

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
New Worlds - Non-Traditional Space Education and Outreach (7)

Author: Mr. Lan Chen

Print 365 Network Technology Co., Ltd, China, chenlan63@outlook.com

Ms. Yanping Bai

Shanghai Engineering Center for Microsatellites, China, byp2173@163.com

Dr. Shufan Wu

Shanghai Engineering Center for Microsatellite, China, dragon_swu@hotmail.com

THE SPACE GREETING CARDS MISSION

Abstract

High area-to-mass ratio spacecraft design, for example, inflatable re-entry vehicles, have long been considered an attractive solution for re-entry missions with the advantages of low-cost, less fuel consumption and low aerodynamic heating, etc. The proposed “Space Greeting Cards Mission” is an educational space project to explore the behaviour of high area-to-mass ratio spacecraft, in order to inspire young people in science and space. In this mission, a net of paper-made, highly-reflective greeting cards and many more separate cards will be sent into a very low Earth orbit that will then re-enter the atmosphere as a result of natural decay. Students and enthusiasts on the ground will be able to observe the “cloud of cards” in space and during their re-entry. There will also be a very low possibility that some of the cards may be found on the ground if they survive the re-entry. Data collected from this mission has scientific value as well. This paper describes the mission concept, design and deployment of the “paper spacecraft”, orbit analysis, and visibility analysis for observation, as well as the plan for educational and outreach activities.