

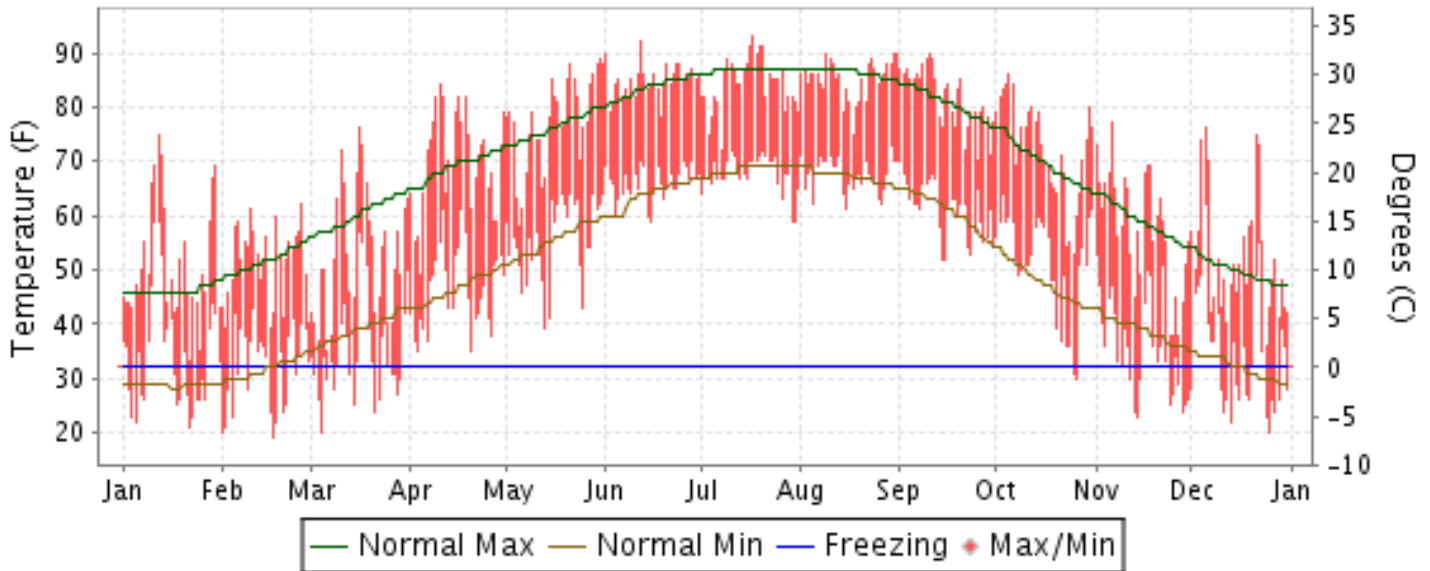


# 2013 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

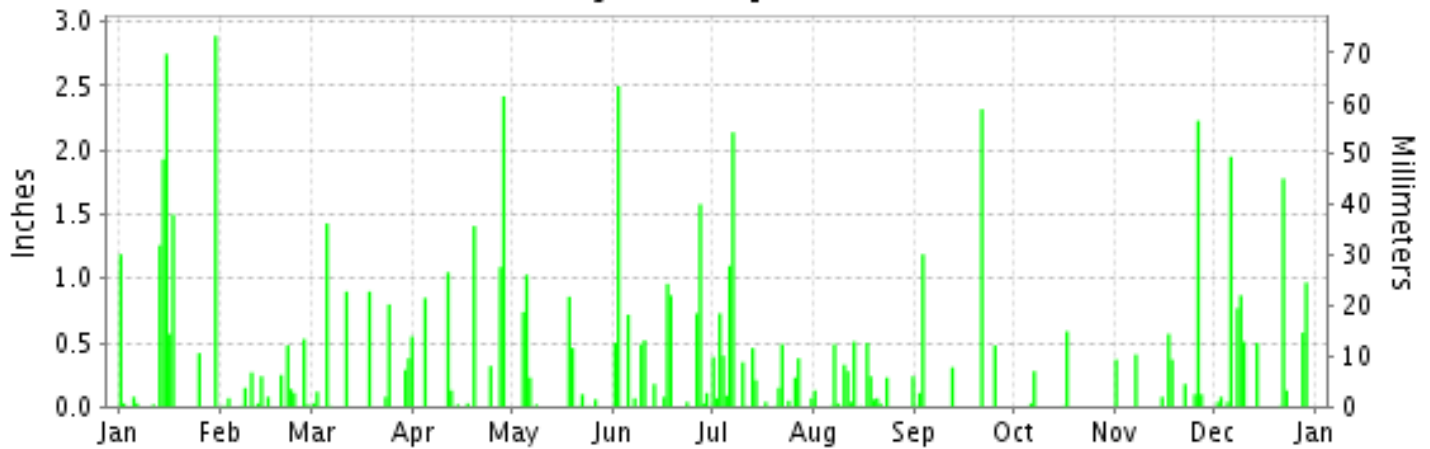
ISSN 0198-4802

## KNOXVILLE, TENNESSEE (KTYS)

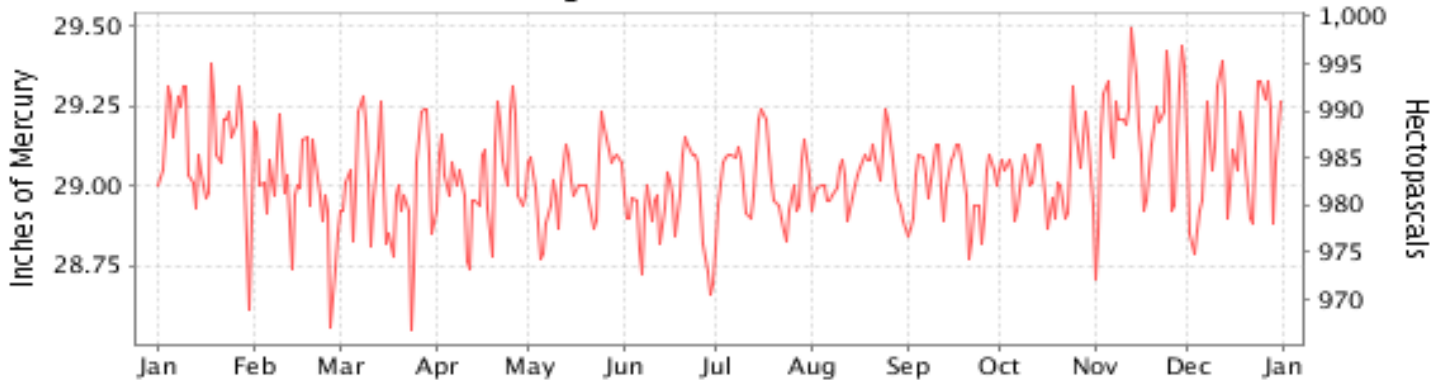
### Daily Max/Min Temperature



### Daily Precipitation



### Daily Station Pressure



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NATIONAL  
CLIMATIC DATA CENTER  
ASHEVILLE, NORTH CAROLINA

*Thomas R. Karl*  
DIRECTOR  
NATIONAL CLIMATIC DATA CENTER

# METEOROLOGICAL DATA FOR 2013

## KNOXVILLE (KTYS)

LATITUDE: 35° 49'N      LONGITUDE: 83° 59'W      ELEVATION (FT): GRND: 962 BARO: 982      TIME ZONE: EASTERN (UTC -5)      WBAN: 13891

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	51.1	51.5	53.1	70.2	77.3	84.8	84.4	85.2	81.6	72.2	57.8	52.4	68.5	
	HIGHEST DAILY MAXIMUM	75	62	76	84	89	92	93	90	90	86	77	76	93	
	DATE OF OCCURRENCE	12	26	16	10	30	12	17	31+	10	05	06	05	JUL 17	
	MEAN DAILY MINIMUM	34.2	32.0	35.0	46.5	55.6	66.0	67.8	67.5	61.1	51.1	36.0	34.3	48.9	
	LOWEST DAILY MINIMUM	21	19	20	35	39	59	59	61	52	30	23	20	19	
	DATE OF OCCURRENCE	22	17	04	20+	13	15	30+	15	15+	26	14	25	FEB 17	
	AVERAGE DRY BULB	42.7	41.8	44.0	58.4	66.4	75.4	76.1	76.4	71.3	61.7	46.9	43.3	58.7	
	MEAN WET BULB	38.6	36.4	38.2	51.5	59.4	68.6	70.1	69.9	65.1	56.1	40.8	39.2	52.8	
	MEAN DEW POINT	33.3	28.9	30.0	44.3	54.3	65.5	67.5	67.2	62.0	51.5	33.1	34.0	47.6	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	0	0	2	5	3	1	0	0	0	0	11
	MAXIMUM <= 32°	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MINIMUM <= 32°	15	12	15	0	0	0	0	0	0	2	11	16	71		
MINIMUM <= 0°	0	0	0	0	0	0	0	0	0	0	0	0	0		
H/C	HEATING DEGREE DAYS	688	644	643	221	69	0	0	0	1	154	535	669	3624	
	COOLING DEGREE DAYS	2	0	2	27	125	320	350	361	198	60	0	4	1449	
RH	MEAN (PERCENT)	73	64	62	62	68	75	79	78	76	72	62	73	70	
	HOUR 01 LST	80	70	68	72	79	88	90	91	91	86	72	79	81	
	HOUR 07 LST	82	79	73	75	77	82	84	88	89	86	75	84	81	
	HOUR 13 LST	64	50	52	49	53	59	65	59	55	51	46	62	55	
	HOUR 19 LST	72	60	58	58	63	71	77	77	75	71	57	70	67	
