

A NEW APPROACH TOWARDS DEPLOYMENT OF FAR SIDE LUNAR SETI USING A TETHERED LINK TO A NEAR SIDE ANTENNA. L. V. Datta¹, U. Guven² and E. Goel³, ¹Technische Universität Berlin, Germany (lakshyavdatta@gmail.com), ²UN CSSTEAP, United States (drguven@live.com), ³University of Petroleum and Energy Studies, India (enagoel269@gmail.com).

Introduction: The search for our celestial neighbors has been gaining momentum inexorably in the field of radio-astronomy. Due to a lack of anthropogenic Radio Frequency Interferences, the far side of the moon is perhaps the most pristine location suited for radio astronomy in the near earth environment. Keeping in pace with the recent growth in interest in deployable space telescopes for detection of extra solar Earth-like planets, we suggest a feasible approach to make the SETIMOON mission a reality with the technology available today. This mission was designed in 2000, with the intention of setting up an extendable radio antenna on the far side of the side to detect targets with significantly lower magnitudes and transmitting the data back to Earth using an antenna on the near side of the moon, where communications can be directly established. The data was proposed to be transmitted between the antennae using a fiber optic “tether” / cable. Our approach builds on aspects discussed in the two approaches in the original paper, but is significantly simpler on a systems level, since it separates the two antennae in space and lands them almost simultaneously on the moon, in order to avoid structurally stressing the data line tether, as was an obvious disadvantage of the previous approaches. The idea behind the described trajectory is rooted in the principle of conservation of momentum of the system. Moreover, it is operationally more feasible and shall be lower in cost as well. The paper describes the new approach, and develops it in order to create a feasible model that can finally bring the SETIMOON mission to life and extend our reach in finally establishing contact with our extra-terrestrial neighbors.

References: [1] Maccone, Claudio (2000), *Adv. Space Res. Vol. 26, No. 2*, 359-370