ASSIGNMENT #6. Due Tuesday 10/26/04

1. Wallace and Hobbs problem 3.1 (k-o)

2. What are the local Eastern Daylight Times at 0000 and 1200 UTC? (Don't forget daylight savings).

3. Go to one of the following web sites:
   http://www.nws.noaa.gov
   http://asp1.sbs.ohio-state.edu

Browse the information available on the site, and download and print* a surface analysis, an "upper air" height analysis from a lower-tropospheric level (850 or 700 hPa), and one from a higher level (300, 400, or 500 hPa). Make sure the maps are valid for the same hour, and that they are analyses and not forecasts. Note that surface maps are usually generated every three hours, while upper air maps are every six or twelve hours, so you may want to log in within three hours of 0000 or 1200 UTC. Identify a low-pressure system somewhere in the map, and any fronts associated with this low. Obtain soundings from stations in the warm and cold sectors of the storm. If the system is near New England, note the current local weather; otherwise, examine also an infrared satellite photo and note the locations of cloudiness near the low.

Examine the following features of the synoptic flow and comment on whether they conform to descriptions in the Wallace and Hobbs text or in class:

   a. relationship of winds to isobars at different levels;
   b. relationship of surface lows to upper-level troughs.

Examine the low pressure system you selected and compare it to either the system described in Wallace and Hobbs or the system described in the recent article by Conaty et al. Briefly describe similarities and differences with respect to:

   c. depth of the low and apparent stage of development of the system;
   d. location of cold, warm, and occluded fronts with respect to low center;
   e. Difference in surface temperature, moisture, and wind direction across each front, and differences aloft in temperature and moisture between air masses;
   f. Tilting with height of fronts, relative locations of lows at different height.
   g. Based on satellite and/or surface observations, comment on how the cloud and/or precipitation patterns appear to be related to the fronts in your system.