OKLAHOMA
MONTHLY SUMMARY
DECEMBER 1989

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DECEMBER 1989 OKLAHOMA SUMMARY

December 1989 ranks as the 3rd coldest and 10th driest December ever recorded in Oklahoma (see Table 1). Many stations set records for their lowest December temperatures during 2 days of subzero weather which capped a major Arctic air mass intrusion during the second half of the month. In spite of several days with above normal temperatures early and late in the month, the State-averaged monthly mean temperature remained below 32 degrees. All stations recorded below normal precipitation (see Map 1). These dry conditions supported 44 wildfires which destroyed over 400 acres in eastern Oklahoma early in the month.

A slow-moving, upper level storm and its accompanying surface cold front finally delivered significant precipitation to the State on December 7. Snowfall amounts ranged from 7" in the northwest to 2" in eastern Oklahoma. Most stations reported water equivalent totals of less than one-half inch. This widespread blanket of moisture was sufficient to allow a lifting of the outdoor fire ban, thus permitting farmers to burn stubble in preparation for the next crop.

A cold air mass edged into Oklahoma on December 15, marking the start of 9 consecutive days with much below normal temperatures. Temperatures at several stations in the northern two-thirds of the State remained below freezing during 8 of the 9 days. Single-digit readings and strong winds associated with the front produced -40 degree wind chill temperatures in northern Oklahoma on the 15th.

A colder, record-breaking burst of artic air arrived behind another cold front on December 22 and 23, dropping morning lows below zero Statewide. Tulsa broke its all-time December minimum temperature record on 2 consecutive mornings with -6 and -8 degree readings on the 22nd and 23rd respectively. The bitter cold on the 23rd produced record December temperatures at most Oklahoma stations (see Table 2). A cold-related death in Oklahoma City raised the December total to at least 3 lives.

Warmer air abruptly ended the cold spell as a warm front with southerly winds boosted temperatures 55 to 70 degrees between December 24 and 26. 60-degree temperatures extended over most of the State from the 26th through the 28th. A cold front produced Statewide freezing temperatures and scattered showers on December 30 and 31.

-R. J. Sladewski

Table 1. Oklahoma's five coldest Decembers (1892-1989).

RANK	YEAR	STATEWIDE AVERAGED MONTHLY TEMPERATURE (°F)
1	1983	26.5
2	1909	31.8
3	1989	31.9
4	1914	32.4
5	1917	33.0

Map 1. December 1989 percent of normal precipitation.

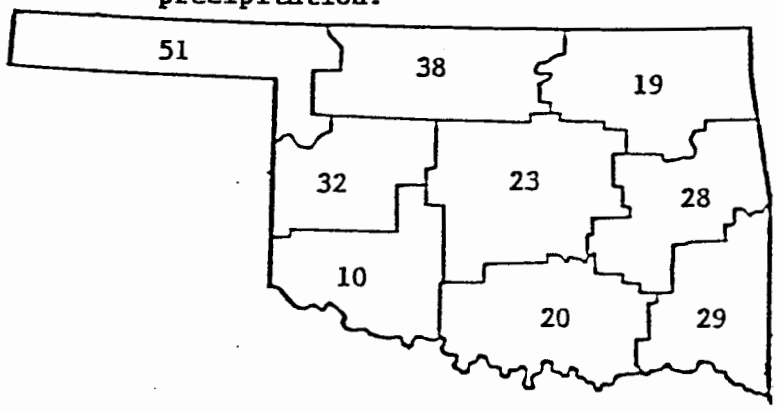


Table 2. Lowest December temperature records established on December 23, 1989 at selected Oklahoma stations.

CD	STATION	DEC. 23, 1989 TEMPERATURE	PREVIOUS DECEMBER RECORD* TEMPERATURE	YEAR	DATE
1	Gage	-13+	-13	1983	29
1	Arnett	-11	-5	1983	22
2	Mutual	-12	-5	1983	22
2	Enid	-10	-2	1968	31
3	Bartlesville	-13	-9	1983	30
3	Tulsa	-8	-3	1963	23
4	Clinton	-11	-5	1983	22
4	Weatherford	-10	-8	1983	22
5	Guthrie	-13	-2	1983	22
5	Oklahoma City	-8	-3	1983	22
6	McAlester	-5	-3	1963	23
6	Tahlequah	-14	-8	1963	23
7	Hobart	-9	-2	1983	22
7	Anadarko	-17	-5	1983	30
8	Ardmore	-8	0	1983	22
8	Waurika	-10	-8	1983	22
9	Antlers	-5	1	1983	30
9	Tuskahoma	-10	-2	1983	30

* Period of Record: 1948-1989
\+ Ties Record

TABLE OF 1988/1989 COMPARISONS

STATION	December Temperatures (F) 1988	1989	December Precipitation (in.) 1988	1989
Arnett	39.2	28.7	.04	.23
Enid	43.1	30.1	.66	.12
Mutual	39.5	28.9	.01	.66
Tulsa	44.1	32.2	1.84	.26
Elk City	43.1	32.5	.10	.19
Oklahoma City	44.9	33.3	1.39	.32
McAlester	45.5	35.2	2.84	.70
Altus Irr Sta	44.6	32.9	.77	.06
Durant	43.9	34.6	2.85	.46
Ada	44.6	34.4	2.67	.33
Antlers	45.7	35.7	2.74	.30

EXTREMES

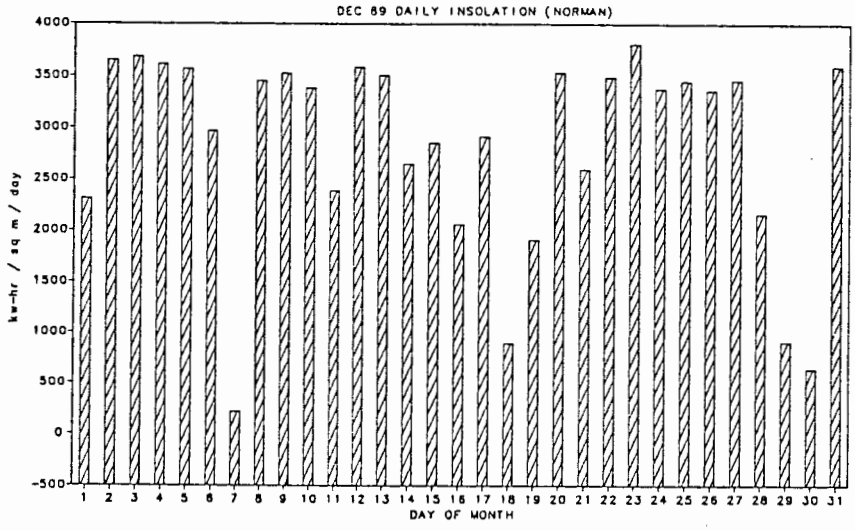
Variable	Station	Division	Observation	Date
Minimum temperature (F)	Perry	2	-18	15
Maximum temperature (F)	Mannford	3	79	5
Maximum 24-hour precipitation	Smithville	9	1.56"	7

INSOLATION DATA AVAILABLE

The University of Oklahoma's School of Meteorology is observing and archiving incoming solar radiation data as part of a cooperative effort with the Agricultural Research Service, USDA at Durant, OK. The observation site, operated continuously since September 1987, is located at Max Westheimer Airport in Norman. The data are representative of central Oklahoma and available through the Oklahoma Climatological Survey. The table and chart below depict the December 1989 daily observations.

December 1989 Daily Insolation Data for Norman, OK
(Insolation units are watt-hours per square meter per day)

DATE	INSOLATION AMOUNT
1	2306.85
2	3649.20
3	3681.97
4	3609.75
5	3567.25
6	2967.80
7	218.08
8	3453.36
9	3524.47
10	3384.19
11	2387.63
12	3581.97
13	3506.14
14	2650.22
15	2850.30
16	2062.32
17	2913.08
18	893.84
19	1906.68
20	3533.92
21	2596.24
22	3489.75
23	3809.75
24	3381.42
25	3451.69
26	3365.30
27	3461.14
28	2160.68
29	907.42
30	642.53
31	3597.25



DECEMBER 1989 SUMMARY FOR NORTHWEST DIVISION (CD1)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	MAX DAY	MIN TEMP	MIN DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	MAX DAY
ARNETT	332	1	28.7	31	-8.5	74.	6	-11.	23	1126.0	264.0	.0	.0	.234	31	-.40	.13	8
BEAVER	593	1	27.5	31	-8.7	73.	6	-13.	23	1162.0	269.0	.0	.0	.452	31	.00	.18	17
BOISE CITY 2 E	908	1	31.8	31	-5.0	68.	5	-13.	22	1028.5	154.5	.0	.0	.254	31	-.15	.10	11
BUFFALO	1243	1	31.3	31	-7.2	73.	5	-10.	22	1045.0	223.0	.0	.0	.290	31	-.40	.15	7
FARGO	3070	1	*****	0	*****	****	0	****	0	******	******	******	******	.363	31	-.29	.22	8
GAGE FAA APT	3407	1	30.2	31	-6.6	74.	5	-13.	23	1078.5	204.5	.0	.0	.406	31	-.23	.22	8
GATE	3489	1	29.6	31	*****	73.	6	-12.	22	1097.0	******	.0	******	.481	31	*****	.25	7
GOODWELL RES ST	3628	1	29.3	31	-7.4	71.	6	-13.	23	1107.0	230.0	.0	.0	.138	31	-.13	.09	7
GUYMON	3835	1	29.7	29	*****	69.	5	-15.	22	1024.0	******	.0	******	.135	30	*****	.08	8
HOOKER	4298	1	29.0	31	-7.4	70.	5	-14.	23	1117.5	230.5	.0	.0	.183	31	-.21	.12	17
KENTON	4766	1	30.2	31	-6.7	68.	6	-12.	23	1079.5	208.5	.0	.0	.186	31	-.11	.11	7
LAVERNE	5045	1	*****	0	*****	****	0	****	0	******	******	******	******	.363	31	-.31	.20	7
OPTIMA LAKE	6740	1	29.3	31	*****	70.	6	-13.	22	1108.0	******	.0	******	.125	30	*****	.09	17
RANGE	7412	1	*****	0	*****	****	0	****	0	******	******	******	******	.372	31	*****	.15	16
REGNIER	7534	1	*****	0	*****	****	0	****	0	******	******	******	******	.063	31	-.22	.04	7
TURPIN 4 SSE	9017	1	27.6	31	*****	70.	6	-12.	22	1158.5	******	.0	******	.150	31	*****	.08	18

