



# NOVEMBER 2003

## LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

# HOUSTON, TX

G BUSH INTCNTL APT/HOU APT (IAH)  
 Lat: 29°59' N Long: 95°21' W Elev (Ground): 118 Feet  
 Time Zone: CENTRAL WBAN: 12960 ISSN #:0198-5094

NOVEMBER 2003  
HOUSTON, TX

| 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 |                  | DEPTH  | WATER EQUIV | SNOW FALL              | WATER EQUIV | 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             | 67      | 75      | 10              | 68             | 70               | 0                 | 10      | FG+ BR           | 0  |             | 0.0                    | 0.00        | 30.02                                | 30.13             | 6.7                                    | 11      | 7.5   | 17      | 10 | 14    | 13                   | 01 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 02                      | 84             | 69      | 77      | 12              | 69             | 71               | 0                 | 12      | BR               | 0  |             | 0.0                    | 0.00        | 29.97                                | 30.09             | 9.7                                    | 12      | 10.0  | 21      | 13 | 16    | 12                   | 02 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 03                      | 84             | 68      | 76      | 11              | 68             | 70               | 0                 | 11      | FG+ BR           | 0  |             | 0.0                    | 0.00        | 29.89                                | 30.00             | 7.2                                    | 13      | 7.6   | 18      | 15 | 16    | 15                   | 03 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 04                      | 84             | 67      | 76      | 12              | 67             | 70               | 0                 | 11      | FG+ BR           | 0  |             | 0.0                    | 0.00        | 29.79                                | 29.91             | 2.0                                    | 14      | 3.8   | 14      | 11 | 12    | 15                   | 04 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 05                      | 85             | 64      | 75      | 11              | 66             | 69               | 0                 | 10      |                  | 0  |             | 0.0                    | 0.00        | 29.87                                | 29.98             | 3.3                                    | 15      | 3.7   | 14      | 14 | 12    | 13                   | 05 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 06                      | 71             | 57      | 64      | 0               | 61             | 63               | 1                 | 0       | BR               | 0  |             | 0.0                    | 0.00        | 30.02                                | 30.14             | 7.2                                    | 35      | 7.8   | 22      | 04 | 15    | 01                   | 06 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 07                      | 63             | 56      | 60      | -3              | 55             | 57               | 5                 | 0       | BR               | 0  |             | 0.0                    | 0.00        | 30.10                                | 30.21             | 8.2                                    | 36      | 8.5   | 16      | 01 | 14    | 01                   | 07 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 08                      | 67             | 56      | 62      | -1              | 54             | 57               | 3                 | 0       | RA DZ BR         | 0  |             | 0.0                    | T           | 30.16                                | 30.28             | 8.8                                    | 02      | 9.1   | 16      | 01 | 14    | 01                   | 08 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 09                      | 70             | 56      | 63      | 0               | 54             | 57               | 2                 | 0       |                  | 0  |             | 0.0                    | 0.00        | 30.20                                | 30.32             | 8.2                                    | 02      | 8.9   | 15      | 01 | 13    | 02                   | 09 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 10                      | 79             | 51      | 65      | 2               | 60             | 63               | 0                 | 0       | BR HZ            | 0  |             | 0.0                    | 0.00        | 30.10                                | 30.22             | 5.4                                    | 12      | 7.4   | 18      | 13 | 16    | 13                   | 10 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 11                      | 85             | 67      | 76      | 14              | 69             | 71               | 0                 | 11      | BR               | 0  |             | 0.0                    | 0.00        | 29.99                                | 30.10             | 8.5                                    | 17      | 8.7   | 20      | 15 | 17    | 17                   | 11 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 12                      | 85*            | 68      | 77*     | 15              | 67             | 70               | 0                 | 12      | MIFG             | 0  |             | 0.0                    | 0.00        | 29.98                                | 30.10             | 3.1                                    | 19      | 4.4   | 17      | 18 | 13    | 17                   | 12 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 13                      | 72             | 53      | 