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EXPLORATION OF KUIPER BELT AND USING ITS AS A POSSIBLE OUTPOST FOR FUTURE
SPACE MISSIONS AND UTILISATION OF ITS RESOURCES FOR FURTHER PROPULSION OF
SPACECRAFTS

Abstract

Since childhood, we have been studying about the stars, planets and other bodies in space. But there are still a lot of interesting facts that we have never known. With new technologies springing up every minute we turn our heads, we get to study the universe with more accuracy, clarity, and authenticity. But beyond the mnemonics some of the most fascinating and unexplored objects lurk beyond the knowledge of textbooks in an icy region known as the Kuiper Belt. This area of our solar system has been providing astronomers with an avenue of mysteries to solve over the past few years. The Kuiper-Edgeworth Belt is an area of the outer solar system that is estimated to stretch across 20 astronomical units (AU) of space. It is similar to the asteroid belt in appearance but physical characteristics differ widely. Unlike asteroids which are composed of rock and metal, most Kuiper belt objects are composed of frozen volatiles such as methane, ammonia and water. While missions to interstellar space are going on we would definitely require a re-fuelling system which would help the rockets and spacecrafts to propel further. Besides this, private space organization SpaceX announced an initiative to develop liquid methane rocket engines and furthermore prior ammonia was likewise been utilized as rocket fuel. So, why not extract these resources from kuiper belt? Later on, this paper will propose a technique to utilise resources like ammonia and methane present in the Kuiper belt for developing a re-fuelling system which would help scientists in successful interstellar space missions. Also this paper will provide locations at which these re-fuelling systems can be set up.