JANUARY 1999
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

DATE	TEMPERATURE °F MAXIMUM	MINIMUM	AVERAGE	DEP FROM NORMAL	AVERAGE DEW PT	AVERAGE WET BULB	DEG DAYS BASE 65° HEATING	COOLING	WEATHER	SNOW/ICE ON GND(IN) 0700 LST DEPTH	1300 LST WATER EQUIV	PRECIPITATION (INCHES) 2400 LST SNOW−FALL	2400 LST WATER EQUIV	PRESSURE (INCHES OF HG) AVERAGE STATION	AVERAGE SEA LEVEL	WIND SPEED = MPH DIR = TENS OF DEGREES RESULTANT SPEED	RES DIR	AVERAGE SPEED	MAXIMUM 5−SEC SPEED	5−SEC DIR	MAXIMUM 2−MIN SPEED	2−MIN DIR	DATE
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	39	21	30	−7	22	28	35	0		0		0.0	0.00	29.18	30.25	8.0	04	8.2	20	05	16	06	01
02	59	33	46	10	34	39	19	0	RA BR	0		0.0	0.84	28.80	29.85	0.9	25	9.8	30	25	26	16	02
03	40	21	31	−5	20	26	34	0	RA SN BR	0		T	0.03	28.94	30.00	11.6	27	12.7	24	28	21	29	03
04	24	16	20	−16	7	17	45	0	SN	0		T	T	29.25	30.34	9.0	28	9.5	20	26	17	26	04
05	25	15*	20*	−16	8	16	45	0	SN	0		T	T	29.33	30.43	2.4	25	4.5	13	24	11	24	05
06	34	19	27	−9	23	26	38	0	DZ SN	T		T	T	29.23	30.31	8.7	25	9.4	22	23	17	23	06
07	45	34	40	4	36	38	25	0	RA DZ BR	0		0.0	0.02	29.22	30.29	2.9	28	6.1	24	23	21	24	07
08	59	39	49	13	43	46	16	0	RA BR	0		0.0	0.36	29.00	30.05	8.0	21	8.8	26	22	22	22	08
09	59	25	42	6	31	35	23	0	RA DZ SN BR	0		T	0.70	28.95	30.01	5.4	30	13.1	31	21	26	21	09
10	35	18	27	−9	16	23	38	0		0		0.0	0.00	29.19	30.26	0.6	23	8.5	18	21	15	23	10
11	46	23	35	−1	22	30	30	0		0		0.0	0.00	29.18	30.26	7.8	24	8.1	18	23	15	23	11
12	56	41	49	13	33	42	16	0		0		0.0	0.00	29.06	30.11	13.0	24	13.5	29	22	25	23	12
13	59	47	53	17	44	49	12	0	RA	0		0.0	0.01	29.05	30.09	5.9	24	8.3	23	23	20	23	13
14	55	36	46	10	49	50	19	0	RA BR SQ	0		0.0	1.32	29.01	30.05	4.0	22	6.6	34	27	28	27	14
15	45	29	37	2	28	33	28	0	RA	0		0.0	T	29.06	30.12	2.0	28	3.7	16	27	14	27	15
16	58	27	43	8	28	35	22	0		0		0.0	0.00	29.03	30.09	1.9	26	3.4	20	24	17	25	16
17	49	30	40	5	35	38	25	0	TS RA	0		0.0	T	28.98	30.03	3.4	02	4.3	16	31	15	31	17
18	56	38	47	11	37	44	18	0	TS TSRA TSRAGR RA BR	0		T	1.02	28.92	29.97	11.1	24	12.7	36	24	29	24	18
19	58	31	45	9	24	36	20	0		0		0.0	0.00	29.10	30.15	1.7	23	2.9	11	27	9	22	19
20	63	36	50	14	40	44	15	0	BR	0		0.0	0.00	28.96	30.01	1.2	23	4.1	20	24	18	23	20
21	68	46	57	21	50	54	8	0	RA BR	0		0.0	T	28.88	29.92	4.0	22	6.7	25	23	22	23	21
22	74*	52	63	27	50	57	2	0		0		0.0	0.00	28.86	29.88	12.6	19	13.6	41*	18	34*	20	22
23	72	55	64*	28	56	59	1	0	TSRA RA BR	0		0.0	1.34	28.79	29.81	5.8	21	10.4	37	19	28	19	23
24	55	35	45	9	38	42	20	0		0		0.0	0.00	29.08	30.12	4.4	30	6.9	21	29	17	28	24
25	58	30	44	8	37	41	21	0	BR	0		0.0	0.00	29.26	30.32	2.3	26	5.3	18	02	16	25	25
26	60	34	47	11	39	43	18	0	BR	0		0.0	0.00	29.31	30.37	1.9	02	2.2	9	05	8	02	26
27	69	35	52	16	42	47	13	0	BR	0		0.0	0.00	29.13	30.18	7.6	24	8.7	34	23	26	25	27
28	68	50	59	23	51	54	6	0	BR	0		0.0	0.00	29.09	30.13	5.6	24	5.3	16	23	15	24	28
29	56	50	53	17	52	52	12	0	RA BR	0		0.0	0.22	29.18	30.23	6.6	03	6.9	16	02	14	01	29
30	54	49	52	15	49	50	13	0	RA BR	0		0.0	0.14	29.23	30.28	5.3	03	5.8	14	04	13	05	30
31	52	39	46	9	43	44	19	0	RA BR	0		0.0	0.62	29.24	30.29	3.6	01	6.1	14	28	11	02	31
	53.2	34.0	43.6		35.1	39.9	21.2	0.0	< MONTHLY AVERAGES	TOTALS−>		T	6.62	29.08	30.14	3.3	25	7.6					<− MONTHLY AVERAGES
	7.3	8.0	7.6		<−−−−−−−−−−−−− DEPARTURE FROM NORMAL −−−−−−−−−−−−−>								2.45	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3									

