

NOV 1988  
 RICHMOND, VA  
 NAT'L WEATHER SERVICE  
 RICHMOND INTL AP, EXEC. TERMINAL

ISSN 0198-537X

# LOCAL CLIMATOLOGICAL DATA

## Monthly Summary



R.E. BYRD INTERNATIONAL AP.

LATITUDE 37° 30' N LONGITUDE 77° 20' W ELEVATION (GROUND) 164 FEET TIME ZONE EASTERN 13740

NOV 1988  
 RICHMOND, VA

DATE	TEMPERATURE °F					DEGREE DAYS BASE 65°F		WEATHER TYPES 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 OR ICE ON GROUND AT 0700 INCHES	PRECIPITATION		AVERAGE STATION PRESSURE IN INCHES ELEV. 177 FEET ABOVE M.S.L.	WIND (M.P.H.)					SUNSHINE		SKY COVER (TENTHS)			
	MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEW POINT	HEATING (SEASON BEGINS WITH JUL)	COOLING (SEASON BEGINS WITH JAN)			WATER EQUIVALENT (INCHES)	SNOW, ICE PELLETS (INCHES)		RESULTANT DIR.	RESULTANT SPEED	AVERAGE SPEED	PEAK - GUST	FASTEST 1-MIN	MINUTES	PERCENT OF TOTAL POSSIBLE	SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT		
01	49	45	47	-6	46	18	0	1	0	1.55	0.0	29.670	33	6.4	8.5	23	N	15	35	0	0	10	10
02	56	42	49	-4	34	16	0	1	0	1	0.0	29.610	27	9.4	10.5	32	W	21	29	476	75	5	5
03	66	31	49	-4	33	16	0	0	0	0.00	0.0	29.820	20	3.4	4.8	16	S	8	18	516	82	4	4
04	71	44	58	6	50	7	0	1	8	0	0	29.700	17	8.7	9.2	23	S	17	16	285	45	10	8
05	71	49	60	8	58	5	0	1	3	0	0.48	29.250	17	11.8	14.3	54	SW	25	17	239	38	8	8
06	65	46	56	4	41	9	0	0	0	0.00	0.0	29.450	22	13.9	14.8	40	SW	26	22	507	81	3	3
07	62	40	51	-1	35	14	0	0	0	0.00	0.0	29.730	23	8.2	9.1	24	SW	17	23	567	91	4	2
08	69	35	52	-1	37	13	0	0	0	0.00	0.0	29.880	23	4.3	5.3	22	SW	14	23	604	97	4	2
09	62	35	49	-2	38	16	0	0	8	0	0.00	30.040	06	2.3	4.1	17	NE	13	04	601	97	6	3
10	73	40	57	6	51	8	0	1	8	0	0.11	29.800	20	8.6	11.1	30	SW	22	34	320	52	9	7
11	61	42	52	-2	35	13	0	0	0	0.00	0.0	29.990	36	8.1	8.8	20	N	14	02	618	99	2	1
12	56	31	44	-6	31	21	0	0	0	0.00	0.0	30.220	07	1.8	6.2	17	N	13	36	476	77	6	5
13	59	41	50	0	46	15	0	1	0	0.03	0.0	29.965	24	3.6	5.9	18	W	14	28	195	32	8	5
14	68	35	52	3	38	13	0	2	8	0	0.00	30.010	18	2.5	3.7	14	SW	8	19	570	93	1	1
15	71	35	53	4	41	12	0	1	8	0	0.00	30.040	12	2.9	3.2	14	E	9	11	550	90	1	3
16	76	50	63	14	55	2	0	1	0	0	0	29.900	20	7.8	8.2	30	SW	17	22	400	66	8	8
17	69	37	53	-5	44	12	0	1	3	0	1.02	29.855	27	5.3	10.4	32	S	21	21	289	48	6	5
18	57	29	43	-5	26	22	0	0	0	0.00	0.0	30.210	02	3.0	3.4	21	N	13	03	486	80	6	3
19	53	31	42	-6	38	23	0	1	8	0	0.02	30.135	04	4.1	4.9	15	NE	9	04	267	44	10	8
20	76*	45	61	13	53	4	0	2	0	0.08	0.0	29.650	24	8.7	11.4	51	SW	28	25	200	33	10	8
21	63	39	51	4	33	14	0	0	0	0.00	0.0	29.900	33	9.1	10.8	29	NW	17	35	481	80	2	1
22	52	34	43	-4	30	22	0	0	0	0.00	0.0	30.170	04	3.0	5.6	16	NE	10	06	471	79	7	7
23	50	39	45	-2	38	20	0	0	8	0	1	29.965	03	6.5	6.9	15	N	10	01	45	8	10	10
24	51	32	42	-4	29	23	0	0	0	0.00	0.0	29.880	36	8.5	8.9	22	N	15	03	550	92	1	1
25	63	28*	46	0	30	19	0	1	8	0	0.00	29.930	18	3.4	4.0	13	S	10	19	544	92	7	4
26	69	34	52	6	44	13	0	0	0	0.00	0.0	29.850	20	8.3	9.0	25	SW	15	20	452	76	8	6
27	70	60	65*	20	60	0	0	1	3	0	0.28	29.660	20	11.0	12.6	33	S	21	19	0	0	10	10
28	70	39	55	10	40	10	0	1	3	0	0.77	29.590	29	10.3	11.6	38	SW	23	23	209	35	7	6
29	52	32	42*	-3	25	23	0	0	0	0.00	0.0	30.080	27	3.9	6.3	15	NW	12	29	589	100	0	0
30	55	30	43	-1	31	22	0	0	0	0.00	0.0	29.920	21	8.5	9.2	24	SW	18	23	495	84	6	4
SUM	SUM					TOTAL	TOTAL	NUMBER OF DAYS		TOTAL	TOTAL	29.860	23	2.6	8.1	54	SW	28	25	TOTAL	%	SUM	SUM
1885	1150					425	0			4.34	0.0									12002	FOR	179	148
AVG.	AVG.	AVG.	DEP.	AVG.	DEP.			PRECIPITATION		DEP.										POSSIBLE	MONTH	AVG.	AVG.
62.8	38.3	50.6	1.7	39.6	-5.8		0	9		1.05										18316	66	6.0	4.9
NUMBER OF DAYS						SEASON TO DATE		SNOW, ICE PELLETS		GREATEST IN 24 HOURS AND DATES					GREATEST DEPTH ON GROUND OF								
						TOTAL	TOTAL	≥ 1.0 INCH							SNOW, ICE PELLETS OR ICE AND DATE								
MAXIMUM TEMP.		MINIMUM TEMP.				813	1476	THUNDERSTORMS		PRECIPITATION		SNOW, ICE PELLETS											
≥ 90°		≤ 32°		≤ 32°		≤ 0°		HEAVY FOG		2		1.65		31-01		0.0		0					
0		0		8		0		85		140		CLEAR		7		PARTLY CLOUDY		12		CLOUDY		11	

\* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE.  
 † TRACE AMOUNT.  
 + ALSO ON EARLIER DATE(S).  
 HEAVY FOG: VISIBILITY 1/4 MILE OR LESS.  
 BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA.

DATA IN COLS 6 AND 12-15 ARE BASED ON 21 OR MORE OBSERVATIONS AT HOURLY INTERVALS. RESULTANT WIND IS THE VECTOR SUM OF WIND SPEEDS AND DIRECTIONS DIVIDED BY THE NUMBER OF OBSERVATIONS. COLS 16 & 17: PEAK GUST - HIGHEST INSTANTANEOUS WIND SPEED. ONE OF TWO WIND SPEEDS IS GIVEN UNDER COLS 18 & 19: FASTEST MILE - HIGHEST RECORDED SPEED FOR WHICH A MILE OF WIND PASSES STATION (DIRECTION IN COMPASS POINTS). FASTEST OBSERVED ONE MINUTE WIND - HIGHEST ONE MINUTE SPEED (DIRECTION IN TENS OF DEGREES). ERRORS WILL BE CORRECTED IN SUBSEQUENT PUBLICATIONS.

I CERTIFY THAT THIS IS AN OFFICIAL PUBLICATION OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, AND IS COMPILED FROM RECORDS ON FILE AT THE NATIONAL CLIMATIC DATA CENTER



NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE

NATIONAL CLIMATIC DATA CENTER ASHEVILLE NORTH CAROLINA

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 DIRECTOR  
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OBSERVATIONS AT 3-HOUR INTERVALS