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	2	1	0	2	2	2	1	5	6	3	0	0	24	
	THUNDERSTORMS	1	0	3	3	7	15	13	8	4	0	0	1	55	
PR	MEAN STATION PRESS. (IN.)	29.13	29.00	29.00	29.03	29.00	28.93	29.02	29.02	29.00	29.04	29.18	29.10	29.04	
	MEAN SEA-LEVEL PRESS. (IN.)	30.20	30.04	30.05	30.07	30.03	29.95	30.04	30.04	30.02	30.08	30.24	30.17	30.08	
WINDS	RESULTANT SPEED (MPH)	1.9	3.2	3.2	1.9	2.0	3.0	0.5	1.3	0.8	1.5	2.2	1.7	1.6	
	RES. DIR. (TENS OF DEGS.)	27	26	26	25	24	23	27	27	36	25	36	27	27	
	MEAN SPEED (MPH)	6.3	7.3	7.4	6.2	5.9	5.7	4.5	4.3	3.8	4.3	4.9	5.1	5.5	
	PREVAIL.DIR.(TENS OF DEGS.)	02	22	25	04	22	22	21	22	02	24	03	22	22	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	37	35	33	33	30	32	28	21	25	37	31	35	37	
	DIR. (TENS OF DEGS.)	24	20	25	20	29	17	27	03	23	21	26	28	21	
	DATE OF OCCURRENCE	30	26	05	24	21	09	22	23	12	31	01	22	OCT 31	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	48	43	43	45	40	45	38	26	32	45	40	47	48	
DIR. (TENS OF DEGS.)	24	21	28	26	31	32	27	03	24	20	25	27	24		
DATE OF OCCURRENCE	30	26	05	11	21	26	22	23	12	31	01	22	JAN 30		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	12.67	2.42	5.49	7.32	3.52	9.38	7.37	3.21	4.42	0.91	4.41	8.23	69.35	
	GREATEST 24-HOUR (IN.)	2.94	0.62	1.43	2.75	1.62	2.86	3.03	0.64	2.32	0.60	2.27	1.95	3.03	
	DATE OF OCCURRENCE	15-16	21-22	05	27-28	04-05	01-02	06-07	17-18	21	16-17	25-26	06	JUL 06-07	
	NUMBER OF DAYS WITH:														
PRECIPITATION 0.01	12	17	11	9	10	15	19	17	6	4	9	13	142		
PRECIPITATION 0.10	8	8	8	7	6	11	12	9	5	2	8	9	93		
PRECIPITATION 1.00	6	0	1	4	1	2	2	0	2	0	1	2	21		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)	1.4	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	4.6	
	GREATEST 24-HOUR (IN.)	1.4	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	1.4	
	DATE OF OCCURRENCE	17	02	02								27		JAN 17	
	MAXIMUM SNOW DEPTH (IN.)	1	1	1	0	0	0	0	0	0	0	1	0	1	
	DATE OF OCCURRENCE	18+	02	02								27		NOV 27	
NUMBER OF DAYS WITH:															
SNOWFALL >= 1.0	1	0	0	0	0	0	0	0	0	0	0	0	1		

