

1998

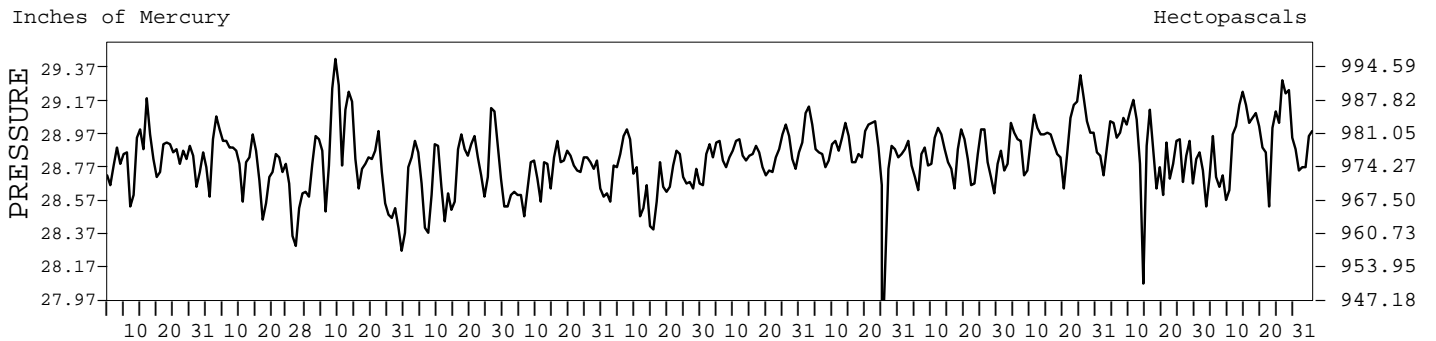
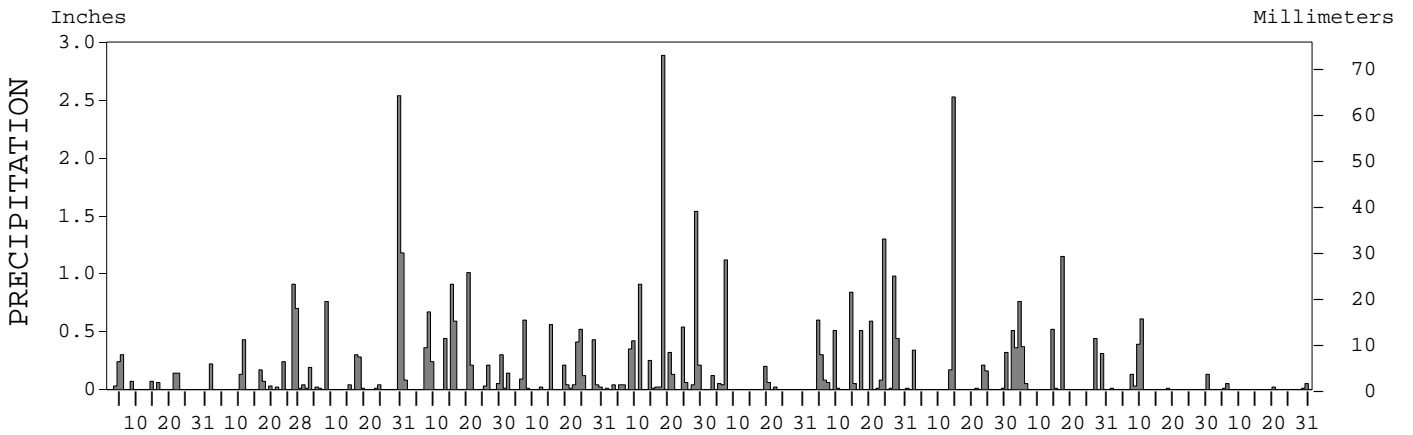
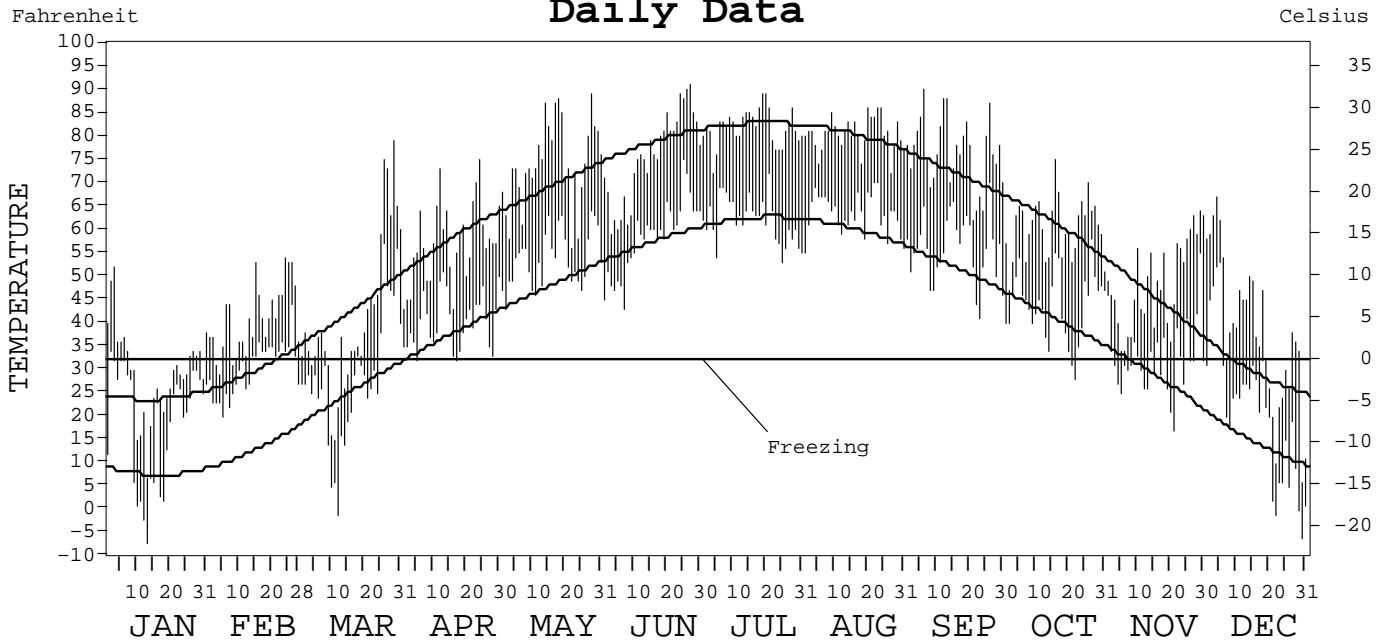
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-2087

