   |         | OCT 04             | SUNSET: 1748 |           |                         |          |             |                       | SUNRISE: 0613 |            |            |           |                     |                        | OCT 10  | SUNSET: 1739      |                    |          |                         |           |          |                       |                       |         |           |
| 01            | CLR        | NC                  |                        |                   | 10.00   |                    | 56           | 48        | 52                      | 75       | 6           | 18                    | 29.84         | 30.04      | 01         | OVC       | 250                 |                        |         | 9.00              |                    | 69       | 64                      | 66        | 84       | 9                     | 20                    | 30.07   | 30.27     |
| 04            | SCT        | NC                  |                        |                   | 10.00   |                    | 54           | 49        | 51                      | 83       | 5           | 13                    | 29.84         | 30.05      | 04         | BKN       | 250                 |                        |         | 10.00             |                    | 67       | 64                      | 65        | 91       | 8                     | 21                    | 30.05   | 30.25     |
| 07            | SCT        | NC                  |                        |                   | 9.00    |                    | 54           | 50        | 52                      | 87       | 3           | 15                    | 29.89         | 30.09      | 07         | OVC       | 090                 |                        |         | 7.00              |                    | 67       | 65                      | 66        | 93       | 7                     | 21                    | 30.07   | 30.27     |
| 10            | SCT        | NC                  |                        |                   | 10.00   |                    | 70           | 53        | 60                      | 55       | 0           | 00                    | 29.91         | 30.11      | 10         | SCT       | NC                  |                        |         | 7.00              |                    | 76       | 64                      | 68        | 67       | 0                     | 00                    | 30.08   | 30.28     |
| 13            | FEW        | NC                  |                        |                   | 10.00   |                    | 80           | 55        | 65                      | 42       | 8           | 18                    | 29.87         | 30.07      | 13         | FEW       | NC                  |                        |         | 9.00              |                    | 86       | 62                      | 71        | 45       | 0                     | 00                    | 30.03   | 30.22     |
| 16            | CLR        | NC                  |                        |                   | 10.00   |                    | 82           | 54        | 65                      | 38       | 6           | 25                    | 29.85         | 30.05      | 16         | SCT       | NC                  |                        |         | 10.00             |                    | 86       | 62                      | 71        | 45       | 7                     | 26                    | 29.98   | 30.18     |
| 19            | CLR        | NC                  |                        |                   | 10.00   |                    | 70           | 58        | 63                      | 66       | 5           | 14                    | 29.87         | 30.08      | 19         | BKN       | 100                 |                        |         | 10.00             |                    | 78       | 64                      | 69        | 62       | 3                     | 01                    | 29.99   | 30.19     |
| 22            | CLR        | NC                  |                        |                   | 10.00   |                    | 65           | 58        | 61                      | 78       | 0           | 00                    | 29.90         | 30.10      | 22         | BKN       | 050                 |                        |         | 10.00             |                    | 76       | 65                      | 69        | 69       | 8                     | 36                    | 30.02   | 30.22     |
| SUNRISE: 0608 |            |                     |                        |                   |         | OCT 05             | SUNSET: 1746 |           |                         |          |             |                       | SUNRISE: 0614 |            |            |           |                     |                        | OCT 11  | SUNSET: 1738      |                    |          |                         |           |          |                       |                       |         |           |
| 01            | CLR        | NC                  |                        |                   | 10.00   |                    | 63           | 57        | 60                      | 81       | 3           | 19                    | 29.89         | 30.09      | 01         | FEW       | NC                  |                        |         | 10.00             |                    | 69       | 53                      | 60        | 57       | 9                     | 03                    | 30.04   | 30.24     |
| 04            | CLR        | NC                  |                        |                   | 8.00    |                    | 59           | 56        | 57                      | 90       | 0           | 00                    | 29.89         | 30.09      | 04         | CLR       | NC                  |                        |         | 10.00             |                    | 61       | 53                      | 57        | 75       | 7                     | 01                    | 30.06   | 30.26     |
| 07            | FEW        | NC                  |                        |                   | 4.00    | BR                 | 59           | 57        | 58                      | 93       | 0           | 00                    | 29.91         | 30.11      | 07         | SCT       | NC                  |                        |         | 10.00             |                    | 59       | 51                      | 55        | 75       | 8                     | 36                    | 30.10   | 30.30     |
| 10            | CLR        | NC                  |                        |                   | 10.00   |                    | 75           | 59        | 65                      | 58       | 3           | 30                    | 29.95         | 30.15      | 10         | FEW       | NC                  |                        |         | 10.00             |                    | 70       | 47                      | 57        | 44       | 12                    | 05                    | 30.14   | 30.34     |
