



# NOVEMBER 2014 LOCAL CLIMATOLOGICAL DATA NOAA, National Climatic Data Center

**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			
01	40	35	38	-15	31	35	27	0	RA SN HZ	0		T	T	29.05	30.14	9.1	34	10.0	29	36	21	35	01	
02	50	28	39	-14	26	34	26	0	RA	0		0.0	T	29.31	30.39	4.5	03	5.4	23	04	20	04	02	
03	62	28	45	-8	32	38	20	0		0		0.0	0.00	29.34	30.40	0.2	24	2.5	10	22	9	24	03	
04	69	37	53	1	34	43	12	0		0		0.0	0.00	29.23	30.27	3.4	24	5.0	20	23	16	23	04	
05	54	46	50	-2	45	48	15	0	RA	0		0.0	0.01	29.16	30.19	1.9	02	2.4	10	04	9	03	05	
06	68	47	58	6	45	51	7	0	RA DZ BR	0		0.0	0.25	28.97	30.01	10.4	26	12.0	40	27	31	27	06	
07	50	37	44	-7	34	39	21	0		0		0.0	0.00	29.07	30.11	5.7	36	6.7	21	31	16	34	07	
08	58	33	46	-5	36	41	19	0	FG BCFG BR HZ	0		0.0	0.00	28.95	29.99	1.3	25	3.3	16	25	13	25	08	
09	61	35	48	-3	38	43	17	0	BCFG BR	0		0.0	0.00	28.95	30.00	0.4	02	1.6	11	06	9	06	09	
10	67	35	51	0	40	44	14	0	BCFG BR	0		0.0	0.00	28.96	30.01	0.6	35	0.9	10	33	8	33	10	
11	68	36	52	2	42	47	13	0		0		0.0	0.00	28.94	29.98	3.0	22	3.8	25	23	20	25	11	
12	58	38	48	-2	39	43	17	0	RA DZ	0		0.0	T	29.05	30.11	7.7	35	8.5	18	01	15	02	12	
13	39	30	35	-15	28	33	30	0	RA DZ SN PL BR	0		T	T	29.13	30.21	7.0	35	7.6	19	36	15	34	13	
14	36	24	30	-19	14	24	35	0		0		0.0	0.00	29.23	30.32	8.2	02	9.4	22	01	17	04	14	
15	44	20	32	-17	18	27	33	0		0		0.0	0.00	29.26	30.34	3.8	04	4.5	15	04	13	04	15	
16	41	33	37	-12	32	36	28	0	RA BR	0		0.0	0.25	29.10	30.14	3.0	04	3.7	13	01	7	02	16	
17	46	25	36	-13	31	35	29	0	RA DZ SN PL BR	0		T	1.01	28.83	29.91	8.6	28	11.0	29	28	23	29	17	
18	31	21	26*	-22	10	21	39	0	SN	0		T	T	29.19	30.29	8.2	26	9.1	23	28	18	27	18	
19	46	18*	32	-16	18	28	33	0		0		0.0	0.00	29.21	30.28	12.3	22	12.4	31	22	25	22	19	
20	53	35	44	-4	25	36	21	0		0		0.0	0.00	29.11	30.18	12.0	24	12.4	29	23	23	24	20	
21	51	28	40	-8	19	31	25	0		0		0.0	0.00	29.32	30.41	4.2	02	6.0	14	02	12	03	21	
22	59	26	43	-5	26	35	22	0		0		0.0	0.00	29.29	30.34	1.2	06	1.4	9	07	8	07	22	
23	66	38	52	5	43	47	13	0	RA BR	0		0.0	0.32	28.84	29.84	2.0	14	8.7	39	19	28	20	23	
24	70*	47	59*	13	47	54	6	0		0		0.0	0.00	28.66	29.73	17.4	22	18.6	47*	23	38*	22	24	
25	58	39	49	3	30	41	16	0		0		0.0	0.00	29.01	30.08	1.5	30	3.5	17	29	13	27	25	
26	52	38	45	-1	30	39	20	0	RA	0		0.0	0.02	28.98	30.02	5.5	23	7.4	27	22	23	21	26	
27	42	31	37	-9	29	34	28	0	RA SN PL BR	0		T	0.24	29.14	30.25	8.4	27	10.4	22	28	16	28	27	
28	43	24	34	-11	21	29	31	0		0		0.0	0.00	29.29	30.36	1.3	28	1.8	11	28	9	29	28	
29	55	26	41	-4	31	37	24	0		0		0.0	0.00	29.12	30.18	6.5	23	6.9	31	21	21	22	29	
30	64	52	58	13	46	52	7	0	RA	0		0.0	T	29.12	30.19	14.3	22	14.8	37	21	29	22	30	

