# ArcticCap: Arctic Carbon Aircraft Profile

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ABoVE – ArcticCAP

Arctic Carbon Aircraft Profiles
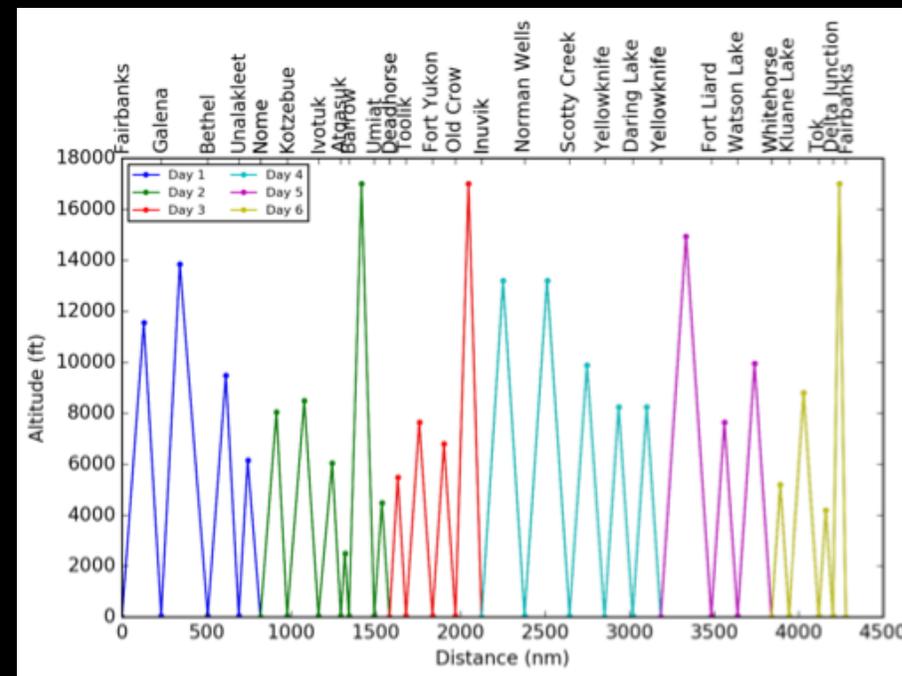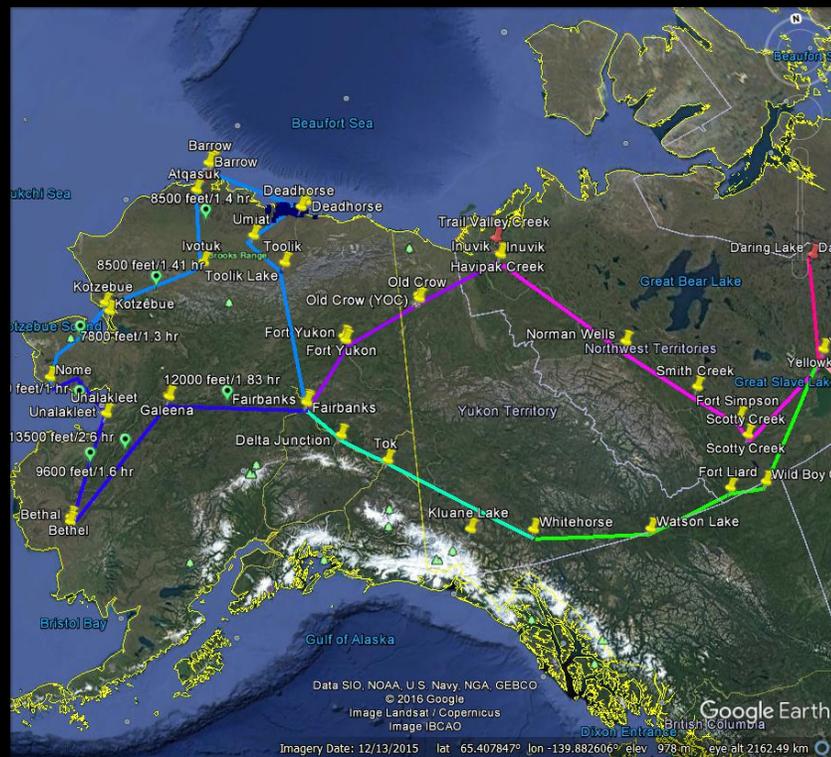
Campaign Statistics:
- 6 campaigns (April – November)
- 56 Flights (316 hours)
- 25 Vertical profiles per campaign
- Measured insitu CO2, CH4, CO and H2O
- Multi-species flasks (CO2, CH4, CO, Hydrocarbons, Halocarbons

