

# *Battel Engineering*

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**Steven Battel** has 32 years experience as an engineer and manager in multiple aerospace and scientific disciplines.

Since 1990 he has been President of Battel Engineering providing engineering, development and review services to NASA, DOD, University, and Industrial clients. Areas of specialization include program management, systems engineering, precision electronics design, scientific instrument design, spacecraft avionics, power systems, high voltage systems, technology development and technology assessment.

Recently delivered hardware development projects include flight high voltage power, low voltage power and other electronic systems for the HST-COS instrument and Mars-Phoenix TEGA-MS sensor, the Mars Science Laboratory SAM Instrument, CRaTER detector electronics and AIM-CIP camera. Current hardware projects include electronic systems for the LADEE and MAVEN Projects plus prototype high voltage systems for space tether and x-ray spectroscopy applications. In addition to hardware projects, Mr. Battel participates in numerous NASA review and advisory activities. He was a member of the HST External Readiness Review Team for SM-2, SM3A, SM3B and SM4, the AXAF/Chandra Independent Assessment Team, the TDRS-H/I/J Independent Review Team, the Mars Polar Lander Failure Review Board and JPL Genesis Failure Review Board.

Mr. Battel is a member of the NESC Power/Avionics SPRT and served as a Red Team or IRT member for the GRACE, HESSI, MAP, CHIPS, AQUA, Contour, Cassini, Dawn, GLAST, STEREO, New Horizons, SIRTf, MESSENGER, Deep Impact, CloudSat, OCO, Dawn and Mars Odyssey missions. He is a current board member on similar mission-level NASA Independent Review Team (IRT), Standing Review Board and Technical Support activities for TDRS K/L, LWS-RBSP, Navigator/TPF, SIM, Aquarius, Solar Dynamics Observatory, JUNO, SMAP, MMS, MSL-RAD and MSL-Chemin.

Outside of NASA, Mr. Battel has participated or currently participates in several advisory activities. He is a former member of the HNS-SPACEWAY technical review board and the NSO Solar Observatory Council (SOC). He is currently a member of the National Research Council Space Studies Board and the Committee for Earth Studies while also serving on two National Academy Committees: "The Role and Scope of Mission-Enabling Activities in NASA's Space and Earth Science Missions" and the "Astro 2010 Decadal Survey for Astronomy and Astrophysics". Previous National Academy assignments include the "Committee ON Assessment of Options for Extending the Life of the Hubble Space Telescope" and the "NASA Astrophysics Performance Assessment".

Mr. Battel is a graduate of the University of Michigan. Prior to becoming President of Battel Engineering, he worked as an engineer, researcher and manager at the University of Michigan, Lockheed Palo Alto Research Laboratory, UC Berkeley, and the University of Arizona Lunar and Planetary Laboratory. At UC Berkeley, Mr. Battel was Project Manager for the Extreme Ultraviolet Explorer (EUVE) Project. He is the recipient of several awards including the NASA Public Service Medal and thirty NASA/GSFC/JPL individual and group achievement awards. In 2008 he was Mr. Battel was selected for life membership as a National Associate of the National Research Council of the National Academies. He is the author or a co-author on twenty-two engineering and scientific papers and is a member of several engineering and scientific societies including Tau Beta Pi, Eta Kappa Nu, AIAA, IEEE, ASME, SPIE, OSA, AIP, SAE, INCOSE, NYAS, SHOT and the AAAS.