



NOVEMBER 2003

LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

RICHMOND, VA

RICHMOND INTL AIRPORT (RIC)
 Lat: 37°30' N Long: 77°19' W Elev (Ground): 164 Feet
 Time Zone: EASTERN WBAN: 13740 ISSN #:0198-537X

NOVEMBER 2003
RICHMOND, VA

| DATE | TEMPERATURE °F | | | | | | DEG DAYS BASE 65° | | WEATHER | SNOW/ICE ON GND(IN) | | PRECIPITATION (INCHES) | | PRESSURE (INCHES OF HG) | | WIND SPEED = MPH DIR = TENS OF DEGREES | | | | | | DATE | |
|------|----------------|---------|---------|-----------------|----------------|------------------|-------------------|---------|-----------|---------------------|----------|------------------------|----------|-------------------------|-------------------|--|---------|---------------|---------|----|-------|------|----|
| | MAXIMUM | MINIMUM | AVERAGE | DEP FROM NORMAL | AVERAGE DEW PT | AVERAGE WET BULB | HEATING | COOLING | | 0700 LST | 1300 LST | 2400 LST | 2400 LST | AVERAGE STATION | AVERAGE SEA LEVEL | RESULTANT SPEED | RES DIR | AVERAGE SPEED | MAXIMUM | | | | |
| | | | | | | | | | | | | | | | | | | | 5-SEC | | 2-MIN | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 01 | 82 | 47 | 65 | 12 | 55 | 58 | 0 | 0 | | | | 0.0 | 0.00 | 30.06 | 30.25 | 0.9 | 15 | 1.8 | 12 | 09 | 10 | 06 | 01 |
| 02 | 82* | 53 | 68 | 15 | 58 | 61 | 0 | 3 | BR | | | 0.0 | 0.00 | 30.05 | 30.24 | 1.8 | 13 | 2.3 | 12 | 18 | 9 | 14 | 02 |
| 03 | 79 | 50 | 65 | 13 | 56 | 59 | 0 | 0 | BR | | | 0.0 | 0.00 | 30.00 | 30.18 | 3.8 | 18 | 3.9 | 16 | 18 | 14 | 17 | 03 |
| 04 | 80 | 52 | 66 | 14 | 65 | 66 | 0 | 1 | FG+ BR | | | 0.0 | 0.00 | 29.94 | 30.13 | 4.2 | 18 | 4.6 | 16 | 19 | 13 | 18 | 04 |
| 05 | 77 | 64 | 71* | 19 | 70 | 70 | 0 | 6 | RA FG+ BR | | | 0.0 | 0.01 | 29.92 | 30.11 | 7.9 | 20 | 8.1 | 18 | 20 | 16 | 19 | 05 |
| 06 | 74 | 64 | 69 | 17 | 68 | 68 | 0 | 4 | RA FG+ BR | | | 0.0 | 1.29 | 29.87 | 30.05 | 0.7 | 01 | 5.8 | 21 | 05 | 16 | 04 | 06 |
| 07 | 65 | 54 | 60 | 9 | 54 | 57 | 5 | 0 | RA BR | | | 0.0 | 0.01 | 29.98 | 30.17 | 7.1 | 03 | 7.5 | 20 | 01 | 16 | 02 | 07 |
| 08 | 56 | 40 | 48 | -3 | 32 | 42 | 17 | 0 | | | | 0.0 | 0.00 | 30.23 | 30.42 | 10.7 | 02 | 10.9 | 23 | 01 | 18 | 01 | 08 |
| 09 | 49 | 33 | 41 | -10 | 27 | 35 | 24 | 0 | | | | 0.0 | 0.00 | 30.45 | 30.65 | 6.4 | 03 | 6.9 | 17 | 02 | 15 | 02 | 09 |
| 10 | 55 | 30 | 43 | -8 | 34 | 39 | 22 | 0 | | | | 0.0 | 0.00 | 30.30 | 30.50 | 1.3 | 06 | 2.7 | 13 | 05 | 10 | 07 | 10 |
| 11 | 66 | 36 | 51 | 1 | 44 | 48 | 14 | 0 | BR | | | 0.0 | 0.00 | 30.02 | 30.21 | 7.7 | 20 | 8.0 | 23 | 19 | 20 | 20 | 11 |
| 12 | 72 | 59 | 66 | 16 | 54 | 58 | 0 | 1 | RA | | | 0.0 | 0.02 | 29.71 | 29.90 | 5.3 | 22 | 7.0 | 26 | 29 | 22 | 28 | 12 |
| 13 | 67 | 39 | 53 | 3 | 26 | 43 | 12 | 0 | | | | 0.0 | 0.00 | 29.67 | 29.85 | 19.5 | 29 | 21.2 | 46* | 27 | 36* | 30 | 13 |
| 14 | 52 | 29 | 41 | -8 | 19 | 34 | 24 | 0 | | | | 0.0 | 0.00 | 29.92 | 30.11 | 10.1 | 26 | 10.9 | 28 | 26 | 22 | 26 | 14 |
| 15 | 52 | 41 | 47 | -2 | 32 | 41 | 18 | 0 | RA | | | 0.0 | T | 29.98 | 30.17 | 5.8 | 26 | 7.0 | 17 | 27 | 14 | 27 | 15 |
| 16 | 53 | 43 | 48 | -1 | 47 | 48 | 17 | 0 | RA BR | | | 0.0 | 0.05 | 30.02 | 30.21 | 2.8 | 19 | 3.6 | 10 | 25 | 8 | 25 | 16 |
| 17 | 65 | 43 | 54 | 5 | 48 | 50 | 11 | 0 | BR | | | 0.0 | 0.00 | 30.04 | 30.23 | 3.1 | 05 | 3.6 | 15 | 03 | 13 | 01 | 17 |
| 18 | 67 | 44 | 56 | 7 | 53 | 55 | 9 | 0 | RA BR | | | 0.0 | 0.01 | 30.02 | 30.21 | 6.7 | 11 | 7.8 | 20 | 13 | 16 | 12 | 18 |
| 19 | 73 | 54 | 64 | 15 | 61 | 61 | 1 | 0 | RA BR | | | 0.0 | 1.52 | 29.52 | 29.70 | 9.1 | 16 | 12.4 | 41 | 15 | 30 | 23 | 19 |
| 20 | 62 | 39 | 51 | 3 | 39 | 45 | 14 | 0 | | | | 0.0 | 0.00 | 29.73 | 29.91 | 6.8 | 30 | 7.9 | 25 | 28 | 20 | 30 | 20 |
| 21 | 75 | 36 | 56 | 9 | 41 | 47 | 9 | 0 | | | | 0.0 | 0.00 | 29.85 | 30.04 | 2.0 | 24 | 3.5 | 16 | 27 | 14 | 27 | 21 |
| 22 | 71 | 41 | 56 | 9 | 45 | 50 | 9 | 0 | | | | 0.0 | 0.00 | 29.93 | 30.12 | 2.7 | 13 | 3.1 | 9 | 14 | 8 | 13 | 22 |
| 23 | 68 | 40 | 54 | 7 | 49 | 51 | 11 | 0 | FG+ BR | | | 0.0 | 0.00 | 29.97 | 30.16 | 5.1 | 14 | 5.3 | 13 | 13 | 10 | 13 | 23 |
| 24 | 71 | 44 | 58 | 11 | 51 | 53 | 7 | 0 | RA FG+ BR | | | 0.0 | 0.02 | 29.76 | 29.95 | 5.6 | 18 | 12.1 | 35 | 31 | 29 | 31 | 24 |
| 25 | 48 | 31 | 40 | -6 | 28 | 35 | 25 | 0 | | | | 0.0 | 0.00 | 29.98 | 30.17 | 5.2 | 03 | 6.0 | 23 | 01 | 18 | 02 | 25 |
| 26 | 51 | 29* | 40* | -6 | 35 | 38 | 25 | 0 | | | | 0.0 | 0.00 | 30.02 | 30.21 | 0.7 | 17 | 1.1 | 9 | 19 | 7 | 19 | 26 |
| 27 | 60 | 36 | 48 | 2 | 44 | 46 | 17 | 0 | | | | 0.0 | 0.00 | 30.00 | 30.19 | 4.6 | 16 | 4.7 | 16 | 15 | 12 | 16 | 27 |
| 28 | 72 | 43 | 58 | 13 | 54 | 56 | 7 | 0 | RA BR | | | 0.0 | 0.46 | 29.55 | 29.74 | 10.2 | 21 | 14.1 | 39 | 19 | 31 | 19 | 28 |
| 29 | 47 | 34 | 41 | -4 | 22 | 33 | 24 | 0 | | | | 0.0 | 0.00 | 29.77 | 29.96 | 16.0 | 27 | 16.4 | 37 | 29 | 29 | 29 | 29 |
| 30 | 59 | 32 | 46 | 1 | 26 | 37 | 19 | 0 | | | | 0.0 | 0.00 | 29.88 | 30.07 | 10.4 | 23 | 10.8 | 24 | 23 | 20 | 22 | 30 |

