

Plains to Northeast U.S. Winter Storm and Gulf Coast Heavy Rainfall 25-28 February, 2013

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Meteorological Overview: During the period of February 25th through the 28th, snow and blizzard conditions occurred in the Plains and the Northeast while the Gulf Coast experienced heavy rainfall. During the week prior to this event, much of the Plains and the Middle Mississippi Valley had already received impressive snowfall amounts. This low-pressure system brought additional paralyzing snow to the Middle Mississippi Valley and white-out blizzard conditions to the Texas Panhandle.

On the morning of February 25th, a closed and deeply layered 500 mb low was located over the Texas Panhandle and moved toward the Middle and Lower Mississippi Valley (Fig 1a). The mid-level closed low followed a southern track and intensified as it moved over the Southern Plains. As the surface low tracked to the south and southeast of Amarillo, it brought blizzard conditions, including heavy snow and strong winds. In fact, NWS Amarillo reported 19 inches of snow on site with nearly 6 foot drifts; in addition, 75 mph wind gusts and 50 feet visibilities were reported.

Once the 500-mb low turned northeast toward the Middle Mississippi Valley, it gradually began to weaken. Despite the weakening, a vorticity maximum assisted in producing up to 10 inches of snow (Fig 1b). Thus, two snowfall maxima occurred northwest of the surface low in the Texas Panhandle and Western Missouri (Fig 2). In addition, a surface low also developed along the Mid-Atlantic coast; this set up a freezing rain event along the Appalachians from Pennsylvania to North Carolina (Table 1). By Wednesday, the 500 mb low continued to weaken and the primary surface low moved north from Virginia to Northern Maine. Nevertheless, some snow fell in the interior of the Northeast (Fig 3).

Although most of the focus was on the snowstorm from the Texas Panhandle to the Northeast, heavy rain fell along the Gulf Coast. A warm front stalled along the coast on February 25th and 26th (Fig 4). This front provided a focus for heavy rainfall, flash flooding, and severe weather from Louisiana to Northern Florida and Georgia. The heaviest rainfall amounts ranged from 5 to 8 inches (Fig 5).

Impacts: With such a historical event for the Texas and Oklahoma panhandle, the public felt the effects of such an awesome system. Interestingly, NWS Amarillo did not set a record for a calendar date. Although they received 19 inches of snow on that day, the record was 19.3 inches on March 25, 1934. This was the third largest snowfall event in Amarillo. Thousands of people lost power in both Texas and Oklahoma, hundreds of motorists were stranded on interstates, and flights were cancelled at both Dallas-Fort Worth International Airport and Oklahoma City Airport. By the time this system moved out of the Mid-West and headed for the Northeast, over 1,000 flights were grounded at the Chicago O'Hare International Airport. Unfortunately, at least three people lost their lives from snowfall event in the Plains.

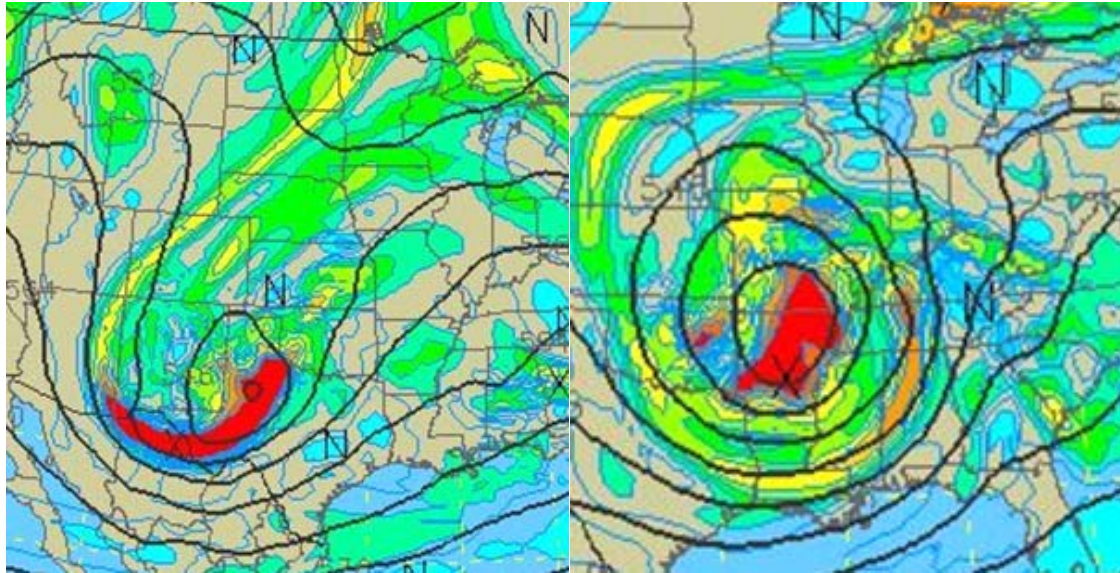


Fig 1a: 500 mb heights and absolute vorticity on 2013 Feb 25 at 12Z.
(<http://locust.mmm.ucar.edu/>)

