

2003

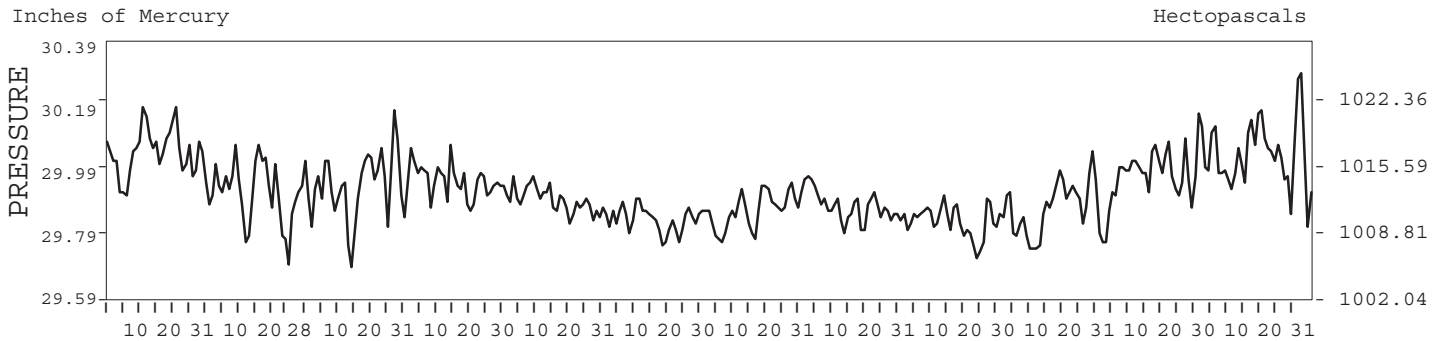
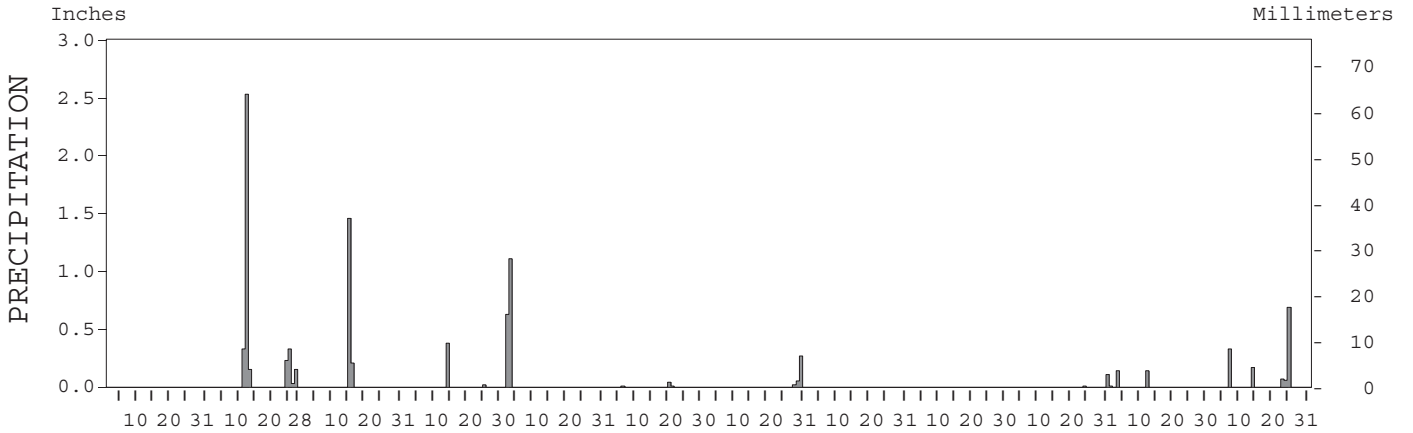
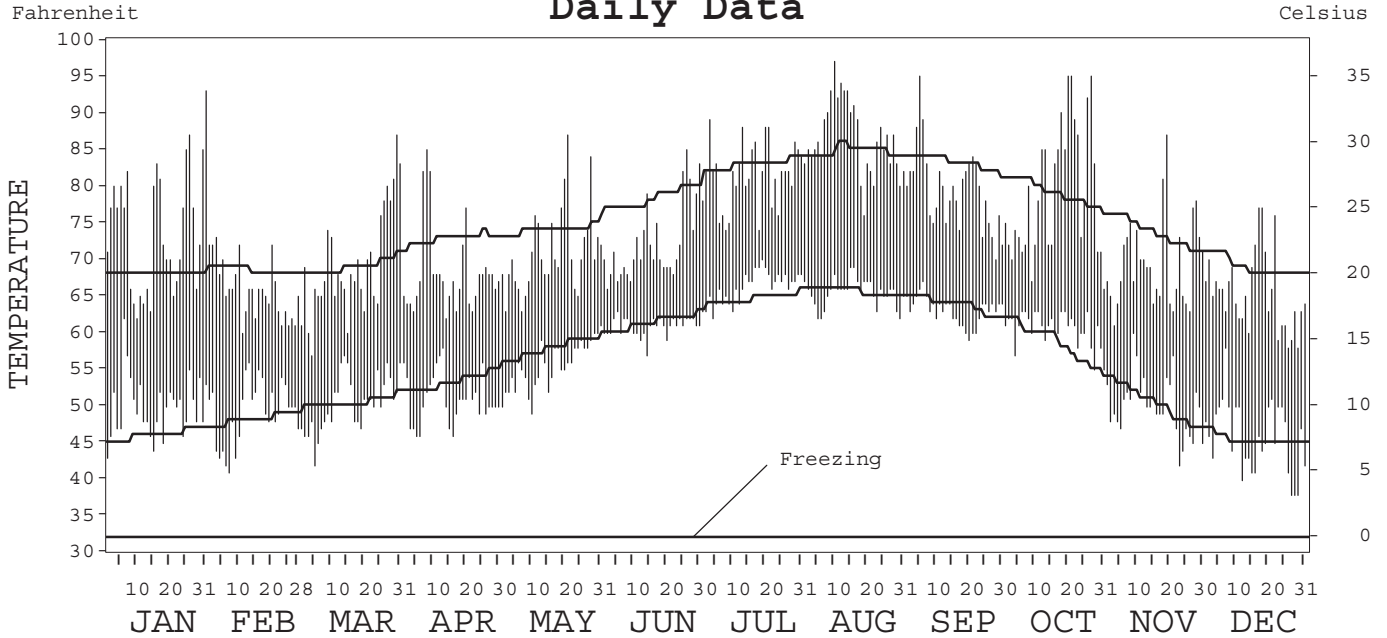
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-0904

