



DECEMBER 1998

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	57	32	45	17	31	40	20	0		0		0.0	0.00	29.18	30.13	9.5	20	10.1	30	19	23	19	01							
02	60	49	55	28	41	48	10	0		0		0.0	0.00	28.93	29.86	7.7	21	8.3	23	22	15	22	02							
03	61	43	52	25	50	52	13	0	FG+ BCFG BR HZ	0		0.0	0.00	28.87	29.79	4.3	22	4.6	16	24	13	23	03							
04	56	47	52	26	52	52	13	0	DZ FG+ BR	0		0.0	T	28.98	29.91	3.6	08	4.3	10	09	9	09	04							
05	62*	52	57*	31	55	56	8	0	DZ FG+ BR HZ	0		0.0	T	28.81	29.73	6.4	19	6.9	17	19	15	19	05							
06	56	32	44	19	40	41	21	0	RA SN PL FG BR	1		1.5	0.22	28.84	29.77	6.5	32	8.0	21	32	15	30	06							
07	35	21	28	3	24	26	37	0		1		0.0	0.00	29.21	30.17	1.6	36	2.4	15	34	11	33	07							
08	43	18	31	7	25	29	34	0	BR	1		0.0	0.00	29.24	30.20	3.9	23	4.1	16	24	13	22	08							
09	44	25	35	11	29	33	30	0		T		0.0	0.00	29.37	30.33	5.3	21	5.9	16	21	13	20	09							
10	39	28	34	10	25	30	31	0		T		0.0	0.00	29.44	30.40	3.8	28	5.1	15	24	11	23	10							
11	48	28	38	15	25	34	27	0		T		0.0	0.00	29.36	30.32	7.9	22	8.3	21	22	16	22	11							
12	48	26	37	14	27	34	28	0		T		0.0	0.00	29.26	30.22	4.6	22	5.0	18	21	14	21	12							
13	49	21	35	13	26	30	30	0		0		0.0	0.00	29.31	30.27	1.7	02	1.8	10	36	8	05	13							
14	52	22	37	15	28	34	28	0		0		0.0	0.00	29.32	30.28	7.5	21	7.7	22	21	16	21	14							
15	51	34	43	21	29	37	22	0		0		0.0	0.00	29.22	30.17	5.7	26	7.7	24	23	17	22	15							
16	40	28	34	13	25	31	31	0		0		0.0	0.00	29.10	30.05	4.7	30	5.4	17	32	13	32	16							
17	36	24	30	9	20	27	35	0	SN	0		T	T	29.09	30.04	3.0	29	6.6	16	11	14	11	17							
18	46	28	37	16	28	34	28	0	SN BR	0		T	T	28.79	29.73	7.0	17	12.0	30	17	23	18	18							
19	36	24	30	10	19	27	35	0		0		0.0	0.00	29.24	30.20	6.9	33	7.6	20	30	15	32	19							
20	29	24	27	7	23	26	38	0	SN BR	T		0.4	0.04	29.36	30.33	3.9	01	4.9	14	04	13	05	20							
21	26	4	15	-5	6	12	50	0	SN	T		T	T	29.24	30.21	10.1	31	10.6	25	27	18	29	21							
22	12	1	7	-12	-6	5	58	0		T		0.0	0.00	29.51	30.51	10.0	26	11.5	23	29	17	22	22							
23	23	11	17	-2	4	13	48	0		T		0.0	0.00	29.45	30.43	8.1	24	9.0	23	25	18	22	23							
24	24	12	18	-1	1	14	47	0		T		0.0	0.00	29.45	30.44	8.5	26	9.2	22	26	16	27	24							
25	31	19	25	6	12	21	40	0		T		0.0	0.00	29.18	30.15	10.1	21	10.8	25	22	20	22	25							
26	29	13	21	3	8	18	44	0	SN	T		T	T	29.12	30.08	5.1	22	9.2	22	17	17	17	26							
27	42	22	32	14	22	28	33	0		T		0.0	0.00	28.96	29.91	6.7	24	9.8	28	18	21	19	27							
28	40	11	26	8	17	25	39	0	SN HZ	T		0.1	0.01	29.02	29.98	8.3	18	8.8	29	20	22	19	28							
29	38	3	21	3	12	20	44	0	SN BR	T		0.2	0.02	28.97	29.92	11.3	32	13.7	36*	32	28*	34	29							
30	12	-4*	4*	-13	-8	4	61	0		T		0.0	0.00	29.21	30.20	3.4	31	4.3	15	34	13	33	30							
31	13	3	8	-9	-2	6	57	0		T		0.0	0.00	29.22	30.21	5.8	30	7.0	17	29	14	33	31							
39.9		22.6	31.3	■ ■	22.2	28.6	33.5	0.0	< MONTHLY AVERAGES	TOTALS-->			2.2	0.29	29.17	30.13	3.8	25	7.4	<- MONTHLY AVERAGES										
10.1		9.1	9.6	■ ■	<----- DEPARTURE FROM NORMAL ----->							-1.55		SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3																
DEGREE DAYS									GREATEST 24-HR PRECIPITATION: 0.22 DATE :06				SEA LEVEL PRESSURE DATE TIME																	
MONTHLY									GREATEST 24-HR SNOWFALL: 1.5 DATE :06				MAXIMUM																	
TOTAL DEPARTURE									GREATEST SNOW DEPTH: 1 DATE :08+				MINIMUM																	
HEATING: 1040 -302									NUMBER OF DAYS WITH →				MAXIMUM TEMP ≥ 90: 0				PRECIPITATION ≥ 0.01 INCH : 4													
COOLING: 0 0													MAXIMUM TEMP ≤ 32 : 9				MINIMUM TEMP ≤ 0 : 1				PRECIPITATION ≥ 0.10 INCH : 1									
													THUNDERSTORMS : 0				HEAVY FOG : 3				SNOWFALL ≥ 1.0 INCH : 1									
SEASON TO DATE									TOTAL DEPARTURE																					
									2252 -695																					
									654 169																					

