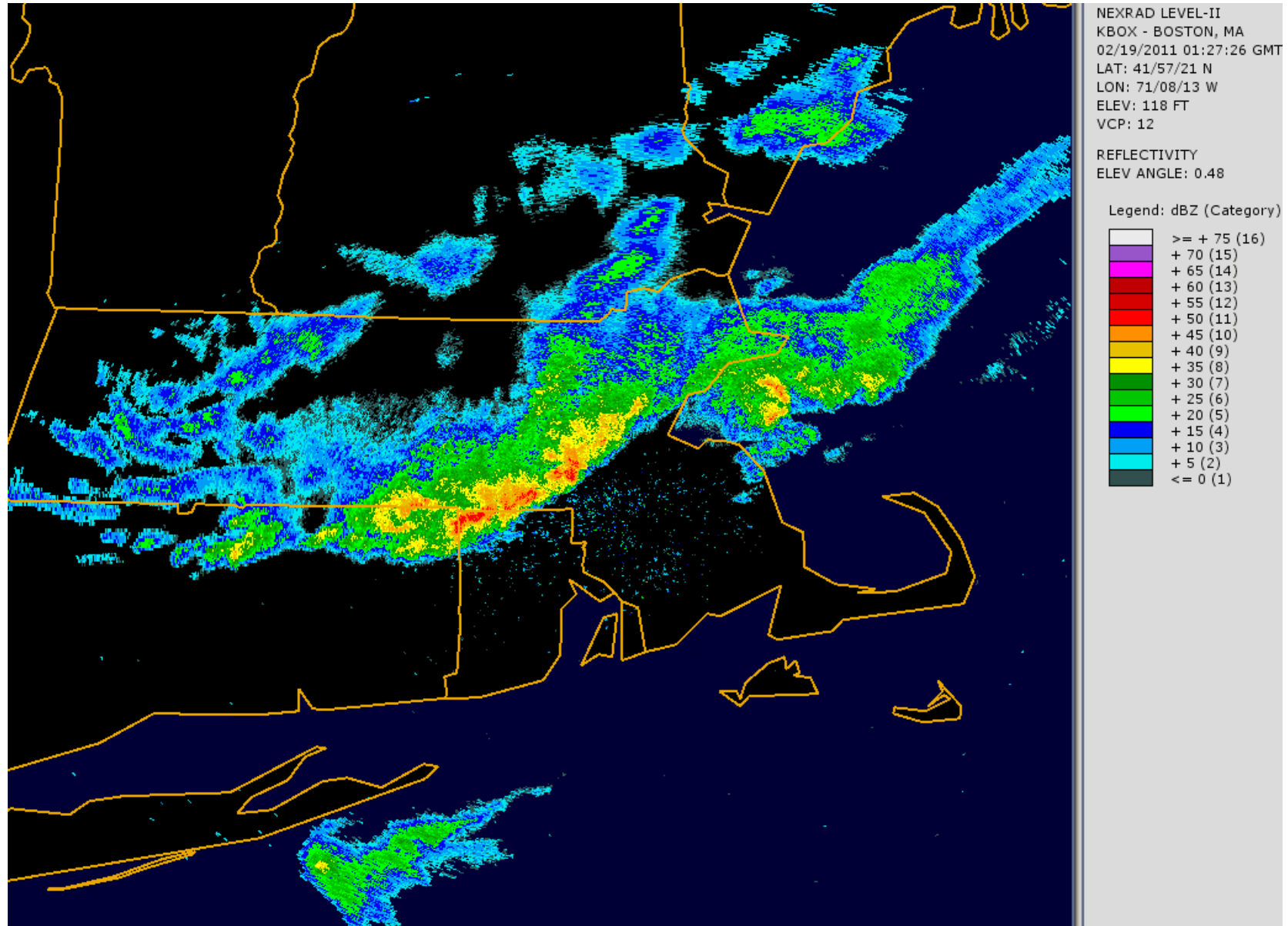


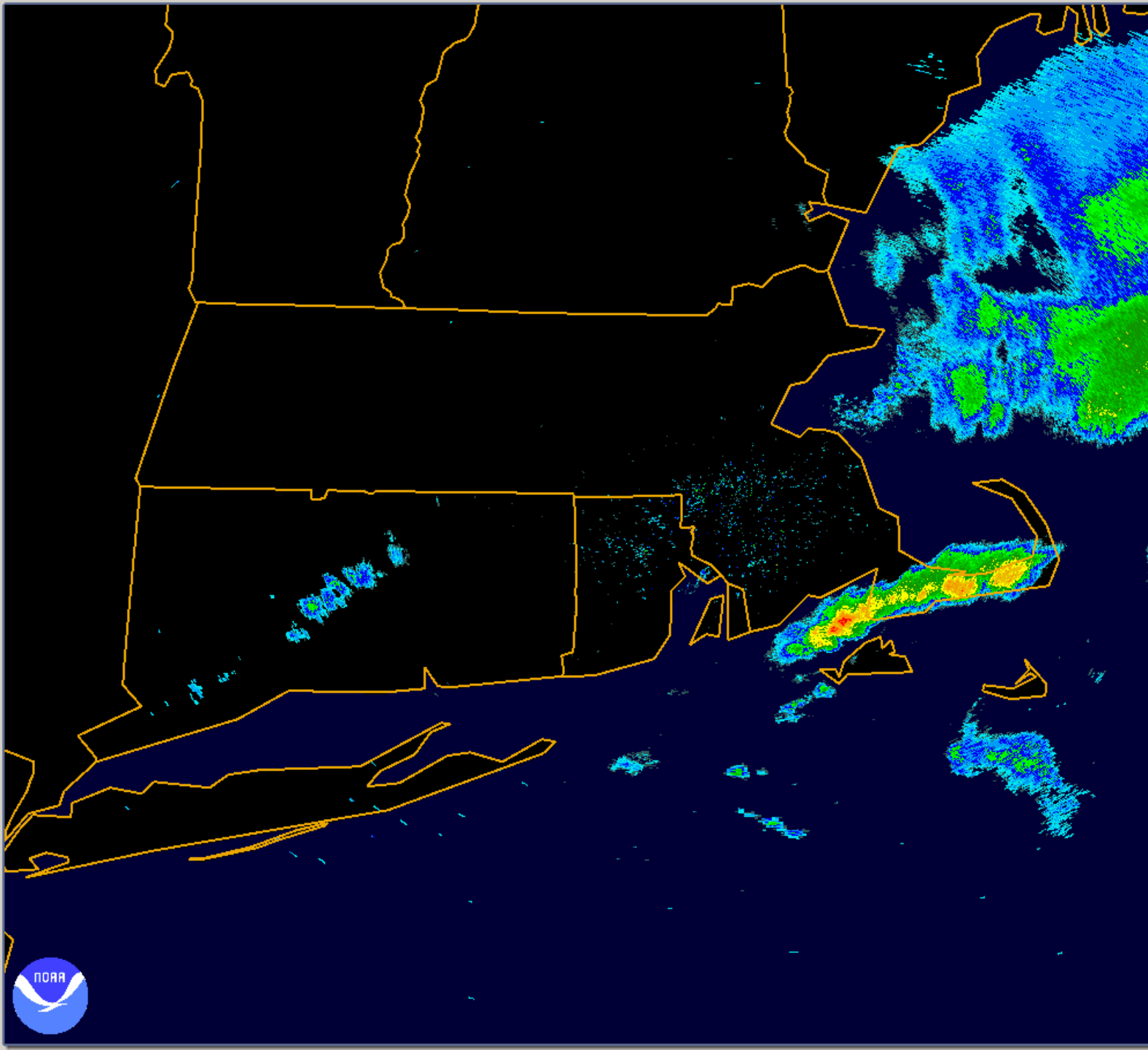
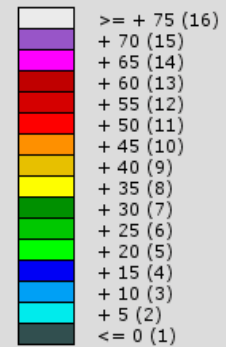
# A Cool Season EML Event



NEXRAD LEVEL-II  
KBOX - BOSTON, MA  
02/19/2011 03:00:34 GMT  
LAT: 41/57/21 N  
LON: 71/08/13 W  
ELEV: 118 FT  
VCP: 12

REFLECTIVITY  
ELEV ANGLE: 0.47

Legend: dBZ (Category)



## Lightning strikes 2 Jet Blue flights; 1 out of Tampa



Last Updated: Friday, February 18, 2011

**BOSTON, Mass.** -- Passengers aboard two Jet Blue planes had a rough ride Friday night.

Lightning struck both planes as they flew above the Northeast. One aircraft was headed to Boston's Logan Airport from Tampa International Airport when the bolt hit around 9:30 p.m. Friday.

There were 82 people aboard Flight #446. No injuries were reported and the plane landed safely in Boston.

