LAB ASSIGNMENT #10
(due Thursday, October 26)
10 points

Learning Objectives:
Upon completion of this lab, you will be able to:
- Generate automated diagnostic plots in GEMPAK.
- Practice creating plots that are of presentation quality.
- Assist in the production of an AOS 452 Diagnostic webpage.

- Assignment Description -

As a class, we will design a **diagnostic page** that you may use during your weather discussions to further investigate an array of structures within the mid-latitude atmosphere. You will be working on these maps with your weather discussion partner. Each pair will be assigned one atmospheric level (e.g. 300 hPa, 500 hPa, 700 hPa, 850 hPa, surface) and a particular diagnostic that we have discussed in class. Subsequently, each group will be responsible for creating plots of their particular diagnostic for the following forecast times: **F00, F12, F24, F36, F48, F60, F72**. Links to all of your group's images must then be placed on each group member's AOS 452 webpage.

All plots must be **centered over North America (GAREA=top-- and PROJ=utm)** using **the current day's 1200 UTC run of the GFS** and you will need to set up crontabs to create the images. **All crontabs should be loaded so that they execute between 12:00p and 1:15p every day**. This will allow for all images to be updated with the latest data prior to the map discussion.

<u>Hint</u>: Use the following syntax within your C-Shell scripts to grab the latest GEMPAK file (place the text below following cd and before gpcolor – see sample script in Lab 9 handout):

    set today = `date +%y%m%d`   # selects the correct date and time needed for GDFILE
    set hr = {'00', '12', '24', '36', '48', '60', '72'}   # all the forecast times you need to create images for
    foreach j (1 2 3 4 5 6 7)   # this initiates a loop over all forecast times

Then you can set your GDATTIM, GDFILE, and DEVICE in your script as follows:

    GDFILE = /weather/data/gemdata/hds/${today}12_avn003.gem
    GDATTIM = F$hr[$j]
    DEVICE = gif|variable_f$hr[$j].gif

Finally, at the end of your script, following EOF and before gpend, type the word, '**end**' on a separate line. This specifies the end of the loop you must implement in order to create files for the separate forecast times.

Each group will be evaluated based on the following criteria:
- Do your images update every day? (e.g. are your crontab scripts running correctly?)
- Is there continuity between all group members and their plots? (e.g. everyone in their group should use the same cint, plot the same variables, use the same color schemes, etc.)
- Are the plots clean and neat? (e.g. you should keep tabs on your output for the first few days and adjust your cint, color schemes, etc. as necessary)

Once you have a finished product you are pleased with, send me an e-mail with a link to your images and the subject headline, **"AOS 452 - Lab 10 Images".** Also, within your e-mail, please provide a brief description of your plot (e.g. a figure caption), a sentence or two explaining why this is a useful diagnostic, and attach a copy of your crontab script.