

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

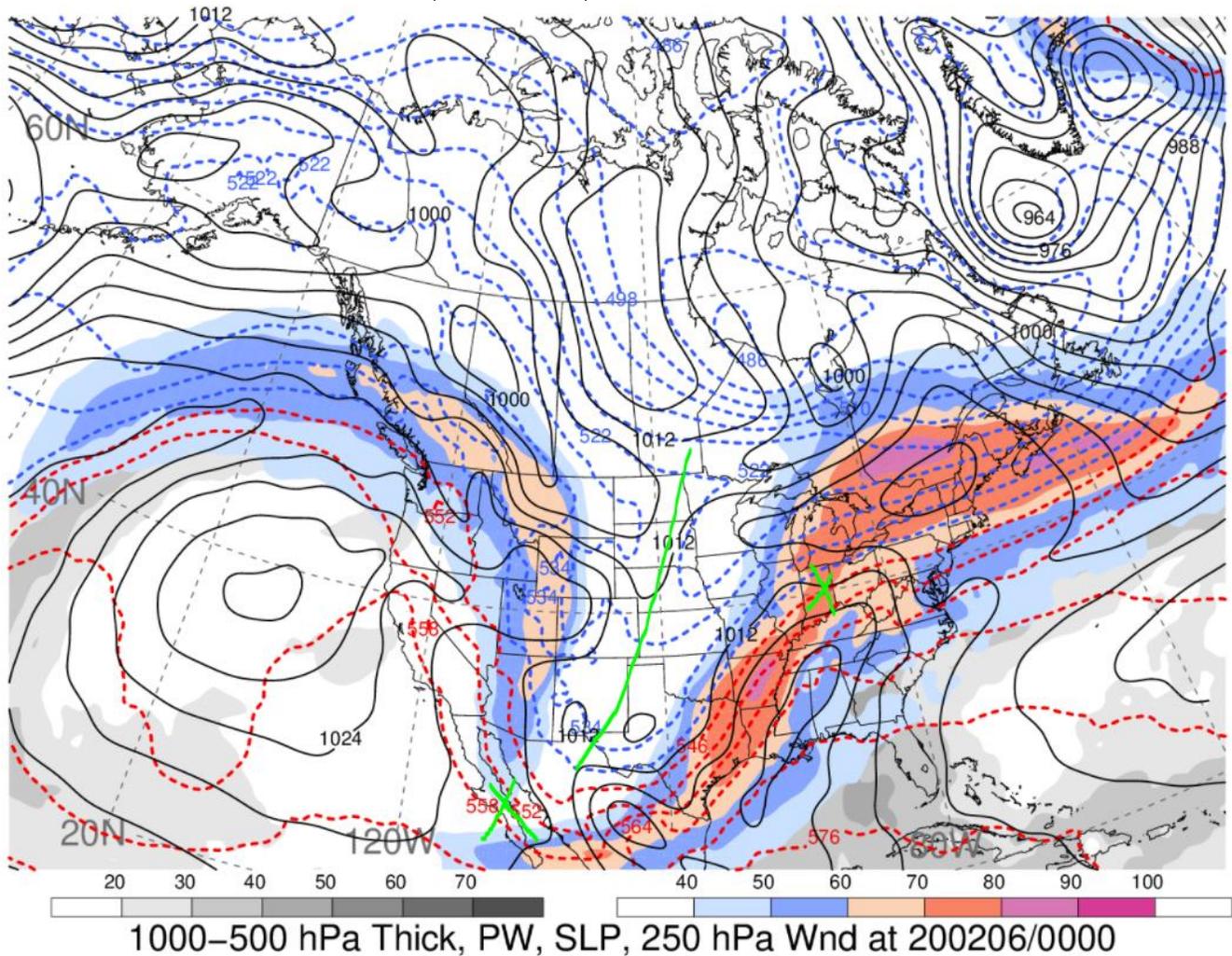
Part 2 : light mixed precipitation and rain
becoming periods of rain, then changing
over to snow with bombogenesis

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

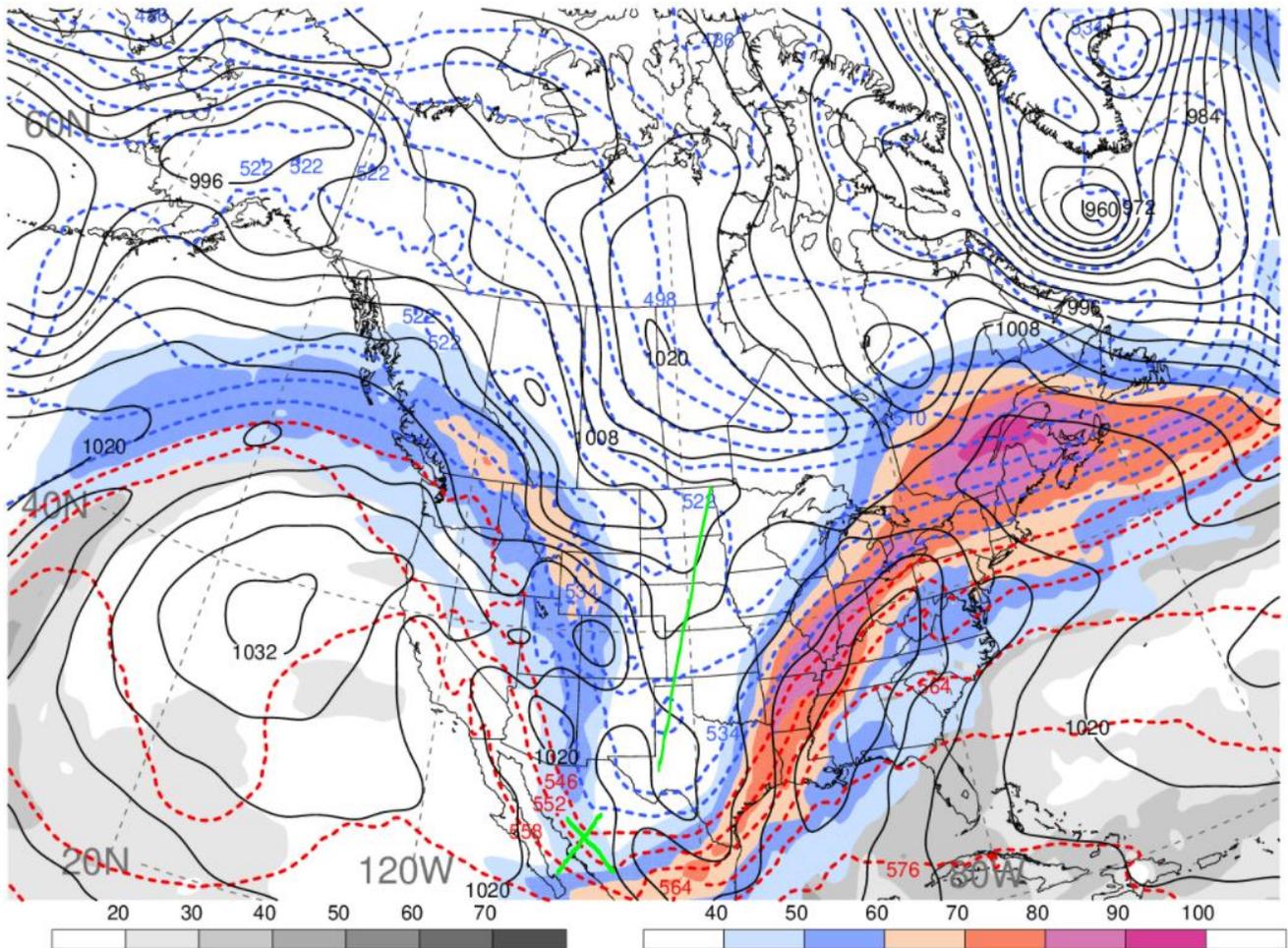


00z February 6 2020

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



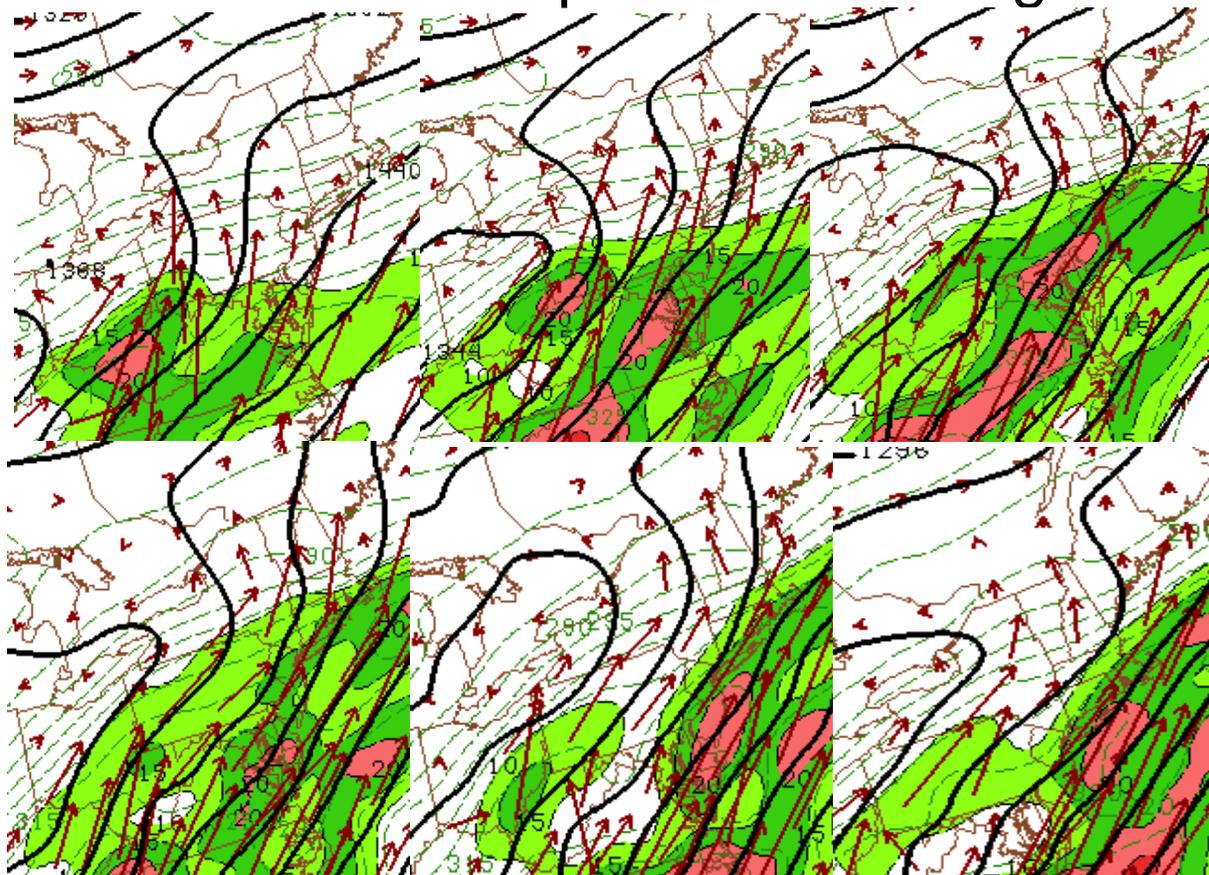
1000–500 hPa Thick, PW, SLP, 250 hPa Wnd at 200206/0600

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.

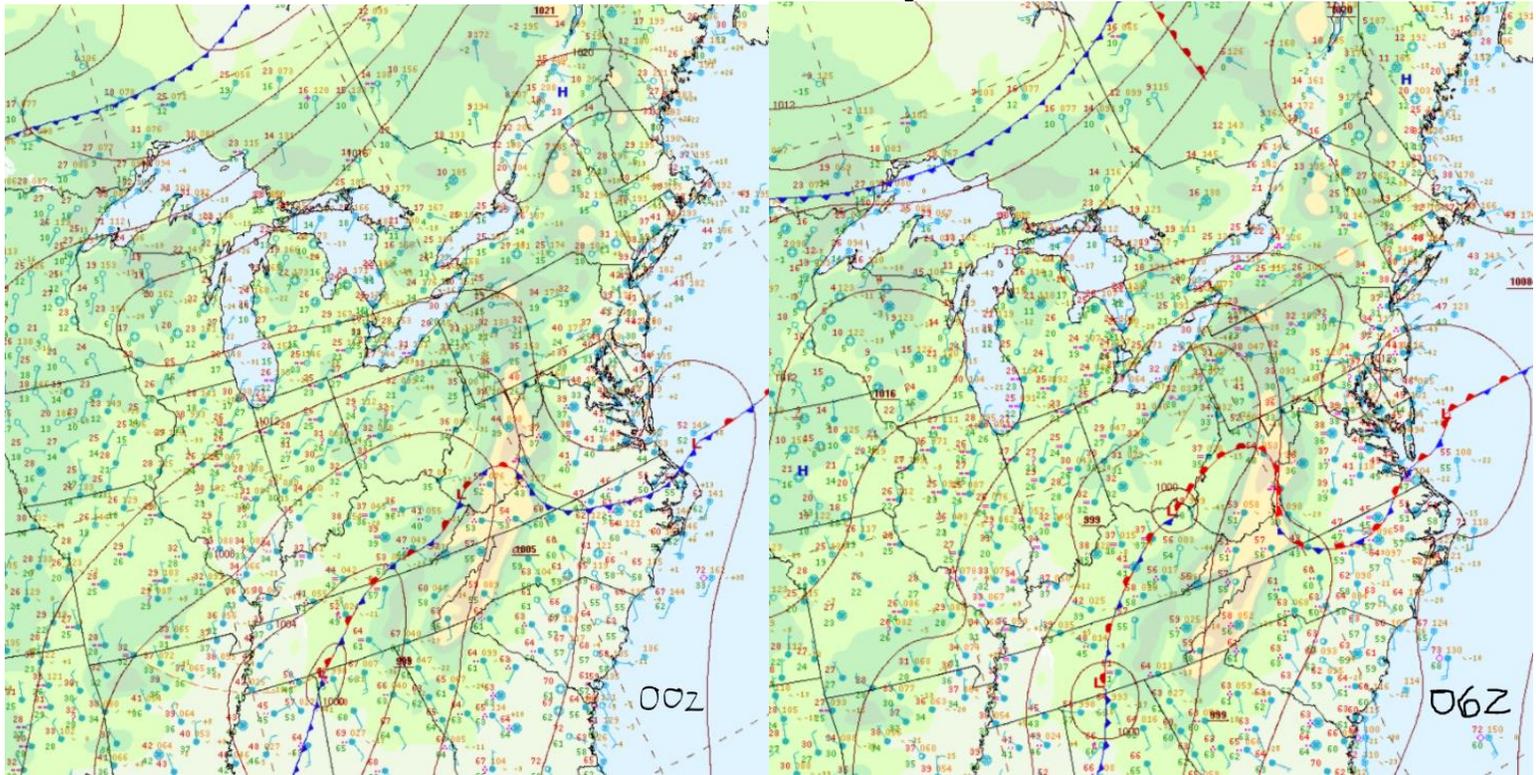
850 mb moisture transport vectors/height/theta-e



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.

