



NOVEMBER 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): 857 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	68	41	55	13	38	46	10	0		0		0.0	0.00	29.04	29.96	7.4	26	10.1	31	29	22	29	01		
02	43	29	36	-6	20	32	29	0		0		0.0	0.00	29.09	30.03	10.3	32	10.6	25	31	20	34	02		
03	48	25	37	-4	18	28	28	0		0		0.0	0.00	29.10	30.05	5.4	30	5.9	20	30	15	30	03		
04	63	21	42	1	25	36	23	0		0		0.0	0.00	29.08	30.01	6.7	20	7.1	21	19	17	19	04		
05	60	31	46	6	30	41	19	0		0		0.0	0.00	29.21	30.13	5.0	27	6.5	18	32	15	31	05		
06	53	25	39	-1	18	31	26	0	TSRA RA BR	0		0.0	0.00	29.49	30.44	0.9	34	1.9	11	01	9	34	06		
07	57	23	40	0	25	35	25	0		0		0.0	0.00	29.43	30.38	4.3	17	4.6	15	17	13	17	07		
08	74*	40	57	18	41	50	8	0		0		0.0	0.00	29.09	30.01	7.4	20	7.6	18	23	14	19	08		
09	73	57	65*	26	49	56	0	0		0		0.0	0.00	28.93	29.84	9.6	21	10.1	25	21	20	21	09		
10	62	39	51	13	43	46	14	0		0		0.0	0.28	28.99	29.90	8.0	02	11.0	31	02	26*	02	10		
11	44	37	41	3	35	38	24	0	FG BCFG BR HZ FG BCFG BR	0		0.0	0.00	29.41	30.35	2.1	07	6.8	18	01	16	01	11		
12	58	34	46	9	41	43	19	0		0		0.0	0.00	29.23	30.17	1.8	24	3.2	11	23	9	23	12		
13	69	30	50	13	40	46	15	0		0		0.0	0.00	28.98	29.90	4.8	22	6.2	21	31	16	31	13		
14	57	27	42	6	27	37	23	0		0		0.0	0.00	29.21	30.14	8.0	32	8.3	29	34	21	33	14		
15	45	24	35	-1	26	32	30	0		0		0.0	0.00	29.22	30.17	4.3	31	4.6	15	29	11	29	15		
16	44	24	34	-1	23	29	31	0	RA DZ BR BR HZ	0		0.0	0.00	29.26	30.21	3.1	36	3.6	17	01	15	04	16		
17	49	28	39	4	25	34	26	0		0		0.0	0.00	29.15	30.10	8.1	17	8.3	21	18	17	17	17		
18	67	34	51	17	36	44	14	0		0		0.0	0.00	28.88	29.80	10.5	17	10.6	29	18	22	19	18		
19	60	41	51	17	40	45	14	0		0		0.0	0.03	28.87	29.78	9.4	22	11.6	29	18	22	18	19		
20	43	34	39	6	35	37	26	0		0		0.0	0.00	29.10	30.03	2.7	18	5.9	16	29	13	30	20		
21	51	30	41	8	38	40	24	0	BR HZ BR HZ TSRA RA DZ BR	0		0.0	0.00	28.98	29.92	8.1	15	8.8	18	17	15	18	21		
22	57	37	47	15	41	44	18	0		0		0.0	0.00	29.08	30.01	0.9	19	4.1	13	20	10	06	22		
23	59	38	49	17	45	47	16	0		0		0.0	0.85	28.90	29.82	7.2	17	15.3	33*	26	24	09	23		
24	47	33	40	9	28	35	25	0		0		0.0	0.00	29.24	30.18	7.2	26	8.0	25	26	18	26	24		
25	46	27	37	6	26	33	28	0		0		0.0	0.00	29.18	30.13	7.6	19	8.0	20	19	16	18	25		
26	44	29	37	7	30	34	28	0	RA SN BR BR	0		T	0.05	28.86	29.79	6.6	20	8.3	20	19	16	18	26		
27	45	27	36	6	27	33	29	0		0		0.0	0.00	29.12	30.06	5.2	28	5.8	18	28	14	29	27		
28	43	22	33	4	23	29	32	0		0		0.0	0.00	29.49	30.45	3.5	28	4.8	14	26	11	30	28		
29	36	18	27	-2	17	24	38	0		0		0.0	0.00	29.73	30.70	5.8	31	6.2	20	32	16	33	29		
30	38	13*	26*	-2	16	23	39	0		0		0.0	0.00	29.68	30.65	5.9	18	6.1	21	18	15	18	30		
< MONTHLY AVERAGES										TOTALS-->			T	1.21	29.17	30.10	2.9	23	7.3	<- MONTHLY AVERAGES					
9.4										3.9		6.6				<----- DEPARTURE FROM NORMAL ----->		- .88		SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3					
DEGREE DAYS									GREATEST 24-HR PRECIPITATION: 0.85 DATE: 23				SEA LEVEL PRESSURE DATE TIME												
MONTHLY TOTAL DEPARTURE 681 -207									GREATEST 24-HR SNOWFALL: T DATE: 26				MAXIMUM : 30.78 29 2253												
SEASON TO DATE TOTAL DEPARTURE 1375 -230									GREATEST SNOW DEPTH: 0 DATE:				MINIMUM : 29.65 23 1453												
HEATING: 681 -207									NUMBER OF DAYS WITH		MAXIMUM TEMP ≥ 90: 0		MINIMUM TEMP ≤ 32: 18		PRECIPITATION ≥ 0.01 INCH : 4										
COOLING: 0 0											MAXIMUM TEMP ≤ 32 : 0		MINIMUM TEMP ≤ 0 : 0		PRECIPITATION ≥ 0.10 INCH : 2										
											THUNDERSTORMS : 2		HEAVY FOG : 0		SNOWFALL ≥ 1.0 INCH : 0										

