



# AUGUST 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	77	60	69	-2	57	62	0	4		0		0.0	0.00	29.19	30.11	7.1	34	7.3	20	29	14	31	01	
02	77	57	67	-4	57	61	0	2		0		0.0	0.00	29.33	30.25	3.9	34	4.2	15	36	13	36	02	
03	80	56	68	-3	60	64	0	3	RA BCFG BR	0		0.0	0.21	29.21	30.13	4.1	24	5.3	17	25	13	22	03	
04	78	63	71	0	59	64	0	6	RA BR	0		0.0	0.07	29.08	30.00	5.0	31	6.4	20	36	14	32	04	
05	77	56	67	-3	57	62	0	2	BR	0		0.0	0.00	29.08	29.99	2.8	29	5.3	16	26	11	27	05	
06	83	65	74	4	63	66	0	9		0		0.0	0.00	29.04	29.96	1.7	17	6.4	15	24	11	06	06	
07	73	64	69	-1	63	65	0	4	RA BCFG BR HZ	0		0.0	0.63	28.93	29.84	1.4	20	5.5	16	19	14	19	07	
08	70	53	62	-8	54	58	3	0	BR	0		0.0	0.00	29.11	30.03	8.6	03	9.2	24	01	20	01	08	
09	67	52	60	-10	56	59	5	0	TSRA RA BR	0		0.0	0.20	29.00	29.92	5.7	18	6.2	36*	19	28*	19	09	
10	82	63	73	3	64	67	0	8	BR	0		0.0	0.00	28.83	29.74	3.3	31	4.8	18	30	14	30	10	
11	80	57	69	0	62	65	0	4	MIFG BCFG BR	0		0.0	0.00	29.01	29.92	1.1	21	2.5	10	18	9	18	11	
12	78	61	70	1	66	68	0	5	TS RA BR	0		0.0	0.22	28.87	29.78	10.1	16	10.5	28	17	24	16	12	
13	73	54	64	-5	61	63	1	0	BR	0		0.0	0.00	28.87	29.78	6.2	32	8.5	24	01	20	36	13	
14	74	51	63	-6	51	56	2	0		0		0.0	0.00	29.19	30.12	4.2	36	5.2	20	01	17	01	14	
15	76	50	63	-6	55	60	2	0		0		0.0	0.00	29.21	30.13	8.4	18	8.5	22	18	18	17	15	
16	79	64	72	3	62	65	0	7	RA BR	0		0.0	0.15	29.12	30.04	8.1	20	8.8	23	19	17	17	16	
17	80	59	70	2	62	65	0	5	BCFG BR	0		0.0	0.00	29.14	30.06	4.9	30	5.3	20	33	16	32	17	
18	70	58	64	-4	62	63	1	0	RA MIFG BR	0		0.0	0.32	29.11	30.03	4.4	12	5.2	14	15	11	14	18	
19	74	56	65	-3	61	62	0	0	RA BR	0		0.0	0.03	29.14	30.06	7.5	04	7.8	21	02	17	01	19	
20	77	50	64	-4	58	60	1	0	MIFG BR	0		0.0	0.00	29.22	30.15	0.9	04	2.2	13	35	8	08	20	
21	77	56	67	0	60	62	0	2	BCFG	0		0.0	0.00	29.19	30.11	1.0	24	1.8	10	25	8	26	21	
22	74	57	66	-1	60	62	0	1	RA BR	0		0.0	0.02	29.10	30.02	5.3	18	5.7	16	17	13	16	22	
23	70	62	66	-1	63	64	0	1	TS TSRA TSRAGS RA BR	0		T	1.27	28.92	29.84	6.7	15	7.5	31	13	24	14	23	
24	73	63	68	1	64	66	0	3	RA BR HZ	0		0.0	0.14	28.93	29.85	8.1	04	8.8	22	06	16	06	24	
25	80	61	71	5	63	65	0	6	BR HZ	0		0.0	0.00	29.01	29.92	5.6	02	6.2	18	01	16	04	25	
26	83	56	70	4	64	66	0	5	FG BCFG BR HZ	0		0.0	0.00	29.00	29.92	1.2	34	1.6	13	32	9	36	26	
27	84	60	72	6	68	70	0	7	BCFG BR HZ	0		0.0	0.00	29.04	29.95	2.9	22	3.8	13	22	10	22	27	
28	87*	64	76*	10	68	71	0	11	FG+ BCFG BR	0		0.0	0.00	29.12	30.03	2.7	33	3.6	11	30	9	32	28	
29	73	50	62	-4	52	57	3	0		0		0.0	0.00	29.30	30.23	8.2	04	8.7	22	04	17	04	29	
30	72	47*	60*	-5	51	54	5	0		0		0.0	0.00	29.34	30.27	5.8	12	7.2	20	14	16	13	30	
31	76	48	62	-3	53	58	3	0	BR	0		0.0	0.00	29.23	30.16	6.4	16	6.5	18	16	15	15	31	
76.6 57.2 66.9 ■■ 59.9 62.9 0.8 3.1 < MONTHLY AVERAGES TOTALS-->												T	3.26	29.09	30.01	0.2	08	6.0	<- MONTHLY AVERAGES					
-3.0 0.3 -1.4 ■■ <----- DEPARTURE FROM NORMAL ----->												- .78		SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3										
DEGREE DAYS									GREATEST 24-HR PRECIPITATION: 1.41 DATE :23-24					SEA LEVEL PRESSURE DATE TIME										
MONTHLY TOTAL DEPARTURE									GREATEST 24-HR SNOWFALL: T DATE :23					MAXIMUM : 30.34 30 1053										
SEASON TO DATE TOTAL DEPARTURE									GREATEST SNOW DEPTH: 0 DATE :					MINIMUM : 29.56 13 0153										
HEATING: 26 -12 26 -24									NUMBER OF DAYS WITH → MAXIMUM TEMP ≥ 90: 0					MINIMUM TEMP ≤ 32: 0				PRECIPITATION ≥ 0.01 INCH : 11						
COOLING: 95 -46 595 122									MAXIMUM TEMP ≤ 32 : 0					MINIMUM TEMP ≤ 0 : 0				PRECIPITATION ≥ 0.10 INCH : 8						
									THUNDERSTORMS : 3					HEAVY FOG : 1				SNOWFALL ≥ 1.0 INCH : 0						