ABoVE – ArcticCAP
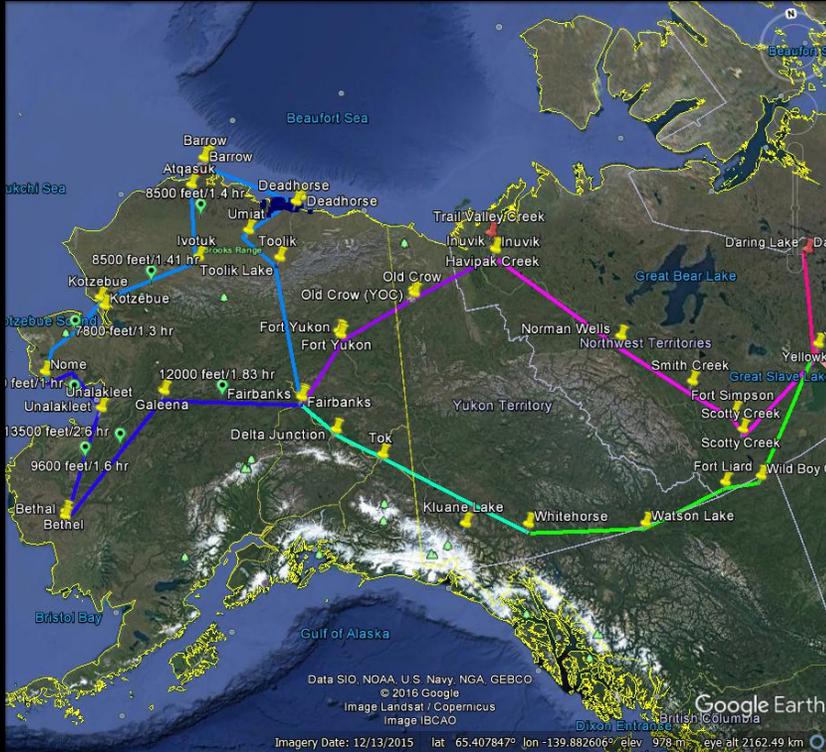
APR/MAY

JUNE

JULY

AUG.

SEPT.

