

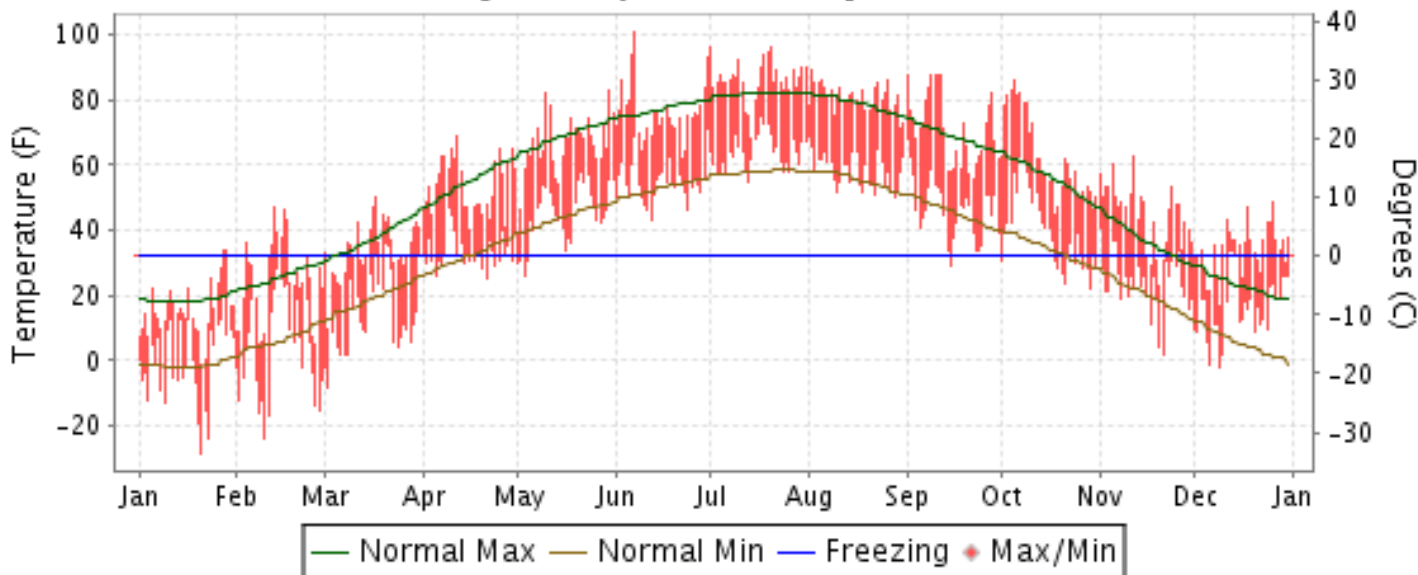


# 2011 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

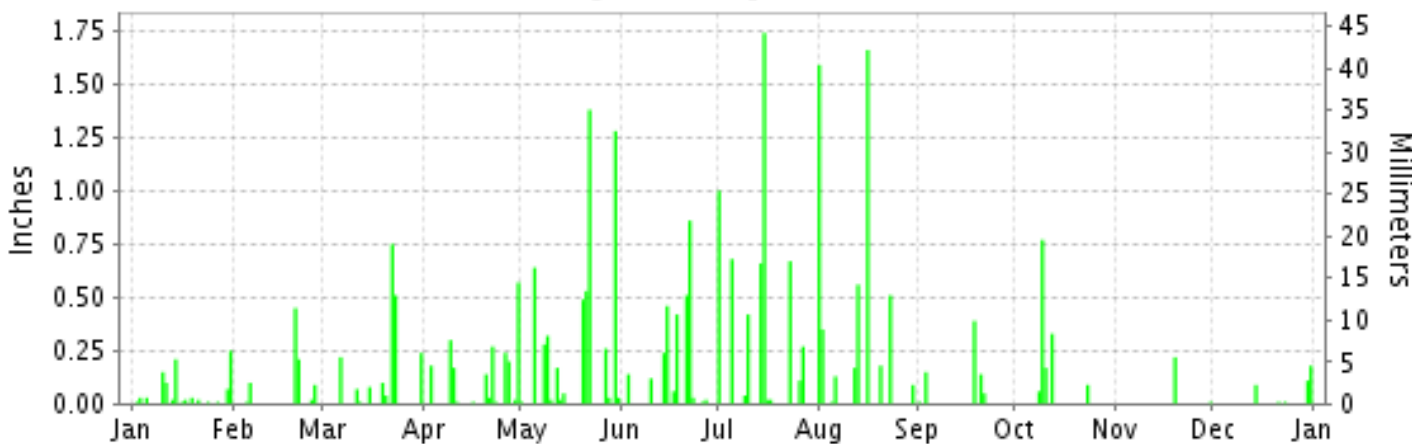
ISSN 0198-277X

## ST CLOUD, MINNESOTA (KSTC)

### Daily Max/Min Temperature



### Daily Precipitation



### Daily Station Pressure



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CLIMATIC DATA CENTER  
ASHEVILLE, NORTH CAROLINA

*Thomas R. Karl*  
DIRECTOR  
NATIONAL CLIMATIC DATA CENTER

# METEOROLOGICAL DATA FOR 2011

## ST CLOUD (KSTC)

LATITUDE: 45° 32'N      LONGITUDE: -94° 3'W      ELEVATION (FT): GRND: 1018 BARO: 1024      TIME ZONE: CENTRAL (UTC -6)      WBAN: 14926

