



# FEBRUARY 1999

## LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

## MADISON, WI

DANE COUNTY REGIONAL AIRPORT (MSN)

Lat: 43°08' N Long: 89°20' W Elev (Ground): 858 Feet

Time Zone: CENTRAL WBAN: 14837 ISSN #:0198-5736

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	37	32	35	18	34	34	30	0	DZ FG+ BR	1		0.0	0.01	29.05	30.00	5.8	15	6.3	15	12	13	12	01					
02	40	34	37	20	27	33	28	0	RA DZ SN BR	1		T	0.04	28.76	29.70	6.9	25	8.5	22	26	16	27	02					
03	42	35	39	22	27	34	26	0	RA	1		0.0	T	28.61	29.55	11.2	20	12.3	30	17	22	18	03					
04	37	15	26	8	12	20	39	0		T		0.0	0.00	29.15	30.11	8.2	29	9.3	30	30	22	31	04					
05	37	20	29	11	23	28	36	0	RA	T		0.0	0.03	29.08	30.04	10.3	17	10.6	28	19	24	16	05					
06	40	26	33	15	24	29	32	0	BR	T		0.0	0.00	29.07	30.02	3.4	33	6.1	16	32	13	31	06					
07	33	26	30	12	25	28	35	0	SN BR	T		T	T	28.95	29.90	4.1	07	6.9	18	09	14	04	07					
08	42	26	34	15	34	35	31	0	DZ BR	T		0.0	T	28.89	29.83	8.5	19	9.1	30	20	24	18	08					
09	49	29	39	20	25	34	26	0		T		0.0	0.00	29.10	30.05	5.4	26	6.3	21	27	16	27	09					
10	51	28	40	21	29	37	25	0	RA	T		0.0	T	29.03	29.98	11.4	15	11.7	31	16	24	16	10					
11	61*	23	42*	23	42	45	23	0	TSRA RA DZ SN FG BR HZ	T		T	0.51	28.64	29.56	10.3	21	14.1	37*	24	26*	27	11					
12	23	12	18*	-2	8	16	47	0	SN BR	T		0.5	0.02	29.00	29.96	13.1	29	13.9	33	27	24	27	12					
13	33	15	24	4	8	19	41	0		0			0.00	29.42	30.40	6.6	30	7.2	21	31	16	32	13					
14	46	20	33	13	22	30	32	0		0		0.0	0.00	29.18	30.14	10.7	19	10.8	29	18	22	18	14					
15	51	30	41	21	29	36	24	0		0		0.0	0.00	28.92	29.86	7.8	19	8.4	23	19	20	19	15					
16	38	29	34	13	29	32	31	0	RA SN BR HZ	0		T	0.01	28.90	29.85	7.2	27	7.7	22	28	15	28	16					
17	32	19	26	5	16	23	39	0	SN	0		T	T	29.02	29.98	6.1	30	6.7	22	30	17	30	17					
18	30	16	23	2	16	21	42	0		0		0.0	0.00	29.12	30.09	5.4	04	5.7	14	03	13	03	18					
19	29	17	23	1	15	20	42	0	SN	0		T	T	29.21	30.18	6.1	03	6.7	15	04	13	03	19					
20	30	14	22	0	11	18	43	0	SN	0		T	T	29.39	30.36	8.6	02	9.0	22	01	20	01	20					
21	34	12	23	0	10	19	42	0		0		0.0	0.00	29.53	30.51	6.2	36	6.6	18	01	16	01	21					
22	32	12*	22	-1	12	20	43	0		0		0.0	0.00	29.43	30.41	6.7	12	7.0	23	13	20	11	22					
23	36	18	27	4	14	22	38	0		0		0.0	0.00	29.26	30.23	9.5	09	10.0	24	12	22	10	23					
24	33	15	24	0	21	24	41	0	SN FG+ FZFG BR	0		2.8	0.17	29.16	30.13	5.9	17	6.2	26	16	22	15	24					
25	33	28	31	7	26	29	34	0	SN FG+ FZFG BR HZ	2		T	T	29.19	30.15	2.0	15	3.9	15	16	13	16	25					
26	44	29	37	13	28	33	28	0	RA DZ BR HZ	T		0.0	0.03	29.08	30.03	11.5	16	11.8	22	15	18	16	26					
27	43	36	40	15	35	37	25	0	RA DZ BR HZ	0		0.0	0.03	28.69	29.63	2.4	21	5.3	16	27	11	28	27					
28	39	33	36	11	30	33	29	0	RA DZ SN BR	T		0.5	0.06	28.68	29.62	10.0	29	10.5	29	30	21	30	28					
< MONTHLY AVERAGES										TOTALS-->			3.8	0.91	29.05	30.01	2.2	21	8.5	<-- MONTHLY AVERAGES								
8.3										12.1		10.2				<----- DEPARTURE FROM NORMAL ----->		- .17		SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3								
DEGREE DAYS									GREATEST 24-HR PRECIPITATION: 0.51				DATE :11				SEA LEVEL PRESSURE				DATE TIME							
MONTHLY									GREATEST 24-HR SNOWFALL: 2.8				DATE :24				MAXIMUM				: 30.56				21 1151			
TOTAL DEPARTURE									GREATEST SNOW DEPTH: 2				DATE : 25				MINIMUM				: 29.28				11 1634			
SEASON TO DATE									NUMBER OF DAYS WITH				MAXIMUM TEMP ≥ 90: 0				MINIMUM TEMP ≤ 32: 24				PRECIPITATION ≥ 0.01 INCH : 10							
HEATING: 952 -291									MAXIMUM TEMP ≤ 32 : 6				MINIMUM TEMP ≤ 0 : 0				PRECIPITATION ≥ 0.10 INCH : 2											
COOLING: 0 0									THUNDERSTORMS : 1				HEAVY FOG : 3				SNOWFALL ≥ 1.0 INCH : 1											