LONG BEACH,
CALIFORNIA (LGB)

Daily Data



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METEOROLOGICAL DATA FOR 2003

LONG BEACH, CA (LGB)

LATITUDE: 33° 49' 42" N LONGITUDE: 118° 09' 47" W ELEVATION (FT): GRND: 34 BARO: 37 TIME ZONE: PACIFIC (UTC + 8) WBAN: 23129

	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	74.0	65.9	69.4	68.2	71.0	72.3	81.5	86.5	79.5	79.2	69.4	65.5	73.5	
	HIGHEST DAILY MAXIMUM	93	73	87	85	87	85	89	97	95	95	87	77	97	
	DATE OF OCCURRENCE	31	03	30	08	21	26	03	10	05	27+	19	18+	AUG 10	
	MEAN DAILY MINIMUM	50.0	49.2	50.5	51.1	55.5	60.9	66.3	65.5	63.1	60.6	50.1	45.8	55.7	
	LOWEST DAILY MINIMUM	43	41	42	46	49	57	62	62	59	55	42	38	38	
	DATE OF OCCURRENCE	01	07	05	16+	10	14	04	30+	20	31+	23	29+	DEC 29+	
	AVERAGE DRY BULB	62.0	57.6	60.0	59.7	63.3	66.6	73.9	76.0	71.3	69.9	59.8	55.7	64.7	
	MEAN WET BULB	53.8	52.4	54.1	53.9	58.4	62.3	68.0	66.8	64.6	61.9	52.7	49.9	58.2	
	MEAN DEW POINT	47.4	47.1	48.8	49.0	55.4	60.2	65.8	62.8	62.0	57.5	46.0	43.2	53.8	
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	1	0	0	0	0	0	0	9	1	5	0	0	0	16
	MAXIMUM ≤ 32°	0	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	0	
MINIMUM ≤ 0°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
H/C	HEATING DEGREE DAYS	118	202	165	162	70	6	0	0	0	5	156	281	1165	
	COOLING DEGREE DAYS	32	0	16	8	24	58	283	348	195	165	7	0	1136	
RH	MEAN (PERCENT)	69	73	73	71	80	84	82	71	80	73	67	69	74	
	HOUR 04 LST	81	84	87	88	94	94	95	91	93	86	79	80	88	
	HOUR 10 LST	65	65	66	60	73	79	74	61	70	60	54	62	66	
	HOUR 16 LST	50	58	56	55	63	72	67	51	64	57	51	57	58	
	HOUR 22 LST	79	81	78	79	88	90	91	77	89	81	76	77	82	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	7	0	6	0	4	0	0	0	4	6	0	6	33	
	THUNDERSTORMS	0	1	0	0	0	0	3	0	0	1	0	0	5	
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.)	30.06	29.92	29.95	29.96	29.91	29.84	29.88	29.88	29.84	29.87	30.01	30.05	29.93	
	MEAN SEA-LEVEL PRESS. (IN.)	30.10	29.97	29.99	30.00	29.95	29.88	29.92	29.92	29.88	29.91	30.05	30.09	29.97	
WINDS	RESULTANT SPEED (MPH)	1.4	0.6	1.5	3.6	2.9	1.5	0.7	1.5	1.2	1.6	1.6	1.0	1.4	
	RES. DIR. (TENS OF DEGS.)	28	21	27	25	22	21	20	27	23	24	29	29	25	
	MEAN SPEED (MPH)	3.7	5.2	5.8	7.1	5.9	5.7	5.8	5.6	5.1	4.4	3.9	3.6	5.1	
	PREVAIL. DIR. (TENS OF DEGS.)	30	30	31	28	19	19	30	30	30	30	30	30	30	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	25	22	33	29	24	16	22	18	20	17	25	28	33	
	DIR. (TENS OF DEGS.)	08	33	33	32	32	29	06	29	29	29	33	29	33	
	DATE OF OCCURRENCE	06	19	17	05	09	06	29	24+	03	22	22	11	MAR 17	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	35	28	39	33	31	18	30	23	22	21	29	35	39	
DIR. (TENS OF DEGS.)	08	14	33	31	31	31	06	29	29	29	32	28	33		
DATE OF OCCURRENCE	06	12	17	05	09	11	29	24	03	22	22	11	MAR 17		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	T	3.75	1.67	0.40	1.74	0.06	0.34	0.00	0.00	0.12	0.29	1.32	9.69	
	GREATEST 24-HOUR (IN.)	T	2.55	1.67	0.38	1.71	0.04	0.27	0.00	0.00	0.11	0.14	0.74	2.55	
	DATE OF OCCURRENCE	08	11-12	15-16	14	02-03	20	30			31	12+	24-25	FEB 11-12	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	0	7	2	2	2	3	3	0	0	2	3	5	29	
PRECIPITATION ≥ 0.10	0	6	2	1	2	0	1	0	0	1	2	3	18		
PRECIPITATION ≥ 1.00	0	1	1	0	1	0	0	0	0	0	0	0	3		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)														
	GREATEST 24-HOUR (IN.)														
	DATE OF OCCURRENCE														
	MAXIMUM SNOW DEPTH (IN.)														
	DATE OF OCCURRENCE														
NUMBER OF DAYS WITH:															
SNOWFALL ≥ 1.0															

NORMALS, MEANS, AND EXTREMES

LONG BEACH, CA (LGB)

LATITUDE: 33° 49' 42" N LONGITUDE: 118° 09' 47" W ELEVATION (FT): GRND: 34 BARO: 37 TIME ZONE: PACIFIC (UTC + 8) WBAN: 23129

