



# JULY 2003

## LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

# DUBUQUE, IA

DUBUQUE REGIONAL AIRPORT (DBQ)  
 Lat: 42°23' N Long: 90°42' W Elev (Ground): 1069 Feet  
 Time Zone: CENTRAL WBAN: 94908 ISSN #:0198-2087

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
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	83	57	70	-1	58	63	0	5				0.0	0.00	28.91	30.05	1.4	12	2.1	14	13	12	12	01
02	85	62	74	3	64	68	0	9	BR HZ			0.0	0.00	28.76	29.89	4.7	20	5.4	14	20	13	20	02
03	89*	67	78	7	72	74	0	13	RA BR HZ			0.0	0.29	28.65	29.77	7.2	21	8.3	28	24	23	21	03
04	84	69	77	6	69	72	0	12	RA BR SQ			0.0	0.36	28.71	29.83	3.5	28	7.9	47	31	38*	31	04
05	83	64	74	2	67	70	0	9	RA BR SQ			0.0	0.43	28.77	29.90	1.9	26	5.4	48	25	36	36	05
06	81	68	75	3	68	70	0	10	TSRA BR			0.0	0.01	28.71	29.84	4.0	19	6.9	24	24	18	22	06
07	88	68	78	6	72	74	0	13	TSRA RA BR			0.0	0.39	28.74	29.86	3.0	29	9.8	40	02	32	02	07
08	72	62	67	-5	62	64	0	2	TSRA RA BR SQ			0.0	0.96	28.85	29.99	7.3	05	8.6	37	21	31	21	08
09	70	62	66	-6	63	64	0	1	RA BR			0.0	0.14	28.77	29.90	6.7	10	7.9	28	10	23	09	09
10	71	60	66	-6	62	64	0	1	FG BR			0.0	0.00	28.63	29.77	11.4	28	13.9	31	29	25	29	10
11	78	56	67	-5	58	61	0	2	TS TSRA SQ			0.0	0.39	28.74	29.88	10.2	29	10.7	48*	34	36	35	11
12	78	55	67	-5	58	62	0	2	BR			0.0	0.00	28.89	30.03	3.5	34	3.8	13	32	10	32	12
13	80	59	70	-2	61	65	0	5				0.0	0.00	28.93	30.07	3.7	21	4.0	15	21	13	21	13
14	79	59	69	-4	61	65	0	4	RA			0.0	T	28.84	29.98	10.9	17	11.4	28	17	22	19	14
15	82	59	71	-2	64	67	0	6	RA BR			0.0	0.06	28.79	29.92	9.7	31	10.9	25	19	22	19	15
16	80	56	68	-5	61	65	0	3				0.0	0.00	28.99	30.13	3.1	21	4.0	14	17	10	22	16
17	86	64	75	2	70	72	0	10	BR			0.0	0.00	28.93	30.07	3.5	21	8.7	24	05	21	05	17
18	78	57	68	-5	51	59	0	3				0.0	0.00	28.96	30.10	9.4	06	9.9	22	04	18	04	18
19	80	50*	65	-8	52	58	0	0				0.0	0.00	28.94	30.08	2.5	21	3.9	15	19	13	19	19
20	85	61	73	0	68	70	0	8	RA BR HZ			0.0	1.39	28.73	29.86	4.3	23	7.8	37	24	28	24	20
21	78	64	71	-2	61	65	0	6	BR			0.0	0.00	28.65	29.78	9.7	34	10.3	25	32	20	31	21
22	74	58	66	-7	55	59	0	1				0.0	0.00	28.84	29.99	9.3	36	9.6	20	01	16	01	22
23	76	54	65	-8	53	59	0	0				0.0	0.00	28.96	30.11	5.7	01	6.1	20	01	16	01	23
24	76	51	64*	-9	55	60	1	0				0.0	0.00	28.96	30.11	4.8	20	5.5	16	21	14	23	24
25	83	58	71	-2	63	66	0	6				0.0	0.00	28.91	30.05	14.6	18	14.7	29	19	23	19	25
26	87	67	77	4	69	72	0	12				0.0	0.00	28.83	29.96	15.0	20	15.2	33	20	25	20	26
27	86	70	78*	5	71	73	0	13	BR			0.0	0.00	28.85	29.98	4.4	34	6.9	25	01	16	01	27
28	78	62	70	-2	62	65	0	5	BR			0.0	0.00	28.88	30.02	3.5	08	4.7	20	10	15	10	28
29	82	58	70	-2	63	66	0	5	FG+ BR HZ			0.0	0.00	28.87	30.01	3.5	21	4.8	14	23	13	24	29
30	79	63	71	-1	65	67	0	6	RA BR			0.0	0.04	28.86	29.99	9.4	20	9.5	21	22	17	22	30
31	84	61	73	1	66	68	0	8	RA BR			0.0	T	28.79	29.93	6.9	19	7.6	16	20	14	20	31