FEBRUARY 1999  
MADISON, WI

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

MADISON, WI

FEBRUARY 1999

MSN

WBAN # 14837

DATE	FOR HOUR (LST) ENDING AT												DATE	FOR HOUR (LST) ENDING AT												DATE	Sum if Different (See Note 2)	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	T	T	T			T	T	0.01	0.02	T	T	T	01										T	0.01	T	01		0.01	
02	0.01	T	T							T			02													02		0.04	
03													03				T					T	T		03	T			
04													04	T	0.03										04	0.00			
05													05												05	0.03			
06													06												06	0.00			
07													07												07	T			
08													08												08	T			
09													09												09	0.00			
10			T	T									10												10	T			
11													11												11		0.51		
12	T	T	T	T	T	T	T	T	0.01	T	T	0.01	12	T	0.06	0.40	0.04	T	T	T	0.01	T	T	T	12		0.02		
13													13		T	T	T								13		0.00		
14													14												14		0.00		
15													15												15		0.00		
16													16	T				T	T	T	T	T	T		16		0.01		
17													17												17		T		
18							T	T		T	T		18					T	T						18		0.00		
19													19	T	T	T	T	T							19		T		
20													20												20		T		
21													21												21		0.00		
22													22												22		0.00		
23													23												23		0.00		
24													24	0.01	0.07	0.06	0.02	0.01	T						24		0.17		
25										T			25												25		T		
26													26								0.01	0.01	T	0.01	26		0.03		
27				0.01	0.01	T	0.01	T		0.01	T		27									T		0.01	27	0.02	0.03		
28	T	T	T	T		T		T		T	T		28											0.01	28		0.06		

## 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.

## REFERENCE NOTES & SUPPLEMENTAL SUMMARIES

\* = 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

Resultant wind is the vector sum of the wind speeds and directions divided by the number of observations.

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

Precipitation is for the 24-hour period ending at the time indicated in the column heading.

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

NORMALS ARE FOR THE YEARS 1961–1990

### WEATHER NOTATIONS

QUALIFIER	WEATHER PHENOMENA		
DESCRIPTOR	PRECIPITATION	OBSCURATION	OTHER
BC Patches	DZ Drizzle	BR Mist	DS Duststorm
BL Blowing	GR Hail	DU Widespread Dust	FC Funnel Cloud
DR Low Drifting	GS Small Hail and/or Snow Pellets	FG Fog	+FC Tornado Waterspout
FZ Freezing	IC Ice Crystals	FU Smoke	PO Well-Developed Dust/Sand Whirls
MI Shallow	PL Ice Pellets	HZ Haze	SQ Squalls
PR Partial	RA Rain	PY Spray	SS Sandstorm
SH Shower(s)	SG Snow Grains	SA Sand	GL Glaze
TS Thunderstorm	SN Snow	VA Volcanic Ash	
VC In the Vicinity	UP Unknown Precipitation		
Intensity (as indicated on pages 4 to 6): '+' = Heavy    ' ' = Moderate    '- ' = Light			

## MADISON, WI FEBRUARY 1999

Ceilometer (30-second) data are used to derive cloudiness at or below 12,000 feet. This cloudiness is the mean cloud cover detected during sunrise to sunset (SR–SS), or midnight to midnight (MN–MN).

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 at constant pressure by evaporation of moisture into it, to 100% relative humidity.

