OKLAHOMA MONTHLY SUMMARY AUGUST 1990

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AUGUST 1990 OKLAHOMA SUMMARY

August 1990 began relatively cool and moist and ended in the midst of the second major hot-spell of the summer. The average temperature for the month over the state was .3 of a degree below normal. The state's precipitation reporting stations averaged 2.33 inches for the month, .43 inches below normal.

Precipitation was generally well below normal in the three northern Climate Divisions (CD's) and in south central and southeastern Oklahoma. West central and southwestern parts of the state averaged well above normal precipitation. As an example of the spotty nature of precipitation during the month, Ponca City received 4.3 inches of rain during August (.94 inches above normal) while its neighboring Kay County community of Newkirk reported 1.41 inches (2.09 inches below normal). Precipitation totals across the state ranged from a trace at Beaver in the Panhandle to 7.28 inches at Tuskahoma in the southeast.

Scattered showers and thunderstorms dotted southern portions of the state during the first few days of the month. Rainfall in excess of 2 inches was reported at Tuskahoma and Clayton on August 2 and at Fanshawe on the 3rd. A cold front which moved through much of the state on August 3 and 4 produced scattered thunderstorms in the north, providing some relief to the dry weather that had dominated that region. Precipitation reports on the morning of the 4th included 2.75 inches at Ralston, 2.6 inches at Orienta and 2.5 inches at Hammon.

Thunderstorms on August 6 produced golfball sized hail west of Chattanooga and Lawton. On the same day, a hailstorm in the Frederick area caused extensive damage to cotton and other crops.

High temperatures in much of northwestern Oklahoma were only in the upper 70's on August 6 and 7, but a rapid warm-up led to a return of 100 degree temperatures on the 8th. Temperatures in the 90's and low 100's were common over the western two-thirds of the state through August 12. Scattered thunderstorms occurred over much of the state from the 10th through the 17th. Two-day totals reported on the 11th and 12th included 2.93 inches at Ponca City, 2.8 inches at Hominy and 2.75 inches at Cleveland.

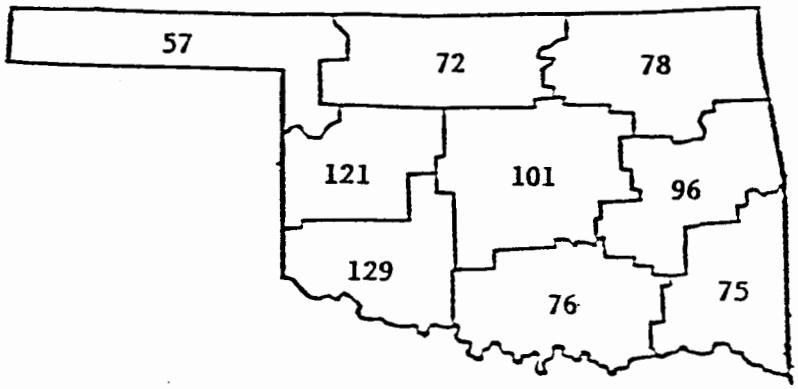
A vigorous low pressure trough in the upper atmosphere moved through the state on August 18 and 19, producing locally heavy rainfalls in the southwest on the 18th. Altus Air Force Base reported 4.85 inches, Hollis reported 4 inches and the Irrigation Research Station near Altus reported 3.75 inches for the 24-hour period ending the morning of the 19th. During the following 24 hours, Eufaula received 3.17 inches of rain.

Scattered thunderstorms continued to occur over much of the state through the morning of August 25. Heavy rain and hail forced the closing of a highway between Felt and the New Mexico state line in Cimarron County on the 20th. Strong winds associated with a thunderstorm led to power losses in Tulsa and surrounding areas on the 22nd.

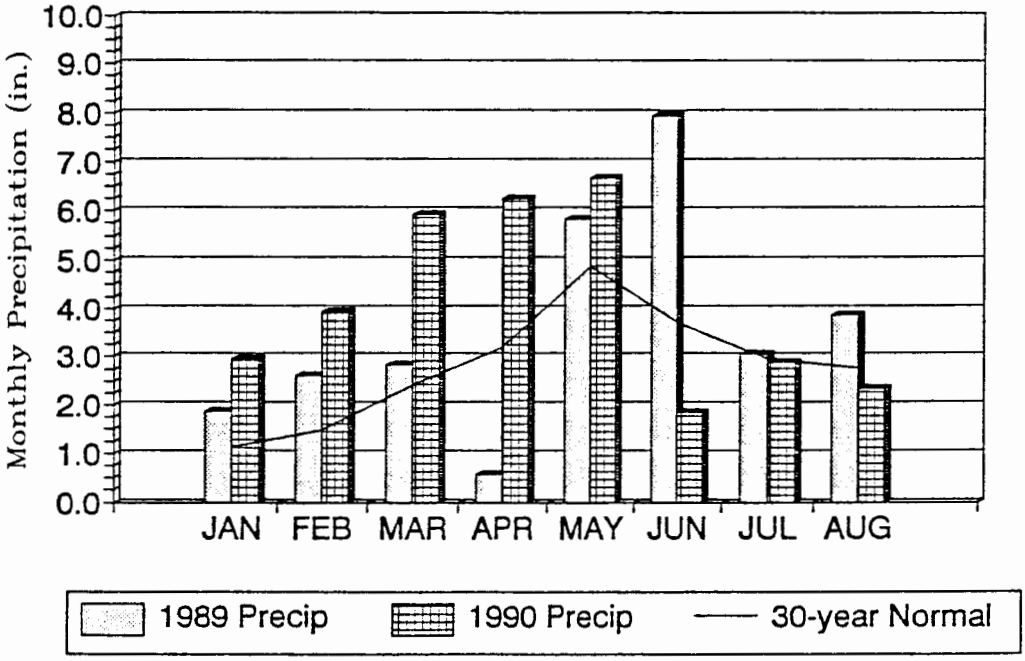
Hot weather returned to all parts of the state during the latter part of the month. Daily maximum temperatures in excess of 100 degrees were commonplace from August 20 through the end of the month. Buffalo reported the state's highest temperature for the month on the 25th (110 degrees). That was the first of 7 consecutive days with temperatures greater than 105 degrees in that western Oklahoma community. The high temperatures, coupled with high humidity forced closings or rescheduling of classes during the first week of school at many locations. The heat wave was still present as the month ended. Reported high temperatures on the 31st included 108 degrees at Ralston, Jefferson and Buffalo.

Howard L. Johnson

August 1990 percent of normal precipitation.



Comparison of Monthly Precipitation Statewide Average for Oklahoma



PROPOSED STATEWIDE NETWORK OF ENVIRONMENTAL MONITORING STATIONS

During the past 7-8 years, several groups across the State (at Oklahoma State University, the NOAA federal agencies in Norman, and at the University of Oklahoma) independently recognized the economic value in developing a statewide network of automated environmental monitoring sensors. Its purpose would be to observe the agricultural, hydrological and meteorological conditions from some 100+ automated weather stations every 15 minutes. Beginning 3-4 years ago, these agencies fostered closer working relationships to strengthen the justifications for successful funding of the proposed network.

The recent announcement by Governor Bellmon of the proposed Oklahoma-wide network of environmental monitoring systems brings closer to reality a joint vision shared by numerous faculty and administrative leaders at Oklahoma State University and at the University of Oklahoma. As a result of an extended period of cooperation, funding efforts for the proposed network have been successful.

As justification efforts intensified, leaders at both universities looked toward the Oklahoma Climatological Survey as the logical agency through which to fund, implement, maintain and administer network operations. Furthermore, focusing network operations at the Climate Survey meshed with its enabling legislation "to acquire, archive, process and disseminate, in the most cost-effective way possible, all climate and weather information which is or could be of value to policy and decision makers in the state".

Conceptually, network operations are diagrammed in Figure 1 shown on the following page. Procurement and implementation will cost an estimated $2.7 Million using proven, off-the-shelf equipment.

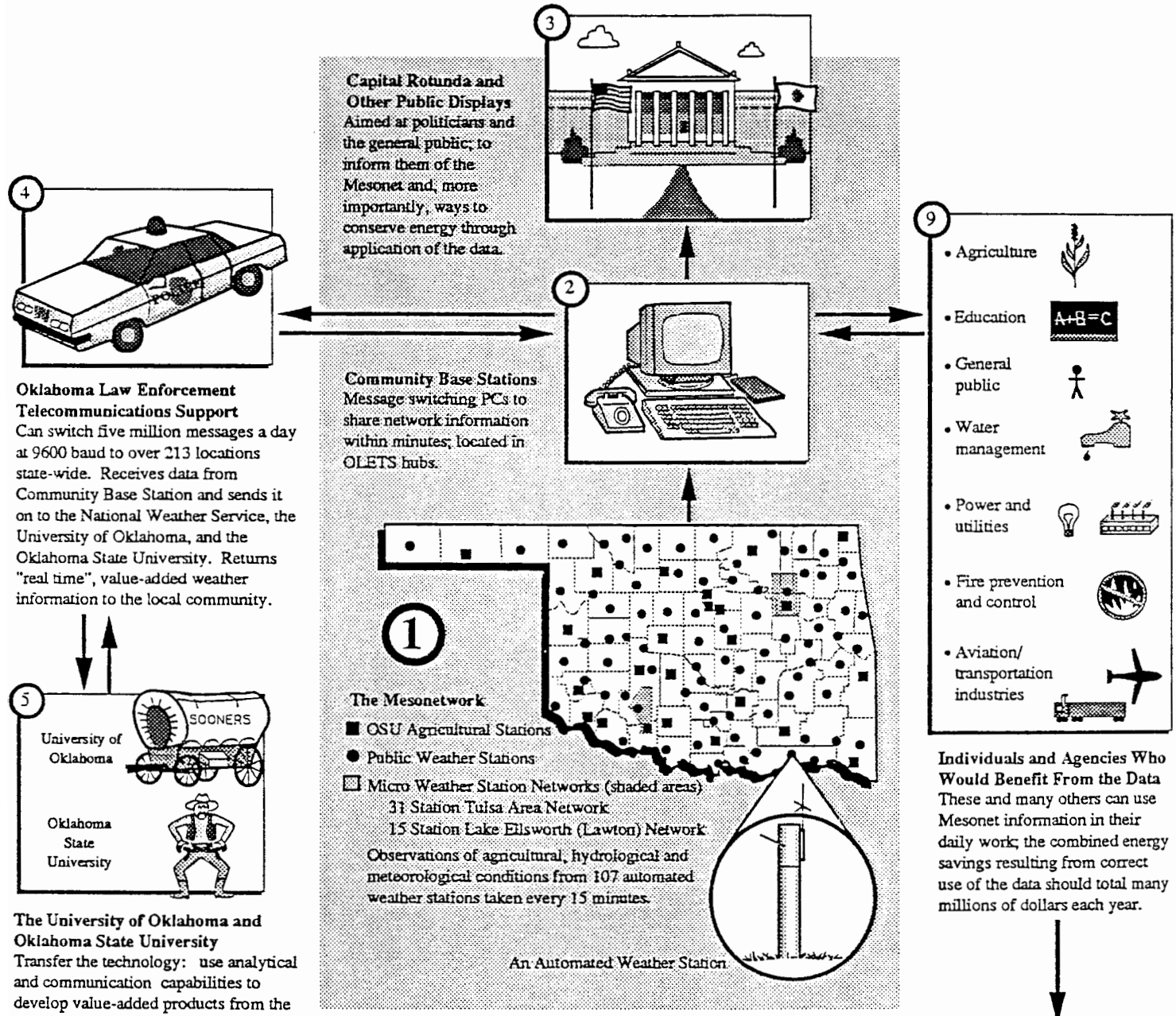
Both universities believe the proposed state-wide network represents a rare opportunity to:

* promote energy education in every school system across the state through links to network information, thereby impacting one million lives by the year 2000; and

* promote energy conservation across the state by following the leadership of the 101st Congress who discovered that "better application of weather and climate information will help conserve water resources, allow agricultural chemicals to be applied in a more efficient fashion with less stress on the environment, and reduce energy consumption by improved management decision making" (HR 2427, Title IV, Section 402[a.6]).

It is difficult to place monetary figures on lives changed through energy education. But, the dividend from conservation activities across Oklahoma, made possible by network information, appears to exceed $25 Million annually. Thus, a public investment will have been made that generates, in its first year, direct benefits well in excess of the initial capital outlay.

