

## **CMDL Baseline Observatory Facilities and Future Plans: A View from Spring 2003**

R.C. Schnell and A.D. Clarke

NOAA Climate Monitoring and Diagnostics Laboratory, 325 Broadway, Boulder, CO 80305;  
303-497-6733, Fax: 303-497-6290, E-mail: Russell.C.Schnell@noaa.gov

***Barrow (BRW), Alaska:*** The Barrow station has experienced such strong growth in research programs over the past 3 years that there is little space for new activities. Funding has just been received to complete architectural and engineering drawings for a new main observatory building to be located east of the two-bay heated garage constructed in 2001. The new main observatory building will be four times as large as the present facility and will be connected to the garage with a covered walkway. Funds appropriated to construct two new CMDL staff houses in Barrow were taken out of the FY2003 NOAA budget, and it is not known when they will be reinstated. The National Environmental Satellite, Data, and Information Service (NESDIS) satellite downlink constructed in 2001 is functioning well, and a second 13-m antenna is being considered for installation 200 m north of the observatory in 2004 or 2005.

***Mauna Loa (MLO), Hawaii:*** MLO has added a number of new research programs this past year, the U.S. Environmental Protection Agency (EPA) continuous atmospheric mercury measurements being the largest in terms of equipment and staff requirements. The top mile of the Mauna Loa road was paved with a smooth coat of asphalt. Funds are being solicited to repave the remaining 16 miles. The just completed MLO solar electric feasibility study has determined that a solar-power installation at MLO is not an economically sound investment as currently designed. Studies are being undertaken to determine if a capital pay-down would make the project feasible. A radio astronomy antenna site is being considered for a location east of the MLO facility. In early 2005, the MLO Hilo offices will have to be vacated for 1 to 2 years while the Hilo Federal Building is structurally modified. Alternate permanent space is being perused, with a location on the University of Hawaii, Hilo, campus a preferred location.

***Samoa (SMO), American Samoa:*** A contract for construction of new 12-story-high stairs from the SMO observatory down to the sea-level facilities will be awarded in the fall of 2003, with construction to begin soon thereafter. Funds have been obtained to design a major refurbishment of the main observatory building that will include relocating instruments from the roof of the building and removal of the concrete water catchment structure. The catchment will be replaced with a sloping metal roof. SMO has acquired the soon-to-be-vacated National Weather Service, Pago Pago, airport building. It will be modified to support a new stratospheric aerosol lidar being constructed at MLO. This lidar will be installed in the late fall of 2003. The ozonesonde preparation facilities, currently at the Cape Matatula site, will also be moved into the airport building.

***South Pole (SPO), Antarctica:*** New aerosol instrumentation was installed at SPO this year along with upgrades to solar instruments, ozonesonde telemetry, the meteorological system, and gas chromatographs. The SPO staff moved into the new dormitories and began eating at the new dining facility in March 2003. The 2003 winter crew will be releasing substantially greater numbers of ozonesondes than normal this coming austral spring in an international ozone hole study that will track ozone depletion as it occurs in air masses moving around Antarctica.

***Trinidad Head (THD), California:*** THD, in operation for just over 1 year, was installed prior to the Intercontinental Transport and Chemical Transformation 2002 (ITCT-2K2) experiment, an aircraft-based study of air chemistry in air flowing onto the West Coast of the United States. A new aerosol lidar will be installed at THD in fall of 2003, and aircraft profiles of trace gases will be initiated in spring of 2004. THD will be the site of the first CMDL Vertical Observatory (VERTOBS) flights of a highly instrumented light aircraft, conducting both gas and aerosol profiles on a biweekly basis, which are planned to begin in late 2005.