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	68.0	68.5	68.9	72.7	74.0	78.3	82.9	84.6	83.1	78.9	73.4	68.8	75.2
	MEAN DAILY MAXIMUM	54	66.1	67.0	67.8	70.9	73.1	76.7	82.0	83.4	81.9	77.6	72.1	67.0	73.8
	HIGHEST DAILY MAXIMUM	51	93	91	98	105	103	109	107	105	110	111	101	92	111
	YEAR OF OCCURRENCE		2003	1995	1988	1989	1967	1981	1985	1967	1963	1961	1966	1958	OCT 1961
	MEAN OF EXTREME MAXS.	54	81.4	81.4	82.4	87.3	87.6	89.6	93.2	94.8	97.8	94.8	87.8	81.0	88.3
	NORMAL DAILY MINIMUM	30	46.0	48.1	50.4	53.2	57.8	61.3	64.6	65.6	63.7	58.3	50.1	45.3	55.4
	MEAN DAILY MINIMUM	54	45.2	46.8	49.1	52.0	56.2	59.7	63.4	64.2	62.3	57.6	50.3	45.2	54.3
	LOWEST DAILY MINIMUM	51	25	33	33	38	40	47	51	52	50	39	34	28	25
	YEAR OF OCCURRENCE		1963	1965	1964	1975	1964	1967	1960	1951	1965	1972	1958	1990	JAN 1963
	MEAN OF EXTREME MINS.	54	35.9	38.7	40.8	44.3	49.4	53.8	58.4	58.9	56.1	49.1	41.0	36.5	46.9
	NORMAL DRY BULB	30	57.0	58.3	59.7	63.0	65.9	69.8	73.8	75.1	73.4	68.6	61.8	57.1	65.3
	MEAN DRY BULB	54	55.4	56.8	58.5	61.5	64.6	68.2	72.7	73.7	72.0	67.5	61.3	56.1	64.0
	MEAN WET BULB	19	50.5	51.8	53.9	56.0	59.0	61.9	61.8	62.5	61.3	60.4	53.9	49.7	56.9
	MEAN DEW POINT	19	41.1	42.9	45.7	47.6	51.5	54.9	58.0	58.4	57.0	55.2	46.5	42.2	50.1
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.1	0.2	0.3	0.7	1.0	2.1	4.0	5.6	5.9	2.9	0.9	0.0	23.7	
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	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	
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	267	205	186	99	39	5	0	0	1	16	128	265	1211
	NORMAL COOLING DEG. DAYS	30	3	5	10	28	55	135	260	302	244	119	20	5	1186
RH	NORMAL (PERCENT)	30	67	68	69	66	69	70	69	69	69	68	65	65	68
	HOUR 04 LST	30	79	80	82	81	82	82	82	82	84	81	80	77	81
	HOUR 10 LST	30	61	63	62	57	62	64	63	62	61	58	55	57	60
	HOUR 16 LST	30	54	54	56	50	56	56	54	53	54	54	51	51	54
	HOUR 22 LST	30	76	75	76	74	77	78	78	78	78	78	75	74	76
S	PERCENT POSSIBLE SUNSHINE														
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	60	4.9	3.4	2.9	2.2	1.3	1.4	1.9	2.8	3.4	4.4	5.1	5.3	39.0
	THUNDERSTORMS	60	0.3	0.5	0.8	0.3	0.1	0.1	0.2	0.3	0.5	0.4	0.3	0.2	4.0
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	39	4.2	4.4	4.2	3.7	4.0	3.5	2.6	2.5	3.0	3.4	3.5	3.8	3.6
