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HUMANKIND'S PLANETARY ECOLOGICAL CRISIS AS A CENTRAL THEME FOR INTERSTELLAR MESSAGE COMPOSITION

Abstract

SETI search strategies typically assume that extraterrestrial civilizations are much longer lived than terrestrial civilization. That is, factor L in the Drake equation, the average lifetime of extraterrestrial civilizations as measured by the time they are actively seeking to make contact with other civilizations, is assumed to be much longer than the time that humans have had the technology and motivation to communicate at interstellar distances. Without this assumption, it is statistically improbable that extraterrestrial and human civilizations will exist sufficiently close enough to one another in time to allow contact, given the much longer lifetime of the galaxy in which such civilizations arise.

This presumed asymmetry in the lifetimes of extraterrestrial and terrestrial civilizations has raised the question, "What would humans have to say that would be of interest to much older civilizations?" Typically it has been assumed that more long-lived civilizations will also be more technologically and scientifically advanced. If so, then humans are unlikely to be able to teach extraterrestrial civilizations much in these realms, at least assuming that there is a convergence of technological developments and scientific discoveries across civilizations, with more advanced civilizations attaining an understanding that encompasses and surpasses that of less advanced civilizations.

Following the above assumptions, humankind is in possession of information that could be of significant scientific interest to astrobiologists on other worlds: information about the longevity of our own civilization, as well as factors that threaten our continued existence as a species. Although more advanced civilizations may be able to glean some information about the threats to our survival as a species by monitoring atmospheric changes and unintentional leakage radiation from Earth, intentional messages describing the social, political, and ecological factors that contribute to the instability of our planet may provide a rare glimpse into the cultures of a young civilization that has some insight into the threats it faces. Whether or not we continue such transmissions over the millennia would be informative to sociologists and psychologists beyond Earth, potentially providing greater insights into the critical years during which civilizations attempt to make the transition to becoming long-lived civilizations themselves. Whether or not humankind succeeds, such messages from Earth could be useful to extraterrestrials attempting to understand better the factors that contribute to L .