PHY517 / AST443: Observational Techniques

Tutorial 1: Computing Lab, bash, awk and sed, topcat, LaTeX

1. Follow the instructions from the "Computing Resources" wiki tab, to log onto uhura or vulcan, with window-forwarding. You can do so either from your laptop, or from a machine in the Computing Lab. (Note: your homework will be to send in a screenshot of changing your password, so you might want to do this now.)

2. Read the "bash" wiki tab.

3. Edit your .bashrc file as described under the "bash" tab. `emacs` is a common text editor that you can use for this. Also recall that in Linux, you can paste with the middle mouse button. Remember to source your .bashrc file afterwards.

4. Confirm that your window-forwarding set-up works by launching `ds9`.

5. Write a `bash` script that prints "Hello, world!". The command to print to standard out is "echo".

6. Go through the examples on the "awk and sed" tab on the wiki page. Use `awk` and `sed` to print out the objects that are observable from Stony Brook, and change their name to "Obj" instead of "Object".

The following can be done on the lab computers, or on your laptop (it will likely be faster on the latter):

6. Download the exoplanet catalog (see the Exoplanet Lab wiki page), in the VOTable format. Open it in `topcat`. Familiarize yourself with `topcat`'s buttons by hovering your cursor over them. Make a log-log plot of planet mass vs. the orbit's semi-major axis.

LaTeX can be run on the lab computers, or your laptop, but the most convenient way (if you have a reliable internet connection) might be an online editor like `overleaf.com`:

7. Download the `example.tex` file linked from the LaTeX wiki tab, along with the references file and example image. Compile the example LaTeX file.