



JULY 2001

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	25
01	90	74	82	5	71	75	0	17	RA			0.0	T	29.77	29.95	11.3	24	12.8	29	25	23	24	01	
02	76	56	66	-11	53	59	0	1				0.0	0.00	30.00	30.18	8.7	02	9.5	39*	01	32*	01	02	
03	79	53*	66	-11	60	63	0	1				0.0	0.00	30.04	30.23	5.3	18	5.8	18	18	16	17	03	
04	92	70	81	4	72	74	0	16	RA BR			0.0	0.04	29.83	30.01	9.3	23	10.0	25	23	22	22	04	
05	91	70	81	4	67	71	0	16	RA			0.0	T	29.71	29.90	7.0	24	9.0	24	25	20	25	05	
06	82	59	71	-6	54	62	0	6				0.0	0.00	29.89	30.08	6.9	02	8.3	22	36	17	01	06	
07	86	56	71	-7	58	64	0	6				0.0	0.00	29.94	30.13	6.1	19	6.9	23	16	15	23	07	
08	83	68	76	-2	69	71	0	11	RA BR			0.0	0.18	29.71	29.89	7.7	20	8.4	18	22	15	20	08	
09	91	70	81	3	68	72	0	16	BR			0.0	0.00	29.65	29.83	5.1	35	6.6	24	01	17	01	09	
10	94	65	80	2	67	71	0	15	RA HZ			0.0	T	29.60	29.78	6.1	22	6.9	20	20	17	20	10	
11	95*	64	80	2	65	71	0	15	HZ			0.0	0.00	29.56	29.74	5.3	31	9.2	25	34	21	34	11	
12	86	62	74	-4	57	63	0	9				0.0	0.00	29.76	29.95	3.4	01	5.1	20	01	16	01	12	
13	84	61	73	-5	58	64	0	8				0.0	0.00	29.76	29.94	3.7	01	4.8	16	01	13	01	13	
14	87	60	74	-4	56	63	0	9				0.0	0.00	29.74	29.93	6.6	35	7.2	23	01	17	36	14	
15	87	59	73	-5	58	64	0	8				0.0	0.00	29.82	30.01	4.1	01	5.3	22	36	16	34	15	
16	91	61	76	-2	61	67	0	11	BR			0.0	0.00	29.89	30.08	3.5	19	4.6	16	18	13	18	16	
17	94	66	80	2	63	70	0	15	HZ			0.0	0.00	29.88	30.06	7.0	21	7.7	23	22	18	19	17	
18	80	73	77	-1	71	73	0	12	RA BR HZ			0.0	0.16	29.82	30.00	5.0	21	5.5	16	20	14	21	18	
19	82	65	74	-4	69	70	0	9	RA BR HZ			0.0	T	29.90	30.08	6.9	04	7.4	18	03	16	04	19	
20	83	61	72	-6	60	64	0	7				0.0	0.00	29.94	30.12	6.8	05	7.8	20	01	16	04	20	
21	85	55	70	-8	58	63	0	5				0.0	0.00	29.88	30.07	3.6	07	5.1	18	05	15	10	21	
22	89	57	73	-6	63	67	0	8				0.0	0.00	29.84	30.03	2.9	13	5.1	20	19	15	19	22	
23	92	69	81	2	71	74	0	16	RA BR			0.0	T	29.84	30.02	4.5	15	5.2	26	14	23	14	23	
24	91	74	83	4	74	76	0	18	RA			0.0	0.02	29.82	30.00	8.9	20	9.2	38	22	31	22	24	
25	93	75	84*	5	71	75	0	19				0.0	0.00	29.82	30.00	13.9	22	14.4	31	23	26	22	25	
26	85	70	78	-1	72	74	0	13	TSRA RA DZ BR			0.0	0.32	29.80	29.98	10.8	23	13.6	28	25	23	22	26	
27	80	63	72	-7	63	66	0	7	RA BR			0.0	T	30.02	30.21	6.9	06	7.8	20	08	16	04	27	
28	79	58	69	-9	59	63	0	4	RA BR			0.0	0.03	30.07	30.26	2.1	18	4.4	17	13	14	13	28	
29	70	62	66*	-12	66	66	0	1	RA DZ BR			0.0	1.94	29.86	30.04	4.0	05	6.7	18	05	16	04	29	
30	80	66	73	-5	66	68	0	8	RA DZ BR			0.0	0.04	29.89	30.08	7.2	03	7.7	17	03	14	03	30	
31	82	62	72	-6	64	67	0	7	BCFG			0.0	0.00	30.06	30.25	4.2	12	4.6	15	10	12	14	31	