NOV 1988  
RICHMOND, VA

13740

HOUR	L. S. T.	VISI-BILITY				TEMPERATURE				WIND			SKY COVER (TENTHS)	VISI-BILITY				TEMPERATURE				WIND													
		CEILING IN HUNDREDS OF FEET	WHOLE MILES	16THS MILE	WEATHER	AIR of	WET BULB of	DEW POINT of	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)	CEILING IN HUNDREDS OF FEET		WHOLE MILES	16THS MILE	WEATHER	AIR of	WET BULB of	DEW POINT of	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)	CEILING IN HUNDREDS OF FEET	WHOLE MILES	16THS MILE	WEATHER	AIR of	WET BULB of	DEW POINT of	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)			
NOV 1st												NOV 2nd												NOV 3rd											
01	10	50	5	1	RF	45	45	45	100	03	5	10	2	0	12	F	45	45	45	100	20	5	0	UNL	15			41	37	31	68	23	4		
04	10	4	4	1	RF	46	46	46	100	01	13	10	3	2		F	44	44	43	96	21	7	0	UNL	12			34	33	30	85	00	0		
07	10	4	1	12	RF	47	47	47	100	34	7	8	7	7			45	42	38	77	29	8	3	UNL	8			34	33	30	85	17	5		
10	10	3	2		LF	46	46	45	96	32	9	3	UNL	10			50	44	38	64	29	11	0	UNL	10			53	44	32	45	27	4		
13	10	5	2		LF	49	49	48	96	31	10	4	UNL	10			54	43	28	37	28	15	6	UNL	10			63	48	30	29	20	4		
16	10	6	5		F	49	48	47	93	30	6	3	UNL	10			56	43	26	32	28	11	8	UNL	10			65	50	32	29	18	7		
19	10	6	6		F	48	47	46	93	29	6	0	UNL	10			49	41	29	46	26	6	5	UNL	10			50	42	31	48	17	4		
22	10	6	1		F	46	46	46	100	25	5	0	UNL	15			45	39	31	58	24	7	8	UNL	10			50	45	39	66	16	3		
NOV 4th												NOV 5th												NOV 6th											
01	6	UNL	10			47	44	41	80	17	6	6	UNL	7			61	60	59	93	15	8	0	UNL	10			50	48	46	86	22	8		
04	3	UNL	8			45	44	43	93	16	6	10	21	7			62	61	60	93	13	10	0	UNL	10			48	47	45	89	20	11		
07	9	UNL	7			44	44	43	96	17	5	10	5	7		RW	62	61	61	97	14	12	0	UNL	10			47	45	42	83	19	12		
10	10	UNL	6		H	60	54	48	65	21	6	10	8	2		F	66	64	63	90	15	11	0	UNL	10			58	51	45	62	22	16		
13	10	200	7			70	59	50	49	19	11	9	40	7			67	65	64	90	17	12	7	35	10			64	51	37	37	22	23		
16	8	200	8			68	60	54	61	15	12	5	UNL	15		R	71	63	58	64	19	18	6	45	15			63	51	39	41	22	14		
19	10	90	7			66	61	57	73	16	9	10	50	6			55	53	52	90	22	8	7	70	15			67	49	40	53	22	8		
22	10	100	8			62	60	59	90	16	10	3	UNL	10			53	50	48	83	22	10	4	UNL	10			54	46	36	51	22	11		
NOV 7th												NOV 8th												NOV 9th											
01	6	60	10			51	43	33	50	23	10	0	UNL	10			42	39	36	79	00	0	0	UNL	7			47	43	39	74	02	7		
04	1	UNL	10			44	41	36	74	22	9	0	UNL	10			39	38	36	89	00	0	0	UNL	7			45	41	37	74	02	3		
07	4	UNL	10			44	41	36	74	22	9	0	UNL	10			35	35	34	96	00	0	0	UNL	7			37	36	35	93	00	0		
10	2	UNL	10			56	46	34	44	23	12	1	UNL	7			56	48	40	55	22	4	7	UNL	7			53	46	37	55	04	11		
13	10	50	15			57	46	34	42	23	15	7	100	10			67	51	33	28	22	11	9	UNL	10			60	49	38	44	26	3		
16	0	UNL	15			60	48	34	38	26	12	7	75	10			67	51	35	31	23	12	6	UNL	10			60	49	37	43	01	3		
19	0	UNL	15			53	45	36	53	31	7	4	UNL	10			61	50	38	43	26	6	1	UNL	10			48	43	38	69	12	4		
22	0	UNL	15			42	40	37	83	00	0	0	UNL	10			57	48	38	49	26	7	1	UNL	8			43	42	40	89	15	3		
NOV 10th												NOV 11th												NOV 12th											
01	0	UNL	7			40	39	38	93	13	3	4	UNL	8			57	55	53	87	00	0	0	UNL	10			41	36	28	60	35	9		
04	0	UNL	5			42	42	41	96	18	5	0	UNL	10			51	47	43	74	34	8	0	UNL	10			33	31	28	82	34	6		
07	4	UNL	3			44	44	44	100	19	7	7	UNL	10			46	42	37	71	30	5	2	UNL	10			31	29	26	82	36	6		
10	10	11	3			54	52	50	86	19	11	0	UNL	10			55	45	33	44	02	8	3	UNL	10			47	40	31	54	11	5		
13	10	19	3		H	67	62	58	73	19	18	3	UNL	10			59	46	31	35	02	10	7	UNL	10			53	43	29	40	21	6		
16	10	80	7			71	62	56	59	22	15	1	UNL	15			57	45	30	36	34	11	10	150	10			52	43	31	45	13	7		
19	10	50	7			69	63	59	71	23	6	0	UNL	15			49	41	30	48	36	6	9	250	10			46	40	32	69	12	7		
22	10	50	6		F	63	61	60	90	25	8	0	UNL	12			45	39	29	54	36	9	8	UNL	10			42	40	37	83	09	3		
NOV 13th												NOV 14th												NOV 15th											
01	3	UNL	8			43	41	39	86	03	3	0	UNL	5		F	45	45	44	96	35	6	0	UNL	15			41	39	36	83	00	0		
04	7	75	7			44	43	41	89	00	0	5	UNL	0		F	39	39	39	100	00	0	0	UNL	10			36	35	34	93	00	0		
07	10	4	1		8	46	46	45	96	26	5	7	UNL	0		F	35	35	35	100	33	3	0	UNL	6		F	36	36	35	96	00	0		
10	10	32	2		8	52	51	49	90	21	8	0	UNL	7			56	50	44	64	16	7	0	UNL	10			58	49	40	51	00	0		
13	10	38	2			50	49	48	93	22	8	0	UNL	15			65	51	35	33	19	7	0	UNL	15			70	56	43	38	14	6		
16	2	UNL	7			59	55	51	75	22	7	0	UNL	15			67	52	36	32	19	6	2	UNL	15			68	53	39	35	15	5		
19	0	UNL	6			47	47	47	100	14	3	0	UNL	15			48	43	37	66	19	6	4	UNL	15			56	51	46	69	11	8		
22	0	UNL	5			46	46	45	96	24	3	0	UNL	15			44	41	38	80	22	4	7	UNL	8			51	51	50	96	12	4		
NOV 16th												NOV 17th												NOV 18th											
01	10	250	5		F	51	51	51	100	00	0	10	100	7			66	63	61	84	19	13	0	UNL	10			37	33	27	67	35	5		
04	10	45	2		RF	51	51	51	100	00	0	10	21	7			69	67	65	87	21	13	0	UNL	10			34	31	26	73	13	3		
07	10	21	1		8	55	55	54	97	00	0	10	9	1		8	67	66	66	97	23	14	3	UNL	10			29	28	26	89	00	0		
10	10	28	1		RF	61	60	59	93	21	8	10	17	7		R	59	57	56	90	30	8	6	UNL	10			49	39	23	36	02	9		
13	6	UNL	8			72	62	54	53	19	11	2	UNL	15			59	55	52	78	01	5	10	UNL	15			54	42	24	31	06	6		
16	7	300	10			74	63	55	52	22	15	0	UNL	15			61	44	20	21	30	12	3	UNL	15			55	42	22	28	00	0		
19	4	UNL	8			62	58	55	78	17	8	0	UNL	10			53	40	21	29	30	7	0	UNL	10			43	37	28	56	00	0		
22	10	UNL	7			63	60	57	81	19	10	0	UNL	10			45	42	37	74	35	5	0	UNL	10			38	34	28	67	00	0		

