



# JULY 1996

## 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 1996  
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	93	71	82	6	70	74	0	17	BR HZ				0.00	28.94	29.95	2.6	25	4.3	16	27	11	28	01																															
02	94	71	83	7	69	73	0	18	TS RA BR HZ				0.08	28.81	29.81	5.3	27	8.3	25	28	22	28	02																															
03	83	65	74	-2	62	67	0	9	RA BR HZ				0.01	28.77	29.78	7.0	36	8.1	25	01	22	03	03																															
04	81	56*	69*	-7	54	61	0	4	BR				0.00	28.88	29.90	5.0	02	4.6	16	07	11	10	04																															
05	88	63	76	0	58	65	0	11					0.00	28.94	29.96	6.5	02	6.1	15	31	10	08	05																															
06	89	65	77	1	63	68	0	12	BR HZ				0.00	28.97	29.98	1.9	01	3.6	11	06	10	06	06																															
07	94	65	80	4	58	66	0	15	HZ				0.00	28.88	29.89	5.0	26	7.8	24	26	21	26	07																															
08	83	73	78	2			0	13	HZ				0.00	28.78	29.78	11.8	24	12.1	22	24	18	26	08																															
09	89	70	80	4	63	68	0	15	RA BR HZ				T	28.82	29.82	6.8	28	8.6	22	28	17	28	09																															
10	85	64	75	-1	56	63	0	10					0.00	29.02	30.04	5.4	04	7.8	18	05	16	06	10																															
11	82	64	73	-3	60	65	0	8	HZ				0.00	29.07	30.09	7.9	05	7.9	16	01	13	04	11																															
12	89	63	76	0	63	68	0	11	BR HZ				0.00	28.98	30.00	5.8	02	5.7	18	01	15	03	12																															
13	89	69	79	2	67	71	0	14	TS RA HZ				0.01	28.90	29.90	6.6	24	7.6	29	24	22	22	13																															
14	90	71	81	4	71	73	0	16	TS TSRA RA BR HZ				0.40	28.92	29.92			5.1	32	24	18	20	14																															
15	82	70	76	-1	70	72	0	11	TSRA RA FG BR HZ				0.27	28.97	29.98	10.5	24	10.2	32	30	25	29	15																															
16	89	67	78	1	68	71	0	13	FG BR HZ				0.00	29.12	30.14	10.2	23	3.5	13	27	10	25	16																															
17	90	70	80	3	70	73	0	15	BR HZ				0.00	29.16	30.18	8.8	23	4.3	20	17	17	18	17																															
18	91	71	81	4	69	73	0	16	BR HZ				0.00	29.12	30.14	9.2	25	9.6	22	23	17	24	18																															
19	94*	73	84*	7	70	74	0	19	TSRA RA				0.03	28.99	29.99	11.8	25	12.2	26	24	22	26	19																															
20	89	73	81	4	71	73	0	16	TSRA RA FG+ BR				0.98	28.93	29.94	7.8	25	3.8	26	29	24	29	20																															
21	89	73	81		70	73	0	16	RA FG+ BR HZ				0.04	28.93	29.94	6.4	25		32	24	28	24	21																															
22	87	73	80	3	73	75	0	15	RA BR				0.01	28.89	29.89	7.1	24	7.3	17	22	15	22	22																															
23	84	71	78	1	69	72	0	13	RA BR HZ				T	28.91	29.92	2.7	28	5.9	31	21	23	21	23																															
24	86	65	76	-1	65	69	0	11	BR HZ				0.00	28.98	29.99	1.4	01						24																															
25	77	66	72	-5	66	68	0	7	RA BR				0.48	28.98	29.99	3.7	23	3.8	23	34	17	34	25																															
26	82	67	75	-2	63	67	0	10	RA BR				0.02	29.08	30.10	2.1	24	3.4	18	31	15	31	26																															
27	83	63	73	-4	63	67	0	8	BR HZ				0.00	29.15	30.17	0.9	22	2.3	14	28	10	30	27																															
28	76	68	72	-5	67	68	0	7	RA BR HZ				0.38	29.16	30.18	1.6	26	4.0	20	34	15	34	28																															
29	81	67	74	-3	67	69	0	9	RA BR HZ				0.26	29.13	30.16	7.5	24	7.7	22	35	20	36	29																															
30	77	67	72	-5	68	69	0	7	TSRA RA BR				0.43	29.07	30.09	5.4	23	5.7	23	21	18	21	30																															
31	73	67	70	-7	68	69	0	5	TS TSRA RA FG BR				1.37	29.01	30.03	7.5	23	8.0	52*	24	43*	24	31																															
85.8											67.8	76.8	■ ■			0.0	12.0	< MONTHLY AVERAGES		TOTALS-->						<-- MONTHLY AVERAGES																												
-1.3											1.8	0.2	■ ■	<----- DEPARTURE FROM NORMAL ----->											0.10	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3																												
DEGREE DAYS											GREATEST 24-HR PRECIPITATION: 1.37 DATE: 31											SEA LEVEL PRESSURE DATE TIME																																
MONTHLY											GREATEST 24-HR SNOWFALL: DATE:											MAXIMUM : 30.25 17 0929																																
TOTAL DEPARTURE											GREATEST SNOW DEPTH: DATE:											MINIMUM : 29.71 03 0521																																
HEATING: 0 0											NUMBER OF DAYS WITH =>											MAXIMUM TEMP ≥ 90: 7											MINIMUM TEMP ≤ 32: 0											PRECIPITATION ≥ 0.01 INCH : 15										
COOLING: 371 11																						MAXIMUM TEMP ≤ 32 : 0											MINIMUM TEMP ≤ 0 : 0											PRECIPITATION ≥ 0.10 INCH : 8										
																						THUNDERSTORMS : 8											HEAVY FOG : 2											SNOWFALL ≥ 1.0 INCH : 0										

