Flight Day Conditions

April 4-5 2008

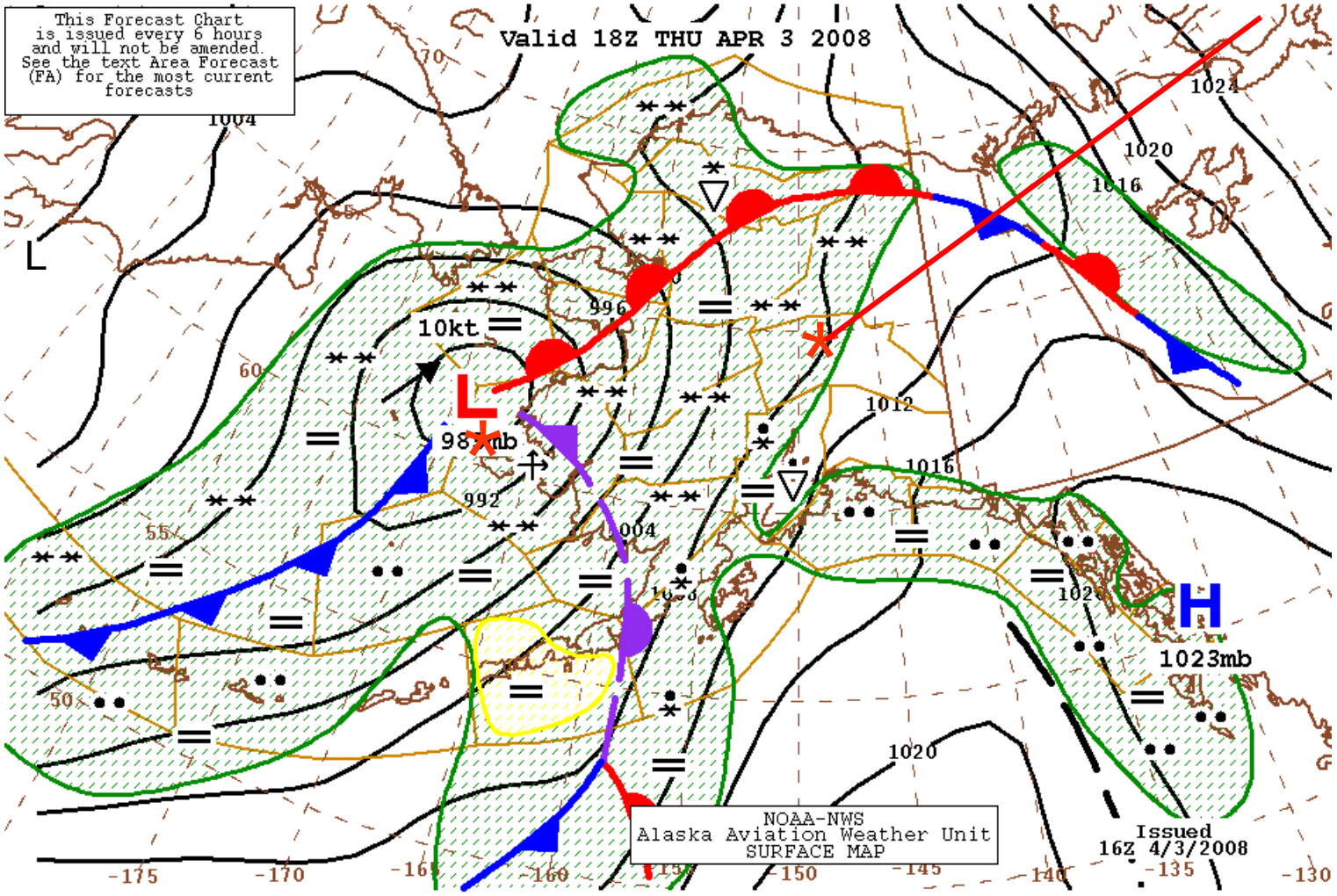
Henry Fuelberg
Andy Latto

"Your Eyes to the Skies"

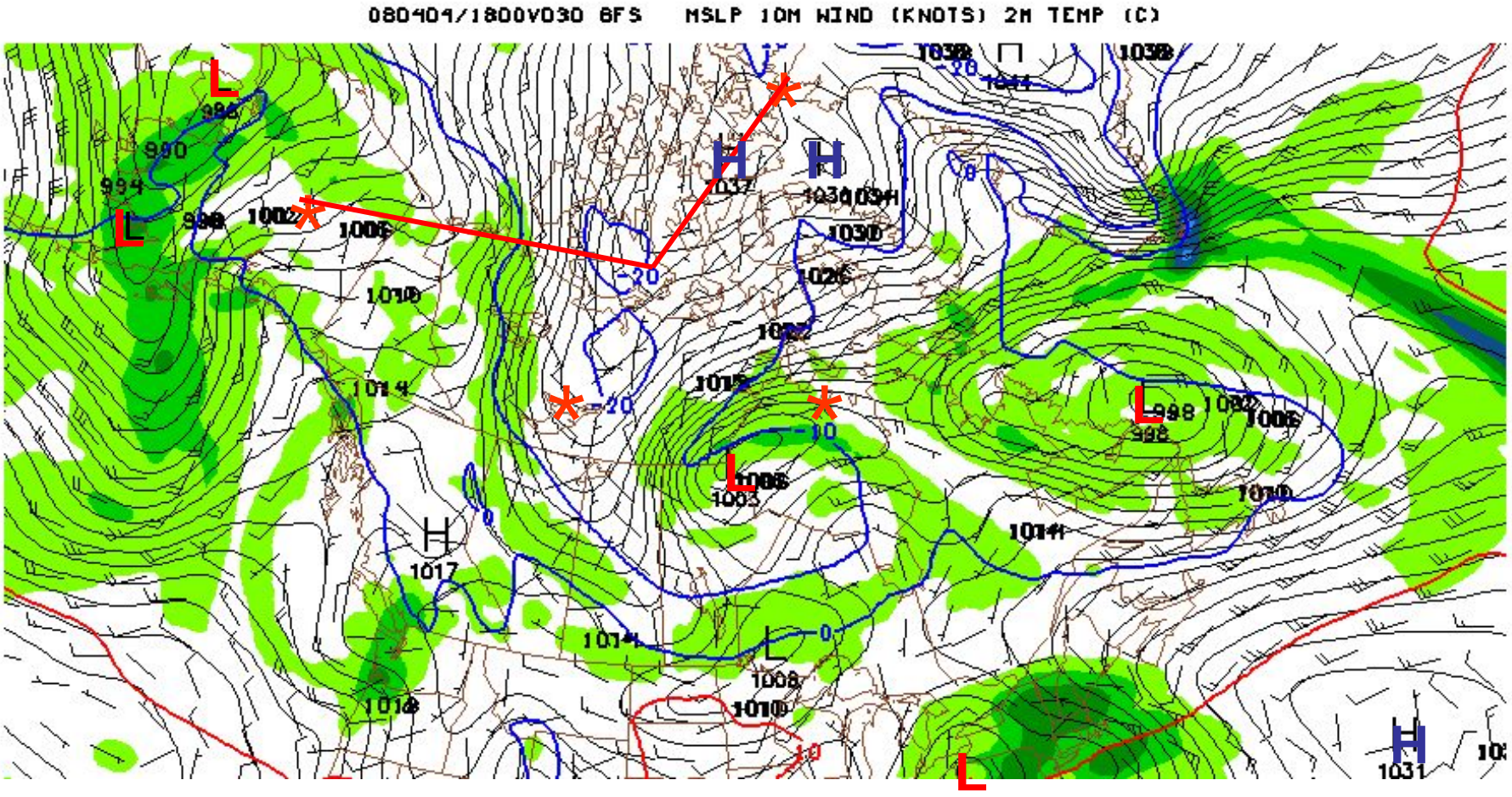
Forecasts for Friday

1800 Z = 10 AM Local

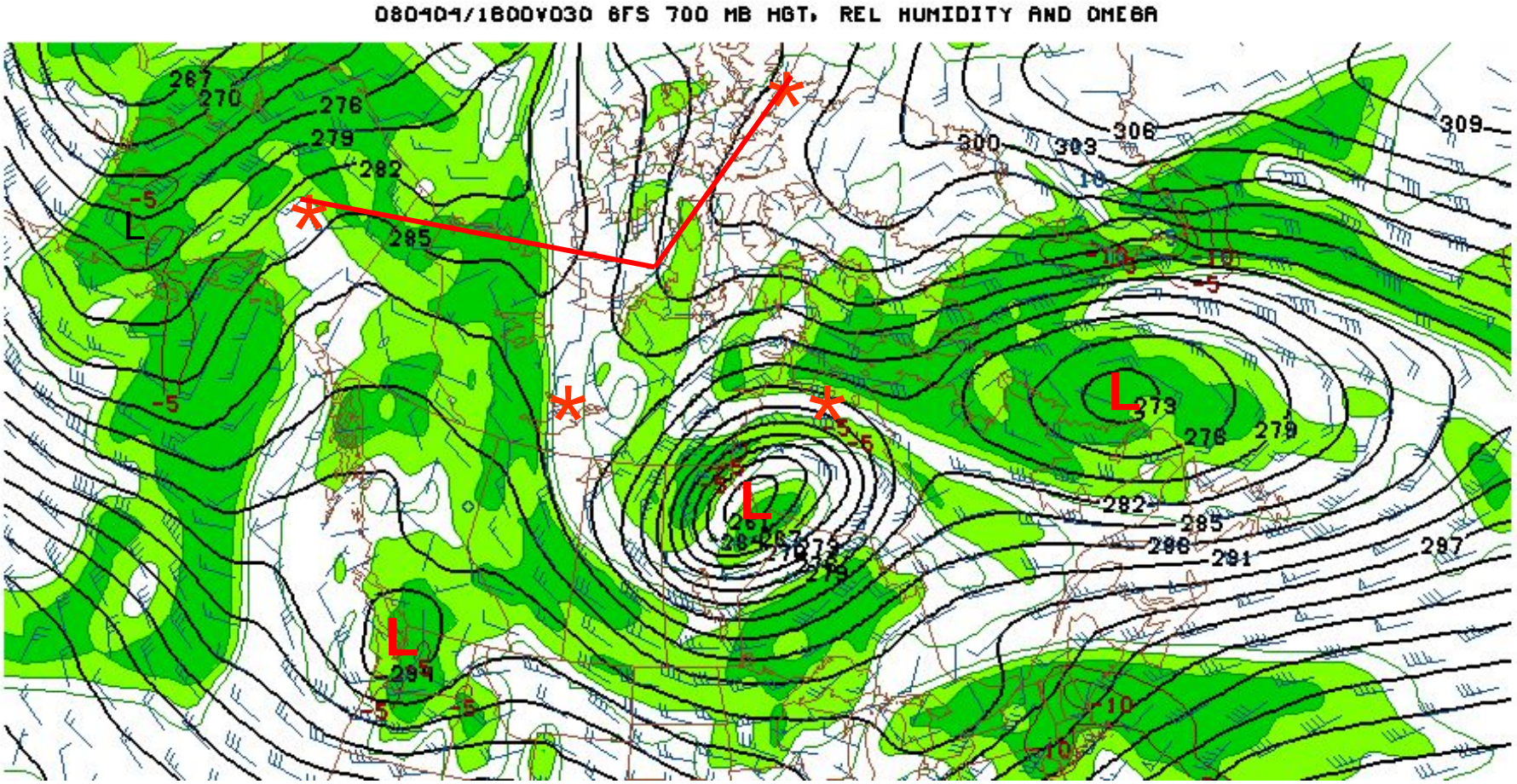
Surface Map Valid 18 Z April 3



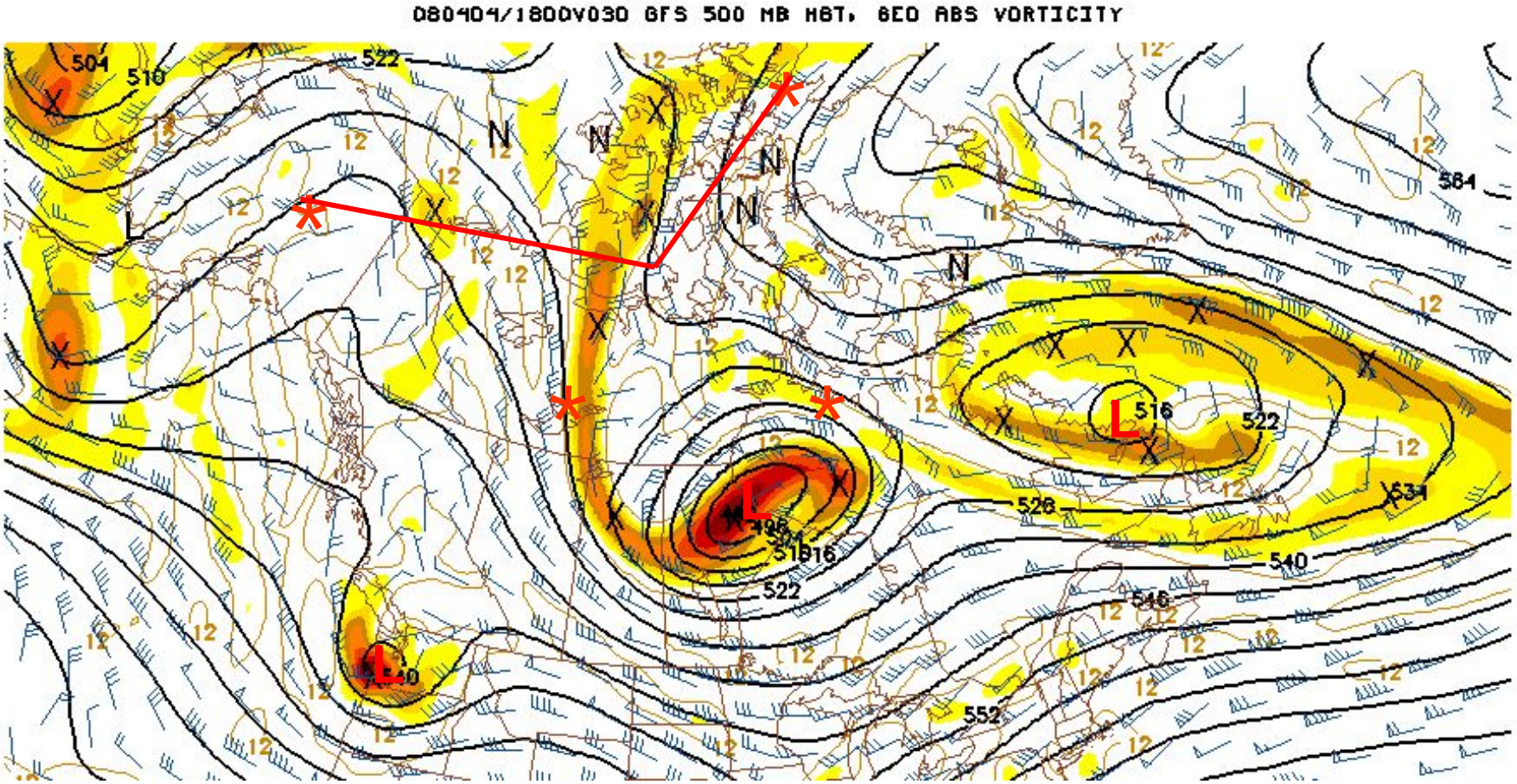
GFS Forecast Valid 1800 Z April 4
SLP, 10 m winds, 6 h precip