	MIDNIGHT-MIDNIGHT (OKTAS)	22	3.7	4.0	3.9	3.2	4.0	3.7	2.7	2.7	3.3	3.3	3.5	3.4	3.5
	MEAN NO. DAYS WITH:														
	CLEAR	39	11.7	9.5	10.9	12.4	10.6	12.4	17.6	18.7	14.7	13.2	13.4	12.7	157.8
PARTLY CLOUDY	39	8.2	7.6	9.5	10.1	12.5	11.9	10.7	10.1	10.9	11.1	8.2	8.4	119.2	
CLOUDY	39	11.1	11.2	10.6	7.5	7.9	5.7	2.0	1.6	4.5	6.7	8.3	9.9	87.0	
PR	MEAN STATION PRESSURE (IN)	22	30.03	30.01	29.96	29.90	29.90	29.88	29.88	29.88	29.86	29.93	29.99	30.03	29.94
	MEAN SEA-LEVEL PRES. (IN)	20	30.07	30.05	30.02	29.96	29.94	29.98	29.94	29.92	29.90	29.95	30.02	30.07	29.99
WINDS	MEAN SPEED (MPH)	27	4.8	5.5	6.0	6.5	6.6	6.5	6.4	6.1	5.7	5.2	4.9	4.5	5.7
	PREVAIL. DIR (TENS OF DEGS)	13	30	29	28	29	18	18	18	30	29	30	30	30	30
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	7	29	30	39	32	24	21	22	20	26	29	33	33	39
	DIR. (TENS OF DEGS)		02	12	11	27	32	28	06	28	10	29	32	31	11
	YEAR OF OCCURRENCE		1997	1998	2000	1999	2003	2000	2003	2000	1998	1997	1999	1998	MAR 2000
	MAXIMUM 5-SECOND:														
SPEED (MPH)	7	38	40	46	39	31	23	30	25	33	36	41	45	46	
DIR. (TENS OF DEGS)		12	11	11	31	31	28	06	17	10	27	31	32	11	
YEAR OF OCCURRENCE		2001	1998	2000	1997	2003	2000	2003	1998	1998	1997	1999	1998	MAR 2000	
PRECIPITATION	NORMAL (IN)	30	2.95	3.01	2.43	0.60	0.23	0.08	0.02	0.10	0.24	0.40	1.12	1.76	12.94
	MAXIMUM MONTHLY (IN)	59	12.76	12.09	8.75	4.42	2.32	0.86	0.34	2.03	1.45	2.30	6.05	5.98	12.76
	YEAR OF OCCURRENCE		1995	1998	1983	1965	1977	1993	2003	1977	1976	2000	1965	1941	JAN 1995
	MINIMUM MONTHLY (IN)	59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	T	0.00
	YEAR OF OCCURRENCE		1976	1964	1959	1993	1952	1978	1983	1978	1974	1969	1980	1989	APR 1993
	MAXIMUM IN 24 HOURS (IN)	59	6.86	3.59	3.52	1.61	2.06	0.86	0.27	1.90	1.42	1.99	3.14	3.52	6.86
	YEAR OF OCCURRENCE		1956	1963	1983	1999	1977	1993	2003	1977	1986	2000	1967	1992	JAN 1956
NORMAL NO. DAYS WITH:															
PRECIPITATION ≥ 0.01	30	6.5	6.3	6.3	3.2	1.3	0.5	0.4	0.5	1.1	2.1	3.2	4.7	36.1	
PRECIPITATION ≥ 1.00	30	0.9	1.0	0.4	0.1	0.1	0.0	0.0	*	0.1	0.1	0.3	0.4	3.4	
SNOWFALL	NORMAL (IN)	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
	MAXIMUM MONTHLY (IN)	53	T	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T
	YEAR OF OCCURRENCE		1993	1996											FEB 1996