NOVEMBER 1999
MADISON, WI

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

MADISON, WI

NOVEMBER 1999

MSN

WBAN # 14837

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													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			T	0.04	0.20	0.04	T					10		0.28	
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												16		0.00	
17													17												17		0.00	
18													18												18		0.00	
19													19			T	0.02	0.01	T	T		T	T	T	19		0.03	
20													20												20		0.00	
21													21												21		0.00	
22													22												22		0.00	
23		0.01	0.19	0.14	0.03	0.09	T	0.08	0.08	0.10	0.11	0.01	23	0.01								T	T	T	23		0.85	
24													24												24		0.00	
25													25												25		0.00	
26													26			T	0.04	0.01							26		0.05	
27													27												27		0.00	
28													28												28		0.00	
29													29												29		0.00	
30													30												30		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)												
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

**MADISON, WI
NOVEMBER 1999**

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 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.

DATE	SUNSHINE		CLOUDINESS (OKTAS)				VISIBILITY (MILES)		RESERVED
	TOTAL MINUTES	PERCENT POSSIBLE	SR-SS		MN-MN		MINIMUM	MAXIMUM	
			CEILOMETER	SATELLITE	CEILOMETER	SATELLITE			
01							7.00	10.00	
02							10.00	10.00	
03							10.00	10.00	
04							10.00	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							4.00	10.00	
11							9.00	10.00	
12							1.50	10.00	
13							1.00	10.00	
14							10.00	10.00	
15							10.00	10.00	
16							10.00	10.00	
17							9.00	10.00	
18							10.00	10.00	
19							4.00	10.00	
20							4.00	10.00	
21							1.50	7.00	
22							2.00	10.00	
23							1.00	10.00	
24							10.00	10.00	
25							10.00	10.00	
26							5.00	10.00	
27							7.00	10.00	
28							7.00	10.00	
29							10.00	10.00	
30							9.00	10.00	
MONTHLY AVGS							7.37	9.90	

SUNSHINE (MINUTES)

 Total: Possible:
 Percent Possible:

NUMBER OF DAYS WITH:
SKY CONDITION
 CLR PTLY CLDY CLOUDY MISSING
 30
MINIMUM VISIBILITY (MILES)
 <=0.25 <=3.0 >=7.0
 0 5 21

