



March 2006 Tornado Outbreak

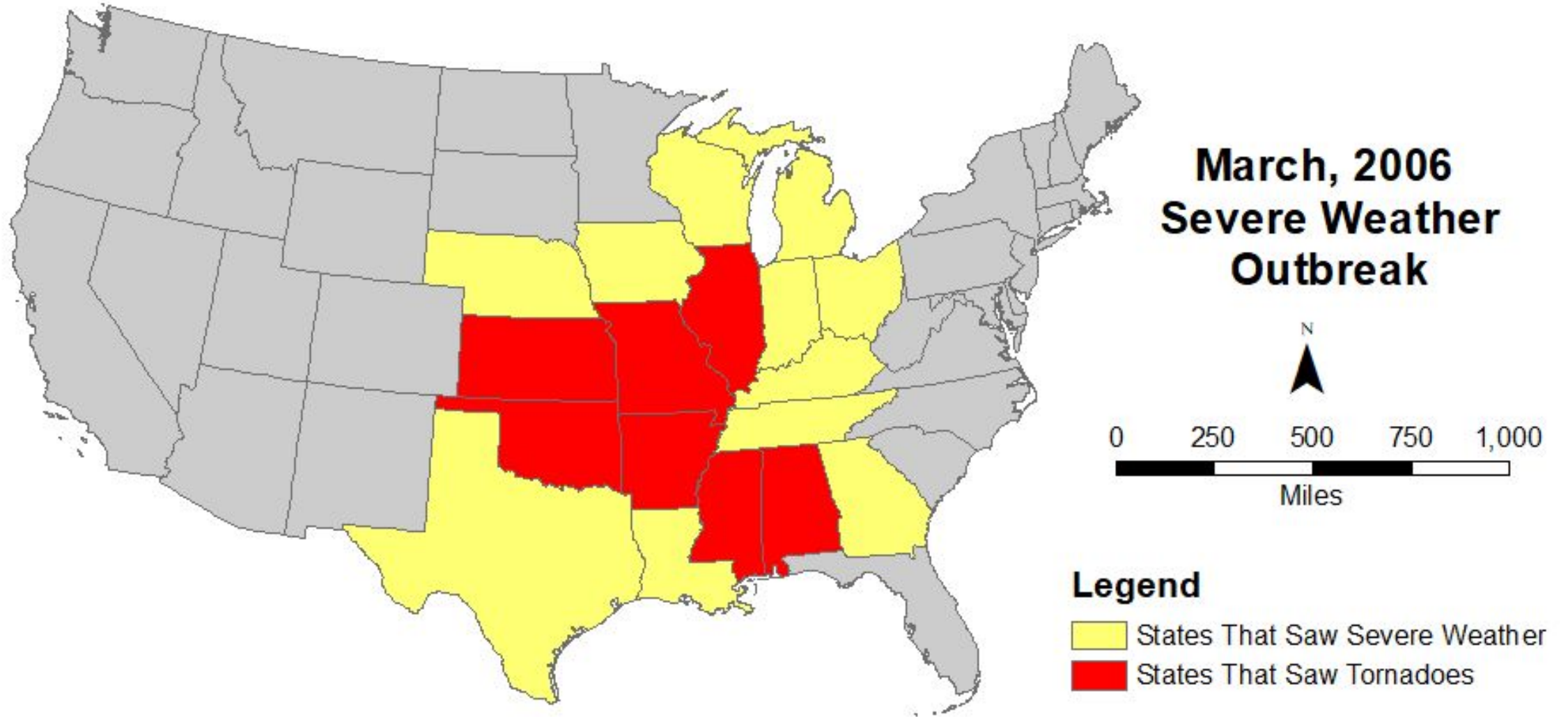
Ian Stearns

03 13 2006

Overview

- This was an extended outbreak of severe weather across the central United States
- Lasted 5 days (March 9 – March 13)
- Over course of the event, the region saw:
 - 99 Confirmed Tornadoes
 - A Derecho Event
 - Widespread Hail Reports
 - Microburst Winds
 - Other forms of Severe Weather
- The outbreak is notable for its duration and timing (being in early March)

Impacted Areas Over the Course of the Event



March 9, 2006

- The evening of March 9 saw a large squall line sweep across the region
- Four tornadoes were confirmed, including an F2 in Arkansas
- Day was more notable for the derecho event
 - Derecho (from SPC): a widespread, long-lived windstorm
 - Must span 250 miles with sustained winds of 58mph or more and periodic gusts of 75mph
- Caused more extensive damage than any of the day's tornadoes
 - Tens of thousands lost power
 - Additionally, at least 2 deaths and dozens of injuries

