Flight Day Conditions

April 12, 2008

Andy Latto
Henry Fuelberg

“Your Eyes to the Skies”

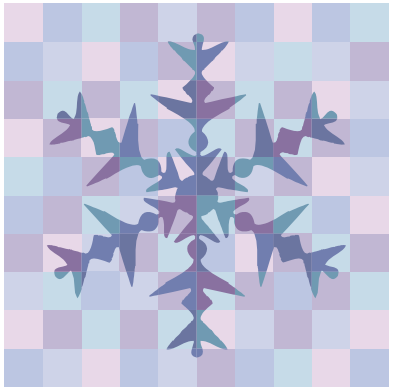
Barrow

We face unafraid

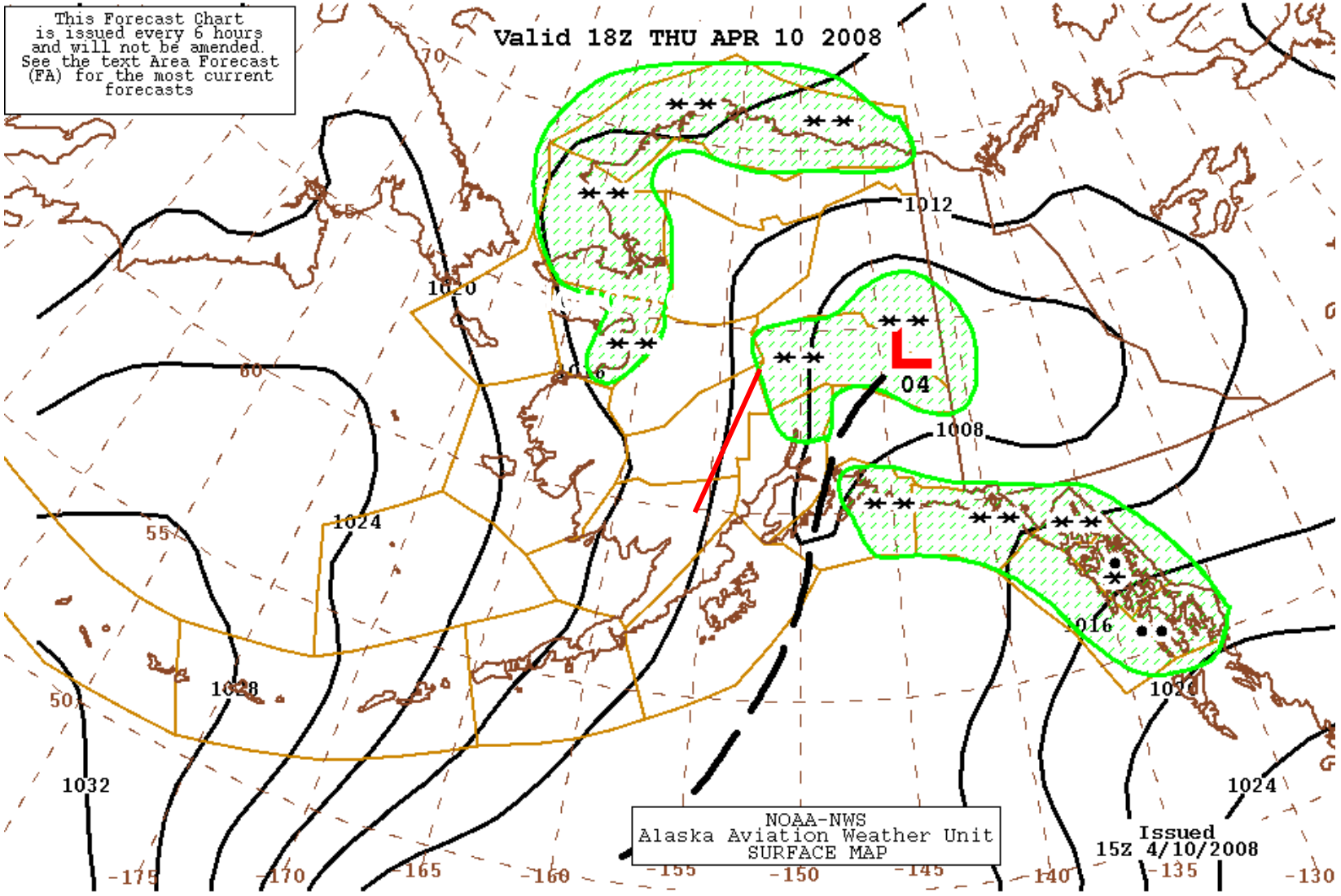
The plans that we've made

Working and flying in a

Winter Wonderland

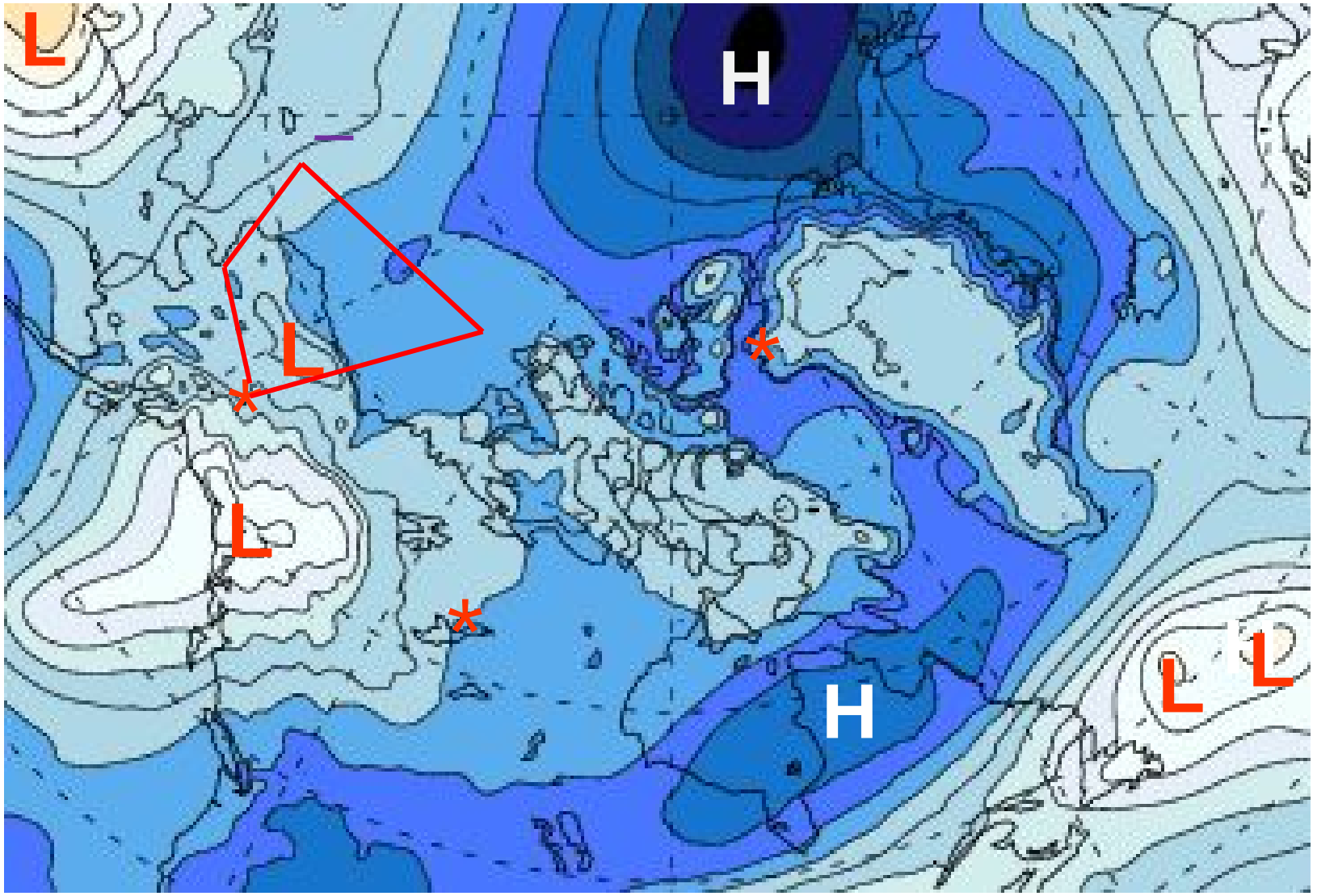


Current Surface Analysis

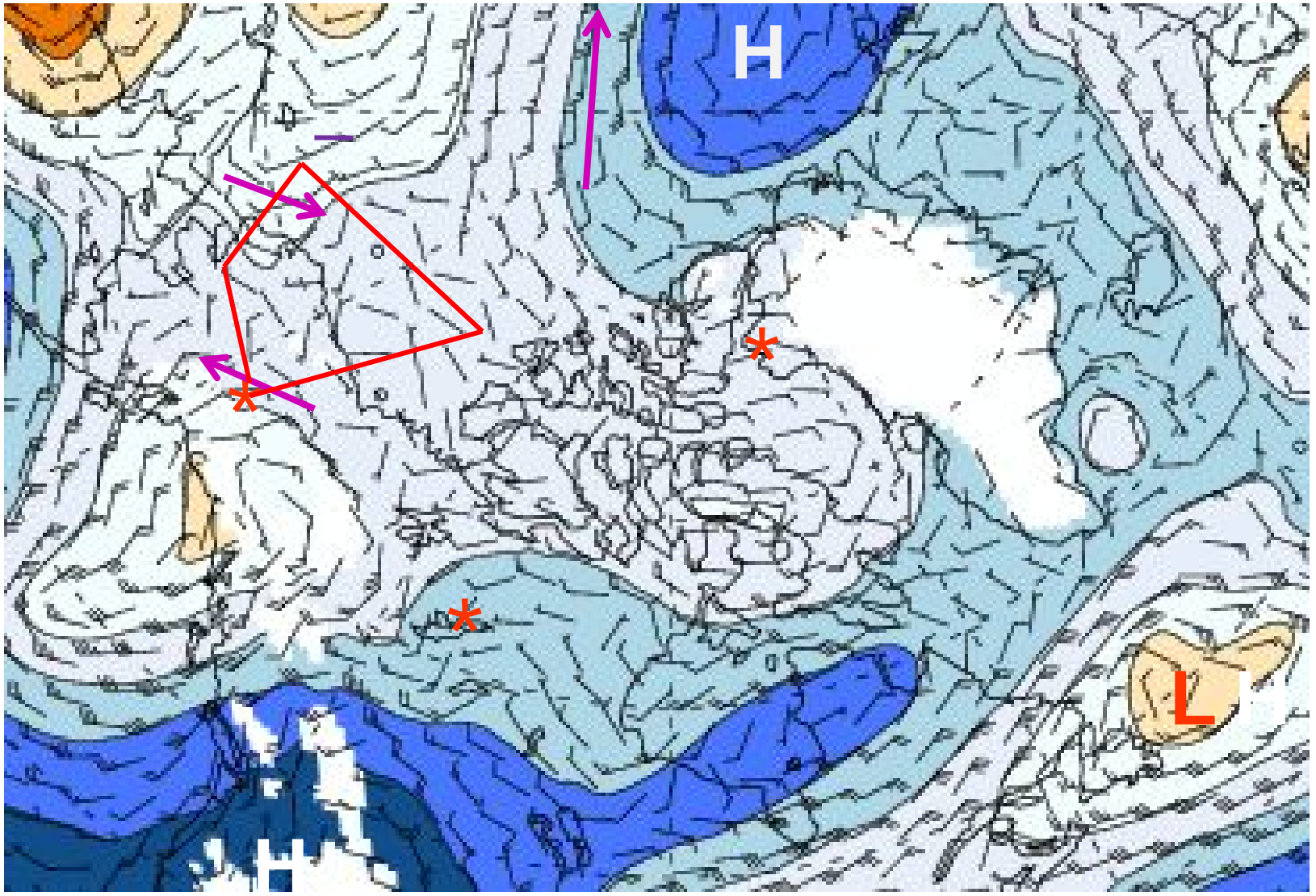


Forecast For Saturday

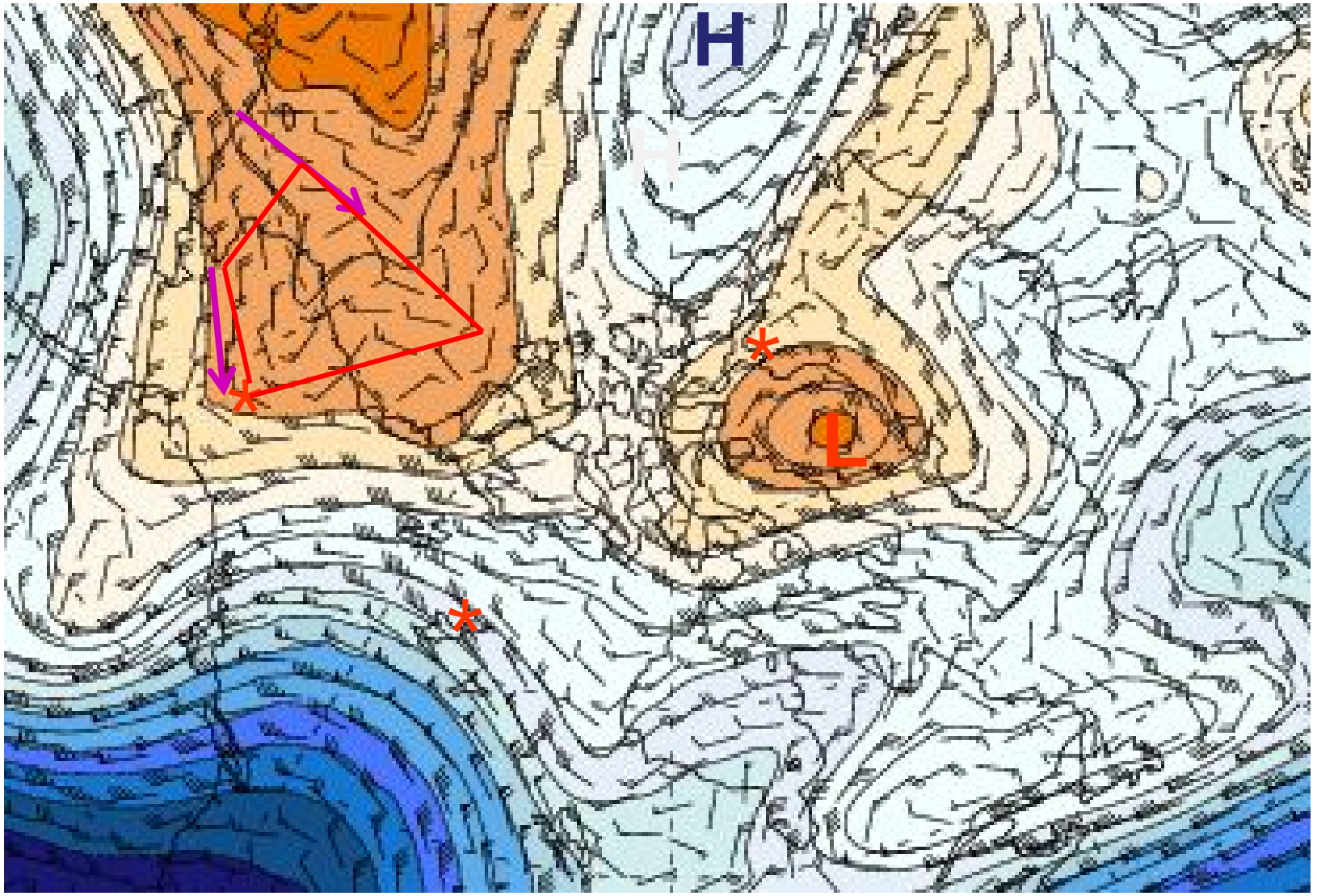
FSU WRF Forecast Valid 1800Z April 12
