

Local Climatological Data

Annual Summary With Comparative Data

1976

RICHMOND, VIRGINIA



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Narrative Climatological Summary

Richmond is located in east-central Virginia at the head of navigation on the James River and along a line separating the Coastal Plains (Tidewater Virginia) from the Piedmont. The Blue Ridge Mountains lie about 90 miles to the west and the Chesapeake Bay 60 miles to the east. Elevations range from a few feet above sea level along the river to a little over 300 feet in parts of the west section of the City.

The climate might be classified as modified continental. Summers are warm and humid and winters generally mild. The mountains to the west act as a partial barrier to outbreaks of cold, continental air in winter, the coldest air being delayed long enough to be modified, then further warmed as it subsides in its approach to Richmond. The open waters of the Chesapeake Bay and Atlantic Ocean contribute to the humid summers and mild winters. The coldest weather normally occurs in late December and in January, when low temperatures usually average in the upper twenties and the high temperatures in the upper forties. Temperatures seldom lower to zero. The record lowest temperature of minus 12° was recorded at the Airport in January 1940. The record high temperature of 107° occurred in August 1918 at Chimborazo Park.

Precipitation is rather uniformly distributed throughout the year. However, dry periods lasting several weeks do occur, especially in autumn when long periods of pleasant, mild weather are most common. There is considerable variability in total monthly amounts from year to year so that no one month can be depended upon to be normal. Snow has been recorded during seven of the twelve months. Falls of 4 inches or more occur on an average of once a year. Snow usually remains on the ground only 1 or 2 days at a time, but on one occasion it remained 21 days (January 23 to February 13, 1948). Ice storms (freezing rain or glaze) are not uncommon in winter, but they are seldom severe enough to do any considerable damage. A notable exception was the spectacular glaze storm of January 27 - 28, 1943, when heavy damage was done to trees and overhead transmission lines of all kinds.

The James River reaches tidewater at Richmond where flooding has occurred in every month of the year, most frequently in March and least in July. Hurricanes and less severe storms of tropical origin have been responsible for most of the flooding during the summer and early fall months. The flood of record at Richmond was Agnes in June, 1972 which produced on the 23rd crests 6 and one half feet above old high water marks dating back 200 years. Agnes was followed closely by serious flooding on October 7, 1972 and preceded by Camille on August 22, 1969 which is now the fourth greatest flood of record. In 1955 three hurricanes brought record rainfall to Richmond within a 6-week period. The most noteworthy of these were Hurricanes Connie and Diane that brought heavy rains five days apart.

Damaging storms occur mainly from snow and freezing rain in winter and from hurricanes, tornadoes, and severe thunderstorms at other seasons. Damage may be from wind, flooding, or rain, or from any combination of these. Tornadoes are infrequent but some notable occurrences have been observed within the Richmond area. The highest wind recorded has been 68 m.p.h. with a peak gust of 79 m.p.h. at the time of Hurricane Hazel, October 15, 1954.

The dates of the last freeze in spring and of the first in autumn mark the limits of the growing season for most crops. The average growing season is 216 days. May 11, 1966, has been the latest date in spring when a temperature of 32° or lower was recorded; October 5, 1965, has been the earliest date in autumn.

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NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION / ENVIRONMENTAL / NATIONAL CLIMATIC CENTER
DATA SERVICE / ASHEVILLE, N.C.

Meteorological Data For The Current Year

Station: RICHMOND, VIRGINIA
13740

R.E.BYRD INTERNATIONAL AP. Standard time used:

EASTERN

Latitude: 37° 30' N

Longitude: 77° 20' W

Elevation (ground): 164 feet

Year: 1976

Month	Temperature °F						Degree days Base 65 °F	Precipitation in inches						Relative humidity, pct.		Wind						Number of days						Average station pressure mb.										
	Averages			Extremes				Water equivalent			Snow, Ice pellets			Hour	Hour	Hour	Hour	Resultant		Fastest mile		Sunrise to sunset		Temperature °F		(b)	Maximum	Minimum	Elev. 177 feet m.s.l.									
	Daily maximum	Daily minimum	Monthly	Highest Date	Lowest Date	Date		Heating Cooling	Total	Greatest in 24 hrs.	24 hrs.	Date	Total	Greatest in 24 hrs.	Date	Direction	Speed m.p.h.	Average speed m.p.h.	Direction	Speed m.p.h.	Percent of possible sunshine	Ave. g. sky cover, tenths, sunrise to sunset	Clear	Partly cloudy	Cloudy	Precipitation 0.1 inch or more	0.1 inch or more	Thunderstorms	Heavy fog, visibility 1/4 mile or less									
JAN	46.7	23.5	35.1	74 26	5 19	917	0	3.39	1.81	26-27	0.2	0.2	17	74	78	49	63	27	2.5	8.2	31	NW	14	57	5.5	11	6	14	10	0	0	28	0	1013.5				
FEB	52.8	34.1	48.5	81 17	17 2	480	8	1.35	0.97	1-2	T	T	9	66	72	39	50	24	4.5	9.2	30	NW	12	53	13	4	12	5	0	0	0	0	14	0	1011.5			
MAR	66.2	39.0	52.6	84 19	18	386	9	2.14	1.30	9-10	1.0	1.0	73	84	52	58	21	2.6	8.1	34	W	13	55	7.0	8	5	18	10	1	0	0	0	1012.2					
APR	77.1	43.8	60.5	96 17	25 13	227	99	1.08	1.03	31-1	0.0	0.0	64	72	31	42	29	2.4	7.6	26	N	11	85	4.0	15	9	6	4	0	0	0	0	1010.5					
MAY	77.9	52.4	65.2	91 31	34 9	78	91	3.76	0.86	0	0.0	0.0	82	80	52	62	20	2.1	7.6	29	NW	18	50	6.6	7	5	19	12	6	1	0	0	1009.1					
JUN	85.7	63.5	74.6	96 12	45 6	307	2.85	1.72	16-17	0.0	0.0	87	85	58	70	18	2.6	7.1	24	NW	30	53	6.7	4	11	15	11	0	8	1	0	0	1011.2					
JUL	89.8	64.8	77.3	100 15	53 13	0	389	2.63	0.68	15	0.0	0.0	85	83	52	62	25	1.7	6.0	28	NW	11	56	6.5	5	16	10	11	0	9	1	16	0	1008.5				
AUG	88.1	63.2	75.7	97 13	47 31	1	337	1.35	0.54	14-15	0.0	0.0	86	86	50	63	05	1.1	6.3	26	NW	14	60	5.6	7	19	11	5	0	4	2	16	0	1012.5				
SEP	81.8	55.6	68.7	96 8	42 23	15	133	4.78	2.16	15-16	0.0	0.0	87	91	54	71	21	0.4	5.4	22	NW	10	65	5.8	9	10	11	8	0	3	4	3	0	1010.5				
OCT	65.9	42.9	54.4	81 7	22 29	332	12	6.99	1.79	20	0.0	0.0	90	91	56	79	33	1.5	7.0	26	W	9	55	6.3	6	16	12	0	1	0	0	8	0	1011.2				
NOV	55.9	29.4	42.7	76 19	15 30	660	0	1.88	1.28	28-29	1.0	1.0	12	73	83	44	61	28	2.7	6.7	25	NW	8	68	5.3	9	12	9	5	1	0	0	0	22	0	1010.8		
DEC	48.5	24.8	36.7	62 19	12 1	869	0	2.56	1.18	7-8	1.7	1.7	8	76	78	54	66	24	2.4	7.8	26	NW	21	62	5.1	14	4	13	10	1	0	0	0	24	0	1011.2		
YEAR	70.5	44.8	57.7	100 15	5 19	3976	1385	34.76	2.16	15-16	3.9	1.7	DEC	8	79	82	49	62	25	1.6	7.3	34	W	13	61	5.8	110	101	155	103	3	33	15	55	5	112	0	1011.1

† DATA CORRECTED AFTER PUBLICATION OF THE MONTHLY ISSUE.