AUGUST 1999  
MADISON, WI

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

MADISON, WI

AUGUST 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	0.07	0.01											01												T	0.20	01	0.20	0.08	0.00
02													0.00																	
03													0.21																	
04													0.07																	
05													0.00																	
06					T	0.01	0.18	0.15	0.09	0.20	T		06														06	0.21	0.00	0.00
07													0.63																	
08													0.00																	
09													0.20																	
10													0.00																	
11													11														11	0.21	0.00	0.00
12													0.22																	
13													0.00																	
14													0.00																	
15													0.00																	
16							T	T	0.11	0.02	0.02	T	16														16	0.01	0.00	0.15
17													0.00																	
18													0.32																	
19													0.03																	
20													0.00																	
21	T	T		T	0.01	T					T		21			T	0.01	0.01	0.02	0.21	0.02					21	0.01	0.00	0.00	
22													0.02																	
23													0.02																	
24													0.14																	
25													0.00																	
26			T	T	0.03	T			0.05	0.26	T		26			0.01	T	0.01	T		T					26	0.00	0.00	0.00	
27													0.02																	
28													1.27																	
29													0.14																	
30													0.00																	
31													31													31	0.00	0.00	0.00	
02													0.00																	
03													0.21																	
04													0.07																	
05													0.00																	
06					T	0.01	0.18	0.15	0.09	0.20	T		06														06	0.21	0.00	0.00
07													0.63																	
08													0.00																	
09													0.20																	
10													0.00																	
11													11														11	0.21	0.00	0.00
12													0.22																	
13													0.00																	
14													0.00																	
15													0.00																	
16							T	T	0.11	0.02	0.02	T	16														16	0.01	0.00	0.15
17													0.00																	
18													0.32																	
19													0.03																	
20													0.00																	
21	T	T		T	0.01	T					T		21			T	0.01	0.01	0.02	0.21	0.02					21	0.01	0.00	0.00	
22													0.02																	
23													0.02																	
24													0.14																	
25													0.00																	
26			T	T	0.03	T			0.05	0.26	T		26			0.01	T	0.01	T		T					26	0.00	0.00	0.00	
27													0.02																	
28													1.27																	
29													0.14																	
30													0.00																	
31													31													31	0.00	0.00	0.00	
02													0.00																	
03													0.21																	
04													0.07																	
05													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  
AUGUST 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							10.00	10.00	
02							10.00	10.00	
03							3.00	10.00	
04							4.00	10.00	
05							2.50	10.00	
06							10.00	10.00	
07							2.00	10.00	
08							4.00	10.00	
09							5.00	10.00	
10							4.00	10.00	
11							1.00	10.00	
12							1.00	10.00	
13							3.00	10.00	
14							10.00	10.00	
15							10.00	10.00	
16							6.00	10.00	
17							6.00	10.00	
18							2.50	10.00	
19							3.00	10.00	
20							1.50	10.00	
21							7.00	10.00	
22							4.00	10.00	
23							1.75	10.00	
24							1.50	6.00	
25							1.00	10.00	
26							.50	10.00	
27							1.00	9.00	
28							<.25	10.00	
29							10.00	10.00	
30							8.00	10.00	
31							5.00	10.00	
<b>MONTHLY AVGS</b>							4.46	9.84	
<p align="center"><b>SUNSHINE (MINUTES)</b></p> <p>Total:                  Possible:</p> <p align="center">Percent Possible:</p>									
<p align="center"><b>NUMBER OF DAYS WITH:</b></p> <p align="center"><b>SKY CONDITION</b></p> <p align="center">CLR   PTLY CLDY   CLOUDY   MISSING</p> <p align="center">31</p> <p align="center"><b>MINIMUM VISIBILITY (MILES)</b></p> <p align="center">&lt;=0.25      &lt;=3.0      &gt;=7.0</p> <p align="center">1                15             8</p>									

