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A PRELIMINARY LOOK AT AVE-SESAME I CONDUCTED ON APRIL 10-11, 1979

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A PRELIMINARY LOOK AT AVE-SESAME I CONDUCTED ON APRIL 10-11, 1979

1. OBJECTIVES AND SCOPE

The objective of the AVE-SESAME I experiment was to gather rawinsonde sounding data at 3-hr intervals for the purpose of investigating atmospheric variability, especially the interaction of severe storms with their environment. Mesosynoptic conditions associated with tornadoes, severe thunderstorms, damaging winds, hail, turbulence, low visibility, and flooding can be studied both spatially and temporally to better understand the formation, development, and maintenance of severe local weather and the interrelationships between convective activity and its environment.

This quick-look report contains information on the general weather conditions during the AVE-SESAME I period, and a summary of severe weather reports assembled from the NOAA weather wire and the national weather summaries. The purpose of this report is to provide to researchers a preliminary look at conditions during the AVE-SESAME I period. Additional information has been presented by Alberty, et al., (1979).

2. DATA COLLECTED

a. Rawinsonde soundings

Rawinsonde soundings were collected at 23 National Weather Service stations and at 19 special stations. A list of these stations is given in Table 1, and their locations are shown in Fig. 1. The dates and times of scheduled soundings were as follows:

Date	Time (GMT)
10 April 1979	12, 15, 18, 21
11 April 1979	00, 03, 06, 09, 12

Table 1. Rawinsonde stations participating in AVE-SESAME I experiment.

Station Number	Location
NWS Stations	
229 (CKL)	Centerville, Al.
232 (BVE)	Boothville, La.
235 (JAN)	Jackson, Ms.
240 (LCH)	Lake Charles, La.
247 (GGG)	Longview, Tx.
255 (VCT)	Victoria, Tx.
259 (SEP)	Stephenville, Tx.
261 (DRT)	Del Rio, Tx.
265 (MAF)	Midland, Tx.
270 (ELP)	El Paso, Tx.
327 (BNA)	Nashville, Tn.
340 (LIT)	Little Rock, Ar.
349 (UMN)	Monett, Mo.
354 (OCK)	Oklahoma City, Ok.
363 (AMA)	Amarillo, Tx.
365 (ABQ)	Albuquerque, Nm.
433 (SLO)	Salem, Il.
451 (DDC)	Dodge City, Ks.
456 (TOP)	Topeka, Ks.
469 (DEN)	Denver, Co.
532 (PIA)	Peoria, Il.
553 (OMA)	Omaha, Ne.
562 (LBF)	North Platte, Ne.
Special Stations	
001 (ABI)	Abilene, Tx.
002 (BVO)	Bartlesville, Ok.
003 (COU)	Columbia, Mo.
004 (CDS)	Childress, Tx.
005 (CLL)	College Station, Tx.
006 (CNK)	Concordia, Ks.
007 (DUA)	Durant, Ok.
008 (FSM)	Fort Smith, Ar.
009 (GAG)	Gage, Ok.
010 (GLD)	Goodland, Ks.
011 (ICT)	Wichita, Ks.
012 (JCT)	Junction, Tx.
013 (MLU)	Monroe, La.
014 (MRF)	Marfa, Tx.
015 (MTX)	Morton, Tx.
016 (OTM)	Ottumwa, Ia.
017 (POF)	Poplar Bluff, Mo.
018 (RTN)	Raton, Nm.
019 (UOX)	Oxford, Ms.

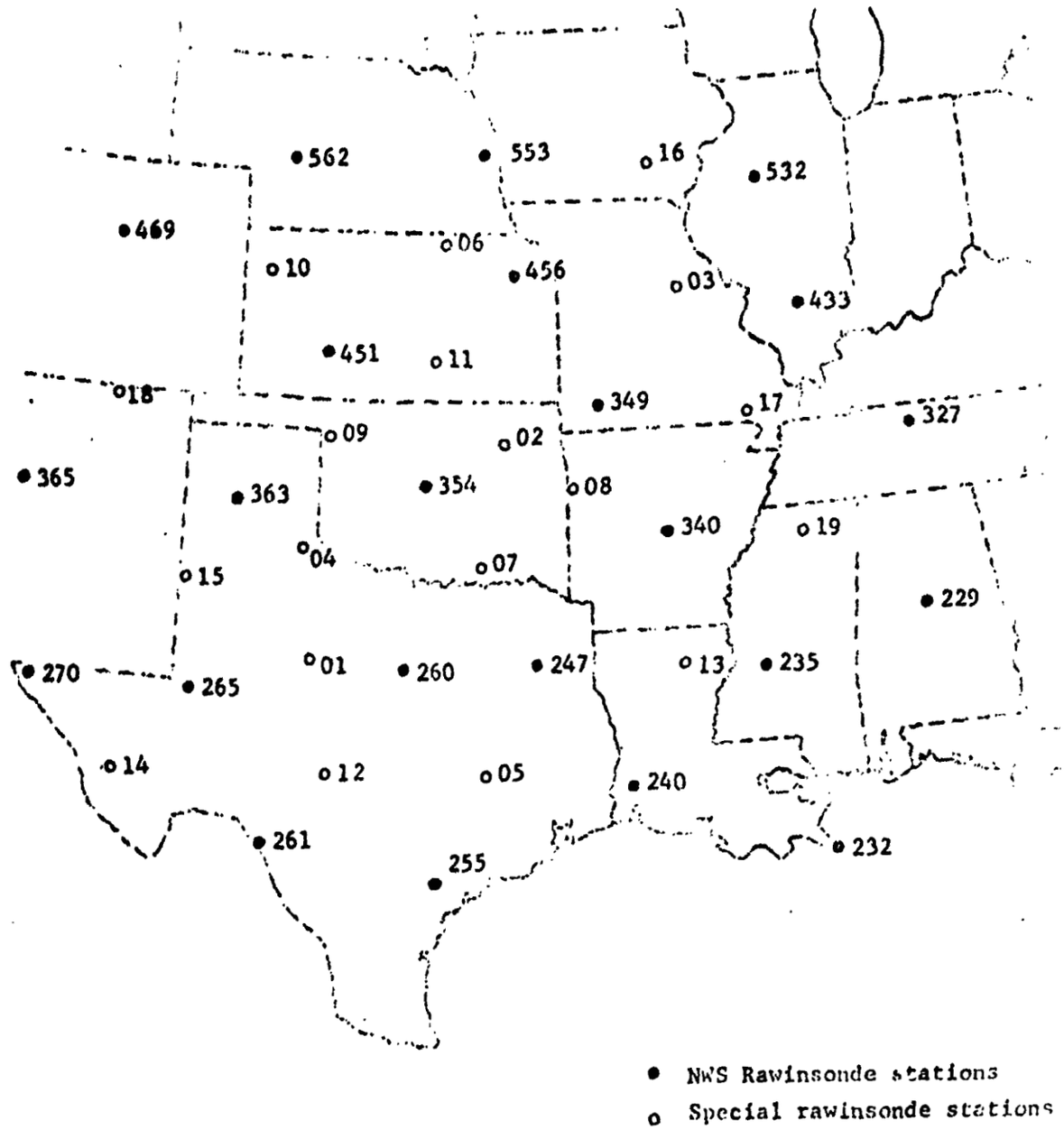


Fig. 1 Location of rawinsonde stations participating in the AVE-SESAME I experiment.

A complete listing of sounding data interpolated to 25-mb intervals is given by Gerhard et al., (1979).

b. Surface and Upper Air

Surface and sounding data transmitted over facsimile and teletype are archived routinely at Texas A&M University. These charts and data also are available from the National Climatic Center in Asheville, North Carolina.

3. SYNOPTIC CONDITIONS

a. Synoptic Charts

Surface and upper air charts during the AVE-SESAME I period are presented in Figs. 2-6. Surface charts are presented at 6-hr intervals and upper air charts at 12-hr intervals. These charts show the general conditions during the experiment and should not be used for other purposes.

At 1200 GMT on 10 April 1979, a rapidly deepening low was centered over eastern Colorado with a cold front extending southward into west Texas. At the same time, a weak warm front extending from Texas through the southeastern United States pushed northward, transporting warm moist air from the Gulf of Mexico to the vicinity of the advancing cold front. As the day progressed, the warm and cold front occluded in Texas and moved northeastward. Conditions were favorable for convective activity by 0000 GMT on 11 April 1979 with the low-level advection of moisture from the Gulf, lift of this moist air by the cold front, and an increase in convective instability. A deep trough of low pressure extending through New Mexico at 500 mb was responsible for generating a series of short-wave impulses through Texas and Oklahoma. The development of two pre-frontal squall lines to the east of the advancing cold front, the existence of a dry line in West Texas, and

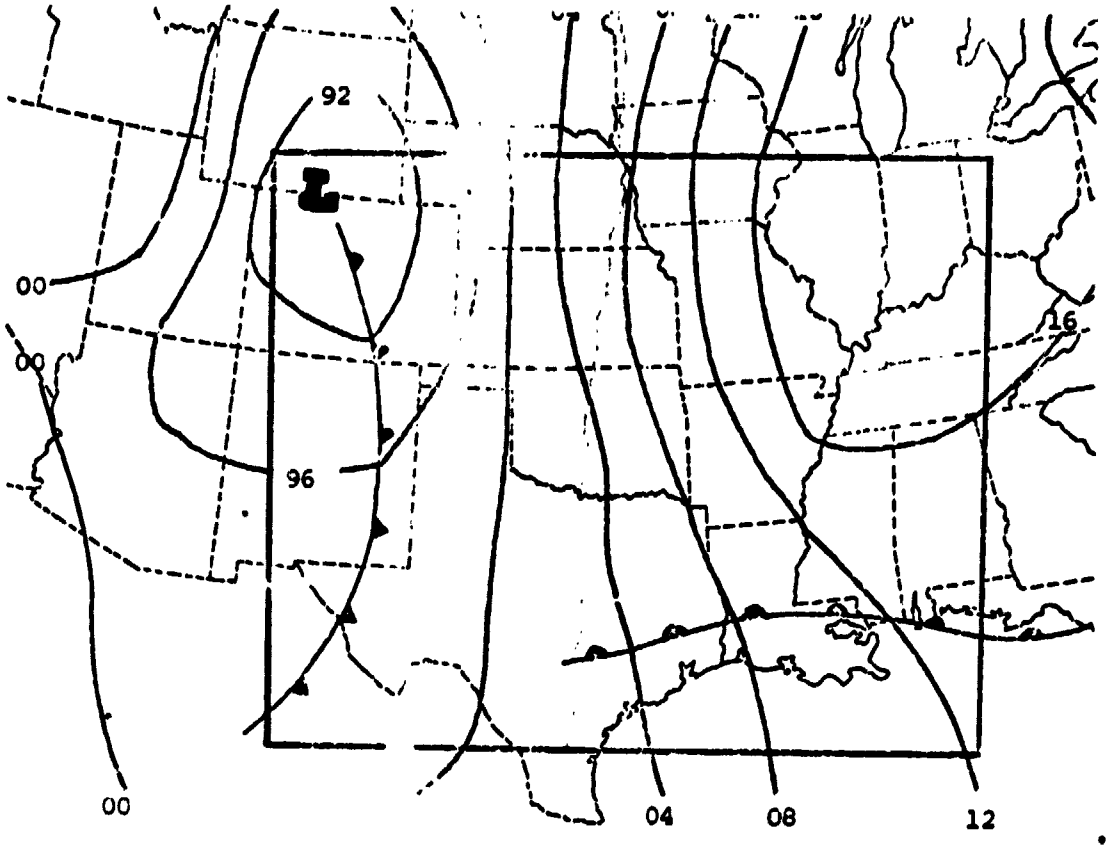
the presence of a 50-knot low-level jet all coupled to trigger the outbreak of severe weather in north central Texas and southern Oklahoma. By 1200 GMT on 11 April 1979, as the warm front advanced northward into the polar air mass, snow developed over portions of northwest Kansas and Nebraska.

b. Radar

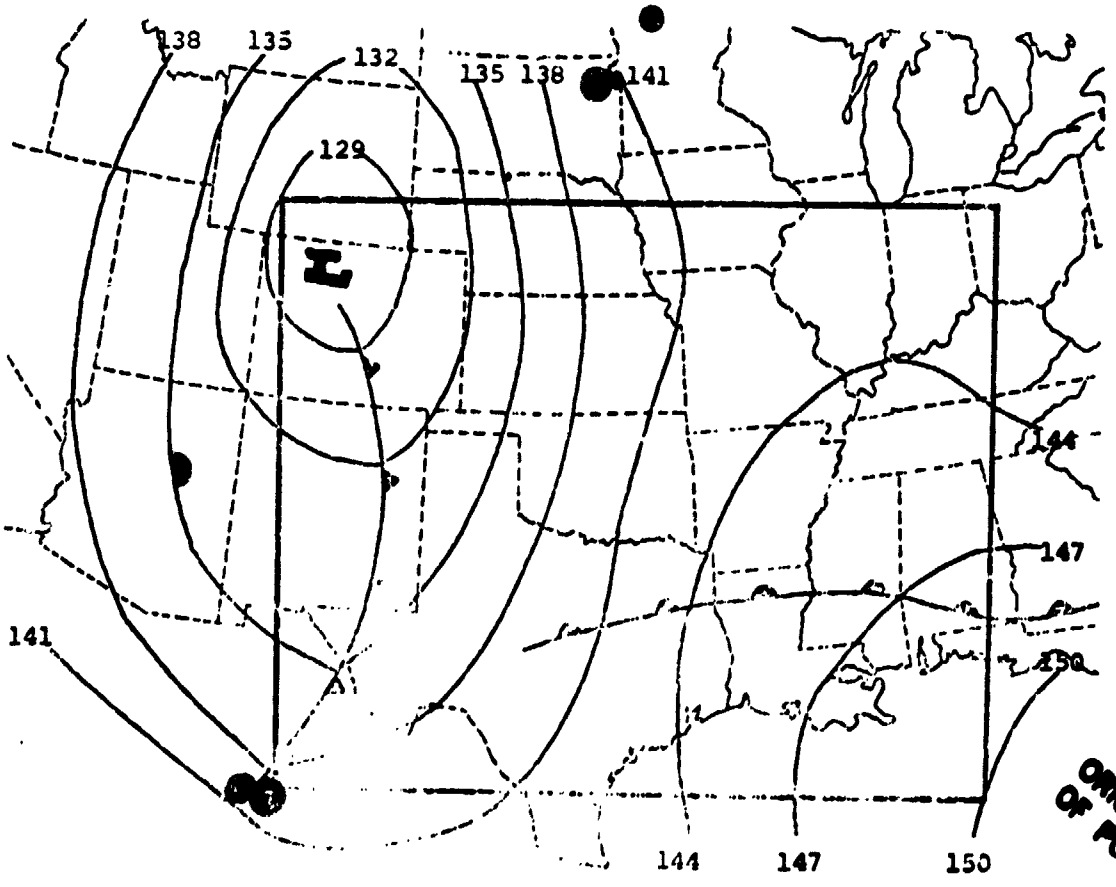
Selected radar summary charts are presented in Figs. 2-14. These charts show areas of principal convective activity, heights of echoes, movement vectors, severe weather watch boxes, etc.

c. Satellite

Satellite photographs were taken at 15-min intervals during the AVE-SESAME I period. These photographs consisted of both infrared and visual. Selected satellite photographs for each hour during the period are presented in Figs. 20-44.

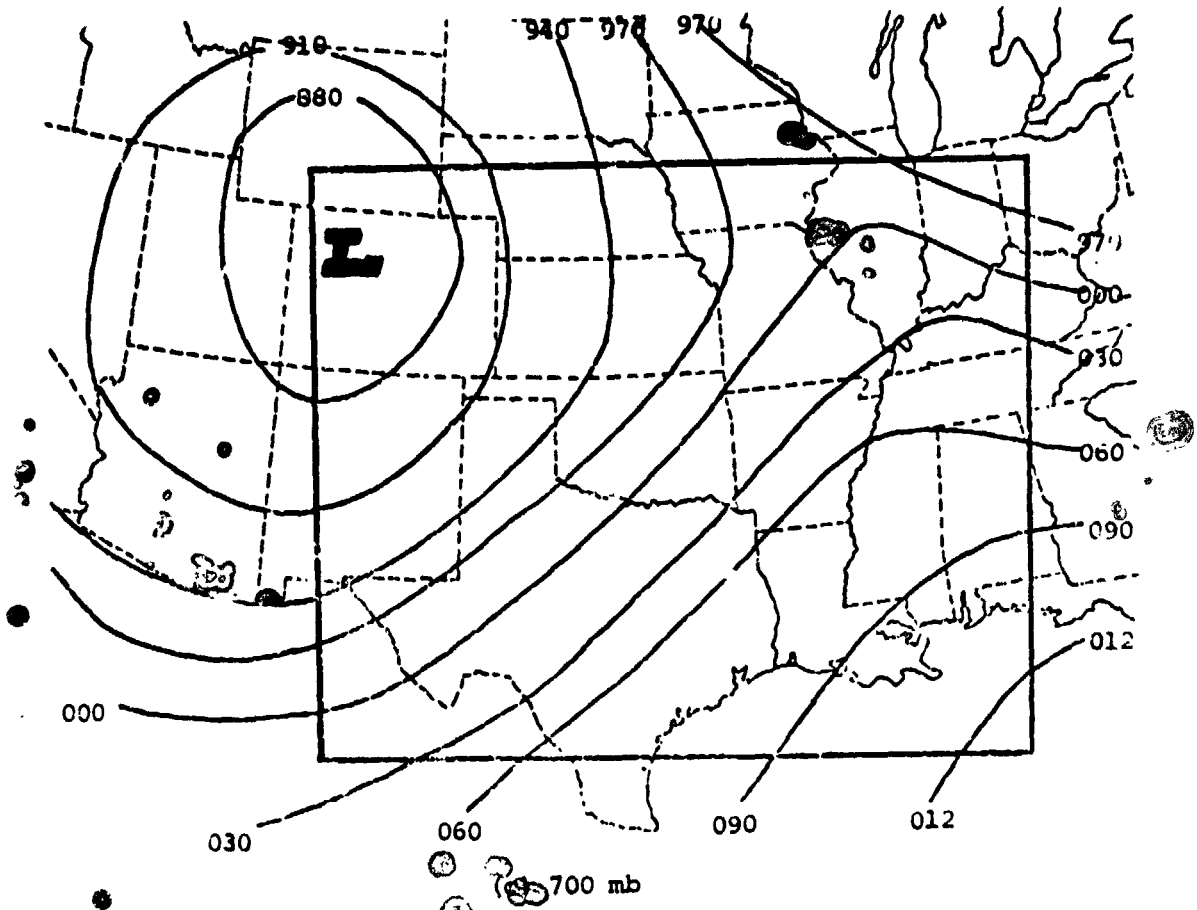


(a) Surface



(b) 850 mb

Fig. 2. Synoptic charts for 1200 GMT, 10 April 1979.



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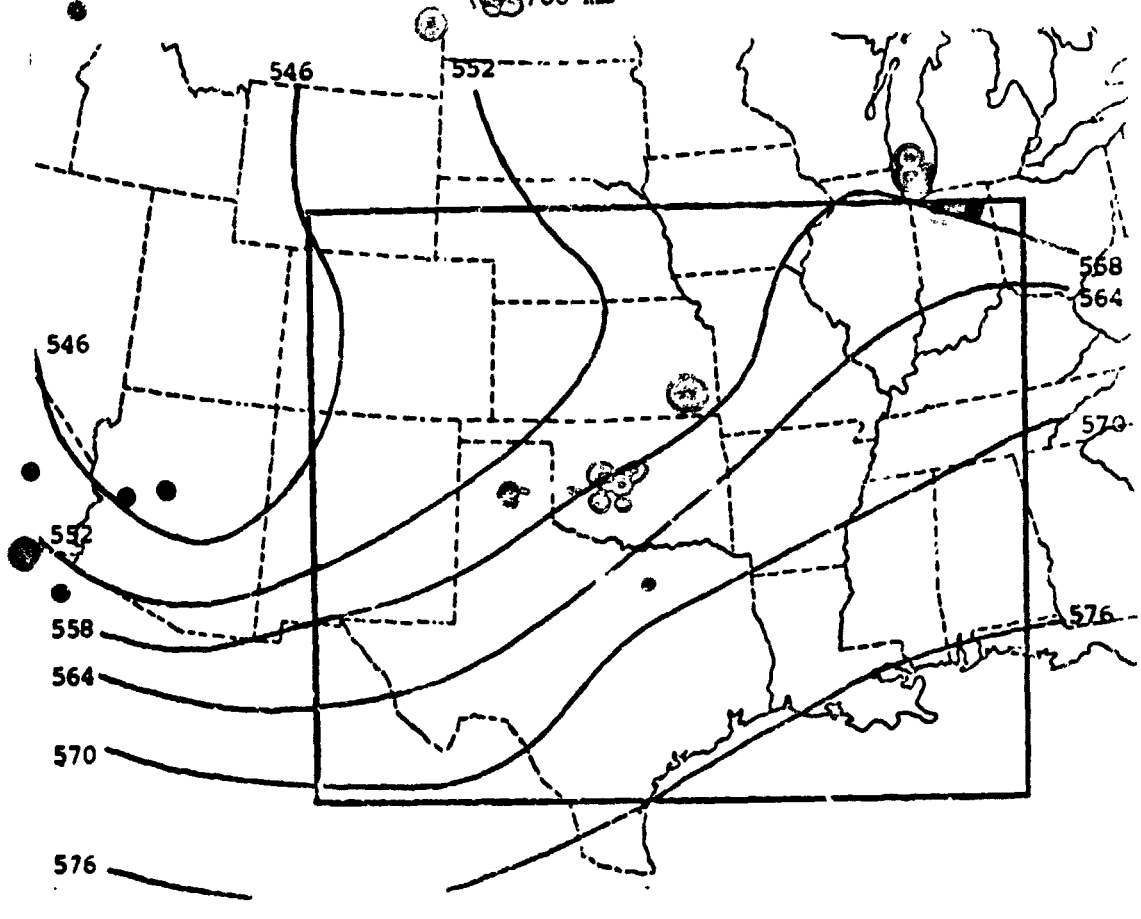
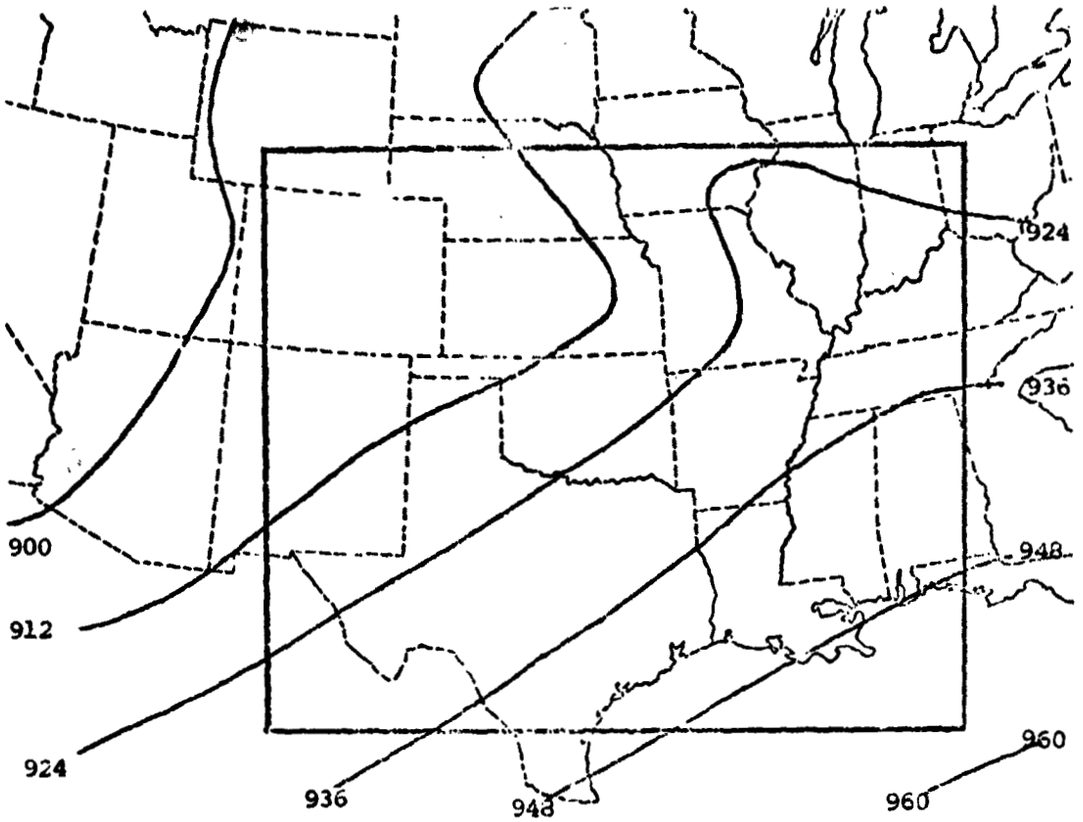


(d) 500 mb

Fig. 2. Continued.



