



# AUGUST 2002

## LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

# RICHMOND, VA

R.E.BYRD INTERNATIONAL AP (RIC)  
 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 (INCHES)		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					
																			5-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	70	85	7	68	73	0	20	BR HZ			0.0	0.00	29.75	29.93	2.4	04	5.0	22	03	16	06	01	
02	97	73	85	7	72	75	0	20	TS TSRA RA BR HZ			0.0	0.21	29.83	30.01	0.9	15	3.9	23	06	20	06	02	
03	94	69	82	4	69	73	0	17	BR			0.0	0.00	29.96	30.15	3.5	18	4.6	15	14	13	14	03	
04	96	70	83	6	69	74	0	18				0.0	0.00	29.98	30.17	3.7	17	4.9	18	17	15	16	04	
05	96	71	84	7	69	74	0	19				0.0	0.00	29.83	30.01	6.9	19	7.8	20	17	15	18	05	
06	86	63	75	-2	59	67	0	10	HZ			0.0	0.00	29.76	29.94	11.3	36	12.8	29	01	24	01	06	
07	82	59	71	-6	50	59	0	6				0.0	0.00	29.90	30.09	8.8	02	9.2	26	01	20	01	07	
08	85	57*	71	-6	51	60	0	6				0.0	0.00	29.95	30.14	6.9	01	7.4	26	01	17	36	08	
09	88	58	73	-4	53	61	0	8				0.0	0.00	30.01	30.20	2.0	07	5.9	20	12	15	12	09	
10	90	58	74	-3	56	64	0	9				0.0	0.00	30.00	30.19	3.5	19	6.2	18	14	15	14	10	
11	96	64	80	3	61	68	0	15				0.0	0.00	29.93	30.11	6.1	18	7.0	18	12	14	18	11	
12	99	68	84	7	65	71	0	19				0.0	0.00	29.88	30.06	3.5	17	5.4	16	20	13	14	12	
13	99	73	86	10	67	73	0	21	HZ			0.0	0.00	29.89	30.07	5.2	18	6.5	21	20	17	20	13	
14	96	72	84	8	66	72	0	19				0.0	0.00	29.92	30.10	9.4	19	10.3	24	19	18	20	14	
15	96	73	85	9	72	75	0	20	TS RA			0.0	T	29.98	30.16	9.6	21	10.9	32	30	26*	29	15	
16	92	73	83	7	74	76	0	18	TS TSRA RA BR			0.0	0.19	29.99	30.18	7.3	22	8.7	23	23	21	23	16	
17	96	74	85	9	71	75	0	20	TS RA			0.0	T	29.88	30.06	7.1	23	8.7	20	22	17	20	17	
18	97	72	85	9	70	74	0	20	RA BR			0.0	T	29.76	29.94	3.3	27	5.8	17	29	14	30	18	
19	98	73	86	10	70	75	0	21				0.0	0.00	29.72	29.90	0.3	14	4.6	17	30	13	27	19	
20	94	73	84	8	67	73	0	19				0.0	0.00	29.80	29.99	5.1	02	7.9	23	02	17	03	20	
21	90	73	82	6	70	73	0	17	BR			0.0	0.00	30.02	30.20	8.1	10	9.2	20	13	16	10	21	
22	95	69	82	6	69	73	0	17				0.0	0.00	29.95	30.13	7.4	20	8.1	20	21	16	21	22	
23	101*	77	89*	13	70	76	0	24	HZ			0.0	0.00	29.76	29.94	3.6	02	9.1	24	36	18	36	23	
24	99	74	87	11	73	76	0	22	RA BR HZ			0.0	T	29.65	29.83	4.7	28	8.1	32*	27	24	26	24	
25	92	72	82	6	66	71	0	17				0.0	0.00	29.72	29.90	4.7	02	7.1	22	02	17	02	25	
26	83	71	77	1	68	71	0	12	RA BR			0.0	0.11	29.79	29.98	4.8	09	5.4	16	11	14	10	26	
27	79	66	73	-2	64	67	0	8	RA BR			0.0	0.55	29.89	30.07	6.2	05	7.1	20	05	15	04	27	
28	72	64	68	-7	67	67	0	3	RA BR			0.0	1.27	29.92	30.10	9.1	04	9.4	21	05	17	04	28	
29	68	61	65*	-10	63	64	0	0	RA BR			0.0	0.03	29.94	30.13	8.1	36	8.3	16	01	14	03	29	
30	72	64	68	-7	63	65	0	3	RA DZ BR			0.0	0.40	30.05	30.24	5.0	04	5.9	15	04	12	04	30	
31	72	63	68	-7	65	66	0	3	RA BR			0.0	0.42	30.16	30.34	7.8	04	8.1	20	06	17	04	31	

