

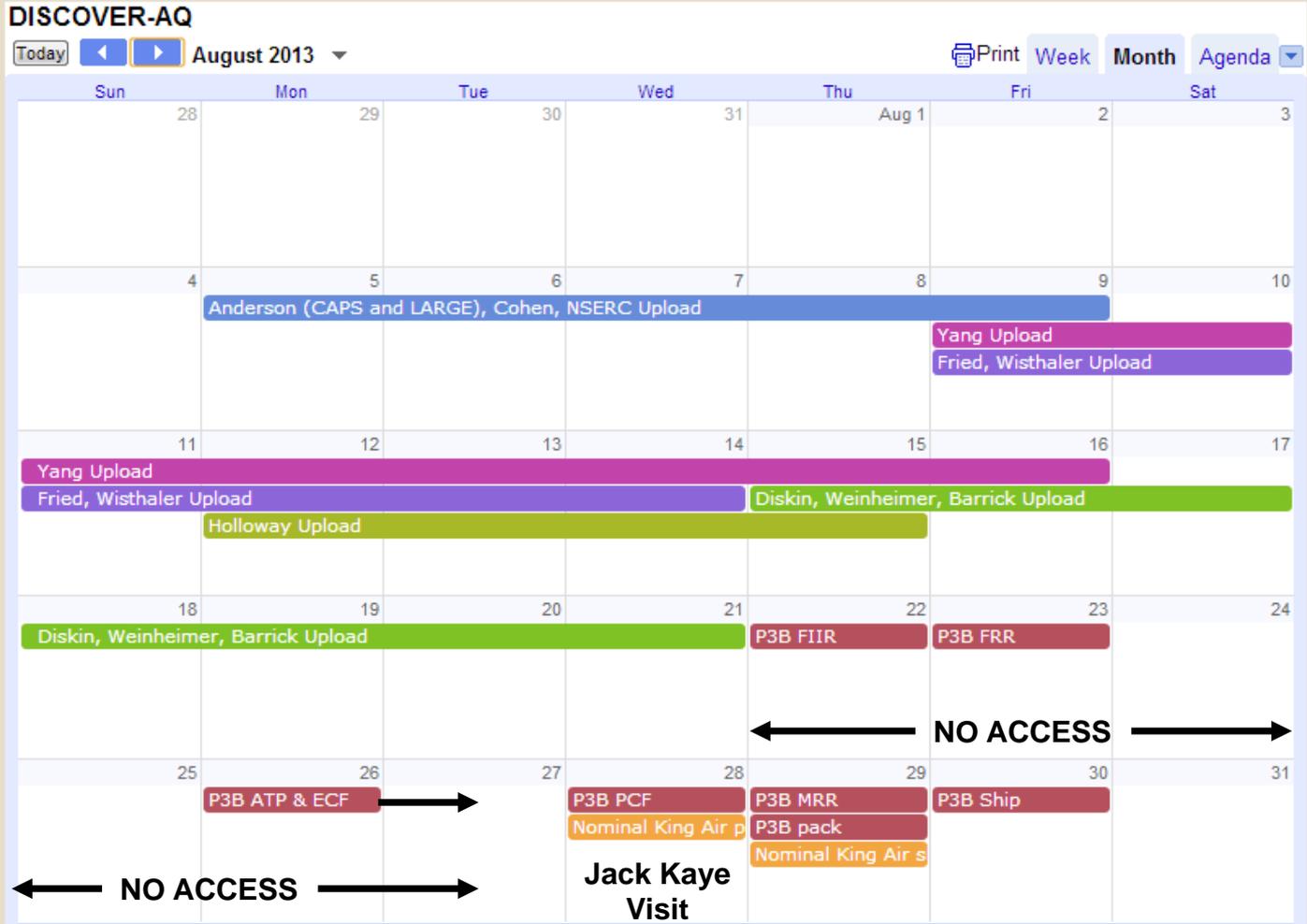


1. Houston Deployment Plans and Update

Only the open items today, please refer to slides from previous telecons for logistical details.

2. Short Presentation of Ira Leifer's recent MACLab measurements of methane in the Houston area.

- Reports
- Forecasting
- Calendar**
- Hotel
- Logistics



Upload activities will include both weekdays and weekends

Site Name	Pandora Y/N	Aeronet Y/N	Mobile Hook-up	Access Granted?	Comments
Aldine	N	Y	N		Aeronet negotiating directly with school for rooftop emplacement
Channelview	Y	Y	Y		Scaffolds ready and other work still pending
Clinton	Y	Y	N		
Conroe (Airport)	Y	Y	Y		Scaffolding in place, other work still pending
Deer Park	Y	Y	N		Scaffolding in place, complete
Galveston	Y	Y	Y		Scaffolding in place, complete
LaPorte Airport	N	N	Y		Scaffolding in place, other work still pending
Texas Avenue	Y	Y	N		Have opened negotiations with stadium, condos have stalled out; EPA in contact with City of Houston
Manvel Croix	Y	Y	Y		Scaffolding in place, other work still pending
Moody Tower	Y(2)	Y	N		
NW Harris Co	Y	Y	N		Scaffolding in place, complete
Seabrook Park	Y	Y	N		Scaffolding in place, complete
Smith Point	Y(2)	Y	N		All details and arrangements should be coordinated through Rich Clark (Millersville University)
UH Coastal Center	N	Y	N		This site complete
UH Liberty	N	Y	N		This site complete
UH Sugarland	N	Y	N		This site complete
West Houston	Y	Y	N		Access is for rooftop instruments, still need to discuss possible NO2 measurement from TCEQ at this site

Yellow indicates that intended activities are still on track
 Green indicates completion of intended activity or permission

12 August – Sites open for Trailers and Mobile units

15 August – Met Profiler set up completed

Initial site visits need to be coordinated with Jim Thomas (jwinthomas@embarqmail.com) and Raj Nadkarni (Raj.Nadkarni@tceq.texas.gov). The project will provide lock access codes for subsequent visits.