SPC Storm Reports for 03/09/06

Map updated at 1202Z on 03/16/06

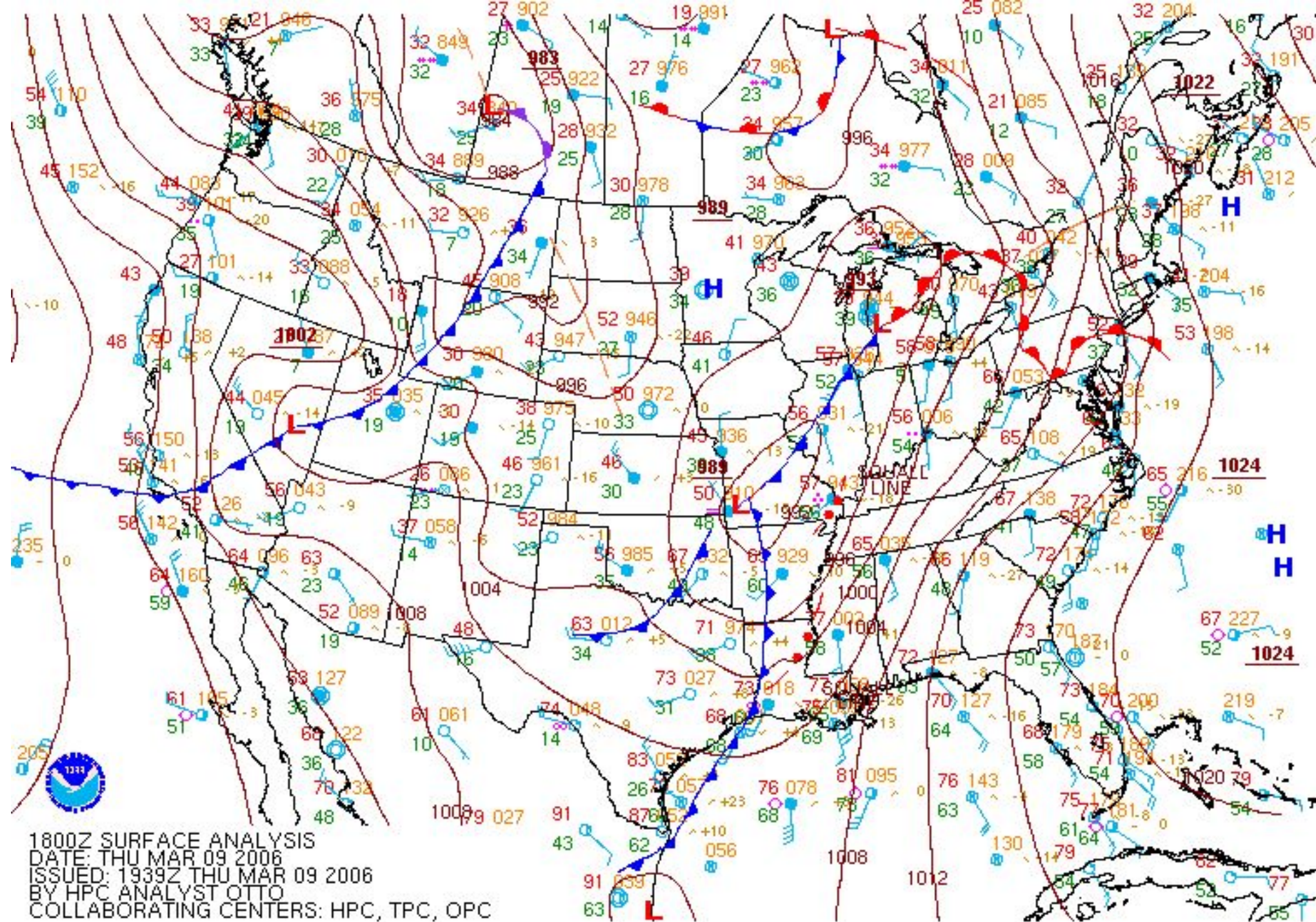


TORNADO REPORTS.. (4)
WIND REPORTS/HI..... (357/7)
HAIL REPORTS/LG..... (49/1)
TOTAL REPORTS..... (410)

National Weather Service
Storm Prediction Center Norman, Oklahoma.

- High Wind Report (65KT +)
- ▲ Large Hail Report (2" dia. +)

PRELIMINARY DATA ONLY



1800Z SURFACE ANALYSIS
 DATE: THU MAR 09 2006
 ISSUED: 1939Z THU MAR 09 2006
 BY HPC ANALYST OTTO
 COLLABORATING CENTERS: HPC, TPC, OPC

