



JUNE 2008 LOCAL CLIMATOLOGICAL DATA NOAA, National Climatic Data Center

RICHMOND, VA
RICHMOND INTERNATIONAL AIRPORT (KRIC)
 Lat:37° 30'N Long: 77° 19'W Elev (Ground) 163 Feet
 Time Zone : EASTERN WBAN: 13740 ISSN#: 0198-537X



Date 1	Temperature °F						Deg Days BASE 65°		WEATHER 10	SNOW/ICE ON GND(IN)		PRECIPITATION ON GND(IN)		PRESSURE (INCHES OF HG)		WIND SPEED = MPH DIR = TENS OF DEGREES								Date 24
	MAXIMUM 2	MINIMUM 3	AVERAGE 4	DEP FROM NORMAL 5	AVERAGE DEW PT 6	AVERAGE WET BULB 7	HEATING 8	COOLING 9		0700 LST	1300 LST	2400 LST	2400 LST	AVERAGE STATION 15	AVERAGE SEA LEVEL 16	RESULTANT SPEED 17	RES DIR 18	AVERAGE SPEED 19	MAXIMUM					
																			3-SEC		2-MIN			
20	21	22	23	24																				
01	88	64	76	6	63	68	0	11	TS TSRA RA BR HZ			0.0	0.30	29.67	29.86	5.7	28	8.0	31	04	24	01	01	
02	81	61	71	1	52	60	0	6				0.0	0.00	29.79	29.99	4.9	02	6.2	20	02	16	02	02	
03	85	60	73	3	62	66	0	8	TS TSRA RA BR			0.0	0.31	29.80	29.97	8.2	19	9.1	24	21	20	21	03	
04	93	67	80	10	67	71	0	15	TS RA			0.0	0.01	29.64	29.82	8.7	24	10.7	26	24	20	24	04	
05	92	68	80	10	68	72	0	15	BR			0.0	0.00	29.83	30.01	3.8	14	5.2	20	15	15	15	05	
06	91	69	80	10	71	74	0	15	BR HZ			0.0	0.00	29.96	30.14	3.1	13	3.5	11	14	9	14	06	
07	100	71	86	15	71	76	0	21	BR HZ			0.0	0.00	29.89	30.07	3.2	24	4.7	17	24	13	24	07	
08	100	74	87	16	69	75	0	22	BR HZ			0.0	0.00	29.81	30.00	2.4	28	4.1	20	26	14	26	08	
09	98	78	88	16	68	74	0	23	HZ			0.0	0.00	29.76	29.95	1.6	25	4.5	14	26	12	24	09	
10	101*	74	88*	15	67	74	0	23	HZ			0.0	0.00	29.74	29.92	5.1	25	7.0	31	32	24	32	10	
11	90	69	80	7	59	67	0	15	RA			0.0	T	29.91	30.09	6.2	04	7.0	24	02	18	03	11	
12	92	64	78	4	59	67	0	13				0.0	0.00	30.02	30.21	2.2	13	3.6	17	14	13	12	12	
13	92	63	78	4	60	67	0	13	HZ FU			0.0	0.00	30.01	30.19	4.8	18	5.6	20	16	16	17	13	
14	95	69	82	8	65	70	0	17	TS TSRA RA BR HZ			0.0	0.38	29.81	30.00	6.6	22	7.9	33	36	25	35	14	
15	90	68	79	5	64	69	0	14	RA BR			0.0	0.01	29.72	29.90	4.2	34	5.8	20	33	17	33	15	
16	93	64	79	5	62	67	0	14	TS TSRA RA MIFG BR			0.0	0.11	29.67	29.85	2.4	23	6.0	51	34	40	33	16	
17	87	64	76	2	57	64	0	11	RA BR			0.0	0.01	29.65	29.83	5.6	34	8.1	30	32	23	32	17	
18	83	54*	69*	-5	49	59	0	4				0.0	0.00	29.67	29.85	3.3	29	6.8	23	02	20	02	18	
19	85	57	71	-3	53	60	0	6	TS TSRA RA			0.0	0.02	29.75	29.94	1.5	03	4.5	38	34	26	34	19	
20	87	59	73	-2	54	62	0	8	HZ FU			0.0	0.00	29.86	30.04	1.9	22	4.1	20	34	14	32	20	
21	88	66	77	2	62	66	0	12	TS TSRA RA FG+ BR			0.0	2.32	29.86	30.05	3.6	20	6.2	43	13	25	14	21	
22	89	64	77	2	66	69	0	12	TS TSRA RA BR HZ			0.0	0.04	29.77	29.97	4.9	19	6.0	24	19	20	19	22	
23	90	68	79	4	63	68	0	14	BR HZ			0.0	0.00	29.78	29.96	2.4	26	5.1	22	36	15	36	23	
24	87	62	75	0	55	64	0	10				0.0	0.00	29.96	30.15	2.9	35	4.4	21	34	15	36	24	
25	93	63	78	2	60	67	0	13	BR HZ			0.0	0.00	30.00	30.19	2.2	27	3.5	23	29	16	29	25	
26	97	70	84	8	63	70	0	19	HZ			0.0	0.00	29.79	29.97	5.9	26	6.6	18	31	15	28	26	
27	97	73	85	9	64	70	0	20	RA HZ SQ			0.0	T	29.74	29.92	6.8	26	8.3	54*	27	41*	28	27	
28	97	71	84	8	66	72	0	19				0.0	0.00	29.72	29.90	8.2	26	9.1	25	27	18	28	28	
29	92	71	82	6	67	72	0	17	TS TSRA RA BR			0.0	0.13	29.68	29.86	11.6	24	12.4	32	24	26	24	29	
30	89	70	80	3	64	69	0	15	RA			0.0	T	29.64	29.83	8.0	26	8.9	30	28	23	27	30	

