



JULY 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	94	80	87*	15	70	75	0	22	TS TSRA RA BR				0.00	29.01	29.88	13.1	21	13.3	32	19	26	19	01										
02	86	77	82	10	69	73	0	17					0.00	29.07	29.95	9.2	24	9.8	25	23	20	23	02										
03	87	70	79	7	65	70	0	14					0.43	29.10	29.98	4.0	31	5.7	22	30	16	34	03										
04	85	63	74	2	58	65	0	9					0.00	29.21	30.09	6.6	11	7.4	21	11	15	11	04										
05	84	70	77	5	64	68	0	12					0.00	29.23	30.11	12.8	13	13.1	23	11	20	15	05										
06	95*	72	84	12	71	74	0	19	TSRA RA BR				0.20	29.25	30.14	3.8	15	7.9	35*	11	31*	12	06										
07	91	72	82	10	72	75	0	17	BR				0.00	29.22	30.10	6.9	16	8.2	21	18	17	18	07										
08	86	74	80	7	73	75	0	15	TS TSRA RA BR HZ				0.14	29.08	29.95	4.2	31	10.1	31	03	22	22	08										
09	90	71	81	8	69	73	0	16	RA				T	29.17	30.05	7.5	08	8.5	22	10	15	11	09										
10	77	61	69	-4	63	65	0	4	TS TSRA RA BR				1.93	29.20	30.09	16.2	10	16.7	32	10	26	12	10										
11	78	62	70	-3	55	61	0	5	RA				0.01	29.32	30.21	9.8	10	10.4	25	12	22	12	11										
12	80	59	70	-3	57	63	0	5	BCFG				0.00	29.20	30.09	0.8	12	3.6	16	07	10	13	12										
13	82	64	73	-1	60	65	0	8					0.00	29.13	30.02	3.0	27	3.9	13	27	10	27	13										
14	85	66	76	2	63	68	0	11					0.00	29.14	30.02	4.5	26	5.2	16	30	13	28	14										
15	85	69	77	3	63	68	0	12					0.00	29.16	30.04	8.0	19	8.7	18	18	16	18	15										
16	90	71	81	7	67	72	0	16					0.00	29.11	29.98	8.1	20	8.7	21	17	17	17	16										
17	92	72	82	8	68	73	0	17					0.00	29.08	29.95	3.4	21	7.1	18	02	15	35	17										
18	83	73	78	4	71	73	0	13	RA BR HZ				T	29.03	29.91	5.6	07	7.7	21	02	15	08	18										
19	83	71	77	3	71	72	0	12	BR HZ				0.00	29.03	29.91	9.0	11	9.4	20	10	15	11	19										
20	89	70	80	6	74	76	0	15	TSRA RA BR				0.53	28.95	29.82	8.3	18	10.5	30	32	28	12	20										
21	91	74	83	9	73	76	0	18	RA				T	28.91	29.78	4.7	28	9.2	28	35	21	35	21										
22	79	63	71	-3	59	64	0	6					0.00	29.13	30.01	10.6	32	11.5	30	35	23	33	22										
23	74	58*	66*	-8	52	59	0	1	RA				T	29.35	30.25	4.2	10	6.3	16	10	13	11	23										
24	71	63	67	-7	60	63	0	2	TS TSRA RA BR				0.73	29.25	30.15	8.7	14	9.4	31	16	26	16	24										
25	82	65	74	0	65	68	0	9	TS RA				0.10	28.99	29.88	7.6	21	10.2	28	18	23	18	25										
26	89	68	79	5	68	71	0	14					0.00	28.94	29.81	3.8	23	4.7	17	25	15	25	26										
27	82	69	76	3	69	71	0	11	RA BR				0.22	28.80	29.67	4.3	18	6.4	26	34	22	34	27										
28	91	69	80	7	69	72	0	15	TS TSRA RA BR				0.78	28.83	29.70	2.0	14	6.8	33	11	26	11	28										
29	84	66	75	2	66	69	0	10					0.00	28.91	29.79	5.3	27	7.4	23	29	16	32	29										
30	92	71	82	9	69	73	0	17					0.00	28.97	29.85	6.2	23	8.1	22	22	16	28	30										
31	91	73	82	9	71	74	0	17	TS TSRA RA BR				0.12	28.91	29.78	9.3	17	10.3	25	19	21	18	31										
85.4										68.6	77.0	■ ■	65.9	69.8	0.0	12.2	< MONTHLY AVERAGES		TOTALS-->				5.19	29.09	29.97	1.1	20	8.6	<- MONTHLY AVERAGES				
2.1										5.6	3.8	■ ■	<-----DEPARTURE FROM NORMAL----->										1.15	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3									
DEGREE DAYS									GREATEST 24-HR PRECIPITATION: 1.94					DATE :10-11					SEA LEVEL PRESSURE					DATE TIME									
MONTHLY									GREATEST 24-HR SNOWFALL:					DATE :					MAXIMUM					: 30.30 23 0953									
TOTAL DEPARTURE									SEASON TO DATE					GREATEST SNOW DEPTH:					DATE :					MINIMUM					: 29.62 27 1253				
HEATING: 0 -7 0 -7									NUMBER OF DAYS WITH ➔					MAXIMUM TEMP ≥ 90: 10					MINIMUM TEMP ≤ 32 : 0					PRECIPITATION ≥ 0.01 INCH : 11									
COOLING: 379 120 651 201														MAXIMUM TEMP ≤ 32 : 0					MINIMUM TEMP ≤ 0 : 0					PRECIPITATION ≥ 0.10 INCH : 10									
														THUNDERSTORMS : 9					HEAVY FOG : 0					SNOWFALL ≥ 1.0 INCH :									