85.8	64.0	74.9	■ ■	64.0	68.1	0.0	10.1	< MONTHLY AVERAGES	TOTALS->	0.0	2.73	29.84	30.03	0.7	15	7.5	<- MONTHLY AVERAGES					
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-2.6	-3.5	-3.1	■ ■	->-----DEPARTURE FROM NORMAL-----<						-2.30	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3													
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DEGREE DAYS								GREATEST 24-HR PRECIPITATION: 1.94 DATE :29				SEA LEVEL PRESSURE				DATE		TIME	
MONTHLY TOTAL DEPARTURE				SEASON TO DATE TOTAL DEPARTURE				GREATEST 24-HR SNOWFALL: 0.0 DATE :				MAXIMUM		: 30.32		31 2254			
HEATING: 0				0				GREATEST SNOW DEPTH:				MINIMUM		: 29.69		11 1454			
COOLING: 314				-89				NUMBER OF DAYS WITH				MAXIMUM TEMP ≥ 90: 11		MINIMUM TEMP ≤ 32: 0		PRECIPITATION ≥ 0.01 INCH: 8			
												MAXIMUM TEMP ≤ 32: 0		MINIMUM TEMP ≤ 0: 0		PRECIPITATION ≥ 0.10 INCH: 4			
												THUNDERSTORMS: 1		HEAVY FOG: 0		SNOWFALL ≥ 1.0 INCH: 0			

JULY 2001 RICHMOND, VA

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

RICHMOND, VA

JULY 2001

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			T			
02													02												02						
03													03												03						
04													04			0.04		T	T					04							
05													05								T	T		05							
06													06											06							
07													07											07							
08						T	T	0.13	0.03	0.02	T		08											08							
09													09											09							
10					T								10											10							
11													11											11							
12													12											12							
13													13											13							
14													14											14							
15													15											15							
16													16											16							
17													17											17							
18								T	T	0.03	T		18		T	T	0.01	T	0.04	0.08	T		18								
19													19											19							
20													20											20							
21													21											21							
22													22											22							
23													23				T	T	T	T				23							
24											0.01	T	24	0.01										24							
25													25											25							
26				T	0.02	0.01					T		26				0.01	0.02	0.03	T	0.14	0.10		26	0.33						
27	T	T											27											27							
28													28			T	T	T	T	T	T	T		28							
29	0.04	0.01	0.03	0.01	0.20	0.13	0.25	0.07	0.08	0.26	0.24	0.07	29	0.35	0.08	0.02	0.01	0.09	T	T	T	T	29	1.95							
30	0.01	T	0.02	T	T	0.01	T	T	T				30											30							
31													31											31							

MAXIMUM SHORT DURATION PRECIPITATION (See Note)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)	.07	.12	.15	.17	.20	.28	.37	.42	.47	.51	.58	.67
Ending Date	29	29	29	29	29	29	29	29	29	29	29	29
Ending Time (Hour/Min)	0452	0456	0501	0503	0503	1247	1300	1318	1029	1057	1109	1253

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 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	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 JULY 2001

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							10.00	10.00	
02							10.00	10.00	
03							8.00	10.00	
04							6.00	10.00	
05							10.00	10.00	
06							10.00	10.00	
07							10.00	10.00	
08							2.00	10.00	
09							5.00	10.00	
10							6.00	10.00	
11							5.00	10.00	
12							10.00	10.00	
13							10.00	10.00	
14							10.00	10.00	
15							10.00	10.00	
16							6.00	10.00	
17							6.00	10.00	
18							1.50	8.00	
19							.75	10.00	
20							7.00	10.00	
21							7.00	10.00	
22							7.00	10.00	
23							5.00	10.00	
24							8.00	10.00	
25							10.00	10.00	
26							.00	10.00	
27							3.00	10.00	
28							4.00	10.00	
29							1.00	10.00	
30							2.00	10.00	
31							7.00	10.00	
MONTHLY AVGS							6.52	9.94	
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 7 16									

