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Strategies for Rapid Implementation of Interstellar Missions: Precursors and Beyond (4)

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POSSIBILITY OF AN INTERSTELLAR MISSION TO GLIESE 667CC-A POTENTIALLY HABITABLE EXOPLANET

Abstract

With the fate of the Sun determined, chances are really low as to whether survivable conditions on Earth can exist after a billion years. The ongoing Kepler mission has detected a number of exoplanets which happen to lie in the habitable zone. One planet which has a high Earth Similarity Index is Gliese 667Cc or GJ 667Cc, which is located 22.4 light years away from Earth. It is essential to explore and colonize such extra solar planets in order to sustain life in general. Our current chemical propellant rockets are less powerful and is definitely not a suitable choice. However, with the advent of solar sail/ Laser sail technology, one can expect relativistic travel speeds to be achieved in a considerable amount of time. It is also necessary to plan guidance and navigation accurately as the distances involved are astronomical, and also by considering the proper motion of the star. After initial investigations about the planet's conditions by the precursor unmanned mission, manned spaceflight can also be made possible provided if we develop appropriate life support systems. This paper provides an overview of such an interstellar mission to Gliese 667 Cc which is a potentially habitable exoplanet.