Thunderstorm activity this morning along the coastal region and over Galveston Bay complicated the picture for today’s flight in terms of clouds. However, these storms had dissipated by midday. Winds were very light today, leading to an ill-defined transport pattern. Winds became better defined from the E and SE by late in the day.

The easterly winds are forecast to persist at least through Saturday. Each day will have chances of scattered thunderstorms. We are watching an easterly wave progressing across the Gulf to our south. The forecast models suggest the possibility of high cirrus from this system approaching our area on Thursday, but the NWS downplays this. They suggest that drier air moving in from the north will actually decrease cloudiness Thursday and Friday, compared with today. In terms of clouds, Friday and Saturday look even better than Thursday.

Moderate levels of ozone were forecast for both today and tomorrow. Unfortunately, we don’t have air quality model forecasts that cover Friday as yet. However, we expect that maximum ozone will be found on the west side of the city due to the easterly flow. The CAMx model suggests that transport from southern Louisiana will contribute enhanced ozone and formaldehyde in the residual layer on Thursday, and this will likely continue into Friday. Aerosols will likely decrease from today’s levels with the flow of more marine air. The sea salt component will increase and the sulfate will decrease.
9/4/2013 Weather Briefing

Chris Loughner
Ken Pickering
Bob Chatfield
### Conroe:

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<th>This Afternoon</th>
<th>Tonight</th>
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<tbody>
<tr>
<td><strong>Slight Chc Thunderstorms</strong>&lt;br&gt;High: 99 °F&lt;br&gt;Low: 73 °F</td>
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### Houston Hobby:

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<tbody>
<tr>
<td><strong>Chance Thunderstorms</strong>&lt;br&gt;High: 97 °F&lt;br&gt;Low: 76 °F</td>
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### Galveston:

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<tbody>
<tr>
<td><strong>Slight Chc Thunderstorms</strong>&lt;br&gt;High: 90 °F&lt;br&gt;Low: 81 °F</td>
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<tr>
<td><strong>Chance Thunderstorms</strong>&lt;br&gt;High: 89 °F&lt;br&gt;Low: 80 °F</td>
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**Temperatures**: Conroe's temperatures range from 73 °F to 99 °F. Houston Hobby's range from 76 °F to 97 °F. Galveston's temperatures range from 80 °F to 90 °F.
Current Conditions

Conroe:
- Mostly Cloudy
- Temperature: 94°F (34°C)
- Humidity: 44%
- Wind Speed: SE 6 mph
- Barometer: 30.05 in (1017.1 mb)
- Dewpoint: 69°F (21°C)
- Visibility: 10.00 mi
- Heat Index: 99°F (37°C)
- Last Update: 4 Sep 11:53 am CDT

Houston Hobby:
- Party Cloudy
- Temperature: 88°F (31°C)
- Humidity: 59%
- Wind Speed: Calm
- Barometer: 30.04 in (1017.5 mb)
- Dewpoint: 72°F (22°C)
- Visibility: 10.00 mi
- Heat Index: 95°F (35°C)
- Last Update: 4 Sep 11:53 am CDT
Current Conditions

Galveston:

Mostly Cloudy

82°F  
28°C

Humidity 90%
Wind Speed NE 8 mph
Barometer 30.06 in (1018.0 mb)
Dewpoint 79°F (26°C)
Visibility 10.00 mi
Heat Index 91°F (33°C)

Last Update on 4 Sep 11:52 am CDT
Today: Cold front to the north. Isolated thunderstorms. Winds shifting to an easterly direction. Dry air moving in from the north.

1 PM CDT
500 mb vorticity
Tomorrow: Isolated thunderstorm possible and easterly winds.

1 PM CDT
500 mb vorticity
Winds at 1 PM tomorrow 10 m
Conroe
Today: Partly cloudy
Tomorrow: Partly cloudy
Houston Hobby
Today: Cloud cover above 50%
Tomorrow: Partly cloudy
Galveston
Today: Partly cloudy
Tomorrow: Around 50% cloud cover
Friday: Isolated thunderstorm possible and easterly winds.

1 PM CDT
500 mb vorticity
Winds at 1 PM Friday  10 m
Saturday: Isolated thunderstorm possible and east-southeasterly winds.