DUBUQUE,
IOWA (DBQ)

Daily Data



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Thomas R. Karl

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
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 ASHEVILLE, NORTH CAROLINA

METEOROLOGICAL DATA FOR 1998

DUBUQUE, IA (DBQ)

LATITUDE: 42° 23' 52" N LONGITUDE: 90° 42' 13" W ELEVATION (FT): GRND: 1056 BARO: 1070 TIME ZONE: CENTRAL (UTC+ 6) WBAN: 94908

	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	29.5	40.8	41.3	57.3	74.1	75.6	81.8	80.5	76.4	60.4	48.5	38.1	58.7	
	HIGHEST DAILY MAXIMUM	52	54	79	75	89	91	89	86	90	75	64	67	91	
	DATE OF OCCURRENCE	03	24	29	24	28	27	20+	24+	06	16	29	4	JUN 27	
	MEAN DAILY MINIMUM	18.8	30.3	28.1	40.2	53.7	58.4	62.0	63.4	55.8	43.6	32.3	21.3	42.3	
	LOWEST DAILY MINIMUM	-7	20	-1	32	43	43	53	55	41	28	17	-6	-7	
	DATE OF OCCURRENCE	13	5	12	17+	02	07	25	01	23	22	21	30	JAN 13	
	AVERAGE DRY BULB	24.2	35.6	34.7	48.8	63.9	67.0	71.9	72.0	66.1	52.0	40.4	29.7	50.5	
	MEAN WET BULB		33.4			57.5	61.7	66.5			48.4	37.0	27.1		
	MEAN DEW POINT		30.5			52.3	57.9	63.1			44.3	32.7	22.5		
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	0	2	0	0	1	0	0	0	0	3
	MAXIMUM ≤ 32°	19	4	7	0	0	0	0	0	0	0	0	11	41	
MINIMUM ≤ 32°	30	14	23	2	0	0	0	0	0	2	18	27	116		
MINIMUM ≤ 0°	2	0	1	0	0	0	0	0	0	0	0	3	6		
H/C	HEATING DEGREE DAYS	1259	820	931	479	100	78	0	0	64	396	729	1087	5943	
	COOLING DEGREE DAYS	0	0	1	0	75	148	222	224	105	0	0	0	775	
RH	MEAN (PERCENT)	87	84	76	69	69	75	75	82	75	77	76	76	77	
	HOUR 06 LST	89	89	84	78	82	85	90	94	91	89	84	84	87	
	HOUR 12 LST	86	77	70	62	58	64	60	69	61	65	66	67	67	
	HOUR 18 LST	87	82	72	62	59	68	63	74	69	74	74	76	72	
	HOUR 24 LST	90	88	80	76	76	83	85	90	83	85	81	81	83	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	11	5	3	1	3	3	2	7	3	2	5	4	49	
	THUNDERSTORMS	0	0	1	1	1	2	0	3	1	1	0	0	10	
CLOUDINESS	SUNRISE-SUNSET: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
	MIDNIGHT-MIDNIGHT: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
NUMBER OF DAYS WITH:															
CLEAR															
PARTLY CLOUDY															
CLOUDY															
PR	MEAN STATION PRESS. (IN.)	28.84	28.76	28.81	28.76	28.73	28.71	28.87		28.83	28.97	28.85	28.95		
	MEAN SEA-LEVEL PRESS. (IN.)		29.94			29.87	29.85	30.01			30.13	30.03	30.15		
WINDS	RESULTANT SPEED (MPH)		2.1	2.1	3.7	1.2	1.8	0.9		0.6	2.0	2.9			
	RES. DIR. (TENS OF DEGS.)		08	01	08	09	18	33		20	18	23			
	MEAN SPEED (MPH)	9.1	9.5	11.4	10.1	8.3	7.8	4.0	5.9	6.6	9.1	11.2	8.8	8.5	
	PREVAIL. DIR. (TENS OF DEGS.)	01	03	03	04	05	13	03	15	20	19	19	21	20	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	29	36	38	34	34	43	38	66	28	34	49	26	66	
	DIR. (TENS OF DEGS.)	03	13	33	17	32	32	34	32	34	15	23	16	32	
	DATE OF OCCURRENCE	07	25	30	12	28	28	19	24	29	17	10	18+	AUG 24	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	36	44	47	45	44	59	48	78	32	40	63	33	78	
DIR. (TENS OF DEGS.)	03	13	21	17	33	26	33	31	34	15	23	20	31		
DATE OF OCCURRENCE	07	25	27	12	28	18	19	24	29+	17	10	01	AUG 24		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	1.05	2.93	5.43	5.10	3.27	7.84	1.61	6.38	3.75	4.48	1.31	0.14	43.29	
	GREATEST 24-HOUR (IN.)	0.30	1.58	2.57	1.42	0.93	2.89	1.12	1.30	2.53	1.15	0.99	0.05	2.89	
	DATE OF OCCURRENCE	05	26-27	30-31	15-16	23-24	18	07	24	14	17	09-10	30+	JUN 18	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	8	11	14	13	17	19	7	17	8	10	7	5	136	
PRECIPITATION ≥ 0.10	4	7	6	10	8	10	3	9	6	8	4	0	75		
PRECIPITATION ≥ 1.00	0	0	2	1	0	2	1	1	1	1	0	0	9		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	7.1	0.2	10.1	T	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.8	20.3	
	GREATEST 24-HOUR (IN.)	2.2	0.1	6.4	T	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.8	6.4	
	DATE OF OCCURRENCE	21	28+	08	16+							07	30	MAR 08	
	MAXIMUM SNOW DEPTH (IN.)								0		0				
	DATE OF OCCURRENCE														
NUMBER OF DAYS WITH:															
SNOWFALL ≥ 1.0	4	0	2	0	0	0	0	0	0	0	0	0	6		