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

JULY 2001

RIC

WBAN # 13740

HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SKY COVER		CEILING 100'S OF FT	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 Okltas			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 Okltas			DRY BULB	DEW POINT	WET BULB		SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL
SUNRISE: 0452								JUL 01								SUNSET: 1934															
01	SCT	NC				10.00		80	72	75	76	9	24	29.82	30.00	01	FEW	NC				10.00		60	54	57	80	0	00	29.97	30.16
04	BKN	250				10.00		78	71	73	79	9	22	29.80	29.99	04	FEW	NC				10.00		57	54	55	90	0	00	29.97	30.16
07	BKN	150				10.00		79	70	73	74	13	25	29.81	29.99	07	FEW	NC				10.00		67	61	63	81	5	VR	30.00	30.19
10	OVC	250				10.00		82	71	75	69	14	24	29.80	29.98	10	FEW	NC				10.00		78	56	65	47	13	17	30.01	30.20
13	BKN	250				10.00		87	73	77	63	17	22	29.76	29.94	13	SCT	NC				10.00		83	57	67	41	12	17	29.98	30.16
16	OVC	250				10.00		88	74	78	63	18	22	29.69	29.88	16	BKN	250				10.00		86	59	69	40	15	23	29.89	30.09
19	BKN	250				10.00		84	73	76	70	13	23	29.72	29.90	19	SCT	NC				10.00		81	61	68	51	9	22	29.86	30.05
22	OVC	250				10.00		81	71	74	72	12	36	29.77	29.95	22	CLR	NC				10.00		71	61	65	71	6	20	29.87	30.06
SUNRISE: 0452								JUL 02								SUNRISE: 0456															
01	OVC	250				10.00		75	68	70	79	5	33	29.79	29.97	01	BKN	200				10.00		71	61	65	71	12	18	29.83	30.02
04	OVC	060				10.00		71	67	68	87	17	01	29.82	30.01	04	OVC	100				10.00		72	60	65	66	13	19	29.75	29.93
07	OVC	035				10.00		62	44	53	52	18	02	29.97	30.15	07	OVC	055				10.00		69	65	66	87	12	22	29.75	29.94
10	BKN	200				10.00		66	47	56	50	16	01	30.02	30.21	10	OVC	005				2.50	-RA BR	68	68	68	100	9	17	29.74	29.93
13	BKN	200				10.00		75	48	60	39	12	01	30.03	30.22	13	OVC	150				7.00		78	72	74	82	13	23	29.69	29.87
16	BKN	250				10.00		74	50	60	43	10	36	30.02	30.21	16	BKN	200				9.00		82	73	76	74	6	25	29.64	29.83
19	SCT	NC				10.00		70	51	59	51	6	05	30.07	30.26	19	SCT	NC				9.00		80	74	76	82	7	18	29.64	29.83
22	FEW	NC				10.00		60	54	57	80	0	00	30.11	30.30	22	SCT	NC				8.00		75	73	74	94	3	16	29.64	29.83
SUNRISE: 0453								JUL 03								SUNRISE: 0456															
01	CLR	NC				10.00		56	52	54	87	0	00	30.10	30.29	01	BKN	250				7.00		75	73	74	94	5	25	29.64	29.83
04	CLR	NC				10.00		54	52	53	93	3	07	30.07	30.27	04	SCT	NC				9.00		72	71	71	97	0	00	29.61	29.80
07	BKN	060				10.00		62	59	60	90	7	18	30.10	30.29	07	OVC	250				8.00		76	71	73	85	9	34	29.65	29.84
10	OVC	045				10.00		71	57	63	61	9	18	30.10	30.29	10	SCT	NC				8.00		84	71	75	65	9	35	29.67	29.86
13	OVC	030				10.00		73	58	64	59	6	19	30.07	30.26	13	CLR	NC				10.00		88	66	73	48	9	02	29.67	29.85
16	OVC	030				10.00		76	64	68	67	12	19	29.98	30.17	16	CLR	NC				10.00		90	64	73	42	13	02	29.63	29.82
