

ARM User Facility Updates

ARM-ASR Joint User Facility & PI Meeting

June 21, 2021

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COVID-19 Impacts

- Over the past year:
 - DOE Office of Science limited travel to “mission essential” travel for Laboratory staff
 - Sites have had fewer staff on site, more remote monitoring – staff have been creative in identifying many new ways to accomplish tasks
 - Some instrument repairs have been delayed due to travel restrictions and supply chain/vendor delays
 - Many delays/challenges to campaigns – MOSAIC (significant logistical challenges); TRACER (IOP delayed); TBS (several campaigns deferred); guest instruments (many PI campaigns delayed/deferred)
- Current status:
 - All sites open for scientific campaigns, but restrictions/practices vary based on site location and managing Laboratory
 - Site visit approvals and protocols may depend on number of people, details of activities to be conducted
 - Many previously deferred campaigns are now being scheduled
 - Contact individual site managers for more information

ARM FY22 Budget Request

- President's FY22 Budget Request was released last month.
 - DOE Office of Science and BER request information can be found at <https://science.osti.gov/budget>.
 - Proposed \$17M increase for ARM
 - ARM language: "Increased funding will support ARM site operations, and a mobile facility will be deployed to the southeastern U.S. and configured to begin operations in FY 2023. ARM will begin a multi-year instrumentation refresh. The ARM support for the Urban Integrated Field Laboratory (IFL) for climate science will be developed."
 - Budget request also calls out fixed site operations, TRACER, SAIL, LASSO, data archive, and aerial capabilities
 - No details yet on House or Senate appropriations bills for FY22

ARM Triennial Review

- DOE Office of Science requires regular reviews of its User Facilities
- As part of the review, ARM developed a new Decadal Vision document (*Mather talk*)
- Review panel held virtually Nov 4-6, 2020
- Overall, ARM received very positive reviews
- Reviewers recommended some actions for strengthening the facility:
 - Broaden user community outreach, with a focus on satellite, early career, and modeling communities
 - Develop science impact metrics related to earth system modeling; develop and apply more instrument performance metrics
 - Develop strategies for managing staff workloads and professional development/training
 - Update radar plan, including strategies for external partnerships
 - Continue development and implementation of capability review process
 - Consider reviewer comments in development of future data management and data product plans



ARM Website Updates

New web page with info for new ARM users

ABOUT
RESOURCES FOR NEW ARM USERS

Southern Great Plains Observatory

WELCOME TO ARM!
Here you will find a list of resources to help familiarize yourself with the Atmospheric Radiation Measurement (ARM) user facility.

ABOUT ARM
Learn about the mission, vision, and history of ARM, a U.S. Department of Energy (DOE) Office of Science user facility. Also contains links to facility documents, reports, management structure, and ARM Data Discovery.

ACRONYMS AND GLOSSARY
View up-to-date dictionaries of ARM and atmospheric science terms. You can also find these at the bottom of each page (under Resources).

FACILITY BACKGROUND INFORMATION
Read information materials that communicate ARM's goals and scientific results to the general public.

ORGANIZATION
Get an overview of ARM's organizational structure and points of contact for leadership, boards, constituent groups, operations, and engineering.

Watch this welcome video, narrated by ARM Technical Director Jim Mather, to learn more about what ARM does.

1:44
arm.gov

ARM U.S. DEPARTMENT OF ENERGY Office of Science

ABOUT NEWS & EVENTS CONTACTS

The world's premier ground-based observations facility advancing atmospheric and climate research