90.3	68.3	79.3	■ ■	65.7	70.4	0.0	14.5	< MONTHLY AVERAGES	TOTALS->	0.0	3.18	29.89	30.07	0.6	08	7.4	<- MONTHLY AVERAGES					
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4.6	1.5	3.0	■ ■	<-----DEPARTURE FROM NORMAL----->							-1.00	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3												
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<b>DEGREE DAYS</b>								GREATEST 24-HR PRECIPITATION: 1.59 DATE: 27-28				SEA LEVEL PRESSURE				DATE		TIME	
MONTHLY TOTAL DEPARTURE				SEASON TO DATE TOTAL DEPARTURE				GREATEST 24-HR SNOWFALL: 0.0 DATE:				MAXIMUM				30.37		31 1054	
HEATING: 0 -1				0 0 -1				GREATEST SNOW DEPTH:				MINIMUM				29.76		24 1454	
COOLING: 451 77				1483 250				NUMBER OF DAYS WITH		MAXIMUM TEMP ≥ 90: 21		MINIMUM TEMP ≤ 32: 0		PRECIPITATION ≥ 0.01 INCH: 8					
								MAXIMUM TEMP ≤ 32: 0		MINIMUM TEMP ≤ 0: 0		PRECIPITATION ≥ 0.10 INCH: 7							
								THUNDERSTORMS: 4		HEAVY FOG: 0		SNOWFALL ≥ 1.0 INCH: 0							

AUGUST 2002  
RICHMOND, VA

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

## RICHMOND, VA

AUGUST 2002

RIC

WBAN # 13740

DATE	FOR HOUR (LST) ENDING AT												DATE	FOR HOUR (LST) ENDING AT												DATE	Sum if Different (See Note)	2400 LST	
	1	2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18	19	20	21	22	23	24			Water	Equiv.
01													01												01			0.00	
02													02												02			0.21	
03			0.01										03			T	0.20								03			0.00	
04													04												04			0.00	
05													05												05			0.00	
06													06												06			0.00	
07													07												07			0.00	
08													08												08			0.00	
09													09												09			0.00	
10													10												10			0.00	
11													11												11			0.00	
12													12												12			0.00	
13													13												13			0.00	
14													14												14			0.00	
15													15						T						15			T	
16													16				0.19								16			0.19	
17													17												17			T	
18			T		T								18												18			T	
19													19								T				19			0.00	
20													20												20			0.00	
21													21												21			0.00	
22													22												22			0.00	
23													23												23			0.00	
24													24												24			T	
25													25												25			0.00	
26													26												26			0.11	
27													27												27			0.55	
28	0.02	0.01											28												28			1.27	
29	0.02	0.01	T										29												29			0.03	
30	0.01	T											30												30			0.40	
31	0.01	0.06	0.09	0.07	T	0.01							31												31			0.42	

### MAXIMUM SHORT DURATION PRECIPITATION (See Note)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)	.10	.19	.19	.20	.25	.31	.36	.43	.45	.45	.51	.55
Ending Date	16	16	16	27	27	27	27	27	27	27	28	28
Ending Time (Hour/Min)	1539	1540	1540	2236	2236	2236	2236	2236	2236	2236	0933	0944

Date and time are not entered for TRACE amounts.

Note : The sum of the hourly totals is given when it differs from the daily total. 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.

## 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		
	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	SQ Squalls
PR Partial	RA Rain	PY Spray	SS Sandstorm
SH Shower(s)	SG Snow Grains	SA Sand	GL Glaze
TS Thunderstorm	SN Snow	VA Volcanic Ash	
VC In the Vicinity	UP Unknown Precipitation		

Intensity (as indicated on pages 4 to 6):  
'+' = Heavy    ' ' = Moderate    '- ' = Light

## RICHMOND, VA AUGUST 2002

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:

DATE	SUNSHINE		CLOUDINESS (OKTAS)				VISIBILITY (MILES)		RESERVED
	TOTAL MINUTES	PERCENT POSSIBLE	SR–SS		MN–MN		MINIMUM	MAXIMUM	
			CEILOMETER	SATELLITE	CEILOMETER	SATELLITE			
01							4.00	10.00	
02							1.50	9.00	
03							5.00	10.00	
04							10.00	10.00	
05							10.00	10.00	
06							4.00	10.00	
07							10.00	10.00	
08							10.00	10.00	
09							10.00	10.00	
10							10.00	10.00	
11							10.00	10.00	
12							8.00	10.00	
13							6.00	9.00	
14							9.00	10.00	
15							10.00	10.00	
16							1.00	10.00	
17							9.00	10.00	
18							4.00	10.00	
19							8.00	10.00	
20							10.00	10.00	
21							3.00	10.00	
22							7.00	10.00	
23							5.00	10.00	
24							.75	10.00	
25							9.00	10.00	
26							1.75	10.00	
27							1.25	10.00	
28							1.00	10.00	
29							1.50	10.00	
30							.75	10.00	
31							1.25	10.00	
<b>MONTHLY AVGS</b>							6.25	9.94	
<b>SUNSHINE (MINUTES)</b>									
Total:                      Possible:                      Percent Possible:									
<b>NUMBER OF DAYS WITH:</b>									
<b>SKY CONDITION</b>									
CLR   PTLY CLDY   CLOUDY   MISSING									
31									
<b>MINIMUM VISIBILITY (MILES)</b>									
<=0.25    <=3.0    >=7.0									
0                      9                      16									

