

2004

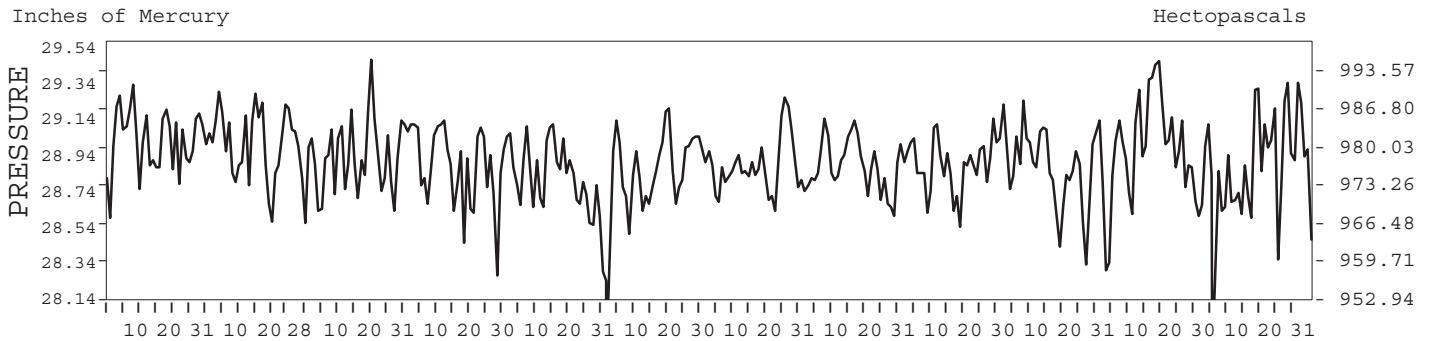
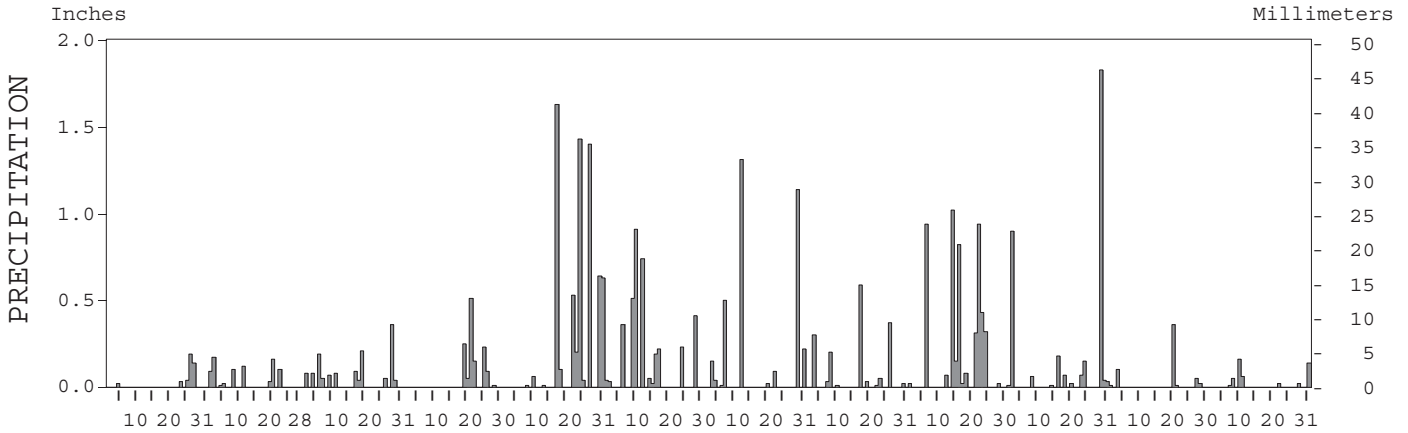
