



OCTOBER 1998

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						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	11	12	13	14	15	16	17	18	19	20	21	22	23	24																
01	81	58	70	5	60	64	0	5			0.0	0.00	28.92	29.94	4.5	36	7.4	24	02	21	02	01																
02	78	51	65	1	49	56	0	0			0.0	0.00	29.02	30.05	2.7	03	3.9	13	33	10	02	02																
03	79	56	68	4	59	62	0	3	TSRA	RA BR	0	0.0	0.13	29.02	30.04	2.3	05	2.9	14	30	13	29	03															
04	80	64	72	9	66	68	0	7	RA	BR HZ	0	0.0	0.06	29.06	30.08	1.3	03	1.9	9	35	7	03	04															
05	85	63	74	12	66	68	0	9	RA	FG+ BR HZ	0	0.0	0.03	29.09	30.11	0.9	02	2.5	23	24	20	24	05															
06	82	66	74	12	63	67	0	9	BR	HZ	0	0.0	0.00	29.11	30.14	1.6	19	4.9	17	17	15	18	06															
07	86*	62	74*	12	64	67	0	9	TSRA	RA BR	0	0.0	0.42	29.03	30.05	3.6	23	6.6	25	22	21	22	07															
08	68	53	61	0	52	56	4	0	RA	BR	0	0.0	0.71	29.04	30.07	6.2	01	7.9	18	27	16	28	08															
09	67	50	59	-2	48	53	6	0			0	0.0	0.00	29.03	30.07	8.4	04	9.0	18	09	15	02	09															
10	70	48	59	-2	49	53	6	0			0	0.0	0.00	29.05	30.08	7.3	04	7.6	18	03	15	03	10															
11	76	47	62	2	52	56	3	0	BR		0	0.0	0.00	29.09	30.12	3.2	05	3.7	14	03	11	05	11															
12	77	48	63	4	52	56	2	0	FG+	BR	0	0.0	0.00	29.10	30.13	0.6	29	1.4	13	26	10	25	12															
13	75	52	64	5	52	57	1	0	BR		0	0.0	0.00	29.02	30.05	3.0	27	3.4	15	31	13	31	13															
14	70	45	58	-1	44	51	7	0	BR		0	0.0	0.00	29.02	30.05	0.4	23	2.1	21	29	11	29	14															
15	75	42	59	0	46	52	6	0			0	0.0	0.00	29.14	30.18	1.2	04	2.1	9	02	7	05	15															
16	78	46	62	4	50	55	3	0			0	0.0	0.00	29.24	30.28	0.5	07	1.8	7	36	6	05	16															
17	78	49	64	6	54	58	1	0	BR		0	0.0	0.00	29.21	30.24	0.6	32	.9	10	31	8	30	17															
18	79	49	64	6	55	59	1	0	FG+	BR	0	0.0	0.00	29.14	30.17	4.3	24	5.8	24	24	21	24	18															
19	70	60	65	8	62	63	0	0	RA	BR	0	0.0	0.07	29.13	30.16	3.4	31	5.3	16	02	13	01	19															
20	70	48	59	2	46	52	6	0			0	0.0	0.00	29.20	30.24	7.4	04	8.4	22	03	20	04	20															
21	69	46	58	2	41	49	7	0			0	0.0	0.00	29.16	30.21	5.1	35	6.9	28	01	23*	01	21															
22	58	39	49	-7	34	42	16	0			0	0.0	0.00	29.32	30.37	10.1	03	10.5	26	04	22	05	22															
23	62	34	48*	-8	33	41	17	0			0	0.0	0.00	29.38	30.44	4.8	05	5.6	16	04	14	04	23															
24	70	33*	52	-3	36	44	13	0			0	0.0	0.00	29.33	30.38	0.8	01	1.4	8	02	7	29	24															
25	69	39	54	-1	42	47	11	0			0	0.0	0.00	29.25	30.30	1.0	03	1.2	9	02	8	07	25															
26	74	38	56	1	42	48	9	0			0	0.0	0.00	29.21	30.26	0.9	03	1.6	8	03	7	02	26															
27	77	41	59	5	44	50	6	0	BR		0	0.0	0.00	29.18	30.22	0.2	09	1.2	10	29	8	29	27															
28	77	40	59	5	47	54	6	0			0	0.0	0.00	29.00	30.03	4.9	24	5.3	29*	25	22	25	28															
29	76	54	65	11	54	59	0	0	HZ		0	0.0	0.00	28.97	30.00	1.3	05	1.8	11	02	9	05	29															
30	79	53	66	13	55	60	0	1	BR		0	0.0	0.00	28.96	29.98	3.9	26	4.4	20	28	16	27	30															
31	75	50	63	10	52	56	2	0	BCFG	BR	0	0.0	0.00	29.01	30.03	2.9	02	4.0	16	01	13	01	31															
MONTHLY AVERAGES											TOTALS-->		0.0		1.42		29.11		30.14		1.8		01		4.3		-- MONTHLY AVERAGES											
3.9											3.2		3.5		<----- DEPARTURE FROM NORMAL ----->											-1.42		SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3										
DEGREE DAYS									GREATEST 24-HR PRECIPITATION: 1.13 DATE: 07-08				SEA LEVEL PRESSURE				DATE				TIME																	
MONTHLY TOTAL DEPARTURE									SEASON TO DATE TOTAL DEPARTURE				GREATEST 24-HR SNOWFALL: 0.0 DATE:				MAXIMUM				: 30.50				23 1129													
HEATING: 133 -105									134 -122				GREATEST SNOW DEPTH: 0 DATE:				MINIMUM				: 29.84				01 0352													
COOLING: 43 10									1827 561				NUMBER OF DAYS WITH =>				MAXIMUM TEMP ≥ 90: 0				MINIMUM TEMP ≤ 32: 0				PRECIPITATION ≥ 0.01 INCH: 6													
													MAXIMUM TEMP ≤ 32: 0				MINIMUM TEMP ≤ 0: 0				PRECIPITATION ≥ 0.10 INCH: 3																	
													THUNDERSTORMS: 2				HEAVY FOG: 3				SNOWFALL ≥ 1.0 INCH: 0																	

