



NOVEMBER 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			
																		SPEED 20	DIR 21	SPEED 22	DIR 23			
01	61	41	51	-2	43	46	14	0	RA FG+ FG BR	0		0.0	T	30.09	30.30	5.2	36	5.4	21	02	15	34	01	
02	63	37	50	-3	39	44	15	0	BR	0		0.0	0.00	30.17	30.37	0.2	17	0.8	9	12	7	14	02	
03	65	41	53	1	41	46	12	0	BR	0		0.0	0.00	29.95	30.10	4.3	18	4.6	22	21	14	19	03	
04	59	43	51	-1	42	47	14	0	RA BR	0		0.0	0.31	29.77	29.99	9.0	02	9.9	33	03	25	03	04	
05	55	37	46	-6	31	39	19	0		0		0.0	0.00	30.16	30.39	7.1	02	8.0	23	01	18	02	05	
06	63	38	51	-1	40	46	14	0		0		0.0	0.00	30.28	30.47	1.2	08	4.9	16	19	10	09	06	
07	69	37	53	2	43	47	12	0	BCFG	0		0.0	0.00	30.17	30.37	0.7	24	1.2	13	23	9	23	07	
08	68	38	53	2	41	46	12	0	BR	0		0.0	0.00	30.08	30.27	1.2	17	1.5			10	15	08	
09	66	39	53	2	47	49	12	0	FG+ FG MIFG BR	0		0.0	0.00	29.95	30.12	1.2	15	1.3	10	15	8	14	09	
10	70	43	57	6	47	49	8	0	RA FG+ FG BR	0		0.0	0.05	29.69	29.87	4.9	34	5.3	24	36	20	34	10	
11	52	33	43	-7	26	36	22	0		0		0.0	0.00	29.79	30.02	9.2	29	9.7	30	30	24	30	11	
12	66	29	48	-2	29	39	17	0		0		0.0	0.00	30.01	30.20	8.7	21	9.1	28	22	22	21	12	
13	68	41	55	5	31	44	10	0		0		0.0	0.00	29.96	30.15	12.7	20	12.8	32	22	26	21	13	
14	75	53	64	15	51	57	1	0		0		0.0	0.00	29.82	30.00	13.1	21	13.3	32	21	22	20	14	
15	75*	58	67*	18	55	60	0	2		0		0.0	0.00	29.75	29.94	7.9	21	10.2	30	21	22	25	15	
16	70	53	62	13	60	60	3	0	TS TSRA RA BR	0		0.0	2.47	29.65	29.83	1.6	24	7.6	39	01	33	02	16	
17	53	37	45	-4	38	42	20	0	RA BR	0		0.0	0.28	29.80	30.03	7.7	34	9.1	30	33	24	34	17	
18	49	28*	39*	-10	21	32	26	0		0		0.0	0.00	30.24	30.46	1.7	31	3.4	16	34	10	34	18	
19	57	30	44	-5	32	39	21	0		0		0.0	0.00	30.24	30.42	6.8	19	7.1	21	19	16	19	19	
20	74	44	59	11	50	54	6	0	RA	0		0.0	T	30.08	30.25	7.8	22	8.3	24	25	20	23	20	
21	69	56	63	16	56	59	2	0	RA BR	0		0.0	T	29.99	30.20	1.5	13	5.6	16	04	12	01	21	
22	65	56	61	14	58	59	4	0	RA BR	0		0.0	0.11	29.96	30.12	7.1	15	7.6	24	17	20	17	22	
23	72	47	60	13	48	54	5	0	RA BR	0		0.0	0.52	29.59	29.81	10.0	29	18.1	47*	33	33*	34	23	
24	62	42	52	5	30	41	13	0		0		0.0	0.00	30.06	30.27	4.1	34	6.1	22	35	17	35	24	
25	70	34	52	6	33	43	13	0		0		0.0	0.00	30.09	30.27	3.2	21	3.5	12	21	9	22	25	
26	70	37	54	8	38	46	11	0		0		0.0	0.00	30.06	30.25	5.8	22	6.4	22	24	18	25	26	
27	73	48	61	15	49	54	4	0		0		0.0	0.00	29.98	30.17	11.5	19	12.0	36	21	28	21	27	
28	72	55	64	19	54	59	1	0		0		0.0	0.00	29.88	30.06	9.7	14	10.1	28	13	22	13	28	
29	65	45	55	10	50	52	10	0	RA BR	0		0.0	0.44	29.62	29.80	9.0	18	11.5	32	25	24	23	29	
30	53	38	46	1	32	39	19	0		0		0.0	0.00	29.67	29.91	8.4	26	11.0	26	26	21	29	30	

