



# SEPTEMBER 2000

## 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): 992 Feet  
 Time Zone: EASTERN WBAN: 13891 ISSN #: 0198-4810

SEPTEMBER 2000  
 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	89	68	79	5	68	71	0	14	RA				0.14	28.94	29.96	0.2	06	3.5	15	22	14	22	01																																				
02	82	71	77	3	71	72	0	12	RA BR HZ VCTS				0.00	28.89	29.91	1.5	36	2.9	12	30	10	31	02																																				
03	89	69	79	6	69	71	0	14	RA FG+ BR				T	28.84	29.87	1.1	07	1.8	17	35	14	34	03																																				
04	88	68	78	5	68	70	0	13	TS FG+ BR HZ				0.00	28.87	29.89	2.2	04	3.5	18	04	15	04	04																																				
05	86	68	77	4	65	69	0	12	BR HZ				0.00	28.96	29.99	8.9	05	9.9	26	07	23	05	05																																				
06	80	64	72	-1	59	64	0	7					0.00	29.10	30.14	8.4	05	8.8	17	06	15	05	06																																				
07	77	64	71	-1	59	63	0	6					0.00	29.11	30.15	5.7	05	6.7	15	03	12	03	07																																				
08	84	66	75	3	64	68	0	10					0.00	29.06	30.09	0.4	33	3.6	12	06	9	09	08																																				
09	87	69	78	6	67	71	0	13					0.00	29.04	30.07	2.9	27	4.0	16	23	14	24	09																																				
10	88	70	79	7	65	69	0	14	RA				T	29.04	30.07	3.9	26	4.7	15	21	12	29	10																																				
11	88	69	79	7	65	69	0	14	RA				T	29.01	30.03	1.6	29	3.6	17	31	14	32	11																																				
12	85	67	76	5	64	68	0	11					0.00	28.95	29.98	5.2	25	6.7	23	26	21	25	12																																				
13	89*	69	79*	8	66	70	0	14	BR HZ				0.00	28.94	29.96	1.9	34	2.9	14	29	12	28	13																																				
14	88	66	77	6	62	67	0	12	BR HZ				0.00	28.88	29.90	5.2	26	5.8	20	25	15	25	14																																				
15	76	59	68	-3	49	58	0	3					0.00	28.90	29.92	8.9	01	9.2	23	02	18	02	15																																				
16	70	51	61	-9	42	51	4	0					0.00	29.02	30.06	6.1	02	7.1	21	03	17	01	16																																				
17	75	48	62	-8	43	52	3	0					0.00	29.07	30.12	3.8	04	4.6	15	06	13	05	17																																				
18	79	53	66	-4	47	56	0	1					0.00	28.99	30.02	3.2	06	3.5	17	04	13	07	18																																				
19	88	53	71	1	46	57	0	6					0.00	28.94	29.98	6.2	24	6.5	23	24	18	24	19																																				
20	88	59	74	4	62	67	0	9	TS TSRA RA BR				0.48	28.90	29.93	7.6	22	8.9	36*	23	28	21	20																																				
21	79	60	70	1	60	64	0	5	TSRA RA BR				0.23	28.95	29.98	2.2	02	5.5	23	36	20	35	21																																				
22	73	62	68	0	64	65	0	3	RA BR				0.07	28.97	30.00	5.8	04	6.1	13	04	10	06	22																																				
23	80	63	72	4	68	68	0	7	RA BR				0.67	28.92	29.95	2.3	23	3.5	15	30	13	29	23																																				
24	80	69	75	7	71	72	0	10	RA BR				0.20	28.85	29.87	4.7	24	5.5	17	21	14	21	24																																				
25	76	55	66	-1	64	66	0	1	TSRA RA BR				2.03	28.74	29.76	10.0	25	10.9	35	25	28*	26	25																																				
26	61	49	55*	-12	45	49	10	0					0.00	29.04	30.09	6.2	01	8.2	18	35	15	34	26																																				
27	70	43*	57	-9	47	51	8	0	FG BR				0.00	29.13	30.19	3.4	05	3.9	16	03	12	03	27																																				
28	74	47	61	-5	49	54	4	0	BR				0.00	29.13	30.18	5.4	05	5.7	18	02	15	04	28																																				
29	75	51	63	-2	51	56	2	0	BR				0.00	29.16	30.21	3.4	04	4.2	16	04	12	04	29																																				
30	77	47	62	-3	52	56	3	0	BR				0.00	29.12	30.17	3.1	04	3.8	21	06	12	03	30																																				
										80.7		60.6		70.7		■ ■		59.1		63.5		1.1		7.0		< MONTHLY AVERAGES		TOTALS-->		3.82		28.98		30.01		1.5		36		5.5		<- MONTHLY AVERAGES																	
										-.5		1.6		0.6		■ ■		<----- DEPARTURE FROM NORMAL ----->																				0.75		SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3																			
DEGREE DAYS										GREATEST 24-HR PRECIPITATION: 2.12 DATE: 24-25										SEA LEVEL PRESSURE DATE TIME																																							
MONTHLY TOTAL DEPARTURE										SEASON TO DATE TOTAL DEPARTURE										GREATEST 24-HR SNOWFALL: DATE: DATE:										MAXIMUM MINIMUM																													
HEATING: 34 16										34 16										GREATEST SNOW DEPTH: DATE: DATE:										: 30.27 29 0953																													
COOLING: 211 40										1455 222										NUMBER OF DAYS WITH →										MAXIMUM TEMP ≥ 90: 0										MINIMUM TEMP ≤ 32: 0										PRECIPITATION ≥ 0.01 INCH: 7									
																														MAXIMUM TEMP ≤ 32: 0										MINIMUM TEMP ≤ 0: 0										PRECIPITATION ≥ 0.10 INCH: 6									
																														THUNDERSTORMS: 4										HEAVY FOG: 2										SNOWFALL ≥ 1.0 INCH: :									