FROM COMBLE, A BOOM OF BIG PLANS
END OF GULFPORT POINT DEPLOYMENT NEARS
ARM GOING BACK TO CALIFORNIA

ATMOSPHERIC OBSERVATORIES
SGP NSA ENA AMF AMF

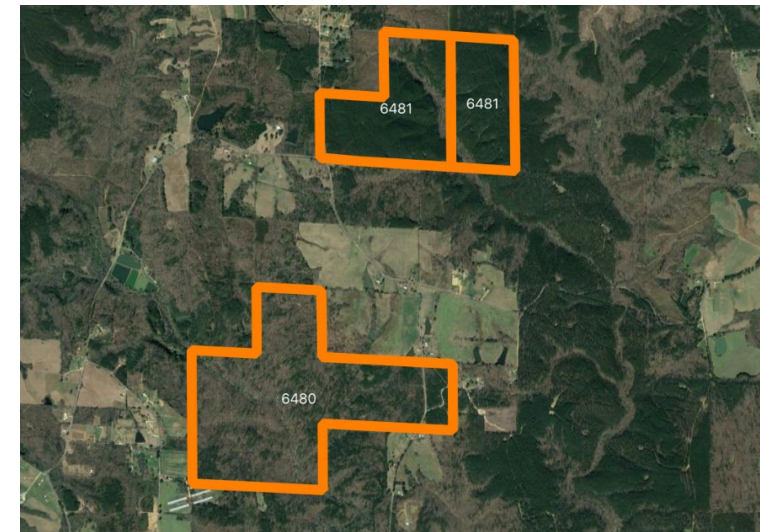
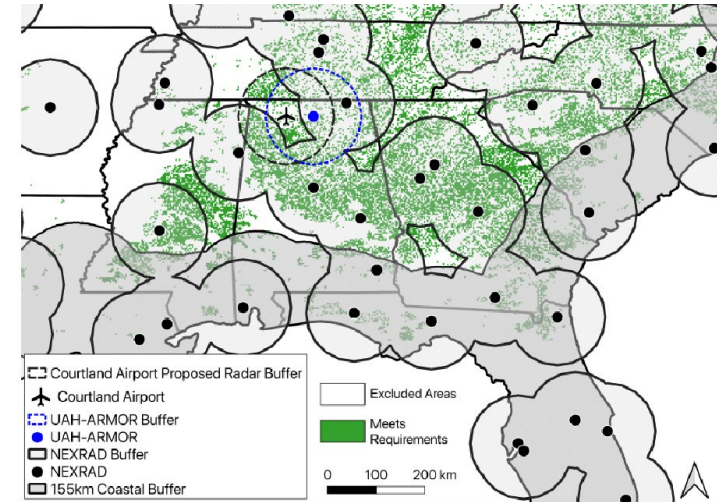
ARM PROVIDES
DATA INSTRUMENTS
CAMPAIGNS MODELS
PUBLICATIONS

Improved functioning on mobile devices

See *Jundt poster* for more details

AMF3 Update

- AMF3 deployment in Oliktok officially ended June 1; SNL team is currently on-site to close out the site and pack instrumentation
- Next AMF3 deployment will be at a site in the southeast US (SEUS)
 - Expect operations to begin March 2023 for a ~5-year deployment
- Siting and instrumentation updates
 - Science team has identified science criteria for sites, site layout and instrument needs (***Giangrande poster***)
 - ARM instrument team is evaluating instrument options and plans
 - ARM site management team is evaluating site options
 - First site visit planned for next week



Upcoming ARM campaigns (1)

