

Synoptic Meteorology II: Structure of Mature Mid-Latitude Cyclones Figure References

29 January 2015

In class, we utilized the 26-27 January 2015 Nor'easter event to illustrate the structure of mature mid-latitude cyclones. Figures referenced during lecture are presented on the following pages.

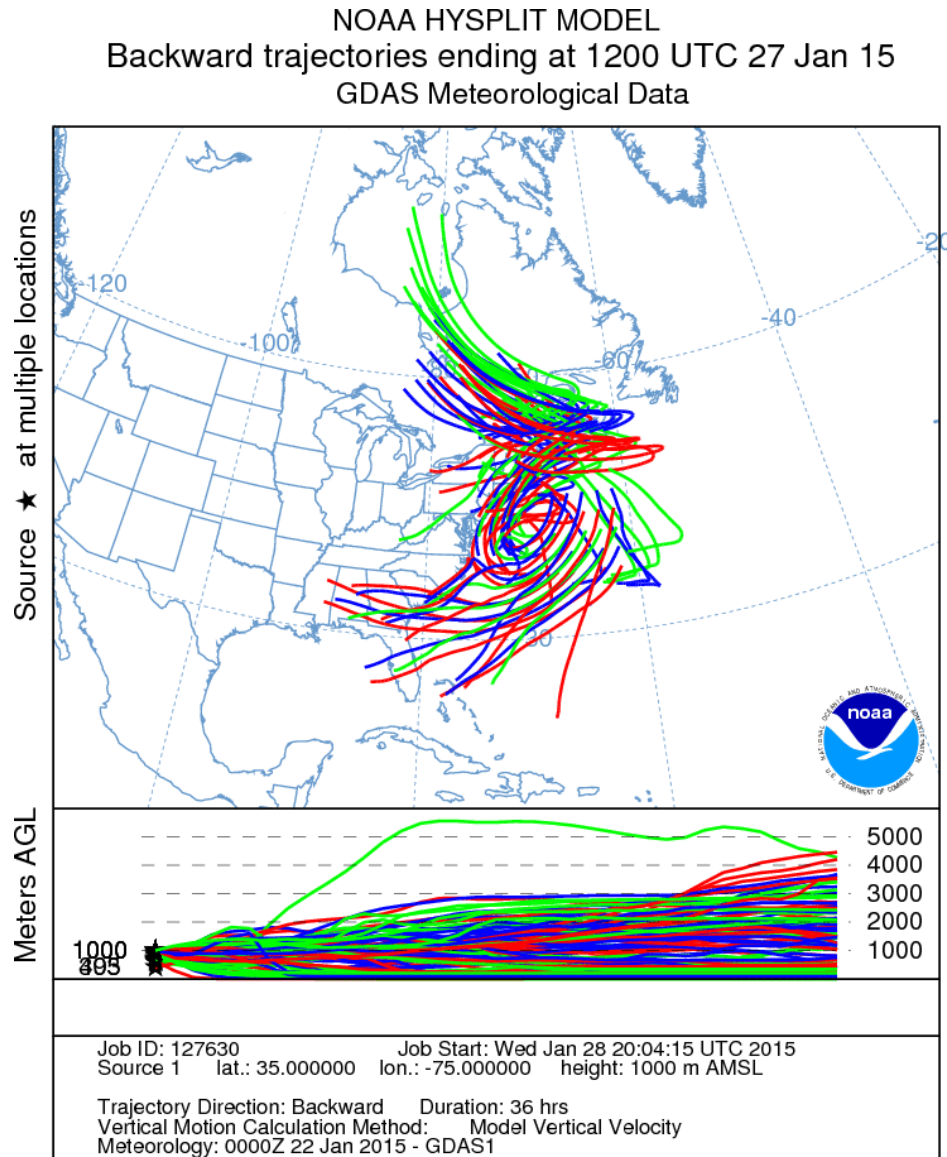


Figure 1. HYSPLIT (<http://ready.arl.noaa.gov/HYSPLIT.php>) backward trajectory output for this case. Backward trajectories extend back 36 h from 1200 UTC 27 January 2015 and were released over a 1.5° latitude by 1.5° longitude grid between 35°N , 75°W and 47°N , 62°W at an altitude of 1 km above sea level. The horizontal path followed by the forward trajectories is depicted at top, while a time-height cross section of trajectory altitude (time decreasing along positive x-axis) is depicted at bottom.