Fig. 1. The Exchange of Information in the Proposed Oklahoma Weather Station Mesonetwork (How It Works)



Oklahoma Law Enforcement Telecommunications Support
Can switch five million messages a day at 9600 baud to over 213 locations state-wide. Receives data from Community Base Station and sends it on to the National Weather Service, the University of Oklahoma, and the Oklahoma State University. Returns "real time", value-added weather information to the local community.

The University of Oklahoma and Oklahoma State University
Transfer the technology: use analytical and communication capabilities to develop value-added products from the raw data, creating energy conservation *information.*

Individuals and Agencies Who Would Benefit From the Data
These and many others can use Mesonet information in their daily work; the combined energy savings resulting from correct use of the data should total many millions of dollars each year.

Data Archives
Stores data on disks for future reference for research, climatological analyses, and forensic verifications.

National Weather Service, Norman Office
In cooperation with the University of Oklahoma, serves as host site to manipulate, consolidate, and compile the data, and returns value-added products to each community base station computer.

Electronic and Print Media
Distribute the information further as another vehicle for educating Oklahomans about how Mesonet products can save energy, promoting conservation.

TABLE OF 1989/1990 COMPARISONS

Station	August Temperatures (F) 1989	1990	August Precipitation (in.) 1989	1990
Arnett	76.8	77.2	3.84	3.53
Enid	78.7	*	6.90	*
Mutual	77.5	79.9	3.43	1.79
Tulsa	80.6	83.9	6.69	1.83
Elk City	78.7	79.5	2.67	4.39
Oklahoma City	78.5	81.8	5.55	3.34
McAlester	80.2	81.7	1.77	2.51
Altus Irr Sta	80.5	81.0	2.01	5.16
Durant	78.8	81.7	1.86	2.15
Ada	79.3	80.8	11.13	1.99
Antlers	79.8	81.8	1.01	1.38

EXTREMES

Variable	Station	Division	Observation	Date
Minimum temperature (F)	Kenton	1	49	7
Maximum temperature (F)	Buffalo	1	110	25
Maximum 24-hour precipitation	Altus AFB	7	4.85"	19

AUGUST 1990 SUMMARY FOR NORTHWEST DIVISION (CD1)

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
ARNETT	332	1	77.2	31	-2.1	99.	30	55.	6	.0	.0	377.5	-65.5	3.530	31	1.12	1.45	3
BEAVER	593	1	79.5	31	-.1	105.	30	53.	7	.0	.0	448.5	-4.5	.002	31	-2.81	.00	16
BOISE CITY 2 E	908	1	75.1	31	-.6	100.	28	52.	7	.0	.0	314.5	-17.5	.992	31	-1.39	.60	3
BUFFALO	1243	1	82.1	31	.3	110.	25	53.	6	.0	.0	531.0	10.0	1.070	31	-2.27	.60	4
FARGO	3070	1	*****	0	*****	****	0	****	0	******	******	******	******	1.141	31	-1.33	.55	3
GAGE FAA APT	3407	1	79.8	31	-.3	102.	31	53.	6	.0	.0	459.5	-8.5	1.472	31	-.95	.76	3
GATE	3489	1	81.0	30	*****	107.	29	54.	6	.0	******	480.0	******	.882	31	*****	.64	4
GOODWELL RES ST	3628	1	77.4	31	-.0	104.	30	52.	11	.0	.0	383.5	-.5	.262	31	-2.11	.17	13
GUYMON	3835	1	79.9	29	*****	104.	29	59.	7	.0	******	433.0	******	.022	30	*****	.02	13
HOOKER	4298	1	78.2	31	.0	103.	30	56.	10	.0	.0	409.5	.5	.561	31	-2.22	.56	15
KENTON	4766	1	73.6	31	-2.9	98.	31	49.	7	8.0	8.0	273.5	-83.5	.891	31	-1.61	.28	16
LAVERNE	5045	1	*****	0	*****	****	0	****	0	******	******	******	******	1.561	31	-1.41	.84	15
OPTIMA LAKE	6740	1	78.6	31	*****	104.	30	56.	6	.0	******	420.5	******	.331	31	*****	.17	13
RANGE	7412	1	*****	0	*****	****	0	****	0	******	******	******	******	.771	31	*****	.40	13
REGNIER	7534	1	*****	0	*****	****	0	****	0	******	******	******	******	1.981	31	.07	.98	18
TURPIN 4 SSE	9017	1	78.3	30	*****	105.	30	56.	9	.0	******	399.5	******	.090	31	*****	.09	13

AUGUST 1990 SUMMARY FOR NORTH CENTRAL DIVISION (CD2)

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
ALVA	193	2	81.4	31	*****	106.	31	58.	6	.0	******	509.0	******	2.370	31	*****	1.98	21
VANCE AFB	302	2	*****	0	*****	****	0	****	0	******	******	******	******	1.321	31	*****	.82	4
BILLINGS	755	2	81.5	31	*****	105.	30	55.	6	.0	******	510.5	******	2.051	31	-.84	.75	4
BLACKWELL 2E	818	2	81.6	31	*****	107.	31	58.	8	.0	******	515.5	******	3.061	31	*****	1.37	13
BRAMAN	1075	2	*****	0	*****	****	0	****	0	******	******	******	******	2.053	31	*****	.84	15
CHEROKEE	1724	2	82.7	31	.5	106.	31	56.	6	.0	.0	547.5	14.5	1.030	31	-1.55	.50	21
FREEDOM	3358	2	80.5	31	*****	104.	31	55.	6	.0	******	482.0	******	.970	31	*****	.63	4
GREAT SALT PLNS	3740	2	82.8	31	*****	107.	30	57.	8	.0	******	551.5	******	1.662	25	*****	1.25	21
HARDY	3909	2	*****	0	*****	****	0	****	0	******	******	******	******	1.861	31	*****	1.10	10
HELENA 1 SSE	4019	2	80.7	31	*****	106.	30	57.	6	.0	******	486.5	******	1.221	31	-1.39	.52	4
JEFFERSON	4573	2	80.9	31	-1.2	108.	31	53.	6	.0	.0	492.0	-38.0	2.661	31	-.59	1.93	15
LAMONT	5013	2	*****	0	*****	****	0	****	0	******	******	******	******	1.030	31	*****	.24	25
MEDFORD	5768	2	*****	0	*****	****	0	****	0	******	******	******	******	1.242	31	*****	.43	14
MORRISON	6065	2	*****	0	*****	****	0	****	0	******	******	******	******	5.150	31	*****	2.00	4
MUTUAL	6139	2	79.9	31	-1.1	104.	31	55.	6	.0	.0	463.0	-33.0	1.790	31	-.41	.46	14
NEWKIRK	6278	2	81.1	31	-.0	105.	31	57.	7	.0	.0	498.0	-1.0	1.411	31	-2.09	.93	12
ORIENTA	6751	2	*****	0	*****	****	0	****	0	******	******	******	******	3.220	31	*****	2.60	4
PERRY	7012	2	82.6	31	.5	106.	31	58.	6	.0	.0	547.0	17.0	2.120	31	-1.21	1.27	4
PONCA CITY FAA	7201	2	82.1	31	1.2	107.	31	59.	6	.0	.0	531.0	38.0	4.303	31	.94	2.02	12
RED ROCK 1 NNE	7505	2	*****	0	*****	****	0	****	0	******	******	******	******	1.990	31	-.95	.67	4
WAYNOKA	9404	2	81.0	31	-1.1	104.	31	56.	6	.0	.0	496.0	-34.0	1.140	31	-1.56	.87	4
WOODWARD	9760	2	*****	0	*****	****	0	****	0	******	******	******	******	1.072	31	*****	.54	3

AUGUST 1990 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	80.0	31	*****	103.	31	55.	8	.0	******	465.0	******	2.651	31	-.52	1.06	25
BARTLESVILLE 2W	548	3	80.5	31	-.1	105.	31	54.	8	.0	.0	480.0	-4.0	1.142	31	-1.88	.73	12
BIXBY	782	3	80.3	31	.0	102.	31	60.	9	.0	.0	474.0	.0	1.830	31	-.96	1.42	12
BURBANK	1256	3	*****	0	*****	****	0	****	0	******	******	******	******	.843	31	*****	.30	11
CHELSEA 4 S	1717	3	*****	0	*****	****	0	****	0	******	******	******	******	1.310	31	*****	.78	12
CLAREMORE	1828	3	80.6	31	.3	103.	31	61.	8	.0	.0	483.5	9.5	2.343	31	-.57	1.58	12
CLEVELAND 5 WSW	1902	3	81.0	31	*****	105.	31	58.	6	.0	******	497.5	******	4.410	31	*****	2.49	11
FORAKER	3250	3	*****	0	*****	****	0	****	0	******	******	******	******	2.382	31	-1.13	.79	19
HOLLOW	4258	3	*****	0	*****	****	0	****	0	******	******	******	******	1.671	31	-1.63	1.12	11
HOMINY	4289	3	*****	0	*****	****	0	****	0	******	******	******	******	6.181	31	3.15	1.84	12
HULAH DAM	4393	3	79.9	23	*****	104.	29	53.	8	.0	******	343.0	******	2.163	31	-.87	1.16	12
JAY TOWER	4567	3	80.2	31	*****	104.	31	56.	6	.0	******	471.0	******	1.800	31	*****	.60	16
KANSAS 1 ESE	4672	3	79.7	31	*****	100.	30	57.	6	.0	******	456.5	******	2.351	31	*****	1.30	12
KEYSTONE DAM	4812	3	80.9	31	*****	102.	31	56.	8	.0	******	491.5	******	1.652	31	*****	.72	12
LENAPAH	5118	3	*****	0	*****	****	0	****	0	******	******	******	******	1.321	31	*****	.68	12
MANNFORD 6 NW	5522	3	82.3	31	*****	106.	31	59.	8	.0	******	536.5	******	4.301	31	1.22	1.88	25
MARAMEC	5540	3	*****	0	*****	****	0	****	0	******	******	******	******	2.712	31	-.21	1.13	4
MIAMI	5855	3	79.7	31	-.2	100.	31	53.	6	.0	.0	456.5	-5.5	3.842	31	.33	3.10	4
NOWATA	6485	3	80.4	31	-.4	102.	30	58.	6	.0	.0	477.5	-12.5	3.410	31	.02	2.38	4
ONETA 1 WNW	6713	3	*****	0	*****	****	0	****	0	******	******	******	******	2.330	31	*****	1.63	12
PAWHUSKA	6935	3	80.0	31	-.5	104.	31	55.	8	.0	.0	464.5	-16.5	2.391	31	-.95	.96	11
PAWHUSKA	6937	3	*****	0	*****	****	0	****	0	******	******	******	******	1.923	31	*****	.85	11
PAWNEE	6940	3	*****	0	*****	****	0	****	0	******	******	******	******	2.520	31	-.49	1.32	4
PRYOR 6 N	7309	3	79.1	31	-1.2	104.	30	55.	6	.0	.0	437.0	-37.0	1.627	31	-1.77	1.30	12
RALSTON	7390	3	81.0	31	*****	108.	31	57.	8	.0	******	494.5	******	3.853	31	.93	2.75	4
RAMONA 4 N	7394	3	*****	0	*****	****	0	****	0	******	******	******	******	.910	31	*****	.91	12
SKIATOOK	8258	3	*****	0	*****	****	0	****	0	******	******	******	******	3.030	31	.17	1.48	12
SPAVINAW	8380	3	82.4	22	*****	101.	31	60.	6	.0	******	382.0	******	3.041	31	-.56	1.50	12
TULSA WSO APT	8992	3	83.9	31	2.2	104.	29	62.	6	.0	.0	585.0	67.0	1.833	31	-1.18	.84	12
VINITA 2 N	9203	3	79.4	30	-.4	102.	29	54.	8	.0	.0	433.5	-25.5	1.320	31	-2.29	.97	12
UPPER SPAVINAW	9101	3	76.9	31	*****	104.	29	52.	8	4.0	******	371.5	******	1.951	31	*****	.91	12
WAGONER	9247	3	81.4	31	.3	102.	29	59.	6	.0	.0	508.0	9.0	2.671	31	-.18	1.11	12
WANN	9298	3	*****	0	*****	****	0	****	0	******	******	******	******	2.400	31	*****	.84	16
WYNONA	9792	3	84.1	31	*****	104.	30	61.	6	.0	******	592.5	******	2.505	31	*****	.78	25

