



JULY 2001

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

JULY 2001
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				
1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
01	84	68	76	0	67	70	0	11				0.00	29.04	30.05	6.0	24	6.9	16	25	15	25	01			
02	89	69	79	3	68	71	0	14				0.00	29.08	30.09	1.0	30	4.2	21	02	16	02	02			
03	84	70	77	1	70	72	0	12	TS	TSRA	RA	BR	HZ	0.02	29.11	30.13	4.2	25	5.5	23	27	18	28	03	
04	87	66	77	1	68	69	0	12	TS	TSRA	RA	BR		1.01	29.05	30.07	8.6	25	9.7	33	28	25	32	04	
05	80	64	72	-4	67	69	0	7	TS	BR	HZ		0.00	29.00	30.02	8.0	25	8.4	22	21	18	20	05		
06	85	65	75	-1	64	68	0	10				0.00	29.04	30.06	2.0	28	3.5	10	34	8	28	06			
07	81	62	72	-4	64	67	0	7	TS	RA	FG+	BR	HZ	T	29.08	30.10	1.9	23	2.9	15	25	13	25	07	
08	91	69	80	4	69	72	0	15	TS			0.00	28.99	30.00	5.6	24	7.1	26	09	23	08	08			
09	83	70	77	1	70	71	0	12	TS	TSRA	RA	BR		0.46	28.90	29.91	1.5	20	6.0	36	04	30	05	09	
10	90	70	80	4	71	73	0	15	BR			0.00	28.82	29.83	3.0	26	4.2	9	35	8	29	10			
11	92	73	83*	7	70	73	0	18	BR	HZ		0.00	28.81	29.81	1.8	02	4.3	16	03	14	02	11			
12	87	67	77	1	61	67	0	12				0.00	28.90	29.90	4.3	02	6.0	18	01	15	03	12			
13	84	69	77	0	57	64	0	12				0.00	28.92	29.93	9.2	04	9.9	22	05	17	06	13			
14	84	59	72*	-5	53	61	0	7				0.00	28.96	29.98	5.9	03	7.0	16	03	13	04	14			
15	86	59*	73	-4	56	63	0	8				0.00	28.97	29.99	3.5	02	4.8	13	34	10	35	15			
16	88	63	76	-1	61	67	0	11	HZ			0.00	29.04	30.05	3.2	26	3.9	17	26	15	24	16			
17	89	69	79	2	66	70	0	14	BR	HZ		0.00	29.06	30.08	4.4	25	5.4	18	28	16	29	17			
18	84	70	77	0	66	70	0	12	HZ			0.00	29.01	30.03	6.6	25	6.9	21	25	16	25	18			
19	86	73	80	3	71	73	0	15	RA	BR	HZ	0.05	29.00	30.01	1.2	28	4.2	25	04	20	04	19			
20	89	71	80	3	71	73	0	15	TS	TSRA	RA	FG+	BR	HZ	0.05	28.98	29.99	1.1	26	4.1	18	22	16	22	20
21	88	71	80	3	69	72	0	15	TS	TSRA	RA	BR	HZ	0.36	28.94	29.95	1.1	28	4.0	17	10	15	23	21	
22	88	71	80	3	69	72	0	15	RA	BR	HZ	T	28.93	29.94	1.8	32	4.0	10	03	8	06	22			
23	90	72	81	4	70	73	0	16	BR	HZ		0.00	28.92	29.92	1.0	01	3.6	16	07	13	08	23			
24	93*	71	82	5	69	73	0	17	BR	HZ		0.00	28.91	29.91	1.6	25	4.6	17	16	15	24	24			
25	86	75	81	4	71	74	0	16	TS	RA	HZ	0.02	28.95	29.96	7.3	23	8.3	28	29	22	29	25			
26	88	73	81	4	69	72	0	16	RA	BR		0.36	29.02	30.03	10.4	24	10.8	38*	25	33*	25	26			
27	90	73	82	5	71	74	0	17	TS	RA		0.01	29.06	30.08	2.4	28	5.3	16	25	14	24	27			
28	89	72	81	4	71	74	0	16	RA	DZ	BR	0.03	29.08	30.09	4.8	25	7.6	25	22	22	23	28			
29	81	72	77	0	72	73	0	12	TS	TSRA	RA	FG	BR	1.77	28.99	30.00	9.8	23	10.4	24	25	22	25	29	
30	89	73	81	4	71	74	0	16	BR	HZ		0.00	29.01	30.02	0.6	27	4.3	12	03	9	34	30			
31	90	71	81	4	70	73	0	16	FG	BR	HZ	0.00	29.12	30.14	1.2	04	4.4	15	01	13	24	31			

