

DISCOVER-AQ OUTLOOK -- September 18, 2013

Today (Wednesday): Fly day for < 1 hr. Too cloudy anyway.

Tomorrow (Thursday): Fly day? Not recommended. Cloudy conditions remain, maybe more so than today's conditions. Moisture and clouds from what's left of Ingrid & Manuel move over the region and interact with a trough, likely producing some rain.

Friday & Saturday: Not looking good for a flight. Instability from the trough and moisture inflow from the Gulf and the storm remnants should allow for convection and precipitation.

Sunday & beyond: Clearing with better flying weather likely, unless ... watching area of tropical convection off of Mexico's coast.

With onshore flow and precipitation, ozone and PM are expected to remain low through the weekend.






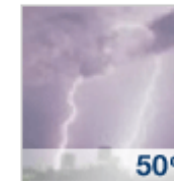



9/18/2013 Weather Briefing

Clare Flynn






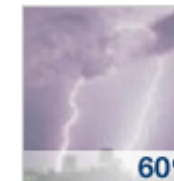


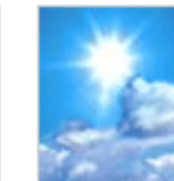
Recommendations

- Thursday, Friday, Saturday: **No fly days**. Too many clouds and high chances of precipitation.




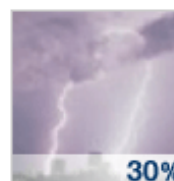

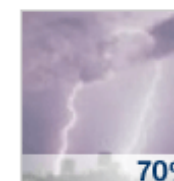

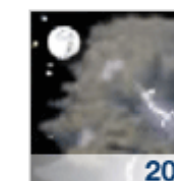

Conroe:

THIS AFTERNOON	TONIGHT	THURSDAY	THURSDAY NIGHT	FRIDAY	FRIDAY NIGHT	SATURDAY	SATURDAY NIGHT	SUNDAY
								
Slight Chc Thunderstorms High: 95 °F	Mostly Cloudy Low: 72 °F	Chance Thunderstorms High: 92 °F	Chance Thunderstorms Low: 74 °F	Thunderstorms Likely High: 88 °F	Chance Thunderstorms Low: 74 °F	Chance Thunderstorms High: 88 °F	Partly Cloudy Low: 69 °F	Mostly Sunny High: 91 °F

Houston Hobby:

THIS AFTERNOON	TONIGHT	THURSDAY	THURSDAY NIGHT	FRIDAY	FRIDAY NIGHT	SATURDAY	SATURDAY NIGHT	SUNDAY
								
Slight Chc Thunderstorms High: 93 °F	Slight Chc Thunderstorms Low: 78 °F	Chance Thunderstorms High: 91 °F	Chance Thunderstorms Low: 78 °F	Thunderstorms Likely High: 88 °F	Thunderstorms Likely Low: 77 °F	Chance Thunderstorms High: 88 °F	Mostly Cloudy Low: 71 °F	Mostly Sunny High: 91 °F

Galveston:

THIS AFTERNOON	TONIGHT	THURSDAY	THURSDAY NIGHT	FRIDAY	FRIDAY NIGHT	SATURDAY	SATURDAY NIGHT	SUNDAY
								
Slight Chc Thunderstorms High: 90 °F	Slight Chc Thunderstorms Low: 81 °F	Chance Thunderstorms High: 88 °F	Chance Thunderstorms Low: 80 °F	Thunderstorms Likely High: 84 °F	Thunderstorms Likely Low: 80 °F	Chance Thunderstorms High: 88 °F	Slight Chc Thunderstorms Low: 77 °F	Slight Chc Thunderstorms High: 90 °F

Conroe:

A Few Clouds

32°C

Humidity	52%
Wind Speed	SE 9 mph
Barometer	30.02 in (1016.0 mb)
Dewpoint	70°F (21°C)
Visibility	10.00 mi
Heat Index	96°F (36°C)

Last Update on 18 Sep 11:53 am CDT



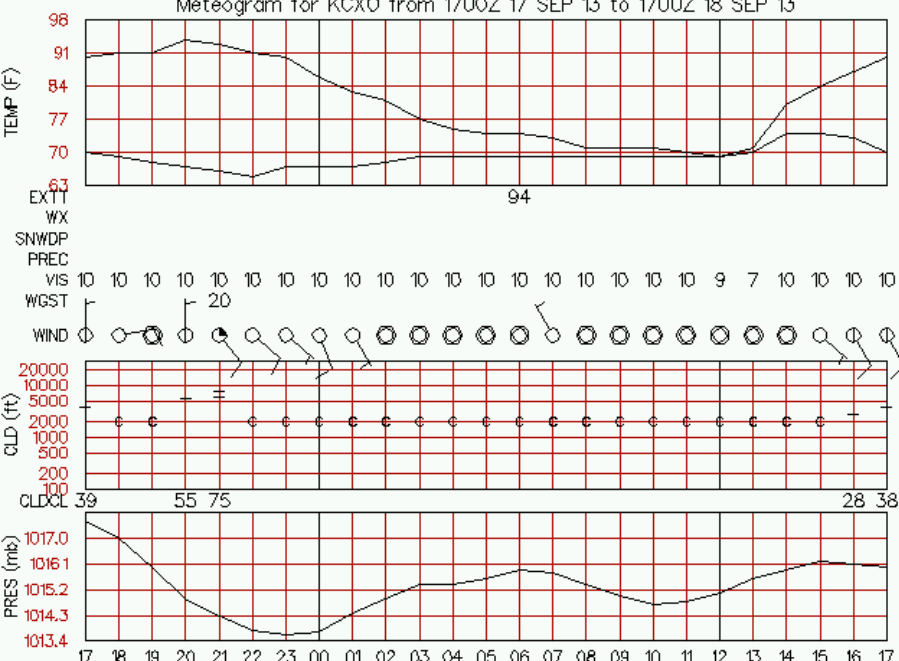
Partly Cloudy

32°C

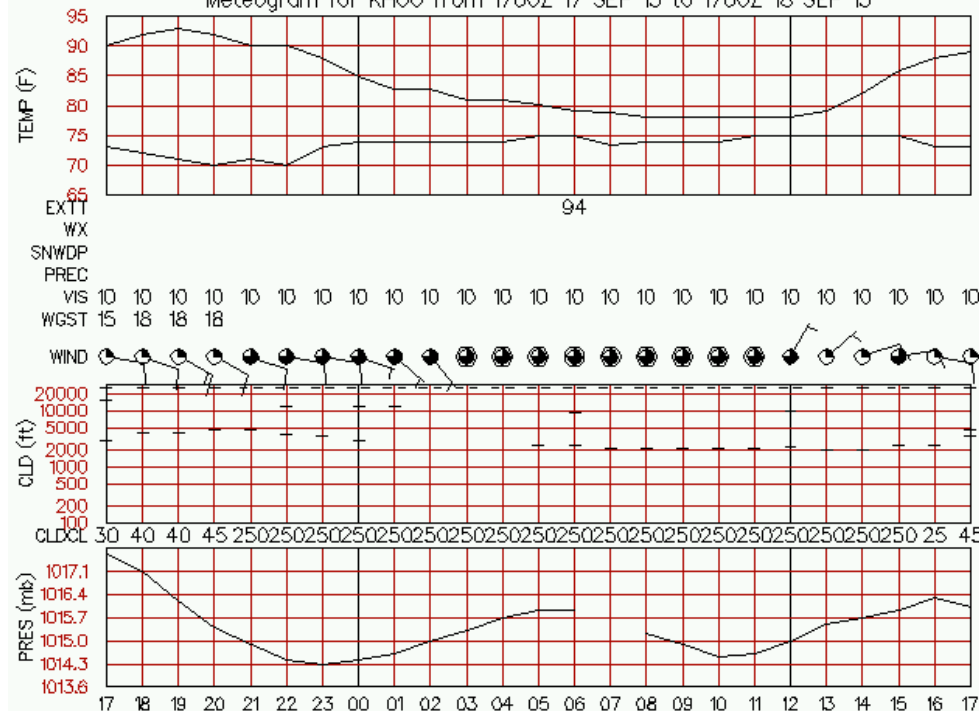
Humidity	59%
Wind Speed	E 8 mph
Barometer	29.99 in (1016.0 mb)
Dewpoint	73°F (23°C)
Visibility	10.00 mi
Heat Index	97°F (36°C)

Last Update on 18 Sep 11:53 am CDT

Meteorogram for KCXO from 1700Z 17 SEP 13 to 1700Z 18 SEP 13



Meteogram for KHOU from 1700Z 17 SEP 13 to 1700Z 18 SEP 13



Current Conditions

Galveston:



Partly Cloudy

87°F

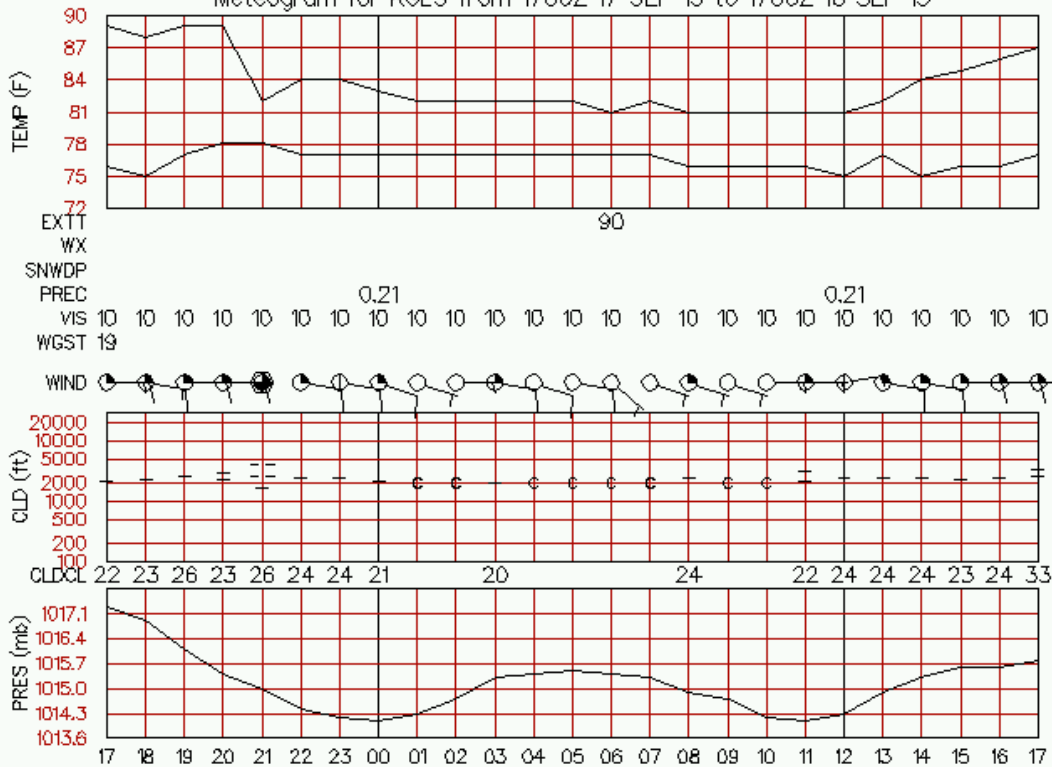
31°C

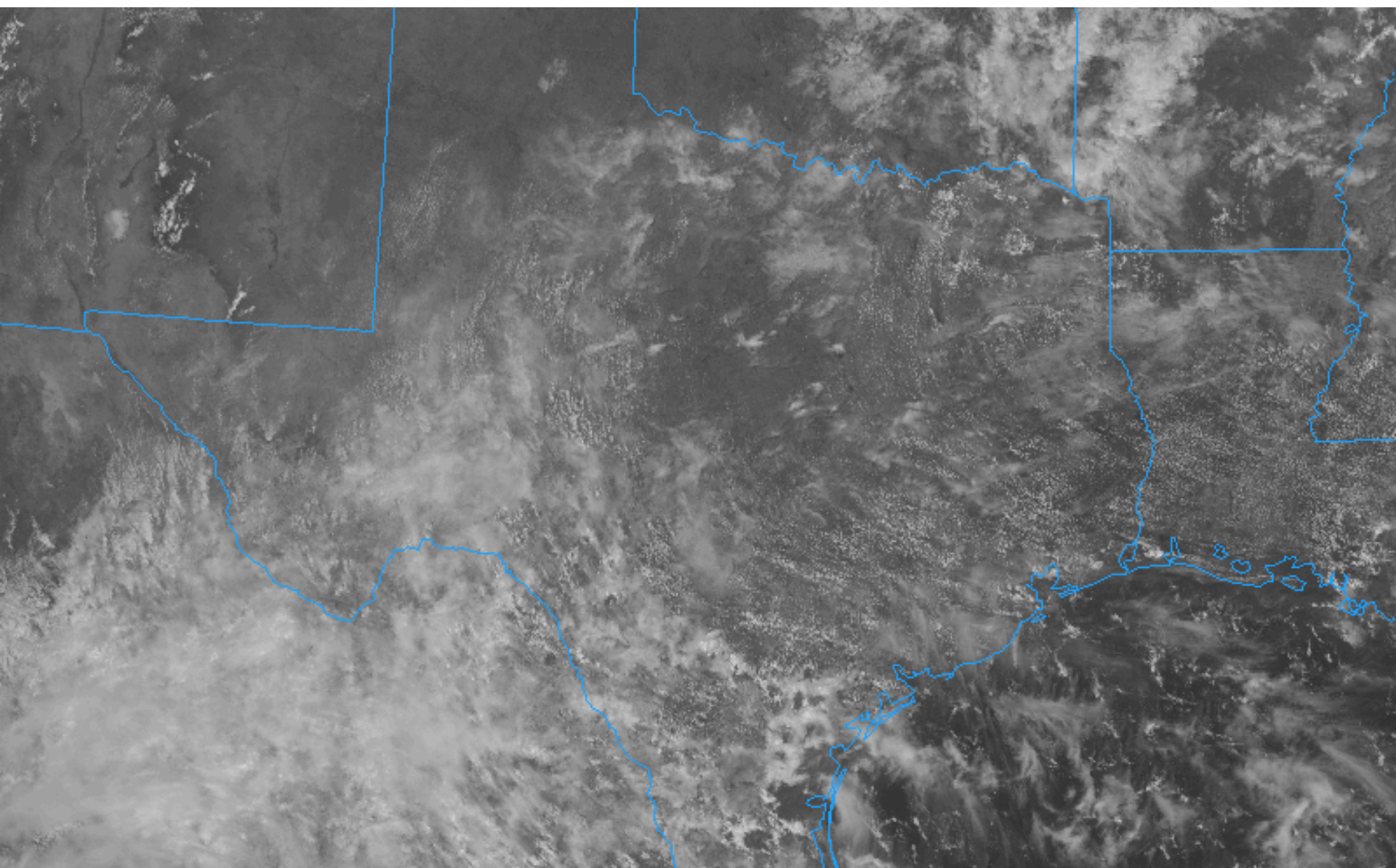
Humidity 72%
Wind Speed E 10 mph
Barometer 30.00 in (1015.8 mb)
Dewpoint 77°F (25°C)
Visibility 10.00 mi
Heat Index 99°F (37°C)