	MAXIMUM IN 24 HOURS (IN)	52	T	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T
	YEAR OF OCCURRENCE		1993	1996											FEB 1996
	MAXIMUM SNOW DEPTH (IN)	46	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) 2003 LONG BEACH, CA (LGB)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1974	6.12	0.17	3.28	0.18	0.05	T	T	T	0.00	0.58	0.03	5.21	15.62
1975	0.09	4.44	3.60	1.49	0.01	T	T	0.00	T	0.25	0.13	0.21	10.22
1976	0.00	2.40	0.66	1.18	0.01	0.14	T	0.03	1.45	0.07	0.98	0.43	7.35
1977	1.80	0.35	1.35	T	2.32	T	0.00	2.03	0.02	T	T	3.03	10.90
1978	7.62	8.60	6.17	0.80	T	0.00	0.00	0.00	1.04	0.02	2.00	1.42	27.67
1979	8.41	2.25	4.07	T	T	T	T	T	T	0.37	0.23	0.28	15.61
1980	7.17	9.40	2.86	0.29	0.10	T	T	T	T	T	0.00	1.54	21.36
1981	1.85	1.55	3.41	0.32	T	T	0.00	T	0.07	0.59	2.39	0.98	11.16
1982	1.92	0.20	3.12	0.76	0.16	T	0.00	T	0.40	0.19	3.07	0.92	10.74
1983	3.04	4.17	8.75	2.30	0.18	0.01	0.00	0.57	1.31	1.44	2.93	1.99	26.69
1984	0.25	0.01	0.13	1.06	0.00	0.01	0.05	0.08	0.15	0.35	1.20	5.20	8.49
1985	0.91	1.58	0.61	T	0.21	0.00	T	0.00	0.24	0.14	4.21	0.33	8.23
1986	1.88	4.97	2.68	0.43	0.00	T	0.21	0.00	1.43	0.40	1.12	0.37	13.49
1987	1.88	1.39	0.63	0.06	T	0.10	0.05	0.05	0.02	1.63	0.64	1.79	8.24
1988	1.67	1.05	0.02	1.33	0.00	T	T	0.02	0.04	T	0.75	3.21	8.09
1989	0.37	0.87	0.80	0.01	0.02	T	0.00	T	0.34	0.45	0.14	T	3.00
1990	1.59	2.08	0.09	0.50	1.20	T	0.00	T	T	0.00	0.22	0.02	5.70
1991	1.42	3.41	4.87	0.05	T	T	0.13	0.01	0.02	0.14	0.05	2.06	12.16
1992	1.48	4.54	5.29	0.02	0.02	T	0.06	0.00	T	0.52	T	4.97	16.90
1993	9.12	5.51	2.00	0.00	T	0.86	T	0.00	T	0.04	0.88	0.78	19.19
1994	0.26	5.17	1.25	0.44	0.16	T	T	T	0.00	0.14	0.42	0.53	8.37
1995	12.76	0.52	5.15	0.45	0.02	0.51	0.06	0.00	T	T	0.02	1.98	21.47
1996	1.83	4.37	1.26	0.42	0.02	0.00	T	0.00	0.00	1.48	1.80	4.07	15.25
1997	6.18	0.13	0.00	0.00	T	T	T	0.00	0.47	T	2.48	3.70	12.96
1998	2.98	12.09	4.76	1.49	1.68	0.03	T	T	T	0.01	1.40	0.57	25.01
1999	1.46	0.41	1.77	2.31	0.05	0.49	0.07	0.00	T	0.00	0.17	0.11	6.84
2000	0.51	2.86	1.70	1.15	0.03	T	0.00	T	T	2.30	T	T	8.55
2001	2.11	5.79	0.26	0.44	T	T	T	0.00	0.00	T	1.02	0.59	10.21
2002	0.25	0.07	0.05	0.14	0.09	T	T	T	T	T	0.54	1.49	2.63
2003	T	3.75	1.67	0.40	1.74	0.06	0.34	0.00	0.00	0.12	0.29	1.32	9.69
POR= 45 YRS	2.56	2.82	1.94	0.67	0.22	0.07	0.03	0.08	0.22	0.30	1.32	1.63	11.86