NOAA HYSPLIT MODEL
 Forward trajectories starting at 1200 UTC 27 Jan 15
 GDAS Meteorological Data

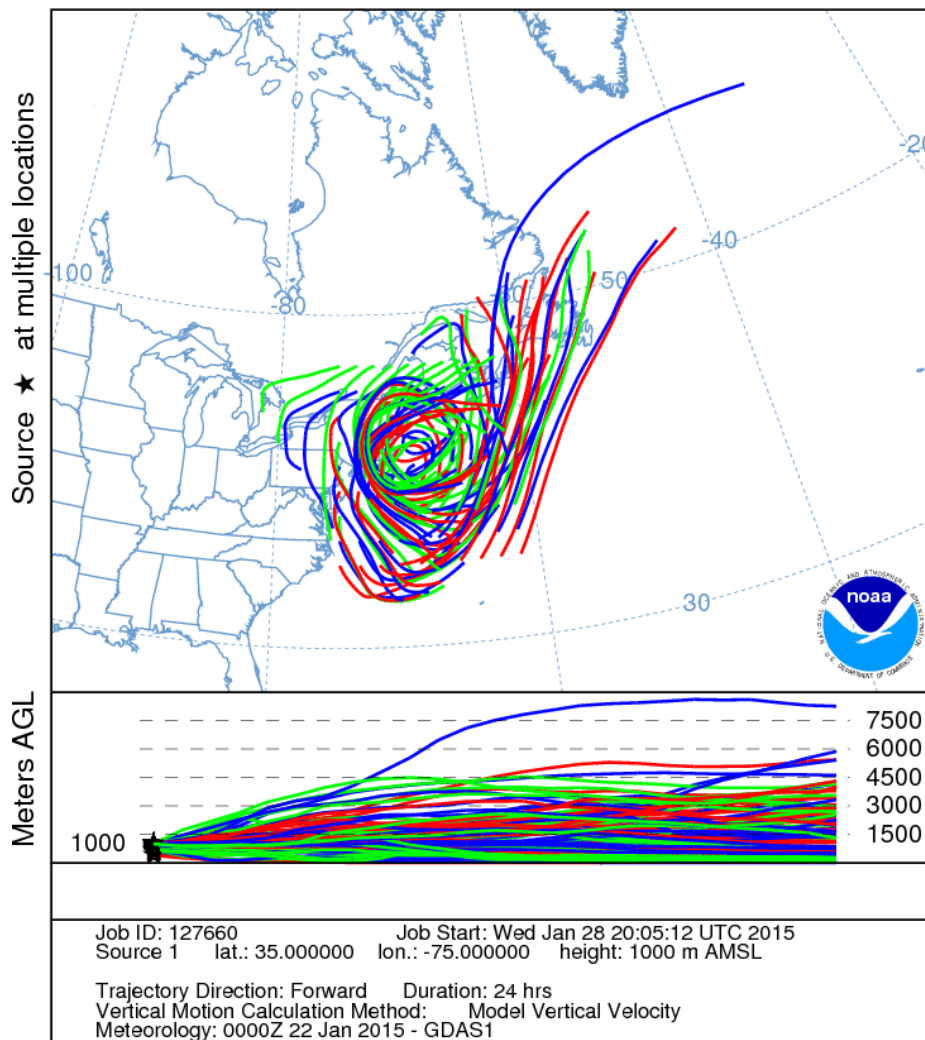


Figure 2. HYSPLIT (<http://ready.arl.noaa.gov/HYSPLIT.php>) forward trajectory output for this case. Forward trajectories extend out 24 h from 1200 UTC 27 January 2015 and were released over a 1.5° latitude by 1.5° longitude grid between 35°N, 75°W and 47°N, 62°W at an altitude of 1 km above sea level. The horizontal path followed by the forward trajectories is depicted at top, while a time-height cross section of trajectory altitude (time increasing along positive x-axis) is depicted at bottom.

UW-Madison/CIMSS Satellite Blog infrared satellite image loop, 26-27 January 2015:
<https://www.youtube.com/watch?v=I2D-OzZYqm0>

UW-Madison/CIMSS GOES-EAST infrared satellite image valid at 1215 UTC 27 January 2015:
<http://dcdb.ssec.wisc.edu/inventory/image.php?sat=GOES-13&date=2015-01-27&time=12:15&type=Imager&band=4&thefilename=goes13.2015.027.121518.INDX&coverage=NH&count=1&offsetz=0>

Archived NCEP surface analyses for January 2015:

<http://archive.atmos.colostate.edu/data/sfc/QYAA00/1501/>

(Pay particular attention to 0300-1500 UTC 27 January 2015.)

NCEP 850 hPa geopotential height (dam, solid contours) and temperature (°C, dashed contours) valid at 1200 UTC 27 January 2015:

<http://archive.atmos.colostate.edu/data/misc/QHUA04/1501/15012713QHUA04.png>

NCEP 700 hPa geopotential height (dam, solid contours) and temperature (°C, dashed contours) valid at 1200 UTC 27 January 2015:

<http://archive.atmos.colostate.edu/data/misc/QHTA07/1501/15012713QHTA07.png>

NCEP 500 hPa geopotential height (dam, solid contours) and temperature (°C, dashed contours) valid at 1200 UTC 27 January 2015:

<http://archive.atmos.colostate.edu/data/misc/QHTA11/1501/15012713QHTA11.png>

NCEP 300 hPa geopotential height (dam, solid contours), temperature (°C, dashed contours), and isotachs (thin dashed contours every 20 kt, >70 kt hatched) valid at 0000 UTC 27 January 2015:

<http://archive.atmos.colostate.edu/data/misc/QHUA15/1501/15012701QHUA15.png>