



APRIL 2003

LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

DULUTH, MN

INTERNATIONAL AIRPORT (DLH)
 Lat: 46° 50' N Long: 92° 11' W Elev (Ground): 1426 Feet
 Time Zone: CENTRAL WBAN: 14913 ISSN #: 0198-2702

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			
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	45	33	39	7	30	35	26	0	RA SN BR	5		T	T	28.21	29.75	3.3	03	7.5	16	08	15	06	01	
02	33	22	28	-5	21	23	37	0	RA SN FG+ FZFG BR BLSN	5		2.0	0.25	28.50	30.07	23.6	07	23.8	43	07	36	07	02	
03	25	20	23	-10	19	22	42	0	SN PL BR HZ BLSN	5		2.0	0.25	28.48	30.06	30.2	08	30.3	55	07	44	08	03	
04	23	16	20*	-14	16	18	45	0	SN BCFG BR BLSN	7		8.5	0.38	28.49	30.08	18.4	06	19.5	36	07	30	07	04	
05	28	14	21	-13	7	16	44	0	SN BR	12		T	T	28.64	30.24	4.8	06	9.1	18	02	14	10	05	
06	32	12	22	-13	12	20	43	0		6		0.0	0.00	28.82	30.42	12.5	09	13.0	28	10	23	08	06	
07	30	23	27	-8	17	23	38	0		5		0.0	0.00	28.89	30.48	17.9	08	18.1	38	08	32	08	07	
08	42	11*	27	-9	11	24	38	0		5		0.0	0.00	28.86	30.45	3.8	16	5.8	14	22	13	22	08	
09	55	32	44	8	18	34	21	0		2		0.0	0.00	28.58	30.13	14.8	22	15.0	28	23	23	22	09	
10	65	35	50	14	29	41	15	0		2		0.0	0.00	28.42	29.95	10.8	24	13.1	26	28	22	26	10	
11	62	34	48	11	22	38	17	0		T		0.0	0.00	28.53	30.06	6.2	02	8.5	29	08	24	09	11	
12	40	28	34	-3	27	31	31	0	SN	0		T	T	28.67	30.24	12.8	09	13.0	24	10	20	10	12	
13	59	28	44	6	30	37	21	0		0		0.0	0.00	28.43	29.98	11.2	14	13.4	25	21	21	21	13	
14	81*	45	63*	25	45	54	2	0		0		0.0	0.00	28.19	29.68	8.3	21	15.4	38	09	32	09	14	
15	46	33	40	1	29	35	25	0		0		0.0	0.00	28.32	29.84	21.6	07	21.9	40	07	31	07	15	
16	33	24	29	-10	21	25	36	0	RA SN PL BLSN	0		T	0.35	28.53	30.10	32.6	08	32.7	56*	08	46*	08	16	
17	34	25	30	-10	28	29	35	0	FZDZ SN BR BLSN	T		0.4	0.06	28.50	30.07	6.4	11	10.9	44	09	36	09	17	
18	40	28	34	-6	28	31	31	0	RA BR	0		0.0	0.15	28.55	30.11	10.7	09	11.9	31	08	24	08	18	
19	37	31	34	-7	34	34	31	0	RA DZ FG+ FZFG BR	0		0.0	0.23	28.38	29.93	12.8	08	13.3	26	09	21	08	19	
20	42	37	40	-1	33	36	25	0	RA DZ BR HZ	0		0.0	0.29	28.17	29.70	11.7	33	12.1	26	31	20	32	20	
21	55	36	46	4	28	38	19	0		0		0.0	0.00	28.43	29.97	13.0	35	13.1	30	36	22	35	21	
22	51	31	41	-1	17	32	24	0		0		0.0	0.00	28.61	30.15	4.6	10	7.9	16	14	12	11	22	
23	57	28	43	1	18	34	22	0		0		0.0	0.00	28.55	30.09	8.4	11	8.8	18	11	16	11	23	
24	66	32	49	6	25	38	16	0		0		0.0	0.00	28.48	30.01	7.7	10	9.2	28	08	20	08	24	
25	48	31	40	-3	24	34	25	0		0		0.0	0.00	28.47	30.02	12.3	08	12.7	28	08	22	08	25	
26	65	26	46	2	28	39	19	0		0		0.0	0.00	28.34	29.88	4.0	15	5.6	16	17	15	19	26	
27	70	45	58	14	37	47	7	0	RA	0		0.0	0.07	28.21	29.71	10.1	25	14.6	38	26	30	25	27	
28	52	39	46	1	34	41	19	0		0		0.0	0.00	28.45	29.98	14.0	28	14.4	35	28	23	28	28	
29	54	34	44	-1	23	36	21	0		0		0.0	0.00	28.55	30.09	4.5	30	6.2	15	30	13	30	29	
30	60	30	45	-1	24	37	20	0		0		0.0	0.00	28.41	29.94	2.9	13	4.4	17	12	14	12	30	

