



JULY 2002

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 2002
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	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
01	93	71	82	5	70	74	0	17	TS BR HZ				0.00	29.10	30.12	2.1	31	3.7	12	22	12	21	01
02	92	68	80	3	69	72	0	15	TS TSRA RA FG BR HZ				0.88	29.07	30.08	1.6	06	4.7	59*	01	43*	03	02
03	90	69	80	3	69	71	0	15	TS TSRA RA BR HZ				0.23	29.01	30.02	3.9	06	5.9	37	08	31	09	03
04	89	67	78	1	69	71	0	13	TS BR HZ				0.00	29.01	30.02	2.3	03	4.4	12	03	9	04	04
05	95*	70	83*	6	70	74	0	18	BR HZ				0.00	29.02	30.03	4.7	04	5.6	14	01	12	02	05
06	91	73	82	5	66	71	0	17	BR HZ				0.00	29.03	30.04	7.7	03	8.0	16	07	14	07	06
07	91	67*	79	2	66	70	0	14					0.00	29.09	30.10	1.0	02	5.0	12	19	10	17	07
08	89	73	81	4	69	73	0	16	HZ				0.00	29.15	30.16	5.1	25	6.3	20	26	13	21	08
09	89	69	79	1	67	71	0	14	HZ				0.00	29.09	30.10	6.7	24	7.3	20	27	15	27	09
10	88	73	81	3	70	72	0	16	TS RA HZ				T	29.01	30.02	7.0	25	7.7	24	24	21	24	10
11	88	69	79	1	70	72	0	14	TS RA BR HZ				T	28.95	29.96	0.9	36	3.7	21	02	16	01	11
12	85	69	77	-1	69	71	0	12	TS TSRA RA BR				0.26	28.93	29.95	1.7	01	5.2	22	08	20	08	12
13	72	68	70*	-8	70	70	0	5	RA FG BR				1.47	28.88	29.90	3.8	04	4.6	14	27	13	27	13
14	82	69	76	-2	71	72	0	11	RA BR				0.38	28.92	29.94	0.8	36	3.1	17	28	16	28	14
15	86	71	79	1	72	73	0	14	FG+ BCFG BR HZ				0.00	29.02	30.03	1.5	25	3.8	17	03	15	05	15
16	89	69	79	1	70	73	0	14	FG BCFG BR HZ				0.00	29.07	30.08	1.4	05	2.4	10	04	8	05	16
17	89	70	80	2	71	74	0	15	TS BR HZ				0.00	29.07	30.09	1.6	29	2.3	14	33	12	35	17
18	88	72	80	2	71	74	0	15	BR				0.00	29.01	30.02	6.9	25	8.1	20	30	15	33	18
19	85	70	78	0	70	72	0	13	TSRA RA BR				0.16	28.97	29.98	6.5	25	7.5	35	32	26	31	19
20	84	69	77	-1	71	73	0	12	TS RA BR HZ				0.25	29.01	30.02	0.3	23	2.9	15	36	13	36	20
21	90	69	80	2	71	74	0	15	BR HZ				0.00	29.03	30.04	1.5	05	2.5	12	10	9	03	21
22	90	71	81	3	70	73	0	16	TS BR HZ				0.00	29.04	30.05	2.2	25	4.8	21	13	17	13	22
23	89	69	79	1	70	72	0	14	TS TSRA RA BR HZ				0.68	29.05	30.07	2.6	26	6.2	31	20	28	20	23
24	88	70	79	1	70	73	0	14	BR				0.00	29.04	30.05	0.9	04	2.8	12	01	8	03	24
25	84	72	78	0	72	74	0	13	TS TSRA RA BR HZ				0.13	29.02	30.03	3.7	25	4.6	28	22	22	22	25
26	87	72	80	2	72	74	0	15	BR HZ				0.00	29.03	30.04	6.9	25	7.6	20	25	16	26	26
27	90	73	82	4	73	75	0	17	RA BR HZ				T	29.03	30.04	7.1	24	7.9	15	22	14	24	27
28	88	74	81	3	73	75	0	16	TSRA RA				0.72	29.04	30.05	4.6	26	6.5	44	27	36	26	28
29	90	73	82	4	72	75	0	17	TS				0.00	29.03	30.04	7.5	23	7.9	17	26	14	22	29
30	91	69	80	2	71	73	0	15	TS TSRA RA BR				0.49	29.03	30.05	5.6	24	7.5	37	36	31	01	30
31	87	69	78	0	71	73	0	13	BR HZ				0.00	29.00	30.02	1.7	01	4.1	20	15	9	04	31