# NORMALS, MEANS, AND EXTREMES KNOXVILLE (KTYS)

LATITUDE:  
35° 49'N

LONGITUDE:  
83° 59'W

ELEVATION (FT):  
GRND: 962 BARO: 982

TIME ZONE:  
EASTERN (UTC -5)

WBAN: 13891

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	47.3	52.3	61.4	70.3	78.1	85.4	88.2	87.8	81.8	71.2	60.4	49.8	69.5
	MEAN DAILY MAXIMUM	104	48.0	50.1	60.4	69.6	78.3	84.4	87.9	87.0	81.2	71.4	58.5	49.9	68.9
	HIGHEST DAILY MAXIMUM	72	77	83	86	92	96	105	105	102	103	91	84	80	105
	YEAR OF OCCURRENCE		1950	1996	1963	1942	2011	2012	2012	2007	1954	1953	1948	1982	JUL 2012
	MEAN OF EXTREME MAXS.	104	67.5	70.5	78.7	85.0	88.4	93.2	95.0	94.3	91.6	83.5	75.9	68.8	82.7
	NORMAL DAILY MINIMUM	30	29.2	32.4	39.2	47.3	56.2	64.7	68.7	67.8	60.4	48.5	39.0	31.7	48.8
	MEAN DAILY MINIMUM	104	30.4	31.4	39.2	47.3	56.4	63.8	68.2	67.1	60.4	48.8	38.0	32.2	48.6
	LOWEST DAILY MINIMUM	72	-24	-8	1	22	32	43	49	49	36	25	5	-6	-24
	YEAR OF OCCURRENCE		1985	1996	1980	1987	1986	1956	1988	1946	1967	1987	1950	1983	JAN 1985
	MEAN OF EXTREME MINS.	104	10.2	13.8	22.4	31.8	41.4	53.1	60.0	59.3	47.5	33.0	22.9	15.1	34.2
	NORMAL DRY BULB	30	38.2	42.4	50.3	58.8	67.2	75.0	78.4	77.8	71.1	59.9	49.7	40.8	59.1
	MEAN DRY BULB	104	39.2	40.7	49.8	58.5	67.4	74.1	78.1	77.1	70.8	60.1	48.3	41.1	58.8
	MEAN WET BULB	30	33.5	36.0	43.0	50.4	59.6	66.6	69.9	69.1	63.2	52.6	43.0	36.1	51.9
	MEAN DEW POINT	30	31.1	33.6	39.6	47.6	57.8	65.3	68.7	67.9	61.5	50.9	40.9	33.9	49.9
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.0	0.0	0.4	5.9	11.3	10.3	3.4	0.0	0.0	0.0	31.3
	MAXIMUM <= 32	30	2.6	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	4.8
MINIMUM <= 32	30	19.0	13.3	7.6	1.4	0.0	0.0	0.0	0.0	0.0	1.1	7.6	17.0	67.0	
MINIMUM <= 0	30	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	
H/C	NORMAL HEATING DEG. DAYS	30	829	634	461	218	58	4	0	0	23	196	462	752	3637
	NORMAL COOLING DEG. DAYS	30	0	0	5	32	125	305	417	397	206	36	3	0	1526
RH	NORMAL (PERCENT)	30	74	70	66	65	73	75	75	76	75	75	74	75	73
	HOURLY 01 LST	30	79	75	73	73	84	87	88	88	87	87	81	80	82
	HOURLY 07 LST	30	82	81	81	82	88	89	90	92	92	91	86	84	87
	HOURLY 13 LST	30	64	60	56	52	58	59	61	60	59	56	59	65	59
	HOURLY 19 LST	30	69	61	57	54	63	64	65	66	68	66	67	70	64
S	PERCENT POSSIBLE SUNSHINE	57	40	47	53	63	64	65	64	63	61	61	49	40	56
W/O	MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI)	50	2.6	1.8	1.6	1.3	2.2	1.7	2.0	3.3	3.7	4.2	2.9	2.4	29.7
	THUNDERSTORMS	66	0.9	1.4	3.3	4.6	6.9	8.6	10.1	7.0	3.1	1.3	1.0	0.7	48.9
CLOUDINESS	MEAN: SUNRISE-SUNSET (OKTAS)						4.0	3.2							
	MIDNIGHT-MIDNIGHT (OKTAS)							3.2							
	MEAN NO. DAYS WITH: CLEAR	1	4.0	1.0	4.0		13.0	11.0							
	PARTLY CLOUDY				1.0		3.0	5.0							
	CLOUDY	1	2.0	3.0	10.0		4.0	4.0							
PR	MEAN STATION PRESSURE(IN)	30	29.08	29.04	29.01	28.97	28.97	28.97	29.00	29.00	29.02	29.05	29.07	29.09	29.02
	MEAN SEA-LEVEL PRES. (IN)	30	30.14	30.10	30.05	30.00	30.00	29.99	30.01	30.01	30.04	30.09	30.12	30.15	30.06
WINDS	MEAN SPEED (MPH)	30	6.7	7.0	7.3	7.1	6.2	5.6	5.4	4.8	4.9	5.0	5.5	6.2	6.0
	PREVAIL.DIR(TENS OF DEGS)	40	24	25	24	24	24	24	24	24	05	05	05	24	24
	MAXIMUM 2-MINUTE: SPEED (MPH)	18	43	46	46	64	41	46	46	49	31	43	49	44	64
	DIR. (TENS OF DEGS)		27	27	29	28	23	26	25	24	16	26	25	24	28
	YEAR OF OCCURRENCE		1996	2009	2012	1996	2012	2011	2005	2012	2011	2001	2000	2006	APR 1996
	MAXIMUM 3-SECOND SPEED (MPH)	18	54	56	58	76	55	58	68	61	45	56	61	57	76
	DIR. (TENS OF DEGS)		28	27	29	27	12	27	25	24	19	26	24	28	27
	YEAR OF OCCURRENCE		2008	2009	2012	1996	2009	2011	1997	2012	2008	2001	2000	1996	APR 1996
PRECIPITATION	NORMAL (IN)	30	4.32	4.26	4.34	4.01	4.51	3.81	5.08	3.27	3.24	2.51	4.01	4.50	47.86
	MAXIMUM MONTHLY (IN)	72	12.67	9.38	11.81	11.07	10.98	9.38	12.66	8.88	9.19	6.67	10.36	11.63	12.67
	YEAR OF OCCURRENCE		2013	1944	1994	1998	1974	2013	1999	1942	1989	1949	1948	1961	JAN 2013
	MINIMUM MONTHLY (IN)	72	0.95	0.74	1.69	0.39	0.74	0.20	0.33	0.77	0.42	T	0.97	0.45	0.20
	YEAR OF OCCURRENCE		1986	1968	1986	1976	1970	1944	1995	1954	1985	1963	1942	1965	JUN 1944
	MAXIMUM IN 24 HOURS (IN)	72	3.89	3.42	5.77	3.71	4.35	3.57	4.69	3.25	5.98	2.46	4.06	4.89	5.98
	YEAR OF OCCURRENCE		1946	1991	1994	2006	2003	1972	1942	1959	2011	2010	1948	1969	SEP 2011
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	11.2	11.0	12.0	10.7	11.4	11.4	11.3	8.8	7.7	8.2	9.9	11.6	125.2
	PRECIPITATION >= 1.00	30	1.1	1.2	0.9	0.8	1.3	1.0	1.7	0.9	1.0	0.6	0.8	1.1	12.4
SNOWFALL	NORMAL (IN)	30	2.7	1.6	0.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	6.5
	MAXIMUM MONTHLY (IN)	69	15.1	23.3	20.2	10.7	T	T	0.0	T	T	T	18.2	12.2	23.3
	YEAR OF OCCURRENCE		1962	1960	1960	1987	2008	2011		1995	2006	1993	1952	1963	FEB 1960
	MAXIMUM IN 24 HOURS (IN)	69	12.0	17.5	14.1	10.7	T	T	0.0	T	T	T	18.2	8.9	18.2
	YEAR OF OCCURRENCE		1962	1960	1993	1987	1945	2011		1995	2006	1993	1952	1969	NOV 1952
	MAXIMUM SNOW DEPTH (IN)	62	10	15	15	7	0	0	0	0	0	0	10	6	15
	YEAR OF OCCURRENCE		1966	1960	1993	1987							1952	1963	MAR 1993
NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	1.0	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.2	

