



# NOVEMBER 2002

## LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

## MILWAUKEE, WI

GENERAL MITCHELL FIELD (MKE)

Lat: 42° 56' N Long: 87° 53' W Elev (Ground): 677 Feet

Time Zone: CENTRAL WBAN: 14839 ISSN #:0198-5752

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	39	26	33	-12	18	28	32	0		0		0.0	0.00	29.42	30.19	12.8	28	13.1	28	28	21	26	01			
02	45	29	37	-7	22	31	28	0	HZ	0		0.0	0.00	29.32	30.09	8.7	28	8.9	26	27	20	27	02			
03	49	25	37	-7	27	34	28	0	HZ	0		0.0	0.00	29.26	30.02	8.1	24	8.2	22	24	17	25	03			
04	43	32	38	-5	27	33	27	0		0		0.0	0.00	29.34	30.10	3.1	36	5.9	17	01	15	01	04			
05	42	33	38	-5	35	38	27	0	RA BR HZ	0		0.0	0.10	29.10	29.86	3.0	27	5.7	16	31	14	31	05			
06	45	36	41	-2	32	37	24	0	BR HZ	0		0.0	0.00	29.19	29.94	9.8	30	10.9	26	30	22	30	06			
07	57	31	44	2	34	41	21	0		0		0.0	0.00	29.16	29.91	12.3	22	14.0	31	22	25	22	07			
08	62	49	56	14	39	47	9	0		0		0.0	0.00	28.87	29.61	12.3	22	12.9	29	23	23	22	08			
09	66*	50	58*	17	50	53	7	0	RA BR HZ	0		0.0	0.02	28.72	29.45	12.4	20	13.1	32	23	26	22	09			
10	60	44	52	11	51	53	13	0	RA BR HZ	0		0.0	0.03	28.61	29.34	3.8	25	8.4	21	35	16	34	10			
11	47	34	41	1	35	37	24	0	RA SN BR	0		T	0.17	29.16	29.92	7.7	35	9.6	25	36	20	02	11			
12	42	36	39	-1	28	34	26	0		0		0.0	0.00	29.40	30.16	8.0	25	8.9	18	23	16	25	12			
13	55	32	44	4	34	40	21	0	BR HZ	0		0.0	0.00	29.22	29.98	6.0	22	9.1	29	21	23	23	13			
14	52	35	44	5	34	39	21	0	RA	0		0.0	T	29.14	29.89	5.7	36	9.2	22	01	18	01	14			
15	39	32	36	-3	26	32	29	0	SN	0		0.2	0.02	29.38	30.15	10.3	03	11.4	25	05	21	06	15			
16	37	31	34	-4	22	29	31	0	SN BR	0		0.1	T	29.45	30.23	8.2	02	9.3	20	01	15	04	16			
17	37	22	30	-8	23	28	35	0	SN BR	T		0.2	0.02	29.31	30.09	5.6	36	6.3	21	01	15	36	17			
18	42	20	31	-6	29	32	34	0	RA BR HZ	0		0.0	0.20	29.26	30.02	4.2	18	6.1	23	14	18	15	18			
19	54	32	43	6	33	38	22	0	BR HZ	0		0.0	0.00	29.21	29.97	10.4	25	11.1	28	26	22	23	19			
20	50	29	40	4	35	39	25	0		0		0.0	0.00	29.19	29.95	1.6	23	2.8	13	01	10	36	20			
21	43	35	39	3	31	35	26	0	RA SN BR	0		T	0.25	29.11	29.86	12.4	36	12.7	31	01	23	36	21			
22	38	30	34	-2	22	30	31	0		0		0.0	0.00	29.29	30.06	8.0	33	9.9	24	32	20	33	22			
23	46	31	39	4	26	34	26	0		0		0.0	0.00	29.16	29.92	9.5	24	10.8	25	23	20	24	23			
24	37	27	32	-3	18	27	33	0	SN	0		T	0.04	29.39	30.16	9.5	31	10.1	20	33	16	33	24			
25	33	22	28	-6	16	23	37	0		T		0.0	0.00	29.56	30.34	8.1	31	8.5	17	29	14	31	25			
26	35	20	28	-6	20	25	37	0	SN BR	0		0.7	0.03	29.61	30.40	8.0	34	8.6	18	01	14	34	26			
27	33	22	28	-5	15	23	37	0		1		0.0	0.00	29.56	30.34	6.0	29	7.7	17	27	13	28	27			
28	37	19	28*	-5	19	25	37	0	HZ	T		0.0	0.00	29.28	30.06	11.7	24	11.9	29	26	22	24	28			
29	48	37	43	11	27	36	22	0		0		0.0	0.00	28.69	29.43	15.6	26	15.9	38	25	25	26	29			
30	41	16*	29	-3	12	22	36	0	RA SN	T		T	T	29.08	29.84	17.2	32	17.4	39*	33	30*	31	30			
45.1 30.6 37.9 ■■										< MONTHLY AVERAGES TOTALS->				1.2	0.88	29.21	29.98	5.1	28	10.0	<- MONTHLY AVERAGES					
- .6 - .4 - .5 ■■										<-----DEPARTURE FROM NORMAL----->						-1.82	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3									
DEGREE DAYS									GREATEST 24-HR PRECIPITATION: 0.25 DATE :21				SEA LEVEL PRESSURE DATE TIME													
MONTHLY TOTAL DEPARTURE									GREATEST 24-HR SNOWFALL: 0.7 DATE :26				MAXIMUM : 30.44 25 2352													
SEASON TO DATE TOTAL DEPARTURE									GREATEST SNOW DEPTH: 1 DATE :27				MINIMUM : 29.23 10 0452													
HEATING: 806 -2 1391 -25									NUMBER OF DAYS WITH → MAXIMUM TEMP ≥ 90: 0				MINIMUM TEMP ≤ 32 : 20				PRECIPITATION ≥ 0.01 INCH : 10									
COOLING: 0 0 897 281									MAXIMUM TEMP ≤ 32 : 0				MINIMUM TEMP ≤ 0 : 0				PRECIPITATION ≥ 0.10 INCH : 4									
									THUNDERSTORMS : 0				HEAVY FOG : 0				SNOWFALL ≥ 1.0 INCH : 0									

