



JUNE 2000

LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

RICHMOND, VA

R.E.BYRD INTERNATIONAL AP. (RIC)
 Lat: 37°30' N Long: 77°19' W Elev (Ground): 165 Feet
 Time Zone: EASTERN WBAN: 13740 ISSN #:0198-537X

JUNE 2000
RICHMOND, VA

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	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																																										
01	87	58	73	2	65	68	0	8	BR				0.00	29.90	30.09	2.5	23	4.2	15	25	13	24	01																																										
02	92	67	80	9	71	74	0	15	BR HZ				0.00	29.82	30.00	4.9	23	6.2	21	21	16	21	02																																										
03	79	64	72	1	59	65	0	7	BR HZ				0.00	29.87	30.06	6.7	03	9.8	29	01	22	36	03																																										
04	75	60	68	-3	56	60	0	3					0.00	29.90	30.09	4.5	10	5.1	14	12	13	14	04																																										
05	67	59	63*	-9	61	62	2	0	RA				0.04	29.81	30.00	5.7	07	6.9	16	09	13	09	05																																										
06	73	60	67	-5	59	61	0	2	RA BR				0.67	29.68	29.87	7.3	35	9.0	23	33	20	33	06																																										
07	76	56*	66	-6	50	57	0	1					0.00	29.97	30.16	7.5	34	10.3	26	33	22	33	07																																										
08	81	58	70	-2	52	60	0	5					0.00	29.99	30.18	10.4	22	11.2	25	22	22	22	08																																										
09	86	61	74	1	59	65	0	9					0.00	29.95	30.14	7.0	21	7.7	17	20	14	20	09																																										
10	89	66	78	5	66	70	0	13					0.00	29.95	30.14	7.7	20	8.2	20	23	16	18	10																																										
11	91	67	79	6	68	71	0	14					0.00	29.94	30.13	7.3	21	7.8	18	22	16	21	11																																										
12	94*	69	82	9	70	74	0	17	TS BR HZ				0.00	29.90	30.08	3.2	19	5.5	20	34	16	35	12																																										
13	85	69	77	3	72	73	0	12	TS TSRA RA BR HZ				0.37	29.90	30.08	5.7	09	7.0	32	32	26	32	13																																										
14	80	67	74	0	69	70	0	9	TSRA RA FG+ BR HZ				0.23	29.91	30.09	3.6	10	6.0	32	23	26	27	14																																										
15	88	69	79	5	71	73	0	14	TS TSRA RA FG BR				0.93	29.81	29.99	7.5	19	8.4	55*	27	45*	26	15																																										
16	87	67	77	3	71	73	0	12	RA				0.00	29.83	30.02	9.8	20	11.0		27		26	16																																										
17	90	75	83	9	72	75	0	18	RA				T	29.90	30.08	9.5	22	10.5	23	21	21	21	17																																										
18	89	72	81	6	72	74	0	16	TS TSRA RA				0.09	29.90	30.09	7.5	21	8.3	31	26	23	22	18																																										
19	82	67	75	0	70	71	0	10	TSRA RA BR				0.23	29.94	30.13	4.2	02	6.4	18	01	15	01	19																																										
20	81	65	73	-2	61	65	0	8	RA				0.01	29.98	30.17	3.1	08	6.5	14	12	13	13	20																																										
21	86	66	76	1	68	71	0	11					0.00	29.82	30.01	11.3	20	11.7	24	20	20	20	21																																										
22	84	74	79	4	68	72	0	14	RA BR HZ				T	29.70	29.89	7.1	25	8.5	21	27	16	27	22																																										
23	88	70	79	3	62	68	0	14					0.00	29.81	29.99	3.8	32	6.9	17	30	15	29	23																																										
24	91	66	79	3	67	71	0	14	BR HZ				0.00	29.91	30.09	5.7	18	6.4	20	20	16	20	24																																										
25	90	70	80	4	70	74	0	15					0.00	29.85	30.03	9.4	18	9.6	22	18	16	20	25																																										
26	91	74	83*	7	71	74	0	18	TS RA BR HZ				T	29.83	30.02	11.5	21	12.5	28	28	22	28	26																																										
27	91	70	81	5	69	72	0	16	TS TSRA RA BR				0.73	29.85	30.03	7.3	22	10.9	39	34	30	34	27																																										
28	79	69	74	-2	71	72	0	9	TSRA RA FG+ BR				2.14	29.81	29.99	4.7	21	5.8	40	34	31	34	28																																										
29	78	70	74	-2	68	69	0	9	RA BR				0.63	29.67	29.86	2.5	28	5.8	15	01	14	01	29																																										
30	81	63	72	-5	59	65	0	7	BR				0.00	29.79	29.98	4.1	36	5.6	21	01	16	36	30																																										
< MONTHLY AVERAGES											TOTALS-->				6.07	29.86	30.05	2.9	21	8.0	<- MONTHLY AVERAGES																																												
- .7											3.6		1.5		■■■		<----- DEPARTURE FROM NORMAL ----->											2.45		SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3																																			
DEGREE DAYS											GREATEST 24-HR PRECIPITATION: 2.69 DATE: 28-29											SEA LEVEL PRESSURE DATE TIME																																											
MONTHLY TOTAL DEPARTURE											GREATEST 24-HR SNOWFALL: DATE: DATE:											MAXIMUM : 30.24 08 0754																																											
SEASON TO DATE TOTAL DEPARTURE											GREATEST SNOW DEPTH: DATE: DATE:											MINIMUM : 29.80 06 0454																																											
HEATING: 2 2 3543 -420											NUMBER OF DAYS WITH →											MAXIMUM TEMP ≥ 90: 8											MINIMUM TEMP ≤ 32: 0											PRECIPITATION ≥ 0.01 INCH : 11																					
COOLING: 320 50 474 102																						MAXIMUM TEMP ≤ 32 : 0											MINIMUM TEMP ≤ 0 : 0											PRECIPITATION ≥ 0.10 INCH : 8																					
																																	THUNDERSTORMS : 9											HEAVY FOG : 2											SNOWFALL ≥ 1.0 INCH : 0										

