U.S. DEPARTMENT OF ENERGY | Office of Science

Atmospheric Radiation Measurement (ARM) User Facility

Sally McFarlane
ARM Program Manager

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2022 ARM-ASR Joint User Facility & PI Meeting

COVID-19 Updates

- All ARM sites are open to ARM staff and users for visits; masking/other requirements tied to local community transmission levels
- Many deferred campaigns and deferred instrument/site maintenance were conducted in FY22 – site staff & mentors have been busy
- Thanks to all ARM staff and users for your hard work, patience, and understanding over the past few years

FY23 Budget

- FY22 budget saw many new initiatives for BER, as well as increased funding for ARM to support the AMF3 Southeastern US site and instrument refresh
- FY23 President's budget requested flat budget for ARM operations relative to FY22
- FY23 House and Senate appropriation bills express support for SC user facilities
- Currently in a continuing resolution until Dec 16

ARM new capability updates

- New or upgraded instrumentation in process or planned:
  - Refresh of instrumentation including broadband radiometers, sun photometers, sky imagers, Doppler lidars, microwave radiometers
  - New lidar capabilities for NSA; new mobile C-band radar; upgrade KAZR antennas/electronics
- Arctic Shark UAS
  - First science mission at SGP in July – data in archive; Planning series of SGP missions in FY23
  - Breakout session this afternoon
- Challenger 850 – new ARM research aircraft
  - Aircraft modifications have been delayed due to FAA ruling of "significant" modifications, requiring subcontractor to respond to multiple FAA amendments since date of aircraft manufacture
  - FAA has recently accepted the "issue" papers; expect updated timeline for completing modifications by end of the year
- AMF3 site – update later this session

Field campaign updates – fixed sites

- SGP – multiple small campaigns including studies on:
  - Agricultural ice nucleating particles
  - Hydroxyl radicals in cloud droplets
  - New particle formation
  - Boundary layer – wind farm interactions
- NSA – campaigns on:
  - Biological volatile organic compounds
  - Snow albedo evolution
- ENA
  - Aerosol growth in the Eastern North Atlantic

Field campaign updates – Mobile Facilities

- TRACER (PI: Mike Jensen, BNL)
  - AMF campaign in Houston concluded after 1 year of operations & 4-month IOP
  - AMS special collection recently approved
- SAIL (PI: Dan Feldman, LBNL)
  - Over 1 year of data obtained; campaign continues through June 2023
  - Strong collaborations with BER Watershed project & NOAA SPLASH project
  - Breakout session tomorrow
- EPCAPE (PI: Lynn Russell, UCSD)
  - Site prep & installation of AMF beginning Nov
  - Campaign start Feb 15, 2023
  - Aircraft flights supported by ONR w/ aerosol instrumentation supported by ASR in June 2023