NOVEMBER 2002  
MILWAUKEE, WI

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

MILWAUKEE, WI

NOVEMBER 2002

MKE

WBAN # 14839

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													03												03			0.00
04													04												04			0.00
05										T		T	05	0.05	0.01	0.01	T	T	0.01	T					05			0.10
06													06												06			0.00
07													07												07			0.00
08													08												08			0.00
09													09								T	T		0.01	09			0.02
10												T	10	T									0.03	0.01	10			0.03
11	T			0.06	0.05	0.01	T	T	T	0.02	0.02	0.01	11	T											11			0.17
12													12												12			0.00
13													13												13			0.00
14													14												14			T
15					T		T	0.01	T	T	T	T	15			T	T		T	0.01	T	T	T	T	15			0.02
16					T	T		T	T		T	T	16	T	T						T	T		T	16			T
17	T	T	0.01	T	0.01	T		T	T		T	T	17								T	T		T	17			0.02
18													18	T	T	T	T	T	0.04	T	0.03	0.06	0.05	0.02	18			0.20
19													19												19			0.00
20													20												20			0.00
21						0.01	0.04	0.12	0.04	0.03	0.01	T	21												21			0.25
22													22												22			0.00
23													23												23			0.00
24													24			T	T	T	T	T					24	T		0.04
25													25												25			0.00
26													26				T	T		T	T				26	T		0.03
27													27												27			0.00
28													28												28			0.00
29													29												29			0.00
30	T	T	T	T	T	T	T	T					30			T	T								30			T

## 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	.08	.10	.12	.15	.16	.18	.20	.21
Ending Date	11	21	21	21	21	21	21	21	21	21	21	21
Ending Time (Hour/Min)	0437	0726	0730	0730	0730	0751	0800	0800	0825	0825	0843	0924

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

**MILWAUKEE, WI  
NOVEMBER 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).

Sky Condition is based on the sum (not to exceed 8) of the sunrise to sunset cloud cover below and above 12,000 feet. Both ceilometer and satellite data must be present to compute Sky Condition. Clear = 0–2 oktas, Partly Cloudy = 3–6 oktas, Cloudy = 7–8 oktas.

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							9.00	10.00	
02							6.00	10.00	
03							6.00	10.00	
04							7.00	10.00	
05							3.00	10.00	
06							4.00	10.00	
07							7.00	10.00	
08							10.00	10.00	
09							4.00	10.00	
10							2.50	10.00	
11							1.50	10.00	
12							8.00	10.00	
13							6.00	10.00	
14							7.00	10.00	
15							2.00	10.00	
16							1.00	10.00	
17							2.00	10.00	
18							3.00	10.00	
19							3.00	10.00	
20							8.00	10.00	
21							1.50	10.00	
22							10.00	10.00	
23							10.00	10.00	
24							1.00	10.00	
25							10.00	10.00	
26							1.75	10.00	
27							8.00	10.00	
28							5.00	10.00	
29							10.00	10.00	
30							3.00	10.00	
<b>MONTHLY AVGS</b>							5.48	10.00	
<p align="center"><b>SUNSHINE (MINUTES)</b></p> <p>Total:                  Possible:</p> <p>                              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">30</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                              11                              12</p>									