91.4	66.5	79.0	☼	62.3	68.3	0.0	14.2	< MONTHLY AVERAGES TOTALS >				0.0	3.64	29.80	29.98	2.6	25	6.4	< MONTHLY AVERAGES			
7.8	3.2	5.5		-----DEPARTURE FROM NORMAL -----								0.10	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3									
DEGREE DAYS								GREATEST 24-HR PRECIPITATION : 2.32 DATE : 21				SEA LEVEL PRESSURE				DATE TIME						
MONTHLY								GREATEST 24-HR SNOWFALL : 0.0 DATE :				MAXIMUM : 30.27				25 0839						
SEASON TO DATE								GREATEST SNOW DEPTH :				MINIMUM : 29.76				16 1627						
TOTAL DEPARTURE				TOTAL DEPARTURE				NUMBER OF -> DAYS WITH				MAXIMUM TEMP >= 90 : 19		MINIMUM TEMP <= 32 : 0		PRECIPITATION >= 0.01 INCH : 11						
HEATING : 0 -8				3266 -653				MAXIMUM TEMP <= 32 : 0		MINIMUM TEMP <= 0 : 0		PRECIPITATION >= 0.10 INCH : 6										
COOLING : 425 148				550 124				THUNDERSTORMS : 9		HEAVY FOG : 1		SNOWFALL >= 1.0 INCH : 0										

**JUNE 2008
RICHMOND, VA**

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

RICHMOND, VA (KRIC)
JUNE 2008

WBAN # 13740

Date	FOR HOUR (LST) ENDING AT												Date	FOR HOUR (LST) ENDING AT												Date	Sum of Hourly Data	2400 LST Water Equiv.
	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												T	01						0.30	T					01	0.30	0.30	
02													02												02	0.00	0.00	
03													03					0.01	0.10	0.14	T	T	0.06	03	0.31	0.31		
04	T					0.01							04											04	0.01	0.01		
05													05											05	0.00	0.00		
06													06											06	0.00	0.00		
07													07											07	0.00	0.00		
08													08											08	0.00	0.00		
09													09											09	0.00	0.00		
10													10											10	0.00	0.00		
11			T	T									11											11	T	T		
12													12											12	0.00	0.00		
13													13											13	0.00	0.00		
14				T									14					0.33	0.05	T	T	T	T	14	0.38	0.38		
15	0.01	T		T	T	T							15											15	0.01	0.01		
16													16					0.01	0.01			0.07	0.02	T	16	0.11	0.11	
17	0.01												17											17	0.01	0.01		
18													18				0.01	0.01						18	0.00	0.00		
19													19			T	0.02							19	0.02	0.02		
20													20											20	0.00	0.00		
21													21			0.25	1.34	0.56	0.16	0.01				21	2.32	2.32		
22													22				0.04	T	T	T	T			22	0.04	0.04		
23													23											23	0.00	0.00		
24													24											24	0.00	0.00		
25													25											25	0.00	0.00		
26													26											26	0.00	0.00		
27													27			T	T							27	T	T		
28													28											28	0.00	0.00		
29													29			T			0.05	0.07	0.01			29	0.13	0.13		
30	T		T		T	T	T	T					30								T			30	T	T		

* Indicates sum of Hourly and Daily disagree.