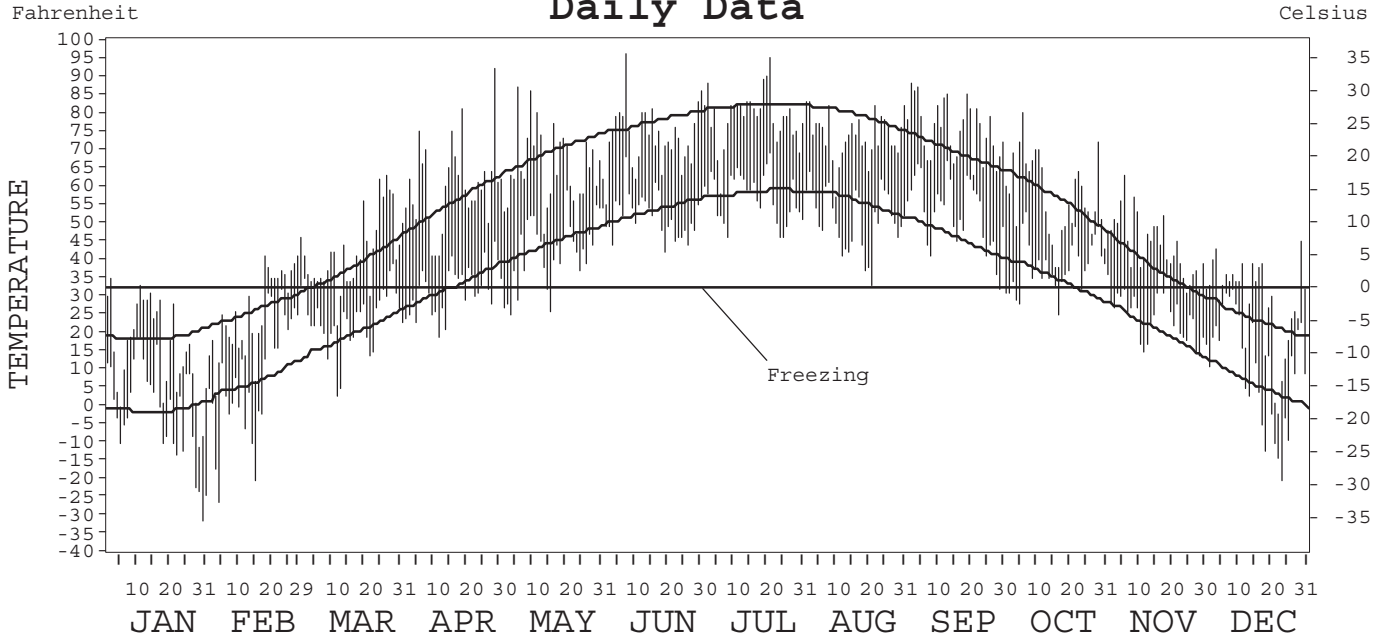
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-277X