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

RICHMOND, VA

JUNE 2000

RIC

WBAN # 13740

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													03												03		0.00		
04													04												04		0.00		
05													05				T	T	T	0.01	0.02	0.01	T	T	05	0.19	0.04		
06		0.01	T	T	0.17	0.24	0.24	0.01					06			T	T								06		0.67		
07													07					T	T						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							0.37	T				13		0.00		
14													14						0.02	0.05	0.12				14	0.19	0.23		
15													15							T	T	0.79	0.14		15		0.93		
16													16												16		0.00		
17				T									17												17		T		
18		T											18	T	0.03	0.03	0.01	T							18		0.09		
19													19		0.05	0.04	0.01	0.05	0.01						19		0.23		
20	0.01												20						T	0.02					20		0.01		
21													21												21		0.00		
22													22	T											22		T		
23													23												23		0.00		
24													24												24		0.00		
25													25												25		0.00		
26													26												26		T		
27													27	T				0.07	T	0.36	T	0.07	0.23	T	27		0.73		
28		0.02	0.01	0.01	0.01	0.01		0.01	T	0.01	T		28		0.01		0.01		0.09	1.67	0.25	0.03			28		2.14		
29	T	0.01	T	0.01	0.04	0.16	0.33	0.05	T	0.02	0.01		29	T											29		0.63		
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 1961–1990

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	
PR Partial	RA Rain	PY Spray	SQ Squalls
SH Shower(s)	SG Snow Grains	SA Sand	SS Sandstorm
TS Thunderstorm	SN Snow	VA Volcanic Ash	GL Glaze
VC In the Vicinity	UP Unknown Precipitation		

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

RICHMOND, VA JUNE 2000

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							5.00	10.00	
02							3.00	9.00	
03							5.00	10.00	
04							10.00	10.00	
05							9.00	10.00	
06							1.50	10.00	
07							10.00	10.00	
08							10.00	10.00	
09							10.00	10.00	
10							7.00	10.00	
11							7.00	10.00	
12							5.00	8.00	
13							1.00	10.00	
14							.25	3.00	
15							.00	10.00	
16							7.00	10.00	
17							10.00	10.00	
18							7.00	10.00	
19							2.50	10.00	
20							7.00	10.00	
21							7.00	10.00	
22							4.00	10.00	
23							10.00	10.00	
24							6.00	10.00	
25							7.00	10.00	
26							6.00	10.00	
27							.50	10.00	
28							.25	10.00	
29							1.00	10.00	
30							4.00	10.00	
MONTHLY AVGS							5.78	9.67	
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									
1 8 14									

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

JUNE 2000 RIC

WBAN # 13740

Table with 23 columns: Hour (LST), Sky Cover, Ceiling 100's of FT, Observation Time (LST), Eff Clad Amt Ocltas, Visibility (Miles), Weather, Temperature (Dry Bulb, Dew Point, Wet Bulb), Relative Humidity (Pct), Wind (Speed, Direction), Pressure (Station, Sea Level), and corresponding observations for June 01 through June 12.