AUGUST 1990 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	75.9	15	*****	97.	11	57.	7	.0	******	164.0	******	2.180	31	-.07	.67	13
CHEYENNE	1738	4	*****	0	*****	****	0	****	0	******	******	******	******	3.670	31	*****	1.71	19
CLINTON	1909	4	82.8	31	.8	106.	31	58.	6	.0	.0	551.0	24.0	2.370	31	-.42	1.19	4
COLONY	2039	4	*****	0	*****	****	0	****	0	******	******	******	******	3.730	31	*****	1.62	4
CORDELL	2125	4	*****	0	*****	****	0	****	0	******	******	******	******	3.212	31	.58	2.15	4
ELK CITY 1 E	2849	4	79.5	31	*****	100.	31	60.	8	.0	******	449.0	******	4.391	31	2.06	1.78	4
ERICK 4 E	2944	4	79.1	31	-1.5	101.	29	57.	6	.0	.0	438.0	-46.0	2.863	31	.74	1.13	21
GEARY	3497	4	79.9	31	-2.0	102.	31	56.	6	.0	.0	461.5	-62.5	2.210	31	.02	1.41	4
HAMMON 1 NNE	3871	4	80.0	31	-1.1	104.	31	61.	1	.0	.0	466.0	-33.0	5.701	31	3.26	2.50	4
LEEDEY	5090	4	*****	0	*****	****	0	****	0	******	******	******	******	4.110	31	1.53	2.00	4
MACKIE 4 NNW	5463	4	*****	0	*****	****	0	****	0	******	******	******	******	1.760	31	*****	.90	18
MORAVIA 2 NNE	6035	4	*****	0	*****	****	0	****	0	******	******	******	******	1.252	31	-.81	.88	19
OKEENE	6629	4	81.2	31	-1.3	104.	31	57.	6	.0	.0	503.0	-40.0	1.440	31	-1.13	.62	4
RETROP	7565	4	*****	0	*****	****	0	****	0	******	******	******	******	2.230	31	*****	1.28	3
REYDON	7579	4	79.3	31	*****	101.	29	55.	6	.0	******	444.0	******	3.131	31	.90	1.67	19
SAYRE	7952	4	*****	0	*****	****	0	****	0	******	******	******	******	2.750	31	.70	1.45	19
SWEETWATER 2 E	8652	4	*****	0	*****	****	0	****	0	******	******	******	******	5,861	31	*****	3.51	3
TALOGA	8708	4	79.8	29	*****	102.	31	55.	6	.0	******	429.0	******	2.720	31	.28	.58	14
THOMAS	8815	4	*****	0	*****	****	0	****	0	******	******	******	******	3.520	31	*****	3.15	4
VICI	9172	4	*****	0	*****	****	0	****	0	******	******	******	******	1.800	31	*****	.50	18
WATONGA	9364	4	81.1	31	*****	103.	31	58.	6	.0	******	500.0	******	1.783	31	-.27	.57	4
WEATHERFORD	9422	4	81.0	31	-.6	106.	30	55.	6	.0	.0	496.0	-19.0	2.972	31	.28	1.40	4

AUGUST 1990 SUMMARY FOR CENTRAL DIVISION (CD5)

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
AMBER	200	5	*****	0	*****	****	0	****	0	******	******	******	******	2.760	31	*****	.60	4
ARCADIA	288	5	*****	0	*****	****	0	****	0	******	******	******	******	1.610	31	*****	.92	4
TINKER AFB	325	5	*****	0	*****	****	0	****	0	******	******	******	******	4.100	31	*****	1.48	4
BLANCHARD 2 SSW	830	5	80.9	31	*****	102.	31	60.	6	.0	******	491.5	******	4.031	31	*****	1.39	2
BRISTOW	1144	5	81.5	31	.3	105.	31	59.	8	.0	.0	510.5	8.5	2.223	31	-.40	.99	25
CHANDLER	1684	5	81.5	31	-.3	105.	31	60.	6	.0	.0	510.0	-11.0	2.490	31	.24	1.46	18
CHICKASHA EX ST	1750	5	81.0	31	-.2	103.	31	58.	8	.0	.0	497.0	-5.0	3.480	31	.96	.75	19
COX CITY 1 E	2196	5	*****	0	*****	****	0	****	0	******	******	******	******	2.800	31	*****	.85	4
CRESCENT	2242	5	*****	0	*****	****	0	****	0	******	******	******	******	2.860	31	*****	2.13	4
CUSHING	2318	5	81.1	29	*****	103.	30	60.	7	.0	******	467.0	******	1.690	31	-1.00	.62	13
EL RENO 1 N	2818	5	81.2	31	-.1	103.	31	57.	6	.0	.0	503.5	-1.5	2.740	31	.44	1.61	4
GUTHRIE	3821	5	83.4	31	1.3	107.	31	59.	6	.0	.0	569.0	39.0	2.500	31	.12	1.08	4
HENNESSEY 2 SE	4055	5	81.7	31	-.6	106.	31	56.	6	.0	.0	519.0	-17.0	2.640	31	-.05	1.15	4
INGALLS	4489	5	*****	0	*****	****	0	****	0	******	******	******	******	2.283	31	*****	1.20	4
KINGFISHER 2 SE	4861	5	81.9	31	-.5	105.	31	58.	6	.0	.0	524.0	-15.0	1.291	31	-1.10	.59	4
KONAWA	4915	5	*****	0	*****	****	0	****	0	******	******	******	******	1.310	31	-1.15	.60	3
MARSHALL	5589	5	*****	0	*****	****	0	****	0	******	******	******	******	1.190	31	-1.56	.43	19
MEEKER 4 W	5779	5	80.5	30	-.8	104.	31	58.	6	.0	.0	465.5	-39.5	2.220	30	*****	.85	18
MULHALL	6110	5	*****	0	*****	****	0	****	0	******	******	******	******	2.590	31	*****	1.41	4
NORMAN 3 S	6386	5	81.5	31	*****	105.	30	61.	8	.0	******	513.0	******	3.290	31	.73	1.12	16
OILTON 2 SE	6616	5	*****	0	*****	****	0	****	0	******	******	******	******	1.980	31	*****	.61	24
OKEMAH	6638	5	81.6	31	.4	104.	31	60.	8	.0	.0	514.0	12.0	1.470	31	-1.13	.62	22
OKLAHOMA CITY WS	6661	5	81.8	31	.7	104.	31	62.	6	.0	.0	520.0	21.0	3.341	31	.94	1.85	4
PERKINS	7003	5	*****	0	*****	****	0	****	0	******	******	******	******	2.220	31	-.39	1.12	4
PIEDMONT	7068	5	*****	0	*****	****	0	****	0	******	******	******	******	2.020	31	*****	1.35	4
PRAGUE	7264	5	*****	0	*****	****	0	****	0	******	******	******	******	2.261	31	-.25	.86	4
PURCELL 5 SW	7327	5	80.6	31	-1.3	104.	31	58.	8	.0	.0	482.5	-41.5	3.650	31	1.23	1.25	4
SEMINOLE	8042	5	82.3	31	-.3	105.	31	61.	6	.0	.0	537.0	-9.0	1.890	31	-.99	.67	14
SHAWNEE	8110	5	*****	0	*****	****	0	****	0	******	******	******	******	2.750	31	-.15	.63	19
STELLA	8479	5	*****	0	*****	****	0	****	0	******	******	******	******	3.680	31	*****	.93	4
STILLWATER 2 W	8501	5	80.9	31	-.1	103.	31	58.	8	.0	.0	491.5	-4.5	3.600	31	.77	1.87	4
STROUD 1 N	8563	5	*****	0	*****	****	0	****	0	******	******	******	******	3.223	31	*****	1.10	20
TROUSDALE	8960	5	*****	0	*****	****	0	****	0	******	******	******	******	2.350	31	*****	.60	14
UNION CITY 1 SE	9086	5	*****	0	*****	****	0	****	0	******	******	******	******	3.090	31	.54	.82	4
WELTY 1 SSE	9479	5	*****	0	*****	****	0	****	0	******	******	******	******	.751	31	*****	.25	4
WEWOKA	9575	5	*****	0	*****	****	0	****	0	******	******	******	******	2.320	31	-.53	1.15	20

AUGUST 1990 SUMMARY FOR EAST CENTRAL DIVISION (CD6)

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
ASHLAND	364	6	*****	0	*****	****	0	****	0	******	******	******	******	.660	31	*****	.35	2
BEGGS	631	6	*****	0	*****	****	0	****	0	******	******	******	******	1.350	31	*****	.53	1
BOYNTON	1027	6	*****	0	*****	****	0	****	0	******	******	******	******	2.250	31	*****	1.40	15
CALVIN	1391	6	*****	0	*****	****	0	****	0	******	******	******	******	1.683	31	-.90	.68	20
CHECOTAH	1711	6	*****	0	*****	****	0	****	0	******	******	******	******	1.381	31	-1.32	.91	20
CLAYTON 11 WNW	1858	6	*****	0	*****	****	0	****	0	******	******	******	******	4.600	31	*****	2.00	2
DEWAR 2 NE	2485	6	*****	0	*****	****	0	****	0	******	******	******	******	2.850	31	.24	.97	20
DUSTIN	2690	6	*****	0	*****	****	0	****	0	******	******	******	******	3.640	31	*****	1.74	20
EUFAULA	2993	6	82.7	31	*****	100.	29	63.	8	.0	******	550.0	******	4.252	31	1.52	3.17	20
HANNA	3884	6	80.6	31	*****	101.	29	59.	8	.0	******	483.5	******	3.051	31	.23	1.30	20
HARTSHORNE	3946	6	*****	0	*****	****	0	****	0	******	******	******	******	3.132	31	*****	1.54	4
HASKELL	3956	6	*****	0	*****	****	0	****	0	******	******	******	******	1.791	31	-.54	1.01	12
HOLDENVILLE	4235	6	80.6	31	-1.3	103.	31	59.	6	.0	.0	484.0	-40.0	3.360	31	.70	1.69	20
LAKE EUFAULA	4975	6	81.4	31	*****	101.	30	60.	6	.0	******	507.5	******	2.960	31	*****	1.63	20
LYONS 2 N	5437	6	*****	0	*****	****	0	****	0	******	******	******	******	2.950	31	.08	1.13	22
MARBLE CITY	5546	6	*****	0	*****	****	0	****	0	******	******	******	******	2.680	31	*****	.77	12
MCALESTER FAA	5664	6	81.7	31	-.0	103.	31	61.	8	.0	.0	517.0	-1.0	2.511	31	-.74	1.26	2
MCCURTAIN 1 SE	5693	6	81.7	31	*****	102.	31	58.	6	.0	******	519.0	******	1.793	31	-1.22	.93	25
MUSKOGEE	6130	6	82.1	30	.6	102.	30	60.	5	.0	.0	513.0	1.0	2.790	31	-.24	.90	1
OKMULGEE W W	6670	6	79.4	27	*****	102.	31	58.	7	.0	******	390.0	******	.593	31	-2.04	.16	13
OKTAHA 2 NE	6678	6	*****	0	*****	****	0	****	0	******	******	******	******	2.242	31	*****	1.38	20
QUINTON	7372	6	*****	0	*****	****	0	****	0	******	******	******	******	2.042	31	-1.06	.75	23
SALLISAW 2 NE	7862	6	80.3	31	-.7	101.	29	58.	6	.0	.0	473.0	-23.0	4.992	31	1.82	1.60	2
SCIPIO	7979	6	*****	0	*****	****	0	****	0	******	******	******	******	3.110	31	*****	2.08	20
SCRAPER	7993	6	*****	0	*****	****	0	****	0	******	******	******	******	1.920	31	*****	1.07	12
SHORT	8170	6	*****	0	*****	****	0	****	0	******	******	******	******	3.560	31	*****	1.86	12
STILWELL 1 NE	8506	6	79.7	31	*****	100.	31	55.	6	.0	******	455.0	******	3.062	31	-.29	1.17	15
TAHLEQUAH	8677	6	80.8	31	.9	101.	30	59.	8	.0	.0	489.0	27.0	3.281	31	.22	1.28	13
WEBBERS FALLS	9445	6	78.4	22	*****	103.	30	56.	6	.0	******	295.0	******	1.411	31	-1.47	.49	17
WESTVILLE	9523	6	*****	0	*****	****	0	****	0	******	******	******	******	2.951	31	*****	2.00	13
WETUMKA 3 NE	9571	6	*****	0	*****	****	0	****	0	******	******	******	******	3.862	31	1.44	1.10	4

AUGUST 1990 SUMMARY FOR SOUTHWEST DIVISION (CD7)