| 13            | CLR        | NC                  |                        |                   | 10.00   |                    | 88           | 58        | 69                      | 36       | 7           | VR                    | 29.90         | 30.10      | 13         | SCT       | NC                  |                        |         | 10.00             |                    | 75       | 48                      | 60        | 39       | 0                     | 00                    | 30.08   | 30.28     |
| 16            | CLR        | NC                  |                        |                   | 10.00   |                    | 89           | 58        | 69                      | 35       | 3           | 31                    | 29.86         | 30.06      | 16         | FEW       | NC                  |                        |         | 10.00             |                    | 76       | 45                      | 59        | 33       | 8                     | 01                    | 30.05   | 30.24     |
| 19            | CLR        | NC                  |                        |                   | 10.00   |                    | 75           | 61        | 66                      | 62       | 0           | 00                    | 29.87         | 30.06      | 19         | FEW       | NC                  |                        |         | 10.00             |                    | 63       | 47                      | 54        | 56       | 7                     | 08                    | 30.09   | 30.29     |
| 22            | CLR        | NC                  |                        |                   | 9.00    |                    | 67           | 61        | 63                      | 81       | 0           | 00                    | 29.90         | 30.10      | 22         | CLR       | NC                  |                        |         | 10.00             |                    | 55       | 48                      | 51        | 77       | 0                     | 00                    | 30.12   | 30.32     |
| SUNRISE: 0609 |            |                     |                        |                   |         | OCT 06             | SUNSET: 1745 |           |                         |          |             |                       | SUNRISE: 0615 |            |            |           |                     |                        | OCT 12  | SUNSET: 1736      |                    |          |                         |           |          |                       |                       |         |           |
| 01            | CLR        | NC                  |                        |                   | 8.00    |                    | 65           | 62        | 63                      | 90       | 0           | 00                    | 29.92         | 30.12      | 01         | CLR       | NC                  |                        |         | 10.00             |                    | 52       | 48                      | 50        | 86       | 0                     | 00                    | 30.12   | 30.32     |
| 04            | CLR        | NC                  |                        |                   | 7.00    |                    | 65           | 61        | 63                      | 87       | 0           | 00                    | 29.92         | 30.12      | 04         | CLR       | NC                  |                        |         | 10.00             |                    | 50       | 49                      | 49        | 96       | 3                     | 04                    | 30.11   | 30.31     |
| 07            | CLR        | NC                  |                        |                   | 5.00    | BR                 | 62           | 60        | 61                      | 93       | 0           | 00                    | 29.96         | 30.16      | 07         | FEW       | NC                  |                        |         | 7.00              |                    | 51       | 50                      | 51        | 96       | 3                     | 33                    | 30.15   | 30.35     |
| 10            | CLR        | NC                  |                        |                   | 10.00   |                    | 82           | 62        | 69                      | 51       | 8           | 04                    | 29.99         | 30.19      | 10         | SCT       | NC                  |                        |         | 10.00             |                    | 66       | 51                      | 58        | 59       | 3                     | VR                    | 30.16   | 30.37     |
| 13            | CLR        | NC                  |                        |                   | 10.00   |                    | 89           | 58        | 69                      | 35       | 6           | 08                    | 29.94         | 30.14      | 13         | SCT       | NC                  |                        |         | 10.00             |                    | 74       | 50                      | 60        | 43       | 5                     | VR                    | 30.09   | 30.29     |
| 16            | CLR        | NC                  |                        |                   | 10.00   |                    | 90           | 57        | 69                      | 33       | 7           | 21                    | 29.91         | 30.11      | 16         | SCT       | NC                  |                        |         | 10.00             |                    | 75       | 51                      | 61        | 43       | 5                     | 17                    | 30.03   | 30.24     |
| 19            | CLR        | NC                  |                        |                   | 10.00   |                    | 77           | 60        | 66                      | 56       | 0           | 00                    | 29.92         | 30.12      | 19         | FEW       | NC                  |                        |         | 10.00             |                    | 64       | 52                      | 57        | 65       | 3                     | 11                    | 30.05   | 30.25     |
| 22            | CLR        | NC                  |                        |                   | 10.00   |                    | 71           | 62        | 66                      | 73       | 0           | 00                    | 29.94         | 30.14      | 22         | CLR       | NC                  |                        |         | 10.00             |                    | 58       | 53                      | 55        | 84       | 0                     | 00                    | 30.08   | 30.28     |



