



OCTOBER 1996

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

OCTOBER 1996
RICHMOND, VA

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	74	59	67	3	56	60	0	2	RA				T	30.19	30.40	5.5	09	6.0	23	12	20	12	01								
02	75	61	68	4	63	64	0	3	RA BR HZ				0.02	30.01	30.21	1.3	24	4.9	14	17	9	19	02								
03	70	47	59	-5	52	57	6	0	BR				0.00	29.98	30.19	9.3	36	11.4	31	01	24	01	03								
04	57	41	49*	-14	34	42	16	0					0.00	30.29	30.50	9.3	02	9.7	23	01	18	01	04								
05	62	39	51	-12	40	45	14	0					0.00	30.34	30.55	7.3	05	8.4	21	08	16	07	05								
06	66	43	55	-7	46	49	10	0					0.00	30.19	30.40	7.2	04	7.4	18	02	14	05	06								
07	62	45	54	-8	54	55	11	0	RA BR				0.10	29.91	30.12	7.6	03	8.0	16	02	14	02	07								
08	60	56	58	-3	55	56	7	0	RA BR				2.94	29.41	29.66	15.7	02	18.6	46*	01	37*	01	08								
09	69	49	59	-2	56	57	6	0	TS TSRA RA FG BR				1.02	29.56	29.76	2.5	12	4.7	15	31	13	31	09								
10	63	47	55	-6	46	50	10	0					0.00	29.74	29.95	7.8	31	6.1	18	31	15	32	10								
11	62	45	54	-6	42	47	11	0					0.00	30.08	30.29	7.4	36	5.7	17	01	15	01	11								
12	65	40	53	-6	44	48	12	0	BR HZ				0.00	30.18	30.39	7.2	36	2.3	16	23	9	26	12								
13	71	44	58	-1	47	52	7	0	BR				0.00	30.06	30.27	5.4	20	5.9	14	21	11	18	13								
14	80	48	64	5	53	57	1	0					0.00	29.87	30.07	4.1	26	6.1	17	32	14	31	14								
15	68	49	59	0	46	52	6	0					0.00	29.99	30.20	3.2	06	6.6	16	02	14	03	15								
16	79	50	65	7	56	59	0	0	BR HZ				0.00	29.87	30.07	7.7	20	7.8	17	20	14	21	16								
17	80	53	67	9	58	61	0	2	BR HZ				0.00	29.81	30.01	5.3	21	4.9	16	17	13	19	17								
18	75	49	62	4	60	61	3	0	TSRA RA FG+ BR SQ				2.91	29.61	29.80	6.2	16	8.2	32	31	26	32	18								
19	60	44	52	-5	37	45	13	0	RA BR				0.06	29.48	29.68	13.0	28	14.0	36	26	26	25	19								
20	57	44	51	-6	41	46	14	0	RA				0.01	29.55	29.75	7.6	26	5.7	16	25	16	25	20								
21	66	39*	53	-4	46	49	12	0					0.00	29.77	29.97	6.9	24	3.5	15	24	11	23	21								
22	73	49	61	5	52	56	4	0	RA				0.01	29.81	30.01	5.7	22	4.7	13	21	10	21	22								
23	75	55	65	9	58	61	0	0					0.00	29.66	29.86	11.9	20	12.3	28	19	23	19	23								
24	70	45	58	2	46	52	7	0					0.00	29.74	29.94	6.6	24	5.5	17	26	15	24	24								
25	71	46	59	4	45	52	6	0					0.00	29.97	30.17	1.9	03	4.5	15	05	13	04	25								
26	68	52	60	5	56	58	5	0	RA BR HZ				0.10	30.17	30.38	1.8	07	2.4	8	17	8	18	26								
27	75	57	66	11	58	60	0	1	BR				0.00	30.11	30.31	6.2	21	4.8	17	21	14	22	27								
28	79	50	65	10	58	61	0	0	RA BR				0.01	29.79	29.99	4.0	25	7.1	21	26	16	36	28								
29	66	45	56	2	43	49	9	0					0.00	29.85	30.05	2.3	26	4.2	18	02	15	04	29								
30	82*	56	69*	15	56	61	0	4	RA				T	29.55	29.75	11.0	21	13.1	36	24	28	22	30								
31	73	51	62	8	42	52	3	0					0.00	29.72	29.93	7.5	25	8.2	24	23	20	23	31								
69.5 48.3 58.9										■ ■		49.9 54.0		6.2 0.4		< MONTHLY AVERAGES		TOTALS-->		7.18 29.88 30.08		1.4 28 7.2		<-- MONTHLY AVERAGES							
-1.2 1.8 0.3										■ ■		<----- DEPARTURE FROM NORMAL ----->		3.65		SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3															
DEGREE DAYS										GREATEST 24-HR PRECIPITATION: 3.96 DATE: 08-09										SEA LEVEL PRESSURE DATE TIME											
MONTHLY TOTAL DEPARTURE										GREATEST 24-HR SNOWFALL: DATE:										: 30.60 05 0846											
SEASON TO DATE TOTAL DEPARTURE										GREATEST SNOW DEPTH: DATE:										: 29.33 08 1322											
HEATING: 193 -40										NUMBER OF DAYS WITH →										MAXIMUM TEMP ≥ 90: 0				MINIMUM TEMP ≤ 32: 0				PRECIPITATION ≥ 0.01 INCH: 10			
COOLING: 12 -22																				MAXIMUM TEMP ≤ 32: 0				MINIMUM TEMP ≤ 0: 0				PRECIPITATION ≥ 0.10 INCH: 5			
																				THUNDERSTORMS: 2				HEAVY FOG: 1				SNOWFALL ≥ 1.0 INCH: 0			

