

# **Biographies for Chairs and Panelists of Session 5 – Technical Value of ARM**

## **Session Chair Biographies**

### **Mr. Dan Mazanek**

Daniel D. Mazanek is a Senior Space Systems Engineer at NASA's Langley Research Center (LaRC) with over 24 years of experience in space mission and architecture formulation, conceptual design and sizing of human and robotic spacecraft, and the research and development of supporting engineering analytical software tools and simulation environments. He graduated with a B.S. degree in Aerospace Engineering from Virginia Tech in 1989. Mr. Mazanek has led multiple study efforts to investigate sending humans beyond low-Earth orbit, including the development of a Near-Earth Object (NEO) crewed mission concept in 2005 and as the study lead for the Descent-Assisted Split-Habitat (DASH) lunar lander design. He was also the Comet/Asteroid Protection System (CAPS) Study lead under NASA's Revolutionary Aerospace Systems Concepts (RASC) program in 2001-2002 and holds a patent for the invention of the Hybrid Propellant Module (HPM), developed as part of a future modular, reusable in-space transportation infrastructure for human missions. He is a technical expert and a leader in the field of human and robotic missions to small planetary bodies and has experience in developing human mission architectures and destination operations for near-Earth asteroids and the Martian moons, Phobos and Deimos. Mr. Mazanek is the NEO mission lead analyst at LaRC. He is currently leading Agency alternate approach analysis efforts for the Asteroid Redirect Mission concept and serves as the Near-Earth Asteroid Destination Lead for NASA's Human Spaceflight Architecture Team. Mr. Mazanek currently resides in Williamsburg, Virginia with his wife Deborah, son Kyle, and daughters Sarah and Lauren.

### **Dr. Faith Vilas**

Dr. Faith Vilas has over 30 years' experience in planetary sciences and astronomy, completing her tenure as the Director of the Multiple Mirror Telescope Observatory in Arizona before transitioning to become the Atsa Suborbital Observatory Project Scientist at the Planetary Science Institute. She spent 20 years working for NASA conducting ground-based and space-based observational research in planetary sciences and of man-made debris in low Earth and geosynchronous orbits. She served as Discovery Program Scientist at NASA Headquarters in 2001-2002. Faith completed a Bachelor of Arts in Astronomy at Wellesley College in 1973, and a Master of Science in Earth and Planetary Sciences at MIT in 1975. Before receiving her Ph.D. in Planetary Sciences from the University of Arizona in 1984, Faith worked for Lockheed Electronics analyzing orbital X-ray fluorescence data of the Moon from Apollos 15 and 16; and for the Cerro Tololo Inter-American Observatory in Chile as senior research assistant. She is one of the discoverers of the rings of Neptune, and she designed the coronagraph used to produce the first-ever image of a circumstellar disk around another star (Beta Pictoris) in 1984. Faith has been part of the 1996 DOD Midcourse Space Experiment Space Surveillance P.I. Team, and the Hayabusa (MUSES C) joint Japanese-U.S. science team for the 2005 mission to asteroid 25143 Itokawa. She is currently a Participating Scientist on NASA's Mercury MESSENGER mission. In 1989, she was honored by the International Astronomical Union with the designation of Minor Planet 3507 Vilas.

## **Panelist Biographies**

### **Mr. Gentry Lee**

Gentry Lee is Chief Engineer for the Solar System Exploration Directorate at the Jet Propulsion Laboratory (JPL) in Pasadena, California. In that position Mr. Lee is responsible for the engineering integrity of all the robotic planetary missions managed by JPL for NASA. His major recent work includes the engineering oversight of the fantastically successful and popular Curiosity rover mission to Mars in August 2012, the Dawn mission to the asteroids Vesta and Ceres, the Juno mission to Jupiter, and the GRAIL mission to the Moon. Previously, Mr. Lee provided oversight for the Phoenix and twin MER rover missions to Mars, as well as the Deep Impact and Stardust missions.

Mr. Lee received the NASA Medal for Exceptional Scientific Achievement in 1976 and the Distinguished Service Medal (NASA's highest award) in 2005. In October 2006 he received the Harold Masursky Award from the American Astronomical Society's Division of Planetary Sciences for his contributions to planetary exploration. In 2013 Gentry Lee was awarded the prestigious Simon Ramo Medal by the IEEE for "career excellence in engineering."

### **Mr. Doug Cooke**

Douglas R. Cooke is an aerospace consultant for Cooke Concepts and Solutions. In 2011, he retired from NASA after a 38-year career at Johnson Space Center and NASA Headquarters. He advises on company strategies, program management, proposal development, program strategies, and technical matters. His experience at NASA was in engineering and senior level program management positions in the Space Shuttle, ISS, and Human Exploration Programs. During his career, Mr. Cooke has held major leadership responsibilities and had achievements during critical periods of each of these human spaceflight programs. In Mr. Cooke's last three years at NASA, he served as the Associate Administrator of the Exploration Systems Mission Directorate at NASA Headquarters. In his last year at NASA, he led efforts within NASA to adopt the current vehicle designs for the Orion and Space Launch System. As Associate Administrator, Mr. Cooke was also responsible for the Lunar Reconnaissance Orbiter, Lunar Crater Observation and Sensing Satellite, Commercial Cargo and Crew, Human Research and Exploration Technology Programs. Prior to this he was deputy of the same directorate, since it was formed in 2004. He has been in leadership positions for most of NASA's advanced studies in human space exploration since 1989, including the White House studies "The 90 Day Study" in 1989 and the "Synthesis Group Report, America at the Threshold" in 1990. He also had several high priority detail assignments to other NASA centers and NASA Headquarters. Mr. Cooke was NASA technical advisor to the Columbia Accident Investigation Board in 2003. Mr. Cooke has also been a member of the International Space Station (ISS) Advisory Committee.

