4-5 April 2007 Snowstorm

Summary

Although this snowstorm didn't occur on a holiday like the past two events (Valentine's and St. Patrick's Day), it was still close enough to Easter to think about Easter egg rolls, rather than rolling snowballs to make snowmen. However, despite the rather substantial snowfall totals across the region, it was not that unusual for "Spring Snow" in Vermont. In Burlington, a typical April averages 5 inches of snow, with the greatest storm total snowfall for April occurring on April 15-16, 1983 with 15.6 inches.

This storm was a complex, three faceted event that was dominated by a strong northern jet stream system, which provided the energy, instability, and eventually a secondary coastal low which delivered the moisture in the form of wet snow.

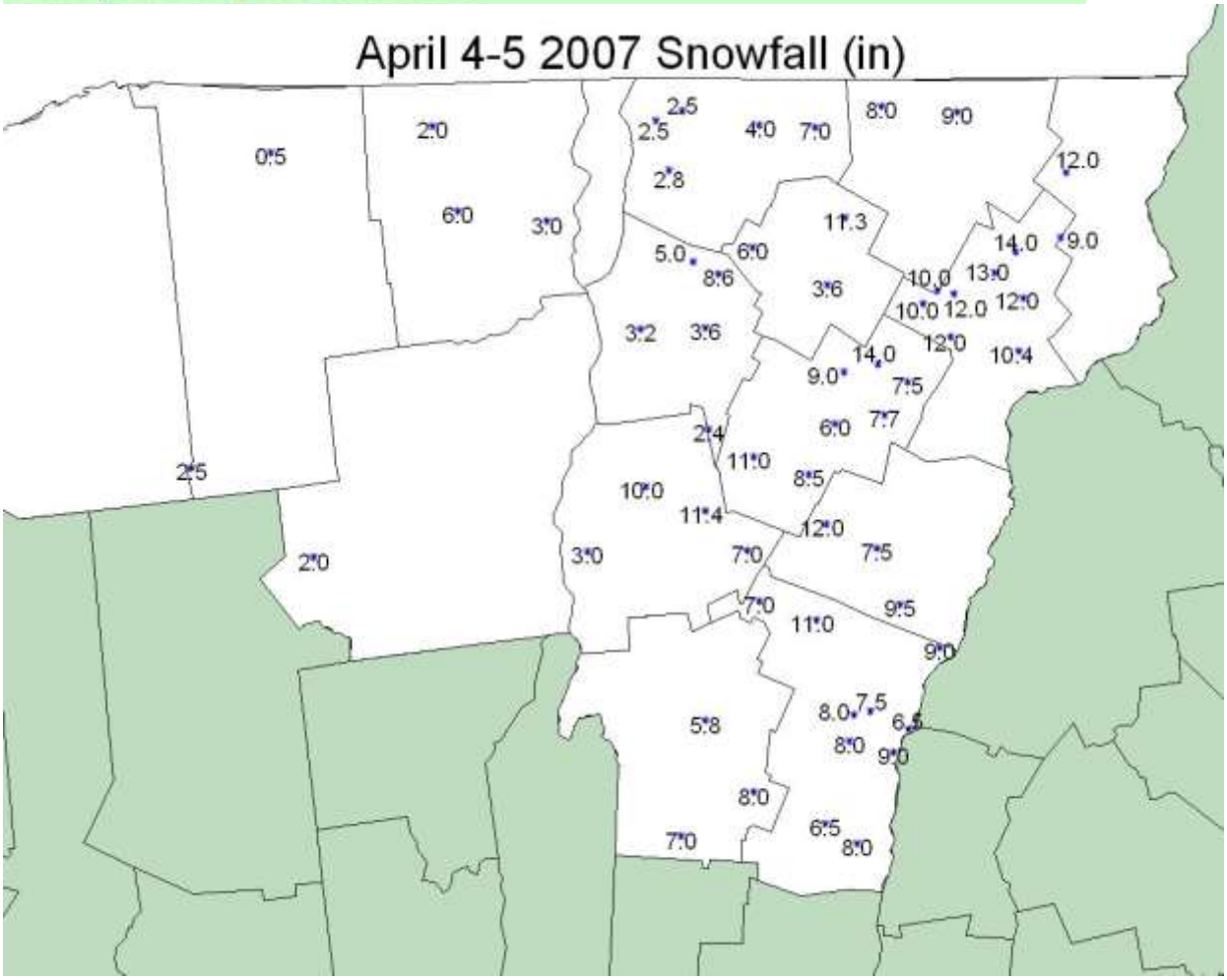
On the night of the 3rd into the early morning hours of the 4th, a disturbance ahead of the main northern stream system, located across the Great Lakes, moved across northern New York and Vermont. A combination of light rain, freezing rain and sleet fell across northern New York and western Vermont, including a few rumbles of thunder. In central and eastern Vermont, snow and sleet fell with localized snow accumulations up to 2 inches.

During the afternoon of the 4th, an associated occluded surface front from the northern stream storm, moved into western New York with temperatures primarily in the mid 30s to around 40 degrees (above freezing). Initially, precipitation was light and fell as rain showers, but as the intensity increased, it cooled the column of air, and precipitation fell as sleet and snow through a process commonly referred to as "dynamic cooling".

During the late afternoon and evening of the 4th, a secondary area low pressure developed off the New Jersey coast. At this time, the main precipitation shield was located primarily across central and eastern New England. However, during the evening and night of the 4th, the strong negative-tilt (southeast to northwest) upper low across the eastern Great Lakes and Ontario promoted strong upward vertical motion, which captured the moisture associated with the developing coastal low, that was moving northeast toward Cape Cod, and transported it back across Vermont and eastern New York in the form of heavy wet snow, which continued into the early morning of the 5th.

On the morning of the 5th, the coastal low was located just east of Cape Cod and moving into the Gulf of Maine with the primary closed upper low across the eastern Great Lakes. The steady snowfall was exiting northern Vermont with improving conditions across southern Vermont and New York. Meanwhile. wrap-around deep moisture and favorable upslope flow across the higher elevations of northern Vermont and the western slopes of the Green mountains, resulted in several inches of additional snowfall on the 5th.