OCT./NOV.
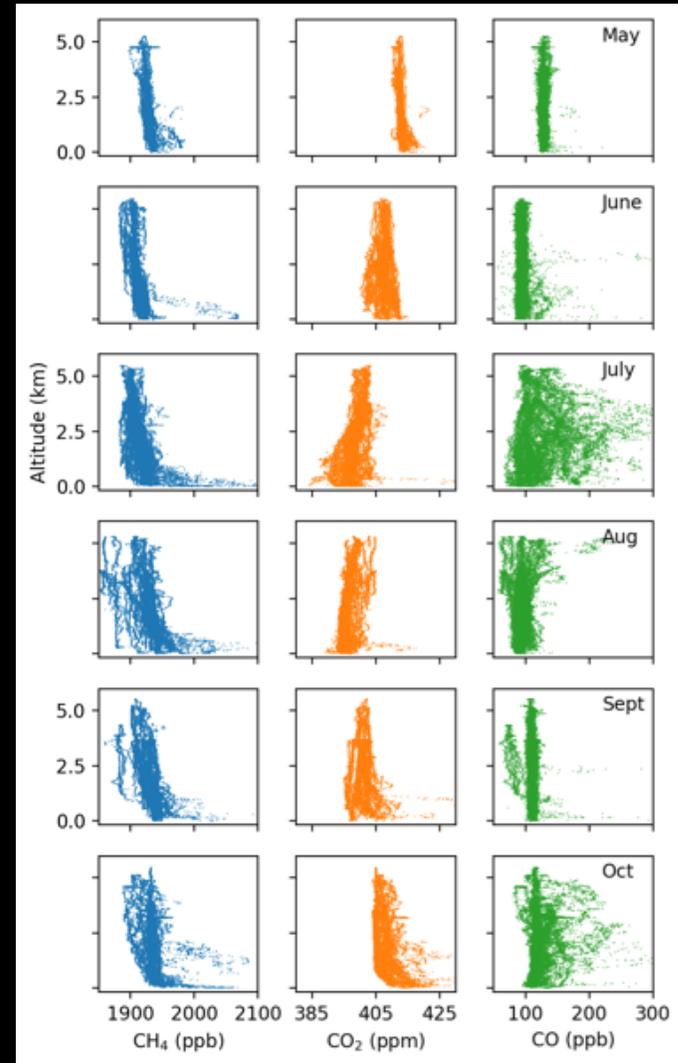
CH₄   CO₂   CO

Basic Observations
CO$_2$ — Short drawdown period (July).
**CH$_4$** – Enhancements were observed in PBL throughout the 6 campaigns
CO – Indicate July was the largest fire month.

