

1999

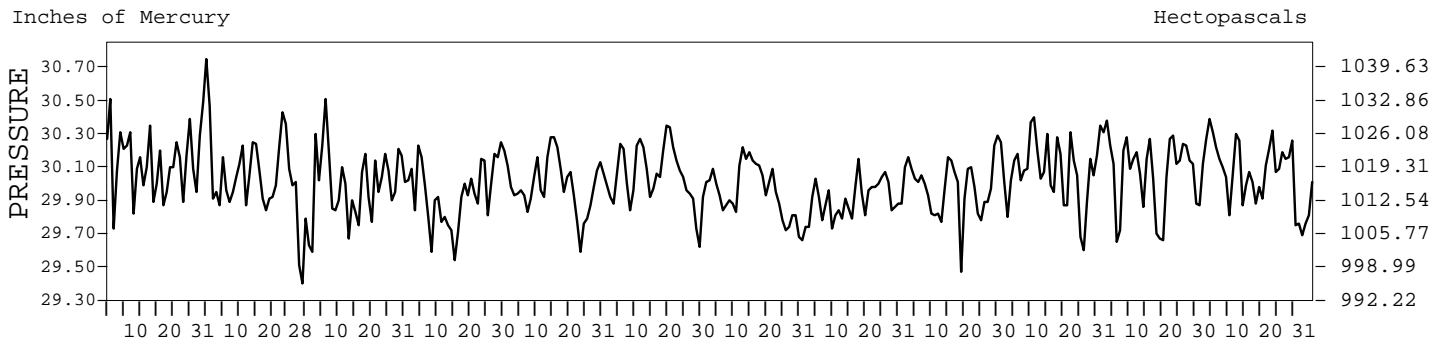
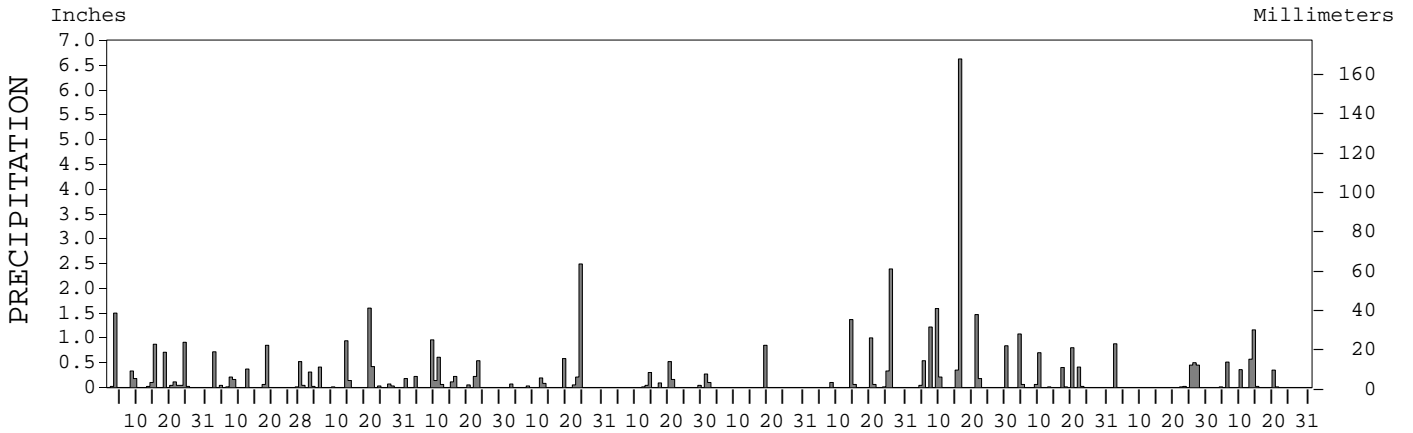
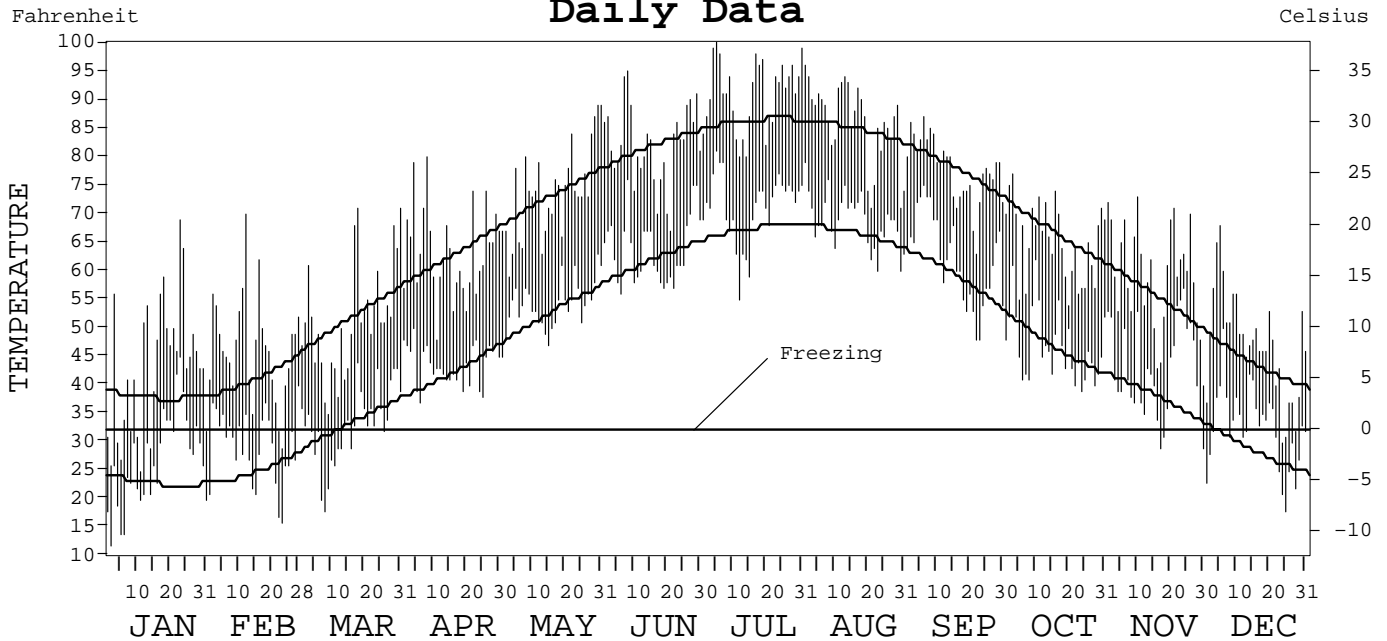
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-4535

