

1998

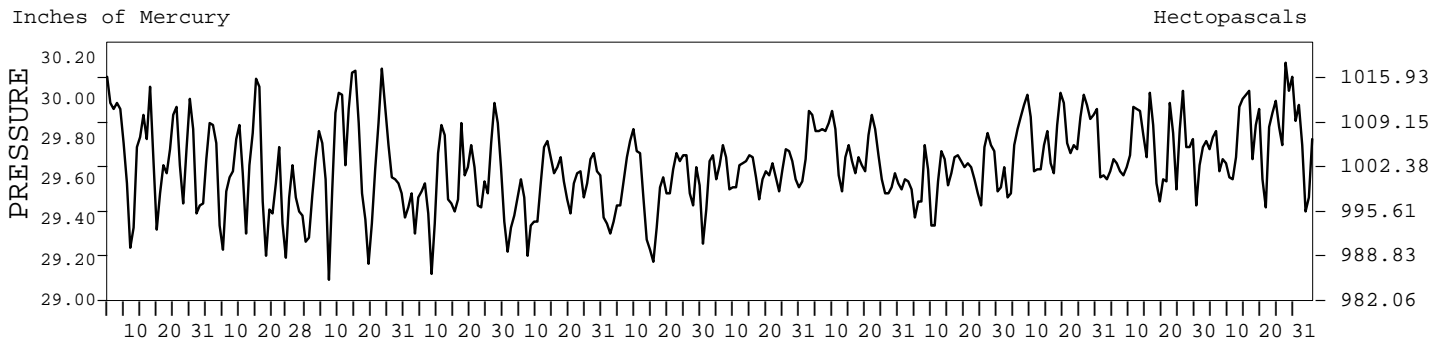
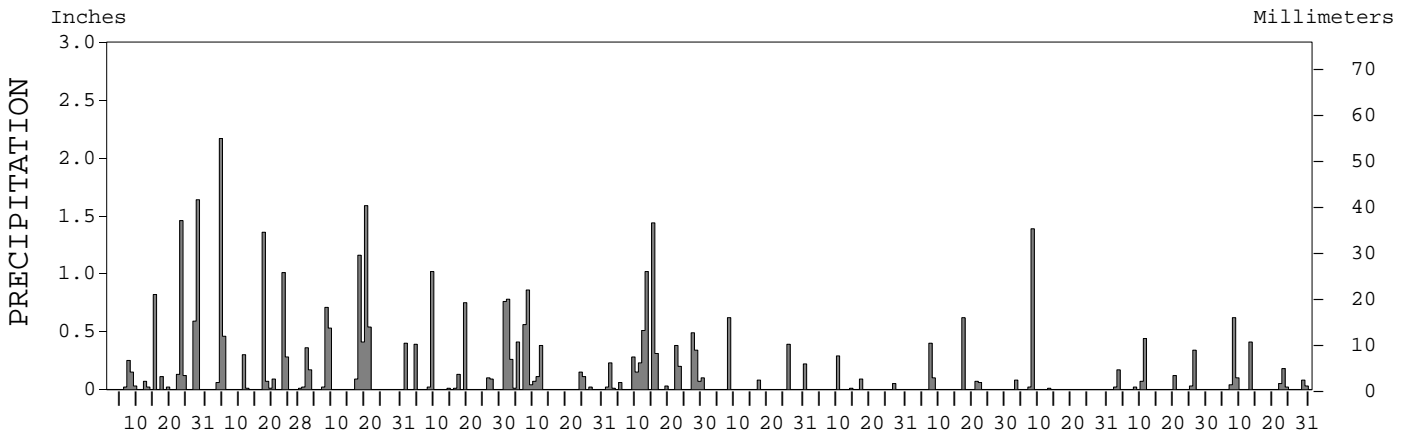
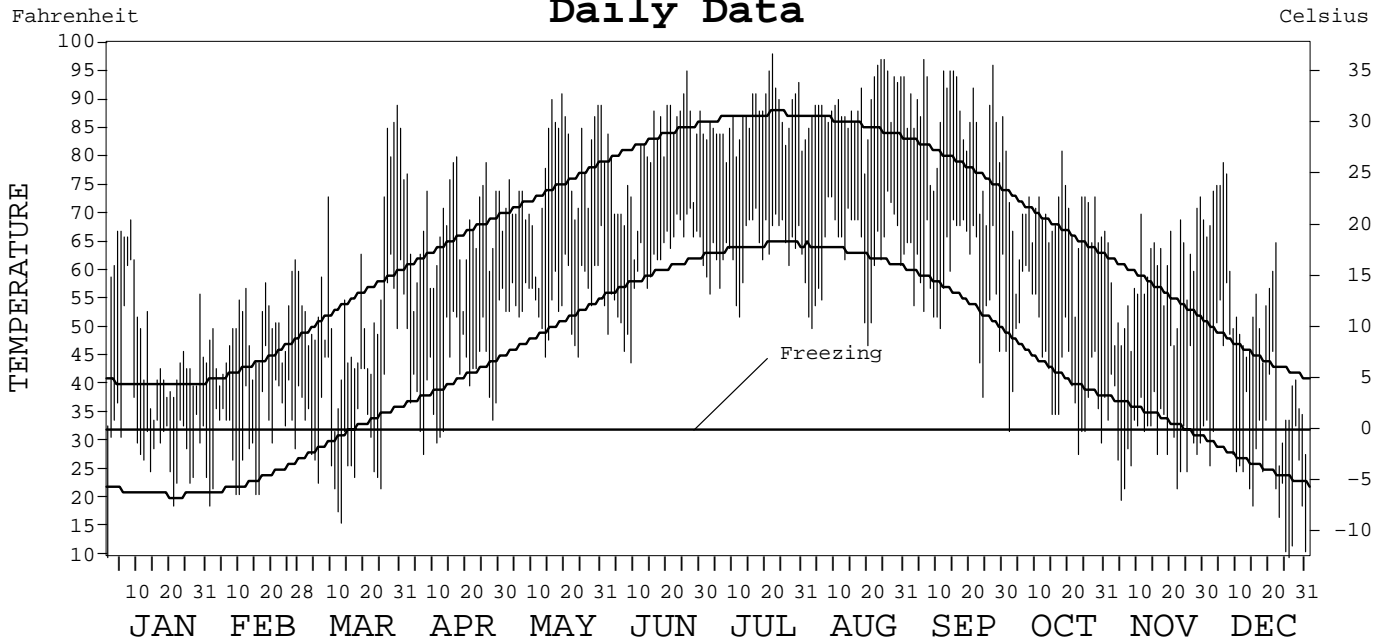
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