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

# KNOXVILLE, TN

JULY 1996

TYS

WBAN # 13891

DATE	FOR HOUR (LST) ENDING AT												DATE	FOR HOUR (LST) ENDING AT												DATE	Sum if Different (See Note 2)	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			0.08	
03		T						0.01					03					0.05	0.01					0.02	03			0.01	
04													04												04			0.00	
05													05												05			0.00	
06													06												06			0.00	
07													07												07			0.00	
08													08												08			0.00	
09					T								09												09		T	0.00	
10													10												10			0.00	
11													11												11			0.00	
12													12												12			0.00	
13									0.01				13												13			0.01	
14				0.17									14		T			T	0.02	0.18	T	0.01	0.01		14		0.01	0.40	
15				T	T			0.01	0.01		T	0.20	15	0.04	0.01									15			0.27		
16													16												16			0.00	
17													17												17			0.00	
18													18												18			0.00	
19													19												19		T	0.03	
20	T	T			T								20			0.19	0.19	0.11	0.06	0.06	0.11	0.09	0.08	0.03	20	0.97	0.08	0.98	
21	0.07	0.07	0.05	0.06	0.04	0.05	0.04	0.03	0.04	0.03	0.02	0.02	21	0.01	0.01	0.01		0.01						0.01	21	0.61	0.01	0.04	
22									T				22												22	T		0.01	
23													23												23	0.00		T	
24													24												24			0.00	
25				T		T						T	25	0.27	0.20	T	0.01							25			0.48		
26		0.02											26											26			0.02		
27													27											27			0.00		
28			T		0.02	0.08	0.03	T				T	28	0.06	T	0.03	0.04	0.11					0.01	28			0.38		
29													29				0.19	0.04	0.03					29			0.26		
30		0.01			0.20			0.10	T			T	30	0.06	0.05	T								30			0.43		
31			T	0.49	0.05	T	0.04	0.35	0.01	0.06	0.04		31	0.04	0.02	0.07	0.04	0.01	T				0.03	0.05	0.06	31	1.36	0.06	1.37

## MAXIMUM SHORT DURATION PRECIPITATION (See Note 1)

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 1: NCDC derives these data from one-minute ASOS values. The table is not printed when inconsistent with ASOS hourly totals.

Note 2: 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	PE Ice Pellets	HZ Haze	SQ Squalls
PR Partial	RA Rain	PY Spray	SS Sandstorm
SH Shower(s)	SG Snow Grains	SA Sand	
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 1996

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 at constant pressure by evaporation of moisture into it, to 100% relative humidity.

ADDITIONAL NOTES:

DATE	SUNSHINE		CLOUDINESS (OKTAS)				VISIBILITY (MILES)		RESERVED
	TOTAL MINUTES	PERCENT POSSIBLE	SR-SS		MN-MN		MINIMUM	MAXIMUM	
			CEILOMETER	SATELLITE	CEILOMETER	SATELLITE			
01							2.50	5.00	
02							2.50	10.00	
03							3.00	10.00	
04							5.00	10.00	
05							9.00	10.00	
06							4.00	10.00	
07							5.00	9.00	
08							6.00	10.00	
09							6.00	10.00	
10							10.00	10.00	
11							6.00	10.00	
12							4.00	10.00	
13							4.00	10.00	
14							2.50	8.00	
15							2.00	10.00	
16							4.00	10.00	
17							2.50	10.00	
18							6.00	10.00	
19							7.00	10.00	
20							2.00	10.00	
21							.25	10.00	
22							4.00	10.00	
23							5.00	10.00	
24							2.00	10.00	
25							2.00	10.00	
26							6.00	10.00	
27							3.00	10.00	
28							1.75	10.00	
29							5.00	10.00	
30							1.75	10.00	
31							1.25	10.00	
<b>MONTHLY AVGS</b>							4.03	9.74	
<b>SUNSHINE (MINUTES)</b>									
Total:                      Possible:									
Percent Possible:									
<b>NUMBER OF DAYS WITH:</b>									
<b>SKY CONDITION</b>									
CLR    PTLY CLDY    CLOUDY    MISSING									
0            0            0            31									
<b>MINIMUM VISIBILITY (MILES)</b>									
<=0.25    <=3.0    >=7.0									
1            14            3									