Derecho Damage

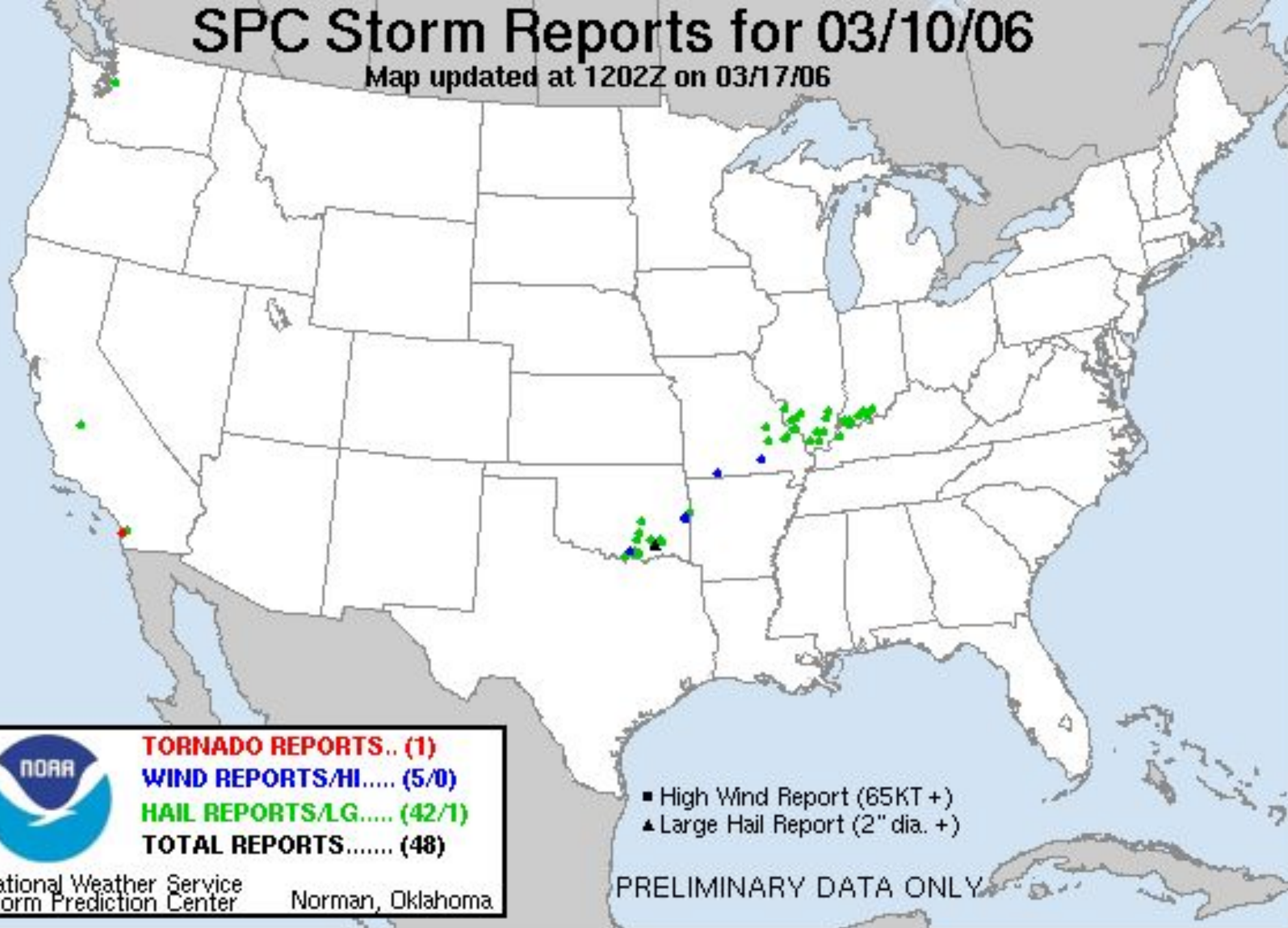


March 10, 2006

- March 10 saw very little severe weather
- Slightly strange, given that it was in the middle of an extensive outbreak
- Something to explore another time – why was there no weather this day?

SPC Storm Reports for 03/10/06

Map updated at 1202Z on 03/17/06

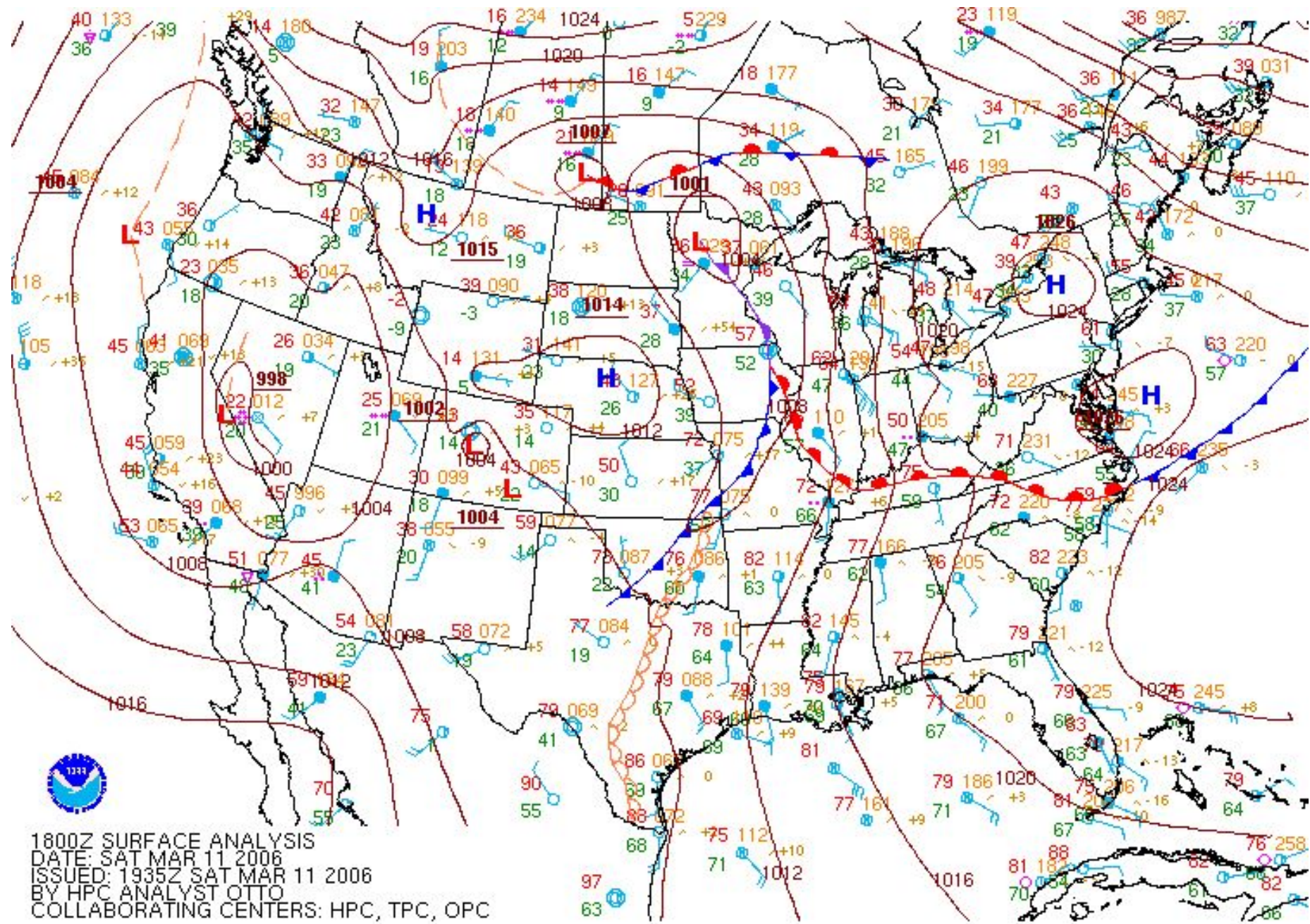


TORNADO REPORTS.. (1)
WIND REPORTS/HI..... (5/0)
HAIL REPORTS/LG..... (42/1)
TOTAL REPORTS..... (48)