86.9	69.0	78.0	■ ■	67.2	70.6	0.0	13.3	< MONTHLY AVERAGES	TOTALS-->	4.14	28.99	30.00	1.6	23	5.9	<- MONTHLY AVERAGES					
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- .2										3.0										1.4										■ ■										<-----DEPARTURE FROM NORMAL----->										- .53										SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3									
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DEGREE DAYS								GREATEST 24-HR PRECIPITATION: 1.80 DATE : 28-29				SEA LEVEL PRESSURE				DATE TIME			
MONTHLY TOTAL DEPARTURE				SEASON TO DATE TOTAL DEPARTURE				GREATEST 24-HR SNOWFALL:				MAXIMUM				: 30.20 31 2253			
HEATING: 0 0 0 0				COOLING: 411 51 857 136				GREATEST SNOW DEPTH:				MINIMUM				: 29.76 11 1653			
NUMBER OF DAYS WITH				MAXIMUM TEMP ≥ 90: 7				MINIMUM TEMP ≤ 32: 0				PRECIPITATION ≥ 0.01 INCH : 11				PRECIPITATION ≥ 0.10 INCH : 5			
				MAXIMUM TEMP ≤ 32 : 0				MINIMUM TEMP ≤ 0 : 0				PRECIPITATION ≥ 1.0 INCH :							
				THUNDERSTORMS : 11				HEAVY FOG : 2											

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

KNOXVILLE, TN

JULY 2001

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													01												01		0.00		
02													02												02		0.00		
03													03												03		0.02		
04													04		T	T									04		1.01		
05													05				T	0.89	0.06	0.06	T				05		0.00		
06													06												06		0.00		
07													07												07		T		
08													08												08		0.00		
09	0.43	0.03	T										09												09		0.46		
10													10												10		0.00		
11													11												11		0.00		
12													12												12		0.00		
13													13												13		0.00		
14													14												14		0.00		
15													15												15		0.00		
16													16												16		0.00		
17													17												17		0.00		
18													18												18		0.00		
19													19												19		0.05		
20													20												20		0.05		
21													21												21		0.36		
22													22												22		T		
23													23												23		0.00		
24													24												24		0.00		
25													25												25		0.02		
26													26												26		0.36		
27													27												27		0.01		
28													28												28		0.03		
29													29												29		1.77		
30													30												30		0.00		
31													31												31		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)	.27	.39	.43	.57	.73	.88	.89	.91	.94	.95	.97	1.01
Ending Date	29	29	04	04	04	04	04	04	04	04	04	04
Ending Time (Hour/Min)	1814	1817	1613	1618	1625	1638	1643	1709	1733	1745	1817	1848

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 1961–1990

WEATHER NOTATIONS

QUALIFIER	WEATHER PHENOMENA		
	PRECIPITATION	OBSCURATION	OTHER
BC Patches	DZ Drizzle	BR Mist	DS Duststorm
BL Blowing	GR Hail	DU Widespread Dust	FC Funnel Cloud
DR Low Drifting	GS Small Hail and/or Snow Pellets	FG Fog	+FC Tornado Waterspout
FZ Freezing	IC Ice Crystals	FU Smoke	PO Well-Developed Dust/Sand Whirls
MI Shallow	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 JULY 2001