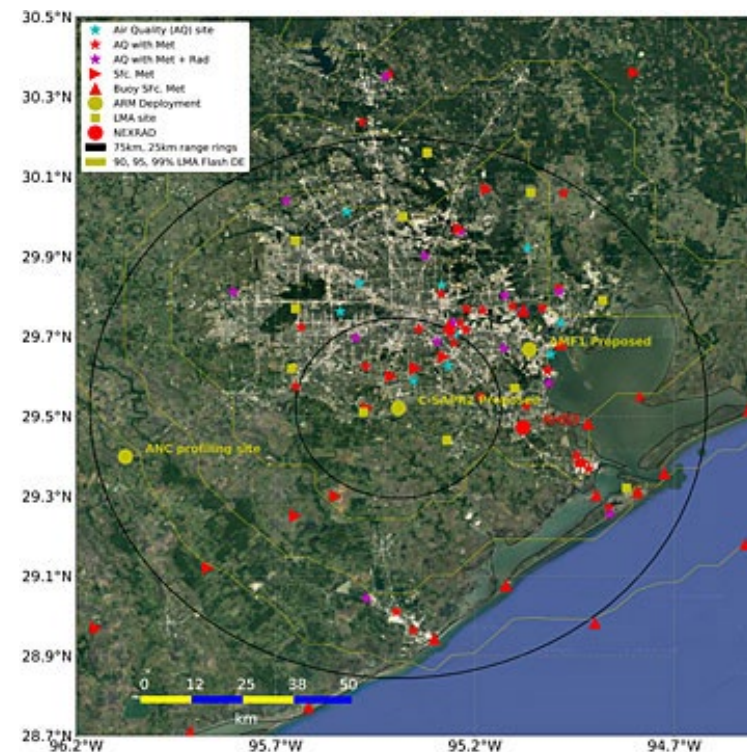
- SAIL (Surface Atmosphere Integrated Field Laboratory)
 - PI: Dan Feldman, LBNL
 - East River watershed, near Crested Butte, CO; Sep 1, 2021 – June 15, 2023
 - Will collocate ARM observations with ongoing surface and subsurface hydrologic observations sponsored by DOE's Environmental Systems Sciences (ESS) program
 - Science goal: develop a quantitative understanding of the atmosphere and land-atmosphere interaction processes that impact mountain hydrology in the midlatitude continental interior of the United States
 - Collaborative activities: NOAA SPLASH campaign
 - Host: Rocky Mountain Biological Laboratory
 - **Breakout session Wed morning; *Feldman poster***



East River Watershed. Photo by Connor Scalbom

Upcoming ARM campaigns (2)

- TRACER (Tracking Convection Interactions Experiment)
 - PI: Mike Jensen, Brookhaven
 - AMF1 and C-SAPR2 to Houston, TX area to study aerosol-cloud interactions in deep convection
 - Houston region has high frequency of isolated convective systems and experiences a spectrum of aerosol conditions
 - Due to COVID, campaign delayed
 - New dates: Oct 2021 – Sep 2022; intensive operational period in summer 2022
 - Many collaborative activities with other agencies (NASA, NSF, TCEQ)
 - ASR funded a set of TRACER-related proposals and guest instrument deployments
 - ARM tethered balloon system (TBS) flights planned for FY22
 - *(Jensen poster)*



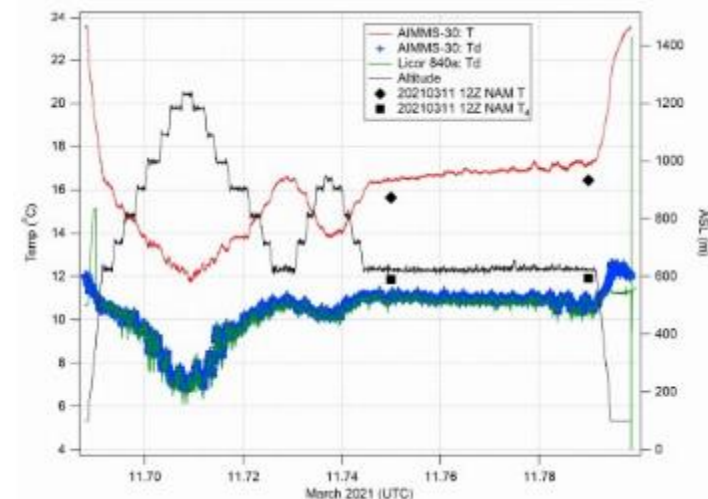
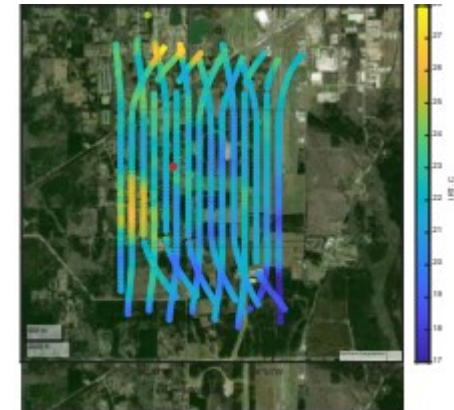
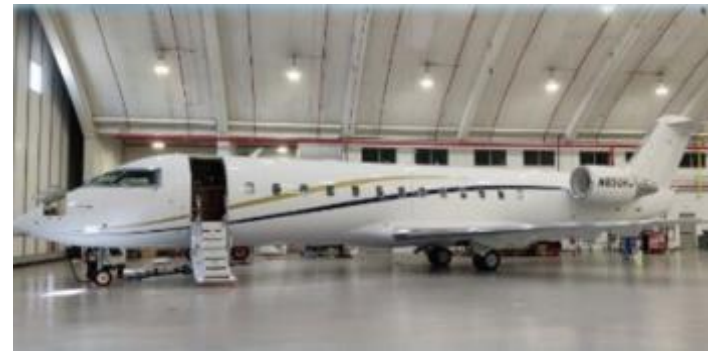
Upcoming ARM campaigns (3)