**PRECIPITATION (inches) 2013 KNOXVILLE (KTYS)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1984	2.26	4.42	3.79	3.37	10.14	4.34	9.03	1.72	0.85	3.26	2.87	2.49	48.54
1985	3.17	4.11	1.98	2.86	1.60	4.77	2.63	4.07	0.42	3.04	5.39	2.36	36.40
1986	0.95	3.90	1.69	2.25	2.40	0.69	1.89	3.37	3.59	3.84	3.83	4.08	32.48
1987	4.68	4.63	2.91	2.18	4.62	2.66	4.67	1.08	1.93	0.60	1.21	3.49	34.66
1988	4.29	2.94	2.42	2.34	2.35	0.51	3.60	3.20	2.68	1.52	4.82	3.99	34.66
1989	4.96	6.26	3.82	3.50	5.31	8.21	2.68	3.16	9.19	1.47	4.92	2.74	56.22
1990	5.88	6.90	5.73	2.56	4.71	1.72	7.56	3.02	2.68	3.64	1.77	8.99	55.16
1991	2.53	6.99	6.36	3.97	3.10	6.02	3.45	6.13	3.14	1.10	5.24	10.23	58.26
1992	3.87	3.36	3.99	2.11	3.20	3.07	4.62	4.22	1.77	3.05	4.29	6.68	44.23
1993	4.09	2.20	6.16	2.50	3.78	0.90	2.03	6.04	4.77	2.25	3.33	7.04	45.09
1994	7.08	8.81	11.81	7.90	3.04	5.97	5.94	4.19	1.20	2.38	2.93	2.02	63.27
1995	4.90	4.54	3.54	1.74	7.05	3.90	0.33	2.08	2.46	3.58	6.21	2.50	42.83
1996	7.53	2.74	4.72	4.50	4.57	2.96	4.77	1.33	3.45	1.17	7.71	5.44	50.89
1997	5.20	5.17	6.34	3.82	6.76	5.70	3.75	2.02	3.32	2.90	2.78	2.37	50.13
1998	4.62	2.71	4.75	11.07	3.84	7.96	5.69	2.07	1.31	1.42	2.51	5.95	53.90
1999	6.62	3.50	4.85	3.40	4.92	5.58	12.66	0.85	0.82	2.84	2.40	1.70	50.14
2000	5.14	3.42	4.37	6.69	5.90	3.36	6.12	1.40	3.82	T	4.35	2.45	47.02
2001	4.74	6.46	2.63	2.82	3.46	3.88	4.14	3.74	3.56	0.86	1.55	4.66	42.50
2002	8.06	1.69	10.59	1.44	4.66	3.91	5.65	1.41	5.17	5.59	4.58	5.35	58.10
2003	3.17	8.69	2.07	5.95	8.09	2.45	8.27	5.48	5.14	1.24	4.71	3.40	58.66
2004	2.74	3.64	4.61	2.73	5.35	7.90	7.62	2.18	4.75	3.10	6.01	5.56	56.19
2005	2.33	3.77	3.47	4.76	3.18	3.09	4.98	3.77	1.74	1.08	3.43	2.83	38.43
2006	4.00	2.55	3.22	7.57	2.13	2.38	3.94	6.39	6.17	4.11	3.24	2.09	47.79
2007	2.12	1.54	2.62	5.05	1.48	1.34	4.71	4.13	1.49	1.23	3.98	4.20	33.89
2008	3.13	4.81	4.33	3.74	3.39	2.19	7.04	1.91	3.16	1.66	3.41	8.98	47.75
2009	6.60	2.73	3.50	2.90	8.10	4.85	6.97	6.22	4.64	4.28	3.58	6.29	60.66
2010	6.21	2.78	2.88	2.51	4.22	1.25	5.89	2.80	4.34	3.99	6.73	2.20	45.80
2011	3.42	4.09	6.38	9.08	1.64	2.99	2.49	1.06	8.74	4.76	7.08	4.91	56.64
2012	5.67	4.06	6.06	3.64	3.61	2.53	6.27	4.14	7.64	2.78	1.06	6.18	53.64
2013	12.67	2.42	5.49	7.32	3.52	9.38	7.37	3.21	4.42	0.91	4.41	8.23	69.35
POR= 104 YRS	4.59	4.27	4.89	4.02	3.97	3.94	4.84	3.39	3.04	2.66	3.53	4.56	47.70