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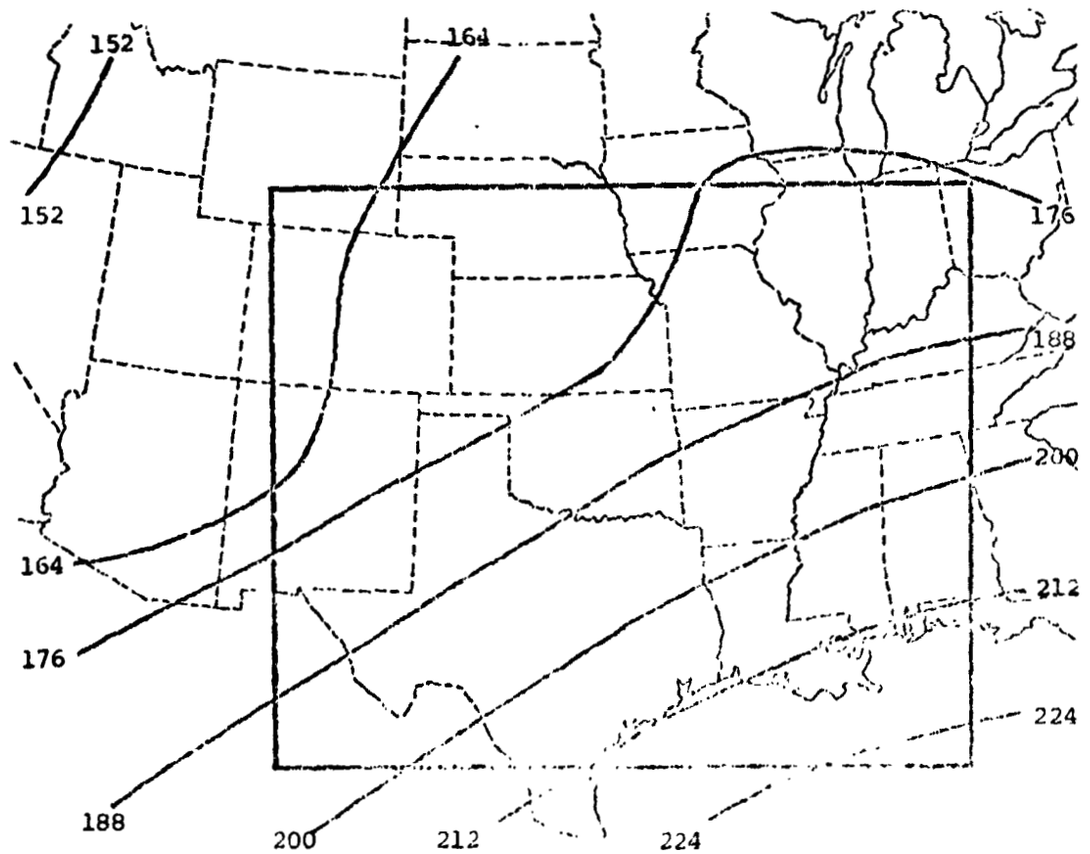

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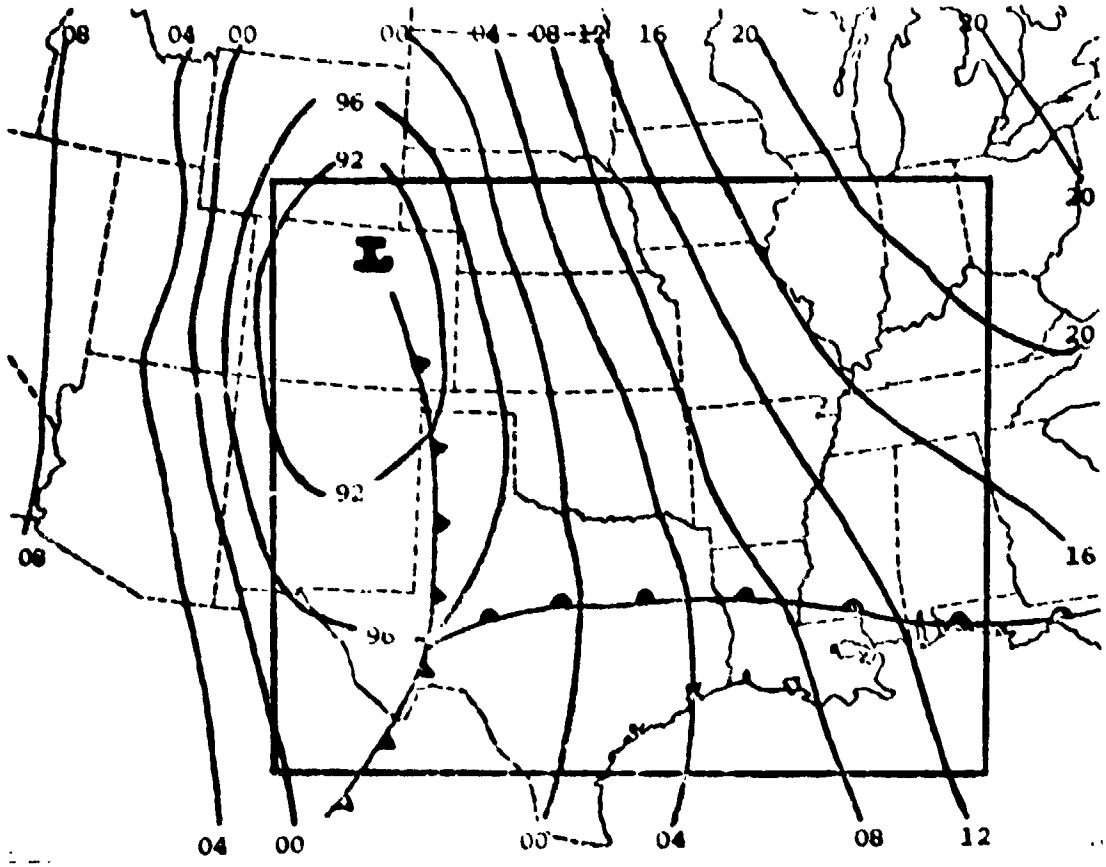
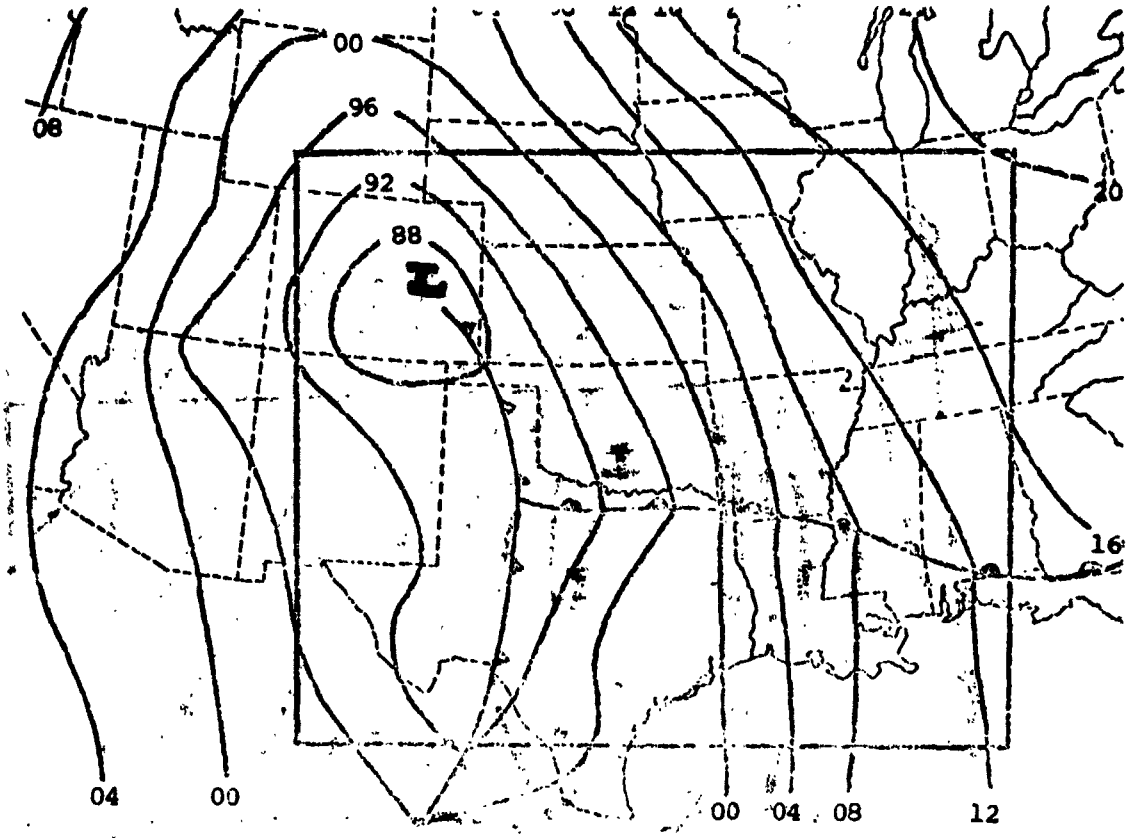
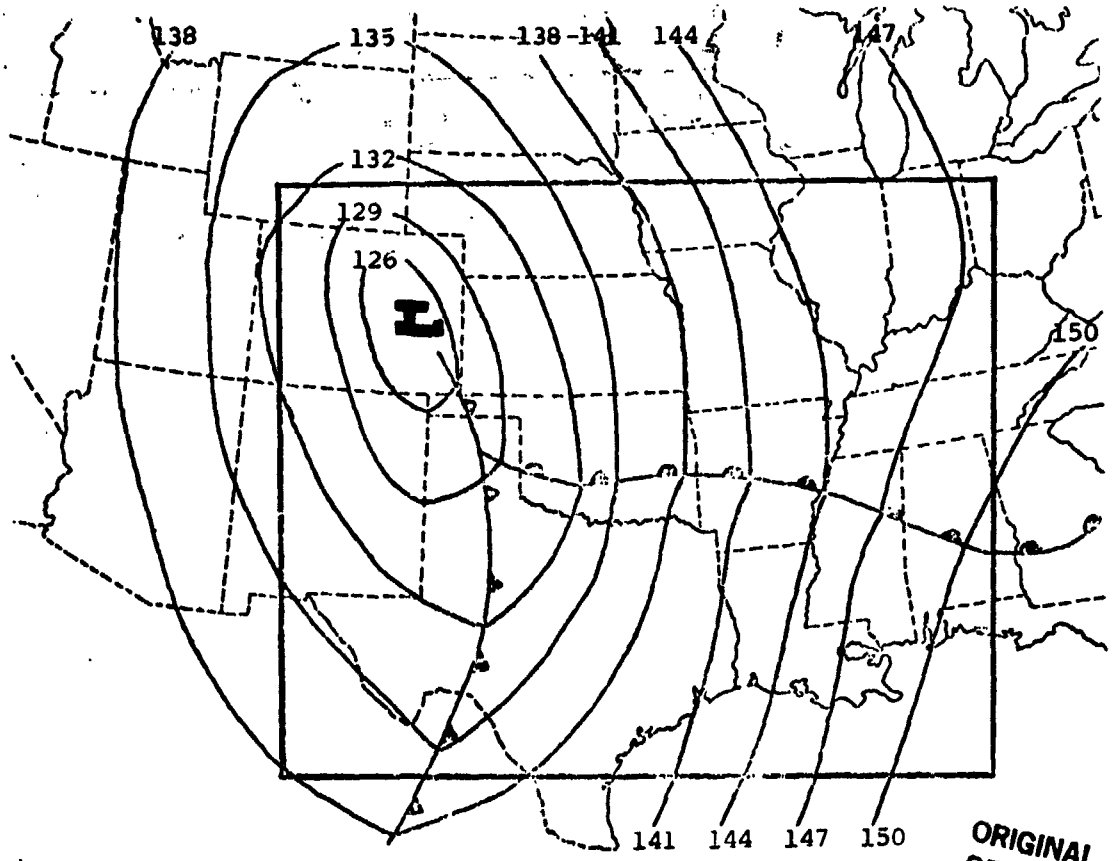


Fig. 3. Surface chart for 1800 GMT, 10 April 1979.

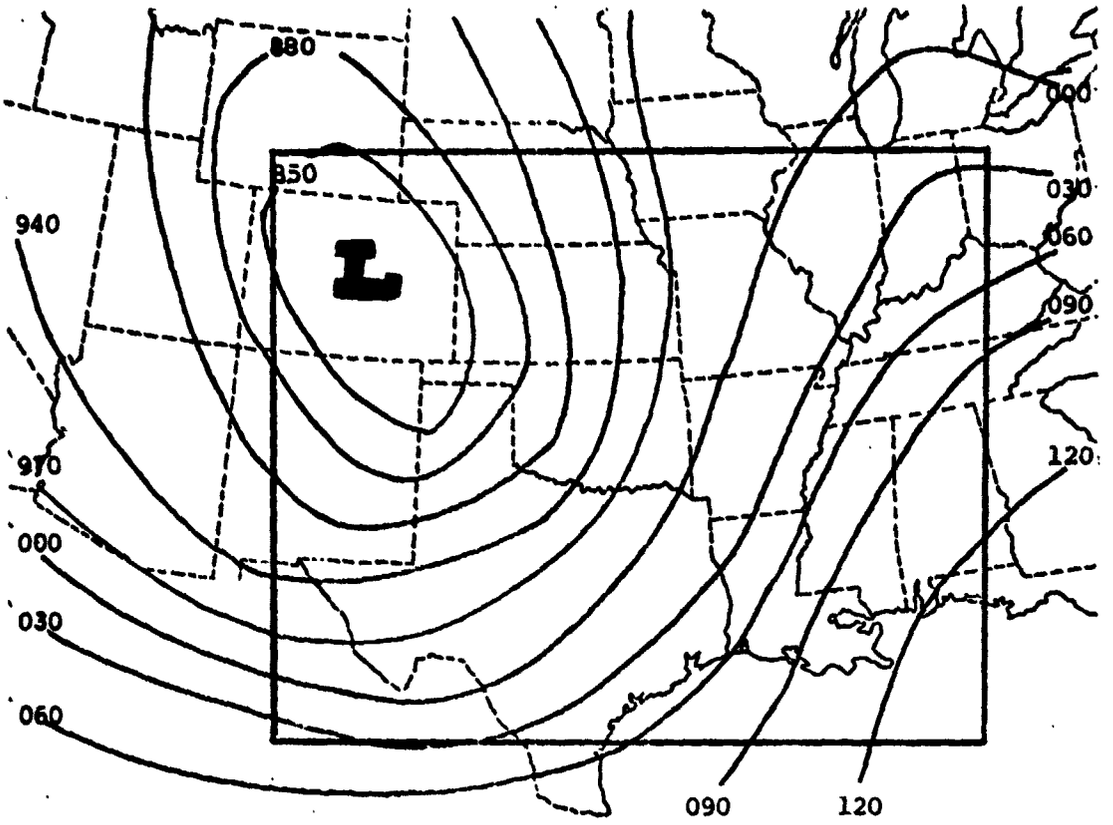


(a) Surface



(b) 850 mb

Fig. 4. Synoptic charts for 0000 GMT, 11 April 1979.



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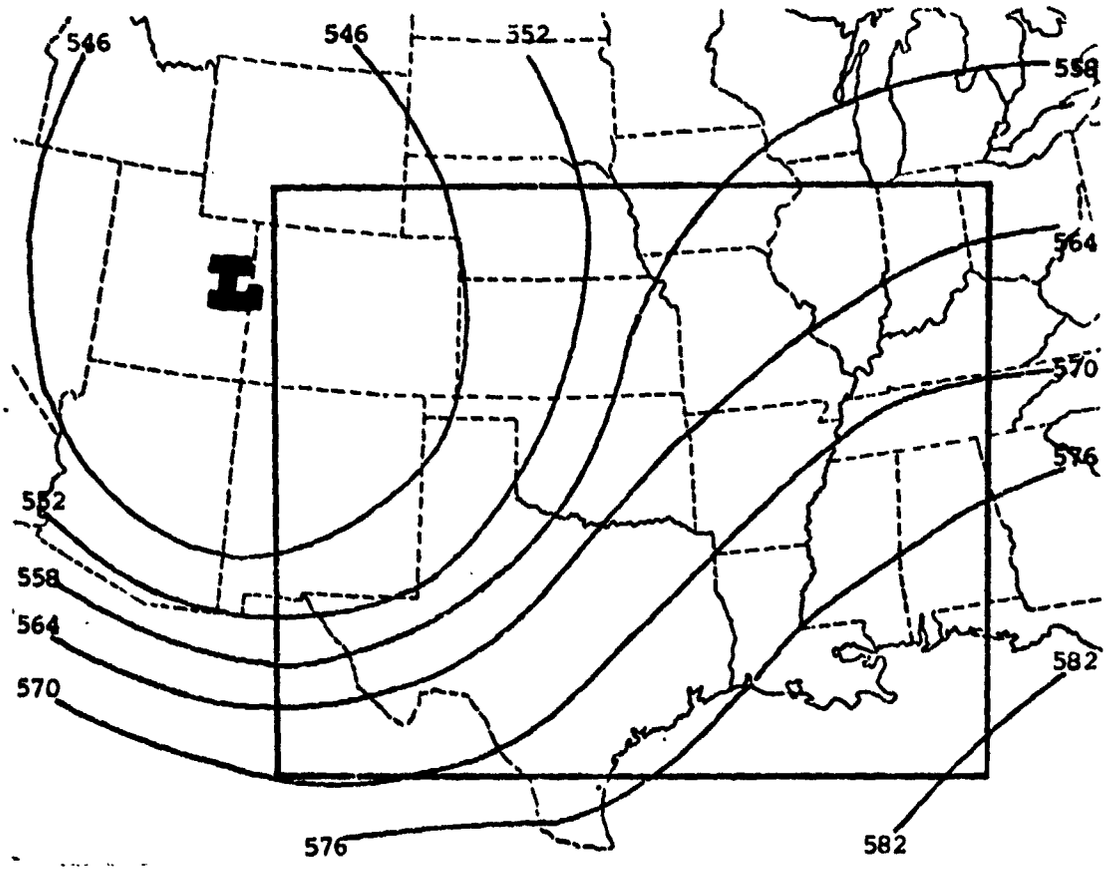

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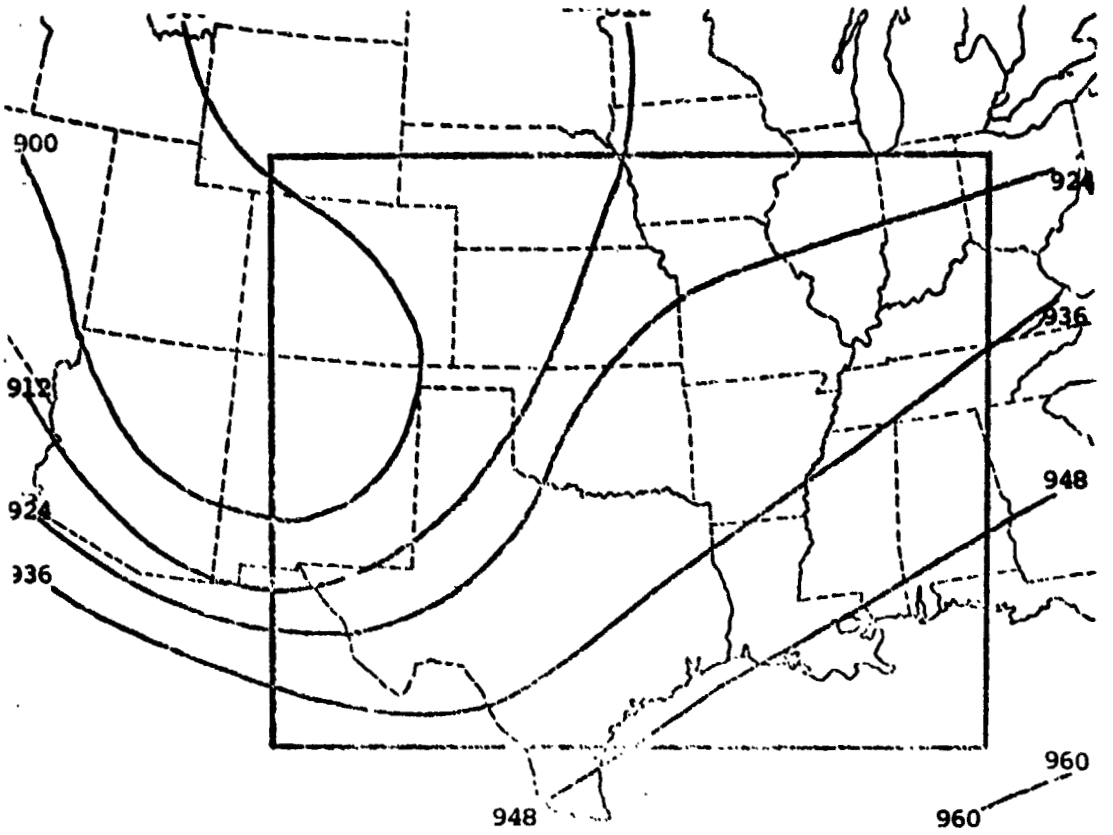

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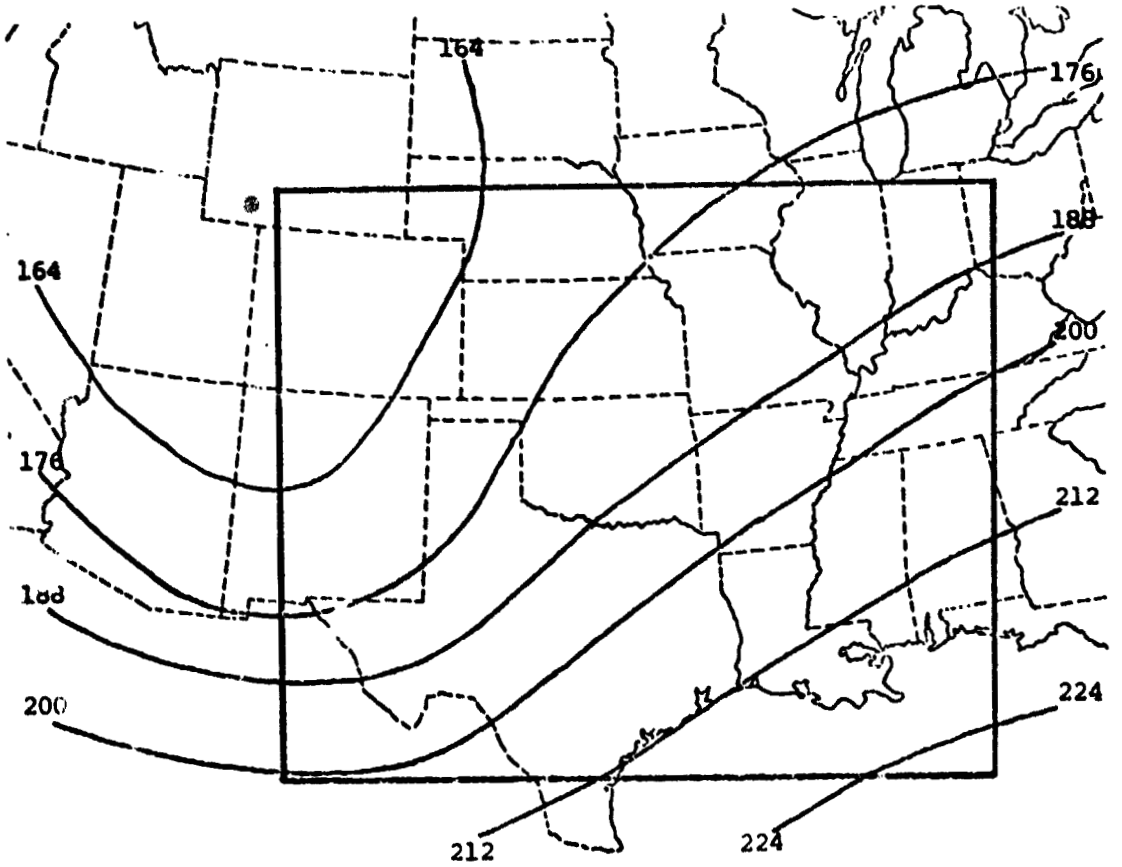

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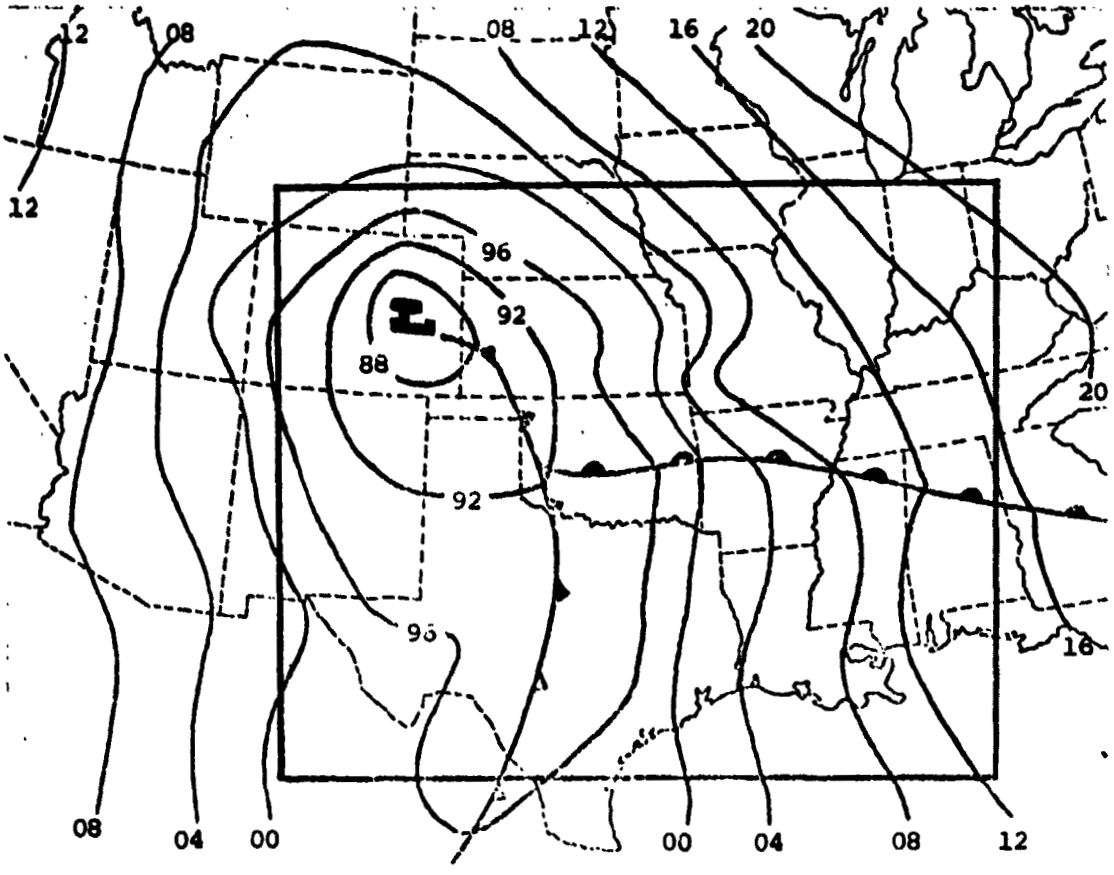
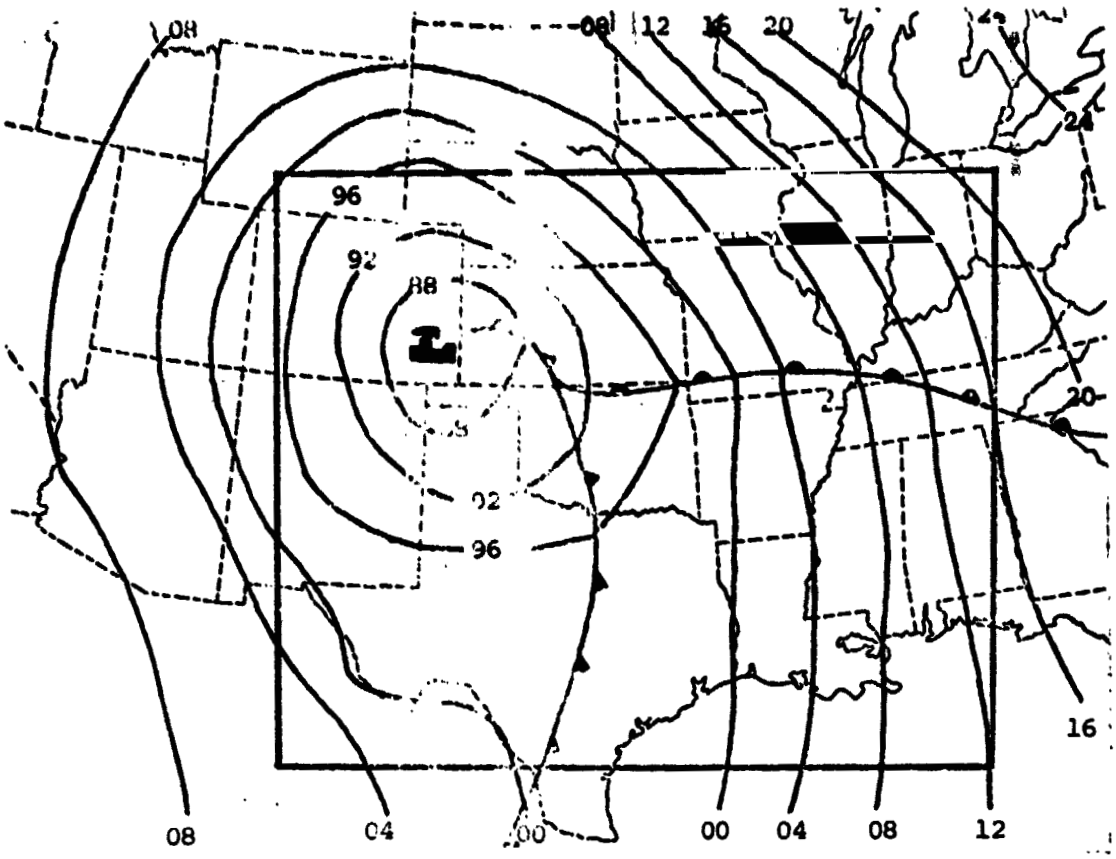
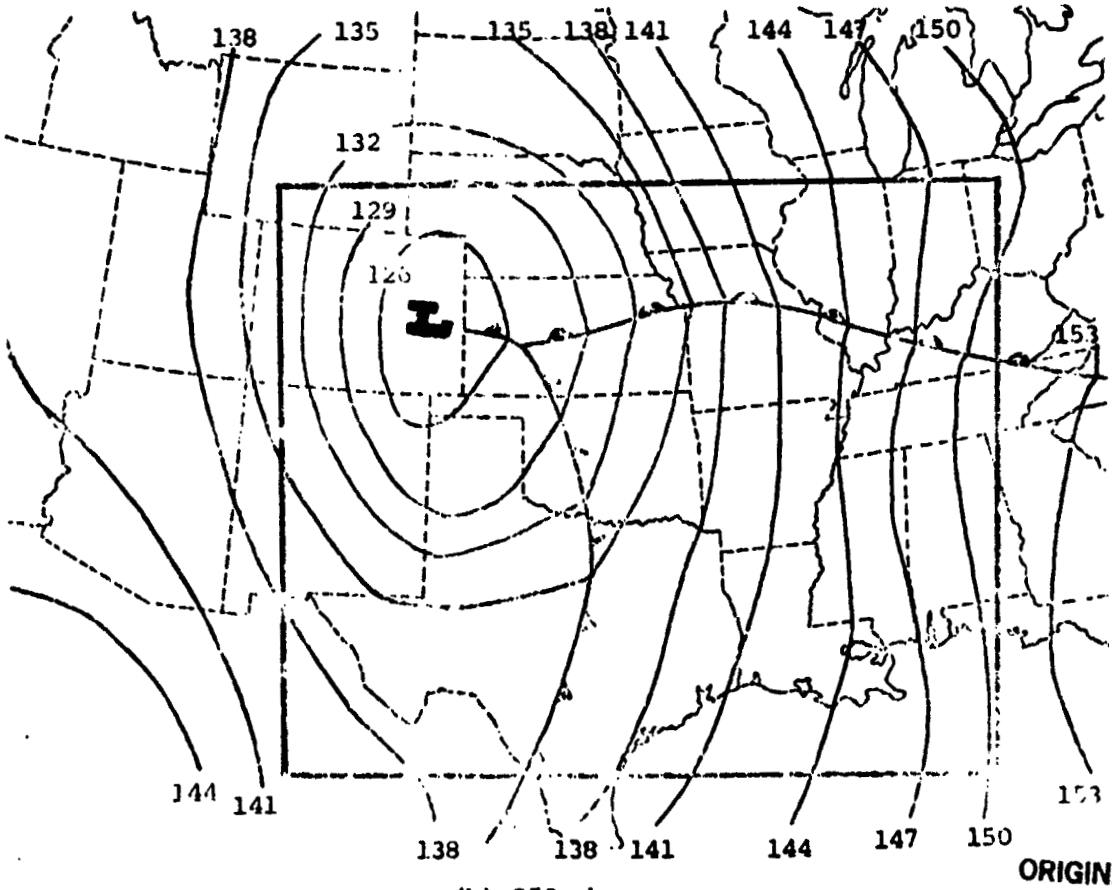


Fig. 5. Surface chart for 0600 GMT, 11 April 1979.

