45th IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) – The Next Steps (A4)
SETI 2: SETI and Society (2)

Author: Mr. Vinayak Nair
University of Petroleum and Energy Studies, India, vinayaksreenath@gmail.com

Dr. Ugur Guven
United States, drguven@live.com
Mr. Shreyash Patel
University of Petroleum and Energy Studies, India, 15shreyash@gmail.com
Mr. Shashank Pathak
University of Petroleum and Energy Studies, India, shashank.hades21@gmail.com
Ms. Somya Shalvi
University of Petroleum and Energy Studies, India, somyashalvi28@gmail.com
Mr. Lakshya Dutt
India, lakshya.dutt01@gmail.com

LEO SATELLITE FOR SETI BY UNIVERSITIES IN AN ECONOMICAL WAY

Abstract

The universe is quite vast and ever expanding with infinite unknown possibilities and questions lurking inside every star and behind every singularity. Among these unknown questions is the origin of life. Evolution led us to where we are right now and it is quite possible that nature led a similar chain of events on another heavenly body somewhere in this vast universe. Search for Extra-Terrestrial Intelligence (SETI) is a collective term for the scientific search of life in the universe. This can be achieved by monitoring the various signals and noises that exist in outer space for possible signs of transmissions from alien civilizations. These signals or noise transmissions are captured and sent to the ground station where various methods of pattern recognition and sampling can help to decipher the possible message. The orbit chosen is the Low Earth Orbit (LEO) due to the economical aspects of the research and the simplicity to place the satellite into orbit. The Low Earth Orbit provides a high bandwidth and low latency, though the major drawback is that it is not visible from any given point at all times. The Aim of the Paper is to explore possible methods on launching of LEO satellites for search of extra-terrestrial intelligence by universities in an economical way. The paper mainly focuses on the use of the TubeSat over the traditional CubeSat and its boons and banes. The secondary focus is on the functions to be performed by the LEO satellite for search of extra-terrestrial Intelligence which includes use of image processing and sampling of electromagnetic waves and noises. Also highlighted are the past, present and possible future research on SETI.