

# NASA TECHNICAL MEMORANDUM

NASA TM-82398

(NASA-TM-82398) A PRELIMINARY LOOK AT  
AVE-SESAME 6 CONDUCTED ON 7-8 JUNE 1979  
(NASA) 58 p HC A04/MF A01 CSCL 04B

N81-18606

Unclas

G3/47 41456

A PRELIMINARY LOOK AT AVE-SESAME VI CONDUCTED  
7 - 8 JUNE 1979

By Michael July and Robert E. Turner

January 1981



NASA

*George C. Marshall Space Flight Center  
Marshall Space Flight Center, Alabama*

TECHNICAL REPORT STANDARD TITLE PAGE

1. REPORT NO. NASA TM-82398		2. GOVERNMENT ACCESSION NO.		3. RECIPIENT'S CATALOG NO.	
4. TITLE AND SUBTITLE A Preliminary Look at AVE-SESAME VI Conducted on 7-8 June 1979				5. REPORT DATE January 1981	
				6. PERFORMING ORGANIZATION CODE	
7. AUTHOR(S) Michael July* and Robert E. Turner				8. PERFORMING ORGANIZATION REPORT #	
9. PERFORMING ORGANIZATION NAME AND ADDRESS  George C. Marshall Space Flight Center Marshall Space Flight Center, Alabama 35812				10. WORK UNIT NO.	
				11. CONTRACT OR GRANT NO.	
12. SPONSORING AGENCY NAME AND ADDRESS  National Aeronautics and Space Administration Washington, D.C. 20546				13. TYPE OF REPORT & PERIOD COVERED  Technical Memorandum	
				14. SPONSORING AGENCY CODE	
15. SUPPLEMENTARY NOTES Prepared by Space Sciences Laboratory, Science and Engineering Directorate  * Texas A&M University, College Station, Texas					
16. ABSTRACT  This report contains information on data collected, synoptic conditions, and severe and unusual weather reported during the AVE-SESAME VI period. The purpose of the report is to provide to researchers a preliminary look at conditions during the AVE-SESAME VI period, 7-8 June 1979.					
17. KEY WORDS AVE-SESAME Meteorology Severe Storms Mesoscale Atmospheric Variability			18. DISTRIBUTION STATEMENT  Unclassified—Unlimited  <i>Robert E. Turner</i>		
19. SECURITY CLASSIF. (of this report)  Unclassified		20. SECURITY CLASSIF. (of this page)  Unclassified		21. NO. OF PAGES  57	22. PRICE  NTIS

## ACKNOWLEDGMENTS

The compilation and preparation of the information presented in this report required the diligent work of several people. The authors would like to express their sincere appreciation to Benjamin Crocker, Timothy Deegan, Nicholas Horvath, Ray Jones, and Kyle Tupin for their contributions to the report. Also, the authors would like to express their sincere appreciation to Andrew Horvitz of the National Environmental Satellite Service for supplying the satellite photographs.

TABLE OF CONTENTS

	Page
LIST OF FIGURES . . . . .	iv
LIST OF TABLES . . . . .	vii
1. OBJECTIVES AND SCOPE . . . . .	1
2. DATA COLLECTED . . . . .	1
a. <u>Rawinsonde Soundings</u> . . . . .	1
b. <u>Surface and Upper Air</u> . . . . .	4
3. SYNOPTIC CONDITIONS . . . . .	4
a. <u>Synoptic Charts</u> . . . . .	4
b. <u>Radar</u> . . . . .	6
c. <u>Satellite</u> . . . . .	6
d. <u>Rainfall</u> . . . . .	6
4. SEVERE AND UNUSUAL WEATHER REPORTED . . . . .	6
REFERENCES . . . . .	49

LIST OF FIGURES

Figure		Page
1	Locations of NWS rawinsonde stations participating in the AVE-SESAME VI experiment . . . . .	3
2	Locations of the special rawinsonde stations participating in the AVE-SESAME VI experiment . . . . .	3
3	Synoptic charts for 1200 GMT 7 June 1979 . . . . .	8
4	Surface chart for 1800 GMT 7 June 1979 . . . . .	11
5	Synoptic charts for 0000 GMT 8 June 1979 . . . . .	12
6	Surface chart for 0600 GMT 8 June 1979 . . . . .	15
7	Synoptic charts for 1200 GMT 8 June 1979 . . . . .	16
8	Radar summary for 1135 GMT 7 June 1979 . . . . .	19
9	Radar summary for 1435 GMT 7 June 1979 . . . . .	19
10	Radar summary for 1735 GMT 7 June 1979 . . . . .	20
11	Radar summary for 1935 GMT 7 June 1979 . . . . .	20
12	Radar summary for 2135 GMT 7 June 1979 . . . . .	21
13	Radar summary for 2235 GMT 7 June 1979 . . . . .	21
14	Radar summary for 2335 GMT 7 June 1979 . . . . .	22
15	Radar summary for 0135 GMT 8 June 1979 . . . . .	22
16	Radar summary for 0235 GMT 8 June 1979 . . . . .	23
17	Radar summary for 0435 GMT 8 June 1979 . . . . .	23
18	Radar summary for 0535 GMT 8 June 1979 . . . . .	24
19	Radar summary for 0635 GMT 8 June 1979 . . . . .	24
20	Radar summary for 0735 GMT 8 June 1979 . . . . .	25
21	Radar summary for 0835 GMT 8 June 1979 . . . . .	25
22	Radar summary for 0935 GMT 8 June 1979 . . . . .	26
23	Radar summary for 1035 GMT 8 June 1979 . . . . .	26

LIST OF FIGURES (Continued)

Figure		Page
24	Radar summary for 1135 GMT 8 June 1979 . . . . .	27
25	GOES-East visual satellite imagery for 1301 GMT 7 June 1979 . . . . .	28
26	GOES-East visual satellite imagery for 1401 GMT 7 June 1979 . . . . .	28
27	GOES-East visual satellite imagery for 1501 GMT 7 June 1979 . . . . .	29
28	GOES-East visual satellite imagery for 1601 GMT 7 June 1979 . . . . .	29
29	GOES-East visual satellite imagery for 1701 GMT 7 June 1979 . . . . .	30
30	GOES-East visual satellite imagery for 1801 GMT 7 June 1979 . . . . .	30
31	GOES-East visual satellite imagery for 1901 GMT 7 June 1979 . . . . .	31
32	GOES-East visual satellite imagery for 2001 GMT 7 June 1979 . . . . .	31
33	GOES-East visual satellite imagery for 2101 GMT 7 June 1979 . . . . .	32
34	GOES-East infrared satellite imagery for 2200 GMT 7 June 1979 . . . . .	32
35	GOES-East visual satellite imagery for 2301 GMT 7 June 1979 . . . . .	33
36	GOES-East visual satellite imagery for 0001 GMT 8 June 1979 . . . . .	33
37	GOES-East infrared satellite imagery for 0100 GMT 8 June 1979 . . . . .	34
38	GOES-East infrared satellite imagery for 0200 GMT 8 June 1979 . . . . .	34
39	GOES-East infrared satellite imagery for 0300 GMT 8 June 1979 . . . . .	35

LIST OF FIGURES (Concluded)

Figure		Page
40	GOES-East infrared satellite imagery for 0400 GMT 8 June 1979 . . . . .	35
41	GOES-East infrared satellite imagery for 0500 GMT 8 June 1979 . . . . .	36
42	GOES-East infrared satellite imagery for 0600 GMT 8 June 1979 . . . . .	36
43	GOES-East infrared satellite imagery for 0700 GMT 8 June 1979 . . . . .	37
44	GOES-East infrared satellite imagery for 0800 GMT 8 June 1979 . . . . .	37
45	GOES-East infrared satellite imagery for 0900 GMT 8 June 1979 . . . . .	38
46	GOES-East infrared satellite imagery for 1000 GMT 8 June 1979 . . . . .	38
47	GOES-East infrared satellite imagery for 1100 GMT 8 June 1979 . . . . .	39
48	GOES-East infrared satellite imagery for 1200 GMT 8 June 1979 . . . . .	39
49	Total rainfall amounts in inches for the period 1200 GMT 7 June to 1200 GMT 8 June 1979 . . . . .	40
50	Severe weather reports between 1200 GMT 7 June and 1200 GMT 8 June 1979 in the AVE-SESAME VI network . . . . .	48

LIST OF TABLES

Table		Page
1	Rawinsonde stations participating in the AVE-SESAME VI experiment . . . . .	2
2	Teletype reports taken from NOAA weather wire and national weather summaries of severe and unusual weather from 1200 GMT 7 June to 1200 GMT 8 June 1979 . . . . .	41



## A PRELIMINARY LOOK AT AVE-SESAME VI CONDUCTED

ON 7-8 JUNE 1979

### 1. OBJECTIVES AND SCOPE

The objectives of AVE-SESAME (Atmospheric Variability Experiment-Severe Environmental Storms and Mesoscale Experiment) are to provide a data base for studying mesosynoptic atmospheric structure and variability associated with convection and severe weather. Rawinsonde sounding data were obtained at 3-hr intervals to investigate spatial and temporal changes of mesosynoptic conditions associated with the formation, development, and maintenance of convective activity and interaction between convective activity and its immediate environment.

This quick-look report contains information and analysis of the general weather conditions during the AVE-SESAME VI period. Synoptic charts, radar maps, satellite photographs, rainfall amounts, and a summary of severe weather reports assembled from the NOAA weather wire and the national weather summaries are compiled for 1200 GMT 7 June through 1200 GMT 8 June 1979. The purpose of this report is to provide to researchers a preliminary look at conditions during the AVE-SESAME VI period. Additional information for AVE-SESAME VI 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 20 special stations in Texas and Oklahoma. A list of these stations is given in Table 1, and their locations are shown in Figs. 1 and 2.

Table 1. Rawinsonde stations participating in the AVE-SESAME VI experiment.

Station Number	Location
<u>NWS Stations</u>	
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
260 (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)	Monet, MO
354 (OKC)	Oklahoma City, OK
363 (AMA)	Amarillo, TX
365 (ABQ)	Albuquerque, NM
433 (SLO)	Salem, IL
451 (DDC)	Dodge City, KS
456 (TOP)	Topeka, KS
462 (DEN)	Denver, CO
532 (PIA)	Peoria, IL
553 (OMA)	Omaha, NE
562 (LBF)	North Platte, NE
<u>Special Stations</u>	
20 (ADA)	Ada, OK
21 (LTS)	Altus, OK
22 (CAN)	Canadian, TX
23 (CHE)	Cheyenne, OK
24 (CHK)	Chickasha, OK
25 (CDS)	Childress, TX
26 (CSM)	Clinton Sherman, OK
27 (EMC)	Elmore City, OK
28 (FSI)	Ft. Sill, OK
29 (GAG)	Gage, OK
30 (HEA)	Healdton, OK
31 (HEN)	Hennessey, OK
32 (HNT)	Hinton, OK
33 (TVY)	KTVY, OKC
34 (MTV)	Mountain View, OK
35 (OUN)	Norman, OK
36 (SEL)	Seiling, OK
37 (SHM)	Shamrock, TX
38 (SUD)	Stroud, OK
39 (SPS)	Wichita Falls, TX

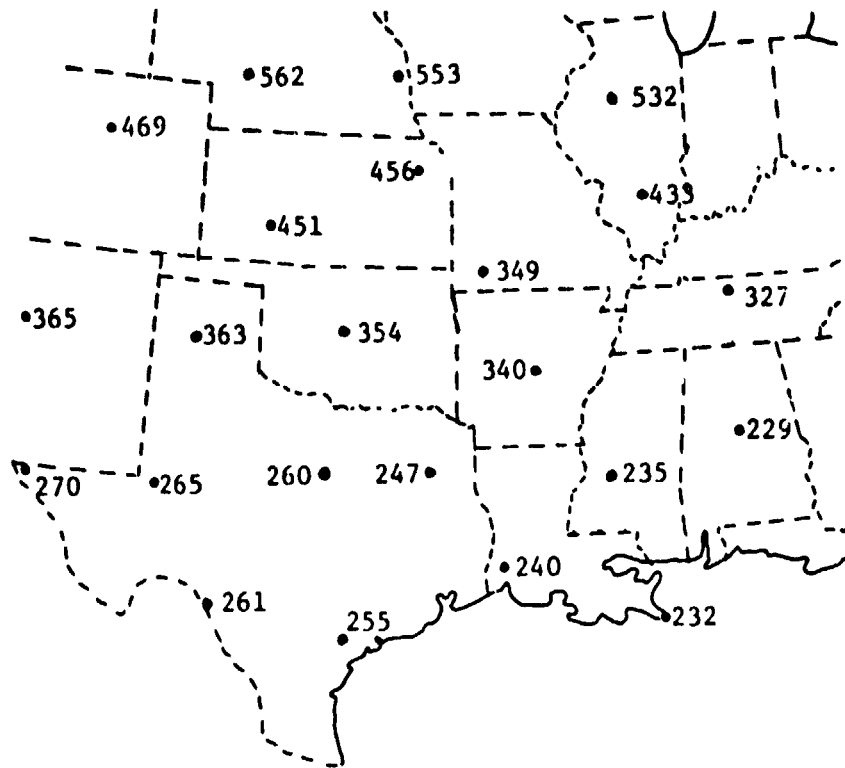


Fig. 1. Locations of the 23 NWS rawinsonde stations participating in the AVE-SESAME VI experiment.

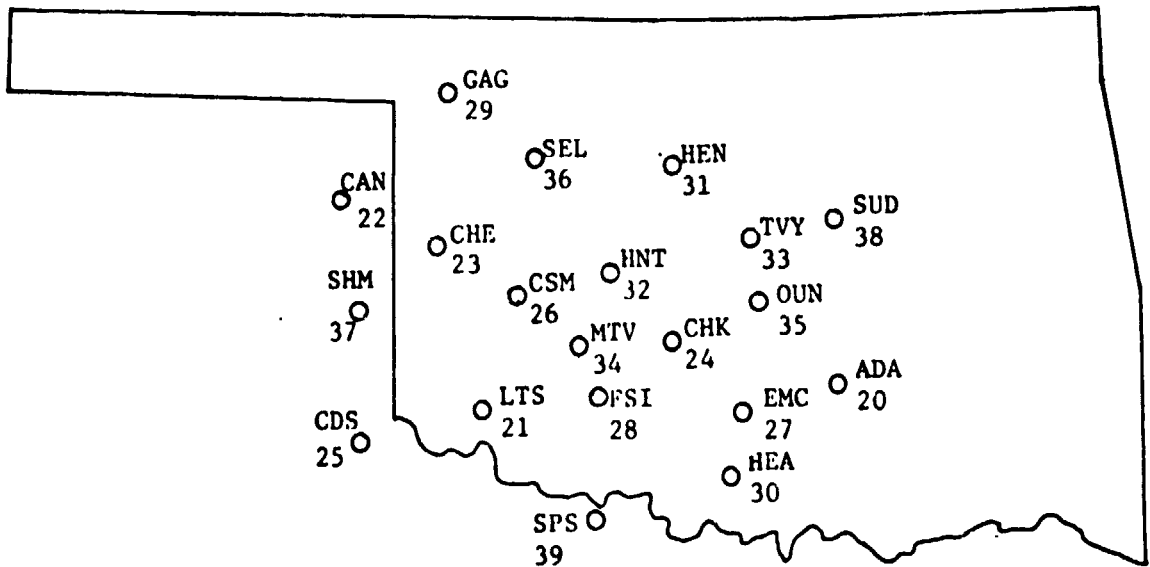


Fig. 2. Locations of the 20 special rawinsonde stations participating in the AVE-SESAME VI experiment.

The dates and times of scheduled soundings are as follows:

<u>Date</u>	<u>Time (GMT)</u>
7 June 1979	12, 15, 18, 21
8 June 1979	00, 03, 06, 09, 12

Sounding data interpolated to 25-mb intervals will be presented in a separate document. These data may be obtained in hard copy form or on magnetic tape from the Atmospheric Sciences Division (Code: ES84), Space Sciences Laboratory, NASA, Marshall Space Flight Center, Alabama 35812.

b. Surface and Upper Air

Surface and upper air charts and data are available from the National Climatic Center in Asheville, North Carolina.

3. SYNOPTIC CONDITIONS

a. Synoptic Charts

Surface and upper air charts for the AVE-SESAME VI period are presented in Figs. 3-7. Surface charts are presented at 6-hr intervals and upper air charts at 12-hr intervals. These charts were plotted and analyzed using National Weather Service data only, and show the general conditions during the experiment. They should not be used for other purposes.

At 1200 GMT 7 June 1979 a surface low pressure center was located over the Texas Panhandle. A cold front stretched northeastward to western Wisconsin from the low, and a stationary front curved westward into southern Nevada. A weak warm front extended from the cold front in western Wisconsin to central Ohio.

Wind directions at 850 mb indicated confluence over southeastern Nebraska and central Kansas. The axis of the 850-mb thermal ridge was orientated south to north from western Texas to the western parts of Kansas and Nebraska. A tongue of moisture at 850 mb stretched from southwestern

Texas to northeastern Texas where it branched northwards into east-central Kansas and northeastward into Illinois. A short wave was evident at the 500-, 300-, and 200-mb levels over southwestern Missouri. A jet maximum of 100 kts at 200 mb covered most of Oklahoma and extreme southwestern Missouri. A significant vertical speed shear between the 500- and 200-mb levels was present over southern Missouri and central Oklahoma. Wind directions indicated diffluence at both the 300- and 200-mb levels at 1200 GMT 7 June over southeastern Missouri, central Illinois, and central Iowa. These areas of diffluence were associated with the convective activity during the AVE-SESAME VI period.

By 0000 GMT 8 June 1979 temperatures in excess of 90° covered most of Texas and extended as far north as southeastern Kansas. There was no strong temperature gradient along the cold front as the colder air remained to the northwest where 50° temperatures had spread into the Dakotas. The axis of the 850-mb thermal ridge at 0000 GMT 8 June acquired a more southwest-to-northeast orientation from southwestern Texas to central Illinois. The moisture axis paralleled the thermal ridge axis but was positioned a little further to the east.

The axis of the short wave over central Illinois had a north-to-south alignment and was evident at all mandatory pressure levels. Also, a short wave at 500 mb propagated into central Oklahoma by 0000 GMT 8 June. A thermal trough over western Iowa, seen at the 500- and 300-mb levels, was associated with the convective activity over Iowa, Missouri, and central Kansas.

By 0600 GMT 8 June the cold front had moved slowly southeastward to central Wisconsin and stretched southwestward to northeastern Oklahoma. Strong convective activity continued over eastern Kansas and northwestern Missouri.

At 1200 GMT 8 June the packing of the isotherms at 850 mb indicated a stronger temperature gradient over central Kansas and the western parts of Texas and Oklahoma. The low-level moisture axis moved slowly eastward and extended from southern Texas to the lower Ohio Valley. The axis of the 850-mb thermal ridge paralleled the moisture axis but remained a few hundred miles to the west. A short wave was evident on the 700-mb chart at 1200 GMT 8 June over the Great Plains states.

The 1135 GMT 8 June radar summary indicated a widespread area of convective activity throughout most of the northern section of the AVE-SESAME VI network. Several strong precipitation echoes were indicated in the vicinity of Wichita, Kansas.

b. Radar

Selected radar summary charts are presented in Figs. 8-24 for the AVE-SESAME VI period. These charts show areas of 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 VI period. Selected visual and infrared satellite photographs for each hour during the period are presented in Figs. 25-48.

d. Rainfall

Isohyets of accumulated rainfall during the AVE-SESAME VI operational period are presented in Fig. 49. Special or cooperative climatological station data were not used in the analysis.

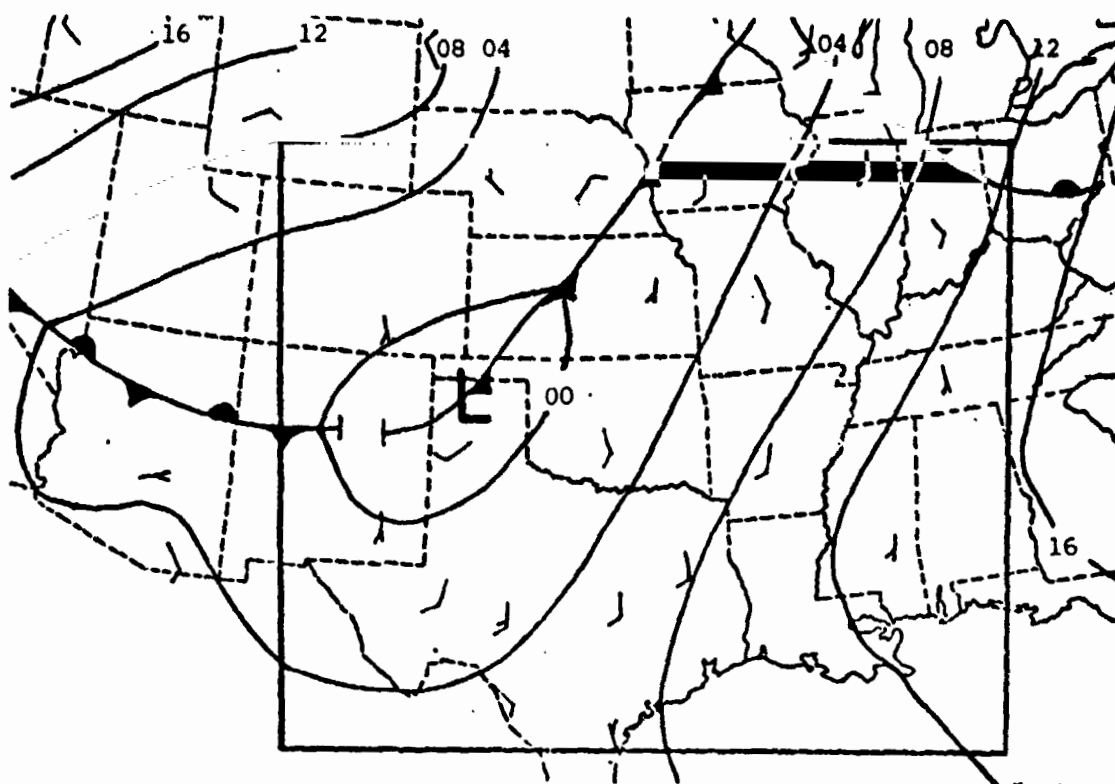
4. SEVERE AND UNUSUAL WEATHER REPORTED

Reports of tornadoes, severe thunderstorms, hail, high winds, and severe weather watches and warnings were compiled for AVE-SESAME VI from the NOAA

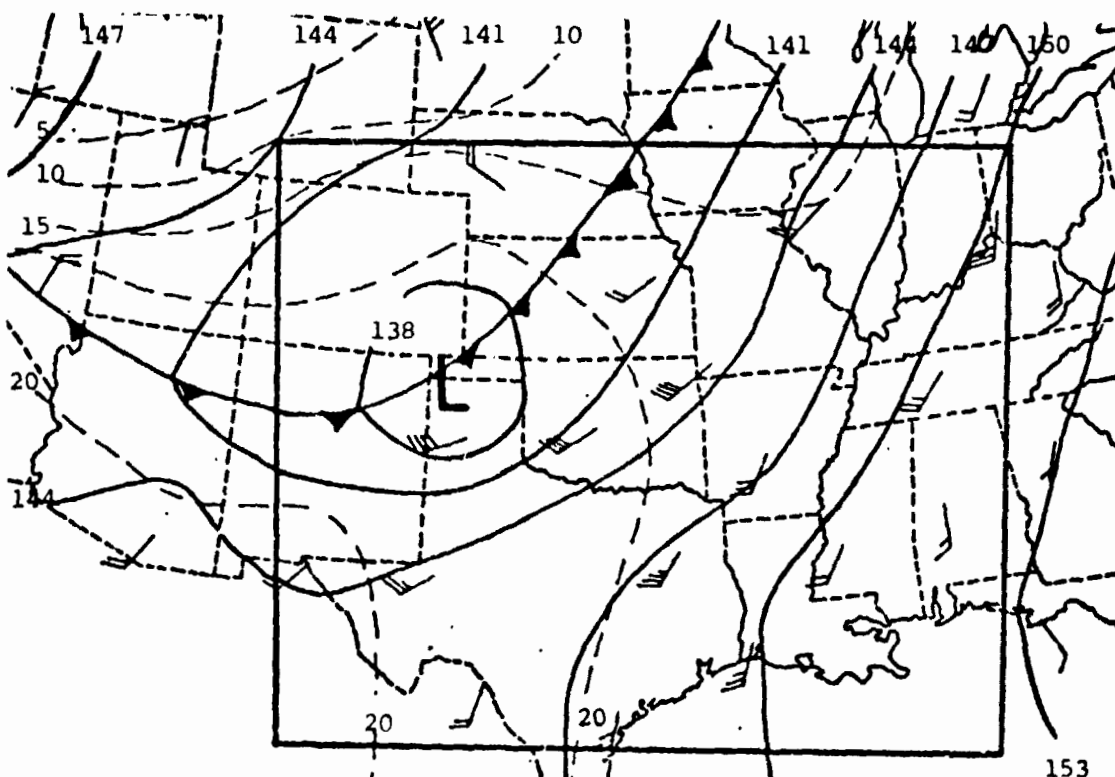
weather wire and national weather summaries and are presented in Table 2. Locations of observed tornadoes, observed funnel clouds, radar-indicated tornadoes, hail, and thunderstorms are shown in Fig. 50.

