

1999

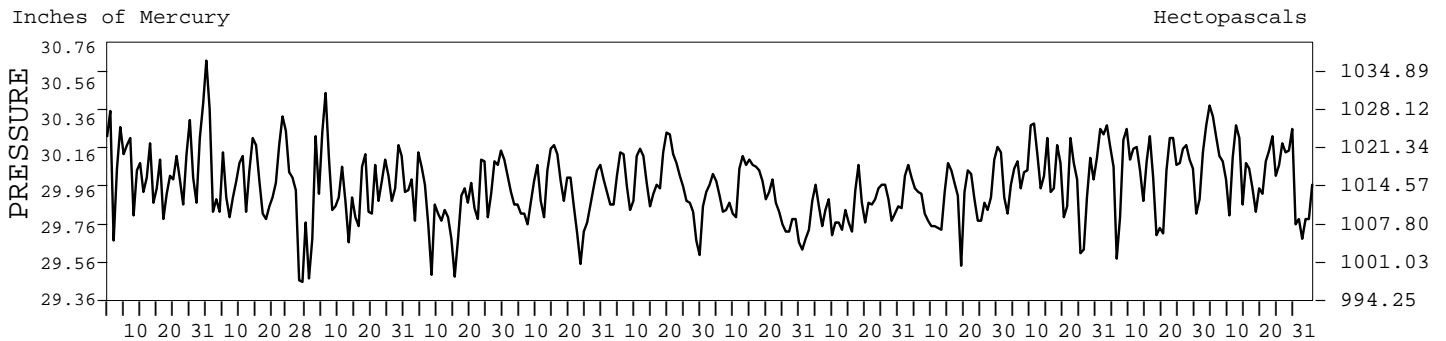
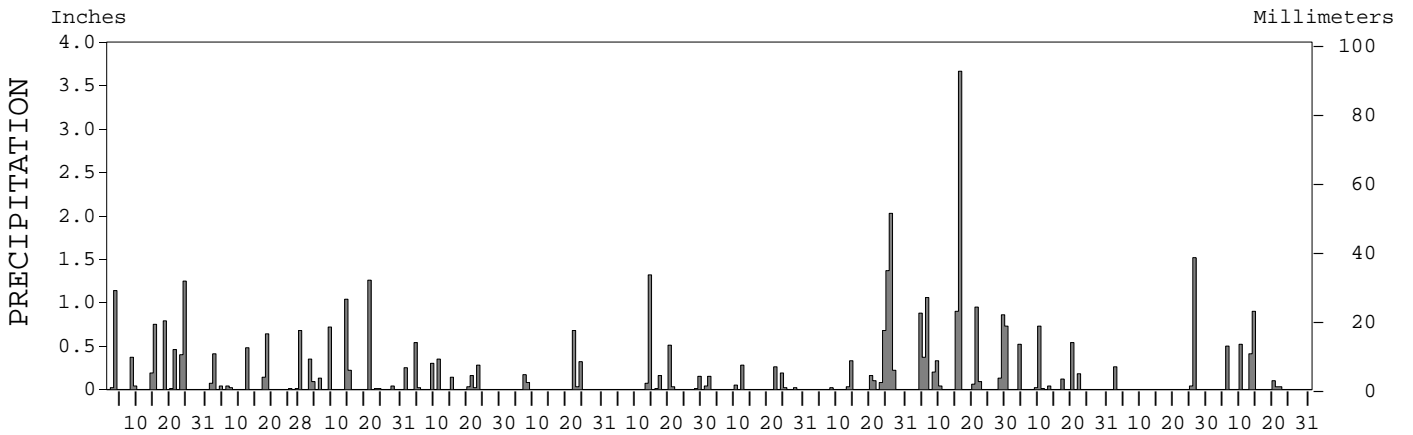
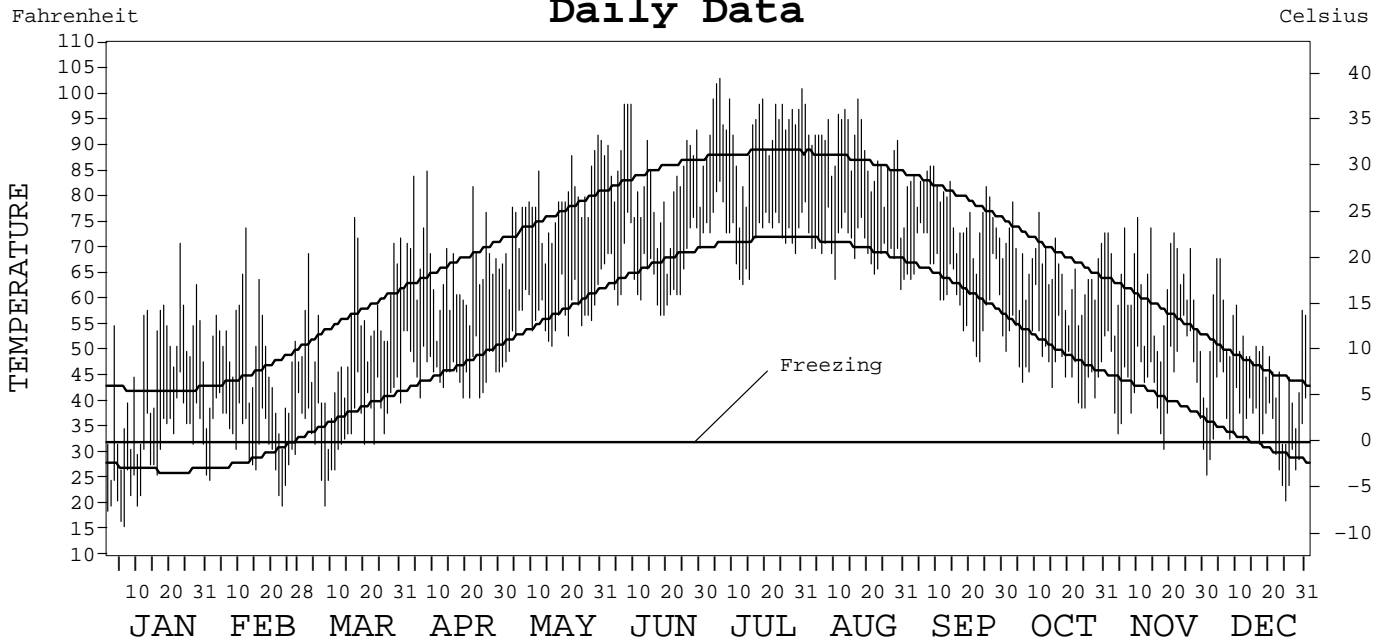
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