DECEMBER 1998
MADISON, WI

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

MADISON, WI

DECEMBER 1998

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													01													01		0.00
02													02													02		0.00
03													03													03		0.00
04													04	T	T	T										04		T
05													05									T	T	T	T	05		T
06					0.01	T							06		T	0.02	T	0.06	0.09	0.03	0.01	T				06		0.22
07													07													07		0.00
08													08													08		0.00
09													09													09		0.00
10													10													10		0.00
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		T
18	T												18													18		T
19													19													19		0.00
20			T	T	T			T	T	T	0.01	T	20	T	T	T	0.01	T	T	T	T	0.01	0.01	T	T	20		0.04
21	T									T	T		21													21		T
22													22													22		0.00
23													23													23		0.00
24													24													24		0.00
25													25													25		0.00
26													26								T	T				26		T
27													27													27		0.00
28													28										T	T		28	T	0.01
29	T	T	T	0.01	0.01	T	T	T	T	T			29	T	T											29		0.02
30													30													30		0.00
31													31													31		0.00

MAXIMUM SHORT DURATION PRECIPITATION (See Note 1)

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 1: NCDC derives these data from one-minute ASOS values. The table is not printed when inconsistent with ASOS hourly totals.

Note 2: 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
DECEMBER 1998**

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							<.25	10.00	
04							<.25	2.50	
05							<.25	8.00	
06							1.00	10.00	
07							10.00	10.00	
08							6.00	10.00	
09							7.00	10.00	
10							10.00	10.00	
11							10.00	10.00	
12							8.00	10.00	
13							9.00	10.00	
14							8.00	10.00	
15							10.00	10.00	
16							8.00	10.00	
17							10.00	10.00	
18							9.00	10.00	
19							10.00	10.00	
20							2.00	10.00	
21							8.00	10.00	
22							10.00	10.00	
23							10.00	10.00	
24							10.00	10.00	
25							10.00	10.00	
26							9.00	10.00	
27							9.00	10.00	
28							4.00	10.00	
29							2.00	10.00	
30							10.00	10.00	
31							9.00	10.00	
MONTHLY AVGS							7.30	9.69	
<p align="center">SUNSHINE (MINUTES)</p> <p>Total: Possible:</p> <p align="center">Percent Possible:</p>									
<p align="center">NUMBER OF DAYS WITH:</p> <p align="center">SKY CONDITION</p> <p align="center">CLR PTLY CLDY CLOUDY MISSING</p> <p align="center">31</p> <p align="center">MINIMUM VISIBILITY (MILES)</p> <p align="center"><=0.25 <=3.0 >=7.0</p> <p align="center">3 6 23</p>									