JANUARY 1999
KNOXVILLE, TN

DEGREE DAYS

	MONTHLY TOTAL	MONTHLY DEPARTURE	SEASON TO DATE TOTAL	SEASON TO DATE DEPARTURE
HEATING:	656	−243	1860	−556
COOLING:	0	0	0	0

GREATEST 24−HR PRECIPITATION: 1.34 DATE :23
GREATEST 24−HR SNOWFALL: T DATE :18+
GREATEST SNOW DEPTH: T DATE : 06

	SEA LEVEL PRESSURE	DATE	TIME
MAXIMUM	30.50	05	1143
MINIMUM	29.59	02	1728

NUMBER OF DAYS WITH →

MAXIMUM TEMP ≥ 90:	0	MINIMUM TEMP ≤ 32 :	13
MAXIMUM TEMP ≤ 32 :	2	MINIMUM TEMP ≤ 0 :	0
THUNDERSTORMS :	3	HEAVY FOG :	0
		PRECIPITATION ≥ 0.01 INCH :	12
		PRECIPITATION ≥ 0.10 INCH :	9
		SNOWFALL ≥ 1.0 INCH :	0

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

KNOXVILLE, TN

JANUARY 1999 TYS WBAN # 13891

DATE	FOR HOUR (LST) ENDING AT												DATE	FOR HOUR (LST) ENDING AT												DATE	Sum if Different (See Note 2)	2400 LST Water Equiv.
	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													01													01		0.00
02													02					T	0.12	0.30	0.17	0.08	0.10	0.05	0.02	02		0.84
03	0.02		0.01	T		T	T				T	T	03	T	T	T		T				T	T	T	T	03		0.03
04				T	T								04													04		T
05		T	T			T				T	T	T	05													05		T
06								T	T	T	T	T	06	T	T	T	T	T						T	T	06		T
07				T	T	T	T		T				07										0.01	0.01		07		0.02
08		0.01	0.01	0.04	0.01	T							08	T	0.01	0.01	T	0.03	0.10	0.07	T	0.02	0.03	0.02	T	08		0.36
09	T	0.03		0.01	0.43	0.14	0.07	0.01	0.01	T			09												T	09		0.70
10													10													10		0.00
11													11													11		0.00
12													12													12		0.00
13													13	T	T	T			T	T					T	13	T	0.01
14	0.02	0.12	0.05	0.01	0.05	0.11	0.03			0.01	0.03	0.06	14	0.06	0.10	0.09	0.02	0.02	0.06	0.06	0.08	0.15	0.13	0.03	0.04	14	1.33	1.32
15	T												15													15		T
16													16													16		0.00
17													17			T	T				T					17		T
18	0.40	0.13	0.19	0.11	0.05	0.08	0.06						18													18		1.02
19													19													19		0.00
20													20													20		0.00
21										T			21													21		T
22													22													22		0.00
23						T	0.07	0.71	0.21	0.11		T	23			T						0.01	0.10	0.10	0.03	23		1.34
24													24													24		0.00
25													25													25		0.00
26													26													26		0.00
27													27													27		0.00
28													28													28		0.00
29										T	T	0.01	29	0.04	T	0.01	0.02	0.04	0.02	0.03	0.02	0.01	0.01	T	0.01	29		0.22
30	T	0.01	0.01	0.01	T		T	T		0.01	0.01		30		T	0.02	0.01		T	0.01	0.02	T	0.01	0.01	0.01	30		0.14
31	0.01	T	0.01	0.01	0.01	0.02	0.02	0.01	0.02	0.02	0.01	0.02	31	0.09	0.05	0.08	0.02	0.01	0.04	T	0.03	0.05	0.01	0.03	0.03	31	0.60	0.62

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 occurence 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		
DESCRIPTOR	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
JANUARY 1999

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

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
			SR−SS		MN−MN				
	TOTAL MINUTES	PERCENT POSSIBLE	CEILOMETER	SATELLITE	CEILOMETER	SATELLITE	MINIMUM	MAXIMUM	
01	371						9.00	10.00	
02	95						2.50	10.00	
03	23	1					3.00	10.00	
04	280	48					10.00	10.00	
05	365	62					5.00	10.00	
06	0	0					1.75	10.00	
07	108						1.50	10.00	
08	0						2.00	10.00	
09	6						3.00	10.00	
10	465						10.00	10.00	
11	423						10.00	10.00	
12	175	29					10.00	10.00	
13	0	0					7.00	10.00	
14	0	0					2.50	10.00	
15	396	66					10.00	10.00	
16	472						8.00	10.00	
17	16						10.00	10.00	
18	372						3.00	10.00	
19	482						10.00	10.00	
20	215	35					5.00	10.00	
21	120	20					5.00	10.00	
22	436	71					10.00	10.00	
23	0	0					2.50	10.00	
24	91						9.00	10.00	
25	503						6.00	10.00	
26	500						4.00	10.00	
27	512						4.00	10.00	
28	197	32					4.00	10.00	
29	0	0					2.50	9.00	
30	0	0					2.50	10.00	
31	0	0					1.25	10.00	
MONTHLY AVGS							5.61	9.97	

SUNSHINE (MINUTES)

Total: 6623 Possible: 18713
Percent Possible: 35

NUMBER OF DAYS WITH:

SKY CONDITION

CLR	PTLY CLDY	CLOUDY	MISSING
			31

MINIMUM VISIBILITY (MILES)

<=0.25	<=3.0	>=7.0
0	12	12

OBSERVATIONS AT 3−HOURLY INTERVALS

KNOXVILLE, TN

JANUARY 1999 TYS WBAN # 13891

HOUR (LST)	SKY COVER	CEILING 100'S OF FT	SATELLITE: OBSERVATION TIME (LST)	SATELLITE: EFF CLD AMT Oktas	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F: DRY BULB	TEMPERATURE °F: DEW POINT	TEMPERATURE °F: WET BULB	RELATIVE HUMIDITY (PCT)	WIND: SPEED (MPH)	WIND: DIRECTION TENS OF DEG	PRESSURE (INCHES,HG): STATION	PRESSURE (INCHES,HG): SEA LEVEL
					SUNRISE: 0746	**JAN 01**			**SUNSET: 1733**					
01	CLR	NC			10.00		28	25	27	88	6	36	29.15	30.22
04	CLR	NC			10.00		26	21	24	81	0	00	29.18	30.25
07	CLR	NC			9.00		21	20	21	96	5	06	29.21	30.29
10	CLR	NC			10.00		28	23	26	81	9	04	29.25	30.33
13	CLR	NC			10.00		37	24	32	60	10	04	29.21	30.27
16	SCT	NC			10.00		38	23	32	55	13	05	29.17	30.23
19	SCT	NC			10.00		37	22	32	54	10	05	29.16	30.23
22	CLR	NC			10.00		34	21	29	59	12	04	29.13	30.20
					SUNRISE: 0746	**JAN 02**			**SUNSET: 1734**					
01	SCT	NC			10.00		33	21	29	61	9	05	29.07	30.13
04	OVC	100			10.00		34	23	30	64	6	09	29.00	30.07
07	CLR	NC			10.00		35	25	31	67	6	36	28.95	30.01
10	BKN	070			10.00		40	27	35	60	8	34	28.90	29.96
13	OVC	060			10.00		57	44	50	62	12	14	28.74	29.78
16	BKN	080			10.00		56	45	50	67	20	15	28.59	29.63
19	OVC	027			4.00	RA BR	43	42	43	97	14	27	28.65	29.69
22	OVC	004			5.00	RA BR	42	41	42	96	3	35	28.63	29.68
					SUNRISE: 0746	**JAN 03**			**SUNSET: 1735**					
01	OVC	007			9.00		40	39	40	97	13	22	28.66	29.70
04	OVC	009			5.00	BR	35	32	34	89	18	28	28.75	29.78
07	OVC	014			10.00		30	25	28	82	14	27	28.83	29.88
10	BKN	018			10.00		28	21	26	75	10	27	28.92	29.98
13	BKN	029			10.00		26	18	23	71	12	30	28.96	30.02
16	OVC	035			10.00		26	14	22	60	14	29	29.00	30.07
19	OVC	039			10.00		23	12	20	63	12	26	29.07	30.14
22	OVC	035			10.00		21	10	18	62	17	26	29.12	30.20
					SUNRISE: 0746	**JAN 04**			**SUNSET: 1735**					
01	OVC	039			10.00		21	8	18	57	15	30	29.16	30.24
04	BKN	036			10.00	−SN	19	7	16	59	8	27	29.19	30.27
07	FEW	NC			10.00		17	7	15	64	9	27	29.22	30.32
10	SCT	NC			10.00		19	8	16	62	6	29	29.28	30.37
13	BKN	036			10.00		24	9	20	52	13	25	29.27	30.36
16	BKN	050			10.00		23	6	19	48	6	VR	29.23	30.32
19	BKN	047			10.00		21	6	17	52	9	31	29.26	30.36
22	OVC	047			10.00		19	8	16	62	7	30	29.30	30.40
					SUNRISE: 0746	**JAN 05**			**SUNSET: 1736**					
01	BKN	047			10.00		17	4	14	56	6	32	29.31	30.41
04	BKN	046			10.00		16	8	14	71	3	36	29.34	30.44
07	OVC	044			10.00		16	9	14	74	3	29	29.36	30.46
10	BKN	025			5.00	−SN	16	11	15	80	6	28	29.39	30.49
13	SCT	NC			10.00		21	6	17	52	7	26	29.36	30.46
16	CLR	NC			10.00		24	7	19	48	6	19	29.31	30.41
19	CLR	NC			10.00		20	9	17	62	8	23	29.32	30.42
22	FEW	NC			10.00		18	9	16	68	0	00	29.28	30.39
					SUNRISE: 0746	**JAN 06**			**SUNSET: 1737**					
01	OVC	110			10.00		21	11	18	65	7	26	29.25	30.34
04	OVC	100			10.00		21	13	19	71	0	00	29.25	30.34
07	OVC	036			10.00		24	14	21	65	0	00	29.26	30.36