OCTOBER 1998
KNOXVILLE, TN

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

KNOXVILLE, TN

OCTOBER 1998

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		0.00		
03													03				T	T			T	0.13			03		0.13		
04											0.06		04												04		0.06		
05													05			0.03									05		0.03		
06													06												06		0.00		
07													07					T	0.09	0.11	0.13	0.08	0.01		07		0.42		
08	0.17	0.40	0.12	0.01	T	0.01	T						08												08		0.71		
09													09												09		0.00		
10													10												10		0.00		
11													11												11		0.00		
12													12												12		0.00		
13													13												13		0.00		
14													14												14		0.00		
15													15												15		0.00		
16													16												16		0.00		
17													17												17		0.00		
18													18												18		0.00		
19								T	0.02	0.02			19			0.02	0.01							19		0.07			
20													20												20		0.00		
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												26		0.00		
27													27												27		0.00		
28													28												28		0.00		
29													29												29		0.00		
30													30												30		0.00		
31													31												31		0.00		

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

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

KNOXVILLE, TN OCTOBER 1998

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
	TOTAL MINUTES	PERCENT POSSIBLE	SR-SS		MN-MN		MINIMUM	MAXIMUM	
			CEILOMETER	SATELLITE	CEILOMETER	SATELLITE			
01	596						10.00	10.00	
02	646						10.00	10.00	
03	227	32					1.75	10.00	
04	373	53					1.00	7.00	
05	480	69					<.25	10.00	
06	441						3.00	10.00	
07	501						4.00	10.00	
08	201						1.75	10.00	
09	551						9.00	10.00	
10	611						7.00	10.00	
11	653	95					3.00	10.00	
12	630	92					1.00	10.00	
13	531	78					3.00	10.00	
14	637	94					5.00	10.00	
15	585						10.00	10.00	
16	560						7.00	10.00	
17	571						4.00	10.00	
18	569						3.00	10.00	
19	23	3					3.00	10.00	
20	597	90					8.00	10.00	
21	360	55					10.00	10.00	
22	565	86					10.00	10.00	
23	565						10.00	10.00	
24	561						8.00	10.00	
25	513						9.00	10.00	
26	562						7.00	10.00	
27	556	85					4.00	10.00	
28	521	80					7.00	10.00	
29	496	76					6.00	10.00	
30	450	70					5.00	10.00	
31	521	81					2.50	10.00	
MONTHLY AVGS							5.58	9.90	
SUNSHINE (MINUTES)									
Total: 15653 Possible: 20949 Percent Possible: 75									
NUMBER OF DAYS WITH:									
SKY CONDITION									
CLR PTLY CLDY CLOUDY MISSING 31									
MINIMUM VISIBILITY (MILES)									
<=0.25 <=3.0 >=7.0 1 11 14									

