

ATM 400: Synoptic Meteorology I Map Discussion Guidelines

Student run map discussions will begin next week with each student participating in two discussions, with a partner, which will count for 15% of your class grade. Your attention and participation in each other's discussions will also be noted and graded.

These discussions will give you the opportunity to show what you have learned about the weather and will go hand-in-hand with the scientific concepts we discuss in class. Your map discussion should generally touch on each of the following weather analysis and forecasting questions:

1. What happened?
2. Why did it happen?
3. What is happening?
4. Why is it happening?
5. What is going to happen?
6. Why is it going to happen?

You should **use dynamical reasoning** when answering questions 2, 4, and 6. For example, we know that jet streaks are something to get excited about. But why should we care where the jet is and what is the dynamical reasoning for jet streaks being of interest?

Feel free to use any web-based or locally generated products. The "Weather Links" (http://www.atmos.albany.edu/facstaff/kristen/Weather_Links.html) on my homepage is also a good starting place for a variety of weather-related links.

In addition to addressing the questions above, each of you must show and describe **one new map** (i.e., one that neither myself or any of your classmates have already talked about) and **one map you made yourself** (e.g., from Python, ESRL, or a hand-drawn schematic) during your discussion.

You may discuss all interesting weather occurring anywhere on the globe (including the tropics, but tread lightly!), but make sure to save at least a few minutes at the end of your discussion to talk specifically about the Albany weather.

Round #1

*9/3, 9/10, 9/17, 9/24,
10/1, 10/8, 10/15*

Liam & Allison
Jack C. & Quintin
EB & Jack F.
Ryan & Kal
Bella & Harrison
Ariel & Ethan
Daniel & Sage & Kathryn

Round #2

*10/22, 10/29, 11/5, 11/12,
11/19, 11/25, 12/3*

Harrison & Quintin
Jack C. & Daniel
Kal & Liam
Sage & Ariel
Jack F. & Allison
Bella & Kathryn
EB & Ethan & Ryan

ATM 400: Synoptic Meteorology I
Some Additional Tips on How to Approach Map Discussions

- 1) Start with the big picture
 - ~ Show radar and satellite loops to illustrate where there is interesting weather happening
 - ~ Some useful websites are the NASA GOES website, <https://weather.msfc.nasa.gov/GOES/>, the College of DuPage (<https://weather.cod.edu/satrad/>), and the University of Washington loops (<https://a.atmos.washington.edu/~ovens/loops/>)

- 2) Come down in scale and discuss the current surface analyses over the U.S.
 - ~ Show a surface map and talk about where the areas of high and low pressure are located, where there are fronts, where there are areas of strong advection, etc., and how these features relate to the current weather
 - ~ Some websites to use are WPC's surface charts (<http://www.wpc.ncep.noaa.gov/>), our own surface potential temperature and mixing ratio maps (http://www.atmos.albany.edu/index.php?d=wx_surfpupprdata), or the high-resolution mesoscale analyses for specific areas on SPC's Mesoanalysis page (<http://www.spc.noaa.gov/exper/mesoanalysis>)

- 3) Discuss the current upper air analyses
 - ~ Show the analyses on the relevant pressure levels (e.g., 850 or 700 hPa, 500 hPa, and 300 or 250 hPa); focus on advection of temperature, vorticity, the placement of troughs and ridges, and where the jets are located
 - ~ You may use any of your favorite websites including Tommy G's QG page, TwisterData, Weathernerds, TropicalTidbits, WeatherBELL, Aguacero, Alicia Bentley's, and Tomer Burg's maps
 - ~ Show some interesting soundings (with inversions, instability, evidence of thermal advection, etc.) using SHARPy, or the RAP, Wyoming, or SPC (<http://www.spc.noaa.gov/exper/soundings>) webpages
 - ~ Finally, make sure to relate all the features on these maps to the current weather situation using the dynamical reasons we've discussed in class

- 4) Finish with a discussion of the model forecasts
 - ~ You may discuss any potentially interesting forecast issues around the globe, but make sure to finish with a discussion of the Albany weather

***** Note:** The above is just a helpful guideline, NOT a strict recipe or checklist. *******
Let the interesting weather of the day be your guide to what maps will be most interesting to show and discuss!