88.0	70.2	79.1	■ ■	70.2	72.7	0.0	14.4	< MONTHLY AVERAGES	TOTALS-->	5.65	29.02	30.04	1.4	24	5.3	<-- MONTHLY AVERAGES					
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1.1	1.7	1.4	■ ■	-----DEPARTURE FROM NORMAL----->						0.94	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3										
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DEGREE DAYS								GREATEST 24-HR PRECIPITATION: 1.72 DATE: 12-13				SEA LEVEL PRESSURE				DATE		TIME	
MONTHLY TOTAL DEPARTURE				SEASON TO DATE TOTAL DEPARTURE				GREATEST 24-HR SNOWFALL:				MAXIMUM				: 30.23		08 0853	
HEATING: 0 0				0 0				GREATEST SNOW DEPTH:				MINIMUM				: 29.86		13 1853	
COOLING: 445 37				1004 171				NUMBER OF DAYS WITH		MAXIMUM TEMP ≥ 90: 11		MINIMUM TEMP ≤ 32: 0		PRECIPITATION ≥ 0.01 INCH: 11		PRECIPITATION ≥ 0.10 INCH: 11		SNOWFALL ≥ 1.0 INCH: :	
								THUNDERSTORMS: 16		HEAVY FOG: 1									

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

KNOXVILLE, TN

JULY 2002

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			0.88	
03													03												03			0.23	
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													09												09			0.00	
10													10												10			T	
11													11												11			T	
12													12												12			0.02	
13													13												13			0.01	
14													14												14			0.01	
15													15												15			0.01	
16													16												16			0.01	
17													17												17			0.08	
18													18												18			0.08	
19													19												19			0.08	
20													20												20			0.08	
21													21												21			0.08	
22													22												22			0.08	
23													23												23			0.08	
24													24												24			0.08	
25													25												25			0.08	
26													26												26			0.08	
27													27												27			0.08	
28													28												28			0.08	
29													29												29			0.08	
30													30												30			0.08	
31													31												31			0.08	

MAXIMUM SHORT DURATION PRECIPITATION (See Note)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)	.49	.69	.72	.76	.82	.85	.85	1.06	1.17	1.20	1.20	1.20
Ending Date	28	28	28	02	02	02	02	13	13	13	13	13
Ending Time (Hour/Min)	1413	1416	1419	1918	1928	1938	1938	1427	1440	1446	1446	1446

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 JULY 2002

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							4.00	10.00	
02							.50	10.00	
03							1.75	10.00	
04							2.50	9.00	
05							4.00	10.00	
06							5.00	10.00	
07							8.00	10.00	
08							6.00	9.00	
09							5.00	8.00	
10							5.00	10.00	
11							1.25	10.00	
12							4.00	10.00	
13							.50	10.00	
14							1.00	10.00	
15							.25	10.00	
16							.50	7.00	
17							2.50	6.00	
18							5.00	10.00	
19							1.00	10.00	
20							1.25	10.00	
21							.50	10.00	
22							4.00	10.00	
23							1.50	10.00	
24							2.00	10.00	
25							2.00	10.00	
26							4.00	8.00	
27							4.00	10.00	
28							.50	10.00	
29							9.00	10.00	
30							.75	10.00	
31							5.00	10.00	
MONTHLY AVGS							3.57	9.55	
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 14 3									

