



JULY 2004

LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

OAK RIDGE, TN

OAK RIDGE (OQT)
 Lat: 36°01' N Long: 84°14' W Elev (Ground): 913 Feet
 Time Zone: EASTERN WBAN: 53868 ISSN #: -

JULY 2004
 OAK RIDGE, TN

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		0700 LST	1300 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	11	12	13	14	15	16	17	18	19	20	21	22	23	24																																									
01	81	70	76	0	69	71	0	11	RA			T	29.18	30.11	2.1	21	3.9	13	19	9	21	01																																									
02	84	71	78	2	69	72	0	13	RA			T	29.11	30.04	1.0	23	2.0	12	01	9	36	02																																									
03	85	70	78	2	71	73	0	13	RA FG BR			0.07	29.01	29.94	1.0	19	1.8	13	18	10	19	03																																									
04	86	72	79	3	71	73	0	14	RA BR			0.19	28.99	29.92	3.4	22	4.5	16	20	12	21	04																																									
05	91	65	78	1	69	71	0	13	RA HZ			0.22	29.12	30.04	1.5	24	3.5	30	34	21	34	05																																									
06	89	63	76	-1	67	69	0	11	RA FG BR			0.39	29.13	30.06	1.0	21	3.1	18	23	13	24	06																																									
07	87	68	78	1	68	71	0	13				0.00	29.01	29.94	2.1	22	4.8	21	22	16	21	07																																									
08	88	70	79	2	68	71	0	14				0.00	29.05	29.97	1.9	19	3.3	13	24	9	18	08																																									
09	90	68	79	2	69	72	0	14	FG+ BR			0.00	29.14	30.07	1.4	23	2.1	13	23	10	20	09																																									
10	92	70	81	4	71	74	0	16	FG+ BR			0.00	29.19	30.11	0.4	31	2.0	17	22	12	22	10																																									
11	90	71	81	4	71	73	0	16	RA FG BR			0.78	29.16	30.08	0.2	15	2.1	16	27	13	29	11																																									
12	90	71	81	4	71	73	0	16	RA BR			0.04	29.09	30.01	0.4	15	1.7	17	05	13	08	12																																									
13	93*	71	82*	5	71	74	0	17				0.00	29.00	29.92	2.0	27	3.5	39	35	24	34	13																																									
14	91	69	80	3	65	70	0	15	RA BR			0.14	28.90	29.82	2.7	24	4.5	21	29	15	27	14																																									
15	85	65	75	-2	61	66	0	10				0.00	28.95	29.88	0.3	32	3.2	14	34	10	35	15																																									
16	86	62	74	-3	63	67	0	9	BR			0.00	28.96	29.89	1.3	23	2.7	14	22	10	26	16																																									
17	83	67	75	-2	65	67	0	10	RA FG+ BR HZ			1.42	28.89	29.82	0.6	08	1.5	40*	07	24*	05	17																																									
18	82	66	74	-4	0	0	0	9	HZ			0.00	28.90		0.1	03	1.8	10	36	8	34	18																																									
19	83	62	73	-5	62	66	0	8	BR HZ			0.00	28.96		0.4	05	1.4	13	05	9	06	19																																									
20	86	62	74	-4	63	67	0	9	FG+ BR			0.00	29.05	29.98	0.4	10	1.2	10	07	8	09	20																																									
21	88	64	76	-2	65	69	0	11	FG+ BR HZ			0.00	29.08	30.01	0.1	21	2.2	12	22	9	21	21																																									
22	87	69	78	0	70	73	0	13	RA BR HZ			T	29.04	29.96	1.3	23	3.5	15	29	10	29	22																																									
23	92	69	81	3	69	73	0	16	RA			T	29.03	29.95	0.3	30	2.6	12	27	8	27	23																																									
24	89	72	81	3	69	73	0	16	BR			0.00	29.14	30.06	2.1	05	4.6	16	36	12	07	24																																									
25	85	69	77	-1	70	72	0	12	RA BR HZ			0.25	29.15	30.08	0.6	06	2.7	15	14	12	15	25																																									
26	86	70	78	0	70	72	0	13	RA BR HZ			0.25	29.10	30.03	1.0	24	2.3	13	27	9	34	26																																									
27	79	66	73	-5	68	70	0	8	RA BR			0.11	29.06	29.99	0.5	09	2.2	8	09	7	07	27																																									
28	83	61*	72*	-6	60	65	0	7	BR			0.00	29.08	30.02	3.2	06	3.8	14	07	10	08	28																																									
29	89	64	77	-1	67	70	0	12	RA FG+ BR HZ			0.11	29.05	29.98	0.8	06	2.6	16	22	10	23	29																																									
30	89	71	80	2	71	74	0	15	RA FG+ BR			T	29.05	29.98	0.6	19	2.1	16	23	10	23	30																																									
31	83	72	78	1	71	73	0	13	RA FG+ BR			0.97	29.07	30.00	1.0	21	1.8	15	27	10	26	31																																									
										86.8		67.7		77.3		■ ■		0.0		12.5		< MONTHLY AVERAGES		TOTALS-->		4.94		29.05		0.2		35		2.8		<-- MONTHLY AVERAGES																											
										-1.3		1.3		0.0		■ ■		<-----DEPARTURE FROM NORMAL----->																						- .22		SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3																					
DEGREE DAYS										GREATEST 24-HR PRECIPITATION: 1.42 DATE: 17										SEA LEVEL PRESSURE										DATE		TIME																															
MONTHLY TOTAL DEPARTURE										GREATEST 24-HR SNOWFALL:										MAXIMUM										: 30.16		10 0853																															
SEASON TO DATE TOTAL DEPARTURE										GREATEST SNOW DEPTH:										MINIMUM										: 29.73		14 1553																															
HEATING: 0 0 0 0										NUMBER OF DAYS WITH →										MAXIMUM TEMP ≥ 90: 8										MINIMUM TEMP ≤ 32: 0										PRECIPITATION ≥ 0.01 INCH: 13																							
COOLING: 387 7 982 232																				MAXIMUM TEMP ≤ 32: 0										MINIMUM TEMP ≤ 0: 0										PRECIPITATION ≥ 0.10 INCH: 11																							
																				THUNDERSTORMS: 0										HEAVY FOG: 8										SNOWFALL ≥ 1.0 INCH: :																							

