

# Winter Storms of December 26-27, 2010 and January 12, 2011



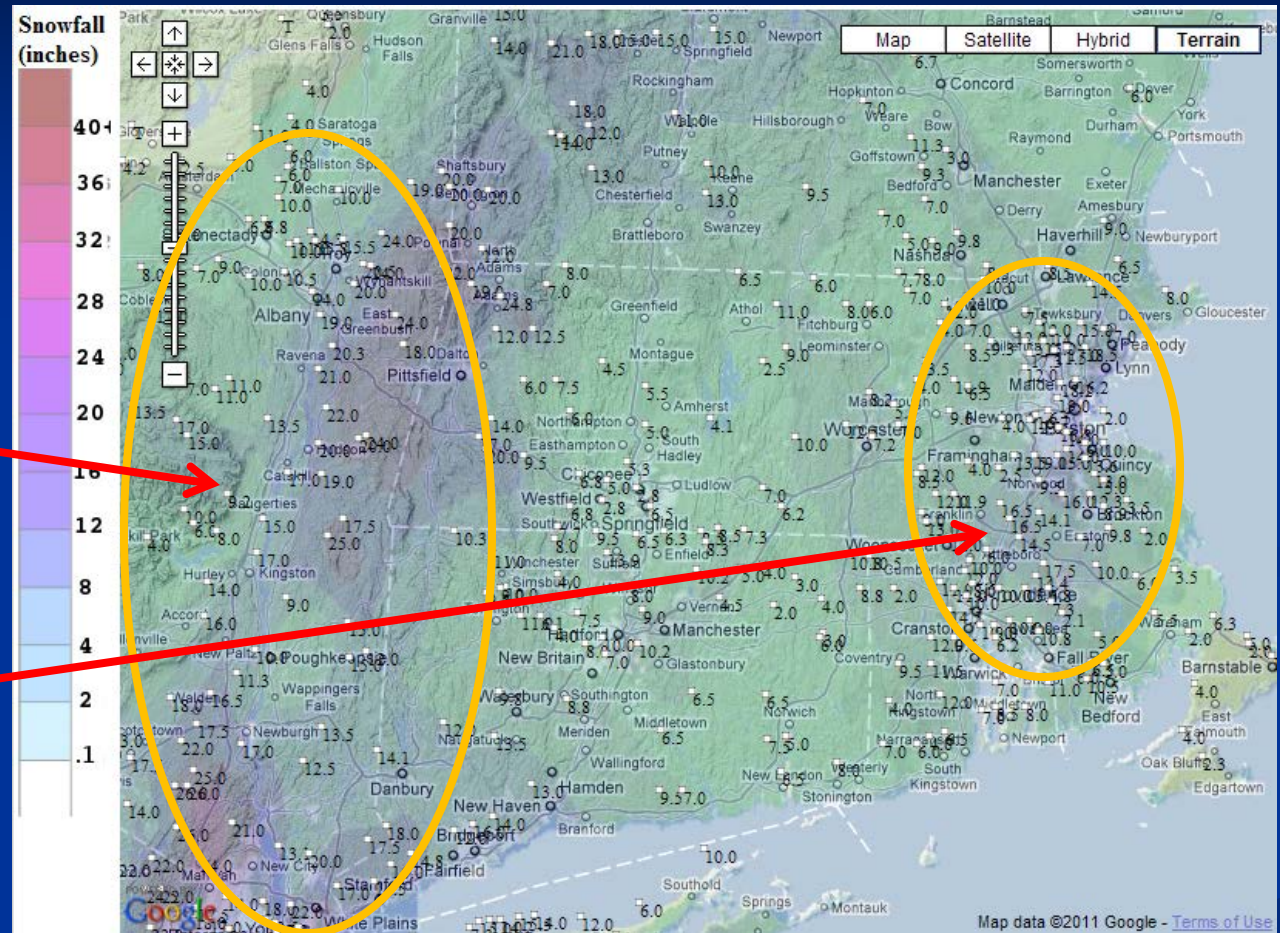
Joe DelliCarpini  
NOAA/NWS Taunton, MA

# December 26-27 2010 Blizzard

Two areas of heavy snow

18-30 inches

10-20 inches



- First winter storm of the season – began a 6 week “snow blitz”
- 60 mph wind gusts from Long Island into southern New England.

# Forecast Issues

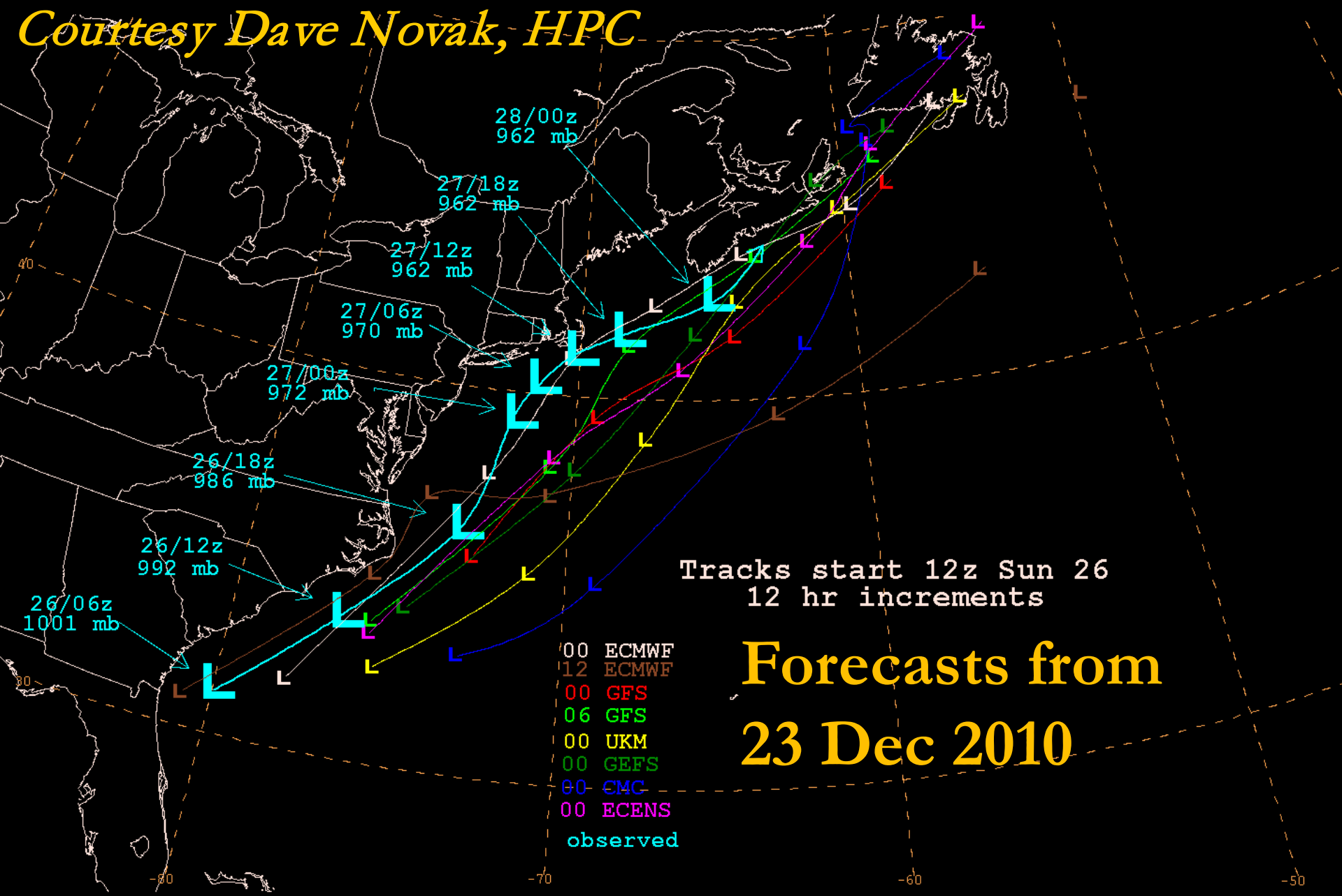
- Models struggled in the days leading up to the storm
  - Most had the storm passing well offshore
- Impact on holiday weekend travel
- Confidence increased as the event drew closer
  - Models shifted storm track west within 48 hours
  - Time to staff up and begin conference calls – but it's Christmas Eve!!!!