# OBSERVATIONS AT 3-HOURLY INTERVALS

# RICHMOND, VA

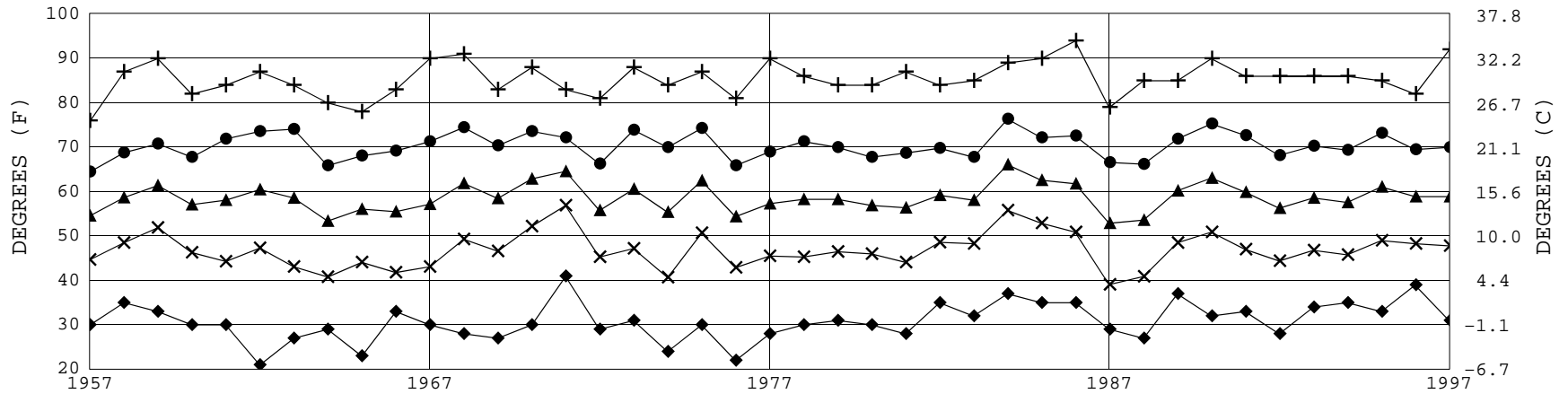
OCTOBER 1997

RIC

WBAN # 13740

| HOUR (LST)  | ≤ 12K FEET |                     | SATELLITE              |                   | WEATHER     | TEMPERATURE °F     |              |           | WIND | PRESSURE (INCHES, HG) |                         | HOUR (LST) | ≤ 12K FEET                        |                       | 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 |         | 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: 0627   |            |                     |                        |                   |             | OCT 25             | SUNSET: 1719 |           |      |                       |                         |            | SUNRISE: 0633                     |                       |           |           |         |                | OCT 31              | SUNSET: 1712           |      |                       |                    |          |           |          |                         |
| 01  | OVC        | 020                 |                        |                   | 3.00 +RA BR | 58                 | 57           | 57        | 97   | 13                    | 19                      | 29.69      | 29.89                             | 01                    | CLR       | NC        |         |                | 9.00                | 42                     | 41   | 42                    | 96                 | 0        | 00        | 29.97    | 30.18                   |
| 04  | OVC        | 005                 |                        |                   | 6.00 BR     | 57                 | 57           | 57        | 100  | 6                     | 28                      | 29.64      | 29.85                             | 04                    | CLR       | NC        |         |                | 6.00 BR             | 41                     | 41   | 41                    | 100                | 0        | 00        | 29.92    | 30.13                   |
| 07  | OVC        | 006                 |                        |                   | 3.00 BR     | 55                 | 55           | 55        | 100  | 6                     | 27                      | 29.68      | 29.88                             | 07                    | SCT       | NC        |         |                | 0.75 BR             | 39                     | 39   | 39                    | 100                | 0        | 00        | 29.94    | 30.15                   |
| 10  | BKN        | 007                 |                        |                   | 7.00        | 57                 | 54           | 55        | 90   | 8                     | 29                      | 29.72      | 29.92                             | 10                    | SCT       | NC        |         |                | 10.00               | 59                     | 54   | 56                    | 83                 | 5        | 10        | 29.96    | 30.16                   |
| 13  | SCT        | NC                  |                        |                   | 10.00       | 67                 | 57           | 61        | 71   | 7                     | 27                      | 29.69      | 29.89                             | 13                    | BKN       | 050       |         |                | 10.00               | 66                     | 51   | 58                    | 59                 | 9        | 11        | 29.87    | 30.07                   |
| 16  | FEW        | NC                  |                        |                   | 10.00       | 71                 | 58           | 63        | 63   | 9                     | 01                      | 29.71      | 29.91                             | 16                    | OVC       | 044       |         |                | 10.00 -RA           | 63                     | 56   | 59                    | 78                 | 0        | 00        | 29.83    | 30.03                   |
| 19  | SCT        | NC                  |                        |                   | 10.00       | 56                 | 52           | 54        | 87   | 14                    | 03                      | 29.82      | 30.03                             | 19                    | OVC       | 044       |         |                | 10.00 -RA           | 59                     | 56   | 57                    | 90                 | 5        | 09        | 29.82    | 30.02                   |
| 22  | BKN        | 038                 |                        |                   | 10.00       | 55                 | 50           | 52        | 83   | 12                    | 02                      | 29.89      | 30.09                             | 22                    | OVC       | 075       |         |                | 6.00 BR             | 57                     | 56   | 56                    | 96                 | 3        | 03        | 29.76    | 29.96                   |
| SUNRISE: 0628   |            |                     |                        |                   |             | OCT 26             | SUNSET: 1718 |           |      |                       |                         |            | <b>3-HOURLY OBSERVATION NOTES</b> |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| Sky Cover is the amount of the sky obscured. CLR = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, VV = Vertical Visibility = 8/8. Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet. NC = No ceiling detected. & = Original observation contained additional weather elements. See page 3 for additional notes. |            |                     |                        |                   |             |                    |              |           |      |                       |                         |            |                                   |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 01  | OVC        | 040                 |                        |                   | 10.00       | 53                 | 49           | 51        | 86   | 6                     | 04                      | 29.92      | 30.12                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 04  | OVC        | 017                 |                        |                   | 10.00       | 51                 | 48           | 50        | 89   | 6                     | 