Sea Level Pressure



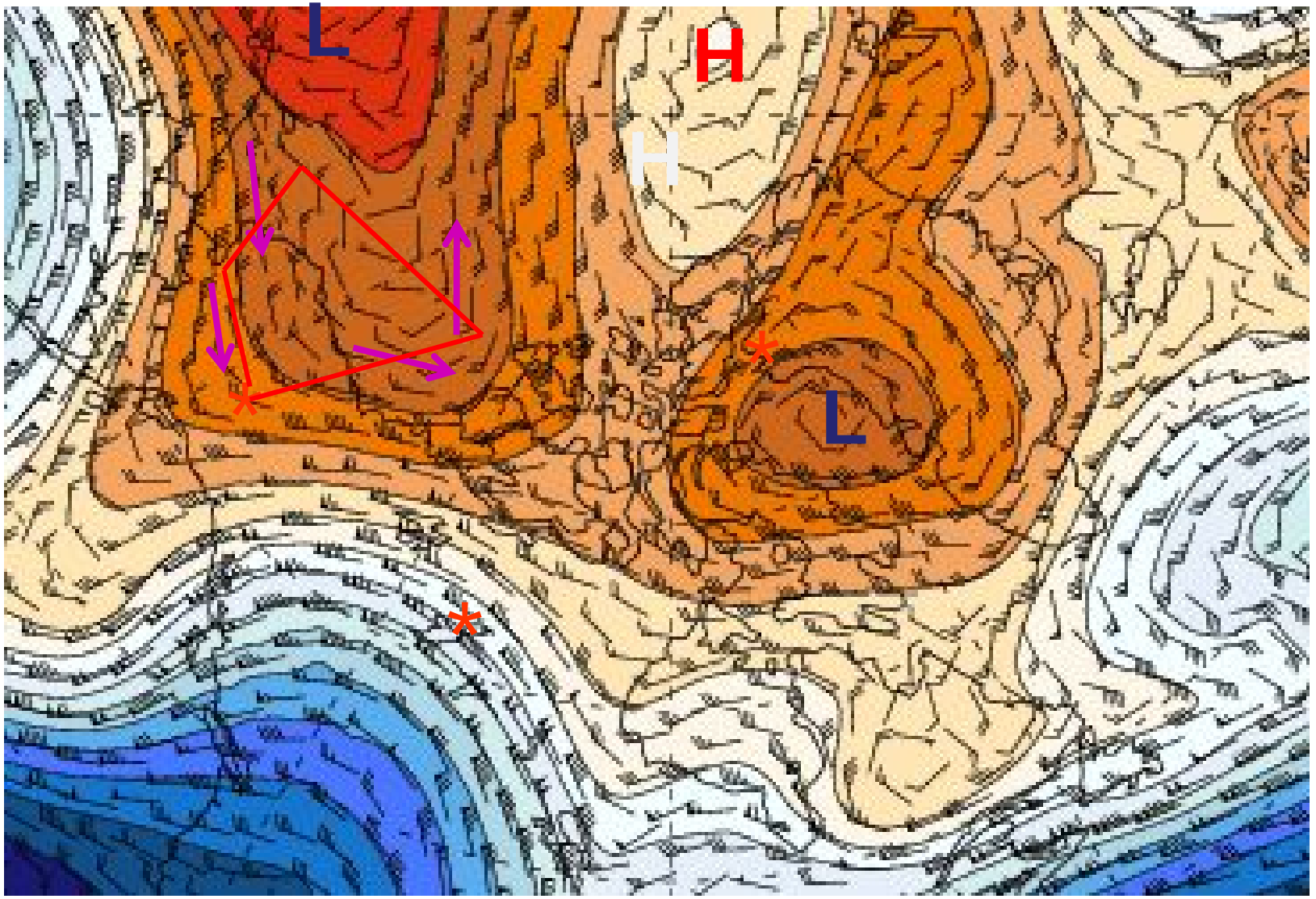
FSU WRF Forecast Valid 1800Z April 12
850 hPa Heights and Winds



FSU WRF Forecast Valid 1800Z April 12
500 hPa Heights and Winds



FSU WRF Forecast Valid 1800Z April 12
300 hPa Heights and Winds

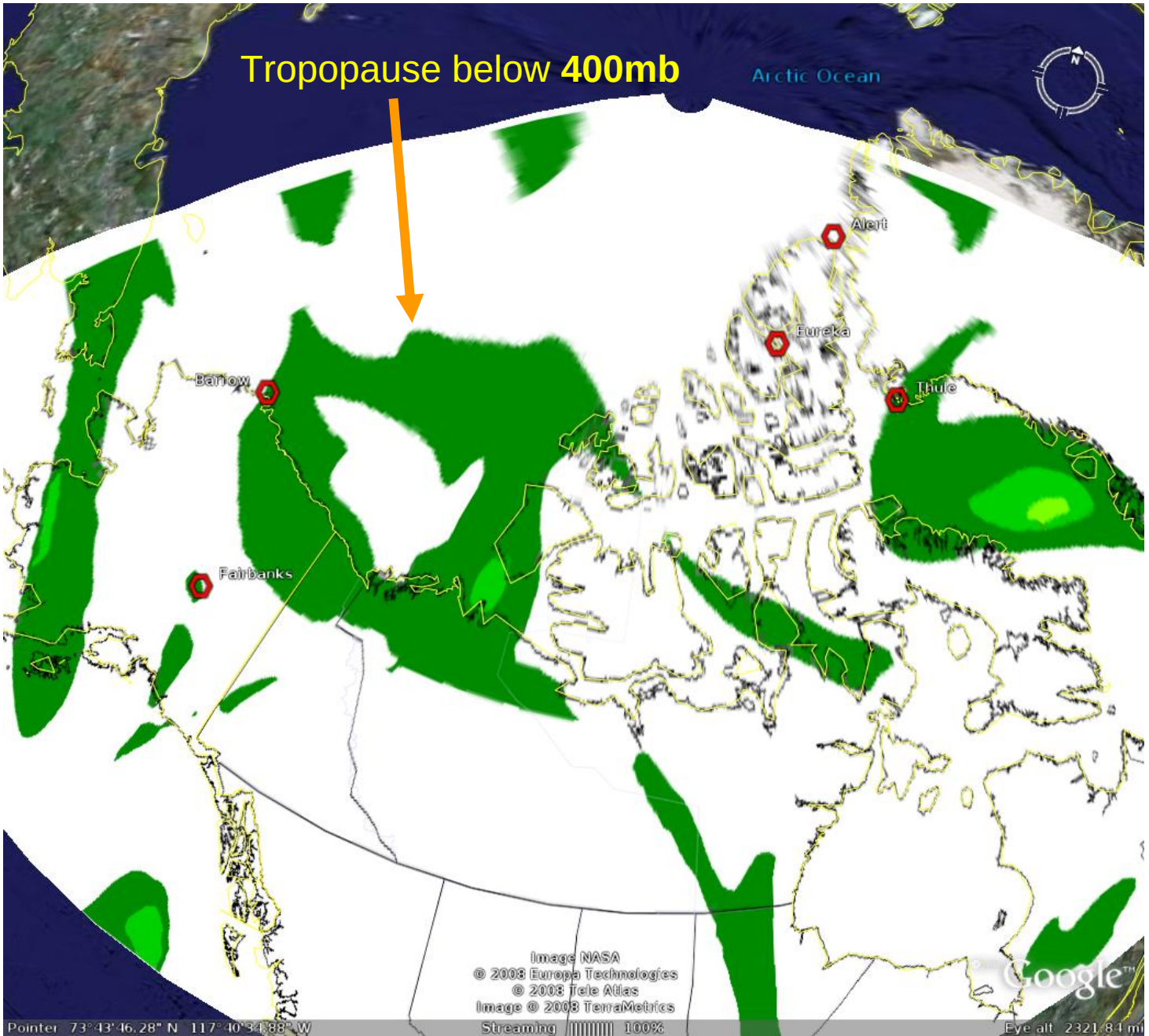


April 12, 2008
Tropopause Height plan view

Alaska – Northern Canada – West Greenland

Atkinson, Cross, Malingowski
University of Alaska Fairbanks
International Arctic Research Center