19	OVC	028				10.00		76	69	71	79	5	20	29.96	30.15	19	CLR	NC				10.00		82	65	71	56	5	08	29.63	29.82
22	FEW	NC				10.00		72	69	70	91	0	00	29.97	30.16	22	CLR	NC				9.00		70	66	67	87	0	00	29.65	29.84
SUNRISE: 0453								JUL 04								SUNRISE: 0457															
01	BKN	027				10.00		72	70	71	94	8	19	29.93	30.12	01	CLR	NC				8.00		69	65	66	87	0	00	29.64	29.82
04	OVC	250				9.00		72	71	71	97	9	20	29.89	30.08	04	CLR	NC				8.00		70	64	66	82	6	25	29.63	29.82
07	OVC	250				9.00		74	72	73	94	8	21	29.88	30.07	07	CLR	NC				6.00	HZ	75	67	70	76	6	28	29.64	29.83
10	BKN	120				8.00		82	73	76	74	12	27	29.88	30.07	10	CLR	NC				10.00		86	68	74	55	9	24	29.63	29.81
13	SCT	NC				10.00		88	72	77	59	6	25	29.82	30.01	13	CLR	NC				10.00		91	66	74	44	10	22	29.61	29.79
16	BKN	250				8.00		80	75	77	85	10	25	29.75	29.94	16	SCT	NC				10.00		89	67	74	48	12	21	29.55	29.74
19	OVC	200				6.00	BR	78	74	75	87	12	21	29.72	29.91	19	SCT	NC				10.00		85	70	75	61	6	19	29.55	29.73
22	OVC	140				10.00		74	69	71	85	12	28	29.77	29.96	22	SCT	NC				10.00		78	68	71	71	10	20	29.56	29.74
SUNRISE: 0454								JUL 05								SUNRISE: 0458															
01	OVC	110				10.00		73	69	70	87	8	24	29.77	29.95	01	CLR	NC				10.00		77	68	71	74	3	17	29.55	29.72
04	BKN	100				10.00		71	68	69	90	8	22	29.73	29.92	04	CLR	NC				7.00		72	69	70	91	5	23	29.53	29.71
07	OVC	250				10.00		73	69	70	87	8	24	29.75	29.93	07	CLR	NC				5.00	HZ	77	71	73	82	8	25	29.54	29.72
10	SCT	NC				10.00		81	66	71	61	3	VR	29.73	29.92	10	SCT	NC				7.00		89	72	77	57	9	24	29.53	29.71
13	FEW	NC				10.00		87	66	73	50	9	23	29.71	29.89	13	SCT	NC				10.00		93	68	76	44	14	34	29.52	29.70
16	BKN	250				10.00		88	67	74	50	14	21	29.64	29.83	16	SCT	NC				7.00		91	64	73	41	15	34	29.53	29.70
19	OVC	250				10.00		85	68	73	57	12	23	29.67	29.85	19	SCT	NC				10.00		82	60	68	47	14	02	29.59	29.77
22	OVC	110				10.00		76	66	70	72	5	24	29.69	29.88	22	SCT	NC				10.00		73	56	63	55	3	02	29.68	29.87
SUNRISE: 0455								JUL 06								SUNRISE: 0458															
01	BKN	250				10.00		69	65	66	87	6	02	29.74	29.93	01	CLR	NC				10.00		64	57	60	78	5	15	29.72	29.91
04	BKN	250				10.00		68	60	63	76	12	01	29.80	29.98	04	FEW	NC				10.00		63	56	59	78	6	33	29.73	29.92
07	FEW	NC				10.00		69	54	60	59	13	01	29.87	30.06	07	OVC	250				10.00		69	56	61	63	9	01	29.77	29.96
10	FEW	NC				10.00		75	52	62	45	10	04	29.91	30.10	10	SCT	NC				10.00		79	54	64	42	7	VR	29.79	29.98
13	CLR	NC				10.00		80	49	62	34	13	35	29.91	30.10	13	OVC	260				10.00		84	55	66	37	9	36	29.77	29.96
16	FEW	NC				10.00		81	50	63	34	3	VR	29.91	30.10	16	OVC	200				10.00		81	56	66	42	12	04	29.74	29.93
19	FEW	NC				10.00		75	53	62	46	6	06	29.92	30.11	19	OVC	150				10.00		77	58	65	52	0	00	29.75	29.94
22	CLR	NC				10.00		66	53	59	63	0	00	29.97	30.16	22	BKN	250				10.00		68	61	64	78	0	00	29.77	29.96