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

OAK RIDGE, TN

JULY 2004

OQT

WBAN # 53868

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													02												02			T	
03		T	T										03			0.05	0.02							03			0.07		
04													04			T								04			0.19		
05													05					0.09	0.08	0.05	T			05			0.22		
06						0.01							06								T			06			0.39		
07													07										0.37	T	06		0.00		
08													08											08			0.00		
09													09											09			0.00		
10													10											10			0.00		
11													11		T									11	0.14		0.78		
12													12			0.04	T							12			0.04		
13													13											13			0.00		
14													14											14			0.14		
15									0.14	T			15											15			0.00		
16													16											16			0.00		
17													17			0.21	1.21	T						17			1.42		
18													18											18			0.00		
19													19											19			0.00		
20													20											20			0.00		
21													21											21			0.00		
22													22										T	22			T		
23													23											23	0.00		T		
24													24											24			0.00		
25													25						0.04	0.03				25			0.25		
26													26						0.05	0.16	0.03	0.01	T	26			0.25		
27			T	0.01	0.01	0.03	T	T	T	T	0.06	T	27		T									27			0.11		
28													28											28			0.00		
29													29					0.11						29			0.11		
30													30											30			T		
31													31			0.19	0.24	0.10	T					31			0.97		

MAXIMUM SHORT DURATION PRECIPITATION (See Note)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)	.48	.85	1.03	1.16	1.20	1.25	1.40	1.42	1.42	1.42	1.42	1.42
Ending Date	17	17	17	17	17	17	17	17	17	17	17	17
Ending Time (Hour/Min)	1513	1514	1518	1521	1524	1524	1521	1534	1534	1534	1534	1534