OBSERVATIONS AT 3-HOURLY INTERVALS

MADISON, WI

DECEMBER 1998

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		VISIBILITY (MILES)	DRY BULB	DEW POINT		WET BULB	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL	
																													VISIBILITY (MILES)
					SUNRISE: 0709	DEC 01			SUNSET: 1624										SUNRISE: 0715	DEC 07									
03	CLR	NC			10.00		37	31	35	79	5	23	29.25	30.19	03	CLR	NC			10.00	28	24	27	85	3	32	29.10	30.06	
06	CLR	NC			8.00		32	30	31	92	5	12	29.28	30.23	06	CLR	NC			10.00	23	21	22	92	3	31	29.18	30.14	
09	CLR	NC			10.00		41	32	37	70	7	23	29.31	30.26	09	CLR	NC			10.00	26	22	25	84	0	00	29.23	30.19	
12	CLR	NC			10.00		52	31	43	45	13	19	29.24	30.19	12	FEW	NC			10.00	32	25	29	75	5	04	29.24	30.20	
15	CLR	NC			10.00		57	31	45	37	12	19	29.15	30.09	15	FEW	NC			10.00	34	26	31	73	5	11	29.24	30.20	
18	CLR	NC			10.00		53	31	43	43	18	19	29.08	30.03	18	CLR	NC			10.00	29	26	28	89	0	00	29.24	30.21	
21	CLR	NC			10.00		51	31	42	46	15	20	29.04	29.98	21	CLR	NC			10.00	24	23	24	96	0	00	29.24	30.20	
24	CLR	NC			10.00		52	31	43	45	10	21	29.03	29.97	24	CLR	NC			10.00	22	21	22	96	0	00	29.23	30.20	
					SUNRISE: 0710	DEC 02			SUNSET: 1623										SUNRISE: 0716	DEC 08									
03	CLR	NC			10.00		53	31	43	43	13	22	29.01	29.94	03	CLR	NC			6.00	BR	20	19	20	96	0	00	29.22	30.18
06	CLR	NC			10.00		50	30	41	46	8	23	29.00	29.93	06	CLR	NC			7.00	19	17	18	92	0	00	29.21	30.18	
09	CLR	NC			10.00		52	21	40	30	9	22	28.99	29.92	09	CLR	NC			10.00	33	27	31	78	8	22	29.23	30.19	
12	CLR	NC			10.00		58	48	53	70	9	23	28.94	29.87	12	CLR	NC			10.00	39	26	34	60	9	23	29.21	30.18	
15	CLR	NC			10.00		58	48	53	70	10	20	28.88	29.80	15	CLR	NC			10.00	43	27	37	53	8	23	29.19	30.15	
18	CLR	NC			10.00		54	48	51	80	10	19	28.86	29.79	18	CLR	NC			10.00	39	30	35	70	7	23	29.25	30.21	
21	BKN	032			10.00		55	50	52	83	10	21	28.87	29.79	21	CLR	NC			10.00	36	31	34	82	5	23	29.28	30.24	
24	OVC	034			10.00		53	50	51	89	5	21	28.83	29.75	24	CLR	NC			9.00	30	28	29	92	0	00	29.31	30.27	
					SUNRISE: 0711	DEC 03			SUNSET: 1623										SUNRISE: 0717	DEC 09									
03	SCT	NC			4.00	BR	52	50	51	93	6	20	28.81	29.73	03	CLR	NC			8.00	28	25	27	88	3	17	29.33	30.29	
06	OVC	014			5.00	BR	53	50	51	89	6	23	28.82	29.74	06	CLR	NC			7.00	28	24	27	85	0	00	29.35	30.31	
09	FEW	NC			4.00	BR	54	50	52	87	9	21	28.85	29.77	09	CLR	NC			8.00	33	28	31	82	8	20	29.38	30.35	
12	CLR	NC			8.00		59	50	54	72	9	22	28.86	29.78	12	CLR	NC			10.00	41	30	37	65	10	20	29.36	30.32	
15	CLR	NC			10.00		59	51	55	75	6	VR	28.86	29.78	15	CLR	NC			10.00	44	29	38	55	8	22	29.35	30.31	
