An attempt was made to get flights in today, but these plans were scrubbed due to the persistent low clouds from the near stationary low pressure system sitting offshore. Conditions were generally either broken or overcast at around 4500 ft, which precluded doing ascending or descending spirals. TCEQ forecast Code Yellow ozone for today to the S and SW of Houston.

We will likely have cloud issues again on Tuesday morning as the low pressure area still lurks offshore. The models suggest that the low will begin to move off to the northeast during the day tomorrow, taking much of the cloudiness with it. Conditions could be much better in the afternoon tomorrow than in the morning. We recommend attempting flights again tomorrow.

Wednesday looks like an excellent day to fly with the dominance of a ridge of high pressure and dry conditions. With light northerly winds carrying Houston emissions out over the Gulf in the AM, a sea breeze will likely recirculate these emissions back over Houston in the afternoon, leading to a convergence zone containing large amounts of pollutants. TCEQ is forecast a Code Orange ozone day on Wednesday. Thursday will see continuing good flying conditions in general, but the winds will turn to more southerly during the day, bringing more moisture into our region and possible more clouds. TCEQ continues the Code Orange ozone for Thursday. Possibly, more chance of clouds and showers on Friday, but we may be able to squeeze in another flight day.
9/23/2013 Weather Briefing

Ryan Stauffer
Recommendations

- Tuesday: **Likely Fly Day.** Still expect clouds to be a factor especially AM. Timing of Sfc Low exit is key
- Wednesday: **Likely Fly Day.** Upper level ridge in control and lighter background winds. Widespread clouds not a factor
- Thursday: **Likely Fly Day.** Cloud conditions look good for flight. Winds will veer to more S and will have to watch moisture advection ahead of front for Friday
Conroe:

Galveston:

Houston Hobby:
Current Conditions

Conroe:
- Overcast
- Temperature: 80°F (27°C)
- Humidity: 58%
- Wind Speed: Vrbl 5 mph
- Barometer: 29.84 in (1010.1 mb)
- Dewpoint: 64°F (18°C)
- Visibility: 10.00 mi
- Heat Index: 82°F (28°C)
- Last Update on 23 Sep 11:53 am CDT

Houston Hobby:
- Partly Cloudy
- Temperature: 82°F (28°C)
- Humidity: 60%
- Wind Speed: NE 9 mph
- Barometer: 29.81 in (1009.8 mb)
- Dewpoint: 67°F (19°C)
- Visibility: 10.00 mi
- Heat Index: 84°F (29°C)
- Last Update on 23 Sep 11:53 am CDT
Current Conditions

Galveston:

Humidity 82%
Wind Speed NE 15 mph
Barometer 29.80 in (1009.0 mb)
Dewpoint 74°F (23°C)
Visibility 10.00 mi
Heat Index 85°F (29°C)

Last Update on 23 Sep 11:52 am CDT
Today: Clouds slowly streamed back N late yesterday as moist 700mb dew points now essentially outline the DISCOVER-AQ domain. Clouds remain SCT-OVC w/showers possible near the coast. Surface low expected to drift NE

12z Surface Analysis

7 AM CDT NAM
700 mb RH
Today: 9am CDT 700mb dew point temperatures (green)
Tomorrow: Clouds and few showers (coast) slowly exit but some disagreement among models on timing of sfc low's departure. Probably see at least some low clouds through noon, perhaps more stubborn

7 AM CDT NAM
700 mb RH
10 m winds at 1 PM tomorrow

Winds N at ~10kts and may relax a bit toward evening as the low pulls away.
Conroe

Today: Mostly Cloudy
Tomorrow: Clearing dependent on low
Houston Hobby
Today: Mostly Cloudy, possibly breezy tomorrow
Tomorrow: Clearing dependent on low
Galveston
Today: Clouds and breezy
Tomorrow: Clearing dependent on low
Wednesday: Upper level ridge moves over the region. N wind and subsidence with little to no cloud interference expected

12z Surface Forecast

1 PM CDT NAM
500 mb Ht/Vorticity
10 m winds at 1 PM Wednesday

Potentially good set up for recirculation/mesoscale patterns to develop. Winds N @5kts and high temps near 90F
Thursday: Maybe some low stratus to start if onshore flow, mixing out by late morning. Cloud conditions still appear very favorable for flight.