65.0	41.9	53.5	☼	41.8	47.6	11.3	0.1	< MONTHLY AVERAGES TOTALS >				0.0	4.18	29.95	30.15	2.5	22	7.5	< MONTHLY AVERAGES			
5.3	3.5	4.5		<-----DEPARTURE FROM NORMAL----->									1.12	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3								
DEGREE DAYS								GREATEST 24-HR PRECIPITATION : 2.57 DATE : 16-17				SEA LEVEL PRESSURE				DATE TIME						
MONTHLY				SEASON TO DATE				GREATEST 24-HR SNOWFALL : 0.0 DATE :				MAXIMUM : 30.54 18 1057										
TOTAL DEPARTURE				TOTAL DEPARTURE				GREATEST SNOW DEPTH : 0 DATE :				MINIMUM : 29.65 23 1154										
HEATING :		340 -130		554 -169		NUMBER OF -> DAYS WITH		MAXIMUM TEMP >= 90 : 0		MINIMUM TEMP <= 32 : 3		PRECIPITATION >= 0.01 INCH: 7										
COOLING :		2 -4		1900 466				MAXIMUM TEMP <= 32 : 0		MINIMUM TEMP <= 0 : 0		PRECIPITATION >= 0.10 INCH: 6										
								THUNDERSTORMS : 1		HEAVY FOG : 3		SNOWFALL >= 1.0 INCH : 0										

**NOVEMBER 2011
RICHMOND, VA**

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

RICHMOND, VA (KRIC)
NOVEMBER 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	T												01												01	T	T	
02													02												02	0.00	0.00	
03													03												03	0.00	0.00	
04		T	0.05	0.03	0.05	0.11	0.06	0.01					04												04	0.31	0.31	
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			0.01	0.03	T	T	T	0.01			10	0.05	0.05		
11													11												11	0.00	0.00	
12													12												12	0.00	0.00	
13													13												13	0.00	0.00	
14													14												14	0.00	0.00	
15													15												15	0.00	0.00	
16				T		T	T	0.03	0.10	T	0.02	16	0.49	0.35		T	T	0.01	0.02	0.08	0.70	0.38	0.11	0.18	16	2.47	2.47	
17	0.03	T	0.01		T	T	0.05	0.02		T	0.10	17	0.03												17	0.28	0.28	
18												18													18	0.00	0.00	
19												19													19	0.00	0.00	
20												20												T	20	T	T	
21			T	T	T							21												T	21	T	T	
22	T	0.05	T				0.04	0.01			T	22			0.01									T	22	0.11	0.11	
23			0.01	T	0.32	0.18	0.01					23													23	0.52	0.52	
24												24													24	0.00	0.00	
25												25													25	0.00	0.00	
26												26													26	0.00	0.00	
27												27													27	0.00	0.00	
28												28													28	0.00	0.00	
29							0.08	0.06	0.11	0.09	0.08	29	0.02	T	T	T									29	0.44	0.44	
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)	0.20	0.26	0.31	0.40	0.47	0.62	0.80	0.96	1.03	1.11	1.18	1.22
Ending Date	23	23	23	16	16	16	16	16	16	16	16	16
Ending Time (Hr/Min)	0454	0459	0504	2028	2039	2050	2110	2115	2132	2154	2212	2254

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

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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.

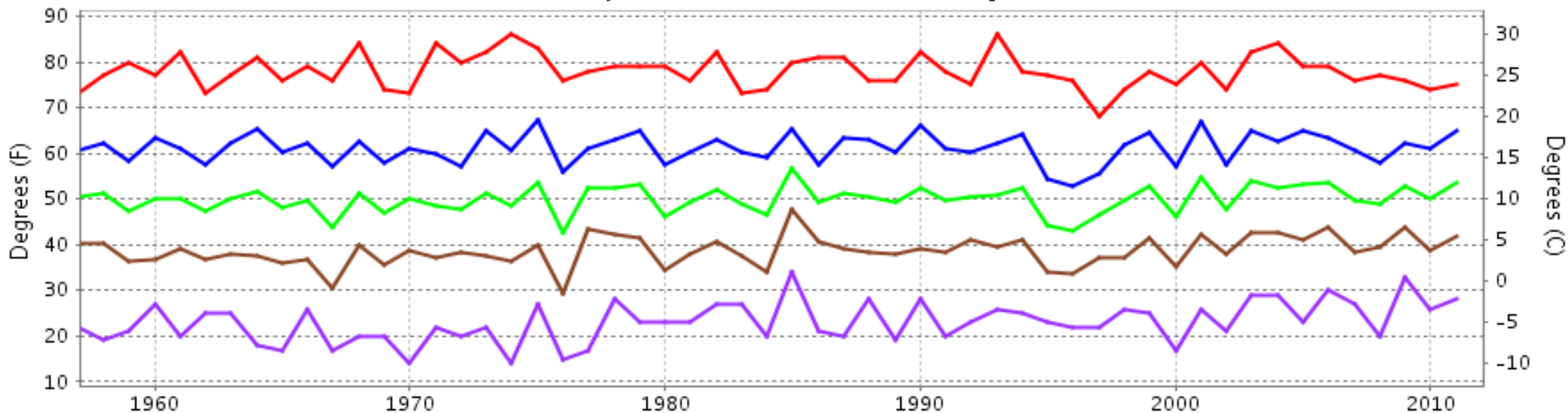
Snow Depth, Snowfall, and Sunshine data may come from nearby sites that the National Weather Service deems Climatologically representative of this site.