Snowfall Map for 4-5 April 2007



Storm Total Snowfall from the pre-Easter snowstorm (Click image to enlarge)

Snowfall Totals for 4-5 April 2007 (text)

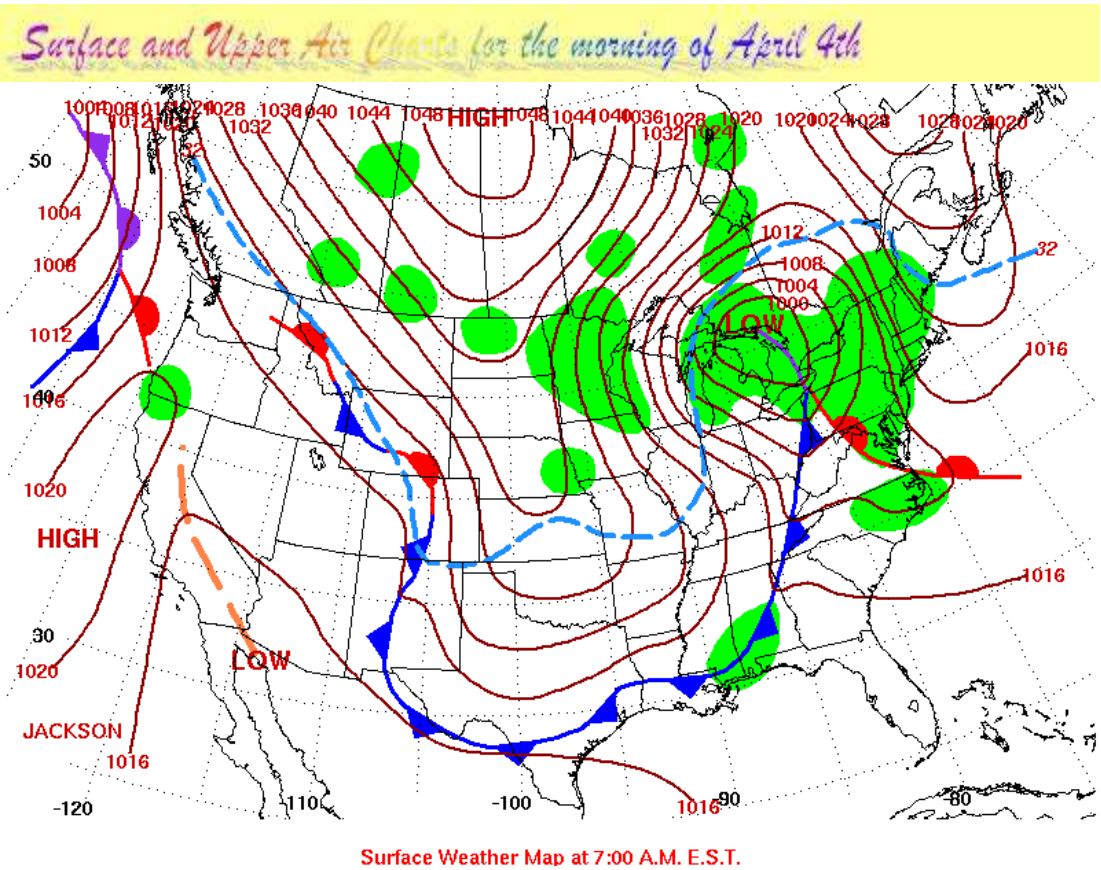
PUBLIC INFORMATION STATEMENT
SPOTTER REPORTS
NATIONAL WEATHER SERVICE BURLINGTON VT
1030 AM EDT FRI APR 6 2007

THE FOLLOWING ARE UNOFFICIAL OBSERVATIONS TAKEN DURING THE APRIL 4TH AND 5TH SNOW STORM THAT AFFECTED OUR REGION. APPRECIATION IS EXTENDED TO HIGHWAY DEPARTMENTS...COOPERATIVE OBSERVERS...SKYWARN SPOTTERS AND MEDIA FOR THESE REPORTS. THIS SUMMARY IS ALSO AVAILABLE ON OUR HOME PAGE AT WEATHER.GOV/BURLINGTON.

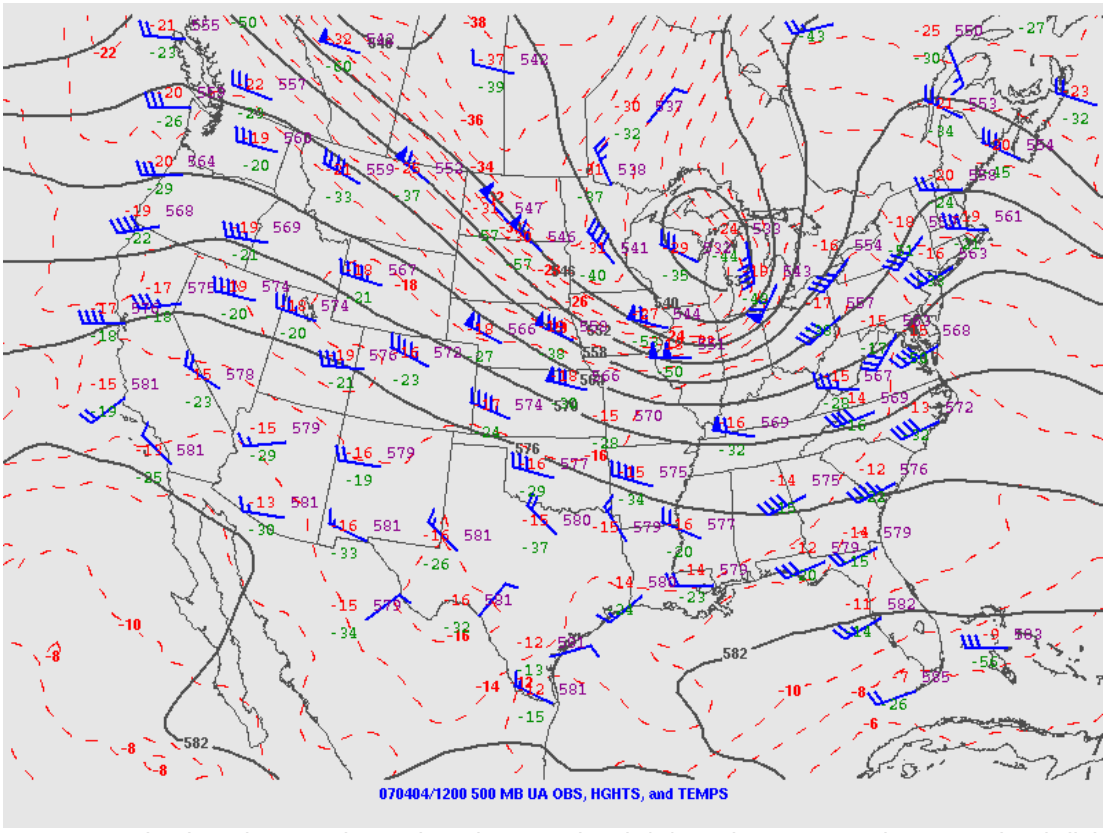
**********STORM TOTAL SNOWFALL**********

