



JULY 2009

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	Temperature °F						Deg Days BASE 65°		WEATHER	SNOW/ICE ON GND(IN)		PRECIPITATION ON GND(IN)		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					
																			3-SEC	DIR	2-MIN	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	90	67	79	2	62	68	0	14	TS TSRA RA BR			0.0	0.37	29.49	29.70	2.5	30	5.9	35	35	25	36	01	
02	87	65	76	-1	60	66	0	11	BR			0.0	0.00	29.63	29.84	7.5	29	8.2	22	29	18	26	02	
03	84	61	73	-4	56	63	0	8				0.0	0.00	29.77	29.97	5.5	33	6.4	21	28	16	34	03	
04	87	61	74	-3	58	65	0	9				0.0	0.00	29.80	29.98	6.0	27	6.9	21	28	16	26	04	
05	76	64	70*	-7	61	63	0	5	RA BR			0.0	0.46	29.75	29.92	3.5	04	4.2	15	04	12	05	05	
06	84	64	74	-3	61	65	0	9	RA BR			0.0	T	29.63	29.81	4.0	03	5.7	23	07	12	02	06	
07	89	62	76	-1	61	66	0	11	BR HZ			0.0	0.00	29.62	29.80	3.7	24	4.9	23	29	15	27	07	
08	86	67	77	0	56	64	0	12				0.0	0.00	29.71	29.92	5.7	04	6.9	21	03	16	04	08	
09	84	64	74	-3	58	64	0	9	RA			0.0	T	29.95	30.13	4.7	08	5.4	18	05	15	04	09	
10	84	63	74	-4	59	64	0	9				0.0	0.00	30.09	30.28	3.4	12	4.6	17	09	12	07	10	
11	87	63	75	-3	63	68	0	10	RA			0.0	T	29.99	30.16	7.1	21	7.5	23	23	17	24	11	
12	94	69	82	4	67	71	0	17	TS TSRA RA FG BR			0.0	0.51	29.79	29.97	2.8	31	7.3	35	01	29	02	12	
13	86	68	77	-1	66	70	0	12	RA			0.0	T	29.73	29.92	1.5	13	3.4	15	09	13	02	13	
14	85	61	73	-5	51	61	0	8	RA			0.0	T	29.88	30.09	5.1	03	6.8	22	02	17	03	14	
15	89	61	75	-3	58	65	0	10				0.0	0.00	29.94	30.11	6.5	21	7.1	21	16	15	19	15	
16	91	70	81	3	67	72	0	16	RA BR			0.0	0.11	29.73	29.90	8.4	23	9.2	20	23	15	25	16	
17	87	71	79	1	71	73	0	14	TS TSRA RA BR			0.0	0.77	29.61	29.79	2.8	21	4.7	26	34	22	35	17	
18	85	69	77	-2	61	67	0	12				0.0	0.00	29.69	29.91	4.8	31	6.5	22	34	14	26	18	
19	85	61*	73	-6	58	65	0	8				0.0	0.00	29.90	30.10	2.8	07	4.4	20	07	13	05	19	
20	78	68	73	-6	67	69	0	8	RA BR			0.0	0.02	29.91	30.10	3.3	08	4.0	21	08	16	07	20	
21	85	66	76	-3	64	68	0	11	BR			0.0	0.00	29.91	30.09	1.0	31	3.5	16	35	9	18	21	
22	90	68	79	0	66	70	0	14	BR			0.0	0.00	29.91	30.10	5.2	16	5.5	21	14	15	14	22	
23	90	71	81	2	68	72	0	16	RA			0.0	T	29.74	29.91	2.6	24	3.5			15	25	23	
24	88	69	79	1	64	69	0	14				0.0	0.00	29.72	29.91	0.5	12	3.9	25	04	14	06	24	
25	93	66	80	2	64	70	0	15	BR			0.0	0.00	29.74	29.94	6.4	20	7.0	23	22	20	21	25	
26	97*	69	83	5	67	71	0	18	TS TSRA RA			0.0	0.08	29.73	29.93	5.5	23	7.2	40*	29	32*	30	26	
27	89	69	79	1	69	71	0	14	TS TSRA RA BR HZ			0.0	0.78	29.80	29.98	2.7	20	5.9	28	32	21	31	27	
28	89	69	79	1	69	72	0	14	TS TSRA RA			0.0	T	29.78	29.95	3.7	19	5.2	23	24	20	23	28	
29	88	74	81	3	71	74	0	16	RA BR			0.0	0.07	29.70	29.88	10.7	22	11.2	31	23	26	22	29	
30	90	71	81	3	69	73	0	16	RA BR			0.0	0.20	29.73	29.93	4.1	22	6.0	25	22	21	23	30	
31	92	74	83*	5	72	74	0	18	TSRA RA BR			0.0	0.02	29.75	29.95	9.6	23	10.6	37	26	28	24	31	