## OBSERVATIONS AT 3-HOURLY INTERVALS

MADISON, WI

AUGUST 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: 0447				AUG 01				SUNSET: 1920				SUNRISE: 0454				AUG 07				SUNSET: 1913											
03	CLR	NC			10.00	62	56	59	81	7	33	29.08	30.00	03	BKN	065			10.00	66	58	61	75	9	17	29.01	29.92				
06	CLR	NC			10.00	62	56	59	81	3	33	29.14	30.06	06	OVC	050			5.00	-RA	BR	67	64	65	91	10	18	28.97	29.87		
09	CLR	NC			10.00	71	56	62	59	12	36	29.19	30.11	09	OVC	039			4.00	-RA	BR	66	62	64	87	9	15	28.91	29.82		
12	CLR	NC			10.00	74	56	63	54	10	32	29.21	30.13	12	OVC	015			4.00	BR		68	65	66	90	0	00	28.87	29.78		
15	CLR	NC			10.00	76	57	64	52	6	36	29.20	30.12	15	OVC	027			4.00	HZ		72	67	69	84	10	29	28.87	29.78		
18	FEW	NC			10.00	74	56	63	54	7	34	29.21	30.13	18	OVC	029			5.00	HZ		70	65	67	84	3	34	28.90	29.81		
21	CLR	NC			10.00	66	58	61	75	3	34	29.26	30.19	21	CLR	NC			6.00	BR		66	63	64	90	3	25	28.94	29.85		
24	CLR	NC			10.00	64	58	60	81	6	32	29.29	30.21	24	BKN	010			4.00	BCFG		66	64	65	93	5	29	28.96	29.87		
SUNRISE: 0448				AUG 02				SUNSET: 1919				SUNRISE: 0455				AUG 08				SUNSET: 1911											
03	CLR	NC			10.00	60	57	58	90	7	33	29.31	30.23	03	OVC	013			10.00	64	60	62	87	10	35	29.00	29.92				
06	CLR	NC			10.00	60	57	58	90	3	34	29.34	30.26	06	BKN	021			10.00	60	54	57	80	15	01	29.09	30.01				
09	CLR	NC			10.00	71	55	62	57	6	35	29.36	30.28	09	BKN	022			10.00	62	52	56	70	16	05	29.14	30.06				
12	SCT	NC			10.00	73	55	62	53	8	32	29.35	30.27	12	OVC	032			10.00	64	52	57	65	16	02	29.16	30.08				
15	SCT	NC			10.00	77	56	64	48	7	35	29.33	30.25	15	SCT	NC			10.00	70	53	60	55	10	03	29.14	30.06				
18	CLR	NC			10.00	74	58	64	57	0	00	29.31	30.23	18	FEW	NC			10.00	67	52	58	59	7	06	29.13	30.05				
21	CLR	NC			10.00	63	59	61	87	0	00	29.32	30.24	21	CLR	NC			10.00	56	54	55	93	0	00	29.14	30.06				
24	CLR	NC			10.00	60	57	58	90	0	00	29.31	30.23	24	CLR	NC			10.00	52	51	52	97	0	00	29.14	30.07				
SUNRISE: 0450				AUG 03				SUNSET: 1918				SUNRISE: 0456				AUG 09				SUNSET: 1910											
03	CLR	NC			10.00	58	56	57	93	0	00	29.28	30.20	03	CLR	NC			9.00	53	52	52	96	0	00	29.11	30.03				
06	CLR	NC			10.00	60	58	59	93	0	00	29.29	30.21	06	CLR	NC			10.00	56	53	54	90	0	00	29.11	30.03				
09	CLR	NC			10.00	73	58	64	59	8	24	29.28	30.20	09	CLR	NC			10.00	65	53	58	66	8	19	29.09	30.01				
12	SCT	NC			10.00	78	61	67	56	8	26	29.23	30.16	12	BKN	100			10.00	67	53	59	61	7	19	29.10	30.03				
15	SCT	NC			10.00	79	61	68	54	8	21	29.16	30.08	15	SCT	NC			10.00	66	55	60	68	8	22	28.92	29.84				
18	SCT	NC			10.00	76	62	67	62	8	24	29.12	30.04	18	OVC	100			5.00	-TSRA		63	60	61	90	8	16	28.90	29.81		
21	CLR	NC			10.00	74	64	68	71	6	23	29.11	30.03	21	OVC	060			10.00	64	62	63	93	9	18	28.87	29.78				