LOCATION	STORM TOTAL SNOWFALL (INCHES)	TIME/DATE OF MEASUREMENT		COMMENTS
NEW YORK				
...CLINTON COUNTY...				
DANNEMORA	6.0	1006 AM	4/5	HAM RADIO
ELLENBURG DEPOT	2.0	958 AM	4/5	COOP
PLATTSBURGH	1.0	700 AM	4/5	MEDIA
...ESSEX COUNTY...				
NEWCOMB	2.0	958 AM	4/5	COOP
...FRANKLIN COUNTY...				
TUPPER LAKE	2.5	700 AM	4/6	COOP
MALONE	0.5	959 AM	4/5	COOP
VERMONT				
...ADDISON COUNTY...				
SOUTH LINCOLN	11.4	700 AM	4/6	COOP
NEW HAVEN	10.0	700 AM	4/6	COOP
GRANVILLE	7.0	1042 AM	4/5	SPOTTER
BRIDPORT	3.0	1004 AM	4/5	SPOTTER
...CALEDONIA COUNTY...				
SUTTON	14.0	700 AM	4/6	COOP
WHEELOCK	13.0	1008 AM	4/5	SPOTTER
LYNDONVILLE	12.0	1042 AM	4/5	SPOTTER
STANNARD	12.0	1007 AM	4/5	SPOTTER
WALDEN	12.0	1046 AM	4/5	SPOTTER
SAINT JOHNSBURY	10.4	700 AM	4/6	COOP
EAST HARDWICK	10.0	1000 AM	4/5	SPOTTER
...CHITTENDEN COUNTY...				
NORTH UNDERHILL	8.6	700 AM	4/6	NWS EMPLOYEE
WESTFORD	5.0	700 AM	4/6	NWS EMPLOYEE
JERICHO CENTER	3.6	700 AM	4/6	NWS EMPLOYEE
SOUTH BURLINGTON	3.2	800 AM	4/6	NWS OFFICE
HANKSVILLE	2.4	945 AM	4/5	COOP
...ESSEX COUNTY...				
ISLAND POND	12.0	1045 AM	4/5	COOP
EAST HAVEN	9.0	945 AM	4/5	COOP
...FRANKLIN COUNTY...				

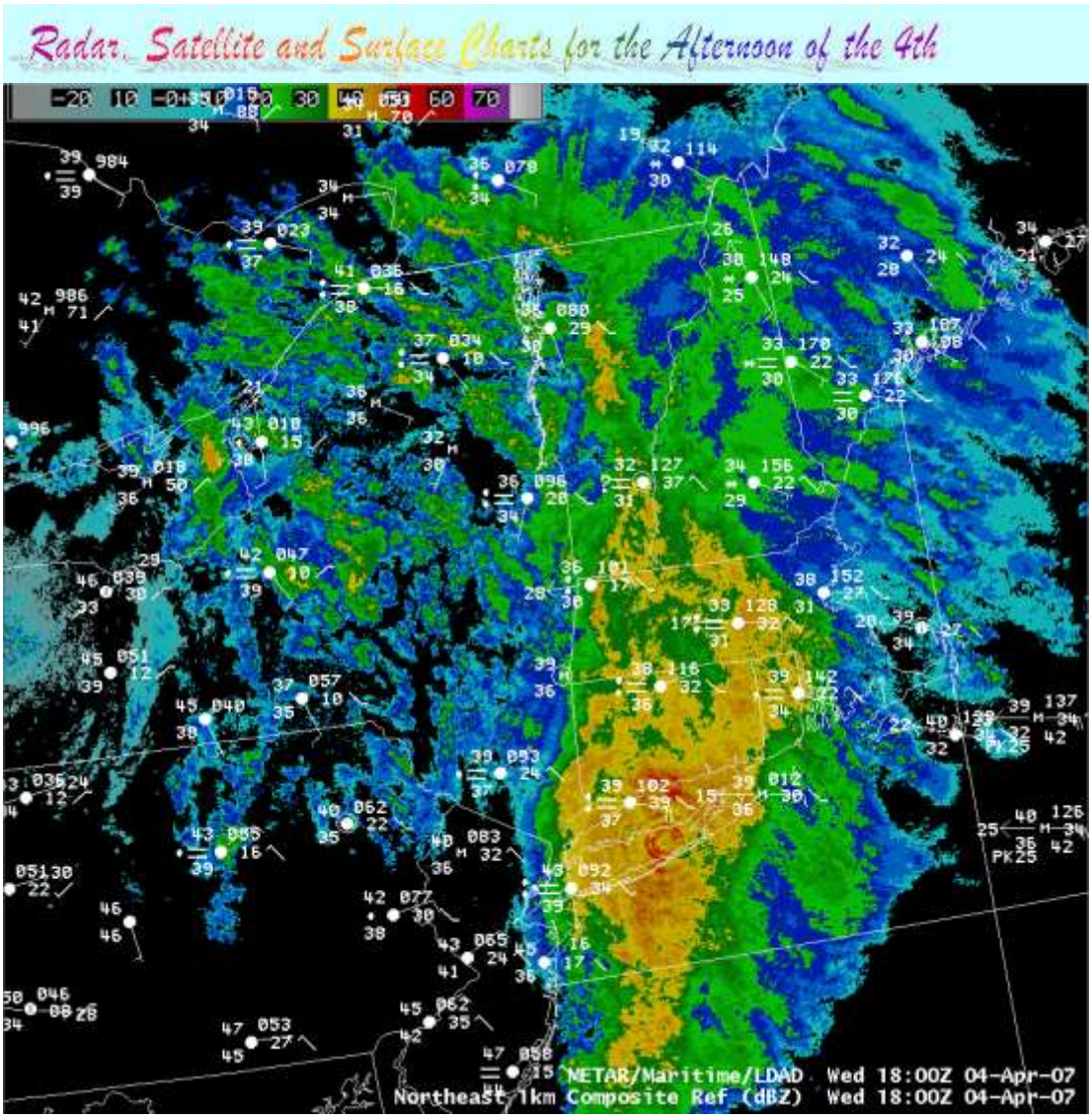
MONTGOMERY	7.0	428 PM	4/5	
ENOSBURG FALLS	4.0	700 AM	4/6	COOP
SAINT ALBANS	2.8	946 AM	4/5	COOP
HIGHGATE CENTER	2.5	1006 AM	4/5	HAM RADIO
SWANTON	2.5	1005 AM	4/5	SPOTTER
...LAMOILLE COUNTY...				
EDEN	11.3	700 AM	4/6	COOP
JEFFERSONVILLE	6.0	947 AM	4/5	COOP
MORRISVILLE	3.6	948 AM	4/5	COOP
...ORANGE COUNTY...				
BROOKFIELD	12.0	700 AM	4/6	COOP
STRAFFORD	9.5	1004 AM	4/5	SPOTTER
UNION VILLAGE DAM	9.0	700 AM	4/6	COOP
CHELSEA	7.5	700 AM	4/6	COOP
...ORLEANS COUNTY...				
GREENSBORO BEND	10.0	1001 AM	4/5	SPOTTER
NEWPORT	9.0	700 AM	4/6	COOP
JAY	8.0	951 AM	4/5	COOP
...RUTLAND COUNTY...				
MOUNT HOLLY	8.0	1044 AM	4/5	SPOTTER
DANBY FOUR CORNERS	7.0	700 AM	4/6	COOP
RUTLAND	5.8	700 AM	4/6	COOP
...WASHINGTON COUNTY...				
NORTH CALAIS	14.0	1205 PM	4/5	SPOTTER
WAITSFIELD	11.0	700 AM	4/6	COOP
WORCESTER	9.0	700 AM	4/6	COOP
NORTHFIELD	8.5	1009 AM	4/5	NWS EMPLOYEE
PLAINFIELD	7.7	700 AM	4/6	COOP
MARSHFIELD	7.5	1225 PM	4/5	SPOTTER
MONTPELIER	6.0	700 AM	4/6	COOP
...WINDSOR COUNTY...				
BETHEL	11.0	700 AM	4/6	COOP
HARTLAND	9.0	1207 PM	4/5	VT HIGHWAY
NORTH SPRINGFIELD	8.0	1044 AM	4/5	SPOTTER
SOUTH WOODSTOCK	8.0	1205 PM	4/5	VT HIGHWAY
WOODSTOCK	8.0	957 AM	4/5	COOP
TAFTSVILLE	7.5	1041 AM	4/5	SPOTTER
ROCHESTER	7.0	957 AM	4/5	COOP
CAVENDISH	6.5	1041 AM	4/5	SPOTTER
NORTH HARTLAND	6.5	700 AM	4/6	COOP