47.7	28.8	38.3	■ ■	24.5	32.7	26.5	0.0	< MONTHLY AVERAGES	TOTALS->	12.9	2.03	28.49	30.04	6.3	08	13.5	<- MONTHLY AVERAGES					
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-1.3	-1	-7	■ ■	->-----DEPARTURE FROM NORMAL-----<						-06	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3													
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DEGREE DAYS								GREATEST 24-HR PRECIPITATION: 0.38 DATE :04				SEA LEVEL PRESSURE DATE TIME			
MONTHLY TOTAL DEPARTURE				SEASON TO DATE TOTAL DEPARTURE				GREATEST 24-HR SNOWFALL: 8.5 DATE :04				MAXIMUM : 30.55 08 0555			
HEATING: 795 8 9178 55				COOLING: 0 0 0 0				GREATEST SNOW DEPTH: 12 DATE :05				MINIMUM : 29.53 01 0055			
NUMBER OF DAYS WITH				MAXIMUM TEMP ≥ 90: 0				MINIMUM TEMP ≤ 32: 20				PRECIPITATION ≥ 0.01 INCH : 9			
				MAXIMUM TEMP ≤ 32 : 5				MINIMUM TEMP ≤ 0 : 0				PRECIPITATION ≥ 0.10 INCH : 7			
				THUNDERSTORMS : 0				HEAVY FOG : 2				SNOWFALL ≥ 1.0 INCH : 3			

APRIL 2003
DULUTH, MN

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

DULUTH, MN

APRIL 2003

DLH

WBAN # 14913

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		T	
02	0.01	T	T	T	T	T	T	T	T	T	T	T	02	T	T	T	T	T	T	T	T	T	T	T	02	0.01	0.25	
03													03			T									03	T	0.25	
04	T	T	T	T	T	T	T	T	T	T	T	T	04	T	T	T	T	T	T	T	T	T	T	T	04	T	0.38	
05	T	T	T										05			T									05		T	
06													06												06		0.00	
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	T	
13													13												13		0.00	
14													14												14		0.00	
15													15												15		0.00	
16													16				T	T	T	T	T	T			16	T	0.35	
17													17	0.02	0.02										17	0.04	0.06	
18													18								T	0.06	0.05	0.03	18	0.14	0.15	
19	0.07	0.04	T			T	T	0.03	0.02	0.01	0.01	T	19	0.01		T			T	0.01	0.01	0.01	0.01	19		0.23		
20	0.01	T	T	0.04	0.02	0.02	T	0.01	T	T	0.02	T	20	T	0.01	T	0.01	0.04	0.03	0.01	0.03	0.02	0.01	20		0.29		
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	T	T											27												27	0.05	0.07	
28													28												28		0.00	
29													29												29		0.00	
30													30												30		0.00	

MAXIMUM SHORT DURATION PRECIPITATION (See Note)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)												
Ending Date												
Ending Time (Hour/Min)												

Date and time are not entered for TRACE amounts.

