

1999

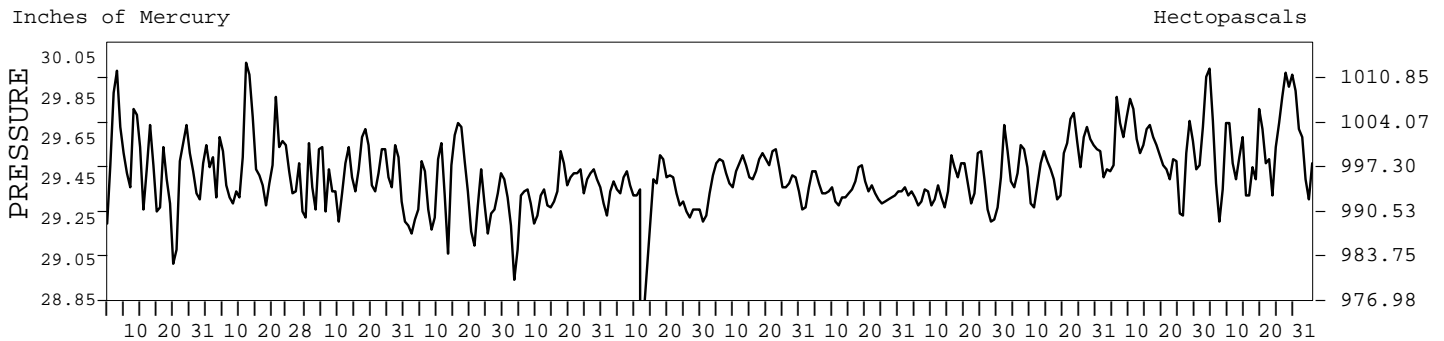
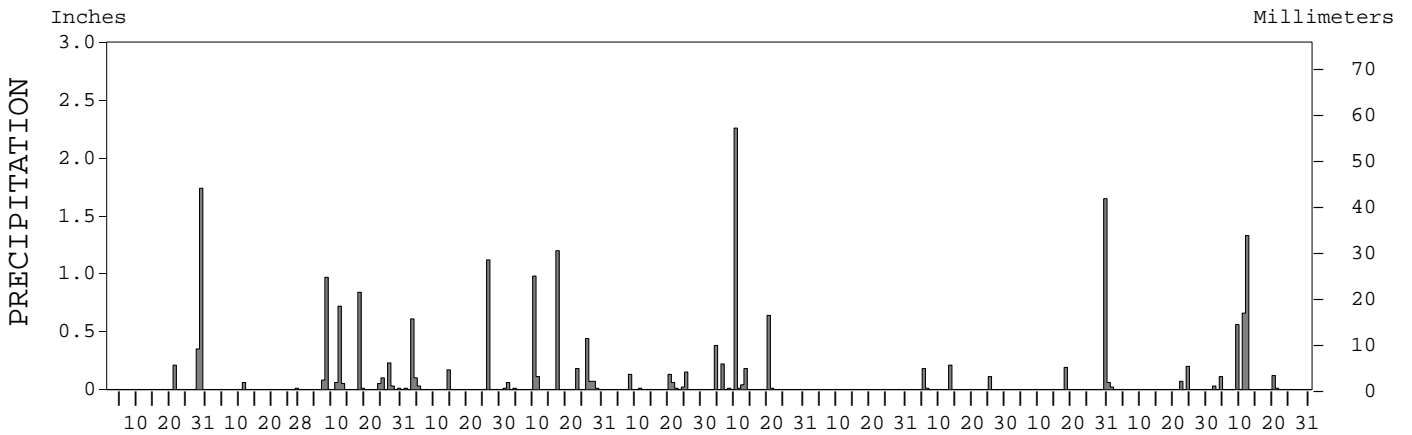
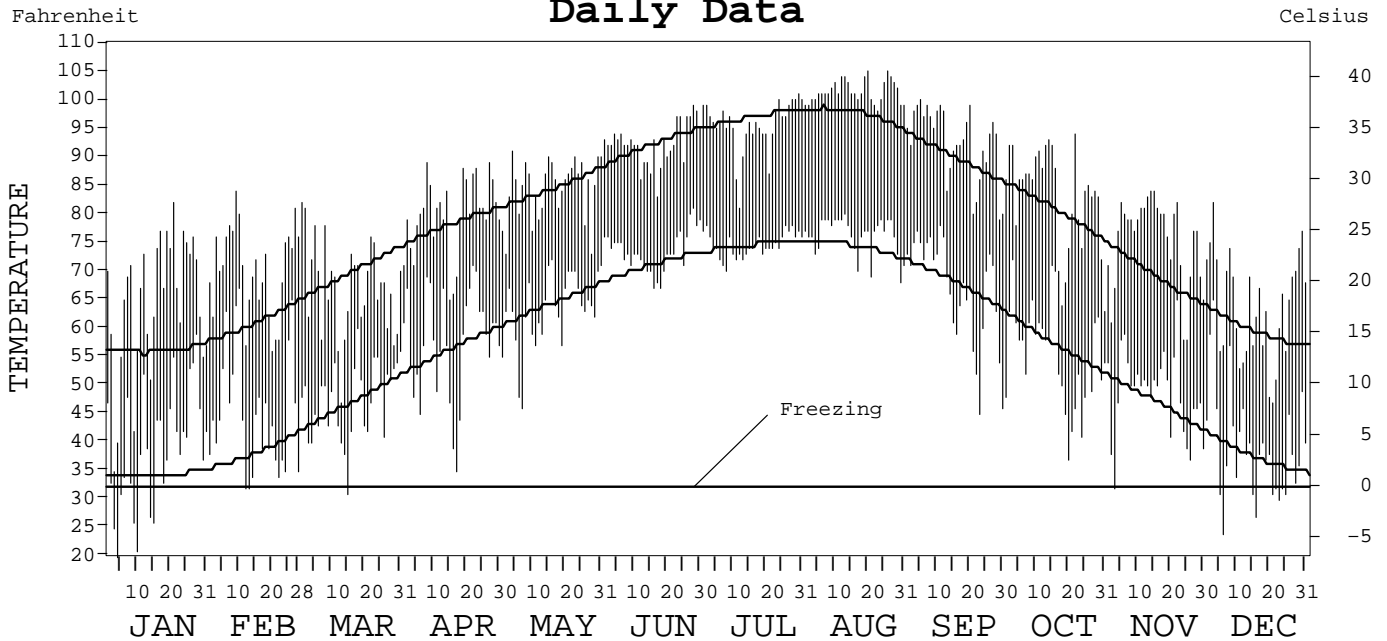
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-522