PHILADELPHIA,
PENNSYLVANIA (PHL)

Daily Data



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Thomas R. Karl

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	NATIONAL ENVIRONMENTAL AND INFORMATION SERVICE	NATIONAL SATELLITE, DATA, AND INFORMATION SERVICE	NATIONAL CLIMATIC DATA CENTER ASHEVILLE, NORTH CAROLINA	DIRECTOR NATIONAL CLIMATIC DATA CENTER
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METEOROLOGICAL DATA FOR 1999

PHILADELPHIA, PA (PHL)

LATITUDE: 39° 52' 06" N LONGITUDE: 75° 13' 52" W ELEVATION (FT): GRND: 60 BARO: 60 TIME ZONE: EASTERN (UTC + 5) WBAN: 13739

	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	43.1	46.6	51.6	63.4	73.8	82.0	91.1	86.0	77.7	65.2	59.1	47.2	65.6	
	HIGHEST DAILY MAXIMUM	69	70	71	80	89	95	100	96	87	77	73	68	100	
	DATE OF OCCURRENCE	23	12	31+	08	31+	08	05	01	06	03	10	05	JUL 05	
	MEAN DAILY MINIMUM	26.9	29.3	33.2	43.6	54.1	63.7	71.2	68.8	62.1	46.9	42.7	32.5	47.9	
	LOWEST DAILY MINIMUM	12	16	18	37	45	56	55	60	48	39	29	18	12	
	DATE OF OCCURRENCE	02	23	08	06	01	06	12	30+	23+	24	30+	25	JAN 02	
	AVERAGE DRY BULB	35.0	38.0	42.4	53.5	64.0	72.9	81.2	77.4	69.9	56.1	50.9	39.9	56.8	
	MEAN WET BULB	32.9	34.8	37.4	46.9	56.3	65.5	71.8	69.3	64.8	52.4	46.6	35.5	51.2	
	MEAN DEW POINT	27.0	28.3	30.1	39.1	49.5	60.9	66.7	64.9	61.6	48.1	41.1	27.5	45.4	
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	0	4	20	11	0	0	0	0	0	35
	MAXIMUM ≤ 32°	9	2	0	0	0	0	0	0	0	0	0	3	14	
	MINIMUM ≤ 32°	23	17	12	0	0	0	0	0	0	0	3	15	70	
	MINIMUM ≤ 0°	0	0	0	0	0	0	0	0	0	0	0	0	0	
H/C	HEATING DEGREE DAYS	920	751	691	336	77	3	0	0	22	275	415	772	4262	
	COOLING DEGREE DAYS	0	0	0	0	51	246	508	394	177	4	0	0	1380	
RH	MEAN (PERCENT)	73	71	65	64	63	69	64	70	78	75	72	63	69	
	HOUR 01 LST	79	76	74	71	75	81	74	82	85	86	79	67	77	
	HOUR 07 LST	78	77	74	74	72	77	76	82	87	87	82	71	78	
	HOUR 13 LST	67	61	54	54	51	54	51	56	66	60	59	53	57	
	HOUR 19 LST	70	68	59	57	54	63	58	62	76	73	68	62	64	
S	PERCENT POSSIBLE SUNSHINE	46	56	60	54	63	63	73	65	57	73	65	62	61	
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	5	1	0	0	2	1	0	0	0	2	3	0	14	
	THUNDERSTORMS	0	0	2	3	3	1	2	6	4	1	0	0	22	
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.)	30.15	30.04	29.97	29.94	30.00	30.04	29.94	29.92	29.97	30.11	30.06	30.04	30.02	
	MEAN SEA-LEVEL PRESS. (IN.)	30.18	30.07	30.00	29.97	30.03	30.07	29.97	29.95	30.00	30.14	30.13	30.10	30.05	
WINDS	RESULTANT SPEED (MPH)	2.8	4.2	7.1	2.9	0.7	1.7	2.2	0.5	1.1	2.9	4.0	4.2	2.4	
	RES. DIR. (TENS OF DEGS.)	30	32	31	32	29	06	33	35	03	27	28	30	31	
	MEAN SPEED (MPH)	10.0	9.3	13.4	9.8	9.1	9.0	8.9	8.8	8.5	7.8	9.1	9.0	9.4	
	PREVAIL. DIR. (TENS OF DEGS.)	29	32	34	23	08	23	23	19	07	23	23	32	23	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	44	34	36	31	37	25	41	31	38	32	37	36	44	
	DIR. (TENS OF DEGS.)	28	32	27	31	27	26	33	29	35	28	32	31	28	
	DATE OF OCCURRENCE	18	12	18+	13	24	08	19	14	16	14	14	10	JAN 18	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	55	44	46	39	39	31	46	40	48	39	45	43	55	
DIR. (TENS OF DEGS.)	29	32	27	32	27	21	32	29	35	31	17	32	29		
DATE OF OCCURRENCE	18	12	18+	12	24	14	19	14	16	14	02	10	JAN 18		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	4.89	2.95	4.02	3.31	3.70	1.16	1.22	5.32	13.07	3.55	2.31	2.99	48.49	
	GREATEST 24-HOUR (IN.)	1.52	0.91	2.02	1.10	2.49	0.65	0.85	2.39	6.77	1.14	0.95	1.60	6.77	
	DATE OF OCCURRENCE	2-3	17-18	21-22	09-10	24	20-21	19	26	15-16	04-05	26-27	13-14	SEP 15-16	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	14	10	12	11	8	7	3	8	10	10	6	8	107	
PRECIPITATION ≥ 0.10	8	6	6	9	4	3	3	5	9	5	4	5	67		
PRECIPITATION ≥ 1.00	1	0	1	0	1	0	0	3	4	1	0	1	12		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	4.9	0.7	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	10.5	
	GREATEST 24-HOUR (IN.)	3.2	0.7	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	4.7	
	DATE OF OCCURRENCE	08	07	14									28+	MAR 14	
	MAXIMUM SNOW DEPTH (IN.)	3	0	2	0	0	0	0	0	0	0	0	T	3	
	DATE OF OCCURRENCE	08		15+									27	JAN 08	
NUMBER OF DAYS WITH:															
SNOWFALL ≥ 1.0	1	0	1	0	0	0	0	0	0	0	0	0	2		

