A two part major winter storm with precipitation type challenges and bombogenesis

Part 1 : periods of snow tapering off to light mixed precipitation and rain

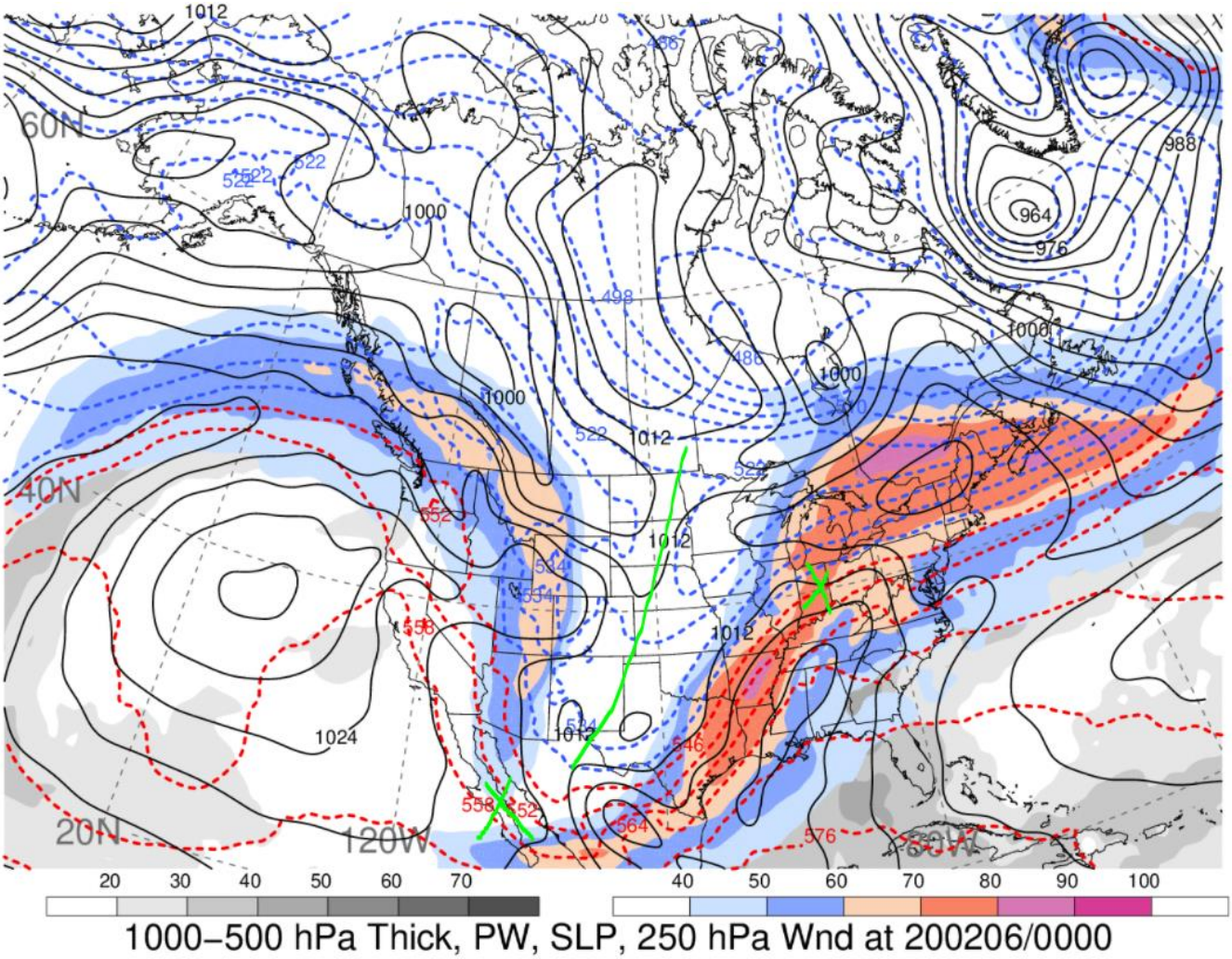
Part 2 : light mixed precipitation and rain becoming periods of rain, then changing over to snow with bombogenesis

Brent Heeren/Mike Evans

Part I Outline :

- Synoptic pattern
- Thermal profiles
- Frontogenesis and banding
- Precipitation/precipitation type forecasts
- Observations
- Summary

GFS analysis of 1000-500 mb thickness, precipitable water, SLP, 250 mb wind

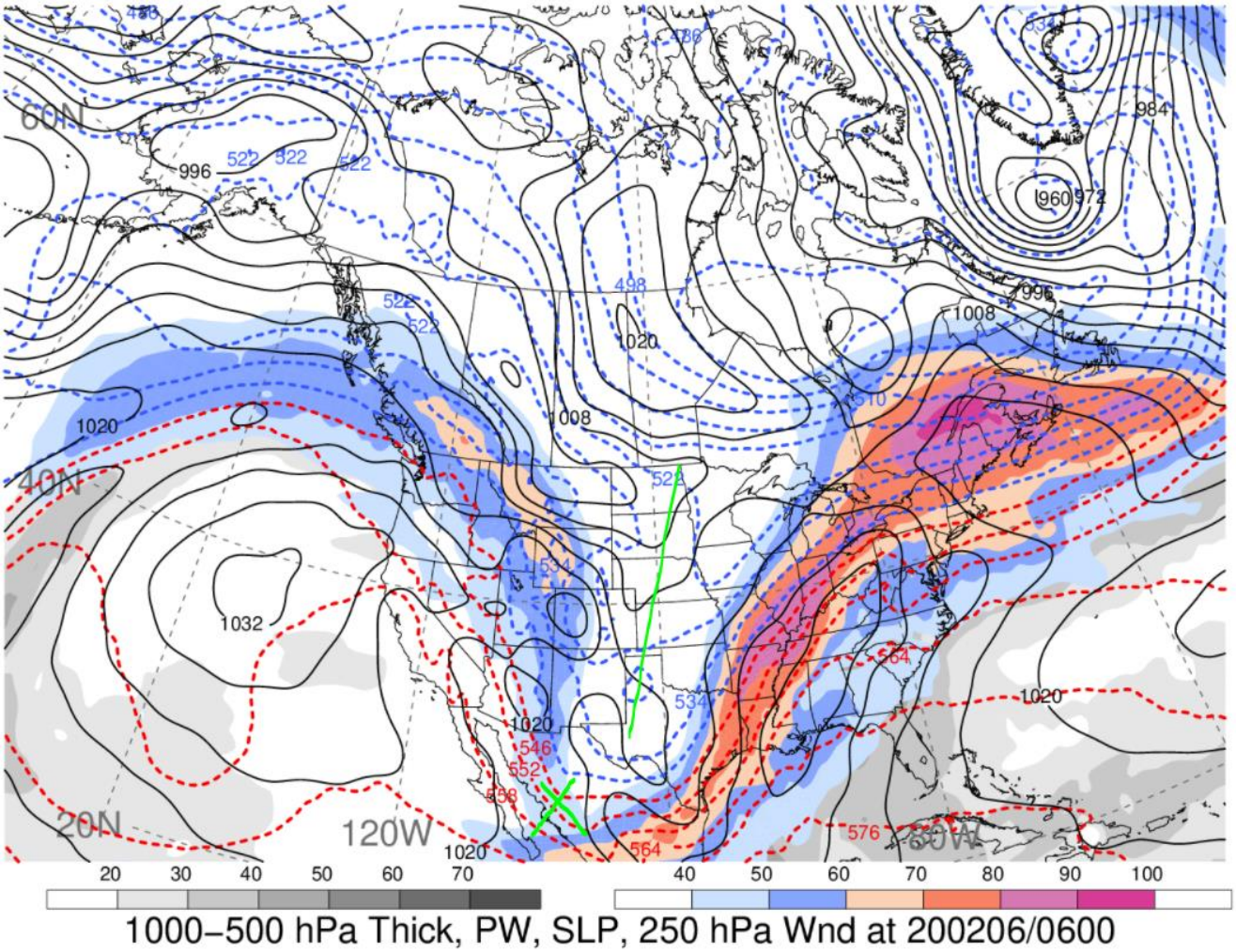


00z February 6 2020

Plots courtesy of Dr. Heather Archambault, http://www.atmos.albany.edu/student/heathera/

A positively tilted upper-level trough located in the midwestern United States was accompanied by a weak right jet exit region in Indiana. The jet exit zone and its accompanying 70-90 kt jet were associated with large-scale uplift, which helped produce wintry precipitation in the northeast U.S. region.

GFS analysis of 1000-500 mb thickness, precipitable water, SLP, 250 mb wind

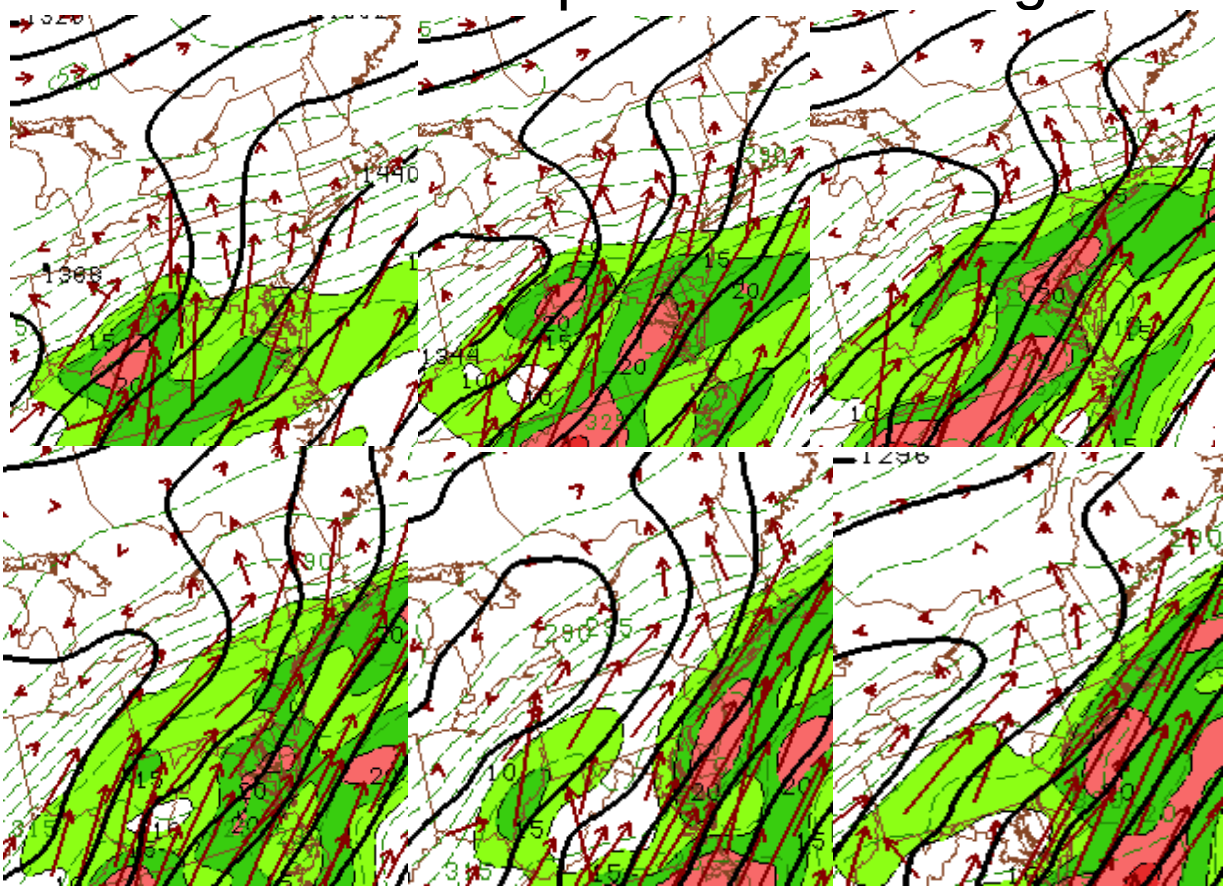


12z February 6, 2020

Plots courtesy of Dr. Heather Archambault, http://www.atmos.albany.edu/student/heathera/

By 12z February 6, the upper level trough had begun to have a more neutral tilt, accompanied by a jet left entrance region in northern Mexico, south of New Mexico and western Texas. The accompanying jet streak north of the Canadian-U.S. border intensified from 70-90 kt to 80-100 kt. The jet streak provided large-scale uplift support for wintry precipitation in northern New England.

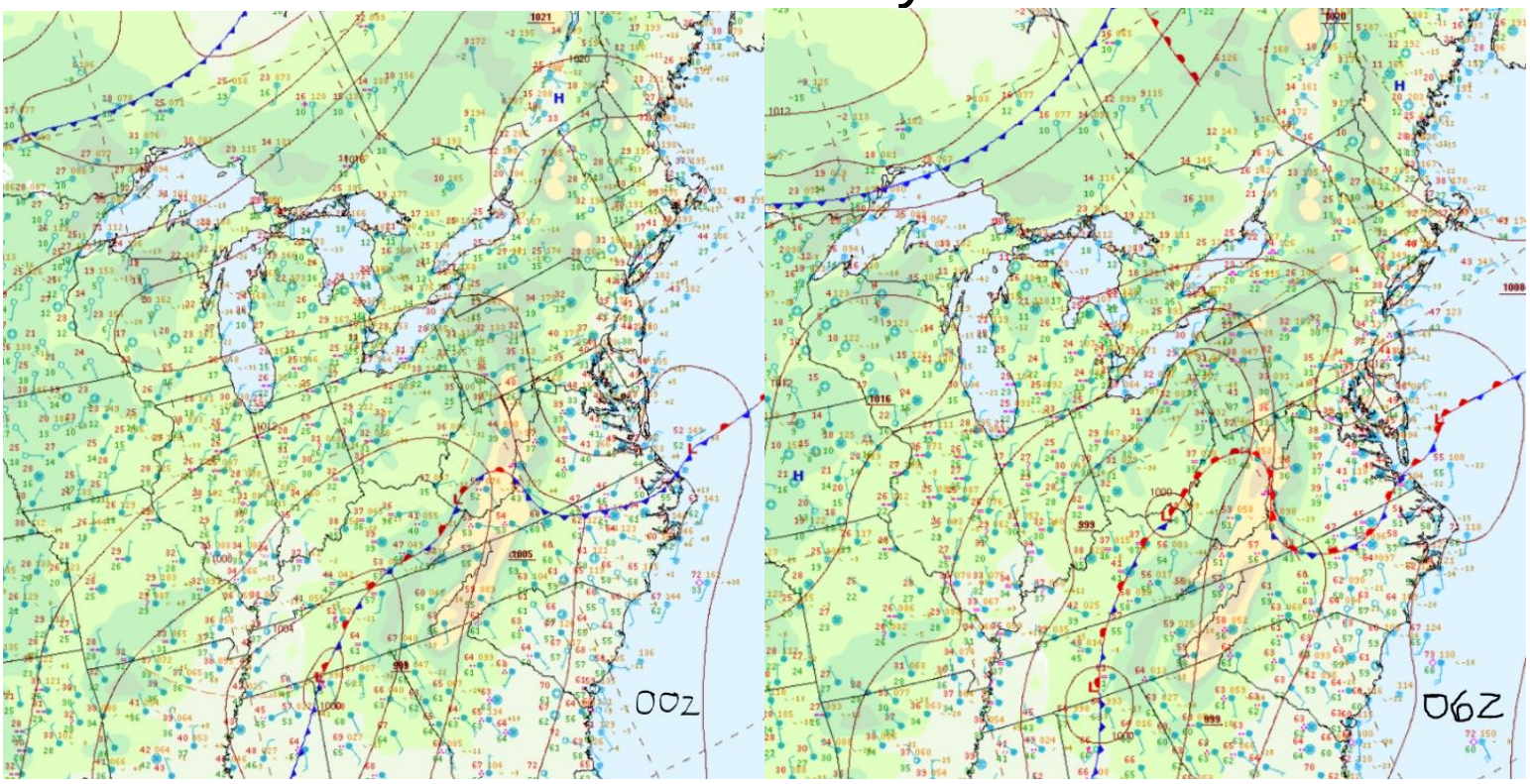
850 mb moisture transport vectors/height/theta-e



03z, 06z, 09z February 6 2020 (top row : left to right)
12z, 15z, 18z February 6 2020 (bottom row : left to right)

850 mb warm air, theta-e, and moisture advection to the north and north-northeast, as shown by moisture transport vectors, provided the moisture needed in order to produce wintry precipitation. The wintry precipitation was initially snow for most of the region before the warm air advection allowed for 850 mb temperatures to rise above freezing, allowing for a changeover from snow to sleet and then freezing rain.

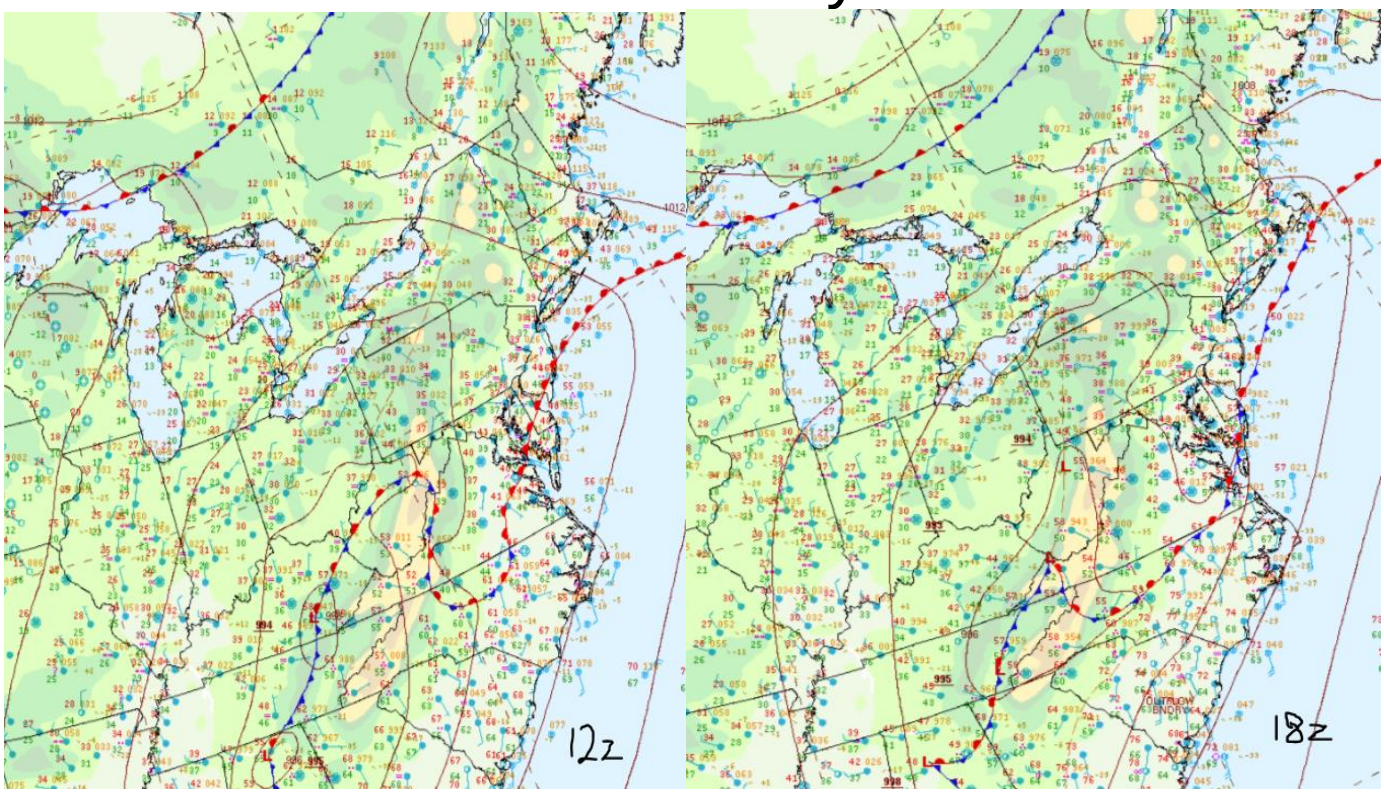
Surface Analysis



00z and 06z February 6 2020

A 999 mb surface low along a quasi-stationary front and strong 2 m air temperature gradient helped contribute to low level forcing for precipitation. A 1021 mb high providing arctic cold air to the northeast U.S. allowed the precipitation type to begin as snow in most locations, except for the southern Hudson Valley and southern New England.

