

HUMAN EXPLORATION OF THE SOLAR SYSTEM SYMPOSIUM (A5)  
Human Exploration of Mars (2)

Author: Mr. Chrishma Singh-Derewa  
National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States,  
starhunterceo@hotmail.com

Ms. Poonampreet Kaur Josan  
University of North Dakota, United States, poonampreetkaur.josa@my.und.edu  
Mr. Srikanth Raviprasad  
University of Illinois at Urbana-Champaign, United States, srknthr2@illinois.edu  
Ms. Priyanka Srivastava  
University of Michigan, United States, sripri@umich.edu  
Ms. Maitreyee Sharma Priyadarshini  
University of Illinois at Urbana-Champaign, United States, sharmap2@illinois.edu  
Mr. Rahul Goel  
Univ of Houston, United States, rahulg@alum.mit.edu

INDIAN SPACE UNIVERSITY – AN INITIATIVE TO NURTURE “BRAHMANAUTS” FOR FUTURE  
HUMAN SPACE FLIGHT

**Abstract**

Space exploration requires a new breed of explorers. A Brahmanaut (Indian Astronaut) will be more prepared for the challenges of the future than counterpartise when trained; the establishment of an Indian Space University will provide rigorous mental and physical training to candidates. Space missions, 15-20 years into the future will involve drilling asteroids for possible energy resources, setting up fuel extraction facilities on Mars, lunar mining, etc. Pilots, mission and payload specialists require advanced physical, mental and technical training. The Indian Space University’s comprehensive curriculum and training schedule provides this. Manned deep space missions have many adverse psycho-physiological effects on human body such as bone density loss in low gravity, DNA degradation resulting from the radiation environment, reduced spatial orientation and vestibular functions, as well as isolation concerns.

Inter-disciplinary knowledge will help spacefarers understand the complex connections within the space industry. The rigorous program consists of lectures on eight courses varying from navigation and propulsion to topics on physiology and spiritual sciences. Coupled with team projects and intensive physical training patterned after Yuri Gagarians curriculum participants are prepared to meet rigors of these new mission objectives. Fast twitch muscle enhancement, bone mass stimulation, hand-eye reactions and yoga along with deprivation techniques such as controlling heart rate, shallow breathing (Ujjayi Pranayama), body muscle relaxation derived from the Vedic Surya Namaskar exercise and more. The students will also undergo intensive physical and intellectual projects as a team to help understand their fellow Brahmanauts, hone their leadership skills and increase their compatibility.

Brahmanauts unify intellectual, physical, and spiritual sciences to forge a new frontier for mankind. Thousands of years of yogic training, intellectual innovation and spiritual awakening makes their training uniquely prepared to meet the challenges of long term and long distance space exploration. He/she will be equipped with abundant knowledge about the space science, ancient traditions, as well as the unique power of critical analysis. Frequent guest talks from experts in the space industry and daily lectures by experts from NASA, ESA, CASA and others a wide range of topics will create a one of a kind international experience.

Who are Brahmanauts? How are they different from Astronauts or Cosmonauts? Why do we need a Brahmanaut? What does it take to become a Brahmanaut? We answer these questions and introduce several new ones as we embark on the next leg of humanities journey into the stars.