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DOE ARM Facilities on the North Slope of Alaska

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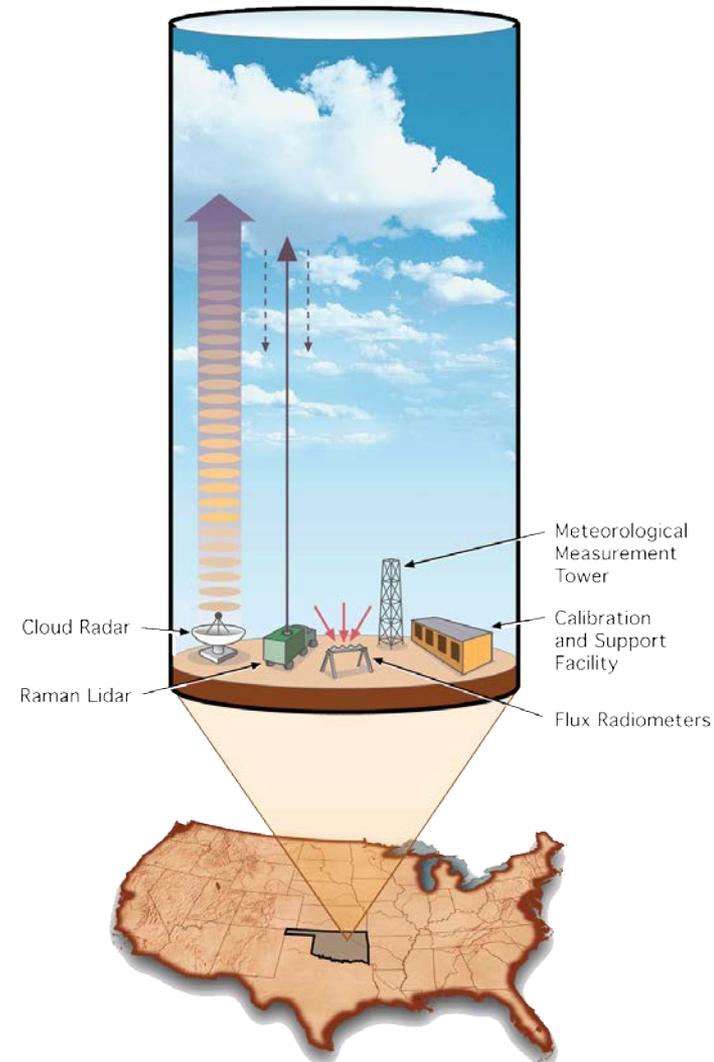
ARM Mission and Vision Statements

Mission

The ARM Climate Research Facility, a DOE scientific user facility, provides the climate research community with strategically located in situ and remote sensing observatories designed to improve the understanding and representation, in climate and earth system models, of clouds and aerosols as well as their interactions and coupling with the Earth's surface.

Vision

To provide a detailed and accurate description of the earth atmosphere in diverse climate regimes to resolve the uncertainties in climate and earth system models toward the development of sustainable solutions for the Nation's energy and environmental challenges.