24	OVC	033			3.00	67	63	64	87	8	30	29.10	30.01	24	BKN	037			10.00	67	61	63	81	12	21	28.76	29.66				
SUNRISE: 0451				AUG 04				SUNSET: 1917				SUNRISE: 0457				AUG 10				SUNSET: 1909											
03	CLR	NC			8.00	65	64	64	97	3	VR	29.08	30.00	03	SCT	NC			10.00	68	63	65	84	6	22	28.74	29.65				
06	SCT	NC			4.00	63	61	62	93	5	34	29.10	30.02	06	SCT	NC			6.00	BR		66	64	65	93	3	VR	28.77	29.68		
09	FEW	NC			7.00	70	63	66	79	6	VR	29.11	30.03	09	BKN	019			10.00	73	66	68	79	9	29	28.81	29.72				
12	FEW	NC			10.00	76	56	64	50	8	33	29.09	30.01	12	SCT	NC			10.00	80	65	70	60	12	34	28.83	29.73				
15	SCT	NC			10.00	77	55	64	47	9	32	29.06	29.98	15	SCT	NC			10.00	79	64	69	60	8	29	28.84	29.74				
18	FEW	NC			10.00	75	56	64	52	8	29	29.04	29.96	18	SCT	NC			10.00	78	67	71	69	0	00	28.86	29.77				
21	FEW	NC			10.00	68	57	61	68	3	VR	29.05	29.97	21	CLR	NC			10.00	68	65	66	90	0	00	28.90	29.81				
24	CLR	NC			10.00	63	59	61	87	5	36	29.07	29.99	24	CLR	NC			7.00	64	63	63	96	0	00	28.95	29.85				
SUNRISE: 0452				AUG 05				SUNSET: 1915				SUNRISE: 0458				AUG 11				SUNSET: 1907											
03	CLR	NC			10.00	60	57	58	90	7	33	29.08	30.01	03	CLR	NC			7.00	BCFG		61	61	61	100	0	00	28.96	29.87		
06	FEW	NC			7.00	58	56	57	93	3	30	29.12	30.03	06	FEW	NC			3.00	MIFG		59	58	58	96	0	00	28.99	29.90		
09	FEW	NC			10.00	66	58	61	75	3	02	29.12	30.04	09	CLR	NC			10.00	74	62	66	67	0	00	29.04	29.96				
12	SCT	NC			10.00	75	55	63	50	8	33	29.10	30.02	12	CLR	NC			10.00	77	60	66	56	5	VR	29.06	29.97				
15	SCT	NC			10.00	77	54	63	45	8	26	29.07	29.99	15	SCT	NC			10.00	79	62	68	56	6	25	29.01	29.93				
18	CLR	NC			10.00	75	55	63	50	6	25	29.03	29.95	18	FEW	NC			10.00	77	64	69	64	7	18	28.99	29.91				
21	CLR	NC			10.00	72	58	63	61	6	21	29.03	29.95	21	CLR	NC			10.00	65	64	64	97	0	00	29.02	29.93				
24	CLR	NC			10.00	71	59	64	66	7	22	29.02	29.94	24	CLR	NC			10.00	62	61	61	96	5	03	29.02	29.93				
SUNRISE: 0453				AUG 06				SUNSET: 1914				SUNRISE: 0459				AUG 12				SUNSET: 1906											
03	CLR	NC			10.00	69	60	64	73	6	VR	29.02	29.93	03	CLR	NC			10.00	65	60	62	84	6	15	28.99	29.89				
06	SCT	NC			10.00	67	60	63	79	5	VR	29.03	29.95	06	OVC	036			2.50	-RA	BR	65	63	64	93	7	15	28.99	29.90		
09	SCT	NC			10.00	74	63	67	69	7	VR	29.05	29.97	09	OVC	003			2.00	BR		68	66	67	93	10	15	28.98	29.88		
12	SCT	NC			10.00	78	64	69	62	8	23	29.05	29.96	12	OVC	017			10.00	73	67	69	81	21	15	28.88	29.79				
15	SCT	NC			10.00	82	64	70	55	8	23	29.04	29.95	15	BKN	019			10.00	75	68	70	79	14	16	28.82	29.72				
18	FEW	NC			10.00	79	65	70	62	5	23	29.03	29.95	18	BKN	025			10.00	76	69	71	79	14	18	28.77	29.67				
21	CLR	NC			10.00	69	65	66	87	8	10	29.05	29.97	21	FEW	NC			7.00			73	71	72	94	8	16	28.75	29.65		
24	CLR	NC			10.00	65	58	61	78	9	14	29.05	29.97	24	SCT	NC			6.00	BR		73	69	70	87	7	19	28.68	29.58		