18	OVC	021			7.00		54	51	52	90	0	00	28.91	29.83	18	CLR	NC			10.00	40	31	36	70	8	21	29.38	30.34	
21	OVC	028			7.00		50	49	49	96	0	00	28.95	29.88	21	CLR	NC			10.00	38	33	36	83	8	23	29.39	30.36	
24	OVC	030			2.00	BR	47	46	46	97	0	00	28.97	29.89	24	CLR	NC			10.00	36	30	34	79	5	27	29.40	30.37	
					SUNRISE: 0712	DEC 04			SUNSET: 1623										SUNRISE: 0718	DEC 10									
03	OVC	036			2.50	BR	51	50	51	96	3	13	28.98	29.90	03	CLR	NC			10.00	32	27	30	82	5	28	29.42	30.39	
06	OVC	008			2.00	BR	52	48	50	86	5	36	28.99	29.92	06	CLR	NC			10.00	30	25	28	82	5	27	29.43	30.40	
09	OVC	004			0.75	BR	52	49	50	89	6	05	29.01	29.95	09	BKN	016			10.00	31	26	29	82	7	31	29.46	30.43	
12	VV	001			0.25	FG	54	52	53	93	3	09	29.01	29.94	12	SCT	NC			10.00	34	27	31	76	5	28	29.45	30.42	
15	VV	001			<.25	FG	56	56	56	100	3	08	28.98	29.90	15	CLR	NC			10.00	39	27	34	62	9	26	29.43	30.40	
18	OVC	001			0.50	BR	54	54	54	100	8	10	28.99	29.91	18	CLR	NC			10.00	35	23	31	61	5	27	29.43	30.40	
21	OVC	001			0.50	BR	53	53	53	100	9	09	28.97	29.89	21	CLR	NC			10.00	33	22	29	64	6	VR	29.41	30.38	
24	VV	001			0.25	FG	52	52	52	100	5	11	28.93	29.86	24	CLR	NC			10.00	31	24	28	76	0	00	29.42	30.39	
					SUNRISE: 0713	DEC 05			SUNSET: 1623										SUNRISE: 0719	DEC 11									
03	OVC	003			2.00	BR	53	53	53	100	3	17	28.89	29.82	03	CLR	NC			10.00	28	22	26	78	3	25	29.40	30.37	
06	OVC	003			2.00	BR	55	55	55	100	6	17	28.84	29.76	06	CLR	NC			10.00	34	28	32	79	7	21	29.39	30.36	
09	OVC	001			0.25	BR	57	57	57	100	8	17	28.83	29.75	09	CLR	NC			10.00	36	23	31	59	8	22	29.39	30.36	
12	OVC	019			2.50	BR	60	58	59	93	7	21	28.79	29.70	12	CLR	NC			10.00	45	26	37	48	8	23	29.36	30.32	
15	BKN	026			6.00	HZ	62	55	58	78	7	21	28.76	29.68	15	CLR	NC			10.00	47	24	38	41	13	22	29.34	30.29	
18	CLR	NC			8.00		56	54	55	93	10	20	28.76	29.68	18	CLR	NC			10.00	42	27	36	55	8	20	29.32	30.27	
21	OVC	021			6.00	DZ BR	56	55	55	97	9	19	28.75	29.67	21	CLR	NC			10.00	40	29	36	65	10	22	29.32	30.27	
24	OVC	012			6.00	BR	56	54	55	93	7	22	28.74	29.66	24	CLR	NC			10.00	39	27	34	62	10	21	29.31	30.26	
					SUNRISE: 0714	DEC 06			SUNSET: 1623										SUNRISE: 0720	DEC 12									
03	OVC	035			4.00	BR	56	54	55	93	6	21	28.76	29.67	03	CLR	NC			10.00	38	25	33	60	13	22	29.29	30.24	
06	OVC	008			9.00		51	49	50	92	5	29	28.78	29.70	06	CLR	NC			10.00	36	26	32	67	6	23	29.30	30.25	
09	OVC	006			8.00		46	45	46	96	7	30	28.80	29.72	09	CLR	NC			10.00	37	27	33	67	5	22	29.28	30.24	
12	OVC	010			4.00	BR	41	38	40	89	10	33	28.81	29.74	12	CLR	NC			10.00	43	28	37	56	9	20	29.26	30.21	
15	OVC	045			4.00	PE BR	35	32	34	89	7	34	28.82	29.75	15	CLR	NC			10.00	47	31	40	54	7				