# OBSERVATIONS AT 3-HOURLY INTERVALS

## RICHMOND, VA

AUGUST 2002

RIC

WBAN # 13740

HOUR (LST)	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)					
	SKY COVER	CEILING 100'S OF FT			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			SKY COVER	CEILING 100'S OF FT	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: 0513					AUG 01				SUNSET: 1918				SUNRISE: 0518					AUG 07				SUNSET: 1912							
01	CLR	NC		5.00	BR	73	71	72	94	0	00	29.74	29.93	01	CLR	NC		10.00		64	50	56	61	9	01	29.87	30.06		
04	CLR	NC		5.00	BR	72	70	71	94	0	00	29.74	29.92	04	CLR	NC		10.00		61	52	56	72	9	01	29.88	30.07		
07	FEW	NC		5.00	HZ	79	70	73	74	7	34	29.76	29.94	07	CLR	NC		10.00		65	50	57	59	10	36	29.92	30.11		
10	CLR	NC		8.00		89	70	76	53	8	35	29.76	29.95	10	SCT	NC		10.00		74	50	60	43	13	36	29.93	30.12		
13	SCT	NC		10.00		95	64	74	36	6	VR	29.74	29.93	13	SCT	NC		10.00		81	50	63	34	13	01	29.89	30.08		
16	SCT	NC		10.00		95	64	74	36	9	06	29.70	29.89	16	SCT	NC		10.00		82	49	63	32	17	02	29.86	30.05		
19	BKN	250		10.00		89	67	74	48	6	14	29.74	29.92	19	SCT	NC		10.00		75	48	60	39	10	03	29.89	30.08		
22	BKN	250		8.00		80	70	73	71	3	14	29.76	29.95	22	FEW	NC		10.00		67	50	58	55	0	00	29.92	30.11		
SUNRISE: 0514					AUG 02				SUNSET: 1917				SUNRISE: 0519					AUG 08				SUNSET: 1911							
01	OVC	100		6.00	HZ	76	71	73	85	3	14	29.77	29.95	01	CLR	NC		10.00		62	53	57	73	3	01	29.93	30.12		
04	BKN	250		3.00	BR	73	73	73	100	3	04	29.78	29.96	04	CLR	NC		10.00		59	52	55	78	5	33	29.92	30.11		
07	BKN	150		4.00	HZ	79	73	75	82	3	29	29.82	30.00	07	CLR	NC		10.00		64	52	57	65	9	36	29.96	30.15		
10	SCT	NC		6.00	HZ	90	73	78	58	7	15	29.82	30.00	10	FEW	NC		10.00		78	54	64	43	7	36	29.97	30.16		
13	SCT	NC		9.00		95	67	76	40	9	02	29.83	30.01	13	SCT	NC		10.00		85	49	64	29	16	35	29.94	30.13		
16	BKN	250		9.00	TS	84	68	73	59	7	23	29.81	29.99	16	SCT	NC		10.00		85	48	63	28	10	05	29.92	30.11		
19	BKN	250		6.00	HZ	78	73	75	85	3	21	29.84	30.02	19	FEW	NC		10.00		77	49	61	37	7	02	29.94	30.13		
22	BKN	250		7.00		75	72	73	90	3	18	29.88	30.07	22	CLR	NC		10.00		69	51	59	53	5	04	29.98	30.17		
SUNRISE: 0515					AUG 03				SUNSET: 1916				SUNRISE: 0520					AUG 09				SUNSET: 1910							
01	SCT	NC		6.00	BR	72	71	71	97	0	00	29.91	30.09	01	CLR	NC		10.00		63	53	57	70	0	00	29.99	30.17		
04	FEW	NC		7.00		71	69	70	94	5	13	29.93	30.12	04	CLR	NC		10.00		60	54	57	80	0	00	29.99	30.18		
07	FEW	NC		6.00	BR	74	70	71	88	3	16	29.96	30.15	07	SCT	NC		10.00		66	55	60	68	6	30	30.03	30.22		
10	FEW	NC		10.00		87	66	73	50	8	23	29.99	30.17	10	FEW	NC		10.00		80	54	64	41	3	VR	30.04	30.23		
13	BKN	130		10.00		89	68	75	50	5	24	29.98	30.17	13	BKN	080		10.00		84	50	64	31	7	08	30.00	30.19		
16	SCT	NC		10.00		93	67	75	42	0	00	29.93	30.11	16	FEW	NC		10.00		87	48	64	26	7	09	29.96	30.15		