## MADISON, WI

AUGUST 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: 0500	AUG 13			SUNSET: 1905									SUNRISE: 0507	AUG 19			SUNSET: 1856								
03	FEW	NC			3.00	BR	71	68	69	90	7	20	28.66	29.57	03	OVC	028			10.00	62	60	61	93	8	06	29.08	30.01		
06	SCT	NC			10.00		69	65	66	87	7	VR	28.72	29.62	06	OVC	006		BR	3.00	61	60	60	97	9	04	29.10	30.03		
09	BKN	014			10.00		72	65	67	79	10	29	28.77	29.67	09	OVC	014			10.00	66	61	63	84	13	03	29.14	30.06		
12	OVC	013			10.00		66	62	64	87	16	33	28.84	29.74	12	BKN	043			10.00	70	61	64	73	16	02	29.14	30.06		
15	OVC	041			10.00		68	60	63	76	7	34	28.93	29.83	15	SCT	NC			10.00	73	61	66	66	12	06	29.15	30.07		
18	OVC	050			10.00		66	57	61	73	13	35	28.99	29.91	18	BKN	043			10.00	69	62	65	78	5	04	29.17	30.09		
21	CLR	NC			10.00		60	55	57	84	3	33	29.06	29.98	21	CLR	NC			10.00	61	60	60	97	0	00	29.19	30.11		
24	CLR	NC			10.00		54	52	53	93	3	33	29.10	30.03	24	CLR	NC			7.00	56	56	56	100	0	00	29.21	30.14		
					SUNRISE: 0501	AUG 14			SUNSET: 1903									SUNRISE: 0508	AUG 20			SUNSET: 1854								
03	CLR	NC			10.00		52	50	51	93	5	33	29.13	30.06	03	CLR	NC			3.00	54	53	53	97	0	00	29.23	30.15		
06	CLR	NC			10.00		53	49	51	86	5	VR	29.17	30.10	06	CLR	NC			5.00	52	52	52	100	0	00	29.24	30.17		
09	CLR	NC			10.00		66	52	58	61	12	01	29.23	30.16	09	CLR	NC			10.00	70	61	64	73	5	01	29.25	30.17		
12	SCT	NC			10.00		72	50	59	46	13	04	29.21	30.14	12	FEW	NC			10.00	76	60	66	58	5	VR	29.24	30.16		
15	SCT	NC			10.00		73	48	59	41	0	00	29.20	30.13	15	SCT	NC			10.00	76	58	65	54	0	00	29.21	30.14		
18	FEW	NC			10.00		69	56	61	63	0	00	29.18	30.11	18	FEW	NC			10.00	72	60	65	66	6	12	29.19	30.12		
21	CLR	NC			10.00		57	54	55	90	0	00	29.20	30.13	21	CLR	NC			10.00	64	59	61	84	0	00	29.21	30.13		
24	CLR	NC			10.00		56	55	55	97	0	00	29.22	30.14	24	CLR	NC			9.00	57	56	56	96	3	06	29.20	30.12		
					SUNRISE: 0503	AUG 15			SUNSET: 1902									SUNRISE: 0509	AUG 21			SUNSET: 1853								
03	CLR	NC			10.00		51	49	50	92	0	00	29.25	30.17	03	CLR	NC			8.00	57	56	56	96	0	00	29.20	30.12		
06	CLR	NC			10.00		54	50	52	87	0	00	29.27	30.19	06	FEW	NC			7.00	59	58	58	96	0	00	29.23	30.16		
09	CLR	NC			10.00		67	53	59	62	8	19	29.26	30.18	09	FEW	NC			10.00	65	58	61	81	3	26	29.23	30.16		
12	CLR	NC			10.00		73	56	63	56	15	17	29.23	30.15	12	BKN	080			10.00	73	61	66	66	5	VR	29.21	30.13		
15	CLR	NC			10.00		76	58	65	54	13	19	29.18	30.11	15	SCT	NC			10.00	77	61	67	58	6	27	29.17	30.09		
18	FEW	NC			10.00		73	59	64	62	12	18	29.16	30.09	18	SCT	NC			10.00	74	65	68	74	0	00	29.14	30.06		
21	CLR	NC			10.00		70	59	63	68	14	17	29.16	30.08	21	CLR	NC			10.00	64	61	62	90	0	00	29.15	30.07		
24	CLR	NC			10.00		68	57	61	68	15	18	29.13	30.05	24	CLR	NC			7.00	60	59	59	96	0	00	29.15	30.07		
