



# JULY 2015

## LOCAL CLIMATOLOGICAL DATA

NOAA, National Centers for Environmental Information

KNOXVILLE, TN  
 MC GHEE TYSON AIRPORT (KTYS)  
 Lat:35° 49'N Long: 83° 59'W Elev (Ground) 962 Feet  
 Time Zone : EASTERN WBAN: 13891 ISSN#: 0198-4810



Date 1	Temperature °F						Deg Days BASE 65°		WEATHER 10	SNOW/ICE ON GND(IN)		PRECIPITATION ON GND(IN)		PRESSURE (INCHES OF HG)		WIND SPEED = MPH DIR = TENS OF DEGREES								Date 24
	MAXIMUM 2	MINIMUM 3	AVERAGE 4	DEP FROM NORMAL 5	AVERAGE DEW PT 6	AVERAGE WET BULB 7	HEATING 8	COOLING 9		0700 LST 11	1300 LST 12	2400 LST 13	2400 LST 14	AVERAGE STATION 15	AVERAGE SEA LEVEL 16	RESULTANT SPEED 17	RES DIR 18	AVERAGE SPEED 19	MAXIMUM					
																			3-SEC		2-MIN			
2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18	19	20	21	22	23				
01	79	67	73	-4	67	69	0	8	RA BR HZ	0		0.0	T	28.94	29.96	9.9	22	10.4	27	22	23	21	01	
02	79	67	73	-4	67	68	0	8	RA BR	0		0.0	1.01	28.91	29.92	8.0	22	8.9	26	21	21	21	02	
03	78	68	73	-4	68	70	0	8	RA BR	0		0.0	0.56	28.86	29.89	11.4	21	11.5	38	22	31	22	03	
04	78	68	73	-4	68	69	0	8	RA BR HZ	0		0.0	0.24	28.95	29.98	9.3	22	9.8	22	24	17	23	04	
05	77	68	73*	-4	67	68	0	8	RA DZ BCFG BR	0		0.0	0.26	29.01	30.04	6.1	22	8.5	25	24	22	22	05	
06	84	67	76	-1	67	70	0	11		0		0.0	0.00	29.06	30.08	5.7	23	6.1	15	19	12	21	06	
07	88	70	79	2	69	72	0	14		0		0.0	0.00	29.05	30.08	9.1	22	9.8	24	22	20	22	07	
08	89	71	80	3	69	73	0	15	TS TSRA RA BR	0		0.0	0.20	29.08	30.09	7.0	22	7.4	30	24	25	24	08	
09	91	73	82	4	68	73	0	17		0		0.0	0.00	29.07	30.09	9.2	22	9.3	24	23	20	23	09	
10	91	71	81	3	68	73	0	16		0		0.0	0.00	29.08	30.10	6.9	24	7.2	22	24	16	24	10	
11	88	72	80	2	69	72	0	15	TS TSRA RA BR VCTS	0		0.0	0.70	29.10	30.11	3.1	20	4.6	26	19	22	19	11	
12	85	68	77	-1	71	73	0	12	RA FG+ FG BCFG BR	0		0.0	0.07	29.02	30.03	3.8	23	4.6	15	20	12	22	12	
13	90	73	82	4	72	75	0	17	RA	0		0.0	T	28.88	29.87	6.1	23	6.9	19	22	15	23	13	
14	84	68	76	-2	69	71	0	11	TS TSRA RA BR VCTS	0		0.0	1.55	28.76	29.77	6.9	22	9.8	41	04	31*	04	14	
15	86	69	78	0	68	70	0	13	TS RA BR VCTS	0		0.0	0.11	28.82	29.86	1.8	31	7.5	18	04	14	02	15	
16	88	66*	77	-1	66	70	0	12		0		0.0	0.00	28.95	29.96	2.2	36	3.7	12	01	9	36	16	
