



MARCH 2003

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

MARCH 2003
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	61	37	49	3	46	48	16	0	FG+ BCFG BR				0.00	28.94	29.98	0.9	28	2.9	13	25	10	25	01													
02	54	37	46	0	42	45	19	0	RA BR				0.01	28.84	29.88	10.0	27	10.9	25	26	21	27	02													
03	50	29	40	-6	26	34	25	0	BR HZ				0.00	28.99	30.04	1.7	02	3.1	13	21	10	22	03													
04	63	28	46	0	34	41	19	0	RA				0.01	28.91	29.96	1.0	32	3.6	13	27	12	25	04													
05	64	50	57	11	52	54	8	0	RA DZ BR				0.15	28.77	29.80	6.9	24	7.9	25	24	22	23	05													
06	59	40	50	3	46	49	15	0	TSRA RA BR				0.49	28.80	29.84	6.7	30	10.4	23	34	17	28	06													
07	62	34	48	1	35	42	17	0	BR				0.00	29.00	30.05	1.3	27	5.2	17	23	15	23	07													
08	70	35	53	6	38	45	12	0					0.00	29.00	30.04	5.2	24	6.2	24	24	21	24	08													
09	65	41	53	5	42	49	12	0					0.00	28.96	30.00	4.5	34	8.2	23	01	20	01	09													
10	51	32	42	-6	19	34	23	0					0.00	29.09	30.15	6.1	01	7.2	18	01	14	01	10													
11	60	33	47	-1	27	39	18	0					0.00	29.04	30.09	2.6	22	4.3	20	29	15	29	11													
12	74	36	55	6	41	48	10	0					0.00	29.01	30.05	5.2	23	5.6	24	23	21	24	12													
13	74	46	60	11	52	55	5	0	TSRA RA BR HZ				0.19	28.94	29.97	2.4	25	6.5	33	34	26	34	13													
14	63	49	56	7	50	53	9	0	RA DZ BR				0.09	29.03	30.06	5.5	03	7.3	24	01	20	02	14													
15	66	52	59	10	51	54	6	0	RA BR				T	28.98	30.01	0.9	02	4.3	13	05	12	05	15													
16	66	52	59	9	54	56	6	0	RA BR HZ				T	28.85	29.88	0.7	07	4.2	13	11	10	11	16													
17	69	50	60	10	55	56	5	0	RA BR				0.08	28.67	29.69	3.3	04	4.2	13	02	10	03	17													
18	67	55	61	11	57	59	4	0	RA BR				0.01	28.62	29.64	2.8	03	4.1	12	05	9	04	18													
19	72	54	63	12	56	58	2	0	TS TSRA RA BR				0.28	28.70	29.72	4.1	14	9.2	38*	16	28	16	19													
20	67	52	60	9	54	56	5	0	RA BR				0.01	28.70	29.72	2.7	35	6.6	18	25	13	24	20													
21	63	49	56	5	49	53	9	0	FG BR				0.00	28.76	29.78	9.4	24	10.2	29	23	24	24	21													
22	64	49	57	6	45	50	8	0					0.00	28.93	29.96	4.2	25	5.9	21	25	15	25	22													
23	67	42	55	3	40	48	10	0	BR				0.00	28.94	29.97	1.0	34	2.8	13	33	10	33	23													
24	71	41	56	4	40	49	9	0					0.00	28.99	30.02	0.6	20	2.1	12	26	10	27	24													
25	76	44	60	8	45	52	5	0					0.00	28.94	29.97	6.3	24	7.2	30	24	22	25	25													
26	61	48	55	3	48	52	10	0	RA				0.01	28.90	29.93	2.7	32	7.4	17	28	15	30	26													
27	75	42	59	6	47	52	6	0					0.00	28.88	29.92	3.1	08	7.6	25	15	20	16	27													
28	77*	51	64*	10	51	57	1	0					0.00	28.88	29.90	5.5	17	9.0	25	15	20	22	28													
29	66	38	52	-2	46	48	13	0	RA BR				0.47	28.98	30.01	4.6	29	8.1	33	29	29*	29	29													
30	45	33	39*	-15	30	35	26	0	RA SN PL BR				0.27	29.05	30.11	6.2	34	8.6	28	32	21	31	30													
31	53	27*	40	-14	24	34	25	0					0.00	29.21	30.27	8.2	24	9.0	24	25	20	25	31													
64.4											42.1	53.3	■ ■	43.3	48.6	11.5	0.0	< MONTHLY AVERAGES		TOTALS->				2.07	28.91	29.95	1.8	28	6.5	<- MONTHLY AVERAGES						
4.1											3.0	3.6	■ ■	<-----DEPARTURE FROM NORMAL----->											-3.10	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3										
DEGREE DAYS										GREATEST 24-HR PRECIPITATION: 0.70				DATE: 29-30		SEA LEVEL PRESSURE				DATE		TIME														
MONTHLY TOTAL DEPARTURE					SEASON TO DATE TOTAL DEPARTURE					GREATEST 24-HR SNOWFALL:				DATE:		MAXIMUM		DATE		MINIMUM																
HEATING: 358					3416					GREATEST SNOW DEPTH:				DATE:		: 30.34		DATE:		: 18 0253																
COOLING: 0					-5					NUMBER OF DAYS WITH				MAXIMUM TEMP ≥ 90: 0		MINIMUM TEMP ≤ 32: 4		PRECIPITATION ≥ 0.01 INCH: 13																		
														MAXIMUM TEMP ≤ 32: 0		MINIMUM TEMP ≤ 0: 0		PRECIPITATION ≥ 0.10 INCH: 6																		
														THUNDERSTORMS: 3		HEAVY FOG: 1		SNOWFALL ≥ 1.0 INCH: :																		