OBSERVATIONS AT 3-HOURLY INTERVALS

MADISON, WI

NOVEMBER 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: 0632			NOV 01	SUNSET: 1650									SUNRISE: 0640			NOV 07	SUNSET: 1642									
03	CLR	NC			10.00	46	38	42	73	0	00	29.11	30.03	03	CLR	NC				10.00	26	19	24	75	0	00	29.51	30.46	
06	CLR	NC			10.00	49	42	46	77	6	19	29.07	30.00	06	CLR	NC				10.00	25	18	23	75	0	00	29.52	30.48	
09	BKN	095			7.00	61	52	56	72	9	19	29.04	29.96	09	CLR	NC				10.00	43	25	36	49	5	13	29.52	30.47	
12	BKN	110			10.00	67	53	59	61	14	24	28.97	29.88	12	CLR	NC				10.00	54	27	42	35	9	19	29.46	30.42	
15	CLR	NC			10.00	65	37	51	36	17	27	28.96	29.87	15	CLR	NC				10.00	57	26	44	30	10	16	29.37	30.32	
18	CLR	NC			10.00	50	29	41	44	14	29	29.04	29.96	18	CLR	NC				10.00	47	29	39	50	3	18	29.35	30.29	
21	FEW	NC			10.00	46	27	38	47	15	31	29.05	29.97	21	CLR	NC				10.00	47	29	39	50	6	19	29.32	30.26	
24	FEW	NC			10.00	42	26	36	53	8	27	29.08	30.01	24	CLR	NC				10.00	43	29	37	58	6	18	29.27	30.20	
			SUNRISE: 0633			NOV 02	SUNSET: 1649									SUNRISE: 0641			NOV 08	SUNSET: 1641									
03	OVC	049			10.00	42	25	35	51	12	32	29.07	29.99	03	CLR	NC				10.00	45	25	37	46	6	19	29.22	30.15	
06	FEW	NC			10.00	35	24	31	64	9	31	29.10	30.03	06	CLR	NC				10.00	42	27	36	55	6	19	29.17	30.11	
09	CLR	NC			10.00	38	21	32	51	17	33	29.12	30.06	09	CLR	NC				10.00	52	36	45	55	8	18	29.15	30.08	
12	BKN	049			10.00	40	18	32	41	13	32	29.09	30.03	12	CLR	NC				10.00	67	47	56	49	10	19	29.08	30.00	
15	SCT	NC			10.00	43	17	34	35	14	34	29.06	30.00	15	CLR	NC				10.00	73	51	60	46	8	23	29.01	29.93	
18	BKN	060			10.00	39	17	31	41	9	31	29.08	30.03	18	CLR	NC				10.00	63	51	56	65	9	19	29.00	29.92	
21	BKN	055			10.00	35	18	29	50	9	31	29.09	30.03	21	CLR	NC				10.00	62	50	55	65	5	21	28.98	29.91	
24	CLR	NC			10.00	29	18	25	64	6	28	29.10	30.04	24	CLR	NC				10.00	62	50	55	65	8	21	28.98	29.90	
			SUNRISE: 0634			NOV 03	SUNSET: 1647									SUNRISE: 0642			NOV 09	SUNSET: 1640									
03	CLR	NC			10.00	28	18	25	66	7	29	29.08	30.02	03	CLR	NC				10.00	61	50	55	67	8	22	28.98	29.89	
06	CLR	NC			10.00	26	18	23	71	6	31	29.09	30.04	06	CLR	NC				10.00	58	49	53	72	12	21	28.98	29.88	
09	CLR	NC			10.00	34	20	29	56	9	32	29.14	30.08	09	CLR	NC				10.00	61	49	54	65	12	23	28.98	29.90	
12	CLR	NC			10.00	41	17	32	38	12	30	29.11	30.06	12	CLR	NC				10.00	70	50	59	49	15	22	28.93	29.83	
15	CLR	NC			10.00	48	17	36	29	13	25	29.08	30.02	15	CLR	NC				10.00	72	50	59	46	9	22	28.89	29.78	
18	CLR	NC			10.00	35	19	29	52	0	00	29.10	30.05	18	CLR	NC				10.00	67	49	57	53	8	19	28.89	29.79	
21	CLR	NC			10.00	26	20	24	78	0	00	29.12	30.07	21	BKN	065				10.00	59	49	54	69	7	16	28.89	29.80	