# OBSERVATIONS AT 3-HOURLY INTERVALS

# KNOXVILLE, TN

JULY 1996

TYS

WBAN # 13891

HOUR (LST)	≤ 12K FEET		SATELLITE		WEATHER	TEMPERATURE °F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)		HOUR (LST)	≤ 12K FEET		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		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		DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL					
SUNRISE: 0524						JUL 01						SUNSET: 1956																				
01	CLR	NC			5.00 HZ	76	69	71	79	0	00	28.98	29.98	01	CLR	NC			9.00					72	62	66	71	0	00	28.94	29.95	
04	CLR	NC			4.00 BR	72	69	70	91	3	18	28.97	29.98	04	FEW	NC			7.00						68	48	57	49	3	34	28.92	29.94
07	FEW	NC			3.00 HZ	74	69	71	85	3	24	28.98	29.99	07	BKN	080			5.00 HZ						70	52	60	53	0	00	28.94	29.96
10	SCT	NC			3.00 HZ	81	71	74	72	5	VR	29.00	30.01	10	FEW	NC			6.00 HZ						84	53	65	35	13	24	28.92	29.93
13	CLR	NC			5.00 HZ	90	70	76	52	6	24	28.96	29.97	13	FEW	NC			6.00 HZ						90	70	76	52	12	25	28.87	29.88
16	CLR	NC			4.00 HZ	92	70	77	49	6	VR	28.89	29.90	16	FEW	NC			7.00						92	68	75	46	15	24	28.83	29.83
19	CLR	NC			4.00 HZ	89	71	76	55	8	26	28.87	29.88	19	CLR	NC			6.00 HZ						87	70	75	57	10	28	28.83	29.83
22	CLR	NC			5.00 HZ	82	71	74	69	0	00	28.88	29.89	22	SCT	NC			9.00						78	54	64	43	8	23	28.83	29.83
SUNRISE: 0524						JUL 02						SUNSET: 1956																				
01	CLR	NC			3.00 BR	76	72	73	88	0	00	28.88	29.89	01	CLR	NC			8.00						76				9	24	28.81	29.81
04	CLR	NC			4.00 BR	75	71	72	88	3	22	28.86	29.86	04	CLR	NC			9.00						75				10	28	28.78	29.77
07	CLR	NC			2.50 BR	74	70	71	88	5	25	28.87	29.88	07	BKN	042			10.00						75	68	70	79	12	22	28.80	29.80
10	CLR	NC			4.00 HZ	85	70	75	61	10	24	28.86	29.86	10	OVC	055			10.00						75	67	70	76	14	24	28.82	29.82
13	CLR	NC			5.00 HZ	93	68	76	44	16	26	28.81	29.81	13	SCT	NC			10.00						77	67	70	71	13	24	28.80	29.80
16	FEW	NC			7.00	92	66	74	43	13	29	28.75	29.74	16	SCT	NC			10.00						80	68	72	67	14	24	28.76	29.76
19	SCT	NC			5.00 HZ	83	71	75	67	7	05	28.75	29.75	19	BKN	028			9.00						79	69	72	72	12	25	28.74	29.74
22	SCT	NC			8.00 TS	75	68	70	79	18	23	28.76	29.76	22	OVC	022			7.00						77	70	72	79	10	24	28.76	29.76
SUNRISE: 0525						JUL 03						SUNSET: 1956																				
01	OVC	035			7.00	74	68	70	82	14	01	28.74	29.74	01	OVC	017			10.00						74	69	71	85	13	23	28.75	29.75
04	OVC	060			5.00 BR	70	68	69	93	3	36	28.72	29.72	04	OVC	030			9.00						74	69	71	85	8	24	28.76	29.76
07	CLR	NC			3.00 BR	71	69	70	94	6	29	28.73	29.73	07	OVC	020			6.00 BR						73	70	71	90	8	24	28.79	29.80
10	BKN	030			7.00	77	66	70	69	6	31	28.75	29.76	10	BKN	025			8.00						78	69	72	74	5	30	28.84	29.84
13	FEW	NC			10.00	83	58	67	43	13	01	28.77	29.77	13	CLR	NC			8.00						86	63	71	46	12	30	28.83	29.83
16	CLR	NC			10.00	78	56	65	47	21	02	28.80	29.81	16	CLR	NC			10.00						88	56	68	34	13	29	28.83	29.83