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

JULY 2001

RIC

WBAN # 13740

HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)			
	DRY BULB	DEW POINT		WET BULB	RELATIVE HUMIDITY (PCT)			SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)		SPEED (MPH)	DIRECTION TENS OF DEG		STATION	SEA LEVEL			DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL		
SUNRISE: 0459 JUL 13 SUNSET: 1931								SUNRISE: 0503 JUL 19 SUNSET: 1928																									
01	SCT	NC				10.00		64	59	61	84	0	00	29.77	29.96	01	OVC	003					1.25	BR		73	73	73	100	0	00	29.84	30.03
04	SCT	NC				10.00		62	59	60	90	6	35	29.76	29.95	04	OVC	003					1.75	BR		71	71	71	100	8	01	29.84	30.03
07	CLR	NC				10.00		70	60	64	71	8	36	29.77	29.96	07	OVC	006					2.00	BR		72	71	71	97	7	02	29.88	30.07
10	SCT	NC				10.00		78	59	66	52	7	03	29.79	29.97	10	OVC	035					5.00	BR		73	69	70	87	10	05	29.90	30.09
13	BKN	065				10.00		81	57	66	44	6	34	29.76	29.95	13	OVC	045					8.00			76	68	71	77	9	02	29.91	30.10
16	SCT	NC				10.00		84	57	67	40	7	VR	29.72	29.91	16	BKN	075					10.00			81	69	73	67	9	02	29.88	30.07
19	FEW	NC				10.00		78	56	65	47	9	02	29.72	29.91	19	BKN	250					10.00			75	66	69	74	10	07	29.90	30.09
22	CLR	NC				10.00		65	57	60	76	0	00	29.75	29.94	22	BKN	250					10.00			69	64	66	84	7	07	29.94	30.13
SUNRISE: 0460 JUL 14 SUNSET: 1931								SUNRISE: 0504 JUL 20 SUNSET: 1928																									
01	CLR	NC				10.00		65	56	60	73	6	31	29.74	29.93	01	BKN	250					10.00			63	61	62	93	3	03	29.95	30.14
04	CLR	NC				10.00		62	55	58	78	5	33	29.72	29.91	04	BKN	250					7.00			61	60	60	97	6	36	29.94	30.13
07	CLR	NC				10.00		68	55	60	63	8	35	29.75	29.94	07	SCT	NC					10.00			66	63	64	90	10	04	29.96	30.15
10	CLR	NC				10.00		78	55	64	45	9	35	29.76	29.95	10	BKN	250					10.00			74	61	66	64	14	05	29.96	30.15
13	SCT	NC				10.00		84	55	66	37	12	35	29.73	29.91	13	BKN	045					10.00			80	60	68	51	10	02	29.95	30.14
16	SCT	NC				10.00		86	55	67	35	12	33	29.70	29.89	16	BKN	055					10.00			82	60	68	47	7	VR	29.90	30.09
19	FEW	NC				10.00		78	56	65	47	8	03	29.72	29.91	19	SCT	NC					10.00			75	58	65	55	7	07	29.90	30.09
22	CLR	NC				10.00		66	57	61	73	0	00	29.77	29.96	22	CLR	NC					10.00			65	59	61	81	7	06	29.93	30.11
SUNRISE: 0500 JUL 15 SUNSET: 1930								SUNRISE: 0505 JUL 21 SUNSET: 1927																									
01	CLR	NC				10.00		64	57	60	78	0	00	29.76	29.95	01	CLR	NC					10.00			61	58	59	90	0	00	29.91	30.10
04	CLR	NC				10.00		64	57	60	78	3	29	29.78	29.97	04	CLR	NC					10.00			56	54	55	93	3	36	29.89	30.08
07	SCT	NC				10.00		69	58	62	68	10	35	29.82	30.01	07	CLR	NC					10.00			63	60	61	90	6	03	29.91	30.10
10	FEW	NC				10.00		80	61	68	52	7	05	29.84	30.03	10	FEW	NC					10.00			75	60	66	60	10	06	29.91	30.10
13	SCT	NC				10.00		86	57	68	37	8	36	29.81	30.00	13	FEW	NC					10.00			82	55	66	40	13	06	29.88	30.07
16	SCT	NC				10.00		86	56	67	36	12	03	29.79	29.98	16	FEW	NC					10.00			82	58	67	44	9	06	29.84	30.03