## OBSERVATIONS AT 3-HOURLY INTERVALS

MILWAUKEE, WI

NOVEMBER 2002

MKE

WBAN # 14839

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: 0626						NOV 01						SUNSET: 1644						SUNRISE: 0634						NOV 07						SUNSET: 1637					
03	CLR	NC			10.00		29	19	26	66	10	29	29.41	30.18	03	BKN	028			10.00		38	31	35	76	6	06	29.35	30.11						
06	FEW	NC			10.00		26	19	24	75	9	28	29.44	30.22	06	FEW	NC			10.00		32	30	31	92	0	00	29.33	30.10						
09	FEW	NC			10.00		30	18	26	61	16	28	29.47	30.24	09	BKN	240			10.00		39	34	37	82	8	20	29.31	30.06						
12	SCT	NC			10.00		35	18	29	50	15	29	29.46	30.23	12	BKN	250			8.00		52	34	44	50	20	22	29.20	29.95						
15	SCT	NC			10.00		39	19	32	45	16	26	29.41	30.18	15	FEW	NC			10.00		57	36	47	45	24	22	29.06	29.81						
18	BKN	100			10.00		38	15	30	39	10	27	29.40	30.17	18	CLR	NC			10.00		54	37	46	53	21	22	28.99	29.74						
21	FEW	NC			10.00		35	18	29	50	15	27	29.37	30.14	21	CLR	NC			10.00		54	38	46	55	17	23	28.97	29.72						
24	BKN	120			10.00		34	17	28	50	15	28	29.33	30.10	24	CLR	NC			10.00		51	37	45	59	18	22	28.92	29.67						
SUNRISE: 0627						NOV 02						SUNSET: 1643						SUNRISE: 0635						NOV 08						SUNSET: 1636					
03	SCT	NC			10.00		33	19	28	56	15	27	29.30	30.06	03	FEW	NC			10.00		52	37	45	57	21	22	28.89	29.63						
06	SCT	NC			10.00		32	21	28	64	15	28	29.31	30.07	06	BKN	140			10.00		49	38	44	66	15	23	28.86	29.61						
09	SCT	NC			10.00		35	22	30	59	15	29	29.32	30.09	09	BKN	250			10.00		54	39	47	57	16	24	28.90	29.64						
12	FEW	NC			10.00		41	24	35	51	14	30	29.31	30.08	12	BKN	230			10.00		59	40	50	49	20	22	28.87	29.61						
15	FEW	NC			10.00		45	23	36	42	12	29	29.31	30.06	15	BKN	200			10.00		61	42	51	50	17	23	28.84	29.57						
18	CLR	NC			9.00		38	24	33	57	0	00	29.33	30.11	18	BKN	220			10.00		52	41	47	66	6	12	28.84	29.59						
21	FEW	NC			7.00		32	23	29	69	0	00	29.35	30.12	21	SCT	NC			10.00		53	38	46	57	3	16	28.86	29.60						
24	FEW	NC			6.00 HZ		30	21	27	69	0	00	29.35	30.12	24	CLR	NC			10.00		53	39	46	59	13	21	28.83	29.56						
SUNRISE: 0629						NOV 03						SUNSET: 1641						SUNRISE: 0636						NOV 09						SUNSET: 1634					
03	FEW	NC			6.00 HZ		28	21	26	75	0	00	29.32	30.09	03	OVC	075			10.00		54	42	48	64	9	21	28.82	29.54						
06	CLR	NC			8.00		30	23	28	75	0	00	29.31	30.09	06	CLR	NC			10.00		51	45	48	80	13	21	28.79	29.53						
09	BKN	240			10.00		37	26	33	65	5	26	29.32	30.09	09	FEW	NC			10.00		55	49	52	80	16	21	28.79	29.52						
12	BKN	250			9.00		46	28	39	50	9	24	29.26	30.02	12	BKN	055			10.00		63	52	57	68	22	22	28.75	29.48						
15	BKN	050			10.00		47	28	39	48	12	24	29.20	29.96	15	BKN	085			10.00		64	53	58	68	17	20	28.69	29.42						
18	OVC	050			10.00		44	28	38	53	14	24	29.20	29.96	18	OVC	028			7.00		60	53	56	78	14	17	28.67	29.40						
21	OVC	050			10.00		42	31	37	65	13	24	29.21	29.96	21	OVC	024			4.00 BR		57	54	55	90	9	17	28.63	29.36						
24	CLR	NC			10.00		38	31	35	76	12	25	29.20	29.96	24	OVC	085			5.00 BR		59	57	58	93	7	21	28.56	29.29						