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							0.25	10.00	
02							6.00	10.00	
03							5.00	10.00	
04							3.00	10.00	
05							10.00	10.00	
06							10.00	10.00	
07							7.00	10.00	
08							6.00	10.00	
09							0.00	10.00	
10							0.25	10.00	
11							10.00	10.00	
12							10.00	10.00	
13							10.00	10.00	
14							10.00	10.00	
15							10.00	10.00	
16							1.00	10.00	
17							5.00	10.00	
18							10.00	10.00	
19							10.00	10.00	
20							10.00	10.00	
21							8.00	10.00	
22							2.50	10.00	
23							1.00	10.00	
24							10.00	10.00	
25							10.00	10.00	
26							10.00	10.00	
27							10.00	10.00	
28							10.00	10.00	
29							1.25	10.00	
30							10.00	10.00	
MONTHLY AVGS							6.88	10.00	
SUNSHINE (Minutes)									
Total : 0					Possible : 18302				
Percent Possible : 0									
NUMBER OF DAYS WITH : SKY CONDITION									
Clear		Partly CLDY			Cloudy			Missing	
MINIMUM VISIBILITY (MILES)									
<= .25			<= 3.0				>= 7.0		
3			8				18		

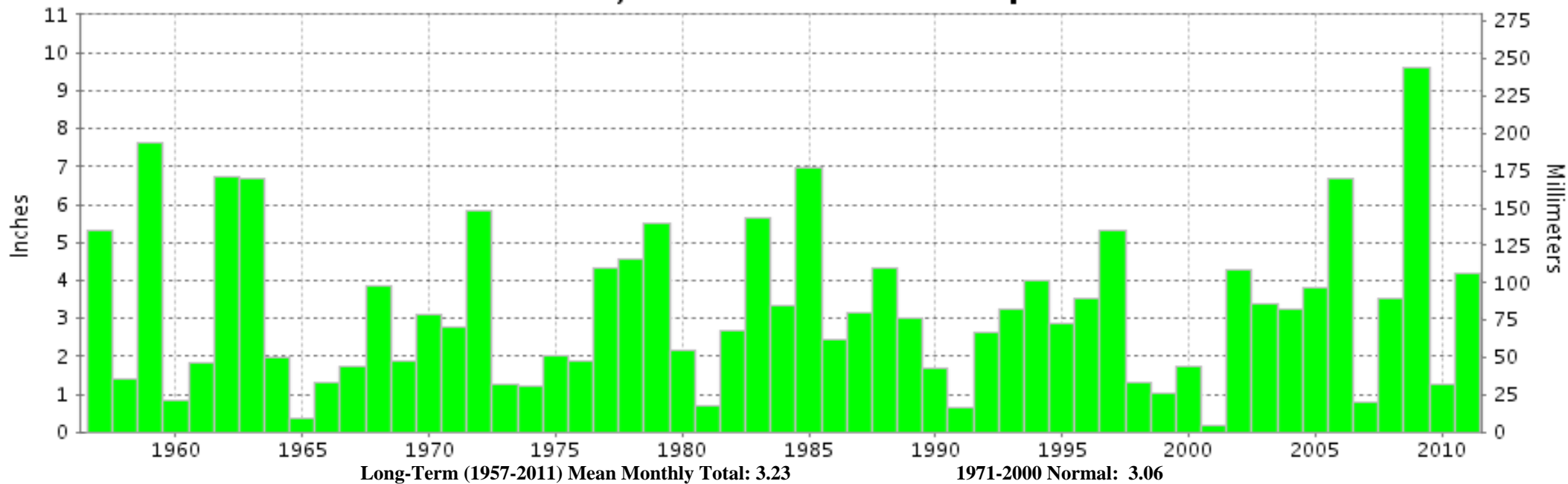
RICHMOND, VA NOVEMBER Temperatures



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

Long-Term (1957-2011) Mean: 49.9
1971-2000 Normal: 49.0

RICHMOND, VA NOVEMBER Precipitation



Long-Term (1957-2011) Mean Monthly Total: 3.23

1971-2000 Normal: 3.06



NOVEMBER 2011
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

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