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

## KNOXVILLE, TN

SEPTEMBER 2000 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		0.14	T	0.14			
02													02												02				0.00			
03													03				T								03				T	0.00		
04													04					T							04					0.00		
05													05												05					0.00		
06													06												06					0.00		
07													07												07					0.00		
08													08												08					0.00		
09													09												09					0.00		
10													10				T			T					10					0.00	T	
11													11												11						T	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					0.00		
20													20								T				20			0.02		0.27	0.19	0.48
21	0.03	0.12	T	0.08	T								21												21					0.23		
22													22	T	T										22					0.07		
23													23				0.10		T	0.51		0.05			23					0.67		
24													24												24					0.20		
25			0.02	0.14	0.59	0.45	0.36	0.05			0.10	0.01	25	0.04	0.04	0.34	T				0.02	0.06		0.01	25		T	T	2.03			
26													26												26					0.00		
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)	.27	.32	.33	.38	.45	.56	.70	.82	.98	1.09	1.29	1.43
Ending Date	25	25	25	23	23	25	25	25	25	25	25	25
Ending Time (Hour/Min)	1450	1451	1451	1623	1623	0501	0519	0539	0556	0613	0648	0648

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	
PR Partial	RA Rain	PY Spray	SQ Squalls
SH Shower(s)	SG Snow Grains	SA Sand	SS Sandstorm
TS Thunderstorm	SN Snow	VA Volcanic Ash	GL Glaze
VC In the Vicinity	UP Unknown Precipitation		

