

1998

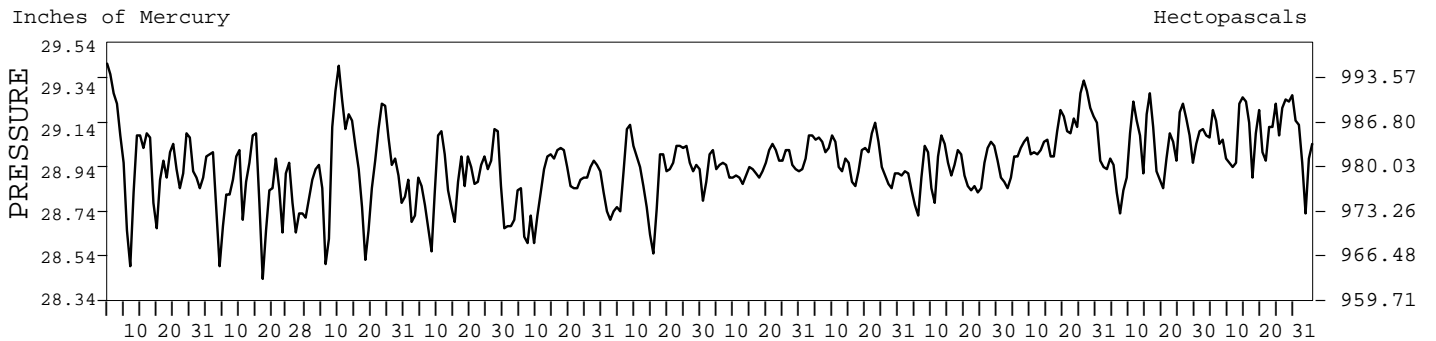
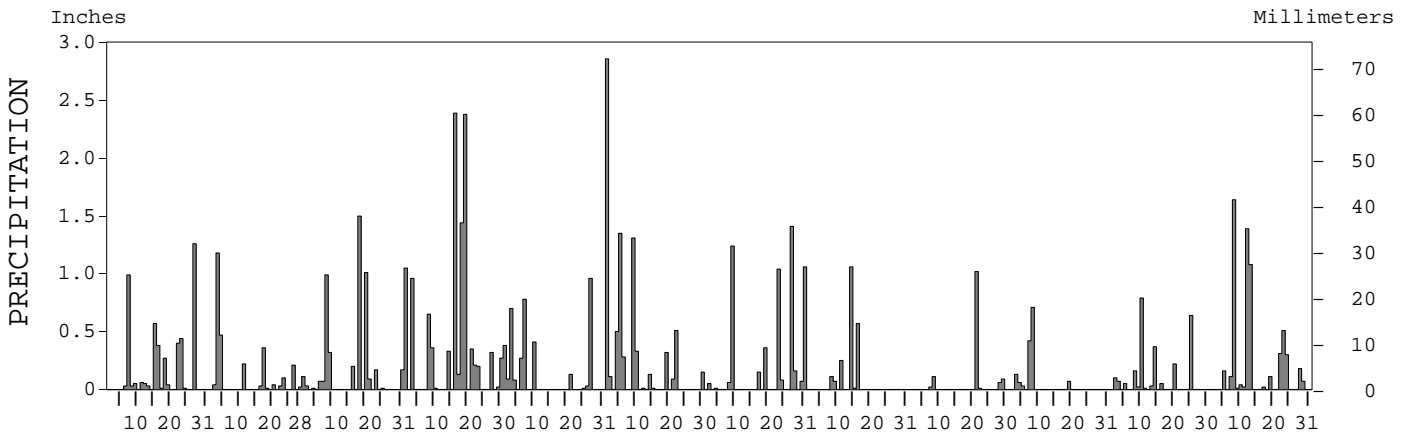
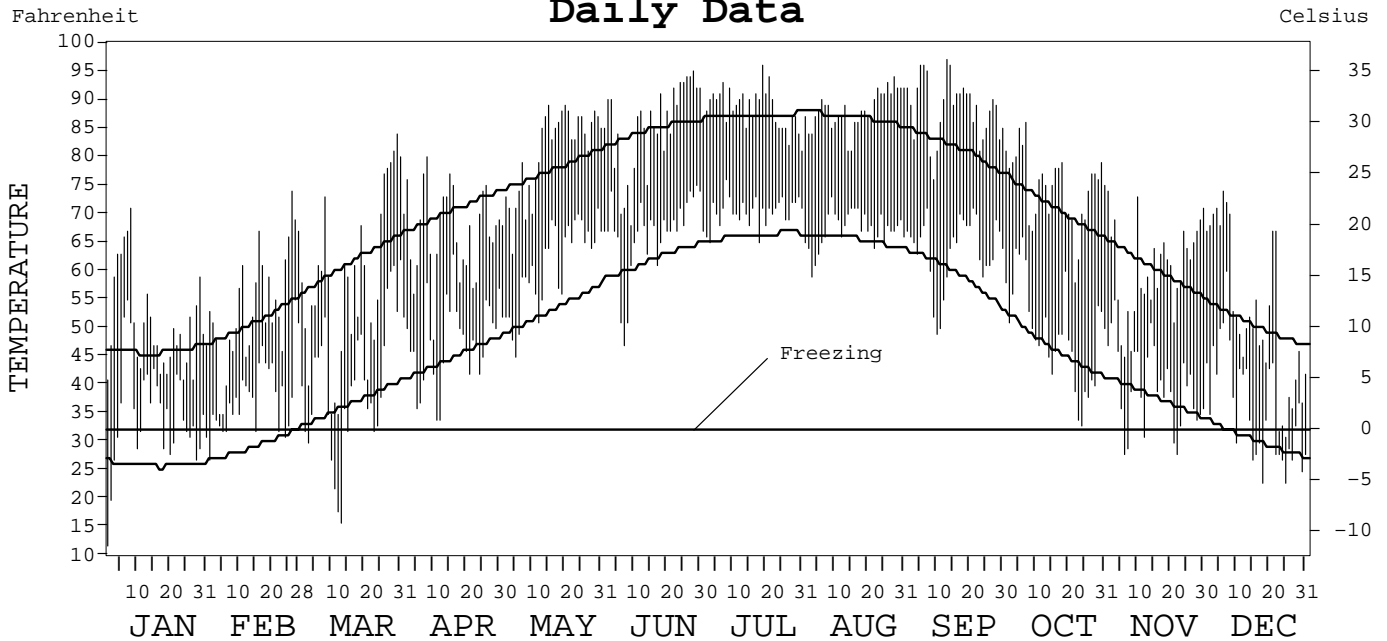
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-4810

KNOXVILLE,
TENNESSEE (TYS)

Daily Data



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Thomas R. Karl

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
 NATIONAL ENVIRONMENTAL AND INFORMATION SERVICE
 NATIONAL ENVIRONMENTAL AND INFORMATION SERVICE
 NATIONAL CLIMATIC DATA CENTER
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 DIRECTOR NATIONAL CLIMATIC DATA CENTER
 ASHEVILLE, NORTH CAROLINA

METEOROLOGICAL DATA FOR 1998

KNOXVILLE, TN (TYS)