19	CLR	NC			10.00	76	56	64	50	6	36	28.81	29.81	19	CLR	NC			10.00						83	54	65	37	9	31	28.84	29.85
22	CLR	NC			10.00	70	56	62	61	7	36	28.85	29.85	22	CLR	NC			10.00						75	56	63	52	3	02	28.90	29.91
SUNRISE: 0525						JUL 04						SUNSET: 1956																				
01	CLR	NC			10.00	66	57	61	73	3	04	28.85	29.86	01	CLR	NC			10.00						71	59	64	66	5	02	28.94	29.96
04	CLR	NC			10.00	59	57	58	93	0	00	28.83	29.84	04	CLR	NC			10.00						68	58	62	70	6	01	28.97	29.98
07	CLR	NC			5.00 BR	61	59	60	93	3	07	28.87	29.89	07	CLR	NC			10.00						67	58	62	73	6	03	29.01	30.03
10	CLR	NC			10.00	73	55	62	53	8	03	28.90	29.92	10	CLR	NC			10.00						77	55	64	47	13	08	29.04	30.06
13	CLR	NC			10.00	78	50	62	37	7	VR	28.89	29.91	13	BKN	060			10.00						81	54	65	39			29.04	30.06
16	CLR	NC			10.00	81	51	63	35	6	VR	28.87	29.89	16	BKN	070			10.00						83	52	64	34	10	09	29.02	30.03
19	CLR	NC			10.00	78	52	63	40	5	36	28.89	29.92	19	CLR	NC			10.00						80	53	64	39	8	02	29.03	30.05
22	CLR	NC			10.00	67	55	60	66	6	06	28.90	29.92	22	FEW	NC			10.00						71	55	62	57	8	05	29.08	30.09
SUNRISE: 0526						JUL 05						SUNSET: 1956																				
01	CLR	NC			10.00	66	57	61	73	6	02	28.93	29.95	01	BKN	070			10.00						66	57	61	73	7	06	29.06	30.08
04	CLR	NC			10.00	65	56	60	73	8	03	28.92	29.94	04	CLR	NC			10.00						66	55	60	68	8	03	29.05	30.06
07	CLR	NC			9.00	63	57	59	81	7	01	28.97	29.98	07	FEW	NC			10.00						67	56	60	68	7	08	29.08	30.09
10	CLR	NC			10.00	72	58	63	61	6	02	28.98	30.00	10	FEW	NC			10.00						74	59	65	60	6	05	29.10	30.12
13	CLR	NC			10.00	83	56	66	40	3	VR	28.95	29.96	13	CLR	NC			10.00						78	62	68	58	9	05	29.08	30.10
16	FEW	NC			10.00	88	56	68	34	8	34	28.91	29.92	16	CLR	NC			7.00						80	64	70	58	9	05	29.07	30.09
19	FEW	NC			10.00	83	60	68	46	8	08	28.92	29.94	19	CLR	NC			7.00						80	64	70	58	10	05	29.05	30.06
22	CLR	NC			10.00	77	62	67	60	6	24	28.95	29.96	22	CLR	NC			8.00						74	63	67	69	7	06	29.06	30.08
SUNRISE: 0526						JUL 06						SUNSET: 1955																				
01	CLR	NC			9.00	71	63	66	76	0	00	28.96	29.97	01	CLR	NC			6.00 BR						69	65	66	87	5	02	29.04	30.06
04	CLR	NC			6.00 BR	67	63	64	87	0	00	28.98	29.99	04	FEW	NC			6.00 HZ						66	61	63	84	3	36	29.03	30.05
07	CLR	NC			4.00 HZ	69	64	66	84	5	13	29.02	30.03	07	CLR	NC			4.00 HZ						68	61	64	78	7	05	29.05	30.07
10	BKN	024			8.00	79	66	70	65	8	24	29.02	30.04	10	FEW	NC			8.00						78	62	68	58	5	VR	29.04	30.06
13	FEW	NC			10.00	84	64	71	51	7	31	28.98	29.99	13	CLR	NC			10.00						85	64	71	50	8	07	28.99	30.00
16	CLR	NC			10.00	86	59	69	40	5	28	28.92	29.94	16	SCT	NC			10.00						88	63	71	43	7	01	28.92	29.94
19	CLR	NC			10.00	86	58	68	39	7	28	28.92	29.93	19	CLR	NC			10.00						84	63	70	49	7	32	28.90	29.91
22	CLR	NC			10.00	76	62	67	62	0	00	28.95	29.96	22	CLR	NC			10.00						77	65	69	66	0	00	28.91	29.93