NORMALS, MEANS, AND EXTREMES

PHILADELPHIA, PA (PHL)

LATITUDE: 39° 52' 06" N LONGITUDE: 75° 13' 52" W ELEVATION (FT): GRND: 60 BARO: 60 TIME ZONE: EASTERN (UTC + 5) WBAN: 13739

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	37.9	41.0	51.6	62.6	73.1	81.7	86.1	84.6	77.6	66.3	55.1	43.4	63.4
	MEAN DAILY MAXIMUM	52	39.6	42.3	51.2	63.3	73.3	82.2	86.6	84.8	77.6	66.7	55.1	43.9	63.9
	HIGHEST DAILY MAXIMUM	58	74	74	87	94	97	100	104	101	100	96	81	73	104
	YEAR OF OCCURRENCE		1950	1997	1945	1976	1991	1994	1966	1955	1953	1941	1993	1998	JUL 1966
	MEAN OF EXTREME MAXS.	52	59.7	61.8	73.2	82.6	88.6	93.5	96.0	93.8	90.5	81.8	72.5	63.1	79.8
	NORMAL DAILY MINIMUM	30	22.8	24.8	33.2	42.1	52.7	61.8	67.2	66.3	58.7	46.4	37.6	28.1	45.1
	MEAN DAILY MINIMUM	52	24.5	26.3	33.3	42.9	52.9	62.1	67.8	66.4	58.9	47.3	37.7	28.9	45.8
	LOWEST DAILY MINIMUM	58	-7	-4	7	19	28	44	51	44	35	25	15	1	-7
	YEAR OF OCCURRENCE		1984	1961	1984	1982	1966	1984	1966	1986	1963	1969	1976	1983	JAN 1984
	MEAN OF EXTREME MINS.	52	8.6	10.2	18.5	29.9	40.6	50.1	57.5	55.3	44.3	33.3	23.7	13.9	32.2
	NORMAL DRY BULB	30	30.4	33.0	42.4	52.4	62.9	71.8	76.7	75.5	68.2	56.4	46.4	35.8	54.3
	MEAN DRY BULB	52	32.1	34.3	42.2	53.0	63.0	72.1	77.2	75.6	68.2	57.0	46.5	36.4	54.8
	MEAN WET BULB	16	30.4	32.0	38.0	46.9	56.7	65.2	70.2	68.6	62.3	52.3	42.7	34.2	50.0
	MEAN DEW POINT	16	23.4	24.2	29.8	39.6	50.5	60.1	65.9	64.3	57.8	47.2	36.5	27.1	43.9
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	0.0	0.0	0.4	0.8	4.0	8.8	6.4	1.9	0.0	0.0	0.0	22.3	
MAXIMUM ≤ 32°	30	9.4	5.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	4.2	20.1	
MINIMUM ≤ 32°	30	26.2	22.3	14.0	2.6	*	0.0	0.0	0.0	0.0	1.5	8.5	21.2	96.3	
MINIMUM ≤ 0°	30	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	
H/C	NORMAL HEATING DEG. DAYS	30	1073	896	701	378	123	5	0	0	32	283	558	905	4954
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	58	209	363	326	128	17	0	0	1101
RH	NORMAL (PERCENT)	30	66	64	62	60	65	68	70	70	72	71	68	68	67
	HOUR 01 LST	30	70	68	68	69	76	80	81	82	82	81	75	72	75
	HOUR 07 LST	30	73	71	72	70	74	77	79	81	83	83	78	74	76
	HOUR 13 LST	30	59	55	52	49	53	54	54	55	56	54	56	59	55
	HOUR 19 LST	30	65	61	57	54	59	61	63	65	69	69	66	67	63
S	PERCENT POSSIBLE SUNSHINE	57	49	53	55	55	56	62	61	62	59	59	52	49	56
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	60	2.6	2.3	1.7	1.2	1.3	1.0	0.8	1.0	1.5	3.0	2.3	2.5	21.2
	THUNDERSTORMS	60	0.3	0.3	1.0	2.0	4.1	5.1	5.5	4.8	2.4	0.8	0.6	0.2	27.1
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	1			6.4			5.6							