WBAN : 23129

AVERAGE TEMPERATURE (°F) 2003 LONG BEACH, CA (LGB)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1974	53.4	55.7	57.2	62.0	64.7	70.4	73.9	73.3	72.2	66.7	63.2	54.1	63.9
1975	56.7	58.4	56.8	57.2	63.4	66.8	72.8	72.7	74.2	66.7	60.6	57.2	63.6
1976	60.1	59.3	59.9	59.6	66.3	72.0	73.6	74.2	74.3	72.3	66.2	59.0	66.4
1977	57.7	59.4	55.5	62.8	63.2	68.9	74.2	76.3	71.6	70.4	66.4	61.2	65.6
1978	56.2	56.9	64.0	61.4	68.9	69.9	72.6	73.0	74.2	69.7	58.4	52.6	64.8
1979	53.7	55.2	59.4	64.2	65.7	72.1	72.0	73.5	74.9	66.4	59.8	58.6	64.6
1980	58.5	60.9	58.0	62.6	62.5	68.9	74.1	74.4	70.3	67.9	61.7	59.2	64.9
1981	58.4	59.7	58.6	63.0	66.7	75.1	75.8	76.0	73.2	66.6	61.9	58.3	66.1
1982	53.8	58.7	58.0	61.5	64.9	65.5	73.3	75.9	74.0	69.4	60.5	55.7	64.3
1983	58.4	58.8	59.8	61.1	66.2	68.3	74.1	79.1	76.7	71.0	60.4	56.2	65.8
1984	57.8	58.0	61.5	62.3	68.0	69.3	76.7	76.6	79.2	66.0	57.7	54.0	65.6
1985	54.3	56.1	56.2	62.7	63.5	69.5	75.6	73.2	70.0	67.4	58.1	57.7	63.7
1986	60.8	58.4	60.3	62.4	65.1	69.0	71.4	74.5	67.6	66.7	63.1	57.2	64.7
1987	54.2	57.3	59.0	65.5	66.2	68.1	69.6	72.1	73.4	70.5	62.0	53.1	64.3
1988	56.1	60.6	63.3	63.4	66.2	66.9	73.3	73.1	71.1	68.4	60.4	56.0	64.9
1989	55.3	55.8	61.1	66.8	65.4	68.1	72.6	72.2	72.3	67.2	64.8	59.3	65.1
1990	56.8	55.5	59.3	64.2	66.0	71.7	75.8	73.4	73.6	70.3	63.1	55.5	65.4
1991	57.0	61.3	56.1	62.6	63.0	66.0	70.3	72.3	72.4	69.9	63.8	58.0	64.4
1992	57.3	60.4	59.3	67.2	68.1	69.4	74.8	77.5	74.5	68.9	62.9	54.5	66.2
1993	55.9	57.0	61.8	64.3	67.7	70.5	72.2	72.9	72.1	68.8	62.2	57.0	65.2
1994	58.5	56.4	61.2	62.4	63.8	71.6	72.2	77.4	73.8	67.6	56.9	56.6	64.9
1995	56.4	61.8	60.2	61.8	62.2	66.8	72.9	74.8	74.0	67.8	63.3	58.2	65.0
1996	57.2	58.4	59.5	65.5	67.2	70.1	73.2	75.0	71.8	64.8	61.3	56.8	65.1
1997	56.0	56.9	62.0	63.7	71.3	70.2	72.4	77.0	78.9	70.8	64.6	57.5	66.8
1998	56.8	56.6	61.3	62.3	65.5	70.2	76.1	80.1	74.3	67.8	60.2	56.5	65.6
1999	59.0	56.9	57.6	58.9	63.0	65.9	72.1	70.9	69.0	70.6	60.8	57.9	63.6
2000	58.7	57.9	59.1	64.0	68.0	72.6	73.8	75.4	72.4	64.7	57.0	57.2	65.1
2001	52.4	52.5	59.1	59.2	66.2	70.5	70.9	72.3	71.6	66.9	60.6	54.1	63.0
2002	55.6	58.0	58.3	60.1	64.0	67.2	71.3	70.2	72.0	63.9	63.7	55.7	63.3
2003	62.0	57.6	60.0	59.7	63.3	66.6	73.9	76.0	71.3	69.9	59.8	55.7	64.7
POR= 60 YRS	55.6	56.5	58.2	61.4	64.4	67.9	72.3	73.4	71.7	67.3	61.1	55.5	63.8