GFS Forecast Valid 1800 Z April 4
700 hPa heights and RH

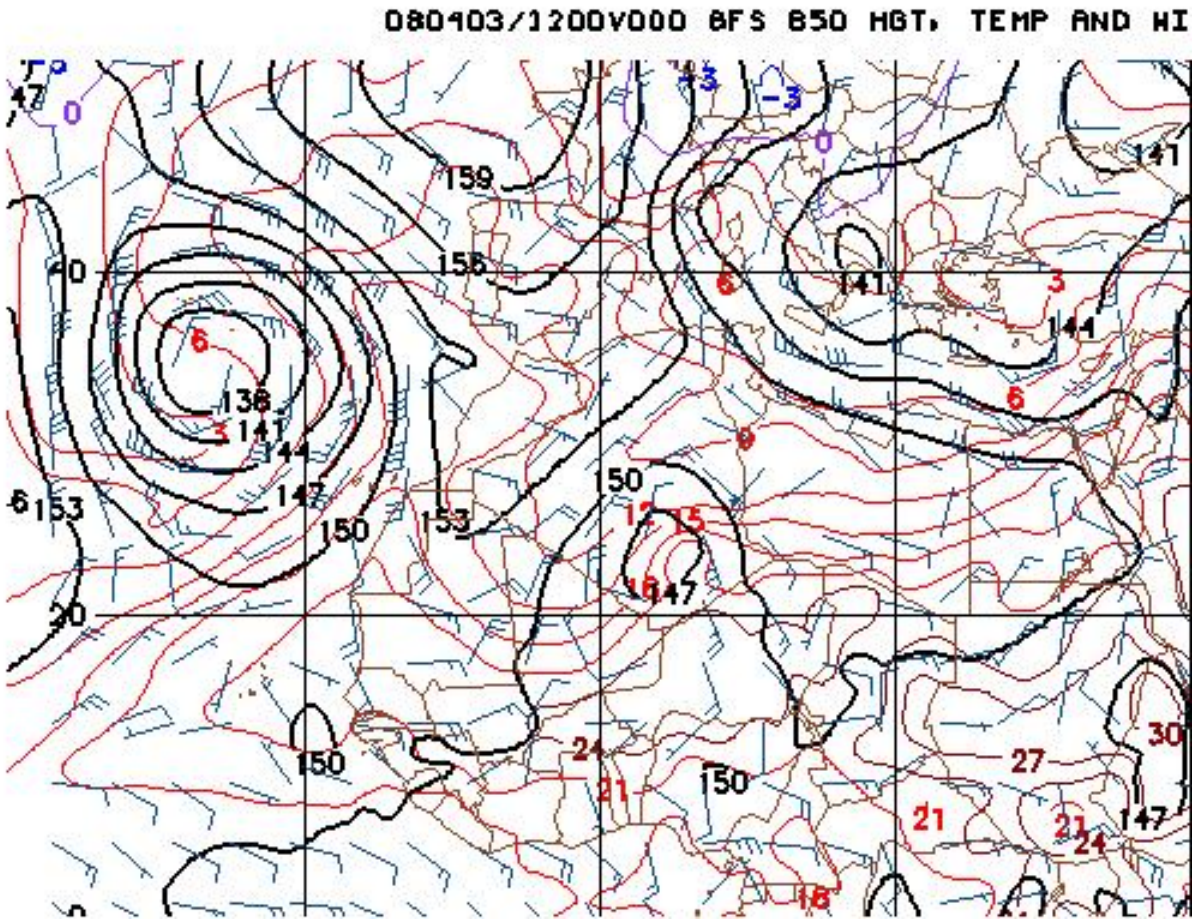


GFS Forecast Valid 1800 Z April 4
500 hPa heights, vorticity, and winds



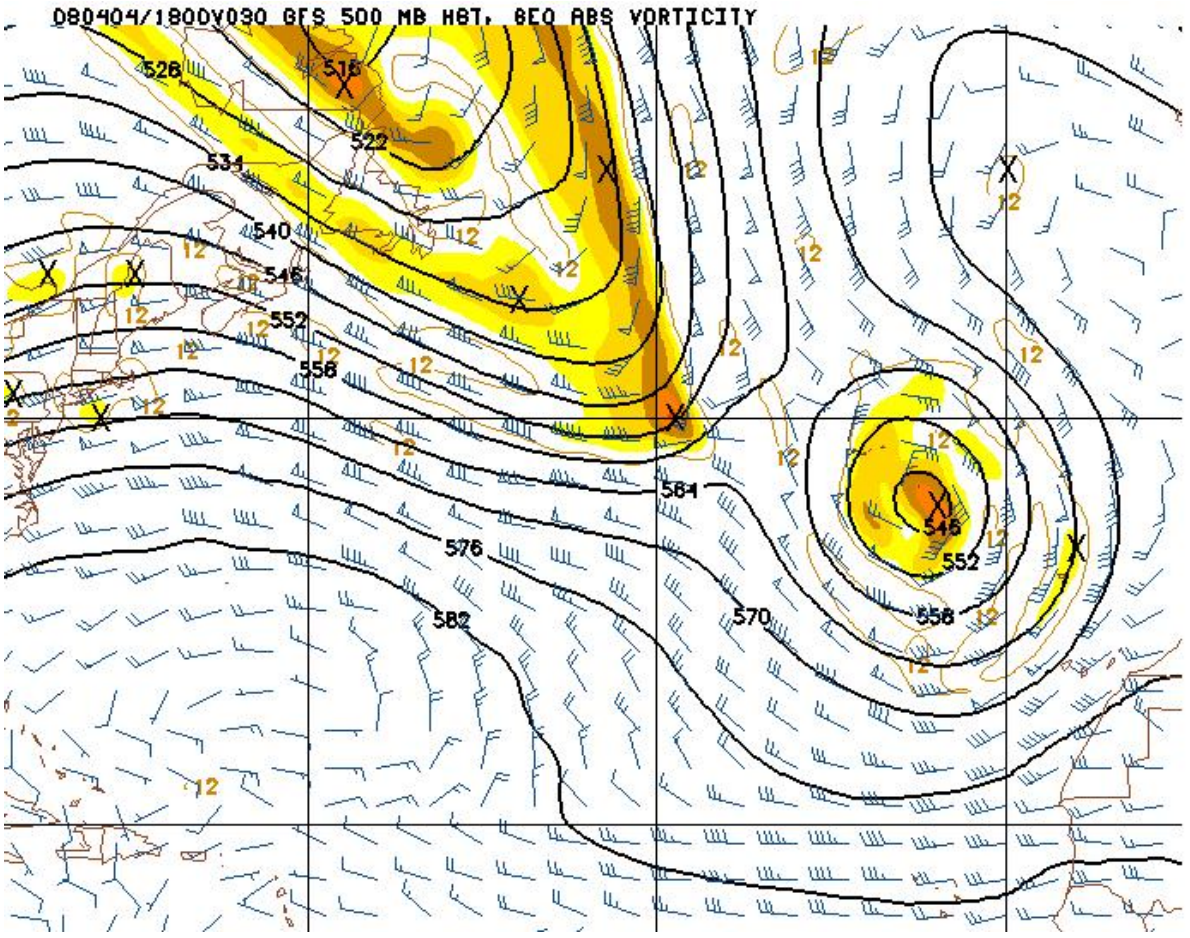
GFS Forecast Valid 1200 Z April 3
850 hPa heights, temp., and winds