19	BKN	250		10.00		87	66	73	50	6	15	29.96	30.14	19	SCT	NC		10.00		79	55	65	44	12	12	29.98	30.17		
22	SCT	NC		10.00		79	70	73	74	5	16	29.99	30.18	22	CLR	NC		10.00		69	56	61	63	8	17	30.03	30.22		
SUNRISE: 0516					AUG 04				SUNSET: 1915				SUNRISE: 0521					AUG 10				SUNSET: 1909							
01	CLR	NC		10.00		74	70	71	88	0	00	29.99	30.18	01	CLR	NC		10.00		64	56	59	75	0	00	30.02	30.21		
04	CLR	NC		10.00		71	70	70	96	0	00	29.98	30.17	04	CLR	NC		10.00		62	56	59	81	0	00	30.02	30.21		
07	CLR	NC		10.00		75	72	73	90	0	00	30.03	30.22	07	CLR	NC		10.00		69	57	62	66	6	VR	30.05	30.24		
10	CLR	NC		10.00		85	69	74	59	3	24	30.02	30.21	10	SCT	NC		10.00		81	55	65	41	6	VR	30.05	30.24		
13	FEW	NC		10.00		92	65	74	41	6	23	29.99	30.17	13	SCT	NC		10.00		86	53	66	32	7	16	30.01	30.19		
16	SCT	NC		10.00		95	67	76	40	8	16	29.94	30.12	16	BKN	250		10.00		88	54	67	31	6	VR	29.95	30.14		
19	BKN	250		10.00		87	71	76	59	10	14	29.93	30.12	19	OVC	250		10.00		82	56	66	41	13	14	29.93	30.12		
22	BKN	250		10.00		80	72	75	76	7	16	29.96	30.15	22	BKN	250		10.00		73	60	65	64	10	16	29.98	30.17		
SUNRISE: 0517					AUG 05				SUNSET: 1914				SUNRISE: 0522					AUG 11				SUNSET: 1908							
01	BKN	250		10.00		75	72	73	90	6	19	29.92	30.11	01	CLR	NC		10.00		66	61	63	84	6	19	29.98	30.17		
04	BKN	250		10.00		74	72	73	94	7	23	29.89	30.08	04	CLR	NC		10.00		65	62	63	90	3	17	29.97	30.16		
07	CLR	NC		10.00		76	73	74	91	6	22	29.91	30.10	07	CLR	NC		10.00		69	62	65	78	8	22	29.97	30.16		
10	CLR	NC		10.00		86	69	74	57	6	VR	29.90	30.08	10	SCT	NC		10.00		85	58	68	40	7	23	29.96	30.15		
13	FEW	NC		10.00		93	67	75	42	6	VR	29.83	30.01	13	BKN	250		10.00		93	58	71	31	9	20	29.92	30.10		
16	SCT	NC		10.00		95	65	75	37	9	16	29.75	29.93	16	BKN	250		10.00		95	58	71	29	10	21	29.86	30.05		
19	BKN	250		10.00		88	68	74	52	10	17	29.73	29.91	19	BKN	250		10.00		87	61	70	42	8	16	29.85	30.04		
22	OVC	250		10.00		83	69	74	63	10	19	29.74	29.93	22	BKN	250		10.00		78	64	69	62	10	17	29.90	30.09		
SUNRISE: 0517					AUG 06				SUNSET: 1913				SUNRISE: 0523					AUG 12				SUNSET: 1906							
01	OVC	250		10.00		80	69	73	69	6	29	29.72	29.90	01	BKN	250		10.00		74	65	68	74	7	18	29.89	30.08		
04	OVC	120		10.00		77	70	72	79	3	23	29.67	29.85	04	OVC	100		10.00		70	65	67	84	3	18	29.88	30.06		
07	OVC	045		7.00		77	70	72	79	20	01	29.71	29.90	07	CLR	NC		10.00		73	66	69	79	5	19	29.90	30.08		
10	FEW	NC		10.00		82	62	69	51	21	36	29.75	29.93	10	FEW	NC		10.00		86	65	72	50	3	VR	29.91	30.10		
13	FEW	NC		10.00		86	56	67	36	18	03	29.75	29.93	13	FEW	NC		9.00		95	63	74	35	5	VR	29.88	30.06		
16	FEW	NC		10.00		85	52	65	32	20	01	29.75	29.94	16	SCT	NC		8.00		96	63	74	34	6	23	29.83	30.02		
19	FEW	NC		10.00		78	51	62	39	9	02	29.80	29.99	19	FEW	NC		8.00		90	66	74	45	8	15	29.83	30.02		
22	CLR	NC		10.00		69	50	58	51	5	36	29.87	30.06	22	CLR	NC		9.00		80	70	73	71	8	13	29.88	30.07		