63      | 2               | 43             | 55               | 2                 | 0       | MIFG             | 0  |             | 0.0                    | 0.00        | 30.20                                | 30.31             | 11.3                                   | 04      | 11.7  | 29      | 05 | 21    | 06                   | 13 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 14                      | 72             | 48      | 60      | -1              | 46             | 53               | 5                 | 0       |                  | 0  |             | 0.0                    | 0.00        | 30.12                                | 30.23             | 8.9                                    | 11      | 10.4  | 21      | 13 | 16    | 15                   | 14 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 15                      | 82             | 60      | 71      | 10              | 66             | 67               | 0                 | 6       | RA BR            | 0  |             | 0.0                    | 0.26        | 29.89                                | 30.00             | 5.3                                    | 16      | 6.9   | 21      | 24 | 16    | 17                   | 15 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 16                      | 77             | 67      | 72      | 11              | 70             | 70               | 0                 | 7       | TS TSRA RA FG BR | 0  |             | 0.0                    | 2.02        | 29.89                                | 30.00             | 3.1                                    | 10      | 6.3   | 20      | 14 | 17    | 14                   | 16 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 17                      | 76             | 66      | 71      | 11              | 70             | 71               | 0                 | 6       | TSRA RA FG BR    | 0  |             | 0.0                    | 5.19        | 29.74                                | 29.85             | 3.6                                    | 14      | 6.8   | 30      | 30 | 25    | 31                   | 17 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 18                      | 76             | 55      | 66      | 6               | 50             | 58               | 0                 | 1       | TS RA            | 0  |             | 0.0                    | 0.09        | 29.71                                | 29.82             | 10.4                                   | 27      | 11.9  | 40*     | 29 | 32*   | 28                   | 18 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 19                      | 72             | 50      | 61      | 1               | 40             | 50               | 4                 | 0       |                  | 0  |             | 0.0                    | 0.00        | 30.09                                | 30.20             | 6.2                                    | 31      | 7.0   | 22      | 01 | 17    | 01                   | 19 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 20                      | 75             | 46      | 61      | 1               | 47             | 53               | 4                 | 0       |                  | 0  |             | 0.0                    | 0.00        | 30.00                                | 30.11             | 3.1                                    | 17      | 3.5   | 15      | 16 | 13    | 17                   | 20 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 21                      | 79             | 55      | 67      | 8               | 59             | 63               | 0                 | 2       |                  | 0  |             | 0.0                    | 0.00        | 29.89                                | 30.00             | 6.1                                    | 17      | 6.3   | 25      | 16 | 18    | 17                   | 21 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 22                      | 81             | 64      | 73      | 14              | 64             | 67               | 0                 | 8       |                  | 0  |             | 0.0                    | 0.00        | 29.76                                | 29.88             | 11.1                                   | 17      | 11.3  | 29      | 16 | 23    | 16                   | 22 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 23                      | 79             | 43      | 61      | 2               | 54             | 58               | 4                 | 0       | RA BR            | 0  |             | 0.0                    | 0.11        | 29.82                                | 29.93             | 3.7                                    | 32      | 12.4  | 33      | 33 | 29    | 32                   | 23 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 24                      | 54             | 35      | 45*     | -14             | 24             | 36               | 20                | 0       |                  | 0  |             | 0.0                    | 0.00        | 30.18                                | 30.30             | 8.8                                    | 35      | 9.0   | 24      | 01 | 20    | 01                   | 24 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 25                      | 67             | 34      | 51      | -7              | 44             | 48               | 14                | 0       |                  | 0  |             | 0.0                    | 0.00        | 29.89                                | 30.01             | 5.1                                    | 14      | 5.8   | 20      | 18 | 17    | 15                   | 25 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 26                      | 78             | 59      | 69      | 11              | 65             | 66               | 0                 | 4       | RA BR            | 0  |             | 0.0                    | 0.13        | 29.72                                | 29.84             | 5.5                                    | 15      | 7.1   | 20      | 16 | 17    | 15                   | 26 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 27                      | 79             | 51      | 65      | 7               | 54             | 61               | 0                 | 0       | RA               | 0  |             | 0.0                    | T           | 29.87                                | 29.99             | 9.9                                    | 31      | 12.3  | 35      | 33 | 28    | 33                   | 27 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 28                      | 61             | 39      | 50      | -7              | 26             | 40               | 15                | 0       |                  | 0  |             | 0.0                    | 0.00        | 30.36                                | 30.48             | 10.2                                   | 33      | 10.5  | 31      | 34 | 24    | 34                   | 28 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 29                      | 62             | 34*     | 48      | -9              | 31             | 41               | 17                | 0       |                  | 0  |             | 0.0                    | 0.00        | 30.26                                | 30.38             | 3.2                                    | 15      | 3.5   | 16      | 12 | 13    | 15                   | 29 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 30                      | 72             | 40      | 56      | -1              | 48             | 52               | 9                 | 0       |                  | 0  |             | 0.0                    | 0.00        | 30.10                                | 30.21             | 5.6                                    | 13      | 6.3   | 20      | 15 | 16    | 13                   | 30 |      |  |                               |  |  |  |                               |  |  |  |  |  |
| < MONTHLY AVERAGES      |                |         |         |                 |                |                  |                   |         |                  | TOTALS-->                                      |             |                        |             |                                      |                   | <-- MONTHLY AVERAGES                   |         |   |         |    |       |                      |    |      |  |                               |  |  |  |                               |  |  |  |  |  |
| 3.1                     |                |         |         |                 |                |                  |                   |         |                  | 5.0  |             |                        |             | 4.1                                  |                   | <-----DEPARTURE FROM NORMAL----->      |         |   |         |    |       |                      |    | 3.61 |  |                               |  | SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3 |  |                               |  |  |  |  |  |
| DEGREE DAYS             |                |         |         |                 |                |                  |                   |         |                  | GREATEST 24-HR PRECIPITATION: 5.67 DATE: 16-17 |             |                        |             | GREATEST 24-HR SNOWFALL: 0.0 DATE: : |                   |  |         | SEA LEVEL PRESSURE DATE TIME                    |         |    |       |                      |    |      |  |                               |  |  |  |                               |  |  |  |  |  |
| MONTHLY TOTAL DEPARTURE |                |         |         |                 |                |                  |                   |         |                  | SEASON TO DATE TOTAL DEPARTURE                 |             |                        |             | GREATEST SNOW DEPTH: 0 DATE: :       |                   |  |         | MAXIMUM MINIMUM : 30.57 28 0953 : 29.69 18 0553 |         |    |       |                      |    |      |  |                               |  |  |  |                               |  |  |  |  |  |
| HEATING: 105 -84        |                |         |         |                 |                |                  |                   |         |                  | COOLING: 111 46                                |             |                        |             | 3190 322                             |                   |  |         | NUMBER OF DAYS WITH =>                          |         |    |       | MAXIMUM TEMP ≥ 90: 0 |    |      |  | MINIMUM TEMP ≤ 32: 0          |  |  |  | PRECIPITATION ≥ 0.01 INCH : 6 |  |  |  |  |  |
|                         |                |         |         |                 |                |                  |                   |         |                  |  |             |                        |             |                                      |                   |  |         | MAXIMUM TEMP ≤ 32 : 0                           |         |    |       | MINIMUM TEMP ≤ 0 : 0 |    |      |  | PRECIPITATION ≥ 0.10 INCH : 5 |  |  |  |                               |  |  |  |  |  |
|                         |                |         |         |                 |                |                  |                   |         |                  |  |             |                        |             |                                      |                   |  |         |   |         |    |       | THUNDERSTORMS : 3    |    |      |  | HEAVY FOG : 3                 |  |  |  | SNOWFALL ≥ 1.0 INCH : 0       |  |  |  |  |  |