LATITUDE: 35° 49' 05" N LONGITUDE: 83° 59' 09" W ELEVATION (FT): GRND: 979 BARO: 994 TIME ZONE: EASTERN (UTC+ 5) WBAN: 13891

| | ELEMENT | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR | |
|----------------------|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|--|
| TEMPERATURE °F | MEAN DAILY MAXIMUM | 50.8 | 53.8 | 58.6 | 67.0 | 80.6 | 85.3 | 88.5 | 88.2 | 88.4 | 74.5 | 60.4 | 52.5 | 70.7 | |
| | HIGHEST DAILY MAXIMUM | 71 | 74 | 84 | 80 | 89 | 95 | 96 | 94 | 97 | 86 | 74 | 74 | 97 | |
| | DATE OF OCCURRENCE | 08 | 26 | 30 | 08 | 20+ | 28 | 19 | 28 | 13 | 07 | 01 | 06 | SEP 13 | |
| | MEAN DAILY MINIMUM | 34.8 | 38.2 | 40.2 | 47.6 | 60.7 | 66.5 | 70.3 | 67.2 | 63.6 | 49.2 | 39.8 | 36.2 | 51.2 | |
| | LOWEST DAILY MINIMUM | 12 | 27 | 16 | 34 | 45 | 47 | 65 | 59 | 49 | 33 | 28 | 23 | 12 | |
| | DATE OF OCCURRENCE | 01 | 01 | 13 | 12+ | 05 | 07 | 18+ | 3 | 10 | 24 | 22+ | 25+ | JAN 01 | |
| | AVERAGE DRY BULB | 42.8 | 46.0 | 49.4 | 57.3 | 70.7 | 75.9 | 79.4 | 77.7 | 76.0 | 61.9 | 50.1 | 44.4 | 61.0 | |
| | MEAN WET BULB | 39.9 | 41.7 | 43.8 | 52.6 | 64.7 | 69.9 | 72.1 | 70.6 | 66.4 | 55.6 | 46.7 | 41.4 | 55.5 | |
| | MEAN DEW POINT | 36.6 | 36.8 | 37.5 | 47.9 | 61.1 | 66.8 | 69.0 | 67.1 | 61.0 | 50.6 | 42.5 | 38.0 | 51.2 | |
| | NUMBER OF DAYS WITH: | | | | | | | | | | | | | | |
| | MAXIMUM ≥ 90° | 0 | 0 | 0 | 0 | 0 | 11 | 15 | 11 | 14 | 0 | 0 | 0 | 51 | |
| | MAXIMUM ≤ 32° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | |
| | MINIMUM ≤ 32° | 14 | 6 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 13 | 46 | |
| | MINIMUM ≤ 0° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| H/C | HEATING DEGREE DAYS | 681 | 528 | 500 | 234 | 30 | 12 | 0 | 0 | 1 | 133 | 438 | 632 | 3189 | |
| | COOLING DEGREE DAYS | 0 | 0 | 24 | 8 | 212 | 346 | 454 | 402 | 338 | 43 | 0 | 1 | 1828 | |
| RH | MEAN (PERCENT) | 81 | 74 | 67 | 74 | 75 | 76 | 75 | 73 | 64 | 71 | 77 | 80 | 74 | |
| | HOUR 01 LST | 87 | 81 | 73 | 83 | 86 | 85 | 87 | 86 | 75 | 86 | 87 | 85 | 83 | |
| | HOUR 07 LST | 90 | 86 | 79 | 88 | 90 | 89 | 89 | 92 | 87 | 92 | 91 | 89 | 88 | |
| | HOUR 13 LST | 72 | 66 | 56 | 63 | 60 | 64 | 59 | 57 | 46 | 50 | 62 | 74 | 61 | |
| | HOUR 19 LST | 75 | 65 | 60 | 66 | 66 | 66 | 64 | 60 | 53 | 59 | 68 | 76 | 65 | |
| S | PERCENT POSSIBLE SUNSHINE | 32 | 29 | 38 | 50 | 70 | 69 | 68 | 80 | 81 | 75 | | 32 | | |
| W/O | NUMBER OF DAYS WITH: | | | | | | | | | | | | | | |
| | HEAVY FOG (VISBY ≤ 1/4 MI) | 2 | 0 | 2 | 2 | 2 | 1 | 3 | 2 | 1 | 3 | 6 | 2 | 26 | |
| | THUNDERSTORMS | 1 | 1 | 3 | 10 | 10 | 15 | 8 | 3 | 5 | 2 | 1 | 2 | 61 | |
| CLOUDINESS | SUNRISE-SUNSET: (OKTAS) | | | | | | | | | | | | | | |
| | CEILOMETER (≤ 12,000 FT.) | | | | | | | | | | | | | | |
| | SATELLITE (> 12,000 FT.) | | | | | | | | | | | | | | |
| | MIDNIGHT-MIDNIGHT: (OKTAS) | | | | | | | | | | | | | | |
| | CEILOMETER (≤ 12,000 FT.) | | | | | | | | | | | | | | |
| | SATELLITE (> 12,000 FT.) | | | | | | | | | | | | | | |
| NUMBER OF DAYS WITH: | | | | | | | | | | | | | | | |
| CLEAR | | | | | | | | | | | | | | | |
| PARTLY CLOUDY | | | | | | | | | | | | | | | |
| CLOUDY | | | | | | | | | | | | | | | |
| PR | MEAN STATION PRESS. (IN.) | 29.01 | 28.85 | 28.98 | 28.91 | 28.87 | 28.92 | 28.98 | 29.01 | 28.95 | 29.11 | 29.07 | 29.13 | 28.98 | |
| | MEAN SEA-LEVEL PRESS. (IN.) | 30.06 | 29.90 | 30.02 | 29.94 | 29.89 | | 29.99 | 30.03 | 29.96 | 30.14 | 30.12 | 30.18 | | |
| WINDS | RESULTANT SPEED (MPH) | 1.4 | 1.3 | 3.0 | 3.0 | 1.7 | 1.1 | 1.1 | 0.8 | 0.6 | 1.8 | 0.9 | 1.4 | 0.9 | |
| | RES. DIR. (TENS OF DEGS.) | 36 | 31 | 26 | 26 | 25 | 15 | 23 | 03 | 34 | 01 | 31 | 34 | 29 | |
| | MEAN SPEED (MPH) | 5.1 | 7.6 | 8.5 | 7.1 | 6.1 | 7.1 | 5.2 | 4.3 | 4.3 | 4.3 | 4.6 | 6.2 | 5.9 | |
| | PREVAIL. DIR. (TENS OF DEGS.) | 05 | 04 | 24 | 23 | 24 | 24 | 24 | 03 | 02 | 03 | 02 | 03 | 24 | |
| | MAXIMUM 2-MINUTE WIND: | | | | | | | | | | | | | | |
| | SPEED (MPH) | 32 | 39 | 32 | 34 | 37 | | 32 | 31 | 24 | 23 | 48 | 34 | | |
| | DIR. (TENS OF DEGS.) | 24 | 23 | 27 | 28 | 22 | | 29 | 27 | 22 | 01 | 29 | 28 | | |
| | DATE OF OCCURRENCE | 08 | 17 | 20 | 03 | 07 | | 23 | 16 | 29 | 21 | 25 | 22 | | |
| | MAXIMUM 5-SECOND WIND: | | | | | | | | | | | | | | |
| | SPEED (MPH) | 38 | 48 | 41 | 43 | 44 | | 40 | 40 | 29 | 29 | 58 | 41 | | |
| DIR. (TENS OF DEGS.) | 24 | 23 | 28 | 28 | 21 | | 30 | 27 | 22 | 25 | 26 | 28 | | | |
| DATE OF OCCURRENCE | 08 | 17 | 20 | 03 | 07 | | 23 | 16 | 29 | 28 | 25 | 22 | | | |
| PRECIPITATION | WATER EQUIVALENT: | | | | | | | | | | | | | | |
| | TOTAL (IN.) | 4.62 | 2.71 | 4.75 | 11.07 | 3.84 | 7.96 | 5.69 | 2.07 | 1.31 | 1.42 | 2.51 | 5.95 | 53.90 | |
| | GREATEST 24-HOUR (IN.) | 1.26 | 1.27 | 1.50 | 3.69 | 1.05 | 2.86 | 1.57 | 1.07 | 1.02 | 1.13 | 0.80 | 2.36 | 3.69 | |
| | DATE OF OCCURRENCE | 27 | 03-04 | 18 | 18-19 | 06-07 | 01 | 27-28 | 14-15 | 21 | 07-08 | 10-11 | 12-13 | APR 18-19 | |
| | NUMBER OF DAYS WITH: | | | | | | | | | | | | | | |
| | PRECIPITATION ≥ 0.01 | 16 | 12 | 14 | 16 | 11 | 14 | 12 | 6 | 6 | 6 | 12 | 15 | 140 | |
| PRECIPITATION ≥ 0.10 | 7 | 6 | 8 | 14 | 7 | 11 | 7 | 4 | 2 | 3 | 6 | 10 | 85 | | |
| PRECIPITATION ≥ 1.00 | 1 | 1 | 2 | 4 | 0 | 3 | 4 | 1 | 1 | 0 | 0 | 3 | 20 | | |
| SNOWFALL | SNOW, ICE PELLETS, HAIL: | | | | | | | | | | | | | | |
| | TOTAL (IN.) | 0.4 | 0.1 | T | 0.0 | T | T | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | T | 0.5 | |
| | GREATEST 24-HOUR (IN.) | 0.4 | 0.1 | T | 0.0 | T | T | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | T | 0.4 | |
| | DATE OF OCCURRENCE | 27 | 04 | 11+ | | 07+ | 22 | 0 | 0 | 0 | 0 | 0 | 30+ | JAN 27 | |
| | MAXIMUM SNOW DEPTH (IN.) | T | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | T | |
| | DATE OF OCCURRENCE | 27+ | 04 | | | | | | | | | | | FEB 04 | |
| NUMBER OF DAYS WITH: | | | | | | | | | | | | | | | |
| SNOWFALL ≥ 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |

NORMALS, MEANS, AND EXTREMES

KNOXVILLE, TN (TYS)

LATITUDE: 35° 49' 05" N LONGITUDE: 83° 59' 09" W ELEVATION (FT): GRND: 979 BARO: 994 TIME ZONE: EASTERN (UTC+ 5) WBAN: 13891

| ELEMENT | | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|----------------------|-----------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|----------|
| TEMPERATURE °F | NORMAL DAILY MAXIMUM | 30 | 45.9 | 50.9 | 61.3 | 70.4 | 77.6 | 84.5 | 87.1 | 86.7 | 81.2 | 70.6 | 59.9 | 50.1 | 68.8 |
| | MEAN DAILY MAXIMUM | 51 | 47.3 | 52.1 | 60.6 | 70.4 | 78.1 | 85.0 | 88.0 | 87.2 | 81.6 | 71.2 | 59.2 | 50.0 | 69.2 |
| | HIGHEST DAILY MAXIMUM | 57 | 77 | 83 | 86 | 92 | 94 | 102 | 103 | 102 | 103 | 91 | 84 | 80 | 103 |
| | YEAR OF OCCURRENCE | | 1950 | 1996 | 1963 | 1942 | 1962 | 1988 | 1952 | 1944 | 1954 | 1953 | 1948 | 1982 | SEP 1954 |
| | MEAN OF EXTREME MAXS. | 51 | 67.1 | 70.7 | 78.9 | 85.0 | 88.2 | 92.8 | 94.9 | 94.1 | 91.7 | 83.5 | 75.8 | 68.5 | 82.6 |
| | NORMAL DAILY MINIMUM | 30 | 26.0 | 29.1 | 36.6 | 44.6 | 53.1 | 61.8 | 66.0 | 65.3 | 59.0 | 46.0 | 37.5 | 30.0 | 46.2 |
| | MEAN DAILY MINIMUM | 51 | 29.3 | 32.0 | 38.7 | 47.2 | 56.1 | 64.0 | 68.1 | 67.1 | 60.7 | 48.1 | 38.1 | 31.8 | 48.4 |
| | LOWEST DAILY MINIMUM | 57 | -24 | -8 | 1 | 22 | 32 | 43 | 49 | 49 | 36 | 25 | 5 | -6 | -24 |
| | YEAR OF OCCURRENCE | | 1985 | 1996 | 1980 | 1987 | 1986 | 1956 | 1988 | 1946 | 1967 | 1987 | 1950 | 1983 | JAN 1985 |
| | MEAN OF EXTREME MINS. | 51 | 9.5 | 12.6 | 22.0 | 31.3 | 41.2 | 52.6 | 59.6 | 58.8 | 47.4 | 33.0 | 22.5 | 14.6 | 33.8 |
| | NORMAL DRY BULB | 30 | 36.0 | 40.1 | 49.0 | 57.5 | 65.4 | 73.2 | 76.6 | 76.0 | 70.1 | 58.4 | 48.7 | 40.1 | 57.6 |
| | MEAN DRY BULB | 51 | 38.3 | 42.1 | 49.7 | 58.9 | 67.1 | 74.4 | 78.1 | 77.2 | 71.2 | 59.6 | 48.6 | 41.0 | 58.8 |
| | MEAN WET BULB | 15 | 34.8 | 38.2 | 44.3 | 51.6 | 60.7 | 67.8 | 66.3 | 65.4 | 60.0 | 53.7 | 44.7 | 37.8 | 52.1 |
| | MEAN DEW POINT | 15 | 29.4 | 32.0 | 37.4 | 45.1 | 56.4 | 64.4 | 63.4 | 62.5 | 56.6 | 49.5 | 39.6 | 33.3 | 47.5 |
| | NORMAL NO. DAYS WITH: | | | | | | | | | | | | | | |
| MAXIMUM ≥ 90° | 30 | 0.0 | 0.0 | 0.0 | * | 0.8 | 5.1 | 10.4 | 8.5 | 2.8 | 0.0 | 0.0 | 0.0 | 27.6 | |
| MAXIMUM ≤ 32° | 30 | 3.5 | 1.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 1.4 | 6.4 | |
| MINIMUM ≤ 32° | 30 | 20.8 | 16.5 | 8.6 | 1.8 | * | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 7.6 | 17.7 | 74.0 | |
| MINIMUM ≤ 0° | 30 | 0.5 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.6 | |
| H/C | NORMAL HEATING DEG. DAYS | 30 | 899 | 697 | 496 | 234 | 94 | 0 | 0 | 0 | 18 | 238 | 489 | 772 | 3937 |
| | NORMAL COOLING DEG. DAYS | 30 | 0 | 0 | 0 | 9 | 106 | 246 | 360 | 341 | 171 | 33 | 0 | 0 | 1266 |
| RH | NORMAL (PERCENT) | 30 | 72 | 68 | 65 | 63 | 71 | 74 | 76 | 76 | 76 | 73 | 72 | 73 | 72 |
| | HOUR 01 LST | 30 | 77 | 74 | 71 | 72 | 82 | 86 | 87 | 88 | 87 | 85 | 80 | 78 | 81 |
| | HOUR 07 LST | 30 | 81 | 80 | 80 | 81 | 86 | 88 | 90 | 92 | 92 | 89 | 84 | 82 | 85 |
| | HOUR 13 LST | 30 | 63 | 59 | 54 | 51 | 57 | 58 | 61 | 61 | 60 | 56 | 59 | 64 | 59 |
| | HOUR 19 LST | 30 | 66 | 60 | 56 | 52 | 60 | 62 | 65 | 66 | 67 | 65 | 66 | 68 | 63 |
| S | PERCENT POSSIBLE SUNSHINE | 56 | 40 | 47 | 53 | 63 | 64 | 65 | 64 | 63 | 61 | 61 | 49 | 40 | 56 |
| W/O | MEAN NO. DAYS WITH: | | | | | | | | | | | | | | |
| | HEAVY FOG (VISBY ≤ 1/4 MI) | 56 | 3.0 | 1.8 | 1.6 | 1.2 | 2.3 | 2.1 | 2.1 | 3.4 | 3.7 | 4.6 | 3.2 | 2.6 | 31.6 |
| | THUNDERSTORMS | 56 | 0.8 | 1.4 | 3.2 | 4.4 | 6.8 | 8.3 | 9.4 | 6.7 | 3.2 | 1.3 | 1.0 | 0.5 | 47.0 |
| CLOUDINESS | MEAN: | | | | | | | | | | | | | | |
| | SUNRISE-SUNSET (OKTAS) | 1 | | | | | 4.0 | 3.2 | | | | | | | |
| | MIDNIGHT-MIDNIGHT (OKTAS) | 1 | | | | | | 3.2 | | | | | | | |
| | MEAN NO. DAYS WITH: | | | | | | | | | | | | | | |
| CLEAR | 1 | 4.0 | 1.0 | 4.0 | | 13.0 | 11.0 | | | | | | | | |
| PARTLY CLOUDY | 1 | | | 1.0 | | 3.0 | 5.0 | | | | | | | | |
| CLOUDY | 1 | 2.0 | 3.0 | 10.0 | | 4.0 | 4.0 | | | | | | | | |
| PR | MEAN STATION PRESSURE (IN) | 26 | 29.10 | 29.00 | 29.00 | 29.00 | 28.99 | 29.00 | 29.00 | 29.00 | 29.00 | 29.10 | 29.10 | 29.09 | 29.03 |
| | MEAN SEA-LEVEL PRES. (IN) | 15 | 30.13 | 30.10 | 30.05 | 29.98 | 30.00 | 29.98 | 30.03 | 30.03 | 28.07 | 30.10 | 30.13 | 30.15 | 29.90 |
| WINDS | MEAN SPEED (MPH) | 41 | 7.6 | 8.0 | 8.5 | 8.5 | 6.9 | 6.4 | 6.1 | 5.5 | 5.6 | 5.6 | 6.7 | 7.2 | 6.9 |
| | PREVAIL. DIR (TENS OF DEGS) | 25 | 24 | 24 | 24 | 23 | 24 | 24 | 24 | 24 | 05 | 05 | 05 | 05 | 24 |
| | MAXIMUM 2-MINUTE: | | | | | | | | | | | | | | |
| | SPEED (MPH) | 3 | 43 | 39 | 43 | 64 | 37 | 34 | 43 | 33 | 28 | 36 | 48 | 39 | 64 |
| | DIR. (TENS OF DEGS) | | 27 | 25 | 24 | 28 | 22 | 15 | 24 | 19 | 30 | 24 | 29 | 25 | 28 |
| | YEAR OF OCCURRENCE | | 1996 | 1997 | 1996 | 1996 | 1998 | 1997 | 1996 | 1997 | 1996 | 1996 | 1998 | 1996 | APR 1996 |
| | MAXIMUM 5-SECOND: | | | | | | | | | | | | | | |
| | SPEED (MPH) | 3 | 53 | 48 | 48 | 76 | 44 | 51 | 68 | 40 | 34 | 40 | 58 | 57 | 76 |
| DIR. (TENS OF DEGS) | | 22 | 23 | 25 | 27 | 21 | 14 | 25 | 27 | 30 | 28 | 26 | 28 | 27 | |
| YEAR OF OCCURRENCE | | 1996 | 1998 | 1996 | 1996 | 1998 | 1997 | 1997 | 1998 | 1996 | 1996 | 1998 | 1996 | APR 1996 | |
| PRECIPITATION | NORMAL (IN) | 30 | 4.17 | 4.06 | 5.09 | 3.72 | 4.13 | 3.97 | 4.67 | 3.13 | 3.07 | 2.84 | 3.75 | 4.54 | 47.14 |
| | MAXIMUM MONTHLY (IN) | 57 | 11.74 | 9.38 | 11.81 | 11.07 | 10.98 | 8.21 | 10.09 | 8.88 | 9.19 | 6.67 | 10.36 | 11.63 | 11.81 |
| | YEAR OF OCCURRENCE | | 1954 | 1944 | 1994 | 1998 | 1974 | 1989 | 1967 | 1942 | 1989 | 1949 | 1948 | 1961 | MAR 1994 |
| | MINIMUM MONTHLY (IN) | 57 | 0.95 | 0.74 | 1.69 | 0.39 | 0.74 | 0.20 | 0.33 | 0.77 | 0.42 | T | 0.97 | 0.45 | T |
| | YEAR OF OCCURRENCE | | 1986 | 1968 | 1986 | 1976 | 1970 | 1944 | 1995 | 1954 | 1985 | 1963 | 1942 | 1965 | OCT 1963 |
| | MAXIMUM IN 24 HOURS (IN) | 57 | 3.89 | 3.42 | 5.77 | 3.69 | 3.40 | 3.57 | 4.69 | 3.25 | 5.08 | 2.44 | 4.06 | 4.89 | 5.77 |
| | YEAR OF OCCURRENCE | | 1946 | 1991 | 1994 | 1998 | 1984 | 1972 | 1942 | 1959 | 1944 | 1961 | 1948 | 1969 | MAR 1994 |
| | NORMAL NO. DAYS WITH: | | | | | | | | | | | | | | |
| PRECIPITATION ≥ 0.01 | 30 | 11.9 | 11.0 | 12.5 | 10.9 | 11.3 | 10.1 | 11.5 | 9.3 | 8.2 | 8.0 | 10.5 | 11.0 | 126.2 | |
| PRECIPITATION ≥ 1.00 | 30 | 0.7 | 0.9 | 1.4 | 0.7 | 1.0 | 1.0 | 1.4 | 0.7 | 0.8 | 0.8 | 0.7 | 1.2 | 11.3 | |
| SNOWFALL | NORMAL (IN) | 30 | 5.4 | 3.9 | 1.3 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | T | 0.2 | 1.9 | 13.4 | |
| | MAXIMUM MONTHLY (IN) | 57 | 15.1 | 23.3 | 20.2 | 10.7 | T | T | 0.0 | T | 0.0 | T | 18.2 | 12.2 | 23.3 |
| | YEAR OF OCCURRENCE | | 1962 | 1960 | 1960 | 1987 | 1945 | 1998 | | 1995 | | 1993 | 1952 | 1963 | FEB 1960 |
| | MAXIMUM IN 24 HOURS (IN) | 57 | 12.0 | 17.5 | 14.1 | 10.7 | T | T | 0.0 | T | 0.0 | T | 18.2 | 8.9 | 18.2 |
| | YEAR OF OCCURRENCE | | 1962 | 1960 | 1993 | 1987 | 1945 | 1998 | | 1995 | | 1993 | 1952 | 1969 | NOV 1952 |
| | MAXIMUM SNOW DEPTH (IN) | 50 | 10 | 15 | 15 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 6 | 15 |
| | YEAR OF OCCURRENCE | | 1966 | 1960 | 1993 | 1987 | | | | | | | 1952 | 1963 | MAR 1993 |
| | NORMAL NO. DAYS WITH: | | | | | | | | | | | | | | |
| SNOWFALL ≥ 1.0 | 30 | 1.7 | 1.2 | 0.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.6 | 4.3 | |