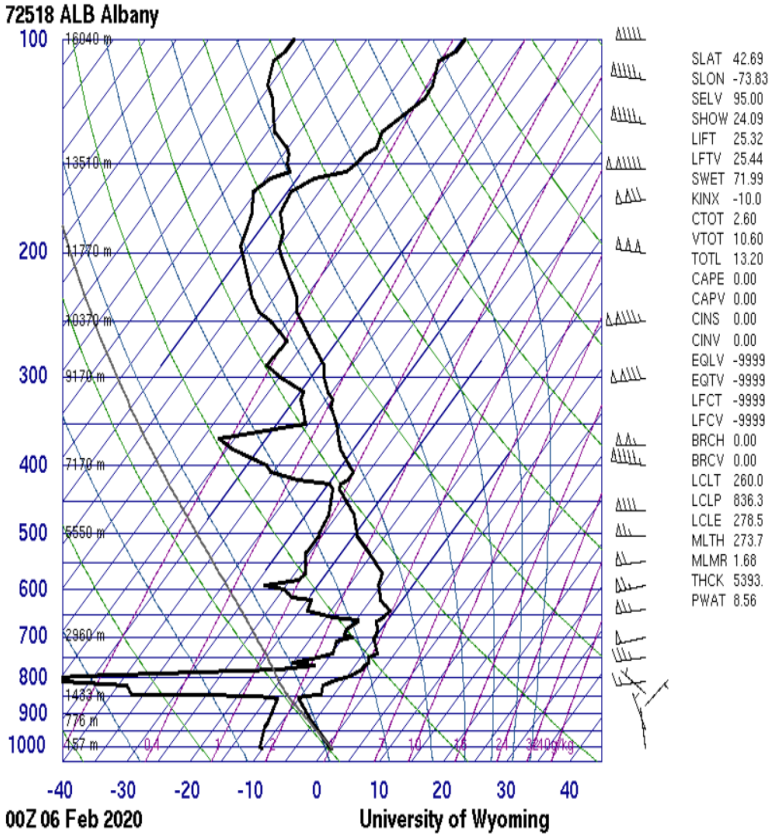
Surface Analysis

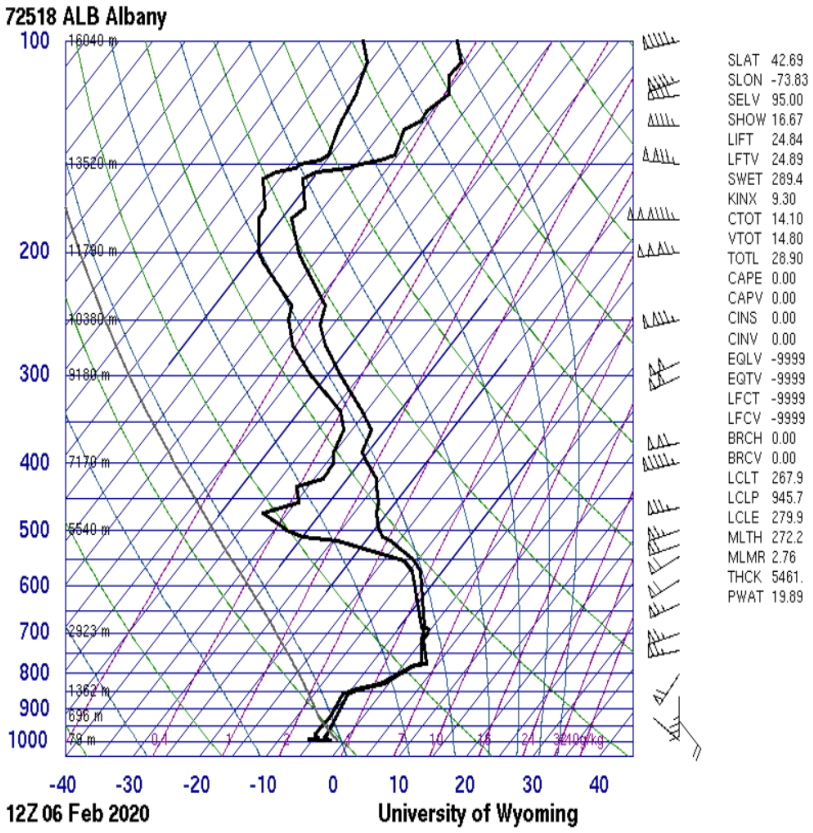


12z and 18z February 6, 2020

By 18z February 6, the main surface low had strengthened to 993 mb while its associated coastal warm front moved north. The warm front helped move warmer air closer to New England. The frontal zone provided continuing forcing for scattered light wintry precipitation in parts of upstate New York and New England as observed at the surface.

Skew-T at KALB

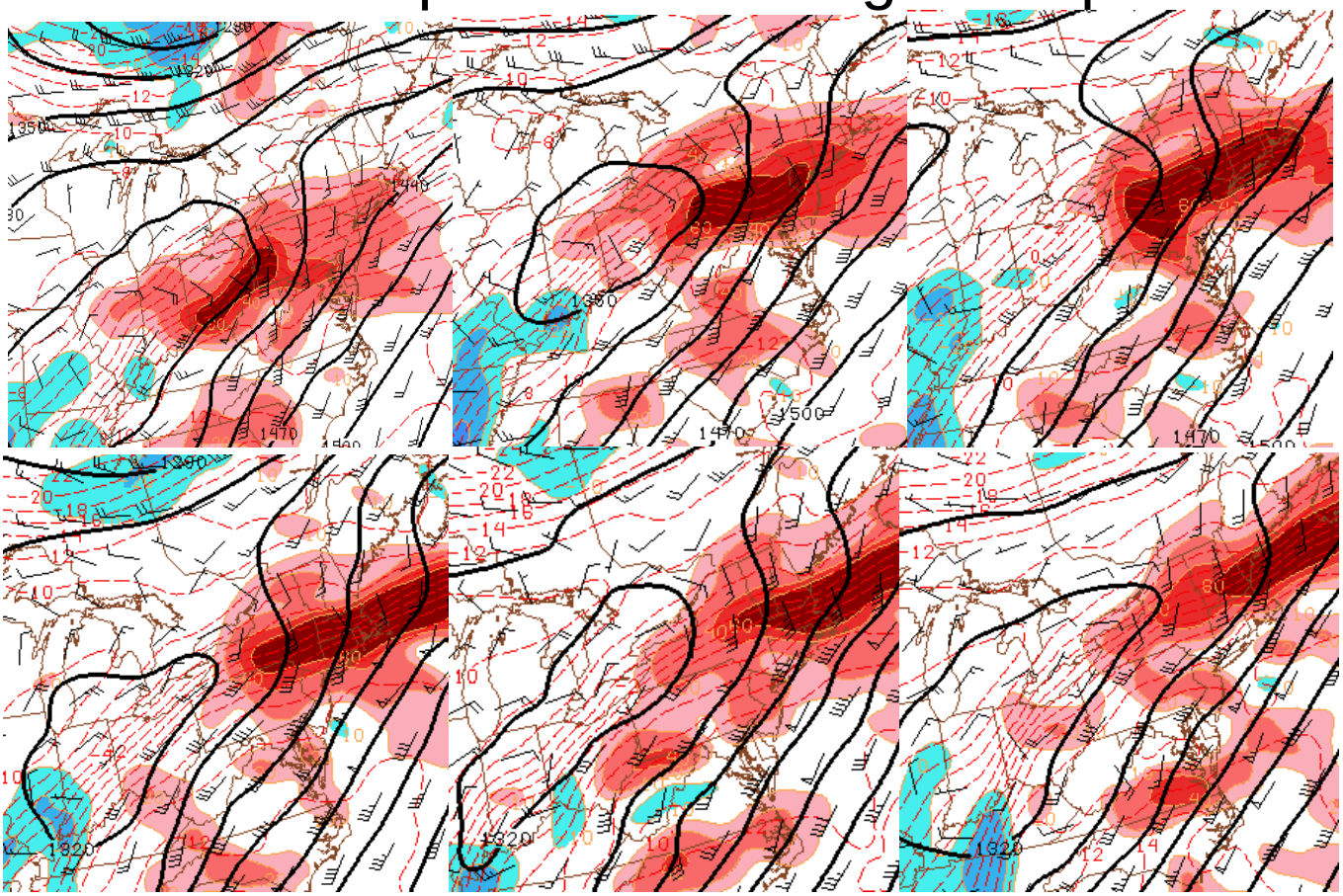




00z and 12z February 6 2020

At 00z February 6, vertical thermal profiles were at either or below freezing at all levels. The dry slot at 800 mb did not allow for precipitation to take place at the time. By 12z February 6, the air temperatures are below freezing from the surface until 850 mb while it is above freezing from 850 to 650 mb. The vertical thermal profiles were now conducive to freezing rain with possibly a mix with sleet.

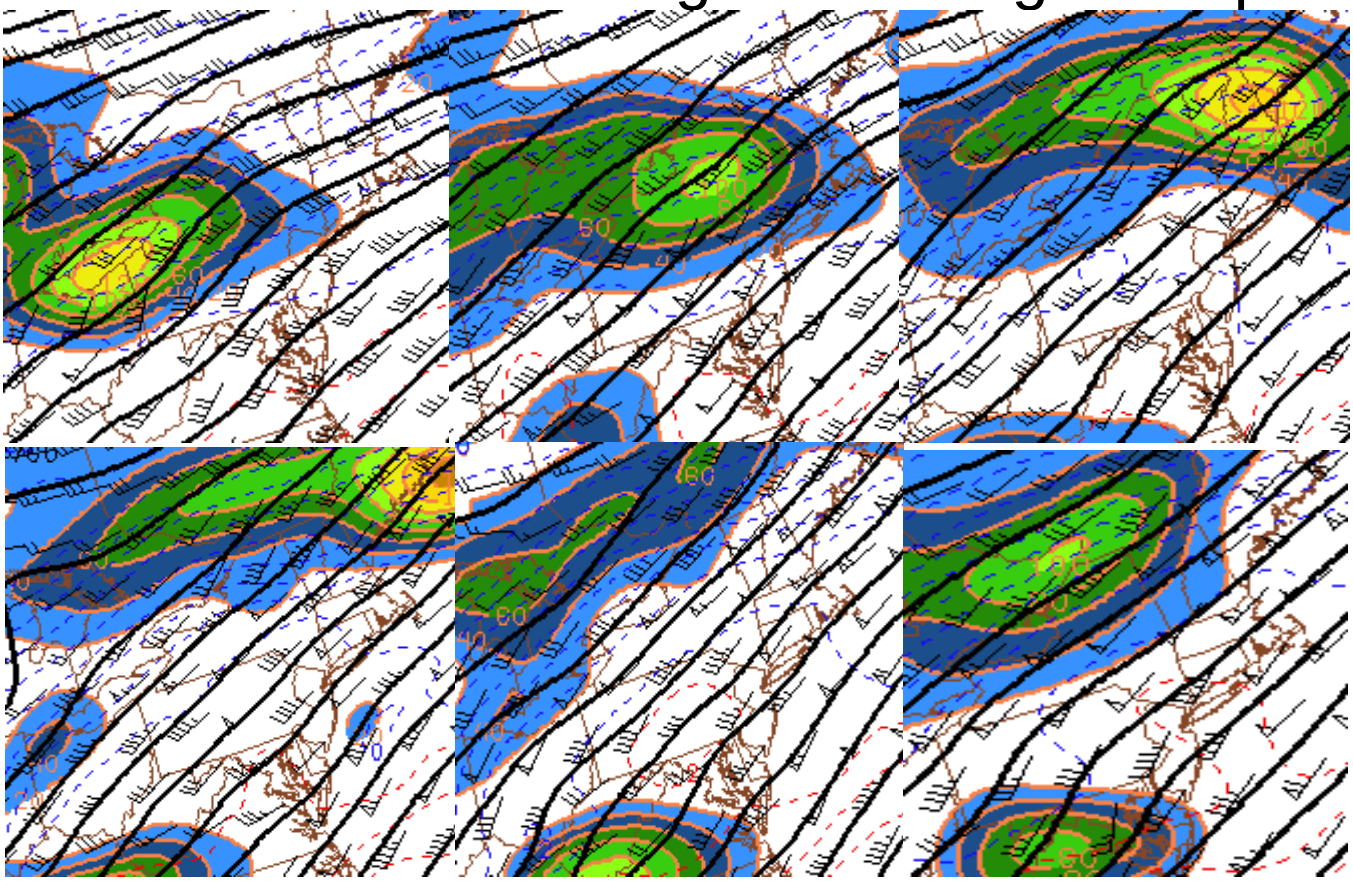
850 mb temp advection/height/temp/wind



03z, 06z, 09z February 6 2020 (top row : left to right)
12z, 15z, 18z February 6 2020 (bottom row : left to right)

850 mb warm air advection provided enough lift and moisture to produce a period of wintry precipitation between 06z and 12z, while continuing to provide lift and moisture for scattered precipitation by 18z.

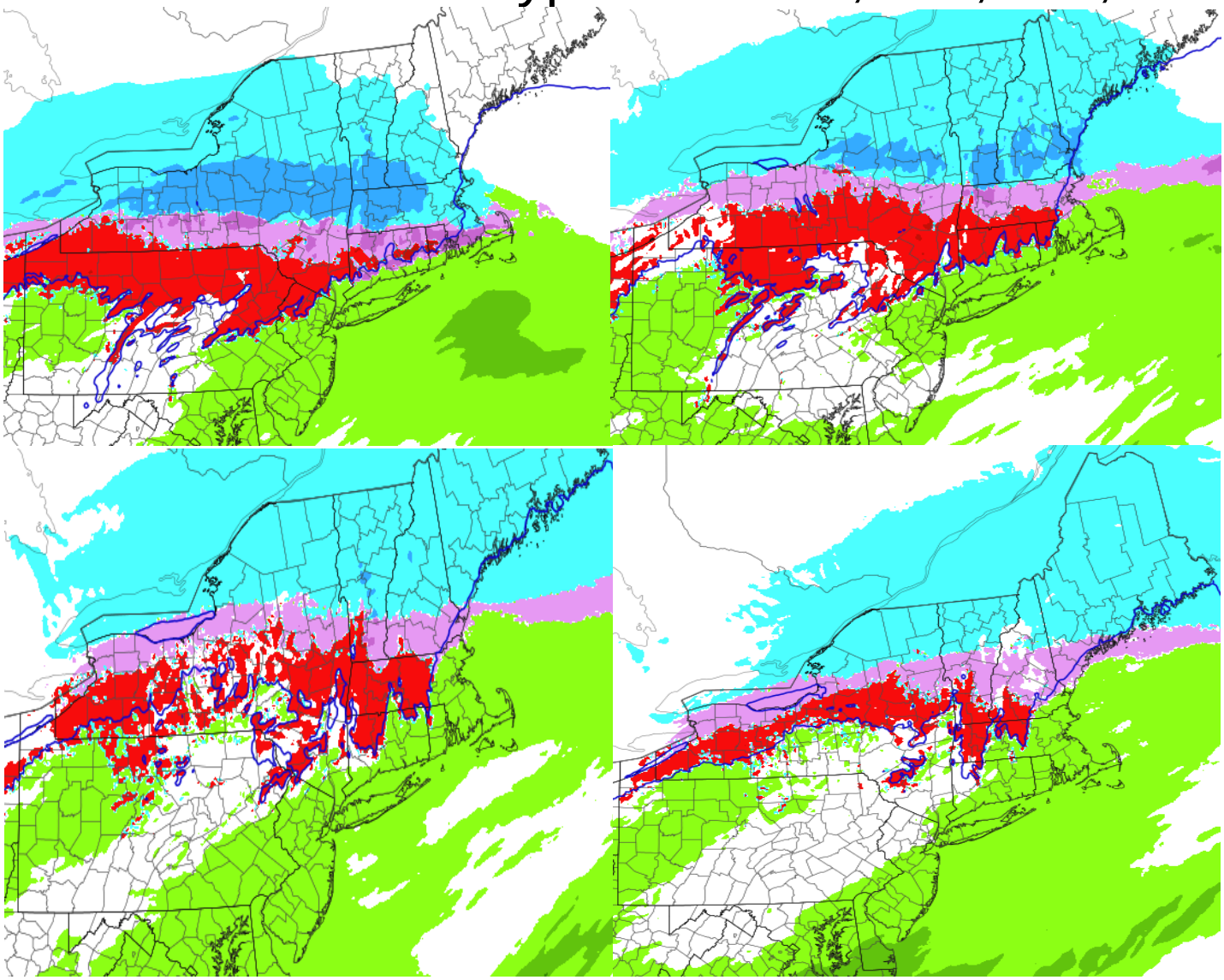
700 mb Petterssen frontogenesis/height/temp/wind



03z, 06z, 09z February 6 2020 (top row : left to right)
12z, 15z, 18z February 6 2020 (bottom row : left to right)

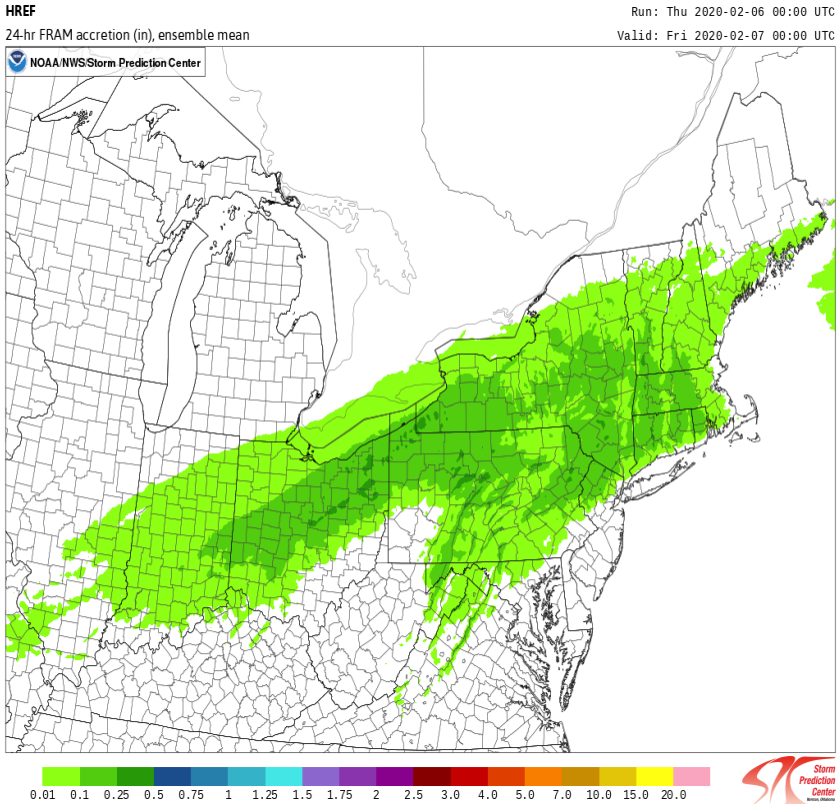
700 mb frontogenesis was one of the key contributors to a band of moderate to locally heavy snowfall. The area of moderate 700 mb frontogenesis, located over the northeastern portion of upstate New York at 06z, helped contribute to the band of precipitation before exiting the region by 12z and remaining along the NY state-Canadian border by 18z.

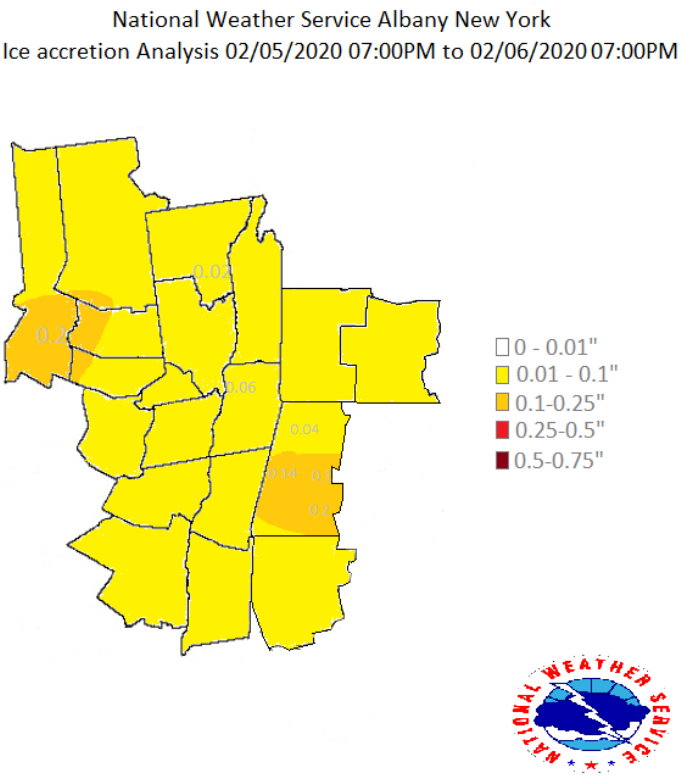
00z Feb 6 HREF P-type valid 09z, 12z, 15z, 18z



The HREF had moderate snow along the I-90 corridor at 09z, while moving the snow/mix line just north of the I-90 corridor by 12z and just north of Glens Falls by 15z. The 32F isotherm was projected to be just north of the I-90 corridor at 18z. This came into fruition almost exactly as shown from 09z to 15z, but about one hour ahead of this projection. The only difference was that the 32F isotherm did not cross the I-90 corridor until between 22z to 23z, a few hours later than modeled.

