

1999

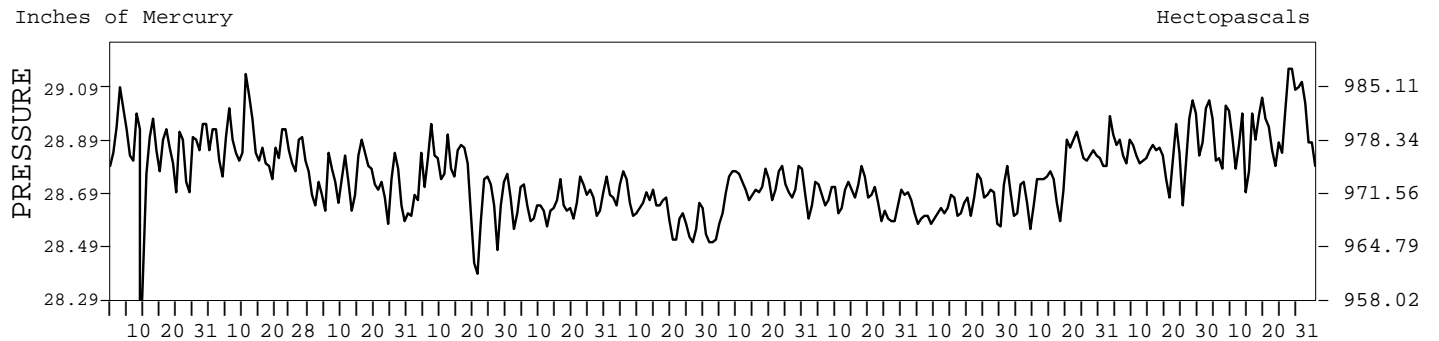
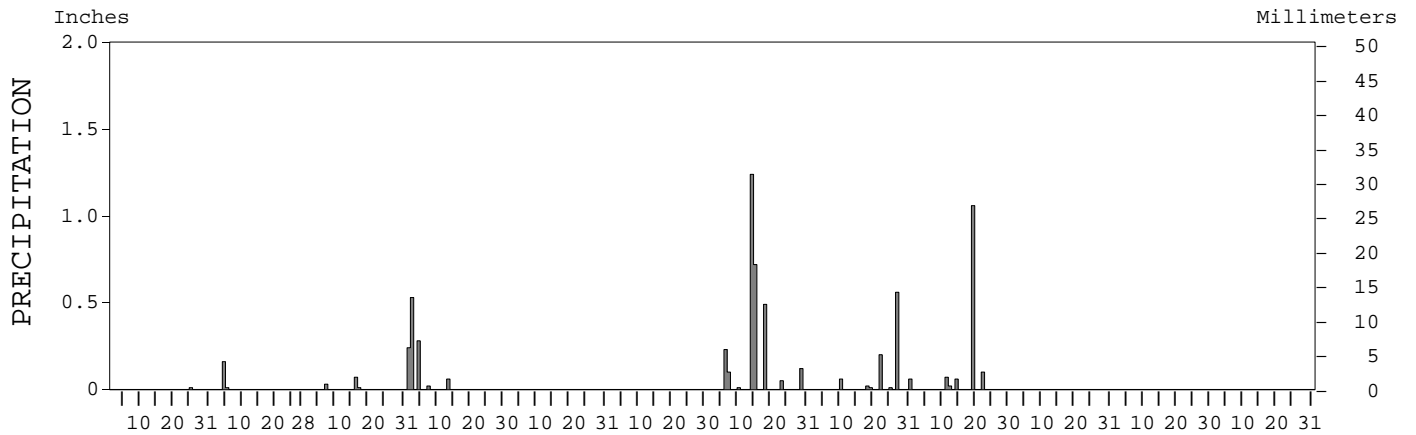
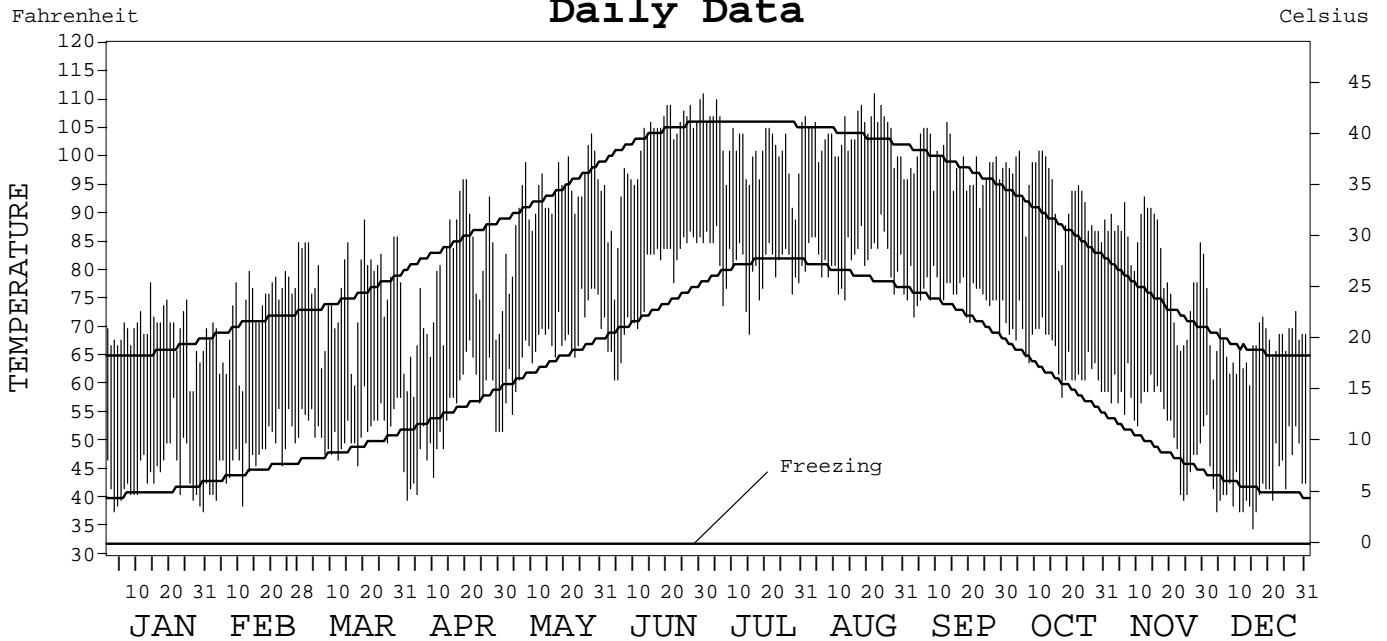
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-0572