NORMALS, MEANS, AND EXTREMES

DUBUQUE, IA (DBQ)

LATITUDE: 42° 23' 52" N LONGITUDE: 90° 42' 13" W ELEVATION (FT): GRND: 1056 BARO: 1070 TIME ZONE: CENTRAL (UTC+ 6) WBAN: 94908

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	23.9	29.6	42.5	57.7	69.2	78.4	82.4	79.9	71.7	60.5	44.6	29.1	55.8
	MEAN DAILY MAXIMUM	46	25.0	29.7	41.9	57.5	69.0	78.4	82.1	80.0	72.1	60.7	43.7	30.2	55.9
	HIGHEST DAILY MAXIMUM	46	60	61	85	93	91	100	101	100	97	90	73	67	101
	YEAR OF OCCURRENCE		1989	1984	1986	1980	1991	1988	1988	1988	1955	1997	1978	1998	JUL 1988
	MEAN OF EXTREME MAXS.	46	44.4	47.1	66.5	78.4	84.8	90.2	92.5	90.9	87.0	79.1	63.7	50.5	72.9
	NORMAL DAILY MINIMUM	30	7.7	12.7	25.0	37.4	48.0	57.1	62.0	59.6	51.4	40.4	27.9	14.0	36.9
	MEAN DAILY MINIMUM	46	9.0	14.0	24.6	37.2	48.0	57.5	61.8	60.0	51.3	40.5	27.3	15.3	37.2
	LOWEST DAILY MINIMUM	46	-28	-27	-20	11	24	36	44	40	28	13	-17	-25	-28
	YEAR OF OCCURRENCE		1970	1996	1962	1973	1966	1972	1984	1986	1984	1952	1977	1983	JAN 1970
	MEAN OF EXTREME MINS.	46	-14.6	-7.8	5.2	21.9	33.3	44.9	50.3	48.3	35.8	25.1	8.5	-7.9	20.3
	NORMAL DRY BULB	30	15.9	21.2	33.8	47.6	58.6	67.8	72.3	69.8	61.6	50.5	36.3	21.6	46.4
	MEAN DRY BULB	46	17.0	21.9	33.2	47.2	58.5	68.0	71.9	69.9	61.7	50.5	35.5	22.8	46.5
	MEAN WET BULB	13	18.0	22.5	32.4	42.7	53.6	62.7	66.4	65.2	57.0	42.5	32.5	22.4	43.2
	MEAN DEW POINT	13	13.4	17.2	25.7	35.0	47.4	54.0	62.6	61.7	52.9	37.5	27.8	18.5	37.8
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	0.0	0.0	*	*	1.5	4.2	2.3	0.5	0.0	0.0	0.0	8.5	
MAXIMUM ≤ 32°	30	21.7	16.0	5.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	4.2	18.3	66.3	
MINIMUM ≤ 32°	30	30.6	26.8	23.9	8.8	0.9	0.0	0.0	0.0	0.4	6.7	20.4	29.7	148.2	
MINIMUM ≤ 0°	30	10.1	5.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	5.6	22.1	
H/C	NORMAL HEATING DEG. DAYS	30	1522	1226	967	522	237	34	6	27	124	456	861	1345	7327
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	39	118	232	176	22	6	0	0	593
RH	NORMAL (PERCENT)	30											62		
	HOUR 06 LST	30		51		16							27		
	HOUR 12 LST	30	76	77	79	76	78	82	85	87	87	82	81	81	81
	HOUR 18 LST	30	67	65	62	55	56	58	60	61	62	58	65	72	62
	HOUR 24 LST	30	72	69	65	56	56	59	62	65	69	66	72	76	66
S	PERCENT POSSIBLE SUNSHINE														
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	30	4.2	2.7	3.4	2.0	1.8	1.5	1.7	2.5	1.9	1.9	3.1	4.1	30.8
	THUNDERSTORMS	30	0.1	0.1	1.5	2.8	4.8	5.6	5.7	5.3	3.1	2.2	0.8	0.2	32.2
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)														
	MIDNIGHT-MIDNIGHT (OKTAS)														
	MEAN NO. DAYS WITH:														
	CLEAR	1			1.0		2.0								
	PARTLY CLOUDY														
	CLOUDY	1	1.0		2.0										
PR	MEAN STATION PRESSURE (IN)	8	28.89	28.88	28.81	28.80	28.79	28.79	28.89	28.91	28.88	28.90	28.90	28.89	28.86
	MEAN SEA-LEVEL PRES. (IN)	13	30.11	30.10	30.05	29.95	29.97	29.95	30.00	27.74	30.05	28.06	30.06	30.11	29.68
WINDS	MEAN SPEED (MPH)	3	10.6	11.2	12.4	11.0	10.0	8.0	6.9	6.9	8.2	10.2	10.8	9.8	9.7
	PREVAIL. DIR (TENS OF DEGS)	5	29	18	32	18	18	18	18	18	18	18	18	30	18
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	3	37	36	38	45	43	43	38	66	38	43	49	31	66
	DIR. (TENS OF DEGS)		02	03	03	28	30	32	34	32	31	28	23	13	32
	YEAR OF OCCURRENCE		1996	1996	1996	1997	1997	1998	1998	1998	1997	1996	1998	1996	AUG 1998
	MAXIMUM 5-SECOND:														
SPEED (MPH)	3	44	49	47	62	51	59	48	78	60	52	63	36	78	
DIR. (TENS OF DEGS)		02	02	02	28	29	26	33	31	22	29	23	13	31	
YEAR OF OCCURRENCE		1996	1996	1996	1997	1997	1998	1998	1998	1997	1996	1998	1996	AUG 1998	
PRECIPITATION	NORMAL (IN)	30	1.26	1.32	2.89	3.72	4.26	4.13	4.02	4.69	4.67	2.73	2.71	1.96	38.36
	MAXIMUM MONTHLY (IN)	46	6.04	3.61	6.50	7.69	9.43	10.49	12.23	9.90	15.46	8.58	10.63	4.14	15.46
	YEAR OF OCCURRENCE		1960	1953	1959	1964	1962	1969	1961	1987	1965	1967	1961	1982	SEP 1965
	MINIMUM MONTHLY (IN)	46	0.31	0.07	0.36	0.81	0.69	0.70	0.87	0.08	0.07	0.00	0.36	0.08	0.00
	YEAR OF OCCURRENCE		1964	1995	1958	1985	1992	1988	1991	1969	1979	1996	1955	1995	OCT 1996
	MAXIMUM IN 24 HOURS (IN)	46	3.75	2.24	2.57	2.65	4.60	3.60	6.28	3.90	8.85	2.58	5.09	2.31	8.85
	YEAR OF OCCURRENCE		1960	1953	1998	1964	1962	1966	1961	1970	1967	1959	1961	1971	SEP 1967
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	9.0	7.9	10.6	11.9	11.4	10.3	9.8	9.1	9.4	8.8	9.6	10.5	118.3	
PRECIPITATION ≥ 1.00	30	0.1	0.1	0.4	0.7	1.1	1.1	1.0	1.4	1.4	0.6	0.6	0.2	8.7	
SNOWFALL	NORMAL (IN)	30	8.8	8.4	8.3	2.9	0.1	0.0	0.0	0.0	0.2	3.7	10.6	43.0	
	MAXIMUM MONTHLY (IN)	45	29.3	25.1	30.2	19.8	3.1	T	0.0	0.0	T	1.5	13.9	26.4	
	YEAR OF OCCURRENCE		1979	1975	1959	1973	1966	1993			1986	1976	1986	1977	MAR 1959
	MAXIMUM IN 24 HOURS (IN)	45	11.8	11.9	15.5	14.6	3.1	T	0.0	0.0	T	1.5	10.4	15.0	
	YEAR OF OCCURRENCE		1971	1962	1959	1973	1966	1993			1986	1976	1992	1990	MAR 1959
	MAXIMUM SNOW DEPTH (IN)	43	25	22	23	17	3	0	0	0	0	1	9	19	
	YEAR OF OCCURRENCE		1979	1962	1962	1973	1994					1962	1986	1951	JAN 1979
NORMAL NO. DAYS WITH:															
SNOWFALL ≥ 1.0	30	2.9	2.8	2.6	0.9	0.*	0.0	0.0	0.0	0.0	0.1	1.2	3.0	13.5	