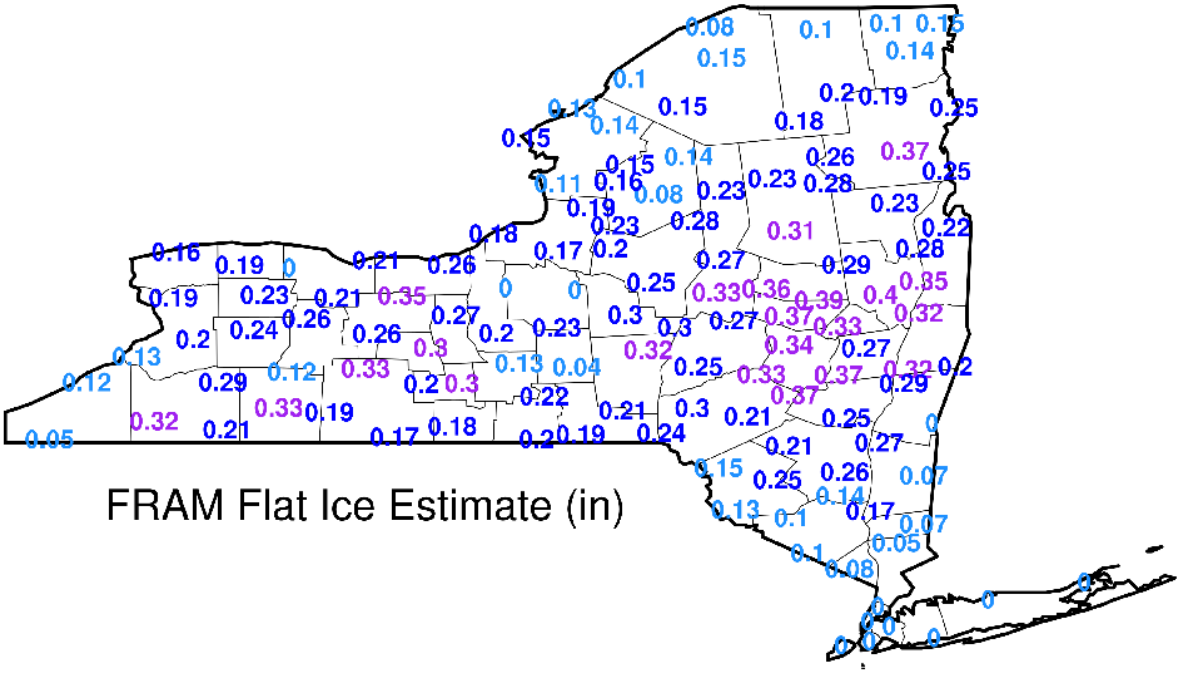
00z Feb 6 HREF Ens Mean Frz Rain vs observed





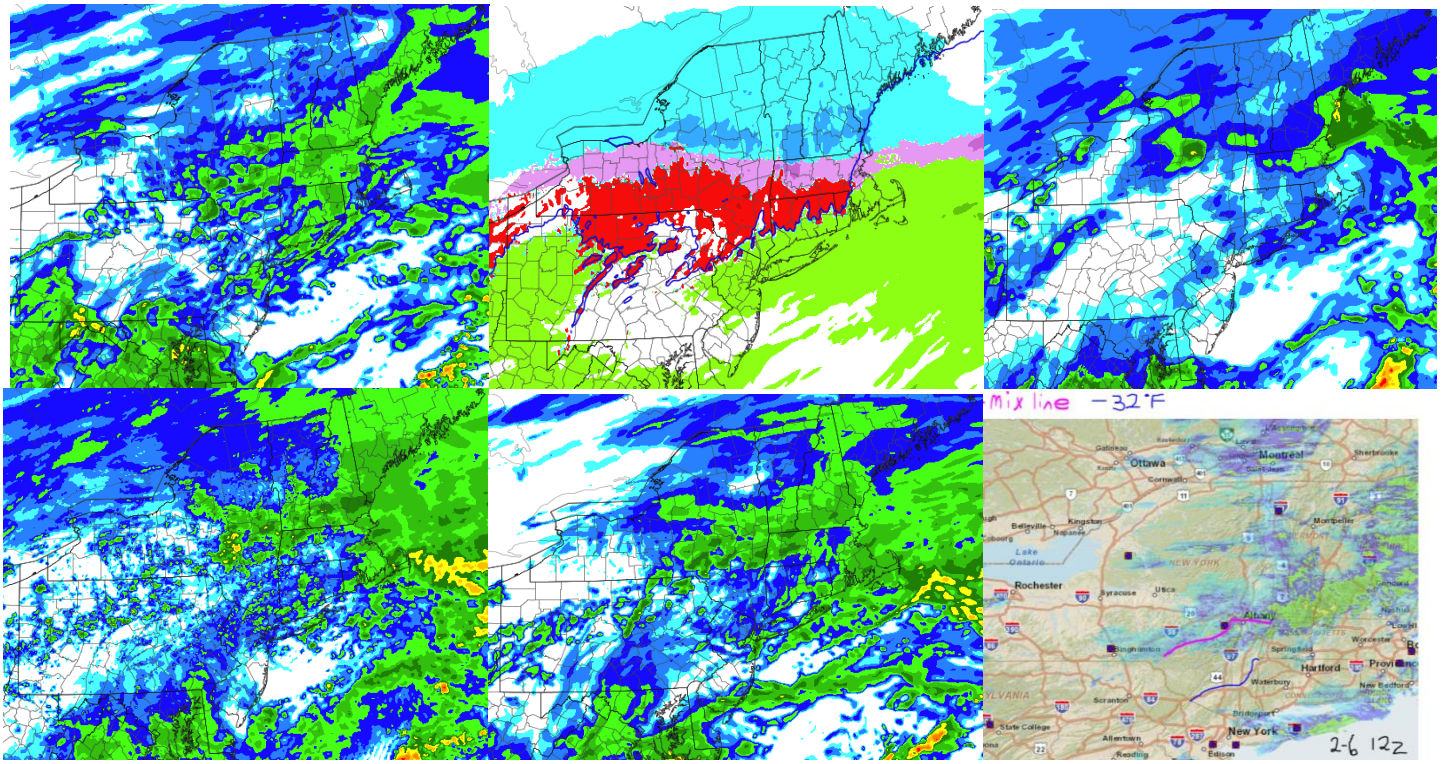
The HREF simulated a widespread region of 0.1 to 0.25 inches of ice accretion, with 0.01 to 0.1 inches modeled for the Hudson Valley region. There were very few reports provided to NWS Albany, which except for ASOS hourly observations mentioning a light glaze and Berkshire County in Massachusetts, made it difficult to pinpoint the exact region for locally higher ice accretions.

One way to estimate how much freezing rain occurred across the area was to use the freezing rain accumulation model (FRAM) algorithm on liquid precipitation amounts observed from the New York Mesonet. The algorithm utilizes observed wet bulb temperatures, precipitation rate, and wind speed to estimate freezing rain accumulations. This methodology produced the amounts shown below:



This estimate indicates that freezing rain accumulations of around 0.25 inches were widespread across the area, with largest totals from the Capital District north to the Saratoga and Lake George areas.

Radar vs Model runs at 12z Feb 6



Left to right (top row) : ARW, HREF, HRRR
Left to right (bottom row) : NAM, NSSL, Observed

The HREF model series modeled scattered areas of light to moderate precipitation at 12z Feb 6. As seen in comparison of the observed radar and HREF models, all HREF models overdid the precipitation bands over Upstate New York at 12z.

Hourly observations at KALB and KGFL

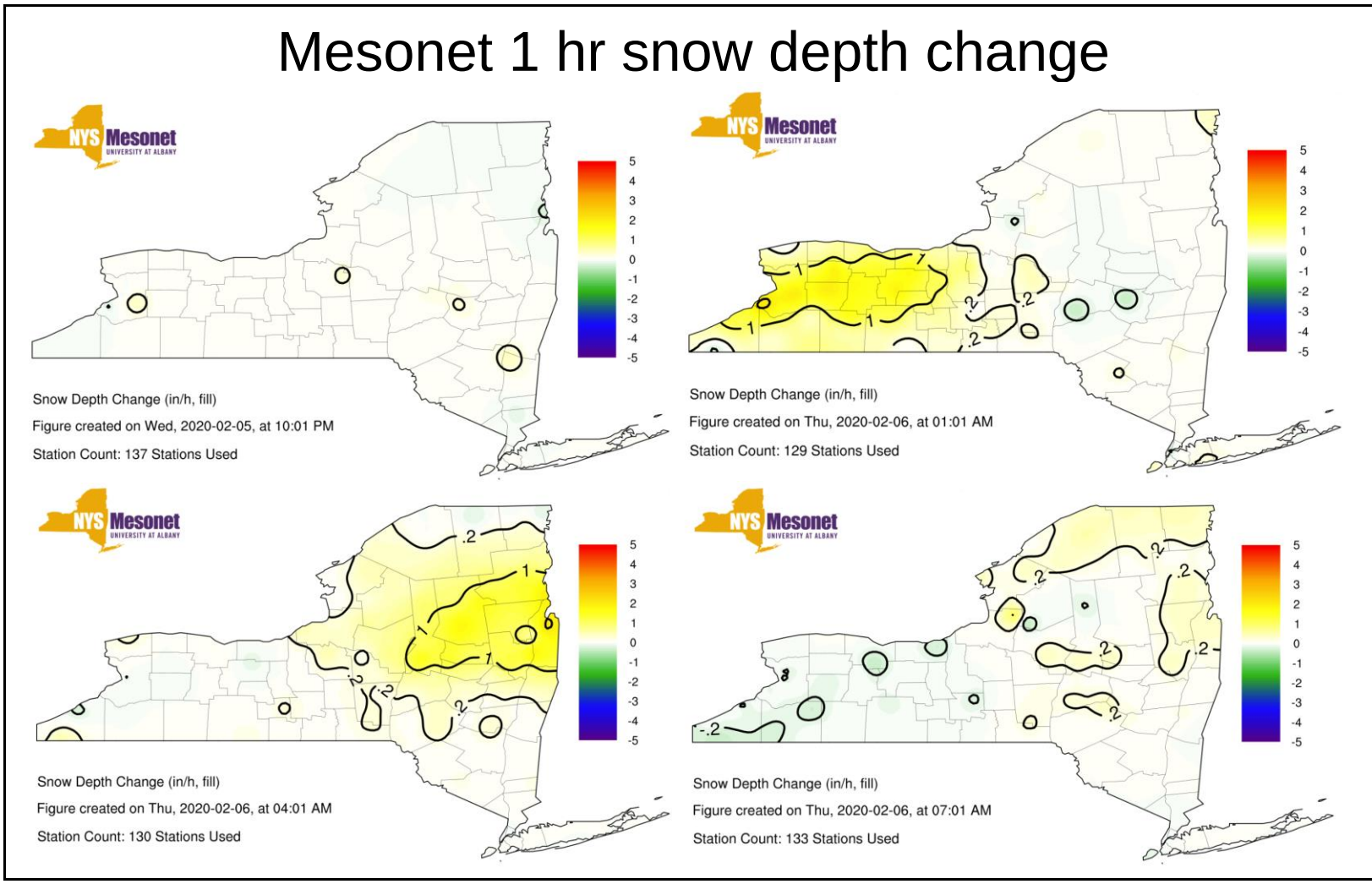
Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
1:51 AM	30 °F	17 °F	59 %	NNW	7 mph	0 mph	29.65 in	0.0 in	Light Snow
2:34 AM	28 °F	20 °F	72 %	NNE	7 mph	0 mph	29.63 in	0.0 in	Light Snow
2:41 AM	28 °F	20 °F	72 %	N	7 mph	0 mph	29.63 in	0.0 in	Light Snow
2:51 AM	28 °F	21 °F	75 %	NE	6 mph	0 mph	29.63 in	0.0 in	Light Snow
3:10 AM	28 °F	22 °F	78 %	ENE	6 mph	0 mph	29.62 in	0.0 in	Light Snow
3:13 AM	28 °F	22 °F	78 %	NE	6 mph	0 mph	29.61 in	0.0 in	Snow
3:31 AM	27 °F	22 °F	81 %	N	5 mph	0 mph	29.63 in	0.1 in	Snow and Sleet
3:36 AM	28 °F	23 °F	81 %	N	5 mph	0 mph	29.63 in	0.1 in	Snow and Sleet
3:47 AM	27 °F	21 °F	80 %	N	6 mph	0 mph	29.63 in	0.1 in	Snow and Sleet
3:51 AM	27 °F	22 °F	81 %	N	6 mph	0 mph	29.63 in	0.1 in	Snow and Sleet
4:10 AM	27 °F	22 °F	81 %	N	6 mph	0 mph	29.61 in	0.0 in	Snow and Sleet
4:18 AM	27 °F	22 °F	81 %	NE	5 mph	0 mph	29.60 in	0.0 in	Light Snow
4:39 AM	27 °F	22 °F	81 %	E	6 mph	0 mph	29.57 in	0.1 in	Light Snow
4:51 AM	27 °F	22 °F	81 %	E	5 mph	0 mph	29.55 in	0.1 in	Light Snow
4:58 AM	27 °F	22 °F	81 %	ENE	7 mph	0 mph	29.54 in	0.0 in	Snow and Sleet
5:14 AM	27 °F	23 °F	85 %	NE	3 mph	0 mph	29.54 in	0.0 in	Snow and Sleet
5:38 AM	27 °F	23 °F	85 %	NNW	5 mph	0 mph	29.54 in	0.0 in	Sleet
5:43 AM	27 °F	22 °F	81 %	N	3 mph	0 mph	29.52 in	0.0 in	Light Sleet
5:51 AM	27 °F	23 °F	85 %	NNE	3 mph	0 mph	29.51 in	0.1 in	Snow and Sleet
5:59 AM	27 °F	23 °F	85 %	CALM	0 mph	0 mph	29.51 in	0.0 in	Light Sleet
6:09 AM	27 °F	23 °F	85 %	NNE	3 mph	0 mph	29.50 in	0.0 in	Wintry Mix
6:41 AM	28 °F	23 °F	81 %	N	5 mph	0 mph	29.50 in	0.0 in	Wintry Mix
6:51 AM	29 °F	24 °F	82 %	N	5 mph	0 mph	29.51 in	0.0 in	Wintry Mix
7:01 AM	29 °F	25 °F	85 %	N	5 mph	0 mph	29.50 in	0.0 in	Wintry Mix
7:26 AM	30 °F	26 °F	85 %	VAR	3 mph	0 mph	29.50 in	0.1 in	Wintry Mix
7:35 AM	30 °F	26 °F	85 %	NNE	5 mph	0 mph	29.49 in	0.1 in	Wintry Mix
7:51 AM	30 °F	26 °F	85 %	NE	6 mph	0 mph	29.47 in	0.1 in	Wintry Mix
8:41 AM	31 °F	27 °F	85 %	NNE	7 mph	0 mph	29.47 in	0.0 in	Wintry Mix
8:51 AM	31 °F	27 °F	85 %	NE	5 mph	0 mph	29.46 in	0.0 in	Wintry Mix
9:06 AM	31 °F	27 °F	85 %	NE	5 mph	0 mph	29.46 in	0.0 in	Wintry Mix
9:51 AM	31 °F	27 °F	85 %	ENE	3 mph	0 mph	29.45 in	0.0 in	Wintry Mix
10:51 AM	31 °F	27 °F	85 %	ENE	3 mph	0 mph	29.38 in	0.0 in	Wintry Mix
11:32 AM	31 °F	28 °F	89 %	CALM	0 mph	0 mph	29.36 in	0.0 in	Fog
11:51 AM	32 °F	27 °F	82 %	NNW	3 mph	0 mph	29.36 in	0.0 in	Fog

1:53 AM	24 °F	18 °F	77 %	NNE	5 mph	0 mph	29.59 in	0.0 in	Light Snow
2:02 AM	23 °F	19 °F	85 %	E	3 mph	0 mph	29.60 in	0.0 in	Light Snow
2:09 AM	23 °F	20 °F	88 %	E	3 mph	0 mph	29.60 in	0.0 in	Light Snow
2:17 AM	22 °F	20 °F	92 %	NE	3 mph	0 mph	29.61 in	0.0 in	Light Snow
2:53 AM	22 °F	20 °F	92 %	CALM	0 mph	0 mph	29.60 in	0.1 in	Snow
3:00 AM	22 °F	21 °F	96 %	CALM	0 mph	0 mph	29.61 in	0.0 in	Snow
3:07 AM	22 °F	20 °F	92 %	CALM	0 mph	0 mph	29.59 in	0.0 in	Heavy Snow
3:35 AM	22 °F	20 °F	92 %	ENE	5 mph	0 mph	29.54 in	0.1 in	Snow
3:43 AM	22 °F	20 °F	92 %	E	7 mph	0 mph	29.53 in	0.1 in	Light Snow
3:53 AM	22 °F	20 °F	92 %	ENE	3 mph	0 mph	29.52 in	0.1 in	Light Snow
4:11 AM	22 °F	19 °F	89 %	NE	5 mph	0 mph	29.52 in	0.0 in	Light Snow
4:27 AM	22 °F	20 °F	92 %	NE	3 mph	0 mph	29.51 in	0.0 in	Snow
4:37 AM	22 °F	20 °F	92 %	CALM	0 mph	0 mph	29.52 in	0.0 in	Light Snow
4:44 AM	22 °F	19 °F	89 %	CALM	0 mph	0 mph	29.51 in	0.0 in	Light Snow
4:53 AM	22 °F	20 °F	92 %	N	5 mph	0 mph	29.50 in	0.1 in	Light Snow
5:26 AM	24 °F	21 °F	88 %	N	6 mph	0 mph	29.49 in	0.0 in	Light Snow
5:39 AM	24 °F	21 °F	88 %	N	6 mph	0 mph	29.50 in	0.1 in	Light Snow
5:53 AM	24 °F	22 °F	91 %	NNE	7 mph	0 mph	29.49 in	0.1 in	Light Snow
6:17 AM	24 °F	22 °F	91 %	NNE	6 mph	0 mph	29.48 in	0.0 in	Light Snow
6:31 AM	23 °F	21 °F	92 %	NE	5 mph	0 mph	29.48 in	0.0 in	Light Snow
6:53 AM	23 °F	21 °F	92 %	NNE	5 mph	0 mph	29.48 in	0.0 in	Light Snow
7:21 AM	24 °F	22 °F	91 %	N	6 mph	0 mph	29.45 in	0.0 in	Light Snow
7:30 AM	24 °F	22 °F	91 %	N	5 mph	0 mph	29.45 in	0.0 in	Light Snow
7:53 AM	24 °F	22 °F	91 %	N	7 mph	0 mph	29.44 in	0.0 in	Light Snow
8:16 AM	25 °F	22 °F	88 %	N	6 mph	0 mph	29.43 in	0.0 in	Cloudy
8:39 AM	25 °F	22 °F	88 %	N	7 mph	0 mph	29.42 in	0.0 in	Fog
8:44 AM	25 °F	22 °F	88 %	N	7 mph	0 mph	29.42 in	0.0 in	Cloudy
8:53 AM	25 °F	22 °F	88 %	N	8 mph	0 mph	29.40 in	0.0 in	Cloudy
9:00 AM	25 °F	23 °F	92 %	N	7 mph	0 mph	29.40 in	0.0 in	Fog
9:07 AM	25 °F	23 °F	92 %	N	7 mph	0 mph	29.40 in	0.0 in	Cloudy
9:23 AM	25 °F	23 °F	92 %	N	7 mph	0 mph	29.39 in	0.0 in	Wintry Mix
9:32 AM	25 °F	23 °F	92 %	N	8 mph	0 mph	29.38 in	0.0 in	Wintry Mix
9:49 AM	25 °F	23 °F	93 %	N	6 mph	0 mph	29.36 in	0.0 in	Wintry Mix
9:53 AM	25 °F	23 °F	92 %	VAR	6 mph	0 mph	29.35 in	0.0 in	Wintry Mix
10:00 AM	25 °F	24 °F	96 %	NE	3 mph	0 mph	29.34 in	0.0 in	Wintry Mix
10:07 AM	25 °F	23 °F	92 %	ENE	5 mph	0 mph	29.33 in	0.0 in	Cloudy
10:41 AM	26 °F	23 °F	88 %	NNW	12 mph	0 mph	29.34 in	0.0 in	Cloudy
10:53 AM	26 °F	23 °F	88 %	NNW	8 mph	0 mph	29.34 in	0.0 in	Cloudy
10:56 AM	26 °F	23 °F	88 %		0 mph	0 mph	29.34 in	0.0 in	Fog
11:10 AM	26 °F	23 °F	88 %	N	9 mph	0 mph	29.33 in	0.0 in	N/A
11:32 AM	26 °F	24 °F	92 %	N	9 mph	0 mph	29.32 in	0.0 in	Cloudy
11:40 AM	27 °F	24 °F	89 %	N	9 mph	0 mph	29.32 in	0.0 in	Light Freezing Rain
11:49 AM	27 °F	25 °F	93 %	N	7 mph	0 mph	29.31 in	0.0 in	Wintry Mix
11:53 AM	27 °F	25 °F	92 %	N	8 mph	0 mph	29.31 in	0.0 in	Wintry Mix