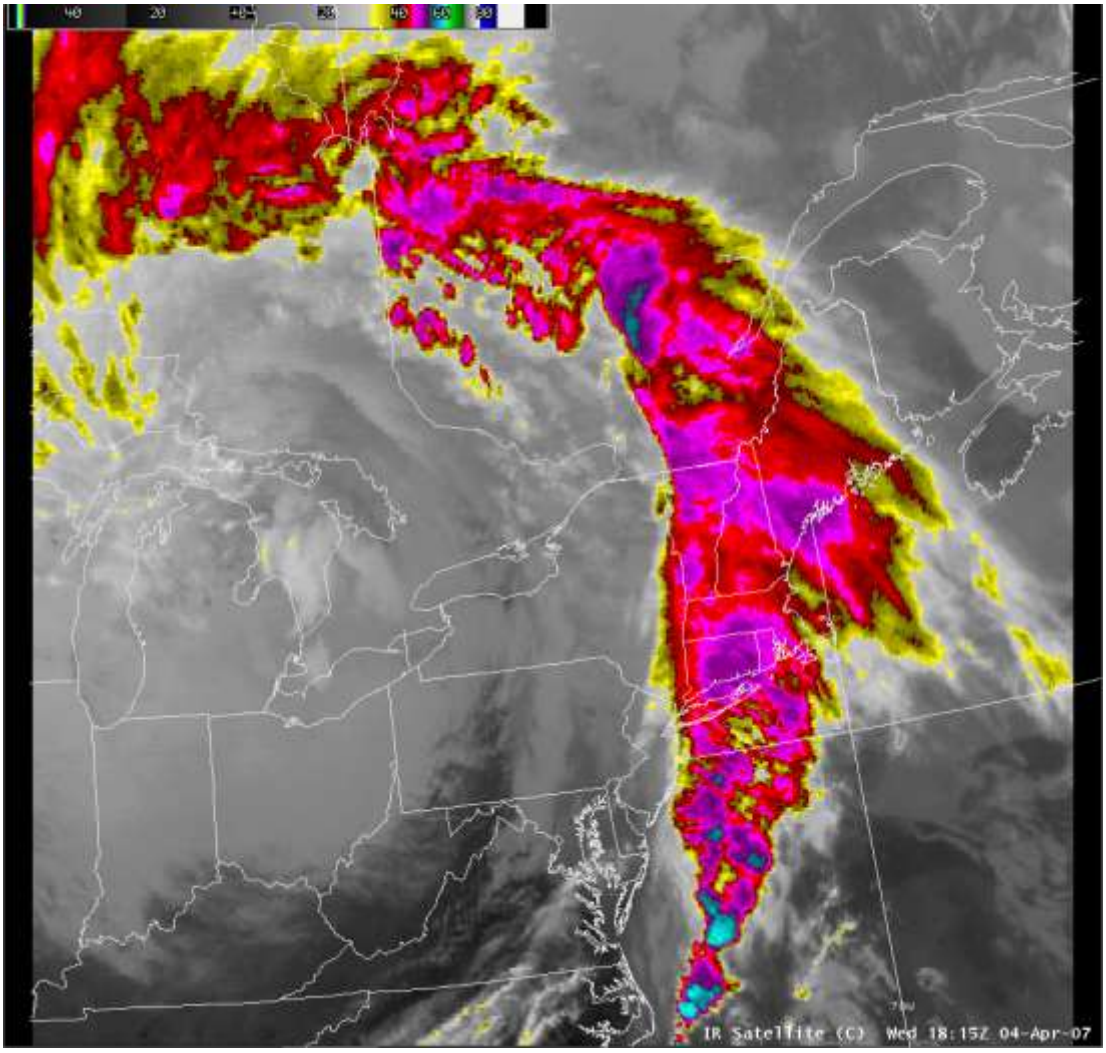
Surface Chart, Wednesday Morning (4/4/2007), 1200UTC (8am EDT) (Click image to enlarge)



