

2003

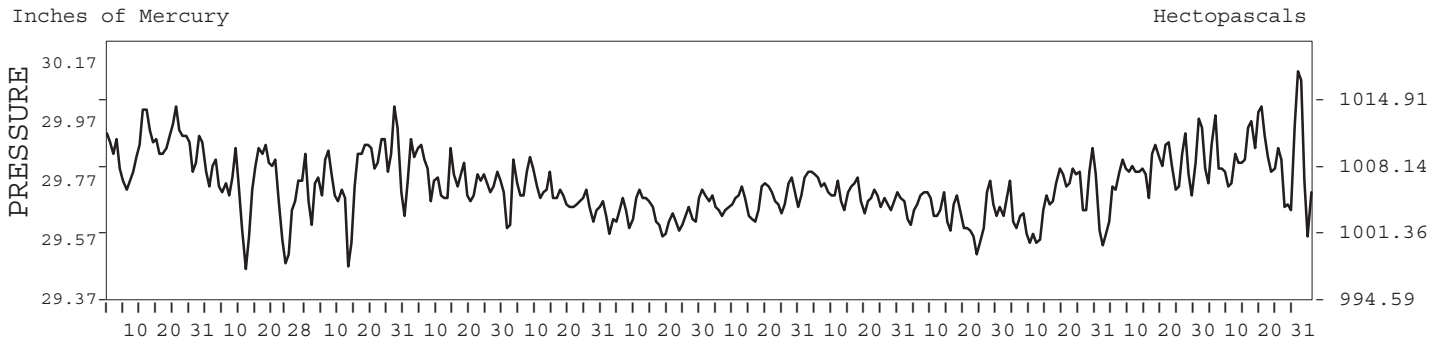
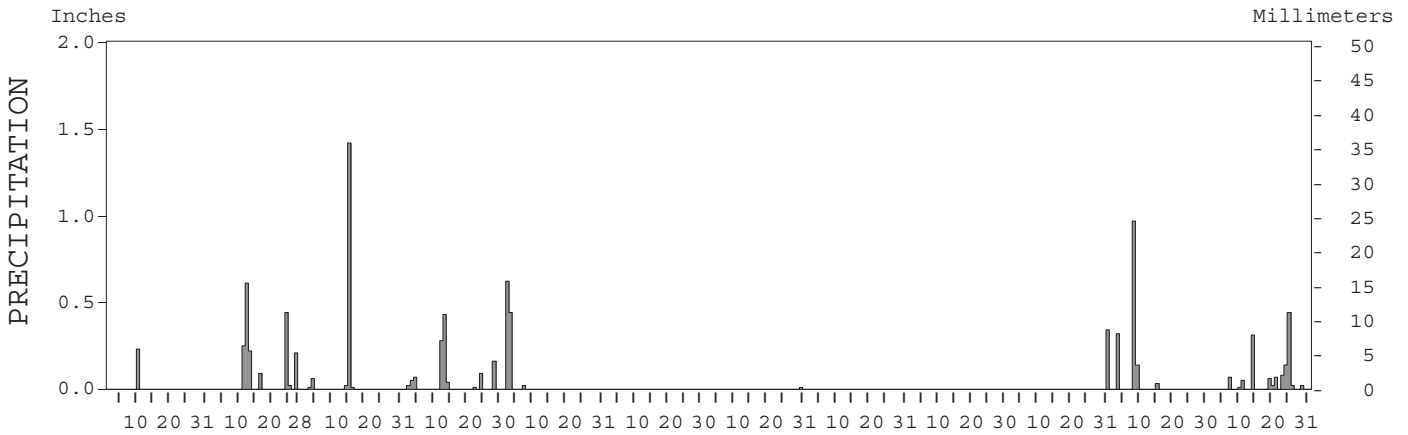