JULY 2002  
MINNEAPOLIS-ST.PAUL, MN

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

## MINNEAPOLIS–ST.PAUL, MN

JULY 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			0.00
02													02												02			0.00
03				0.03	0.12	T	0.22	0.06					03												03			0.43
04													04												04			0.00
05													05												05			0.00
06													06							0.02	0.12	0.04	0.02		06			0.20
07													07												07			0.00
08		T		0.02	0.12								08	T											08			0.14
09													09									T			09			T
10	T	0.01				T	0.20	0.32	0.14	0.43	T	T	10	0.01	0.32	0.41	0.01	T	0.02	0.03	0.02	0.01	T		10			1.93
11	0.01												11												11			0.01
12													12												12			0.00
13													13												13			0.00
14													14												14			0.00
15													15												15			0.00
16													16												16			0.00
17													17												17			0.00
18		T											18	T	T			T		0.01					18	0.01		T
19													19												19			0.00
20													20												20	0.00		0.53
21													21									T	T		21			T
22													22												22			0.00
23													23									T			23			T
24					0.02	0.07	T		T			0.01	24	0.07	0.03			0.01	0.04	T	0.03		0.06	0.10	24			0.73
25	0.01	T			0.05	0.01	0.01	T	T	0.02			25												25			0.10
26													26												26			0.00
27													27		T	0.22	T								27			0.22
28				0.01									28				T	0.38	0.21	0.19	T				28	0.79		0.78
29													29												29			0.00
30													30												30			0.00
31					0.11		0.01	T					31												31			0.12

### MAXIMUM SHORT DURATION PRECIPITATION (See Note)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)												
Ending Date												
Ending Time (Hour/Min)												

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**  
**JULY 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.

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## OBSERVATIONS AT 3-HOURLY INTERVALS