10	OVC	029			1.75	−SN	26	23	25	88	14	25	29.26	30.35
13	OVC	025			3.00	−SN	29	25	28	85	15	23	29.23	30.32
16	OVC	015			7.00	−SN	30	27	29	88	12	24	29.19	30.27
19	OVC	013			10.00		32	28	31	85	10	26	29.20	30.27
22	OVC	011			8.00		33	31	32	92	8	28	29.20	30.27
					SUNRISE: 0746	**JAN 07**			**SUNSET: 1738**					
01	OVC	013			10.00		36	31	34	82	12	25	29.19	30.26
04	OVC	011			10.00	DZ	39	31	36	73	17	25	29.21	30.28
07	OVC	005			2.00	BR	35	32	34	89	0	00	29.24	30.32
10	OVC	041			2.00	BR	38	37	38	97	0	00	29.26	30.34
13	OVC	024			7.00		45	39	42	80	6	24	29.25	30.32
16	OVC	019			10.00		44	39	42	83	0	00	29.21	30.27
19	OVC	026			6.00	BR	42	39	41	89	5	02	29.20	30.26
22	OVC	024			4.00	−RA BR	40	39	40	97	7	06	29.18	30.24
					SUNRISE: 0746	**JAN 08**			**SUNSET: 1739**					
01	OVC	024			2.50	BR	39	39	39	100	5	06	29.13	30.19
04	OVC	048			2.00	−RA BR	39	39	39	100	0	00	29.10	30.16
07	OVC	043			10.00		48	41	45	77	17	21	29.09	30.14
10	OVC	046			10.00		50	37	44	61	15	21	29.12	30.17
13	OVC	070			10.00	−RA	53	40	47	61	12	19	29.01	30.06
16	OVC	070			10.00		54	45	49	72	8	21	28.90	29.95
19	OVC	060			10.00	−RA	51	48	50	89	5	19	28.89	29.94
22	OVC	085			10.00		53	48	50	83	8	18	28.84	29.87
					SUNRISE: 0746	**JAN 09**			**SUNSET: 1740**					
01	OVC	055			10.00		57	50	53	78	20	21	28.75	29.78
04	OVC	041			9.00	RA	57	51	54	81	17	22	28.70	29.73
07	OVC	018			4.00	RA BR	43	41	42	93	16	27	28.80	29.83
10	OVC	010			7.00		35	33	34	93	13	28	28.98	30.03
13	BKN	019			7.00		34	27	31	76	8	36	29.00	30.05
16	OVC	030			10.00		30	22	27	72	14	01	29.05	30.10
19	OVC	030			10.00		27	17	24	66	12	36	29.11	30.17
22	OVC	039			10.00		26	15	23	63	8	36	29.13	30.20
					SUNRISE: 0746	**JAN 10**			**SUNSET: 1741**					
01	CLR	NC			10.00		24	15	21	68	12	04	29.13	30.20
04	CLR	NC			10.00		20	14	18	78	7	06	29.15	30.23
07	CLR	NC			10.00		18	14	17	84	6	06	29.19	30.27
10	CLR	NC			10.00		22	15	20	75	7	06	29.22	30.31
13	CLR	NC			10.00		31	19	27	61	6	26	29.21	30.29
16	CLR	NC			10.00		35	17	29	48	14	22	29.15	30.23
19	CLR	NC			10.00		29	18	25	64	10	22	29.17	30.25
22	CLR	NC			10.00		28	17	25	63	9	21	29.20	30.28
					SUNRISE: 0746	**JAN 11**			**SUNSET: 1742**					
01	CLR	NC			10.00		26	18	23	71	9	23	29.21	30.30
04	CLR	NC			10.00		24	18	22	77	8	23	29.25	30.33
07	CLR	NC			10.00		25	17	23	72	3	28	29.27	30.35
10	CLR	NC			10.00		31	21	28	67	5	25	29.27	30.35
13	CLR	NC			10.00		40	23	34	51	12	23	29.21	30.27
16	FEW	NC			10.00		45	26	37	48	12	25	29.11	30.18
19	CLR	NC			10.00		40	27	35	60	8	23	29.11	30.17
22	CLR	NC			10.00		41	25	35	53	13	22	29.06	30.12
					SUNRISE: 0746	**JAN 12**			**SUNSET: 1743**					
01	CLR	NC			10.00		41	25	35	53	13	25	29.05	30.11
04	OVC	055			10.00		44	27	37	51	14	25	29.09	30.14
07	OVC	060			10.00		46	27	38	47	14	25	29.08	30.13
10	OVC	028			10.00		47	30	40	52	15	24	29.10	30.15
13	OVC	030			10.00		51	37	45	59	20	24	29.06	30.11
16	SCT	NC			10.00		55	40	48	57	20	23	29.02	30.06
19	SCT	NC			10.00		49	39	44	69	8	19	29.04	30.09
22	FEW	NC			10.00		48	37	43	66	10	25	29.04	30.09