OBSERVATIONS AT 3-HOURLY INTERVALS

KNOXVILLE, TN

JULY 2002

TYS

WBAN # 13891

HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F			WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F			WIND		PRESSURE (INCHES, HG)			
	DRY BULB	DEW POINT		WET BULB	RELATIVE HUMIDITY (PCT)			SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL	DRY BULB	DEW POINT	WET BULB		RELATIVE HUMIDITY (PCT)	SPEED (MPH)		DIRECTION TENS OF DEG	STATION			SEA LEVEL								
SUNRISE: 0523 JUL 01 SUNSET: 1956																															
01	CLR	NC				9.00		76	69	71	79	3	26	29.11	30.12	01	CLR	NC				10.00		73	62	66	69	6	03	29.06	30.08
04	CLR	NC				8.00		73	69	70	87	3	32	29.12	30.13	04	CLR	NC				10.00		69	60	64	73	7	04	29.06	30.07
07	CLR	NC				4.00	BR	73	70	71	90	0	00	29.14	30.16	07	SCT	NC				10.00		70	62	65	76	3	07	29.10	30.11
10	CLR	NC				8.00		83	71	75	67	5	34	29.16	30.17	10	SCT	NC				10.00		79	65	70	62	0	00	29.13	30.14
13	SCT	NC				7.00		89	72	77	57	0	00	29.12	30.13	13	SCT	NC				9.00		87	70	75	57	6	22	29.11	30.12
16	SCT	NC				6.00	HZ	90	71	77	54	7	34	29.06	30.07	16	SCT	NC				9.00		90	68	75	49	8	36	29.06	30.07
19	SCT	NC				7.00		90	69	75	50	5	33	29.06	30.06	19	SCT	NC				8.00		86	70	75	59	9	17	29.07	30.08
22	BKN	060				6.00	TS	83	72	75	70	6	36	29.08	30.09	22	CLR	NC				9.00		78	69	72	74	0	00	29.11	30.12
SUNRISE: 0524 JUL 02 SUNSET: 1956																															
01	BKN	250				10.00		76	65	69	69	3	32	29.07	30.08	01	SCT	NC				9.00		76	68	71	77	6	30	29.12	30.13
04	CLR	NC				6.00	HZ	73	68	70	84	3	24	29.08	30.09	04	OVC	070				7.00		75	70	72	84	0	00	29.13	30.14
07	CLR	NC				4.00	BR	74	70	71	88	0	00	29.12	30.13	07	BKN	095				7.00		75	67	70	76	10	26	29.19	30.20
10	CLR	NC				4.00	HZ	82	72	75	72	3	VR	29.12	30.12	10	SCT	NC				7.00		81	70	73	69	9	29	29.21	30.23
13	FEW	NC				4.00	HZ	88	71	76	57	0	00	29.07	30.08	13	OVC	250				7.00		85	71	75	63	7	24	29.18	30.19
16	SCT	NC				5.00	HZ	92	70	77	49	7	07	29.01	30.01	16	SCT	NC				8.00		88	71	76	57	8	27	29.11	30.12
19	BKN	055				2.50	-TSRA	77	66	70	69	21	12	29.04	30.05	19	BKN	130				8.00		83	69	74	63	9	19	29.11	30.12
22	OVC	090				5.00	-TSRA	71	69	70	94	8	21	29.04	30.06	22	OVC	085				8.00		79	70	73	74	5	16	29.13	30.14
SUNRISE: 0524 JUL 03 SUNSET: 1956																															
01	BKN	200				5.00	BR	70	67	68	90	5	07	29.04	30.06	01	BKN	080				8.00		76	68	71	77	7	23	29.12	30.14
04	OVC	150				3.00	BR	70	68	69	93	0	00	29.03	30.04	04	FEW	NC				8.00		74	67	69	79	7	26	29.11	30.12
07	BKN	200				2.50	BR	70	68	69	93	5	08	29.05	30.07	07	CLR	NC				5.00	HZ	73	68	70	84	0	00	29.14	30.15
10	BKN	250				5.00	HZ	77	69	72	77	8	01	29.04	30.06	10	SCT	NC				8.00		81	65	70	58	9	24	29.16	30.17
13	SCT	NC				10.00		85	67	73	55	10	07	29.00	30.01	13	SCT	NC				8.00		87	65	72	48	13	26	29.14	30.12
16	SCT	NC				7.00		89	72	77	57	8	08	28.92	29.93	16	BKN	250				7.00		88	65	73	46	8	28	29.11	30.05