OBSERVATIONS AT 3-HOURLY INTERVALS

MADISON, WI

DECEMBER 1998

MSN

WBAN # 14837

HOUR (LST)			SATELLITE		WEATHER	TEMPERATURE °F				WIND	PRESSURE (INCHES, HG)		HOUR (LST)			SATELLITE		WEATHER	TEMPERATURE °F				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		RELATIVE HUMIDITY (PCT)	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	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL				
SUNRISE: 0720						DEC 13						SUNSET: 1623						SUNRISE: 0725						DEC 19						SUNSET: 1624					
03	CLR	NC			9.00	23	22	23	96	0	00	29.25	30.20	03	OVC	028				10.00	36	25	32	64	6	31	29.01	29.96							
06	CLR	NC			9.00	23	20	22	88	0	00	29.26	30.22	06	OVC	025				10.00	34	25	31	70	7	31	29.07	30.02							
09	CLR	NC			10.00	33	30	32	89	0	00	29.31	30.27	09	OVC	035				10.00	32	19	28	59	9	34	29.17	30.13							
12	CLR	NC			10.00	45	30	39	56	6	03	29.30	30.26	12	OVC	030				10.00	31	17	26	56	9	30	29.25	30.21							
15	CLR	NC			10.00	49	30	41	48	6	01	29.30	30.26	15	OVC	030				10.00	30	16	26	56	7	34	29.32	30.28							
18	CLR	NC			10.00	33	26	30	75	0	00	29.34	30.31	18	OVC	028				10.00	25	15	22	66	10	36	29.38	30.34							
21	CLR	NC			10.00	29	26	28	89	0	00	29.38	30.35	21	OVC	028				10.00	25	17	23	72	5	VR	29.43	30.40							
24	CLR	NC			10.00	24	22	23	91	0	00	29.39	30.35	24	OVC	032				10.00	24	17	22	75	5	35	29.45	30.43							
SUNRISE: 0721						DEC 14						SUNSET: 1623						SUNRISE: 0725						DEC 20						SUNSET: 1625					
03	CLR	NC			10.00	23	20	22	88	0	00	29.38	30.34	03	OVC	029				9.00	-SN	25	17	23	72	6	36	29.46	30.44						
06	CLR	NC			8.00	23	21	22	92	0	00	29.38	30.35	06	OVC	080				10.00	26	21	24	81	8	05	29.42	30.40							
09	CLR	NC			10.00	37	29	34	73	8	19	29.38	30.35	09	OVC	011				9.00	-SN	27	22	25	81	6	05	29.44	30.42						
12	CLR	NC			10.00	48	29	40	48	9	22	29.34	30.30	12	OVC	011				3.00	-SN	28	25	27	88	5	36	29.37	30.34						
15	CLR	NC			10.00	52	31	43	45	12	22	29.29	30.24	15	OVC	025				3.00	-SN	28	26	27	92	5	36	29.32	30.29						
18	CLR	NC			10.00	45	31	39	58	9	20	29.29	30.24	18	OVC	017				6.00	-SN BR	28	26	27	92	0	00	29.28	30.24						
21	CLR	NC			10.00	44	30	38	58	12	21	29.25	30.20	21	OVC	008				2.00	-SN BR	27	25	26	92	3	32	29.25	30.21						
24	CLR	NC			10.00	43	30	38	60	8	23	29.26	30.21	24	OVC	019				7.00	-SN	26	23	25	88	6	31	29.24	30.21						
SUNRISE: 0722						DEC 15						SUNSET: 1623						SUNRISE: 0726						DEC 21						SUNSET: 1625					
03	CLR	NC			10.00	43	30	38	60	14	22	29.23	30.17	03	OVC	012				9.00		23	18	21	81	9	31	29.24	30.20						
06	CLR	NC			10.00	42	31	37	65	13	23	29.23	30.17	06	OVC	090				10.00	17	11	15	77	9	32	29.20	30.16							
09	CLR	NC			10.00	41	32	37	70	7	VR	29.25	30.19	09	OVC	065				10.00	14	6	12	71	10	28	29.26	30.24							
12	CLR	NC			10.00	48	33	41	56	10	31	29.22	30.17	12	BKN	085				10.00	14	6	12	71	10	30	29.20	30.18							
15	CLR	NC			10.00	50	27	40	41	8	32	29.20	30.14	15	FEW	NC				10.00	14	4	12	64	12	31	29.18	30.15							
18	CLR	NC			10.00	42	23	35	47	6	30	29.22	30.17	18	OVC	095				10.00	13	3	11	64	12	31	29.23	30.21							
