



# APRIL 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) 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			
11	12	13	14	15	16	17	18	19	20	21	22	23	24											
01	52	36	44*	-9	32	39	21	0	RA DZ BR	0		0.0	0.01	29.41	29.62	8.1	29	9.5	31	31	24	31	01	
02	59	36	48	-5	30	40	17	0	RA	0		0.0	0.05	29.54	29.76	9.6	28	11.1	45	32	35	32	02	
03	65	37	51	-2	28	42	14	0		0		0.0	0.00	29.85	30.04	4.8	24	8.6	30	24	16	15	03	
04	87	51	69	16	44	56	0	4		0		0.0	0.00	29.57	29.72	19.2	20	19.8	46	22	37	22	04	
05	72	45	59	5	41	50	6	0	TS TSRA RA BR	0		0.0	0.15	29.39	29.63	8.8	27	16.1	58*	24	41*	24	05	
06	67	32*	50	-4	28	42	15	0		0		0.0	0.00	29.88	30.07	9.6	21	10.1	33	22	24	22	06	
07	80	49	65	11	36	50	0	0		0		0.0	0.00	29.83	30.03	2.6	18	8.2	26	09	20	09	07	
08	57	46	52	-3	45	48	13	0	RA BR	0		0.0	0.01	29.90	30.08	7.2	06	8.5	21	13	16	03	08	
09	57	45	51	-4	45	48	14	0	RA	0		0.0	0.05	29.95	30.16	1.0	04	5.9	16	02	14	02	09	
10	72	50	61	6	53	55	4	0	BR	0		0.0	0.00	29.92	30.10	5.5	19	5.8	23	22	16	20	10	
11	84	56	70	14	61	64	0	5	BR	0		0.0	0.00	29.67	29.83	13.6	20	14.1	38	21	25	21	11	
12	79	58	69	12	59	62	0	4	RA BR	0		0.0	0.47	29.52	29.70	9.5	18	10.4	32	18	25	18	12	
13	66	50	58	1	49	53	7	0		0		0.0	0.00	29.67	29.89	3.1	32	6.9	24	32	16	32	13	
14	73	42	58	1	40	49	7	0		0		0.0	0.00	29.89	30.10	1.1	04	3.6	20	01	15	36	14	
15	71	43	57	0	44	51	8	0		0		0.0	0.00	30.04	30.24	9.3	12	9.5	29	15	22	11	15	
16	69	54	62	4	55	58	3	0	TS TSRA RA FG+ BR	0		0.0	0.90	29.67	29.80	9.1	15	14.1	37	15	26	19	16	
17	70	46	58	0	35	48	7	0		0		0.0	0.00	29.65	29.88	11.0	24	12.3	29	23	23	23	17	
18	81	52	67	9	40	53	0	2		0		0.0	0.00	29.80	29.99	11.5	20	12.0	33	19	28	20	18	
19	83	56	70	12	51	59	0	5		0		0.0	0.00	29.81	29.99	10.4	19	10.6	28	21	21	21	19	
20	86	63	75	16	57	64	0	10		0		0.0	0.00	29.72	29.92	14.2	22	15.0	38	24	29	22	20	
21	70	46	58	-1	39	50	7	0		0		0.0	0.00	29.96	30.20	5.8	01	6.9	26	35	22	35	21	
22	55	42	49	-10	43	47	16	0	RA DZ BR	0		0.0	0.18	30.16	30.35	5.9	09	6.7	21	12	16	13	22	
23	79	48	64	5	56	59	1	0	RA DZ BR	0		0.0	T	29.95	30.12	8.1	21	9.1	32	22	25	21	23	
24	88	57	73	13	60	66	0	8	MIFG BR	0		0.0	0.00	29.86	30.05	9.5	22	10.2	30	22	22	22	24	
25	88*	66	77	17	63	68	0	12	BR	0		0.0	0.00	29.83	30.02	11.4	20	11.8	28	21	22	22	25	
26	87	67	77*	17	65	68	0	12	RA	0		0.0	T	29.80	29.98	13.4	19	13.8	35	18	25	18	26	
27	84	67	76	16	68	70	0	11	RA DZ BR	0		0.0	0.14	29.73	29.92	12.8	18	13.0	39	25	26	18	27	
28	82	63	73	12	64	67	0	8	TS TSRA RA BR SQ	0		0.0	0.67	29.56	29.75	11.9	21	15.2	51	28	37	28	28	
29	74	50	62	1	43	53	3	0		0		0.0	0.00	29.68	29.89	6.7	29	8.7	28	29	20	32	29	
30	71	44	58	-3	43	51	7	0		0		0.0	0.00	29.93	30.15	2.6	36	4.5	21	32	15	34	30	