17	90	68	79	1	69	73	0	14	BCFG	0		0.0	0.00	28.97	29.98	3.6	24	4.6	18	23	14	22	17	
18	89	73	81	3	72	74	0	16	TS TSRA RA BR VCTS	0		0.0	0.18	28.97	30.00	0.7	22	3.7	26	34	22	33	18	
19	91	72	82	4	73	75	0	17	TS TSRA RA	0		0.0	0.25	28.95	29.96	3.4	21	4.7	52*	32	30	31	19	
20	91	71	81	3	72	74	0	16	TS TSRA RA BR	0		0.0	0.57	28.88	29.88	4.8	22	6.4	32	31	23	30	20	
21	89	72	81	3	71	73	0	16	TS RA	0		0.0	0.14	28.82	29.82	6.5	26	7.2	20	24	17	25	21	
22	89	70	80	2	70	72	0	15	RA	0		0.0	T	28.88	29.90	3.8	24	4.4	14	22	13	23	22	
23	76	71	74	-4	71	72	0	9	RA BR	0		0.0	0.64	28.92	29.93	0.9	24	4.6	13	03	12	02	23	
24	87	70	79	1	69	72	0	14	FG+ FG BR HZ	0		0.0	0.00	28.93	29.95	1.9	35	3.7	13	02	10	03	24	
25	89	69	79	1	68	72	0	14		0		0.0	0.00	28.94	29.95	2.3	29	3.8	17	32	10	30	25	
26	91	70	81	3	70	73	0	16	BR	0		0.0	0.00	28.94	29.95	2.5	26	3.8	15	23	12	23	26	
27	92	73	83	5	70	74	0	18	RA	0		0.0	T	28.95	29.96	2.3	30	4.0	16	32	14	32	27	
28	92	72	82	4	73	75	0	17	TS TSRA RA BR HZ	0		0.0	0.01	28.95	29.96	0.7	30	4.6	19	32	15	32	28	
29	92*	74	83	5	72	75	0	18		0		0.0	0.00	28.95	29.96	1.4	33	2.9	12	33	8	05	29	
30	91	75	83*	5	70	74	0	18		0		0.0	0.00	28.95	29.98	4.8	35	5.8	20	33	15	35	30	
31	87	68	78	0	60	67	0	13		0		0.0	0.00	28.99	30.00	6.9	03	7.5	17	04	12	36	31	
86.8		70.1	78.5	☼	69.1	72.0	0.0	13.7	< MONTHLY AVERAGES   TOTALS >			0.0	6.49	28.95	29.97	3.7	23	6.4	< MONTHLY AVERAGES					
-1.4	1.4	0.1	<----- DEPARTURE FROM NORMAL ----->						1.41	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3														
<b>DEGREE DAYS</b>									GREATEST 24-HR PRECIPITATION : 1.66 DATE : 14-15				SEA LEVEL PRESSURE				DATE		TIME					
MONTHLY				SEASON TO DATE					GREATEST 24-HR SNOWFALL : 0.0 DATE :				MAXIMUM : 30.17				10		1033					
TOTAL DEPARTURE				TOTAL DEPARTURE					GREATEST SNOW DEPTH : 0 DATE :				MINIMUM : 29.67				14		1553					
HEATING :		0		0		0		0		NUMBER OF ->		MAXIMUM TEMP >= 90 : 11		MINIMUM TEMP <= 32 : 0		PRECIPITATION >= 0.01 INCH: 15								
COOLING :		424		7		1057		173		THUNDERSTORMS : 9		MAXIMUM TEMP <= 32 : 0		MINIMUM TEMP <= 0 : 0		PRECIPITATION >= 0.10 INCH: 13								
												HEAVY FOG : 2				SNOWFALL >= 1.0 INCH : 0								