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

OAK RIDGE, TN JULY 2004

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							7.00	10.00	
02							10.00	10.00	
03							.50	10.00	
04							.75	10.00	
05							1.75	10.00	
06							.50	10.00	
07							10.00	10.00	
08							10.00	10.00	
09							.25	10.00	
10							.50	10.00	
11							.50	10.00	
12							2.00	10.00	
13							7.00	10.00	
14							10.00	10.00	
15							10.00	10.00	
16							6.00	10.00	
17							.25	10.00	
18							.50	10.00	
19							4.00	10.00	
20							<.25	10.00	
21							.25	10.00	
22							2.50	10.00	
23							7.00	10.00	
24							3.00	10.00	
25							.75	10.00	
26							4.00	10.00	
27							2.00	10.00	
28							5.00	10.00	
29							.25	10.00	
30							.25	10.00	
31							.25	10.00	
MONTHLY AVGS							4.26	9.97	
SUNSHINE (MINUTES)									
Total: Possible: Percent Possible:									
NUMBER OF DAYS WITH:									
SKY CONDITION									
CLR PTLY CLDY CLOUDY MISSING 31									
MINIMUM VISIBILITY (MILES)									
<=0.25 <=3.0 >=7.0 6 15 9									

OBSERVATIONS AT 3-HOURLY INTERVALS

OAK RIDGE, TN

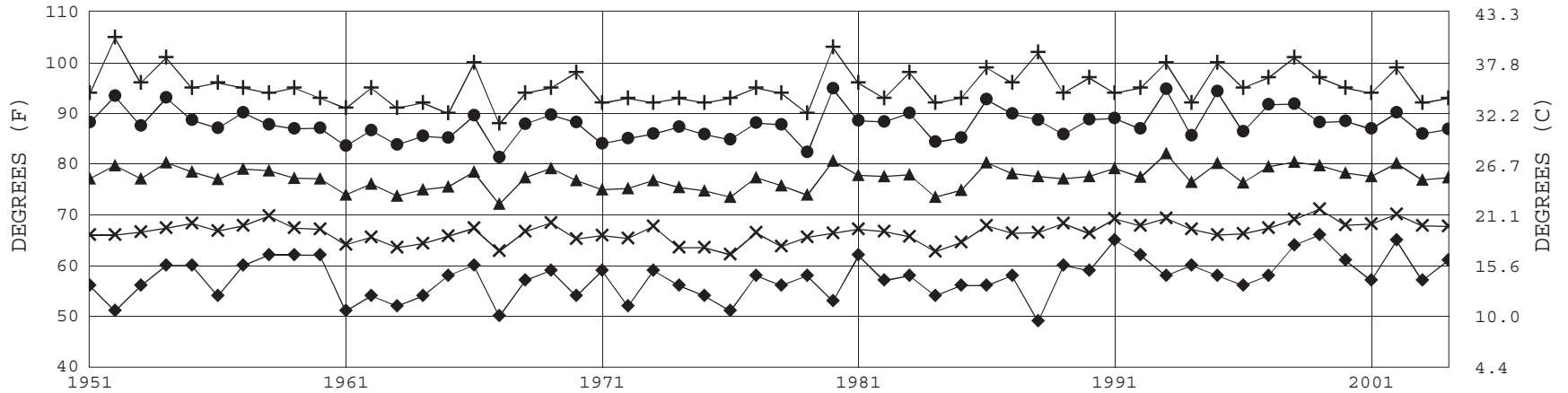
JULY 2004

QQT

WBAN # 53868

HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		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: 0539 JUL 25 SUNSET: 1948								SUNRISE: 0544 JUL 31 SUNSET: 1943																							
01	CLR	NC				8.00		73	66	69	79	6	06	29.15	30.07	01	BKN	065				10.00		75	72	73	90	0	00	29.06	29.97
04	CLR	NC				6.00	BR	71	67	68	87	0	00	29.14	30.07	04	BKN	065				10.00		74	70	71	88	0	00	29.05	29.96
07	FEW	NC				4.00	BR	71	67	68	87	3	06	29.17	30.11	07	OVC	055				10.00		75	70	72	84	0	00	29.07	30.00
10	CLR	NC				8.00		80	70	73	71	0	00	29.18	30.11	10	BKN	070				10.00		79	71	74	77	7	27	29.08	30.01
13	CLR	NC				7.00		84	73	76	70	3	34	29.13	30.06	13	OVC	009				1.75	+RA BR	76	74	75	94	0	00	29.09	30.03
16	CLR	NC				6.00	HZ	85	74	77	70	5	VR	29.09	30.03	16	FEW	NC				10.00		75	71	72	88	3	22	29.07	30.00
19	OVC	038				4.00	RA BR	73	71	72	94	6	22	29.11	30.06	19	BKN	015				10.00		76	72	73	88	3	21	29.05	29.97
22	CLR	NC				7.00		72	70	71	94	0	00	29.14	30.07	22	CLR	NC				7.00		73	71	72	94	0	00	29.08	30.02
SUNRISE: 0540 JUL 26 SUNSET: 1947								3-HOURLY OBSERVATION NOTES																							
01	FEW	NC				6.00	BR	71	69	70	94	0	00	29.13	30.06	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 Visibility = 8/8.															
04	OVC	004				8.00		70	69	69	97	3	21	29.12	30.06	Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.															
07	FEW	NC				6.00	BR	71	69	70	94	0	00	29.13	30.08	NC = No ceiling detected.															
10	OVC	011				10.00		74	69	71	85	0	00	29.14	30.09	& = Original observation contained additional weather elements.															
13	BKN	029				9.00		81	70	73	69	7	VR	29.11	30.04	See page 3 for additional notes.															