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WASHINGTON, D.C .
DULLES INTERNATIONAL AIRPORT (IAD)

Daily Data



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Thomas R. Karl

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
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METEOROLOGICAL DATA FOR 1998

WASHINGTON DULLES AP, VA (IAD)

LATITUDE: 38° 56' 05" N LONGITUDE: 77° 26' 51" W ELEVATION (FT): GRND: 290 BARO: 310 TIME ZONE: EASTERN (UTC+ 5) WBAN: 93738

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	48.3	49.9	55.6	67.4	76.7	80.5	86.9	89.2	85.9	68.9	59.1	51.8	68.3	
	HIGHEST DAILY MAXIMUM	69	62	89	80	91	95	98	97	97	81	73	79	98	
	DATE OF OCCURRENCE	08	27	30	17	19	26	22	25+	06	18+	29	06	JUL 22	
	MEAN DAILY MINIMUM	31.9	32.0	35.3	42.3	55.2	60.2	63.7	63.2	59.4	43.5	32.0	30.0	45.7	
	LOWEST DAILY MINIMUM	10	19	16	28	45	44	52	47	38	28	20	10	10	
	DATE OF OCCURRENCE	01	01	13	07	24+	09	12	20	24	23	05	26	DEC 26	
	AVERAGE DRY BULB	40.1	41.0	45.5	54.9	66.0	70.4	75.3	76.2	72.7	56.2	45.6	40.9	57.1	
	MEAN WET BULB	37.5	37.7	40.7	49.4	60.6	65.5	68.7	68.0	64.1	50.8	41.0			
	MEAN DEW POINT	32.7	32.3	33.9	43.1	57.0	62.2	64.8	63.2	58.3	44.5	33.6			
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	2	2	10	12	11	0	0	0	0	37
	MAXIMUM ≤ 32°	0	0	1	0	0	0	0	0	0	0	0	3	4	4
	MINIMUM ≤ 32°	19	12	15	5	0	0	0	0	0	5	15	19	19	90
	MINIMUM ≤ 0°	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/C	HEATING DEGREE DAYS	765	665	630	298	60	33	0	1	25	269	577	743	4066	
	COOLING DEGREE DAYS	1	0	35	3	97	204	326	358	259	3	0	3	1289	
RH	MEAN (PERCENT)	76	73	67	67	76	77	71	67	64	68	64	70	70	
	HOUR 01 LST	84	80	76	80	88	91	87	87	79	81	76	77	82	
	HOUR 07 LST	84	84	83	83	86	85	83	85	86	86	81	81	84	
	HOUR 13 LST	66	60	54	52	60	60	52	46	43	49	45	54	53	
	HOUR 19 LST	75	70	60	58	69	73	61	55	55	63	58	68	64	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	0	2	3	1	4	4	0	0	1	1	2	2	20	
	THUNDERSTORMS	0	0	2	4	5	12	2	1	3	0	0	0	29	
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.)	29.73	29.60	29.68	29.59	29.54	29.54	29.64	29.72	29.61	29.80	29.75	29.82	29.67	
	MEAN SEA-LEVEL PRESS. (IN.)	30.08	29.95	30.03	29.93		29.88	29.98	30.06	29.95	30.15	30.10			
WINDS	RESULTANT SPEED (MPH)	1.7	3.9	2.3	1.5	1.4	2.1	0.9	1.1	1.3	2.9	2.4			
	RES. DIR. (TENS OF DEGS.)	29	35	25	31	31	26	30	34	20	32	28			
	MEAN SPEED (MPH)	7.2	7.5	8.6	7.2	5.5	5.9	5.4	5.3	6.2	6.1	6.0	6.1	6.4	
	PREVAIL. DIR. (TENS OF DEGS.)	20	02	20	20	32	20	16	32	20	33	31	20	20	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	30	33	30	28	23	32	24	22	25	28	24	32	33	
	DIR. (TENS OF DEGS.)	24	32	09	36	32	30	35	20	33	31	32	30	32	
	DATE OF OCCURRENCE	09	25	20	26+	21	13	21	10	08	01	27+	30	FEB 25	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	40	47	36	36	29	44	30	28	31	33	31	44	47	
DIR. (TENS OF DEGS.)	24	09	23	18	32	26	02	36	33	31	30	30	09		
DATE OF OCCURRENCE	09	17	31+	01	21	15	21	31	09	01	26	30	FEB 17		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	5.43	5.83	5.60	2.92	4.52	5.87	1.31	0.44	1.25	1.50	1.21	1.53	37.41	
	GREATEST 24-HOUR (IN.)	2.22	2.17	2.06	1.02	0.86	1.44	0.62	0.29	0.50	1.39	0.51	0.66	2.22	
	DATE OF OCCURRENCE	27-28	04	20-21	09	08	15	08-09	10	07-08	08	10-11	08-09	JAN 27-28	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	14	12	11	10	14	18	4	4	5	4	8	9	113	
PRECIPITATION ≥ 0.10	9	6	8	6	10	13	3	1	3	1	4	4	68		
PRECIPITATION ≥ 1.00	2	3	2	1	0	2	0	0	0	1	0	0	11		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	0.5	0.7	T	0.0	T	T	0.0	0.0	0.0	0.0	0.0	0.6	1.8	
	GREATEST 24-HOUR (IN.)	0.5	0.5	T	0.0	T	T	0.0	0.0	0.0	0.0	0.0	0.6	0.6	
	DATE OF OCCURRENCE	24	04	21+		05	15						23	DEC 23	
	MAXIMUM SNOW DEPTH (IN.)														
	DATE OF OCCURRENCE														
NUMBER OF DAYS WITH:															
SNOWFALL ≥ 1.0	0	0	0	0	0	0	0	0	0	0	0	0	0		