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
ALTUS IRR STA	179	7	81.0	31	-2.1	101.	31	60.	8	.0	.0	496.0	-65.0	5.160	31	2.92	3.75	19
ALTUS DAM	184	7	81.8	31	*****	102.	30	62.	8	.0	******	521.5	******	2.991	31	.86	2.45	19
ANADARKO	224	7	80.6	25	*****	101.	31	60.	4	.0	******	389.5	******	2.310	25	*****	1.21	4
APACHE	260	7	*****	0	*****	****	0	****	0	******	******	******	******	3.550	31	*****	1.72	4
ALTUS AFB	447	7	*****	0	*****	****	0	****	0	******	******	******	******	6.164	31	*****	4.85	19
CARNEGIE 2 ENE	1504	7	81.2	30	-1.1	104.	31	58.	8	.0	.0	487.0	-49.0	2.660	30	*****	1.70	3
CHATTANOOGA	1706	7	82.4	31	-.9	105.	31	60.	8	.0	.0	538.0	-29.0	1.700	31	-.91	.74	19
DUNCAN 12 W	2668	7	*****	0	*****	****	0	****	0	******	******	******	******	1.710	31	*****	.39	19
FREDERICK	3353	7	79.9	29	*****	101.	31	61.	8	.0	******	431.5	******	3.130	31	.67	1.63	19
GRANDFIELD 4 NW	3709	7	*****	0	*****	****	0	****	0	******	******	******	******	2.270	31	-.12	.80	10
HOBART FAA APT	4204	7	81.2	31	-.9	103.	31	58.	6	.0	.0	503.5	-26.5	2.641	31	.76	1.35	19
HOLLIS	4249	7	80.9	31	-2.5	102.	31	59.	8	.0	.0	492.5	-77.5	4.851	31	2.82	4.00	19
LAWTON	5063	7	81.9	30	-.8	103.	31	61.	7	.0	.0	506.5	-42.5	1.480	31	-.67	.60	18
FORT SILL	5068	7	81.5	31	*****	101.	31	62.	7	.0	******	513.0	******	3.394	31	1.24	1.43	13
LOOKEBA 2 ENE	5329	7	*****	0	*****	****	0	****	0	******	******	******	******	3.400	31	*****	1.47	14
MANGUM RES STA	5509	7	79.7	31	-2.9	100.	31	60.	6	.0	.0	455.0	-91.0	2.670	31	.62	2.67	20
RANDLETT 9 E	7403	7	*****	0	*****	****	0	****	0	******	******	******	******	1.580	31	*****	1.33	4
ROOSEVELT	7727	7	*****	0	*****	****	0	****	0	******	******	******	******	2.450	31	.31	2.00	19
SEDAN	8016	7	*****	0	*****	****	0	****	0	******	******	******	******	2,740	31	*****	1.02	13
VINSON 3 WNW	9212	7	*****	0	*****	****	0	****	0	******	******	******	******	2.260	31	.00	1.68	19
WALTERS	9278	7	82.3	31	-1.4	102.	30	60.	6	.0	.0	537.5	-42.5	1.460	31	-1.11	.55	4
WICHITA MT WLR	9629	7	79.0	31	-2.5	101.	26	58.	6	.0	.0	435.5	-76.5	2.701	31	.66	1.93	19
WILLOW	9668	7	*****	0	*****	****	0	****	0	******	******	******	******	1.980	31	*****	1.10	19

AUGUST 1990 SUMMARY FOR SOUTH CENTRAL DIVISION (CD8)

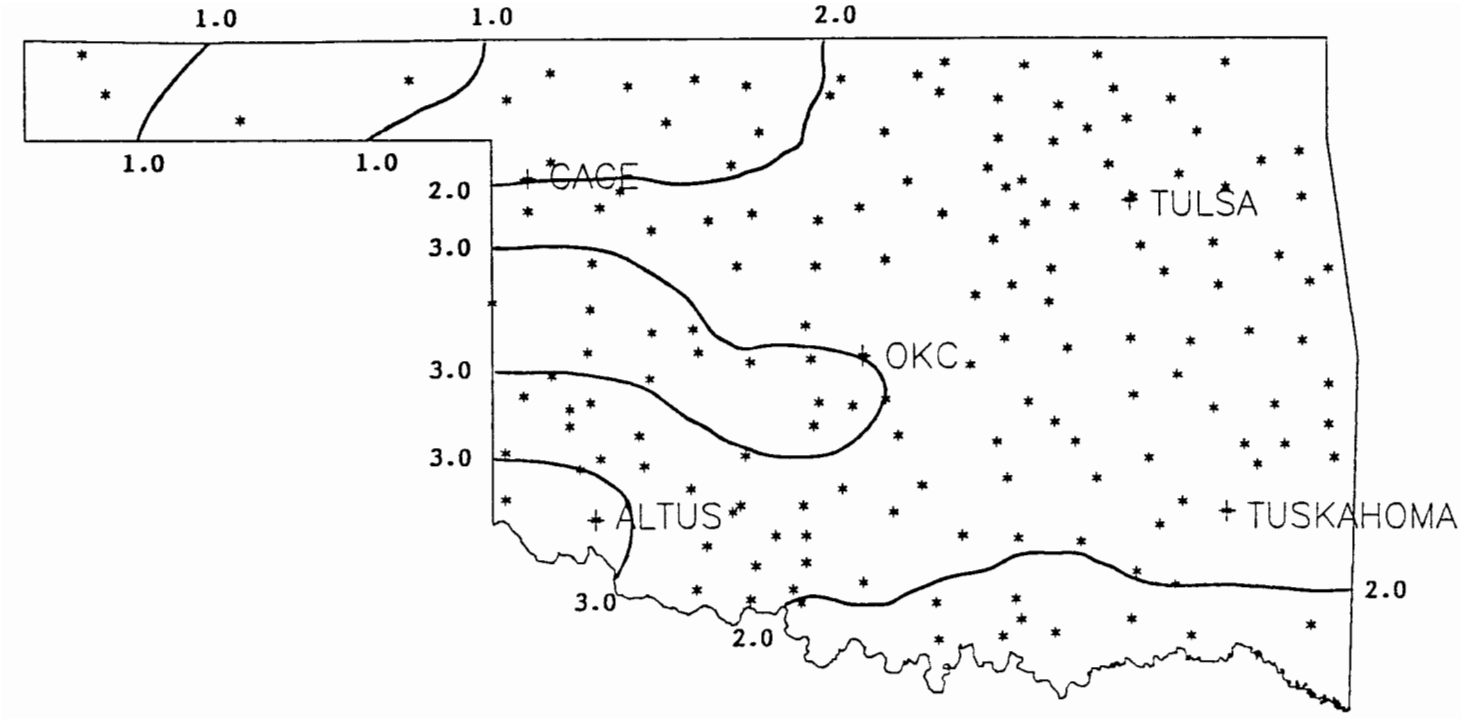
NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ADA	17	8	81.1	31	-.6	102.	31	60.	7	.0	.0	498.5	-19.5	1.990	31	-1.10	1.17	4
ALLEN	147	8	*****	0	*****	****	0	****	0	******	******	******	******	.850	31	*****	.50	2
ARDMORE	292	8	82.5	31	-1.5	102.	31	62.	6	.0	.0	543.0	-46.0	1.911	31	-.62	1.32	4
ATOKA DAM	394	8	85.2	23	*****	106.	31	58.	14	.0	******	464.0	******	.170	23	*****	.17	15
BOKCHITO	917	8	*****	0	*****	****	0	****	0	******	******	******	******	.520	31	*****	.25	16
CANEY	1437	8	82.9	31	*****	104.	31	60.	6	.0	******	555.0	******	.270	31	*****	.12	23
CENTRAHOMA	1648	8	*****	0	*****	****	0	****	0	******	******	******	******	1.650	31	*****	.80	24
CHICKASAW NRA	1745	8	80.9	31	*****	103.	31	58.	11	.0	******	493.0	******	3.530	31	*****	1.60	4
COLEMAN	2011	8	*****	0	*****	****	0	****	0	******	******	******	******	.920	31	*****	.62	4
COMANCHE	2054	8	*****	0	*****	****	0	****	0	******	******	******	******	2.840	31	*****	1.55	4
DAISY 4 ENE	2354	8	*****	0	*****	****	0	****	0	******	******	******	******	2.580	31	-.93	1.01	1
DUNCAN	2660	8	80.8	31	-2.2	100.	31	61.	8	.0	.0	490.5	-67.5	2.950	31	.60	1.14	4
DURANT USDA	2678	8	81.7	31	*****	105.	31	60.	8	.0	******	517.0	******	2.150	31	-.32	1.68	2
ELMORE CITY	2872	8	*****	0	*****	****	0	****	0	******	******	******	******	1.930	31	*****	.85	4
FARRIS 3 WNW	3083	8	*****	0	*****	****	0	****	0	******	******	******	******	1.780	31	*****	1.69	3
GRADY	3688	8	*****	0	*****	****	0	****	0	******	******	******	******	1.871	31	*****	.86	4
HEALDTON	4001	8	83.3	18	*****	105.	31	60.	6	.0	******	329.5	******	1.150	19	*****	.93	4
HENNEPIN	4052	8	*****	0	*****	****	0	****	0	******	******	******	******	.751	31	*****	.72	4
KETCHUM RANCH	4780	8	*****	0	*****	****	0	****	0	******	******	******	******	2.590	31	*****	1.40	4
KINGSTON	4865	8	*****	0	*****	****	0	****	0	******	******	******	******	1.271	31	-1.22	.55	24
LEHIGH	5108	8	*****	0	*****	****	0	****	0	******	******	******	******	2.250	31	*****	1.25	4
LINDSAY 2 W	5216	8	80.4	28	*****	101.	31	59.	8	.0	******	430.5	******	4.580	29	*****	1.50	3
LOCO 6 SE	5247	8	*****	0	*****	****	0	****	0	******	******	******	******	1.400	31	*****	1.03	4
MADILL	5468	8	82.2	31	-.9	104.	30	60.	8	.0	.0	534.0	-27.0	1.360	31	-1.07	.97	1
MARIETTA	5563	8	83.0	31	.1	105.	31	61.	6	.0	.0	556.5	1.5	1.931	31	-.65	1.28	19
MARLOW 1 WSW	5581	8	81.2	31	*****	105.	31	57.	6	.0	******	503.5	******	3.111	31	.69	.86	5
MCGEE CREEK DAM	5713	8	82.5	31	*****	106.	31	61.	8	.0	******	543.5	******	2.001	31	*****	1.83	3
PAULS VALLEY	6926	8	81.0	31	-2.1	104.	31	59.	6	.0	.0	494.5	-66.5	1.844	31	-.48	.80	4
PONTOTOC	7214	8	*****	0	*****	****	0	****	0	******	******	******	******	2.470	31	-.24	.95	1
TISHOMINGO NWLR	8884	8	81.9	29	*****	106.	31	58.	8	.0	******	490.5	******	.920	31	-1.60	.31	2
TUSSY	9032	8	*****	0	*****	****	0	****	0	******	******	******	******	2.792	31	*****	1.25	16
WAURIKA	9395	8	82.7	31	-1.1	105.	31	60.	6	.0	.0	548.5	-34.5	.793	31	-1.76	.65	1
WAURIKA DAM	9399	8	81.3	31	*****	101.	31	61.	8	.0	******	505.0	******	3.740	31	*****	2.05	4

AUGUST 1990 SUMMARY FOR SOUTHEAST DIVISION (CD9)