87.4		66.6		77.0		☼	63.4		68.2		0.0		12.2		< MONTHLY AVERAGES TOTALS >		0.0		3.39		29.78		29.96		1.7		23		6.1		< MONTHLY AVERAGES	
-0.1		-1.7		-0.9			<----- DEPARTURE FROM NORMAL ----->										-1.28		SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3													
DEGREE DAYS										GREATEST 24-HR PRECIPITATION : 0.86 DATE : 26-27										SEA LEVEL PRESSURE				DATE		TIME						
MONTHLY					SEASON TO DATE					GREATEST 24-HR SNOWFALL : 0.0 DATE :					MAXIMUM :				30.32		10		0954									
TOTAL DEPARTURE					TOTAL DEPARTURE					GREATEST SNOW DEPTH : DATE :					MINIMUM :				29.65		01		1719									
HEATING :		0		0		0		0		NUMBER OF -> DAYS WITH					MAXIMUM TEMP >= 90 :		9		MINIMUM TEMP <= 32 :		0		PRECIPITATION >= 0.01 INCH :				11					
COOLING :		378		-37		916		75		THUNDERSTORMS :					7		MAXIMUM TEMP <= 32 :		0		MINIMUM TEMP <= 0 :		0		PRECIPITATION >= 0.10 INCH :				7			
																					SNOWFALL >= 1.0 INCH :				0							

JULY 2009
RICHMOND, VA

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

RICHMOND, VA (KRIC)
JULY 2009

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													01								0.02	0.35			01	0.37	0.37	
02													02												02	0.00	0.00	
03													03												03	0.00	0.00	
04													04												04	0.00	0.00	
05						T	0.01	0.09	0.07	0.04	0.01	0.08	05	0.06	0.06	0.03	T	0.01	T		T		T	05	0.46	0.46		
06			T										06												06	T	T	
07													07												07	0.00	0.00	
08													08												08	0.00	0.00	
09													09				T								09	T	T	
10													10												10	0.00	0.00	
11													11						T						11	T	T	
12													12			0.01	0.12				0.25	0.13			12	0.51	0.51	
13													13											T	13	T	T	
14	T												14												14	T	T	
15													15												15	0.00	0.00	
16		0.02	0.09	T									16												16	0.11	0.11	
17													17		0.31	T						0.18	0.28		17	0.77	0.77	
18													18												18	0.00	0.00	
19													19												19	0.00	0.00	
20									T	T	T	T	20	T	T	T	T	0.02	T					20	0.02	0.02		
21													21												21	0.00	0.00	
22													22												22	0.00	0.00	
23													23		T								T		23	T	T	
24													24												24	0.00	0.00	
25													25												25	0.00	0.00	
26													26					0.07					0.01		26	0.08	0.08	
27	0.07	T	0.71		T								27												27	0.78	0.78	
28													28			T					T				28	T	T	
29													29			0.06	0.01								29	0.07	0.07	
30													30								T	0.01	0.19	T	30	0.20	0.20	
31													31	0.02	T		T	T	T						31	0.02	0.02	

* 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)	0.47	0.67	0.71	0.71	0.71	0.71	0.71	0.71	0.72	0.76	0.79	0.79
Ending Date	27	27	27	27	27	27	27	27	27	27	27	27
Ending Time (Hr/Min)	0208	0212	0214	0214	0214	0214	0214	0214	0214	0214	0214	0214

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 JULY 2009

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							7.00	10.00	
02							5.00	10.00	
03							10.00	10.00	
04							10.00	10.00	
05							2.00	10.00	
06							1.00	10.00	
07							2.00	10.00	
08							9.00	10.00	
09							10.00	10.00	
10							10.00	10.00	
11							10.00	10.00	
12							0.50	10.00	
13							7.00	10.00	
14							10.00	10.00	
15							10.00	10.00	
16							7.00	10.00	
17							0.75	10.00	
18							9.00	10.00	
19							10.00	10.00	
20							3.00	10.00	
21							2.00	10.00	
22							6.00	10.00	
23							10.00	10.00	
24							9.00	10.00	
25							6.00	10.00	
26							9.00	10.00	
27							3.00	10.00	
28							7.00	10.00	
29							5.00	10.00	
30							6.00	10.00	
31							4.00	10.00	
MONTHLY AVGS							6.46	10.00	
SUNSHINE (Minutes)									
Total : 0					Possible : 26883				
Percent Possible : 0									
NUMBER OF DAYS WITH : SKY CONDITION									
Clear		Partly CLDY		Cloudy		Missing			
MINIMUM VISIBILITY (MILES)									
<= .25			<= 3.0			>= 7.0			
0			8			17			