MAXIMUM SHORT DURATION PRECIPITATION (See Note)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)	0.54	0.97	1.27	1.40	1.61	1.67	1.72	1.91	2.00	2.03	2.12	2.28
Ending Date	21	21	21	21	21	21	21	21	21	21	21	21
Ending Time (Hr/Min)	1650	1653	1658	1703	1713	1718	1742	1803	1820	1833	1755	1820

Note : The hourly and daily precipitation totals are printed in the last 2 columns and hi-lighted in red when they disagree. 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.

Date and time are not entered for TRACE amounts.

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		
DESCRIPTOR	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 Unkown Precipitation		

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

RICHMOND, VA JUNE 2008

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:

Station Augmentation-SANDSTON COOP
Lat/Lon:37.54417/-77.27583 Elevation:165
Distance:4 MI Dir:E
Augmented Elements:Temp, Precip, Snow
Equipment:MMTS, SRG, Snowboard

Date	SUNSHINE		CLOUDINESS (OKTAS)				VISIBILITY (MILES)		RESERVED
	TOTAL MINUTES	PERCENT POSSIBLE	SR-SS		MN-MN		MINIMUM	MAXIMUM	
			Sky Cover	Satellite	Sky Cover	Satellite			
01							6.00	10.00	
02							10.00	10.00	
03							4.00	10.00	
04							7.00	10.00	
05							5.00	10.00	
06							2.00	5.00	
07							2.00	10.00	
08							4.00	10.00	
09							6.00	10.00	
10							6.00	10.00	
11							8.00	10.00	
12							10.00	10.00	
13							2.50	10.00	
14							0.75	10.00	
15							4.00	10.00	
16							4.00	10.00	
17							1.00	10.00	
18							10.00	10.00	
19							7.00	10.00	
20							4.00	10.00	
21							0.25	10.00	
22							4.00	10.00	
23							4.00	10.00	
24							10.00	10.00	
25							5.00	10.00	
26							6.00	10.00	
27							5.00	10.00	
28							9.00	10.00	
29							4.00	10.00	
30							10.00	10.00	
MONTHLY AVGS							5.35	9.83	
SUNSHINE (Minutes)									
Total : 0					Possible : 26456				
Percent Possible : 0									
NUMBER OF DAYS WITH : SKY CONDITION									
Clear		Partly CLDY		Cloudy		Missing			
MINIMUM VISIBILITY (MILES)									
<= .25			<= 3.0			>= 7.0			
1			6			9			

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

JUNE 2008

KRIC

WBAN # 13740

Table with multiple columns: HOUR (LST), SKY COVER, CEILING 100's of FT., SATELLITE (Observation Time, Eff Clد Amt, Oktas), VISIBILITY (MILES), WEATHER, TEMPERATURE (°F: DRY BULB, DEW POINT, WET BULB), HUMIDITY (PCT: RELATIVE), WIND (SPEED MPH, DIRECTION), PRESSURE (INCHES, HG: STATION, SEA LEVEL). The table is organized by date (JUN 01 to JUN 12) and time intervals (SUNRISE and SUNSET). Each entry includes a 3-hourly observation record.

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

JUNE 2008

KRIC

WBAN # 13740

Table with columns for Hour (LST), Sky Cover, Ceiling, Satellite, Visibility, Weather, Temperature (Dry Bulb, Dew Point, Wet Bulb), Wind (Speed, Direction), Pressure (Station, Sea Level), and their corresponding values for each hour from June 13 to June 24.

