



# JULY 2012

## 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	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		2-MIN			
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	99	71	85	8	71	75	0	20	TS RA BR	0		0.0	T	29.70	29.89	2.5	27	5.4	22	29	17	30	01	
02	94	74	84	7	67	72	0	19		0		0.0	0.00	29.75	29.95	3.7	02	5.9	23	32	17	33	02	
03	94	71	83	6	69	73	0	18	BR	0		0.0	0.00	29.77	29.95	3.0	17	4.9	16	24	12	28	03	
04	98	72	85	8	68	73	0	20	HZ	0		0.0	0.00	29.72	29.90	3.5	22	5.7	22	35	16	35	04	
05	102	79	91	14	69	75	0	26		0		0.0	0.00	29.67	29.86	0.9	31	4.9	17	03	14	36	05	
06	99	80	90	13	70	76	0	25		0		0.0	0.00	29.72	29.92	3.8	01	5.8	20	35	16	01	06	
07	104*	76	90	13	72	77	0	25	BR HZ	0		0.0	0.00	29.73	29.91	2.9	22	4.9	20	26	14	26	07	
08	103	78	91*	14	72	77	0	26	TS TSRA RA	0		0.0	T	29.67	29.85	2.6	20	6.8	29	04	23	05	08	
09	92	71	82	5	72	74	0	17	TS TSRA RA BR HZ	0		0.0	0.46	29.72	29.92	4.6	04	6.8	33	16	26	16	09	
10	83	73	78	0	71	73	0	13	TS TSRA RA BR	0		0.0	1.36	29.80	30.00	3.6	05	3.8	17	06	14	07	10	
11	86	71	79	1	65	70	0	14		0		0.0	0.00	29.91	30.11	5.4	06	6.3	20	10	16	10	11	
12	86	68	77	-1	62	67	0	12		0		0.0	0.00	29.98	30.18	5.8	07	6.5	21	10	16	10	12	
13	86	66*	76*	-2	62	67	0	11		0		0.0	0.00	30.01	30.21	3.3	11	4.2	17	07	13	14	13	
14	87	73	80	2	73	74	0	15	TS TSRA RA FG BR	0		0.0	0.96	30.01	30.19	3.3	19	4.9	40	26	32	27	14	
15	91	74	83	5	74	75	0	18	TS TSRA RA BR	0		0.0	0.73	29.94	30.11	4.5	20	5.8	31	27	24	28	15	
16	94	74	84	6	71	75	0	19	HZ	0		0.0	0.00	29.78	29.95	2.8	28	4.0	20	22	12	30	16	
17	97	72	85	7	71	75	0	20	BR	0		0.0	0.00	29.72	29.90	3.0	18	3.8	13	25	9	21	17	
18	96	75	86	7	74	77	0	21	TS TSRA RA BR HZ	0		0.0	0.02	29.71	29.90	6.6	19	7.7	32	19	25	21	18	
19	95	73	84	5	73	76	0	19	TS RA BR	0		0.0	0.09	29.73	29.92	4.5	20	6.7	25	23	18	23	19	
20	86	72	79	0	73	75	0	14	TS TSRA RA BR	0		0.0	0.54	29.72	29.91	0.8	30	5.7	17	17	15	17	20	
21	81	72	77	-2	72	73	0	12	RA BR	0		0.0	0.17	29.83	30.03	4.4	03	5.2	20	04	14	04	21	
22	86	71	79	0	72	73	0	14	DZ BR	0		0.0	0.01	29.96	30.15	2.6	05	4.1	13	14	9	01	22	
23	94	73	84	5	71	74	0	19	TS RA FG BR	0		0.0	0.01	29.90	30.06	4.2	24	5.9	25	27	20	26	23	
24	95	72	84	6	72	75	0	19	TS TSRA RA BR	0		0.0	0.14	29.65	29.83	7.9	27	9.3	48*	32	37*	33	24	
25	89	71	80	2	64	69	0	15		0		0.0	0.00	29.72	29.91	3.1	35	6.9	18	35	14	35	25	
26	96	73	85	7	73	77	0	20	BR	0		0.0	0.00	29.62	29.80	9.7	20	10.1	26	21	21	20	26	
27	97	75	86	8	72	76	0	21	TS TSRA RA	0		0.0	0.06	29.64	29.84	4.2	25	6.3	33	22	26	22	27	
28	95	71	83	5	71	74	0	18		0		0.0	0.00	29.73	29.92	3.7	23	5.6	18	25	15	25	28	
29	91	71	81	3	67	72	0	16		0		0.0	0.00	29.79	29.98	3.0	36	5.0	20	35	16	36	29	
30	87	71	79	1	71	73	0	14	MIFG BR	0		0.0	0.00	29.85	30.03	5.0	09	5.6	22	11	16	11	30	
31	89	71	80	2	70	72	0	15	TS TSRA RA BR	0		0.0	0.74	29.78	29.96	2.2	09	3.6	26	21	22	18	31	