# STORM REPORTS -

- Numerous reports of dime to nickel size hail
- Several reports of down trees
- Wind gusts to 60 mph at MQE

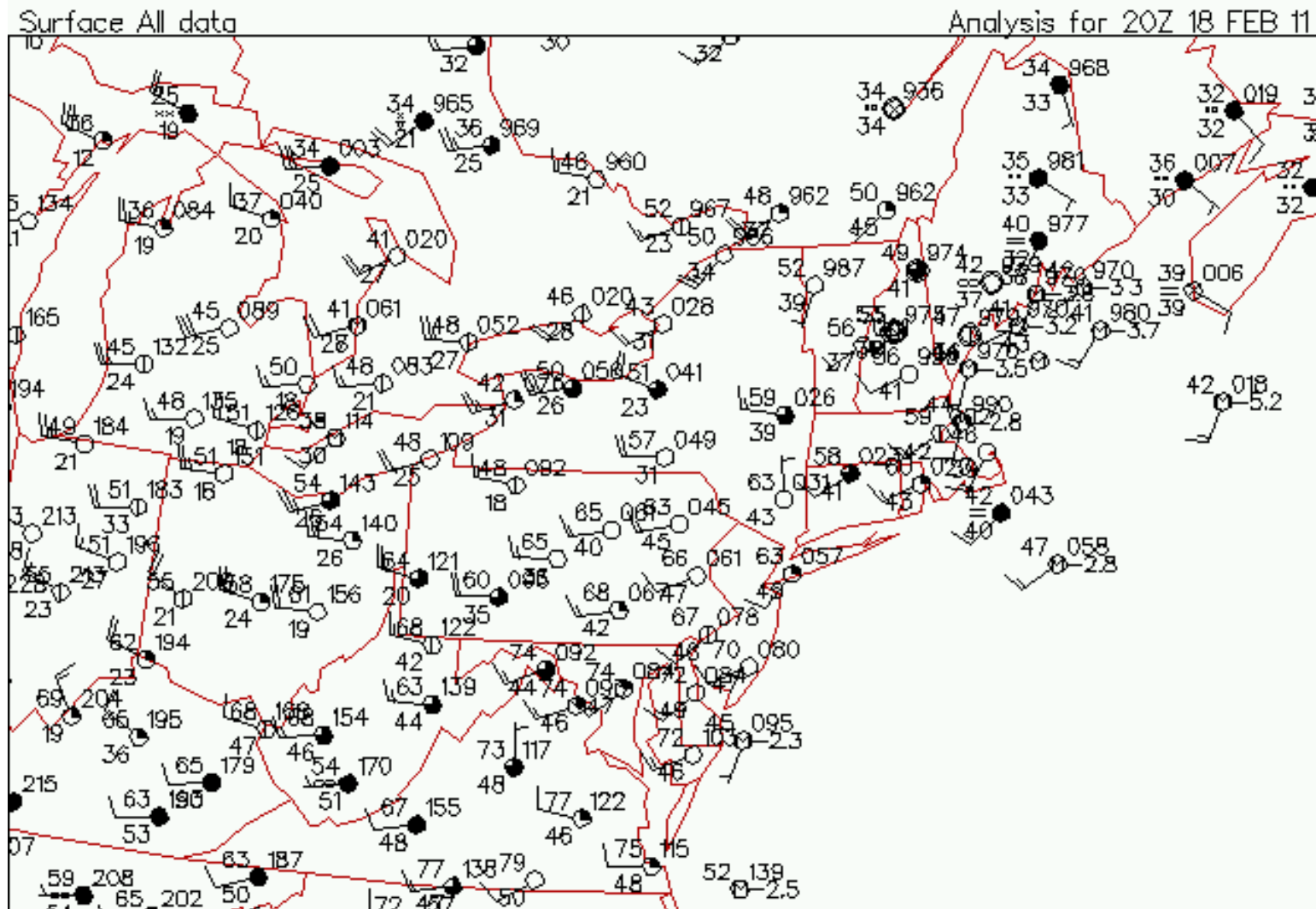
# AFD – was convection expected?

**348 AM FRI FEB 18 –**

AS FOR PRECIP...OTHER THAN A FEW SPRINKLES THIS MORNING EXPECTING A DRY DAY AS DEEP WESTERLY FLOW PRECEDING COLD FRONT WILL LIMIT DEEP LAYER CONVERGENCE.