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

JUNE 2008

KRIC

WBAN # 13740

HOUR (LST)	SKY COVER	CEILING 100's of FT.	SATELLITE		WEATHER	TEMPERATURE °F			WIND SPEED (MPH) DIRECTION Tens of Deg	PRESSURE (INCHES, HG)									
			Observation Time (LST)	Eff Cld Amt Oktas		VISIBILITY (MILES)	DRY BULB	DEW POINT		WET BULB	RELATIVE HUMIDITY (PCT)	STATION	SEA LEVEL						
SUNRISE: 0450						JUN 25						SUNSET: 1934							
01	SCT	080										69	60	64	73	0	00	30.04	30.23
04	SCT	250										66	61	63	84	0	00	30.04	30.23
07	FEW	040										71	64	67	79	3	22	30.07	30.26
10	SCT	250										84	65	72	53	6	15	30.06	30.25
13	BKN	250										89	57	69	34	10	29	30.00	30.19
16	OVC	250										91	55	69	30	3	27	29.94	30.13
19	BKN	250										88	52	66	29	7	29	29.92	30.11
22	BKN	250										74	66	69	76	0	00	29.93	30.11
SUNRISE: 0450						JUN 26						SUNSET: 1934							
01	SCT	250										72	68	69	87	0	00	29.88	30.07
04	BKN	250										70	64	66	81	5	21	29.84	30.03
07	BKN	200										75	67	70	76	6	24	29.85	30.04
10	BKN	250										87	65	72	48	10	27	29.83	30.01
13	BKN	250										95	60	72	31	11	28	29.78	29.97
16	BKN	250										96	57	71	27	10	30	29.72	29.91
19	SCT	250										91	62	72	38	8	24	29.70	29.88
22	BKN	250										86	63	71	46	9	26	29.74	29.93
SUNRISE: 0450						JUN 27						SUNSET: 1934							
01	BKN	250										79	61	68	54	11	21	29.73	29.92
04	BKN	250										77	62	68	60	7	26	29.73	29.91
07	BKN	250										77	63	68	62	8	25	29.76	29.94
10	SCT	250										86	64	72	48	8	27	29.76	29.94
13	BKN	250										95	62	73	34	14	27	29.73	29.91
16	BKN	150										78	67	71	69	8	01	29.72	29.91
19	OVC	250										80	68	72	67	8	21	29.72	29.91
22	BKN	250										74	67	69	79	6	25	29.74	29.92
SUNRISE: 0451						JUN 28						SUNSET: 1934							
01	SCT	250										77	63	68	62	11	27	29.72	29.91
04	SCT	250										73	64	67	74	6	23	29.71	29.90
07	BKN	250										76	65	69	69	9	26	29.75	29.94
10	SCT	250										87	67	74	52	13	25	29.75	29.94
13	SCT	250										95	64	74	36	9	28	29.71	29.90
16	BKN	100										96	64	74	35	15	29	29.68	29.87
19	BKN	200										91	66	74	44	7	27	29.69	29.87
22	FEW	100										81	71	74	72	0	00	29.72	29.91
SUNRISE: 0451						JUN 29						SUNSET: 1934							
01	SCT	250										78	70	73	77	5	20	29.70	29.88
04	FEW	250										74	67	69	79	8	21	29.68	29.86
07	BKN	250										79	67	71	67	13	24	29.71	29.90
10	BKN	250										85	66	72	53	15	25	29.72	29.91
13	BKN	250										91	65	74	42	15	26	29.70	29.88
16	BKN	250										90	64	73	42	15	25	29.62	29.80
19	BKN	250										89	63	72	42	9	24	29.60	29.79
22	OVC	150										73	71	72	93	10	24	29.68	29.87
SUNRISE: 0451						JUN 30						SUNSET: 1934							
01	BKN	110										71	68	69	90	8	24	29.65	29.83
04	OVC	025										72	68	69	87	10	28	29.65	29.83
07	OVC	011										72	69	70	90	7	26	29.66	29.85
10	BKN	250										81	65	71	58	7	29	29.66	29.85
13	BKN	250										85	61	70	45	6	23	29.63	29.81
16	BKN	250										86	62	70	45	11	29	29.59	29.78
19	BKN	250										84	61	69	46	7	27	29.61	29.79
22	BKN	250										75	61	66	62	5	34	29.67	29.86

HOUR (LST)	SKY COVER	CEILING 100's of FT.	SATELLITE		WEATHER	TEMPERATURE °F			WIND SPEED (MPH) DIRECTION Tens of Deg	PRESSURE (INCHES, HG)			
			Observation Time (LST)	Eff Cld Amt Oktas		VISIBILITY (MILES)	DRY BULB	DEW POINT		WET BULB	RELATIVE HUMIDITY (PCT)	STATION	SEA LEVEL

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, W = 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.