Surface influence

The actual flight paths
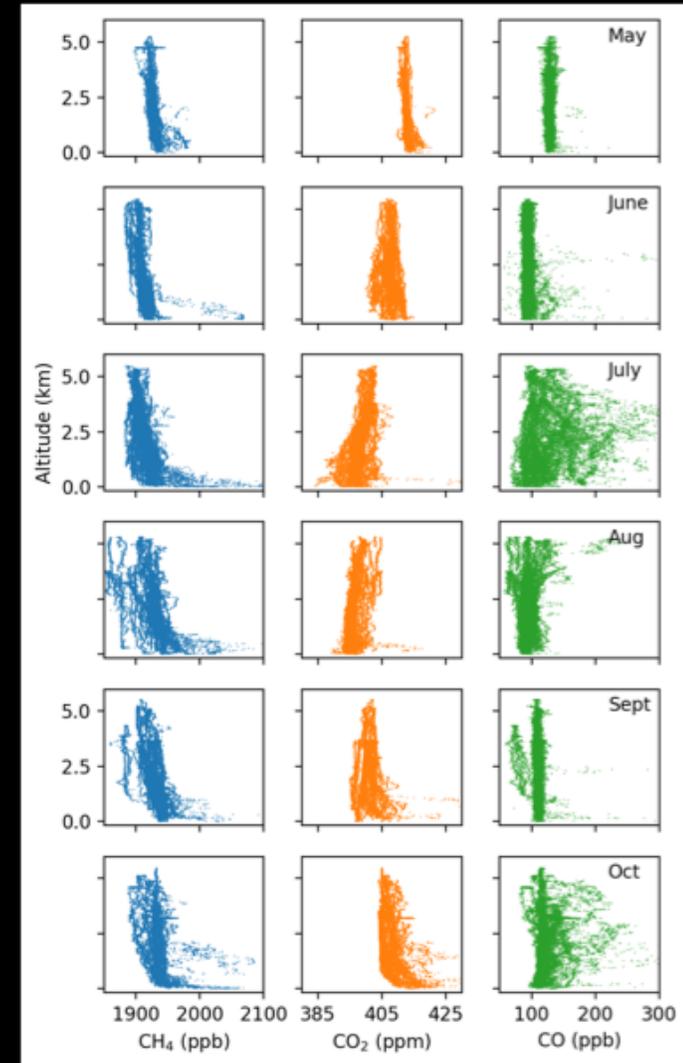