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA
JULY 2009

KRIC

WBAN # 13740

HOUR (LST)	SKY COVER	CEILING 100's of FT.	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F			WIND RELATIVE HUMIDITY (PCT)	WIND SPEED (MPH) DIRECTION Tens of Deg	PRESSURE (INCHES, HG)		HOUR (LST)	SKY COVER	CEILING 100's of FT.	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F			WIND RELATIVE HUMIDITY (PCT)	WIND SPEED (MPH) DIRECTION Tens of Deg	PRESSURE (INCHES, HG)			
			Observation Time (LST)	Eff Clid Amt Oktas			DRY BULB	DEW POINT	WET BULB			STATION	SEA LEVEL				Observation Time (LST)	Eff Clid Amt Oktas			DRY BULB	DEW POINT	WET BULB			STATION	SEA LEVEL		
																												Observation Time (LST)	Eff Clid Amt Oktas
SUNRISE: 0452 JUL 01 SUNSET: 1934														SUNRISE: 0455 JUL 07 SUNSET: 1933															
01	BKN	250			10.00		77	62	68	60	0	00	29.47	29.65	01	SCT	250			4.00	BR	67	64	65	90	0	00	29.63	29.82
04	BKN	120			10.00		71	64	67	79	7	02	29.48	29.67	04	FEW	001			2.00	BR	64	62	63	93	0	00	29.61	29.80
07	BKN	250			10.00		74	64	68	71	6	05	29.52	29.70	07	CLR	NC			6.00	HZ	70	64	66	81	3	28	29.64	29.83
10	SCT	250			10.00		82	63	70	53	5	VR	29.54	29.72	10	FEW	250			10.00		81	60	68	49	6	24	29.64	29.83
13	SCT	250			10.00		88	53	67	30	8	23	29.52	29.70	13	SCT	055			10.00		86	61	70	43	6	VR	29.60	29.79
16	SCT	150			10.00		89	57	69	34	11	22	29.47	29.66	16	SCT	070			10.00		88	56	68	34	8	29	29.58	29.77
19	BKN	200			10.00		84	62	70	48	0	00	29.48	29.67	19	FEW	250			10.00		85	56	67	37	6	28	29.58	29.77
22	OVC	100			10.00	TS	69	66	67	90	0	00	29.56	29.75	22	CLR	NC			10.00		73	62	66	69	3	19	29.62	29.81
SUNRISE: 0452 JUL 02 SUNSET: 1934														SUNRISE: 0455 JUL 08 SUNSET: 1933															
01	BKN	120			10.00		69	65	66	87	7	28	29.58	29.76	01	FEW	110			10.00		73	62	66	69	6	26	29.64	29.83
04	BKN	100			5.00	BR	65	63	64	93	3	21	29.60	29.79	04	CLR	NC			10.00		69	60	64	73	5	02	29.65	29.84
07	CLR	NC			10.00		71	62	65	73	5	28	29.64	29.83	07	SCT	250			10.00		72	57	63	59	10	02	29.70	29.88
10	FEW	040			10.00		79	59	67	50	10	30	29.67	29.85	10	SCT	250			10.00		80	55	65	42	9	04	29.74	29.93
13	SCT	050			10.00		84	57	67	40	10	27	29.65	29.84	13	SCT	250			10.00		84	53	65	34	9	05	29.74	29.93
16	BKN	100			10.00		83	59	68	44	14	25	29.65	29.83	16	SCT	250			10.00		85	53	66	33	10	05	29.73	29.92
19	SCT	110			10.00		81	59	67	47	10	27	29.66	29.85	19	BKN	200			10.00		77	54	63	45	8	04	29.76	29.95
22	BKN	085			10.00		77	60	66	56	10	32	29.73	29.92	22	BKN	250			10.00		71	55	62	57	5	10	29.83	30.02
SUNRISE: 0453 JUL 03 SUNSET: 1934														SUNRISE: 0456 JUL 09 SUNSET: 1933															
01	CLR	NC			10.00		70	54	61	57	7	33	29.73	29.92	01	OVC	200			10.00		68	58	62	71	0	00	29.85	30.04
04	CLR	NC			10.00		64	55	59	73	0	00	29.74	29.93	04	FEW	080			10.00		65	57	60	75	0	00	29.86	30.05
07	CLR	NC			10.00		69	56	61	63	7	33	29.78	29.97	07	OVC	250			10.00		68	60	63	76	7	07	29.90	30.09
10	SCT	250			10.00		77	54	63	45	3	VR	29.80	29.99	10	BKN	250			10.00		78	58	66	50	9	08	29.95	30.14