NEWS & EVENTS > FEATURES

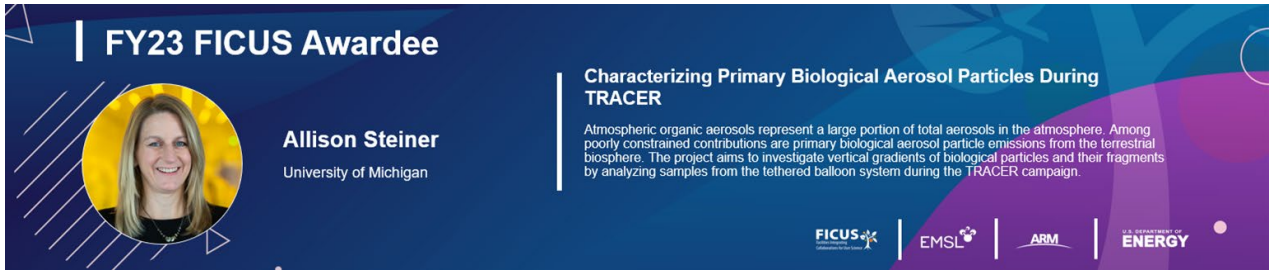
SAIL AT 1 YEAR: A MOUNTAIN HYDROLOGY CAMPAIGN SWEEPS UP RICH DATA

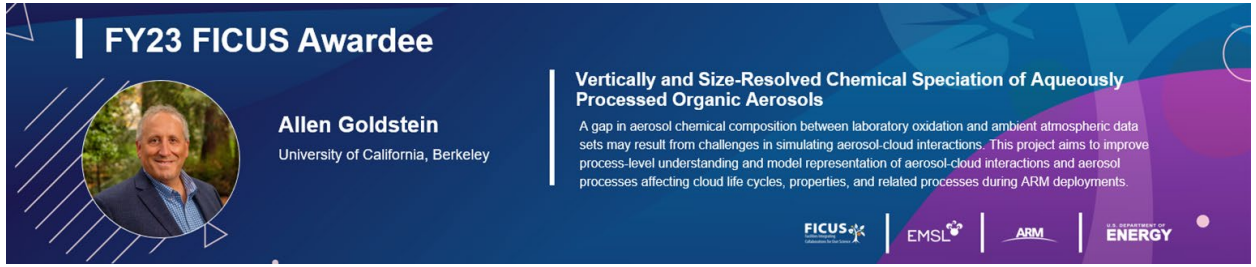
Published: 27 September 2022

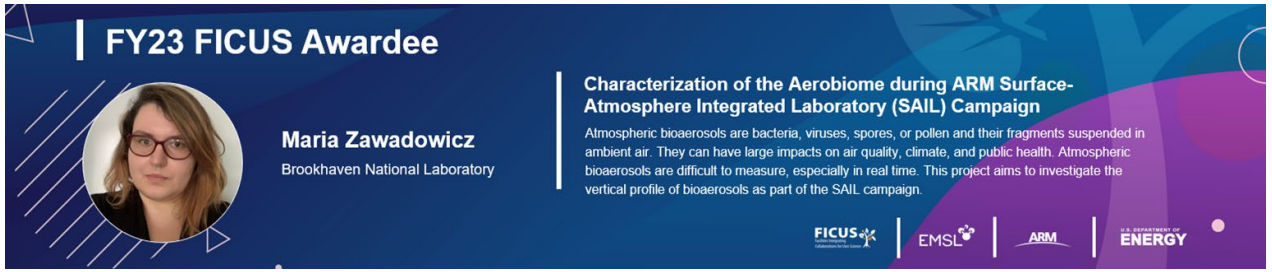
WITH 9 MONTHS OF OBSERVATION TO GO, RESEARCHERS AWAIT ADDITIONAL SURPRISES IN THE ROCKIES

New activities - FICUS Proposal Selections

- FICUS – joint call with EMSL user facility for analysis of ARM TBS samples with EMSL instrumentation
- 4 proposals selected – projects will analyze data from SGP, SAIL, and TRACER