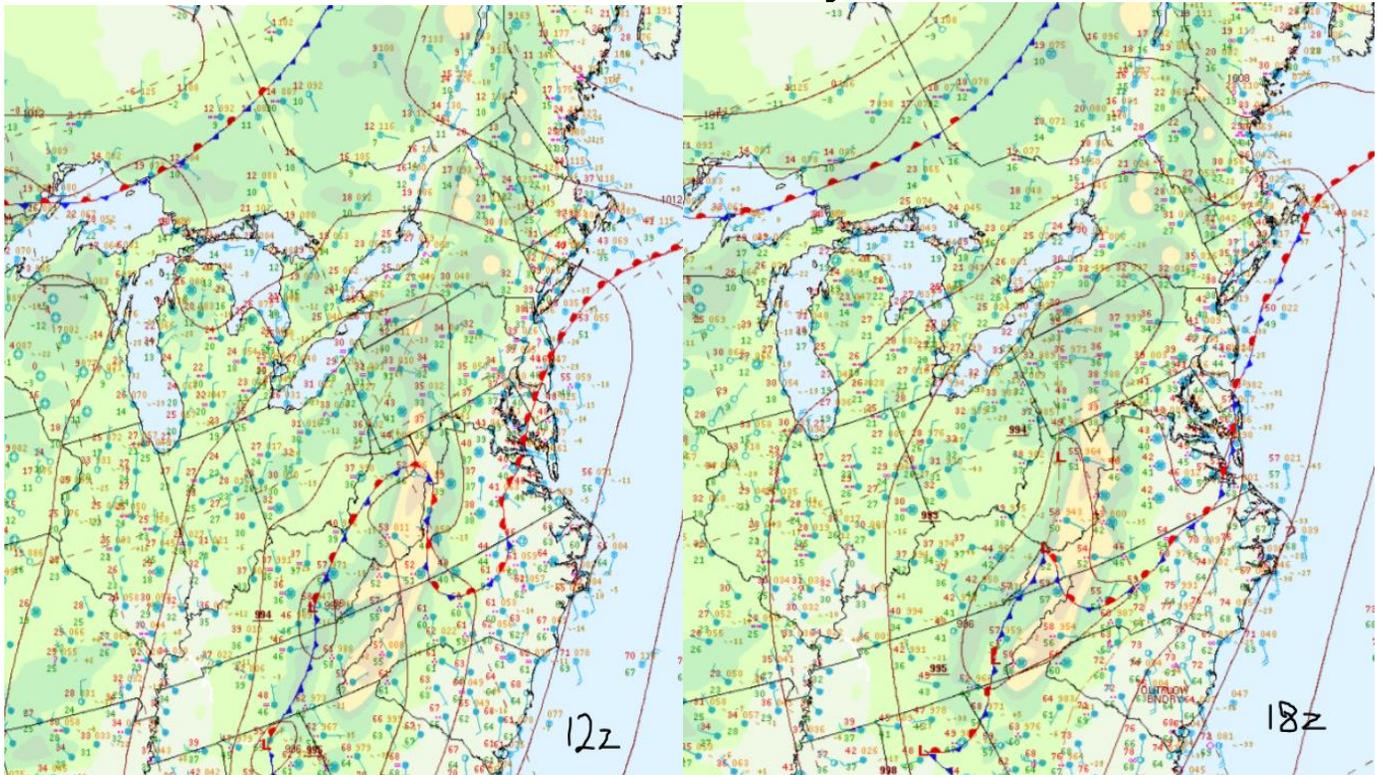
Surface Analysis



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

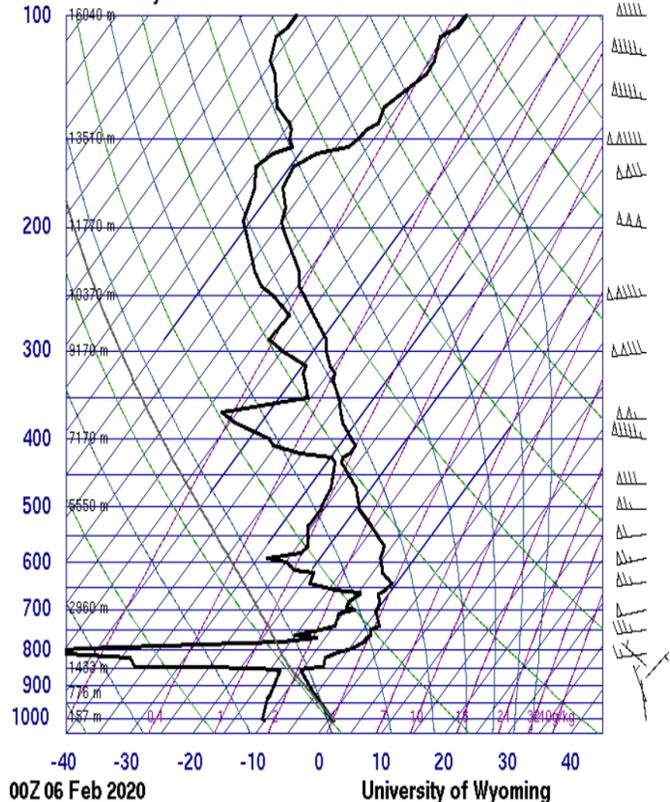


12z and 18z February 6, 2020

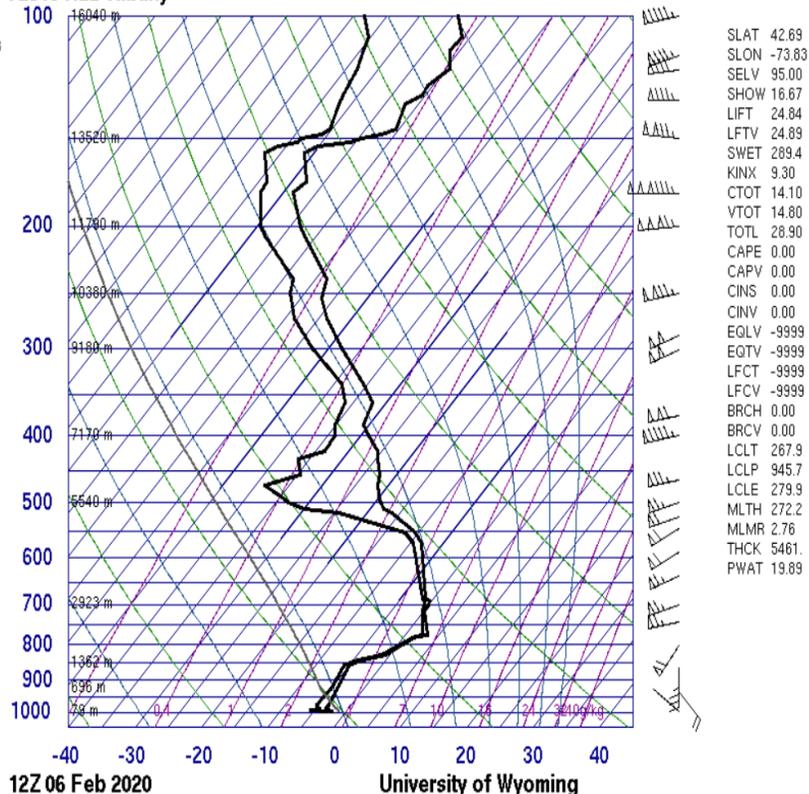
By 18z February 6, the main surface low had strengthened to 993 mb while its associated coastal warm front moved north. The warm front helped move warmer air closer to New England. The frontal zone provided continuing forcing for scattered light wintry precipitation in parts of upstate New York and New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

Skew-T at KALB

72518 ALB Albany



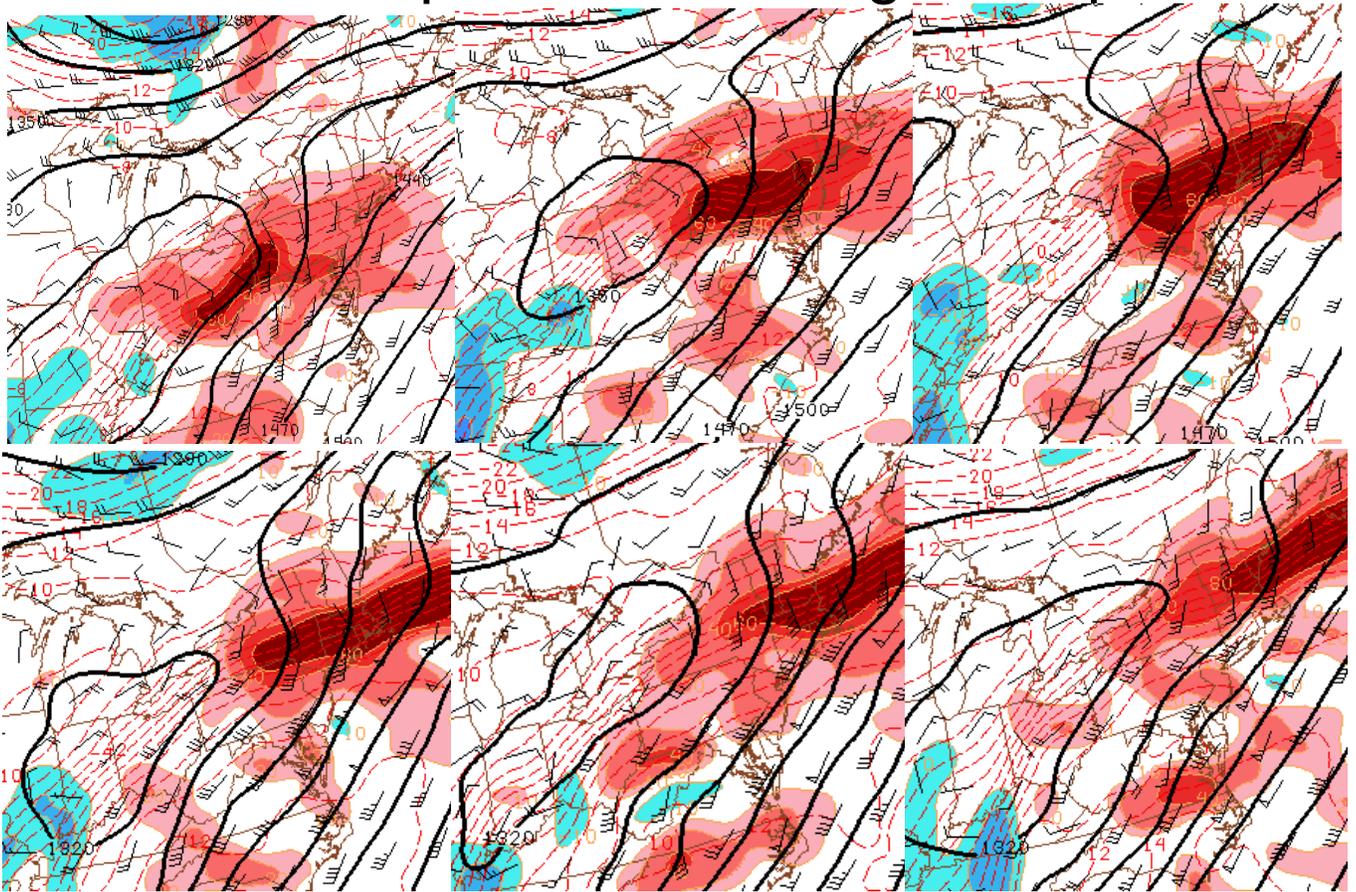
72518 ALB Albany



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.

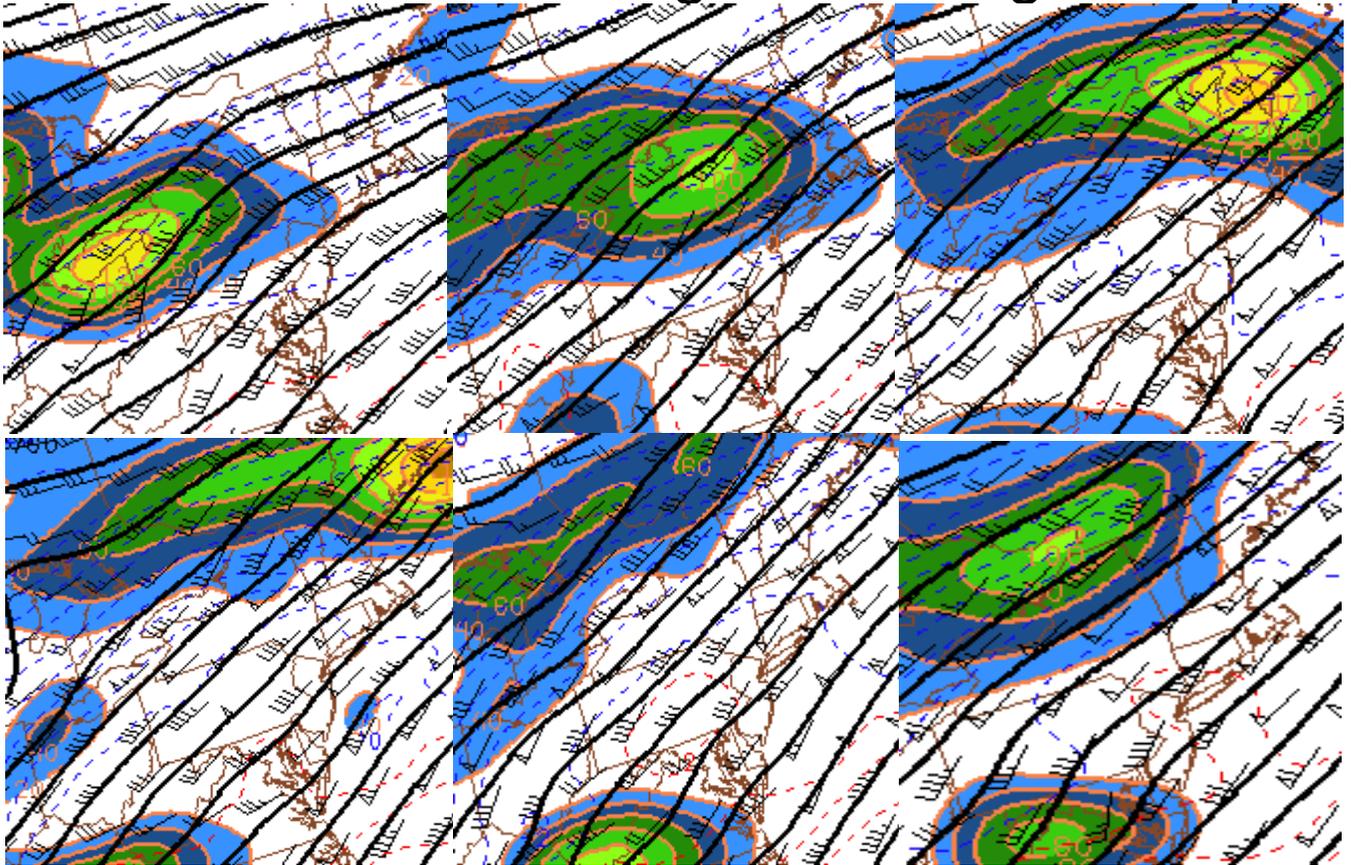
850 mb temp advection/height/temp/wind



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.