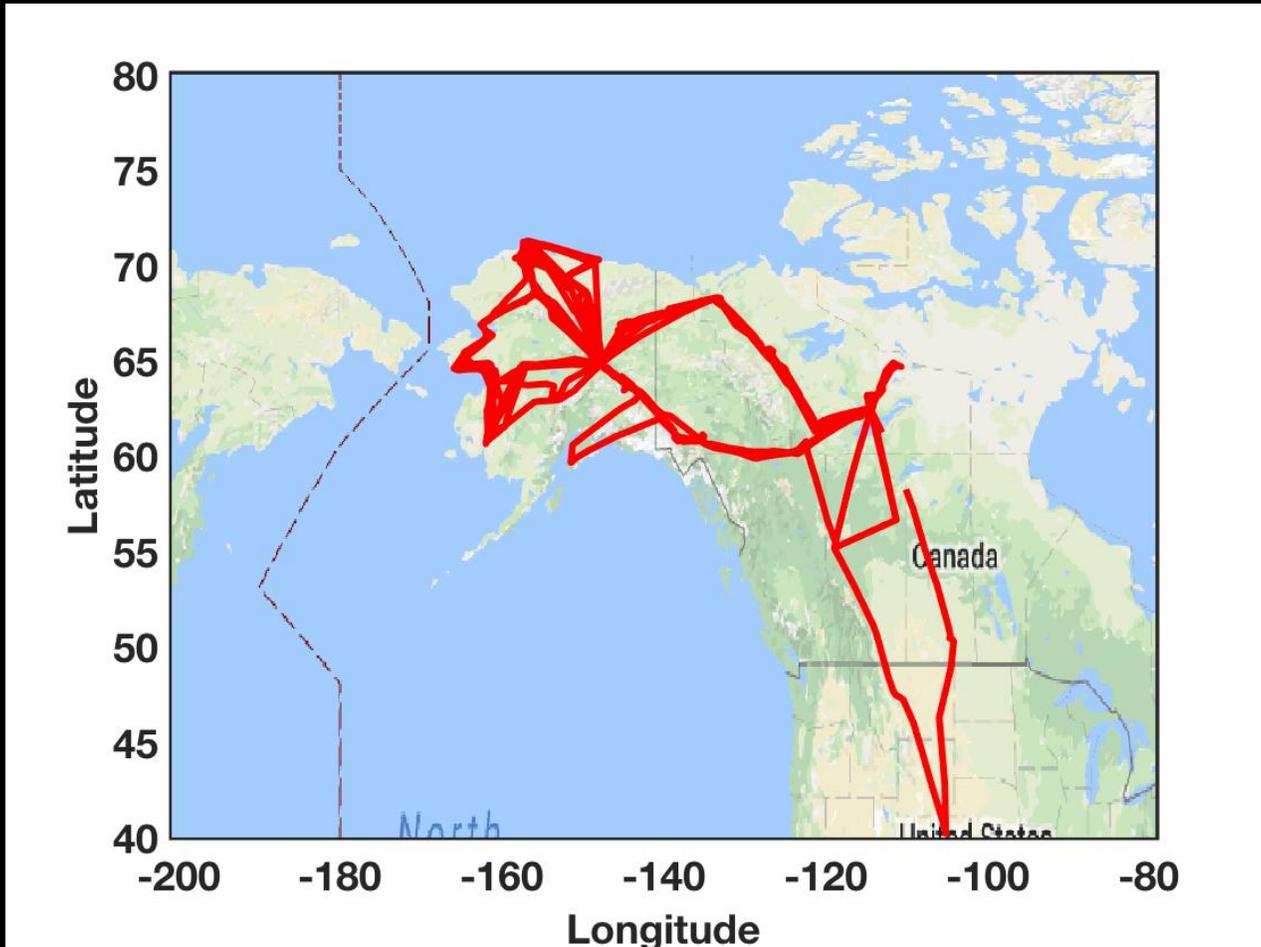
Surface influence