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

## HOUSTON, TX

NOVEMBER 2003

IAH

WBAN # 12960

| 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   |                          |      |      |      |      |      |      |      |      |    |    | 05 |      | 0.00                        |          |        |
| 06   |                          |      |      |      |   |      |   |   |   |      |      |    | 06   |                          |      |      |      |      |      |      |      |      |    |    | 06 |      | 0.00                        |          |        |
| 07   |                          |      |      |      |   |      |   |   |   |      |      |    | 07   |                          |      |      |      |      |      |      |      |      |    |    | 07 |      | 0.00                        |          |        |
| 08   |                          |      |      |      |   |      |   |   |   |      |      |    | 08   |                          |      |      |      |      |      |      |      |      |    |    | 08 | T    | T                           |          |        |
| 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   | T                        | 0.25 | 0.01 |      |      |      |      |      |      |    |    | 14 |      | 0.00                        |          |        |
| 15   |                          |      |      |      |   |      |   |   |   |      |      |    | 15   |                          |      |      |      |      |      |      |      |      |    |    | 15 |      | 0.26                        |          |        |
| 16   |                          |      |      |      |   |      |   |   |   |      |      |    | 16   |                          |      |      |      |      |      |      |      |      |    |    | 16 |      | 2.02                        |          |        |
| 17   | 0.02                     | 0.03 | 0.02 | 0.01 | T | 0.01 |   |   |   | 0.05 | 0.10 | T  | 17   | 0.49                     | 0.06 | 0.25 | T    | T    | 0.78 | 0.27 | 0.48 | 0.08 | T  | 17 |    | 5.19 |                             |          |        |
| 18   |                          |      |      |      |   |      |   |   |   |      |      |    | 18   |                          | 0.70 | 1.57 | 1.08 | 0.01 | 0.11 | 0.05 | 0.17 | 0.01 | T  | 18 |    | 0.09 |                             |          |        |
| 19   |                          |      |      |      |   |      |   |   |   |      |      |    | 19   |                          |      |      |      |      |      |      |      |      |    |    | 19 |      | 0.00                        |          |        |
| 20   |                          |      |      |      |   |      |   |   |   |      |      |    | 20   |                          |      |      |      |      |      |      |      |      |    |    | 20 |      | 0.00                        |          |        |
| 21   |                          |      |      |      |   |      |   |   |   |      |      |    | 21   |                          |      |      |      |      |      |      |      |      |    |    | 21 |      | 0.00                        |          |        |
| 22   |                          |      |      |      |   |      |   |   |   |      |      |    | 22   |                          |      |      |      |      |      |      |      |      |    |    | 22 |      | 0.00                        |          |        |
| 23   |                          |      |      |      |   | T    |   |   |   |      |      |    | 23   | T                        | 0.01 |      | T    | 0.01 | T    |      |      |      |    | 23 |    | 0.11 |                             |          |        |
| 24   |                          |      |      |      |   |      |   |   |   |      |      |    | 24   |                          |      |      |      |      |      |      |      |      |    |    | 24 |      | 0.00                        |          |        |
| 25   |                          |      |      |      |   |      |   |   |   |      |      |    | 25   |                          |      |      |      |      |      |      |      |      |    |    | 25 |      | 0.00                        |          |        |
| 26   |                          |      |      |      |   |      |   |   |   |      |      |    | 26   |                          |      |      |      |      |      | 0.11 | 0.02 |      |    |    | 26 |      | 0.13                        |          |        |
| 27   |                          |      | T    |      |   |      |   |   |   |      |      |    | 27   |                          |      | T    | T    |      |      |      |      |      |    | 27 |    | T    |                             |          |        |
| 28   |                          |      |      |      |   |      |   |   |   |      |      |    | 28   |                          |      |      |      |      |      |      |      |      |    |    | 28 |      | 0.00                        |          |        |
| 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) |   |    |    |    |    |    |    |    |     |     |     |     |
| Ending Date            |   |    |    |    |    |    |    |    |     |     |     |     |
| Ending Time (Hour/Min) |   |    |    |    |    |    |    |    |     |     |     |     |

Date and time are not entered for TRACE amounts.