Overview – Tropopause height – April 12 0700 AK (15Z April 12)

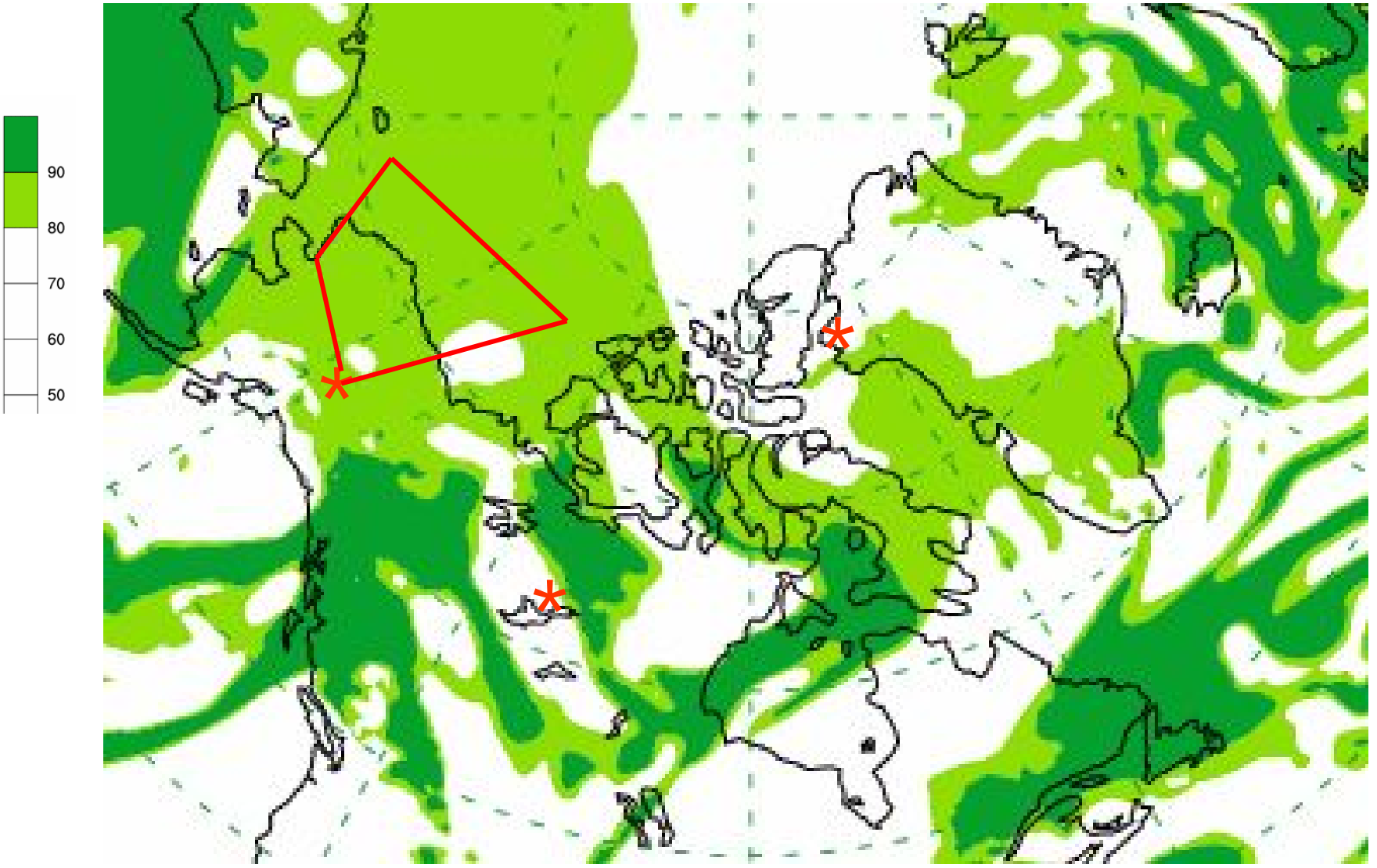


Tropopause height:

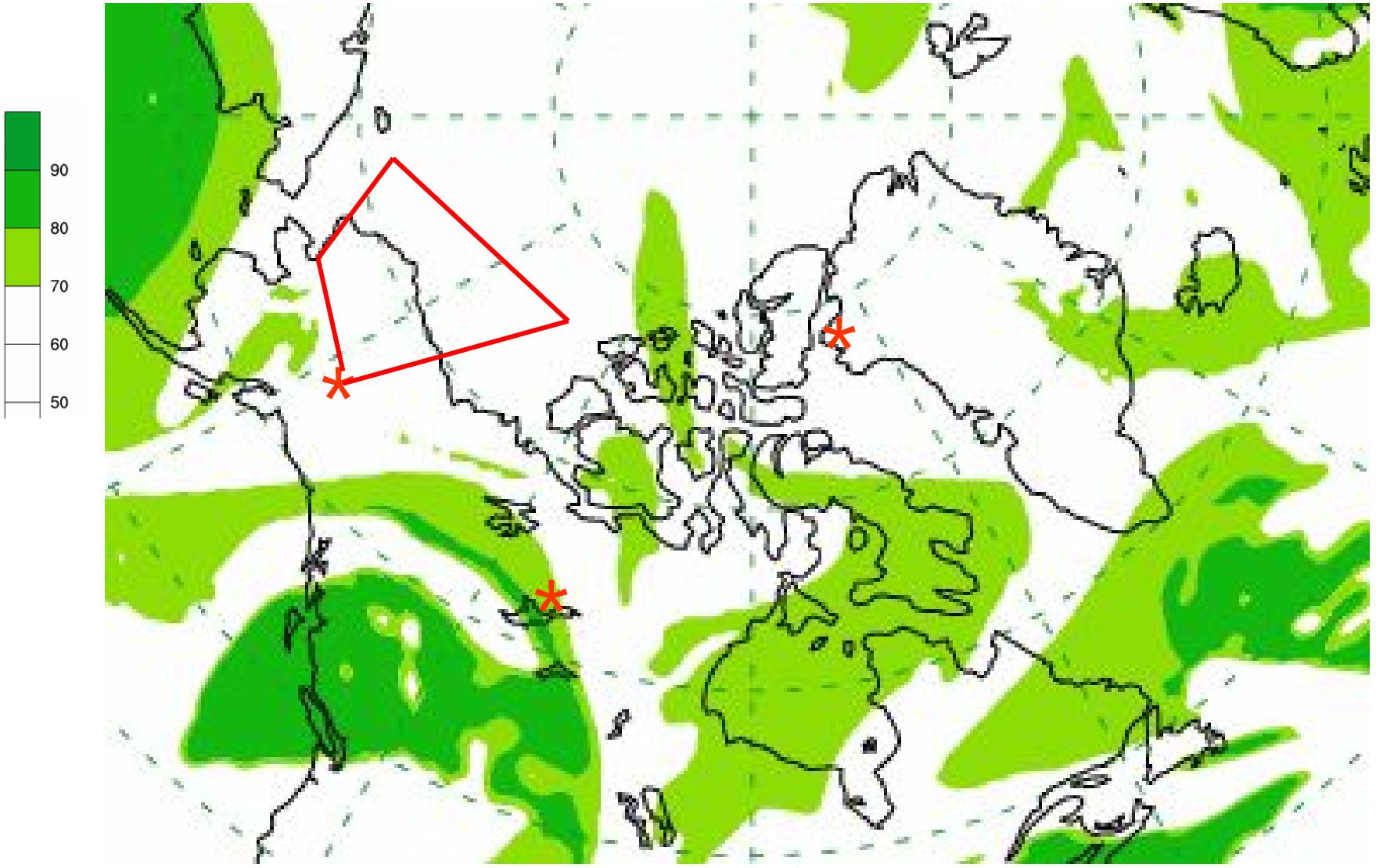
- 400mb – 500mb
- 500mb – 550mb
- 550mb – 600mb
- < 600mb

What About Clouds for Saturday??

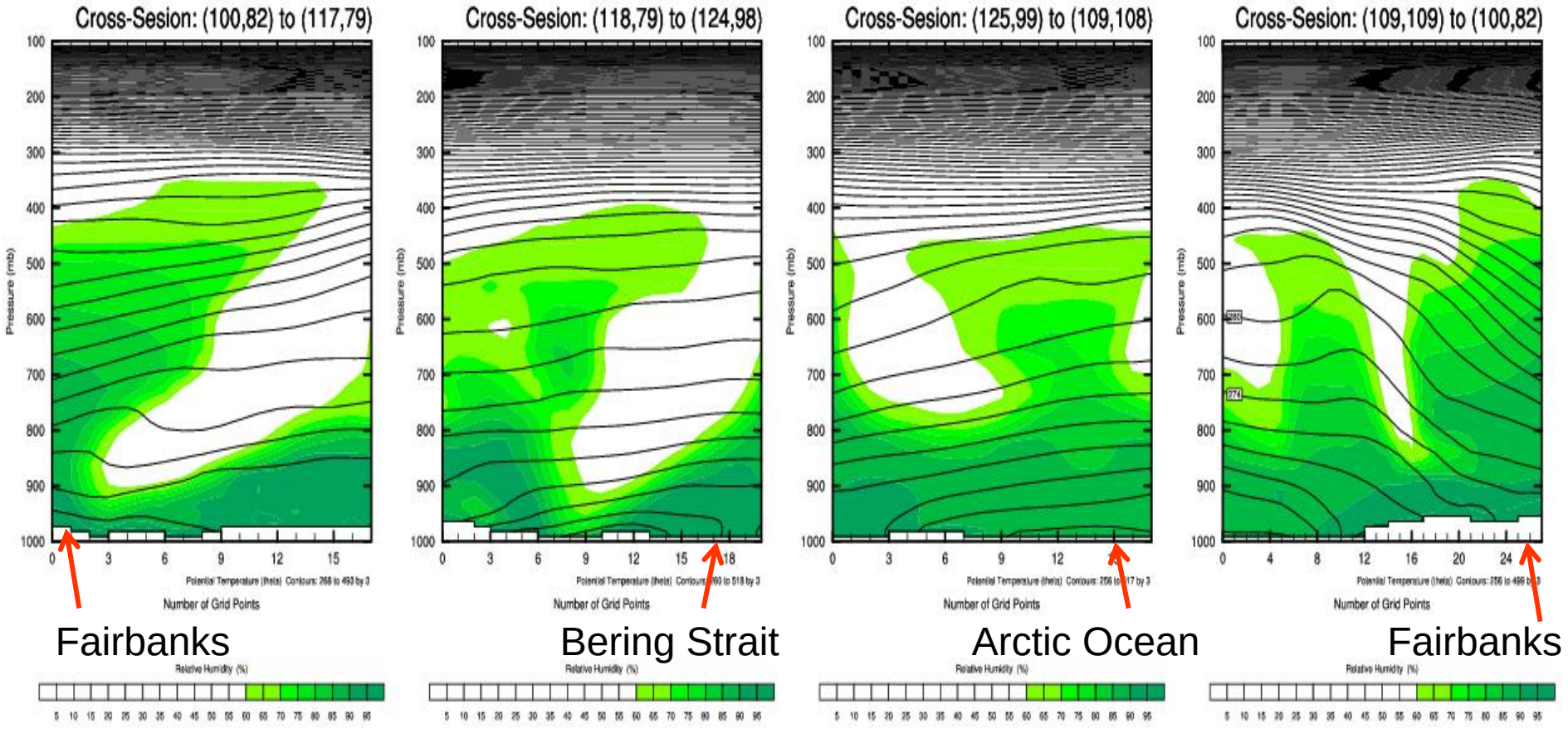
FSU WRF Relative Humidity at 850 hPa Forecast
Valid 1800 Z April 12