Fig 1b: 500 mb heights and absolute vorticity on 2013 Feb 26 at 12Z.
(<http://locust.mmm.ucar.edu/>)

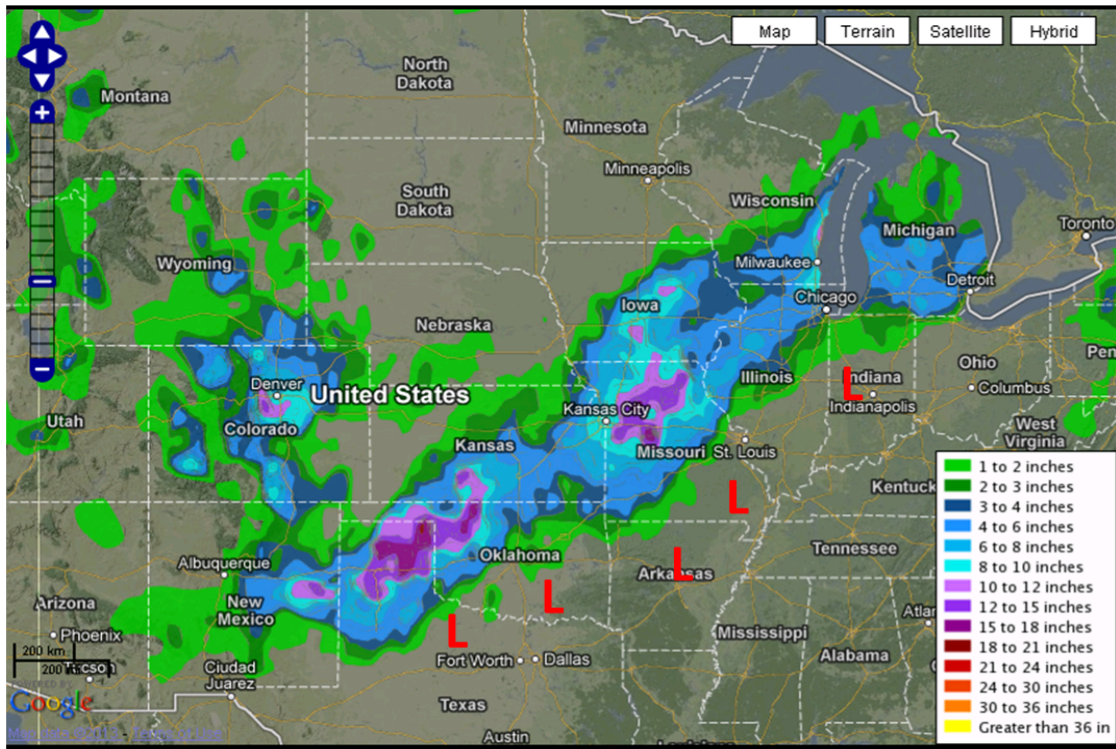


Fig 2: The surface low track from the Southern Plains to the Upper Great Lakes combined with the Southern Region snowfall graphic.

Scaled Snow Precipitation
24-Hour Total Ending 2013-02-26 06

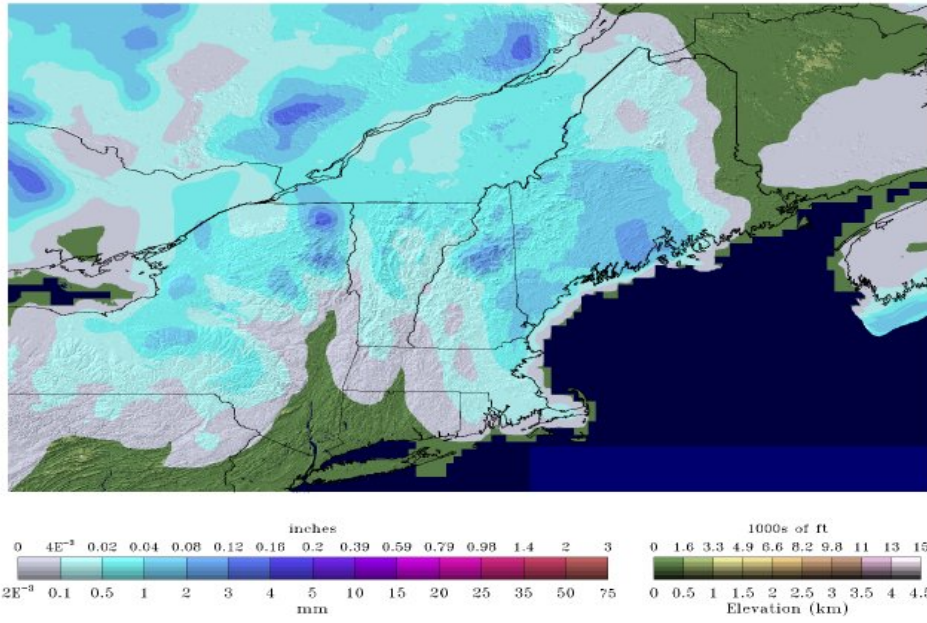


Fig 3: The 24 hour snowfall total for New England on 2013 Feb 26. (www.nohrsc.noaa.gov/nsa/)