53.4		33.0		43.2		☼	31.3		38.2		21.6		0.0		< MONTHLY AVERAGES   TOTALS >		T		2.10		29.09		30.16		2.8		27		7.1		< MONTHLY AVERAGES	
-7.0		-6.0		-6.5			<-----DEPARTURE FROM NORMAL----->										-1.91		SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3													
<b>DEGREE DAYS</b>										GREATEST 24-HR PRECIPITATION : 1.25 DATE : 16-17										SEA LEVEL PRESSURE				DATE		TIME						
MONTHLY					SEASON TO DATE					GREATEST 24-HR SNOWFALL : T DATE : 27+					MAXIMUM :				30.48		21		1053									
TOTAL DEPARTURE					TOTAL DEPARTURE					GREATEST SNOW DEPTH : 0 DATE :					MINIMUM :				29.52		23		1853									
HEATING :		648		186		826		145		NUMBER OF -> DAYS WITH		MAXIMUM TEMP >= 90 :		0		MINIMUM TEMP <= 32 :		13		PRECIPITATION >= 0.01 INCH :		7										
COOLING :		0		-3		1486		-40		THUNDERSTORMS :		0		MAXIMUM TEMP <= 32 :		1		MINIMUM TEMP <= 0 :		0		PRECIPITATION >= 0.10 INCH :		5								
																				SNOWFALL >= 1.0 INCH :		0										

**NOVEMBER 2014  
KNOXVILLE, TN**

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

KNOXVILLE, TN (KTYS)  
NOVEMBER 2014

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	T			T	T	T	T	T				01	T		T				T	T	T	T	01	T	T		
02	T												02											02	T	T		
03													03											03	0.00	0.00		
04													04											04	0.00	0.00		
05												T	05	0.01	T						T	T	T	05	0.01	0.01		
06	0.03	0.01	0.14	0.05	0.02	T		T					06											06	0.25	0.25		
07													07											07	0.00	0.00		
08													08											08	0.00	0.00		
09													09											09	0.00	0.00		
10													10											10	0.00	0.00		
11													11											11	0.00	0.00		
12					T	T	T	T					12									T		12	T	T		
13					T	T	T	T	T				13			T	T	T						13	T	T		
14													14											14	0.00	0.00		
15													15											15	0.00	0.00		
16												T	16	0.01	0.02	0.06	0.07	0.04	0.01	0.01	0.01	0.02	T	16	0.25	0.25		
17	0.11	0.07	0.02	0.07	0.13	0.22	0.20	0.11	0.05	T	0.01	0.01	17	0.01							T	T	17	1.01	1.01			
18	T						T	T					18											18	T	T		
19													19											19	0.00	0.00		
20													20											20	0.00	0.00		
21													21											21	0.00	0.00		
22													22											22	0.00	0.00		
23											T	T	23	0.02	T	0.02	0.06	0.03	0.03	0.15	0.01			23	0.32	0.32		
24													24											24	0.00	0.00		
25													25											25	0.00	0.00		
26													26									T	0.01	0.01	26	0.02	0.02	
27	0.11	0.12	T							0.01			27				T							27	0.24	0.24		
28													28											28	0.00	0.00		
29													29											29	0.00	0.00		
30													30		T									30	T	T		

\* 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)	0.05	0.09	0.11	0.13	0.16	0.23	0.30	0.36	0.40	0.43	0.51	0.57
Ending Date	23	23	23	23	17	17	17	17	17	17	17	17
Ending Time (Hr/Min)	1839	1839	1839	1843	0621	0616	0621	0625	0638	0659	0621	0638