19	OVC	035				3.00	TSRA BR	71	68	69	90	13	33	29.03	30.05	19	BKN	250				7.00		85	68	73	57	6	22	29.03	30.04
22	BKN	065				5.00	-RA BR	71	69	70	94	7	01	29.02	30.04	22	FEW	NC				7.00		78	67	71	69	6	20	29.05	30.06
SUNRISE: 0525 JUL 04 SUNSET: 1956																															
01	SCT	NC				4.00	BR	69	68	68	96	8	01	28.99	30.00	01	BKN	100				7.00		77	68	71	74	6	23	29.05	30.06
04	SCT	NC				4.00	BR	68	66	67	93	3	02	28.98	29.99	04	SCT	NC				7.00		76	66	69	72	5	24	29.01	30.02
07	SCT	NC				3.00	BR	68	66	67	93	7	06	29.03	30.05	07	BKN	250				5.00	HZ	76	68	71	77	8	26	29.04	30.05
10	BKN	120				6.00	HZ	73	68	70	84	5	05	29.06	30.08	10	BKN	250				6.00	HZ	82	72	75	72	7	VR	29.05	30.06
13	BKN	150				9.00		80	69	73	69	5	VR	29.03	30.05	13	OVC	250				7.00		83	73	76	72	7	22	29.01	30.02
16	FEW	NC				8.00		88	69	75	54	5	VR	28.97	29.98	16	OVC	250				10.00		80	69	73	69	5	31	28.99	30.00
19	SCT	NC				8.00	TS	85	71	75	63	5	23	28.96	29.98	19	OVC	250				10.00		74	68	70	82	9	24	28.95	29.97
22	OVC	180				7.00		80	73	75	79	3	03	29.02	30.03	22	OVC	250				10.00		74	69	71	85	5	27	29.01	30.03
SUNRISE: 0525 JUL 05 SUNSET: 1956																															
01	CLR	NC				7.00		74	69	71	85	5	02	29.00	30.01	01	CLR	NC				7.00		71	70	70	96	6	22	28.98	30.00
04	CLR	NC				6.00	BR	70	68	69	93	7	01	29.00	30.01	04	SCT	NC				4.00	BR	70	69	69	97	3	24	28.97	29.98
07	CLR	NC				4.00	BR	72	68	69	87	5	07	29.03	30.04	07	BKN	001				1.50	BR	71	70	70	96	0	00	28.99	30.01
10	CLR	NC				8.00		83	70	74	65	6	03	29.06	30.07	10	BKN	110				6.00	HZ	77	70	72	79	0	00	28.99	30.00
13	FEW	NC				9.00		80	73	78	58	7	07	29.02	30.03	13	SCT	NC				8.00		84	71	75	65	7	28	28.96	29.98
16	SCT	NC				10.00		94	70	77	46	3	VR	28.98	29.99	16	SCT	NC				9.00		86	70	75	59	3	VR	28.90	29.91
19	OVC	250				9.00		88	71	76	57	7	01	28.99	30.00	19	BKN	250				10.00		81	70	73	69	12	01	28.90	29.91
22	SCT	NC				8.00		80	73	75	79	5	07	29.02	30.03	22	SCT	NC				9.00		74	69	71	85	7	06	28.94	29.96
SUNRISE: 0526 JUL 06 SUNSET: 1956																															
01	CLR	NC				8.00		79	72	74	79	7	02	29.02	30.03	01	SCT	NC				6.00	BR	72	70	71	94	7	01	28.93	29.95
04	FEW	NC				7.00		74	70	71	88	5	04	29.02	30.03	04	SCT	NC				6.00	BR	70	67	68	90	5	02	28.94	29.96
07	FEW	NC				5.00	BR	74	70	71	88	8	05	29.05	30.06	07	BKN	250				4.00	BR	69	66	67	90	6	03	28.98	30.00
10	CLR	NC				7.00		80	71	74	74	9	04	29.06	30.07	10	BKN	080				8.00		76	68	71	77	3	VR	28.98	30.00
13	FEW	NC				10.00		88	67	74	50	8	03	29.04	30.04	13	BKN	032				4.00	-RA	79	70	73	74	0	00	28.94	29.95
16	SCT	NC				10.00		91	61	71	37	7	02	29.00	30.01	16	BKN	060				10.00		84	70	74	63	9	27	28.88	29.89
19	SCT	NC				10.00		87	59	69	39	8	02	28.99	30.00	19	OVC	055				6.00	BR	72	71	71	97	6	09	28.90	29.92
22	CLR	NC				10.00		79	63	69	58	10	02	29.04	30.05	22	BKN	075				6.00	BR	71	70	70	96	3	05	28.91	29.93

