



## NOAA Research in New Mexico



### NM-1 through 3 (Statewide)

#### **Climate and Global Change Program**

NOAA is responsible for providing climate information to the nation in order to prepare and protect climate sensitive sectors of society and the economy. To carry out this mission, NOAA's Climate and Global Change Program conducts focused scientific research to understand and predict variations of climate. The program is comprised of a number of research elements, each focusing on a specific aspect of climate variability. Taken together, this research contributes to improved predictions and assessments of the effects of climate variability and change on different environments over a continuum of time scales from season to season, year to year, and over the course of a decade and beyond. This research is accomplished through the strong support of the academic and private sectors, as well as NOAA and other federal laboratories. In FY 2001, NOAA's Climate and Global Change Program provided approximately \$109,100 in support of climate research in the State of New Mexico. For more information please visit <http://www.ogp.noaa.gov>

### NM-1 through 3 (Statewide)

#### **Climate Diagnostics Center Climate Research**

NOAA's Climate Diagnostics Center (CDC) works in collaboration with university social scientists to investigate the process of how climate information and products are being used or could be used by New Mexico water resource managers to provide NOAA with a knowledge base for enhanced decision support. CDC has prepared climate-briefing documents and provided online demonstrations of climate products to representatives of the Navajo and Zuni tribes. In support of this effort, CDC has developed a web site with links to regional climate resources at <http://www.cdc.noaa.gov/ClimateInfo>

### NM-1 (Albuquerque)

#### **Air Resources Laboratory Integrated Surface Irradiance Study**

Solar radiation is the driving energy for the geophysical and biochemical processes that control weather and life on earth, so understanding the global surface energy budget is key to understanding climate. Because it is impractical to cover the earth with monitoring stations, the answer to global coverage lies in reliable satellite-based estimates. Accurate and precise ground-based measurements in differing climatic regions are essential to refine and verify the satellite-based estimates, as well as to support specialized research. The Integrated Surface Irradiance Study (ISIS) is a continuation of earlier NOAA surface-based solar monitoring programs in the visible and ultraviolet wavebands.

ISIS provides basic surface radiation data with consistency and accuracy. The Air Resources Laboratory operates the NOAA national broadband solar radiation network, including a station located in Albuquerque that monitors incoming radiation. For more information please visit <http://www.atdd.noaa.gov>

### **NM-1,2, and 3 (Kirtland AFB, Aztec, Tukumcari, and White Sands)**

#### **Forecast Systems Laboratory GPS Meteorological Observing System**

NOAA's Forecast Systems Laboratory (FSL) operates a rapidly expanding network of GPS Meteorological (GPS-Met) Observing Systems to monitor the total quantity of precipitable water vapor in the atmosphere. Currently, there are 93 systems over the contiguous 48 states and Alaska, and plans are being made to extend these observations to Hawaii, Puerto Rico, the Caribbean Islands, and Central America. Water vapor is an important but under-observed component of the atmosphere that plays a major role in severe weather events and the global climate system. GPS-Met systems provide accurate water vapor measurements under all weather conditions, including thick cloud cover and precipitation, and do so at very low cost. The major reason why this system is so economical is that the network is being developed by FSL in cooperation with federal, state and local government agencies, universities, and the private sector. The GPS stations provide high-accuracy surveying and navigation services for National defense, automated agriculture, safe land and marine transportation, government infrastructure management, and 911 emergency response services. Fortunately, these systems can also be used for meteorology with the addition of surface weather sensors. GPS-Met systems located in New Mexico include sites operated by NOAA near Aztec, Tukumcari, and White Sands, and one operated by the U.S. Department of Transportation near Kirtland AFB. For more information please visit <http://www.gpsmet.noaa.gov/jsp/index.jsp>

### **NM-2 (Sunspot)**

#### **Space Environment Center Space Weather Research**

NOAA, through its Space Environment Center (SEC), is a research partner with the National Solar Observatory (NSO) located on Sacramento Peak in Sunspot, New Mexico. NSO operates three solar telescopes at this facility including the Richard B. Dunn Solar Telescope, the John W. Evans Solar Facility, and the Hilltop Dome Facility. NSO has built a new synoptic facility for solar observations over a long time frame called SOLIS. SOLIS has been used over the recent active phase of the solar cycle and has provided data for the planning and scientific support of solar space missions and has supported the National Space Weather Program. For more information please visit <http://www.sec.noaa.gov>

For further information about these and other NOAA programs, please contact NOAA's Office of Legislative Affairs at (202) 482-4981.

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