L

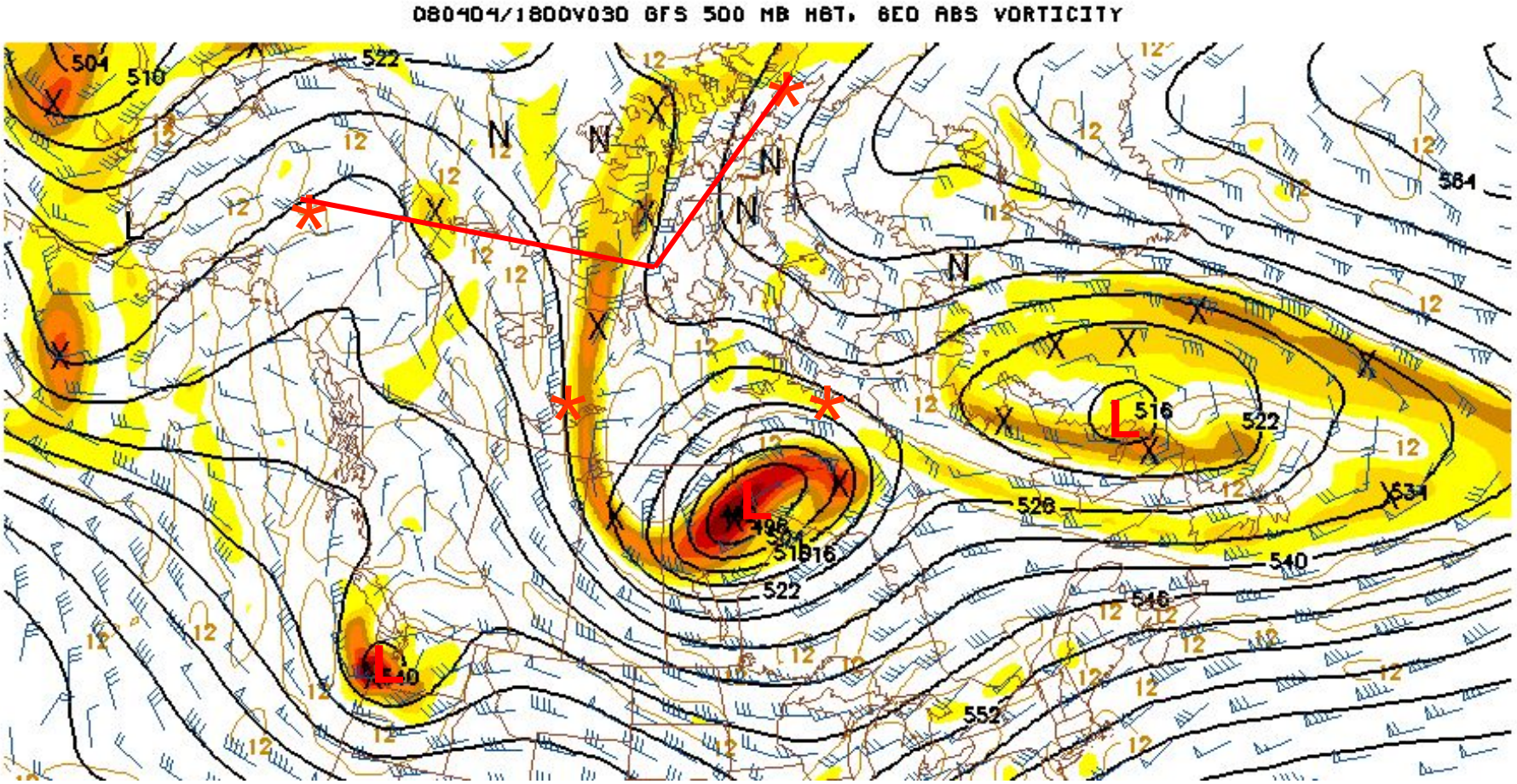


GFS Forecast Valid 1800 Z April 4
500 hPa heights, vorticity, and winds

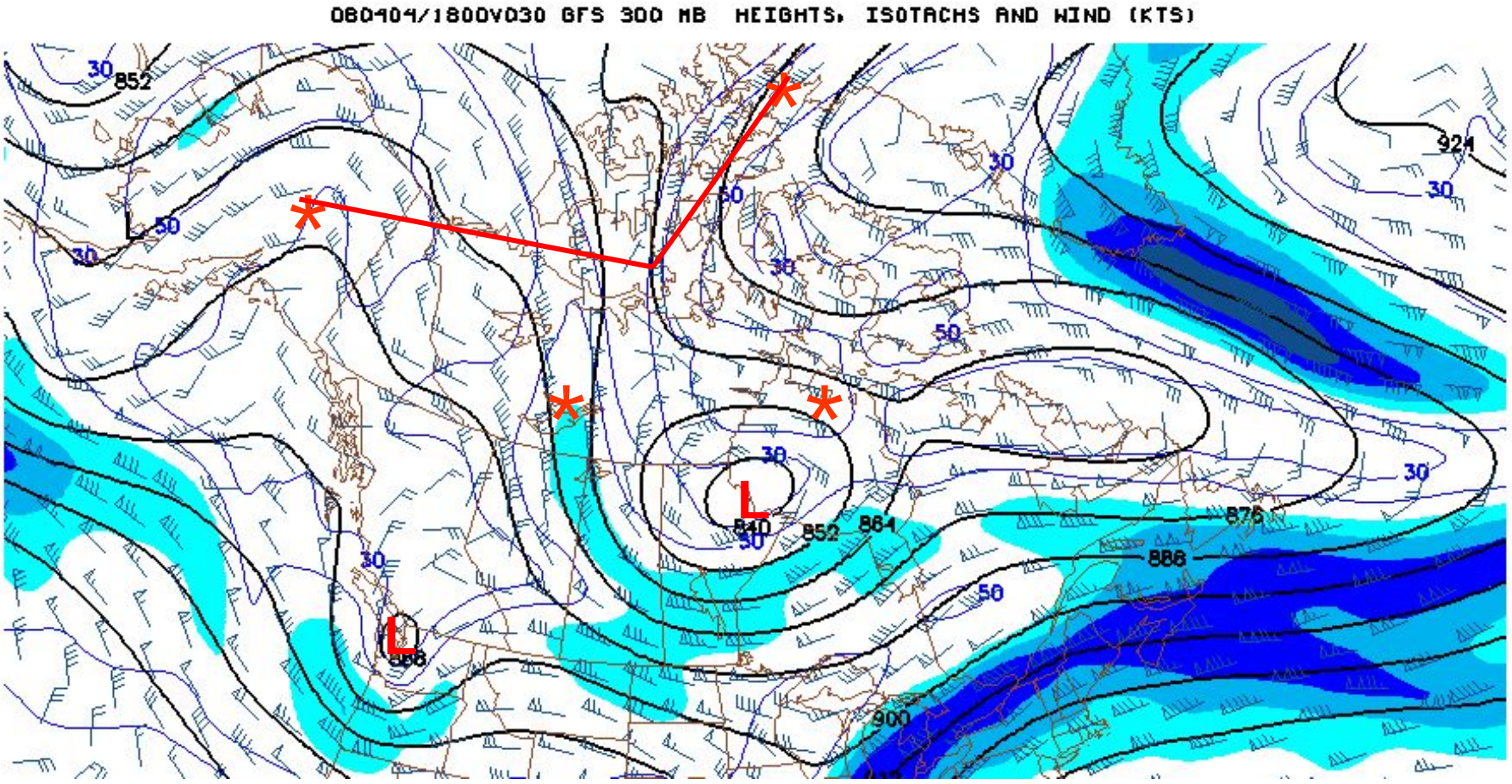
L



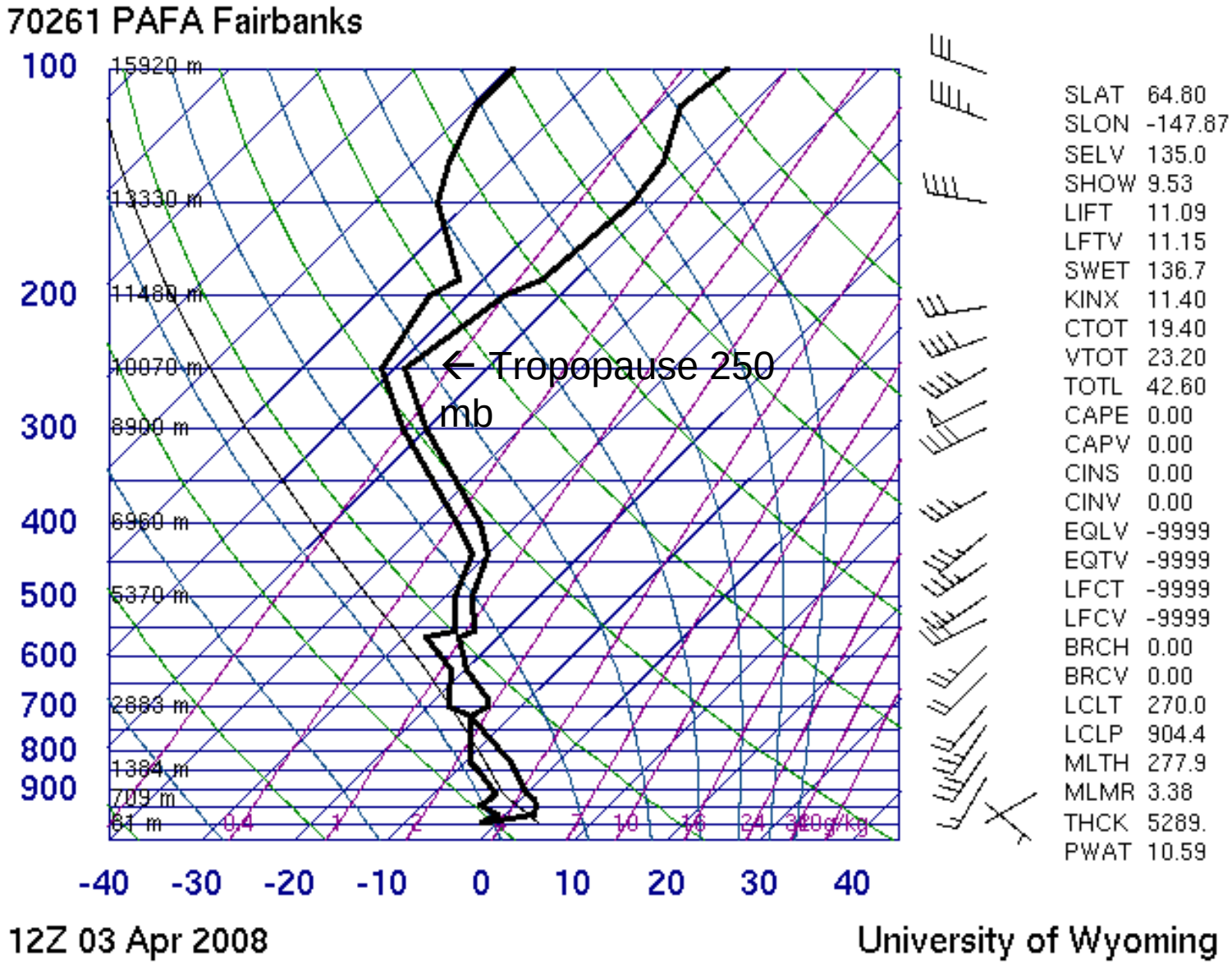
GFS Forecast Valid 1800 Z April 4
500 hPa heights, vorticity, and winds



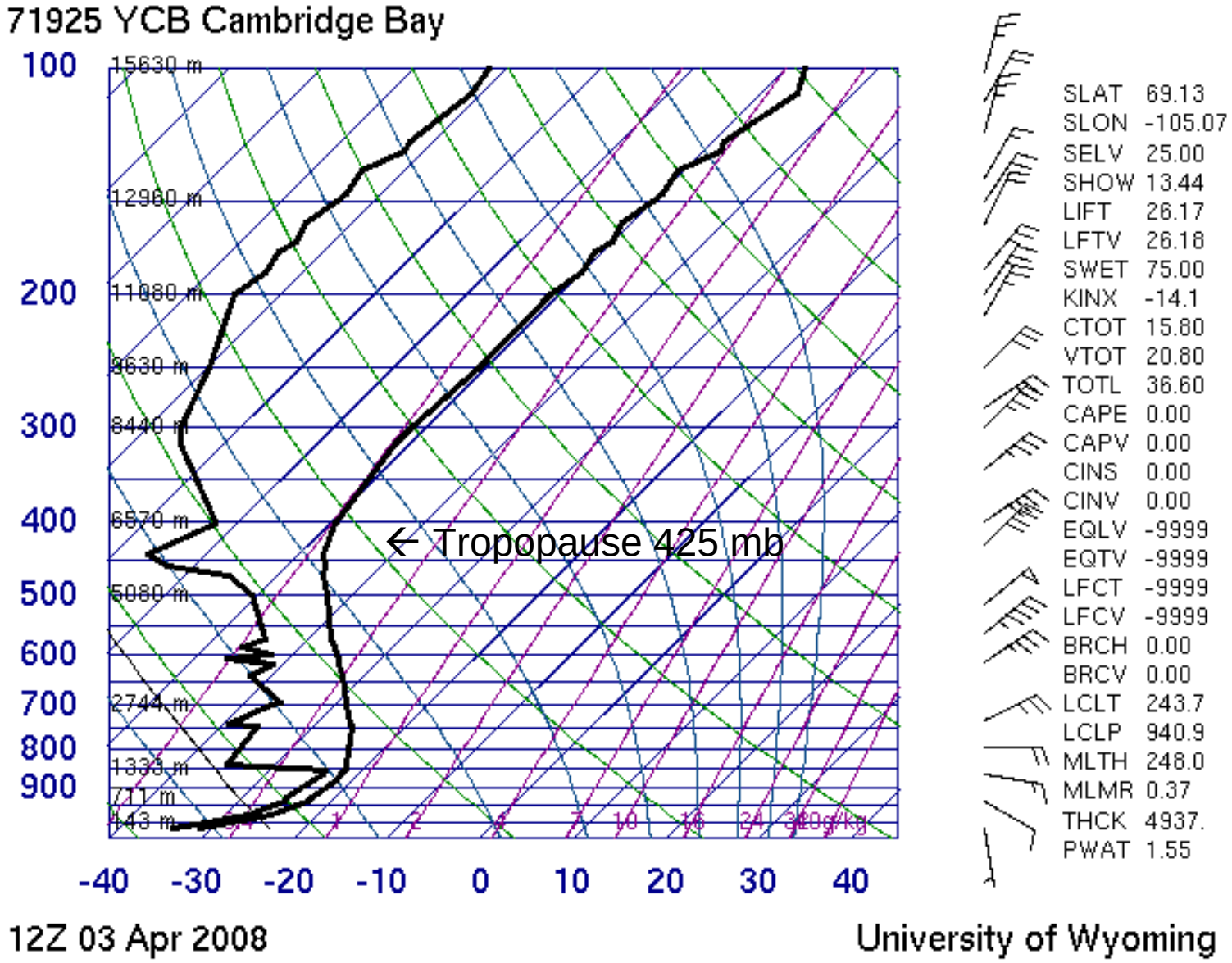
GFS Forecast Valid 1800 Z April 4
300 hPa winds and heights