**Shape of profiles are the result of recent surface influence**
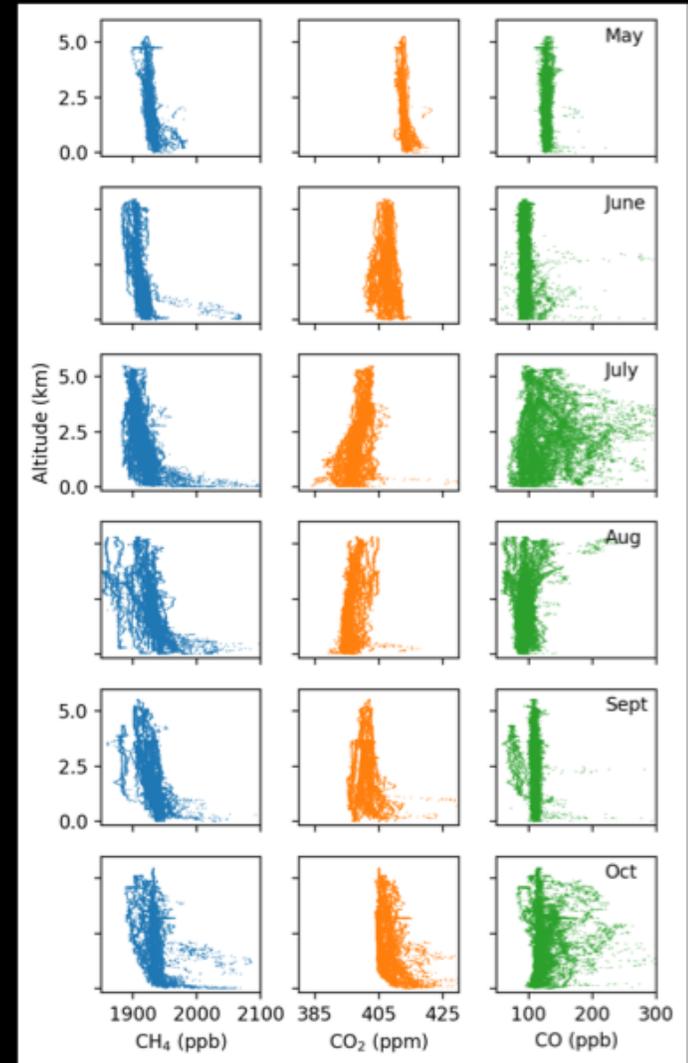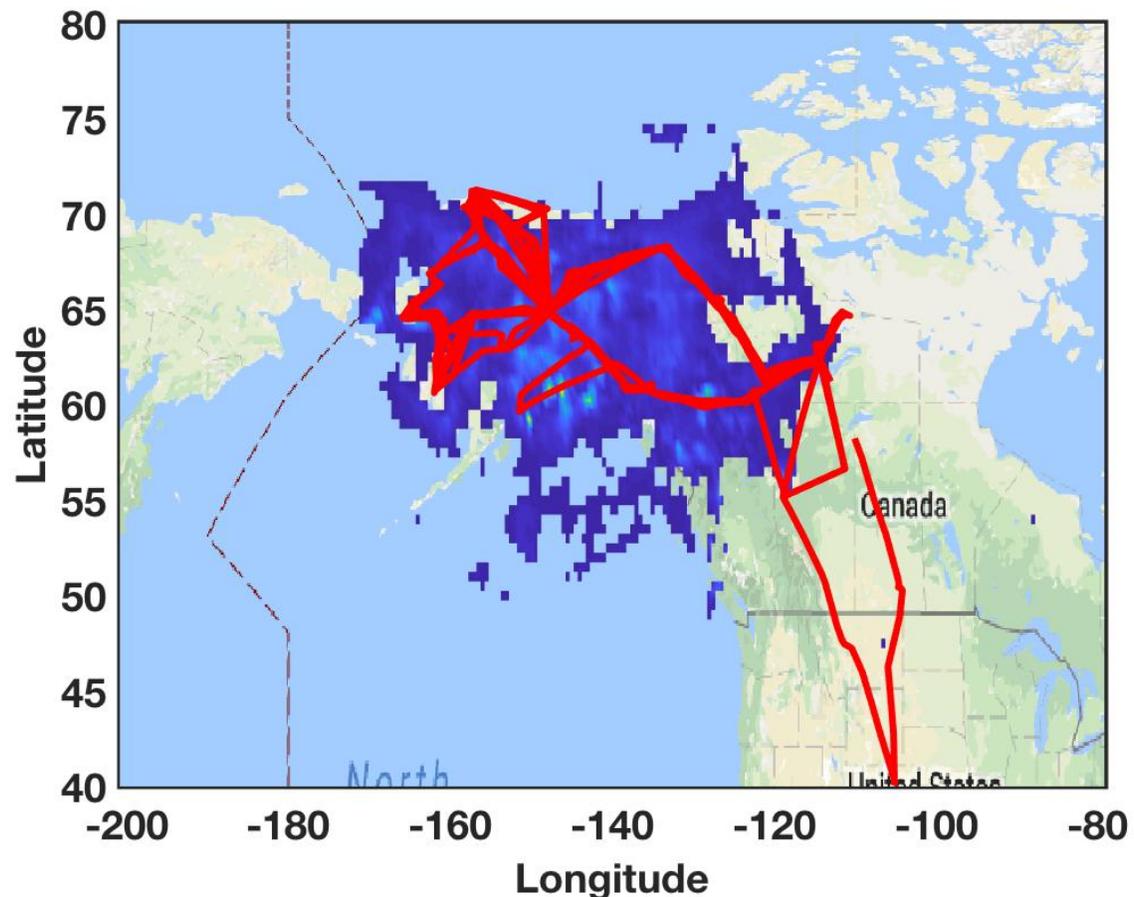
2017 Season in the ABoVE domain

