Astronomy 400B: Homework 1

Due: January 16, 2018

1 Get Set Up on Nimoy

You should already have an account on the undergrad computer *nimoy*. Your username is the initial of your first name and then last name e.g. mine would be gbesla.

1. Log in to nimoy by opening a terminal and typing the following in the command line:

   ssh username@nimoy.as.arizona.edu

   Note, if you get the following message: WARNING: REMOTE HOST IDENTIFICATION HAS CHANGED you need to go into your ∼/.ssh/known_hosts file and delete the line with *nimoy* in it. Then try to ssh again.

2. From your home directory, access the directory for the class

   cd ../astr400b/

   The data filed needed to complete most homeworks will be stored in this directory. In that directory there will be a file called MW_000.txt. This file stores the data for a model of the Milky Way at the present day. 000 corresponds to time=0 and will be referred to as the SnapNumber. Other files will have different SnapNumbers, like 001, 002, etc to indicate future points in time.

3. Return to your home directory.

   cd

   Create a symbolic link to copy the file MW_000.txt to your home directory.

   ln -s ../astr400b/MW_000.txt ./MW_000.txt

4. Open the symbolically linked file with your favorite editor (vi, emacs, etc).
   Copy the first 3 lines of the file and send them to me in an email. Remember to include in the subject header "ASTR 400B".

5. There is also a README in the directory that explains the file organization. It says:

    - First Row is the time in units of 10 Myr (equivalent to SnapNumber/0.7)
    - Second Row is the total number of particles
    - Third Row describes the units of the columns that follows the fourth row
    - Fourth Row describes the header name for each column that follows
    - Remaining rows contain the particle data, which we will discuss in the next homework.

2 Installing Anaconda

On your own laptop or desktop, install Anaconda: https://www.anaconda.com/download/ choosing the version appropriate for your operating system (and using Python 3.6). If you do not have a laptop or home computer then please see me.

3 Get Used to Python

Try out coding in python. An easy way to do this is Jupyter Notebooks. You can launch Jupyter from the Anaconda interface. Note that you do not have to use Jupyter Notebooks interface and can instead create your own scripts that run from the command line.

An example python tutorial site: https://www.learnpython.org/

4 Update Astropy

On your laptop or desktop, update to the latest version of astropy as instructed here: http://www.astropy.org/
A list of units in astropy can be found here: http://docs.astropy.org/en/stable/units/

5 GitHub Account

All assignments will be due on GitHub, so make yourself an account: https://github.com/

Try it out by following the tutorial: https://try.github.io/levels/1/challenges/1

Create a repository with your last name called ASTR400B_yourlastname