



# DECEMBER 2002

## LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

## MINNEAPOLIS-ST.PAUL, MN

INTERNATIONAL AIRPORT (MSP)

Lat: 44°52' N Long: 93°13' W Elev (Ground): 871 Feet

Time Zone: CENTRAL WBAN: 14922 ISSN #:0198-2745

DATE	TEMPERATURE °F						DEG DAYS BASE 65°		WEATHER	SNOW/ICE ON GND(IN)		PRECIPITATION (INCHES)		PRESSURE (INCHES OF HG)		WIND SPEED = MPH DIR = TENS OF DEGREES								DATE								
	MAXIMUM	MINIMUM	AVERAGE	DEP FROM NORMAL	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING		0600 LST	1200 LST	2400 LST	2400 LST	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	MAXIMUM													
																			5-SEC		2-MIN											
																			SPEED	DIR	SPEED	DIR										
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	38	19	29	4	16	24	36	0	SN				T	28.90	29.83	3.9	28	8.8	22	22	17	23	01									
02	26	9	18	-6	5	13	47	0	SN BR				T	29.28	30.22	11.4	02	11.6	26	01	20	03	02									
03	23	5	14	-10	5	13	51	0	SN				T	29.65	30.61	3.0	13	5.3	12	15	10	15	03									
04	22	6	14	-9	13	17	51	0	SN BR				0.02	29.54	30.50	4.5	30	5.4	16	32	14	31	04									
05	23	3*	13*	-10	5	10	52	0					0.00	29.31	30.26	7.3	26	8.4	18	30	15	29	05									
06	39	8	24	2	17	22	41	0					0.00	29.02	29.96	7.7	24	9.2	24	27	18	27	06									
07	34	22	28	6	16	24	37	0					0.00	29.13	30.06	9.8	29	10.2	23	33	18	29	07									
08	24	12	18	-3	-1	13	47	0					0.00	29.57	30.53	4.1	34	6.6	21	02	17	34	08									
09	41	10	26	5	14	24	39	0					0.00	29.26	30.21	11.1	22	11.5	30	22	24	22	09									
10	45	27	36	15	26	31	29	0	BR				0.00	29.08	30.00	6.3	20	6.7	15	21	12	21	10									
11	37	25	31	11	30	31	34	0	BR HZ				0.00	28.99	29.91	8.5	20	9.2	17	20	16	17	11									
12	41	26	34	14	29	32	31	0	BR HZ				0.00	29.06	29.98	3.9	23	4.1	13	24	12	25	12									
13	42	21	32	12	26	28	33	0	BR VCFG				0.00	29.06	29.99	2.4	15	2.5	12	17	9	17	13									
14	48*	24	36	17	26	32	29	0	BR				0.00	28.89	29.81	4.9	23	7.0	18	25	15	25	14									
15	39	27	33	14	26	31	32	0					0.00	29.00	29.92	9.6	07	11.2	30	09	25	09	15									
16	30	22	26	8	12	22	39	0	SN				T	29.09	30.02	16.8	11	17.1	29	10	25	12	16									
17	39	30	35	17	25	30	30	0	RA BR				0.07	28.90	29.82	16.9	12	17.3	30	11	23	11	17									
18	46	33	40*	22	36	37	25	0	RA DZ BR				0.07	28.54	29.44	6.9	15	13.1	29	12	24	11	18									
19	37	29	33	16	29	32	32	0	SN BR				0.02	28.60	29.51	10.5	26	11.1	22	29	18	29	19									
20	30	26	28	11	22	26	37	0	SN BR				0.02	28.56	29.48	15.9	29	16.0	33*	30	25	30	20									
21	28	21	25	8	18	23	40	0					0.00	28.80	29.73	13.4	29	13.6	30	30	24	29	21									
22	26	19	23	7	16	21	42	0	SN				T	28.97	29.90	15.2	28	15.3	30	30	23	28	22									
23	26	14	20	4	9	16	45	0					0.00	29.19	30.14	13.0	29	13.7	28	28	22	32	23									
24	20	12	16	0	13	16	49	0	SN BR				T	29.16	30.10	5.3	33	5.7	21	03	12	33	24									
25	23	11	17	1	12	16	48	0					0.00	29.14	30.08	5.1	28	6.1	14	25	12	33	25									
26	34	12	23	8	15	20	42	0					0.00	29.23	30.17	3.5	20	3.9	10	22	7	22	26									
27	35	21	28	13	21	27	37	0					0.00	29.08	30.01	6.8	21	7.1	18	21	16	24	27									
28	39	27	33	18	25	30	32	0					0.00	28.98	29.91	2.5	12	4.0	15	02	12	12	28									
29	42	26	34	20	28	32	31	0	BR HZ				0.00	28.87	29.79	12.5	12	12.8	29	13	25	12	29									
30	39	22	31	17	24	29	34	0	BR				0.00	28.77	29.68	8.5	29	13.3	32	31	29*	29	30									
31	26	13	20	6	8	17	45	0					0.00	29.17	30.11	5.1	32	7.6	21	30	17	28	31									
33.6 18.8 26.2 ■■										< MONTHLY AVERAGES		TOTALS->			0.20	29.06	29.99	2.6	25	9.5	<- MONTHLY AVERAGES											
7.2 7.9 7.5 ■■										<-----DEPARTURE FROM NORMAL----->											- .80											
DEGREE DAYS										GREATEST 24-HR PRECIPITATION: 0.14					DATE: 17-18					SEA LEVEL PRESSURE					DATE TIME							
MONTHLY										GREATEST 24-HR SNOWFALL:					DATE:					MAXIMUM					: 30.68 03 0853							
TOTAL DEPARTURE										GREATEST SNOW DEPTH:					DATE:					MINIMUM					: 29.34 18 1353							
HEATING: 1197 -231										NUMBER OF DAYS WITH →					MAXIMUM TEMP ≥ 90: 0					MINIMUM TEMP ≤ 32: 30					PRECIPITATION ≥ 0.01 INCH: 5							
COOLING: 0 0															MAXIMUM TEMP ≤ 32: 13					MINIMUM TEMP ≤ 0: 0					PRECIPITATION ≥ 0.10 INCH: 0							
															THUNDERSTORMS: 0					HEAVY FOG: 0					SNOWFALL ≥ 1.0 INCH:							