04                      | 29.91      | 30.11                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 07  | OVC        | 037                 |                        |                   | 10.00       | 51                 | 48           | 50        | 89   | 7                     | 06                      | 29.91      | 30.11                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 10  | OVC        | 015                 |                        |                   | 2.00 -RA BR | 50                 | 50           | 50        | 100  | 8                     | 05                      | 29.91      | 30.11                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 13  | OVC        | 005                 |                        |                   | 2.00 RA BR  | 52                 | 52           | 52        | 100  | 7                     | 08                      | 29.82      | 30.02                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 16  | OVC        | 003                 |                        |                   | 2.00 -RA BR | 54                 | 54           | 54        | 100  | 6                     | 01                      | 29.73      | 29.94                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 19  | OVC        | 001                 |                        |                   | 2.00 -RA BR | 54                 | 54           | 54        | 100  | 7                     | 33                      | 29.67      | 29.87                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 22  | OVC        | 001                 |                        |                   | 0.75 BR     | 52                 | 52           | 52        | 100  | 6                     | 29                      | 29.57      | 29.78                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| SUNRISE: 0629   |            |                     |                        |                   |             | OCT 27             | SUNSET: 1717 |           |      |                       |                         |            |                                   |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 01  | OVC        | 001                 |                        |                   | < .25 FG    | 52                 | 52           | 52        | 100  | 3                     | 23                      | 29.44      | 29.64                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 04  | OVC        | 001                 |                        |                   | < .25 BR    | 52                 | 52           | 52        | 100  | 6                     | 23                      | 29.41      | 29.62                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 07  | OVC        | 001                 |                        |                   | 1.50        | 53                 | 53           | 53        | 100  | 10                    | 24                      | 29.42      | 29.62                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 10  | OVC        | 200                 |                        |                   | 10.00       | 62                 | 59           | 60        | 90   | 10                    | 24                      | 29.44      | 29.64                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 13  | OVC        | 250                 |                        |                   | 10.00       | 66                 | 51           | 58        | 59   | 13                    | 26                      | 29.41      | 29.61                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 16  | OVC        | 150                 |                        |                   | 10.00       | 65                 | 51           | 57        | 61   | 7                     | 29                      | 29.42      | 29.62                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 19  | OVC        | 044                 |                        |                   | 10.00       | 56                 | 46           | 51        | 70   | 12                    | 01                      | 29.53      | 29.74                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 22  | FEW        | NC                  |                        |                   | 10.00       | 49                 | 38           | 44        | 66   | 8                     | 34                      | 29.64      | 29.84                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| SUNRISE: 0630   |            |                     |                        |                   |             | OCT 28             | SUNSET: 1716 |           |      |                       |                         |            |                                   |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 01  | CLR        | NC                  |                        |                   | 10.00       | 44                 | 35           | 40        | 71   | 8                     | 33                      | 29.70      | 29.91                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 04  | CLR        | NC                  |                        |                   | 10.00       | 40                 | 32           | 37        | 73   | 8                     | 34                      | 29.77      | 29.98                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 07  | CLR        | NC                  |                        |                   | 10.00       | 36                 | 29           | 33        | 76   | 6                     | 31                      | 29.87      | 30.07                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 10  | FEW        | NC                  |                        |                   | 10.00       | 45                 | 26           | 37        | 48   | 6                     | VR                      | 29.91      | 30.12                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 13  | CLR        | NC                  |                        |                   | 10.00       | 52                 | 26           | 41        | 37   | 9                     | 31                      | 29.88      | 30.09                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 16  | CLR        | NC                  |                        |                   | 10.00       | 55                 | 27           | 43        | 34   | 7                     | 26                      | 29.89      | 30.09                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 19  | SCT        | NC                  |                        |                   | 10.00       | 41                 | 34           | 38        | 76   | 5                     | 13                      | 29.93      | 30.14                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 22  | CLR        | NC                  |                        |                   | 10.00       | 42                 | 32           | 38        | 68   | 5                     | 16                      | 29.95      | 30.16                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| SUNRISE: 0631   |            |                     |                        |                   |             | OCT 29             | SUNSET: 1714 |           |      |                       |                         |            |                                   |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 01  | CLR        | NC                  |                        |                   | 10.00       | 37                 | 33           | 35        | 86   | 0                     | 00                      | 29.93      | 30.14                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 04  | CLR        | NC                  |                        |                   | 10.00       | 34                 | 32           | 33        | 92   | 0                     | 00                      | 29.93      | 30.13                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 07  | BKN        | 250                 |                        |                   | 10.00       | 35                 | 33           | 34        | 93   | 0                     | 00                      | 29.97      | 30.18                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 10  | BKN        | 250                 |                        |                   | 10.00       | 53                 | 37           | 46        | 55   | 12                    | 23                      | 29.97      | 30.17                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 13  | FEW        | NC                  |                        |                   | 10.00       | 60                 | 36           | 49        | 41   | 5                     | VR                      | 29.92      | 30.12                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 16  | CLR        | NC                  |                        |                   | 10.00       | 62                 | 33           | 49        | 34   | 3                     | VR                      | 29.88      | 30.09                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 19  | CLR        | NC                  |                        |                   | 10.00       | 49                 | 40           | 45        | 71   | 0                     | 00                      | 29.91      | 30.11                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 22  | CLR        | NC                  |                        |                   | 10.00       | 44                 | 38           | 41        | 79   | 5                     | 13                      | 29.94      | 30.14                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| SUNRISE: 0632   |            |                     |                        |                   |             | OCT 30             | SUNSET: 1713 |           |      |                       |                         |            |                                   |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 01  | CLR        | NC                  |                        |                   | 10.00       | 39                 | 37           | 38        | 93   | 3                     | 14                      | 29.93      | 30.13                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 04  | CLR        | NC                  |                        |                   | 10.00       | 38                 | 36           | 37        | 93   | 0                     | 00                      | 29.94      | 30.14                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 07  | CLR        | NC                  |                        |                   | 10.00       | 39                 | 36           | 38        | 89   | 0                     | 00                      | 30.00      | 30.20                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 10  | CLR        | NC                  |                        |                   | 10.00       | 58                 | 39           | 49        | 50   | 7                     | 07                      | 30.03      | 30.24                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 13  | CLR        | NC                  |                        |                   | 10.00       | 65                 | 40           | 52        | 40   | 7                     | 02                      | 29.98      | 30.18                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 16  | CLR        | NC                  |                        |                   | 10.00       | 65                 | 40           | 52        | 40   | 0                     | 00                      | 29.96      | 30.16                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 19  | CLR        | NC                  |                        |                   | 10.00       | 51                 | 44           | 48        | 77   | 3                     | 13                      | 29.97      | 30.18                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |
| 22  | CLR        | NC                  |                        |                   | 10.00       | 48                 | 42           | 45        | 80   | 0                     | 00                      | 29.98      | 30.18                             |                       |           |           |         |                |                     |                        |      |                       |                    |          |           |          |                         |