**JULY 2012**  
**RICHMOND, VA**

92.6			72.7			82.7			☼	70.1		73.7		0.0		17.9		< MONTHLY AVERAGES   TOTALS >				< MONTHLY AVERAGES										
2.9			3.8			3.4				<-----DEPARTURE FROM NORMAL----->												0.78				SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3						
<b>DEGREE DAYS</b>										GREATEST 24-HR PRECIPITATION : 1.82 DATE : 09-10										SEA LEVEL PRESSURE				DATE TIME								
MONTHLY					SEASON TO DATE					GREATEST 24-HR SNOWFALL : 0.0 DATE :					GREATEST SNOW DEPTH : 0 DATE :					MAXIMUM : 30.24 13 1113				MINIMUM : 29.71 26 1726								
TOTAL DEPARTURE					TOTAL DEPARTURE					NUMBER OF -> DAYS WITH					MAXIMUM TEMP >= 90 : 20					MINIMUM TEMP <= 32 : 0					PRECIPITATION >= 0.01 INCH: 13							
HEATING : 0 0					COOLING : 555 112					THUNDERSTORMS : 13					MAXIMUM TEMP <= 32 : 0					MINIMUM TEMP <= 0 : 0					PRECIPITATION >= 0.10 INCH: 8							
																									SNOWFALL >= 1.0 INCH : 0							

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

RICHMOND, VA (KRIC)  
JULY 2012

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													04												04	0.00	0.00	
05													05												05	0.00	0.00	
06													06												06	0.00	0.00	
07													07												07	0.00	0.00	
08													08												08	T	T	
09	T												09												09	0.46	0.46	
10		0.03	T	0.96	0.34	0.03							10			T	T	T			T	0.24	0.22		10	1.36	1.36	
11													11												11	0.00	0.00	
12													12												12	0.00	0.00	
13													13												13	0.00	0.00	
14													14	0.20	0.01										14	0.96	0.96	
15													15		0.14	0.05	0.51	0.01	0.03						15	0.73	0.73	
16													16												16	0.00	0.00	
17													17												17	0.00	0.00	
18													18												18	0.02	0.02	
19	T												19												19	0.09	0.09	
20													20	T								0.09			20	0.54	0.54	
21													21												21	0.17	0.17	
22		T	0.01										22												22	0.01	0.01	
23				T	0.01								23												23	0.01	0.01	
24													24												24	0.14	0.14	
25													25												25	0.00	0.00	
26													26												26	0.00	0.00	
27													27												27	0.06	0.06	
28													28												28	0.00	0.00	
29													29												29	0.00	0.00	
30													30												30	0.00	0.00	
31	T												31												31	0.74	0.74	

\* 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)	0.36	0.53	0.59	0.63	0.77	1.02	1.08	1.23	1.28	1.32	1.33	1.33
Ending Date	14	14	14	14	10	10	10	10	10	10	10	10
Ending Time (Hr/Min)	1156	1201	1203	1210	0348	0403	0418	0437	0446	0503	0520	0520