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	15.5	24.6	34.3	53.8	66.1	76.0	86.2	80.8	71.2	62.5	44.4	34.0	54.1	
	HIGHEST DAILY MAXIMUM	34	47	50	69	83	101	96	89	88	86	63	49	101	
	DATE OF OCCURRENCE	29+	13	17	12	30	07	20	02	12+	05	12	26	JUN 07	
	MEAN DAILY MINIMUM	-0.4	3.6	14.4	33.5	45.2	54.7	64.0	58.4	46.5	39.5	23.9	16.3	33.3	
	LOWEST DAILY MINIMUM	-29	-24	-8	25	26	43	55	50	29	22	2	-2	-29	
	DATE OF OCCURRENCE	21	10	02	21	03	12	13	28	15	29	21	09	JAN 21	
	AVERAGE DRY BULB	7.6	14.1	24.4	43.7	55.7	65.4	75.1	69.6	58.9	51.0	34.2	25.2	43.7	
	MEAN WET BULB	7.5	13.7	22.6	38.6	49.4	59.2	68.8	63.8	52.9	45.0	30.9	23.5	39.7	
	MEAN DEW POINT	3.5	8.6	17.3	31.8	42.3	54.7	65.3	60.1	47.8	38.5	24.6	17.7	34.4	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	0	0	3	8	0	0	0	0	0	0	11
	MAXIMUM <= 32°	29	21	15	0	0	0	0	0	0	0	5	11	81	
	MINIMUM <= 32°	31	28	28	15	4	0	0	0	1	13	26	28	174	
MINIMUM <= 0°	17	13	2	0	0	0	0	0	0	0	0	2	34		
H/C	HEATING DEGREE DAYS	1770	1416	1254	637	292	61	0	1	225	454	919	1228	8257	
	COOLING DEGREE DAYS	0	0	0	0	10	78	319	151	49	27	0	0	634	
RH	MEAN (PERCENT)	79	75	74	68	64	71	74	75	71	66	69	72	72	
	HOUR 00 LST	81	78	81	74	70	80	88	88	85	72	77	77	79	
	HOUR 06 LST	82	79	83	86	80	86	89	92	89	81	78	79	84	
	HOUR 12 LST	76	71	65	56	57	59	57	57	52	52	59	64	60	
	HOUR 18 LST	77	70	64	53	51	61	61	60	56	58	64	68	62	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	2	4	7	2	2	3	2	9	4	2	3	2	42	
	THUNDERSTORMS	0	0	0	2	5	4	6	6	1	1	0	0	25	
CLOUDINESS	SUNRISE-SUNSET: (OKTAS)														
	CEILOMETER (<= 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
	MIDNIGHT-MIDNIGHT: (OKTAS)														
	CEILOMETER (<= 12,000 FT.)														
SATELLITE (> 12,000 FT.)															
NUMBER OF DAYS WITH:															
CLEAR															
PARTLY CLOUDY															
CLOUDY															
PR	MEAN STATION PRESS. (IN.)	28.94	28.89	29.01	28.72	28.79	28.77	28.82	28.81	28.94	28.87	28.83	28.93	28.86	
	MEAN SEA-LEVEL PRESS. (IN.)	30.13	30.07	30.18	29.86	29.92	29.88	29.92	29.92	30.06	30.00	29.98	30.08	30.00	
WINDS	RESULTANT SPEED (MPH)	1.8	2.4	1.0	1.1	1.8	2.0	0.8	1.5	2.1	1.8	2.2	2.8	0.7	
	RES. DIR. (TENS OF DEGS.)	30	27	03	01	07	10	18	23	31	23	24	26	27	
	MEAN SPEED (MPH)	6.7	9.2	7.5	9.5	8.5	7.6	5.5	5.5	6.7	8.3	8.1	8.4	7.6	
	PREVAIL.DIR.(TENS OF DEGS.)	32	35	35	06	08	05	09	16	33	14	16	18	32	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	29	39	35	33	33	35	51	49	37	32	35	37	51	
	DIR. (TENS OF DEGS.)	31	28	29	23	25	20	31	30	22	18	27	30	31	
	DATE OF OCCURRENCE	07	17	12	30	31	07	10	02	20	07	15	15	JUL 10	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	36	49	43	44	47	46	64	63	46	43	44	45	64	
DIR. (TENS OF DEGS.)	33	28	15	21	27	20	31	30	33	19	28	31	31		
DATE OF OCCURRENCE	07	17	19	30	31	07	10	02	29	07	15	15	JUL 10		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	0.97	0.88	2.02	2.15	5.51	2.87	5.63	5.25	0.74	1.42	0.23	0.40	28.07	
	GREATEST 24-HOUR (IN.)	0.31	0.66	0.98	0.59	1.42	0.88	1.79	1.89	0.39	0.83	0.22	0.18	1.89	
	DATE OF OCCURRENCE	30-31	20-21	22-23	29-30	21-22	22-23	14-15	01-02	18	08-09	19	31	AUG 01-02	
	NUMBER OF DAYS WITH:														
	PRECIPITATION 0.01	15	6	9	13	15	11	11	10	5	5	2	5	107	
PRECIPITATION 0.10	4	3	5	8	9	7	8	8	3	3	1	2	61		
PRECIPITATION 1.00	0	0	0	0	2	0	2	2	0	0	0	0	6		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)	15.6	10.9	12.7	2.2	T	T	0.0	0.0	0.0	0.0	3.9	2.8	48.1	
	GREATEST 24-HOUR (IN.)	3.8	4.5	5.5	2.0	T	T	0.0	0.0	0.0	0.0	3.8	1.3	5.5	
	DATE OF OCCURRENCE	31	20	23	20	01	17					19	30	MAR 23	
	MAXIMUM SNOW DEPTH (IN.)	16	16	13	2	0	0	0	0	0	0	4	1	16	
	DATE OF OCCURRENCE	31+	10+	07	20							20	31	FEB 10+	
NUMBER OF DAYS WITH:															
SNOWFALL >= 1.0	7	4	3	1	0	0	0	0	0	0	1	2	18		