21	CLR	NC			10.00	37	26	33	65	3	30	29.22	30.17	21	SCT	NC				10.00	8	-4	6	57	10	29	29.30	30.29							
24	CLR	NC			10.00	36	28	33	73	3	33	29.20	30.14	24	SCT	NC				10.00	4	-7	2	60	13	29	29.36	30.35							
SUNRISE: 0723						DEC 16						SUNSET: 1623						SUNRISE: 0726						DEC 22						SUNSET: 1626					
03	BKN	110			10.00	34	27	31	76	3	29	29.18	30.13	03	CLR	NC				10.00	2	-8	0	63	13	28	29.41	30.41							
06	BKN	110			10.00	31	27	29	85	0	00	29.14	30.09	06	FEW	NC				10.00	1	-9	0	62	10	28	29.49	30.49							
09	CLR	NC			8.00	31	27	29	85	5	28	29.13	30.09	09	FEW	NC				10.00	2	-10	0	57	10	28	29.56	30.57							
12	SCT	NC			10.00	37	27	33	67	9	29	29.07	30.02	12	CLR	NC				10.00	7	-6	5	55	12	30	29.55	30.55							
15	FEW	NC			10.00	38	25	33	60	6	VR	29.03	29.98	15	CLR	NC				10.00	12	-7	9	42	9	28	29.56	30.56							
18	OVC	080			10.00	35	22	30	59	5	30	29.05	30.01	18	CLR	NC				10.00	11	-4	8	51	9	23	29.56	30.56							
21	OVC	075			10.00	34	20	29	56	7	30	29.05	30.01	21	CLR	NC				10.00	11	-1	9	58	14	22	29.52	30.53							
24	CLR	NC			10.00	31	23	28	72	9	31	29.07	30.03	24	CLR	NC				10.00	12	0	10	58	15	23	29.49	30.49							
SUNRISE: 0723						DEC 17						SUNSET: 1624						SUNRISE: 0727						DEC 23						SUNSET: 1626					
03	CLR	NC			10.00	28	21	26	75	7	30	29.09	30.04	03	CLR	NC				10.00	12	1	10	61	12	22	29.47	30.46							
06	FEW	NC			10.00	26	20	24	78	7	28	29.11	30.07	06	CLR	NC				10.00	11	2	9	67	13	22	29.45	30.44							
09	FEW	NC			10.00	28	21	26	75	6	28	29.13	30.09	09	CLR	NC				10.00	13	4	11	67	13	22	29.45	30.45							
12	BKN	075			10.00	35	21	30	57	7	31	29.10	30.06	12	CLR	NC				10.00	20	7	17	57	12	23	29.42	30.41							
15	BKN	065			10.00	35	19	29	52	8	31	29.08	30.03	15	CLR	NC				10.00	23	6	19	48	9	28	29.40	30.39							
18	BKN	060			10.00	30	20	27	66	0	00	29.06	30.03	18	CLR	NC				10.00	19	5	16	54	7	25	29.43	30.42							
21	OVC	080			10.00	29	20	26	69	8	12	29.03	29.99	21	CLR	NC				10.00	15	4	13	61	6	26	29.46	30.45							
24	OVC	046			10.00	30	21	27	69	12	11	29.01	29.97	24	CLR	NC				10.00	13	3	11	64	6	28	29.45	30.44							
SUNRISE: 0724						DEC 18						SUNSET: 1624						SUNRISE: 0727						DEC 24						SUNSET: 1627					
03	CLR	NC			10.00	30	22	27	72	16	12	28.90	29.85	03	CLR	NC				10.00	14	4	12	64	9	24	29.46	30.45							
06	CLR	NC			10.00	33	24	30	70	16	15	28.78	29.73	06	CLR	NC				10.00	14	2	11	58	9	25	29.46	30.45							
09	CLR	NC			10.00	35	27	32	72	21	16	28.72	29.66	09	CLR	NC				10.00	15	1	12	53	9	26	29.50	30.49							
12	CLR	NC			10.00	42	29	37	60	14	20	28.64	29.58	12	CLR	NC				10.00	20	-4	15	34	14	27	29.49	30.48							
15	OVC	034			10.00	46	34	41	63	8	23	28.67	29.61	15	CLR	NC				10.00	24	-5	18	27	10	25	29.43	30.42							
18	OVC	034			10.00	43	34	39	71	5	29	28.76	29.70	18	CLR	NC				10.00	21	-2	16	36	8	24	29.44	30.43							
21	OVC	028			10.00	38	30	35	73	12	29	28.88	29.82	21	CLR	NC				10.00	21	5	17	50	9	23	29.41	30.40							
24	OVC	028			10.00	36	27	32	70	3	VR	28.94	29.88	24	CLR	NC				10.00	21	6	17	52	9	22	29.38	30.36							