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

KNOXVILLE, TN

MARCH 2003

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					T	T	T						02	T	T										02			0.01	
03													03												03			0.00	
04													04												04			0.01	
05	0.01	T		T	T	T	T						05					T	T	T	0.01	0.09	.01	0.04	05			0.15	
06	T	0.02	0.15	0.10	0.20	0.02							06												06			0.49	
07													07												07			0.00	
08													08												08			0.00	
09													09												09			0.00	
10													10												10			0.00	
11													11												11			0.00	
12													12												12			0.00	
13													13			0.01		0.18	T						13			0.19	
14													14						T						14			0.09	
15													15						T	T	T	T	0.09	T	15			T	
16	T												16												16			T	
17													17			T	0.01	0.01	T		0.03	0.01	0.01	T	17			0.08	
18													18							0.01	T			0.01	18			0.01	
19						0.05	0.01	0.14	T				19						0.01	0.01	0.01				19			0.28	
20						T	T	T	0.01				20			T				0.04					20			0.01	
21													21												21			0.00	
22													22												22			0.00	
23													23												23			0.00	
24													24												24			0.00	
25													25												25			0.00	
26													26			T	T	T							26			0.01	
27													27												27			0.00	
28													28												28			0.00	
29													29			T	0.07	0.13	0.08	0.02					29			0.47	
30	0.03	0.03	.02	0.04	0.07	0.01	0.03	0.01					30			T									30			0.27	
31													31			T									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)	.09	.09	.09	.11	.14	.19	.23	.27	.30	.34	.43	.46
Ending Date	13	13	13	19	19	06	06	06	06	06	06	06
Ending Time (Hour/Min)	1635	1635	1635	0726	0735	0441	0446	0441	0454	0430	0454	0454