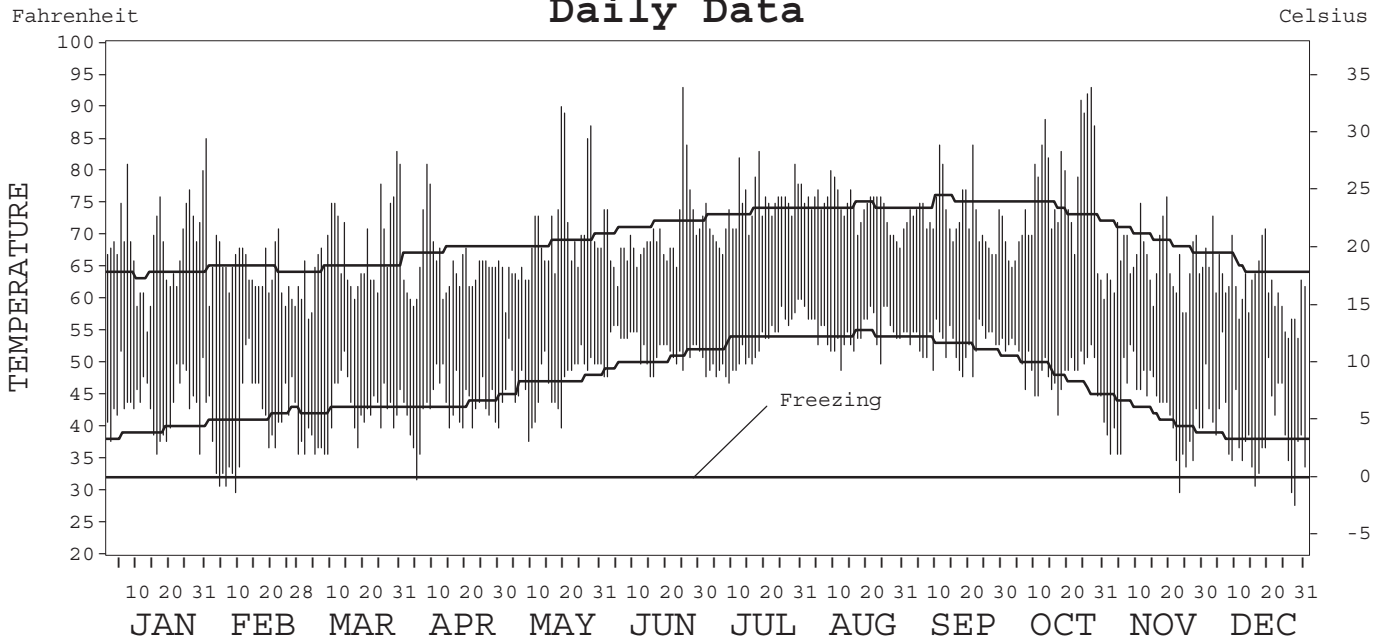
LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-1005