# NORMALS, MEANS, AND EXTREMES ST CLOUD (KSTC)

LATITUDE: 45° 32'N      LONGITUDE: -94° 3'W      ELEVATION (FT): GRND: 1018 BARO: 1024      TIME ZONE: CENTRAL (UTC -6)      WBAN: 14926

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	18.7	25.7	37.7	54.9	69.0	77.3	81.7	78.9	69.0	56.3	37.2	23.2	52.5	
	MEAN DAILY MAXIMUM	114	19.5	23.4	37.3	54.4	68.0	75.6	82.4	79.2	69.5	56.5	37.5	24.5	52.3	
	HIGHEST DAILY MAXIMUM	71	55	55	79	96	98	102	103	103	98	90	75	61	103	
	YEAR OF OCCURRENCE		1942	2000	2007	1980	2006	1988	1940	1947	1978	1992	1999	1998	1998	AUG 1947
	MEAN OF EXTREME MAXS.	117	40.0	44.0	58.2	78.0	87.4	92.2	93.4	92.2	87.3	78.8	60.0	43.4	71.2	
	NORMAL DAILY MINIMUM	30	-1.2	6.4	19.1	32.2	44.1	52.9	57.9	55.5	45.7	34.3	20.4	5.5	31.1	
	MEAN DAILY MINIMUM	114	-0.0	3.6	17.7	32.2	44.1	52.9	59.0	55.8	46.7	35.4	20.6	7.3	31.3	
	LOWEST DAILY MINIMUM	71	-43	-40	-32	-3	19	32	40	33	18	5	-20	-41	-43	
	YEAR OF OCCURRENCE		1977	1996	1962	1975	1967	1993	1972	2004	1974	1976	1964	1983	1983	JAN 1977
	MEAN OF EXTREME MINS.	117	-24.1	-18.8	-6.6	16.7	28.7	39.4	46.7	42.9	30.1	19.2	0.8	-15.4	13.3	
	NORMAL DRY BULB	30	8.8	16.1	28.4	43.6	56.6	65.1	69.8	67.2	57.4	45.3	28.8	14.4	41.8	
	MEAN DRY BULB	114	9.7	13.6	27.5	43.3	56.1	64.3	70.7	67.5	58.1	46.0	29.1	16.0	41.8	
	MEAN WET BULB	28	10.8	15.0	25.8	37.4	48.9	58.8	63.5	61.9	53.3	40.8	27.3	15.3	38.2	
	MEAN DEW POINT	28	7.9	12.1	22.0	32.3	44.4	55.6	61.1	59.6	50.6	37.3	24.7	13.0	35.1	
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.0	*	0.5	1.8	3.9	2.4	0.5	*	0.0	0.0		
	MAXIMUM <= 32	30	25.8	18.2	8.4	0.7	0.0	0.0	0.0	0.0	0.0	0.2	9.9	23.5		
MINIMUM <= 32	30	31.0	27.5	27.2	15.9	3.4	*	0.0	0.0	2.5	13.9	26.7	30.7			
MINIMUM <= 0	30	16.9	10.7	3.6	*	0.0	0.0	0.0	0.0	0.0	0.0	2.1	11.1			
H/C	NORMAL HEATING DEG. DAYS	30	1742	1381	1135	637	285	79	19	49	253	604	1077	1554		
	NORMAL COOLING DEG. DAYS	30	0	0	0	2	26	90	172	121	31	1	0	0		
RH	NORMAL (PERCENT)	30														
	hour 00 LST	30														
	hour 06 LST	30														
	hour 12 LST	30														
	hour 18 LST	30														
S	PERCENT POSSIBLE SUNSHINE															
W/O	MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI)	29	2.3	2.6	3.2	1.4	1.0	1.6	1.7	3.3	2.7	2.0	2.1	2.7	26.6	
	THUNDERSTORMS	39	0.0	0.1	0.5	2.4	4.4	7.3	7.2	6.5	4.1	1.8	0.2	0.0	34.5	
CLOUDINESS	MEAN: SUNRISE-SUNSET (OKTAS)															
	MIDNIGHT-MIDNIGHT (OKTAS)															
	MEAN NO. DAYS WITH: CLEAR	1	1.0		6.0		4.0	8.0								
	PARTLY CLOUDY			1.0	9.0		2.0	3.0								
	CLOUDY	1	3.0	5.0	5.0		9.0	4.0								
PR	MEAN STATION PRESSURE(IN)	28	28.94	29.00	28.93	28.85	28.84	28.83	28.86	28.90	28.90	28.90	28.89	28.93	28.90	
	MEAN SEA-LEVEL PRES. (IN)	28	30.12	30.14	30.08	29.98	29.95	29.93	29.96	30.00	30.01	30.02	30.04	30.10	30.03	
WINDS	MEAN SPEED (MPH)	28	8.3	8.4	9.1	9.8	9.3	8.0	7.0	6.8	7.6	8.4	8.6	8.3	8.3	
	PREVAIL.DIR(TENS OF DEGS)	17	32	33	32	33	33	19	19	17	19	32	32	32	32	
	MAXIMUM 2-MINUTE: SPEED (MPH)	16	40	46	43	44	41	62	51	49	43	46	41	45	62	
	DIR. (TENS OF DEGS)		31	30	30	30	20	32	31	30	27	24	29	31	32	
	YEAR OF OCCURRENCE		2005	2002	2002	2000	2009	1998	2011	2011	2010	2010	2005	2004	JUN 1998	
	MAXIMUM 3-SECOND SPEED (MPH)	16	47	52	49	48	54	77	64	63	56	58	54	55	77	
	DIR. (TENS OF DEGS)		31	27	31	18	29	32	31	30	27	24	28	31	32	
	YEAR OF OCCURRENCE		2005	2002	2002	2008	2002	1998	2011	2011	2010	2010	2005	2004	JUN 1998	
PRECIPITATION	NORMAL (IN)	30	0.76	0.59	1.50	2.13	2.97	4.51	3.34	3.93	2.93	2.24	1.54	0.69	27.13	
	MAXIMUM MONTHLY (IN)	71	2.52	2.76	4.66	8.42	8.01	10.52	8.00	7.55	9.48	6.16	3.83	2.56	10.52	
	YEAR OF OCCURRENCE		1969	1951	2009	2001	1962	1990	1955	1956	1985	1971	1996	2010	JUN 1990	
	MINIMUM MONTHLY (IN)	71	0.02	0.04	0.10	0.05	0.32	0.05	0.21	0.46	0.07	0.07	0.01	0.01	0.01	
	YEAR OF OCCURRENCE		1942	1964	1959	1987	1948	1988	1975	1950	1952	1952	2007	1943	NOV 2007	
	MAXIMUM IN 24 HOURS (IN)	71	0.99	1.83	2.67	3.74	3.70	4.06	2.29	4.62	5.37	4.11	2.22	1.38	5.37	
	YEAR OF OCCURRENCE		1949	1951	2009	2001	1979	1983	1972	1956	1985	2005	1977	1984	SEP 1985	
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	8.8	6.9	8.3	9.4	11.1	11.4	10.6	10.0	9.3	8.5	8.3	7.9	110.5	
	PRECIPITATION >= 1.00	30	0.0	0.0	0.1	0.2	0.4	1.2	0.8	1.1	0.6	0.6	0.2	0.0	5.2	
SNOWFALL	NORMAL (IN)	30	10.5	7.2	8.5	2.9	0.2	0.0	0.0	0.0	0.*	0.6	9.1	8.6	47.6	
	MAXIMUM MONTHLY (IN)	65	29.9	21.6	51.7	11.1	3.2	T	0.0	T	1.8	6.0	26.9	25.4	51.7	
	YEAR OF OCCURRENCE		1975	1971	1965	1950	1971	2011		2006	1942	1995	1940	1968	MAR 1965	
	MAXIMUM IN 24 HOURS (IN)	65	9.4	12.2	14.5	7.0	3.2	T	0.0	T	1.8	4.9	11.4	10.2	14.5	
	YEAR OF OCCURRENCE		1975	1951	1985	1994	1971	2011		2006	1942	1995	1975	1968	MAR 1985	
	MAXIMUM SNOW DEPTH (IN)	57	30	30	35	27	1	0	0	0	0	3	14	18	35	
	YEAR OF OCCURRENCE		1969	1969	1965	1965	1954					1951	1983	1985	MAR 1965	
	NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	3.4	2.6	2.8	1.0	0.0	0.0	0.0	0.0	0.0	0.1	2.5	3.0	15.4	