| | | | | | | | | | | | | | | | | | |
|------|------|------|-----|------|------|------|-----|--------------------|-----------|-----|------|-------|-------|-----|----|-----|---------------------|
| 65.0 | 42.7 | 53.9 | ■ ■ | 44.6 | 49.5 | 11.4 | 0.5 | < MONTHLY AVERAGES | TOTALS--> | 0.0 | 3.39 | 29.94 | 30.13 | 2.0 | 23 | 7.4 | <- MONTHLY AVERAGES |
|------|------|------|-----|------|------|------|-----|--------------------|-----------|-----|------|-------|-------|-----|----|-----|---------------------|

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|----------------------------------|--|--|--|--|--|------|--|--|--|--|--|--|
| 5.3 | 4.3 | 4.9 | ■ ■ | -----DEPARTURE FROM NORMAL-----> | | | | | | 0.33 | SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3 | | | | | |
|-----|-----|-----|-----|----------------------------------|--|--|--|--|--|------|--|--|--|--|--|--|

| | | | | | | | | | | | |
|-------------------------|--|--|--|---|--|--|--|------------------------------------|--|--|--|
| DEGREE DAYS | | | | GREATEST 24-HR PRECIPITATION: 1.52 DATE: 19 | | | | SEA LEVEL PRESSURE DATE TIME | | | |
| MONTHLY TOTAL DEPARTURE | | | | SEASON TO DATE TOTAL DEPARTURE | | | | GREATEST 24-HR SNOWFALL: 0.0 DATE: | | | |
| HEATING: 341 -129 | | | | 570 -153 | | | | MAXIMUM MINIMUM : 30.72 09 0954 | | | |
| COOLING: 15 9 | | | | 1342 -92 | | | | DATE: : 29.47 28 1654 | | | |
| NUMBER OF DAYS WITH → | | | | MAXIMUM TEMP ≥ 90: 0 | | | | MINIMUM TEMP ≤ 32: 5 | | | |
| | | | | MAXIMUM TEMP ≤ 32: 0 | | | | MINIMUM TEMP ≤ 0: 0 | | | |
| | | | | THUNDERSTORMS: 0 | | | | HEAVY FOG: 5 | | | |
| | | | | PRECIPITATION ≥ 0.01 INCH: 9 | | | | PRECIPITATION ≥ 0.10 INCH: 3 | | | |
| | | | | SNOWFALL ≥ 1.0 INCH: 0 | | | | | | | |