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

### ADDITIONAL NOTES:

DATE	SUNSHINE		CLOUDINESS (OKTAS)				VISIBILITY (MILES)		RESERVED
	TOTAL MINUTES	PERCENT POSSIBLE	SR-SS		MN-MN		MINIMUM	MAXIMUM	
			CEILOMETER	SATELLITE	CEILOMETER	SATELLITE			
01							< .25	7.00	
02							1.50	10.00	
03							10.00	10.00	
04							10.00	10.00	
05							8.00	10.00	
06							4.00	10.00	
07							3.00	10.00	
08							1.00	8.00	
09							9.00	10.00	
10							10.00	10.00	
11							1.00	10.00	
12							1.00	10.00	
13							10.00	10.00	
14							10.00	10.00	
15							10.00	10.00	
16							2.00	10.00	
17							10.00	10.00	
18							10.00	10.00	
19							9.00	10.00	
20							9.00	10.00	
21							10.00	10.00	
22							10.00	10.00	
23							10.00	10.00	
24							.50	10.00	
25							.25	10.00	
26							3.00	10.00	
27							.75	10.00	
28							1.00	10.00	
MONTHLY AVGS							5.86	9.82	
SUNSHINE (MINUTES)									
Total:                      Possible:									
Percent Possible:									
NUMBER OF DAYS WITH:									
SKY CONDITION									
CLR   PTLY CLDY   CLOUDY   MISSING									
28									
MINIMUM VISIBILITY (MILES)									
<=0.25                      <=3.0                      >=7.0									
2                                      12                                      15									