**PRECIPITATION (inches) 2011 ST CLOUD (KSTC)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1982	0.97	0.13	1.75	0.97	3.91	2.53	3.90	3.37	4.38	4.52	2.31	1.72	30.46
1983	0.61	0.13	2.60	1.57	2.39	9.52	2.21	3.48	6.55	3.09	3.11	0.92	36.18
1984	0.67	0.87	0.65	4.16	2.02	8.11	2.94	2.57	3.39	5.84	0.17	1.81	33.20
1985	0.43	0.23	1.70	3.83	2.81	5.28	2.80	4.57	9.48	1.28	1.43	0.57	34.41
1986	0.71	0.79	0.94	5.55	2.56	4.02	7.53	5.23	6.28	0.42	1.06	0.33	35.42
1987	0.41	0.12	0.71	0.05	2.17	2.14	4.41	4.47	1.94	0.72	1.64	0.76	19.54
1988	0.51	0.17	1.39	0.73	2.22	0.05	2.64	5.45	3.19	0.68	2.75	0.60	20.38
1989	0.85	0.62	0.84	2.33	3.26	2.20	1.74	4.35	2.09	0.71	0.97	0.33	20.29
1990	0.06	0.66	3.09	2.68	3.74	10.52	5.15	3.38	1.70	2.70	0.30	0.68	34.66
1991	0.39	1.08	1.84	4.68	5.04	5.63	3.74	2.88	3.91	2.04	2.31	0.48	34.02
1992	0.69	0.27	1.49	1.78	2.20	3.03	2.95	1.51	1.00	1.12	1.39	0.94	18.37
1993	0.99	0.33	1.26	1.95	5.64	4.99	3.76	5.49	2.09	1.44	2.15	0.78	30.87
1994	1.06	0.63	0.73	3.92	1.13	3.27	4.10	3.15	3.14	3.12	0.98	0.51	25.74
1995	0.48	0.56	2.51	2.22	2.06	3.42	2.41	7.35	2.27	2.95	0.45	0.32	27.00
1996	1.38	0.23	0.64	0.67	2.96	1.94	2.72	2.08	1.20	2.95	3.83	.99	21.59
1997	1.71	0.25	1.14	0.69	1.28	2.59	6.89	5.80	1.70	1.30	0.98	0.23	24.56
1998	0.79	0.74	2.77	1.14	3.65	4.23	3.31	3.18	1.25	1.89	1.53	0.86	25.34
1999	0.61	0.07	0.85	2.29	4.72	3.99	3.84	4.95	2.61	1.35	0.20	0.10	25.58
2000	0.42	0.82	1.61	0.98	2.96	3.10	3.24	1.20	0.93	1.60	3.15	0.28	20.29
2001	0.66	0.94	0.72	8.42	4.13	3.00	2.10	1.69	1.78	1.28	2.81	0.16	27.69
2002	0.28	0.95	1.06	3.68	2.06	4.92	5.10	5.59	6.67	3.48	0.15	0.09	34.03
2003	0.17	0.39	1.47	4.73	3.81	3.62	3.43	0.69	3.94	1.10	1.05	0.28	24.68
2004	0.42	0.80	1.34	1.29	6.72	3.67	3.48	1.63	5.13	3.37	0.54	0.46	28.85
2005	1.80	0.97	0.65	2.11	3.30	4.37	2.11	3.64	5.54	4.81	2.56	1.01	32.87
2006	0.34	0.20	0.97	4.03	1.59	2.55	2.10	3.97	5.09	1.14	0.72	1.53	24.23
2007	0.16	1.42	3.33	1.69	1.30	2.92	1.63	4.14	4.10	4.14	0.01	1.11	25.95
2008	0.17	0.54	1.47	2.94	3.83	4.38	1.39	4.18	3.35	2.60	0.93	1.58	27.36
2009	0.54	0.80	4.66	1.37	1.63	3.47	2.59	5.23	0.61	6.02	0.35	1.31	28.58
2010	0.72	0.77	1.21	1.43	2.06	4.92	3.15	6.36	7.16	2.59	1.02	2.56	33.95
2011	0.97	0.88	2.02	2.15	5.51	2.87	5.63	5.25	0.74	1.42	0.23	0.40	28.07
POR= 117 YRS	0.72	0.68	1.35	2.25	3.35	4.27	3.42	3.66	3.07	2.05	1.20	0.71	26.73

