

## Results from the 2003 North American Interagency Intercomparison of Ultraviolet Spectroradiometers and Filter Radiometers

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The fifth Interagency Intercomparison of Ultraviolet Monitoring Spectroradiometers including Filter Radiometers was held June 13 to 21, 2003 at the Table Mountain Test Facility, Boulder, Colorado. The main purpose of the Intercomparison was to assess the ability of spectroradiometers to accurately measure solar ultraviolet irradiance and to compare the results between different instrument types from several research and monitoring organizations. This Intercomparison was coordinated by the Central UV Calibration Facility (CUCF) of the Air Resources Laboratory of NOAA, and included participants from the National Ultraviolet Monitoring Center (NUVMC) representing the Environmental Protection Agency's (EPA) UV Monitoring Program, the National Institute of Water and Atmospheric Research of New Zealand (NIWA), the Climate Monitoring and Diagnostics Laboratory (CMDL) of NOAA, the Institute of Meteorology and Climatology (IMUK) at the University of Hanover, Germany, the National Science Foundation's (NSF) UV Polar Program represented by Biospherical Instruments (BSI), the Smithsonian Environmental Research Center (SERC), the Atmospheric Sciences Research Center (ASRC) at the State University of New York (SUNY), and the National Resource Ecology Laboratory (NREL) representing the USDA UV Monitoring Program. The UV measuring instruments included five scanning spectroradiometers, one spectrograph, and six multi-filter radiometers. Synchronized spectral scans of the solar irradiance were performed over June 16 – 21 starting at every half hour from sunrise to sunset. The spectral responsivities were determined for each instrument using the participants' calibration procedures and again using the CUCF field calibrator with three CUCF standard lamps. Figure 1 presents data from six instruments on 1 day at SZA = 30.6. The solar irradiance from the scanning spectroradiometers and the spectrographs were convolved with the filter functions of the filter radiometers and compared with the solar irradiance measured with the multi-filter radiometers as a function of filter wavelength and solar zenith angle. Other products measured during the intercomparison included total ozone and erythema.

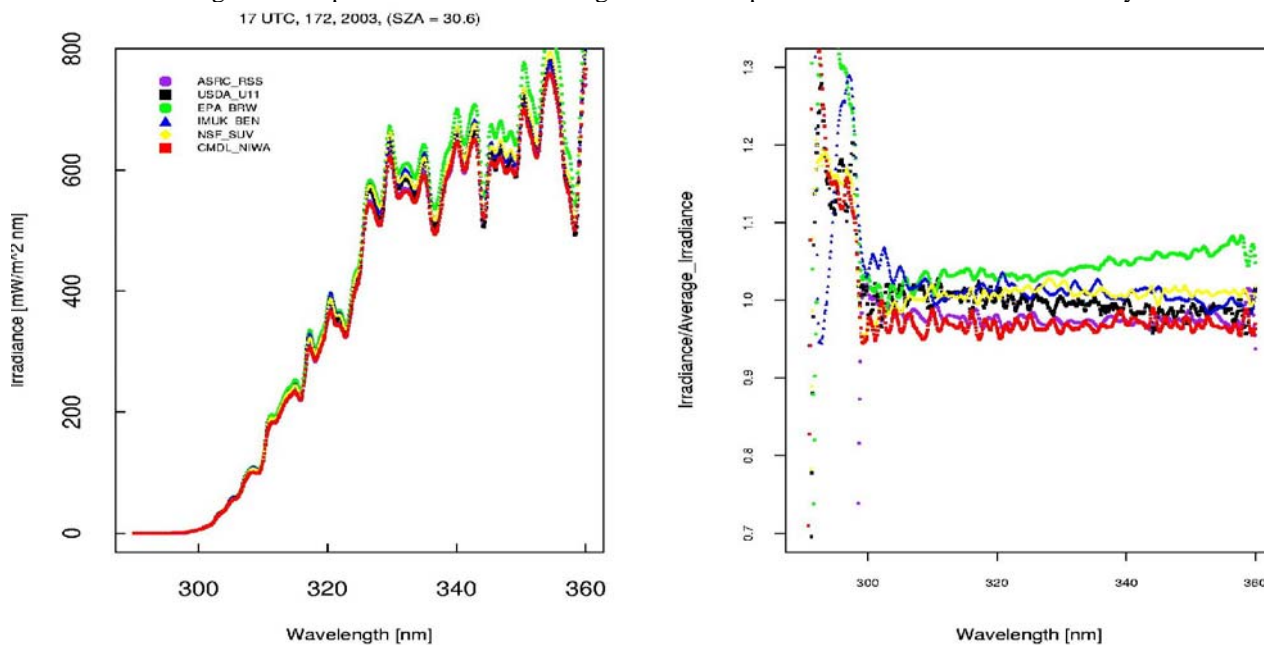


Figure 1. UV solar irradiance as a function of wavelength at 1700 [UT] for the six participating UV solar spectroradiometers.