The severe weather outbreak during the AVE-SESAME VI experiment was confined to the Oklahoma Panhandle area. Two tornadoes, two funnel clouds, 1/4 inch hail, and nearly a half dozen severe thunderstorms were reported in this area between 0200 GMT and 0430 GMT 8 June 1979. Scattered severe thunderstorms also occurred over south-central Kansas. A few isolated severe storms were reported at Des Moines, Iowa, and Chicago, Illinois. Most of the storms during the AVE-SESAME VI experiment were associated with a cold front which moved slowly to the east-southeast through the network.

The heaviest rains were associated with an intense area of convective activity over eastern Kansas. Emporium, Kansas, received more than 4 inches of precipitation during the AVE-SESAME VI period.



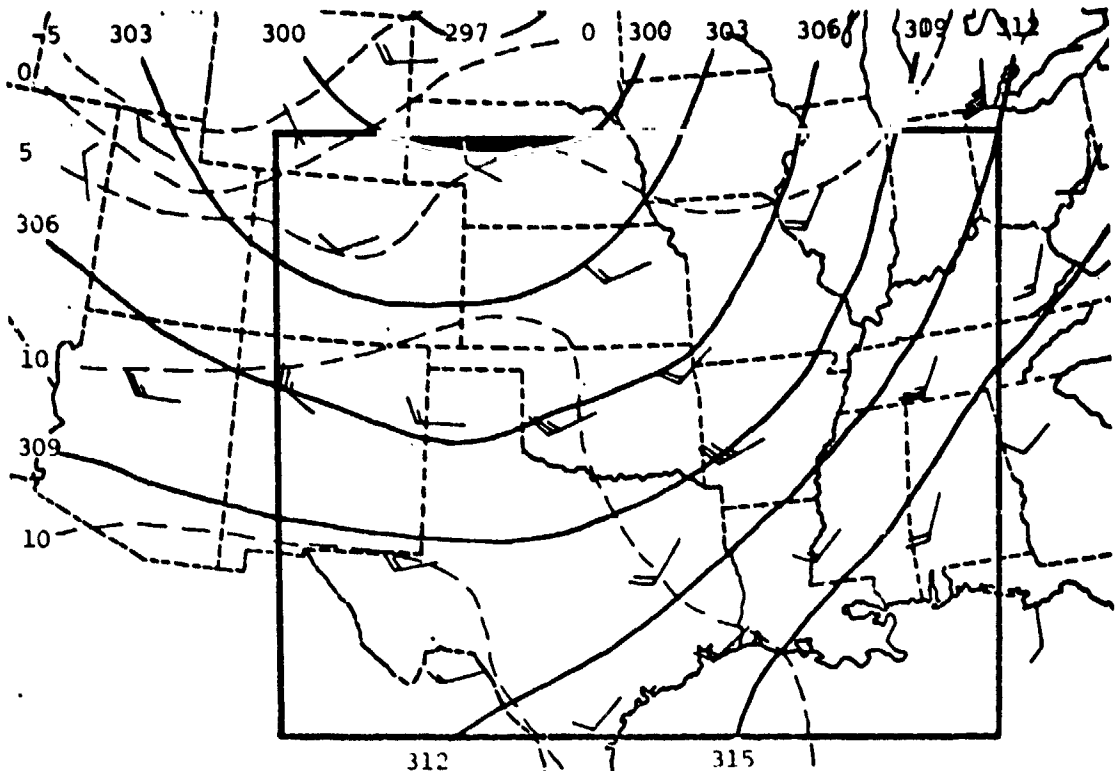
(a) Surface



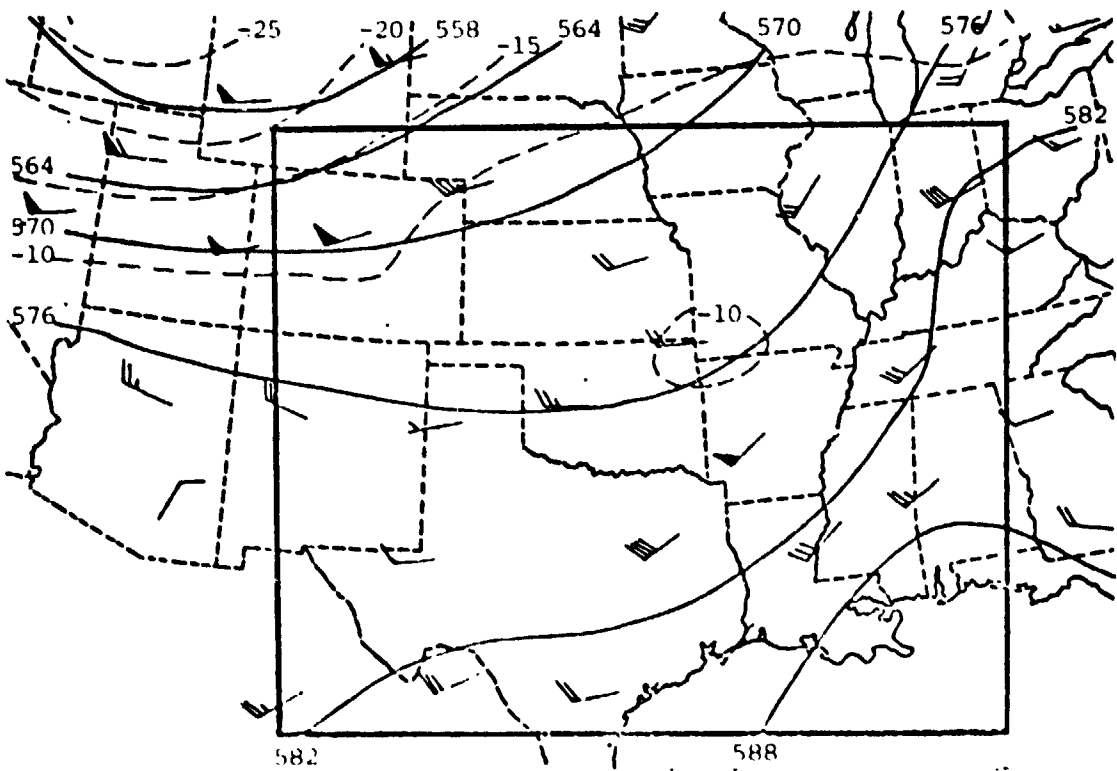
(b) 850 mb

Fig. 3. Synoptic charts for 1200 GMT 7 June 1979.



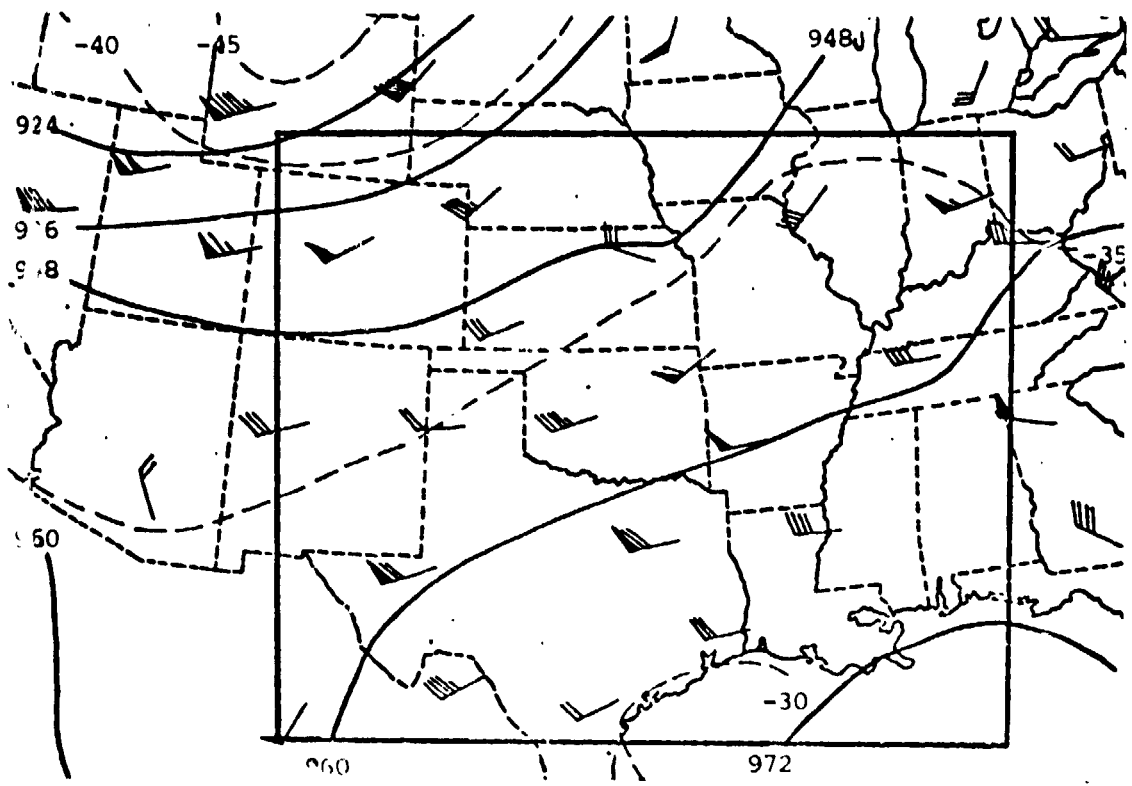


(c) 700 mb

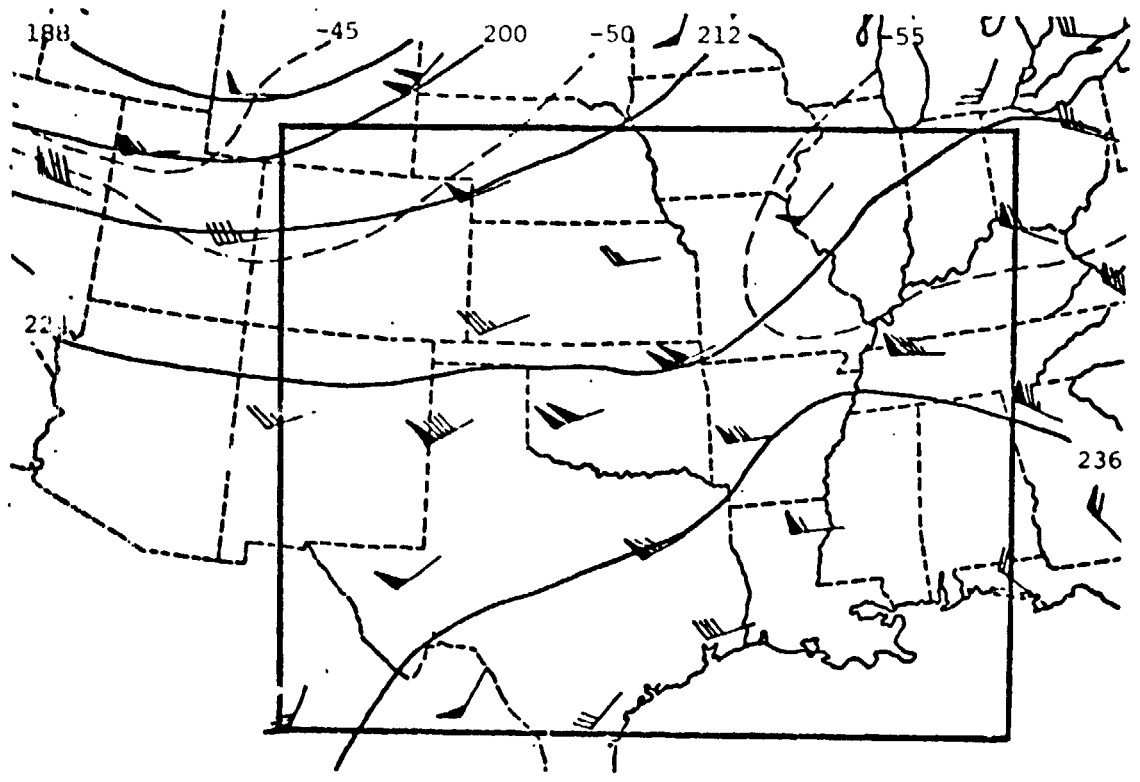


(d) 500 mb

Fig. 3. Continued.



(e) 300 mb



(f) 200 mb

Fig. 3. Concluded.

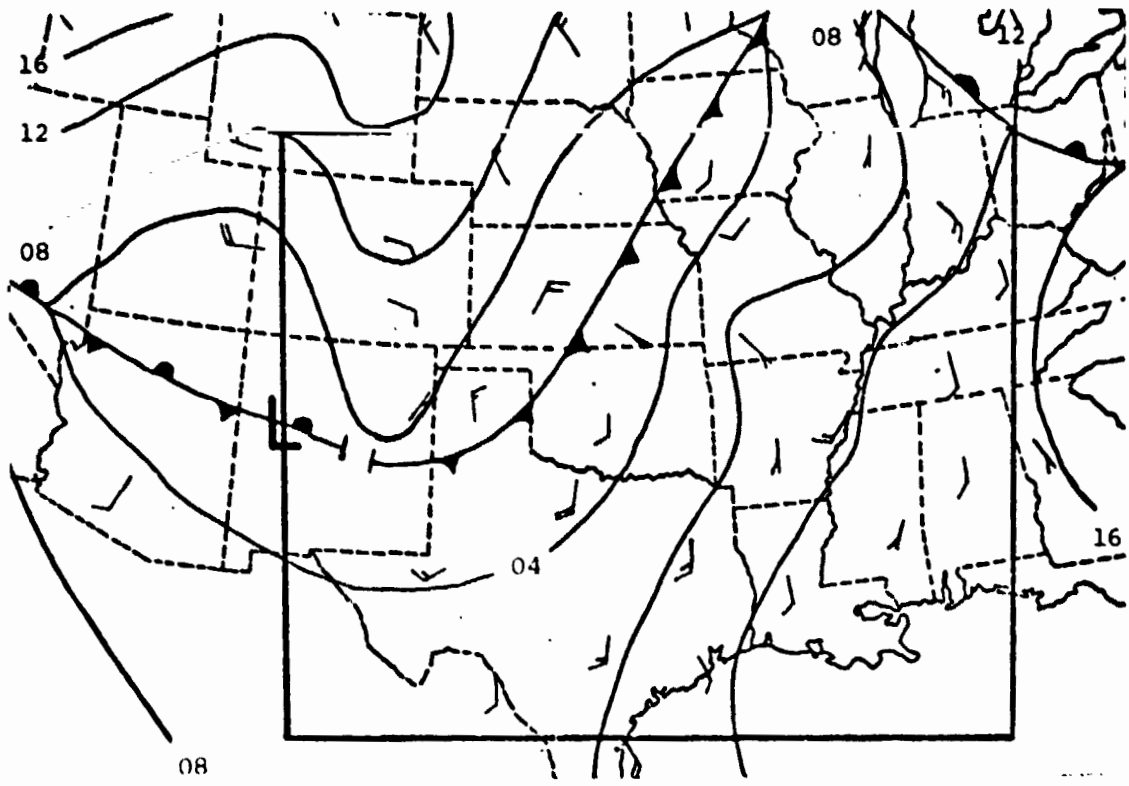
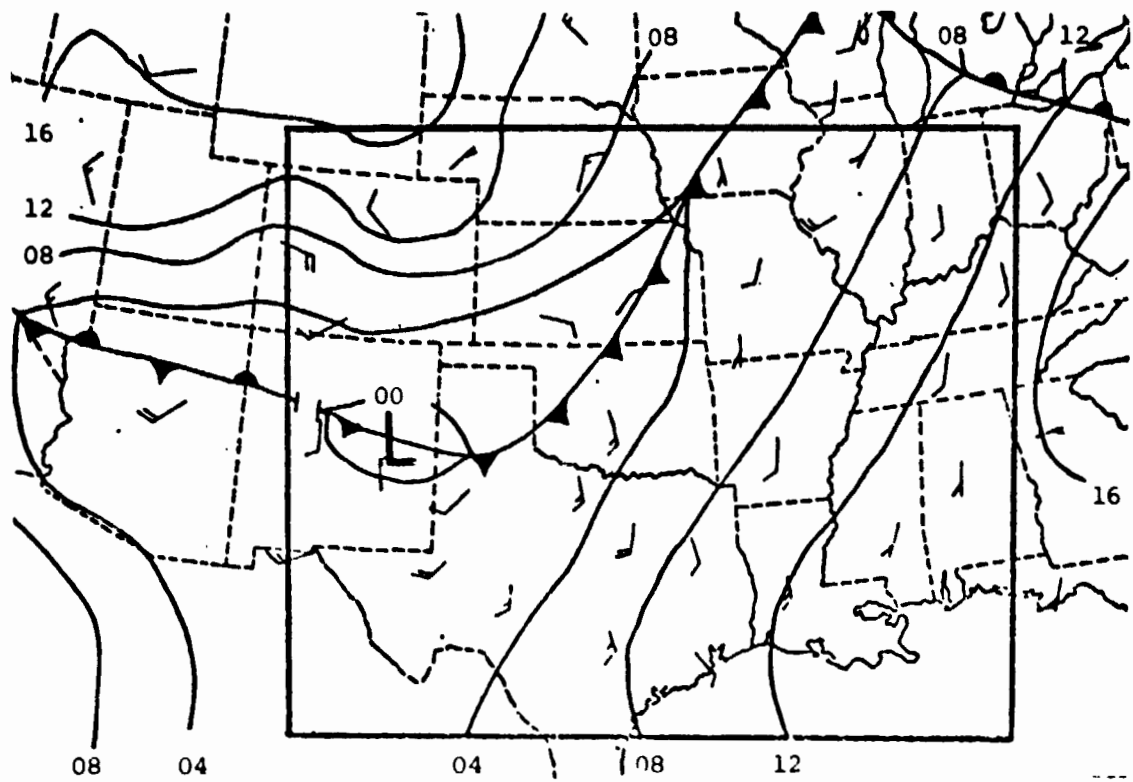
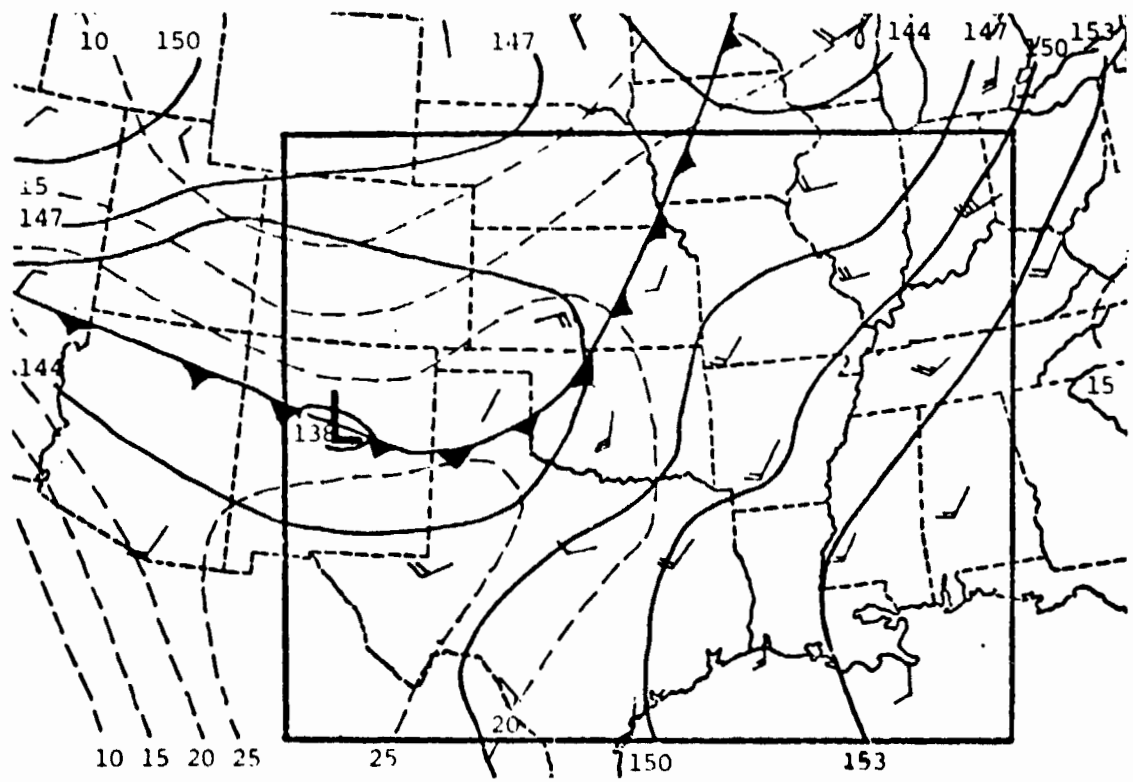


Fig. 4. Surface chart for 1800 GMT 7 June 1979.

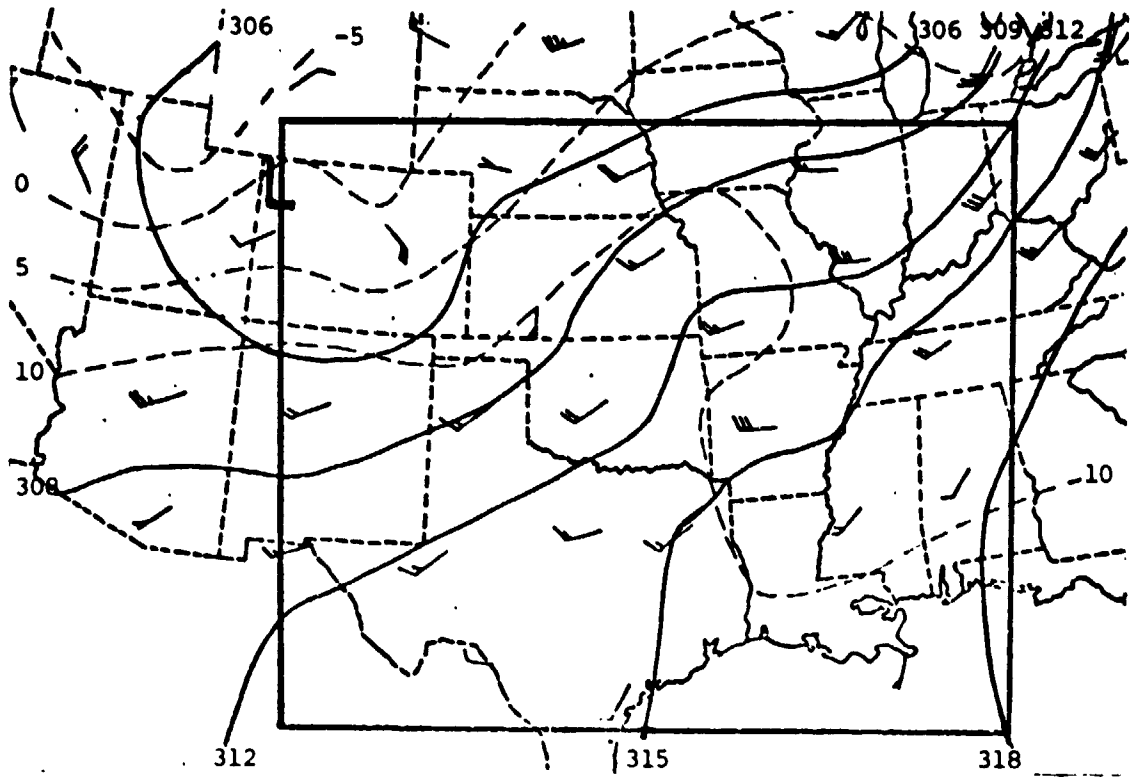


(a) Surface

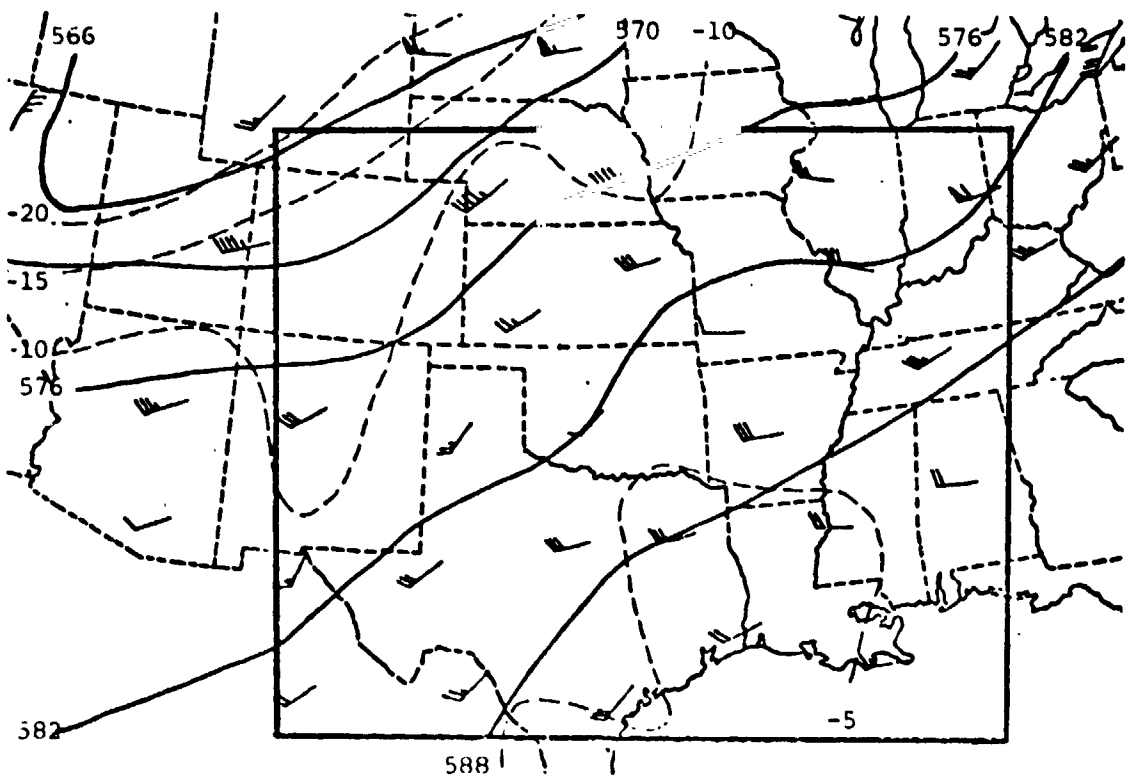


(b) 850 mb

Fig. 5. Synoptic charts for 0000 GMT 8 June 1979.