16	SCT	NC				6.00	HZ	85	70	75	61	7	28	29.03	29.96																
19	SCT	NC				10.00		78	67	71	69	0	00	29.05	29.98																
22	CLR	NC				9.00	-RA	72	70	71	94	0	00	29.08	30.01																
SUNRISE: 0541 JUL 27 SUNSET: 1946								SUMMARY BY HOUR																							
01	OVC	009				10.00		72	70	71	94	0	00	29.05	29.98	AVERAGES															
04	OVC	005				10.00	-RA	71	69	70	94	5	22	29.04	29.96	RESULTANT WIND (MPH)															
07	OVC	007				10.00		71	70	70	96	0	00	29.06	29.99	HOUR (LST)															
10	OVC	008				5.00	-RA BR	73	70	71	90	0	00	29.08	30.02	CEILOMETER															
13	OVC	034				10.00		75	69	71	82	0	00	29.07	30.00	EFF CLD AMT															
16	OVC	060				10.00		78	68	71	71	6	08	29.04	29.96	DRY BULB															
19	OVC	040				10.00		77	70	72	79	3	08	29.05	29.98	DEW POINT															
22	CLR	NC				10.00		70	64	66	82	0	00	29.08	30.02	WET BULB															
SUNRISE: 0541 JUL 28 SUNSET: 1946								PRESSURE (INCHES, HG)																							
01	BKN	037				8.00		66	62	64	87	0	00	29.08	30.02	STATION															
04	CLR	NC				9.00		63	60	61	90	0	00	29.08	30.02	SEA LEVEL															
07	CLR	NC				8.00		63	60	61	90	5	07	29.10	30.04	VISIBILITY (MILES)															
10	FEW	NC				10.00		73	60	65	64	7	06	29.12	30.06	WIND SPEED (MPH)															
13	CLR	NC				10.00		80	58	66	47	6	06	29.08	30.02	SPEED															
16	CLR	NC				10.00		82	59	67	46	8	05	29.05	29.98	DIRECTION															
19	CLR	NC				10.00		78	62	68	58	0	00	29.06	30.00																
22	CLR	NC				10.00		69	61	64	76	5	06	29.08	30.01																
SUNRISE: 0542 JUL 29 SUNSET: 1945																															
01	SCT	NC				10.00		68	61	64	78	0	00	29.06	29.98																
04	CLR	NC				8.00		65	61	63	87	3	06	29.05	29.98																
07	CLR	NC				6.00	BR	66	62	64	87	3	VR	29.07	30.00																
10	CLR	NC				10.00		75	65	69	71	6	07	29.08	30.03																
13	CLR	NC				10.00		85	69	74	59	5	VR	29.04	29.96																
16	OVC	060				8.00		85	70	75	61	6	26	29.01	29.94																
19	OVC	090				9.00		78	71	73	79	0	00	29.03	29.96																
22	CLR	NC				4.00	BR	74	72	73	94	0	00	29.06	29.98																
SUNRISE: 0543 JUL 30 SUNSET: 1944																															
01	VV	001				0.25	FG	71	71	71	100	0	00	29.05	29.98																
04	OVC	060				4.00	BR	71	70	70	96	0	00	29.04	29.96																
07	OVC	055				5.00	BR	72	70	71	94	0	00	29.08	30.00																
10	BKN	046				10.00		79	71	74	77	3	14	29.08	30.01																
13	BKN	041				10.00		86	69	74	57	8	19	29.06	29.98																
16	CLR	NC				10.00		89	71	76	55	7	VR	29.01	29.93																
19	BKN	090				10.00		80	74	76	82	3	36	29.04	29.96																
22	FEW	NC				10.00		79	73	75	82	0	00	29.07	29.99																