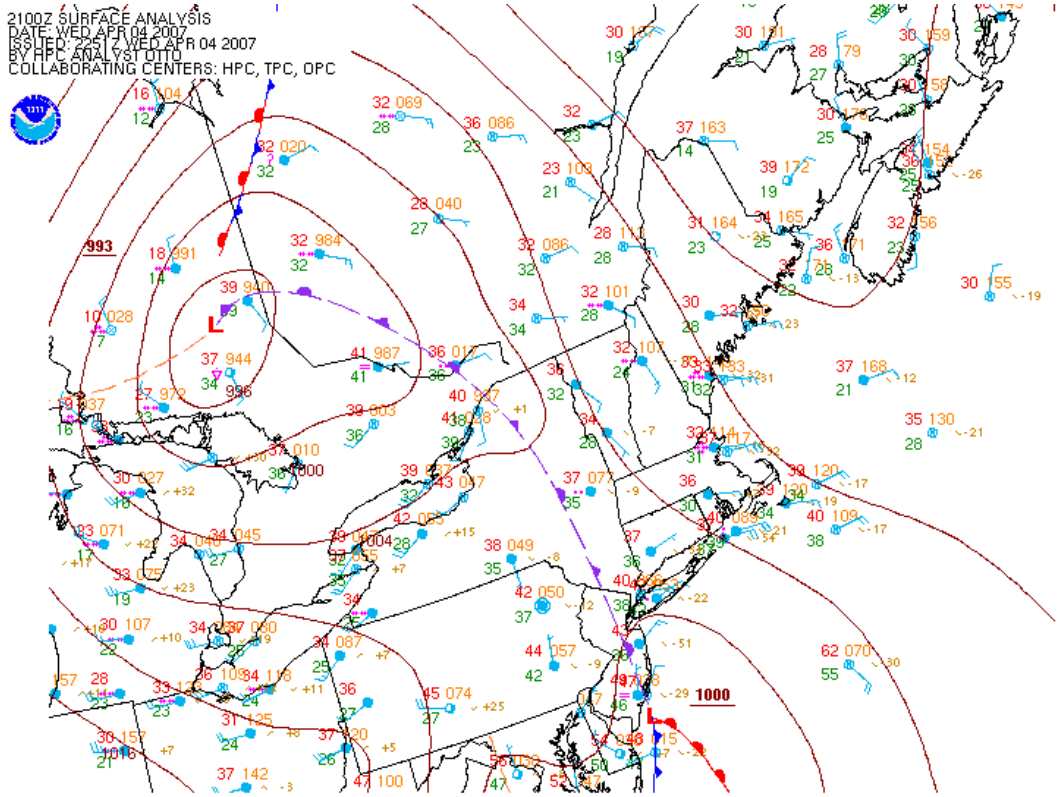
US Upper Air Chart (500HPa), Wednesday Morning (4/4/2007), 1200UTC (8am EDT) (Click image to enlarge)



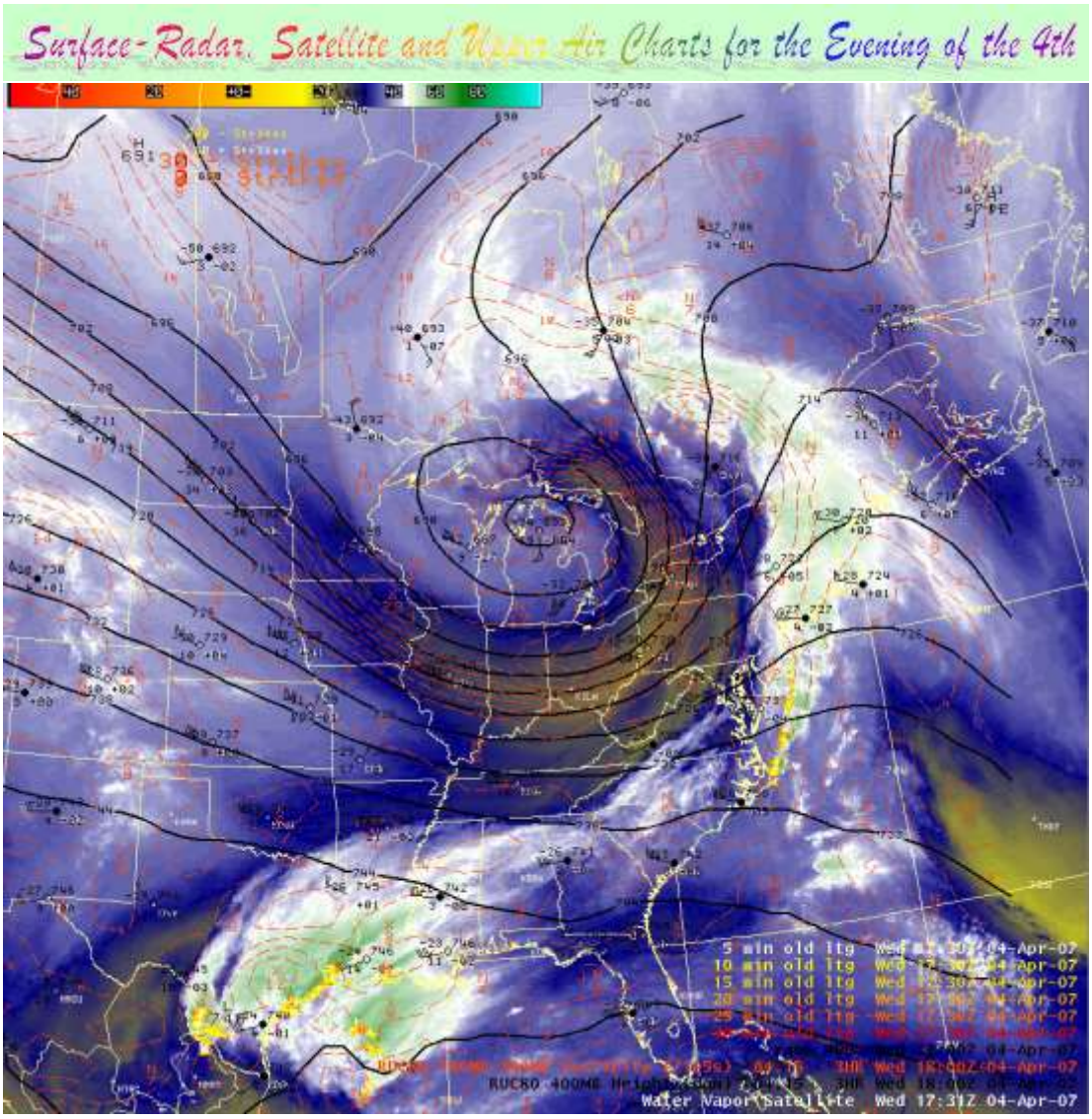
Composite Radar at 2 pm EDT Wednesday afternoon (4/4/2007) - Snow, sleet and rain showers across Vermont and northern New York with Heavy precipitation across southern New England and Long Island. (Click image to enlarge)