13	BKN	130			10.00		79	55	65	44	10	33	29.78	29.96	13	BKN	250			10.00		83	55	66	38	7	VR	29.96	30.14
16	BKN	150			10.00		80	57	66	45	10	35	29.75	29.94	16	BKN	150			10.00		80	53	64	39	5	06	29.96	30.15
19	SCT	250			10.00		79	57	66	47	9	32	29.77	29.96	19	BKN	250			10.00		77	57	65	50	5	09	29.98	30.17
22	SCT	250			10.00		73	57	63	57	7	33	29.83	30.02	22	BKN	250			10.00		70	61	65	73	8	11	30.04	30.23
SUNRISE: 0453 JUL 04 SUNSET: 1934														SUNRISE: 0457 JUL 10 SUNSET: 1933															
01	SCT	150			10.00		67	58	62	73	0	00	29.83	30.02	01	FEW	150			10.00		65	60	62	84	5	12	30.05	30.24
04	FEW	150			10.00		63	58	60	84	5	25	29.82	30.01	04	BKN	110			10.00		64	60	62	87	0	00	30.08	30.27
07	FEW	250			10.00		71	57	63	61	7	30	29.84	30.03	07	BKN	095			10.00		69	60	64	73	5	06	30.13	30.32
10	SCT	250			10.00		82	56	66	41	7	29	29.84	30.03	10	BKN	250			10.00		75	59	65	58	7	13	30.13	30.32
13	BKN	250			10.00		85	56	67	37	9	28	29.81	29.99	13	SCT	100			10.00		80	57	66	45	0	00	30.10	30.29
16	OVC	250			10.00		84	57	67	40	13	25	29.75	29.93	16	SCT	150			10.00		80	57	66	45	5	16	30.07	30.26
19	OVC	250			10.00		78	63	68	60	7	22	29.74	29.93	19	SCT	060			10.00		74	59	65	60	5	13	30.06	30.25
22	OVC	200			10.00		77	62	68	60	8	25	29.74	29.93	22	SCT	250			10.00		68	60	63	76	5	16	30.09	30.28
SUNRISE: 0454 JUL 05 SUNSET: 1934														SUNRISE: 0457 JUL 11 SUNSET: 1932															
01	OVC	100			10.00		75	61	66	62	8	02	29.75	29.94	01	SCT	250			10.00		64	60	62	87	3	17	30.08	30.27
04	OVC	070			10.00		73	57	63	57	6	35	29.76	29.95	04	BKN	250			10.00		63	59	61	87	3	22	30.06	30.25
07	OVC	070			6.00	-RA	67	61	63	81	6	35	29.81	29.99	07	OVC	250			10.00		68	59	63	73	5	24	30.07	30.26
10	BKN	070			10.00	-RA	65	60	62	84	5	06	29.78	29.97	10	BKN	050			10.00		77	60	66	56	8	19	30.02	30.21
13	OVC	055			6.00	-RA BR	64	61	62	90	3	08	29.76	29.95	13	BKN	150			10.00		84	64	71	51	8	22	29.97	30.16
16	OVC	005			6.00	-RA BR	65	63	64	93	3	13	29.70	29.89	16	OVC	250			10.00		85	65	72	51	10	22	29.90	30.09
19	OVC	003			2.00	BR	66	63	64	90	6	06	29.67	29.85	19	OVC	250			10.00		79	69	72	72	6	21	29.88	30.07
22	OVC	003			2.00	BR	66	63	64	90	0	00	29.68	29.87	22	BKN	250			10.00		76	68	71	76	8	24	29.86	30.05
SUNRISE: 0454 JUL 06 SUNSET: 1934														SUNRISE: 0458 JUL 12 SUNSET: 1932															
01	OVC	003			2.00	BR	66	64	65	93	5	01	29.64	29.83	01	OVC	250			9.00		73	68	70	84	6	22	29.83	30.01
04	OVC	003			2.00	BR	66	63	64	90	5	34	29.62	29.81	04	OVC	150			10.00		75	68	70	79	8	28	29.81	29.99
07	BKN	080			5.00	BR	66	62	64	87	6	03	29.64	29.83	07	FEW	110			10.00		78	68	71	71	7	30	29.83	30.02
10	SCT	250			10.00		75	62	67	64	8	02	29.64	29.83	10	SCT	250			10.00		88	63	72	43	7	01	29.82	30.01
13	SCT	042			10.00		80	59	67	49	7	01	29.62	29.81	13	SCT	150			10.00		92	64	73	40	9	27	29.77	29.96
16	FEW	049			10.00		84	55	66	37	7	02	29.59	29.78	16	OVC	200			10.00	-RA	83	64	71	53	10	05	29.75	29.94
19	BKN	250			10.00		80	54	64	41	0	00	29.62	29.81	19	OVC	250			10.00		75	70	72	85	3	14	29.74	29.93
22	BKN	250			9.00		69	64	66	84	6	16	29.64	29.83	22	OVC	120			10.00		70	67	68	90	5	20	29.75	29.94