DECEMBER 2002  
MINNEAPOLIS-ST.PAUL, MN

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

## MINNEAPOLIS—ST.PAUL, MN

DECEMBER 2002

MSP

WBAN # 14922

DATE	FOR HOUR (LST) ENDING AT												DATE	FOR HOUR (LST) ENDING AT												DATE	Sum if Different (See Note)	2400 LST	
	1	2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18	19	20	21	22	23	24			Water	Equiv.
01													01												01			T	
02	T	T	T	T									02												02			T	
03													03												03			T	
04	T	T	T	T	T	T	T	T	T			T	04	T	T	T	T	T	T	T	T	T	T		04	T		0.02	
05													05												05			0.00	
06													06												06			0.00	
07													07												07			0.00	
08													08												08			0.00	
09													09												09			0.00	
10													10												10			0.00	
11													11												11			0.00	
12													12												12			0.00	
13													13												13			0.00	
14													14												14			0.00	
15													15												15			0.00	
16													16				T	T							16			T	
17	0.07	T	T		T	T	T	T	T	T			17			T	T				T	T		0.04	0.03	17	0.01	0.07	
18													18			T	T								18			0.07	
19													19		T	T	T	T				T	T		19			0.02	
20	T	T	0.01	0.01	T	T	T	T	T	T	0.01	T	20	T	T	T	T	T	T	T	T	T	T		20			0.02	
21													21												21			0.00	
22			T	T	T	T	T	T	T	T	T	T	22	T								T			22			T	
23													23												23			0.00	
24													24	T	T	T	T	T	T	T	T				24			T	
25													25												25			0.00	
26													26												26			0.00	
27													27												27			0.00	
28													28												28			0.00	
29													29												29			0.00	
30													30												30			0.00	
31													31												31			0.00	

### MAXIMUM SHORT DURATION PRECIPITATION (See Note)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)	.03	.04	.05	.06	.07	.08	.09	.10	.10	.10	.13	.14
Ending Date	17	18	18	18	18	18	18	18	18	18	18	18
Ending Time (Hour/Min)	2206	0026	0026	0033	0033	0033	0033	0033	0033	0033	0033	0033

Date and time are not entered for TRACE amounts.

Note : The sum of the hourly totals is given when it differs from the daily total. 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.

\* = 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

Wind direction is recorded in tens of degrees (2 digits) clockwise from true north. '00' = calm, 'VR' = variable.

Water Equivalent of snow on the ground is reported only when the depth is 2 or more inches.

## WEATHER NOTATIONS

**MINNEAPOLIS-ST. PAUL, MN  
DECEMBER 2002**

Satellite data are used to derive cloudiness above 12,000 feet. Effective Cloud Amount is based on the cloud cover and the transparency of the clouds within the satellite field of view (approx. 31x31 miles).

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.

Dew Point is the temperature to which the air must be cooled to achieve 100% relative humidity. Wet Bulb is the temperature the air would have if cooled to saturation at constant pressure by evaporation of water into it.

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

DATE	SUNSHINE		CLOUDINESS (OKTAS)				VISIBILITY (MILES)		RESERVED
	TOTAL MINUTES	PERCENT POSSIBLE	SR-SS		MN-MN		MINIMUM	MAXIMUM	
			CEILOMETER	SATELLITE	CEILOMETER	SATELLITE			
01							5.00	10.00	
02							2.50	10.00	
03							9.00	10.00	
04							1.50	10.00	
05							10.00	10.00	
06							9.00	10.00	
07							10.00	10.00	
08							10.00	10.00	
09							10.00	10.00	
10							3.00	10.00	
11							1.00	8.00	
12							5.00	10.00	
13							4.00	10.00	
14							5.00	10.00	
15							10.00	10.00	
16							3.00	10.00	
17							4.00	10.00	
18							3.00	10.00	
19							2.50	10.00	
20							2.00	10.00	
21							10.00	10.00	
22							6.00	10.00	
23							10.00	10.00	
24							1.50	10.00	
25							8.00	10.00	
26							9.00	10.00	
27							10.00	10.00	
28							7.00	10.00	
29							6.00	10.00	
30							4.00	10.00	
31							10.00	10.00	
<b>MONTHLY AVGS</b>							6.40	9.94	
<p align="center"><b>SUNSHINE (MINUTES)</b></p> <p>Total:                  Possible:</p> <p align="center">Percent Possible:</p>									
<p align="center"><b>NUMBER OF DAYS WITH:</b></p> <p align="center"><b>SKY CONDITION</b></p> <p align="center">CLR   PTLY CLDY   CLOUDY   MISSING</p> <p align="center">31</p> <p align="center"><b>MINIMUM VISIBILITY (MILES)</b></p> <p align="center">&lt;=0.25      &lt;=3.0      &gt;=7.0</p> <p align="center">0                9             15</p>									

