



JULY 2011 LOCAL CLIMATOLOGICAL DATA NOAA, National Climatic Data Center

RICHMOND, VA
RICHMOND INTERNATIONAL AIRPORT (KRIC)
 Lat:37° 30'N Long: 77° 19'W Elev (Ground) 164 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	90	63	77	0	58	66	0	12		0		0.0	0.00	29.83	30.03	2.4	36	3.5	16	01	12	36	01	
02	92	65	79	2	61	68	0	14	BR	0		0.0	0.00	29.87	30.05	1.4	09	3.3	15	12	10	11	02	
03	95	71	83	6	67	72	0	18	TS TSRA RA BR	0		0.0	0.18	29.75	29.93	3.2	22	7.1	48	30	37*	35	03	
04	93	70	82	5	70	72	0	17	TS TSRA RA BR	0		0.0	0.93	29.74	29.92	1.2	21	5.9	53*	16	36	16	04	
05	91	69	80	3	70	73	0	15	FG BR	0		0.0	0.00	29.77	29.96	1.5	13	2.6	24	15	9	02	05	
06	84	69	77	0	71	72	0	12	TS TSRA RA BR	0		0.0	0.31	29.78	29.97	2.6	18	5.3	22	01	20	01	06	
07	92	66	79	2	70	73	0	14	BCFG BR	0		0.0	0.00	29.77	29.95	4.4	19	5.0	16	19	14	19	07	
08	87	73	80	3	73	74	0	15	TS TSRA RA FG BR FU	0		0.0	1.72	29.67	29.84	4.3	18	6.9	33	18	25	19	08	
09	88	72	80	3	69	72	0	15	RA BR	0		0.0	0.01	29.72	29.93	2.9	36	4.3	16	01	13	34	09	
10	90	66	78	0	66	70	0	13	BR HZ	0		0.0	0.00	29.85	30.05	2.3	16	2.9	18	14	9	18	10	
11	93	71	82	4	72	75	0	17		0		0.0	0.00	29.82	29.97	7.7	20	7.9	25	22	17	21	11	
12	97	81	89	11	72	77	0	24		0		0.0	0.00	29.65	29.82	5.5	24	6.9	22	24	16	25	12	
13	94	73	84	6	71	75	0	19	RA SQ	0		0.0	0.01	29.65	29.84	4.6	33	6.0	45	35	35	35	13	
14	83	65	74	-4	60	65	0	9		0		0.0	0.00	29.80	30.01	6.8	02	8.5	25	02	18	02	14	
15	82	61*	72*	-6	57	63	0	7		0		0.0	0.00	29.92		4.4	13	4.8	20	14	13	13	15	
16	86	62	74	-4	62	67	0	9		0		0.0	0.00	29.98		4.0	16	5.0	21	17	13	17	16	
17	89	69	79	1	64	69	0	14		0		0.0	0.00	30.01	30.19	6.3	19	7.0	21	22	16	22	17	
18	91	68	80	1	67	71	0	15		0		0.0	0.00	29.87	30.03	5.5	20	5.9	18	21	14	19	18	
19	94	72	83	4	71	75	0	18	TS HZ	0		0.0	0.00	29.68	29.86	3.9	19	5.2	29	07	21	04	19	
20	96	72	84	5	72	76	0	19		0		0.0	0.00	29.67	29.86	2.6	13	3.7	22	15	14	14	20	
21	99	75	87	8	76	79	0	22	BR HZ	0		0.0	0.00	29.67	29.86	4.0	18	4.4	18	20	14	19	21	
22	102	79	91*	12	77	80	0	26	BR HZ	0		0.0	0.00	29.72	29.92	5.0	19	5.4	18	21	15	20	22	
23	101	76	89	10	73	77	0	24	TS TSRA RA HZ	0		0.0	0.03	29.78	29.97	5.8	23	7.5	29	31	22	30	23	
24	99	75	87	9	73	77	0	22	HZ	0		0.0	0.00	29.77	29.95	2.5	31	6.0	26	23	22	22	24	
25	95	74	85	7	74	76	0	20	TS TSRA RA BR	0		0.0	0.41	29.65	29.82	1.3	17	5.8	31	01	26	36	25	
26	94	74	84	6	70	74	0	19	BR HZ	0		0.0	0.00	29.60	29.80	2.5	21	6.5	17	21	14	23	26	
27	94	76	85	7	68	73	0	20	BR HZ	0		0.0	0.00	29.73	29.94	2.0	07	5.6	15	14	12	01	27	
28	99	73	86	8	70	75	0	21	BR	0		0.0	0.00	29.83	30.01	1.7	22	3.7	17	24	14	24	28	
29	103*	75	89	11	70	76	0	24		0		0.0	0.00	29.78	29.95	1.6	17	4.5	17	15	13	15	29	
30	97	79	88	10	70	75	0	23	RA	0		0.0	T	29.79	29.99	4.5	02	6.1	21	02	16	02	30	
31	87	71	79	1	71	74	0	14	TS TSRA RA	0		0.0	0.03	29.86	30.05	3.6	20	4.6	16	15	14	17	31	