Last Update on 18 Sep 11:52 am CDT

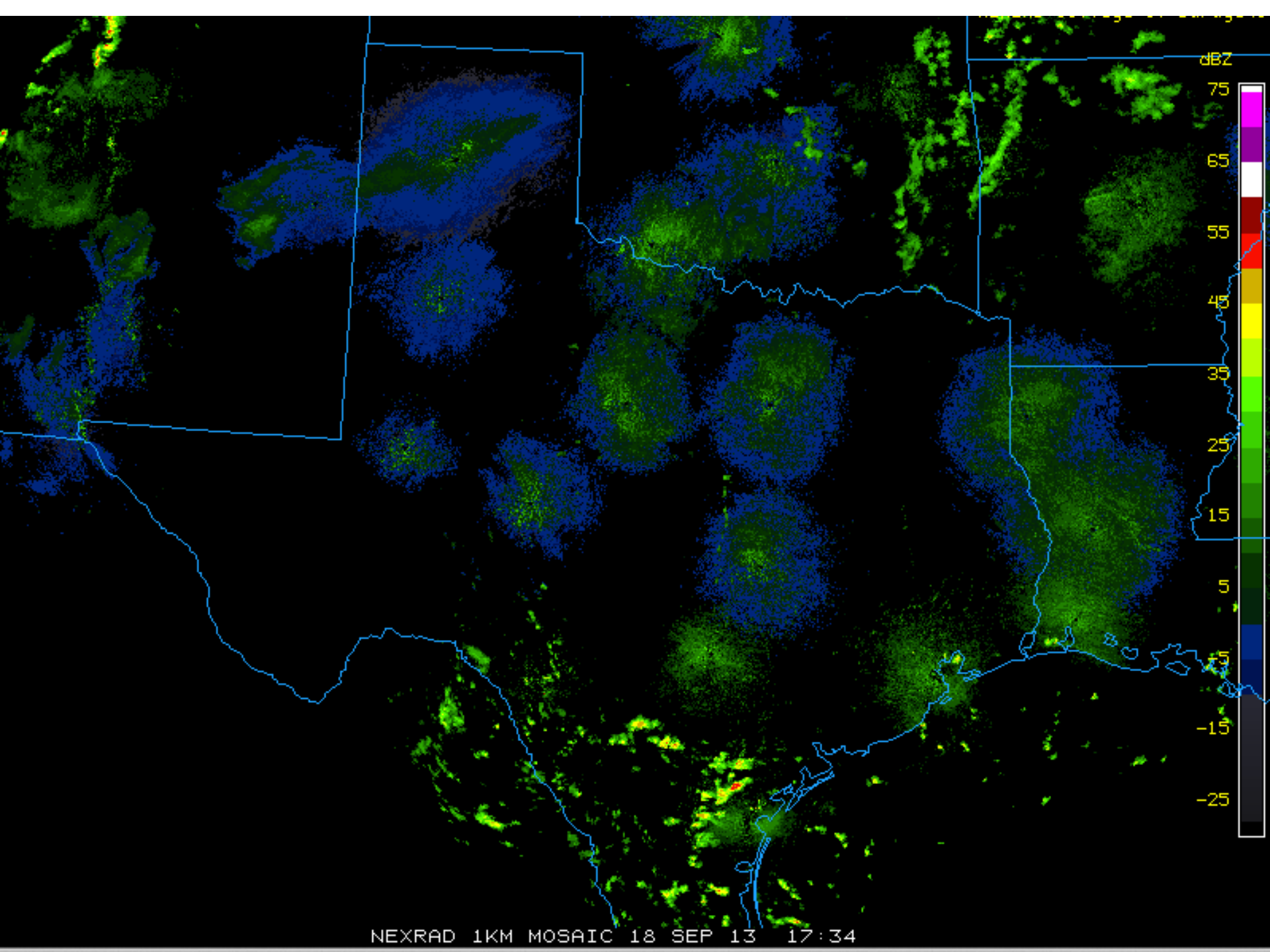
▼ Plymouth State Weather Center ▼

Meteogram for KGLS from 1700Z 17 SEP 13 to 1700Z 18 SEP 13



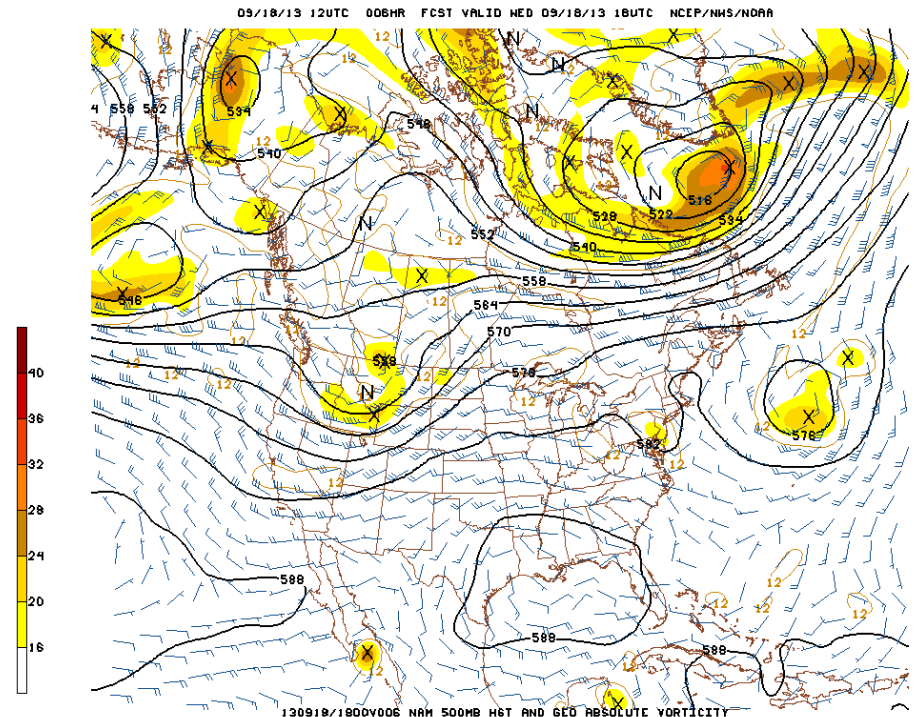
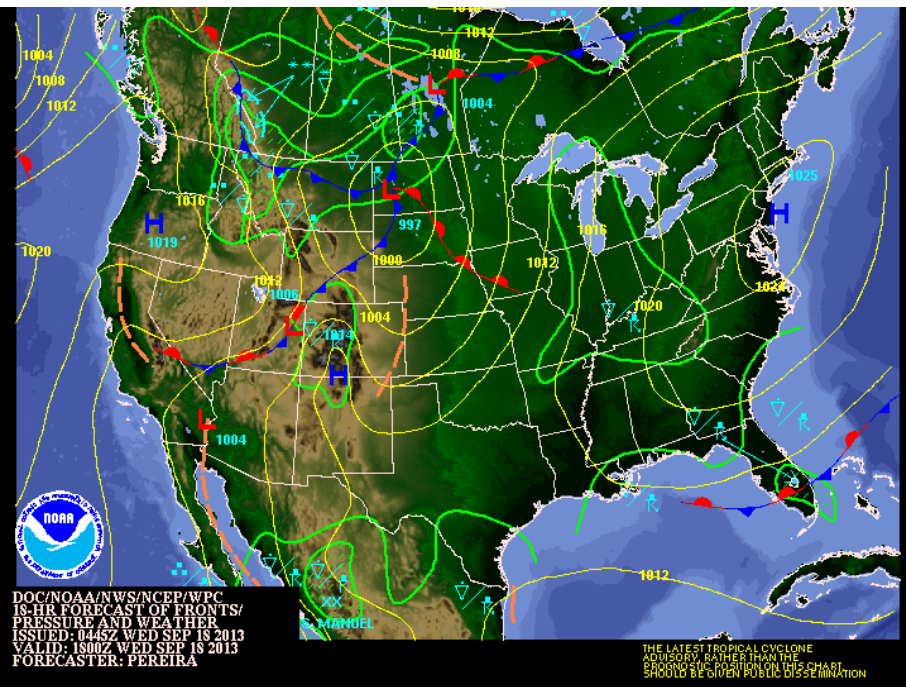


GOES VISIBLE SATELLITE 18 SEP 13 17:15



Today: Easterly flow. The upper trough builds into the region from the west. This change in synoptic flow will enhance the moisture stream from the remnants of Ingrid and Manuel. This will keep cloud cover high.

1 PM CDT
500 mb vorticity



10 m winds at 1 PM today

WRF 3-KM

Fcst: 12 h

Sigma1 Windspeed (m/s)

Sea Level Pressure (hPa)

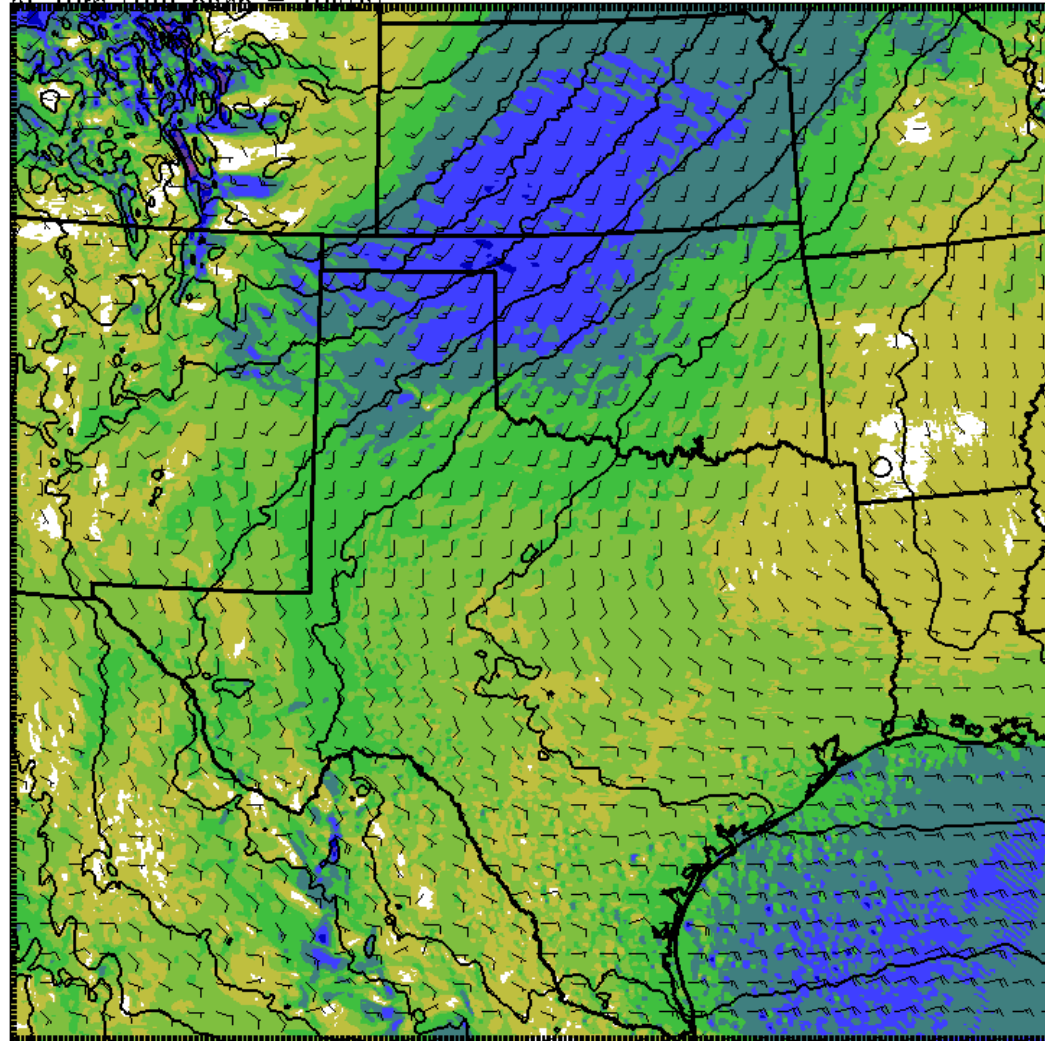
Wind at 10m (full barb = 10kts)

Valid: 18 UTC Wed 18 Sep 13 (13 CDT Wed 18 Sep 13)

Init: 06 UTC Wed 18 Sep 13

100 W

90 W



30 N

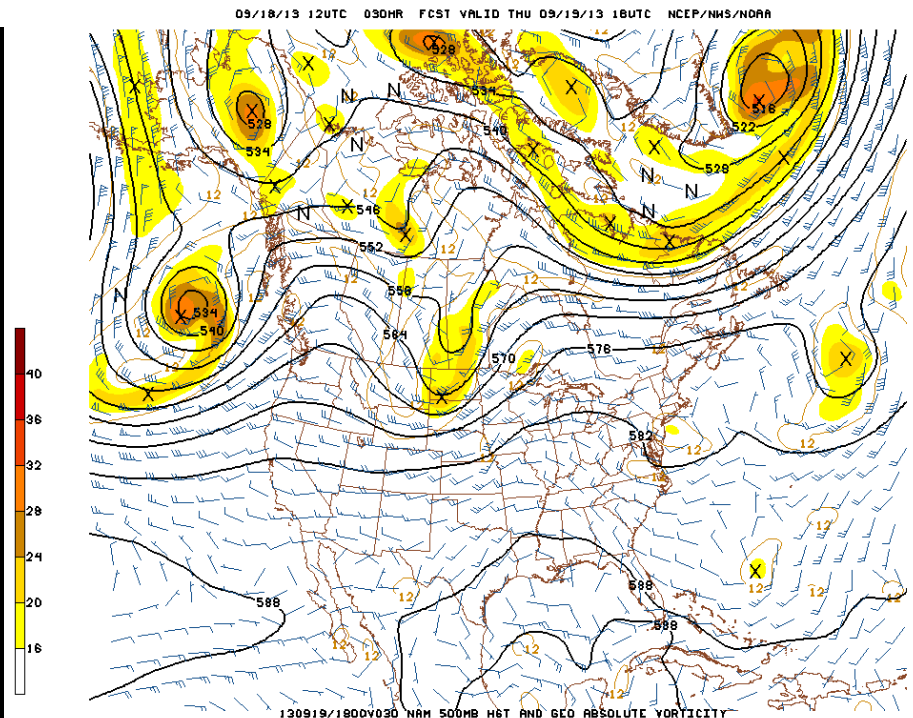
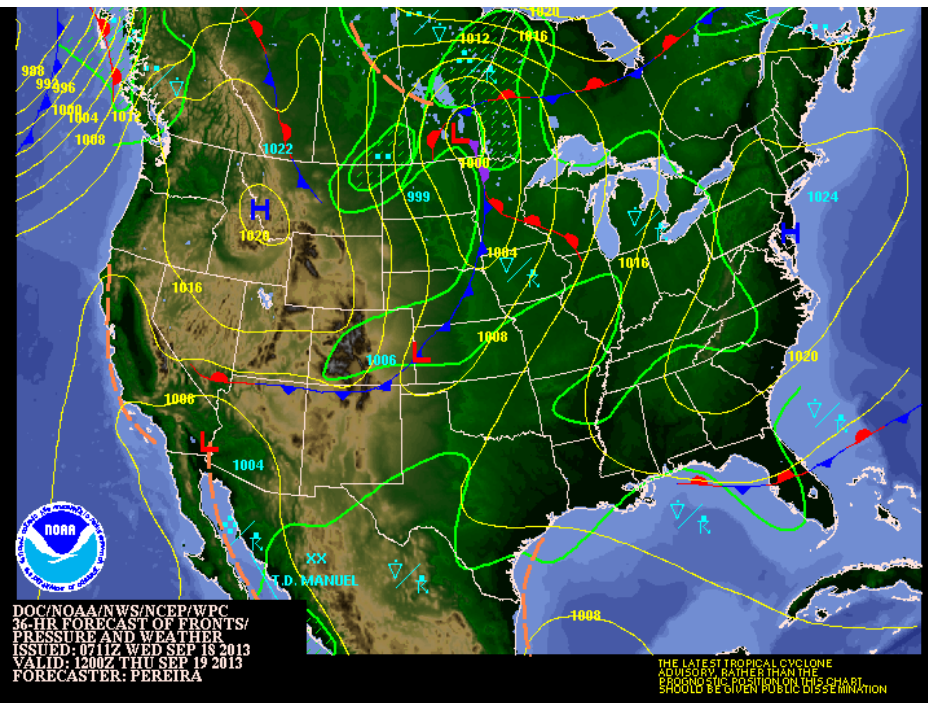
CONTOURS: UNITS=hPa LOW= 1002.0 HIGH= 1016.0 INTERVAL= 2.0000



Model Info: V3.3 No Cu YSU PBL Thompson Noah LSM 3.0 km, 37 levels, 18 sec
LW: RRTM SW: Dudhia DIFF: simple KM: 2D Smagor

Tomorrow: Easterly flow. The upper trough influences the study region. The synoptic flow will continue to stream moisture from the remnants of Ingrid and Manuel. Dense cloud coverage again.