## OBSERVATIONS AT 3-HOURLY INTERVALS

## MINNEAPOLIS-ST. PAUL, MN

DECEMBER 2002

MSP

WBAN # 14922

HOUR (LST)			SATELLITE		WEATHER	TEMPERATURE °F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)		HOUR (LST)			SATELLITE		WEATHER	TEMPERATURE °F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)			
	SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)	EFF CLD AMT <small>Oktas</small>		VISIBILITY (MILES)	DRY BULB	DEW POINT		WET BULB	SPEED (MPH)	DIRECTION TENS OF DEG	STATION		SEA LEVEL	SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)		EFF CLD AMT <small>Oktas</small>	VISIBILITY (MILES)	DRY BULB		DEW POINT	WET BULB	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL
			SUNRISE: 0730			DEC 01	SUNSET: 1634									SUNRISE: 0737			DEC 07	SUNSET: 1632									
03	OVC	095			10.00		21	7	17	54	12	22	29.04	29.98	03	SCT	NC			10.00	26	20	24	78	7	27	29.00	29.92	
06	OVC	110			10.00		24	12	21	60	14	23	28.95	29.88	06	CLR	NC			10.00	23	19	22	85	8	30	29.06	29.98	
09	OVC	095			10.00		26	14	22	60	8	23	28.88	29.80	09	OVC	030			10.00	25	20	23	81	6	28	29.14	30.07	
12	SCT	NC			10.00		34	18	28	52	9	31	28.84	29.76	12	SCT	NC			10.00	32	19	28	59	8	31	29.13	30.06	
15	SCT	NC			10.00		35	21	30	57	9	31	28.81	29.73	15	FEW	NC			10.00	33	18	28	54	15	29	29.12	30.06	
18	BKN	200			10.00		32	21	28	64	8	04	28.84	29.76	18	FEW	NC			10.00	29	13	24	51	13	29	29.16	30.10	
21	OVC	060			10.00		30	20	27	66	6	04	28.89	29.81	21	CLR	NC			10.00	26	2	20	35	15	31	29.22	30.15	
24	OVC	038			9.00		26	22	25	84	10	04	28.91	29.83	24	BKN	095			10.00	24	5	19	44	12	31	29.30	30.24	
			SUNRISE: 0732			DEC 02	SUNSET: 1633									SUNRISE: 0738			DEC 08	SUNSET: 1632									
03	OVC	025			5.00	-SN	24	17	22	75	14	03	28.98	29.90	03	SCT	NC			10.00	20	6	16	55	13	35	29.40	30.34	
06	OVC	100			10.00		19	10	17	68	14	36	29.09	30.02	06	CLR	NC			10.00	15	0	12	51	10	34	29.50	30.45	
09	SCT	NC			10.00		11	-1	9	58	14	01	29.22	30.16	09	CLR	NC			10.00	13	-1	10	54	12	36	29.63	30.58	
12	FEW	NC			10.00		14	0	11	53	13	36	29.29	30.23	12	CLR	NC			10.00	16	-1	12	47	5	34	29.66	30.62	
15	SCT	NC			10.00		16	0	12	49	12	03	29.33	30.28	15	CLR	NC			10.00	19	-5	14	34	3	VR	29.65	30.61	
18	SCT	NC			10.00		14	1	11	56	12	01	29.45	30.41	18	FEW	NC			10.00	16	-3	12	43	3	26	29.64	30.60	
21	FEW	NC			10.00		11	2	9	67	6	36	29.52	30.49	21	CLR	NC			10.00	13	-1	10	54	5	18	29.59	30.55	
24	CLR	NC			10.00		10	-1	8	61	7	02	29.58	30.55	24	CLR	NC			10.00	12	-1	9	56	3	23	29.55	30.51	
			SUNRISE: 0733			DEC 03	SUNSET: 1633									SUNRISE: 0739			DEC 09	SUNSET: 1632									
03	CLR	NC			10.00		7	-1	5	70	6	02	29.63	30.60	03	SCT	NC			10.00	10	1	8	67	7	15	29.45	30.42	
06	CLR	NC			10.00		5	0	4	79	5	02	29.65	30.62	06	BKN	150			10.00	19	6	16	57	9	21	29.39	30.33	
09	FEW	NC			10.00		10	5	9	80	3	06	29.71	30.68	09	BKN	200			10.00	22	8	18	55	15	22	29.34	30.28	