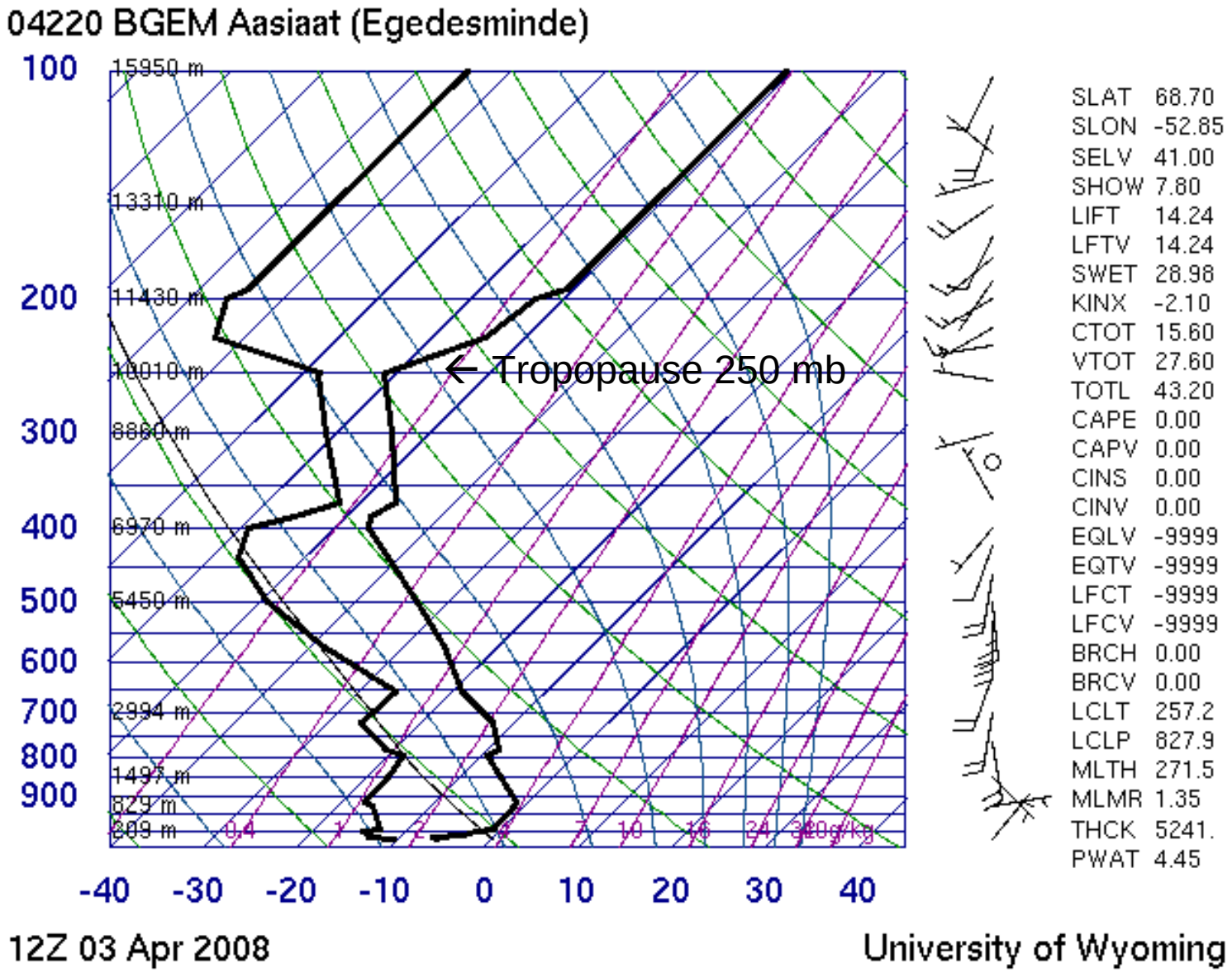
Fairbanks Sounding



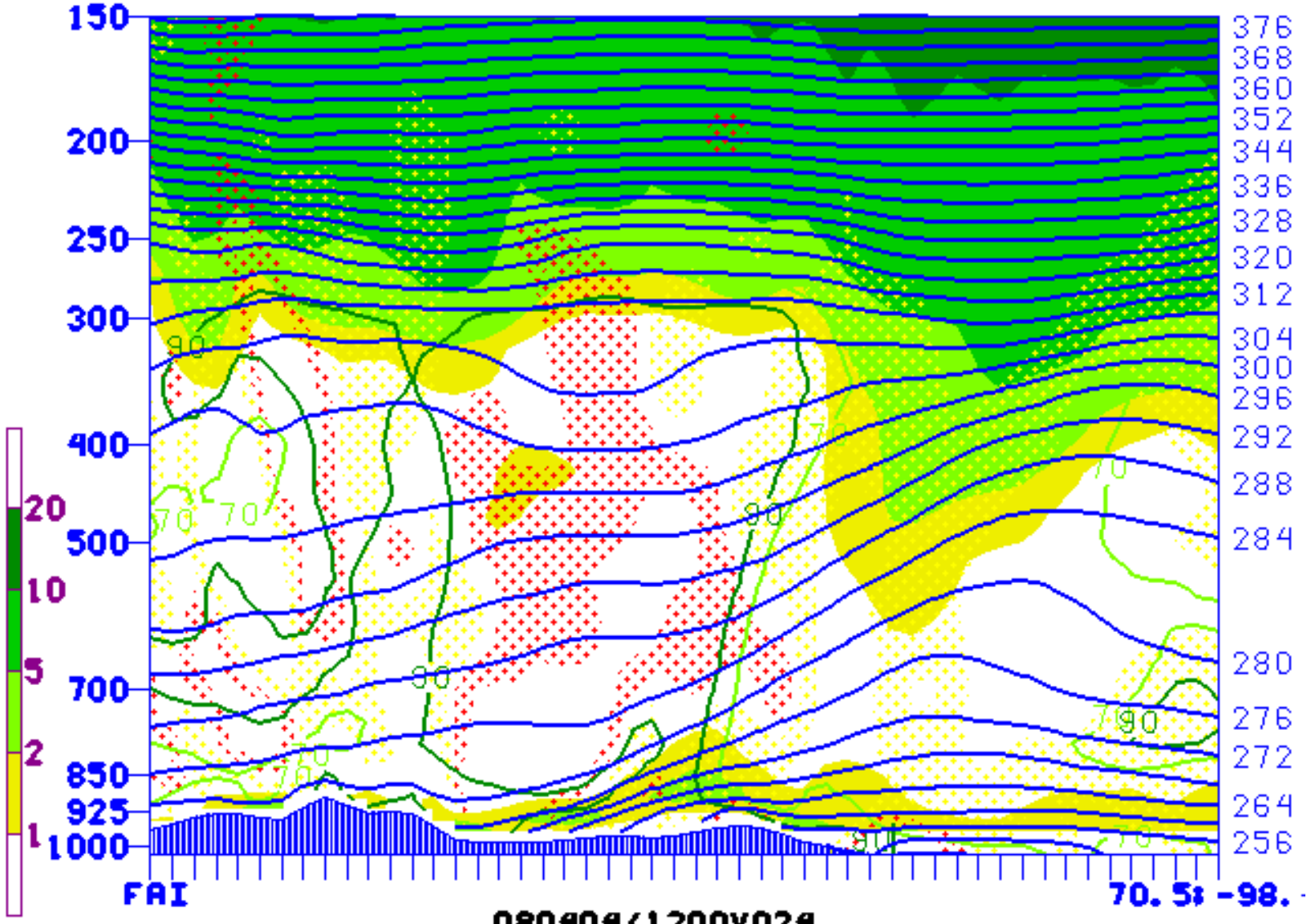
Cambridge Bay Sounding



Thule Sounding

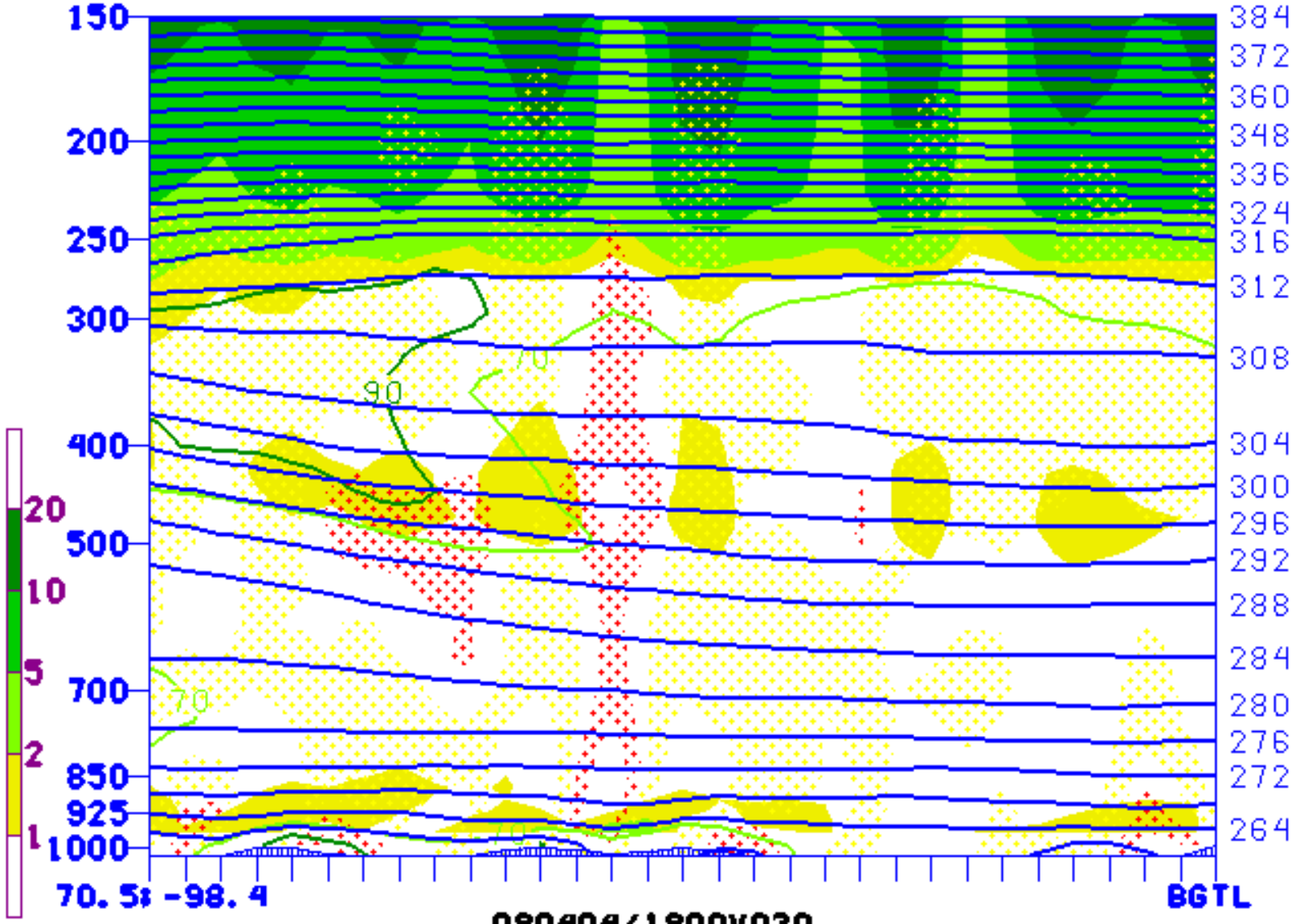


April 4 2008
Fairbanks – Somerset Island – Thule



080404/1200V024

GFS Cross Section: PV, omega, theta, RH

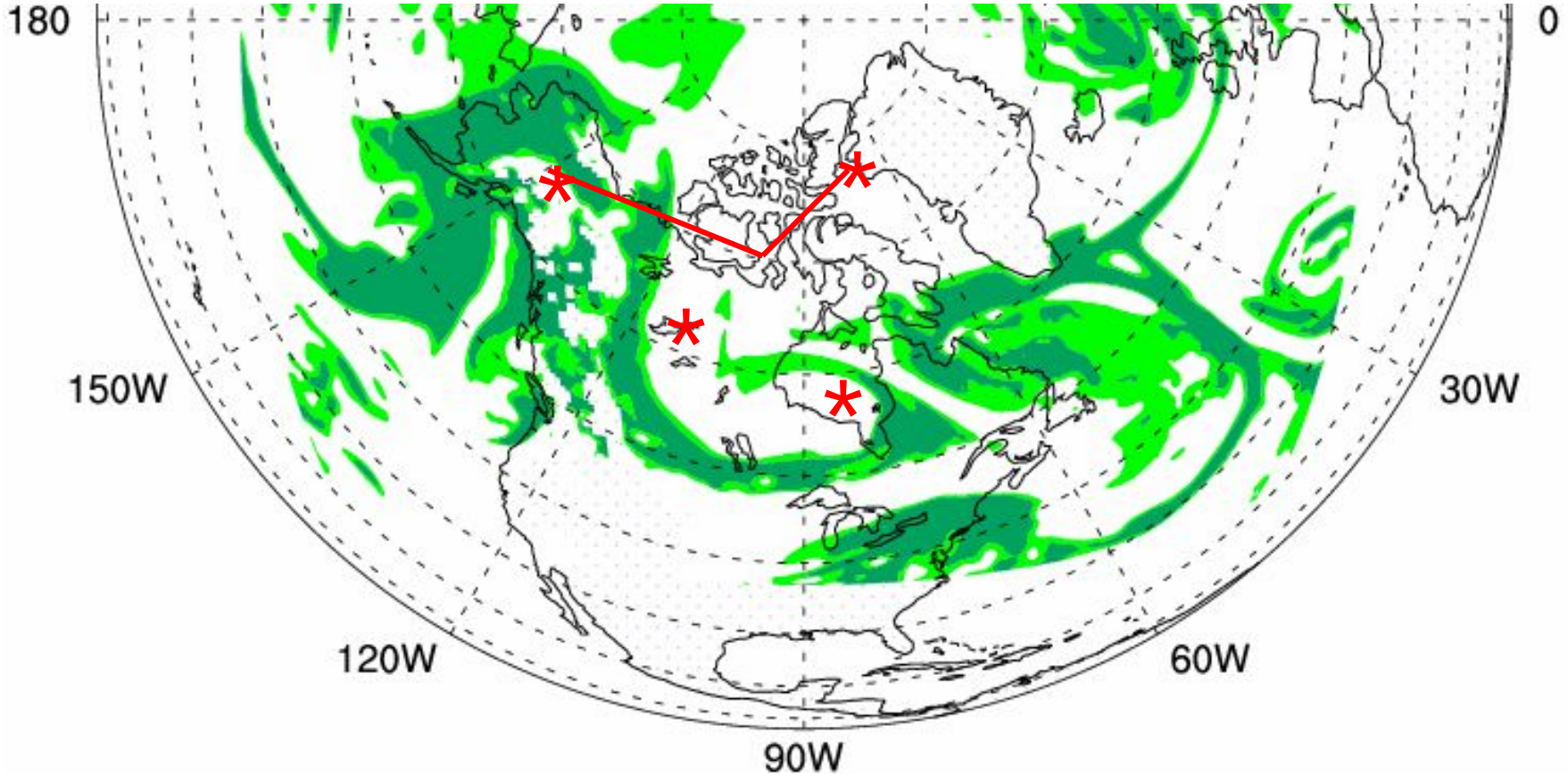


080404/1800V030

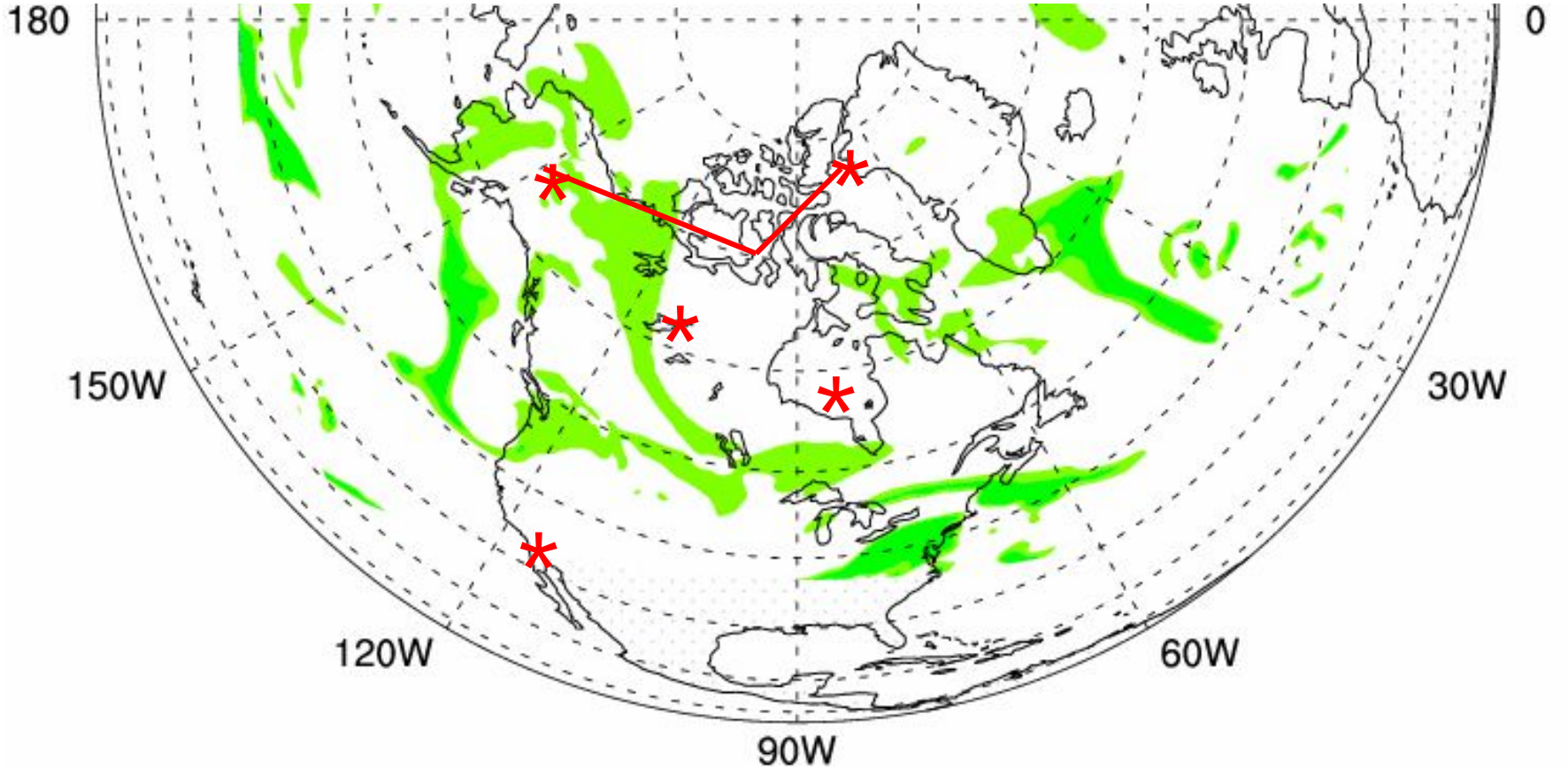
GFS Cross Section: PV, omega, theta, RH

What About Clouds ??

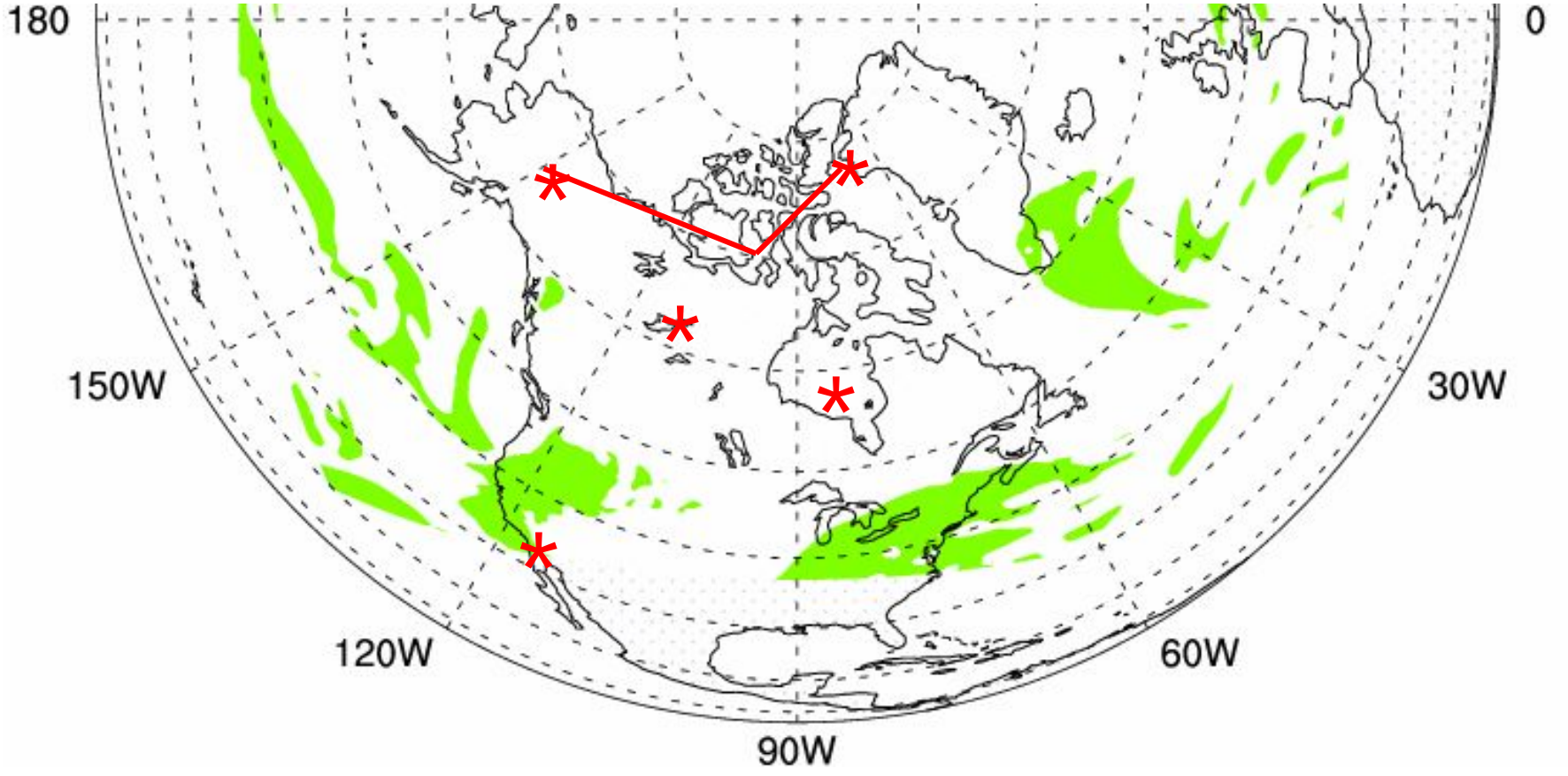
FSU WRF Relative Humidity at 850 hPa Forecast
Valid 1800 Z April 4