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

JULY 2009

KRIC

WBAN # 13740

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)																																	
			Observation Time (LST)	Eff Cl'd Amt Oktas			DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION Tens of Deg	STATION				SEA LEVEL	Observation Time (LST)			Eff Cl'd Amt Oktas	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION Tens of Deg	STATION	SEA LEVEL																														
																														Observation Time (LST)	Eff Cl'd Amt Oktas	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION Tens of Deg	STATION	SEA LEVEL																				
SUNRISE: 0459														JUL 13		SUNSET: 1931						SUNRISE: 0503														JUL 19		SUNSET: 1928																					
01	OVC	250			9.00		70	67	68	90	3	02	29.74	29.93	01	CLR	NC			10.00		69	55	61	61	6	32	29.86	30.05	04	FEW	150			10.00		68	66	67	93	0	00	29.73	29.92	04	FEW	150			10.00		63	56	59	78	3	34	29.88	30.07
07	OVC	250			7.00		72	69	70	90	0	00	29.75	29.93	07	SCT	250			10.00		69	58	62	68	3	07	29.93	30.12	10	SCT	250			10.00		76	70	72	82	0	00	29.76	29.95	10	SCT	250			10.00		78	57	65	49	8	10	29.94	30.13
10	OVC	150			9.00		76	70	72	82	0	00	29.76	29.95	10	SCT	250			10.00		78	57	65	49	8	10	29.94	30.13	13	SCT	250			10.00		86	64	72	48	3	03	29.73	29.92	13	SCT	250			10.00		83	57	67	41	5	09	29.91	30.10
13	BKN	250			10.00		86	64	72	48	3	03	29.73	29.92	13	SCT	250			10.00		84	58	68	41	3	06	29.90	30.09	16	SCT	150			10.00		85	61	70	45	8	21	29.69	29.88	16	OVC	250			10.00		78	61	67	56	6	14	29.90	30.09
16	SCT	150			10.00		85	61	70	45	8	21	29.69	29.88	19	BKN	050			10.00		78	61	67	56	6	14	29.90	30.09	22	SCT	150			10.00		72	66	68	82	0	00	29.76	29.94	22	OVC	120			10.00		74	63	67	69	5	08	29.92	30.11
19	BKN	050			10.00		78	66	70	67	11	08	29.71	29.89	SUNRISE: 0459														JUL 14		SUNSET: 1931						SUNRISE: 0504														JUL 20		SUNSET: 1928						
22	SCT	150			10.00		72	66	68	82	0	00	29.76	29.94	01	BKN	110			10.00		70	65	67	84	6	12	29.92	30.11	04	FEW	100			10.00		67	58	62	73	10	01	29.82	30.01	04	OVC	250			6.00	BR	69	66	67	90	0	00	29.90	30.09
07	FEW	100			10.00		69	50	58	51	13	02	29.89	30.08	07	OVC	200			7.00		70	66	67	87	8	05	29.92	30.11	10	SCT	250			10.00		79	47	61	32	10	03	29.94	30.13	10	OVC	200			10.00	-RA	75	68	70	79	5	09	29.93	30.12
10	SCT	250			10.00		79	47	61	32	10	03	29.94	30.13	10	OVC	200			10.00	-RA	75	68	70	79	5	09	29.93	30.12	13	SCT	250			10.00		82	47	62	29	0	00	29.93	30.12	13	OVC	120			9.00	-RA	76	68	71	76	5	12	29.92	30.11
13	SCT	250			10.00		82	47	62	29	0	00	29.93	30.12	16	OVC	075			10.00	-RA	74	67	69	79	0	00	29.91	30.10	16	SCT	200			10.00		83	42	60	24	6	VR	29.91	30.10	16	OVC	075			10.00	-RA	74	67	69	79	0	00	29.91	30.10
16	SCT	200			10.00		83	42	60	24	6	VR	29.91	30.10	19	OVC	150			5.00	BR	72	69	70	90	0	00	29.90	30.09	19	FEW	250			10.00		76	49	61	39	3	12	29.93	30.12	19	OVC	150			5.00	BR	72	69	70	90	0	00	29.90	30.09
19	FEW	250			10.00		76	49	61	39	3	12	29.93	30.12	22	BKN	140			5.00	BR	68	66	67	93	5	02	29.92	30.11	22	FEW	250			10.00		66	52	58	61	5	15	29.96	30.15	22	BKN	140			5.00	BR	68	66	67	93	5	02	29.92	30.11