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

## KNOXVILLE, TN SEPTEMBER 2000

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							8.00	10.00	
02							2.00	10.00	
03							.25	10.00	
04							< .25	8.00	
05							5.00	10.00	
06							10.00	10.00	
07							10.00	10.00	
08							10.00	10.00	
09							10.00	10.00	
10							7.00	10.00	
11							9.00	10.00	
12							10.00	10.00	
13							6.00	10.00	
14							2.50	10.00	
15							10.00	10.00	
16							10.00	10.00	
17							10.00	10.00	
18							10.00	10.00	
19							10.00	10.00	
20							1.25	10.00	
21							2.50	10.00	
22							5.00	10.00	
23							1.00	10.00	
24							1.00	10.00	
25							1.00	10.00	
26							10.00	10.00	
27							.50	10.00	
28							6.00	10.00	
29							5.00	10.00	
30							5.00	10.00	
<b>MONTHLY AVGS</b>							6.24	9.93	
<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					
2		8		15					



OBSERVATIONS AT 3-HOURLY INTERVALS

KNOXVILLE, TN

SEPTEMBER 2000

TYS

WBAN # 13891

Table with columns for Hour (LST), Sky Cover, Ceiling, Observation Time, Satellites, Visibility, Weather, Temperature (Dry Bulb, Dew Point, Wet Bulb), Relative Humidity, Wind (Speed, Direction), Pressure (Station, Sea Level), and a second set of identical columns for a second day's observations.