19	SCT	NC				10.00		80	58	66	47	6	06	29.81	30.00	19	SCT	NC					10.00			76	61	67	60	9	12	29.83	30.02
22	SCT	NC				10.00		69	60	64	73	0	00	29.87	30.06	22	SCT	NC					10.00			67	60	63	79	0	00	29.85	30.04
SUNRISE: 0501 JUL 16 SUNSET: 1930								SUNRISE: 0505 JUL 22 SUNSET: 1926																									
01	SCT	NC				10.00		65	62	63	90	0	00	29.87	30.06	01	CLR	NC					10.00			59	57	58	93	0	00	29.85	30.03
04	SCT	NC				10.00		62	60	61	93	0	00	29.87	30.06	04	CLR	NC					10.00			57	56	56	96	0	00	29.84	30.03
07	OVC	250				9.00		71	62	66	73	5	29	29.90	30.09	07	SCT	NC					10.00			65	61	63	87	6	35	29.87	30.06
10	BKN	250				10.00		83	62	70	49	6	23	29.93	30.11	10	FEW	NC					10.00			78	57	65	48	5	12	29.87	30.06
13	SCT	NC				10.00		88	59	70	38	5	VR	29.90	30.09	13	SCT	NC					10.00			85	63	71	48	7	VR	29.84	30.03
16	BKN	250				10.00		88	57	69	35	7	21	29.87	30.06	16	BKN	250					10.00			86	65	72	50	8	18	29.80	29.99
19	BKN	250				10.00		83	63	70	51	6	17	29.87	30.06	19	SCT	NC					10.00			81	69	73	67	12	15	29.80	29.99
22	SCT	NC				10.00		75	62	67	64	7	16	29.90	30.09	22	CLR	NC					10.00			73	69	70	87	6	13	29.84	30.03
SUNRISE: 0502 JUL 17 SUNSET: 1929								SUNRISE: 0506 JUL 23 SUNSET: 1925																									
01	SCT	NC				10.00		71	61	65	71	0	00	29.89	30.08	01	CLR	NC					10.00			70	68	69	93	3	12	29.84	30.03
04	BKN	250				9.00		68	61	64	78	6	19	29.89	30.08	04	SCT	NC					9.00			70	69	69	97	0	00	29.83	30.02
07	FEW	NC				7.00		73	63	67	71	7	20	29.91	30.10	07	OVC	005					6.00	BR		73	71	72	94	5	14	29.86	30.05
10	CLR	NC				8.00		86	66	73	51	8	24	29.92	30.10	10	BKN	100					10.00			82	72	75	72	5	19	29.86	30.05
13	SCT	NC				10.00		93	62	73	36	13	19	29.88	30.07	13	BKN	060					10.00			88	70	76	55	0	00	29.83	30.01
16	SCT	NC				9.00		93	60	72	33	13	23	29.84	30.03	16	BKN	070					10.00	-RA		85	72	76	65	15	13	29.81	30.00
19	BKN	200				7.00		87	64	72	46	7	22	29.83	30.01	19	FEW	NC					10.00			83	73	76	72	8	15	29.80	29.99
22	OVC	250				9.00		82	67	72	60	10	20	29.84	30.03	22	CLR	NC					10.00			76	72	73	88	7	19	29.83	30.02
SUNRISE: 0502 JUL 18 SUNSET: 1929								SUNRISE: 0507 JUL 24 SUNSET: 1925																									
01	OVC	110				8.00		78	67	71	69	9	20	29.82	30.01	01	SCT	NC					10.00			75	73	74	94	7	17	29.83	30.01
04	OVC	100				8.00		76	68	71	77	10	20	29.80	29.99	04	OVC	012					10.00			75	73	74	94	7	19	29.82	30.01
07	OVC	090				6.00	HZ	77	68	71	74	9	24	29.81	29.99	07	OVC	006					8.00			76	74	75	94	7	19	29.83	30.02
10	OVC	140				3.00	-RA BR	75	71	72	88	5	22	29.82	30.00	10	OVC	055					10.00			84	74	77	72	7	20	29.83	30.01
13	OVC	120				5.00	HZ	80	71	74	74	8	20	29.82	30.00	13	BKN	070					10.00			83	74	77	74	7	24	29.81	29.99
16	OVC	050				2.50	RA BR	74	73	73	97	7	21	29.80	29.99	16	OVC	070					10.00			89	76	80	65	16	17	29.77	29.96
19	OVC	018				2.00	-RA BR	75	74	74	96	0	00	29.80	29.99	19	BKN	150					10.00			79	75	76	88	10	20	29.78	29.97
22	OVC	006				2.00	BR	74	74	74	100	0	00	29.84	30.03	22	SCT	NC					10.00			77	72	74	85	10	20	29.82	30.01

