

EDITORIAL PREFACE

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NASA's proposal for a new asteroid retrieval mission, NASA's contract with Bigelow for building an inflatable Bigelow Expandable Activity Module (BEAM) to be docked to the ISS in 2015, and the successful launch of the Mars One program are new projects discussed by the public and the space industry.

The first six months of 2013 were marked by heated debates in the US Congress about the viability of an asteroid retrieval concept in which a solar-electric propulsion spacecraft "captures" a 7 meters asteroid and "re-directs" it into a safe lunar orbit. This will permit astronauts to reach and explore the asteroid by 2025, using the Space Launch System (SLS) launcher and the Orion capsule for regular visits and exploitation missions. Asteroids may be rich in natural resources, such as iron, nickel, titanium and water, which can potentially create exciting commercial opportunities for companies such as the Shackleton Energy Company (SEC). SEC plans to extract and mine the ice on the lunar poles and use it for rocket propellants that will be stored in propellant depots. Their lunar mining base may use inflatable structures for the crew habitats similar to the BEAM module that will be tested on board the space station. Commercial space exploration and exploitation may witness "game changing" technologies and concepts for the public, for space agencies and for the space industry.

Therefore, in this issue of the IJSTMI we will have an interview with Jim Keravala one of the Founders of the the Shackleton Energy Company and we hear about their long term vision for space exploration.

Also in this issue a paper from Dr. Young will present the results of a study on investigating public acceptance and perception of public-oriented human space commercialization, and an analysis and review of mechanisms of innovation in the space and defence sector written by Prof. Szajnfalber. Architect André Caminoa proposes a new "sub-orbital" space elevator concept called a "Buoyant Advanced Building Elevator Lightweight" (BABEL) tower. Finally, in this issue we will propose a Cube satellite space education project that led to the development of the Bulgarian Orbital Research And Satellites (BOREAS) initiative, which includes students in Bulgaria, Canada and the United Arab Emirates.

The contributions of all the authors made this volume a reality. The support and recommendations from the associate editors and the editorial review board were crucial for assessing and presenting the new ideas in this volume.

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Stella Tkatchova is a Space Business Manager at Interstellar, a Belgium aerospace SME. She has the unique opportunity to work on developing new business opportunities, developing projects related to technology innovation, management, and new space applications (i.e. disaster management, telemedicine, etc.). She was awarded a Master of Science (M.Sc.) in space studies from the International Space University (ISU) in 2006, and a PhD from the Faculty of Aerospace Engineering, Industrial Engineering Group, TUDelft (The Netherlands). She started her career working on the cost-engineering drivers for METOP-A, the expected revenues from geomantic applications of the Galileo navigation system in the Cost Analysis Division of the European Space Agency (ESA), European Space and Technology Centre (ESTEC). Later on she started working on performing R&D market analysis and defining management, marketing, and commercialization strategies for the International Space Station for the ESA Columbus module, at ESA Commercial Promotion Office (CPO) ESA- ESTEC. Stella has developed a strong passion for researching commercialization of space-based technologies. As she believes that space-technology can offer to non-space companies the unique opportunity to exploit technologies that will result in the development of new markets, applications, and technologies, as industrialization of space technology will bring benefits to society in the areas of science, environment protection, disease prevention, and technology innovation.