SUNRISE: 0630						NOV 04						SUNSET: 1640						SUNRISE: 0637						NOV 10						SUNSET: 1633					
03	CLR	NC			8.00		35	29	33	78	7	29	29.24	30.00	03	FEW	NC			4.00 BR		57	55	56	93	9	21	28.52	29.24						
06	CLR	NC			9.00		32	26	30	79	7	32	29.30	30.06	06	BKN	050			4.00 BR		58	56	57	93	7	23	28.52	29.25						
09	FEW	NC			10.00		38	25	33	60	12	34	29.36	30.12	09	OVC	012			3.00 BR		59	56	57	90	9	24	28.52	29.25						
12	SCT	NC			10.00		42	26	36	53	8	04	29.38	30.15	12	OVC	010			3.00 -RA BR		58	55	56	90	15	25	28.58	29.31						
15	BKN	250			10.00		41	27	35	57	8	06	29.35	30.12	15	OVC	140			4.00 HZ		57	51	54	81	10	33	28.59	29.32						
18	FEW	NC			10.00		37	27	33	67	5	13	29.37	30.14	18	BKN	035			10.00		49	47	48	93	3	06	28.69	29.41						
21	BKN	250			10.00		32	27	30	82	0	00	29.37	30.14	21	SCT	NC			10.00		45	43	44	93	6	07	28.74	29.48						
24	BKN	029			10.00		34	28	32	79	0	00	29.32	30.09	24	OVC	022			10.00		47	44	46	90	8	06	28.80	29.53						
SUNRISE: 0631						NOV 05						SUNSET: 1639						SUNRISE: 0639						NOV 11						SUNSET: 1632					
03	OVC	027			9.00		39	32	36	76	7	23	29.30	30.06	03	OVC	015			10.00		47	45	46	93	6	08	28.84	29.58						
06	BKN	032			6.00 HZ		38	32	36	79	0	00	29.20	29.96	06	OVC	012			6.00 -RA BR		41	39	40	93	16	02	28.93	29.68						
09	OVC	036			4.00 HZ		40	35	38	83	7	19	29.14	29.90	09	OVC	009			2.50 -RASN		37	35	36	93	13	36	29.07	29.83						
12	OVC	018			4.00 -RA BR		40	37	39	89	7	19	29.06	29.82	12	OVC	014			7.00 -SN		36	33	35	89	12	34	29.19	29.94						
15	OVC	012			7.00 -RA		40	37	39	89	5	34	28.98	29.73	15	OVC	024			10.00		38	31	35	76	10	32	29.27	30.02						
18	OVC	022			4.00 -RA BR		39	37	38	93	8	33	28.99	29.75	18	OVC	021			10.00		37	31	35	79	9	32	29.35	30.12						
21	OVC	020			4.00 BR		40	37	39	89	8	31	29.00	29.75	21	OVC	023			10.00		37	30	34	76	6	35	29.40	30.17						
24	OVC	016			4.00 BR		39	35	37	86	13	30	29.02	29.78	24	OVC	020			10.00		37	30	34	76	6	26	29.43	30.20						
SUNRISE: 0632						NOV 06						SUNSET: 1638						SUNRISE: 0640						NOV 12						SUNSET: 1631					
03	OVC	011			7.00		36	32	34	86	15	31	29.06	29.82	03	OVC	020			10.00		36	28	33	73	6	32	29.45	30.22						
06	OVC	018			5.00 HZ		36	31	34	82	12	30	29.11	29.87	06	OVC	024			10.00		37	28	34	70	7	27	29.46	30.23						
09	OVC	013			4.00 HZ		38	33	36	83	10	27	29.16	29.92	09	OVC	024			10.00		37	27	33	67	9	27	29.46	30.23						
12	OVC	031			7.00		42	31	37	65	14	29	29.17	29.93	12	SCT	NC			10.00		39	27	34	62	12	24	29.41	30.18						
15	FEW	NC			10.00		45	31	39	58	15	27	29.18	29.93	15	FEW	NC			8.00		42	26	36	53	13	25	29.35	30.12						
18	OVC	070			10.00		43	31	38	63	10	30	29.26	30.01	18	CLR	NC			9.00		38	28	34	68	7	22	29.34	30.11						
21	OVC	026			7.00		42	32	38	68	10	36	29.31	30.07	21	BKN	130			9.00		38	29	34	70	10	23	29.33	30.10						
24	OVC	050			8.00		40	31	36	70	7	34	29.34	30.11	24	SCT	NC			10.00		40	30	36	68	12	25	29.31	30.06						