PRECIPITATION (inches) 1998 KNOXVILLE, TN (TYS)

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL |
|-----------------|------|------|-------|-------|-------|------|------|------|------|------|------|-------|--------|
| 1969 | 4.11 | 5.54 | 2.89 | 2.41 | 1.33 | 7.58 | 3.51 | 6.72 | 3.03 | 1.56 | 2.56 | 7.74 | 48.98 |
| 1970 | 3.04 | 2.86 | 3.18 | 7.20 | 0.74 | 4.26 | 3.11 | 4.89 | 2.75 | 5.33 | 1.40 | 4.67 | 43.43 |
| 1971 | 5.03 | 4.93 | 4.21 | 3.87 | 3.78 | 3.73 | 8.76 | 3.05 | 3.41 | 1.98 | 2.21 | 5.48 | 50.44 |
| 1972 | 7.35 | 4.19 | 4.98 | 2.54 | 4.49 | 5.02 | 6.76 | 1.61 | 4.70 | 5.99 | 3.36 | 7.02 | 58.01 |
| 1973 | 3.24 | 2.59 | 10.24 | 5.15 | 5.71 | 5.26 | 4.38 | 2.31 | 3.28 | 3.48 | 5.01 | 7.38 | 58.03 |
| 1974 | 7.05 | 5.24 | 6.15 | 5.77 | 10.98 | 2.70 | 2.92 | 3.14 | 3.33 | 2.35 | 5.18 | 4.52 | 59.33 |
| 1975 | 4.66 | 4.68 | 10.42 | 2.43 | 2.98 | 2.43 | 2.25 | 1.61 | 3.28 | 4.02 | 2.92 | 3.59 | 45.27 |
| 1976 | 3.86 | 2.18 | 5.22 | 0.39 | 5.53 | 3.46 | 3.75 | 1.98 | 2.87 | 5.33 | 3.45 | 4.42 | 42.44 |
| 1977 | 2.55 | 1.52 | 6.08 | 6.96 | 1.16 | 6.49 | 1.08 | 5.78 | 6.91 | 4.04 | 5.06 | 3.30 | 50.93 |
| 1978 | 5.22 | 1.01 | 4.42 | 4.10 | 3.44 | 5.27 | 5.06 | 2.44 | 1.26 | 0.82 | 3.62 | 5.91 | 42.57 |
| 1979 | 6.18 | 4.17 | 4.21 | 4.30 | 7.21 | 3.80 | 9.47 | 2.29 | 2.64 | 1.97 | 5.73 | 1.92 | 53.89 |
| 1980 | 5.54 | 1.78 | 8.72 | 3.30 | 3.80 | 1.94 | 3.57 | 2.34 | 2.38 | 1.53 | 3.78 | 1.78 | 40.46 |
| 1981 | 1.05 | 3.62 | 2.83 | 4.84 | 3.02 | 5.53 | 2.03 | 3.48 | 6.09 | 4.15 | 3.01 | 4.14 | 43.79 |
| 1982 | 6.03 | 4.88 | 6.36 | 3.26 | 5.52 | 3.93 | 6.60 | 2.68 | 2.68 | 2.66 | 5.21 | 4.89 | 54.70 |
| 1983 | 1.58 | 2.90 | 1.99 | 5.88 | 5.42 | 3.26 | 3.18 | 3.89 | 0.95 | 3.34 | 4.40 | 5.69 | 42.48 |
| 1984 | 2.26 | 4.42 | 3.79 | 3.37 | 10.14 | 4.34 | 9.03 | 1.72 | 0.85 | 3.26 | 2.87 | 2.49 | 48.54 |
| 1985 | 3.17 | 4.11 | 1.98 | 2.86 | 1.60 | 4.77 | 2.63 | 4.07 | 0.42 | 3.04 | 5.39 | 2.36 | 36.40 |
| 1986 | 0.95 | 3.90 | 1.69 | 2.25 | 2.40 | 0.69 | 1.89 | 3.37 | 3.59 | 3.84 | 3.83 | 4.08 | 32.48 |
| 1987 | 4.68 | 4.63 | 2.91 | 2.18 | 4.62 | 2.66 | 4.67 | 1.08 | 1.93 | 0.60 | 1.21 | 3.49 | 34.66 |
| 1988 | 4.29 | 2.94 | 2.42 | 2.34 | 2.35 | 0.51 | 3.60 | 3.20 | 2.68 | 1.52 | 4.82 | 3.99 | 34.66 |
| 1989 | 4.96 | 6.26 | 3.82 | 3.50 | 5.31 | 8.21 | 2.68 | 3.16 | 9.19 | 1.47 | 4.92 | 2.74 | 56.22 |
| 1990 | 5.88 | 6.90 | 5.73 | 2.56 | 4.71 | 1.72 | 7.56 | 3.02 | 2.68 | 3.64 | 1.77 | 8.99 | 55.16 |
| 1991 | 2.53 | 6.99 | 6.36 | 3.97 | 3.10 | 6.02 | 3.45 | 6.13 | 3.14 | 1.10 | 5.24 | 10.23 | 58.26 |
| 1992 | 3.87 | 3.36 | 3.99 | 2.11 | 3.20 | 3.07 | 4.62 | 4.22 | 1.77 | 3.05 | 4.29 | 6.68 | 44.23 |
| 1993 | 4.09 | 2.20 | 6.16 | 2.50 | 3.78 | 0.90 | 2.03 | 6.04 | 4.77 | 2.25 | 3.33 | 7.04 | 45.09 |
| 1994 | 7.08 | 8.81 | 11.81 | 7.90 | 3.04 | 5.97 | 5.94 | 4.19 | 1.20 | 2.38 | 2.93 | 2.02 | 63.27 |
| 1995 | 4.90 | 4.54 | 3.54 | 1.74 | 7.05 | 3.90 | 0.33 | 2.08 | 2.46 | 3.58 | 6.21 | 2.50 | 42.83 |
| 1996 | 7.53 | 2.74 | 4.72 | 4.50 | 4.57 | 2.96 | 4.77 | 1.33 | 3.45 | 1.17 | 7.71 | 5.44 | 50.89 |
| 1997 | 5.20 | 5.17 | 6.34 | 3.82 | 6.76 | 5.70 | 3.75 | 2.02 | 3.32 | 2.90 | 2.78 | 2.37 | 50.13 |
| 1998 | 4.62 | 2.71 | 4.75 | 11.07 | 3.84 | 7.96 | 5.69 | 2.07 | 1.31 | 1.42 | 2.51 | 5.95 | 53.90 |