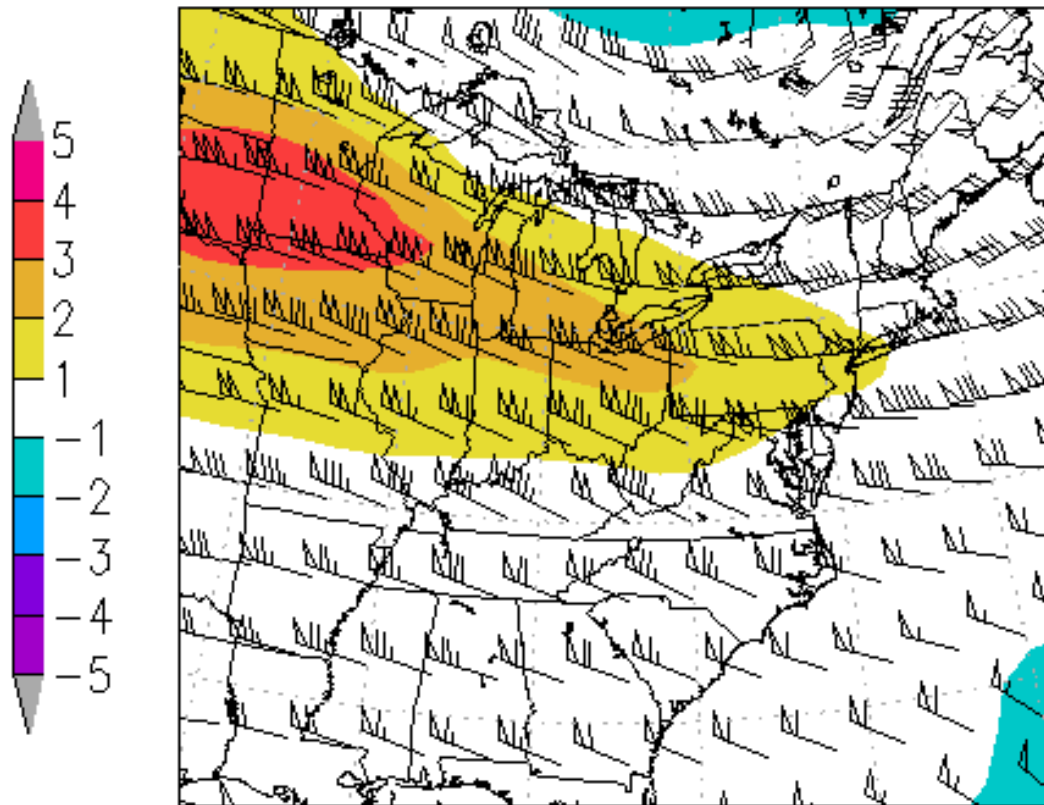
**10 AM and 4 PM AFD –** no convection or precipitation expected.

# Plymouth State Weather Center



- Anomalously warm airmass with temps in the 60s (+20 degs. above normal!)
- Modest low level moisture for late Feb. with dew points in the 40s
- Some frontal convergence/lift provided by surface boundary.