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

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

DULUTH, MN APRIL 2003

Ceilometer (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							2.00	10.00	
02							.25	10.00	
03							.13	10.00	
04							.25	4.00	
05							3.00	10.00	
06							10.00	10.00	
07							10.00	10.00	
08							10.00	10.00	
09							10.00	10.00	
10							9.00	10.00	
11							10.00	10.00	
12							10.00	10.00	
13							10.00	10.00	
14							10.00	10.00	
15							10.00	10.00	
16							2.50	10.00	
17							.75	10.00	
18							5.00	10.00	
19							<.25	10.00	
20							1.50	10.00	
21							10.00	10.00	
22							10.00	10.00	
23							10.00	10.00	
24							10.00	10.00	
25							10.00	10.00	
26							10.00	10.00	
27							10.00	10.00	
28							10.00	10.00	
29							9.00	10.00	
30							8.00	10.00	
MONTHLY AVGS							7.27	9.80	
SUNSHINE (MINUTES)									
Total: Possible: Percent Possible:									
NUMBER OF DAYS WITH:									
SKY CONDITION									
CLR PTLY CLDY CLOUDY MISSING									
30									
MINIMUM VISIBILITY (MILES)									
<=0.25 <=3.0 >=7.0									
3 8 21									

OBSERVATIONS AT 3-HOURLY INTERVALS

DULUTH, MN

APRIL 2003

DLH

WBAN # 14913

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: 0549				APR 01				SUNSET: 1836				SUNRISE: 0537				APR 07				SUNSET: 1844									
03	CLR	NC		10.00	36	31	34	82	7	31	28.03	29.57	03	CLR	NC		10.00	24	18	22	77	15	07	28.79	30.38				
06	FEW	NC		10.00	35	31	33	85	8	33	28.11	29.65	06	OVC	014		10.00	24	19	22	81	17	08	28.84	30.44				
09	BKN	110		10.00	37	30	34	76	9	36	28.18	29.72	09	FEW	NC		10.00	25	17	22	72	24	07	28.87	30.47				
12	OVC	085		10.00	39	30	35	70	6	34	28.24	29.78	12	CLR	NC		10.00	29	15	25	56	21	08	28.91	30.50				
15	FEW	NC		10.00	44	27	37	51	0	00	28.25	29.78	15	CLR	NC		10.00	29	15	25	56	20	08	28.91	30.50				
18	BKN	110		10.00	38	30	35	73	8	11	28.28	29.83	18	CLR	NC		10.00	27	17	24	66	17	07	28.91	30.51				
21	OVC	075		10.00	38	28	34	68	7	07	28.34	29.88	21	CLR	NC		10.00	24	16	22	71	12	09	28.94	30.53				
24	OVC	018		2.00	33	32	33	96	12	07	28.38	29.93	24	CLR	NC		10.00	23	18	21	81	8	08	28.93	30.53				
SUNRISE: 0547				APR 02				SUNSET: 1838				SUNRISE: 0535				APR 08				SUNSET: 1846									
03	OVC	006		0.50	30	29	30	96	18	07	28.40	29.95	03	CLR	NC		10.00	20	14	18	78	8	09	28.92	30.52				
06	OVC	009		2.50	25	23	24	92	26	08	28.43	29.98	06	CLR	NC		10.00	11	8	10	88	3	09	28.94	30.55				
09	OVC	005		3.00	23	22	23	96	28	08	28.50	30.06	09	CLR	NC		10.00	28	10	23	47	6	17	28.93	30.53				
12	OVC	007		2.00	23	20	22	88	31	07	28.54	30.11	12	CLR	NC		10.00	36	6	27	28	0	00	28.89	30.47				
15	OVC	009		10.00	22	19	21	89	25	07	28.53	30.11	15	CLR	NC		10.00	41	11	31	29	6	16	28.83	30.42				
18	OVC	011		10.00	22	18	21	85	20	07	28.54	30.12	18	CLR	NC		10.00	40	14	31	35	7	16	28.77	30.37				
21	OVC	036		10.00	23	14	20	68	24	07	28.54	30.12	21	CLR	NC		10.00	31	14	26	49	7	18	28.77	30.36				
24	OVC	065		10.00	24	15	21	68	22	07	28.53	30.12	24	CLR	NC		10.00	34	11	27	38	10	22	28.71	30.27				
SUNRISE: 0545				APR 03				SUNSET: 1839				SUNRISE: 0533				APR 09				SUNSET: 1847									
03	OVC	038		10.00	24	19	22	81	24	07	28.50	30.08	03	CLR	NC		10.00	34	16	28	48	13	24	28.68	30.24				
06	OVC	043		6.00	24	18	22	77	31	08	28.49	30.07	06	CLR	NC		10.00	32	12	26	43	13	23	28.65	30.21				