MINNEAPOLIS-ST. PAUL, MN  
JULY 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: 0431		JUL 01	SUNSET: 2003										SUNRISE: 0434		JUL 07	SUNSET: 2001										
03	SCT	NC			10.00	82	72	75	72	8	21	29.03	29.90	03	SCT	NC			7.00	BR	73	72	72	96	0	00	29.28	30.16	
06	SCT	NC			10.00	80	71	74	74	9	21	29.05	29.93	06	BKN	250			5.00		73	72	72	96	9	10	29.29	30.17	
09	CLR	NC			10.00	85	71	75	63	12	21	29.05	29.92	09	BKN	150			10.00		78	72	74	82	5	10	29.30	30.18	
12	CLR	NC			10.00	91	70	76	50	18	19	29.00	29.88	12	BKN	250			10.00		86	72	76	63	7	16	29.26	30.14	
15	FEW	NC			10.00	93	67	75	42	22	22	28.98	29.85	15	BKN	250			10.00		90	70	76	52	13	17	29.20	30.08	
18	FEW	NC			10.00	91	70	76	50	14	22	28.98	29.85	18	SCT	NC			10.00		89	71	76	55	10	18	29.16	30.04	
21	CLR	NC			10.00	86	69	74	57	12	21	28.98	29.85	21	OVC	250			9.00		85	73	77	68	13	18	29.15	30.03	
24	CLR	NC			10.00	83	68	73	61	13	23	29.01	29.88	24	OVC	200			7.00		82	73	76	74	14	19	29.11	29.99	
			SUNRISE: 0431		JUL 02	SUNSET: 2003										SUNRISE: 0435		JUL 08	SUNSET: 2001										
03	CLR	NC			10.00	80	67	71	64	16	24	29.04	29.91	03	BKN	090			8.00		82	73	76	74	12	22	29.05	29.92	
06	BKN	046			10.00	77	67	70	71	15	24	29.09	29.97	06	BKN	250			4.00	BR	78	74	75	87	7	23	29.03	29.91	
09	SCT	NC			10.00	80	68	72	67	12	24	29.10	29.98	09	BKN	200			6.00	HZ	83	73	76	72	8	25	29.04	29.92	
12	BKN	250			10.00	84	70	74	63	7	21	29.09	29.97	12	OVC	047			6.00	HZ	85	75	78	72	8	31	29.06	29.93	
15	BKN	042			10.00	86	69	74	57	14	22	29.08	29.96	15	OVC	017			9.00		79	73	75	82	14	36	29.09	29.97	
18	OVC	250			10.00	84	71	75	65	5	25	29.05	29.93	18	SCT	NC			10.00		83	71	75	67	13	02	29.10	29.97	
21	OVC	080			10.00	82	72	75	72	0	00	29.06	29.93	21	FEW	NC			10.00		79	71	74	77	6	36	29.12	30.00	
24	OVC	095			10.00	80	72	74	76	6	16	29.05	29.93	24	CLR	NC			10.00		74	71	72	91	6	34	29.13	30.01	
			SUNRISE: 0432		JUL 03	SUNSET: 2002										SUNRISE: 0436		JUL 09	SUNSET: 2000										
03	OVC	046			10.00	79	71	74	77	9	23	29.05	29.93	03	CLR	NC			10.00		73	70	71	90	6	06	29.13	30.02	
06	OVC	023			10.00	74	72	73	94	10	36	29.08	29.96	06	BKN	250			10.00		73	70	71	90	5	08	29.16	30.04	
09	BKN	080			10.00	77	72	74	85	5	VR	29.11	29.98	09	BKN	250			10.00		83	70	74	65	8	03	29.20	30.08	
12	SCT	NC			10.00	84	65	71	53	0	00	29.11	29.99	12	BKN	250			10.00		87	69	75	55	10	09	29.17	30.05	
15	SCT	NC			10.00	87	59	69	39	10	28	29.10	29.98	15	BKN	250			10.00		89	66	73	47	13	08	29.18	30.06	
18	SCT	NC			10.00	84	55	66	37	10	31	29.09	29.97	18	SCT	NC			10.00		87	65	72	48	10	10	29.16	30.04	
21	SCT	NC			10.00	78	57	65	48	3	33	29.11	29.99	21	SCT	NC			10.00		82	69	73	65	10	09	29.17	30.05	
24	CLR	NC			10.00	71	60	64	68	0	00	29.17	30.05	24	BKN	150			10.00		77	68	71	74	9	10	29.19	30.07	