1 PM CDT
500 mb vorticity



10 m winds at 1 PM tomorrow

WRF 3-KM

Fcst: 36 h

Sigma1 Windspeed (m/s)

Sea Level Pressure (hPa)

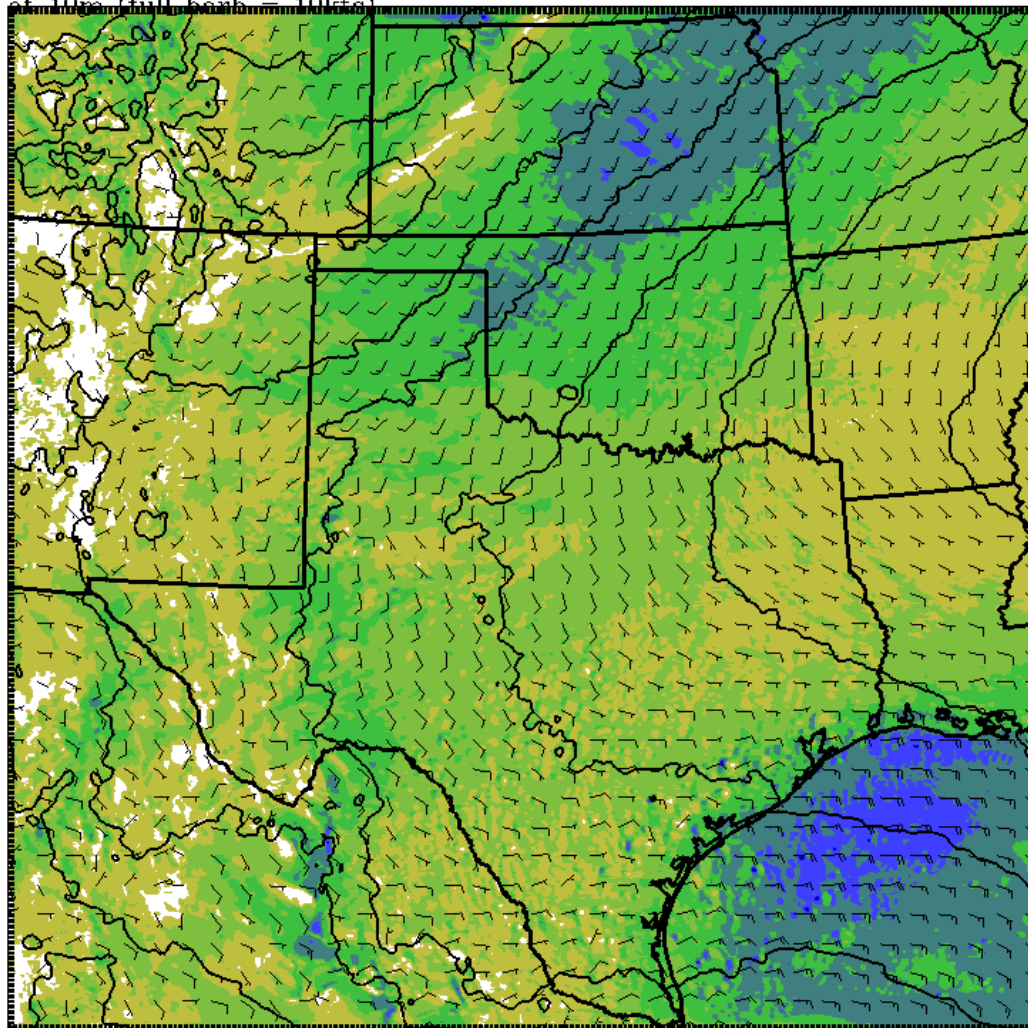
Wind at 10m (full barb = 10kts)

Init: 06 UTC Wed 18 Sep 13

Valid: 18 UTC Thu 19 Sep 13 (13 CDT Thu 19 Sep 13)