## OBSERVATIONS AT 3-HOURLY INTERVALS

MADISON, WI

FEBRUARY 1999

MSN

WBAN # 14837

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: 0713 FEB 01						SUNSET: 1709						SUNRISE: 0706 FEB 07						SUNSET: 1717											
03	OVC	006			4.00 BR	32	31	32	96	8	13	29.20	30.16	03	CLR	NC			4.00 BR	27	24	26	89	6	04	28.99	29.95		
06	OVC	006			4.00 BR	33	31	32	92	8	14	29.16	30.12	06	BKN	019			5.00 BR	27	25	26	92	6	03	28.91	29.86		
09	OVC	002			< .25 FG	33	33	33	100	5	15	29.14	30.09	09	OVC	017			7.00	30	26	29	85	9	03	28.91	29.86		
12	VV	001			< .25 FG	34	34	34	100	6	15	29.07	30.02	12	OVC	017			10.00	32	25	29	75	9	05	28.92	29.87		
15	VV	001			< .25 FG	36	35	36	97	5	16	28.99	29.95	15	OVC	019			10.00	33	25	30	72	5	02	28.94	29.88		
18	VV	001			< .25 FG	35	35	35	100	5	16	28.97	29.91	18	OVC	020			10.00	31	26	29	82	6	12	28.95	29.90		
21	VV	001			0.25 FG	36	36	36	100	7	17	28.91	29.85	21	OVC	100			10.00	31	26	29	82	6	17	28.98	29.93		
24	OVC	003			1.75 DZ BR	36	36	36	100	7	22	28.86	29.80	24	CLR	NC			9.00	26	23	25	88	6	17	28.99	29.94		
SUNRISE: 0712 FEB 02						SUNSET: 1711						SUNRISE: 0705 FEB 08						SUNSET: 1719											
03	OVC	003			2.00 BR	35	34	35	96	5	20	28.77	29.71	03	CLR	NC			4.00 BR	27	24	26	89	5	17	28.95	29.90		
06	OVC	005			3.00 DZ BR	35	34	35	96	5	23	28.72	29.66	06	OVC	008			3.00 BR	32	29	31	88	12	16	28.88	29.83		
09	OVC	005			3.00 -SNRA	34	33	34	97	8	28	28.72	29.67	09	OVC	004			1.00 BR	36	35	36	97	15	17	28.87	29.81		
12	CLR	NC			10.00	37	27	33	67	13	29	28.75	29.69	12	OVC	004			2.00 BR	38	36	37	93	21	18	28.81	29.75		
15	CLR	NC			10.00	40	11	30	30	13	27	28.78	29.72	15	OVC	004			1.50 BR	40	37	39	89	9	20	28.82	29.77		
18	CLR	NC			10.00	35	20	30	54	7	22	28.80	29.74	18	OVC	018			2.50 BR	41	38	40	89	5	20	28.87	29.81		
21	BKN	120			10.00	35	24	31	64	9	22	28.78	29.72	21	OVC	027			5.00 BR	39	37	38	93	3	22	28.89	29.83		
24	CLR	NC			10.00	35	24	31	64	8	21	28.75	29.69	24	CLR	NC			5.00 BR	40	37	39	89	6	25	28.92	29.86		
SUNRISE: 0711 FEB 03						SUNSET: 1712						SUNRISE: 0703 FEB 09						SUNSET: 1720											
03	BKN	120			10.00	36	24	32	62	13	20	28.71	29.65	03	CLR	NC			10.00	38	30	35	73	5	27	28.97	29.91		
06	OVC	075			10.00	35	25	31	67	15	19	28.66	29.61	06	CLR	NC			10.00	34	27	31	76	6	23	29.02	29.97		
09	OVC	075			10.00	37	25	32	62	16	18	28.62	29.56	09	CLR	NC			10.00	38	26	33	62	10	27	29.07	30.03		
12	OVC	080			10.00	39	25	34	57	18	18	28.57	29.50	12	CLR	NC			10.00	45	24	37	44	12	26	29.10	30.05		
15	OVC	043			10.00	40	27	35	60	15	19	28.52	29.44	15	CLR	NC			10.00	49	19	37	31	14	28	29.13	30.08		
18	OVC	055			10.00	40	29	35	65	12	19	28.55	29.47	18	CLR	NC			10.00	42	21	34	43	0	00	29.16	30.11		
21	BKN	039			10.00	38	30	35	73	7	23	28.60	29.53	21	CLR	NC			10.00	30	23	28	75	3	24	29.18	30.14		