a. 18Z18FEB2011 GEFS Valid 00Z19FEB2011 (Sat)  
250hPa ugrdprs

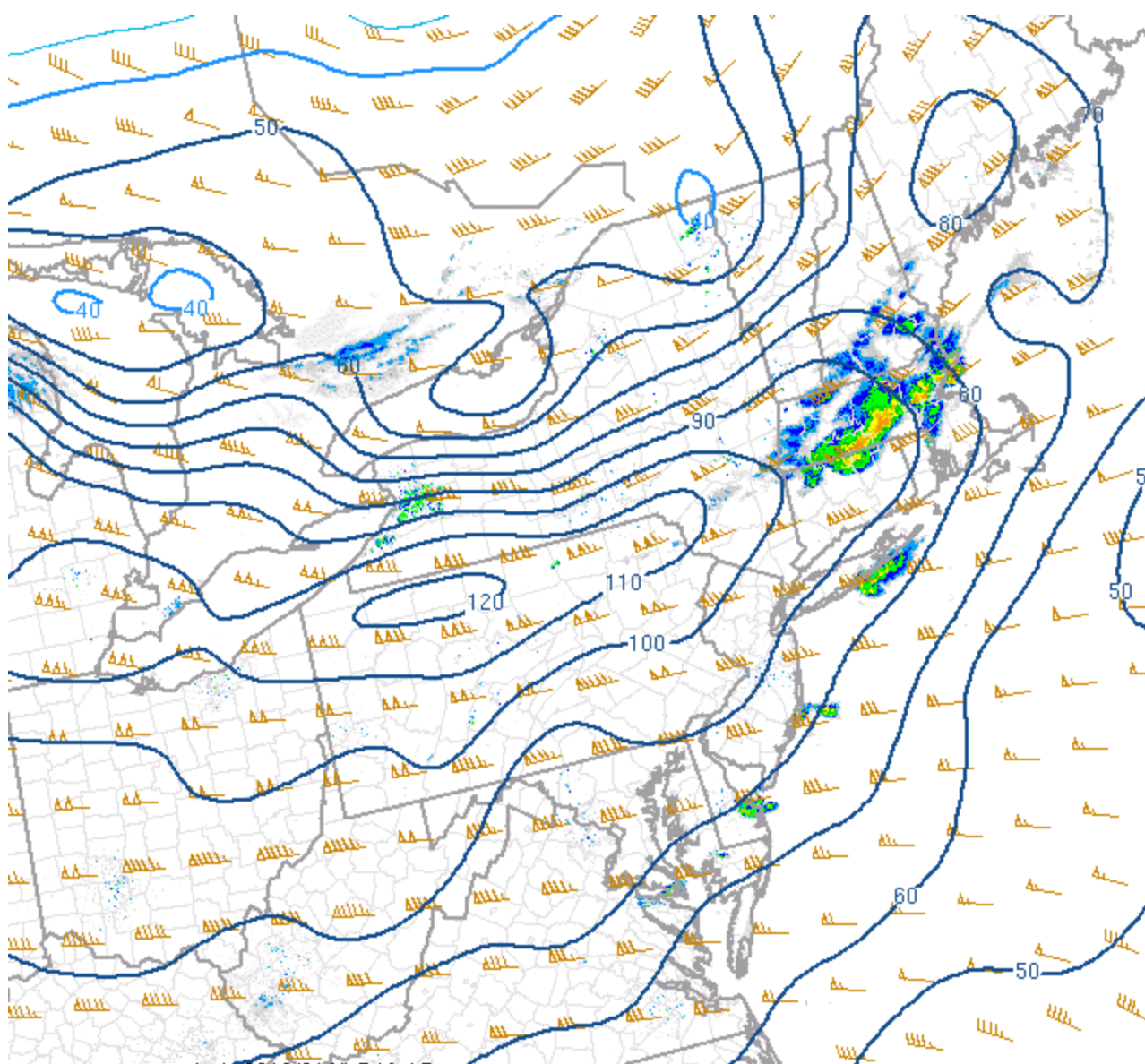


Ensemble Components:

MODEL	INIT TIME
c00	18Z18FEB2
p01	18Z18FEB2
p02	18Z18FEB2
p03	18Z18FEB2
p04	18Z18FEB2
p05	18Z18FEB2
p06	18Z18FEB2
p07	18Z18FEB2
p08	18Z18FEB2
p09	18Z18FEB2
p10	18Z18FEB2
p11	18Z18FEB2
p12	18Z18FEB2
p13	18Z18FEB2
p14	18Z18FEB2
p15	18Z18FEB2
p16	18Z18FEB2
p17	18Z18FEB2
p18	18Z18FEB2

b. 18Z18FEB2011 GEFS Valid 00Z19FEB2011 (Sat)  
250hPa vgrdprs

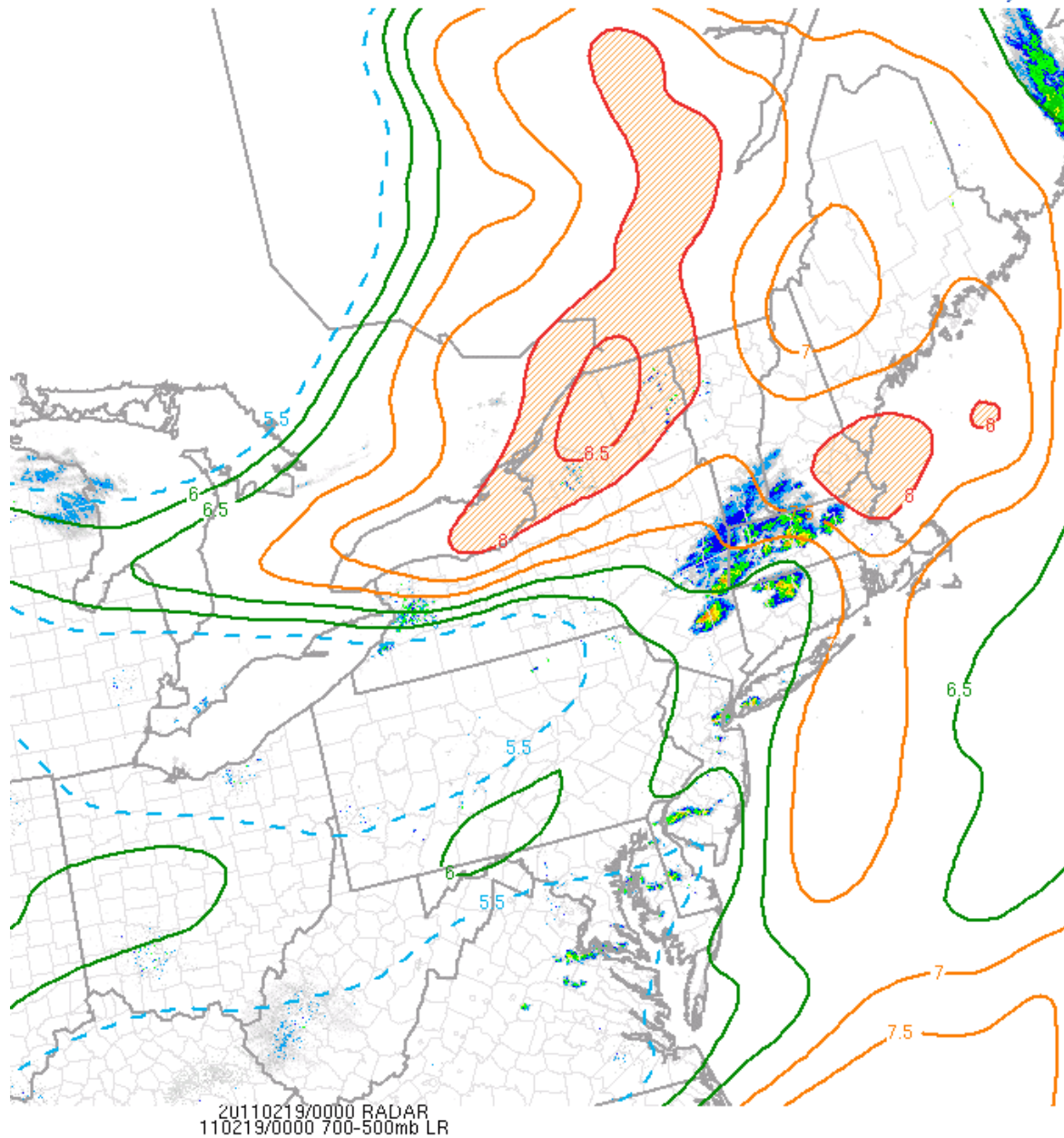
- Strong cyclonically curved upper level jet
- Anomalous jet on the order of +3 to +4 STD
- LFQ over Southern New England coupled with surface convergence = large QG forcing!