PRECIPITATION (inches) 1998 DUBUQUE, IA (DBQ)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	2.56	0.40	1.11	3.46	2.37	10.49	5.39	0.08	1.04	4.31	0.60	1.89	33.70
1970	0.49	0.58	2.55	2.04	5.24	3.88	4.26	4.13	9.16	1.65	1.23	1.56	36.77
1971	1.98	2.96	1.58	1.37	4.35	2.51	3.66	2.60	3.96	3.69	4.39	4.04	37.09
1972	0.47	0.99	2.85	5.50	3.44	2.49	5.02	6.02	5.58	3.69	1.80	1.93	39.78
1973	1.66	1.00	4.72	6.30	5.36	2.13	4.34	1.54	7.27	0.73	2.09	2.42	39.56
1974	2.39	1.38	2.62	4.21	7.39	7.74	1.85	4.06	0.62	3.08	1.78	1.46	38.58
1975	0.90	2.53	3.33	3.78	2.79	3.75	1.15	7.44	1.91	0.41	4.22	0.30	32.51
1976	0.57	2.58	3.71	3.74	1.73	1.48	1.97	3.67	0.88	2.43	0.37	0.45	23.58
1977	0.78	1.10	4.82	2.93	3.31	2.22	6.48	6.02	3.45	2.38	3.05	2.49	39.03
1978	0.81	0.66	1.30	4.14	5.50	2.50	3.51	1.10	4.51	1.68	2.93	2.36	31.00
1979	2.61	1.12	2.54	2.37	2.18	4.33	6.72	7.47	0.07	2.80	1.92	1.34	35.47
1980	1.80	1.23	1.12	1.78	4.31	5.62	1.80	9.11	6.48	2.77	0.99	1.61	38.62
1981	0.34	2.38	0.41	5.72	1.05	6.67	1.69	9.65					
1982											5.30	4.14	
1983	0.70	2.17	2.91	3.39	6.42	1.56	3.38	2.23	3.54	1.78	3.88	2.44	34.40
1984	0.81	1.05	1.68	4.08	4.20	6.19	2.31	1.37	2.22	6.55	1.77	2.77	35.00
1985	1.17	2.51	4.35	0.81	4.51	1.09	2.19	3.44	4.89	4.94	4.22	2.20	36.32
1986	0.82	2.26	1.96	2.74	5.92	5.72	2.75	4.29	13.06	3.60	1.61	0.68	45.41
1987	0.79	0.80	2.11	1.53	5.19	2.05	5.55	9.90	3.31	1.03	3.41	3.16	38.83
1988	1.32	0.74	2.31	2.21	0.97	0.70	1.97	3.73	2.72	1.73	2.69	1.48	22.57
1989	0.90	0.45	1.85	2.32	2.25	1.85	3.01	4.35	2.38	2.18	0.81	0.39	22.74
1990	1.27	1.06	4.63	2.27	4.91	5.68	4.28	8.01	0.57	1.35	2.66	2.86	39.55
1991	1.16	0.45	5.81	3.88	4.24	3.34	0.87	3.90	3.76	3.86	4.28	1.59	37.14
1992	1.49	1.87	1.55	3.82	0.69	1.02	7.52	1.63	4.57	1.09	6.84	2.12	34.21
1993	1.37	0.99	3.10	4.61	5.40	8.04	8.50	8.05	4.50	1.64	1.03	0.98	48.21
1994	1.37	2.42	0.48	3.10	1.10	5.77	6.70	6.67	4.51	0.53	2.71	1.73	37.09
1995	1.00	0.07	2.32	5.14	5.33	2.90	2.48	0.29	1.40	2.73	2.40	0.08	26.14
1996	2.65	0.35	1.05	2.09	7.56	5.24	2.37	1.98	1.97	4.14	1.68	0.77	31.85
1997	0.86	1.86	1.20	3.12	2.93	5.35	2.75	3.41	4.11	0.95	0.77	0.90	28.21
1998	1.05	2.93	5.43	5.10	3.27	7.84	1.61	6.38	3.75	4.48	1.31	0.14	43.29
POR= 123 YRS	1.40	1.31	2.41	3.18	4.10	4.47	3.86	3.71	3.88	2.52	2.08	1.48	34.40