Normals, Means, And Extremes

Month	Temperatures °F						Normal Degree days Base 65 °F	Precipitation in inches						Relative humidity pct.		Wind						Mean number of days						Average station pressure mb.												
	Normal			Extremes				Water equivalent			Snow, Ice pellets			Hour	Hour	Hour	Hour	Resultant		Fastest mile		Sunrise to sunset		Temperature °F		Max.		Min.		Elev. 177 feet m.s.l.										
	Daily maximum	Daily minimum	Monthly	Record Highest	Record Lowest	Year		Heating Cooling	Total	Normal monthly	Maximum monthly	Year	Normal monthly	Maximum monthly	Year	Normal monthly	Maximum monthly	Year	Mean speed mph.	Prevailing direction	Speed mph.	Direction	Year	Clear	Partly cloudy	Cloudy	Precipitation 0.1 inch or more	0.1 inch or more	Show. ice pellets	0.1 inch or less	Thunderstorms	Heavy fog, visibility 1/4 mile or less	(b)							
(a)	47	37.5	47	80 1950	-12 1940	853	0	2.86	5.95	1962	1.08	1951	3.31	1962	28.5	1940	21.6	1940	77	81	57	69	8.0	NW	1971	51	6.5	8	7	16	10	1	* 3	0	3	21	* 1013.7			
J	47.4	27.6	37.5	80 1950	-12 1940	853	0	3.01	5.01	1944	0.98	1968	1.91	1973	17.1	1967	9.2	1947	74	79	52	63	8.6	NNE	1951	55	6.2	9	6	13	9	1	* 2	0	1	19	* 1011.8			
F	49.9	28.8	39.4	83 1932	-10 1936	717	0	3.38	4.04	1975	0.94	1966	2.04	1942	19.7	1960	12.1	1962	73	78	49	59	8.9	W	1952	59	6.2	8	9	14	11	1	* 1	2	1	10	0	1010.3		
M	58.2	35.5	46.9	93 1938	11 1960	569	8	3.58	4.39	1971	0.94	1963	2.04	1952	2.0	1952	7.0	1940	74	75	45	56	8.9	S	1960	63	6.1	8	9	13	9	1	* 2	2	1	0	2	0	1009.8	
A	70.3	45.2	57.8	96 1976	25 1976	226	10	2.77	5.32	1952	0.64	1963	2.07	1952	2.0	1952	0.0	1940	74	75	45	56	7.8	SSW	1959	45	6.2	7	11	13	11	0	6	2	3	0	0	1008.4		
M	78.4	54.5	66.5	100 1941	31 1956	64	111	3.42	8.87	1972	0.87	1965	2.53	1972	0.0	1965	83	79	50	65	7.8	SSW	1962	63	6.3	7	11	13	11	0	6	2	3	0	0	1010.1				
J	85.4	62.9	74.2	104 1952	40 1967	0	276	3.52	9.24	1938	0.91	1960	4.61	1963	0.0	1963	87	82	54	68	7.2	S	1952	52	6.0	7	12	11	10	0	7	2	2	0	0	1011.4				
J	88.2	67.5	77.9	104 1936	51 1965	0	400	5.63	18.87	1945	0.52	1963	5.73	1969	0.0	1969	89	85	56	72	6.7	SSW	56	NW	1955	65	6.2	7	12	12	11	0	9	2	13	0	0	0	0	1009.9
A	86.6	65.9	76.3	102 1953	46 1934	350	5.06	14.10	1955	0.52	1963	8.79	1955	0.0	1955	90	88	57	76	6.3	S	1964	64	6.0	7	12	12	10	0	7	3	10	0	0	0	0	1011.8			
S	80.9	59.0	70.0	103 1954	35 1974	21	171	3.58	10.98	1975	0.69	1954	3.82	1956	0.0	1956	90	89	56	79	6.6	S	1955	55	6.2	9	6	13	9	1	* 2	0	1	19	0	0	0	0	1011.8	
□	71.2	47.4	59.3	99 1941	21 1962	203	27	2.94	9.39	1971	0.30	1963	6.50	1961	T	1972	87	89	53	77	6.8	NNE	68	SE	1954	59	5.3	10	8	12	8	0	3	4	0	0	0	0	0	1013.6
N	60.6	37.3	49.0	86 1974	10 1933	480	0	3.20	7.64	1959	0.36	1965	4.07	1956	7.3	1956	80	84	50	70	7.4	S	1955	35	5.6	10	8	12	8	*	1	2	0	0	2	0	0	0	1012.6	
D	49.1	28.8	39.0	80 1971	-1 1942	806	0	3.22	7.07	1973	0.72	1965	3.16	1958	12.5	1958	7.5	1966	81	85	55	70	7.5	SW	1968	51	6.1	10	6	15	9	1	*	3</td						