SANTA MARIA, CALIFORNIA (SMX)

Daily Data



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HEATING DEGREE DAYS (base 65°F) 2003 SANTA MARIA, CA (SMX)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1974-75	60	41	78	164	287	462	450	402	446	451	276	136	3253
1975-76	103	63	96	215	334	432	381	354	385	394	242	132	3131
1976-77	44	30	23	97	184	402	427	282	487	297	298	125	2696
1977-78	81	27	44	145	161	238	323	305	216	325	181	160	2206
1978-79	112	45	54	139	379	544	505	442	372	326	189	130	3237
1979-80	69	35	27	97	299	330	307	254	378	252	286	183	2517
1980-81	68	60	85	155	288	290	327	297	360	289	238	57	2514
1981-82	47	52	58	202	221	367	509	288	398	289	224	153	2808
1982-83	76	53	38	104	319	409	349	301	305	291	184	66	2495
1983-84	21	1	0	34	258	330	356	377	286	318	135	106	2222
1984-85	1	6	1	144	310	436	461	339	402	188	195	45	2528
1985-86	5	45	61	150	343	348	254	262	271	270	235	127	2371
1986-87	48	39	125	132	218	420	516	352	385	223	159	132	2749
1987-88	117	71	80	79	287	499	430	272	267	237	244	139	2722
1988-89	44	33	108	132	294	441	483	433	291	196	227	111	2793
1989-90	82	69	98	112	172	319	418	415	347	181	221	128	2562
1990-91	40	11	37	93	253	491	383	259	446	306	334	203	2856
1991-92	39	62	49	131	234	373	380	217	271	144	110	98	2108
1992-93	47	24	34	77	226	445	377	330	227	204	137	86	2214
1993-94	47	23	79	81	224	403	365	361	260	268	217	147	2475
1994-95	98	67	81	158	440	453	344	219	292	294	243	157	2846
1995-96	43	59	75	96	165	349	383	256	309	167	162		
1996-97		82	99	175	256	357	391	378	293	274	107	95	
1997-98	41	6	4	127	223	454	403	309	187	271	241	124	2390
1998-99	52	14	56	176	333	517	417	394	464	408	299	214	3344
1999-00	110	103	113	121	275	358	377	336	342	240	199	84	2658
2000-01	115	78	54	177	395	344	485	405	303	373	118	93	2940
2001-02	63	86	83	145	255	460	519	315	398	277	268	156	3025
2002-03	65	90	81	235	188	394	266	350	310	318	206	116	2619
2003-	63	26	59	114	321	429							

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COOLING DEGREE DAYS (base 65°F) 2003 SANTA MARIA, CA (SMX)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1974	0	0	0	0	0	0	19	12	4	11	0	0	46
1975	0	0	0	0	0	0	1	4	19	9	2	0	35
1976	0	0	0	0	7	72	13	25	40	18	6	0	181
1977	0	0	0	0	0	0	24	40	17	7	15	1	104
1978	0	0	0	0	12	0	0	25	59	2	0	0	98
1979	0	0	0	0	8	14	21	7	51	12	0	0	113
1980	0	0	0	3	0	13	20	16	19	19	2	0	92
1981	0	4	0	9	0	52	20	12	5	6	0	0	108
1982	0	0	0	0	0	2	1	8	42	21	0	0	74
1983	0	0	0	0	0	0	62	127	158	77	3	0	427
1984	0	0	0	6	26	0	84	119	212	9	0	0	456
1985	0	3	0	7	0	25	126	24	34	28	2	0	249
1986	0	2	0	2	0	0	11	14	1	7	0	0	37
1987	0	0	0	0	2	4	0	3	8	56	0	0	73
1988	0	3	15	2	2	2	56	28	13	20	11	0	152
1989	0	0	0	51	2	6	10	3	3	28	5	2	110
1990	0	0	2	0	0	6	31	38	10	13	6	0	106
1991	0	0	0	1	0	7	7	23	7	13	7	0	65
1992	0	0	0	4	3	1	50	23	14	23	7	0	125
1993	0	0	0	0	10	32	21	32	23	10	2	0	130
1994	0	0	0	0	0	4	2	25	18	18	0	0	67
1995	0	7	0	0	0	2	21	3	13	30	0	0	76
1996	0	2	0	33	19			21	4	15	0	0	
1997	0	0	0	1	38	0	8	72	111	50	24	0	304
1998	0	0	0	1	0	0	24	47	37	4	0	0	113
1999	0	0	0	2	0	0	19	0	7	21	3	0	52
2000	0	0	1	0	5	13	1	9	26	0	0	0	55
2001	0	2	0	0	6	20	21	1	21	12	1	0	84
2002	0	1	0	2	1	2	8	2	18	15	4	0	53
2003	1	0	0	0	10	9	24	21	11	38	0	0	114