100 W

90 W



30 N

CONTOURS: UNITS=hPa LOW= 1002.0 HIGH= 1016.0 INTERVAL= 2.0000



Model Info: V3.3

No Cu YSU PBL Thompson Noah LSM 3.0 km, 37 levels, 18 sec

LW: RRTM SW: Dudhia DIFF: simple KM: 2D Smagor

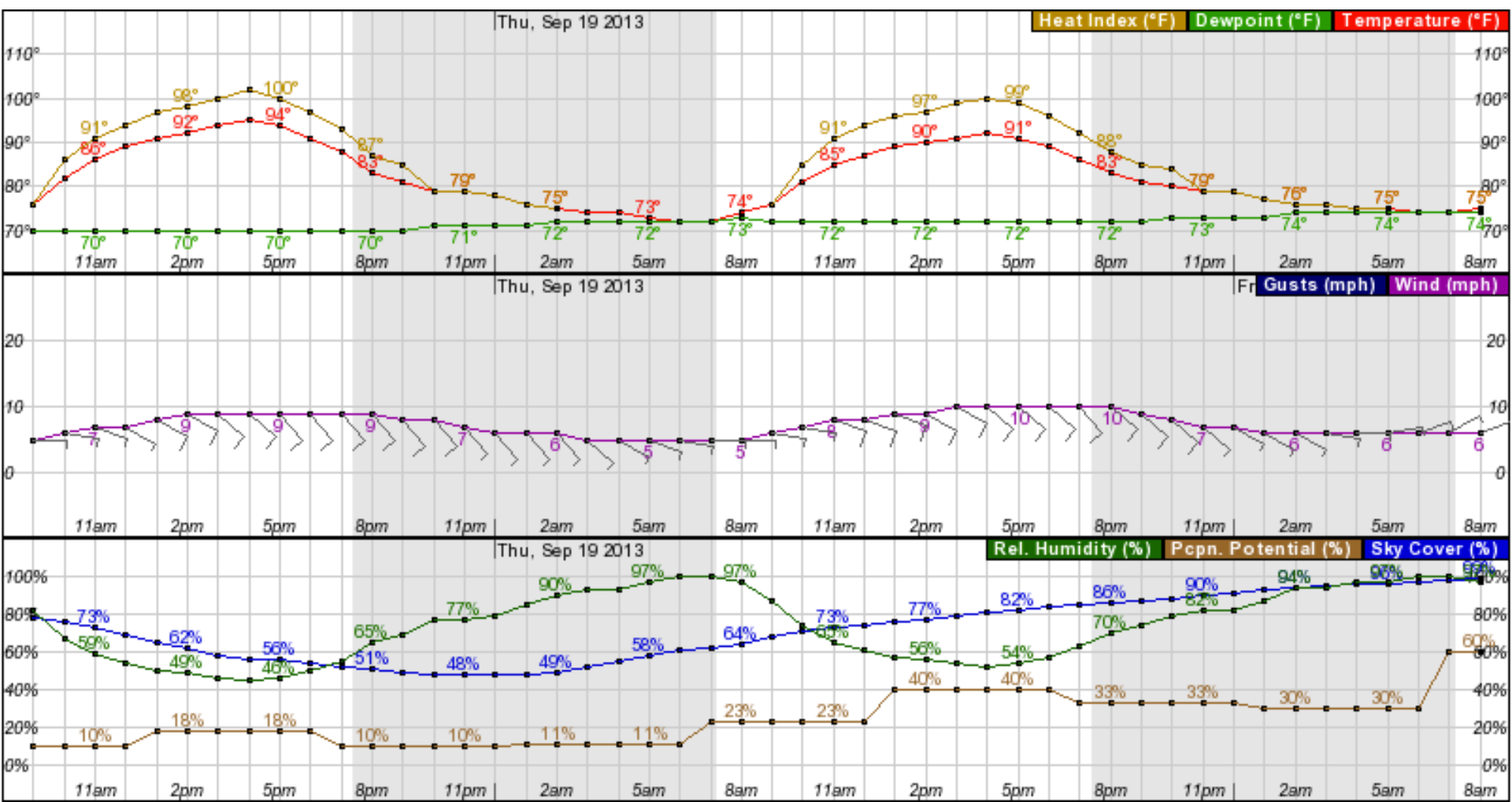
Conroe

Today: Partly cloudy

Tomorrow: Mostly cloudy

Today→

Tomorrow→



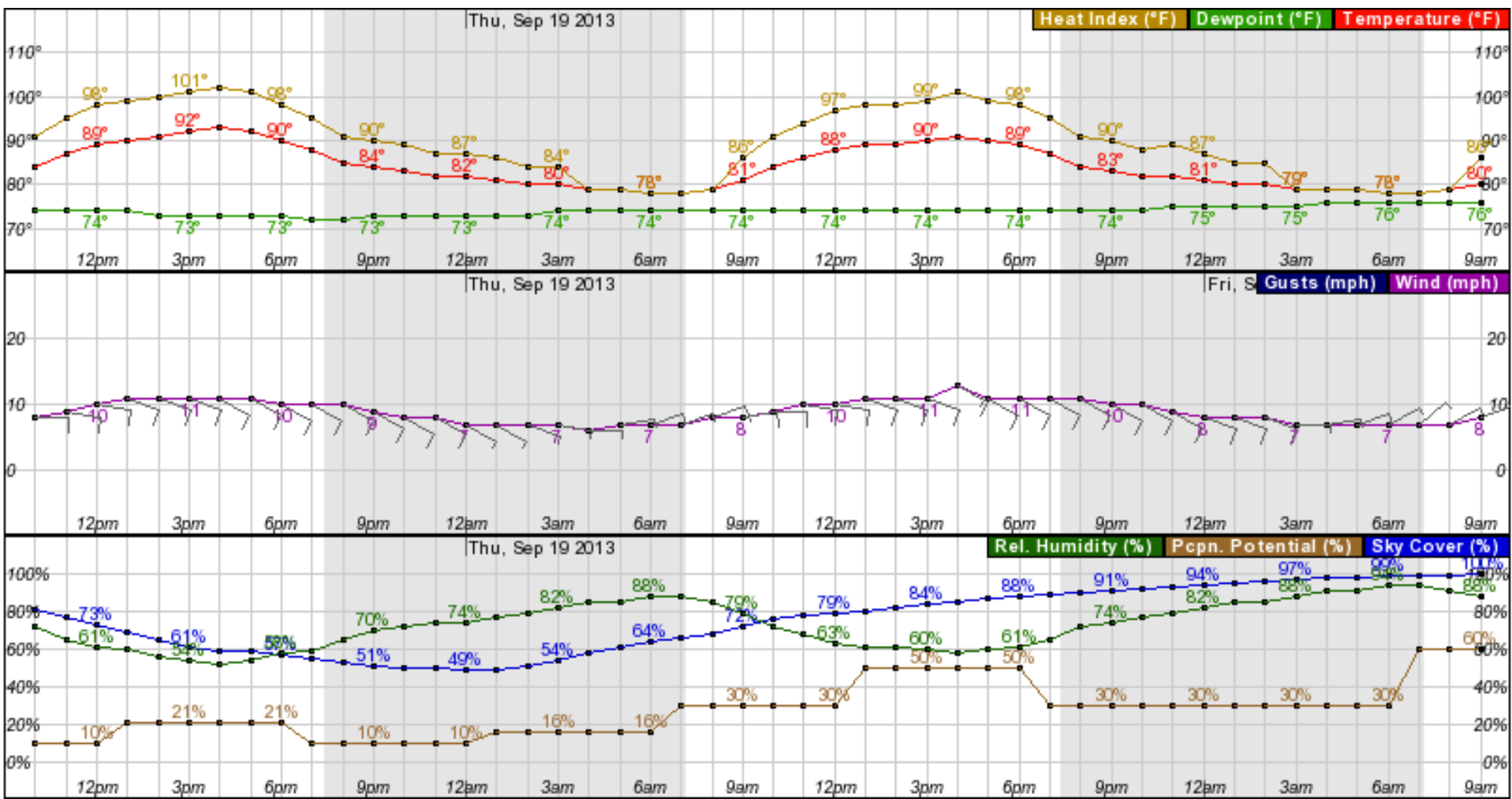
Houston Hobby

Today: Partly cloudy

Tomorrow: Mostly cloudy

Today→

Tomorrow→



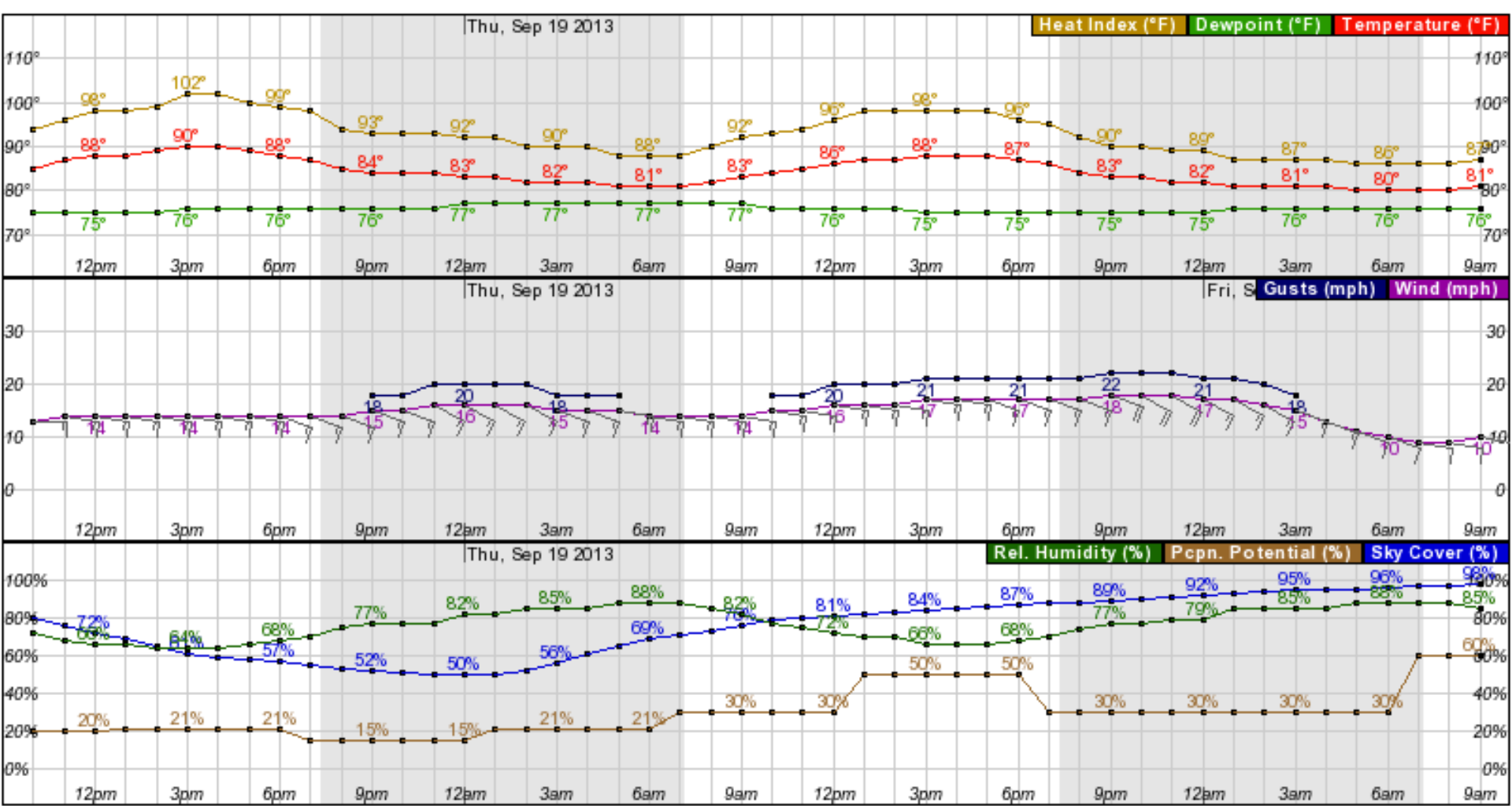
Galveston

Today: Partly cloudy

Tomorrow: Mostly cloudy

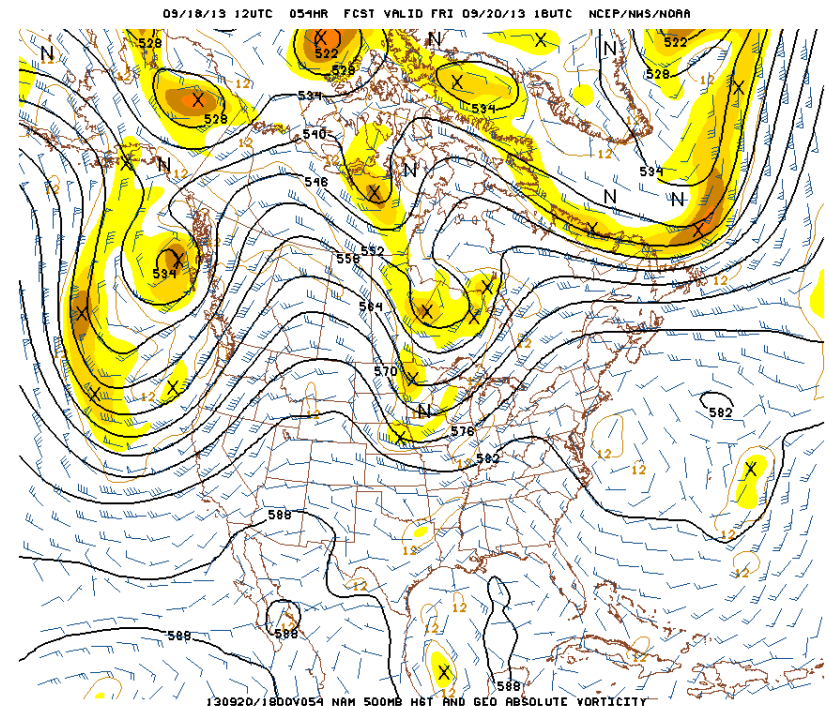
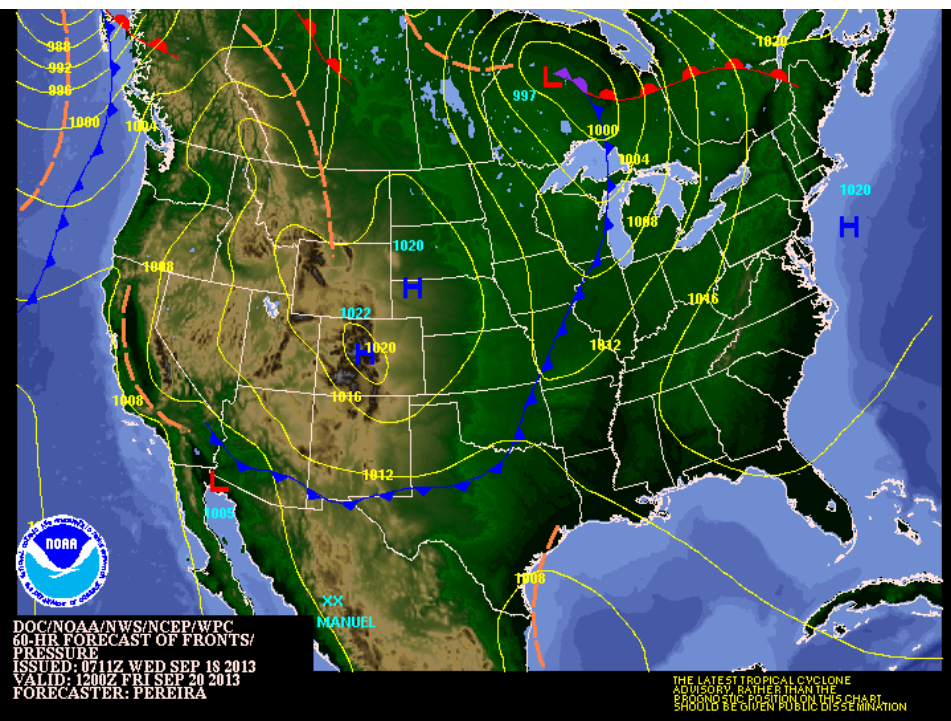
Today→

Tomorrow→



Friday: Surface winds become more complex. The upper trough remains in place. The synoptic flow will continue to stream moisture from the remnants of Ingrid and Manuel. Cold front enters Texas. Dense cloud coverage again, and high chances of precipitation.

1 PM CDT
500 mb vorticity



10 m winds at 1 PM Friday

WRF 3-KM

Fest: 60 h

Sigma1 Windspeed (m/s)

Sea Level Pressure (hPa)

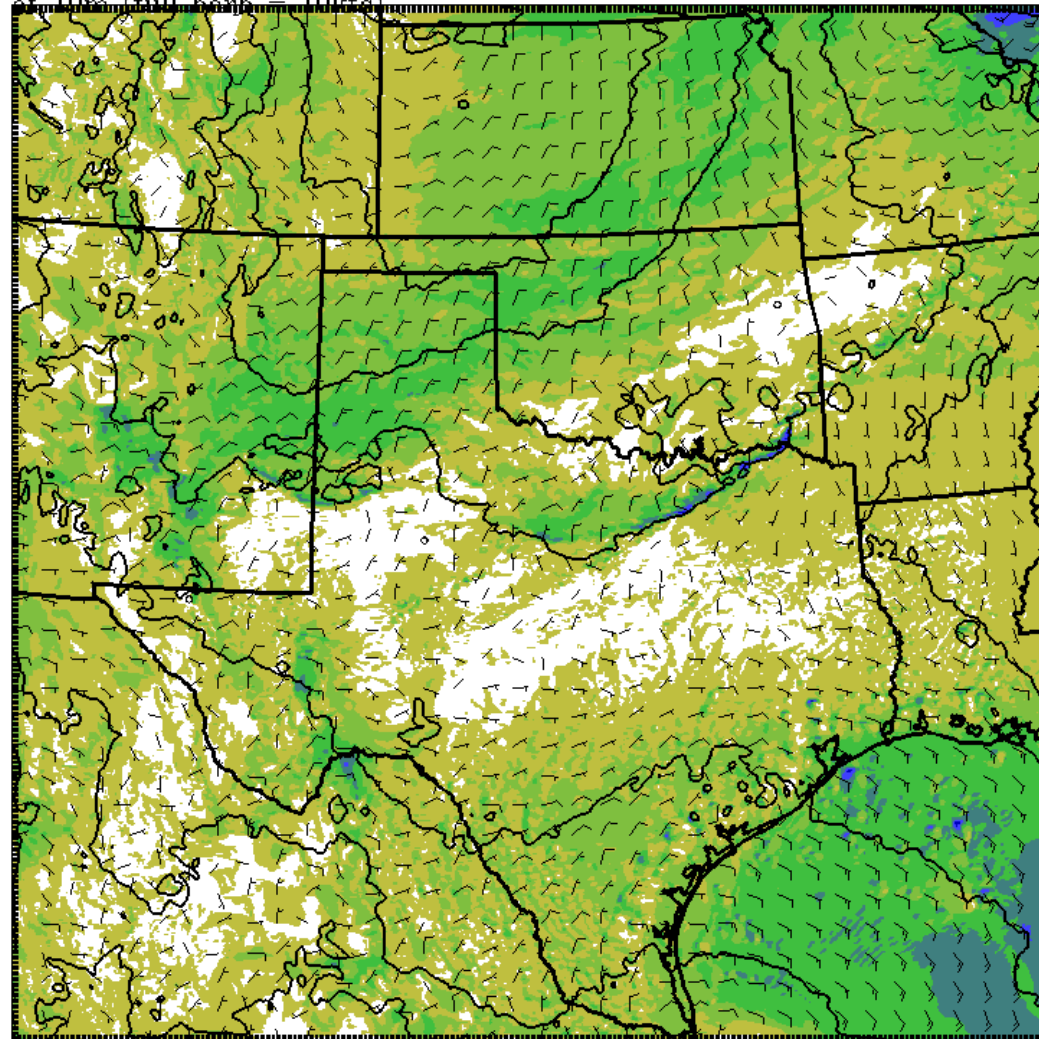
Wind at 10m (full barb = 10 m/s)

Init: 06 UTC Wed 18 Sep 13

Valid: 18 UTC Fri 20 Sep 13 (13 CDT Fri 20 Sep 13)

100 W

90 W



CONTOURS: UNITS=hPa LOW= 1008.0 HIGH= 1018.0 INTERVAL= 2.0000

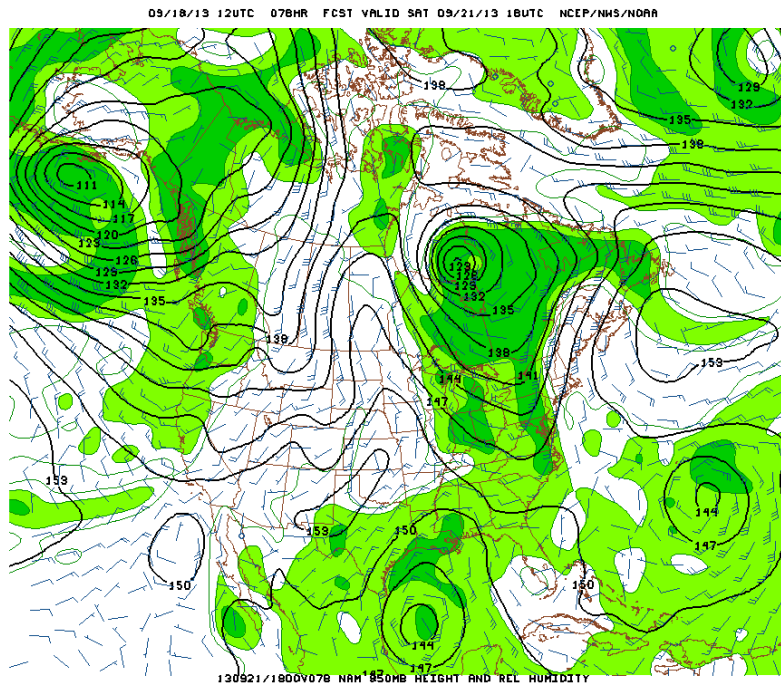


Model Info: V3.3

No Cu YSU PBL Thompson Noah LSM 3.0 km, 37 levels, 18 sec
LW: RRTM SW: Dudhia DIFF: simple KM: 2D Smagor

Saturday: Upper ridge has built in over the mid US, but followed closely by a second trough. This will keep moisture in the area, with chances for cloud and precipitation continuing.