SAINT CLOUD,
MINNESOTA (STC)

Daily Data



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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE	NATIONAL CLIMATIC DATA CENTER ASHEVILLE, NORTH CAROLINA	DIRECTOR NATIONAL CLIMATIC DATA CENTER
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METEOROLOGICAL DATA FOR 2004

ST CLOUD, MN (STC)

LATITUDE: 45° 32' 41" N LONGITUDE: 94° 03' 07" W ELEVATION (FT.): GRND: 1021 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	15.7	26.0	42.1	60.1	65.1	73.5	78.9	73.8	75.5	57.1	44.0	28.3	53.3	
	HIGHEST DAILY MAXIMUM	35	46	63	92	87	96	95	83	88	80	63	45	96	
	DATE OF OCCURRENCE	02	29	26	28	05	07	21	02+	02	06	06	30	JUN 07	
	MEAN DAILY MINIMUM	-1.0	8.8	23.4	31.9	42.3	51.9	56.9	50.8	52.7	38.3	25.2	10.9	32.7	
	LOWEST DAILY MINIMUM	-31	-26	3	19	25	42	46	33	32	25	14	-20	-31	
	DATE OF OCCURRENCE	30	04	11	11	3	19	25+	21	29	17	29	24	JAN 30	
	AVERAGE DRY BULB	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	
	MEAN WET BULB	6.7	17.8	30.8				62.9	58.4	59.1	44.1	32.1			
	MEAN DEW POINT	1.5	14.1	26.6				59.5	55.3	55.7	40.0	27.3			
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	1	0	1	2	0	0	0	0	0	0	4
	MAXIMUM ≤ 32°	29	18	3	0	0	0	0	0	0	0	2	16	68	
MINIMUM ≤ 32°	31	28	28	15	6	0	0	0	1	6	27	31	173		
MINIMUM ≤ 0°	15	9	0	0	0	0	0	0	0	0	0	0	8	32	
H/C	HEATING DEGREE DAYS	1779	1372	992	569	345	107	39	121	107	530	905	1399	8265	
	COOLING DEGREE DAYS	0	0	0	4	4	49	135	48	87	0	0	0	327	
RH	MEAN (PERCENT)	75	82	79	58	64	70	76	79	78	78	77	78	74	
	HOUR 00 LST	77	87	83	70	72	86	91	93	87	84	82	79	83	
	HOUR 06 LST	81	86	86	80	77	86	92	95	93	90	88	82	86	
	HOUR 12 LST	72	78	73	43	54	54	61	62	62	68	64	72	64	
	HOUR 18 LST	73	78	71	40	54	53	60	65	68	72	73	77	65	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	0	2	7	0	2	3	2	5	2	3	2	1	29	
	THUNDERSTORMS	0	0	2	3	11	9	10	10	7	4	0	0	56	
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.)	29.02	29.01	28.92	28.88	28.80		28.87	28.89	28.89	28.83	29.00			
	MEAN SEA-LEVEL PRESS. (IN.)	30.21	30.18	30.08		29.92		29.98	30.00	30.01	29.96	30.16			
WINDS	RESULTANT SPEED (MPH)	3.7	0.7	2.7	2.8	0.8		0.3	1.2	5.1		2.3			
	RES. DIR. (TENS OF DEGS.)	31	24	29	34	09		02	26	17		26			
	MEAN SPEED (MPH)	9.4	8.2	10.3	9.6	9.6	8.3	6.1	7.1	9.3	8.6	7.7	10.4	8.7	
	PREVAIL. DIR. (TENS OF DEGS.)	32	32	31	32	36	31	14	32	17	15	31	32	32	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	36	26	40	39	33	41	28	35	32	31	29	45	45	
	DIR. (TENS OF DEGS.)	32	30	30	29	15	30	14	19	22	31	31	31	31	
	DATE OF OCCURRENCE	21	09	20	07	11	23	02	22	23	30	23+	12	DEC 12	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	44	32	47	45	38	49	31	40	44	36	36	55	55	
DIR. (TENS OF DEGS.)	29	30	30	30	15	30	29	19	20	31	31	31	31		
DATE OF OCCURRENCE	21	09	20	07	11	23	13+	22	23	30	23	12	DEC 12		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	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	
	GREATEST 24-HOUR (IN.)	0.23	0.17	0.40	0.64	1.73	1.12	1.31	0.59	1.25	1.83	0.37	0.22	1.83	
	DATE OF OCCURRENCE	25-26	02	27-28	20-21	16-17	08-09	11	16	20-21	28	19-20	09-10	OCT 28	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	5	9	12	7	13	11	9	11	13	12	5	7	114	
PRECIPITATION ≥ 0.10	2	5	3	4	8	8	5	4	8	4	2	2	55		
PRECIPITATION ≥ 1.00	0	0	0	0	3	0	2	0	1	1	0	0	7		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	11.7	9.3	8.9	T	0.0	0.0	0.0	0.0	0.0	T	0.2	2.0	32.1	
	GREATEST 24-HOUR (IN.)	5.8	2.1	2.8	T	0.0	0.0	0.0	0.0	0.0	T	0.2	0.8	5.8	
	DATE OF OCCURRENCE	26	02	18	09						17	27	09	JAN 26	
	MAXIMUM SNOW DEPTH (IN.)	8	11	3	0	0	0	0	0	0	0	0	1	11	
	DATE OF OCCURRENCE	30+	13+	18									30+	FEB 13+	
	NUMBER OF DAYS WITH:														
SNOWFALL ≥ 1.0	3	5	3	0	0	0	0	0	0	0	0	0	11		

NORMALS, MEANS, AND EXTREMES

ST CLOUD, MN (STC)