WBAN : 14926

**AVERAGE TEMPERATURE (°F) 2011 ST CLOUD (KSTC)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1982	-3.1	12.1	24.5	40.9	59.2	59.6	70.6	67.2	57.1	47.5	25.6	21.8	40.3
1983	14.2	23.8	31.2	40.6	51.5	64.3	73.6	73.4	59.4	46.2	31.9	-0.4	42.5
1984	9.2	25.7	23.0	45.7	54.6	66.5	70.1	70.5	53.7	49.0	30.8	13.9	42.7
1985	7.3	13.8	33.0	49.1	59.7	60.7	69.0	63.8	55.8	44.1	21.1	4.0	40.1
1986	14.5	12.0	30.6	47.8	57.3	65.1	70.7	63.9	57.0	46.1	25.7	19.9	42.6
1987	17.8	28.9	35.7	50.9	59.6	68.2	73.4	65.7	59.3	41.8	34.7	21.3	46.4
1988	6.8	10.2	30.8	44.5	63.6	71.1	74.6	70.3	58.8	40.8	29.1	16.0	43.1
1989	16.0	4.6	23.6	42.5	55.3	64.8	72.7	68.5	57.8	46.4	24.9	7.7	40.4
1990	22.0	19.0	32.2	43.9	53.9	66.6	68.1	67.4	59.9	44.1	33.5	13.7	43.7
1991	8.8	22.1	31.6	46.3	60.5	68.3	69.5	69.1	56.5	43.8	22.2	17.4	43.0
1992	18.5	24.6	30.9	41.4	57.8	61.8	63.1	63.2	56.7	43.9	28.8	16.6	42.3
1993	10.8	14.0	25.9	41.6	54.3	62.1	67.6	67.4	51.7	43.3	27.0	17.5	40.3
1994	0.1	8.7	31.4	42.9	58.0	66.4	67.5	64.7	60.8	49.8	34.2	19.9	42.0
1995	13.4	13.5	30.9	38.9	54.1	68.3	70.2	70.7	56.7	44.8	23.9	14.6	41.7
1996	2.4	12.7	20.8	38.2	53.7	66.2	67.3	67.6	59.1	45.7	22.5	9.7	38.8
1997	6.3	16.0	25.1	41.2	51.1	68.1	68.7	65.3	60.4	47.6	25.6	24.0	41.6
1998	15.4	29.6	30.1	48.7	62.1	63.3	70.0	69.2	62.9	49.1	33.7	20.9	46.3
1999	8.5	25.0	31.7	45.5	58.4	65.8	72.6	67.3	57.1	45.7	37.4	22.2	44.8
2000	11.7	22.0	37.5	43.2	58.0	62.2	69.2	68.8	57.6	48.2	28.6	3.9	42.6
2001	16.0	6.3	23.6	44.5	57.5	66.3	72.0	70.4	57.9	45.8	41.8	23.9	43.8
2002	21.2	25.2	18.6	42.0	51.5	68.5	72.9	66.9	61.2	38.1	29.8	23.2	43.3
2003	12.5	11.0	27.2	44.5	55.3	64.7	69.6	70.6	58.6	48.2	28.0	22.3	42.7
2004	7.4	17.4	32.8	46.0	53.7	62.7	67.9	62.3	64.1	47.7	34.6	19.6	43.0
2005	11.0	22.7	29.1	48.8	54.5	70.1	73.0	68.1	63.3	48.8	33.2	18.1	45.1
2006	25.5	14.5	32.2	49.9	59.4	67.5	75.1	69.0	56.6	43.0	33.1	25.6	46.0
2007	17.1	10.7	34.0	43.8	61.1	69.1	72.3	68.2	61.1	50.9	31.2	11.5	44.3
2008	9.3	10.8	24.6	41.0	53.4	65.0	70.4	68.4	59.4	47.1	31.9	8.5	40.8
2009	3.3	16.4	27.5	44.3	55.3	63.4	66.1	65.9	63.3	40.9	39.4	14.5	41.7
2010	9.7	15.4	37.7	51.1	57.1	65.7	72.2	72.7	56.8	49.6	32.5	13.2	44.5
2011	7.6	14.1	24.4	43.7	55.7	65.4	75.1	69.6	58.9	51.0	34.2	25.2	43.7
POR= 114 YRS	9.7	13.6	27.5	43.3	56.1	64.3	70.7	67.5	58.1	46.0	29.1	16.0	41.8