WBAN : 13891

**AVERAGE TEMPERATURE (°F) 2013 KNOXVILLE (KTYS)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1984	35.3	43.4	47.7	57.3	62.8	74.8	73.3	74.1	67.1	67.6	46.3	47.5	58.1
1985	29.4	37.1	50.2	58.6	65.7	72.5	76.5	75.1	68.5	63.7	56.8	34.8	57.4
1986	35.0	43.9	48.7	58.6	68.1	77.2	81.4	76.7	72.8	60.2	52.4	39.1	59.5
1987	36.8	42.2	49.2	55.0	71.3	75.5	78.5	79.6	70.1	52.8	50.2	43.5	58.7
1988	33.9	39.4	50.1	57.2	65.0	74.4	78.7	79.6	71.3	52.7	49.7	40.4	57.7
1989	42.8	41.3	53.5	57.8	62.4	73.3	77.5	76.8	70.9	59.4	48.1	32.2	58.0
1990	44.7	48.9	53.6	57.9	65.9	75.4	78.0	77.9	72.1	59.9	52.1	45.1	61.0
1991	41.2	43.8	52.0	62.8	72.0	74.9	79.3	76.5	71.4	61.0	47.1	43.5	60.5
1992	40.5	45.8	48.3	59.0	64.0	72.2	77.9	73.7	71.3	57.4	48.3	40.0	58.2
1993	43.5	39.5	45.7	56.2	67.0	76.0	83.0	78.7	70.6	57.9	48.4	40.2	58.9
1994	32.0	43.4	49.5	61.9	63.9	76.5	76.8	75.8	69.0	60.1	53.6	44.8	58.9
1995	39.2	40.7	53.1	61.0	67.3	73.8	80.2	81.5	70.5	58.6	43.6	37.1	58.9
1996	36.4	39.6	44.8	55.1	69.4	74.2	76.8	76.2	68.9	59.2	44.1	43.3	57.3
1997	39.4	46.6	54.2	54.0	62.2	71.9	78.4	75.7	71.7	58.9	43.9	39.2	58.0
1998	42.8	46.0	49.4	57.3	70.7	75.9	79.4	77.7	76.0	61.9	50.1	44.4	61.0
1999	43.6	44.1	45.3	61.2	66.2	75.0	78.6	77.7	69.9	58.5	52.7	42.4	59.6
2000	37.5	46.1	53.2	55.9	69.9	74.8	77.3	76.9	70.7	61.0	47.4	34.0	58.7
2001	35.5	45.8	46.3	61.7	68.4	72.9	78.0	77.5	68.2	56.9	54.2	45.6	59.3
2002	41.5	41.3	50.3	62.7	65.3	76.6	79.1	78.9	74.9	62.9	46.4	40.7	60.1
2003	33.9	40.9	53.3	60.4	67.5	72.1	76.3	77.8	69.4	58.5	53.0	38.5	58.5
2004	37.3	40.4	53.3	58.5	70.8	74.6	76.7	73.8	70.2	63.8	53.1	39.9	59.4
2005	43.0	44.1	48.5	58.6	64.1	75.0	78.4	79.3	74.1	61.1	51.3	37.6	59.6
2006	45.7	40.7	50.8	63.6	65.5	75.4	79.4	80.4	68.2	56.8	48.9	44.3	60.0
2007	41.2	38.2	57.0	56.1	70.0	76.7	77.5	83.2	74.7	65.1	49.3	45.5	61.2
2008	37.0	43.2	49.4	59.3	66.4	76.7	77.9	77.1	73.0	59.1	45.8	42.1	58.9
2009	36.6	42.8	51.3	58.4	67.5	76.0	74.5	76.4	71.8	58.0	50.9	39.0	58.6
2010	34.3	34.8	47.4	62.0	70.8	79.9	81.8	81.4	73.2	60.0	51.0	32.8	59.1
2011	36.0	46.2	52.9	63.4	68.1	78.0	81.8	80.1	69.9	58.0	51.2	45.0	60.9
2012	43.3	46.2	60.4	61.5	71.9	76.0	81.0	76.3	70.6	58.1	46.7	46.0	61.5
2013	42.7	41.8	44.0	58.4	66.4	75.4	76.1	76.4	71.3	61.7	46.9	43.3	58.7
POR= 104 YRS	39.2	40.7	49.8	58.5	67.4	74.1	78.1	77.1	70.8	60.1	48.3	41.1	58.8