LATITUDE: 45° 32' 41" N LONGITUDE: 94° 03' 07" W ELEVATION (FT): GRND: 1021 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	57	18.9	25.5	36.9	54.6	68.1	77.0	81.9	79.5	69.6	57.5	38.6	24.6	52.7
	HIGHEST DAILY MAXIMUM	64	55	55	79	96	97	102	103	103	98	90	75	61	103
	YEAR OF OCCURRENCE		1942	2000	1968	1980	2001	1988	1940	1947	1978	1992	1999	1998	AUG 1947
	MEAN OF EXTREME MAXS.	57	39.8	44.2	57.8	77.9	87.1	92.3	93.4	92.3	87.4	78.5	59.3	43.6	71.1
	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	57	-1.3	4.5	17.4	31.9	43.9	53.3	58.3	55.9	46.3	35.2	21.2	6.8	31.1
	LOWEST DAILY MINIMUM	64	-4.3	-4.0	-3.2	-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	JAN 1977
	MEAN OF EXTREME MINS.	57	-25.8	-19.8	-7.1	16.2	28.6	38.9	45.9	42.6	29.8	18.8	0.2	-17.2	12.6
	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	57	8.8	14.9	27.1	43.3	56.0	65.3	70.2	67.8	58.0	46.3	30.0	15.7	42.0
	MEAN WET BULB	18	11.0	16.6	27.5	39.5	51.2	60.6	61.2	62.9	54.1	41.6	26.9	15.6	39.1
	MEAN DEW POINT	18	5.8	11.0	21.1	30.4	43.1	54.8	56.8	58.7	49.4	35.5	22.2	11.3	33.3
	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	9.1	
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	86.7	
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	178.8	
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	44.4	
H/C	NORMAL HEATING DEG. DAYS	30	1742	1381	1135	637	285	79	19	49	253	604	1077	1554	8815
	NORMAL COOLING DEG. DAYS	30	0	0	0	2	26	90	172	121	31	1	0	0	443
RH	NORMAL (PERCENT)														
	HOUR 00 LST	30	79	81	82	81	82	86	90	92	91	86	84	82	85
	HOUR 06 LST	30	70	68	63	50	50	55	57	59	59	58	68	72	61
	HOUR 18 LST	30	74	70	64	50	48	53	57	60	62	61	74	77	62
S	PERCENT POSSIBLE SUNSHINE														
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	41	1.9	2.3	2.2	1.0	1.0	1.2	1.6	2.9	1.9	2.2	2.0	2.8	23.0
	THUNDERSTORMS	41	0.0	0.1	0.4	2.1	4.8	7.9	7.6	7.3	3.9	1.7	0.3	0.0	36.1
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	1			5.6			5.6						7.2	
	MIDNIGHT-MIDNIGHT (OKTAS)	1			6.4										
	MEAN NO. DAYS WITH:														
CLEAR	1	1.0		6.0		4.0	8.0								
PARTLY CLOUDY	1		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)	16	28.95	28.98	28.90	28.89	28.82	28.82	28.87	28.88	28.90	28.91	28.92	28.93	28.90
	MEAN SEA-LEVEL PRES. (IN)	18	30.13	30.14	30.05	29.97	29.95	29.93	29.96	30.01	30.02	30.04	30.05	30.10	30.03