## OBSERVATIONS AT 3-HOURLY INTERVALS

MILWAUKEE, WI

NOVEMBER 2002

MKE

WBAN # 14839

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: 0641 NOV 13 SUNSET: 1630						SUNRISE: 0649 NOV 19 SUNSET: 1625																							
03	FEW	NC			10.00	37	30	34	76	5	27	29.31	30.07	03	FEW	NC			4.00	BR	35	32	34	89	9	29	29.19	29.95	
06	FEW	NC			9.00	35	30	33	82	5	28	29.32	30.09	06	CLR	NC			4.00	BR	33	30	32	89	6	25	29.21	29.97	
09	SCT	NC			8.00	40	31	36	70	3	VR	29.34	30.11	09	CLR	NC			7.00		38	32	36	79	13	25	29.22	29.98	
12	SCT	NC			10.00	47	34	41	61	9	22	29.30	30.05	12	FEW	NC			10.00		51	32	43	48	17	23	29.18	29.93	
15	OVC	200			7.00	47	39	43	74	12	14	29.21	29.96	15	BKN	250			10.00		54	32	44	43	18	24	29.16	29.91	
18	OVC	110			7.00	47	41	44	80	10	18	29.12	29.88	18	BKN	250			10.00		48	34	42	58	14	25	29.22	29.98	
21	BKN	100			10.00	55	33	45	44	18	22	29.05	29.80	21	SCT	NC			10.00		43	35	40	74	6	25	29.26	30.01	
24	FEW	NC			10.00	52	34	44	50	14	24	29.03	29.77	24	BKN	250			10.00		41	33	38	74	7	28	29.26	30.02	
SUNRISE: 0643 NOV 14 SUNSET: 1629						SUNRISE: 0650 NOV 20 SUNSET: 1624																							
03	FEW	NC			10.00	47	35	42	63	8	22	29.05	29.80	03	FEW	NC			10.00		34	31	33	89	0	00	29.26	30.01	
06	FEW	NC			10.00	42	34	39	73	3	23	29.07	29.82	06	BKN	110			9.00		31	28	30	89	0	00	29.26	30.02	
09	OVC	230			10.00	47	36	42	66	10	33	29.11	29.86	09	BKN	100			10.00		40	35	38	83	0	00	29.24	29.99	
12	OVC	023			9.00	42	35	39	76	15	04	29.14	29.89	12	OVC	150			10.00		46	38	42	73	0	00	29.19	29.94	
15	OVC	022			9.00	40	32	37	73	12	02	29.16	29.91	15	BKN	180			10.00		49	37	43	64	5	24	29.15	29.91	
18	OVC	022			10.00	39	31	36	73	8	01	29.18	29.94	18	OVC	100			10.00		46	38	42	73	6	22	29.15	29.91	
21	OVC	015			8.00	-RA	38	35	37	89	12	04	29.20	29.95	21	OVC	060			10.00		46	38	42	73	5	26	29.14	29.89
24	OVC	016			10.00	35	30	33	82	9	36	29.24	30.00	24	FEW	NC			10.00		40	36	38	86	6	36	29.11	29.86	
SUNRISE: 0644 NOV 15 SUNSET: 1628						SUNRISE: 0651 NOV 21 SUNSET: 1624																							
03	OVC	038			10.00	34	28	32	79	9	36	29.27	30.03	03	OVC	005			4.00	BR	41	39	40	93	9	02	29.07	29.82	
06	OVC	025			10.00	33	26	30	75	13	01	29.30	30.06	06	OVC	005			4.00	BR	39	37	38	93	10	01	29.04	29.79	
09	OVC	023			4.00	-SN	33	28	31	82	9	01	29.35	30.13	09	OVC	007			5.00	-RA BR	37	35	36	93	17	36	29.04	29.80
12	OVC	039			10.00	38	24	33	57	13	05	29.38	30.15	12	OVC	140			10.00		38	32	35	79	22	36	29.05	29.80	
15	OVC	039			9.00	-SN	37	27	33	67	16	04	29.40	30.17	15	OVC	044			10.00		39	24	33	55	21	36	29.10	29.85
18	OVC	038			10.00	34	27	31	76	5	36	29.45	30.22	18	SCT	NC			10.00		37	20	31	50	12	35	29.18	29.93	
21	OVC	039			10.00	-SN	34	23	30	64	14	06	29.48	30.26	21	OVC	055			10.00		37	26	33	65	13	33	29.20	29.96
24	OVC	044			10.00	34	22	30	61	9	02	29.50	30.27	24	OVC	065			10.00		35	27	32	72	12	34	29.20	29.96	
SUNRISE: 0645 NOV 16 SUNSET: 1628						SUNRISE: 0653 NOV 22 SUNSET: 1623																							
03	OVC	040			10.00	33	20	29	59	8	03	29.49	30.26	03	BKN	055			10.00		34	24	30	67	13	33	29.24	29.99	
06	OVC	031			10.00	32	21	28	64	13	05	29.50	30.27	06	BKN	050			10.00		34	23	30	64	15	35	29.27	30.03	
09	OVC	038			10.00	32	20	28	61	9	04	29.50	30.27	09	FEW	NC			10.00		33	20	29	59	16	35	29.31	30.07	
12	OVC	026			10.00	35	25	31	67	7	04	29.47	30.25	12	BKN	038			10.00		36	21	31	55	8	34	29.31	30.08	
15	OVC	041			10.00	34	21	29	59	12	02	29.43	30.20	15	BKN	038			10.00		36	20	30	52	10	31	29.31	30.08	
18	OVC	044			10.00	33	22	29	64	8	02	29.41	30.19	18	FEW	NC			10.00		34	21	29	59	0	00	29.31	30.09	
21	OVC	055			10.00	31	22	28	69	12	34	29.40	30.18	21	CLR	NC			10.00		31	22	28	69	6	25	29.31	30.08	
24	OVC	055			9.00	31	24	28	76	9	35	29.35	30.13	24	OVC	130			10.00		30	23	28	75	7	21	29.28	30.04	
SUNRISE: 0646 NOV 17 SUNSET: 1627						SUNRISE: 0654 NOV 23 SUNSET: 1622																							
03	OVC	060			6.00	-SN	30	25	28	82	13	35	29.32	30.10	03	OVC	080			10.00		32	24	29	73	9	19	29.23	29.99
06	BKN	040			10.00	28	25	27	88	7	35	29.32	30.10	06	OVC	060			10.00		34	25	31	70	13	21	29.14	29.90	
09	FEW	NC			10.00	31	25	29	79	10	34	29.33	30.11	09	CLR	NC			10.00		37	26	33	65	16	23	29.12	29.88	
12	BKN	040			10.00	35	25	31	67	12	02	29.31	30.08	12	CLR	NC			10.00		43	28	37	56	15	28	29.08	29.84	
15	SCT	NC			10.00	35	21	30	57	0	00	29.28	30.04	15	FEW	NC			10.00		45	28	38	52	16	28	29.10	29.86	
18	FEW	NC			10.00	32	20	28	61	3	32	29.31	30.07	18	CLR	NC			10.00		41	28	36	60	6	25	29.16	29.92	
21	CLR	NC			10.00	28	18	25	66	0	00	29.31	30.08	21	CLR	NC			10.00		38	25	33	60	9	26	29.22	29.98	
24	CLR	NC			9.00	23	17	21	78	0	00	29.31	30.08	24	OVC	110			10.00		37	24	32	60	7	28	29.25	30.01	
SUNRISE: 0648 NOV 18 SUNSET: 1626						SUNRISE: 0655 NOV 24 SUNSET: 1622																							
03	CLR	NC			7.00	24	19	22	81	5	22	29.31	30.09	03	BKN	150			10.00		35	21	30	57	9	30	29.30	30.06	
06	BKN	250			6.00	HZ	25	19	23	78	3	19	29.32	30.10	06	BKN	130			10.00		32	19	28	59	10	30	29.34	30.11
09	OVC	230			7.00	31	24	28	76	8	17	29.31	30.08	09	OVC	095			10.00		32	19	28	59	13	31	29.38	30.15	
12	OVC	120			9.00	38	27	34	65	7	17	29.29	30.06	12	OVC	140			10.00		32	15	27	50	10	27	29.40	30.17	
15	OVC	045			6.00	-RA	40	34	37	79	13	14	29.22	29.98	15	OVC	014			1.50	-SN	29	22	27	75	9	29	29.41	30.19
18	OVC	045			6.00	-RA BR	41	37	39	86	7	17	29.21	29.97	18	OVC	017			3.00	-SN	28	19	25	69	8	31	29.43	30.21
21	OVC	024			3.00	-RA BR	40	38	39	93	6	31	29.18	29.94	21	BKN	090			10.00		29	15	25	56	8	34	29.45	30.23
24	OVC	013			5.00	BR	38	35	37	89	10	30	29.15	29.91	24	FEW	NC			10.00		27	15	23	61	10	30	29.45	30.23

