

18 August Preview

Rapid Science Synthesis*

Questions **A, C, D, E** - Emissions:

- **Emission Inventory Targets**
- **Early Ronald Brown Data**
 - **Ship Channel Industrial Emissions**
 - **Ship Channel Mercury Plume**
 - **Vehicle Emission Signature**

Questions **G, H** - Regional Background O₃ and aerosol:

- **Early Twin Otter Data** (Bob Banta, Christoph Senff, et al.)
- **MISR Aerosol Products** (Ralph Kahn)

Questions **I** - Regional Background O₃ and aerosol:

- **SAPRC vs. CB-IV chemical mechanisms** (Dave Allen)

*<http://esrl.noaa.gov/csd/2006/rss/>

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Rapid Science Synthesis*

Questions **A, C, D, E** - Emissions: (David Parrish)

- Emission Inventory Targets
- Early Ronald Brown Data
 - Ship Channel Industrial Emissions
 - Ship Channel Mercury Plume
 - Vehicle emissions signature

Questions **G, H** - Regional Background O₃ and aerosol:

- Early WNW Otter Data (Christoph Senff)
- MISC Aerosol Products (Ralph Kahn)

Questions **I** - Regional Background O₃ and aerosol:

- **SO₂ vs. CB-IV chemical mechanisms**
(Dave Allen)

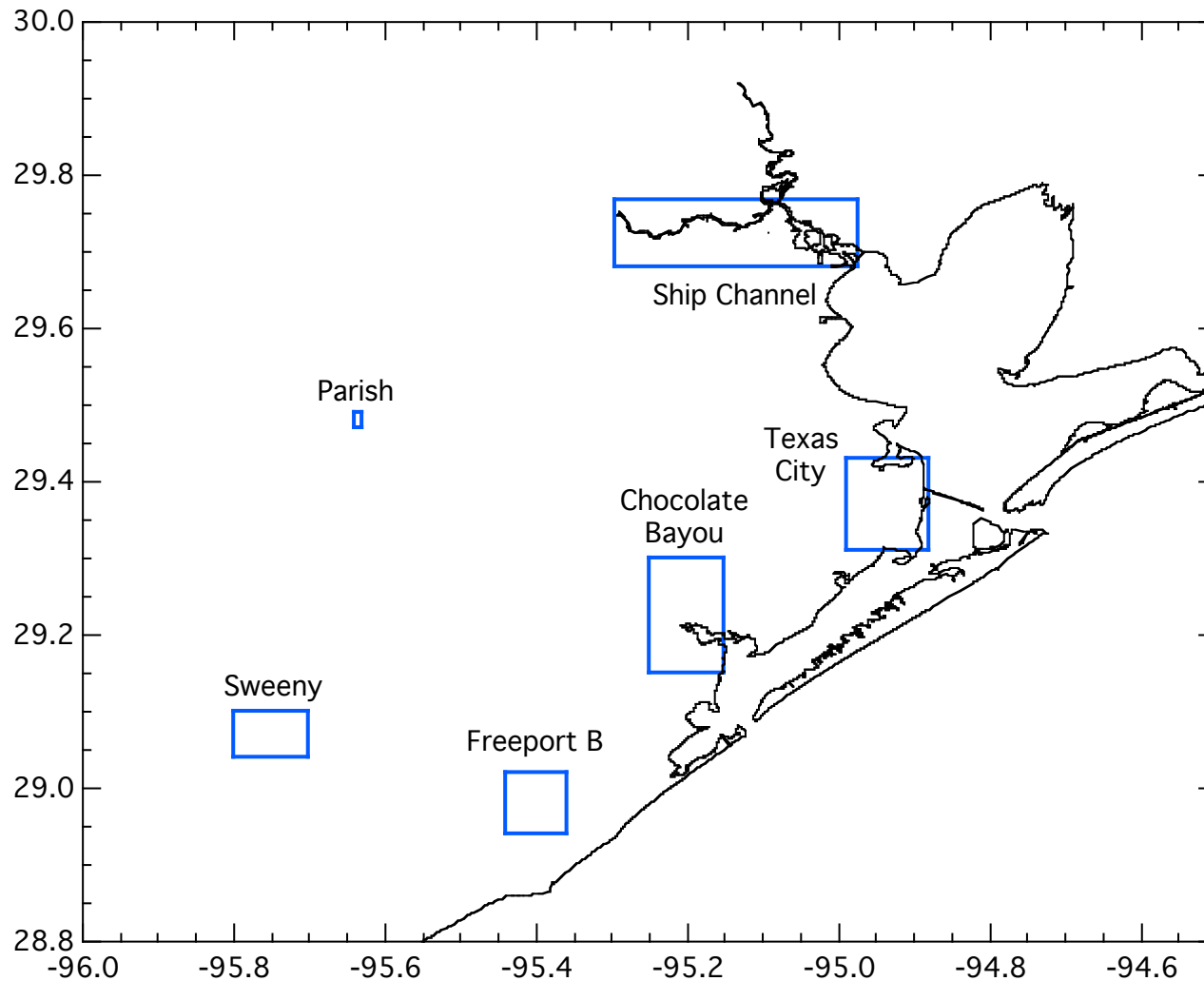
Do Not Cite or Distribute!!!!

*<http://esrl.noaa.gov/csd/2006/rss/>

Questions A, C, D, E - Emissions:

- **Emission Inventory Targets**

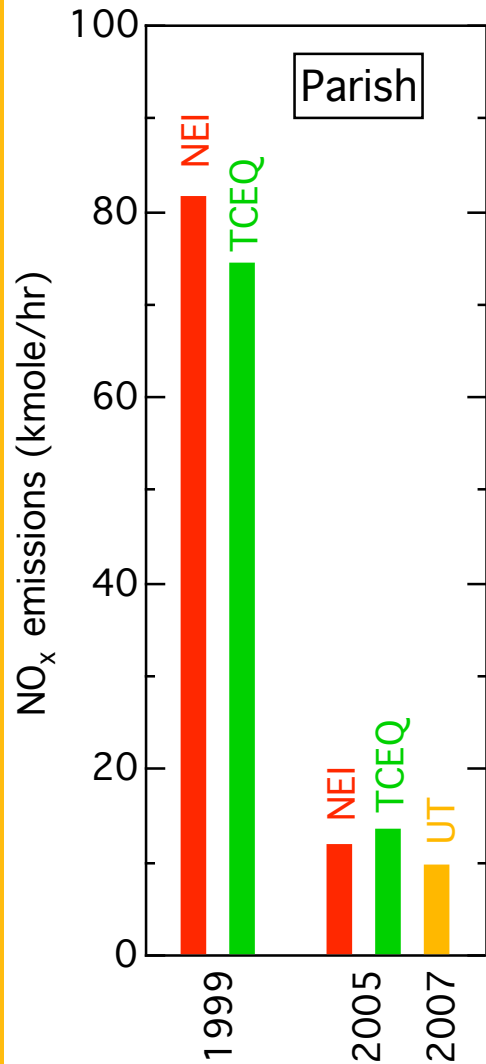
(Stu McKeen, Greg Frost, Dave Allen)



Questions A, C, D, E - Emissions:

- **Emission Inventory Targets**

(Stu McKeen, Greg Frost, Dave Allen)



NEI 1999 = EPA NET-99 Version Point Emissions

NEI 2005 = EPA NET-99 Version Point Emissions
modified where possible with 2005 CEMS data