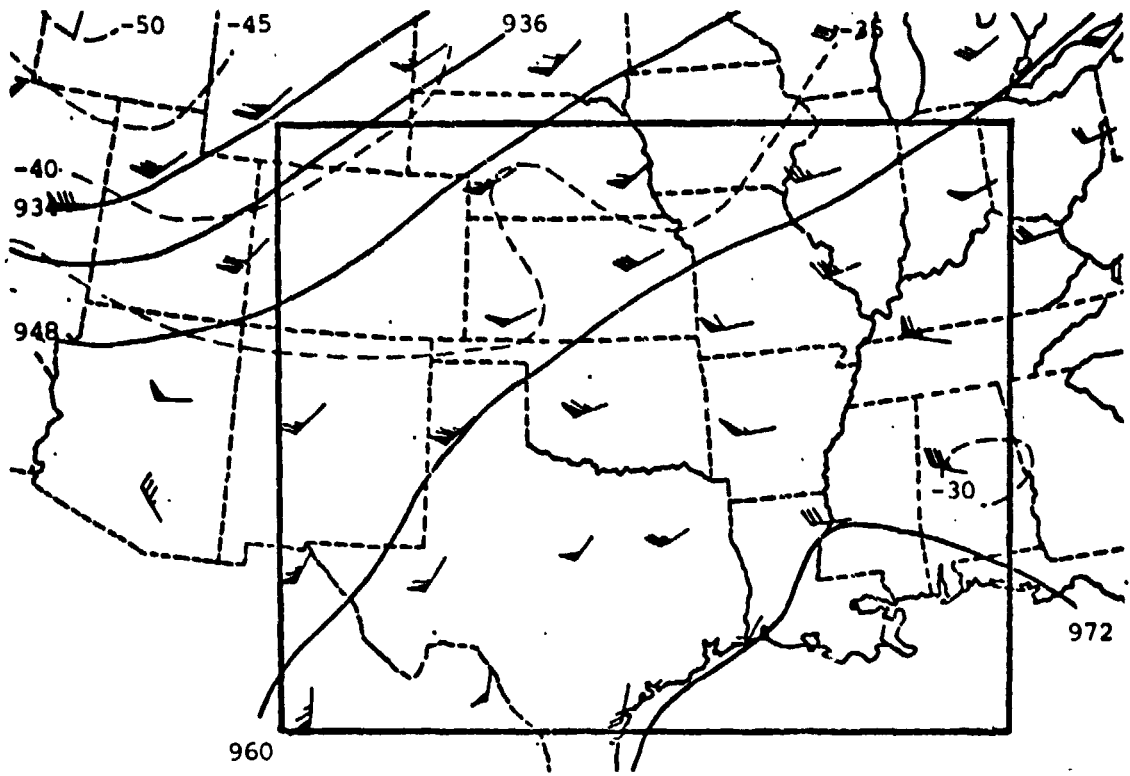


(c) 700 mb

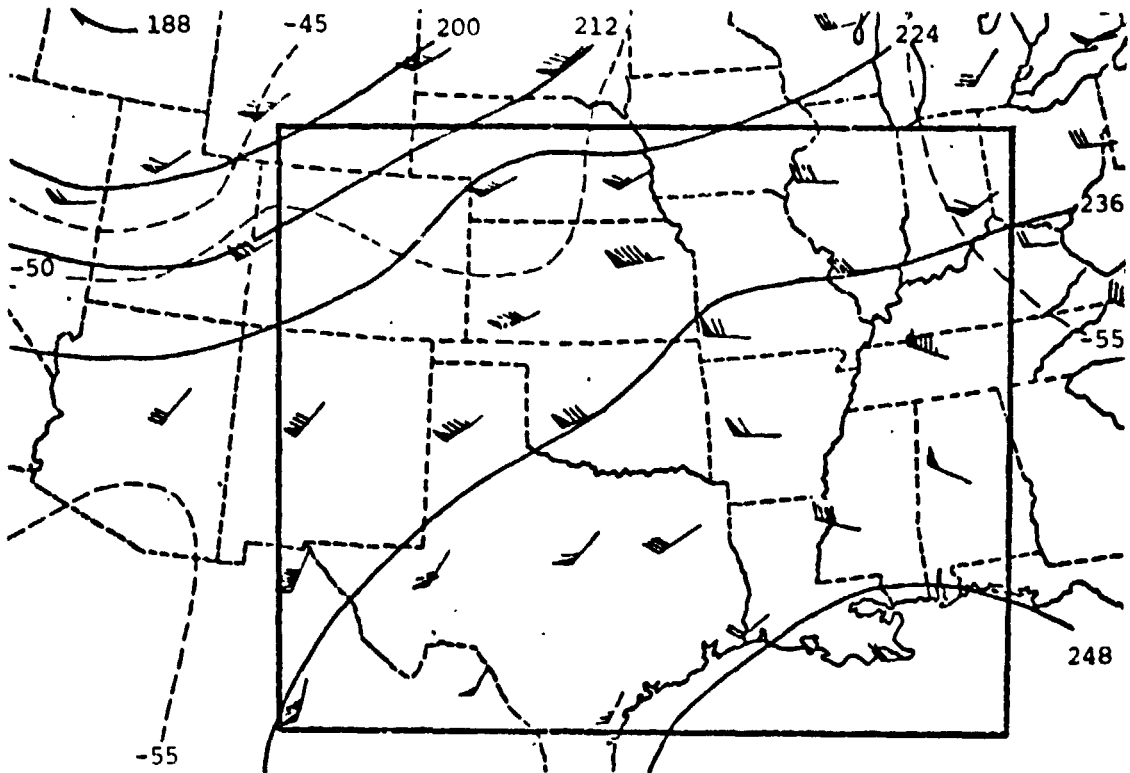


(d) 500 mb

Fig. 5. Continued.



(e) 300 mb



(f) 200 mb

Fig. 5. Concluded.

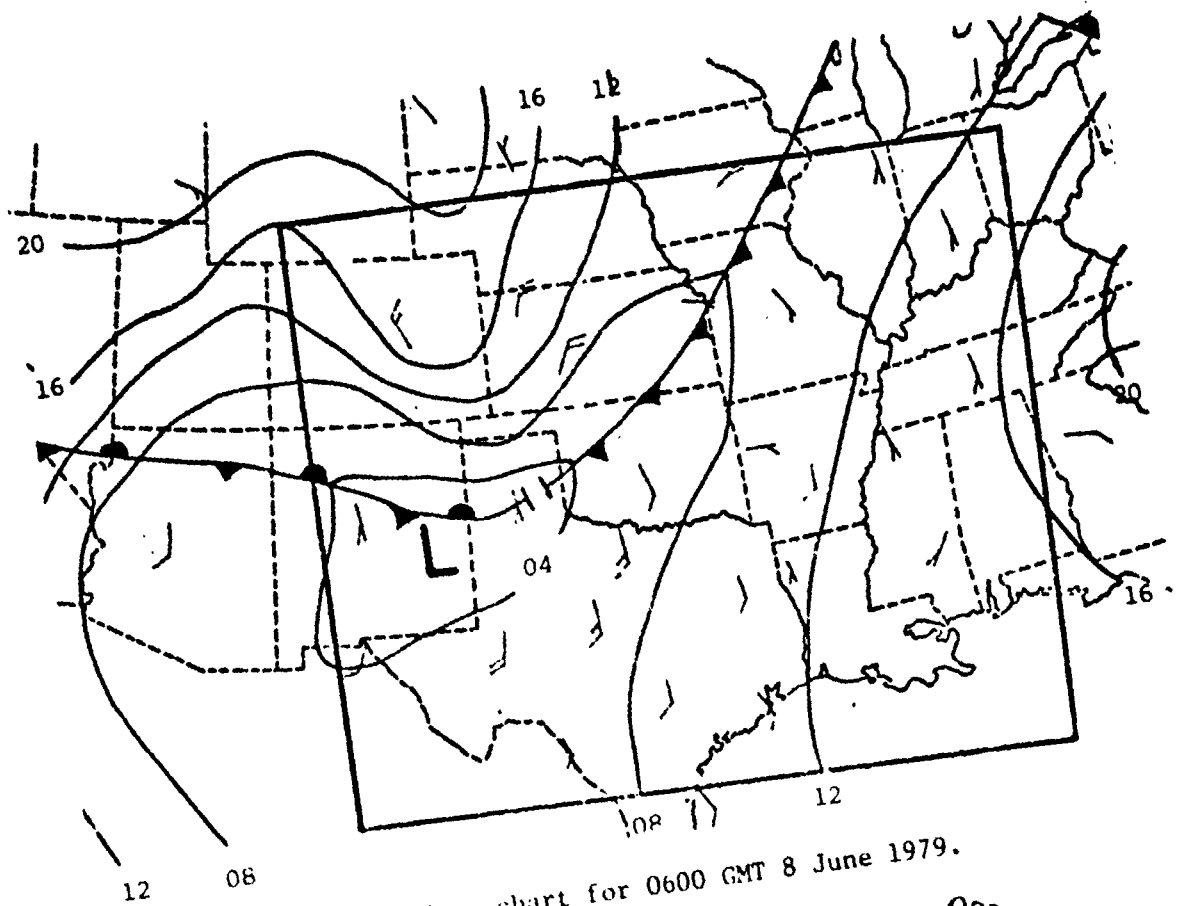
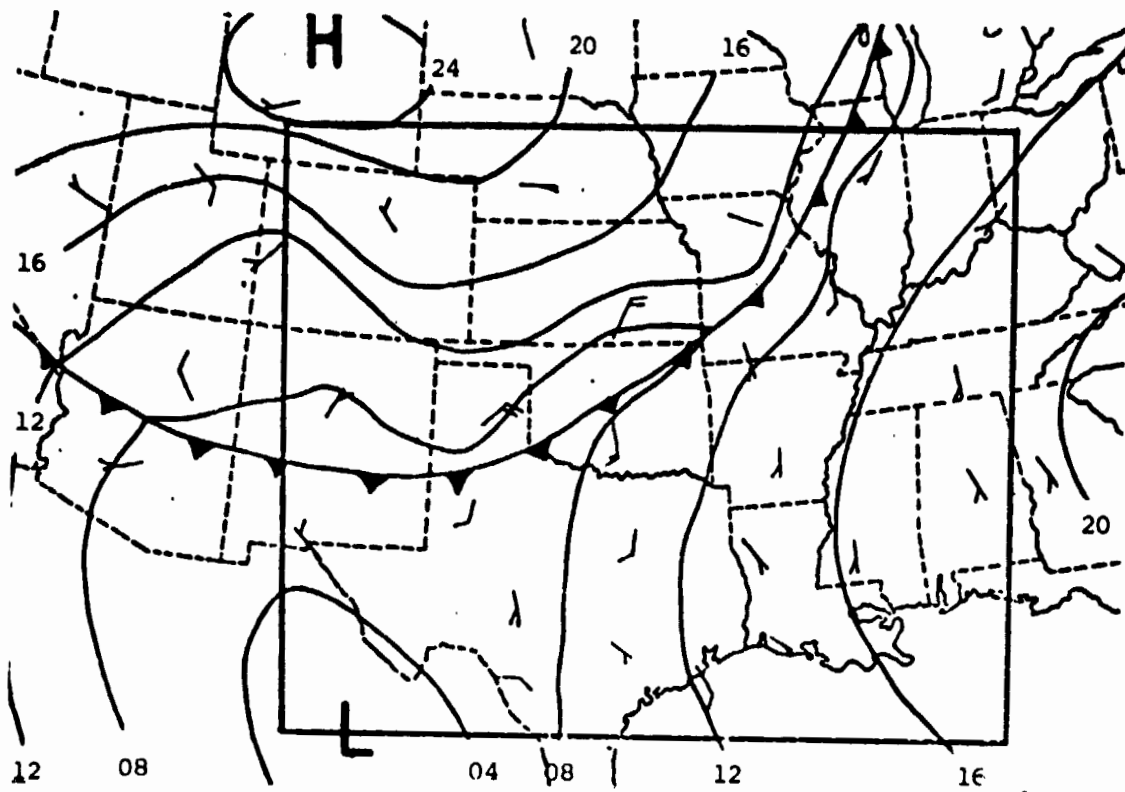
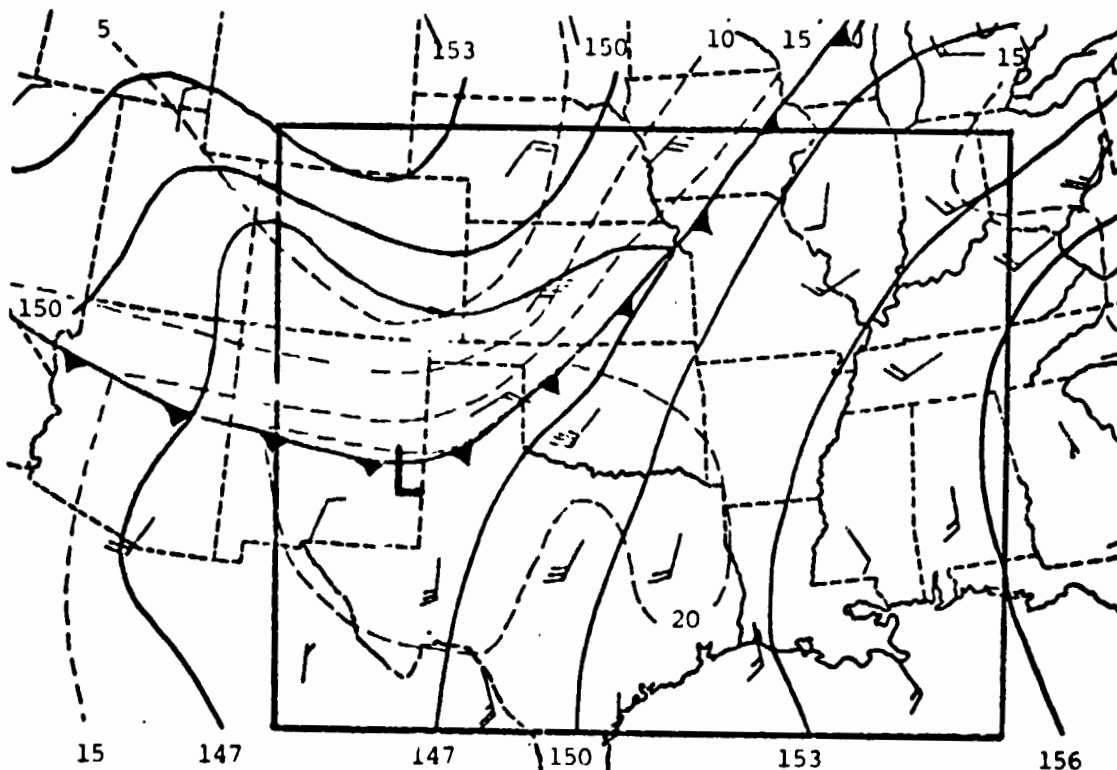


Fig. 6. Surface chart for 0600 GMT 8 June 1979.

**ORIGINAL PAGE IS  
OF POOR QUALITY**



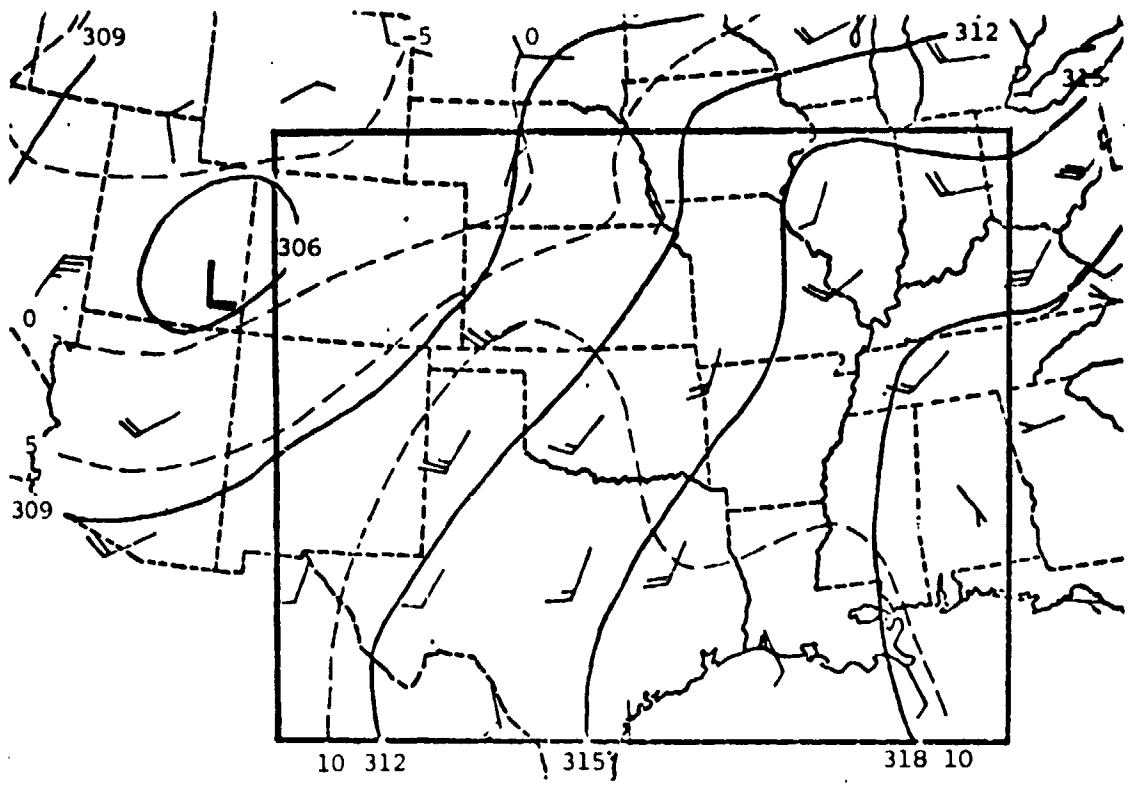
(a) Surface



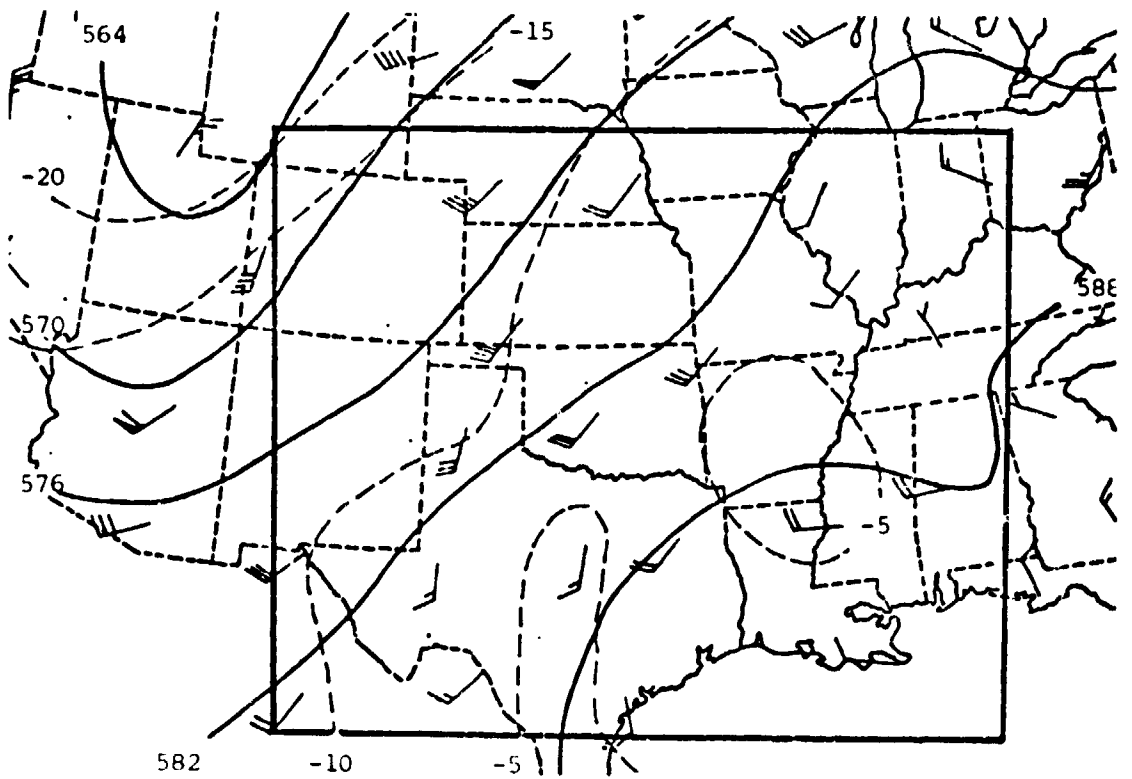
(b) 850 mb

Fig. 7. Synoptic charts for 1200 GMT 8 June 1979.