WACO,
TEXAS (ACT)

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

WACO, TX (ACT)

LATITUDE: 31° 36' 41" N LONGITUDE: 97° 13' 43" W ELEVATION (FT): GRND: 497 BARO: 497 TIME ZONE: CENTRAL (UTC + 6) WBAN: 13959

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	64.5	70.2	67.2	79.8	84.4	92.3	95.5	101.4	92.4	82.9	75.3	63.7	80.8	
	HIGHEST DAILY MAXIMUM	82	84	82	89	91	99	101	105	100	94	84	82	105	
	DATE OF OCCURRENCE	21	09	01	27+	04	28	30	26+	05	22	15+	03	AUG 26+	
	MEAN DAILY MINIMUM	39.1	45.1	47.4	57.4	63.2	73.5	74.6	76.2	66.7	55.5	48.6	39.1	57.2	
	LOWEST DAILY MINIMUM	20	32	31	35	46	67	70	68	45	37	32	24	20	
	DATE OF OCCURRENCE	04	13+	15	17	07	18+	08	30	23	20	03	06	JAN 04	
	AVERAGE DRY BULB	51.8	57.7	57.3	68.6	73.8	82.9	85.1	88.8	79.6	69.2	62.0	51.4	69.0	
	MEAN WET BULB	46.6	51.6	53.1	62.8					68.0	58.7		45.5		
	MEAN DEW POINT	41.2	45.0	49.1	58.4					61.1	50.7		38.9		
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	5	23	28	31	22	8	0	0	0	117
	MAXIMUM ≤ 32°	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MINIMUM ≤ 32°	7	2	1	0	0	0	0	0	0	0	1	9	20	
MINIMUM ≤ 0°	0	0	0	0	0	0	0	0	0	0	0	0	0		
H/C	HEATING DEGREE DAYS	407	227	233	45	1	0	0	2	49	120	426	1510		
	COOLING DEGREE DAYS	5	30	2	159	282	545	628	745	449	187	39	3083		
RH	MEAN (PERCENT)	72	67	76	73	76	73	70	54	57	57	66	67	67	
	HOUR 00 LST	79	74	82	84	86	84	81	61	63	63	73	74	75	
	HOUR 06 LST	85	83	87	90	92	91	93	79	80	77	85	80	85	
	HOUR 12 LST	60	54	67	59	63	57	54	41	46	45	53	56	55	
	HOUR 18 LST	62	52	67	58	62	58	54	38	39	43	53	58	54	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	4	1	0	3	1	0	0	0	0	0	2	0	11	
	THUNDERSTORMS	4	0	6	4	7	5	4	1	1	1	0	2	35	
CLOUDINESS	SUNRISE-SUNSET: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
	MIDNIGHT-MIDNIGHT: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
NUMBER OF DAYS WITH:															
CLEAR															
PARTLY CLOUDY															
CLOUDY															
PR	MEAN STATION PRESS. (IN.)	29.52	29.54	29.47	29.37	29.38		29.47	29.40	29.42	29.54	29.64	29.60		
	MEAN SEA-LEVEL PRESS. (IN.)	30.06	30.07	30.01		29.90				30.07			30.14		
WINDS	RESULTANT SPEED (MPH)	3.2	4.3	1.4	3.2	1.7			3.7	3.6	1.4	3.2	1.9		
	RES. DIR. (TENS OF DEGS.)	21	19	06	17	10			13	14	15	19	24		
	MEAN SPEED (MPH)	11.1	10.4	10.6	10.6	8.8	10.9	10.3	7.8	9.5	8.5	8.6	10.1	9.8	
	PREVAIL. DIR. (TENS OF DEGS.)	18	17	36	17	16	18	18	19	18	17	17	16	17	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	39	31	40	55	37	40	36	37	30	28	30	32	55	
	DIR. (TENS OF DEGS.)	20	34	27	28	12	20	17	04	35	01	18	29	28	
	DATE OF OCCURRENCE	12	11	08	26	10	02	04	03	28	17	22	09	APR 26	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	47	37	58	69	47	48	40	45	37	32	37	38	69	
DIR. (TENS OF DEGS.)	20	31	28	27	11	20	17	04	34	02	18	29	27		
DATE OF OCCURRENCE	12	11	08	26	10	02	04	03	29	17	22	09	APR 26		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	2.30	0.07	3.15	2.04	3.14	0.51	3.75	T	0.51	1.90	0.29	2.82	20.48	
	GREATEST 24-HOUR (IN.)	2.02	0.06	0.97	1.12	1.20	0.15	2.27	T	0.21	1.65	0.20	1.99	2.27	
	DATE OF OCCURRENCE	28-29	11	08	26	17	25	10-11	03	13	30	24	11-12	JUL 10-11	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	3	2	12	6	11	7	9	0	4	3	3	7	67	
PRECIPITATION ≥ 0.10	3	0	5	4	5	3	5	0	3	2	1	5	36		
PRECIPITATION ≥ 1.00	1	0	0	1	1	0	1	0	0	1	0	1	6		
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