OBSERVATIONS AT 3–HOURLY INTERVALS

KNOXVILLE, TN

JANUARY 1999 TYS WBAN # 13891

HOUR (LST)	SKY COVER	CEILING 100'S OF FT	SATELLITE: OBSERVATION TIME (LST)	SATELLITE: EFF CLD AMT Oktas	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F: DRY BULB	TEMPERATURE °F: DEW POINT	TEMPERATURE °F: WET BULB	RELATIVE HUMIDITY (PCT)	WIND: SPEED (MPH)	WIND: DIRECTION TENS OF DEG	PRESSURE (INCHES,HG): STATION	PRESSURE (INCHES,HG): SEA LEVEL
					SUNRISE: 0746 JAN 13				**SUNSET: 1743**					
01	OVC	060			10.00		49	38	44	66	10	21	29.06	30.10
04	OVC	065			10.00		52	38	45	59	10	23	29.06	30.10
07	BKN	075			10.00		53	39	46	59	7	26	29.04	30.08
10	OVC	060			10.00		55	42	49	62	7	21	29.06	30.11
13	OVC	060			10.00	-RA	57	47	52	69	17	24	29.03	30.08
16	BKN	070			10.00		58	49	53	72	5	27	29.01	30.05
19	OVC	070			10.00		54	50	52	87	0	00	29.05	30.09
22	OVC	070			10.00		51	48	50	89	5	02	29.05	30.10
					SUNRISE: 0746 JAN 14				**SUNSET: 1744**					
01	OVC	028			5.00	-RA BR	49	48	48	97	3	VR	29.06	30.10
04	OVC	070			8.00	-RA	53	52	52	96	7	23	29.04	30.08
07	OVC	065			10.00		53	51	52	93	8	16	29.03	30.07
10	BKN	075			8.00	-RA	52	52	52	100	5	33	29.05	30.09
13	OVC	034			2.50	-RA BR	54	53	53	97	5	16	29.01	30.05
16	OVC	070			10.00	-RA	54	52	53	93	0	00	28.94	29.98
19	OVC	065			8.00	-RA	53	52	52	96	6	17	28.91	29.96
22	OVC	007			6.00	-RA BR	38	37	38	97	10	25	29.00	30.06
					SUNRISE: 0745 JAN 15				**SUNSET: 1745**					
01	OVC	012			10.00		36	34	35	93	9	26	29.01	30.06
04	OVC	008			10.00		34	32	33	92	9	27	29.06	30.11
07	BKN	030			10.00		30	27	29	88	0	00	29.10	30.16
10	SCT	NC			10.00		33	28	31	82	6	05	29.11	30.18
13	CLR	NC			10.00		39	23	33	53	0	00	29.09	30.15
16	CLR	NC			10.00		44	25	36	47	3	30	29.04	30.10
19	FEW	NC			10.00		40	27	35	60	0	00	29.01	30.08
22	CLR	NC			10.00		33	29	31	85	0	00	29.03	30.10
					SUNRISE: 0745 JAN 16				**SUNSET: 1746**					
01	CLR	NC			10.00		31	28	30	89	0	00	29.03	30.09
04	CLR	NC			10.00		28	26	27	92	0	00	29.03	30.09
07	CLR	NC			10.00		28	26	27	92	0	00	29.03	30.10
10	CLR	NC			10.00		34	30	32	85	0	00	29.06	30.12
13	CLR	NC			10.00		50	33	42	52	6	22	29.03	30.09
16	CLR	NC			10.00		58	29	45	33	7	26	29.00	30.05
19	CLR	NC			10.00		50	22	39	33	7	25	29.02	30.08
22	CLR	NC			10.00		41	28	36	60	5	04	29.04	30.11
					SUNRISE: 0745 JAN 17				**SUNSET: 1747**					
01	CLR	NC			10.00		35	30	33	82	0	00	29.05	30.10
04	CLR	NC			10.00		32	30	31	92	6	04	29.06	30.11
07	SCT	NC			10.00		32	30	31	92	6	04	29.07	30.13
10	BKN	090			10.00		38	33	36	83	0	00	29.09	30.15
13	SCT	NC			10.00		46	35	41	66	7	01	29.01	30.07
16	OVC	046			10.00		48	38	43	68	5	01	28.91	29.96
19	OVC	055			10.00		47	38	43	71	5	34	28.89	29.95
22	FEW	NC			10.00		42	38	40	85	5	04	28.82	29.87
					SUNRISE: 0744 JAN 18				**SUNSET: 1748**					
01	OVC	032			3.00	-TSRA BR	49	47	48	93	8	26	28.88	29.93
04	OVC	055			6.00	TSRA BR	49	48	48	97	10	16	28.87	29.91
07	OVC	034			10.00		49	48	48	97	8	26	28.79	29.83
10	BKN	100			10.00		50	45	47	83	13	25	28.89	29.94
13	FEW	NC			10.00		53	33	44	47	22	27	28.92	29.96
16	FEW	NC			10.00		55	29	44	37	25	24	28.90	29.95
19	CLR	NC			10.00		47	30	40	52	12	25	28.99	30.04
22	CLR	NC			10.00		39	28	35	65	7	23	29.06	30.11

