



WILLIAM T. PECORA AWARD

Ozone Monitoring Instrument (OMI) International Team

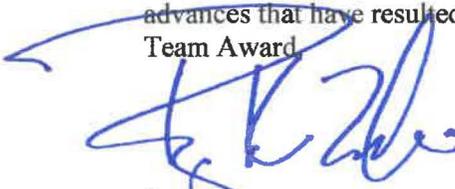
For sustained team innovation and international collaboration to produce daily global satellite data that revolutionized air quality, stratospheric chemistry, and climate research

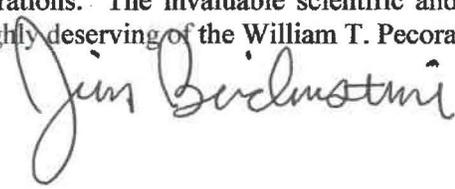
For over 15 years, the Ozone Monitoring Instrument (OMI) international team (Team) has developed novel uses of satellite data and innovated advances in atmospheric constituent retrieval algorithms that have been groundbreaking for air pollution, stratospheric chemistry, and climate research. The OMI data and products are used as a gold standard for solar spectral irradiance variability, which is a testament to the Team's remarkable work on calibration. This has allowed OMI data use in a variety of applications that include trends and emissions of surface air pollutants to human health studies and hazards monitoring. Its work on the long-term data record of total ozone column, begun in 1979 with the Nimbus-7 Total Ozone Mapping Spectrometer, has been crucial for monitoring the health of the stratospheric ozone layer, including the depth and size of the Antarctic "Ozone Hole." Together with the Microwave Limb Sounder, the OMI data provide the understanding necessary for the development of models that predict that the Antarctic Ozone Hole will recover in the latter half of this century.

One of OMI's signature achievements has been the global mapping of nitrogen dioxide (NO₂) and sulfur dioxide (SO₂) that shed new light on the geography and trends of nitrogen oxides (NO_x) and sulfur oxides (SO_x) emissions. The OMI data are increasingly used by the human health and air quality communities to estimate emissions exposure. Over the past decade, OMI data provided evidence of the successful control of NO_x and SO_x emissions in the United States, the emission turnover in China in response to measures taken to tackle extreme air pollution, and the rapid worsening of Indian air pollution.

The Team works closely with stakeholders to develop novel, high impact applications of OMI data for hazards monitoring. The OMI is the first satellite instrument to be used for daily monitoring of volcanic emissions. These studies have been used to evaluate the impacts of volcanic eruptions on climate and aviation and the production of consistent, long-term records of volcanic emissions observed from space. The success of this work hinges largely on the timely delivery of consistent data products from a well-characterized and calibrated instrument and the dedicated and meticulous work of the Team. The OMI inventory of volcanic SO₂ emissions includes degassing volcanoes, many of which were not included in previous inventories. The OMI's aerosol index measurements are used by the Volcanic Ash Advisory Centers by aviation control in case of a volcanic eruption, as well as in air quality models.

The Team is a stellar example of international collaboration in observing atmospheric composition from space and serves as a model for international cooperation in satellite operations. The invaluable scientific and societal advances that have resulted from this mission make this Team highly deserving of the William T. Pecora Team Award.


Secretary
Department of the Interior


Administrator
National Aeronautics and
Space Administration