National Weather Service
Storm Prediction Center
Norman, Oklahoma

March 11, 2006

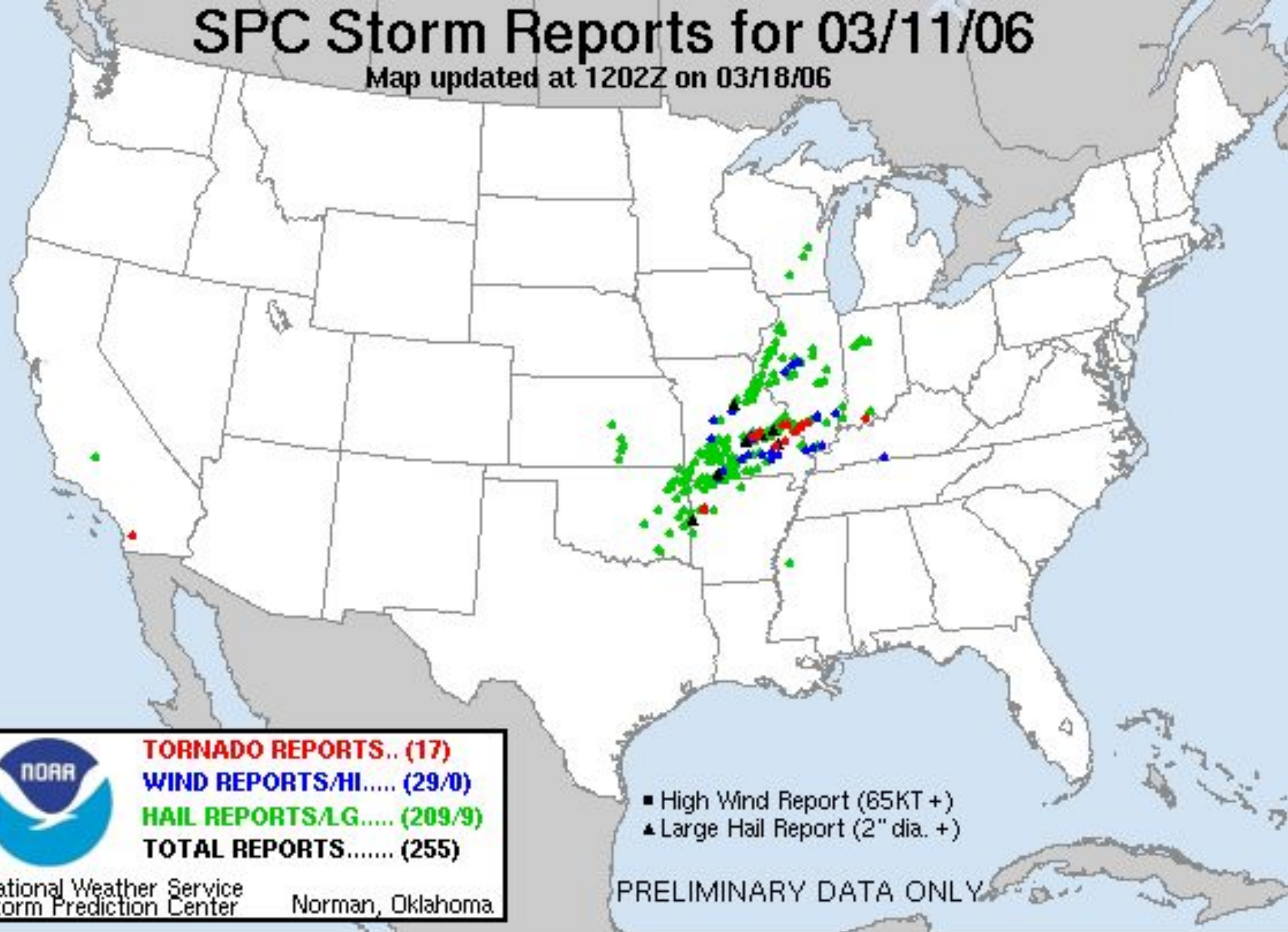
- March 11 saw a large ramp-up of severe weather
- The system produced 11 tornadoes
 - Three of these were F2 or above
 - F3 in Perry County, MO, tracked 54 miles
 - Leveled a trailer park and dozens of homes
- Other storms caused substantial damage to homes, businesses, and national forests
- At least two confirmed deaths