Mr. Cooke has received the Presidential Distinguished Rank Award, Presidential Meritorious Rank Award, NASA Distinguished Service Medal, three NASA Exceptional Achievement Medals, NASA Outstanding Leadership Medal, NASA Exceptional Service Medal, two JSC Certificates of Commendation, a number of NASA Group Achievement Awards, and the Space Transportation Association Lifetime Achievement Award. Most recently he was awarded the Texas A&M Outstanding Aerospace Engineer Alumni Award. Mr. Cooke received a B.S. in aerospace engineering from Texas A&M University.

## **Dr. Tom Jones**

Thomas D. Jones, PhD, is a scientist, author, pilot, and former NASA astronaut. He holds a doctorate in planetary sciences, and in more than eleven years with NASA, flew on four space shuttle missions to Earth orbit. On his last flight, Dr. Jones led three spacewalks to install the centerpiece of the International Space Station, the American *Destiny* laboratory. He has spent fifty-three days working and living in space.

After graduation from the Air Force Academy, Tom piloted B-52D strategic bombers, studied asteroids for NASA, engineered intelligence-gathering systems for the CIA, and as a NASA contractor, developed advanced mission concepts to explore the solar system.

Dr. Jones' awards include the NASA Distinguished Service Medal, four NASA Space Flight Medals, the NASA Exceptional Service award, the NASA Outstanding Leadership Medal, the NASA Exceptional Public Service award, Phi Beta Kappa, and the Air Force Commendation Medal. King's College of Wilkes-Barre, Penn. awarded him an honorary doctorate in 2007. The Main Belt asteroid 1082 TomJones is named in his honor.

Tom served on the NASA Advisory Council and is a board member of the Association of Space Explorers and the Astronauts Memorial Foundation. As a senior research scientist at the Florida Institute for Human and Machine Cognition, he focuses on the future direction of human space exploration, uses of asteroid and space resources, and planetary defense. Jones was a member of the 2012 study team proposing an asteroid capture and retrieval mission to NASA. He appears frequently on-air with expert commentary on science and space flight. [www.AstronautTomJones.com](http://www.AstronautTomJones.com)

## **Dr. Jim Bell**

Dr. Jim Bell is currently a Professor in the School of Earth and Space Exploration at Arizona State University in Tempe, Arizona and is an Adjunct Professor in the Department of Astronomy at Cornell University in Ithaca, New York. He received his B.S. in Planetary Science and Aeronautics from Caltech in 1987 and his M.S. and Ph.D. in Geology & Geophysics from the University of Hawaii in 1992. Jim spent 3 years as a National Research Council postdoctoral research fellow at NASA's Ames Research Center from 1992 through 1995. Jim's research group primarily focuses on the geology, geochemistry, and mineralogy of planets, moons, asteroids, and comets using data obtained from telescopes and spacecraft missions.

Jim is an active planetary scientist and has been heavily involved in many NASA robotic space exploration missions, including the Near Earth Asteroid Rendezvous (NEAR), Mars Pathfinder, Comet Nucleus Tour, Mars Exploration Rovers Spirit and Opportunity, Mars Odyssey Orbiter, Mars Reconnaissance Orbiter, Lunar Reconnaissance Orbiter, and the Mars Science Laboratory Curiosity rover mission. Jim is the lead scientist in charge of the Panoramic camera (Pancam) color, stereoscopic imaging system on the Spirit and Opportunity rovers, and is the Deputy P.I. of the Mastcam camera system on the Curiosity rover. As a professional scientist, Jim has published 35 first-authored and more than 160 co-authored research papers in peer reviewed scientific journals, has authored or co-authored more than 525 short abstracts and scientific conference presentations, and has co-edited or edited two scientific books for Cambridge University Press (one on the NEAR mission: "Asteroid Rendezvous"; the other on Mars: "The Martian Surface: Composition, Mineralogy, and Physical Properties"). He has been an active user of the Hubble Space Telescope, and of a number of ground based telescopes, including several at Mauna Kea Observatory in Hawaii.

Jim is also an extremely active and prolific public communicator of science and space exploration, and is President of The Planetary Society. He is a frequent contributor to popular astronomy and science magazines like *Sky & Telescope*, *Astronomy*, and *Scientific American*, and to radio shows and internet blogs about astronomy and space. He has appeared on television on the NBC "Today" show, on CNN's "This American Morning," on the PBS "Newshour," and on the Discovery, National Geographic, Wall St. Journal, and History Channels. He has also written many photography-oriented books that showcase some of the most spectacular images acquired during the space program: *Postcards from Mars* (Dutton/Penguin, 2006), *Mars 3-D* (Sterling, 2008), *Moon 3-D* (Sterling, 2009), and *The Space Book* (Sterling, 2013). Jim has a main belt asteroid named after him (8146 Jimbell), and was the recipient of the 2011 Carl Sagan Medal from the American Astronomical Society, for excellence in public communication in planetary sciences.