Tentative Ground Site Schedule



Sites	Dates	Groups
Manvel Croix	19-Aug	Baylor/EPA
Conroe	22-Aug	UT-Austin
La Porte	29-Aug	EPA, NOAA
Galveston	26-Aug	NOAA, UH
Manvel Croix	26-Aug	Rice
Smith Point	7-Aug	Met Profiler
College Station	9-Aug	Met Profiler
Fayette Co	22-Aug	Met Profiler
Wharton	23-Aug	Met Profiler
Seabrook	30-Aug	EPA
Channelview	Completed	Aeronet / Pandora
Deer Park	Completed	Aeronet / Pandora
Seabrook	Completed	Aeronet / Pandora
NW Harris	Completed	Aeronet / Pandora
Manvel Croix	Completed	Aeronet / Pandora
Conroe	Completed	Aeronet / Pandora
Galveston	Completed	Aeronet / Pandora

TCEQ would prefer to stick to this schedule, but if anyone has a problem, please contact Raj Nadkarni (Raj.Nadkarni@tceq.texas.gov) as soon as possible.



Small Sensors



CairClip sensors have arrived in Houston and Gao Chen has them. AQMesh sensors are shipping out today and should arrive tomorrow.

Both the Deer Park (4 schools) and Laporte (3 schools) Independent School Districts as well as DeZavala Elementary have agreed in principle to hosting small sensors, although specific details do need to be arranged. Other units will be placed at Deer Park (or Laporte Airport) and on the Aerodyne van.

Installation of AQMesh sensors will be accomplished by Iq Mead and Bobby Martin during the week of 19 August. **Kristen Knoedler, a science teacher from Deer Park High School will be available all day Monday and afternoons on subsequent days. Details still being worked out with other schools**

Additional Cairclip sensors are being secured to ensure that each school has at least one unit. Russell Long **and Rachelle Duvall** will accompany Iq and Bobby to distribute these devices and brief the schools on their implementation.

Melissa Yang will serve as POC and host for the online chat sessions with teachers and students on flight days. This is different than the scientists onboard who do most of the chatting. Emily Schaller will be busy with HS3, but is available to provide tips on what to do.



Mobile Lab Operations



The Homeland Security letter is complete and undergoing review at TCEQ. Due to the attention-grabbing nature of the mobile labs (and P-3B) operating in close proximity to petrochemical and other facilities, a letter is being drafted for Homeland Security. A copy of this letter will be provided to show to any authorities in case you are stopped and questioned.

During the telecon last Friday, three regions were identified for repetitive sampling during flight days.

Channelview – Deer Park (Aerodyne)

Manvel Croix – Galveston (NASA LARGE)

Conroe – NW Harris Co (University of Houston/Rice)

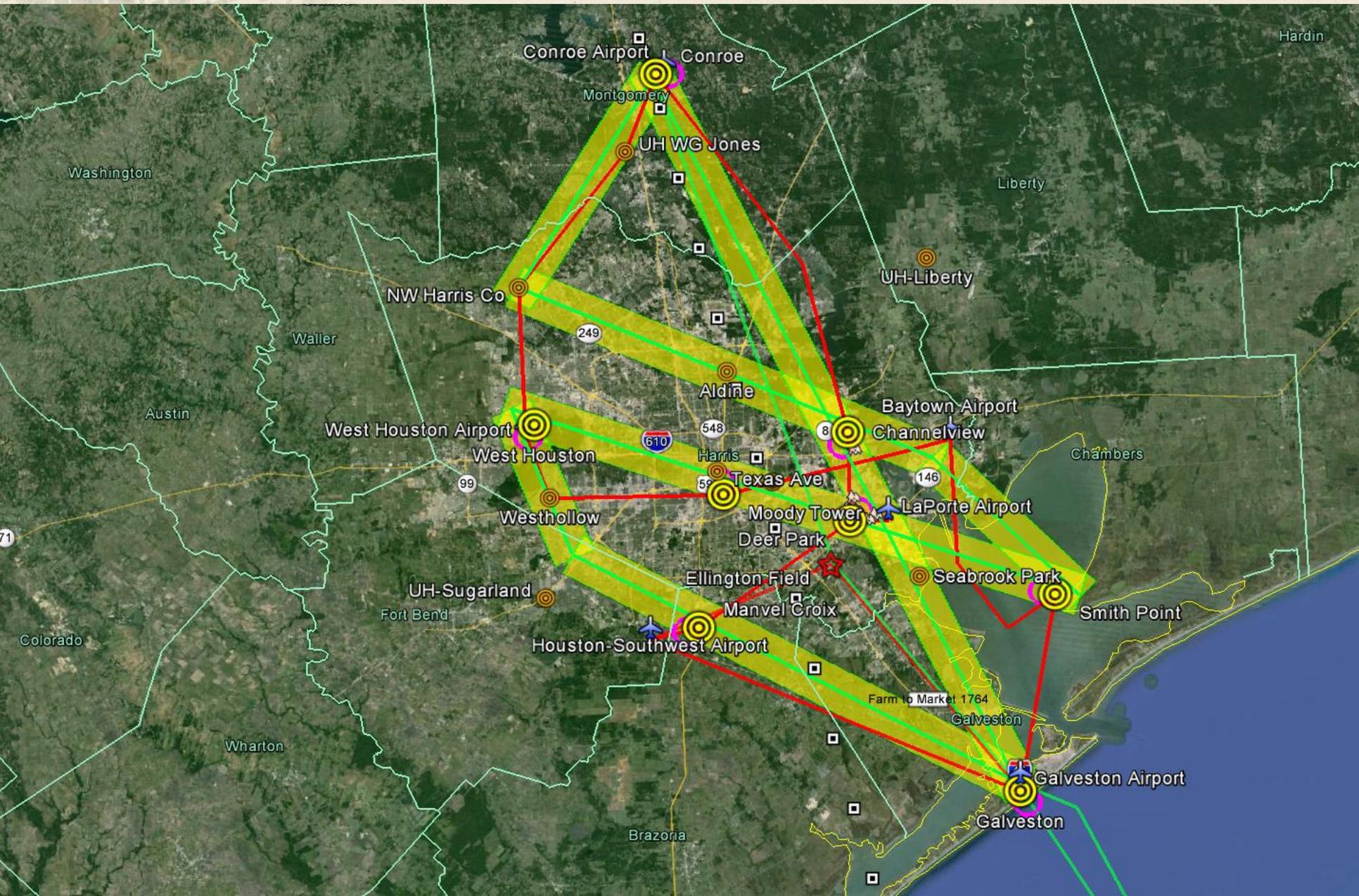
Potential routes will be shared and discussed at the next telecon.