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

RICHMOND, VA

OCTOBER 1996

RIC

WBAN # 13740

DATE	FOR HOUR (LST) ENDING AT												DATE	FOR HOUR (LST) ENDING AT												DATE	Sum if Different (See Note 2)	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			T		
02	T	T	0.01				T	0.01	T	T			02												02			0.02		
03							T						03												03			0.00		
04													04												04			0.00		
05													05												05			0.00		
06													06												06			0.00		
07													07						0.01	T	0.01	0.03	0.02	0.03	07			0.10		
08	0.03	0.07	0.07	0.12	0.14	0.13	0.24	0.34	0.41	0.31			08	.14		0.09	0.03	0.01						08	2.13		2.94			
09													09		0.01	T	0.01	0.05	0.63	0.23	0.01	0.08			09			1.02		
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												15			0.00		
16													16												16			0.00		
17													17												17			0.00		
18							0.01						18	T	T	T	0.23		0.22	0.18	T	1.01	0.30	0.20	0.19	18	2.35		2.91	
19	0.07	0.01	T	0.01	T								19					T	T						19	0.08		0.06		
20							T	T	T	0.01			20												20			0.01		
21													21												21			0.00		
22							T	0.01	T				22												22			0.01		
23													23												23			0.00		
24													24												24			0.00		
25													25												25			0.00		
26													26					0.01	0.01	0.02	0.05	0.01	T	T	26			0.10		
27													27		T										27			0.00		
28													28	0.01											28			0.01		
29													29												29			0.00		
30							T	T	T				30												30			T		
31													31												31			0.00		

MAXIMUM SHORT DURATION PRECIPITATION (See Note 1)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)												
Ending Date												
Ending Time (Hour/Min)												

Date and time are not entered for TRACE amounts.

Note 1: NCDC derives these data from one-minute ASOS values. The table is not printed when inconsistent with ASOS hourly totals.

Note 2: 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 1961 – 1990

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	PE Ice Pellets	HZ Haze	SQ Squalls
PR Partial	RA Rain	PY Spray	SS Sandstorm
SH Shower(s)	SG Snow Grains	SA Sand	
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

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Ceilorometer (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 at constant pressure by evaporation of moisture into it, to 100% relative humidity.