TCEQ 1999 = TCEQ Point Emissions used in 2000

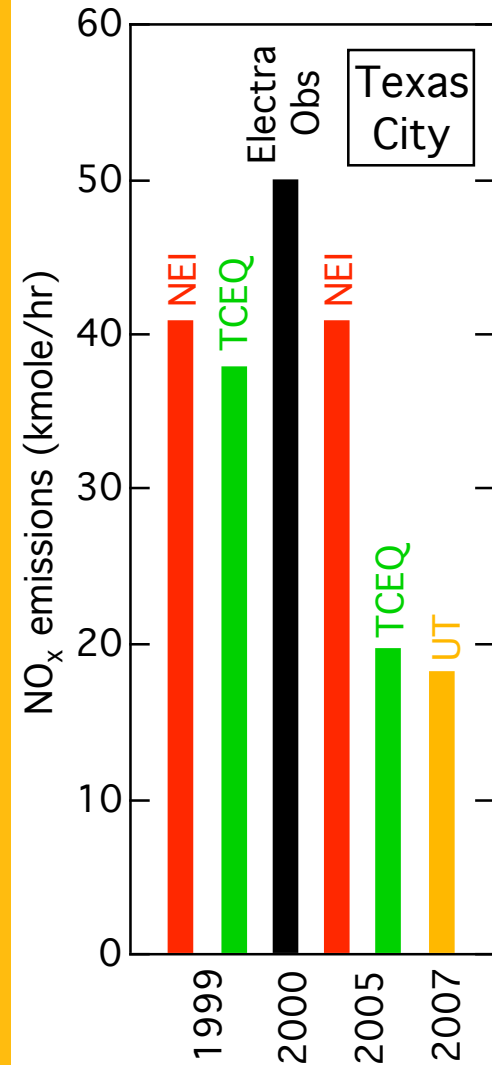
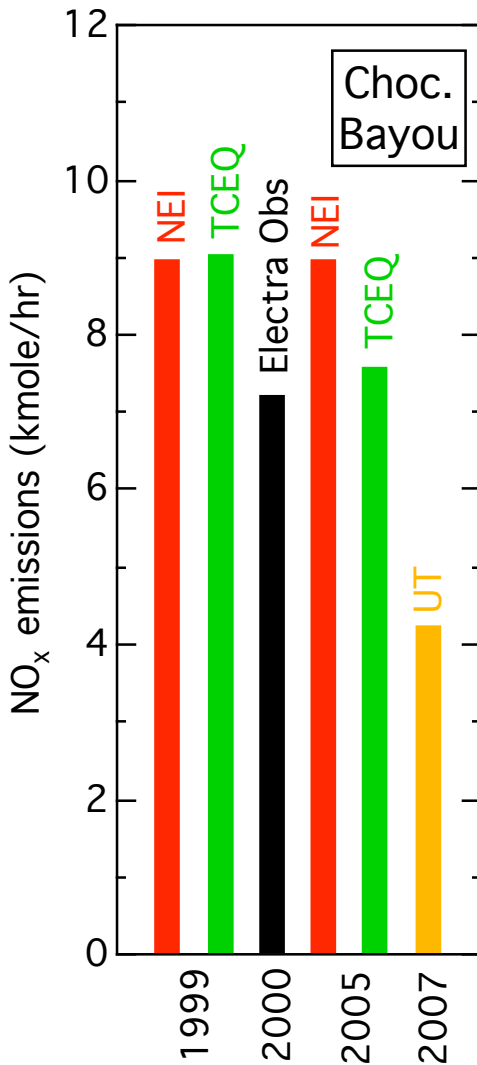
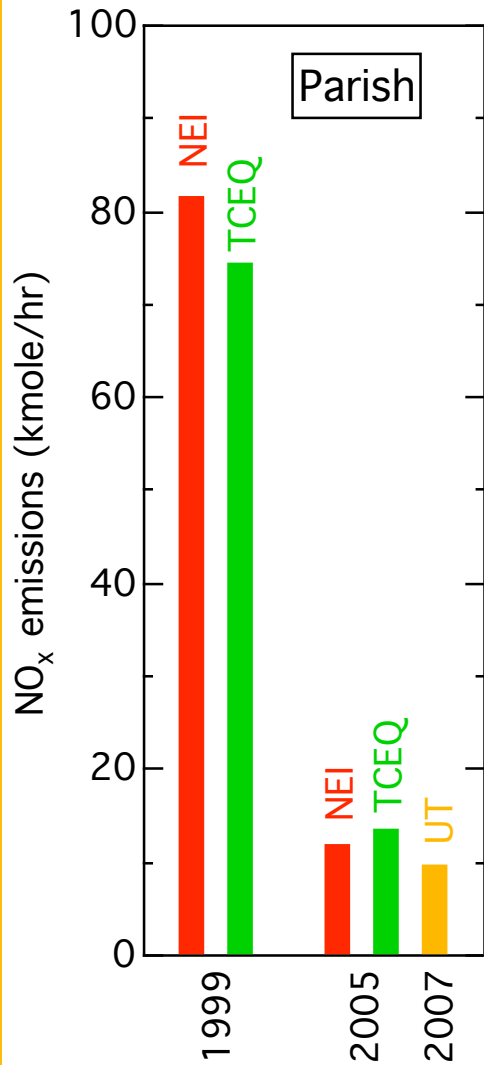
TCEQ 2005 = TCEQ 2004 Point Emissions
modified where possible with 2005 CEMS data

UT = 13:00-14:00 CST emissions from elevated
point source file

Questions A, C, D, E - Emissions:

- Emission Inventory Targets

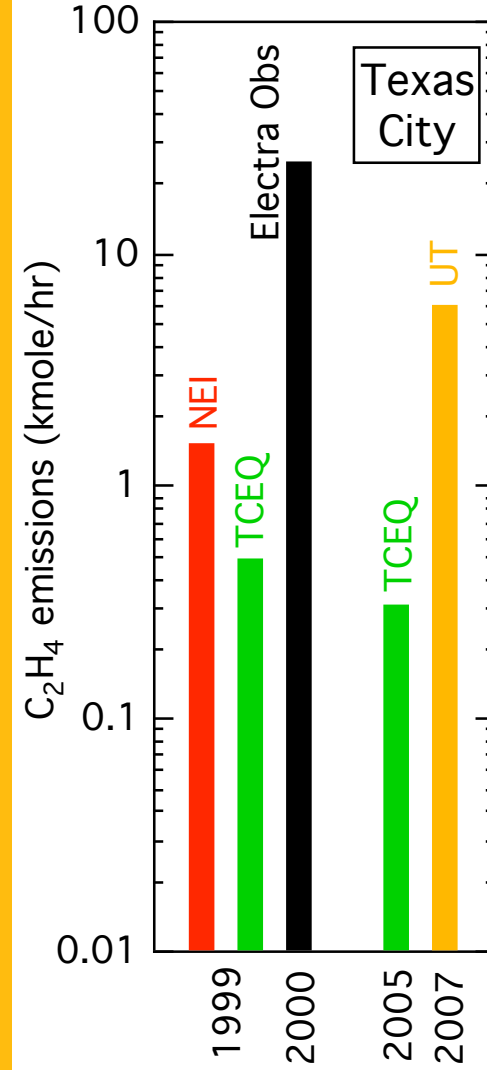
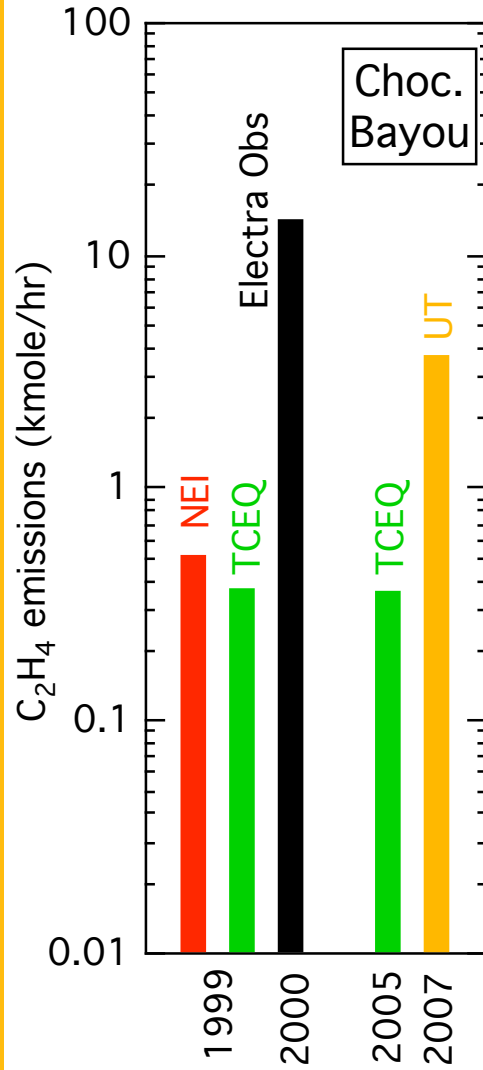
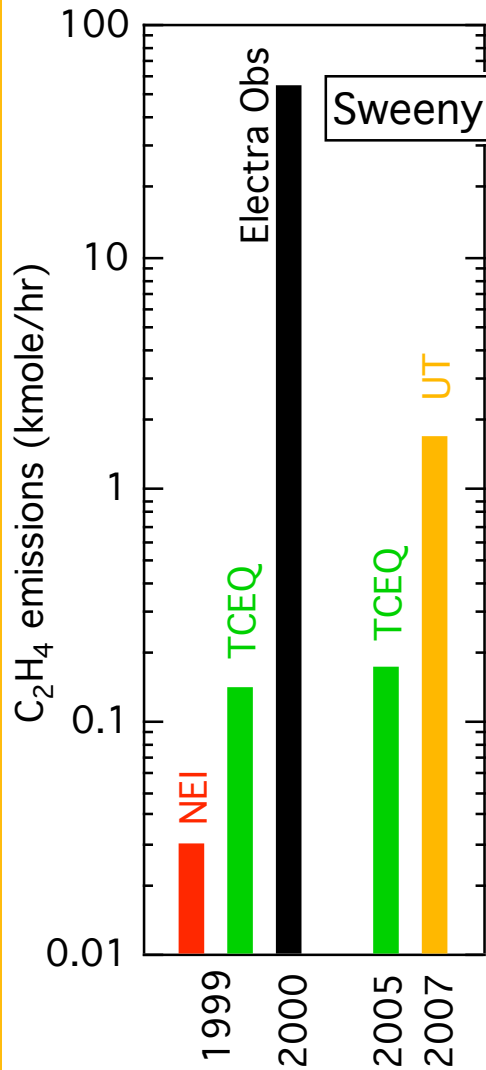
(Stu McKeen, Greg Frost, Dave Allen)