Loop: 1



*Courtesy Dave Novak, HPC*



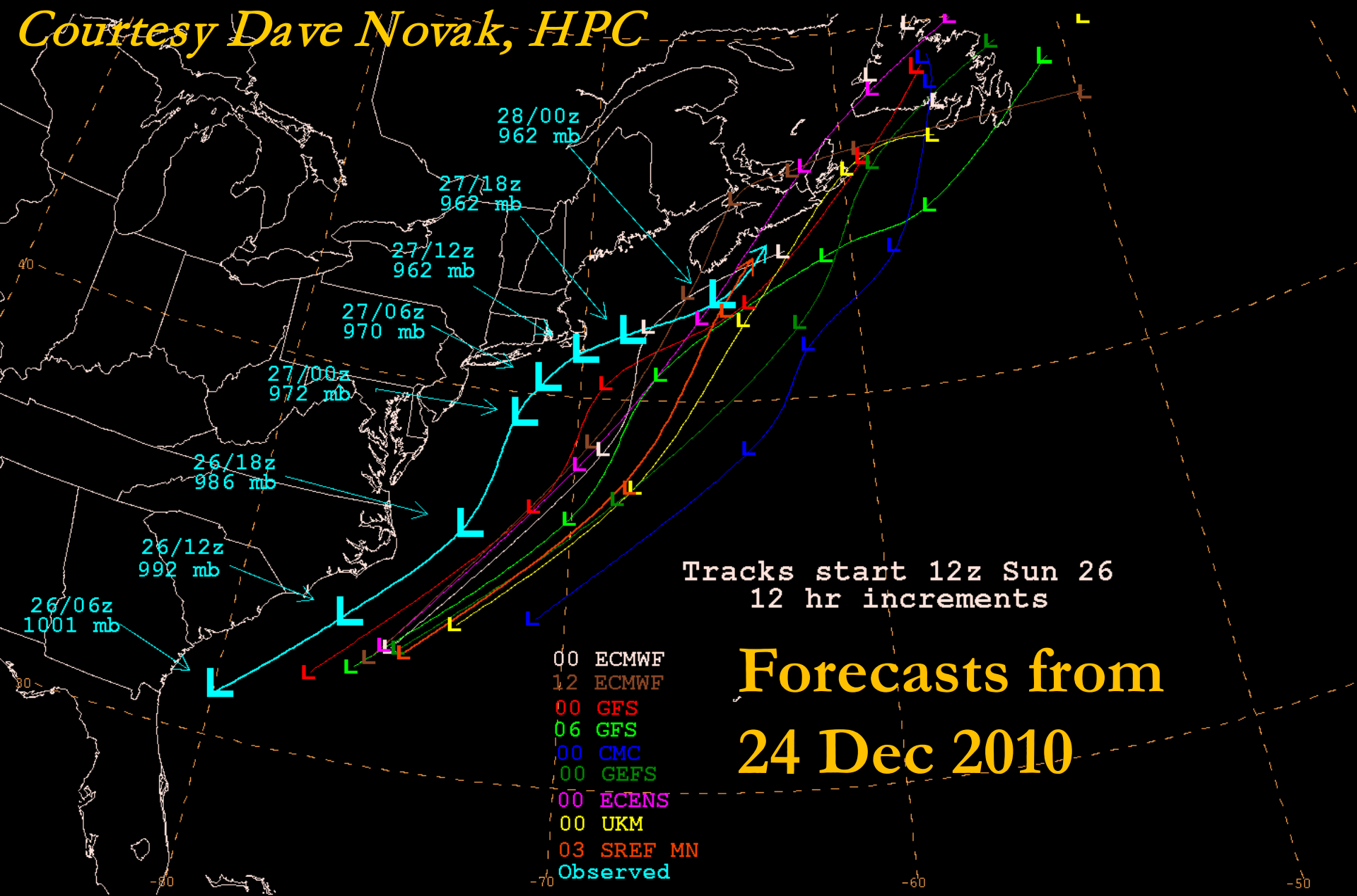
Forecasts from  
23 Dec 2010



Loop: 3

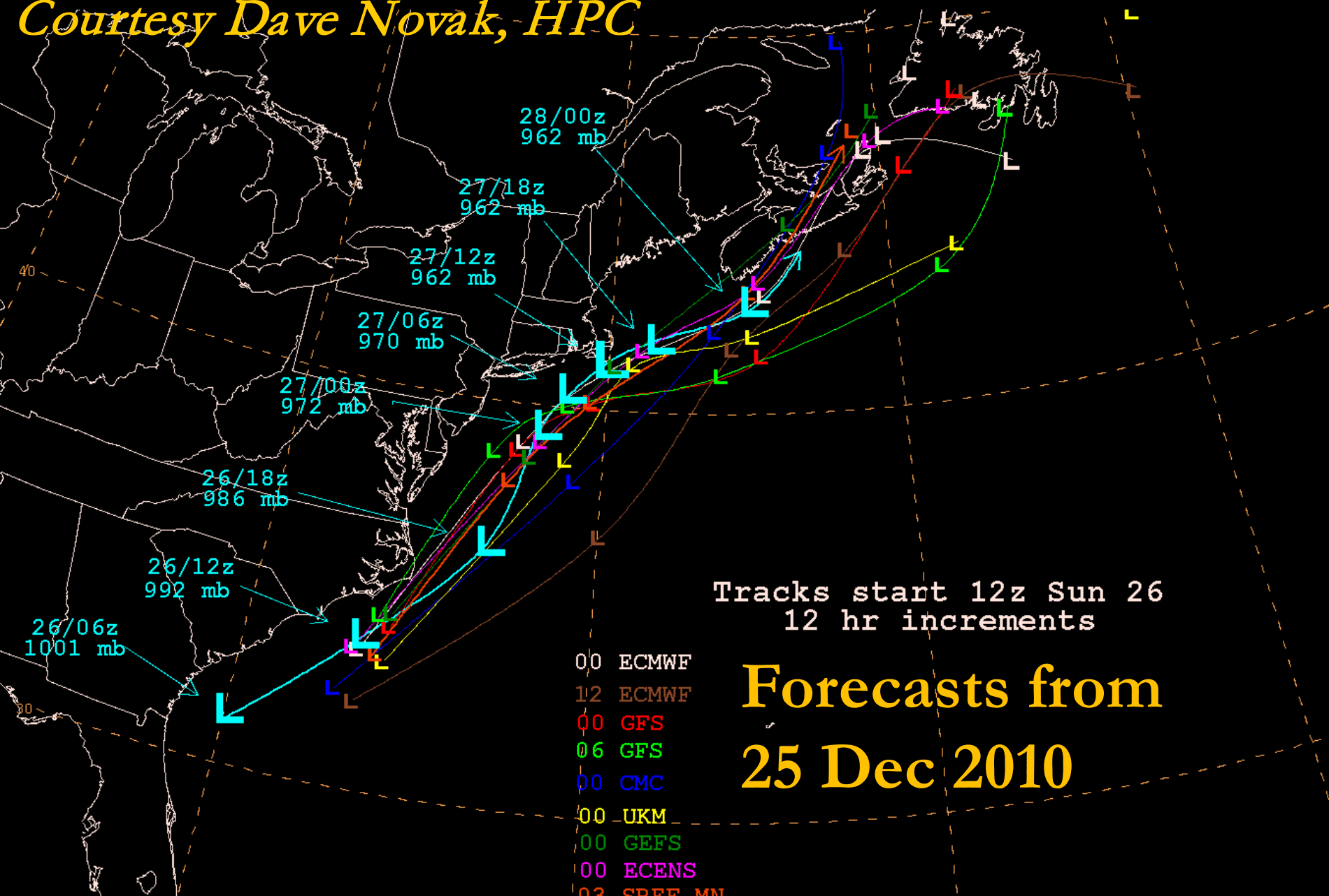


*Courtesy Dave Novak, HPC*



Forecasts from  
24 Dec 2010

Courtesy Dave Novak, HPC



Tracks start 12z Sun 26  
12 hr increments

# Forecasts from 25 Dec 2010

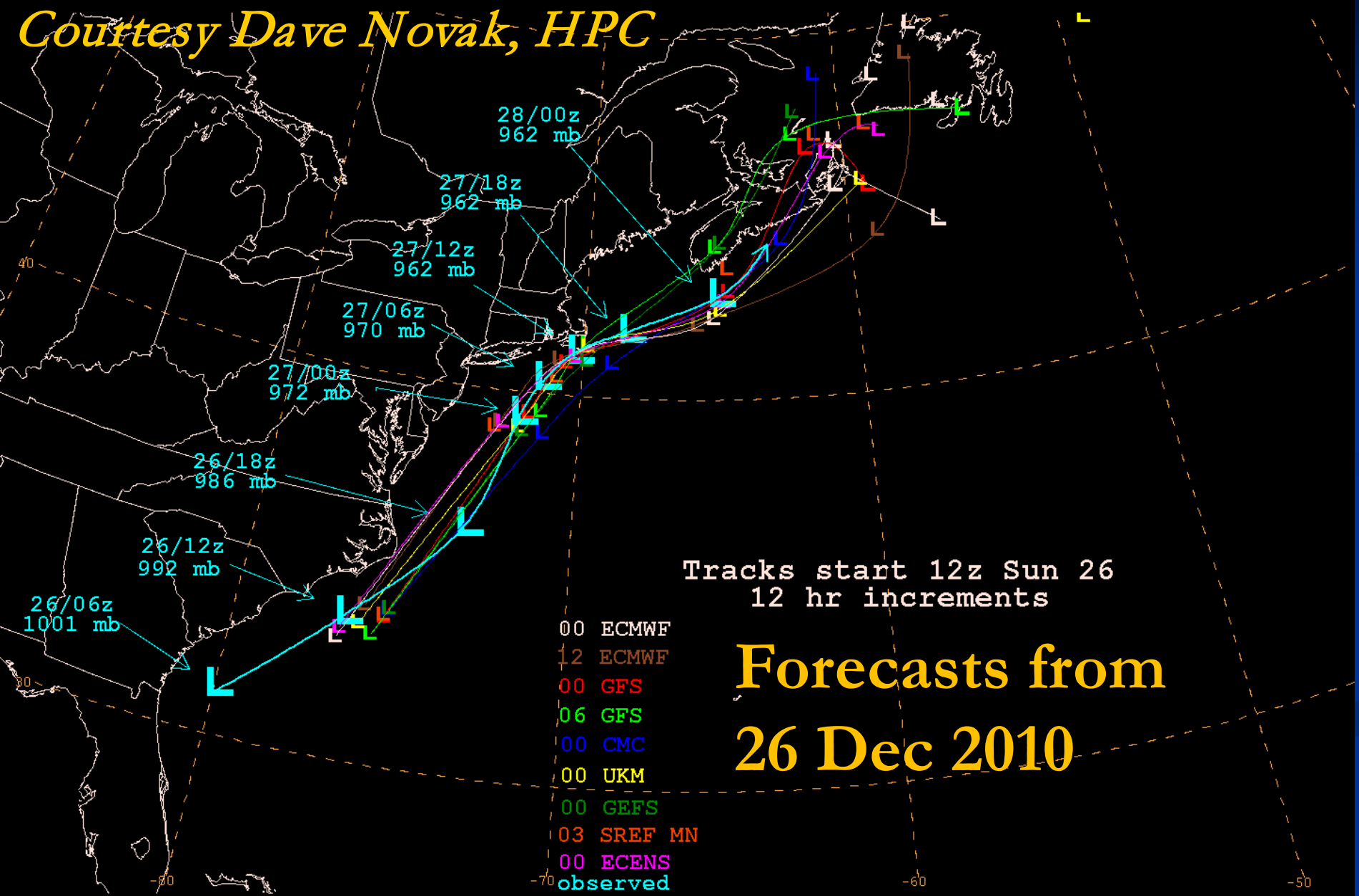
- 00 ECMWF
- 12 ECMWF
- 00 GFS
- 06 GFS
- 00 CMC
- 00 UKM
- 00 GEFS
- 00 ECENS
- 02 SREF\_MN



Loop: 3



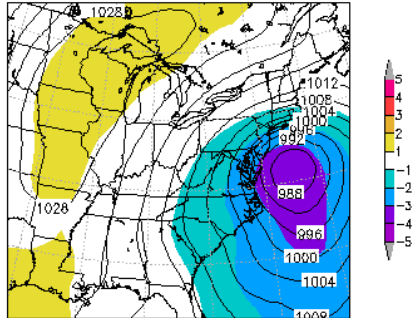
*Courtesy Dave Novak, HPC*



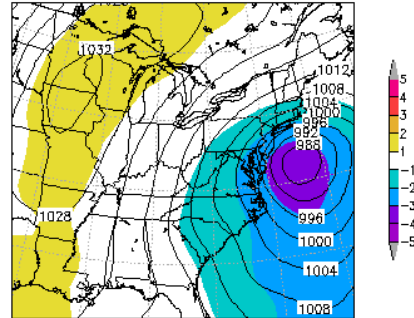
Forecasts from  