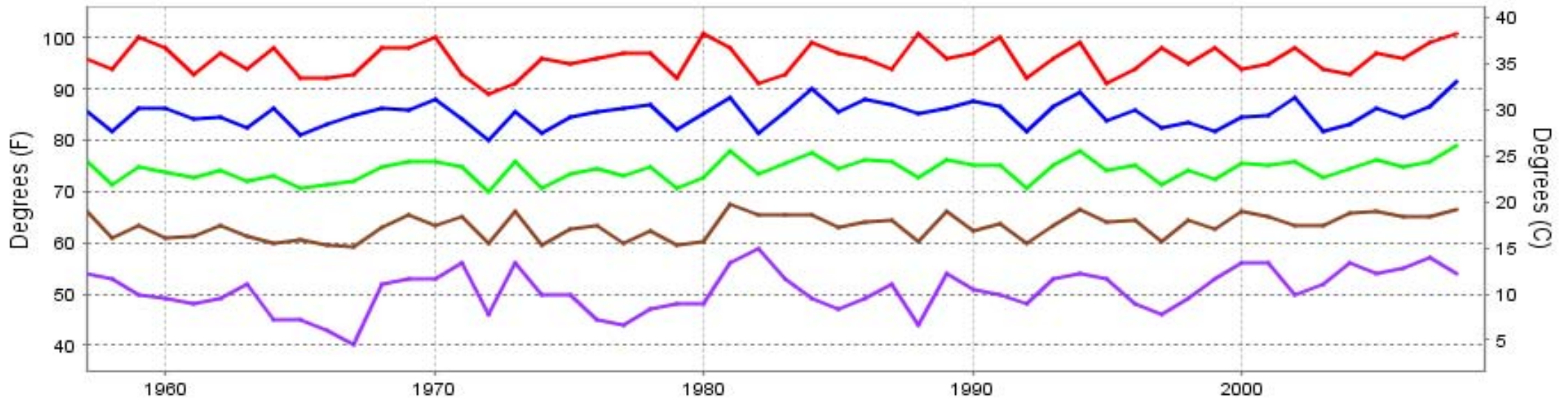
& = Original observation contained additional weather elements.

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)	SPEED	DIRECTION
							STATION	SEA LEVEL				
01			71	64	67	80	29.79	29.98	8.38	4	3	23
02			70	64	66	81	29.79	29.98	8.28	3	4	24
03			70	63	66	81	29.79	29.98	7.92	4	4	24
04			69	63	65	84	29.79	29.98	8.17	4	2	22
05			68	63	65	84	29.80	29.99	7.60	3	3	23
06			70	64	66	82	29.81	30.00	7.67	4	3	24
07			73	64	68	74	29.82	30.01	8.02	6	4	25
08			77	64	69	66	29.83	30.02	8.55	7	4	25
09			81	64	70	57	29.83	30.02	8.93	7	4	25
10			83	62	70	51	29.83	30.01	9.37	8	5	25
11			85	61	70	46	29.82	30.01	9.50	8	5	25
12			87	60	70	41	29.81	30.00	9.43	8	7	26
13			89	59	70	38	29.79	29.98	9.55	8	6	25
14			90	59	70	37	29.78	29.96	9.60	8	5	25
15			90	59	70	36	29.76	29.95	9.50	9	5	26
16			89	60	70	40	29.75	29.94	9.47	9	4	25
17			87	60	70	42	29.75	29.94	9.04	10	4	25
18			85	61	70	46	29.75	29.94	8.92	9	2	24
19			82	62	69	53	29.76	29.95	8.94	8	1	20
20			77	64	69	65	29.77	29.96	8.97	7	2	23
21			76	64	68	70	29.79	29.98	9.23	6	1	19
22			74	64	68	72	29.80	29.99	8.90	6	2	20
23			73	64	67	75	29.80	29.99	8.90	5	2	20
24			72	64	67	76	29.80	29.99	8.50	4	2	22