Ceilorometer (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							7.00	10.00	
03							3.00	10.00	
04							.75	10.00	
05							5.00	10.00	
06							8.00	10.00	
07							.25	10.00	
08							7.00	10.00	
09							1.50	10.00	
10							3.00	10.00	
11							3.00	10.00	
12							9.00	10.00	
13							10.00	10.00	
14							9.00	10.00	
15							10.00	10.00	
16							5.00	10.00	
17							3.00	6.00	
18							3.00	6.00	
19							1.50	8.00	
20							.25	8.00	
21							1.50	7.00	
22							2.50	7.00	
23							3.00	6.00	
24							3.00	10.00	
25							3.00	10.00	
26							1.00	10.00	
27							8.00	10.00	
28							5.00	10.00	
29							.50	10.00	
30							1.50	9.00	
31							.50	10.00	
MONTHLY AVGS							4.44	9.26	
SUNSHINE (MINUTES)									
Total: Possible: Percent Possible:									
NUMBER OF DAYS WITH:									
SKY CONDITION									
CLR PTLY CLDY CLOUDY MISSING									
31									
MINIMUM VISIBILITY (MILES)									
<=0.25 <=3.0 >=7.0									
1 18 9									

OBSERVATIONS AT 3-HOURLY INTERVALS

KNOXVILLE, TN

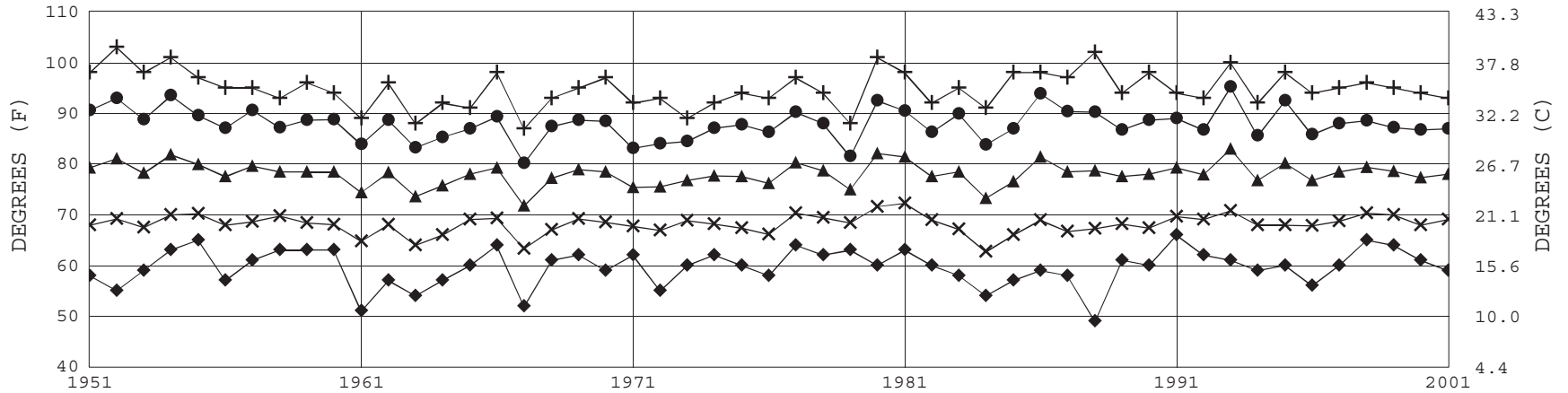
JULY 2001

TYS

WBAN # 13891

HOUR (LST)	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)					
	SKY COVER	CEILING 100'S OF FT			OBSERVATION TIME (LST)	EFF CLD AMT Oktas	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG		STATION	SEA LEVEL			SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)	EFF CLD AMT Oktas	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL
SUNRISE: 0538					JUL 25					SUNSET: 1947					SUNRISE: 0543					JUL 31					SUNSET: 1942				
01	BKN	065	10.00		76	71	73	85	6	25	28.91	29.92	01	CLR	NC	5.00	BR	73	71	72	94	3	08	29.05	30.06				
04	BKN	120	10.00		76	70	72	82	5	23	28.91	29.91	04	BKN	065	6.00	BR	73	70	71	90	0	00	29.08	30.09				
07	BKN	090	10.00		76	71	73	85	3	14	28.94	29.95	07	FEW	NC	2.00	BR	73	70	71	90	3	06	29.14	30.15				
10	BKN	060	8.00		77	70	72	79	0	00	28.96	29.97	10	FEW	NC	5.00	HZ	83	71	75	67	3	36	29.17	30.18				
13	BKN	070	10.00		82	71	74	69	14	23	28.94	29.96	13	SCT	NC	9.00		88	71	76	57	3	VR	29.14	30.15				
16	SCT	NC	4.00	HZ	85	72	76	65	14	23	28.93	29.94	16	BKN	049	10.00		89	69	75	52	8	04	29.10	30.11				
19	SCT	NC	4.00	HZ	82	72	75	72	14	24	28.95	29.96	19	CLR	NC	10.00		86	67	73	53	6	07	29.11	30.12				
22	SCT	NC	10.00	-RA	76	70	72	82	8	22	29.00	30.01	22	CLR	NC	10.00		77	67	70	71	7	26	29.18	30.19				
SUNRISE: 0539					JUL 26					SUNSET: 1946					3-HOURLY OBSERVATION NOTES														
01	BKN	036	10.00		77	69	72	77	10	24	28.98	29.99	Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, VV = Vertical Visibility = 8/8.																
04	CLR	NC	10.00		74	69	71	85	9	28	28.98	29.99	Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.																
07	SCT	NC	10.00		75	69	71	82	10	25	29.02	30.03	NC= No ceiling detected.																