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

RICHMOND, VA

NOVEMBER 2003

RIC

WBAN # 13740

| DATE | FOR HOUR (LST) ENDING AT | | | | | | | | | | | | DATE | FOR HOUR (LST) ENDING AT | | | | | | | | | | | | DATE | Sum if Different (See Note) | 2400 LST | |
|------|--------------------------|---|---|------|---|---|---|------|------|------|----|----|------|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------------------|----------|--------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | Water | Equiv. |
| 01 | | | | | | | | | | | | | 01 | | | | | | | | | | | | 01 | | 0.00 | | |
| 02 | | | | | | | | | | | | | 02 | | | | | | | | | | | | 02 | | 0.00 | | |
| 03 | | | | | | | | | | | | | 03 | | | | | | | | | | | | 03 | | 0.00 | | |
| 04 | | | | | | | | | | | | | 04 | | | | | | | | | | | | 04 | | 0.00 | | |
| 05 | | | | | | | | | | | | | 05 | T | | | | | | | | | | | 05 | T | 0.01 | | |
| 06 | | | | | | | | | | | | | 06 | 0.06 | 0.01 | 0.16 | 0.10 | 0.18 | 0.29 | 0.10 | 0.04 | | | | 06 | | 1.29 | | |
| 07 | | | | 0.01 | | | | 0.03 | 0.20 | 0.12 | | | 07 | | | | | | | | | T | | | 07 | | 0.01 | | |
| 08 | | | | | | | | | | | | | 08 | | | | | | | | | | | | 08 | | 0.00 | | |
| 09 | | | | | | | | | | | | | 09 | | | | | | | | | | | | 09 | | 0.00 | | |
| 10 | | | | | | | | | | | | | 10 | | | | | | | | | | | | 10 | | 0.00 | | |
| 11 | | | | | | | | | | | | | 11 | | | | | | | | | | | | 11 | | 0.00 | | |
| 12 | | | | | | | | | | | | | 12 | | | | | | | | | | | | 12 | | 0.02 | | |
| 13 | | | | | | | | | | | | | 13 | | | | | | | | | | | | 13 | | 0.00 | | |
| 14 | | | | | | | | | | | | | 14 | | | | | | | | | | | | 14 | | 0.00 | | |
| 15 | | | | | | | | | | | | | 15 | | | | | | | | | | | | 15 | T | 0.00 | | |
| 16 | | | | | | | | | | | | | 16 | T | 0.01 | 0.01 | T | T | 0.03 | T | T | | | 16 | | 0.05 | | | |
| 17 | | | | | | | | | | | | | 17 | | | | | | | | | | | | 17 | | 0.00 | | |
| 18 | | | | | | | | 0.01 | | T | | | 18 | | | | | | | | | | | | 18 | | 0.01 | | |
| 19 | | | | | | | | | | | | | 19 | T | 0.53 | 0.26 | 0.09 | 0.08 | 0.08 | 0.12 | 0.01 | 0.14 | 0.07 | 0.13 | 0.01 | 19 | | 1.52 | |
| 20 | | | | | | | | | | | | | 20 | | | | | | | | | | | | 20 | | 0.00 | | |
| 21 | | | | | | | | | | | | | 21 | | | | | | | | | | | | 21 | | 0.00 | | |
| 22 | | | | | | | | | | | | | 22 | | | | | | | | | | | | 22 | | 0.00 | | |
| 23 | | | | | | | | | | | | | 23 | | | | | | | | | | | | 23 | | 0.00 | | |
| 24 | | | | | | | | | | | | | 24 | | | | | | | | 0.02 | T | T | T | 24 | | 0.02 | | |
| 25 | | | | | | | | | | | | | 25 | | | | | | | | | | | | 25 | | 0.00 | | |
| 26 | | | | | | | | | | | | | 26 | | | | | | | | | | | | 26 | | 0.00 | | |
| 27 | | | | | | | | | | | | | 27 | | | | | | | | | | | | 27 | | 0.00 | | |
| 28 | | | | | | | | | | | | | 28 | | | T | T | 0.16 | 0.06 | 0.14 | 0.10 | T | | 28 | | 0.46 | | | |
| 29 | | | | | | | | | | | | | 29 | | | | | | | | | | | | 29 | | 0.00 | | |
| 30 | | | | | | | | | | | | | 30 | | | | | | | | | | | | 30 | | 0.00 | | |

MAXIMUM SHORT DURATION PRECIPITATION (See Note)

| Time Period (Minutes) | 5 | 10 | 15 | 20 | 30 | 45 | 60 | 80 | 100 | 120 | 150 | 180 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Precipitation (Inches) | .16 | .23 | .33 | .41 | .50 | .53 | .61 | .69 | .77 | .82 | .84 | .90 |
| Ending Date | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| Ending Time (Hour/Min) | 1333 | 1334 | 1332 | 1335 | 1343 | 1355 | 1415 | 1432 | 1453 | 1508 | 1541 | 1606 |

Date and time are not entered for TRACE amounts.

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

REFERENCE NOTES & SUPPLEMENTAL SUMMARIES

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

T = Trace precipitation amount

+ = also occurs on earlier date

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

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

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

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

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

NORMALS ARE FOR THE YEARS 1971–2000

WEATHER NOTATIONS

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

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

RICHMOND, VA NOVEMBER 2003

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

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

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

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

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

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

ADDITIONAL NOTES:

| DATE | SUNSHINE | | CLOUDINESS (OKTAS) | | | | VISIBILITY (MILES) | | RESERVED |
|--|---------------|------------------|--------------------|-----------|------------|-----------|--------------------|---------|----------|
| | TOTAL MINUTES | PERCENT POSSIBLE | SR–SS | | MN–MN | | MINIMUM | MAXIMUM | |
| | | | CEILOMETER | SATELLITE | CEILOMETER | SATELLITE | | | |
| 01 | | | | | | | 7.00 | 10.00 | |
| 02 | | | | | | | 4.00 | 10.00 | |
| 03 | | | | | | | 1.50 | 10.00 | |
| 04 | | | | | | | .25 | 10.00 | |
| 05 | | | | | | | .25 | 10.00 | |
| 06 | | | | | | | .25 | 10.00 | |
| 07 | | | | | | | 5.00 | 10.00 | |
| 08 | | | | | | | 10.00 | 10.00 | |
| 09 | | | | | | | 10.00 | 10.00 | |
| 10 | | | | | | | 10.00 | 10.00 | |
| 11 | | | | | | | 3.00 | 10.00 | |
| 12 | | | | | | | 7.00 | 10.00 | |
| 13 | | | | | | | 10.00 | 10.00 | |
| 14 | | | | | | | 10.00 | 10.00 | |
| 15 | | | | | | | 10.00 | 10.00 | |
| 16 | | | | | | | 6.00 | 10.00 | |
| 17 | | | | | | | 2.00 | 10.00 | |
| 18 | | | | | | | 2.00 | 10.00 | |
| 19 | | | | | | | .50 | 10.00 | |
| 20 | | | | | | | 10.00 | 10.00 | |
| 21 | | | | | | | 10.00 | 10.00 | |
| 22 | | | | | | | 10.00 | 10.00 | |
| 23 | | | | | | | .13 | 10.00 | |
| 24 | | | | | | | .13 | 10.00 | |
| 25 | | | | | | | 10.00 | 10.00 | |
| 26 | | | | | | | 8.00 | 10.00 | |
| 27 | | | | | | | 7.00 | 10.00 | |
| 28 | | | | | | | 1.00 | 10.00 | |
| 29 | | | | | | | 10.00 | 10.00 | |
| 30 | | | | | | | 10.00 | 10.00 | |
| MONTHLY AVGS | | | | | | | 5.98 | 10.00 | |
| SUNSHINE (MINUTES) | | | | | | | | | |
| Total: Possible: Percent Possible: | | | | | | | | | |
| NUMBER OF DAYS WITH: | | | | | | | | | |
| SKY CONDITION | | | | | | | | | |
| CLR PTLY CLDY CLOUDY MISSING | | | | | | | | | |
| 30 | | | | | | | | | |
| MINIMUM VISIBILITY (MILES) | | | | | | | | | |
| <=0.25 <=3.0 >=7.0 | | | | | | | | | |
| 4 11 16 | | | | | | | | | |