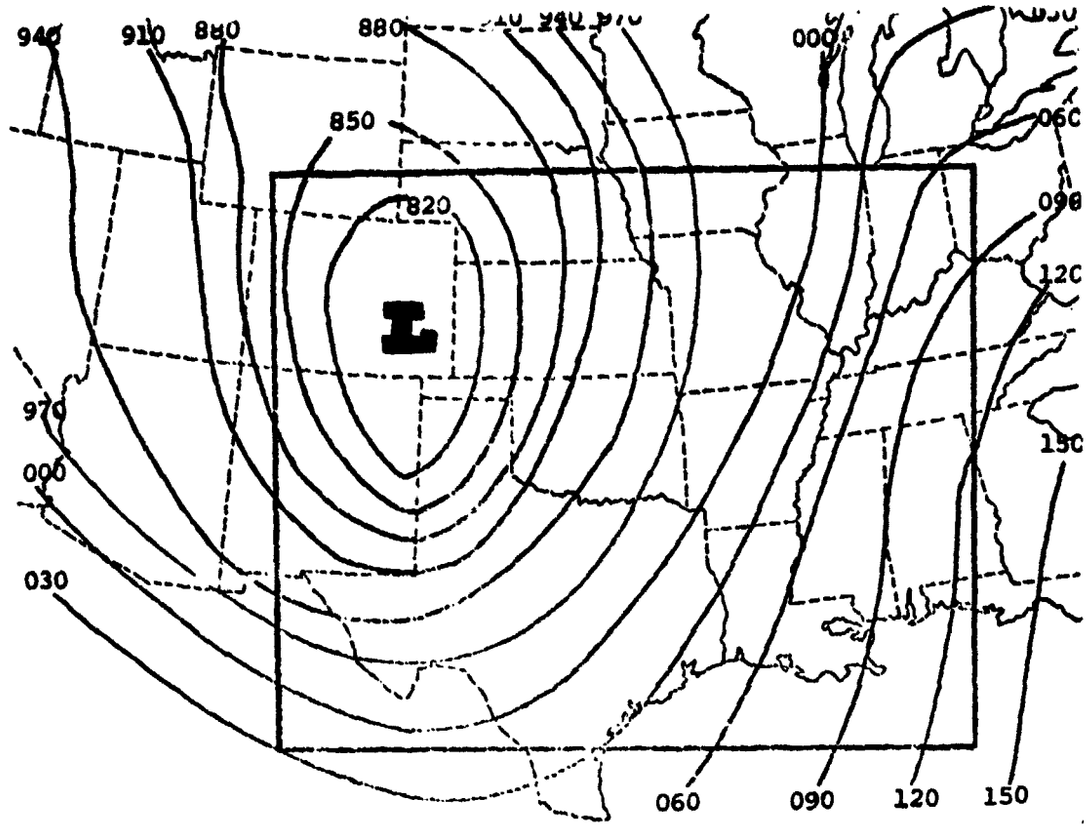


(a) Surface



(b) 850 mb

Fig. 6. Synoptic charts for 1200 GMT, 11 April 1979.



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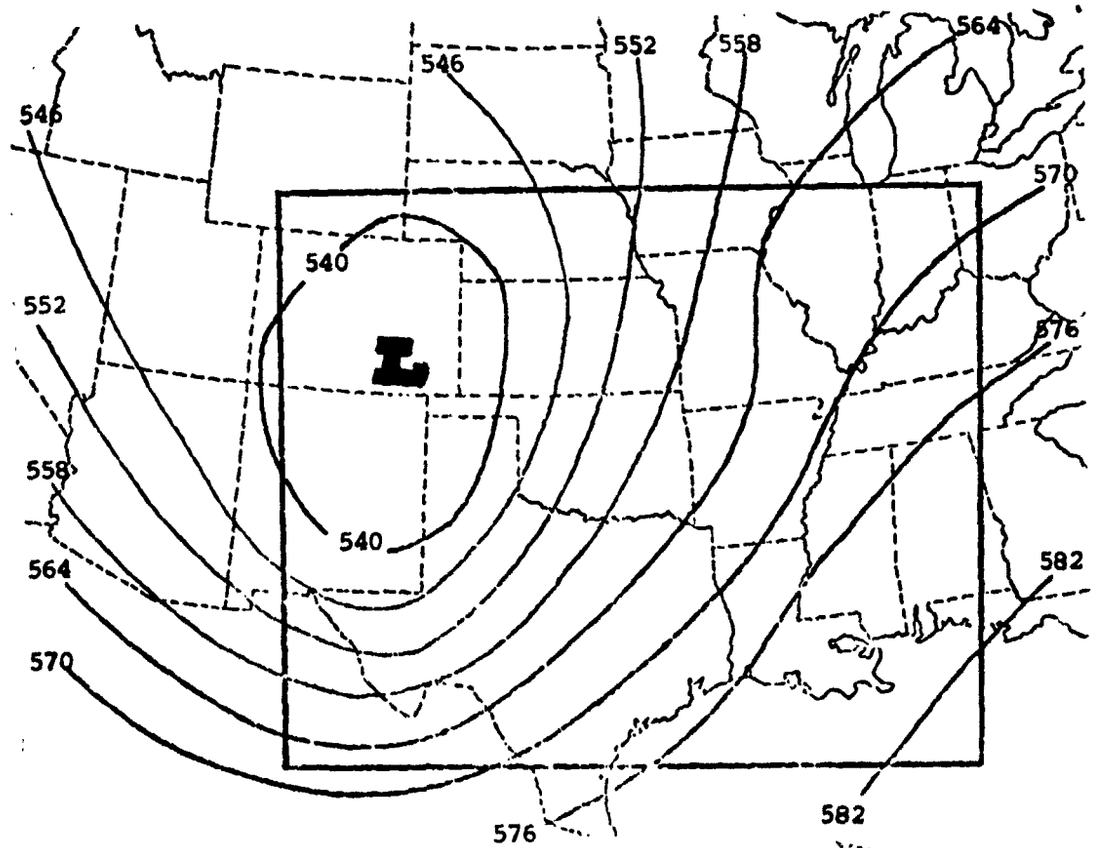

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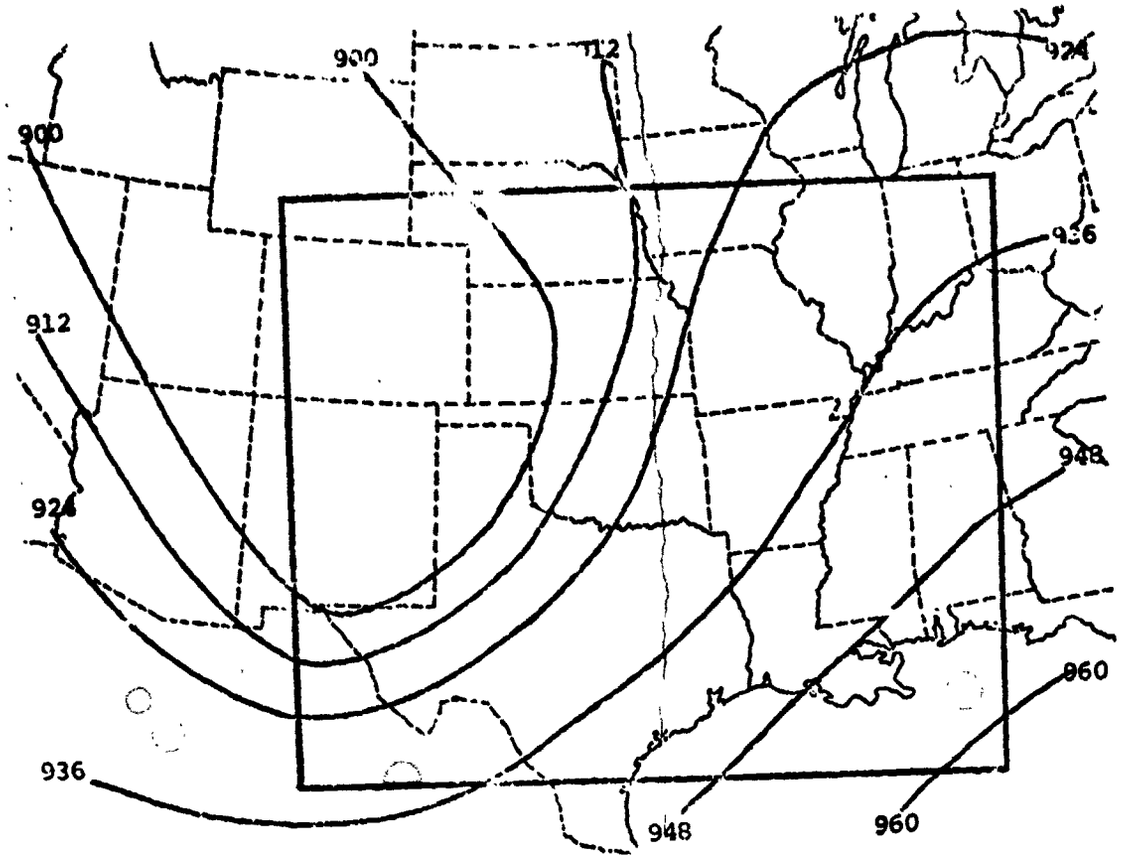

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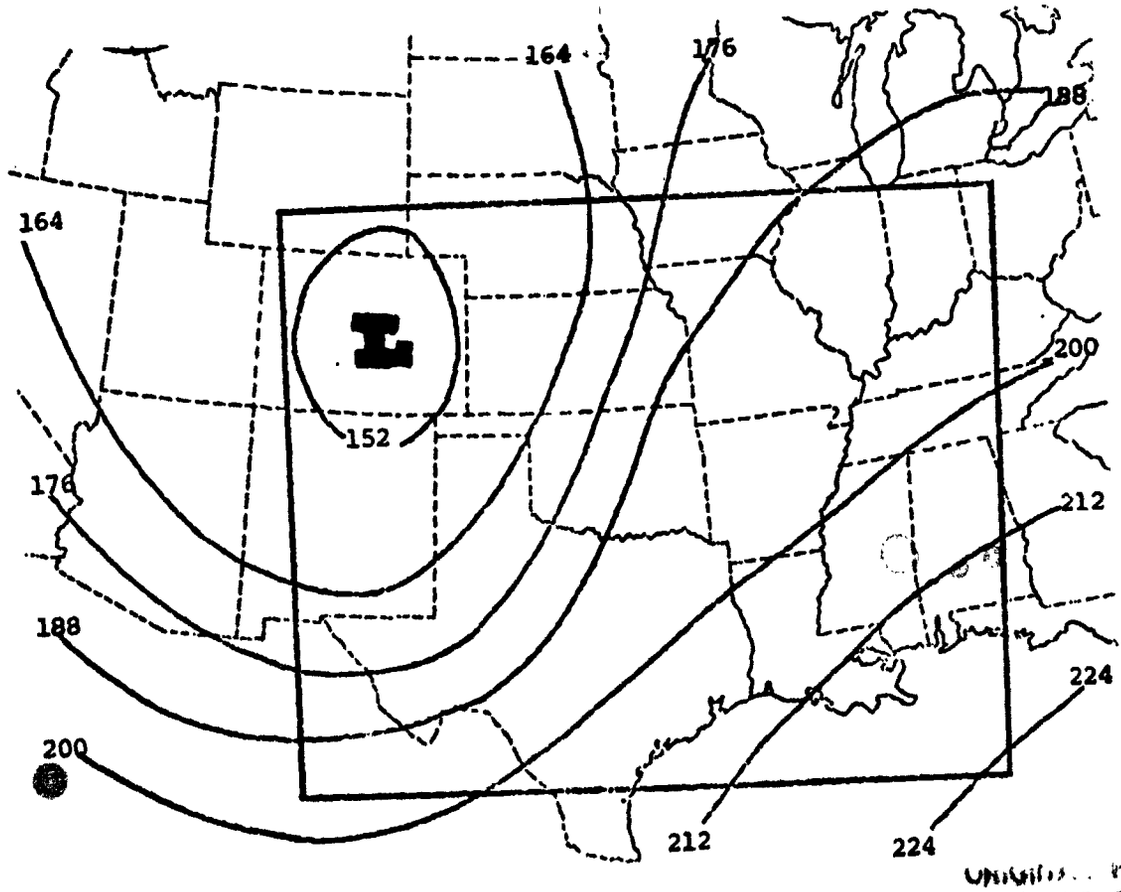

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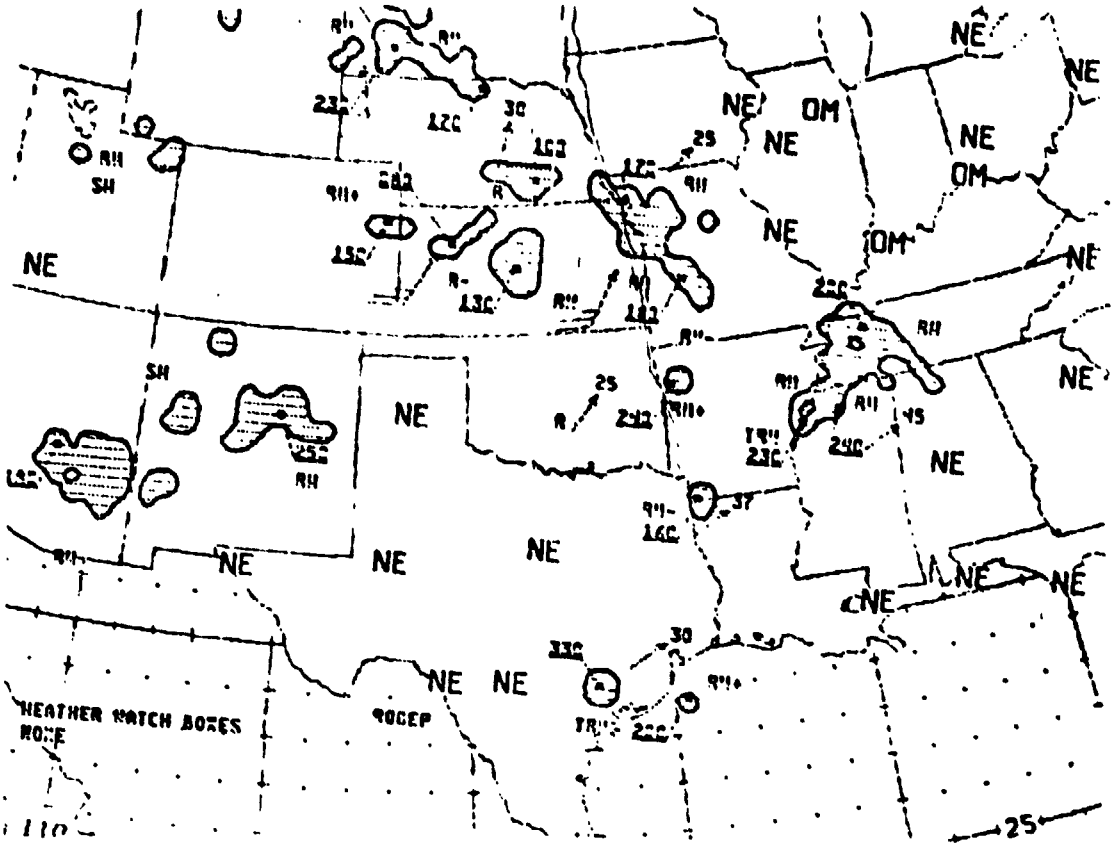

Fig. 7. Radar summary for 1435 GMT, 10 April 1979.

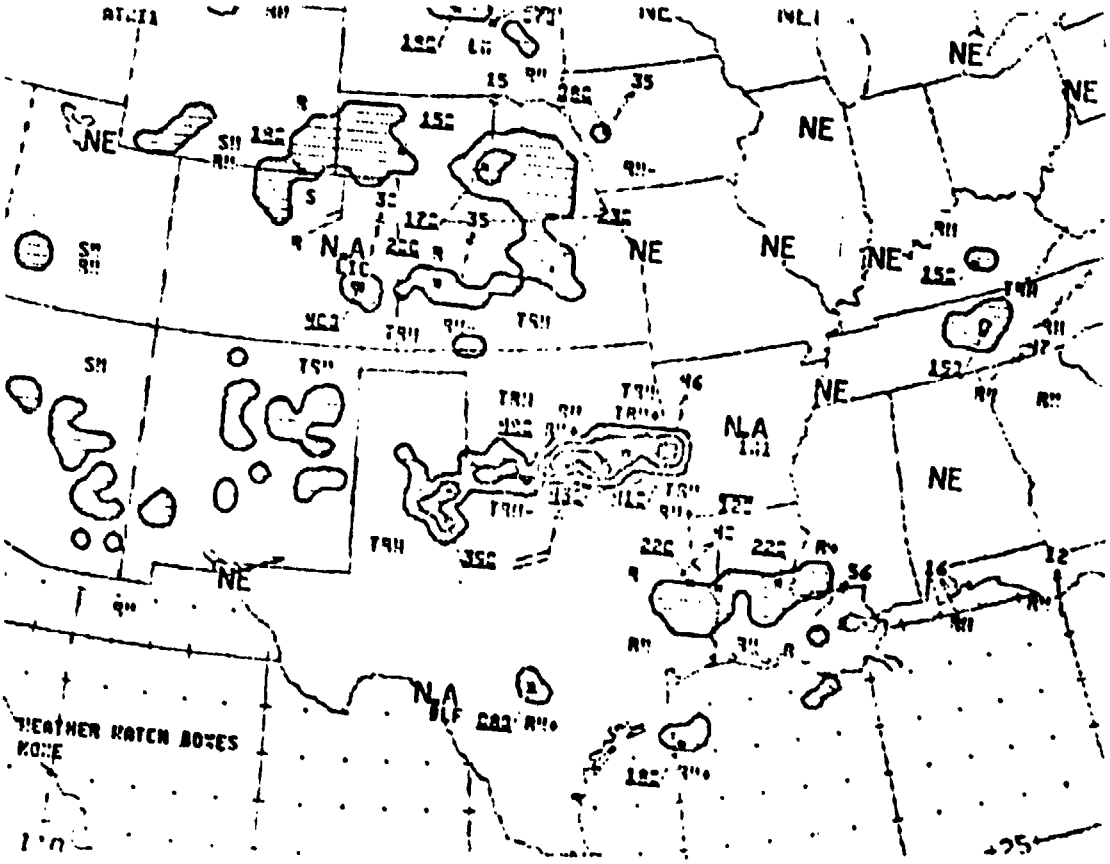

Fig. 8. Radar summary for 1935 GMT, 10 April 1979.

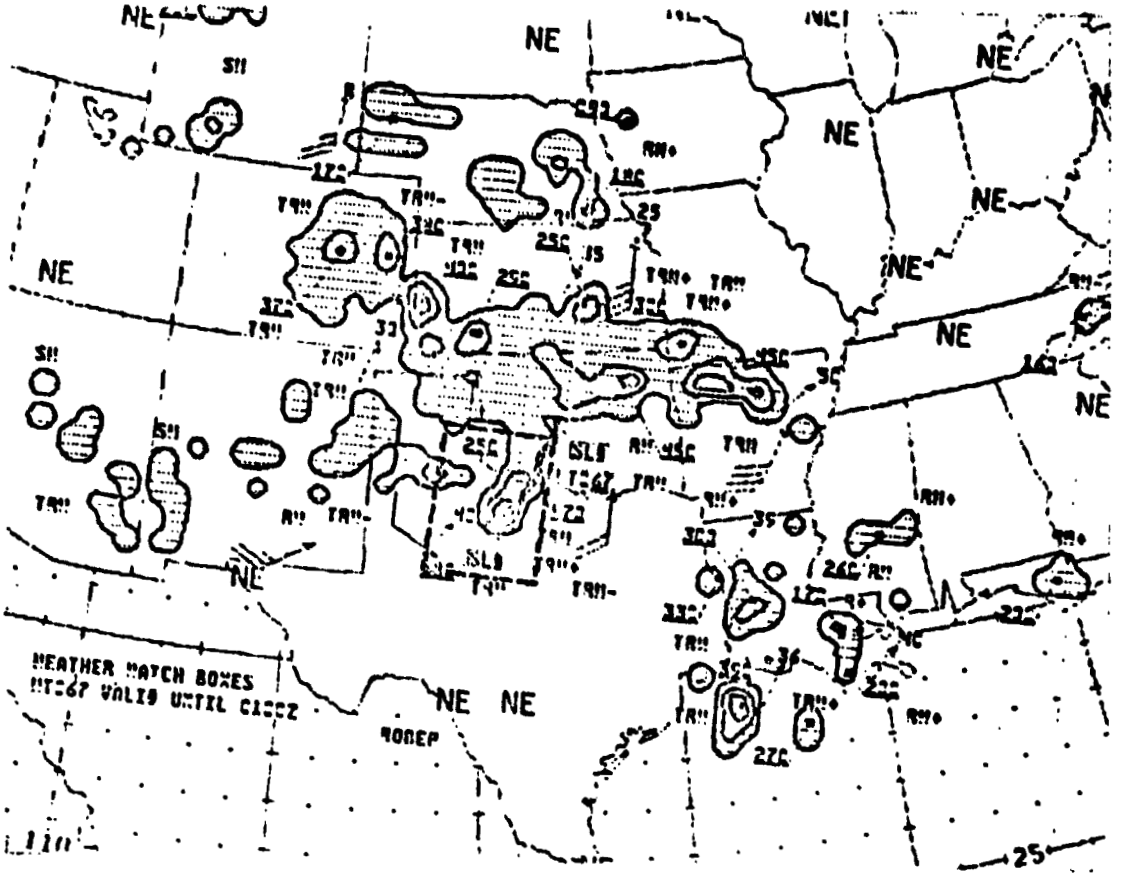

Fig. 9. Radar summary for 2235 GMT, 10 April 1979.

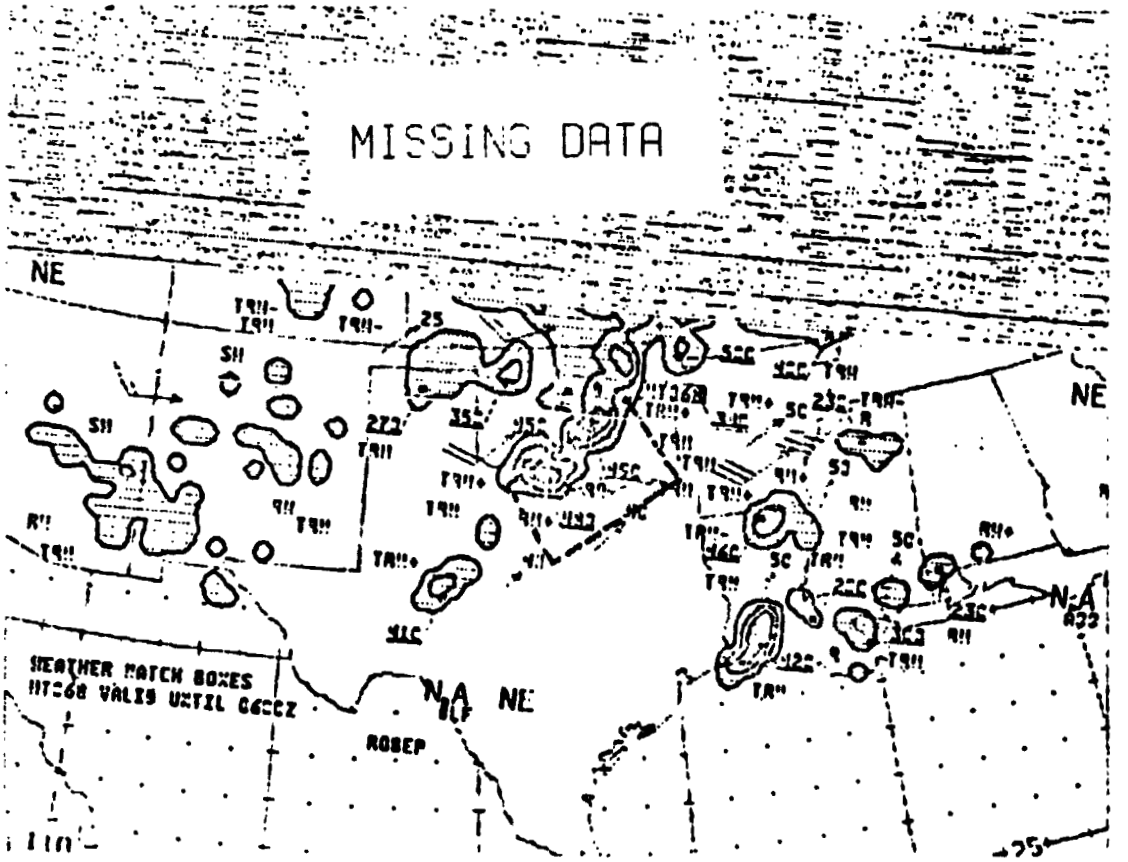

Fig. 10. Radar summary for 0135 GMT, 11 April 1979.

