

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 1990
 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		MINUTES	PERCENT OF TOTAL POSSIBLE	SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT				
																SPEED	DIRECTION					SPEED	DIRECTION		
01	78	44	61	8	46	4	0	1	8	0	0.00	0.0	30.060	18	2.1	3.0	13	S	8	23	637	100	0	1	
02	81	45	63	10	46	2	0	0	8	0	0.00	0.0	30.070	20	5.9	6.3	16	SW	12	22	635	100	3	2	
03	82*	46	64	11	45	1	0	0		0	0.00	0.0	30.020	20	3.9	4.8	12	SE	7	20	565	89	4	4	
04	78	43	61	9	47	4	0	0		0	0.00	0.0	29.885	21	3.9	4.8	10	W	8	24	500	79	10	8	
05	77	47	62	10	52	3	0	1		0	T	0.0	29.645	19	10.0	10.4	26	S	18	19	539	86	1	3	
06	67	44	56	4	40	9	0	0		0	0.05	0.0	29.760	31	5.1	8.2	26	W	15	21	627	100	0	1	
07	61	34	48	-4	37	17	0	0		0	0.00	0.0	29.920	02	1.3	5.4	12	N	10	01	523	84	9	5	
08	53	36	45	-6	27	20	0	0		0	0.00	0.0	30.060	36	9.2	10.1	28	N	17	36	539	86	3	3	
09	53	33	43	-8	36	22	0	1		0	0.04	0.0	30.010	10	4.5	6.1	17	E	13	10	341	55	9	9	
10	65	46	56	5	50	9	0	1		0	1.18	0.0	29.430	32	5.3	13.3	35	SE	21	14	76	12	10	8	
11	60	41	51	1	27	14	0	0		0	0.00	0.0	29.830	26	10.8	12.9	26	W	18	25	616	100	0	1	
12	61	34	48	-2	32	17	0	0		0	0.00	0.0	29.890	36	1.2	5.8	15	N	13	24	614	100	0	0	
13	54	28*	41	-9	23	24	0	0		0	0.00	0.0	30.040	35	4.5	7.0	21	NW	16	33	585	95	4	3	
14	56	29	43	-6	25	22	0	0		0	0.00	0.0	30.260	36	3.8	5.7	23	N	15	01	585	96	1	0	
15	71	32	52	3	35	13	0	0		0	0.00	0.0	30.210	20	4.9	5.6	15	SW	10	23	610	100	0	0	
16	73	40	57	8	42	8	0	0	8	0	0.00	0.0	29.940	19	6.1	6.6	15	S	10	19	476	78	3	4	
17	57	43	50	-2	38	15	0	1		0	0.28	0.0	29.800	34	12.1	14.0	35	NW	26	33	230	38	9	6	
18	54	31	43	-5	21	22	0	0		0	0.00	0.0	29.930	36	12.5	12.7	25	N	18	36	605	100	0	0	
19	57	29	43	-5	24	22	0	0		0	0.00	0.0	29.905	31	3.5	4.4	16	W	9	28	548	91	4	4	
20	62	37	50	2	29	15	0	0		0	T	0.0	30.030	36	4.4	4.8	17	N	12	35	522	87	1	3	
21	60	32	46	-1	31	19	0	0		0	0.00	0.0	30.110	02	0.4	3.5	10	W	7	25	509	85	6	4	
22	67	33	50	3	38	15	0	1	8	0	0.00	0.0	29.920	17	6.6	6.9	16	S	13	19	509	85	5	5	
23	72	52	62	15	48	3	0	1	8	0	T	0.0	29.555	22	9.0	9.8	23	W	15	24	352	59	6	6	
24	63	48	56	10	29	9	0	0		0	0.00	0.0	29.640	23	11.1	12.4	29	SW	21	23	460	77	6	6	
25	72	47	60	14	38	5	0	0		0	0.00	0.0	29.760	22	11.9	12.3	23	SW	18	25	503	85	10	8	
26	75	40	58	12	40	7	0	0		0	0.00	0.0	29.970	14	4.8	6.3	16	SE	13	14	593	100	0	1	
27	76	39	58	13	47	7	0	1	8	0	0.00	0.0	30.030	19	7.0	7.6	21	SW	16	19	523	88	2	2	
28	76	53	65*	20	63	0	0	1		0	0.02	0.0	29.930	19	12.9	13.1	29	S	20	19	72	12	10	8	
29	70	36	53	8	42	12	0	1		0	0.13	0.0	30.000	35	7.8	12.5	26	N	17	01	230	39	8	6	
30	50	30	40*	-4	22	25	0	0		0	0.00	0.0	30.290	34	2.9	6.4	18	N	15	35	588	100	0	0	
SUM	SUM					TOTAL	TOTAL	NUMBER OF DAYS		TOTAL	TOTAL	FOR THE MONTH:				TOTAL	%	SUM	SUM						
1981	1172					365	0			1.70	0.0	29.930	25	2.0	8.1	35	NW	26	33	14712	100	124	111		
AVG.	AVG.	AVG.	DEP.	AVG.	DEP.			PRECIPITATION		DEP.										DATE: 17+	DATE: 17	POSSIBLE MONTH	AVG.	AVG.	
66.0	39.1	52.6	3.7	37.2	-118		0	.01 INCH.		6	-1.59											18316	80	4.1	3.7
NUMBER OF DAYS						SEASON TO DATE		SNOW, ICE PELLETS ≥ 1.0 INCH		GREATEST IN 24 HOURS AND DATES				GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE											
MAXIMUM TEMP.		MINIMUM TEMP.		544	1587	THUNDERSTORMS		PRECIPITATION		SNOW, ICE PELLETS															
≥ 90°		≤ 32°		7	0	-184		251	CLEAR	15	PARTLY CLOUDY	7	CLOUDY	8											

