

Local Climatological Data

MONTHLY SUMMARY



LATITUDE 37° 30' N LONGITUDE 77° 20' W ELEVATION (GROUND) 164 FT. STANDARD TIME USED: EASTERN WBAN #13740

NOVEMBER 1977 RICHMOND, VIRGINIA

DATE	TEMPERATURE °F			DEGREE DAYS BASE 65°		WEATHER TYPES ON DATES OF OCCURRENCE 1 FOG 2 HEAVY FOG 3 THUNDERSTORM 4 ICE PELLETS 5 HAIL 6 GLAZE 7 DUSTSTORM 8 SMOKE - HAZE 9 BLOWING SNOW	SNOW. ICE PELLETS ON ICE ON GROUND AT 07AM IN.	PRECIPITATION		AVG. STATION PRES-SURE IN. ELEV. FEET M.S.L.	WIND			SUNSHINE		SKY COVER TENTHS		DATE				
	MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEW POINT			HEATING (SEASON BEGINS WITH JAN. 1)	COOLING (SEASON BEGINS WITH JAN. 1)		WATER EQUIVALENT IN.	SNOW. ICE PELLETS IN.	RESULTANT DIR.	RESULTANT SPEED M.P.H.	AVERAGE SPEED M.P.H.	FASTEST MILE M.P.H.	DIRECTION		MINUTES	PERCENT OF POSSIBLE	SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT
1	2	3	4	5	6	7A	7B	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	68	49	59	5	55	6	0	1	0	.30	0	30.08	05	9.3	9.8	15	NE	313	49	9	10	1
2	72	60	66	12	63	0	0	1	0	.06	0	29.98	05	8.2	8.6	12	NE	56	9	10	10	2
3	71	65	68	15	67	0	0	3	1	.12	0	29.93	06	7.8	8.3	12	NE	7	1	10	10	3
4	78	66	72	19	69	0	0	7	1	.20	0	29.98	09	6.9	7.6	12	SE	270	43	10	10	4
5	78x	67	73x	20	67	0	0	8	1	.59	0	30.01	08	9.6	9.9	16	NE	243	39	9	10	5
6	69	64	67	15	66	0	0	2	1	1.61	0	29.83	05	10.4	10.5	22	NE	0	0	10	10	6
7	71	65	68	16	67	0	0	3	1	.14	0	29.61	11	6.0	6.6	12	E	89	14	10	10	7
8	74	53	64	12	59	1	0	3	1	0	0	29.72	20	2.2	4.2	10	NW	56	1.6	2	5	8
9	75	60	68	17	62	0	0	3	2	0	0	29.84	12	3.9	5.8	9	SE	461	74	5	6	9
10	77	47	62	11	57	3	0	1	0	0	0	29.63	21	8.1	11.4	27	SW	251	40	6	8	10
11	56	35	46	-5	29	19	0	0	0	0	0	29.82	27	7.7	9.2	15	W	618	100	0	0	11
12	48	31	40	-10	25	25	0	0	0	T	T	29.96	32	6.3	8.8	18	NW	485	78	5	3	12
13	46	28	37	-13	21	26	0	0	0	0	0	30.11	32	9.3	9.5	20	NW	598	97	2	1	13
14	53	24	39	-11	23	26	0	0	0	0	0	30.12	21	2.3	4.0	7	W	508	83	5	9	14
15	68	33	51	2	30	14	0	0	0	0	0	29.97	19	6.3	6.5	11	SW	520	89	9	9	15
16	74	42	58	9	44	7	0	0	0	0	0	29.81	20	8.3	9.4	22	SW	435	77	6	6	16
17	75	52	64	15	51	1	0	3	0	.08	0	29.88	25	9.0	11.7	38	NW	383	63	5	5	17
18	51	37	49	1	26	16	0	0	0	0	0	30.13	01	1.0	2.9	19	N	605	100	0	0	18
19	60	29	45	-3	31	20	0	0	0	0	0	30.13	01	1.0	2.9	19	N	561	93	4	2	19
20	59	32	46	-2	35	19	0	0	0	0	0	30.27	09	2.4	4.2	8	SE	602	100	6	5	20
21	63	40	52	5	51	13	0	1	0	.01	0	30.15	19	2.9	3.3	6	S	260	43	10	6	21
22	60	42	51	4	50	14	0	1	0	.31	0	30.10	03	5.5	7.0	13	NE	0	0	10	10	22
23	46	40	43	-3	44	22	0	1	0	.24	0	29.98	01	6.3	6.8	11	N	0	0	10	10	23
24	64	45	55	9	49	10	0	1	0	0	0	29.82	32	1.7	6.8	13	NE	409	68	8	8	24
25	50	41	46	0	39	19	0	1	0	.40	0	29.67	02	5.8	7.6	12	NE	0	0	10	10	25
26	43	26	35	-10	24	30	0	1	0	T	T	29.47	29	9.9	10.5	22	NW	210	35	7	6	26
27	39	17x	28x	-17	16	37	0	0	0	T	T	29.98	21	3.7	6.6	12	SW	293	48	8	7	27
28	47	34	41	-3	39	24	0	1	0	.07	0	30.08	22	4.2	5.6	10	SW	58	10	10	9	28
29	46	38	42	-2	37	23	0	1	0	0	0	30.30	04	7.4	7.9	11	NE	0	0	10	10	29
30	45	37	41	-2	41	24	0	2	0	.18	0	30.00	02	6.1	6.5	8	NE	0	0	10	10	30