10	BKN	029	10.00		82	68	73	63	18	23	29.04	30.05	& = Original observation contained additional weather elements.																
13	OVC	041	10.00		83	69	74	63	14	23	29.04	30.06	See page 3 for additional notes.																
16	BKN	070	10.00		84	68	73	59	14	24	29.00	30.01																	
19	OVC	019	3.00	-RA BR	74	70	71	88	8	27	29.02	30.04																	
22	SCT	NC	10.00		74	72	73	94	3	21	29.05	30.06																	
SUNRISE: 0540					JUL 27					SUNSET: 1945																			
01	BKN	060	10.00		74	71	72	91	6	26	29.04	30.05																	
04	OVC	055	9.00		74	72	73	94	0	00	29.04	30.06																	
07	OVC	065	10.00		75	72	73	90	3	23	29.09	30.11																	
10	BKN	095	10.00		81	72	75	74	9	25	29.11	30.12																	
13	SCT	NC	10.00		86	69	74	57	8	26	29.07	30.08																	
16	FEW	NC	10.00		89	68	75	50	8	22	29.03	30.04																	
19	BKN	085	10.00		82	73	76	74	6	06	29.05	30.06																	
22	OVC	045	10.00		78	73	75	85	7	36	29.09	30.10																	
SUNRISE: 0541					JUL 28					SUNSET: 1944																			
01	BKN	100	5.00	BR	75	73	74	94	8	07	29.08	30.10																	
04	SCT	NC	5.00	BR	73	71	72	94	6	09	29.09	30.11																	
07	OVC	029	6.00	BR	73	71	72	94	0	00	29.12	30.14																	
10	BKN	027	10.00		82	70	74	67	16	23	29.14	30.15																	
13	BKN	048	10.00		86	69	74	57	14	23	29.08	30.09																	
16	BKN	095	10.00		84	71	75	65	12	25	29.05	30.06																	
19	OVC	085	7.00		82	72	75	72	9	26	29.04	30.05																	
22	OVC	041	6.00	-RA	77	72	74	85	7	27	29.05	30.06																	
SUNRISE: 0541					JUL 29					SUNSET: 1944																			
01	BKN	070	6.00	BR	75	71	72	88	8	26	29.03	30.04																	
04	OVC	024	5.00	-TSRA BR	73	72	72	96	6	24	29.00	30.01																	
07	OVC	007	2.50	-RA BR	73	72	72	96	13	23	29.01	30.03																	
10	OVC	007	5.00	-RA BR	75	73	74	94	13	21	29.00	30.01																	
13	OVC	007	4.00	BR	76	74	75	94	16	23	28.97	29.99																	
16	BKN	028	10.00		80	73	75	79	8	20	28.95	29.96																	
19	BKN	036	8.00	-TSRA	74	70	71	88	5	22	28.96	29.97																	
22	FEW	NC	9.00		73	72	72	96	8	24	28.98	30.00																	
SUNRISE: 0542					JUL 30					SUNSET: 1943																			
01	OVC	005	5.00	BR	74	72	73	94	5	25	28.97	29.99																	
04	OVC	004	2.00	BR	74	73	73	97	6	21	28.97	29.99																	
07	OVC	011	2.50	BR	74	73	73	97	7	22	29.01	30.03																	
10	SCT	NC	6.00	HZ	80	72	74	76	3	34	29.05	30.06																	
13	CLR	NC	9.00		86	69	74	57	5	VR	29.03	30.04																	
16	SCT	NC	8.00		87	68	74	53	3	28	28.99	30.00																	
19	SCT	NC	9.00		85	70	75	61	5	06	28.98	29.99																	
22	CLR	NC	6.00	HZ	78	73	75	85	0	00	29.05	30.06																	