80.5	60.7	70.6	■ ■	62.7	66.0	0.0	5.8	< MONTHLY AVERAGES	TOTALS-->	0.0	4.46	28.83	29.96	1.6	23	8.0	<-- MONTHLY AVERAGES					
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-1.6	-1.7	-1.7	■ ■	-----DEPARTURE FROM NORMAL----->						0.73	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3													
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<b>DEGREE DAYS</b>								GREATEST 24-HR PRECIPITATION: 1.39 DATE :20				SEA LEVEL PRESSURE				DATE		TIME	
MONTHLY TOTAL DEPARTURE				SEASON TO DATE TOTAL DEPARTURE				GREATEST 24-HR SNOWFALL: 0.0 DATE :				MAXIMUM				: 30.16		16 1055	
HEATING: 1 -7				291 -123				GREATEST SNOW DEPTH:				MINIMUM				: 29.68		21 0355	
COOLING: 180 -53								NUMBER OF DAYS WITH →		MAXIMUM TEMP ≥ 90: 0		MINIMUM TEMP ≤ 32: 0		PRECIPITATION ≥ 0.01 INCH : 11					
								MAXIMUM TEMP ≤ 32 : 0		MINIMUM TEMP ≤ 0 : 0		PRECIPITATION ≥ 0.10 INCH : 8							
								THUNDERSTORMS : 4		HEAVY FOG : 1		SNOWFALL ≥ 1.0 INCH : 0							

JULY 2003  
DUBUQUE, IA

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

## DUBUQUE, IA

JULY 2003

DBQ

WBAN # 94908

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						T	0.27	0.02					03												03		0.29		
04				0.26	0.10								04												04		0.36		
05		0.21	0.22	T									05												05		0.43		
06					0.01	T							06												06		0.01		
07				T	0.32	0.07	T						07												07		0.39		
08					0.29	0.02	0.09		0.05	0.07	T	0.01	08	0.01	0.40	0.02	T	T						08		0.96			
09									0.08	0.06			09												09		0.14		
10													10												10		0.00		
11													11			0.37	0.02	T						11		0.39			
12													12											12		0.00			
13													13											13		0.00			
14													14											14		0.00			
15	T	0.06											15							T				15		0.06			
16													16											16		0.00			
17													17											17		0.00			
18													18											18		0.00			
19													19											19		0.00			
20													20							T				20		1.39			
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													29											29		0.00			
30													30											30		0.04			
31											T		31	T							0.03	0.01		31		T			

### MAXIMUM SHORT DURATION PRECIPITATION (See Note)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)	.31	.58	.83	1.04	1.25	1.38	1.38	1.39	1.39	1.39	1.39	1.39
Ending Date	20	20	20	20	20	20	20	20	20	20	20	20
Ending Time (Hour/Min)	2249	2249	2249	2252	2258	2306	2306	2306	2306	2306	2306	2306

Date and time are not entered for TRACE amounts.

Note : The sum of the hourly totals is given when it differs from the daily total. NWS does not edit ASOS hourly values but may edit daily and monthly totals. Hourly, daily, and monthly totals are printed as reported by the ASOS site.

## REFERENCE NOTES & SUPPLEMENTAL SUMMARIES

\* = Extreme for the month (last occurrence if more than one)

T = Trace precipitation amount

+ = also occurs on earlier date

FG+ = Heavy fog, visibility .25 miles or less

BLANK entries denote missing or unreported data

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

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

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

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

NORMALS ARE FOR THE YEARS 1971–2000

### WEATHER NOTATIONS

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

Intensity (as indicated on pages 4 to 6):  
'+' = Heavy    ' ' = Moderate    '-' = Light

## DUBUQUE, IA JULY 2003

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

Satellite data are used to derive cloudiness above 12,000 feet. Effective Cloud Amount is based on the cloud cover and the transparency of the clouds within the satellite field of view (approx. 31x31 miles).