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

NOVEMBER 2003

RIC

WBAN # 13740

| HOUR (LST) | SATELLITE | | WEATHER | TEMPERATURE °F | | | | WIND | | PRESSURE (INCHES, HG) | | HOUR (LST) | SATELLITE | | WEATHER | TEMPERATURE °F | | | | WIND | | PRESSURE (INCHES, HG) | | |
|------------|-----------|---------------------|---------------|------------------------|-------------|--------------------|----------|-----------|----------|-------------------------|-------------|------------|-----------------------|---------|---------|----------------|------------------------|-------------|--------------------|----------|-----------|-----------------------|-------------------------|-------------|
| | SKY COVER | CEILING 100'S OF FT | | OBSERVATION TIME (LST) | EFF CLD AMT | VISIBILITY (MILES) | DRY BULB | DEW POINT | WET BULB | RELATIVE HUMIDITY (PCT) | SPEED (MPH) | | DIRECTION TENS OF DEG | STATION | | SEA LEVEL | OBSERVATION TIME (LST) | EFF CLD AMT | VISIBILITY (MILES) | DRY BULB | DEW POINT | WET BULB | RELATIVE HUMIDITY (PCT) | SPEED (MPH) |
| | | | SUNRISE: 0634 | | NOV 01 | SUNSET: 1712 | | | | | | | SUNRISE: 0640 | | NOV 07 | SUNSET: 1706 | | | | | | | | |
| 01 | CLR | NC | | | | 54 | 51 | 52 | 90 | 5 | 18 | 30.06 | 30.25 | 01 | BKN | 014 | | | | 8.00 | | | | |
| 04 | FEW | NC | | | | 52 | 50 | 51 | 93 | 0 | 00 | 30.05 | 30.24 | 04 | OVC | 029 | | | | 10.00 | | | | |
| 07 | SCT | NC | | | | 49 | 49 | 49 | 100 | 3 | 25 | 30.07 | 30.26 | 07 | OVC | 008 | | | | 10.00 | | | | |
| 10 | SCT | NC | | | | 66 | 54 | 59 | 65 | 3 | VR | 30.09 | 30.29 | 10 | BKN | 018 | | | | 10.00 | | | | |
| 13 | BKN | 250 | | | | 79 | 55 | 65 | 44 | 0 | 00 | 30.04 | 30.23 | 13 | OVC | 030 | | | | 10.00 | | | | |
| 16 | BKN | 250 | | | | 79 | 58 | 66 | 49 | 3 | 08 | 30.03 | 30.22 | 16 | OVC | 035 | | | | 10.00 | | | | |
| 19 | BKN | 250 | | | | 65 | 61 | 63 | 87 | 0 | 00 | 30.06 | 30.25 | 19 | OVC | 043 | | | | 10.00 | | | | |
| 22 | SCT | NC | | | | 60 | 58 | 59 | 93 | 0 | 00 | 30.07 | 30.26 | 22 | OVC | 046 | | | | 10.00 | | | | |
| | | | SUNRISE: 0635 | | NOV 02 | SUNSET: 1711 | | | | | | | SUNRISE: 0641 | | NOV 08 | SUNSET: 1705 | | | | | | | | |
| 01 | FEW | NC | | | | 57 | 57 | 57 | 100 | 0 | 00 | 30.05 | 30.24 | 01 | SCT | NC | | | | 10.00 | | | | |
| 04 | CLR | NC | | | BR | 53 | 53 | 53 | 100 | 0 | 00 | 30.04 | 30.23 | 04 | BKN | 046 | | | | 10.00 | | | | |
| 07 | SCT | NC | | | BR | 53 | 53 | 53 | 100 | 0 | 00 | 30.06 | 30.25 | 07 | SCT | NC | | | | 10.00 | | | | |
| 10 | FEW | NC | | | | 71 | 59 | 64 | 66 | 0 | 00 | 30.09 | 30.28 | 10 | FEW | NC | | | | 10.00 | | | | |
| 13 | BKN | 250 | | | | 80 | 56 | 65 | 44 | 5 | 11 | 30.03 | 30.22 | 13 | CLR | NC | | | | 10.00 | | | | |
| 16 | BKN | 250 | | | | 78 | 61 | 67 | 56 | 8 | 19 | 30.01 | 30.20 | 16 | SCT | NC | | | | 10.00 | | | | |
| 19 | OVC | 250 | | | | 66 | 60 | 62 | 81 | 8 | 14 | 30.02 | 30.22 | 19 | FEW | NC | | | | 10.00 | | | | |
| 22 | SCT | NC | | | | 61 | 57 | 59 | 87 | 3 | 15 | 30.04 | 30.23 | 22 | CLR | NC | | | | 10.00 | | | | |
| | | | SUNRISE: 0636 | | NOV 03 | SUNSET: 1709 | | | | | | | SUNRISE: 0642 | | NOV 09 | SUNSET: 1704 | | | | | | | | |
| 01 | SCT | NC | | | BR | 57 | 56 | 56 | 96 | 5 | 15 | 30.03 | 30.22 | 01 | CLR | NC | | | | 10.00 | | | | |
| 04 | SCT | NC | | | BR | 55 | 55 | 55 | 100 | 0 | 00 | 30.01 | 30.20 | 04 | CLR | NC | | | | 10.00 | | | | |
| 07 | CLR | NC | | | BR | 51 | 51 | 51 | 100 | 3 | 14 | 30.04 | 30.23 | 07 | CLR | NC | | | | 10.00 | | | | |