WINDS	MEAN SPEED (MPH)	19	8.5	8.6	9.1	10.0	9.2	8.2	7.1	6.6	7.5	8.6	8.7	8.5	8.4
	PREVAIL. DIR (TENS OF DEGS)	10	32	32	31	32	32	18	18	18	18	31	31	31	32
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	9	36	46	43	44	41	62	49	45	34	43	39	45	62
	DIR. (TENS OF DEGS)		32	30	30	30	27	32	22	22	32	31	30	31	32
	YEAR OF OCCURRENCE		2004	2002	2002	2000	2002	1998	1997	1996	1997	2001	1998	2004	JUN 1998
MAXIMUM 5-SECOND:															
SPEED (MPH)	9	44	52	49	48	54	77	61	52	51	54	52	55	77	
DIR. (TENS OF DEGS)		29	27	31	30	29	32	21	34	25	32	30	31	32	
YEAR OF OCCURRENCE		2004	2002	2002	2002	2002	1998	1997	1997	2002	1996	1998	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)	64	2.52	2.76	3.43	8.42	8.01	10.52	8.00	7.55	9.48	6.16	3.83	2.04	10.52
	YEAR OF OCCURRENCE		1969	1951	1965	2001	1962	1990	1955	1956	1985	1971	1996	1969	JUN 1990
	MINIMUM MONTHLY (IN)	64	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	1941	1943	DEC 1943
	MAXIMUM IN 24 HOURS (IN)	64	0.99	1.83	1.81	3.74	3.70	4.06	2.29	4.62	5.37	3.24	2.22	1.38	5.37
	YEAR OF OCCURRENCE		1949	1951	1957	2001	1979	1983	1972	1956	1985	1950	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)	58	29.9	21.6	51.7	11.1	3.2	0.0	0.0	0.0	1.8	6.0	26.9	25.4	51.7
	YEAR OF OCCURRENCE		1975	1971	1965	1950	1971				1942	1995	1940	1968	MAR 1965
	MAXIMUM IN 24 HOURS (IN)	58	9.4	12.2	14.5	7.0	3.2	0.0	0.0	0.0	1.8	4.9	11.4	10.2	14.5
	YEAR OF OCCURRENCE		1975	1951	1985	1994	1971				1942	1995	1975	1968	MAR 1985
	MAXIMUM SNOW DEPTH (IN)	50	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) 2004 SAINT CLOUD, MN (STC)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1975	2.39	0.40	1.75	3.69	3.02	5.78	0.21	4.83	2.27	1.08	3.24	0.28	28.94
1976	0.85	0.83	1.78	0.92	0.93	4.84	1.92	0.60	1.37	0.44	0.14	0.31	14.93
1977	0.58	0.98	3.03	3.17	3.57	3.48	4.27	6.10	2.34	2.93	3.74	1.40	35.59
1978	0.19	0.17	0.81	3.49	3.20	6.04	4.43	2.88	4.59	0.14	0.95	1.02	27.91
1979	1.28	1.67	3.02	0.74	5.17	6.34	1.21	4.88	1.58	4.36	0.62	0.31	31.18
1980	1.17	0.84	0.76	0.48	1.62	6.06	1.28	7.01	5.99	0.71	0.20	0.22	26.34
1981	0.44	1.10	1.05	3.29	1.40						0.45	1.11	
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	0.99	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
POR= 108 YRS	0.77	0.71	1.35	2.26	3.44	4.40	3.45	3.58	3.00	1.93	1.25	0.60	26.74