| POR= 128 YRS | 4.59 | 4.54 | 5.13 | 4.11 | 3.87 | 4.05 | 4.40 | 3.56 | 2.80 | 2.58 | 3.41 | 4.40 | 47.44 |

WBAN : 13891

AVERAGE TEMPERATURE (°F) 1998 KNOXVILLE, TN (TYS)

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|--------|
| 1969 | 36.5 | 39.4 | 42.1 | 59.5 | 67.3 | 74.5 | 78.9 | 74.5 | 69.3 | 59.1 | 45.5 | 37.7 | 57.0 |
| 1970 | 30.6 | 39.3 | 48.7 | 61.2 | 68.6 | 73.4 | 78.5 | 77.1 | 75.3 | 62.8 | 48.1 | 44.1 | 59.0 |
| 1971 | 38.5 | 39.4 | 45.6 | 58.5 | 63.9 | 75.9 | 75.4 | 76.0 | 73.3 | 65.3 | 48.7 | 50.4 | 59.2 |
| 1972 | 42.5 | 39.4 | 48.2 | 59.5 | 64.9 | 70.8 | 75.5 | 75.9 | 71.9 | 56.8 | 47.5 | 44.8 | 58.1 |
| 1973 | 38.0 | 39.9 | 55.8 | 56.4 | 63.5 | 74.8 | 76.7 | 76.2 | 73.8 | 62.4 | 52.4 | 41.1 | 59.3 |
| 1974 | 49.3 | 43.1 | 55.2 | 59.8 | 68.1 | 70.5 | 77.7 | 76.5 | 69.8 | 58.6 | 50.8 | 41.9 | 60.1 |
| 1975 | 43.3 | 45.5 | 46.6 | 57.5 | 70.1 | 74.6 | 77.6 | 78.8 | 68.9 | 60.1 | 50.2 | 41.1 | 59.5 |
| 1976 | 34.3 | 48.2 | 52.6 | 58.9 | 63.4 | 73.9 | 76.2 | 74.9 | 67.7 | 54.5 | 43.2 | 37.5 | 57.1 |
| 1977 | 27.2 | 41.4 | 55.0 | 62.9 | 69.8 | 75.3 | 80.3 | 78.9 | 74.0 | 57.4 | 52.6 | 40.2 | 59.6 |
| 1978 | 29.4 | 34.6 | 49.0 | 61.1 | 66.6 | 75.4 | 78.7 | 77.1 | 74.8 | 58.2 | 54.4 | 42.8 | 58.5 |
| 1979 | 33.0 | 36.7 | 53.1 | 59.9 | 66.9 | 72.8 | 75.0 | 77.6 | 72.2 | 58.3 | 51.4 | 42.2 | 58.3 |
| 1980 | 41.6 | 36.6 | 47.6 | 59.1 | 68.1 | 75.2 | 82.1 | 81.7 | 73.7 | 56.0 | 47.3 | 40.1 | 59.1 |
| 1981 | 33.4 | 41.9 | 46.8 | 63.5 | 63.9 | 77.1 | 81.4 | 78.3 | 70.2 | 58.9 | 49.4 | 38.7 | 58.6 |
| 1982 | 33.8 | 43.1 | 53.0 | 55.2 | 69.3 | 72.6 | 77.6 | 76.7 | 70.0 | 59.5 | 50.9 | 46.4 | 59.0 |
| 1983 | 38.0 | 41.1 | 49.7 | 53.2 | 65.4 | 72.5 | 78.5 | 79.6 | 70.3 | 60.2 | 47.4 | 36.4 | 57.7 |
| 1984 | 35.3 | 43.4 | 47.7 | 57.3 | 62.8 | 74.8 | 73.3 | 74.1 | 67.1 | 67.6 | 46.3 | 47.5 | 58.1 |
| 1985 | 29.4 | 37.1 | 50.2 | 58.6 | 65.7 | 72.5 | 76.5 | 75.1 | 68.5 | 63.7 | 56.8 | 34.8 | 57.4 |
| 1986 | 35.0 | 43.9 | 48.7 | 58.6 | 68.1 | 77.2 | 81.4 | 76.7 | 72.8 | 60.2 | 52.4 | 39.1 | 59.5 |
| 1987 | 36.8 | 42.2 | 49.2 | 55.0 | 71.3 | 75.5 | 78.5 | 79.6 | 70.1 | 52.8 | 50.2 | 43.5 | 58.7 |
| 1988 | 33.9 | 39.4 | 50.1 | 57.2 | 65.0 | 74.4 | 78.7 | 79.6 | 71.3 | 52.7 | 49.7 | 40.4 | 57.7 |
| 1989 | 42.8 | 41.3 | 53.5 | 57.8 | 62.4 | 73.3 | 77.5 | 76.8 | 70.9 | 59.4 | 48.1 | 32.2 | 58.0 |
| 1990 | 44.7 | 48.9 | 53.6 | 57.9 | 65.9 | 75.4 | 78.0 | 77.9 | 72.1 | 59.9 | 52.1 | 45.1 | 61.0 |
| 1991 | 41.2 | 43.8 | 52.0 | 62.8 | 72.0 | 74.9 | 79.3 | 76.5 | 71.4 | 61.0 | 47.1 | 43.5 | 60.5 |
| 1992 | 40.5 | 45.8 | 48.3 | 59.0 | 64.0 | 72.2 | 77.9 | 73.7 | 71.3 | 57.4 | 48.3 | 40.0 | 58.2 |
| 1993 | 43.5 | 39.5 | 45.7 | 56.2 | 67.0 | 76.0 | 83.0 | 78.7 | 70.6 | 57.9 | 48.4 | 40.2 | 58.9 |
| 1994 | 32.0 | 43.4 | 49.5 | 61.9 | 63.9 | 76.5 | 76.8 | 75.8 | 69.0 | 60.1 | 53.6 | 44.8 | 58.9 |
| 1995 | 39.2 | 40.7 | 53.1 | 61.0 | 67.3 | 73.8 | 80.2 | 81.5 | 70.5 | 58.6 | 43.6 | 37.1 | 58.9 |
| 1996 | 36.4 | 39.6 | 44.8 | 55.1 | 69.4 | 74.2 | 76.8 | 76.2 | 68.9 | 59.2 | 44.1 | 43.3 | 57.3 |
| 1997 | 39.4 | 46.6 | 54.2 | 54.0 | 62.2 | 71.9 | 78.4 | 75.7 | 71.7 | 58.9 | 43.9 | 39.2 | 58.0 |
| 1998 | 42.8 | 46.0 | 49.4 | 57.3 | 70.7 | 75.9 | 79.4 | 77.7 | 76.0 | 61.9 | 50.1 | 44.4 | 61.0 |
| POR= 128 YRS | 38.9 | 41.8 | 49.4 | 58.7 | 67.2 | 74.7 | 77.8 | 76.8 | 71.3 | 59.7 | 48.4 | 40.6 | 58.8 |