Altitude
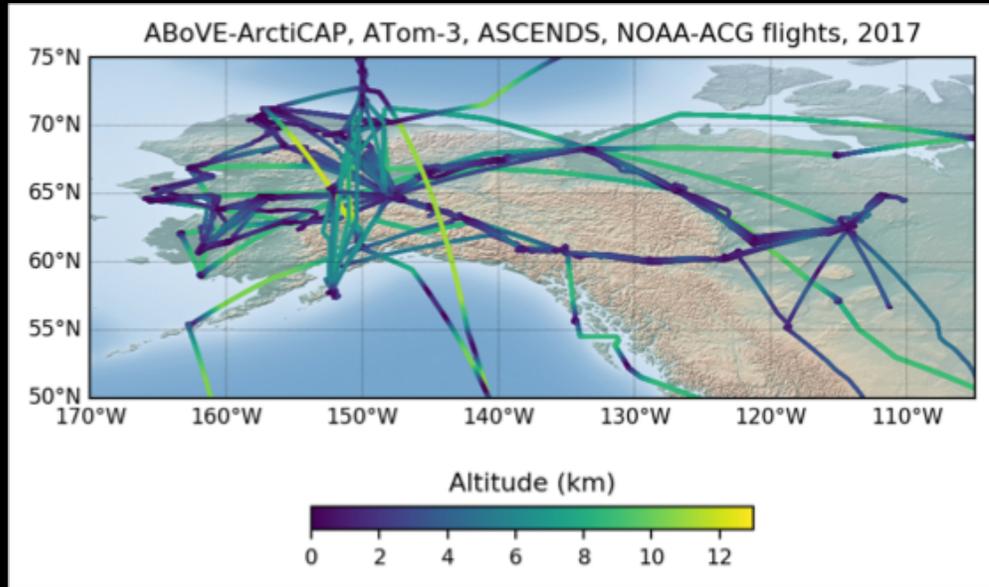
## Time of year
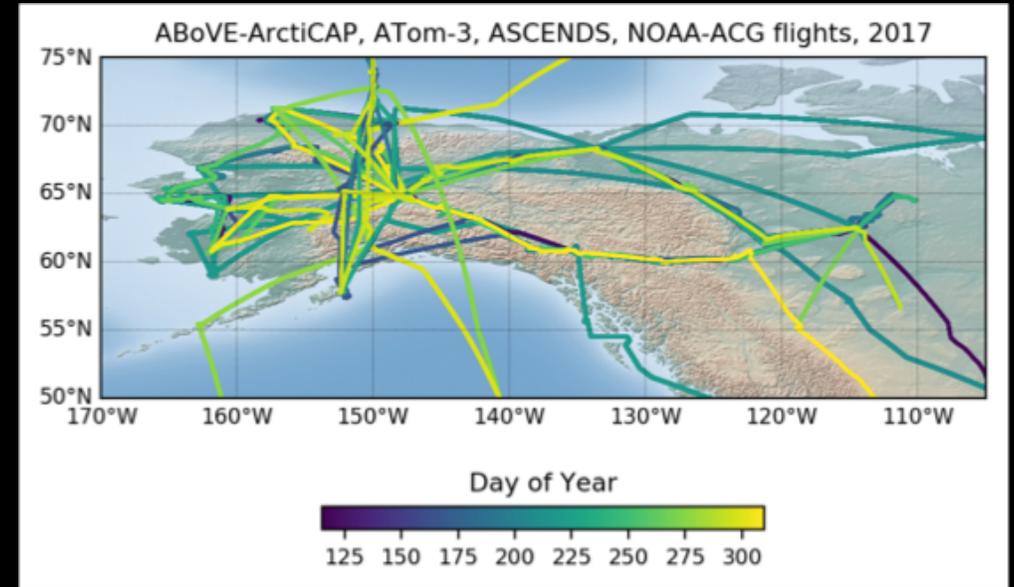
Flight Platform
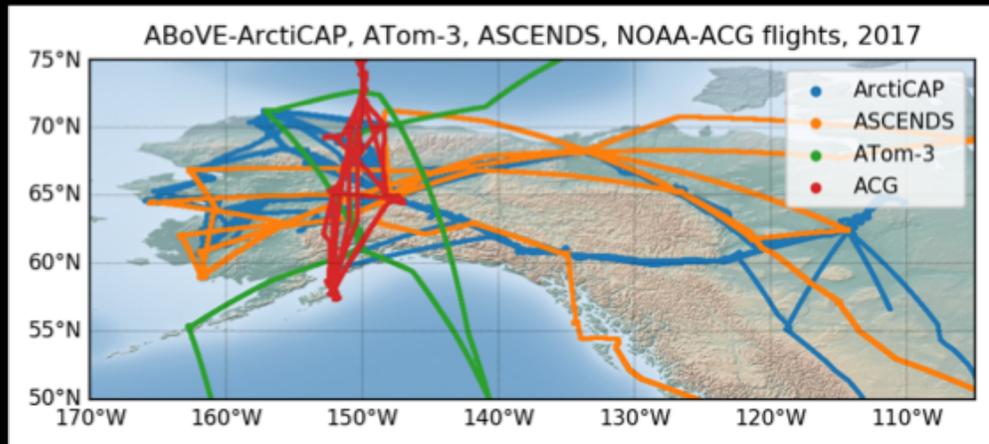
ActicCAP: April – November
ASCENDS: July – August
Coast Guard C130: June , July, August, September
Atom -3: Feburary, October