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE.
 T 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

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE

NATIONAL CLIMATIC DATA CENTER ASHEVILLE NORTH CAROLINA

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OBSERVATIONS AT 3-HOUR INTERVALS

NOV 1990
RICHMOND, VA

13740

HOUR L.S.T.	SKY COVER (TENTHS)			VISI-BILITY	WEATHER	TEMPERATURE				WIND		SKY COVER (TENTHS)	SKY COVER (TENTHS)			VISI-BILITY	WEATHER	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			AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)										
NOV 1st																																	
01	3	UNL	7			49	48	46	90	11	4	0	UNL	7			52	51	49	90	19	4	0	UNL	10			54	49	44	69	20	4
04	0	UNL	6		F	46	45	44	93	10	2	0	UNL	6		F	47	46	45	93	16	3	0	UNL	8			50	47	44	80	19	4
07	0	UNL	3		F	45	44	43	93	35	4	0	UNL	6		F	47	46	46	96	15	4	0	UNL	8			48	46	43	83	19	5
10	0	UNL	3		H	63	56	50	63	00	0	0	UNL	5		H	66	56	48	53	24	6	0	UNL	8			67	56	47	49	26	5
13	0	UNL	7			76	59	46	35	18	5	3	UNL	7			79	61	46	31	18	9	5	UNL	10			80	61	46	30	22	4
16	0	UNL	10			76	57	41	29	23	7	9	UNL	7			75	60	48	39	20	6	7	UNL	10			79	60	45	30	20	6
19	1	UNL	10			59	53	47	65	18	4	8	UNL	7			58	52	47	67	20	7	3	UNL	10			59	53	48	67	18	3
22	2	UNL	10			53	50	47	80	00	0	0	UNL	7			55	50	45	69	20	5	5	UNL	10			51	49	46	83	19	3
NOV 2nd																																	
NOV 3rd																																	
NOV 4th																																	
NOV 5th																																	
NOV 6th																																	
NOV 7th																																	
NOV 8th																																	
NOV 9th																																	
NOV 10th																																	
NOV 11th																																	
NOV 12th																																	
NOV 13th																																	
NOV 14th																																	
NOV 15th																																	
NOV 16th																																	
NOV 17th																																	
NOV 18th																																	

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 1.15).