Average Temperature

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
1937	46.0	38.3	43.3	55.3	65.8	76.0	76.8	77.2	66.0	55.0	46.2	38.4	57.0
1938	37.2	43.1	52.6	59.9	64.9	71.6	76.8	78.3	68.4	57.7	49.9	40.3	58.5
1939	41.6	44.8	48.8	56.0	66.9	76.4	75.7	77.1	71.8	59.0	44.8	39.8	58.6
1940	24.2	38.2	43.3	52.4	63.0	74.7	76.0	73.6	66.2	55.8	47.4	42.5	54.9
1941	35.2	34.2	40.8	59.8	66.8	73.0	78.3	75.8	72.2	64.7	48.7	41.9	57.6
#1942	34.2	35.2	48.0	58.8	69.5	75.2	79.4	75.2	71.3	60.8	50.0	37.1	57.9
1943	40.0	41.5	47.0	53.9	69.0	79.2	78.5	78.4	68.4	57.3	47.5	38.6	58.3
1944	38.8	40.4	43.2	56.2	71.6	76.4	77.7	75.4	71.2	57.9	48.2	36.1	57.9
1945	34.2	40.8	58.6	61.4	63.9	75.7	76.2	75.2	73.6	57.8	49.6	33.4	58.4
#1946	38.0	41.7	53.8	57.2	65.8	72.8	75.4	72.6	70.0	60.9	52.9	43.4	58.8
1947	44.6	33.5	40.0	57.5	67.0	72.2	74.8	78.5	70.1	63.7	46.4	38.4	57.2
1948	31.1	39.6	50.8	57.7	66.3	74.4	78.2	75.7	68.6	56.2	42.0	37.8	57.8
1949	45.2	46.5	49.6	55.7	66.0	75.2	80.1	76.6	67.4	62.5	49.0	42.0	59.6
#1950	49.7	40.7	44.4	54.7	65.0	74.2	76.8	75.3	68.2	61.2	47.3	36.1	57.8
1951	40.8	41.3	40.6	56.6	64.6	74.3	78.6	76.0	70.0	61.6	44.7	42.0	58.1
1952	42.9	42.2	49.3	58.1	65.4	77.6	80.4	76.4	69.2	55.7	49.4	39.2	58.3
1953	42.9	43.4	49.3	58.0	71.3	75.2	79.5	75.7	70.0	60.7	48.5	42.5	59.9
1954	38.6	44.9	47.0	61.2	62.0	74.6	78.6	76.8	74.4	62.3	40.1	38.2	58.8
1955	35.8	40.1	50.2	60.8	67.2	70.1	81.3	78.7	70.6	59.5	46.4	35.0	58.0
1956	36.0	43.0	46.3	55.5	65.0	74.7	77.8	76.5	67.9	60.9	47.6	48.9	58.3
1957	35.3	43.3	47.2	61.3	67.8	76.2	78.4	74.4	71.9	54.6	50.3	43.0	58.7
1958	34.6	39.8	42.3	57.1	65.1	71.3	80.2	76.4	69.1	58.7	51.2	33.4	56.2
1959	37.5	41.6	47.3	59.3	67.4	74.8	79.9	79.0	70.8	61.6	47.3	41.6	59.0
1960	38.8	39.3	34.9	61.8	64.9	73.7	76.3	77.5	69.3	57.1	50.1	34.6	56.6
1961	33.5	42.2	50.8	53.0	63.6	72.8	78.5	77.1	75.3	58.1	50.1	37.1	57.5
1962	36.6	39.7	45.0	57.3	70.6	74.0	74.8	74.6	66.2	60.5	47.2	36.1	56.9
1963	35.9	33.3	50.6	59.2	64.0	72.0	76.1	75.7	65.5	58.6	50.1	32.4	56.1
1964	38.1	37.2	47.6	55.4	66.4	73.1	75.8	73.1	67.1	53.4	42.9	35.8	56.8
1965	32.6	38.8	43.0	53.9	69.6	70.7	74.9	75.9	70.7	56.1	48.2	41.3	56.6
1966	31.1	37.7	47.5	52.8	63.1	71.4	76.4	74.6	67.2	55.5	49.5	38.0	55.4
1967	40.9	34.8	46.6	58.8	60.7	72.1	76.6	75.5	65.7	57.2	44.0	41.9	56.2
1968	33.9	34.2	52.0	58.8	64.7	74.7	78.9	78.9	70.9	61.9	51.3	37.0	58.1
1969	33.9	36.8	42.3	57.6	65.5	75.7	78.3	75.1	68.1	58.5	46.8	35.5	56.2
1970	30.1	37.1	42.9	58.2	69.1	75.7	78.3	78.0	74.8	62.9	49.9	40.4	58.1
1971	33.8	39.5	44.3	55.0	63.3	74.0	76.0	75.3	71.4	64.6	48.5	48.0	57.9
1972	40.7	37.6	47.2	56.2	60.6	70.1	77.1	75.2	70.1	55.8	47.9	45.9	57.4
1973	37.6	38.5	52.6	57.9	65.1	76.0	77.4	77.5	72.3	60.6	51.3	40.8	59.0
1974	45.8	40.1	50.4	59.6	58.9	70.6	76.9	75.7	67.4	55.4	48.5	41.7	58.2
1975	40.7	41.4	45.3	52.9	67.7	73.6	76.0	78.8	69.3	62.5	53.6	40.0	58.5
1976	35.1	48.5	52.6	60.5	65.2	74.6	77.3	75.7	68.7	54.4	42.7	36.7	57.7
RECORD	38.0	39.6	47.0	56.9	66.1	74.0	77.6	76.1	69.9	58.8	48.6	39.6	57.7
MEAN	47.9	50.3	58.4	69.4	70.9	83.5	86.3	80.8	70.7	60.2	49.7	46.7	
MAX	58.0	28.8	35.5	44.4	54.2	62.8	67.2	65.9	59.0	46.8	36.9	29.4	46.6
MIN													