26 Dec 2010

# Ensemble Forecast Trends

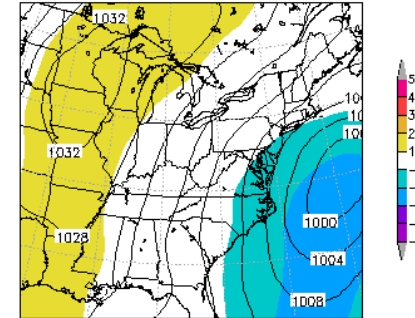
i.GEFS prmslmsl init:18Z24DEC2010 Valid: 00Z27DEC2010



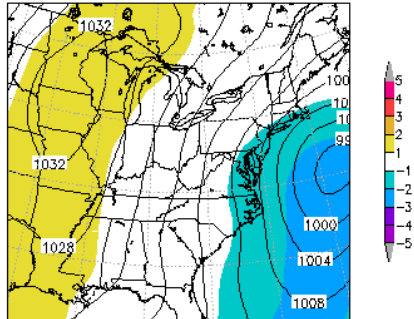
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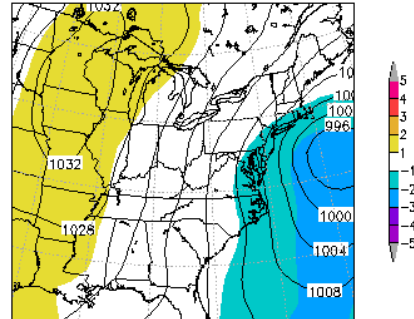
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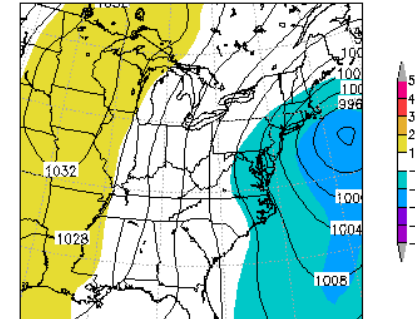
f.GEFS prmslmsl init:00Z24DEC2010 Valid: 00Z27DEC2010



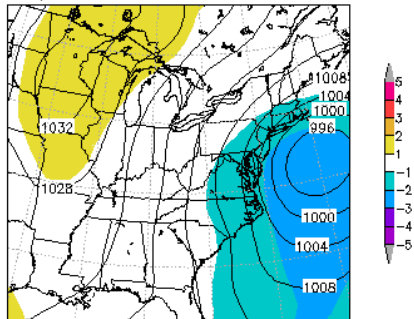
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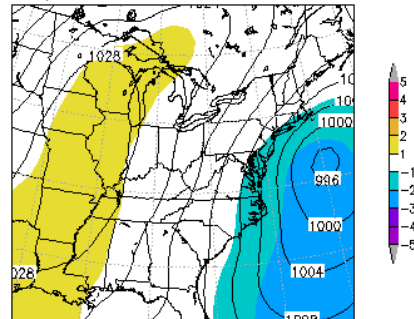
d.GEFS prmslmsl init:12Z23DEC2010 Valid: 00Z27DEC2010