Glens Falls and Albany ASOS stations 07z-17z Feb 6

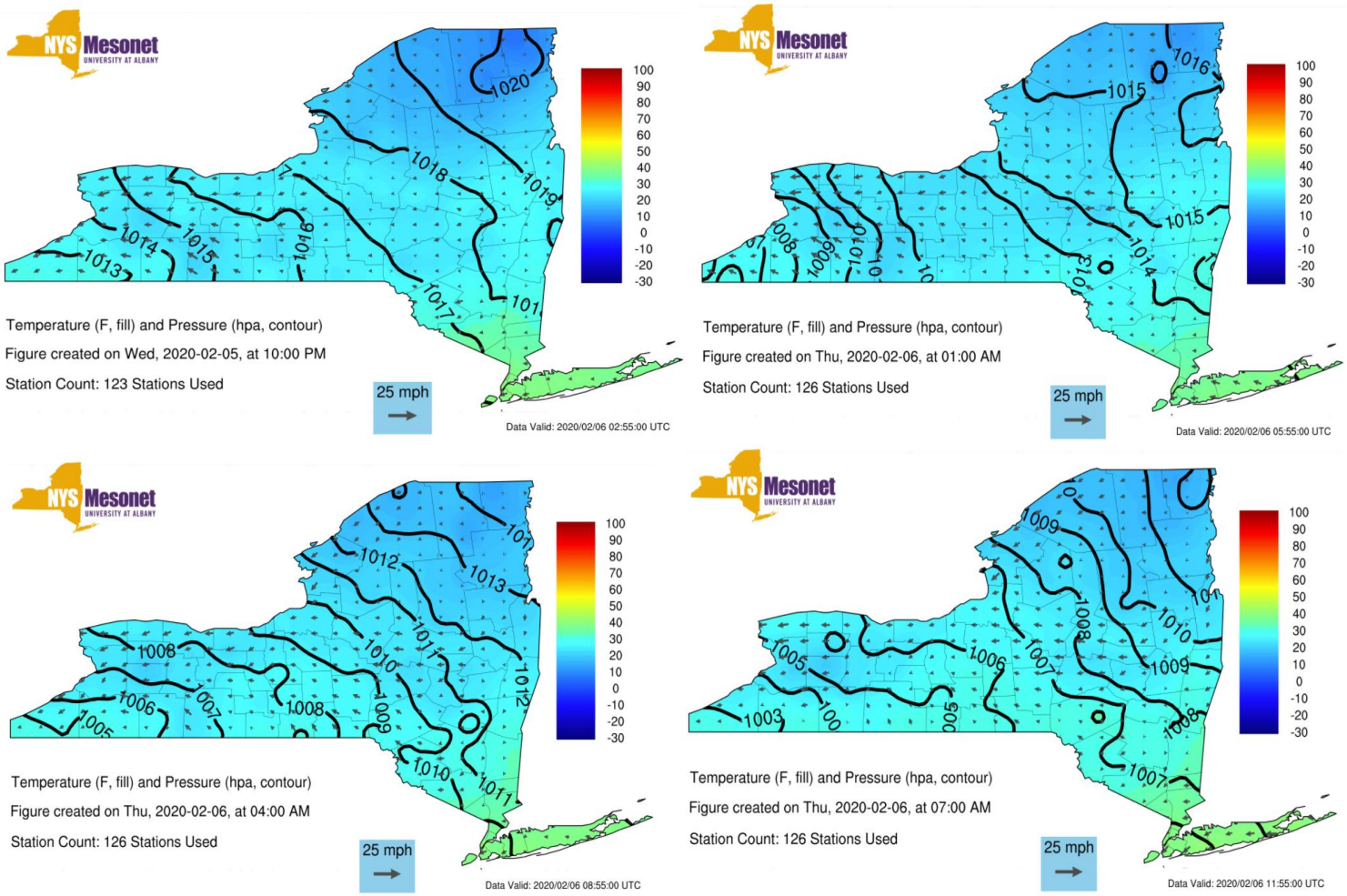
The hourly observations at both Albany and Glens Falls showed that precipitation began as snow around 07z February 6. In Albany, the snow began to mix in with sleet on and off around 0930z until making a transition to mixed wintry precip by 11z. The wintry precip ended in Albany at 16z. In Glens Falls, it continued to snow until stopping at 13z before giving way to on and off light wintry mix between 14z and 17z.

Mesonet 1 hr snow depth change



Between 03z and 06z, the snowband begins to move into Central New York from west to east. At 09z, the snowband is resulting in a widespread area of over 1 inch per hour rates as shown in the hourly snow depth change graphic courtesy of NYS Mesonet. By 12z, the snow became scattered around and northwest of the Adirondack mountains.

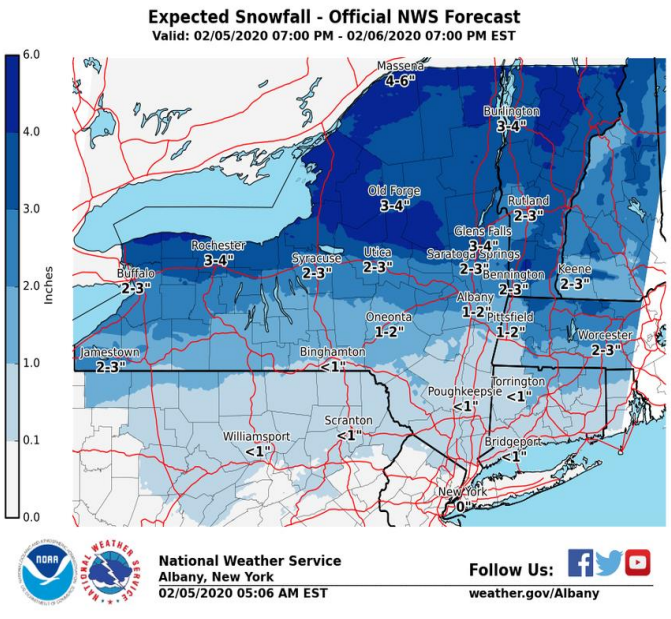
Mesonet Air Temp/Sea Level Pressure

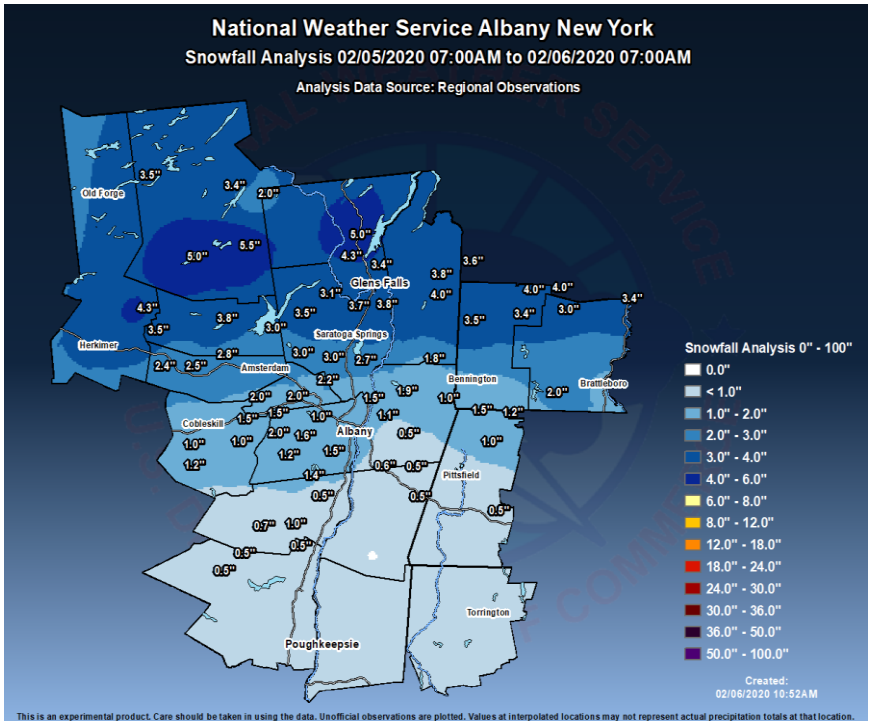


03z, 06z, 09z, 12z February 6

By 12z February 6, the sea level pressure dropped considerably while the 2m air temperature rose slightly in the Hudson Valley and Long Island.

NWS Forecast vs observed snowfall





The snow changed over to sleet and freezing rain an hour or so earlier than modeled along the I-90 corridor east of Albany. Other than that, the snowfall forecast was close to what was observed.

ALY Public Weather Information Statement

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MASSACHUSETTS

...Berkshire County...
   Williamstown          1.5   932 AM  2/06  Total snow and sleet
   Savoy                 1.3   404 PM  2/06  WeatherNet6
   Clarksburg            1.2   526 AM  2/06  WeatherNet6
   Cheshire              1.0   800 AM  2/06  snow and sleet
   Becket                0.5   609 AM  2/06  WeatherNet6

NEW YORK

...Albany County...
   Knox                  2.4  1047 AM  2/06  WeatherNet6
   Boght Corners         1.5   630 AM  2/06  Snow and sleet
   2 ESE Westmere        1.4   820 AM  2/06  NWS Employee
   1 NE Shakers          1.3   700 AM  2/06  snow and sleet
   Albany                1.1   700 AM  2/06  snow and sleet
   Albany Intl AP        1.1   400 PM  2/06  Snow and sleet
   Colonie               1.0   700 AM  2/06  WeatherNet6

...Columbia County...
   Spencertown           0.5   627 AM  2/06  WeatherNet6
   Chatham               0.3   343 PM  2/06  Trained Spotter
   Taghkanic             0.1   809 AM  2/06  WeatherNet6

...Dutchess County...
   Red Hook              0.2   630 AM  2/06  Sleet and freezing rain

...Fulton County...
   Broadalbin            3.0   808 AM  2/06  WeatherNet6

...Greene County...
   Greenville Center     1.4   623 AM  2/06  WeatherNet6
   Haines Falls          1.0   533 AM  2/06  WeatherNet6
   Catskill              0.3  1204 PM  2/06  WeatherNet6
   Halcott Center        0.2   816 AM  2/06  WeatherNet6

...Schoharie County...
   Schoharie             2.0  1203 PM  2/06  WeatherNet6
   Richmondville         2.0  1218 PM  2/06  WeatherNet6
   Charlotteville        1.3  1135 AM  2/06  WeatherNet6
   Jefferson             1.2   520 AM  2/06  WeatherNet6
   Middleburgh           1.0   525 AM  2/06  WeatherNet6

...Ulster County...
   Phoenicia             0.5   607 AM  2/06  WeatherNet6

...Warren County...
   Warrensburg           6.0  1059 AM  2/06  WeatherNet6
   Queensbury            3.4   900 AM  2/06  Emergency Manager
   Lake Luzerne          3.1   530 AM  2/06  WeatherNet6

...Washington County...
   Hebron                4.0   637 AM  2/06  WeatherNet6
   Hartford              3.8   723 AM  2/06  Trained Spotter
   Granville             3.6   815 AM  2/06  Emergency Manager
   Hudson Falls          3.5   757 AM  2/06  WeatherNet6
   Cambridge             2.0   900 AM  2/06  Trained Spotter

VERMONT

...Bennington County...
   Landgrove             4.5  1150 AM  2/06  WeatherNet6
   Woodford              4.0  1211 PM  2/06  WeatherNet6
   West Arlington        3.5   616 AM  2/06  WeatherNet6
   3 SSE Arlington       3.0  1030 AM  2/06  0.30 liquid equivalent
   5 NW Readsboro        2.1   400 PM  2/06  Public

...Windham County...
   Townshend             3.5  1100 AM  2/06  Social Media
   2 S Londonderry       3.0   706 AM  2/06  1400 feet elevation
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...Hamilton County...
   2 E Hoffmeister       5.5  1000 AM  2/06  Trained Spotter
   Wells                 5.5   730 AM  2/06  WeatherNet6
   Piseco                5.0   607 AM  2/06  WeatherNet6
   Inlet                 3.5   615 AM  2/06  all snow
   Indian Lake           2.0   527 AM  2/06  WeatherNet6

...Herkimer County...
   2 SSW Salisbury       2.8  1030 AM  2/06  Trained Spotter

...Montgomery County...
   Amsterdam             3.0  1146 AM  2/06  WeatherNet6
   Fonda                 2.8   552 AM  2/06  WeatherNet6
   Palatine Bridge       2.5   508 AM  2/06  WeatherNet6

...Rensselaer County...
   Petersburg            1.0   625 AM  2/06  WeatherNet6

...Saratoga County...
   1 WNW Gansevoort      4.0   930 AM  2/06  CoCoRaHS
   Wilton                3.7   700 AM  2/06  Meteorologist
   Lake Desolation       3.5   518 AM  2/06  WeatherNet6
   Galway                3.2  1141 AM  2/06  WeatherNet6
   Hickeys Corners       3.2   700 AM  2/06  snow and sleet
   3 WNW Victory         3.2  1100 AM  2/06  Social Media

...Schenectady County...
   1 SSW Aqueduct        2.2   545 AM  2/06  Snow and sleet
   Scotia                2.0   645 AM  2/06  Snow and sleet
   Glenville             2.0  1151 AM  2/06  WeatherNet6
   Schenectady           2.0   713 AM  2/06  WeatherNet6
   Delanson              2.0  1154 AM  2/06  WeatherNet6
   South Schenectady     1.9   530 AM  2/06  NWS Employee
   Schenectady-GE Plot   1.7   800 AM  2/06  mix of snow and sleet
   Duanesburg            1.5   643 AM  2/06  WeatherNet6

**********************STORM TOTAL ICE**********************

LOCATION          STORM TOTAL     TIME/DATE   COMMENTS
                        ICE           OF
                   /INCHES/   MEASUREMENT

MASSACHUSETTS

...Berkshire County...
   3 S Sandisfield       0.20  1230 PM  2/06  Trained Spotter
   Pittsfield Municipal  0.14  1000 AM  2/06  ASOS
   Peru                  0.10  1100 AM  2/06  Trained Spotter
   Harriman-and-west-Ai  0.04  1001 AM  2/06  ASOS

NEW YORK

...Herkimer County...
   2 SSW Salisbury       0.20   340 PM  2/06  Trained Spotter

...Rensselaer County...
   1 N Sycaway           0.06  1231 PM  2/06  NWS Employee