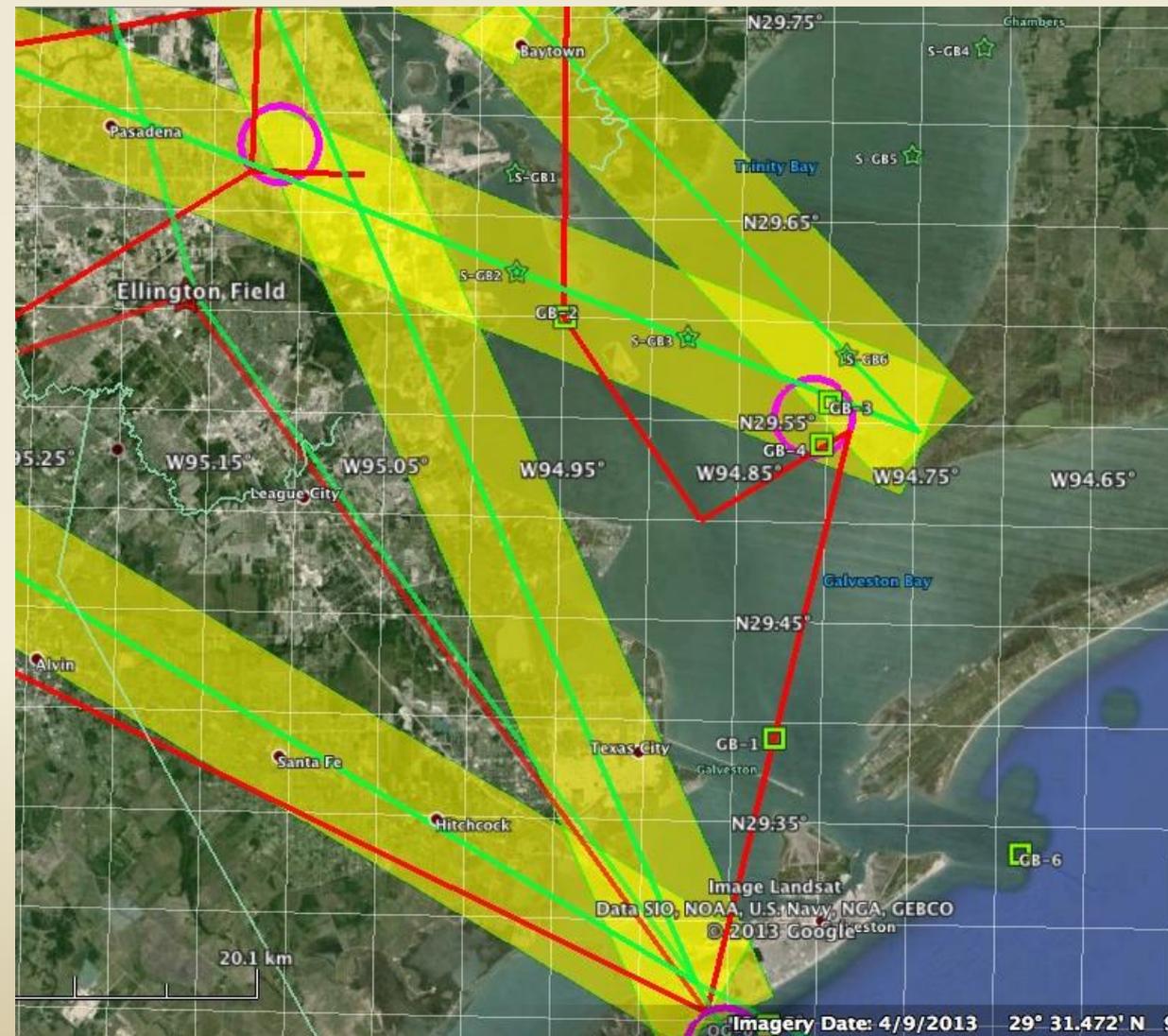
Primary POCs:

Aerodyne - Scott Herndon or Paola Massoli

University of Houston - Jimmy Flynn

NASA Langley - Bruce Anderson





Squares = Large vessel with full complement of oceanographic and atmospheric measurements

Stars = Small boat with only water samples and in-water radiometry

We have been requested to consider possible alteration to the King Air flight pattern on the few days when the ship is in the bay.



DataID Registration



The website is ready for registration of dataIDs (Gao will be emailing instructions very soon.)

