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CASE STUDY OF AN INTERSTELLAR MISSION TO ALTAIR: FOUNDATIONS FOR
INTERSTELLAR TRAVEL WITH ADVANCED 21ST CENTURY TECHNOLOGY

Abstract

Le Reve d'Etoiles or the Dream of Stars has been a common dynamo for mankind since the dawn of the civilization. Since mankind has looked upon the stars, he has felt the compulsion to reach out to the cosmos. However, mostly this has remained a dream rather than a reality due to limitations in current space technology. When it comes to manned missions, unfortunately the furthest distance that we could reach was the Moon. However, with the advancements in technology, it seems that going to Mars is around the corner and that new developments will allow for a permanent settlement on the moon soon. However, the main objective of mankind is to go beyond our solar system and to reach out to stars near our solar system. This paper focuses on a case study of interstellar travel to Altair using advanced 21st century technology. Contrary to popular belief, mankind has the means to launch an interstellar mission provided that the necessary budget is provided by governments and the private sector. Altair has been chosen as it is one of the stars that can be visible to the naked eye and it is 5.3 parsecs away from our solar system. Consequently, it forms one of the vertices of Summer Triangle Asterism in the sky. In mythology Altair is known as the Pillar of Heaven. In this paper, various methods for travel to Altair is given with a case study with different velocity and acceleration levels taking relativistic effects into account. Paper will discuss thermal nuclear propulsion, fusion propulsion as well as advanced warp propulsion to showcase the differences between them in terms of travel time to Altair. These types of case studies are important as they shine the light toward the future for interstellar travel which is one of the main driving forces of mankind.