Questions A, C, D, E - Emissions:

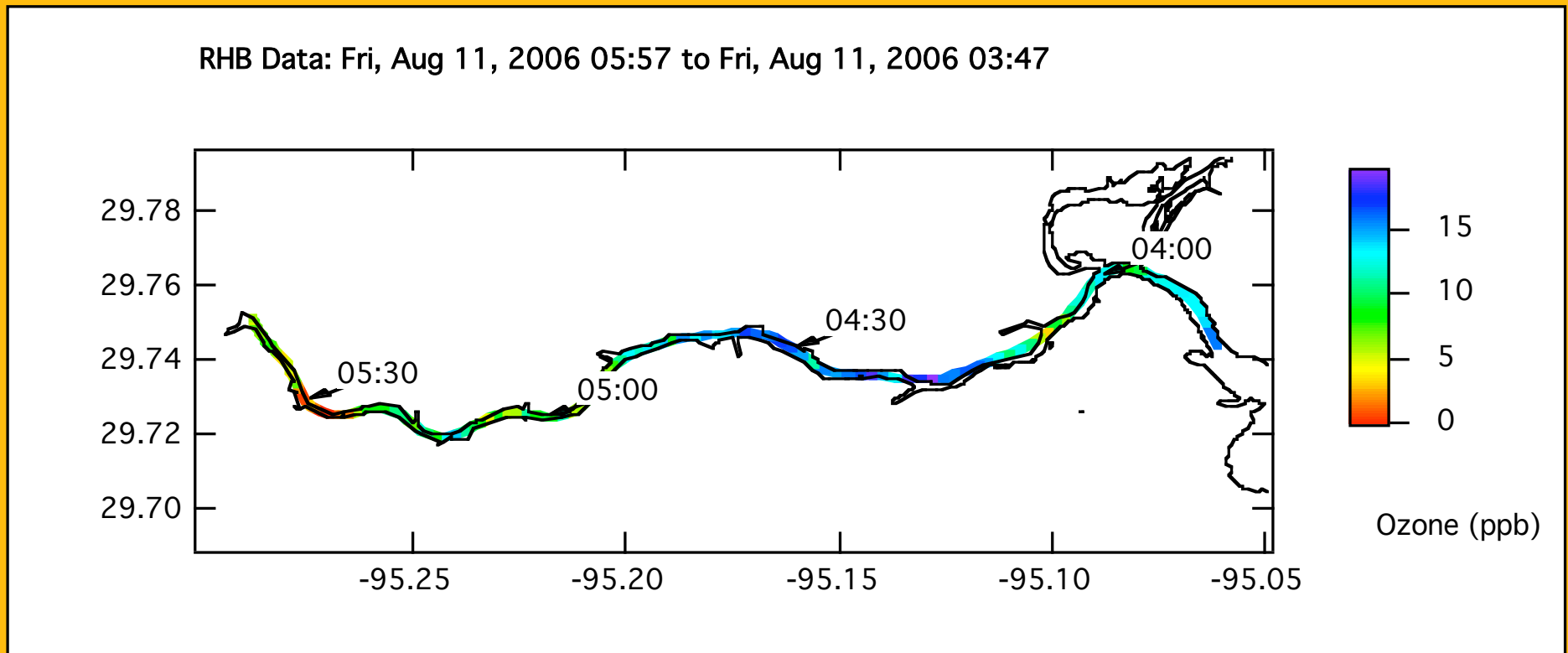
- Emission Inventory Targets

(Stu McKeen, Greg Frost, Dave Allen)



Questions A, C, D, E - Emissions: Early RHB Data

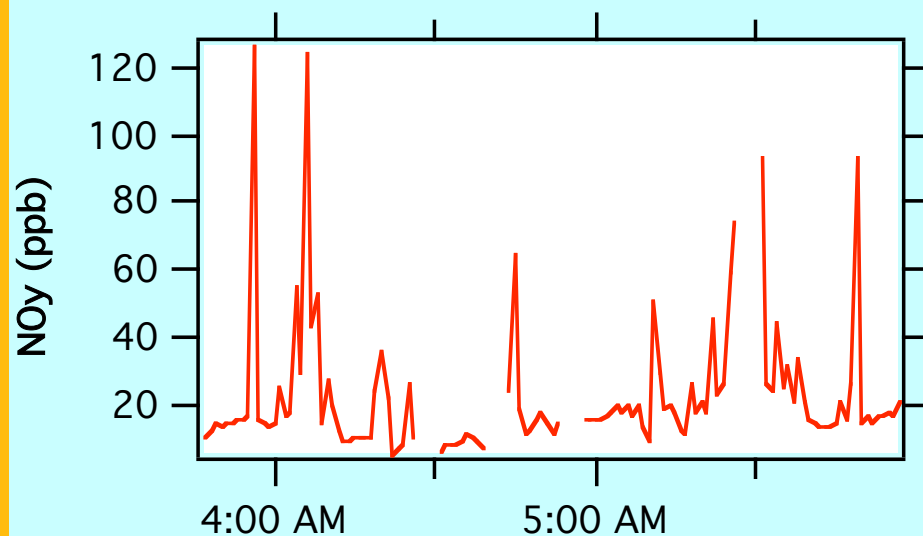
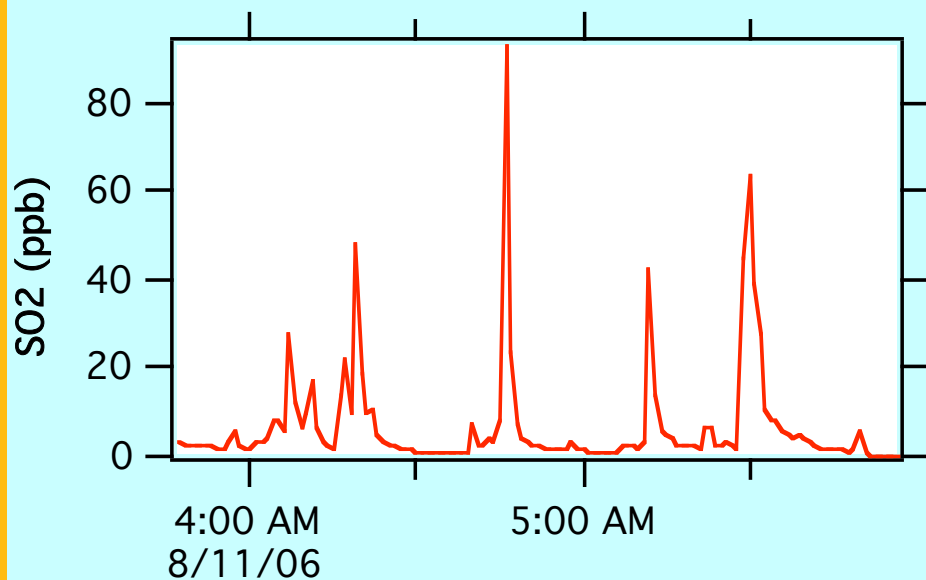
- **Ship Channel Industrial Emissions**
(Eric Williams, Bill Kuster, et al.)