1 PM CDT
850 mb RH



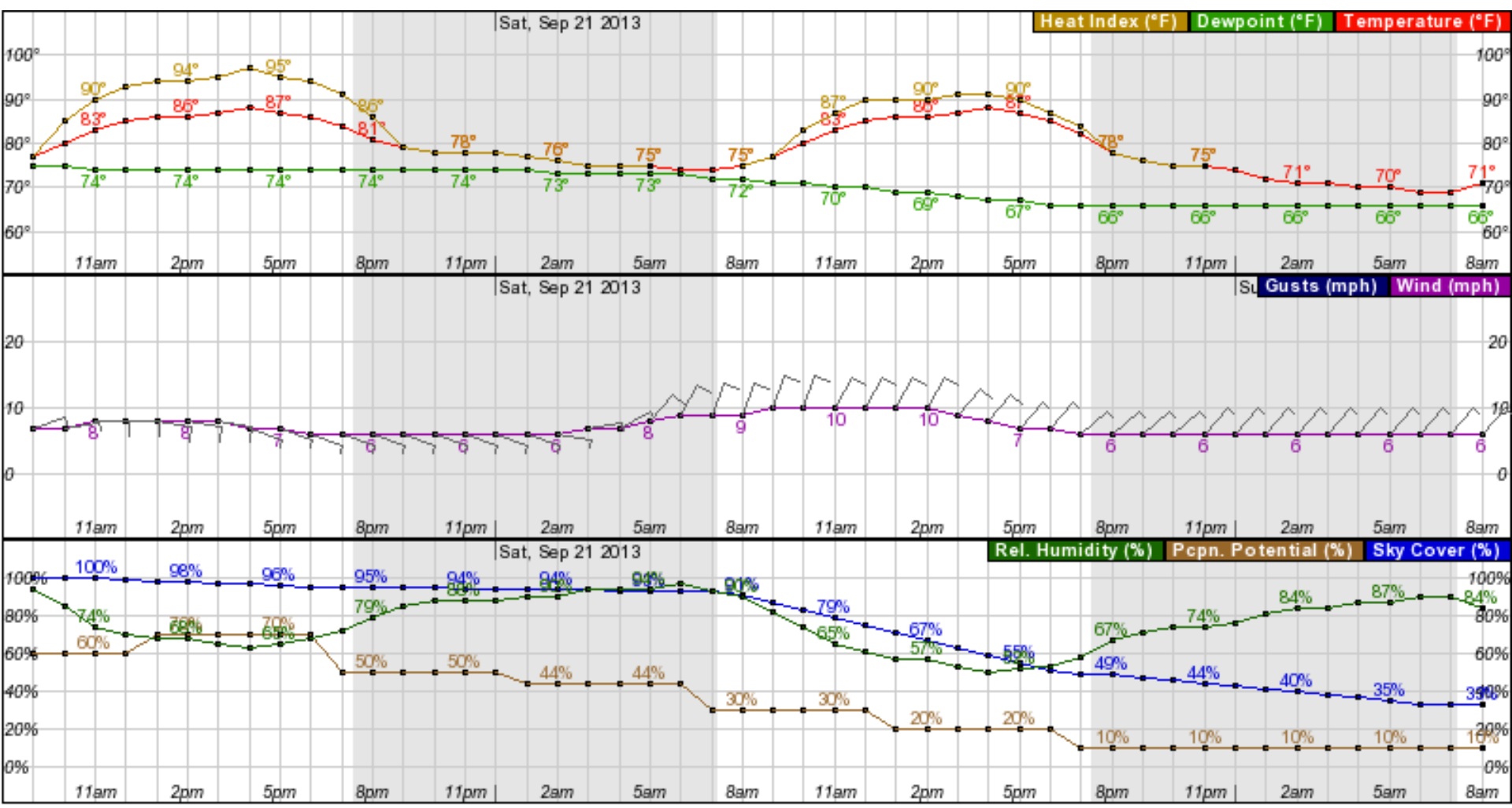
Conroe

Friday: Mostly cloudy

Saturday: Mostly cloudy

Friday→

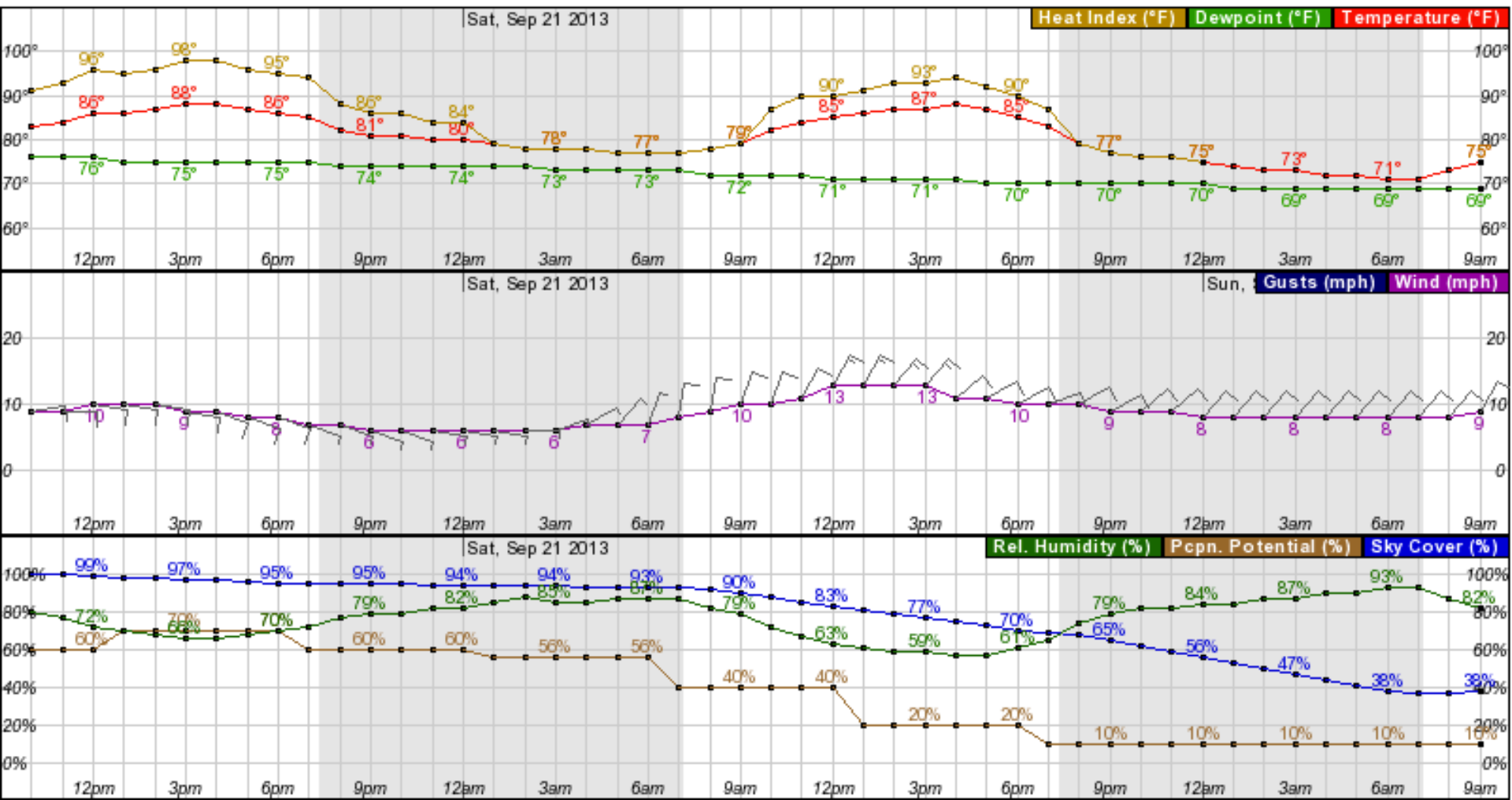
Saturday→



Houston Hobby
Friday: Mostly cloudy
Saturday: Mostly cloudy

Friday→

Saturday→



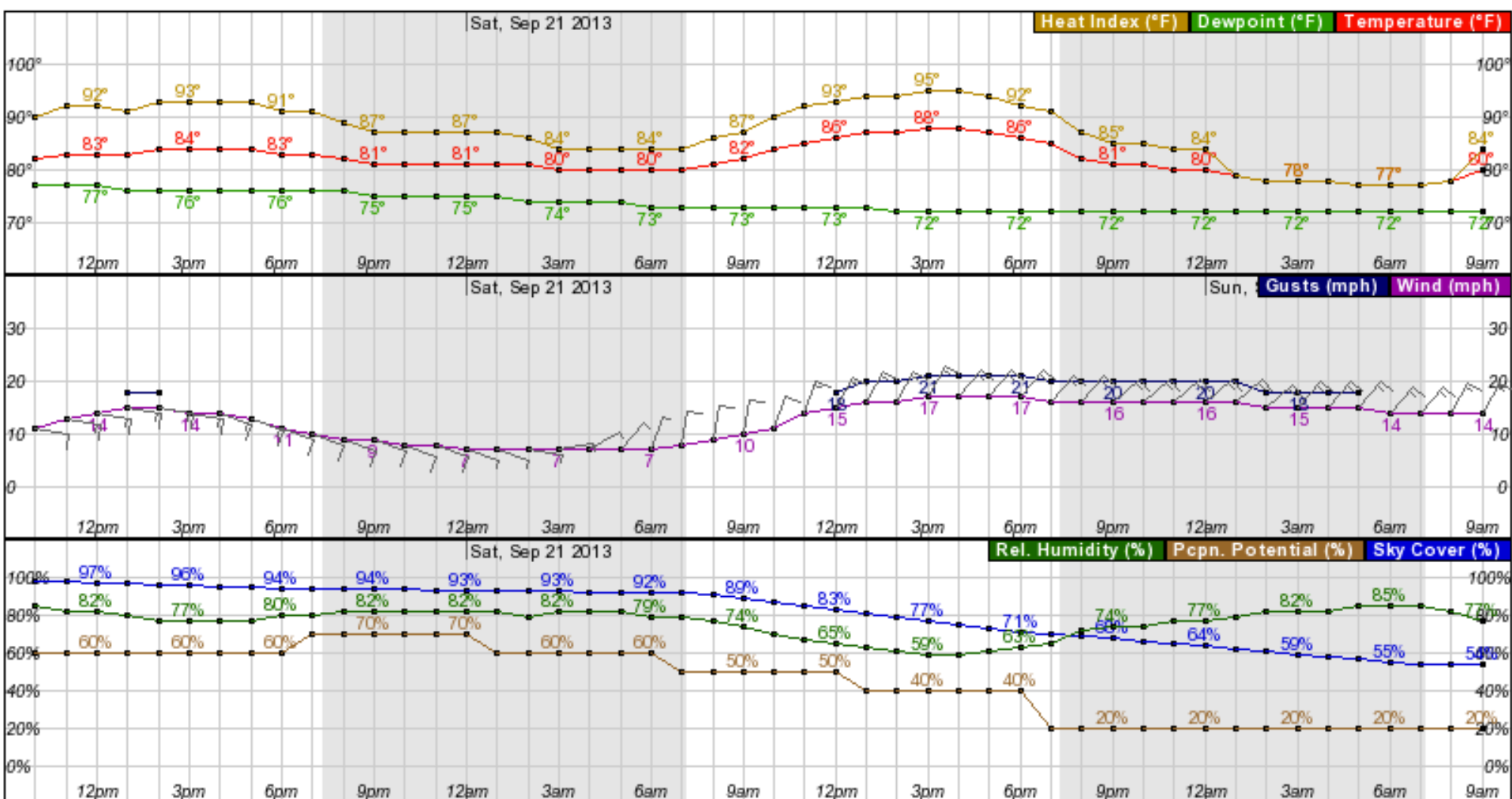
Galveston

Friday: Mostly cloudy

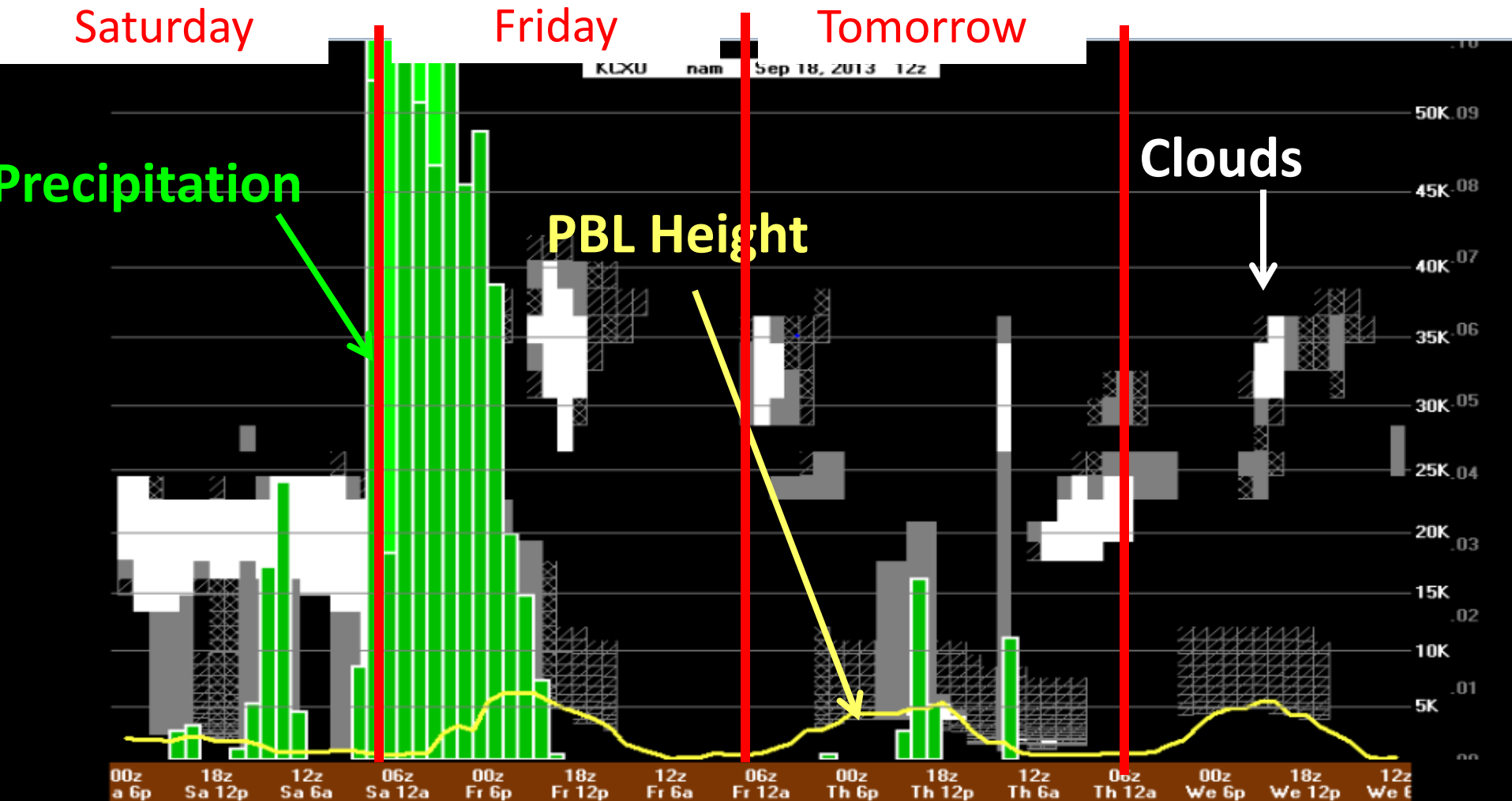
Saturday: Mostly cloudy

Friday→

Saturday→

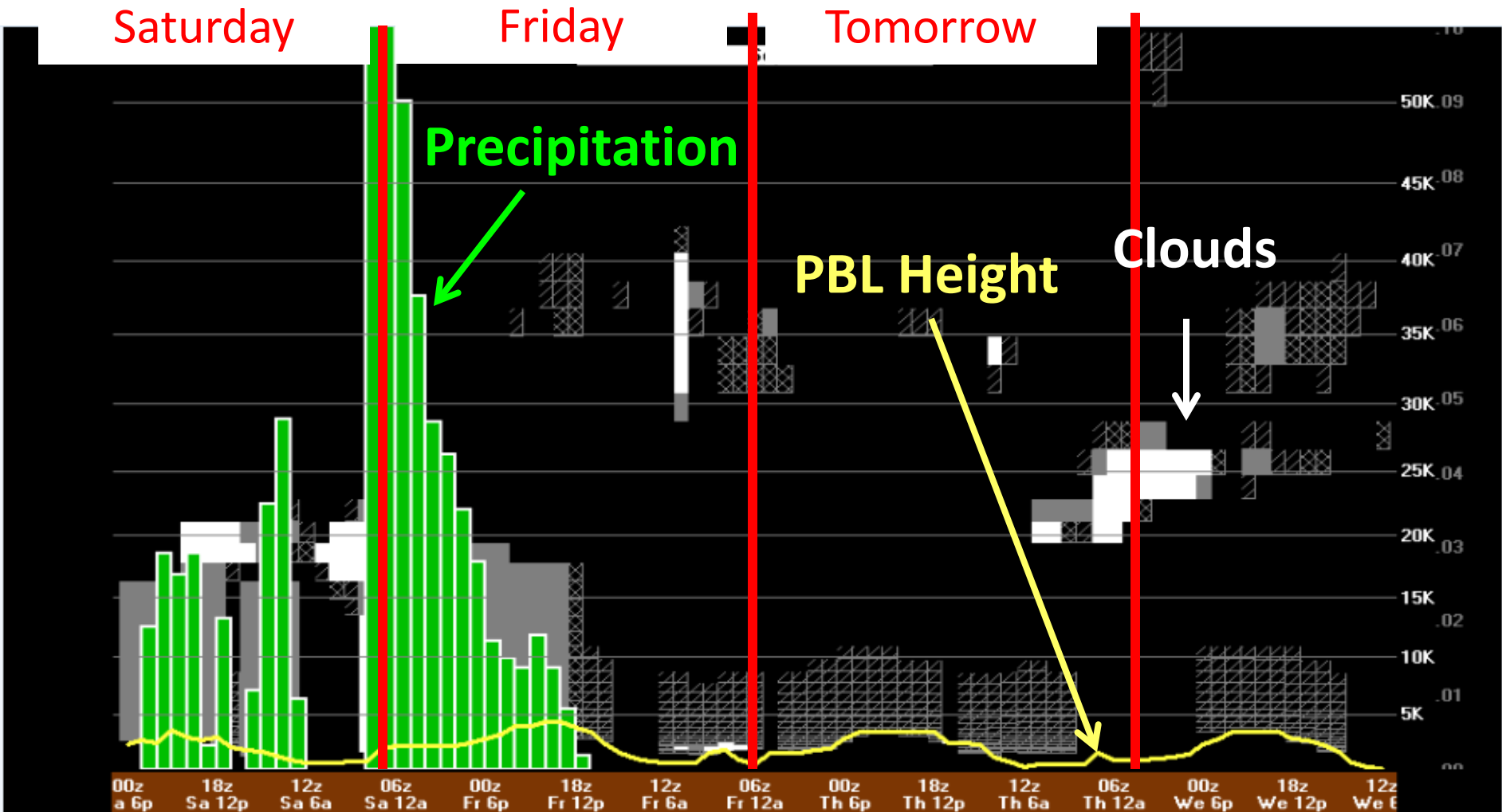


Conroe; BUFKIT – NAM (12 UTC 10 September)



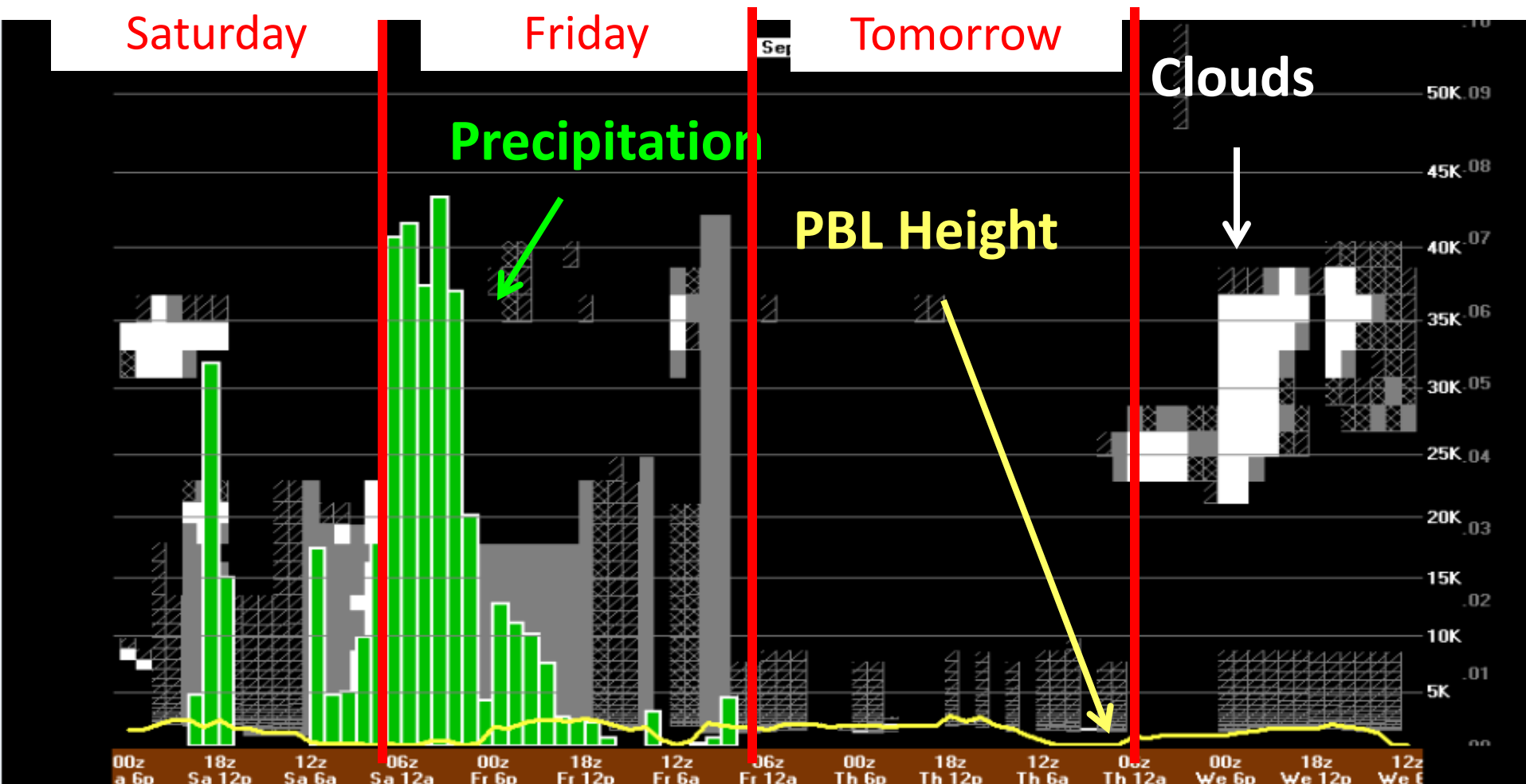
- Tomorrow: Low cloud and precipitation.
- Friday: Scattered Cu/cirrus during afternoon, with heavy precipitation during evening.
- Saturday: Low cloud throughout the day and some precipitation.