2010 Feb 19 00z - surface to 6 km shear vector (kt) from SPC meso-analysis page. High shear environment!

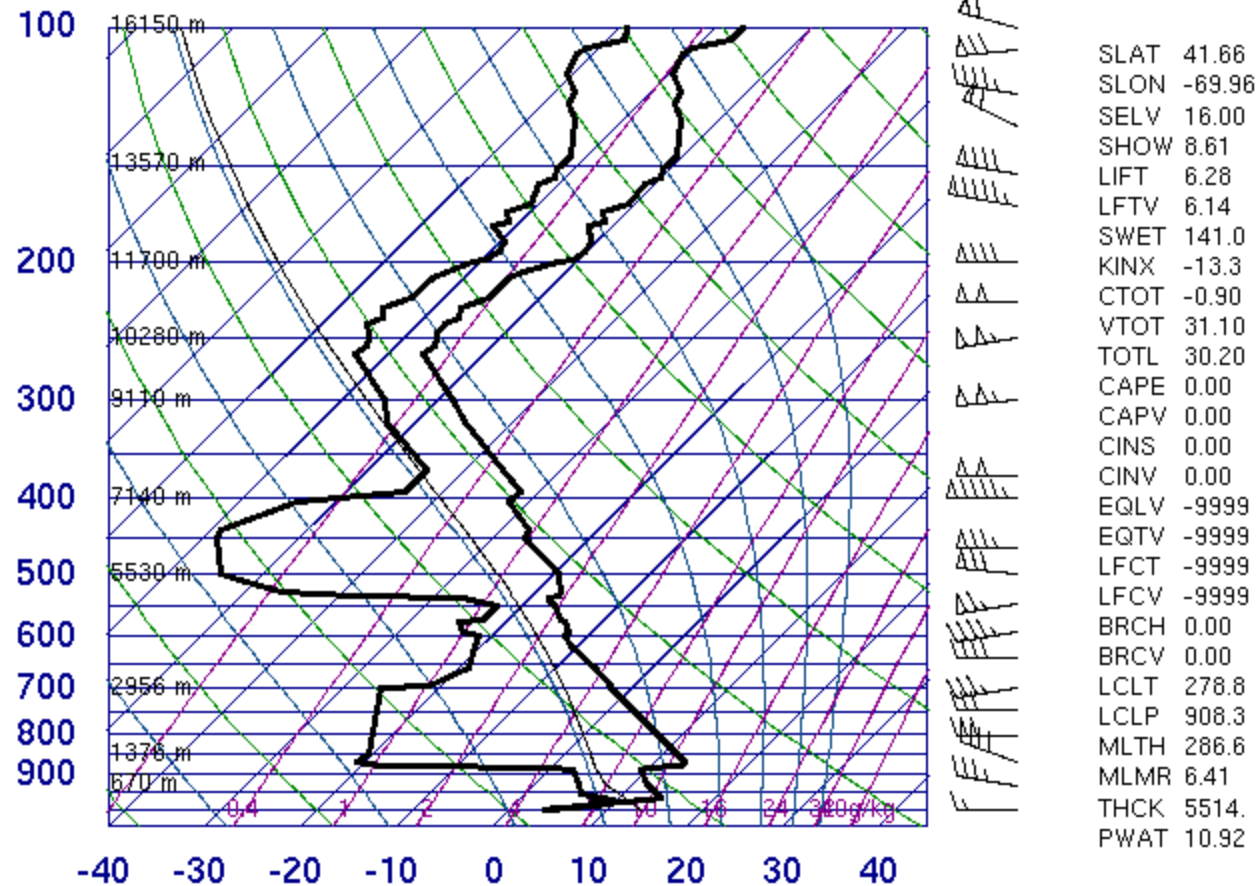
2010 Feb 19 00z - surface to 6 km shear vector (kt) from SPC meso-analysis page. High shear environment!





