SETI Visualizations

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Computer Systems

1 Background

The Search for Extra-Terrestrial Intelligence (SETI) has been active since 1960. There are many good text-based sites to explain the purpose and theory of the program. However, few good graphical utilies are available to explain that theory to the general public. The purpose of this project is to develop such utilities.

There are several text-based scripts that allow the user to create a model Drake Equation universe. However, these scripts only output a single number, whose meaning may not be obvious to the user. Organizations within the SETI project try to educate the public about their efforts. In particular, many solicit donations to fund their work. It is well-known that graphical presentations are more effective than purely textual ones. If graphical utilities were available, such fundraising efforts would be more effective.

2 Description

The graphical utilities available in the Computer Systems lab (OpenGL, POV-Ray) are well suited to developing such programs. Several programs have been developed. One is be a graphical representation of alien civilizations in the galaxy, using the Drake Equation. Another is a simulation of a colonizing civilization. POV-Ray graphics were used to create visual representations of different telescope strategies.

This project is designed to provide an overview of the beliefs and philosophies behind SETI. There is no plan to analyze specific data gathered by the various SETI searches. Because most viewers will be nonscientists, the programs do not try to explain the technical methods used by the SETI organizations.

3 Visuals

Since the results of the project are graphical programs, they can be used without modification as visuals. The POV-Ray utilities are especially good for this purpose because they produce high quality graphics.