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 MARCH 2003

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							.13	10.00	
02							2.00	10.00	
03							5.00	10.00	
04							7.00	10.00	
05							3.00	10.00	
06							1.75	10.00	
07							6.00	10.00	
08							10.00	10.00	
09							8.00	10.00	
10							10.00	10.00	
11							10.00	10.00	
12							7.00	10.00	
13							2.00	10.00	
14							2.00	10.00	
15							1.00	10.00	
16							2.00	10.00	
17							3.00	10.00	
18							3.00	10.00	
19							2.00	10.00	
20							.75	10.00	
21							.50	10.00	
22							7.00	10.00	
23							5.00	10.00	
24							10.00	10.00	
25							9.00	10.00	
26							9.00	10.00	
27							7.00	10.00	
28							9.00	10.00	
29							1.50	10.00	
30							1.00	10.00	
31							10.00	10.00	
MONTHLY AVGS							5.26	10.00	
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 13									

OBSERVATIONS AT 3-HOURLY INTERVALS

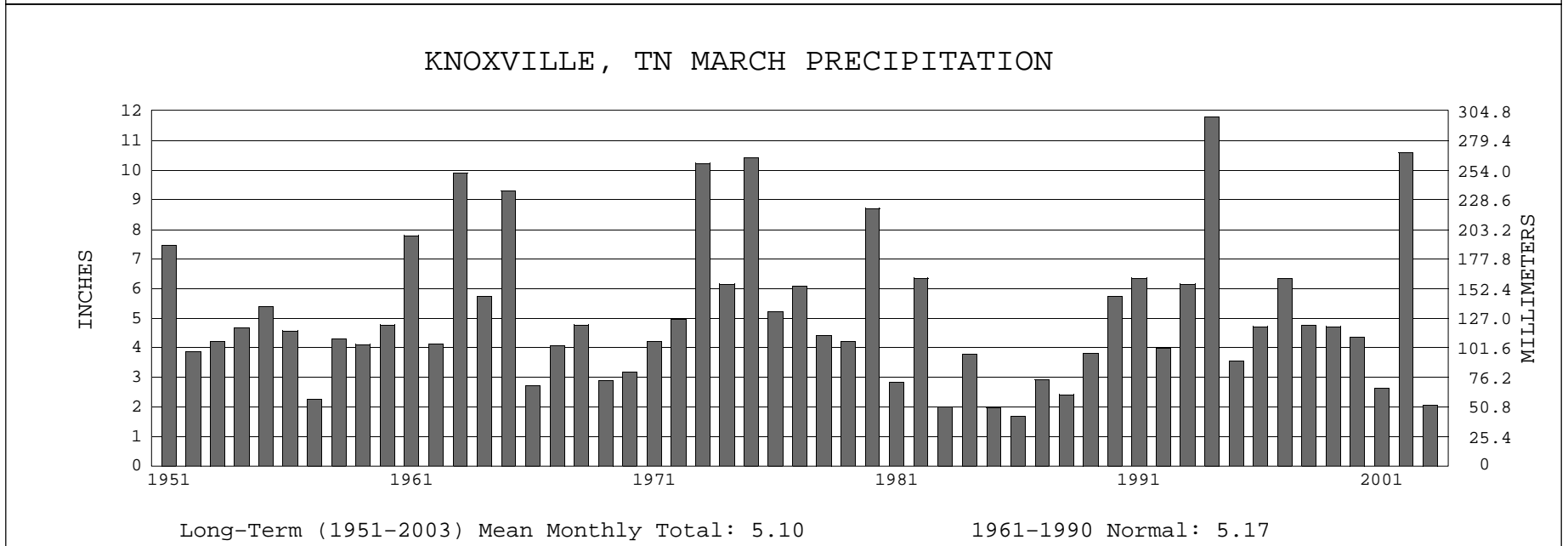
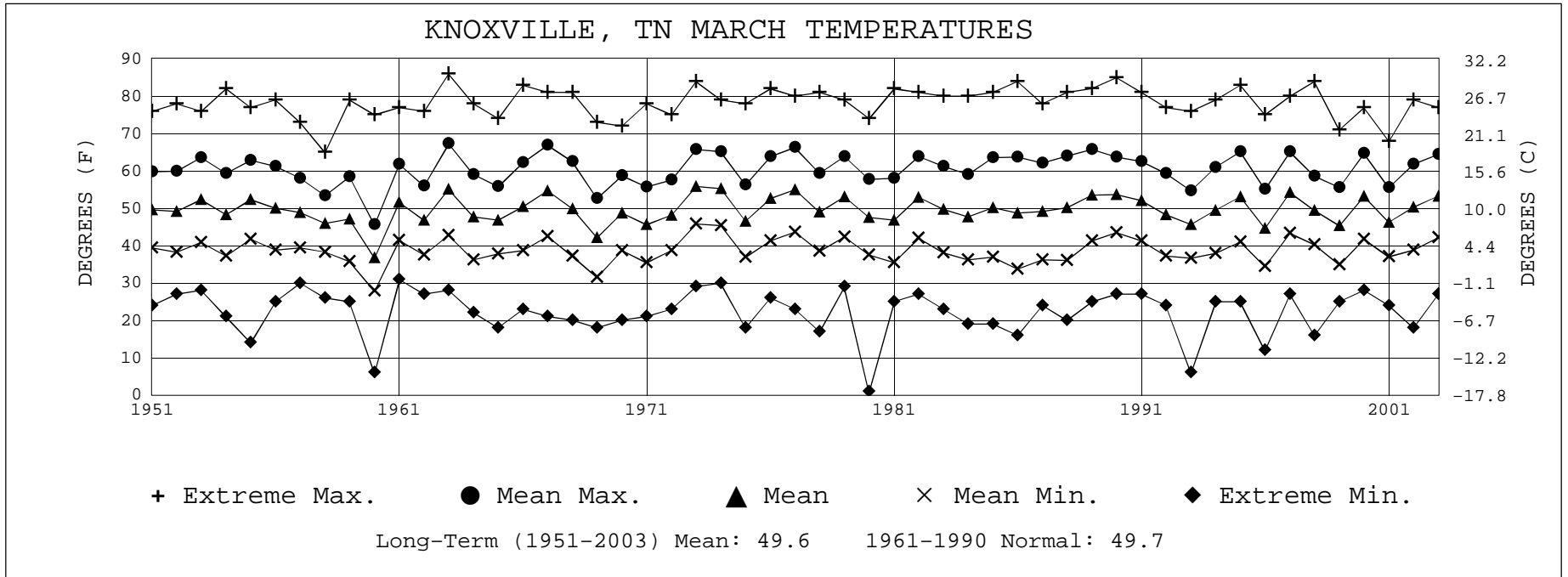
KNOXVILLE, TN