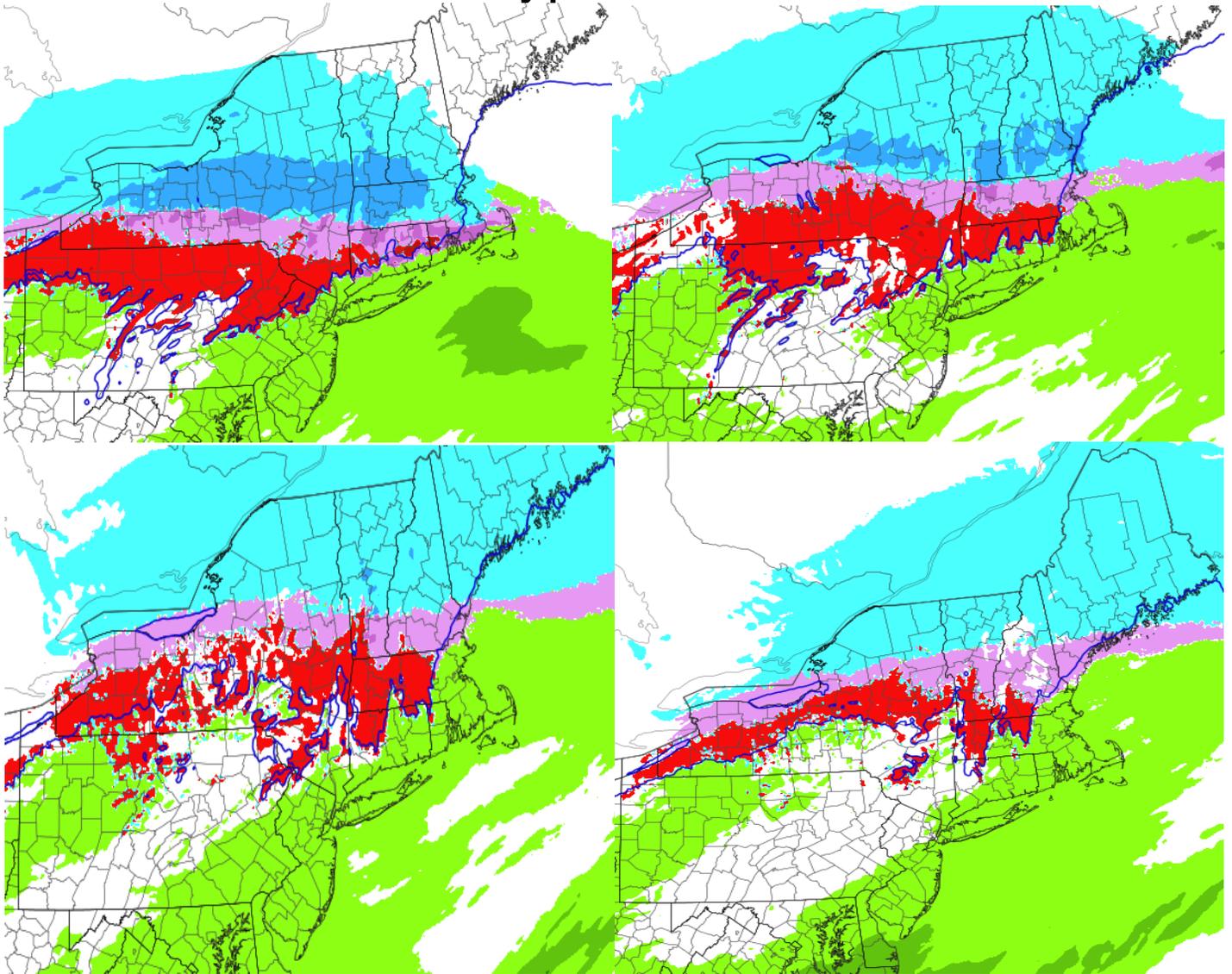
700 mb Petterssen frontogenesis/height/temp/wind



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

HREF

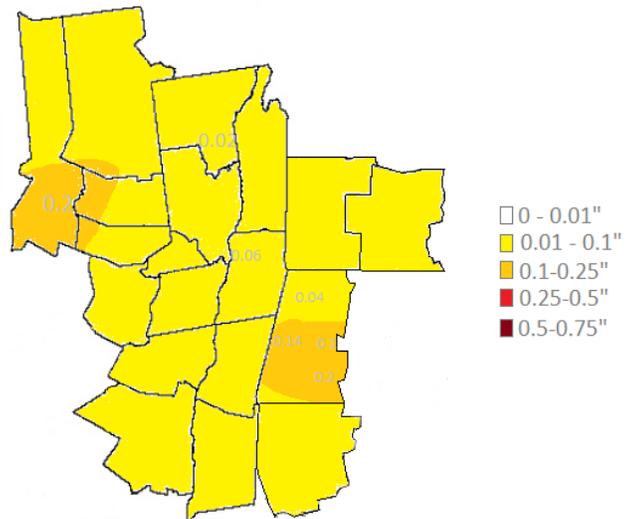
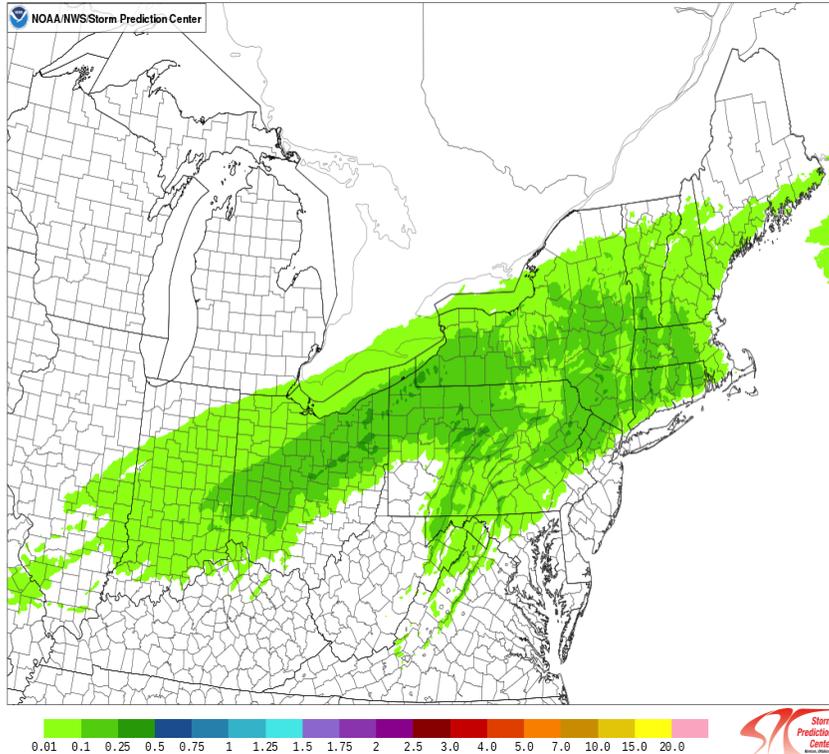
24-hr FRAM accretion (in), ensemble mean

Run: Thu 2020-02-06 00:00 UTC

Valid: Fri 2020-02-07 00:00 UTC

National Weather Service Albany New York

Ice accretion Analysis 02/05/2020 07:00PM to 02/06/2020 07:00PM



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:

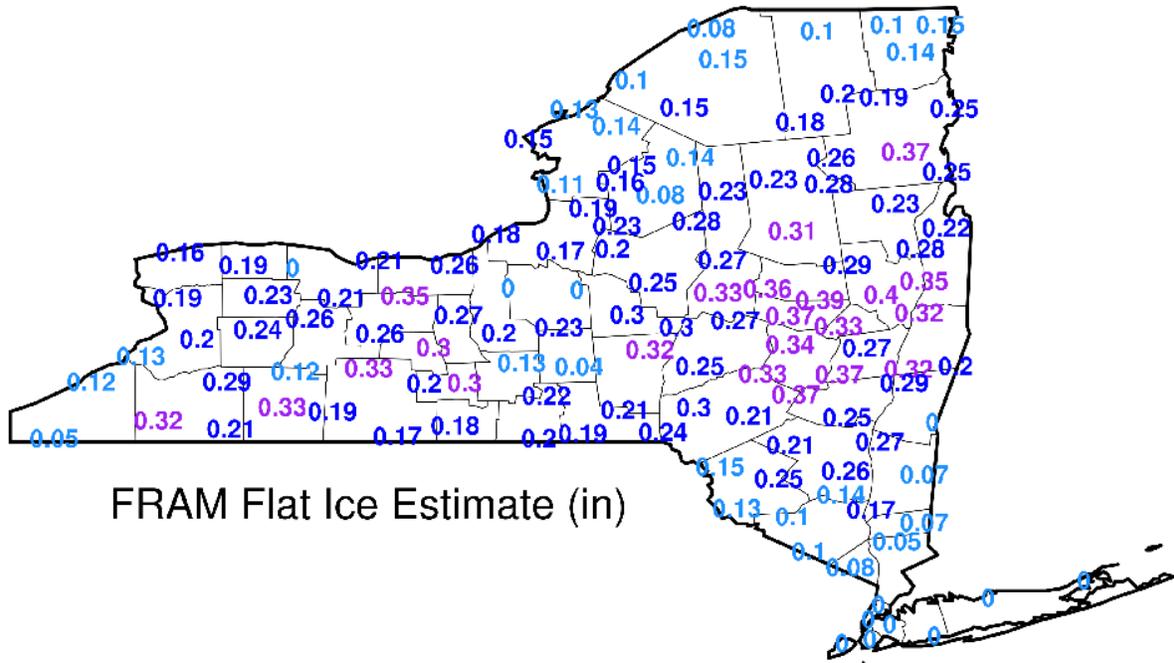
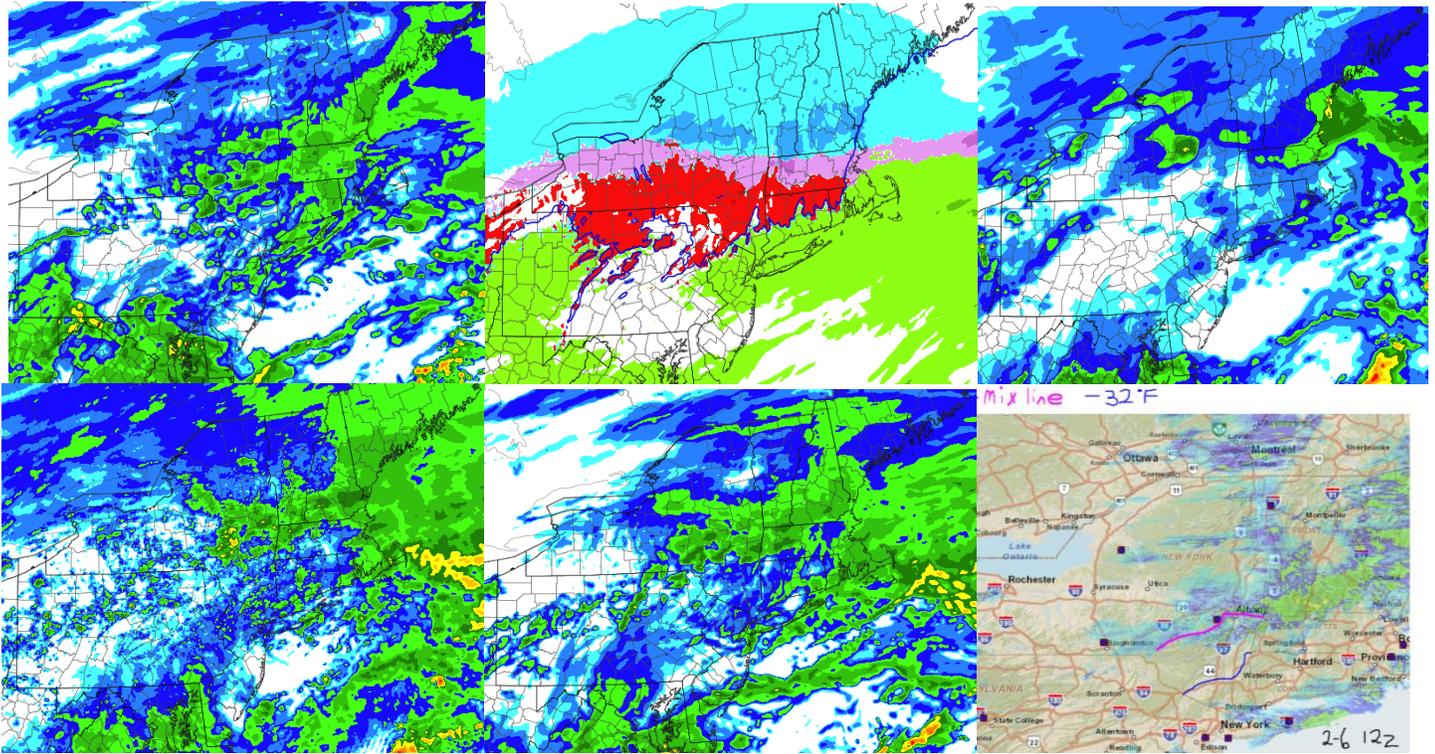


Image courtesy of Nick Bassill – U Albany Center of Excellence

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.

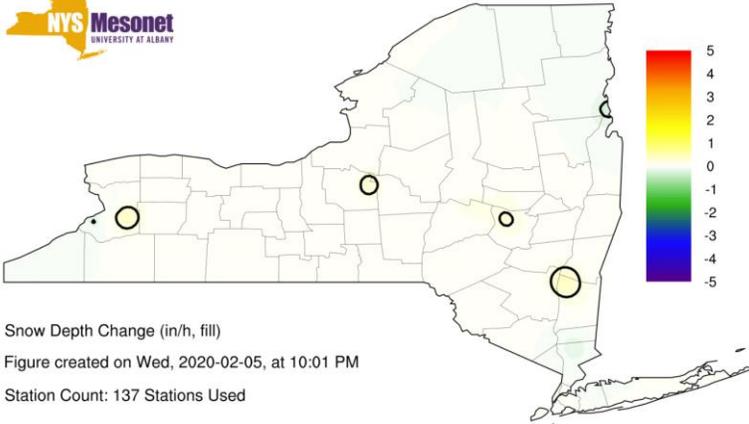
Hourly observations at KALB and KGFL

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	29.85 in	0.0 in	Light Snow
2:34 AM	28 °F	20 °F	72 %	NNE	7 mph	0 mph	29.83 in	0.0 in	Light Snow
2:41 AM	28 °F	20 °F	72 %	N	7 mph	0 mph	29.83 in	0.0 in	Light Snow
2:51 AM	28 °F	21 °F	75 %	NE	6 mph	0 mph	29.83 in	0.0 in	Light Snow
3:10 AM	28 °F	22 °F	78 %	ENE	6 mph	0 mph	29.82 in	0.0 in	Light Snow
3:13 AM	28 °F	22 °F	78 %	NE	6 mph	0 mph	29.81 in	0.0 in	Snow
3:31 AM	27 °F	22 °F	81 %	N	5 mph	0 mph	29.83 in	0.1 in	Snow and Sleet
3:36 AM	28 °F	23 °F	81 %	N	5 mph	0 mph	29.83 in	0.1 in	Snow and Sleet
3:47 AM	27 °F	21 °F	80 %	N	6 mph	0 mph	29.83 in	0.1 in	Snow and Sleet
3:51 AM	27 °F	22 °F	81 %	N	6 mph	0 mph	29.83 in	0.1 in	Snow and Sleet
4:10 AM	27 °F	22 °F	81 %	N	6 mph	0 mph	29.81 in	0.0 in	Snow and Sleet
4:18 AM	27 °F	22 °F	81 %	NE	5 mph	0 mph	29.80 in	0.0 in	Light Snow
4:39 AM	27 °F	22 °F	81 %	E	6 mph	0 mph	29.87 in	0.1 in	Light Snow
4:51 AM	27 °F	22 °F	81 %	E	5 mph	0 mph	29.85 in	0.1 in	Light Snow
4:58 AM	27 °F	22 °F	81 %	ENE	7 mph	0 mph	29.84 in	0.0 in	Snow and Sleet
5:14 AM	27 °F	23 °F	85 %	NE	3 mph	0 mph	29.84 in	0.0 in	Snow and Sleet
5:38 AM	27 °F	23 °F	85 %	NNW	5 mph	0 mph	29.84 in	0.0 in	Sleet
5:43 AM	27 °F	22 °F	81 %	N	3 mph	0 mph	29.82 in	0.0 in	Light Sleet
5:51 AM	27 °F	23 °F	85 %	NNE	3 mph	0 mph	29.81 in	0.1 in	Snow and Sleet
5:59 AM	27 °F	23 °F	85 %	CALM	0 mph	0 mph	29.81 in	0.0 in	Light Sleet
6:09 AM	27 °F	23 °F	85 %	NNE	3 mph	0 mph	29.80 in	0.0 in	Wintry Mix
6:41 AM	28 °F	23 °F	81 %	N	5 mph	0 mph	29.80 in	0.0 in	Wintry Mix
6:51 AM	29 °F	24 °F	82 %	N	5 mph	0 mph	29.81 in	0.0 in	Wintry Mix
7:01 AM	29 °F	25 °F	85 %	N	5 mph	0 mph	29.80 in	0.0 in	Wintry Mix
7:28 AM	30 °F	26 °F	85 %	VAR	3 mph	0 mph	29.80 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.