Houston Hobby; BUFKIT – NAM (12 UTC 10 September)



- Tomorrow: Low cloud throughout the day.
- Friday: Scattered Cu/cirrus during afternoon, with heavy precipitation during evening.
- Saturday: Low cloud throughout the day and precipitation.

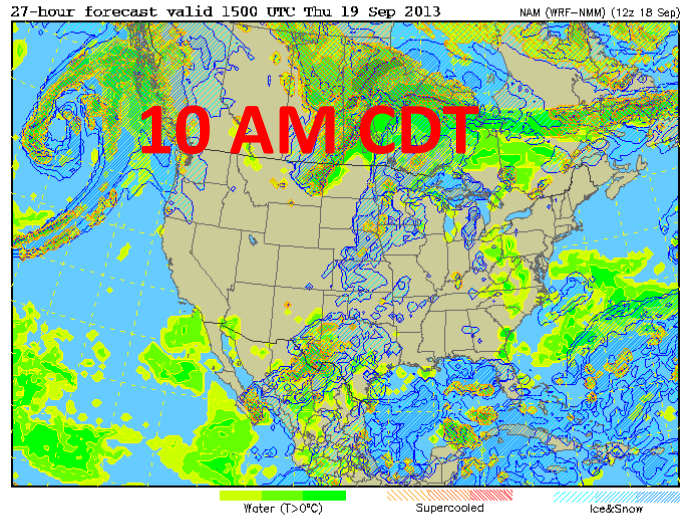
Galveston; BUFRKIT – NAM (12 UTC 10 September)



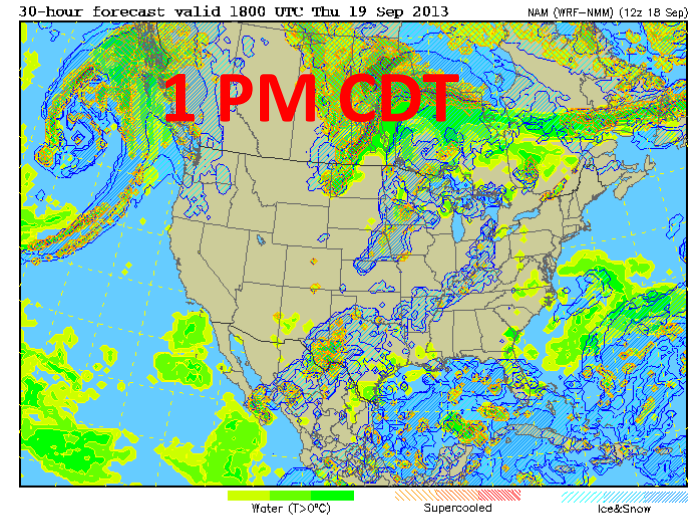
- Tomorrow: Low cloud throughout the day.
- Friday: Cloud and precipitation throughout the day.
- Saturday: Low cloud throughout the day and precipitation.

Tomorrow: NAM – Clouds at various levels throughout the day

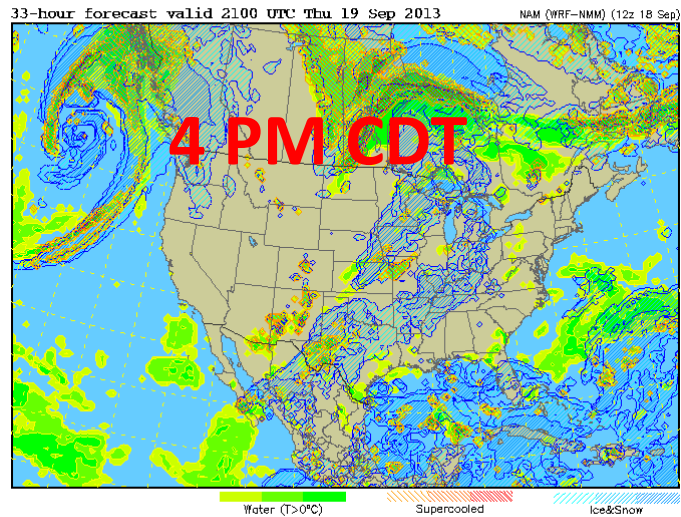
Integrated liquid and frozen hydrometeors (all levels)



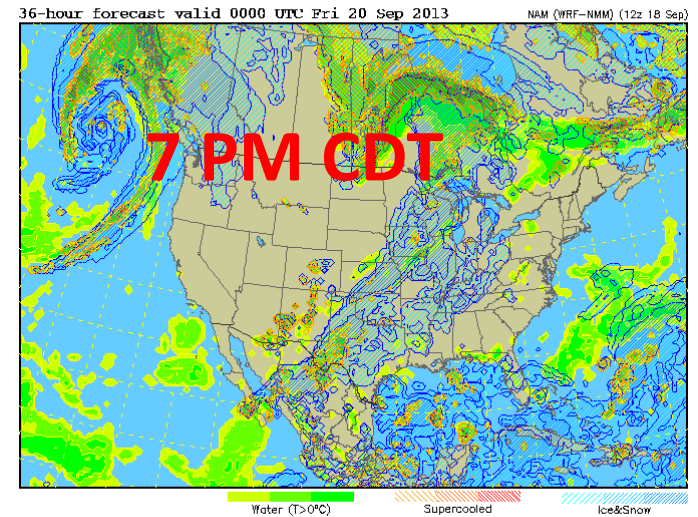
Integrated liquid and frozen hydrometeors (all levels)



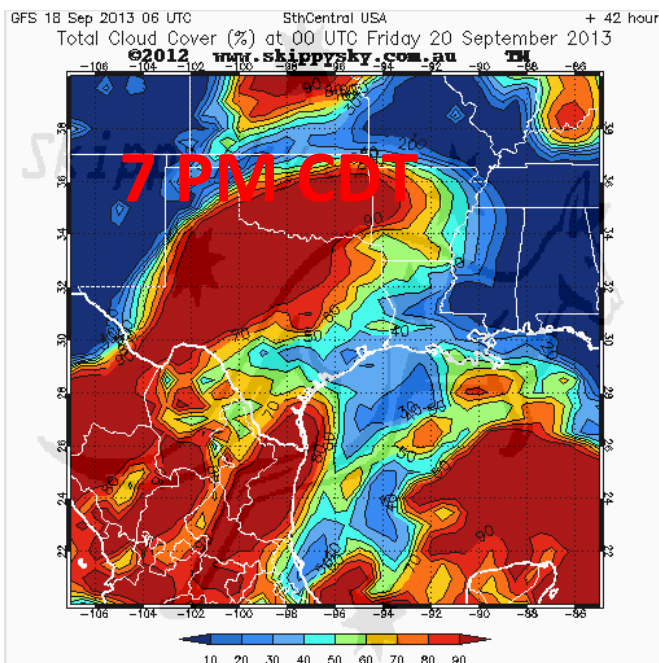
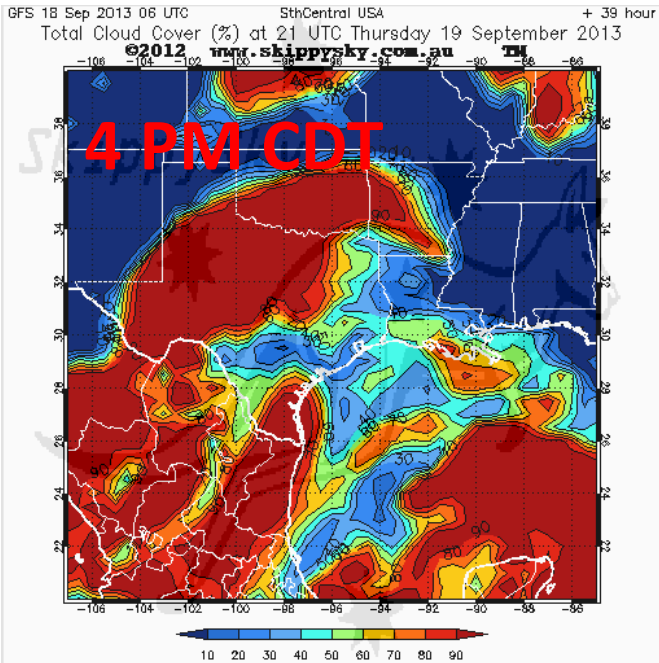
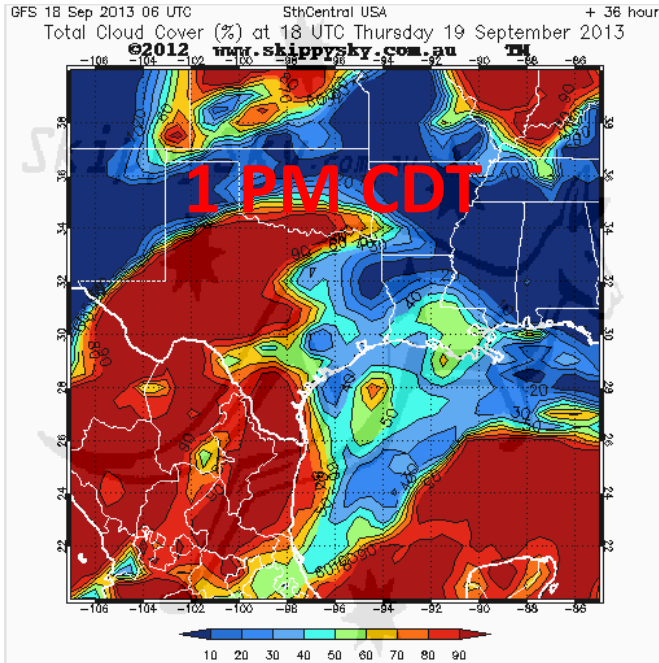
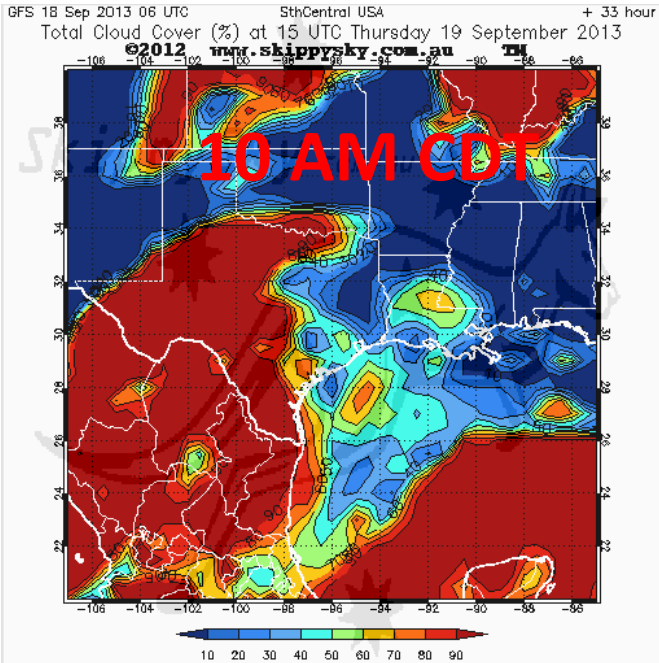
Integrated liquid and frozen hydrometeors (all levels)



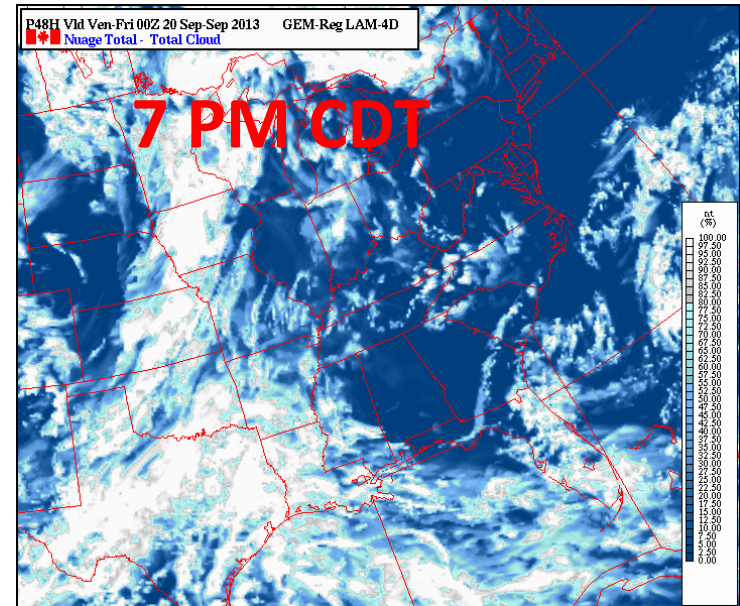
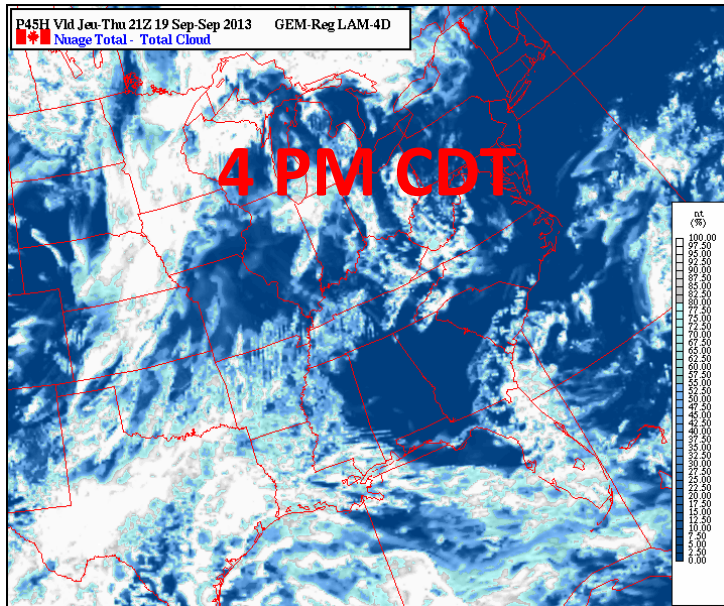
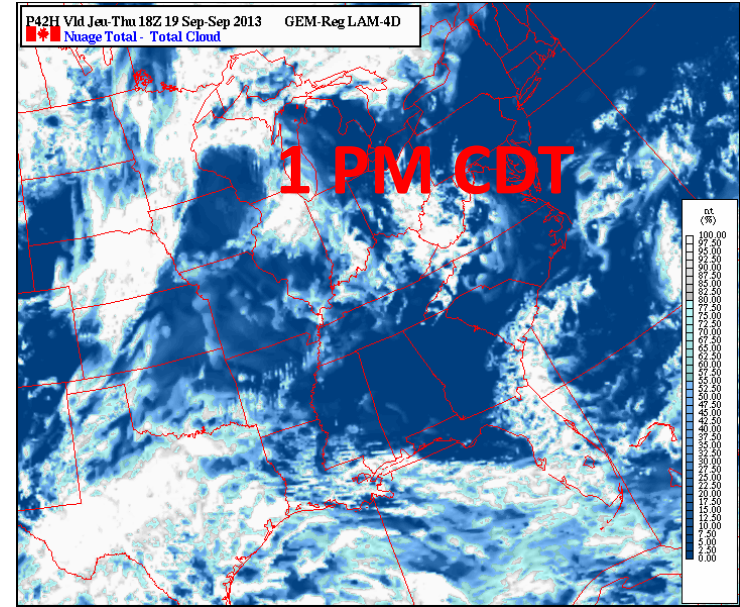
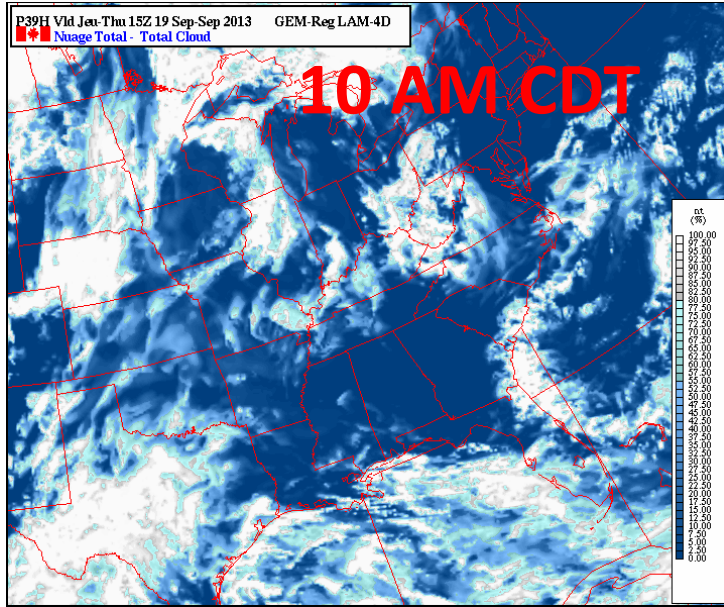
Integrated liquid and frozen hydrometeors (all levels)



