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# ARM Facilities Newsletter

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## ARM Participating in Off-site Intensive Operational Period

The ARM Program is playing a role in the Cirrus Regional Study of Tropical Anvils and Cirrus Layers-Florida Area Cirrus Experiment (CRYSTAL-FACE) intensive operational period (IOP), under way through July in South Florida. The objective of CRYSTAL-FACE is to investigate the physical properties and formation processes of tropical cirrus clouds.

The ARM Program has deployed a suite of ground-based instruments in Florida for CRYSTAL-FACE (Figure 1). In addition, the National Aeronautics and Space Administration provides six research aircraft equipped with state-of-the-art instruments to measure characteristics of cirrus clouds and their ability to alter the temperature of the atmosphere.

The reliability of climate predictions depends on the accuracy of computer models of climate. Interactions between

clouds and solar radiation are a major source of current uncertainty in the models, hindering accurate climate prediction. A goal of CRYSTAL-FACE is to improve on the way clouds are represented in and integrated into the models and thus achieve more reliable climate predictions.

CRYSTAL-FACE will be followed in 2004 by CRYSTAL-TWP, to be held at ARM's Tropical Western Pacific (TWP) location on Manus and Nauru Islands.



Figure 1. The Pacific Northwest National Laboratory Atmospheric Remote Sensing Laboratory (PARSL) 35-gigahertz radar set up at the CRYSTAL-FACE field site in Everglades City, Florida. PARSL is funded by ARM to participate in CRYSTAL-FACE.

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### **New Storage Building Proposed for Central Facility**

Now in the design phase is a new storage building to be erected at the central facility, west of the shipping and receiving trailer. The added storage is needed because shipping needs for the TWP are now being handled by the SGP site.

### **New Seminole Extended Facility Location Approved**

The extended facility formerly on the property of the Seminole Industrial Foundation had to be removed from service in April, after the land was sold to a new owner. Both the foundation and the new land owner offered options for new extended facility locations in the area. An Environmental Evaluation Notification Form has now been approved by the U.S. Department of Energy (ARM Program sponsor), as required by the National Environmental Policy Act, for a newly leased site 1.5 miles north of the old site.

### **DigiCORA-III Transition IOP Scheduled**

A July IOP at the central facility completed the transition from the DigiCORA-II to the DigiCORA-III radiosonde sounding system. The DigiCORA, the computer "brains" behind the radiosonde (weather balloon) system used at the SGP, retrieves signals from the radiosonde as it travels upward into the sky, collecting and processing the data in real time.

### **Radiometer Calibration Exercise Under Way**

The second Broadband Outdoor Radiometer Calibration (BORCAL) exercise of the year is currently calibrating the pyranometers from the SGP extended facilities (Figure 2). Half of the SGP pyranometers are calibrated during each of two annual BORCAL events. This schedule ensures that at least half of the deployed instruments are operating optimally at any time.



Figure 2. The SGP Calibration Facility, site of the BORCAL exercise.