**HEATING DEGREE DAYS (base 65°F) 2011 ST CLOUD (KSTC)**

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1982-83	13	63	255	534	1176	1333	1568	1148	1044	723	412	114	8383
1983-84	8	0	229	579	987	2026	1729	1135	1293	571	325	34	8916
1984-85	16	29	348	492	1021	1580	1785	1431	984	475	185	162	8508
1985-86	8	76	300	642	1314	1892	1559	1480	1061	508	269	82	9191
1986-87	0	94	252	580	1170	1390	1454	1002	899	426	221	50	7538
1987-88	8	65	179	713	905	1348	1801	1585	1057	609	112	23	8405
1988-89	1	39	202	744	1071	1514	1513	1689	1276	669	305	88	9111
1989-90	0	23	231	576	1198	1773	1325	1281	1010	653	346	55	8471
1990-91	18	41	204	642	939	1591	1739	1197	1029	554	219	23	8196
1991-92	16	23	285	651	1279	1472	1437	1167	1048	703	259	133	8473
1992-93	83	110	252	648	1079	1495	1679	1425	1208	695	328	117	9119
1993-94	21	38	400	667	1134	1470	2013	1573	1031	655	233	47	9282
1994-95	18	85	169	462	918	1390	1593	1437	1047	778	332	72	8301
1995-96	12	2	271	623	1228	1558	1940	1516	1366	798	355	66	9735
1996-97	17	18	223	593	1269	1709	1812	1366	1232	708	421	14	9382
1997-98	50	66	158	553	1175	1263	1527	985	1073	483	134	125	7592
1998-99	6	4	137	486	932	1363	1745	1114	1025	577	219	96	7704
1999-00	3	21	271	595	820	1318	1647	1240	844	646	248	135	7788
2000-01	29	15	243	513	1083	1891	1512	1638	1278	618	244	76	9140
2001-02	22	13	234	588	690	1266	1348	1107	1433	688	430	47	7866
2002-03	4	30	183	827	1051	1292	1621	1508	1164	616	297	74	8667
2003-04	6	16	236	523	1101	1317	1779	1372	992	569	345	107	8363
2004-05	39	121	107	530	905	1399	1665	1174	1106	484	323	1	7854
2005-06	9	29	110	504	948	1451	1220	1406	1007	446	247	41	7418
2006-07	0	2	264	677	950	1214	1477	1492	955	636	174	26	7867
2007-08	2	30	184	441	1009	1649	1719	1565	1246	716	354	47	8962
2008-09	7	13	186	550	985	1745	1904	1354	1156	617	307	128	8952
2009-10	38	42	90	743	762	1559	1706	1384	841	409	288	45	7907
2010-11	0	7	238	476	967	1600	1770	1416	1254	637	292	61	8718
2011-	0	1	225	454	919	1228							

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**COOLING DEGREE DAYS (base 65°F) 2011 ST CLOUD (KSTC)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1982	0	0	0	0	16	14	194	138	24	0	0	0	386
1983	0	0	0	0	0	98	284	268	66	1	0	0	717
1984	0	0	0	0	8	84	180	210	13	1	0	0	496
1985	0	0	0	4	28	42	138	47	32	0	0	0	291
1986	0	0	0	0	37	92	182	64	19	0	0	0	394
1987	0	0	0	8	59	152	279	92	14	0	0	0	604
1988	0	0	0	0	76	211	304	208	22	0	0	0	821
1989	0	0	0	0	14	90	248	142	21	6	0	0	521
1990	0	0	0	25	8	110	121	121	60	0	0	0	445
1991	0	0	0	0	86	130	167	155	37	0	0	0	575
1992	0	0	0	0	42	45	34	62	9	0	0	0	192
1993	0	0	0	0	4	40	113	121	3	0	0	0	281
1994	0	0	0	0	24	97	101	82	51	0	0	0	355
1995	0	0	0	0	1	177	181	184	29	6	0	0	578
1996	0	0	0	0	13	111	95	106	54	2	0	0	381
1997	0	0	0	0	0	113	172	81	27	18	0	0	411
1998	0	0	0	0	50	80	164	142	81	0	0	0	517
1999	0	0	0	0	22	127	245	99	42	0	0	0	535
2000	0	0	0	0	38	55	165	140	25	0	0	0	423
2001	0	0	0	7	17	121	248	189	28	0	0	0	610
2002	0	0	0	6	21	157	253	96	75	0	0	0	608
2003	0	0	0	8	2	73	157	197	50	8	0	0	495
2004	0	0	0	4	4	49	135	48	87	0	0	0	327
2005	0	0	0	5	4	159	260	133	64	11	0	0	636
2006	0	0	0	0	77	118	320	132	19	5	0	0	671
2007	0	0	0	4	63	155	238	137	74	12	0	0	683
2008	0	0	0	0	0	55	180	127	28	2	0	0	392
2009	0	0	0	2	12	84	77	77	46	0	0	0	298
2010	0	0	0	0	49	74	229	252	0	2	0	0	606
2011	0	0	0	0	10	78	319	151	49	27	0	0	634