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 NOVEMBER 2014

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	5.00	10.00
02	10.00	10.00
03	10.00	10.00
04	10.00	10.00
05	7.00	10.00
06	3.00	10.00
07	10.00	10.00
08	0.50	10.00
09	3.00	10.00
10	4.00	10.00
11	7.00	10.00
12	9.00	10.00
13	3.00	10.00
14	10.00	10.00
15	10.00	10.00
16	2.50	10.00
17	1.50	10.00
18	9.00	10.00
19	10.00	10.00
20	10.00	10.00
21	10.00	10.00
22	10.00	10.00
23	4.00	10.00
24	10.00	10.00
25	8.00	10.00
26	10.00	10.00
27	3.00	10.00
28	10.00	10.00
29	8.00	10.00
30	10.00	10.00
<b>AVGS</b>	7.25	10.00
<b>MINIMUM VISIBILITY (MILES)</b>		
<= .25	<= 3.0	>= 7.0
0	7	20

OBSERVATIONS AT 3-HOURLY INTERVALS

KNOXVILLE, TN  
NOVEMBER 2014 KTYS

WBAN # 13891

Table with 20 columns and multiple rows. Columns include: HOUR (LST), SKY COVER, CEILING 100's of FT., VISIBILITY (MILES), WEATHER, TEMPERATURE °F (DRY BULB, DEW POINT, WET BULB), WIND (SPEED MPH, DIRECTION), PRESSURE (INCHES, HG) STATION, SEA LEVEL. Data is organized by date (NOV 01 to NOV 12) and time intervals.



# OBSERVATIONS AT 3-HOURLY INTERVALS

KNOXVILLE, TN

NOVEMBER 2014 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
<b>SUNRISE: 0722      NOV 25      SUNSET: 1724</b>												
01	BKN	250	10.00		48	33	41	56	8	27	28.99	30.03
04	BKN	250	10.00		43	31	38	63	3	23	29.03	30.07
07	BKN	250	10.00		40	32	37	73	0	00	29.05	30.10
10	FEW	250	10.00		46	34	41	63	0	00	29.09	30.14
13	SCT	250	10.00		56	29	44	36	6	36	29.03	30.08
16	BKN	250	10.00		55	27	43	34	5	VR	28.98	30.03
19	OVC	250	10.00		48	30	40	50	6	06	28.98	30.03
22	OVC	250	10.00		49	30	41	48	6	36	29.02	30.07
<b>SUNRISE: 0723      NOV 26      SUNSET: 1724</b>												
01	OVC	250	10.00		46	30	39	54	7	02	28.98	30.03
04	OVC	090	10.00		44	30	38	58	5	32	28.96	30.01
07	SCT	110	10.00		40	31	36	70	8	27	28.97	30.02
10	FEW	045	10.00		44	33	39	65	5	21	29.02	30.07
13	SCT	200	10.00		49	32	42	52	5	19	29.00	30.04
16	FEW	250	10.00		51	23	40	33	14	25	28.96	30.01
19	OVC	250	10.00		44	28	37	53	9	21	28.98	30.04
22	OVC	070	10.00		46	27	38	47	9	24	28.96	30.01
<b>SUNRISE: 0724      NOV 27      SUNSET: 1723</b>												
01	OVC	030	4.00	RA BR	40	37	39	89	11	24	28.95	30.00
04	OVC	036	10.00		40	35	38	83	14	24	29.00	30.05
07	OVC	048	10.00		38	32	36	79	7	26	29.08	30.14
10	OVC	025	10.00		38	32	36	79	8	29	29.18	30.24
13	OVC	038	10.00		38	31	35	76	10	28	29.21	30.28
16	BKN	055	10.00		37	27	33	67	13	28	29.25	30.32
19	OVC	041	10.00		34	24	30	67	16	28	29.32	30.39
22	OVC	037	10.00		32	22	28	66	7	35	29.35	30.43
<b>SUNRISE: 0725      NOV 28      SUNSET: 1723</b>												
01	OVC	042	10.00		31	24	29	76	5	25	29.33	30.41
04	SCT	040	10.00		27	21	25	78	5	27	29.32	30.40
07	FEW	040	10.00		25	21	24	85	3	21	29.34	30.42
10	BKN	130	10.00		32	21	28	64	5	03	29.38	30.46
13	FEW	180	10.00		37	21	31	52	0	00	29.30	30.38
16	FEW	250	10.00		42	19	34	40	0	00	29.22	30.30
19	CLR	NC	10.00		37	20	31	50	0	00	29.21	30.29
22	CLR	NC	10.00		32	21	28	64	0	00	29.18	30.25
<b>SUNRISE: 0725      NOV 29      SUNSET: 1723</b>												
01	SCT	250	10.00		30	23	28	75	0	00	29.15	30.22
04	SCT	200	10.00		29	23	27	78	0	00	29.15	30.22
07	SCT	200	9.00		27	23	26	85	0	00	29.19	30.27
10	BKN	250	10.00		36	27	33	70	0	00	29.18	30.26
13	OVC	030	10.00		51	30	42	44	17	23	29.11	30.17
16	OVC	060	10.00		54	36	46	51	14	23	29.06	30.11
19	BKN	050	10.00		50	37	44	61	10	24	29.05	30.11
22	BKN	045	10.00		51	39	45	64	11	24	29.06	30.11
<b>SUNRISE: 0726      NOV 30      SUNSET: 1723</b>												
01	BKN	043	10.00		54	40	47	59	13	23	29.07	30.11
04	BKN	050	10.00		56	42	49	60	16	22	29.10	30.14
07	OVC	046	10.00		56	47	51	72	14	21	29.14	30.19
10	OVC	050	10.00		60	50	55	70	17	21	29.18	30.22
13	OVC	050	10.00		63	50	56	63	24	21	29.14	30.18
16	FEW	041	10.00		64	48	55	56	20	23	29.12	30.16
19	CLR	NC	10.00		56	46	51	70	9	25	29.15	30.20
22	CLR	NC	10.00		52	45	48	77	9	24	29.19	30.24