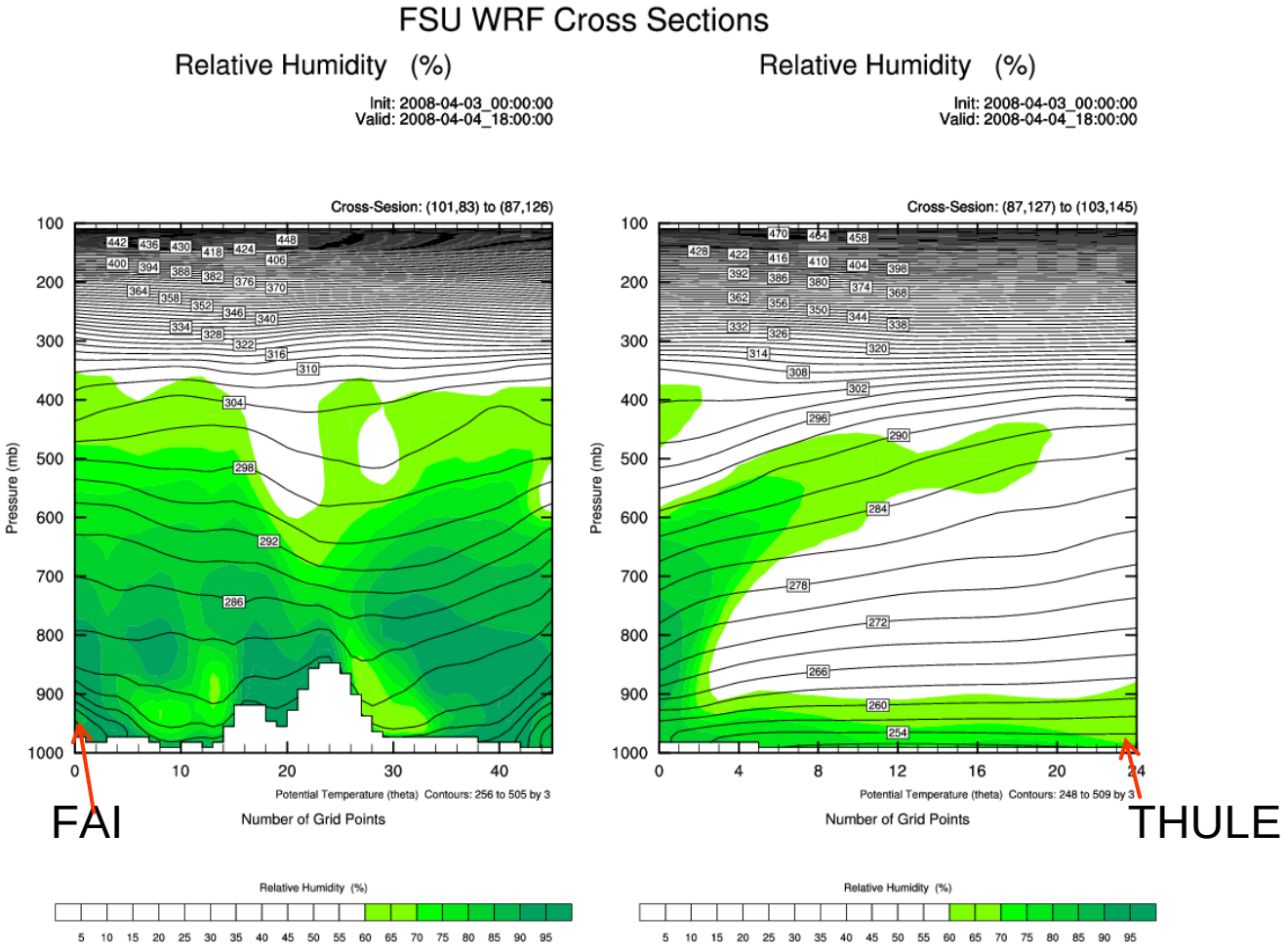
FSU WRF Relative Humidity at 500 hPa Forecast
Valid 1800 Z April 4



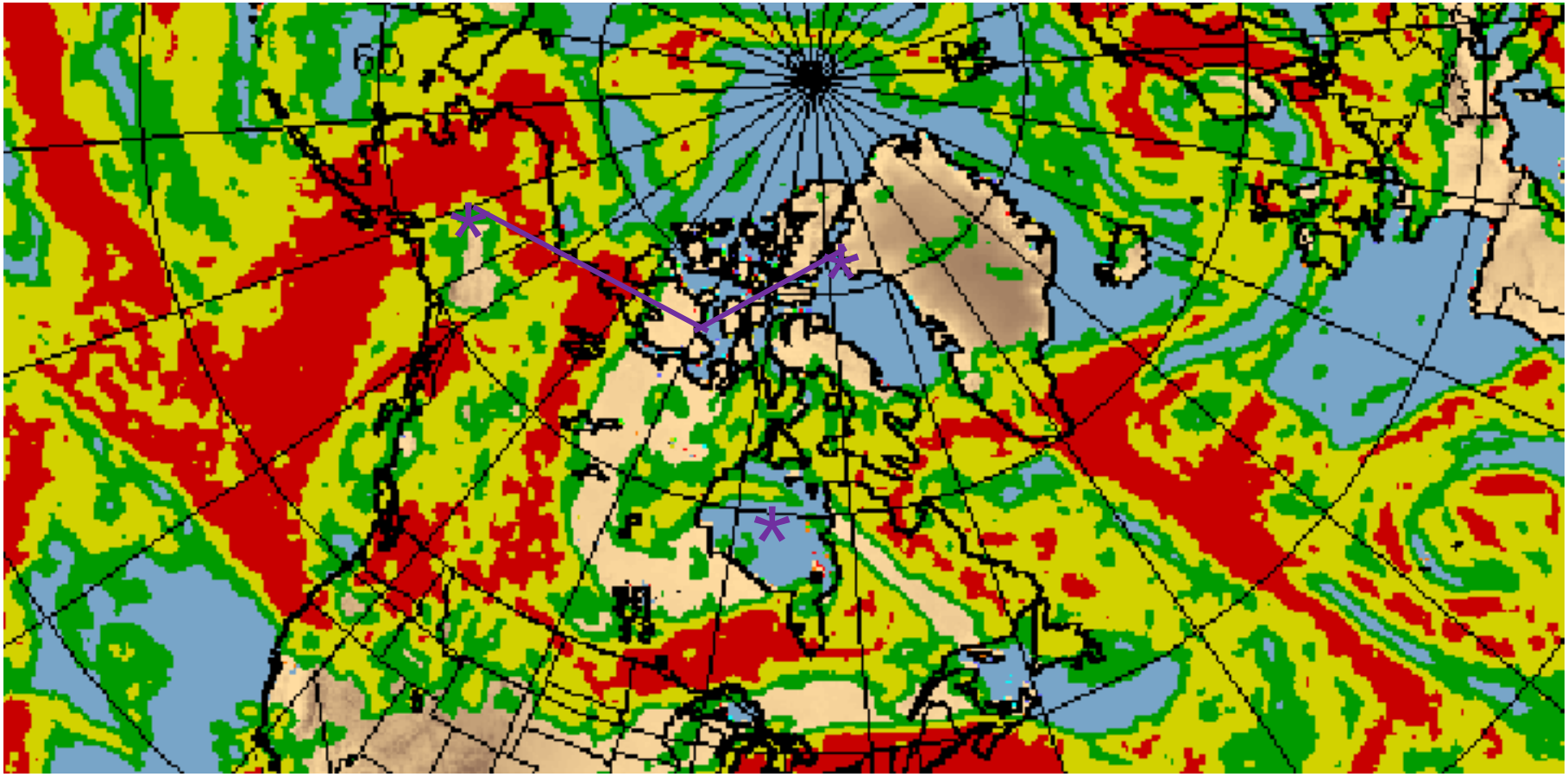
FSU WRF Relative Humidity at 300 hPa Forecast
Valid 1800 Z April 4



FSU WRF RH Flight Path Forecast
Valid 1800 Z April 4



Air Force Total Cloud Cover for comparison
Valid 1800 Z April 4

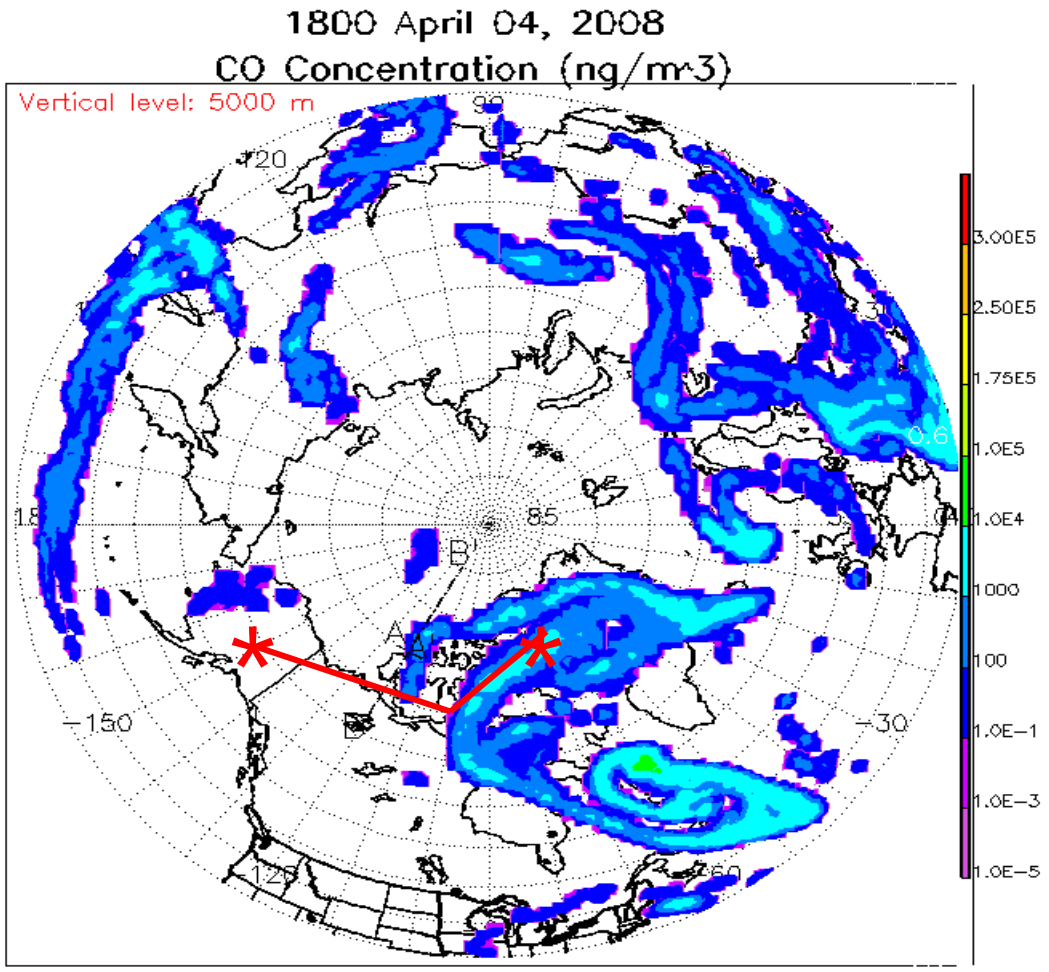


Red colors indicate higher chances of cloud cover

FSU Runs Flexpart

- Met data from FSU WRF run (25 km grid)
- Top10% of emissions are tracked
- 7 day runs
- Color coded by altitude (red ~ 300 mb)