Sky Condition is based on the sum (not to exceed 8) of the sunrise to sunset cloud cover below and above 12,000 feet. Both ceilometer and satellite data must be present to compute Sky Condition. Clear = 0–2 oktas, Partly Cloudy = 3–6 oktas, Cloudy = 7–8 oktas.

A Heating (Cooling) Degree Day is the difference between the average daily temperature and 65 degrees F. The HDD season begins July 1, the CDD season begins January 1.

Dew Point is the temperature to which the air must be cooled to achieve 100% relative humidity. Wet Bulb is the temperature the air would have if cooled to saturation at constant pressure by evaporation of water into it.

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

### ADDITIONAL NOTES:

DATE	SUNSHINE		CLOUDINESS (OKTAS)				VISIBILITY (MILES)		RESERVED
	TOTAL MINUTES	PERCENT POSSIBLE	SR–SS		MN–MN		MINIMUM	MAXIMUM	
			CEILOMETER	SATELLITE	CEILOMETER	SATELLITE			
01							9.00	10.00	
02							5.00	10.00	
03							.75	10.00	
04							1.75	10.00	
05							1.00	10.00	
06							4.00	10.00	
07							1.75	10.00	
08							1.50	10.00	
09							2.00	10.00	
10							.50	10.00	
11							.75	10.00	
12							5.00	10.00	
13							9.00	10.00	
14							8.00	10.00	
15							1.75	10.00	
16							8.00	10.00	
17							5.00	10.00	
18							10.00	10.00	
19							10.00	10.00	
20							.75	10.00	
21							6.00	10.00	
22							10.00	10.00	
23							10.00	10.00	
24							10.00	10.00	
25							8.00	10.00	
26							7.00	10.00	
27							5.00	10.00	
28							4.00	10.00	
29							<.25	10.00	
30							2.50	10.00	
31							4.00	10.00	
<b>MONTHLY AVGS</b>							5.39	10.00	
<b>SUNSHINE (MINUTES)</b>									
Total:                      Possible: Percent Possible:									
<b>NUMBER OF DAYS WITH:</b>									
<b>SKY CONDITION</b>									
CLR   PTLY CLDY   CLOUDY   MISSING 31									
<b>MINIMUM VISIBILITY (MILES)</b>									
<=0.25    <=3.0    >=7.0 1            10        12									