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NATIONAL AIRPORT (DCA)

Daily Data



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Thomas R. Karl

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METEOROLOGICAL DATA FOR 1999

WASHINGTON DC, VA (DCA)

LATITUDE: 38° 51' 54" N LONGITUDE: 77° 02' 03" W ELEVATION (FT): GRND: 60 BARO: 60 TIME ZONE: EASTERN (UTC + 5) WBAN: 13743

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE ° F	MEAN DAILY MAXIMUM	46.4	49.3	53.4	66.4	77.9	83.6	92.8	88.8	77.7	65.9	61.8	49.4	67.8	
	HIGHEST DAILY MAXIMUM	71	74	76	85	92	98	103	99	86	79	76	68	103	
	DATE OF OCCURRENCE	23	12	17	08	30	09+	06	17	09+	03	10	05+	JUL 06	
	MEAN DAILY MINIMUM	29.9	32.6	35.5	46.6	56.7	65.7	73.1	70.5	62.3	48.4	44.4	34.5	50.0	
	LOWEST DAILY MINIMUM	16	20	20	41	47	57	63	62	48	39	31	21	16	
	DATE OF OCCURRENCE	06	23	08	24+	01	19+	13	30	23	25+	30+	25	JAN 06	
	AVERAGE DRY BULB	38.2	41.0	44.5	56.5	67.3	74.7	83.0	79.7	70.0	57.2	53.1	42.0	58.9	
	MEAN WET BULB	34.0	36.7	37.4	49.4	58.7	66.6	72.6	69.3	64.4	52.7	47.4	37.0	52.2	
	MEAN DEW POINT	26.4	29.8	27.0	41.4	51.8	61.9	67.9	63.8	60.7	48.0	41.0	28.7	45.7	
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	2	8	22	16	0	0	0	0	48	
	MAXIMUM ≤ 32°	7	1	1	0	0	0	0	0	0	0	0	2	11	
	MINIMUM ≤ 32°	19	15	10	0	0	0	0	0	0	0	2	11	57	
MINIMUM ≤ 0°	0	0	0	0	0	0	0	0	0	0	0	0	0		
H/C	HEATING DEGREE DAYS	824	667	630	251	34	3	0	0	22	240	348	707	3726	
	COOLING DEGREE DAYS	0	0	0	4	111	301	565	462	180	6	0	0	1629	
RH	MEAN (PERCENT)	65	68	54	61	61	67	64	63	74	73	67	62	65	
	HOUR 01 LST	69	74	59	70	71	76	76	74	81	83	74	66	73	
	HOUR 07 LST	77	77	61	72	72	77	74	74	85	82	79	71	75	
	HOUR 13 LST	57	59	46	49	47	53	51	48	63	59	55	53	53	
	HOUR 19 LST	59	63	51	54	53	61	56	58	71	72	64	58	60	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	4	1	1	0	1	1	0	0	0	0	4	2	14	
	THUNDERSTORMS	1	2	2	4	3	3	5	8	4	0	1	0	33	
CLOUDINESS	SUNRISE-SUNSET: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
	MIDNIGHT-MIDNIGHT: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
NUMBER OF DAYS WITH:															
CLEAR															
PARTLY CLOUDY															
CLOUDY															
PR	MEAN STATION PRESS. (IN.)	30.11	30.02	29.97	29.91	29.96	30.01	29.92	29.89	29.93	30.08	30.08	30.06	29.99	
	MEAN SEA-LEVEL PRESS. (IN.)	30.18	30.09	30.03	29.98	30.02	30.07	29.99	29.95	30.00	30.15	30.14	30.13	30.06	
WINDS	RESULTANT SPEED (MPH)	1.6	3.5	5.6	1.6	0.5	2.1	2.0	0.4	1.3	1.6	2.5	2.8	1.4	
	RES. DIR. (TENS OF DEGS.)	31	33	31	33	35	10	22	02	03	25	28	31	31	
	MEAN SPEED (MPH)	9.3	8.7	11.6	9.1	8.8	9.2	8.2	8.8	9.4	7.8	8.7	8.5	9.0	
	PREVAIL. DIR. (TENS OF DEGS.)	18	32	32	18	04	19	20	17	17	19	18	19	18	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	36	30	34	30	37	49	35	30	39	32	34	34	49	
	DIR. (TENS OF DEGS.)	30	31	25	01	26	31	32	02	32	35	16	32	31	
	DATE OF OCCURRENCE	18	12	04	09	22	14	25	29+	16	18+	02	10	JUN 14	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	45	38	45	37	44	60	40	38	55	41	44	44	60	
DIR. (TENS OF DEGS.)	15	31	14	25	26	31	32	01	32	36	16	31	31		
DATE OF OCCURRENCE	03	12	03	14	22	14	25	29	16	18	02	10	JUN 14		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	5.42	2.54	3.87	2.09	1.28	2.26	1.01	5.02	10.27	2.16	1.82	2.49	40.23	
	GREATEST 24-HOUR (IN.)	1.65	0.68	1.26	0.56	0.71	1.32	0.28	2.22	4.09	0.75	1.52	1.30	4.09	
	DATE OF OCCURRENCE	23-24	28	21+	04-05	22-23	14	12	26-27	15-16	09-10	26	13-14	SEP 15-16	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	11	11	10	10	5	8	8	10	14	8	3	7	105	
PRECIPITATION ≥ 0.10	8	5	6	7	3	4	4	7	11	5	2	5	67		
PRECIPITATION ≥ 1.00	2	0	2	0	0	1	0	2	2	0	1	0	10		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	2.2	0.2	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	11.1	
	GREATEST 24-HOUR (IN.)	2.2	0.2	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	8.4	
	DATE OF OCCURRENCE	08	23	09									28+	MAR 09	
	MAXIMUM SNOW DEPTH (IN.)	2	T	8	0	0	0	0	0	0	0	0	0	8	
	DATE OF OCCURRENCE	09	24	10										MAR 10	
NUMBER OF DAYS WITH:															
SNOWFALL ≥ 1.0	1	0	1	0	0	0	0	0	0	0	0	0	2		