**HEATING DEGREE DAYS (base 65°F) 2013 KNOXVILLE (KTYS)**

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1984-85	0	0	44	30	556	536	1095	776	459	208	51	13	3768
1985-86	0	0	44	86	250	927	922	582	499	206	51	0	3567
1986-87	0	2	0	197	377	797	863	631	483	313	13	0	3676
1987-88	0	0	15	370	437	660	956	734	458	247	66	9	3952
1988-89	0	0	3	384	454	755	681	660	360	258	148	1	3704
1989-90	0	1	36	204	499	1011	622	443	358	239	68	0	3481
1990-91	0	0	26	182	382	612	730	589	405	93	16	0	3035
1991-92	0	0	46	159	538	660	753	549	512	225	113	6	3561
1992-93	0	0	13	229	494	769	659	708	592	270	38	2	3774
1993-94	0	0	37	232	495	761	1016	597	473	139	93	0	3843
1994-95	0	0	11	158	336	620	794	674	364	162	54	0	3173
1995-96	0	0	22	216	638	857	877	732	622	302	45	0	4311
1996-97	0	0	30	196	623	663	786	512	332	333	124	8	3607
1997-98	0	0	1	226	625	794	681	528	500	234	30	12	3631
1998-99	0	0	1	133	438	632	656	578	604	149	24	0	3215
1999-00	0	0	28	206	359	694	846	542	354	265	9	6	3309
2000-01	0	0	34	149	522	955	908	530	571	155	25	1	3850
2001-02	0	0	57	263	320	594	719	657	451	152	99	0	3312
2002-03	0	0	2	126	555	749	957	669	358	148	11	4	3579
2003-04	0	0	29	206	358	818	853	708	365	225	42	0	3604
2004-05	0	0	4	75	362	772	675	580	506	197	90	0	3261
2005-06	0	0	1	187	416	844	593	674	444	102	77	0	3338
2006-07	0	0	32	271	476	633	732	745	277	288	23	0	3477
2007-08	0	0	0	106	464	597	861	624	476	194	53	0	3375
2008-09	0	0	0	223	569	702	870	615	418	231	39	0	3667
2009-10	0	0	13	221	412	800	945	839	539	127	23	0	3919
2010-11	0	0	4	157	416	987	891	520	373	134	85	0	3567
2011-12	0	0	11	227	412	611	666	540	175	143	8	3	2796
2012-13	0	0	15	221	542	582	688	644	643	221	69	0	3625
2013-	0	0	1	154	535	669							

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**COOLING DEGREE DAYS (base 65°F) 2013 KNOXVILLE (KTYS)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1984	0	0	0	12	77	306	263	290	116	120	2	0	1186
1985	0	0	11	20	81	247	363	322	155	53	11	0	1263
1986	0	0	0	21	156	374	517	373	241	55	6	0	1743
1987	0	0	0	18	215	321	427	460	172	0	0	0	1613
1988	0	0	3	19	74	297	431	458	200	9	0	0	1491
1989	0	2	10	47	76	257	395	374	219	35	0	0	1415
1990	0	1	13	32	101	316	410	406	245	32	1	0	1557
1991	0	0	9	32	239	306	453	364	244	42	6	2	1697
1992	0	0	0	49	91	230	410	279	206	0	0	0	1265
1993	0	0	0	10	106	339	566	432	212	21	3	0	1689
1994	0	0	0	54	67	349	372	342	137	15	0	0	1336
1995	0	0	3	50	134	268	480	521	192	26	1	0	1675
1996	0	4	0	10	187	285	371	353	152	22	3	0	1387
1997	0	1	5	9	44	222	423	338	209	46	0	0	1297
1998	0	0	24	8	212	346	454	402	338	43	0	1	1828
1999	0	0	0	41	67	304	429	403	181	13	0	0	1438
2000	0	0	0	2	167	309	390	376	211	33	4	0	1492
2001	0	0	0	62	137	247	411	393	160	19	1	0	1430
2002	0	0	2	89	113	355	445	439	304	71	5	0	1823
2003	0	0	0	21	93	226	358	407	168	14	8	0	1295
2004	2	0	8	39	229	297	371	278	166	46	12	0	1448
2005	0	0	1	12	69	304	425	451	278	73	9	0	1622
2006	0	0	11	66	100	318	452	485	138	23	0	0	1593
2007	0	0	35	27	187	359	393	572	300	114	0	0	1987
2008	0	0	0	29	105	355	408	382	246	46	0	0	1571
2009	0	0	2	40	126	339	302	360	222	11	0	0	1402
2010	0	0	0	46	209	454	529	516	256	12	0	0	2022
2011	0	0	7	91	188	395	527	475	166	15	5	0	1869
2012	0	0	38	44	231	342	505	359	190	16	0	0	1725
2013	2	0	2	27	125	320	350	361	198	60	0	4	1449