PHOENIX,
ARIZONA (PHX)

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

PHOENIX, AZ (PHX)

LATITUDE: 33° 26' 35" N LONGITUDE: 111° 59' 25" W ELEVATION (FT): GRND: 1104 BARO: 1104 TIME ZONE: MOUNTAIN (UTC + 7) WBAN: 23183

	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	69.4	72.9	77.3	77.8	92.3	100.5	101.6	103.9	98.8	93.0	81.9	67.2	86.4	
	HIGHEST DAILY MAXIMUM	78	85	89	96	104	110	111	111	106	101	93	77	111	
	DATE OF OCCURRENCE	14	28	20	20+	28	30	01	22	13	12+	12	01	AUG 22	
	MEAN DAILY MINIMUM	44.2	47.7	52.5	54.0	67.3	77.1	80.9	82.1	75.9	65.5	54.1	43.3	62.0	
	LOWEST DAILY MINIMUM	38	39	46	40	52	61	69	75	69	58	40	35	35	
	DATE OF OCCURRENCE	30+	11	18	02	01	05+	15	13	29	18	24	15	DEC 15	
	AVERAGE DRY BULB	56.8	60.3	64.9	65.9	79.8	88.8	91.3	93.0	87.4	79.3	68.0	55.3	74.2	
	MEAN WET BULB		46.0	49.6	50.7	56.8	64.3	73.8	71.6	68.4	56.9	50.4	41.8		
	MEAN DEW POINT		27.9	32.6	34.0	34.7	46.7	65.6	60.5	57.1	36.8	32.1	23.4		
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	5	24	26	30	31	30	21	7	0	174	
	MAXIMUM ≤ 32°	0	0	0	0	0	0	0	0	0	0	0	0	0	
	MINIMUM ≤ 32°	0	0	0	0	0	0	0	0	0	0	0	0	0	
MINIMUM ≤ 0°	0	0	0	0	0	0	0	0	0	0	0	0	0		
H/C	HEATING DEGREE DAYS	245	127	65	104	2	0	0	0	0	0	53	297	893	
	COOLING DEGREE DAYS	0	7	68	138	468	724	820	875	679	453	151	1	4384	
RH	MEAN (PERCENT)	37	35	34	36	21	24	46	37	39	24	30	32	33	
	HOUR 05 LST	50	48	46	51	31	34	58	48	49	33	41	42	44	
	HOUR 11 LST	32	29	33	33	19	22	41	33	34	18	22	26	28	
	HOUR 17 LST	20	23	21	24	15	18	36	27	28	14	17	20	22	
	HOUR 23 LST	41	37	32	36	19	22	49	41	44	29	35	36	35	
S	PERCENT POSSIBLE SUNSHINE	93	88												
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	0	0	0	0	0	0	0	0	0	0	0	0	0	
	THUNDERSTORMS	0	0	0	0	0	0	6	7	5	0	0	0	18	
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.)		28.88	28.74	28.73	28.66	28.64	28.70	28.68	28.65	28.78	28.87	28.94		
	MEAN SEA-LEVEL PRESS. (IN.)		30.04	29.89	29.87	29.79	29.75	29.81	29.79	29.77	29.91	30.02	30.10		
WINDS	RESULTANT SPEED (MPH)		0.8	0.9	2.5	1.2	1.3	0.8	1.2	0.1	1.5	0.9	1.2		
	RES. DIR. (TENS OF DEGS.)		09	20	22	20	26	21	11	31	08	10	07		
	MEAN SPEED (MPH)	4.3	4.8	5.8	7.4	6.7	6.8	6.9	6.3	5.6	4.8	3.6	4.2	5.6	
	PREVAIL. DIR. (TENS OF DEGS.)	10	10	10	10	27	27	10	10	09	10	10	10	10	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	29	24	25	31	25	24	39	37	37	21	16	22	39	
	DIR. (TENS OF DEGS.)	24	25	25	23	20	13	15	14	15	03	30	05	15	
	DATE OF OCCURRENCE	25	10	26	02	22	19	07	23	19	17+	22	25	JUL 07	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	34	31	30	36	30	30	45	49	51	28	22	26	51	
DIR. (TENS OF DEGS.)	24	25	24	26	18	05	15	15	15	01	28	06	15		
DATE OF OCCURRENCE	25	10	31+	12+	22	20	07	23	19	17	22	25+	SEP 19		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	0.01	0.17	0.11	1.13	0.00	T	2.96	0.92	1.31	0.00	0.00	0.00	6.61	
	GREATEST 24-HOUR (IN.)	0.01	0.16	0.07	0.76	0.00	T	1.96	0.56	1.06	0.00	0.00	0.00	1.96	
	DATE OF OCCURRENCE	25	04	16	01-02		02	14-15	27	19				JUL 14-15	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	1	2	3	5	0	0	8	7	5	0	0	0	31	
PRECIPITATION ≥ 0.10	0	1	0	3	0	0	6	2	2	0	0	0	14		
PRECIPITATION ≥ 1.00	0	0	0	0	0	0	1	0	1	0	0	0	2		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	GREATEST 24-HOUR (IN.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	DATE OF OCCURRENCE														
	MAXIMUM SNOW DEPTH (IN.)	0	0	0	0	0	0	0	0	0	0	0	0	0	
	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