## OBSERVATIONS AT 3-HOURLY INTERVALS

MILWAUKEE, WI

NOVEMBER 2002

MKE

WBAN # 14839

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: 0656	NOV 25		SUNSET: 1621																			
03	CLR	NC				24	17	22	75	9	31	29.47	30.25														
06	FEW	NC				23	17	21	78	13	31	29.50	30.29														
09	FEW	NC				25	18	23	75	10	30	29.55	30.33														
12	CLR	NC				31	15	26	52	10	30	29.57	30.35														
15	BKN	250				32	14	26	47	7	VR	29.55	30.33														
18	CLR	NC				28	14	24	56	6	29	29.61	30.40														
21	FEW	NC				25	15	22	66	6	33	29.63	30.42														
24	FEW	NC				22	14	20	71	8	30	29.66	30.44														
					SUNRISE: 0657	NOV 26		SUNSET: 1621																			
03	SCT	NC				21	14	19	74	6	31	29.64	30.42														
06	BKN	150				22	16	20	78	6	31	29.64	30.42														
09	OVC	042				26	19	24	75	8	31	29.64	30.42														
12	OVC	120				33	18	28	54	8	35	29.60	30.38														
15	OVC	038				33	23	29	67	13	02	29.58	30.36														
18	BKN	080				29	24	27	82	10	34	29.59	30.37														
21	OVC	080				30	22	27	72	8	34	29.60	30.38														
24	BKN	031				28	20	25	72	8	32	29.59	30.37														
					SUNRISE: 0658	NOV 27		SUNSET: 1620																			
03	BKN	055				28	19	25	69	9	32	29.58	30.35														
06	FEW	NC				24	18	22	77	9	33	29.59	30.37														
09	SCT	NC				27	17	24	66	6	31	29.60	30.38														
12	SCT	NC				31	13	25	47	5	28	29.57	30.35														
15	SCT	NC				30	13	25	49	9	26	29.54	30.32														
18	SCT	NC				27	14	23	58	6	24	29.53	30.31														
21	CLR	NC				23	14	20	68	9	24	29.53	30.32														
24	BKN	110				23	13	20	65	9	27	29.51	30.29														
					SUNRISE: 0660	NOV 28		SUNSET: 1620																			
03	BKN	120			6.00 HZ	20	14	18	78	7	24	29.47	30.25														
06	OVC	110			7.00	21	14	19	74	8	24	29.44	30.22														
09	OVC	030			5.00 HZ	23	16	21	74	12	25	29.41	30.19														
12	OVC	033			7.00	29	19	26	66	14	24	29.34	30.12														
15	SCT	NC			8.00	32	22	28	66	20	23	29.25	30.02														
18	SCT	NC			8.00	31	24	28	76	10	22	29.17	29.94														
21	BKN	150			9.00	32	24	29	73	16	23	29.05	29.82														
24	CLR	NC			10.00	37	22	31	54	20	24	28.90	29.67														
					SUNRISE: 0701	NOV 29		SUNSET: 1619																			
03	CLR	NC			10.00	38	27	34	65	17	24	28.72	29.47														
06	SCT	NC			10.00	41	30	36	65	16	26	28.69	29.44														
09	BKN	120			10.00	42	32	38	68	14	26	28.68	29.43														
12	BKN	120			10.00	46	30	39	54	15	26	28.65	29.39														
15	BKN	150			10.00	47	29	39	50	16	25	28.65	29.39														
18	FEW	NC			10.00	44	24	36	45	15	27	28.69	29.43														
21	CLR	NC			10.00	42	24	35	49	14	27	28.69	29.44														
24	SCT	NC			10.00	40	23	33	51	14	27	28.69	29.43														
					SUNRISE: 0702	NOV 30		SUNSET: 1619																			
03	OVC	060			9.00	34	21	29	59	16	32	28.76	29.50														
06	OVC	039			7.00	27	19	24	72	17	31	28.87	29.63														
09	CLR	NC			10.00	26	15	23	63	23	32	29.00	29.76														
12	BKN	044			10.00	28	9	23	45	21	33	29.08	29.84														
15	OVC	044			10.00	25	10	21	53	18	30	29.16	29.93														
18	BKN	050			10.00	22	8	18	55	16	31	29.27	30.04														
21	CLR	NC			10.00	18	3	14	52	10	31	29.33	30.11														
24	CLR	NC			10.00	16	0	12	49	9	30	29.33	30.12														