Heating Degree Days

Season	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Total
1956-57	0	3	25	14	51	493	918	600	544	201	63	5	3566
1957-58	0	20	317	424	674	936	871	494	254	70	6	4308	
1958-59	0	0	24	212	409	973	827	650	542	212	44	10	3923
1959-60	0	0	26	171	330	717	807	737	694	184	88	2	4212
1960-61	0	0	24	257	439	936	971	632	461	990	106	7	4223
1961-62	0	0	27	218	459	860	875	623	276	32	0	4072	
1962-63	0	0	73	175	526	891	882	434	218	102	1	4199	
1963-64	0	0	71	197	439	1004	826	501	537	306	74	12	4267
1964-65	0	0	32	352	402	676	909	726	674	339	17	34	4161
1965-66	0	6	25	275	498	126	1043	739	538	371	133	27	4401
1966-67	0	47	293	466	833	738	841	560	230	171	17	4196	
1967-68	0	0	64	256	623	708	956	887	416	191	86	0	4187
1968-69	0	0	161	403	864	957	783	695	227	66	0	4166	
1969-70	0	0	45	221	541	907	1076	778	677	231	51	0	4527
1970-71	0	0	12	124	445	950	960	709	627	295	104	3	4035
1971-72	0	11	512	526	748	788	554	286	58	21	3573		
1972-73	0	0	17	285	513	588	843	735	294	247	79	0	3701
1973-74	0	0	15	163	414	744	889	691	453	204	75	5	3345
1974-75	0	0	62	310	513	715	746	654	368	44	1	4017	
1975-76	0	0	27	121	336	770	917	480	386	227	78	11	3373
1976-77	0	1	15	332	660	869							

