



MIT MUSEUM PRESS RELEASE

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The MIT Museum Presents:

Six Minutes of Terror: The Mars Exploration Rovers Entry, Descent, and Landing

Dr. Juan R. Cruz
Exploration Systems Engineering Branch
NASA Langley Research Center

Thursday, January 19, 2006 at 7:30 pm, MIT Museum

In 2004 NASA placed two rovers on the surface of Mars. Before their mission could start, the rovers had to survive the Entry, Descent, and Landing (EDL) sequence. From an approach speed of 5.4 km/s the EDL system had to bring the rovers to a standstill on the surface of Mars all without human intervention, but with the knowledge that two thirds of all previous missions to Mars had crashed. Using photographs, videos, and flight data this talk describes the design, development, and operation of the Mars Exploration Rovers EDL system.

Juan R. Cruz

Dr. Cruz is a senior aerospace engineer in the Exploration Systems Engineering Branch at the NASA Langley Research Center in Hampton, Virginia. His responsibilities are focused on research and development of entry, descent, and landing (EDL) systems for robotic and human exploration missions. He was a member of the highly successful Mars Exploration Rover (MER) project that placed two rovers on the surface of Mars in 2004. His contributions to the MER project were centered on the design and qualification of the supersonic parachute.

Dr. Cruz is also a member of the Phoenix (Mars 2007), Mars Science Laboratory (Mars 2009), and Crew Exploration Vehicle EDL teams. He has undertaken research on advanced missions to Mars, including robotic airplanes, as well as having been a technical reviewer for the Genesis, Huygens, and Stardust missions. Prior to his involvement with exploration programs he conducted research on high-altitude unmanned aircraft.

Dr. Cruz holds a Ph.D. from Virginia Tech, and an S.B. from MIT, both in aerospace engineering. During his years at MIT he was involved with the Monarch and Daedalus human powered airplane teams.

Photos Available

NASA photos Attached: Credit: NASA/JPL

High resolution photos available in the press section of

http://www.nasa.gov/vision/universe/solarsystem/mer_main.html