92.8	71.1	82.0	☼	68.9	72.9	0.0	17.1	< MONTHLY AVERAGES TOTALS >	0.0	3.63	29.77	29.95	1.7	19	5.4	< MONTHLY AVERAGES			
5.3	2.8	4.1		<----- DEPARTURE FROM NORMAL ----->						-1.04	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3								

DEGREE DAYS				GREATEST 24-HR PRECIPITATION : 1.73 DATE : 08-09				SEA LEVEL PRESSURE			
MONTHLY				GREATEST 24-HR SNOWFALL : 0.0 DATE :				MAXIMUM : 30.25 17 1026			
TOTAL DEPARTURE				GREATEST SNOW DEPTH : 0 DATE :				MINIMUM : 29.72 25 1652			
SEASON TO DATE				NUMBER OF -> DAYS WITH				PRECIPITATION >= 0.01 INCH: 9			
HEATING : 0 0 0 0				MAXIMUM TEMP >= 90 : 23				MINIMUM TEMP <= 32 : 0			
COOLING : 531 116 1181 340				MAXIMUM TEMP <= 32 : 0				PRECIPITATION >= 0.10 INCH: 5			
				THUNDERSTORMS : 8				HEAVY FOG : 0			
								SNOWFALL >= 1.0 INCH : 0			

**JULY 2011
RICHMOND, VA**

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

RICHMOND, VA (KRIC)
JULY 2011

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												01	0.00	0.00	
02													02												02	0.00	0.00	
03													03												03	0.18	0.18	
04													04												04	0.93	0.93	
05													05												05	0.00	0.00	
06													06	0.02	0.10	0.12	0.06	0.01							06	0.31	0.31	
07													07												07	0.00	0.00	
08													08				0.60								08	1.72	1.72	
09													09												09	0.01	0.01	
10													10												10	0.00	0.00	
11													11												11	0.00	0.00	
12													12												12	0.00	0.00	
13													13												13	0.01	0.01	
14													14												14	0.00	0.00	
15													15												15	0.00	0.00	
16													16												16	0.00	0.00	
17													17												17	0.00	0.00	
18													18												18	0.00	0.00	
19													19												19	0.00	0.00	
20													20												20	0.00	0.00	
21													21												21	0.00	0.00	
22													22												22	0.00	0.00	
23													23												23	0.03	0.03	
24													24												24	0.00	0.00	
25													25												25	0.41	0.41	
26													26												26	0.00	0.00	
27													27												27	0.00	0.00	
28													28												28	0.00	0.00	
29													29												29	0.00	0.00	
30													30												30	T	T	
31													31												31	0.03	0.03	

* 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)												
Ending Date												
Ending Time (Hr/Min)												

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 2011

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							10.00	10.00	
02							6.00	10.00	
03							7.00	10.00	
04							2.50	10.00	
05							0.50	10.00	
06							3.00	10.00	
07							6.00	10.00	
08							2.00	10.00	
09							6.00	10.00	
10							6.00	10.00	
11							7.00	10.00	
12							9.00	10.00	
13							7.00	10.00	
14							7.00	10.00	
15							10.00	10.00	
16							10.00	10.00	
17							10.00	10.00	
18							10.00	10.00	
19							5.00	10.00	
20							7.00	10.00	
21							4.00	9.00	
22							4.00	10.00	
23							5.00	10.00	
24							5.00	10.00	
25							0.75	10.00	
26							4.00	10.00	
27							5.00	10.00	
28							4.00	10.00	
29							4.00	10.00	
30							10.00	10.00	
31							8.00	10.00	
MONTHLY AVGS							5.96	9.97	
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			5				13		