OBSERVATIONS AT 3-HOURLY INTERVALS

KNOXVILLE, TN

JULY 2002

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 Oктаs	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 Oктаs	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL
SUNRISE: 0530					JUL 13				SUNSET: 1953				SUNRISE: 0534					JUL 19				SUNSET: 1951							
01	BKN	090	4.00	BR	70	70	70	100	3	04	28.90	29.91	01	SCT	NC	10.00		73	69	70	87	9	23	28.97	29.98				
04	OVC	003	3.00	-RA BR	71	70	70	96	3	35	28.88	29.90	04	FEW	NC	10.00		72	68	69	87	3	25	28.96	29.98				
07	OVC	007	2.50	BR	70	69	69	97	5	02	28.90	29.92	07	SCT	NC	10.00		72	69	70	91	5	25	28.98	29.99				
10	OVC	005	4.00	BR	71	70	70	96	7	06	28.88	29.90	10	SCT	NC	10.00		80	71	74	74	13	23	29.00	30.01				
13	OVC	010	2.00	-RA BR	71	70	70	96	7	02	28.87	29.88	13	SCT	NC	10.00		80	72	74	76	6	33	28.98	29.99				
16	OVC	030	7.00		70	69	69	97	6	07	28.87	29.88	16	SCT	NC	10.00		83	68	73	61	14	25	28.93	29.95				
19	OVC	038	10.00		72	70	71	94	6	06	28.85	29.86	19	SCT	NC	10.00		82	69	73	65	6	25	28.90	29.91				
22	OVC	041	10.00		71	70	70	96	6	02	28.88	29.90	22	BKN	100	10.00		73	70	71	90	5	20	28.97	29.98				
SUNRISE: 0531					JUL 14				SUNSET: 1953				SUNRISE: 0535					JUL 20				SUNSET: 1950							
01	OVC	055	4.00	BR	70	69	69	97	5	06	28.87	29.89	01	OVC	100	10.00		73	69	70	87	0	00	28.96	29.98				
04	OVC	025	4.00	BR	69	69	69	100	3	06	28.87	29.90	04	SCT	NC	10.00		70	68	69	93	0	00	28.95	29.97				
07	OVC	024	2.00	-RA BR	70	69	69	97	5	15	28.91	29.93	07	OVC	055	10.00		71	69	70	94	3	23	29.01	30.03				
10	OVC	007	10.00		73	70	71	90	3	VR	28.93	29.96	10	SCT	NC	10.00		78	71	73	79	5	25	29.04	30.06				
13	BKN	080	9.00		80	70	73	71	0	00	28.92	29.94	13	BKN	070	9.00	TS	83	70	74	65	0	00	29.02	30.04				
16	BKN	080	8.00		79	71	74	77	5	33	28.90	29.92	16	SCT	NC	8.00		81	73	75	77	3	VR	29.00	30.02				
19	BKN	200	10.00		79	71	74	77	5	23	28.93	29.95	19	BKN	250	7.00		80	72	74	76	3	06	29.00	30.01				
22	BKN	040	7.00		76	72	73	88	0	00	28.96	29.97	22	SCT	NC	4.00	BR	74	73	73	97	5	06	29.02	30.03				
SUNRISE: 0531					JUL 15				SUNSET: 1953				SUNRISE: 0535					JUL 21				SUNSET: 1949							
01	SCT	NC	5.00	BR	73	72	72	96	0	00	28.95	29.97	01	SCT	NC	5.00	BR	73	70	71	90	3	04	29.03	30.05				
04	OVC	001	0.25	FG	72	71	71	97	3	23	28.98	29.99	04	SCT	NC	4.00	BR	70	69	69	97	0	00	29.02	30.04				
07	OVC	010	3.00	BR	73	70	71	90	6	25	29.03	30.04	07	CLR	NC	3.00	BR	71	69	70	94	3	36	29.05	30.07				
10	OVC	014	5.00	BR	75	72	73	90	7	22	29.05	30.06	10	CLR	NC	4.00	HZ	80	72	74	76	0	00	29.10	30.11				
13	SCT	NC	6.00	HZ	83	72	75	70	7	23	29.04	30.05	13	SCT	NC	9.00		86	72	76	63	5	03	29.06	30.07				
16	SCT	NC	6.00	HZ	86	71	76	61	6	33	29.01	30.02	16	SCT	NC	10.00		90	72	77	56	6	02	28.99	30.00				
19	SCT	NC	8.00		79	72	74	79	0	00	29.01	30.02	19	SCT	NC	10.00		86	70	75	59	5	05	28.97	29.98				