WBAN : 94908

AVERAGE TEMPERATURE (°F) 1998 DUBUQUE, IA (DBQ)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	14.0	24.1	29.4	49.6	58.6	62.2	72.1	71.7	61.9	47.6	34.2	20.4	45.5
1970	8.4	19.0	31.4	48.7	61.6	68.1	72.2	70.6	62.5	52.7	36.7	23.8	46.3
1971	11.2	20.0	29.6	47.7	55.8	73.2	68.0	67.1	64.9	57.1	37.6	27.7	46.7
1972	13.4	17.2	30.8	43.7	62.3	66.4	70.2	71.6	62.1	46.0	32.7	17.3	44.5
1973	22.5	25.7	42.3	45.2	55.5	68.9	72.3	72.3	62.5	55.6	38.0	20.4	48.4
1974	17.6	20.5	34.2	49.2	54.8	63.8	74.0	67.1	57.7	50.8	36.8	25.5	46.0
1975	20.4	19.6	24.6	41.3	61.8	68.5	72.0	71.1	57.3	52.5	40.6	26.2	46.3
1976	16.4	30.0	36.5	49.7	55.4	67.9	73.3	68.9	59.7	45.3	27.8	14.7	45.5
1977	3.4	23.6	41.5	54.2	65.1	67.6	74.4	66.5	61.7	48.7	34.0	17.5	46.5
1978	7.7	11.5	28.6	47.5	57.8	67.3	71.4	71.0	66.2	48.6	35.8	19.2	44.4
1979	4.5	10.8	30.8	43.7	57.9	67.6	71.1	69.7	63.3	50.6	35.7	29.6	44.6
1980	20.1	18.1	29.7	47.9	61.7	68.4	75.9	73.0	63.6	47.8	37.9	23.9	47.3
1981	21.7	25.6	38.4	51.2	57.1	69.3	72.2	69.9					
1982											35.7	30.5	
1983	23.1	28.2	35.3	43.4	54.9	69.8	75.9	76.6	62.9	51.2	39.0	9.6	47.5
1984	15.7	30.7	28.4	47.7	55.1	68.9	70.6	72.4	60.6	53.9	37.4	27.4	47.4
1985	11.9	19.3	39.8	54.0	61.3	65.8	71.3	67.1	61.8	49.8	30.4	8.7	45.1
1986	18.4	19.2	37.3	50.9	59.5	67.2	73.6	65.0	63.3	50.8	30.9	25.7	46.8
1987	23.1	31.9	38.4	51.5	62.4	71.0	75.0	69.1	61.7	44.7	40.8	27.8	49.8
1988	13.9	17.9	36.0	47.5	62.6	71.3	76.1	74.7	64.2	45.1	37.7	25.3	47.7
1989	27.4	14.4	32.3	46.5	58.1	67.0	73.5	67.9	58.5	52.3	34.2	13.3	45.5
1990	28.7	26.8	38.8	47.6	55.1	68.3	71.1	70.8	64.2	49.2	41.2	20.0	48.5
1991	14.5	26.9	37.9	50.9	64.1	72.2	73.2	71.3	61.3	49.6	30.3	26.3	48.2
1992	24.7	30.4	36.8	45.3	59.4	66.7	66.7	64.4	59.4	48.8	32.9	23.5	46.6
1993	20.8	20.3	31.7	44.4	59.3	66.2	71.4	71.1	57.3	48.3	34.7	26.2	46.0
1994	9.7	16.7	36.1	48.3	59.2	70.2	69.7	66.4	64.8	52.9	39.9	29.0	46.9
1995	18.7	23.1	37.3	43.6	57.4	70.7	73.3	76.9	60.2	49.7	28.8	21.9	46.8
1996	16.3	23.0	29.3	44.4	54.7	68.0	68.8	70.4	61.2	50.2	29.2	20.7	44.7
1997	15.1	24.5	35.5	43.9	53.0	68.9	70.9	67.5	62.3	51.5	32.2	26.5	46.0
1998	24.2	35.6	34.7	48.8	63.9	67.0	71.9	72.0	66.1	52.0	40.4	29.7	50.5
POR= 122 YRS	18.7	22.6	34.0	48.3	59.6	68.9	73.7	71.3	63.2	51.7	36.5	24.3	47.7

