Syntax Problem #15

Objectives

1. Practice writing and running Python code.
2. Use MetPy to interpolate point data to a grid.
3. Practice plotting observations.
4. Practice contouring and color-filling contours.

Problem

1. Interpolate the geopotential height and the wind speed for the 300-hPa level for 12 UTC 14 March 1993 from upperair observations. Use the MetPy `interpolate_to_grid` function.
    a. Use `interp_type='rbf', hres=1`.
    b. Remove any additional bad points (KVER already removed for you).
    c. Drop any NaN in height and wind speed variables.
2. Plot the observations around a standard upperair station model.
3. Plot contours of geopotential height every 120 m.
4. Colorfill wind speed every 20 knots starting at 50 kt.
5. Smooth data fields as desired.

Call the image **300hPa_obs_gridded_contours_<username>.png**.

Notes:

- Double check to make sure you have the correct output and conversion for temperature.
- Make sure documentation (e.g., comment block and comments throughout code) is present in your source code.
- Make output informative so that anyone running your program understands what is being produced without seeing the assignment.
- Name the program **`syntax15_<username>.py`** and place a copy in `/share/share/syntax_problems/`.