			SUNRISE: 0432		JUL 04	SUNSET: 2002										SUNRISE: 0437		JUL 10	SUNSET: 1960										
03	CLR	NC			9.00	66	61	63	84	0	00	29.18	30.06	03	BKN	120			10.00		74	70	71	88	18	11	29.13	30.01	
06	FEW	NC			10.00	68	59	63	73	3	04	29.21	30.10	06	OVC	044			6.00	-TSRA	70	62	65	76	22	12	29.17	30.05	
09	FEW	NC			10.00	75	56	64	52	10	11	29.23	30.11	09	OVC	036			1.00	+RA BR	62	60	61	93	16	09	29.20	30.09	
12	FEW	NC			10.00	81	57	66	44	9	13	29.23	30.11	12	BKN	150			10.00		65	60	62	84	21	11	29.15	30.04	
15	SCT	NC			10.00	84	57	67	40	7	10	29.21	30.10	15	OVC	010			9.00	-RA	66	64	65	93	18	10	29.19	30.09	
18	SCT	NC			10.00	83	57	67	41	10	11	29.18	30.06	18	OVC	014			3.00	-RA BR	68	66	67	93	15	10	29.20	30.09	
21	BKN	250			10.00	77	59	66	54	13	12	29.22	30.10	21	OVC	035			10.00	-RA	65	62	63	90	18	09	29.26	30.16	
24	CLR	NC			10.00	72	59	64	64	12	09	29.20	30.09	24	OVC	070			10.00		63	55	58	76	15	08	29.31	30.21	
			SUNRISE: 0433		JUL 05	SUNSET: 2002										SUNRISE: 0438		JUL 11	SUNSET: 1959										
03	SCT	NC			10.00	71	60	64	68	12	13	29.20	30.09	03	OVC	085			10.00		63	54	58	73	12	08	29.31	30.21	
06	SCT	NC			10.00	70	62	65	76	13	14	29.24	30.12	06	BKN	110			10.00		63	53	57	70	14	09	29.35	30.24	
09	BKN	150			10.00	74	58	64	57	13	14	29.26	30.14	09	BKN	250			10.00		68	55	60	63	13	09	29.37	30.26	
12	SCT	NC			10.00	80	63	69	56	10	14	29.24	30.13	12	SCT	NC			10.00		74	52	61	46	15	13	29.37	30.26	
15	SCT	NC			10.00	81	66	71	61	16	12	29.23	30.11	15	SCT	NC			10.00		78	55	64	45	15	12	29.31	30.20	
18	FEW	NC			10.00	82	69	73	65	14	12	29.21	30.10	18	SCT	NC			10.00		77	55	64	47	8	09	29.28	30.17	
21	FEW	NC			10.00	77	69	72	77	13	13	29.23	30.11	21	FEW	NC			10.00		72	55	62	55	3	07	29.28	30.17	
24	BKN	150			10.00	74	68	70	82	8	13	29.25	30.13	24	CLR	NC			10.00		66	59	62	78	0	00	29.27	30.16	
			SUNRISE: 0434		JUL 06	SUNSET: 2002										SUNRISE: 0438		JUL 12	SUNSET: 1959										
03	BKN	150			10.00	73	68	70	84	8	13	29.25	30.13	03	CLR	NC			10.00		62	59	60	90	0	00	29.25	30.14	
06	BKN	250			10.00	73	69	70	87	6	15	29.27	30.15	06	SCT	NC			10.00	BCFG	62	60	61	93	0	00	29.26	30.15	
09	SCT	NC			10.00	82	72	75	72	6	19	29.27	30.15	09	SCT	NC			10.00		74	59	65	60	5	08	29.25	30.14	
12	SCT	NC			10.00	90	74	78	59	6	26	29.25	30.13	12	SCT	NC			10.00		78	55	64	45	6	VR	29.22	30.11	
15	SCT	NC			10.00	95	68	76	41	12	18	29.21	30.09	15	SCT	NC			10.00		79	54	64	42	3	VR	29.17	30.06	
18	BKN	200			10.00	82	69	73	65	7	09	29.23	30.11	18	FEW	NC			10.00		78	54	64	43	7	14	29.14	30.03	
21	OVC	030			5.00	75	73	74	94	7	14	29.27	30.16	21	SCT	NC			10.00		72	58	63	61	7	33	29.14	30.02	
24	BKN	150			10.00	74	72	73	94	7	07	29.28	30.16	24	CLR	NC			10.00		67	60	63	79	0	00	29.15	30.04	