HEATING DEGREE DAYS (base 65°F) 1998 KNOXVILLE, TN (TYS)

| YEAR | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | TOTAL |
|---------|-----|-----|-----|-----|-----|------|------|-----|-----|-----|-----|-----|-------|
| 1969-70 | 0 | 0 | 11 | 200 | 579 | 840 | 1063 | 712 | 496 | 139 | 45 | 0 | 4085 |
| 1970-71 | 0 | 0 | 13 | 109 | 497 | 640 | 813 | 710 | 596 | 209 | 76 | 0 | 3663 |
| 1971-72 | 0 | 0 | 0 | 53 | 496 | 450 | 692 | 735 | 516 | 211 | 47 | 11 | 3211 |
| 1972-73 | 0 | 0 | 9 | 251 | 522 | 622 | 828 | 697 | 283 | 272 | 97 | 0 | 3581 |
| 1973-74 | 0 | 0 | 10 | 135 | 373 | 734 | 481 | 606 | 304 | 190 | 41 | 10 | 2884 |
| 1974-75 | 0 | 0 | 23 | 215 | 439 | 713 | 666 | 542 | 563 | 257 | 9 | 0 | 3427 |
| 1975-76 | 0 | 0 | 42 | 172 | 437 | 733 | 944 | 485 | 380 | 203 | 91 | 0 | 3487 |
| 1976-77 | 0 | 0 | 19 | 320 | 651 | 845 | 1166 | 658 | 319 | 110 | 33 | 2 | 4123 |
| 1977-78 | 0 | 0 | 3 | 242 | 374 | 764 | 1097 | 846 | 487 | 148 | 74 | 0 | 4035 |
| 1978-79 | 0 | 0 | 0 | 210 | 310 | 681 | 985 | 786 | 376 | 167 | 46 | 0 | 3561 |
| 1979-80 | 0 | 0 | 0 | 220 | 407 | 700 | 715 | 815 | 529 | 185 | 32 | 1 | 3604 |
| 1980-81 | 0 | 0 | 23 | 284 | 523 | 761 | 974 | 641 | 556 | 104 | 94 | 0 | 3960 |
| 1981-82 | 0 | 0 | 32 | 196 | 461 | 809 | 959 | 606 | 384 | 295 | 20 | 0 | 3762 |
| 1982-83 | 0 | 0 | 30 | 228 | 416 | 577 | 829 | 662 | 472 | 356 | 50 | 3 | 3623 |
| 1983-84 | 0 | 0 | 51 | 163 | 523 | 878 | 912 | 619 | 530 | 240 | 139 | 5 | 4060 |
| 1984-85 | 0 | 0 | 44 | 30 | 556 | 536 | 1095 | 776 | 459 | 208 | 51 | 13 | 3768 |
| 1985-86 | 0 | 0 | 44 | 86 | 250 | 927 | 922 | 582 | 499 | 206 | 51 | 0 | 3567 |
| 1986-87 | 0 | 2 | 0 | 197 | 377 | 797 | 863 | 631 | 483 | 313 | 13 | 0 | 3676 |
| 1987-88 | 0 | 0 | 15 | 370 | 437 | 660 | 956 | 734 | 458 | 247 | 66 | 9 | 3952 |
| 1988-89 | 0 | 0 | 3 | 384 | 454 | 755 | 681 | 660 | 360 | 258 | 148 | 1 | 3704 |
| 1989-90 | 0 | 1 | 36 | 204 | 499 | 1011 | 622 | 443 | 358 | 239 | 68 | 0 | 3481 |
| 1990-91 | 0 | 0 | 26 | 182 | 382 | 612 | 730 | 589 | 405 | 93 | 16 | 0 | 3035 |
| 1991-92 | 0 | 0 | 46 | 159 | 538 | 660 | 753 | 549 | 512 | 225 | 113 | 6 | 3561 |
| 1992-93 | 0 | 0 | 13 | 229 | 494 | 769 | 659 | 708 | 592 | 270 | 38 | 2 | 3772 |
| 1993-94 | 0 | 0 | 37 | 232 | 495 | 761 | 1016 | 597 | 473 | 139 | 93 | 0 | 3843 |
| 1994-95 | 0 | 0 | 11 | 158 | 336 | 620 | 794 | 674 | 364 | 162 | 54 | 0 | 3173 |
| 1995-96 | 0 | 0 | 22 | 216 | 638 | 857 | 877 | 732 | 622 | 302 | 45 | 0 | 4311 |
| 1996-97 | 0 | 0 | 30 | 196 | 623 | 663 | 786 | 512 | 332 | 333 | 124 | 8 | 3607 |
| 1997-98 | 0 | 0 | 1 | 226 | 625 | 794 | 681 | 528 | 500 | 234 | 30 | 12 | 3631 |
| 1998- | 0 | 0 | 1 | 133 | 438 | 632 | | | | | | | |

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COOLING DEGREE DAYS (base 65°F) 1998 KNOXVILLE, TN (TYS)