	MIDNIGHT-MIDNIGHT (OKTAS)	1			5.6										
	MEAN NO. DAYS WITH:														
	CLEAR	1	3.0	2.0	8.0		8.0	11.0							
PARTLY CLOUDY	1		1.0	4.0		5.0	3.0								
CLOUDY	1	3.0	6.0	8.0		7.0	9.0								
PR	MEAN STATION PRESSURE (IN)	27	30.05	30.05	30.00	29.95	29.95	29.95	29.97	30.01	30.05	30.07	30.06	30.06	30.01
	MEAN SEA-LEVEL PRES. (IN)	16	30.10	30.07	30.05	29.97	29.98	29.97	29.99	30.03	30.06	30.10	30.11	30.10	30.04
WINDS	MEAN SPEED (MPH)	59	10.4	10.9	11.4	10.9	9.6	8.8	8.2	7.9	8.4	8.9	9.7	10.1	9.6
	PREVAIL. DIR (TENS OF DEGS)	36	29	30	29	23	23	23	23	23	23	23	29	29	23
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	4	44	43	40	37	40	51	41	41	39	36	40	39	51
	DIR. (TENS OF DEGS)		28	29	27	27	31	30	33	25	32	35	28	32	30
	YEAR OF OCCURRENCE		1999	1996	1996	1996	1997	1998	1999	1997	1998	1996	1996	1996	JUN 1998
	MAXIMUM 5-SECOND:														
	SPEED (MPH)	4	57	52	52	46	51	71	46	52	49	46	52	46	71
DIR. (TENS OF DEGS)		18	31	26	30	29	30	32	24	31	35	27	33	30	
YEAR OF OCCURRENCE		1996	1996	1996	1998	1997	1998	1999	1997	1996	1996	1996	1996	JUN 1998	
PRECIPITATION	NORMAL (IN)	30	3.21	2.79	3.46	3.62	3.75	3.74	4.28	3.80	3.42	2.62	3.34	3.38	41.41
	MAXIMUM MONTHLY (IN)	57	8.86	6.44	7.01	8.12	7.41	7.88	10.42	9.70	13.07	5.99	9.06	8.47	13.07
	YEAR OF OCCURRENCE		1978	1979	1980	1983	1948	1973	1994	1955	1999	1995	1972	1996	SEP 1999
	MINIMUM MONTHLY (IN)	57	0.45	0.75	0.68	0.52	0.47	0.11	0.64	0.49	0.44	0.09	0.32	0.25	0.09
	YEAR OF OCCURRENCE		1955	1991	1966	1985	1964	1949	1957	1964	1968	1963	1976	1955	OCT 1963
	MAXIMUM IN 24 HOURS (IN)	53	2.70	1.96	2.39	2.76	3.18	4.62	4.49	5.68	6.77	3.85	3.99	3.03	6.77
	YEAR OF OCCURRENCE		1979	1966	1968	1970	1984	1973	1989	1971	1999	1980	1977	1992	SEP 1999
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	10.4	9.8	10.0	10.6	11.2	10.0	9.1	8.7	7.9	7.3	9.9	10.5	115.4	
PRECIPITATION ≥ 1.00	30	0.8	0.6	1.0	0.9	0.9	1.0	1.4	1.2	1.0	0.7	0.9	0.8	11.2	
SNOWFALL	NORMAL (IN)	30	7.8	7.5	3.3	0.5	T	0.0	0.0	0.0	0.1	0.6	3.4	23.2	
	MAXIMUM MONTHLY (IN)	56	23.4	27.6	13.4	4.3	T	T	0.0	0.0	0.0	2.1	8.8	18.8	27.6
	YEAR OF OCCURRENCE		1978	1979	1958	1971	1963	1993			1979	1953	1966	FEB 1979	
	MAXIMUM IN 24 HOURS (IN)	56	13.2	21.3	12.0	4.3	T	T	0.0	0.0	0.0	2.1	8.7	14.6	21.3
	YEAR OF OCCURRENCE		1961	1983	1993	1971	1963	1993			1979	1953	1960	FEB 1983	
	MAXIMUM SNOW DEPTH (IN)	51	12	22	12	3	0	0	0	0	0	8	12	22	
	YEAR OF OCCURRENCE		1961	1983	1993	1997						1953	1966	FEB 1983	
	NORMAL NO. DAYS WITH:														
SNOWFALL ≥ 1.0	30	2.3	1.8	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.*	0.2	0.9	6.4	