# OBSERVATIONS AT 3-HOURLY INTERVALS

## RICHMOND, VA

AUGUST 2002

RIC

WBAN # 13740

HOUR (LST)	SATELLITE		WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SATELLITE		WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)							
	SKY COVER	CEILING 100'S OF FT		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	SKY COVER	CEILING 100'S OF FT	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: 0523</b>				<b>AUG 13</b>				<b>SUNSET: 1905</b>				<b>SUNRISE: 0528</b>				<b>AUG 19</b>				<b>SUNSET: 1856</b>									
01	SCT	NC			8.00	77	68	71	74	3	19	29.89	30.08	01	OVC	250			9.00	76	71	73	85	3	20	29.72	29.91		
04	SCT	NC			8.00	75	66	69	74	5	18	29.89	30.08	04	OVC	250			10.00	74	70	71	88	0	00	29.73	29.91		
07	SCT	NC			6.00	75	68	70	79	3	19	29.92	30.10	07	FEW	NC			9.00	77	71	73	82	6	32	29.75	29.94		
10	CLR	NC			6.00	88	68	74	52	3	VR	29.94	30.13	10	CLR	NC			10.00	88	70	76	55	0	00	29.78	29.97		
13	SCT	NC			6.00	97	67	76	37	5	23	29.89	30.07	13	SCT	NC			10.00	95	69	77	43	9	20	29.74	29.92		
16	FEW	NC			7.00	98	64	75	33	5	VR	29.83	30.01	16	BKN	250			10.00	97	68	77	39	8	03	29.67	29.85		
19	BKN	090			7.00	92	67	75	44	10	17	29.84	30.02	19	BKN	250			9.00	85	69	74	59	6	15	29.66	29.85		
22	SCT	NC			8.00	85	66	72	53	12	17	29.89	30.08	22	OVC	250			8.00	80	72	75	76	6	15	29.69	29.88		
<b>SUNRISE: 0524</b>				<b>AUG 14</b>				<b>SUNSET: 1904</b>				<b>SUNRISE: 0529</b>				<b>AUG 20</b>				<b>SUNSET: 1855</b>									
01	SCT	NC			9.00	80	66	71	62	12	20	29.91	30.10	01	OVC	250			10.00	78	71	73	79	6	18	29.71	29.90		
04	CLR	NC			9.00	74	67	69	79	6	18	29.92	30.10	04	OVC	250			10.00	73	70	71	90	6	19	29.70	29.89		
07	FEW	NC			9.00	75	68	70	79	5	17	29.94	30.12	07	OVC	250			10.00	79	69	72	72	12	36	29.78	29.97		
10	CLR	NC			10.00	87	64	72	46	6	22	29.94	30.13	10	SCT	NC			10.00	87	67	74	51	15	03	29.82	30.00		
13	CLR	NC			10.00	94	62	73	35	16	19	29.92	30.10	13	SCT	NC			10.00	93	65	74	40	6	VR	29.81	29.99		
16	BKN	250			10.00	93	62	73	36	15	20	29.87	30.06	16	SCT	NC			10.00	93	64	74	38	9	34	29.80	29.98		
19	SCT	NC			10.00	87	65	72	48	9	18	29.87	30.06	19	SCT	NC			10.00	86	65	72	50	6	06	29.83	30.01		
22	FEW	NC			10.00	82	67	72	60	14	20	29.93	30.11	22	BKN	075			10.00	80	65	70	60	5	08	29.89	30.07		
<b>SUNRISE: 0525</b>				<b>AUG 15</b>				<b>SUNSET: 1903</b>				<b>SUNRISE: 0530</b>				<b>AUG 21</b>				<b>SUNSET: 1854</b>									
01	CLR	NC			10.00	77	71	73	82	12	21	29.95	30.14	01	CLR	NC			8.00	75	71	72	88	6	11	29.91	30.10		
04	SCT	NC			10.00	73	71	72	94	7	19	29.95	30.14	04	SCT	NC			4.00	73	73	73	100	8	10	29.95	30.14		
07	FEW	NC			10.00	76	73	74	91	9	19	30.00	30.18	07	BKN	100			6.00	75	73	74	94	9	07	30.02	30.20		
10	BKN	030			10.00	86	73	77	65	12	22	30.00	30.19	10	SCT	NC			10.00	83	71	75	67	7	VR	30.05	30.24		
13	SCT	NC			10.00	91	72	78	54	12	20	29.96	30.15	13	SCT	NC			10.00	89	68	75	50	15	12	30.04	30.23		
16	BKN	250			10.00	94	71	78	48	10	20	29.91	30.10	16	BKN	085			10.00	86	68	74	55	14	14	30.00	30.19		