DECEMBER 1989 SUMMARY FOR NORTH CENTRAL DIVISION (CD2)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	MAX DAY	MIN TEMP	MIN DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	MAX DAY
ALVA	193	2	29.8	31	*****	74.	5	-15.	23	1090.0	******	.0	******	.730	31	*****	.60	8
VANCE AFB	302	2	*****	0	*****	****	0	****	0	******	******	******	******	.489	31	*****	.39	8
BILLINGS	755	2	26.7	31	*****	71.	6	-13.	23	1188.5	******	.0	******	.055	31	-1.17	.03	17
BLACKWELL 2E	818	2	28.2	31	*****	67.	5	-12.	22	1140.0	******	.0	******	.268	31	*****	.18	8
BRAMAN	1075	2	*****	0	*****	****	0	****	0	******	******	******	******	.140	31	*****	.14	8
CHEROKEE	1724	2	29.9	31	-8.4	72.	5	-12.	23	1087.0	259.0	.0	.0	1.100	31	.23	.70	7
ENID	2912	2	30.3	31	-9.0	70.	5	-10.	23	1077.0	280.0	.0	.0	.120	31	-.91	.06	29
FT SUPPLY DAM	3304	2	27.5	31	-10.6	73.	6	-13.	23	1161.0	327.0	.0	.0	.240	31	-.38	.09	8
FREEDOM	3358	2	29.1	31	*****	72.	5	-17.	23	1114.0	******	.0	******	.410	31	*****	.36	8
GREAT SALT PLNS	3740	2	29.0	31	*****	69.	6	-12.	23	1114.5	******	.0	******	.362	20	*****	.19	8
HARDY	3909	2	*****	0	*****	****	0	****	0	******	******	******	******	.137	31	*****	.08	7
HELENA 1 SSE	4019	2	26.4	31	*****	69.	6	-15.	23	1196.5	******	.0	******	.807	31	-.13	.72	8
JEFFERSON	4573	2	29.0	31	-9.3	69.	5	-16.	23	1117.0	289.0	.0	.0	.261	31	-.77	.20	7
LAMONT	5013	2	*****	0	*****	****	0	****	0	******	******	******	******	.322	31	*****	.26	8
MEDFORD	5768	2	*****	0	*****	****	0	****	0	******	******	******	******	.360	31	*****	.25	7
MORRISON	6065	2	*****	0	*****	****	0	****	0	******	******	******	******	.290	31	*****	.10	29
MUTUAL	6139	2	29.3	31	-8.5	73.	6	-12.	23	1108.0	265.0	.0	.0	.660	31	.00	.57	8
NEWKIRK	6278	2	29.3	31	-8.3	68.	5	-13.	22	1108.0	259.0	.0	.0	.272	31	-.95	.19	8
ORIENTA	6751	2	*****	0	*****	****	0	****	0	******	******	******	******	.300	31	*****	.30	8
PERRY	7012	2	25.7	31	-14.7	68.	5	-18.	15	1218.0	455.0	.0	.0	.480	31	-.72	.22	29
PONCA CITY FAA	7201	2	29.3	31	-7.4	66.	5	-10.	22	1105.5	228.5	.0	.0	.361	31	-.91	.28	17
RED ROCK 1 NNE	7505	2	*****	0	*****	****	0	****	0	******	******	******	******	.100	31	-1.19	.05	29
RENFROW	7556	2	*****	0	*****	****	0	****	0	******	******	******	******	.391	31	-.60	.31	8
WAYNOKA	9404	2	29.7	31	-8.9	72.	5	-14.	23	1095.5	277.5	.0	.0	.320	31	-.45	.26	8
WOODWARD	9760	2	*****	0	*****	****	0	****	0	******	******	******	******	.335	31	*****	.14	8

DECEMBER 1989 SUMMARY FOR NORTHEAST DIVISION (CD3)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
BARNSDALL	535	3	28.4	31	*****	74.	5	-13.	23	1133.5	******	.0	******	.264	31	-1.36	.21	29
BARTLESVILLE 2W	548	3	29.0	31	-10.0	75.	5	-13.	23	1117.0	311.0	.0	.0	.590	31	-.89	.20	8
BIXBY	782	3	29.0	31	-11.3	76.	6	-10.	24	1116.0	350.0	.0	.0	.020	31	-1.81	.02	8
BURBANK	1256	3	*****	0	*****	****	0	****	0	******	******	******	******	.270	31	*****	.18	28
CHELSEA 4 S	1717	3	*****	0	*****	****	0	****	0	******	******	******	******	.430	31	*****	.19	8
CLAREMORE	1828	3	27.5	31	-11.5	74.	6	-12.	24	1163.5	357.5	.0	.0	.295	31	-1.56	.10	18
CLEVELAND 5 WSW	1902	3	31.8	27	*****	76.	5	-14.	23	896.5	******	.0	******	.230	27	*****	.23	29
FORAKER	3250	3	*****	0	*****	****	0	****	0	******	******	******	******	1.000	31	-.34	.27	17
HOLLOW	4258	3	*****	0	*****	****	0	****	0	******	******	******	******	.191	31	-1.70	.13	29
HOMINY	4289	3	*****	0	*****	****	0	****	0	******	******	******	******	.411	31	-.87	.22	17
HULAH DAM	4393	3	26.5	19	*****	72.	6	-14.	26	732.0	******	.0	******	.021	23	*****	.02	8
KANSAS 1 ESE	4672	3	30.5	31	*****	73.	5	-13.	23	1070.5	******	.0	******	.675	31	*****	.35	31
LENAPAH	5118	3	*****	0	*****	****	0	****	0	******	******	******	******	.550	31	*****	.25	8
MANNFORD 6 NW	5522	3	31.9	30	*****	79.	5	-16.	23	994.0	******	.0	******	.453	30	*****	.26	8
MARAMEC	5540	3	*****	0	*****	****	0	****	0	******	******	******	******	.480	31	-.75	.32	8
MIAMI	5855	3	28.2	31	-11.0	70.	5	-15.	23	1142.0	342.0	.0	.0	.590	31	-1.56	.38	29
NOWATA	6485	3	28.8	31	-10.2	73.	5	-13.	23	1122.5	316.5	.0	.0	.270	31	-1.53	.17	29
ONETA 1 WNW	6713	3	*****	0	*****	****	0	****	0	******	******	******	******	.165	31	*****	.12	8
PAWHUSKA	6935	3	28.6	31	-10.1	71.	5	-13.	23	1128.5	313.5	.0	.0	.501	31	-.85	.20	29
PAWHUSKA	6937	3	*****	0	*****	****	0	****	0	******	******	******	******	.192	31	*****	.15	8
PAWNEE	6940	3	*****	0	*****	****	0	****	0	******	******	******	******	.204	31	-1.05	.15	8
PRYOR 6 N	7309	3	26.0	31	-13.4	70.	6	-14.	24	1210.0	416.0	.0	.0	.294	31	-1.75	.25	8
QUAPAW	7358	3	*****	0	*****	****	0	****	0	******	******	******	******	.450	31	-1.56	.25	29
RALSTON	7390	3	30.9	31	*****	75.	5	-13.	23	1057.5	******	.0	******	.263	31	-1.10	.12	29
RAMONA 4 N	7394	3	*****	0	*****	****	0	****	0	******	******	******	******	.020	31	*****	.02	8
SKIATOOK	8258	3	*****	0	*****	****	0	****	0	******	******	******	******	.320	31	-1.13	.14	29
SPAVINAW	8380	3	31.0	31	*****	68.	5	-11.	23	1054.5	******	.0	******	.324	31	-1.71	.27	8
TULSA WSO APT	8992	3	32.2	31	-7.6	77.	5	-8.	23	1017.5	236.5	.0	.0	.267	31	-1.55	.16	8
VINITA 2 N	9203	3	27.9	31	-11.0	70.	5	-14.	23	1150.5	341.5	.0	.0	.240	31	-1.90	.14	29
WAGONER	9247	3	36.6	17	*****	76.	5	-11.	23	482.0	******	.0	******	.511	31	-1.55	.28	8
WANN	9298	3	*****	0	*****	****	0	****	0	******	******	******	******	.180	31	*****	.11	29
WYNONA	9792	3	*****	0	*****	****	0	****	0	******	******	******	******	.303	31	*****	.20	29

DECEMBER 1989 SUMMARY FOR WEST CENTRAL DIVISION (CD4)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
CANTON DAM	1445	4	29.9	19	*****	73.	6	-8.	22	667.0	******	.0	******	.300	20	*****	.17	8
CHEYENNE	1738	4	*****	0	*****	****	0	****	0	******	******	******	******	.000	31	*****	.00	31
CLINTON	1909	4	34.1	31	-5.8	77.	5	-11.	23	958.0	180.0	.0	.0	.172	31	-.74	.09	8
COLONY	2039	4	*****	0	*****	****	0	****	0	******	******	******	******	.062	31	*****	.06	17
CORDELL	2125	4	*****	0	*****	****	0	****	0	******	******	******	******	.062	31	-.85	.04	17
ELK CITY 1 E	2849	4	32.5	28	*****	75.	5	-9.	23	910.0	******	.0	******	.192	31	-.52	.12	8
ERICK 4 E	2944	4	32.2	31	-8.1	76.	5	-9.	23	1017.0	251.0	.0	.0	.184	31	-.50	.10	8
GEARY	3497	4	31.4	30	-8.8	75.	5	-12.	23	1007.5	238.5	.0	.0	.000	30	*****	.00	31
HAMMON 1 NNE	3871	4	28.4	31	-10.6	78.	6	-9.	23	1134.5	328.5	.0	.0	.351	31	-.36	.35	7
LEEDEY	5090	4	*****	0	*****	****	0	****	0	******	******	******	******	.432	31	-.26	.35	8
MACKIE 4 NNW	5463	4	*****	0	*****	****	0	****	0	******	******	******	******	.220	31	*****	.17	8
MORAVIA 2 NNE	6035	4	*****	0	*****	****	0	****	0	******	******	******	******	.102	31	-.70	.05	17
OKEENE	6629	4	30.9	31	-9.4	71.	5	-13.	23	1056.5	290.5	.0	.0	.640	31	-.22	.50	8
SAYRE	7952	4	*****	0	*****	****	0	****	0	******	******	******	******	.101	31	-.50	.05	17
TALOGA	8708	4	31.2	31	-7.5	78.	5	-16.	23	1046.5	231.5	.0	.0	.453	31	-.18	.45	8
THOMAS	8815	4	*****	0	*****	****	0	****	0	******	******	******	******	.220	31	*****	.16	8
VICI	9172	4	*****	0	*****	****	0	****	0	******	******	******	******	.661	31	*****	.46	8
WATONGA	9364	4	31.3	31	*****	77.	5	-14.	23	1045.5	******	.0	******	.244	31	-.76	.13	8
WEATHERFORD	9422	4	31.3	31	-8.9	76.	6	-10.	23	1045.5	276.5	.0	.0	.232	31	-.63	.18	8

DECEMBER 1989 SUMMARY FOR CENTRAL DIVISION (CD5)