PRECIPITATION (inches) 1999 PHILADELPHIA, PA (PHL)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0.74	2.08	3.83	6.12	2.57	4.60	2.75	3.99	0.82	3.66	4.71	3.27	39.14
1971	2.13	5.43	2.58	1.84	4.10	1.01	4.84	9.61	5.83	3.84	5.37	1.21	47.79
1972	2.34	5.09	2.69	4.08	4.11	5.79	2.62	3.76	1.12	3.77	9.06	5.20	49.63
1973	3.93	2.96	3.52	6.68	4.14	7.88	2.39	2.03	3.39	2.16	0.64	6.34	46.06
1974	2.95	2.14	4.91	2.77	3.21	4.43	2.08	3.83	4.68	1.93	0.81	4.04	37.78
1975	4.00	2.91	4.68	2.97	4.99	7.57	6.32	2.21	7.21	3.24	3.14	2.89	52.13
1976	4.50	1.66	2.38	2.06	4.35	3.42	4.04	2.17	2.44	4.30	0.32	1.63	33.27
1977	2.61	1.33	4.19	5.59	0.70	5.33	1.47	8.70	3.44	3.11	7.76	5.19	49.42
1978	8.86	1.35	4.31	1.76	6.01	1.75	5.27	6.04	1.59	1.20	2.20	5.61	45.95
1979	8.74	6.44	2.43	4.08	3.98	4.34	3.95	5.95	4.89	3.84	2.48	1.67	52.79
1980	2.27	0.96	7.01	4.79	3.22	1.73	6.58	0.80	2.79	5.03	2.85	0.77	38.80
1981	0.50	2.94	1.61	3.60	4.53	4.40	4.54	5.11	2.83	2.68	0.95	4.14	37.83
1982	4.45	3.16	2.66	6.06	4.47	5.76	1.94	2.20	2.32	1.94	3.67	1.80	40.43
1983	2.81	3.53	6.70	8.12	7.03	2.75	0.68	2.57	3.45	3.69	5.71	7.37	54.41
1984	2.22	2.81	6.14	4.25	6.87	2.85	6.99	3.28	1.96	2.56	1.56	2.17	43.66
1985	1.55	2.44	1.95	0.52	4.99	1.88	4.66	2.82	5.78	1.54	6.09	0.98	35.20
1986	4.13	3.38	1.25	4.46	0.70	1.99	4.10	3.70	2.33	2.22	6.27	5.89	40.42
1987	4.58	1.17	1.16	3.63	3.15	2.01	4.82	3.72	2.78	2.62	2.08	1.68	33.40
1988	2.72	4.11	2.24	2.92	3.67	0.57	8.07	3.16	2.62	2.16	5.17	1.00	38.41
1989	2.41	3.25	4.41	2.27	6.76	4.73	9.44	3.92	5.03	3.44	1.79	1.21	48.66
1990	4.09	1.44	2.59	3.16	6.08	3.39	2.62	4.07	1.71	1.68	1.17	3.79	35.79
1991	4.10	0.75	4.13	2.81	1.82	3.36	4.79	3.86	3.58	1.61	1.55	3.86	36.22
1992	0.88	1.31	3.19	1.26	2.74	1.84	5.05	2.00	3.04	1.23	3.26	4.61	30.41
1993	1.97	3.03	6.61	4.20	2.42	1.52	1.98	5.18	6.66	2.69	2.23	3.69	42.18
1994	4.27	3.27	6.44	2.86	3.66	1.74	10.42	4.54	1.64	0.94	3.03	2.11	44.92
1995	3.10	2.41	1.67	1.96	2.67	0.62	2.92	1.15	3.55	5.99	3.34	2.15	31.53
1996	4.39	2.12	4.27	4.48	3.25	4.73	8.17	4.29	4.95	4.30	3.03	8.47	56.45
1997	2.80	2.48	3.91	2.58	2.32	1.49	2.38	4.56	1.59	1.83	3.49	3.09	32.52
1998	4.24	3.25	3.93	2.70	3.87	4.91	1.79	1.26	1.86	1.84	1.18	0.82	31.65
1999	4.89	2.95	4.02	3.31	3.70	1.16	1.22	5.32	13.07	3.55	2.31	2.99	48.49
POR= 128 YRS	3.25	3.01	3.55	3.33	3.43	3.49	4.18	4.29	3.37	2.70	3.07	3.12	40.79