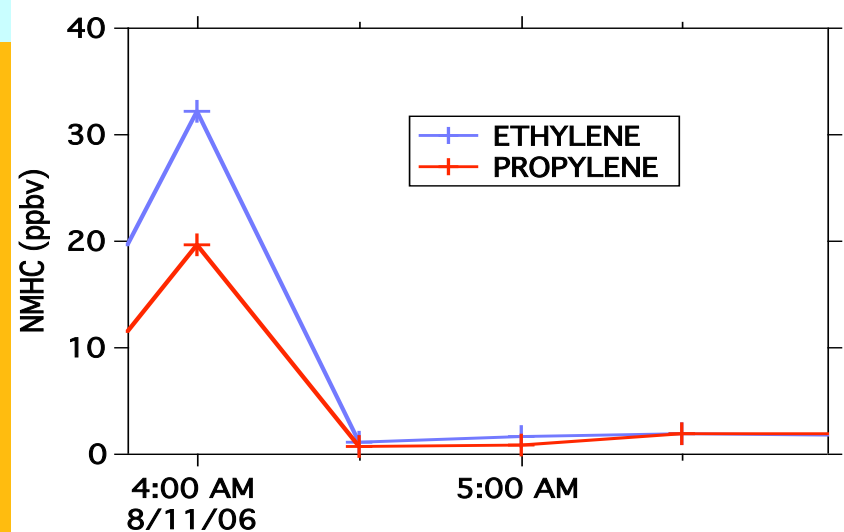
Questions A, C, D, E - Emissions: Early RHB Data

- **Ship Channel Industrial Emissions**

(Eric Williams, Bill Kuster, et al.)



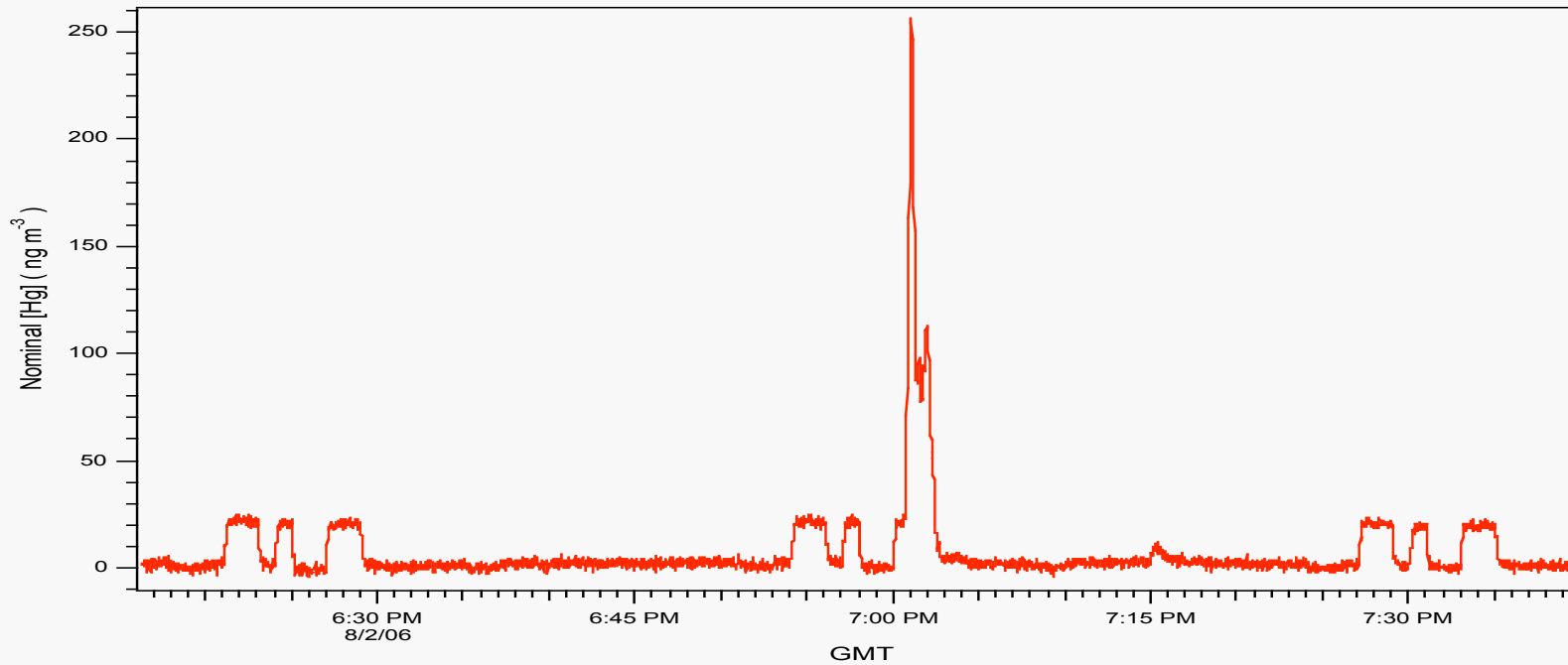
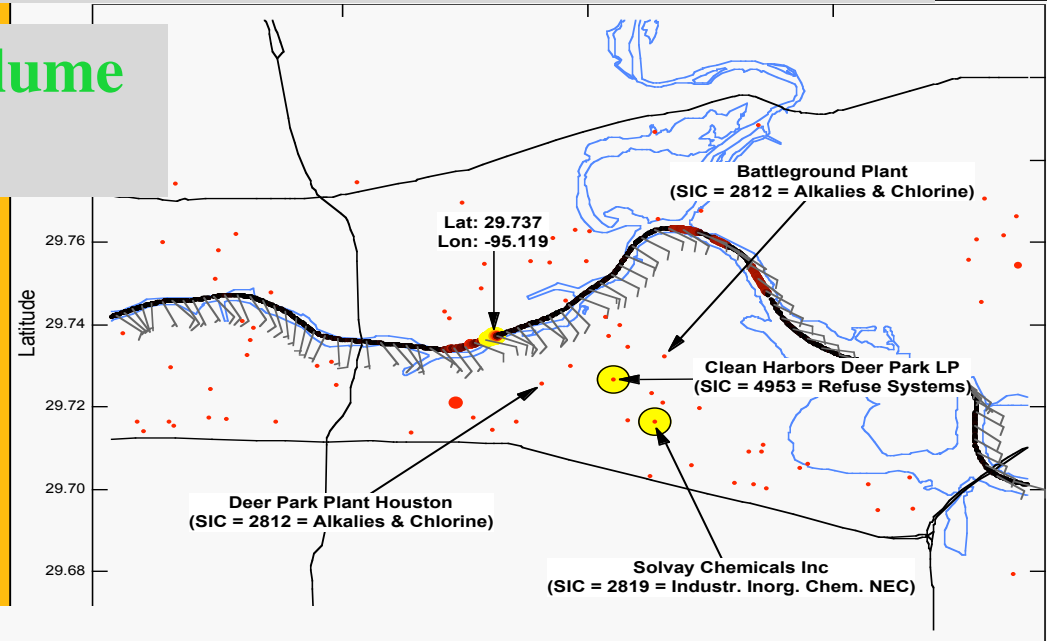
- Many plumes with different emission ratios
- At least some are rich in HRVOC



Questions A, C, D, E - Emissions: Early RHB Data

• Ship Channel Mercury Plume (Tara Fortin)