22	CLR	NC	7.00		75	73	74	94	0	00	29.03	30.05	22	SCT	NC	9.00		82	73	76	74	0	00	29.01	30.02				
SUNRISE: 0532					JUL 16				SUNSET: 1952				SUNRISE: 0536					JUL 22				SUNSET: 1949							
01	SCT	NC	6.00	BR	72	70	71	94	0	00	29.04	30.06	01	CLR	NC	9.00		76	70	72	82	8	28	29.01	30.02				
04	FEW	NC	5.00	BR	70	69	69	97	0	00	29.04	30.05	04	SCT	NC	7.00		73	70	71	90	0	00	29.02	30.03				
07	SCT	NC	1.50	BR	72	69	70	91	0	00	29.08	30.10	07	CLR	NC	4.00	BR	74	71	72	91	0	00	29.06	30.07				
10	SCT	NC	5.00	HZ	80	71	74	74	6	VR	29.11	30.12	10	CLR	NC	7.00		82	72	75	72	3	VR	29.07	30.08				
13	SCT	NC	6.00	HZ	85	70	75	61	5	01	29.09	30.10	13	SCT	NC	8.00		88	73	77	61	8	30	29.04	30.05				
16	SCT	NC	6.00	HZ	87	68	74	53	3	16	29.04	30.06	16	BKN	250	7.00		81	71	74	72	5	09	28.99	30.01				
19	SCT	NC	6.00	HZ	85	71	75	63	3	08	29.04	30.06	19	OVC	250	10.00		80	67	71	64	8	23	29.00	30.02				
22	CLR	NC	5.00	HZ	79	73	75	82	0	00	29.08	30.09	22	SCT	NC	10.00		77	68	71	74	7	28	29.06	30.07				
SUNRISE: 0533					JUL 17				SUNSET: 1952				SUNRISE: 0537					JUL 23				SUNSET: 1948							
01	FEW	NC	4.00	BR	74	72	73	94	0	00	29.08	30.09	01	CLR	NC	9.00		71	67	68	87	6	22	29.06	30.07				
04	CLR	NC	4.00	BR	72	69	70	91	0	00	29.07	30.08	04	CLR	NC	8.00		71	67	68	87	0	00	29.03	30.04				
07	CLR	NC	2.50	BR	72	70	71	94	0	00	29.11	30.12	07	CLR	NC	5.00	BR	70	68	69	93	5	14	29.07	30.09				
10	SCT	NC	3.00	HZ	82	73	76	74	0	00	29.11	30.12	10	SCT	NC	8.00		79	70	73	74	5	VR	29.08	30.10				
13	BKN	250	4.00	HZ	88	71	76	57	0	00	29.10	30.11	13	SCT	NC	7.00		85	73	77	68	6	VR	29.06	30.08				
16	SCT	NC	4.00	HZ	86	72	76	63	7	32	29.06	30.07	16	SCT	NC	8.00		89	73	78	59	5	29	28.98	30.00				
19	FEW	NC	5.00	HZ	86	71	76	61	5	29	29.03	30.04	19	BKN	250	8.00		82	69	73	65	6	18	29.00	30.02				
22	CLR	NC	5.00	HZ	78	73	75	85	5	23	29.05	30.06	22	OVC	150	6.00	BR	71	71	71	100	8	06	29.08	30.10				
SUNRISE: 0533					JUL 18				SUNSET: 1951				SUNRISE: 0538					JUL 24				SUNSET: 1948							
01	FEW	NC	5.00	BR	75	73	74	94	7	22	29.02	30.03	01	BKN	250	7.00		71	70	70	96	6	07	29.05	30.07				
04	SCT	NC	9.00		75	70	72	84	8	26	29.04	30.05	04	BKN	250	3.00	BR	71	69	70	94	3	32	29.05	30.06				
07	SCT	NC	8.00		75	71	72	88	8	23	29.06	30.07	07	BKN	150	2.50	BR	71	69	70	94	5	08	29.07	30.09				
10	SCT	NC	10.00		81	72	75	74	12	27	29.06	30.07	10	SCT	NC	8.00		77	70	72	79	0	00	29.09	30.11				
13	SCT	NC	10.00		85	71	75	63	10	26	29.02	30.03	13	SCT	NC	10.00		84	71	75	65	6	VR	29.07	30.08				
16	BKN	080	10.00		85	71	75	63	10	28	28.98	29.99	16	SCT	NC	10.00		87	68	74	53	0	00	29.00	30.01				
19	BKN	200	10.00		82	73	76	74	6	29	28.95	29.96	19	SCT	NC	10.00		83	72	75	70	5	13	28.98	29.99				
22	SCT	NC	10.00		76	72	73	88	8	23	28.97	29.98	22	SCT	NC	10.00		81	71	74	72	3	VR	29.02	30.03				