73.6	49.9	61.8	☼	47.2	54.3	5.7	2.7	< MONTHLY AVERAGES   TOTALS >				0.0	2.63	29.77	29.97	5.5	21	10.4	< MONTHLY AVERAGES				
4.7	4.6	4.7		-----DEPARTURE FROM NORMAL -----								-0.55	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3										
<b>DEGREE DAYS</b>								<b>GREATEST 24-HR PRECIPITATION :</b> 0.90 <b>DATE :</b> 16								<b>SEA LEVEL PRESSURE</b>							
<b>MONTHLY</b>				<b>SEASON TO DATE</b>				<b>GREATEST 24-HR SNOWFALL :</b> 0.0 <b>DATE :</b>				<b>MAXIMUM :</b> 30.40 <b>DATE</b> 22 <b>TIME</b> 0954				<b>MINIMUM :</b> 29.34 <b>DATE</b> 05 <b>TIME</b> 0700							
<b>TOTAL DEPARTURE</b>				<b>TOTAL DEPARTURE</b>				<b>GREATEST SNOW DEPTH :</b> 0 <b>DATE :</b>				<b>MINIMUM TEMP &lt;= 32 :</b> 1				<b>PRECIPITATION &gt;= 0.01 INCH :</b> 10							
<b>HEATING :</b> 170		-84		3748		-83		<b>NUMBER OF -&gt; DAYS WITH</b>				<b>MAXIMUM TEMP &lt;= 32 :</b> 0				<b>MINIMUM TEMP &lt;= 0 :</b> 0				<b>PRECIPITATION &gt;= 0.10 INCH :</b> 6			
<b>COOLING :</b> 81		48		83		41		<b>THUNDERSTORMS :</b> 3				<b>HEAVY FOG :</b> 1				<b>SNOWFALL &gt;= 1.0 INCH :</b> 0							

**APRIL 2011  
RICHMOND, VA**

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

RICHMOND, VA (KRIC)  
APRIL 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	0.01	T											01												01	0.01	0.01	
02													02		0.01	0.02	0.01	0.01							02	0.05	0.05	
03													03												03	0.00	0.00	
04													04												04	0.00	0.00	
05				0.10	0.02		T	T	T	0.03	T		05												05	0.15	0.15	
06													06												06	0.00	0.00	
07													07												07	0.00	0.00	
08													08			T	T	T	0.01	T	T			08	0.01	0.01		
09													09							T	0.03	0.02		09	0.05	0.05		
10													10											10	0.00	0.00		
11													11											11	0.00	0.00		
12												T	12	0.46	0.01	T							T	12	0.47	0.47		
13													13											13	0.00	0.00		
14													14											14	0.00	0.00		
15													15											15	0.00	0.00		
16													16	T	T	T	0.12	0.38	0.32	0.01				16	0.90	0.90		
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	T		0.02	0.03	T	0.03	0.07	0.02	T	T	T	0.01	22	0.18	0.18
23	T	T			T	T	T	T	T				23											23	T	T		
24													24											24	0.00	0.00		
25													25											25	0.00	0.00		
26													26				T	T						26	T	T		
27				T	T	0.01	T	T	0.03				27		0.02	0.08	T						27	0.14	0.14			
28													28			0.01				0.66	T		28	0.67	0.67			
29													29										29	0.00	0.00			
30													30										30	0.00	0.00			

\* 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 APRIL 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							2.50	10.00	
02							7.00	10.00	
03							10.00	10.00	
04							10.00	10.00	
05							2.00	10.00	
06							10.00	10.00	
07							10.00	10.00	
08							8.00	10.00	
09							7.00	10.00	
10							2.50	10.00	
11							6.00	10.00	
12							10.00	10.00	
13							10.00	10.00	
14							10.00	10.00	
15							10.00	10.00	
16							2.00	10.00	
17							10.00	10.00	
18							10.00	10.00	
19							10.00	10.00	
20							10.00	10.00	
21							10.00	10.00	
22							3.00	10.00	
23							2.00	10.00	
24							6.00	10.00	
25							6.00	10.00	
26							10.00	10.00	
27							5.00	10.00	
28							10.00	10.00	
29							10.00	10.00	
30							8.00	10.00	
MONTHLY AVGS							7.57	10.00	
<b>SUNSHINE (Minutes)</b>									
Total : 0					Possible : 23732				
Percent Possible : 0									
<b>NUMBER OF DAYS WITH : SKY CONDITION</b>									
Clear		Partly CLDY			Cloudy			Missing	
<b>MINIMUM VISIBILITY (MILES)</b>									
<= .25			<= 3.0				>= 7.0		
0			6				20		