12z Surface Forecast

7 AM CDT NAM
850 mb RH
Conroe
Wednesday: Plentiful sunshine
Thursday: Few clouds may build
Houston Hobby
Wednesday: Sunny
Thursday: Few clouds
Galveston

Wednesday: Sunshine
Thursday: Some clouds possible as winds turn S
Tomorrow (Tuesday): GEOS-5 – low clouds hang on, scattered by afternoon

10 am

1 pm

4 pm

7 pm

Low

High

Mid

Low
Wednesday: GEOS-5 – finally clear skies for the whole day

10 am

1 pm

4 pm

7 pm

Low

Mid

High
Thursday: GEOS-5 – no large scale cloud issues, watch for SCT showers

10 am

1 pm

4 pm

7 pm

High

Mid

Low
Recommendations

• Tuesday: Likely Fly Day. Still expect clouds to be a factor, speed of clearing a bit uncertain

• Wednesday: Likely Fly Day. Light background winds and few clouds should make for a good flight. Best bet for recirculation pattern

• Thursday: Likely Fly Day. Winds will shift during the day to S, but clouds don’t appear to be a problem

• Flying Friday also looks probable, but will again be contending with clouds. Weekend not good with another cold frontal passage
DISCOVER-AQ Air Quality Outlook
September 23, 2013

Ken Pickering
Bryan Duncan
Monday: Code Yellow – *Moderate* (O$_3$ : W & SW sides of Houston)

Tuesday: Code Yellow – *Moderate* (S & SW sides of Houston)

Wednesday: Code Orange – *Unhealthy to Sensitive Groups* (S, SW, & W sides of Houston)

Thursday: Code Orange – *Unhealthy to Sensitive Groups*
Hourly Ozone (airnowtech.org)**

September 2nd – 22nd ** EVERY 8th HOUR PLOTTED!!!!!

Hourly Ozone (ppb)

80
70
60
50
40
30
20
10
0
-10

#1
#2
#3
#4 #5 #6

Houston Aldine C8/O3 - 44201/1 Hr/2
Houston Westhollow C410/O3 - 44201/1 Hr/1
Manvel Croix Park C84/O3 - 44201/1 Hr/1
Conroe Relocated C78/O3 - 44201/1 Hr/1
West Houston C554/O3 - 44201/1 Hr/1
Galveston Airport C1034/O3 - 44201/1 Hr/1
Coastal Center C697/O3 - 44201/1 Hr/1
West Liberty C699/O3 - 44201/1 Hr/1
Clinton C403/O3 - 44201/1 Hr/3

Northwest Harris Co. C26/C110/C154/O3 - 44201/1 Hr/2
Houston Deer Park C35/O3 - 44201/1 Hr/1
Seabrook Friendship Park C45/O3 - 44201/1 Hr/1
Texas City C620/O3 - 44201/1 Hr/1
La Porte Sylvan Beach C556/O3 - 44201/1 Hr/1
Sugarland C696/O3 - 44201/1 Hr/1
Jones Forest C698/O3 - 44201/1 Hr/1
Channelview C15/O3 - 44201/1 Hr/3
Houston Texas Avenue C411/O3 - 44201/1 Hr/1 (Method: 047)
Houston - Network of Environmental Towers (H-NET)

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.
HNET

Ozone (ppbv)

NE flow: clean continental air
10-m Winds
Texas 12km

Min(7,93) = 0.0, Max(121,2) = 26.0

Tue September 24 11:00 CST
Hourly PM$_{2.5}$ (airnowtech.org)**

September 2$^{nd}$ – 22$^{nd}$

** EVERY 8$^{th}$ HOUR PLOTTED!!!!!