



# APRIL 2004

## LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

# KNOXVILLE, TN

MC GHEE TYSON AIRPORT (TYS)  
 Lat: 35° 49' N Long: 83° 59' W Elev (Ground): 979 Feet  
 Time Zone: EASTERN WBAN: 13891 ISSN #:0198-4810

APRIL 2004  
KNOXVILLE, TN

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																																						
																			SPEED	DIR	SPEED	DIR																																					
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	57	39	48	-6	34	41	17	0	RA	0		0.0	0.02	28.84	29.89	7.1	30	8.2	22	27	18	28	01																																				
02	47	38	43*	-11	36	40	22	0	RA	0		0.0	T	28.88	29.92	4.7	27	7.1	17	25	14	26	02																																				
03	67	44	56	2	39	47	9	0		0		0.0	0.00	28.83	29.87	7.0	26	8.1	22	29	18	29	03																																				
04	56	41	49	-5	25	39	16	0		0		0.0	0.00	28.92	29.96	6.3	35	8.6	23	02	18	36	04																																				
05	59	32*	46	-8	19	37	19	0		0		0.0	0.00	29.07	30.12	4.0	03	4.6	20	02	16	03	05																																				
06	70	34	52	-3	28	42	13	0		0		0.0	0.00	29.01	30.05	0.9	28	4.5	15	25	13	22	06																																				
07	76	43	60	5	38	49	5	0		0		0.0	0.00	28.81	29.84	1.8	23	3.1	14	27	12	26	07																																				
08	74	55	65	9	46	54	0	0	RA	0		0.0	T	28.67	29.69	5.3	24	7.4	18	24	15	24	08																																				
09	72	47	60	4	35	48	5	0		0		0.0	0.00	28.87	29.90	6.0	02	6.8	18	03	13	04	09																																				
10	63	42	53	-3	41	48	12	0	RA	0		0.0	T	28.89	29.92	3.6	03	4.7	17	04	15	04	10																																				
11	54	51	53	-3	50	51	12	0	RA BR HZ	0		0.0	0.28	28.86	29.90	4.7	03	5.4	15	05	13	04	11																																				
12	58	52	55	-2	53	54	10	0	TSRA RA DZ BR	0		0.0	0.37	28.68	29.71	5.5	03	6.6	16	04	13	04	12																																				
13	60	36	48	-9	46	47	17	0	TS TSRA RA BR	0		0.0	0.90	28.61	29.64	8.3	26	12.5	33	24	26	24	13																																				
14	58	35	47	-10	34	40	18	0	RA	0		0.0	0.05	28.95	30.00	4.3	32	7.6	21	02	17	01	14																																				
15	69	35	52	-6	37	45	13	0		0		0.0	0.00	29.15	30.20	2.4	05	3.9	17	05	14	03	15																																				
16	76	42	59	0	42	51	6	0		0		0.0	0.00	29.18	30.22	3.9	25	4.6	20	23	16	25	16																																				
17	79	47	63	4	47	56	2	0		0		0.0	0.00	29.24	30.28	8.2	24	8.4	25	25	22	25	17																																				
18	82	53	68	9	50	58	0	3		0		0.0	0.00	29.29	30.32	6.2	25	6.9	18	26	16	24	18																																				
19	80	57	69	10	48	58	0	4		0		0.0	0.00	29.21	30.24	9.7	23	10.0	24	25	21	25	19																																				
20	76	57	67	8	50	57	0	2	RA	0		0.0	T	29.02	30.04	1.9	22	3.3	13	24	10	25	20																																				
21	77	55	66	6	51	58	0	1	RA	0		0.0	T	28.90	29.92	11.5	24	12.4	33*	25	28	23	21																																				
22	77	59	68	8	55	60	0	3	RA	0		0.0	T	28.98	30.00	8.4	25	9.1	26	25	23	24	22																																				
23	81	59	70	10	60	64	0	5	RA BR	0		0.0	0.02	29.03	30.05	5.3	25	8.8	26	23	23	23	23																																				
24	84*	63	74*	14	62	66	0	9		0		0.0	0.00	29.04	30.06	2.4	03	5.8	16	04	14	04	24																																				
25	82	63	73	13	59	63	0	8	TSRA RA BR	0		0.0	0.49	29.01	30.03	11.3	22	11.7	29	23	24	23	25																																				
26	64	51	58	-3	54	57	7	0	RA BR	0		0.0	0.60	28.98	30.00	2.1	29	4.6	15	34	13	35	26																																				
27	67	45	56	-5	35	46	9	0	BR	0		0.0	0.00	28.97	30.01	8.5	28	9.6	31	24	28*	24	27																																				
28	74	36	55	-6	37	47	10	0		0		0.0	0.00	29.15	30.20	0.4	11	1.7	9	23	7	27	28																																				
29	77	46	62	0	48	55	3	0		0		0.0	0.00	29.20	30.24	3.5	22	6.1	17	25	15	21	29																																				
30	75	63	69	7	56	61	0	4		0		0.0	0.00	29.09	30.11	6.6	20	8.2	21	20	17	20	30																																				
										69.7		47.3	58.5	■ ■	43.8	51.3	7.5	1.3	< MONTHLY AVERAGES		TOTALS->		0.0	2.73	28.98	30.01	2.5	26	7.0	<- MONTHLY AVERAGES																													
										0.7	0.7	0.7	■ ■	<-----DEPARTURE FROM NORMAL----->										-1.26	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3																																		
<b>DEGREE DAYS</b>										GREATEST 24-HR PRECIPITATION: 1.09 DATE: 12-13										SEA LEVEL PRESSURE DATE TIME																																							
MONTHLY TOTAL DEPARTURE										SEASON TO DATE TOTAL DEPARTURE										GREATEST 24-HR SNOWFALL: 0.0 DATE:										MAXIMUM MINIMUM																													
HEATING: 225 -2										3562 -60										GREATEST SNOW DEPTH: 0 DATE:										: 30.40 18 1053																													
COOLING: 39 12										49 16										NUMBER OF DAYS WITH →										MAXIMUM TEMP ≥ 90: 0										MINIMUM TEMP ≤ 32: 1										PRECIPITATION ≥ 0.01 INCH: 8									
																														MAXIMUM TEMP ≤ 32: 0										MINIMUM TEMP ≤ 0: 0										PRECIPITATION ≥ 0.10 INCH: 5									
																														THUNDERSTORMS: 3										HEAVY FOG: 0										SNOWFALL ≥ 1.0 INCH: 0									

