

Highlights

- News Hounds Needed for Plan-It stories
- Possible flow reversal - precipitation chances on the rise
- DC-3 and Electra up today, Twin Otter & G-1 tomorrow

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- Postcards from the edge - Williams Tower report
- Upcoming Events
- Thoughts for the day

The Daily Plan-it

The TexAQs 2000
Field Study Newsletter
Issue 6
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A View from Williams Tower - Latest Downtown Happenings

Reporters Needed

As Editor of the Daily Plan-It it is my privilege to assemble new and exciting news-you-can-use items for our scientists and other folks who wonder what we're up to here in Houston. However, I cannot even hope to do a good job without your help - in the form of written news items, pictures, personal interest stories, restaurant reviews, etc.

Today we are indebted to the Williams Tower Crew - particularly Carl Berkowitz and Chet Spicer - for taking the time to let us know a little bit about what's happening at their impressive high-elevation sampling site.

Tomorrow's Weather

According to the weather forecasters, tomorrows weather should be much the same as today with somewhat higher winds aloft and lighter surface winds - bringing the possibility of a flow reversal situation over Galveston Bay. Surface temperatures should moderate a bit (95° F) with

light west-southwest wind in the morning backing around to the south-southeast by late morning/early afternoon. Ozone hot spots under these conditions should be around the ship channel.

The continental cool front to the east has withered away and a high-pressure ridge has formed across the south from the South Carolina coast all the way to east Texas. Our dew points are climbing and bring increased

probabilities for clouds and precipitation for tomorrow and Tuesday.

Electra N308D

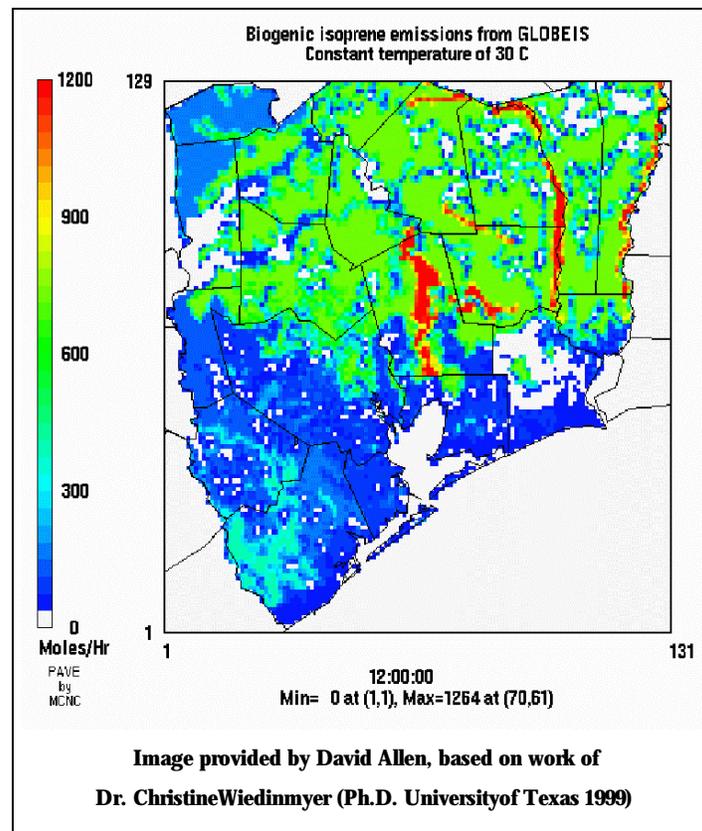
Following a hard down day yesterday, the NOAA/NCAR Electra is flying this evening beginning at 5:00 PM and ending at 10:00 PM

The flight plans call for a day-into-night tracking of the Houston plume to the north and east of the Houston area.

G-1 N701BN

The G-1 crew is enjoying a well-deserved "hard" down day today.

Initial results from yesterday's flight are quite interesting. The DOE G-1 left Ellington at about 2:20 PM for an 2.75 hour flight to characterize the Houston plume. Flying at 1500 feet msl, the G-1 flew two-thirds circular patterns (southwest to northeast) around the Houston downtown area at 15, 20, and 30 mile distances. Background ozone ranged from 85 to 100 ppb with the highest levels occurring northeast of the city in the urban area plume. The 15



mile circle yielded a maximum ozone of 175 ppbv, the 20 mile circle yielded 200 ppbv, and 165 for the 30 mile circle. The location and pattern of these maxima were consistent with contemporaneous surface level ozone readings at Mont Belvieu (146 ppbv hourly average), Aldine (124 ppbv), and Conroe (121 ppbv). Carbon monoxide levels remained in the high 200's to low 300's for the entire flight.