ADDITIONAL NOTES:

DATE	SUNSHINE		CLOUDINESS (OKTAS)				VISIBILITY (MILES)		RESERVED
	TOTAL MINUTES	PERCENT POSSIBLE	SR-SS		MN-MN		MINIMUM	MAXIMUM	
			CEILOMETER	SATELLITE	CEILOMETER	SATELLITE			
01							9.00	10.00	
02							2.50	10.00	
03							2.00	10.00	
04							10.00	10.00	
05							10.00	10.00	
06							10.00	10.00	
07							3.00	10.00	
08							1.00	10.00	
09							1.00	10.00	
10							10.00	10.00	
11							8.00	10.00	
12							6.00	10.00	
13							4.00	10.00	
14							8.00	10.00	
15							10.00	10.00	
16							6.00	10.00	
17							1.75	10.00	
18							.50	10.00	
19							10.00	10.00	
20							10.00	10.00	
21							9.00	10.00	
22							9.00	10.00	
23							8.00	10.00	
24							10.00	10.00	
25							10.00	10.00	
26							3.00	10.00	
27							1.75	10.00	
28							5.00	10.00	
29							10.00	10.00	
30							10.00	10.00	
31							10.00	10.00	
MONTHLY AVGS							6.73	10.00	
SUNSHINE (MINUTES)									
Total:					Possible:				
					Percent Possible:				
NUMBER OF DAYS WITH:									
SKY CONDITION									
CLR					PTLY CLDY		CLOUDY		MISSING
							31		
MINIMUM VISIBILITY (MILES)									
<=0.25			<=3.0			>=7.0			
0			9			18			