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA
JUNE 2000

RIC

WBAN # 13740

Table with columns: HOUR (LST), SKY COVER, CEILING 100'S OF FT, OBSERVATION TIME (LST), EFF CLD AMT, VISIBILITY (MILES), WEATHER, TEMPERATURE °F (DRY BULB, DEW POINT, WET BULB), RELATIVE HUMIDITY (PCT), WIND (SPEED (MPH), DIRECTION TENS OF DEG), PRESSURE (INCHES, HG), SEA LEVEL, and similar columns for the second set of hours.

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

JUNE 2000

RIC

WBAN # 13740

HOUR (LST)			SATELLITE		WEATHER	TEMPERATURE ° F			WIND		PRESSURE (INCHES, HG)		HOUR (LST)			SATELLITE		WEATHER	TEMPERATURE ° F			WIND		PRESSURE (INCHES, HG)					
			OBSERVATION TIME (LST)	EFF CLD AMT Oktas		DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION				SEA LEVEL	OBSERVATION TIME (LST)		EFF CLD AMT Oktas	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL		
	VISIBILITY (MILES)														VISIBILITY (MILES)														
SUNRISE: 0450						JUN 25						SUNSET: 1934						SUNRISE: JUN 31						SUNSET:					
01	FEW	NC		10.00		74	68	70	82	8	19	29.90	30.09																
04	FEW	NC		10.00		71	68	69	90	6	18	29.88	30.07																
07	SCT	NC		10.00		74	70	71	88	10	21	29.90	30.09																
10	FEW	NC		10.00		83	72	75	70	9	17	29.87	30.06																
13	FEW	NC		10.00		89	70	76	53	13	18	29.84	30.02																
16	SCT	NC		10.00		89	71	77	55	13	20	29.80	29.98																
19	FEW	NC		10.00		84	72	76	67	8	18	29.79	29.97																
22	CLR	NC		9.00		80	72	75	76	9	18	29.82	30.01																
SUNRISE: 0450						JUN 26						SUNSET: 1934																	
01	BKN	085		10.00		80	71	74	74	13	20	29.83	30.02																
04	FEW	NC		8.00		75	71	72	88	7	20	29.84	30.02																
07	SCT	NC		8.00		77	72	74	85	14	21	29.86	30.04																
10	SCT	NC		10.00		85	72	76	65	17	22	29.85	30.04																
13	SCT	NC		9.00		90	74	79	59	12	21	29.83	30.01																
16	SCT	NC		6.00	HZ	90	70	76	52	16	22	29.78	29.97																
19	BKN	100		7.00	TS	80	68	72	67	8	19	29.81	30.00																
22	BKN	250		10.00		77	70	72	79	10	19	29.83	30.01																
SUNRISE: 0450						JUN 27						SUNSET: 1934																	
01	BKN	250		10.00		77	67	70	71	12	20	29.83	30.02																
04	BKN	250		10.00		74	68	70	82	9	21	29.83	30.01																
07	FEW	NC		10.00		76	68	71	77	16	22	29.85	30.04																
10	SCT	NC		10.00		84	70	74	63	9	23	29.86	30.05																
13	SCT	NC		10.00		88	69	75	54	12	23	29.83	30.01																
16	BKN	250		10.00		87	70	75	57	10	21	29.78	29.97																
19	OVC	025		10.00	-TSRA	71	69	70	94	12	36	29.82	30.01																
22	BKN	065		9.00		70	69	69	97	5	14	29.87	30.06																
SUNRISE: 0451						JUN 28						SUNSET: 1934																	
01	BKN	120		7.00		71	70	70	96	8	20	29.86	30.04																
04	OVC	110		5.00	-RA BR	71	70	70	96	5	17	29.84	30.03																
07	OVC	140		6.00	BR	72	71	71	97	8	21	29.86	30.05																
10	OVC	008		7.00	-RA	74	72	73	94	6	21	29.85	30.03																
13	OVC	150		10.00		76	72	73	88	8	24	29.82	30.01																
16	OVC	049		10.00		77	72	74	85	9	18	29.76	29.95																
19	OVC	039		2.00	TSRA BR	75	74	74	96	3	33	29.75	29.94																
22	OVC	015		10.00		70	69	69	97	0	00	29.74	29.93																
SUNRISE: 0451						JUN 29						SUNSET: 1934																	
01	OVC	007		7.00	-RA	71	70	70	96	7	21	29.72	29.91																
04	OVC	005		4.00	-RA BR	71	70	70	96	7	21	29.68	29.87																
07	OVC	006		1.00	+RA BR	71	70	70	96	5	VR	29.66	29.85																
10	OVC	008		6.00	-RA BR	70	69	69	97	7	01	29.69	29.88																
13	BKN	150		10.00		77	67	70	71	8	33	29.66	29.85																
16	OVC	095		10.00		76	63	68	64	3	28	29.64	29.83																
19	SCT	NC		10.00		74	64	68	71	6	22	29.65	29.84																
22	BKN	110		7.00		72	66	68	82	8	25	29.69	29.88																
SUNRISE: 0452						JUN 30						SUNSET: 1934																	
01	FEW	NC		6.00	BR	70	66	67	87	8	28	29.69	29.88																
04	FEW	NC		5.00	BR	65	63	64	93	5	35	29.72	29.91																
07	CLR	NC		9.00		70	62	65	76	5	01	29.78	29.97																
10	FEW	NC		10.00		78	56	65	47	13	34	29.82	30.01																
13	BKN	250		10.00		79	54	64	42	10	35	29.81	30.00																
16	BKN	250		10.00		78	54	64	43	3	VR	29.79	29.98																
19	BKN	250		10.00		75	60	66	60	5	12	29.81	30.00																
22	SCT	NC		10.00		66	63	64	90	0	00	29.84	30.03																

