

**Dr. Robert D. Braun**  
**David and Andrew Lewis Associate Professor of Space Technology**  
**Daniel Guggenheim School of Aerospace Engineering**  
**Georgia Institute of Technology**



Dr. Robert D. Braun has twenty years experience performing design and analysis of planetary exploration systems as a member of the technical staff of the NASA Langley Research Center and the Georgia Institute of Technology. His research has focused on systems aspects of planetary exploration, where he has contributed to the design, development, test, and operation of several robotic space flight systems. He was a member of the Mars Pathfinder design and landing operations team from 1992 to 1997 and has been part of development and operations teams for the Mars Global Surveyor, Mars Microprobe, Mars Sample Return and Mars Surveyor 2001 projects. He has also provided independent assessment and served on NASA review boards for Mars Global Surveyor, Mars Polar Lander, Mars Odyssey, Mars Exploration Rover, Phoenix Mars Scout, Genesis, Mars Science Laboratory, and the Orion Crew Exploration Vehicle.

Dr. Braun joined the Georgia Institute of Technology as the David and Andrew Lewis Associate Professor of Space Technology in Oct 2003. He presently leads an active research and educational program focused on the design of advanced flight systems and technologies for planetary exploration. Recent research projects include entry, descent and landing concepts for human Mars exploration, robotic platforms capable of powered flight in planetary atmospheres, entry system architectural concepts for human return from the Moon, design and analyses of inflatable aerodynamic decelerators, pinpoint landing technology assessment for planetary exploration systems, and engineering strategies for asteroid deflection. Dr. Braun is also responsible for undergraduate and graduate level instruction in the areas of space systems design, astrodynamics and planetary entry.

Dr. Braun has performed extensive systems analysis and technology development of advanced planetary aerial platforms and entry system technologies. From 1998-2000, he managed the development of the Mars Sample Return Earth Entry Vehicle, an innovative, risk-based entry system design. From 2001-2003, he served as the Mission Architect and Atmospheric Flight System Manager for the Aerial Regional-scale Environmental Survey (ARES) Mars Scout mission, a proposed 2008 scientific survey utilizing a Mars airplane. In this capacity, he was responsible for balancing science, implementation risk and cost across the mission architecture and managing Mars airplane development, including the successful ground-based and high-altitude flight test program performed in Mars-relevant conditions. He has also been an active participant in the development of advanced methods for multidisciplinary design and optimization. As a member of the Aircraft Design Group at Stanford University from 1991-1996, Dr. Braun developed the Collaborative Optimization architecture. This architecture was shown to have significant computational and operational benefits in the optimization of large, distributed design problems. Since completing his initial research in this area, several university and industry groups have applied this technique in the solution of diverse set of engineering design challenges. From 2000-2001, Dr. Braun served as Chief Engineer of NASA's Intelligent Synthesis Environment Program, where he led and integrated the Agency's advanced engineering environment technology development activities.

Dr. Braun received a B.S. in Aerospace Engineering from Penn State in 1987, M.S. in Astronautics from the George Washington University in 1989, and Ph.D. in Aeronautics and Astronautics from Stanford University in 1996. He has received the 1999 AIAA Lawrence Sperry Award, two NASA Exceptional Achievement Medals, two NASA Inventions and Contributions Team Awards, and seven NASA Group Achievement Awards. He is an AIAA Fellow and the principle author or co-author of over 150 technical publications in the fields of atmospheric flight dynamics, planetary exploration, multidisciplinary design optimization, and systems engineering. He is a member of the Planetary Society and the American Astronautical Society. From 2003 to 2006, Dr. Braun served as an AIAA Distinguished Lecturer giving 12 lectures on planetary exploration across the country. From 2004 to 2006, he served on the NASA Planetary Protection Advisory Council, AIAA MDO Technical Committee, and co-chaired roadmapping efforts focused on development of an integrated robotic and human exploration development plan. In 2006, Dr. Braun began service on the JPL Advisory Council, the Mars Program Systems Engineering Team, and the NASA Chief Engineer's Management Operations Working Group. From 2006 to 2008 he served as a member of the AIAA Space Systems Technical Committee. In 2008, he began service on the Advisory Council of the Aerospace Engineering Department at the Penn State and the Space Systems Department of the Charles Stark Draper Laboratory.