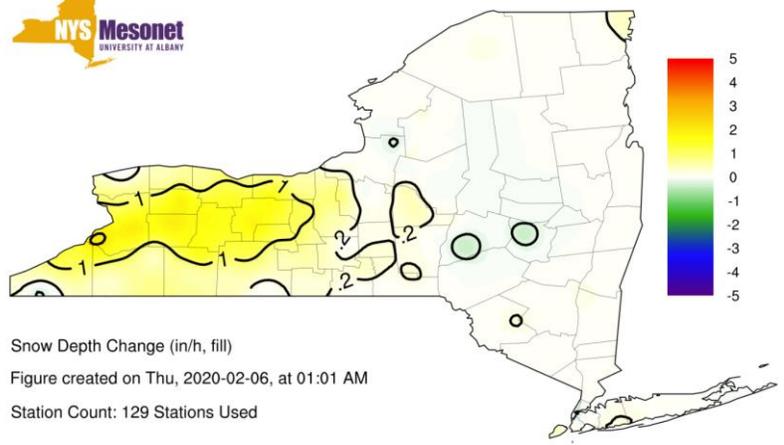
Mesonet 1 hr snow depth change



Snow Depth Change (in/h, fill)

Figure created on Wed, 2020-02-05, at 10:01 PM

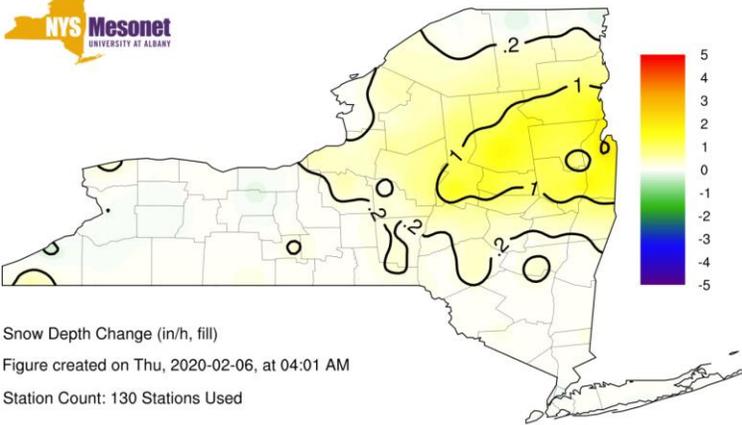
Station Count: 137 Stations Used



Snow Depth Change (in/h, fill)

Figure created on Thu, 2020-02-06, at 01:01 AM

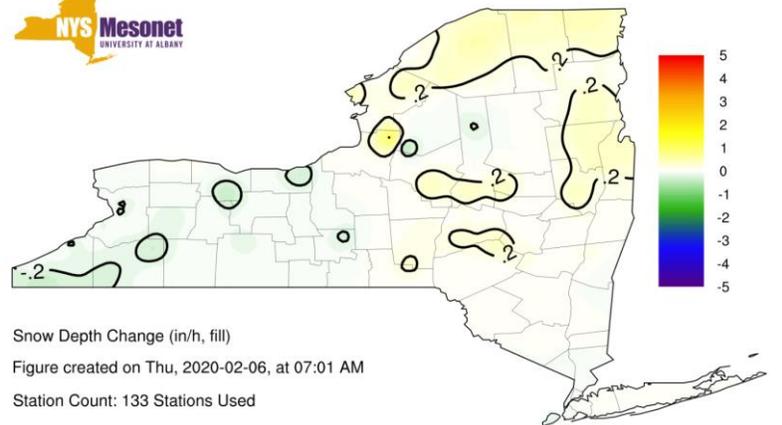
Station Count: 129 Stations Used



Snow Depth Change (in/h, fill)

Figure created on Thu, 2020-02-06, at 04:01 AM

Station Count: 130 Stations Used



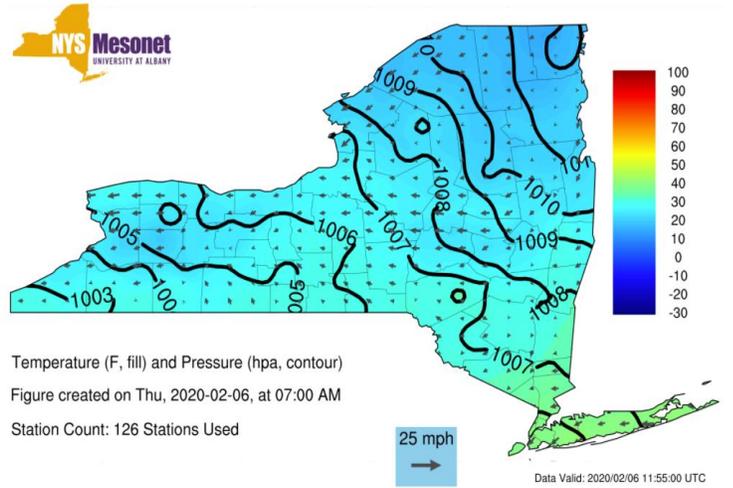
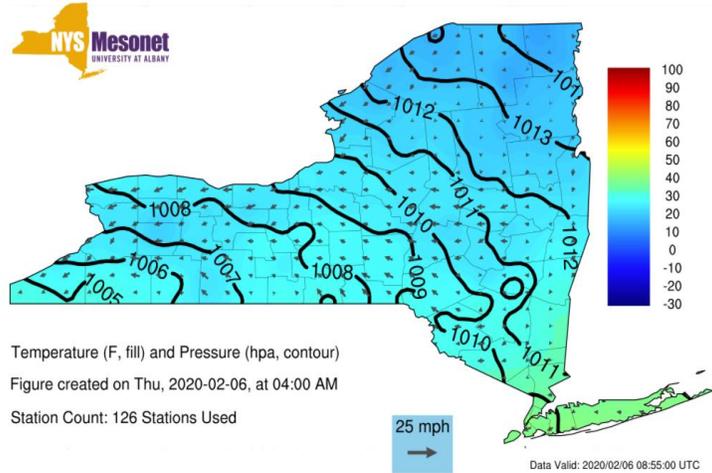
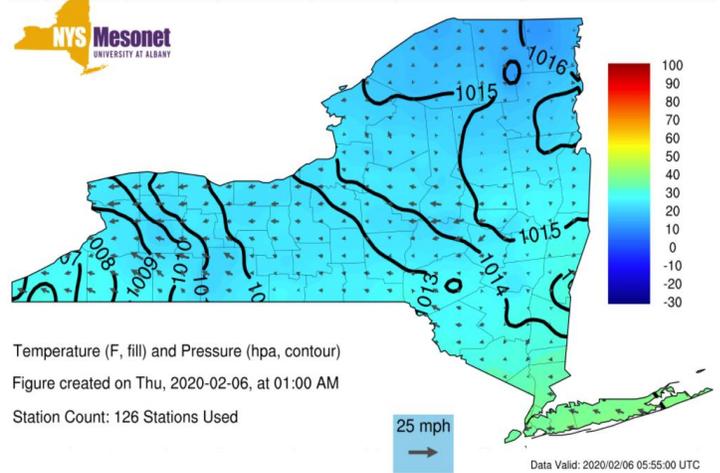
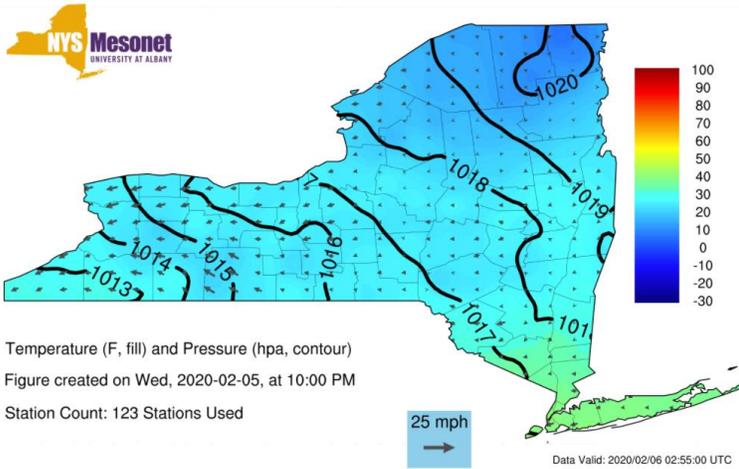
Snow Depth Change (in/h, fill)

Figure created on Thu, 2020-02-06, at 07:01 AM

Station Count: 133 Stations Used

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

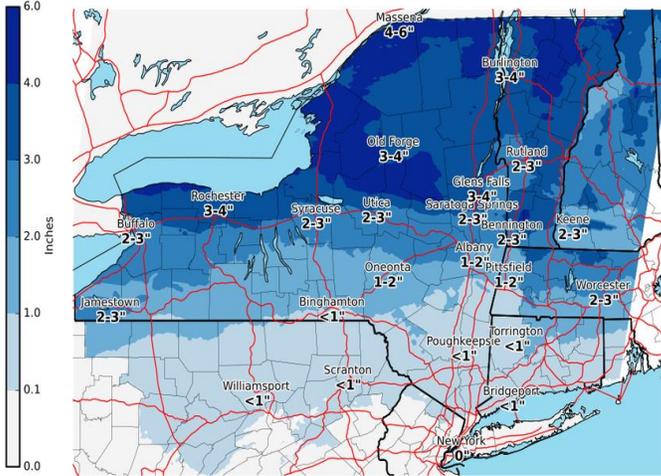


03z, 06z, 09z, 12z February 6

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

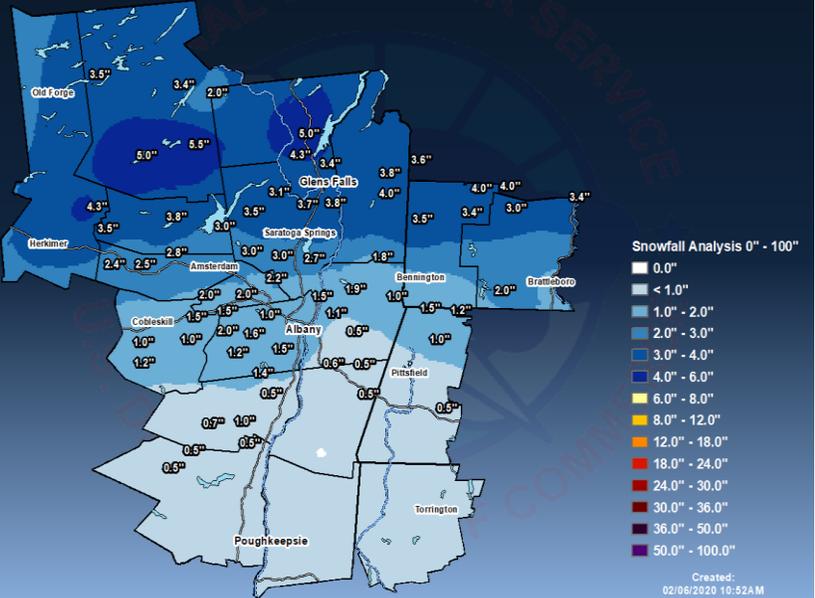
Expected Snowfall - Official NWS Forecast
Valid: 02/05/2020 07:00 PM - 02/06/2020 07:00 PM EST



National Weather Service
Albany, New York
02/05/2020 05:06 AM EST

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National Weather Service Albany New York
Snowfall Analysis 02/05/2020 07:00AM to 02/06/2020 07:00AM
Analysis Data Source: Regional Observations



This is an experimental product. Care should be taken in using the data. Unofficial observations are plotted. Values at interpolated locations may not represent actual precipitation totals at that location.

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

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	
...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.