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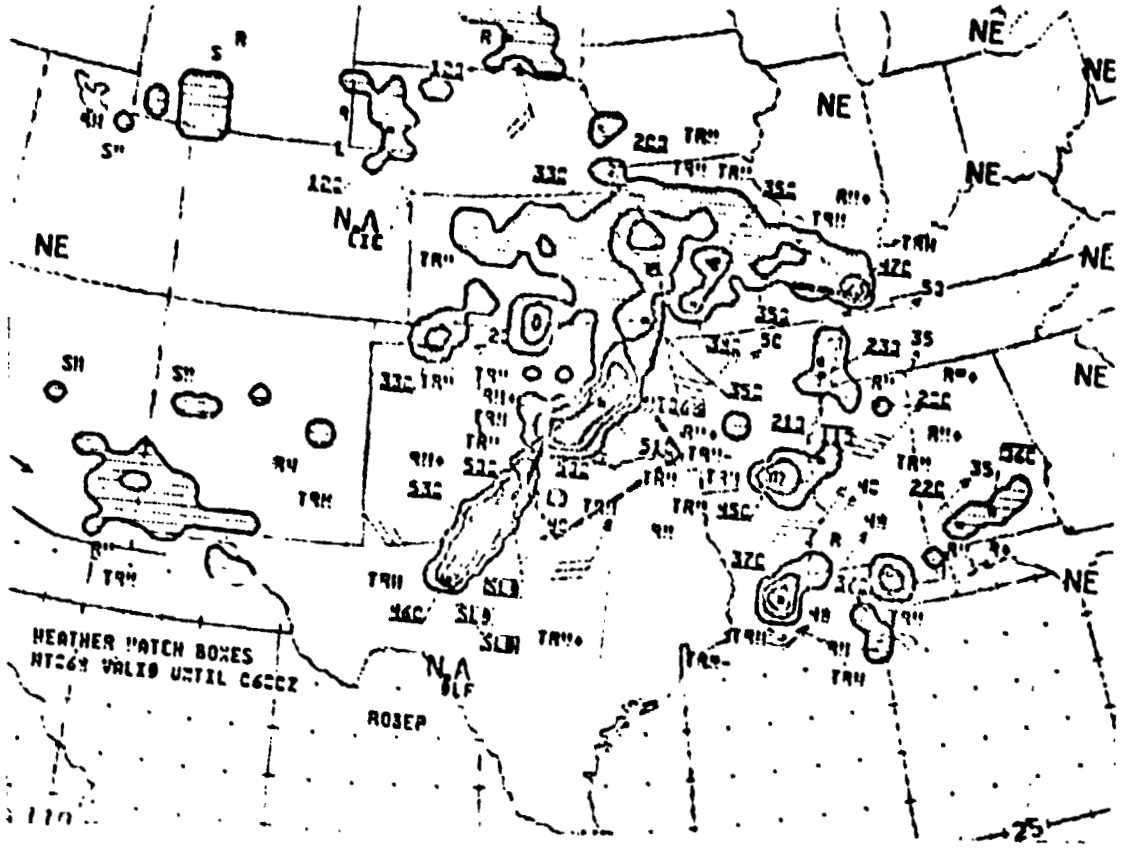

Fig. 11. Radar summary for 0235 GMT, 11 April 1979.

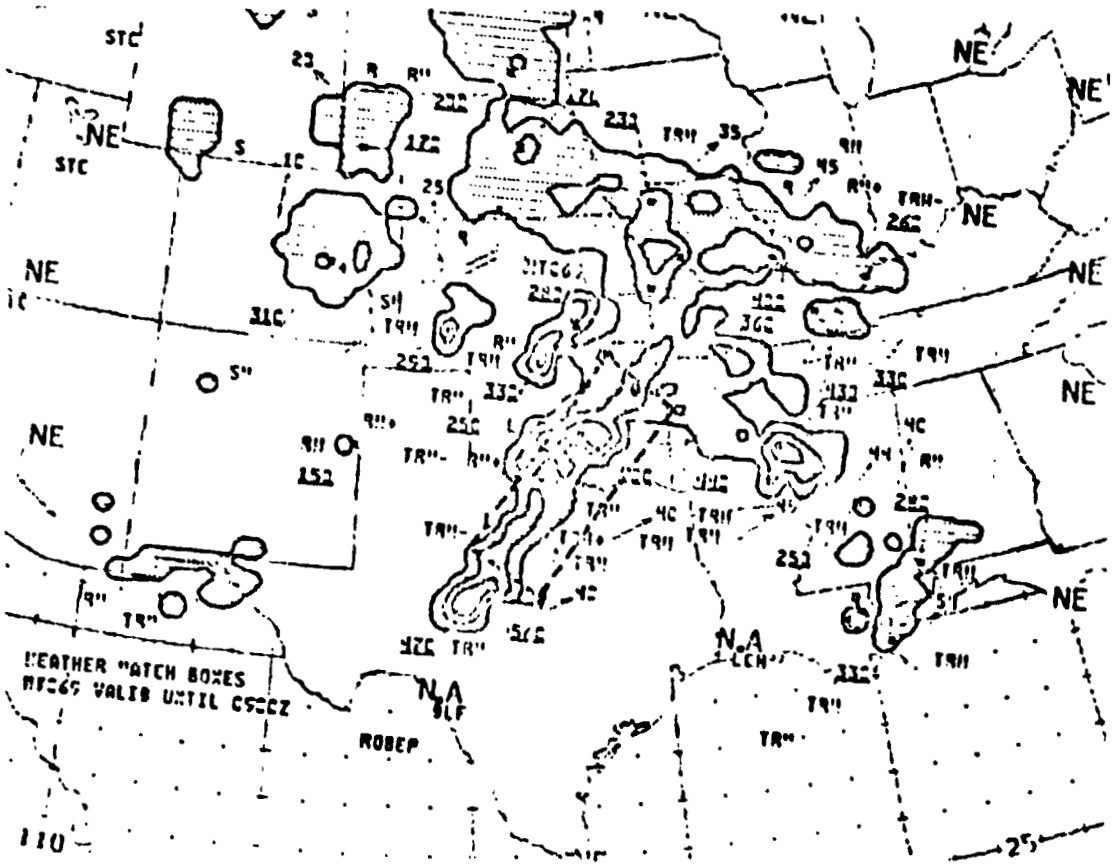

Fig. 12. Radar summary for 0435 GMT, 11 April 1979.

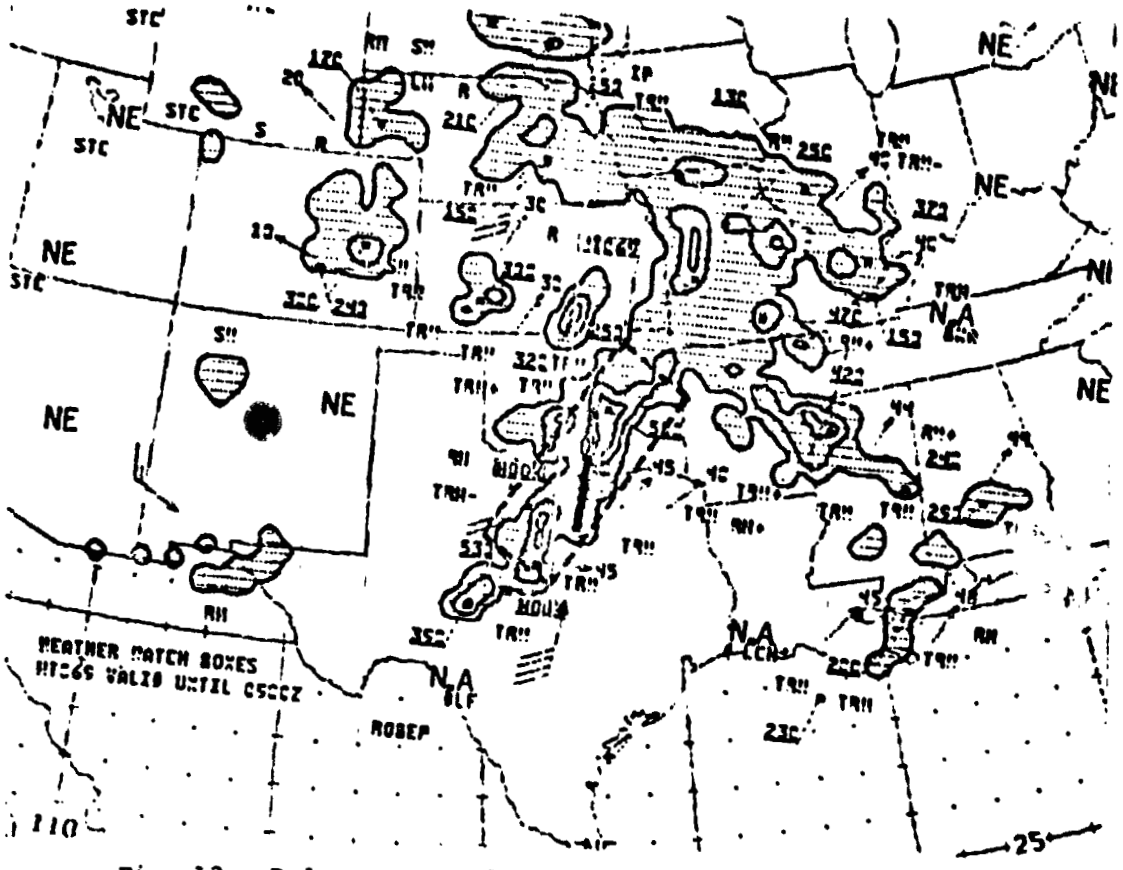

Fig. 13. Radar summary for 0535 GMT, 11 April 1979.

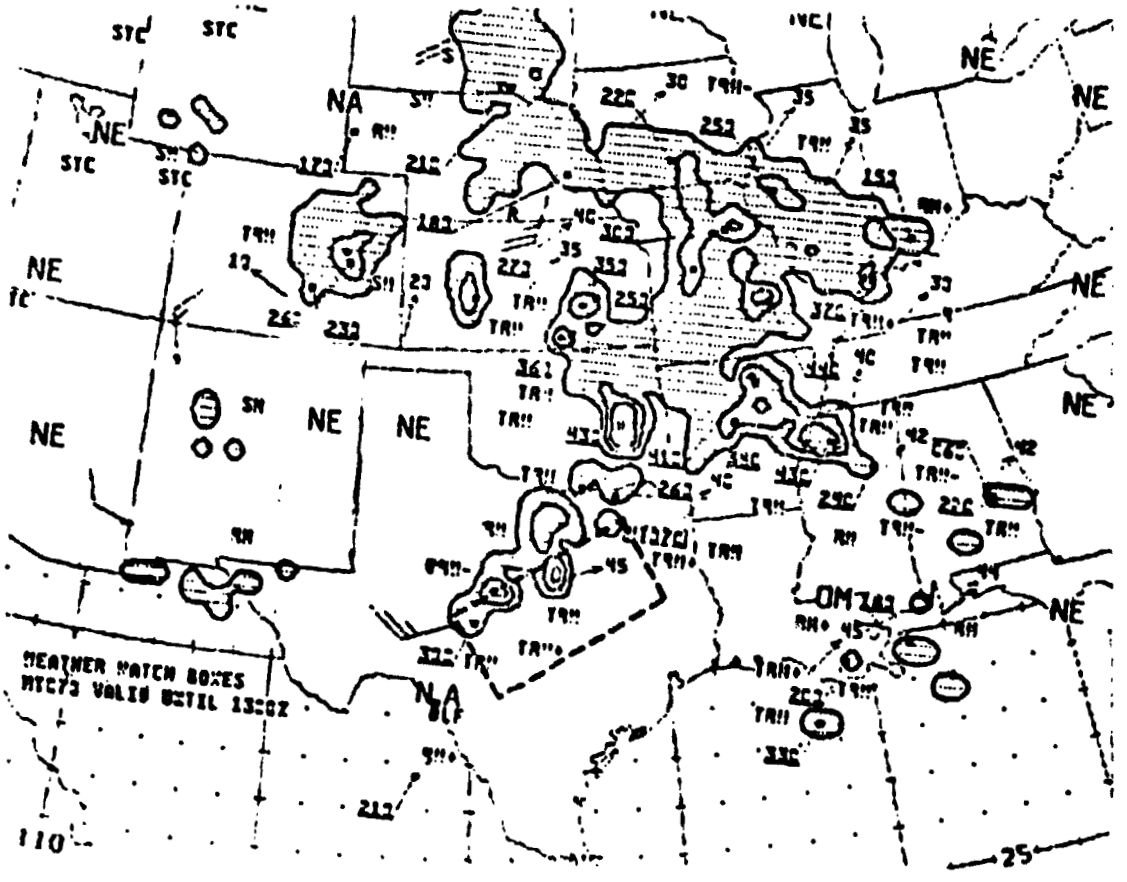

Fig. 14. Radar summary for 0635 GMT, 11 April 1979.

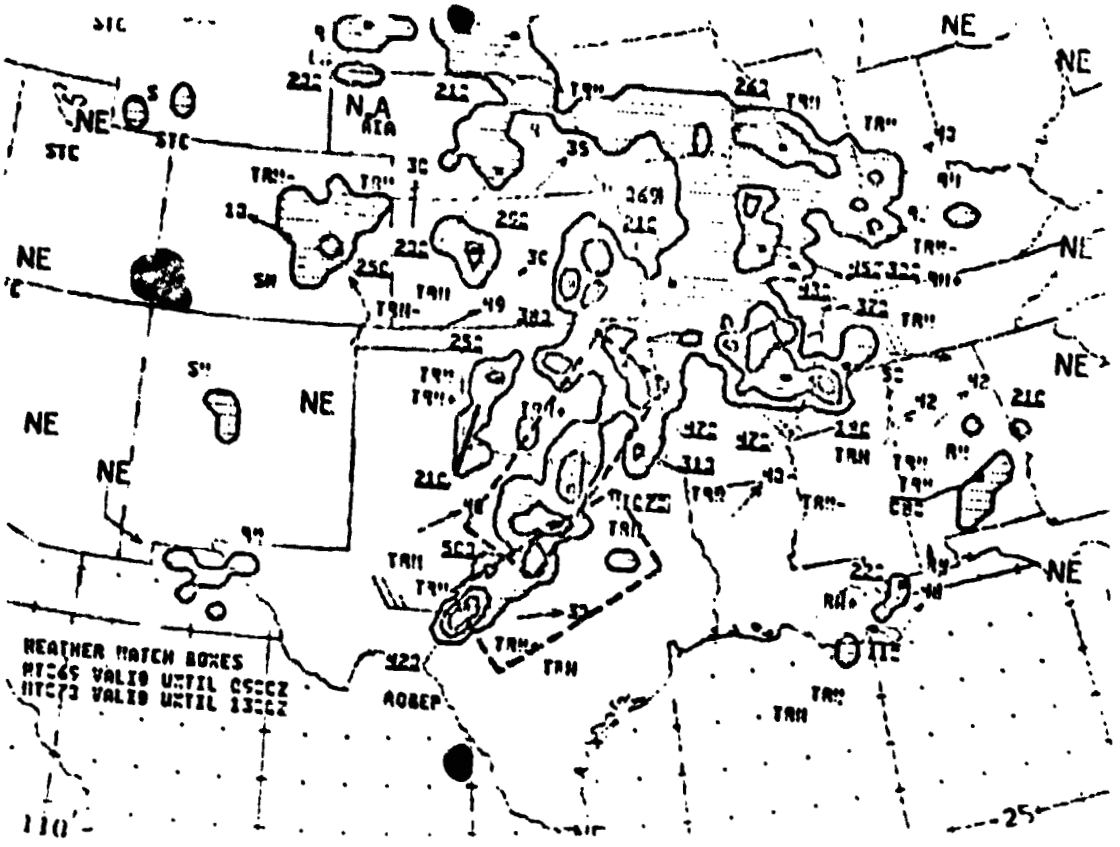

Fig. 15. Radar summary for 0735 GMT, 11 April 1979.

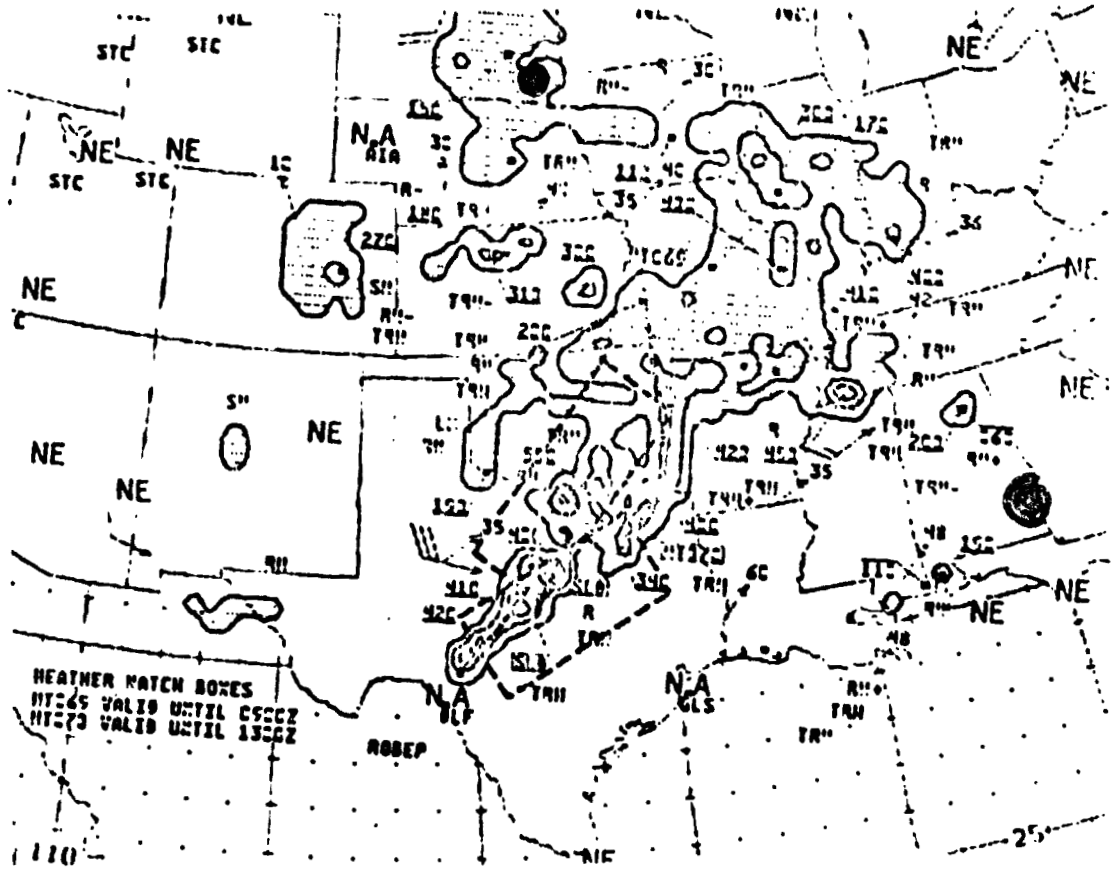

Fig. 16. Radar summary for 0835 GMT, 11 April 1979.

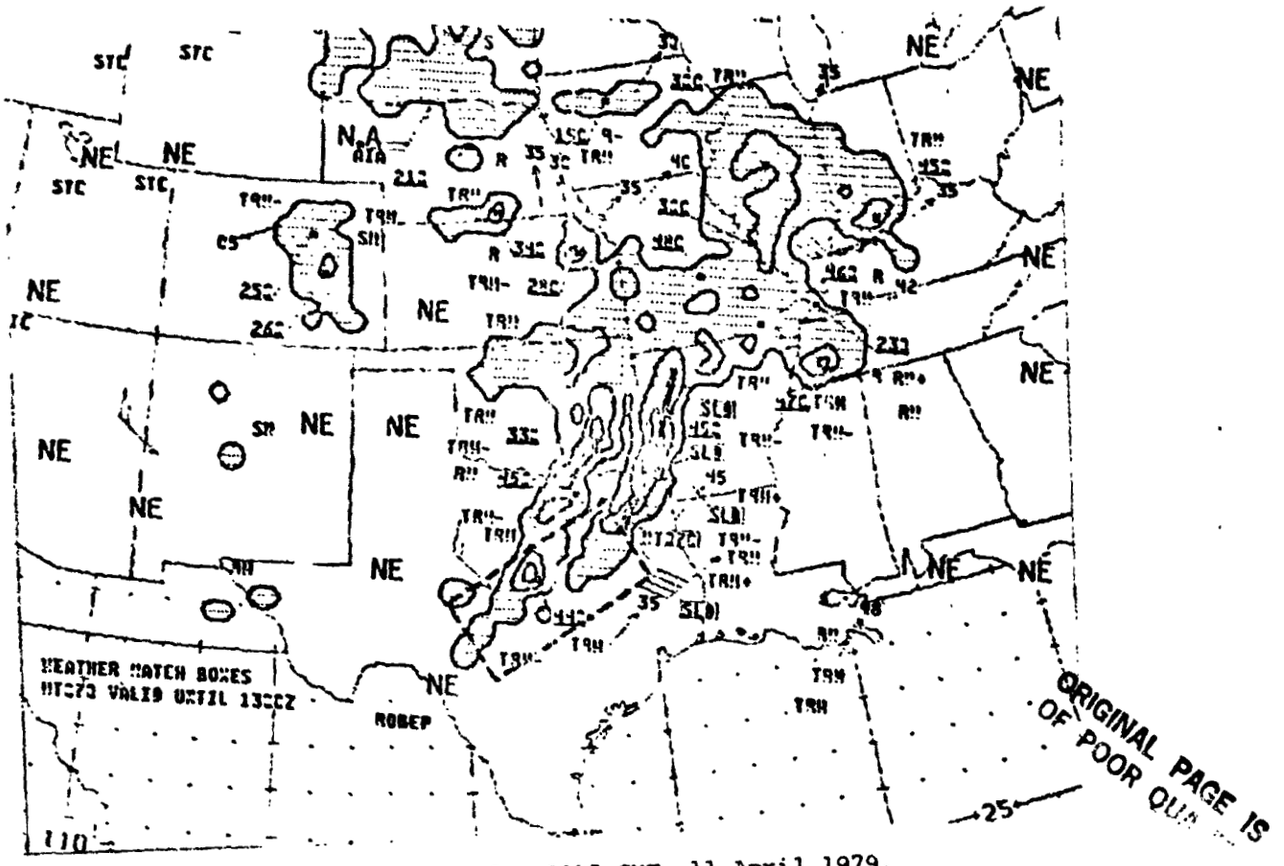

Fig. 17. Radar summary for 0935 GMT, 11 April 1979.

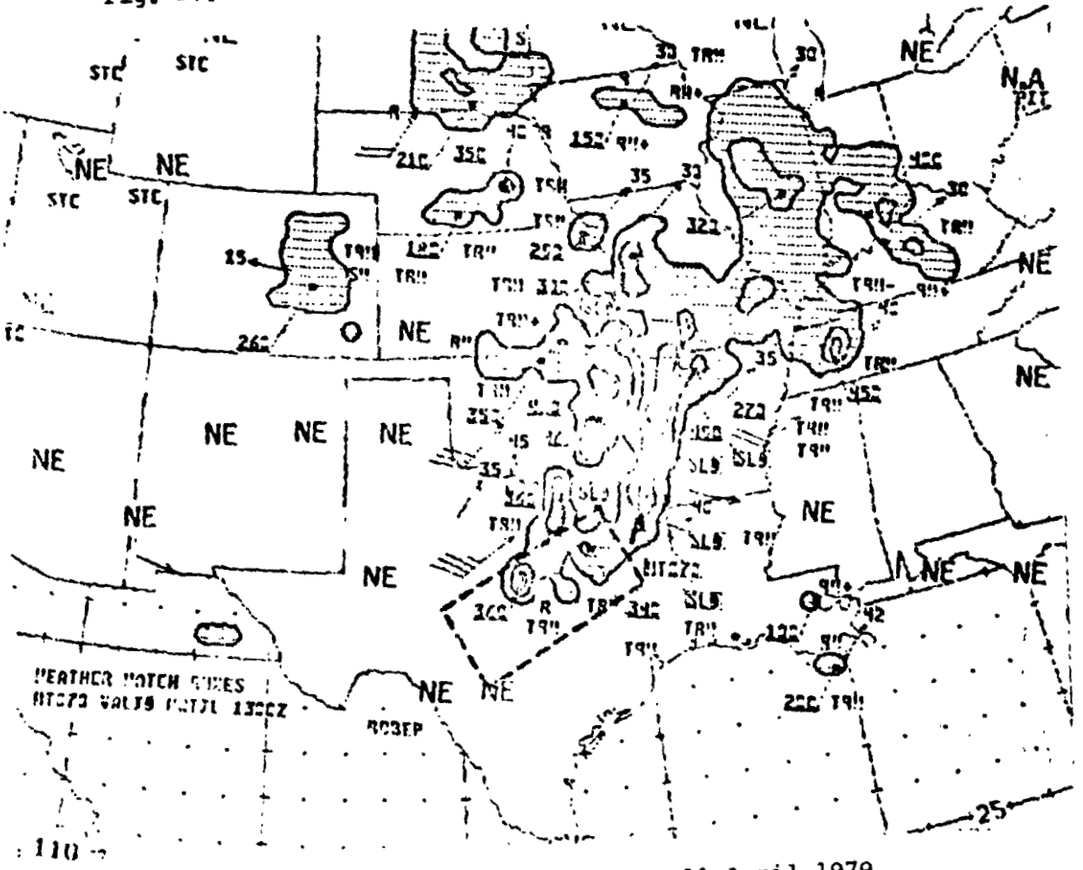

Fig. 18. Radar summary for 1035 GMT, 11 April 1979.

