



ENVIRONMENTAL
SCIENCE
DIVISION

UPDATE ON ARM SONDE ACTIVITIES

EVAN KEELER
Sonde Mentor



Argonne National Laboratory is a
U.S. Department of Energy laboratory
managed by UChicago Argonne, LLC.

Argonne 
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PERSONNEL CHANGE

Evan Keeler is now the BBSS mentor

- Replaced Donna Holdridge as BBSS mentor
- Replaced Nicki Hickmon as GRUAN liaison
- Background
 - Radiosonde testing at NWS's Sterling Field Support Center
 - Focus on operational intercomparisons (vendor vs. vendor)





CURRENT OPERATIONS





NETWORK OVERVIEW

Total ARM Sonde Capabilities

- 12 total launching platforms
 - 11 manual Vaisala MW41 systems
 - Five systems for permanent operational soundings
 - Six systems are for deployment to campaigns
 - One Vaisala AS15 Autolauncher
- All sites are launching the RS41 with 300g balloons



SOUTHERN GREAT PLAINS (SGP) LAMONT, OKLAHOMA UNITED STATES



SOUTHERN GREAT PLAINS SITE

Certified Since 2019

- 3 Ground stations launching 4 times a day (0,6,12,18)
- Capability to launch RS41 and RS92 for support of the JPSS/RIVAL campaign





NORTH SLOPE OF ALASKA (NSA) BARROW, ALASKA UNITED STATES



NORTH SLOPE OF ALASKA

To be certified

- Vaisala AS15 Autosonde doing 4 launches a day (0,6,12,18)
- Cooperative agreement with NWS
- HOGEN installed Dec 2019
- Other autolaunchers have been certified. Seeking certification for NSA 2021
- A manual system for JPSS/RIVAL launches





EASTERN NORTH ATLANTIC (ENA) GRACIOSA PORTUGAL



EASTERN NORTH ATLANTIC SITE

To be certified

- One ground stations launching 2 times a day (0,12)
- Participating in JPSS/RIVAL



GRUAN CERTIFICATION

Current status and potential improvements

- SGP - Certified
 - Need larger balloons to consistently reach 10mb
 - Need scientific justification for funding approval
- NSA – Exploring certification in 2021
 - Can an Autosonde get certified?
 - We need to create a roadmap for NSA certification



CAMPAIGNS



JOINT POLAR SATELLITE SYSTEM (JPSS) RADIOSONDE FIELD CAMPAIGN

- Began in 2012
 - Phase 9 began in Sept 2020
- NSA, SGP, and ENA launching RS41s during JPSS satellite overpasses
- Principle Investigator
 - Lori Borg (lori.borg@ssec.wisc.edu)

RADIOSONDE INTERCOMPARISON AND VALIDATION (RIVAL)

Ending stages

- SGP is performing dual radiosonde observations with RS41 and RS92 during satellite overpasses
- Principle Investigator
 - Lori Borg (lori.borg@ssec.wisc.edu)

TRACKING AEROSOL CONVECTION INTERACTIONS EXPERIMENT (TRACER)

April 2021 – April 2022

- Looking at cloud and aerosol interactions in the deep convection above Houston.
- ARM will support TRACER with four Vaisala MW41 ground stations and two Vaisala MAWS.

SURFACE ATMOSPHERE INTEGRATED FIELD LABORATORY (SAIL)

Sept 2021- June 2023

- Develop a quantitative understanding of the atmosphere and land-atmosphere interaction processes, at their relevant scales, that impact mountain hydrology in the midlatitude continental interior of the United States.
- ARM will support SAIL with a single Vaisala MW41 ground station and a Vaisala MAWS

ARM CONTACTS

- ARM – Technical Director
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- Radiosonde Mentors:
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