CO Concentration at 5 km Valid 1800 Z April 4

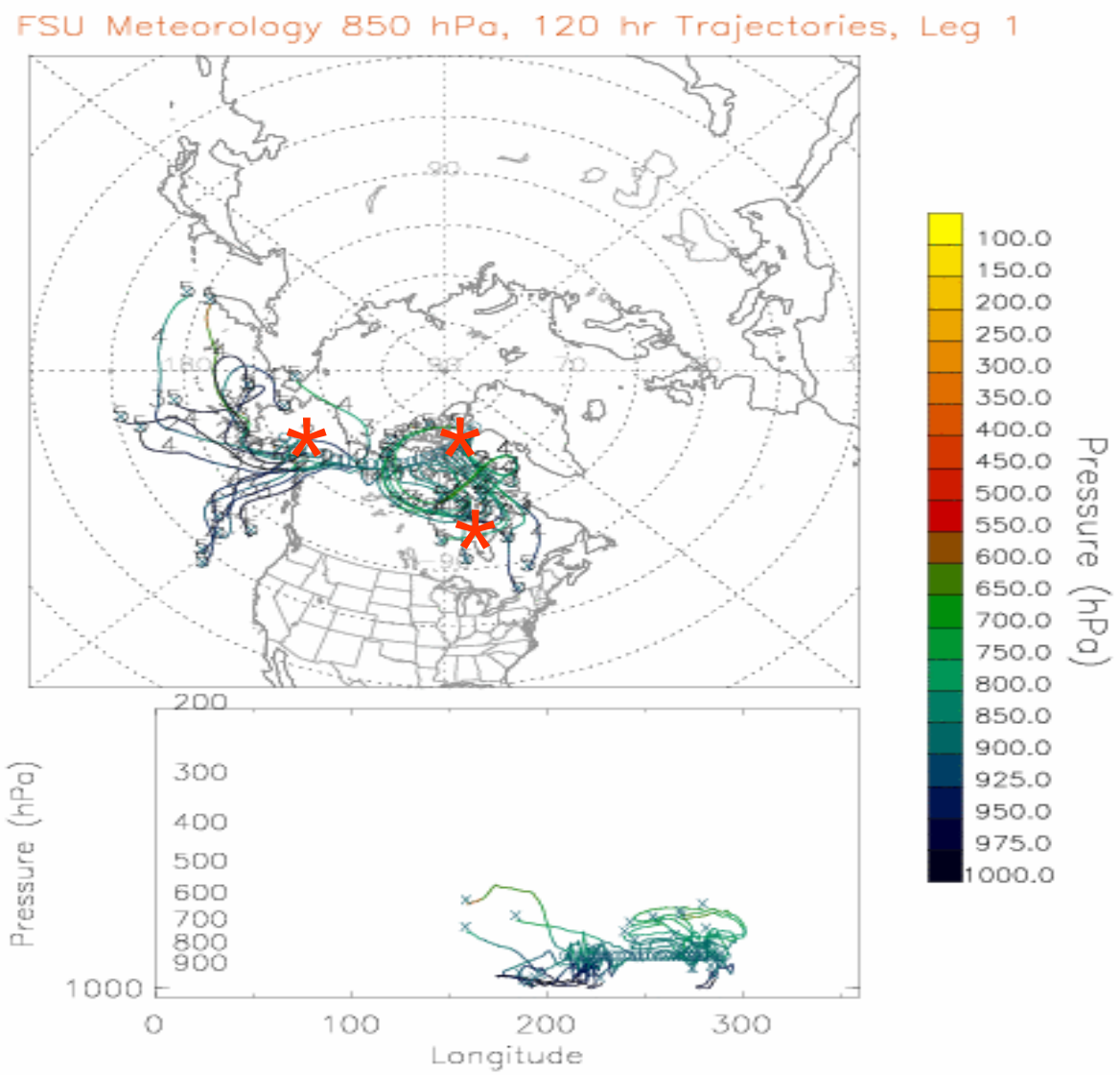


Florida State University Meteorology

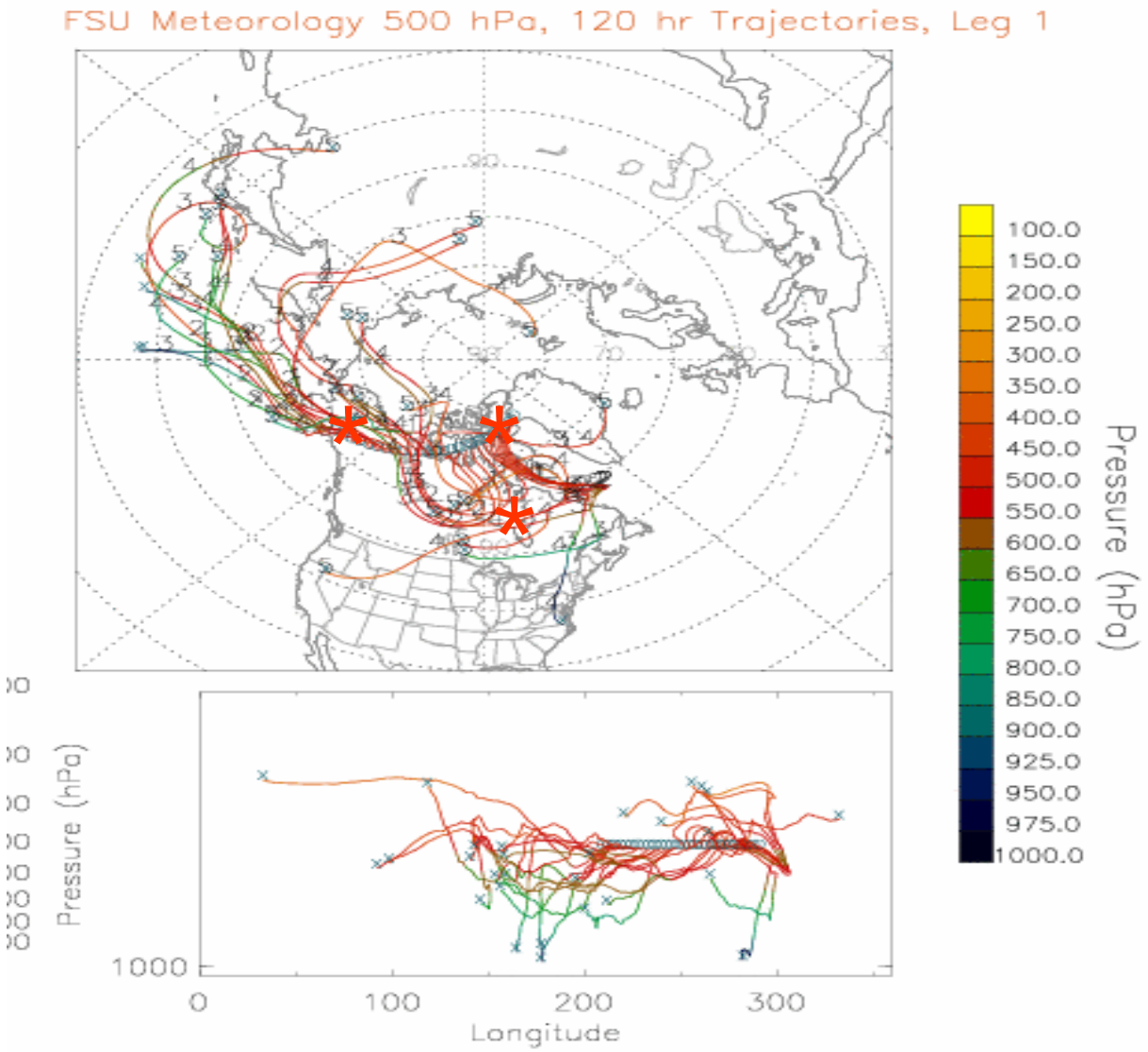
FSU Trajectories

- Met data from FSU WRF run (25 km grid)
- 5 days backwards in time
- Color coded by altitude