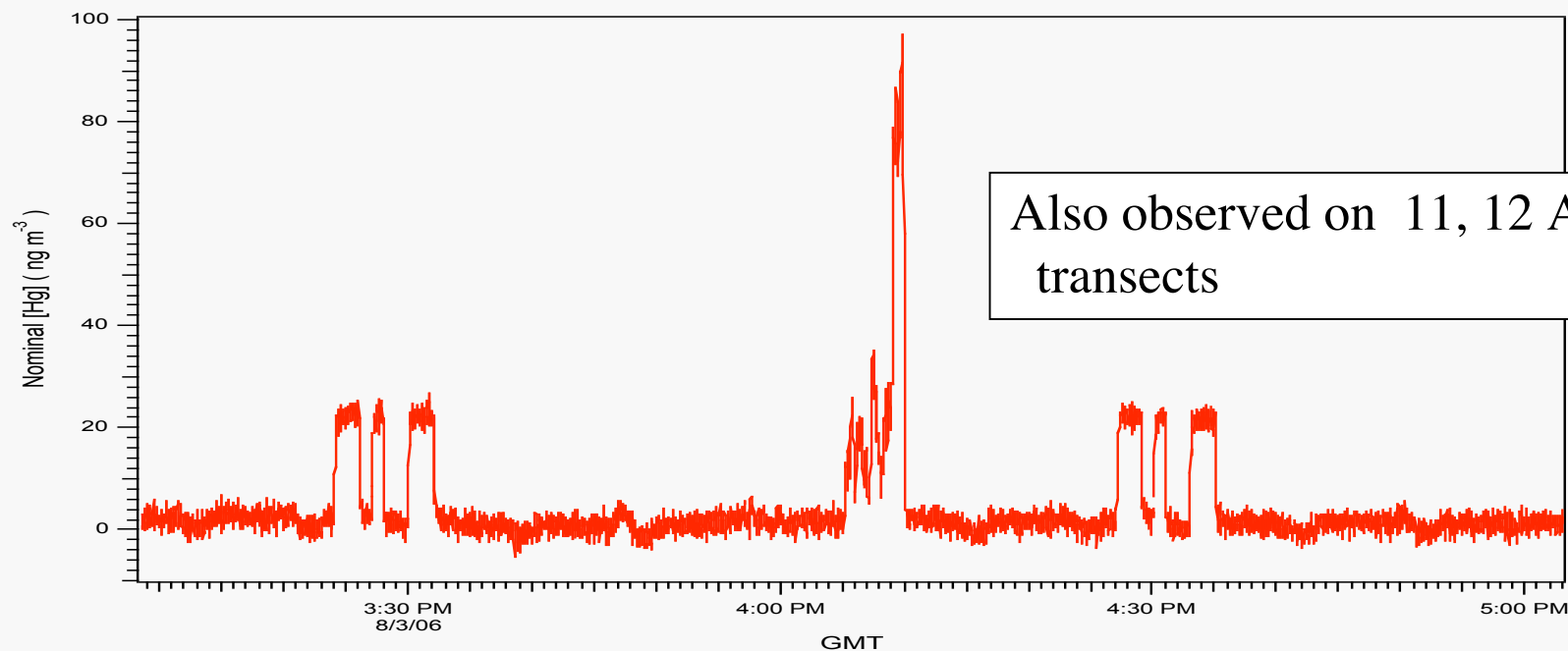
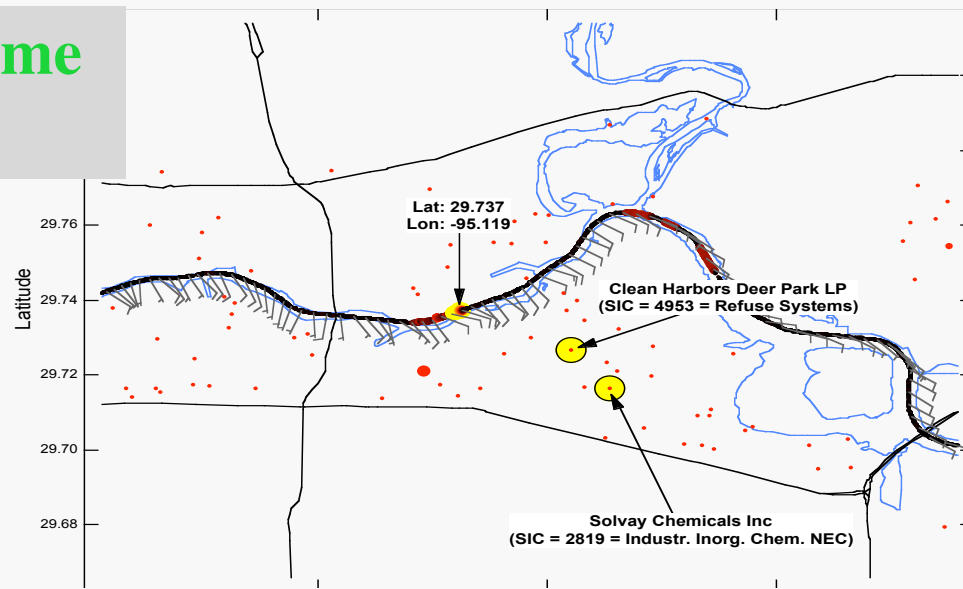
2 August up the ship channel



Questions A, C, D, E - Emissions: Early RHB Data

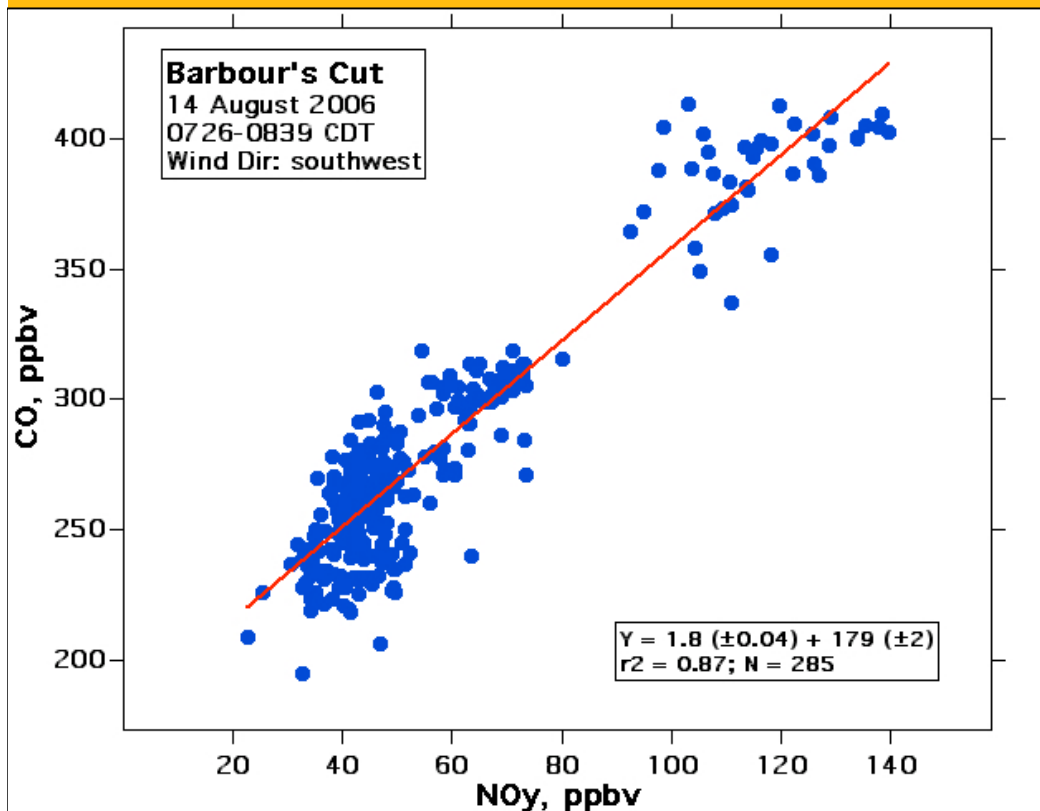
- **Ship Channel Mercury Plume**
(Tara Fortin)