## OBSERVATIONS AT 3-HOURLY INTERVALS

MINNEAPOLIS-ST. PAUL, MN  
JULY 2002 MSP WBAN # 14922

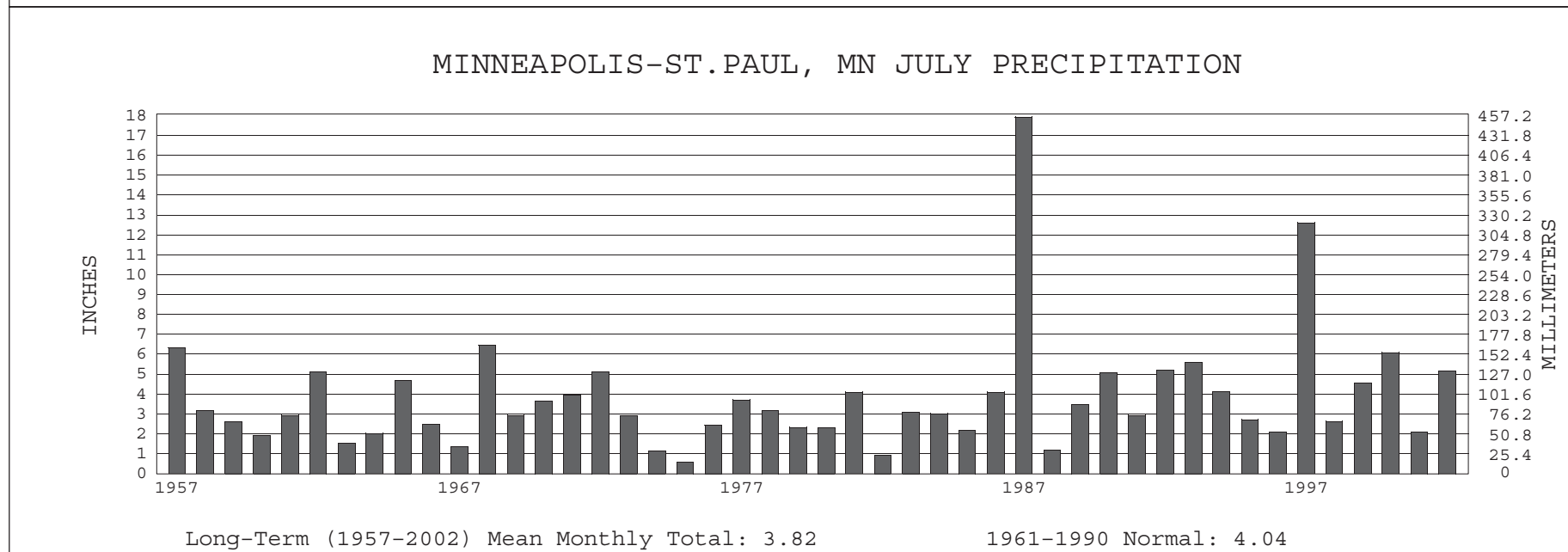
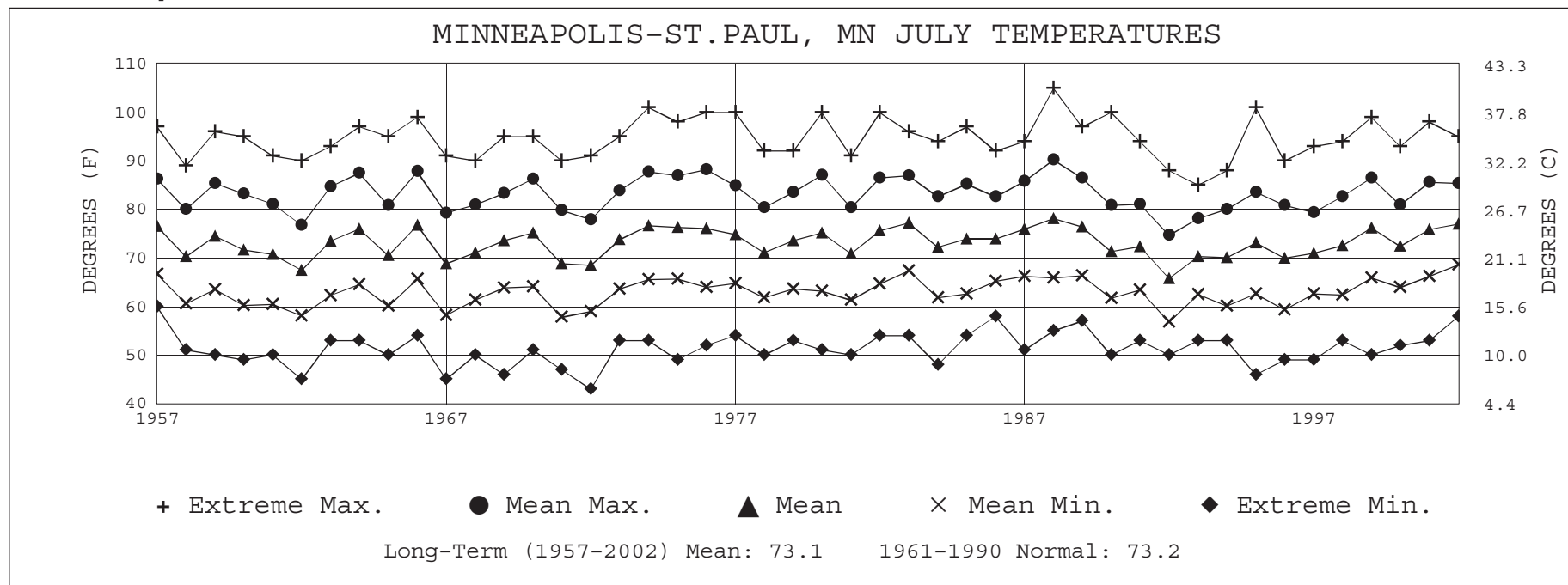
HOUR (LST)			SATELLITE		WEATHER	TEMPERATURE °F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES,HG)		HOUR (LST)			SATELLITE		WEATHER	TEMPERATURE °F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES,HG)			
	SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)	EFF CLD AMT Oktas		VISIBILITY (MILES)	DRY BULB	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 Oktas	VISIBILITY (MILES)	DRY BULB		DEW POINT	WET BULB	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL
			SUNRISE: 0439 JUL 13 SUNSET: 1958													SUNRISE: 0445 JUL 19 SUNSET: 1954													
03	CLR	NC			10.00	66	60	62	81	3	20	29.14	30.03	03	OVC	009			6.00	BR	72	69	70	91	9	11	29.02	29.90	
06	FEW	NC			9.00	65	60	62	84	5	26	29.17	30.06	06	OVC	005			3.00	BR	71	69	70	94	9	14	29.03	29.92	
09	FEW	NC			10.00	75	61	66	62	5	30	29.16	30.04	09	OVC	005			3.00	BR	71	69	70	94	8	11	29.05	29.93	
12	SCT	NC			10.00	79	59	66	50	3	VR	29.14	30.03	12	OVC	018			7.00		79	71	74	77	9	09	29.04	29.93	
15	SCT	NC			10.00	79	59	66	50	5	24	29.13	30.01	15	BKN	026			7.00		82	72	75	72	13	10	29.03	29.91	
18	FEW	NC			10.00	80	59	67	49	5	25	29.10	29.98	18	FEW	NC			7.00		82	71	74	69	9	15	29.02	29.90	
21	SCT	NC			10.00	74	61	66	64	0	00	29.11	29.99	21	CLR	NC			7.00		77	72	74	85	8	13	29.02	29.91	
24	CLR	NC			10.00	71	61	65	71	0	00	29.11	29.99	24	FEW	NC			8.00		75	72	73	90	8	13	29.03	29.91	
			SUNRISE: 0440 JUL 14 SUNSET: 1958													SUNRISE: 0446 JUL 20 SUNSET: 1953													
03	CLR	NC			10.00	68	61	64	78	0	00	29.12	30.01	03	BKN	040			5.00	BR	74	72	73	94	9	14	29.00	29.87	
06	FEW	NC			10.00	66	60	62	81	5	22	29.14	30.03	06	SCT	NC			3.00	BR	74	72	73	94	9	14	28.99	29.86	