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			36	28	33	73	29.21	29.97	8.77	9	6	29
02			36	28	33	74	29.21	29.97	8.67	9	5	29
03			36	28	33	74	29.21	29.96	8.67	9	5	29
04			35	27	32	76	29.20	29.97	8.37	9	5	30
05			34	28	32	77	29.21	29.97	8.23	9	5	29
06			34	27	32	77	29.21	29.98	8.47	9	5	30
07			34	28	32	78	29.22	29.98	7.98	9	5	29
08			35	28	32	76	29.23	29.99	7.80	10	7	28
09			37	28	34	72	29.23	29.99	8.32	11	7	29
10			39	28	35	67	29.24	30.00	8.60	12	6	28
11			40	28	35	65	29.23	29.99	8.52	12	6	28
12			41	28	36	61	29.22	29.98	9.10	12	6	28
13			42	28	36	59	29.21	29.96	9.20	12	7	28
14			42	28	37	59	29.19	29.95	9.28	12	5	28
15			42	28	36	60	29.20	29.96	8.98	13	6	27
16			41	28	36	61	29.20	29.96	8.83	11	5	27
17			40	28	35	64	29.21	29.97	9.37	9	4	28
18			39	28	35	66	29.21	29.98	9.10	9	4	27
19			38	28	35	68	29.22	29.98	9.03	8	5	27
20			38	28	34	68	29.22	29.98	8.83	8	4	28
21			38	28	34	69	29.22	29.98	9.00	9	4	28
22			37	28	34	69	29.22	29.98	9.03	9	5	28
23			37	27	33	69	29.21	29.97	8.97	9	5	28
24			36	27	33	70	29.21	29.97	9.13	9	6	28

## 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 Visiblity = 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.

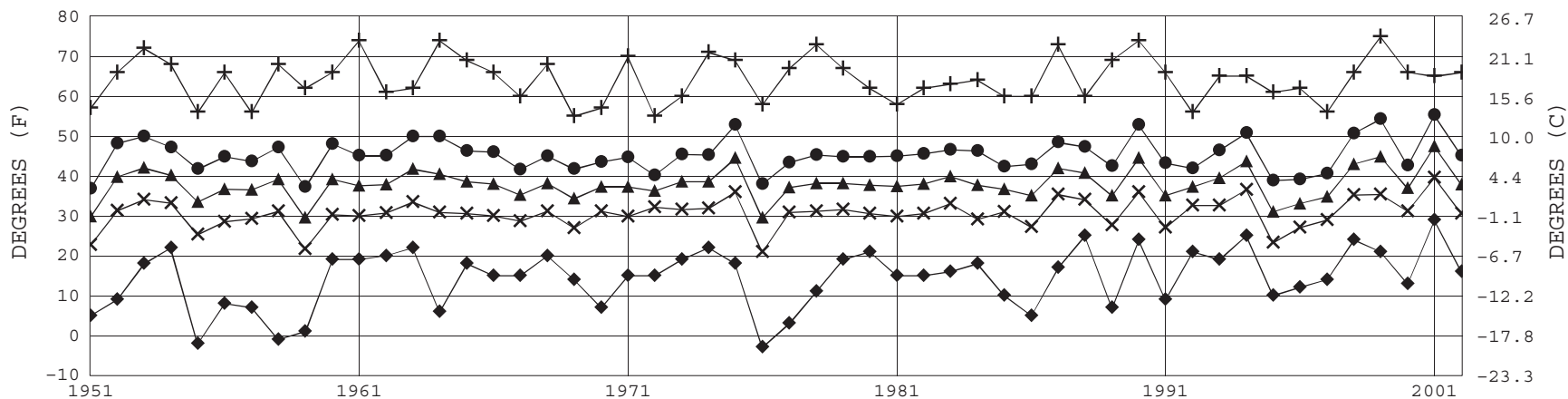
See page 3 for additional notes.