3 August down the ship channel



Questions A, C, D, E - Emissions: Early RHB Data

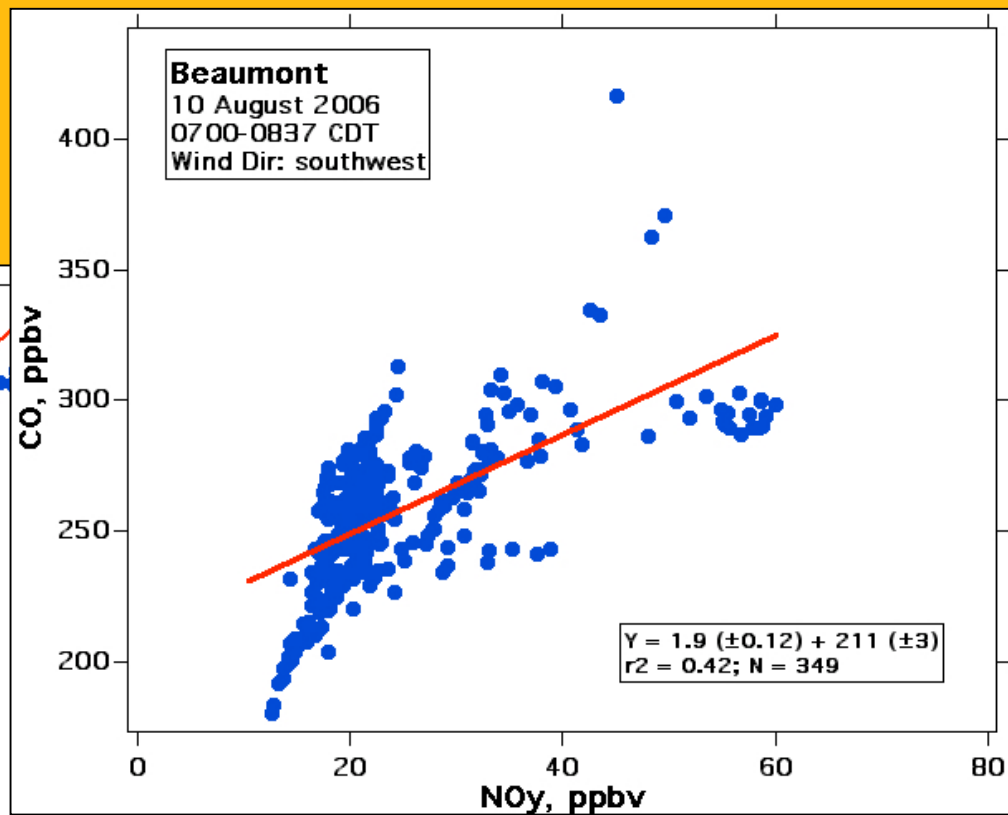
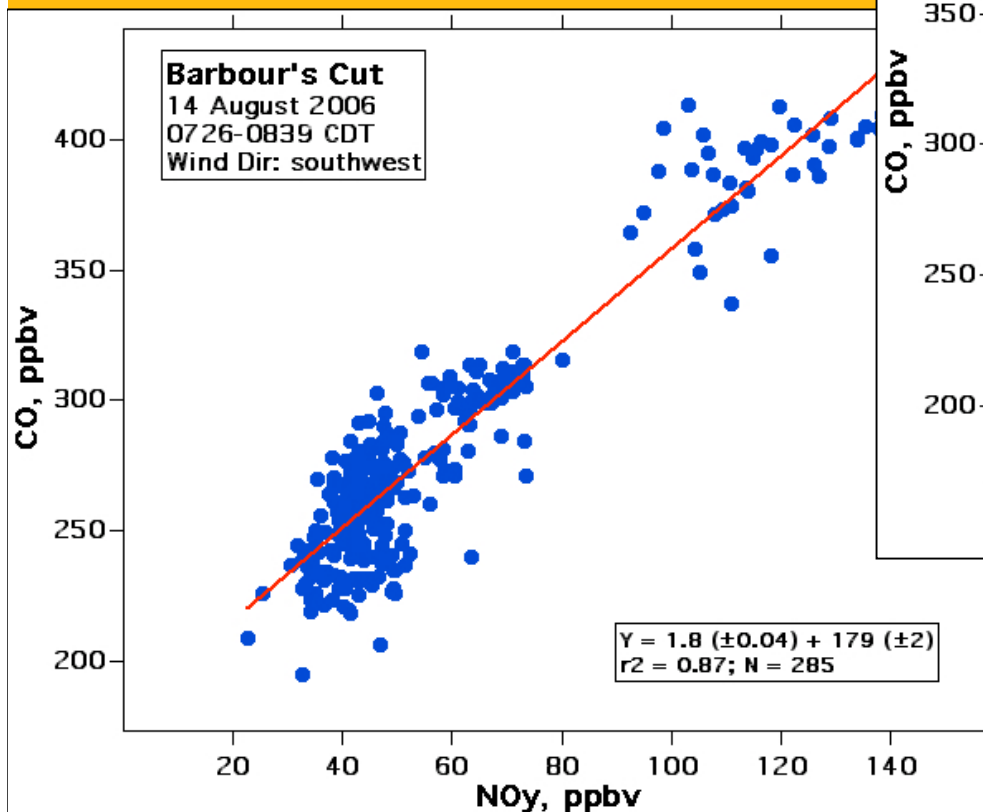
- **Vehicle Emission Signature**
(Eric Williams)



Very low CO/NO_x emission ratio

Questions A, C, D, E - Emissions: Early RHB Data

• Vehicle Emission Signature (Eric Williams)

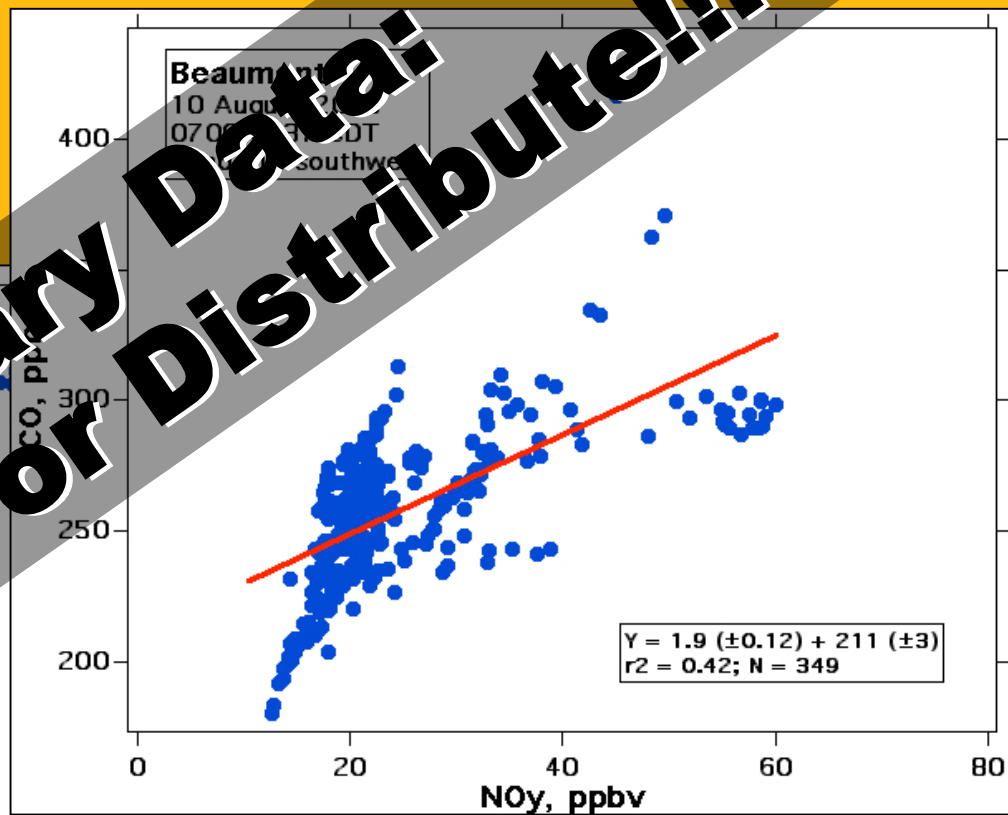
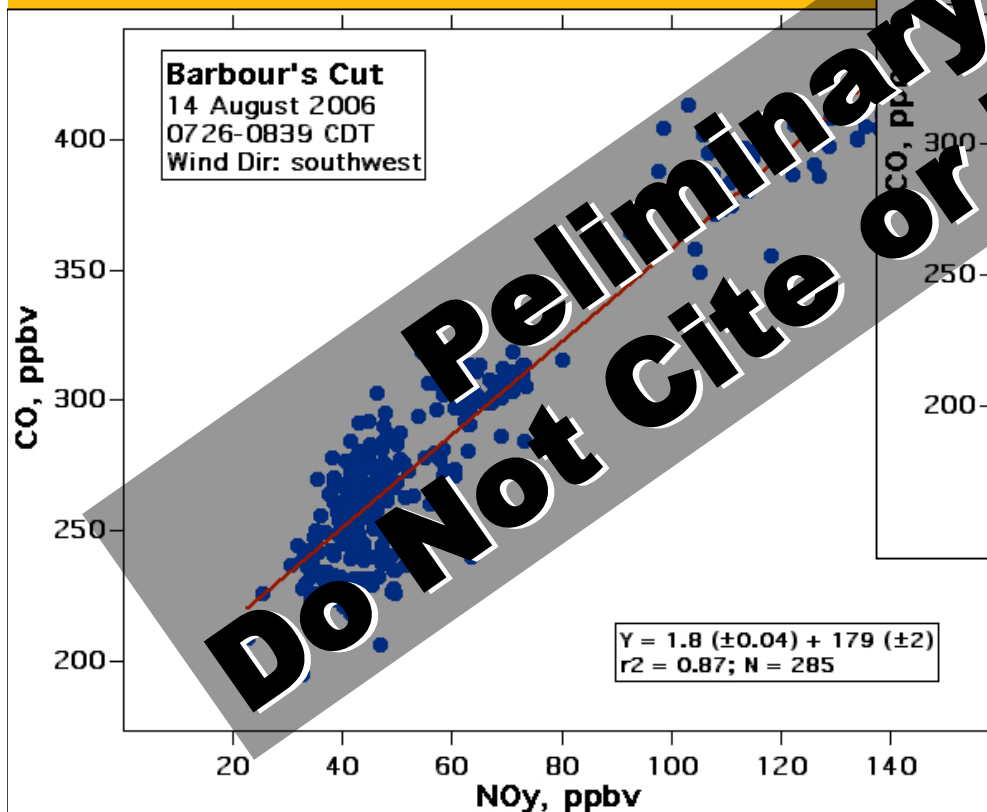


Very low CO/NO_x emission ratio

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• Vehicle Emission Signature

(Eric Williams)