24	OVC	016			10.00	37	31	35	79	9	26	28.66	29.60	24	CLR	NC			10.00	30	25	28	82	5	07	29.20	30.15		
SUNRISE: 0710 FEB 04						SUNSET: 1713						SUNRISE: 0702 FEB 10						SUNSET: 1721											
03	OVC	021			10.00	36	29	33	76	10	28	28.74	29.68	03	OVC	080			10.00 -RA	32	29	31	88	0	00	29.19	30.14		
06	FEW	NC			10.00	22	12	19	66	18	29	28.93	29.88	06	CLR	NC			10.00	33	27	31	78	3	14	29.18	30.13		
09	FEW	NC			10.00	17	5	14	59	14	32	29.11	30.08	09	CLR	NC			10.00	40	28	35	63	13	14	29.15	30.11		
12	CLR	NC			10.00	21	4	17	47	13	30	29.23	30.20	12	CLR	NC			10.00	47	26	38	44	16	15	29.07	30.02		
15	CLR	NC			10.00	23	5	18	46	10	31	29.29	30.25	15	OVC	047			10.00	51	30	42	45	9	14	28.97	29.91		
18	CLR	NC			10.00	22	8	18	55	5	27	29.38	30.35	18	BKN	027			10.00	50	31	42	48	18	14	28.88	29.82		
21	CLR	NC			10.00	17	11	15	77	0	00	29.35	30.33	21	OVC	025			10.00	48	30	40	50	16	16	28.85	29.78		
24	CLR	NC			10.00	20	13	18	74	6	16	29.37	30.34	24	BKN	018			10.00	49	31	41	50	17	17	28.78	29.70		
SUNRISE: 0708 FEB 05						SUNSET: 1715						SUNRISE: 0701 FEB 11						SUNSET: 1723											
03	CLR	NC			10.00	21	14	19	74	9	17	29.32	30.29	03	OVC	010			5.00 HZ	51	31	42	46	10	18	28.76	29.68		
06	CLR	NC			10.00	23	15	21	72	15	16	29.27	30.24	06	OVC	017			3.00 BR	54	53	53	97	12	17	28.72	29.64		
09	OVC	070			10.00	27	18	24	69	16	16	29.20	30.17	09	OVC	007			2.50 BR	57	55	56	93	16	18	28.67	29.59		
12	BKN	060			10.00	34	22	30	61	23	16	29.05	30.01	12	OVC	013			5.00 -RA BR	60	57	58	90	14	18	28.56	29.47		
15	OVC	045			10.00	34	28	32	79	17	18	28.95	29.90	15	BKN	027			9.00 -RA	52	50	51	93	6	18	28.46	29.37		
18	OVC	049			10.00	36	30	34	79	8	18	28.91	29.86	18	OVC	008			5.00 DZ	38	35	37	89	20	27	28.48	29.40		
21	OVC	043			10.00	37	30	34	76	7	19	28.89	29.84	21	OVC	038			7.00 -SN	26	17	23	69	17	28	28.72	29.65		
24	CLR	NC			10.00	32	30	31	92	3	27	28.89	29.84	24	OVC	025			10.00 -SN	23	14	20	68	16	26	28.85	29.79		
SUNRISE: 0707 FEB 06						SUNSET: 1716						SUNRISE: 0659 FEB 12						SUNSET: 1724											
03	CLR	NC			9.00	32	28	30	85	5	31	28.96	29.90	03	OVC	028			9.00 -SN	22	10	19	60	13	27	28.91	29.85		
06	CLR	NC			9.00	30	26	29	85	5	27	29.03	29.99	06	OVC	033			10.00 -SN	21	11	18	65	9	26	28.90	29.85		
09	CLR	NC			7.00	32	26	30	79	8	29	29.09	30.04	09	OVC	020			1.00 -SN	20	15	19	81	15	28	28.89	29.85		
12	CLR	NC			10.00	38	21	32	51	10	32	29.12	30.08	12	BKN	095			10.00	21	7	17	54	10	30	28.92	29.88		
15	CLR	NC			10.00	38	21	32	51	6	35	29.12	30.07	15	BKN	041			7.00 -SN	17	7	15	64	17	29	28.98	29.94		
18	CLR	NC			10.00	30	24	28	79	6	02	29.13	30.09	18	OVC	049			10.00	16	4	13	59	16	31	29.08	30.05		
21	CLR	NC			10.00	27	23	26	85	5	08	29.09	30.05	21	OVC	035			6.00 -SN	14	4	12	64	16	33	29.18	30.16		
24	CLR	NC			9.00	27	23	26	85	8	10	29.04	29.99	24	OVC	050			10.00	15	4	12	61	12	30	29.23	30.21		