**SNOWFALL (inches) 2011 ST CLOUD (KSTC)**

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1982-83	0.0	0.0	0.0	0.5	16.9	13.9	4.9	1.7	9.3	6.1	0.0	0.0	53.3
1983-84	0.0	0.0	0.0	0.7	25.0	11.0	10.0	6.5	10.2	0.2	0.0	0.0	63.6
1984-85	0.0	0.0	T	1.2	0.9	8.0	8.6	4.1	22.8	T	0.0	0.0	45.6
1985-86	0.0	0.0	T	0.0	18.3	10.9	11.2	11.5	6.7	0.0	0.0	0.0	58.6
1986-87	0.0	0.0	0.0	0.1	6.9	3.9	3.9	1.5	0.4	T	0.0	0.0	16.7
1987-88	0.0	0.0	0.0	1.5	5.4	8.2	7.6	2.9	6.3	0.2	0.0	0.0	32.1
1988-89					18.2	9.0	12.6	11.2	13.1	1.0	T	0.0	
1989-90	0.0	0.0	T	0.0	12.9	4.0	0.1	10.3	2.8	2.4	0.0	0.0	32.5
1990-91	0.0	0.0	0.0	T	1.6	7.8	5.1	15.9	6.1	9.4	0.3	0.0	46.2
1991-92	0.0	0.0	0.0	3.1	21.3	8.5	7.2	2.7	5.7	6.0	0.0	0.0	54.5
1992-93	0.0	0.0	0.0	1.4	14.1	9.7	15.6	4.0	7.5	7.2	T	0.0	59.5
1993-94	0.0	0.0	0.0	0.1	13.5	9.3	19.9	11.5	3.7	7.0	0.0	0.0	65.0
1994-95	0.0	0.0	0.0	0.0	7.8	7.1	5.6	6.4	16.1	3.7	0.0		
1995-96	0.0	0.0	0.2	6.0	6.6	9.4	21.9	3.5	9.4	2.6	0.0	0.0	59.6
1996-97	0.0	0.0	0.0	T	13.4								
1997-98													
1998-99													
1999-00													
2000-01													
2001-02													
2002-03							3.1	8.8	9.6	1.7	0.0	0.0	
2003-04	0.0	0.0	0.0	T	13.2	7.1	11.7	9.3	8.9	T	0.0	0.0	50.2
2004-05	0.0	0.0	0.0	T	0.2	2.0	15.0	8.9	1.0	T	0.1	0.0	27.2
2005-06	0.0	0.0	0.0	0.0	4.6	15.1	3.8	3.7	6.2	0.0	0.0	0.0	33.4
2006-07	0.0	T	0.0	T	0.3	2.4	2.0	13.6	8.2	5.1	0.0	0.0	31.6
2007-08	0.0	0.0	0.0	0.0	0.5	13.9	1.8	7.3	17.8	10.9	0.0	0.0	52.2
2008-09	0.0	0.0	0.0	T	1.3	23.0	6.6	8.5	10.9	3.6	0.0	0.0	53.9
2009-10	0.0	0.0	0.0	2.5	T	18.2	0.9	9.2	0.0	0.0	T	0.0	30.8
2010-11	0.0	0.0	0.0	T	3.6	21.0	15.6	10.9	12.7	2.2	T	T	66.0
2011-	0.0	0.0	0.0	0.0	3.9	2.8							
POR= 70 YRS	0.0	T	T	0.5	6.2	7.7	8.1	6.9	8.5	2.4	0.1	T	40.4

WBAN : 14926

**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. NORMALS ARE 30-YEAR AVERAGES (1971 - 2000). 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 AND ON SATELLITE DATA FOR CLOUDS ABOVE 12,000 FEET. THE NUMBER OF DAYS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY CONDITIONS FOR ASOS STATIONS IS THE SUM OF THE CEILOMETER AND SATELLITE DATA FOR THE SUNRISE TO SUNSET PERIOD. CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. WHEN AT LEAST ONE OF THE ELEMENTS (CEILOMETER OR SATELLITE) IS MISSING, THE DAILY CLOUDINESS IS NOT COMPUTED.</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 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 EIGHTS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER. STATION HISTORY STOPPED WITH THE 2009 ANNUAL. IF YOU NEED HISTORY GO TO "MULTI-NETWORK MEDADATA SYSTEM", URL IS: <a href="https://mi3.ncdc.noaa.gov/mi3qry/login.cfm">https://mi3.ncdc.noaa.gov/mi3qry/login.cfm</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 the "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.</p>
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# 2011 SAINT CLOUD MINNESOTA (KSTC)

St. Cloud is located in central Minnesota on the banks of the Mississippi River. The topography is gently rolling terrain with numerous lakes and wooded areas.