12	FEW	NC			10.00		18	6	15	60	6	17	29.68	30.64	12	FEW	NC			10.00	33	14	27	45	21	23	29.24	30.18	
15	FEW	NC			10.00		22	6	18	50	8	15	29.63	30.60	15	FEW	NC			10.00	41	21	34	45	13	23	29.16	30.09	
18	BKN	100			10.00		21	6	17	52	5	15	29.63	30.59	18	FEW	NC			10.00	38	24	33	57	9	22	29.13	30.07	
21	OVC	060			10.00		21	8	18	57	6	15	29.63	30.59	21	SCT	NC			10.00	37	24	32	60	14	23	29.13	30.06	
24	OVC	060			9.00	-SN	20	13	18	74	7	15	29.62	30.58	24	CLR	NC			10.00	34	23	30	64	8	24	29.14	30.06	
			SUNRISE: 0734			DEC 04	SUNSET: 1633									SUNRISE: 0740			DEC 10	SUNSET: 1632									
03	OVC	020			4.00	-SN BR	19	17	18	92	0	00	29.59	30.55	03	CLR	NC			10.00	30	22	27	72	5	21	29.14	30.06	
06	OVC	022			5.00	-SN BR	19	18	19	96	0	00	29.56	30.52	06	CLR	NC			10.00	29	21	26	72	6	21	29.11	30.03	
09	SCT	NC			5.00	BR	16	14	15	92	5	31	29.58	30.53	09	FEW	NC			9.00	28	21	26	75	6	21	29.12	30.05	
12	OVC	022			9.00	-SN	21	14	19	74	6	26	29.56	30.51	12	SCT	NC			10.00	39	25	34	57	8	20	29.09	30.01	
15	OVC	025			7.00	-SN	20	14	18	78	9	30	29.51	30.47	15	FEW	NC			10.00	45	31	39	58	10	18	29.04	29.96	
18	OVC	025			5.00	-SN	18	12	16	77	7	31	29.50	30.46	18	CLR	NC			9.00	37	30	34	76	7	16	29.02	29.94	
21	OVC	021			9.00	-SN	15	8	13	74	9	30	29.48	30.44	21	CLR	NC			7.00	33	28	31	82	8	22	29.02	29.95	
24	CLR	NC			10.00		7	2	6	80	9	29	29.45	30.41	24	SCT	NC			3.00	28	27	28	96	7	15	29.01	29.94	
			SUNRISE: 0735			DEC 05	SUNSET: 1632									SUNRISE: 0741			DEC 11	SUNSET: 1632									
03	CLR	NC			10.00		5	1	4	83	5	25	29.42	30.39	03	SCT	NC			4.00	26	24	25	92	7	15	29.00	29.91	
06	SCT	NC			10.00		3	-1	2	83	9	22	29.38	30.33	06	OVC	003			2.50	30	29	30	96	7	20	28.97	29.88	
09	FEW	NC			10.00		5	0	4	79	12	23	29.35	30.31	09	OVC	003			1.50	29	28	29	96	14	17	28.99	29.91	
12	SCT	NC			10.00		13	4	11	67	12	24	29.28	30.24	12	OVC	005			4.00	32	30	31	92	9	20	28.98	29.90	
15	FEW	NC			10.00		23	11	20	60	13	27	29.21	30.16	15	OVC	007			5.00	35	31	33	85	10	20	28.97	29.88	
18	FEW	NC			10.00		17	9	15	70	7	29	29.24	30.19	18	OVC	011			8.00	36	32	34	86	9	21	29.00	29.91	
21	SCT	NC			10.00		14	8	13	77	5	30	29.25	30.21	21	OVC	015			7.00	37	31	35	79	10	23	29.00	29.91	
24	CLR	NC			10.00		12	8	11	84	3	28	29.26	30.21	24	OVC	013			6.00	36	31	34	82	8	23	29.00	29.92	
			SUNRISE: 0736			DEC 06	SUNSET: 1632									SUNRISE: 0741			DEC 12	SUNSET: 1632									
03	CLR	NC			10.00		10	7	9	87	3	20	29.23	30.18	03	OVC	015			6.00	35	30	33	82	7	23	29.00	29.93	
06	CLR	NC			10.00		8	5	7	87	6	21	29.19	30.14	06	OVC	021			7.00	35	30	33	82	0	00	29.02	29.94	
09	CLR	NC			10.00		16	11	15	80	8	20	29.10	30.05	09	OVC	017			5.00	34	30	32	85	5	22	29.06	29.98	
12	BKN	250			10.00		28	19	25	69	13	22	28.98	29.91	12	BKN	011			6.00	36	30	34	79	6	24	29.06	29.98	
15	OVC	250			10.00		36	25	32	64	9	20	28.86	29.79	15	SCT	NC			7.00	39	30	35	70	7	23	29.05	29.97	
18	FEW	NC			10.00		38	27	34	65	16	27	28.87	29.79															