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

## KNOXVILLE, TN

APRIL 2004

TYS

WBAN # 13891

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					0.01	T	0.01						01						T						01		0.02		
02													02						T						02		T		
03													03		T				T						03		0.00		
04													04												04		0.00		
05													05												05		0.00		
06													06												06		0.00		
07													07												07		0.00		
08			T										08												08		T		
09													09												09		0.00		
10													10			T									10		T		
11									0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.01	0.01	T	T	T	T	0.01	T	11		0.28			
12									0.06	0.06	.08	0.02	T	T									0.10	12		0.37			
13	0.10	0.26	T	0.01	T	0.13	0.02	T	T				13	0.07	0.01	0.09	T	0.03	0.01	T	T	T	0.02	13		0.90			
14	0.01	0.03	0.14	0.03	0.05	T		T					14			0.01		0.03	0.01	0.01	0.01	T		14		0.05			
15													15												15		0.00		
16													16												16		0.00		
17													17												17		0.00		
18													18												18		0.00		
19													19												19		0.00		
20													20												20		T		
21													21												21		T		
22			T	T									22								T	T	T	T	22		T		
23						0.01	0.01	T	T				23												23		0.02		
24													24												24		0.00		
25													25						T	0.09	0.05	0.27	0.02	0.05	0.01	25		0.49	
26	0.01	T	0.01	0.01	0.03	0.07	0.07	0.21	0.08	0.04	0.06	0.01	26	T											26		0.60		
27													27												27		0.00		
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