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE.
 T TRACE AMOUNT.
 + ALSO ON AN EARLIER DATE, OR DATES.
 HEAVY FOG - VISIBILITY 1/4 MILE OR LESS.
 FIGURES FOR WIND DIRECTIONS ARE TENS OF DEGREES CLOCKWISE FROM TRUE NORTH. 00 = CALM.
 DATA IN COLS. 6 AND 12-15 ARE BASED ON 7 OR

MORE OBSERVATIONS PER DAY AT 3-HOUR INTERVALS. FASTEST MILE WIND SPEEDS ARE FASTEST OBSERVED ONE-MINUTE VALUES WHEN DIRECTIONS ARE IN TENS OF DEGREES. THE / WITH THE DIRECTION INDICATES PEAK GUST SPEED.
 ANY ERRORS DETECTED WILL BE CORRECTED AND CHANGES IN SUMMARY DATA WILL BE ANNOTATED IN THE ANNUAL SUMMARY

SUMMARY BY HOURS

HOUR LOCAL TIME	SKY COVER TENTHS	STATION PRESSURE IN.	TEMPERATURE				RELATIVE HUMIDITY %	WIND SPEED M.P.H.	DIRECTION	SPEED M.P.H.
			AIR °F	WET BULB °F	DEW PT. °F	RELATIVE HUMIDITY %				
01	6	29.93	50	47	44	84	6.8	36	1.1	
04	6	29.93	48	47	45	88	6.1	04	1.2	
07	7	29.95	47	46	44	91	6.2	02	.6	
10	7	29.96	54	50	45	74	8.2	04	.9	
13	7	29.91	58	52	45	65	9.5	33	1.6	
16	7	29.89	58	52	45	66	9.0	36	.9	
19	7	29.91	53	49	45	76	7.6	04	.8	
22	7	29.93	52	48	44	78	7.4	36	1.4	

HOURLY PRECIPITATION (WATER EQUIVALENT IN INCHES)

HOUR	A. M. HOUR ENDING AT												P. M. HOUR ENDING AT												DATE
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
1																									1
2	T	T	T	T	T	T	.02	.01	T	.01	.04	.04	.01	.11	.08	.04	.03	.01	T	T	T	T	T	T	2
3																									3
4				.06	.04																				4
5	.02	.02	.04	.08	.29	.10	.04																		5
6																									6
7	T	T	T	T	T	T	T	T	T	.01	.02	.06	.01	.28	.02	.22	.55	.07	.01	T	T	T	T	7	
8																									8
9																									9
10																									10
11																									11
12																									12
13																									13
14																									14
15																									15
16																									16
17																									17
18																									18
19																									19
20																									20
21																									21
22																									22
23	.04	.03	.02	.01	.01	T	.03	.03	T	T	.03	.04	.01	T	.01	T	.02	.01	.02	T	.01	.05	.02	.03	23
24																									24
25																									25
26																									26
27																									27
28																									28
29	T	T	T	T	T	T	T	T	T	T	T	.04	.01	T	.01	T	.01	.01	.04	.04	.03	T	.01	.02	29
30																									30

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Daniel B. Mitchell
 DIRECTOR, NATIONAL CLIMATIC CENTER