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

JULY 2011

KRIC

WBAN # 13740

HOUR (LST)	SKY COVER	CEILING 100's of FT.	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F			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 SPEED (MPH) DIRECTION Tens of Deg	PRESSURE (INCHES, HG)					
			Observation Time (LST)	Eff Cld Amt Oktas			DRY BULB	DEW POINT	WET BULB		RELATIVE HUMIDITY (PCT)	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
SUNRISE: 0452 JUL 01 SUNSET: 1934													SUNRISE: 0455 JUL 07 SUNSET: 1933																
01	SCT	070			10.00		68	58	62	71	0	00	29.83	30.02	01	SCT	250			9.00		70	68	69	93	3	26	29.77	29.96
04	BKN	070			10.00		68	61	64	78	0	00	29.84	30.03	04	SCT	031			9.00		68	66	67	93	0	00	29.78	29.97
07	SCT	250			10.00		75	62	67	64	0	00	29.86	30.04	07	SCT	250			8.00		72	69	70	90	6	21	29.80	29.99
10	FEW	250			10.00		83	59	68	44	5	33	29.85	30.04	10	FEW	250			10.00		84	72	76	67	6	20	29.79	29.98
13	SCT	060			10.00		87	56	68	35	9	35	29.83	30.02	13	FEW	040			10.00		90	72	77	56	5	21	29.77	29.95
16	SCT	060			10.00		88	54	67	31	7	03	29.83	30.02	16	SCT	250			10.00		91	66	74	44	8	18	29.72	29.91
19	FEW	250			10.00		83	55	66	38	6	01	29.83	30.02	19	SCT	250			10.00		86	74	78	68	5	18	29.73	29.91
22	FEW	250			10.00		73	59	64	62	0	00	29.88	30.06	22	SCT	250			10.00		79	71	74	77	8	23	29.74	29.92
SUNRISE: 0452 JUL 02 SUNSET: 1934													SUNRISE: 0455 JUL 08 SUNSET: 1933																
01	CLR	NC			10.00		69	61	64	76	0	00	29.87	30.06	01	BKN	250			10.00		75	71	72	87	3	18	29.72	29.91
04	FEW	250			9.00		66	61	63	84	0	00	29.87	30.06	04	BKN	250			10.00	-RA	74	71	72	90	5	17	29.71	29.90
07	SCT	250			10.00		73	64	67	74	3	01	29.92	30.11	07	OVC	008			5.00	BR FU	75	72	73	90	5	17	29.73	29.91
10	BKN	250			10.00		85	59	69	41	0	00	29.90	30.09	10	BKN	012			9.00		80	73	75	79	10	17	29.69	29.88
13	BKN	250			10.00		91	59	70	34	3	VR	29.88	30.06	13	OVC	250			9.00		85	75	78	72	13	17	29.64	29.83
16	BKN	250			10.00		89	61	71	39	6	08	29.83	30.01	16	OVC	250			6.00	-RA BR	77	74	75	91	5	20	29.58	29.77
19	SCT	250			10.00		85	58	68	40	5	08	29.81	30.00	19	OVC	026			10.00		75	72	73	90	11	36	29.58	29.77
22	SCT	250			10.00		75	66	69	74	6	13	29.82	30.00	22	OVC	065			4.00	RA BR	73	71	72	93	7	30	29.62	29.81
SUNRISE: 0453 JUL 03 SUNSET: 1934													SUNRISE: 0456 JUL 09 SUNSET: 1933																
01	BKN	250			8.00		74	66	69	76	5	19	29.80	29.98	01	OVC	070			7.00	-RA	73	72	72	97	6	23	29.64	29.83
04	OVC	110			8.00		74	66	69	76	5	18	29.76	29.94	04	OVC	130			9.00		73	70	71	90	0	00	29.62	29.81
07	OVC	200			8.00		74	65	68	74	6	12	29.79	29.97	07	SCT	250			9.00		75	70	72	85	8	34	29.69	29.88
10	SCT	250			9.00		83	66	72	57	3	VR	29.77	29.96	10	BKN	022			9.00		80	70	73	72	8	35	29.75	29.94
13	FEW	250			10.00		92	66	74	42	6	VR	29.74	29.93	13	SCT	035			10.00		86	68	74	55	6	VR	29.76	29.95
16	SCT	250			10.00		94	68	76	43	10	20	29.69	29.87	16	SCT	045			10.00		87	68	74	53	3	07	29.74	29.93