OBSERVATIONS AT 3-HOURLY INTERVALS

KNOXVILLE, TN

JULY 2002

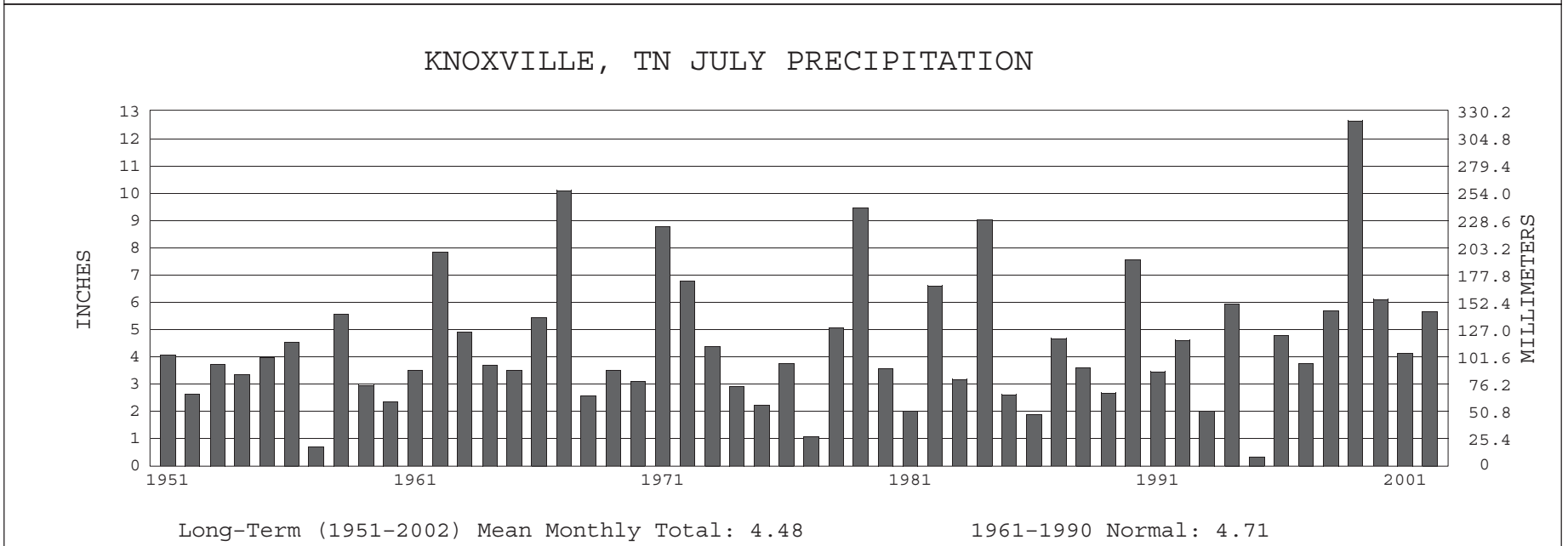
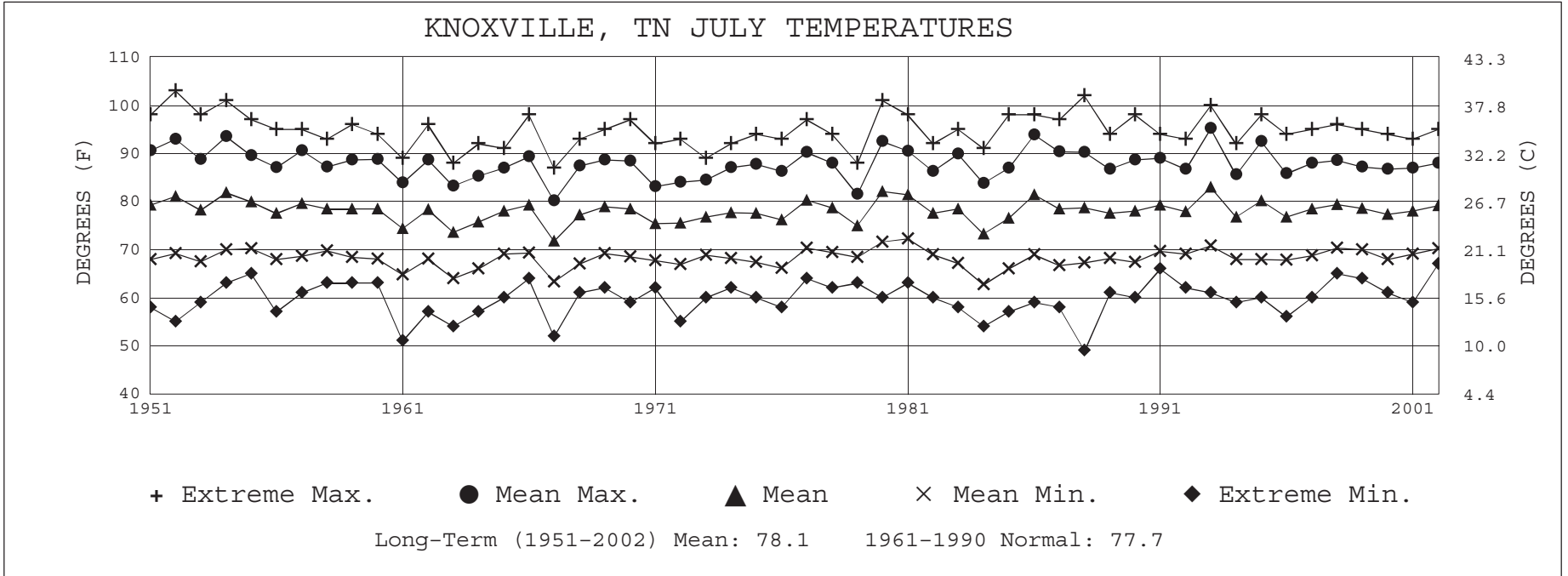
TYS