...Warren County...
   Floyd Bennett Memori  0.02  1001 AM  2/06  ASOS

VERMONT

...Bennington County...
   5 NW Readsboro        0.10   400 PM  2/06  Public
   Bennington State Air  0.08  1002 AM  2/06  ASOS
```

Snow/Sleet/Ice totals in statement issued 2151z Feb 6

Community observation reports submitted to NWS Albany confirmed widespread snowfall totals of 2 to 6 inches with lesser totals over and south of the Capital region.

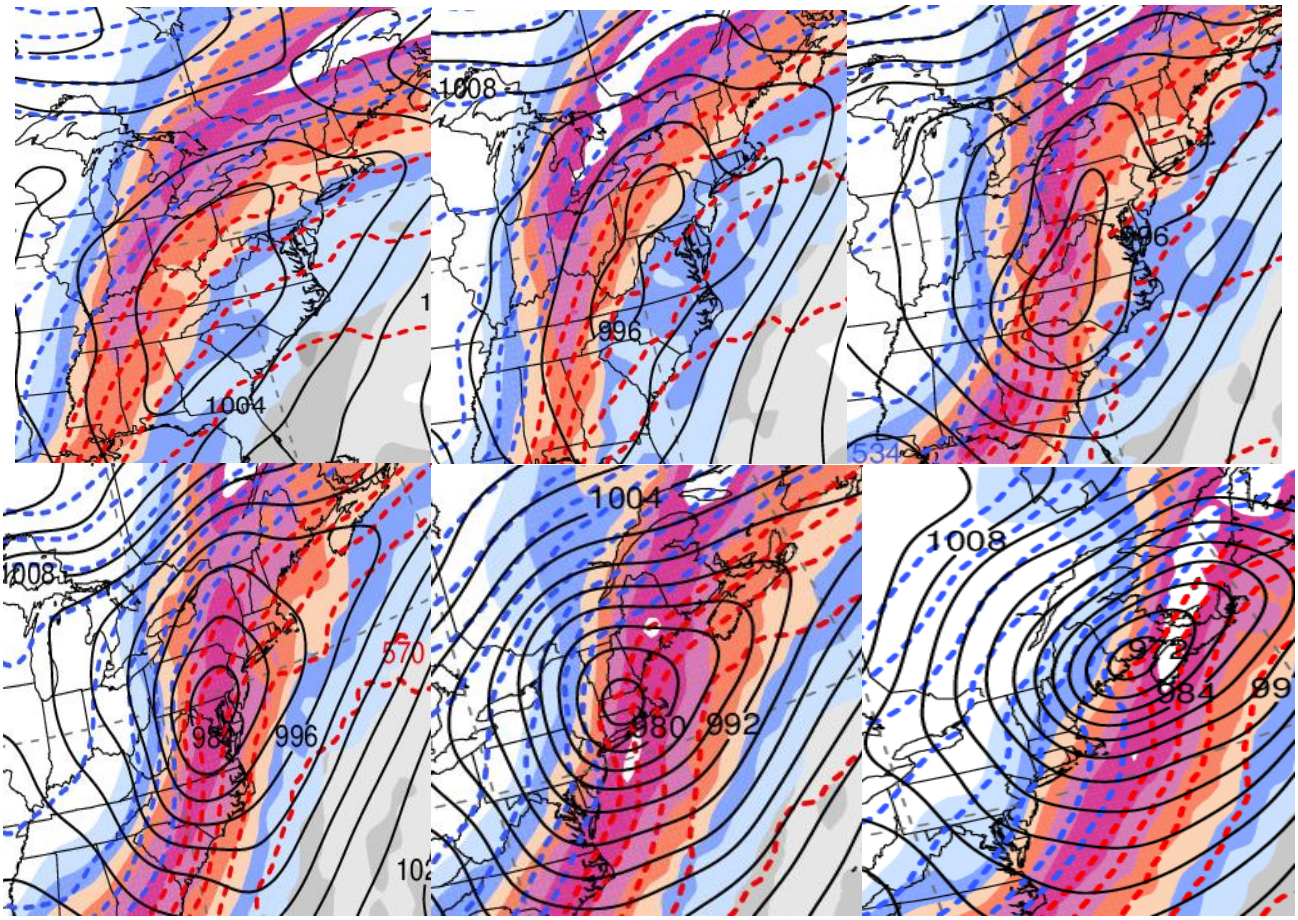
Summary

- A nearly stationary frontal system with a weak area of low pressure approached the mid-Atlantic coastline overnight Wednesday Feb 5 into Thursday Feb 6
- Cold 2m air temperatures pumped in by high pressure to the north allowed for precipitation at the onset to begin as snow
- Strong lower-to-mid level frontogenesis, isentropic lift, and large-scale uplift assisted by 250 mb level winds were favorable for moderate to heavy snow bands well to the north of the frontal boundary
- 850 mb warm air advection to the north allowed for temperatures to rise above freezing aloft, allowing for a changeover from snow to sleet and then freezing rain
- The snow changed over to sleet and freezing rain an hour or so earlier than modeled along the I-90 corridor east of Albany. Other than that, the snowfall forecast was close to what was observed.

Part II Outline

- Synoptic pattern
- Thermal profiles
- Frontogenesis and banding
- Precipitation/precipitation type forecasts
- Observations
- Summary

GFS analysis of 1000-500 mb thickness, precipitable water, SLP, 250 mb wind

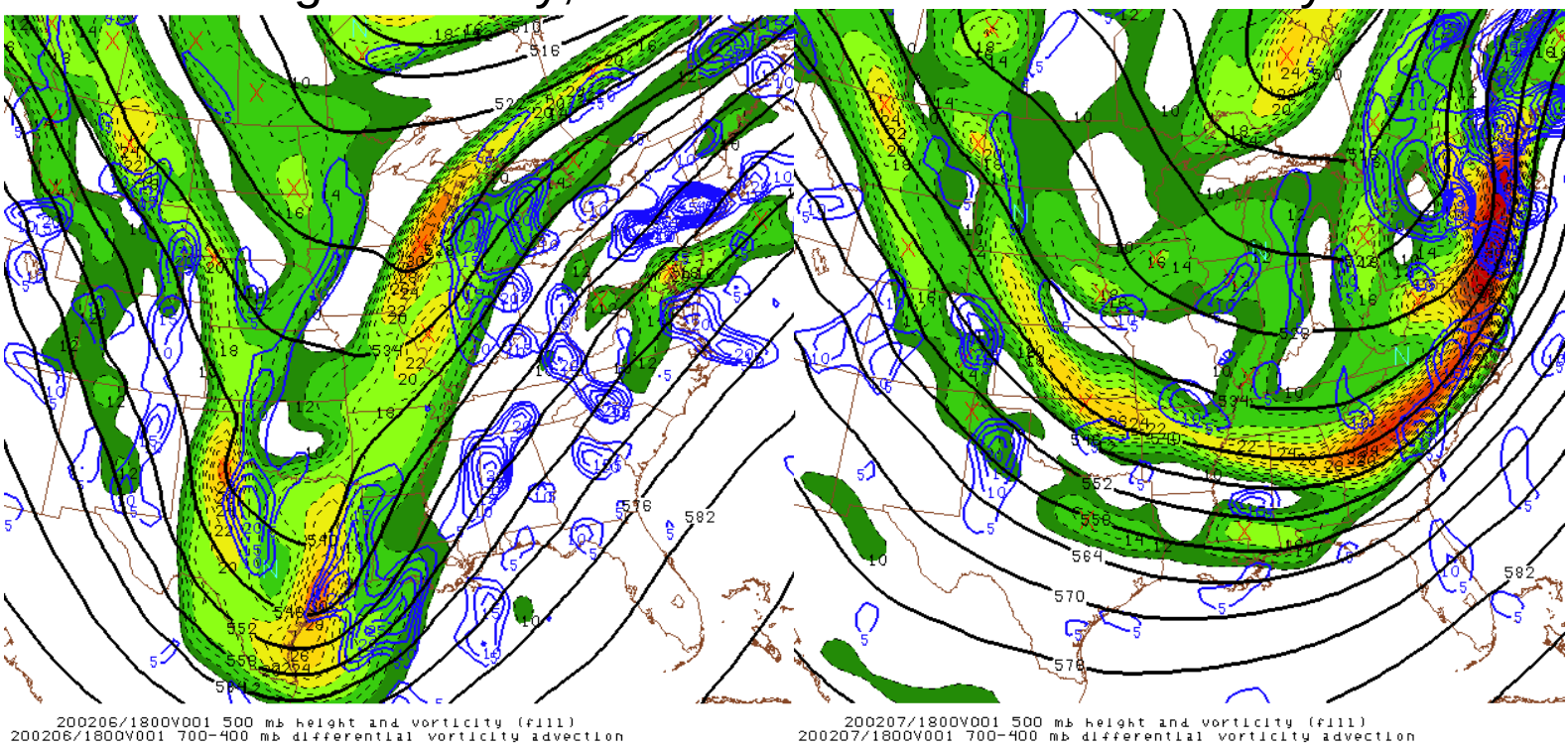


Top : 18z 2/6, 00z 2/7, 06z 2/7, Bottom : 12z 2/7, 18z 2/7, 00z 2/8

Plots courtesy of Dr. Heather Archambault, http://www.atmos.albany.edu/student/heathera/

From 18z February 6 to 00z February 8, the storm deepened steadily as the accompanying jet streak just to the north intensified to over 100 kts. This provided large-scale uplift for precipitation.

500 mb height/vorticity, 400-700 mb differential vorticity advection

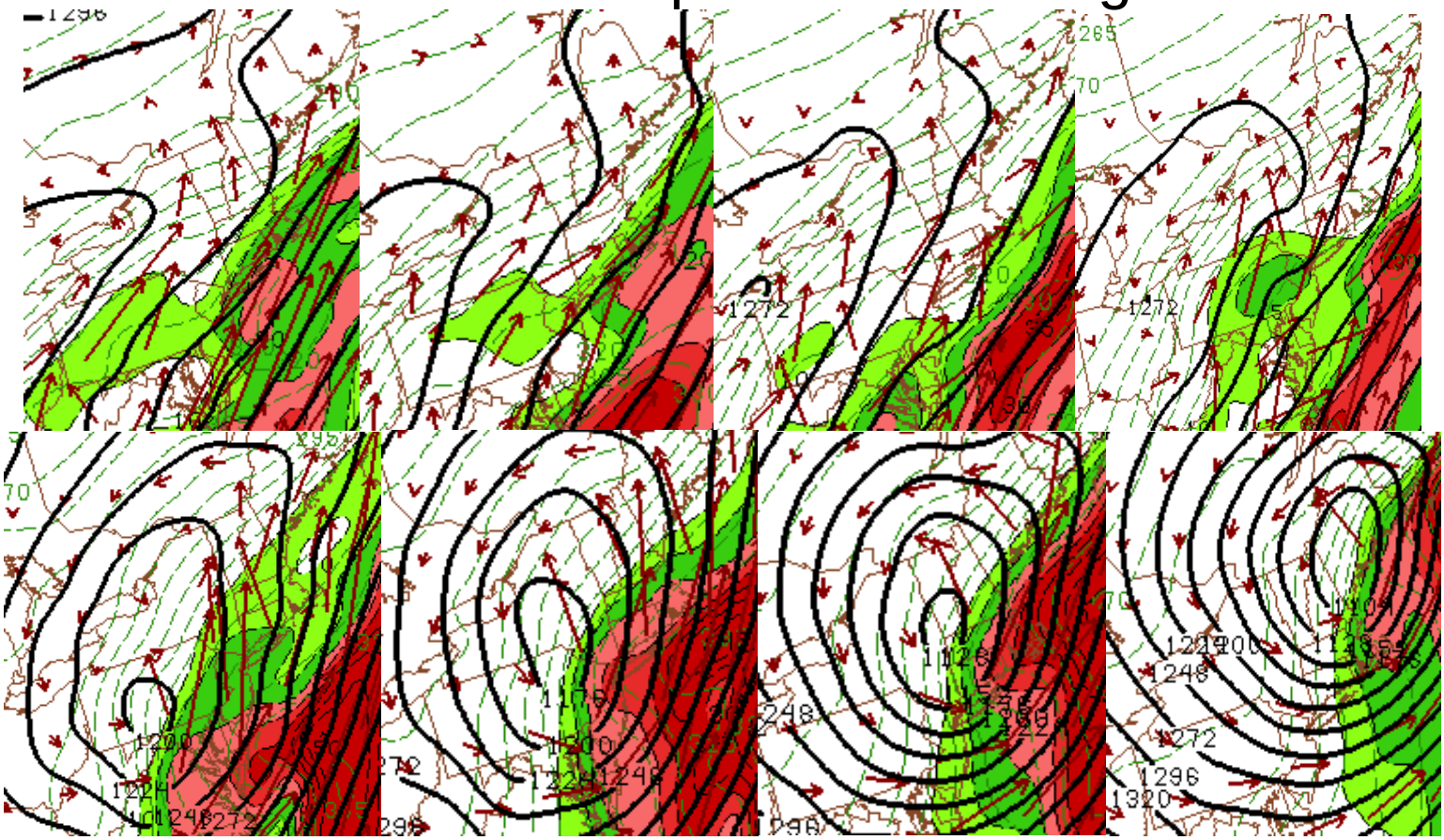


18z February 6 and 18z February 7

Plots courtesy of Dr. Heather Archambault, http://www.atmos.albany.edu/student/heathera/

Strong positive 700-400 mb cyclonic vorticity advection and negative tilting of the 500 mb trough contributed to the deepening of the cyclone.

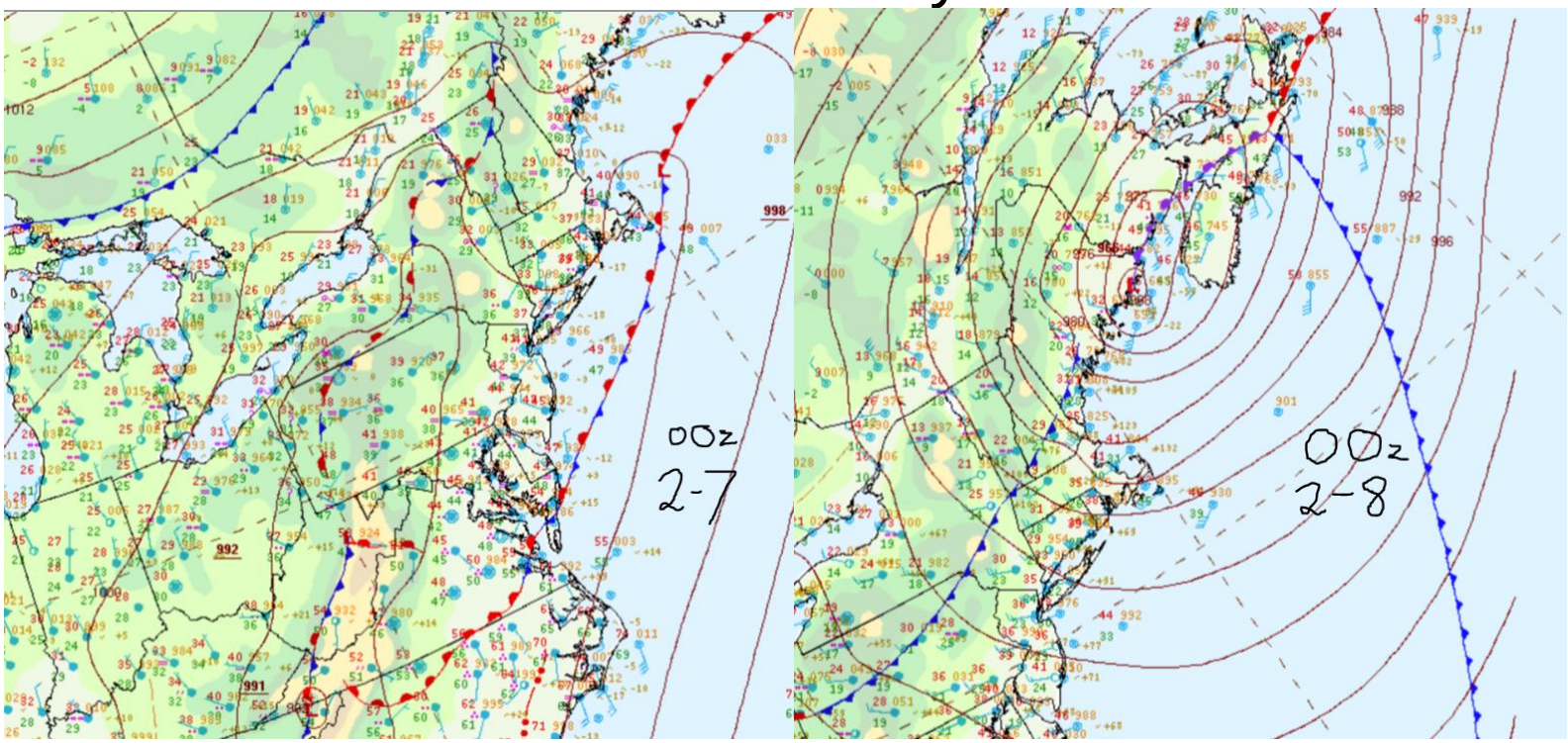
850 mb moisture transport vectors/height/theta-e



Top : 18z 2/6, 21z 2/6, 00z 2/7, 03z 2/7
Bot : 12z 2/7, 15z 2/7, 18z 2/7, 21z 2/7

850 mb warm air, theta-e, and moisture advection to the north and north-northeast, as pointed out by moisture transport vectors, provided the moisture needed for the atmosphere to interact with in order to continue producing precipitation as light sleet and freezing rain until late Thursday night. The moisture transport provided the moisture needed to produce rain, freezing rain, sleet and snow on the backside of the storm during the daytime hours of Friday, February 7.

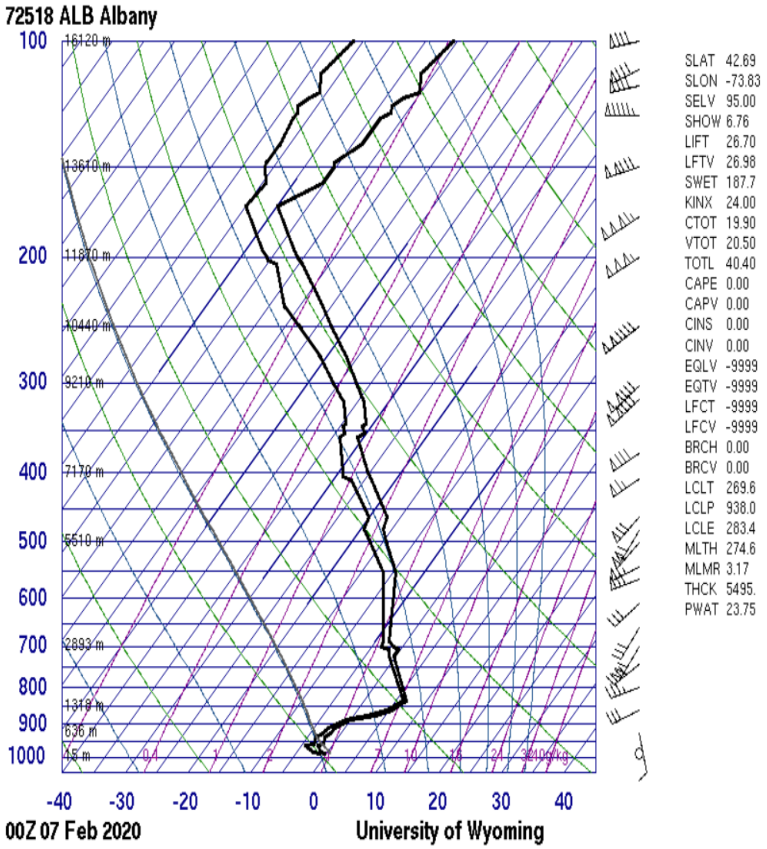
Surface Analysis

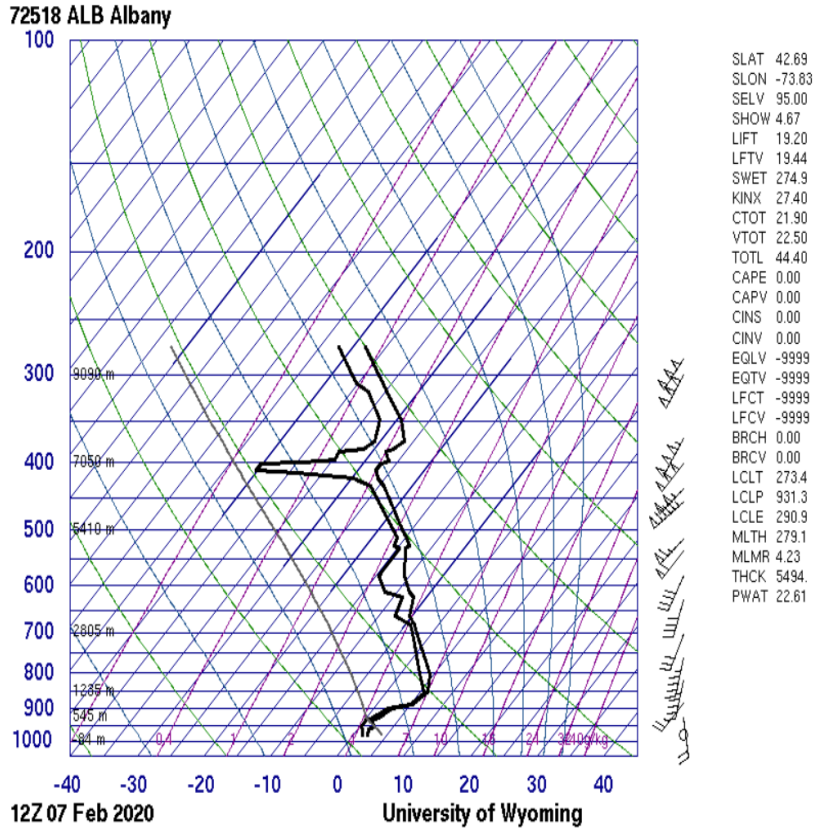


00z February 7, 00z February 8

The central pressure of the storm dropped from 991 to 966 millibars, which is a 25 mb decrease in a 24 hour period. It met the NWS criteria for bombogenesis, which is the deepening of a storm at a rate of at least 24 mb in a 24 hour period.

Skew-T at KALB

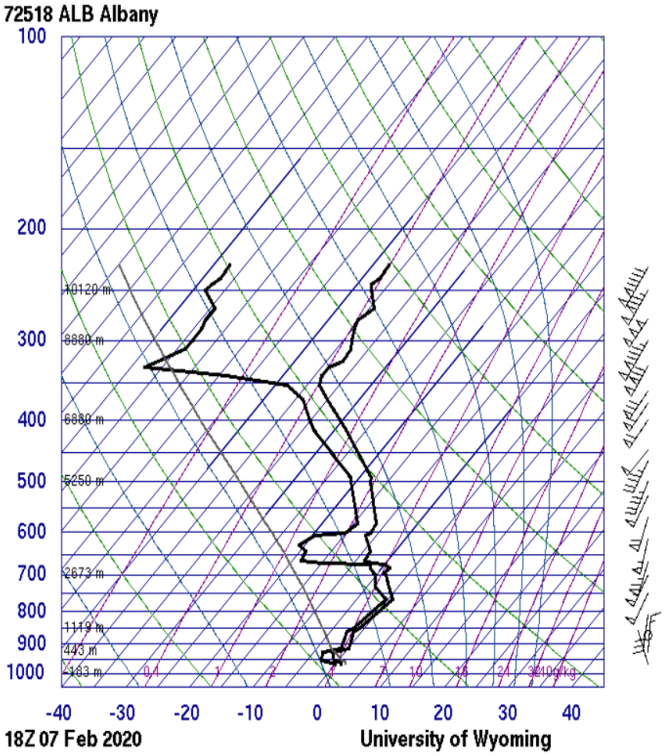


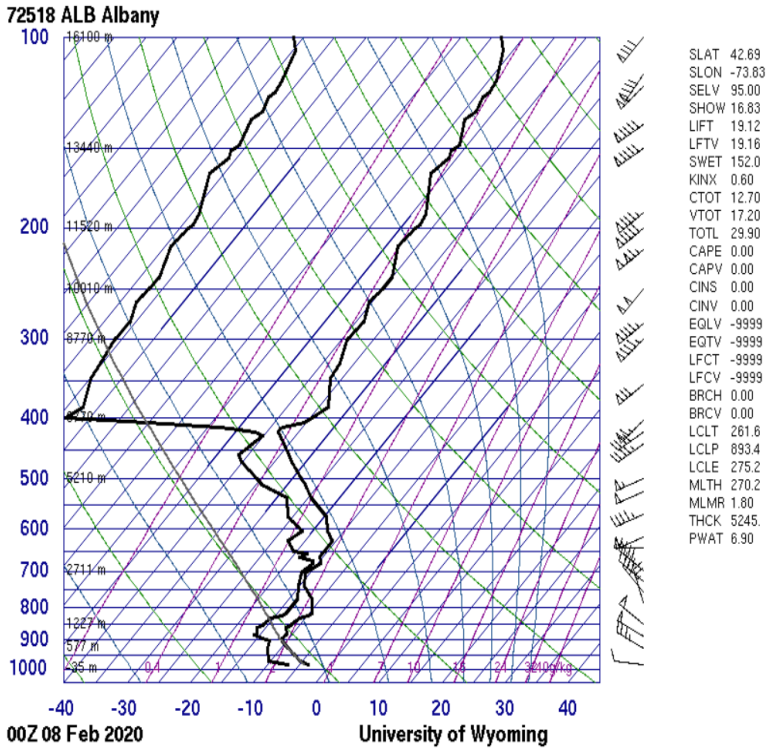


00z February 7, 12z February 7

Vertical thermal profiles continued to support freezing rain at 00z February 7 due to temps at least 10C just above the 850 mb level. By 12z February 7, the 2 m air temperatures rose slightly above freezing, which marked the transition over to plain rain.

Skew-T at KALB

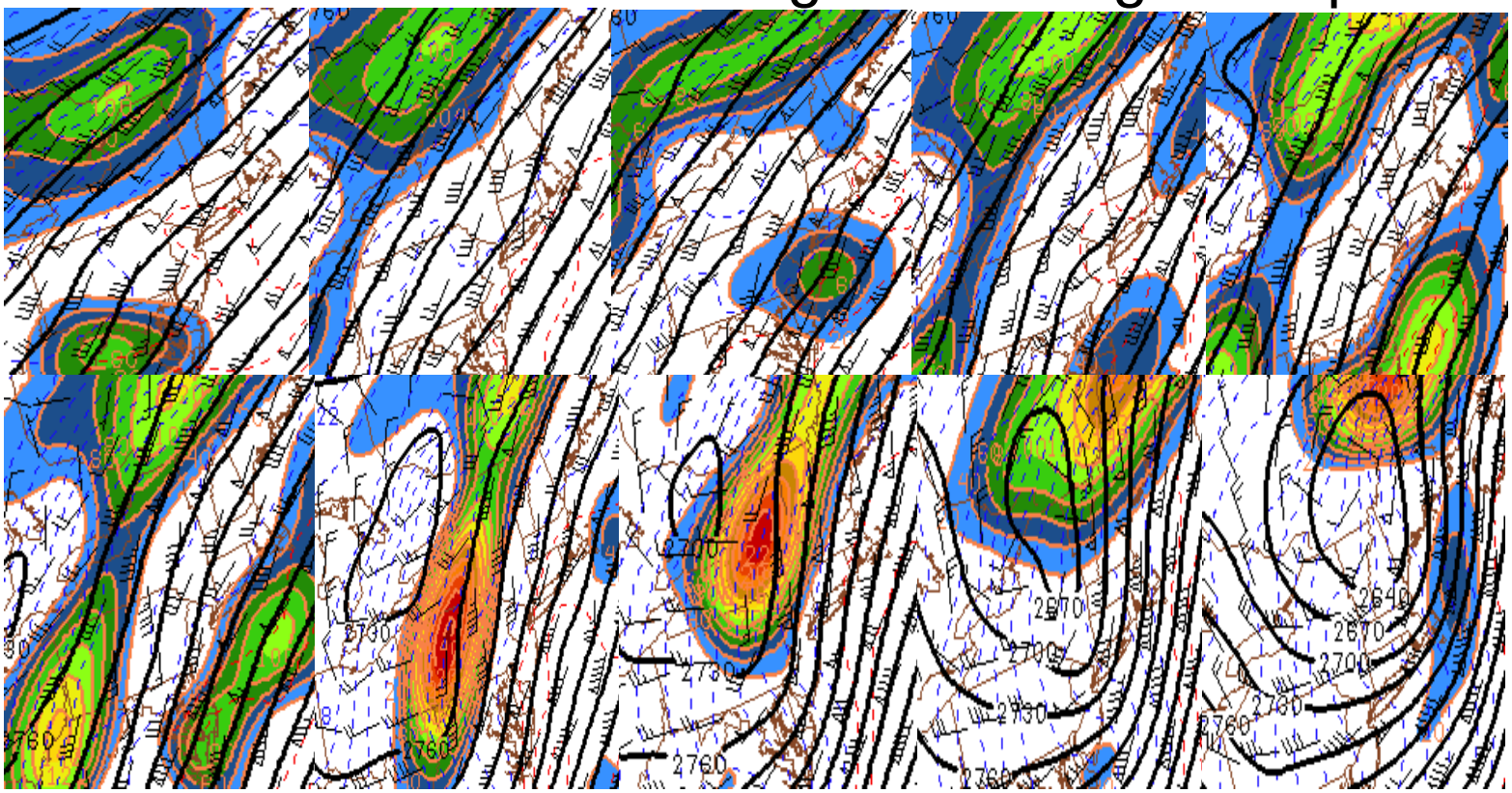




18z February 7, 00z February 8

At 18z February 7, the temperatures at Albany are still above freezing aloft while around freezing at the surface. At the time, rain was just beginning to transition over to snow. At 00z February 8, the vertical profiles showed backing winds which is indicative of cold air advection.

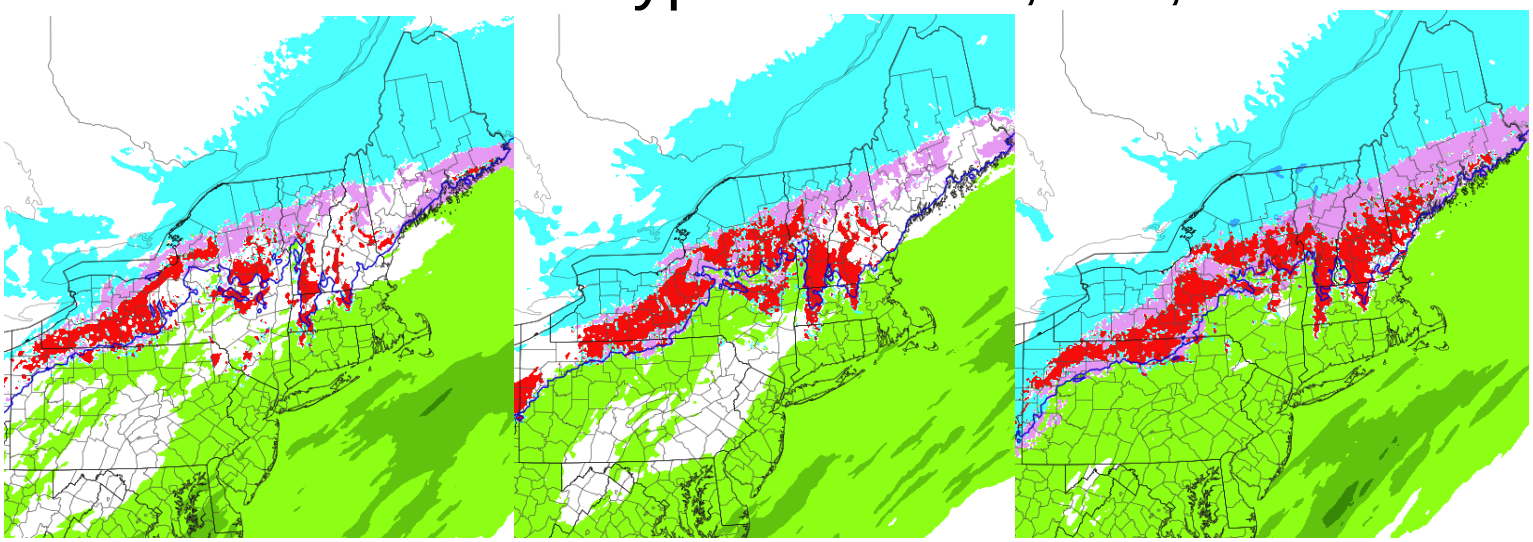
700 mb Petterssen Frontogenesis/height/temp/wind



Top : 18z/21z Feb 6, 00z/03z/06z Feb 7
Bottom : 09z, 12z, 15z, 18z, 21z Feb 7

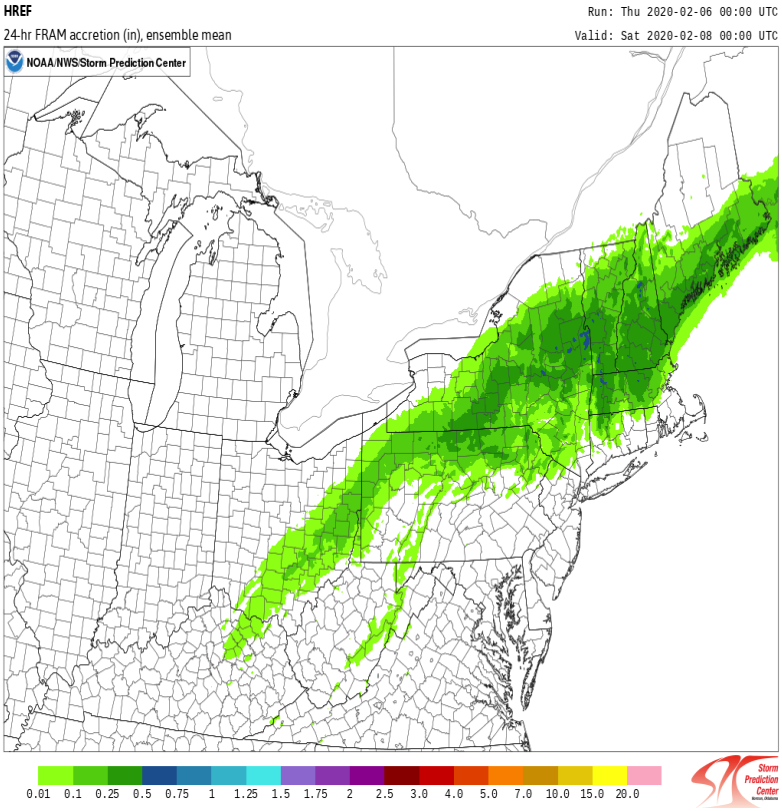
The increase of 850 hPa warm air advection just to the northeast of the cyclone led to a burst of 700 hPa frontogenesis in the cold sector. The frontogenesis led to the intensification of a large-scale snowband, which produced snowfall rates of 1 to 2 inches per hour in Central and Northeastern New York. The departure of the frontogenesis zone led to a tapering off of snow bands over the Albany region and points just to the east between 18z and 21z.

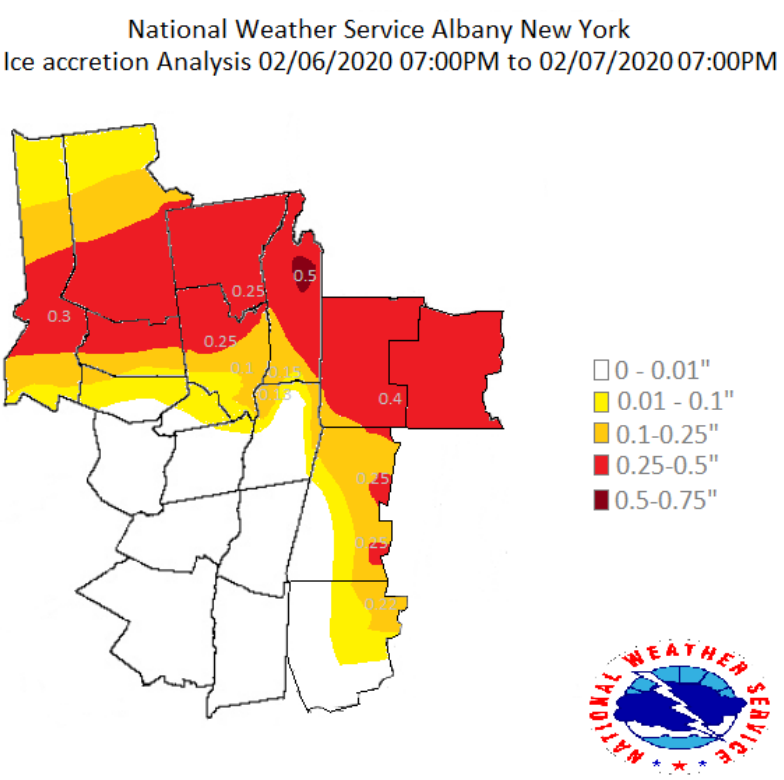
00z Feb 6 HREF P-type valid 00z, 03z, 06z Feb 7



The HREF run overdid the precipitation rates for times valid 03z and 06z February 7, while it underestimated the precipitation for the Capital region at 00z. Instead of a modeled increase in precipitation coverage, cloudy skies were observed in Albany after 02z and Glens Falls for the 00z to 06z time period. This may be related to a common trend of model performances becoming less accurate over time as the times were over 24 hours of the initial hour. The mixing line was generally well-forecast, except that the 32F isotherm was instead south of Glens Falls.

00z Feb 6 HREF Ensemble Mean Ice vs observed

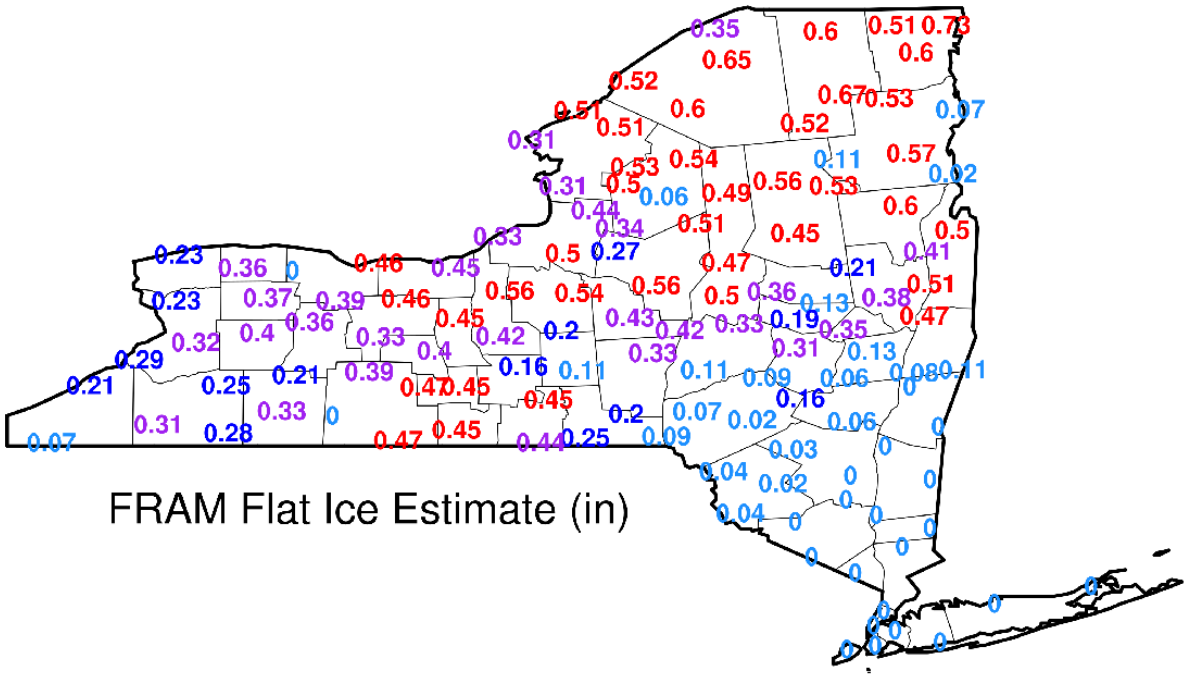




Simulated/Observed Ice Amounts valid 00z February 8

The HREF simulated a widespread region of 0.25 to 0.50 inches of ice accretion, primarily to the north of the I-90 corridor while areas to the south were modeled at 0.10 to 0.25 inches. There were very few reports provided to NWS Albany within the Hudson Valley, making it difficult to pinpoint the exact region for ice accretions higher than a trace. The model simulation performed well for areas north of I-90, southwestern Vermont counties, Berkshire County in Massachusetts, and Litchfield County in Connecticut while the air temperature was a degree or so warmer south of I-90 than modeled, which cut down ice totals.

Once again, the FRAM model could be applied to New York state mesonet data to provide an estimate for ice accumulations from 00z on the 7th to 00z on the 8th. The result is shown below:



Similar to the analysis of observed amounts, most of the freezing rain was indicated north of the Capital District, with highest amounts near 0.50 inches over the Adirondacks.

Hourly observations at KALB and KGFL

1:51 PM	31 °F	27 °F	85 %	ENE	7 mph	0 mph	29.30 in	0.0 in	Fog
1:54 PM	31 °F	27 °F	85 %	E	8 mph	0 mph	29.30 in	0.0 in	Wintry Mix