# OBSERVATIONS AT 3-HOURLY INTERVALS

# KNOXVILLE, TN

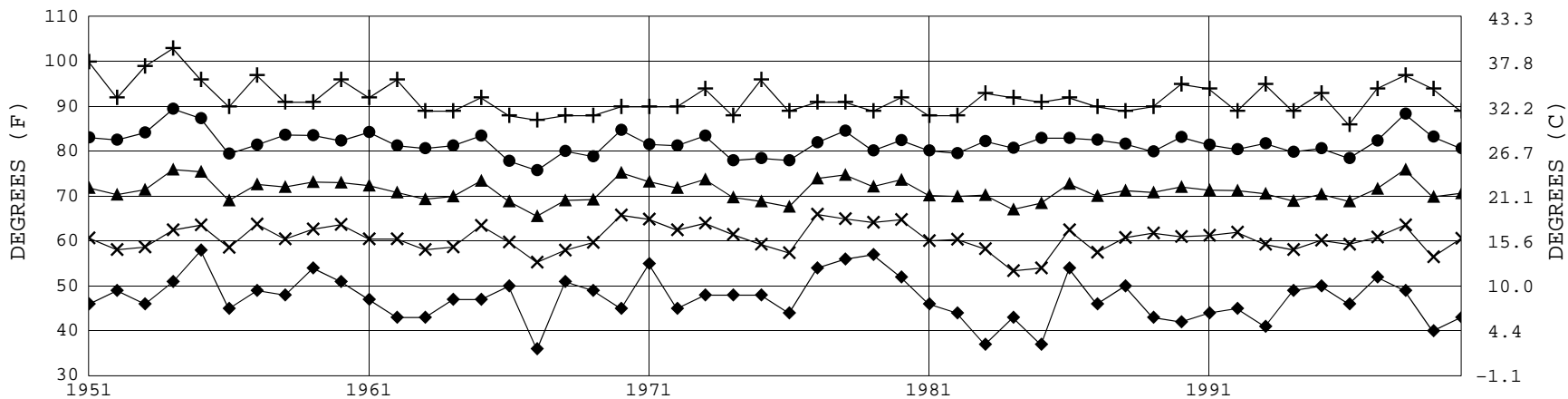
SEPTEMBER 2000

TYS

WBAN # 13891

HOUR (LST)	SATELLITE		WEATHER	TEMPERATURE °F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SATELLITE		WEATHER	TEMPERATURE °F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)			
	SKY COVER	CEILING 100'S OF FT		OBSERVATION TIME (LST)	EFF CLD AMT Oktas	VISIBILITY (MILES)		DRY BULB	DEW POINT	WET BULB	SPEED (MPH)		DIRECTION TENS OF DEG	STATION		SEA LEVEL	SKY COVER	CEILING 100'S OF FT		OBSERVATION TIME (LST)	EFF CLD AMT Oktas	VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB
SUNRISE: 0627 SEP 25 SUNSET: 1828												SUNRISE: SEP 31 SUNSET:													
01	BKN	110		6.00	BR	70	69	69	97	0	00	28.79	29.82												
04	OVC	030		3.00	+TSRA BR	69	69	69	100	0	00	28.76	29.78												
07	OVC	014		1.75	+RA BR	69	69	69	100	9	27	28.75	29.77												
10	BKN	090		10.00		75	69	71	82	10	21	28.73	29.74												
13	BKN	045		7.00		75	72	73	90	15	23	28.65	29.67												
16	BKN	100		10.00		71	65	67	81	18	26	28.65	29.67												
19	BKN	048		10.00		64	53	58	68	14	26	28.76	29.78												
22	OVC	023		10.00		58	51	54	78	9	26	28.82	29.85												
SUNRISE: 0627 SEP 26 SUNSET: 1826												3-HOURLY OBSERVATION NOTES													
01	OVC	040		10.00		55	51	53	87	9	28	28.85	29.89	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	OVC	023		10.00		51	44	48	77	10	35	28.91	29.95	Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.											
07	OVC	019		10.00		50	44	47	80	8	35	28.99	30.04	NC= No ceiling detected.											
10	OVC	020		10.00		52	45	48	77	7	01	29.06	30.11	& = Original observation contained additional weather elements.											
13	OVC	026		10.00		55	45	50	69	10	02	29.09	30.14	See page 3 for additional notes.											
16	SCT	NC		10.00		60	44	52	56	8	04	29.08	30.13												
19	FEW	NC		10.00		55	46	50	72	6	07	29.10	30.16												
22	CLR	NC		10.00		51	46	49	83	3	04	29.12	30.19												
SUNRISE: 0628 SEP 27 SUNSET: 1825												SUMMARY BY HOUR													
01	CLR	NC		10.00		49	46	47	90	6	02	29.12	30.19	AVERAGES											
04	CLR	NC		8.00		44	43	44	96	3	04	29.12	30.19	RESULTANT WIND (MPH)											
07	CLR	NC		8.00		45	43	44	93	0	00	29.17	30.24	HOUR (LST)											
10	FEW	NC		7.00		55	50	52	83	8	05	29.19	30.25	CEILOMETER											
13	FEW	NC		10.00		64	48	55	56	5	VR	29.15	30.20	EFF CLD AMT											
16	CLR	NC		10.00		69	46	57	44	0	00	29.10	30.14	DRY BULB											
19	CLR	NC		10.00		64	46	54	52	0	00	29.09	30.14	DEW POINT											
22	CLR	NC		10.00		54	50	52	87	0	00	29.11	30.16	WET BULB											
SUNRISE: 0629 SEP 28 SUNSET: 1823												PRESSURE (INCHES, HG)													
01	FEW	NC		10.00		52	49	50	89	3	06	29.10	30.15	STATION											
04	FEW	NC		7.00		48	47	47	96	3	06	29.10	30.15	SEA LEVEL											
07	CLR	NC		9.00		47	46	46	97	0	00	29.12	30.18	VISIBILITY (MILES)											
10	FEW	NC		10.00		61	51	56	70	12	04	29.17	30.23	WIND SPEED (MPH)											
13	FEW	NC		10.00		70	50	59	49	10	03	29.14	30.19	SPEED											
16	FEW	NC		10.00		73	47	58	40	7	06	29.10	30.14	DIRECTION											
19	CLR	NC		10.00		67	50	57	55	5	02	29.11	30.16												
22	CLR	NC		10.00		61	50	55	67	5	04	29.14	30.19												
SUNRISE: 0630 SEP 29 SUNSET: 1822												HOUR (LST)													
01	CLR	NC		10.00		58	51	54	78	8	01	29.14	30.19	CEILOMETER											
04	CLR	NC		9.00		52	49	50	89	5	04	29.15	30.20	EFF CLD AMT											
07	CLR	NC		5.00	BR	51	49	50	92	0	00	29.19	30.24	DRY BULB											
10	FEW	NC		10.00		61	52	56	72	3	VR	29.22	30.27	DEW POINT											
13	FEW	NC		10.00		72	51	60	48	3	VR	29.18	30.22	WET BULB											
16	FEW	NC		10.00		74	50	60	43	6	13	29.11	30.16	RELATIVE HUMIDITY											
19	CLR	NC		10.00		67	53	59	61	5	07	29.11	30.16	PRESSURE (INCHES, HG)											
22	CLR	NC		10.00		61	52	56	72	0	00	29.14	30.19	STATION											
SUNRISE: 0630 SEP 30 SUNSET: 1821												SEA LEVEL													
01	CLR	NC		10.00		56	52	54	87	7	02	29.15	30.20	VISIBILITY (MILES)											
04	CLR	NC		10.00		52	48	50	86	5	02	29.15	30.20	WIND SPEED (MPH)											
07	CLR	NC		6.00	BR	50	48	49	93	3	06	29.17	30.22	SPEED											
10	CLR	NC		10.00		62	53	57	73	6	03	29.19	30.25	DIRECTION											
13	CLR	NC		10.00		73	51	60	46	7	04	29.12	30.17												
16	FEW	NC		10.00		76	51	61	42	0	00	29.05	30.09												
19	SCT	NC		10.00		70	53	60	55	3	04	29.05	30.09												
22	CLR	NC		10.00		63	54	58	73	3	19	29.07	30.11												