WBAN : 13739

AVERAGE TEMPERATURE (°F) 1999 PHILADELPHIA, PA (PHL)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	24.5	33.1	38.3	51.5	64.9	71.6	76.9	76.7	72.0	60.1	48.2	35.8	54.5
1971	27.8	36.1	40.7	51.6	60.9	74.3	77.4	75.3	71.6	63.5	46.1	41.6	55.6
1972	35.1	32.4	40.7	49.7	63.6	68.7	77.1	76.0	69.2	52.7	43.6	39.9	54.1
1973	34.4	33.6	47.2	53.4	60.3	74.6	77.9	78.8	70.7	59.2	48.0	38.6	56.4
1974	35.9	31.7	43.3	55.8	62.4	70.3	76.9	76.8	68.1	54.8	48.5	39.4	55.3
1975	37.3	35.8	41.2	48.7	66.6	72.2	76.6	77.1	66.6	61.2	52.7	36.9	56.1
1976	28.7	40.9	46.3	56.6	62.7	75.2	75.3	74.8	67.3	52.5	39.9	30.3	54.2
1977	20.0	33.6	48.8	57.2	65.8	68.6	77.8	76.2	69.9	54.3	46.4	32.6	54.3
1978	28.0	24.7	39.0	50.6	61.4	72.6	75.6	79.2	68.5	55.5	47.9	38.6	53.5
1979	32.5	23.0	47.0	52.3	66.4	69.1	76.2	75.5	68.5	54.9	50.1	38.2	54.5
1980	31.8	29.7	40.2	54.7	65.4	70.6	78.5	80.0	72.2	54.9	43.2	32.5	54.5
1981	25.3	37.9	40.0	54.7	62.6	72.0	76.9	74.9	66.8	53.1	45.6	34.6	53.7
1982	24.7	34.4	41.7	50.2	65.9	68.7	76.9	73.5	67.6	56.9	48.4	41.3	54.2
1983	34.1	34.0	43.7	51.0	62.1	72.0	77.9	77.1	69.0	56.6	46.7	33.2	54.8
1984	26.2	38.7	35.5	50.2	60.2	73.0	73.9	75.2	64.7	61.2	44.4	41.9	53.8
1985	27.3	35.3	44.6	55.5	64.5	68.8	75.4	74.1	69.1	59.3	51.3	33.3	54.9
1986	32.8	32.1	44.5	53.3	66.8	73.8	78.1	74.0	68.3	57.8	44.5	37.9	55.3
1987	31.9	32.5	45.7	53.1	63.9	74.6	79.5	75.4	68.8	52.5	48.0	39.2	55.4
1988	27.3	34.6	44.7	51.3	63.6	72.3	80.7	78.3	66.7	51.8	47.7	35.4	54.5
1989	36.5	34.8	42.3	52.4	62.4	74.7	76.3	75.6	69.7	58.3	44.9	25.5	54.5
1990	40.3	41.2	46.1	53.3	61.3	72.2	78.0	75.8	68.0	61.9	49.7	42.1	57.5
1991	35.2	40.0	46.1	55.5	70.8	75.7	79.0	79.0	69.5	58.9	47.3	39.6	58.1
1992	35.7	37.5	41.6	53.2	62.5	71.3	77.1	73.5	68.4	55.2	48.0	38.8	55.2
1993	38.2	31.9	39.8	54.2	66.4	74.4	81.4	78.9	69.7	58.0	49.0	38.4	56.7
1994	27.4	33.2	42.8	59.5	62.5	78.1	82.1	74.9	68.3	57.5	51.7	41.9	56.7
1995	38.2	31.5	47.3	54.5	64.3	74.3	81.5	79.9	70.4	61.4	43.0	31.6	56.5
1996	30.2	33.9	38.7	52.7	60.6	73.0	74.4	74.5	68.7	56.3	41.3	40.2	53.7
1997	32.5	40.0	44.1	51.4	59.5	71.1	77.5	73.9	67.1	57.3	44.4	38.5	54.8
1998	41.0	41.8	45.5	55.3	66.2	71.5	77.5	78.0	71.8	58.3	48.2	42.0	58.1
1999	35.0	38.0	42.4	53.5	64.0	72.9	81.2	77.4	69.9	56.1	50.9	39.9	56.8
POR= 126 YRS	32.8	34.0	41.8	52.4	63.1	71.9	76.8	74.9	68.4	57.3	46.3	36.3	54.7

HEATING DEGREE DAYS (base 65°F) 1999 PHILADELPHIA, PA (PHL)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0	0	29	191	499	899	1145	802	746	394	140	3	4848
1971-72	0	0	17	79	576	719	920	941	748	450	86	26	4562
1972-73	0	0	22	378	635	775	940	874	547	359	176	1	4707
1973-74	0	0	18	196	507	810	897	926	667	292	128	11	4452
1974-75	0	0	46	313	500	786	852	812	732	483	66	4	4594
1975-76	0	0	45	152	372	866	1120	692	572	307	119	13	4258
1976-77	0	2	42	387	743	1069	1390	873	505	258	73	36	5378
1977-78	0	0	24	328	558	998	1139	1121	797	423	161	10	5559
1978-79	5	0	41	296	507	811	999	1170	556	378	38	17	4818
1979-80	4	7	28	324	439	823	1021	1016	763	301	72	17	4815
1980-81	0	0	22	320	646	999	1222	752	768	309	129	4	5171
1981-82	0	0	58	364	576	936	1243	850	714	440	50	25	5256
1982-83	0	8	31	277	497	730	951	861	653	423	128	2	4561
1983-84	0	0	70	283	540	981	1196	756	911	438	181	13	5369
1984-85	0	0	92	138	613	709	1161	824	627	306	89	9	4568
1985-86	0	0	38	187	407	975	990	914	628	345	77	6	4567
1986-87	0	21	23	255	609	838	1017	904	591	359	129	1	4747
1987-88	0	0	20	379	504	796	1162	876	624	404	105	32	4902
1988-89	0	0	35	408	513	908	876	840	700	371	138	0	4789
1989-90	0	0	43	220	594	1219	757	662	588	375	127	6	4591
1990-91	2	1	55	171	453	701	920	694	576	296	44	0	3913
1991-92	0	0	42	215	527	778	903	789	720	356	124	9	4463
1992-93	0	1	49	310	504	804	824	920	773	314	47	6	4552
1993-94	0	0	34	219	479	820	1156	881	681	193	132	0	4595
1994-95	0	0	20	231	392	710	824	932	542	318	82	0	4051
1995-96	0	0	21	159	656	1029	1072	894	809	370	191	7	5208
1996-97	0	0	34	265	704	761	999	695	643	401	172	42	4716
1997-98	2	0	45	278	612	811	738	644	619	287	67	13	4116
1998-99	0	0	14	207	498	706	920	751	691	336	77	3	4203
1999-	0	0	22	275	415	772							