HOUR (LST)	SKY COVER	CEILING 100'S OF FT	SATELLITE: OBSERVATION TIME (LST)	SATELLITE: EFF CLD AMT Oktas	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F: DRY BULB	TEMPERATURE °F: DEW POINT	TEMPERATURE °F: WET BULB	RELATIVE HUMIDITY (PCT)	WIND: SPEED (MPH)	WIND: DIRECTION TENS OF DEG	PRESSURE (INCHES,HG): STATION	PRESSURE (INCHES,HG): SEA LEVEL
					SUNRISE: 0744 JAN 19				**SUNSET: 1749**					
01	CLR	NC			10.00		37	26	33	65	7	25	29.10	30.15
04	CLR	NC			10.00		35	23	31	61	7	23	29.14	30.19
07	CLR	NC			10.00		35	25	31	67	0	00	29.16	30.22
10	CLR	NC			10.00		42	26	36	53	0	00	29.18	30.24
13	CLR	NC			10.00		52	21	40	30	0	00	29.12	30.17
16	CLR	NC			10.00		57	20	42	24	3	28	29.05	30.10
19	CLR	NC			10.00		50	24	39	36	3	12	29.04	30.09
22	CLR	NC			10.00		44	24	36	45	0	00	29.02	30.07
					SUNRISE: 0744 JAN 20				**SUNSET: 1750**					
01	CLR	NC			10.00		39	31	36	73	0	00	28.99	30.04
04	OVC	095			10.00		38	32	35	79	0	00	28.99	30.04
07	OVC	034			10.00		41	31	37	67	6	01	28.97	30.02
10	BKN	030			10.00		45	34	40	66	3	09	28.99	30.04
13	SCT	NC			10.00		53	37	46	55	3	09	28.97	30.02
16	SCT	NC			10.00		62	50	55	65	15	24	28.92	29.96
19	FEW	NC			10.00		56	49	52	77	8	26	28.93	29.98
22	FEW	NC			7.00		52	48	50	86	6	23	28.94	29.98
					SUNRISE: 0743 JAN 21				**SUNSET: 1751**					
01	OVC	049			5.00	BR	49	46	47	90	3	03	28.92	29.96
04	OVC	055			9.00		49	45	47	86	5	35	28.91	29.95
07	BKN	065			8.00		47	45	46	93	3	15	28.88	29.92
10	BKN	060			7.00		54	50	52	87	0	00	28.90	29.94
13	OVC	065			10.00		65	56	60	73	16	23	28.88	29.92
16	SCT	NC			10.00		66	54	59	65	14	22	28.87	29.90
19	CLR	NC			10.00		63	52	57	68	6	17	28.87	29.90
22	SCT	NC			10.00		61	51	56	70	5	15	28.85	29.88
					SUNRISE: 0743 JAN 22				**SUNSET: 1752**					
01	CLR	NC			10.00		58	52	55	81	5	25	28.83	29.85
04	FEW	NC			10.00		59	52	55	78	7	25	28.87	29.90
07	FEW	NC			10.00		64	49	56	58	17	18	28.87	29.90
10	CLR	NC			10.00		68	49	57	51	24	18	28.91	29.94
13	SCT	NC			10.00		74	50	60	43	26	20	28.87	29.88
16	SCT	NC			10.00		72	48	59	43	17	20	28.84	29.85
19	SCT	NC			10.00		66	49	57	54	6	14	28.86	29.87
22	SCT	NC			10.00		69	50	58	51	13	16	28.82	29.83
					SUNRISE: 0742 JAN 23				**SUNSET: 1753**					
01	BKN	110			10.00		72	53	61	52	18	19	28.79	29.80
04	OVC	075			10.00		72	53	61	52	20	19	28.77	29.78
07	OVC	046			5.00	+RA BR	60	59	59	96	15	31	28.81	29.83
10	OVC	032			6.00	-TSRA BR	57	56	56	96	8	10	28.83	29.85
13	OVC	048			10.00		60	59	59	96	0	00	28.76	29.77
16	OVC	049			10.00		60	59	59	96	5	36	28.73	29.75
19	OVC	060			10.00		61	57	59	87	12	27	28.78	29.80
22	OVC	019			3.00	RA BR	58	57	57	97	10	28	28.81	29.84
					SUNRISE: 0742 JAN 24				**SUNSET: 1755**					
01	OVC	031			10.00		52	48	50	86	13	28	28.89	29.93
04	OVC	035			10.00		48	43	46	83	5	VR	28.93	29.97
07	OVC	039			10.00		47	40	44	77	7	31	29.00	30.05
10	OVC	021			10.00		45	40	43	83	8	29	29.09	30.13
13	OVC	025			10.00		45	36	41	71	6	01	29.13	30.17
16	SCT	NC			10.00		48	35	42	61	5	03	29.14	30.19
19	CLR	NC			10.00		44	34	40	68	5	05	29.18	30.23
22	CLR	NC			10.00		38	33	36	83	5	32	29.17	30.23