## OBSERVATIONS AT 3-HOURLY INTERVALS

MADISON, WI

FEBRUARY 1999

MSN

WBAN # 14837

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: 0658	FEB 13			SUNSET: 1725										SUNRISE: 0650	FEB 19			SUNSET: 1733						
03	CLR	NC			10.00	17	5	14	59	12	31	29.30	30.28	03	OVC	025			9.00	23	17	21	78	8	03	29.15	30.12		
06	CLR	NC			10.00	16	4	13	59	12	32	29.38	30.37	06	OVC	027			10.00	20	15	19	81	10	02	29.17	30.14		
09	CLR	NC			10.00	18	4	15	54	12	30	29.46	30.45	09	CLR	NC			10.00	23	17	21	78	6	04	29.21	30.18		
12	CLR	NC			10.00	25	8	20	48	8	29	29.47	30.45	12	OVC	025			10.00	27	16	24	63	5	35	29.20	30.16		
15	CLR	NC			10.00	32	8	25	36	6	29	29.45	30.43	15	OVC	031			10.00	27	17	24	66	8	03	29.18	30.15		
18	CLR	NC			10.00	28	10	23	47	0	00	29.46	30.44	18	SCT	NC			10.00	24	15	21	68	8	03	29.24	30.21		
21	CLR	NC			10.00	24	12	21	60	0	00	29.43	30.42	21	CLR	NC			10.00	20	14	18	78	6	07	29.27	30.24		
24	CLR	NC			10.00	22	14	20	71	3	19	29.40	30.39	24	CLR	NC			10.00	17	11	15	77	6	04	29.27	30.24		
					SUNRISE: 0657	FEB 14			SUNSET: 1727										SUNRISE: 0648	FEB 20			SUNSET: 1734						
03	CLR	NC			10.00	21	16	20	81	5	17	29.36	30.32	03	CLR	NC			10.00	14	10	13	84	5	34	29.31	30.28		
06	CLR	NC			10.00	26	19	24	75	7	18	29.32	30.28	06	CLR	NC			10.00	17	12	16	80	8	36	29.34	30.32		
09	CLR	NC			10.00	32	20	28	61	17	18	29.26	30.23	09	BKN	034			9.00	21	15	19	78	14	01	29.37	30.34		
12	CLR	NC			10.00	42	20	34	41	18	19	29.17	30.12	12	BKN	028			10.00	27	14	23	58	18	02	29.38	30.35		
15	CLR	NC			10.00	46	24	37	42	13	19	29.07	30.02	15	BKN	038			10.00	29	8	23	41	14	03	29.39	30.37		
18	CLR	NC			10.00	43	28	37	56	12	19	29.05	30.01	18	CLR	NC			10.00	24	4	19	42	14	04	29.43	30.41		
21	CLR	NC			10.00	37	26	33	65	7	18	29.05	30.01	21	CLR	NC			10.00	17	8	15	68	0	00	29.45	30.44		
24	CLR	NC			10.00	37	29	34	73	10	19	29.03	29.98	24	CLR	NC			10.00	18	9	16	68	7	35	29.48	30.46		
					SUNRISE: 0655	FEB 15			SUNSET: 1728										SUNRISE: 0647	FEB 21			SUNSET: 1736						
03	CLR	NC			10.00	34	27	31	76	7	18	29.01	29.96	03	CLR	NC			10.00	16	9	14	74	7	36	29.51	30.49		
06	CLR	NC			10.00	32	26	30	79	7	17	28.99	29.93	06	CLR	NC			10.00	13	9	12	84	5	32	29.55	30.53		
09	OVC	120			10.00	37	28	34	70	10	19	28.96	29.91	09	CLR	NC			10.00	23	13	20	65	10	36	29.57	30.55		
12	CLR	NC			10.00	46	30	39	54	14	18	28.90	29.83	12	FEW	NC			10.00	29	11	24	47	12	01	29.57	30.55		
15	CLR	NC			10.00	50	30	41	46	14	19	28.85	29.78	15	CLR	NC			10.00	33	7	25	33	10	01	29.52	30.50		
18	CLR	NC			10.00	43	30	38	60	6	18	28.86	29.80	18	CLR	NC			10.00	29	7	23	39	3	36	29.51	30.49		
21	CLR	NC			10.00	42	30	37	62	5	20	28.85	29.79	21	CLR	NC			10.00	20	11	17	68	0	00	29.51	30.50		
24	OVC	015			10.00	38	30	35	73	9	27	28.89	29.82	24	CLR	NC			10.00	15	10	14	80	0	00	29.52	30.50		
					SUNRISE: 0654	FEB 16			SUNSET: 1729										SUNRISE: 0645	FEB 22			SUNSET: 1737						
03	OVC	014			4.00 HZ	36	30	34	79	5	24	28.89	29.83	03	CLR	NC			10.00	14	11	13	88	0	00	29.50	30.49		
06	OVC	010			4.00 BR	35	32	34	89	3	VR	28.89	29.83	06	CLR	NC			10.00	13	10	12	88	0	00	29.50	30.49		
09	OVC	012			2.50 BR	36	32	34	86	7	27	28.90	29.84	09	CLR	NC			10.00	24	16	22	71	9	14	29.50	30.48		
12	OVC	012			2.50 -RA BR	36	32	34	86	8	26	28.89	29.83	12	FEW	NC			10.00	31	13	25	47	12	12	29.45	30.44		
15	OVC	010			2.00 BR	34	31	33	89	9	28	28.87	29.81	15	FEW	NC			10.00	31	10	25	42	9	11	29.39	30.37		
18	OVC	018			9.00 -SN	33	27	31	78	10	28	28.92	29.86	18	CLR	NC			10.00	29	12	24	49	14	11	29.35	30.32		
21	OVC	018			10.00 -SN	30	24	28	79	12	29	28.95	29.90	21	OVC	110			10.00	24	11	20	57	14	11	29.34	30.31		
24	OVC	020			10.00	29	22	27	75	12	28	28.96	29.91	24	OVC	110			10.00	23	12	20	63	7	10	29.31	30.28		
					SUNRISE: 0652	FEB 17			SUNSET: 1731										SUNRISE: 0643	FEB 23			SUNSET: 1738						
03	OVC	026			10.00	28	19	25	69	10	28	28.98	29.93	03	OVC	100			10.00	20	14	18	78	7	08	29.27	30.24		
06	BKN	026			10.00	24	15	21	68	8	30	29.00	29.96	06	BKN	100			10.00	24	14	21	65	12	10	29.25	30.22		
09	BKN	021			10.00 -SN	23	16	21	74	8	30	29.04	30.01	09	CLR	NC			10.00	28	15	24	58	21	09	29.23	30.19		
12	SCT	NC			10.00	28	15	24	58	13	31	29.03	29.99	12	SCT	NC			10.00	33	12	26	42	15	12	29.24	30.21		
15	SCT	NC			10.00	31	15	26	52	7	32	29.00	29.96	15	BKN	044			10.00	33	14	27	45	14	05	29.23	30.19		
18	CLR	NC			10.00	28	15	24	58	0	00	29.02	29.98	18	CLR	NC			10.00	26	13	22	57	7	07	29.29	30.26		
21	CLR	NC			10.00	23	17	21	78	0	00	29.05	30.02	21	CLR	NC			10.00	23	17	21	78	7	10	29.31	30.27		
24	CLR	NC			10.00	19	15	18	85	0	00	29.06	30.03	24	CLR	NC			10.00	19	17	18	92	0	00	29.29	30.26		
					SUNRISE: 0651	FEB 18			SUNSET: 1732										SUNRISE: 0642	FEB 24			SUNSET: 1740						
03	CLR	NC			10.00	17	14	16	88	0	00	29.08	30.05	03	CLR	NC			8.00	17	15	17	92	0	00	29.29	30.26		
06	BKN	085			10.00	18	14	17	84	0	00	29.09	30.06	06	CLR	NC			9.00	21	17	20	85	7	18	29.26	30.23		
09	FEW	NC			10.00	23	17	21	78	7	04	29.13	30.10	09	FEW	NC			10.00	28	18	25	66	13	17	29.22	30.19		
12	OVC	020			10.00	26	18	23	71	8	03	29.13	30.10	12	OVC	022			2.00 -SN	30	18	26	61	17	18	29.15	30.11		
15	BKN	027			10.00	28	16	24	61	7	05	29.10	30.07	15	VV	005			0.50 SN	28	27	28	96	6	17	29.09	30.06		
18	BKN	032			10.00	25	17	22	72	10	05	29.13	30.10	18	OVC	014			3.00 BR	29	26	28	89	7	16	29.08	30.04		
21	BKN	030			10.00	24	16	22																					