					SUNRISE: 0504	AUG 16			SUNSET: 1900									SUNRISE: 0510	AUG 22			SUNSET: 1851								
03	CLR	NC			10.00		66	56	60	70	14	19	29.13	30.05	03	CLR	NC			4.00	58	57	57	97	0	00	29.15	30.07		
06	CLR	NC			10.00		65	56	60	73	8	20	29.18	30.10	06	OVC	110		BR	5.00	61	60	60	97	0	00	29.13	30.05		
09	OVC	027			6.00	-RA BR	64	60	62	87	17	19	29.15	30.07	09	FEW	NC			9.00	71	62	65	73	7	18	29.13	30.05		
12	BKN	120			10.00		69	64	66	84	6	21	29.12	30.04	12	SCT	NC			10.00	73	58	64	59	9	21	29.12	30.04		
15	CLR	NC			10.00		78	63	68	60	12	20	29.08	30.00	15	OVC	060		-RA	9.00	69	62	65	78	5	VR	29.10	30.02		
18	CLR	NC			10.00		78	67	71	69	8	20	29.07	29.98	18	OVC	110			8.00	67	62	64	84	8	17	29.06	29.98		
21	CLR	NC			10.00		70	68	69	93	3	20	29.10	30.02	21	BKN	095			10.00	66	59	62	78	7	18	29.05	29.97		
24	CLR	NC			7.00		69	66	67	90	0	00	29.11	30.03	24	OVC	100			9.00	67	61	63	81	5	18	29.02	29.93		
					SUNRISE: 0505	AUG 17			SUNSET: 1859									SUNRISE: 0511	AUG 23			SUNSET: 1849								
03	CLR	NC			10.00		66	63	64	90	5	28	29.12	30.03	03	BKN	085			9.00	66	61	63	84	8	18	28.99	29.91		
06	CLR	NC			10.00		65	59	61	81	3	VR	29.14	30.06	06	BKN	110			7.00	66	62	64	87	10	17	28.99	29.91		
09	CLR	NC			10.00		74	62	66	67	8	32	29.15	30.07	09	OVC	023		BR	1.75	65	64	64	97	8	16	28.97	29.89		
12	SCT	NC			10.00		78	62	68	58	13	28	29.14	30.06	12	OVC	048		BR	6.00	69	65	66	87	10	15	28.93	29.83		
15	SCT	NC			10.00		80	59	67	49	10	29	29.14	30.05	15	BKN	065		BR	6.00	69	65	66	87	9	14	28.83	29.74		
18	FEW	NC			10.00		76	62	67	62	7	33	29.14	30.05	18	BKN	012			9.00	65	62	63	90	12	16	28.87	29.78		
21	CLR	NC			10.00		64	62	63	93	0	00	29.16	30.09	21	CLR	NC			10.00	62	60	61	93	7	12	28.87	29.78		
24	CLR	NC			10.00		59	57	58	93	0	00	29.16	30.08	24	BKN	023		BR	3.00	64	62	63	93	3	07	28.87	29.78		
					SUNRISE: 0506	AUG 18			SUNSET: 1857									SUNRISE: 0512	AUG 24			SUNSET: 1848								
03	CLR	NC			9.00		60	59	59	96	0	00	29.14	30.06	03	OVC	019		-RA BR	1.50	65	64	64	97	7	07	28.85	29.75		
06	BKN	075			10.00		62	60	61	93	3	25	29.16	30.08	06	OVC	009		BR	1.75	66	64	65	93	13	06	28.89	29.80		
09	CLR	NC			10.00		65	61	63	87	3	10	29.16	30.09	09	BKN	013		BR	2.50	68	64	66	87	8	03	28.93	29.84		
12	BKN	100			10.00		69	65	66	87	9	11	29.10	30.02	12	OVC	013		HZ	3.00	71	66	68	84	13	04	28.95	29.85		
15	OVC	018			7.00	-RA	68	64	66	87	7	14	29.09	30.01	15	BKN	022		HZ	3.00	72	65	67	79	14	04	28.96	29.87		
18	OVC	060			4.00	-RA BR	67	65	66	93	10	14	29.06	29.98	18	CLR	NC		HZ	3.00	70	65	67	84	7	04	28.97	29.88		
21	OVC	033			7.00		65	63	64	93	10	12	29.03	29.96	21	BKN	110		BR	6.00	66	63	64	90	6	36	28.99	29.91		
24	OVC	008			5.00	-RA BR	65	63	64	93	3	13	29.06	29.98	24	CLR	NC		BR	3.00	64	62	63	93	5	36	28.99	29.91		

