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CONCEPT OF A LOW COST MOON PROBE NANOSATELLITE FOR A UNIVERSITY RESEARCH PROGRAM

Abstract

Since the dawn of time, mankind has been looking at the moon and imagining what it would be like up there. It has been a major fascination with science fiction writers since the time of Jules Verne as well as with scientists. Luckily, many missions to the Moon including manned missions have been sent to the Lunar surface and we know quite a bit of information about the Moon as a result. With the latest results of the Chandrayaan mission of the Indian space program, we are also aware that water exists on the moon and the Chang E mission of the Chinese space program has allowed a detailed mapping of various resources on the moon. While budget cuts in space programs across the world has caused a decline in robotic moon missions, there are new possibilities for a low cost moon probe using a mid sized nanosatellite. This paper discusses the possibility of using a nanosatellite with some technological improvements so that low cost analysis of the moon can be performed with this method. In fact, the concept of a moon probe can be possible even with university budgets as several universities can come together and outfit a nanosatellite with the required payload and sensors for lunar analysis. The nanosatellite probe can be used for analysis while it is orbiting the moon and then it can be crashed on the moon for further experiments. An innovative propulsion and maneuvering system is also proposed in this paper to create a low cost lunar transport process. It is hoped that this paper will set the trends for the future university level space programs and that the concept of university moon probe using nanosatellites will be a feasibility.