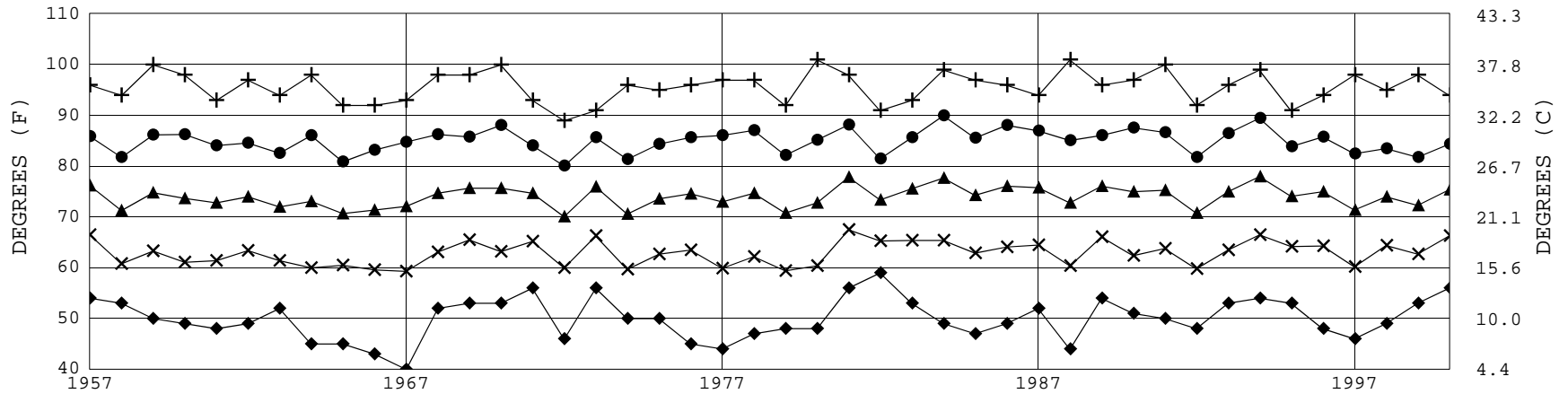
3-HOURLY OBSERVATION NOTES

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.
Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.
NC = No ceiling detected.
& = Original observation contained additional weather elements.
See page 3 for additional notes.