22	FEW	250			10.00		66	52	58	61	5	15	29.96	30.15	SUNRISE: 0460														JUL 15		SUNSET: 1931						SUNRISE: 0504														JUL 21		SUNSET: 1927						
01	FEW	200			10.00		64	54	58	70	0	00	29.98	30.17	01	BKN	030			3.00	BR	68	66	67	93	6	01	29.91	30.10	04	BKN	250			10.00		61	56	58	84	0	00	29.97	30.16	04	BKN	020			4.00	BR	67	64	65	90	6	36	29.90	30.09
04	BKN	250			10.00		61	56	58	84	0	00	29.97	30.16	07	SCT	250			4.00	BR	68	65	66	90	5	36	29.92	30.11	07	FEW	150			10.00		68	61	64	78	5	19	30.00	30.19	07	SCT	250			4.00	BR	68	65	66	90	5	36	29.92	30.11
07	FEW	150			10.00		68	61	64	78	5	19	30.00	30.19	10	BKN	250			10.00		78	65	70	64	0	00	29.93	30.12	10	SCT	250			10.00		81	59	67	47	9	22	30.00	30.19	10	BKN	250			10.00		78	65	70	64	0	00	29.93	30.12
10	SCT	250			10.00		81	59	67	47	9	22	30.00	30.19	13	SCT	250			10.00		81	61	68	51	0	00	29.91	30.10	13	BKN	250			10.00		87	54	67	32	10	24	29.94	30.13	13	SCT	250			10.00		81	61	68	51	0	00	29.91	30.10
13	BKN	250			10.00		87	54	67	32	10	24	29.94	30.13	16	BKN	250			10.00		85	62	70	46	7	21	29.86	30.05	16	BKN	250			10.00		88	58	69	36	9	22	29.88	30.06	16	SCT	060			10.00		85	62	70	46	7	21	29.86	30.05
16	BKN	250			10.00		88	58	69	36	9	22	29.88	30.06	19	BKN	250			10.00		84	60	69	44	6	23	29.85	30.04	19	BKN	250			10.00		84	60	69	44	6	23	29.85	30.04	19	FEW	060			10.00		80	65	70	60	5	16	29.88	30.07
19	BKN	250			10.00		84	60	69	44	6	23	29.85	30.04	22	OVC	250			9.00		70	65	67	84	0	00	29.92	30.11	22	OVC	250			10.00		78	59	66	52	10	19	29.84	30.02	22	CLR	NC			7.00		70	65	67	84	0	00	29.93	30.12
22	OVC	250			10.00		78	59	66	52	10	19	29.84	30.02	SUNRISE: 0501														JUL 16		SUNSET: 1930						SUNRISE: 0505														JUL 22		SUNSET: 1927						
01	OVC	200			10.00		76	58	65	54	13	20	29.81	29.99	01	CLR	NC			7.00		70	65	67	84	0	00	29.93	30.12	04	BKN	150			10.00		70	64	66	81	6	19	29.75	29.93	04	CLR	NC			7.00		69	66	67	90	0	00	29.92	30.11
04	BKN	150			10.00		70	64	66	81	6	19	29.75	29.93	07	BKN	250			8.00		73	69	70	87	0	00	29.95	30.14	07	BKN	250			7.00		76	67	70	74	8	23	29.75	29.93	07	BKN	250			8.00		73	69	70	87	0	00	29.95	30.14
07	BKN	250			7.00		76	67	70	74	8	23	29.75	29.93	10	BKN	250			10.00		83	67	72	59	5	17	29.96	30.15	10	BKN	250			10.00		83	69	74	63	9	25	29.72	29.91	10	BKN	250			10.00		83	67	72	59	5	17	29.96	30.15
10	BKN	250			10.00		83	69	74	63	9	25	29.72	29.91	13	SCT	250			10.00		86	64	72	45	8	18	29.93	30.12	13	BKN	250			10.00		86	70	75	59	14	24	29.70	29.88	13	SCT	250			10.00		88	64	72	45	8	18	29.93	30.12
13	BKN	250			10.00		86	70	75	59	14	24	29.70	29.88	16	BKN	250			10.00		90	69	76	50	13	21	29.66	29.85	16	OVC	250			10.00		90	69	76	50	13	21	29.66	29.85	16	BKN	250			10.00		88	63	72	43	13	15	29.87	30.06
16	OVC	250			10.00		90	69	76	50	13	21	29.66	29.85	19	BKN	200			10.00		86	69	74	57	11	23	29.67	29.85	19	OVC	250			10.00		86	69	74	57	11	23	29.67	29.85	19	BKN	200			10.00		79	63	69	58	8	12	29.86	30.05
19	OVC	250			10.00		86	69	74	57	11	23	29.67	29.85	22	BKN	200			10.00		79	69	72	72	6	22	29.68	29.87	22	BKN	250			10.00		79	69	72	72	6	22	29.68	29.87	22	BKN	200			10.00		74	67	69	79	7	15	29.87	30.06
22																																																											