HEATING DEGREE DAYS (base 65°F) 2003 LONG BEACH, CA (LGB)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1974-75	0	0	0	27	87	331	254	180	246	227	63	2	1417
1975-76	0	0	0	28	145	239	177	161	165	165	8	1	1089
1976-77	0	0	0	0	42	180	224	157	285	74	72	1	1035
1977-78	0	0	0	4	35	125	265	223	88	104	12	5	861
1978-79	0	0	0	4	201	376	344	268	177	41	30	1	1442
1979-80	0	0	0	21	147	204	195	116	209	99	82	11	1084
1980-81	0	0	0	14	103	185	197	156	189	89	8	0	941
1981-82	0	0	0	26	111	198	339	173	211	119	33	10	1220
1982-83	0	0	0	7	136	283	203	170	161	119	24	1	1104
1983-84	0	0	0	0	145	268	220	198	109	101	15	0	1056
1984-85	0	0	0	32	213	333	324	253	266	87	57	5	1570
1985-86	0	0	0	17	205	219	132	191	154	98	31	0	1047
1986-87	0	0	14	11	64	233	330	214	182	50	23	0	1121
1987-88	0	0	0	4	106	365	270	133	112	85	28	14	1117
1988-89	0	0	0	0	136	277	299	264	134	37	24	3	1174
1989-90	0	0	1	11	49	173	244	261	179	39	22	0	979
1990-91	0	0	0	2	82	292	241	107	268	89	86	9	1176
1991-92	0	0	0	23	72	212	236	141	171	17	0	0	872
1992-93	0	0	0	0	79	319	280	217	103	44	3	6	1051
1993-94	0	0	0	3	90	243	195	234	123	90	52	0	1030
1994-95	0	0	0	7	238	255	263	115	148	108	85	19	1238
1995-96	0	0	0	5	55	204	242	191	169	53	10	0	929
1996-97	0	0	0	50	131	247	271	220	111	70	0	0	1100
1997-98	0	0	0	0	70	227	243	232	120	116	16	0	1024
1998-99	0	0	0	7	139	263	179	218	221	207	71	28	1333
1999-00	0	0	4	1	123	213	193	199	179	55	2	0	969
2000-01	0	0	0	38	235	237	383	345	182	181	12	0	1613
2001-02	0	0	0	9	129	332	288	204	199	141	58	15	1375
2002-03	0	0	1	61	73	281	118	202	165	162	70	6	1139
2003-	0	0	0	5	156	281							

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COOLING DEGREE DAYS (base 65°F) 2003 LONG BEACH, CA (LGB)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1974	0	0	0	15	31	167	284	262	220	87	40	0	1106
1975	6	0	0	0	22	62	248	243	282	90	18	3	974
1976	34	0	17	8	56	215	271	295	286	232	85	0	1499
1977	6	4	0	14	26	124	295	360	207	180	83	13	1312
1978	0	0	65	2	138	162	240	254	284	155	11	0	1311
1979	0	0	10	25	61	220	226	272	302	72	1	14	1203
1980	0	4	0	33	10	132	289	299	167	109	7	8	1058
1981	0	15	0	37	66	309	340	350	251	81	28	1	1478
1982	0	1	2	21	37	33	265	345	276	150	7	0	1137
1983	8	0	7	7	67	108	291	443	359	191	14	0	1495
1984	3	0	8	28	116	138	369	369	430	68	0	0	1529
1985	0	8	0	24	15	149	339	259	156	98	4	2	1054
1986	11	15	12	26	40	126	207	301	102	69	15	0	924
1987	1	4	2	71	67	97	151	225	262	185	22	0	1087
1988	3	12	65	43	70	79	264	259	186	111	3	6	1101
1989	3	12	19	98	43	102	243	229	225	85	49	6	1114
1990	0	1	11	21	60	207	343	266	265	174	32	5	1385
1991	0	9	0	23	31	45	170	232	229	182	46	0	967
1992	0	15	0	89	104	139	312	395	293	128	19	0	1494
1993	3	0	12	33	92	178	229	252	219	131	13	3	1165
1994	2	0	12	17	21	205	230	393	270	92	1	2	1245
1995	2	34	2	21	6	78	250	310	274	102	7	0	1086
1996	6	5	3	74	87	160	260	317	212	51	29	0	1204
1997	0	0	26	39	201	165	233	379	425	186	64	2	1720
1998	0	0	13	39	39	161	347	475	286	99	0	7	1466
1999	5	0	0	29	14	63	228	192	128	182	3	0	844
2000	6	1	3	33	101	237	280	332	229	37	0	1	1260
2001	0	1	6	15	56	174	189	234	202	77	4	0	958
2002	5	13	0	1	35	91	201	167	217	34	38	0	802
2003	32	0	16	8	24	58	283	348	195	165	7	0	1136