MARCH 2003

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: 0633 MAR 25								SUNSET: 1852								SUNRISE: 0624 MAR 31								SUNSET: 1857							
01	CLR	NC				10.00		53	41	47	64	3	19	28.96	29.99	01	SCT	NC				10.00		35	20	30	54	6	31	29.18	30.24
04	CLR	NC				10.00		48	41	45	77	3	01	28.97	30.00	04	SCT	NC				10.00		29	24	27	82	5	23	29.17	30.24
07	CLR	NC				10.00		46	40	43	79	0	00	29.00	30.04	07	SCT	NC				10.00		29	24	27	82	5	18	29.22	30.29
10	FEW	NC				10.00		61	45	53	56	0	00	29.00	30.04	10	FEW	NC				10.00		41	28	36	60	8	24	29.27	30.34
13	SCT	NC				10.00		74	47	59	38	15	23	28.94	29.96	13	SCT	NC				10.00		47	25	38	42	13	24	29.25	30.32
16	BKN	250				10.00		75	47	59	37	18	25	28.86	29.88	16	SCT	NC				10.00		52	23	40	32	17	26	29.20	30.26
19	BKN	250				10.00		68	48	57	49	9	23	28.87	29.91	19	FEW	NC				10.00		48	23	38	37	10	24	29.17	30.23
22	SCT	NC				10.00		61	47	53	60	7	22	28.88	29.91	22	CLR	NC				10.00		42	25	35	51	9	22	29.20	30.25
SUNRISE: 0631 MAR 26								SUNSET: 1852								3-HOURLY OBSERVATION NOTES															
01	SCT	NC				10.00		59	47	53	64	7	21	28.87	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	070				10.00		61	47	53	60	12	25	28.86	29.88	Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.															
07	BKN	070				10.00		59	48	53	67	0	00	28.87	29.90	NC = No ceiling detected.															
10	OVC	048				10.00		58	52	55	81	6	24	28.91	29.94	& = Original observation contained additional weather elements.															
13	OVC	028				10.00		59	54	56	83	8	28	28.91	29.95	See page 3 for additional notes.															
16	OVC	023				10.00		55	49	52	80	9	01	28.89	29.93																
19	BKN	045				10.00		53	47	50	80	9	03	28.90	29.94																
22	FEW	NC				10.00		50	43	47	77	9	03	28.94	29.98																
SUNRISE: 0630 MAR 27								SUNSET: 1853																							
01	OVC	019				10.00		50	43	47	77	9	03	28.92	29.96																
04	CLR	NC				10.00		46	42	44	86	9	04	28.91	29.96																
07	SCT	NC				7.00		43	40	42	89	9	04	28.92	29.96																
10	CLR	NC				9.00		54	47	50	77	5	VR	28.92	29.96																
13	SCT	NC				10.00		67	51	58	57	3	36	28.89	29.92																
16	FEW	NC				10.00		73	53	61	50	5	VR	28.81	29.83																
19	SCT	NC				10.00		70	49	58	47	9	18	28.83	29.86																
22	CLR	NC				10.00		65	47	55	52	13	17	28.87	29.91																
SUNRISE: 0629 MAR 28								SUNSET: 1854																							
01	CLR	NC				10.00		64	48	55	56	12	16	28.87	29.88																
04	CLR	NC				10.00		55	47	51	74	0	00	28.87	29.90																
07	SCT	NC				10.00		51	46	49	83	6	02	28.90	29.93																
10	SCT	NC				10.00		67	52	58	59	3	VR	28.91	29.94																
13	SCT	NC				10.00		74	52	61	46	15	14	28.88	29.90																
16	BKN	065				10.00		75	54	62	48	9	23	28.85	29.87																
19	BKN	075				10.00		72	51	60	48	16	19	28.87	29.89																
22	FEW	NC				10.00		65	52	58	63	6	18	28.87	29.89																
SUNRISE: 0627 MAR 29								SUNSET: 1855																							
01	CLR	NC				10.00		65	54	59	68	8	15	28.84	29.85																
04	CLR	NC				10.00		59	53	56	81	5	28	28.80	29.82																
07	OVC	043				10.00	-RA	55	50	52	83	18	29	28.88	29.91																
10	OVC	013				3.00	RA BR	51	50	51	96	12	23	28.98	30.02																
13	OVC	010				10.00		47	45	46	93	9	26	29.01	30.05																
16	OVC	010				9.00		47	44	46	90	6	30	29.01	30.06																
19	OVC	024				10.00		47	40	44	77	9	01	29.07	30.12																
22	OVC	045				6.00	-RA BR	41	39	40	93	9	34	29.13	30.18																
SUNRISE: 0626 MAR 30								SUNSET: 1856																							
01	OVC	020				8.00	-RA	38	37	38	97	8	07	29.09	30.14																
04	OVC	006				6.00	-RA BR	36	35	36	97	9	06	29.03	30.08																
07	OVC	008				1.00	-SN BR	33	33	33	100	5	03	29.01	30.07																
10	OVC	004				10.00		38	36	37	93	0	00	29.04	30.09																
13	OVC	050				10.00		44	30	38	58	10	32	28.99	30.05																
16	BKN	055				10.00		42	27	36	55	16	34	28.99	30.05																
19	BKN	080				10.00		39	23	33	53	16	32	29.07	30.13																
22	SCT	NC				10.00		36	23	31	59	5	35	29.15	30.22																





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KNOXVILLE, TN

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NOAA, National Climatic Data Center

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POSTAGE AND FEES PAID
NOAA
PERMIT G-19