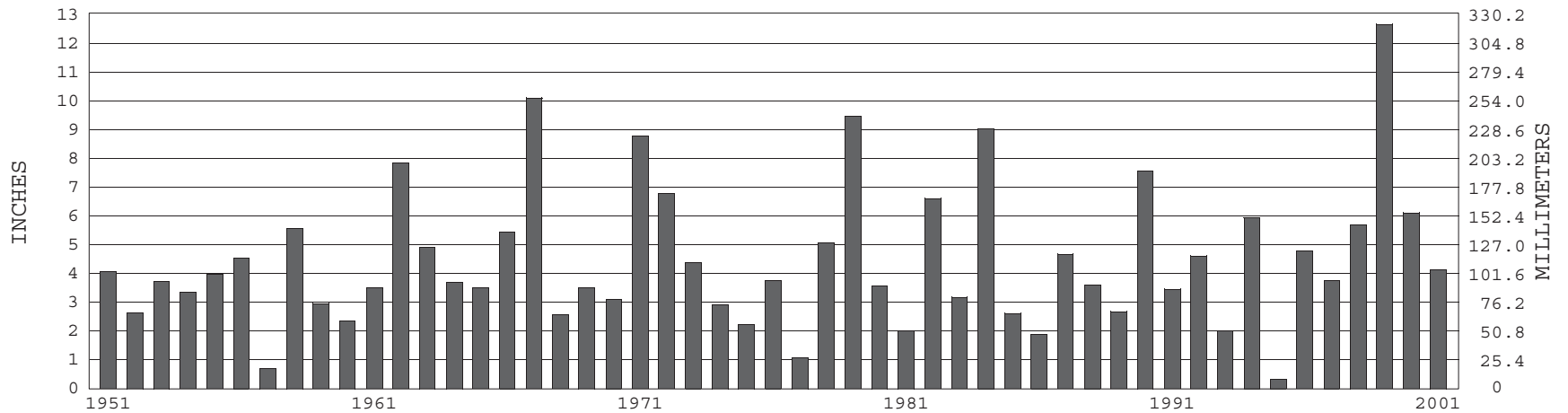
KNOXVILLE, TN JULY TEMPERATURES



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

Long-Term (1951-2001) Mean: 78.1 1961-1990 Normal: 76.6

KNOXVILLE, TN JULY PRECIPITATION



Long-Term (1951-2001) Mean Monthly Total: 4.46

1961-1990 Normal: 4.67



**JULY 2001
KNOXVILLE, TN**

LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

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