OBSERVATIONS AT 3-HOUR INTERVALS

HOUR	SKY COVER			VISI-BILITY	WEATHER	TEMPERATURE				WIND				SKY COVER	VISI-BILITY			WEATHER	TEMPERATURE				WIND											
	CEILING	LOW	HIGH			AIR F	WET BULB	DEW PT.	REL. HUM.	DIR	SPEED	MOPTS	CEILING		LOW	HIGH	AIR F		WET BULB	DEW PT.	REL. HUM.	DIR	SPEED	MOPTS	CEILING	LOW	HIGH	AIR F	WET BULB	DEW PT.	REL. HUM.	DIR	SPEED	MOPTS
01	8	40	15			53	51	50	90	03	8	10	2	0	12	LF	61	61	61	100	07	7	10	5	5	5			67	65	64	90	04	7
04	10	40	15			53	51	50	90	04	8	10	2	0	12	LF	61	61	61	100	04	7	10	5	5	5			66	64	63	90	04	7
07	10	45	15			51	50	50	96	01	7	10	2	0	12	LF	62	62	62	100	36	6	10	4	2	2			66	65	65	93	05	8
10	5	UNL	12			60	56	53	78	06	8	10	4	4	2	2		65	64	64	97	06	8	10	4	2	2		68	67	66	93	05	7
13	10	20	12			65	60	57	75	06	11	10	15	5	5	5		71	67	65	81	06	8	10	4	2	2		69	68	68	97	05	8
16	10	4	1		RF	60	59	58	97	03	8	10	18	7			71	67	65	81	06	8	10	4	2	2		71	70	70	97	06	8	
19	10	4	1		F	60	59	58	97	06	8	10	12	6			68	65	64	87	05	8	10	4	2	2		70	70	70	100	06	8	
22	10	4	1		LF	61	60	60	97	06	8	10	6	6			66	65	64	93	06	7	10	4	2	2		69	69	69	100	11	6	
DAY 01																																		
01	10	2	1		F	70	70	70	100	12	5	10	3	3			68	67	67	97	05	7	10	5	7			68	67	66	93	07	6	
04	10	2	1		F	69	68	68	100	12	5	10	3	3			68	67	67	97	10	8	10	5	7			68	67	66	93	06	10	
07	10	4	3		F	69	68	68	100	09	6	10	4	3	3			68	67	67	97	09	8	10	1	1			68	67	66	93	05	10
10	9	18	5		F	73	71	70	90	10	6	8	80	6			72	70	69	90	09	8	10	3	2			68	67	67	97	04	6	
13	10	18	5		R	77	72	70	79	10	8	10	20	6			74	70	68	82	08	8	10	4	2			67	66	65	93	05	9	
16	9	30	7			76	72	70	82	08	7	8	80	8			74	69	67	78	06	10	10	5	3			67	66	65	93	05	10	
19	10	40	7			72	69	68	87	10	6	10	60	8			71	68	67	87	07	8	10	7	5			67	66	65	93	05	10	
22	10	50	7			68	67	66	90	04	6	10	7	7			68	67	66	90	08	8	10	4				67	66	66	97	05	12	
DAY 04																																		
01	10	2	2		LF	67	67	67	100	04	5	8	40	8			63	62	61	93	21	4	10	4	3			62	61	61	97	04	4	
04	10	3	2		F	67	67	67	100	11	3	2	UNL	4			58	57	57	86	00	0	10	0	0	12	F	61	61	61	100	05	5	
07	10	3	2		F	67	66	66	97	14	3	1	UNL	4			54	54	54	100	21	3	10	1	0	1	F	61	61	61	100	04	3	
10	10	5	2		B	68	67	66	93	12	8	3	UNL	2			56	62	60	81	23	3	10	2	0	12	F	62	62	62	100	14	4	
13	10	8	1		B	68	67	67	97	12	6	1	UNL	2			71	65	61	71	24	4	0	UNL	5	H		71	66	65	76	17	5	
16	10	5	8		LF	68	68	67	93	11	7	3	UNL	6			68	63	60	73	31	6	0	UNL	5	H		74	66	62	66	13	7	
19	10	5	5		RF	68	67	66	93	11	7	10	40	6			66	63	61	84	02	4	4	UNL	5	H		67	64	62	84	14	6	
22	10	35	6		F	67	66	66	97	13	5	10	40	6			64	62	61	80	33	5	7	80	5	H		67	63	61	81	16	6	
DAY 07																																		
01	0	UNL	5		FH	61	60	60	87	14	5	0	UNL	15			45	38	29	54	28	11	0	UNL	12			36	35	33	89	35	5	