24	CLR	NC			10.00	25	18	23	75	0	00	29.09	30.04	24	FEW	NC				10.00	62	48	54	60	9	19	28.85	29.75	
			SUNRISE: 0636			NOV 04	SUNSET: 1646									SUNRISE: 0643			NOV 10	SUNSET: 1639									
03	CLR	NC			10.00	23	19	22	85	0	00	29.09	30.03	03	CLR	NC				9.00	57	47	52	69	6	20	28.82	29.72	
06	CLR	NC			10.00	22	18	21	85	0	00	29.09	30.04	06	FEW	NC				9.00	47	44	46	90	0	00	28.82	29.73	
09	CLR	NC			10.00	40	25	34	55	6	17	29.09	30.04	09	CLR	NC				10.00	57	48	52	72	3	VR	28.85	29.76	
12	CLR	NC			10.00	57	28	44	33	10	20	29.09	30.03	12	SCT	NC				8.00	59	49	54	69	16	03	28.87	29.78	
15	CLR	NC			10.00	61	27	46	27	10	21	29.05	29.99	15	OVC	032				10.00	49	42	46	77	23	02	28.98	29.91	
18	CLR	NC			10.00	56	31	45	39	12	18	29.05	29.99	18	OVC	009			RA BR	4.00	42	41	42	96	17	01	29.14	30.08	
21	CLR	NC			10.00	54	31	44	42	14	19	29.05	29.98	21	OVC	014				10.00	39	37	38	93	16	36	29.24	30.17	
24	CLR	NC			10.00	50	31	42	48	7	20	29.05	29.97	24	OVC	021				10.00	39	35	37	86	14	01	29.30	30.23	
			SUNRISE: 0637			NOV 05	SUNSET: 1645									SUNRISE: 0645			NOV 11	SUNSET: 1638									
03	CLR	NC			10.00	49	31	41	50	8	22	29.04	29.96	03	OVC	021				10.00	38	33	36	83	10	01	29.38	30.32	
06	CLR	NC			10.00	47	32	40	56	5	22	29.06	29.99	06	OVC	017				10.00	38	34	36	86	7	04	29.40	30.35	
09	CLR	NC			10.00	51	32	43	48	8	26	29.15	30.07	09	OVC	017				10.00	39	33	37	79	8	04	29.48	30.43	
12	CLR	NC			10.00	57	33	46	41	12	30	29.20	30.12	12	BKN	021				10.00	41	33	38	74	3	11	29.45	30.40	
15	CLR	NC			10.00	59	26	45	28	9	31	29.24	30.16	15	FEW	NC				10.00	43	34	39	71	6	16	29.43	30.38	
18	CLR	NC			10.00	49	29	40	46	6	27	29.31	30.24	18	BKN	021				10.00	43	36	40	76	3	16	29.41	30.36	
21	CLR	NC			10.00	44	28	38	53	6	28	29.37	30.32	21	OVC	017				10.00	44	38	41	79	12	19	29.37	30.32	
24	CLR	NC			10.00	31	24	28	76	0	00	29.40	30.35	24	FEW	NC				9.00	42	39	41	89	3	21	29.37	30.30	
			SUNRISE: 0638			NOV 06	SUNSET: 1644									SUNRISE: 0646			NOV 12	SUNSET: 1637									
03	CLR	NC			10.00	31	20	27	63	6	29	29.44	30.38	03	CLR	NC				5.00 BR	39	37	38	93	0	00	29.33	30.27	
06	CLR	NC			10.00	27	21	25	78	0	00	29.47	30.43	06	CLR	NC				3.00 BR	36	35	36	97	0	00	29.31	30.24	
09	CLR	NC			10.00	42	16	33	35	0	00	29.51	30.46	09	CLR	NC				3.00 BR	45	41	43	86	3	VR	29.27	30.20	
12	CLR	NC			10.00	49	12	36	23	5	VR	29.50	30.45	12	CLR	NC				6.00 HZ	52	44	48	75	6	25	29.22	30.15	
15	CLR	NC			10.00	53	13	38	20	3	33	29.48	30.43	15	CLR	NC				10.00	57	46	51	67	6	29	29.18	30.11	
18	CLR	NC			10.00	39	19	32	45	0	00	29.49	30.45	18	CLR	NC				5.00 BR	46	43	45	89	0	00	29.19	30.13	
21	CLR	NC																											