ActicCAP CO$_2$, CH$_4$ and CO measurements were substantially enhanced by measurements on several other flight platforms.

Retrospective study
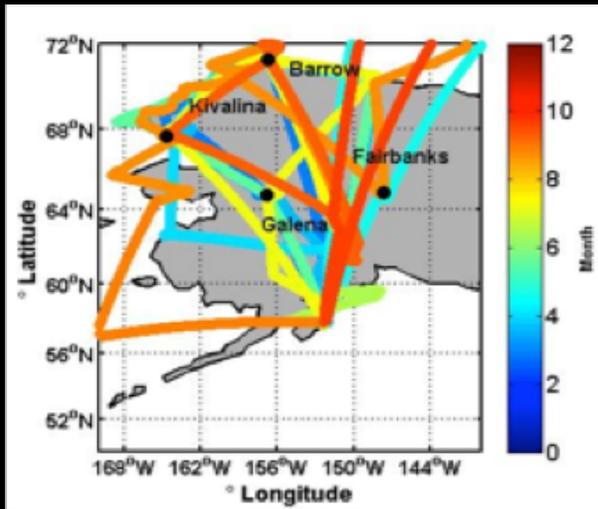
US Coast Guard flights
2009 - 2017
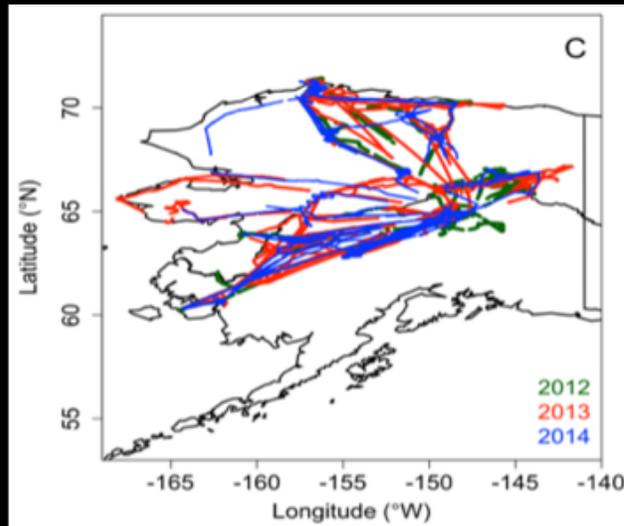
CARVE
2011-2015
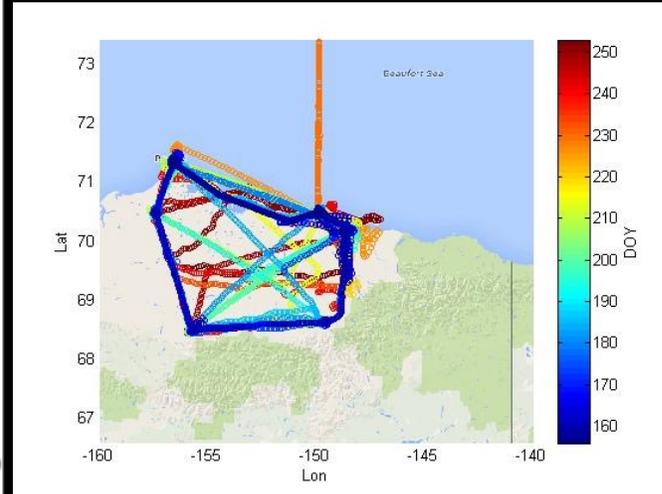
DOE North Slope
2015
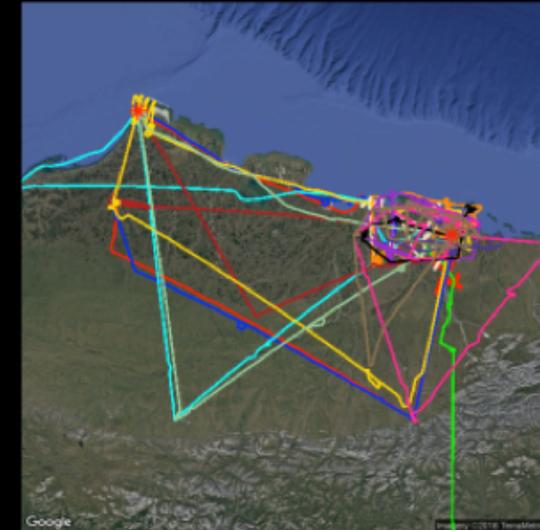
NOAA North Slope
2016

This study will benefit from many different aircraft and ground measurements that have been made in Arctic over the last 8 years

Planned analysis

Quantify spatially explicit, temporally resolved CO_2 and CH_4 flux for 2017

(Schiferl, poster)