JULY 2015  
KNOXVILLE, TN

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

KNOXVILLE, TN (KTYS)  
JULY 2015

WBAN # 13891

Date	FOR HOUR (LST) ENDING AT												Date	FOR HOUR (LST) ENDING AT												Date	Sum of Hourly Data	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				T									01				T	T	T	T				01	T	T		
02					0.02	0.01	0.20	0.20	0.31	0.15	0.10		02	T	T								0.01	0.01	02	1.01	1.01	
03	T	0.06	0.05	T	0.11	0.02				T	0.20		03				T						T		03	0.56	0.56	
04				0.02	0.01	T					0.08	0.11	04	T								T	0.02		04	0.24	0.24	
05	0.03	0.12	0.08	0.01		T	T	0.02		T			05		T	T	T	T							05	0.26	0.26	
06													06												06	0.00	0.00	
07													07												07	0.00	0.00	
08													08		0.20										08	0.20	0.20	
09													09												09	0.00	0.00	
10													10												10	0.00	0.00	
11						0.05							11				T	0.65							11	0.70	0.70	
12										T		0.07	12	T											12	0.07	0.07	
13													13								T	T			13	T	T	
14										0.24	0.27	T	14			0.32	0.01						0.71	14	1.55	1.55		
15	0.11												15												15	0.11	0.11	
16													16												16	0.00	0.00	
17													17												17	0.00	0.00	
18					0.05	T							18	T	0.02		0.11	T							18	0.18	0.18	
19													19			0.14	0.11								19	0.25	0.25	
20													20			0.15	0.32	0.09	0.01						20	0.57	0.57	
21											0.01		21	0.13											21	0.14	0.14	
22													22						T		T	T			22	T	T	
23									T	0.02	0.01	0.11	23	0.01	0.16	0.31	0.01	T	0.01						23	0.64	0.64	
24													24												24	0.00	0.00	
25													25												25	0.00	0.00	
26													26												26	0.00	0.00	
27													27				T								27	T	T	
28													28			0.01	T								28	0.01	0.01	
29													29												29	0.00	0.00	
30													30												30	0.00	0.00	
31													31												31	0.00	0.00	

\* Indicates sum of Hourly and Daily disagree.

### MAXIMUM SHORT DURATION PRECIPITATION (See Note)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)												
Ending Date												
Ending Time (Hr/Min)												

Note : The hourly and daily precipitation totals are printed in the last 2 columns and hi-lighted in red when they disagree. 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.

Date and time are not entered for TRACE amounts.

# 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.

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).

## 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	
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	
VC In the Vicinity	UP Unkown Precipitation		GL Glaze

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

# KNOXVILLE, TN JULY 2015

Sky Condition is based on the sum (not to exceed 8) of the sunrise to sunset cloud cover below and above 12,000 feet.

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.

Snow Depth, Snowfall, and Sunshine data may come from nearby sites that the National Weather Service deems Climatologically representative of this site.

**NORMALS ARE FOR THE YEARS 1981-2010**

### ADDITIONAL NOTES & ERRATA:

Station Augmentation-CONTRACTOR ON AIRPORT  
 Lat/Lon:/ Elevation:  
 Distance:2200 FT Dir:W  
 Augmented Elements:Temp,Precip,Snow  
 Equipment:SRG, PSY, Snow Board, Snow stick

Date	VISIBILITY (MILES)	
	MINIMUM	MAXIMUM
01	6.00	10.00
02	1.50	10.00
03	5.00	10.00
04	1.00	10.00
05	2.50	10.00
06	9.00	10.00
07	10.00	10.00
08	5.00	10.00
09	10.00	10.00
10	10.00	10.00
11	5.00	10.00
12	0.50	10.00
13	10.00	10.00
14	1.25	10.00
15	10.00	10.00
16	10.00	10.00
17	9.00	10.00
18	5.00	10.00
19	5.00	10.00
20	2.00	10.00
21	7.00	10.00
22	7.00	10.00
23	0.75	10.00
24	0.12	10.00
25	7.00	10.00
26	6.00	10.00
27	10.00	10.00
28	5.00	10.00
29	7.00	10.00
30	8.00	10.00
31	10.00	10.00
<b>AVGS</b>	5.99	10.00
<b>MINIMUM VISIBILITY (MILES)</b>		
	<b>&lt;= .25</b>	<b>&lt;= 3.0</b> <b>&gt;= 7.0</b>
1	8	15