09	OVC	018		1.75	24	19	22	81	40	08	28.50	30.07	09	CLR	NC		10.00	40	17	32	40	13	22	28.61	30.17				
12	OVC	019		7.00	23	17	21	78	28	07	28.44	30.01	12	CLR	NC		10.00	50	20	38	31	17	23	28.57	30.12				
15	OVC	015		6.00	22	18	21	85	35	08	28.43	30.01	15	CLR	NC		10.00	55	22	41	28	20	21	28.52	30.06				
18	OVC	010		0.25	21	19	20	92	26	08	28.46	30.04	18	CLR	NC		10.00	53	23	41	31	18	23	28.52	30.06				
21	OVC	008		0.75	22	21	22	96	32	08	28.50	30.07	21	CLR	NC		10.00	46	19	36	34	12	21	28.50	30.05				
24	OVC	009		1.75	23	21	22	92	21	08	28.50	30.08	24	CLR	NC		10.00	41	22	34	47	14	22	28.51	30.06				
SUNRISE: 0543				APR 04				SUNSET: 1840				SUNRISE: 0531				APR 10				SUNSET: 1849									
03	OVC	009		1.00	23	21	22	92	16	08	28.46	30.03	03	CLR	NC		10.00	36	24	31	62	14	21	28.48	30.02				
06	OVC	013		0.50	20	18	19	92	25	07	28.48	30.06	06	CLR	NC		9.00	36	26	32	67	14	21	28.45	29.98				
09	OVC	013		0.50	18	15	17	88	23	05	28.54	30.13	09	CLR	NC		10.00	47	29	39	50	12	23	28.42	29.95				
12	OVC	008		0.25	19	15	18	85	21	06	28.50	30.08	12	CLR	NC		10.00	56	33	45	42	15	22	28.38	29.91				
15	OVC	015		0.50	18	15	17	88	21	06	28.49	30.08	15	CLR	NC		10.00	65	39	52	39	20	27	28.36	29.88				
18	OVC	014		0.50	18	14	17	84	22	05	28.50	30.08	18	CLR	NC		10.00	62	37	50	40	12	25	28.36	29.88				
21	OVC	029		4.00	16	12	15	84	12	01	28.50	30.10	21	CLR	NC		10.00	53	22	40	30	8	32	28.42	29.94				
24	OVC	035		2.50	16	12	15	84	12	02	28.51	30.11	24	CLR	NC		10.00	46	22	37	38	8	32	28.43	29.96				
SUNRISE: 0541				APR 05				SUNSET: 1842				SUNRISE: 0529				APR 11				SUNSET: 1850									
03	OVC	090		9.00	15	7	13	70	12	02	28.52	30.12	03	CLR	NC		10.00	41	20	33	43	6	34	28.47	29.99				
06	OVC	100		10.00	14	5	12	67	8	35	28.57	30.17	06	CLR	NC		10.00	35	20	30	54	5	32	28.52	30.06				
09	FEW	NC		7.00	19	5	15	54	3	01	28.62	30.22	09	CLR	NC		10.00	49	23	38	36	8	35	28.55	30.09				
12	FEW	NC		10.00	25	1	19	35	5	VR	28.65	30.24	12	CLR	NC		10.00	57	25	43	29	9	03	28.53	30.06				
15	CLR	NC		10.00	25	12	21	58	13	12	28.66	30.25	15	CLR	NC		10.00	61	22	44	22	12	02	28.50	30.03				
18	CLR	NC		10.00	22	10	19	60	12	10	28.69	30.29	18	CLR	NC		10.00	59	19	43	21	8	01	28.52	30.06				
21	CLR	NC		10.00	18	12	16	77	9	09	28.73	30.34	21	CLR	NC		10.00	49	20	38	32	6	36	28.56	30.09				
24	CLR	NC		10.00	17	5	14	59	6	14	28.77	30.37	24	CLR	NC		10.00	35	28	32	76	14	09	28.62	30.17				
SUNRISE: 0539				APR 06				SUNSET: 1843				SUNRISE: 0527				APR 12				SUNSET: 1851									
03	CLR	NC		10.00	14	4	12	64	7	10	28.78	30.39	03	CLR	NC		10.00	32	27	30	82	12	09	28.65	30.19				
06	CLR	NC		10.00	13	8	12	81	8	11	28.80	30.41	06	FEW	NC		10.00	30	27	29	88	14	08	28.69	30.24				
09	CLR	NC		10.00	24	14	21	65	9	10	28.82	30.43	09	OVC	011		10.00	32	27	30	82	15	09	28.73	30.29				
12	CLR	NC		10.00	29	11	24	47	9	11	28.85	30.45	12	OVC	015		10.00	36	28	33	73	14	07	28.73	30.30				
15	CLR	NC		10.00	31	12	25	45	16	10	28.80	30.40	15	CLR	NC		10.00	39	29	35	67	13	10	28.68	30.25				
18	CLR	NC		10.00	27	10	22	49	20	07	28.80	30.40	18	CLR	NC		10.00	36	25	32	64	14	09	28.65	30.22				
21	CLR	NC		10.00	25	19	23	78	20	09	28.84	30.44	21	CLR	NC		10.00	30	23	28	75	13	09	28.64	30.22				
24	CLR	NC		10.00	25	18	23	75	21	07	28.84	30.43	24	CLR	NC		10.00	28	24	27	85	13	11	28.59	30.16				