WACO, TX (ACT)

LATITUDE: 31° 36' 41" N LONGITUDE: 97° 13' 43" W ELEVATION (FT): GRND: 497 BARO: 497 TIME ZONE: CENTRAL (UTC + 6) WBAN: 13959

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	56.1	60.8	69.6	78.0	84.4	92.0	96.8	97.2	89.6	80.3	68.8	59.3	77.7
	MEAN DAILY MAXIMUM	36	56.8	61.3	69.3	77.8	84.5	92.1	97.0	96.8	89.7	80.2	68.5	59.7	77.8
	HIGHEST DAILY MAXIMUM	57	88	96	100	101	102	109	109	112	106	101	92	91	112
	YEAR OF OCCURRENCE		1971	1996	1971	1963	1985	1980	1998	1969	1998	1989	1988	1955	AUG 1969
	MEAN OF EXTREME MAXS.	52	77.7	81.1	85.8	90.2	93.8	98.8	102.5	103.5	99.0	93.1	84.8	78.2	90.7
	NORMAL DAILY MINIMUM	30	34.2	38.0	46.8	56.2	64.2	70.9	74.4	74.0	67.6	56.8	46.6	37.3	55.6
	MEAN DAILY MINIMUM	36	35.6	39.3	46.8	55.5	63.9	71.3	74.8	74.1	67.6	56.8	46.6	38.3	55.9
	LOWEST DAILY MINIMUM	57	-5	4	15	27	37	52	60	53	40	25	17	-4	-5
	YEAR OF OCCURRENCE		1949	1985	1948	1975	1981	1964	1994	1992	1983	1993	1976	1989	JAN 1949
	MEAN OF EXTREME MINS.	52	18.5	22.8	28.6	37.8	49.8	61.1	68.0	66.2	52.9	40.3	29.3	21.9	41.4
	NORMAL DRY BULB	30	45.2	49.4	58.2	67.1	74.3	81.5	85.6	85.6	78.6	68.5	57.7	48.3	66.7
	MEAN DRY BULB	52	46.5	50.8	58.1	66.8	74.4	81.7	85.8	85.6	78.8	68.7	57.1	49.2	67.0
	MEAN WET BULB	49	41.7	45.1	51.2	59.2	66.9	72.0	73.6	73.1	69.1	60.7	51.1	43.8	59.0
	MEAN DEW POINT	49	36.2	39.5	44.8	53.9	63.0	68.0	68.7	67.8	64.3	55.4	45.6	38.2	53.8
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	*	0.4	1.5	7.5	22.1	28.4	28.5	17.6	4.2	0.1	0.0	110.3	
MAXIMUM ≤ 32°	30	1.2	0.3	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	2.1	
MINIMUM ≤ 32°	30	13.6	7.5	2.1	0.2	0.0	0.0	0.0	0.0	0.0	*	1.9	9.7	35.0	
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	
H/C	NORMAL HEATING DEG. DAYS	30	620	441	247	66	0	0	0	0	0	38	243	524	2179
	NORMAL COOLING DEG. DAYS	30	6	0	36	129	288	495	639	639	408	146	24	6	2816
RH	NORMAL (PERCENT)	30	71	69	66	68	71	67	60	60	67	67	71	71	67
	HOUR 00 LST	30	77	76	73	75	79	75	68	67	75	75	78	77	75
	HOUR 06 LST	30	82	82	81	84	87	86	82	81	85	84	84	82	83
	HOUR 12 LST	30	63	60	58	58	60	55	48	47	54	55	59	61	56
	HOUR 18 LST	30	61	56	51	53	56	51	44	43	52	56	62	63	54
S	PERCENT POSSIBLE SUNSHINE														
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	56	2.9	2.1	1.2	0.8	0.7	0.2	0.0	0.0	0.2	0.8	2.0	2.6	13.5
	THUNDERSTORMS	56	1.3	2.6	3.8	5.6	7.9	5.8	4.1	4.1	3.8	3.0	2.1	1.5	45.6
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	2	4.5	5.0	9.0	4.5	3.5	1.6	2.0	2.5	3.0	4.0		1.0	
	MIDNIGHT-MIDNIGHT (OKTAS)	2	4.5	5.0	5.0	2.5	3.5	2.5	2.0	2.0	3.0	2.0			
	MEAN NO. DAYS WITH:														