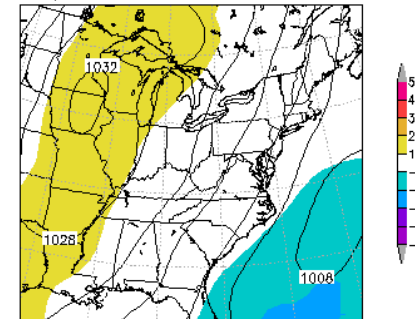
c.GEFS prmslmsl init:06Z23DEC2010 Valid: 00Z27DEC2010



b.GEFS prmslmsl init:18Z22DEC2010 Valid: 00Z27DEC2010



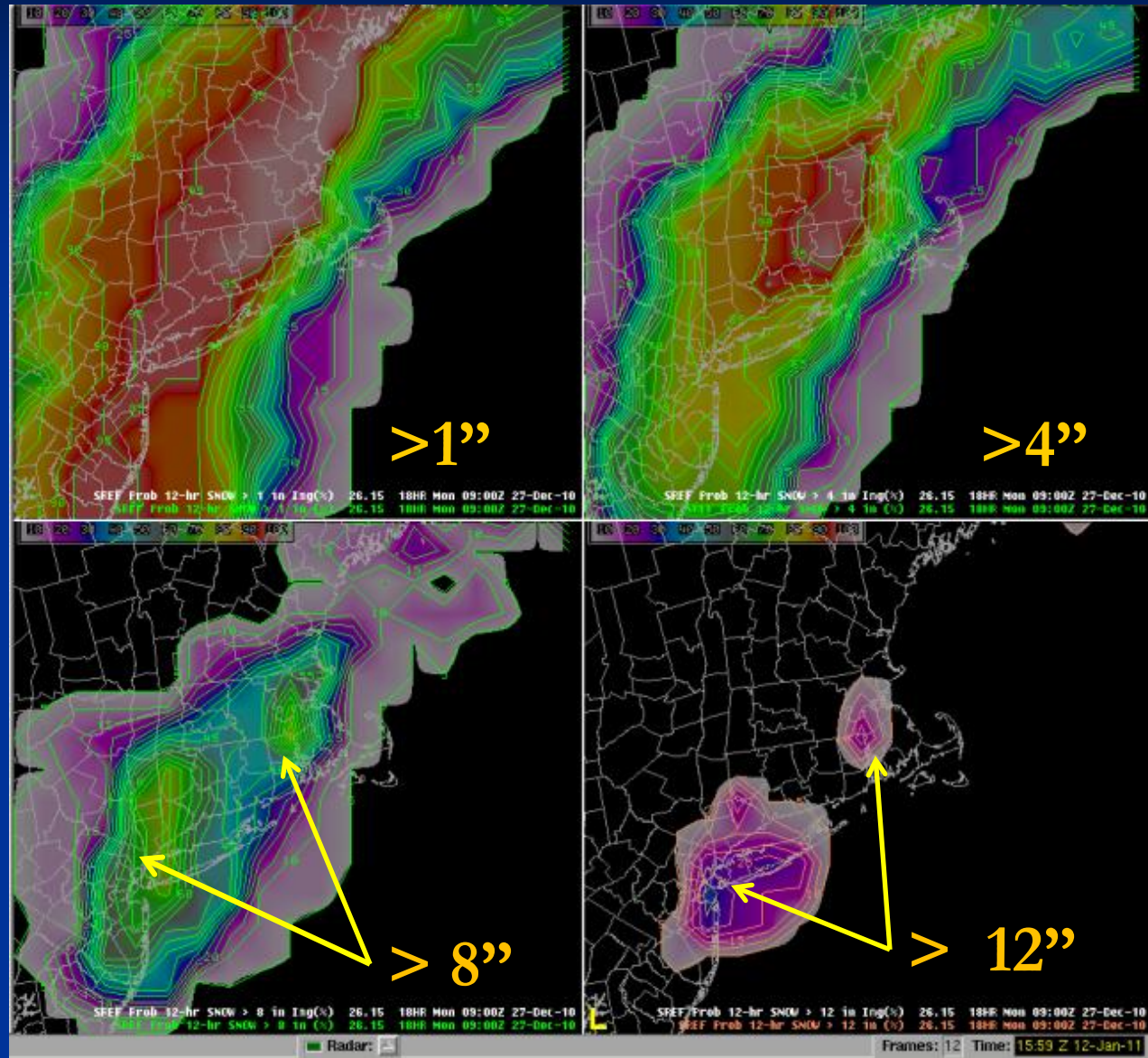
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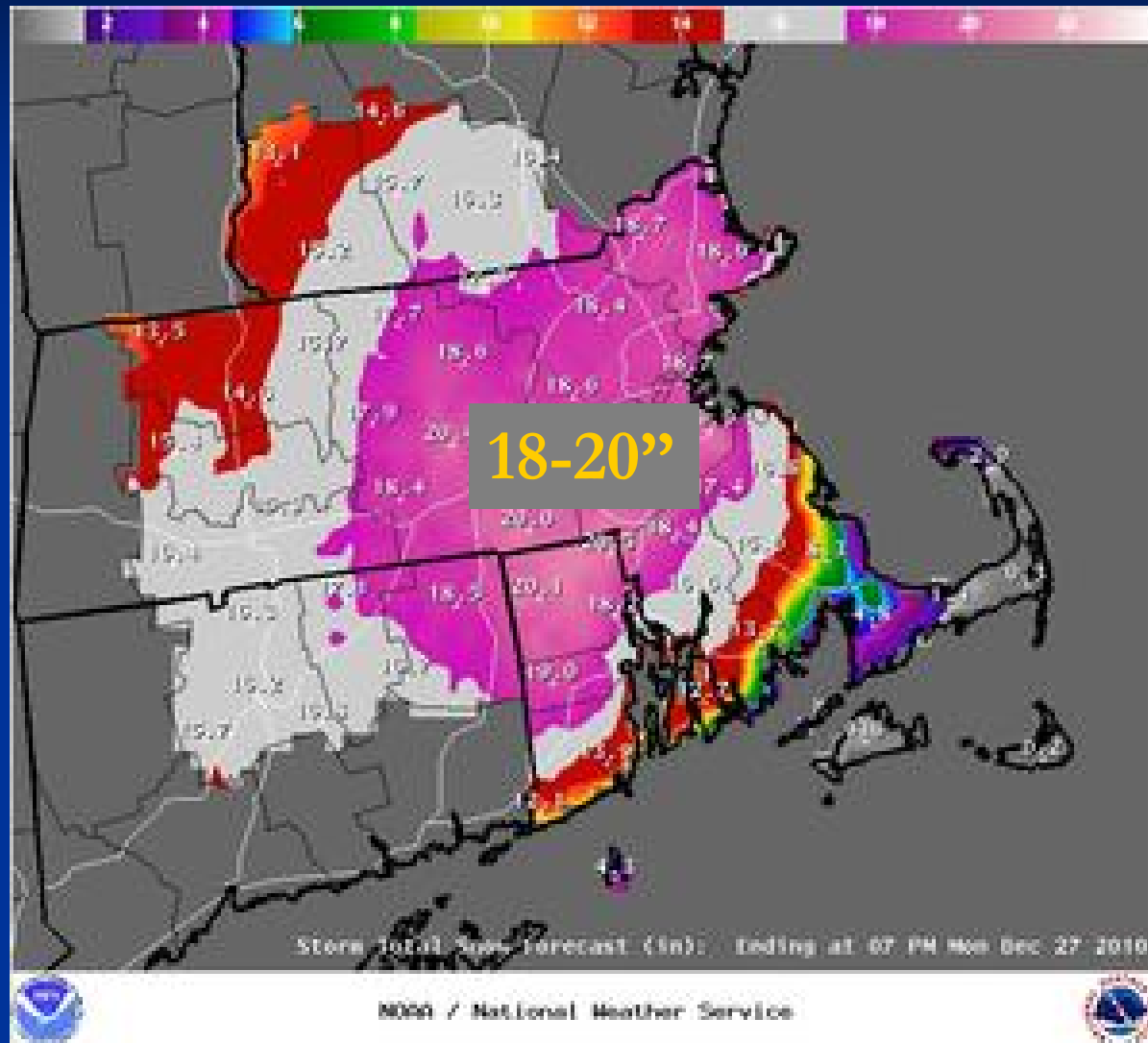