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|
| 1969 | 0 | 0 | 0 | 15 | 125 | 294 | 438 | 304 | 147 | 23 | 0 | 0 | 1346 |
| 1970 | 0 | 0 | 0 | 33 | 162 | 258 | 427 | 384 | 326 | 46 | 0 | 0 | 1636 |
| 1971 | 0 | 0 | 0 | 20 | 50 | 333 | 328 | 350 | 252 | 69 | 13 | 3 | 1418 |
| 1972 | 0 | 0 | 0 | 53 | 51 | 193 | 332 | 347 | 223 | 4 | 2 | 0 | 1205 |
| 1973 | 0 | 0 | 4 | 19 | 56 | 298 | 369 | 355 | 282 | 60 | 2 | 0 | 1445 |
| 1974 | 0 | 0 | 9 | 39 | 142 | 179 | 399 | 365 | 171 | 19 | 17 | 0 | 1340 |
| 1975 | 0 | 0 | 0 | 39 | 173 | 293 | 397 | 434 | 168 | 26 | 0 | 0 | 1530 |
| 1976 | 0 | 3 | 1 | 26 | 48 | 273 | 356 | 314 | 107 | 5 | 0 | 0 | 1133 |
| 1977 | 0 | 5 | 14 | 57 | 188 | 317 | 483 | 440 | 283 | 14 | 10 | 0 | 1811 |
| 1978 | 0 | 0 | 0 | 37 | 130 | 319 | 432 | 384 | 302 | 8 | 0 | 0 | 1612 |
| 1979 | 0 | 0 | 15 | 20 | 111 | 242 | 317 | 399 | 224 | 23 | 4 | 0 | 1355 |
| 1980 | 0 | 0 | 0 | 16 | 136 | 315 | 538 | 525 | 290 | 12 | 0 | 0 | 1832 |
| 1981 | 0 | 0 | 0 | 62 | 65 | 373 | 512 | 421 | 193 | 14 | 1 | 0 | 1641 |
| 1982 | 0 | 0 | 17 | 6 | 157 | 233 | 396 | 372 | 187 | 65 | 2 | 8 | 1443 |
| 1983 | 0 | 0 | 4 | 6 | 71 | 235 | 425 | 462 | 217 | 23 | 0 | 0 | 1443 |
| 1984 | 0 | 0 | 0 | 12 | 77 | 306 | 263 | 290 | 116 | 120 | 2 | 0 | 1186 |
| 1985 | 0 | 0 | 11 | 20 | 81 | 247 | 363 | 322 | 155 | 53 | 11 | 0 | 1263 |
| 1986 | 0 | 0 | 0 | 21 | 156 | 374 | 517 | 373 | 241 | 55 | 6 | 0 | 1743 |
| 1987 | 0 | 0 | 0 | 18 | 215 | 321 | 427 | 460 | 172 | 0 | 0 | 0 | 1613 |
| 1988 | 0 | 0 | 3 | 19 | 74 | 297 | 431 | 458 | 200 | 9 | 0 | 0 | 1491 |
| 1989 | 0 | 2 | 10 | 47 | 76 | 257 | 395 | 374 | 219 | 35 | 0 | 0 | 1415 |
| 1990 | 0 | 1 | 13 | 32 | 101 | 316 | 410 | 406 | 245 | 32 | 1 | 0 | 1557 |
| 1991 | 0 | 0 | 9 | 32 | 239 | 306 | 453 | 364 | 244 | 42 | 6 | 2 | 1697 |
| 1992 | 0 | 0 | 0 | 49 | 91 | 230 | 410 | 279 | 206 | 0 | 0 | 0 | 1265 |
| 1993 | 0 | 0 | 0 | 10 | 106 | 339 | 566 | 432 | 212 | 21 | 3 | 0 | 1689 |
| 1994 | 0 | 0 | 0 | 54 | 67 | 349 | 372 | 342 | 137 | 15 | 0 | 0 | 1336 |
| 1995 | 0 | 0 | 3 | 50 | 134 | 268 | 480 | 521 | 192 | 26 | 1 | 0 | 1675 |
| 1996 | 0 | 4 | 0 | 10 | 187 | 285 | 371 | 353 | 152 | 22 | 3 | 0 | 1387 |
| 1997 | 0 | 1 | 5 | 9 | 44 | 222 | 423 | 338 | 209 | 46 | 0 | 0 | 1297 |
| 1998 | 0 | 0 | 24 | 8 | 212 | 346 | 454 | 402 | 338 | 43 | 0 | 1 | 1828 |

SNOWFALL (inches) 1998 KNOXVILLE, TN (TYS)

| YEAR | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | TOTAL |
|----------------|-----|-----|-----|-----|-----|-----|------|------|------|------|-----|-----|-------|
| 1969-70 | 0.0 | 0.0 | 0.0 | 0.0 | T | 8.9 | 12.9 | 4.6 | T | 0.0 | 0.0 | 0.0 | 26.4 |
| 1970-71 | 0.0 | 0.0 | 0.0 | 0.0 | T | 6.3 | 1.3 | 6.4 | 3.6 | 7.0 | 0.0 | 0.0 | 24.6 |
| 1971-72 | 0.0 | 0.0 | 0.0 | 0.0 | T | T | 0.4 | 4.2 | 6.7 | 0.0 | 0.0 | 0.0 | 11.3 |
| 1972-73 | 0.0 | 0.0 | 0.0 | 0.0 | T | T | 9.0 | T | 1.9 | T | 0.0 | 0.0 | 10.9 |
| 1973-74 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | T | T | 1.8 | 0.0 | 0.0 | 0.0 | 3.8 |
| 1974-75 | 0.0 | 0.0 | 0.0 | 0.0 | T | 1.6 | 1.3 | T | 2.5 | 0.0 | 0.0 | 0.0 | 5.4 |
| 1975-76 | 0.0 | 0.0 | 0.0 | 0.0 | T | T | 0.3 | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | 3.1 |
| 1976-77 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 2.1 | 7.9 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 11.2 |
| 1977-78 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.6 | 11.3 | 5.5 | 1.8 | 0.0 | 0.0 | 0.0 | 19.3 |
| 1978-79 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | T | 4.7 | 18.4 | T | 0.0 | 0.0 | 0.0 | 23.1 |
| 1979-80 | 0.0 | 0.0 | 0.0 | 0.0 | T | T | 0.5 | 11.0 | 3.5 | T | 0.0 | 0.0 | 15.0 |
| 1980-81 | 0.0 | 0.0 | 0.0 | 0.0 | T | T | 5.0 | 2.5 | T | 0.0 | 0.0 | 0.0 | 7.5 |
| 1981-82 | 0.0 | 0.0 | 0.0 | 0.0 | T | 0.1 | 4.4 | 0.1 | 1.1 | T | 0.0 | 0.0 | 5.7 |
| 1982-83 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 1.1 | 3.4 | 0.7 | 2.0 | 0.0 | 0.0 | 10.2 |
| 1983-84 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 2.8 | 3.5 | T | 0.0 | 0.0 | 0.0 | 7.0 |
| 1984-85 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | T | 14.2 | 8.3 | 0.0 | 0.0 | 0.0 | 0.0 | 22.5 |
| 1985-86 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 3.6 | 5.0 | T | 0.0 | 0.0 | 0.0 | 9.0 |
| 1986-87 | 0.0 | 0.0 | 0.0 | 0.0 | T | T | 7.5 | T | 1.6 | 10.7 | 0.0 | 0.0 | 19.8 |
| 1987-88 | 0.0 | 0.0 | 0.0 | 0.0 | T | T | 9.2 | 0.9 | T | 0.0 | 0.0 | 0.0 | 10.1 |
| 1988-89 | 0.0 | 0.0 | 0.0 | 0.0 | T | 2.6 | 1.8 | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | 7.2 |
| 1989-90 | 0.0 | 0.0 | 0.0 | T | T | 1.1 | T | T | T | 0.0 | 0.0 | 0.0 | 1.1 |
| 1990-91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | T | T | 1.2 | 0.7 | T | 0.0 | 0.0 | 1.9 |
| 1991-92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | T | T | 0.0 | T | T | 0.0 | 0.0 | 0.2 |
| 1992-93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | T | 1.0 | 15.1 | T | 0.0 | 0.0 | 16.4 |
| 1993-94 | 0.0 | 0.0 | 0.0 | T | 0.0 | 0.3 | 3.3 | T | 0.6 | 0.0 | 0.0 | 0.0 | 4.2 |
| 1994-95 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 1.1 | 0.6 | 0.0 | 0.0 | 0.0 | 3.7 |
| 1995-96 | 0.0 | T | 0.0 | 0.0 | | T | 10.0 | | | | | | |
| 1996-97 | | | | | | | 1.5 | | | | | | |
| 1997-98 | | | | | T | 3.3 | 0.4 | 0.1 | T | 0.0 | T | T | |
| 1998- | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | T | | | | | | | |
| POR= 54 YRS | 0.0 | T | 0.0 | T | 0.6 | 1.5 | 3.8 | 3.3 | 1.7 | 0.4 | T | 0.0 | 11.3 |

