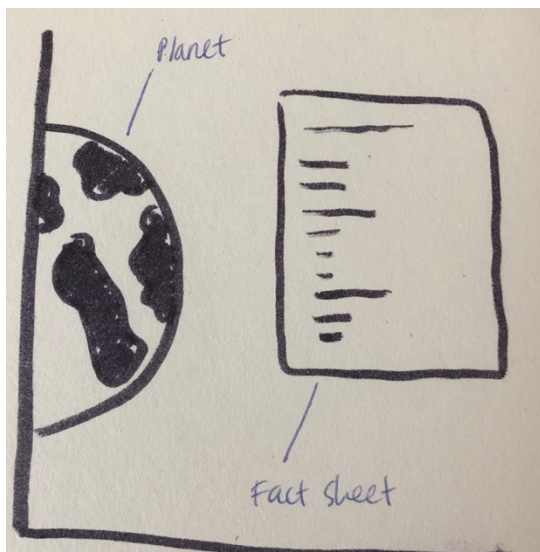
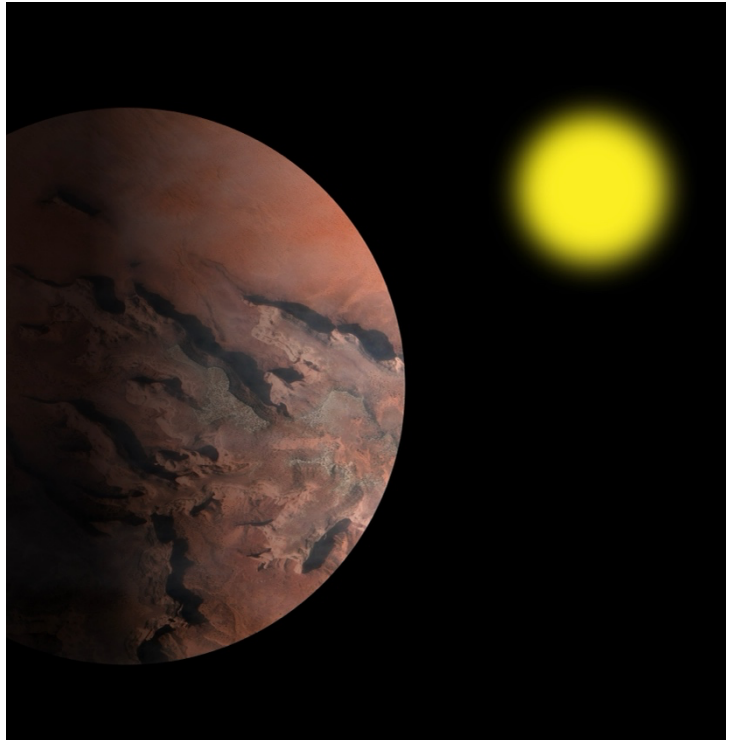


CART 263 Final Project

The Planets – George Gausden

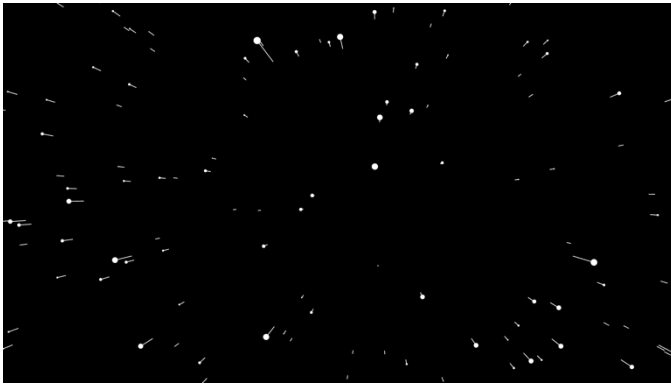
For my final project, I'd like to make an interactive solar system model. I'm still doing research and the ideas might change between now and the submission of my final project. The idea is to have the user travel in a spaceship (which controls the camera of the 3D scene). Using the arrow keys, the spaceship can travel through a solar system and explore the different worlds.



I'm considering using NASA exoplanet data to create descriptions and names for each planet in each solar system. The user can travel to different solar systems, with different suns, planets and star backgrounds by entering through some type of portal/black hole (I'm not entirely sure how I will choose to implement this yet).

There are a lot of details I'm thinking of incorporating to make the solar systems look more realistic/engaging. I'm planning on taking images from

<https://earthview.withgoogle.com/> to create textures for each planet. I'm also considering adding rings to some planets, moons as well as clouds and other animated objects.

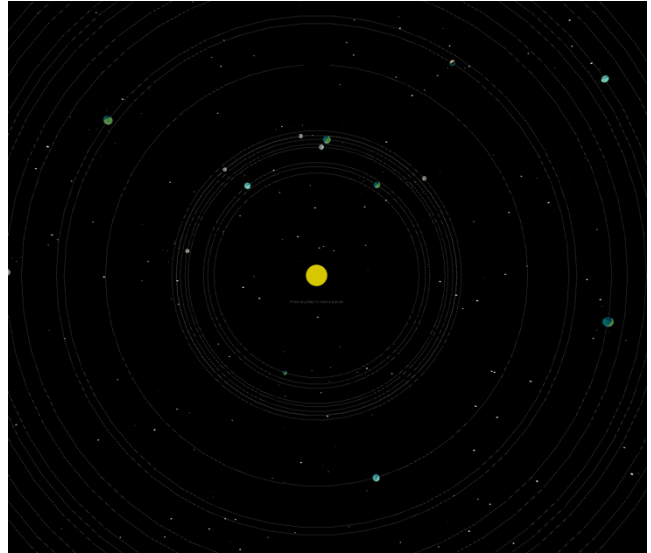


When the user travels from one solar system to another, there will be a “Star Trek warp speed” type of transition page. Sort of like in the image on the left.

One big challenge I'm running into currently is trying to make 3D objects interactive using WebGL. I've done some research online and it doesn't seem like there are any obvious answers to making a 3D object clickable using the mouse. I'll need to figure out a way around this eventually. Perhaps a library has already been created to deal with this or someone has come up with a method to treat 3D shapes as 2D projections, making it much easier to be able to define the boundaries of an object and when a mouse is hovering over it.

Also, I feel fairly limited right now by the WebGL library so I might consider using the Three.js library eventually. One other problem I feel I might face is performance issues. Already the transition I have in place to go from one solar system to another seems to lag quite a bit on my laptop. I'm not entirely sure how I could overcome this without compromising too much on the aesthetic experience.

I think it would be pretty cool to make the interface fairly customizable for the user as well. For example, the user could decide to include the orbit rings or decide to remove them entirely. The user could also for example decide to change what type of info is displayed for each planet. My plan is to try to incorporate many different libraries in the same program as a challenge. After discovering how useful the EasyCam library is for 3D p5 projects, I'm really eager to explore more libraries.



Of course ideally I'd like to also implement a lot of sound effects and spacey-type music. If I have enough time, I would like to attempt to make the sound effects and music myself using Logic Pro.