NAME	ID	CD	MEAN TEMP	DEV NUM OBS	DEV FROM NORM	MAX TEMP	MAX DAY	MIN TEMP	MIN DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	DEV NUM OBS	DEV FROM NORM	MAX 24-HR	MAX DAY
AMBER	200	5	*****	0	*****	****	0	****	0	******	******	******	******	.170	31	*****	.07	29
ARCADIA	288	5	*****	0	*****	****	0	****	0	******	******	******	******	.780	31	*****	.75	8
TINKER AFB	325	5	*****	0	*****	****	0	****	0	******	******	******	******	.258	31	*****	.15	8
BLANCHARD 2 SSW	830	5	32.9	31	*****	76.	5	-11.	23	994.0	******	.0	******	.193	31	*****	.09	7
BRISTOW	1144	5	32.3	27	*****	76.	5	-14.	23	884.0	******	.0	******	.281	31	-1.31	.23	8
CHANDLER	1684	5	32.5	30	-9.0	77.	5	-13.	23	975.5	246.5	.0	.0	.200	30	*****	.20	8
CHICKASHA EX ST	1750	5	31.3	31	-10.3	75.	5	-12.	23	1045.0	320.0	.0	.0	.203	31	-.88	.11	30
COX CITY 1 E	2196	5	*****	0	*****	****	0	****	0	******	******	******	******	.103	31	*****	.10	8
CRESCENT	2242	5	*****	0	*****	****	0	****	0	******	******	******	******	.150	31	*****	.08	7
CUSHING	2318	5	29.0	31	-10.5	76.	6	-9.	24	1115.0	324.0	.0	.0	.100	31	-1.21	.10	8
EL RENO 1 N	2818	5	31.5	31	-8.6	74.	5	-11.	23	1039.5	267.5	.0	.0	.200	31	-.83	.13	8
GUTHRIE	3821	5	31.8	31	-8.2	75.	5	-13.	23	1029.5	254.5	.0	.0	1.120	31	-.08	.70	8
HENNESSEY 2 SE	4055	5	30.0	31	-9.3	73.	5	-13.	23	1086.5	289.5	.0	.0	.150	31	-.84	.06	29
INGALLS	4489	5	*****	0	*****	****	0	****	0	******	******	******	******	.353	31	*****	.20	8
KINGFISHER 2 SE	4861	5	30.3	31	-9.6	75.	5	-14.	23	1076.0	298.0	.0	.0	.342	31	-.79	.33	8
KONAWA	4915	5	*****	0	*****	****	0	****	0	******	******	******	******	.471	31	-1.39	.27	31
MARSHALL	5589	5	*****	0	*****	****	0	****	0	******	******	******	******	.280	31	-.86	.28	8
MEEKER 4 W	5779	5	31.9	31	-8.9	76.	5	-15.	23	1026.0	276.0	.0	.0	.160	31	-1.27	.16	8
MULHALL	6110	5	*****	0	*****	****	0	****	0	******	******	******	******	.490	31	*****	.39	8
NORMAN 3 S	6386	5	32.5	31	*****	77.	5	-8.	23	1007.0	******	.0	******	.325	31	-1.02	.20	8
OKEMAH	6638	5	33.2	31	-8.8	75.	5	-9.	23	985.0	272.0	.0	.0	.472	31	-1.36	.25	8
OKLAHOMA CITY WS	6661	5	33.3	31	-6.6	74.	5	-8.	23	982.5	204.5	.0	.0	.326	31	-.87	.17	8
PERKINS	7003	5	*****	0	*****	****	0	****	0	******	******	******	******	.400	31	-.95	.30	7
PIEDMONT	7068	5	*****	0	*****	****	0	****	0	******	******	******	******	.343	31	*****	.29	8
PRAGUE	7264	5	*****	0	*****	****	0	****	0	******	******	******	******	.271	31	-1.28	.25	7
PURCELL 5 SW	7327	5	32.3	31	-8.7	75.	5	-13.	23	1012.5	268.5	.0	.0	.345	31	-1.12	.18	8
SEMINOLE	8042	5	34.0	31	-9.0	75.	5	-9.	23	962.0	280.0	.0	.0	.351	31	-1.43	.35	8
SHAWNEE	8110	5	*****	0	*****	****	0	****	0	******	******	******	******	.231	31	-1.30	.18	8
STELLA	8479	5	*****	0	*****	****	0	****	0	******	******	******	******	.250	31	*****	.23	8
STILLWATER 2 W	8501	5	27.6	31	-12.2	69.	6	-15.	23	1160.0	379.0	.0	.0	.502	31	-.72	.40	8
STROUD 1 N	8563	5	*****	0	*****	****	0	****	0	******	******	******	******	.532	31	*****	.42	8
TROUSDALE	8960	5	*****	0	*****	****	0	****	0	******	******	******	******	.300	31	*****	.22	30
UNION CITY 1 SE	9086	5	*****	0	*****	****	0	****	0	******	******	******	******	.141	31	-1.20	.14	6
WELTY 1 SSE	9479	5	*****	0	*****	****	0	****	0	******	******	******	******	.421	31	*****	.30	8
WEWOKA	9575	5	*****	0	*****	****	0	****	0	******	******	******	******	.331	31	-1.45	.14	8

DECEMBER 1989 SUMMARY FOR EAST CENTRAL DIVISION (CD6)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ASHLAND	364	6	*****	0	*****	****	0	****	0	******	******	******	******	1.332	31	*****	.89	8
BEGGS	631	6	*****	0	*****	****	0	****	0	******	******	******	******	.201	31	*****	.20	8
BOYNTON	1027	6	*****	0	*****	****	0	****	0	******	******	******	******	.750	31	*****	.30	8
CALVIN	1391	6	*****	0	*****	****	0	****	0	******	******	******	******	.610	31	-1.35	.41	8
CHECOTAH	1711	6	*****	0	*****	****	0	****	0	******	******	******	******	.722	31	-1.39	.56	8
CLAYTON 11 WNW	1858	6	*****	0	*****	****	0	****	0	******	******	******	******	.200	31	*****	.20	8
DEWAR 2 NE	2485	6	*****	0	*****	****	0	****	0	******	******	******	******	.320	31	-1.55	.28	8
DUSTIN	2690	6	*****	0	*****	****	0	****	0	******	******	******	******	.600	31	*****	.35	8
EUFAULA	2993	6	34.0	31	*****	72.	5	-3.	23	962.0	******	.0	******	1.012	31	-1.43	.88	8
HANNA	3884	6	32.6	31	*****	75.	5	-9.	23	1004.0	******	.0	******	.911	31	-1.19	.75	8
HARTSHORNE	3946	6	*****	0	*****	****	0	****	0	******	******	******	******	1.080	31	*****	.43	30
HASKELL	3956	6	*****	0	*****	****	0	****	0	******	******	******	******	.610	31	-1.36	.34	8
HOLDENVILLE	4235	6	33.5	31	-9.4	75.	5	-8.	23	976.5	291.5	.0	.0	.463	31	-1.37	.20	8
LAKE EUFAULA	4975	6	32.3	31	*****	77.	6	-8.	23	1015.0	******	.0	******	.020	31	*****	.02	29
LYONS 2 N	5437	6	*****	0	*****	****	0	****	0	******	******	******	******	.282	31	-1.72	.11	29
MCALESTER FAA	5664	6	35.2	31	-6.8	75.	5	-5.	23	924.0	211.0	.0	.0	.704	31	-1.68	.35	8
MCCURTAIN 1 SE	5693	6	35.1	31	*****	78.	5	-9.	23	925.5	******	.0	******	.682	31	-1.96	.33	8
MUSKOGEE	6130	6	31.3	31	-10.4	73.	5	-7.	22	1046.0	324.0	.0	.0	.620	31	-1.62	.27	8
OKMULGEE W W	6670	6	28.4	31	-13.5	76.	6	-14.	23	1134.0	418.0	.0	.0	.592	31	-1.46	.40	31
OKTAHA 2 NE	6678	6	*****	0	*****	****	0	****	0	******	******	******	******	1.061	31	*****	.81	8
QUINTON	7372	6	*****	0	*****	****	0	****	0	******	******	******	******	.814	31	-1.55	.35	31
SALLISAW 2 NE	7862	6	31.6	30	-10.6	75.	5	-9.	23	1001.5	294.5	.0	.0	.334	31	-2.14	.15	31
SCIPIO	7979	6	*****	0	*****	****	0	****	0	******	******	******	******	1.140	31	*****	.94	8
SHORT	8170	6	*****	0	*****	****	0	****	0	******	******	******	******	.540	31	*****	.22	9
STILWELL 1 NE	8506	6	32.0	31	*****	73.	5	-12.	23	1023.5	******	.0	******	.494	31	-2.22	.15	31
TAHLEQUAH	8677	6	31.3	31	-9.5	74.	5	-14.	23	1043.5	293.5	.0	.0	.274	31	-2.19	.15	8
WEBBERS FALLS	9445	6	30.3	31	-10.1	75.	6	-11.	24	1075.0	312.0	.0	.0	.480	31	-1.81	.26	8
WESTVILLE	9523	6	*****	0	*****	****	0	****	0	******	******	******	******	.401	31	*****	.15	31
WETUMKA 3 NE	9571	6	*****	0	*****	****	0	****	0	******	******	******	******	.225	31	-1.66	.20	8

DECEMBER 1989 SUMMARY FOR SOUTHWEST DIVISION (CD7)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ALTUS IRR STA	179	7	34.5	31	-8.3	73.	5	-10.	23	944.5	256.5	.0	.0	.060	31	-.81	.03	30
ALTUS DAM	184	7	32.8	31	*****	75.	6	-10.	23	997.0	******	.0	******	.050	31	-.80	.05	17
ANADARKO	224	7	30.4	29	*****	75.	5	-17.	23	1003.0	******	.0	******	.100	31	-1.09	.06	30
APACHE	260	7	*****	0	*****	****	0	****	0	******	******	******	******	.080	31	*****	.04	30
ALTUS AFB	447	7	*****	0	*****	****	0	****	0	******	******	******	******	.055	31	*****	.03	8
CARNEGIE 2 ENE	1504	7	32.1	31	-9.0	77.	5	-14.	23	1020.5	279.5	.0	.0	.090	31	-.97	.08	17
CHATTANOOGA	1706	7	33.6	29	*****	72.	5	-13.	23	909.5	******	.0	******	.160	31	-.92	.16	30
DUNCAN 12 W	2668	7	*****	0	*****	****	0	****	0	******	******	******	******	.160	31	*****	.07	31
FREDERICK	3353	7	32.1	26	*****	78.	5	-5.	23	856.5	******	.0	******	.150	31	-.87	.15	29
GRANDFIELD 4 NW	3709	7	*****	0	*****	****	0	****	0	******	******	******	******	.140	31	-1.11	.10	30
HOBART FAA APT	4204	7	33.1	31	-6.8	74.	5	-9.	23	988.5	210.5	.0	.0	.034	31	-.78	.03	17
HOLLIS	4249	7	33.2	31	-9.0	76.	5	-9.	23	987.0	280.0	.0	.0	.181	31	-.55	.10	16
LAWTON	5063	7	31.4	31	-10.8	72.	5	-8.	22	1040.5	333.5	.0	.0	.160	31	-1.06	.08	29
FORT SILL	5068	7	34.2	31	*****	72.	5	-5.	23	953.5	******	.0	******	.065	31	-1.15	.03	30
LOOKEBA 2 ENE	5329	7	*****	0	*****	****	0	****	0	******	******	******	******	.060	31	*****	.03	17
MANGUM RES STA	5509	7	34.1	31	-7.8	74.	5	-11.	23	958.5	242.5	.0	.0	.000	31	-.76	.00	31
RANDLETT 9 E	7403	7	*****	0	*****	****	0	****	0	******	******	******	******	.001	31	*****	.00	21
ROOSEVELT	7727	7	*****	0	*****	****	0	****	0	******	******	******	******	.100	31	-.87	.10	21
SEDAN	8016	7	*****	0	*****	****	0	****	0	******	******	******	******	.130	31	*****	.12	8
VINSON 3 WNW	9212	7	*****	0	*****	****	0	****	0	******	******	******	******	.091	31	-.69	.06	8
WALTERS	9278	7	35.7	30	-7.8	71.	5	-9.	23	880.5	213.5	.0	.0	.160	31	-1.26	.16	30
WICHITA MT WLR	9629	7	30.6	31	-10.6	73.	6	-12.	23	1066.5	328.5	.0	.0	.030	31	-1.09	.03	8
WILLOW	9668	7	*****	0	*****	****	0	****	0	******	******	******	******	.121	31	*****	.08	8

DECEMBER 1989 SUMMARY FOR SOUTH CENTRAL DIVISION (CD8)

