

**A 27-Year Composite Dataset of Global UV Effective Reflectivity From the TOMS and SBUV(/2) Satellite Instruments**

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The series of TOMS and SBUV(/2) satellite instruments provides a 27-year continuous record of direct observations of the Earth's albedo or "UV effective reflectivity" across the globe. A total of eight instrument datasets have been recently re-processed with the version 8 total ozone retrieval algorithm developed at NASA's Goddard Space Flight Center, including Nimbus 7 Total Ozone Mapping Spectrometer (TOMS, 1978-1993), Nimbus 7 Solar Backscatter UltraViolet (SBUV, 1978-1990), NOAA 9 SBUV/2 (1985-98), NOAA 11 SBUV/2 (1988-2001), NOAA 14 SBUV/2 (1995-2004), Earth Probe TOMS (1996-2005), NOAA 16 SBUV/2 (2000-2005) and NOAA 17 SBUV/2 (2004-2005). Additional datasets in preparation include Nimbus-4 Backscatter Ultraviolet (BUV, 1970-75), the European ERS-2 Global Ozone Monitoring Experiment (1995-present), ADEOS TOMS (1997), NOAA 18 SBUV/2 (2005-present), and Aura Ozone Monitoring Instrument (OMI, 2004-present), as well as continuing measurements by the NOAA 16 and NOAA 17 SBUV/2 instruments. Long-term calibration of TOMS and SBUV(/2) Lambertian Effective Reflectivity (LER) measurements in the UV-A region (331 nm) is maintained to approximately +/-1%. While other TOMS and SBUV(/2) data products are somewhat sensitive to the degradation of the instruments' diffuser plates, observations of absolute reflectivity are routinely validated by actual geophysical on-orbit calibration to locations of high (polar ice cover) and low (clear-sky open ocean) reflectivity. This frequent absolute calibration provides a continuous, stable record of global effective reflectivity over the last 27 years. This dataset provides insight into the issue of long-term changes in the effective albedo of the Earth (i.e., "global dimming") and climate feedback mechanisms (i.e., "global warming").