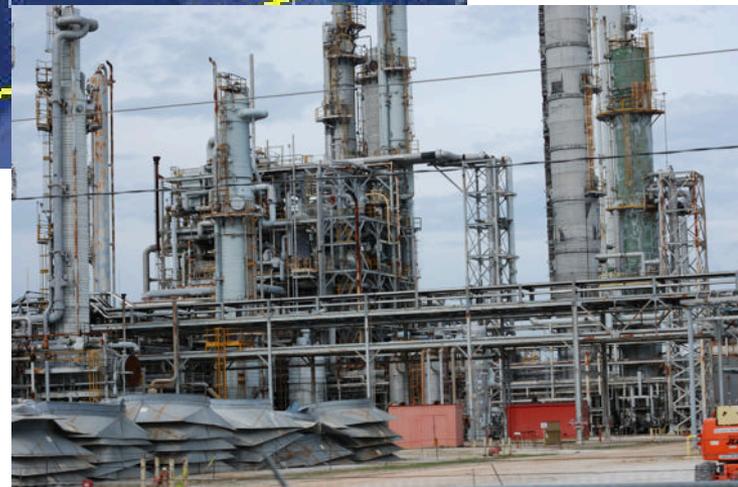
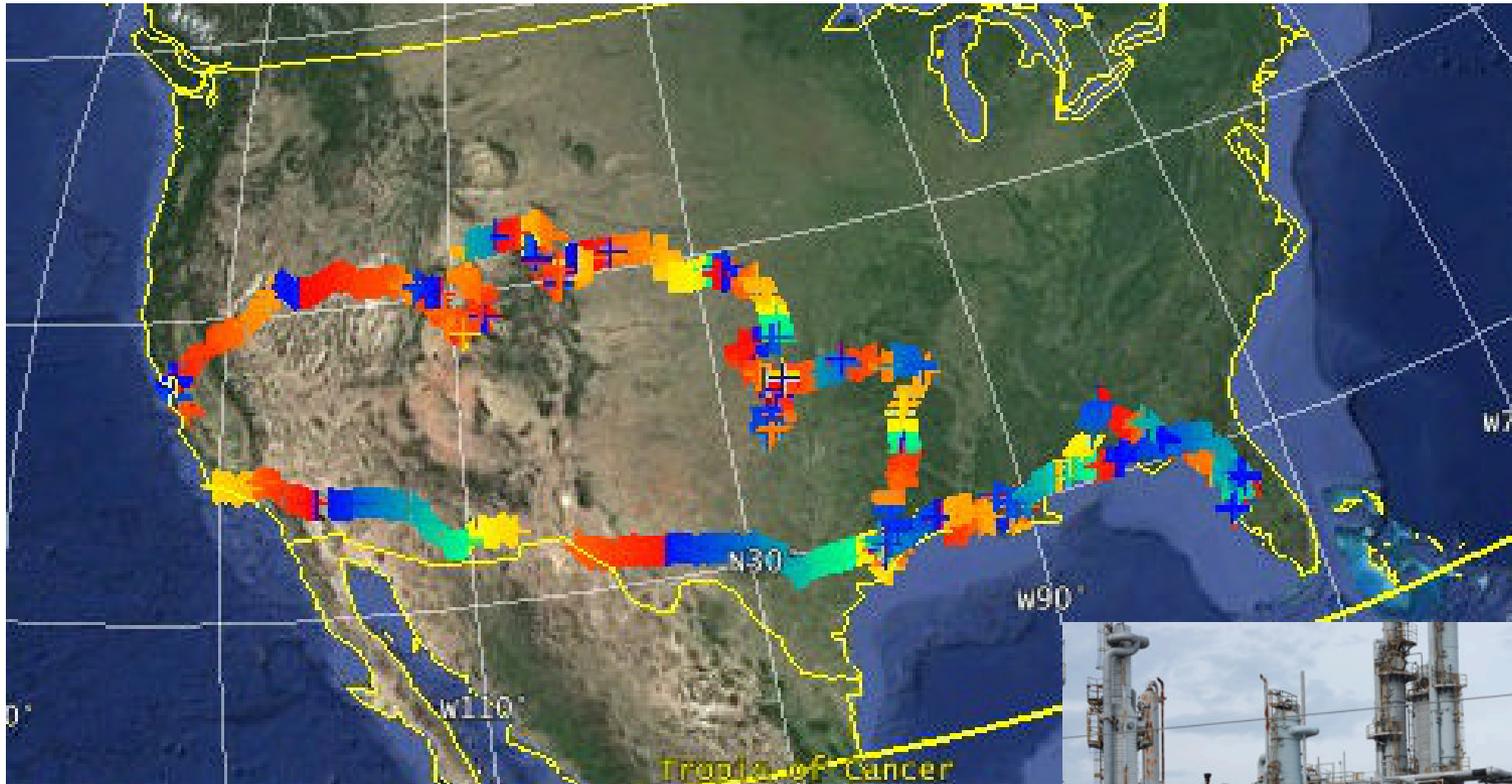
Those on the aircraft who already have dataIDs from previous DISCOVER-AQ campaigns do NOT need to enter new dataIDs

Everyone on the ground will need new dataIDs since the location names have changed.

MACLab Expedition USA 2013

PI: Ira Leifer

Crew: Thor Eglund, Monica Leifer, Claudio Pierfederici



The Houston Refinery Survey

MACLab (Mobile Atmospheric Composition Laboratory)

Los Gatos Research, Greenhouse Gas Sensor (CH₄, CO₂, H₂O)

Airmar GPS/meteorology

Realtime data visualization (Google Earth)