| 10 | CLR | NC | | | | 69 | 58 | 62 | 68 | 3 | 19 | 30.05 | 30.24 | 10 | BKN | 250 | | | | 10.00 | | | | |
| 13 | CLR | NC | | | | 78 | 54 | 64 | 43 | 9 | 20 | 29.98 | 30.17 | 13 | CLR | NC | | | | 10.00 | | | | |
| 16 | CLR | NC | | | | 77 | 54 | 63 | 45 | 8 | 19 | 29.94 | 30.13 | 16 | CLR | NC | | | | 10.00 | | | | |
| 19 | CLR | NC | | | | 64 | 58 | 60 | 81 | 3 | 16 | 29.95 | 30.14 | 19 | CLR | NC | | | | 10.00 | | | | |
| 22 | CLR | NC | | | | 61 | 59 | 60 | 93 | 0 | 00 | 29.98 | 30.17 | 22 | CLR | NC | | | | 10.00 | | | | |
| | | | SUNRISE: 0637 | | NOV 04 | SUNSET: 1708 | | | | | | | SUNRISE: 0643 | | NOV 10 | SUNSET: 1703 | | | | | | | | |
| 01 | CLR | NC | | | | 60 | 60 | 60 | 100 | 0 | 00 | 29.96 | 30.15 | 01 | CLR | NC | | | | 10.00 | | | | |
| 04 | CLR | NC | | | BR | 58 | 58 | 58 | 100 | 3 | 17 | 29.94 | 30.13 | 04 | CLR | NC | | | | 10.00 | | | | |
| 07 | SCT | NC | | | BR | 52 | 52 | 52 | 100 | 0 | 00 | 29.97 | 30.16 | 07 | CLR | NC | | | | 10.00 | | | | |
| 10 | CLR | NC | | | | 72 | 67 | 69 | 84 | 0 | 00 | 29.97 | 30.16 | 10 | CLR | NC | | | | 10.00 | | | | |
| 13 | BKN | 030 | | | | 78 | 68 | 71 | 71 | 9 | 17 | 29.92 | 30.11 | 13 | FEW | NC | | | | 10.00 | | | | |
| 16 | OVC | 034 | | | | 77 | 70 | 72 | 79 | 8 | 17 | 29.90 | 30.09 | 16 | BKN | 250 | | | | 10.00 | | | | |
| 19 | FEW | NC | | | | 70 | 69 | 69 | 97 | 6 | 16 | 29.93 | 30.13 | 19 | SCT | NC | | | | 10.00 | | | | |
| 22 | CLR | NC | | | BR | 68 | 68 | 68 | 100 | 6 | 16 | 29.94 | 30.13 | 22 | BKN | 250 | | | | 10.00 | | | | |
| | | | SUNRISE: 0638 | | NOV 05 | SUNSET: 1707 | | | | | | | SUNRISE: 0644 | | NOV 11 | SUNSET: 1702 | | | | | | | | |
| 01 | OVC | 001 | | | BR | 68 | 68 | 68 | 100 | 6 | 18 | 29.92 | 30.11 | 01 | FEW | NC | | | | 10.00 | | | | |
| 04 | VV | 001 | | | FG | 67 | 67 | 67 | 100 | 6 | 16 | 29.92 | 30.11 | 04 | SCT | NC | | | | 9.00 | | | | |
| 07 | BKN | 150 | | | BR | 65 | 65 | 65 | 100 | 3 | 19 | 29.94 | 30.13 | 07 | SCT | NC | | | | 6.00 | BR | | | |
| 10 | OVC | 007 | | | BR | 70 | 70 | 70 | 100 | 10 | 22 | 29.98 | 30.16 | 10 | OVC | 250 | | | | 10.00 | | | | |
| 13 | OVC | 012 | | | | 74 | 72 | 73 | 94 | 10 | 20 | 29.91 | 30.10 | 13 | OVC | 060 | | | | 10.00 | | | | |
| 16 | BKN | 110 | | | | 77 | 72 | 74 | 85 | 12 | 19 | 29.88 | 30.07 | 16 | SCT | NC | | | | 10.00 | | | | |
| 19 | BKN | 250 | | | | 73 | 72 | 72 | 96 | 7 | 16 | 29.90 | 30.09 | 19 | SCT | NC | | | | 10.00 | | | | |
| 22 | BKN | 120 | | | | 72 | 71 | 71 | 97 | 12 | 20 | 29.90 | 30.09 | 22 | BKN | 110 | | | | 10.00 | | | | |
| | | | SUNRISE: 0639 | | NOV 06 | SUNSET: 1706 | | | | | | | SUNRISE: 0645 | | NOV 12 | SUNSET: 1701 | | | | | | | | |
| 01 | OVC | 023 | | | | 72 | 71 | 71 | 97 | 3 | 26 | 29.91 | 30.10 | 01 | OVC | 130 | | | | 10.00 | | | | |
| 04 | BKN | 250 | | | BR | 69 | 69 | 69 | 100 | 5 | 17 | 29.89 | 30.08 | 04 | OVC | 150 | | | | 10.00 | | | | |
| 07 | OVC | 001 | | | BR | 69 | 69 | 69 | 100 | 3 | 19 | 29.90 | 30.09 | 07 | BKN | 110 | | | | 10.00 | | | | |
| 10 | OVC | 021 | | | +RA FG | 70 | 70 | 70 | 100 | 0 | 00 | 29.88 | 30.07 | 10 | OVC | 075 | | | | 10.00 | | | | |
| 13 | OVC | 017 | | | +RA BR | 69 | 68 | 68 | 96 | 15 | 31 | 29.83 | 30.02 | 13 | OVC | 060 | | | | 10.00 | | | | |
| 16 | OVC | 036 | | | -RA | 67 | 67 | 67 | 100 | 8 | 03 | 29.81 | 30.00 | 16 | OVC | 055 | | | | 10.00 | | | | |
| 19 | OVC | 055 | | | -RA | 65 | 65 | 65 | 100 | 7 | 01 | 29.84 | 30.03 | 19 | OVC | 085 | | | | 10.00 | | | | |
| 22 | OVC | 010 | | | | 64 | 64 | 64 | 100 | 3 | 01 | 29.84 | 30.03 | 22 | OVC | 120 | | | | 10.00 | | | | |