# OBSERVATIONS AT 3-HOURLY INTERVALS

# RICHMOND, VA

APRIL 2011

KRIC

WBAN # 13740

HOUR (LST)	SKY COVER	CEILING 100's of FT.	SATELLITE		WEATHER	TEMPERATURE °F			WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SKY COVER	CEILING 100's of FT.	SATELLITE		WEATHER	TEMPERATURE °F			WIND		PRESSURE (INCHES, HG)																																																																																																																																	
			Observation Time (LST)	Eff Cld 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 Cld Amt Oktas	VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION Tens of Deg	STATION	SEA LEVEL																																																																																																																												
<b>SUNRISE: 0538 APR 13</b>						<b>SUNSET: 1843</b>						<b>SUNRISE: 0530 APR 19</b>						<b>SUNSET: 1848</b>																																																																																																																																							
01	OVC	100			10.00	58	54	56	87	8	18	29.57	29.76	01	SCT	250			10.00	62	42	52	48	10	20	29.82	30.01	04	BKN	200			10.00	59	42	50	54	5	18	29.81	30.00	07	OVC	030			10.00	56	51	53	83	7	29	29.64	29.83	10	OVC	250			10.00	60	50	55	70	13	32	29.69	29.89	13	OVC	250			10.00	65	48	56	54	9	34	29.69	29.89	16	OVC	065			10.00	62	47	54	58	11	01	29.71	29.90	19	BKN	070			10.00	57	46	51	67	0	00	29.76	29.95	22	BKN	055			10.00	55	47	51	75	3	34	29.82	30.02	22	OVC	250			10.00	73	54	62	52	13	20	29.78	29.97														
<b>SUNRISE: 0536 APR 14</b>						<b>SUNSET: 1844</b>						<b>SUNRISE: 0528 APR 20</b>						<b>SUNSET: 1849</b>																																																																																																																																							
01	CLR	NC			10.00	49	45	47	86	0	00	29.84	30.03	01	SCT	250			10.00	70	57	62	64	13	18	29.74	29.93	04	FEW	250			10.00	66	59	62	78	17	19	29.71	29.89	07	BKN	250			10.00	49	43	46	80	5	29	29.90	30.09	10	SCT	250			10.00	64	36	50	36	9	04	29.93	30.12	13	CLR	NC			10.00	68	35	52	30	0	00	29.91	30.11	16	FEW	250			10.00	72	36	54	27	3	VR	29.88	30.07	19	BKN	250			10.00	65	38	52	37	3	12	29.92	30.11	22	BKN	250			10.00	57	42	50	57	0	00	29.97	30.16	22	BKN	250			10.00	73	56	63	55	7	24	29.77	29.96														
<b>SUNRISE: 0535 APR 15</b>						<b>SUNSET: 1844</b>						<b>SUNRISE: 0527 APR 21</b>						<b>SUNSET: 1850</b>																																																																																																																																							
01	BKN	250			10.00	48	41	45	77	3	15	29.99	30.18	01	OVC	250			10.00	66	53	59	63	5	25	29.79	29.98	04	FEW	250			10.00	46	40	43	80	0	00	30.02	30.21	07	FEW	250			10.00	50	46	48	86	5	14	30.08	30.27	10	FEW	250			10.00	66	41	53	40	13	13	30.09	30.29	13	BKN	250			10.00	71	39	55	31	11	11	30.07	30.27	16	BKN	250			10.00	69	43	55	39	15	11	30.03	30.22	19	BKN	250			10.00	57	49	53	75	18	11	30.06	30.25	22	OVC	017			10.00	55	49	52	80	11	11	30.06	30.25	22	FEW	250			10.00	49	38	44	66	0	00	30.13	30.32														
<b>SUNRISE: 0534 APR 16</b>						<b>SUNSET: 1845</b>						<b>SUNRISE: 0526 APR 22</b>						<b>SUNSET: 1851</b>																																																																																																																																							
01	OVC	014			10.00	55	49	52	80	9	10	30.00	30.19	01	SCT	250			10.00	46	39	43	77	0	00	30.13	30.33	04	OVC	010			10.00	57	52	54	83	15	11	29.88	30.07	07	OVC	048			10.00	58	53	55	84	13	11	29.82	30.01	10	OVC	047			10.00	61	58	59	90	9	13	29.71	29.91	13	OVC	050			8.00	-RA						29.53	29.72	16	OVC	048			2.00	-TSRA BR						29.37	29.56	19	SCT	100			10.00	65	61	63	87	13	19	29.33	29.51	22	BKN	090			10.00	64	51	57	63	13	31	29.41	29.60	22	OVC	030			6.00	-RA BR						29.41	29.60	22	OVC	030			10.00	48	46	47	93	7	09	30.12	30.31
<b>SUNRISE: 0532 APR 17</b>						<b>SUNSET: 1846</b>						<b>SUNRISE: 0524 APR 23</b>						<b>SUNSET: 1852</b>																																																																																																																																							
01	CLR	NC			10.00	56	42	49	60	6	25	29.52	29.70	01	OVC	004			4.00	-DZ BR	48	47	48	96	3	05	30.04	30.23	04	CLR	NC			4.00	BR	50	48	49	93	7	35	30.00	30.19	07	CLR	NC			4.00	-RA BR	51	49	50	93	5	18	29.98	30.17	10	CLR	NC			10.00	58	33	47	39	16	28	29.75	29.95	13	FEW	250			10.00	64	32	49	30	13	23	29.72	29.91	16	FEW	050			10.00	69	31	51	24	15	24	29.67	29.87	19	FEW	250			10.00	64	35	50	34	13	20	29.69	29.88	22	CLR	NC			10.00	60	37	49	43	11	20	29.75	29.94	22	BKN	250			10.00	67	62	64	84	9	20	29.88	30.08											
<b>SUNRISE: 0531 APR 18</b>						<b>SUNSET: 1847</b>						<b>SUNRISE: 0523 APR 24</b>						<b>SUNSET: 1853</b>																																																																																																																																							
01	CLR	NC			10.00	59	37	48	44	14	22	29.77	29.96	01	FEW	250			10.00	67	62	64	84	8	23	29.88	30.07	04	OVC	250			6.00	BR	63	61	62	93	0	00	29.89	30.08	07	OVC	250			10.00	56	43	50	62	5	21	29.85	30.04	10	OVC	250			10.00	70	42	55	36	6	21	29.86	30.04	13	OVC	250			10.00	78	40	58	26	23	21	29.81	30.00	16	BKN	250			10.00	80	35	57	20	23	20	29.74	29.93	19	OVC	250			10.00	73	39	55	29	14	19	29.76	29.95	22	BKN	250			10.00	64	43	53	47	9	18	29.81	30.00	22	SCT	250			10.00	76	63	68	64	13	20	29.84	30.03													