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

JULY 2001

RIC

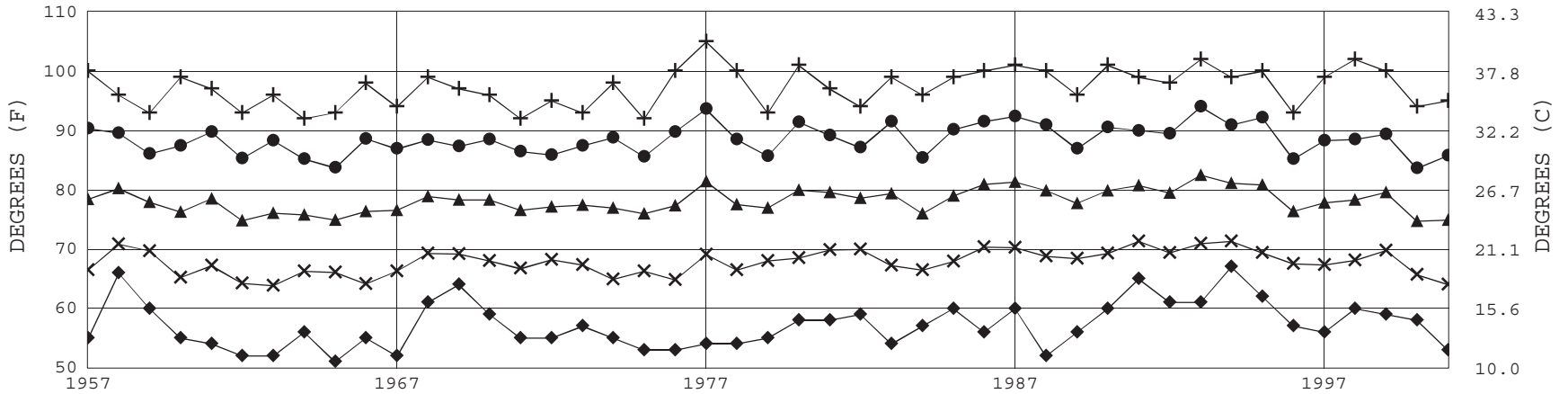
WBAN # 13740

HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)																	
	DRY BULB	DEW POINT		WET BULB	RELATIVE HUMIDITY (PCT)			SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)		SPEED (MPH)	DIRECTION TENS OF DEG		STATION	SEA LEVEL																										
SUNRISE: 0508								JUL 25								SUNSET: 1924								SUNRISE: 0513								JUL 31								SUNSET: 1919							
01	SCT	NC				10.00		75	73	74	94	8	20	29.82	30.00	01	CLR	NC				9.00		65	64	64	97	0	00	29.99	30.18																
04	SCT	NC				10.00		75	71	72	88	10	21	29.82	30.01	04	CLR	NC				8.00	BCFG	63	62	62	97	0	00	29.98	30.17																
07	BKN	150				10.00		77	71	73	82	13	22	29.83	30.02	07	CLR	NC				7.00		68	66	67	93	3	11	30.04	30.23																
10	BKN	150				10.00		82	71	75	69	18	21	29.84	30.03	10	BKN	050				10.00		76	65	69	69	8	11	30.09	30.28																
13	OVC	150				10.00		90	71	77	54	18	22	29.81	30.00	13	BKN	070				10.00		80	66	71	62	7	12	30.08	30.27																
16	BKN	065				10.00		90	69	76	50	21	22	29.78	29.97	16	SCT	NC				10.00		81	65	71	58	8	14	30.05	30.24																
19	BKN	075				10.00		87	70	75	57	14	22	29.78	29.96	19	BKN	250				10.00		75	63	67	66	7	13	30.06	30.24																
22	BKN	200				10.00		81	70	74	69	12	21	29.82	30.01	22	FEW	NC				10.00		68	62	64	81	3	17	30.11	30.30																
SUNRISE: 0509								JUL 26								SUNSET: 1923								3-HOURLY OBSERVATION NOTES																							
01	BKN	050				10.00		78	71	73	79	16	21	29.79	29.97	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.																															
04	OVC	015				10.00		76	72	73	88	12	21	29.75	29.93	Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.																															
07	OVC	012				10.00		74	72	73	94	13	23	29.77	29.96	NC = No ceiling detected.																															
10	OVC	140				9.00		80	72	75	76	14	24	29.80	29.98	& = Original observation contained additional weather elements.																															
13	OVC	020				7.00		82	73	76	74	18	20	29.79	29.98	See page 3 for additional notes.																															
16	OVC	110				10.00	-RA	80	72	75	76	16	24	29.77	29.96																																
19	OVC	055				4.00	-RA BR	77	75	76	94	10	22	29.79	29.98																																
22	OVC	005				3.00	-DZ BR	72	72	72	100	13	34	29.86																																	
SUNRISE: 0509								JUL 27								SUNSET: 1922																															
01	OVC	007				3.00	-RA BR	69	68	68	96	7	04	29.90	30.09																																
04	OVC	012				7.00		68	67	67	96	10	02	29.94	30.13																																
07	OVC	090				10.00		68	64	66	88	8	03	30.02																																	
10	BKN	030				10.00		74	64	68	71	12	07	30.03	30.22																																
13	BKN	065				10.00		78	62	68	58	14	05	30.04	30.23																																
16	BKN	250				10.00		80	59	67	49	8	07	30.02	30.21																																
19	OVC	250				10.00		73	62	66	69	5	07	30.04	30.23																																
22	BKN	250				10.00		67	60	63	79	6	14	30.09	30.28																																
SUNRISE: 0510								JUL 28								SUNSET: 1922																															
01	SCT	NC				10.00		61	59	60	93	0	00	30.08	30.27																																
04	BKN	250				10.00		61	57	59	87	0	00	30.09	30.28																																
07	BKN	250				10.00		65	60	62	84	0	00	30.11	30.30																																
10	BKN	220				10.00		73	56	63	55	6	05	30.11	30.30																																
13	BKN	065				10.00		78	58	66	50	7	17	30.08	30.27																																
16	BKN	130				10.00		74	60	65	62	9	17	30.05	30.24																																
19	BKN	045				10.00	-RA	69	61	64	76	7	24	30.04	30.23																																
22	OVC	040				10.00		65	61	63	87	0	00	30.03	30.22																																
SUNRISE: 0511								JUL 29								SUNSET: 1921																															
01	OVC	030				4.00	-RA BR	62	61	61	96	0	00	30.00	30.19																																
04	OVC	002				3.00	BR	63	62	62	97	7	06	29.94	30.13																																
07	OVC	013				2.00	RA BR	64	63	63	96	6	11	29.93	30.12																																
10	OVC	005				2.00	RA BR	65	65	65	100	10	08	29.90	30.09																																
13	OVC	015				1.75	RA BR	67	66	66	97	8	10	29.83	30.01																																
16	OVC	005				2.50	-RA BR	70	69	69	97	5	34	29.78	29.97																																
19	OVC	007				1.50	-RA BR	69	68	68	96	6	34	29.75	29.93																																
22	OVC	003				1.00	-DZ BR	68	68	68	100	8	35	29.76	29.95																																
SUNRISE: 0512								JUL 30								SUNSET: 1920																															
01	OVC	006				3.00	-DZ BR	68	67	67	96	10	03	29.77	29.96																																
04	OVC	007				9.00		67	66	66	97	7	04	29.78	29.97																																
07	OVC	005				2.00	-DZ BR	67	66	66	97	9	03	29.85	30.04																																
10	OVC	012				7.00		71	67	68	87	10	02	29.90	30.09																																
13	BKN	035				10.00		78	66	70	67	10	04	29.90	30.09																																
16	OVC	060				10.00		76	66	70	72	9	01	29.90	30.09																																
19	BKN	065				10.00		72	67	69	84	5	04	29.93	30.12																																
22	OVC	065				10.00		70	67	68	90	3	01	29.98	30.17																																

