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Author: Ms. Lori Walton
Tigerstar Geoscience, Canada, lawalton@telus.net

REVISITING SETI SEARCHES FOR LARGE SCALE EXTRATERRESTRIAL TECHNOSIGNATURES

Abstract

Of the more than one hundred SETI searches carried out to date since the inception of modern SETI over fifty years ago, few fall outside the realm of identifying extraterrestrial signals through incongruous electromagnetic radiation. A small subset of SETI searches focuses on finding evidence of extraterrestrial intelligence through detection of advanced extraterrestrial technologies; for example, Dyson spheres, engineered stars, extraterrestrial nuclear fusion technology, and starship propulsion emissions. The concept of looking for large scale futuristic extraterrestrial technology is reinvigorated by several new projects. Researchers are harnessing computer power to scan large repositories of observational data from various space-based observatories, including the Kepler telescope, to look for Dyson spheres and other astroengineered objects that may show up as unexpected light curves or other anomalies. This paper presents an overview of historical SETI searches and SETI search ideas focused on detecting large scale extraterrestrial technology and aims to generate potential new ideas. The search scope is limited by our ability to recognize not only extraterrestrial technology but also natural astronomical phenomena; after all, it was only one hundred years ago that our Milky Way Galaxy was thought to be the complete universe.