1800Z SURFACE ANALYSIS
 DATE: SAT MAR 11 2006
 ISSUED: 1935Z SAT MAR 11 2006
 BY HPC ANALYST OTTO
 COLLABORATING CENTERS: HPC, TPC, OPC

SPC Storm Reports for 03/11/06

Map updated at 1202Z on 03/18/06



TORNADO REPORTS.. (17)
WIND REPORTS/HI..... (29/0)
HAIL REPORTS/LG..... (209/9)
TOTAL REPORTS..... (255)

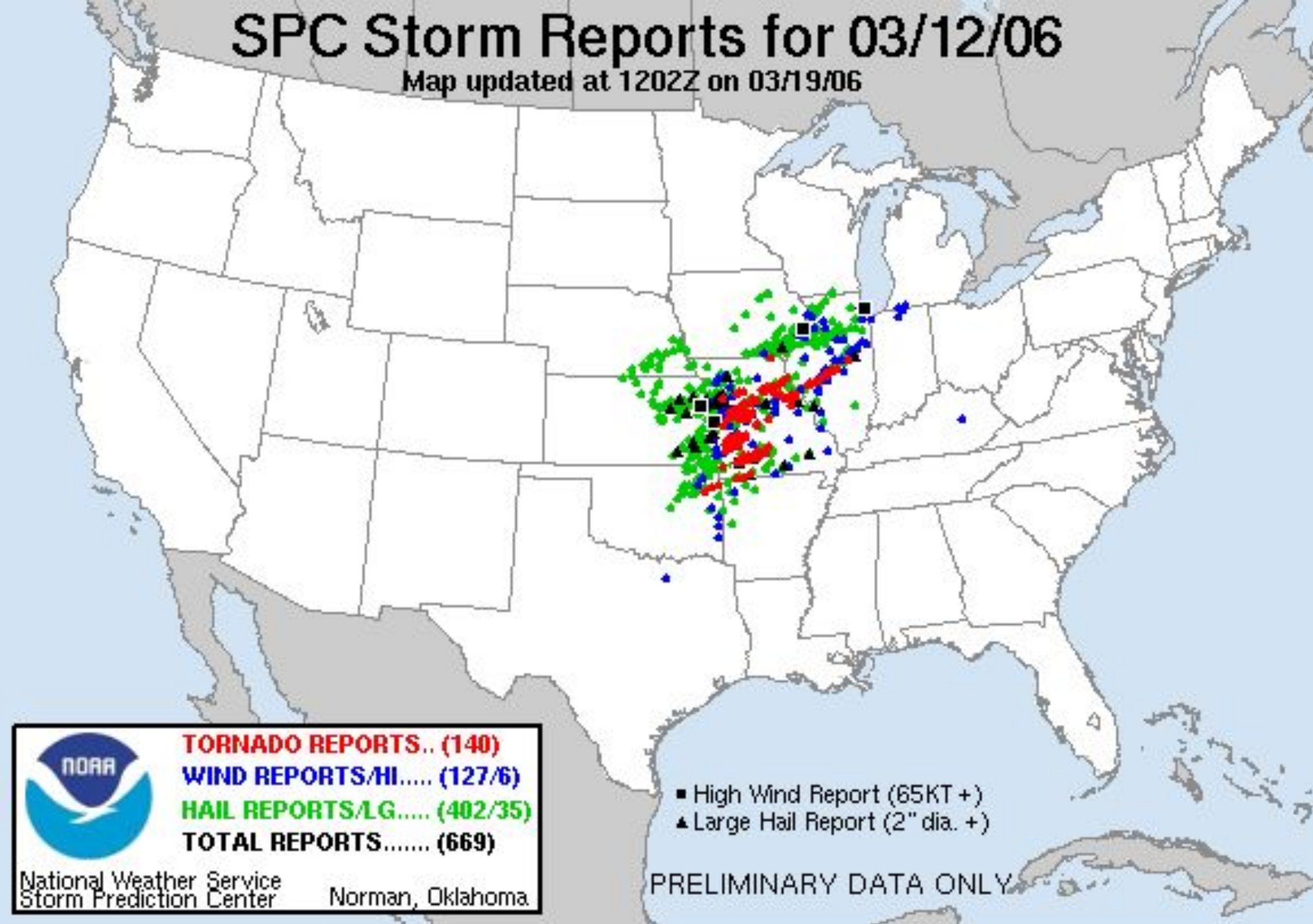
National Weather Service
Storm Prediction Center Norman, Oklahoma