A morning and afternoon flight are planned for the G-1 on Monday August, 21. The morning flight will have a 10:00 takeoff with sampling concentrated to the south and west of Ellington including several traverses over Galveston Bay and the ship channel. The G-1 will also pass by the Williams Tower and cross the I-10 corridor. Profiles will be done over the Bay and over land. The expected flight duration is 2:45 hours. The afternoon flight (pending a favorable up-to-date weather report) will start as soon as the flight attendants can replace the snacks, fluff the pillows and make sure that the magazines are all current. We expect that takeoff will be about 2:30 PM. The flight pattern will be similar to that run on Saturday, August 18th and will include two-third arcs around Houston International designed to capture the plumes from the urban area and ship channel.

DC-3 N56KS

Today, another urban plume mission is being done by the DC-3 and the intrepid NOAA-ETL Lidar crew. The flight pattern consists of multiple E-W transects starting about 20 nautical miles south of Houston and the ship channel and extending well to the north and east of the Houston metro area. The pattern will be flown twice. The nominal flight level is 10500 feet msl. Takeoff was at 12:00 PM and the duration of the flight will be 5-6 hours.

Twin Otter N153BU

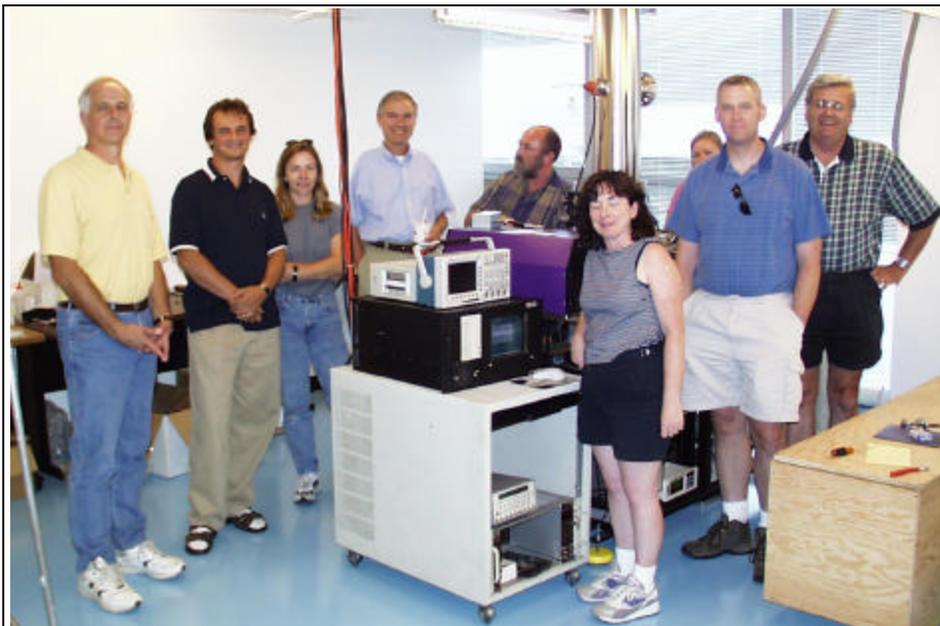
The Twin Otter crew is enjoying a well-deserved "hard" down day today.

Tomorrow, conditions willing, they will fly two bay breeze characterization flights - one in the morning to characterize inflow and one in the afternoon to characterize flow reversal.

"Tower Team," setting up shop on the 62nd floor of the Williams Tower in the Galleria area of uptown Houston. Working in air-conditioned comfort at a height of approximately 900 feet above ground level, they've set up 20 instruments sampling 24-hours a day, 7 days a week. Key to the successful start up of the site has been the Hines Management Corporation, which has provided outstanding support.

This skyscraper site makes several important contributions to TexAQ5 2000. First, a rather complete suite of gas and aerosol measurements taken here will be used to characterize the Houston air west of the major emission sources. The elevated measurement site also contribute to studies of air chemistry above and within the nocturnal boundary layer. Finally, the measurements will be used in the analysis of the role of regional scale transport during meteorological periods associated with strong advection.