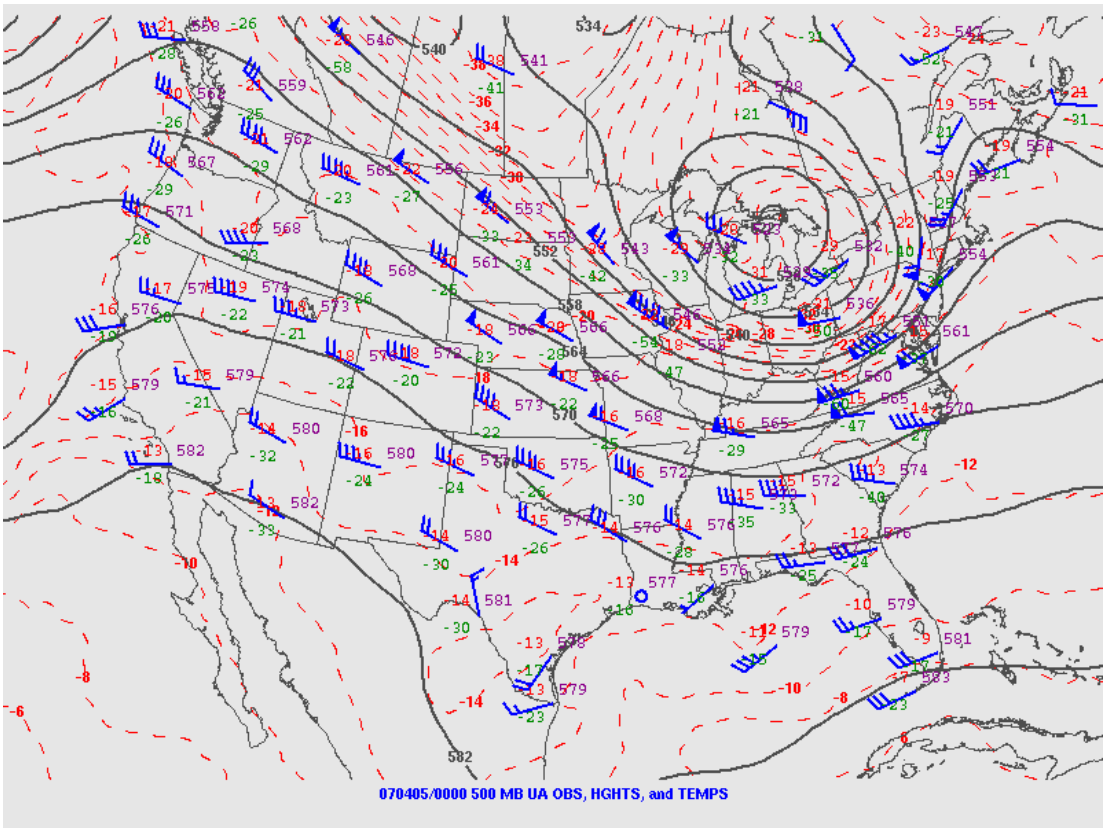
Infra-red Satellite at 2 pm EDT Wednesday afternoon (4/4/2007) - Heaviest precipitation ahead of occluded front from Vermont/New York border east. Meanwhile, the occluded front is located from eastern Lake Ontario south across east-central Pennsylvania to northern Virginia. (Click image to enlarge)



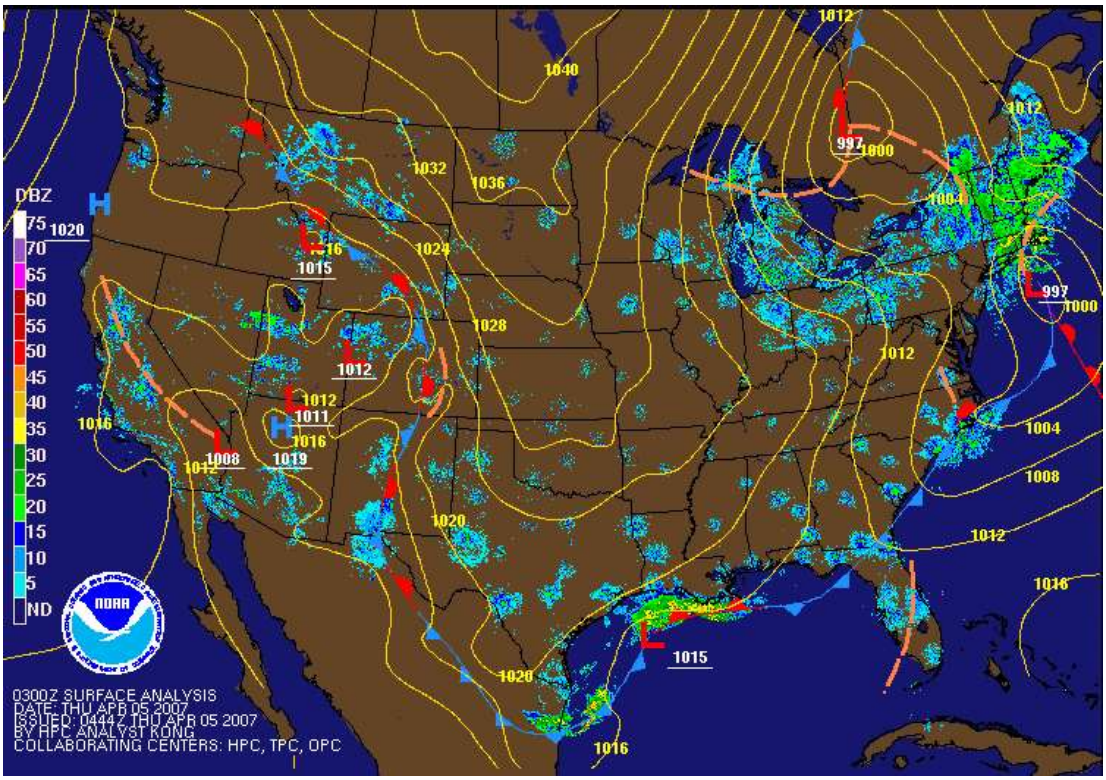
US Surface Chart, Wednesday afternoon (4/4/2007), 2100UTC (5pm EDT) (Click image to enlarge)