The climate is influenced by atmospheric moisture flowing into the state from the Gulf of Mexico and the Pacific coast. Air masses carrying moisture which is eventually released as precipitation may travel nearly 1,500 miles. Due to this long trek, a minor change in the wind system can result in the area receiving well below or well above the normal precipitation. Rainfall is generally ample for farm and garden crops. Although the total amount is important, its distribution during the average 140 day growing season from mid-May to the end of September is even more significant. Thunderstorms are the principal source of rainfall during this period.

Spring, summer, and fall are very pleasant. Prolonged periods of hot and humid weather are infrequent. Extremely hot days with temperatures of 100 degrees or higher occur only once every five to ten years and rarely are temperatures this high recorded on successive days. Tornadoes and severe local storms are common.

Winter is cold, but not unpleasant, since strong winds and high humidities are generally absent on the coldest days. Cold Canadian air masses are prevalent throughout the winter season. The normal winter will have five to ten days with temperatures in the -20 to -30 degree range. Heavy snowfalls do occur, but the northern location limits the numerous heavy snowfalls that occur just a short distance to the south. Snowfalls of 3 inches or more in a 24 hour period occur only on an average of four times per year. Snow generally remains on the ground from the onset of the winter season until spring. Blizzards occur on the average of once per year with a severe blizzard once every three or four years. Ice storms are infrequent because temperatures are usually too cold and the transition period from season to season is rather abrupt.

# Station History

ST CLOUD, MN

NAME	Begin Date	End Date	Latitude	Longitude	Elevation Feet	Relocation	Platform
ST CLOUD MUNICIPAL AP	1972-02-14	1993-06-29	45° 33'	-94° 4'	1028		COOP, WXSVC
ST CLOUD REGIONAL AP	2004-12-27	Present	45° 32'	-94° 3'	1018		AIRWAYS, ASOS, COOP, WXSVC
ST CLOUD WHITNEY MEMORIAL AP	1969-01-01	1971-12-31	45° 34'	-94° 10'	1034		COOP, WXSVC
ST CLOUD WHITNEY MEMORIAL AP	1936-02-25	1948-01-01	45° 34'	-94° 10'	1034		AIRWAYS
ST CLOUD REGIONAL AP	2003-07-17	2004-12-27	45° 32'	-94° 3'	1018		AIRWAYS, ASOS, COOP, WXSVC
ST CLOUD WHITNEY MEMORIAL AP	1971-12-31	1972-02-14	45° 34'	-94° 10'	1034		COOP
ST CLOUD MUNICIPAL AP	1993-06-29	1995-06-01	45° 33'	-94° 4'	1028		AIRWAYS, COOP, WXSVC
ST CLOUD WHITNEY MEMORIAL AP	1948-01-01	1969-01-01	45° 34'	-94° 10'	1034		AIRWAYS, COOP
ST CLOUD REGIONAL AP	1995-06-01	2003-07-17	45° 32'	-94° 3'	1009	4000 FT SE	AIRWAYS, ASOS, COOP, WXSVC

# Element History

Element	Begin Date	End Date	Frequency	Time Of Observation	Equipment *	Equipment * Modifications	Equipment Exposure
TEMP	2003-07-17	2004-12-27	DAILY	2400	ATEMP		
PRECIP	1990-01-01	1995-06-01	HOURLY	2400			
PRECIP	1990-01-01	1995-06-01	DAILY	2400	UNIV	RCRD	
TEMP	1972-02-14	1990-01-01	DAILY	2400			
TEMP	1990-01-01	1995-06-01	DAILY	2400	MXMN		
PRECIP	1995-06-01	2003-07-17	DAILY	2400	TB	RCRD	
PRECIP	2010-09-27	Present	DAILY	2400	PCPNX	SHLD	
PRECIP	1995-06-01	2003-07-17	HOURLY	2400	TB	RCRD	
PRECIP	2003-07-17	2004-12-27	HOURLY	2400	AHTB	RCRD;HTD	
TEMP	2004-12-27	2010-09-27	DAILY	2400	ATEMP		
PRECIP	2010-09-27	Present	HOURLY	2400	AWPAG	RCRD;HTD	
PRECIP	1972-02-14	1990-01-01	HOURLY	2400			
TEMPATOBS	1990-01-01	1992-09-01	TWICE DAILY - AM/PM	UNKN	FRONTIER		
TEMP	1995-06-01	2003-07-17	DAILY	2400	HYGR		
PRECIP	1972-02-14	1990-01-01	DAILY	2400	UNIV	RCRD	
PRECIP	2004-12-27	2010-09-27	HOURLY	2400	AWPAG	RCRD;HTD	
PRECIP	2004-12-27	2010-09-27	DAILY	2400	PCPNX		
TEMP	2010-09-27	Present	DAILY	2400	ATEMP		
TEMPATOBS	1972-02-14	1990-01-01	TWICE DAILY - AM/PM	UNKN	FRONTIER		
PRECIP	2003-07-17	2004-12-27	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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TDD : (828) 271-4010

Email : [ncdc.info@noaa.gov](mailto:ncdc.info@noaa.gov)

NOAA/National Climatic Data Center

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Asheville, NC 28801-5001

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