Cooling Degree Days

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1969	0	0	0	21	90	328	417	321	147	26	0	0	1350
1970	0	0	0	35	185	328	418	410	313	67	0	0	1756
1971	0	0	0	0	56	297	367	327	209	62	22	5	1345
1972	0	0	7	30	52	180	381	326	178	9	8	0	1171
1973	0	0	0	13	42	91	338	391	231	32	9	2	1544
1974	0	0	10	58	106	180	377	340	141	21	26	0	1259
1975	0	0	0	16	135	267	348	433	163	51	18	0	1433
1976	0	8	9	99	91	307	389	337	132	12	0	0	1385

Snowfall

Season	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Total
1937-38	0.0	0.0	0.0	0.0	0.0	T	0.6	1.5	0.0	0.0	0.0	0.0	2.1
1938-39	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	5.0
1939-40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	28.5	0.3	2.0	0.0	34.2
1940-41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	3.6	5.2	9.2
1941-42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5
#1942-43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6
1943-44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5					

STATION LOCATION

RICHMOND, VIRGINIA.

Location	Occupied from	Occupied to	Airline distance and direction from previous location	Latitude North	Longitude West	Ground at temperature site	Elevation above						Sea level	Remarks	
							Sea level	Ground							
COOPERATIVE								Wind instruments	Extreme thermometers	Psychrometer	Telemeter	Tipping bucket rain gauge	Weighing rain gauge	8" rain gauge	Higrometer
High elevation in East Richmond	1/1880	2/1893				Est. 150									W. H. Pleasants; exact address unknown.
Near Southern RR Bridge	3/1893	3/1895				Est. 35									A. J. Duesberry, River Observer.
Westbrook Farms	4/1895	10/1897	4 mi. N	27° 36'	77° 24'	196									Capt. J. C. Shafer; temperatures only
CITY															
State Library Building Capitol Square	9/18/95	5/22/97	4 mi. S	37° 32'	77° 27'	142									Section Center; no observations
Chamber of Commerce Building, Ninth & Main Streets	5/22/97	5/31/00	3/8 mi. SW	37° 32'	77° 27'	104	107	98	98		89		89		Observational Program begun 10/5/97.
Times Building 10th & Bank Streets	5/31/00	6/30/05	1/8 mi. NE	37° 32'	77° 27'	115	92	82	82		76		76		
Mutual Assurance Bldg. Ninth & Main Streets	6/30/05	1/30/10	1/8 mi. SW			104	154	145	145		138		138		
Weather Bureau Building Chimborazo Park 3301 E Broad Street	1/30/10	7/01/53	1-1/2 mi. E	37° 32'	77° 25'	162	53	11	11		3	a4	3		Climatological observations were continuous at City Office sites 10/5/97 through 6/30/53.
															a - At this site 9/24/42 to 4/19/46 and after 6/1/50.
AIRPORT															
WB-CAA Building	7/15/25	9/24/42	None	37° 30'	77° 20'	158	#	5	5				3		CAA to 8/3/30, WBAS 8/3/30 to 5/26/35 and 7/14/38 to 9/24/42. # - 40 feet 8/3/30 to 5/26/35, estimated 40 feet 5/26/35 to 7/14/38 and estimated 50 feet to 9/24/42.
Army Hanger (Operations Annex)	9/24/42	4/19/46	1/2 mi. NNW	37° 30'	77° 20'	156	55	5	5				3		AF operation.
Old Airport Administration Building	4/19/46	6/01/50	1/3 mi. SSE	37° 30'	77° 20'	156	46	5	5				4		WBAS reopened.
Byrd Field † New Terminal Building † R. E. Byrd International Airport effective 2/18/71	6/01/50	Present	4/5 mi. N	37° 30'	77° 20'	c164	b20	d6	d6	e19	e19	a4			a - Installed 2700 feet ENE of thermometer site 6/26/59. b - 67 feet to 1/11/61. c - 162 feet to 6/26/59. d - Discontinued 6/26/59. e - 3 feet to 10/9/69.

Requests for additional climatic information should be addressed to: Director, National Climatic Center, Federal Building, Asheville, N.C. 28801

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