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 1981-2010

## 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 2012

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

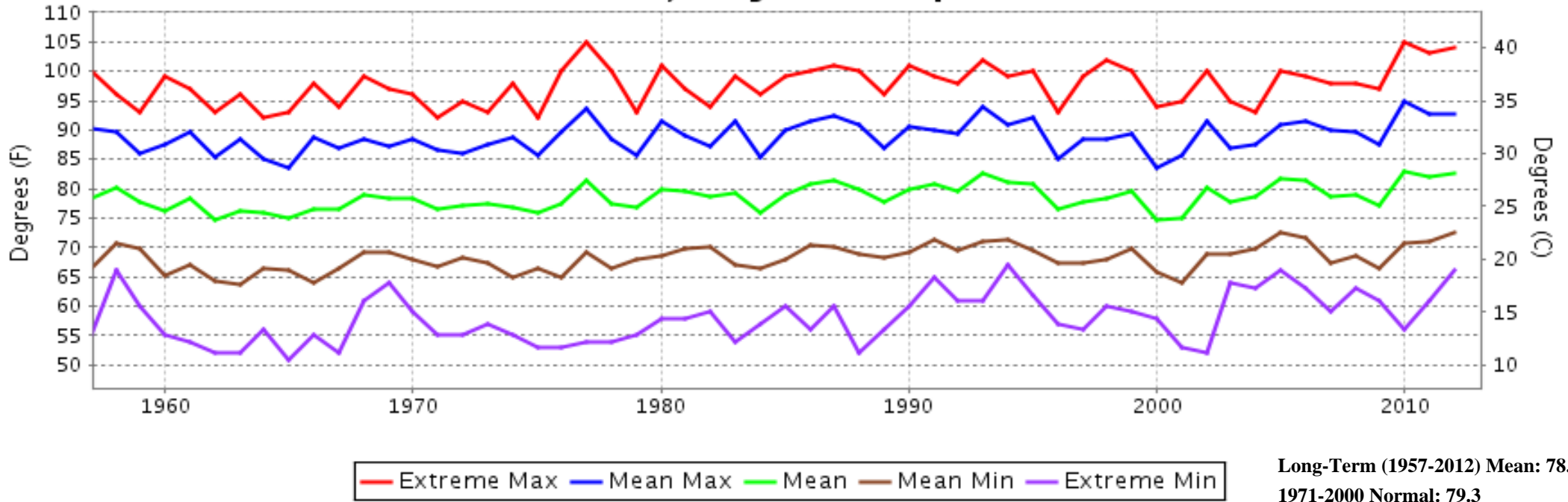
Date	SUNSHINE		CLOUDINESS (OKTAS)				VISIBILITY (MILES)		RESERVED
	TOTAL MINUTES	PERCENT POSSIBLE	SR-SS		MN-MN		MINIMUM	MAXIMUM	
			Sky Cover	Satellite	Sky Cover	Satellite			
01							3.00	10.00	
02							8.00	10.00	
03							6.00	10.00	
04							6.00	10.00	
05							8.00	10.00	
06							7.00	10.00	
07							2.00	10.00	
08							9.00	10.00	
09							6.00	10.00	
10							1.50	10.00	
11							10.00	10.00	
12							10.00	10.00	
13							10.00	10.00	
14							0.50	10.00	
15							2.00	10.00	
16							6.00	10.00	
17							6.00	10.00	
18							5.00	10.00	
19							5.00	10.00	
20							3.00	10.00	
21							3.00	10.00	
22							2.00	10.00	
23							1.50	10.00	
24							5.00	10.00	
25							10.00	10.00	
26							6.00	10.00	
27							7.00	10.00	
28							9.00	10.00	
29							10.00	10.00	
30							6.00	10.00	
31							1.25	10.00	
MONTHLY AVGS							5.64	10.00	
<b>SUNSHINE (Minutes)</b>									
Total : 0					Possible : 26883				
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			10				11		



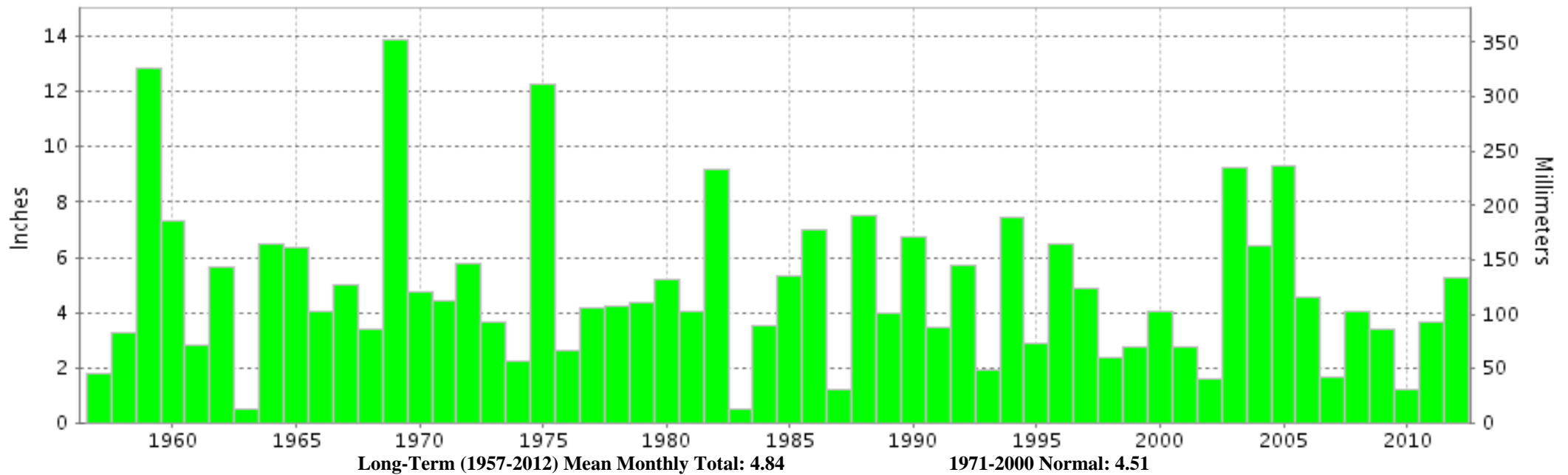




# RICHMOND, VA JULY Temperatures



# RICHMOND, VA JULY Precipitation





**JULY 2012  
RICHMOND, VA**

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*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.*

A handwritten signature in black ink, appearing to read "Thomas R. Karl".

**DIRECTOR**

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