## KNOXVILLE, TN APRIL 2004

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							10.00	10.00	
02							5.00	10.00	
03							9.00	10.00	
04							10.00	10.00	
05							10.00	10.00	
06							10.00	10.00	
07							7.00	10.00	
08							10.00	10.00	
09							8.00	10.00	
10							8.00	10.00	
11							1.50	7.00	
12							1.25	8.00	
13							2.50	10.00	
14							9.00	10.00	
15							10.00	10.00	
16							9.00	10.00	
17							10.00	10.00	
18							10.00	10.00	
19							10.00	10.00	
20							10.00	10.00	
21							10.00	10.00	
22							9.00	10.00	
23							5.00	10.00	
24							8.00	10.00	
25							2.00	10.00	
26							1.50	10.00	
27							6.00	10.00	
28							10.00	10.00	
29							9.00	10.00	
30							10.00	10.00	
<b>MONTHLY AVGS</b>							7.74	9.83	
<b>SUNSHINE (MINUTES)</b>									
Total:      Possible:      Percent Possible:									
<b>NUMBER OF DAYS WITH:</b>									
<b>SKY CONDITION</b>									
CLR   PTLY CLDY   CLOUDY   MISSING									
30									
<b>MINIMUM VISIBILITY (MILES)</b>									
<=0.25   <=3.0   >=7.0									
0            5            22									





# OBSERVATIONS AT 3-HOURLY INTERVALS

# KNOXVILLE, TN

APRIL 2004

TYS

WBAN # 13891

HOUR (LST)	SKY COVER		SATELLITE		WEATHER	TEMPERATURE °F			WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SKY COVER		SATELLITE		WEATHER	TEMPERATURE °F			WIND		PRESSURE (INCHES, HG)	
	SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)	EFF CLD AMT		DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION		SEA LEVEL	SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)		EFF CLD AMT	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG
			SATELLITE													SATELLITE									
			SATELLITE													SATELLITE									

SUNRISE: 0550						APR 25						SUNSET: 1917					
01	BKN	080			9.00	70	61	64	73	7	24	29.01	30.03				
04	FEW	NC			9.00	67	58	62	73	6	22	29.01	30.02				
07	SCT	NC			10.00	67	57	61	71	7	20	29.04	30.06				
10	OVC	080			10.00	74	58	64	57	17	21	29.05	30.07				
13	BKN	090			10.00	77	54	63	45	22	22	29.02	30.04				
16	BKN	090			10.00	80	55	65	42	18	24	28.95	29.97				
19	OVC	027		+RA	2.00	65	62	63	90	17	26	29.01	30.03				
22	OVC	065			8.00	64	62	63	93	10	19	29.03	30.06				
SUNRISE: 0549						APR 26						SUNSET: 1918					
01	BKN	110			10.00	63	61	62	93	6	25	28.99	30.01				
04	OVC	075			8.00	62	61	61	96	7	21	28.95	29.96				
07	OVC	014		RA	3.00	61	59	60	93	6	33	28.97	30.01				
10	OVC	040			8.00	57	53	55	87	6	36	29.03	30.06				
13	OVC	100			10.00	58	52	55	81	0	00	28.99	30.02				
16	BKN	100			10.00	62	51	56	67	0	00	28.94	29.97				
19	BKN	065			10.00	62	50	55	65	3	24	28.93	29.96				
22	CLR	NC			10.00	57	46	51	67	5	27	28.99	30.02				
SUNRISE: 0548						APR 27						SUNSET: 1919					
01	CLR	NC			10.00	50	48	49	93	0	00	28.97	30.01				
04	CLR	NC			9.00	47	45	46	93	3	23	28.94	29.98				
07	SCT	NC			7.00	48	46	47	93	6	22	28.97	30.01				
10	SCT	NC			10.00	60	43	51	53	9	28	28.96	30.00				
13	SCT	NC			10.00	65	31	49	28	18	29	28.92	29.96				
16	FEW	NC			10.00	65	29	48	26	15	27	28.91	29.94				
19	FEW	NC			10.00	60	21	44	22	16	30	28.97	30.01				
22	CLR	NC			10.00	54	25	42	33	5	VR	29.06	30.10				
SUNRISE: 0547						APR 28						SUNSET: 1920					
01	CLR	NC			10.00	45	33	40	63	0	00	29.09	30.13				
04	CLR	NC			10.00	40	34	37	79	0	00	29.12	30.16				
07	CLR	NC			10.00	41	36	39	82	3	05	29.18	30.22				
10	CLR	NC			10.00	57	36	47	45	5	VR	29.20	30.24				
13	CLR	NC			10.00	67	38	52	35	5	VR	29.17	30.21				
16	CLR	NC			10.00	73	36	54	26	0	00	29.12	30.16				
19	SCT	NC			10.00	71	38	54	30	0	00	29.13	30.16				
22	SCT	NC			10.00	62	43	52	50	0	00	29.18	30.22				
SUNRISE: 0546						APR 29						SUNSET: 1921					
01	FEW	NC			10.00	51	45	48	80	0	00	29.19	30.23				
04	SCT	NC			10.00	55	41	48	59	3	27	29.21	30.24				
07	BKN	250			10.00	51	47	49	86	3	06	29.25	30.29				
10	SCT	NC			10.00	66	48	56	52	3	11	29.29	30.34				
13	SCT	NC			10.00	75	51	61	43	7	24	29.24	30.28				
16	SCT	NC			10.00	76	49	60	39	13	24	29.16	30.19				
19	SCT	NC			9.00	71	50	59	47	13	24	29.12	30.15				
22	SCT	NC			10.00	68	48	57	49	8	14	29.15	30.18				
SUNRISE: 0544						APR 30						SUNSET: 1922					
01	OVC	080			10.00	68	50	58	53	7	14	29.13	30.15				
04	OVC	075			10.00	67	52	58	59	7	17	29.10	30.12				
07	OVC	060			10.00	66	56	60	70	8	26	29.13	30.15				
10	OVC	060			10.00	68	56	61	66	12	19	29.13	30.16				
13	OVC	060			10.00	72	56	62	57	14	20	29.10	30.13				
16	OVC	065			10.00	73	57	63	57	12	22	29.05	30.07				
19	BKN	055			10.00	70	57	62	64	8	20	29.04	30.07				
22	SCT	NC			10.00	65	57	60	76	0	00	29.06	30.09				