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REFERENCE NOTES:

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|---|---|
| <p>PAGE 1: THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).</p> <p>PAGE 2 AND 3: H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY W/O INDICATES WEATHER AND OBSTRUCTIONS S INDICATES SUNSHINE. PR INDICATES PRESSURE. CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).</p> <p>GENERAL: T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. NORMALS ARE 30-YEAR AVERAGES (1961 - 1990). ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED. 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05. CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET AND ON SATELLITE DATA FOR CLOUDS ABOVE 12,000 FEET. THE NUMBER OF DAYS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY CONDITIONS FOR ASOS STATIONS IS THE SUM OF THE CEILOMETER AND SATELLITE DATA FOR THE SUNRISE TO SUNSET PERIOD.</p> | <p>GENERAL CONTINUED: CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. WHEN AT LEAST ONE OF THE ELEMENTS (CEILOMETER OR SATELLITE) IS MISSING, THE DAILY CLOUDINESS IS NOT COMPUTED. WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH. RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION. AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65° F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY.</p> <p>ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.</p> |
|---|---|

1998
KNOXVILLE,
TENNESSEE (TYS)

Knoxville is located in a broad valley between the Cumberland Mountains, which lie northwest of the city, and the Great Smoky Mountains, which lie southeast of the city. These two mountain ranges exercise a marked influence upon the climate of the valley. The Cumberland Mountains, to the northwest, serve to retard and weaken the force of the cold winter air which frequently penetrates far south of the latitude of Knoxville over the plains areas to the west of the mountains.

The mountains also serve to modify the hot summer winds which are common to the plains to the west. In addition, they serve as a fixed incline plane which lifts the warm, moist air flowing northward from the Gulf of Mexico and thereby increases the frequency of afternoon thunderstorms. Relief from extremely high temperatures which such thunderstorms produce serves to reduce the number of extremely warm days in the valley.

July is usually the warmest month of the year. The coldest weather usually occurs during the month of January. Sudden great temperature changes occur infrequently. This again is due mainly to the retarding effect of the mountains. Summer nights are nearly always comfortable.

Rainfall is ample for agricultural purposes and is favorably distributed during the year for most crops. Precipitation is greatest in the wintertime. Another peak period occurs during the late spring and summer months. The period of lowest rainfall occurs during the fall. A cumulative total of approximately 12 inches of snow falls annually. However, this usually comes in amounts of less than 4 inches at one time. It is unusual for snow to remain on the ground in measurable amounts longer than one week.

The topography also has a pronounced effect upon the prevailing wind direction. Daytime winds usually have a southwesterly component, while nighttime winds usually move from the northeast. The winds are relatively light and tornadoes are extremely rare.

STATION LOCATION

KNOXVILLE, TENNESSEE

| LOCATION | OCCUPIED FROM | OCCUPIED TO | AIRLINE AND DIRECTIONS FROM PREVIOUS LOCATION | NORTH | WEST | ELEVATION ABOVE | | | | | | | | | | REMARKS | | |
|--|---------------|-------------|---|--------|--------|-----------------|--------|------|------|-----|----|-----|----|----|----|---------|----|---|
| | | | | | | SEA LEVEL | GROUND | | | | | | | | | | | |
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | 10 | |
| CITY - - NOTE: For period January 1, 1871 through August 25, 1877, refer to previous editions. | | | | | | | | | | | | | | | | | | |
| U.S. Custom House & Post Office, corner Clinch & Prince Streets | 8/26/77 | 7/15/97 | .75 mi. NE | 35æ58© | 83æ55© | 941 | 88 | (72) | (72) | | | | | | | | | Thermometers 72 feet prior to 11/16/87. Rain gage 77 feet through 1886, 67 feet in 1887 and 71 feet thereafter. |
| Old College Univ. of Tennessee Cumberland Avenue | 7/16/97 | 6/18/07 | .75 mi. SW | 35æ58© | 83æ56© | | 88 | (10) | (10) | | | (3) | | | | | | Thermometers 10 feet to 5/8/03. Rain gages 3 feet from 7/16/97 to 5/7/03 and 10/4/04 to 3/31/06. |
| Van Deventer Building 311-313 Wall Avenue | 6/18/07 | 5/18/17 | .6 mi. NNE | 35æ58© | 83æ55© | 935 | 100 | 93 | 93 | | | 84 | | | | | | |
| Brownlow (Henson) Bldg. 311 Market Street | 5/18/17 | 9/19/32 | 200 ft. WSW | 35æ58© | 83æ55© | | 111 | 102 | 102 | | | 96 | | | | | | |
| New Sprankle Building 508 West Union Avenue | 9/19/32 | 3/13/34 | 1000 ft. S | 35æ58© | 83æ55© | 935 | 97 | 79 | 79 | | | 72 | | | | | | |
| U.S. Post Office and Court House, corner Main and Walnut Sts. | 3/13/34 | 2/28/42 | 1200 ft. SSE | 35æ58© | 83æ55© | 921 | 84 | 66 | 66 | | | 57 | | | | | | |
| AIRPORT | | | | | | | | | | | | | | | | | | |
| Administration Building Knoxville Municipal (McGhee Tyson) Airport | 8/24/37 | 12/31/38 | 1 1/2 mi. SSW of P.O. | 35æ49© | 83æ59© | 950 | | #6 | #6 | | | | | | | | #3 | # - Estimated. |
| Administration Building Knoxville Municipal (McGhee Tyson) Airport | 1/01/39 | 2/28/42 | No Change | 35æ49© | 83æ59© | 950 | 45 | 27 | 27 | | | | | | | | 26 | Dates of instrument changes: |
| Administration Building Knoxville Municipal (McGhee Tyson) Airport | 3/01/42 | 11/4/81 | No Change | 35æ49© | 83æ59© | 950 | 53 | 27 | 27 | %36 | 35 | 27 | 35 | NA | NA | | | f - 8/18/59, for direct reading indicators. Autographic record continued from 73 ft. elevation until 4/2/83. |
| | | | | | | h980 | a71 | b39 | b37 | | | b35 | | | | | | g - Commissioned 3000 feet from thermometer site 2/1/61. |
| | | | | | | | c47 | d39 | d37 | | | d36 | | | | | | h - Effective 2/1/61. |
| | | | | | | | d73 | x | x | | | e37 | | | | | | x - Decommissioned prior to 1964. Sling psychrometer for standby use. |
| | | | | | | | i22 | | | | | | | | | | | % - Commissioned 2/23/61. |
| | | | | | | | | | | | | | | | | | | i - Type change 7/16/85. |
| | | | | | | | | | | | | | | | | | | j - Raised 9/26/86. |
| | | | | | | | | | | | | | | | | | | k - Minor move 12/12/89. |
| | | | | | | | | | | | | | | | | | | S ASOS Commissioned 10/01/95 |
| NWS Building McGhee-Tyson Airport | 11/4/81 | Present | 1.2 mi. SW | 35æ49© | 83æ59© | 980 | 22 | NA | NA | 36 | 36 | 37 | 36 | 5 | NA | | | |

SUBSCRIPTION: Price and ordering information available through: National Climatic Data Center, Federal Building, Asheville, North Carolina 28801. INQUIRIES/COMMENTS CALL: (828) 271-4800

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