SNOWFALL (inches) 2003 LONG BEACH, CA (LGB)

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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	0.0	0.0	0.0	0.0	0.0
1986-87	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
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991-92	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
1992-93	0.0	0.0	0.0	0.0	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	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	T	0.0	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	0.0	0.0											
1997-98													
1998-99													
1999-00													
2000-01													
2001-02													
2002-03													
2003-													
POR= 52 YRS	0.0	0.0	0.0	0.0	0.0	0.0	T	T	0.0	0.0	0.0	0.0	T

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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 (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
LONG BEACH,
CALIFORNIA (LGB)

The climate of the Long Beach Airport is considerably influenced by local topography. In fact, the topography plays a greater role in the climatic conditions at this station than the more general movements of pressure systems which dominate other sections of the country.

The Pacific Ocean, 4 miles south and 12 miles west, has a moderating effect on temperatures. The annual range of temperatures at the airport is much less than is experienced at stations further inland in the Los Angeles basin. Low coastal hills lie immediately between the station and the sea, the highest being Signal Hill, 1 5/8 miles southwest and 498 feet above sea level. The Palos Verdes Hills, 11 miles west-southwest of the station, slope upward to 1,480 feet above sea level. These natural barriers between the ocean and the station cause slightly greater ranges of high and low temperatures locally than at stations on the coast. During the winter months high temperatures are usually in the upper 60s, and lows in the 40s. In the summer highs are in the 70s and low 80s, and lows in the high 50s. Fortunately, high temperatures usually occur with low relative humidities, making infrequent heat waves tolerable for most people.

Precipitation is sparse during the summer months, with an average of only about 0.60 inch for the months of May through October. The greatest rainfall occurs during the winter months. Terrain again plays an important role. Precipitation at the station is considerably less than over the San Gabriel Mountains, about 28 miles to the north and the Santa Ana Mountains, 20 miles to the east. Even the coastal hills influence the local precipitation with greater amounts of rainfall occurring just 1 or 2 miles south and southwest of the station. Snow is an extremely rare phenomenon locally, although the San Gabriel Mountains are blanketed in the higher elevations much of the winter, and occasionally have snow down to the 2,500-foot level. Thunderstorms occur only sporadically at Long Beach.

With the Pacific Ocean only 4 miles south, it might be expected that the sea breeze would be from a southerly component. However, the coastal hills to the southwest combine with the lowest mountain passes leading to the interior desert valleys east of the Los Angeles basin to produce a sea breeze from a westerly component in the afternoon and early evening hours. Occasionally, strong dry northeasterly winds descend the mountain slopes in the fall, winter, and early spring months, developing velocities in excess of 50 mph over localized sections of the Los Angeles basin, usually below canyons. However, these strong winds ordinarily by-pass the station. Actually, the highest winds at Long Beach are recorded in association with the winter and spring storms which invade southern California from the Pacific.

During the summer months low clouds are quite common in the late night and morning hours at this station due to its proximity to the ocean. The tourist from the east and midwest usually expects a wet, rainy day, but by late morning or early afternoon the clouds have disappeared and the balance of the day is sunny and comfortable. Here again is a moderating influence on summertime temperatures locally which is not so prominent at stations further inland where the coastal cloudiness arrives later, burns off earlier, and penetrates less frequently.

STATION LOCATION

LONG BEACH, 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
						SEA LEVEL		GROUND									
						GROUND	SEA LEVEL	WIND	EXTREME	PSYCHROMETER	SUNSHINE	TIPPING BUCKET	WEIGHING	8 INCH	HYGROMETER		
*NOTE: <u>AIRPORT</u> 3rd Floor, New Admn. Building, Municipal Airport (Daugherty Field)	10/01/57	09/01/96	3/4 mi. NE	33°49'	118°09'	34 d25	a20 c20 f33 g31 j31	37	37				e35	33	b5 c5 h5 i5	a. 83 feet to 4/1/59. b. Commissioned 1/2 mi. WSW of thermometer site 3/1/60. c. Moved 4700 ft. SE 2/8/71. d. Effective 2/8/71. e. Added 12/3/76. f. Effective 7/10/79. g. Lowered 8/9/82. h. Minor relocation 8/9/82. i. type change 12/18/85. Station type changed from WSO to WSCMO 11/30/87. j. Minor move 10/22/87.	
Long Beach Airport	09/01/96	Present	NA	33°50'	118°10'	k34									S	ASOS Commissioned 09/01/96 k. Ground Elevation	

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* NOTES: For earlier station history see previous editions.