# OBSERVATIONS AT 3-HOURLY INTERVALS

# KNOXVILLE, TN JULY 2015 KTYS

WBAN # 13891

HOUR (LST)	SKY COVER	CEILING 100's of FT.	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)	
					DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION Tens of Deg	STATION	SEA LEVEL
SUNRISE: 0538					JUL 25			SUNSET: 1947				
01	SCT	250	10.00		73	68	70	84	3	36	28.93	29.94
04	BKN	250	10.00		71	68	69	90	0	00	28.92	29.93
07	BKN	065	7.00		71	68	69	90	0	00	28.96	29.97
10	SCT	250	10.00		80	70	73	71	3	VR	28.96	29.98
13	BKN	250	10.00		86	70	75	59	7	28	28.95	29.96
16	SCT	250	10.00		88	67	74	50	8	27	28.91	29.92
19	SCT	250	10.00		85	68	73	57	5	28	28.90	29.92
22	CLR	NC	10.00		77	69	72	77	0	00	28.93	29.94
SUNRISE: 0539					JUL 26			SUNSET: 1946				
01	CLR	NC	10.00		74	70	71	88	0	00	28.93	29.94
04	CLR	NC	8.00		70	68	69	93	0	00	28.92	29.93
07	FEW	250	6.00	BR	72	69	70	91	0	00	28.95	29.96
10	FEW	100	10.00		82	69	73	65	0	00	28.97	29.98
13	SCT	033	10.00		88	72	77	59	5	VR	28.96	29.97
16	OVC	180	10.00		90	69	75	50	9	27	28.92	29.93
19	OVC	180	10.00		83	70	74	65	9	26	28.91	29.93
22	CLR	NC	10.00		79	70	73	74	3	34	28.94	29.95
SUNRISE: 0540					JUL 27			SUNSET: 1945				
01	CLR	NC	10.00		75	68	70	79	5	25	28.94	29.95
04	SCT	250	10.00		74	69	71	85	0	00	28.93	29.94
07	BKN	250	10.00		75	69	71	82	0	00	28.98	29.99
10	SCT	250	10.00		84	70	74	63	5	28	28.99	30.00
13	BKN	250	10.00		88	70	75	55	3	VR	28.96	29.97
16	OVC	250	10.00		87	69	75	55	7	31	28.91	29.93
19	BKN	250	10.00		87	71	76	59	3	27	28.91	29.92
22	BKN	250	10.00		81	72	75	74	6	03	28.96	29.97
SUNRISE: 0540					JUL 28			SUNSET: 1945				
01	BKN	250	10.00		79	71	74	77	0	00	28.95	29.96
04	BKN	250	10.00		75	72	73	90	5	02	28.93	29.94
07	OVC	250	6.00	BR	75	72	73	90	5	09	28.98	29.99
10	SCT	250	10.00		85	74	77	70	3	VR	28.98	29.99
13	BKN	250	8.00		91	76	80	61	6	26	28.96	29.97
16	FEW	035	10.00		86	74	77	67	8	03	28.92	29.93
19	SCT	100	10.00		83	71	75	67	7	29	28.92	29.93
22	BKN	250	10.00		78	72	74	82	7	22	28.97	29.97
SUNRISE: 0541					JUL 29			SUNSET: 1944				
01	OVC	250	10.00		77	72	74	85	3	26	28.95	29.96
04	SCT	250	8.00		75	72	73	90	5	14	28.93	29.94
07	BKN	250	8.00		76	73	74	91	3	32	28.98	30.00
10	SCT	250	10.00		84	72	76	67	3	03	28.99	30.00
13	SCT	250	10.00		88	71	76	57	3	VR	28.97	29.98
16	BKN	250	10.00		92	68	75	46	8	34	28.92	29.92
19	BKN	250	10.00		89	70	76	53	0	00	28.93	29.94
22	BKN	250	10.00		82	74	76	77	0	00	28.97	29.98
SUNRISE: 0542					JUL 30			SUNSET: 1943				
01	FEW	200	8.00		78	74	75	87	3	12	28.93	29.93
04	BKN	090	10.00		78	73	75	85	3	VR	28.95	29.95
07	SCT	250	9.00		78	72	74	82	3	36	28.98	29.99
10	SCT	021	10.00		82	71	74	69	5	VR	29.00	30.01
13	BKN	250	10.00		87	72	76	61	5	03	28.99	30.00
16	BKN	250	10.00		89	70	76	53	9	33	28.93	29.94
19	BKN	250	10.00		85	65	72	51	13	35	28.93	29.94
22	FEW	250	10.00		77	63	68	62	8	35	29.00	30.01