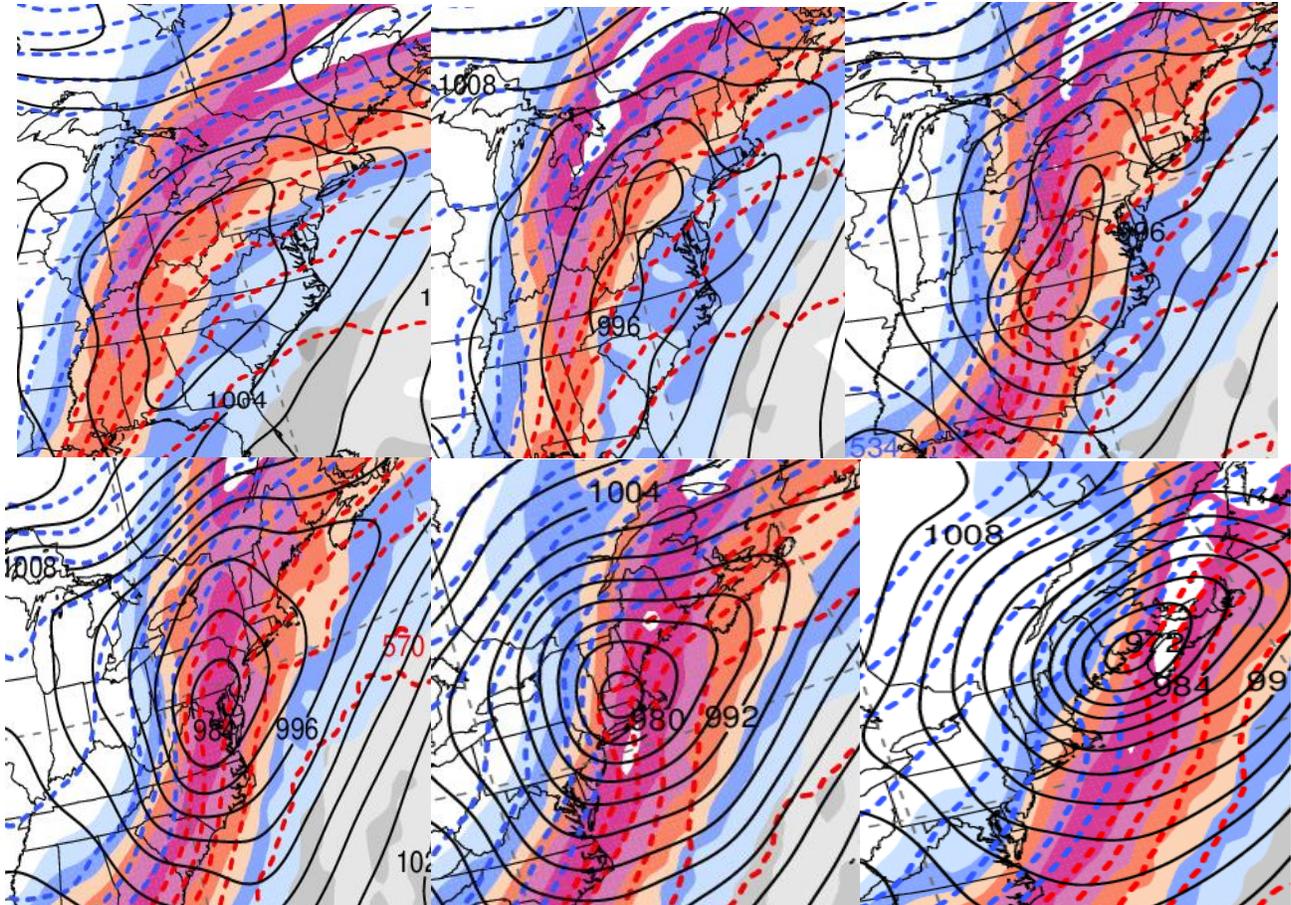
Summary

- 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

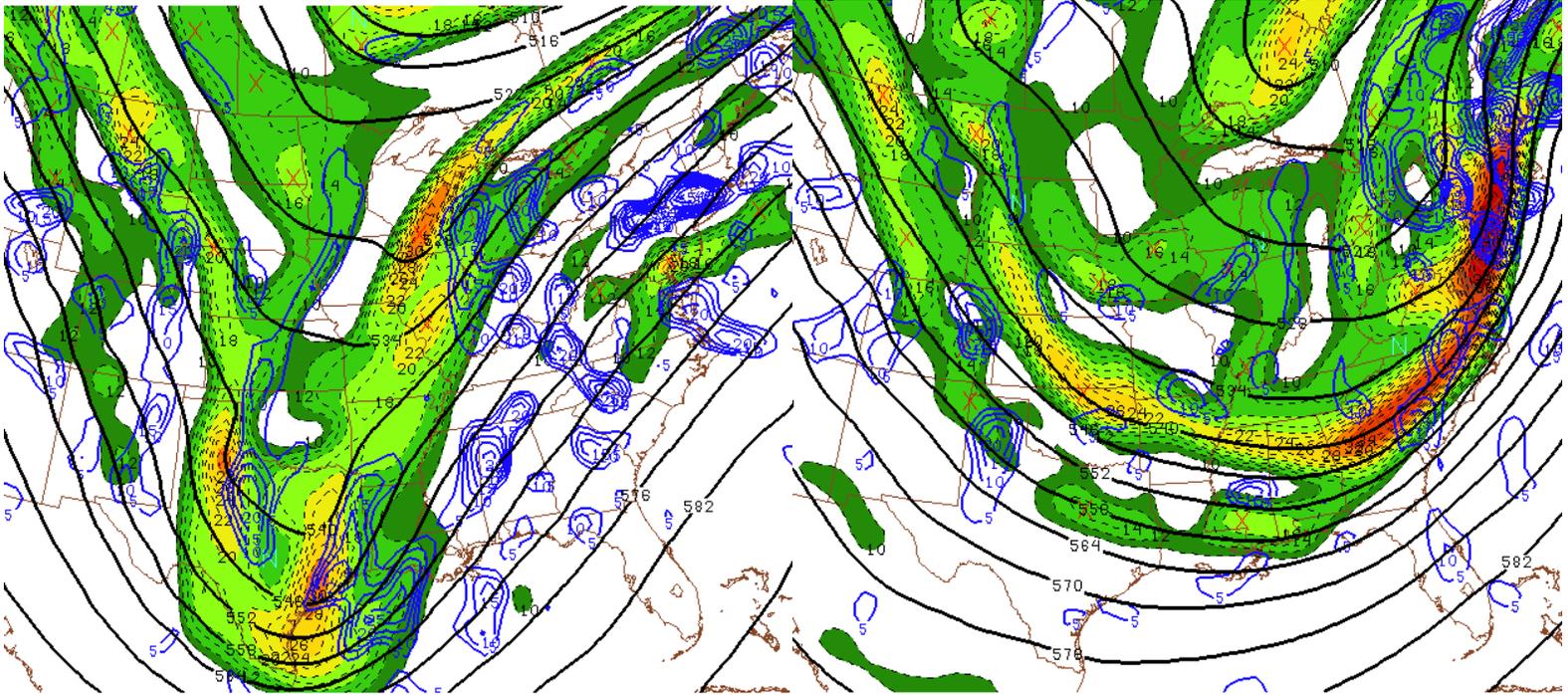


Top : 18z 2/6, 00z 2/7, 06z 2/7, Bottom : 12z 2/7, 18z 2/7, 00z 2/8

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



200206/1800V001 500 mb height and vorticity (fill)
200206/1800V001 700-400 mb differential vorticity advection

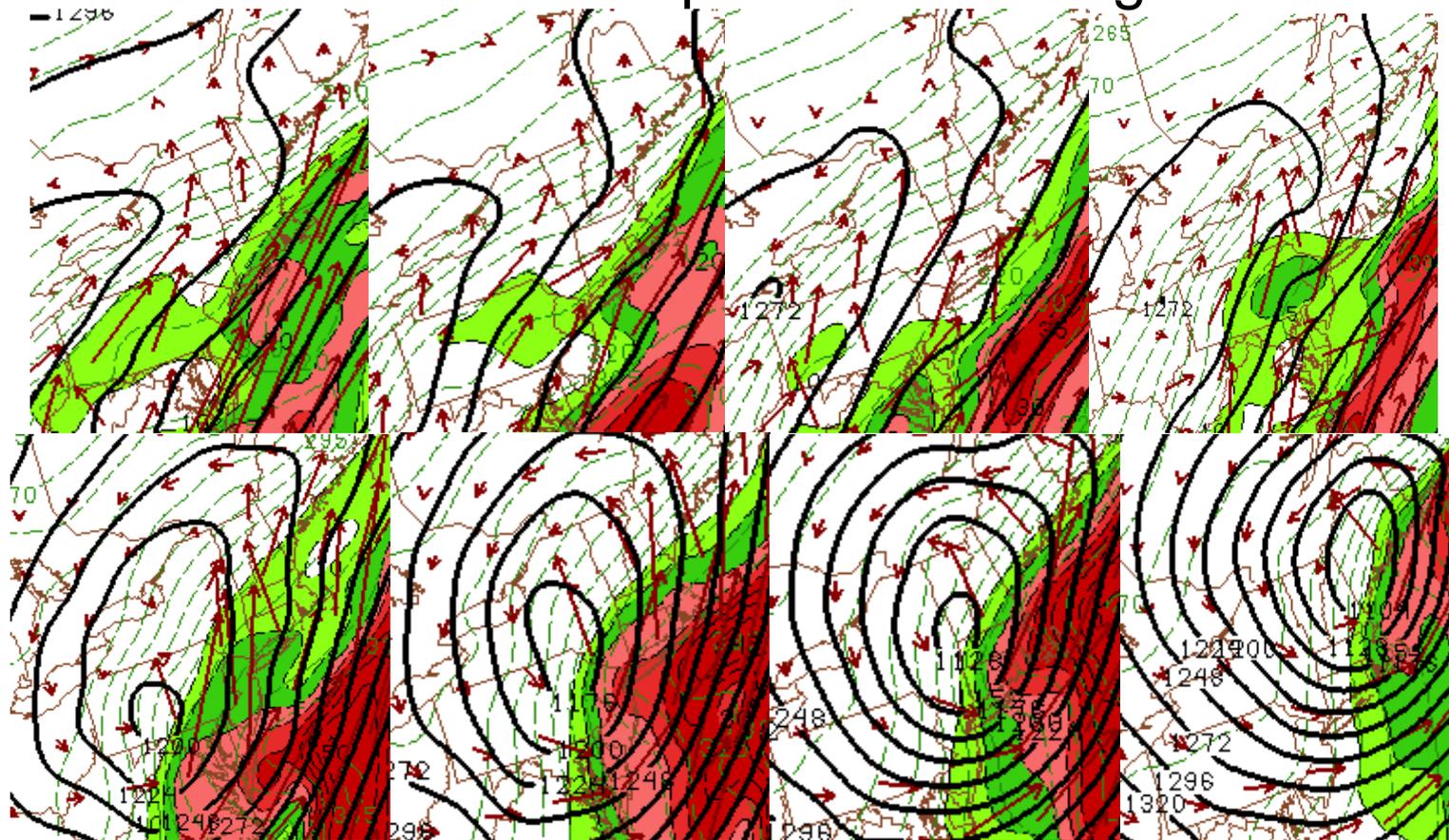
200207/1800V001 500 mb height and vorticity (fill)
200207/1800V001 700-400 mb differential vorticity advection

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

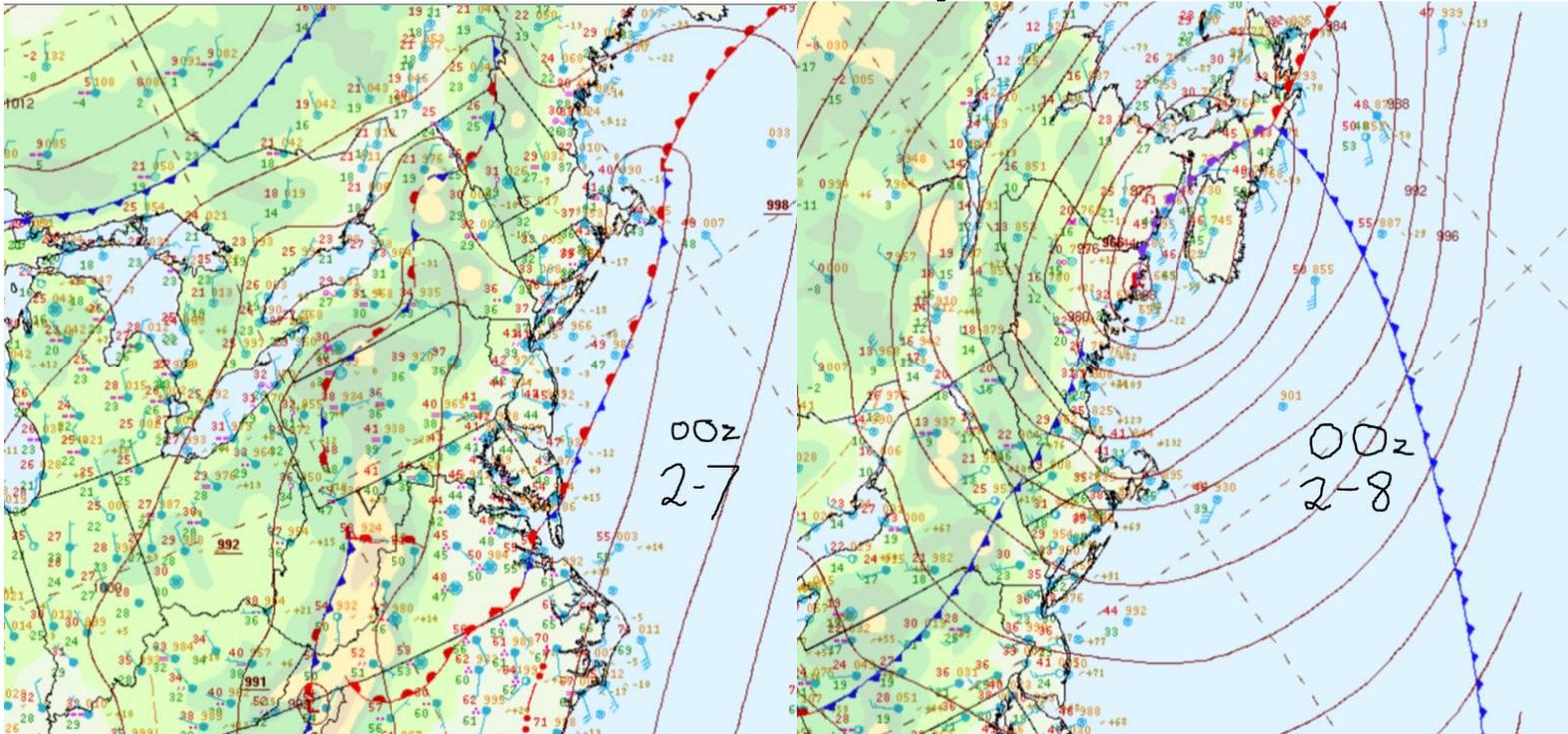


Top : 18z 2/6, 21z 2/6, 00z 2/7, 03z 2/7

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

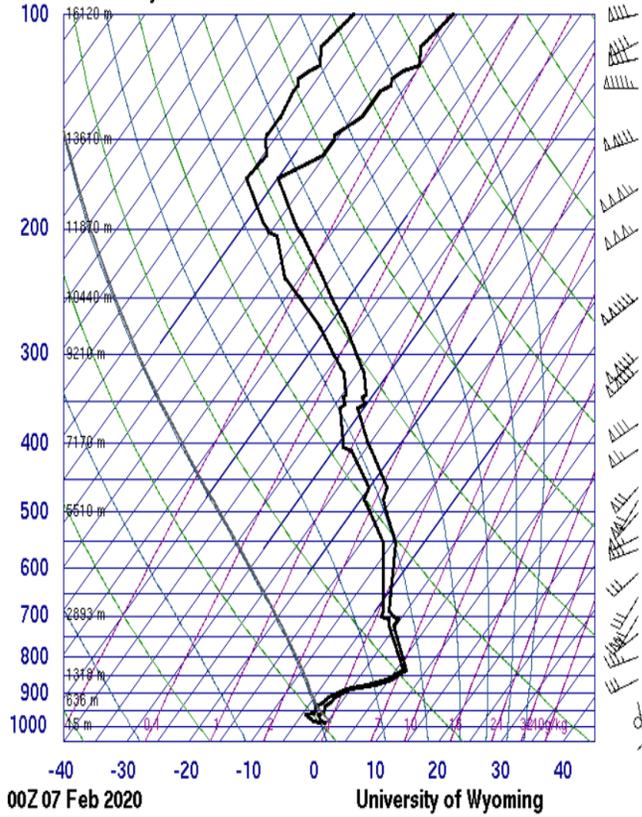


00z February 7, 00z February 8

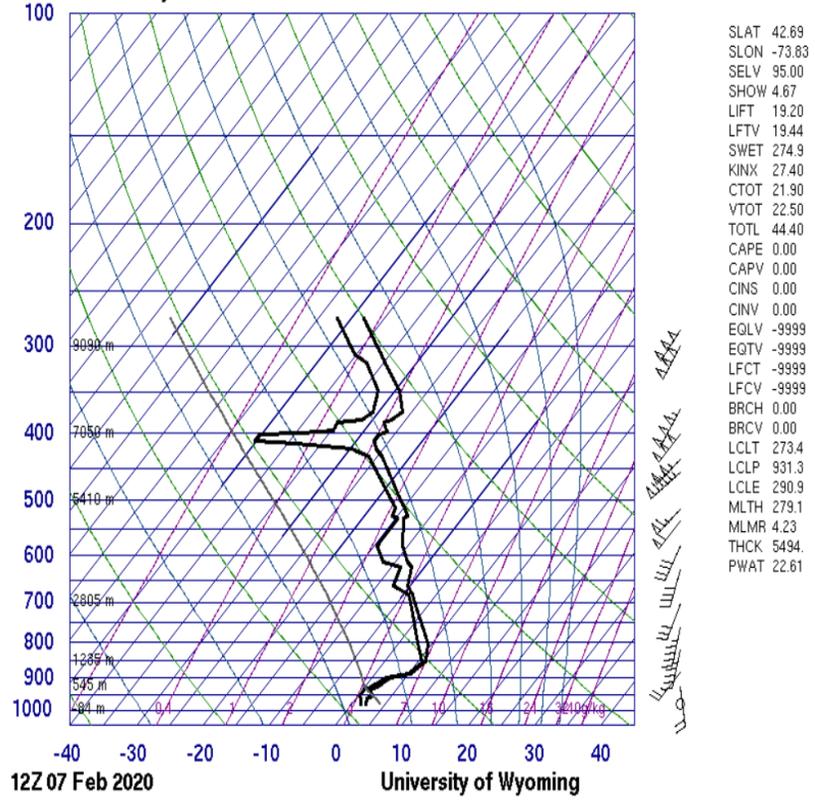
The central pressure of the storm dropped from 991 to 966 millibars, which is a 25 mb decrease in a 24 hour period. It met the NWS criteria for bombogenesis, which is the deepening of a storm at a rate of at least 24 mb in a 24 hour period.