WBAN : 14926

AVERAGE TEMPERATURE (°F) 2004 SAINT CLOUD, MN (STC)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1975	9.9	11.9	18.8	36.3	58.8	65.3	73.3	67.6	54.6	47.9	31.9	15.5	41.0
1976	5.9	22.1	25.9	48.3	55.0	67.8	70.7	69.9	57.8	40.1	23.2	7.3	41.2
1977	-2.2	19.0	34.8	50.9	64.4	65.9	70.9	63.3	58.6	46.0	28.0	10.9	42.5
1978	3.4	9.1	27.2	42.0	58.3	64.3	68.2	67.9	62.4	46.1	27.6	9.0	40.5
1979	-2.5	5.1	24.3	39.2	51.2	63.5	69.0	65.1	58.5	44.7	28.7	22.9	39.1
1980	10.8	11.7	23.2	47.4	58.9	64.1	71.2	67.2	56.4	42.7	33.4	16.7	42.0
1981	15.3	20.9	35.5	46.2	54.9						35.4	14.0	
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	- .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
POR= 110 YRS	9.6	14.3	27.5	43.9	56.3	65.4	70.8	68.2	59.0	46.8	30.2	16.2	42.4

HEATING DEGREE DAYS (base 65°F) 2004 SAINT CLOUD, MN (STC)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1975-76	17	29	312	524	985	1533	1828	1238	1207	501	303	32	8509
1976-77	7	37	250	766	1249	1787	2085	1283	928	419	112	39	8962
1977-78	6	90	191	582	1103	1674	1911	1561	1169	683	238	92	9300
1978-79	31	26	175	579	1115	1736	2093	1677	1260	767	438	87	9984
1979-80	8	79	220	623	1081	1297	1679	1540	1286	529	227	83	8652
1980-81	4	35	279	683	939	1491	1535	1230	906	556	314		
1981-82					883	1577	2115	1479	1251	717	192	168	
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-	39	121	107	530	905	1399							

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COOLING DEGREE DAYS (base 65°F) 2004 SAINT CLOUD, MN (STC)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1975	0	0	0	0	37	97	283	117	7	1	0	0	542
1976	0	0	0	5	0	122	193	197	40	0	0	0	557
1977	0	0	0	5	101	73	199	44	6	0	0	0	428
1978	0	0	0	0	39	80	136	125	107	0	0	0	487
1979	0	0	0	0	14	52	140	87	31	0	0	0	324
1980	0	0	0	6	44	61	202	111	27	0	0	0	451
1981	0	0	0	0	9					0	0	0	
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

SNOWFALL (inches) 2004 SAINT CLOUD, MN (STC)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1975-76	0.0	0.0	0.0	0.0	17.1	3.1	17.3	4.6	10.2	1.4	0.1	0.0	53.8
1976-77	0.0	0.0	0.0	0.9	0.9	4.8	12.0	3.5	8.6	1.3	0.0	0.0	32.0
1977-78	0.0	0.0	0.0	T	9.0	12.0	2.7	2.6	8.7	5.0	0.0	0.0	40.0
1978-79	0.0	0.0	0.0	T	4.7	17.8	17.8	13.8	12.1	0.4	0.3	0.0	66.9
1979-80	0.0	0.0	0.0	0.0	5.0	1.9	14.4	9.1	12.0	1.8	T	0.0	44.2
1980-81	0.0	0.0	0.0	T	0.6	1.8	6.7	5.5	T	1.9	0.0		
1981-82					0.0	0.0	18.1	2.6	12.1	1.6	0.0	0.0	
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-	0.0	0.0	0.0	T	0.2	2.0							
POR= 56 YRS	0.0	0.0	0.0	0.6	7.5	8.0	8.9	7.2	9.4	2.7	0.3	0.0	44.6

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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. 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.</p>	<p>GENERAL CONTINUED: 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. 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.</p> <p>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.</p>
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2004
SAINT CLOUD,
MINNESOTA (STC)

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 LOCATION

SAINT CLOUD, MINNESOTA

LOCATION	Occupied From	Occupied To	Airline Distances and Directions from previous Location	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE										AUTOMATIC OBSERVING EQUIPMENT * REMARKS
						SEA LEVEL GROUND SURFACE	GROUND								HYGROTHERMOMETER	
							WIND INSTRUMENT	EXTREME THERMOMETERS	PSYCHROMETER	SUNSHINE SWITCH	TIPPING BUCKET	RAIN GAUGE	WINDHOLE RAIN GAGE	8 INCH RAIN GAGE		
*NOTE: <u>AIRPORT</u>																
Saint Cloud Municipal Airport, Whitney Memorial	2/25/36	2/28/47	4 mi. NW	45°35'	94°11'	1034	22	5	4				#	4	#. Added after 1940; 8" gage data used for record.	
Saint Cloud Municipal Airport, Whitney Memorial	3/01/47	2/14/72	200' N	45°35'	94°11'	1034	a46	5	5				b6		Cotton region shelter replaced with large size shelter 10/22/51. Winds from SW through NW reduced somewhat due to hangars constructed in 1946. a. 36 ft. to 10/8/63. b. 4 ft. to 7/12/60; data used for record from 6/1/51.	
Municipal Airport	2/14/72	06/01/95	5.4 mi. SE	45°33'	94°04'	1028	20	5 d5	5 d5				6	6	c5 c. Commissioned 7/11/85. d. Relocated to Hygro-thermometer site as standby.	
Municipal Airport	06/01/95	Present	NA	45°33'	94°03'	e1021									S ASOS Commissioned 06/01/95 e. Ground Elevation	

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* NOTES: For earlier station history see previous editions.