NORMALS, MEANS, AND EXTREMES

WASHINGTON DULLES AP, VA (IAD)

LATITUDE: 38° 56' 05" N LONGITUDE: 77° 26' 51" W ELEVATION (FT): GRND: 290 BARO: 310 TIME ZONE: EASTERN (UTC+ 5) WBAN: 93738

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	40.1	43.8	54.6	65.1	74.3	82.8	87.0	85.5	78.9	67.7	56.7	45.0	65.1
	MEAN DAILY MAXIMUM	36	40.8	44.5	54.5	65.6	74.5	82.8	87.3	85.8	78.8	67.7	56.5	45.4	65.3
	HIGHEST DAILY MAXIMUM	36	75	79	89	92	97	100	104	104	99	90	84	79	104
	YEAR OF OCCURRENCE		1975	1985	1998	1990	1969	1964	1988	1983	1983	1986	1982	1998	JUL 1988
	MEAN OF EXTREME MAXS.	36	62.7	65.4	77.2	84.8	88.6	93.4	96.2	95.1	92.1	83.2	74.8	66.0	81.6
	NORMAL DAILY MINIMUM	30	21.0	23.3	31.8	40.3	50.0	59.2	64.1	62.8	55.4	42.4	34.2	25.8	42.5
	MEAN DAILY MINIMUM	36	22.0	23.9	32.0	40.6	50.2	59.3	64.6	62.9	55.5	42.4	34.0	26.3	42.8
	LOWEST DAILY MINIMUM	36	-18	-14	-1	17	28	36	41	38	30	15	9	-4	-18
	YEAR OF OCCURRENCE		1984	1979	1993	1969	1970	1977	1988	1982	1974	1969	1989	1989	JAN 1984
	MEAN OF EXTREME MINS.	36	1.7	6.0	15.0	24.9	34.6	44.5	51.4	49.1	38.6	26.7	18.2	9.6	26.7
	NORMAL DRY BULB	30	30.6	33.6	43.2	52.7	62.2	71.0	75.6	74.2	67.1	55.1	45.4	35.4	53.8
	MEAN DRY BULB	36	31.3	34.1	43.3	53.1	62.3	71.1	76.0	74.4	67.2	55.0	45.2	35.8	54.1
	MEAN WET BULB	15	29.8	32.0	38.5	47.7	57.0	65.4	69.7	68.1	61.6	50.6	40.9	33.1	49.5
	MEAN DEW POINT	15	23.2	24.9	30.8	40.4	52.0	61.2	66.3	64.6	57.7	45.9	35.0	26.8	44.1
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	0.0	0.0	0.2	0.8	5.4	11.1	7.9	3.0	0.1	0.0	0.0	28.5	
MAXIMUM ≤ 32°	30	7.3	4.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.3	15.2	
MINIMUM ≤ 32°	30	26.4	22.6	17.3	5.8	0.5	0.0	0.0	0.0	0.1	5.2	14.4	23.6	115.9	
MINIMUM ≤ 0°	30	1.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.0	
H/C	NORMAL HEATING DEG. DAYS	30	1066	879	676	369	140	7	0	0	44	319	588	918	5006
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	53	187	329	285	107	12	0	0	973
RH	NORMAL (PERCENT)	30	68	66	64	63	70	72	73	75	75	73	70	70	70
	HOUR 01 LST	30	74	74	73	73	83	87	88	89	88	86	78	76	81
	HOUR 07 LST	30	76	77	77	77	82	84	85	88	89	88	83	78	82
	HOUR 13 LST	30	58	55	51	49	54	55	54	55	55	53	54	58	54
	HOUR 19 LST	30	66	62	57	54	63	65	66	70	74	71	68	68	65
S	PERCENT POSSIBLE SUNSHINE														
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG(VISBY≤1/4 MI)	36	3.2	2.4	2.0	1.4	2.3	1.7	1.9	2.4	2.8	3.4	1.9	2.6	28.0
	THUNDERSTORMS	36	0.2	0.2	2.0	2.4	3.8	6.0	6.1	4.5	2.1	1.0	0.6	0.1	29.0
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	34	5.4	5.2	5.3	5.1	5.1	5.0	4.7	4.7	4.6	4.3	5.0	5.2	5.0
	MIDNIGHT-MIDNIGHT (OKTAS)	32	5.1	4.9	5.0	4.9	4.8	4.7	4.7	4.4	4.4	4.1	4.7	5.0	4.7