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

## REFERENCE NOTES & SUPPLEMENTAL SUMMARIES

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

T = Trace precipitation amount

+ = also occurs on earlier date

FG+ = Heavy fog, visibility .25 miles or less

BLANK entries denote missing or unreported data

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

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

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

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

NORMALS ARE FOR THE YEARS 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

## HOUSTON, TX 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:

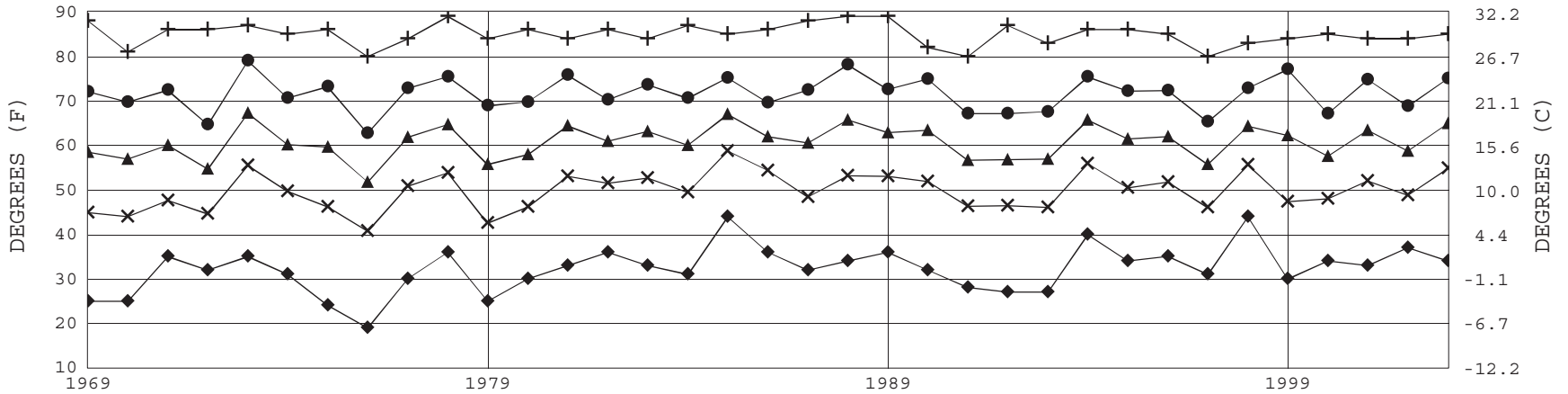
| DATE  | SUNSHINE      |                  | CLOUDINESS (OKTAS) |           |            |           | VISIBILITY (MILES) |         | RESERVED |
|---|---------------|------------------|--------------------|-----------|------------|-----------|--------------------|---------|----------|
|   | TOTAL MINUTES | PERCENT POSSIBLE | SR–SS              |           | MN–MN      |           | MINIMUM            | MAXIMUM |          |
|   |               |                  | CEILOMETER         | SATELLITE | CEILOMETER | SATELLITE |                    |         |          |
| 01  |               |                  |                    |           |            |           | .25                | 10.00   |          |
| 02  |               |                  |                    |           |            |           | 2.50               | 10.00   |          |
| 03  |               |                  |                    |           |            |           | .25                | 10.00   |          |
| 04  |               |                  |                    |           |            |           | <.25               | 10.00   |          |
| 05  |               |                  |                    |           |            |           | 9.00               | 10.00   |          |
| 06  |               |                  |                    |           |            |           | .13                | 10.00   |          |
| 07  |               |                  |                    |           |            |           | 2.00               | 10.00   |          |
| 08  |               |                  |                    |           |            |           | 6.00               | 10.00   |          |
| 09  |               |                  |                    |           |            |           | 7.00               | 10.00   |          |
| 10  |               |                  |                    |           |            |           | 5.00               | 10.00   |          |
| 11  |               |                  |                    |           |            |           | 1.00               | 10.00   |          |
| 12  |               |                  |                    |           |            |           | 7.00               | 10.00   |          |
| 13  |               |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 14  |               |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 15  |               |                  |                    |           |            |           | 2.00               | 10.00   |          |
| 16  |               |                  |                    |           |            |           | .50                | 10.00   |          |
| 17  |               |                  |                    |           |            |           | .00                | 10.00   |          |
| 18  |               |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 19  |               |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 20  |               |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 21  |               |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 22  |               |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 23  |               |                  |                    |           |            |           | 4.00               | 10.00   |          |
| 24  |               |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 25  |               |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 26  |               |                  |                    |           |            |           | 2.50               | 10.00   |          |
| 27  |               |                  |                    |           |            |           | 8.00               | 10.00   |          |
| 28  |               |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 29  |               |                  |                    |           |            |           | 10.00              | 10.00   |          |
| 30  |               |                  |                    |           |            |           | 10.00              | 10.00   |          |
| <b>MONTHLY AVGS</b>                                     |               |                  |                    |           |            |           | 6.16               | 10.00   |          |
| <b>SUNSHINE (MINUTES)</b>                               |               |                  |                    |           |            |           |                    |         |          |
| Total:      Possible:<br>Percent Possible:              |               |                  |                    |           |            |           |                    |         |          |
| <b>NUMBER OF DAYS WITH:</b>                             |               |                  |                    |           |            |           |                    |         |          |
| <b>SKY CONDITION</b>                                    |               |                  |                    |           |            |           |                    |         |          |
| CLR   PTLY CLDY   CLOUDY   MISSING<br>30                |               |                  |                    |           |            |           |                    |         |          |
| <b>MINIMUM VISIBILITY (MILES)</b>                       |               |                  |                    |           |            |           |                    |         |          |
| <=0.25   <=3.0   >=7.0<br>4            10            17 |               |                  |                    |           |            |           |                    |         |          |