PHOENIX, AZ (PHX)

LATITUDE: 33° 26' 35" N LONGITUDE: 111° 59' 25" W ELEVATION (FT): GRND: 1104 BARO: 1104 TIME ZONE: MOUNTAIN (UTC + 7) WBAN: 23183

		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	65.9	70.7	75.5	84.5	93.6	103.5	105.9	103.7	98.3	88.1	74.9	66.2	85.9
	MEAN DAILY MAXIMUM	49	66.0	70.4	75.4	84.1	93.2	102.9	105.2	103.2	98.5	88.2	74.7	66.2	85.7
	HIGHEST DAILY MAXIMUM	62	88	92	100	105	113	122	121	116	118	107	93	88	122
	YEAR OF OCCURRENCE		1971	1986	1988	1992	1984	1990	1995	1975	1950	1980	1999	1950	JUN 1990
	MEAN OF EXTREME MAXS.	52	77.5	82.3	88.0	97.0	104.5	112.4	113.3	110.5	107.3	99.3	86.8	77.6	96.4
	NORMAL DAILY MINIMUM	30	41.2	44.7	48.8	55.3	63.9	72.9	81.0	79.2	72.8	60.8	48.9	41.8	59.3
	MEAN DAILY MINIMUM	49	41.7	45.0	49.2	55.8	64.3	73.0	80.7	79.5	72.9	61.2	48.8	42.2	59.5
	LOWEST DAILY MINIMUM	62	17	22	25	32	40	50	61	60	47	34	25	22	17
	YEAR OF OCCURRENCE		1950	1948	1966	1945	1967	1944	1944	1942	1965	1971	1938	1948	JAN 1950
	MEAN OF EXTREME MINS.	52	30.7	34.2	38.2	44.5	52.7	62.7	71.5	71.0	62.4	48.6	37.2	31.6	48.8
	NORMAL DRY BULB	30	53.6	57.7	62.2	69.9	78.8	88.2	93.5	91.5	85.6	74.5	61.9	54.1	72.6
	MEAN DRY BULB	52	53.6	57.4	62.2	69.8	78.6	87.8	92.8	91.2	85.7	74.3	61.8	53.9	72.4
	MEAN WET BULB	47	43.9	46.1	48.5	52.1	56.5	61.9	70.0	70.5	65.7	57.4	48.9	44.0	55.5
	MEAN DEW POINT	47	33.1	33.3	33.4	33.6	35.9	41.0	57.3	59.4	53.3	43.6	36.0	32.9	41.1
	NORMAL NO. DAYS WITH:														
	MAXIMUM ≥ 90°	30	0.0	0.1	2.2	9.7	22.8	29.3	30.9	30.7	27.4	14.8	0.5	0.0	168.4
MAXIMUM ≤ 32°	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MINIMUM ≤ 32°	30	3.7	1.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.0	7.7	
MINIMUM ≤ 0°	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
H/C	NORMAL HEATING DEG. DAYS	30	362	227	182	75	8	0	0	0	0	17	134	345	1350
	NORMAL COOLING DEG. DAYS	30	8	22	95	222	436	696	884	822	618	311	41	7	4162
RH	NORMAL (PERCENT)	30	51	44	39	28	22	19	32	36	36	37	44	52	37
	HOUR 05 LST	30	66	60	56	43	35	31	45	51	50	51	58	66	51
	HOUR 11 LST	30	45	39	34	23	18	16	28	33	31	31	37	46	32
	HOUR 17 LST	30	32	26	24	16	13	11	20	23	23	22	27	33	22
	HOUR 23 LST	30	56	48	42	29	22	20	33	38	38	41	49	57	39
S	PERCENT POSSIBLE SUNSHINE	11	79	82	85	89	94	95	86	86	89	88	83	77	86
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	62	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	1.4
	THUNDERSTORMS	60	0.4	0.6	0.9	0.7	1.0	1.0	6.0	7.0	3.6	1.3	0.5	0.6	23.6
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	1		2.4	2.0	2.4	1.2	1.2	1.6	0.8				1.6	