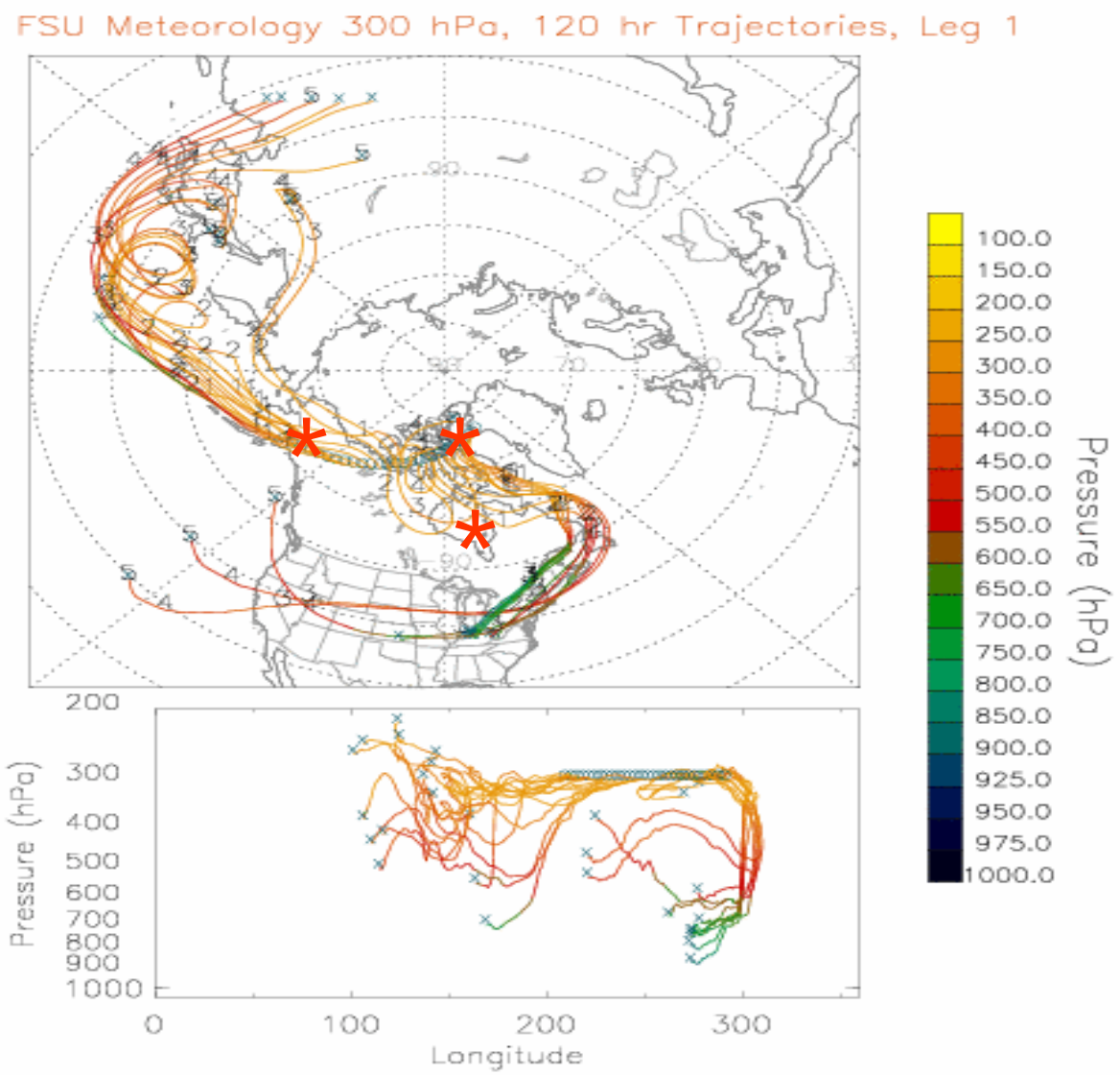
FSU Trajectories from 850 hPa



FSU Trajectories from 500 hPa

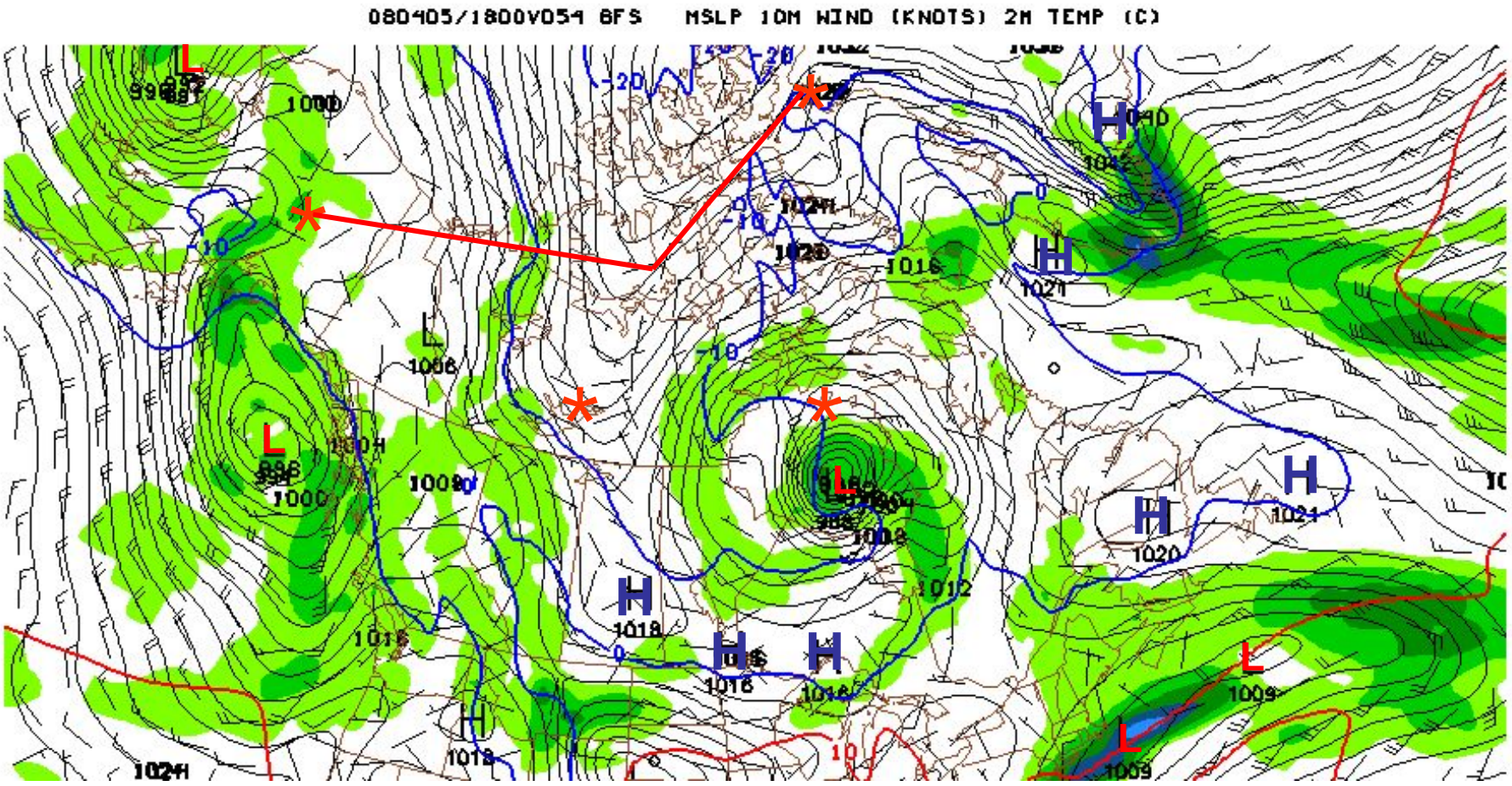


FSU Trajectories from 300 hPa

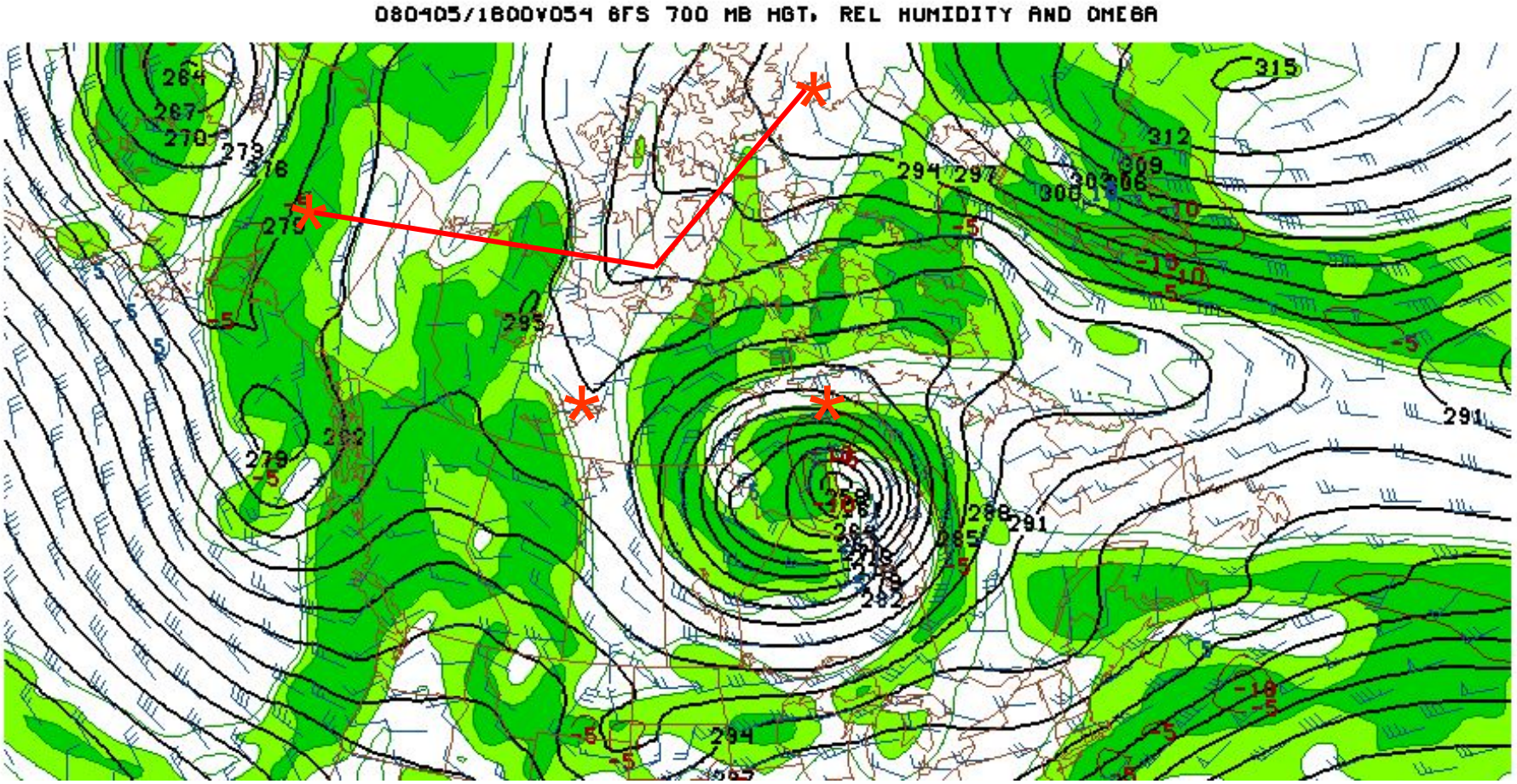


Saturday’s Forecast

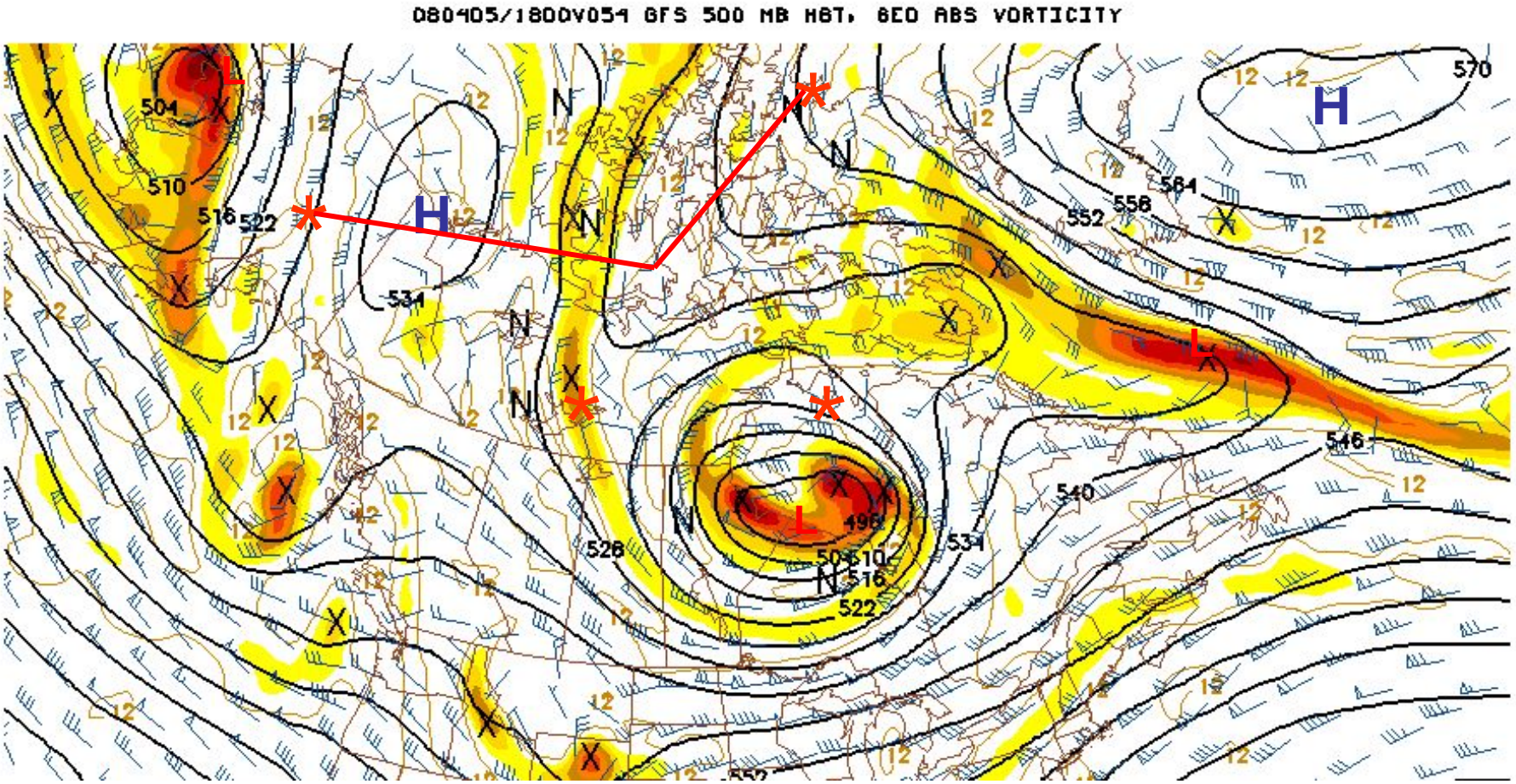
GFS Forecast Valid 1800 Z April 5
SLP, 10 m winds, 6 h precip



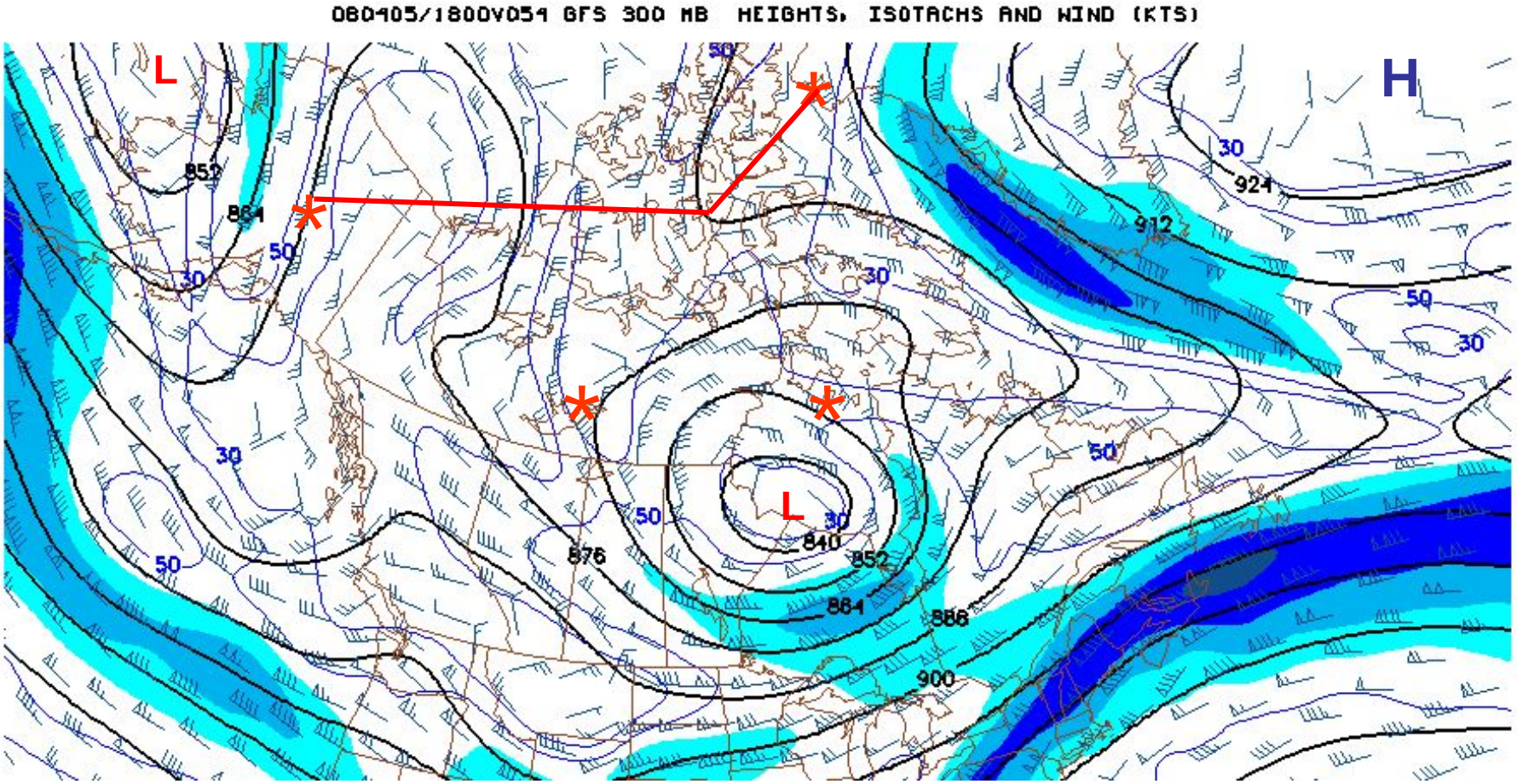
GFS Forecast Valid 1800 Z April 5
700 hPa RH and heights



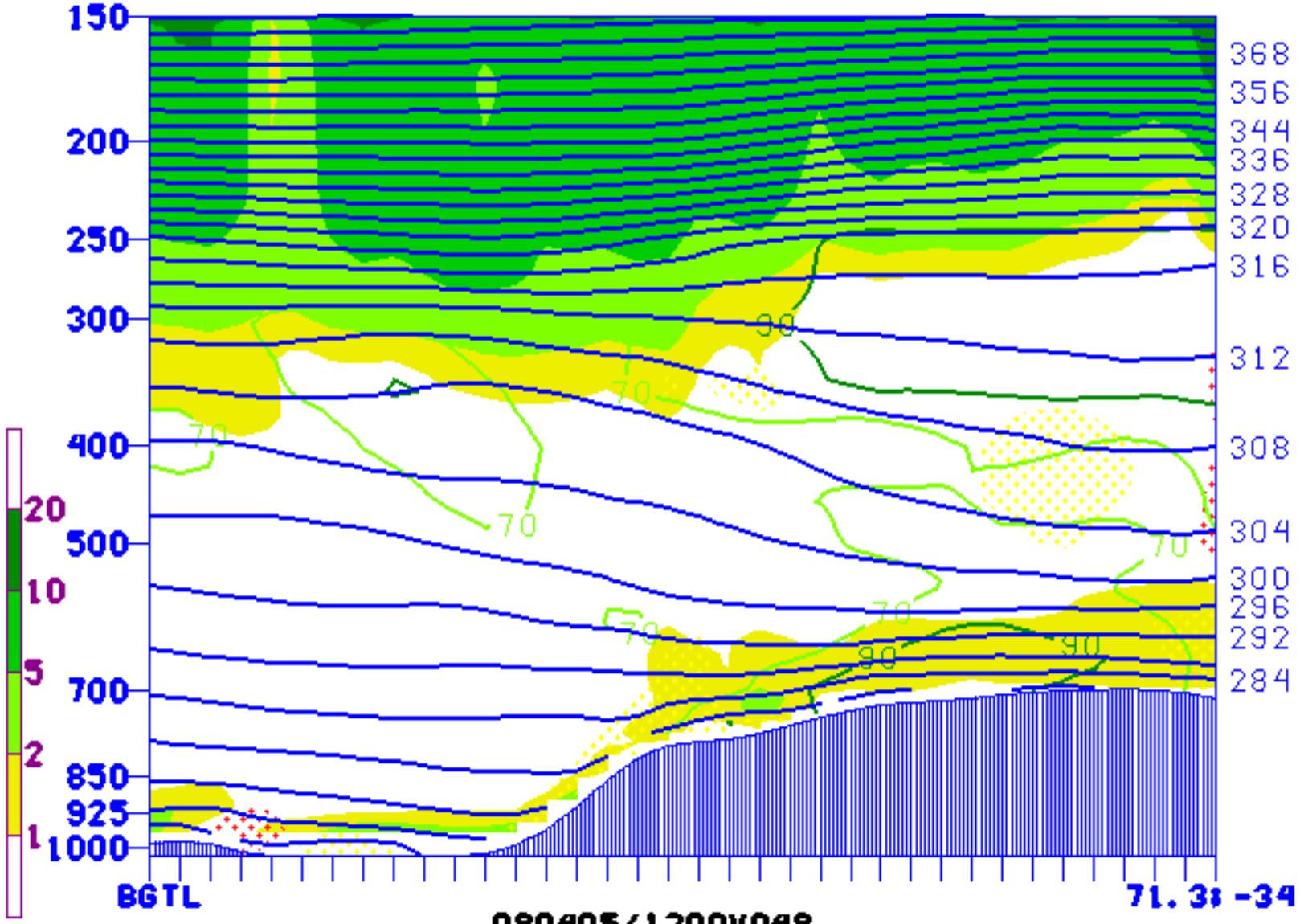
GFS Forecast Valid 1800 Z April 5
500 hPa heights, vorticity, and winds