HEATING DEGREE DAYS (base 65°F) 1998 DUBUQUE, IA (DBQ)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1969-70	7	0	140	555	916	1376	1756	1281	1035	502	180	46	7794
1970-71	9	3	140	379	840	1271	1663	1257	1090	515	295	9	7471
1971-72	29	24	127	266	818	1150	1594	1379	1051	632	174	63	7307
1972-73	20	20	141	582	961	1476	1311	1095	696	588	285	7	7182
1973-74	0	2	132	302	805	1375	1460	1242	946	472	327	87	7150
1974-75	0	38	234	433	837	1219	1379	1267	1247	706	149	48	7557
1975-76	24	0	245	393	724	1198	1502	1009	877	461	294	16	6743
1976-77	0	14	180	614	1106	1554	1909	1155	722	343	93	40	7730
1977-78	1	43	121	500	924	1472	1770	1491	1122	521	268	41	8274
1978-79	3	12	90	505	869	1414	1877	1511	1053	632	247	25	8238
1979-80	6	27	110	449	873	1087	1383	1356	1086	516	173	28	7094
1980-81	0	3	113	527	806	1266	1337	1097	819	408	262	9	6647
1981-82	15	13											
1982-83					871	1063	1294	1021	913	641	306	25	
1983-84	5	0	144	429	773	1716	1523	988	1126	513	307	11	7535
1984-85	9	8	198	339	824	1158	1642	1275	776	362	135	64	6790
1985-86	4	23	198	465	1032	1744	1438	1276	856	433	180	45	7694
1986-87	3	56	112	428	1013	1210	1292	922	816	410	149	16	6427
1987-88	3	46	127	619	718	1146	1581	1361	892	519	113	20	7145
1988-89	1	14	87	611	813	1226	1160	1416	1010	549	247	41	7175
1989-90	2	15	208	394	917	1602	1120	1063	805	547	301	38	7012
1990-91	7	1	139	490	707	1388	1561	1063	833	425	159	10	6783
1991-92	3	6	197	477	1033	1191	1241	994	865	585	212	46	6850
1992-93	33	75	201	495	958	1281	1362	1246	1026	610	194	74	7555
1993-94	0	10	241	516	901	1199	1712	1348	893	509	207	22	7558
1994-95	6	44	91	370	746	1109	1432	1168	850	636	232	24	6708
1995-96	10	0	187	468	1078	1331	1507	1167	1101	612	342	53	7856
1996-97	7	0	164	457	1065	1366	1540	1128	908	627	367	16	7645
1997-98	15	28	112	457	975	1186	1259	820	931	479	100	78	6440
1998-	0	0	64	396	729	1087							

WBAN : 94908

COOLING DEGREE DAYS (base 65°F) 1998 DUBUQUE, IA (DBQ)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	0	0	0	0	43	61	236	217	54	22	0	0	633
1970	0	0	0	19	80	149	239	182	70	9	0	0	748
1971	0	0	0	1	15	260	124	97	130	30	0	0	657
1972	0	0	0	0	95	110	189	234	61	0	0	0	689
1973	0	0	0	0	0	133	233	236	65	18	0	0	685
1974	0	0	0	4	18	59	287	109	18	0	0	0	495
1975	0	0	0	0	57	159	247	198	19	12	0	0	692
1976	0	0	0	9	3	112	266	144	29	8	0	0	571
1977	0	0	0	26	103	126	302	98	30	0	0	0	685
1978	0	0	0	0	52	117	210	202	131	1	0	0	713
1979	0	0	0	0	36	106	203	181	66	8	0	0	600
1980	0	0	0	11	76	136	347	257	78	0	0	0	905
1981	0	0	0	1	23	144	247	170					
1982											0	0	
1983	0	0	0	0	0	176	349	367	90	9	0	0	991
1984	0	0	0	1	9	138	190	243	72	1	0	0	654
1985	0	0	0	41	28	93	206	94	112	0	0	0	574
1986	0	0	2	15	15	116	276	64	67	0	0	0	555
1987	0	0	0	11	76	203	322	182	34	0	0	0	828
1988	0	0	0	0	49	216	351	325	68	0	0	0	1009
1989	0	0	1	1	41	110	272	112	21	9	0	0	567
1990	0	0	0	29	1	143	203	191	120	6	0	0	693
1991	0	0	0	8	136	234	264	207	91	4	0	0	944
1992	0	0	0	0	44	105	94	63	39	1	0	0	346
1993	0	0	0	0	27	117	204	209	17	5	0	0	579
1994	0	0	0	15	36	185	158	97	91	2	0	0	584
1995	0	0	0	0	1	203	273	377	49	3	0	0	906
1996	0	0	0	0	28	149	130	175	58	0	0	0	540
1997	0	0	0	0	1	142	205	110	36	45	0	0	539
1998	0	0	1	0	75	148	222	224	105	0	0	0	775