## OBSERVATIONS AT 3-HOURLY INTERVALS

MINNEAPOLIS-ST. PAUL, MN

DECEMBER 2002

MSP

WBAN # 14922

HOUR (LST)			SATELLITE		WEATHER	TEMPERATURE °F				RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)		HOUR (LST)			SATELLITE		WEATHER	TEMPERATURE °F				RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)	
	SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)	EFF CLD AMT <small>Okta</small>		VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL		SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)	EFF CLD AMT <small>Okta</small>		VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL
	SUNRISE: 0742					DEC 13	SUNSET: 1632						SUNRISE: 0746					DEC 19	SUNSET: 1634										
03	FEW	NC			5.00	BR	24	22	23	91	0	00	29.11	30.04	03	OVC	032			10.00	36	32	34	86	10	23	28.62	29.52	
06	CLR	NC			6.00	BR	22	21	22	96	0	00	29.11	30.04	06	OVC	015			9.00	35	31	33	85	12	23	28.63	29.54	
09	CLR	NC			5.00	BR	25	22	24	88	0	00	29.10	30.03	09	OVC	018			7.00	-SN	34	30	32	85	12	24	28.63	29.54
12	CLR	NC			10.00		37	30	34	76	0	00	29.06	29.99	12	OVC	017			9.00		34	30	32	85	13	26	28.61	29.52
15	CLR	NC			10.00		41	30	36	65	5	16	29.02	29.94	15	OVC	015			4.00	-SN BR	32	28	30	85	13	25	28.60	29.51
18	CLR	NC			10.00		33	28	31	82	5	16	29.02	29.96	18	OVC	034			10.00		31	27	29	85	13	28	28.60	29.50
21	CLR	NC			8.00		31	28	30	89	6	17	29.01	29.94	21	OVC	020			10.00		30	26	29	85	14	29	28.58	29.48
24	CLR	NC			6.00	BR	27	25	26	92	7	14	29.00	29.93	24	OVC	029			4.00	-SN BR	29	27	28	92	8	28	28.54	29.44
	SUNRISE: 0743					DEC 14	SUNSET: 1632						SUNRISE: 0747					DEC 20	SUNSET: 1634										
03	CLR	NC			8.00		26	24	25	92	7	14	28.96	29.87	03	OVC	020			6.00	-SN BR	29	25	28	85	9	30	28.50	29.41
06	CLR	NC			10.00		27	22	25	81	5	VR	28.91	29.83	06	OVC	080			10.00		26	22	25	84	15	29	28.50	29.41
09	BKN	250			10.00		32	23	29	69	7	20	28.90	29.81	09	OVC	025			9.00	-SN	26	22	25	84	13	28	28.52	29.43
12	FEW	NC			10.00		39	25	34	57	7	23	28.88	29.79	12	OVC	018			2.00	-SN BR	28	24	27	85	17	29	28.54	29.45
15	FEW	NC			10.00		47	28	39	48	9	23	28.83	29.74	15	BKN	040			9.00		29	19	26	66	22	29	28.57	29.48
18	SCT	NC			10.00		43	28	37	56	9	29	28.88	29.79	18	OVC	065			9.00	-SN	28	22	26	78	20	28	28.60	29.52
21	SCT	NC			10.00		40	28	35	63	7	27	28.89	29.80	21	OVC	070			9.00	-SN	27	21	25	78	15	29	28.64	29.56
24	BKN	150			10.00		37	28	34	70	5	31	28.89	29.80	24	OVC	060			10.00		27	20	25	75	17	29	28.67	29.58
	SUNRISE: 0744					DEC 15	SUNSET: 1633						SUNRISE: 0747					DEC 21	SUNSET: 1635										
03	SCT	NC			10.00		34	28	32	79	5	33	28.92	29.83	03	SCT	NC			10.00		23	16	21	74	15	30	28.72	29.64
06	BKN	150			10.00		33	28	31	82	5	02	28.94	29.85	06	OVC	050			10.00		22	16	20	78	12	29	28.76	29.68
09	BKN	200			10.00		32	27	30	82	6	06	28.99	29.90	09	OVC	021			10.00		24	18	22	77	14	28	28.80	29.72
12	BKN	120			10.00		37	30	34	76	13	08	29.00	29.91	12	OVC	040			10.00		27	18	24	69	16	29	28.83	29.75
15	OVC	180			10.00		38	27	34	65	14	07	29.00	29.92	15	OVC	039			10.00		28	20	25	72	10	28	28.81	29.74
18	OVC	026			10.00		35	25	31	67	17	08	29.04	29.97	18	OVC	023			10.00		27	20	25	75	15	29	28.83	29.76
21	SCT	NC			10.00		31	21	27	67	15	09	29.08	30.01	21	OVC	043			10.00		27	21	25	78	13	28	28.85	29.77
24	SCT	NC			10.00		27	16	24	63	14	09	29.11	30.04	24	OVC	095			10.00		26	20	24	78	13	28	28.85	29.77
	SUNRISE: 0744					DEC 16	SUNSET: 1633						SUNRISE: 0748					DEC 22	SUNSET: 1635										
03	SCT	NC			10.00		25	7	20	46	18	09	29.09	30.01	03	OVC	034			9.00	-SN	24	18	22	77	15	29	28.88	29.80
06	BKN	150			10.00		23	5	18	46	17	10	29.11	30.04	06	OVC	028			9.00	-SN	22	16	20	78	13	29	28.90	29.82
09	OVC	047			10.00		23	7	19	50	22	11	29.14	30.07	09	BKN	049			9.00	-SN	20	14	18	78	12	27	28.95	29.87
12	OVC	049			10.00		25	10	21	53	20	13	29.13	30.06	12	OVC	020			6.00	-SN	21	16	20	81	14	28	28.98	29.91
15	OVC	041			10.00		26	14	22	60	15	11	29.10	30.03	15	OVC	024			10.00		24	16	22	71	14	27	28.99	29.92
18	OVC	038			10.00		27	17	24	66	15	12	29.07	30.01	18	OVC	100			10.00		23	15	21	72	16	27	29.03	29.97
21	OVC	034			10.00		28	19	25	69	12	10	29.06	29.99	21	OVC	070			9.00		22	16	20	78	15	28	29.05	29.99
24	OVC	032			10.00		30	16	25	56	14	12	29.05	29.99	24	OVC	021			10.00		22	17	20	82	21	28	29.07	30.01
	SUNRISE: 0745					DEC 17	SUNSET: 1633						SUNRISE: 0748					DEC 23	SUNSET: 1636										
03	OVC	024			10.00		30	20	27	66	17	14	29.06	29.99	03	FEW	NC			10.00		19	14	18	81	16	28	29.14	30.08
06	OVC	020			10.00		30	22	27	72	15	12	29.02	29.95	06	CLR	NC			10.00		15	9	14	77	15	29	29.16	30.11
09	OVC	018			9.00		31	24	28	76	20	12	28.99	29.91	09	FEW	NC			10.00		16	6	14	65	12	28	29.21	30.16
12	OVC	018			10.00		34	25	31	70	21	12	28.92	29.84	12	FEW	NC			10.00		24	8	20	50	16	32	29.15	30.09
15	OVC	020			10.00		36	27	32	70	15	12	28.86	29.77	15	BKN	200			10.00		25	8	20	48	16	26	29.21	30.16
18	OVC	022			10.00		37	27	33	67	16	10	28.79	29.70	18	SCT	NC			10.00		21	9	18	59	13	30	29.24	30.19
21	OVC	020			10.00		36	30	34	79	16	11	28.75	29.66	21	CLR	NC			10.00		17	8	15	68	10	33	29.25	30.19
24	OVC	014			6.00	-RA BR	34	31	33	89	17	11	28.68	29.59	24	FEW	NC			10.00		14	8	13	77	9	33	29.23	30.18
	SUNRISE: 0746					DEC 18	SUNSET: 1633						SUNRISE: 0749					DEC 24	SUNSET: 1636										
03	OVC	010			8.00		35	31	33	85	20	12	28.61	29.52	03	OVC	022			10.00		14	8	13	77	6	28	29.24	30.19
06	OVC	006			5.00	-DZ	36	31	34	82	18	11	28.55	29.45	06	OVC	018			10.00		17	11	15	77	3	32	29.22	30.16
09	OVC	006			8.00		37	35	36	93	14	12	28.52	29.42	09	OVC	014			8.00	-SN	18	14	17	84	7	32	29.21	30.15
12	OVC	004			4.00	BR	42	41	42	96	9	13	28.47	29.37	12	OVC	016			2.00	-SN BR	18	15	17	88	8	34	29.14	30.09
15	OVC	006			3.00	-DZ BR	44	43	44	96	6	22	28.46	29.35	15	OVC	014			1.50	-SN BR	18	14	17	84	8	34	29.11	30.06
18	OVC</																												