Skew-T at KALB

72518 ALB Albany



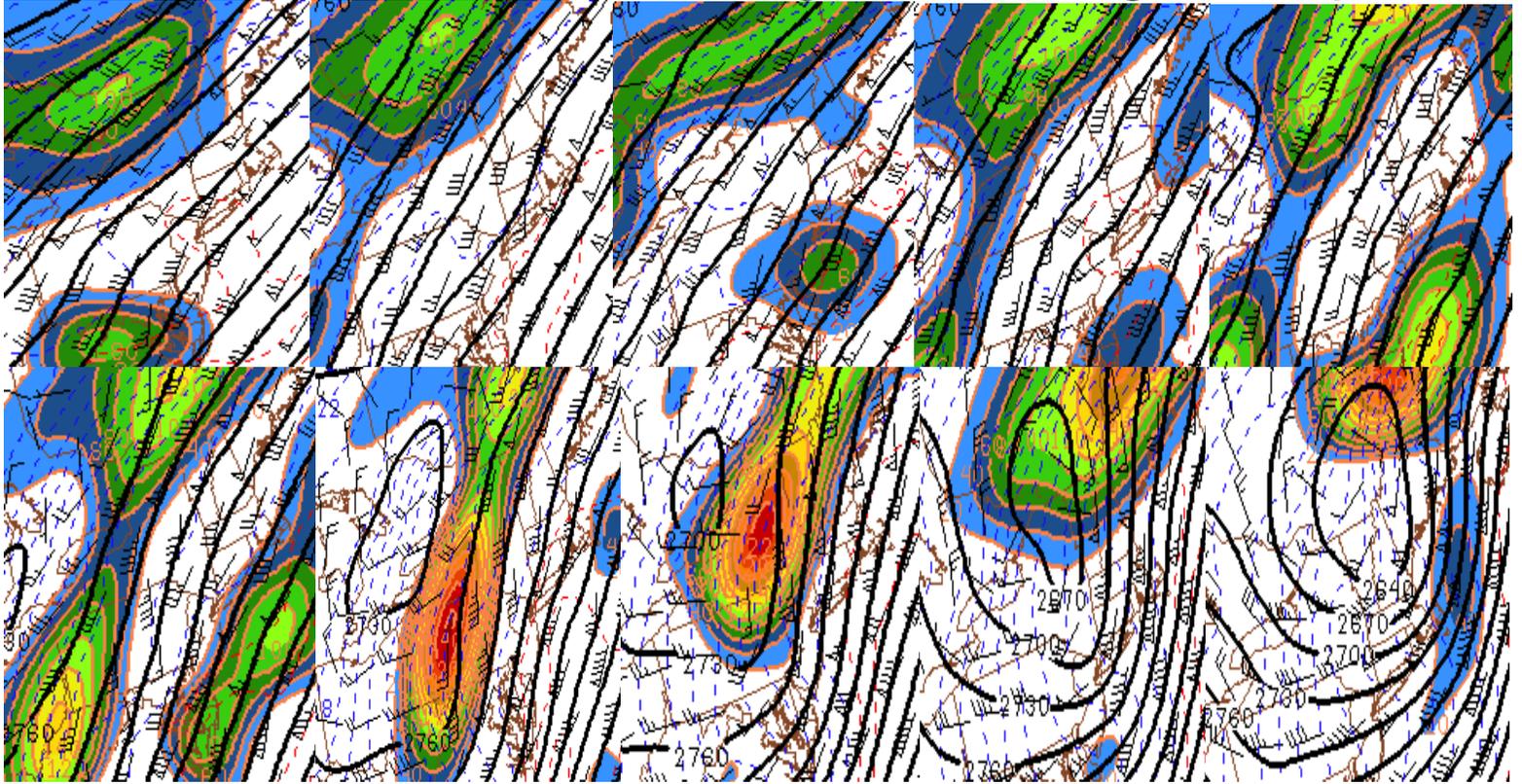
72518 ALB Albany



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.

700 mb Petterssen Frontogenesis/height/temp/wind

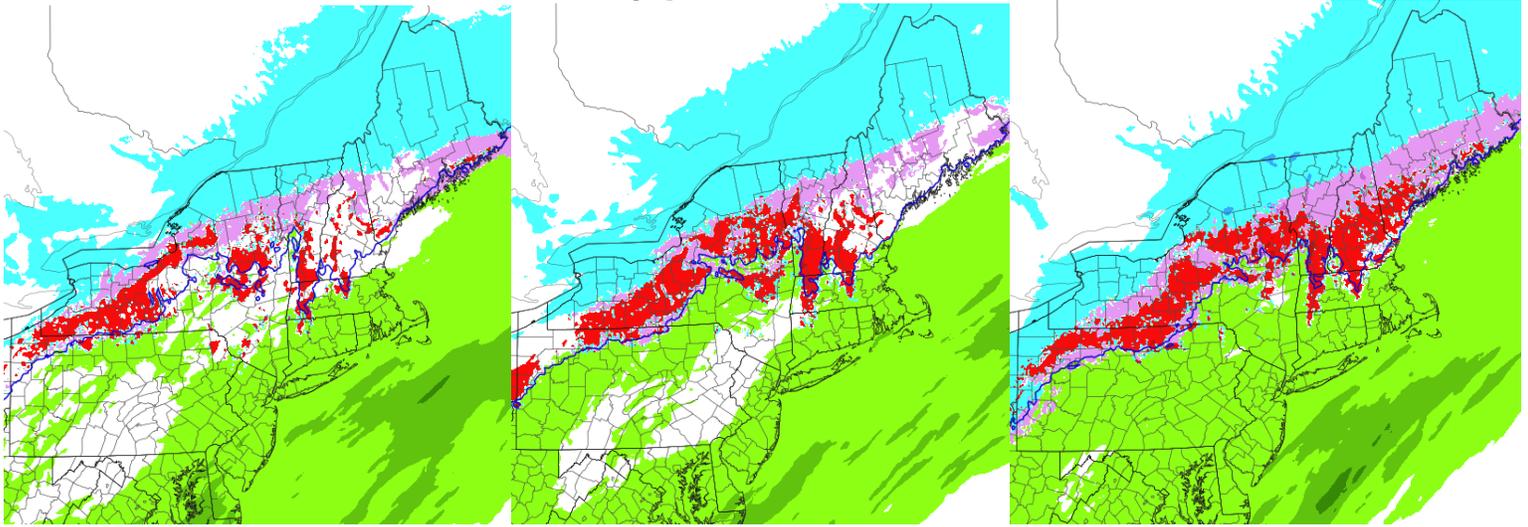


Top : 18z/21z Feb 6, 00z/03z/06z Feb 7

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

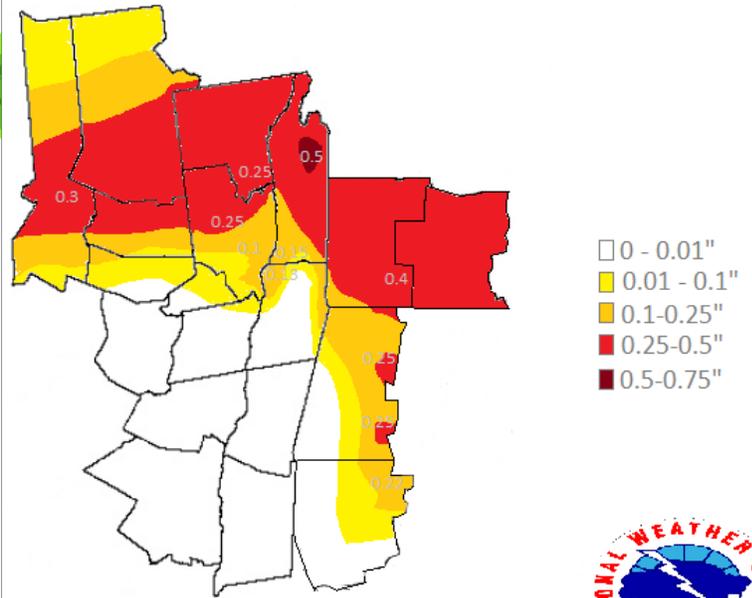
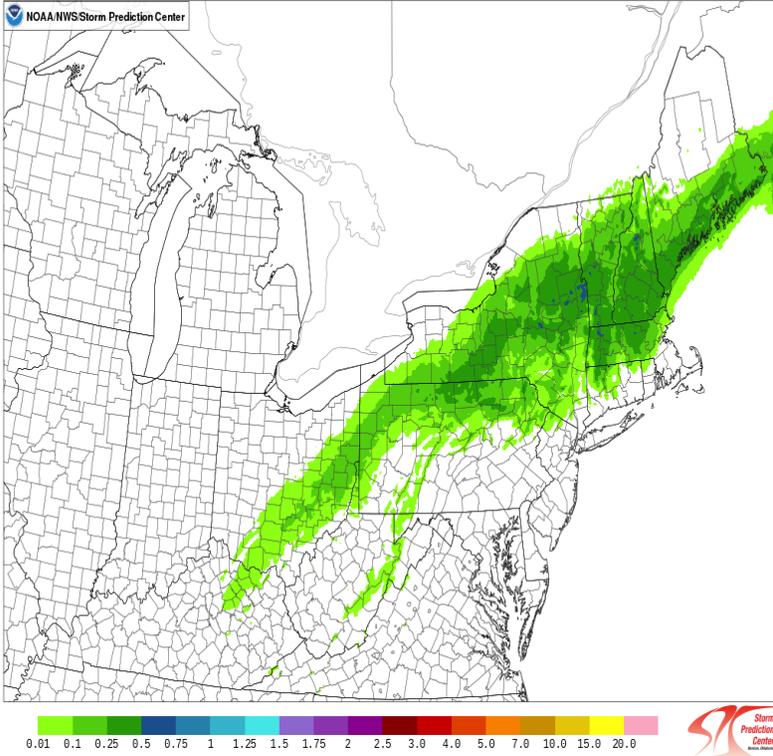


The HREF run overdid the precipitation rates for times valid 03z and 06z February 7, while it underestimated the precipitation for the Capital region at 00z. Instead of a modeled increase in precipitation coverage, cloudy skies were observed in Albany after 02z and Glens Falls for the 00z to 06z time 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

HREF
24-hr FRAM accretion (in), ensemble mean
Run: Thu 2020-02-06 00:00 UTC
Valid: Sat 2020-02-08 00:00 UTC

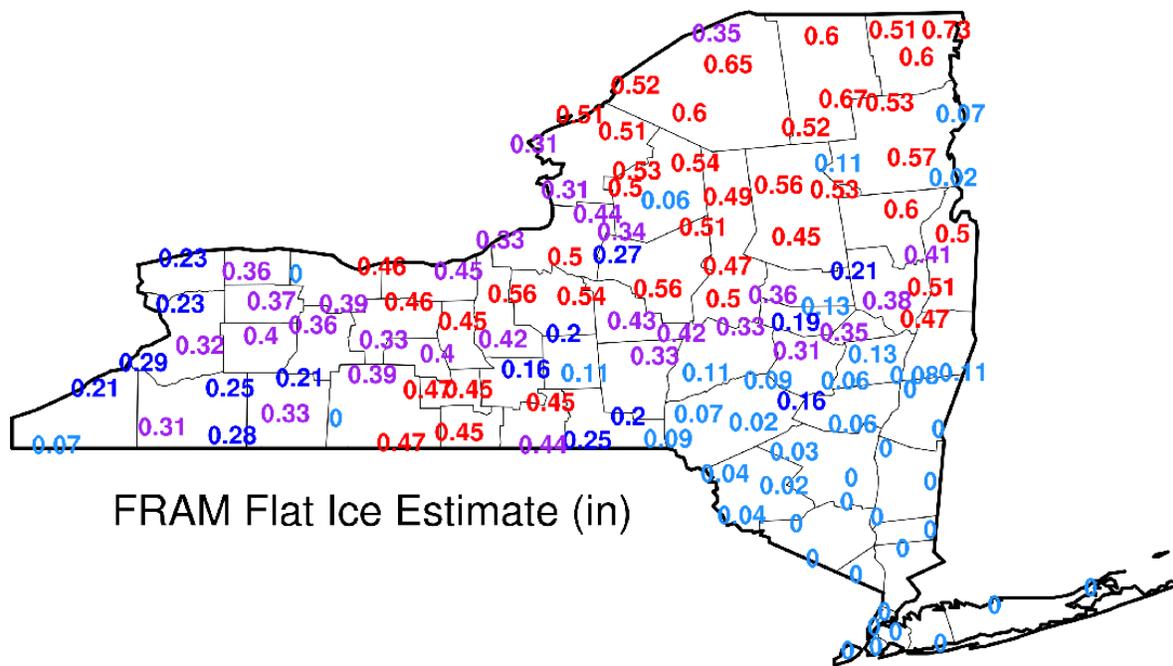
National Weather Service Albany New York
Ice accretion Analysis 02/06/2020 07:00PM to 02/07/2020 07:00PM



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:



FRAM Flat Ice Estimate (in)

Image courtesy of Nick Bassill – U Albany Center of Excellence

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	1:53 PM	29°F	27°F	92%	N	9 mph	0 mph	29.24 in	0.0 in	Cloudy
1:54 PM	31°F	27°F	85%	E	8 mph	0 mph	29.30 in	0.0 in	Wintry Mix	2:12 PM	29°F	27°F	92%	N	9 mph	0 mph	29.22 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	2:25 PM	29°F	27°F	92%	N	8 mph	0 mph	29.22 in	0.0 in	Wintry Mix
2:51 PM	31°F	27°F	85%	NE	6 mph	0 mph	29.26 in	0.0 in	Fog	2:53 PM	29°F	27°F	92%	N	7 mph	0 mph	29.21 in	0.0 in	Wintry Mix
3:51 PM	31°F	28°F	89%	NNE	3 mph	0 mph	29.25 in	0.0 in	Fog	3:12 PM	29°F	27°F	92%	N	9 mph	0 mph	29.22 in	0.0 in	Wintry Mix
4:43 PM	31°F	28°F	89%	NE	5 mph	0 mph	29.26 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
4:51 PM	31°F	28°F	89%	NE	3 mph	0 mph	29.26 in	0.0 in	Wintry Mix	3:32 PM	30°F	28°F	92%	N	7 mph	0 mph	29.22 in	0.0 in	Cloudy
5:51 PM	32°F	28°F	85%	NNE	5 mph	0 mph	29.26 in	0.0 in	Wintry Mix	3:45 PM	30°F	28°F	92%	N	7 mph	0 mph	29.21 in	0.0 in	Cloudy
6:51 PM	32°F	28°F	85%	NNE	5 mph	0 mph	29.25 in	0.0 in	Wintry Mix	3:53 PM	30°F	28°F	92%	N	7 mph	0 mph	29.22 in	0.0 in	Cloudy
7:32 PM	32°F	29°F	88%	ENE	5 mph	0 mph	29.23 in	0.1 in	Wintry Mix	4:05 PM	30°F	28°F	92%	N	7 mph	0 mph	29.22 in	0.0 in	Fog
7:51 PM	32°F	29°F	88%	ENE	3 mph	0 mph	29.22 in	0.1 in	Wintry Mix	4:30 PM	30°F	28°F	92%	ENE	5 mph	0 mph	29.22 in	0.0 in	Fog
8:13 PM	32°F	29°F	88%	CALM	0 mph	0 mph	29.20 in	0.0 in	Wintry Mix	4:53 PM	29°F	28°F	96%	ENE	5 mph	0 mph	29.21 in	0.0 in	Fog
8:51 PM	32°F	29°F	88%	CALM	0 mph	0 mph	29.16 in	0.0 in	Wintry Mix	5:19 PM	29°F	28°F	96%	CALM	0 mph	0 mph	29.21 in	0.0 in	Fog
9:05 PM	32°F	29°F	88%	SE	5 mph	0 mph	29.13 in	0.0 in	Cloudy	5:31 PM	29°F	28°F	96%	CALM	0 mph	0 mph	29.21 in	0.0 in	Wintry Mix
9:51 PM	33°F	29°F	85%	NNW	5 mph	0 mph	29.09 in	0.0 in	Cloudy	5:39 PM	29°F	29°F	100%	CALM	0 mph	0 mph	29.21 in	0.0 in	Wintry Mix
10:51 PM	33°F	30°F	89%	N	8 mph	0 mph	29.12 in	0.0 in	Cloudy	5:53 PM	29°F	28°F	96%	CALM	0 mph	0 mph	29.22 in	0.0 in	Wintry Mix
11:30 PM	33°F	30°F	89%	E	7 mph	0 mph	29.15 in	0.0 in	Cloudy	6:03 PM	29°F	27°F	92%	CALM	0 mph	0 mph	29.20 in	0.0 in	Wintry Mix
11:51 PM	33°F	30°F	89%	E	5 mph	0 mph	29.16 in	0.0 in	Cloudy	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	29.06 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.