19	BKN	250			10.00		88	71	76	57	5	20	29.67	29.85	19	CLR	NC			10.00		83	65	71	55	0	00	29.78	29.96
22	OVC	120			7.00	-TSRA	75	68	70	79	33	31	29.81	30.00	22	CLR	NC			10.00		73	68	70	84	0	00	29.84	30.03
SUNRISE: 0453 JUL 04 SUNSET: 1934													SUNRISE: 0457 JUL 10 SUNSET: 1933																
01	BKN	150			10.00		71	68	69	90	6	17	29.73	29.92	01	CLR	NC			7.00		69	66	67	90	0	00	29.84	30.03
04	SCT	250			10.00		71	68	69	90	3	13	29.72	29.90	04	CLR	NC			9.00		68	65	66	90	0	00	29.84	30.03
07	OVC	250			7.00		75	69	71	82	6	18	29.73	29.91	07	CLR	NC			6.00	HZ	75	69	71	82	0	00	29.87	30.06
10	BKN	250			9.00		87	72	77	61	5	28	29.73	29.91	10	FEW	022			10.00		85	68	74	57	0	00	29.90	30.09
13	BKN	250			10.00		91	70	76	50	6	36	29.71	29.90	13	SCT	075			10.00		88	61	71	40	0	00	29.88	30.06
16	BKN	250			10.00		91	73	78	56	10	04	29.66	29.84	16	SCT	080			10.00		88	63	72	43	0	00	29.85	30.04
19	OVC	045			4.00	-TSRA BR	71	67	68	87	3	19	29.79	29.98	19	FEW	075			10.00		83	69	74	63	5	13	29.84	30.02
22	OVC	200			10.00		72	70	71	93	6	21	29.75	29.94	22	CLR	NC			10.00		76	67	70	74	6	14	29.87	30.05
SUNRISE: 0454 JUL 05 SUNSET: 1934													SUNRISE: 0457 JUL 11 SUNSET: 1932																
01	OVC	150			7.00		72	70	71	93	5	18	29.74	29.93	01	CLR	NC			10.00		73	67	69	82	5	17	29.87	30.05
04	OVC	150			0.50	FG	70	69	69	97	5	17	29.78	29.96	04	CLR	NC			10.00		72	68	69	87	0	00	29.84	30.03
07	BKN	250			8.00		73	70	71	90	0	00	29.79	29.98	07	SCT	085			8.00		76	72	73	87	5	19	29.88	30.06
10	SCT	250			10.00		80	69	73	69	0	00	29.79	29.98	10	CLR	NC			10.00		86	73	77	65	8	18	29.86	30.04
13	BKN	250			10.00		85	68	74	57	5	31	29.78	29.96	13	SCT	040			10.00		91	74	79	58	13	21	29.80	29.98
16	BKN	250			10.00		87	68	74	53	6	12	29.76	29.94	16	SCT	045			10.00		91	75	79	60	11	19	29.74	29.93
19	SCT	250			10.00		84	70	74	63	6	12	29.75	29.94	19	FEW	250			10.00		87	75	78	68	8	19	29.73	29.91
22	FEW	250			10.00		77	72	74	85	5	12	29.79	29.97	22	OVC	250			10.00		85	74	77	70	14	18	29.67	29.85
SUNRISE: 0454 JUL 06 SUNSET: 1934													SUNRISE: 0458 JUL 12 SUNSET: 1932																
01	FEW	250			8.00		76	72	73	87	0	00	29.79	29.97	01	OVC	250			9.00		82	72	75	72	7	21	29.67	29.85
04	BKN	150			9.00		75	72	73	90	3	14	29.77	29.96	04	BKN	250			10.00		82	72	75	72	11	23	29.63	29.82
07	OVC	250			6.00	BR	76	72	73	87	5	19	29.80	29.98	07	OVC	250			10.00		82	72	75	72	7	27	29.66	29.85
10	BKN	150			10.00		81	72	75	74	10	18	29.81	29.99	10	BKN	250			10.00		90	70	76	52	6	30	29.68	29.87
13	BKN	065			6.00	-RA BR	74	71	72	90	8	05	29.79	29.98	13	SCT	250			10.00		94	71	78	47	9	24	29.65	29.83
16	OVC	070			3.00	-RA BR	73	72	72	97	7	18	29.74	29.93	16	SCT	250			10.00		97	69	77	40	10	24	29.61	29.79
19	BKN	250			6.00	BR	73	71	72	93	6	23	29.75	29.94	19	SCT	250			10.00		93	73	79	52	7	24	29.60	29.78
22	BKN	250			7.00		70	68	69	93	6	18	29.81	30.00	22	SCT	250			10.00		89	75	79	63	3	30	29.64	29.82