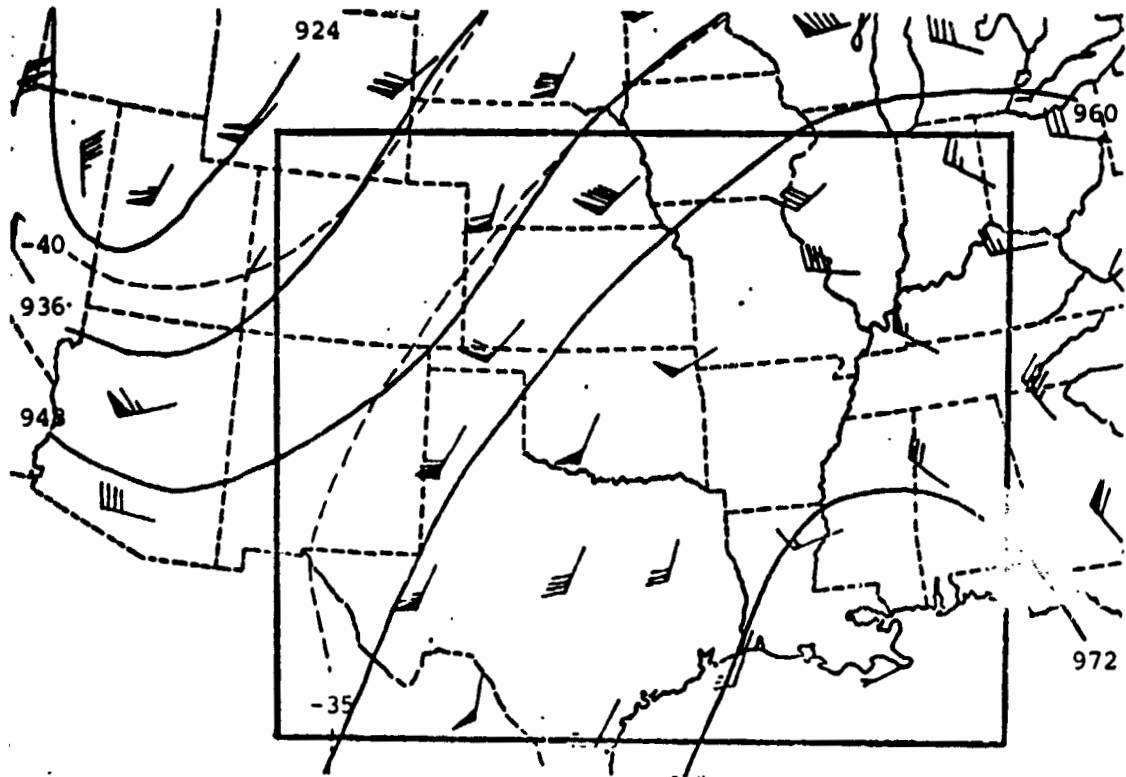


(c) 700 mb

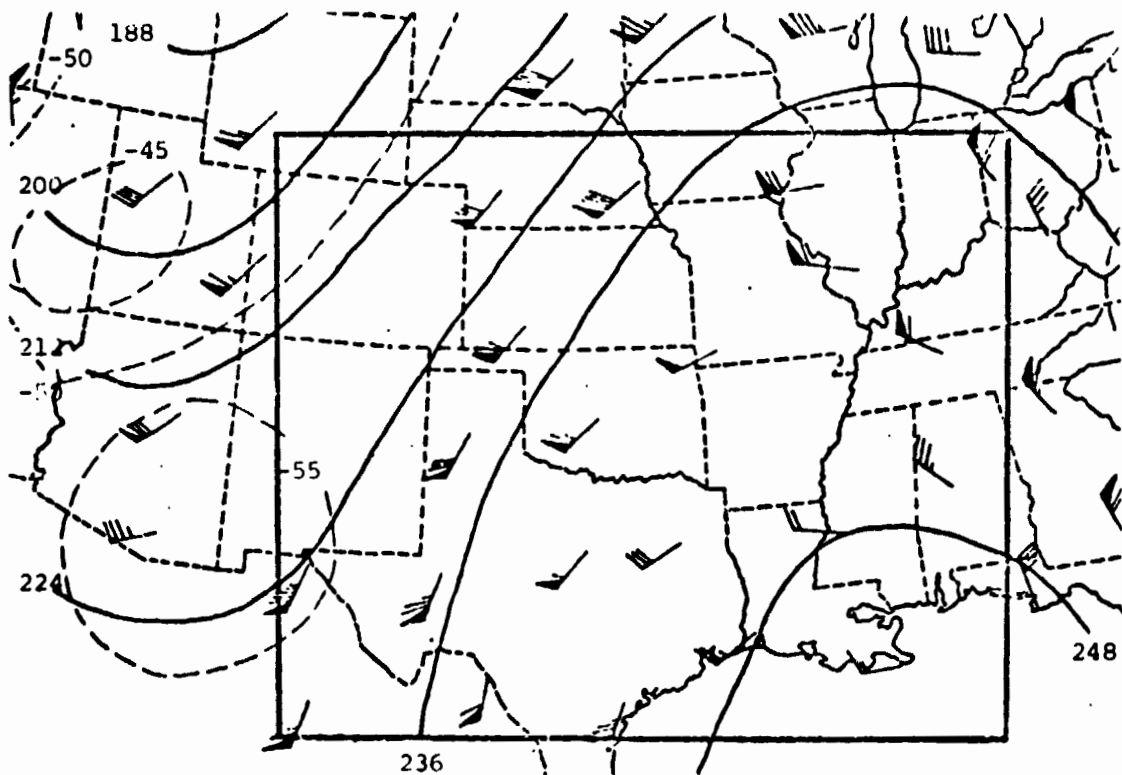


(a) 500 mb

Fig. 7. Continued.



(e) 300 mb



(f) 200 mb

Fig. 7. Concluded.

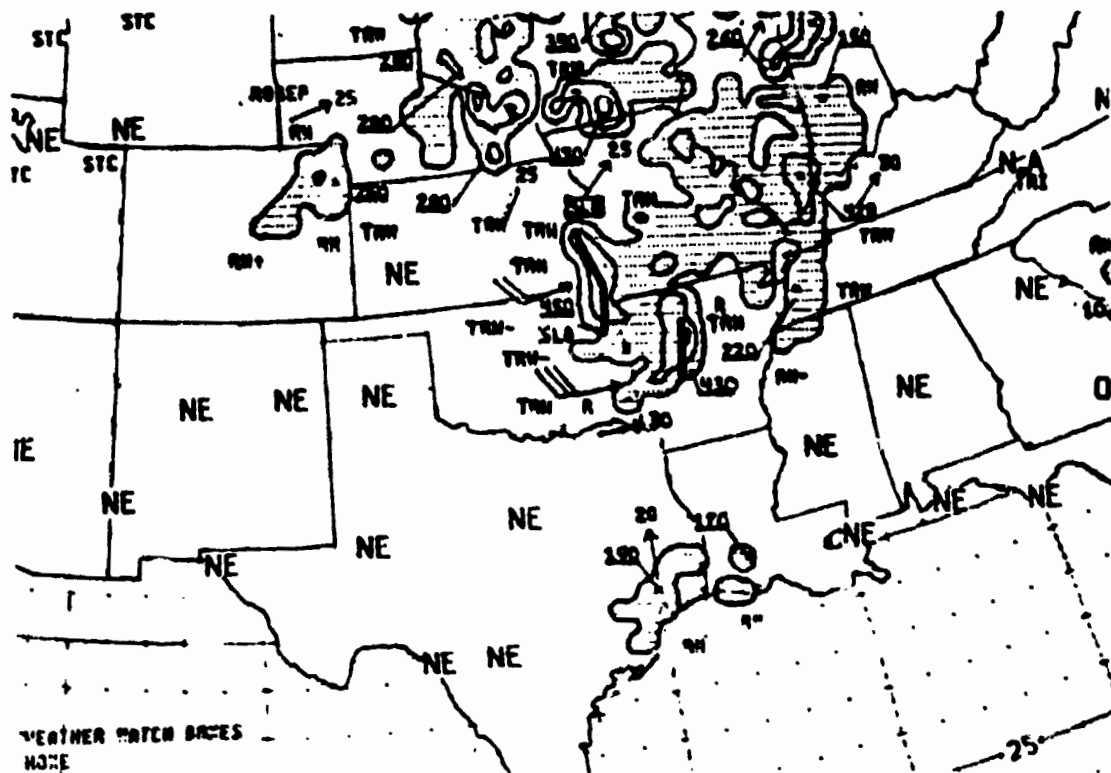


Fig. 8. Radar summary for 1135 GMT 7 June 1979.

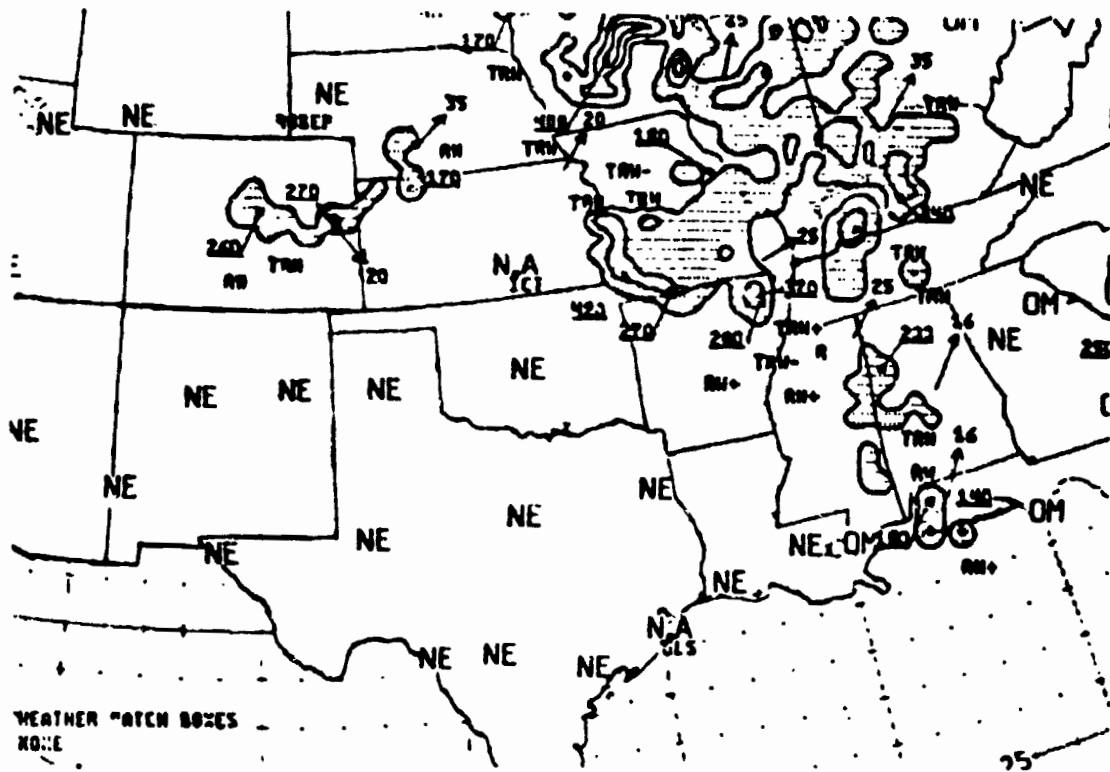


Fig. 9. Radar summary for 1435 GMT 7 June 1979.

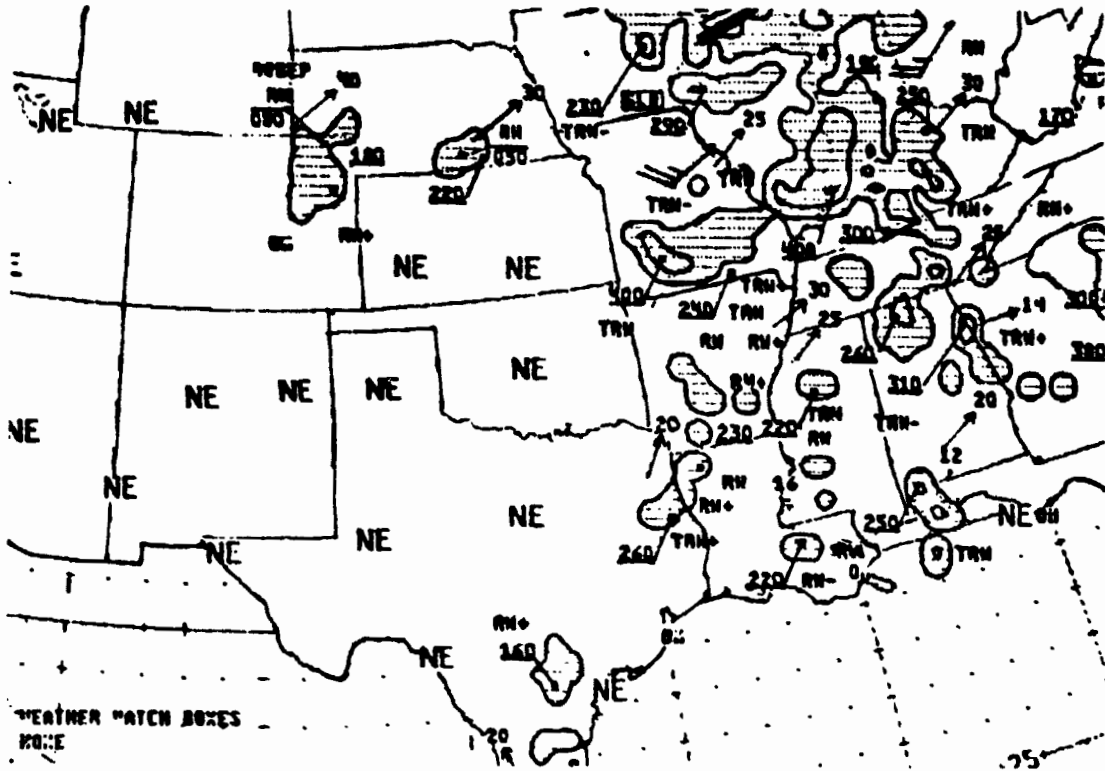


Fig. 10. Radar summary for 1735 GMT 7 June 1979.

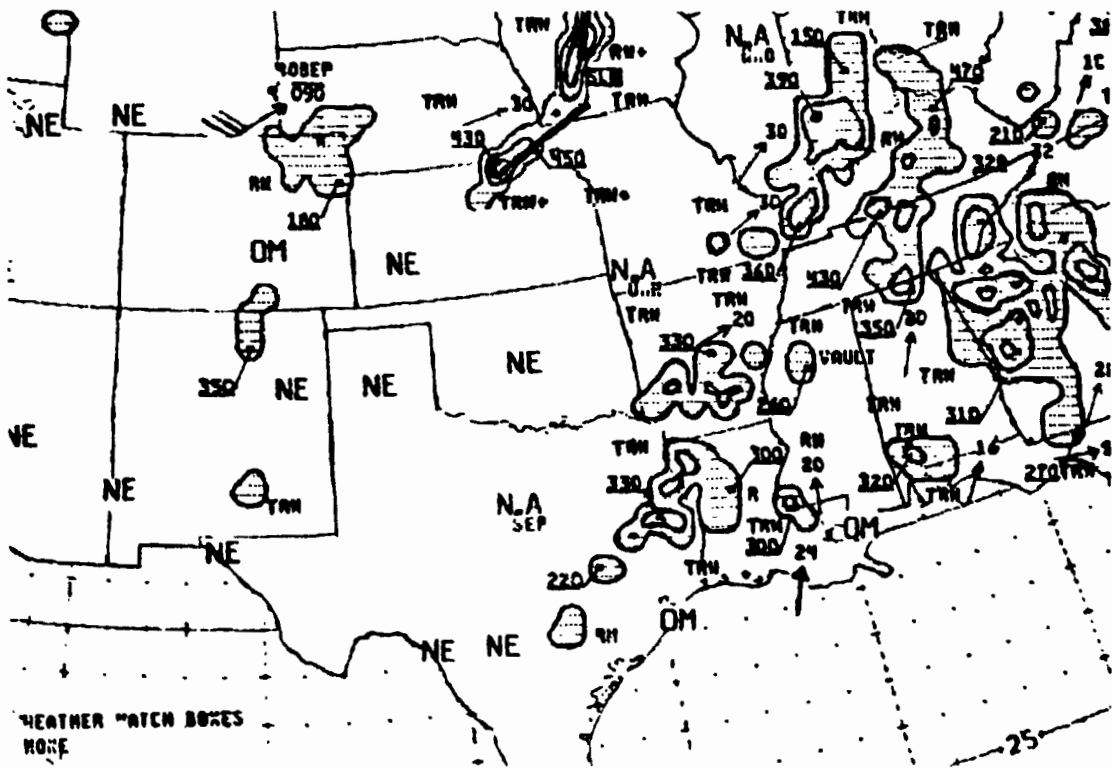


Fig. 11. Radar summary for 1935 GMT 7 June 1979.

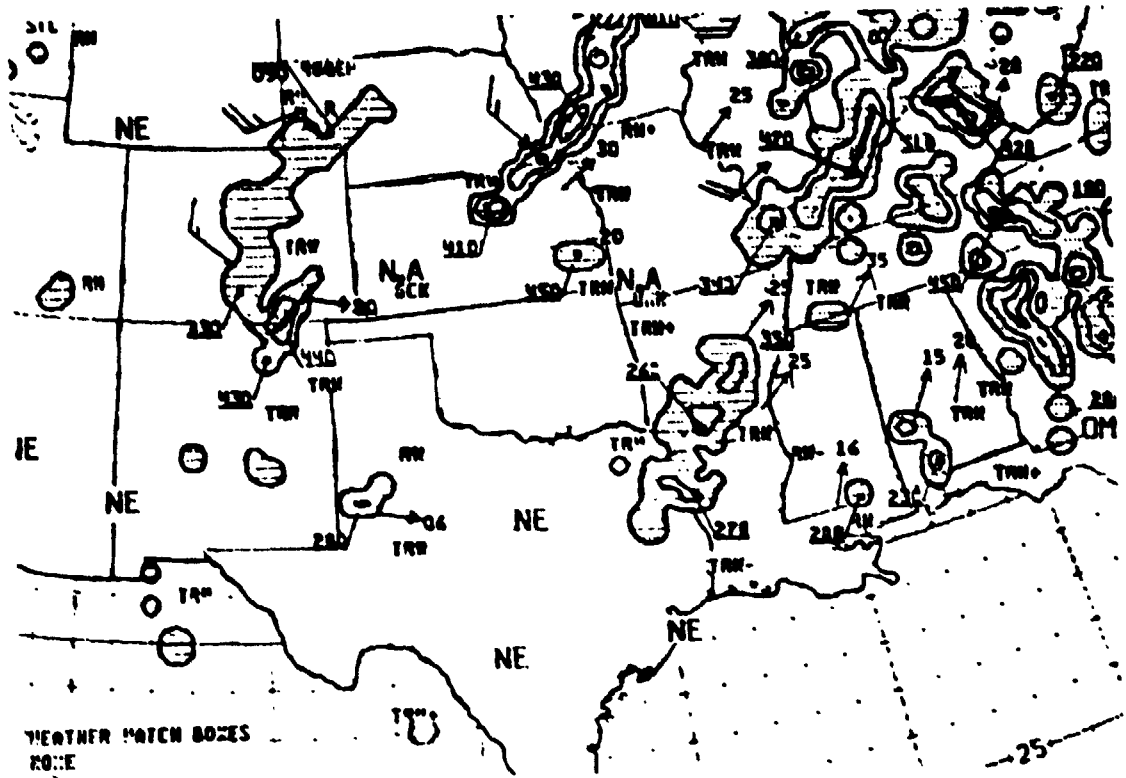


Fig. 12. Radar summary for 2135 GMT 7 June 1979.

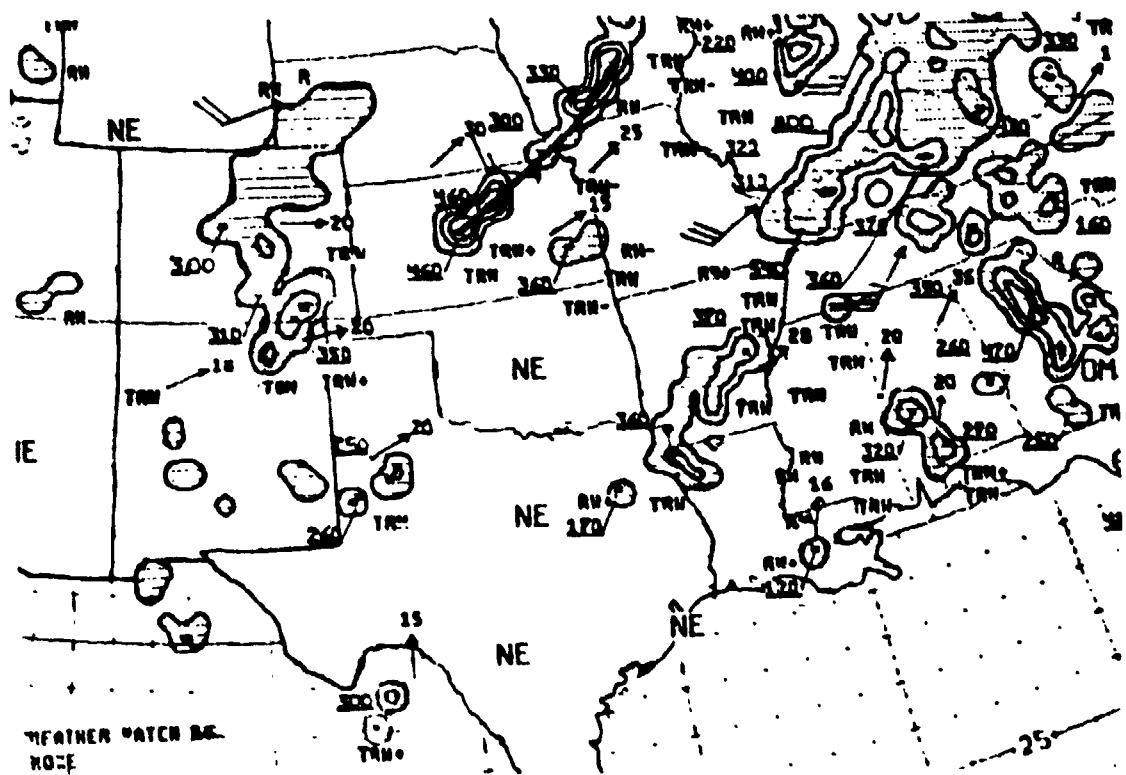


Fig. 13. Radar summary for 2235 GMT 7 June 1979.

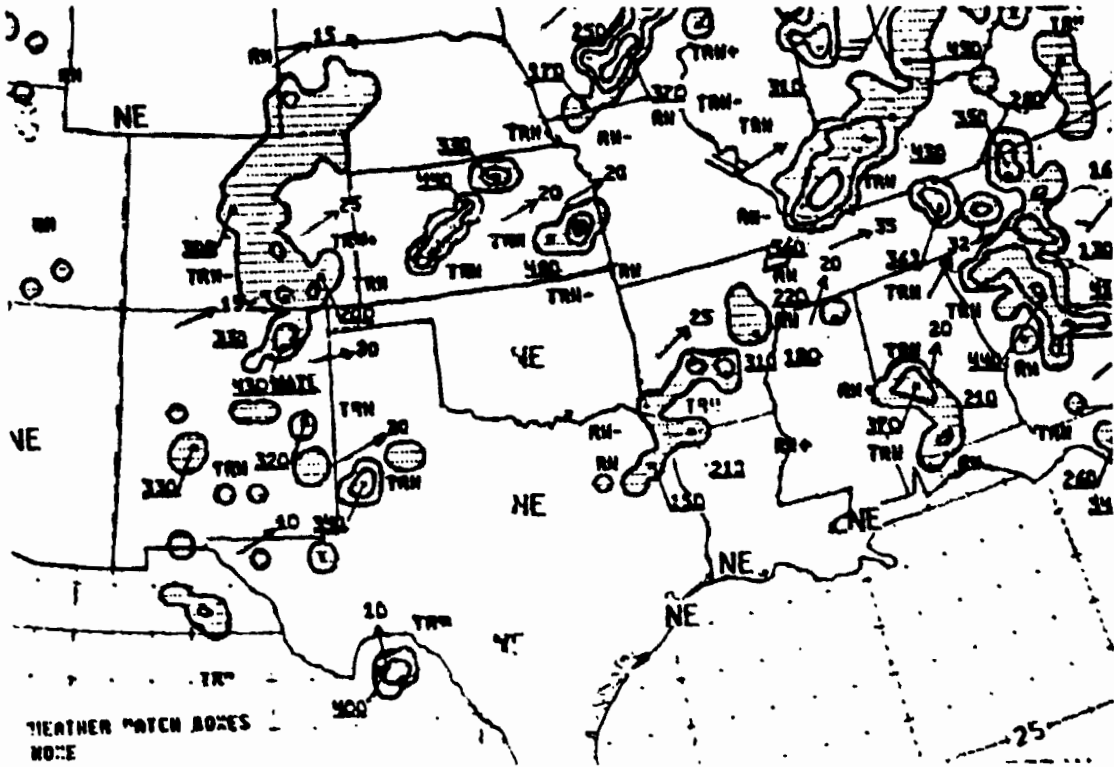


Fig. 14. Radar summary for 2335 GMT 7 June 1979.