OBSERVATIONS AT 3-HOURLY INTERVALS

DULUTH, MN

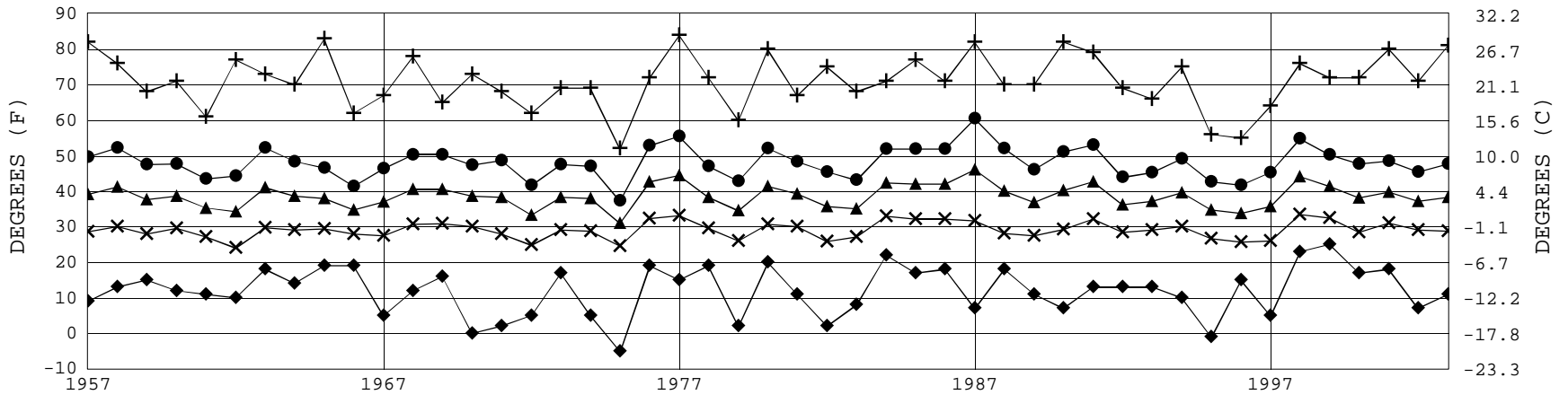
APRIL 2003

DLH

WBAN # 14913

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: 0526 APR 13				SUNSET: 1853				SUNRISE: 0515 APR 19				SUNSET: 1901																	
03	CLR	NC		10.00	29	24	27	82	14	10	28.60	30.17	03	VV	001		0.50	FZFG	31	31	31	100	17	09	28.44	29.99			
06	BKN	110		10.00	30	26	29	85	12	14	28.56	30.12	06	VV	001		0.25	-RA FG	32	31	32	96	17	09	28.40	29.96			
09	CLR	NC		10.00	40	30	36	68	14	14	28.51	30.08	09	OVC	001		1.50	-RA BR	33	32	33	96	14	08	28.38	29.93			
12	CLR	NC		10.00	49	32	41	52	12	16	28.44	29.98	12	OVC	001		1.00	BR	35	34	35	96	15	07	28.37	29.93			
15	CLR	NC		10.00	50	34	43	54	13	12	28.35	29.90	15	VV	001		0.25	FG	36	36	36	100	14	07	28.36	29.91			
18	FEW	NC		10.00	46	30	39	54	10	13	28.31	29.85	18	VV	001		0.06	FG	36	36	36	100	12	07	28.36	29.91			
21	CLR	NC		10.00	44	32	39	63	8	16	28.27	29.81	21	OVC	001		1.25	-DZ BR	36	36	36	100	6	05	28.33	29.88			
24	CLR	NC		10.00	59	39	49	48	21	21	28.24	29.75	24	OVC	001		2.50	-RA BR	37	37	37	100	8	04	28.26	29.80			
SUNRISE: 0524 APR 14				SUNSET: 1854				SUNRISE: 0513 APR 20				SUNSET: 1902																	
03	CLR	NC		10.00	60	42	51	52	20	21	28.21	29.71	03	OVC	003		8.00	-RA	38	37	38	97	8	32	28.20	29.74			
06	CLR	NC		10.00	57	43	50	60	15	22	28.20	29.70	06	OVC	005		6.00	-RA BR	37	36	37	96	15	34	28.17	29.70			
09	CLR	NC		10.00	65	47	55	52	18	23	28.21	29.71	09	OVC	003		10.00	-RA	39	32	36	76	15	34	28.13	29.66			
12	CLR	NC		10.00	73	50	60	44	12	23	28.21	29.69	12	OVC	005		10.00	-RA	40	32	37	73	15	32	28.12	29.65			
15	CLR	NC		10.00	80	49	62	34	14	22	28.16	29.63	15	OVC	007		2.50	-RA BR	40	32	37	73	14	31	28.14	29.67			
18	CLR	NC		10.00	78	52	63	40	8	22	28.15	29.63	18	OVC	014		9.00	-RA	40	31	36	70	10	32	28.16	29.69			
21	SCT	NC		10.00	57	43	50	60	21	07	28.18	29.67	21	OVC	015		10.00		39	31	36	73	13	35	28.19	29.72			
