Issues

Karthik Boyareddygari and Reese Danzer

At this point in our project we don’t possess any major, unsolvable issues. However, there are some issues that while not impossible are still somewhat difficult, and we’ll list those below.

# Interface

We realized that the interface was quite easy to make initially, but cannot be completed until we know what data the databases we create will supply (this situation is explained in detail in the following section). As noted below, whatever data the database contains will be numerous and complex, and that will create its own challenges in terms of interface display. As of now the interface has temporary values for demonstration only; these values will likely need to be replaced with helper functions that will feed the correct data to the interface for visualization.

# Data Acquisition Method

Originally, we had intended for the program to calculate all of the necessary data for display using the internal structure of a star as a function of time. After consulting with Dr. Carini, who basically told us that we were in way over our, his, and everyone else’s heads with this approach, we decided to try a database search function instead (the program goes to a list of pre-determined values and displays diagrams based on those values). This presents another set of difficult challenges:

* We need to construct the database(s) ourselves. There is no prominent research paper or website where all the information on all masses of stars at all points in time in all the different forms we need is stored, so we will have to do a lot of research to acquire that data ourselves and build up a database from it.
* Because we need a whole bunch of complex data, the databases we make will be numerous, large, and complex also. We need to design/discover functions that can comb through that data and locate the data we want at any given time. Not only that, but since we are attempting to develop a scale-able visualization from a finite number of data points, our functions will also have to be able to interpolate and extrapolate data from in-between the data points in our databases to create a more fluid animation.
* This added complexity also runs into how we will display the data itself, especially when displaying the internal structure of the star. We will have develop strategies to display varying numbers of layers with multiple varying characteristics, seamlessly. This will also add another layer of complexity to our previous challenge (you can’t interpolate between 2 data points where a layer is not present and then it is, so we’ll have to work a way around that also).