Astr450 Assignment 2: Average Lifetime of a Civilization
due Thu Sep 10, 2009

Word limit: 250

This assignment deals with the term $L$ in Drake's equation. This term represents the average lifetime of those civilizations that are in an industrial phase and make extensive use of radio waves for communication.

1. Explain, using reasoning similar to that in the lectures, why a very large value for $L$ is possible.

2. Briefly describe 3 reasons for why an individual civilization might cease using radio waves after a short time, say 100 years.

3. Suppose the Milky Way Galaxy has a large number of civilizations with lifetimes from 100 to 1 billion years. Which of these civilizations are we, on Earth, most likely to detect? why?

Requirements for a good assignment

- The assignment is not a group project. All work must be completely original. The assignment will be graded strictly, as expected for a 400-level course. All assignments are weighted equally.
- Have your name, SID, and a word count at the top of the paper. Use question-and-answer format when writing your assignment, do NOT hand in a run-on paragraph (50% penalty).
- Be typed, double-spaced, and within the word limit. Assignments longer than the word limit will receive zero credit. Equations and diagrams can be hand written.
- Reference all sources of information you use.
- Use quotations only to illustrate your point, not to make it. If you are unclear about this requirement, then speak with the instructor.
- Show completeness of information, conciseness of expression, have a logical development of ideas, and evidence of thought regarding the content.
- Be professional of presentation, e.g., no ragged ends, creases, or ink blobs on the paper.
- In all ways, show pride in your work.