Tomorrow: GFS – Partly cloudy throughout the day



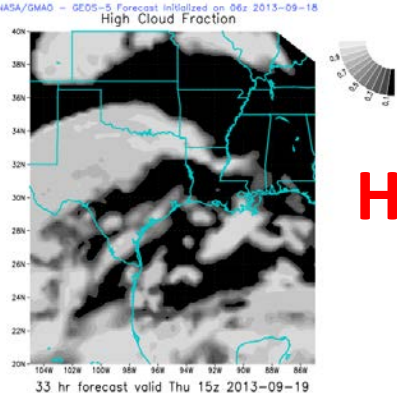
Tomorrow: Canadian – Cloudy all day



Tomorrow: GEOS-5 –Some low cloud throughout the day

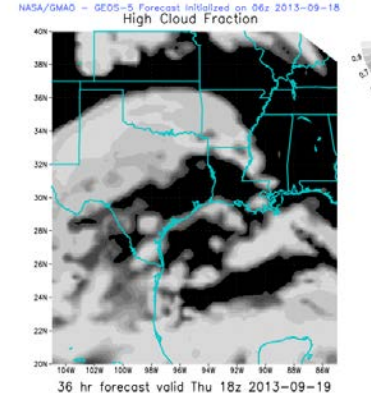
10 am 1 pm 4 pm 7 pm

NASA/GMAO – GEOS-5 Forecast initialized on 06z 2013-09-18

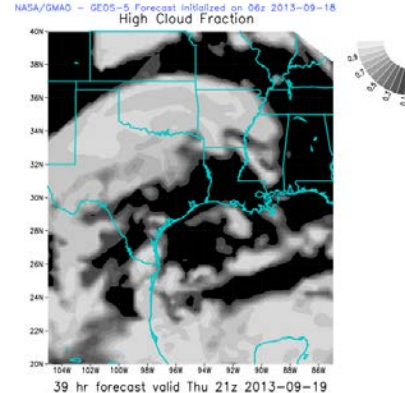


High

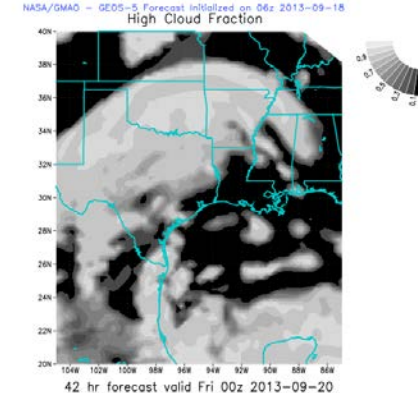
NASA/GMAO – GEOS-5 Forecast initialized on 06z 2013-09-18



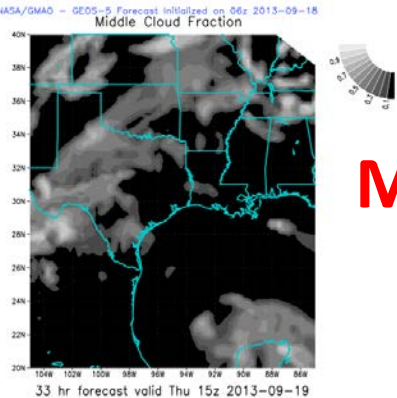
NASA/GMAO – GEOS-5 Forecast initialized on 06z 2013-09-18



NASA/GMAO – GEOS-5 Forecast initialized on 06z 2013-09-18

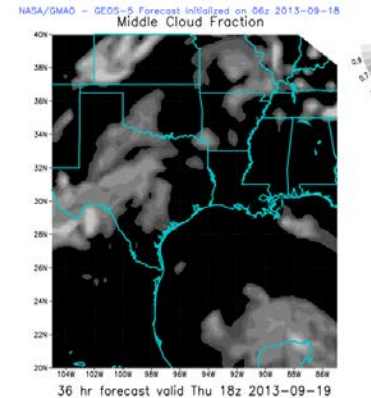


NASA/GMAO – GEOS-5 Forecast initialized on 06z 2013-09-18

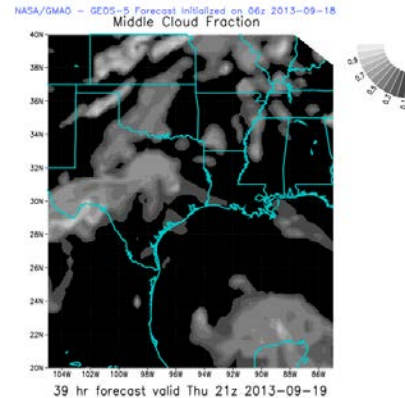


Mid

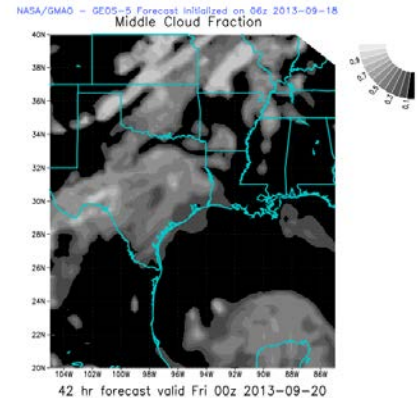
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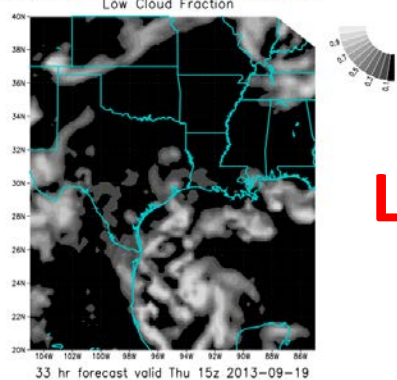
NASA/GMAO – GEOS-5 Forecast initialized on 06z 2013-09-18



NASA/GMAO – GEOS-5 Forecast initialized on 06z 2013-09-18

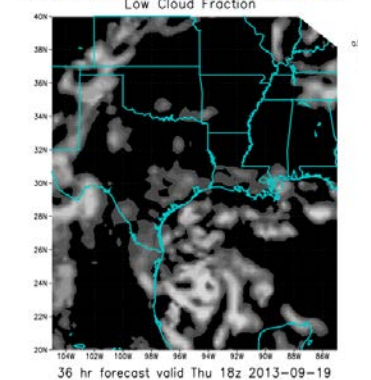


NASA/GMAO – GEOS-5 Forecast initialized on 06z 2013-09-18

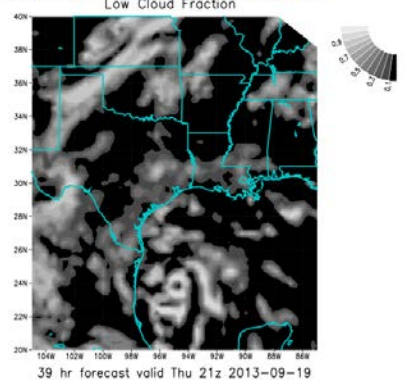


Low

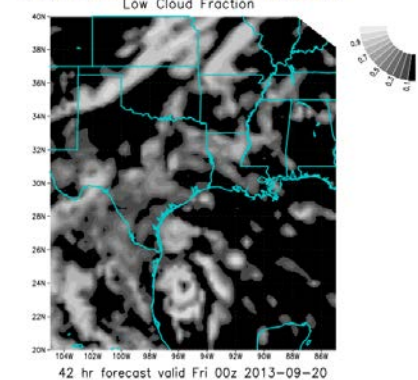
NASA/GMAO – GEOS-5 Forecast initialized on 06z 2013-09-18



NASA/GMAO – GEOS-5 Forecast initialized on 06z 2013-09-18

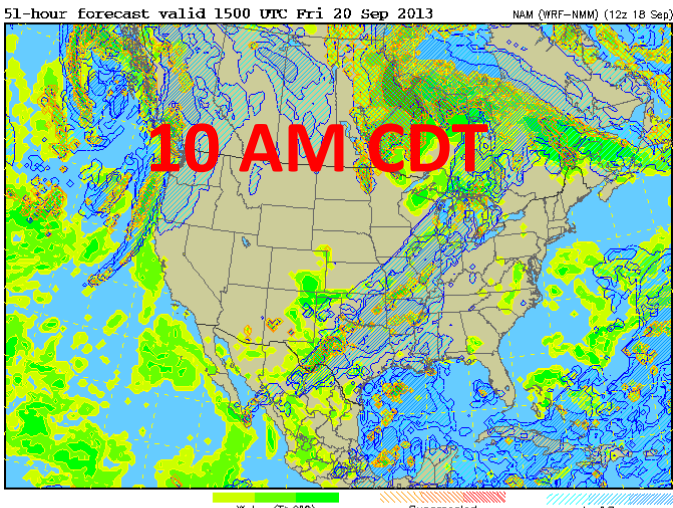


NASA/GMAO – GEOS-5 Forecast initialized on 06z 2013-09-18

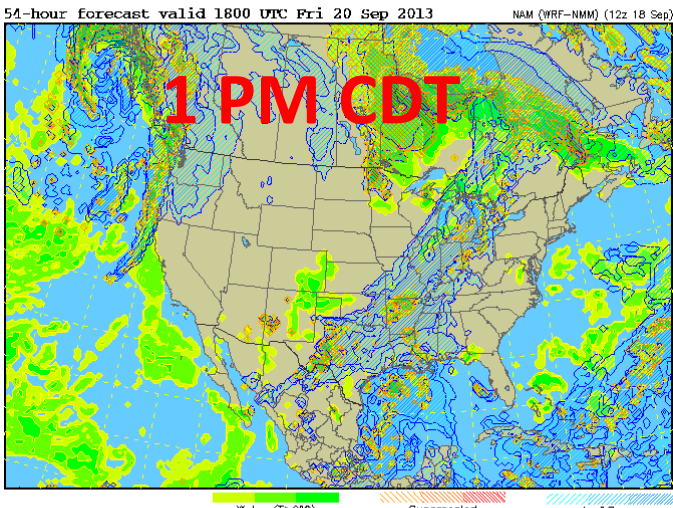


Friday: NAM – High clouds; low clouds develop during day

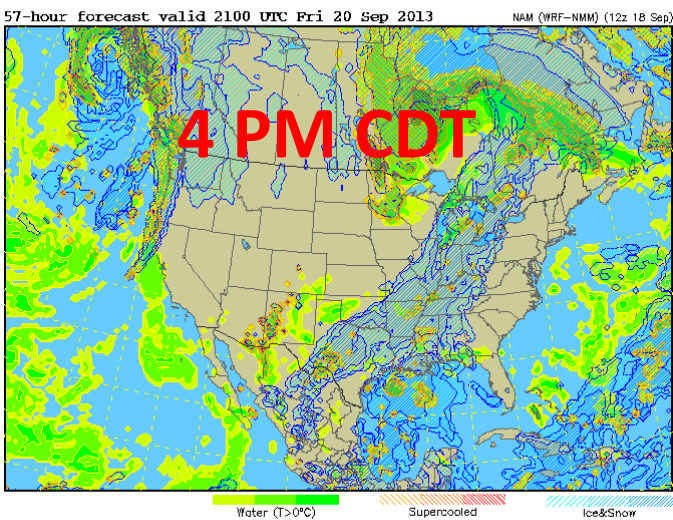
Integrated liquid and frozen hydrometeors (all levels)



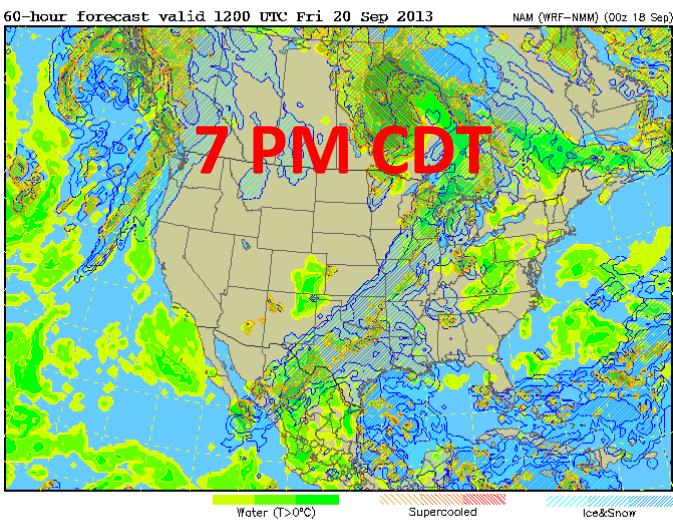
Integrated liquid and frozen hydrometeors (all levels)



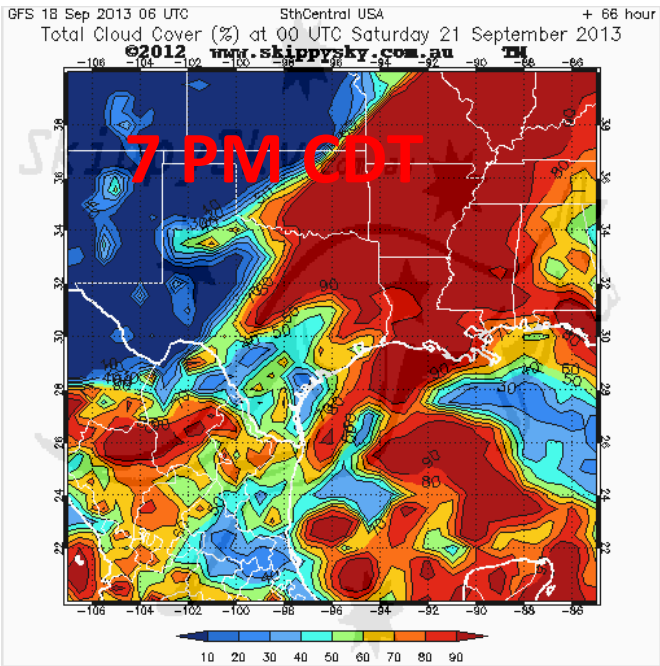
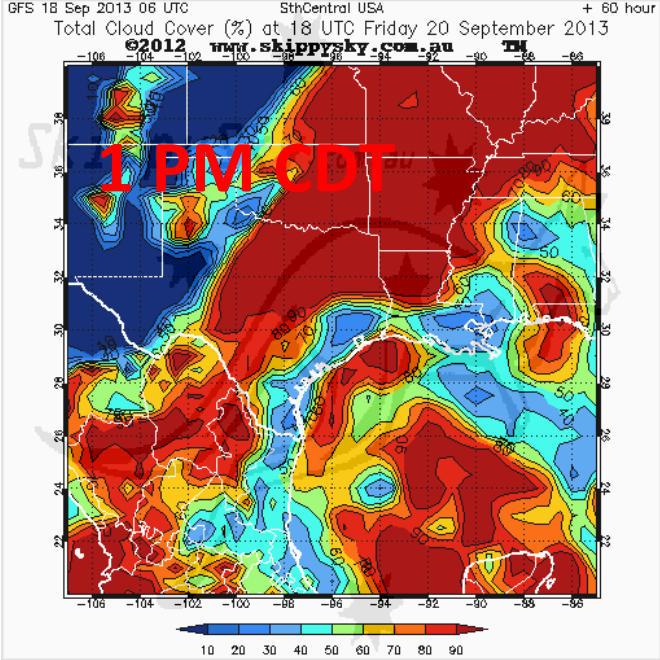
Integrated liquid and frozen hydrometeors (all levels)