# OBSERVATIONS AT 3-HOURLY INTERVALS

# KNOXVILLE, TN

JULY 1996

TYS

WBAN # 13891

HOUR (LST)	≤ 12K FEET		SATELLITE		WEATHER	TEMPERATURE °F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)		HOUR (LST)	≤ 12K FEET		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	SPEED (MPH)	DIRECTION TENS OF DEG
SUNRISE: 0530						JUL 13						SUNSET: 1953															
01	FEW	NC			10.00	73	65	68	76	3	24	28.90	29.91	01	CLR	NC			10.00	77	69	72	77	9	24	29.05	30.06
04	BKN	085			10.00	71	65	67	81	0	00	28.89	29.90	04	CLR	NC			9.00	75	69	71	82	7	24	29.02	30.03
07	BKN	090			10.00	73	65	68	76	6	23	28.91	29.92	07	CLR	NC			7.00	77	69	72	77	13	24	29.07	30.08
10	BKN	033			8.00	78	69	72	74	10	22	28.93	29.94	10	CLR	NC			7.00	85	71	75	63	17	25	29.03	30.04
13	SCT	NC			4.00	89	69	75	52	15	24	28.90	29.91	13	SCT	NC			10.00	90	70	76	52	15	25	28.99	30.00
16	CLR	NC			8.00	86	67	73	53	14	22	28.87	29.87	16	CLR	NC			8.00	94	69	76	44	17	27	28.91	29.92
19	CLR	NC			6.00	83	68	73	61	9	22	28.86	29.86	19	CLR	NC			10.00	89	70	76	53	12	25	28.89	29.90
22	OVC	050			10.00	80	67	71	64	7	22	28.90	29.91	22	OVC	100			10.00	85	70	75	61	9	26	28.94	29.95
SUNRISE: 0531						JUL 14						SUNSET: 1953															
01	BKN	046			7.00	74	71	72	91	3	06	28.91	29.92	01	OVC	090			10.00	77	73	74	88	9	25	28.90	29.91
04	BKN	029			3.00	72	70	71	94			28.90	29.91	04	OVC	065			10.00	74	68	70	82	3	28	28.92	29.93
07	FEW	NC			3.00	74	71	72	91			28.95	29.96	07	CLR	NC			10.00	74	70	71	88	5	13	28.93	29.94
10	BKN	055			5.00	80	71	74	74	6	28	28.96	29.98	10	BKN	037			10.00	81	71	74	72	3	16	28.97	29.98
13	BKN	048			5.00	86	69	74	57	0	00	28.92	29.93	13	BKN	090			10.00	86	69	74	57	3	26	28.95	29.96
16	CLR	NC			7.00	87	70	75	57	7	16	28.87	29.87	16	OVC	012			3.00	75	71	72	88	3	30	28.90	29.91
19	BKN	100			4.00	76	72	73	88	3	21	28.89	29.91	19	BKN	095			10.00	80	74	76	82	6	14	28.90	29.91
22	SCT	NC			6.00	74	71	72	91	3	17	28.90	29.91	22	OVC	080			9.00	74	73	73	97	0	00	28.94	29.95
SUNRISE: 0531						JUL 15						SUNSET: 1952															
01	OVC	032			7.00	74	70	71	88	14	23	28.89	29.91	01	BKN	039			2.50	74	73	73	97	0	00	28.93	29.94
04	OVC	027			7.00	74	70	71	88	10	25	28.88	29.89	04	OVC	001			1.00	73	42	56	33	0	00	28.93	29.95
07	OVC	060			7.00	75	69	71	82	15	23	28.91	29.92	07	OVC	005			2.00	74	65	68	75	0	00	28.96	29.98
10	BKN	045			8.00	77	72	74	85	16	22	28.94	29.95	10	OVC	009			7.00	78	68	71	71	0	00	28.97	29.98
13	OVC	011			10.00	73	71	72	94	13	24	29.01	30.03	13	BKN	023			7.00	84	73	76	70	5	VR	28.94	29.96
16	FEW	NC			10.00	80	69	73	69	5	26	28.99	30.00	16	FEW	NC			8.00	87	74	78	65	5	10	28.87	29.88