	MIDNIGHT-MIDNIGHT (OKTAS)	1		2.4		2.4	1.2	1.2	1.6	0.8		0.0			
	MEAN NO. DAYS WITH:														
	CLEAR	1	5.0	17.5	18.0	14.0	26.0	17.0	6.0	10.0	15.0	15.0		13.0	
PARTLY CLOUDY	1	1.0	5.0	5.0	4.0	1.5	4.0		1.0		2.0		5.0		
CLOUDY	1		6.0	4.0	1.0	1.0			1.0						
PR	MEAN STATION PRESSURE (IN)	26	28.89	28.87	28.78	28.72	28.66	28.64	28.68	28.69	28.69	28.76	28.84	28.89	28.76
	MEAN SEA-LEVEL PRES. (IN)	47	30.06	30.01	29.93	29.86	29.80	29.75	29.79	29.80	29.80	29.89	30.00	30.05	29.89
WINDS	MEAN SPEED (MPH)	44	5.1	5.7	6.5	6.8	6.9	6.6	6.9	6.5	6.1	5.6	5.2	4.9	6.1
	PREVAIL. DIR (TENS OF DEGS)	28	10	10	10	10	27	27	27	09	10	10	10	10	10
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	5	36	26	43	33	31	29	41	37	37	36	30	25	43
	DIR. (TENS OF DEGS)		25	25	24	28	25	24	17	14	15	24	25	01	24
	YEAR OF OCCURRENCE		1995	1998	1998	1995	1997	1995	1995	1999	1999	1998	1997	1996	MAR 1998
	MAXIMUM 5-SECOND:														
SPEED (MPH)	5	39	31	53	46	39	33	52	53	51	48	36	32	53	
DIR. (TENS OF DEGS)		24	25	24	28	15	13	18	13	15	24	25	05	13	
YEAR OF OCCURRENCE		1995	1999	1998	1995	1997	1996	1995	1998	1999	1998	1997	1996	AUG 1998	
PRECIPITATION	NORMAL (IN)	30	0.67	0.68	0.88	0.22	0.12	0.13	0.83	0.96	0.86	0.65	0.66	1.00	7.66
	MAXIMUM MONTHLY (IN)	62	5.22	2.93	4.16	2.10	1.06	1.70	5.15	5.56	4.23	4.40	3.04	3.98	5.56
	YEAR OF OCCURRENCE		1993	1998	1941	1941	1976	1972	1984	1951	1939	1972	1952	1967	AUG 1951
	MINIMUM MONTHLY (IN)	62	0.00	0.00	0.00	0.00	0.00	0.00	T	T	0.00	0.00	0.00	0.00	0.00
	YEAR OF OCCURRENCE		1972	1967	1959	1962	1983	1983	1995	1975	1973	1973	1980	1981	JUN 1983
	MAXIMUM IN 24 HOURS (IN)	62	1.84	1.49	2.04	1.38	0.96	1.64	2.75	3.07	2.43	2.32	2.16	1.89	3.07
	YEAR OF OCCURRENCE		1993	1987	1983	1941	1976	1972	1984	1943	1970	1988	1993	1967	AUG 1943
NORMAL NO. DAYS WITH:															
PRECIPITATION ≥ 0.01	30	4.0	3.8	4.1	1.6	0.8	0.7	4.3	4.7	3.2	2.7	2.9	4.0	36.8	
PRECIPITATION ≥ 1.00	30	0.0	*	0.1	0.0	0.0	*	0.1	0.2	0.2	0.1	0.0	0.1	0.8	
SNOWFALL	NORMAL (IN)	30	T	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.*	0.0
	MAXIMUM MONTHLY (IN)	62	T	0.6	T	T	T	0.0	0.0	0.0	0.0	T	0.0	0.4	0.6
	YEAR OF OCCURRENCE		1993	1939	1991	1949	1992					1992		1990	FEB 1939
	MAXIMUM IN 24 HOURS (IN)	62	T	0.6	T	T	T	0.0	0.0	0.0	0.0	T	0.0	0.4	0.6
	YEAR OF OCCURRENCE		1993	1939	1991	1949	1992					1992		1990	FEB 1939
	MAXIMUM SNOW DEPTH (IN)	48	0	0	0	0	0	0	0	0	0	0	0	0	0
	YEAR OF OCCURRENCE														
NORMAL NO. DAYS WITH:															
SNOWFALL ≥ 1.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