GFS Forecast Valid 1800 Z April 5
300 hPa winds and heights

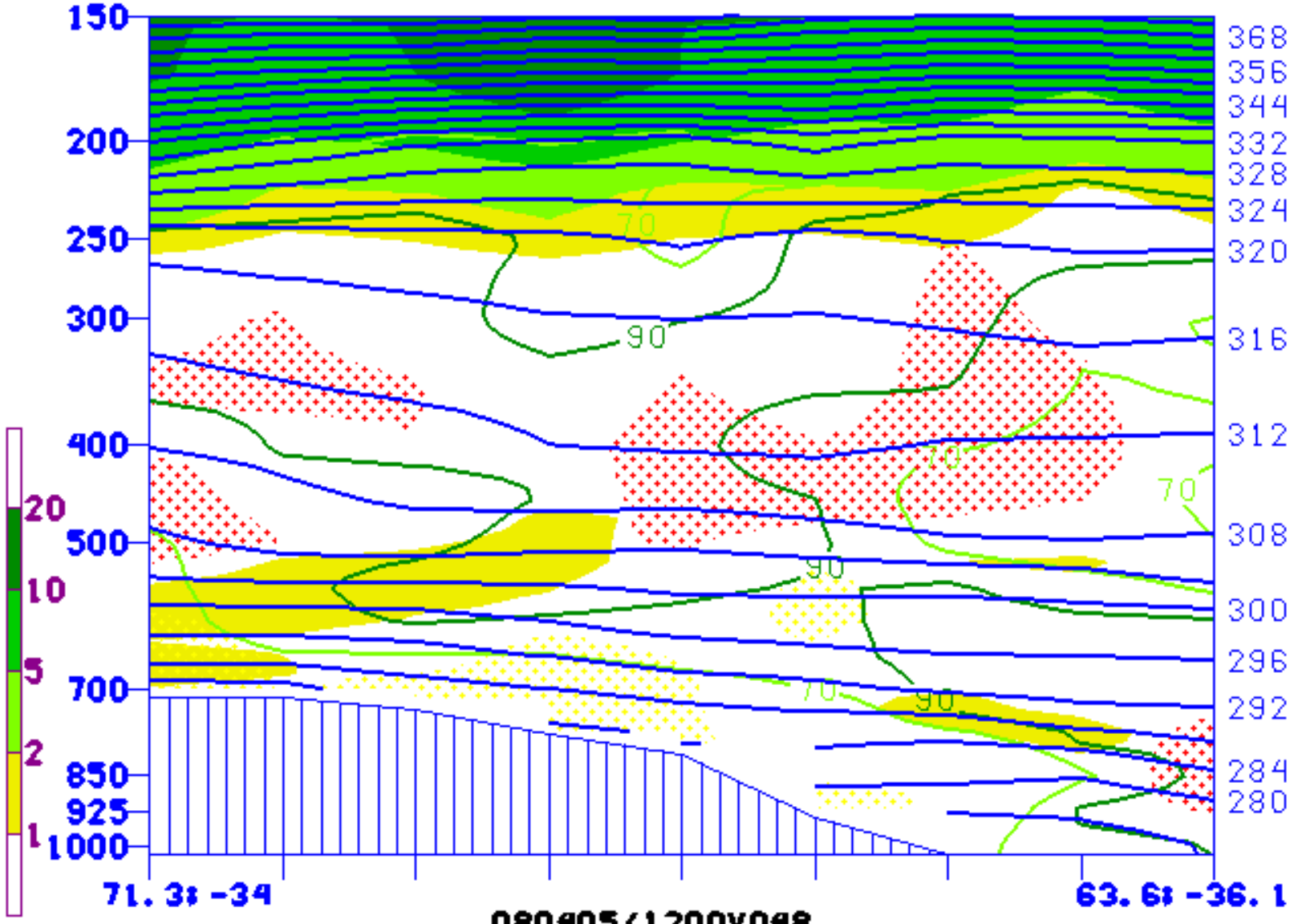


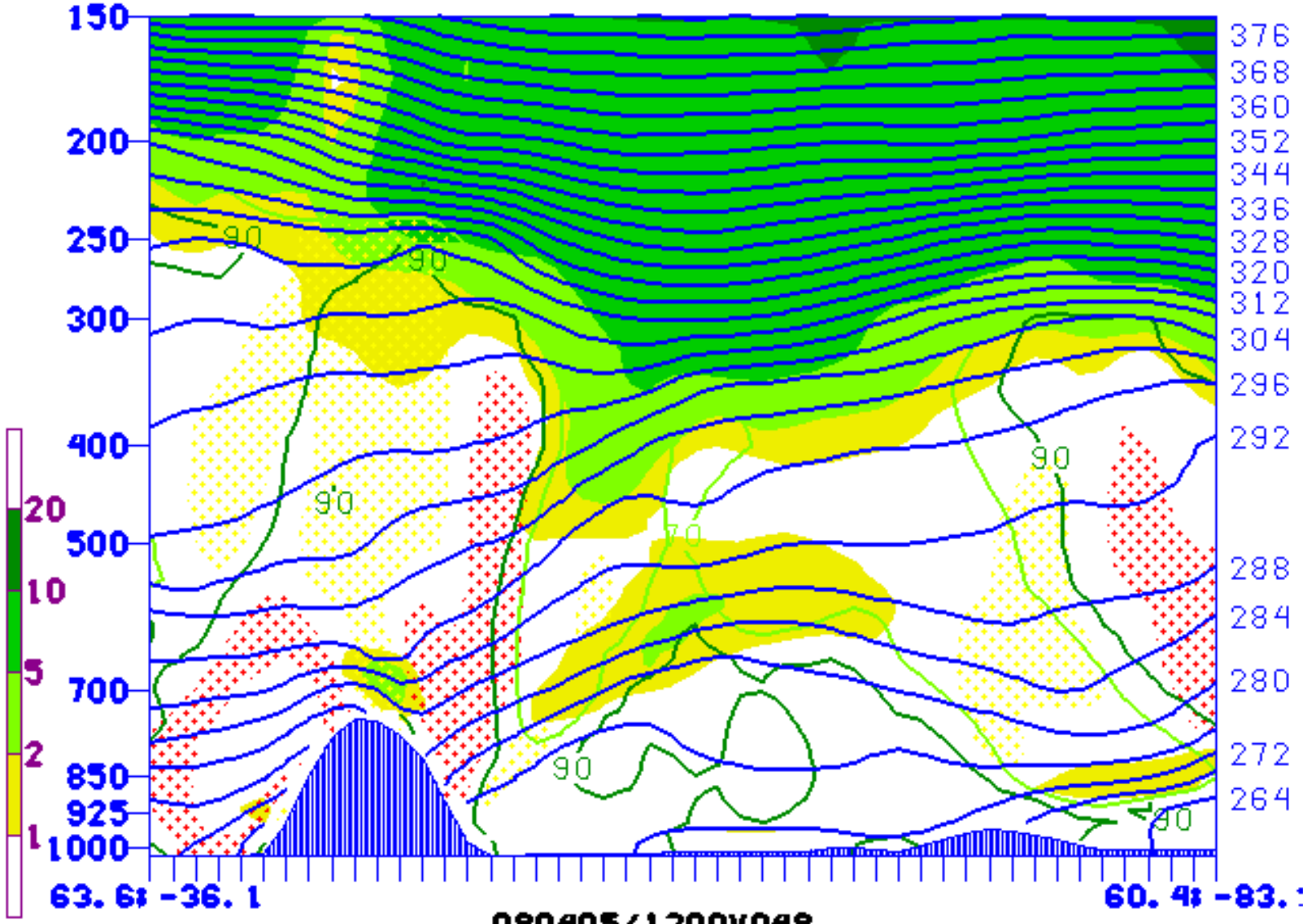
April 5 2008
Thule – Summit – Ship – Hudson's Bay – Fairbanks



080405/1200V048

GFS Cross Section: PV, omega, theta, RH


150
200
250
300
400
500
700
850
925
1000
368
356
344
332
328
324
320
316
312
308
300
296
292
284
280
70
90
70
90
70
90
20
10
5
2
1
71.3: -34
63.6: -36.1
080405/1200V048
GFS Cross Section: PV, omega, theta, RH


150
200
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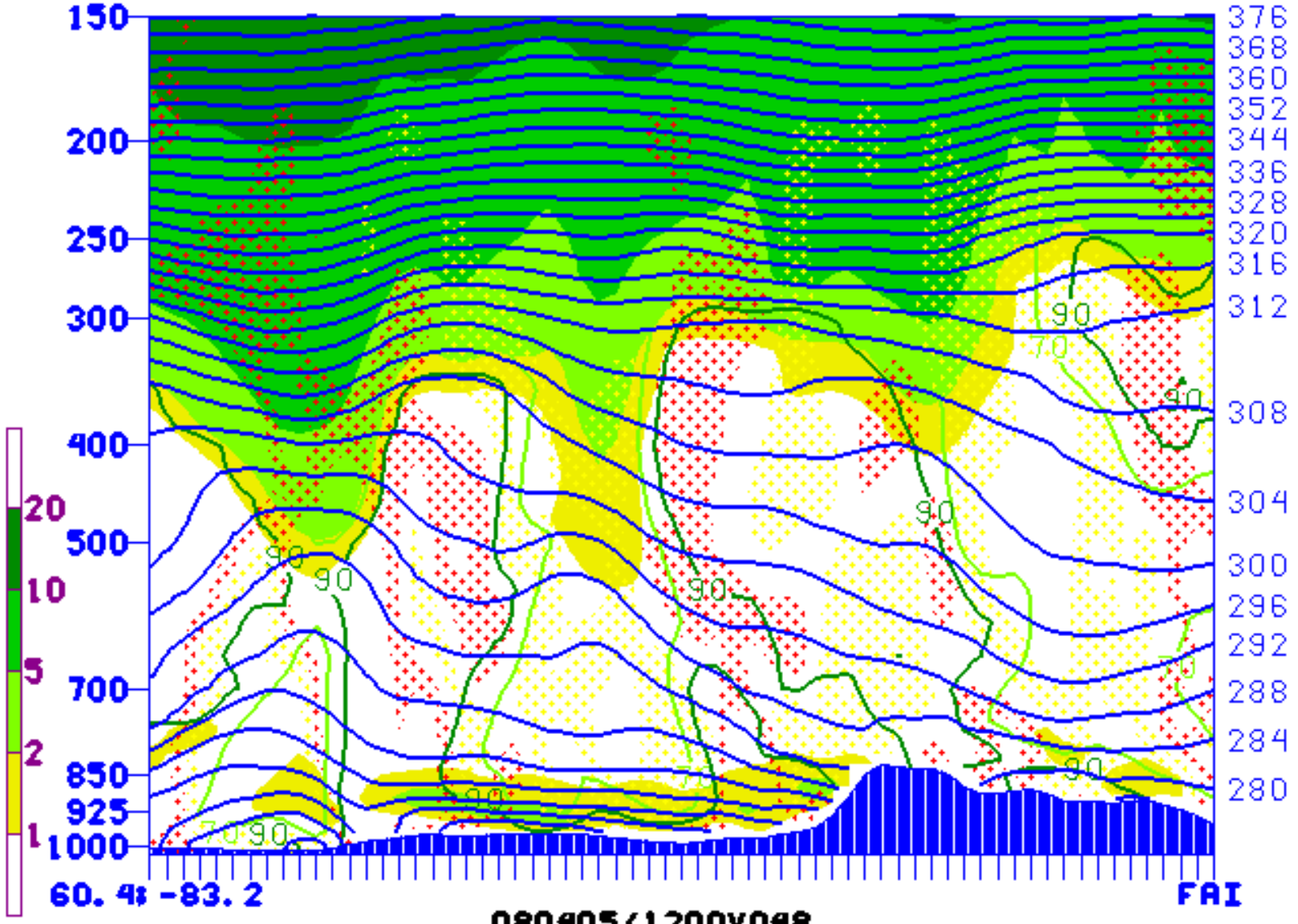
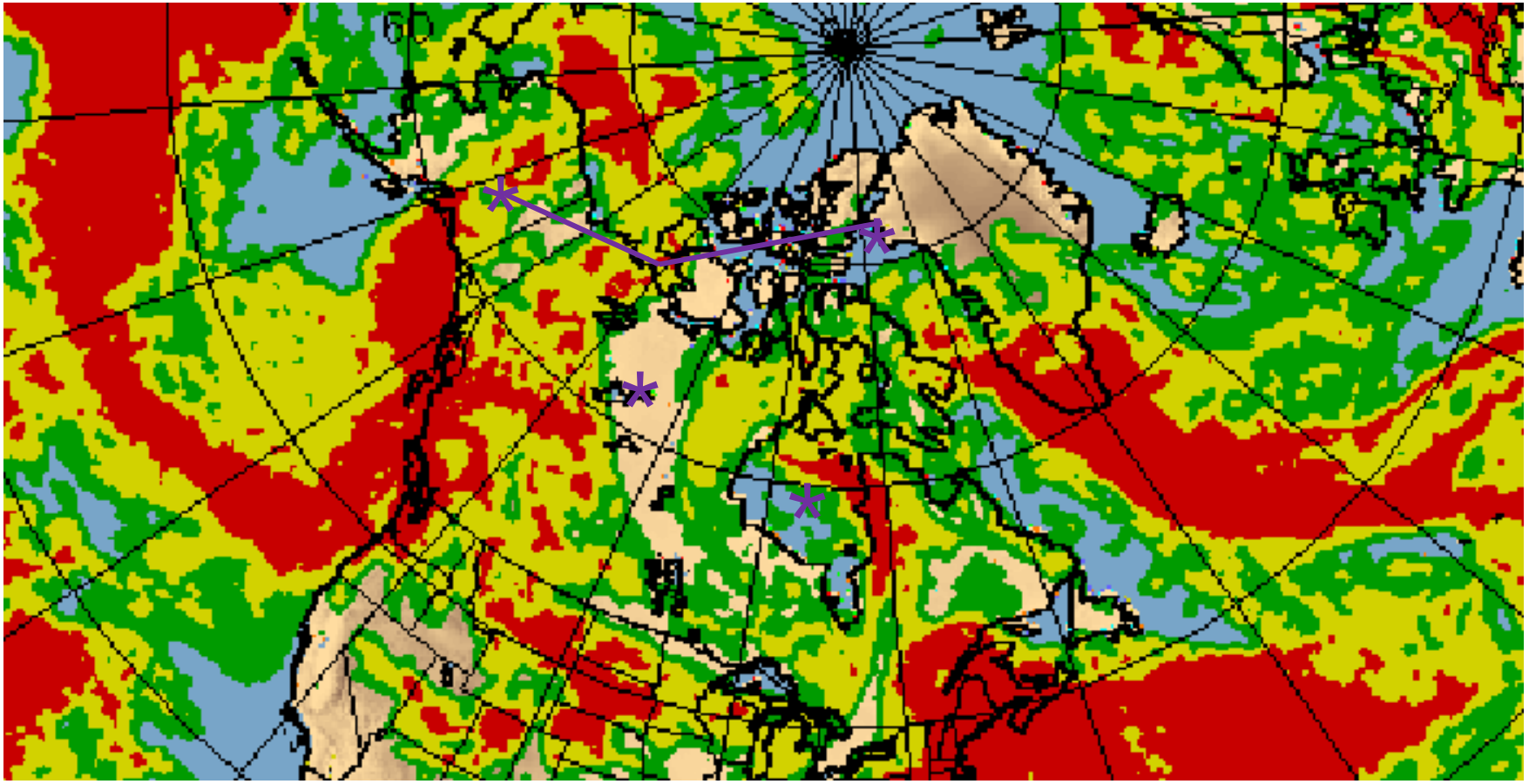
296
292
288
284
280
272
264
90
90
90
90
90
90
70
20
10
5
2
1
63.6: -36.1
60.4: -83.1
080405/1200V048
GFS Cross Section: PV, omega, theta, RH



080405/1200V048

GFS Cross Section: PV, omega, theta, RH

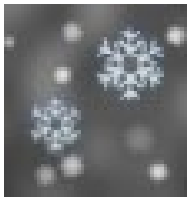
Air Force Total Cloud Cover for comparison
Valid 1800 Z April 5



Red colors indicate higher chances of cloud cover

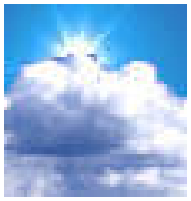
Fairbanks AK Forecast (PAFA)

Tonight



Isolated snow showers
Lo: 28F

Friday



Cloudy
Hi: 50F

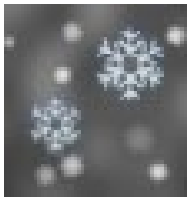
Fri. Night

Mostly Cloudy
Lo: 23F

Saturday

Chance of Rain or Snow
Hi: 42F

Sat. Night

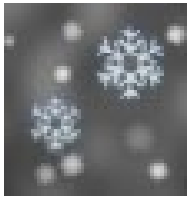


Chance of Snow
Lo: 20F

Sunday

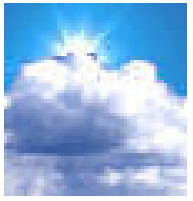
Chance of Rain or Snow
Hi: 40F

Sun. Night



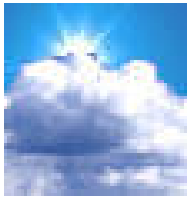
Chance of snow
Lo: 20F

Monday



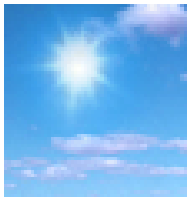
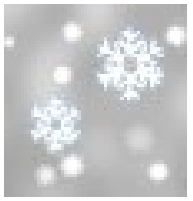
Mostly Cloudy
Hi: 40F

Mon. Night



Mostly Cloudy
Lo: 20F

Thule Forecast (BGTL)

Friday	Fri. Night	Saturday	Sat. Night	Sunday
				
Partly Cloudy Hi: 1	Partly Cloudy Lo: -9	Mostly ClearLo Hi: 10F	Mostly Clear Lo: 3F	Chance of Snow Lo: 25F