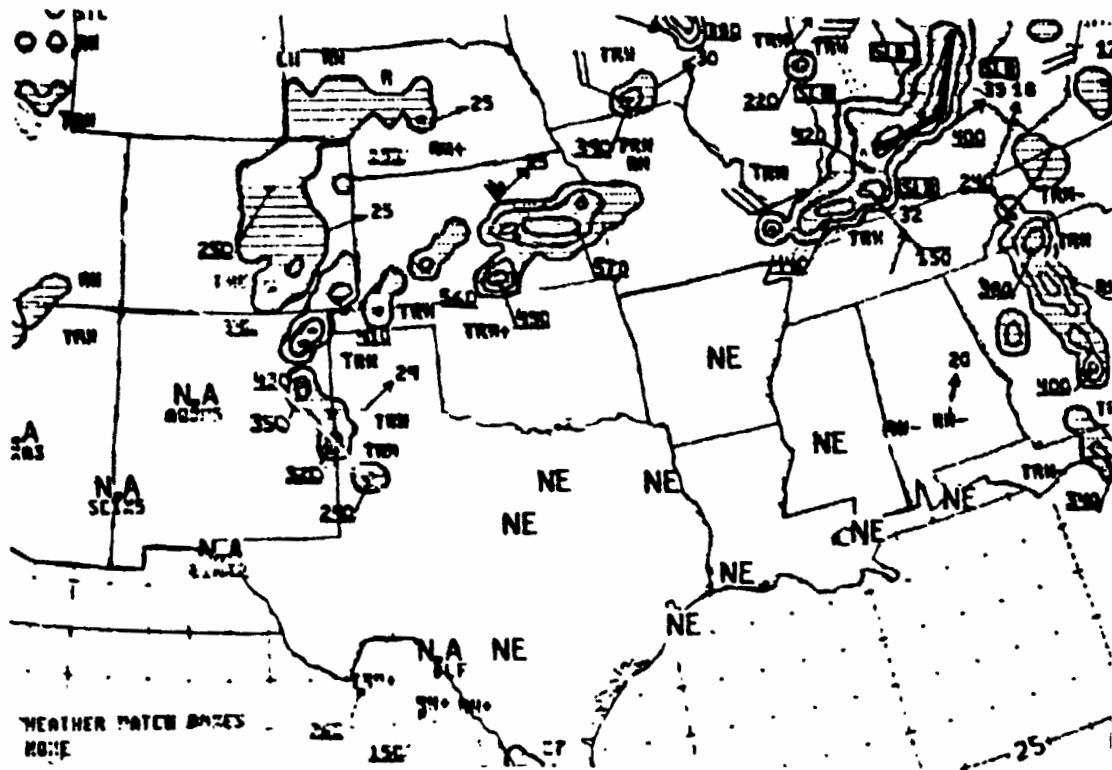


Fig. 15. Radar summary for 0135 GMT 8 June 1979.

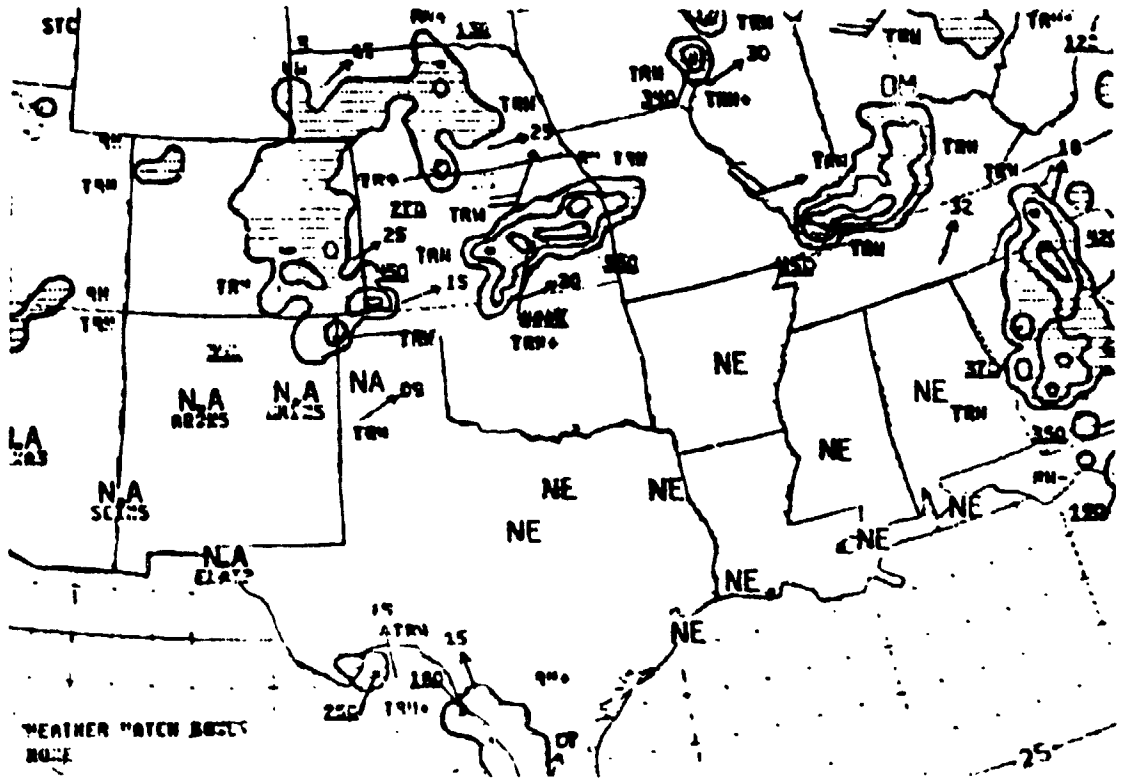


Fig. 16. Radar summary for 0235 GMT 8 June 1979.

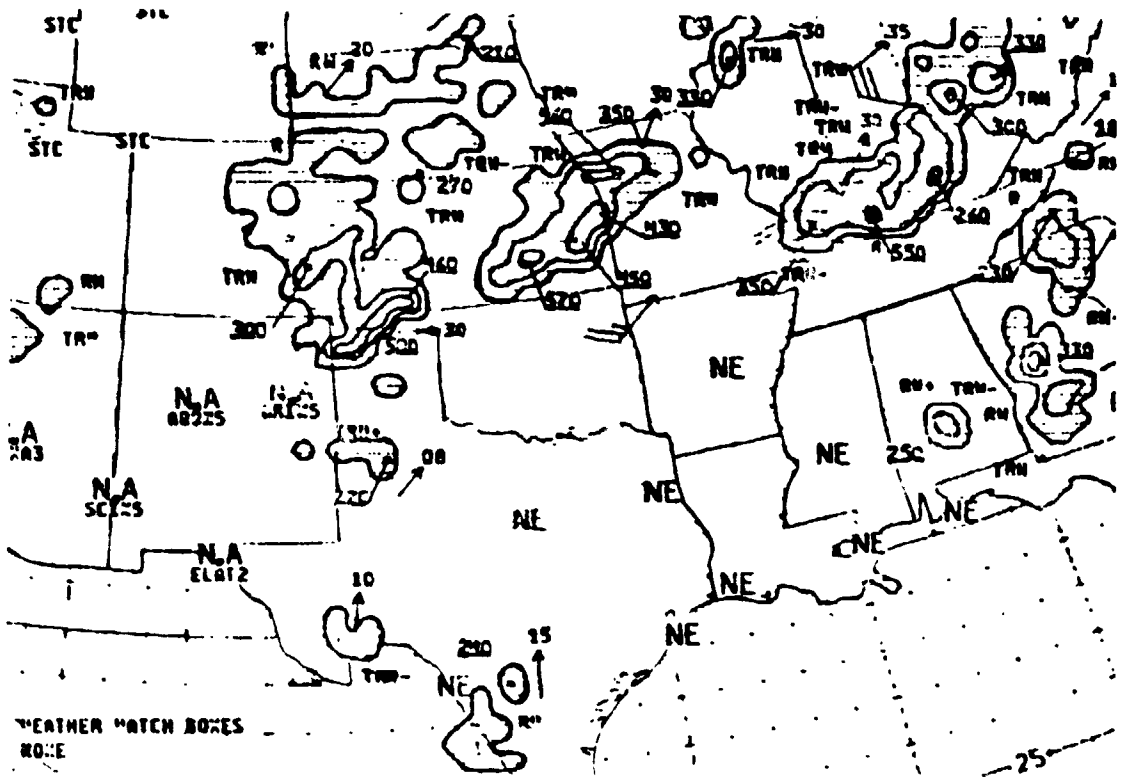


Fig. 17. Radar summary for 0435 GMT 8 June 1979.

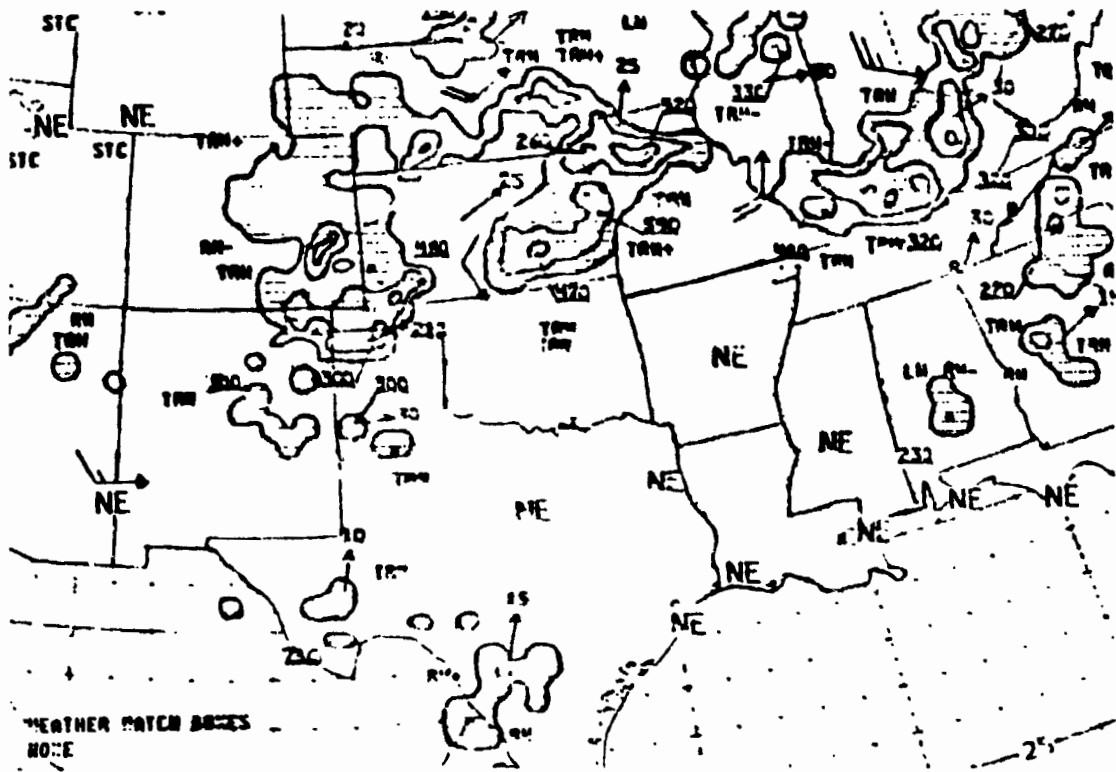


Fig. 18. Radar summary for 0535 GMT 8 June 1979.

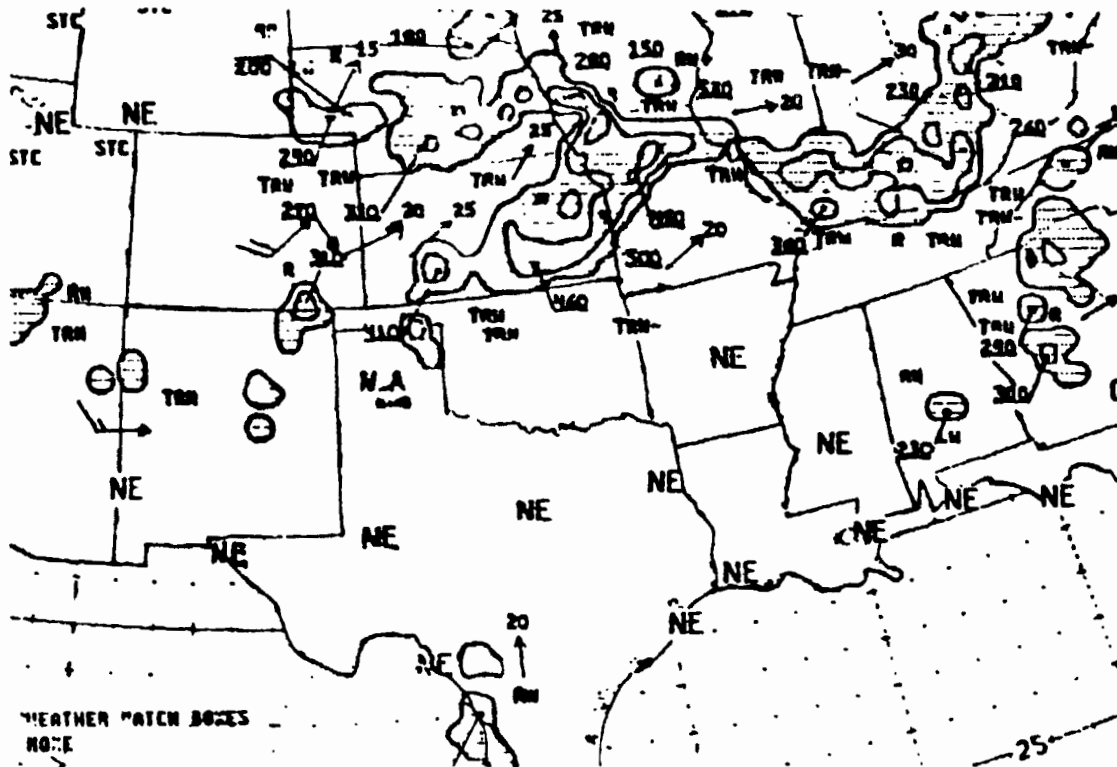


Fig. 19. Radar summary for 0635 GMT 8 June 1979.



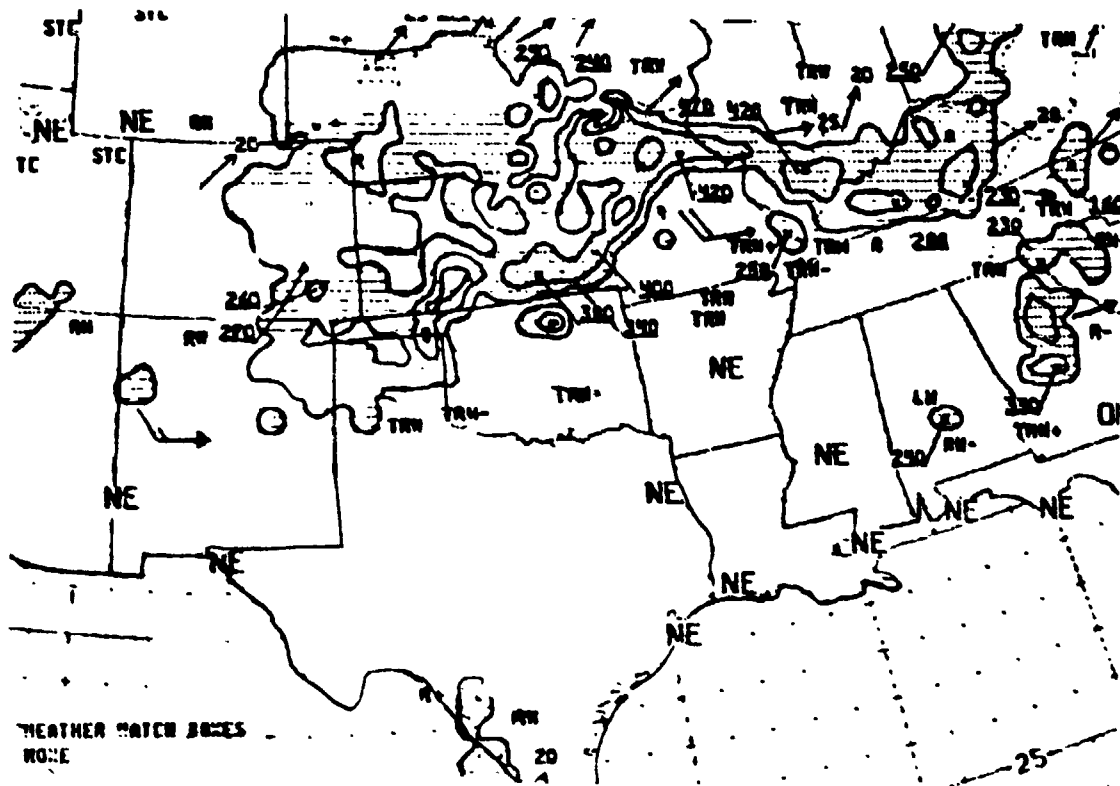


Fig. 20. Radar summary for 0735 GMT 8 June 1979.

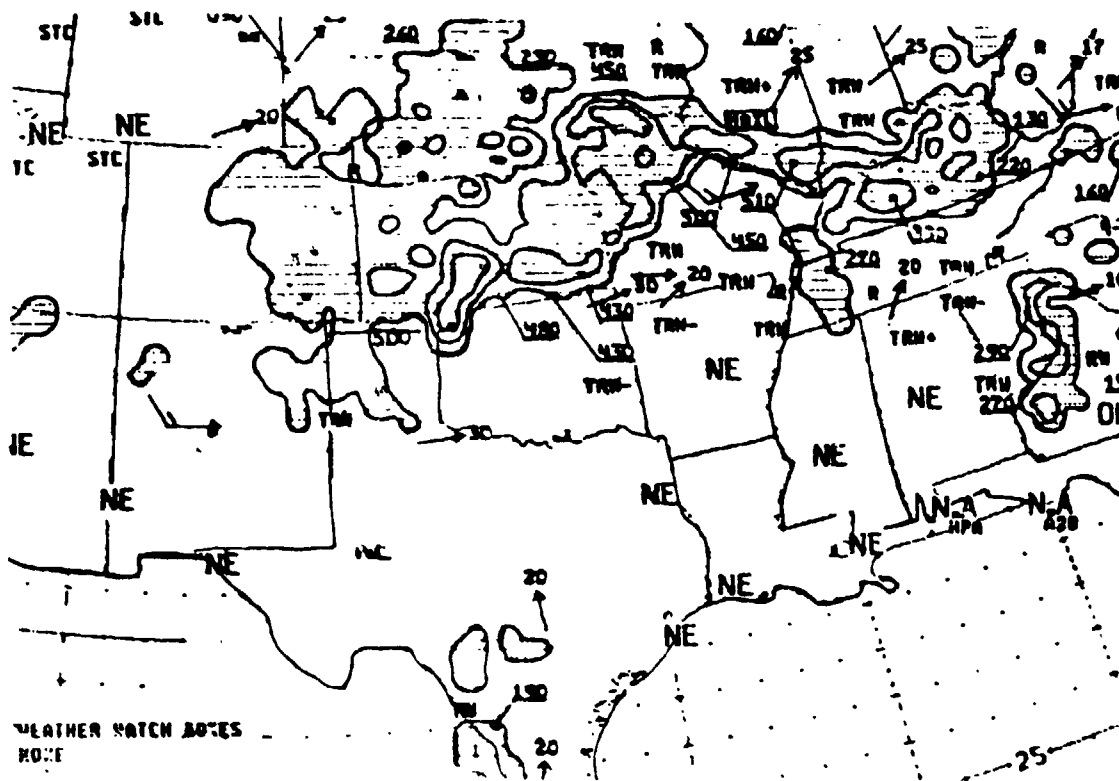


Fig. 21. Radar summary for 0835 GMT 8 June 1979.

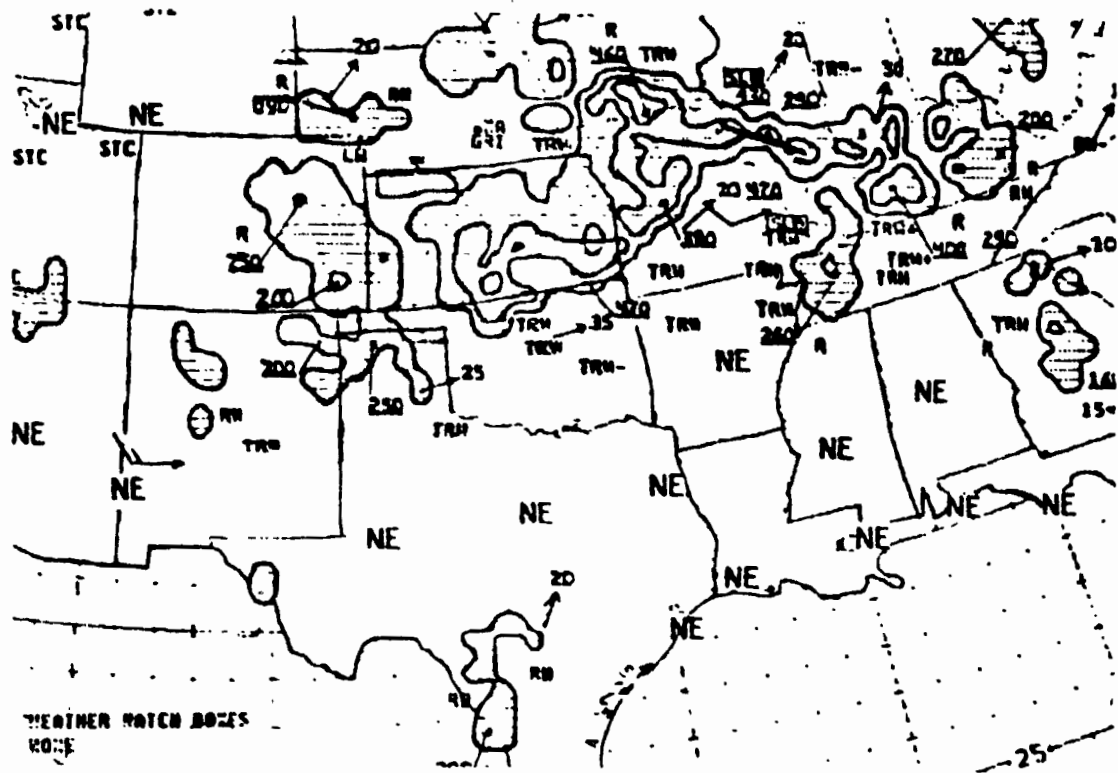


Fig. 22. Radar summary for 0935 GMT 8 June 1979.

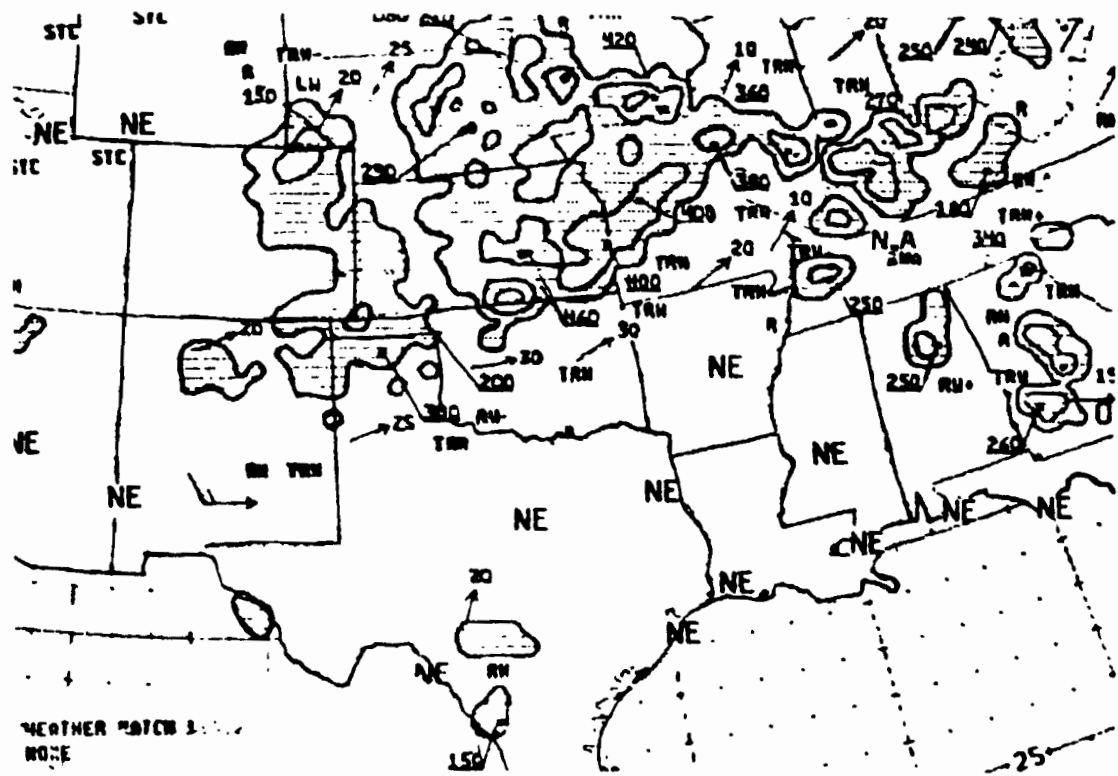


Fig. 23. Radar summary for 1035 GMT 8 June 1979.