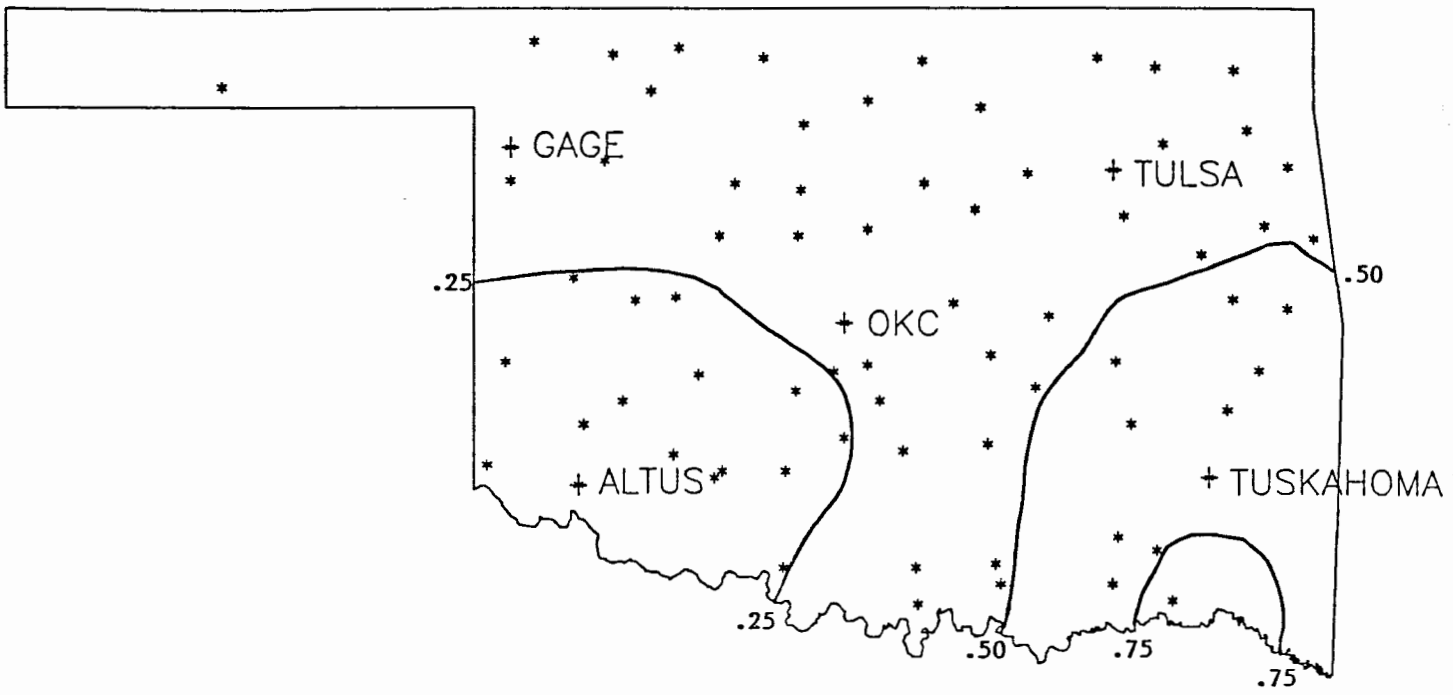
NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ADA	17	8	34.8	31	-8.7	77.	5	-8.	23	935.0	268.0	.0	.0	.330	31	-1.61	.21	8
ALLEN	147	8	*****	0	*****	****	0	****	0	******	******	******	******	.850	31	*****	.65	7
ARDMORE	292	8	35.6	30	-10.6	73.	5	-8.	23	881.0	298.0	.0	.0	.124	30	*****	.12	30
ATOKA DAM	394	8	35.9	27	*****	74.	6	1.	22	786.5	******	.0	******	.300	27	*****	.30	8
BOKCHITO	917	8	*****	0	*****	****	0	****	0	******	******	******	******	.640	31	*****	.35	30
CENTRAHOMA	1648	8	*****	0	*****	****	0	****	0	******	******	******	******	.750	31	*****	.45	7
CHICKASAW NRA	1745	8	31.6	31	*****	75.	6	-11.	23	1034.5	******	.0	******	.470	31	*****	.28	8
COLEMAN	2011	8	*****	0	*****	****	0	****	0	******	******	******	******	.570	31	*****	.35	31
COMANCHE	2054	8	*****	0	*****	****	0	****	0	******	******	******	******	.300	31	*****	.23	31
DAISY 4 ENE	2354	8	*****	0	*****	****	0	****	0	******	******	******	******	.342	31	-2.32	.30	30
DUNCAN	2660	8	33.4	31	-10.3	70.	6	-2.	22	981.0	321.0	.0	.0	.241	31	-1.11	.15	31
DURANT USDA	2678	8	34.6	31	*****	74.	6	-7.	23	941.0	******	.0	******	.460	31	-1.72	.31	31
ELMORE CITY	2872	8	*****	0	*****	****	0	****	0	******	******	******	******	.120	31	*****	.10	30
FARRIS 3 WNW	3083	8	*****	0	*****	****	0	****	0	******	******	******	******	.510	31	*****	.22	30
GRADY	3688	8	*****	0	*****	****	0	****	0	******	******	******	******	.301	31	*****	.30	31
HENNEPIN	4052	8	*****	0	*****	****	0	****	0	******	******	******	******	.491	31	*****	.20	31
KETCHUM RANCH	4780	8	*****	0	*****	****	0	****	0	******	******	******	******	.311	31	*****	.24	30
KINGSTON	4865	8	*****	0	*****	****	0	****	0	******	******	******	******	.200	31	-1.81	.20	29
LEHIGH	5108	8	*****	0	*****	****	0	****	0	******	******	******	******	.481	31	*****	.25	31
LINDSAY 2 W	5216	8	32.6	31	*****	73.	5	-13.	23	1003.0	******	.0	******	.231	31	-1.24	.15	30
LOCO 6 SE	5247	8	*****	0	*****	****	0	****	0	******	******	******	******	.220	31	*****	.10	31
MADILL	5468	8	35.6	31	-9.2	73.	5	-8.	23	912.0	286.0	.0	.0	.361	31	-1.61	.20	30
MARIETTA	5563	8	36.8	31	-8.0	75.	5	-8.	23	874.5	248.5	.0	.0	.200	31	-1.50	.14	31
MARLOW 1 WSW	5581	8	34.5	31	*****	73.	5	-15.	23	947.0	******	.0	******	.231	31	-1.13	.10	8
MCGEE CREEK DAM	5713	8	35.5	31	*****	71.	30	-3.	23	913.0	******	.0	******	.460	31	*****	.23	30
OSWALT	6787	8	*****	0	*****	****	0	****	0	******	******	******	******	.001	31	*****	.00	30
PAULS VALLEY	6926	8	32.9	31	-9.9	74.	5	-10.	23	994.0	306.0	.0	.0	.182	31	-1.53	.12	30
TISHOMINGO NWLR	8884	8	34.0	31	*****	71.	5	-9.	23	961.0	******	.0	******	.512	31	-1.57	.22	30
TUSSY	9032	8	*****	0	*****	****	0	****	0	******	******	******	******	.390	31	*****	.24	31
WAURIKA	9395	8	35.8	31	-8.8	73.	5	-10.	23	905.0	273.0	.0	.0	.330	31	-1.15	.33	31
WAURIKA DAM	9399	8	35.8	20	*****	71.	6	-9.	26	583.5	******	.0	******	.431	22	*****	.34	31

DECEMBER 1989 SUMMARY FOR SOUTHEAST DIVISION (CD9)

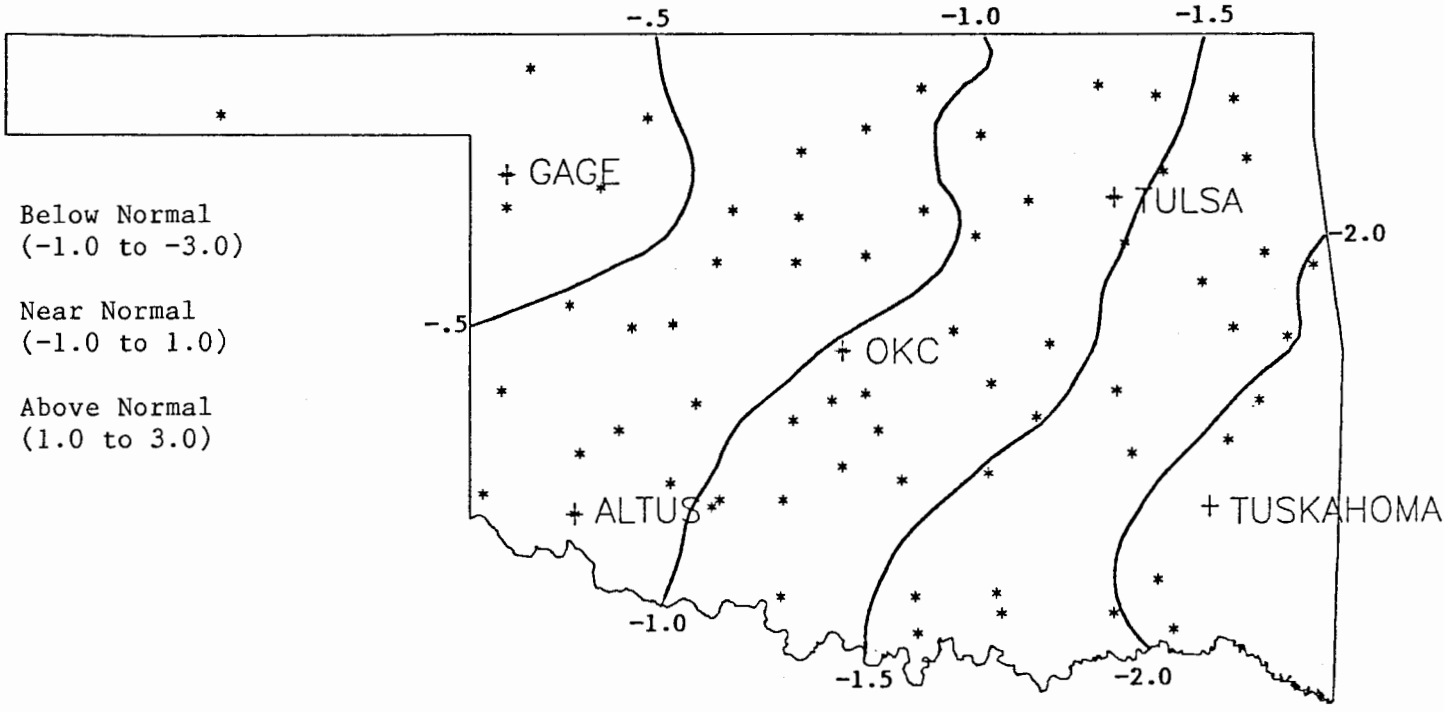
NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ANTLERS	256	9	35.5	31	-8.2	74.	5	-5.	23	915.0	255.0	.0	.0	.300	31	-2.72	.15	30
BATTIEST 1 SSW	567	9	34.6	31	*****	70.	6	-4.	23	942.5	******	.0	******	2.010	31	*****	.65	29
BEAR MT TWR	584	9	35.9	29	*****	72.	6	1.	22	843.5	******	.0	******	1.500	30	*****	.55	8
BENGAL	670	9	*****	0	*****	****	0	****	0	******	******	******	******	1.281	31	*****	.67	8
BOSWELL 4 NNW	980	9	38.1	31	*****	75.	5	-3.	23	834.0	******	.0	******	.231	31	-2.41	.17	30
BROKEN BOW 1 N	1162	9	*****	0	*****	****	0	****	0	******	******	******	******	2.080	31	-1.74	.81	7
BROKEN BOW DAM	1168	9	35.3	31	*****	74.	6	3.	23	921.0	******	.0	******	2.370	31	*****	.95	7
CARTER TWR	1544	9	*****	0	*****	****	0	****	0	******	******	******	******	2.100	31	-1.81	.56	7
FANSHAWE	3065	9	*****	0	*****	****	0	****	0	******	******	******	******	1.580	31	-1.36	.87	7
FLAGPOLE TWR	3169	9	*****	0	*****	****	0	****	0	******	******	******	******	.770	31	*****	.40	30
HEAVENER 1 SE	4008	9	*****	0	*****	****	0	****	0	******	******	******	******	1.470	31	-1.75	.80	8
HEE MT TWR	4017	9	*****	0	*****	****	0	****	0	******	******	******	******	1.520	31	*****	.59	9
HUGO	4384	9	38.2	31	-7.5	73.	5	-4.	23	830.0	232.0	.0	.0	1.110	31	-1.97	.35	31
POTEAU W W	7254	9	30.9	28	*****	76.	5	-9.	22	955.0	******	.0	******	.701	30	*****	.31	7
SMITHVILLE 1 W	8285	9	32.5	31	*****	72.	5	-6.	22	1009.0	******	.0	******	2.602	31	*****	1.56	7
SOBAL TOWER	8305	9	42.4	21	*****	70.	6	17.	12	475.5	******	.0	******	1.330	21	*****	.37	7
SPIRO	8416	9	*****	0	*****	****	0	****	0	******	******	******	******	.692	31	-2.10	.25	30
TUSKAHOMA	9023	9	34.7	31	*****	77.	5	-10.	23	939.0	******	.0	******	.952	31	*****	.31	8
VALLIANT 3 W	9118	9	*****	0	*****	****	0	****	0	******	******	******	******	1.462	31	-2.14	.68	8
WILBURTON 9 ENE	9634	9	33.2	31	-9.7	75.	5	-10.	23	985.0	300.0	.0	.0	.091	31	-2.78	.04	7