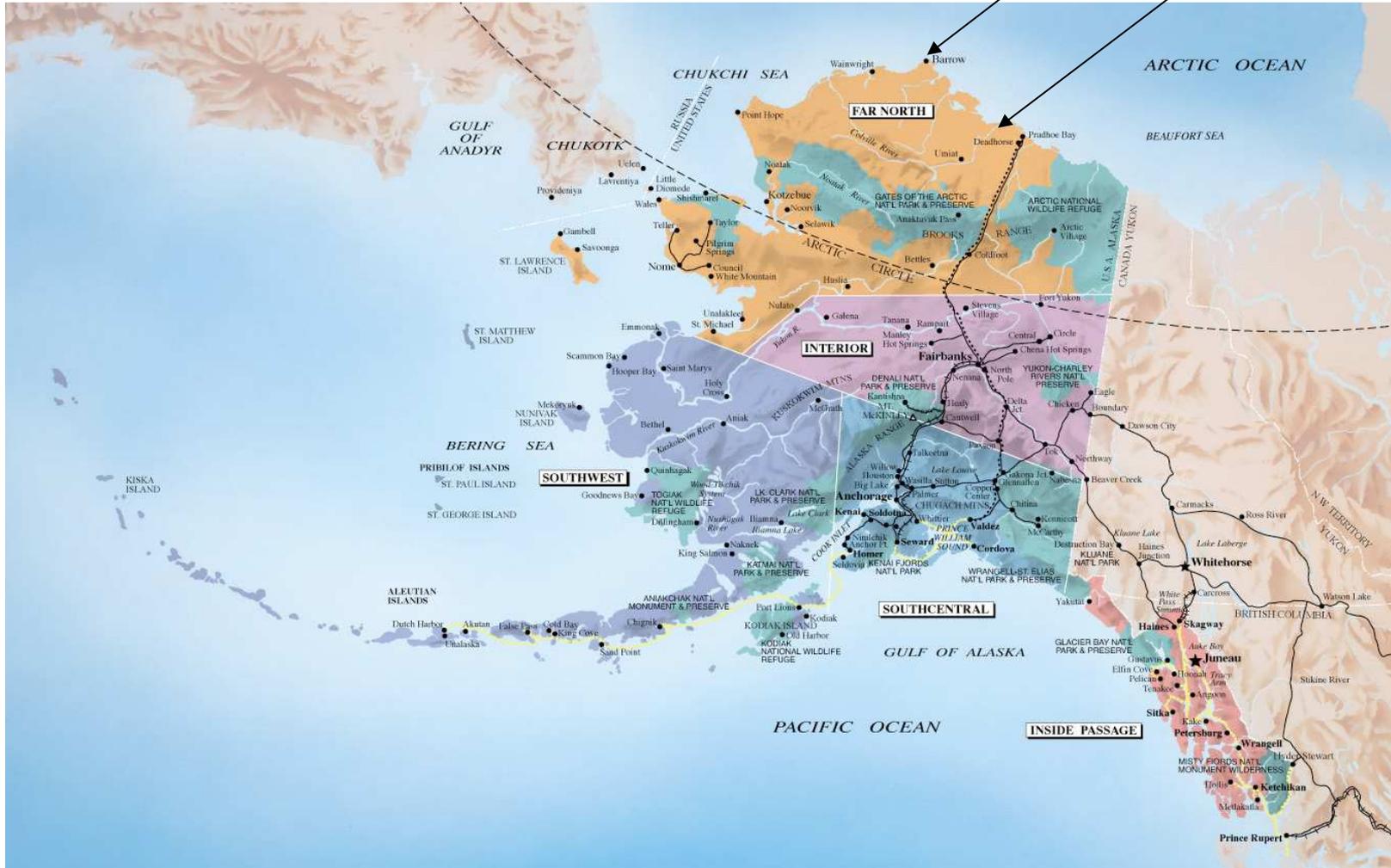


DOE ARM Program, Arctic Interests

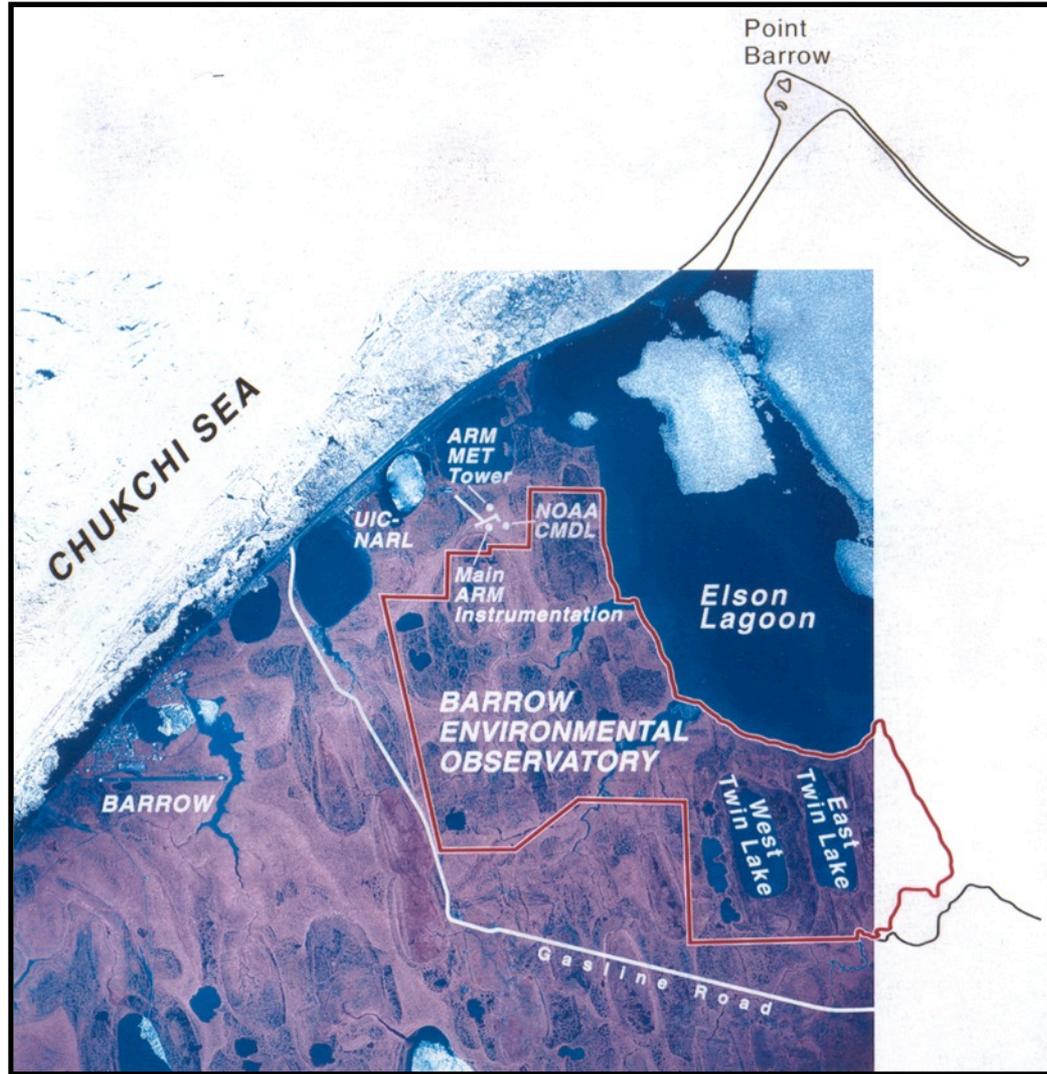
- DOE User Facilities at Barrow and Oliktok
- Recent Field Campaigns on the North Slope
- Inland Facility at Atqasuk -- No Longer Active, Still Available for Field Campaigns
- AMF3/Oliktok Deployment
- Unmanned Aerial Systems and Tethered Balloons
- <http://www.arm.gov/sites/nsa>

ARM Climate Research Facilities in Alaska

Barrow and Oliktok



Barrow



Categories of Instrumentation at Barrow

- Surface Meteorological Sensors
- Wind, Temperature and Humidity Profilers
- Cloud Observation Instrumentation
- Downwelling Radiation Sensors
- Upwelling Radiation Sensors
- Aerosol Instrumentation
- Gas Instrumentation

Additions with ARRA Funding:

- Scanning instruments
- Radars
- 3D and 4D cloud profiles



Barrow ARM Climate Research Facilities Existing Facilities and ARRA Additions



DOE ARM Facility in Atqasuk



DOE ARM Facility in Atqasuk (continued)



