Planet Projects

Due: Monday, May 26 by 5pm

As your final piece of work in this class, you will complete a project looking at a planet or planetary system discovered outside of our solar system. You will work either on your own or as part of a *pair* for this project. Note that, in general, I will expect a more comprehensive project from pairs than I will from individuals. Also note that both of the members of a team will receive the same grade/evaluation.

You have wide latitude for what form your project takes. It can be a (~6 page) paper, a short story, some piece of visual art, some piece of music/audio art, etc. If you choose a more creative path for your final project, you will also include a *brief* (~1 page) write-up explaining the scientific connections in your project and listing references/sources used.

Regardless of the medium, your final project must:

- Convey why the planetary system is interesting, i.e. is there something unique about this system? (e.g. first of this type discovered, something we hadn't thought of, etc…)
- Convey the significant/relevant parameters about the geological/biological conditions of the planet system as they connect to the material presented in lecture and readings.
- Perhaps (may not be applicable), why this system might harbor life and speculate what this life could look like - you could have a lot of leeway here if you are ambitious.

If your plan is to do something on the more creative side, I would encourage you to *talk to me* to make sure your project fulfills the above requirements.

Good places to get information on your target planets:

- https://exoplanetarchive.ipac.caltech.edu/ is an excellent database of exoplanets and is an excellent place to start your research.
- https://exoplanets.nasa.gov/ is a NASA site with a bunch of good information about exoplanets, both in general and for specific systems.
- http://scholar.google.com/ allows you to search the scientific literature for publications on the planet systems. Please let me know if you have trouble accessing information that you need and I should be able to get it for you (or point you in the right direction).

Source Guidelines

You should source original work as your references for your presentation and paper. While Wikipedia can be useful as a tool to finding original sources (Hint: the "References" section of Wikipedia pages can be a gold mine), you should *not* rely on the information presented in Wikipedia for your work. For all of the planetary systems listed below, there are

published scientific journal articles, press releases, and/or news stories in the popular press written about these, in addition to information presented at the sites above .

Scientific papers can be found on all of the planet systems listed below via a google search or a more targeted search at http://scholar.google.com/

All sources should be properly referenced. You should have proper citations to sources of information within your text. If you have any questions about what is an appropriate source, or how to cite them ***please ask me.***

Suggested systems

Listed below is a curated list of some of the most interesting planetary systems. All but one of these (the exception is PSR B1257+12) were discovered via one of the two methods we discussed in class (transits or radial velocity). In order to ensure that there is no overlap in choices, once you have decided, please *email me (hcrowl@bennington.edu)* which system you'd like to base your work around. The choices will be first come, first served and available options are listed on the course web page under "Planetary Systems Available."

In addition, if you would like to work on a planetary system *not* listed here, please email me to ask whether it would be appropriate. For the most part, if the planetary system is interesting for some reason, you can work on it.

Complete list of Systems

Note: The cases where more than one planet/planetary system are listed on a line are grouped together for a reason. If you choose these systems, your project must address all of the systems.

Check Course Web Page "Planetary Systems Available" for which are still available.

- Proxima Centauri b
- TRAPPIST-1 System
- Teegarden's Star System
- J1407b
- Kepler-62 system
- Kepler-186 f
- TOI-1231 b
- TOI-674 b
- PSR B1257+12
- Kepler 452 b
- Kepler-1649 c
- 51 Pegasi b
- 55 Cancri System
- Kepler-11 system
- Kepler-22 b
- K2-18 b
- Kepler-16b/Kepler-34b/Kepler-35b/TIC 172900988 b (Circumbinary Planets)
- Kepler-47 system
- Kepler-296e/Kepler-296f
- Kepler-438b/Kepler-442b
- Tau Ceti System
- HD 219134 b
- KIC 8462852
- TOI-700 d