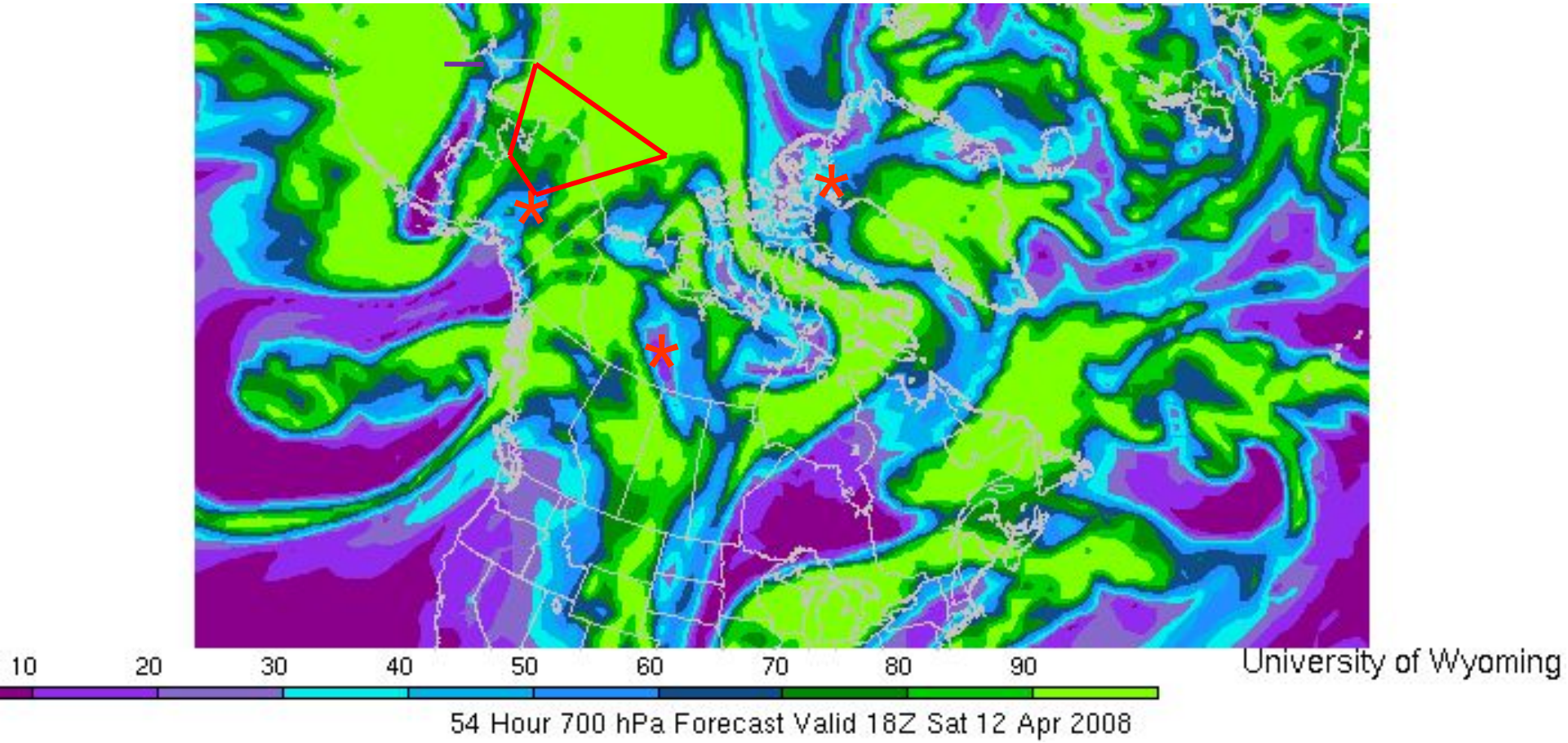
FSU WRF Relative Humidity at 500 hPa Forecast
Valid 1800 Z April 12



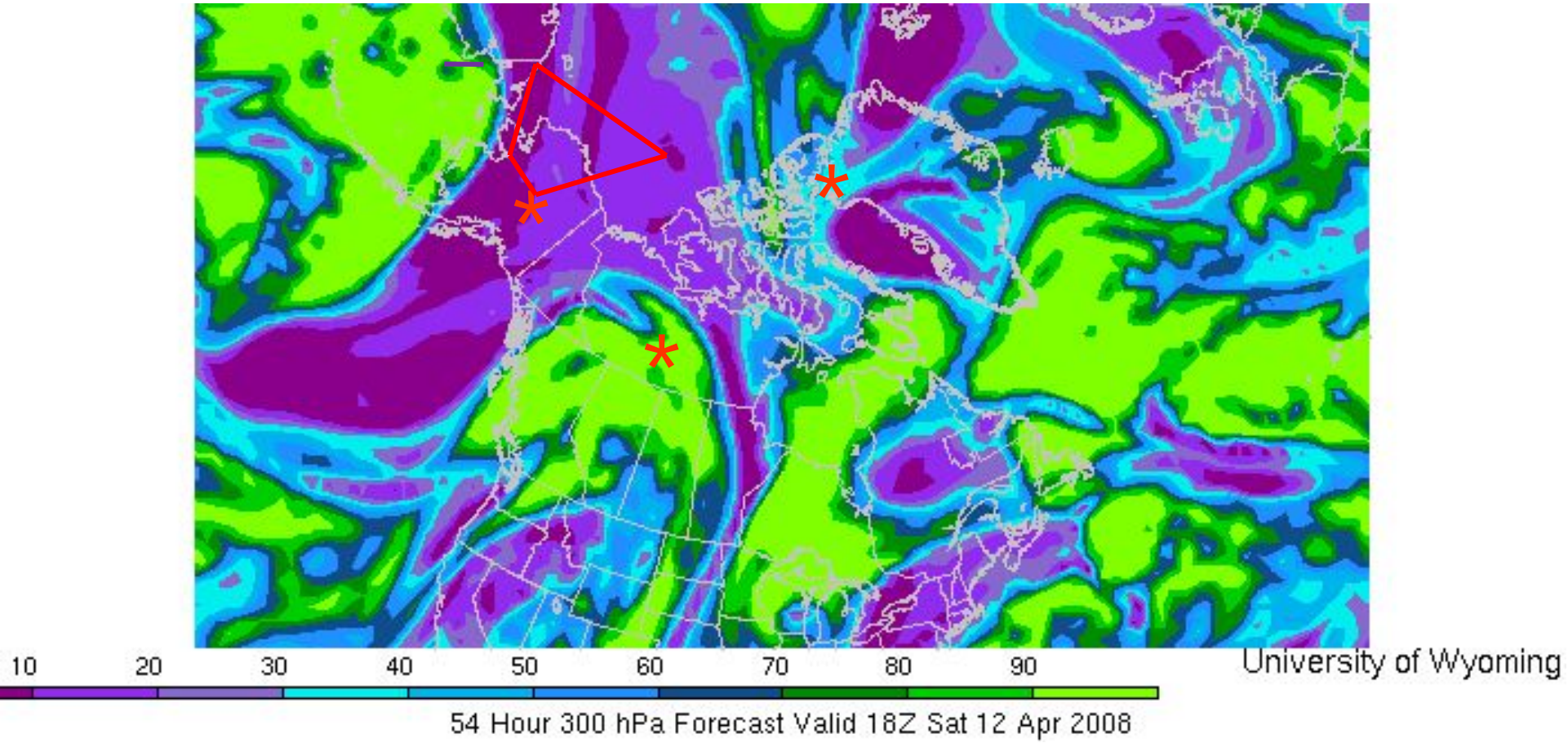
FSU WRF RH Cross Section DC-8 Flight Path Forecast for Suitcase Flight Valid 1800 Z April 12



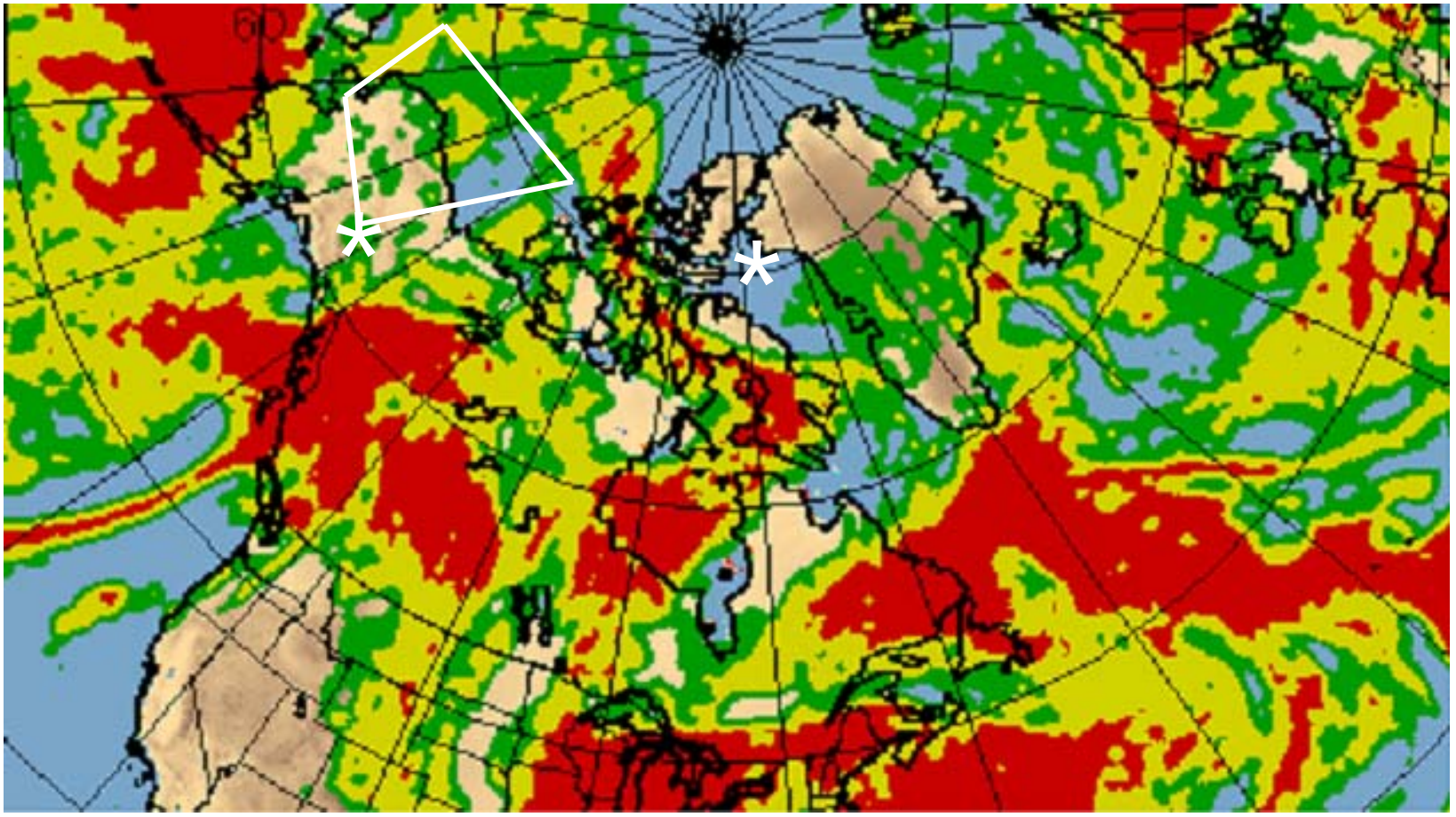
Let's Compare with GFS Forecast Valid 1800Z April 12 700 hPa Relative Humidity and Heights



Let's Compare with GFS Forecast Valid 1800Z April 12
300 hPa Relative Humidity and Heights