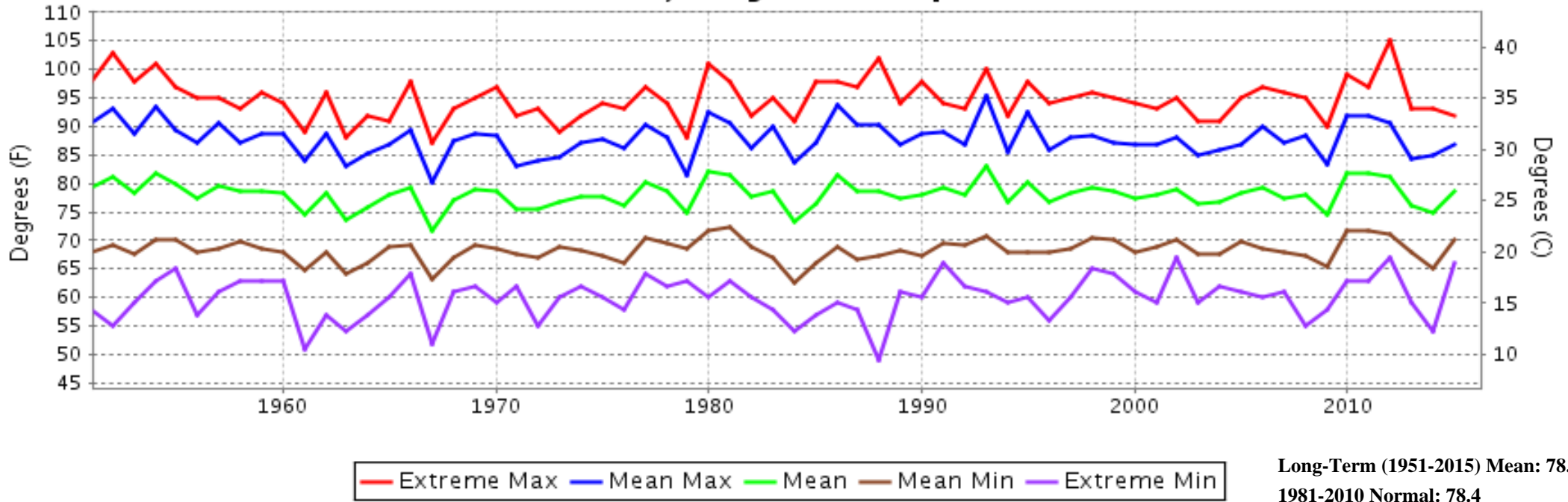
HOUR (LST)	SKY COVER	CEILING 100's of FT.	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)	
					DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION Tens of Deg	STATION	SEA LEVEL
SUNRISE: 0543					JUL 31			SUNSET: 1942				
01	BKN	060	10.00		74	64	68	71	5	01	29.00	30.01
04	CLR	NC	10.00		70	62	65	76	7	01	28.99	30.00
07	SCT	250	10.00		71	61	65	71	8	01	29.01	30.02
10	SCT	250	10.00		80	61	68	52	11	03	29.02	30.03
13	FEW	250	10.00		84	58	68	41	8	04	29.00	30.01
16	FEW	250	10.00		87	58	69	37	11	36	28.95	29.96
19	FEW	060	10.00		82	58	67	44	7	03	28.95	29.96
22	CLR	NC	10.00		74	61	66	64	3	04	28.98	29.99