DECEMBER 1989 CLIMATE DIVISION SUMMARY

CLIMATE DIV	MEAN TEMP	NUM STA	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEGREE DAYS	DEV FROM NORM	COOL DEGREE DAYS	DEV FROM NORM	TOT PPT	NUM STA	DEV FROM NORM	MAX 24-HR	DAY
1	29.5	11	-7.4	74.0	5	-15.0	22	1100.7	230.7	.0	.0	.28	14	-.21	.25	7
2	28.6	15	-9.7	74.0	5	-18.0	15	1128.0	301.7	.0	.0	.37	24	-.62	.72	8
3	29.3	14	-10.0	79.0	5	-16.0	23	1105.5	307.6	.0	.0	.35	29	-1.31	.38	29
4	31.4	8	-8.4	78.0	5	-16.0	23	1038.9	256.4	.0	.0	.25	17	-.55	.50	8
5	31.6	15	-9.1	77.0	5	-15.0	23	1033.1	278.4	.0	.0	.33	34	-1.05	.75	8
6	32.3	12	-9.4	78.0	5	-14.0	23	1010.9	288.6	.0	.0	.60	29	-1.61	.94	8
7	33.2	10	-8.8	78.0	5	-17.0	23	983.7	271.2	.0	.0	.09	23	-.93	.16	30
8	34.5	13	-9.9	77.0	5	-15.0	23	944.8	304.5	.0	.0	.37	28	-1.44	.65	7
9	35.3	8	-8.8	77.0	5	-10.0	23	921.9	274.3	.0	.0	1.33	17	-1.96	1.56	7



DECEMBER 1989 TOTAL PRECIPITATION
(Inches)

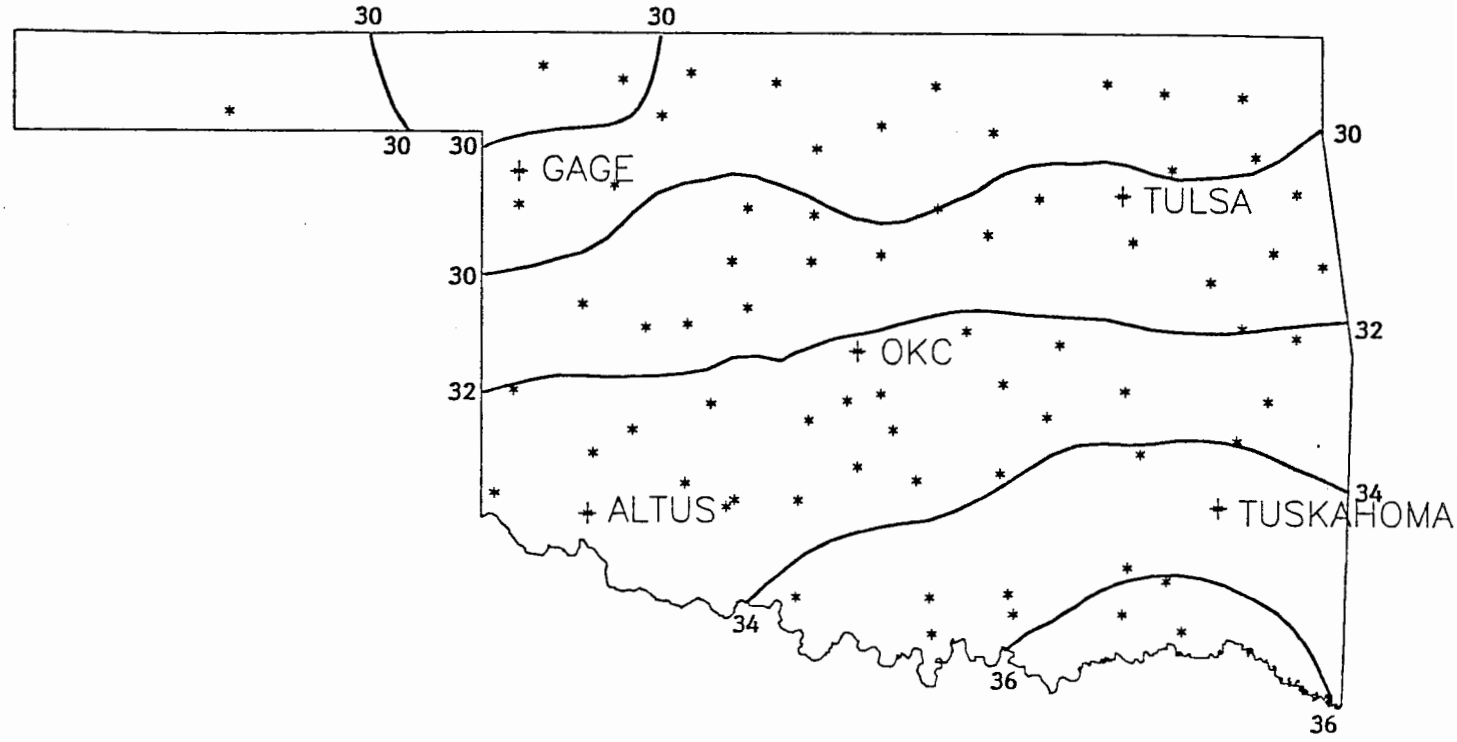


Below Normal
(-1.0 to -3.0)

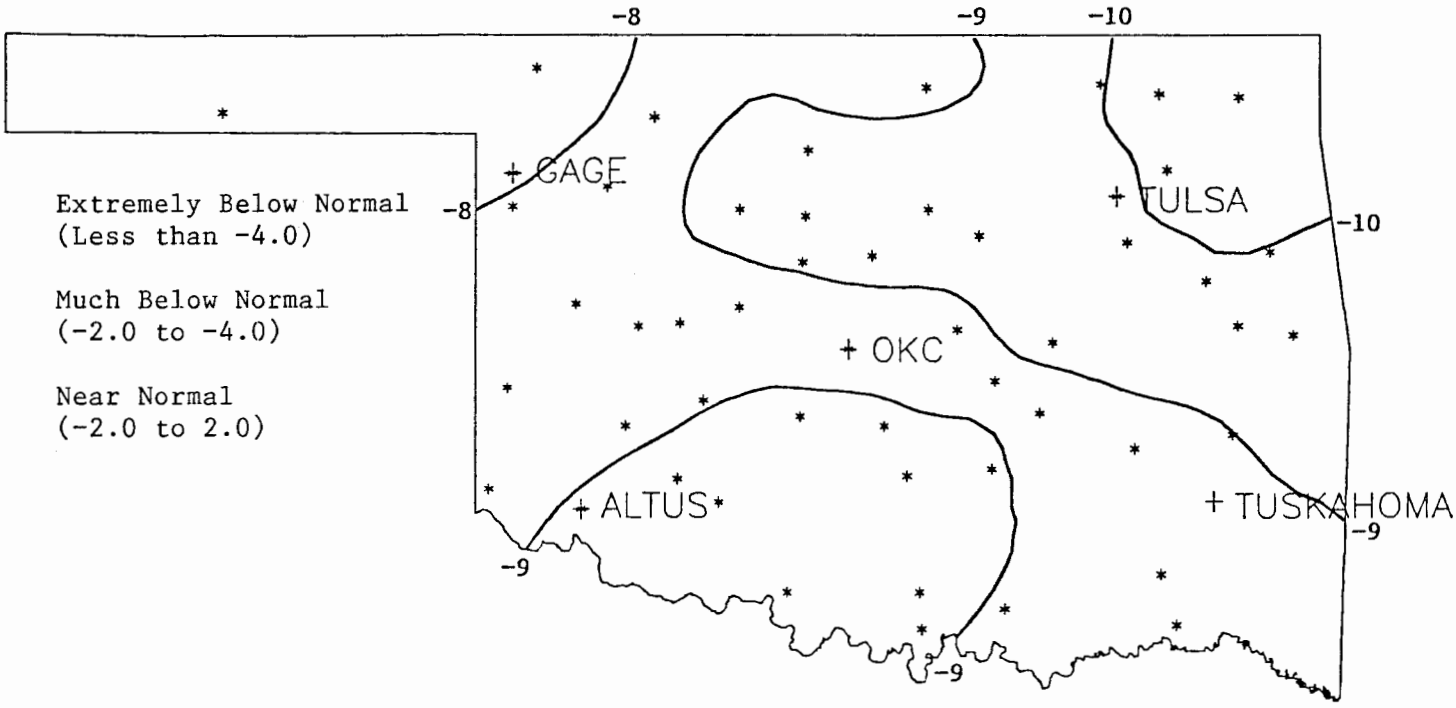
Near Normal
(-1.0 to 1.0)

Above Normal
(1.0 to 3.0)

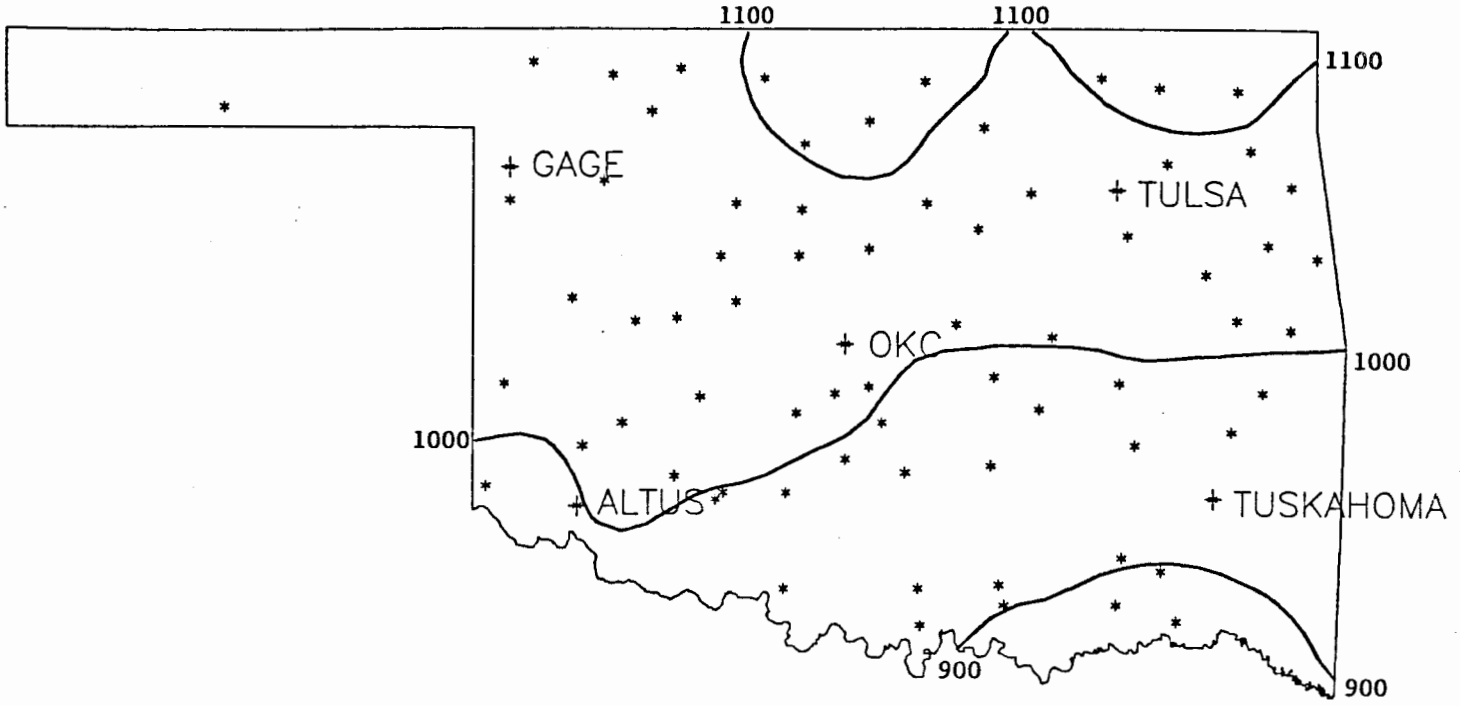
DECEMBER 1989 DEVIATION FROM NORMAL PRECIPITATION
(Inches)