## OBSERVATIONS AT 3-HOURLY INTERVALS

## MINNEAPOLIS-ST. PAUL, MN

DECEMBER 2002

MSP

WBAN # 14922

HOUR (LST)	SKY COVER		CEILING 100'S OFFT	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES,HG)	
				OBSERVATION TIME (LST)	EFF CLD AMT Okta			DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL
03	OVC	014			10.00		DEC 25	20	17	19	89	8	34	29.08	30.02
06	OVC	018			10.00			15	12	14	88	6	29	29.09	30.04
09	SCT	NC			10.00			12	8	11	84	7	28	29.14	30.09
12	SCT	NC			10.00			19	11	17	71	5	28	29.13	30.08
15	FEW	NC			10.00			23	13	20	65	8	26	29.13	30.07
18	FEW	NC			10.00			20	12	18	71	7	26	29.17	30.12
21	CLR	NC			10.00			17	12	16	80	3	28	29.20	30.15
24	CLR	NC			10.00			15	12	14	88	6	22	29.22	30.16
SUNRISE: 0749 DEC 25 SUNSET: 1637															
03	CLR	NC			10.00			13	10	12	88	5	23	29.23	30.18
06	CLR	NC			10.00			13	10	12	88	0	00	29.23	30.18
09	CLR	NC			9.00			14	10	13	84	3	21	29.27	30.22
12	FEW	NC			10.00			24	16	22	71	5	19	29.26	30.20
15	FEW	NC			10.00			34	20	29	56	3	20	29.24	30.18
18	FEW	NC			10.00			28	19	25	69	7	15	29.22	30.16
21	FEW	NC			10.00			26	19	24	75	0	00	29.20	30.14
24	CLR	NC			10.00			30	18	26	61	6	22	29.16	30.10
SUNRISE: 0750 DEC 26 SUNSET: 1638															
03	CLR	NC			10.00			29	18	25	64	9	21	29.14	30.07
06	CLR	NC			10.00			26	18	23	71	7	20	29.10	30.04
09	BKN	250			10.00			24	19	22	81	5	20	29.12	30.05
12	BKN	200			10.00			30	22	27	72	14	22	29.09	30.02
15	BKN	200			10.00			34	24	30	67	9	20	29.04	29.96
18	BKN	250			10.00			33	24	30	70	5	22	29.05	29.98
21	BKN	200			10.00			31	22	28	69	7	24	29.04	29.98
24	OVC	100			10.00			31	24	28	76	0	00	29.00	29.92
SUNRISE: 0750 DEC 27 SUNSET: 1638															
03	OVC	060			10.00			30	24	28	79	6	14	28.98	29.90
06	OVC	070			10.00			30	24	28	79	0	00	28.93	29.85
09	BKN	050			10.00			32	25	29	75	7	09	28.94	29.86
12	BKN	200			10.00			35	25	31	67	0	00	28.93	29.85
15	OVC	180			10.00			39	25	34	57	7	VR	28.98	29.89
18	BKN	180			10.00			33	25	30	72	0	00	29.02	29.95
21	SCT	NC			8.00			31	24	28	76	3	VR	29.07	30.00
24	SCT	NC			7.00			27	24	26	89	3	13	29.06	29.99
SUNRISE: 0750 DEC 28 SUNSET: 1639															
03	OVC	130			7.00			29	25	28	85	5	13	29.06	29.99
06	OVC	130			7.00			31	27	29	85	10	10	29.02	29.95
09	OVC	180			6.00	BR		31	27	29	85	13	13	29.01	29.94
12	BKN	200			8.00			39	28	35	65	17	12	28.92	29.84
15	OVC	200			9.00			42	28	36	58	21	12	28.80	29.71
18	OVC	200			10.00			38	30	35	73	14	12	28.73	29.64
21	BKN	200			9.00			38	30	35	73	15	14	28.68	29.60
24	BKN	180			8.00			37	30	34	76	17	13	28.60	29.50
SUNRISE: 0750 DEC 29 SUNSET: 1640															