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

JULY 2009

KRIC

WBAN # 13740

HOUR (LST)	SKY COVER	CEILING 100's of FT.	SATELLITE		WEATHER	TEMPERATURE °F			WIND		PRESSURE (INCHES, HG)						
			Observation Time (LST)	Eff Cl'd Amt Oktas		VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION Tens of Deg	STATION	SEA LEVEL			
															Observation Time (LST)	Eff Cl'd Amt Oktas	
SUNRISE: 0507						JUL 25						SUNSET: 1924					
01	CLR	NC				70	66	67	87	0	00	29.76	29.94				
04	CLR	NC				67	62	64	84	3	23	29.77	29.96				
07	CLR	NC				71	65	67	81	3	16	29.79	29.98				
10	FEW	200				85	65	72	51	5	VR	29.79	29.98				
13	BKN	065				91	62	72	38	8	22	29.74	29.92				
16	SCT	060				91	63	72	39	15	20	29.72	29.90				
19	SCT	250				85	64	71	49	8	20	29.69	29.88				
22	SCT	250				80	68	72	67	9	20	29.75	29.93				
SUNRISE: 0508						JUL 26						SUNSET: 1924					
01	SCT	250				75	67	70	76	7	20	29.74	29.92				
04	FEW	250				72	67	69	84	5	21	29.74	29.92				
07	FEW	120				75	68	70	79	9	25	29.78	29.97				
10	FEW	150				86	67	73	53	6	20	29.75	29.94				
13	SCT	150				94	65	74	38	11	22	29.72	29.91				
16	BKN	250			TS	91	64	73	41	14	28	29.71	29.89				
19	BKN	250				80	67	71	65	5	22	29.71	29.90				
22	BKN	120				76	67	70	74	0	00	29.75	29.94				
SUNRISE: 0509						JUL 27						SUNSET: 1923					
01	OVC	050			TS	71	69	70	93	5	07	29.77	29.96				
04	BKN	150				70	67	68	90	6	16	29.78	29.97				
07	BKN	250			BR	73	69	70	87	5	17	29.81	30.00				
10	OVC	250				80	73	75	79	5	23	29.81	30.00				
13	OVC	250				85	71	75	63	3	VR	29.80	29.98				
16	BKN	150				79	66	71	65	7	17	29.75	29.94				
19	OVC	200				73	68	70	84	7	17	29.81	30.00				
22	OVC	200				74	68	70	82	5	28	29.80	29.98				
SUNRISE: 0510						JUL 28						SUNSET: 1922					
01	OVC	200				72	68	69	87	0	00	29.82	30.00				
04	BKN	250				70	67	68	90	3	20	29.80	29.98				
07	BKN	250				73	67	69	82	7	23	29.81	30.00				
10	SCT	022				82	70	74	67	5	25	29.78	29.97				
13	SCT	035				87	72	77	61	6	16	29.75	29.94				
16	SCT	120			TS	86	74	78	68	9	11	29.72	29.91				
19	OVC	250				81	72	75	74	0	00	29.72	29.91				
22	BKN	250				75	69	71	82	5	17	29.73	29.91				
SUNRISE: 0511						JUL 29						SUNSET: 1921					
01	BKN	250				76	71	73	85	9	22	29.73	29.92				
04	SCT	250				74	70	71	87	6	21	29.72	29.91				
07	OVC	250				77	71	73	82	10	20	29.73	29.92				
10	OVC	250				85	72	76	65	14	21	29.72	29.91				
13	OVC	250				86	70	75	59	20	23	29.68	29.86				
16	BKN	250			-RA BR	77	72	74	85	9	21	29.65	29.83				
19	BKN	200				79	71	74	77	13	22	29.64	29.83				
22	SCT	150				78	71	73	79	11	22	29.66	29.84				
SUNRISE: 0511						JUL 30						SUNSET: 1920					
01	FEW	250				75	71	72	87	8	22	29.65	29.84				
04	CLR	NC				74	71	72	90	7	26	29.68	29.87				
07	BKN	250				76	69	71	79	8	32	29.77	29.96				
10	BKN	250				85	67	73	55	0	00	29.80	29.99				
13	BKN	250				87	67	74	52	6	VR	29.78	29.96				
16	BKN	250				89	67	74	48	9	22	29.74	29.93				
19	BKN	250				84	69	74	61	5	21	29.75	29.93				
22	BKN	070			-RA	75	72	73	90	7	19	29.78	29.96				

HOUR (LST)	SKY COVER	CEILING 100's of FT.	SATELLITE		WEATHER	TEMPERATURE °F			WIND		PRESSURE (INCHES, HG)								
			Observation Time (LST)	Eff Cl'd Amt Oktas		VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION Tens of Deg	STATION	SEA LEVEL					
															Observation Time (LST)	Eff Cl'd Amt Oktas			
SUNRISE: 0512						JUL 31						SUNSET: 1919							
01	OVC	140				8.00						75	73	74	94	7	21	29.75	29.94
04	OVC	012				8.00						75	72	73	90	13	22	29.73	29.92
07	OVC	011				7.00						76	73	74	90	10	22	29.77	29.95
10	BKN	250				10.00						83	72	75	70	14	21	29.76	29.95
13	BKN	250				10.00						90	71	77	54	21	24	29.71	29.90
16	BKN	150				10.00						89	69	75	52	23	26	29.69	29.87
19	OVC	250				10.00						77	70	72	79	7	24	29.78	29.96
22	BKN	065				10.00						75	71	72	87	0	00	29.87	30.06