# OBSERVATIONS AT 3-HOURLY INTERVALS

# DUBUQUE, IA

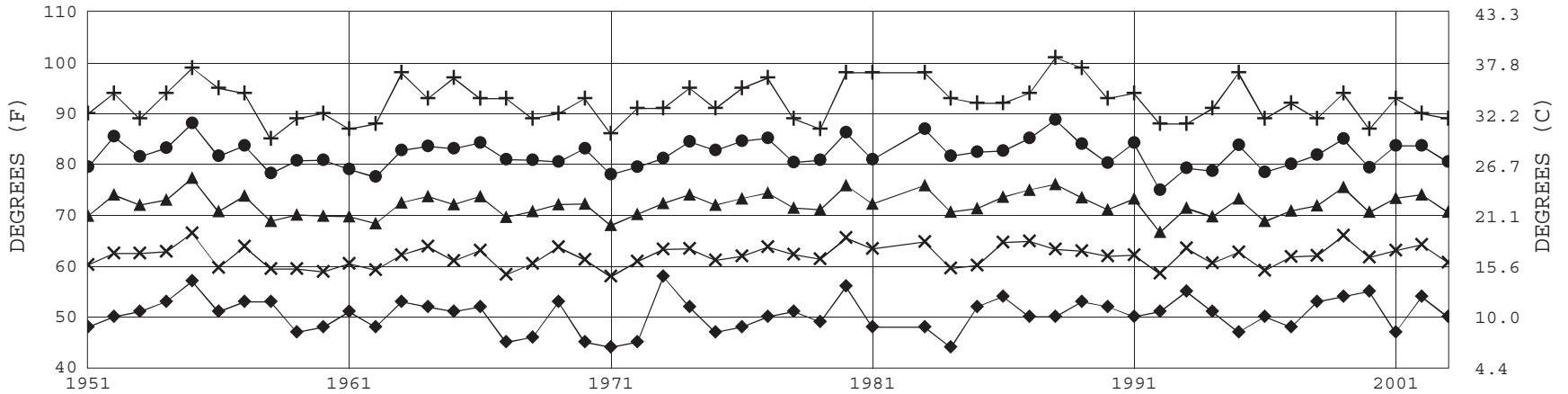
JULY 2003

DBQ

WBAN # 94908

HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		OBSERVATION TIME (LST)	EFF CLD AMT Okta	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		OBSERVATION TIME (LST)	EFF CLD AMT Okta	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)		
	DRY BULB	DEW POINT		WET BULB	RELATIVE HUMIDITY (PCT)					SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)		SPEED (MPH)	DIRECTION TENS OF DEG		STATION	SEA LEVEL													
SUNRISE: 0448									JUL 25									SUNSET: 1931																		
03	CLR	NC						10.00		59	56	57	90	7	18	28.92	30.06	03	CLR	NC							5.00	BR	63	61	62	93	7	20	28.84	29.97
06	CLR	NC						10.00		62	57	59	84	14	19	28.92	30.07	06	CLR	NC							4.00	BR	63	61	62	93	7	20	28.83	29.96
09	CLR	NC						10.00		72	62	66	71	15	18	28.93	30.08	09	CLR	NC							8.00		75	67	70	76	9	20	28.82	29.95
12	CLR	NC						10.00		79	66	70	65	17	18	28.92	30.07	12	CLR	NC							10.00		81	69	73	67	10	17	28.80	29.93
15	CLR	NC						10.00		81	67	72	62	20	18	28.88	30.02	15	FEW	NC							10.00		83	64	70	53	12	20	28.78	29.91
18	CLR	NC						10.00		78	67	71	69	15	18	28.86	30.00	18	CLR	NC							10.00		77	70	72	79	9	15	28.74	29.87
21	CLR	NC						10.00		75	66	69	74	15	17	28.90	30.03	21	CLR	NC							6.00	BR	72	68	69	87	0	00	28.75	29.88
24	CLR	NC						10.00		71	62	65	73	16	17	28.89	30.02	24	CLR	NC							5.00	BR	70	67	68	90	8	17	28.75	29.88
SUNRISE: 0449									JUL 26									SUNSET: 1930																		
03	CLR	NC						10.00		69	61	64	76	15	19	28.87	30.00	3-HOURLY OBSERVATION NOTES																		
06	CLR	NC						9.00		69	61	64	76	16	20	28.88	30.01	Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8,																		
09	CLR	NC						10.00		76	64	68	67	22	20	28.83	29.96	SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, VV = Vertical Visibility = 8/8.																		
12	CLR	NC						10.00		83	70	74	65	17	22	28.83	29.95	Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.																		
15	CLR	NC						10.00		86	74	77	67	15	21	28.81	29.94	NC= No ceiling detected.																		
18	CLR	NC						8.00		85	75	78	72	15	21	28.78	29.91	& = Original observation contained additional weather elements.																		
21	FEW	NC						7.00		78	74	75	87	7	20	28.83	29.95	See page 3 for additional notes.																		
24	CLR	NC						7.00		77	73	74	88	6	22	28.82	29.94																			
SUNRISE: 0450									JUL 27									SUNSET: 1929																		
03	SCT	NC						5.00	BR	75	73	74	94	5	19	28.81	29.93																			
06	OVC	055						8.00		75	71	72	88	8	35	28.83	29.96																			
09	CLR	NC						10.00		80	72	74	76	8	35	28.88	30.00																			
12	CLR	NC						8.00		79	72	74	79	12	33	28.90	30.03																			
15	CLR	NC						10.00		85	68	73	57	13	01	28.84	29.96																			
18	SCT	NC						10.00		82	69	73	65	0	00	28.85	29.97																			
21	BKN	047						8.00		76	72	73	88	5	29	28.88	30.00																			
24	CLR	NC						10.00		73	67	69	81	8	36	28.86	29.99																			
SUNRISE: 0451									JUL 28									SUNSET: 1928																		
03	OVC	016						10.00		67	61	63	81	7	05	28.86	29.99																			
06	OVC	032						10.00		66	59	62	78	6	07	28.89	30.02																			
09	OVC	025						10.00		68	59	63	73	9	08	28.91	30.04																			
12	BKN	025						10.00		73	61	66	66	0	00	28.91	30.04																			
15	FEW	NC						10.00		77	63	68	62	3	VR	28.88	30.01																			
18	CLR	NC						10.00		76	62	67	62	3	07	28.86	29.99																			
21	CLR	NC						10.00		65	62	63	90	0	00	28.88	30.02																			
24	CLR	NC						8.00		64	61	62	90	3	20	28.89	30.03																			
SUNRISE: 0452									JUL 29									SUNSET: 1927																		
03	VV	001						1.00	BR	62	61	61	96	5	21	28.88	30.01																			
06	OVC	001						0.25	FG	60	60	60	100	0	00	28.89	30.03																			
09	CLR	NC						7.00		74	66	69	76	8	26	28.91	30.04																			
12	BKN	035						10.00		79	65	70	62	5	VR	28.89	30.03																			
15	CLR	NC						10.00		80	64	70	58	6	VR	28.87	30.00																			
18	CLR	NC						10.00		77	67	70	71	9	18	28.82	29.96																			
21	CLR	NC						10.00		67	63	64	87	6	16	28.86	29.99																			
24	SCT	NC						8.00		65	62	63	90	6	20	28.88	30.01																			
SUNRISE: 0453									JUL 30									SUNSET: 1926																		
03	BKN	120						5.00	BR	66	64	65	93	5	20	28.86	29.99																			
06	CLR	NC						3.00	BR	64	63	63	96	6	22	28.86	29.99																			
09	CLR	NC						9.00		73	65	68	76	10	20	28.88	30.01																			
12	SCT	NC						9.00		73	65	68	76	13	21	28.88	30.02																			
15	CLR	NC						10.00		79	66	70	65	14	19	28.85	29.98																			
18	CLR	NC						10.00		75	64	68	69	9	20	28.81	29.95																			
21	BKN	120						7.00		70	66	67	87	8	18	28.85	29.98																			
24	CLR	NC						5.00	BR	66	64	65	93	7	20	28.86	30.00																			