Let's Compare with Air Force Total Cloud Cover Valid 1800 Z April 12

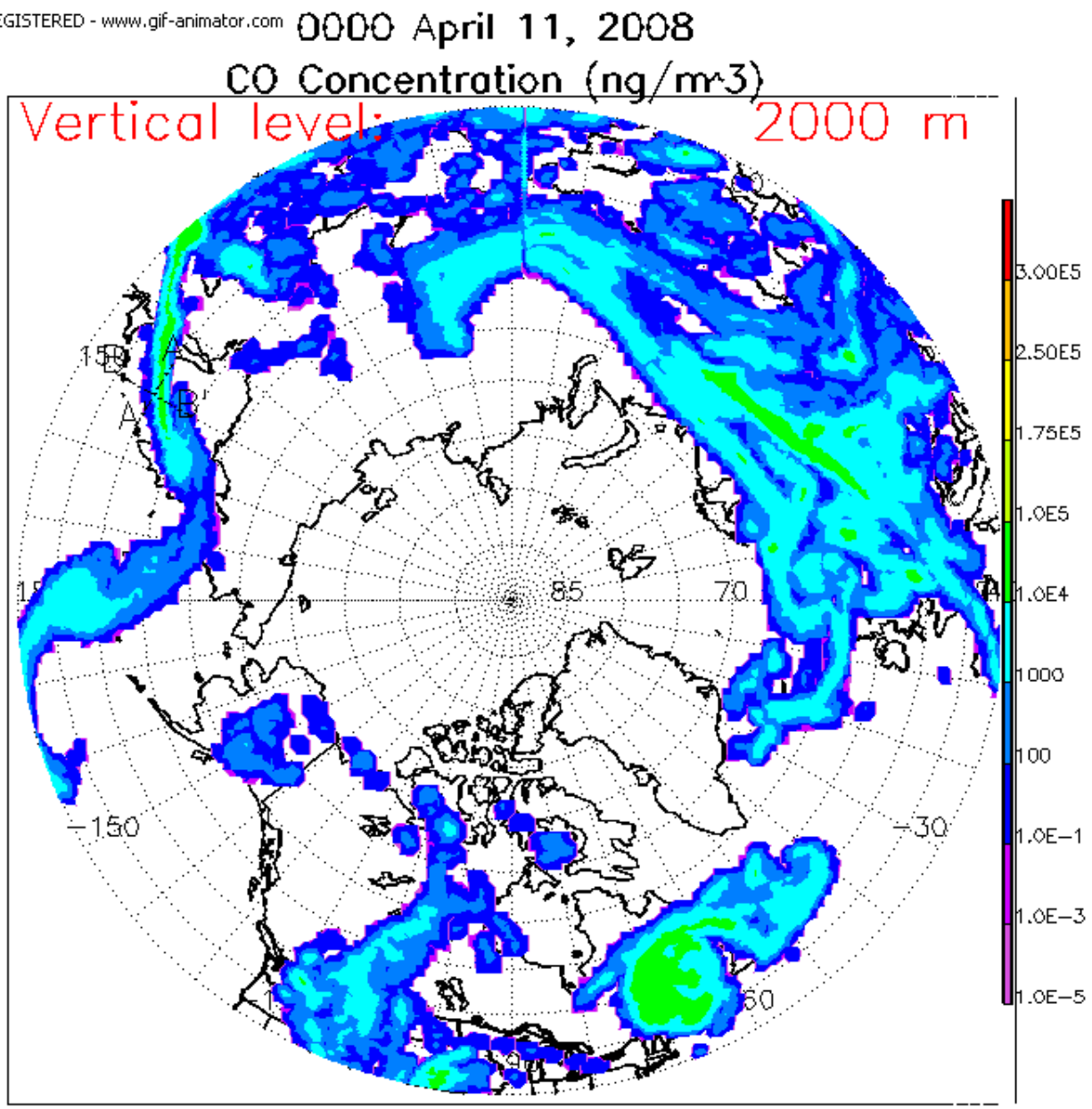


Red = Overcast **Yellow = 0.6-0.9 coverage** **Green = 0.1-0.5 coverage**

FSU Runs Flexpart

- Met data from FSU WRF run (25 km grid)
- Top10% of emissions are tracked
- 7 day runs through fly day (April 12)
- Color coded by concentration
- Fire Data Not Included

AdGIF UNREGISTERED - www.gif-animator.com

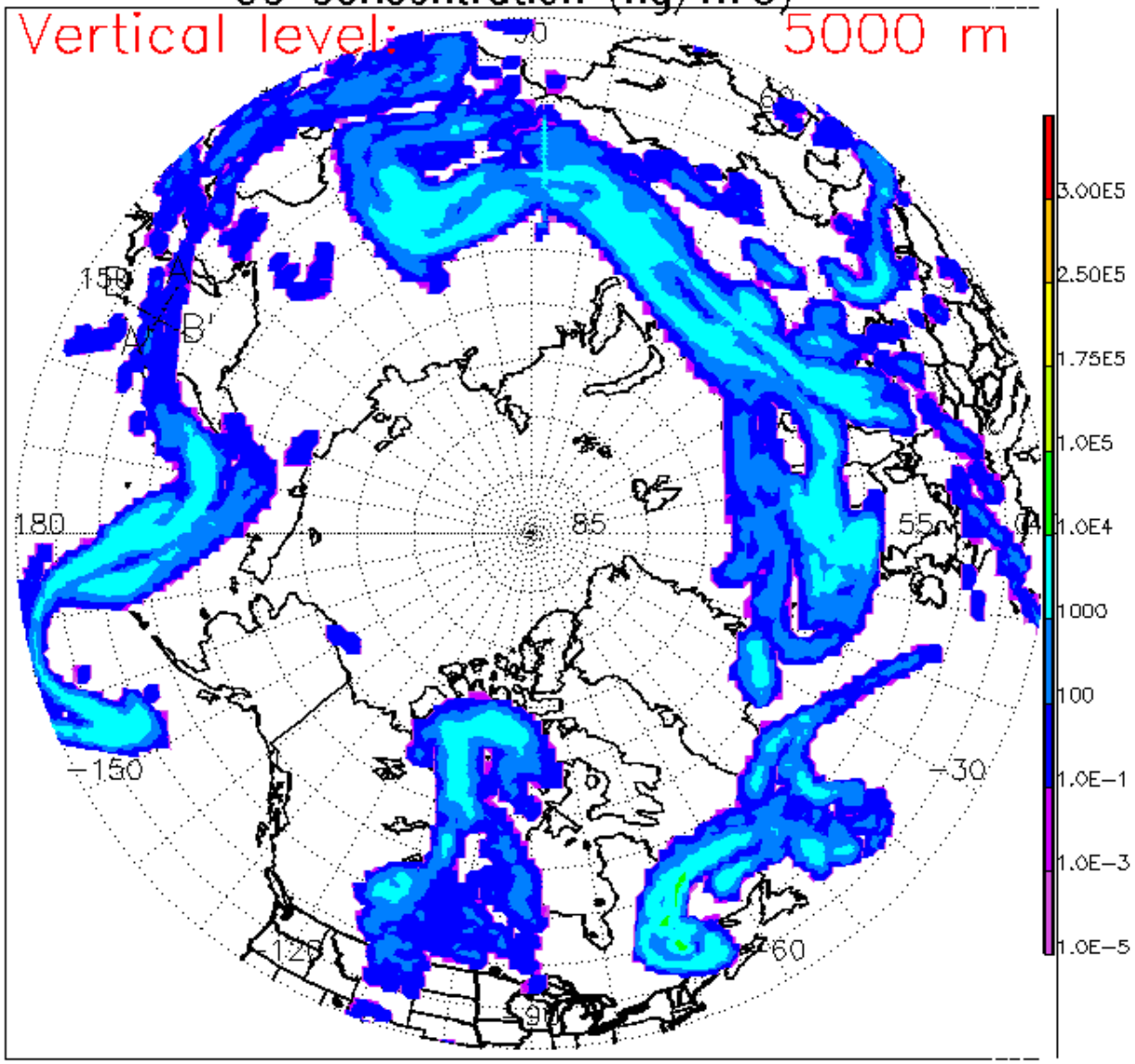


Florida State University Meteorology

AdGIF UNREGISTERED - www.gif-animator.com

2200 April 10, 2008

CO Concentration (ng/m^3)