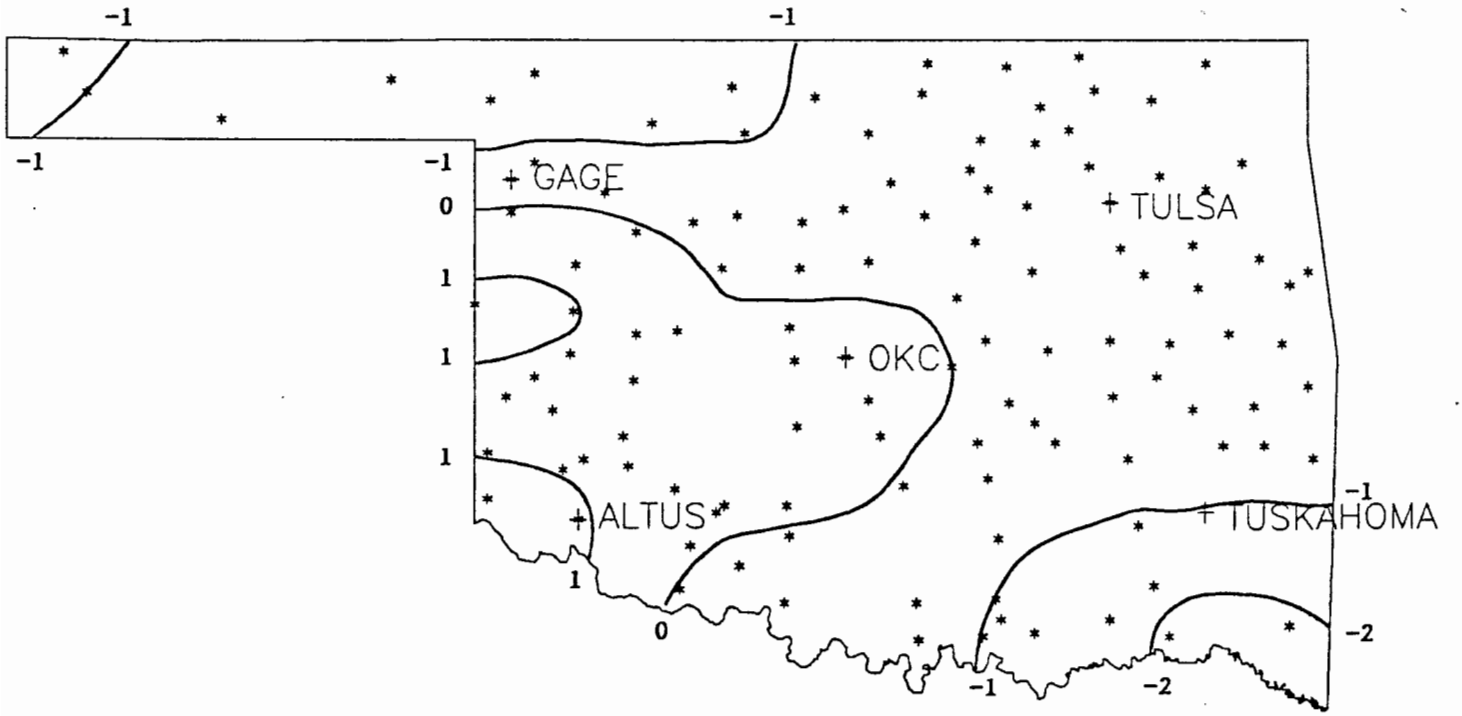
NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ANTLERS	256	9	81.8	31	.7	106.	30	60.	8	.0	.0	519.5	20.5	1.380	31	-1.85	.52	2
BATTIEST 1 SSW	567	9	77.4	30	*****	99.	30	56.	8	.0	******	373.0	******	2.241	31	*****	.76	2
BEAR MT TWR	584	9	82.8	26	*****	104.	30	64.	10	.0	******	463.5	******	2.330	28	*****	1.00	21
BENGAL	670	9	*****	0	*****	****	0	****	0	******	******	******	******	2.880	31	*****	.75	4
BOSWELL 4 NNW	980	9	83.0	30	*****	106.	29	60.	8	.0	******	541.0	******	.102	31	-2.58	.05	21
BROKEN BOW 1 N	1162	9	*****	0	*****	****	0	****	0	******	******	******	******	.231	31	-2.73	.09	24
BROKEN BOW DAM	1168	9	80.8	31	*****	103.	30	56.	7	.0	******	490.5	******	1.290	31	*****	.40	14
CARNASAW TWR	1499	9	*****	0	*****	****	0	****	0	******	******	******	******	2.010	31	-1.09	1.07	25
CARTER TWR	1544	9	*****	0	*****	****	0	****	0	******	******	******	******	1.840	31	-1.83	1.00	3
FANSHAWE	3065	9	*****	0	*****	****	0	****	0	******	******	******	******	4.430	31	1.36	2.17	3
FLAGPOLE TWR	3169	9	*****	0	*****	****	0	****	0	******	******	******	******	2.200	31	*****	1.10	25
HEAVENER 1 SE	4008	9	*****	0	*****	****	0	****	0	******	******	******	******	1.571	31	-1.78	.45	2
HEE MT TWR	4017	9	*****	0	*****	****	0	****	0	******	******	******	******	3.080	31	*****	.92	4
HUGO	4384	9	82.4	31	.2	104.	30	62.	9	.0	.0	540.5	7.5	.591	31	-2.85	.44	4
IDABEL	4451	9	81.2	31	-.1	102.	31	60.	8	.0	.0	501.5	-3.5	.590	31	-2.03	.40	4
POTEAU W W	7254	9	80.0	31	*****	102.	31	57.	9	.0	******	466.5	******	2.062	31	*****	.95	11
SMITHVILLE 1 W	8285	9	86.3	30	*****	99.	30	65.	2	.0	******	639.5	******	3.731	31	*****	1.55	14
SOBAL TOWER	8305	9	82.1	29	*****	101.	30	62.	8	.0	******	496.0	******	1.210	30	*****	.60	2
SPIRO	8416	9	*****	0	*****	****	0	****	0	******	******	******	******	3.410	31	.81	1.16	12
TUSKAHOMA	9023	9	80.3	31	*****	100.	30	58.	8	.0	******	475.0	******	7.280	31	*****	2.33	2
VALLIANT 3 W	9118	9	*****	0	*****	****	0	****	0	******	******	******	******	1.850	31	-.91	.70	4
WILBURTON 9 ENE	9634	9	80.6	31	-.3	104.	29	58.	8	.0	.0	483.5	-9.5	1.602	31	-1.73	.60	3

AUGUST 1990 CLIMATE DIVISION SUMMARY

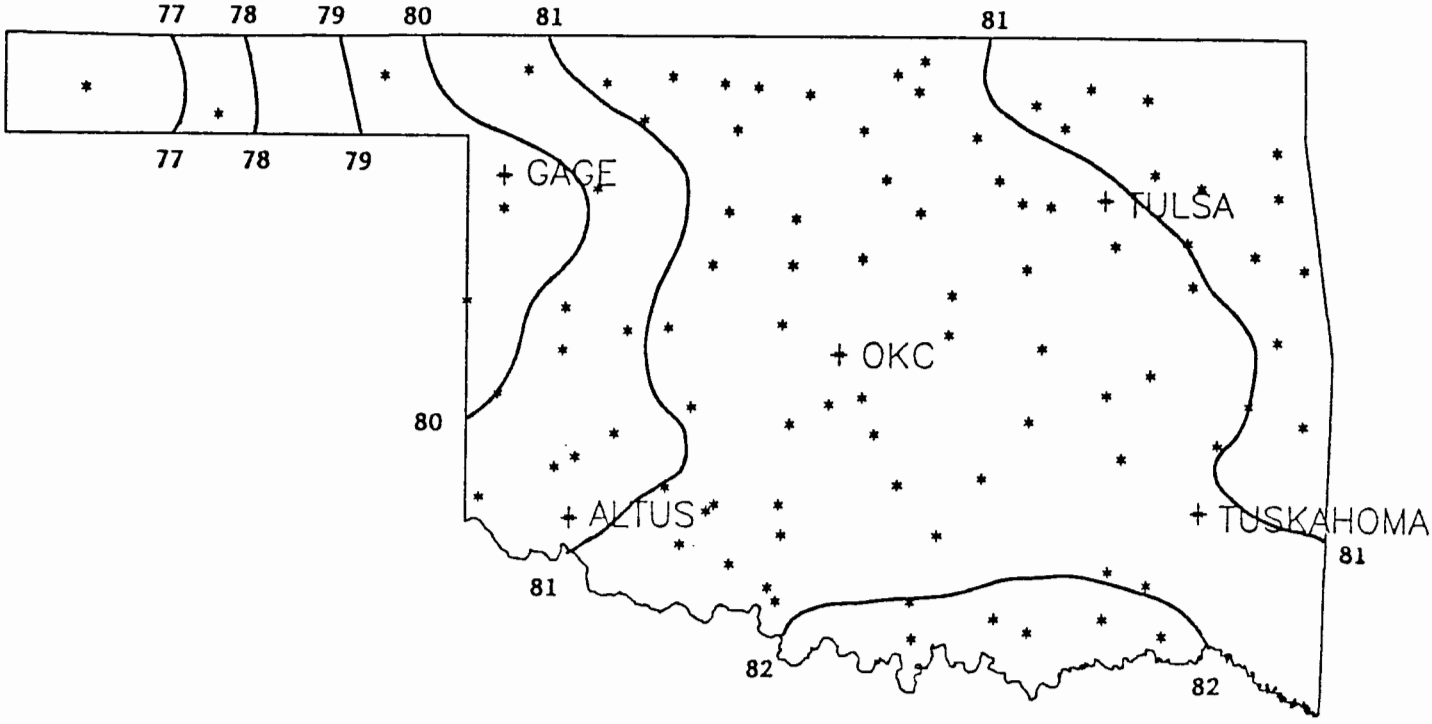
CLIMATE DIV	MEAN TEMP	NUM STA	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEGREE DAYS	DEV FROM NORM	COOL DEGREE DAYS	DEV FROM NORM	TOT PPT	NUM STA	DEV FROM NORM	MAX 24-HR	DAY
1	78.3	11	-.3	110.0	25	49.0	7	.7	.7	408.9	-12.0	1.04	15	-1.54	1.45	3
2	81.5	13	-.2	108.0	31	53.0	6	.0	.0	510.0	-5.9	2.05	21	-.88	2.60	4
3	80.6	19	.1	108.0	31	52.0	8	.2	.2	482.9	2.9	2.43	34	-.73	3.10	4
4	80.4	9	-1.1	106.0	30	55.0	6	.0	.0	478.7	-33.4	2.98	22	.62	3.51	3
5	81.5	15	-.1	107.0	31	56.0	6	.0	.0	509.9	-5.5	2.53	35	-.05	2.13	4
6	81.2	10	.1	103.0	30	55.0	6	.0	.0	499.1	.7	2.67	31	-.18	3.17	20
7	81.2	11	-1.7	105.0	31	58.0	6	.0	.0	498.7	-54.5	2.87	21	.64	4.85	19
8	81.8	13	-1.3	106.0	31	57.0	6	.0	.0	521.7	-39.0	1.90	30	-.67	2.05	4
9	81.4	10	.0	106.0	29	56.0	7	.0	.0	503.0	-4.5	2.22	20	-.91	2.33	2



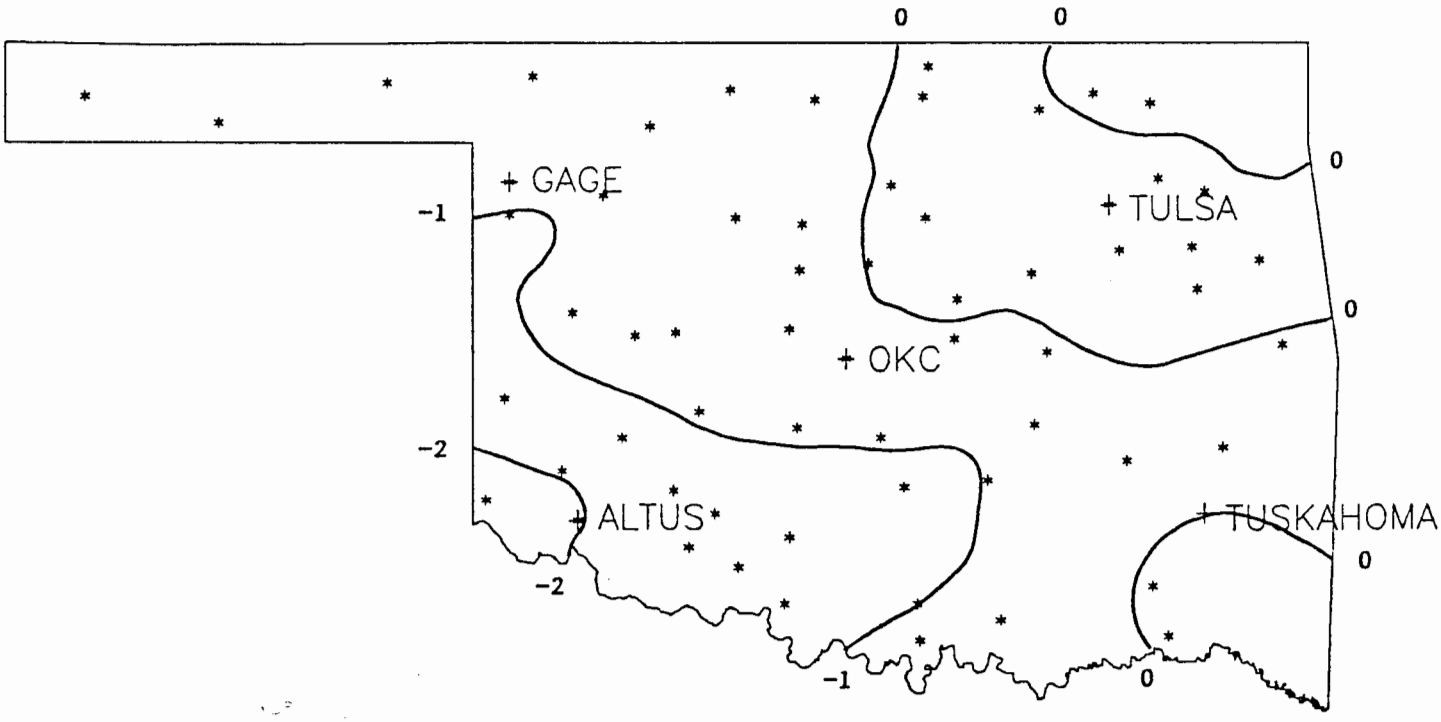
AUGUST 1990 TOTAL PRECIPITATION
(Inches)