OBSERVATIONS AT 3-HOURLY INTERVALS

MADISON, WI

NOVEMBER 1999

MSN

WBAN # 14837

HOUR (LST)			SATELLITE		WEATHER	TEMPERATURE ° F				WIND	PRESSURE (INCHES, HG)		HOUR (LST)			SATELLITE		WEATHER	TEMPERATURE ° F				WIND	PRESSURE (INCHES, HG)											
			OBSERVATION TIME (LST)	EFF CLD AMT Okta		VISIBILITY (MILES)	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG		STATION	SEA LEVEL				OBSERVATION TIME (LST)	EFF CLD AMT Okta		VISIBILITY (MILES)	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG		STATION	SEA LEVEL										
	SKY COVER	CEILING 100'S OF FT												DRY BULB	DEW POINT											WET BULB	SKY COVER	CEILING 100'S OF FT	DRY BULB	DEW POINT	WET BULB				
SUNRISE: 0647						NOV 13						SUNSET: 1636						SUNRISE: 0655						NOV 19						SUNSET: 1631					
03	CLR	NC			1.00	BCFG	31	31	31	100	0	00	29.13	30.06	03	SCT	NC		10.00	57	39	48	51	14	18	28.78	29.69								
06	CLR	NC			3.00	BCFG	32	32	32	100	3	16	29.08	30.02	06	BKN	110		10.00	56	42	49	60	12	18	28.78	29.69								
09	CLR	NC			2.00	BCFG	47	44	46	90	9	19	29.05	29.98	09	BKN	038		10.00	56	46	51	70	12	19	28.79	29.70								
12	CLR	NC			8.00		63	47	54	56	10	20	28.96	29.88	12	BKN	060		10.00	53	36	45	52	15	24	28.82	29.73								
15	CLR	NC			10.00		68	42	54	39	12	22	28.86	29.78	15	OVC	030		5.00	43	38	41	82	10	22	28.88	29.79								
18	CLR	NC			10.00		64	44	54	48	8	21	28.86	29.78	18	OVC	014		10.00	41	38	40	89	9	24	28.95	29.87								
21	CLR	NC			10.00		60	41	50	50	8	26	28.88	29.79	21	OVC	007		4.00	42	40	41	92	10	27	28.99	29.92								
24	CLR	NC			10.00		58	39	49	50	12	32	28.94	29.85	24	OVC	011		10.00	41	38	40	89	10	30	29.03	29.96								
SUNRISE: 0649						NOV 14						SUNSET: 1635						SUNRISE: 0656						NOV 20						SUNSET: 1630					
03	CLR	NC			10.00		46	31	40	56	5	32	29.02	29.94	03	OVC	012		8.00	39	36	38	89	6	29	29.06	30.00								
06	CLR	NC			10.00		44	28	38	53	10	32	29.11	30.03	06	OVC	016		9.00	39	34	37	82	3	VR	29.11	30.05								
09	CLR	NC			10.00		43	27	37	53	15	34	29.20	30.13	09	SCT	NC		9.00	38	33	36	83	6	VR	29.14	30.08								
12	CLR	NC			10.00		48	27	39	44	12	34	29.25	30.17	12	OVC	015		8.00	41	35	38	79	6	18	29.13	30.06								
15	CLR	NC			10.00		50	27	40	41	9	32	29.26	30.19	15	FEW	NC		7.00	43	37	40	80	7	16	29.08	30.02								
18	CLR	NC			10.00		43	25	36	49	7	30	29.31	30.24	18	CLR	NC		5.00	37	34	36	89	6	14	29.09	30.03								
21	CLR	NC			10.00		33	25	30	72	0	00	29.32	30.27	21	CLR	NC		4.00	35	33	34	93	6	16	29.08	30.02								
24	CLR	NC			10.00		28	24	27	85	0	00	29.33	30.27	24	CLR	NC		4.00	36	34	35	93	8	15	29.07	30.01								
SUNRISE: 0650						NOV 15						SUNSET: 1634						SUNRISE: 0657						NOV 21						SUNSET: 1629					
03	CLR	NC			10.00		29	24	27	82	3	02	29.30	30.24	03	CLR	NC		4.00	32	31	32	96	5	12	29.05	30.00								
06	CLR	NC			10.00		24	19	22	81	0	00	29.28	30.23	06	CLR	NC		4.00	32	31	32	96	6	16	29.04	29.98								
09	CLR	NC			10.00		35	28	32	76	5	29	29.26	30.21	09	CLR	NC		2.50	37	35	36	93	10	17	29.04	29.99								
12	OVC	095			10.00		45	26	37	48	9	29	29.22	30.16	12	BKN	009		2.50	43	39	41	86	12	14	28.99	29.93								
15	OVC	095			10.00		45	27	38	49	10	34	29.18	30.12	15	CLR	NC		7.00	48	40	44	74	9	13	28.93	29.86								