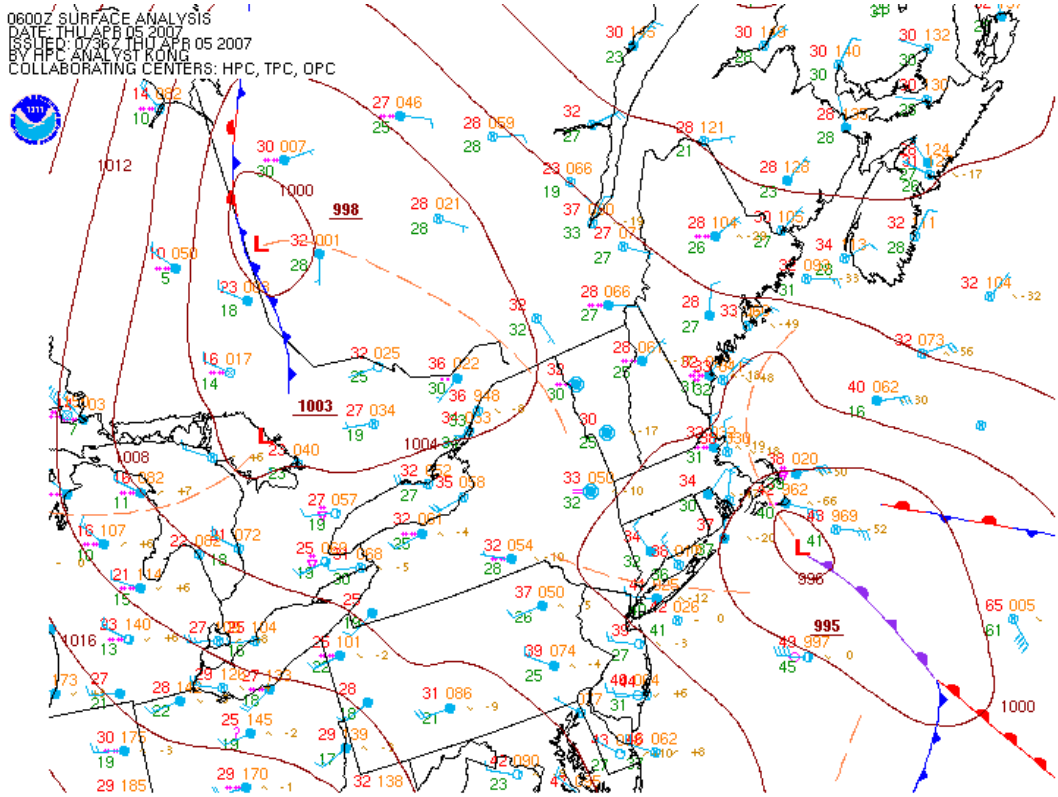
Water Vapor Satellite Picture on Wednesday afternoon (4/4/2007) showing the strong upper level cut-off low across the northern Great Lakes, as well as the negative tilted orientation of the trough from the Appalachians back to the closed low over the Great Lakes.



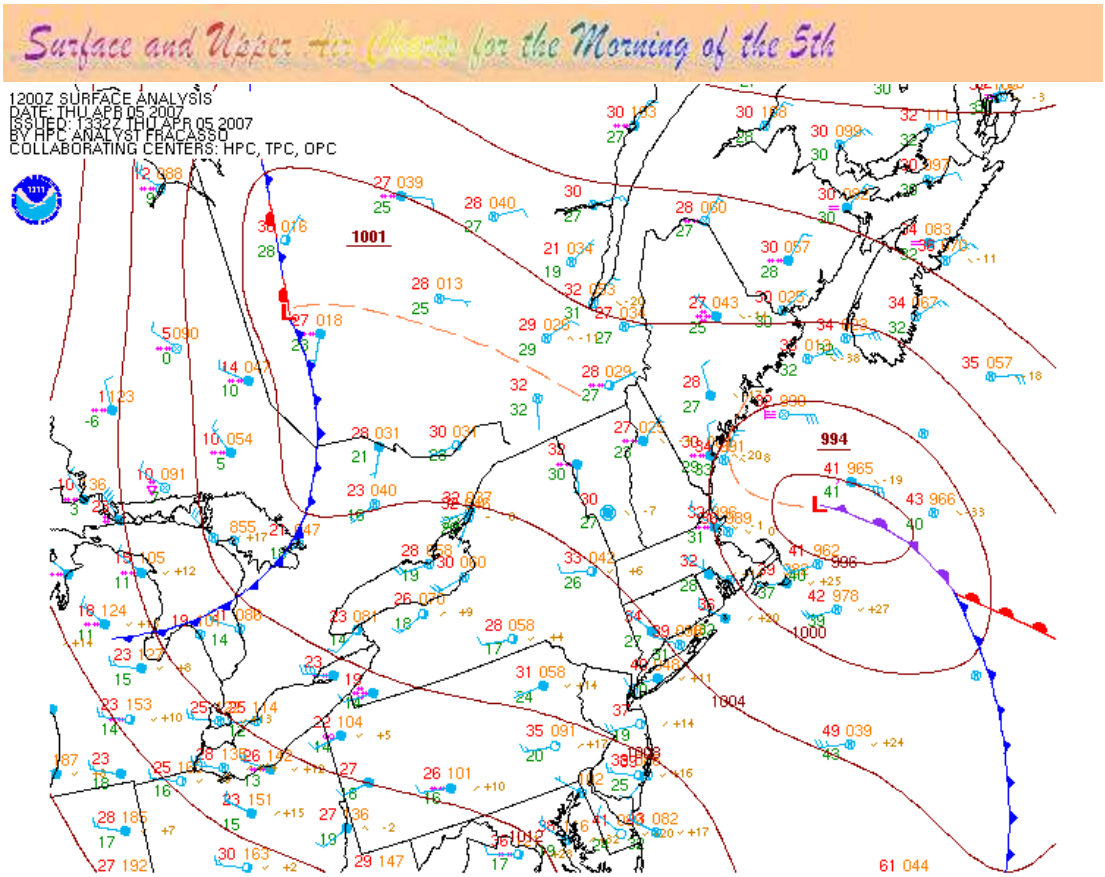
US Upper Air Chart (500HPa), Wednesday Evening 0000UTC (4/5/2007), 8pm EDT-4/4/2007 (Click image to enlarge)