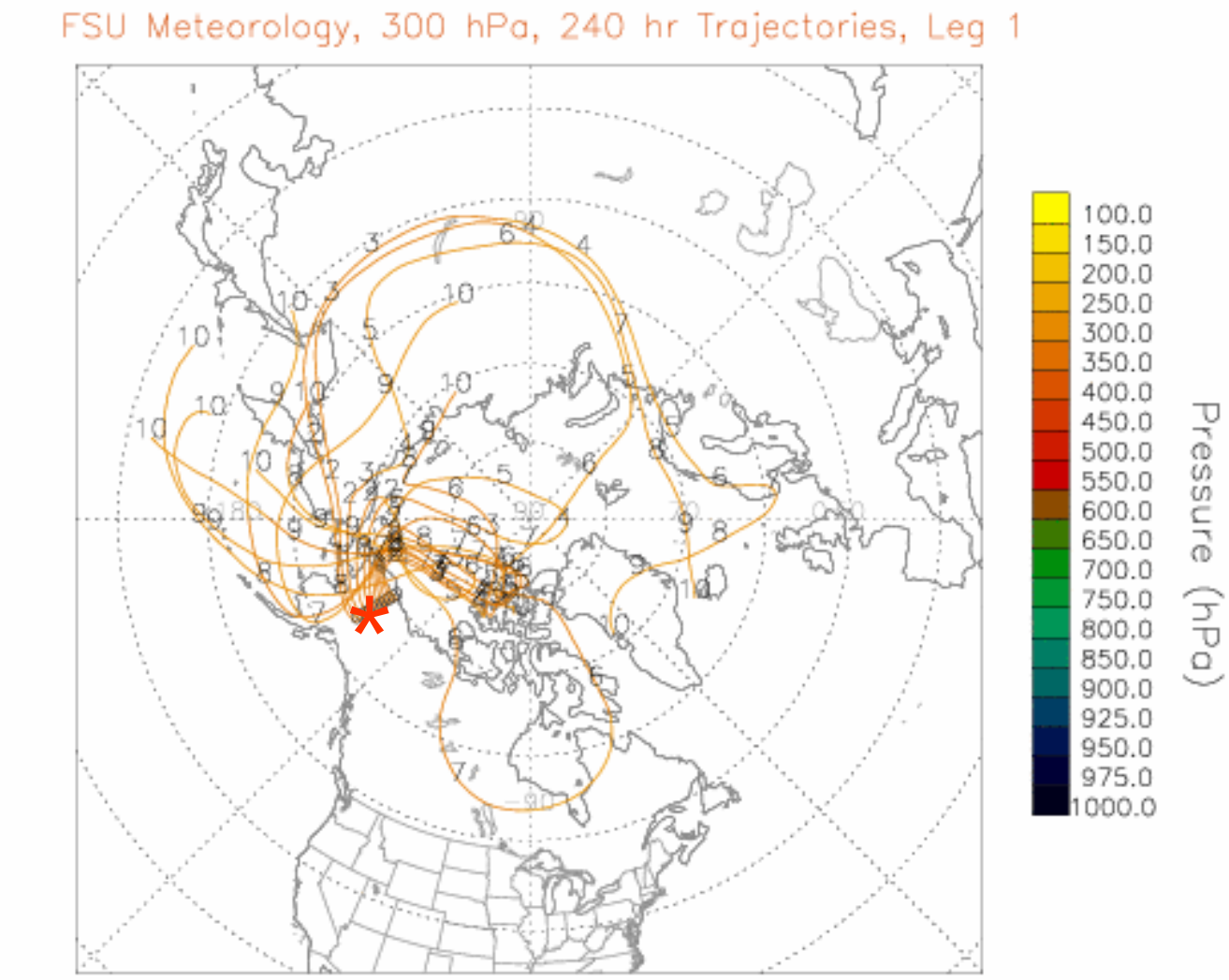


Florida State University Meteorology

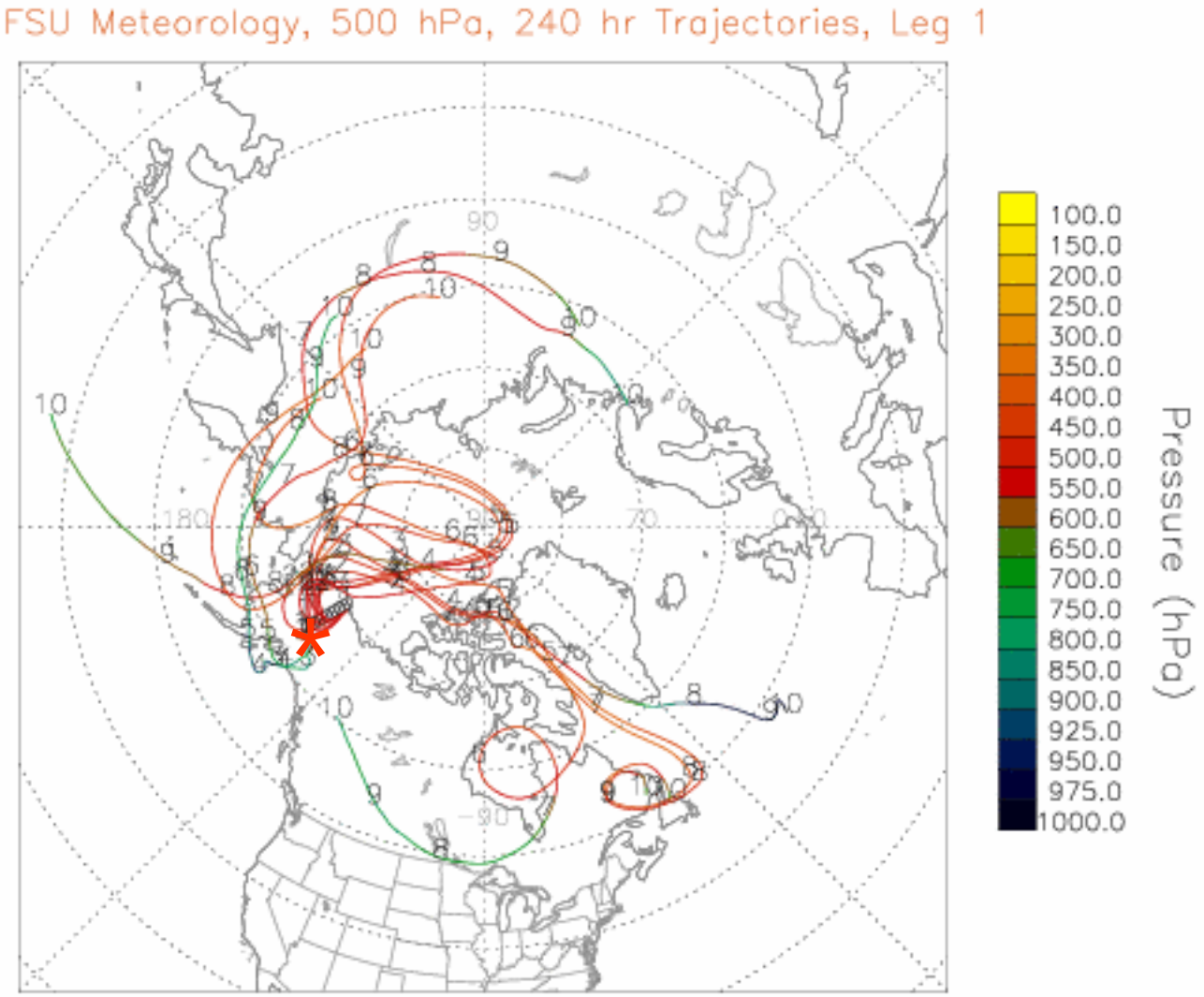
FSU Trajectories for Saturday

- Met data from FSU WRF run (25 km grid)
- 10 days backwards in time
- Color coded by altitude
- Leg 1: Fairbanks to Barrow
- Leg 2: Barrow to north Canada
- Leg 3: North Canada to Fairbanks

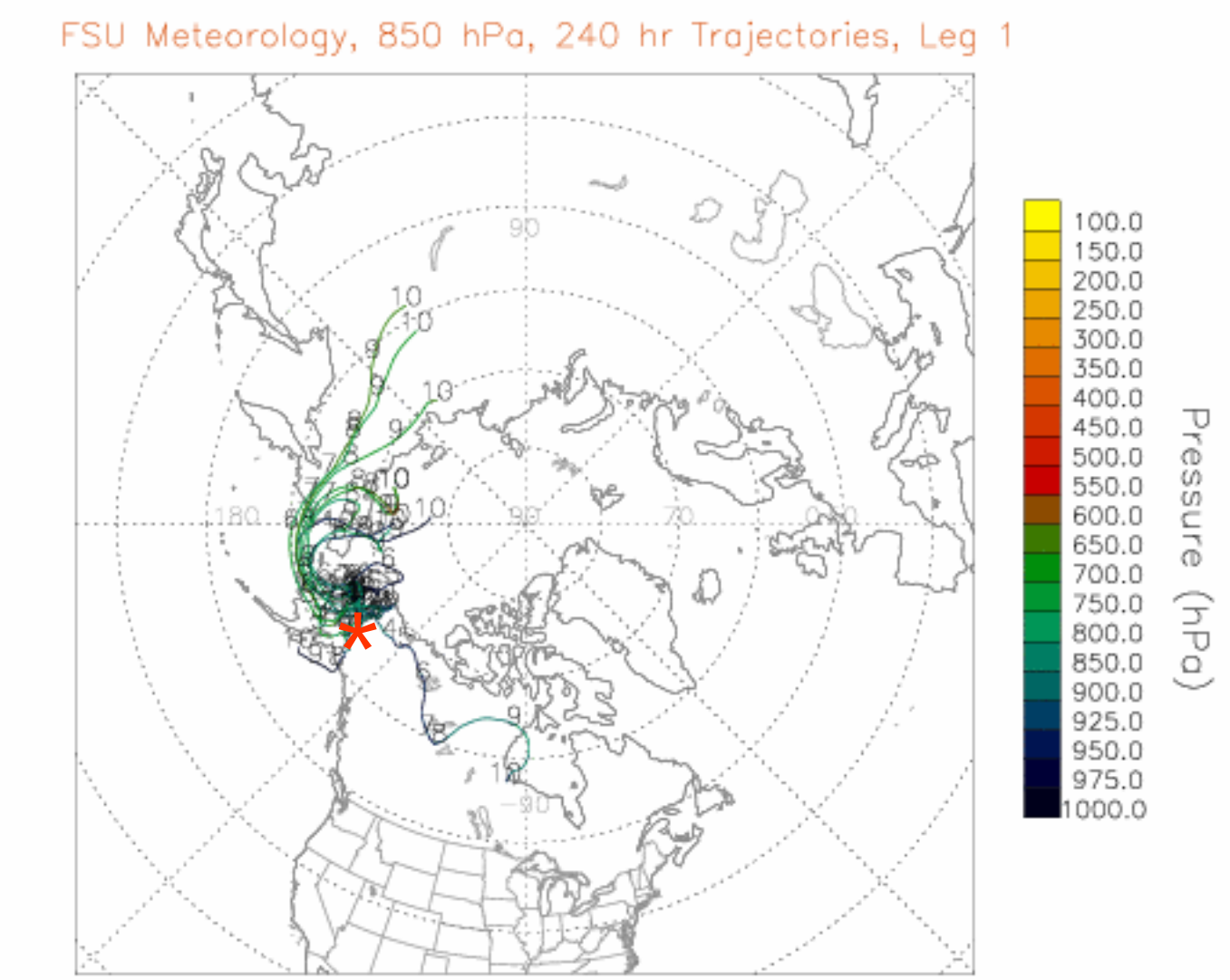
FSU 10 Day Backward Trajectories from 300 hPa Leg 1



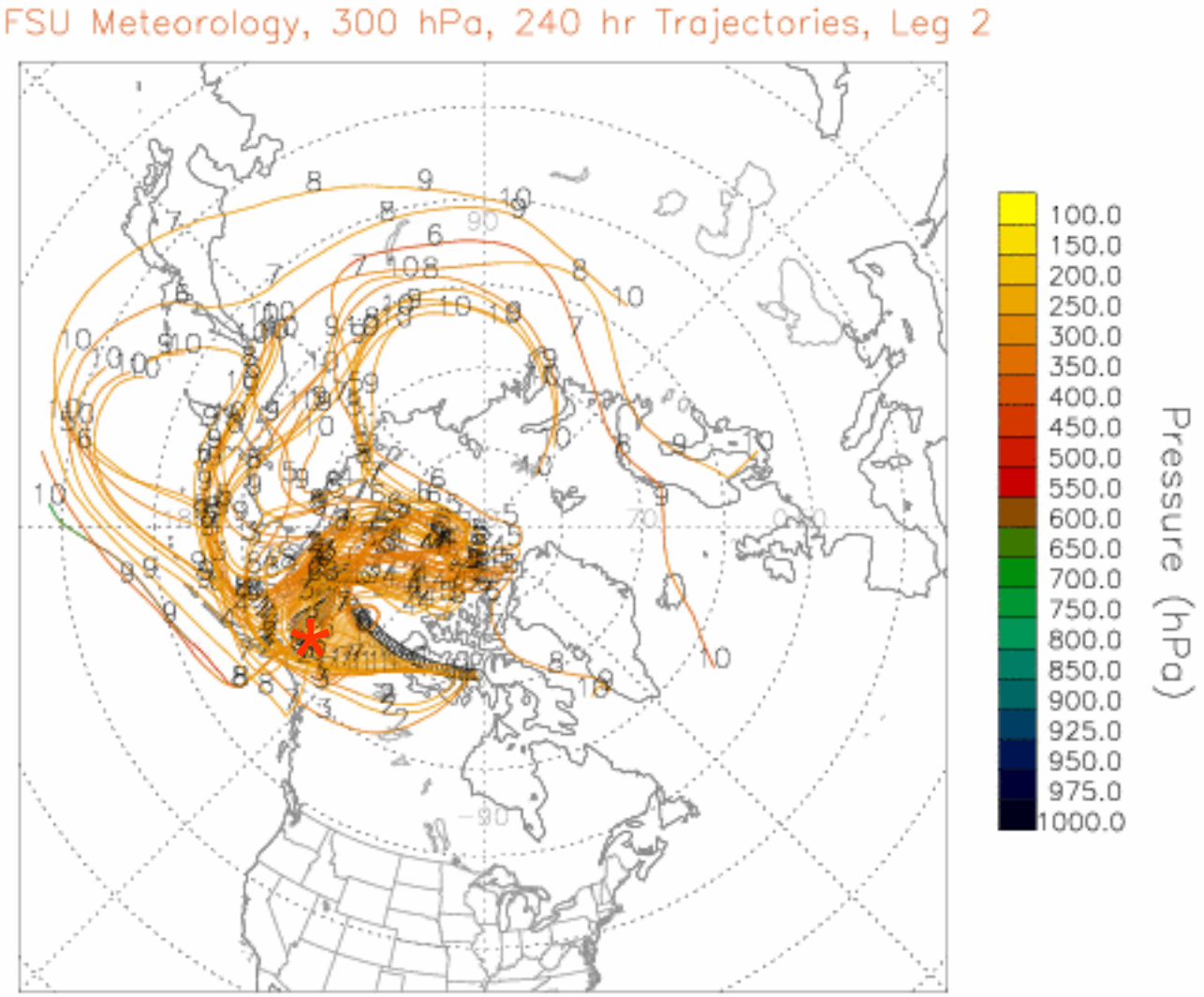
FSU 10 Day Backward Trajectories from 500 hPa Leg 1