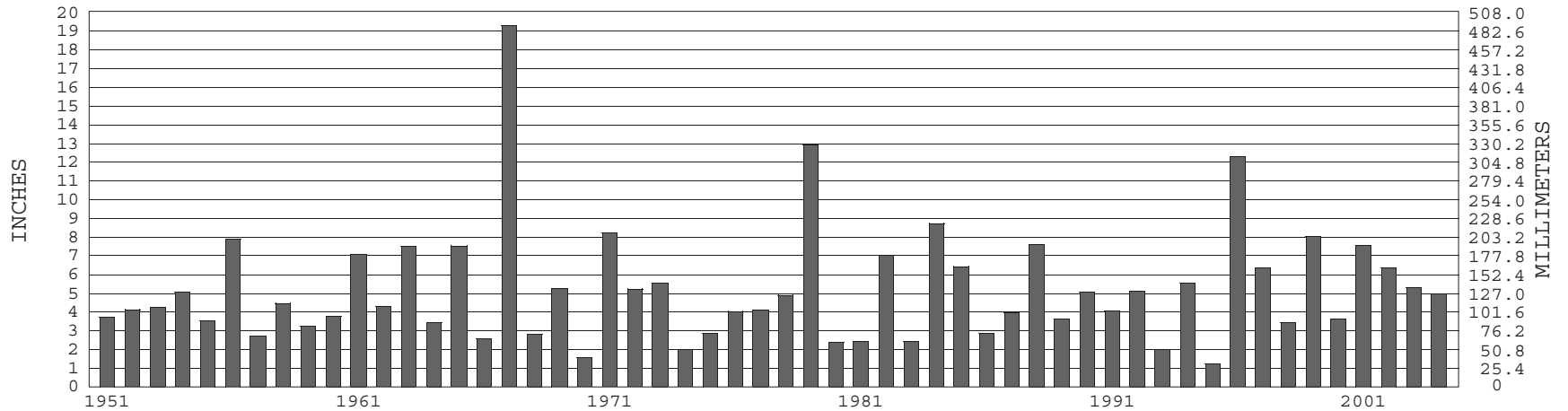
OAK RIDGE, TN JULY TEMPERATURES



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

Long-Term (1951-2004) Mean: 77.2 1971-2000 Normal: 77.3

OAK RIDGE, TN JULY PRECIPITATION



Long-Term (1951-2004) Mean Monthly Total: 5.22

1971-2000 Normal: 5.16



JULY 2004

OAK RIDGE, TN

LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

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