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COOLING DEGREE DAYS (base 65°F) 1999 PHILADELPHIA, PA (PHL)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0	0	0	3	100	204	376	367	247	46	0	0	1343
1971	0	0	0	0	19	292	394	326	223	37	14	0	1305
1972	0	0	3	0	47	143	381	344	153	3	0	0	1074
1973	0	0	0	16	35	294	404	435	193	23	0	0	1400
1974	0	0	0	24	55	179	373	372	145	5	12	0	1165
1975	0	0	0	0	121	224	366	380	98	42	12	0	1243
1976	0	0	0	64	58	326	326	315	115	7	0	0	1211
1977	0	0	10	32	104	150	402	355	175	3	6	0	1237
1978	0	0	0	0	57	244	338	447	153	8	0	0	1247
1979	0	0	6	5	90	146	357	339	137	16	1	0	1097
1980	0	0	0	0	89	194	428	470	244	10	0	0	1435
1981	0	0	0	9	62	224	373	315	119	1	0	0	1103
1982	0	0	0	3	85	142	376	280	115	31	5	0	1037
1983	0	0	0	11	43	217	409	380	199	27	0	0	1286
1984	0	0	0	0	39	260	283	324	90	30	0	0	1026
1985	0	0	0	27	81	133	330	291	166	19	0	0	1047
1986	0	0	0	0	139	278	413	307	129	40	0	0	1306
1987	0	0	0	7	101	295	456	332	142	0	0	0	1333
1988	0	0	0	1	70	259	495	418	93	7	0	0	1343
1989	0	0	1	1	62	298	357	332	192	18	1	0	1262
1990	0	0	9	29	20	226	413	341	152	83	1	0	1274
1991	0	0	1	21	230	327	443	437	183	30	0	0	1672
1992	0	0	0	10	54	205	380	268	158	13	0	0	1088
1993	0	0	0	0	95	298	517	438	181	11	6	0	1546
1994	0	0	0	34	63	401	540	313	125	4	0	0	1480
1995	0	0	0	8	66	284	519	468	189	53	1	0	1588
1996	0	0	0	9	61	257	301	305	151	2	1	0	1087
1997	0	0	0	0	9	230	397	280	113	49	0	0	1078
1998	0	0	20	3	114	216	397	410	223	3	0	0	1386
1999	0	0	0	0	51	246	508	394	177	4	0	0	1380

SNOWFALL (inches) 1999 PHILADELPHIA, PA (PHL)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0.0	0.0	0.0	T	0.0	1.1	7.7	0.8	4.4	4.3	0.0	0.0	18.3
1971-72	0.0	0.0	0.0	0.0	T	0.1	3.2	8.2	0.3	0.4	0.0	0.0	12.2
1972-73	0.0	0.0	0.0	T	T	T	T	T	T	T	0.0	0.0	T
1973-74	0.0	0.0	0.0	0.0	T	4.6	4.1	12.1	T	T	0.0	0.0	20.8
1974-75	0.0	0.0	0.0	0.0	T	0.8	3.9	6.6	2.3	T	0.0	0.0	13.6
1975-76	0.0	0.0	0.0	0.0	0.0	1.1	6.4	3.1	6.9	0.0	0.0	0.0	17.5
1976-77	0.0	0.0	0.0	0.0	T	2.8	15.7	0.2	T	0.0	0.0	0.0	18.7
1977-78	0.0	0.0	0.0	0.0	0.2	0.2	23.4	19.0	12.1	T	0.0	0.0	54.9
1978-79	0.0	0.0	0.0	0.0	2.5	T	10.1	27.6	T	T	0.0	0.0	40.2
1979-80	0.0	0.0	0.0	2.1	T	4.9	6.1	0.4	7.4	T	0.0	0.0	20.9
1980-81	0.0	0.0	0.0	0.0	0.2	1.4	5.0	T	8.8	0.0	0.0	0.0	15.4
1981-82	0.0	0.0	0.0	0.0	T	2.8	14.0	3.5	1.1	4.0	0.0	0.0	25.4
1982-83	0.0	0.0	0.0	0.0	0.0	6.8	0.2	26.1	0.9	1.9	0.0	0.0	35.9
1983-84	0.0	0.0	0.0	0.0	0.8	T	10.5	T	10.3	T	0.0	0.0	21.6
1984-85	0.0	0.0	0.0	0.0	T	0.2	11.9	4.4	T	T	0.0	0.0	16.5
1985-86	0.0	0.0	0.0	0.0	0.0	1.5	3.4	11.5	T	T	0.0	0.0	16.4
1986-87	0.0	0.0	0.0	0.0	T	0.4	15.2	10.1	T	T	0.0	0.0	25.7
1987-88	0.0	0.0	0.0	0.0	1.4	1.5	10.6	1.5	T	0.0	0.0	0.0	15.0
1988-89	0.0	0.0	0.0	0.0	0.0	0.4	6.0	2.4	2.4	0.0	0.0	0.0	11.2
1989-90	0.0	0.0	0.0	0.0	4.6	5.3	1.4	0.9	2.4	2.4	0.0	0.0	17.0
1990-91	0.0	0.0	0.0	0.0	0.0	6.4	6.5	1.0	0.7	0.0	0.0	0.0	14.6
1991-92	0.0	0.0	0.0	0.0	T	T	1.2	1.0	2.5	T	0.0	0.0	4.7
1992-93	0.0	0.0	0.0	0.0	T	T	1.0	10.9	12.4	T	0.0	T	24.3
1993-94	0.0	0.0	0.0	0.0	T	0.9	4.1	13.2	4.9	0.0	0.0	0.0	23.1
1994-95	0.0	0.0	0.0	0.0	T	0.0	T	9.8	T	0.0	0.0	0.0	9.8
1995-96	0.0	0.0	0.0	0.0	1.9	2.3							
1996-97					T	T	1.7	4.1	5.5	1.6	0.0	0.0	
1997-98	0.0	0.0	0.0	0.0	T	0.2	0.5	T	0.1	0.0	0.0	T	0.8
1998-99	0.0	0.0	0.0	0.0	0.0	2.0	4.9	0.7	4.9	0.0	0.0	0.0	12.5
1999-	0.0	0.0	0.0	0.0	0.0	T							
POR= 56 YRS	0.0	0.0	0.0	0.0	0.7	3.1	5.9	6.3	3.5	0.3	T	T	19.8