**SNOWFALL (inches) 2013 KNOXVILLE (KTYS)**

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1984-85	0.0	0.0	0.0	0.0	0.0	T	14.2	8.3	0.0	0.0	0.0	0.0	22.5
1985-86	0.0	0.0	0.0	0.0	0.0	0.4	3.6	5.0	T	0.0	0.0	0.0	9.0
1986-87	0.0	0.0	0.0	0.0	T	T	7.5	T	1.6	10.7	0.0	0.0	19.8
1987-88	0.0	0.0	0.0	0.0	T	T	9.2	0.9	T	0.0	0.0	0.0	10.1
1988-89	0.0	0.0	0.0	0.0	T	2.6	1.8	2.8	0.0	0.0	0.0	0.0	7.2
1989-90	0.0	0.0	0.0	T	T	1.1	T	T	T	0.0	0.0	0.0	1.1
1990-91	0.0	0.0	0.0	0.0	0.0	T	T	1.2	0.7	T	0.0	0.0	1.9
1991-92	0.0	0.0	0.0	0.0	0.2	T	T	0.0	T	T	0.0	0.0	0.2
1992-93	0.0	0.0	0.0	0.0	0.0	0.3	T	1.0	15.1	T	0.0	0.0	16.4
1993-94	0.0	0.0	0.0	T	0.0	0.3	3.3	T	0.6	0.0	0.0	0.0	4.2
1994-95	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.1	0.6	0.0	0.0	0.0	3.7
1995-96	0.0	T	0.0	0.0		T	10.0						
1996-97							1.5						
1997-98					T	3.3	0.4	0.1	T	0.0	T	T	
1998-99	0.0	0.0	0.0	0.0	0.0	T	T	2.1	2.0	0.0	T	0.0	4.1
1999-00	0.0	0.0	0.0	0.0	0.0	T	2.0	T	T	0.0	T	0.0	2.0
2000-01													
2001-02													
2002-03													
2003-04							1.0	T	0.0	0.0	0.0	0.0	
2004-05	0.0	0.0	0.0	0.0	0.0	0.1	T	T	0.4	T	0.0	0.0	0.5
2005-06	0.0	0.0	0.0	0.0	0.0	T	T	2.7	T	T	T	0.0	2.7
2006-07	0.0	0.0	T	0.0	T	T	T	0.3	T	T	0.0	0.0	0.3
2007-08	0.0	0.0	0.0	0.0	0.0	T	T	T	T	T	T	T	T
2008-09	0.0	0.0	0.0	0.0	T	0.0	1.0	5.0	T	T	0.0	0.0	6.0
2009-10	0.0	0.0	0.0	0.0	0.0	2.0	3.1	T	1.0	0.0	0.0	0.0	6.1
2010-11	0.0	0.0	0.0	0.0	T	5.0	6.5	0.8	T	T	0.0	T	12.3
2011-12	0.0	0.0	0.0	0.0	0.0	0.1	T	T	T	T	0.0	0.0	0.1
2012-13	0.0	0.0	0.0	0.0	0.0	T	1.4	1.2	1.2	0.0	0.0	0.0	3.8
2013-	0.0	0.0	0.0	0.0	0.8	0.0							
POR= 103 YRS	0.0	T	T	T	0.4	1.4	3.0	2.6	1.5	0.2	T	T	9.1

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**REFERENCE NOTES :**

<p>PAGE 1: THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).</p> <p>PAGE 2 AND 3: H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY W/O INDICATES WEATHER AND OBSTRUCTIONS S INDICATES SUNSHINE. PR INDICATES PRESSURE. CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).</p> <p>GENERAL: T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED. 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05. CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS.</p> <p>GENERAL CONTINUED: WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH. RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION. AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN</p>	<p>PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65 F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY. ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER. STATION HISTORY STOPPED WITH THE 2009 ANNUAL. IF YOU NEED STATION HISTORY INFORMATION GO TO "Historical Observing Metadata Repository", URL IS: <a href="http://www.ncdc.noaa.gov/homr/">http://www.ncdc.noaa.gov/homr/</a> SNOWFALL STOPPED MONTH &amp; YEAR INDICATED ABOVE. NO FURTHER YEARS INCLUDED UNLESS RESTARTED.</p> <p><b>NOTE:</b> The "Period of Record:(POR)" for all "averages" is based on "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.</p>
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# 2013 KNOXVILLE TENNESSEE (KTYS)

Knoxville is located in a broad valley between the Cumberland Mountains, which lie northwest of the city, and the Great Smoky Mountains, which lie southeast of the city. These two mountain ranges exercise a marked influence upon the climate of the valley. The Cumberland Mountains, to the northwest, serve to retard and weaken the force of the cold winter air which frequently penetrates far south of the latitude of Knoxville over the plains areas to the west of the mountains.

The mountains also serve to modify the hot summer winds which are common to the plains to the west. In addition, they serve as a fixed incline plane which lifts the warm, moist air flowing northward from the Gulf of Mexico and thereby increases the frequency of afternoon thunderstorms. Relief from extremely high temperatures which such thunderstorms produce serves to reduce the number of extremely warm days in the valley.