March 12, 2006

- March 12 was the peak of the outbreak
- 62 Confirmed Tornadoes, 24 of which were F2 or higher
 - Springfield, IL had 2 tornadoes track directly through it
 - Damaged many structures and caused city-wide power loss
 - Other notable population centers include Monroe City, Verona, and Springfield, MO
- Other dangerous weather associated with this system:
 - Softball-sized hail in many places
 - Microburst winds in excess of 90mph recorded in northern and eastern Illinois, the Quad Cities area, and Kansas City
- 9 deaths and hundreds of injuries
- Longest Tracked Supercell Ever Recorded

SPC Storm Reports for 03/12/06

Map updated at 1202Z on 03/19/06



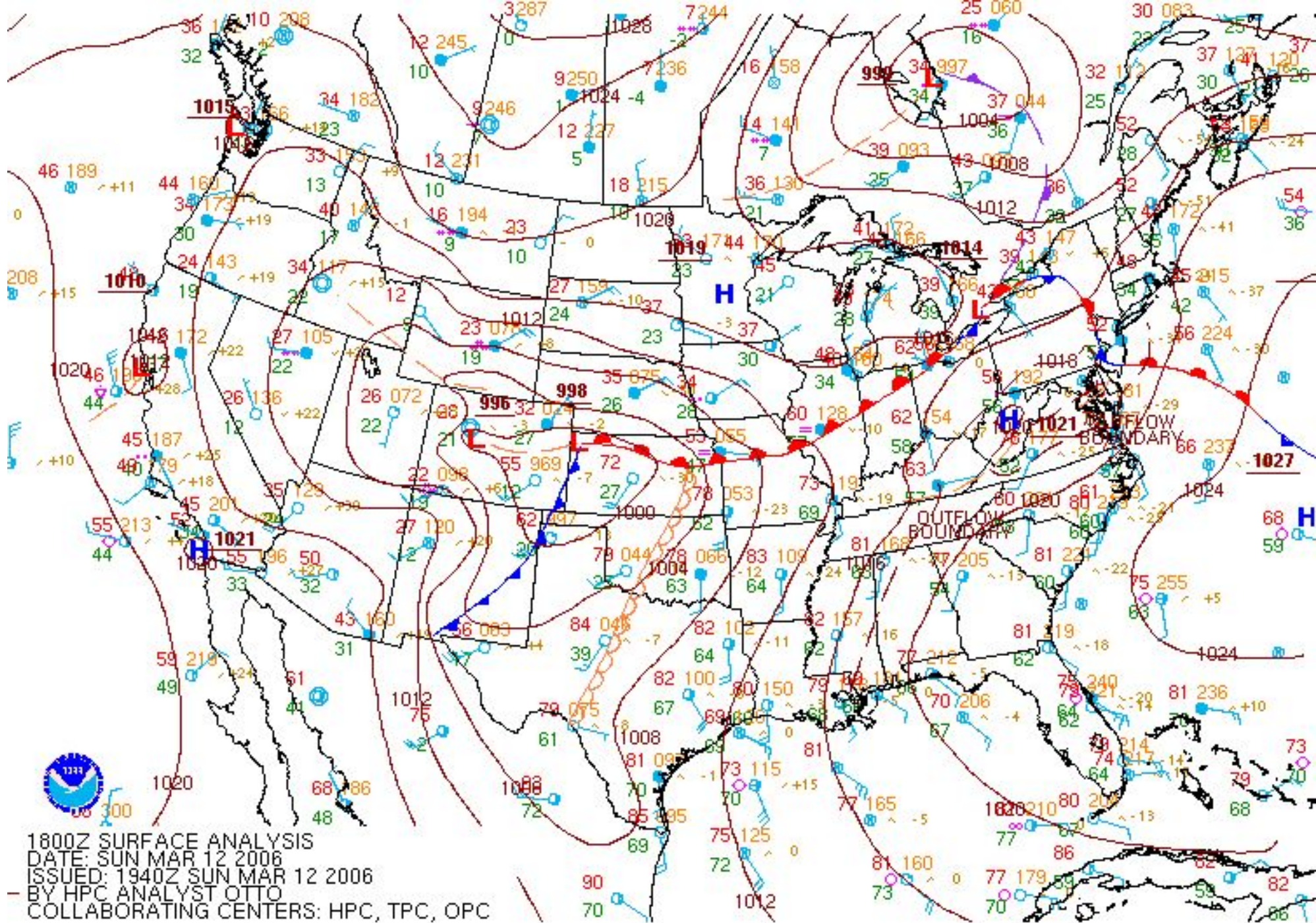


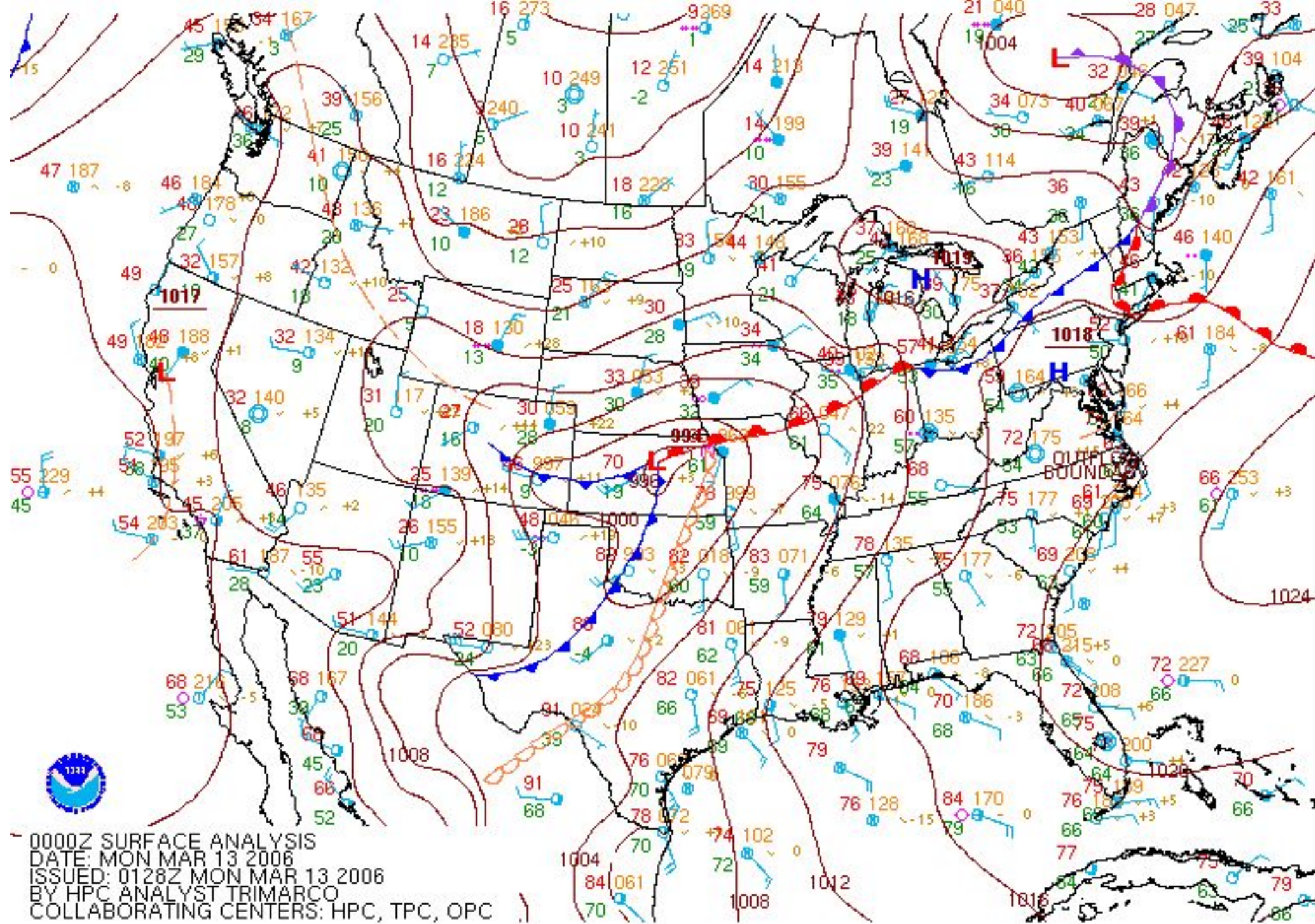
IEM NEXRAD composite base reflect valid: 12 March 2006 05:40 PM CST