18	OVC	070			10.00		43	28	37	56	3	31	29.17	30.11	18	BKN	024		6.00	43	39	41	86	6	09	28.92	29.85								
21	FEW	NC			10.00		39	27	34	62	5	32	29.17	30.11	21	OVC	020		5.00	50	46	48	86	12	16	28.93	29.85								
24	CLR	NC			10.00		32	25	29	75	5	30	29.18	30.12	24	OVC	075		5.00	50	46	48	86	9	19	28.91	29.83								
SUNRISE: 0651						NOV 16						SUNSET: 1633						SUNRISE: 0659						NOV 22						SUNSET: 1628					
03	CLR	NC			10.00		29	24	27	82	0	00	29.20	30.14	03	BKN	060		5.00	47	44	46	90	10	20	28.93	29.85								
06	CLR	NC			10.00		27	22	25	81	3	35	29.25	30.19	06	CLR	NC		3.00	42	41	42	96	0	00	28.98	29.91								
09	CLR	NC			10.00		34	28	32	79	9	01	29.29	30.24	09	CLR	NC		2.50	46	42	44	86	6	23	29.05	29.98								
12	CLR	NC			10.00		40	27	35	60	5	33	29.29	30.24	12	CLR	NC		7.00	53	42	48	66	6	VR	29.09	30.02								
15	CLR	NC			10.00		44	21	35	40	7	34	29.27	30.21	15	CLR	NC		10.00	56	42	49	60	5	34	29.12	30.04								
18	CLR	NC			10.00		34	21	29	59	0	00	29.28	30.24	18	CLR	NC		6.00	43	39	41	86	0	00	29.18	30.12								
21	CLR	NC			10.00		29	21	26	72	0	00	29.28	30.23	21	CLR	NC		6.00	38	36	37	93	0	00	29.21	30.14								
24	CLR	NC			10.00		28	23	26	81	0	00	29.27	30.22	24	CLR	NC		5.00	43	40	42	89	8	04	29.15	30.08								
SUNRISE: 0652						NOV 17						SUNSET: 1632						SUNRISE: 0660						NOV 23						SUNSET: 1628					
03	CLR	NC			10.00		33	24	30	70	3	19	29.26	30.20	03	OVC	036		2.00	47	45	46	93	20	08	29.06	29.99								
06	FEW	NC			10.00		33	27	31	78	7	19	29.23	30.17	06	OVC	006		2.00	50	49	49	96	18	12	28.95	29.88								
09	CLR	NC			10.00		38	30	35	73	9	19	29.25	30.20	09	OVC	060		1.50	56	54	55	93	13	16	28.89	29.81								
12	CLR	NC			10.00		46	29	39	51	13	19	29.18	30.12	12	OVC	012		2.00	57	55	56	93	14	17	28.80	29.71								
15	CLR	NC			10.00		48	23	38	37	14	16	29.09	30.02	15	OVC	110		8.00	58	54	56	87	15	18	28.74	29.65								
18	CLR	NC			10.00		41	20	33	43	7	14	29.05	29.99	18	OVC	016		10.00	47	40	44	77	16	23	28.81	29.72								
21	BKN	070			10.00		43	23	35	45	10	17	29.05	29.98	21	OVC	018		10.00	38	33	36	83	14	26	28.90	29.82								
24	CLR	NC			10.00		40	25	34	55	9	17	29.00	29.93	24	OVC	022		10.00	38	31	35	76	12	27	28.99	29.92								
SUNRISE: 0654						NOV 18						SUNSET: 1631						SUNRISE: 0701						NOV 24						SUNSET: 1627					
03	CLR	NC			10.00		34	25	31	70	3	14	28.97	29.90	03	OVC	022		10.00	38	32	36	79	15	26	29.09	30.02								
06	CLR	NC			10.00		38	28	34	68	6	17	28.93	29.86	06	OVC	018		10.00	37	31	35	79	9	26	29.15	30.09								
09	CLR	NC			10.00		45	33	40	63	8	18	28.93	29.85	09	BKN	016		10.00	34	28	32	79	9	29	29.25	30.19								
12	CLR	NC			10.00		60	42	51	52	14	17	28.87	29.79	12	CLR	NC		10.00	42	26	36	53	7	25	29.28	30.22								
15	CLR	NC			10.00		66	44	54	45	17	16	28.81	29.73	15	CLR	NC		10.00	46	22	37	38	7	29	29.29	30.23								
18	CLR	NC			10.00		58	44	51	60	8	17	28.83	29.75	18	CLR	NC		10.00	38	24	33	57	5	23	29.32	30.26								
21	CLR	NC			10.00		60	41	50	50	17	17	28.84	29.75	21	CLR	NC		10.00	39	28	35	65	7	23	29.33	30.27								
24	SCT	NC			10.00		60	38	49	44	20	19	28.80	29.71	24	CLR	NC		10.00	35	30	33	82	3	19	29.32	30.27								