CLEAR	3	4.7	8.7	9.0	7.0	6.0	10.0	10.5	13.5	5.0	7.5	3.0	4.5	89.4	
PARTLY CLOUDY	2	1.5	1.0	3.3	3.5	5.3	3.0	3.5	3.0	3.0	2.5	2.0	4.0	35.6	
CLOUDY	3	6.0	7.7	6.7	4.5	4.7	1.7	2.5	2.5	2.0	3.5	5.5	5.5	52.8	
PR	MEAN STATION PRESSURE (IN)	27	29.60	29.55	29.44	29.41	29.37	29.40	29.45	29.45	29.45	29.51	29.54	29.59	29.48
	MEAN SEA-LEVEL PRES. (IN)	49	30.14	30.09	29.99	29.95	29.91	29.92	29.96	29.96	29.97	30.04	30.09	30.12	30.01
WINDS	MEAN SPEED (MPH)	39	11.6	11.8	12.7	12.6	11.7	11.1	10.8	9.8	9.7	10.0	10.8	10.9	11.1
	PREVAIL. DIR (TENS OF DEGS)	25	18	18	18	18	18	18	18	18	18	18	18	18	18
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	6	41	43	40	55	47	48	40	37	36	33	40	33	55
	DIR. (TENS OF DEGS)		32	31	27	28	02	36	03	04	29	33	31	34	28
	YEAR OF OCCURRENCE		1994	1998	1999	1999	1994	1997	1997	1999	1995	1995	1996	1996	APR 1999
	MAXIMUM 5-SECOND:														
SPEED (MPH)	6	47	52	58	69	58	63	47	45	55	44	48	41	69	
DIR. (TENS OF DEGS)		32	28	28	27	02	35	04	16	31	33	29	31	27	
YEAR OF OCCURRENCE		1994	1998	1999	1999	1994	1997	1997	1995	1995	1996	1996	1997	APR 1999	
PRECIPITATION	NORMAL (IN)	30	1.65	2.09	2.33	3.19	4.58	3.28	1.99	1.68	3.52	3.36	2.43	1.86	31.96
	MAXIMUM MONTHLY (IN)	57	6.10	7.91	6.84	13.37	15.00	12.06	8.58	8.91	7.29	10.51	6.24	9.81	15.00
	YEAR OF OCCURRENCE		1998	1997	1945	1957	1965	1961	1971	1974	1970	1984	1952	1997	MAY 1965
	MINIMUM MONTHLY (IN)	57	0.03	0.07	0.04	0.12	0.55	0.27	0.00	T	0.00	0.00	0.13	0.04	0.00
	YEAR OF OCCURRENCE		1971	1999	1956	1983	1998	1953	1993	1952	1956	1952	1970	1950	JUL 1993
	MAXIMUM IN 24 HOURS (IN)	57	4.79	3.97	3.17	5.09	7.18	4.21	4.49	4.80	4.57	5.72	4.26	7.98	7.98
	YEAR OF OCCURRENCE		1998	1997	1990	1957	1953	1947	1973	1958	1957	1974	1952	1997	DEC 1997
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	6.6	6.5	7.3	7.0	8.6	6.7	4.1	5.3	6.9	6.0	6.6	6.1	77.7	
PRECIPITATION ≥ 1.00	30	0.3	0.5	0.6	1.1	1.5	1.1	0.6	0.5	1.2	1.2	0.7	0.4	9.7	
SNOWFALL	NORMAL (IN)	30	0.8	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.*		1.5
	MAXIMUM MONTHLY (IN)	53	7.0	4.8	1.0	T	T	0.0	0.0	T	0.0	T	2.4	2.0	7.0
	YEAR OF OCCURRENCE		1949	1966	1987	1993	1989			1991		1993	1993	1946	JAN 1949
	MAXIMUM IN 24 HOURS (IN)	53	7.0	4.8	1.0	T	T	0.0	0.0	T	0.0	T	2.4	2.0	7.0
	YEAR OF OCCURRENCE		1949	1966	1987	1993	1989			1991		1993	1993	1946	JAN 1949
	MAXIMUM SNOW DEPTH (IN)	47	7	5	1	0	0	0	0	0	0	0	1	1	7
	YEAR OF OCCURRENCE		1949	1966	1989								1976	1963	JAN 1949
NORMAL NO. DAYS WITH:															
SNOWFALL ≥ 1.0	30	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.*	0.6	