NORMALS, MEANS, AND EXTREMES

WASHINGTON DC, VA (DCA)

LATITUDE: 38° 51' 54" N LONGITUDE: 77° 02' 03" W ELEVATION (FT): GRND: 60 BARO: 60 TIME ZONE: EASTERN (UTC + 5) WBAN: 13743

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	42.3	45.9	56.5	66.7	76.2	84.7	88.5	86.9	80.1	69.1	58.3	47.0	66.8
	MEAN DAILY MAXIMUM	54	43.4	46.6	55.3	66.6	75.7	83.9	88.1	86.2	79.7	68.9	57.5	46.8	66.6
	HIGHEST DAILY MAXIMUM	58	79	82	89	95	99	101	104	105	101	94	86	79	105
	YEAR OF OCCURRENCE		1950	1948	1990	1976	1991	1994	1988	1997	1980	1954	1974	1998	AUG 1997
	MEAN OF EXTREME MAXS.	54	64.5	67.2	77.6	85.7	90.3	95.4	97.0	95.6	92.5	83.8	75.3	66.2	82.6
	NORMAL DAILY MINIMUM	30	26.8	29.1	37.7	46.4	56.6	66.5	71.4	70.0	62.5	50.3	41.1	31.7	49.2
	MEAN DAILY MINIMUM	54	28.2	29.9	36.9	46.3	56.2	65.4	70.4	68.8	62.0	50.2	40.3	31.8	48.9
	LOWEST DAILY MINIMUM	58	-5	4	11	24	34	47	54	49	39	29	16	1	-5
	YEAR OF OCCURRENCE		1982	1961	1943	1982	1947	1972	1988	1986	1963	1969	1955	1942	JAN 1982
	MEAN OF EXTREME MINS.	54	12.2	15.1	22.8	33.2	43.7	53.5	60.8	58.5	48.3	36.7	26.7	17.4	35.7
	NORMAL DRY BULB	30	34.6	37.5	47.2	56.5	66.4	75.6	80.0	78.5	71.3	59.7	49.8	39.4	58.0
	MEAN DRY BULB	54	35.7	38.3	46.1	56.5	65.9	74.7	79.3	77.4	70.8	59.6	48.9	39.3	57.7
	MEAN WET BULB	16	32.3	34.6	40.1	49.4	58.8	67.2	71.6	70.1	64.0	53.7	43.9	35.7	51.8
	MEAN DEW POINT	16	24.8	26.8	31.6	41.7	53.1	62.4	67.3	66.0	59.7	48.5	37.5	28.7	45.7
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	0.0	0.0	0.4	1.5	7.4	13.8	10.1	3.9	0.1	0.0	0.0	37.2	
MAXIMUM ≤ 32°	30	5.2	2.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*	2.1	9.8	
MINIMUM ≤ 32°	30	22.3	18.5	8.4	0.9	0.0	0.0	0.0	0.0	0.0	0.4	4.2	15.7	70.4	
MINIMUM ≤ 0°	30	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
H/C	NORMAL HEATING DEG. DAYS	30	942	770	552	264	60	0	0	0	14	195	456	794	4047
	NORMAL COOLING DEG. DAYS	30	0	0	0	9	104	318	465	419	203	31	0	0	1549
RH	NORMAL (PERCENT)	30	62	60	59	58	64	66	67	69	70	67	65	64	64
	HOUR 01 LST	30	66	66	64	66	74	76	77	79	79	76	71	68	72
	HOUR 07 LST	30	69	69	70	69	74	75	76	80	81	79	75	71	74
	HOUR 13 LST	30	55	52	49	48	52	52	53	55	55	53	54	56	53
	HOUR 19 LST	30	59	56	53	51	59	60	61	64	66	64	61	61	60
S	PERCENT POSSIBLE SUNSHINE	50	46	50	55	57	58	64	62	62	61	59	51	46	56
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	51	1.7	1.5	0.9	0.8	0.4	0.2	0.1	0.1	0.3	1.3	1.2	1.7	10.2
	THUNDERSTORMS	51	0.2	0.2	1.1	2.6	4.6	5.8	6.6	5.0	2.4	1.1	0.6	0.0	30.2
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	49	5.4	5.2	5.2	5.1	5.1	4.8	4.8	4.6	4.6	4.3	5.0	5.2	4.9
	MIDNIGHT-MIDNIGHT (OKTAS)	33	5.1	5.0	5.0	4.8	5.0	4.7	4.8	4.5	4.5	4.2	4.7	5.1	4.8