OBSERVATIONS AT 3-HOURLY INTERVALS

MADISON, WI

NOVEMBER 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		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		DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL
					SUNRISE: 0702	NOV 25		SUNSET: 1626																			
03	CLR	NC				34	30	32	85	6	20	29.29	30.23														
06	CLR	NC				32	27	30	82	6	20	29.27	30.22														
09	CLR	NC				36	28	33	73	8	20	29.27	30.21														
12	CLR	NC				44	24	36	45	12	20	29.21	30.15														
15	CLR	NC				45	21	36	39	15	18	29.14	30.08														
18	CLR	NC				39	28	35	65	8	18	29.10	30.04														
21	CLR	NC				32	25	29	75	6	16	29.07	30.01														
24	CLR	NC				30	25	28	82	7	16	29.01	29.95														
					SUNRISE: 0703	NOV 26		SUNSET: 1626																			
03	CLR	NC				34	25	31	70	7	19	28.96	29.89														
06	BKN	120				31	26	29	82	6	17	28.89	29.83														
09	OVC	095				35	28	32	76	9	17	28.87	29.80														
12	BKN	100				42	29	37	60	14	17	28.79	29.72														
15	OVC	019			-RA	40	32	37	73	9	23	28.77	29.70														
18	BKN	035				36	34	35	93	7	21	28.80	29.73														
21	OVC	009			BR	38	35	37	89	8	27	28.85	29.78														
24	BKN	011			BR	36	34	35	93	0	00	28.89	29.82														
					SUNRISE: 0704	NOV 27		SUNSET: 1625																			
03	SCT	NC				36	33	35	89	5	26	28.93	29.86														
06	BKN	110				35	30	33	82	5	24	28.98	29.92														
09	OVC	085				36	28	33	73	3	27	29.05	29.99														
12	CLR	NC				42	27	36	55	12	26	29.09	30.03														
15	CLR	NC				44	24	36	45	8	28	29.15	30.09														
18	CLR	NC				35	24	31	64	0	00	29.23	30.17														
21	CLR	NC				33	23	29	67	6	30	29.29	30.23														
24	CLR	NC				30	24	28	79	3	30	29.37	30.32														
					SUNRISE: 0706	NOV 28		SUNSET: 1625																			
03	CLR	NC				28	22	26	78	5	29	29.40	30.35														
06	CLR	NC				25	22	24	88	0	00	29.44	30.40														
09	CLR	NC				30	25	28	82	7	VR	29.48	30.44														
12	CLR	NC				38	25	33	60	6	30	29.50	30.46														
15	CLR	NC				42	24	35	49	8	27	29.50	30.46														
18	CLR	NC				34	24	30	67	5	28	29.53	30.49														
21	CLR	NC				30	22	27	72	3	28	29.56	30.52														
24	CLR	NC				29	22	27	75	5	26	29.58	30.54														
					SUNRISE: 0707	NOV 29		SUNSET: 1625																			
03	CLR	NC				28	20	25	72	3	30	29.61	30.57														
06	CLR	NC				27	17	24	66	9	33	29.65	30.62														
09	CLR	NC				27	18	24	69	14	32	29.74	30.70														
12	CLR	NC				33	18	28	54	9	31	29.76	30.72														
15	CLR	NC				35	14	28	42	7	32	29.77	30.74														
18	CLR	NC				27	16	24	63	3	29	29.78	30.76														
21	CLR	NC				21	14	19	74	0	00	29.79	30.77														
24	CLR	NC				19	15	18	85	0	00	29.79	30.78														
					SUNRISE: 0708	NOV 30		SUNSET: 1624																			
03	CLR	NC				17	13	16	84	0	00	29.77	30.76														
06	CLR	NC				15	13	15	91	0	00	29.77	30.74														
09	CLR	NC				24	17	22	75	0	00	29.78	30.76														
12	CLR	NC				34	17	28	50	10	22	29.72	30.69														
15	CLR	NC				37	16	30	42	13	17	29.63	30.60														
18	FEW	NC				30	17	26	59	7	16	29.61	30.58														
21	CLR	NC				32	16	27	52	10	18	29.55	30.52														
24	CLR	NC				32	19	28	59	13	19	29.50	30.46														