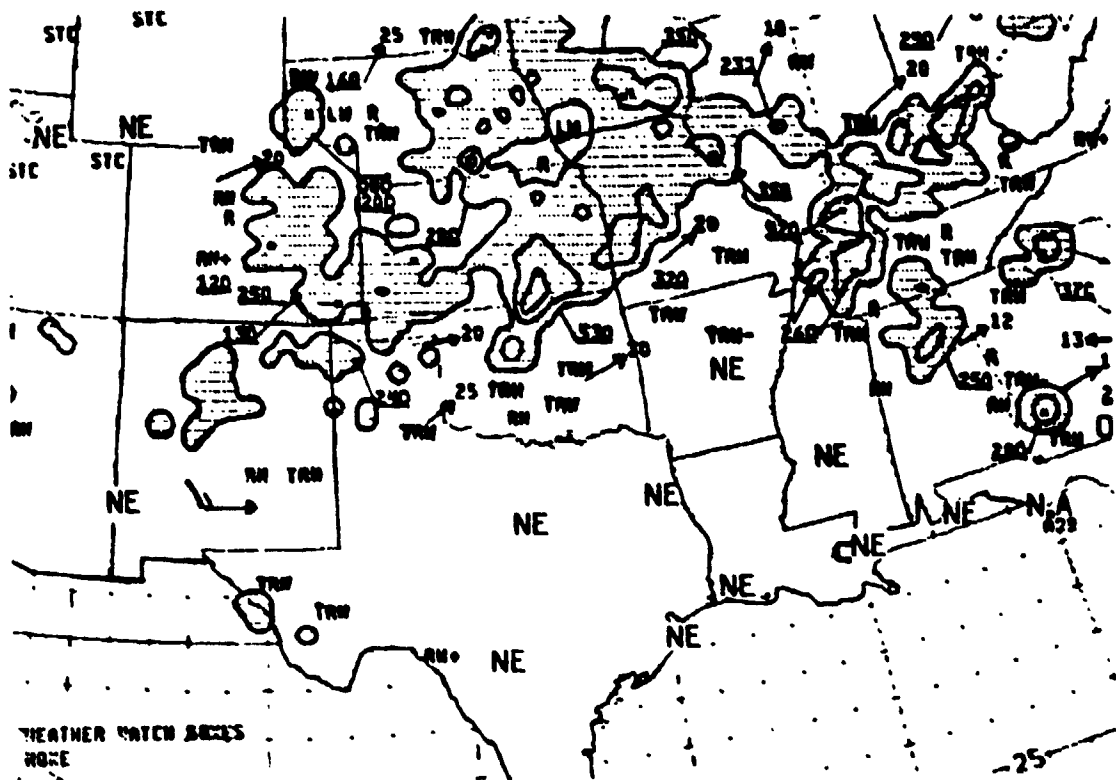


Fig. 24. Radar summary for 1135 GMT 8 June 1979.

1301 07JN79 12A-2 01294 13632 PQ36N95W-1

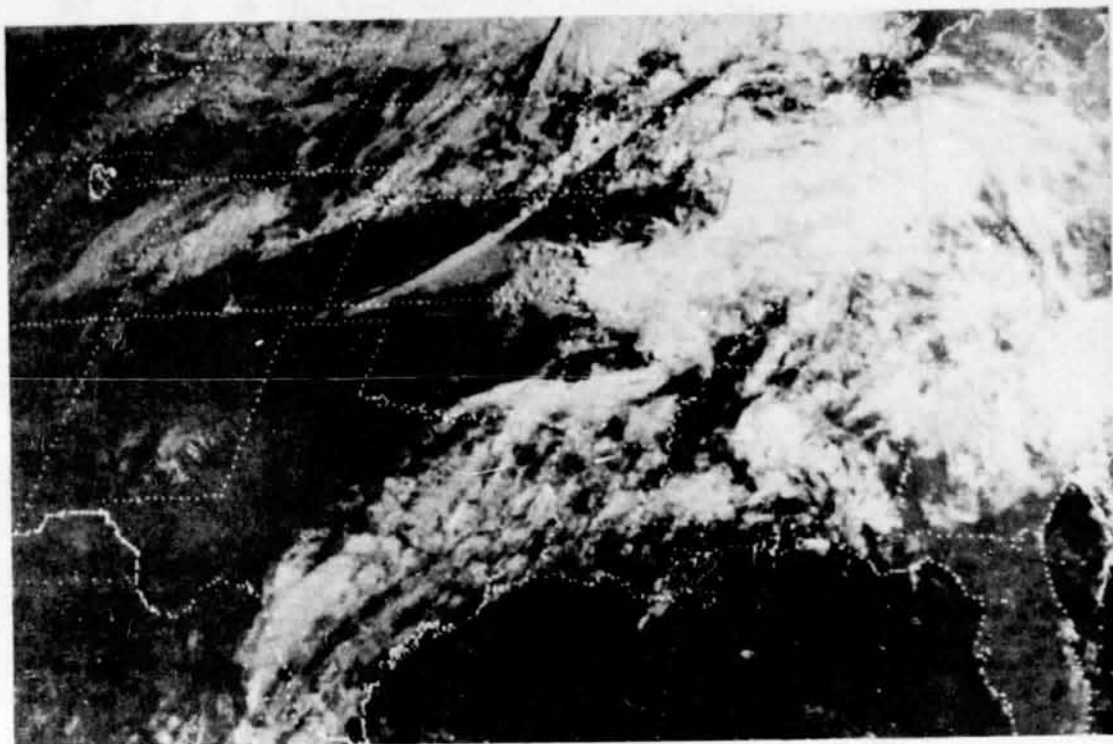


Fig. 25. GOES-East visual satellite imagery for 1301 GMT  
7 June 1979.

1401 07JN79 12A-2 01294 13641 PQ36N95W-1



Fig. 26. GOES-East visual satellite imagery for 1401 GMT  
7 June 1979.

1501 07JN79 12A-2 01294 13642 PQ36N95W-1



Fig. 27. GOES-East visual satellite imagery for 1501 GMT  
7 June 1979.

1601 07JN79 12A-2 01304 13642 PQ36N95W-1



Fig. 28. GOES-East visual satellite imagery for 1601 GMT  
7 June 1979.

ORIGINAL PAGE IS  
OF POOR QUALITY

1701 07JN79 12A-2 01301 13632 PQ36N95W-1

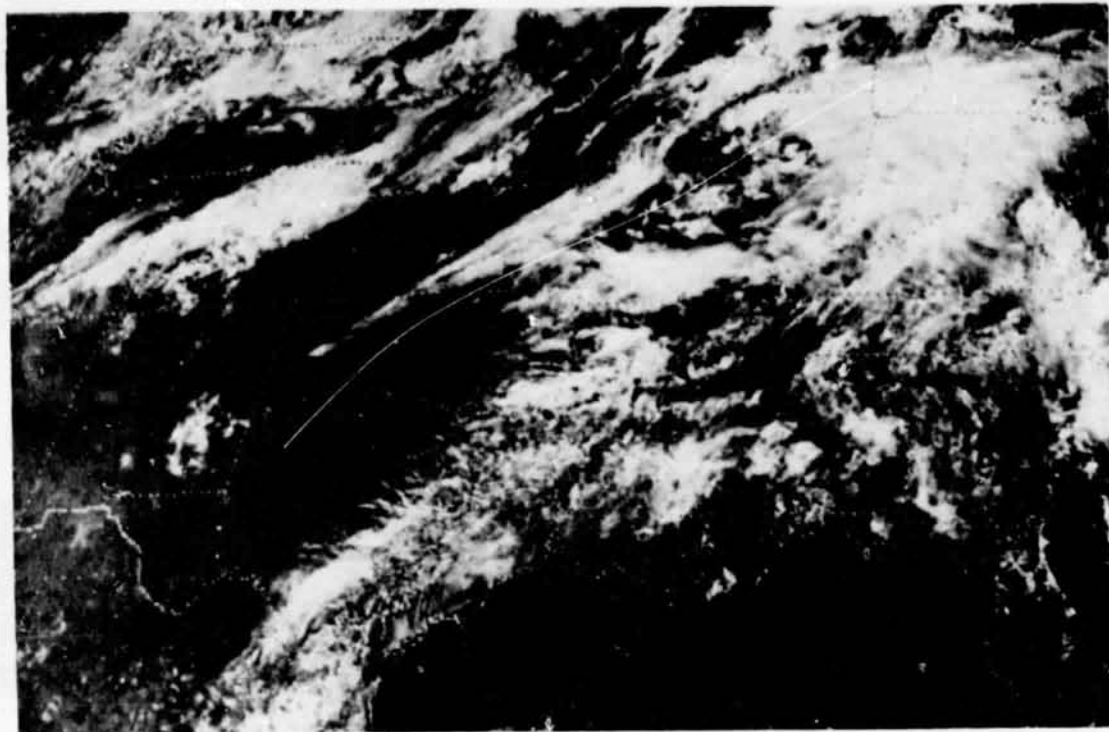


Fig. 29. GOES-East visual satellite imagery for 1701 GMT  
7 June 1979.

1801 07JN79 12A-2 01301 13622 PQ 36N95W-1

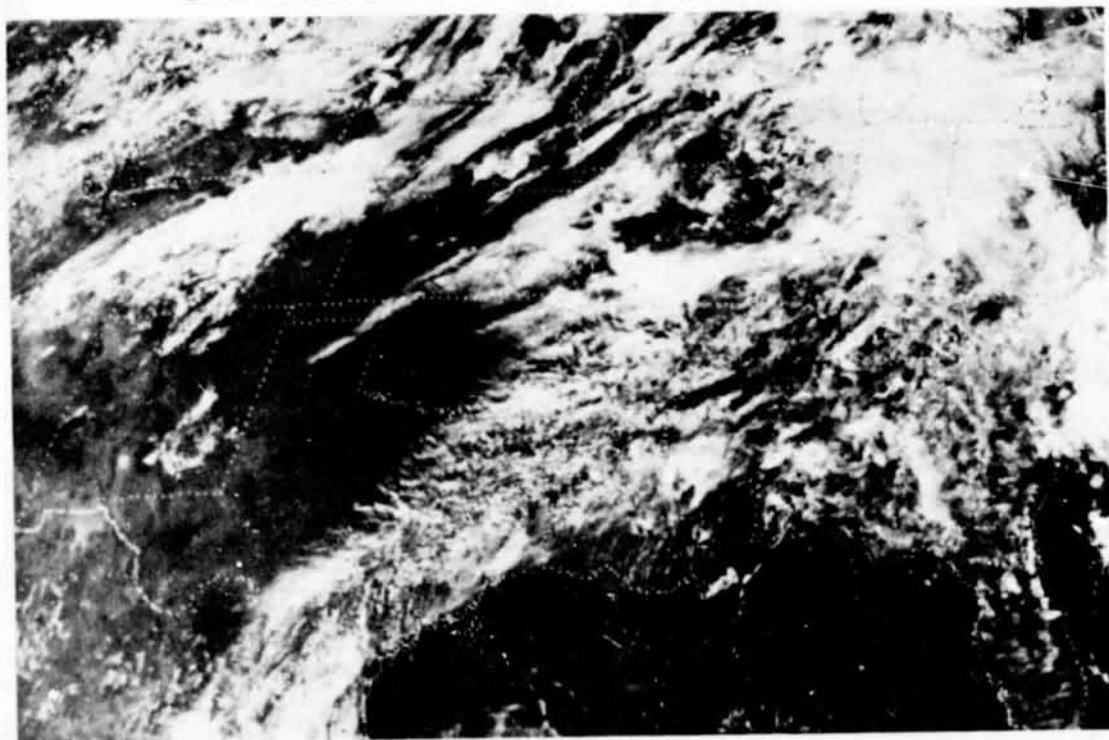


Fig. 30. GOES-East visual satellite imagery for 1801 GMT  
7 June 1979.

1901 07JN79 12A-2 01311 13612 PQ36N95W-1

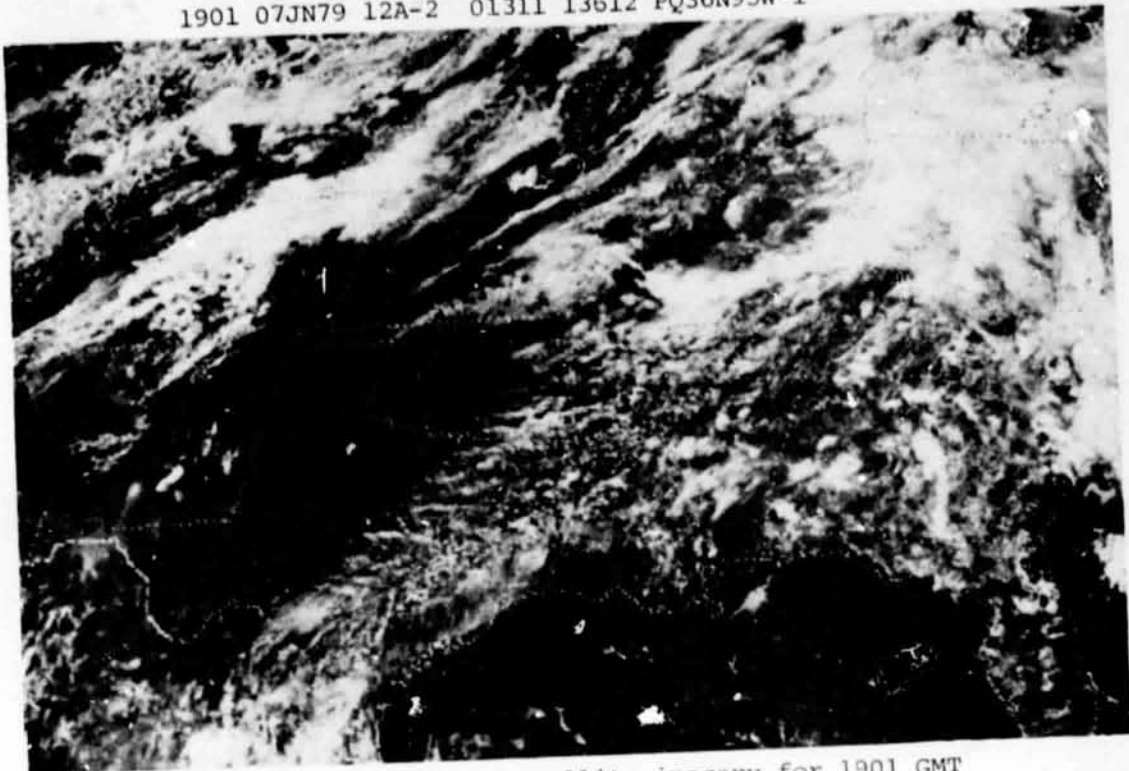


Fig. 31. GOES-East visual satellite imagery for 1901 GMT  
7 June 1979.

2001 07JN79 12A-2 01302 13592 PQ36N95W-1

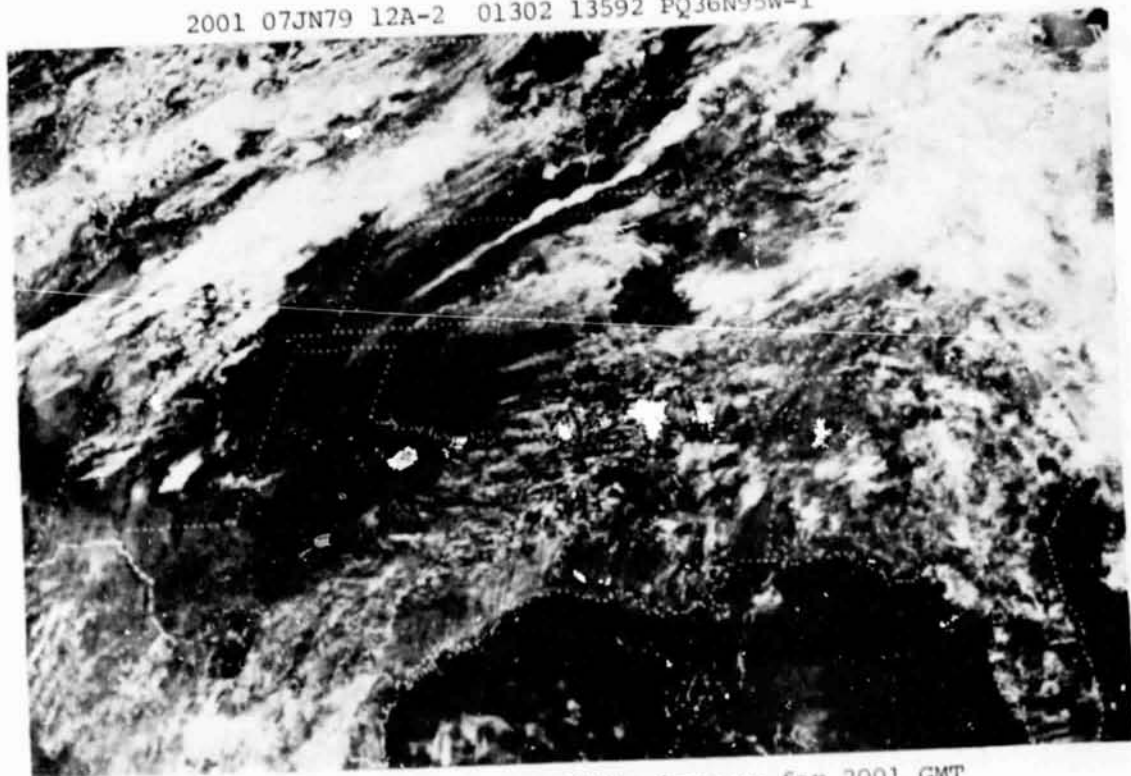
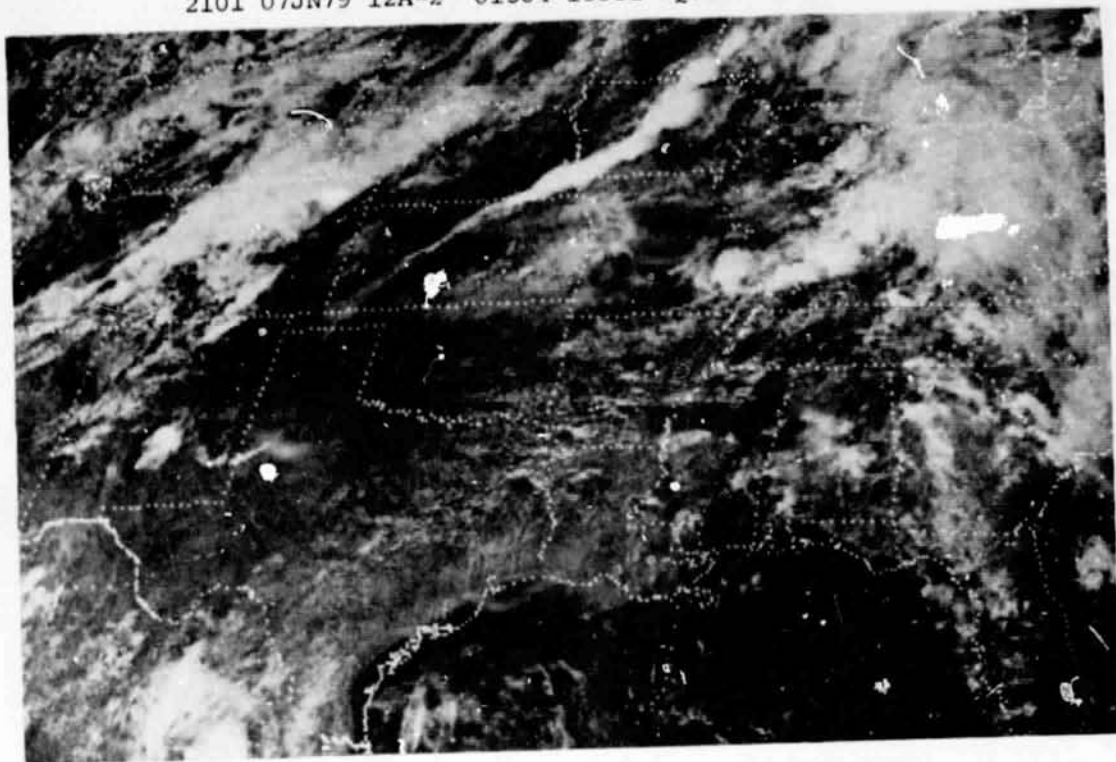


Fig. 32. GOES-East visual satellite imagery for 2001 GMT  
7 June 1979.

2101 07JN79 12A-2 01304 13581 PQ36N95W-1



22:00 07JN79 22A-Z 0006-1640 FULL DISC IR

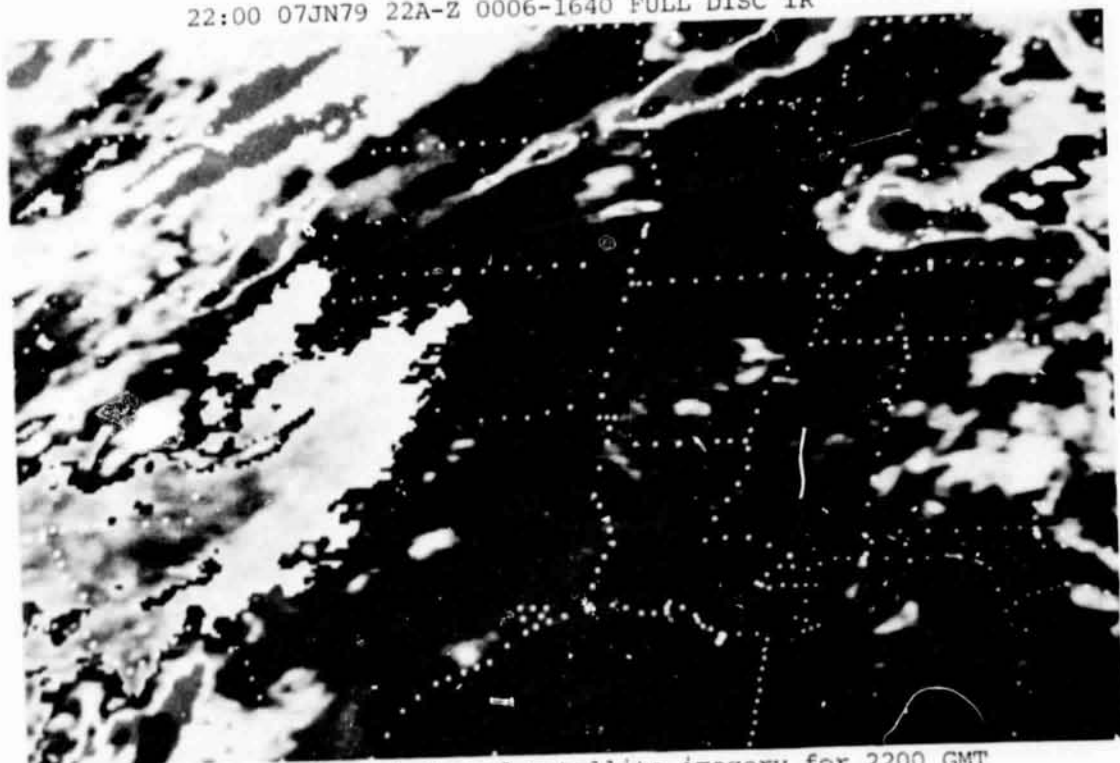


Fig. 34. GOES-East infrared satellite imagery for 2200 GMT  
7 June 1979.



2301 07JN79 12A-2 01304 13542 PQ36N95W-1



Fig. 35. GOES-East visual satellite imagery for 2301 GMT  
7 June 1979.