2010 Feb 19 00z, 700-500mb lapse rates from SPC meso-analysis page. Very steep mid level lapse rates!

## 74494 CHH Chatham

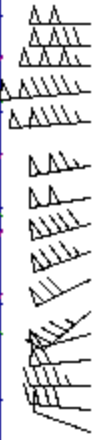
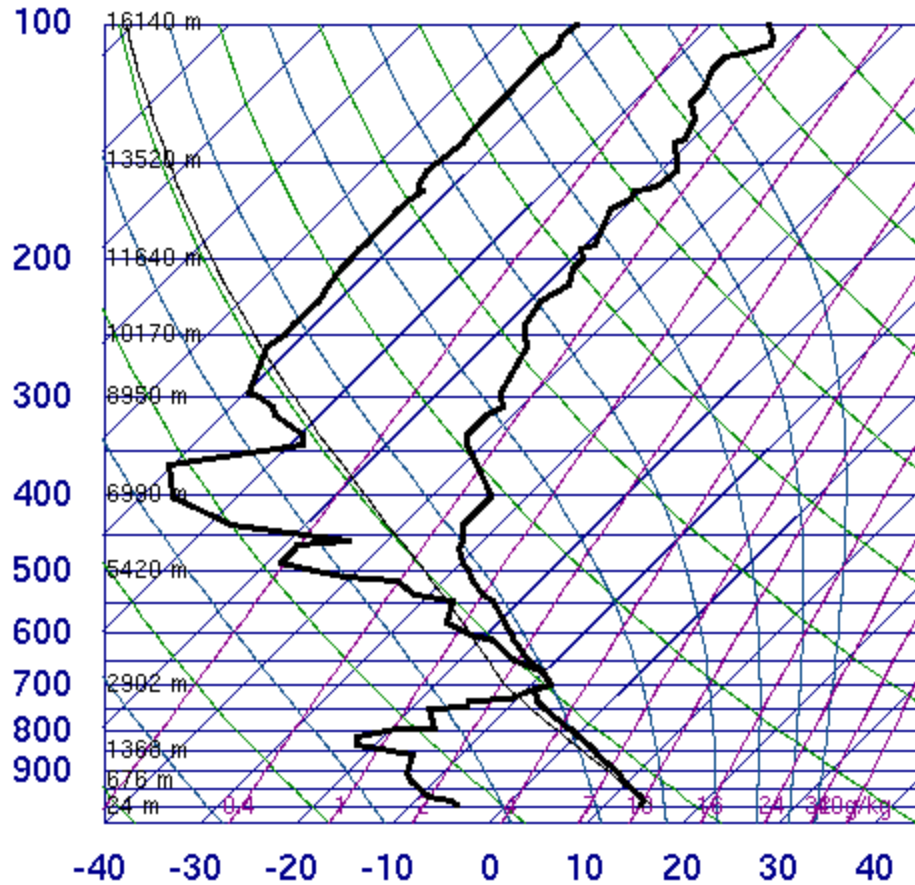


00Z 19 Feb 2011

University of Wyoming

- Impressive elevated mixed layer (EML)
- The temperature at the bottom of the EML is +13C
- Surface temperatures upstream about +15C, thus less of a cap to overcome