SNOWFALL (inches) 2003 SANTA MARIA, CA (SMX)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1974-75	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
1975-76	0.0	0.0	0.0	0.0	T	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0
1985-86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0	0.0	T
1986-87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	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	T	0.0	0.0	0.0	0.0	T
1990-91	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0	T	0.0	0.0	0.0	T
1991-92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	T	0.0	0.0	0.0	T
1992-93	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
1993-94	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
1994-95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0	0.0	T
1995-96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0	0.0	0.0	T
1996-97													
1997-98													
1998-99													
1999-00													
2000-01													
2001-02													
2002-03													
2003-													
POR= 53 YRS	0.0	0.0	0.0	0.0	T	T	T	T	T	0.0	0.0	0.0	T

WBAN : 23273

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 (1971 - 2000) . 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 EIGHTS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.</p>
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2003
SANTA MARIA,
CALIFORNIA (SMX)

Santa Maria Valley is a flat, fertile valley opening on the Pacific Ocean where it is widest and tapering inland for a distance approximately 30 miles. The valley is 10 miles wide at the site of the station, which is located 13 miles inland at an elevation of 236 feet. It is bounded by the foothills of the San Rafael Mountains, the Solomon Hills, and the Casmalia Hills ranging from 1,300 to 4,000 feet.

Located 150 miles west-northwest of Los Angeles and 250 miles south of San Francisco, Santa Maria has a maritime climate, displaying characteristics of those of both neighbors. Year-round mild temperatures moving through gradual transitions characterize the climate more than do clearly defined seasons. The annual range of temperatures is about 13 degrees, while the daily temperature range is about 20 degrees for May through September and a few degrees higher from October through April.

The area is primarily agricultural, with vegetable and other produce crops thriving successfully the year-round. Temperatures of 32 degrees or slightly lower occur about twenty-three times during the winter months and necessitate the rotation of crops to the hardier varieties during this season. Precipitation, particularly during the summer months, is insufficient for some crops and is supplemented by irrigation from subterranean water reserves. High humidity and moderate temperatures, however, substantially limit the irrigation requirement.

Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is December 5 and the average last occurrence in the spring is March 15.

The rainfall season, typical of the mid-California coast, is in the winter. About three-fourths of the total annual rainfall occurs from December through March in connection with Pacific cold fronts and storm centers passing inland. During the remainder of the year, and particularly from June to October, the northward displacement and intensification of the semipermanent Pacific anticyclone produces a circulation resulting in little or no precipitation here. Thunderstorms are rare.

During most days, clear, sunny afternoons prevail. But under the influence of the Pacific high, considerable advective and radiative cooling frequently produces nightly low stratus clouds, known as California stratus, and early-morning fog. Both clouds and fog, however, are generally dissipated before noon.

The unequal daytime solar heating over land and ocean, in conjunction with the Pacific high, gives rise to a consistent and prevailing westerly sea breeze during most afternoons. The winds generally decrease to a calm by sundown. Thus the two factors of nighttime stratus and daytime sea breezes effectively combine to maintain relatively cool days and warm nights with little diurnal change.

STATION LOCATION

SANTA MARIA, CALIFORNIA

LOCATION	Occupied From	Occupied To	Airline Distances and Directions from previous Location	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE										AUTOMATIC OBSERVING EQUIPMENT *	* TYPE M = AMOS T = AUTOB S = ASOS W = AWOS REMARKS
						GROUND											
						SEA LEVEL	GROUND	WIND INSTRUMENT	EXTREME THERMOMETERS	PSYCHROMETER	SUNSHINE SWITCH	TRAINING GAUGE	WEIGHING RAIN GAGE	8 INCH RAIN GAGE	HYGROMETER		
*NOTE: <u>AIRPORT</u>																	
Santa Maria Public Airport	2/15/72	08/01/96	990 ft. SSE	34° 54'	120° 27'	236	f24	6 g20	16		19	19		f5	f. Same site as prior to 2/15/72. g. Moved to roof 5/25/77.		
Santa Maria Public Airport	08/01/96	Present	NA	34° 55'	120° 28'	h242								S	ASOS Commissioned 08/01/96 h. Ground elevation		

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* NOTES: For earlier station history see previous editions.