OBSERVATIONS AT 3-HOURLY INTERVALS

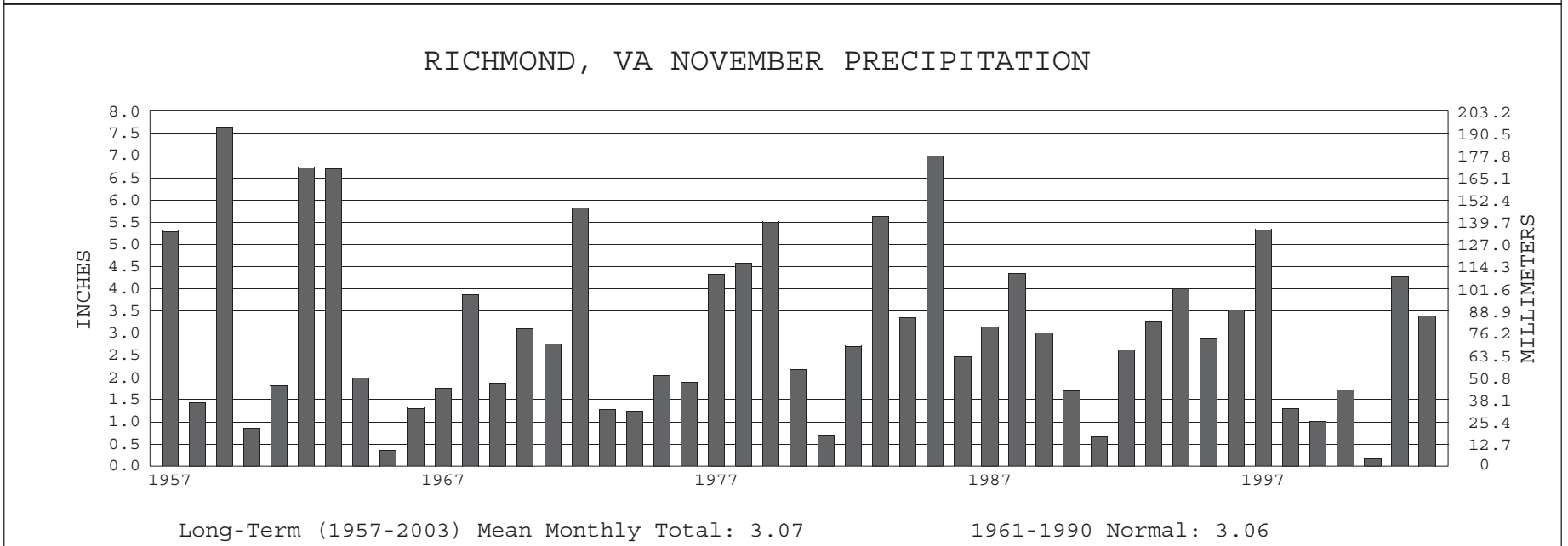
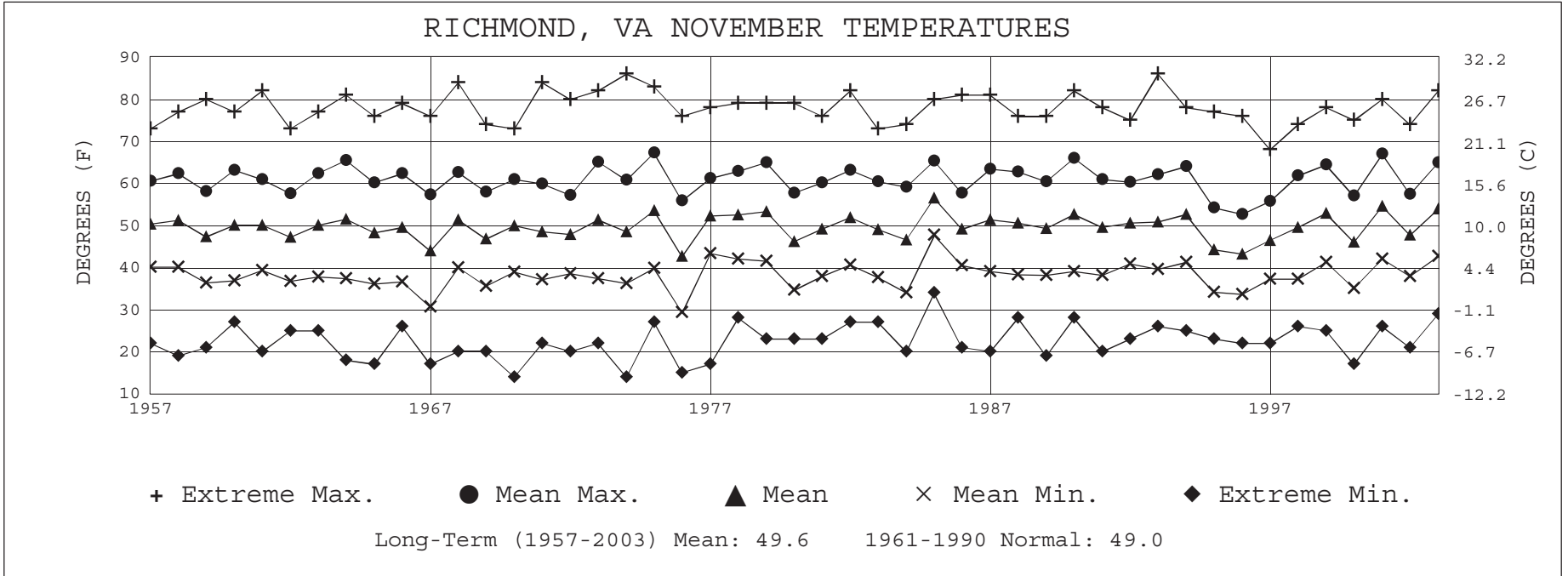
RICHMOND, VA