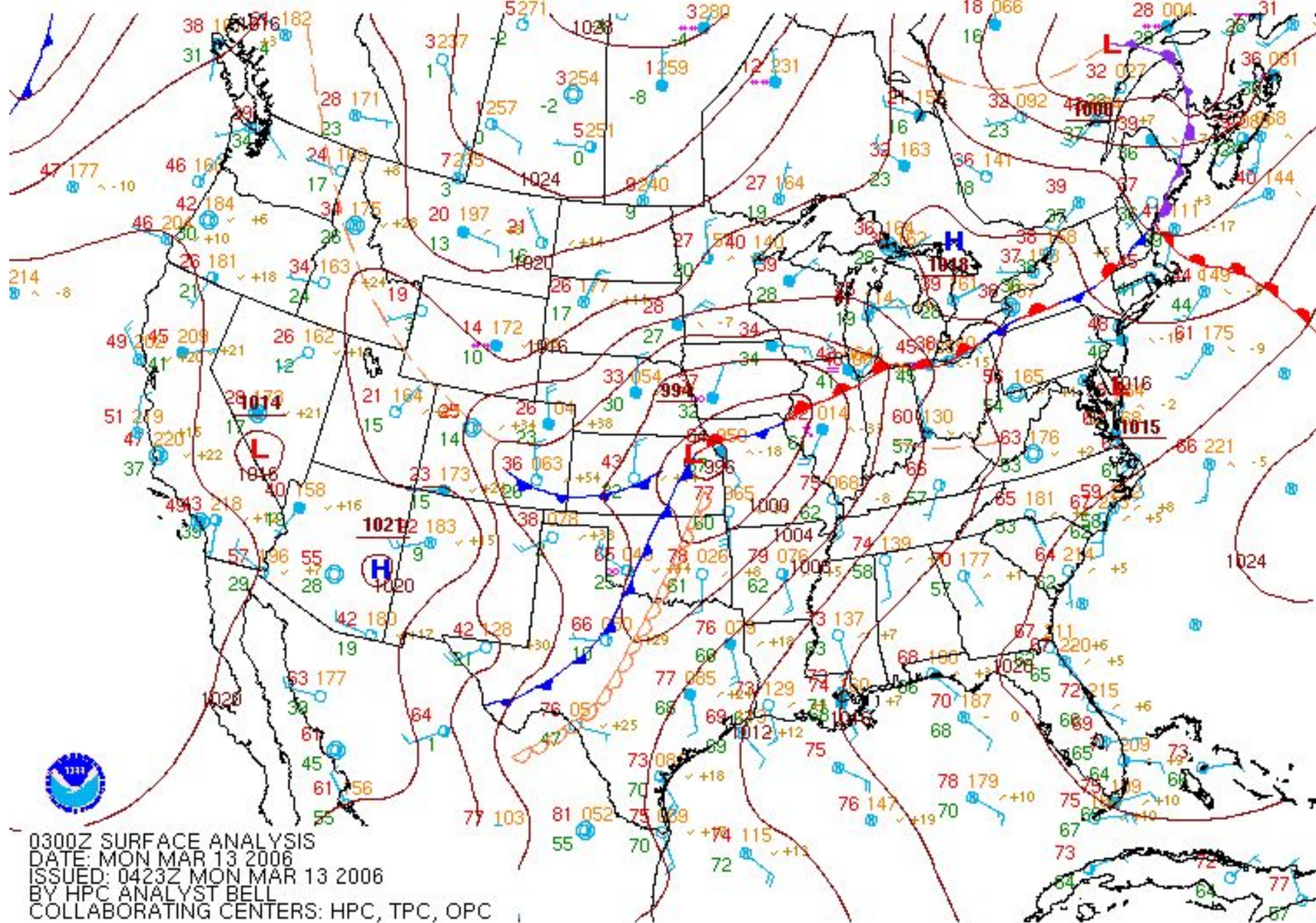
Surface Analysis – March 12, 2006

- You may be quick to assume that all these tornadoes happened all right in a row
- This is actually not the case; analyzing the timing of the storms is the key to revealing what is driving them
- 1st round of storms occurred early in the morning near KC
- 2nd round started early afternoon
 - Fired by a dryline well ahead of the cold front
- 3rd set of storms fired behind this towards the evening hours
 - Also probably fired by the dryline
- 4th round of storms were finally triggered by the cold front





0000Z SURFACE ANALYSIS
 DATE: MON MAR 13 2006
 ISSUED: 0128Z MON MAR 13 2006
 BY HPC ANALYST TRIMARCO
 COLLABORATING CENTERS: HPC, TPC, OPC

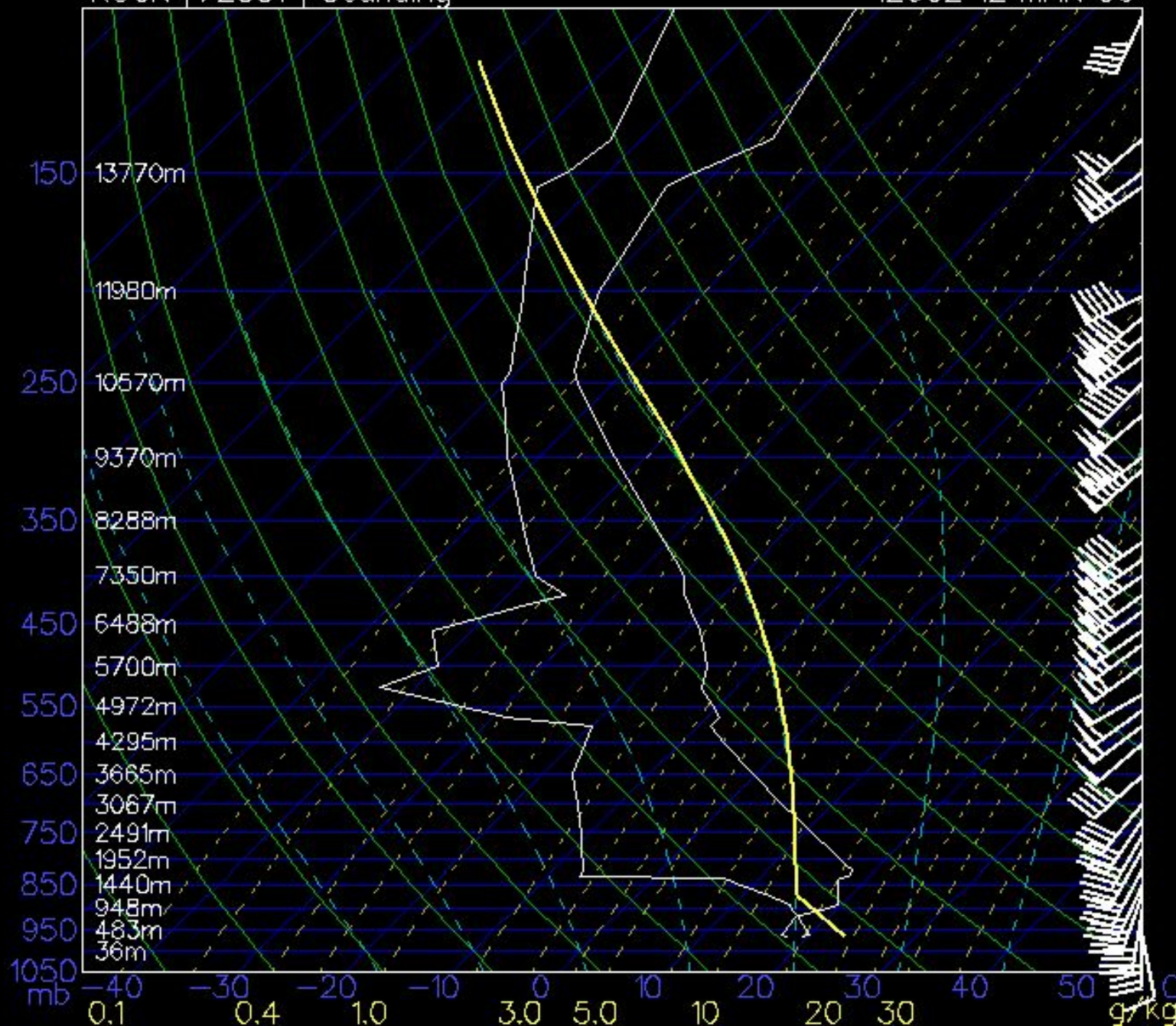


0300Z SURFACE ANALYSIS
 DATE: MON MAR 13 2006
 ISSUED: 0423Z MON MAR 13 2006
 BY HPC ANALYST BELL
 COLLABORATING CENTERS: HPC, TPC, OPC