**MADISON, WI**

## AUGUST 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: 0513      AUG 25      SUNSET: 1846																													
03	CLR	NC			2.50	BR	63	61	62	93	6	34	28.99	29.91	03	CLR	NC			7.00		49	48	48	97	0	00	29.27	30.20
06	CLR	NC			1.00	BR	61	60	60	97	6	34	29.02	29.94	06	CLR	NC			8.00		55	52	53	90	9	16	29.29	30.22
09	CLR	NC			7.00		72	64	67	76	7	03	29.02	29.94	09	CLR	NC			10.00		66	52	58	61	14	14	29.29	30.21
12	CLR	NC			10.00		78	62	68	58	13	04	29.02	29.93	12	CLR	NC			10.00		72	54	61	53	10	18	29.25	30.18
15	SCT	NC			10.00		79	65	70	62	10	02	29.00	29.91	15	CLR	NC			10.00		75	55	63	50	8	18	29.20	30.12
18	CLR	NC			10.00		75	65	69	71	3	35	28.99	29.90	18	CLR	NC			10.00		72	55	62	55	7	16	29.17	30.10
21	CLR	NC			6.00	BR	65	64	64	97	0	00	29.00	29.92	21	CLR	NC			10.00		65	56	60	73	6	17	29.19	30.11
24	FEW	NC			1.50	BR	61	61	61	100	0	00	29.01	29.93	24	CLR	NC			10.00		56	54	55	93	0	00	29.20	30.12
SUNRISE: 0515      AUG 26      SUNSET: 1844																													
03	FEW	NC			0.50	FG	58	58	58	100	0	00	28.99	29.91	3-HOURLY OBSERVATION NOTES														
06	CLR	NC			0.50	FG	56	56	56	100	0	00	29.02	29.94	Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8,														
09	CLR	NC			8.00		76	65	69	69	5	35	29.03	29.95	SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, VV = Vertical Visibilty = 8/8.														
12	SCT	NC			10.00		80	65	70	60	7	34	29.01	29.93	Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.														
15	BKN	050			10.00		83	65	71	55	6	36	28.99	29.89	NC= No ceiling detected.														
18	SCT	NC			10.00		76	70	72	82	0	00	28.98	29.89	& = Original observation contained additional weather elements.														
21	CLR	NC			9.00		69	66	67	90	0	00	28.99	29.91	See page 3 for additional notes.														
24	CLR	NC			6.00	BR	64	63	63	96	0	00	29.01	29.93															
SUNRISE: 0516      AUG 27      SUNSET: 1843																													
03	CLR	NC			3.00	BCFG BR	62	62	62	100	0	00	29.02	29.93	<div>SUMMARY BY HOUR</div>														
06	BKN	070			3.00	BCFG BR	62	60	61	93	0	00	29.05	29.97															
09	CLR	NC			6.00	HZ	77	68	71	74	5	VR	29.06	29.98															
12	SCT	NC			9.00		82	68	73	63	7	VR	29.05	29.97															
15	CLR	NC			9.00		84	70	74	63	6	22	29.02	29.93															
18	BKN	050			7.00		81	71	74	72	6	22	29.01	29.93															
21	CLR	NC			7.00		77	71	73	82	5	22	29.03	29.94															
24	CLR	NC			4.00	BR	71	70	70	96	0	00	29.04	29.96															
SUNRISE: 0517      AUG 28      SUNSET: 1841																													
03	CLR	NC			1.00	BCFG BR	70	69	69	97	5	31	29.07	29.98	<div>SUMMARY BY HOUR</div>														
06	VV	001			< .25	FG	69	69	69	100	0	00	29.10	30.01															
09	CLR	NC			10.00		80	70	73	71	6	35	29.14	30.05															
12	CLR	NC			10.00		83	69	74	63	6	31	29.14	30.05															
15	FEW	NC			10.00		85	70	75	61	6	33	29.12	30.03															
18	CLR	NC			10.00		82	71	74	69	3	30	29.10	30.02															
21	CLR	NC			10.00		72	67	69	84	6	34	29.15	30.06															
24	CLR	NC			10.00		64	60	62	87	3	35	29.18	30.09															
SUNRISE: 0518      AUG 29      SUNSET: 1839																													
03	CLR	NC			10.00		60	54	57	80	5	35	29.21	30.12	<div>SUMMARY BY HOUR</div>														
06	CLR	NC			10.00		57	51	54	81	6	36	29.26	30.18															
09	CLR	NC			10.00		67	54	59	63	14	06	29.32	30.24															
12	FEW	NC			10.00		71	54	61	55	10	04	29.33	30.25															
15	FEW	NC			10.00		72	50	59	46	13	04	29.32	30.24															
18	FEW	NC			10.00		66	51	58	59	12	03	29.33	30.25															
21	CLR	NC			10.00		55	51	53	87	6	07	29.37	30.30															
24	CLR	NC			10.00		52	47	49	83	6	06	29.37	30.29															
SUNRISE: 0519      AUG 30      SUNSET: 1838																													
03	CLR	NC			10.00		48	47	47	96	5	01	29.36	30.29	<div>SUMMARY BY HOUR</div>														
06	CLR	NC			10.00		51	47	49	86	3	VR	29.38	30.32															
09	CLR	NC			10.00		65	53	58	66	15	14	29.39	30.33															
12	BKN	039			10.00		68	51	58	55	9	11	29.38	30.32															
15	FEW	NC			10.00		71	53	61	53	10	13	29.31	30.24															
18	CLR	NC			10.00		66	52	58	61	9	10	29.28	30.21															
21	CLR	NC			10.00		58	51	54	78	8	13	29.29	30.22															
24	CLR	NC			8.00		50	49	49	96	0	00	29.29	30.22															