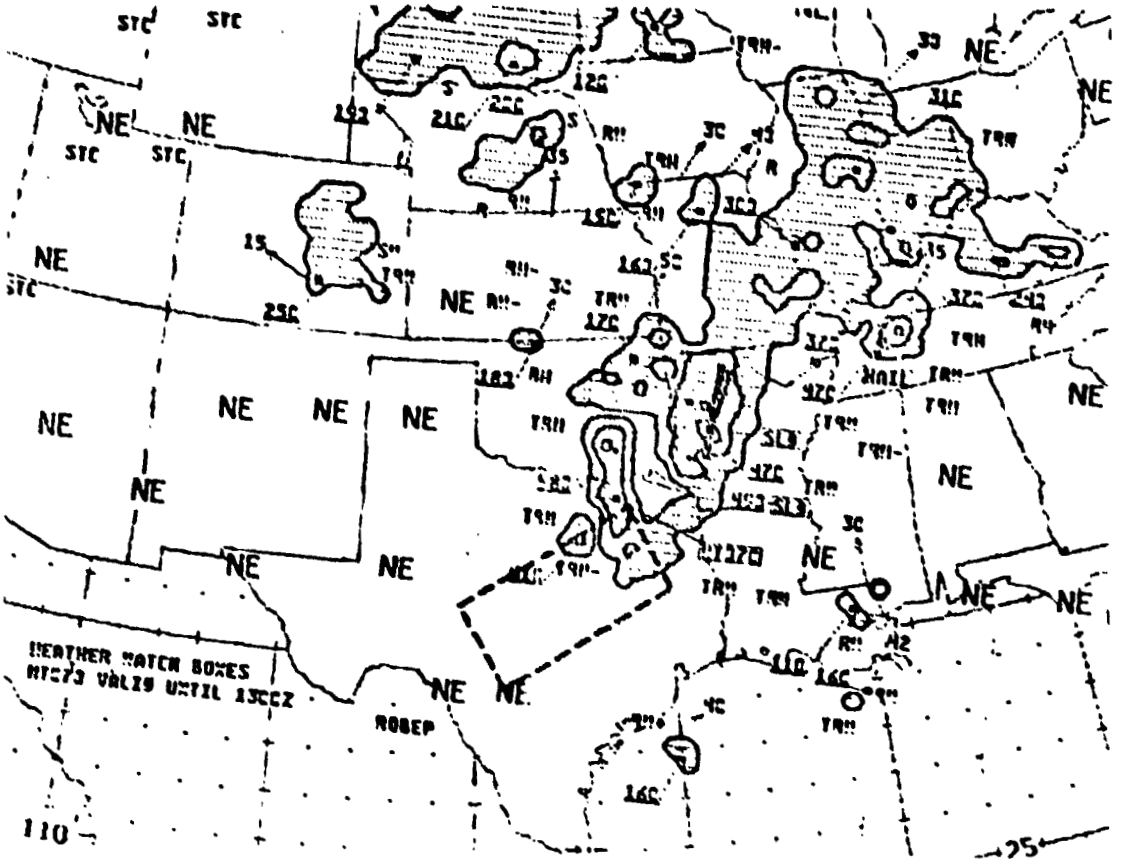

Fig. 19. Radar summary for 1135 GMT, 11 April 1979.

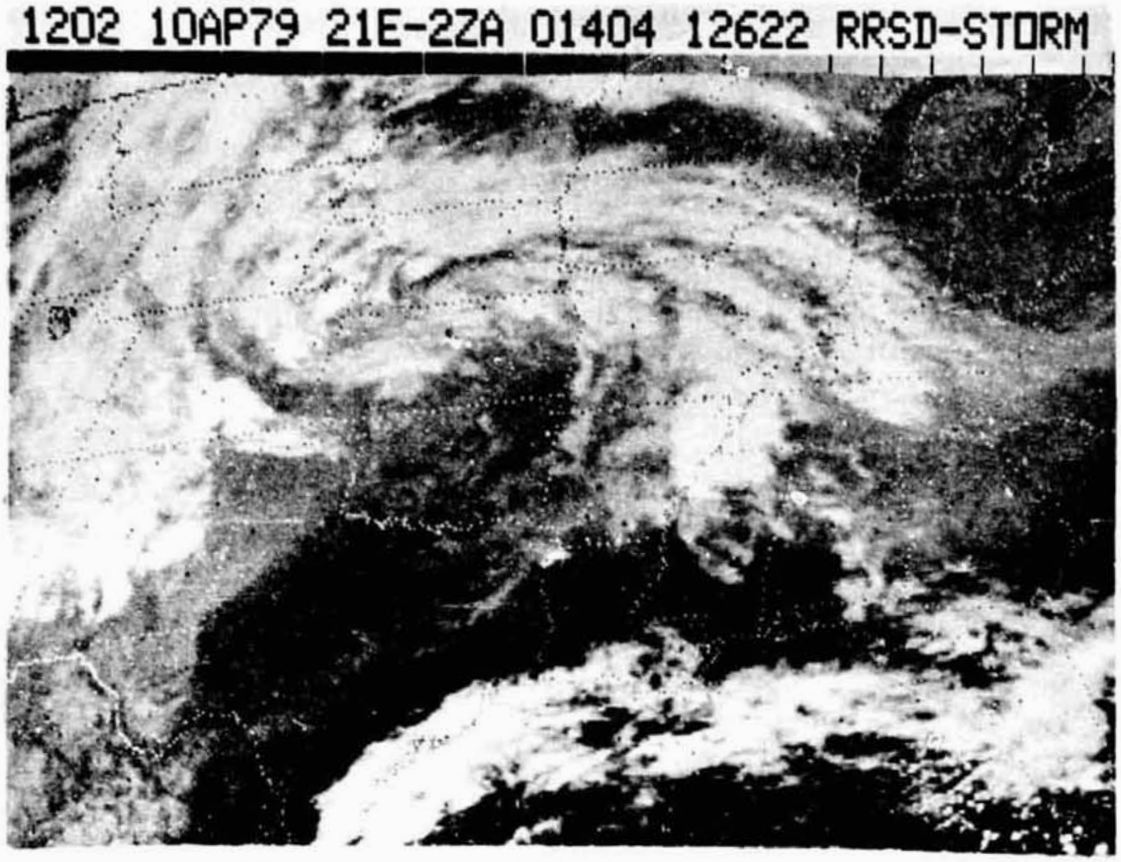

Fig. 20. GOES-East infrared satellite imagery for 1202 GMT, 10 April 1979.

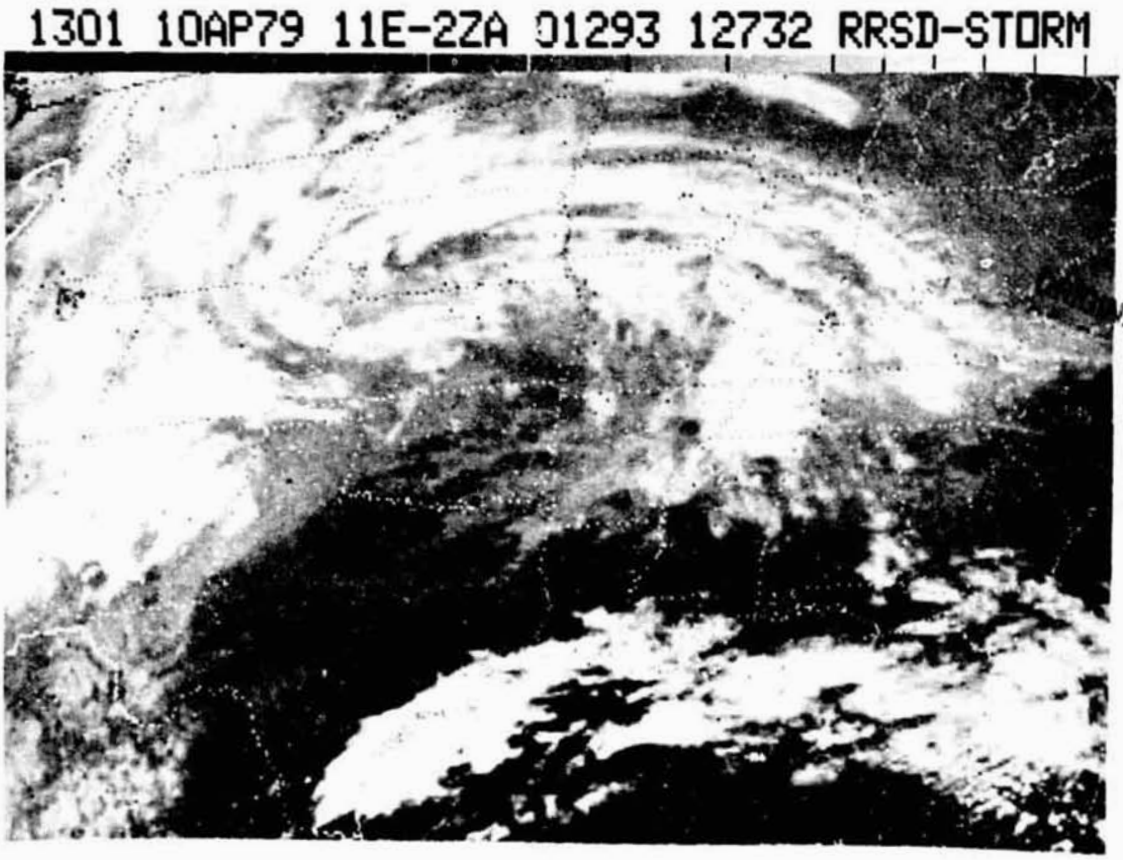

Fig. 21. GOES-East infrared satellite imagery for 1301 GMT, 10 April 1979.

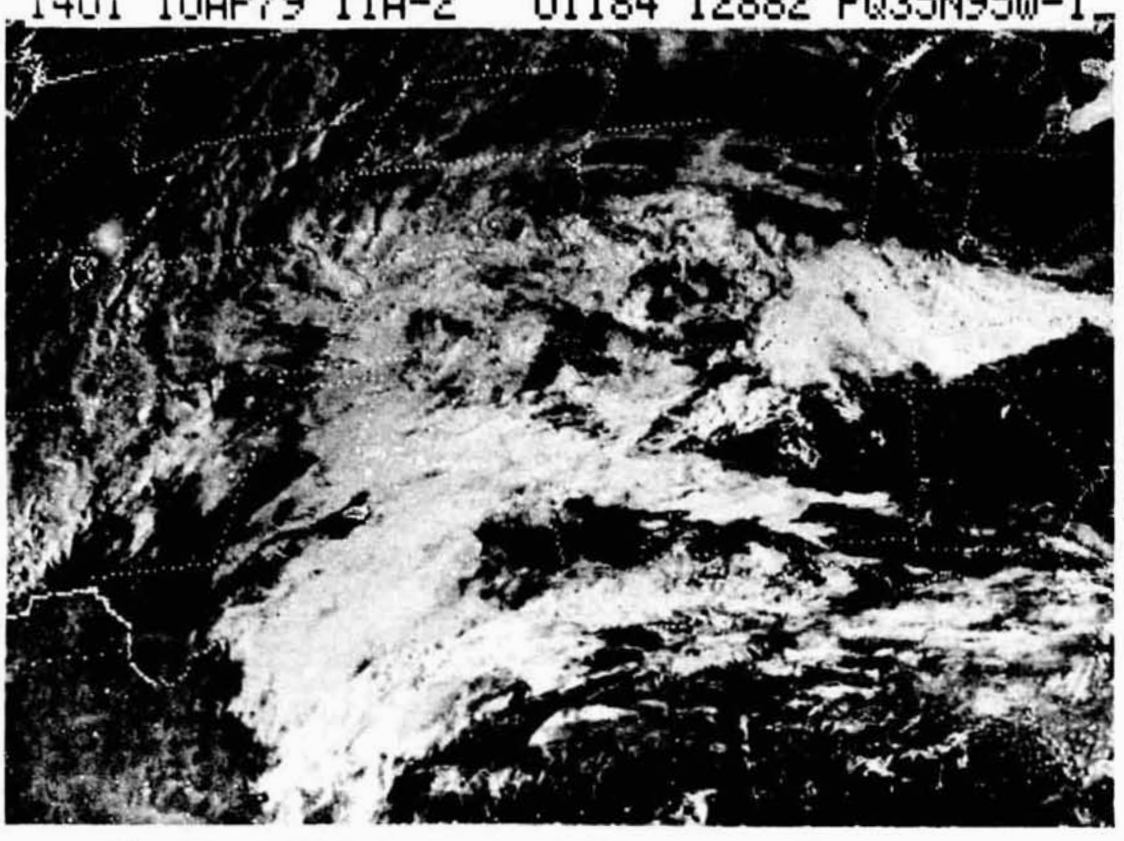

Fig. 22. GOES-East visual satellite imagery for 1401 GMT, 10 April 1979.

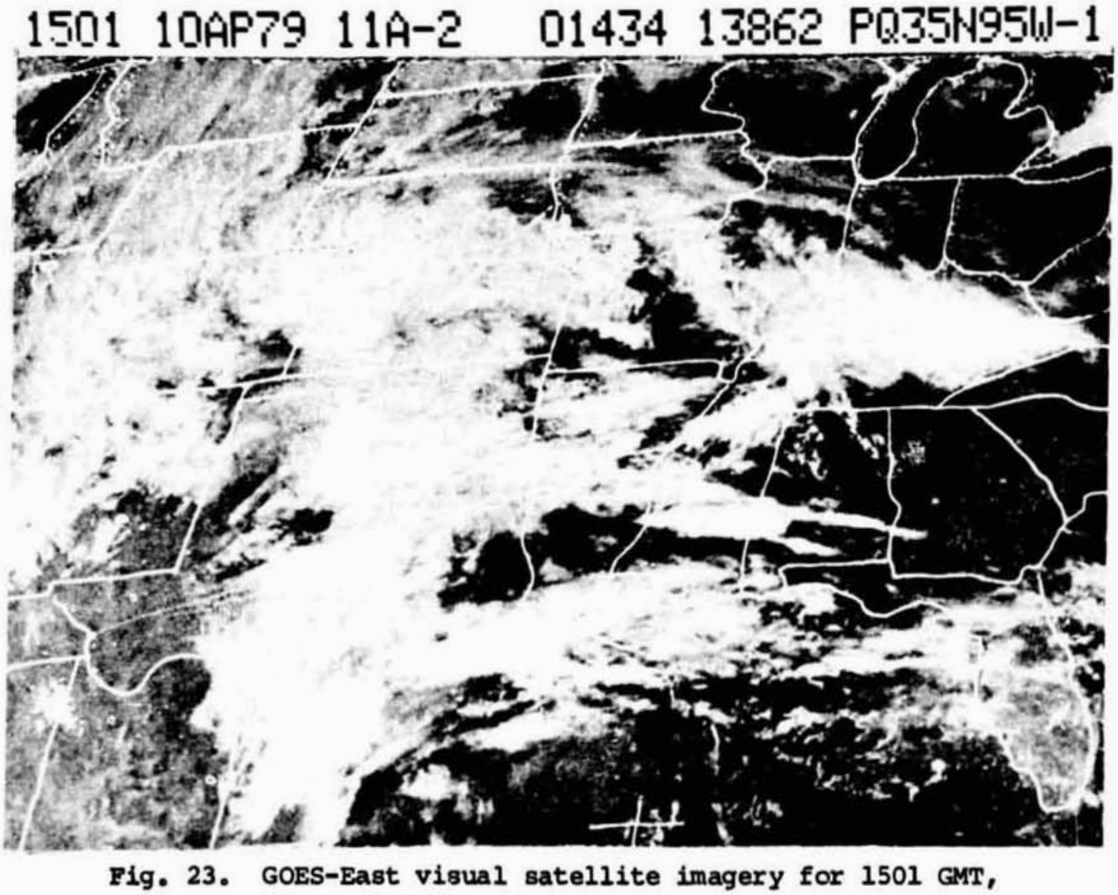

Fig. 23. GOES-East visual satellite imagery for 1501 GMT, 10 April 1979.

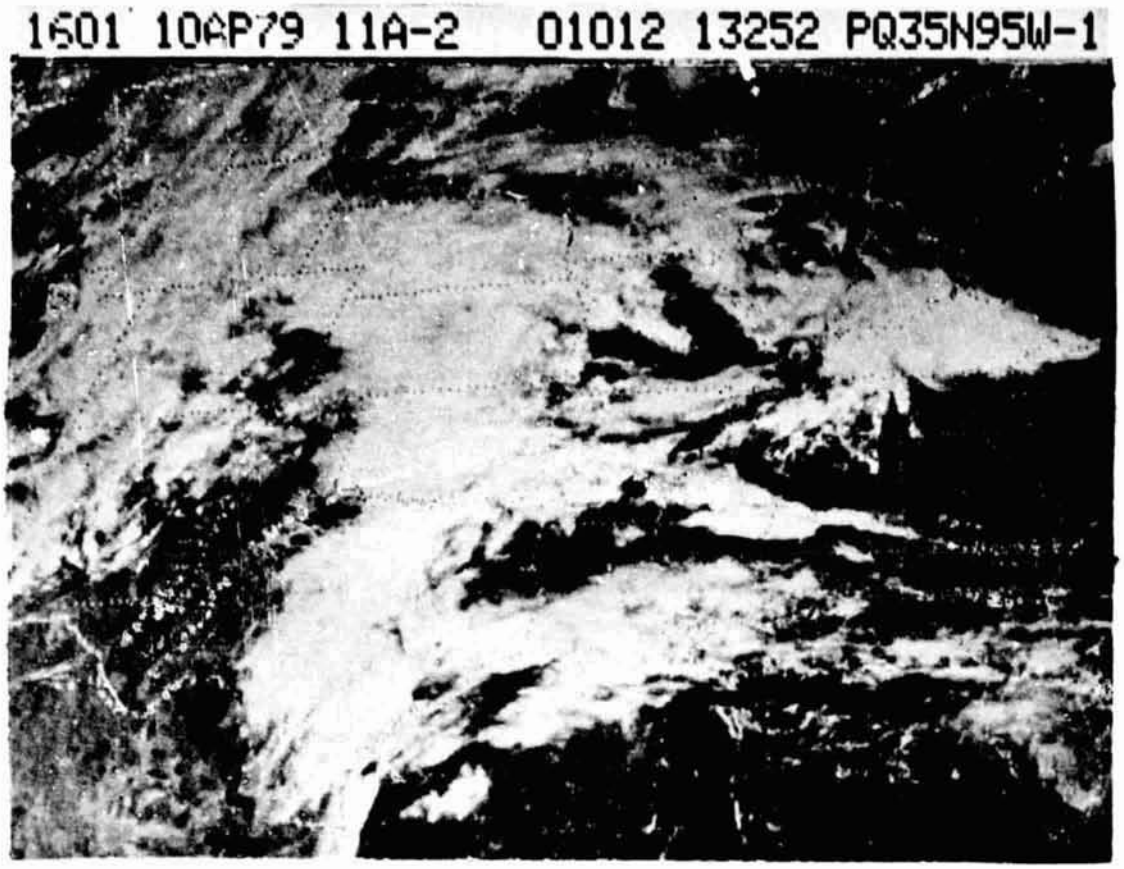

Fig. 24. GOES-East visual satellite imagery for 1601 GMT, 10 April 1979.

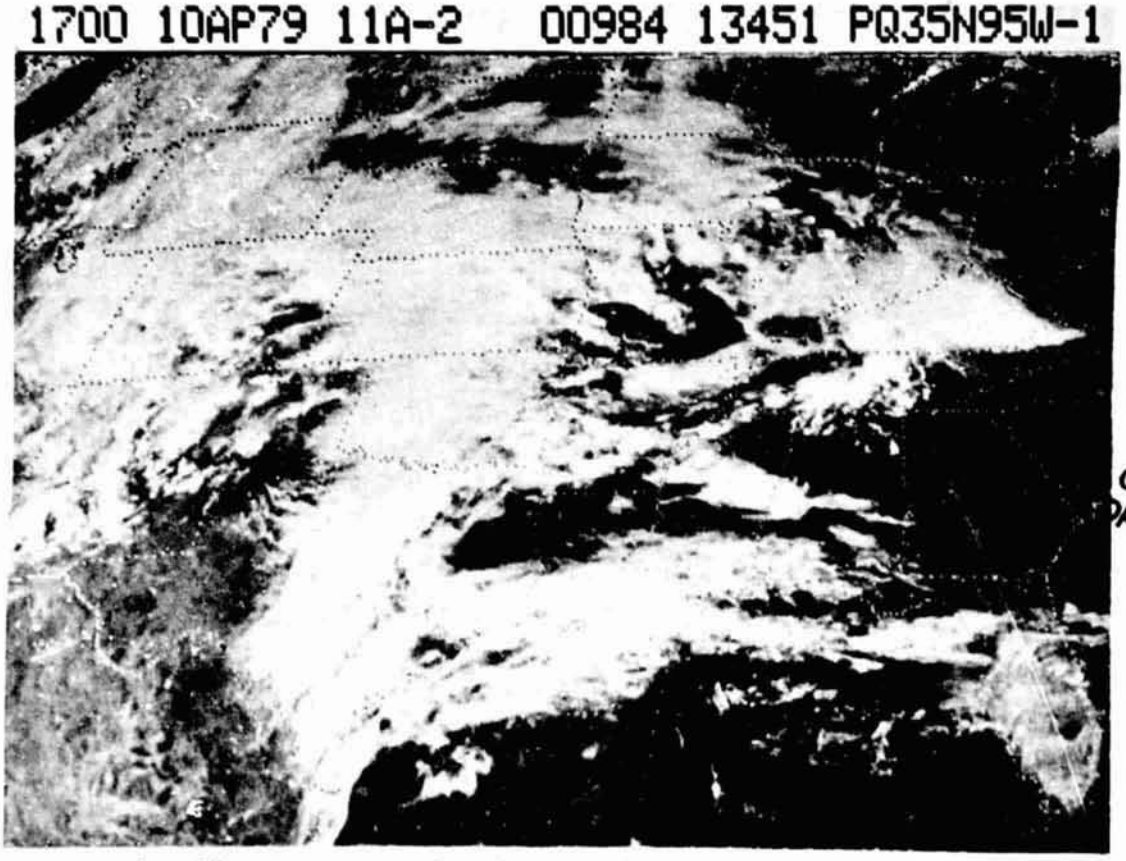

Fig. 25. GOES-East visual satellite imagery for 1700 GMT, 10 April 1979.

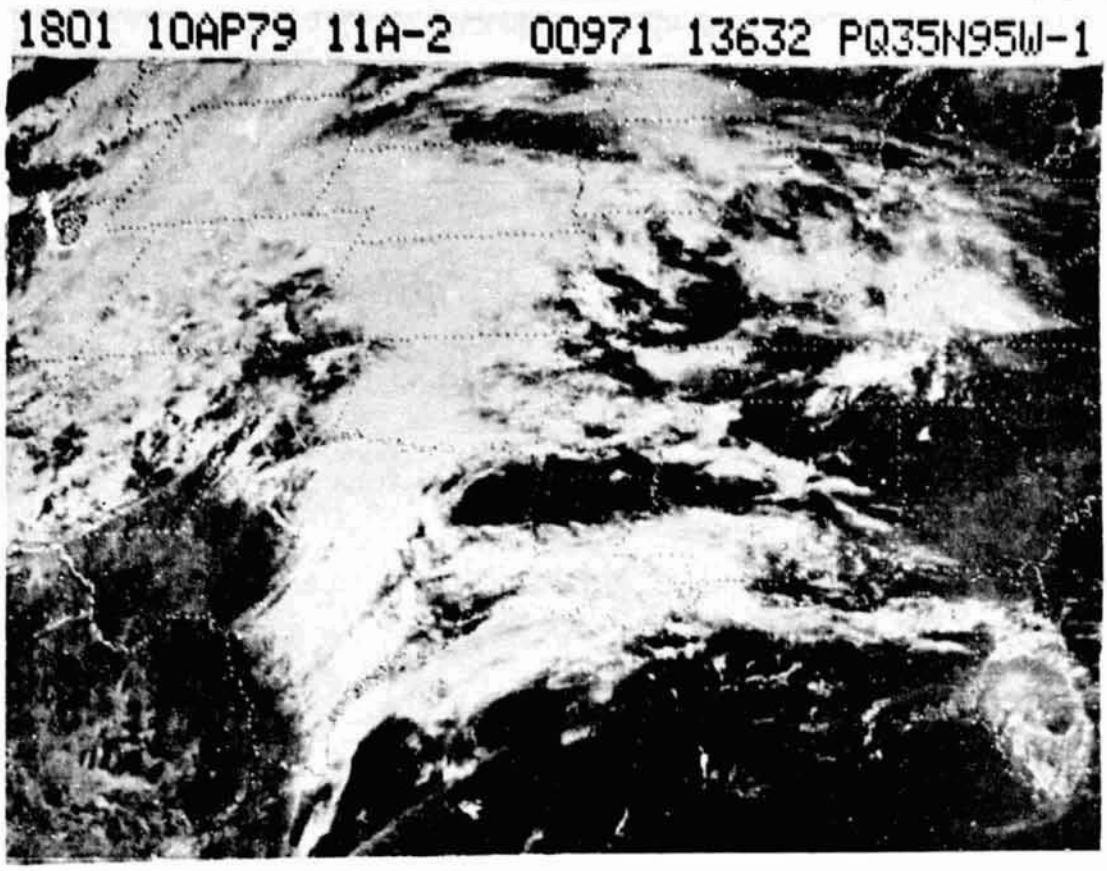

Fig. 26. GOES-East visual satellite imagery for 1801 GMT, 10 April 1979.

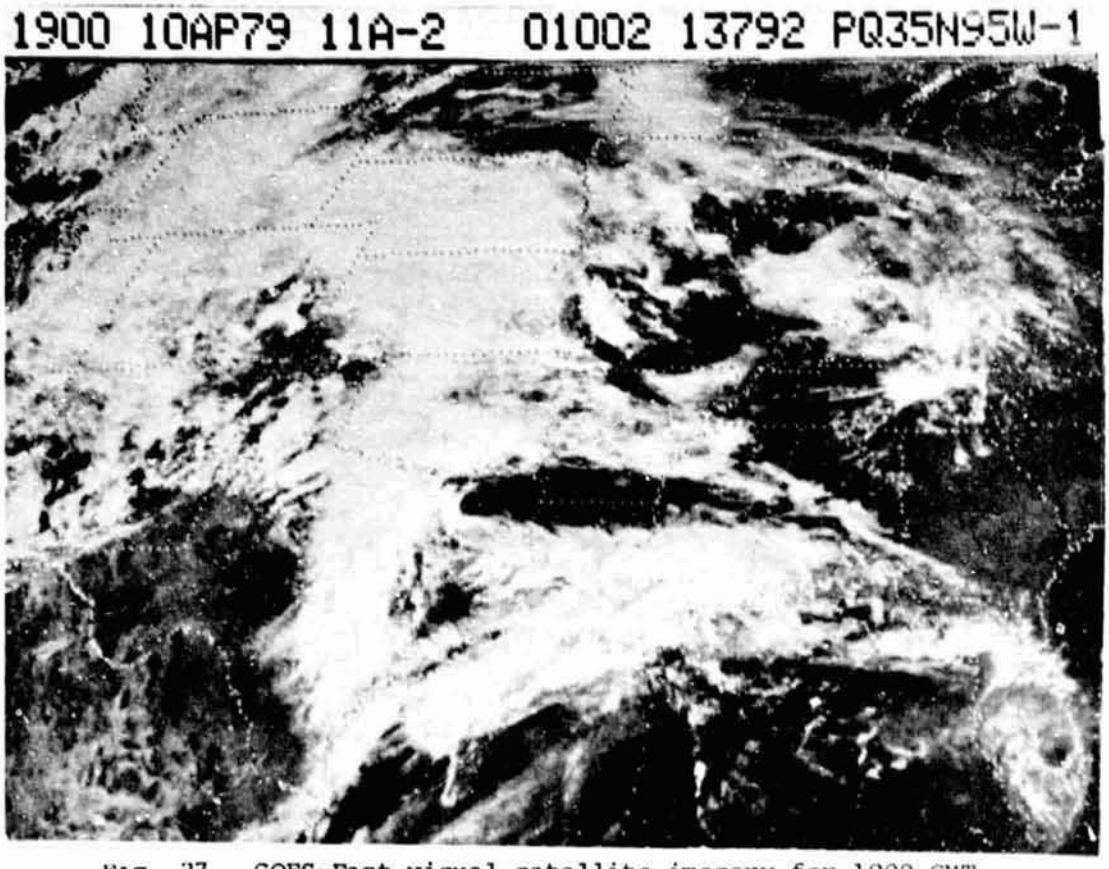

Fig. 27. GOES-East visual satellite imagery for 1900 GMT, 10 April 1979.