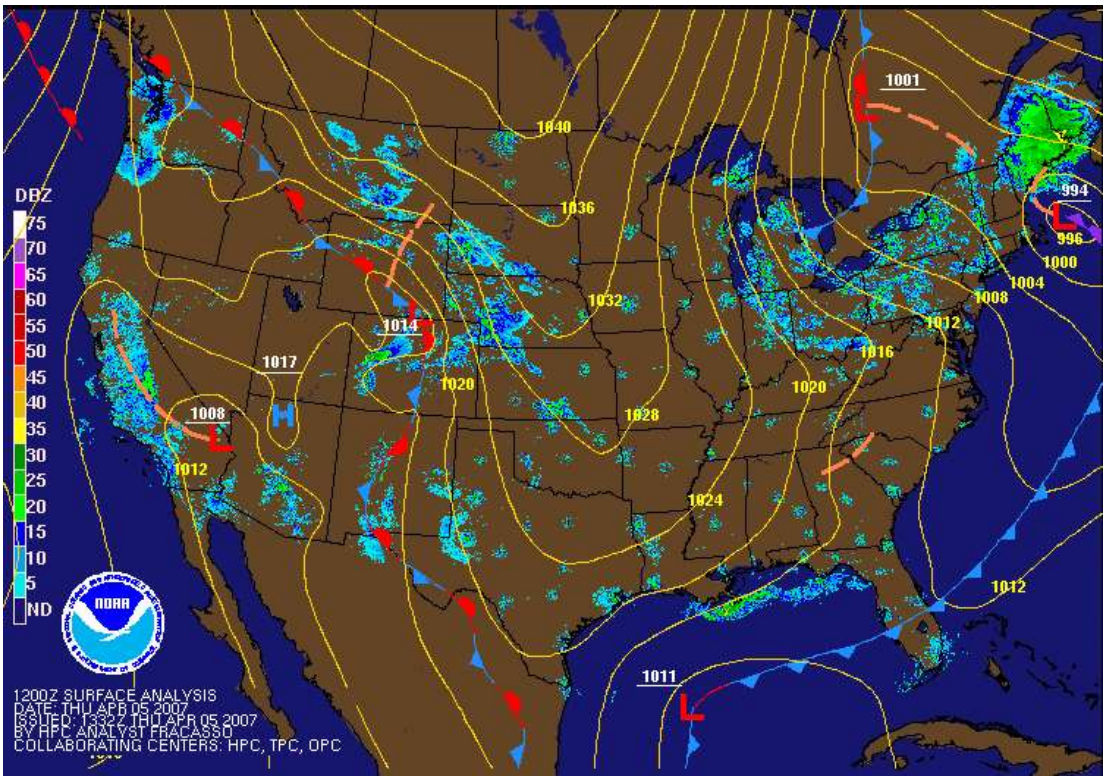
Surface Chart and Radar composite - Wednesday Evening, 0300UTC 4/5/2007 (11pm EDT 4/5/2007) Surface low moving northeast, south of New England, while precipitation has redeveloped and moved back toward Vermont and northeast New York. (Click image to enlarge)



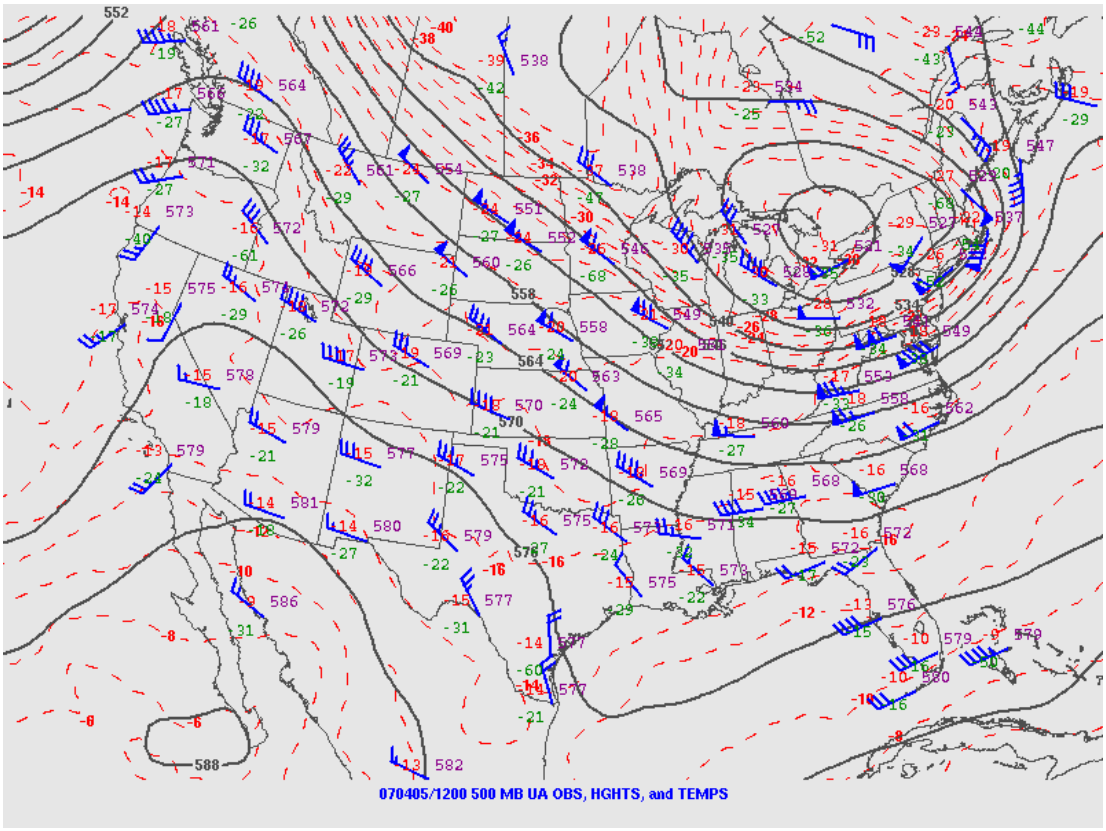
Surface Chart - Thursday Morning (4/5/2007), 0600UTC (2am EDT) (Click image to enlarge)



Surface Chart - Thursday Morning (4/5/2007), 1200UTC (8am EDT) (Click image to enlarge)



Surface and Radar composite - Thursday Morning, 1200UTC 4/5/2007 (8am EDT) (Click image to enlarge)



US Upper Air Chart (500HPa), Thursday Morning (4/5/2007), 1200UTC (8am EDT) (Click image to enlarge)