# Short Range Ensemble Forecasts (SREF)

SREF probabilities can give forecasters more confidence in snowfall amounts

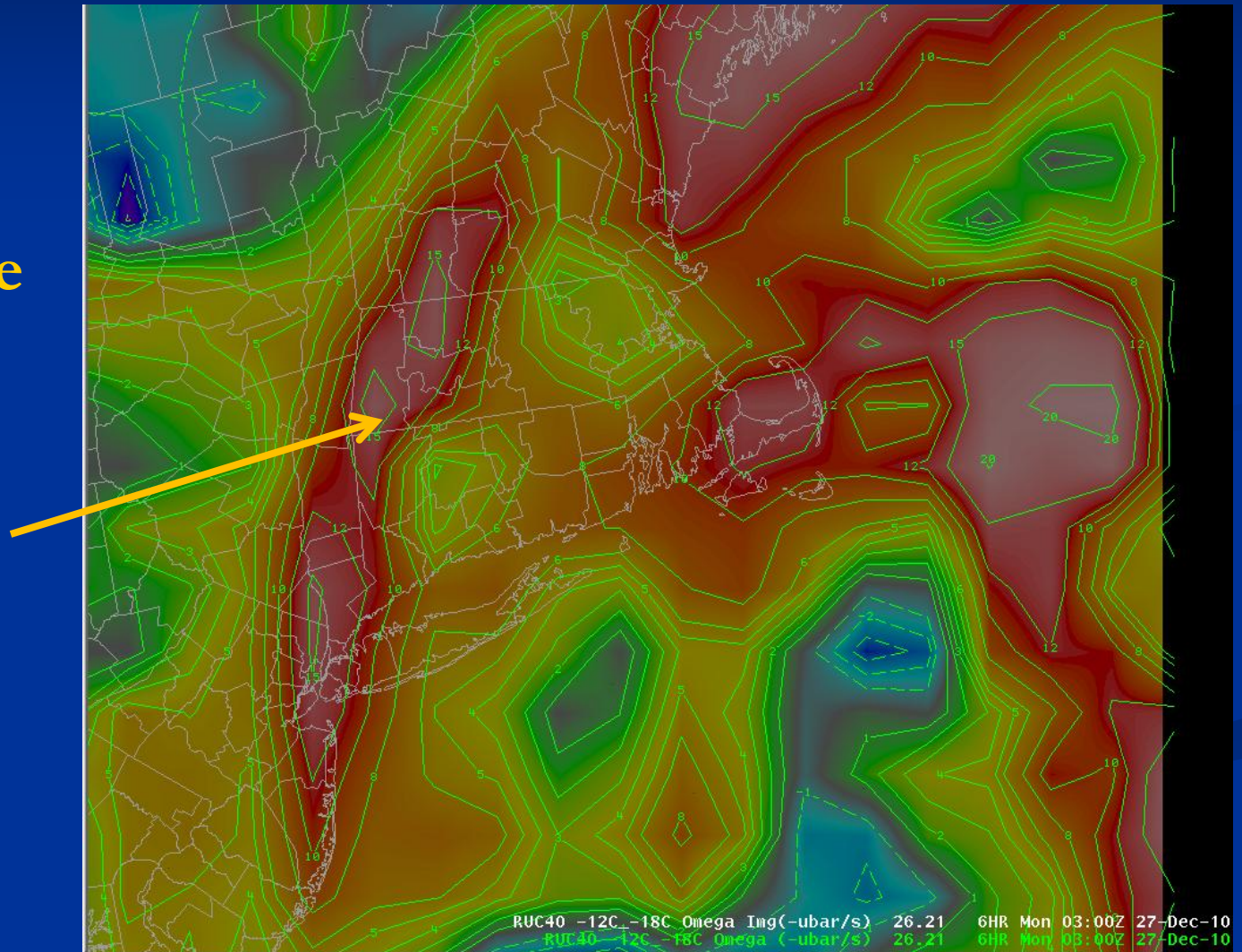


# Snowfall Forecast (Dec 24)



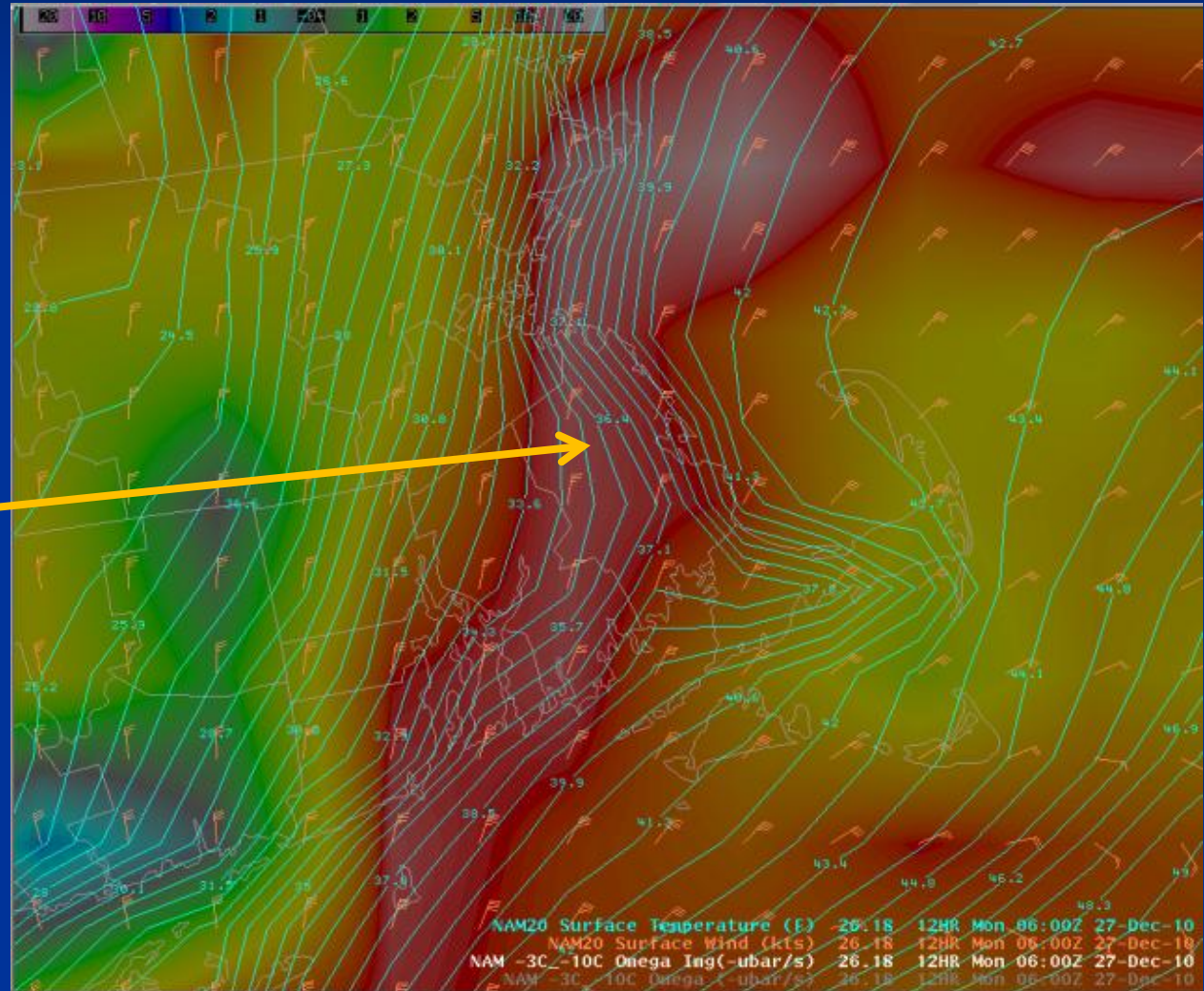
# Lift in the Snow Growth Zone

Shorter range  
RUC model  
correctly  
predicted  
location of  
heavy snow



# Role of the Coastal Front

Lift  
enhanced  
near the  
coastal  
front

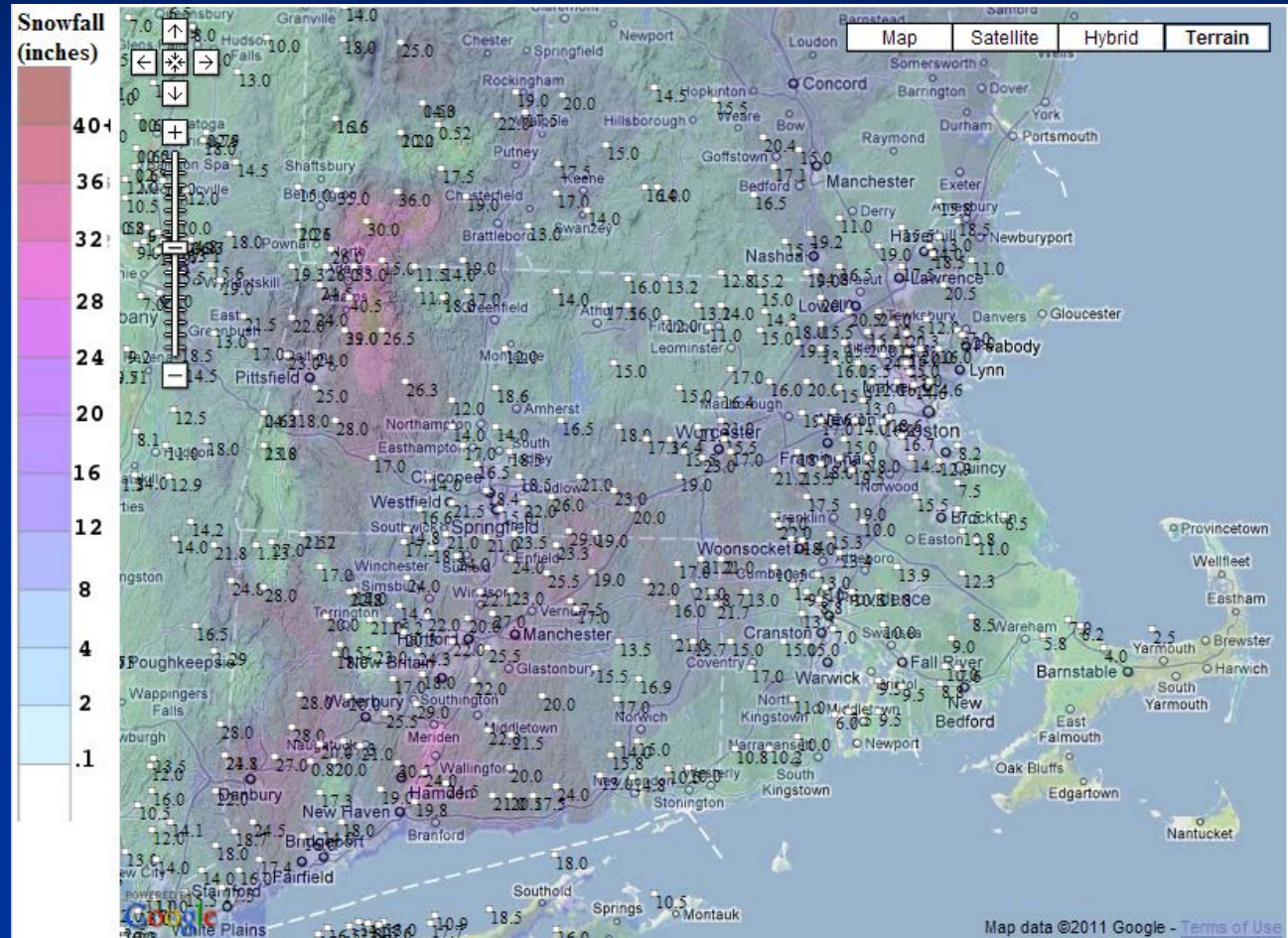