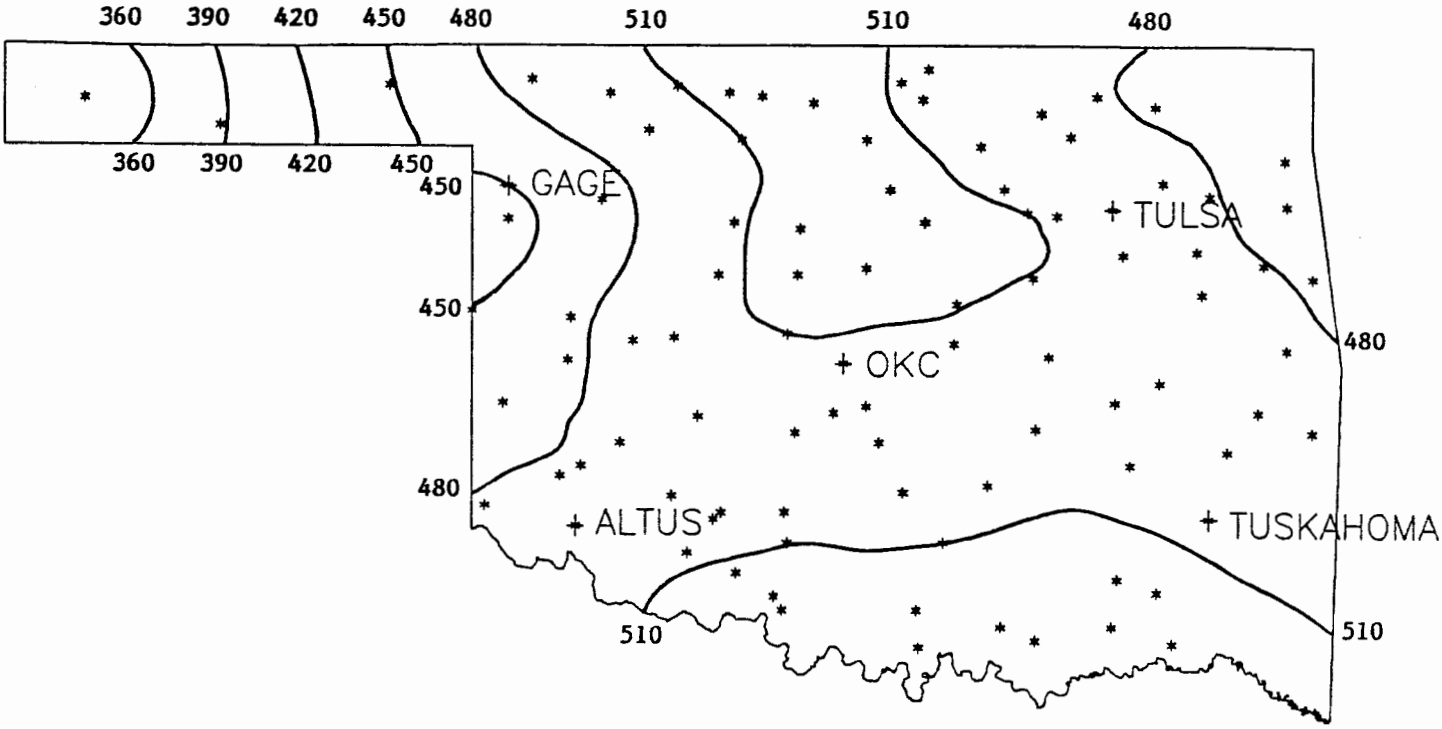
AUGUST 1990 DEVIATION FROM NORMAL PRECIPITATION
(Inches)



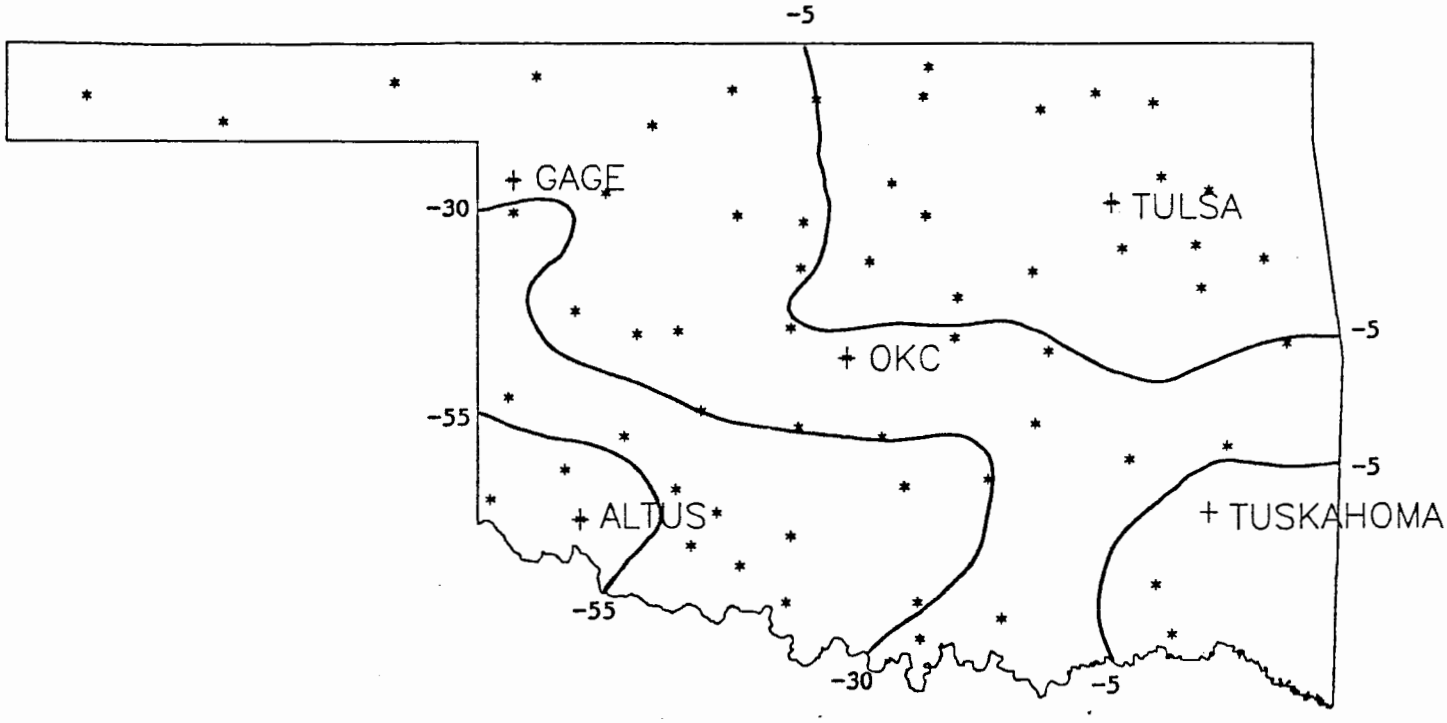
AUGUST 1990 AVERAGE MONTHLY TEMPERATURES
(Degrees F)



AUGUST 1990 DEVIATION FROM NORMAL TEMPERATURES
(Degrees F)