	MEAN NO. DAYS WITH:														
	CLEAR	50	7.2	7.0	7.5	7.1	6.9	7.3	7.4	8.6	9.4	10.7	7.7	7.9	94.7
PARTLY CLOUDY	50	7.4	6.7	8.3	9.1	10.1	11.4	11.8	10.2	8.4	7.9	7.8	6.6	105.7	
CLOUDY	50	16.4	14.5	15.2	13.9	14.0	11.4	11.4	11.7	11.6	11.9	13.8	15.9	161.7	
PR	MEAN STATION PRESSURE (IN)	27	30.03	30.02	29.97	29.92	29.92	29.92	29.94	29.98	30.01	30.04	30.03	30.05	29.99
	MEAN SEA-LEVEL PRES. (IN)	16	30.11	30.09	30.06	29.98	29.99	29.98	30.00	30.03	30.07	30.11	30.13	30.12	30.06
WINDS	MEAN SPEED (MPH)	52	10.2	10.7	11.1	10.7	9.6	9.0	8.5	8.3	8.5	8.8	9.5	9.6	9.5
	PREVAIL. DIR (TENS OF DEGS)	30	33	32	32	18	18	18	18	18	18	18	18	18	18
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	1	36	30	34	30	37	49	35	30	39	32	34	34	49
	DIR. (TENS OF DEGS)		30	31	25	01	26	31	32	02	32	35	16	32	31
	YEAR OF OCCURRENCE		1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	JUN 1999
	MAXIMUM 5-SECOND:														
SPEED (MPH)	1	45	38	45	37	44	60	40	38	55	41	44	44	60	
DIR. (TENS OF DEGS)		15	31	14	25	26	31	32	01	32	36	16	31	31	
YEAR OF OCCURRENCE		1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	JUN 1999	
PRECIPITATION	NORMAL (IN)	30	2.72	2.71	3.17	2.71	3.66	3.38	3.80	3.91	3.31	3.02	3.12	3.12	38.63
	MAXIMUM MONTHLY (IN)	58	7.11	5.71	8.45	6.88	10.69	11.53	11.06	14.31	12.36	8.65	6.70	6.54	14.31
	YEAR OF OCCURRENCE		1978	1961	1994	1983	1953	1972	1945	1955	1975	1995	1963	1969	AUG 1955
	MINIMUM MONTHLY (IN)	58	0.31	0.42	0.64	0.03	0.75	0.95	0.93	0.55	0.20	T	0.29	0.22	T
	YEAR OF OCCURRENCE		1955	1978	1945	1985	1986	1988	1966	1962	1967	1963	1981	1955	OCT 1963
	MAXIMUM IN 24 HOURS (IN)	56	2.13	2.13	3.43	3.08	4.32	7.19	4.69	6.39	5.31	4.98	4.03	2.86	7.19
	YEAR OF OCCURRENCE		1976	1998	1958	1970	1953	1972	1970	1955	1975	1955	1993	1977	JUN 1972
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	9.8	9.5	10.1	9.6	10.8	9.7	9.6	8.9	7.2	7.2	8.5	8.9	109.8	
PRECIPITATION ≥ 1.00	30	0.4	0.5	0.6	0.4	0.9	0.8	1.0	1.3	1.0	1.0	0.8	0.7	9.4	
SNOWFALL	NORMAL (IN)	30	6.2	6.3	1.6	0.*	0.0	0.0	0.0	0.0	0.*	1.0	3.1	18.2	
	MAXIMUM MONTHLY (IN)	56	23.8	30.6	17.1	0.6	T	T	T	T	0.0	0.3	11.5	16.2	30.6
	YEAR OF OCCURRENCE		1996	1979	1960	1972	1993	1998	1990	1996		1979	1987	1962	FEB 1979
	MAXIMUM IN 24 HOURS (IN)	56	13.8	18.7	8.4	0.6	T	T	T	T	0.0	0.3	11.5	11.4	18.7
	YEAR OF OCCURRENCE		1966	1979	1999	1972	1993	1998	1990	1992		1979	1987	1957	FEB 1979
	MAXIMUM SNOW DEPTH (IN)	53	18	22	8	1	0	0	0	0	0	0	12	8	22
	YEAR OF OCCURRENCE		1987	1979	1960	1972							1987	1973	FEB 1979
NORMAL NO. DAYS WITH:															
SNOWFALL ≥ 1.0	30	1.6	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.7	4.5	