24	CLR	NC		10.00	45	33	40	63	26	09	28.16	29.65	24	OVC	013		10.00		39	31	36	73	17	35	28.22	29.75			
SUNRISE: 0522 APR 15				SUNSET: 1855				SUNRISE: 0511 APR 21				SUNSET: 1904																	
03	CLR	NC		10.00	43	32	38	65	18	07	28.20	29.70	03	OVC	018		10.00		38	33	36	83	13	36	28.26	29.80			
06	FEW	NC		10.00	39	34	37	82	15	06	28.26	29.77	06	OVC	024		10.00		38	31	35	76	17	35	28.35	29.89			
09	OVC	013		10.00	40	34	37	79	23	07	28.32	29.85	09	FEW	NC		10.00		43	32	38	65	18	36	28.41	29.95			
12	OVC	017		10.00	41	31	37	67	29	07	28.34	29.88	12	FEW	NC		10.00		51	32	43	48	17	36	28.46	30.00			
15	SCT	NC		10.00	39	26	34	60	28	07	28.34	29.88	15	FEW	NC		10.00		54	26	42	34	13	36	28.46	30.00			
18	SCT	NC		10.00	38	24	33	57	20	08	28.35	29.89	18	CLR	NC		10.00		52	22	40	31	12	36	28.49	30.02			
21	CLR	NC		10.00	36	21	31	55	26	08	28.38	29.93	21	CLR	NC		10.00		44	21	35	40	8	35	28.53	30.07			
24	CLR	NC		10.00	34	23	30	64	31	08	28.42	29.96	24	CLR	NC		10.00		37	21	31	52	6	34	28.56	30.11			
SUNRISE: 0520 APR 16				SUNSET: 1857				SUNRISE: 0509 APR 22				SUNSET: 1905																	
03	OVC	048		10.00	31	24	28	76	30	07	28.44	29.99	03	CLR	NC		10.00		32	21	28	64	5	35	28.58	30.13			
06	OVC	045		10.00	30	23	28	75	32	07	28.49	30.05	06	CLR	NC		10.00		33	21	29	61	7	36	28.62	30.17			
09	OVC	043		10.00	29	21	26	72	40	07	28.51	30.07	09	CLR	NC		10.00		45	14	34	29	7	06	28.64	30.19			
12	OVC	042		10.00	27	19	24	72	39	08	28.57	30.14	12	CLR	NC		10.00		46	23	37	40	8	13	28.65	30.19			
15	BKN	060		10.00	26	18	23	71	36	08	28.57	30.14	15	CLR	NC		10.00		50	16	37	26	12	13	28.61	30.16			
18	OVC	043		7.00	-FZRAPL	24	20	23	84	30	08	28.56	30.14	18	CLR	NC		10.00		49	8	35	19	8	12	28.57	30.13		
21	OVC	036		7.00	-PL	25	21	24	85	36	08	28.55	30.13	21	CLR	NC		10.00		36	10	28	34	6	11	28.58	30.13		