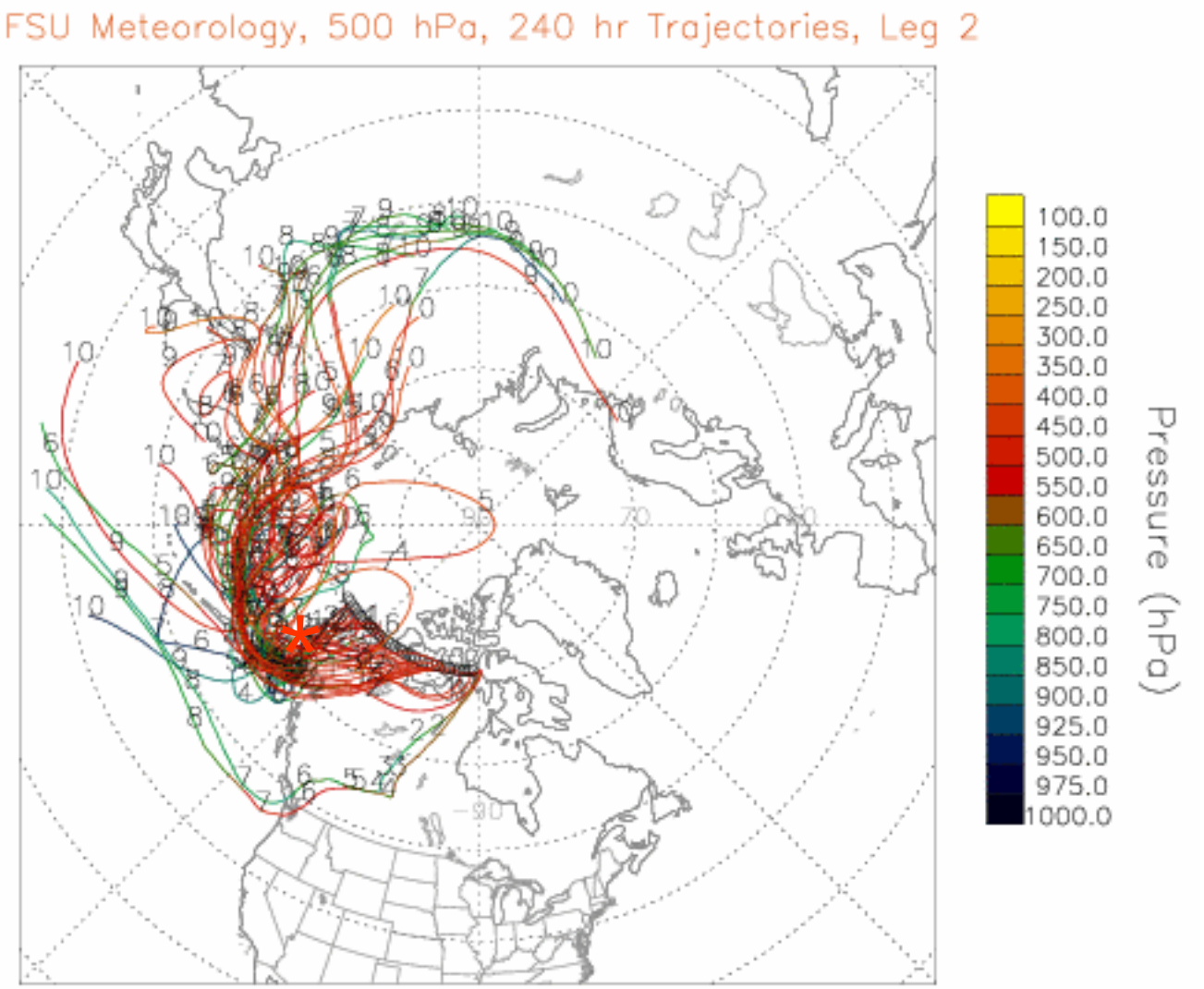
FSU 10 Day Backward Trajectories from 850 hPa Leg 1



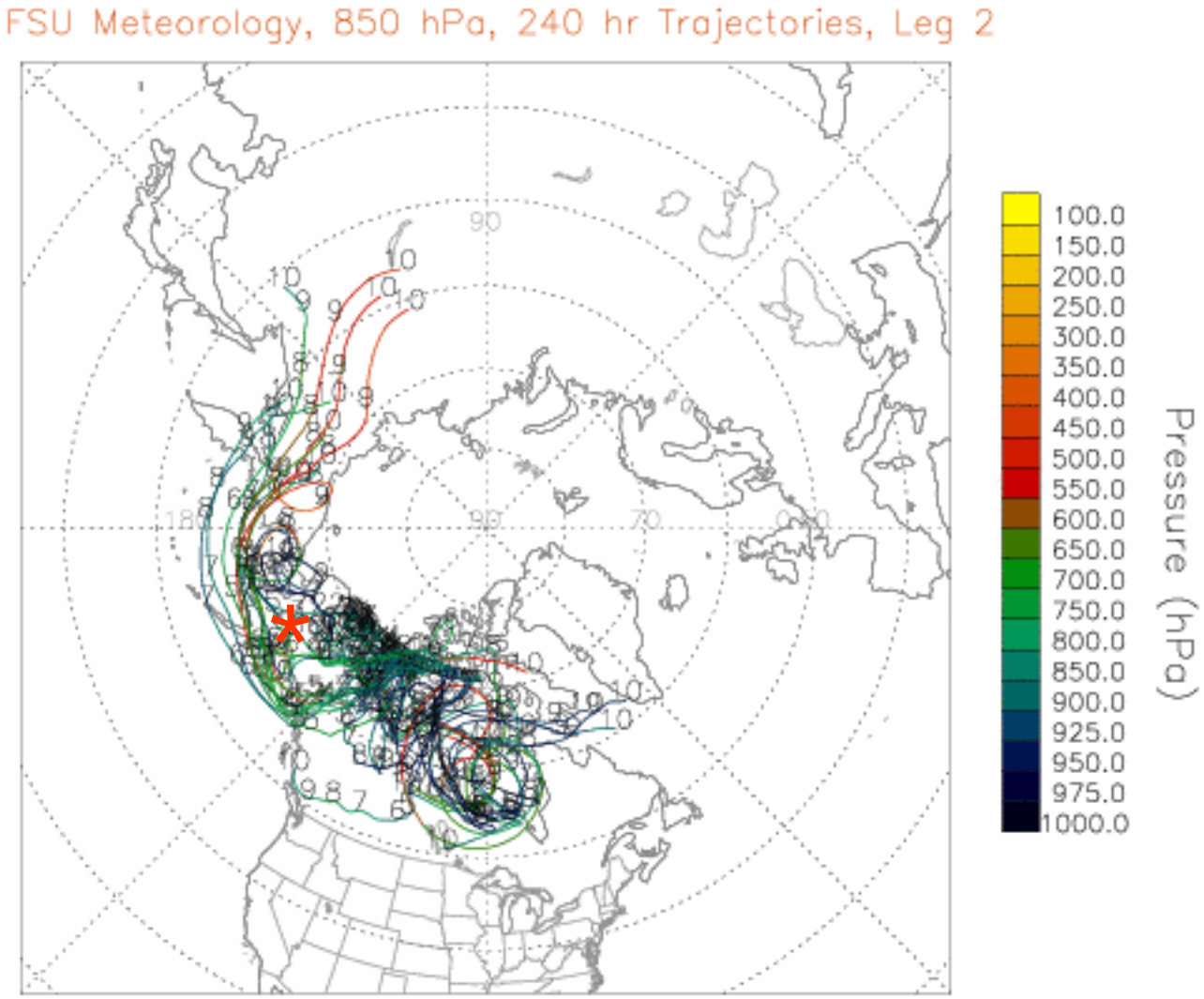
FSU 10 Day Backward Trajectories from 300 hPa Leg 2



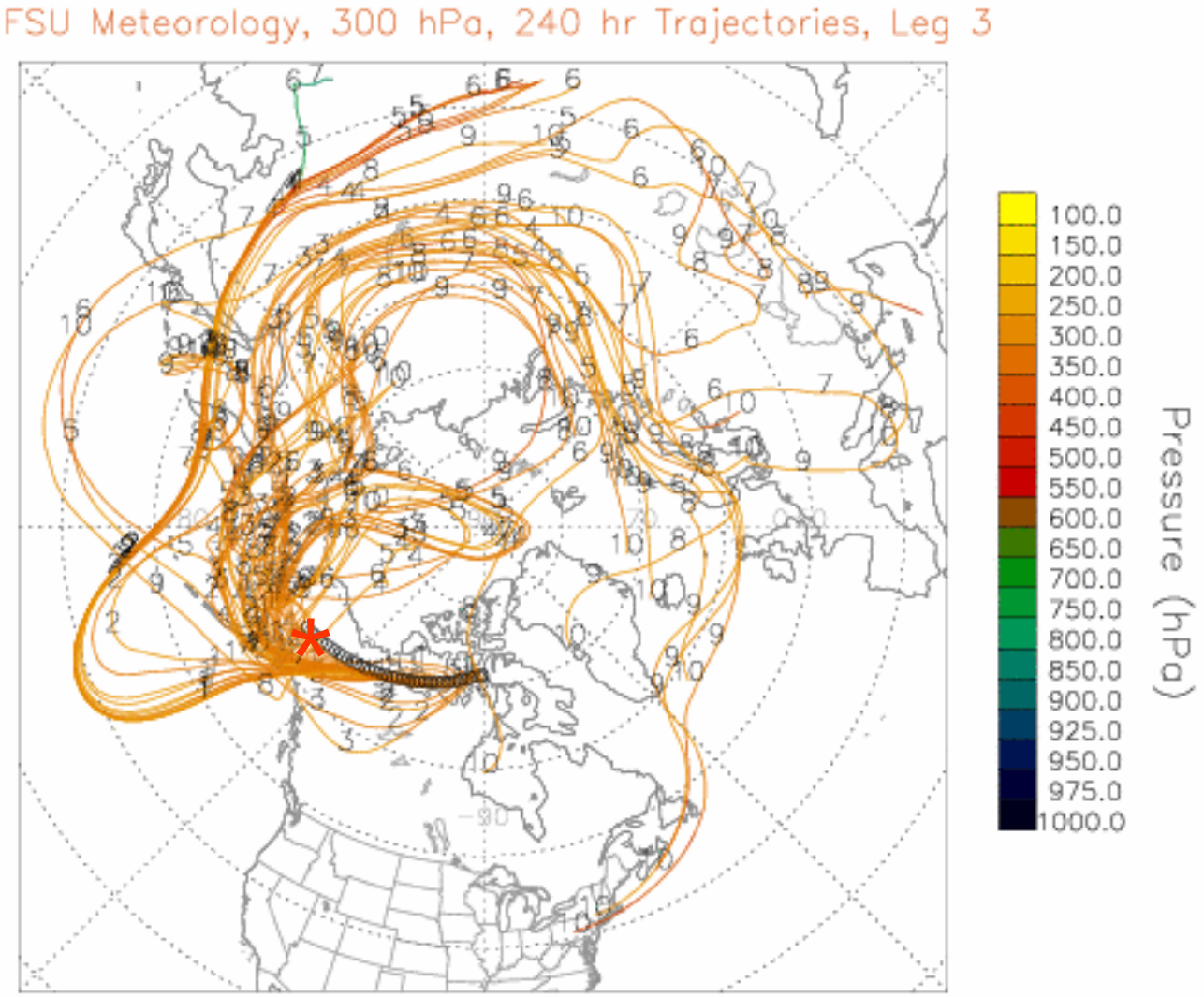
FSU 10 Day Backward Trajectories from 500 hPa Leg 2