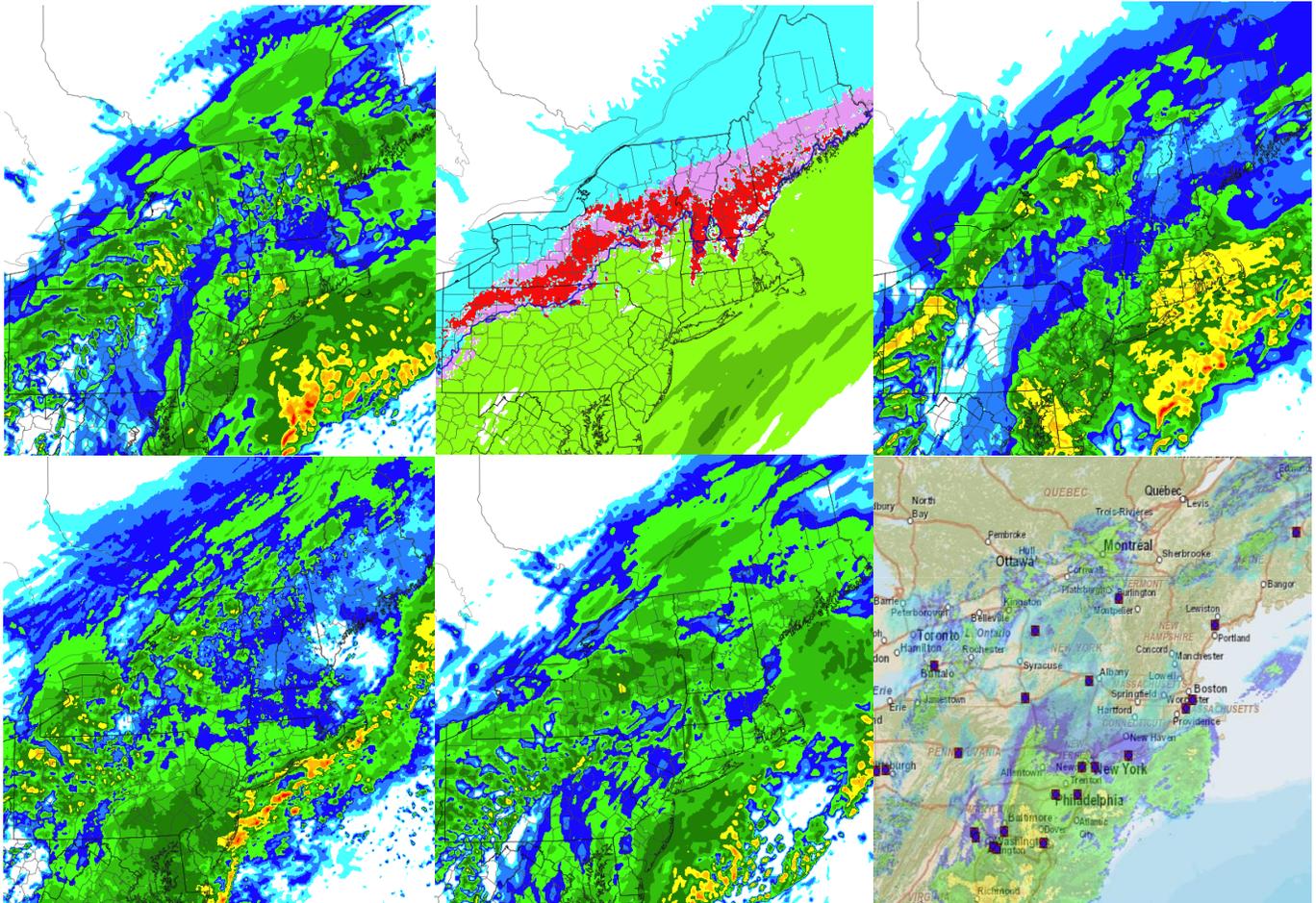
Hourly observations at KALB and KGFL

1:51 AM	33 °F	30 °F	89 %	CALM	0 mph	0 mph	29.08 in	0.0 in	Light Drizzle	2:24 AM	29 °F	27 °F	92 %	E	5 mph	0 mph	28.96 in	0.0 in	Fog
2:13 AM	33 °F	31 °F	92 %	CALM	0 mph	0 mph	29.07 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
2:51 AM	34 °F	31 °F	89 %	ESE	3 mph	0 mph	29.06 in	0.0 in	Fog	2:46 AM	28 °F	28 °F	100 %	CALM	0 mph	0 mph	28.97 in	0.0 in	Wintry Mix
3:51 AM	35 °F	33 °F	92 %	W	5 mph	0 mph	29.03 in	0.0 in	Light Rain	2:51 AM	28 °F	28 °F	100 %	ENE	3 mph	0 mph	28.97 in	0.0 in	Wintry Mix
4:51 AM	34 °F	31 °F	89 %	SE	5 mph	0 mph	28.98 in	0.0 in	Fog	2:53 AM	28 °F	27 °F	96 %	E	3 mph	0 mph	28.97 in	0.0 in	Wintry Mix
5:22 AM	35 °F	32 °F	89 %	SE	7 mph	0 mph	28.95 in	0.0 in	Cloudy	2:59 AM	29 °F	28 °F	96 %	CALM	0 mph	0 mph	28.96 in	0.0 in	Wintry Mix
5:51 AM	35 °F	32 °F	89 %	ESE	6 mph	0 mph	28.94 in	0.0 in	Cloudy	3:21 AM	29 °F	27 °F	92 %	NE	6 mph	0 mph	28.94 in	0.0 in	Wintry Mix
5:58 AM	35 °F	31 °F	85 %	ENE	6 mph	0 mph	28.92 in	0.0 in	Cloudy	3:49 AM	28 °F	28 °F	100 %	CALM	0 mph	0 mph	28.94 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	3:53 AM	29 °F	28 °F	96 %	CALM	0 mph	0 mph	28.94 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	4:08 AM	29 °F	28 °F	96 %	CALM	0 mph	0 mph	28.93 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	4:35 AM	29 °F	28 °F	96 %	NE	3 mph	0 mph	28.92 in	0.0 in	Cloudy
7:51 AM	34 °F	31 °F	89 %	ENE	6 mph	0 mph	28.86 in	0.0 in	Light Drizzle	4:53 AM	29 °F	28 °F	96 %	E	3 mph	0 mph	28.91 in	0.0 in	Cloudy
7:58 AM	34 °F	31 °F	89 %	NE	6 mph	0 mph	28.85 in	0.0 in	Light Drizzle	5:07 AM	29 °F	28 °F	96 %	NE	6 mph	0 mph	28.89 in	0.0 in	Cloudy
8:51 AM	33 °F	30 °F	89 %	NNE	5 mph	0 mph	28.83 in	0.0 in	Light Rain	5:16 AM	29 °F	28 °F	96 %	NE	6 mph	0 mph	28.88 in	0.0 in	Cloudy
9:51 AM	33 °F	30 °F	89 %	N	6 mph	0 mph	28.77 in	0.1 in	Rain	5:35 AM	29 °F	28 °F	96 %	NE	3 mph	0 mph	28.88 in	0.0 in	Cloudy
10:51 AM	33 °F	30 °F	89 %	NNW	6 mph	0 mph	28.71 in	0.1 in	Rain	6:35 AM	28 °F	27 °F	96 %	ENE	6 mph	0 mph	28.86 in	0.0 in	Wintry Mix
11:44 AM	34 °F	30 °F	85 %	N	6 mph	0 mph	28.66 in	0.1 in	Rain	6:42 AM	28 °F	28 °F	100 %	NE	6 mph	0 mph	28.85 in	0.1 in	Wintry Mix
11:51 AM	34 °F	30 °F	85 %	NNE	8 mph	0 mph	28.66 in	0.2 in	Rain	6:53 AM	29 °F	28 °F	96 %	NE	5 mph	0 mph	28.84 in	0.1 in	Wintry Mix
12:51 PM	34 °F	30 °F	85 %	N	8 mph	0 mph	28.57 in	0.1 in	Light Rain	7:04 AM	29 °F	28 °F	96 %	NE	5 mph	0 mph	28.84 in	0.0 in	Wintry Mix
1:51 PM	34 °F	30 °F	85 %	NW	14 mph	0 mph	28.55 in	0.1 in	Light Sleet	7:10 AM	29 °F	28 °F	96 %	NE	6 mph	0 mph	28.83 in	0.0 in	Wintry Mix
2:11 PM	34 °F	30 °F	85 %	NW	12 mph	0 mph	28.54 in	0.1 in	Light Snow	7:53 AM	30 °F	29 °F	96 %	NE	7 mph	0 mph	28.80 in	0.1 in	Wintry Mix
2:20 PM	34 °F	30 °F	85 %		0 mph	0 mph	28.55 in	0.1 in	Light Snow	8:14 AM	30 °F	29 °F	96 %	NE	7 mph	0 mph	28.79 in	0.0 in	Wintry Mix
2:27 PM	33 °F	29 °F	85 %	WNW	20 mph	32 mph	28.55 in	0.1 in	Snow	8:28 AM	30 °F	29 °F	96 %	NE	6 mph	0 mph	28.77 in	0.0 in	Wintry Mix
2:51 PM	32 °F	28 °F	85 %		0 mph	0 mph	28.57 in	0.1 in	Heavy Snow	8:51 AM	30 °F	28 °F	93 %	ENE	5 mph	0 mph	28.76 in	0.1 in	Wintry Mix
3:15 PM	31 °F	28 °F	82 %	W	23 mph	31 mph	28.59 in	0.0 in	Snow / Windy	8:52 AM	30 °F	29 °F	96 %	ENE	3 mph	0 mph	28.76 in	0.1 in	Wintry Mix
3:37 PM	28 °F	23 °F	81 %	W	29 mph	45 mph	28.64 in	0.0 in	Heavy Snow / Windy	9:08 AM	31 °F	30 °F	96 %	NNE	5 mph	0 mph	28.75 in	0.0 in	Wintry Mix
3:51 PM	28 °F	23 °F	81 %	W	31 mph	41 mph	28.66 in	0.0 in	Heavy Snow / Windy	9:15 AM	31 °F	29 °F	92 %	NNE	6 mph	0 mph	28.74 in	0.1 in	Wintry Mix
4:24 PM	27 °F	21 °F	78 %	W	25 mph	45 mph	28.72 in	0.0 in	Heavy Snow / Windy	9:31 AM	31 °F	30 °F	96 %	N	9 mph	0 mph	28.73 in	0.1 in	Wintry Mix
4:49 PM	27 °F	19 °F	74 %	W	23 mph	40 mph	28.79 in	0.0 in	Light Snow / Windy	9:39 AM	31 °F	30 °F	96 %	N	9 mph	0 mph	28.71 in	0.1 in	Wintry Mix
4:51 PM	27 °F	20 °F	75 %	W	24 mph	37 mph	28.79 in	0.0 in	Light Snow / Windy	9:53 AM	31 °F	30 °F	96 %	NNE	8 mph	0 mph	28.69 in	0.1 in	Freezing Rain
4:58 PM	27 °F	19 °F	72 %	W	24 mph	40 mph	28.81 in	0.0 in	Light Snow / Windy	10:05 AM	31 °F	30 °F	96 %	NNE	6 mph	0 mph	28.68 in	0.0 in	Freezing Rain
5:32 PM	28 °F	18 °F	71 %	W	31 mph	48 mph	28.87 in	0.0 in	Light Snow / Windy	10:34 AM	31 °F	30 °F	96 %	N	8 mph	0 mph	28.65 in	0.1 in	Light Freezing Rain
5:51 PM	28 °F	18 °F	71 %	W	29 mph	48 mph	28.90 in	0.0 in	Light Snow / Windy	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
										4:48 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	18 °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.

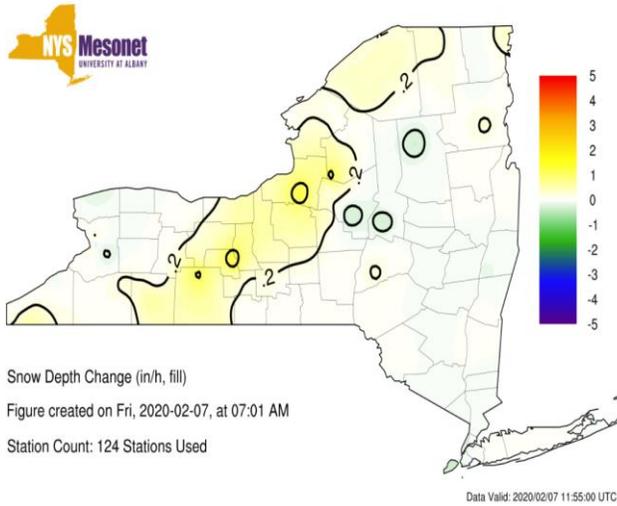
Radar vs Model runs at 06z Feb 7



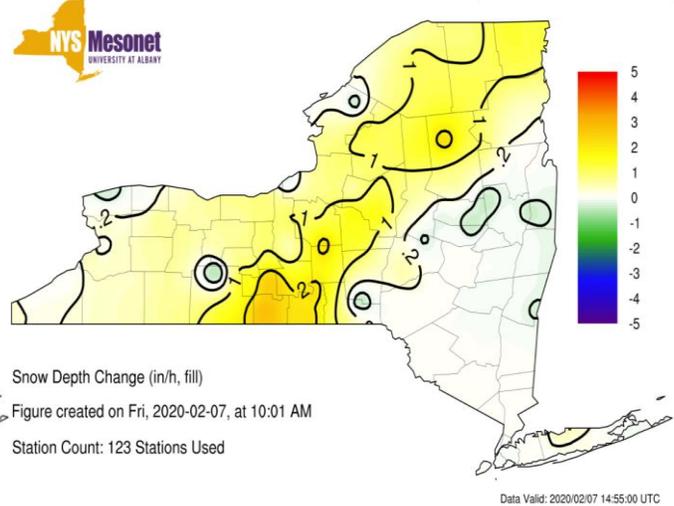
Left to right (top row) : ARW, HREF, HRRR
Left to right (bottom row) : NAM, NSSL, Observed

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.

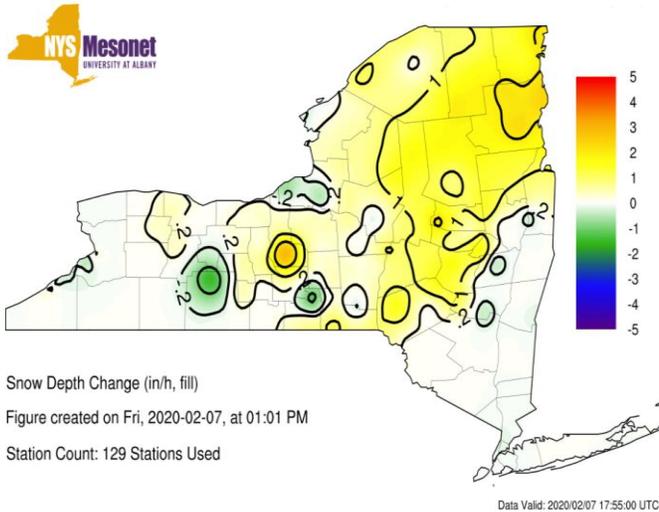
Mesonet 1 hr snow depth change



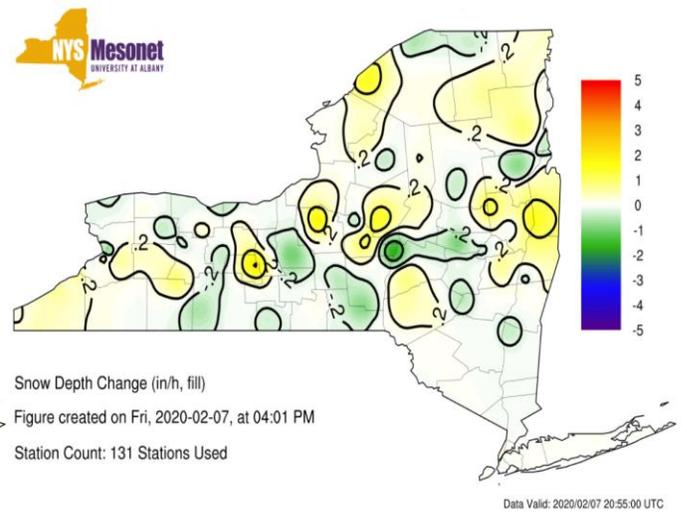
Data Valid: 2020/02/07 11:55:00 UTC



Data Valid: 2020/02/07 14:55:00 UTC



Data Valid: 2020/02/07 17:55:00 UTC

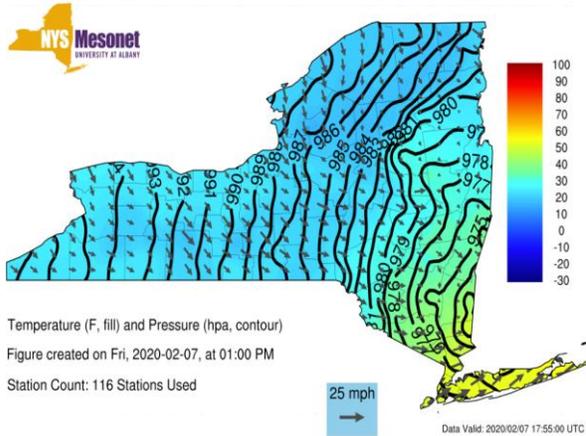
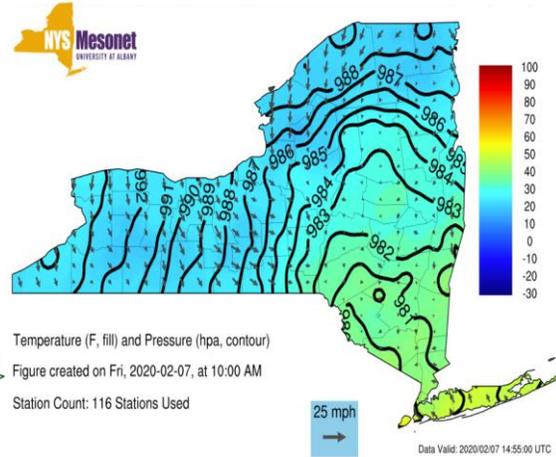
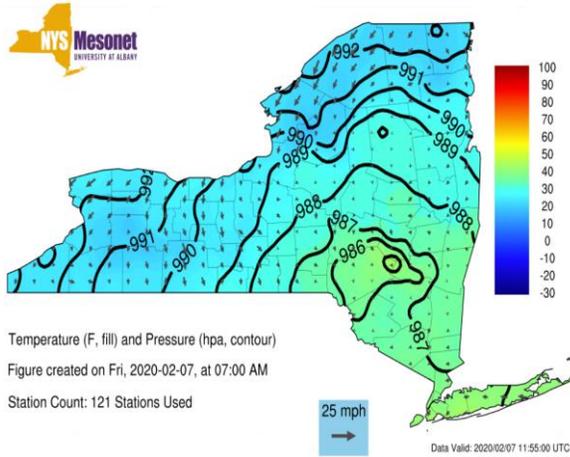


