ATS 351, Spring 2010
Extra Credit – due by 5pm May 7\textsuperscript{th} to envelope outside TA office (ENGR 204A) (Wed May 5\textsuperscript{th} for Wednesday Lab)

There are 3 choices below for extra credit projects. Please choose only one.

**Option #1: Hurricanes and Climate Change** (up to 30 extra credit points)

There is an on-going debate among scientists regarding whether or not climate change has or will have an impact on hurricanes (their frequency, intensity, etc.). Write a 2 page, double-spaced paper highlighting both sides of this argument (can be longer if needed, but no more than 4 pages). Please site at least 3 references.

Here are some websites to help you in your search for journal articles (both require keywords to search for articles):

American Meteorological Society journal search: http://journals.ametsoc.org/search/advanced

CSU Web of Science:

http://lib.colostate.edu/databases/

Once there, click on Web of Science (under “Don’t Know Where to Start?”)

Or you can use a search engine like Google – but make sure you are using credible sources (Google scholar would be better than simple Google - if you are unsure about a source, you can e-mail it to your TA to get it approved.)

**Option #2: Contouring US Map** (up to 20 extra credit points)

A map of the United States is provided. Please do the following things:

- Please contour isobars (lines of constant pressure) using an interval of 2mb, with 1000mb as a one of your contour values. The pressure is the top right number at each station.
- Mark areas of low pressure with an L (in red) and areas of high pressure with an H (in blue).

Recall: The value given on the map does not include the leading 9 or 10. Therefore, a value of 109 is actually 1010.9mb and a value of 861 is actually 986.1mb.

Reminders:
- Do not draw contour isobars where there is no data (i.e. into Mexico)
- Please label every contour line with a pressure value in mb (not the decoded value given on the map)
Option #3: Forecasting (up to 10 extra credit points)

Create your own forecast for Fort Collins for Saturday May 8, 2010. You may use all tools at your disposal (but please try to come up with your own numbers – don’t copy a forecast online). Recall that there are various links on the course webpage that may be useful in this exercise: http://radarmet.atmos.colostate.edu/AT351/ links.html

Use the template below to record your forecast and discussion. You should provide numbers for the high and low temperatures and circle the category of precipitation for your forecast. In the discussion section provide all websites and materials you consulted to create your forecast.

Example discussion points include:
What maps did you use and why?
What synoptic situations are likely to occur? How did this affect your forecast?
Did you apply any local knowledge of the area?
Give physical reasoning for your prediction.
Are there any other pertinent details?
Are there any advantages/disadvantages to the data you used?

Fort Collins forecast for May 8, 2010

Temperature:
High: _________ °F
Low: _________ °F

Precipitation Category (please circle one):

1. 0 in – Trace
2. 0.01- 0.1 in.
3. 0.1 - 0.5 in.
4. 0.5+ in.

Discussion (see above for details):