	MEAN NO. DAYS WITH:														
	CLEAR	34	7.4	7.4	6.7	7.0	7.0	6.4	7.8	8.2	8.6	10.6	7.2	7.3	91.6
PARTLY CLOUDY	34	6.9	6.2	8.3	9.0	9.5	11.8	10.8	10.7	9.4	8.3	7.8	6.7	105.4	
CLOUDY	34	16.7	14.7	16.1	14.0	14.5	11.8	12.5	12.2	12.1	12.1	14.9	17.0	168.6	
PR	MEAN STATION PRESSURE(IN)	26	29.75	29.72	29.69	29.64	29.64	29.65	29.66	29.70	29.74	29.76	29.76	29.76	29.71
	MEAN SEA-LEVEL PRES. (IN)	14	30.12	30.09	30.06	29.97	30.00	29.97	30.00	30.04	30.07	30.11	30.13	30.13	30.06
WINDS	MEAN SPEED (MPH)	29	8.2	8.6	9.2	8.7	7.3	6.8	6.2	6.0	6.1	6.5	7.4	7.8	7.4
	PREVAIL.DIR.(TENS OF DEGS)	28	32	31	32	32	18	18	18	18	18	32	32	32	32
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	2	30	33	39	36	30	33	30	43	30	28	31	32	43
	DIR. (TENS OF DEGS)		24	20	33	32	30	33	33	34	34	31	31	30	34
	YEAR OF OCCURRENCE		1998	1997	1997	1997	1997	1997	1997	1997	1997	1998	1997	1998	AUG 1997
	MAXIMUM 5-SECOND:														
	SPEED (MPH)	2	45	47	49	49	41	44	40	63	39	33	45	44	63
DIR. (TENS OF DEGS)		32	09	31	32	29	26	32	33	33	31	30	30	33	
YEAR OF OCCURRENCE		1997	1998	1997	1997	1997	1998	1997	1997	1997	1998	1997	1998	AUG 1997	
PRECIPITATION	NORMAL (IN)	30	2.70	2.81	3.17	3.11	4.02	3.92	3.49	3.94	3.36	3.20	3.30	3.22	40.24
	MAXIMUM MONTHLY (IN)	35	6.61	5.83	7.65	7.35	10.26	18.19	7.23	10.71	11.26	9.19	7.83	6.74	18.19
	YEAR OF OCCURRENCE		1979	1998	1993	1973	1988	1972	1992	1984	1975	1971	1963	1969	JUN 1972
	MINIMUM MONTHLY (IN)	35	0.40	0.25	0.99	0.33	0.80	0.52	0.94	0.44	0.62	T	0.24	0.42	T
	YEAR OF OCCURRENCE		1981	1978	1981	1985	1964	1988	1983	1998	1967	1963	1981	1965	OCT 1963
	MAXIMUM IN 24 HOURS (IN)	35	2.22	2.17	2.56	2.43	3.13	11.88	4.05	7.04	5.54	4.13	4.80	3.15	11.88
	YEAR OF OCCURRENCE		1998	1998	1967	1993	1988	1972	1994	1984	1966	1979	1993	1977	JUN 1972
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	10.0	9.2	9.8	10.1	12.0	10.0	10.1	9.9	8.3	7.6	9.1	9.6	115.7	
PRECIPITATION ≥ 1.00	30	0.4	0.9	0.6	0.5	0.9	0.9	0.9	1.1	0.8	0.9	0.8	0.7	9.4	
SNOWFALL	NORMAL (IN)	30	7.5	6.9	2.9	0.3	T	0.0	0.0	0.0	0.*	1.3	4.4	23.3	
	MAXIMUM MONTHLY (IN)	36	30.9	27.6	15.5	4.0	T	T	0.0	T	0.0	1.3	11.4	24.2	30.9
	YEAR OF OCCURRENCE		1996	1979	1993	1990	1963	1995		1993		1979	1967	1966	JAN 1996
	MAXIMUM IN 24 HOURS (IN)	36	19.8	22.8	13.9	3.8	T	T	0.0	T	0.0	1.3	11.4	12.1	22.8
	YEAR OF OCCURRENCE		1996	1983	1993	1990	1963	1995		1993		1979	1967	1969	FEB 1983
	MAXIMUM SNOW DEPTH (IN)	34	19	22	13	1	0	0	0	0	0	0	4	13	22
	YEAR OF OCCURRENCE		1987	1983	1993	1990							1987	1969	FEB 1983
NORMAL NO. DAYS WITH:															
SNOWFALL ≥ 1.0	30	2.2	1.4	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.*	0.3	1.0	6.0	