09	CLR	NC			10.00	75	63	67	66	7	27	29.16	30.05	09	OVC	046			10.00	-RA	72	69	70	91	6	26	29.04	29.92	
12	FEW	NC			10.00	81	64	70	57	9	31	29.14	30.03	12	OVC	150			10.00		76	71	73	85	13	17	28.94	29.82	
15	SCT	NC			10.00	84	63	70	49	9	28	29.13	30.01	15	BKN	250			10.00		86	73	77	65	16	18	28.92	29.79	
18	SCT	NC			10.00	82	64	70	55	7	26	29.12	30.00	18	SCT	NC			10.00		89	79	82	72	9	18	28.89	29.76	
21	SCT	NC			10.00	79	64	69	60	5	24	29.13	30.01	21	FEW	NC			10.00		88	80	82	77	12	20	28.87	29.74	
24	CLR	NC			10.00	75	64	68	69	3	23	29.15	30.03	24	FEW	NC			10.00		88	75	79	66	14	22	28.86	29.73	
			SUNRISE: 0441 JUL 15 SUNSET: 1957													SUNRISE: 0447 JUL 21 SUNSET: 1952													
03	CLR	NC			10.00	71	63	66	76	5	23	29.15	30.03	03	SCT	NC			10.00		84	74	77	72	9	01	28.91	29.78	
06	CLR	NC			8.00	70	61	64	73	6	23	29.19	30.07	06	SCT	NC			10.00		82	73	76	74	9	20	28.88	29.75	
09	FEW	NC			10.00	77	63	68	62	7	20	29.21	30.09	09	FEW	NC			10.00		87	74	78	65	9	24	28.90	29.77	
12	FEW	NC			10.00	82	61	69	49	12	19	29.16	30.04	12	BKN	038			10.00		89	75	79	63	8	26	28.91	29.77	
15	CLR	NC			10.00	84	63	70	49	13	19	29.15	30.03	15	BKN	050			10.00		83	70	74	65	17	34	28.89	29.76	
18	CLR	NC			10.00	83	63	70	51	9	19	29.13	30.01	18	BKN	100			10.00		81	74	76	79	15	32	28.92	29.79	
21	FEW	NC			10.00	78	65	70	64	12	17	29.13	30.01	21	OVC	038			7.00	-RA	75	70	72	84	3	36	28.97	29.83	
24	CLR	NC			10.00	75	64	68	69	7	18	29.12	30.01	24	OVC	035			10.00		74	71	72	91	9	34	28.99	29.86	
			SUNRISE: 0442 JUL 16 SUNSET: 1956													SUNRISE: 0448 JUL 22 SUNSET: 1951													
03	CLR	NC			10.00	73	63	67	71	7	22	29.12	30.00	03	BKN	110			10.00		69	66	67	90	6	31	29.00	29.89	
06	CLR	NC			10.00	72	63	66	73	8	20	29.14	30.02	06	BKN	250			10.00		68	63	65	84	3	27	29.05	29.93	
09	CLR	NC			10.00	80	65	70	60	6	21	29.14	30.02	09	SCT	NC			10.00		75	58	65	55	12	32	29.08	29.97	
