

**R&D Activities at NASA Langley in Support of the Space Shuttle,
the Mars Science Laboratory and Atmospheric Science**

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4 pm, Wednesday, October 17
Carlson Auditorium (Room 1125)
Chester F. Carlson Center for Imaging Science (Building 76)
Rochester Institute of Technology Campus
54 Lomb Memorial Drive, Rochester, New York

Abstract

The Remote Sensing Flight Systems Branch (RSFSB) at NASA's Langley Research Center conducts development and research in advanced electro-optical and optical instrument systems leading to state-of-the-art instrument development for both remote sensing and in-situ measurements. The branch supports a concept-to-flight capability, provides conceptual analysis capability in support of advanced electro-optical instruments, develops breadboard and prototype systems to validate conceptual instrument designs, executes instrument field campaigns, and manages space-flight instrument development projects for the Agency.

The branch conducts research and development of electro-optical technologies for remote sensing applications including: atmospheric science; thermography; lunar science; lunar and Martian entry, descent and landing; thermal protection system instrumentation, and acoustic leak detection in space habitats. The branch's areas of expertise include: fundamental physics leading to innovative and one-of-a-kind imaging Fourier transform spectrometers, infrared radiometers, camera systems, multi-wavelength sensitive focal plane arrays, optical system design, data analysis and reduction, and management of large, complex space-flight instrument development projects.

This talk will provide a brief overview of the branch's recent remote sensing projects in thermography-based Orbiter inspection, entry, descent, and landing instrumentation for the Mars Science Laboratory (MSL) entry vehicle, and processing of interferograms from the Geosynchronous Imaging Fourier Transform Spectrometer (GIFTS) engineering unit.

Biography

Dr. Gazarik is the Branch Chief of the Remote Sensing Flight Systems Branch (RSFSB) at the NASA Langley Research Center (LaRC) in Hampton, Virginia. Prior to coming to NASA, Dr. Gazarik held positions at MIT Lincoln Laboratory, Texas Instruments, Aware, Inc., and Xybion Inc.

Dr. Gazarik served as the Project Manager for the Mars Science Laboratory (MSL) Entry, Descent, and Landing Instrumentation (MEDLI) during the project's formulation and early design phases. He is also the Principal Investigator and Development Manager for the Space Shuttle Extravehicular (EVA) Infrared (IR) Camera Project. The EVA IR Camera is the only system available to the Shuttle's flight crew that can detect subsurface damage in the Orbiter's wing-leading edge. He also serves as the Program Manager and lead Systems Engineer for the National Polar-orbiting Operational Environmental Satellite System (NPOESS) Airborne Sounder Testbed-Interferometer (NAOST-I).

Dr. Gazarik received his Ph.D. and M.S. in Electrical Engineering from the Georgia Institute of Technology in 1997 and 1989 respectively, and his B.S. in Electrical Engineering from the University of Pittsburgh in 1987..

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