03	OVC	150			7.00			34	31	33	89	9	11	28.56	29.46
06	OVC	150			6.00	BR		32	30	31	92	6	12	28.56	29.47
09	BKN	150			4.00	BR		32	31	32	96	7	29	28.63	29.55
12	BKN	017			9.00			37	29	34	73	16	32	28.73	29.64
15	CLR	NC			10.00			37	18	30	46	14	30	28.81	29.72
18	CLR	NC			10.00			29	15	25	56	25	29	28.93	29.85
21	FEW	NC			10.00			25	16	22	69	21	28	29.00	29.92
24	BKN	023			10.00			22	15	20	75	15	28	29.04	29.97
SUNRISE: 0750 DEC 30 SUNSET: 1641															
03	FEW	NC			10.00			19	12	17	74	12	30	29.13	30.06
06	CLR	NC			10.00			15	6	13	67	12	31	29.14	30.08
09	CLR	NC			10.00			15	5	13	64	6	32	29.19	30.13
12	CLR	NC			10.00			21	6	17	52	10	30	29.18	30.12
15	FEW	NC			10.00			25	8	20	48	6	34	29.15	30.09
18	BKN	200			10.00			23	9	19	55	5	03	29.17	30.11
21	BKN	200			10.00			22	9	18	57	3	17	29.23	30.17
24	BKN	150			10.00			22	11	19	63	9	02	29.22	30.16
SUNRISE: 0751 DEC 31 SUNSET: 1642															
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, VV = 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				
	CEILOMETER	EFF CLD AMT	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY	PRESSURE (INCHES,HG)		VISIBILITY (MILES)	WIND SPEED (MPH)	WIND (MPH)				
							STATION	SEA LEVEL			SPEED	DIRECTION			
01			24	17	22	77	29.05	29.99	8.42	9	2	27			
02			24	17	22	77	29.06	29.99	8.61	8	2	26			
03			23	17	21	78	29.06	29.99	8.68	9	1	24			
04			23	17	21	77	29.06	29.99	9.03	9	2	25			
05			23	17	21	78	29.05	29.99	8.87	9	2	24			
06			23	16	21	78	29.06	29.99	8.92	8	2	26			
07			22	16	21	78	29.06	29.99	8.84	8	2	23			
08			22	16	21	79	29.07	30.00	8.43	9	2	22			
09			23	17	21	77	29.08	30.01	8.53	9	2	22			
10			25	18	23	75	29.08	30.01	8.60	11	3	23			
11			27	18	24	72	29.08	30.01	8.40	11	3	24			
12			29	19	26	68	29.06	29.99	8.68	11	4	25			
13			30	19	27	65	29.04	29.97	9.05	10	4	24			
14			31	20	27	64	29.03	29.96	9.13	10	4	25			
15			32	20	28	62	29.03	29.96	8.89	10	4	25			
16			31	20	28	64	29.04	29.97	8.79	10	3	26			
17			30	20	27	67	29.04	29.98	9.48	10	3	26			
18			29	20	26	69	29.05	29.98	9.55	10	4	27			
19			28	19	25	71	29.06	29.99	9.48	10	3	27			
20			28	19	25	71	29.06	29.99	9.26	10	3	26			
21			27	19	24	72	29.06	30.00	9.39	9	3	26			
22			26	19	24	73	29.07	30.00	9.19	9	3	26			
23			26	19	24	76	29.06	30.00	9.00	9	2	27			
24			25	18	23	76	29.06	29.99	8.81	9	2	27			

## 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, VV = 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.

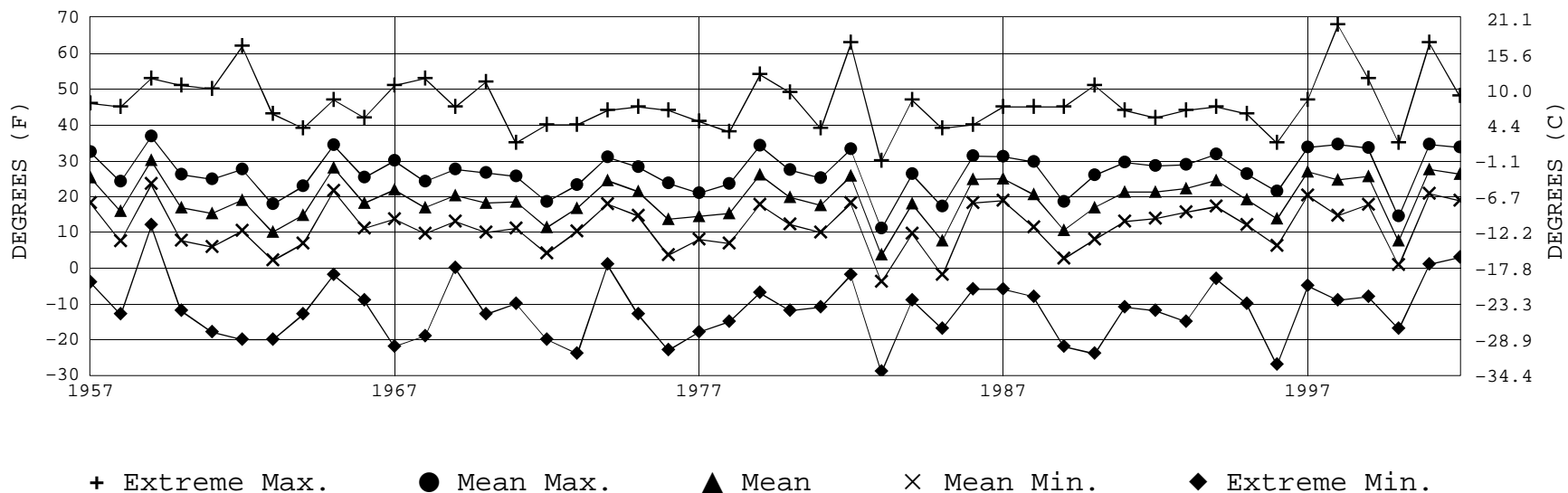
& = Original observation contained additional weather elements.