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

JULY 2011

KRIC

WBAN # 13740

HOUR (LST)	SKY COVER	CEILING 100's of FT.	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F			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 SPEED (MPH) DIRECTION Tens of Deg	PRESSURE (INCHES, HG)					
			Observation Time (LST)	Eff Cld Amt Oktas			DRY BULB	DEW POINT	WET BULB		RELATIVE HUMIDITY (PCT)	STATION				SEA LEVEL	Observation Time (LST)			Eff Cld Amt Oktas	DRY BULB	DEW POINT		WET BULB	RELATIVE HUMIDITY (PCT)	STATION	SEA LEVEL		
			SUNRISE: 0459						JUL 13							SUNSET: 1931													
01	BKN	250			10.00		81	74	76	79	5	34	29.63	29.82	01	BKN	250			10.00		77	68	71	74	5	19	29.73	29.92
04	SCT	250			10.00		80	73	75	79	0	00	29.64	29.82	04	CLR	NC			10.00		74	67	69	79	6	22	29.69	29.88
07	BKN	250			7.00		82	74	76	77	0	00	29.66	29.84	07	OVC	250			10.00		76	69	71	79	5	19	29.69	29.88
10	BKN	250			10.00		92	68	75	45	7	36	29.66	29.85	10	OVC	250			10.00		89	71	76	55	0	00	29.70	29.88
13	OVC	250			10.00		91	67	75	45	7	29	29.64	29.83	13	OVC	250			9.00		91	72	78	54	7	19	29.68	29.86
16	OVC	250			10.00		93	70	77	47	13	25	29.59	29.78	16	OVC	250			10.00		93	73	79	52	10	19	29.63	29.81
19	BKN	060			10.00	-RA	74	71	72	90	3	35	29.65	29.84	19	SCT	250			6.00	HZ	88	75	79	65	7	21	29.62	29.81
22	BKN	110			10.00		75	71	72	87	7	33	29.69	29.88	22	BKN	250			5.00	HZ	82	77	78	85	6	07	29.68	29.86
SUNRISE: 0459						JUL 14						SUNSET: 1931																	
01	CLR	NC			7.00		73	70	71	90	8	34	29.71	29.90	01	FEW	150			10.00		73	68	70	84	5	17	29.65	29.84
04	FEW	250			10.00		69	66	67	90	7	01	29.75	29.94	04	CLR	NC			10.00		73	68	70	84	0	00	29.66	29.85
07	FEW	250			10.00		70	59	63	68	13	01	29.80	29.99	07	CLR	NC			10.00		78	70	73	77	3	03	29.70	29.88
10	SCT	250			10.00		77	59	66	54	13	02	29.85	30.04	10	CLR	NC			10.00		89	72	77	57	3	17	29.70	29.89
13	BKN	250			10.00		81	58	67	46	11	01	29.85	30.04	13	BKN	042			10.00		94	72	78	49	5	19	29.69	29.88
16	BKN	250			10.00		82	57	67	43	8	09	29.84	30.02	16	FEW	043			9.00		94	74	80	52	6	12	29.65	29.83
19	SCT	250			10.00		76	59	66	56	6	11	29.84	30.03	19	BKN	250			8.00		88	76	79	68	10	12	29.65	29.83
22	FEW	250			10.00		67	58	62	73	5	13	29.90	30.09	22	SCT	250			7.00		81	75	77	82	6	14	29.70	29.88
SUNRISE: 0460						JUL 15						SUNSET: 1931																	
01	FEW	250			10.00		64	58	60	81	0	00	29.90	30.09	01	SCT	250			8.00		79	74	76	85	5	18	29.68	29.87
04	SCT	250			10.00		62	58	60	87	0	00	29.89	30.08	04	FEW	250			4.00	BR	76	74	75	94	3	15	29.67	29.85
07	SCT	250			10.00		68	63	65	84	0	00	29.93	30.12	07	FEW	250			5.00	HZ	80	75	77	85	0	00	29.70	29.89
10	BKN	250			10.00		77	55	64	47	0	00	29.95	30.14	10	CLR	NC			7.00		90	78	81	68	7	14	29.69	29.87
13	BKN	250			10.00		82	54	65	38	11	15	29.93	30.12	13	SCT	050			7.00		96	77	82	54	9	16	29.67	29.85