PRECIPITATION (inches) 1999 WACO, TX (ACT)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0.76	3.82	4.33	1.80	2.24	0.92	0.10	2.47	7.29	3.37	0.13	0.83	28.06
1971	0.03	1.33	0.64	2.79	0.75	0.99	8.58	2.16	0.74	3.26	1.64	4.30	27.21
1972	2.54	0.17	0.09	2.04	1.95	3.05	4.14	1.79	2.57	6.62	2.87	0.78	28.61
1973	3.48	1.52	3.04	5.41	3.16	7.10	4.89	0.36	5.24	9.36	0.66	0.76	44.98
1974	1.33	1.21	0.61	3.30	2.21	1.07	0.73	8.91	6.80	6.76	2.54	1.92	37.39
1975	1.40	2.94	1.09	4.58	13.21	2.84	2.77	0.72	2.27	2.40	0.40	1.83	36.45
1976	1.74	0.33	1.60	6.54	4.99	3.23	7.40	0.24	5.66	5.19	0.66	2.50	40.08
1977	1.83	3.67	2.90	7.38	1.71	0.78	0.21	1.96	0.26	1.50	2.43	0.15	24.78
1978	1.03	2.83	2.46	2.37	2.88	1.54	0.26	1.42	0.53	1.87	4.57	2.01	23.77
1979	1.99	1.97	4.31	1.38	9.68	4.70	5.01	4.58	2.51	1.94	0.33	3.97	42.37
1980	2.26	1.83	2.13	4.03	4.47	0.34	0.01	0.16	2.03	0.76	2.29	2.70	23.01
1981	0.85	1.80	2.97	1.21	3.69	7.23	0.16	2.14	3.61	8.41	0.99	0.50	33.56
1982	1.86	1.41	3.79	2.46	5.54	3.93	2.61	0.18	0.15	1.43	3.57	2.11	29.04
1983	1.28	2.97	3.46	0.12	3.83	0.95	3.41	2.54	0.71	1.55	2.90	0.46	24.18
1984	0.82	1.00	3.45	0.54	3.71	1.75	1.82	1.33	1.32	10.51	3.05	5.07	34.37
1985	0.76	1.91	2.57	3.37	1.59	5.62	0.68	0.68	6.38	3.84	3.53	2.02	32.95
1986	0.07	4.51	0.43	2.74	6.89	3.95	0.37	0.68	3.94	5.09	3.56	3.48	35.71
1987	1.29	2.60	1.67	1.63	5.16	5.84	1.42	0.76	5.69	1.19	4.44	3.31	35.00
1988	0.44	1.68	3.09	1.28	0.65	5.57	1.15	0.56	5.52	0.98	1.76	2.01	24.69
1989	2.45	2.27	2.42	1.60	9.34	4.16	1.99	2.21	0.27	0.91	0.32	0.54	28.48
1990	2.72	2.80	5.07	3.11	6.12	0.97	0.69	1.05	6.57	4.48	3.50	1.35	38.43
1991	3.13	1.43	0.93	2.68	5.89	3.16	3.65	7.21	3.81	3.58	1.68	8.44	45.59
1992	4.49	6.29	3.57	1.27	6.36	2.66	2.39	0.49	2.22	1.51	4.05	3.31	38.61
1993	2.45	3.84	4.31	3.63	2.06	2.15	0.00	0.81	4.44	5.50	2.11	1.48	32.78
1994	1.52	3.32	2.23	2.78	6.66	1.97	0.31	1.17	0.34	5.40	3.98	5.03	34.71
1995	1.38	0.60	3.67	7.18	7.82	2.35	4.02	6.04	6.11	0.12	1.57	1.01	41.87
1996	0.86	0.20	0.93	2.74	1.20	2.28	2.64	6.27	1.82	0.89	4.93	2.51	27.27
1997	2.50	7.91	3.77	5.46	3.51	2.71	0.73	1.74	0.49	2.12	2.52	9.81	43.27
1998	6.10	4.04	2.38	1.31	0.55	1.24	0.18	0.62	4.92	6.61	3.50	4.08	35.53
1999	2.30	0.07	3.15	2.04	3.14	0.51	3.75	T	0.51	1.90	0.29	2.82	20.48
POR= 114 YRS	2.03	2.34	2.67	3.82	4.54	3.00	1.98	2.13	3.00	2.81	2.52	2.61	33.45