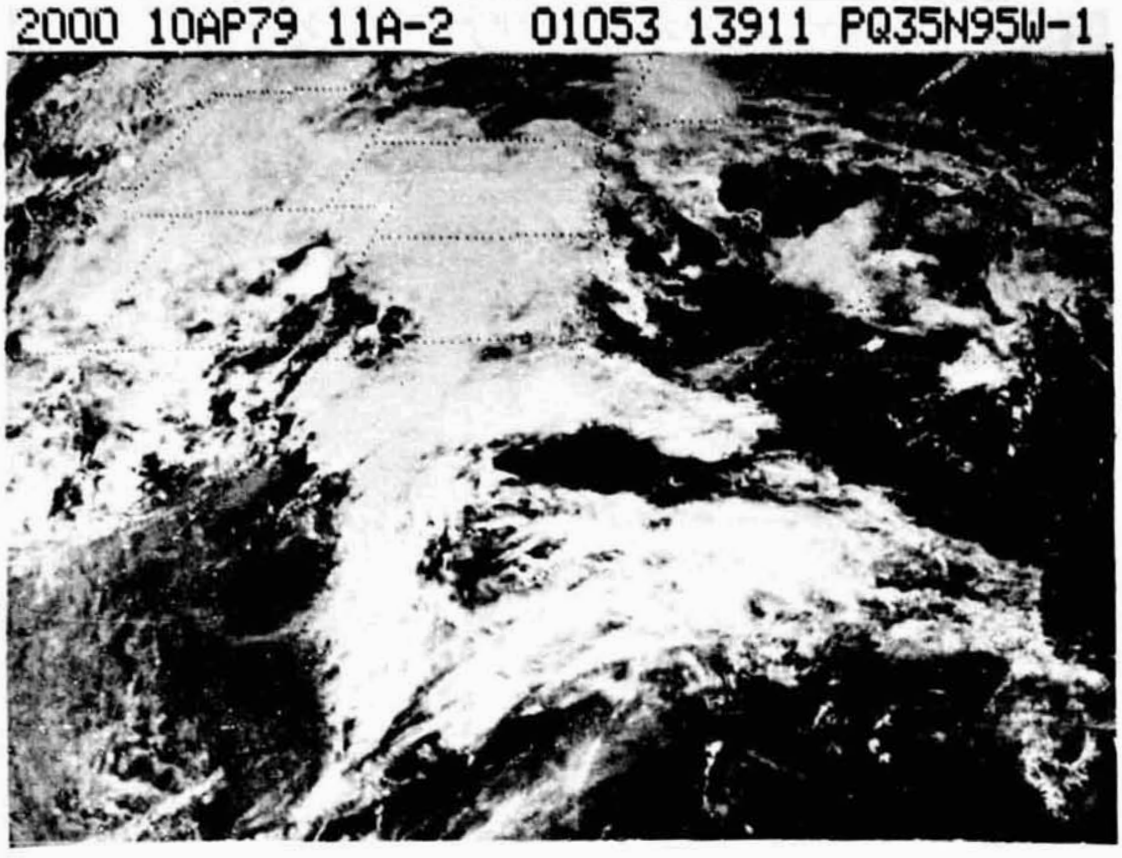

Fig. 28. GOES-East visual satellite imagery for 2000 GMT, 10 April 1979.

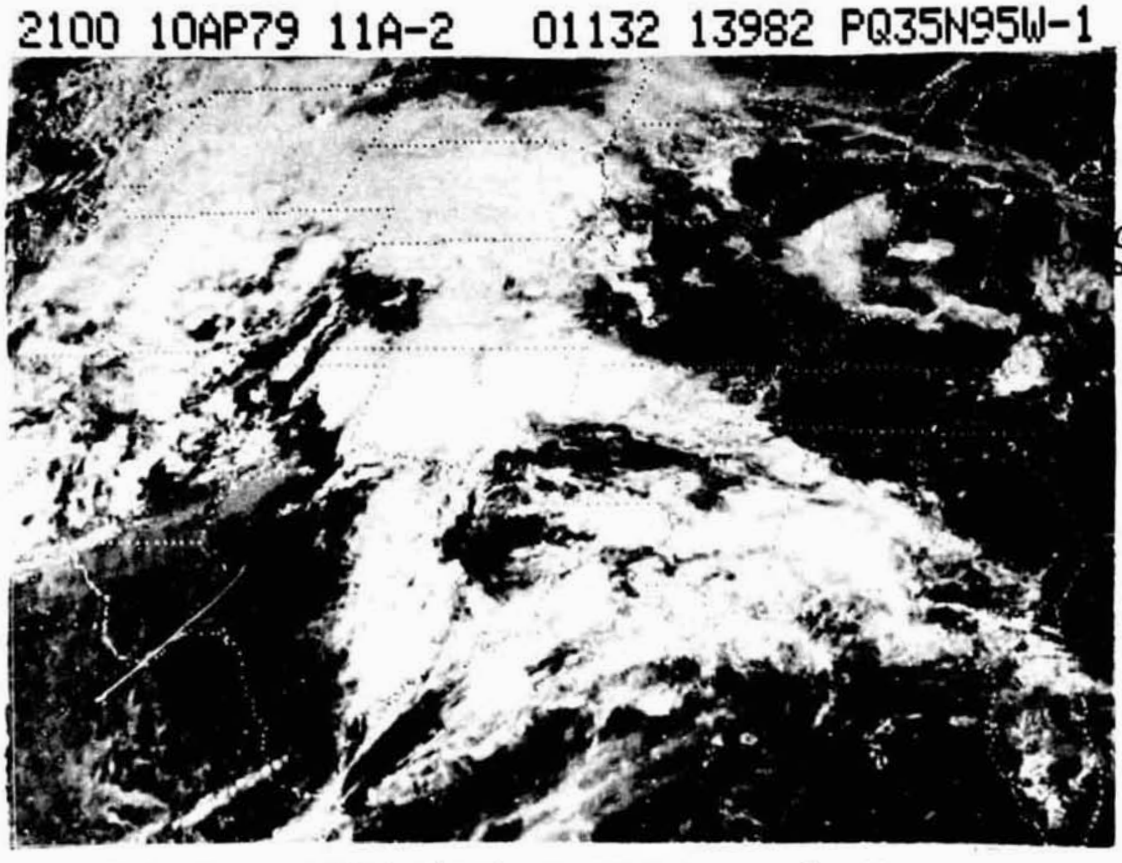

Fig. 29. GOES-East visual satellite imagery for 2100 GMT, 10 April 1979.

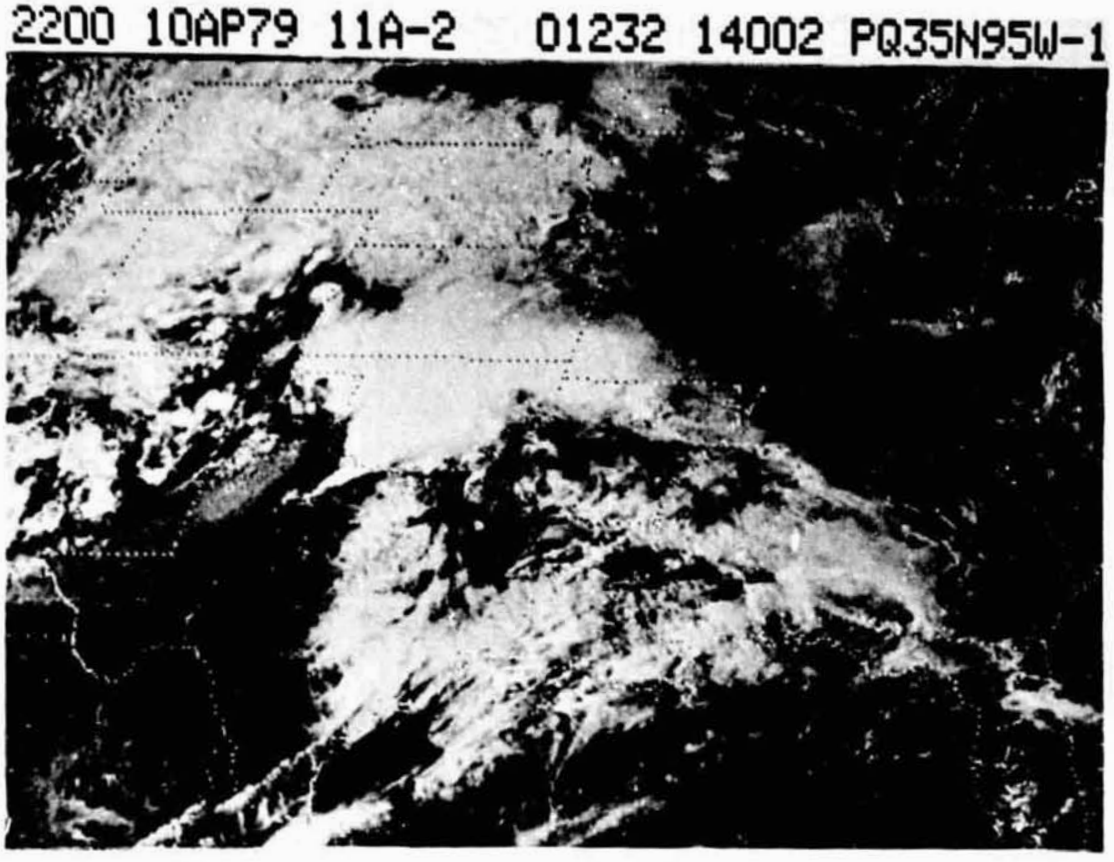

Fig. 30. GOES-East visual satellite imagery for 2200 GMT, 10 April 1979.

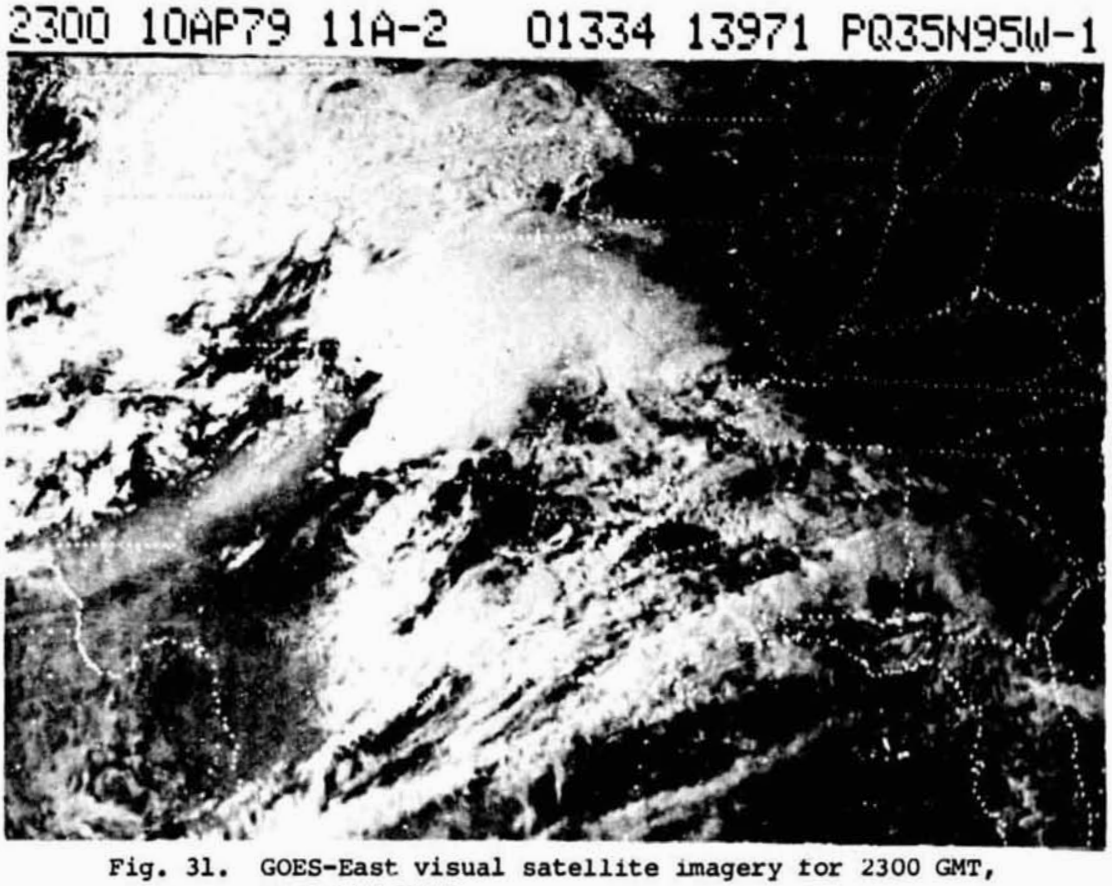

Fig. 31. GOES-East visual satellite imagery for 2300 GMT, 10 April 1979.

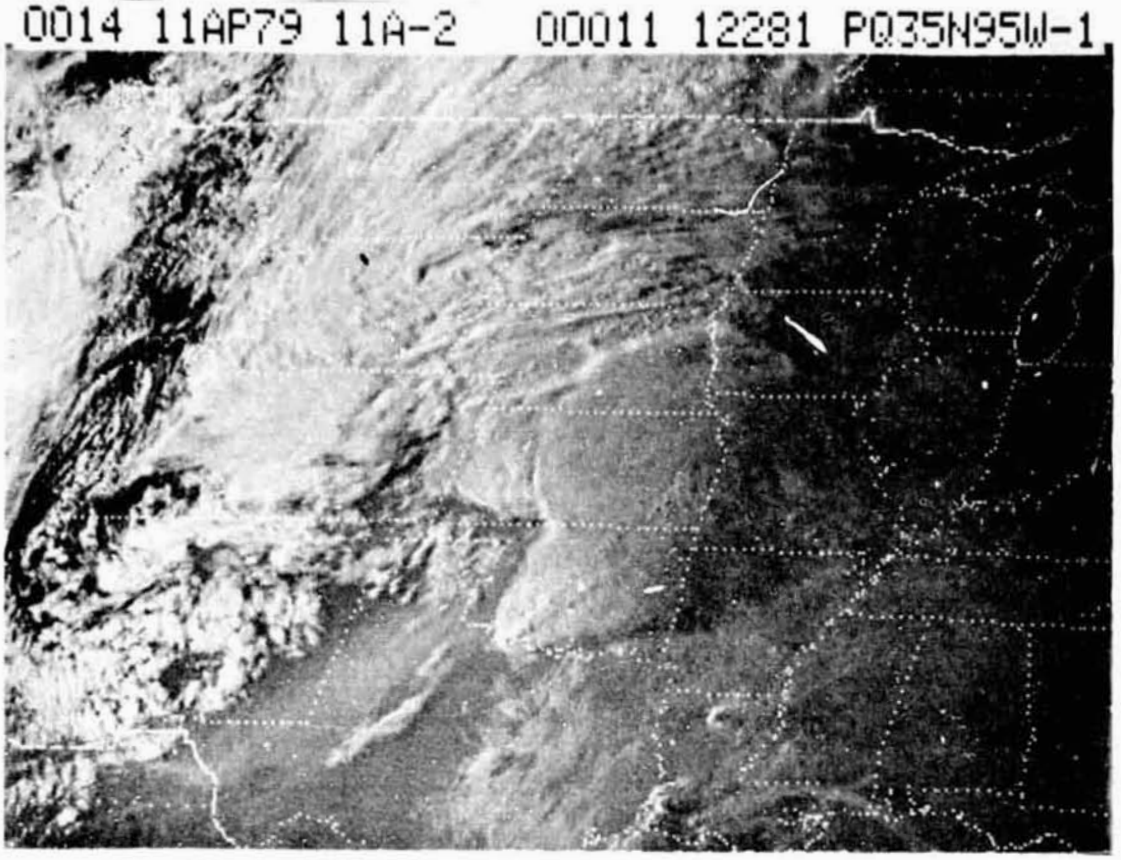

Fig. 32. GOES-East visual satellite imagery for 0014 GMT, 11 April 1979.

Fig. 33. GOES-East infrared satellite imagery for 0101 GMT, 11 April 1979.

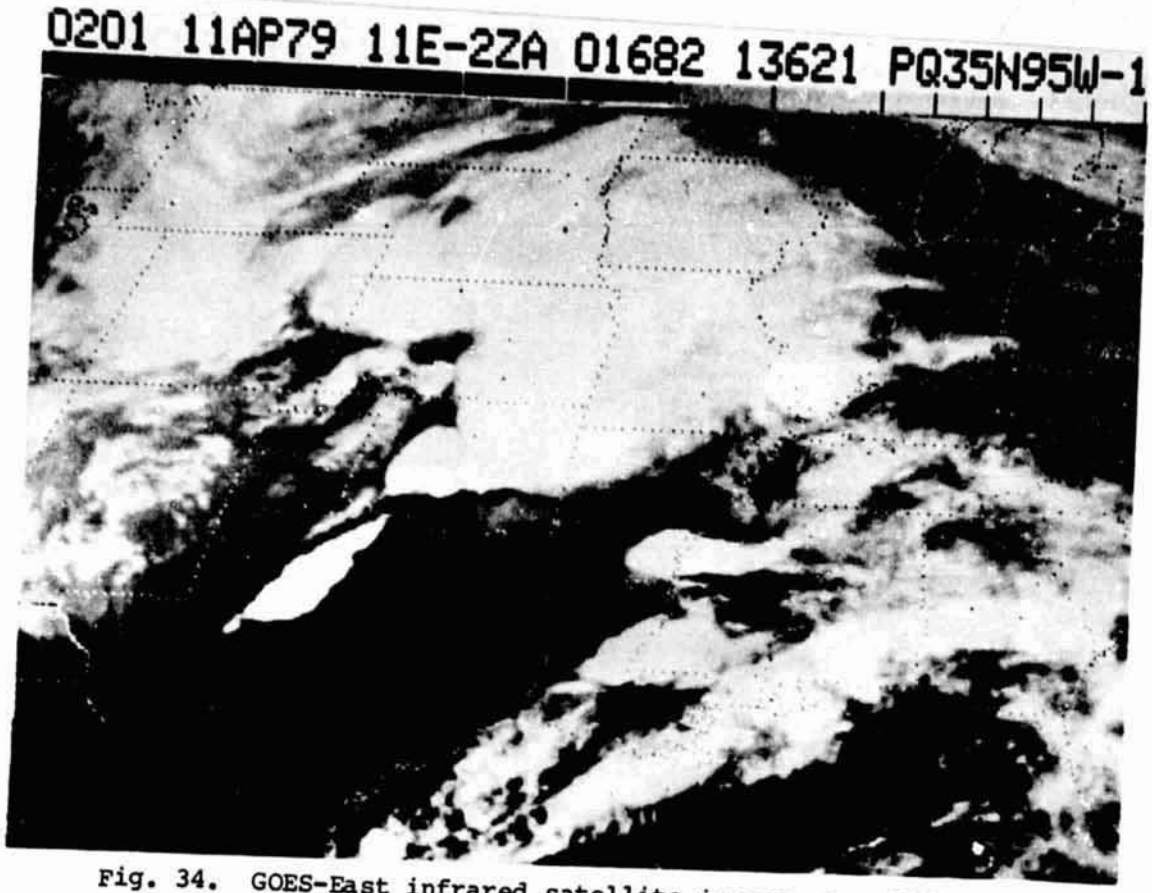

Fig. 34. GOES-East infrared satellite imagery for 0201 GMT, 11 April 1979.

Fig. 35. GOES-East infrared satellite imagery for 0303 GMT, 11 April 1979.

Fig. 36. GOES-East infrared satellite imagery for 0401 GMT, 11 April 1979.

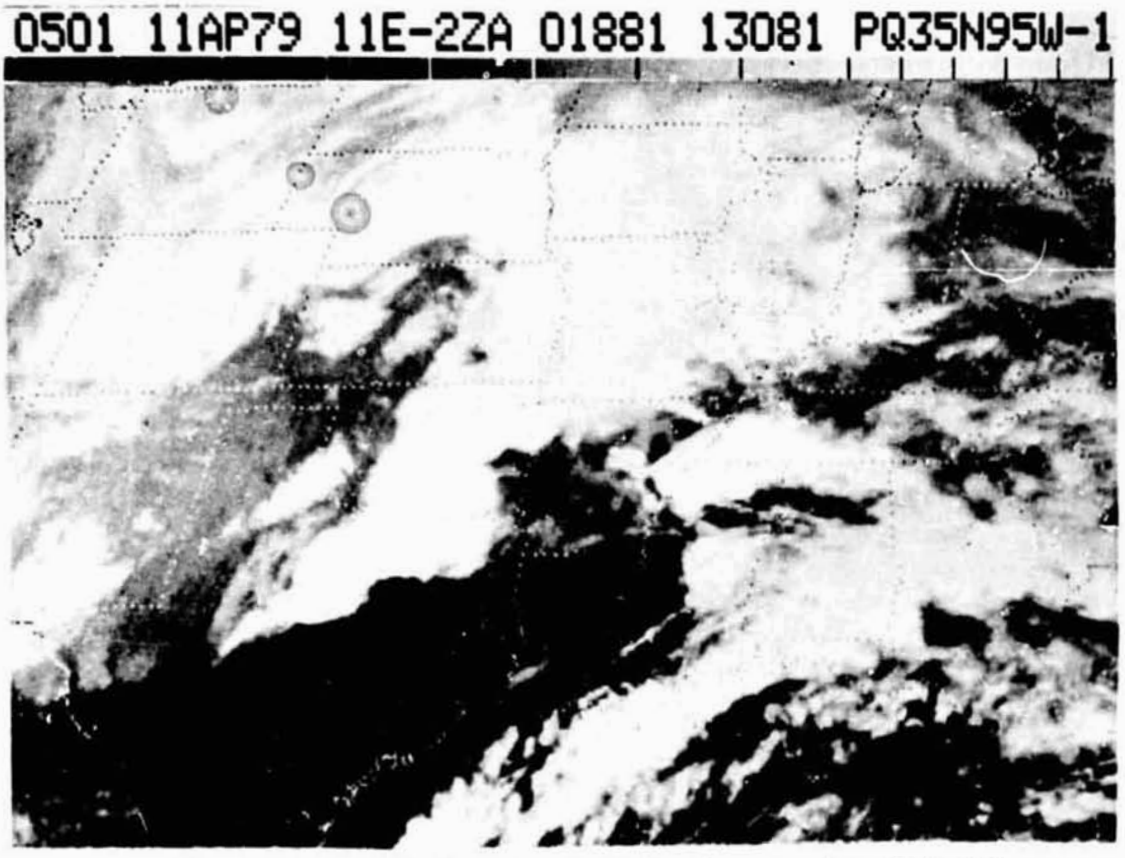

Fig. 37. GOES-East infrared satellite imagery for 0501 GMT, 11 April 1979.

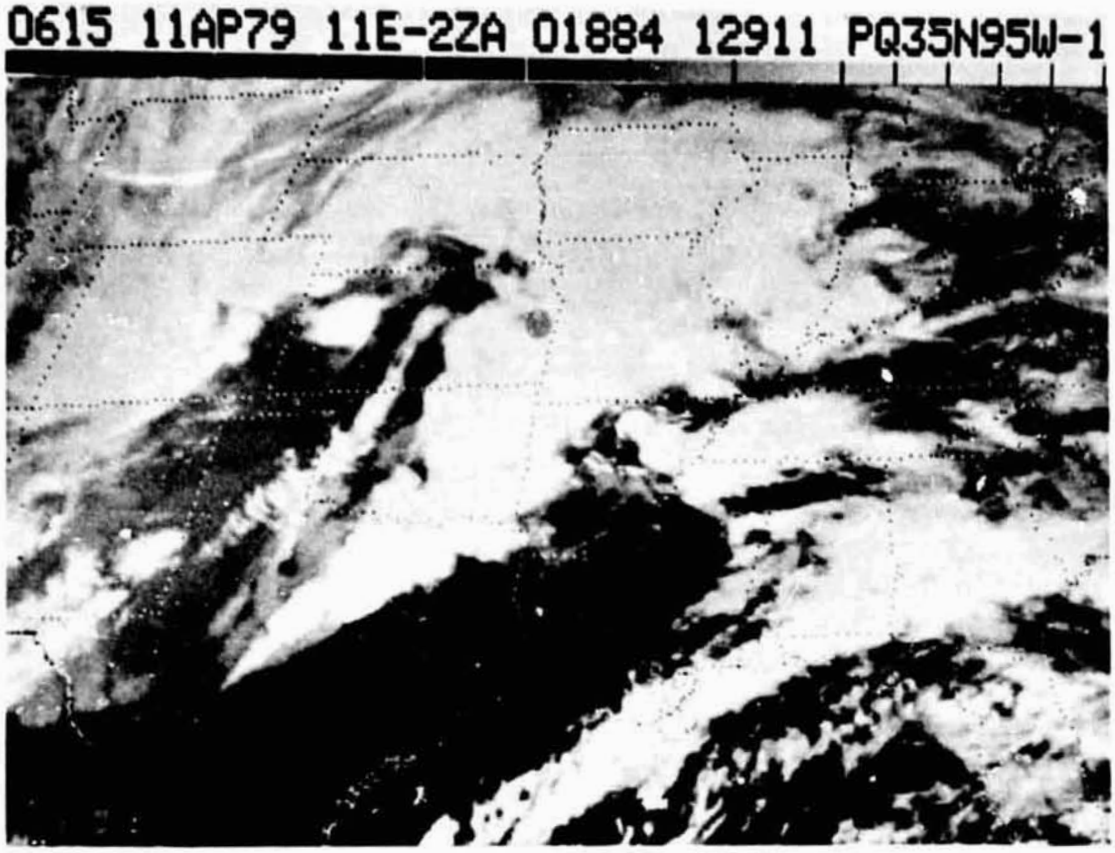

Fig. 38. GOES-East infrared satellite imagery for 0615 GMT, 11 April 1979.

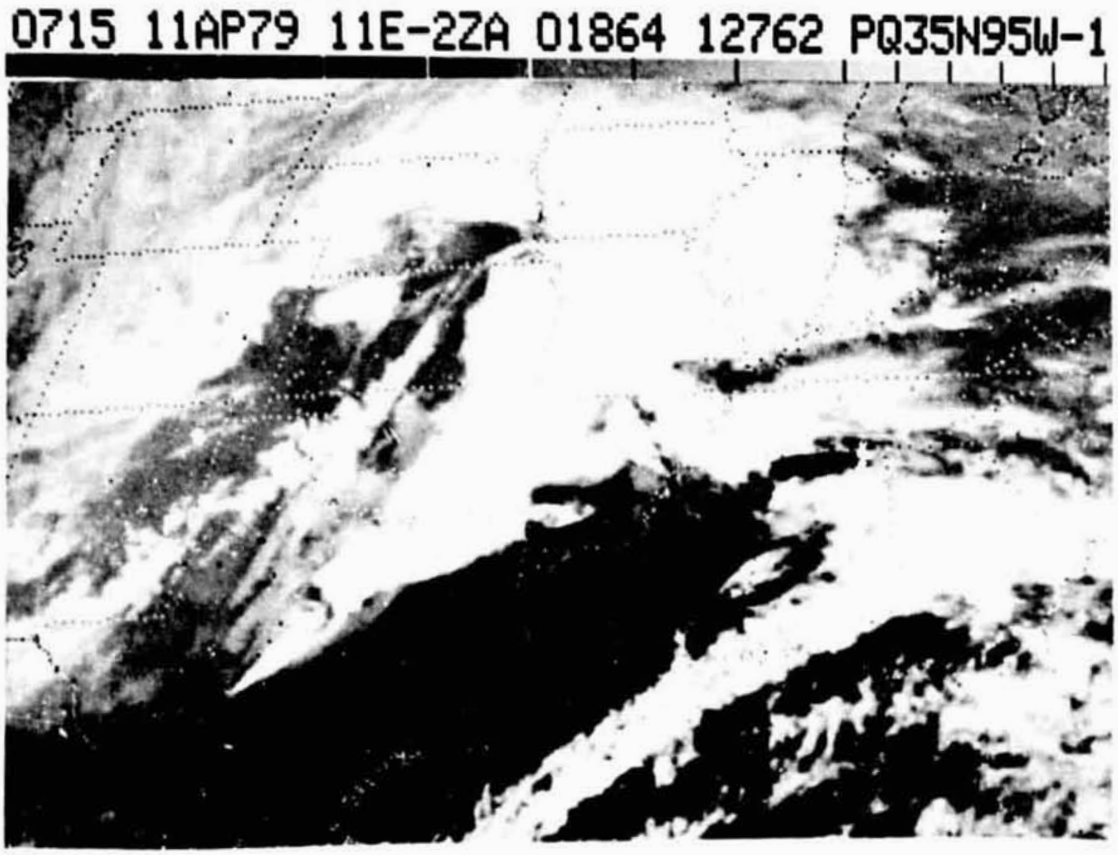

Fig. 39. GOES-East infrared satellite imagery for 0715 GMT, 11 April 1979.