- EPCAPE (Eastern Pacific Cloud Aerosol Precipitation Experiment)
 - PI: Lynn Russell, Scripps Institution of Oceanography
 - Scripps Pier (main site) and Mt Soledad (supplemental site); La Jolla, CA; Feb 2023 – Jan 2024
 - Science goals:
 - Characterize the extent, radiative properties, and precipitation characteristics of stratocumulus clouds in the Eastern Pacific
 - Investigate differences in cloud properties during regional polluted and clean marine conditions
- **Breakout session Tues morning**



ARM Aircraft/UAS Status

- ARM Challenger 850 aircraft is being modified for research (*Tomlinson poster*)
 - Modifications scheduled for completion in FY22
 - ARM will perform 1 year of training, testing, and characterization of instrument performance
 - Expect to be ready for research campaigns in CY2023
- ARM ArcticShark UAS currently with manufacturer for repairs/flight testing
- ARM Aerial Facility partnering with Mississippi State University to continue moving forward with UAS activities (*Goldberger & Schmid posters*)
 - Integrated inlet and 12 AAF instruments on MSU TigerShark
 - Performed 5 instrument flights - assessed flight patterns with current payload; tested in-field calibration; developing data products
 - Planning flights at SGP in Aug/September



ARM Field Campaign Proposal Process

- 2022 Mobile Facility call
 - Expect to release solicitation for AMF2 this fall
 - Pre-proposals likely due in early 2022 for deployments starting ~Jan 2024
- Tethered Balloon Systems (TBS)
 - FY22 activities planned for SGP and TRACER; mostly COVID-delayed, previously approved campaigns
 - TBS call expected to be released in January for FY23 campaigns
 - Plan to release calls annually in January, potential supplemental call in summer
- Small campaigns
 - Small campaigns & guest instrument deployments at fixed sites accepted year-round
 - Small campaigns reviewed/approved **quarterly** (generally Jan, Apr, Jul, Oct)
 - Timeline on website shows proposal deadlines based on start date
 - Proposals should be submitted well before proposed start date to allow time for review/approval

Meeting Logistics

- Slack channels are open
 - ARM data channel – ask any data discovery or other data questions
 - Separate discussion channels for plenary/breakout sessions
 - Separate discussion channels for each poster
 - Post questions for poster presenters in their channel
 - Poster presenters may post their own web conference link in their channel if they want to enable oral discussion of their poster
- Networking sessions
 - Please join the networking sessions every afternoon (4:15 EDT)
 - Use the Slack networking channel to plan meetings with collaborators in the networking sessions
 - Small group (15 people) “circles”
 - General session each day plus UEC session Monday and Early Career session Tuesday