WBAN : 13959

AVERAGE TEMPERATURE (°F) 1999 WACO, TX (ACT)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	41.7	50.0	52.7	68.0	72.8	80.8	85.1	88.1	79.6	66.3	55.9	56.6	66.5
1971	51.7	52.9	60.8	67.8	75.1	84.0	85.9	80.5	79.1	71.2	58.5	53.4	68.4
1972	47.3	52.9	63.6	71.0	73.3	82.7	82.2	84.4	81.3	67.7	50.8	44.1	66.8
1973	42.3	47.2	60.4	61.1	71.6	77.3	83.8	84.4	79.1	69.9	63.2	50.0	65.9
1974	45.3	53.4	64.6	67.4	77.2	80.1	86.8	84.4	71.8	69.8	56.7	46.2	67.0
1975	48.5	47.0	54.5	64.1	72.0	79.7	82.0	84.6	77.2	70.5	59.8	50.5	65.9
1976	46.8	59.0	60.5	66.2	70.7	80.4	82.2	85.6	77.9	60.5	50.1	45.5	65.5
1977	38.0	52.7	59.8	67.2	76.5	84.6	89.1	87.9	85.7	71.4	60.2	51.7	68.7
1978	37.8	42.0	56.4	70.2	76.5	83.7	89.2	86.3	81.4	69.5	57.3	46.5	66.4
1979	36.4	44.5	58.4	64.9	69.5	78.9	82.3	81.8	75.5	70.4	52.4	49.3	63.7
1980	46.7	48.7	56.0	62.5	73.5	85.2	89.2	87.5	81.2	65.7	55.9	51.4	67.0
1981	46.6	50.1	55.7	69.9	72.6	81.7	85.8	83.9	77.5	68.9	58.8	48.7	66.7
1982	46.8	47.5	61.8	64.4	75.0	80.5	86.3	88.2	80.4	68.8	57.9	50.4	67.3
1983	45.5	48.9	55.4	61.8	71.5	79.2	84.3	85.6	77.4	69.8	59.3	38.3	64.8
1984	41.8	51.5	58.8	65.5	76.2	82.4	86.0	86.6	76.6	69.1	56.0	54.9	67.1
1985	40.4	46.2	61.5	68.4	76.8	82.1	85.3	87.4	77.5	69.4	59.7	44.9	66.6
1986	50.5	53.0	60.8	69.0	73.5	81.5	87.5	84.6	83.1	67.2	55.1	47.3	67.8
1987	45.9	51.9	55.3	64.8	75.3	80.4	84.4	87.3	77.3	67.7	57.0	49.4	66.4
1988	44.2	49.4	57.9	66.6	73.6	79.8	86.0	88.2	80.2	68.5	60.8	50.8	67.2
1989	51.7	44.8	58.3	68.2	76.5	78.9	84.2	83.9	75.6	70.4	59.6	40.5	66.1
1990	54.0	54.9	60.0	66.8	75.7	86.3	84.8	87.0	80.6	67.6	61.5	47.0	68.9
1991	44.3	53.8	60.7	69.3	75.8	81.4	85.3	83.5	76.7	69.9	53.9	52.2	67.2
1992	48.6	55.0	61.2	67.3	72.4	81.4	86.3	81.5	80.2	70.9	54.2	51.2	67.5
1993	46.4	50.4	57.0	63.8	72.1	82.1	85.7	86.8	78.0	64.6	51.5	49.7	65.7
1994	46.1	50.2	59.3	66.1	72.0	83.1	85.9	84.4	76.6	68.3	59.2	50.4	66.8
1995	49.7	52.6	56.5	64.6	73.1	77.7	84.1	84.1	76.7	66.9	55.3	50.5	66.0
1996	44.6	53.8	54.0	65.3	80.6	82.3	87.1	83.4	74.8	67.4	58.1	50.8	66.9
1997	45.2	49.9	58.8	60.6	71.2	79.3	85.1	84.0	81.2	68.4	52.7	46.7	65.3
1998	51.6	51.5	56.2	65.0	78.6	86.2	90.4	86.3	82.1	70.6	59.5	48.4	68.9
1999	51.8	57.7	57.3	68.6	73.8	82.9	85.1	88.8	79.6	69.2	62.0	51.4	69.0
POR= 103 YRS	47.2	50.3	58.7	66.8	74.7	82.3	85.9	85.7	79.1	68.9	57.4	49.3	67.2

HEATING DEGREE DAYS (base 65°F) 1999 WACO, TX (ACT)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0	0	4	87	286	288	411	349	188	50	5	0	1668
1971-72	0	0	6	5	230	360	543	368	109	19	2	0	1642
1972-73	0	0	4	89	426	638	696	492	149	170	13	0	2677
1973-74	0	0	0	22	118	460	605	322	145	52	0	0	1724
1974-75	0	0	13	14	274	578	507	495	343	120	0	0	2344
1975-76	0	0	2	27	230	462	558	200	204	38	6	0	1727
1976-77	0	0	0	205	446	596	827	345	175	21	2	0	2617
1977-78	0	0	0	22	173	417	839	639	284	19	19	0	2412
1978-79	0	0	0	23	256	573	880	570	217	59	30	0	2608
1979-80	0	0	0	43	384	483	562	475	297	119	6	0	2369
1980-81	0	0	2	98	305	427	561	417	285	27	13	0	2135
1981-82	0	0	6	75	194	498	566	486	202	103	3	0	2133
1982-83	0	0	1	73	265	453	599	443	298	159	9	0	2300
1983-84	0	0	11	38	220	823	710	390	221	73	6	0	2492
1984-85	0	0	23	41	293	319	752	527	157	41	0	0	2153
1985-86	0	0	14	38	207	619	443	353	151	39	3	0	1867
1986-87	0	0	0	50	305	540	583	360	308	111	0	0	2257
1987-88	0	0	0	44	270	480	644	451	256	49	0	0	2194
1988-89	0	0	3	20	188	434	403	562	255	82	0	0	1947
1989-90	0	0	12	67	227	753	341	287	195	64	7	0	1953
1990-91	0	0	0	90	157	555	633	312	177	15	7	0	1946
1991-92	0	0	10	57	350	401	502	283	144	59	10	0	1816
1992-93	0	0	1	7	331	435	570	405	262	111	6	0	2128
1993-94	0	0	0	155	419	477	581	418	222	80	27	0	2379
1994-95	0	0	6	59	204	448	477	347	292	85	7	0	1925
1995-96	0	0	18	41	292	464	623	359	366	97	0	0	2260
1996-97	0	0	17	46	240	442	611	417	205	156	15	0	2149
1997-98	0	0	0	79	377	559	411	374	315	65	0	0	2180
1998-99	0	0	0	31	184	526	407	227	233	45	1	0	1654
1999-	0	0	2	49	120	426							