16					10.00						11	14			16	FEW	055			9.00		98	75	81	48	11	20	29.63	29.82
19	BKN	250			10.00		78	59	66	52	9	12	29.90		19	FEW	250			6.00	HZ	92	78	82	64	5	18	29.66	29.84
22	SCT	250			10.00		69	63	65	81	7	12	29.94		22	FEW	250			7.00		85	79	81	82	0	00	29.67	29.86
SUNRISE: 0501						JUL 16						SUNSET: 1930																	
01	CLR	NC			10.00		66	61	63	84	5	14	29.96		01	CLR	NC			4.00	BR	82	78	79	88	5	21	29.68	29.86
04	CLR	NC			10.00		64	60	62	87	0	00	29.97		04	FEW	250			5.00	HZ	81	76	77	85	0	00	29.71	29.89
07	CLR	NC			10.00		70	66	67	87	3	18	29.99	30.18	07	FEW	250			4.00	HZ	84	78	80	82	6	20	29.76	29.95
10	SCT	035			10.00		80	62	69	54	6	22	30.01	30.20	10	SCT	250			7.00		94	78	82	60	3	17	29.76	29.95
13	SCT	065			10.00		84	60	69	44	6	VR	30.01	30.19	13	BKN	250			9.00		99	75	81	46	7	19	29.74	29.93
16	SCT	055			10.00		85	59	69	41	0	00	29.98	30.16	16	SCT	250			9.00		101	73	81	41	11	19	29.70	29.88
19	SCT	070			10.00		80	64	70	58	8	14	29.98	30.17	19	SCT	250			7.00		94	77	81	58	7	19	29.72	29.91
22	CLR	NC			10.00		72	64	67	76	7	14	30.01	30.20	22	FEW	250			6.00	HZ	87	79	81	77	5	18	29.75	29.94
SUNRISE: 0501						JUL 17						SUNSET: 1930																	
01	BKN	250			10.00		70	62	65	76	6	14	30.01	30.20	01	SCT	250			7.00		84	76	78	77	7	21	29.75	29.93
04	OVC	085			10.00		70	64	66	81	5	18	30.02	30.21	04	FEW	250			7.00		80	73	75	79	5	20	29.76	29.95
07	BKN	090			10.00		73	65	68	76	5	19	30.05	30.24	07	FEW	250			6.00	HZ	85	74	77	70	9	24	29.82	30.00
10	BKN	110			10.00		81	62	69	53	13	22	30.06	30.25	10	FEW	250			10.00		94	73	79	51	9	23	29.82	30.00
13	SCT	200			10.00		86	63	71	46	8	20	30.03	30.22	13	SCT	050			10.00		99	73	80	43	10	19	29.78	29.97
16	SCT	090			10.00		87	63	71	45	10	21	29.98	30.16	16	BKN	250			10.00		99	72	80	42	10	20	29.74	29.92
19	FEW	090			10.00		82	66	71	58	6	19	29.95	30.14	19	OVC	250			8.00	-RA	80	73	75	79	5	31	29.78	29.96
22	CLR	NC			10.00		73	67	69	82	3	14	29.97	30.16	22	BKN	250			10.00		77	74	75	91	8	20	29.79	29.98
SUNRISE: 0502						JUL 18						SUNSET: 1929																	
01	CLR	NC			10.00		70	65	67	84	0	00	29.94	30.13	01	SCT	250			10.00		77	73	74	88	3	24	29.79	29.98
04	CLR	NC			10.00		69	63	65	81	0	00	29.91	30.10	04	FEW	250			8.00		76	72	73	87	0	00	29.77	29.95
07	SCT	250			10.00		73	65	68	76	6	19	29.94	30.12	07	FEW	250			8.00		79	74	76	85	6	26	29.79	29.98
10	SCT	250			10.00		85	66	72	53	7	23	29.89	30.08	10	BKN	250			9.00		89	73	78	59	9	36	29.80	29.99
13	BKN	250			10.00		89	67	74	48	11	19	29.85	30.03	13	BKN	250			10.00		95	72	79	47	3	06	29.76	29.95
16	SCT	250			10.00		91	66	74	44	10	20	29.78	29.96	16	OVC	170			6.00	HZ	93	73	79	52	8	02	29.73	29.92
19	OVC	250			10.00		85	70	75	61	7	20	29.76	29.95	19	OVC	250			5.00	HZ	88	75	79	65	0	00	29.73	29.92
22	SCT	250			10.00		78	70	73	77	0	00	29.76	29.95	22	OVC	240			10.00		79	72	74	79	6	28	29.76	29.94