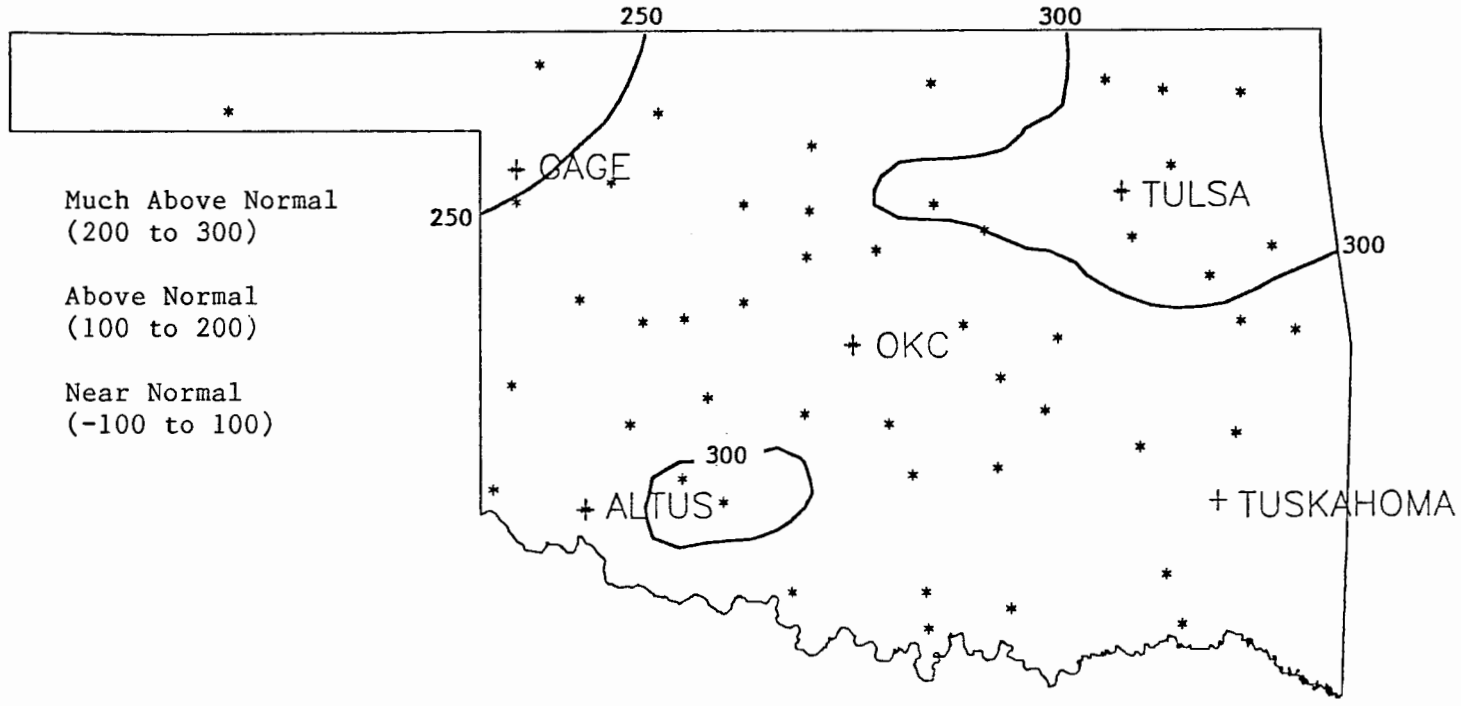
DECEMBER 1989 AVERAGE MONTHLY TEMPERATURES
(Degrees F)



DECEMBER 1989 DEVIATION FROM NORMAL TEMPERATURES
(Degrees F)

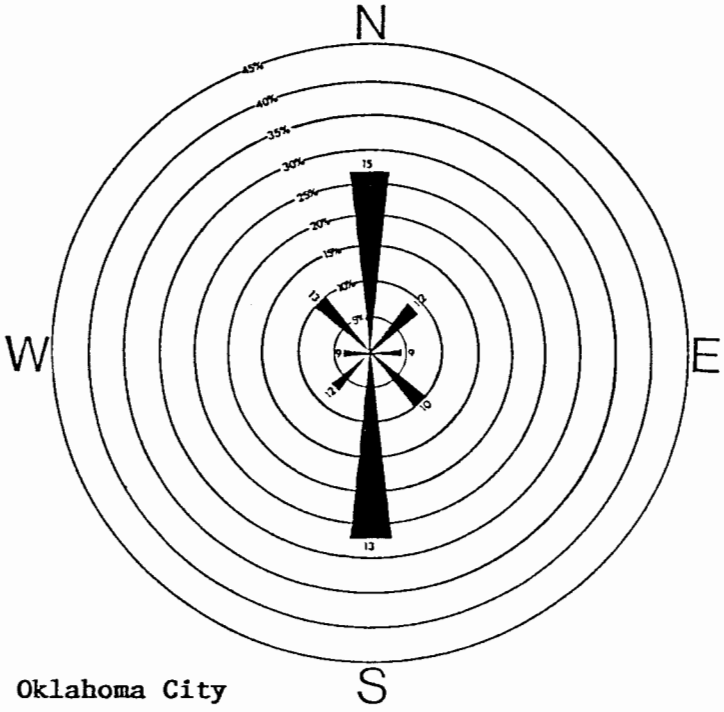


DECEMBER 1989 HEATING DEGREE DAYS

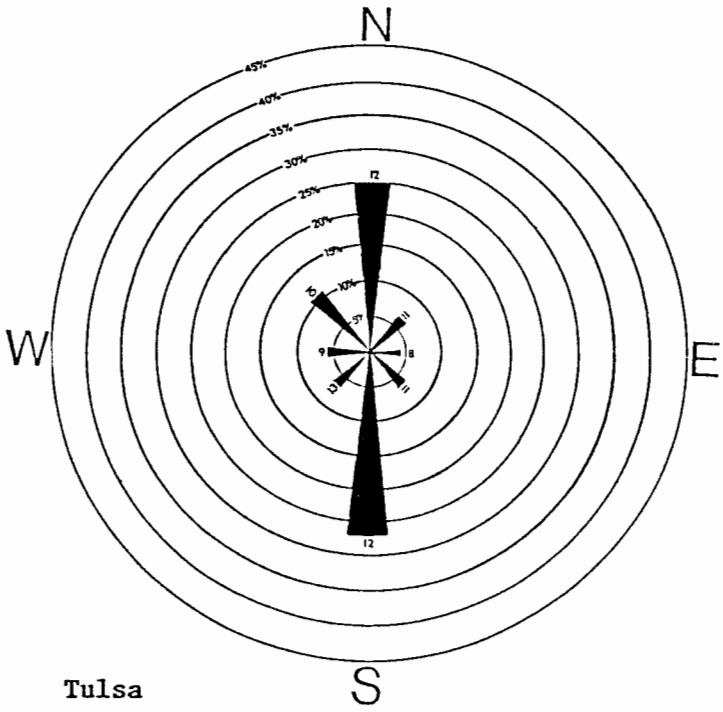


DECEMBER 1989 DEVIATION FROM NORMAL HEATING DEGREE DAYS

February wind roses for Oklahoma City and Tulsa for 10-year (1965-1974) mean winds (data adapted from NOAA Airport Climatology Series). Percents represent the percentages for winds coming from a direction. The numbers at the end of the bars indicate the average speed (miles per hour) of winds from that direction.



