Syntax Problem #16

Objectives
1. Use xarray to read GOES data file
2. Plotting a satellite projection water vapor image
3. Using a MetPy colormap to enhance an image

Due by the end of class.

Problem

1. Write a Python program that reads in the most current CONUS region GOES-16 data for mid-level water vapor (channel 9) and plot using the satellite projection from the netCDF file and use an appropriate colormap from MetPy to enhance the water vapor imagery.

   Use `vmin = 180` and `vmax = 290` as the minimum and maximum brightness temperatures.

   A starter notebook available at:
   `/archive/courses/met330/syntax16_starter_notebook.ipynb`

Notes:
- Call image **water_vapor_<date_time>.png**
- Where input the appropriate date/time value from a datetime object in the name of the file.
- 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 understand what is being produced without seeing the assignment.
- Name the program **syntax16_<username>.py** and place a copy in `/archive/courses/met330/syntax_problems`