19	BKN	120			10.00	81	71	74	72	9	29	29.94	30.13	19	FEW	NC			10.00	80	68	72	67	14	11	30.02	30.21		
22	BKN	250			10.00	80	71	74	74	12	22	30.02	30.20	22	BKN	080			10.00	75	66	69	74	9	13	30.06	30.24		
<b>SUNRISE: 0526</b>				<b>AUG 16</b>				<b>SUNSET: 1902</b>				<b>SUNRISE: 0531</b>				<b>AUG 22</b>				<b>SUNSET: 1852</b>									
01	OVC	250			10.00	76	73	74	91	10	21	30.01	30.20	01	BKN	065			10.00	73	66	69	79	5	15	30.06	30.25		
04	BKN	250			10.00	74	73	73	97	8	20	30.00	30.19	04	BKN	041			10.00	72	66	68	82	0	00	30.05	30.23		
07	OVC	150			10.00	77	73	74	88	9	21	30.02	30.20	07	OVC	035			10.00	73	66	69	79	6	18	30.06	30.25		
10	OVC	140			10.00	81	73	75	77	12	22	30.02	30.21	10	SCT	NC			10.00	84	66	72	55	14	19	30.04	30.22		
13	BKN	250			10.00	88	73	77	61	6	27	30.00	30.19	13	SCT	NC			10.00	91	70	76	50	13	21	29.95	30.14		
16	OVC	250			8.00	81	77	78	88	6	20	29.96	30.15	16	BKN	250			8.00	94	71	78	48	9	20	29.85	30.04		
19	OVC	150			9.00	79	76	77	90	5	16	29.96	30.15	19	BKN	250			7.00	88	71	76	57	8	20	29.82	30.01		
22	BKN	150			10.00	79	73	75	82	9	23	29.95	30.14	22	BKN	250			8.00	85	72	76	65	10	21	29.83	30.01		
<b>SUNRISE: 0527</b>				<b>AUG 17</b>				<b>SUNSET: 1859</b>				<b>SUNRISE: 0532</b>				<b>AUG 23</b>				<b>SUNSET: 1851</b>									
01	OVC	150			10.00	77	73	74	88	6	19	29.95	30.14	01	FEW	NC			7.00	82	72	75	72	8	26	29.80	29.99		
04	OVC	200			10.00	77	72	74	85	9	23	29.94	30.12	04	CLR	NC			6.00	78	71	73	79	5	27	29.78	29.96		
07	OVC	150			10.00	77	72	74	85	7	22	29.94	30.13	07	FEW	NC			6.00	82	71	75	69	6	28	29.79	29.98		
10	FEW	NC			10.00	88	72	77	59	10	23	29.91	30.10	10	CLR	NC			8.00	93	71	78	49	8	35	29.81	30.00		
13	OVC	250			10.00	93	69	76	46	5	VR	29.88	30.06	13	SCT	NC			10.00	101	66	77	32	13	34	29.76	29.95		
16	BKN	250			10.00	95	69	77	43	9	20	29.80	29.99	16	SCT	NC			10.00	99	65	76	33	8	09	29.70	29.88		
19	OVC	120			10.00	83	72	75	70	7	26	29.82	30.01	19	BKN	090			9.00	90	73	78	58	12	11	29.69	29.88		
22	OVC	150			10.00	76	73	74	91	8	22	29.82	30.00	22	OVC	090			10.00	84	73	76	70	12	10	29.71	29.90		
<b>SUNRISE: 0528</b>				<b>AUG 18</b>				<b>SUNSET: 1858</b>				<b>SUNRISE: 0533</b>				<b>AUG 24</b>				<b>SUNSET: 1850</b>									
01	OVC	150			10.00	75	73	74	94	7	20	29.79	29.98	01	SCT	NC			6.00	79	75	76	88	8	08	29.69	29.88		
04	OVC	150			6.00	73	73	73	100	5	19	29.76	29.95	04	BKN	200			5.00	76	76	76	100	3	03	29.65	29.84		
07	BKN	085			6.00	74	73	73	97	6	23	29.80	29.98	07	OVC	001			0.75	75	75	75	100	0	00	29.68	29.86		
10	SCT	NC			10.00	89	70	76	53	10	02	29.78	29.97	10	SCT	NC			7.00	90	73	78	58	9	28	29.68	29.87		
13	BKN	085			10.00	91	67	75	45	3	17	29.74	29.93	13	BKN	150			9.00	96	71	78	44	14	31	29.63	29.82		
16	SCT	NC			10.00	97	65	75	35	10	31	29.70	29.89	16	BKN	140			10.00	96	66	75	37	12	28	29.58	29.76		
19	OVC	250			10.00	90	67	74	47	9	32	29.71	29.90	19	OVC	250			10.00	78	72	74	82	9	27	29.61	29.80		
22	OVC	250			10.00	82	71	75	69	3	30	29.75	29.94	22	OVC	200			10.00	74	71	72	91	6	17	29.64	29.83		