# January 12, 2011 Winter Storm

Widespread  
12-24 inches

30+ inches in  
the Berkshires

Snow  
changed to  
rain on Cape  
Cod and the  
Islands



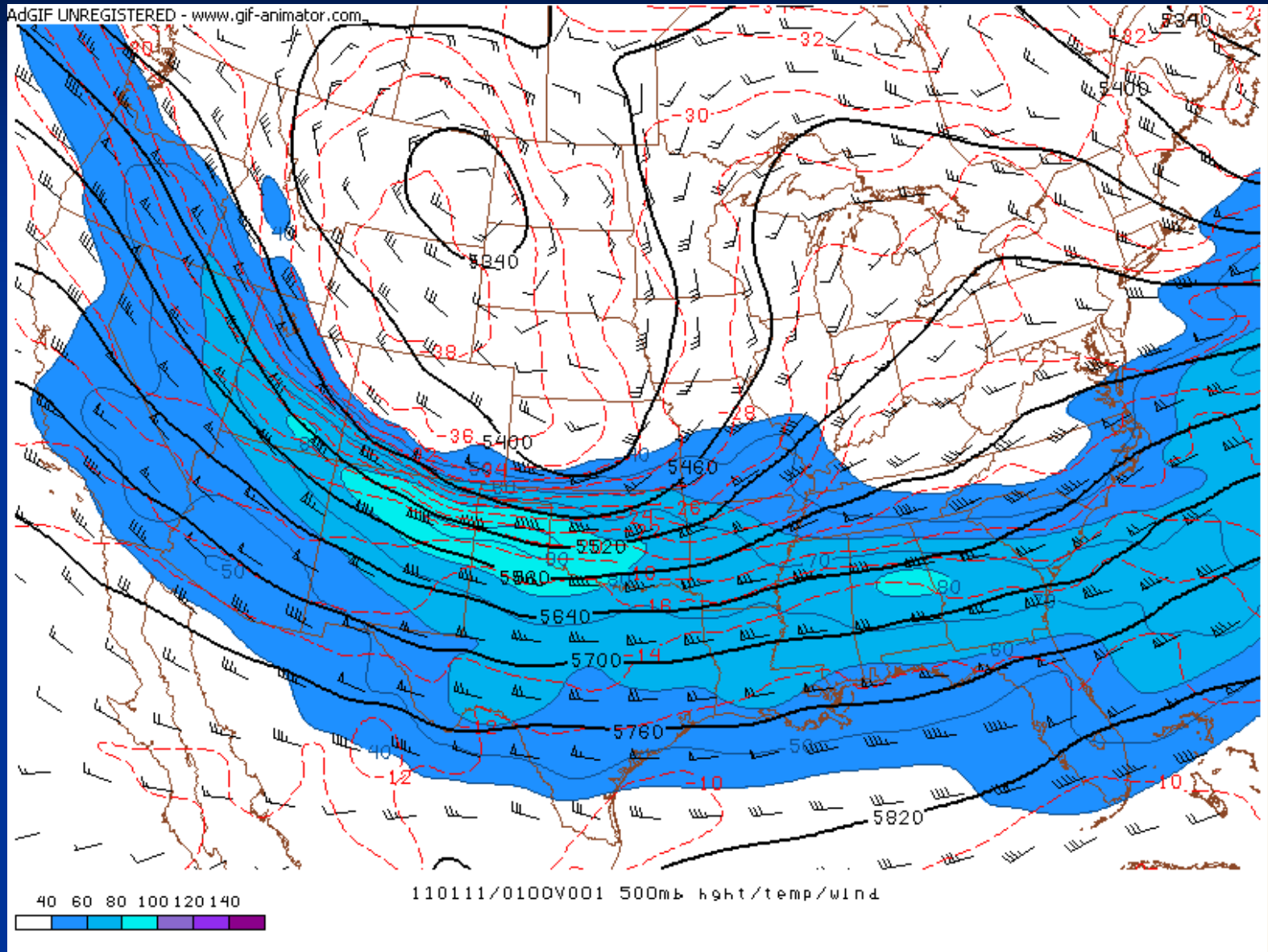
# Forecast Issues

- High level of confidence
  - Models were in agreement several days in advance and remained consistent
- Timing of storm helped to reduce impact
  - Began late at night
  - Strong winds resulted in over 100,000 power outages and downed trees/wires