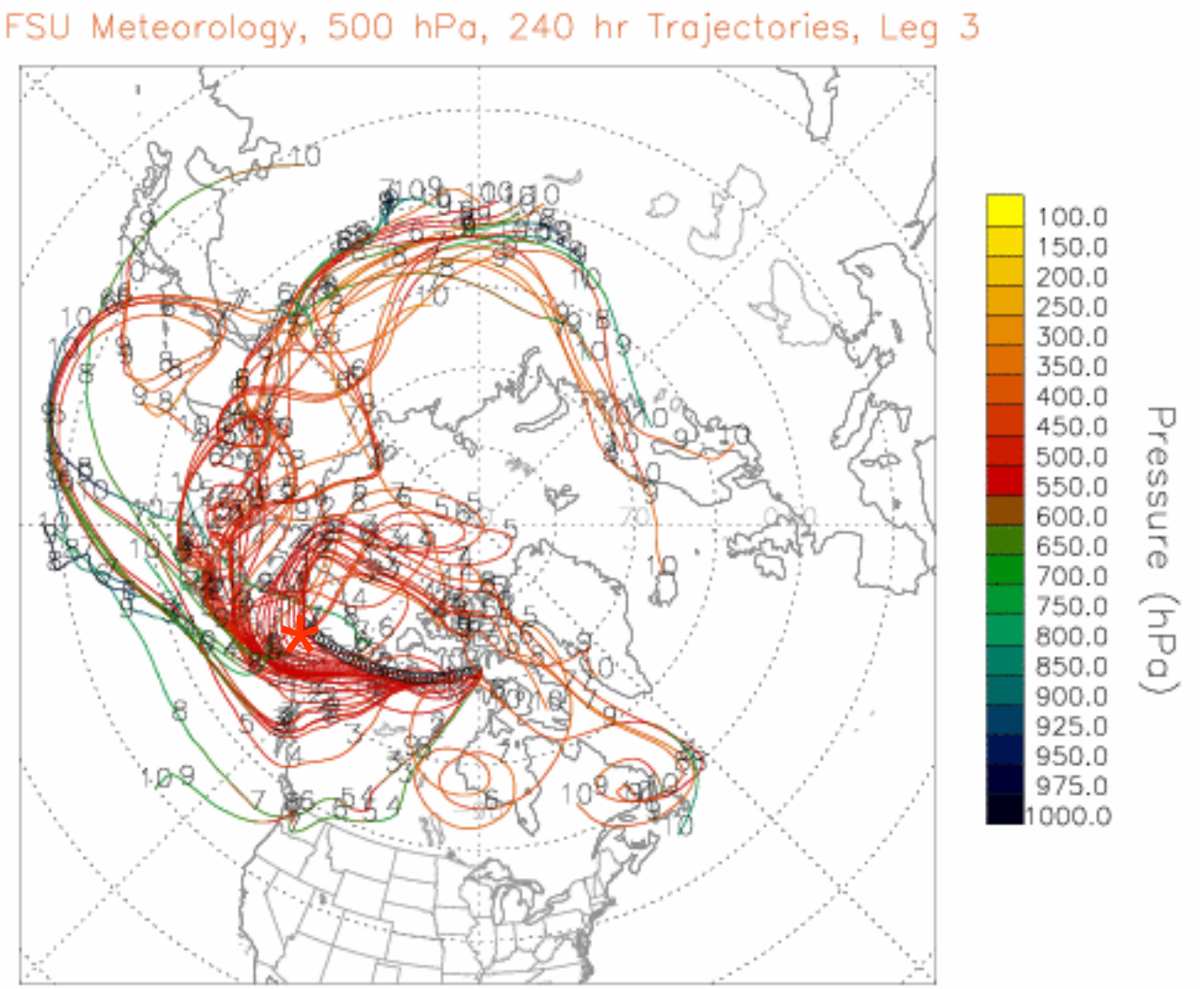
FSU 10 Day Backward Trajectories from 850 hPa Leg 2



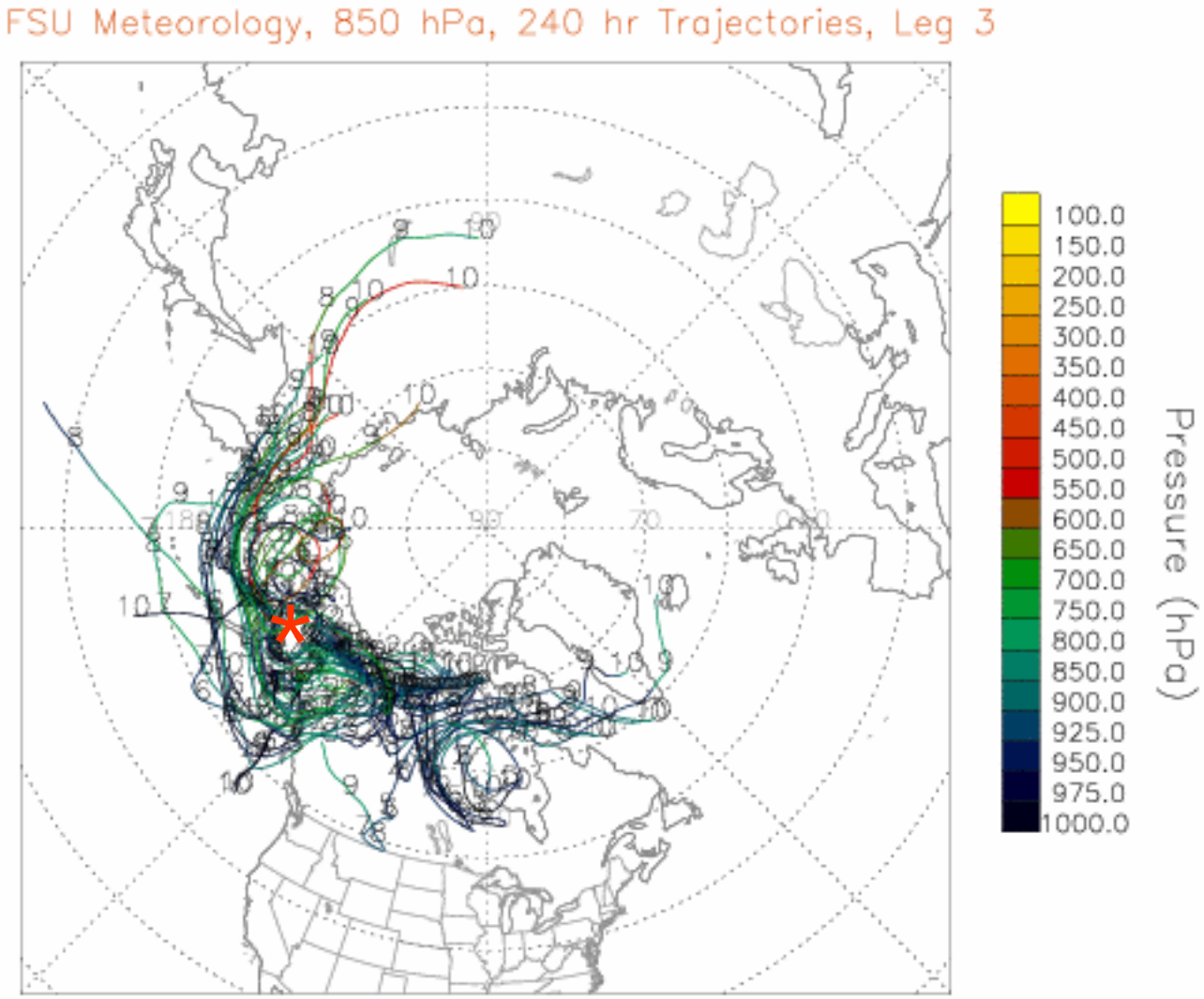
FSU 10 Day Backward Trajectories from 300 hPa Leg 3



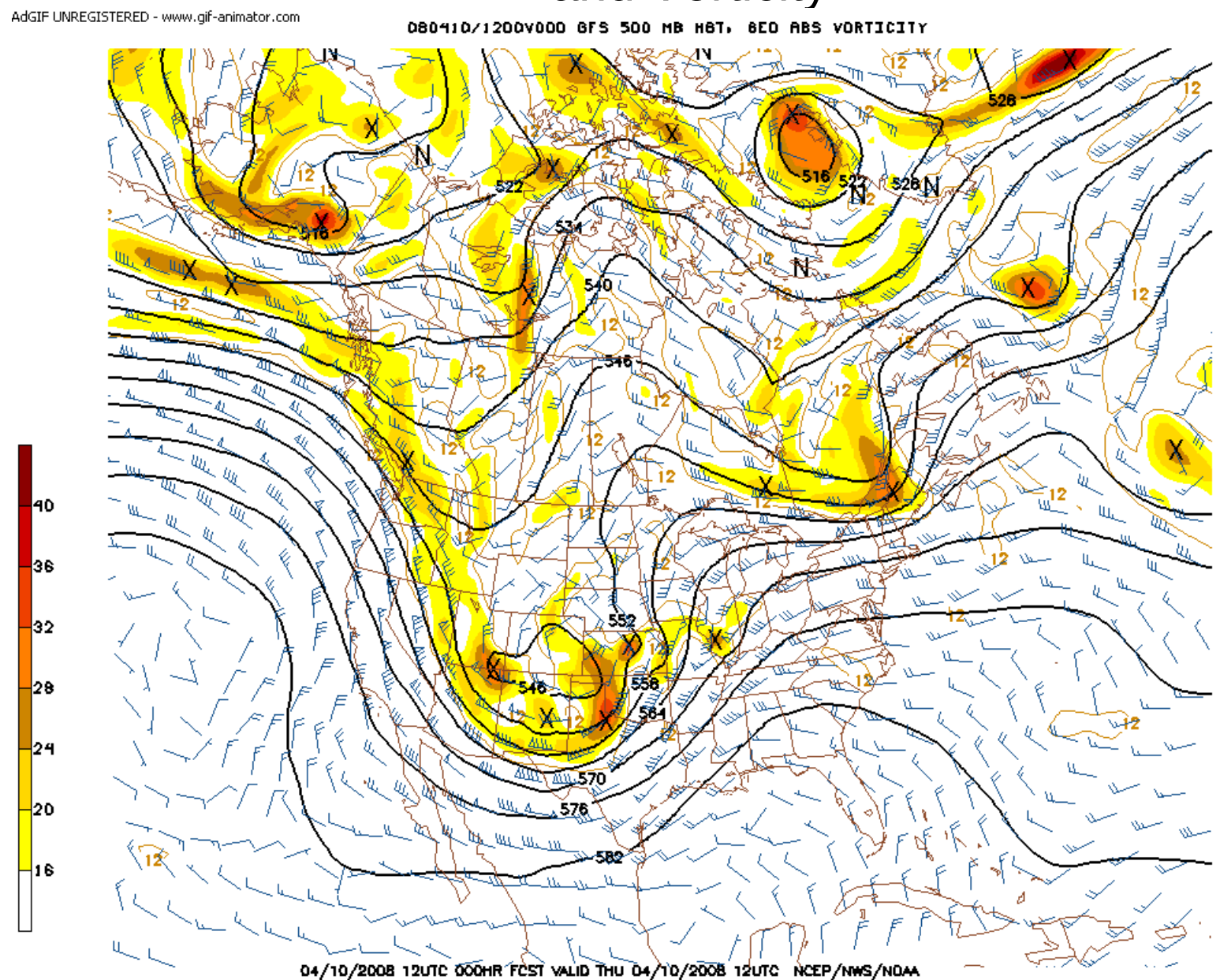
FSU 10 Day Backward Trajectories from 500 hPa Leg 3



FSU 10 Day Backward Trajectories from 850 hPa Leg 3

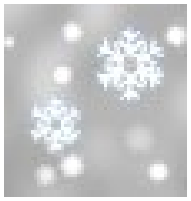


GFS Forecast next 120 hours 500 hPa Heights, Winds and Vorticity



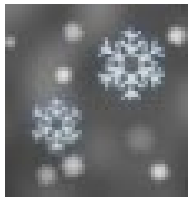
Fairbanks AK Forecast

Today



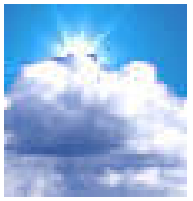
Snow
Hi: 28F

Tonight



Snow
Showers
Lo: 10F

Friday

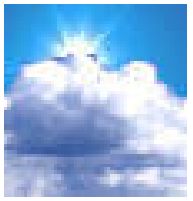


Mostly
Cloudy
Hi: 33F

Fri. Night

Snow
Showers
Lo: 8F

Saturday

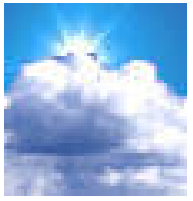


Mostly
Cloudy
Hi: 30F

Sat. Night

Cloudy
Lo: 15F

Sunday

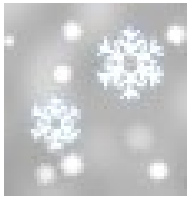


Cloudy
Hi: 35F

Fri. Night

Chance
of Snow
Lo: 20F

Monday



Chance
of Snow
Hi: 35F