# OBSERVATIONS AT 3-HOURLY INTERVALS

# RICHMOND, VA

AUGUST 2002

RIC

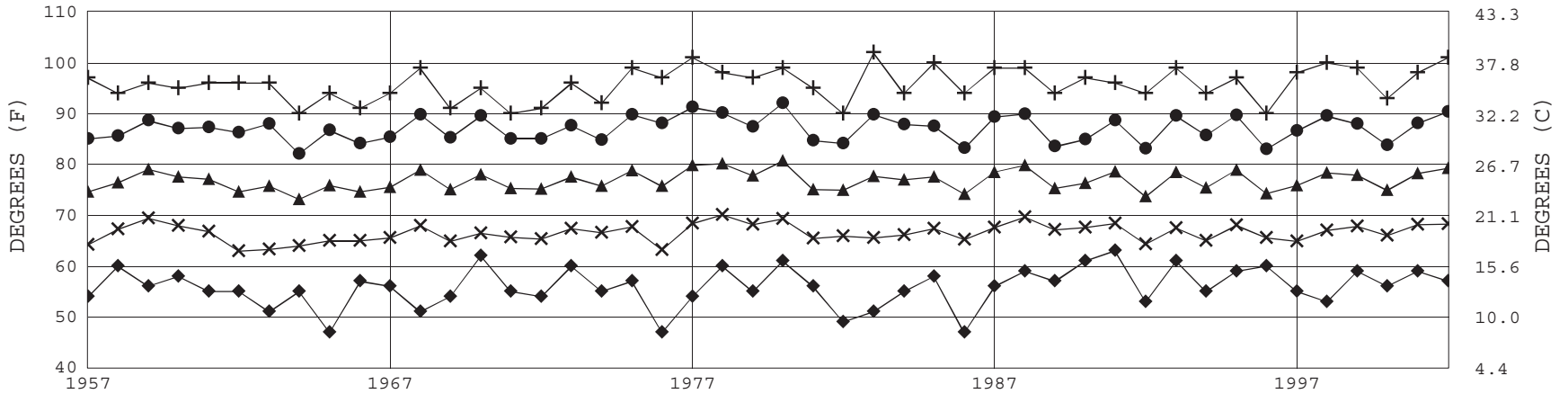
WBAN # 13740

HOUR (LST)	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)					
	SKY COVER	CEILING 100'S OF FT			OBSERVATION TIME (LST)	EFF CLD AMT	DRY BULB		DEW POINT	WET BULB	SPEED (MPH)	DIRECTION TENS OF DEG		STATION	SEA LEVEL			SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)		EFF CLD AMT	DRY BULB	DEW POINT	WET BULB	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL
<b>SUNRISE: 0534</b>					<b>AUG 25</b>					<b>SUNSET: 1848</b>					<b>SUNRISE: 0539</b>					<b>AUG 31</b>					<b>SUNSET: 1840</b>				
01	SCT	NC	10.00		74	71	72	91	3	33	29.66	29.85	01	OVC	030	3.00	-RA BR	64	64	64	100	8	04	30.13	30.32				
04	BKN	200	10.00		73	68	70	84	7	36	29.67	29.86	04	OVC	030	2.50	-RA BR	63	63	63	100	5	03	30.12	30.31				
07	BKN	250	9.00		75	66	69	74	10	36	29.73	29.92	07	OVC	100	2.50	BR	64	64	64	100	3	01	30.16	30.35				
10	FEW	NC	10.00		83	64	71	53	9	02	29.74	29.92	10	OVC	027	9.00		70	65	67	84	9	04	30.18	30.37				
13	SCT	NC	10.00		88	61	71	40	7	32	29.73	29.91	13	OVC	020	10.00		72	63	66	73	10	04	30.17	30.36				
16	SCT	NC	10.00		90	60	71	37	3	VR	29.69	29.87	16	OVC	029	2.00	-RA BR	67	66	66	97	7	05	30.16	30.35				
19	OVC	250	10.00		84	63	70	49	6	08	29.72	29.91	19	OVC	008	6.00	-RA BR	67	66	66	97	9	04	30.16	30.35				
22	BKN	250	10.00		76	70	72	82	6	13	29.77	29.96	22	OVC	005	3.00	-RA BR	66	66	66	100	8	01	30.15	30.34				
<b>SUNRISE: 0534</b>					<b>AUG 26</b>					<b>SUNSET: 1847</b>					<b>3-HOURLY OBSERVATION NOTES</b>														
01	BKN	150	9.00		73	70	71	90	3	09	29.76	29.94	<p>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, VV = 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.                      &amp; = Original observation contained additional weather elements.                      See page 3 for additional notes.</p>																
04	OVC	150	7.00		72	70	71	94	0	00	29.78	29.96																	
07	OVC	150	3.00	-RA BR	72	72	72	100	3	07	29.81	30.00																	
10	OVC	150	6.00	BR	76	74	75	94	6	04	29.81	30.00																	
13	OVC	140	10.00		81	69	73	67	8	07	29.79	29.98																	
16	BKN	120	10.00		83	63	70	51	14	12	29.75	29.94																	
19	OVC	120	10.00		77	62	68	60	7	10	29.78	29.97																	
22	OVC	130	10.00		74	63	67	69	5	06	29.81	30.00																	
<b>SUNRISE: 0535</b>					<b>AUG 27</b>					<b>SUNSET: 1846</b>																			
01	OVC	095	10.00		72	65	68	79	6	02	29.81	30.00																	
04	OVC	090	10.00		71	65	67	81	5	03	29.81	30.00																	
07	OVC	100	10.00		72	65	68	79	6	05	29.86	30.05																	
10	OVC	150	10.00		77	63	68	62	10	06	29.88	30.07																	
13	OVC	075	10.00		79	62	68	56	8	06	29.89	30.08																	
16	OVC	150	10.00		73	62	66	69	8	05	29.90	30.09																	
19	OVC	055	10.00		69	65	66	87	7	13	29.92	30.11																	
22	OVC	043	2.50	RA BR	66	66	66	100	7	01	29.95	30.14																	
<b>SUNRISE: 0536</b>					<b>AUG 28</b>					<b>SUNSET: 1844</b>																			
01	OVC	036	5.00	-RA BR	66	66	66	100	5	02	29.94	30.13																	
04	OVC	032	10.00		65	64	64	97	9	02	29.91	30.10																	
07	OVC	028	4.00	RA BR	64	64	64	100	12	02	29.94	30.13																	
10	OVC	100	5.00	-RA BR	67	67	67	100	13	04	29.94	30.13																	
13	OVC	007	9.00		70	69	69	97	9	06	29.92	30.11																	
16	OVC	017	4.00	RA BR	72	72	72	100	6	06	29.89	30.08																	
19	OVC	006	2.00	-RA	70	70	70	100	10	05	29.89	30.08																	
22	OVC	005	3.00	RA BR	66	66	66	100	13	04	29.91	30.10																	
<b>SUNRISE: 0537</b>					<b>AUG 29</b>					<b>SUNSET: 1843</b>																			
01	OVC	006	5.00	-RA BR	65	65	65	100	10	01	29.91	30.09																	
04	OVC	005	6.00	BR	64	64	64	100	14	36	29.89	30.08																	
07	OVC	004	1.50	BR	62	62	62	100	10	35	29.94	30.13																	
10	OVC	005	10.00		63	62	62	97	10	35	29.95	30.14																	
13	OVC	008	9.00		66	63	64	90	9	35	29.94	30.13																	
16	OVC	010	9.00		67	63	64	87	8	01	29.94	30.13																	
19	OVC	016	10.00		68	64	66	87	5	01	29.95	30.14																	
22	OVC	017	10.00		67	63	64	87	6	02	29.98	30.17																	
<b>SUNRISE: 0538</b>					<b>AUG 30</b>					<b>SUNSET: 1841</b>																			
01	OVC	017	4.00	-RA BR	65	63	64	93	7	36	29.97	30.16																	
04	OVC	030	3.00	BR	65	64	64	97	5	01	29.99	30.18																	
07	OVC	035	5.00	BR	65	63	64	93	5	02	30.04	30.23																	
10	OVC	035	10.00		69	62	65	78	10	04	30.05	30.24																	
13	OVC	032	10.00		72	62	66	71	7	01	30.05	30.24																	
16	OVC	029	2.00	-RA BR	68	66	67	93	6	08	30.06	30.25																	
19	OVC	032	7.00		67	66	66	97	5	10	30.08	30.27																	
22	OVC	030	3.00	-RA BR	67	67	67	100	3	06	30.10	30.29																	