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

APRIL 2011

KRIC

WBAN # 13740

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

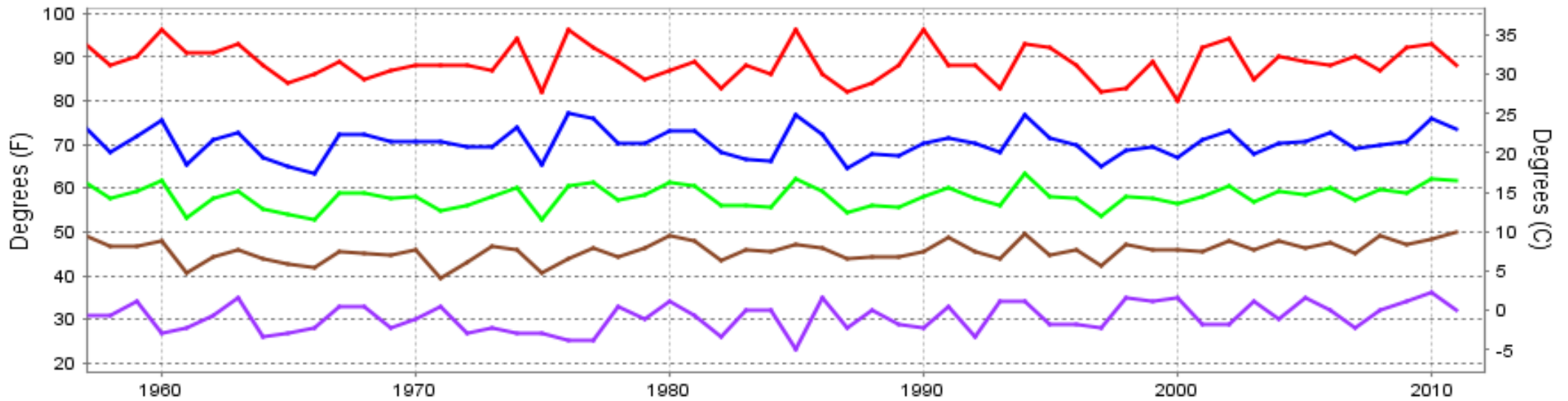
Table with columns: HOUR (LST), SKY COVER, CEILING 100's of FT., SATELLITE (Observation Time (LST), Eff Clد Amt Oktas, VISIBILITY (MILES)), WEATHER, TEMPERATURE °F (DRY BULB, DEW POINT, WET BULB, RELATIVE HUMIDITY (PCT)), WIND (SPEED (MPH), DIRECTION Tens of Deg), PRESSURE (INCHES, HG) (STATION, SEA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