OBSERVATIONS AT 3-HOURLY INTERVALS

MADISON, WI

DECEMBER 1998

MSN

WBAN # 14837

HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		WEATHER	TEMPERATURE ° F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES,HG)		HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		WEATHER	TEMPERATURE ° F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES,HG)					
				OBSERVATION TIME (LST)	EFF CLD AMT Ok/as		DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL					OBSERVATION TIME (LST)	EFF CLD AMT Ok/as		DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL				
				SUNRISE: 0727		DEC 25	SUNSET: 1628									SUNRISE: 0729		DEC 31	SUNSET: 1632														
03	CLR	NC			10.00		21	9	18	59	9	21	29.34	30.31	03	OVC	065			10.00		7	-5	5	58	6	28	29.19	30.18				
06	CLR	NC			10.00		20	9	17	62	9	21	29.28	30.25	06	OVC	070			10.00		7	-7	5	52	9	29	29.19	30.18				
09	CLR	NC			10.00		21	10	18	62	12	23	29.25	30.22	09	SCT	NC			10.00		5	-6	3	60	8	29	29.23	30.22				
12	CLR	NC			10.00		27	12	23	53	14	22	29.19	30.16	12	BKN	080			10.00		10	-2	8	58	9	31	29.21	30.20				
15	OVC	050			10.00		29	14	24	54	12	21	29.14	30.11	15	BKN	080			10.00		12	1	10	61	7	VR	29.18	30.17				
18	OVC	085			10.00		30	14	25	51	15	19	29.09	30.05	18	BKN	080			10.00		11	2	9	67	5	29	29.21	30.20				
21	BKN	060			10.00		29	13	24	51	13	20	29.04	30.00	21	SCT	NC			10.00		8	1	7	73	3	VR	29.25	30.24				
24	CLR	NC			10.00		29	16	25	58	8	26	29.00	29.97	24	CLR	NC			10.00		3	-3	2	76	3	31	29.32	30.31				
				SUNRISE: 0728		DEC 26	SUNSET: 1628									3-HOURLY OBSERVATION NOTES																	
03	FEW	NC			10.00		22	11	19	63	12	31	29.08	30.05	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 Visibilty = 8/8.																		
06	SCT	NC			10.00		16	10	14	77	7	29	29.15	30.11	Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.																		
09	FEW	NC			10.00		16	8	14	71	6	30	29.21	30.18	NC= No ceiling detected.																		
12	CLR	NC			10.00		20	6	16	55	6	26	29.21	30.17	& = Original observation contained additional weather elements.																		
15	CLR	NC			10.00		25	0	19	33	6	20	29.15	30.12	See page 3 for additional notes.																		
18	SCT	NC			10.00		23	2	18	40	9	19	29.13	30.10																			
21	OVC	047			10.00		26	7	21	44	13	16	29.01	29.98																			
24	OVC	100			10.00		28	18	25	66	14	17	28.97	29.92																			
				SUNRISE: 0728		DEC 27	SUNSET: 1629																										
03	OVC	080			10.00		32	21	28	64	16	20	28.86	29.80																			
06	CLR	NC			10.00		32	22	28	66	10	22	28.81	29.76																			
09	CLR	NC			9.00		34	25	31	70	9	25	28.86	29.81																			
12	FEW	NC			10.00		38	25	33	60	14	27	28.91	29.85																			
15	CLR	NC			10.00		41	21	34	45	7	VR	28.96	29.90																			
18	CLR	NC			10.00		32	22	28	66	7	29	29.07	30.03																			
21	CLR	NC			10.00		26	19	24	75	0	00	29.14	30.10																			
24	CLR	NC			10.00		22	17	20	82	5	30	29.18	30.14																			
				SUNRISE: 0728		DEC 28	SUNSET: 1630																										
03	CLR	NC			8.00		16	12	15	84	0	00	29.19	30.15																			
06	CLR	NC			7.00		14	9	13	80	0	00	29.16	30.13																			
09	CLR	NC			7.00		22	18	21	85	8	17	29.15	30.12																			
12	CLR	NC			10.00		33	18	28	54	13	17	29.08	30.04																			
15	CLR	NC			10.00		39	19	32	45	12	17	28.95	29.90																			
18	OVC	100			10.00		38	20	31	48	10	18	28.90	29.85																			
21	OVC	048			10.00		39	19	32	45	13	18	28.81	29.76																			
24	OVC	048			7.00	-SN	37	27	33	67	14	19	28.74	29.68																			
				SUNRISE: 0729		DEC 29	SUNSET: 1630																										
03	OVC	020			2.00	-SN BR	36	32	34	86	8	22	28.67	29.61																			
06	OVC	006			3.00	-SN BR	36	33	35	89	9	30	28.68	29.62																			
09	OVC	016			3.00	-SN	32	21	28	64	17	34	28.85	29.79																			
12	SCT	NC			10.00		26	10	21	51	21	35	28.97	29.92																			
15	FEW	NC			10.00		20	3	16	48	16	32	29.06	30.03																			
18	CLR	NC			10.00		12	-4	9	48	14	33	29.19	30.16																			
21	CLR	NC			10.00		6	-8	4	52	9	33	29.24	30.22																			
24	CLR	NC			10.00		3	-11	1	51	8	32	29.28	30.26																			
				SUNRISE: 0729		DEC 30	SUNSET: 1631																										
03	CLR	NC			10.00		1	-12	-1	54	8	31	29.26	30.25																			
06	CLR	NC			10.00		-2	-12	-3	62	5	30	29.24	30.23																			
09	CLR	NC			10.00		0	-13	-1	54	3	VR	29.24	30.24																			
12	CLR	NC			10.00		7	-6	5	55	5	VR	29.20	30.19																			
15	CLR	NC			10.00		12	-5	9	46	5	23	29.15	30.14																			
18	OVC	075			10.00		11	-7	8	44	5	34	29.16	30.16																			
21	OVC	070			10.00		11	-5	8	48	7	29	29.19	30.18																			
24	OVC	075			10.00		10	-3	8	55	3	VR	29.19	30.18																			