PRECIPITATION (inches) 1999 PHOENIX, AZ (PHX)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	T	0.30	2.26	T	T	0.00	0.48	1.02	2.85	0.44	0.02	0.26	7.63
1971	0.22	0.35	T	0.13	T	0.00	0.24	0.99	0.92	0.27	T	0.47	3.59
1972	0.00	T	T	T	T	1.70	0.72	1.20	0.28	4.40	1.01	1.56	10.87
1973	0.13	1.36	1.69	0.07	0.10	T	1.30	T	0.00	0.00	1.36	0.00	6.01
1974	0.57	0.02	1.37	0.01	0.00	0.00	0.84	1.15	1.07	2.12	0.44	0.59	8.18
1975	0.02	0.33	0.63	0.43	T	T	0.38	T	0.82	0.23	0.55	1.12	4.51
1976	T	0.47	0.40	0.67	1.06	0.09	1.48	0.12	1.69	0.70	0.43	0.85	7.96
1977	0.35	0.06	0.27	0.06	0.16	0.10	0.30	0.18	0.53	0.61	T	0.54	3.16
1978	2.33	2.21	2.14	0.20	T	0.01	1.44	1.79	T	0.35	2.30	2.46	15.23
1979	2.16	0.09	1.78	0.02	0.76	0.04	0.34	1.18	0.09	0.09	0.12	0.13	6.80
1980	1.58	2.09	0.86	0.44	0.21	0.03	0.56	0.06	0.13	0.02	0.00	0.08	6.06
1981	0.71	1.08	0.98	0.20	0.03	T	1.14	0.11	0.18	1.34	0.95	0.00	6.72
1982	0.81	0.67	1.30	T	0.50	T	0.43	1.97	0.12	T	2.50	1.64	9.94
1983	0.70	1.17	3.17	0.18	0.00	0.00	0.38	2.48	2.43	0.71	0.43	1.16	12.81
1984	0.31	0.00	0.00	0.91	0.18	0.18	5.15	0.87	3.36	0.31	0.71	2.93	14.91
1985	0.95	0.18	0.46	0.17	T	0.00	0.98	0.21	1.60	0.92	1.59	0.86	7.92
1986	0.07	1.19	1.58	0.01	T	0.01	1.19	1.27	0.47	0.41	0.03	1.38	7.61
1987	0.67	2.06	0.28	0.09	0.06	0.01	1.08	0.45	0.57	0.47	1.04	1.62	8.40
1988	0.90	0.23	0.17	1.09	0.00	0.02	0.87	0.63	0.00	2.38	0.78	0.14	7.21
1989	1.19	T	1.25	0.00	T	0.00	0.13	1.11	0.47	0.46	0.14	0.19	4.94
1990	0.80	0.70	0.35	0.17	0.16	0.04	1.05	2.70	1.11	0.04	0.15	0.46	7.73
1991	0.63	0.56	2.05	0.00	0.00	T	0.14	0.12	0.81	1.16	1.25	1.63	8.35
1992	1.62	0.90	2.49	0.49	1.05	0.04	2.95	1.30	0.03	0.26	0.03	3.08	14.24
1993	5.22	1.72	1.62	0.00	0.08	0.01	T	0.55	0.06	1.27	2.79	0.02	13.34
1994	0.13	0.54	1.36	0.09	0.39	T	0.25	0.02	1.74	0.55	0.68	3.03	8.78
1995	1.41	0.34	1.04	0.29	0.09	T	T	3.50	1.08	0.00	1.75	0.01	9.51
1996	0.25	1.03	0.55	T	T	T	1.04	0.34	0.54	0.37	0.23	0.02	4.37
1997	0.90	0.55	0.01	0.24	T	T	0.17	1.39	0.45	0.07	0.06	0.83	4.67
1998	0.35	2.93	1.31	0.43	0.04	0.00	1.94	1.05	0.58	1.03	0.19	0.68	10.53
1999	0.01	0.17	0.11	1.13	0.00	T	2.96	0.92	1.31	0.00	0.00	0.00	6.61
POR= 104 YRS	0.79	0.75	0.77	0.34	0.14	0.09	0.94	1.02	0.80	0.52	0.64	0.90	7.70