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

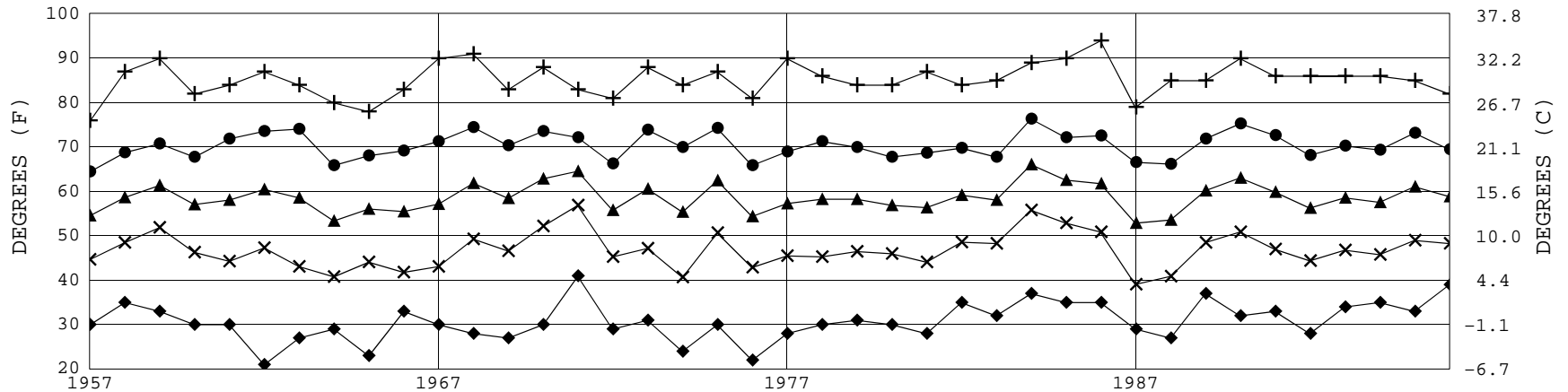
OCTOBER 1996

RIC

WBAN # 13740

HOUR (LST)	≤ 12K FEET		SATELLITE		WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)		HOUR (LST)	≤ 12K FEET		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
SUNRISE: 0628						OCT 25	SUNSET: 1719						SUNRISE: 0634						OCT 31	SUNSET: 1712							
01	CLR	NC			10.00	51	49	50	92	0	00	29.84	30.04	01	CLR	NC			10.00	63	43	53	48	7	30	29.60	29.80
04	CLR	NC			10.00	48	46	47	93	5	35	29.86	30.07	04	CLR	NC			10.00	62	40	51	44	9	29	29.67	29.87
07	CLR	NC			10.00	49	46	47	90	5	06	29.93	30.13	07	CLR	NC			10.00	56	42	49	60	6	26	29.74	29.94
10	CLR	NC			10.00	65	42	53	44	10	06	29.99	30.19	10	CLR	NC			10.00	67	40	53	37	12	27	29.79	29.99
13	CLR	NC			10.00	69	41	55	36	6	VR	29.98	30.18	13	CLR	NC			10.00	72	38	55	29	14	25	29.75	29.94
16	CLR	NC			10.00	68	44	55	42	6	07	29.98	30.18	16	CLR	NC			10.00	70	38	54	31	13	23	29.73	29.93
19	CLR	NC			10.00	60	48	54	65	7	12	30.01	30.21	19	CLR	NC			10.00	59	43	51	56	6	21	29.73	29.93
22	CLR	NC			10.00	56	48	52	75	3	05	30.07	30.27	22	CLR	NC			10.00	56	46	51	70	3	24	29.74	29.94
SUNRISE: 0629						OCT 26	SUNSET: 1718						3-HOURLY OBSERVATION NOTES														
01	CLR	NC			10.00	54	50	52	87	0	00	30.08	30.29	Sky Cover is the amount of the sky obscured. CLR = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, VV = Vertical Visibility = 8/8.													
04	FEW	NC			10.00	55	51	53	87	0	00	30.09	30.29	Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.													
07	SCT	NC			10.00	54	52	53	93	0	00	30.15	30.36	NC = No ceiling detected.													
10	CLR	NC			10.00	62	57	59	84	5	VR	30.19	30.39	& = Original observation contained additional weather elements.													
13	CLR	NC			10.00	68	57	62	68	0	00	30.18	30.39	See page 3 for additional notes.													
16	BKN	100			10.00	67	56	61	68	5	19	30.19	30.39														
19	OVC	080			4.00	62	61	61	96	3	14	30.22	30.42														
22	BKN	120			4.00	59	58	58	96	3	14	30.24	30.44														
SUNRISE: 0630						OCT 27	SUNSET: 1716						SUMMARY BY HOUR														
01	OVC	085			5.00	58	57	57	97	0	00	30.20	30.41	AVERAGES													
04	OVC	100			5.00	58	57	57	97	7	21	30.18	30.38													RESULTANT WIND (MPH)	
07	OVC	070			1.75	58	58	58	100	5	19	30.19	30.40	HOUR (LST)													
10	CLR	NC			10.00	65	56	60	73	10	20	30.18	30.39													CEILOMETER	
13	CLR	NC			10.00	73	55	62	53	8	21	30.09	30.29	EFF CLD AMT													
16	OVC	090			10.00	73	59	65	62	5	18	30.05	30.25													DRY BULB	
19	OVC	060			8.00	67	62	64	84	0	00	30.04	30.24	DEW POINT													
22	CLR	NC			10.00	62	58	60	86	5	20	30.00	30.20													WET BULB	
SUNRISE: 0631						OCT 28	SUNSET: 1715						RELATIVE HUMIDITY														
01	CLR	NC			8.00	59	57	58	93	5	20	29.94													30.14	PRESSURE (INCHES, HG)	
04	CLR	NC			7.00	60	58	59	93	7	24	29.89	30.09	STATION													
07	CLR	NC			5.00	60	58	59	93	3	26	29.85	30.05													SEA LEVEL	
10	FEW	NC			10.00	72	61	65	69	9	22	29.79	29.99	VISIBILITY (MILES)													
13	SCT	NC			10.00	74	64	68	71	8	23	29.71	29.91													WIND SPEED (MPH)	
16	BKN	095			10.00	78	63	68	60	9	24	29.66	29.86	SPEED													
19	SCT	NC			10.00	67	61	63	81	7	03	29.74	29.94													DIRECTION	
22	CLR	NC			10.00	60	45	52	58	0	00	29.80	30.00														
SUNRISE: 0632						OCT 29	SUNSET: 1714																				
01	CLR	NC			10.00	49	46	47	90	5	20	29.81													30.01		
04	CLR	NC			10.00	48	45	47	89	0	00	29.82	30.02														
07	CLR	NC			10.00	47	41	44	80	5	36	29.90	30.10														
10	CLR	NC			10.00	57	39	48	51	9	05	29.93	30.13														
13	CLR	NC			10.00	64	37	51	37	3	VR	29.88	30.08														
16	CLR	NC			10.00	63	40	51	43	7	20	29.83	30.03														
19	CLR	NC			10.00	54	44	49	69	0	00	29.84	30.04														
22	CLR	NC			10.00	52	47	49	83	7	14	29.82	30.03														
SUNRISE: 0633						OCT 30	SUNSET: 1713																				
01	OVC	100			10.00	56	50	53	81	9	18	29.76													29.96		
04	OVC	065			10.00	57	50	53	78	15	18	29.69	29.90														
07	OVC	017			10.00	59	52	55	78	14	18	29.62	29.82														
10	OVC	013			10.00	66	60	62	81	17	19	29.55	29.75														
13	CLR	NC			10.00	79	64	69	60	17	22	29.43	29.62														
16	CLR	NC			10.00	81	61	68	51	16	23	29.41	29.60														
19	CLR	NC			10.00	73	60	65	64	10	23	29.47	29.67														
22	CLR	NC			10.00	69	51	59	53	7	27	29.54	29.74														