19	CLR	NC			10.00	81	67	72	62	6	26	29.01	30.02	19	OVC	050			6.00	77	74	75	90	6	18	28.93	29.94
22	CLR	NC			9.00	75	69	71	82	0	00	29.05	30.07	22	CLR	NC			9.00	75	72	73	90	8	28	28.94	29.95
SUNRISE: 0532						JUL 16						SUNSET: 1952															
01	CLR	NC			5.00	70	68	69	93	3	13	29.07	30.09	01	BKN	049			8.00	75	72	73	90	7	28	28.89	29.91
04	BKN	048			4.00	69	68	68	96	0	00	29.10	30.11	04	OVC	013			5.00	74	73	73	97	10	25	28.91	29.92
07	CLR	NC			6.00	70	67	68	90	0	00	29.14	30.16	07	BKN	005			7.00	73	72	72	96	9	24	28.92	29.93
10	BKN	050			8.00	79	71	74	77	3	VR	29.17	30.19	10	OVC	049			10.00	78	72	74	82	12	23	28.92	29.93
13	CLR	NC			10.00	86	67	73	53	7	VR	29.15	30.16	13	SCT	NC			10.00	83	74	77	74	13	24	28.89	29.90
16	CLR	NC			10.00	89	64	72	43	7	33	29.09	30.11	16	BKN	046			8.00	86	75	78	70	3	VR	28.87	29.87
19	BKN	050			9.00	85	68	73	57	9	23	29.10	30.12	19	FEW	NC			8.00	86	75	78	70	3	VR	28.86	29.85
22	CLR	NC			7.00	78	69	72	74	3	15	29.14	30.15	22	BKN	044			7.00	79	75	76	88	0	00	28.84	29.84
SUNRISE: 0533						JUL 17						SUNSET: 1951															
01	CLR	NC			6.00	74	70	71	88	0	00	29.14	30.15	01	BKN	035			5.00	78	76	77	93	5	23	28.86	29.86
04	CLR	NC			6.00	73	69	70	87	0	00	29.15	30.16	04	OVC	025			5.00	75	72	73	90	10	26	28.89	29.90
07	FEW	NC			2.50	73	70	71	90	0	00	29.20	30.21	07	CLR	NC			10.00	72	69	70	91	5	03	28.87	29.88
10	BKN	047			6.00	79	70	73	74	7	17	29.22	30.24	10	BKN	029			6.00	76	72	73	88	5	23	28.91	29.92
13	FEW	NC			10.00	84	67	73	57	9	28	29.19	30.21	13	BKN	048			5.00	81	69	73	67	0	00	28.92	29.93
16	CLR	NC			8.00	89	69	75	52	6	VR	29.13	30.14	16	FEW	NC			7.00	83	67	72	59	13	02	28.90	29.91
19	CLR	NC			10.00	87	71	76	59	7	30	29.13	30.14	19	CLR	NC			9.00	81	65	70	58	8	01	28.90	29.92
22	FEW	NC			8.00	82	72	75	72	0	00	29.15	30.16	22	CLR	NC			9.00	74	66	69	76	7	02	28.94	29.96
SUNRISE: 0533						JUL 18						SUNSET: 1951															
01	CLR	NC			10.00	73	68	70	84	0	00	29.15	30.17	01	CLR	NC			6.00	71	66	68	84	0	00	28.96	29.97
04	CLR	NC			9.00	73	69	70	87	8	26	29.14	30.15	04	CLR	NC			2.50	68	66	67	93	3	01	28.94	29.96
07	SCT	NC			6.00	74	69	71	85	7	25	29.18	30.19	07	CLR	NC			2.00	68	66	67	93	0	00	28.99	30.00
10	CLR	NC			10.00	83	69	74	63	14	24	29.19	30.20	10	FEW	NC			5.00	78	68	71	71	6	01	29.02	30.03
13	FEW	NC			10.00	88	71	76	57	15	24	29.15	30.16	13	FEW	NC			7.00	83	65	71	55	5	08	29.01	30.02
16	FEW	NC			9.00	89	70	76	53	12	25	29.09	30.10	16	SCT	NC			8.00	83	64	71	53	3	VR	28.94	29.96
19	CLR	NC			10.00	86	69	74	57	13	23	29.06	30.07	19	CLR	NC			10.00	83	61	69	48	5	30	28.94	29.95
22	CLR	NC			10.00	78	70	73	76	8	23	29.07	30.08	22	CLR	NC			9.00	76	66	69	72	0	00	28.97	29.99