2:34 PM	30 °F	27 °F	88 %	NE	6 mph	0 mph	29.27 in	0.0 in	Fog
2:51 PM	31 °F	27 °F	85 %	NE	6 mph	0 mph	29.26 in	0.0 in	Fog
3:51 PM	31 °F	28 °F	89 %	NNE	3 mph	0 mph	29.25 in	0.0 in	Fog
4:43 PM	31 °F	28 °F	89 %	NE	5 mph	0 mph	29.26 in	0.0 in	Wintry Mix
4:51 PM	31 °F	28 °F	89 %	NE	3 mph	0 mph	29.26 in	0.0 in	Wintry Mix
5:51 PM	32 °F	28 °F	85 %	NNE	5 mph	0 mph	29.26 in	0.0 in	Wintry Mix
6:51 PM	32 °F	28 °F	85 %	NNE	5 mph	0 mph	29.25 in	0.0 in	Wintry Mix
7:32 PM	32 °F	29 °F	88 %	ENE	5 mph	0 mph	29.23 in	0.1 in	Wintry Mix
7:51 PM	32 °F	29 °F	88 %	ENE	3 mph	0 mph	29.22 in	0.1 in	Wintry Mix
8:13 PM	32 °F	29 °F	88 %	CALM	0 mph	0 mph	29.20 in	0.0 in	Wintry Mix
8:51 PM	32 °F	29 °F	88 %	CALM	0 mph	0 mph	29.16 in	0.0 in	Wintry Mix
9:05 PM	32 °F	29 °F	88 %	SE	5 mph	0 mph	29.13 in	0.0 in	Cloudy
9:51 PM	33 °F	29 °F	85 %	NNW	5 mph	0 mph	29.09 in	0.0 in	Cloudy
10:51 PM	33 °F	30 °F	89 %	N	8 mph	0 mph	29.12 in	0.0 in	Cloudy
11:30 PM	33 °F	30 °F	89 %	E	7 mph	0 mph	29.15 in	0.0 in	Cloudy
11:51 PM	33 °F	30 °F	89 %	E	5 mph	0 mph	29.16 in	0.0 in	Cloudy

1:53 PM	29 °F	27 °F	92 %	N	9 mph	0 mph	29.24 in	0.0 in	Cloudy
2:12 PM	29 °F	27 °F	92 %	N	9 mph	0 mph	29.22 in	0.0 in	Wintry Mix
2:25 PM	29 °F	27 °F	92 %	N	8 mph	0 mph	29.22 in	0.0 in	Wintry Mix
2:53 PM	29 °F	27 °F	92 %	N	7 mph	0 mph	29.21 in	0.0 in	Wintry Mix
3:12 PM	29 °F	27 °F	92 %	N	9 mph	0 mph	29.22 in	0.0 in	Wintry Mix
3:22 PM	30 °F	28 °F	92 %	N	10 mph	0 mph	29.22 in	0.0 in	Fog
3:32 PM	30 °F	28 °F	92 %	N	7 mph	0 mph	29.22 in	0.0 in	Cloudy
3:45 PM	30 °F	28 °F	92 %	N	7 mph	0 mph	29.21 in	0.0 in	Cloudy
3:53 PM	30 °F	28 °F	92 %	N	7 mph	0 mph	29.22 in	0.0 in	Cloudy
4:05 PM	30 °F	28 °F	92 %	N	7 mph	0 mph	29.22 in	0.0 in	Fog
4:30 PM	30 °F	28 °F	92 %	ENE	5 mph	0 mph	29.22 in	0.0 in	Fog
4:53 PM	29 °F	28 °F	96 %	ENE	5 mph	0 mph	29.21 in	0.0 in	Fog
5:19 PM	29 °F	28 °F	96 %	CALM	0 mph	0 mph	29.21 in	0.0 in	Fog
5:31 PM	29 °F	28 °F	96 %	CALM	0 mph	0 mph	29.21 in	0.0 in	Wintry Mix
5:39 PM	29 °F	29 °F	100 %	CALM	0 mph	0 mph	29.21 in	0.0 in	Wintry Mix
5:53 PM	29 °F	28 °F	96 %	CALM	0 mph	0 mph	29.22 in	0.0 in	Wintry Mix
6:03 PM	29 °F	27 °F	92 %	CALM	0 mph	0 mph	29.20 in	0.0 in	Wintry Mix
6:40 PM	30 °F	28 °F	92 %	E	5 mph	0 mph	29.18 in	0.0 in	Wintry Mix
6:49 PM	30 °F	28 °F	93 %	ESE	3 mph	0 mph	29.18 in	0.0 in	Cloudy
6:53 PM	30 °F	29 °F	96 %	E	5 mph	0 mph	29.18 in	0.0 in	Cloudy
7:02 PM	30 °F	28 °F	92 %	E	5 mph	0 mph	29.17 in	0.0 in	Cloudy
7:53 PM	29 °F	28 °F	96 %	ENE	7 mph	0 mph	29.11 in	0.0 in	Cloudy
8:14 PM	30 °F	28 °F	92 %	NNW	5 mph	0 mph	29.11 in	0.0 in	Cloudy
8:36 PM	30 °F	28 °F	92 %	WNW	9 mph	0 mph	29.11 in	0.0 in	Cloudy
8:53 PM	30 °F	28 °F	92 %	NNW	9 mph	0 mph	29.09 in	0.0 in	Cloudy
9:26 PM	30 °F	28 °F	92 %	N	12 mph	0 mph	29.08 in	0.0 in	Cloudy
9:53 PM	30 °F	28 °F	92 %	N	12 mph	21 mph	29.09 in	0.0 in	Cloudy
10:48 PM	30 °F	28 °F	93 %	E	6 mph	0 mph	29.10 in	0.0 in	Cloudy
10:53 PM	30 °F	28 °F	92 %	E	5 mph	0 mph	29.09 in	0.0 in	Cloudy
11:12 PM	29 °F	28 °F	96 %	E	6 mph	0 mph	29.09 in	0.0 in	Cloudy
11:42 PM	29 °F	27 °F	92 %	ENE	7 mph	0 mph	29.07 in	0.0 in	Cloudy
11:53 PM	29 °F	27 °F	92 %	ENE	8 mph	0 mph	29.05 in	0.0 in	Cloudy

1951z February 6 to 551z February 7

ASOS observations confirmed a period of light mixed wintry precipitation in both Albany and Glens Falls in the early evening hours of February 6.

Hourly observations at KALB and KGFL

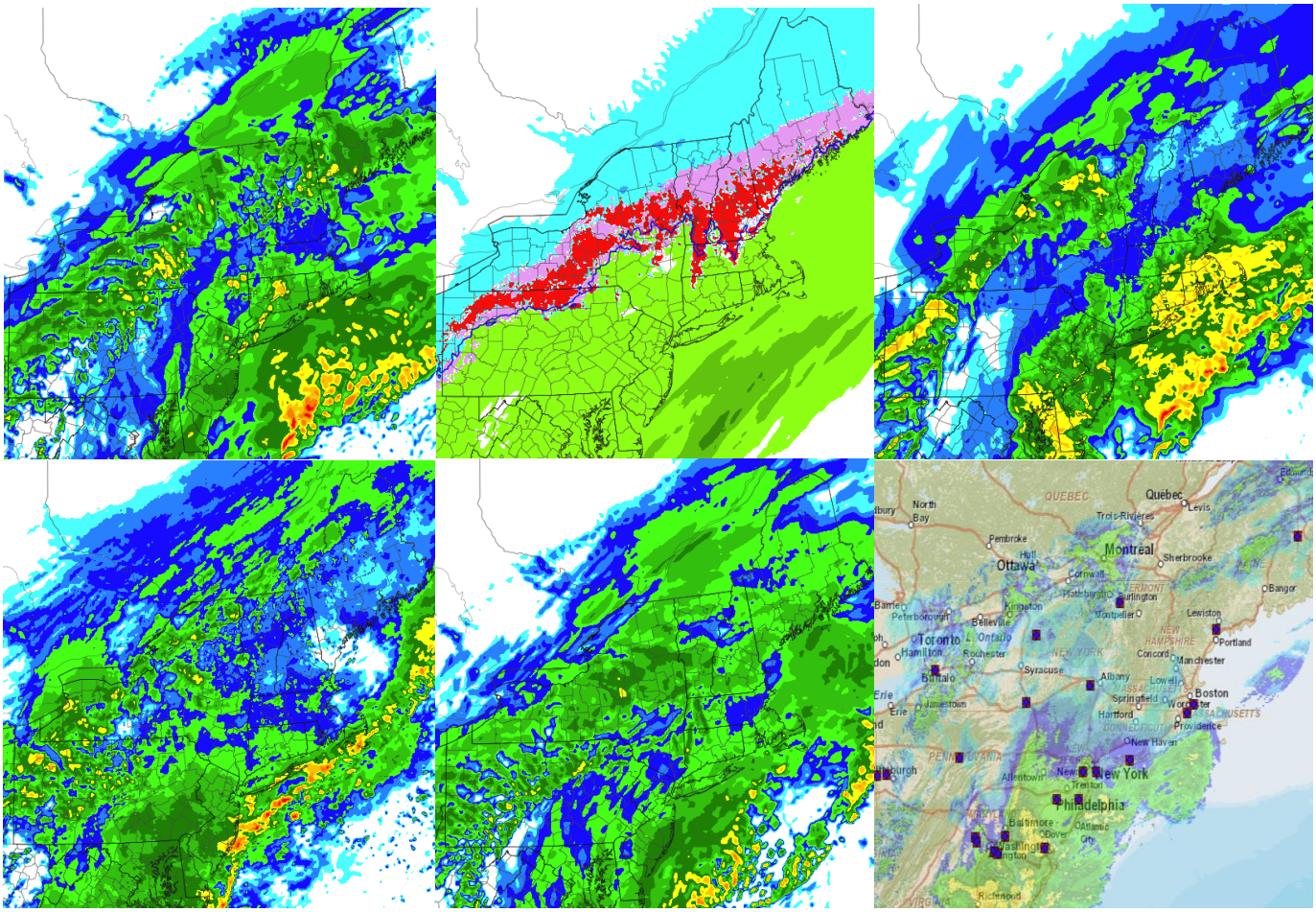
1:51 AM	33 °F	30 °F	89 %	CALM	0 mph	0 mph	29.08 in	0.0 in	Light Drizzle
2:13 AM	33 °F	31 °F	92 %	CALM	0 mph	0 mph	29.07 in	0.0 in	Fog
2:51 AM	34 °F	31 °F	89 %	ESE	3 mph	0 mph	29.06 in	0.0 in	Fog
3:51 AM	35 °F	33 °F	92 %	W	5 mph	0 mph	29.03 in	0.0 in	Light Rain
4:51 AM	34 °F	31 °F	89 %	SE	5 mph	0 mph	28.98 in	0.0 in	Fog
5:22 AM	35 °F	32 °F	89 %	SE	7 mph	0 mph	28.95 in	0.0 in	Cloudy
5:51 AM	35 °F	32 °F	89 %	ESE	6 mph	0 mph	28.94 in	0.0 in	Cloudy
5:58 AM	35 °F	31 °F	85 %	ENE	6 mph	0 mph	28.92 in	0.0 in	Cloudy
6:07 AM	34 °F	31 °F	89 %	E	5 mph	0 mph	28.92 in	0.0 in	Cloudy
6:51 AM	34 °F	31 °F	89 %	ENE	6 mph	0 mph	28.89 in	0.0 in	Cloudy
7:35 AM	34 °F	31 °F	89 %	E	5 mph	0 mph	28.87 in	0.0 in	Light Drizzle
7:51 AM	34 °F	31 °F	89 %	ENE	6 mph	0 mph	28.86 in	0.0 in	Light Drizzle
7:58 AM	34 °F	31 °F	89 %	NE	6 mph	0 mph	28.85 in	0.0 in	Light Drizzle
8:51 AM	33 °F	30 °F	89 %	NNE	5 mph	0 mph	28.83 in	0.0 in	Light Rain
9:51 AM	33 °F	30 °F	89 %	N	6 mph	0 mph	28.77 in	0.1 in	Rain
10:51 AM	33 °F	30 °F	89 %	NNW	6 mph	0 mph	28.71 in	0.1 in	Rain
11:44 AM	34 °F	30 °F	85 %	N	6 mph	0 mph	28.66 in	0.1 in	Rain
11:51 AM	34 °F	30 °F	85 %	NNE	8 mph	0 mph	28.66 in	0.2 in	Rain
12:51 PM	34 °F	30 °F	85 %	N	8 mph	0 mph	28.57 in	0.1 in	Light Rain
1:51 PM	34 °F	30 °F	85 %	NW	14 mph	0 mph	28.55 in	0.1 in	Light Sleet
2:11 PM	34 °F	30 °F	85 %	NW	12 mph	0 mph	28.54 in	0.1 in	Light Snow
2:20 PM	34 °F	30 °F	85 %		0 mph	0 mph	28.55 in	0.1 in	Light Snow
2:27 PM	33 °F	29 °F	85 %	WNW	20 mph	32 mph	28.55 in	0.1 in	Snow
2:51 PM	32 °F	28 °F	85 %		0 mph	0 mph	28.57 in	0.1 in	Heavy Snow
3:15 PM	31 °F	26 °F	82 %	W	23 mph	31 mph	28.59 in	0.0 in	Snow / Windy
3:37 PM	28 °F	23 °F	81 %	W	29 mph	45 mph	28.64 in	0.0 in	Heavy Snow / Windy
3:51 PM	28 °F	23 °F	81 %	W	31 mph	41 mph	28.66 in	0.0 in	Heavy Snow / Windy
4:24 PM	27 °F	21 °F	78 %	W	25 mph	45 mph	28.72 in	0.0 in	Heavy Snow / Windy
4:49 PM	27 °F	19 °F	74 %	W	23 mph	40 mph	28.79 in	0.0 in	Light Snow / Windy
4:51 PM	27 °F	20 °F	75 %	W	24 mph	37 mph	28.79 in	0.0 in	Light Snow / Windy
4:58 PM	27 °F	19 °F	72 %	W	24 mph	40 mph	28.81 in	0.0 in	Light Snow / Windy
5:32 PM	26 °F	18 °F	71 %	W	31 mph	46 mph	28.87 in	0.0 in	Light Snow / Windy
5:51 PM	26 °F	18 °F	71 %	W	29 mph	46 mph	28.90 in	0.0 in	Light Snow / Windy

2:24 AM	29 °F	27 °F	92 %	E	5 mph	0 mph	28.98 in	0.0 in	Fog
2:32 AM	28 °F	28 °F	100 %	E	3 mph	0 mph	28.99 in	0.0 in	Wintry Mix
2:46 AM	28 °F	28 °F	100 %	CALM	0 mph	0 mph	28.97 in	0.0 in	Wintry Mix
2:51 AM	28 °F	28 °F	100 %	ENE	3 mph	0 mph	28.97 in	0.0 in	Wintry Mix
2:53 AM	28 °F	27 °F	96 %	E	3 mph	0 mph	28.97 in	0.0 in	Wintry Mix
2:59 AM	29 °F	28 °F	96 %	CALM	0 mph	0 mph	28.96 in	0.0 in	Wintry Mix
3:21 AM	29 °F	27 °F	92 %	NE	6 mph	0 mph	28.94 in	0.0 in	Wintry Mix
3:49 AM	28 °F	28 °F	100 %	CALM	0 mph	0 mph	28.94 in	0.0 in	Cloudy
3:53 AM	29 °F	28 °F	96 %	CALM	0 mph	0 mph	28.94 in	0.0 in	Cloudy
4:08 AM	29 °F	28 °F	96 %	CALM	0 mph	0 mph	28.93 in	0.0 in	Cloudy
4:35 AM	29 °F	28 °F	96 %	NE	3 mph	0 mph	28.92 in	0.0 in	Cloudy
4:53 AM	29 °F	28 °F	96 %	E	3 mph	0 mph	28.91 in	0.0 in	Cloudy
5:07 AM	29 °F	28 °F	96 %	NE	6 mph	0 mph	28.89 in	0.0 in	Cloudy
5:16 AM	29 °F	28 °F	96 %	NE	6 mph	0 mph	28.88 in	0.0 in	Cloudy
5:53 AM	29 °F	28 °F	96 %	NE	3 mph	0 mph	28.88 in	0.0 in	Cloudy
6:35 AM	28 °F	27 °F	96 %	ENE	6 mph	0 mph	28.86 in	0.0 in	Wintry Mix
6:42 AM	28 °F	28 °F	100 %	NE	6 mph	0 mph	28.85 in	0.1 in	Wintry Mix
6:53 AM	29 °F	28 °F	96 %	NE	5 mph	0 mph	28.84 in	0.1 in	Wintry Mix