24	OVC	014		4.00	-PLSN BLSN	25	22	24	88	35	09	28.52	30.10	24	CLR	NC		10.00		32	15	26	50	8	11	28.59	30.14		
SUNRISE: 0518 APR 17				SUNSET: 1858				SUNRISE: 0508 APR 23				SUNSET: 1906																	
03	OVC	005		4.00	-SN BLSN	26	25	26	96	29	09	28.48	30.05	03	CLR	NC		10.00		30	11	24	45	5	11	28.59	30.14		
06	OVC	005		1.50	-FZDZSN BR	27	26	27	96	14	11	28.50	30.08	06	CLR	NC		10.00		30	9	24	41	6	12	28.59	30.15		
09	OVC	003		2.50	-SN BR	28	28	28	100	12	10	28.50	30.07	09	CLR	NC		10.00		45	18	35	34	7	15	28.59	30.14		
12	OVC	005		7.00		29	29	29	100	5	19	28.50	30.06	12	CLR	NC		10.00		54	24	41	31	8	13	28.55	30.10		
15	OVC	009		10.00		32	30	31	92	8	26	28.47	30.04	15	CLR	NC		10.00		56	24	42	29	12	10	28.50	30.05		
18	OVC	017		10.00		34	29	32	82	5	25	28.49	30.05	18	CLR	NC		10.00		52	20	39	28	14	10	28.50	30.03		
21	OVC	019		10.00		32	30	31	92	6	18	28.50	30.08	21	CLR	NC		10.00		43	18	34	37	13	09	28.50	30.04		
24	OVC	017		10.00		31	29	30	92	0	00	28.52	30.09	24	CLR	NC		10.00		38	18	31	44	7	10	28.51	30.05		
SUNRISE: 0516 APR 18				SUNSET: 1859				SUNRISE: 0506 APR 24				SUNSET: 1908																	
03	BKN	015		10.00	30	27	29	88	3	19	28.54	30.11	03	CLR	NC		10.00		35	18	29	50	5	11	28.49	30.02			
06	BKN	015		10.00	28	26	27	92	3	14	28.55	30.12	06	CLR	NC		10.00		37	23	32	57	0	00	28.50	30.03			
09	OVC	013		10.00	34	28	32	79	14	11	28.56	30.13	09	SCT	NC		10.00		52	28	42	40	3	20	28.50	30.03			
12	OVC	016		10.00	36	28	33	73	14	09	28.60	30.16	12	FEW	NC		10.00		62	29	47	29	6	14	28.48	30.00			
15	FEW	NC		10.00	39	30	35	70	12	09	28.57	30.13	15	CLR	NC		10.00		65	31	49	28	10	14	28.43	29.95			
18	CLR	NC		10.00	34	28	32	79	13	07	28.53	30.10	18	BKN	110		10.00		48	25	39	41	15	09	28.44	29.98			
21	OVC	026		10.00	-RA	32	28	30	85	21	09	28.50	30.06	21	OVC	100		10.00		43	29	37	58	15	08	28.48	30.01		
24	OVC	005		6.00	-RA BR	32	32	32	100	15	09	28.51	30.07	24	OVC	080		10.00		41	24	34	51	18	07	28.49	30.01		