# OBSERVATIONS AT 3-HOURLY INTERVALS

# KNOXVILLE, TN

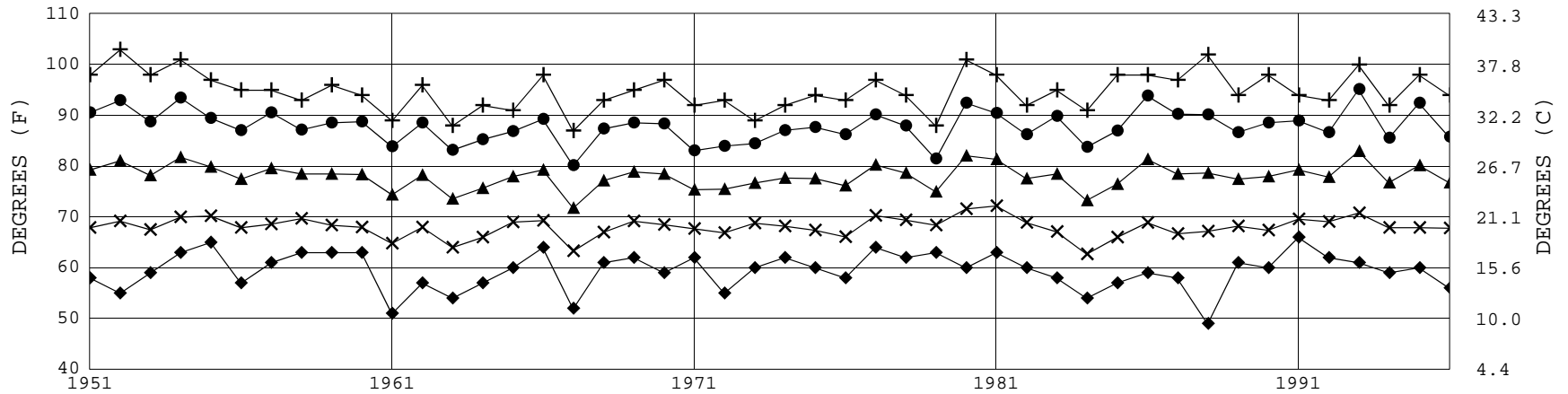
JULY 1996

TYS

WBAN # 13891

HOUR (LST)	≤ 12K FEET		SATELLITE		WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)		HOUR (LST)	≤ 12K FEET		SATELLITE		WEATHER	TEMPERATURE °F				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	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	VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL						
SUNRISE: 0539						JUL 25						SUNSET: 1946						SUNRISE: 0543						JUL 31						SUNSET: 1942					
01	BKN	070			7.00	72	67	69	84	0	00	28.96	29.97	01	SCT	NC			10.00	72	66	68	82	7	23	29.04	30.05								
04	OVC	060			7.00	72	68	69	87	0	00	28.95	29.96	04	OVC	046			7.00	-TSRA	71	67	68	87	10	31	29.02	30.03							
07	OVC	025			7.00	73	67	69	81	0	00	28.96	29.98	07	OVC	080			10.00		68	66	67	93	5	25	29.05	30.07							
10	BKN	029			7.00	75	68	70	79	13	21	28.97	29.99	10	BKN	023			5.00	-RA BR	71	69	70	94	12	22	29.06	30.08							
13	OVC	017			2.00	66	64	65	93	5	32	29.00	30.03	13	BKN	015			6.00	-RA BR	72	69	70	91	12	21	29.03	30.05							
16	FEW	NC			10.00	69	65	66	87	7	10	28.95	29.97	16	OVC	016			4.00	-RA BR	71	69	70	94	10	22	29.00	30.02							
19	CLR	NC			10.00	72	66	68	82	5	31	28.99	30.01	19	OVC	065			10.00		73	70	71	90	3	24	28.94	29.96							
22	CLR	NC			10.00	68	65	66	90	3	24	29.02	30.03	22	OVC	038			3.00	+RA BR	71	69	70	94	12	23	28.95	29.97							
SUNRISE: 0539						JUL 26						SUNSET: 1946						3-HOURLY OBSERVATION NOTES																	
01	OVC	027			10.00	68	65	66	90	0	00	29.00	30.03	Sky Cover is the amount of the sky obscured. CLR = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, VV = Vertical Visibilty = 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.																					
04	SCT	NC			6.00	67	65	66	93	3	17	29.02	30.05																						
07	OVC	012			9.00	68	65	66	90	0	00	29.07	30.09																						
10	SCT	NC			10.00	75	65	69	71	3	VR	29.10	30.12																						
13	FEW	NC			10.00	80	59	67	49	8	32	29.09	30.11																						
16	CLR	NC			10.00	82	60	68	47	0	00	29.08	30.10																						
19	CLR	NC			10.00	80	58	66	47	5	28	29.08	30.09																						
22	SCT	NC			8.00	69	65	66	87	6	08	29.13	30.15																						
SUNRISE: 0540						JUL 27						SUNSET: 1945						SUMMARY BY HOUR																	
01	CLR	NC			5.00	68	63	65	84	0	00	29.12	30.14	AVERAGES																					
04	BKN	050			5.00	66	63	64	90	0	00	29.13	30.15	RESULTANT WIND (MPH)																					
07	CLR	NC			3.00	65	63	64	93	0	00	29.17	30.19	HOUR (LST)																					
10	CLR	NC			8.00	76	64	68	67	0	00	29.19	30.22	CEILOMETER																					
13	FEW	NC			10.00	82	62	69	51	5	VR	29.18	30.19	EFF CLD AMT																					
16	CLR	NC			10.00	82	60	68	47	6	30	29.13	30.15	DRY BULB																					
19	CLR	NC			10.00	80	60	67	51	3	33	29.13	30.15	DEW POINT																					
22	CLR	NC			8.00	72	66	68	82	5	08	29.17	30.19	WET BULB																					
SUNRISE: 0541						JUL 28						SUNSET: 1944						RELATIVE HUMIDITY																	
01	CLR	NC			7.00	69	65	66	87	6	06	29.15	30.16	PRESSURE (INCHES, HG)																					
04	OVC	080			4.00	70	66	67	87	5	28	29.15	30.16	STATION																					
07	BKN	090			2.00	68	67	67	96	0	00	29.19	30.21	SEA LEVEL																					
10	CLR	NC			4.00	73	68	70	84	0	00	29.19	30.21	VISIBILITY (MILES)																					
13	OVC	060			4.00	72	69	70	91	5	28	29.17	30.19	WIND SPEED (MPH)																					
16	OVC	034			2.00	69	67	68	93	3	VR	29.14	30.16	SPEED																					
19	BKN	110			10.00	70	67	68	90	3	24	29.13	30.16	DIRECTION																					
22	BKN	027			10.00	70	67	68	90	3	20	29.15	30.17																						
SUNRISE: 0542						JUL 29						SUNSET: 1943																							
01	BKN	046			9.00	69	67	68	93	5	28	29.15	30.17																						
04	BKN	026			8.00	69	67	68	93	8	25	29.13	30.16																						
07	OVC	020			7.00	70	67	68	90	7	23	29.16	30.18																						
10	BKN	019			7.00	75	69	71	82	12	22	29.17	30.19																						
13	BKN	048			6.00	79	69	72	72	13	27	29.15	30.17																						
16	FEW	NC			6.00	76	70	72	82	9	35	29.11	30.14																						
19	CLR	NC			9.00	70	67	68	90	9	22	29.10	30.12																						
22	CLR	NC			10.00	68	65	66	90	8	26	29.13	30.15																						
SUNRISE: 0542						JUL 30						SUNSET: 1942																							
01	OVC	065			10.00	68	66	67	93	3	26	29.10	30.11																						
04	OVC	005			6.00	67	66	66	97	3	14	29.07	30.09																						
07	OVC	065			1.75	67	66	66	97	3	06	29.09	30.11																						
10	SCT	NC			5.00	73	70	71	90	9	24	29.11	30.13																						
13	BKN	095			4.00	75	72	73	90	8	29	29.09	30.11																						
16	FEW	NC			10.00	73	69	70	87	9	23	29.06	30.09																						
19	CLR	NC			10.00	73	67	69	81	8	24	29.04	30.06																						
22	CLR	NC			10.00	71	67	68	87	0	00	29.04	30.06																						