SNOWFALL (inches) 1998 DUBUQUE, IA (DBQ)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1969-70	0.0	0.0	0.0	T	0.9	21.4	6.4	6.4	3.5	3.7	0.0	0.0	42.3
1970-71	0.0	0.0	0.0	0.3	T	11.0	14.6	7.5	13.4	1.4	0.0	0.0	48.2
1971-72	0.0	0.0	0.0	0.0	12.3	4.1	4.7	12.4	16.4	4.5	0.0	0.0	54.4
1972-73	0.0	0.0	0.0	0.5	9.5	10.4	2.2	6.0	1.4	19.8	0.0	0.0	49.8
1973-74	0.0	0.0	0.0	0.0	T	6.7	9.1	13.5	3.1	0.5	0.0	0.0	32.9
1974-75	0.0	0.0	0.0	0.0	6.2	11.6	6.2	25.1	17.2	8.7	0.0	0.0	75.0
1975-76	0.0	0.0	0.0	0.0	7.1	1.0	6.2	12.4	0.7	T	0.0	0.0	27.4
1976-77	0.0	0.0	0.0	1.5	3.7	5.7	9.6	1.3	9.5	3.5	0.0	0.0	34.8
1977-78	0.0	0.0	0.0	0.0	11.6	26.4	10.6	9.7	13.0	T	0.0	0.0	71.3
1978-79	0.0	0.0	0.0	0.0	8.0	17.0	29.3	8.7	3.3	4.1	0.0	0.0	70.4
1979-80	0.0	0.0	0.0	0.0	1.9	1.5	7.1	12.3	7.9	5.3	0.0	0.0	36.0
1980-81	0.0	0.0	0.0	1.4	2.1	7.0	3.7	6.5	1.0	0.0	0.0	0.0	21.7
1981-82	0.0	0.0											
1982-83					0.0	0.0	5.9	15.6	18.4	12.3	0.0	0.0	
1983-84	0.0	0.0	0.0	0.0	1.3	18.4	11.5	0.9	10.7	3.1	0.0	0.0	45.9
1984-85	0.0	0.0	0.0	0.0	1.0	14.2	13.7	6.4	8.1	0.1	0.0	0.0	43.5
1985-86	0.0	0.0	0.0	0.0	10.4	18.7	15.8	12.8	0.8	1.3	0.0	0.0	59.8
1986-87	0.0	0.0	T	T	13.9	3.3	8.7	T	8.0	T	0.0	0.0	33.9
1987-88	0.0	0.0	0.0	0.0	1.1	20.9	8.4	8.3	1.5	1.7	0.0	0.0	41.9
1988-89					1.0	4.4	2.4	8.3	7.7	0.2	T	0.0	
1989-90	0.0	0.0	0.0	T	1.8	8.3	7.1	9.7	0.5	0.3	0.0	0.0	27.7
1990-91	0.0	0.0	0.0	0.0	5.3	18.8	12.5	2.6	12.7	0.1	T	0.0	52.0
1991-92	0.0	0.0	0.0	T	3.7	6.5	9.1	10.7	6.0	0.2	0.0	0.0	36.2
1992-93	0.0	0.0	0.0	0.4	12.6	7.4	8.6	8.6	14.9	11.3	0.0	T	63.8
1993-94	0.0	0.0	0.0	T	1.0	5.6	15.0	23.7	0.6	6.0	0.0	0.0	51.9
1994-95	0.0	0.0	0.0	0.0	T	16.0	13.2	0.5	6.5	0.4	0.0	0.0	36.6
1995-96	0.0	0.0	0.0		4.6	0.5	17.2			1.8	0.0	0.0	
1996-97				0.0	5.2								
1997-98							7.1	0.2	10.1	T	0.0	0.0	
1998-	0.0	0.0	0.0	0.0	1.1	1.8							
POR= 43 YRS	0.0	0.0	T	0.2	3.5	10.2	9.3	7.6	9.1	2.4	0.2	T	42.5

WBAN : 94908

REFERENCE NOTES:

<p>PAGE 1: THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).</p> <p>PAGE 2 AND 3: H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY W/O INDICATES WEATHER AND OBSTRUCTIONS S INDICATES SUNSHINE. PR INDICATES PRESSURE. CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).</p> <p>GENERAL: T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. NORMALS ARE 30-YEAR AVERAGES (1961 - 1990). ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED. 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05. CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET AND ON SATELLITE DATA FOR CLOUDS ABOVE 12,000 FEET. THE NUMBER OF DAYS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY CONDITIONS FOR ASOS STATIONS IS THE SUM OF THE CEILOMETER AND SATELLITE DATA FOR THE SUNRISE TO SUNSET PERIOD.</p>	<p>GENERAL CONTINUED: CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. WHEN AT LEAST ONE OF THE ELEMENTS (CEILOMETER OR SATELLITE) IS MISSING, THE DAILY CLOUDINESS IS NOT COMPUTED. WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH. RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION. AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65° F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY.</p> <p>ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.</p>
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1998 DUBUQUE, IOWA (DBQ)

The terrain around Dubuque varies from gently rolling, 10 to 15 miles to the south and west, to steep hills and bluffs around the city and along the Mississippi River.