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

JULY 2011

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 Cl'd Amt Oktas		VISIBILITY (MILES)	DRY BULB	DEW POINT		WET BULB	RELATIVE HUMIDITY (PCT)	STATION	SEA LEVEL
SUNRISE: 0507 JUL 25 SUNSET: 1924													
01	BKN	250				78	73	75	85	5	23	29.71	29.90
04	SCT	250				75	72	73	90	6	20	29.70	29.89
07	SCT	250				78	73	75	85	5	23	29.69	29.88
10	BKN	250				89	74	78	61	5	VR	29.67	29.86
13	BKN	250				92	74	79	56	7	17	29.61	29.79
16	OVC	100			+RA	83	77	79	82	13	09	29.55	29.74
19	OVC	110			-RA BR	76	73	74	90	7	07	29.60	29.79
22	OVC	100				76	74	75	94	7	20	29.62	29.81
SUNRISE: 0508 JUL 26 SUNSET: 1924													
01	CLR	NC				76	73	74	90	6	30	29.56	29.74
04	OVC	006			BR	75	73	74	94	6	21	29.58	29.77
07	BKN	250			BR	77	74	75	91	0	00	29.63	29.82
10	SCT	250				86	70	75	59	10	02	29.67	29.85
13	SCT	250				90	63	72	41	7	VR	29.65	29.83
16	SCT	250				92	68	75	45	6	18	29.59	29.78
19	FEW	250				86	71	76	61	9	20	29.60	29.78
22	FEW	250				79	72	74	79	5	18	29.63	29.82
SUNRISE: 0509 JUL 27 SUNSET: 1923													
01	FEW	250				79	74	76	85	6	24	29.66	29.84
04	CLR	NC				77	73	74	88	3	33	29.67	29.86
07	CLR	NC				80	69	73	69	10	02	29.76	29.94
10	SCT	250				88	65	73	47	9	05	29.79	29.97
13	BKN	250				92	60	71	34	5	VR	29.76	29.95
16	SCT	070				89	64	72	44	5	08	29.75	29.93
19	BKN	250				85	66	72	53	5	10	29.76	29.95
22	SCT	250				77	68	71	74	5	13	29.81	29.99
SUNRISE: 0510 JUL 28 SUNSET: 1922													
01	BKN	075				76	69	71	79	0	00	29.82	30.01
04	SCT	075				74	67	69	79	0	00	29.82	30.01
07	SCT	250				78	71	73	79	0	00	29.86	30.04
10	SCT	250				89	74	78	61	6	20	29.86	30.04
13	BKN	250				94	69	77	44	5	VR	29.83	30.02
16	OVC	250				98	62	74	31	10	26	29.80	29.99
19	BKN	250				91	73	78	56	3	04	29.81	30.00
22	BKN	250				81	77	78	88	5	16	29.82	30.01
SUNRISE: 0511 JUL 29 SUNSET: 1921													
01	SCT	250			BR	79	77	78	94	0	00	29.80	29.99
04	FEW	250				78	71	73	79	0	00	29.76	29.94
07	SCT	250				83	71	75	67	5	30	29.80	29.99
10	SCT	250				96	69	77	42	5	30	29.81	29.99
13	SCT	250				101	57	72	23	7	06	29.78	29.97
16	FEW	075				98	68	77	38	8	17	29.72	29.91
19	SCT	250				91	72	78	54	3	16	29.73	29.91
22	FEW	250				84	73	76	70	6	20	29.74	29.92
SUNRISE: 0511 JUL 30 SUNSET: 1920													
01	FEW	250				85	70	75	61	6	30	29.74	29.93
04	FEW	250				80	70	73	72	3	01	29.76	29.94
07	FEW	250				83	71	75	67	10	01	29.81	30.00
10	FEW	080				90	70	76	52	11	01	29.84	30.03
13	FEW	043				94	68	76	43	7	01	29.82	30.01
16	SCT	050				93	67	75	43	8	07	29.78	29.96
19	BKN	240				88	70	76	55	5	08	29.79	29.98
22	OVC	150				83	73	76	72	0	00	29.83	30.02