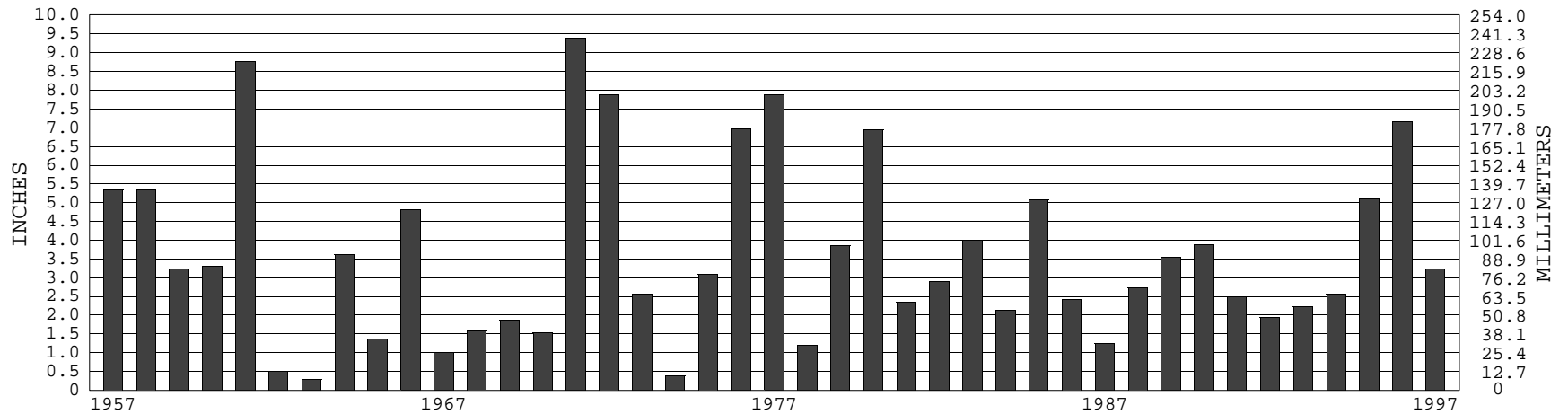
### RICHMOND, VA OCTOBER TEMPERATURES



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

Long-Term (1957-1997) Mean: 58.6      1961-1990 Normal: 58.6

### RICHMOND, VA OCTOBER PRECIPITATION



Long-Term (1957-1997) Mean Monthly Total: 3.61

1961-1990 Normal: 3.53



**OCTOBER 1997  
RICHMOND, VA**

# 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.*

ACTING DIRECTOR

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