OBSERVATIONS AT 3−HOURLY INTERVALS

KNOXVILLE, TN

JANUARY 1999 TYS WBAN # 13891

HOUR (LST)	SKY COVER	CEILING 100'S OF FT	SATELLITE: OBSERVATION TIME (LST)	SATELLITE: EFF CLD AMT Oktas	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F: DRY BULB	TEMPERATURE °F: DEW POINT	TEMPERATURE °F: WET BULB	RELATIVE HUMIDITY (PCT)	WIND: SPEED (MPH)	WIND: DIRECTION TENS OF DEG	PRESSURE (INCHES,HG): STATION	PRESSURE (INCHES,HG): SEA LEVEL
					SUNRISE: 0741	**JAN 25**			**SUNSET: 1756**					
01	CLR	NC			10.00		35	33	34	93	3	22	29.18	30.24
04	CLR	NC			10.00		34	32	33	92	6	29	29.21	30.27
07	CLR	NC			7.00		34	33	34	97	0	00	29.24	30.31
10	CLR	NC			10.00		40	36	38	86	3	VR	29.27	30.35
13	CLR	NC			10.00		55	41	48	59	7	22	29.24	30.30
16	CLR	NC			10.00		57	40	49	53	9	23	29.24	30.30
19	CLR	NC			10.00		52	40	46	64	0	00	29.28	30.35
22	CLR	NC			10.00		45	38	42	77	6	05	29.32	30.39
					SUNRISE: 0740	**JAN 26**			**SUNSET: 1757**					
01	CLR	NC			10.00		41	37	39	86	6	02	29.33	30.40
04	CLR	NC			10.00		37	35	36	93	7	01	29.33	30.39
07	CLR	NC			7.00		36	34	35	93	5	01	29.34	30.40
10	CLR	NC			8.00		41	37	39	86	6	06	29.38	30.45
13	CLR	NC			10.00		52	39	46	61	0	00	29.32	30.38
16	CLR	NC			10.00		60	43	51	53	5	32	29.26	30.32
19	CLR	NC			10.00		54	42	48	64	0	00	29.26	30.32
22	CLR	NC			10.00		47	42	45	83	0	00	29.24	30.31
					SUNRISE: 0740	**JAN 27**			**SUNSET: 1758**					
01	CLR	NC			7.00		41	40	41	96	0	00	29.21	30.27
04	CLR	NC			9.00		40	38	39	93	3	19	29.20	30.24
07	CLR	NC			5.00	BR	36	36	36	100	0	00	29.20	30.26
10	CLR	NC			6.00	BR	44	41	43	89	3	10	29.21	30.27
13	CLR	NC			10.00		63	47	54	56	16	23	29.12	30.16
16	CLR	NC			10.00		68	46	56	45	20	23	29.05	30.09
19	CLR	NC			10.00		58	45	51	62	9	24	29.04	30.09
22	CLR	NC			10.00		58	43	50	58	9	26	29.04	30.09
					SUNRISE: 0739	**JAN 28**			**SUNSET: 1759**					
01	CLR	NC			10.00		55	44	49	67	9	26	29.08	30.11
04	OVC	050			10.00		55	46	50	72	6	19	29.10	30.13
07	BKN	065			10.00		54	48	51	80	6	32	29.10	30.14
10	OVC	032			10.00		57	49	53	75	5	26	29.12	30.16
13	BKN	100			10.00		67	56	60	68	12	21	29.08	30.11
16	OVC	075			10.00		65	53	58	66	7	25	29.05	30.08
19	BKN	095			10.00		61	53	57	75	6	20	29.06	30.10
22	OVC	075			7.00		58	54	56	87	5	21	29.10	30.14
					SUNRISE: 0739	**JAN 29**			**SUNSET: 1760**					
01	BKN	095			6.00	BR	56	54	55	93	0	00	29.11	30.14
04	SCT	NC			6.00	BR	53	51	52	93	6	06	29.10	30.14
07	BKN	110			8.00		53	50	51	89	7	04	29.14	30.18
10	BKN	100			9.00		56	50	53	81	6	02	29.21	30.26
13	OVC	026			3.00	-RA BR	54	52	53	93	10	04	29.20	30.24
16	OVC	013			3.00	-RA BR	55	54	54	96	8	36	29.18	30.22
19	OVC	070			4.00	-RA BR	53	52	52	96	10	03	29.23	30.28
22	OVC	075			4.00	-RA BR	51	50	51	96	9	03	29.22	30.28
					SUNRISE: 0738	**JAN 30**			**SUNSET: 1801**					
01	OVC	070			4.00	-RA BR	50	50	50	100	9	02	29.21	30.27
04	OVC	075			5.00	-RA BR	50	48	49	93	6	05	29.21	30.27
07	OVC	070			8.00	-RA	49	46	47	90	5	05	29.24	30.30
10	SCT	NC			9.00	-RA	50	46	48	86	7	04	29.26	30.32
13	OVC	060			10.00		54	49	51	83	7	02	29.23	30.29
16	BKN	085			7.00		53	50	51	89	6	05	29.21	30.26
19	OVC	085			5.00	-RA BR	52	51	52	97	3	31	29.21	30.27
22	OVC	090			2.50	-RA BR	51	51	51	100	0	00	29.21	30.25

HOUR (LST)	SKY COVER	CEILING 100'S OF FT	SATELLITE: OBSERVATION TIME (LST)	SATELLITE: EFF CLD AMT Oktas	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F: DRY BULB	TEMPERATURE °F: DEW POINT	TEMPERATURE °F: WET BULB	RELATIVE HUMIDITY (PCT)	WIND: SPEED (MPH)	WIND: DIRECTION TENS OF DEG	PRESSURE (INCHES,HG): STATION	PRESSURE (INCHES,HG): SEA LEVEL
					SUNRISE: 0737	**JAN 31**			**SUNSET: 1802**					
01	OVC	080			2.00	-RA BR	51	51	51	100	5	07	29.21	30.25
04	OVC	075			3.00	-RA BR	50	50	50	100	5	06	29.18	30.23
07	OVC	055			5.00	-RA BR	50	49	49	96	3	29	29.23	30.28
10	OVC	044			10.00	-RA	47	41	44	80	5	28	29.28	30.34
13	BKN	024			6.00	-RA BR	44	41	43	89	7	01	29.24	30.30
16	OVC	035			4.00	-RA BR	42	39	41	89	6	36	29.25	30.32
19	OVC	070			10.00		42	40	41	92	5	29	29.25	30.31
22	OVC	075			8.00	-RA	40	38	39	93	8	01	29.24	30.30

3−HOURLY OBSERVATION NOTES

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 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.

SUMMARY BY HOUR

HOUR (LST)	AVERAGES: CEILOMETER	EFF CLD AMT	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY	PRESSURE (INCHES,HG): STATION	PRESSURE (INCHES,HG): SEA LEVEL	VISIBILITY (MILES)	WIND SPEED (MPH)	RESULTANT WIND (MPH): SPEED	RESULTANT WIND (MPH): DIRECTION
01			41	35	38	80	29.06	30.12	8.50	7	3	26
02			41	35	38	80	29.07	30.12	8.44	8	4	24
03			40	34	38	80	29.07	30.13	8.40	8	4	24
04			40	34	38	81	29.07	30.13	8.77	7	3	24
05			40	34	37	81	29.07	30.12	8.68	7	3	24
06			40	34	37	80	29.08	30.13	8.50	7	3	25
07			39	33	37	82	29.09	30.15	8.65	6	3	27
08			39	33	37	81	29.11	30.17	8.64	7	3	25
09			40	34	37	81	29.12	30.18	8.27	6	2	26
10			42	35	39	78	29.12	30.18	8.67	7	2	26
11			44	35	40	73	29.13	30.19	8.90	8	3	25
12			46	36	41	69	29.12	30.17	9.05	8	4	24
13			48	36	43	66	29.09	30.14	8.98	10	5	24
14			49	36	43	64	29.06	30.12	9.28	10	6	24
15			50	36	44	62	29.05	30.11	9.13	9	5	24
16			50	36	44	63	29.05	30.10	9.39	9	5	24
17			49	37	44	65	29.05	30.11	8.89	8	4	26
18			47	36	42	69	29.06	30.11	8.98	8	4	27
19			46	36	42	71	29.07	30.12	9.26	7	3	26
20			45	36	41	73	29.07	30.12	8.97	7	2	26
21			43	36	40	76	29.07	30.12	8.58	6	3	27
22			43	35	40	76	29.07	30.13	8.53	7	2	27
23			42	35	39	78	29.07	30.12	8.31	6	3	25
24			42	35	39	79	29.07	30.12	8.53	7	3	27