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 Cl'd Amt Oktas		VISIBILITY (MILES)	DRY BULB	DEW POINT		WET BULB	RELATIVE HUMIDITY (PCT)	STATION	SEA LEVEL
SUNRISE: 0512 JUL 31 SUNSET: 1919													
01	OVC	150				81	74	76	79	0	00	29.83	30.02
04	OVC	150				78	74	75	88	3	21	29.83	30.02
07	OVC	200				81	74	76	79	0	00	29.87	30.06
10	BKN	200				84	70	74	63	6	23	29.90	30.08
13	BKN	200				82	73	76	74	3	31	29.88	30.07
16	SCT	250				86	68	74	55	8	16	29.84	30.03
19	SCT	300				80	68	72	67	7	18	29.85	30.04
22	FEW	300				73	70	71	90	5	20	29.86	30.05

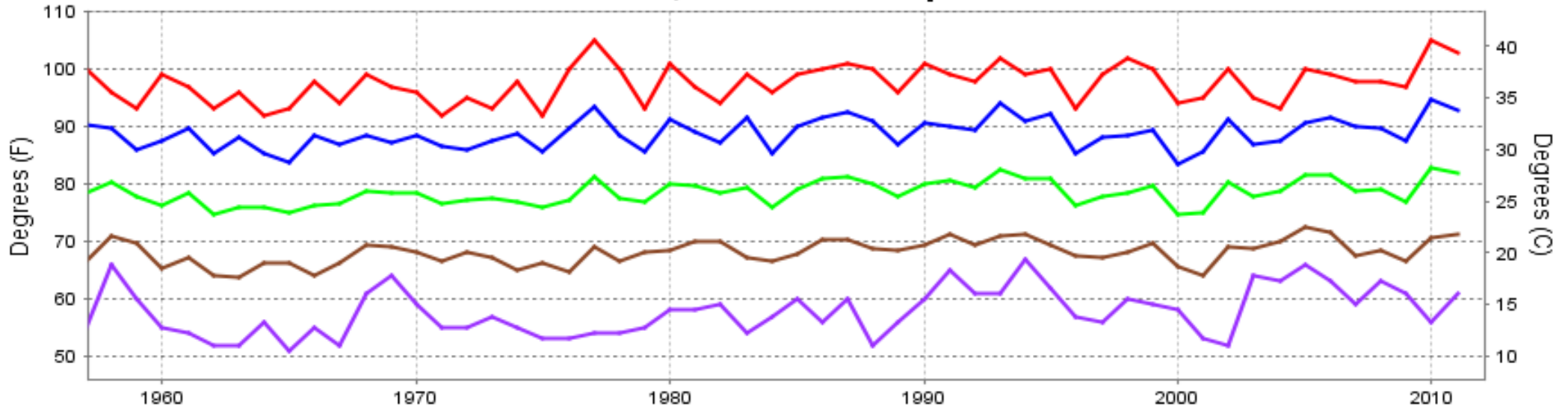
3-HOURLY OBSERVATION NOTES

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)		WIND SPEED (MPH)	DIRECTION		
							STATION	SEA LEVEL				
01			75	69	71	83	29.77	29.95	8.81	4	3	21
02			74	69	71	84	29.76	29.94	8.90	4	2	20
03			74	69	70	84	29.76	29.94	8.87	3	3	20
04			73	68	70	85	29.77	29.95	8.66	3	3	19
05			73	68	70	87	29.78	29.96	8.29	2	4	19
06			74	69	71	85	29.79	29.98	7.71	3	3	19
07			77	70	72	79	29.80	29.99	8.19	4	3	21
08			80	70	73	72	29.81	29.99	9.03	5	3	22
09			83	69	74	65	29.80	29.99	9.45	6	2	21
10			86	69	74	57	29.80	29.99	9.61	6	2	21
11			88	68	74	53	29.80	29.99	9.71	6	3	21
12			89	68	75	51	29.79	29.98	9.68	7	2	20
13			90	67	75	49	29.78	29.97	9.68	7	2	19
14			91	65	74	46	29.77	29.95	9.71	7	2	18
15			91	67	75	47	29.75	29.94	9.68	8	2	17
16			90	68	75	50	29.73	29.92	9.11	8	2	16
17			89	67	74	50	29.73	29.92	9.29	8	2	19
18			86	68	74	57	29.74	29.92	8.78	9	2	18
19			84	70	74	64	29.75	29.93	8.87	6	2	15
20			80	70	74	72	29.76	29.94	9.00	5	2	19
21			79	71	73	77	29.77	29.95	9.26	5	2	16
22			77	70	73	80	29.78	29.96	9.00	6	2	20
23			76	70	72	82	29.78	29.96	9.13	4	2	16
24			76	70	72	83	29.77	29.95	9.03	4	2	21

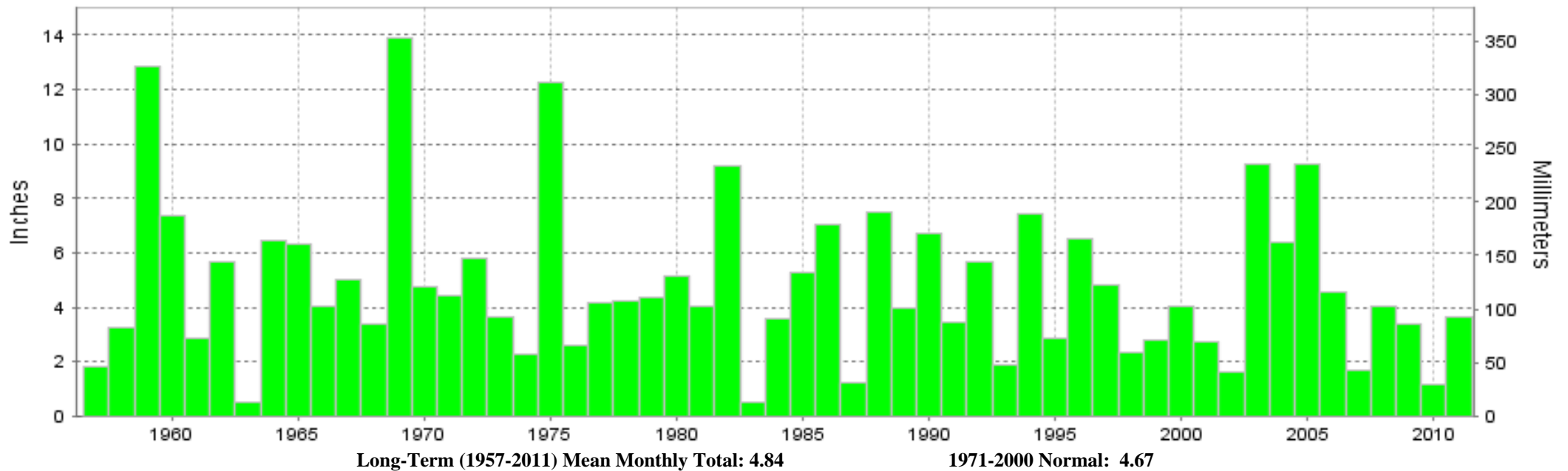
RICHMOND, VA JULY Temperatures



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

Long-Term (1957-2011) Mean: 78.5
1971-2000 Normal: 77.9

RICHMOND, VA JULY Precipitation



Long-Term (1957-2011) Mean Monthly Total: 4.84

1971-2000 Normal: 4.67



JULY 2011
RICHMOND, VA

LOCAL CLIMATOLOGICAL DATA NOAA, National Climatic Data Center

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