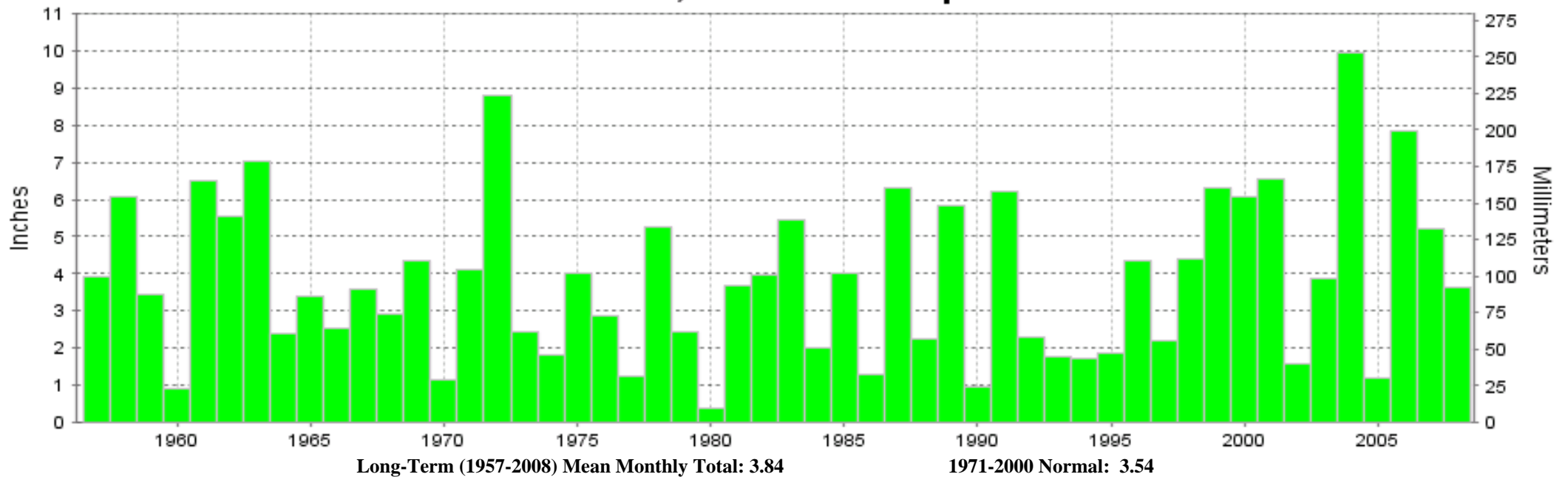
RICHMOND, VA JUNE Temperatures



— Extreme Max
 — Mean Max
 — Mean
 — Mean Min
 — Extreme Min

Long-Term (1957-2008) Mean: 74.2
1971-2000 Normal: 73.5

RICHMOND, VA JUNE Precipitation



Long-Term (1957-2008) Mean Monthly Total: 3.84

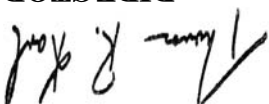
1971-2000 Normal: 3.54



JUNE 2008
RICHMOND, VA

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.


DIRECTOR

NCDC now offers an annual online subscription for the **Edited Local Climatological Data Publication**. When you purchase this subscription service, you will have **immediate online access** to all previous publications back to July 1996 and all publications thereafter until the expiration of the subscription. Your subscription is valid for one year after purchase. **The total cost for online delivery (including back issues) is significantly less than the cost for offline delivery.** To order this and other subscriptions online with your credit card, go to: **www.ncdc.noaa.gov** and choose subscriptions.

We welcome your questions or comments, please contact us at:

Toll Free Number (866) 742-3322 (voice)
Fax Number : (304) 726-4409

TDD : (828) 271-4010

or Email : ncdc.info@noaa.gov

Local Climatological Data is available at www.ncdc.noaa.gov

United States
Department of Commerce

National Oceanic and
Atmospheric Administration

National Environmental Satellite
Atmospheric Administration

For address correction, please return a photocopy of this page to Subscription Services indicating changes

NCDC Subscription Services Center
310 State Route 956 Building 300
Rocket Center, WV 26726

OFFICIAL BUSINESS, PENALTY FOR PRIVATE USE \$300

FIRST CLASS
POSTAGE AND FEES PAID
NOAA
PERMIT G-19