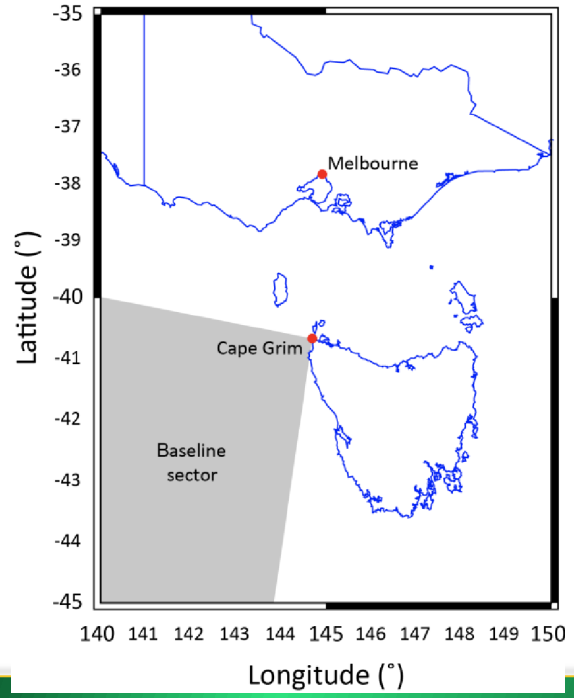






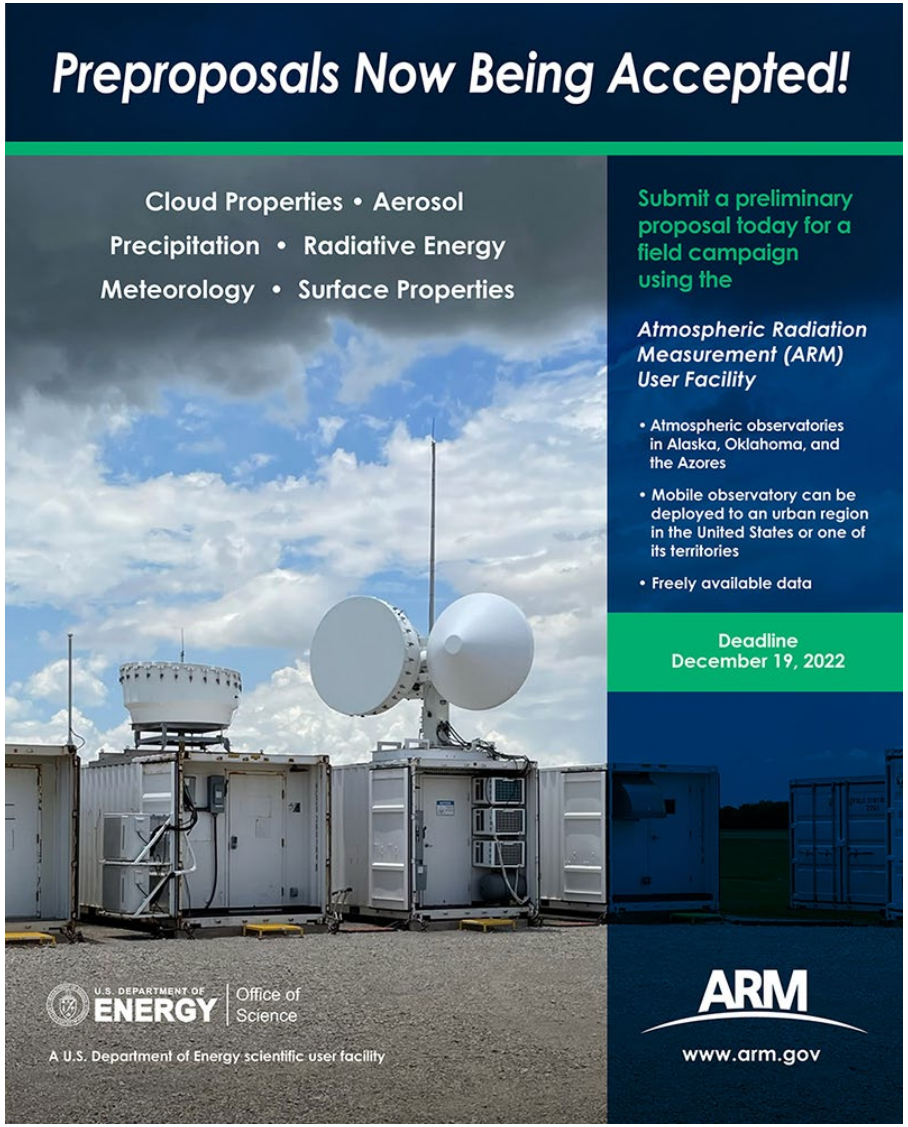
New activities - AMF Proposal Selection

- Cloud And Precipitation Experiment at Kennaook (Cape-K)
  - PI: Gerald Mace, University of Utah
  - Team: Roger Marchand, Melita Keywood, Sam Cleland, Alain Protat, Ruhi Humphries, Sonya Fiddes, Christina McCluskey, Steve Siems, Yi Huang, Peter May
  - Deployment of the AMF at the Kennaook/Cape Grim Baseline Air Pollution Station in Tasmania, Australia to study the seasonal cycle of Southern Ocean cloud & precipitation properties and their co-variation with aerosol, dynamic, and thermodynamic factors
  - April 15, 2024 – Sep 15, 2025 with two planned IOPs
  - Collaboration with Australian Bureau of Meteorology and CSIRO including planned ship-borne campaign off Tasmania in Austral winter 2025



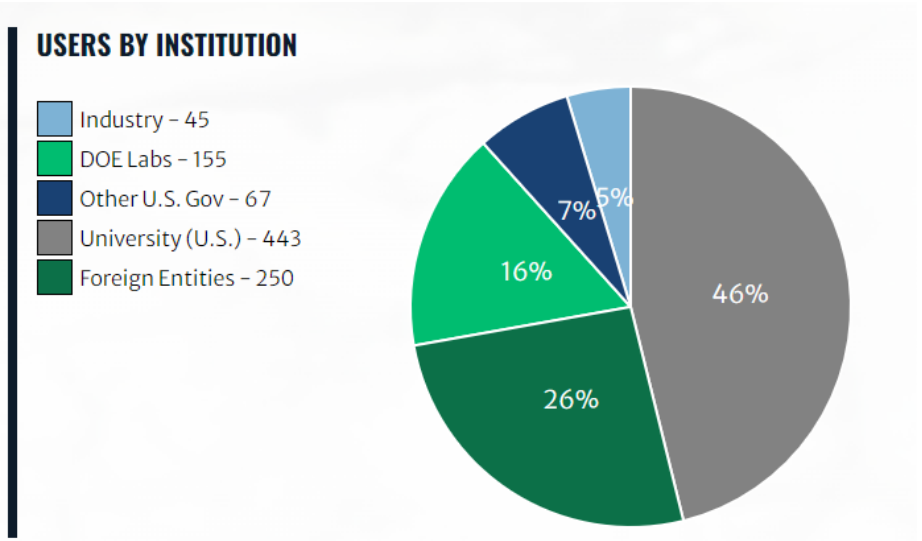
ARM Facility Solicitations

- New call for AMF deployments open
  - Deployments within US focusing on urban regions
  - Webinar on Nov 9
  - Pre-applications due Dec 19
- FICUS & TBS call – expected Dec
- Proposals for small campaigns & use of ARM high performance computing capabilities always open
  - Proposals reviewed quarterly by IMB



User registration form

- Office of Science requires ARM to report information on science users
- This information is important to continued funding/support for the facility!
- Office of Science has been adding required information the past few years & more rigorously checking input
- Please fill out/update your user registration information & project information



Acknowledging ARM

- https://arm.gov/working-with-arm/acknowledging-arm
- It is important to acknowledge ARM facility in your papers to show the research coming out of the facility
- Please submit research highlights on your papers using ARM data: https://arm.gov/research/highlights
- ARM data is not possible without the work of many people – to acknowledge their efforts:
  - Cite the data – use DOIs for datasets
  - Cite instrument handbooks or relevant papers on the instruments/data streams
  - If ARM mentors or other ARM staff are contributing significantly to your research, please consider including them as a co-author
  - See Adam Theisen's poster – "Get to Know your ARM Instrument Mentors"