PRECIPITATION (inches) 1999 WASHINGTON, D.C. VA (DCA)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	1.24	2.69	2.82	5.35	2.79	2.80	8.12	1.09	1.57	2.05	5.77	3.33	39.62
1971	1.86	5.44	1.93	2.10	6.80	1.72	4.97	7.18	2.48	6.12	3.76	1.66	46.02
1972	2.45	5.27	2.27	3.99	4.78	11.53	3.43	2.82	1.27	3.56	6.05	4.55	51.97
1973	2.26	2.68	2.97	4.19	3.39	2.11	2.68	4.41	1.58	1.71	0.97	6.03	34.98
1974	2.66	0.95	4.21	2.26	4.37	3.40	1.15	5.77	4.39	1.13	1.24	4.43	35.96
1975	3.09	1.56	5.33	2.13	4.71	2.15	7.16	3.54	12.36	2.38	2.05	4.04	50.50
1976	3.56	1.55	2.51	1.17	3.57	1.21	4.54	2.13	7.23	7.76	0.85	1.99	38.07
1977	1.50	0.66	2.17	2.66	1.73	3.28	4.06	4.74	0.32	5.35	4.81	4.86	36.14
1978	7.11	0.42	4.48	1.38	5.13	2.43	4.28	5.85	1.01	1.16	2.31	4.00	39.56
1979	6.64	5.62	2.45	1.88	3.55	2.99	3.43	5.41	6.64	5.54	2.33	0.85	47.33
1980	2.85	1.16	5.04	3.28	2.64	1.68	3.86	1.11	1.90	2.59	2.56	0.65	29.32
1981	0.38	2.82	1.49	2.63	3.42	2.55	5.69	3.02	1.94	3.64	0.29	2.80	30.67
1982	2.27	3.33	2.64	3.19	5.11	5.41	2.98	2.68	1.71	1.75	2.96	1.74	35.77
1983	1.69	3.09	4.84	6.88	4.62	7.09	1.78	3.11	2.90	4.87	5.09	5.91	51.87
1984	1.71	3.43	6.14	3.71	3.80	2.01	4.09	2.30	2.51	3.18	3.66	1.19	37.73
1985	2.11	3.07	1.88	0.03	5.79	2.05	2.91	2.35	6.67	3.85	4.47	0.68	35.86
1986	2.38	3.49	0.74	1.98	0.75	1.29	3.79	5.33	0.60	2.01	5.23	4.98	32.57
1987	4.90	2.11	1.54	2.28	2.54	3.90	2.59	2.07	5.11	2.53	4.49	2.57	36.63
1988	3.14	2.52	2.27	2.00	4.50	0.95	3.74	2.39	1.85	1.75	5.33	1.30	31.74
1989	2.49	2.80	4.30	3.50	7.77	6.02	5.66	1.15	6.68	5.48	2.37	2.10	50.32
1990	2.95	1.30	2.57	4.09	5.20	3.14	3.78	6.74	0.87	3.30	2.17	4.73	40.84
1991	2.90	0.83	4.42	1.39	1.57	1.27	3.76	2.03	3.50	2.03	0.85	5.07	29.62
1992	2.78	2.23	3.48	2.55	3.41	2.35	5.34	2.48	3.49	2.03	3.38	2.86	36.38
1993	2.90	2.27	6.82	3.62	3.40	1.73	1.36	3.87	3.68	2.62	4.76	4.38	41.41
1994	4.28	4.20	8.45	1.58	1.56	1.59	3.61	4.35	2.84	1.19	1.57	2.35	37.57
1995	3.22	1.71	2.14	1.89	4.19	2.42	4.03	0.88	3.73	8.65	4.77	2.17	39.80
1996	5.01	1.99	3.60	3.17	4.96	3.14	5.60	2.63	7.79	4.04	3.58	5.51	51.02
1997	2.55	2.43	4.15	2.41	3.04	2.94	1.14	3.51	1.59	3.72	4.60	1.74	33.82
1998	5.43	5.23	5.40	3.96	4.05	4.42	1.79	0.59	1.83	0.59	0.91	1.74	35.94
1999	5.42	2.54	3.87	2.09	1.28	2.26	1.01	5.02	10.27	2.16	1.82	2.49	40.23
POR= 58 YRS	2.90	2.58	3.47	2.78	3.81	3.24	3.79	4.02	3.44	2.98	2.98	3.00	38.99

WBAN : 13743

AVERAGE TEMPERATURE (°F) 1999 WASHINGTON, D.C. VA (DCA)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	30.0	37.1	41.9	55.3	68.3	75.2	79.2	79.0	75.0	62.5	49.3	39.7	57.7
1971	31.3	39.1	43.2	55.0	63.7	75.9	78.3	76.7	73.0	64.7	48.2	45.5	57.9
1972	38.5	36.5	45.6	54.1	64.6	70.2	77.5	75.9	71.0	56.0	46.8	43.6	56.7
1973	37.6	37.0	51.1	56.0	62.8	77.1	79.2	79.9	74.3	63.3	51.6	41.9	59.3
1974	42.9	39.2	49.2	58.3	65.1	71.5	79.0	78.4	70.2	57.3	50.9	43.1	58.8
1975	40.9	40.6	45.2	53.6	69.7	76.4	79.3	80.1	68.5	63.2	54.4	40.5	59.4
1976	33.9	46.9	51.3	59.9	65.0	77.6	78.4	76.7	70.4	55.4	43.0	35.5	57.8
1977	25.4	38.8	52.7	60.1	69.4	74.3	80.9	78.8	73.9	59.0	51.8	38.1	58.6
1978	32.5	31.4	44.4	57.7	65.8	76.7	78.8	81.3	73.6	59.4	52.2	43.1	58.1
1979	35.1	28.4	51.5	56.0	67.7	72.4	78.6	78.5	71.6	58.6	54.4	43.7	58.0
1980	37.2	36.1	46.2	60.1	69.5	74.8	82.3	82.8	77.1	59.9	48.6	39.8	59.5
1981	33.0	43.7	47.6	62.1	66.2	78.7	80.2	77.0	71.0	58.3	51.4	38.5	59.0
1982	28.1	38.3	45.7	54.0	69.0	72.8	80.3	75.4	70.6	60.2	51.8	45.5	57.6
1983	38.1	38.7	48.8	53.3	64.9	75.0	81.2	81.0	72.6	60.5	50.3	36.0	58.4
1984	32.2	43.8	41.8	54.9	64.9	76.9	76.5	77.8	68.3	65.2	46.0	45.6	57.8
1985	30.8	37.8	47.7	61.6	68.1	72.3	79.0	76.7	71.9	61.2	54.3	36.4	58.2
1986	35.4	35.3	47.4	56.2	68.1	76.6	81.1	74.6	70.9	61.1	46.5	39.8	57.8
1987	34.7	37.0	47.7	54.8	67.2	76.4	82.6	78.7	72.1	54.4	49.9	41.5	58.1
1988	31.0	37.3	47.2	54.4	65.8	74.4	81.9	80.7	68.9	54.4	49.9	38.7	57.1
1989	39.9	37.8	46.1	55.4	64.1	76.8	78.3	77.1	71.4	60.5	48.0	27.9	56.9
1990	43.6	45.2	50.2	56.8	64.3	75.0	79.4	76.5	69.6	62.8	52.0	44.5	60.0
1991	38.6	43.0	48.8	58.2	73.0	76.8	81.4	80.0	71.0	60.4	48.8	42.3	60.2
1992	38.2	41.2	45.0	55.4	62.3	71.7	79.5	74.0	69.2	56.0	48.8	39.6	56.7
1993	39.7	34.3	42.2	54.8	67.4	75.3	83.1	79.6	71.0	58.1	48.8	38.1	57.7
1994	28.8	36.3	45.4	62.0	63.1	79.4	81.8	75.5	70.2	59.1	53.4	44.2	58.3
1995	39.6	34.4	49.2	56.3	65.8	74.6	81.5	81.3	71.0	62.3	43.1	35.6	57.9
1996	32.9	37.3	42.9	56.8	63.9	77.2	77.6	76.5	70.6	59.4	44.1	43.0	56.9
1997	37.0	44.7	48.7	54.0	62.9	73.1	80.4	77.6	70.5	59.6	46.2	41.0	58.0
1998	43.0	43.4	46.9	57.4	67.5	73.0	78.9	79.4	75.4	60.1	50.3	44.4	60.0
1999	38.2	41.0	44.5	56.5	67.3	74.7	83.0	79.7	70.0	57.2	53.1	42.0	58.9
POR= 58 YRS	35.7	38.2	46.2	56.4	66.0	74.7	79.2	77.3	70.7	59.5	48.9	39.1	57.7