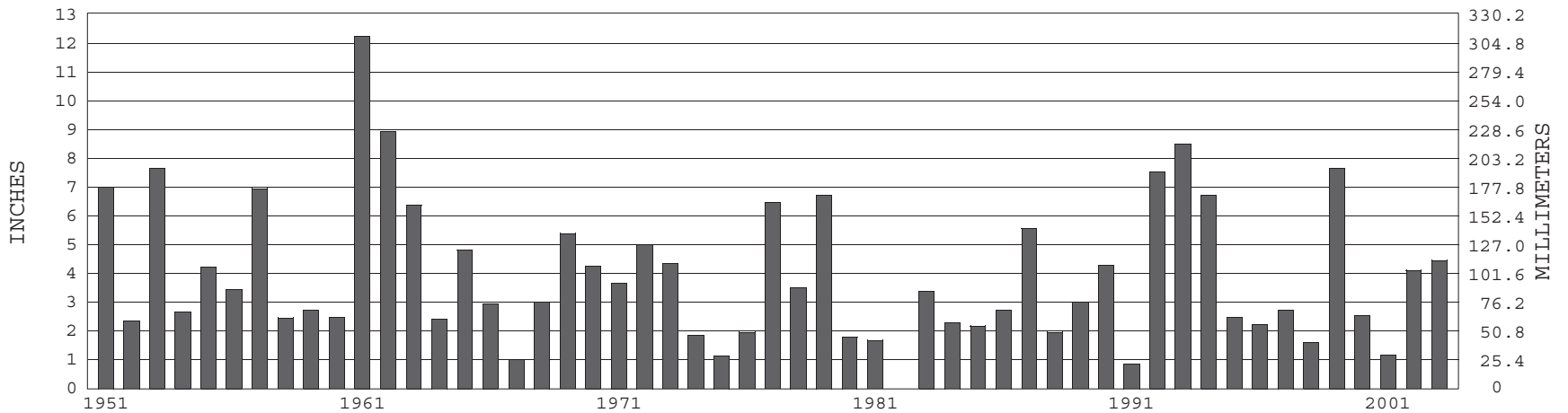
### DUBUQUE, IA JULY TEMPERATURES



+ Extreme Max.      ● Mean Max.      ▲ Mean      × Mean Min.      ◆ Extreme Min.

Long-Term (1951-2003) Mean: 70.7      1961-1990 Normal: 72.3

### DUBUQUE, IA JULY PRECIPITATION



Long-Term (1951-2003) Mean Monthly Total: 3.95

1961-1990 Normal: 3.73



JULY 2003

DUBUQUE, IA

# LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

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DIRECTOR

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