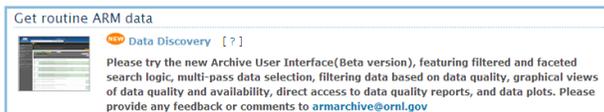


## One-Stop Shopping: Getting the Data You Need

From the ARM Data Archive, [www.archive.arm.gov](http://www.archive.arm.gov), users can select routine data by browsing in the new ARM Data Discovery Tool—the first interface listed on the page. This tool features pre-selected sorts and search logic to help you find atmospheric and climate data faster. As each selection is made, only ARM data meeting the criteria remain visible, leading to the datastream that best suits your needs. When data are ordered, the Data Archive will process and deliver the selected data to an ftp site for downloading.



To access data gathered during field campaigns (also known as intensive operational periods), click the “IOP Data” link under “Get special data.”



To assist the ARM Data Archive in reporting user statistics, users are requested to create accounts. Accounts are free and available to anyone. Information obtained from these accounts is never shared and is used only for the purpose of characterizing the user community as a group. Account holders will also receive important alerts about the data previously delivered to them.

## What You Need To Do

Go to the Data Discovery browser, which features filtered and faceted search results, multi-pass data selection, graphical views of data quality and availability, direct access to data quality reports, and data plots.

<http://www.archive.arm.gov/discovery>

To search for data, choose a measurement category or enter a keyword in the search box at the top of the screen. Additional options based on your search allow you to further refine your results. When you have created and placed your data order, you will receive email notification that your data are available for pickup on the ftp site.

*Any questions? Refer back to the ARM website for technical contacts and specific information about the data.*

### Contact Information

#### Data Archive

[www.archive.arm.gov](http://www.archive.arm.gov)  
[info@arm.gov](mailto:info@arm.gov)  
1-888-ARM-DATA

#### Data Quality Office

[www.dq.arm.gov](http://www.dq.arm.gov)  
[armdataquality@arm.gov](mailto:armdataquality@arm.gov)  
405-325-6667

#### Technical Coordination Office

[www.arm.gov](http://www.arm.gov)  
[www@arm.gov](mailto:www@arm.gov)  
509-375-2111



U.S. DEPARTMENT OF  
**ENERGY**

Office of  
Science

# ARM

CLIMATE RESEARCH FACILITY

## Ordering ARM Data

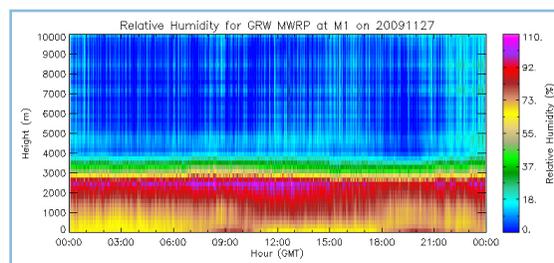
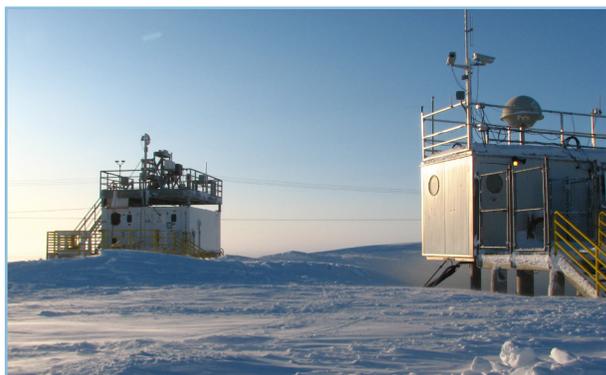


A U.S. Department of Energy Scientific User Facility

## Atmospheric Data From Sites Around the World

The Atmospheric Radiation Measurement (ARM) Climate Research Facility operates several highly instrumented ground stations, three mobile facilities, and an aerial facility to study the effects of clouds and radiative feedback processes on global climate change. This U.S. Department of Energy scientific user facility strives to deliver atmospheric data reliably, quickly, and in a useful format to the scientific community.

Four permanent ARM locales represent a broad range of climatic conditions: the **Southern Great Plains** in Oklahoma, the **Tropical Western Pacific**, and the **North Slope of Alaska**, and the **Eastern North Atlantic**. The portable ARM Mobile Facilities enable data collection in different climate regions, and the ARM Aerial Facility provides airborne measurements to enhance ground-based measurements. Numerous instrument platforms are available at each site, including radiometer suites that measure solar and terrestrial radiation; tower-mounted instruments that measure wind, temperature, and humidity; sensors that measure soil moisture and thermal properties; a host of cloud-observing instruments that measure cloud extent and microphysical properties; and instruments for observing atmospheric aerosols. Data collection began at the Southern Great Plains in late 1992, at the Tropical Western Pacific in 1996, and at the North Slope of Alaska in 1997. In late 2013, data collection will begin at the Azores in the Eastern North Atlantic.



Data generated by ARM instruments are transmitted to the ARM Data Archive for distribution. A sophisticated infrastructure process the data from all sites on an hourly basis and make daily updates available for general users through satellite networking, specialized data movement processes, and a tight configuration management process.

## Keep the Data Flowing

Because data are the primary resource for the research community, our goals in managing the volume of ARM data are to:

- transfer measurement data from the sites to the central Data Management Facility
- “ingest” data into a common, standardized format (e.g., NetCDF, a self-describing binary format) and process into a series of daily files with a similar structure, which is referred to as the datastream
- create documentation describing the datastream
- perform quality analysis of the data
- perform supplemental processing, which results in derived data (aka “value-added products”)
- reprocess measurements as necessary to correct errors or otherwise ensure a complete, representative data set
- acquire and process non-ARM data products of interest to the scientific community through the External Data Center
- transfer raw and processed measurement data to the Data Archive
- make data files freely and publicly available to a globally distributed user community.

## Quality Data—And Lots of It!

Serving more than 7500 registered users from over 25 U.S. agencies, 475 universities, and 71 countries, the Data Archive collects and delivers about 20 terabytes of data per month. Web-based interfaces enable both new and experienced users to navigate more than **400 terabytes** of available data and select sets from nearly **13 million data files** collected as of January 2013.

As part of the data collection effort, ARM scientists and infrastructure staff developed an extensive data quality program. ARM’s Data Quality Office is responsible for ensuring that quality assurance results are communicated to (1) data users, so that they may make informed decisions when using the data, and (2) ARM’s site operators and engineers, to facilitate optimal instrument performance and minimize the amount of unacceptable data collected. Through the use of tools like the Data Quality Explorer (DQ Explorer) and NCVweb, an interactive data plotting tool, data quality staff inspect and assess ARM data on a near real-time basis. Supplemental processing of the data files also occurs to create new file levels that include quality flags and thumbnail views of the data plots.

## Continuous Improvement

While every effort is made to ensure the quality and accuracy of the data, the occasional problem does arise. If quality issues are discovered while using ARM data, please contact the Data Quality Office at [armdataquality@arm.gov](mailto:armdataquality@arm.gov) or see [dq.arm.gov](http://dq.arm.gov) for online reporting options. Be sure to include the datastream names and a description of the problem or error received.