OBSERVATIONS AT 3-HOURLY INTERVALS

KNOXVILLE, TN

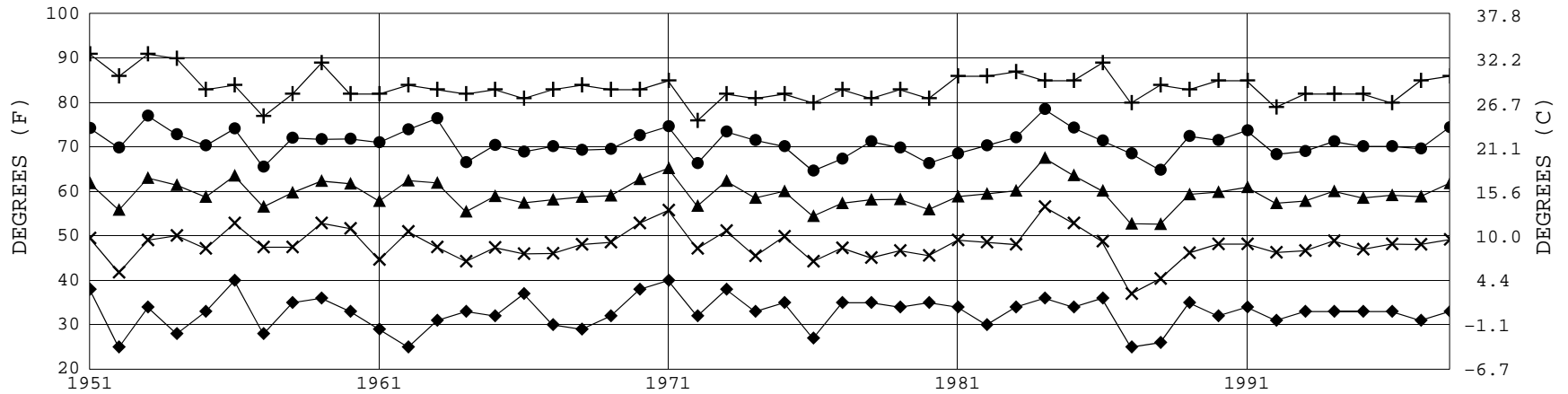
OCTOBER 1998

TYS

WBAN # 13891

HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE ° F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE ° F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)			
	SKY COVER	CEILING		OBSERVATION TIME (LST)	EFF CLD AMT Okltas			DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL		SKY COVER	CEILING		OBSERVATION TIME (LST)	EFF CLD AMT Okltas			DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL		
SUNRISE: 0652								OCT 25	SUNSET: 1748								SUNRISE: 0657								OCT 31	SUNSET: 1742							
01	CLR	NC			10.00			44	40	42	85	0	00	29.27	30.32	01	CLR	NC			10.00			59	55	57	87	0	00	28.95	29.97		
04	CLR	NC			10.00			41	39	40	93	0	00	29.26	30.31	04	FEW	NC			7.00			56	54	55	93	5	24	28.96	29.98		
07	CLR	NC			10.00			41	39	40	93	0	00	29.29	30.35	07	SCT	NC			3.00		BCFG	52	52	52	100	0	00	29.01	30.04		
10	FEW	NC			10.00			55	43	49	64	3	36	29.30	30.35	10	CLR	NC			7.00			65	56	60	73	3	VR	29.06	30.09		
13	BKN	100			10.00			64	44	54	48	0	00	29.25	30.30	13	FEW	NC			10.00			72	54	61	53	7	04	29.01	30.03		
16	SCT	NC			10.00			68	40	54	36	3	07	29.20	30.24	16	CLR	NC			10.00			75	47	59	37	5	36	28.98	30.00		
19	CLR	NC			10.00			60	41	50	50	0	00	29.21	30.25	19	CLR	NC			10.00			64	50	56	61	13	01	29.00	30.04		
22	CLR	NC			10.00			49	45	47	86	0	00	29.21	30.26	22	CLR	NC			9.00			59	50	54	72	3	05	29.04	30.07		
SUNRISE: 0652								OCT 26	SUNSET: 1747								3-HOURLY OBSERVATION NOTES																
01	CLR	NC			9.00			45	44	45	97	0	00	29.21	30.25	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. 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	CLR	NC			8.00			43	41	42	93	0	00	29.19	30.23																		
07	CLR	NC			7.00			38	38	38	100	0	00	29.23	30.29																		
10	CLR	NC			10.00			54	46	50	75	3	08	29.26	30.32																		
13	CLR	NC			10.00			69	41	54	36	3	01	29.21	30.25																		
16	CLR	NC			10.00			74	41	56	31	3	34	29.17	30.21																		
19	CLR	NC			10.00			64	41	52	43	0	00	29.19	30.24																		
22	CLR	NC			10.00			51	45	48	80	3	05	29.21	30.26																		
SUNRISE: 0653								OCT 27	SUNSET: 1746								SUMMARY BY HOUR																
01	CLR	NC			9.00			47	44	46	90	0	00	29.21	30.25	AVERAGES																	
04	CLR	NC			7.00			42	42	42	100	3	04	29.21	30.26	RESULTANT WIND (MPH)																	
07	CLR	NC			7.00			43	42	43	97	0	00	29.24	30.29	HOUR (LST)																	