Table with columns: HOUR (LST), CEILOMETER, EFF CLD AMT, DRY BULB, DEW POINT, WET BULB, RELATIVE HUMIDITY, PRESSURE (Inches, HG) (STATION, SEA LEVEL), VISIBILITY (Miles), WIND SPEED (MPH), RESULTANT WIND (MPH) (SPEED, DIRECTION).

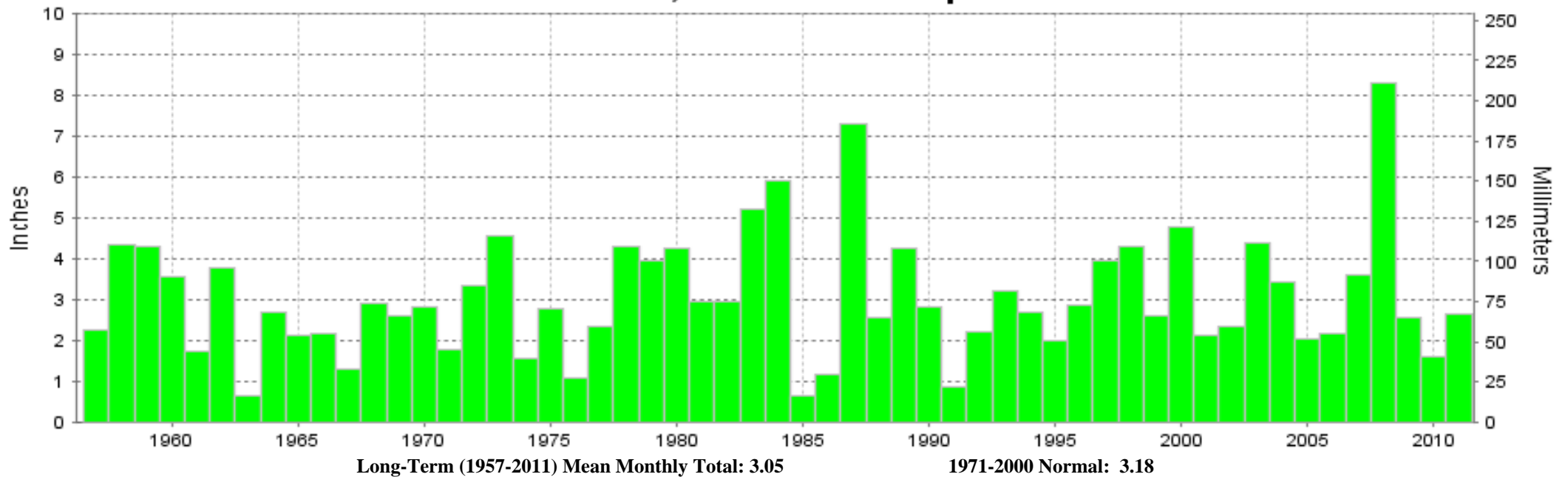
## RICHMOND, VA APRIL Temperatures



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

**Long-Term (1957-2011) Mean: 58.0**  
**1971-2000 Normal: 57.1**

## RICHMOND, VA APRIL Precipitation



Long-Term (1957-2011) Mean Monthly Total: 3.05

1971-2000 Normal: 3.18



APRIL 2011  
RICHMOND, VA

## LOCAL CLIMATOLOGICAL DATA NOAA, National Climatic Data Center

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