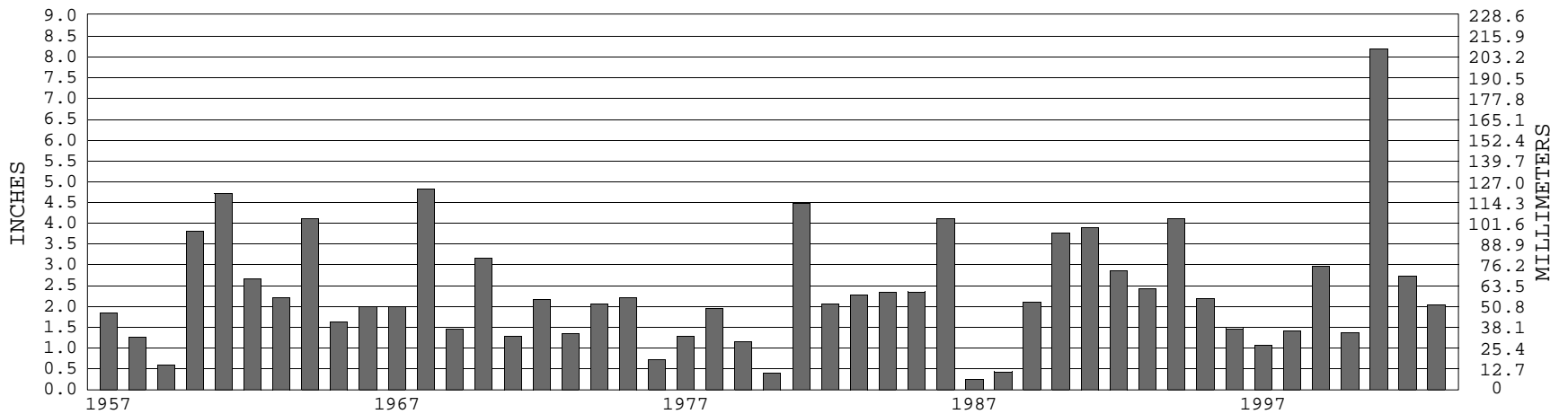
DULUTH, MN APRIL TEMPERATURES



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

Long-Term (1957-2003) Mean: 38.6 1961-1990 Normal: 39.0

DULUTH, MN APRIL PRECIPITATION



Long-Term (1957-2003) Mean Monthly Total: 2.38

1961-1990 Normal: 2.09



APRIL 2003

DULUTH, MN

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.

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