WBAN : 23183

AVERAGE TEMPERATURE (°F) 1999 PHOENIX, AZ (PHX)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	52.1	60.2	59.5	64.7	79.6	88.1	95.0	92.5	82.2	69.1	61.4	52.6	71.4
1971	52.2	56.3	63.3	66.5	73.3	85.3	94.9	89.6	85.6	69.3	59.7	50.2	70.5
1972	51.4	59.1	70.6	71.4	78.3	87.8	94.4	89.9	84.8	71.9	58.1	52.1	72.5
1973	51.2	57.5	56.6	67.2	80.9	88.1	93.5	93.4	84.7	74.4	60.8	55.4	72.0
1974	54.0	56.7	64.5	70.6	80.2	92.2	92.4	91.2	87.2	75.9	61.5	50.6	73.1
1975	52.3	54.0	59.0	62.6	76.7	86.6	94.3	91.9	86.2	72.9	60.9	54.8	71.0
1976	55.4	60.7	61.5	68.7	80.7	87.9	91.6	90.7	83.0	74.0	64.1	55.6	72.8
1977	53.8	61.7	60.8	73.5	75.7	91.4	95.0	94.1	87.6	78.7	65.8	59.9	74.8
1978	56.6	58.7	65.6	69.2	78.5	90.9	94.6	91.4	86.3	78.6	61.5	51.7	73.6
1979	50.1	55.7	60.4	70.1	78.1	89.5	93.8	89.4	90.2	77.2	58.2	55.9	72.4
1980	56.6	60.6	60.7	69.8	76.0	88.9	95.6	92.2	87.3	75.6	64.1	61.3	74.1
1981	59.2	61.4	63.8	76.0	80.5	93.4	95.2	95.8	89.2	73.6	66.1	58.6	76.1
1982	53.9	60.1	62.4	72.5	80.4	88.1	93.7	93.7	86.7	73.5	61.9	54.1	73.4
1983	56.0	58.4	62.2	66.6	80.6	88.6	95.5	92.6	91.0	77.2	62.4	57.2	74.0
1984	57.4	60.1	67.6	70.7	87.0	88.9	91.7	91.2	87.5	71.4	61.9	53.7	74.1
1985	54.3	57.4	62.8	75.1	84.2	92.4	94.9	94.5	82.3	75.1	61.3	55.9	74.2
1986	61.4	61.0	69.3	74.2	82.3	92.8	92.3	94.5	84.1	74.7	65.0	56.4	75.7
1987	54.7	59.7	63.4	77.9	82.6	93.0	93.1	92.2	86.9	80.9	63.1	52.7	75.0
1988	55.1	62.5	66.3	73.0	81.4	93.1	96.2	93.9	87.4	82.4	64.4	55.7	76.0
1989	54.4	61.9	70.1	80.1	83.1	92.1	97.4	93.7	89.9	77.3	66.4	57.0	77.0
1990	55.6	56.6	67.2	76.2	81.1	93.8	93.6	90.8	87.6	78.7	65.9	53.6	75.1
1991	55.9	66.0	60.3	72.2	79.7	87.8	95.1	94.5	88.5	80.2	63.5	57.3	75.1
1992	56.4	62.1	64.7	77.0	83.1	90.1	92.8	92.3	90.5	79.8	61.5	53.8	75.3
1993	58.2	58.2	65.7	73.8	83.7	89.6	92.9	91.6	87.9	76.7	61.4	56.2	74.7
1994	56.8	58.1	65.0	71.8	78.3	92.2	93.9	95.3	86.9	73.1	58.0	55.3	73.7
1995	54.4	63.1	64.3	68.4	76.2	86.2	94.5	94.6	89.2	76.2	66.6	56.9	74.2
1996	55.8	62.3	65.1	74.1	83.0	91.9	95.2	94.1	84.3	74.9	64.5	56.5	75.1
1997	55.7	57.8	69.4	70.9	86.3	87.7	93.8	92.9	90.0	74.7	64.1	52.9	74.7
1998	56.6	54.1	61.9	66.7	76.2	85.4	94.5	94.7	87.9	74.1	62.7	54.4	72.4
1999	56.8	60.3	64.9	65.9	79.8	88.8	91.3	93.0	87.4	79.3	68.0	55.3	74.2
POR= 104 YRS	52.4	56.5	61.2	68.8	77.1	86.3	91.5	89.8	84.4	72.8	60.7	53.1	71.2

HEATING DEGREE DAYS (base 65°F) 1999 PHOENIX, AZ (PHX)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0	0	0	19	119	376	396	241	123	53	0	0	1327
1971-72	0	0	0	79	185	455	414	174	22	12	0	0	1341
1972-73	0	0	0	38	205	395	422	200	254	39	0	0	1553
1973-74	0	0	0	2	156	291	333	229	77	5	0	0	1093
1974-75	0	0	0	21	112	439	388	301	191	107	4	0	1563
1975-76	0	0	0	15	159	310	296	123	134	52	0	0	1089
1976-77	0	0	0	2	112	285	339	122	149	33	0	0	1042
1977-78	0	0	0	0	42	155	254	172	67	25	0	0	715
1978-79	0	0	0	1	148	405	455	254	143	30	0	0	1436
1979-80	0	0	0	11	204	277	254	130	129	35	0	0	1040
1980-81	0	0	0	12	108	122	181	131	74	8	0	0	636
1981-82	0	0	0	1	56	196	335	151	99	4	0	0	842
1982-83	0	0	0	1	103	331	272	181	120	53	0	0	1061
1983-84	0	0	0	0	154	236	228	139	16	23	0	0	796
1984-85	0	0	0	7	126	345	328	222	102	5	0	0	1135
1985-86	0	0	0	0	149	274	110	158	66	2	1	0	760
1986-87	0	0	0	0	43	260	318	172	95	4	0	0	892
1987-88	0	0	0	0	98	375	311	100	60	20	2	0	966
1988-89	0	0	0	0	135	284	321	133	46	0	0	0	919
1989-90	0	0	0	1	36	243	291	253	76	0	0	0	900
1990-91	0	0	0	0	65	348	275	27	161	5	0	0	881
1991-92	0	0	0	34	107	233	260	89	56	7	0	0	786
1992-93	0	0	0	0	127	340	205	184	61	0	0	0	917
1993-94	0	0	0	0	125	264	246	192	54	13	0	0	894
1994-95	0	0	0	15	211	293	320	61	74	48	6	0	1028
1995-96	0	0	0	0	22	243	278	111	63	0	0	0	717
1996-97	0	0	0	46	67	260	284	202	39	36	0	0	934
1997-98	0	0	0	9	83	369	250	299	138	77	2	0	1227
1998-99	0	0	0	4	73	322	245	127	65	104	2	0	942
1999-	0	0	0	0	53	297							