SUNRISE: APR 31 SUNSET:

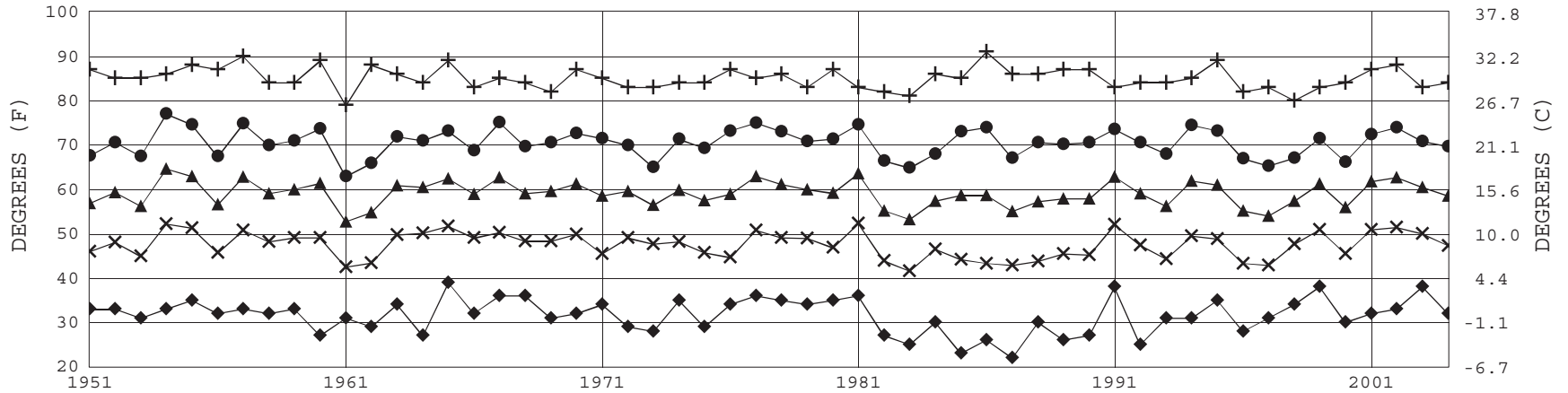
### 3-HOURLY OBSERVATION NOTES

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. Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet. NC= No ceiling detected. & = Original observation contained additional weather elements. See page 3 for additional notes.