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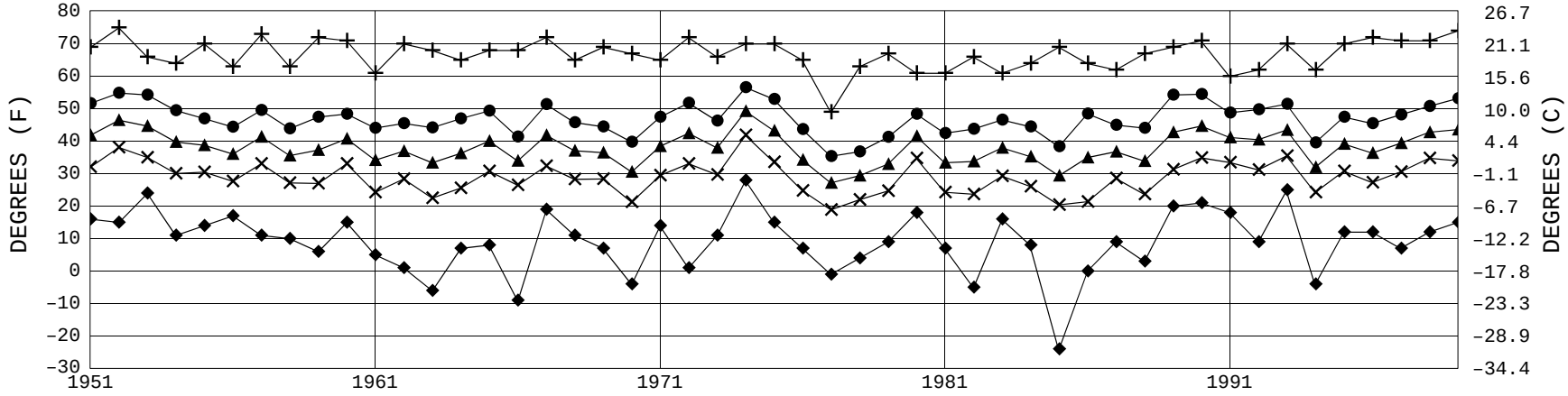
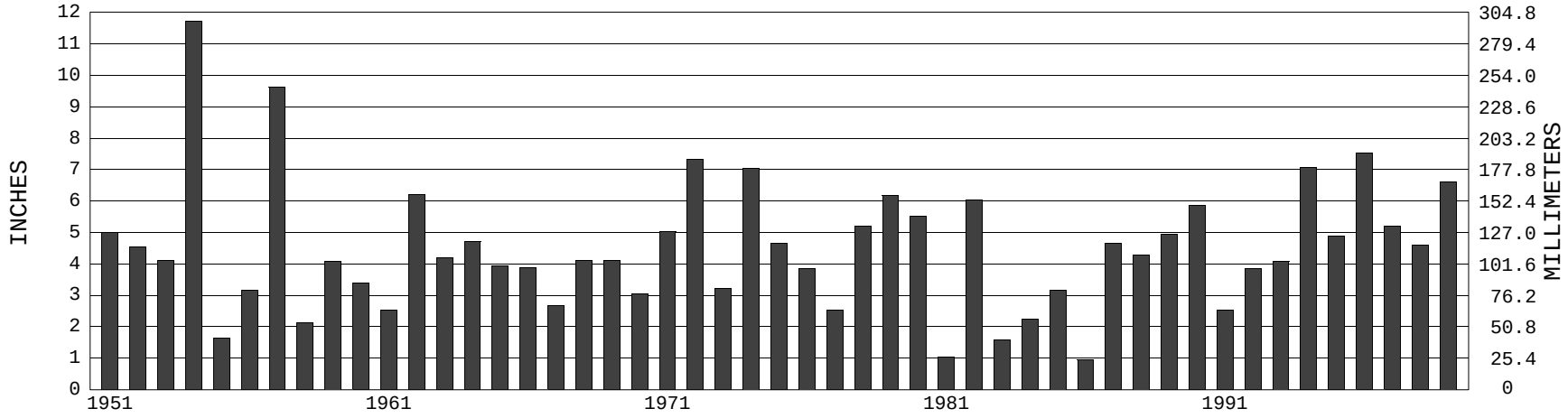
KNOXVILLE, TN JANUARY TEMPERATURES



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

Long–Term (1951–1999) Mean: 38.0 1961–1990 Normal: 36.0

KNOXVILLE, TN JANUARY PRECIPITATION



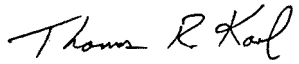
Long–Term (1951–1999) Mean Monthly Total: 4.51 1961–1990 Normal: 4.17

JANUARY 1999
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 (NOAA). It is compiled using information from weather observing sites operated by NOAA—National Weather Service / Department Of Transportation—Federal Aviation Administration and received at the National Climatic Data Center (NCDC), Asheville, North Carolina 28801.



DIRECTOR

NOTICE

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

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