Fig. 40. GOES-East infrared satellite imagery for 0801 GMT, 11 April 1979.

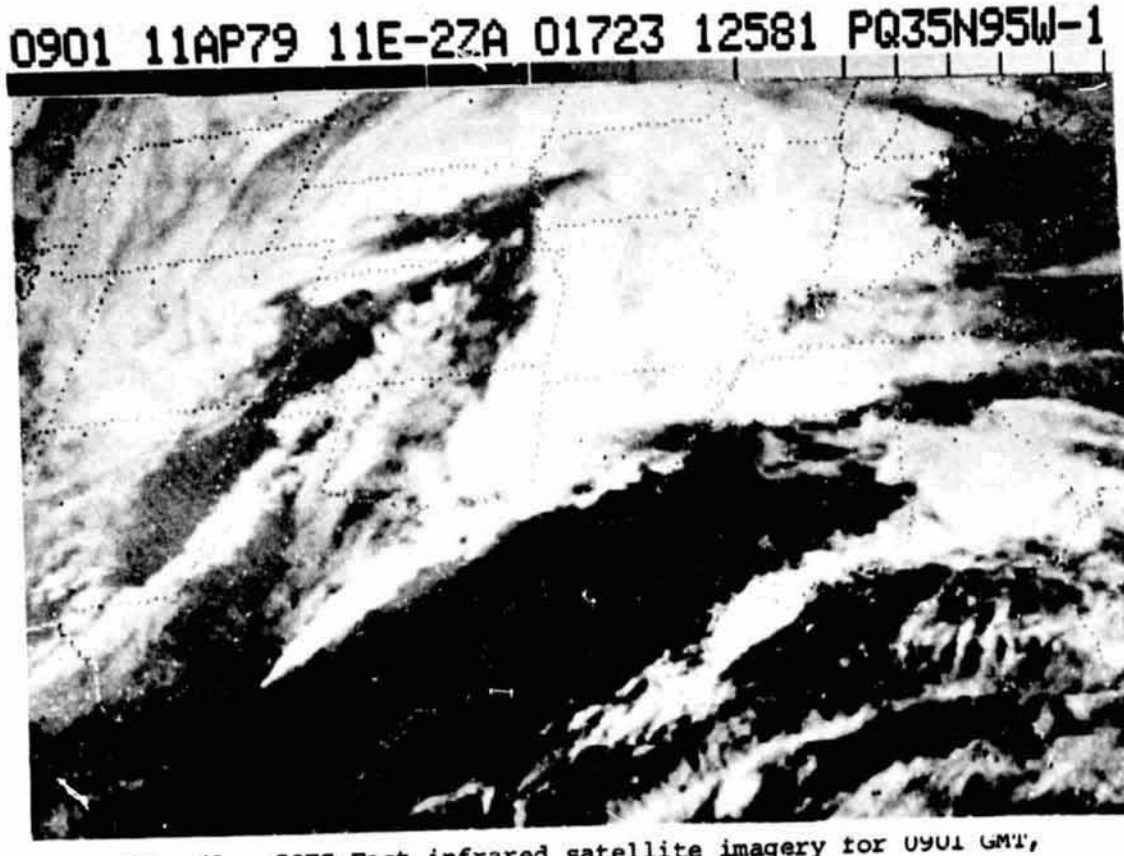

Fig. 41. GOES-East infrared satellite imagery for 0901 GMT, 11 April 1979.

Fig. 42. GOES-East infrared satellite imagery for 1001 GMT, 11 April 1979.

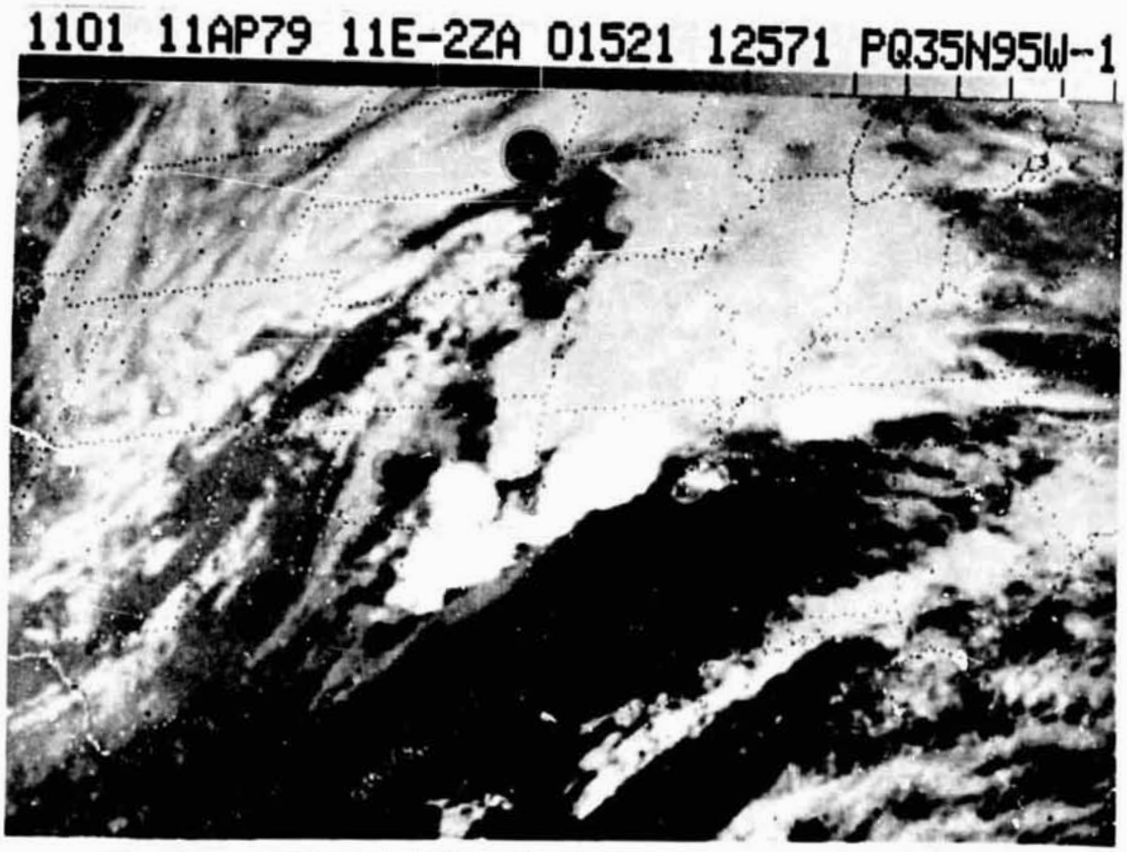

Fig. 43. GOES-East infrared satellite imagery for 1101 GMT, 11 April 1979.

Fig. 44. GOES-East infrared satellite imagery for 1145 GMT, 11 April 1979.

4. SEVERE AND UNUSUAL WEATHER REPORTED

AVE-SESAME I proved to be a strong outbreak period for severe and unusual weather events. Reports of tornadoes, severe thunderstorms, strong winds, heavy rain, hail, flooding, duststorms, and severe weather watches and warnings were compiled from the NOAA weather wire and national weather summaries when available and are presented in Table 2. A large number of these events took place in the South Central United States, with reports of over forty tornadoes, hail, severe thunderstorms, and strong winds in the South Central United States during the entire AVE-SESAME I experiment period. In one 2-hr period (0100-0300 GMT, 11 April 1979), twelve different tornadoes occurred within a 75 km radius of Wichita Falls, Texas. This outbreak of tornadoes in the Red River Valley area was responsible for 59 deaths and 1029 injuries. The locations, paths, times, and a corresponding damage scale determined by Fujita (used by permission) are presented in Fig. 46. A description of the Fujita damage scale specifications is presented in Table 3.

TABLE 2. Teletype reports taken from NOAA ' ther wire and national weather summaries of severe and unusual ' her from 0600 CST April 10 to 0600 CST April 11, 1979.

EVENT	LOCATION	TIME (CST)
GAL RAREP	RW & -TRW W & NW OF HOU MOVING TOWARD CLL @ 40 MPH	1045
WIND	75 MPH WINDS IN GUADALUPE PASS AREA	1106
LCH RAREP	SCATTERED RW IN A 10 MI WIDE AREA, 10 MI NW OF CONROE TO 20 MI SW OF DAM B RESERVOIR	1135
GAL RAREP	ISOLATED TRW MIDWAY BETWEEN CLL AND HUNTSVILLE, PATCHES OF -R SCATTERED E OF THERE TOWARDS LAKE LIVINGSTON AND A FEW MILES S OF LAKE RAYBURN. MOVEMENT IS NE.	1145
SEP RAREP	TWO ++ TRW 30 MI N OF DALLAS-FORT WORTH METROPLEX	1150
MAF RAREP	WIDELY SCATTERED RW NEAR MIDLAND	1330
LCH RAREP	SCATTERED SHOWERS IN AN AREA 70 MI WIDE FROM LUFKIN TO 20 MI N OF BATON ROUGE	1335
HONDO RAREP	-RW IN SAN ANTONIO AREA AND N FOR 35 MI MAX TOPS 8000 FT	1335
GGG RAREP	+TRW & ++TRW FROM BETHEL, OK TO N OF DEQUEEN, AR IN 20 MI WIDE AREA MOVING NE @ 50 MPH. SCATTERED -R IN SE TX AND CENTRAL LA EXTENDING FROM LUFKIN, TX TO ALEXANDRIA, LA IN A 40 MI WIDE AREA MOVING NE @ 35 MPH. MAX TOP @ DEQUEEN, AR @ 30,000 FT	1335
SVRTRW WARNING	NWS-AMARILLO WARNING FOR ARMSTRONG & CARSON COS. UNTIL 245 PM	1340
RAREP	++TRW 7 MI N OF TULIA, TX AND NEAR WASHBURN, TX MOVING NE @ 40 MPH	1340
HAIL	GOLFBALL SIZE HAIL IN STORMS NEAR TULIA AND WASHBURN, TX	1340
TORNADO WATCH	KC, MO WATCH #67 FOR W AND N CENTRAL TX AND SW OK FROM 2:30 PM UNTIL 7:00 PM. WATCH AREA IS ALONG A LINE FROM 30 MI SW OF ABILENE, TX TO 30 MI NW OF HOBART, OK AND IS 90 MI ON EITHER SIDE OF LINE	1355

TABLE 2. CONTINUED.

EVENT	LOCATION	TIME (CST)
TORNADO WARNING	IN EFFECT UNTIL 2:45 PM FOR MOTLEY CO, TX	1355
LUB RAREP	POSSIBLE RADAR INDICATED TORNADO SE OF CROSBYTON HAS MOVED NW AND @ 13:38 WAS ABOUT 4 MI SE OF MATADOR, TX	1355
TRW LINE	LINE OF TRW IN NE PORTION OF TEXAS S PLAINS	1355
TRW	++TRW OCCURRING FROM APPERMONT TO BUANNAH, TX	1401
AMA RAREP	SVR TRW MOVING NE INTO DONLEY CO, TX @ 35 MPH	1425
LCH RAREP	SCATTERED RW FROM RAYBURN LAKE TO S OF SHREVE-PORT, LA TOWARD NATCHEZ, MS	1435
GGG RAREP	-TRW S OF TYLER TO 10 MI SW OF LONGVIEW MAX TOP 27,000 FT	1435
WINTER STORM WATCH	NAT'L WX SUMM FOR TONIGHT & WEDNESDAY FOR NW KS	1500
TEMP	RECORD LOW-ROCKFORD, IL: 19°	1500
TORNADO WARNING	NWS-WICHITA FALLS, TX: WARNING FOR WILBARGER CO, TX UNTIL 5:00 PM	1553
TORNADO	RADAR INDICATED TORNADO 15 MI S OF VERNON, TX AND MOVING NE @ 25 MPH	1555
TORNADO WATCH	CONTINUES IN EFFECT UNTIL 7:00 PM FOR TX & OK ALONG AND 90 MI EITHER SIDE OF A LINE FROM 30 MI SW OF ABILENE TO 30 MI NW OF HOBART, OK	1620
TORNADO	TORNADO @ 4:00 PM CAUSED DAMAGE AND INJURIES IN VERNON AND OKLAUNION, TEXAS	1600
TRW	+TRW OCCURRING FROM N OF HASKELL TO 15 MI W OF WICHITA FALLS MOVING NE @ 45 MPH	1620
TORNADO	TORNADO VISUALLY OBSERVED TO BE MOVING N ACROSS THE RED RIVER INTO OK	1633
TORNADO WARNING	ISSUED FOR BAYLOR CO INCLUDING SEYMOUR, TX	1656
TORNADO	BAYLOR CO SHERIFF REPORTED A TORNADO TOUCH-DOWN IN SEYMOUR, TX. TORNADO WAS REPORTED TO BE MOVING NE AND TO HAVE RETURNED TO THE CLOUDS	1653

TABLE 2. CONTINUED.

EVENT	LOCATION	TIME (CST)
SEP RAREP	AREA OF ++TRW IN THE SEYMOUR, TX AREA, MOVING NE AT 45 MPH. PRECIP TOPS TO 58,000 FT W OF SEYMOUR	1635
TORNADO	TORNADO SEEN BY A SVR WX SPOTTER @ ROCKY POINT	1700
WINDS	WINDS OF 65 MPH WERE REPORTED IN GUADALUPE PASS AREA	1700
TORNADO WATCH	TORNADO WATCH #68 HAS BEEN ISSUED FOR N CENTRAL, NE TEXAS AND S CENTRAL, SE OKLAHOMA FOR 6:00 PM TO 12:00 AM. THE WATCH AREA IS ALONG AND 70 MI EITHER SIDE OF A LINE 50 MI S OF WICHITA FALLS, TX TO 40 MI E OF MCALESTER, OK	1700
SVR TRW WARNING	NWS HAS ISSUED A SVR TRW WARNING EFFECTIVE UNTIL 7:00 PM FOR WICHITA CO OF TX	1745
WICHITA FALLS RAREP	SVR TRW SPOTTED ON RADAR 5 MI W OF IOWA PARK, TX MOVING NE	1745
HAIL	GOLF TO BASEBALL SIZE HAIL REPORTED BY SPOTTERS 20 MI SW OF WICHITA FALLS, TX	1750
TORNADO WARNING	NWS TORNADO WARNING ISSUED FOR WICHITA CO, TX AND CITY OF WICHITA FALLS, TX EFFECTIVE UNTIL 7:00 PM	1800
WICHITA FALLS RAREP	A TORNADO WAS INDICATED 10 MI SW OF WICHITA FALLS, TX	1758
TORNADO	SPOTTER REPORTED A TORNADO 5 MI SW OF THE WICHITA FALLS MEMORIAL STADIUM MOVING NE @ 30 MPH	1800
SEP RAREP	++TRW WAS 25 MI W OF WICHITA FALLS, MOVING NW @ 45 MPH. TOPS TO 53,000 FT	1735
TORNADO WARNING	NWS WARNING EFFECTIVE UNTIL 7:00 PM FOR CLAY CO, TX	1811
TORNADO	TORNADO IN WICHITA FALLS @ SOUTHWEST PARKWAY AND HARRISON STREETS MOVING E @ 30 MPH	1811
TORNADO WARNING	NWS WARNING FOR ARCHER CO, TX EFFECTIVE UNTIL 6:15 PM	1720
TORNADO	RADAR INDICATED & BAYLOR CO SHERIFF REPORTED A TORNADO IN BAYLOR CO, TX NEAR MAYBELLE, MOVING NE @ 30 MPH	1720

TABLE 2. CONTINUED.

EVENT	LOCATION	TIME (CST)
SVR TRW WARNING	NWS WARNING FOR JACKSON, OUACHITA, LINCOLN, AND UNION PARISHES IN N CENTRAL LA	1835
SVR TRW	SVR TRW THAT CAUSE WICHITA FALLS TORNADO HAS MOVED N TO OK AND IS ABOUT 20 MI NE OF WICHITA FALLS. ALSO, A LINE OF TRW IS BEGINNING TO FORM W OF ABILENE	1930
GGG RAREP	++TRW WERE OVER FARMERVILLE, LA AND SE OF THERE MOVING NE AT 40 MPH	1930
SEP RAREP	A LINE OF TRWS HAS DEVELOPED AND EXTENDS FROM N OF ABILENE TO W OF SAN ANGELO MOVING NE @ 45 MPH	1935
GAL RAREP	++TRW OVER LA BETWEEN CAMERON AND LAKE CHARLES MOVING NE @ 40 MPH	1940
SVR TRW WARNING	NWS HAS ISSUED A WARNING FOR STERLING AND COKE CO OF TEXAS EFFECTIVE UNTIL 9:00 PM	1945
SAN ANGELO RAREP	SVR TRW 8 MI ESE OF STERLING CITY, TX, MOVING NE @ 25 MPH. A LINE OF TRW HAS RAPIDLY DEVELOPED DURING PAST HOUR FROM BIG LAKE TO STERLING CITY TO COLORADO CITY	1945
SVR TRW WARNING	NWS WARNING FOR SW PARISHES IN LA EFFECTIVE UNTIL 8:30 PM	1930
LCH RAREP	SHORT LINE OF TRW FROM CALCASIEU LAKE TO KINDER, LA MOVING NE @ 55 MPH	1930
SVR TRW WARNING	NWS WARNING ISSUED FOR ARCHER & YOUNG CO OF TX EFFECTIVE UNTIL 10:00 PM. LINE OF SVR TRW FROM 20 MI SW OF ARCHER CITY TO ABILENE WERE MOVING NE @ 45 MPH	20:45
HAIL, RAIN	GOLFBALL SIZE HAIL AND HEAVY RAINS WERE REPORTED BY THE DEPT OF PUBLIC SAFETY IN BRONTE AND WATER VALLEY, TX	2030
HAIL	INCH AND A HALF HAIL REPORTED AT DYESS AFB AND GOLFBALL SIZE HAIL AT VIEW, TX	2050
ABI RAREP	LINE OF SVR TRW FROM E OF ALBANY TO NOVICE, TX MOVING SE @ 30 MPH	2110
TORNADO WARNING	NWS WARNING FOR COLEMAN & CALLAHAN CO OF TX EFFECTIVE UNTIL 10:30 PM	2115

EVENT	LOCATION	TIME (CST)
TORNADO	DPS REPORTED A CONFIRMED TORNADO E OF CREWS, TX MOVING NE @ 40 MPH	2117
SAN ANGELO RAREP	INDICATED TORNADO 10 MI WNW OF PAINT ROCK, TX MOVING E @ 35 MPH	2128
SEP RAREP	35 MI WIDE LINE OF +TRW & ++TRW EXTENDED FROM 35 MI NE OF WICHITA FALLS TO 45 MI SW OF SAN ANGELO MOVING SE @ 35 MPH	2135
TORNADO WATCH	NWS HAS ISSUED WATCH #69 FOR N CENTRAL TX, CENTRAL AND E OK EFFECTIVE 9:30 PM TO 3:00 AM. THE WATCH AREA IS ALONG AND 70 MI EITHER SIDE OF A LINE FROM 40 MI SE OF ABILENE, TX TO 40 MI E OF TULSA, OK.	2100
DFW RAREP	LINE OF SVR TRW WITH POSSIBLE LARGE HAIL WAS INDICATED 30 MI E OF WICHITA FALLS TO BALLINGER MOVING E @ 30 MPH	2145
FUNNEL CLOUD	FUNNEL SPOTTED ON RUNNELS/CONCHO CO LINE ON HIGHWAY 83	2134
HAIL	NUMEROUS HAIL REPORTS IN THE TOM GREEN/RUNNELS CO AREA AS WELL AS AT MATHIS FIELD	2210
TORNADOES & FUNNEL CLOUDS	NUMEROUS REPORTS OF TORNADOES & FUNNEL CLOUDS HAVE BEEN REPORTED TO AND BY THE DPS IN NW COLEMAN CO, TX AND ALSO INDICATED BY RADAR. THE TORNADOES WERE MOVING NE @ 35 MPH	2220
OKC RAREP	SVR TRW OVER HOLDENVILLE, OK MOVING NE @ 40 MPH	2225
TORNADO WARNING	NWS ISSUED WARNING FOR STEVENS CO & PALO PINTO CO, TX EFFECTIVE UNTIL 12:30 AM	2301
DFW RAREP	POSSIBLE TORNADOES NEAR CADDO, TX AND JUST N OF STRAWN, TX MOVING E @ 35 MPH	2315
AUS RAREP	POSSIBLE TORNADO NEAR BROWNWOOD MOVING E @ 35 MPH	2314
TORNADO WARNING	NWS WARNING FOR BROWN CO, TX EFFECTIVE UNTIL 12:30 AM	2325
ABI RAREP	POSSIBLE TORNADO 6 MI SW OF BLANKET, TX MOVING ENE @ 35 MPH	2320

TABLE 2. CONTINUED.

EVENT	LOCATION	TIME (CST)
SVR TRW WARNING	NWS WARNING FOR COLEMAN CO, TX UNTIL 12:30 AM	2325
ABI RAREP	SVR TRW 10 MI S OF TALPA, TX MOVING ENE @ 35 MPH	2320
MAF RAREP	++TRW 15 MI SE OF SAN ANGELO AND ANOTHER 30 MI E OF SAN ANGELO BOTH MOVING E @ 35 MPH	2330
SVR TRW WARNING	NWS ISSUED WARNING FOR PARKER, HOOD, WISE, & ERATH CO OF TX EFFECTIVE UNTIL 1:00 AM	2345
DFW RAREP	LINE OF SVR TRW WITH POSSIBLE LARGE HAIL INDICATED FROM ALVORD TO COMANCHE MOVING E @ 35 MPH	2345
SER RAREP	TWO ++TRW IN PROGRESS. ONE JUST W OF MINERAL WELLS, TX MOVING NE @ 35 MPH, THE OTHER JUST S OF COMANCHE MOVING E @ 50 MPH	2335
TORNADO WARNING	NWS ISSUED WARNING FOR PARKER, HAMILTON, AND MONTAGUE CO OF TX, EFFECTIVE UNTIL 1:00 AM	2335
DFW RAREP	SVR TRW WITH POSSIBLE TORNADOES @ MINERAL WELLS, TX AND LAMBLEIN, TX	0000
TORNADO	OBSERVED ON THE GROUND @ NOCONA MOVING E @ 40 MPH	0000
SVR TRW WARNING	NWS WARNING EFFECTIVE UNTIL 10:30 AM FOR BOSQUE AND CORYELL CO, TX	0030
ACT RAREP	LINE OF ++TRW FROM 75 MI NW OF WACO TO HAMILTON MOVING E @ 35 MPH	0020
TORNADO WATCH	NWS HAS ISSUED WATCH #70 EFFECTIVE 1:00 AM UNTIL 7:00 AM ALONG AND EITHER SIDE OF A LINE FROM 10 MI S OF JUNCTION, TX TO TYLER, TX	0030
TORNADO WARNING	NWS ISSUED WARNING EFFECTIVE UNTIL 10:30 AM FOR WISE CO, TX	0030
TORNADO	TORNADOES WERE REPORTED IN BRIDGEPORT AND BOWIE BOTH MOVING ENE @ 50 MPH	0030
RAIN	RW AND TRW WERE LOCATED IN A 45 MI WIDE AREA FROM 25 MI NW OF JUNCTION TO BROWNWOOD MOVING E @ 30 MPH. RAINFALL RATES WERE ½"/HOUR. MAX TOP WAS 30,000 FT 30 MI N OF JUNCTION	0045

EVENT	LOCATION	TIME (CST)
SVR TRW WARNING	NWS ISSUED WARNING FOR SOMERVELL AND JOHNSON COS OF TX EFFECTIVE UNTIL 02:00	0100
DFW RAREP	SVR TRW WITH POSSIBLE LARGE HAIL INDICATED 5 MI W OF GLEN ROSE MOVING ENE @ 35 MPH	0100
DFW RAREP	POSSIBLE TORNADOES AT MINERAL WELLS AND NEAR LAMKIN	0000
SEP RAREP	TWO ++TRW WERE IN PROGRESS, ONE JUST W OF BROWNWOOD, THE OTHER N OF MINERAL WELLS, BOTH MOVING NE @ 35 MPH	0035
TORNADO WARNING	NWS ISSUED WARNING EFFECTIVE UNTIL 02:15 AM FOR DENTON CO, TX	0115
DFW RAREP	POSSIBLE TORNADO 2 MI N OF KRUM MOVING ENE @ 35 MPH. ALSO, A LINE OF SEVERE TRW EXTENDED FROM SANGER TO RHOME	0115
TORNADO WARNING	NWS ISSUED WARNING EFFECTIVE FOR E LOVE AND W MARSHALL COS OF OK UNTIL 10:45 AM	0110
OKC RAREP	POSSIBLE TORNADO INDICATED 10 MI S OF MARIETTA, OK MOVING ENE @ 40 MPH	0110
SVR TRW WARNING	NWS ISSUED WARNING FOR MENARD CO, TX EFFECTIVE UNTIL 2:30 AM	0130
SAN ANGELO RAREP	SVR TRW INDICATED 20 MI SW OF MENARD, TX MOVING NE @ 30 MPH	0130
HONDO RAREP	A FEW +TRW AND SCATTERED TRW WERE LOCATED FROM JUST N OF ROCKSPRINGS TO 40 MI NW OF LAMPASSAS. THIS 40 MI WIDE AREA WAS MOVING E @ 30 MPH. RAINFALL RATES WERE FROM 1 TO 2 INCHES/HOUR. MAX TOP 35,000 FT, 25 MI NW OF JUNCTION, TX	0135
TORNADO WARNING	NWS ISSUED WARNING EFFECTIVE UNTIL 2:25 AM FOR MARSHALL, W BRYAN, & S JOHNSTON COS OF OK	0145
TORNADO	TORNADO REPORTED BY OK HIGHWAY PATROL NEAR KINGSTON, OK	0145
TORNADO WARNING	NWS ISSUED WARNING FOR GRAYSO CO, TX EFFECTIVE UNTIL 3:00 AM	0200
DFW RAREP	SVR TRW WITH POSSIBLE TORNADO 20 MI SW OF SHERMAN MOVING NE @ 35 MPH	0200

TABLE 2. CONTINUED.