### 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 Visiblty = 8/8.

Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.

NC= No ceiling detected.

& = Original observation contained additional weather elements.

See page 3 for additional notes.

## SUMMARY BY HOUR

HOUR (LST)	AVERAGES										RESULTANT	
	CEILOMETER	EFF CLD AMT	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY	PRESSURE (INCHES, HG)		VISIBILITY (MILES)	WIND SPEED (MPH)	WIND (MPH)	
							STATION	SEA LEVEL			SPEED	DIRECTION
01			62	59	60	90	29.08	30.00	7.50	4	1	34
02			61	58	60	90	29.08	30.00	7.46	4	1	33
03			61	58	59	91	29.08	30.00	7.60	4	1	30
04			60	58	59	91	29.08	30.00	7.36	3	0	0
05			60	57	58	92	29.09	30.01	6.92	3	0	0
06			61	58	59	90	29.11	30.02	6.74	4	0	0
07			64	59	61	86	29.12	30.03	7.16	5	1	2
08			67	60	63	79	29.12	30.04	7.65	8	1	2
09			69	60	64	73	29.12	30.04	8.49	8	1	8
10			71	60	64	69	29.12	30.04	9.00	8	1	5
11			72	60	65	67	29.12	30.04	9.26	7	1	5
12			73	60	65	64	29.11	30.03	9.42	9	2	36
13			74	60	65	62	29.10	30.02	9.35	9	1	10
14			75	60	66	62	29.09	30.00	9.29	9	1	12
15			75	60	66	61	29.08	30.00	9.29	8	1	27
16			75	61	66	63	29.08	29.99	9.29	7	0	0
17			74	61	66	66	29.07	29.99	9.26	7	0	0
18			73	61	66	69	29.07	29.99	9.06	6	1	17
19			69	62	65	78	29.07	29.99	9.29	5	1	8
20			67	61	64	82	29.08	30.00	9.18	4	1	15
21			66	61	63	85	29.08	30.00	9.29	4	2	16
22			65	60	62	86	29.08	30.00	8.97	4	1	16
23			63	60	61	88	29.09	30.00	8.50	3	1	17
24			62	59	60	90	29.09	30.00	7.73	4	1	21

# SUPPLEMENTARY HOURLY PRECIPITATION

## UNIVERSAL RAIN GAUGE (WATER EQUIVALENT IN INCHES)

AUGUST 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	0.07												01													01	0.00	
02													0.00															
03													0.21															
04													0.07															
05													0.00															
06				0.01	0.02	0.12	0.10	0.19	0.21	0.03			06														06	0.00
07													0.68															
08													0.00															
09													0.17															
10													0.00															
11					0.03	0.08	0.09	0.01					11														11	0.00
12													0.21															
13													0.00															
14													0.00															
15													0.00															
16									0.03	0.07	0.03	0.02	16														16	0.15
17													0.00															
18													0.31															
19													0.03															
20													0.00															
21	0.14		0.01										21		0.01	0.01	0.08	0.07	0.10	0.10							21	0.00
22													0.02															
23													1.26															
24													0.14															
25													0.00															
26													26														26	0.00
27													0.00															
28													0.00															
29													0.00															
30													0.00															
31													0.00															
PUBLISHED BY: NCDC, ASHEVILLE, NC.																								MONTHLY TOTAL		3.25		

### SUPPLEMENTARY MAXIMUM SHORT DURATION PRECIPITATION (MSDP)

TIME PERIOD (MINUTES)	5	10	15	20	30	45	60	80	100	120	150	180
PRECIPITATION (INCHES)					0.57	0.57	0.57	0.57	0.60	0.60	0.68	0.68
ENDED: DATE					23	23	23	23	23	23	23	23
ENDED: TIME					1400	1400	1400	1400	1500	1500	1600	1600

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.



**AUGUST 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)  
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Local Climatological Data is available at [www.ncdc.noaa.gov](http://www.ncdc.noaa.gov)

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