SUMMARY BY HOUR

HOUR (LST)	AVERAGES											RESULTANT WIND (MPH)	
	CEILOMETER	EFF CLD AMT	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY	PRESSURE (INCHES, HG)		VISIBILITY (MILES)	WIND SPEED (MPH)	DIRECTION	SPEED	DIRECTION
							STATION	SEA LEVEL					
01			70	65	67	85	29.86	30.05	8.13	7	4	20	
02			69	65	66	87	29.86	30.05	7.91	6	3	21	
03			69	65	66	88	29.85	30.04	8.04	6	3	22	
04			68	64	66	89	29.85	30.04	7.81	5	2	21	
05			67	64	65	90	29.86	30.05	6.72	6	2	20	
06			69	65	66	88	29.88	30.06	6.67	7	2	23	
07			71	65	67	84	29.88	30.07	7.42	8	3	23	
08			73	66	68	78	29.89	30.08	8.78	8	3	24	
09			75	66	69	73	29.89	30.08	8.88	9	3	24	
10			77	66	70	69	29.89	30.08	8.98	8	2	24	
11			79	66	71	65	29.89	30.07	9.17	8	2	19	
12			81	66	71	63	29.88	30.07	9.17	9	3	24	
13			82	66	72	60	29.87	30.05	9.07	9	3	21	
14			83	66	72	59	29.85	30.04	8.90	10	4	22	
15			83	66	72	58	29.84	30.03	9.02	9	4	19	
16			82	65	71	58	29.83	30.02	9.02	11	6	20	
17			81	66	71	60	29.82	30.01	8.95	11	4	21	
18			79	66	71	65	29.83	30.02	8.75	10	4	22	
19			77	66	70	71	29.84	30.02	8.60	8	4	19	
20			74	66	69	78	29.84	30.03	8.90	7	4	18	
21			73	66	69	80	29.86	30.05	8.63	7	4	18	
22			72	66	68	82	29.87	30.06	8.70	7	4	20	
23			71	65	68	83	29.87	30.05	8.72	6	3	20	
24			71	65	67	84	29.86	30.05	8.45	6	3	21	

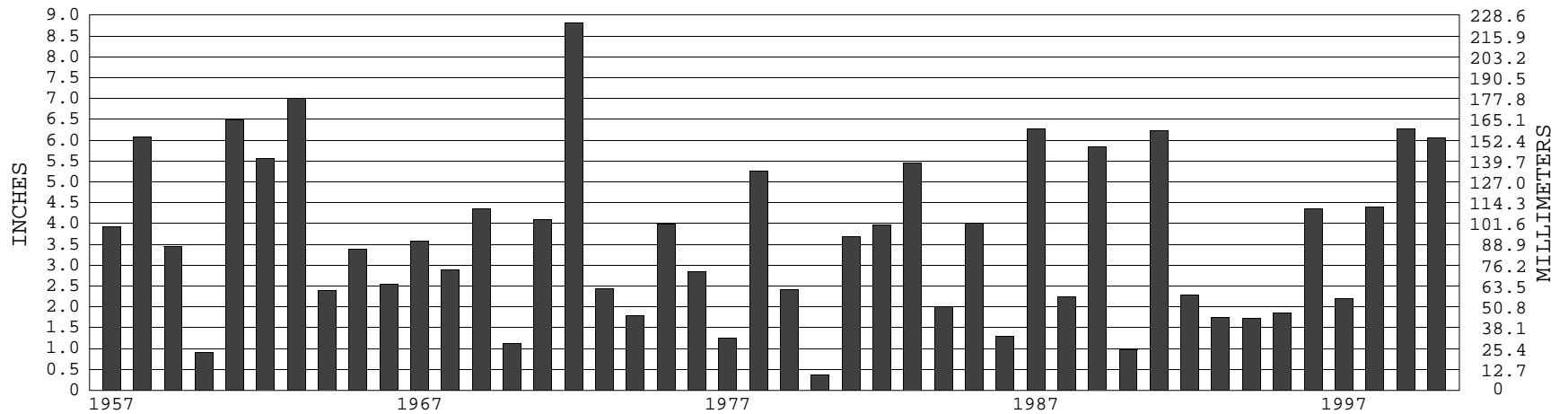
RICHMOND, VA JUNE TEMPERATURES



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

Long-Term (1957-2000) Mean: 74.0 1961-1990 Normal: 73.9

RICHMOND, VA JUNE PRECIPITATION



Long-Term (1957-2000) Mean Monthly Total: 3.64

1961-1990 Normal: 3.62



**JUNE 2000
RICHMOND, VA**

LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

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