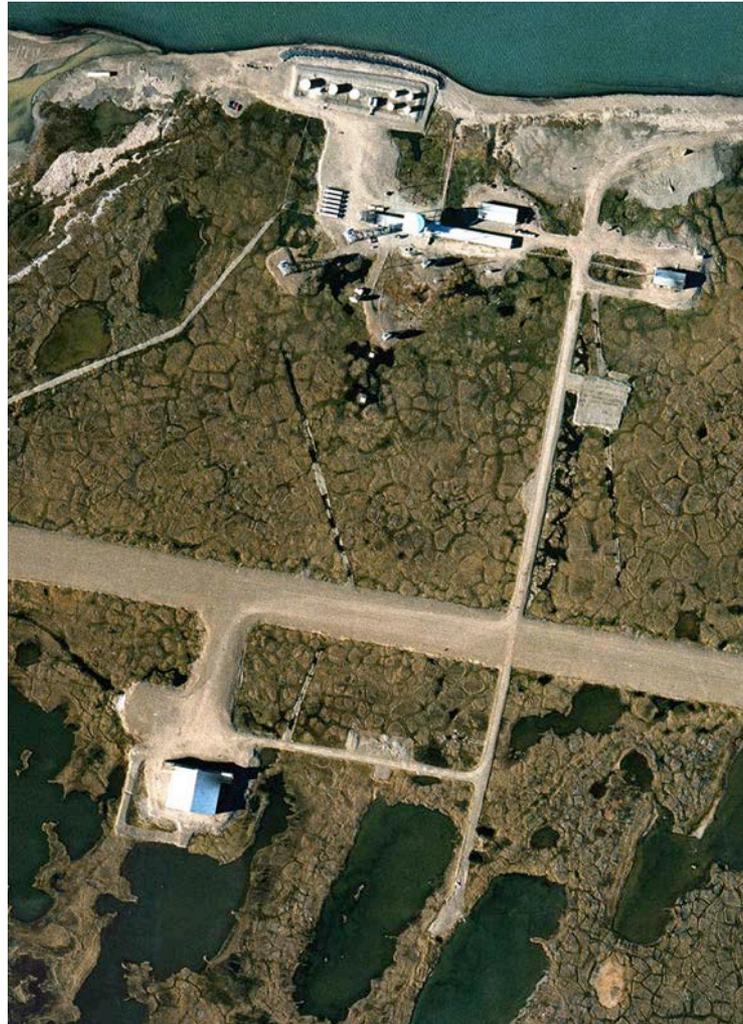
Oliktok Point, Alaska



Oliktok Point Region



USAF Oliktok Point Long Range Radar Station: Sandia has a permit from the USAF for use of selected facilities at Oliktok Point, just as Sandia has a permit for use of selected areas on Kirtland AFB; Oliktok is one of several old Distant Early Warning (DEW Line) radar stations that are still active.



Restricted Airspace R2204 at Oliktok Pt; originally obtained by Sandia for a field experiment at Oliktok in 2004 (Mixed-Phase Arctic Cloud Experiment [M-PACE]); It's airspace that, when activated (at DOE discretion), DOE controls; Restricted Airspace is the mechanism through which FAA keeps non-participating aircraft out of an area.



Oliktok LRRS



Oliktok LRRS (continued)



Oliktok LRRS (continued)



Existing Hangar at Oliktok Point

Presently, we have access to the hangar and the area around it, as well as to lodging and other services at Oliktok LRRS.

Note that Oliktok is embedded in the Prudhoe Bay Oil Fields, and is about 40 miles from Deadhorse/Prudhoe Bay Airport.



Tethered Balloon Operations at Oliktok



ALTOS Campaign – Balloon Operations



ALTOS Campaign

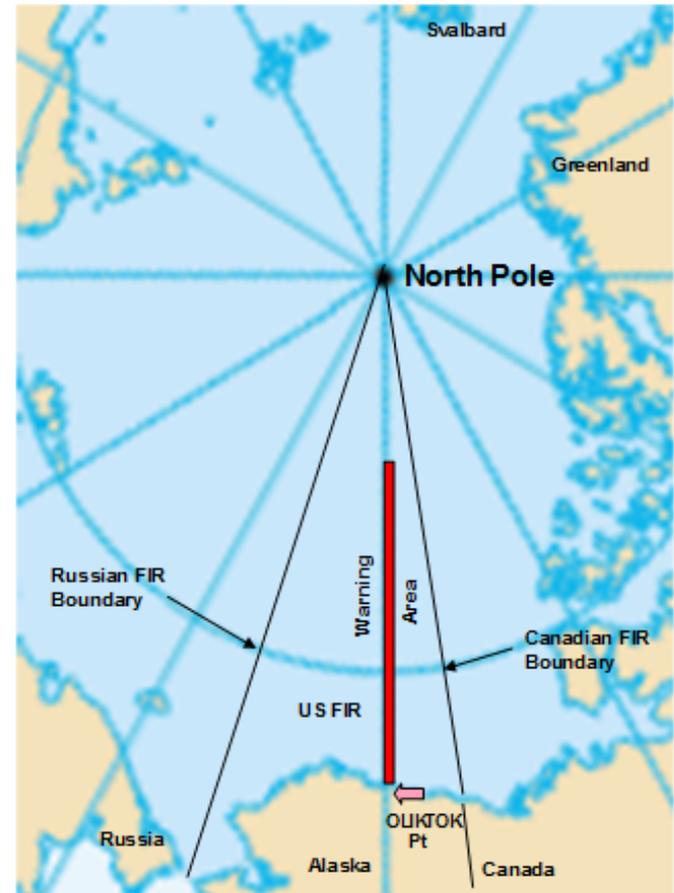


A Step Towards an Arctic Climate Observatory

DOE has requested from the FAA the creation of a Warning Area over International Waters adjoining Oliktok to accommodate unmanned aircraft flights and other research activities out over the Arctic Ocean focused on the rapid retreat of the sea ice; Warning Areas confer similar advantages to Restricted Airspace.

**Proposed
Warning
Area
(in red)**

**FIR =
Flight
Information
Region
(relevant
country
controls
flight in
that region)**



Unmanned Aircraft in the Arctic