HEATING DEGREE DAYS (base 65°F) 1999 WASHINGTON, D.C. VA (DCA)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0	0	17	131	464	777	1034	722	670	294	85	2	4196
1971-72	0	0	12	61	518	597	815	817	599	326	56	21	3822
1972-73	0	0	8	278	543	654	843	777	423	286	109	0	3921
1973-74	0	0	4	103	399	708	677	716	490	228	85	4	3414
1974-75	0	0	26	250	446	674	740	677	608	345	24	0	3790
1975-76	0	0	20	102	328	752	956	524	415	236	80	0	3413
1976-77	0	0	11	306	652	907	1221	729	389	188	32	3	4438
1977-78	0	0	1	196	406	829	1001	933	633	219	86	0	4304
1978-79	0	0	9	192	378	671	918	1019	425	273	30	0	3915
1979-80	0	0	5	231	313	654	857	830	573	149	28	0	3640
1980-81	0	0	4	189	487	774	984	592	536	133	75	0	3774
1981-82	0	0	19	219	399	818	1135	743	592	328	19	3	4275
1982-83	0	2	9	193	402	597	827	730	497	365	77	0	3699
1983-84	0	0	32	177	433	890	1009	610	710	302	95	4	4262
1984-85	0	0	54	59	561	594	1053	757	533	166	30	6	3813
1985-86	0	0	14	147	320	879	913	824	542	267	61	3	3970
1986-87	0	13	18	180	548	775	931	777	527	304	68	0	4141
1987-88	0	0	4	325	448	719	1047	796	544	317	69	25	4294
1988-89	0	0	18	330	442	807	771	755	596	297	112	0	4128
1989-90	0	0	35	167	507	1144	656	550	481	285	64	4	3893
1990-91	0	0	38	153	381	630	810	608	502	237	22	0	3381
1991-92	0	0	27	175	486	696	824	686	614	295	127	5	3935
1992-93	0	0	43	282	477	781	779	855	700	307	32	3	4259
1993-94	0	0	33	217	487	825	1115	796	599	135	132	0	4339
1994-95	0	0	5	190	348	639	782	853	485	274	59	0	3635
1995-96	0	0	30	144	651	901	993	798	675	268	131	0	4591
1996-97	0	0	9	182	617	677	861	564	499	322	110	30	3871
1997-98	0	0	14	232	557	737	675	596	581	229	50	11	3682
1998-99	0	0	4	153	433	638	824	667	630	251	34	3	3637
1999-	0	0	22	240	348	707							

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COOLING DEGREE DAYS (base 65°F) 1999 WASHINGTON, D.C. VA (DCA)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0	0	0	10	166	311	449	442	324	60	0	0	1762
1971	0	0	0	0	52	337	422	372	258	60	22	0	1523
1972	0	0	3	5	50	184	393	346	195	8	2	0	1186
1973	0	0	2	21	47	371	448	469	288	57	3	0	1706
1974	0	0	4	33	96	205	441	422	192	17	27	0	1437
1975	1	0	0	12	177	344	448	475	132	50	15	0	1654
1976	0	4	1	92	86	383	424	370	179	15	0	0	1554
1977	0	0	10	49	177	289	496	434	274	18	15	0	1762
1978	0	0	0	10	117	358	434	514	274	25	0	0	1732
1979	0	0	14	9	120	231	431	425	208	39	2	0	1479
1980	0	0	0	9	174	301	546	563	374	38	1	0	2006
1981	0	0	6	49	118	417	478	380	204	18	0	0	1670
1982	0	0	0	6	155	244	479	330	185	51	13	1	1464
1983	0	0	0	21	81	310	510	504	269	42	0	0	1737
1984	0	0	0	4	99	368	365	404	157	73	0	0	1470
1985	0	0	6	70	135	232	444	373	228	37	6	0	1531
1986	0	0	5	10	162	358	503	318	202	70	1	0	1629
1987	0	0	0	8	146	347	554	431	222	0	0	0	1708
1988	0	0	1	4	101	313	534	490	144	11	0	0	1598
1989	0	0	16	14	91	362	417	381	233	33	1	0	1548
1990	0	0	30	46	50	309	451	364	183	88	0	0	1521
1991	0	0	5	38	278	362	517	472	214	41	5	0	1932
1992	0	0	0	16	53	214	457	285	175	8	0	0	1208
1993	0	0	0	5	114	319	569	460	218	9	8	0	1702
1994	0	0	1	53	82	439	530	333	166	11	6	0	1621
1995	0	0	0	20	91	297	515	511	216	67	1	0	1718
1996	0	0	0	29	105	373	397	364	181	14	0	0	1463
1997	0	0	1	0	52	282	484	399	184	72	0	0	1474
1998	0	0	27	11	132	257	438	456	322	9	0	5	1657
1999	0	0	0	4	111	301	565	462	180	6	0	0	1629