SUPPLEMENTARY HOURLY PRECIPITATION

UNIVERSAL RAIN GAUGE (WATER EQUIVALENT IN INCHES)

DECEMBER 1998
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												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			0.04	0.08	0.08	T						06	0.20	
07													07												07	0.00	
08													08												08	0.00	
09													09												09	0.00	
10													10												10	0.00	
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												19	0.00	
20								T	0.01		T		20												20	0.01	
21													21												21	0.00	
22													22												22	0.00	
23													23												23	0.00	
24													24												24	0.00	
25													25												25	0.00	
26													26												26	0.00	
27													27												27	0.00	
28													28												28	0.00	
29				T	0.01								29												29	0.01	
30													30												30	0.00	
31													31												31	0.00	
PUBLISHED BY: NCDC, ASHEVILLE, NC.													MONTHLY TOTAL												0.22		

SUPPLEMENTARY MAXIMUM SHORT DURATION PRECIPITATION (MSDP)

TIME PERIOD (MINUTES)	5	10	15	20	30	45	60	80	100	120	150	180
PRECIPITATION (INCHES)					0.04	0.06	0.08	0.10	0.14	0.16	0.18	0.20
ENDED: DATE					06	06	06	06	06	06	06	06
ENDED: TIME					1800	1800	1800	1800	1800	1800	1800	1800

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.



**DECEMBER 1998
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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151 PATTON AVE RM 120
ASHEVILLE, NC 28801–5001

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