**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, W = 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.**

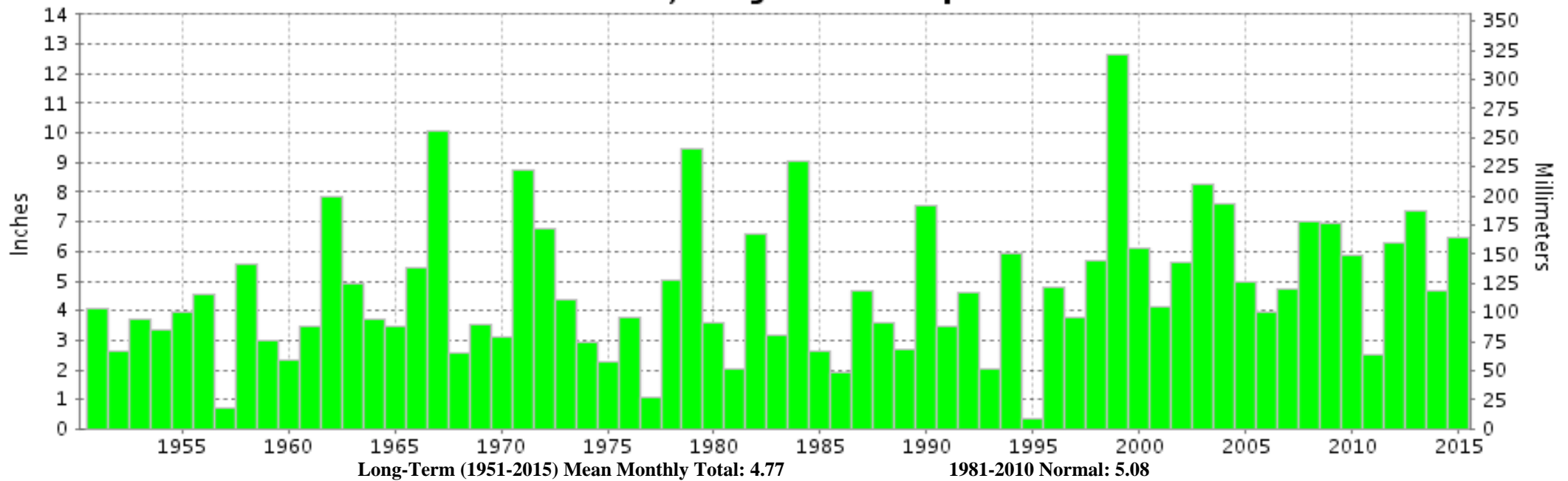
## SUMMARY BY HOUR

HOUR (LST)	AVERAGES								RESULTANT WIND (MPH)	
	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY	PRESSURE (Inches, HG)		VISIBILITY (Miles)	WIND SPEED (MPH)	SPEED	DIRECTION
					STATION	SEA LEVEL				
01	73	69	70	86	28.95	29.96	9.48	4	3	24
02	73	69	70	88	28.94	29.96	9.29	4	3	25
03	72	69	70	88	28.94	29.95	9.08	4	3	24
04	72	68	70	89	28.94	29.95	9.16	4	3	24
05	72	68	70	90	28.95	29.96	8.52	4	2	24
06	71	68	70	90	28.96	29.97	8.43	4	3	25
07	73	69	70	88	28.97	29.99	8.77	5	3	24
08	75	69	71	83	28.99	30.00	8.95	6	3	25
09	77	70	72	80	28.99	30.01	8.94	7	3	25
10	79	70	73	75	28.99	30.00	9.02	8	4	25
11	81	70	74	72	28.99	30.00	9.58	7	4	26
12	82	70	74	67	28.98	29.99	9.32	8	5	26
13	84	70	74	63	28.97	29.98	9.42	9	5	26
14	84	69	74	63	28.95	29.96	9.38	9	5	26
15	85	69	74	60	28.94	29.95	9.48	8	4	26
16	84	68	73	62	28.93	29.94	9.32	10	5	26
17	83	68	73	63	28.93	29.94	9.61	10	5	26
18	83	69	73	64	28.92	29.94	9.84	9	4	26
19	81	69	73	67	28.93	29.94	9.90	7	3	25
20	79	69	72	73	28.93	29.94	9.94	6	3	25
21	78	69	72	76	28.94	29.95	9.97	6	3	25
22	76	69	72	79	28.96	29.97	9.97	5	3	25
23	75	69	71	82	28.96	29.97	9.81	5	4	25
24	74	69	71	84	28.96	29.97	9.23	5	3	25

## KNOXVILLE, TN JULY Temperatures



## KNOXVILLE, TN JULY Precipitation





**JULY 2015  
KNOXVILLE, TN**

## **LOCAL CLIMATOLOGICAL DATA**

### **NOAA, National Centers for Environmental Information**

*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 Centers for Environmental Information (NCEI), Asheville, North Carolina 28801.*

A handwritten signature in black ink, appearing to read "Thomas R. Karl".

**DIRECTOR**

NCEI now offers free online access to the **Edited Local Climatological Data Publication**. Go to : [www.ncdc.noaa.gov/IPS/lcd/lcd.html](http://www.ncdc.noaa.gov/IPS/lcd/lcd.html)

We welcome your questions or comments, please contact us at:  
(828) 271-4800, option 2  
Fax Number : 828-271-4876  
TDD : (828) 271-4010  
or Email : [ncei.orders@noaa.gov](mailto:ncei.orders@noaa.gov)

NOAA, National Centers for Environmental Information  
Attn: Customer Engagement Branch  
151 Patton Avenue  
Asheville, NC 28801-5001