7:04 AM	29 °F	28 °F	96 %	NE	5 mph	0 mph	28.84 in	0.0 in	Wintry Mix
7:10 AM	29 °F	28 °F	96 %	NE	6 mph	0 mph	28.83 in	0.0 in	Wintry Mix
7:53 AM	30 °F	29 °F	96 %	NE	7 mph	0 mph	28.80 in	0.1 in	Wintry Mix
8:14 AM	30 °F	29 °F	96 %	NE	7 mph	0 mph	28.79 in	0.0 in	Wintry Mix
8:28 AM	30 °F	29 °F	96 %	NE	6 mph	0 mph	28.77 in	0.0 in	Wintry Mix
8:51 AM	30 °F	28 °F	93 %	ENE	5 mph	0 mph	28.76 in	0.1 in	Wintry Mix
8:52 AM	30 °F	29 °F	96 %	ENE	3 mph	0 mph	28.76 in	0.1 in	Wintry Mix
9:08 AM	31 °F	30 °F	96 %	NNE	5 mph	0 mph	28.75 in	0.0 in	Wintry Mix
9:15 AM	31 °F	29 °F	92 %	NNE	6 mph	0 mph	28.74 in	0.1 in	Wintry Mix
9:31 AM	31 °F	30 °F	96 %	N	9 mph	0 mph	28.73 in	0.1 in	Wintry Mix
9:39 AM	31 °F	30 °F	96 %	N	9 mph	0 mph	28.71 in	0.1 in	Wintry Mix
9:53 AM	31 °F	30 °F	96 %	NNE	8 mph	0 mph	28.69 in	0.1 in	Freezing Rain
10:05 AM	31 °F	30 °F	96 %	NNE	6 mph	0 mph	28.68 in	0.0 in	Freezing Rain
10:34 AM	31 °F	30 °F	96 %	N	8 mph	0 mph	28.65 in	0.1 in	Light Freezing Rain
10:41 AM	32 °F	30 °F	92 %	NNW	5 mph	0 mph	28.66 in	0.1 in	Freezing Rain
10:53 AM	32 °F	30 °F	92 %	NNW	3 mph	0 mph	28.66 in	0.2 in	Light Snow
11:31 AM	30 °F	29 °F	96 %	N	10 mph	0 mph	28.58 in	0.1 in	Snow
11:53 AM	30 °F	28 °F	92 %	NNW	12 mph	0 mph	28.56 in	0.1 in	Snow
12:17 PM	28 °F	26 °F	92 %	N	13 mph	24 mph	28.53 in	0.0 in	Snow
12:53 PM	27 °F	25 °F	92 %	N	15 mph	0 mph	28.52 in	0.1 in	Snow
1:28 PM	27 °F	25 °F	92 %	NNW	8 mph	21 mph	28.51 in	0.0 in	Light Snow
1:38 PM	27 °F	25 °F	92 %	NNW	13 mph	0 mph	28.50 in	0.0 in	Snow
1:47 PM	27 °F	25 °F	93 %	NNW	14 mph	0 mph	28.49 in	0.0 in	Heavy Snow
1:53 PM	27 °F	25 °F	92 %	NNW	13 mph	22 mph	28.50 in	0.0 in	Heavy Snow
2:53 PM	27 °F	26 °F	96 %	VAR	7 mph	0 mph	28.59 in	0.1 in	Snow
3:53 PM	25 °F	23 °F	92 %	N	13 mph	0 mph	28.71 in	0.0 in	Snow
4:46 PM	24 °F	22 °F	91 %	VAR	6 mph	0 mph	28.81 in	0.0 in	Light Snow
4:53 PM	25 °F	18 °F	75 %	WNW	22 mph	28 mph	28.82 in	0.0 in	Light Snow / Windy
5:53 PM	24 °F	16 °F	71 %	WNW	8 mph	0 mph	28.90 in	0.0 in	Mostly Cloudy

07z to 23z February 7

ASOS surface observations confirmed wintry mix changing over to snow in Glens Falls (right) by 16z while Albany (left) completed the transition by 1912z. Surface observations confirmed near blizzard conditions in Albany between 2030z and 2300z.

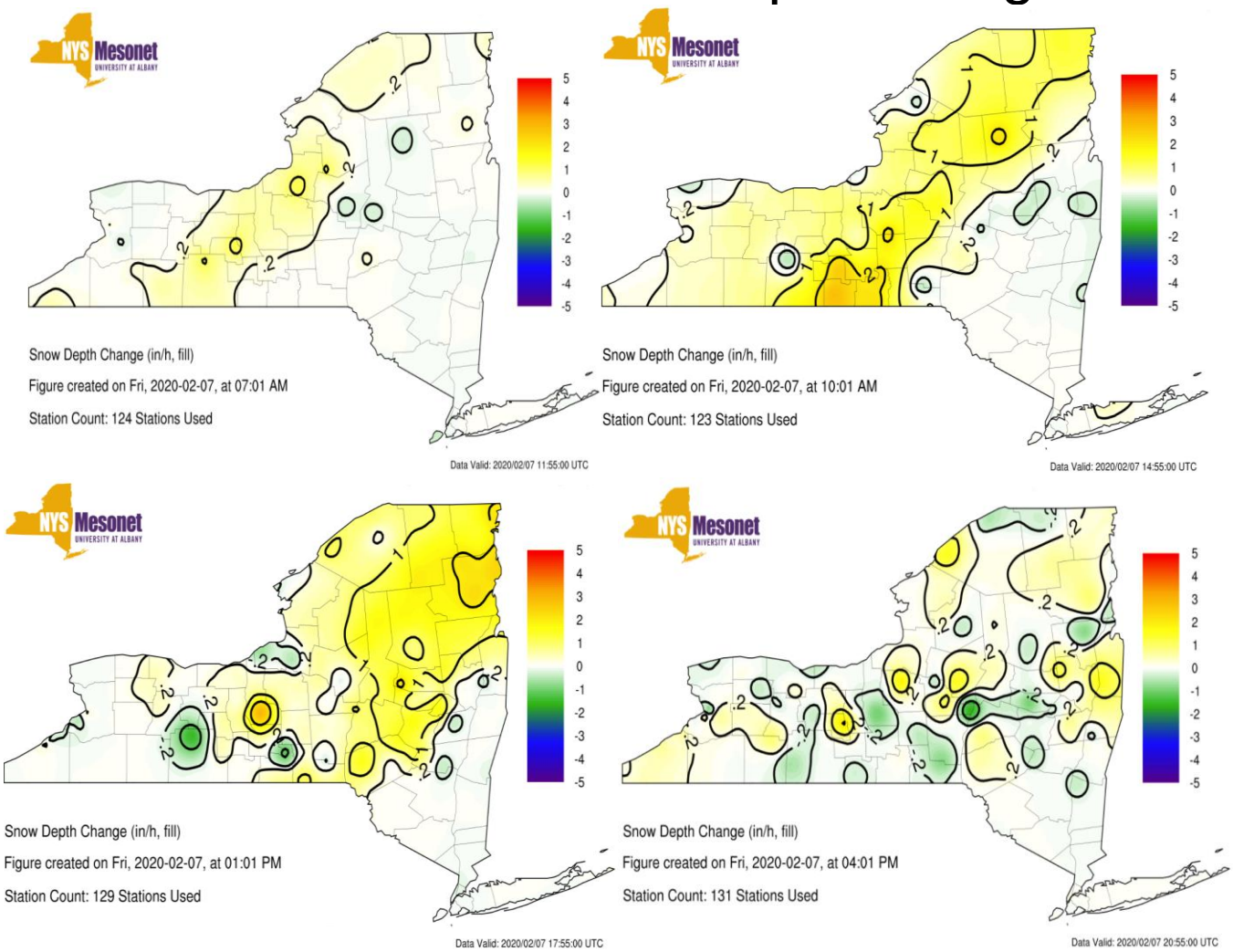
Radar vs Model runs at 06z Feb 7



Left to right (top row) : ARW, HREF, HRRR
Left to right (bottom row) : NAM, NSSL, Observed

At 06z, widespread precipitation was modeled to occur in western New York and along the coastline. The precipitation coverage and its rates were less than projected by the models for upstate New York.

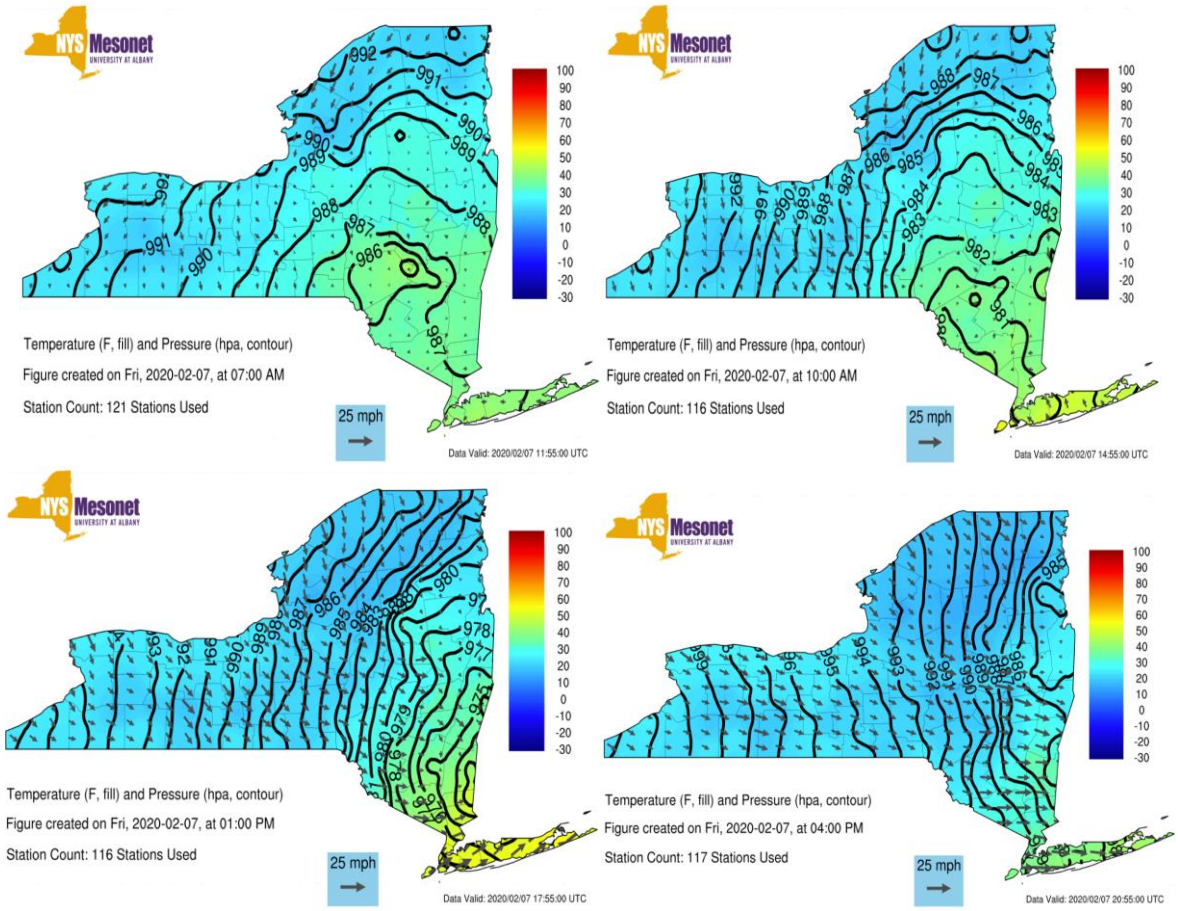
Mesonet 1 hr snow depth change



12z, 15z, 18z, 21z February 7

Mesonet stations throughout upstate New York confirmed a widespread area of 1 to 2+ inch per hour rates between 12z and 18z, preceding scattered snowfall rates by 21z. Drifting due to high wind gusts was indicated by isolated areas of local snow depth decreases at 18z and 21z.

Mesonet Air Temp/Sea Level Pressure



12z, 15z, 18z, 21z February 7

The sea level pressure and temperature gradients intensified between 12z and 18z as a result of cyclogenesis. This is indicated by scattered gusts over 25mph in upstate New York, sea level pressure readings in the 970s in eastern New York and temperatures in the 50s on Long Island at 18z.

ALY Public Weather Information Statement

CONNECTICUT

...Litchfield County...

Norfolk	1.6	800 AM	2/08	Co-Op Observer
2 NNE Litchfield	0.4	700 AM	2/08	CoCoRaHS
3 SW New Hartford Ce	0.2	700 AM	2/08	CoCoRaHS
Bakersville	0.2	700 AM	2/08	Co-Op Observer

MASSACHUSETTS

...Berkshire County...

Savoy	3.1	1057 PM	2/07	WeatherNet6
Williamstown	2.2	729 AM	2/08	Twitter
Windsor	2.0	727 PM	2/07	Broadcast Media
2 SE Pittsfield	1.8	610 PM	2/07	Trained Spotter
Becket	1.0	455 PM	2/07	WeatherNet6
NNE Stockbridge	1.0	530 AM	2/08	CoCoRaHS
1 NNW Cheshire	1.0	700 AM	2/08	CoCoRaHS
3 N Great Barrington	1.0	700 AM	2/08	CoCoRaHS
3 S Sandisfield	1.0	500 PM	2/07	Trained Spotter

NEW YORK

...Albany County...

Rensselaerville	4.0	726 PM	2/07	Broadcast Media
Knox	3.8	444 PM	2/07	WeatherNet6
2 NNW Rensselaervill	2.7	700 AM	2/08	CoCoRaHS
3 SW Glenmont	2.5	700 AM	2/08	CoCoRaHS
Delmar	2.0	614 PM	2/07	WeatherNet6
NWS Albany	1.6	700 AM	2/08	CoCoRaHS
1 SW Albany	1.5	700 AM	2/08	CoCoRaHS
Colonie	1.5	445 PM	2/07	WeatherNet6
Albany Intl AP	1.2	700 PM	2/07	ASOS
Alcove Reservoir	0.5	745 AM	2/08	Co-Op Observer

...Columbia County...

3 N Valatie	1.2	700 AM	2/08	CoCoRaHS

...Fulton County...

Stratford	7.0	738 AM	2/08	WeatherNet6
Gloversville 7nw	5.8	800 AM	2/08	Co-Op Observer
5 ESE Broadalbin	5.5	900 AM	2/08	CoCoRaHS
Perth	4.0	435 PM	2/07	WeatherNet6
Broadalbin	3.0	733 AM	2/08	WeatherNet6

...Greene County...

Greenville Center	2.0	641 AM	2/08	WeatherNet6
East Jewett	2.0	700 AM	2/08	Trained Spotter
West Kill	1.5	448 PM	2/07	WeatherNet6

...Hamilton County...

Long Lake	12.0	718 PM	2/07	Broadcast Media
Indian Lake	10.3	828 AM	2/08	Co-Op Observer
Speculator	9.0	719 PM	2/07	Broadcast Media
Wells	9.0	719 PM	2/07	Broadcast Media
Hoffmeister	8.0	719 PM	2/07	Broadcast Media
2 E Hoffmeister	7.0	752 AM	2/08	Trained Spotter
Piseco	6.5	514 PM	2/07	WeatherNet6

...Herkimer County...

2 NW Salisbury Cente	8.5	600 AM	2/08	CoCoRaHS

...Montgomery County...

Palatine Bridge	8.0	721 PM	2/07	Broadcast Media
Fort Plain	6.2	435 PM	2/07	WeatherNet6
Amsterdam	5.0	451 PM	2/07	WeatherNet6
1 NNW Amsterdam	5.0	500 PM	2/07	CoCoRaHS
SE Fort Plain	4.3	700 AM	2/08	CoCoRaHS
Fonda	4.3	954 PM	2/07	WeatherNet6
Glen	4.1	1044 PM	2/07	WeatherNet6
2 WSW Hessville	2.5	800 AM	2/08	CoCoRaHS

...Rensselaer County...

7 NE Troy	3.9	700 AM	2/08	CoCoRaHS
1 WNW Averill Park	3.2	730 PM	2/07	Meteorologist
Schaghticoke	3.0	533 PM	2/07	WeatherNet6
Petersburg	3.0	536 PM	2/07	WeatherNet6
Hoosick Falls	2.9	1035 PM	2/07	WeatherNet6
Speigletown	2.8	446 PM	2/07	WeatherNet6
4 ESE Nassau	2.2	748 AM	2/08	CoCoRaHS
Center Brunswick	2.0	1053 PM	2/07	WeatherNet6
1 N Sycaway	1.9	428 PM	2/07	NWS Employee
2 NNE Troy	1.9	800 AM	2/08	CoCoRaHS

...Saratoga County...

Lake Desolation	5.5	548 PM	2/07	WeatherNet6
Galway	5.0	725 PM	2/07	Broadcast Media
1 WNW Gansevoort	4.7	600 AM	2/08	CoCoRaHS
Ballston Spa	3.5	512 PM	2/07	WeatherNet6
Charlton	3.0	1026 PM	2/07	WeatherNet6
3 ESE Ballston Spa	2.5	730 AM	2/08	CoCoRaHS
3 S Clifton Park	2.0	600 AM	2/08	CoCoRaHS

...Schenectady County...

Schenectady-GE Plot	3.0	700 AM	2/08	NWS Employee
Delanson 2nc	2.5	700 AM	2/08	Co-Op Observer
Duanesburg	2.5	914 PM	2/07	WeatherNet6
Niskayuna	2.5	726 PM	2/07	Broadcast Media
Schenectady	2.4	937 PM	2/07	WeatherNet6
1 NW Scotia	2.3	600 AM	2/08	CoCoRaHS
1 NW Rotterdam	2.3	500 AM	2/08	CoCoRaHS
Glenville	2.0	546 PM	2/07	WeatherNet6
Delanson	2.0	507 PM	2/07	WeatherNet6
1 SSW Aqueduct	2.0	500 PM	2/07	NWS Employee
S Niskayuna	2.0	700 AM	2/08	CoCoRaHS