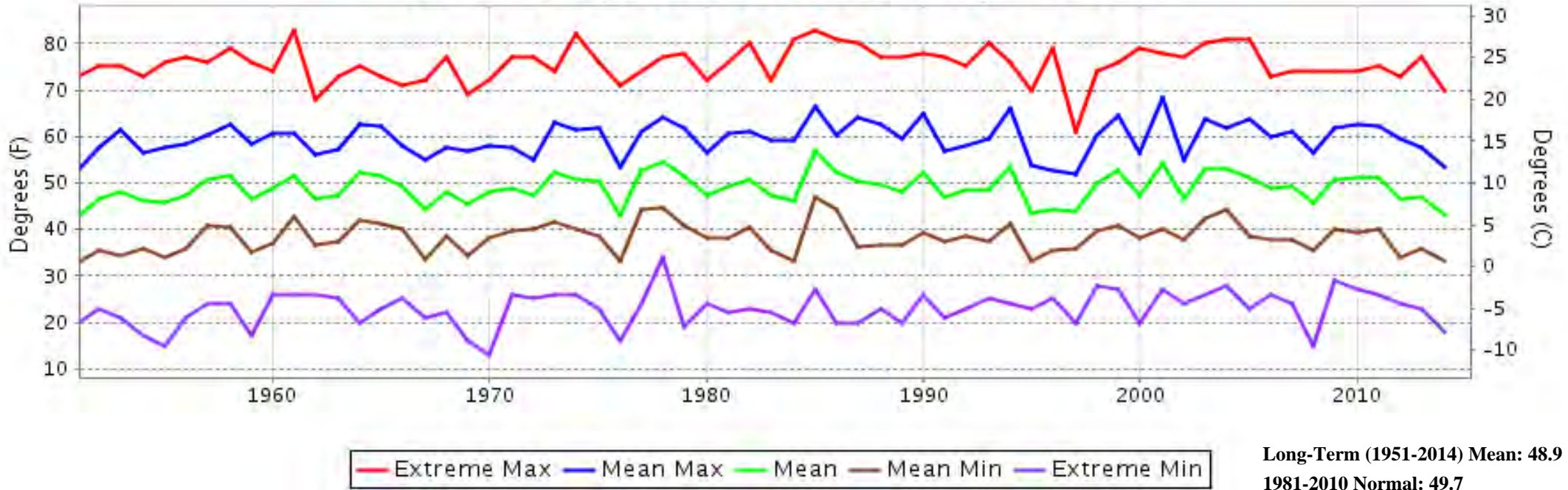
HOUR (LST)	SKY COVER	CEILING 100's of FT.	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)	
					DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION Tens of Deg	STATION	SEA LEVEL