SNOWFALL (inches) 1999 WASHINGTON, D.C. VA (DCA)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0.0	0.0	0.0	0.0	T	5.2	4.8	0.3	1.4	T	0.0	0.0	11.7
1971-72	0.0	0.0	0.0	0.0	1.4	0.1	0.3	14.4	T	0.6	0.0	0.0	16.8
1972-73	0.0	0.0	0.0	T	T	0.0	T	0.1	T	T	0.0	0.0	0.1
1973-74	0.0	0.0	0.0	0.0	0.0	11.0	1.5	4.2	T	T	0.0	0.0	16.7
1974-75	0.0	0.0	0.0	T	T	0.1	6.6	5.8	0.3	T	0.0	0.0	12.8
1975-76	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.9	0.8	0.0	0.0	0.0	2.2
1976-77	0.0	0.0	0.0	0.0	0.8	0.6	9.7	0.0	0.0	T	0.0	0.0	11.1
1977-78	0.0	0.0	0.0	0.0	0.1	0.2	10.3	3.8	8.3	0.0	0.0	0.0	22.7
1978-79	0.0	0.0	0.0	0.0	3.1	T	4.0	30.6	T	0.0	0.0	0.0	37.7
1979-80	0.0	0.0	0.0	0.3	0.0	T	8.6	5.1	6.1	0.0	0.0	0.0	20.1
1980-81	0.0	0.0	0.0	0.0	T	0.3	4.2	T	T	0.0	0.0	0.0	4.5
1981-82	0.0	0.0	0.0	0.0	T	1.7	15.3	5.3	0.2	T	0.0	0.0	22.5
1982-83	0.0	0.0	0.0	0.0	0.0	6.6	T	21.0	0.0	T	0.0	0.0	27.6
1983-84	0.0	0.0	0.0	0.0	0.3	T	6.5	T	1.8	T	0.0	0.0	8.6
1984-85	0.0	0.0	0.0	0.0	T	0.3	10.0	T	T	T	0.0	0.0	10.3
1985-86	0.0	0.0	0.0	0.0	0.0	0.7	1.8	12.9	T	T	0.0	0.0	15.4
1986-87	0.0	0.0	0.0	0.0	0.0	T	20.8	10.3	T	T	0.0	0.0	31.1
1987-88	0.0	0.0	0.0	0.0	11.5	T	13.1	T	0.4	T	0.0	0.0	25.0
1988-89	0.0	0.0	0.0	0.0	0.0	1.2	2.9	1.2	0.4	0.0	0.0	0.0	5.7
1989-90	0.0	0.0	0.0	0.0	3.5	9.0	0.2	T	2.4	0.2	0.0	0.0	15.3
1990-91	T	0.0	0.0	0.0	0.0	3.0	4.8	0.3	T	0.0	T	0.0	8.1
1991-92	0.0	0.0	0.0	0.0	T	0.0	4.0	2.6	T	0.0	0.0	0.0	6.6
1992-93	0.0	T	0.0	0.0	T	1.0	T	4.1	6.6	0.0	T	0.0	11.7
1993-94	0.0	0.0	0.0	0.0	T	2.6	3.5	3.1	4.0	0.0	0.0	0.0	13.2
1994-95	0.0	0.0	0.0	0.0	T	0.0	3.9	5.8	0.4	0.0	0.0	0.0	10.1
1995-96	0.0	0.0	0.0	0.0	0.5	1.3	23.8	15.2	5.2	T	0.0	0.0	46.0
1996-97	0.0	T	0.0	0.0	0.2	0.2	2.3	4.0	T	0.0	0.0	0.0	6.7
1997-98	0.0	0.0	0.0	0.0	T	0.1	T	T	T	0.0	T	T	0.1
1998-99	0.0	0.0	0.0	0.0	0.0	0.5	2.2	0.2	8.7	0.0	0.0	0.0	11.6
1999-	0.0	0.0	0.0	0.0	0.0	T							
POR= 55 YRS	T	T	0.0	0.0	0.8	2.8	5.2	5.2	2.2	0.0	T	0.0	16.2

WBAN : 13743

REFERENCE NOTES:

<p>PAGE 1: THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).</p> <p>PAGE 2 AND 3: H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY W/O INDICATES WEATHER AND OBSTRUCTIONS S INDICATES SUNSHINE. PR INDICATES PRESSURE. CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).</p> <p>GENERAL: T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. NORMALS ARE 30-YEAR AVERAGES (1961 - 1990). ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED. 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05. CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET AND ON SATELLITE DATA FOR CLOUDS ABOVE 12,000 FEET. THE NUMBER OF DAYS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY CONDITIONS FOR ASOS STATIONS IS THE SUM OF THE CEILOMETER AND SATELLITE DATA FOR THE SUNRISE TO SUNSET PERIOD.</p>	<p>GENERAL CONTINUED: CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. WHEN AT LEAST ONE OF THE ELEMENTS (CEILOMETER OR SATELLITE) IS MISSING, THE DAILY CLOUDINESS IS NOT COMPUTED. WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH. RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION. AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65° F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY.</p> <p>ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.</p>
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1999
WASHINGTON, D.C.
NATIONAL AIRPORT (DCA)

Washington lies at the western edge of the mid Atlantic Coastal Plain, about 50 miles east of the Blue Ridge Mountains and 35 miles west of Chesapeake Bay, adjacent to the Potomac and Anacostia Rivers. Elevations range from a few feet above sea level to about 400 feet in parts of the northwest section of the city.