### SUMMARY BY HOUR

HOUR (LST)	AVERAGES												RESULTANT WIND (MPH)	
	CEILOMETER	EFF CLD AMT	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY	PRESSURE (INCHES, HG)		VISIBILITY (MILES)	WIND SPEED (MPH)	SPEED	DIRECTION		
							STATION	SEA LEVEL						
01			54	43	49	69	28.98	30.01	9.40	4	2	25		
02			53	43	48	71	28.97	30.00	9.50	4	2	26		
03			52	43	48	74	28.96	29.99	9.40	5	1	30		
04			51	44	48	77	28.96	30.00	9.30	5	1	28		
05			51	43	47	78	28.97	30.00	9.17	5	1	28		
06			50	43	47	79	28.98	30.01	8.93	5	1	29		
07			51	44	48	79	29.00	30.04	8.68	5	1	27		
08			54	45	49	73	29.01	30.05	8.99	6	2	24		
09			57	45	51	66	29.01	30.05	9.26	7	2	23		
10			60	45	52	59	29.01	30.05	9.50	9	4	25		
11			62	44	53	54	29.01	30.05	9.55	10	5	27		
12			64	44	54	50	29.00	30.04	9.67	9	5	25		
13			66	44	54	48	28.99	30.02	9.31	8	6	26		
14			67	43	55	47	28.97	30.00	9.55	10	6	26		
15			68	43	55	46	28.95	29.98	9.28	10	6	27		
16			68	43	55	44	28.94	29.97	9.43	9	7	26		
17			68	43	55	45	28.94	29.97	9.26	10	6	27		
18			66	43	54	48	28.94	29.97	9.43	9	5	27		
19			63	43	53	52	28.95	29.98	9.09	8	4	27		
20			61	43	52	55	28.96	30.00	9.30	7	3	27		
21			60	43	52	56	28.98	30.01	9.37	5	2	26		
22			59	43	51	60	28.99	30.02	9.60	5	2	26		
23			57	44	50	65	28.99	30.02	9.67	5	1	26		
24			55	44	50	68	28.99	30.02	9.52	5	2	26		

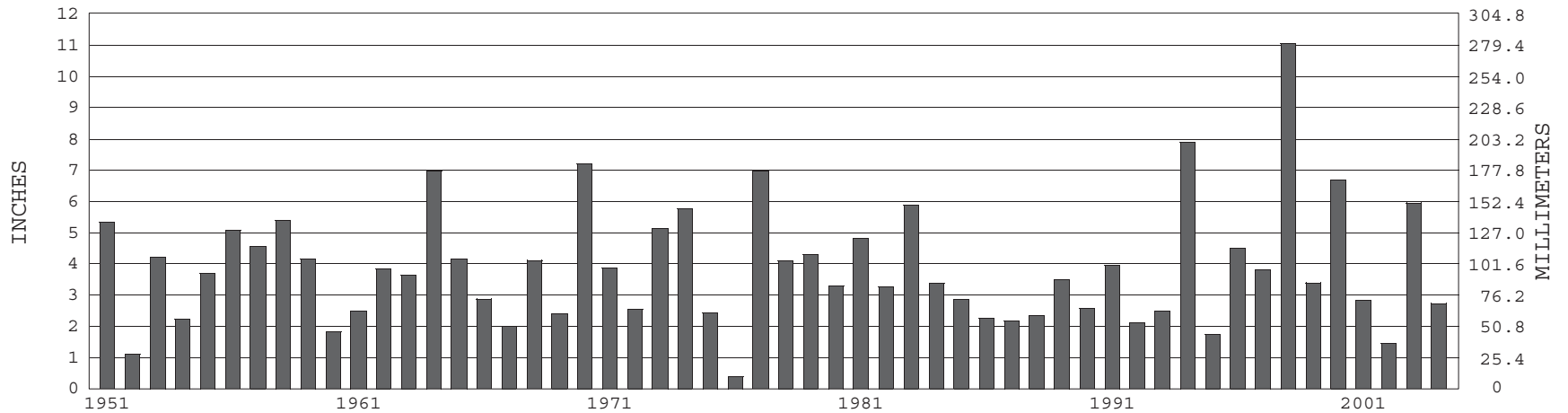
### KNOXVILLE, TN APRIL TEMPERATURES



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

Long-Term (1951-2004) Mean: 59.0      1971-2000 Normal: 57.8

### KNOXVILLE, TN APRIL PRECIPITATION



Long-Term (1951-2004) Mean Monthly Total: 3.89

1971-2000 Normal: 3.99



APRIL 2004

KNOXVILLE, TN

# LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

*I certify that this is an official publication of the National Oceanic and Atmospheric Administration (NOAA). It is compiled using information from weather observing sites operated by NOAA – National Weather Service / Department Of Transportation – Federal Aviation Administration and received at the National Climatic Data Center (NCDC), Asheville, North Carolina 28801.*

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