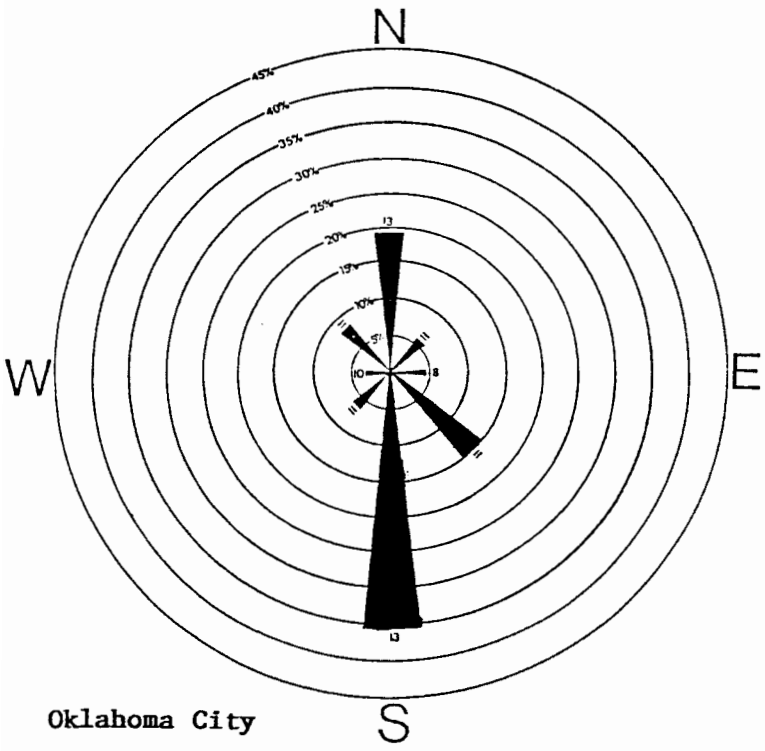


AUGUST 1990 COOLING DEGREE DAYS

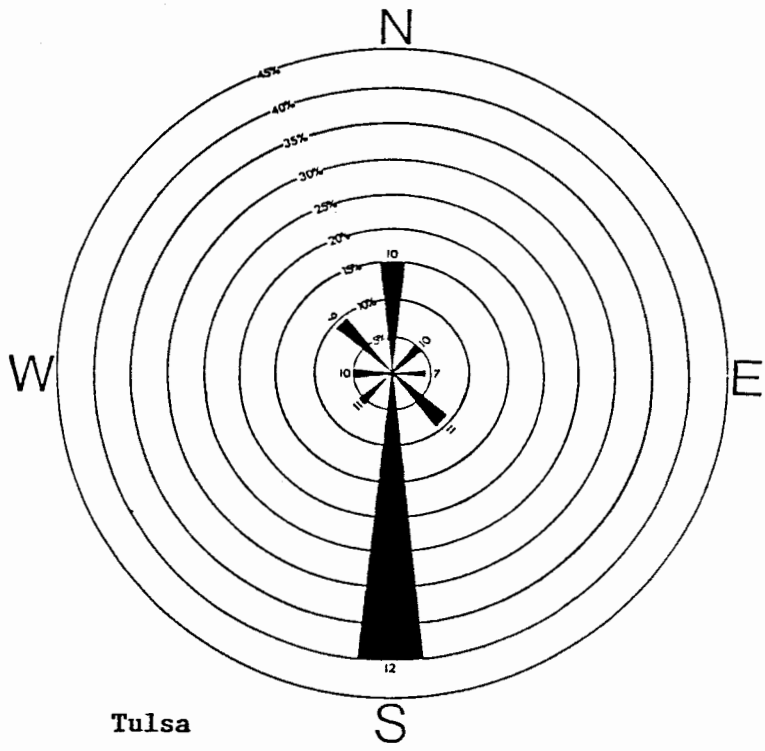


AUGUST 1990 DEVIATION FROM NORMAL COOLING DEGREE DAYS

October 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

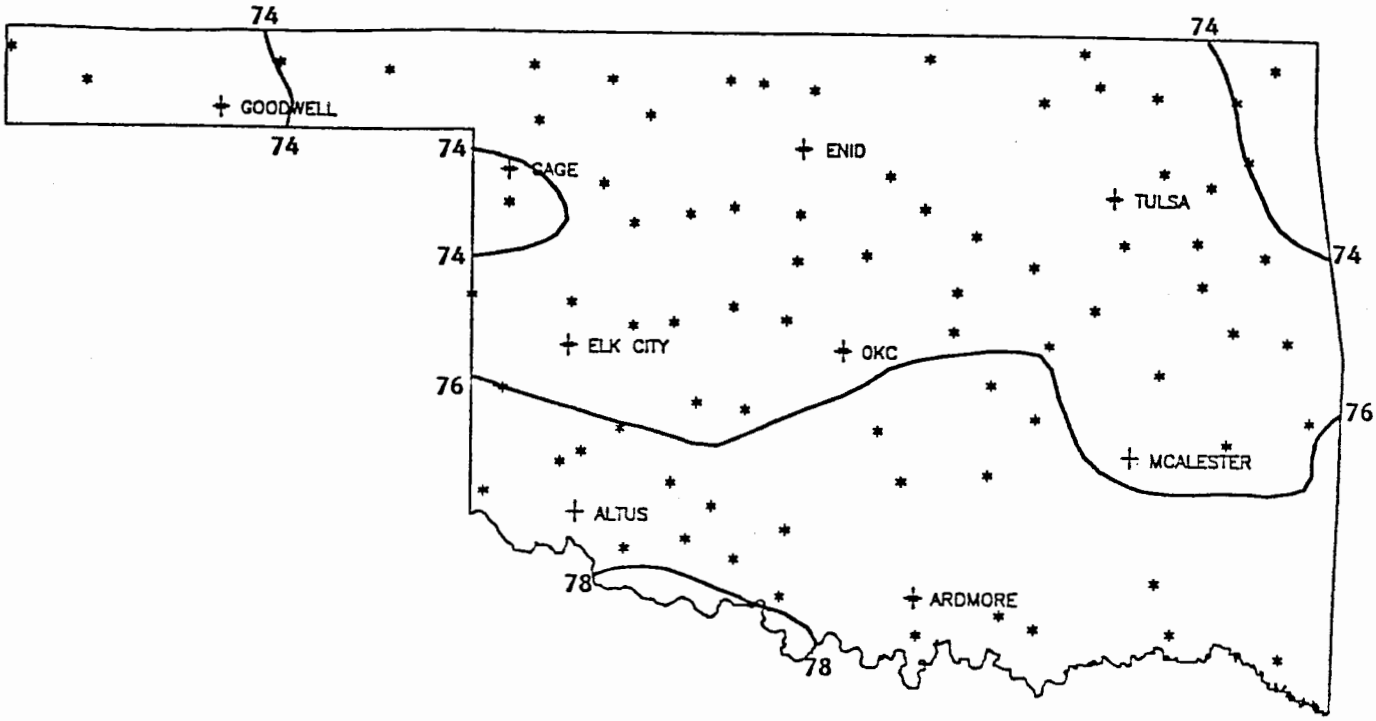
OCTOBER 1990 SUNRISE AND SUNSET

Oklahoma City

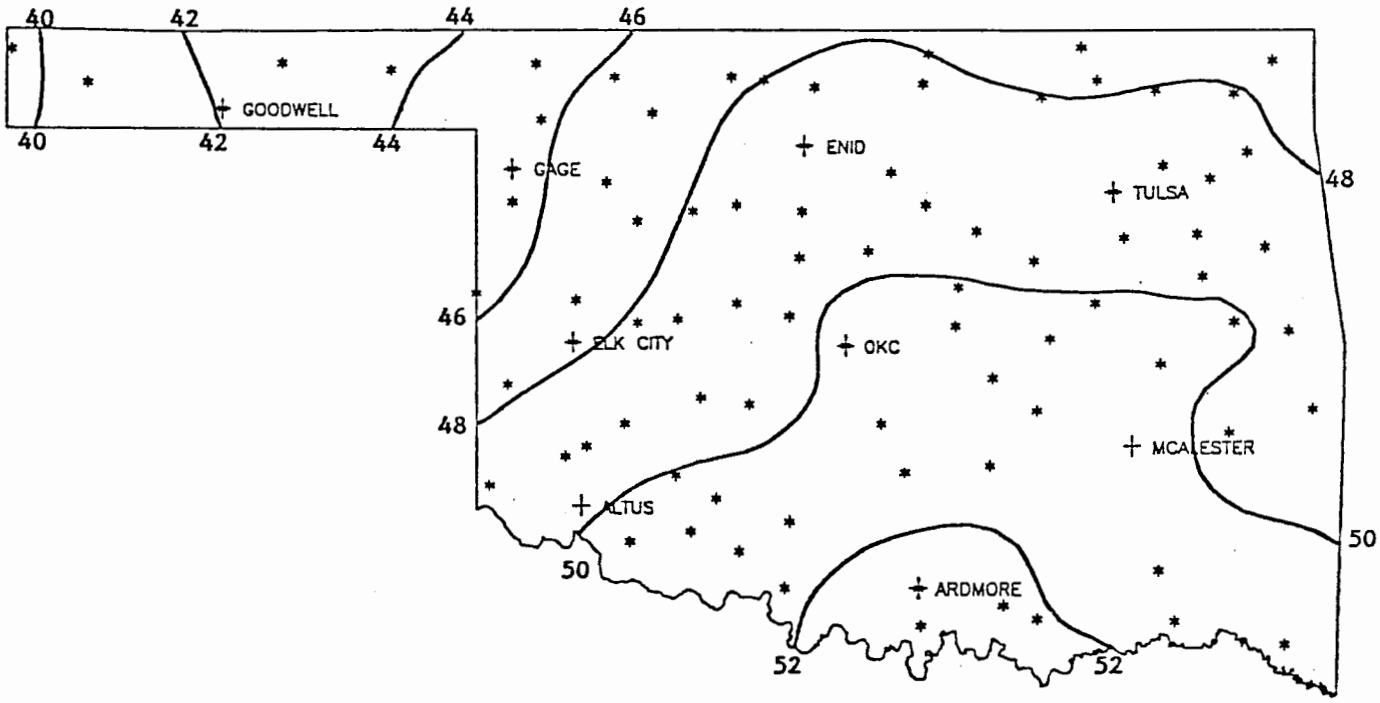
DATE	SUNRISE	SUNSET	DAYLIGHT
901001	7:24AM	7:16PM LT	11:52
901002	7:24AM	7:14PM LT	11:50
901003	7:25AM	7:13PM LT	11:48
901004	7:26AM	7:11PM LT	11:46
901005	7:27AM	7:10PM LT	11:43
901006	7:28AM	7: 9PM LT	11:41
901007	7:28AM	7: 7PM LT	11:39
901008	7:29AM	7: 6PM LT	11:37
901009	7:30AM	7: 5PM LT	11:35
901010	7:31AM	7: 3PM LT	11:32
901011	7:32AM	7: 2PM LT	11:30
901012	7:32AM	7: 1PM LT	11:28
901013	7:33AM	6:59PM LT	11:26
901014	7:34AM	6:58PM LT	11:24
901015	7:35AM	6:57PM LT	11:22
901016	7:36AM	6:55PM LT	11:19
901017	7:37AM	6:54PM LT	11:17
901018	7:38AM	6:53PM LT	11:15
901019	7:39AM	6:52PM LT	11:13
901020	7:39AM	6:50PM LT	11:11
901021	7:40AM	6:49PM LT	11: 9
901022	7:41AM	6:48PM LT	11: 7
901023	7:42AM	6:47PM LT	11: 5
901024	7:43AM	6:46PM LT	11: 3
901025	7:44AM	6:45PM LT	11: 1
901026	7:45AM	6:44PM LT	10:59
901027	7:46AM	6:43PM LT	10:57
901028	7:47AM	6:42PM LT	10:55
901029	7:48AM	6:40PM LT	10:53
901030	7:49AM	6:39PM LT	10:51
901031	7:50AM	6:38PM LT	10:49

Tulsa

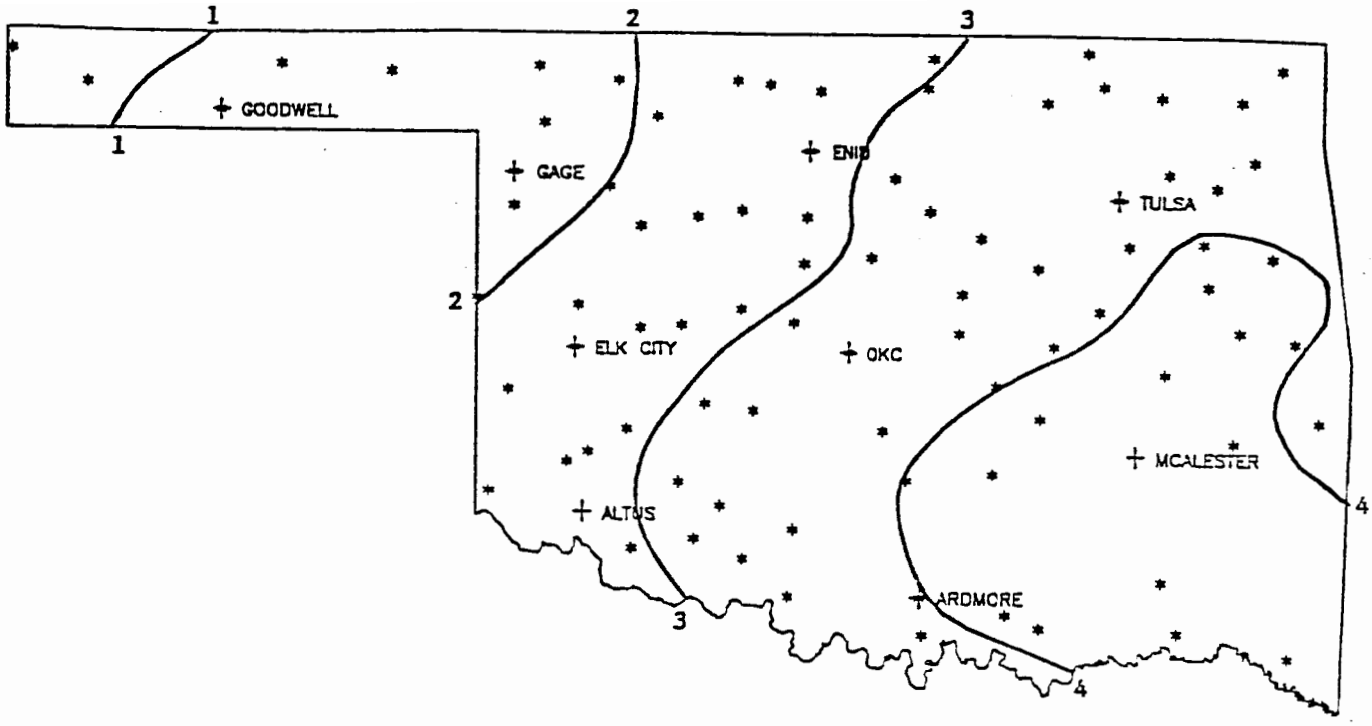
DATE	SUNRISE	SUNSET	DAYLIGHT
901001	7:17AM	7: 9PM LT	11:52
901002	7:18AM	7: 7PM LT	11:49
901003	7:19AM	7: 6PM LT	11:47
901004	7:19AM	7: 4PM LT	11:45
901005	7:20AM	7: 3PM LT	11:43
901006	7:21AM	7: 1PM LT	11:40
901007	7:22AM	7: 0PM LT	11:38
901008	7:23AM	6:59PM LT	11:36
901009	7:24AM	6:57PM LT	11:34
901010	7:24AM	6:56PM LT	11:31
901011	7:25AM	6:55PM LT	11:29
901012	7:26AM	6:53PM LT	11:27
901013	7:27AM	6:52PM LT	11:25
901014	7:28AM	6:51PM LT	11:23
901015	7:29AM	6:49PM LT	11:20
901016	7:30AM	6:48PM LT	11:18
901017	7:31AM	6:47PM LT	11:16
901018	7:32AM	6:45PM LT	11:14
901019	7:32AM	6:44PM LT	11:12
901020	7:33AM	6:43PM LT	11: 9
901021	7:34AM	6:42PM LT	11: 7
901022	7:35AM	6:40PM LT	11: 5
901023	7:36AM	6:39PM LT	11: 3
901024	7:37AM	6:38PM LT	11: 1
901025	7:38AM	6:37PM LT	10:59
901026	7:39AM	6:36PM LT	10:57
901027	7:40AM	6:35PM LT	10:55
901028	7:41AM	6:34PM LT	10:53
901029	7:42AM	6:33PM LT	10:51
901030	7:43AM	6:32PM LT	10:49
901031	7:44AM	6:31PM LT	10:47