Data Valid: 2020/02/07 20:55:00 UTC

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



ALY Public Weather Information Statement

CONNECTICUT					...Rensselaer County...				
...Litchfield County...					7 NE Troy	3.9	700 AM	2/08	CoCoRaHS
Norfolk	1.6	800 AM	2/08	Co-Op Observer	1 NW Averill Park	3.2	730 PM	2/07	Meteorologist
2 NNE Litchfield	0.4	700 AM	2/08	CoCoRaHS	Schaghticoke	3.0	533 PM	2/07	WeatherNet6
3 SW New Hartford Ce	0.2	700 AM	2/08	CoCoRaHS	Petersburg	3.0	536 PM	2/07	WeatherNet6
Bakersville	0.2	700 AM	2/08	Co-Op Observer	Hoosick Falls	2.9	1035 PM	2/07	WeatherNet6
MASSACHUSETTS					Speigletown	2.8	446 PM	2/07	WeatherNet6
...Berkshire County...					4 ESE Nassau	2.2	748 AM	2/08	CoCoRaHS
Savoy	3.1	1057 PM	2/07	WeatherNet6	Center Brunswick	2.0	1053 PM	2/07	WeatherNet6
Williamstown	2.2	729 AM	2/08	Twitter	1 N Sycaway	1.9	428 PM	2/07	NWS Employee
Windsor	2.0	727 PM	2/07	Broadcast Media	2 NNE Troy	1.9	800 AM	2/08	CoCoRaHS
2 SE Pittsfield	1.8	610 PM	2/07	Trained Spotter	...Saratoga County...				
Becket	1.0	455 PM	2/07	WeatherNet6	Lake Desolation	5.5	548 PM	2/07	WeatherNet6
NNE Stockbridge	1.0	530 AM	2/08	CoCoRaHS	Galway	5.0	725 PM	2/07	Broadcast Media
1 NNW Cheshire	1.0	700 AM	2/08	CoCoRaHS	1 NW Gansevoort	4.7	600 AM	2/08	CoCoRaHS
3 N Great Barrington	1.0	700 AM	2/08	CoCoRaHS	Ballston Spa	3.5	512 PM	2/07	WeatherNet6
3 S Sandisfield	1.0	500 PM	2/07	Trained Spotter	Charlton	3.0	1026 PM	2/07	WeatherNet6
NEW YORK					3 ESE Ballston Spa	2.5	730 AM	2/08	CoCoRaHS
...Albany County...					3 S Clifton Park	2.0	600 AM	2/08	CoCoRaHS
Rensselaerville	4.0	726 PM	2/07	Broadcast Media	...Schenectady County...				
Knox	3.8	444 PM	2/07	WeatherNet6	Schenectady-GE Plot	3.0	700 AM	2/08	NWS Employee
2 NNW Rensselaervill	2.7	700 AM	2/08	CoCoRaHS	Delanson Znc	2.5	700 AM	2/08	Co-Op Observer
3 SW Glenmont	2.5	700 AM	2/08	CoCoRaHS	Duanesburg	2.5	914 PM	2/07	WeatherNet6
Delmar	2.0	614 PM	2/07	WeatherNet6	Niskayuna	2.5	726 PM	2/07	Broadcast Media
NWS Albany	1.6	700 AM	2/08	CoCoRaHS	Schenectady	2.4	937 PM	2/07	WeatherNet6
1 SW Albany	1.5	700 AM	2/08	CoCoRaHS	1 NW Scotia	2.3	600 AM	2/08	CoCoRaHS
Colonie	1.5	445 PM	2/07	WeatherNet6	1 NW Rotterdam	2.3	500 AM	2/08	CoCoRaHS
Albany Intl AP	1.2	700 PM	2/07	ASOS	Glenville	2.0	546 PM	2/07	WeatherNet6
Alcove Reservoir	0.5	745 AM	2/08	Co-Op Observer	Delanson	2.0	507 PM	2/07	WeatherNet6
...Columbia County...					1 SSW Aqueduct	2.0	500 PM	2/07	NWS Employee
3 N Valatie	1.2	700 AM	2/08	CoCoRaHS	5 Niskayuna	2.0	700 AM	2/08	CoCoRaHS
...Fulton County...					...Schoharie County...				
Stratford	7.0	738 AM	2/08	WeatherNet6	Summit	6.0	724 PM	2/07	Broadcast Media
Gloversville 7mw	5.8	800 AM	2/08	Co-Op Observer	Middleburgh	6.0	724 PM	2/07	Broadcast Media
5 ESE Broadalbin	5.5	900 AM	2/08	CoCoRaHS	Cobleskill	6.0	735 AM	2/08	Co-Op Observer
Perth	4.0	435 PM	2/07	WeatherNet6	Jefferson	5.8	959 PM	2/07	WeatherNet6
Broadalbin	3.0	733 AM	2/08	WeatherNet6	Schoharie	5.5	1112 PM	2/07	WeatherNet6
...Greene County...					Gilboa	5.0	1050 PM	2/07	WeatherNet6
Greenville Center	2.0	641 AM	2/08	WeatherNet6	Warnerville	5.0	443 PM	2/07	WeatherNet6
East Jewett	2.0	700 AM	2/08	Trained Spotter	Richmondville	5.0	454 PM	2/07	WeatherNet6
West Kill	1.5	448 PM	2/07	WeatherNet6	Charlotteville	4.8	554 PM	2/07	WeatherNet6
...Hamilton County...					...Ulster County...				
Long Lake	12.0	718 PM	2/07	Broadcast Media	Phoenicia	0.3	713 AM	2/08	Co-Op Observer
Indian Lake	10.3	828 AM	2/08	Co-Op Observer	...Warren County...				
Speculator	9.0	719 PM	2/07	Broadcast Media	Lake Luzerne-Hadley	7.0	705 PM	2/07	Broadcast Media
Wells	9.0	719 PM	2/07	Broadcast Media	Warrensburg	7.0	700 PM	2/07	WeatherNet6
Hoffmeister	8.0	719 PM	2/07	Broadcast Media	Brant Lake	7.0	706 PM	2/07	Broadcast Media
2 E Hoffmeister	7.0	752 AM	2/08	Trained Spotter	1 N Lake George	6.8	600 AM	2/08	CoCoRaHS
Piseco	6.5	514 PM	2/07	WeatherNet6	3 S Lake Luzerne	6.2	600 AM	2/08	Co-Op Observer
...Herkimer County...					Lake Luzerne	6.1	607 AM	2/08	WeatherNet6
2 NW Salisbury Cente	8.5	600 AM	2/08	CoCoRaHS	Glens Falls	4.0	625 PM	2/07	WeatherNet6
...Montgomery County...					...Washington County...				
Palatine Bridge	8.0	721 PM	2/07	Broadcast Media	Whitehall	8.0	722 PM	2/07	Broadcast Media
Fort Plain	6.2	435 PM	2/07	WeatherNet6	Fort Edward	6.0	724 PM	2/07	Broadcast Media
Amsterdam	5.0	451 PM	2/07	WeatherNet6	Hobron	5.5	632 AM	2/08	WeatherNet6
1 NNW Amsterdam	5.0	500 PM	2/07	CoCoRaHS	10 SW Granville	5.1	700 AM	2/08	CoCoRaHS
SE Fort Plain	4.3	700 AM	2/08	CoCoRaHS	Hartford	5.0	650 PM	2/07	Social Media
Fonda	4.3	954 PM	2/07	WeatherNet6	VERMONT				
Glen	4.1	1044 PM	2/07	WeatherNet6	...Bennington County...				
2 WSW Hessville	2.5	800 AM	2/08	CoCoRaHS	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

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.	

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

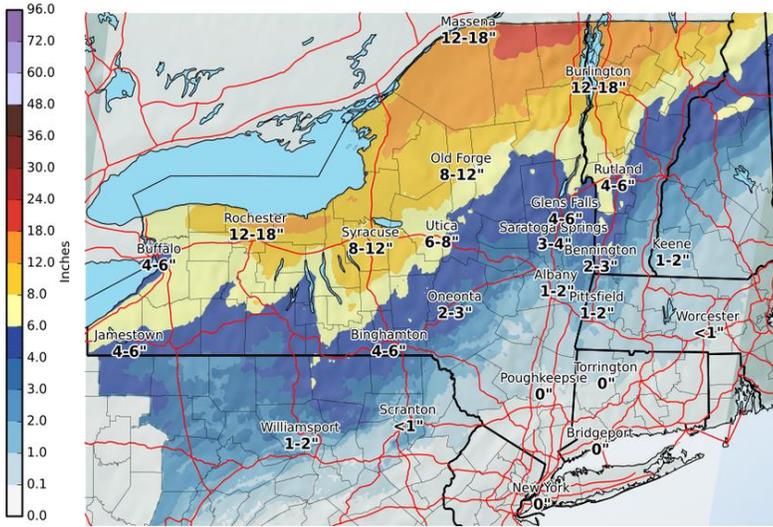
CONNECTICUT					...Herkimer County...				
...Litchfield County...					Herkimer	34	1130 AM	2/07	NYSM
Torrington	35	601 PM	2/07	CWOP	...Montgomery County...				
Watertown	35	147 PM	2/07	CWOP	Johnstown	43	220 PM	2/07	NYSM
MASSACHUSETTS					Sprakers	37	335 PM	2/07	NYSM
...Berkshire County...					Hessville	36	1015 AM	2/07	CWOP
Pittsfield Municipal	54	344 PM	2/07	ASOS	...Rensselaer County...				
Williamstown	41	445 PM	2/07	CWOP	Schodack	41	435 PM	2/07	NYSM
Adams	38	401 PM	2/07	CWOP	Schaghticoke	31	520 PM	2/07	NYSM
Harriman Airport	33	222 PM	2/07	ASOS	Hoosick Falls	31	604 PM	2/07	CWOP
NEW YORK					...Schenectady County...				
...Albany County...					East Glenville	47	333 PM	2/07	AWOS
Voorheesville	53	415 PM	2/07	NYSM	Duanesburg	44	335 PM	2/07	NYSM
Albany Intl Ap	47	503 PM	2/07	ASOS	Schenectady	35	455 PM	2/07	CWOP
Medusa	46	455 PM	2/07	NYSM	...Schoharie County...				
2 W Guilderland	36	415 PM	2/07	RAWS	Cobleskill	35	410 PM	2/07	NYSM
Colonie	33	415 PM	2/07	CWOP	...Ulster County...				
...Columbia County...					Willow	39	246 PM	2/07	CWOP
Kinderhook	40	335 PM	2/07	NYSM	Wallkill	38	315 PM	2/07	NYSM
Copake	34	555 PM	2/07	NYSM	2 ESE Fleischmanns	36	511 PM	2/07	RAWS
Claverack	31	500 PM	2/07	CWOP	Claryville	33	215 PM	2/07	NYSM
...Dutchess County...					New Paltz	31	354 PM	2/07	CWOP
Beacon	45	220 PM	2/07	NYSM	High Falls	31	330 PM	2/07	NYSM
Hudson Valley Region	45	328 PM	2/07	ASOS	VERMONT				
Bannerman Island	42	305 PM	2/07	WXFLOW	...Bennington County...				
3 NNE Beacon	37	407 PM	2/07	RAWS	3 W Woodford State P	37	701 PM	2/07	MESOWEST
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					

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

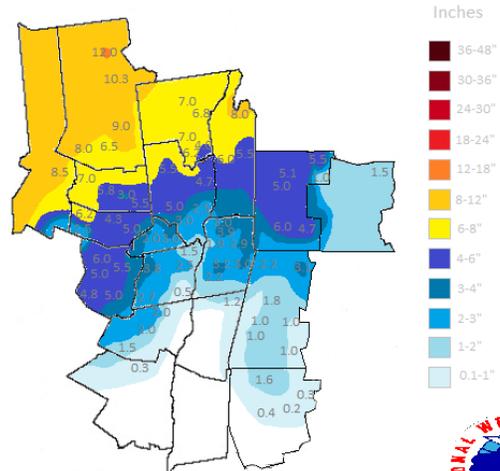
Community observation reports submitted to NWS Albany confirmed widespread 30 to 45 mph gusts with a few locations reporting gusts up to 55 mph.

NWS Forecast vs observed snowfall

Expected Snowfall - Official NWS Forecast
Valid: 02/07/2020 01:00 AM - 02/08/2020 01:00 AM



National Weather Service Albany New York
Snowfall Analysis 02/07/2020 01:00AM - 02/08/2020 01:00AM



National Weather Service
Albany, New York
02/06/2020 03:57 PM EST

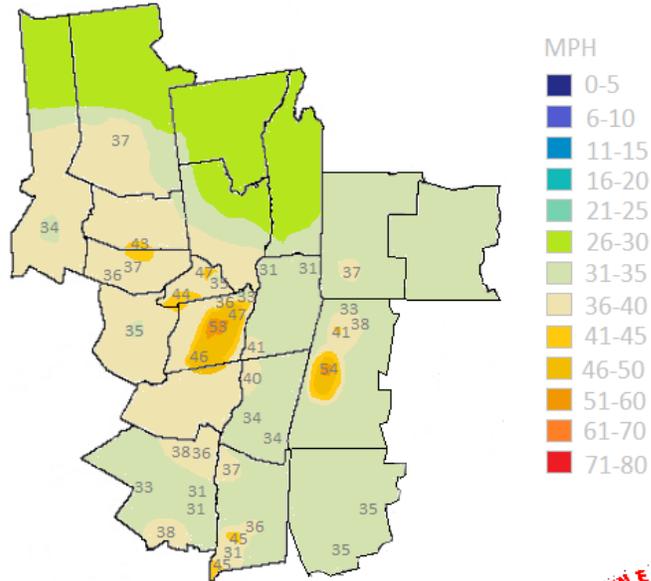
Follow Us: [f](#) [t](#) [v](#)
weather.gov/Albany/winter



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.