WBAN : 13739

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
PHILADELPHIA,
PENNSYLVANIA (PHL)

The Appalachian Mountains to the west and the Atlantic Ocean to the east have a moderating effect on climate. Periods of very high or very low temperatures seldom last for more than three or four days. Temperatures below zero or above 100 degrees are a rarity. On occasion, the area becomes engulfed with maritime air during the summer months, and high humidity adds to the discomfort of seasonably warm temperatures.

Precipitation is fairly evenly distributed throughout the year with maximum amounts during the late summer months. Much of the summer rainfall is from local thunderstorms and amounts vary in different areas of the city. This is due, in part, to the higher elevations to the west and north. Snowfall amounts are often considerably larger in the northern suburbs than in the central and southern parts of the city. In many cases, the precipitation will change from snow to rain within the city. Single storms of 10 inches or more occur about every five years.

The prevailing wind direction for the summer months is from the southwest, while northwesterly winds prevail during the winter. The annual prevailing direction is from the west-southwest. Destructive velocities are comparatively rare and occur mostly in gustiness during summer thunderstorms. High winds occurring in the winter months, as a rule, come with the advance of cold air after the passage of a deep low pressure system. Only rarely have hurricanes in the vicinity caused widespread damage, primarily because of flooding.

Flood stages in the Schuylkill River normally occur about twice a year. Flood stages seldom last over 12 hours and usually occur after excessive thunderstorms. Flooding rarely occurs on the Delaware River.

STATION LOCATION

PHILADELPHIA, PENNSYLVANIA

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE												REMARKS
						SEA LEVEL	GROUND											
							WIND DIRECTION	1	2	3	4	5	6	7	8	9	10	
CITY -- NOTE: For period December, 1870 through February, 1882, refer to previous editions.																		
Mutual Life Ins. Bldg. 10th & Chestnut Sts.	2/01/82	4/01/84	0.7 mi. W	39°57'	75°09'	40	107											φ - Approximate.
Post Office Building 9th & Chestnut Sts.	4/01/84	12/17/34	0.1 mi. E	39°57'	75°09'	39	175 d184 e190 f182 g341 h367	169 d117 e124	168 d116 e123		%114			167 d114				% - Added 1/27/14. d - Effective 2/1/04. e - Effective 1/27/14. f - Effective 7/23/24. g - Moved 1000 feet South to Edison Building 2/2/28. h - Effective 10/27/28.
New Customhouse 2nd & Chestnut Sts.	12/17/34	12/31/54	0.6 mi. E	39°57'	75°09'	26	i367 m148	175	174			166 k m132	jl66	166				i - Remained on Edison Bldg. j - Added 1/1/43. k - Moved to SW Airport 1/1/43. m - Added 0.2 mile West on Bourse Building 7/1/45.
New Customhouse 2nd & Chestnut Sts.	1/01/55	5/15/59				26		175			n160	n160	166				Cooperative Station. n - Added 5/1/55.	
Bourse Building 4th Street below Market	3/01/55	5/01/55	0.2 mi. W	39°57'	75°09'								133					
Phila Electric Building 10th & Chestnut Sts.	5/15/59	10/1973	0.7 mi. W	39°57'	75°10'	35		155										
Federal Office Building 600 Arch Street	12/03/73	Present		39°57'	75°09'	35	186	178					178					
<u>AIRPORT</u>																		
Administration Building Southwest Airport #	6/20/40	6/22/45		39°53'	75°14'	13	a58	6	5			b3	3				a - 57 feet through 1942. b - Installed 1/1/43. # - Name changed to International Airport 4/1/48.	
Administration Building N. Philadelphia Airport	6/23/45	11/30/45	18 mi. NE	40°05'	75°01'	100	51	6	5				4					
Administration Building International Airport	12/01/45	12/22/54	18 mi. SW	39°53'	75°14'	13	58	*22	*22			3	3				* - Changed to roof exposure 10/4/54. WB design wind equipment installed 5/17/49.	
New Terminal Building International Airport	12/23/54	5/09/55	7/8 mi. SW	39°53'	75°15'	13	120	67	66			64	64				c - Telepsychrometer (7') 5/9/55-12/31/59. Hygro. comm. 3000' S of tele. site 12/31/59.	
New Terminal Building International Airport	5/09/55	12/31/59	0.2 mi. N	39°53'	75°15'	13	120	7	66			3	4	3			d - Removed prior to 12/1968. e - 4 feet to 7/13/70. % - Commissioned 6/16/69.	
New Terminal Building International Airport	1/01/60	12/01/95	NA	39°53'	75°15'	5	20	d4	d55	%115	e64	e64	NA	c4	NA			
International Airport	12/01/95	Present	NA	39°52'	75°14'	60											S ASOS Commissioned 12/01/95	

SUBSCRIPTION: Price and ordering information available through: National Climatic Data Center, Federal Building, Asheville, North Carolina 28801. INQUIRIES/COMMENTS CALL: (828) 271-48001

National Climatic Data Center
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