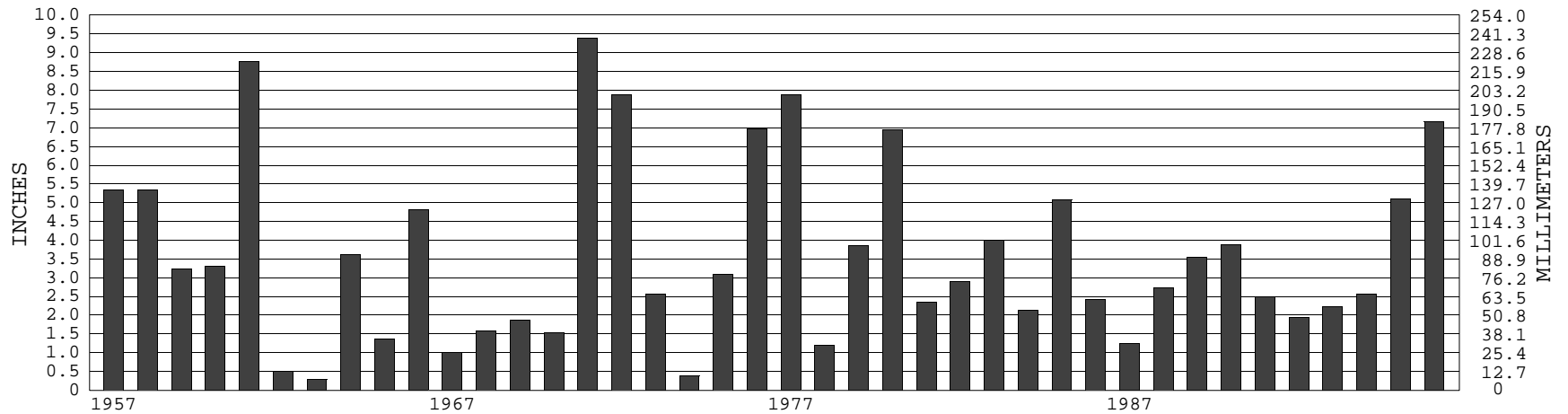
RICHMOND, VA OCTOBER TEMPERATURES



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

Long-Term (1957-1996) Mean: 58.6 1961-1990 Normal: 58.6

RICHMOND, VA OCTOBER PRECIPITATION



Long-Term (1957-1996) Mean Monthly Total: 3.62

1961-1990 Normal: 3.53



**OCTOBER 1996
RICHMOND, VA**

LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

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Kenneth D Hadean

DIRECTOR

NOTICE

Effective July 1, 1996, the National Weather Service & Federal Aviation Administration began using the METAR format for Hourly Observations.

We welcome your questions or comments, please contact us at
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