## OBSERVATIONS AT 3-HOURLY INTERVALS

MADISON, WI

FEBRUARY 1999

MSN

WBAN # 14837

HOUR (LST)			SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE ° F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)	
	SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)	EFF CLD AMT Oktas			DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL
03	OVC	007			5.00	BR	28	25	27	88	0	00	29.09	30.05
06	OVC	003			0.75	BR	29	27	28	92	0	00	29.14	30.10
09	OVC	006			2.50	BR	29	26	28	89	3	03	29.19	30.15
12	OVC	017			10.00		32	25	29	75	5	09	29.21	30.17
15	OVC	019			10.00		33	25	30	72	0	00	29.22	30.18
18	OVC	017			6.00	HZ	32	27	30	82	6	16	29.22	30.18
21	OVC	015			8.00		31	26	29	82	12	12	29.23	30.19
24	OVC	015			9.00		31	25	29	79	9	17	29.25	30.21
SUNRISE: 0640 FEB 25 SUNSET: 1741														
03	OVC	015			6.00	HZ	31	26	29	82	12	18	29.20	30.16
06	OVC	011			5.00	BR	30	26	29	85	10	16	29.19	30.15
09	SCT	NC			5.00	HZ	31	26	29	82	13	16	29.18	30.14
12	CLR	NC			8.00		38	28	34	68	18	17	29.12	30.07
15	BKN	050			10.00		43	30	38	60	14	16	29.02	29.97
18	OVC	030			7.00	-RA	40	30	36	68	15	13	28.95	29.89
21	OVC	022			3.00	-RA	38	30	35	73	8	15	28.94	29.88
24	OVC	030			5.00	BR	38	31	35	76	8	14	28.88	29.82
SUNRISE: 0639 FEB 26 SUNSET: 1742														
03	OVC	033			5.00	BR	38	31	35	76	9	13	28.78	29.71
06	OVC	016			5.00	BR	38	35	37	89	6	14	28.75	29.68
09	OVC	006			1.00	DZ BR	38	36	37	93	7	14	28.72	29.66
12	OVC	004			0.75	BR	39	38	39	96	0	00	28.68	29.62
15	OVC	010			1.50	HZ	43	38	41	82	9	30	28.63	29.57
18	OVC	024			8.00		40	35	38	83	0	00	28.64	29.58
21	OVC	030			10.00	DZ	38	34	36	86	6	27	28.63	29.56
24	OVC	017			5.00	BR	36	34	35	93	6	27	28.59	29.52
SUNRISE: 0637 FEB 27 SUNSET: 1743														
03	OVC	014			6.00	DZ BR	35	32	34	89	8	28	28.57	29.50
06	OVC	012			1.50	-SN BR	33	31	32	92	8	27	28.57	29.50
09	OVC	021			1.00	-SN BR	33	31	32	92	13	28	28.60	29.54
12	OVC	019			10.00		38	32	35	79	16	29	28.63	29.57
15	OVC	029			10.00		38	30	35	73	12	30	28.69	29.63
18	OVC	029			10.00		36	27	32	70	12	30	28.78	29.72
21	OVC	029			10.00		35	25	31	67	13	31	28.84	29.78
24	OVC	033			10.00		34	25	31	70	5	VR	28.85	29.79
SUNRISE: 0635 FEB 28 SUNSET: 1745														
SUNRISE: FEB 29 SUNSET:														
SUNRISE: FEB 30 SUNSET:														

HOUR (LST)	SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)	EFF CLD AMT Oktas	VISIBILITY (MILES)	WEATHER	TEMPERATURE ° F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)	
							DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL
SUNRISE: FEB 31 SUNSET:														

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.

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			28	22	26	79	29.07	30.02	8.49	7	3	22
02			28	22	26	80	29.07	30.02	8.21	7	2	22
03			28	22	26	79	29.06	30.02	7.86	6	2	23
04			28	21	26	77	29.06	30.02	7.73	6	2	24
05			27	22	26	81	29.06	30.02	7.55	7	2	23
06			27	22	26	81	29.06	30.02	7.58	8	2	20
07			28	22	26	81	29.07	30.02	7.04	8	2	19
08			28	23	27	81	29.07	30.03	6.56	8	2	20
09			30	23	28	76	29.07	30.03	6.88	11	2	19
10			32	23	29	71	29.07	30.03	7.77	11	3	19
11			34	23	30	67	29.07	30.02	8.39	12	3	19
12			35	23	31	63	29.05	30.00	8.23	13	3	20
13			36	23	31	62	29.03	29.99	8.30	11	3	22
14			36	23	32	62	29.02	29.98	7.84	10	2	24
15			36	22	31	60	29.02	29.98	8.27	10	2	25
16			36	22	31	60	29.02	29.98	8.52	10	2	20
17			35	22	31	62	29.03	29.98	8.72	9	2	21
18			33	22	29	66	29.04	29.99	8.59	8	1	17
19			31	23	28	71	29.05	30.00	8.83	7	2	16
20			30	22	28	72	29.05	30.01	8.79	7	2	20
21			30	22	27	74	29.05	30.01	8.65	7	2	20
22			29	22	27	76	29.06	30.01	8.85	6	2	21
23			29	22	27	77	29.06	30.01	8.91	6	2	21
24			28	22	26	78	29.06	30.01	8.88	7	3	22