**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.

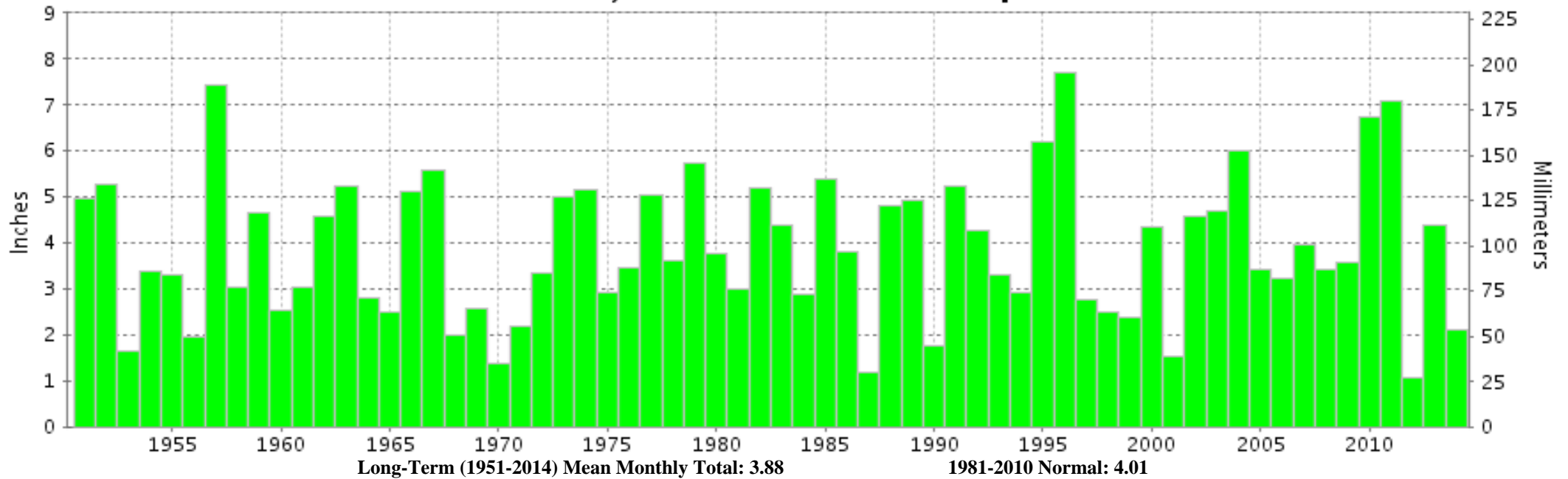
## SUMMARY BY HOUR

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	39	31	36	74	29.09	30.14	9.15	5	3	26
02	39	31	35	75	29.09	30.14	9.27	6	3	27
03	38	31	35	77	29.09	30.14	9.35	6	4	27
04	38	31	35	77	29.09	30.14	9.28	6	3	27
05	37	31	35	78	29.09	30.15	9.27	6	2	26
06	37	31	35	79	29.10	30.16	9.08	6	2	26
07	37	31	34	80	29.11	30.17	8.87	6	2	26
08	37	31	35	78	29.12	30.19	8.48	7	2	26
09	40	32	37	74	29.14	30.20	9.03	7	2	26
10	43	32	38	68	29.14	30.20	9.57	8	2	26
11	45	32	40	62	29.14	30.20	9.42	8	3	27
12	47	32	41	58	29.12	30.18	9.72	8	4	27
13	49	32	42	55	29.10	30.16	9.60	10	6	27
14	50	32	42	53	29.08	30.13	9.83	9	6	27
15	51	31	42	50	29.07	30.12	9.50	10	6	27
16	51	31	42	50	29.06	30.12	9.63	10	6	27
17	49	31	42	52	29.07	30.12	9.70	8	5	27
18	47	31	40	55	29.07	30.13	9.83	7	4	27
19	45	31	39	59	29.08	30.14	9.80	7	3	27
20	44	31	39	62	29.09	30.15	9.80	5	3	27
21	43	31	38	65	29.09	30.15	9.75	6	3	27
22	42	31	37	66	29.10	30.16	9.67	6	4	27
23	41	31	37	68	29.10	30.16	9.67	6	3	27
24	40	31	37	71	29.10	30.16	9.48	6	3	27

## KNOXVILLE, TN NOVEMBER Temperatures



## KNOXVILLE, TN NOVEMBER Precipitation





**NOVEMBER 2014  
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.*

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

**DIRECTOR**

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