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			38	30	35	75	29.16	30.10	8.95	6	2	25
02			38	30	34	74	29.16	30.10	8.83	6	2	23
03			37	30	34	75	29.16	30.10	8.73	6	2	24
04			37	29	34	77	29.16	30.09	8.70	6	2	23
05			36	29	33	77	29.16	30.10	8.78	5	2	24
06			36	29	33	79	29.17	30.10	8.67	5	2	21
07			36	30	34	79	29.17	30.11	8.40	6	3	19
08			38	31	35	77	29.18	30.12	8.19	6	3	20
09			42	32	38	70	29.19	30.13	8.52	7	2	23
10			45	33	40	64	29.19	30.13	8.90	9	3	24
11			47	33	41	59	29.18	30.12	9.03	9	4	22
12			49	33	42	55	29.16	30.10	9.05	10	5	23
13			51	32	43	51	29.15	30.09	9.33	10	5	23
14			51	32	43	49	29.14	30.08	9.50	10	4	23
15			51	31	43	49	29.14	30.07	9.47	10	4	23
16			49	31	42	52	29.15	30.08	9.17	9	3	23
17			46	31	40	59	29.15	30.09	8.97	6	3	22
18			44	31	38	64	29.16	30.10	9.13	6	3	22
19			43	31	38	66	29.17	30.11	9.20	7	3	23
20			41	31	37	68	29.17	30.11	9.07	7	3	23
21			41	31	36	69	29.18	30.11	8.93	7	3	23
22			40	30	36	71	29.18	30.11	9.07	7	3	23
23			39	30	35	73	29.18	30.11	9.07	6	3	23
24			38	30	35	74	29.18	30.11	9.02	6	3	22

SUPPLEMENTARY HOURLY PRECIPITATION

UNIVERSAL RAIN GAUGE (WATER EQUIVALENT IN INCHES)

NOVEMBER 1999
MADISON, WI

LATITUDE 43° 8'N
LONGITUDE 89° 20'

A.M. HOUR (L.S.T.) ENDING AT														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												01	0.00				
02												02												02	0.00				
03												03												03	0.00				
04												04												04	0.00				
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		0.01	0.01	0.03	0.12	0.10	0.01					10	0.28				
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												16	0.00				
17												17												17	0.00				
18												18												18	0.00				
19												19		0.01	0.01	0.01	0.01							19	0.04				
20												20												20	0.00				
21												21												21	0.00				
22												22												22	0.00				
23	0.08	0.11	0.17	0.01	0.12	0.01	0.13	0.13	0.05	0.03	0.01	23												23	0.85				
24												24												24	0.00				
25												25												25	0.00				
26												26	0.03	0.02										26	0.05				
27												27												27	0.00				
28												28												28	0.00				
29												29												29	0.00				
30												30												30	0.00				
PUBLISHED BY: NCDC, ASHEVILLE, NC.																						MONTHLY TOTAL			1.22				

SUPPLEMENTARY MAXIMUM SHORT DURATION PRECIPITATION (MSDP)

TIME PERIOD (MINUTES)	5	10	15	20	30	45	60	80	100	120	150	180
PRECIPITATION (INCHES)					0.15	0.15	0.20	0.25	0.28	0.28	0.36	0.36
ENDED: DATE					23	23	23	23	23	23	23	23
ENDED: TIME					0330	0330	0330	0400	0400	0400	0400	0400

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.



**NOVEMBER 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
Local Climatological Data is available at www.ncdc.noaa.gov

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