WEATHER CODES

- \* TORNADO
- T THUNDERSTORM
- Q SQUALL
- R RAIN
- RW RAIN SHOWERS
- ZR FREEZING RAIN
- L DRIZZLE
- ZL FREEZING DRIZZLE
- S SNOW
- SW SNOW SHOWERS
- SG SNOW GRAINS
- SP SNOW PELLETS
- IC ICE CRYSTALS
- IP ICE PELLETS
- IPW ICE PELLET SHOWERS
- A HAIL
- F FOG
- IF ICE FOG
- GF GROUND FOG
- BD BLOWING DUST
- BN BLOWING SAND
- BS BLOWING SNOW
- BY BLOWING SPRAY
- K SMOKE
- H HAZE
- D DUST

CEILING: UNL INDICATES UNLIMITED  
 WIND DIRECTION: DIRECTIONS ARE THOSE FROM WHICH THE WIND BLOWS, INDICATED IN TENS OF DEGREES FROM TRUE NORTH: I.E., 09 FOR EAST, 18 FOR SOUTH, 27 FOR WEST. AN ENTRY OF 00 INDICATES CALM  
 SPEED: THE OBSERVED AVERAGE ONE-MINUTE VALUE, EXPRESSED IN KNOTS (MPH=KNOTS X 1.151).