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COOLING DEGREE DAYS (base 65°F) 1999 WACO, TX (ACT)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	4	0	0	155	260	483	629	723	447	136	20	35	2892
1971	6	14	66	142	325	576	655	489	436	206	40	7	2962
1972	3	24	72	203	266	539	541	608	499	178	6	0	2939
1973	0	0	12	60	225	375	587	611	429	182	72	0	2553
1974	0	5	138	128	382	461	683	610	225	169	31	2	2834
1975	2	0	26	100	227	448	533	618	376	206	83	19	2638
1976	0	33	72	81	193	469	542	644	395	73	5	0	2507
1977	0	7	20	94	366	593	754	719	628	224	34	13	3452
1978	2	0	21	181	383	568	757	666	496	169	30	6	3279
1979	0	1	21	61	177	426	544	529	320	220	17	1	2317
1980	0	6	25	49	278	611	758	705	498	126	39	12	3107
1981	0	5	4	184	256	509	648	594	384	207	15	0	2806
1982	8	0	112	93	321	470	666	725	471	197	62	9	3134
1983	0	0	7	68	217	431	604	648	390	193	56	3	2617
1984	0	4	39	95	360	529	658	677	379	174	28	14	2957
1985	0	7	56	150	370	518	637	699	397	177	55	3	3069
1986	1	24	27	165	273	502	703	616	551	124	16	0	3002
1987	0	0	14	112	327	469	609	697	374	134	35	3	2774
1988	5	5	43	105	273	451	655	726	465	135	68	2	2933
1989	0	2	56	186	367	427	601	594	335	244	72	0	2884
1990	6	9	49	125	344	649	619	687	474	177	59	5	3203
1991	0	4	49	150	351	500	638	581	366	219	25	11	2894
1992	0	1	33	137	247	497	666	518	465	194	14	13	2785
1993	0	0	24	82	234	519	649	681	398	149	21	5	2762
1994	2	9	50	119	248	548	652	608	362	167	37	3	2805
1995	10	7	38	83	268	391	600	601	373	111	11	22	2515
1996	0	43	32	115	488	525	690	577	318	131	41	6	2966
1997	7	0	18	27	211	434	628	596	491	189	14	0	2615
1998	3	0	49	73	427	645	790	668	521	214	25	18	3433
1999	5	30	2	159	282	545	628	745	449	187	39	12	3083

SNOWFALL (inches) 1999 WACO, TX (ACT)

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	T	T	T	0.0	0.0	0.0	T
1971-72	0.0	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0	0.0	0.0	0.0	T
1972-73	0.0	0.0	0.0	0.0	T	T	2.6	T	0.0	0.0	0.0	0.0	2.6
1973-74	0.0	0.0	0.0	0.0	0.0	T	T	0.0	0.0	0.0	0.0	0.0	T
1974-75	0.0	0.0	0.0	0.0	0.0	T	1.0	0.8	0.0	0.0	0.0	0.0	1.8
1975-76	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0	0.0	0.0	0.0	0.0	T
1976-77	0.0	0.0	0.0	0.0	0.8	0.0	1.8	0.0	0.0	0.0	0.0	0.0	2.6
1977-78	0.0	0.0	0.0	0.0	T	0.0	2.2	0.2	T	0.0	0.0	0.0	2.4
1978-79	0.0	0.0	0.0	0.0	0.0	0.2	T	T	0.0	0.0	0.0	0.0	0.2
1979-80	0.0	0.0	0.0	0.0	T	0.0	0.0	T	0.0	0.0	0.0	0.0	T
1980-81	0.0	0.0	0.0	0.0	0.8	0.0	T	1.0	0.0	0.0	0.0	0.0	1.8
1981-82	0.0	0.0	0.0	0.0	0.0	0.0	6.0	T	T	0.0	0.0	0.0	6.0
1982-83	0.0	0.0	0.0	0.0	0.0	0.0	T	T	0.0	0.0	0.0	0.0	T
1983-84	0.0	0.0	0.0	0.0	0.0	T	T	0.0	T	0.0	0.0	0.0	T
1984-85	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.9	0.0	0.0	0.0	0.0	2.9
1985-86	0.0	0.0	0.0	0.0	0.0	0.0	T	T	0.0	0.0	0.0	0.0	T
1986-87	0.0	0.0	0.0	0.0	T	T	T	0.0	1.0	0.0	0.0	0.0	1.0
1987-88	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.4	0.0	0.0	0.0	0.0	1.5
1988-89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.8	0.0	T	0.0	1.0
1989-90	0.0	0.0	0.0	0.0	0.0	T	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	T	0.0	0.0	0.0	0.0	0.0	T
1991-92	0.0	T	0.0	T	0.0	0.0	T	0.0	T	T	0.0	0.0	T
1992-93	0.0	0.0	0.0	0.0	T	0.0	T	0.0	T	T	0.0	0.0	T
1993-94	0.0	0.0	0.0	T	2.4	T	T	1.4	0.0	0.0	0.0	0.0	3.8
1994-95	0.0	0.0	0.0	0.0	0.0	0.0	T	0.0	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						
1996-97													
1997-98													
1998-99													
1999-													
POR= 53 YRS	0.0	T	0.0	T	0.1	0.1	0.8	0.4	0.1	T	T	0.0	1.5

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REFERENCE NOTES:

<p>PAGE 1: THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).</p> <p>PAGE 2 AND 3: H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY W/O INDICATES WEATHER AND OBSTRUCTIONS S INDICATES SUNSHINE. PR INDICATES PRESSURE. CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).</p> <p>GENERAL: T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. NORMALS ARE 30-YEAR AVERAGES (1961 - 1990). ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED. 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05. CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET AND ON SATELLITE DATA FOR CLOUDS ABOVE 12,000 FEET. THE NUMBER OF DAYS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY CONDITIONS FOR ASOS STATIONS IS THE SUM OF THE CEILOMETER AND SATELLITE DATA FOR THE SUNRISE TO SUNSET PERIOD.</p>	<p>GENERAL CONTINUED: CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. WHEN AT LEAST ONE OF THE ELEMENTS (CEILOMETER OR SATELLITE) IS MISSING, THE DAILY CLOUDINESS IS NOT COMPUTED. WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH. RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION. AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65° F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY.</p> <p>ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.</p>
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1999
WACO,
TEXAS (ACT)

One of the major cities of Texas, Waco is located in the rich agricultural region of the Brazos River Valley in North Central Texas. The city lies on the edge of the gently rolling Blackland Prairies. To the west lies the rolling to hilly Grand Prairie. Waco is a commercial hub with an economy based on industry, education and agriculture. Baylor University, founded in 1845, is located here. Regional agriculture includes chiefly cattle, poultry, sorghum, cotton and corn. Soils are black waxy, loam and sandy types. Lake Waco, a reservoir of 7,260 surface acres, lies within the Waco city limits, with the north shoreline approximately 0.8 mile south of the Municipal Airport.

The climate of Waco is humid subtropical with hot summers. It is a continental type climate characterized by extreme variations in temperature. Tropical maritime air masses predominate throughout the late spring, summer and early fall months, while Polar air masses frequent the area in winter. In an average year, April and May are the wettest months, while the July-August period is the driest. Most warm season rainfall occurs from thunderstorm activity. Consequently, considerable spatial variation in amounts occur.

Winters are mild. Cold fronts moving down from the High Plains often are accompanied by strong, gusty, northerly winds and sharp drops in temperature. Cold spells are of short duration, rarely lasting longer than 2 or 3 days before a rapid warming occurs. Winter precipitation is closely associated with frontal activity, and may fall as rain, freezing rain, sleet or snow. During most years, snowfall is of little or no consequence.

Daytime temperatures are hot in summer, particularly in July and August. The highest temperatures are associated with fair skies, light winds, and comparatively low humidities. There is little variety in the day-to-day weather during July and August. Air conditioning is recommended for maximum comfort indoors or while traveling.

The spring and fall seasons are very pleasant at Waco. Temperatures are comfortable. Cloudiness and showers are more frequent in the spring than in the fall. The average first occurrence of 32 degrees Fahrenheit is late November and the average last occurrence is in mid March.

STATION LOCATION

WACO, TEXAS

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE											* Type	REMARKS
						SEA LEVEL	GROUND											
							WIND	TEMP	REL	MO	OR	OR	OR	OR	OR	OR		
<u>COOPERATIVE</u>																		
Waco, Texas	1867	1/31/13		31°34'	97°08'	424		a10										Data incomplete through 1888. Mr. E.H. Hall, December 1901 through January 1913. a - 15 feet latter part of period, probably from December 1901.
718 East Clay Street	2/01/13	1/31/32		31°34'	97°08'	424		15										Mr. A.E. Howell, February 1913 through January 1932.
728 East Webster	2/01/32	3/31/34		31°34'	97°08'	424		15										Mr. J.E. Garner, February 1932 through March 1934.
2404 McKenzie	4/01/34	2/29/40	2.5 mi. WSW	31°33'	97°09'	531		15										Mr. W. Earl Harrison, April 1934 through February 1940.
<u>AIRPORT</u>																		
3-1/2 miles West of Post Office CAA Bldg., Rich Field	3/11/29	7/26/39	3 mi. W	31°33'	97°11'	575												Climatological data are from cooperative observer's records until 3/1/40.
Administration Building Rich Field	7/26/39	2/06/40	200 ft. NW	31°33'	97°11'	575												
Administration Building Rich Field	2/06/40	2/10/43		31°33'	97°11'	575	39	5	5			4	4					Observations by Weather Bureau personnel.
Operations Building Blackland Field	2/10/43	4/13/51	5 mi. NNW	31°37'	97°13'	500	30	5	5			4	4					
Municipal Airport Administration Building	4/13/51	3/19/73	216 ft. N	31°37'	97°13'	b501	d23	s5	s5			c4	3	a5				a - Commissioned 3200 feet NNW 11/18/63. b - 500 feet to 11/18/63. c - 3 feet to 8/11/59. d - 78 feet to 2/18/64. s - Standby status after 11/18/63.
Weather Service Bldg. Madison Cooper Airport	3/19/73	07/01/93	600 ft. NE	31°37'	97°13'	501	e23	NA	f3 g6	NA	5	5	5	e5 h5	NA			e - Same site as prior to 3/19/73. f - Sling psychrometer. g - Type change 2/10/83. h - Type change 10/1/85.
Waco Regional Airport	07/01/93	Present	NA	31°17'	97°14'	497									S			ASOS commissioned 07/01/93

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

National Climatic Data Center
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