PRECIPITATION (inches) 1998 WASHINGTON, D.C . VA (IAD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	2.07	1.69	2.04	1.34	0.99	5.55	4.90	5.07	4.89	0.85	2.11	6.74	38.24
1970	1.32	2.76	2.98	4.19	2.86	2.48	6.00	2.65	1.03	2.79	6.00	3.88	38.94
1971	2.27	4.68	2.27	2.56	8.47	2.81	2.15	4.45	3.63	9.19	3.13	1.00	46.61
1972	2.28	5.44	2.37	4.40	4.76	18.19	1.53	2.09	1.40	3.44	7.09	6.06	59.05
1973	2.25	2.84	2.66	7.35	3.97	1.91	4.99	3.18	3.14	2.67	0.81	5.72	41.49
1974	3.07	1.14	3.09	2.14	3.78	5.41	2.69	4.84	4.02	0.71	1.97	5.26	38.12
1975	2.76	1.97	4.38	2.58	2.99	7.08	6.25	5.38	11.26	2.34	1.64	4.01	52.64
1976	2.81	1.42	4.15	1.31	4.18	2.88	2.33	3.13	3.75	7.88	0.57	1.78	36.19
1977	1.10	0.49	3.59	2.58	2.33	3.09	3.25	4.18	1.74	4.19	4.51	4.87	35.92
1978	6.55	0.25	2.85	1.62	5.05	4.36	4.52	4.29	0.78	0.79	3.02	3.58	37.66
1979	6.61	5.75	3.50	2.05	4.89	4.64	2.18	6.05	7.58	8.65	2.65	0.88	55.43
1980	2.95	1.00	4.82	3.64	3.86	1.89	4.41	1.67	2.70	2.77	3.42	0.68	33.81
1981	0.40	4.10	0.99	3.05	4.36	3.86	4.05	3.55	2.07	3.00	0.24	2.46	32.13
1982	2.10	4.09	3.47	2.82	3.57	5.49	2.11	3.36	4.22	2.21	2.87	2.25	38.56
1983	1.40	3.74	4.21	7.24	3.63	4.01	0.94	1.34	2.95	6.00	5.06	5.66	46.18
1984	1.42	4.13	5.81	5.01	4.23	2.19	2.46	10.71	1.49	1.73	3.64	1.25	44.07
1985	2.32	3.73	1.70	0.33	4.82	1.14	2.34	3.35	2.96	4.06	5.27	0.92	32.94
1986	1.58	3.16	1.12	3.01	1.19	1.40	1.86	5.72	1.04	1.30	4.17	4.83	30.38
1987	4.53	2.47	1.46	4.61	2.33	3.38	3.04	0.96	8.11	2.51	5.02	2.35	40.77
1988	2.47	2.06	2.31	2.35	10.26	0.52	7.12	3.92	1.80	1.60	4.48	0.92	39.81
1989	2.65	2.50	4.01	2.70	7.71	5.75	5.99	0.76	3.14	4.73	2.68	1.72	44.34
1990	3.14	1.65	2.78	5.06	4.37	1.77	5.42	5.56	1.49	6.53	2.56	5.00	45.33
1991	2.67	0.81	5.16	1.80	1.51	6.58	2.64	0.99	3.25	1.37	2.70	4.54	34.02
1992	2.13	2.26	3.23	3.15	3.82	2.88	7.23	1.33	5.55	2.81	5.24	4.73	44.36
1993	2.72	2.74	7.65	5.62	2.85	1.77	2.06	4.68	4.66	2.15	6.28	3.78	46.96
1994	4.12	3.61	6.71	1.71	3.19	5.82	5.75	4.62	3.40	1.05	1.86	2.42	44.26
1995	4.18	1.80	1.39	2.14	5.13	3.25	4.24	2.02	2.74	6.51	4.75	2.05	40.20
1996	5.61	2.62	3.52	3.69	7.07	4.88	5.89	4.16	7.72	3.97	3.75	5.21	58.09
1997	2.16	2.16	4.78	2.18	2.87	2.36	1.38	5.32	3.16	2.75	5.48	1.92	36.52
1998	5.43	5.83	5.60	2.92	4.52	5.87	1.31	0.44	1.25	1.50	1.21	1.53	37.41
POR= 35 YRS	2.96	2.76	3.48	3.03	4.00	3.97	3.37	3.75	3.54	3.16	3.31	3.17	40.50