1 PM CDT
850 mb RH

500 mb vorticity
Conroe

Friday: Partly cloudy
Saturday: Partly cloudy
Houston Hobby
Friday: Around 50% cloud cover
Saturday: Partly cloudy
Galveston
Friday: Around 50% cloud cover
Saturday: Partly cloudy
-Tomorrow: Mostly cloudy in the afternoon.
-Friday: Partly cloudy.
-Saturday: Partly cloudy.
-Tomorrow: Partly cloudy.
-Friday: Partly cloudy.
-Saturday: Partly cloudy.
-Tomorrow: Partly cloudy.
-
-Friday: Partly cloudy.
-
-Saturday: Partly cloudy.
Tomorrow: NAM – low, mid, and high level clouds

10 AM CDT

1 PM CDT

4 PM CDT

7 PM CDT
Tomorrow: GFS – high level clouds

10 AM CDT

1 PM CDT

4 PM CDT

7 PM CDT
Tomorrow: Canadian - scattered clouds

10 AM CDT

1 PM CDT

4 PM CDT

7 PM CDT
Tomorrow: GEOS-5 – low and high level clouds

8 am

High

Mid

Low

11 am

High

Mid

Low

2 pm

High

Mid

Low

5 pm

High

Mid

Low
Friday: NAM – a few low level clouds around mid-day
Friday: GFS – a few high level clouds
Friday: GEOS-5 – a few low and high level clouds

8 am

11 am

2 pm

5 pm

High

Mid

Low
Saturday: NAM – a few low level clouds in the morning
Saturday: GEOS-5 – a few low level clouds by late evening

8 am
11 am
2 pm
5 pm

High
Mid
Low
Recommendations

• Tomorrow: Possible flight day. Looks better than today.
• Friday: Looks even better – fly day.
• Saturday: Possible flight day.
DISCOVER-AQ Air Quality Outlook
Sept. 4, 2013

Ken Pickering
Bob Chatfield
Houston Network of Environmental Towers (H-NET) collect chemistry and meteorological measurements for air quality model applications in Houston Galveston Area. This web site provides real-time update of collected data, as well as historical data.

Currently, five sites have been set up in:

- UH - Main Campus (695)
- Jones State Forest (698)
- West Liberty Airport (699)
- UH - Sugar Land (696)
- UH - Coastal Center (697)

More about this project.
Ozone (ppbv)  
Aug. 5th – Sept. 3rd  

Houston – Network of Environmental Towers (H-NET)  

Titration of ozone by NO evident at all sites: 0 ppbv.
Ozone (ppbv)
Sep. 2nd – Sept. 4th

Sugar Land

Jones Forest

Moody Tower

West Liberty

Coastal Center

Houston – Network of Environmental Towers (H-NET)
Hourly Ozone (airnowtech.org)
Monday – Tuesday – Wednesday morning (2 am)

- Conroe
- Galveston
- Aldine
- Coastal Center

Graph showing hourly ozone levels in various locations. The graph includes data from different sites such as Conroe, Galveston, Aldine, and Coastal Center. The ozone levels are measured in parts per billion (ppb).
FORM [ppb] at 1013 [hPa] Valid 19Z SEP 05 2013
TCEQ: WRF Model suggests major trans-boundary transport
from New Orleans-Shreveport-Lake Charles

Ozone
Best Case: CAMx Layer 14

Min(93,15) = 24.2, Max(106,46) = 74.4

Thu September 5 06:00 CST
More rapid transport at 1.2 km brings coastal pollution faster
TCEQ: WRF Model suggests major trans-boundary transport from New Orleans-Shreveport-Lake Charles.
**TCEQ: WRF Model suggests major transboundary transport**

La-Tex Coast from New Orleans-Shreveport-Lake Charles

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**Formaldehyde**
Best Case: CAMx Layer 14

Min(110,100) = 0.1, Max(117,52) = 4.8

Thu September 5 08:00 CST

**NO₂**
Best Case: CAMx Layer 14

Min(120,34) = 0.0, Max(135,109) = 2.1

Thu September 5 08:00 CST
Moderate ozone levels (Code Yellow) expected today and tomorrow

Location of peak ozone today is uncertain due to very light winds and cloud cover especially in southern portion of region

Easterly to northeasterly flow tomorrow should place ozone max to the west
Hourly PM$_{2.5}$ (airnowtech.org)
Monday – Tuesday – Wednesday morning (6am)
ASO4J [μg/m³] at 1013 [hPa] Valid 22Z SEP 05 2013
LAT = 30.3, LON = -95.4, Location = Conroe, Fcst_Init = 20130904
LAT = 29.2, LON = -94.8, Location = Galveston, Fcst_init = 20130904