12	CLR	NC			10.00	87	65	72	48	12	19	29.10	29.98	12	FEW	NC			10.00		78	58	66	50	18	30	29.11	29.99	
15	CLR	NC			10.00	90	66	74	45	15	19	29.08	29.96	15	BKN	060			10.00		75	57	64	54	20	32	29.15	30.04	
18	CLR	NC			10.00	88	70	75	55	9	22	29.07	29.95	18	BKN	055			10.00		73	58	64	59	16	33	29.18	30.07	
21	FEW	NC			9.00	84	72	76	67	8	19	29.07	29.95	21	FEW	NC			10.00		69	55	61	61	12	36	29.25	30.14	
24	CLR	NC			9.00	79	70	73	74	8	22	29.08	29.96	24	CLR	NC			10.00		63	53	57	70	7	01	29.30	30.19	
			SUNRISE: 0443 JUL 17 SUNSET: 1955													SUNRISE: 0449 JUL 23 SUNSET: 1950													
03	CLR	NC			9.00	76	68	71	77	6	21	29.08	29.96	03	FEW	NC			10.00		59	53	56	81	5	01	29.34	30.23	
06	CLR	NC			7.00	74	67	69	79	0	00	29.11	29.99	06	SCT	NC			10.00		61	56	58	84	5	03	29.37	30.26	
09	CLR	NC			9.00	82	67	72	60	6	VR	29.10	29.98	09	FEW	NC			10.00		67	50	58	55	8	11	29.40	30.29	
12	FEW	NC			9.00	89	67	74	48	9	21	29.07	29.95	12	SCT	NC			10.00		71	50	59	47	9	13	29.40	30.29	
15	FEW	NC			10.00	91	66	74	44	9	19	29.05	29.93	15	BKN	250			10.00		73	51	60	46	8	14	29.34	30.23	
18	OVC	200			10.00	89	66	73	47	7	26	29.06	29.94	18	BKN	130			10.00		72	51	60	48	6	13	29.34	30.24	
21	OVC	200			10.00	81	71	74	72	3	16	29.04	29.92	21	BKN	130			10.00		70	52	60	53	10	12	29.32	30.21	
24	BKN	150			10.00	77	69	72	77	3	03	29.05	29.93	24	BKN	100			10.00		68	55	60	63	6	16	29.34	30.24	
			SUNRISE: 0444 JUL 18 SUNSET: 1955													SUNRISE: 0450 JUL 24 SUNSET: 1949													
03	BKN	150			10.00	77	69	72	77	6	08	29.03	29.91	03	BKN	150			10.00		66	55	60	68	6	13	29.33	30.22	
06	BKN	080			10.00	76	69	71	79	7	02	29.04	29.92	06	BKN	036			10.00	-RA	63	58	60	84	5	13	29.32	30.22	
09	BKN	150			8.00	78	73	75	85	10	02	29.06	29.93	09	OVC	150			10.00		65	59	61	81	8	14	29.30	30.19	
12	OVC	150			7.00	81	73	75	77	6	03	29.03	29.91	12	OVC	040			10.00	-RA	67	61							