04	9	35	2		FH	62	62	62	100	17	5	0	UNL	15			42	36	27	55	27	7	0	UNL	12			33	32	31	92	32	4	
07	7	UNL	1		B	62	61	61	87	17	8	0	UNL	15			36	33	28	73	23	6	1	UNL	12			32	31	30	92	33	3	
10	6	1	8		FH	67	66	65	93	17	8	0	UNL	15			50	41	29	44	25	8	1	UNL	12			46	37	22	39	35	10	
13	10	30	8			75	67	62	64	20	8	1	UNL	15			55	44	29	37	27	10	8	40	15			47	37	20	34	31	14	
16	4	UNL	10			75	66	61	62	19	13	0	UNL	15			56	44	27	33	25	9	7	80	15			45	36	22	40	31	11	
19	0	UNL	7			71	58	48	44	25	18	0	UNL	7			42	38	36	78	16	3	2	UNL	15			38	33	23	55	30	7	
22	0	UNL	7			52	45	37	57	28	14	0	UNL	7			45	38	27	49	32	10	0	UNL	7			37	31	20	50	31	7	
DAY 10																																		
01	0	UNL	15			38	31	23	59	32	9	0	UNL	7			26	26	24	82	22	3	4	UNL	12			43	36	26	51	20	4	
04	0	UNL	15			33	30	25	72	31	7	0	UNL	12			27	26	23	85	00	0	0	UNL	12			37	33	26	65	18	4	
07	0	UNL	15			33	29	22	64	29	5	0	UNL	12			25	24	22	88	17	3	4	UNL	8			34	32	28	78	18	3	
10	2	UNL	10			40	33	21	47	32	11	3	UNL	12			41	34	22	47	05	3	8	UNL	10			50	41	30	46	23	4	
13	4	UNL	15			46	36	20	36	32	12	5	UNL	12			47	37	21	36	28	7	10	250	10			62	49	34	35	18	8	
16	3	UNL	15			43	34	17	35	33	10	10	90	12			50	38	18	28	20	5	10	250	10			67	51	33	28	19	7	
19	1	UNL	7			37	31	20	50	32	6	9	70	12			43	36	25	49	19	4	9	UNL	12			57	46	33	40	19	8	
22	0	UNL	7			32	29	22	67	30	5	10	45	12			44	37	26	49	17	3	8	250	12			53	43	31	43	19	6	
DAY 13																																		
01	6	UNL	12			48	41	32	54	18	4	10	70	12			65	61	58	78	22	10	0	UNL	15			52	41	25	35	30	8	
04	4	UNL	12			47	42	35	63	19	6	10	35	10			62	61	61	87	22	8	0	UNL	15			45	38	29	54	27	5	
07	2	UNL	10			61	40	36	76	17	4	10	40	12			63	61	58	87	22	8	0	UNL	15			41	36	28	60	23	6	
10	3	UNL	10			61	53	45	96	22	8	10	18	12			67	63	60	78	23	8	0	UNL	15			55	43	28	36	24	12	
13	5	UNL	10			71	58	48	44	24	15	2	UNL	15			73	62	54	51	23	8	0	UNL	15			60	49	36	25	15	5	
16	10	130	10			70	59	51	51	22	10	2	UNL	15			74	61	52	46	23	12	0	UNL	15			60	44	22	23	24	12	
19	10	110	10			64	58	53	68	17	8	6	45	15			56	47	36	47	32	14	0	UNL	15			47	38	26	44	20	4	
22	10	250	10			64	57	51	63	18	10	6	50	15			55	42	25	31	30	12	0	UNL	15			43	37	29	58	06	5	
DAY 15																																		
01	0	UNL	15			38	31	23	59	32	9	0	UNL	7			26	26	24	82	22	3	4	UNL	12			43	36	26	51	20	4	
04	0	UNL	15			33	30	25	72	31	7	0	UNL	12			27	26	23	85	00	0	0	UNL	12			37	33	26	65	18	4	
07	0	UNL	15			33	29	22	64	29	5	0	UNL	12			25	24	22	88	17	3	4	UNL	8			34	32	28	78	18	3	
10	2	UNL	10			40	33	21	47	32	11	3	UNL	12			41	34	22	47	05	3	8	UNL	10			50	41	30	46	23	4	
13	4	UNL	15			46	36	20	36																									