The principal feature of the climate in Dubuque is its variety. The Dubuque area is subject to weather ranging from the cold, dry, arctic air masses in the winter, with readings as low as 32 degrees below zero, to the hot, dry weather of the desert southwest in the summer when the temperatures reach about 110. More often the area is covered by mild Pacific air that has lost considerable moisture in crossing the mountains far to the west, or by cool, dry Canadian air, or by warm, moist air from the Gulf regions. Most of the year the latter three types of air masses dominate Dubuque weather, with the invasions of Gulf air rarely occurring in the winter.

The seasons vary widely from year to year at Dubuque. For example, successive invasions of cold air from the north may bring a long, cold winter with snow-covered ground from mid November until March and many days of sub-zero temperatures. Another winter can be mild with bare ground most of the season and only a few sub-zero temperature readings. The summers, too, may vary from hot and humid with considerable thunderstorm activity when the Gulf air prevails, to relatively cool, dry weather when air of northerly origin dominates the season.

All seasons are marked by storms that accompany the changes from one type of air mass to another. In winter, rain changes to sleet and snow, and occasionally a peal of thunder is heard at the height of a snowstorm. In summer, thunderstorms are frequently heavy. They are occasionally accompanied by hail and on rare occasions by tornadoes. Thunderstorms have been sufficiently intense at times to raise the Mississippi River, which is about one-fourth mile wide at Debuque, nearly 5 feet overnight. Flash floods have drowned many people.

Most of the precipitation occurs during the spring and fall seasons. The last occurrence of snow and freezing rain can be in late May, and the first occurrence in late September.

While the climate of Dubuque does not lack for variety, there are times when a particular weather condition may persist for an extended period. Cold weather has lasted as long as 20 days in succession with sub-zero readings. Heat waves have persisted for 10 or more days with readings around 100 degrees each day. Hot, dry spells occasionally plague the crops and livestock in summer, but there are frequent periods of mild, dry weather in the spring and frequently in the autumn.

STATION LOCATION

DUBUQUE, IOWA

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE											AUGUST 1980	* Type M = AMOS T = AUTOB S = ASOS W = AWOS	REMARKS
						SEA LEVEL	GROUND												
							WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND			
<u>COOPERATIVE</u>																			
SE Corner 5th & Main	1/22/51	8/18/58	NA	42°30'	90°40'	633											25	Observations by Dr. Asa Horr.	
Near SE Corner 9th and Main	8/18/58	12/31/71	1300' NNW	42°30'	90°40'	643												Dr. Horr's new office location.	
E. side of Main between 4th and 5th	5/22/68	9/18/69	1350' SSE	42°30'	90°40'	632												By Dr. Horr's son, Edward Horr, at his store during absences of Dr. Horr.	
<u>CITY</u>																			
SW Corner 6th and Main Sullivan Block, 3rd Fl.	7/10/73	7/1/89	1000' SSE	42°30'	90°40'	636	62	52	52								47	By U.S. Army Signal Corps. Thermometer shelter from window to roof 5/1/85.	
SE Corner 5th and Main Moran Block, 2nd Floor Room 5	7/2/89	6/1/94	350' SE	42°30'	90°40'	633	60	61	60								50	U.S. Army Signal Corps until 7/1/91, then Weather Bureau.	
568 Main, 2nd Floor Rooms 1 and 2	6/2/94	1/12/97	200' NNW	42°30'	90°40'	635	57	49	49								41	Co-op Station by Mr. T.W. Ruete 6/1/94-3/1/96. Roof exposure.	
NW Corner 9th and Main B and I Building	1/13/97	1/7/02	1100' NNW	42°30'	90°40'	643	109	101	101								93		
NE Corner 9th and Locust, Old Post Office	1/8/02	2/27/34	200' WSW	42°30'	90°40'	645	96	83	81		a76						76	a - Installed 5/19/02.	
Sixth Street between Locust and Bluff U.S. Post Office and Courthouse	2/28/34	1/26/51	1200' SSE	42°30'	90°40'	641	79	62	60			53	b53				53	b - Installed 9/6/47. Temperature and precipitation records continued until 1/26/52.	
<u>AIRPORT</u>																			
Administration Bldg * Municipal Airport	1/26/51	Present	6.8 mi. SSW	42°24'	90°42'	1065 e1056	31 e23	5 g5	c5 g5	NA	NA	3 i4	3 h3	NA d5 f5	NA	NA	c - Effective 9/9/51. Evaporation records began 8/14/62. d - Commissioned 1800' WSW of thermometer site 6/1/65. e - Effective 6/1/65. f - Type change 6/19/85. g - Moved 140' S 9/1987. h - Moved 165' S 9/28/87. i - Moved 165' S 10/5/87.		
* or Terminal Bldg. +																			
+ Crescent Aviation Bldg. eff. 1987.		(STATION INACTIVE 9/4/81 - 11/1/82)															S	ASOS Commissioned 09/01/95	

SUBSCRIPTION: Price and ordering information available through: National Climatic Data Center, Federal Building, Asheville, North Carolina 28801.
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