## OBSERVATIONS AT 3-HOURLY INTERVALS

MINNEAPOLIS-ST. PAUL, MN  
JULY 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 OFFT	OBSERVATION TIME (LST)	EFF CLD AMT Oktas		DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL		SKY COVER	CEILING 100'S OFFT	OBSERVATION TIME (LST)	EFF CLD AMT Oktas		DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL												
SUNRISE: 0451 JUL 25 SUNSET: 1948						68	61	64	78	21	18	29.03	29.92	03	BKN	150			10.00		74	68	70	82	7	13	28.98	29.85											
06	OVC	130			-RA	66	62	64	87	10	17	29.00	29.89	06	BKN	120			10.00		74	70	71	88	8	13	28.98	29.85											
09	OVC	150				67	64	65	91	10	23	29.00	29.89	09	OVC	150			10.00		76	70	72	82	9	13	28.96	29.83											
12	OVC	013				72	66	68	82	10	22	29.00	29.88	12	BKN	250			10.00		85	72	76	65	16	17	28.92	29.79											
15	SCT	NC				79	68	72	69	10	21	28.97	29.84	15	SCT	NC			10.00		90	72	77	56	16	19	28.86	29.73											
18	BKN	250				81	68	72	65	9	30	28.94	29.81	18	SCT	NC			10.00		89	72	77	57	14	20	28.85	29.72											
21	SCT	NC				73	67	69	81	3	30	28.98	29.86	21	SCT	NC			10.00		82	74	76	77	10	16	28.84	29.71											
24	SCT	NC				71	67	68	87	0	00	28.98	29.86	24	BKN	250			10.00		80	70	73	71	12	16	28.81	29.68											
SUNRISE: 0452 JUL 26 SUNSET: 1947						69	66	67	90	3	19	28.96	29.83	3-HOURLY OBSERVATION NOTES																									
03	SCT	NC				68	66	67	93	3	22	28.97	29.85	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.																									
06	BKN	250				77	68	71	74	6	23	28.97	29.85	Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.																									
09	SCT	NC				86	66	73	51	0	00	28.96	29.83	NC= No ceiling detected.																									
12	SCT	NC				89	67	74	48	10	26	28.93	29.80	& = Original observation contained additional weather elements.																									
15	SCT	NC				87	66	73	50	7	26	28.91	29.78	See page 3 for additional notes.																									
18	BKN	250				83	70	74	65	6	20	28.90	29.77																										
21	SCT	NC				78	70	73	76	5	15	28.88	29.75																										
24	SCT	NC				73	69	70	87	3	13	28.84	29.71																										
SUNRISE: 0453 JUL 27 SUNSET: 1946						71	68	69	90	5	14	28.85	29.72																										
03	FEW	NC			-RA	77	70	72	79	10	18	28.81	29.67																										
06	BKN	250				81	71	74	72	12	17	28.77	29.64																										
09	BKN	250				72	64	67	76	17	34	28.79	29.67																										
12	OVC	050				79	69	72	72	5	21	28.76	29.63																										
15	OVC	029				76	70	72	82	3	19	28.78	29.65																										
18	SCT	NC				72	70	71	94	3	14	28.79	29.66																										
21	FEW	NC				72	71	71	97	3	21	28.80	29.67																										
24	CLR	NC				73	71	72	94	3	23	28.84	29.71																										
SUNRISE: 0454 JUL 28 SUNSET: 1945						83	72	75	70	3	VR	28.85	29.72																										
03	CLR	NC		6.00	BR	88	70	75	55	0	00	28.85	29.72																										
06	CLR	NC		5.00	BR	91	67	74	45	9	13	28.80	29.67																										
09	FEW	NC		10.00		72	70	71	94	22	35	28.89	29.76																										
12	SCT	NC		10.00		70	66	67	87	12	13	28.79	29.67																										
15	BKN	250		10.00		69	65	66	87	7	19	28.84	29.72																										
18	OVC	027		5.00	+TSRA BR																																		
21	BKN	150		10.00																																			
24	BKN	150		10.00																																			
SUNRISE: 0455 JUL 29 SUNSET: 1944						66	65	65	96	5	31	28.84	29.71																										
03	SCT	NC		10.00		68	65	66	90	7	28	28.87	29.75																										
06	SCT	NC		10.00		73	67	69	81	7	27	28.90	29.78																										
09	FEW	NC		10.00		80	65	70	60	9	31	28.93	29.80																										
12	FEW	NC		10.00		83	62	69	49	10	30	28.93	29.81																										
15	FEW	NC		10.00		83	66	72	57	7	26	28.95	29.83																										
18	CLR	NC		10.00		77	67	70	71	6	15	28.96	29.84																										
21	FEW	NC		10.00		72	67	69	84	5	16	28.99	29.87																										
24	CLR	NC		10.00																																			
SUNRISE: 0456 JUL 30 SUNSET: 1943						73	67	69	81	5	20	28.99	29.86																										
03	CLR	NC		10.00		74	66	69	76	12	23	28.97	29.84																										
06	SCT	NC		10.00		82	67	72	60	12	23	28.98	29.85																										
09	CLR	NC		10.00		89	71	76	55	12	25	28.96	29.83																										
12	CLR	NC		10.00		89	75	79	63	10	33	28.95	29.81																										
15	BKN	055		10.00		82	68	73	63	10	21	28.95	29.82																										
18	BKN	150		10.00		80	68	72	67	7	18	29.00	29.87																										
21	SCT	NC		10.00		76	69	71	79	6	14	29.00	29.88																										
24	BKN	150		10.00																																			







JULY 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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