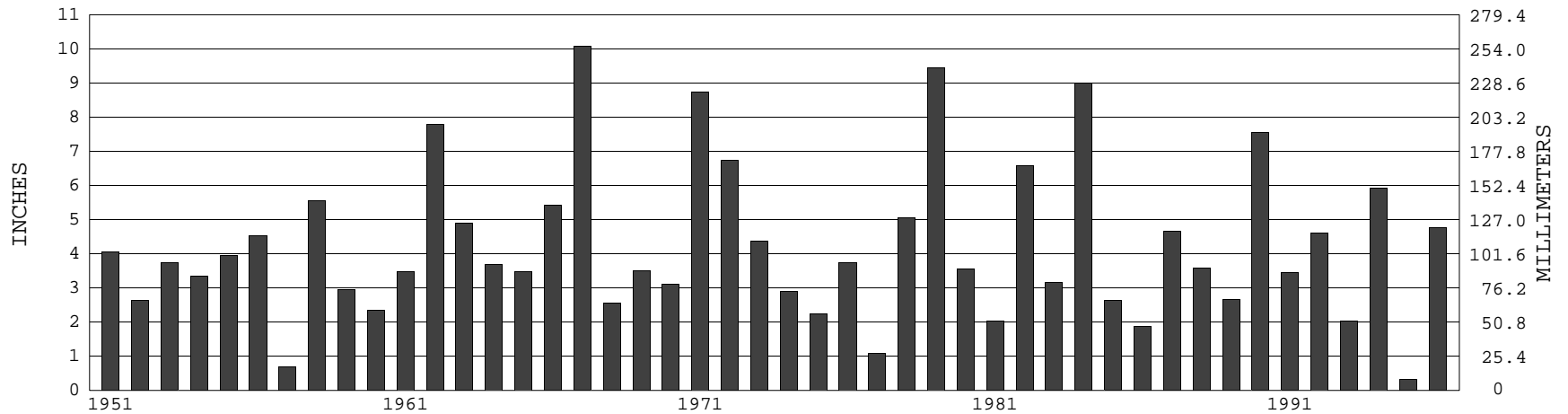
### KNOXVILLE, TN JULY TEMPERATURES



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

Long-Term (1951-1996) Mean: 78.0      1961-1990 Normal: 76.6

### KNOXVILLE, TN JULY PRECIPITATION



Long-Term (1951-1996) Mean Monthly Total: 4.24

1961-1990 Normal: 4.67



**JULY 1996  
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 and is compiled from records on file at the National Climatic Data Center, Asheville, North Carolina.*

*Kenneth D Haden*

DIRECTOR

### **NOTICE**

Effective July 1, 1996, the National Weather Service began using the METAR format for Hourly Observations.

We welcome your questions or comments, please contact us at  
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704-271-4010(TDD)  
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