Observations have been kept continuously since November 1870. Since June 1941 the official observations have been taken at Washington National Airport.

National Airport is located at the center of the urban heat island. As a result, low temperatures are the highest for the area. Differences between the airport and suburban locations are often 10 to 15 degrees. There is less variation in the high temperatures.

Summers are warm and humid and winters are cold, but not severe. Periods of pleasant weather often occur in the spring and fall. The summertime temperature is in the upper 80s and the winter is in the upper 20s. Precipitation is rather uniformly distributed throughout the year.

Thunderstorms can occur at any time but are most frequent during the late spring and summer. The storms are most often accompanied by downpours and gusty winds, but are not usually severe.

Tornadoes, which infrequently occur, have resulted in significant damage. Severe hailstorms have occurred in the spring.

Tropical storms can bring heavy rain, high winds and flooding, but extensive damage from wind and tidal flooding is rare. Wind gusts of nearly 100 mph and rainfall over 7 inches have occurred during the passage of tropical storms and hurricanes.

Major flooding of the Potomac River can result from heavy rains over the basin, occasionally augmented by snowmelt, and above normal tides associated with hurricanes or severe storms along the coast. Flooding may also occur after a cold winter when the Potomac may be blocked with ice.

Although a snowfall of 10 inches or more in 24 hours is unusual, several notable falls of more than 25 inches have occurred. Normal snowfall during the winter season is 18 inches.

The average date of the last freezing temperature in the spring is April 1 and the average date for the first freezing temperature in the fall is November 10.

STATION LOCATION

WASHINGTON, D.C.
WASHINGTON NATIONAL AIRPORT

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	NORTH	WEST	ELEVATION ABOVE												A U T O M A T I C A L I N S T R U M E N T S * *	* Type M = AMOS T = AUTOB S = ASOS W = AWOS	REMARKS
						SEA LEVEL	GROUND													
							W I N D I Z O N	E M E R S O N	R O O F T O P	S U R F A C E	T E L E P S Y C H O M E T E R	R A I N G A N G E	W E I G H T I N G A N G E	8 I N C H R A I N G A N G E	H I G H T O F T O P	H I G H T O F T O P	H I G H T O F T O P			
<p>CITY - - NOTE: For period November 1, 1870 through July 27, 1931, refer to previous editions.</p>																				
Washington-Hoover AP Arlington County, VA	7/27/31	6/16/41	2 mi. NW	38°52'	77°03'	12	28	5	5	NA	NA	NA	NA	NA	NA	NA	NA	m - site 1450' MNW of office. n - Installed 8/5/42. n - Installed 7/23/43. p - Effective 1/1/45. p - See NOTE at left. r - See NOTE at left. r - See NOTE at left. t - See NOTE at left. t - See NOTE at left. v - Telepsychrometer (64') 8/1/45-11/23/45 and 4/1/46-7/30/46. w - Telepsychrometer (6') 8/12/46-11/24/46; 5/1/47- 8/28/47; & 9/5/47-12/1/47. y - Telepsychrometer (6') 12/1/47-3/21/48 and 8/29/52-9/30/60.		
Terminal Building Washington National AP	6/16/41	8/30/68	1.25 mi. SSE	38°52'	77°03'	14	89 Q93 A120 B113 E115 G111 H20 J111 K20	mr6 t72 K77	u72 F K77	NA p81	NA C3	NA Z C4 I3	3 N3 C3	NA v w/m Y/D L4	NA	NA	NA	z - At 6 feet: 6/16/41-8/1/45 9/13/46-11/24/46 5/1/47-5/15/47 5/16/47-8/28/47 9/5/47-3/21/48 2/7/52-9/30/60 s - At 64 feet: 8/1/45-11/23/45 4/1/46-7/30/46 10/4/51-2/7/52 t - At 72 feet: 11/23/45-4/1/46 11/24/46-5/1/47 5/15/47-5/16/47 8/28/47-9/5/47 3/21/48-10/4/51 Psychrometer u - At 72 feet: 6/16/41-8/1/45 11/23/45-4/1/46 7/30/46-9/13/46 11/24/46-5/1/47 5/15/47-5/16/47 8/28/47-9/5/47 3/21/48-2/16/50 Psychrometer not used at other times & removed 2/16/50		
<p>NOTE: Due to various construction projects at the airport, instrument elevations were as follows:</p>																				
Main Terminal Building Washington National AP	8/30/68	02/01/98	750 ft. NE	38°51'	77°02'	10	20 Q20	N77	N77	N81	N3 P85	N3 P85	N3 P85	4 Q4	NA	NA	NA	N - Nov moved 8/30/68. P - Relocated 3/19/71. O - Moved 800' SSE 8/1/75. Station type changed from WSO to WSCMO 11/29/79.		
Ronald Reagan Nat'l AP	02/01/98	Present	NA	38°52'	77°02'	60									S			ASOS Commissioned 02/01/98		

SUBSCRIPTION:
Price and ordering information available through: National Climatic Data Center, Federal Building, Asheville, North Carolina 28801.
INQUIRIES/COMMENTS CALL: (828) 271-4800

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