OBSERVATIONS AT 3-HOUR INTERVALS

NOV 1988  
RICHMOND, VA 13740

HOUR L.S.T.	VISI-BILITY			TEMPERATURE				WIND		SKY COVER (TENTHS)	VISI-BILITY			TEMPERATURE				WIND		
	CEILING IN HUNDREDS OF FEET	WHOLE MILES	16THS MILE	AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)		CEILING IN HUNDREDS OF FEET	WHOLE MILES	16THS MILE	WEATHER	AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)
NOV 19th																				
01	2	UNL	10	34	33	30	85	00	0	10	4	1	8	LF	46	46	46	100	35	4
04	2	UNL	10	31	30	29	92	00	0	10	3	0	12	LF	46	46	46	100	33	3
07	7	UNL	10	32	31	30	92	05	3	10	1	0	6	LF	46	46	46	100	00	0
10	10	100	7	47	41	33	58	04	3	10	2	0	12	LF	49	49	49	100	25	6
13	10	45	7	53	46	39	59	11	8	10	1	0	8	LF	58	58	58	100	20	12
16	10	33	3	49	47	44	83	03	7	9	250	10			73	67	64	74	20	16
19	10	4	2	46	46	45	96	01	5	5	UNL	10			75	67	62	64	22	18
22	10	4	1	46	46	46	100	04	7	2	UNL	7			69	58	49	49	25	15
NOV 20th																				
NOV 21st																				
NOV 22nd																				
NOV 23rd																				
NOV 24th																				
NOV 25th																				
NOV 26th																				
NOV 27th																				
NOV 28th																				
NOV 29th																				
NOV 30th																				

SUMMARY BY HOURS

HOUR L.S.T.	SKY COVER (TENTHS)	AVERAGES				RESULTANT WIND			
		STATION PRESSURE (INCHES)	TEMPERATURE	REL HUMIDITY %	WIND SPEED (MPH)	DIRECTION	SPEED (MPH)		
		AIR TEMP OF	WET BULB OF	DEW POINT OF					
01	4	29.870	46	43	40	80	6.3	23	1.3
04	4	29.860	44	41	39	85	6.5	24	1.3
07	5	29.880	43	41	39	87	6.7	24	2.2
10	6	29.900	53	47	40	65	9.2	24	2.7
13	7	29.840	58	50	40	55	10.5	23	4.7
16	5	29.825	60	50	38	49	10.3	23	4.7
19	5	29.850	51	46	39	66	7.5	20	2.5
22	4	29.860	48	45	40	75	7.7	23	3.5

HOURLY PRECIPITATION (WATER EQUIVALENT IN INCHES)

NOV 1988  
RICHMOND, VA

13740

DATE	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	
01	0.09	0.03	0.09	0.16	0.25	0.42	0.37	0.13	0.01	T	T	T	T	T										01	
02						T	T																	02	
03																								03	
04																								04	
05				0.01	0.01		0.01	T	T			0.13	T											05	
06																								06	
07																								07	
08																								08	
09																								09	
10													T	T										10	
11																								11	
12																								12	
13													T	0.03	T									13	
14																								14	
15																								15	
16																								16	
17					0.01	0.07	0.74	0.15	0.03	0.01	0.01													17	
18																								18	
19																								19	
20	T	T	0.01	T	T		T	T	0.03	0.04	T	T	T	T	T	T	T	0.01	T	0.01	T	T		20	
21																								21	
22																								22	
23																								23	
24																								24	
25																								25	
26																								26	
27																								27	
28	0.09	0.44	0.04	T	0.02	0.02	0.02	0.07	0.02	0.03	0.01	0.03	0.01	0.02	0.02	0.01	0.03	0.01	0.10	0.03				28	
29																								29	
30																								30	

MAXIMUM SHORT DURATION PRECIPITATION

TIME PERIOD (MINUTES)	5	10	15	20	30	45	60	80	100	120	150	180
PRECIPITATION (INCHES)	0.18	0.33	0.38	0.40	0.50	0.61	0.74	0.84	0.91	0.94	0.97	1.06
ENDED: DATE	28	28	28	28	17	17	17	17	17	17	17	01
ENDED: TIME	0108	0109	0109	0111	0646	0700	0659	0714	0733	0747	0808	0707

THE PRECIPITATION AMOUNTS FOR THE INDICATED TIME INTERVALS MAY OCCUR AT ANY TIME DURING THE MONTH. THE TIME INDICATED IS THE ENDING TIME OF THE INTERVAL. DATE AND TIME ARE NOT ENTERED FOR TRACE AMOUNTS.

VALIDATED BY:  
BILL CLAYTON

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