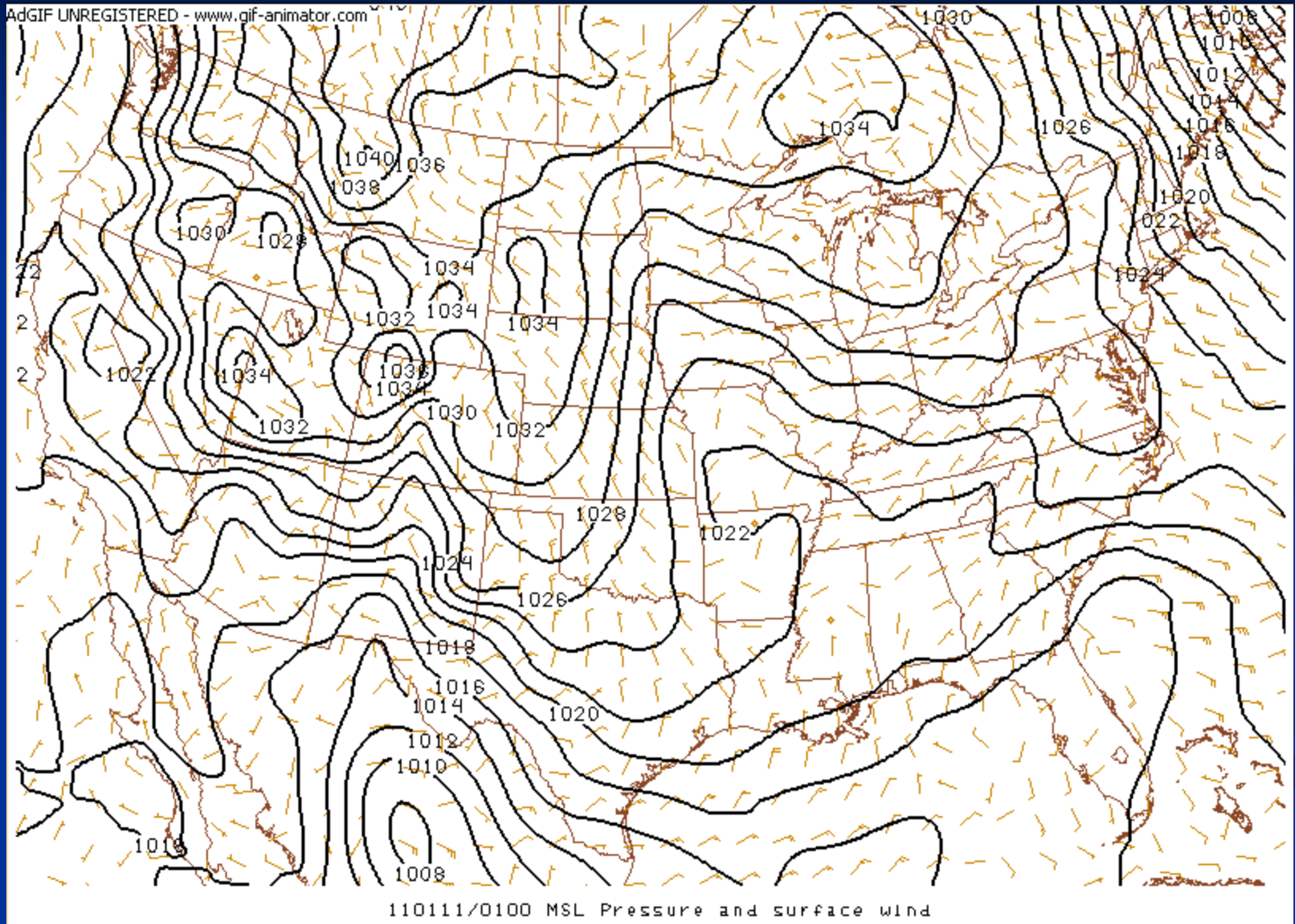
**Slam Dunk!**



# 500 mb Heights and Winds



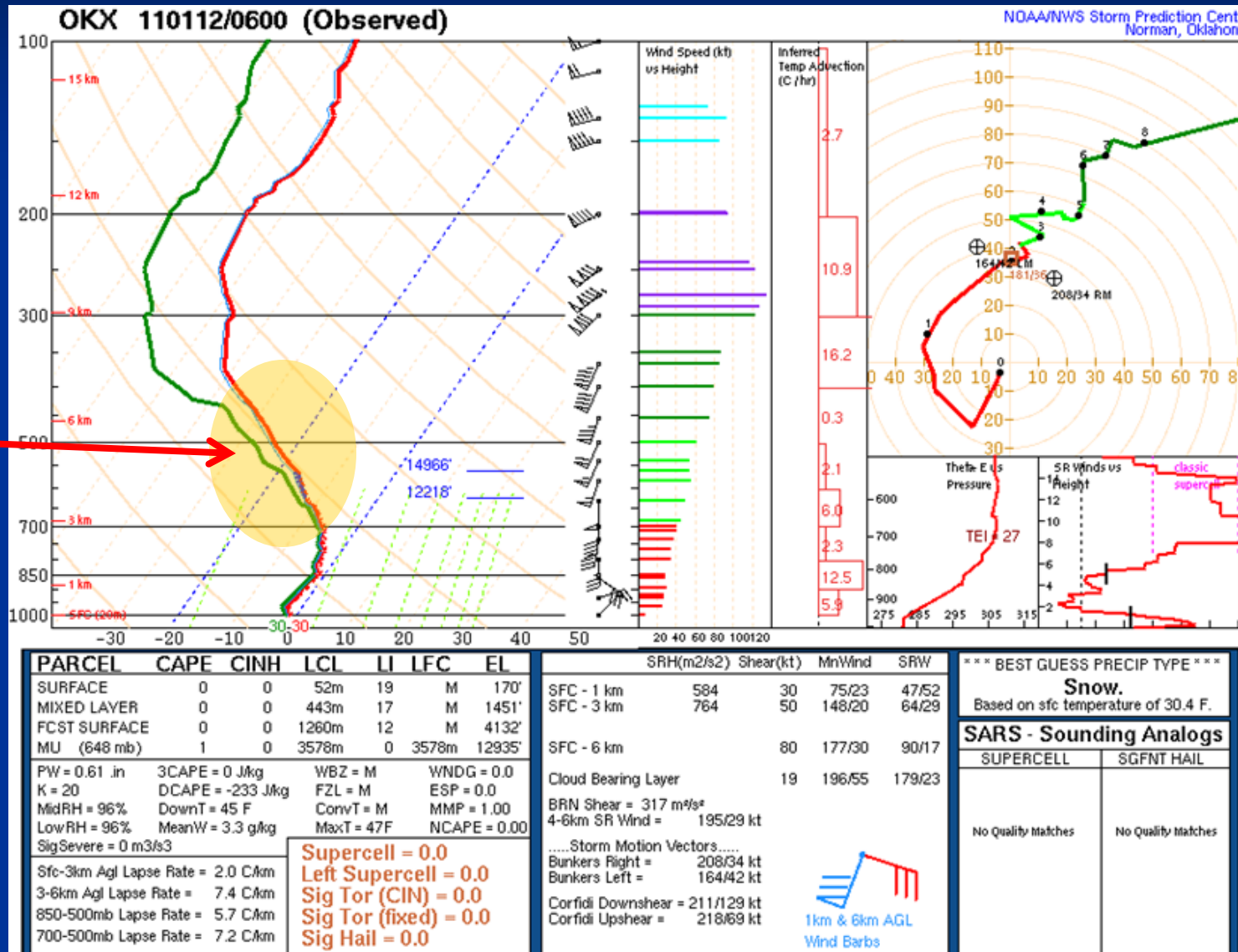
# MSL Pressure and Wind



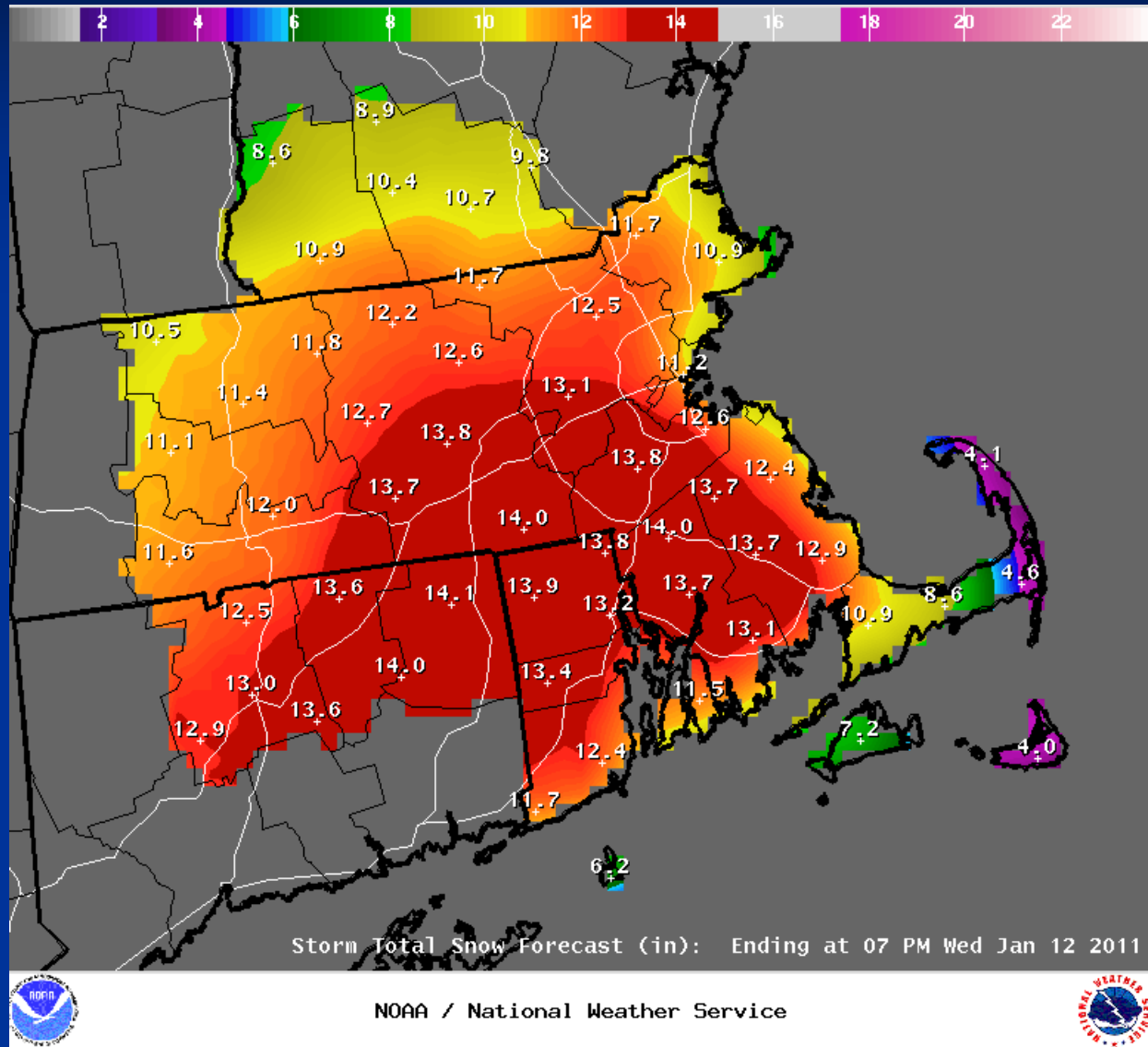


# OKX Sounding: 1 am Jan 12

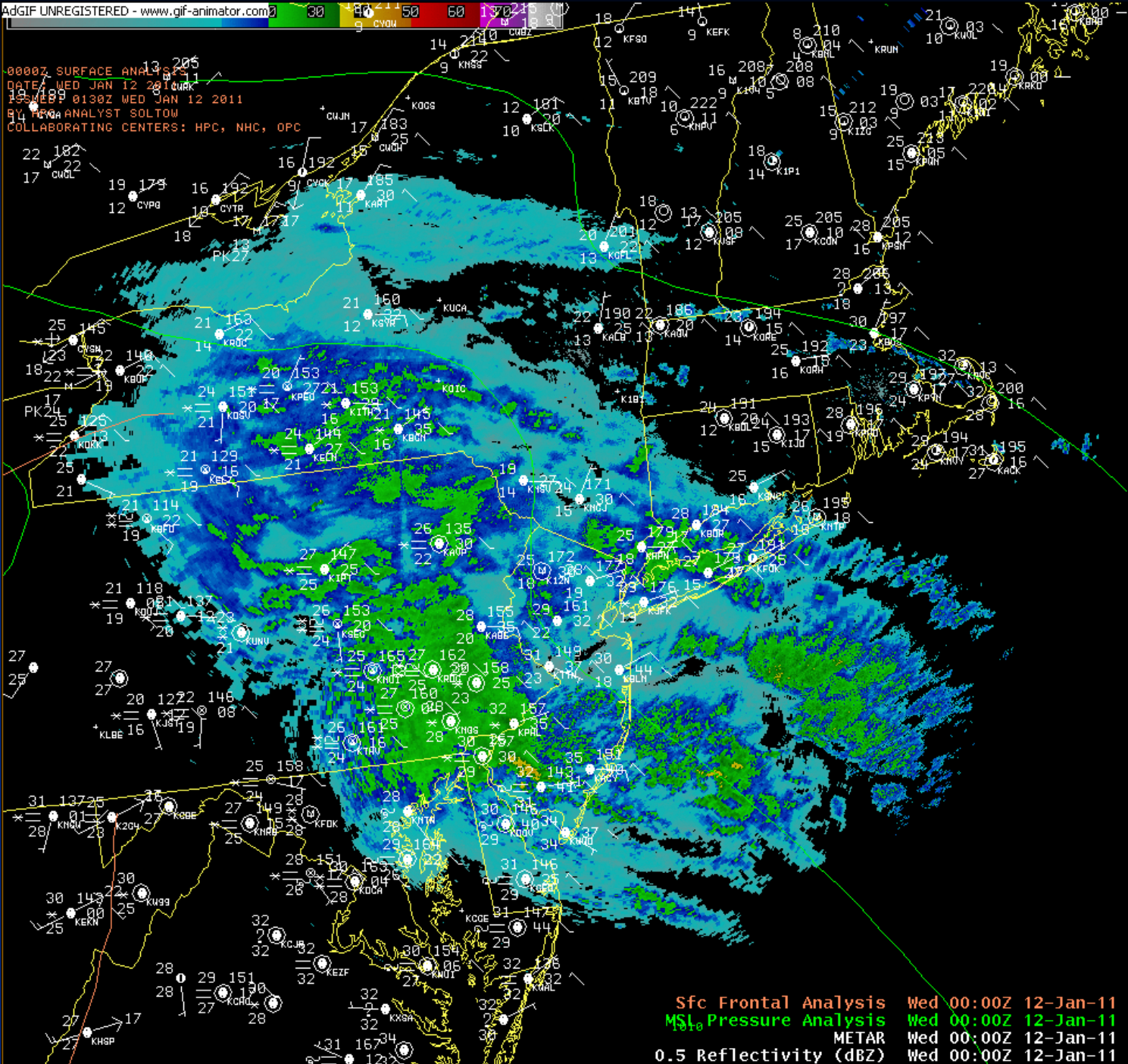
Note steep lapse rates



# Snowfall Forecast: Jan 10



0000Z SURFACE ANALYSIS  
DATE: WED JAN 12 2011  
195619Z 0130Z WED JAN 12 2011  
BY: NOAA ANALYST SOLTOW  
COLLABORATING CENTERS: HPC, NHC, OPC



**Sfc Frontal Analysis** Wed 00:00Z 12-Jan-11  
**MSL Pressure Analysis** Wed 00:00Z 12-Jan-11  
**METAR** Wed 00:00Z 12-Jan-11  
**0.5 Reflectivity (dBZ)** Wed 00:00Z 12-Jan-11

# Questions?