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			69	64	66	86	29.84	30.02	8.81	4	2	20
02			68	64	65	88	29.83	30.01	8.88	4	2	22
03			68	64	65	87	29.83	30.02	8.77	5	1	24
04			67	63	65	89	29.83	30.02	8.86	6	1	27
05			67	63	64	88	29.84	30.02	8.12	6	1	33
06			67	63	65	88	29.85	30.04	7.88	6	2	31
07			70	64	66	82	29.86	30.04	8.29	8	2	31
08			73	64	68	75	29.86	30.05	8.41	9	2	33
09			76	64	69	70	29.87	30.05	8.60	9	1	32
10			78	64	69	64	29.87	30.05	8.69	9	0	0
11			80	64	69	59	29.86	30.05	9.07	9	0	0
12			81	63	70	57	29.86	30.04	9.19	9	2	22
13			83	63	70	54	29.84	30.03	9.31	10	1	27
14			83	63	70	53	29.83	30.02	9.44	9	3	23
15			84	63	71	52	29.82	30.00	9.47	10	3	22
16			83	64	71	55	29.81	30.00	9.29	10	3	22
17			82	64	71	57	29.81	29.99	9.44	10	2	22
18			81	65	70	60	29.81	29.99	9.40	9	2	17
19			78	65	70	66	29.81	30.00	9.02	8	2	17
20			75	65	69	72	29.82	30.01	9.53	7	2	19
21			73	65	68	76	29.84	30.03	9.21	6	2	20
22			71	65	67	80	29.85	30.04	9.10	5	1	21
23			70	64	66	81	29.85	30.04	9.25	5	1	17
24			69	64	66	84	29.85	30.04	8.95	4	1	18

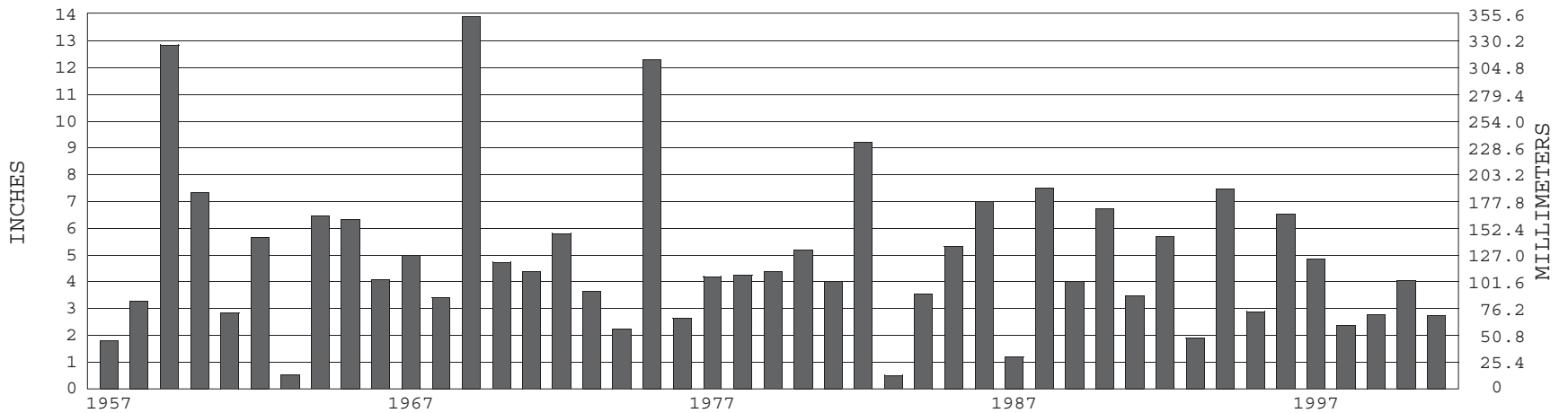
RICHMOND, VA JULY TEMPERATURES



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

Long-Term (1957-2001) Mean: 78.2 1961-1990 Normal: 78.0

RICHMOND, VA JULY PRECIPITATION



Long-Term (1957-2001) Mean Monthly Total: 4.91

1961-1990 Normal: 5.03



JULY 2001
RICHMOND, VA

LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

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