OBSERVATIONS AT 3-HOUR INTERVALS

NOV 1990
RICHMOND, VA 13740

HOUR L.S.T.	VISI-BILITY			TEMPERATURE				WIND		SKY COVER (TENTHS)	VISI-BILITY			WEATHER	TEMPERATURE				WIND	
	SKY COVER (TENTHS)	CEILING IN HUNDREDS OF FEET	WHOLE MILES	AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)		CEILING IN HUNDREDS OF FEET	WHOLE MILES	16THS MILE		AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)
NOV 19th																				
01	4	UNL	15	32	28	21	64	01	5	8	120	7			39	37	33	79	00	0
04	5	UNL	15	33	29	20	59	32	3	10	65	7			43	41	39	86	35	3
07	1	UNL	15	30	27	20	66	31	4	10	65	7			42	39	35	76	00	0
10	3	UNL	10	43	35	22	43	33	7	1	UNL	8			54	43	29	38	02	9
13	10	UNL	10	54	42	24	31	32	7	0	UNL	8			60	46	27	29	36	9
16	1	UNL	10	56	42	22	27	30	4	0	UNL	10			60	44	22	23	34	6
19	0	UNL	10	41	36	28	60	00	0	0	UNL	10			45	38	26	46	02	6
22	10	120	10	39	37	33	73	00	0	0	UNL	10			40	35	26	57	00	0
NOV 20th																				
NOV 21st																				
01	0	UNL	8	35	32	27	73	36	3	0	UNL	8			35	32	27	73	36	3
04	0	UNL	8	36	33	27	70	32	4	0	UNL	8			36	33	27	70	32	4
07	4	UNL	7	32	31	28	85	34	4	4	UNL	7			32	31	28	85	34	4
10	5	UNL	8	48	42	33	56	02	4	5	UNL	8			48	42	33	56	02	4
13	3	UNL	8	58	46	31	36	00	0	3	UNL	8			58	46	31	36	00	0
16	8	UNL	7	56	45	32	40	00	0	8	UNL	7			56	45	32	40	00	0
19	6	UNL	7	44	40	35	71	00	0	6	UNL	7			44	40	35	71	00	0
22	4	UNL	7	41	38	33	73	00	0	4	UNL	7			41	38	33	73	00	0
NOV 22nd																				
NOV 23rd																				
NOV 24th																				
01	1	UNL	7	38	36	33	82	15	4	10	UNL	7			56	50	44	64	20	12
04	0	UNL	6	35	34	32	89	13	4	10	90	7			53	50	48	83	19	7
07	8	UNL	6	35	34	33	92	15	3	10	85	6		RF	52	51	50	93	19	6
10	7	120	5	50	44	36	59	19	6	10	85	6		H	59	55	52	78	23	8
13	2	UNL	6	63	51	39	41	19	8	0	UNL	8			71	58	47	43	26	5
16	9	250	7	64	52	40	42	16	6	10	110	8			69	56	44	41	24	8
19	6	UNL	7	53	48	42	66	17	8	10	130	15			60	53	46	60	21	8
22	10	250	7	54	49	44	69	18	7	1	UNL	7			57	52	48	72	22	9
NOV 25th																				
NOV 26th																				
NOV 27th																				
01	6	UNL	12	55	46	35	47	20	8	3	UNL	15			52	46	39	61	21	5
04	8	120	12	55	46	36	49	22	12	1	UNL	15			47	43	39	74	23	4
07	9	UNL	15	54	46	36	51	22	13	1	UNL	15			40	38	36	86	17	5
10	10	UNL	15	62	50	38	41	23	12	0	UNL	7			61	52	43	52	19	4
13	10	UNL	15	69	53	38	32	25	16	0	UNL	8			73	57	42	33	15	10
16	8	UNL	15	69	54	39	34	23	10	0	UNL	10			73	55	38	28	11	8
19	10	UNL	15	59	50	40	50	20	8	0	UNL	10			59	50	40	50	07	4
22	5	UNL	15	55	47	39	55	20	5	0	UNL	10			52	47	42	69	10	5
NOV 28th																				
NOV 29th																				
NOV 30th																				
01	2	UNL	10	56	52	49	78	21	7	7	90	7			69	67	66	90	19	13
04	10	19	7	57	54	51	81	20	5	10	13	7		R	69	68	67	93	21	9
07	10	7	6	60	56	53	78	17	8	10	45	6		RF	58	56	55	90	36	11
10	10	11	5	70	68	67	90	19	17	10	55	7			53	49	44	72	02	14
13	10	19	7	76	71	68	76	20	14	10	120	10			50	43	34	54	35	13
16	10	20	6	72	70	69	90	19	11	4	UNL	10			50	42	31	48	35	10
19	10	UNL	8	70	69	68	93	19	12	0	UNL	10			43	37	28	56	35	9
22	9	11	8	70	69	68	93	21	14	0	UNL	10			40	34	24	53	33	10

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	29.920	47	43	38	73	6.5	22	2.4
04	3	29.920	45	41	37	77	6.1	24	1.8
07	4	29.940	43	40	37	80	6.8	29	1.4
10	4	29.970	55	47	38	55	10.1	32	3.3
13	4	29.920	63	50	37	40	10.7	27	4.7
16	5	29.900	63	50	36	39	9.5	26	2.4
19	5	29.920	52	46	38	61	7.3	18	1.7
22	3	29.935	49	44	38	67	7.2	22	2.1

HOURLY PRECIPITATION (WATER EQUIVALENT IN INCHES)

NOV 1990
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																								01	
02																									02
03																									03
04																									04
05																							T		05
06	0.05																								06
07																									07
08																									08
09																					T	T	0.01	0.03	09
10	0.11	0.10	0.05	0.02	0.18	0.51	0.10	0.10	0.01	T	T	T	T												10
11																									11
12																									12
13																									13
14																									14
15																									15
16																									16
17						0.03	0.07	0.03	0.07	0.08	T														17
18																									18
19																									19
20			T	T																					20
21																									21
22			T	T	T	T	T	T	T	T															22
23																									23
24																									24
25																									25
26																									26
27																									27
28																									28
29	0.01	T	T	T	0.04	0.06	0.01	0.01	T						T	0.02									29
30																									30

MAXIMUM SHORT DURATION PRECIPITATION

TIME PERIOD (MINUTES)	5	10	15	20	30	45	60	80	100	120	150	180
PRECIPITATION (INCHES)	0.09	0.18	0.27	0.31	0.37	0.44	0.51	0.57	0.63	0.69	0.76	0.79
ENDED: DATE	10	10	10	10	10	10	10	10	10	10	10	10
ENDED: TIME	0553	0553	0553	0554	0557	0603	0559	0624	0624	0624	0642	0659

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:
MATTHEW BODOSKY

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