Plymouth State Weather Center

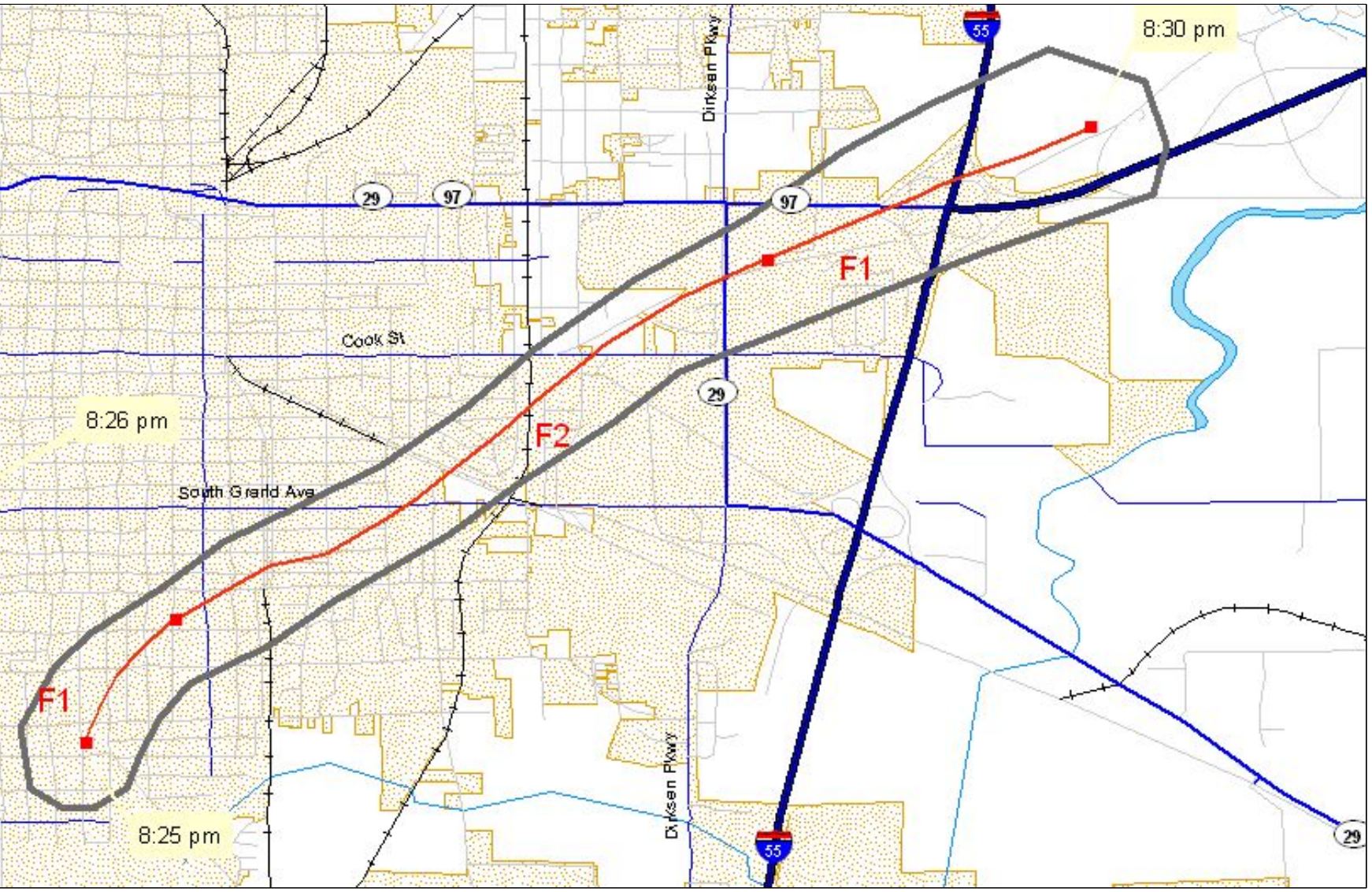
KOUN [72357] Sounding

1200Z 12 MAR 06



LAT:35.2
LON:-97.4
EL:357
TP:155
MW:4.30
FRZ:653
WB0:727
PW:0.82
RH:33.8
MAXT:31.5
TH:5664
L57:7.6
LCL:943
LI:-6.1
SI:-3.5
TT:56
KI:22
SW:476
EI:-2.7
-PARCEL-
100 layer
LI:-6.1
CAPE:1875
CINH:196
LCL:873
CAP:5.1
LFC:718
EL:208
MPL:128
-WIND-
STM:253/35
HEL:454
SHR+:0.0
SRDS:79
EHI:4.9
BRN:14.2
BSHR:16

Springfield, IL Tornadoes



Parkway Pointe



Wabash Ave



The Lauterbach Man



March 13, 2006

- March 13 saw a decline in severe weather to round-out the outbreak
- 15 tornadoes touched down in a line in northern Mississippi and Alabama
- All of them were F1 or weaker
- Thankfully, minimal damage
- Another thing to study – What caused all these tornadoes to form in quick succession?
 - Cyclic Supercell?

SPC Storm Reports for 03/13/06

Map updated at 1202Z on 03/20/06



TORNADO REPORTS.. (12)
WIND REPORTS/HI..... (35/0)
HAIL REPORTS/LG..... (19/2)
TOTAL REPORTS..... (66)

National Weather Service
Storm Prediction Center Norman, Oklahoma.

- High Wind Report (65KT +)
- ▲ Large Hail Report (2" dia. +)

PRELIMINARY DATA ONLY

Impacts - Summary

- 5 Straight Days of Severe Weather
- Total of 10 Deaths
 - Hundreds of injuries
- Excess of \$1 Billion in damage throughout the midwest
- All of these damages were made worse by the fact that a winter storm came through less than a week later
 - Dumped multiple inches of snow into the area, severely hindering damage assessment and rebuilding efforts

Thanks for Listening!

Questions?