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COOLING DEGREE DAYS (base 65°F) 1999 PHOENIX, AZ (PHX)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0	4	4	58	459	700	938	862	527	151	18	0	3721
1971	7	2	76	107	265	614	934	773	623	220	30	0	3651
1972	0	11	200	212	419	691	919	780	599	259	4	0	4094
1973	0	0	0	109	499	701	894	885	598	302	36	0	4024
1974	0	2	69	182	477	825	858	821	673	365	13	0	4285
1975	0	0	12	42	374	654	913	839	640	265	45	1	3785
1976	6	4	34	169	495	692	833	804	548	289	91	0	3965
1977	0	36	25	295	334	797	936	907	683	434	73	1	4521
1978	3	1	92	158	422	787	928	828	644	431	49	0	4343
1979	0	0	11	191	411	741	901	763	764	397	7	0	4186
1980	0	5	2	187	344	724	956	852	675	346	88	13	4192
1981	5	36	40	345	489	857	943	961	731	277	95	5	4784
1982	0	21	24	234	481	697	899	897	658	272	12	0	4195
1983	2	1	38	112	489	715	951	861	787	388	85	0	4429
1984	0	2	107	203	688	724	836	821	681	208	41	0	4311
1985	0	17	40	316	603	826	934	920	525	319	47	0	4547
1986	3	52	209	282	543	844	853	921	582	307	51	1	4648
1987	3	30	51	396	553	846	879	850	665	499	48	0	4820
1988	10	31	108	265	520	851	972	904	678	543	124	3	5009
1989	1	49	210	459	566	820	1013	897	751	392	87	0	5245
1990	5	25	150	339	506	873	895	806	683	431	101	0	4814
1991	0	61	22	227	465	691	937	920	712	514	70	0	4619
1992	0	13	54	373	567	762	868	851	771	464	30	0	4753
1993	1	1	89	271	585	746	871	832	695	369	24	0	4484
1994	0	3	59	223	421	821	904	943	664	273	10	0	4321
1995	0	19	58	158	365	642	923	927	733	354	79	0	4258
1996	0	41	70	278	564	817	943	908	583	358	60	4	4626
1997	2	8	185	217	665	689	899	873	756	315	62	0	4671
1998	0	0	50	136	361	619	924	928	691	295	13	2	4019
1999	0	7	68	138	468	724	820	875	679	453	151	1	4384

SNOWFALL (inches) 1999 PHOENIX, AZ (PHX)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971-72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1972-73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973-74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974-75	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0	0.0	0.0	0.0	0.0	T
1975-76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0	0.0	T
1976-77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977-78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978-79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979-80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980-81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981-82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982-83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983-84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984-85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0	0.0	0.0	T
1985-86	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1986-87	0.0	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0	0.0	0.0	0.0	T
1987-88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988-89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989-90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990-91	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	T	0.0	0.0	0.0	0.4
1991-92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0	T
1992-93	0.0	0.0	0.0	T	0.0	0.0	T	0.0	0.0	0.0	0.0	0.0	T
1993-94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0	0.0	0.0	T
1994-95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995-96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996-97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997-98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998-99	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0	0.0	0.0	0.0	0.0	T
1999-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T
POR= 62 YRS	0.0	0.0	0.0	T	0.0	T	T	T	T	T	T	0.0	T

WBAN : 23183

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 PHOENIX, ARIZONA (PHX)

Phoenix is located in the Salt River Valley at an elevation of about 1,100 feet. The valley is oval shaped and flat except for scattered precipitous mountains rising a few hundred to as much as 1,500 feet above the valley floor. Sky Harbor Airport, where the weather observations are taken, is in the southern part of the city. Six miles to the south of the airport are the South Mountains rising to 2,500 feet. Eighteen miles southwest, the Estrella Mountains rise to 4,500 feet, and 30 miles to the west are the White Tank Mountains rising to 4,100 feet. The Superstition Mountains, over 30 miles to the east, rise to as much as 5,000 feet. The valley, though located in the Sonora Desert, supports large acreages of cotton, citrus, and other agriculture along with one of the largest urban populations in the United States. The water supply for this complex desert community is partly from reservoirs on the impounded Salt and Verde Rivers, and partly from a large underground water table.