Oklahoma City



Tulsa

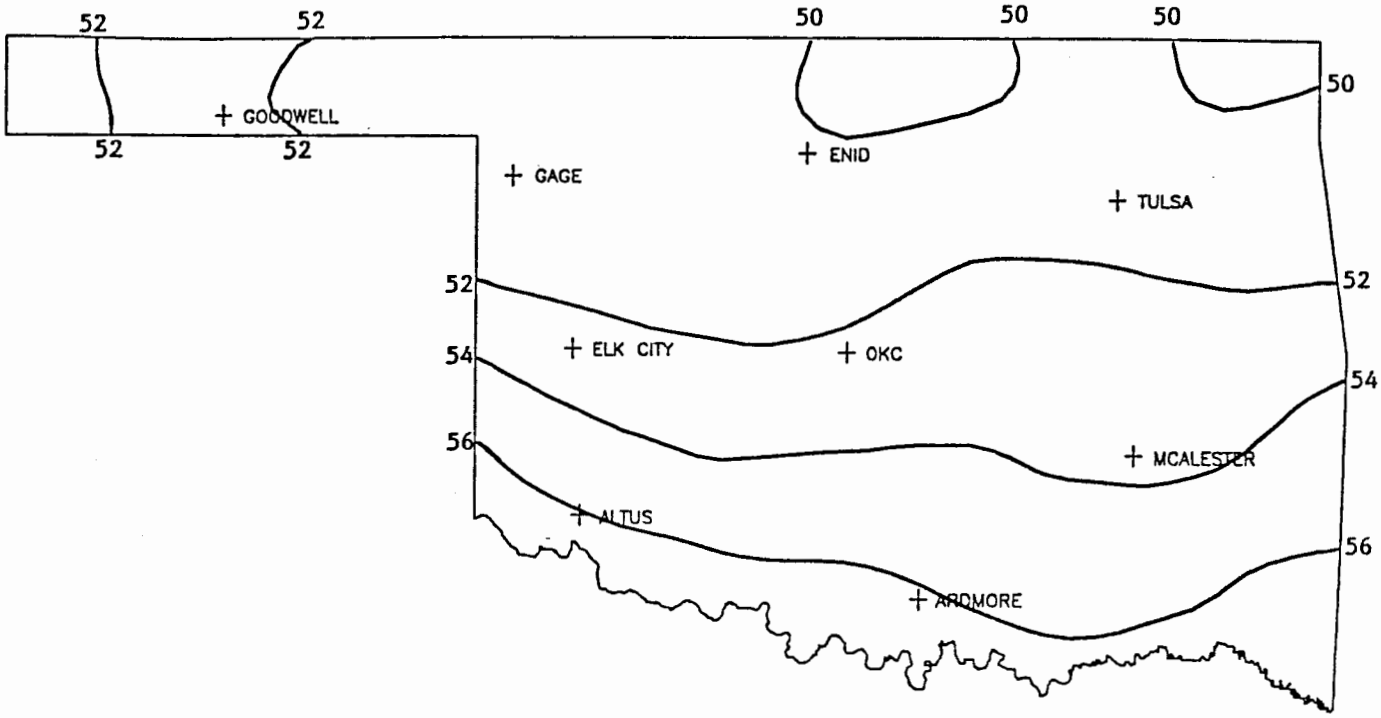
FEBRUARY 1990 SUNRISE AND SUNSET

Oklahoma City

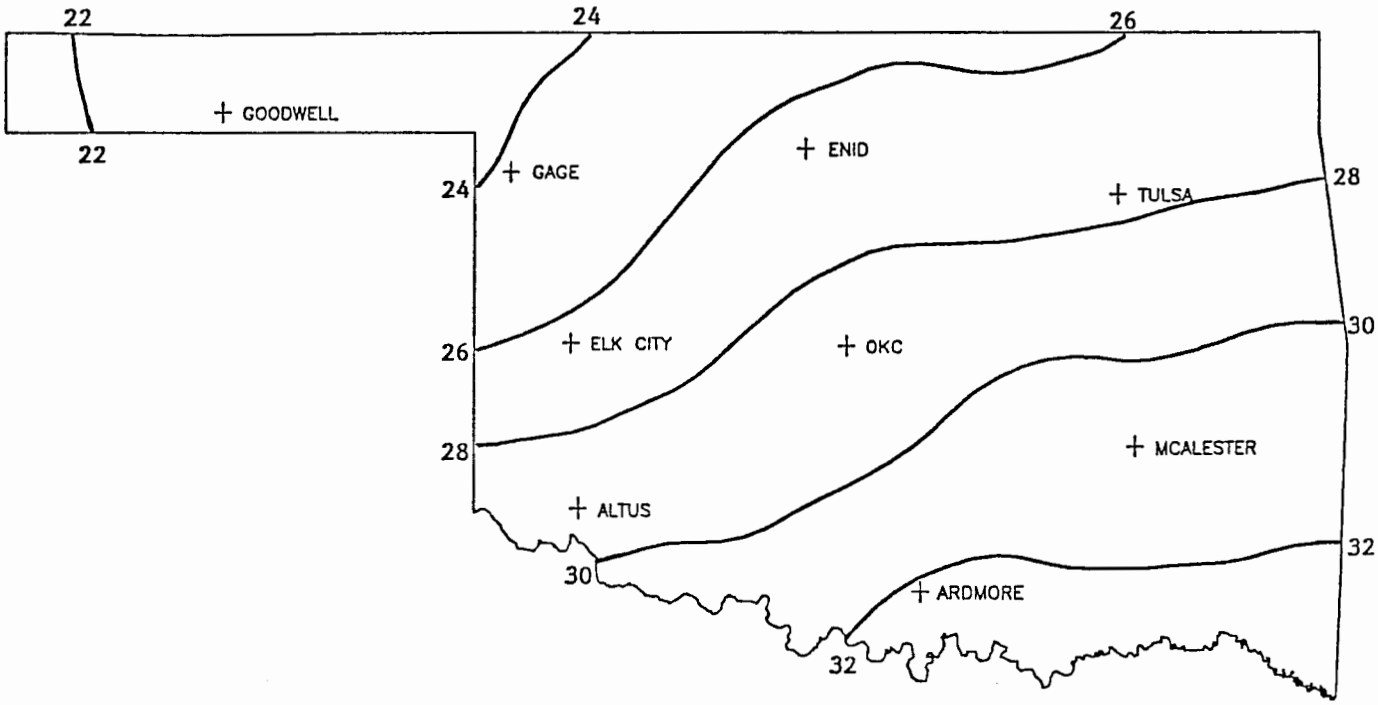
DATE	SUNRISE	SUNSET	DAYLIGHT
900201	7:30AM	5:58PM LT	10:28
900202	7:29AM	5:59PM LT	10:29
900203	7:28AM	6: 0PM LT	10:31
900204	7:28AM	6: 1PM LT	10:33
900205	7:27AM	6: 2PM LT	10:35
900206	7:26AM	6: 3PM LT	10:36
900207	7:25AM	6: 4PM LT	10:38
900208	7:24AM	6: 5PM LT	10:40
900209	7:24AM	6: 6PM LT	10:42
900210	7:23AM	6: 7PM LT	10:44
900211	7:22AM	6: 8PM LT	10:46
900212	7:21AM	6: 9PM LT	10:48
900213	7:20AM	6:10PM LT	10:50
900214	7:19AM	6:11PM LT	10:52
900215	7:18AM	6:12PM LT	10:54
900216	7:17AM	6:13PM LT	10:56
900217	7:16AM	6:13PM LT	10:58
900218	7:15AM	6:14PM LT	10:60
900219	7:14AM	6:15PM LT	11: 2
900220	7:13AM	6:16PM LT	11: 4
900221	7:11AM	6:17PM LT	11: 6
900222	7:10AM	6:18PM LT	11: 8
900223	7: 9AM	6:19PM LT	11:10
900224	7: 8AM	6:20PM LT	11:12
900225	7: 7AM	6:21PM LT	11:14
900226	7: 5AM	6:22PM LT	11:16
900227	7: 4AM	6:23PM LT	11:19
900228	7: 3AM	6:24PM LT	11:21
900229	7: 2AM	6:25PM LT	11:23

Tulsa

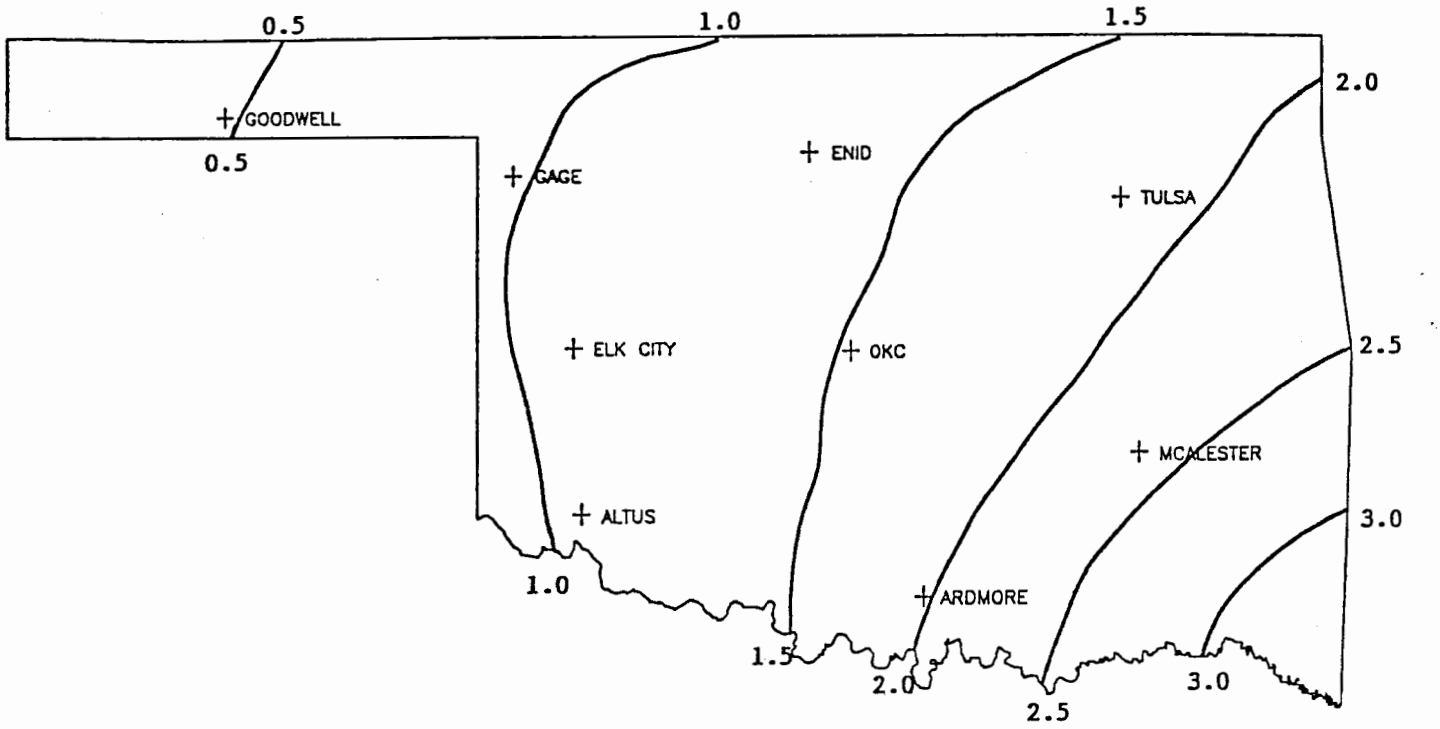
DATE	SUNRISE	SUNSET	DAYLIGHT
900201	7:25AM	5:49PM LT	10:25
900202	7:24AM	5:50PM LT	10:27
900203	7:23AM	5:51PM LT	10:28
900204	7:22AM	5:52PM LT	10:30
900205	7:22AM	5:54PM LT	10:32
900206	7:21AM	5:55PM LT	10:34
900207	7:20AM	5:56PM LT	10:36
900208	7:19AM	5:57PM LT	10:38
900209	7:18AM	5:58PM LT	10:40
900210	7:17AM	5:59PM LT	10:42
900211	7:16AM	6: 0PM LT	10:43
900212	7:15AM	6: 1PM LT	10:45
900213	7:14AM	6: 2PM LT	10:47
900214	7:13AM	6: 3PM LT	10:50
900215	7:12AM	6: 4PM LT	10:52
900216	7:11AM	6: 5PM LT	10:54
900217	7:10AM	6: 6PM LT	10:56
900218	7: 9AM	6: 7PM LT	10:58
900219	7: 8AM	6: 8PM LT	10:60
900220	7: 7AM	6: 9PM LT	11: 2
900221	7: 5AM	6:10PM LT	11: 4
900222	7: 4AM	6:11PM LT	11: 6
900223	7: 3AM	6:12PM LT	11: 8
900224	7: 2AM	6:13PM LT	11:11
900225	7: 1AM	6:13PM LT	11:13
900226	6:59AM	6:14PM LT	11:15
900227	6:58AM	6:15PM LT	11:17
900228	6:57AM	6:16PM LT	11:19
900229	6:56AM	6:17PM LT	11:22



30-YEAR MEAN FEBRUARY DAILY MAXIMUM TEMPERATURE



30-YEAR MEAN FEBRUARY DAILY MINIMUM TEMPERATURE



30-YEAR MEAN FEBRUARY PRECIPITATION

30- and 90-DAY NATIONAL WEATHER SERVICE OUTLOOK

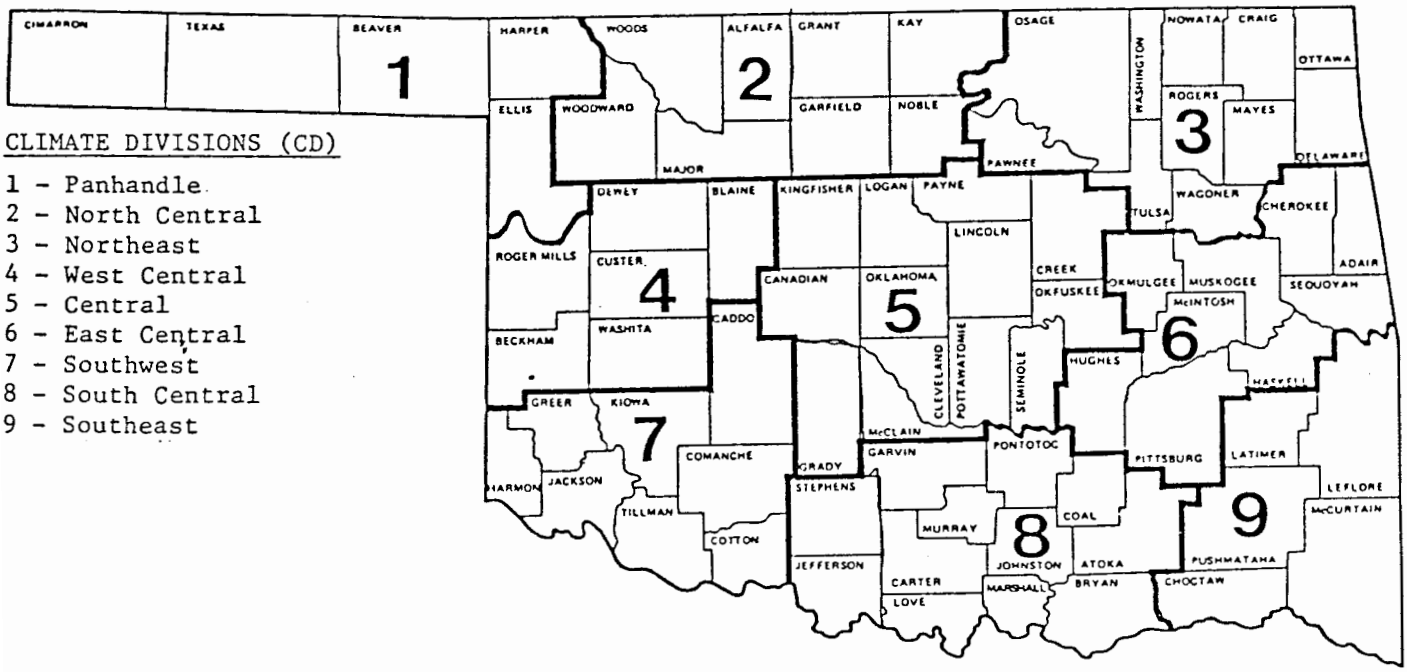
30-DAY OUTLOOK (JANUARY)

Precipitation - Near Normal Statewide
Temperature - Near Normal Statewide

90-DAY OUTLOOK (JANUARY-MARCH)

Precipitation - Near Normal Statewide
Temperature - Below Normal Statewide

O K L A H O M A



CLIMATE DIVISIONS (CD)

1 - Panhandle
2 - North Central
3 - Northeast
4 - West Central
5 - Central
6 - East Central
7 - Southwest
8 - South Central
9 - Southeast

EXPLANATION OF TABLES

Two kinds of tables appear in this summary. The first is a set of tables containing all reporting stations grouped by climate division. The figure above shows the locations of the climate divisions. Each table contains the following information for each station:

Station Name:

Station Identification Number: These are usually assigned by the National Climatic Data Center.

