Lesser number of thunderstorms in the Houston area compared with the past few days. Continued easterly and southeasterly winds at the surface off the Gulf led to low background ozone and aerosol. The moisture is shifting to the south and west, and there was some evidence of storm outflow over the study region from those directions.

Tomorrow should see continued drying of the atmosphere. Thunderstorm may pop up along the coast, but few are expect over inland areas of our study region. There will be continued easterly and southeasterly winds off the Gulf. This flow will continue the low ozone (Code Green) over the region. Mostly clear skies off the coast of Louisiana where the King Air will fly tomorrow to rendezvous with the GEO-CAPE ship. Perhaps some scattered Cu in the lower levels and possible scattered Ci in that region during the afternoon.

Wednesday and Thursday should continue the drying trend with partly cloudy skies (less than 50% cloud cover). Relatively clean conditions for ozone and aerosols continue, except for possible influence of Mississippi Valley smoke extending down to the northern portion of our region. Wednesday will likely be a good day to fly in the Houston area.
Current Conditions

Conroe:
- Partly Cloudy
- Temperature: 93°F (34°C)
- Humidity: 42%
- Wind Speed: SE 14 G 18 mph
- Barometer: 29.96 in (1014.0 mb)
- Dewpoint: 67°F (19°C)
- Visibility: 10.00 mi
- Heat Index: 96°F (36°C)
- Last Update: 9 Sep 2.53 pm CDT

Houston Hobby:
- Mostly Cloudy
- Temperature: 88°F (31°C)
- Humidity: 57%
- Wind Speed: E 15 G 23 mph
- Barometer: 29.95 in (1014.7 mb)
- Dewpoint: 71°F (22°C)
- Visibility: 10.00 mi
- Heat Index: 94°F (34°C)
- Last Update: 9 Sep 2.53 pm CDT
Current Conditions

Galveston:

86°F 30°C

Humidity 70%
Wind Speed E 15 mph
Barometer 29.96 in (1014.7 mb)
Dewpoint 75°F (24°C)
Visibility 10.00 mi
Heat Index 95°F (35°C)

Last Update on 9 Sep 2.52 pm CDT
Today: Scattered thunderstorms and southeasterly winds.

1 PM CDT
500 mb vorticity
Tomorrow: Isolated thunderstorms and southeasterly winds.

1 PM CDT
500 mb vorticity
Houston Hobby
Tomorrow: Partly cloudy
Wednesday: Isolated thunderstorms, easterly winds, and upper level ridge moving inland in the Pacific Northwest.

1 PM CDT
500 mb vorticity
Thursday: Ridge extending from the upper Midwest to Texas.

1 PM CDT
850 mb RH

500 mb vorticity
Houston Hobby

Wednesday: Partly cloudy
Thursday: Cloud cover around 50%
-Tomorrow: Mostly cloudy in the afternoon.
-Wednesday: Mostly cloudy.
-Thursday: Mostly cloudy.
Tomorrow: NAM – high level clouds; low and mid level clouds along the coast

Integrated liquid and frozen hydrometeors (all levels)

27-hour forecast valid 1500 UTC Tue 10 Sep 2013

10 AM CDT

Integrated liquid and frozen hydrometeors (all levels)

30-hour forecast valid 1800 UTC Tue 10 Sep 2013

1 PM CDT

Integrated liquid and frozen hydrometeors (all levels)

33-hour forecast valid 2100 UTC Tue 10 Sep 2013

4 PM CDT

Integrated liquid and frozen hydrometeors (all levels)

36-hour forecast valid 0000 UTC Wed 11 Sep 2013

7 PM CDT
Wednesday: NAM – high level clouds; mid and low level clouds on western edge of our region
Thursday: NAM – high level clouds

Integrated liquid and frozen hydrometeors (all levels)

75-hour forecast valid 1500 UTC Thu 12 Sep 2013

10 AM CDT

7 PM CDT

Integrated liquid and frozen hydrometeors (all levels)

81-hour forecast valid 2100 UTC Thu 12 Sep 2013

4 PM CDT

84-hour forecast valid 0000 UTC Fri 13 Sep 2013

7 PM CDT
Offshore Louisiana forecast for tomorrow

- Clear in the morning and few to scattered clouds developing by 1 PM
- Cloud base above 4,000 ft
- Less than 10% chance of thunderstorms
- Few to scattered cirrus clouds between 20,000 and 40,000 ft
Our Thoughts

The 12Z model runs appear to be overdoing the amount of cirrus clouds over the next few days. The NWS mentioned the models initialized the simulations with too much moisture in the upper troposphere. We predict that the cloud coverage will decrease over the next few days, as do the NWS as shown in their forecast.
Recommendations

• Tomorrow: King Air flight in support of GEO-CAPE.

• Wednesday and Thursday: Possible flight days. Conditions look better Wednesday and Thursday than tomorrow as moisture axis continues to move south.
DISCOVER-AQ Air Quality Outlook
September 9, 2013

Ken Pickering
Mariel Friberg
O$_3$ (ppbv) – 15 min avg
September 2nd – 8th

= 50 ppbv
Hourly Ozone (airnowtech.org)**

Sept. 2nd – 8th

** EVERY 3rd HOUR PLOTTED!!!!!!
NO$_2$
Best Case: CAMx Layer 14

Min(114,32) = 0.0, Max(47,28) = 4.0

Tue September 10 09:00 CST
Good ozone levels (Code Green) expected: Mon., Tues., Wed., Thurs.

Onshore flow with low background ozone will keep ozone in the Good range through Wednesday. Some chance of Moderate ozone by Thurs/Fri.
Hourly PM$_{2.5}$ (airnowtech.org)**

September 2$^\text{nd}$ – 8$^\text{th}$ (9 pm)

** EVERY 3$^\text{rd}$ HOUR PLOTTED!!!!!
2013/SEP/08 : Daily average AOT Level 1.5, 13 sites

(N 30.5000, W 96.0000)  (N 30.5000, W 94.5000)

- DRAGON_Conroe : 0.14
- DRAGON_UH_W_Liberty : 0.10
- DRAGON_Aldine : 0.25
- DRAGON_West_Houston : 0.13
- DRAGON_Channel_View : 0.11
- DRAGON_Clinton : 0.11
- DRAGON_Deer_Park : 0.13
- DRAGON_SeabrookPark : 0.10
- DRAGON_Smith_Point : 0.11
- UH_Coastal_Center : 0.13
- DRAGON_Galveston_DP : 0.09

Color scale:
- 0.00 - 0.03
- 0.03 - 0.05
- 0.05 - 0.08
- 0.08 - 0.10
- 0.10 - 0.12
- 0.12 - 0.15
- 0.15 - 0.18
- 0.18 - 0.20
- 0.20 - 0.23
- 0.23 - 0.25
- 0.25 - 0.28
- 0.28 - 0.30
- 0.30 - 0.33
- 0.33 - 0.35
- 0.35 - 0.38
- 0.38 - 0.40
- 0.40 - 0.42
- 0.42 - 0.45
- 0.45 - 0.48
- 0.48
LAT = 30.3, LON = -95.4, Location = Conroe, Fcst_init = 20130909