10	CLR	NC			10.00			56	46	51	70	3	VR	29.25	30.30	CEILOMETER																	
13	CLR	NC			10.00			77	44	59	31	0	00	29.19	30.22	EFF CLD AMT																	
16	CLR	NC			10.00			74	42	57	32	0	00	29.13	30.16	DRY BULB																	
19	CLR	NC			10.00			64	45	54	50	0	00	29.11	30.16	DEW POINT																	
22	CLR	NC			10.00			53	47	50	80	3	19	29.10	30.14	WET BULB																	
SUNRISE: 0654								OCT 28	SUNSET: 1745								RELATIVE HUMIDITY																
01	CLR	NC			8.00			49	45	47	86	0	00	29.08	30.11	PRESSURE (INCHES, HG)																	
04	CLR	NC			8.00			46	44	45	93	0	00	29.06	30.09	STATION																	
07	CLR	NC			7.00			41	40	41	96	0	00	29.07	30.11	SEA LEVEL																	
10	CLR	NC			7.00			60	47	53	62	6	24	29.06	30.10	VISIBILITY (MILES)																	
13	CLR	NC			10.00			75	48	60	39	13	24	28.97	30.01	WIND SPEED (MPH)																	
16	FEW	NC			10.00			76	48	60	37	10	25	28.92	29.95	SPEED																	
19	BKN	070			10.00			72	51	60	48	8	25	28.92	29.96	DIRECTION																	
22	BKN	075			10.00			67	52	58	59	3	22	28.95	29.97																		
SUNRISE: 0655								OCT 29	SUNSET: 1744								HOUR (LST)																
01	OVC	050			10.00			63	53	57	70	0	00	28.95	29.98	CEILOMETER																	
04	BKN	060			10.00			60	52	56	75	0	00	28.96	29.99	EFF CLD AMT																	
07	FEW	NC			7.00			56	52	54	87	0	00	28.99	30.02	DRY BULB																	
10	CLR	NC			9.00			67	54	59	63	0	00	29.02	30.05	DEW POINT																	
13	BKN	041			10.00			73	56	63	55	7	02	28.98	30.01	WET BULB																	
16	SCT	NC			10.00			75	55	63	50	9	06	28.95	29.97	RELATIVE HUMIDITY																	
19	CLR	NC			10.00			69	53	60	57	0	00	28.95	29.98	PRESSURE (INCHES, HG)																	
22	FEW	NC			9.00			63	54	58	73	0	00	28.97	30.00	STATION																	
SUNRISE: 0656								OCT 30	SUNSET: 1743								SEA LEVEL																
01	BKN	120			6.00	BR		57	53	55	87	0	00	28.97	30.00	VISIBILITY (MILES)																	
04	BKN	110			6.00	BR		57	53	55	87	0	00	28.96	29.99	WIND SPEED (MPH)																	
07	SCT	NC			7.00			56	52	54	87	0	00	28.99	30.02	SPEED																	
10	BKN	047			8.00			67	55	60	66	6	23	29.00	30.03	DIRECTION																	
13	BKN	100			10.00			78	58	66	50	10	22	28.93	29.96																		
16	SCT	NC			10.00			78	60	67	54	7	28	28.89	29.92																		
19	SCT	NC			10.00			71	56	62	59	6	27	28.92	29.95																		
22	CLR	NC			10.00			63	56	59	78	0	00	28.95	29.98																		