The Tall Tower Team has filled two rooms at the tower. The small north room contains primarily gas-phase instruments being operated under the watchful eye of Chet Spicer and his colleagues from Battelle and Pacific Northwest National Laboratory (PNNL). Key measurements include O₃, NO/NO_y, PAN, SO₂, CO, CH₂O, HNO₃, HONO, temperature and moisture. Asked about observations made during the first few days of operation,



Showing the rugged working conditions of scientists at the tall tower site. Standing in air conditioned comfort are (from left to right): Carl Berkowitz (PNNL), Alex Laskin (PNNL), Barbara Hillery (SUNY/Old Westbury), Chet Spicer (Battelle), Dan Imre (BNL), Judy Lloyd (SUNY/Old Westbury), Alla Zelenyuk (BNL), Rob Disselkamp (PNNL) and Tom Cahill (UC/Davis).

Williams Tower

As part of TexAQ5 2000, scientists from six research organizations have banded together to form "The Tall

Chet told Daily Plan-it reporters that peak ozone levels have been in the 60-70 ppb range, formaldehyde in the 10-12 ppb range, PAN 1.0-1.5, and NO_y up to 50 ppb. There's been little evidence that the site has been decoupled from the surface at night during the first few nights of the study.

Scientists in the south room are focusing more on aerosol characterization. Alex Laskin (PNNL) is deploying a new aerosol collector system that has a time resolution on the order of minutes. The collected samples will be analyzed back at PNNL using scanning electron microscopy with energy dispersed X-ray analysis and time of flight secondary ionization mass spectrometer, among other techniques. In an exclusive interview with the Daily Plan-it, Alex said that preliminary results from a LASAIR counter suggest that 0.1 to 0.5 micron aerosols increase throughout the afternoon, followed by an abrupt fall-off after sunset. The opposite pattern was observed in particles between 0.5 to 2 microns.

The Brookhaven National Laboratory single particle time of flight mass spectrometer is quickly recovering from its rocky ride from Long Island thanks to the efforts of Alla Zelenyuk, Barbara Hillery, and Dan Imre. Single particle size and composition data should be available by press time. BNL scientists Fred Brechtel and Gintautas Buzorius also expect their Scanning Electrical Mobility (SEM) Particle Size Distribution system to be fully operational by the time this issue of the

Daily Plan-it makes its way to newsstands across the country.

Judy Lloyd (State University of New York at Old Westbury) is making peroxide measurements at the tower; Paul Doskey, Heather Price and Jeff Gaffney (from Argonne National Laboratory) are measuring VOCs, NO₂ and PAN; and Karsten Baumann and Danny DiPasquale have their TEOMS/ozone system up and running. But for some reason, these scientists have not yet had a chance to look at their data. Our reporters have determined that this could be because they are splitting their time between the skyscraper, the G-1, Deer Park, La Porte, Rice University and (most significantly) Houston traffic.

Last, and possibly least, visitors should look around for the official TexAQS 2000 pendulum, which provides a quantitative measurement of building sway. When asked to comment on peak values of sway, one distinguished scientist replied "Oh, I donno....couple or three inches. You can sure feel it rock'n rollin' when the winds come up, though."

Call Carl (713 850-7180) or Chet (713 850-7189) to book your own personal tour.

Upcoming Events

Aerosol Group Meeting - Every Tuesday at 2:00 PM (Ellington, CapRock Building)

LaPorte Team Meeting - Every Tuesday at 3:00 PM (Ellington, CapRock Building)

Science Overview Meeting - Tuesday, **August 22nd** - 8:00 PM (Ellington, CapRock Building)

Media Day - Thursday, **August 24th** - 2:00 PM (Ellington, Southwest Services)

VIP Day - Wednesday, **August 30th** (Ellington, Southwest Services)

The Garrulous Gourmet - Jason's Delicatessen

If you haven't yet had the pleasure, please give Jason's Deli - on Bay Area Boulevard between Galveston and I45 - a try real soon. An excellent selection of all kinds of Deli food that should please all but the most discriminating palate - I'd not take Lenny Newman there, for example - but the rest of us should enjoy it just fine.

Real value, too. They have a no-fat Turkey Rueben that's pretty tasty and comes with some fruit salad to boot for only \$4.95 plus tax. Those allowed more tasty, higher fat fare have sung its praises as well. Eat there and as a bonus you can get free frozen yogurt as well. Hard to beat a deal like that! Three and one half (out of four) stars.

★★★★

Thoughts for the Day

"The opposite of a correct statement is a false statement. The opposite of a profound truth may well be another profound truth."

- Niels Bohr (1885-1962)

"The graveyards are full of indispensable men."

- Charles de Gaulle (1890-1970)