## 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			28	22	26	79	29.07	30.02	8.49	7	3	22
02			28	22	26	80	29.07	30.02	8.21	7	2	22
03			28	22	26	79	29.06	30.02	7.86	6	2	23
04			28	21	26	77	29.06	30.02	7.73	6	2	24
05			27	22	26	81	29.06	30.02	7.55	7	2	23
06			27	22	26	81	29.06	30.02	7.58	8	2	20
07			28	22	26	81	29.07	30.02	7.04	8	2	19
08			28	23	27	81	29.07	30.03	6.56	8	2	20
09			30	23	28	76	29.07	30.03	6.88	11	2	19
10			32	23	29	71	29.07	30.03	7.77	11	3	19
11			34	23	30	67	29.07	30.02	8.39	12	3	19
12			35	23	31	63	29.05	30.00	8.23	13	3	20
13			36	23	31	62	29.03	29.99	8.30	11	3	22
14			36	23	32	62	29.02	29.98	7.84	10	2	24
15			36	22	31	60	29.02	29.98	8.27	10	2	25
16			36	22	31	60	29.02	29.98	8.52	10	2	20
17			35	22	31	62	29.03	29.98	8.72	9	2	21
18			33	22	29	66	29.04	29.99	8.59	8	1	17
19			31	23	28	71	29.05	30.00	8.83	7	2	16
20			30	22	28	72	29.05	30.01	8.79	7	2	20
21			30	22	27	74	29.05	30.01	8.65	7	2	20
22			29	22	27	76	29.06	30.01	8.85	6	2	21
23			29	22	27	77	29.06	30.01	8.91	6	2	21
24			28	22	26	78	29.06	30.01	8.88	7	3	22

# SUPPLEMENTARY HOURLY PRECIPITATION

## UNIVERSAL RAIN GAUGE (WATER EQUIVALENT IN INCHES)

FEBRUARY 1999  
MADISON, WI

LATITUDE 43° 8'N  
LONGITUDE 89° 20'

DATE	A.M. HOUR (L.S.T.) ENDING AT												DATE	P.M. HOUR (L.S.T.) ENDING AT												DATE	DAILY TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12		1	2	3	4	5	6	7	8	9	10	11	12		
01													01								0.01	T	T			01	0.01
02							0.01	0.01					02													02	0.02
03													03													03	0.00
04													04													04	0.00
05													05		0.03											05	0.03
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		0.32	0.16										11	0.48
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													18													18	0.00
19													19													19	0.00
20													20													20	0.00
21													21													21	0.00
22													22													22	0.00
23													23													23	0.00
24													24	0.05	0.05											24	0.10
25													25													25	0.00
26													26							T						26	T
27				T	0.02	T	T	T	T				27													27	0.00
28													28													28	0.02
PUBLISHED BY: NCDC, ASHEVILLE, NC.													MONTHLY TOTAL 0.66														

### SUPPLEMENTARY MAXIMUM SHORT DURATION PRECIPITATION (MSDP)

TIME PERIOD (MINUTES)	5	10	15	20	30	45	60	80	100	120	150	180
PRECIPITATION (INCHES)					0.30	0.32	0.37	0.48	0.48	0.48	0.48	0.48
ENDED: DATE					11	11	11	11	11	11	11	11
ENDED: TIME					1500	1500	1500	1500	1500	1500	1500	1500

The time indicated is the ending time of the interval.  
Date and time are not entered for trace amounts.

The National Weather Service has determined that the ASOS Heated Tipping-Bucket (HTB) rain gauge may not measure water equivalent precipitation accurately during frozen precipitation events. Precipitation data from a nearby site is provided on this page to supplement the ASOS HTB data. M = Missing Data.  
\* = Data distribution unknown.  
First HPD value that follows is the total accumulated amount.



**FEBRUARY 1999  
MADISON, 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.*

DIRECTOR

## **NOTICE**

Effective July 1, 1996, the National Weather Service & Federal Aviation Administration began using the METAR format for Hourly Observations.

We welcome your questions or comments, please contact us at  
828–271–4800 (voice), 828–271–4876 (fax),  
828–271–4010(TDD)  
or [orders@ncdc.noaa.gov](mailto:orders@ncdc.noaa.gov)  
Local Climatological Data is available at [www.ncdc.noaa.gov](http://www.ncdc.noaa.gov)

For address correction, please return a photocopy of this page to Subscription Services indicating changes

NATIONAL CLIMATIC DATA CENTER  
151 PATTON AVE RM 120  
ASHEVILLE, NC 28801 –5001

OFFICIAL BUSINESS, PENALTY FOR PRIVATE USE \$300

FIRST CLASS  
POSTAGE AND FEES PAID  
NOAA  
PERMIT G–19