Temperatures range from very hot in summer to mild in winter. Many winter days reach over 70 degrees and typical high temperatures in the middle of the winter are in the 60s. The climate becomes less attractive in the summer. The normal high temperature is over 90 degrees from early May through early October, and over 100 degrees from early June through early September. Many days each summer will exceed 110 degrees in the afternoon and remain above 85 degrees all night. When temperatures are extremely high, the low humidity does not provide much comfort.

Indeed, the climate is very dry. Annual precipitation is only about 7 inches, and afternoon humidities range from about 30 percent in winter to only about 10 percent in June. Rain comes mostly in two seasons. From about Thanksgiving to early April there are periodic rains from Pacific storms. Moisture from the south and southeast results in a summer thunderstorm peak in July and August. Usually the break from extreme dryness in June to the onset of thunderstorms in early July is very abrupt. Afternoon humidities suddenly double to about 20 percent, which with the great heat, gives a feeling of mugginess. Fog is rare, occurring about once per winter, and is unknown in the other seasons.

The valley is characterized by light winds. High winds associated with thunderstorms occur periodically in the summer. These occasionally create duststorms which move large distances across the deserts. Strong thunderstorm winds occur any month of the year, but are rare outside the summer months. Persistent strong winds of 30 mph or more are rare except for two or three events in an average spring due to Pacific storms. Winter storms rarely bring high winds due to the relatively stable air in the valley during that season.

Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is December 13 and the average last occurrence in the spring is February 7.

STATION LOCATION

PHOENIX, ARIZONA

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE										AUTOMATED	* Type	REMARKS	
						SEA LEVEL	GROUND												
							G	W	E	P	S	T	R	W	8				H
CITY - - NOTE: For period January 28, 1876 through August 1, 1901 refer to previous editions.																			
Talbot Building SW corner First Avenue at Adams	8/1/01	3/24/13	300 ft. NW	33°27'	112°05'	1085	56	50	50	Unk	b41						b - Added 6/1/06.		
Federal Building 230 N. First Avenue	3/24/13	6/27/16	500 ft. NNW	33°27'	112°05'	1086	81	76	76	Unk	68								
Water Users Building 145 W Van Buren Street	6/27/16	9/4/24	100 ft. W	33°27'	112°05'	1086	81	11	11	Unk	68						Wind instruments & rain gage equipment left on roof of Federal Building. Thermometer shelter moved to lawn between the buildings.		
Ellis Building Basement 137 N Second Avenue	9/4/24	8/22/33	300 ft. S	33°27'	112°05'	1086	82	10	10	Unk	56						Thermometer shelter in Ellis Court, exposure poor, moved back to Federal Bldg. lawn on 7/18/25.		
Ellis Building 5th Floor 137 N Second Avenue	8/22/33	10/22/36	NA	33°27'	112°05'	1086	107	10	10	Unk	81						Ellis Building was raised 2 stories.		
Post Office Building 500 N Central Avenue	10/22/36	12/16/36	1200 ft. NNE	33°27'	112°04'	1083	51	39	39	Unk	36						Shelter on flat gravelled roof.		
Post Office Building 500 N Central Avenue	12/16/36	10/22/53	NA	33°27'	112°04'	1083	87	39	39	Unk	36						Psychrometric observations moved to WBAS at Sky Harbor Airport on 7/1/39.		
Posts Office Building 500 N Central Avenue	10/22/53	8/15/68	NA	33°27'	112°04'	1083		39			39						Combined at Airport 10/22/53. Psychrometer, wind equipment & tipping bucket gage removed 11/1/53.		
AIRPORT Administration Building Sky Harbor Airport	5/2/33	12/19/52	3 mi. ESE of P.O.	33°26'	112°02'	1108	29	5	5	NA				3	d		Station closed 7/27/35 to 1/1/38. Cotton Region Shelter moved 110 feet NE & Standard Shelter added 10/1/40.		
New Terminal Building Sky Harbor Airport	12/19/52	5/29/58	0.8 mi. SE	33°26'	112°01'	1114	32	5	5	cUnk		c5		3	d		c - Added 11/1/53. d - Telepsychrometer (5') 6/1/49-12/20/60. Hygro. comm. 3900' E of office. 12/20/60.		
FAA Operations Bldg. Sky Harbor Airport + Sky Harbor Int'l AP effective 1971.	5/29/58	1/25/78	0.3 mi. NW	33°26'	112°01'	1109	41	5	5	35		4		3	d5 f7		e - Effective 12/20/60		
Wea. Svc. Forecast Off. Sky Harbor Int'l AP	1/25/78	03/01/94	3000 ft. SW	33°26'	112°01'	1110	33	5	5	7	5	5		5	NA		f - Moved 2800' SW 9/19/75. g - Effective 9/19/75.		
Sky Harbor Int'l AP	03/01/94	Present	NA	33°27'	111°59'	1104									S		ASOS Commissioned 03/01/94		

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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