Climate Division: See the figure above.

Number of Temperature Observations: These are the actual number of temperature reports recorded at the station during the current month. Missing observations may result in artificially high or low mean monthly temperatures.

Deviation from Normal: The deviation of the observed mean monthly temperature from the monthly station normal. A positive value indicates the month was warmer than normal. A negative value indicates the month was cooler than normal. Normal monthly temperatures may be calculated by subtracting the deviation from the observed temperature.

Maximum Daily Maximum: The maximum daily maximum temperature observed during the current month and year and the day which it occurred.

Minimum Daily Minimum: The minimum daily minimum temperature observed during the current month and year and the day which it occurred.

Heating Degree Days: HDD are calculated each day of the month for which there is a temperature report and summed. They are a qualitative measure of how much heat was required to maintain a comfortable indoor temperature. Missing observations may result in an artificially high or low value. For February 1984 HDD would be calculated as:

$$\sum_{i=1}^{29} 65-((TMAX_i + TMIN_i)/2)$$

Deviation from Normal Heating Degree Days: A positive value indicates higher than normal heating requirements for the month as a whole. A negative value indicates lower than normal heating requirements for the month as a whole. Normal HDD may be calculated by subtracting the deviation from observed HDD.

Cooling Degree Days: CDD are calculated each day of the month for which there is a temperature report and summed. They are a proxy measure of how much cooling was required to maintain a comfortable indoor temperature. Missing observations may result in an artificially high or low value. For June, CDD would be calculated as:

$$\sum_{i=1}^{30} ((TMAX_i + TMIN_i)/2)-65$$

Deviation from Normal Cooling Degree Days: A positive value indicates higher than normal cooling requirements for the month as a whole. A negative value indicates lower than normal cooling requirements for the month as a whole. Normal cooling degree days may be found by subtracting the deviation from the observed cooling degree days.

Total Precipitation: Often incorrectly referred to as mean precipitation, this value is the sum of all precipitation reported during the month at a station. If snow occurred, it is to be melted and its water equivalent recorded.

Number of Precipitation Observations: The number of days a rain or no-rain observation was reported. Missing observations frequently result in artificially low total precipitation values.

Deviation from Normal Precipitation: A positive value indicates more rain than normal was received. A negative value indicates less than was expected rainfall was received. Normal rainfall may be calculated by subtracting the deviation from monthly total.

Maximum 24-Hour Report and Day: The maximum amount of precipitation recorded during the station's 24-hour observation period for the current month and year and the day on which it was recorded.

The second set of tables contain similar information but are the average or extreme over all the stations reporting in each climate division.

EXPLANATION OF MAPS

To give a Statewide perspective, a series of maps is produced each month from the information contained in the station tables. Each map is calculated using between 50 and 200 observations. Only stations with complete monthly records are used. Each observation is put into one of three categories and assigned a plus (+), minus (-), or a dot (.). The minus is the lowest numeric category, the dot is the middle and the plus the highest numeric category. If a map location has no report, a value is estimated. Each map is accompanied by its own legend. The categories will vary from month to month throughout the year. The categories for the deviations from normal maps will always remain constant. This is to facilitate comparisons between months and across years.

FEBRUARY 1990

CLIMATE CALENDAR

The data on this calendar are for Oklahoma City. Normal values are calculated for the period 1948-1987. Extremes are found for the period of record (1924-present).

Normal 1		Actual
48.1	max	
27.6	min	
.029	pcpn	
27	HDD	
0	CDD	
Highest Max		74-1986
Lowest Max		16-1985
Lowest Min		-1-1951
Highest Min		59-1986
Greatest pcpn		1.88-1983

Normal 2		Actual
46.4	max	
26.4	min	
.025	pcpn	
28	HDD	
0	CDD	
Highest Max		75-1934
Lowest Max		24-1985
Lowest Min		3-1951
Highest Min		58-1986
Greatest pcpn		.88-1943

Normal 3		Actual
48.7	max	
27.2	min	
.058	pcpn	
27	HDD	
0	CDD	
Highest Max		78-1934
Lowest Max		13-1989
Lowest Min		0-1989
Highest Min		58-1986
Greatest pcpn		1.13-1960

Normal 4		Actual
50.7	max	
29.3	min	
.073	pcpn	
25	HDD	
0	CDD	
Highest Max		77-1962
Lowest Max		15-1989
Lowest Min		2-1989
Highest Min		58-1927
Greatest pcpn		1.32-1964

Normal 5		Actual
48.4	max	
29.1	min	
.094	pcpn	
26	HDD	
0	CDD	
Highest Max		77-1948
Lowest Max		16-1982
Lowest Min		3-1989
Highest Min		57-1938
Greatest pcpn		1.05-1987

Normal 6		Actual
45.5	max	
26.7	min	
.024	pcpn	
29	HDD	
0	CDD	
Highest Max		72-1931
Lowest Max		23-1989
Lowest Min		6-1933
Highest Min		54-1931
Greatest pcpn		.60-1979

Normal 7		Actual
47.0	max	
25.0	min	
.058	pcpn	
29	HDD	
0	CDD	
Highest Max		76-1932
Lowest Max		6-1933
Lowest Min		-5-1933
Highest Min		47-1931
Greatest pcpn		.84-1980

Normal 8		Actual
48.8	max	
28.0	min	
.060	pcpn	
26	HDD	
0	CDD	
Highest Max		73-1938
Lowest Max		12-1929
Lowest Min		-5-1933
Highest Min		53-1966
Greatest pcpn		.62-1966

Normal 9		Actual
50.8	max	
27.6	min	
.037	pcpn	
26	HDD	
0	CDD	
Highest Max		84-1932
Lowest Max		17-1929
Lowest Min		-3-1979
Highest Min		51-1932
Greatest pcpn		.24-1959

Normal 10		Actual
53.1	max	
27.2	min	
.027	pcpn	
25	HDD	
0	CDD	
Highest Max		76-1954
Lowest Max		16-1933
Lowest Min		4-1929
Highest Min		52-1932
Greatest pcpn		.50-1953

Normal 11		Actual
49.2	max	
28.3	min	
.064	pcpn	
26	HDD	
0	CDD	
Highest Max		82-1962
Lowest Max		25-1988
Lowest Min		0-1981
Highest Min		58-1930
Greatest pcpn		1.12-1977

Normal 12		Actual
51.4	max	
28.7	min	
.080	pcpn	
25	HDD	
0	CDD	
Highest Max		84-1962
Lowest Max		17-1948
Lowest Min		7-1986
Highest Min		57-1938
Greatest pcpn		2.21-1978

Normal 13		Actual
53.1	max	
29.9	min	
.028	pcpn	
23	HDD	
0	CDD	
Highest Max		82-1962
Lowest Max		30-1933
Lowest Min		12-1936
Highest Min		50-1926
Greatest pcpn		.47-1989

Normal 14		Actual
53.0	max	
32.0	min	
.071	pcpn	
22	HDD	
0	CDD	
Highest Max		81-1954
Lowest Max		21-1936
Lowest Min		1-1936
Highest Min		54-1954
Greatest pcpn		.89-1938

Normal 15		Actual
51.1	max	
30.6	min	
.051	pcpn	
24	HDD	
0	CDD	
Highest Max		81-1954
Lowest Max		25-1936
Lowest Min		9-1936
Highest Min		53-1976
Greatest pcpn		.93-1938

Normal 16		Actual
51.7	max	
29.7	min	
.020	pcpn	
24	HDD	
0	CDD	
Highest Max		75-1959
Lowest Max		17-1979
Lowest Min		7-1979
Highest Min		48-1976
Greatest pcpn		2.16-1940

Normal 17		Actual
54.4	max	
29.7	min	
.028	pcpn	
23	HDD	
0	CDD	
Highest Max		78-1970
Lowest Max		17-1936
Lowest Min		8-1936
Highest Min		50-1926
Greatest pcpn		.88-1961

Normal 18		Actual
54.9	max	
32.2	min	
.036	pcpn	
21	HDD	
0	CDD	
Highest Max		78-1986
Lowest Max		24-1936
Lowest Min		-1-1978
Highest Min		53-1971
Greatest pcpn		.88-1946

Normal 19		Actual
54.0	max	
31.8	min	
.055	pcpn	
22	HDD	
0	CDD	
Highest Max		83-1986
Lowest Max		21-1929
Lowest Min		8-1978
Highest Min		48-1930
Greatest pcpn		.68-1954

Normal 20		Actual
54.7	max	
31.4	min	
.083	pcpn	
22	HDD	
0	CDD	
Highest Max		80-1976
Lowest Max		26-1929
Lowest Min		12-1939
Highest Min		51-1930
Greatest pcpn		1.31-1985

Normal 21		Actual
50.8	max	
30.3	min	
.085	pcpn	
24	HDD	
0	CDD	
Highest Max		84-1981
Lowest Max		28-1938
Lowest Min		9-1939
Highest Min		54-1930
Greatest pcpn		1.63-1971

Normal 22		Actual
54.1	max	
31.4	min	
.069	pcpn	
22	HDD	
0	CDD	
Highest Max		83-1982
Lowest Max		24-1968
Lowest Min		11-1963
Highest Min		56-1949
Greatest pcpn		1.15-1985

Normal 23		Actual
54.6	max	
33.0	min	
.032	pcpn	
21	HDD	
0	CDD	
Highest Max		80-1930
Lowest Max		31-1928
Lowest Min		11-1965
Highest Min		51-1930
Greatest pcpn		.81-1985

Normal 24		Actual
53.5	max	
31.9	min	
.054	pcpn	
22	HDD	
0	CDD	
Highest Max		81-1956
Lowest Max		19-1960
Lowest Min		7-1965
Highest Min		58-1930
Greatest pcpn		.94-1952

Normal 25		Actual
57.0	max	
33.8	min	
.017	pcpn	
19	HDD	
0	CDD	
Highest Max		82-1986
Lowest Max		29-1935
Lowest Min		10-1960
Highest Min		50-1951
Greatest pcpn		.74-1936

Normal 26		Actual
58.0	max	
33.9	min	
.033	pcpn	
19	HDD	
0	CDD	
Highest Max		78-1986
Lowest Max		21-1934
Lowest Min		11-1934
Highest Min		59-1981
Greatest pcpn		.50-1945

Normal 27		Actual
58.5	max	
34.2	min	
.072	pcpn	
18	HDD	
0	CDD	
Highest Max		81-1976
Lowest Max		25-1962
Lowest Min		13-1934
Highest Min		61-1981
Greatest pcpn		1.32-1966

Normal 28		Actual
57.0	max	
34.3	min	
.046	pcpn	
19	HDD	
0	CDD	
Highest Max		81-1972
Lowest Max		24-1962
Lowest Min		7-1962
Highest Min		53-1932
Greatest pcpn		.88-1987

FEBRUARY AVERAGES

Temperature : 41.1
Precipitation : 1.41"
Heating Degree Days: 664
Cooling Degree Days: 0