3.2.3. AEROSOL OPTICAL DEPTH REMOTE SENSING

Aerosol optical depth measurements with the FWNIP continued at the CMDL baseline stations at BRW, MLO, SMO, and SPO. The Physikalish-Meteorologisches Observatorium Davos (PMOD) tracking sunphotometer continues to collect data in the Mauna Loa dome, as it has for the past 17 years. In addition a new precision filter radiometer (PFR) was installed in the MLO tracking dome at the end of 1999. This PFR has four channels (367.6, 412.0, 501.2, and 862.4 nm) and is the next generation tracking sunphotometer from PMOD in Switzerland. A small group of handheld instruments is still used for special projects, and instrument calibrations have been maintained at MLO. These handheld instruments were used in the Aerosol Characterization Experiment (ACE-I) and ACE-II field programs, as well as in the arctic and antarctic.

A group of multifilter rotating shadowband radiometers (MFRSR) were deployed at BAO, Boulder, Bermuda, and Kwajalein. These MFRSRs were installed at Bermuda (February 1996), Kwajalein (April 1996), Boulder Atmospheric Observatory (November 1996), and Boulder (July 1999) in conjunction with the BSRN program. The main goal of this program is to obtain a spectral optical-depth time series and to maintain calibrations using Langley analysis. Data are currently downloaded from the sites automatically and archived on the STAR computer.

A four-channel (368, 412, 500, and 865 nm) tracking sunphotometer (SPO1-A) manufactured by Carter-Scott Design was purchased for operation at BRW during the northern summer and at SPO during the austral summer. This instrument travels from pole to pole every year and is installed temporarily in the MLO tracking dome after every move for comparison with the MLO optical depth instruments, particularly the PFR because of the similar wavelengths.