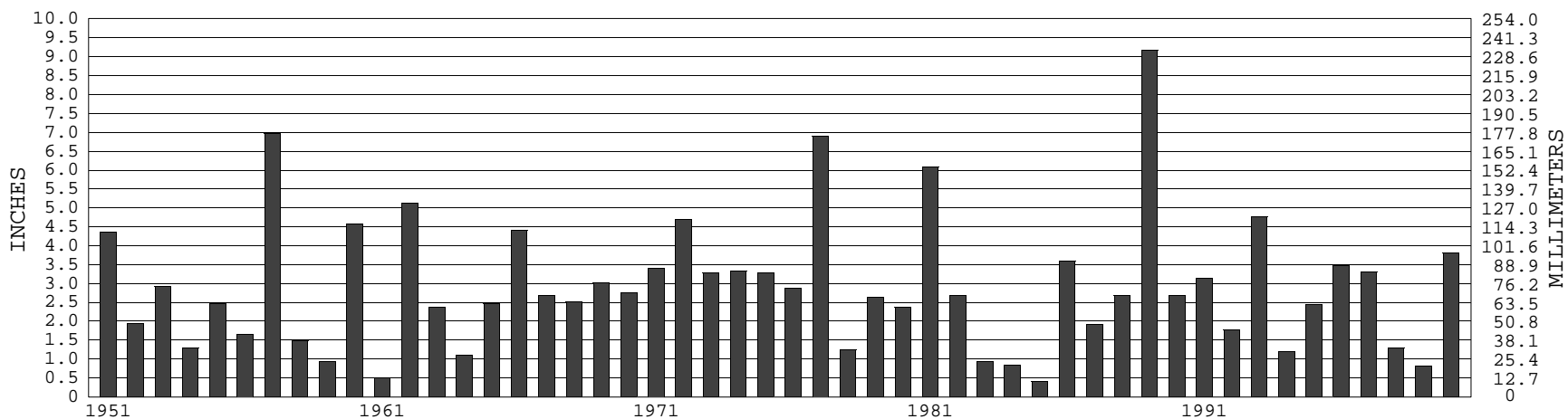
### KNOXVILLE, TN SEPTEMBER TEMPERATURES



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

Long-Term (1951-2000) Mean: 71.3      1961-1990 Normal: 70.1

### KNOXVILLE, TN SEPTEMBER PRECIPITATION



Long-Term (1951-2000) Mean Monthly Total: 2.94

1961-1990 Normal: 3.07



**SEPTEMBER 2000  
KNOXVILLE, TN**

# LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

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DIRECTOR

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