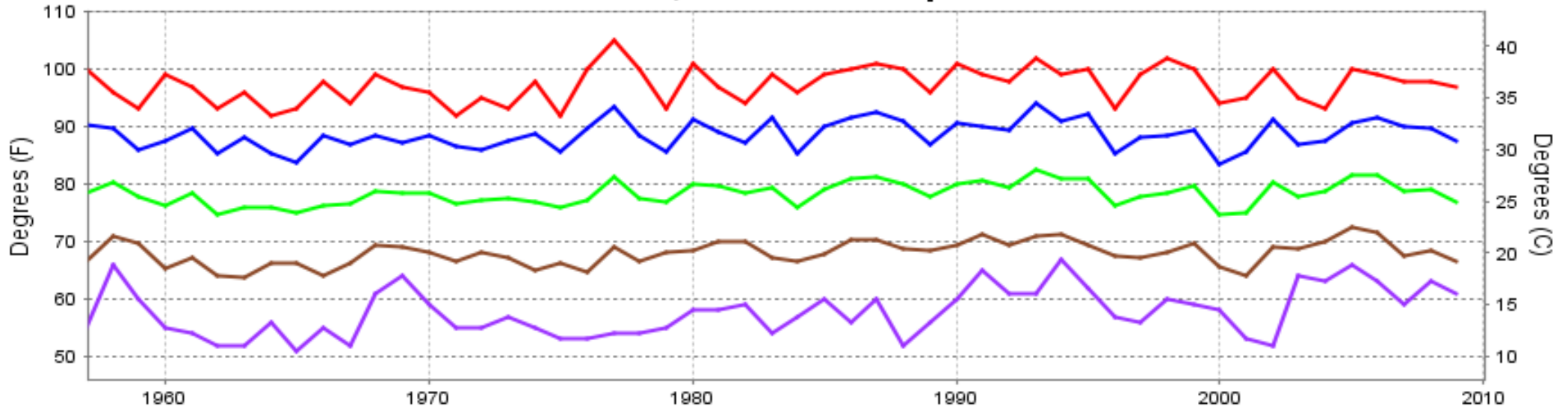
3-HOURLY OBSERVATION NOTES

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	29.77	29.96	8.84	5	2	23
02			70	64	66	81	29.77	29.96	8.73	4	2	24
03			69	64	66	83	29.77	29.96	8.71	3	2	22
04			69	64	66	84	29.77	29.96	8.58	4	2	24
05			68	63	65	84	29.78	29.97	8.58	4	1	22
06			69	64	66	83	29.79	29.98	8.11	5	1	22
07			72	64	67	78	29.80	29.99	8.58	6	1	23
08			75	64	68	70	29.81	30.00	9.24	6	2	23
09			78	63	69	62	29.81	30.00	9.74	6	1	21
10			80	63	69	57	29.81	30.00	9.87	6	1	21
11			82	63	70	53	29.80	29.99	9.81	7	2	23
12			83	62	70	50	29.79	29.98	9.76	7	2	24
13			84	62	70	49	29.78	29.97	9.77	7	4	25
14			84	62	70	49	29.76	29.95	9.38	8	4	25
15			85	61	70	47	29.75	29.94	9.90	9	4	26
16			84	62	70	49	29.75	29.94	9.71	9	3	25
17			83	62	70	52	29.74	29.93	9.74	8	3	25
18			82	63	70	55	29.75	29.94	9.68	8	2	24
19			79	63	69	60	29.76	29.94	9.58	6	2	23
20			76	64	68	67	29.77	29.96	9.31	7	2	24
21			75	64	68	71	29.78	29.97	9.61	5	1	22
22			73	64	68	75	29.79	29.98	9.52	5	2	23
23			72	65	68	78	29.79	29.98	9.11	6	1	22
24			72	64	67	79	29.79	29.98	9.19	4	2	24

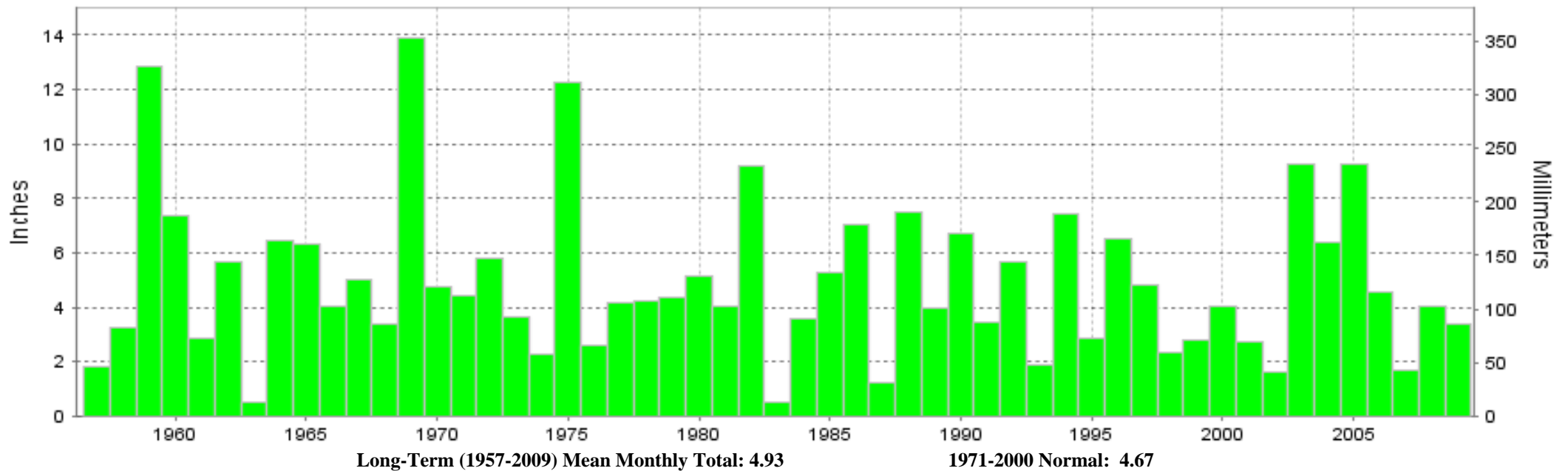
RICHMOND, VA JULY Temperatures



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

Long-Term (1957-2009) Mean: 78.3
1971-2000 Normal: 77.9

RICHMOND, VA JULY Precipitation



Long-Term (1957-2009) Mean Monthly Total: 4.93

1971-2000 Normal: 4.67



JULY 2009
RICHMOND, VA

LOCAL CLIMATOLOGICAL DATA NOAA, National Climatic Data Center

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