



WILLIAM T. PECORA AWARD

Darrel L. Williams

For outstanding contributions toward understanding terrestrial ecosystems by means of Landsat remote sensing

Dr. Darrel L. Williams, Chief Scientist, Global Science and Technology (GST), Inc., has dedicated his career to understanding the Earth by means of remote sensing. Using these advanced technologies, Dr. Williams has conducted research to monitor and assess the health of terrestrial ecosystems. Since the 1970's at the Pennsylvania State University School of Forestry, where he wrote one of the first Master's Thesis based on digital analysis of ERTS 1 (Landsat 1), his contributions to the science and remote-sensing community embody the substance and spirit of rigorous science and devotion to community leadership.

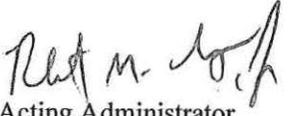
Dr. Williams retired from NASA in 2010, following a distinguished 35-year career primarily focused on the Landsat program. Throughout his NASA career, Dr. Williams pursued scientific research and took on increasing scientific management responsibilities. In 1978, he became the Assistant Project Scientist for Landsats 4 and 5. In this role, he led a team of scientists in quantifying the improvement that could be expected in transitioning from the Multispectral Scanner System (MSS) instrument to the better spectral, spatial, and radiometric resolution of the Thematic Mapper (TM) instrument. In 1992, as Landsat returned to government management from EOSAT, Dr. Williams was appointed the Landsat Project Scientist. He served in this role until his retirement. As Landsat Project Scientist, Dr. Williams was the catalyst behind many new innovations for the Landsat 7 mission, reflecting its emerging critical role in NASA Earth Systems Science and Mission to Planet Earth. For example, he advocated for placing Landsat 7 and EOS Terra in 705 km orbits spaced ~30 minutes apart, thereby facilitating novel research that makes use of multi-resolution same-day coverage by instruments on both satellites.

In 1995, Dr. Williams learned that EOSAT, the commercial custodians of Landsat 5, had not been conducting routine orbit adjustment burns for fear of damaging the 11-year old satellite. This was causing a serious degradation in the data and would soon make it useless because of inadequate solar illumination. Williams intervened, instructing EOSAT to conduct adjustment maneuvers immediately, and lined up the NASA engineering support needed to perform the maneuvers. As a result, Landsat 5 went on to function another 17 years, acquire an additional 1 million images, and provide critical 8-day repeat coverage working in concert with Landsat 7. Under his guidance, the Landsat Project Science Office implemented significant benchmarks to improve Landsat 7 image in both quantity and quality. These included (1) under-flying Landsat 5 with Landsat 7, for cross-calibration between the two satellites; (2) developing an automated image assessment system (IAS) to routinely evaluate image quality; and (3) implementation of consistent calibration across the 40-plus year Landsat archive of imagery. Dr. Williams also played an instrumental role in the development of the Landsat 7 long-term acquisition plan (LTAP) to insure that a robust, global, seasonal archive was acquired and worked closely with several Earth science focus groups to acquire unique Landsat data sets to support their needs. Two significant examples include a global archive of coral reefs, and the acquisition of Landsat imagery of Antarctica leading to the highly acclaimed Landsat Image Mosaic of Antarctica.

Currently, as Chief Scientist at GST, he has explored innovative approaches to follow-on Landsat missions and continues to support completion of the soon-to-be-published Landsat Legacy study, more than a decade-long effort to compile and document the definitive history of the Landsat program.

Dr. Williams's career has been dedicated to development and advancement of digital remote sensing and the Landsat program in particular, as envisioned by William Pecora and Secretary Udall a half-century ago. In stature and achievements, he lives in the true spirit of the Pecora award and deserves the recognition that this award honors.


Secretary
Department of the Interior


Acting Administrator
National Aeronautics and
Space Administration