GE web-push for remote post-processing

Video Camera, 3-direction, continuous video record

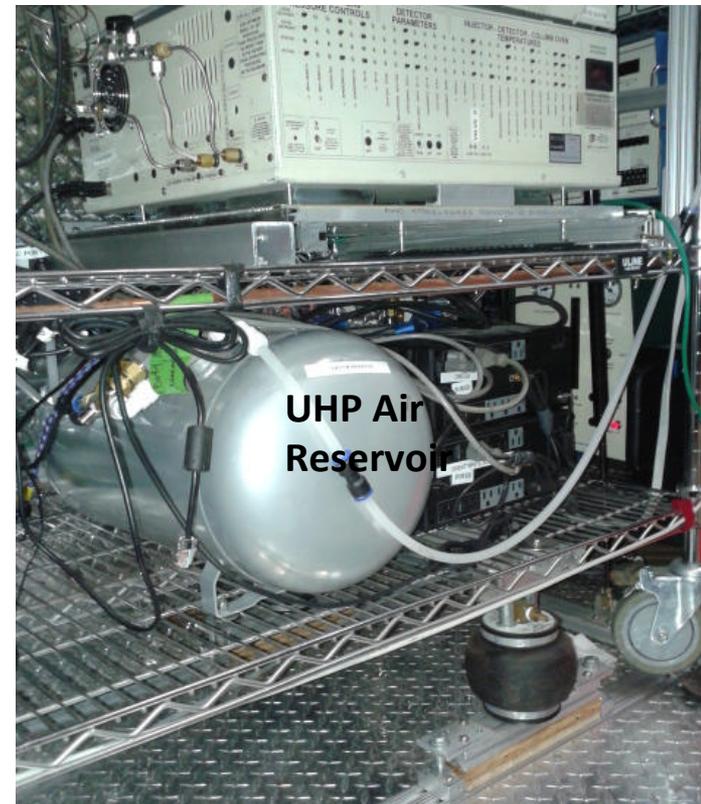
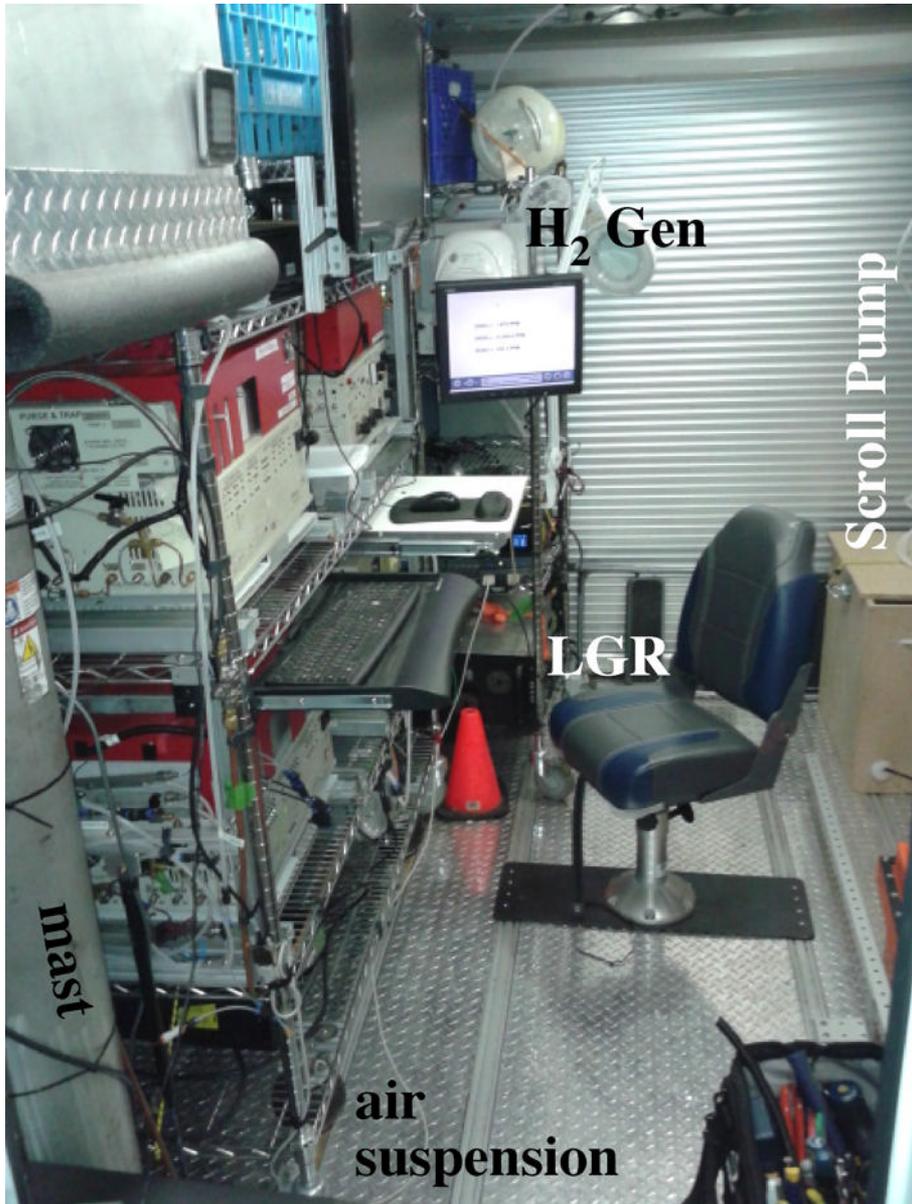
50 ft mast for stationary sampling and winds

Hydraulic lift for loading instrumentation



MacLab 8'x11'x7' Lab

- Gas Chromo Rack
(air suspension)
- Gas Generator Rack
- Storage & work surfaces