NOVEMBER 2003

RIC

WBAN # 13740

| HOUR (LST) | SATELLITE | | WEATHER | TEMPERATURE °F | | | RELATIVE HUMIDITY (PCT) | WIND | | PRESSURE (INCHES, HG) | | HOUR (LST) | SATELLITE | | WEATHER | TEMPERATURE °F | | | RELATIVE HUMIDITY (PCT) | WIND | | PRESSURE (INCHES, HG) | | | |
|---------------|-----------|---------------------|---------|------------------------|-------------------|--------------------|-------------------------|--------------|-----------|-----------------------|-------------|----------------------------|--|---------|---------|----------------|-----------|---------------------|-------------------------|------------------------|-------------------|-----------------------|----------|-----------|----------|
| | SKY COVER | CEILING 100'S OF FT | | OBSERVATION TIME (LST) | EFF CLD AMT Oktas | VISIBILITY (MILES) | | DRY BULB | DEW POINT | WET BULB | SPEED (MPH) | | DIRECTION TENS OF DEG | STATION | | SEA LEVEL | SKY COVER | CEILING 100'S OF FT | | OBSERVATION TIME (LST) | EFF CLD AMT Oktas | VISIBILITY (MILES) | DRY BULB | DEW POINT | WET BULB |
| SUNRISE: 0659 | | | | NOV 25 | | | | SUNSET: 1653 | | | | SUNRISE: NOV 31 | | | | SUNSET: | | | | | | | | | |
| 01 | SCT | NC | | 10.00 | 42 | 38 | 40 | 85 | 10 | 02 | 29.83 | 30.03 | | | | | | | | | | | | | |
| 04 | CLR | NC | | 10.00 | 36 | 31 | 34 | 82 | 6 | 02 | 29.90 | 30.09 | | | | | | | | | | | | | |
| 07 | CLR | NC | | 10.00 | 32 | 27 | 30 | 82 | 6 | 01 | 29.97 | 30.16 | | | | | | | | | | | | | |
| 10 | SCT | NC | | 10.00 | 41 | 26 | 35 | 55 | 9 | 03 | 30.04 | 30.24 | | | | | | | | | | | | | |
| 13 | SCT | NC | | 10.00 | 46 | 25 | 38 | 44 | 7 | 36 | 30.01 | 30.20 | | | | | | | | | | | | | |
| 16 | SCT | NC | | 10.00 | 47 | 25 | 38 | 42 | 6 | 08 | 29.98 | 30.18 | | | | | | | | | | | | | |
| 19 | BKN | 250 | | 10.00 | 40 | 28 | 35 | 63 | 0 | 00 | 30.01 | 30.21 | | | | | | | | | | | | | |
| 22 | BKN | 250 | | 10.00 | 35 | 28 | 32 | 76 | 0 | 00 | 30.00 | 30.20 | | | | | | | | | | | | | |
| SUNRISE: 0700 | | | | NOV 26 | | | | SUNSET: 1653 | | | | 3-HOURLY OBSERVATION NOTES | | | | | | | | | | | | | |
| 01 | CLR | NC | | 10.00 | 33 | 30 | 32 | 89 | 0 | 00 | 29.99 | 30.19 | Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, VV = Vertical Visibility = 8/8. | | | | | | | | | | | | |
| 04 | CLR | NC | | 10.00 | 32 | 31 | 32 | 96 | 0 | 00 | 30.00 | 30.19 | Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet. | | | | | | | | | | | | |
| 07 | BKN | 250 | | 10.00 | 30 | 30 | 30 | 100 | 0 | 00 | 30.02 | 30.22 | NC= No ceiling detected. | | | | | | | | | | | | |
| 10 | OVC | 200 | | 10.00 | 42 | 36 | 39 | 79 | 5 | 20 | 30.05 | 30.25 | & = Original observation contained additional weather elements. | | | | | | | | | | | | |
| 13 | OVC | 250 | | 10.00 | 49 | 34 | 42 | 57 | 5 | 18 | 29.99 | 30.19 | See page 3 for additional notes. | | | | | | | | | | | | |
| 16 | OVC | 250 | | 10.00 | 50 | 36 | 44 | 59 | 0 | 00 | 29.99 | 30.18 | | | | | | | | | | | | | |
| 19 | OVC | 250 | | 10.00 | 43 | 37 | 40 | 80 | 0 | 00 | 30.02 | 30.22 | | | | | | | | | | | | | |
| 22 | OVC | 250 | | 10.00 | 40 | 37 | 39 | 89 | 0 | 00 | 30.04 | 30.24 | | | | | | | | | | | | | |
| SUNRISE: 0701 | | | | NOV 27 | | | | SUNSET: 1653 | | | | SUMMARY BY HOUR | | | | | | | | | | | | | |
| 01 | BKN | 200 | | 10.00 | 39 | 38 | 39 | 96 | 0 | 00 | 30.05 | 30.24 | AVERAGES | | | | | | | | | | | | |
| 04 | BKN | 200 | | 10.00 | 38 | 38 | 38 | 100 | 0 | 00 | 30.02 | 30.22 | RESULTANT WIND (MPH) | | | | | | | | | | | | |
| 07 | SCT | NC | | 9.00 | 36 | 36 | 36 | 100 | 3 | 16 | 30.04 | 30.24 | HOUR (LST) | | | | | | | | | | | | |
| 10 | OVC | 250 | | 10.00 | 47 | 43 | 45 | 86 | 6 | 15 | 30.05 | 30.25 | CEILOMETER | | | | | | | | | | | | |
| 13 | OVC | 200 | | 10.00 | 59 | 47 | 53 | 64 | 8 | 14 | 30.02 | 30.21 | EFF CLD AMT | | | | | | | | | | | | |
| 16 | OVC | 200 | | 10.00 | 58 | 48 | 53 | 70 | 7 | 18 | 29.98 | 30.17 | DRY BULB | | | | | | | | | | | | |
| 19 | OVC | 045 | | 10.00 | 53 | 48 | 50 | 83 | 6 | 14 | 29.96 | 30.15 | DEW POINT | | | | | | | | | | | | |
| 22 | OVC | 200 | | 10.00 | 52 | 50 | 51 | 93 | 5 | 17 | 29.90 | 30.09 | WET BULB | | | | | | | | | | | | |