July is usually the warmest month of the year. The coldest weather usually occurs during the month of January. Sudden great temperature changes occur infrequently. This again is due mainly to the retarding effect of the mountains. Summer nights are nearly always comfortable.

Rainfall is ample for agricultural purposes and is favorably distributed during the year for most crops. Precipitation is greatest in the wintertime. Another peak period occurs during the late spring and summer months. The period of lowest rainfall occurs during the fall. A cumulative total of approximately 12 inches of snow falls annually. However, this usually comes in amounts of less than 4 inches at one time. It is unusual for snow to remain on the ground in measurable amounts longer than one week.

The topography also has a pronounced effect upon the prevailing wind direction. Daytime winds usually have a southwesterly component, while nighttime winds usually move from the northeast. The winds are relatively light and tornadoes are extremely rare.

# Station History

KNOXVILLE, TN

NAME	Begin Date	End Date	Latitude	Longitude	Elevation Feet	Relocation	Platform
KNOXVILLE	1889-10-01	1891-01-01	35° 58'	-83° 55'			MILITARY
KNOXVILLE	1937-01-01	1938-01-01	35° 58'	-83° 55'			AIRWAYS
KNOXVILLE MCGHEE TYSON AP	2004-04-06	2006-09-20	35° 49'	-83° 59'	962		ASOS, COOP
KNOXVILLE MCGHEE TYSON AP	1981-12-31	1990-01-01	35° 48'	-84° 00'	879		COOP
KNOXVILLE MCGHEE TYSON AP	2008-04-09	Present	35° 49'	-83° 59'	962		AIRSAMPLE, AIRWAYS, ASOS, COOP
KNOXVILLE	1938-01-01	1942-03-01	35° 58'	-83° 55'			WXSVC
KNOXVILLE MCGHEE TYSON AP	1995-10-01	2004-04-06	35° 49'	-83° 59'	962	.8 MI S	ASOS, COOP
KNOXVILLE	1933-08-01	1937-01-01	35° 58'	-83° 55'			WXSVC
KNOXVILLE	1891-01-01	1932-12-31	35° 58'	-83° 55'			WXSVC
KNOXVILLE MCGHEE TYSON AP	1948-08-01	1973-01-01	35° 49'	-83° 58'	905		AIRWAYS, COOP
KNOXVILLE MCGHEE TYSON AP	1942-03-01	1948-08-01	35° 49'	-83° 58'	981		AIRWAYS
KNOXVILLE MCGHEE TYSON AP	1981-11-05	1981-12-31	35° 48'	-84° 00'	879	1.2 MI SW	COOP, WXSVC
KNOXVILLE MCGHEE TYSON AP	1990-01-01	1995-03-01	35° 49'	-83° 58'	879	1.2 MI N	COOP
KNOXVILLE MCGHEE TYSON AP	1973-01-01	1981-11-05	35° 49'	-83° 58'	905		COOP, WXSVC
KNOXVILLE MCGHEE TYSON AP	1995-03-01	1995-10-01	35° 49'	-83° 58'	879		COOP
KNOXVILLE MCGHEE TYSON AP	2006-09-20	2008-04-09	35° 49'	-83° 59'	962		AIRSAMPLE, ASOS, COOP

# Element History

Element	Begin Date	End Date	Frequency	Time Of Observation	Equipment *	Equipment * Modifications	Equipment Exposure
PRECIP	1981-11-05	1988-12-07	HOURLY	2400			
TEMP	1995-07-01	1995-10-01	DAILY	2400	HYGR		
PRECIP	2001-10-31	2004-04-06	HOURLY		AHTB	RCRD;HTD	
PRECIP	2006-09-20	Present	HOURLY	2400	AHTB	RCRD;HTD	
PRECIP	1995-07-01	1995-10-01	HOURLY	2400	UNIV	RCRD	
PRECIP	2004-04-06	2006-09-20	HOURLY	2400	AHTB	RCRD;HTD	
TEMP	1995-10-01	1999-01-01	DAILY	2400	HYGR		
TEMP	1999-01-01	2001-10-31	DAILY	2400	HYGR		
TEMP	2001-10-31	2004-04-06	DAILY	2400	ATEMP		
PRECIP	2004-04-06	2006-09-20	DAILY	2400	PCPN1		
PRECIP	1995-07-01	1995-10-01	DAILY	2400	UNIV	RCRD	
PRECIP	1999-01-01	2001-10-31	HOURLY		TB	RCRD	
PRECIP	2001-10-31	2004-04-06	DAILY	2400			
PRECIP	1988-12-07	1995-07-01	DAILY	2400	UNIV	RCRD	
PRECIP	1995-10-01	1999-01-01	HOURLY		TB	RCRD	
TEMP	2006-09-20	Present	DAILY	2400	ATEMP		
PRECIP	1981-11-05	1988-12-07	DAILY	2400	UNIV	RCRD	
PRECIP	1995-10-01	1999-01-01	DAILY	2400	TB	RCRD	
TEMP	1981-11-05	1988-12-07	DAILY	2400	TEMPX		
PRECIP	1988-12-07	1995-07-01	HOURLY	2400			
TEMP	2004-04-06	2006-09-20	DAILY	2400	ATEMP		
TEMP	1988-12-07	1995-07-01	DAILY	2400	HYGR		
PRECIP	1999-01-01	2001-10-31	DAILY	2400			
PRECIP	2006-09-20	Present	DAILY	2400	PCPNX		

\* For explanation of codes and abbreviations see Station Metadata link below.

Other Station Information can be found at:

ASOS Implementation by NWS: <http://www.nws.noaa.gov/ops2/Surface/asosimplementation.htm>

Station Metadata website: <http://www.ncdc.noaa.gov/homr>

INQUIRES/COMMENTS CALL: (828) 271-4800, option 2

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NOAA/National Climatic Data Center

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