Houston MACLab Survey

Research goal – investigate Houston refinery emissions within the larger context

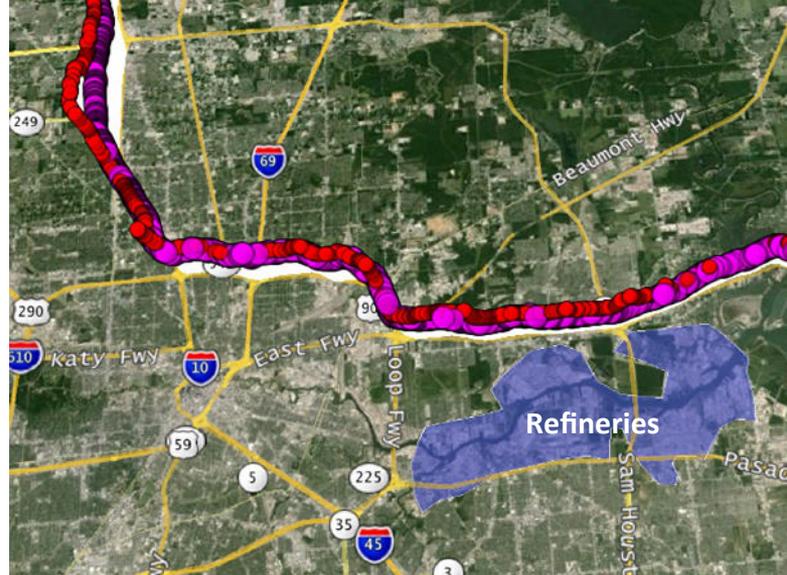


1st look, Post-Processing Houston Area

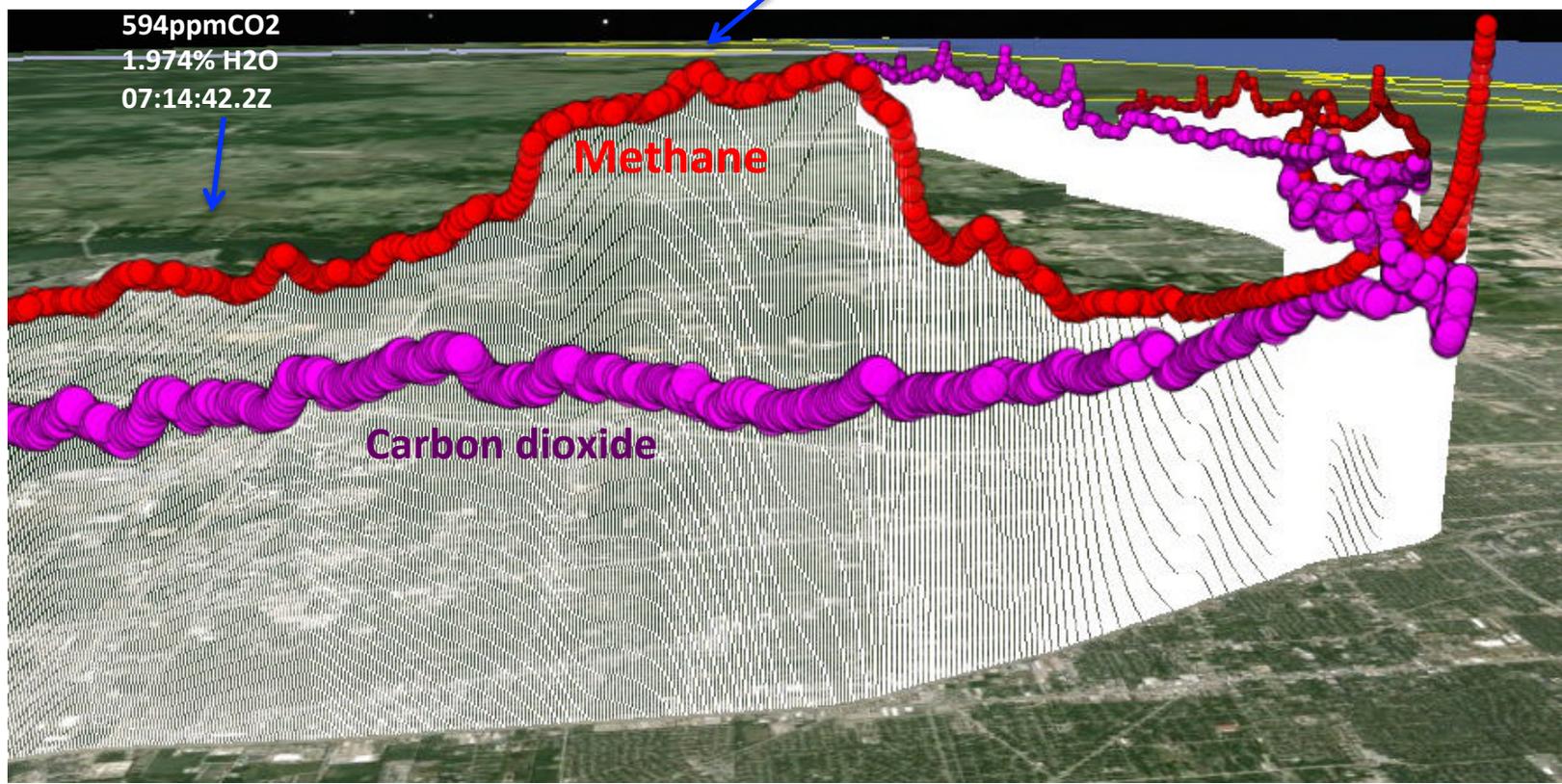
(1Hz data, 5 Hz available – realtime data is 0.25 hz
custom software)