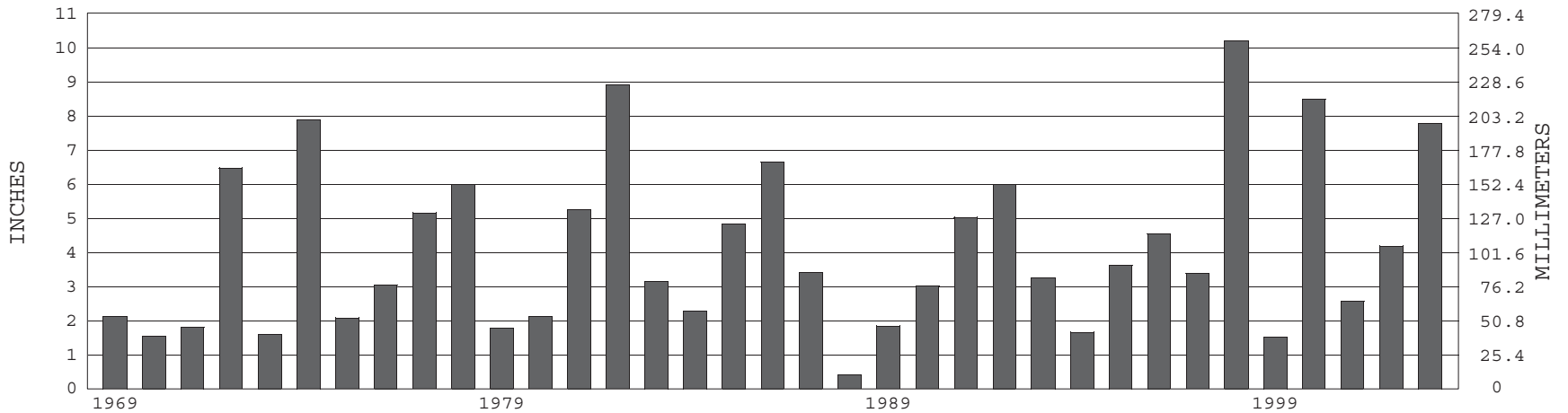
### HOUSTON, TX NOVEMBER TEMPERATURES



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

Long-Term (1969-2003) Mean: 60.7      1961-1990 Normal: 60.9

### HOUSTON, TX NOVEMBER PRECIPITATION



Long-Term (1969-2003) Mean Monthly Total: 4.11

1961-1990 Normal: 4.19



NOVEMBER 2003

HOUSTON, TX

# 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

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