| SUNRISE: 0702 | | | | NOV 28 | | | | SUNSET: 1652 | | | | PRESSURE (INCHES, HG) | | | | | | | | | | | | | |
| 01 | OVC | 040 | | 7.00 | 55 | 53 | 54 | 93 | 9 | 18 | 29.85 | 30.04 | STATION | | | | | | | | | | | | |
| 04 | OVC | 003 | | 2.00 | 54 | 54 | 54 | 100 | 10 | 19 | 29.79 | 29.98 | SEA LEVEL | | | | | | | | | | | | |
| 07 | OVC | 004 | | 3.00 | 57 | 57 | 57 | 100 | 10 | 17 | 29.71 | 29.90 | VISIBILITY (MILES) | | | | | | | | | | | | |
| 10 | OVC | 007 | | 8.00 | 62 | 60 | 61 | 93 | 12 | 18 | 29.64 | 29.83 | WIND SPEED (MPH) | | | | | | | | | | | | |
| 13 | OVC | 035 | | 10.00 | 70 | 62 | 65 | 76 | 23 | 19 | 29.45 | 29.63 | SPEED | | | | | | | | | | | | |
| 16 | OVC | 050 | | 10.00 | 71 | 61 | 65 | 71 | 17 | 20 | 29.32 | 29.50 | DIRECTION | | | | | | | | | | | | |
| 19 | OVC | 047 | | 9.00 | 54 | 53 | 53 | 97 | 13 | 28 | 29.34 | 29.52 | | | | | | | | | | | | | |
| 22 | SCT | NC | | 10.00 | 46 | 38 | 42 | 73 | 17 | 28 | 29.43 | 29.62 | | | | | | | | | | | | | |
| SUNRISE: 0703 | | | | NOV 29 | | | | SUNSET: 1652 | | | | HOUR (LST) | | | | | | | | | | | | | |
| 01 | CLR | NC | | 10.00 | 42 | 31 | 37 | 65 | 20 | 26 | 29.50 | 29.69 | CEILOMETER | | | | | | | | | | | | |
| 04 | CLR | NC | | 10.00 | 37 | 21 | 31 | 52 | 21 | 27 | 29.58 | 29.78 | EFF CLD AMT | | | | | | | | | | | | |
| 07 | CLR | NC | | 10.00 | 35 | 18 | 29 | 50 | 16 | 26 | 29.68 | 29.87 | DRY BULB | | | | | | | | | | | | |
| 10 | CLR | NC | | 10.00 | 40 | 22 | 33 | 49 | 21 | 26 | 29.73 | 29.93 | DEW POINT | | | | | | | | | | | | |
| 13 | BKN | 065 | | 10.00 | 46 | 23 | 37 | 40 | 18 | 28 | 29.76 | 29.96 | WET BULB | | | | | | | | | | | | |
| 16 | FEW | NC | | 10.00 | 45 | 22 | 36 | 40 | 15 | 28 | 29.84 | 30.03 | RELATIVE HUMIDITY | | | | | | | | | | | | |
| 19 | CLR | NC | | 10.00 | 41 | 23 | 34 | 49 | 13 | 26 | 29.93 | 30.13 | PRESSURE (INCHES, HG) | | | | | | | | | | | | |
| 22 | BKN | 250 | | 10.00 | 37 | 23 | 32 | 57 | 12 | 25 | 29.95 | 30.15 | STATION | | | | | | | | | | | | |
| SUNRISE: 0704 | | | | NOV 30 | | | | SUNSET: 1652 | | | | SEA LEVEL | | | | | | | | | | | | | |
| 01 | CLR | NC | | 10.00 | 34 | 23 | 30 | 64 | 8 | 24 | 29.95 | 30.14 | VISIBILITY (MILES) | | | | | | | | | | | | |
| 04 | BKN | 250 | | 10.00 | 33 | 24 | 30 | 70 | 8 | 22 | 29.92 | 30.11 | WIND SPEED (MPH) | | | | | | | | | | | | |
| 07 | BKN | 250 | | 10.00 | 35 | 24 | 31 | 64 | 13 | 22 | 29.92 | 30.12 | SPEED | | | | | | | | | | | | |
| 10 | BKN | 200 | | 10.00 | 44 | 23 | 36 | 43 | 8 | 24 | 29.94 | 30.13 | DIRECTION | | | | | | | | | | | | |
| 13 | BKN | 180 | | 10.00 | 54 | 25 | 42 | 33 | 13 | 25 | 29.86 | 30.06 | | | | | | | | | | | | | |
| 16 | BKN | 250 | | 10.00 | 58 | 28 | 45 | 32 | 15 | 23 | 29.84 | 30.03 | | | | | | | | | | | | | |
| 19 | BKN | 250 | | 10.00 | 46 | 30 | 39 | 54 | 8 | 19 | 29.84 | 30.03 | | | | | | | | | | | | | |
| 22 | SCT | NC | | 10.00 | 46 | 29 | 39 | 51 | 10 | 21 | 29.82 | 30.01 | | | | | | | | | | | | | |





NOVEMBER 2003

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.

DIRECTOR

NCDC now offers an annual online subscription for the **Edited Local Climatological Data Publication**. When you purchase this subscription service, you will have **immediate online access** to all previous publications back to July 1996 and all publications thereafter until the expiration of the subscription. Your subscription is valid for one year after purchase. **The total cost is \$29 for online delivery (including back issues) compared to \$34 for offline delivery.** To order this and other subscriptions online with your credit card, go to: www.ncdc.noaa.gov and choose subscriptions.

We welcome your questions or comments, please contact us at
Toll Free Number (866) 742–3322 (voice)
Fax Number :(304) 726–4409
TDD : 828–271–4010
or Email : ncdc.info@noaa.gov
Local Climatological Data is available at www.ncdc.noaa.gov

For address correction, please return a photocopy of this page to Subscription Services indicating changes

NCDC Subscription Services Center
310 State Route 956 Building 300
Rocket Center, WV 26726

OFFICIAL BUSINESS. PENALTY FOR PRIVATE USE \$300

FIRST CLASS
POSTAGE AND FEES PAID
NOAA
PERMIT G-19