**Strong, broad, sharp plume North of
Houston during a N-S transect of
downtown is 25 miles from refinery
alley (NW)**

2587ppbCH₄
582ppmCO₂
1.993% H₂O
07:12:23.2Z



N



594ppmCO₂
1.974% H₂O
07:14:42.2Z

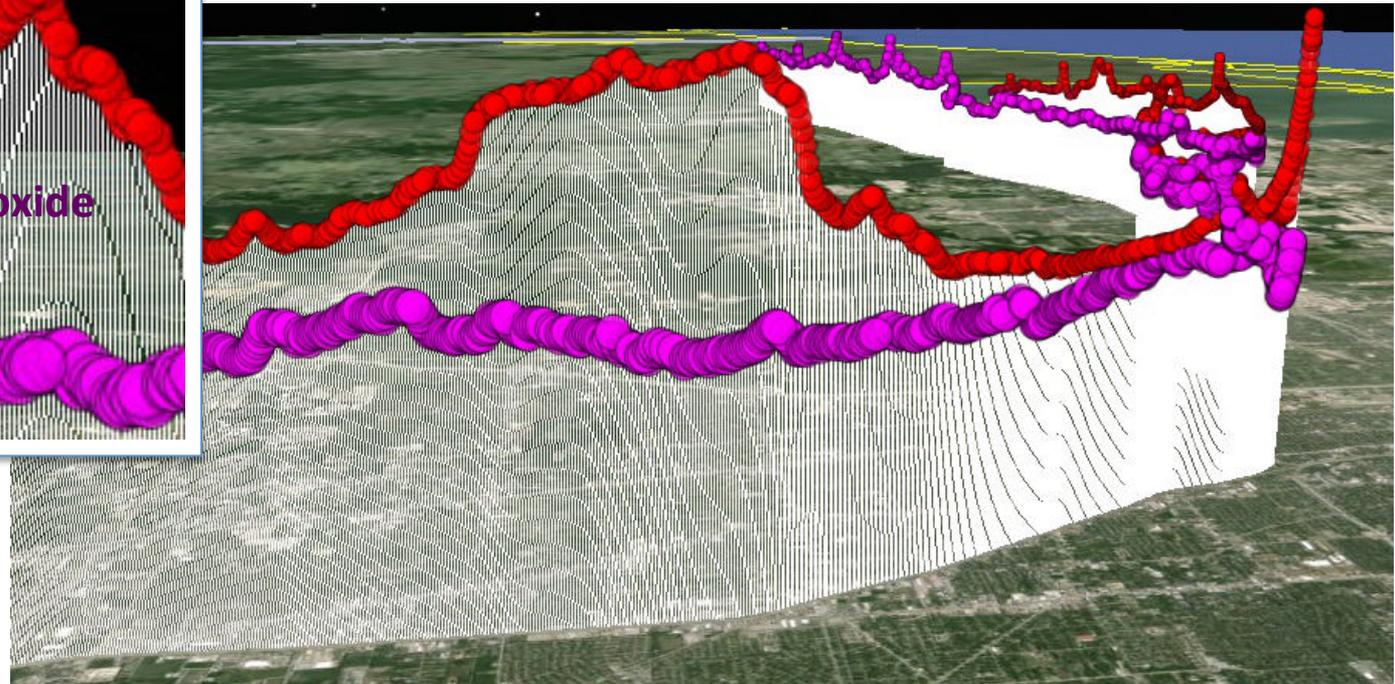
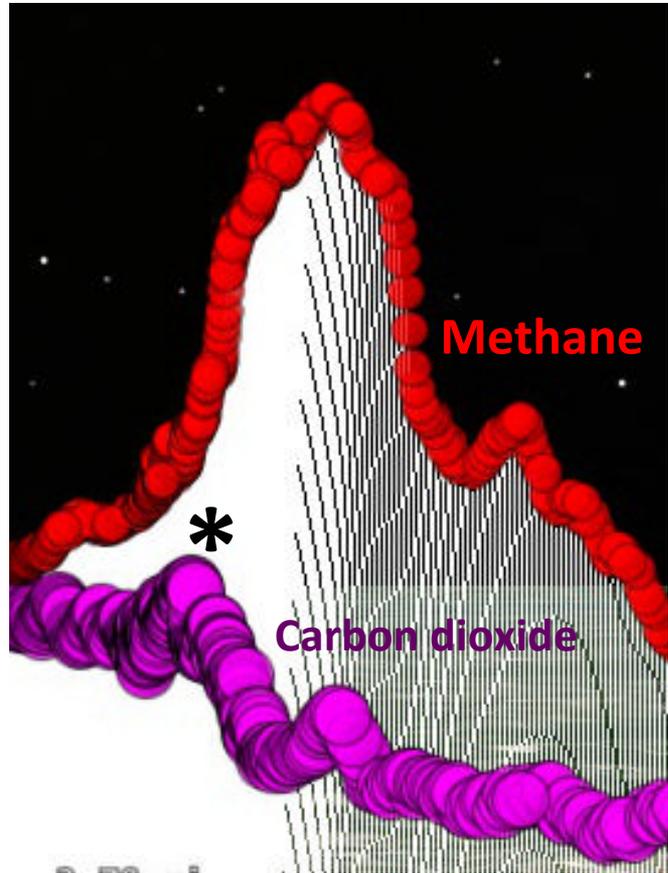
Methane