WBAN # 13891

HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		OBSERVATION TIME (LST)	EFF CLD AMT Okta	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		OBSERVATION TIME (LST)	EFF CLD AMT Okta	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)	
	DRY BULB	DEW POINT		WET BULB	RELATIVE HUMIDITY (PCT)					SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL	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	OVC	060						9.00		76	73	74	91	0	00	29.01	30.03	01	SCT	NC						10.00		71	68	69	90	0	00	29.04	30.06
04	CLR	NC						6.00	BR	73	72	72	96	5	16	29.00	30.01	04	OVC	038					10.00		71	69	70	94	3	19	29.04	30.05	
07	BKN	250						8.00		75	71	72	88	0	00	29.03	30.04	07	BKN	250					7.00		70	69	69	97	0	00	29.04	30.06	
10	BKN	250						9.00		80	73	75	79	0	00	29.05	30.06	10	SCT	NC					10.00		79	71	74	77	7	05	29.05	30.06	
13	BKN	033						3.00	-TSRA	75	70	72	84	6	20	29.04	30.06	13	SCT	NC					9.00		83	72	75	70	6	VR	29.01	30.03	
16	BKN	250						7.00		83	74	77	74	7	28	28.98	29.99	16	SCT	NC					10.00		86	70	75	59	5	02	28.96	29.97	
19	BKN	250						6.00	HZ	81	73	75	77	8	24	28.99	30.00	19	BKN	250					7.00		83	73	76	72	7	32	28.93	29.95	
22	SCT	NC						6.00	BR	75	71	72	88	6	23	29.03	30.04	22	BKN	250					6.00	HZ	78	73	75	85	0	00	28.97	29.98	
SUNRISE: 0539										JUL 26				SUNSET: 1946				3-HOURLY OBSERVATION NOTES																	
01	FEW	NC						7.00		74	70	71	88	6	20	29.02	30.04	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	BKN	100						5.00	BR	73	70	71	90	6	22	29.02	30.04	Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.																	
07	OVC	100						4.00	BR	73	71	72	94	5	23	29.04	30.06	NC= No ceiling detected.																	
10	OVC	018						5.00	HZ	79	73	75	82	12	24	29.07	30.09	& = Original observation contained additional weather elements.																	
13	CLR	NC						4.00	HZ	83	73	76	72	12	26	29.07	30.08	See page 3 for additional notes.																	
16	SCT	NC						8.00		87	72	76	61	9	28	29.01	30.02																		
19	SCT	NC						7.00		83	72	75	70	8	21	28.98	29.99																		
22	SCT	NC						7.00		78	73	75	85	5	21	29.02	30.03																		
SUNRISE: 0540										JUL 27				SUNSET: 1945																					
01	BKN	041						6.00	BR	76	72	73	88	8	23	29.02	30.03																		
04	SCT	NC						6.00	BR	75	72	73	90	7	25	29.03	30.04																		
07	SCT	NC						5.00	BR	75	72	73	90	5	27	29.06	30.07																		
10	BKN	020						6.00	HZ	81	75	77	82	10	25	29.09	30.10																		
13	FEW	NC						7.00		86	74	77	67	7	24	29.06	30.07																		
16	SCT	NC						10.00		89	73	78	59	6	VR	28.99	30.00																		
19	SCT	NC						10.00		86	74	77	67	8	24	28.97	29.98																		
22	SCT	NC						10.00		82	72	75	72	10	22	29.01	30.02																		
SUNRISE: 0541										JUL 28				SUNSET: 1945																					
01	CLR	NC						10.00		77	72	74	85	9	23	29.02	30.03																		
04	CLR	NC						9.00		76	71	73	85	6	27	29.03	30.04																		
07	FEW	NC						8.00		77	72	74	85	9	24	29.07	30.08																		
10	SCT	NC						10.00		83	74	77	74	12	25	29.10	30.10																		
13	BKN	080						10.00		84	72	76	67	10	34	29.05	30.07																		
16	SCT	NC						10.00		84	74	77	72	7	01	29.03	30.04																		
19	BKN	250						10.00		84	73	76	70	0	00	29.01	30.02																		
22	FEW	NC						10.00		77	74	75	90	0	00	29.03	30.04																		
SUNRISE: 0541										JUL 29				SUNSET: 1944																					
01	BKN	060						10.00		75	72	73	90	7	23	29.02	30.03																		
04	SCT	NC						10.00		74	72	73	94	0	00	29.01	30.02																		
07	FEW	NC						10.00		75	71	72	88	8	24	29.07	30.08																		
10	SCT	NC						10.00		82	75	77	79	9	22	29.08	30.10																		
13	SCT	NC						10.00		87	74	78	65	9	24	29.03	30.04																		
16	SCT	NC						10.00		90	71	77	54	9	21	28.97	29.98																		
19	SCT	NC						10.00		87	70	75	57	8	23	28.97	29.98																		
22	SCT	NC						10.00		81	71	74	72	12	19	29.03	30.04																		
SUNRISE: 0542										JUL 30				SUNSET: 1943																					
01	SCT	NC						10.00		77	70	72	79	8	25	29.02	30.03																		
04	SCT	NC						10.00		75	70	72	84	7	25	29.02	30.03																		
07	SCT	NC						8.00		74	71	72	91	6	23	29.07	30.08																		
10	SCT	NC						10.00		83	74	77	74	7	24	29.08	30.09																		
13	SCT	NC						10.00		89	72	77	57	12	25	29.03	30.04																		
16	SCT	NC						10.00		91	72	77	54	9	25	28.98	29.99																		
19	OVC	250						6.00	BR	71	69	70	94	8	17	29.04	30.06																		
22	SCT	NC						9.00		71	70	70	96	5	07	29.02	30.03																		

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			74	69	71	87	29.02	30.03	7.42	5	2	27
02			73	69	70	88	29.01	30.02	7.10	4	1	25
03			72	69	70	89	29.01	30.02	6.68	4	2	26
04			72	69	70	90	29.02	30.03	6.43	3	1	28
05			71	69	70	91	29.03	30.04	6.14	3	1	24
06			71	69	69	91	29.04	30.05	4.96	4	1	27
07			72	69	70	90	29.05	30.07	5.13	4	1	25
08			74	70	71	86	29.06	30.08	5.92	6	2	26
09			77	70	72	81	29.07	30.08	6.77	5	2	25
10			79	71	74	76	29.07	30.08	7.32	5	2	27
11			82	71	75	72	29.06	30.08	7.58	6	3	28
12			83	71	75	68	29.05	30.07	7.90	5	2	28
13			84	71	75	65	29.04	30.05	7.58	5	2	28
14			86	71	75	62	29.02	30.03	7.53	6	3	28
15			86	71	75	62	29.00	30.01	7.77	7	3	26
16			86	70	75	60	28.99	30.00	8.32	6	3	31
17			86	70	75	60	28.98	29.99	8.65	5	2	28
18			84	70	74	64	28.98	29.99	8.23	7	1	27
19			82	70	74	69	28.99	30.00	8.02	7	1	22
20			79	70	73	75	28.99	30.01	7.95	5	2	26
21			78	71	73	80	29.01	30.02	7.90	5	1	27
22			77	71	73	83	29.02	30.03	7.77	5	0	0
23			75	70	72	85	29.02	30.04	7.52	5	1	24
24			74	70	71	86	29.02	30.03	7.42	4	2	25





JULY 2002

KNOXVILLE, TN

LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

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DIRECTOR

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