# 72518 ALB Albany



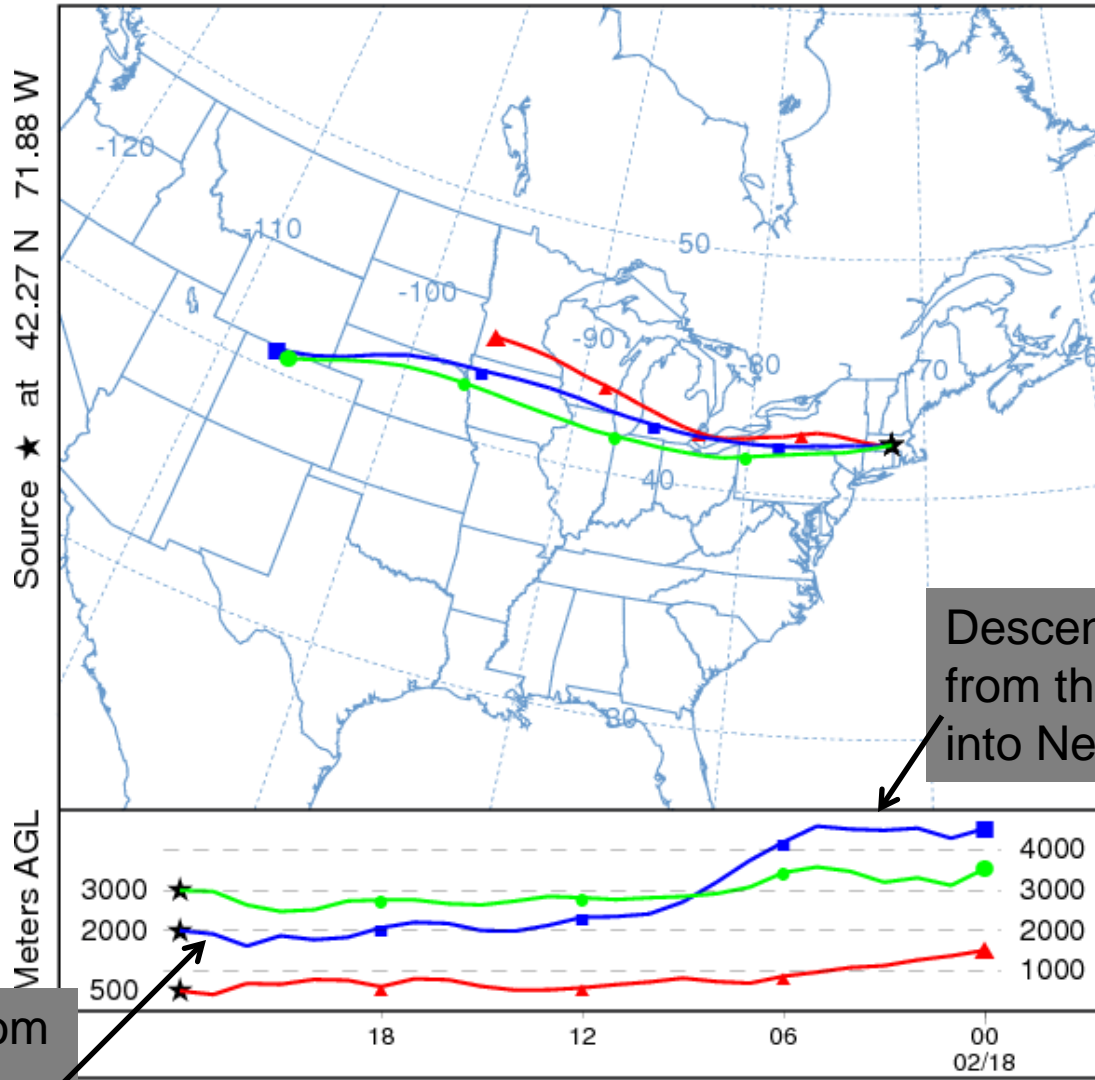
SLAT	42.70
SLON	-73.83
SELV	96.00
SHOW	5.48
LIFT	4.59
LFTV	4.54
SWET	195.0
KINX	14.00
CTOT	10.70
VTOT	31.70
TOTL	42.40
CAPE	0.00
CAPV	0.00
CINS	0.00
CINV	0.00
EQLV	-9999
EQTV	-9999
LFCT	-9999
LFCV	-9999
BRCH	0.00
BRCV	0.00
LCLT	259.8
LCLP	693.7
MLTH	288.4
MLMR	2.01
THCK	5396.
PWAT	7.59

00Z 19 Feb 2011

University of Wyoming

- Upstream sounding at ALY confirms some mid level moisture for instability to be realized.

NOAA HYSPLIT MODEL  
Backward trajectories ending at 0000 UTC 19 Feb 11  
NAM Meteorological Data



Descending airstream from the High Plains into New England

Airstream goes from descending to ascending as it approaches ORH!

This is not a NOAA product. It was produced by a web user.  
Job ID: 317716 Job Start: Thu Mar 17 08:58:33 UTC 2011  
Source 1 lat.: 42.27 lon.: -71.88 hgts: 500, 2000, 3000 m AGL  
Trajectory Direction: Backward Duration: 96 hrs  
Vertical Motion Calculation Method: Model Vertical Velocity  
Meteorology: 0000Z 19 Feb 2011 - NAM12

# SPS Mesoanalysis Archive

- Mid level lapse rate plumes
- Mid level frontogenesis

# SUMMARY

- Steep mid level lapse rates and a high shear environment were unleashed by strong QG forcing yielding a surprise near severe convective event.
- Pattern recognition – regardless of the season, in NW flow monitor steep mid level lapse rate plumes from the Rockies and High Plains. Will the forcing and moisture be sufficient for the instability aloft to be realized?
- EMLs are low frequency events in New England thus very difficult to forecast, but situational awareness can help once convection initiates.