Carbon dioxide

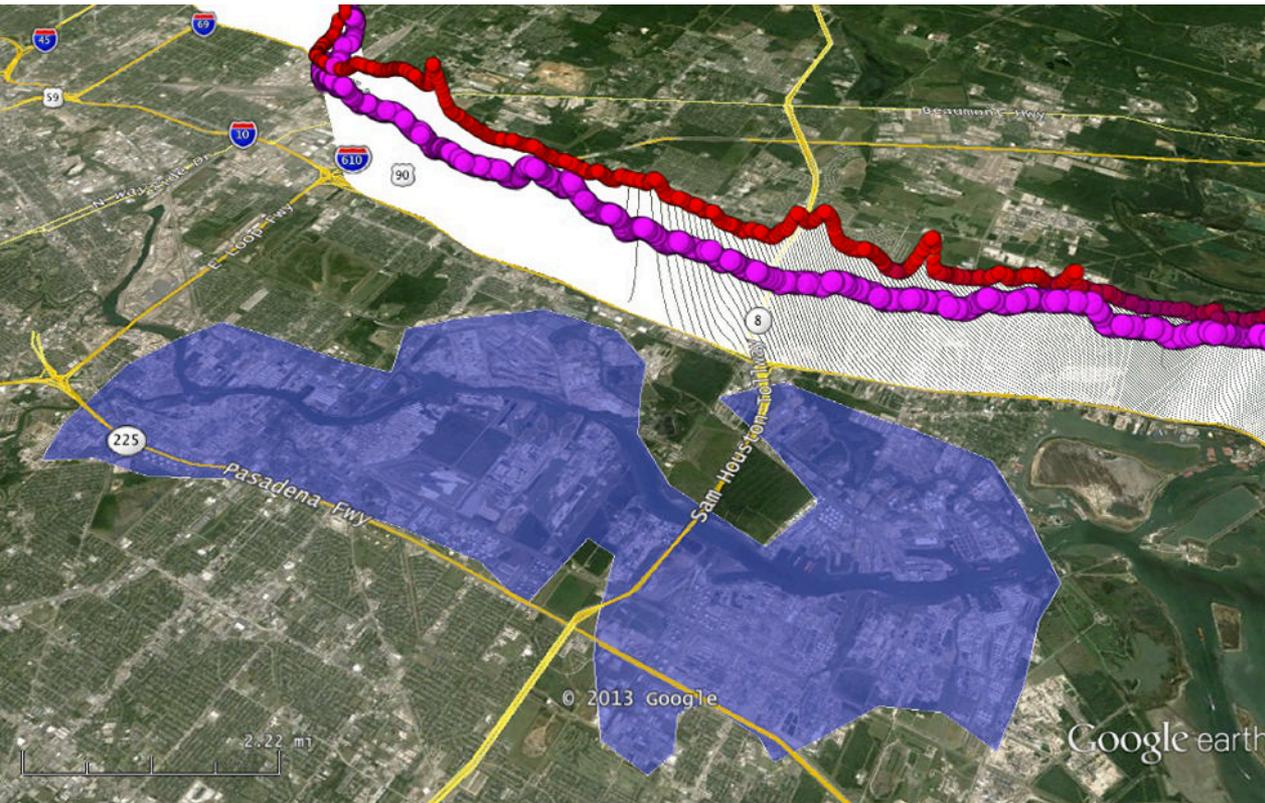
S

Oblique northward view of plume shows near Gaussian profile

***Note, spatial shift of CO₂ plume relative to CH₄ plume**

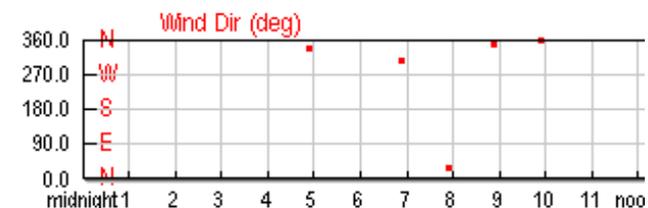
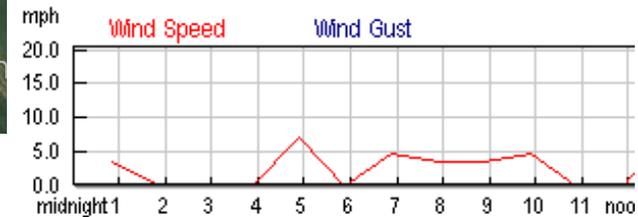


Near-Refinery Alley plumes smaller than the North Plume were observed with significant fine-scale structure



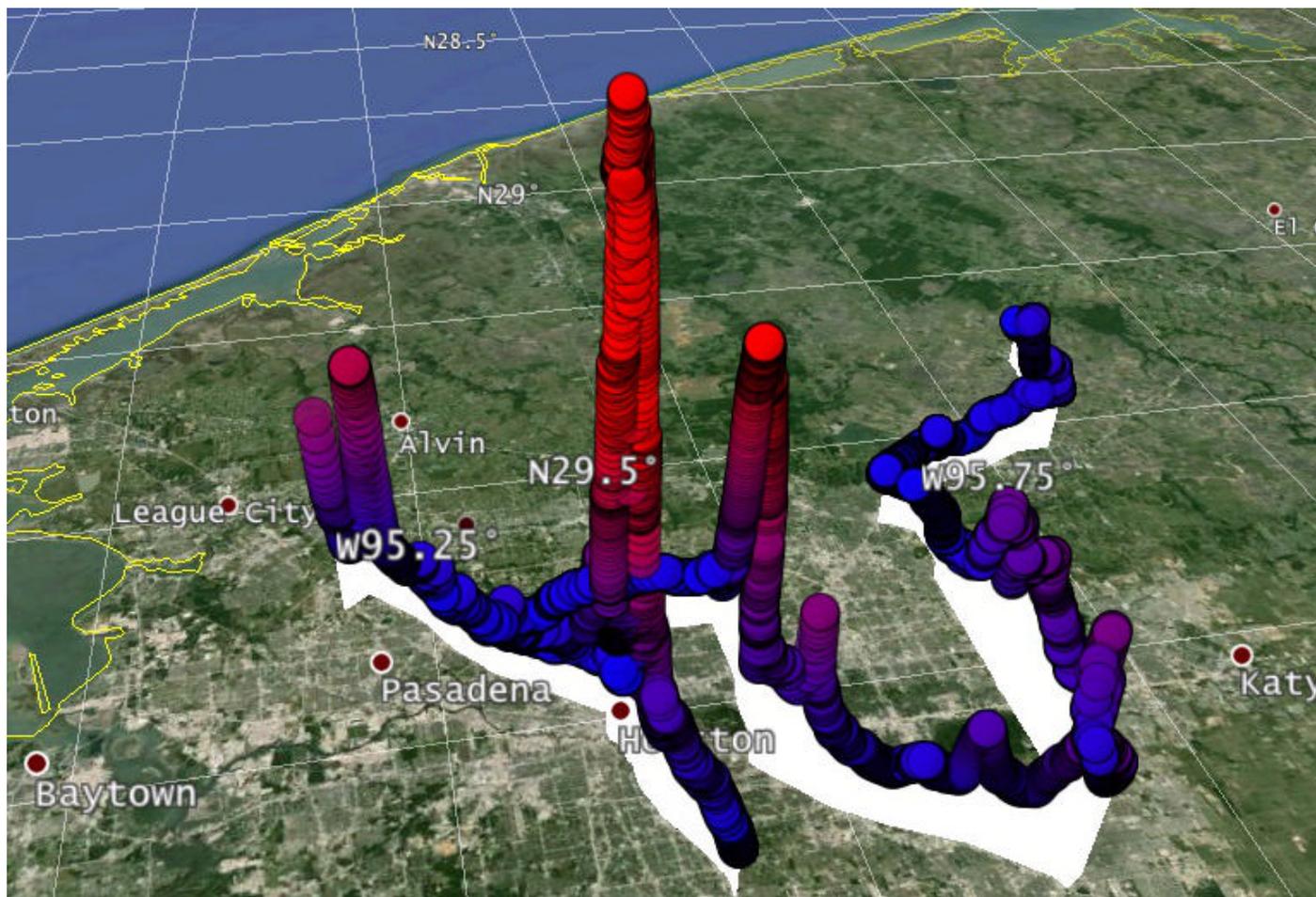
Observations similar
to Houston
Observations in
Leifer et al 2013

Weak NNW winds**
From weatherunderground



**** winds not yet extracted
from data in post processing**

Impressive CH₄ plume east of Refinery Alley, centered on downtown Houston



**CH₄ plume
peaked
at 10 ppm**

Downtown Houston data