0001 08JN79 12A-2 01323 13512 PQ36N95W-1

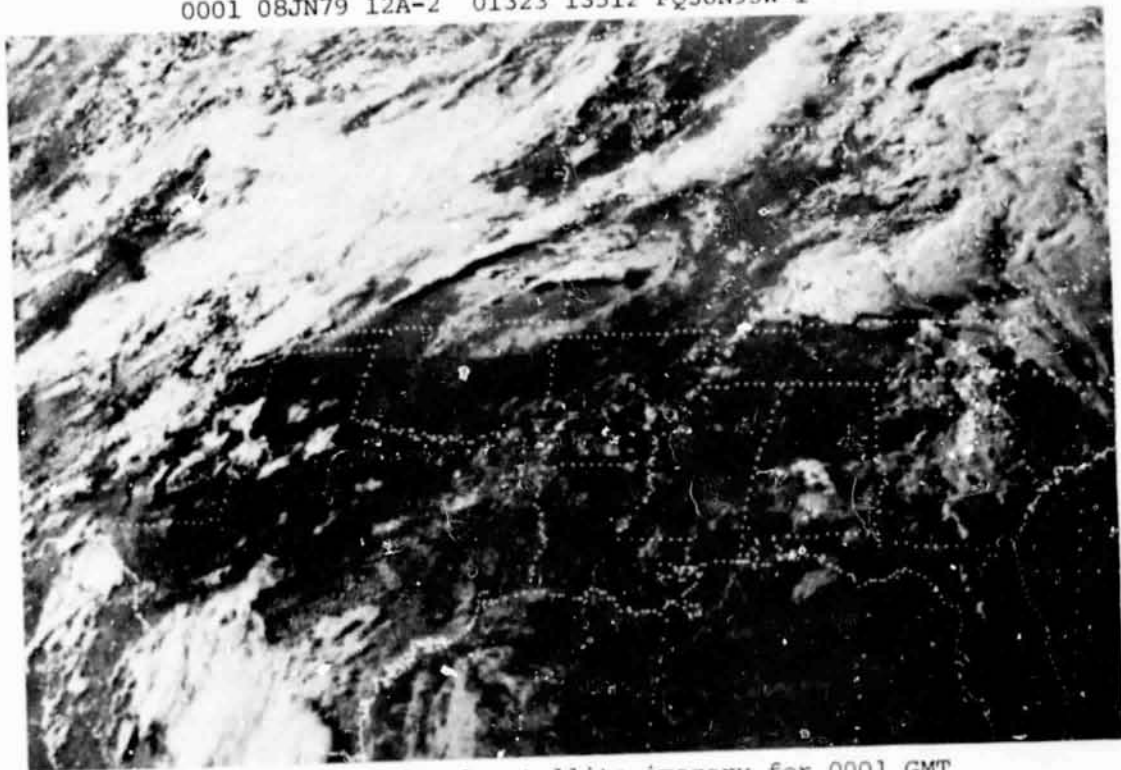


Fig. 36. GOES-East visual satellite imagery for 0001 GMT  
8 June 1979.

01:00 08JN79 12A-Z 0006-1640 FULL DISC IR



Fig. 37. GOES-East infrared satellite imagery for 0100 GMT  
8 June 1979.

02:00 08JN79 12A-Z 0006-1640 FULL DISC IR



Fig. 38. GOES-East infrared satellite imagery for 0200 GMT  
8 June 1979.

03:00 08JN79 12A-Z 0006-1640 FULL DISC IR

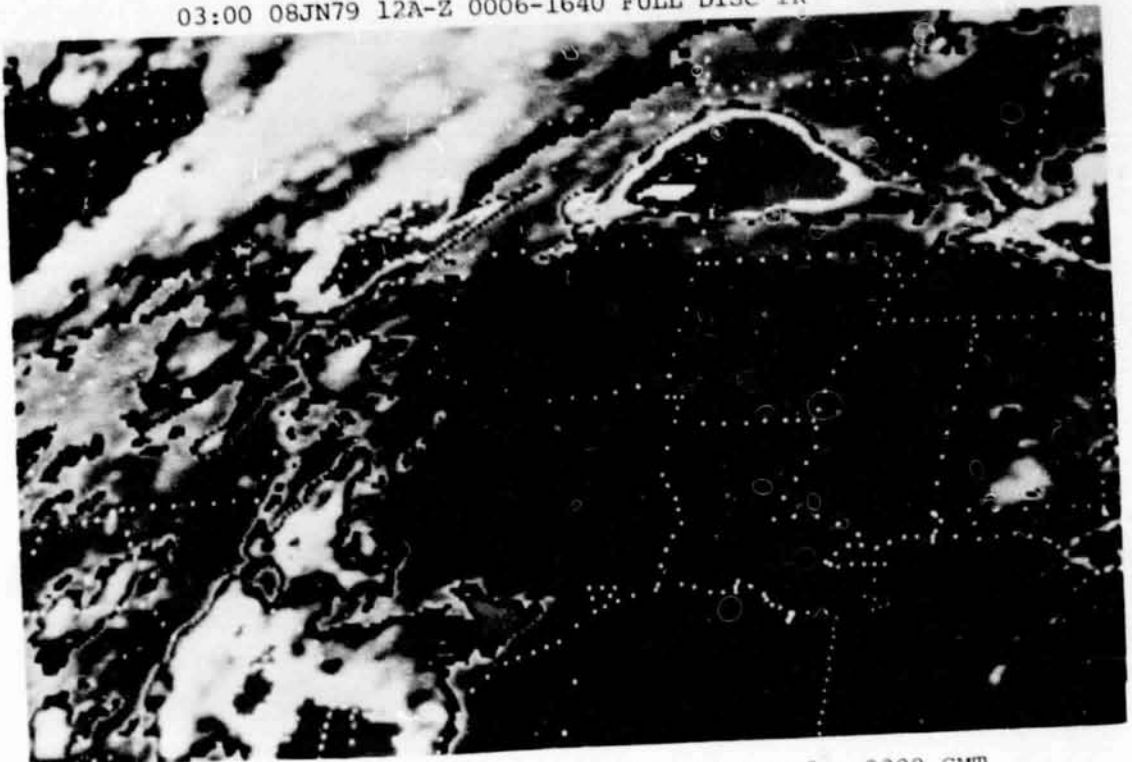


Fig. 39. GOES-East infrared satellite imagery for 0300 GMT  
8 June 1979.

04:00 08JN79 12A-Z 0006-1640 FULL DISC IR

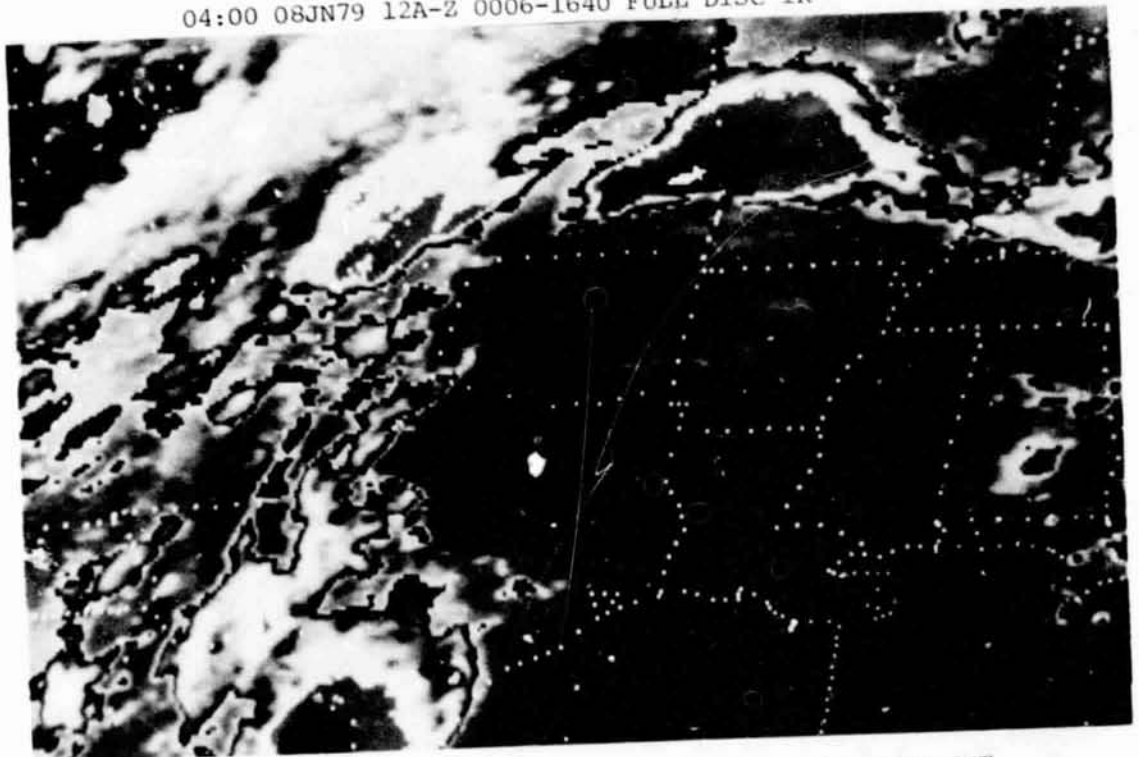


Fig. 40. GOES-East infrared satellite imagery for 0400 GMT  
8 June 1979.

05:00 08JN79 12A-Z 0006-1640 FULL DISC IR



Fig. 41. GOES-East infrared satellite imagery for 0500 GMT  
8 June 1979.

06:00 08JN79 12A-Z 0006-1640 FULL DISC IR

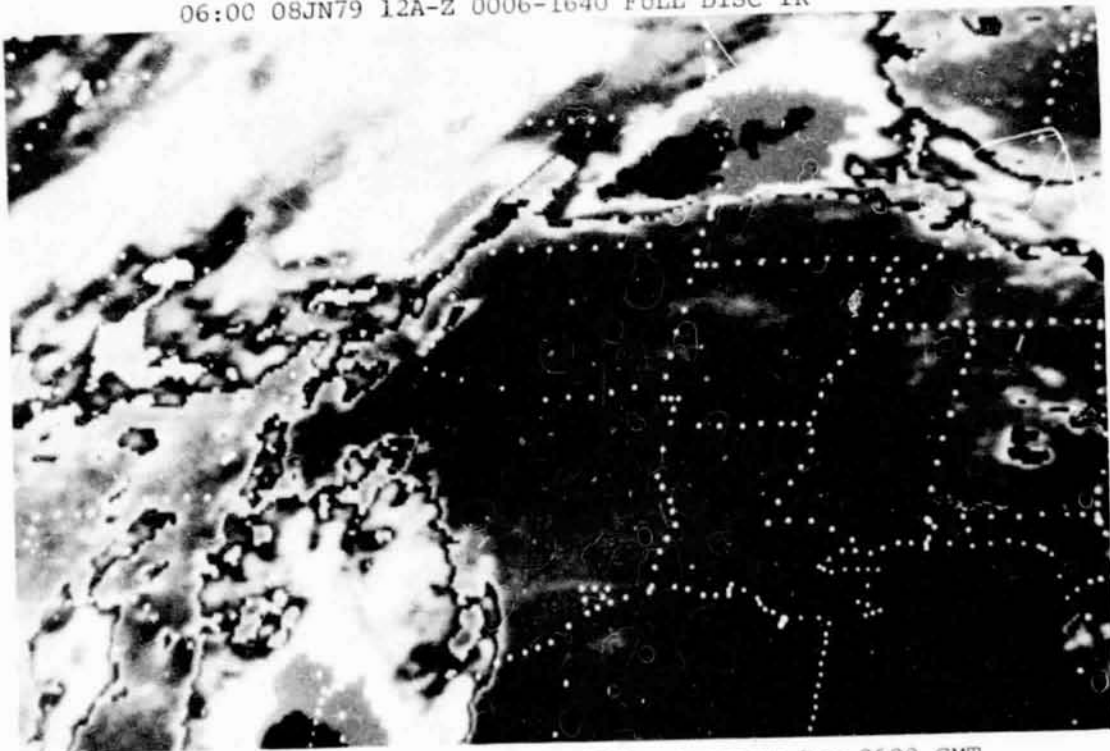


Fig. 42. GOES-East infrared satellite imagery for 0600 GMT  
8 June 1979.

07:00 08JN79 12A-Z 0006-1640 FULL DISC IR

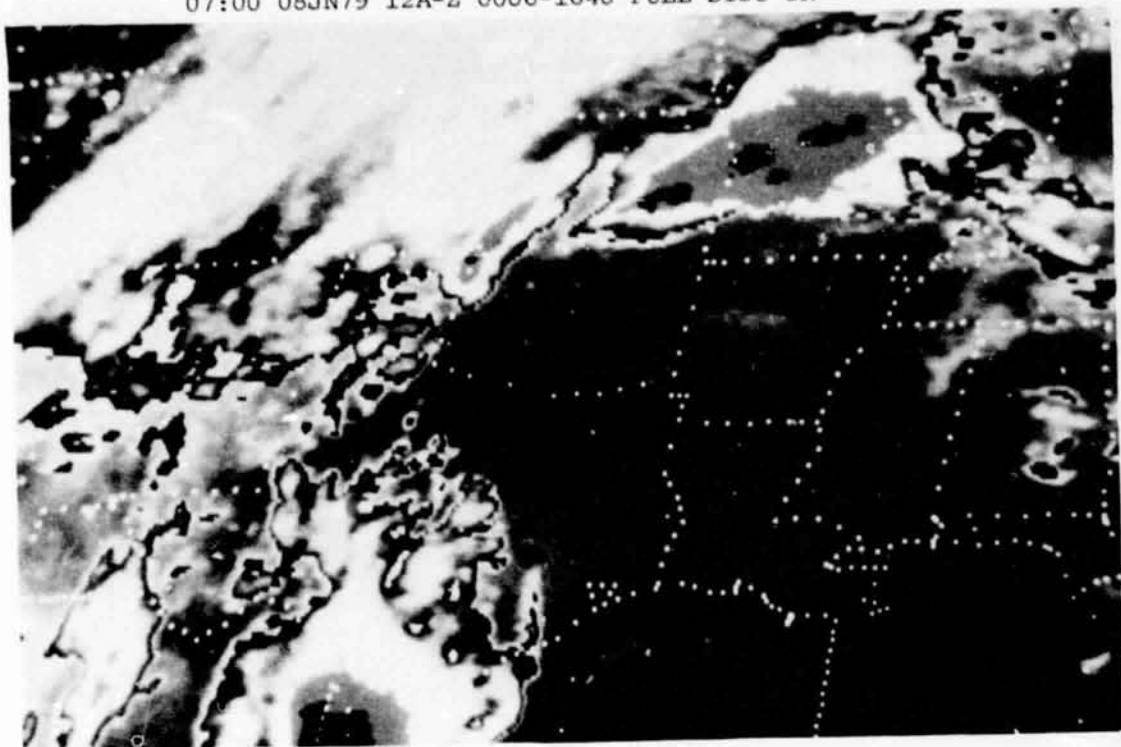


Fig. 43. GOES-East infrared satellite imagery for 0700 GMT  
8 June 1979.

08:00 08JN79 12A-Z 0006-1640 FULL DISC IR



Fig. 44. GOES-East infrared satellite imagery for 0800 GMT  
8 June 1979.

09:00 08JN79 12A-Z 0006-1640 FULL DISC IR

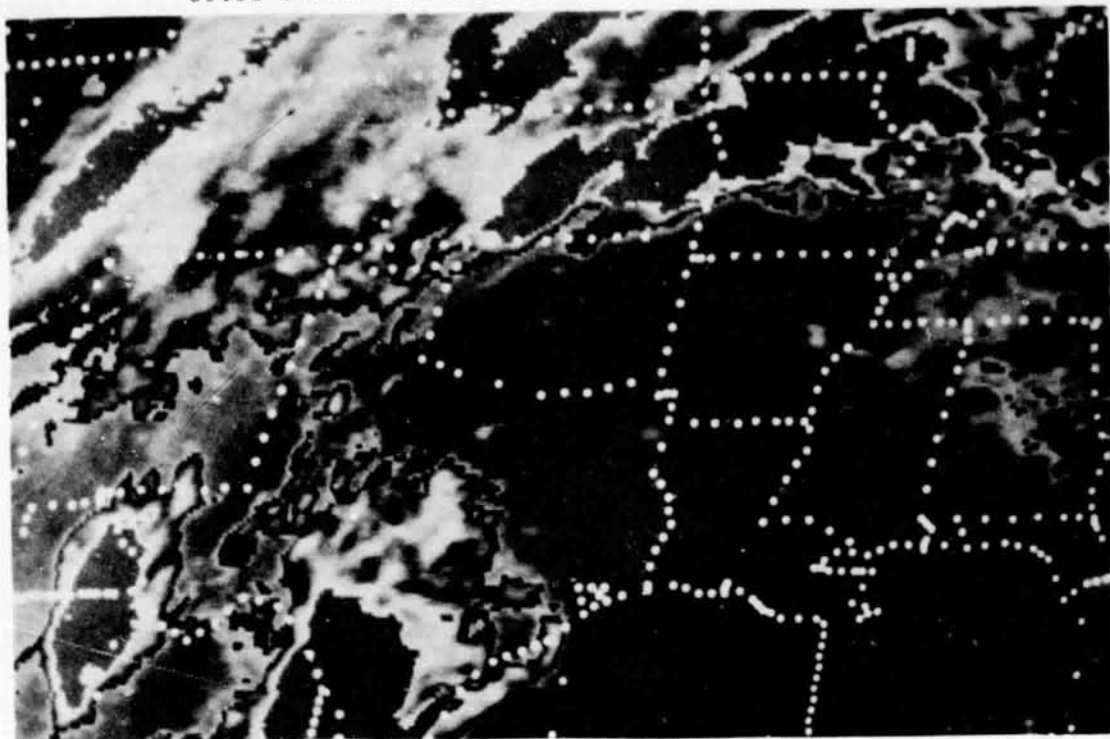


Fig. 45. GOES-East infrared satellite imagery for 0900 GMT  
8 June 1979.

10:00 08JN79 12A-Z 0006-1640 FULL DISC IR

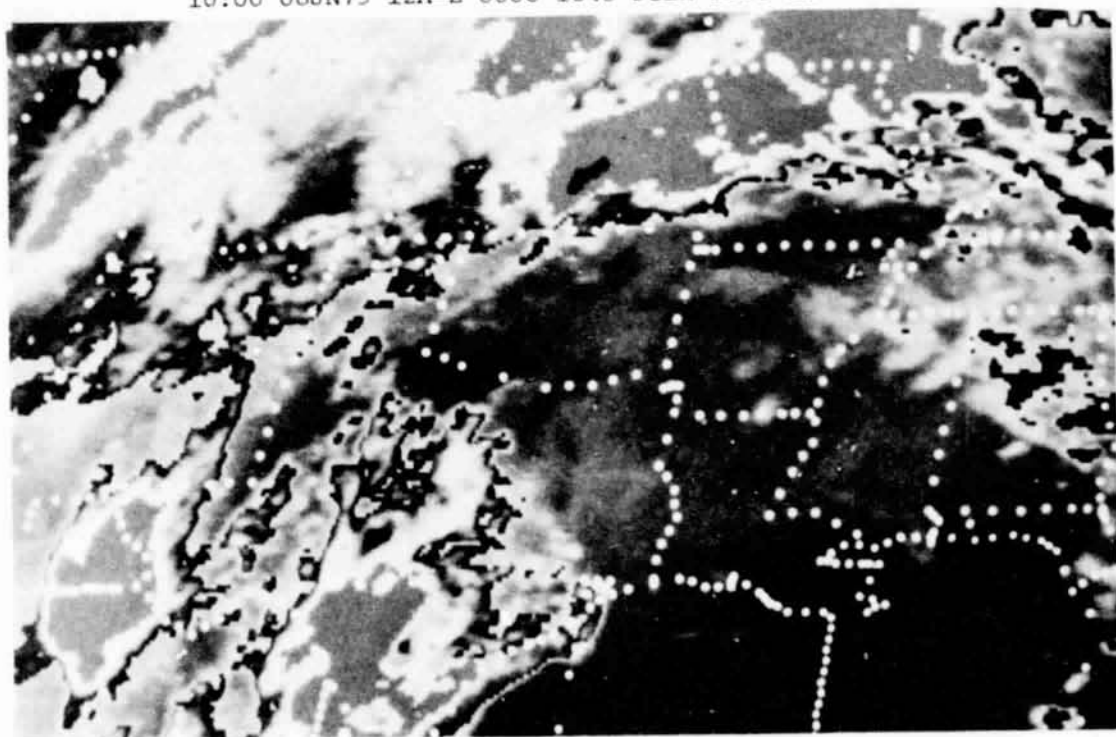


Fig. 46. GOES-East infrared satellite imagery for 1000 GMT  
8 June 1979.

11:00 08JN79 12A-Z 0006-1640 FULL DISC IR



Fig. 47. GOES-East infrared satellite imagery for 1100 GMT  
8 June 1979.

ORIGINAL PAGE IS  
OF POOR QUALITY

12:00 08JN79 12A-Z 0006-1640 FULL DISC IR



Fig. 48. GOES-East infrared satellite imagery for 1200 GMT  
8 June 1979.

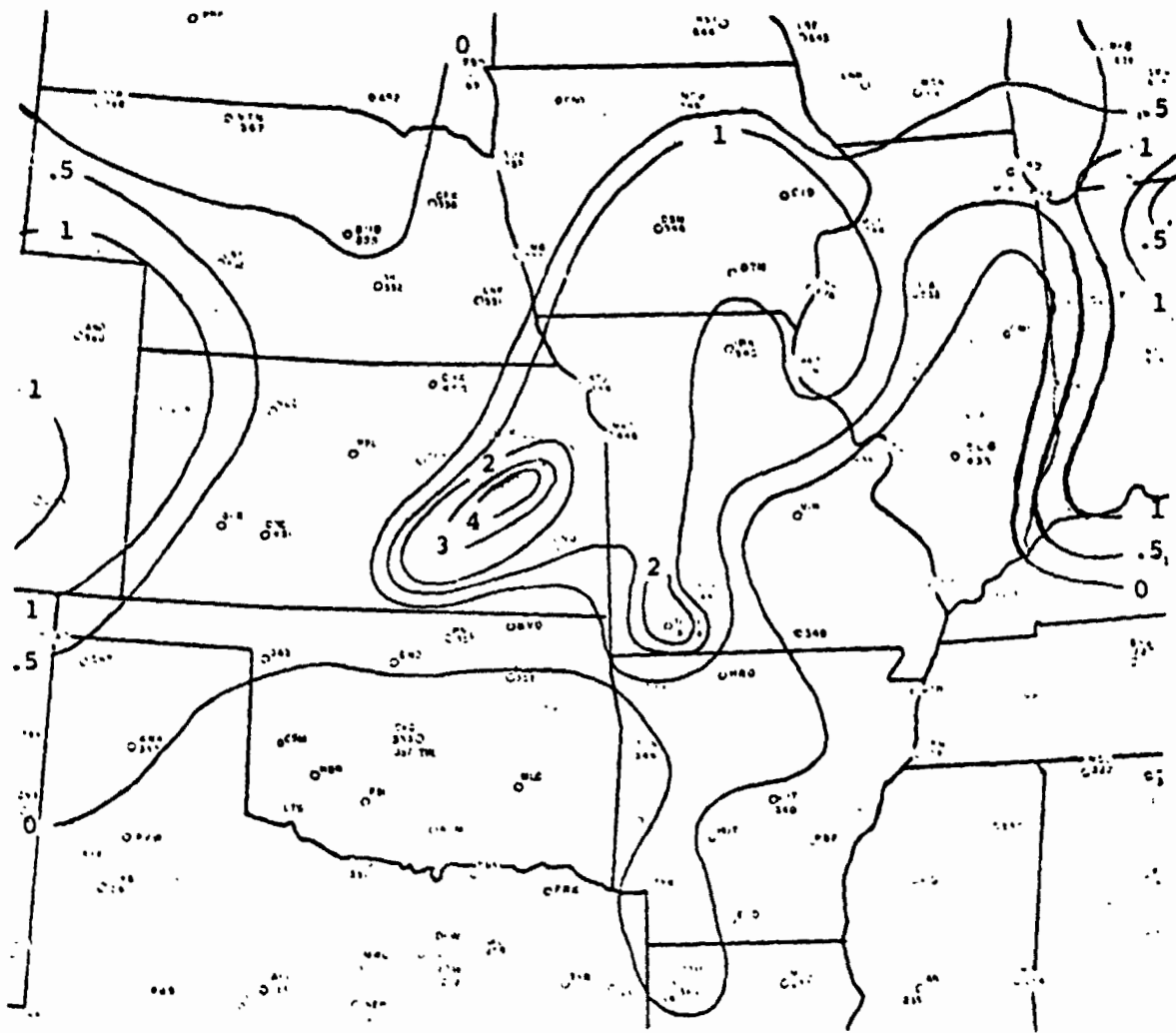


Fig. 49. Total rainfall amounts in inches for the period 1200 GMT 7 June to 1200 GMT 8 June 1979.



TABLE 2. Teletype reports taken from NOAA weather wire and national weather summaries of severe and unusual weather from 1200 GMT 7 June to 1200 GMT 8 June 1979.