30-YEAR MEAN OCTOBER DAILY MAXIMUM TEMPERATURE



30-YEAR MEAN OCTOBER DAILY MINIMUM TEMPERATURE



30-YEAR MEAN OCTOBER PRECIPITATION

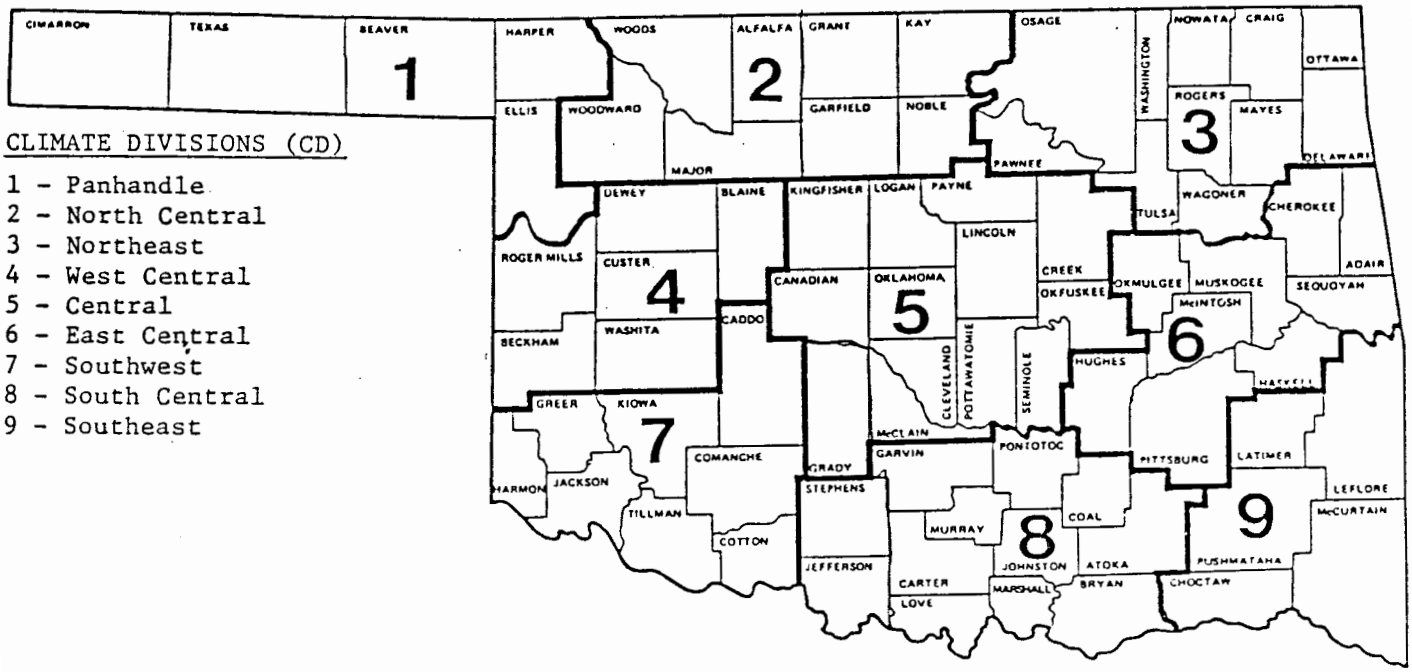
30- and 90-DAY NATIONAL WEATHER SERVICE OUTLOOK

30-DAY OUTLOOK (MID-SEPTEMBER TO MID-OCTOBER)

Precipitation - Above Normal in the South
Near Normal Elsewhere
Temperature - Near Normal Statewide

90-DAY OUTLOOK (SEPTEMBER-NOVEMBER)

Precipitation - Above Normal Statewide
Temperature - Near Normal Statewide



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.

OCTOBER 1990

CLIMATE CALENDAR - OKLAHOMA CITY

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
80.3	max	
54.6	min	
.084	pcpn	
2	HDD	
5	CDD	
Highest Max		97-1938
Lowest Max		61-1958
Lowest Min		38-1958
Highest Min		71-1926
Greatest pcpn		2.28-1959

Normal 2		Actual
80.7	max	
55.5	min	
.279	pcpn	
2	HDD	
5	CDD	
Highest Max		96-1938
Lowest Max		61-1958
Lowest Min		41-1975
Highest Min		72-1954
Greatest pcpn		4.52-1955

Normal 3		Actual
79.4	max	
56.1	min	
.177	pcpn	
2	HDD	
5	CDD	
Highest Max		96-1951
Lowest Max		56-1959
Lowest Min		40-1975
Highest Min		73-1954
Greatest pcpn		1.59-1955

Normal 4		Actual
77.9	max	
56.1	min	
.110	pcpn	
2	HDD	
4	CDD	
Highest Max		96-1931
Lowest Max		58-1959
Lowest Min		43-1975
Highest Min		71-1940
Greatest pcpn		2.22-1955

Normal 5		Actual
78.0	max	
55.3	min	
.093	pcpn	
2	HDD	
4	CDD	
Highest Max		95-1947
Lowest Max		53-1988
Lowest Min		38-1932
Highest Min		73-1981
Greatest pcpn		1.74-1970

Normal 6		Actual
74.8	max	
53.7	min	
.050	pcpn	
3	HDD	
3	CDD	
Highest Max		94-1931
Lowest Max		58-1952
Lowest Min		40-1976
Highest Min		72-1931
Greatest pcpn		1.38-1989

Normal 7		Actual
76.2	max	
52.2	min	
.066	pcpn	
3	HDD	
3	CDD	
Highest Max		94-1979
Lowest Max		50-1976
Lowest Min		32-1952
Highest Min		73-1939
Greatest pcpn		1.41-1967

Normal 8		Actual
76.9	max	
53.8	min	
.050	pcpn	
3	HDD	
4	CDD	
Highest Max		94-1979
Lowest Max		50-1970
Lowest Min		35-1976
Highest Min		70-1928
Greatest pcpn		.88-1970

Normal 9		Actual
77.8	max	
53.3	min	
.085	pcpn	
3	HDD	
4	CDD	
Highest Max		96-1965
Lowest Max		56-1970
Lowest Min		38-1970
Highest Min		70-1973
Greatest pcpn		2.09-1961

Normal 10		Actual
77.1	max	
52.8	min	
.040	pcpn	
3	HDD	
3	CDD	
Highest Max		95-1965
Lowest Max		49-1985
Lowest Min		35-1979
Highest Min		71-1973
Greatest pcpn		.94-1985

Normal 11		Actual
76.5	max	
51.7	min	
.114	pcpn	
4	HDD	
3	CDD	
Highest Max		94-1979
Lowest Max		51-1987
Lowest Min		36-1932
Highest Min		69-1972
Greatest pcpn		1.72-1930

Normal 12		Actual
76.8	max	
53.8	min	
.050	pcpn	
4	HDD	
4	CDD	
Highest Max		94-1978
Lowest Max		47-1986
Lowest Min		34-1987
Highest Min		70-1928
Greatest pcpn		1.02-1981

Normal 13		Actual
77.4	max	
54.0	min	
.067	pcpn	
3	HDD	
4	CDD	
Highest Max		90-1963
Lowest Max		52-1969
Lowest Min		37-1986
Highest Min		71-1966
Greatest pcpn		1.08-1957

Normal 14		Actual
75.8	max	
52.6	min	
.089	pcpn	
3	HDD	
3	CDD	
Highest Max		90-1938
Lowest Max		55-1937
Lowest Min		32-1969
Highest Min		68-1928
Greatest pcpn		2.45-1956

Normal 15		Actual
73.7	max	
51.9	min	
.093	pcpn	
4	HDD	
2	CDD	
Highest Max		92-1962
Lowest Max		55-1970
Lowest Min		38-1974
Highest Min		68-1928
Greatest pcpn		1.80-1953

Normal 16		Actual
74.3	max	
49.7	min	
.068	pcpn	
4	HDD	
2	CDD	
Highest Max		89-1972
Lowest Max		57-1969
Lowest Min		31-1977
Highest Min		67-1934
Greatest pcpn		1.25-1981

Normal 17		Actual
73.2	max	
49.6	min	
.072	pcpn	
5	HDD	
2	CDD	
Highest Max		96-1972
Lowest Max		53-1970
Lowest Min		33-1976
Highest Min		68-1934
Greatest pcpn		1.43-1942

Normal 18		Actual
73.0	max	
49.6	min	
.165	pcpn	
5	HDD	
1	CDD	
Highest Max		91-1932
Lowest Max		50-1989
Lowest Min		34-1948
Highest Min		67-1934
Greatest pcpn		2.34-1960

Normal 19		Actual
72.2	max	
48.0	min	
.153	pcpn	
6	HDD	
1	CDD	
Highest Max		90-1927
Lowest Max		50-1989
Lowest Min		29-1989
Highest Min		69-1941
Greatest pcpn		4.98-1983

Normal 20		Actual
72.4	max	
48.7	min	
.226	pcpn	
6	HDD	
1	CDD	
Highest Max		93-1979
Lowest Max		49-1972
Lowest Min		26-1976
Highest Min		72-1979
Greatest pcpn		5.45-1983

Normal 21		Actual
71.9	max	
49.0	min	
.163	pcpn	
5	HDD	
1	CDD	
Highest Max		90-1978
Lowest Max		46-1930
Lowest Min		32-1982
Highest Min		66-1941
Greatest pcpn		3.70-1972

Normal 22		Actual
71.1	max	
49.3	min	
.136	pcpn	
5	HDD	
1	CDD	
Highest Max		85-1927
Lowest Max		42-1936
Lowest Min		39-1928
Highest Min		65-1941
Greatest pcpn		2.16-1953

Normal 23		Actual
69.3	max	
48.7	min	
.067	pcpn	
6	HDD	
1	CDD	
Highest Max		89-1927
Lowest Max		48-1936
Lowest Min		36-1966
Highest Min		67-1934
Greatest pcpn		1.30-1949

Normal 24		Actual
68.6	max	
46.0	min	
.059	pcpn	
8	HDD	
0	CDD	
Highest Max		89-1927
Lowest Max		48-1949
Lowest Min		33-1980
Highest Min		68-1939
Greatest pcpn		.72-1974

Normal 25		Actual
68.2	max	
45.8	min	
.066	pcpn	
8	HDD	
0	CDD	
Highest Max		86-1927
Lowest Max		43-1957
Lowest Min		29-1957
Highest Min		68-1939
Greatest pcpn		1.40-1932

Normal 26		Actual
70.1	max	
46.0	min	
.044	pcpn	
7	HDD	
1	CDD	
Highest Max		88-1977
Lowest Max		42-1936
Lowest Min		26-1957
Highest Min		71-1939
Greatest pcpn		.66-1973

Normal 27		Actual
68.8	max	
45.8	min	
.094	pcpn	
8	HDD	
1	CDD	
Highest Max		84-1950
Lowest Max		46-1936
Lowest Min		22-1957
Highest Min		66-1940
Greatest pcpn		3.19-1984

Normal 28		Actual
67.7	max	
45.4	min	
.073	pcpn	
9	HDD	
0	CDD	
Highest Max		87-1950
Lowest Max		47-1980
Lowest Min		31-1957
Highest Min		65-1961
Greatest pcpn		.99-1974

Normal 29		Actual
69.5	max	
46.4	min	
.053	pcpn	
7	HDD	
1	CDD	
Highest Max		88-1950
Lowest Max		45-1928
Lowest Min		28-1980
Highest Min		67-1961
Greatest pcpn		1.61-1941

Normal 30		Actual
69.6	max	
46.4	min	
.206	pcpn	
7	HDD	
1	CDD	
Highest Max		86-1968
Lowest Max		47-1967
Lowest Min		28-1980
Highest Min		66-1977
Greatest pcpn		2.84-1974

Normal 31		Actual
67.8	max	
46.9	min	
.130	pcpn	
8	HDD	
1	CDD	
Highest Max		84-1950
Lowest Max		40-1941
Lowest Min		30-1949
Highest Min		64-1950
Greatest pcpn		.86-1987

OCTOBER AVERAGES

Temperature	:	62.2°F
Precipitation	:	3.22"
Heating Degree Days:		147
Cooling Degree Days:		71