## 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			36	28	33	73	29.21	29.97	8.77	9	6	29
02			36	28	33	74	29.21	29.97	8.67	9	5	29
03			36	28	33	74	29.21	29.96	8.67	9	5	29
04			35	27	32	76	29.20	29.97	8.37	9	5	30
05			34	28	32	77	29.21	29.97	8.23	9	5	29
06			34	27	32	77	29.21	29.98	8.47	9	5	30
07			34	28	32	78	29.22	29.98	7.98	9	5	29
08			35	28	32	76	29.23	29.99	7.80	10	7	28
09			37	28	34	72	29.23	29.99	8.32	11	7	29
10			39	28	35	67	29.24	30.00	8.60	12	6	28
11			40	28	35	65	29.23	29.99	8.52	12	6	28
12			41	28	36	61	29.22	29.98	9.10	12	6	28
13			42	28	36	59	29.21	29.96	9.20	12	7	28
14			42	28	37	59	29.19	29.95	9.28	12	5	28
15			42	28	36	60	29.20	29.96	8.98	13	6	27
16			41	28	36	61	29.20	29.96	8.83	11	5	27
17			40	28	35	64	29.21	29.97	9.37	9	4	28
18			39	28	35	66	29.21	29.98	9.10	9	4	27
19			38	28	35	68	29.22	29.98	9.03	8	5	27
20			38	28	34	68	29.22	29.98	8.83	8	4	28
21			38	28	34	69	29.22	29.98	9.00	9	4	28
22			37	28	34	69	29.22	29.98	9.03	9	5	28
23			37	27	33	69	29.21	29.97	8.97	9	5	28
24			36	27	33	70	29.21	29.97	9.13	9	6	28



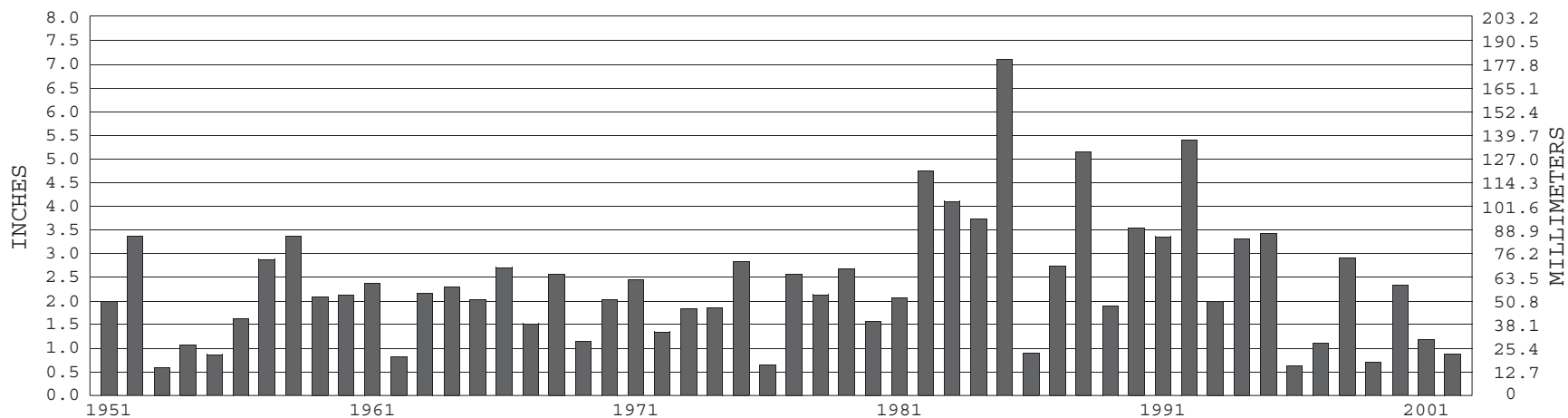
# MILWAUKEE, WI NOVEMBER TEMPERATURES



+ Extreme Max.    ● Mean Max.    ▲ Mean    × Mean Min.    ◆ Extreme Min.

Long-Term (1951-2002) Mean: 37.9    1961-1990 Normal: 38.4

# MILWAUKEE, WI NOVEMBER PRECIPITATION



Long-Term (1951-2002) Mean Monthly Total: 2.36

1961-1990 Normal: 2.70



NOVEMBER 2002

MILWAUKEE, WI

# 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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