WBAN : 93738

AVERAGE TEMPERATURE (°F) 1998 WASHINGTON, D.C . VA (IAD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	29.4	32.2	38.7	55.3	64.3	73.6	77.8	71.9	65.3	52.8	41.9	31.0	52.9
1970	23.9	32.7	37.8	52.5	63.5	68.9	74.0	72.2	69.1	56.3	45.7	36.3	52.7
1971	28.5	36.7	39.7	51.4	60.1	72.6	74.9	72.9	69.7	61.4	44.4	42.2	54.5
1972	35.8	32.6	42.8	51.3	61.8	67.4	75.9	73.3	68.0	51.5	42.0	39.3	53.5
1973	33.6	33.1	48.6	53.1	59.8	74.2	75.9	76.4	69.6	56.9	46.0	35.2	55.2
1974	37.8	32.5	44.6	54.3	61.1	67.1	73.5	74.4	66.3	53.3	46.1	36.6	54.0
1975	34.0	35.0	40.3	49.1	65.2	70.9	74.4	75.5	64.4	57.0	47.2	33.2	53.9
1976	27.5	41.1	44.6	52.9	58.1	70.5	72.2	71.5	64.8	50.5	38.3	31.2	51.9
1977	21.0	34.8	48.9	55.4	64.5	68.3	76.4	76.3	69.9	53.9	47.9	33.0	54.2
1978	27.3	26.7	40.6	54.2	63.4	71.6	74.4	77.2	68.9	53.8	46.8	38.2	53.6
1979	31.2	23.3	46.4	52.2	63.3	68.2	74.2	74.4	66.9	54.6	49.7	40.1	53.7
1980	32.7	31.0	41.9	55.6	65.8	69.2	77.3	77.1	70.8	54.1	42.7	34.9	54.4
1981	27.8	38.5	41.4	57.0	60.9	73.5	75.1	71.9	66.7	52.5	45.9	34.1	53.8
1982	26.2	36.5	43.7	51.3	66.8	70.8	77.0	72.3	66.9	57.3	48.4	42.6	55.0
1983	34.7	35.0	46.0	50.2	59.4	70.0	74.6	75.3	66.2	54.7	44.7	30.4	53.4
1984	25.8	38.9	37.5	50.9	59.8	71.2	72.0	74.2	63.0	61.8	42.6	43.3	53.4
1985	28.1	35.8	45.0	57.1	63.8	69.7	75.9	73.4	67.7	58.4	52.6	33.2	55.1
1986	32.5	32.1	44.3	53.6	64.2	73.4	79.0	72.5	68.2	56.8	43.2	36.8	54.7
1987	31.2	33.1	43.5	51.7	64.3	73.7	79.1	75.4	68.7	49.9	47.8	38.6	54.8
1988	27.6	34.5	43.9	52.2	63.5	70.9	78.7	78.4	66.4	49.2	46.0	35.8	53.9
1989	36.3	35.2	43.7	51.7	61.4	73.8	76.0	74.4	68.6	57.3	43.7	23.1	53.8
1990	40.8	42.2	48.1	54.3	61.6	72.0	76.9	73.8	66.1	58.7	48.6	41.3	57.0
1991	34.0	39.5	46.1	56.0	69.3	72.3	77.9	77.0	67.6	56.6	45.7	38.5	56.7
1992	35.0	38.0	41.9	53.1	59.7	68.6	75.9	70.4	66.0	52.2	45.7	36.8	53.6
1993	36.8	31.7	39.3	52.6	64.5	72.0	79.7	78.0	68.7	54.2	45.3	34.0	54.7
1994	26.1	33.3	42.7	60.1	59.9	76.1	79.5	73.8	66.7	53.9	49.1	40.3	55.1
1995	37.2	31.3	46.1	52.6	62.7	71.5	78.2	77.6	67.1	58.3	39.7	33.0	54.6
1996	30.0	34.7	39.7	54.6	59.7	72.8	72.9	72.7	67.1	55.7	39.3	38.3	53.1
1997	32.5	40.5	44.6	50.3	58.8	69.1	75.8	73.3	65.1	53.7	43.6	37.2	53.7
1998	40.1	41.0	45.5	54.9	66.0	70.4	75.3	76.2	72.7	56.2	45.6	40.9	57.1
POR= 36 YRS	31.4	34.2	43.3	53.0	62.4	71.0	73.9	74.4	67.2	54.9	45.3	36.0	53.9

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HEATING DEGREE DAYS (base 65°F) 1998 WASHINGTON, D.C . VA (IAD)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1969-70	0	8	90	376	685	1047	1267	898	837	378	121	17	5724
1970-71	0	0	46	272	573	879	1121	786	776	401	168	5	5027
1971-72	0	2	34	141	631	699	901	935	687	404	117	46	4597
1972-73	2	3	38	414	686	788	964	886	500	371	186	1	4839
1973-74	0	0	24	257	564	917	837	905	631	329	168	21	4653
1974-75	0	0	77	358	574	873	956	837	759	473	75	15	4997
1975-76	0	0	83	247	526	977	1158	688	625	382	232	35	4953
1976-77	0	8	65	447	793	1038	1361	838	508	303	90	41	5492
1977-78	1	2	23	339	521	985	1163	1066	748	317	123	14	5302
1978-79	0	0	58	349	539	824	1040	1163	578	383	115	43	5092
1979-80	7	15	50	337	461	765	993	977	707	272	69	31	4684
1980-81	0	0	33	342	664	928	1145	735	728	254	170	6	5005
1981-82	0	6	63	388	563	952	1196	790	653	407	56	8	5082
1982-83	0	13	41	266	504	687	934	832	581	449	204	16	4527
1983-84	3	1	103	325	600	1066	1209	750	845	414	194	19	5529
1984-85	4	0	137	130	664	664	1136	814	617	261	94	20	4541
1985-86	0	0	73	217	368	977	995	915	636	336	114	10	4641
1986-87	0	31	52	296	648	868	1039	888	660	398	113	4	4997
1987-88	0	5	21	464	508	810	1152	873	646	381	107	49	5016
1988-89	7	0	50	485	564	899	881	825	670	399	167	0	4947
1989-90	0	7	60	260	633	1295	740	634	547	347	124	8	4655
1990-91	1	0	79	236	482	728	952	706	579	290	53	8	4114
1991-92	0	0	69	280	577	814	921	779	708	359	181	20	4708
1992-93	0	4	79	391	572	869	870	929	787	366	79	19	4965
1993-94	0	0	64	330	587	952	1201	884	684	187	196	5	5090
1994-95	0	0	28	342	474	762	857	936	580	378	118	4	4479
1995-96	0	0	61	236	754	987	1075	874	778	330	220	7	5322
1996-97	0	0	41	288	765	820	998	680	625	433	205	54	4909
1997-98	0	0	69	369	633	855	765	665	630	298	60	33	4377
1998-	0	1	25	269	577	743							