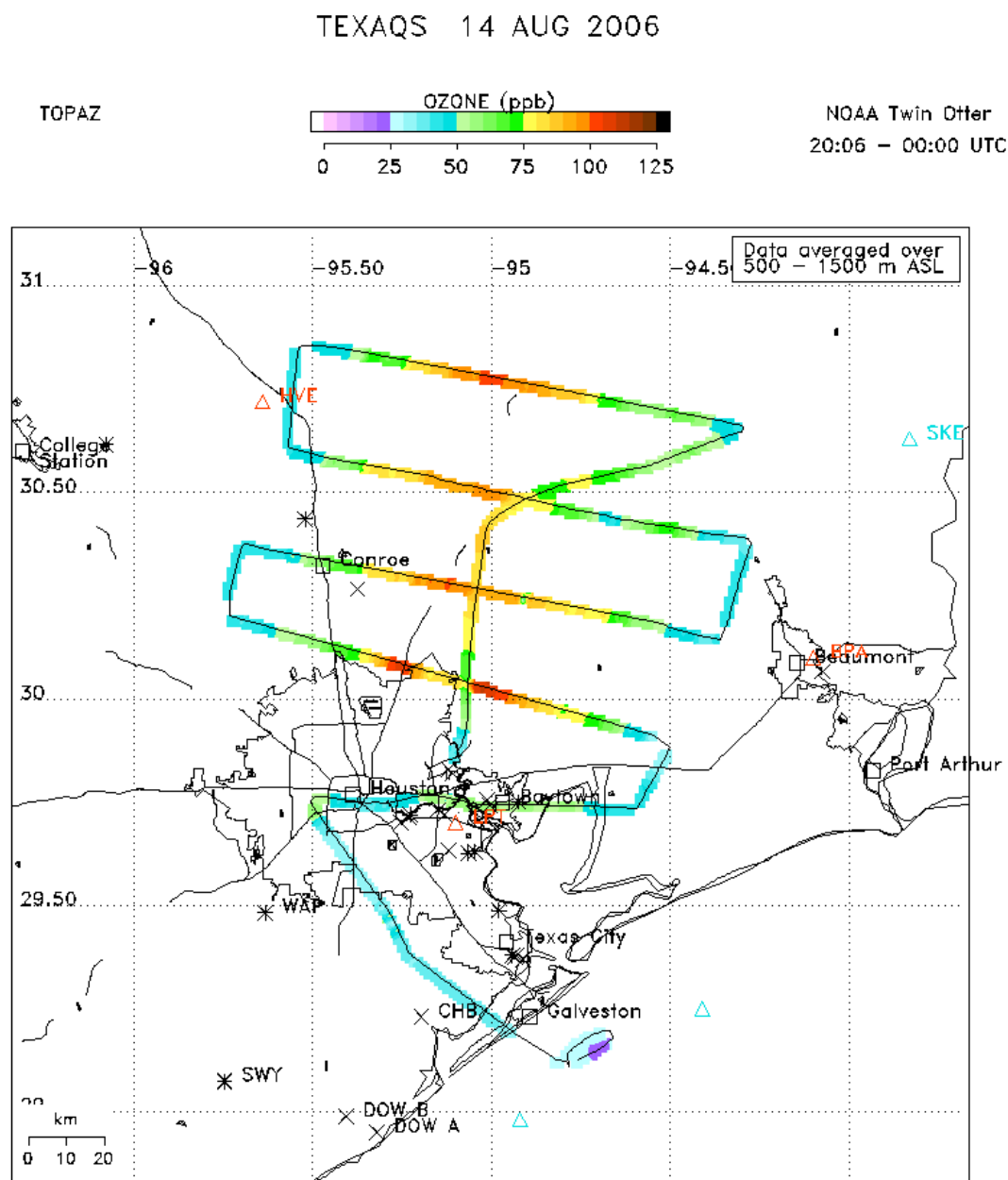
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Preliminary Data!

Very low CO/NO_x emission ratio

G, H - Regional Background O₃ and aerosol:

- **Early Twin Otter Data**
(Bob Banta,
Christoph Senff,
et al.)

Plume of 100 ppbv O₃
leaving Houston area
on day surface network
observed \approx 50 ppbv
maximum

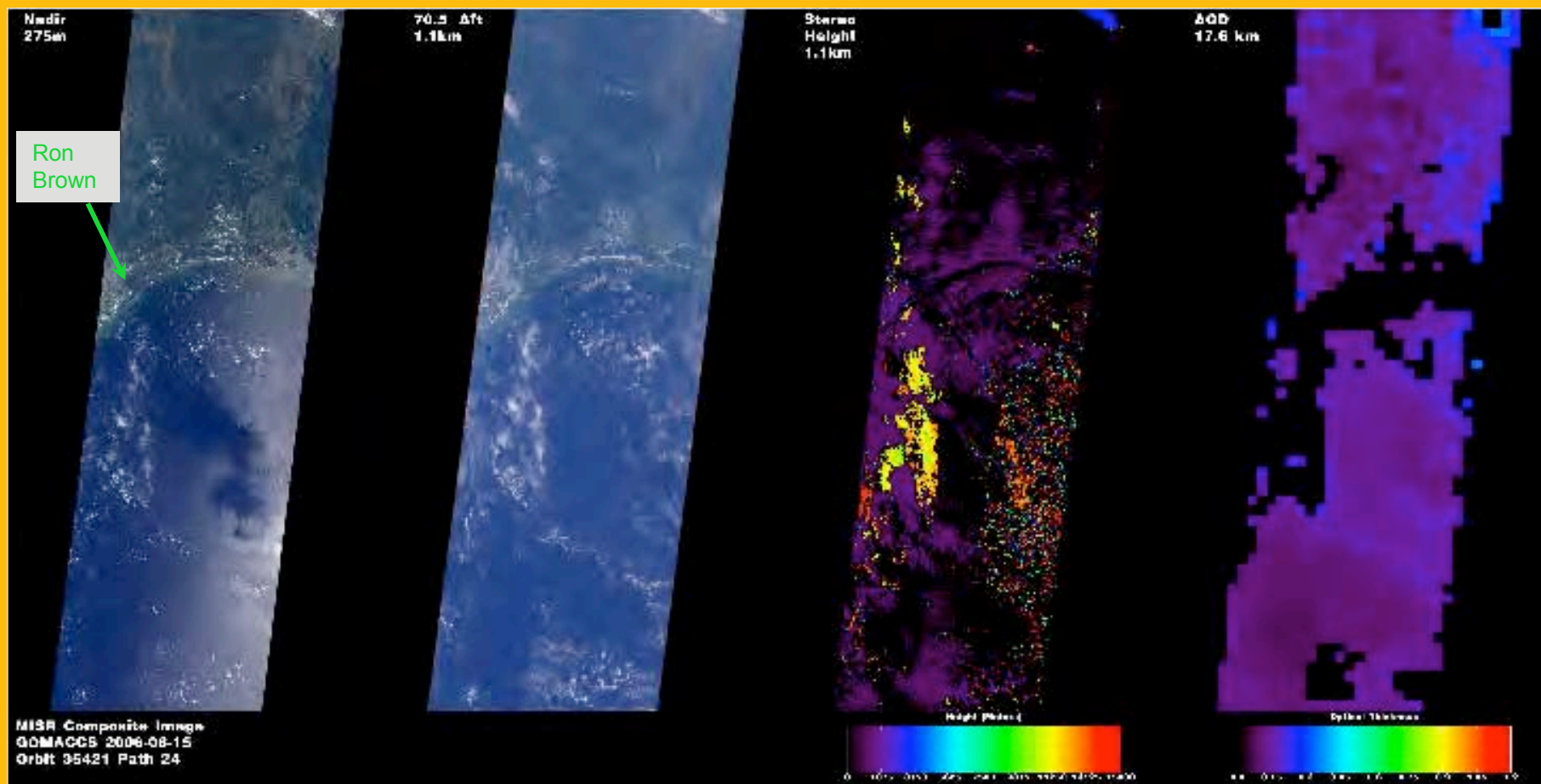


G, H - Regional Background O₃ and aerosol:

- **MISR Aerosol Products (Ralph Kahn)**

MISR GoMACCS Composite

August 15, 2006 Orbit 35421 Path 024 Blocks 65-69 V20



MISR Nadir Image

MISR 70° aft Image

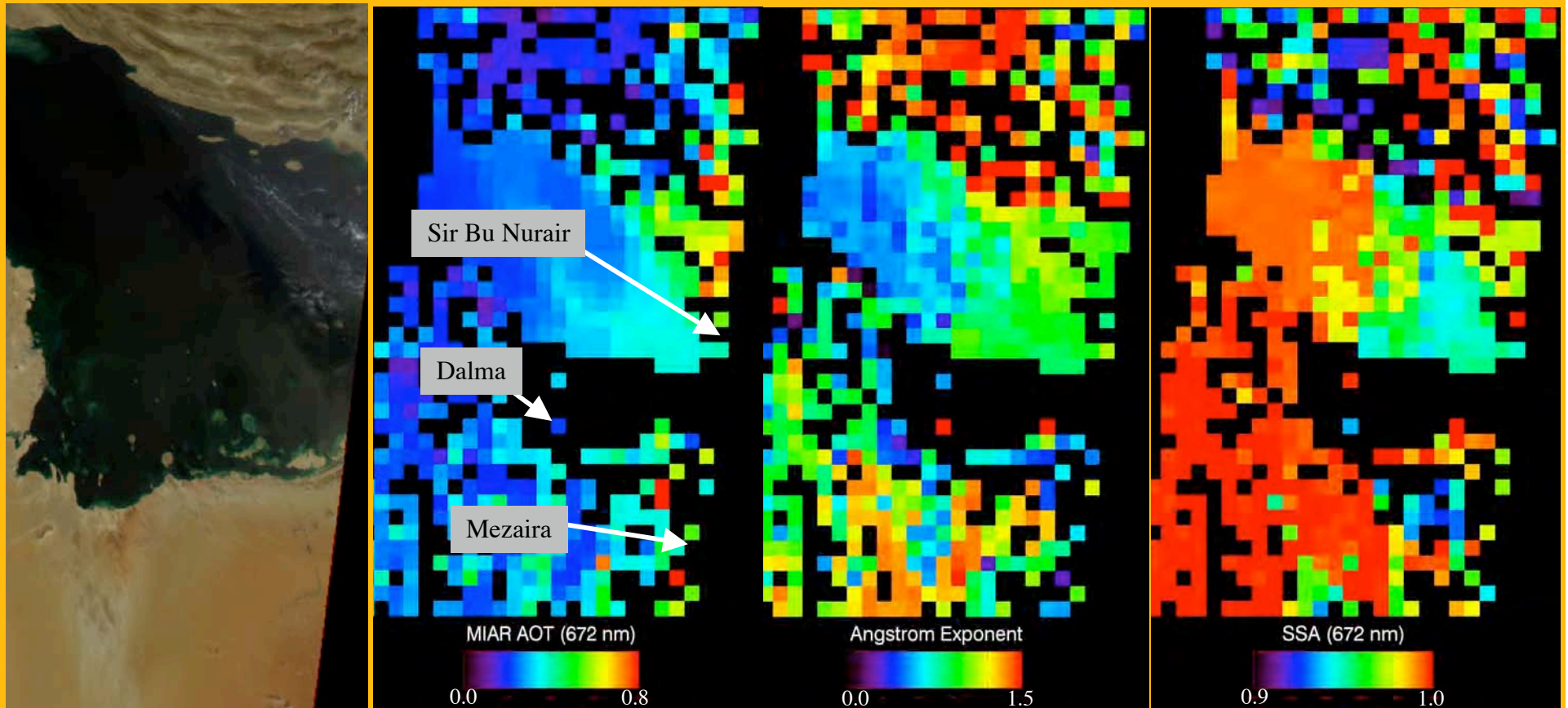
Stereo Height (0-15 km)

MISR AOT (0-1.2)

Distinct Regional **Aerosol Air Mass Types** Identified

Dust + Pollution -- UAE-2 Campaign MISR Data

September 01, 2004 Orbit 25032 Path 162 Blocks 68-72 V16



MISR 26° F Image

MISR AOT

Angstrom Exponent

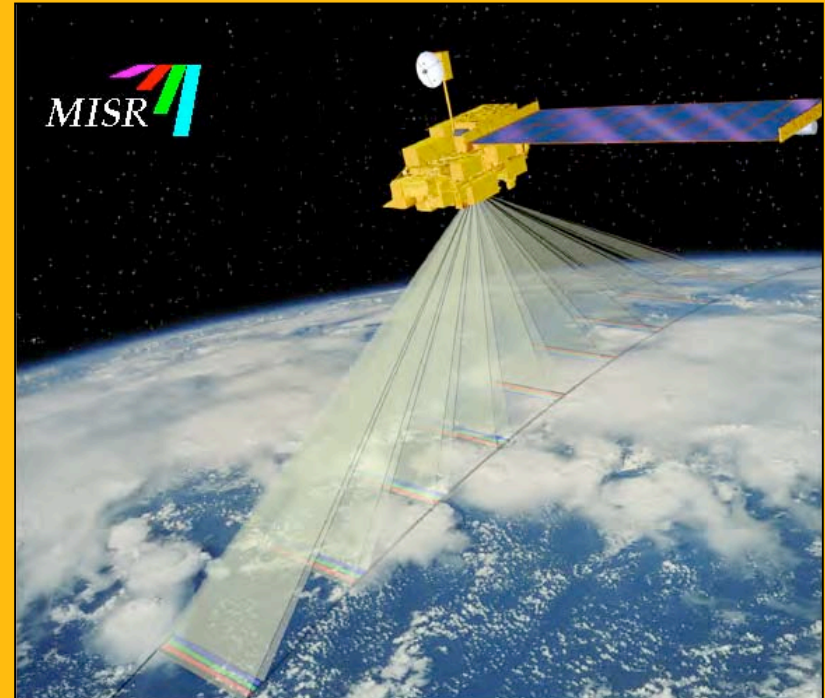
SSA

MISR Participation: GoMACCS/TexAQS Campaign

Ralph Kahn - Jet Propulsion Lab / Caltech

With Contributions from: The MISR, GoMACCS, TexAQS Teams

MISR Site Coverage GoMACCS Campaign						
Site Name	Date	UTC Time	Orbit	Path	Block	
Cameron_LA	30-Jul-06	16:58	35188	24	67	
Gulf_Shelf_W	01-Aug-06	16:46	35217	22	69	
Gulf_Shelf_E	03-Aug-06	16:34	35246	20	68	
La_Copita	04-Aug-06	17:17	35261	27	68	
Houston	06-Aug-06	17:04	35290	25	67	
Cameron_LA	08-Aug-06	16:52	35319	23	67	
Gulf_Shelf_E	10-Aug-06	16:40	35348	21	68	
Gulf_Shelf_E	12-Aug-06	16:28	35377	19	68	
Houston	13-Aug-06	17:10	35392	26	67	
Cameron_LA	15-Aug-06	16:58	35421	24	67	
Gulf_Shelf_W	17-Aug-06	16:46	35450	22	69	
Gulf_Shelf_E	19-Aug-06	16:34	35479	20	68	
La_Copita	20-Aug-06	17:17	35494	27	68	
Houston	22-Aug-06	17:04	35523	25	67	
Cameron_LA	24-Aug-06	16:52	35552	23	67	
Gulf_Shelf_E	26-Aug-06	16:40	35581	21	68	
Gulf_Shelf_E	28-Aug-06	16:28	35610	19	68	
Houston	29-Aug-06	17:10	35625	26	67	
Cameron_LA	31-Aug-06	16:58	35654	24	67	
Gulf_Shelf_W	02-Sep-06	16:46	35683	22	69	
Gulf_Shelf_E	04-Sep-06	16:34	35712	20	68	
La_Copita	05-Sep-06	17:17	35727	27	68	
Houston	07-Sep-06	17:04	35756	25	67	
Cameron_LA	09-Sep-06	16:52	35785	23	67	
Gulf_Shelf_E	11-Sep-06	16:40	35814	21	68	
Gulf_Shelf_E	13-Sep-06	16:28	35843	19	68	
Houston	14-Sep-06	17:10	35858	26	67	
Cameron_LA	16-Sep-06	16:58	35887	24	67	
Gulf_Shelf_W	18-Sep-06	16:46	35916	22	69	
Gulf_Shelf_E	20-Sep-06	16:34	35945	20	68	
La_Copita	21-Sep-06	17:17	35960	27	68	
Houston	23-Sep-06	17:04	35989	25	67	
Cameron_LA	25-Sep-06	16:52	36018	23	67	
Gulf_Shelf_E	27-Sep-06	16:40	36047	21	68	
Gulf_Shelf_E	29-Sep-06	16:28	36076	19	68	
Houston	30-Sep-06	17:10	36091	26	67	
Just east of Houston		Just West of Houston				



...8 MISR Opportunities over Houston itself

- **Validate MISR Land & Water Urban Aerosol Pollution Retrievals**
 - Accuracy, Minimum AOT Sensitivity, Particle Property Information
- **Learn what MISR can contribute to aerosol-cloud interaction studies**
- **Provide Regional AOT & Aerosol Type Maps/Analyze w/Sub-Orbital Data & Models**
- **Test AEGIS multi-angle-spectral + Lidar Mission Concept**

MISR-GoMACCS Web Site: http://eosweb.larc.nasa.gov/PRODOCS/misr/gomaccs/table_gomaccs.html

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