...Schoharie County...

Summit	6.0	724 PM	2/07	Broadcast Media
Middleburgh	6.0	724 PM	2/07	Broadcast Media
Cobleskill	6.0	735 AM	2/08	Co-Op Observer
Jefferson	5.8	959 PM	2/07	WeatherNet6
Schoharie	5.5	1112 PM	2/07	WeatherNet6
Gilboa	5.0	1050 PM	2/07	WeatherNet6
Warnerville	5.0	443 PM	2/07	WeatherNet6
Richmondville	5.0	454 PM	2/07	WeatherNet6
Charlotteville	4.8	554 PM	2/07	WeatherNet6

...Ulster County...

Phoenicia	0.3	713 AM	2/08	Co-Op Observer

...Warren County...

Lake Luzerne-Hadley	7.0	705 PM	2/07	Broadcast Media
Warrensburg	7.0	700 PM	2/07	WeatherNet6
Brant Lake	7.0	706 PM	2/07	Broadcast Media
1 N Lake George	6.8	600 AM	2/08	CoCoRaHS
3 S Lake Luzerne	6.2	600 AM	2/08	Co-Op Observer
Lake Luzerne	6.1	607 AM	2/08	WeatherNet6
Glens Falls	4.0	625 PM	2/07	WeatherNet6

...Washington County...

Whitehall	8.0	722 PM	2/07	Broadcast Media
Fort Edward	6.0	724 PM	2/07	Broadcast Media
Hebron	5.5	632 AM	2/08	WeatherNet6
10 SW Granville	5.1	700 AM	2/08	CoCoRaHS
Hartford	5.0	650 PM	2/07	Social Media

VERMONT

...Bennington County...

Woodford	6.0	735 AM	2/08	WeatherNet6
1 NNE Landgrove	5.5	700 AM	2/08	CoCoRaHS
Landgrove	5.5	1048 PM	2/07	WeatherNet6
Manchester Center	5.1	950 PM	2/07	WeatherNet6
West Arlington	5.0	628 AM	2/08	WeatherNet6
5 NW Readsboro	4.7	945 PM	2/07	Public
Peru	1.9	700 AM	2/08	Co-Op Observer

...Windham County...

1 NNE Rockingham	1.5	600 AM	2/08	CoCoRaHS

Past 18 hr report of snow totals - 1516z Sat February 8

Community observation reports submitted to NWS Albany confirmed widespread 5 to 12 inch snowfall totals in higher elevation zones while lower elevation areas south and east faced lesser snowfall totals of up to 4 inches.

ALY Public Weather Information Statement

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CONNECTICUT

...Litchfield County...
   2 WSW New Hartford    0.22  1242 PM  2/07  Trained Spotter

MASSACHUSETTS

...Berkshire County...
   Peru                  0.25   912 AM  2/07  Amateur Radio
   3 S Sandisfield       0.25  1141 AM  2/07  Twitter

NEW YORK

...Herkimer County...
   2 SSW Salisbury       0.30   815 AM  2/07  Trained Spotter

...Rensselaer County...
   1 N Sycaway           0.13  1100 AM  2/07  NWS Employee

...Saratoga County...
   Providence            0.25  1155 AM  2/07  Measured on trees
   1 WSW Stillwater      0.15  1115 AM  2/07  Two trees down in yard
   1 SSE Malta           0.10  1245 PM  2/07  Public

...Warren County...
   Glens Falls           0.25  1059 AM  2/07  Trained Spotter

...Washington County...
   Hartford              0.50   650 PM  2/07  Social Media

VERMONT

...Bennington County...
   5 NW Readsboro        0.40   315 PM  2/07  Flat ice measurement.
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Past 15 hr report of ice totals - 0401z Sat February 8

Community observation reports submitted to NWS Albany confirmed ice totals anywhere from a tenth to half an inch of ice accretion. All reports were located in areas of higher terrain.

ALY Public Weather Information Statement

CONNECTICUT

...Litchfield County...

Torrington	35	601 PM	2/07	CWOP
Watertown	35	147 PM	2/07	CWOP

MASSACHUSETTS

...Berkshire County...

Pittsfield Municipal	54	344 PM	2/07	ASOS
Williamstown	41	445 PM	2/07	CWOP
Adams	38	401 PM	2/07	CWOP
Harriman Airport	33	222 PM	2/07	ASOS

NEW YORK

...Albany County...

Voorheesville	53	415 PM	2/07	NYSM
Albany Intl Ap	47	503 PM	2/07	ASOS
Medusa	46	455 PM	2/07	NYSM
2 W Guilderland	36	415 PM	2/07	RAWS
Colonie	33	415 PM	2/07	CWOP

...Columbia County...

Kinderhook	40	335 PM	2/07	NYSM
Copake	34	555 PM	2/07	NYSM
Claverack	31	500 PM	2/07	CWOP

...Dutchess County...

Beacon	45	220 PM	2/07	NYSM
Hudson Valley Region	45	328 PM	2/07	ASOS
Bannerman Island	42	305 PM	2/07	WXFLOW
3 NNE Beacon	37	407 PM	2/07	RAWS
Red Hook	37	405 PM	2/07	NYSM
Lagrangeville	36	451 PM	2/07	CWOP
Wappingers Falls	31	302 PM	2/07	CWOP

...Hamilton County...

Piseco	37	250 PM	2/07	NYSM

...Herkimer County...

Herkimer	34	1130 AM	2/07	NYSM

...Montgomery County...

Johnstown	43	220 PM	2/07	NYSM
Sprakers	37	335 PM	2/07	NYSM
Hessville	36	1015 AM	2/07	CWOP

...Rensselaer County...

Schodack	41	435 PM	2/07	NYSM
Schaghticoke	31	520 PM	2/07	NYSM
Hoosick Falls	31	604 PM	2/07	CWOP

...Schenectady County...

East Glenville	47	333 PM	2/07	AWOS
Duanesburg	44	335 PM	2/07	NYSM
Schenectady	35	455 PM	2/07	CWOP

...Schoharie County...

Cobleskill	35	410 PM	2/07	NYSM

...Ulster County...

Willow	39	246 PM	2/07	CWOP
Wallkill	38	315 PM	2/07	NYSM
2 ESE Fleischmanns	36	511 PM	2/07	RAWS
Claryville	33	215 PM	2/07	NYSM
New Paltz	31	354 PM	2/07	CWOP
High Falls	31	330 PM	2/07	NYSM

VERMONT

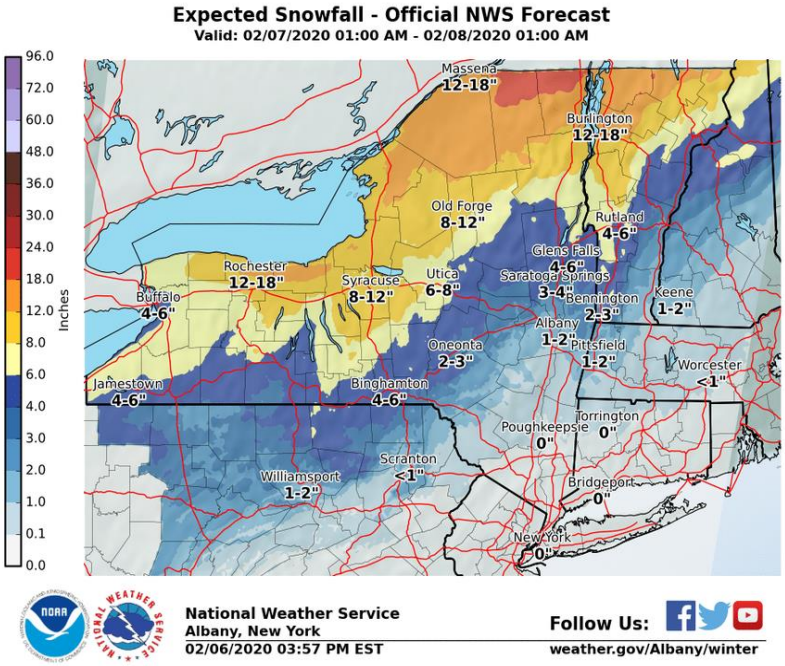
...Bennington County...

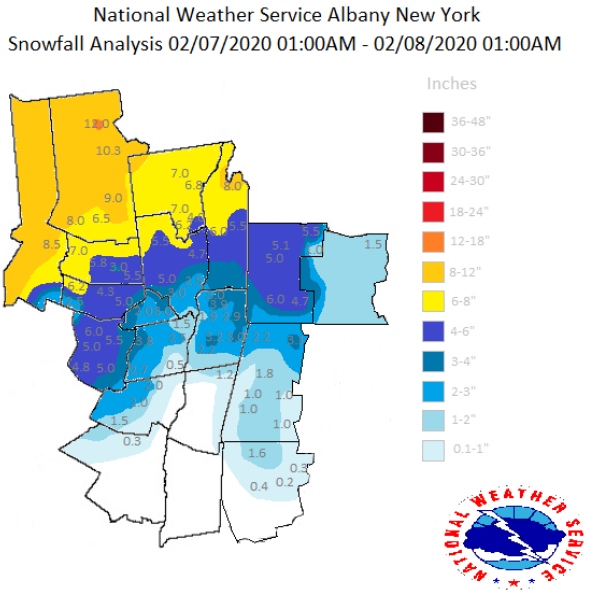
3 W Woodford State P	37	701 PM	2/07	MESOWEST

Past 12 hr report of wind gusts - 0034z Sat February 8

Community observation reports submitted to NWS Albany confirmed widespread 30 to 45 mph gusts with a few locations reporting gusts up to 55 mph.

NWS Forecast vs observed snowfall

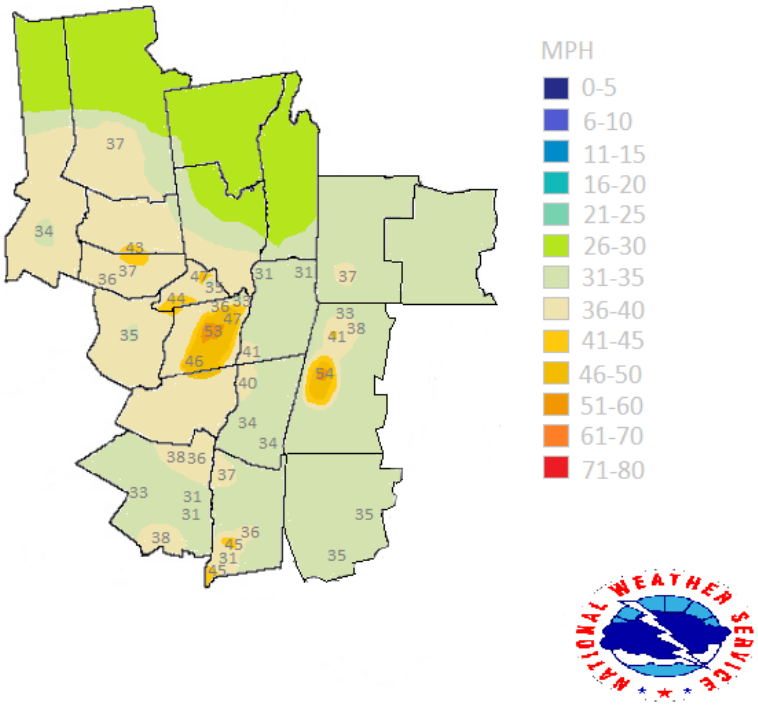




The snowfall forecast came almost exactly in fruition, except for amounts about 2 inches higher than forecast in north and western portions of the NWS Albany zone. The difference between the initial forecast and observed snowfall may be due to stronger frontogenesis and temperatures a degree or two colder than forecast.

NWS observed wind gusts

National Weather Service Albany New York
Highest wind gusts 02/06/2020 07:00PM to 02/07/2020 07:00PM



Peak wind gusts reported to the NWS within 12 hours

The observed peak wind gusts were reported as a result of tighter pressure gradient from cyclogenesis.

Summary

- A low pressure system intensified and moved off the New England coast in the afternoon and evening hours of Friday, February 7.
- The preexisting frontal boundary, strong temperature gradient, positive cyclonic vorticity advection, warm air advection, and the supporting jet stream winds to the north contributed to the bombogenesis of the cyclone.
- The tightening pressure gradient led to widespread wind gusts of 30 to 45 mph, with a few locations reaching 55mph.
- Strong lower-to-mid level frontogenesis, isentropic lift, and large-scale uplift assisted by 250 mb level winds were favorable for 1 to 2+ inch hourly snowfall rates at times.
- 850 mb cold air advection to the northwest allowed for temperatures to fall back below freezing, allowing for a transition back from rain and wintry mix to snow.
- Snowfall amounts were up to 2 inches higher than modeled north and west of the I-90 corridor. Observed ice accretion amounts under performed in the lower terrain due to surface temperatures being 1 to 2F higher than modeled. Other than that, the snowfall and ice accretion forecasts were close to what was observed.