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COOLING DEGREE DAYS (base 65°F) 1998 WASHINGTON, D.C . VA (IAD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0	0	0	10	83	143	288	228	178	9	0	0	939
1971	0	0	0	0	21	237	316	255	181	35	19	0	1064
1972	0	0	6	3	25	123	346	268	134	4	0	0	909
1973	0	0	0	20	30	281	344	358	168	15	0	0	1216
1974	0	0	4	15	53	90	270	299	127	3	11	0	872
1975	0	0	0	4	89	197	298	330	73	10	0	0	1001
1976	0	0	0	28	24	208	232	215	65	7	0	0	779
1977	0	0	13	22	81	147	361	357	175	3	12	0	1171
1978	0	0	0	0	84	219	298	385	183	10	0	0	1179
1979	0	0	9	5	69	147	297	310	112	21	6	0	976
1980	0	0	0	0	100	165	391	380	211	12	0	0	1259
1981	0	0	2	20	49	268	320	227	120	5	0	0	1011
1982	0	0	0	6	120	191	381	248	103	34	11	2	1096
1983	0	0	0	12	40	173	307	328	149	10	0	0	1019
1984	0	0	0	0	38	215	228	292	82	39	0	0	894
1985	0	1	4	32	65	169	344	267	160	20	5	0	1067
1986	0	0	3	0	93	266	441	273	151	49	0	0	1276
1987	0	0	0	5	97	270	446	335	138	0	0	0	1291
1988	0	0	1	2	71	231	439	423	96	5	0	0	1268
1989	0	0	16	9	63	270	343	305	176	27	1	0	1210
1990	0	0	30	31	26	223	376	279	118	49	0	0	1132
1991	0	0	0	23	196	234	408	379	153	24	3	0	1420
1992	0	0	0	8	24	131	343	180	116	1	0	0	803
1993	0	0	0	2	71	233	464	407	183	2	6	0	1368
1994	0	0	0	49	45	345	456	277	88	2	4	0	1266
1995	0	0	0	12	55	208	415	395	132	37	0	0	1254
1996	0	0	0	27	61	248	253	247	113	4	0	0	953
1997	0	0	0	0	22	185	340	265	79	28	0	0	919
1998	1	0	35	3	97	204	326	358	259	3	0	3	1289