See page 3 for additional notes.

## SUMMARY BY HOUR

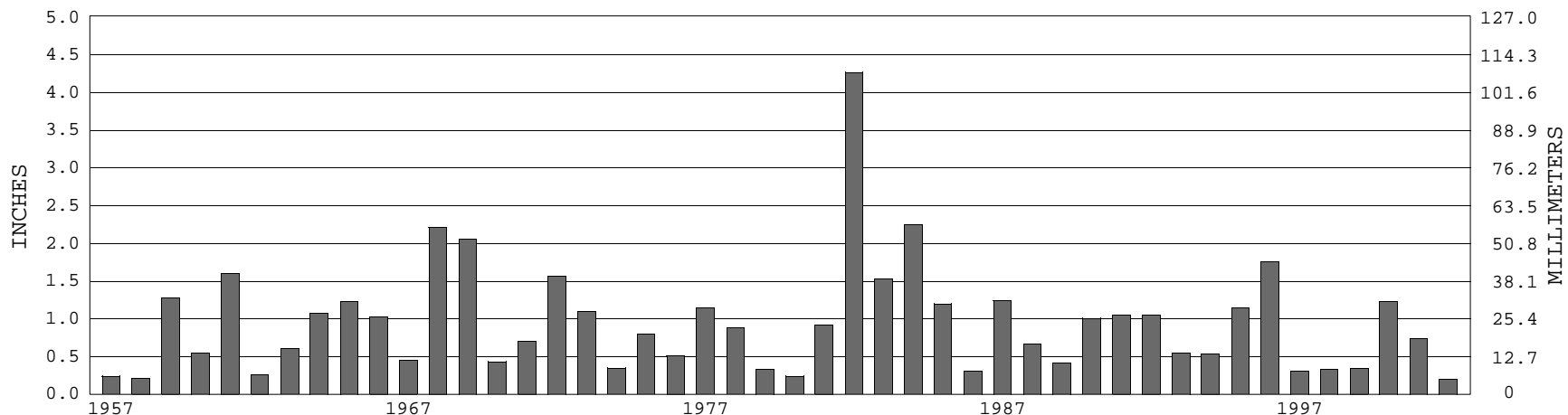
HOUR (LST)	AVERAGES										RESULTANT WIND (MPH)	
	CEILOMETER	EFF CLD AMT	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY	PRESSURE (INCHES, HG)		VISIBILITY (MILES)	WIND SPEED (MPH)	SPEED	DIRECTION
							STATION	SEA LEVEL				
01			24	17	22	77	29.05	29.99	8.42	9	2	27
02			24	17	22	77	29.06	29.99	8.61	8	2	26
03			23	17	21	78	29.06	29.99	8.68	9	1	24
04			23	17	21	77	29.06	29.99	9.03	9	2	25
05			23	17	21	78	29.05	29.99	8.87	9	2	24
06			23	16	21	78	29.06	29.99	8.92	8	2	26
07			22	16	21	78	29.06	29.99	8.84	8	2	23
08			22	16	21	79	29.07	30.00	8.43	9	2	22
09			23	17	21	77	29.08	30.01	8.53	9	2	22
10			25	18	23	75	29.08	30.01	8.60	11	3	23
11			27	18	24	72	29.08	30.01	8.40	11	3	24
12			29	19	26	68	29.06	29.99	8.68	11	4	25
13			30	19	27	65	29.04	29.97	9.05	10	4	24
14			31	20	27	64	29.03	29.96	9.13	10	4	25
15			32	20	28	62	29.03	29.96	8.89	10	4	25
16			31	20	28	64	29.04	29.97	8.79	10	3	26
17			30	20	27	67	29.04	29.98	9.48	10	3	26
18			29	20	26	69	29.05	29.98	9.55	10	4	27
19			28	19	25	71	29.06	29.99	9.48	10	3	27
20			28	19	25	71	29.06	29.99	9.26	10	3	26
21			27	19	24	72	29.06	30.00	9.39	9	3	26
22			26	19	24	73	29.07	30.00	9.19	9	3	26
23			26	19	24	76	29.06	30.00	9.00	9	2	27
24			25	18	23	76	29.06	29.99	8.81	9	2	27

# MINNEAPOLIS-ST. PAUL, MN DECEMBER TEMPERATURES



Long-Term (1957-2002) Mean: 19.2    1961-1990 Normal: 18.7

# MINNEAPOLIS-ST. PAUL, MN DECEMBER PRECIPITATION



Long-Term (1957-2002) Mean Monthly Total: 0.95

1961-1990 Normal: 1.00



DECEMBER 2002

MINNEAPOLIS—ST. PAUL, MN

# 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.*

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