<u>EVENT</u>	<u>LOCATION</u>	<u>TIME (GMT)</u>
ICT RAREP	SCATTERED TRW+ DECREASING IN INTENSITY OVER SE KANSAS AND SW MISSOURI. MAX TOPS TO 33,000 FT WITH MOVEMENT TO THE ENE AT 20 MPH	1235
1M1 RAREP	TRW++ DECREASING IN INTENSITY OVER S CENTRAL MISSOURI AND N ARKANSAS. ACTIVITY MOVING ENE AT 30 MPH	1335
UMN RAREP	AREA OF TRW+ COVERING S HALF OF MISSOURI, SE KANSAS, EXTREME NE OKLAHOMA, AND N HALF OF ARKANSAS. MAX TOPS TO 42,000 FT 33 MI NW OF LITTLE ROCK, AR	1435
FLOOD WARNING	ISSUED FOR THE SAN JACINTO, BRAZOS, TRINITY, COLORADO, AND GUADALUPE RIVERS IN TEXAS.	1435
CONVECTIVE SIGMET	AREA OF TSTMS FROM 90 MI NE OF MASON CITY, IA TO 70 MI ESE OF MASON CITY TO 25 MI S OF FORT DODGE, IA. MAX TOPS TO 40,000 FT WITH MOVEMENT TO THE ENE AT 20 MPH	1455
UMN RAREP	AREA OF TRW+ OVER SW MISSOURI, NW ARKANSAS, NE OKLAHOMA, AND SE KANSAS. AREA MOVING TO THE ENE AT 20 MPH	1533
CONVECTIVE SIGMET	AREA OF TSTMS FROM NE OF MASON CITY, IA TO DUBUQUE, IA TO NW OF BURLINGTON, IA TO 45 MI WSW OF FORT DODGE, IA. LITTLE MOVEMENT IN AREA	1555
SVR TSTM	CHICAGO, IL EXPERIENCING SVR TSTM REDUCING VISIBILITY TO 1/2 MI	1614
UMN RAREP	FEW TRW+ OVER N HALF OF ARKANSAS AND EXTREME NW MISSISSIPPI. MOVEMENT TO THE EAST AT 30 MPH. MAX TOP OF 42,000 FT 35 MI ENE OF MONET, MO	1635
GGG RAREP	WIDELY SCATTERED SHOWERS DEVELOPING FROM 30 MI N OF LUFKIN, TX TO MAGNOLIA, AR	1730
LCH RAREP	ISOLATED TSTMS DEVELOPING 20 MI N OF SAN AUGUSTINE, TX. MOVEMENT IS TO THE N AT 15 MPH	1735
UMN RAREP	NUMEROUS TRW+ COVERING MOST OF S MISSOURI. STORMS MOVING EAST AT 30 MPH	1735
GGG RAREP	AREA OF INCREASING TRW+ OVER NE TEXAS, EXTREME NW LOUISIANA, SW ARKANSAS, AND EXTREME SE OKLAHOMA MOVING TOWARDS THE NNE AT 20 MPH	1828

TABLE 2. CONTINUED.

<u>EVENT</u>	<u>LOCATION</u>	<u>TIME (GMT)</u>
UMN RAREP	WIDELY SCATTERED TRW+ OVER S CENTRAL MISSOURI. MAX TOPS TO 39,000 FT	1832
GGG RAREP	A 25 MILE WIDE BAND OF SCATTERED TSTMS FROM 15 MI N OF LUFKIN, TX TO 15 MI NW OF MINDEN, LA. MOVEMENT IS TO THE NE AT 20 MPH	1930
LCH RAREP	HEAVY TSTMS OVER MOST OF RAYBURN LAKE, LA AND A FEW N OF BATON ROUGE, LA. WIDELY SCATTERED SHOWERS AND TSTMS DEVELOPING FROM NACOGDOCHES, TX TO THE NORTHERN PART OF TOLEDO BEND, LA	1935
1M1 RAREP	AREA OF TRW+ INCREASING IN INTENSITY COVERING S ARKANSAS, NW MISSISSIPPI, AND N LOUISIANA. MOVEMENT TO THE ENE AT 20 MPH	1935
ICT RAREP	NEW AREA OF TRW++ OVER A SMALL PORTION OF CENTRAL KANSAS AND N PART OF NE ARKANSAS. MAX TOPS TO 40,000 FT	1935
TURBULENCE	AT 6,000 FT AIRCRAFT EXPERIENCED SEVERE TURBU- LENCE 35 MI E OF LEXINGTON, KY	1940
TURBULENCE, ICING	MODERATE TURBULENCE AND RIME ICING 35 MI S OF DENVER, CO ENCOUNTERED BY AIRCRAFT AT 18,000 FT	1957
GGG RAREP	SCATTERED TSTMS WITH SOME BEING HEAVY OVER AN 80 MI WIDE AREA FROM 30 MI W OF LUFKIN, TX TO PRESCOTT, AR MOVING NE AT 20 MPH	2030
MAF RAREP	RAIN SHOWERS DEVELOPING OVER NW TEXAS	2030
1M1 RAREP	WIDELY SCATTERED TRW+ OVER MOST OF ARKANSAS, SE MISSOURI, AND EXTREME E OKLAHOMA. ACTIVITY MOVING ENE AT 20 MPH	2030
ICT RAREP	LINE OF TRWXX INCREASING IN SIZE FROM CENTRAL KANSAS TO W PART OF NE KANSAS. MOVEMENT IS TO THE EAST AT 20 MPH. MAX TOPS TO 32,000 FT	2030
LCH RAREP	SCATTERED SHOWERS AND TSTMS FROM N PART OF TOLEDO BEND, LA TO NEAR WINNFIELD, LA	2035
GGG RAREP	WIDELY SCATTERED TRW+ MOVING NNE AT 20 MPH. TSTMS COVERING E HALF OF NE TEXAS, EXTREME SE OKLAHOMA, SW ARKANSAS, AND NW LOUISIANA	2037
TORNADO	PILOT SIGHTED TORNADO AS IT DESTROYED A BARN 3 MI SE AF MAYSVILLE, KY	2045

TABLE 2. CONTINUED.

<u>EVENT</u>	<u>LOCATION</u>	<u>TIME (GMT)</u>
CONVECTIVE SIGMET	LINE OF TSTMS 20 MI WIDE FROM 35 MI NW OF DES MOINES, IA TO 45 MI NE OF HAYS, KS. MAX TOPS TO 55,000 FT. MOVEMENT TO THE SE AT 20 MPH	2055
AMA RAREP	SCATTERED TSTMS OVER NW TEXAS PANHANDLE, NE NEW MEXICO, EXTREME W OKLAHOMA PANHANDLE, AND EXTREME SE COLORADO	2130
ICT RAREP	AREA OF TRWXX COVERING CENTRAL KANSAS AND W PART OF NE KANSAS. MAX TOP TO 47,000 FT 15 MI S OF CONCORDIA, KS. NEW AREA OF TRW++ COVERING SMALL PORTION OF S AND SE KANSAS. MOVEMENT TO THE ENE AT 30 MPH	2130
GGG RAREP	ISOLATED HEAVY TSTMS NW OF ELDORADO, AR AND NE OF MANSFIELD, LA. STORMS MOVING NNE AT 25 MPH	2130
UMN RAREP	NEW AREA OF TRW COVERING A SMALL AREA OF SE KANSAS AND EXTREME SW MISSOURI. MAX TOP TO 45,000 FT	2131
1M1 RAREP	MOST OF S ARKANSAS COVERED BY TRW+. MAX TOP TO 35,000 FT	2135
CONVECTIVE SIGMET	LINE OF TSTMS 20 MI WIDE FROM 30 MI E MASON CITY, IA TO DES MOINES, IA TO 45 MI WNW OF MANHATTAN, KS. MAX TOPS TO 55,000 FT	2155
SVR TSTM	INTENSE TSTM AT DES MOINES, IA. NEARLY ONE INCH OF RAIN HAS FALLEN IN PAST HOUR	2155
TURBULENCE	MODERATE TO SEVERE TURBULENCE ENCOUNTERED BY AIRCRAFT AT 10,000 FT 30 MI WSW OF LAMAR, CO	2210
GGG RAREP	SCATTERED HEAVY TSTMS NE OF SHREVEPORT, LA AND EXTENDING NW TO SW ARKANSAS. MOVEMENT IS NE AT 20 MPH	2235
AMA RAREP	SCATTERED TSTMS OVER NE NEW MEXICO, PARTS OF NW AND SW TEXAS PANHANDLE, AND S PLAINS OF TEXAS. STORMS MOVING EAST AT 20 MPH	2235
CONVECTIVE SIGMET	LINE OF TSTMS 25 MI WIDE FROM 25 MI E OF DES MOINES, IA TO 25 MI S OF HAYS, KS. MOVEMENT TO THE SE AT 25 MPH WITH TOPS TO 55,000 FT	2255
SVR TSTM	STRONG TSTM AT LOUISVILLE, KY. WIND GUSTS TO 40 MPH	2306

TABLE 2. CONTINUED.

<u>EVENT</u>	<u>LOCATION</u>	<u>TIME (GMT)</u>
AMA RAREP	WIDELY SCATTERED SHOWERS AND TSTMS OVER E CENTRAL NEW MEXICO AND S CENTRAL PLAINS OF TEXAS. MOVEMENT AT 20 MPH TO THE NE	2330
UMN RAREP	A FEW TRW+ INCREASING IN INTENSITY OVER SE KANSAS AND SW MISSOURI. MAX TOP TO 48,000 FT WITH MOVEMENT NE AT 18 MPH	2330
CONVECTIVE SIGMET	LINE OF TSTMS 25 MI WIDE FROM 35 MI SE OF LA CROSSE, WI TO 35 MI S OF DES MOINES, IA	2335
IMI RAREP	ISOLATED TRW++ OVER CENTRAL ARKANSAS. MOVEMENT TO THE ENE AT 30 MPH	2335
ICT RAREP	SCATTERED TRW++ DECREASING IN INTENSITY FROM W KANSAS TO NE KANSAS AND MOVING TO THE ENE AT 20 MPH	2335
MAF RAREP	WIDELY SCATTERED TRW AND TRW+ NEAR LATURN, NM AND EASTWARD TO E OF LUBBOCK, TX	2335
ICT RAREP	FEW TRWX INCREASING IN INTENSITY AND COVERING CENTRAL AND E KANSAS. MAX TOPS TO 50,000 FT 53 MI N OF WICHITA, KS	0030
UMN RAREP	AREA OF TSTMS OVER SW MISSOURI, SE KANSAS, AND EXTREME NE OKLAHOMA. MAX TOP TO 62,000 FT 20 MI E OF EMPORIUM, KS. STORMS MOVING TO THE NNE AT 10 MPH	0034
IMI RAREP	ISOLATED TRW++ 6 MI IN DIAMETER 45 MI N OF TEXARKANA, TX	0035
CONVECTIVE SIGMET	LINE OF TSTMS 25 MI WIDE FROM 80 MI SE LA CROSSE, WI TO 60 MI NW OF KIRKSVILLE, MO. LINE MOVING SE AT 20 MPH WITH TOPS TO 40,000 FT	0055
OKC RAREP	NEW TRW++ CELL 15 MI IN DIAMETER 35 MI WSW OF WICHITA, KS MOVING EAST AT 18 MPH. MAX TOP OF 45,000 FT	0130
SVR TSTM	INTENSE TSTM AT LOUISVILLE, KY	0108
AMA RAREP	TRWX CELL INCREASING IN INTENSITY 10 MI ESE OF CLOVIS, NM. SCATTERED TRWX OVER EXTREME NE NEW MEXICO, W OKLAHOMA PANHANDLE, SW KANSAS, AND EXTREME SE COLORADO. MAX TOPS TO 43,000 FT	0130

TABLE 2. CONTINUED.

<u>EVENT</u>	<u>LOCATION</u>	<u>TIME (GMT)</u>
UMN RAREP	AREA OF TRW+ INCREASING IN INTENSITY FROM E KANSAS TO CENTRAL MISSOURI. MAX TOP OF 57,000 FT 35 MI E OF EMPORIUM, KS. MOVEMENT TO THE NE AT 10 MPH	0132
SVR TSTM	EMPORIUM, KS EXPERIENCING SVR TSTM	0147
TORNADO	TORNADO TOUCHED DOWN 60 MI NW OF DALHART, TX	0217
SVR TSTM WARNING	A SVR TSTM WARNING HAS BEEN ISSUED FOR N DALLAM COUNTY IN THE NW PART OF THE TEXAS PANHANDLE AND CIMARRON COUNTY IN W OKLAHOMA PANHANDLE AREA UNTIL 10:30 P.M. CDT. AMARILLO RADAR INDICATED SVR TSTMS 10 MI W OF FELT, OK AND ANOTHER 15 MI W OF TEXLINE, TX. MOVEMENT IS TO THE EAST AT 35 MPH	0220
ICT RAREP	AREA OF TRWX OVER E CENTRAL AND S CENTRAL KANSAS WITH TOPS TO 57,000 FT	0230
TORNADO	PUBLIC REPORTS TORNADO 8 MI W OF CLAYTON, NM AT 9:35 P.M. CDT	0235
OKC RAREP	AREA OF TRW+ INCREASING IN INTENSITY OVER EXTREME S CENTRAL KANSAS AND W OKLAHOMA. MAX TOPS TO 48,000 FT WITH MOVEMENT TO THE NE AT 35 MPH	0330
AMA RAREP	TRWXX 15 MI IN DIAMETER INCREASING IN SIZE 40 MI ENE OF CLAYTON, NM. MAX TOP TO 52,000 FT. STORM MOVING EAST AT 35 MPH. NUMEROUS TRW++ OVER NE NEW MEXICO, NW TEXAS PANHANDLE, OKLAHOMA PANHANDLE, AND SW KANSAS. AREA MOVING EAST AT 35 MPH	0330
SVR TSTM	SVR TSTM AT HUTCHINSON, KS	0351
AMA RAREP	TRWXX CELLS 25 MI W OF GUYMON, OK AND 35 MI SW OF GUYMON. FUNNEL CLOUDS WERE REPORTED WITH THESE CELLS. MOVEMENT TO THE EAST AT 30 MPH. AREA OF INCREASING TRWXX COVERING EXTREME NE NEW MEXICO, N SECTION OF TEXAS PANHANDLE, EXTREME SW KANSAS, AND THE OKLAHOMA PANHANDLE	0430
ICT RAREP	TSTMS OVER W CENTRAL MISSOURI AND SE KANSAS. MAX TOPS TO 57,000 FT 21 MI NE OF WICHITA, KS. MOVEMENT TO THE ESE AT 10 MPH	0430
TURBULENCE	MODERATE TO SEVERE TURBULENCE ENCOUNTERED BY AIRCRAFT AT 4,000 FT 10 MI NE OF KANSAS CITY, MO	0454

TABLE 2. CONTINUED.

<u>EVENT</u>	<u>LOCATION</u>	<u>TIME (GMT)</u>
SVR TSTM	SVR TSTM AT LAJUNTA, CO	0455
OKC RAREP	FEW TSTMS OVER SE KANSAS. WIDELY SCATTERED TSTMS OVER SW KANSAS, CENTRAL OKLAHOMA PANHANDLE, AND N CENTRAL TEXAS PANHANDLE	0530
ICT RAREP	AREA OF TRWX COVERING W CENTRAL MISSOURI AND SE KANSAS. MAX TOPS TO 47,000 FT	0530
AMA RAREP	TRWXX CELLS 8 MI IN DIAMETER OVER THE NNE PART OF THE TEXAS PANHANDLE. TOPS TO 45,000 FT. NUMEROUS TRW++ OVER SW KANSAS, CENTRAL PANHANDLE AREA OF OKLAHOMA, N AND NW SECTION OF TEXAS PANHANDLE, AND NE NEW MEXICO. AREA MOVEMENT IS TO THE ENE AT 35 MPH. NEW AREA OF TRW OVER E CENTRAL NEW MEXICO AND FYTREME SW TEXAS PANHANDLE	0535
SVR TSTM WARNING	ISSUED FOR TEXAS COUNTY IN THE OKLAHOMA PANHANDLE UNTIL 1:30 A.M. CDT. AMARILLO RADAR INDICATES VERY HEAVY TSTMS WITH HAIL JUST W OF HOOKER, OK AND ANOTHER JUST W OF HARDESTY STATION, OK. MOVEMENT IS EASTERLY AT 30 MPH	0535
SVR TSTM	DODGE CITY, KS EXPERIENCING INTENSE TSTM. VISIBILITY REDUCED TO 1 MI	0617
OKC RAREP	SCATTERED TSTMS OVER SE AND S KANSAS, NW OKLAHOMA, E OKLAHOMA PANHANDLE, AND NE TEXAS PANHANDLE	0630
ICT RAREP	NUMEROUS TRW++ DECREASING IN INTENSITY OVER W CENTRAL MISSOURI AND NE KANSAS. MAX TOP 46,000 FT 25 MI E OF WICHITA, KS	0630
AMA RAREP	TRWXX CELLS 8 MI IN DIAMETER 35 MI ESE OF GUYMON, OK MOVING TOWARDS THE ENE AT 35 MPH WITH TOPS TO 48,000 FT. FEW TRW++ OVER SW KANSAS, MOST OF THE NORTHERN TEXAS PANHANDLE, OKLAHOMA PANHANDLE, AND NE NEW MEXICO	0635
SVR TSTM	WICHITA, KS EXPERIENCING SVR TSTM. NEARLY ONE INCH OF RAIN IN PAST HOUR	0650
SVR TSTM WARNING	ISSUED FOR BEAVER COUNTY OF OKLAHOMA UNTIL 3:00 A.M. CDT. THE SHERIFF'S OFFICE IN BEAVER COUNTY REPORTED 1/4 INCH HAIL JUST TO THE NE OF GRAY, OK. VERY HEAVY TSTMS ARE LOCATED ON RADAR JUST S OF BEAVER, OK. STORMS MOVING AT 30 MPH TO THE EAST	0655

TABLE 2. CONCLUDED.

<u>EVENT</u>	<u>LOCATION</u>	<u>TIME (GMT)</u>
ICT RAREP	AREA OF TRWX INCREASING IN INTENSITY FROM S CENTRAL AND E KANSAS TO W CENTRAL MISSOURI. NUMEROUS TRWX INCREASING IN INTENSITY OVER NW OKLAHOMA. MAX TOPS TO 42,000 FT 35 MI NE OF CHANUTE, KS	0730
AMA RAREP	VERY HEAVY TSTM E BEAVER COUNTY IN THE OKLAHOMA PANHANDLE. MAX TOP OF 45,000 FT. WIDELY SCATTERED SHOWERS AND TSTMS OVER SW KANSAS, NORTHERN 2/3 OF TEXAS PANHANDLE, AND EXTREME NE NEW MEXICO.	0735
SVR TSTM	GOODLAND, KS EXPERIENCING STRONG TSTM	0755
ICT RAREP	AREA OF TRWX OVER W CENTRAL AND SSW KANSAS, AND NW OKLAHOMA. TRW++ DECREASING IN INTENSITY OVER SE AND EXTREME E KANSAS AND W CENTRAL KANSAS. STORMS MOVING EAST AT 18 MPH	0830
AMA RAREP	WIDELY SCATTERED TRW++ COVERING W OKLAHOMA PANHANDLE, NE NEW MEXICO, AND MOST OF THE TEXAS PANHANDLE	0835
AMA RAREP	WIDELY SCATTERED TRW OVER THE TEXAS AND OKLAHOMA PANHANDLES, SW KANSAS, NE NEW MEXICO, AND SE COLORADO. STORMS MOVING ENE AT 30 MPH	0930
ICT RAREP	NUMEROUS TRWX OVER MOST OF S KANSAS. MAX TOPS TO 48,000 FT. MOVEMENT ENE AT 35 MPH	0930
UMN RAREP	SOLID LINE OF TRW++ FROM SE KANSAS TO SW MISSOURI TO NE MISSOURI	0935
ICT RAREP	TRWX OVER MOST OF S AND E KANSAS AND W CENTRAL MISSOURI. MAX TOPS TO 46,000 FT WITH ACTIVITY MOVING ENE AT 30 MPH	1030
SVR TSTM	SVR TSTM AT WICHITA, KS WITH WIND GUSTS TO 35 MPH	1030
AMA RAREP	WIDELY SCATTERED TRW+ COVERING SE COLORADO, SW KANSAS, NE NEW MEXICO, AND MOST OF THE TEXAS PANHANDLE. MOVEMENT TO THE ENE AT 30 MPH	1035
SVR TSTM	SVR TSTM AT DES MOINES, IA	1055

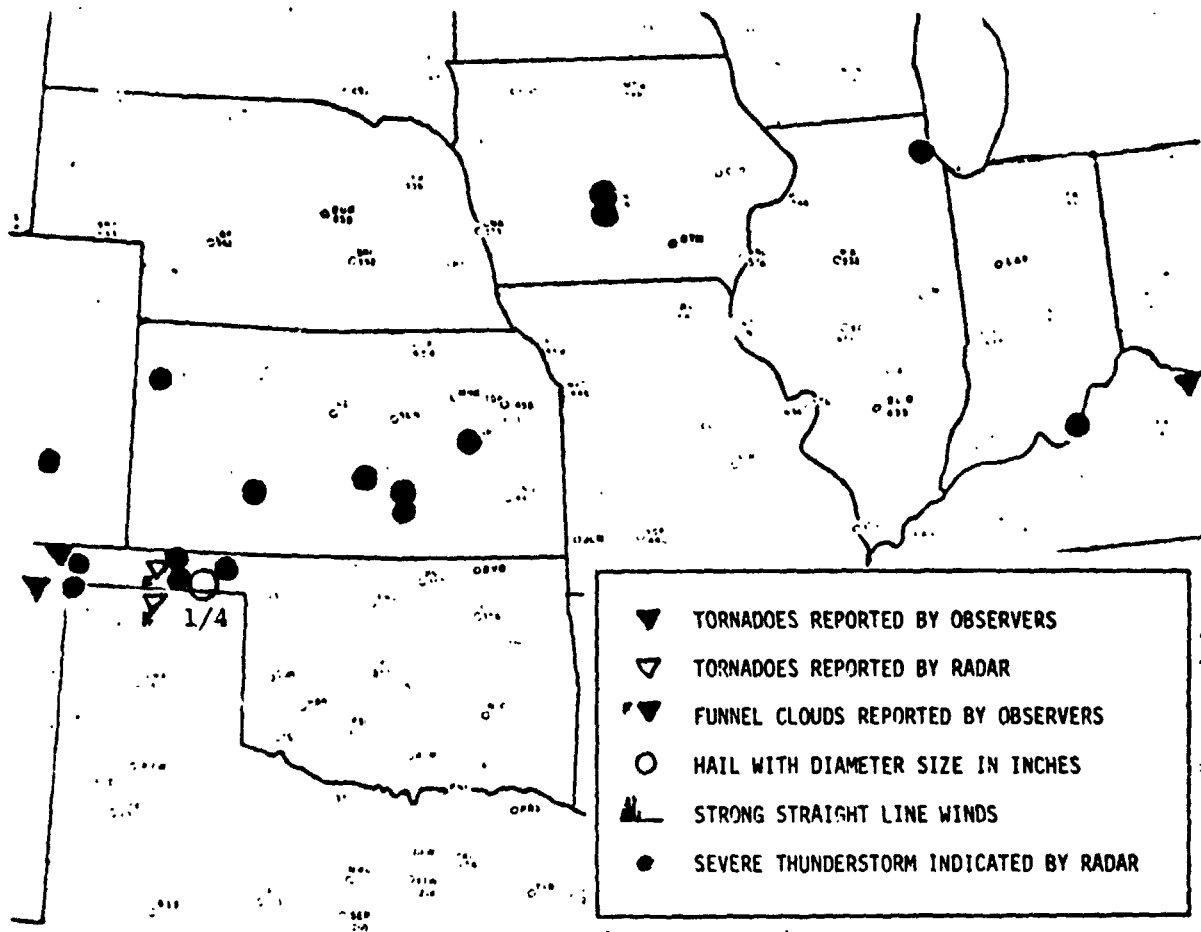


Fig. 50. Severe weather reports between 1200 GMT 7 June and 1200 GMT 8 June 1979 in the AVE-SESAME VI area.



## REFERENCE

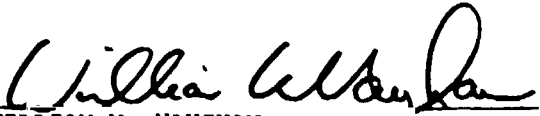
Alberty, R. L., D. W. Burgess, C. J. Hane, and J. F. Weaver, 1979:  
SESAME 1979 Operations Summary. U. S. Department of Commerce,  
Boulder, 253 pp.


APPROVAL

A PRELIMINARY LOOK AT AVE-SESAME VI  
CONDUCTED ON 7-8 JUNE 1979

By Michael July and Robert E. Turner

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.

  
WILLIAM W. VAUGHAN  
Chief, Atmospheric Sciences Division

  
CHARLES A. LUNDQUIST  
Director, Space Sciences Laboratory