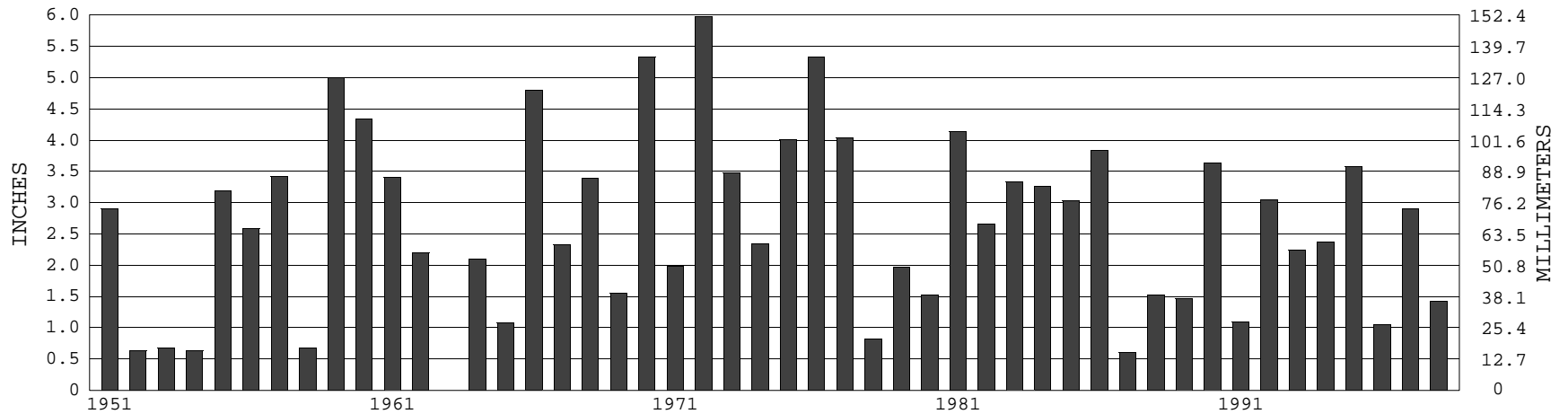
KNOXVILLE, TN OCTOBER TEMPERATURES



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

Long-Term (1951-1998) Mean: 59.5 1961-1990 Normal: 58.4

KNOXVILLE, TN OCTOBER PRECIPITATION



Long-Term (1951-1998) Mean Monthly Total: 2.65

1961-1990 Normal: 2.84



**OCTOBER 1998
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.

We welcome your questions or comments, please contact us at
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