SNOWFALL (inches) 1998 WASHINGTON, D.C . VA (IAD)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1969-70	0.0	0.0	0.0	0.0	T	15.9	9.8	3.6	0.9	T	0.0	0.0	30.2
1970-71	0.0	0.0	0.0	0.0	T	9.2	7.5	0.2	2.4	0.3	0.0	0.0	19.6
1971-72	0.0	0.0	0.0	0.0	2.9	T	T	16.9	0.2	0.4	0.0	0.0	20.4
1972-73	0.0	0.0	0.0	0.1	0.6	0.0	T	0.3	0.2	1.0	0.0	0.0	2.2
1973-74	0.0	0.0	0.0	0.0	T	10.7	1.0	7.0	0.2	0.0	0.0	0.0	18.9
1974-75	0.0	0.0	0.0	T	T	1.0	7.5	8.1	1.2	T	0.0	0.0	17.8
1975-76	0.0	0.0	0.0	0.0	T	0.9	1.6	0.2	6.4	0.0	0.0	0.0	9.1
1976-77	0.0	0.0	0.0	0.0	0.8	0.6	9.2	T	0.0	T	0.0	0.0	10.6
1977-78	0.0	0.0	0.0	T	0.1	1.1	13.4	2.5	10.3	0.0	0.0	0.0	27.4
1978-79	0.0	0.0	0.0	0.0	4.0	T	8.8	27.6	0.2	0.0	0.0	0.0	40.6
1979-80	0.0	0.0	0.0	1.3	0.0	0.2	9.9	5.6	9.8	0.0	0.0	0.0	26.8
1980-81	0.0	0.0	0.0	0.0	T	0.4	4.0	T	T	0.0	0.0	0.0	4.4
1981-82	0.0	0.0	0.0	0.0	0.9	5.7	14.3	5.7	0.3	2.6	0.0	0.0	29.5
1982-83	0.0	0.0	0.0	0.0	0.0	11.9	0.1	27.2	T	T	0.0	0.0	39.2
1983-84	0.0	0.0	0.0	0.0	0.3	T	10.5	0.8	10.8	0.0	0.0	0.0	22.4
1984-85	0.0	0.0	0.0	0.0	T	T	13.8	0.7	T	0.3	0.0	0.0	14.8
1985-86	0.0	0.0	0.0	0.0	0.0	0.2	1.9	16.0	T	T	0.0	0.0	18.1
1986-87	0.0	0.0	0.0	0.0	0.0	T	28.8	12.0	1.4	0.5	0.0	0.0	42.7
1987-88	0.0	0.0	0.0	0.0	5.5	0.1	10.9	T	0.2	T	0.0	0.0	16.7
1988-89	0.0	0.0	0.0	0.0	0.0	1.0	6.6	1.4	0.9	0.0	0.0	0.0	9.9
1989-90	0.0	0.0	0.0	0.0	2.4	11.4	5.0	T	6.4	4.0	0.0	0.0	29.2
1990-91	0.0	0.0	0.0	0.0	0.0	4.7	6.3	0.1	3.5	T	0.0	0.0	14.6
1991-92	0.0	0.0	0.0	0.0	T	T	2.1	3.4	1.2	T	0.0	0.0	6.7
1992-93	0.0	0.0	0.0	0.0	T	2.8	3.2	8.8	15.5	T	0.0	0.0	30.3
1993-94	0.0	T	0.0	0.0	0.0	3.5	4.2	3.8	7.9	T	0.0	T	19.4
1994-95	0.0	0.0	0.0	0.0	T	0.0	4.3	7.8	1.9	0.0	0.0	T	14.0
1995-96	0.0	0.0	0.0	0.0	3.6	2.5	30.9	16.4	6.0	2.5	0.0	0.0	
1996-97					0.7	1.9	5.5	8.2	1.5	0.0	0.0	0.0	
1997-98	0.0	0.0	0.0	0.0	0.0	4.7	0.5	0.7	T	0.0	T	T	5.9
1998-	0.0	0.0	0.0	0.0	0.0	0.6							
POR= 35 YRS	0.0	T	0.0	0.0	1.2	3.6	7.2	6.6	3.2	0.4	T	T	22.2

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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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1998
WASHINGTON, D.C .
DULLES INTERNATIONAL AIRPORT (IAD)

Dulles International Airport is located in the Virginia Piedmont about 23 miles east of the Blue Ridge Mountains and 12 miles east of the Bull Run and Catocin Mountains. The Blue Ridge rises to about 2,500 feet above sea level and the Bull Run Mountains to about 1,500 feet at their nearest points. Field elevation is 313 feet. The terrain near the airport is mostly low rolling hills about one-fourth wooded. Ponds located on and near the airport, along with poor air drainage contribute to the formation of local ground fog. Easterly winds cause an upslope effect from the Atlantic Ocean, 140 miles east, and from the Chesapeake Bay, about 55 miles east. Westerly winds create a slight foehn effect.

Its location in the middle latitudes, where the general atmospheric flow is from west to east, favors a continental climate with four well defined seasons. Summers are warm and at times humid, Winters are mild. Generally pleasant weather prevails in spring and autumn. The coldest period, when temperatures average 21 degrees, occurs in late January. The warmest period, averaging 88 degrees, occurs in the last half of July.

Precipitation is rather evenly distributed through the year. Annual precipitation has ranged from about 25 inches to more than 55 inches. Rainfalls of over 10 inches in a 24-hour period have been recorded during the passage of tropical storms. The seasonal snowfall is nearly 24 inches, but varies greatly from season to season. Snowfalls of 4 inches or more occur only twice each winter on average. Accumulations of over 20 inches from a single storm are extremely rare.

Storm damage results mainly from heavy snows and freezing rains in winter and from hurricanes and severe thunderstorms during the other seasons. Damage may result from wind, flooding or rain.

Prevailing winds are from the south except during the winter months when they are from the northwest. The windiest period is late winter and early spring. Winds are generally less during the night and early morning hours and increase to a high in the afternoon. Winds may reach 50 to 60 miles per hour or even higher during severe summer thunderstorms, hurricanes, and winter storms.

The growing season averages 169 days. The average date for the last freeze in spring is late April and the average date for the first freeze in the fall is mid October.

STATION LOCATION

WASHINGTON, D.C.
DULLES INTERNATIONAL 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												
							WIND	EMERGENCY	MEMORANDUM	SWITCH	TELEPHONE	RAIN	WEIGHING	8 INCH	RAIN				MEMORANDUM
Telephone Building Dulles International AP (22 mi. W city center)	11/17/62	Present	NA	38°57'	77°27'	290	d20	NA	b37	b36	NA	NA	NA	a34	c5 e5	NA	a - Installed 3/1/63. b - Effective 10/10/74. c - Minor move 12/3/74. d - Minor move 2/19/75. e - Type change 6/5/87. Station type change from WSO to WSCMO 1/1988. S ASOS Commissioned 05/01/96		

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

National Climatic Data Center
151 Patton Avenue, Rm 120
Asheville NC 28801-5001

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