EVENT	LOCATION	TIME (CST)
FUNNEL CLOUDS	FUNNEL CLOUDS SEEN BY SPOTTERS IN STORM NEAR SHERMAN, TX	0200
TORNADO WATCH	NWS ISSUED WATCH #71 EFFECTIVE 3:00 AM UNTIL 9:00 AM FOR NE TX, W & CEN AR, SE OK, & NW LA. WATCH AREA IS ALONG AND 70 MI EITHER SIDE OF A LINE FROM 30 MI W OF LONGVIEW, TX TO 70 MI NNW OF LITTLE ROCK, AR	0215
SVR TRW WARNING	NWS ISSUED WARNING EFFECTIVE UNTIL 3:30 AM FOR PARKER AND TARRANT CO OF TX	0220
DFW RAREP	SVR TRW WITH POSSIBLE LARGE HAIL JUST N OF CRESSON, TX MOVING NE @ 35 MPH	0220
SVR TRW WARNING	NWS ISSUED WARNING EFFECTIVE UNTIL 3:30 AM FOR BROWN CO, TX	0220
ABI RAREP	LINE OF TRW INDICATED MOVING INTO BROWN CO FROM THE SW. THE LINE IS MOVING ENE @ 35 MPH	0215
TORNADO WARNING	NWS WARNING ISSUED FOR BRYAN AND ATOKA CO OF OK EFFECTIVE UNTIL 3:15 AM	0225
OKC RAREP	POSSIBLE TORNADO INDICATED 10 MI SW OF DURANT, OK	0220
SVR TRW WARNING	NWS ISSUED WARNING FOR MILLS CO, TX EFFECTIVE UNTIL 3:15 AM	0235
AUS RAREP	SVR TRW INDICATED NEAR GOLDTHWAITE MOVING ENE @ 25 MPH	0310?
HONDO RAREP	++TRW WERE LOCATED 15 MI N OF ROCKSPRINGS AND 35 MI NW OF LAKE BUCHANAN. THEIR RAINFALL RATES WERE UP TO 2"/HR. MOVEMENT TO E @ 25 MPH. MAX TOP 38,000 FT 35 MI NW OF LAKE BUCHANAN	0235
SVR TRW WARNING	NWS ISSUED WARNING FOR HAMILTON & COMANCHE CO OF TX EFFECTIVE UNTIL 3:45 AM	0245
DFW RAREP	SVR TRW WITH POSSIBLE HAIL FROM COMMANCHE TO NEAR RISING STAR, TX MOVING NE @ 40 MPH	0245
SVR TRW WARNING	NWS ISSUED WARNING EFFECTIVE UNTIL 4:20 AM FOR BOSQUE CO, TX	0320?
HAIL	HAIL UP TO GOLFBALL SIZE REPORTED IN THE CITY OF BROWNWOOD, TX	0305
SVR TRW WARNING	NWS ISSUED WARNING FOR SEVIER & HOWARD CO OF AR EFFECTIVE UNTIL 4:15 AM	0325

EVENT	LOCATION	TIME (CST)
SHREVEPORT RAREP	SVR TRW NEAR DEQUEEN, AR MOVING NE @ 50 MPH. THIS STORM IS PART OF A LINE 30 MI WIDE FROM W OF MT IDA, AR TO 25 MI W OF TEXARKANA TO 25 MI NW OF TYLER, TX MOVING E @ 30 MPH	0325
DUSTSTORM WARNING	WARNING FORECAST FOR SOUTH PLAINS IN WEST TEXAS	0339
DFW RAREP	LINE OF SCATTERED TRW FROM BROWNWOOD, TX TO STEPHENVILLE TO FORT WORTH TO CORSICANA TO MT PLEASANT TO THE RED RIVER. SOME OF THESE STORMS ARE SEVERE WITH POSSIBLE HAIL & HIGH WINDS	0415
HAIL	MARBLE SIZE HAIL REPORTED NW OF DEQUEEN, AR	0330
HAIL	BASEBALL SIZE HAIL REPORTED IN DECATUR, TX	0000
SHREVEPORT RAREP	+TRW WERE LOCATED N OF DEQUEEN AR TO N OF MT IDA, AR	0545
FLASH FLOOD WATCH	WATCH IN EFFECT FOR ENTIRE STATE OF AR TODAY	0410
	SERVICE A	CST
ICING	ICING ALOFT OVER N HALF OF NM	0840
ICING	ICING ALOFT OVER W HALF OF MO	0915
RAREP	LINE 30S MLC TO 40 SW PRX TO 30 NNW MQP OF SCATTERED EMBEDDED TRW WITH A LEVEL 5 CELL, MAX TOP 50,000	1135
TURBULENCE, ICING	UPPER AIR REPORT OF TB MDT AND RIME ICING OVER ABQ	1218
RAREP	A LINE 30 MI SE MLC TO 10 MI SW PRX TO 40 MI S LBB TO 30 MI S DHT: EMBEDDED TRW WITH AN EXTREME LEVEL 6 AND A FEW LEVEL 5 ECHOES. MAX TOPS 48,000 FT	1235
HAIL	1" HAIL REPORTED 40 MI S OF ADM	1233
OKC RAREP	HAIL 162°/76 MI, TROPOPAUSE - 39,700 FT	1233
SEP RAREP	TROPOPAUSE 40,200 FT	1230
GGG RAREP	TROPOPAUSE 39,000 FT	
TURBULENCE	OVER ABI C141 EXPERIENCED MODERATE TURBULENCE	1304
HAIL	¼" HAILSTONES @ LVS	1315

TABLE 2. CONTINUED.

EVENT	LOCATION	TIME (CST)
TURBULENCE	TURBULENCE & UDDF OVER NM AND W TX	1305
RAREP	60 MI ESE FSM TO 50 MI WSW LIT TO 40 MI S LBB TO 30 MI S DHT - EMBEDDED TRW WITH AN EXTREME LEVEL 6 AND SOME LEVEL 5 ECHOES TOPS TO 48,000 FT	1335
OKC RAREP	HAIL 187°/54 MI, TROP @ 39,700 FT	1335
HAIL	½" HAIL @ HBR	1450
RAREP	LINE 50 MI NE FYV TO 40 SW FLP TO 60 MI S CDS TO 50 MI NE DHT WITH AN EXTREME LEVEL 6 AND SOME LEVEL 5 ECHOES. MAX TOPS 53,000 FT	1535
RAREP	40 MI SW HCT TO 10 MI N LAA TO 50 MI SW AKO WITH LEVEL 5 ECHOES AND TOPS TO 38,000 FT	1535
TURBULENCE	OVER GAG MODERATE TO SVR TURB., TRACE OF ICING AND EXTREMELY +RW	1627
RAREP	FROM 30 MI SE SLN TO 30 MI S ARG TO 30 MI NNW ABI WITH EXTREME LEVEL 6 AND SOME LEVEL 5 ECHOES, MAX TOPS 58,000 FT. TORNADO REPORTED 2128Z FROM ZONE AKO TO 60 MI W ANY TO 60 MI W GAG TO 30 SSE DEN TRW WITH SOME LEVEL 5 ECHOES. MAX TOPS 45,000 FT	1635
SEP RAREP	½" HAIL IN CELL 16°/73 MI	1733
HAIL	½" HAIL 6 MI N COS	1719
RAREP	20 W HYS TO 25 WSW CNG TO 30 W LIT TO 40 NNE ABI WITH AN EXTREME LEVEL 6 AND SOME LEVEL 5 ECHOES. MAX TOP 58,000 FT. TORNADO REPORTED IN SW PRECIP AREA FROM ZONE AKO TO 60 MI W ANY TO 60 MI W GAG TO 30 SSE DEN TRW WITH SOME LEVEL 5 ECHOES. MAX TOPS 45,000 FT	1735
RAREP	FROM 20 MI W HYS TO 40 MI NNW SGF TO 35 MI E MLC TO 40 MI NNE ABI: AREA OF BROKEN EMBEDDED TRW WITH AN EXTREME LEVEL 6 AND SOME LEVEL 5 ECHOES. MAX TOPS 55,000 FT. TORNADO REPORTED 0000Z 5 MI S SPS	1835

EVENT	LOCATION	TIME (CST)
RAREP	FROM 50 MI NE AKO TO 20 MI W HYS TO 30 MI SE GCK TO 50 MI SW AKO: AREA OF SCATTERED LOCALLY EMBEDDED TRW WITH A FEW LEVEL 5 ECHOES. MAX TOPS 35,000 FT	1835
HAIL	1/8" HAILSTONES AT LCH	1853
BLOWING DUST, WIND	BLOWING DUST IN ALL QUADRANTS, GUST TO 40 MPH AT ELP	1955
RAREP	FROM 40 MI WSW LNK TO 70 MI E BUM TO 20 MI SSW ADM TO 35 MI SW SPS, AREA OF BROKEN EMBEDDED TRWS WITH SOME LEVEL 5 ECHOES. MAX TOPS 50,000 FT	1935
GGG RAREP	TROP AT 50,000 FT	1930
SEP RAREP	TROP AT 43,000 FT	2001
RAREP	FROM 50 MI NW LNK TO 70 MI E BUM TO 30 MI NW PRX TO 35 MI SW SPS, AREA OF BROKEN EMBEDDED TRWS WITH FEW EXTREME LEVEL 6 AND SOME LEVEL 5 ECHOES. MAX TOPS 50,000 FT	2035
RAREP	FROM 60 MI NE ABI TO 35 MI W SJT, LINE OF BROKEN TRWS 20 MI WIDE WITH EXTREME LEVEL 6 AND SOME LEVEL 5 ECHOES, MAX TOPS 53,000 FT	2035
RAREP	NEAR CNG ISOLATED EXTREME LEVEL 6 TRW 20 MI IN DIAMETER, MAX TOP 44,000 FT	2035
RAREP	50 MI NW MLU, ISOLATED INTENSE LEVEL 5 TRW 15 MI IN DIAMETER, MAX TOP 45,000 FT	2035
DUST, WIND	ELP, DUST ALL QUADRANTS WIND GUSTING TO 36 MPH	2104
HAIL	MARBLE SIZE HAILSTONES ACCUMULATING ON THE GROUND AT ABI	2105
HAIL	¼" HAILSTONES AT ABI	2059
RAREP	FROM 30 MI NE PWE TO 30 MI NNE CBI TO 40 MI SW SGF TO 20 MI SW CNU, AREA OF BROKEN EMBEDDED TRWS, MAX TOPS 40,000 FT	2135
RAREP	FROM 50 MI NNW FYU TO 50 MI S TUL TO 40 MI NW ADM TO 40 MI NE ABI TO 30 MI W SJT, LINE OF BROKEN TRWS WITH FEW EXTREME LEVEL 6 AND SOME LEVEL 5 ECHOES. MAX TOPS 58,000 FT. SVR WX REPORTED LAST HOUR	2135
RAREP	40 MI NE CNG ISOLATED EXTREME LEVEL 6 TRW OF 20 MI DIAMETER, MAX TOP 44,000 FT, 3/4" HAIL REPORTED	2135

TABLE 2. CONTINUED.

EVENT	LOCATION	TIME (CST)
RAREP	FROM 50 MI E LIT TO 20 MI W GRW TO 40 MI NW MLU TO 60 MI E TXK, AREA OF SCATTERED TRWS WITH SOME LEVEL 5 ECHOES, MAX TOPS 43,000 FT	2135
DUST	ELP - DUST, ALQDS	2152
HAIL	¼" TO ½" HAILSTONES AT SJT	2155
RAREP	FROM 30 MI NE PWE TO 40 MI S STL TO 60 MI SSW ANY, AREA OF BROKEN EMBEDDED TRWS WITH SOME LEVEL 5 ECHOES. MAX TOPS 40,000 FT	2235
RAREP	FROM 50 MI N FYU TO 40 MI SSW BWD TO 20 MI S SJT TO 30 MI SE HBR, AREA OF BROKEN TRWS WITH A FEW EXTREME LEVEL 6 AND SOME LEVEL 5 ECHOES. MAX TOPS 50,000 FT	2235
RAREP	45 MI NE MON EXTREME LEVEL 6 TRW, 15 MI IN DIAMETER, TOP OF 43,000 FT	2235
HAIL	3/8" HAILSTONES AT SJT	2315
SEP RAREP	HOOK ECHO 342°/52 MI	2259
RAREP	FROM 50 MI SSE OMA TO 50 MI SSE [illegible] TO 50 MI W SGE, AREA OF SCATTERED EMBEDDED TRWS WITH A FEW LEVEL 5 ECHOES, MAX TOPS 44,000 FT	2335
RAREP	FROM 30 MI SSW SGF TO 50 MI W ACT TO 20 MI S SJT TO 30 MI E MBR, AREA OF BROKEN EMBEDDED TRWS WITH FEW EXTREME LEVEL 6 AND SOME LEVEL 5 ECHOES. MAX TOPS 50,000 FT. NUMEROUS REPORTS OF SVR WX.	2335
RAREP	FROM 40 MI SE FLP TO 50 MI SE MEM TO 30 MI NE MON TO 40 MI NW LIT, AREA OF SCATTERED EMBEDDED TRWS WITH FEW LEVEL 5 ECHOES, MAX TOPS 42,000 FT	2335
RAREP	30 MI SE ICT, ISOLATED EMBEDDED LEVEL 5 TRW, 20 MI DIAMETER, TOP TO 32,000 FT	2335
SEP RAREP	HOOK ECHO 335°/70 MI, HOOK ECHO 232°/75 MI, TROP 42,300 FT	2330
RAREP	FROM 40 MI SE BDF TO 30 MI NW LEU TO CGI TO 30 MI NW FAM, AREA OF BROKEN TRWS, MAX TOP 30,000 FT	2335
RAREP	40 MI ANE JKS, ISOLATED LEVEL 5 TRW 30 MI IN DIAMETER, TOP TO 47,000 FT	2335

TABLE 2. CONTINUED.

EVENT	LOCATION	TIME (CST)
RAREP	FROM 60 MI SE CNU TO 20 MI W MLC TO 45 MI ESE DFW, LINE OF BROKEN TRWS 25 MI WIDE WITH FEW LEVEL 5 ECHOES. TOPS TO 48,000 FT, 2" HAIL, GUSTS TO 65 MPH AND POSSIBLE TORNADOES REPORTED	2335
SEP RAREP	HOOK ECHO 194°/45 MI	0030
RAREP	FROM 40 MI NE IRK TO 40 MI NNE FYV TO 30 MI SW TUL TO 50 MI SE SPS TO 10 MI S SJT, LINE OF BROKEN TRWS 40 MI WIDE WITH A FEW EXTREME LEVEL 6 AND LEVEL 5 ECHOES. HAIL TO 2", GUSTS TO 65 KNOTS AND POSSIBLE TORNADOES IN TEXAS AREA	0035
RAREP	FROM 70 MI NE ICT TO 20 MI W CNU TO 30 MI E ANY AREA OF BROKEN TRWS WITH SOME LEVEL 5 ECHOES. MAX TOPS 36,000 FT	0035
RAREP	FROM 30 MI W ARG TO 30 MI WNW TUP TO 30 MI N GRW TO 50 MI NW LIT, AREA OF SCATTERED TRWS WITH SOME LEVEL 5 ECHOES, MAX TOPS 42,000 FT	0035
RAREP	VICINITY OF MAP ISOLATED LEVEL 5 TRW 30 MI DIAMETER, TOP TO 44,000 FT	0035
RAREP	FROM 20 MI N FYV TO 40 MI SSW FSM TO 40 MI SE ADM TO 30 MI N DLE, LINE OF BROKEN TRWS 30 MI WIDE WITH FEW EXTREME LEVEL 6 AND SOME LEVEL 5 ECHOES. MAX TOPS 55,000 FT. HAIL TO 2", GUSTS TO 65 KTS, POSSIBLE TORNADOES IN TX-OK REGION	0235
RAREP	FROM BDF TO 40 MI NE DEC TO 30 MI S STL TO 15 MI NW UIN, AREA OF BROKEN TRWS, MAX TOP 40,000 FT	0235
RAREP	FROM 20 MI W MAP TO 30 MI NE DYR TO 40 MI N TUP TO 40 MI SW FLP, AREA OF BROKEN TRWS WITH FEW EXTREME LEVEL 6 AND LEVEL 5 ECHOES MAX TOPS 42,000 FT	0235
RAREP	FROM 30 MI NE FYV TO 40 MI S FSM TO 60 MI W GGG, LINE OF BROKEN TRWS 30 MI WIDE WITH FEW LEVEL 5 ECHOES, MAX TOP 46,000 FT, HAIL TO 2", GUSTS TO 65 KTS, POSSIBLE TORNADOES	0335
RAREP	FROM BDF TO 40 MI NE DEC TO 15 MI E STL TO BRL, AREA OF BROKEN TRWS, MAX TOP 30,000 FT	0335
RAREP	30 MI WNW JKS LEVEL 5 TRW 30 MI IN DIAMETER, TOP TO 47,000 FT	0335

TABLE 2. CONCLUDED.

EVENT	LOCATION	TIME (CST)
RAREP	FROM 50 MI SW OBH TO 40 MI E TKO TO 20 MI NNW HLC, AREA OF SCATTERED EMBEDDED TRWS, TOPS TO 31,000 FT	0335
RAREP	30 NE MLC TO 30 MI W LZZ, LINE OF BROKEN TRWS 25 MI WIDE WITH FEW LEVEL 5 ECHOES, TOPS TO 45,000 FT, HAIL TO 2", POSSIBLE TORNADOES	0335
SEP RAREP	HAIL INDICATED 97°/43 MI	0406
RAREP	FROM 30 MI W ELP TO 45 MI SE FSM TO 45 MI SW GGG, LINE OF BROKEN TRWS 30 MI WIDE WITH FEW LEVEL 5 ECHOES, MAX TOP 46,000 FT. HAIL TO 2", GUSTS TO 65 MPH, POSSIBLE TORNADOES	0435
RAREP	20 MI NW JKS ISOLATED LEVEL 5 TRW 30 MI DIAMETER TOP TO 43,000 FT	0435
RAREP	40 MI NE TUL TO 35 MI S MLC TO 30 MI SE BWD, LINE OF BROKEN TRWS 25 MI WIDE WITH FEW LEVEL 5 ECHOES, TOPS TO 57,000 FT, HAIL TO 2", POSSIBLE TORNADOES	0435

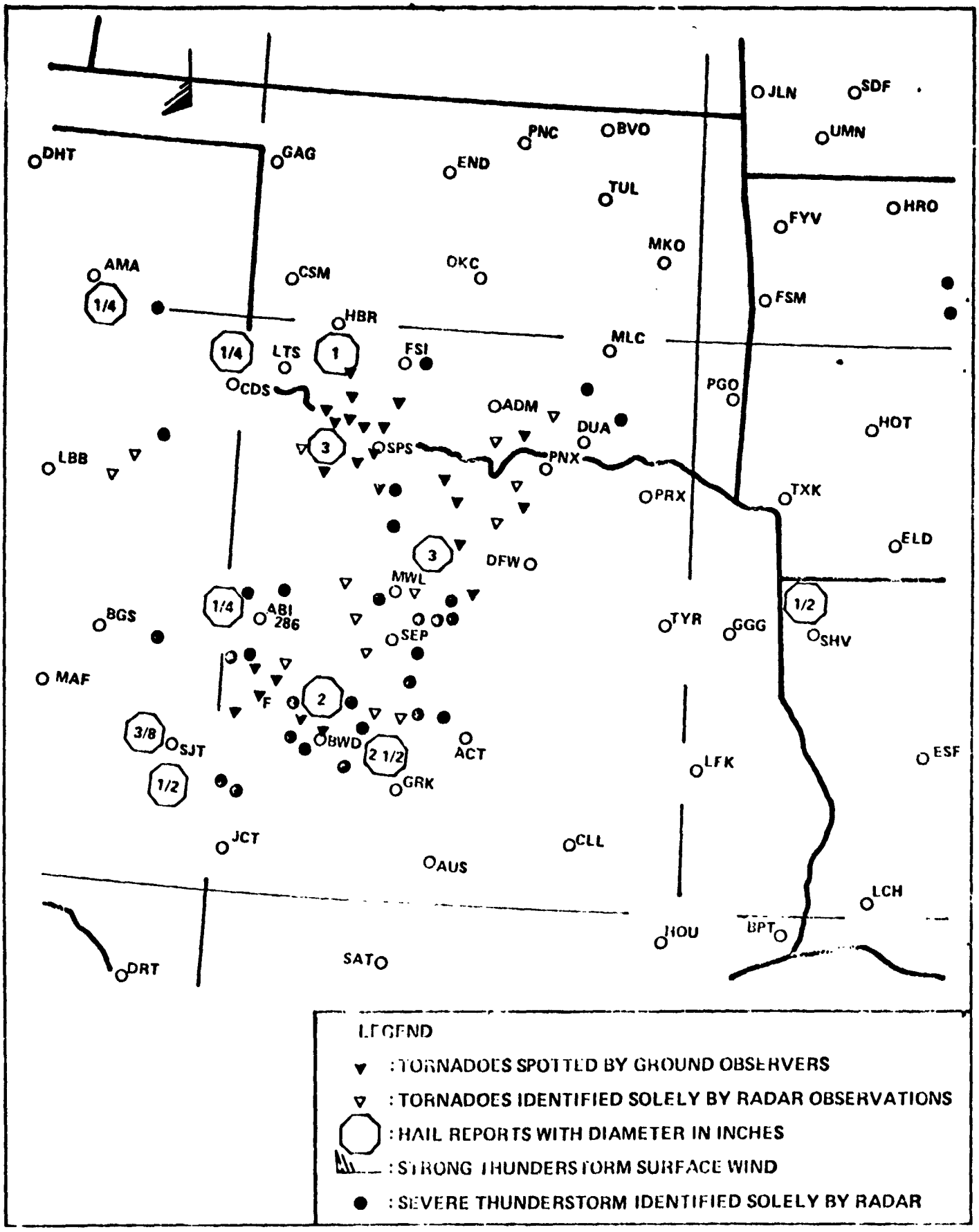

Fig. 45. Severe weather reports that occurred between 1200 GMT 10 April and 1200 GMT 11 April 1979 in the South Central United States.

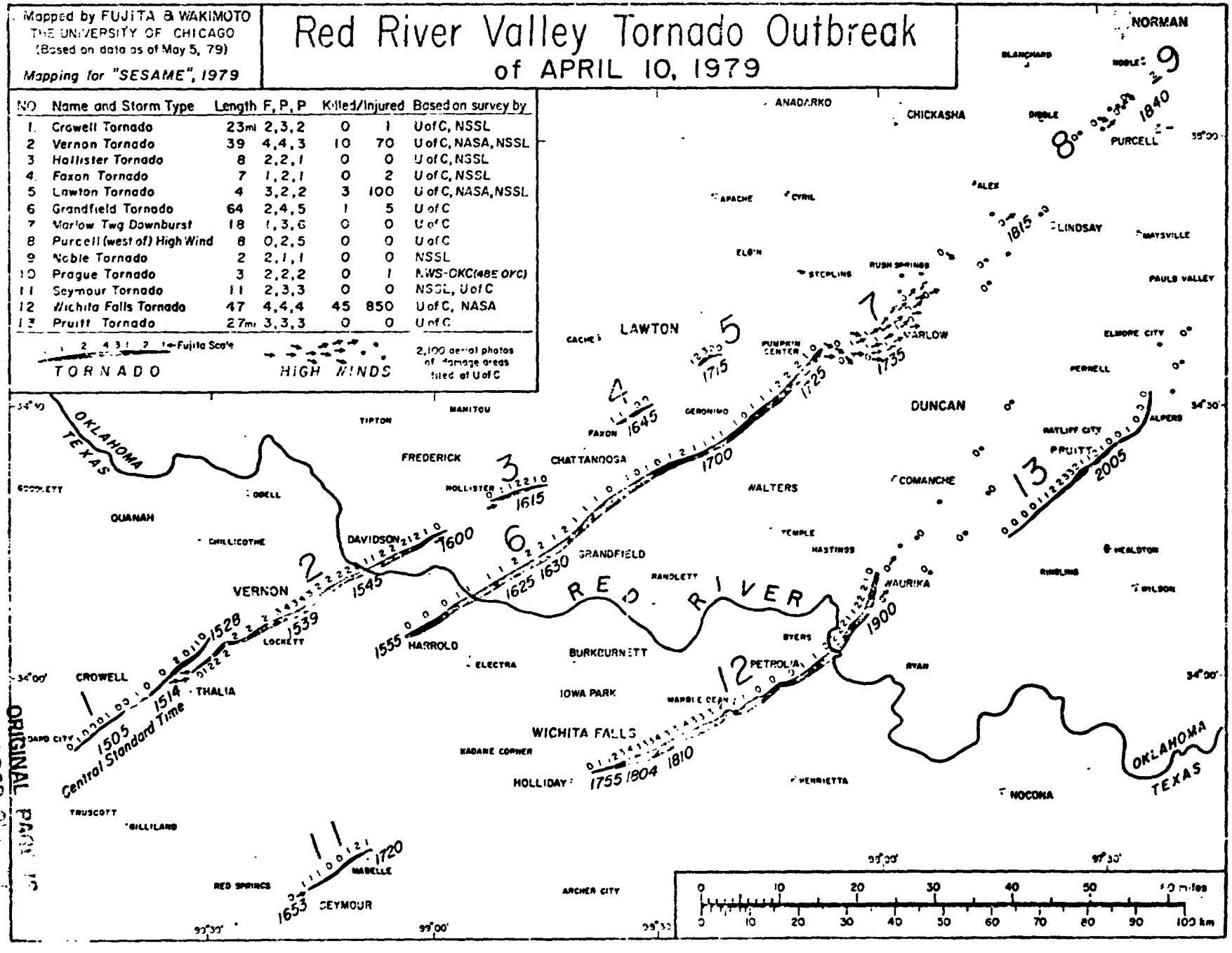

Fig. 46. Red River Valley tornado outbreak of 10 April 1979.

Table 3. Fujita Scale damage specifications.*

Fujita Scale	Windspeed (mph)	Damage	Remarks
0	40-72	LIGHT	Some damage to chimneys and TV antennae; breaks twigs off trees; pushes over shallow rooted trees.
1	73-112	MODERATE	Peels surface off roofs; windows broken; light trailer houses pushed or overturned; some trees uprooted or snapped; moving automobiles pushed off the road.
2	113-157	CONSIDERABLE	Roofs torn off frame houses leaving strong upright walls; weak buildings in rural areas demolished; trailer houses destroyed; large trees snapped or uprooted; railroad boxcars pushed over; light object missiles generated; cars blown off highway.
3	158-206	SEVERE	Roofs and some walls torn off frame houses; some rural buildings completely demolished; trains overturned; steel-framed hangar warehouse structures torn; cars lifted off ground; most trees in a forest uprooted, snapped, or leveled.
4	207-260	DEVASTATING	Whole frame houses leveled, leaving piles of debris; steel structures badly damaged; trees debarked by small flying debris; cars and trains thrown some distances or rolled considerable distances; large missiles generated.
5	261-318	INCREDIBLE	Whole frame houses tossed off foundations; steel-reinforced concrete structures badly damaged; automobile-sized missiles generated; incredible phenomena can occur.
6-12	319-sonic	INCONCEIVABLE	Should a tornado with the maximum wind speed in excess of scale 6 occur, the extent and types of damage may not be conceived. A number of missiles such as iceboxes, water heaters, storage tanks, automobiles, etc. will create serious secondary damage on structures.

*From Fujita (1971)

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APPROVAL

A PRELIMINARY LOOK AT AVE-SESAME I CONDUCTED ON APRIL 10-11, 1979

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Nicholas Horvath, and Kelly Hill

The information in this report has been reviewed for technical content. Review of any information concerning Department of Defense or nuclear energy activities or programs has been made by the MSFC Security Classification Officer. This report, in its entirety, has been determined to be unclassified.

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