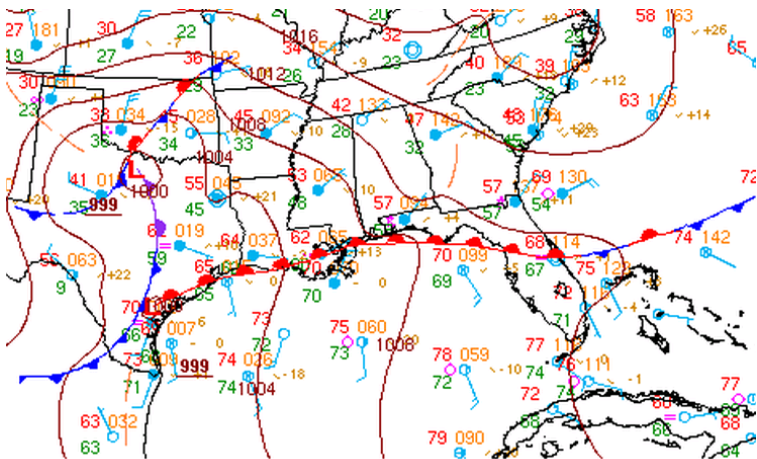


Fig 4: Surface analysis on 2013 Feb 25 at 12Z. (www.wpc.ncep.noaa.gov)

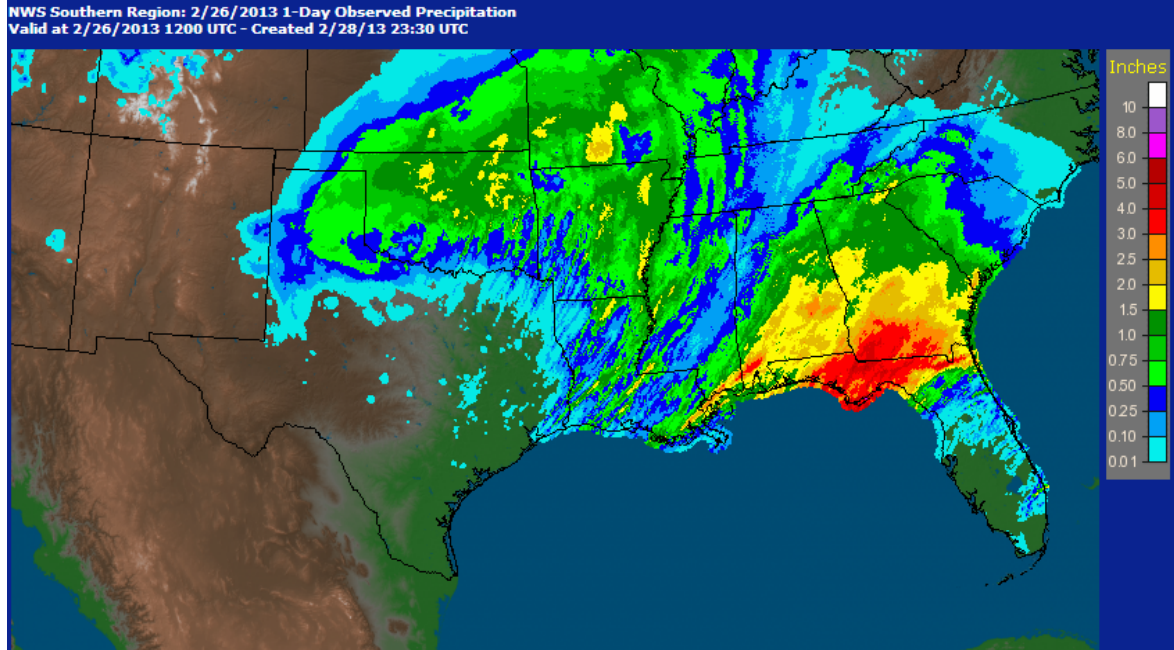


Fig 5: The 24 hour total precipitation from 2013 Feb 26 in NWS Southern Region.
(water.weather.gov/precip)

Selected Storm Total Snow Accumulation (in)		Selected Storm Total Freezing Ice Amounts (in)	
Follett, TX	21.0	Aho 1 SSE, NC	1.00
Fort Supply 3 SE, OK	18.0	Meadows of Dan, VA	1.00
Macon 4.6 NE, MO	17.8	Quinwood, WV	0.75
Hingham, WI	16.9	Fairview, NC	0.50
Sawyer 1 W, KS	12.0	Panorama, VA	0.30
Holcombville 3 WSW, NY	12.0	Hightown 5 NW, MD	0.25

Table 1: Selected storm totals for snowfall and ice accumulations.
(www.wpc.ncep.noaa.gov)