

Searching for ExoPlanets!

Go to NASA's New World Atlas: <http://planetquest.jpl.nasa.gov/newworldsatlas>

1. Search for planets that are like the following and list how many you find in each category.

Hot Neptunes:

Hot Jupiters:

Gas Giants:

Terrestrial:

2. Why would a Hot Neptune be an interesting planet type? How would those planets be different from Hot Jupiters? (Use your text or do other research to answer.)

3. There are A LOT of Hot Jupiters out there! How many stars currently have more than one Hot Jupiter in their planetary system? Approximately how far away are they?

4. How many terrestrial planets are in the universe, outside of our Solar System? How far away are these planets?

Click on GJ e so you can see their orbital paths (compared to Mercury). How do these orbital paths differ? Which planet would be more "habitable" and why?

5. Based on what we know about how our Solar System formed and how it is organized (terrestrial inner planets, gas out planets, etc), do you expect that there are more terrestrial planets in these other planetary systems? Why or why not?

PART II:

No, go to this wicked, wicked awesome web site:

<http://www.pbs.org/wgbh/nova/origins/drake.html>

Click on the Interactive on the left hand side. When this opens, you can mouse over the variables in the Drake Equation to see what they represent. If you click on the variables, you will get more detailed information AND you can change the amount of the variables in question.

Now, you get to be in charge! Change the variables as you choose (based on the information provided about the variable, choose a reasonable number). List what you chose here and then write down how many civilizations are likely in our galaxy:

When $R = \underline{\hspace{1cm}}$, $f_p = \underline{\hspace{1cm}}$, $n_e = \underline{\hspace{1cm}}$, $f_l = \underline{\hspace{1cm}}$, $f_i = \underline{\hspace{1cm}}$, $f_c = \underline{\hspace{1cm}}$, and $L = \underline{\hspace{1cm}}$

Then $N =$

Try again with a new set of numbers, either more or less conservative. Write down your inputs and your results here:

When $R = \underline{\hspace{1cm}}$, $f_p = \underline{\hspace{1cm}}$, $n_e = \underline{\hspace{1cm}}$, $f_l = \underline{\hspace{1cm}}$, $f_i = \underline{\hspace{1cm}}$, $f_c = \underline{\hspace{1cm}}$, and $L = \underline{\hspace{1cm}}$

Then $N =$

Explain what these numbers show. How is this important to our current thinking about either current research or future research?