## 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			72	67	69	84	29.88	30.07	8.39	5	1	19
02			72	67	69	85	29.88	30.06	8.47	6	1	18
03			71	67	69	86	29.87	30.06	8.29	5	1	25
04			70	67	68	89	29.88	30.06	8.11	5	0	0
05			70	67	68	90	29.88	30.07	8.05	5	1	36
06			70	67	68	90	29.90	30.08	7.27	5	1	36
07			73	67	69	83	29.91	30.10	7.41	7	2	34
08			76	67	70	76	29.92	30.10	8.13	8	2	33
09			79	67	71	67	29.92	30.10	8.74	8	2	35
10			82	66	71	59	29.92	30.10	9.19	8	2	36
11			84	65	72	54	29.91	30.10	9.65	9	3	36
12			86	64	72	50	29.90	30.09	9.68	7	3	36
13			88	64	72	47	29.89	30.08	9.71	8	1	1
14			89	63	72	46	29.87	30.06	9.52	9	1	2
15			88	63	72	48	29.86	30.04	9.03	9	1	1
16			88	63	72	48	29.85	30.04	8.94	8	1	10
17			86	64	72	51	29.85	30.04	8.79	9	3	12
18			84	65	71	56	29.85	30.04	8.81	9	3	11
19			81	65	71	61	29.86	30.05	9.03	8	3	12
20			79	66	70	67	29.88	30.06	9.03	7	4	12
21			77	65	69	69	29.89	30.08	9.03	7	4	14
22			76	66	70	74	29.89	30.08	8.69	7	3	16
23			75	66	69	77	29.90	30.08	8.94	7	2	18
24			73	67	69	80	29.90	30.09	8.77	6	1	19

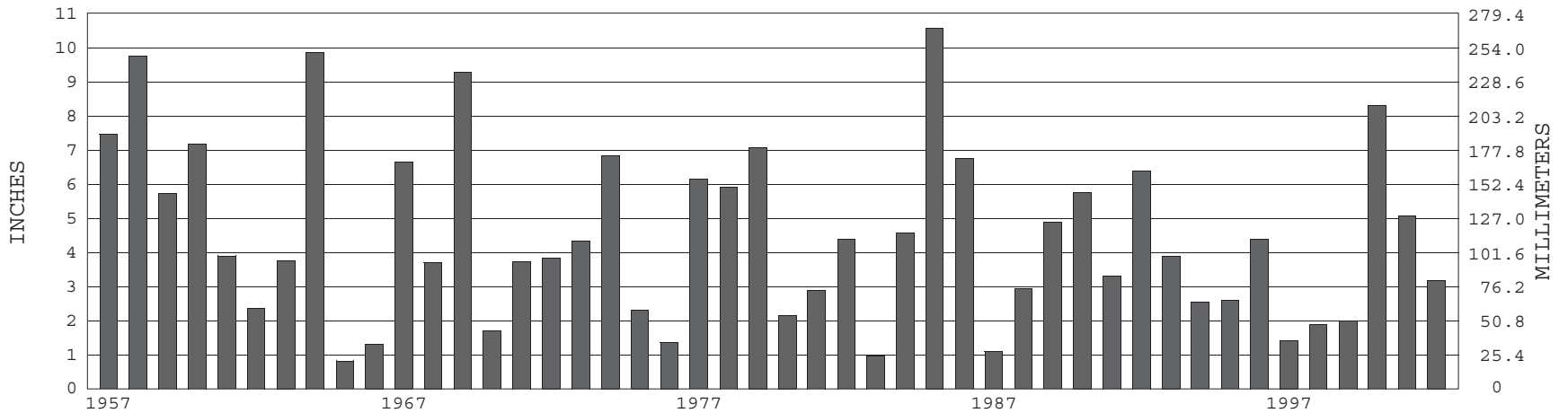
### RICHMOND, VA AUGUST TEMPERATURES



+ Extreme Max.      ● Mean Max.      ▲ Mean      × Mean Min.      ◆ Extreme Min.

Long-Term (1957-2002) Mean: 76.8      1961-1990 Normal: 76.3

### RICHMOND, VA AUGUST PRECIPITATION



Long-Term (1957-2002) Mean Monthly Total: 4.50

1961-1990 Normal: 4.18



AUGUST 2002

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.*

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