

Title: Hyperspectral Remote Sensing of Air Pollution from Geo with GEMS and TEMPO

Abstract:

The Geostationary Environmental Monitoring System (GEMS) and Tropospheric Emissions: Monitoring of Pollution (TEMPO) instruments will provide a new capability for the understanding and forecasting of air quality and pollution. Ball Aerospace is the developer of these UV/Vis Hyperspectral sensors. The GEMS and TEMPO instruments use well-proven remote sensing techniques and take advantage of a geostationary orbit to take hourly measurements of the same geographical area. The high spatial and temporal resolution of these instruments will allow for measurements of the complex diurnal cycle of pollution driven by the combination of photochemistry, chemical composition and the dynamic nature of the atmosphere.

The GEMS instrument was built for the Korea Aerospace Research Institute (KARI) and their customer the National Institute of Environmental Research (NIER). The TEMPO instrument was built for NASA under the Earth Venture Instrument EVI Program. NASA Langley Research Center (LaRC) is the managing center and the Principle Investigator (PI) is Kelly Chance of the Smithsonian Astrophysical Observatory (SAO).