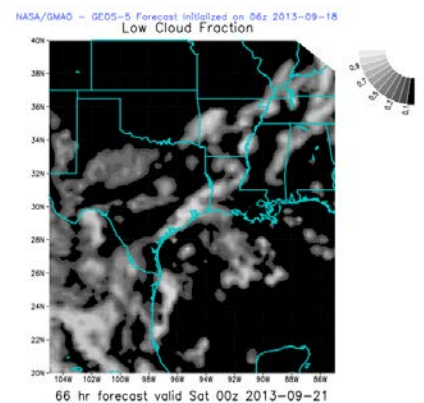
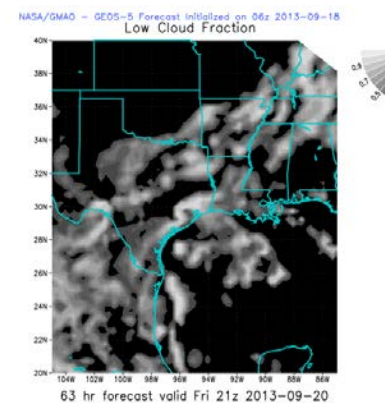
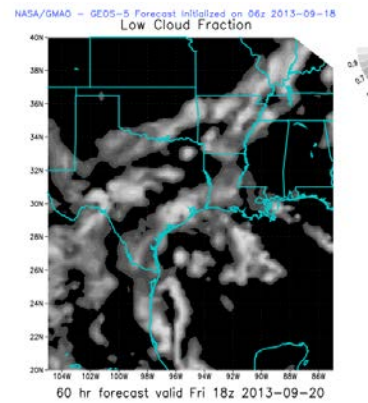
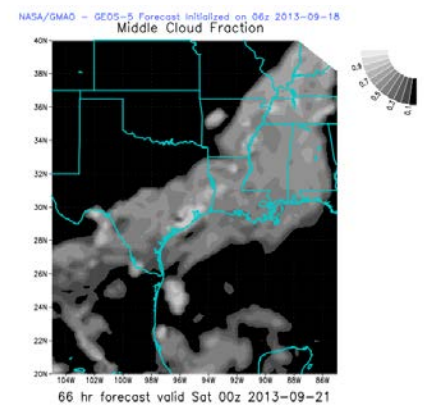
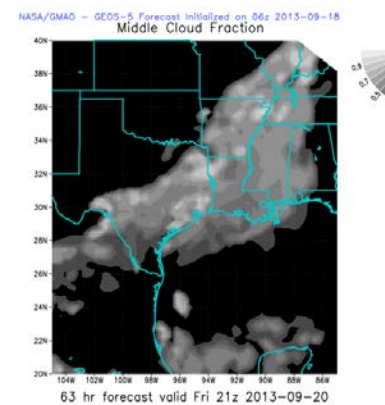
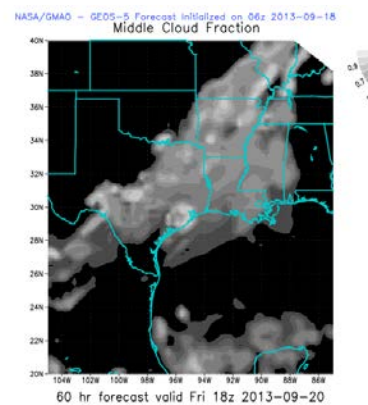
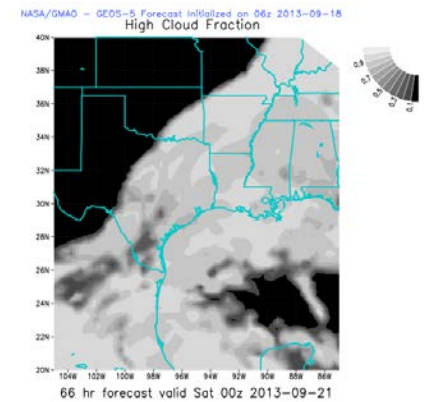
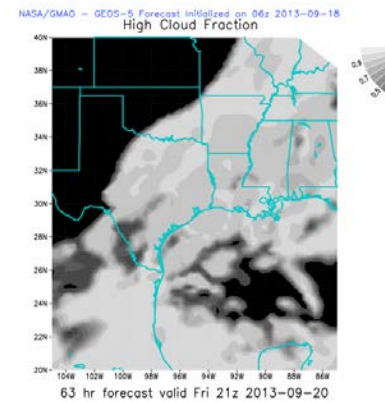
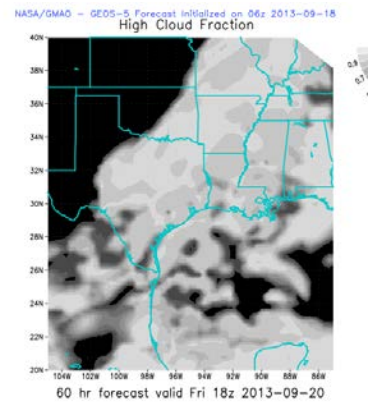
Integrated liquid and frozen hydrometeors (all levels)



Friday: GFS – Region remains soaked in by clouds

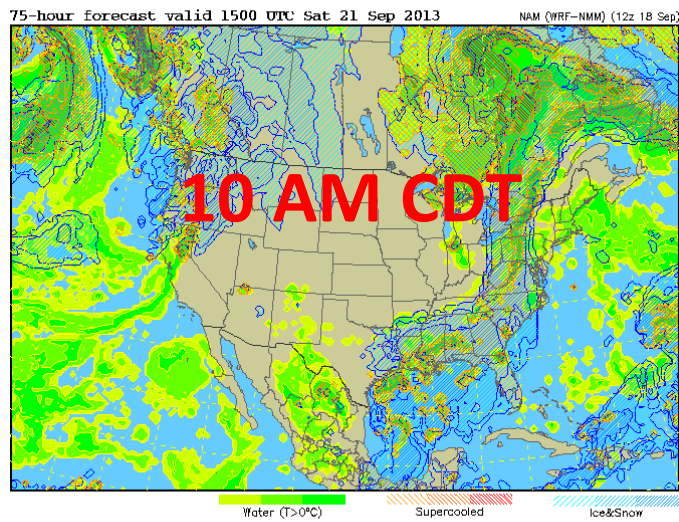


7 pm

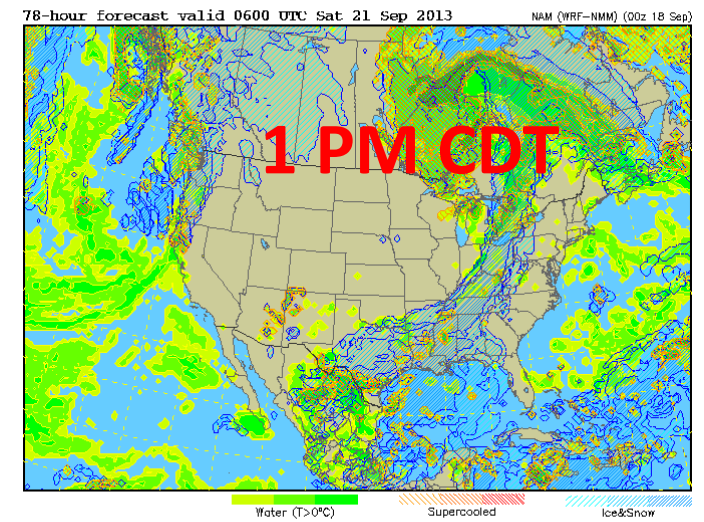


Saturday: NAM – Most cloudy during afternoon

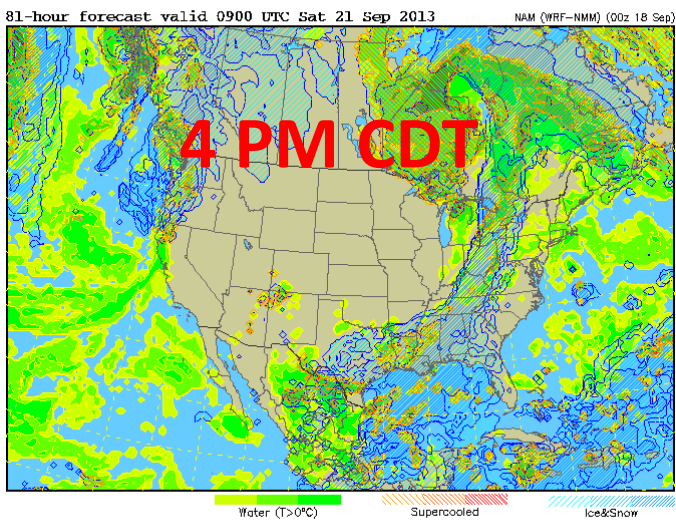
Integrated liquid and frozen hydrometeors (all levels)



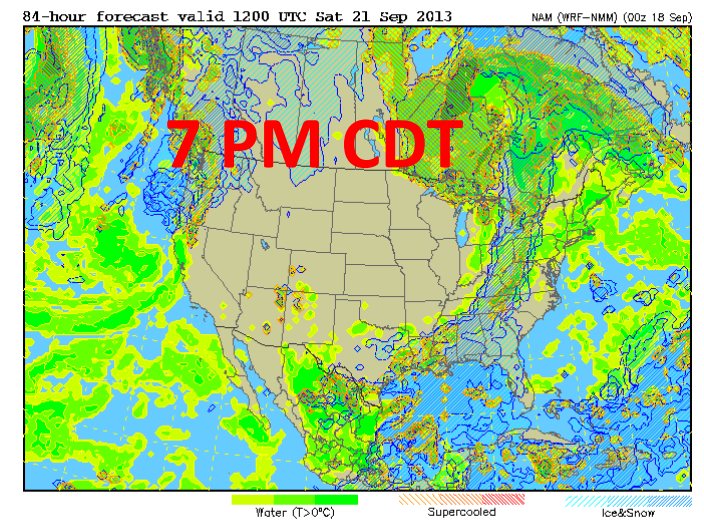
Integrated liquid and frozen hydrometeors (all levels)



Integrated liquid and frozen hydrometeors (all levels)



Integrated liquid and frozen hydrometeors (all levels)



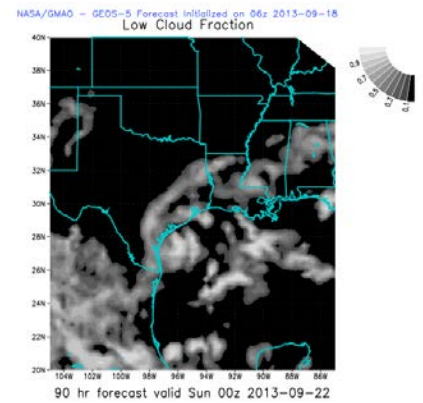
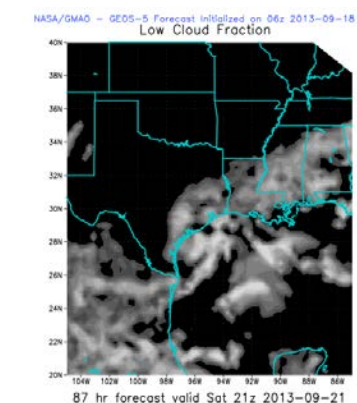
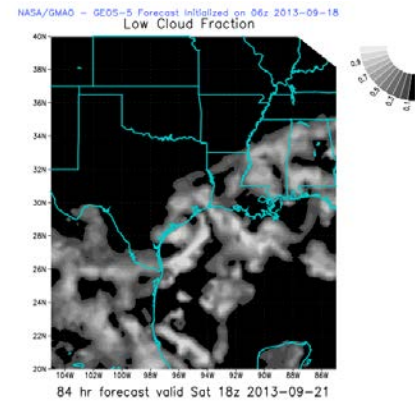
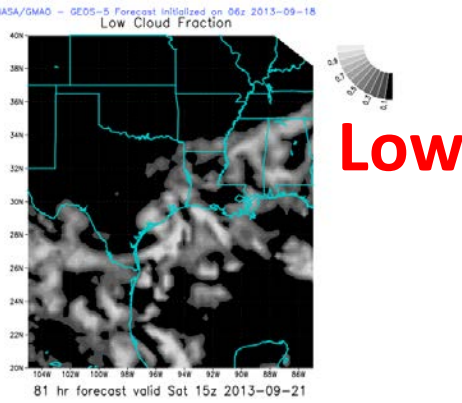
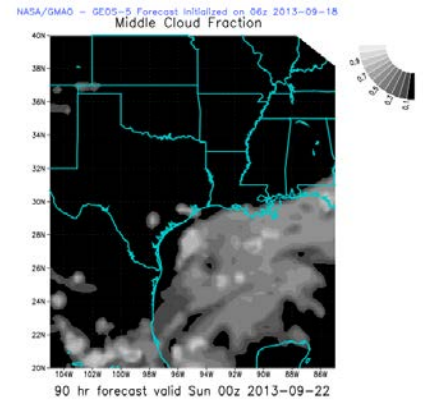
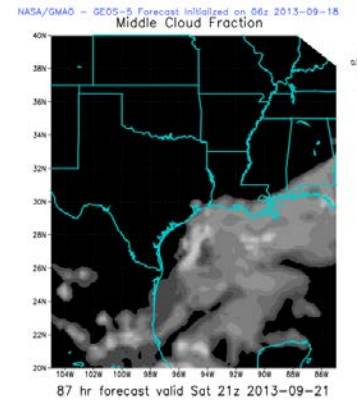
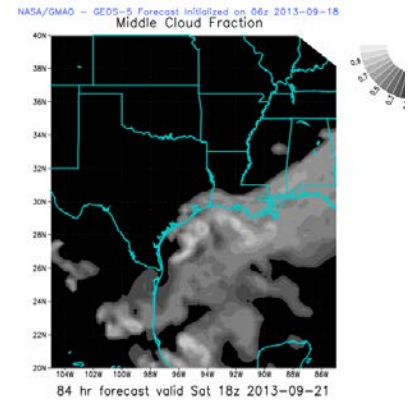
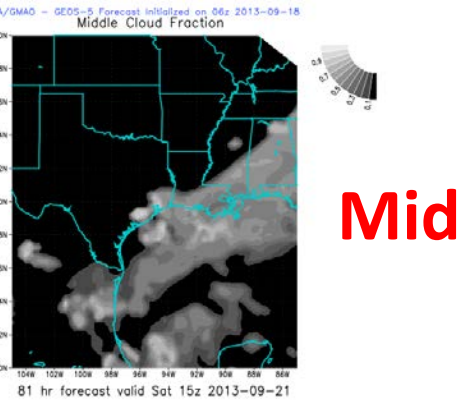
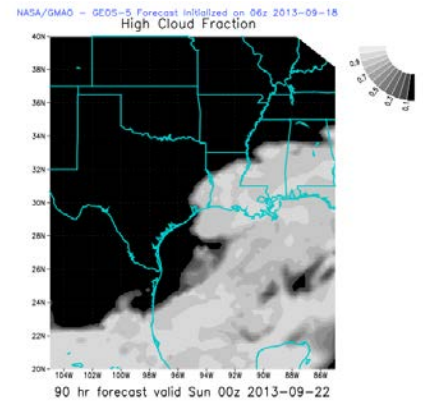
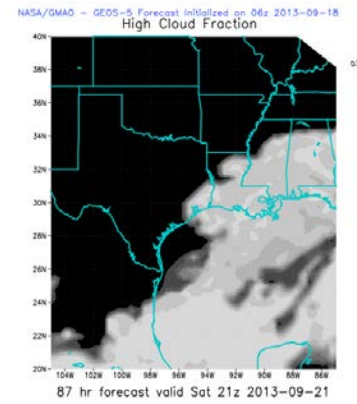
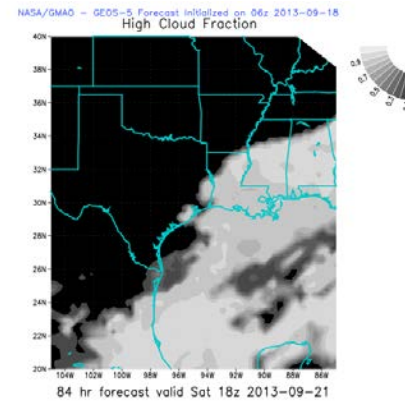
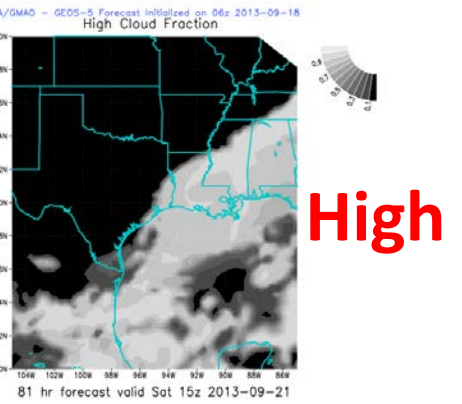
Saturday: GEOS-5 – high and low level clouds all day

10 am

1 pm

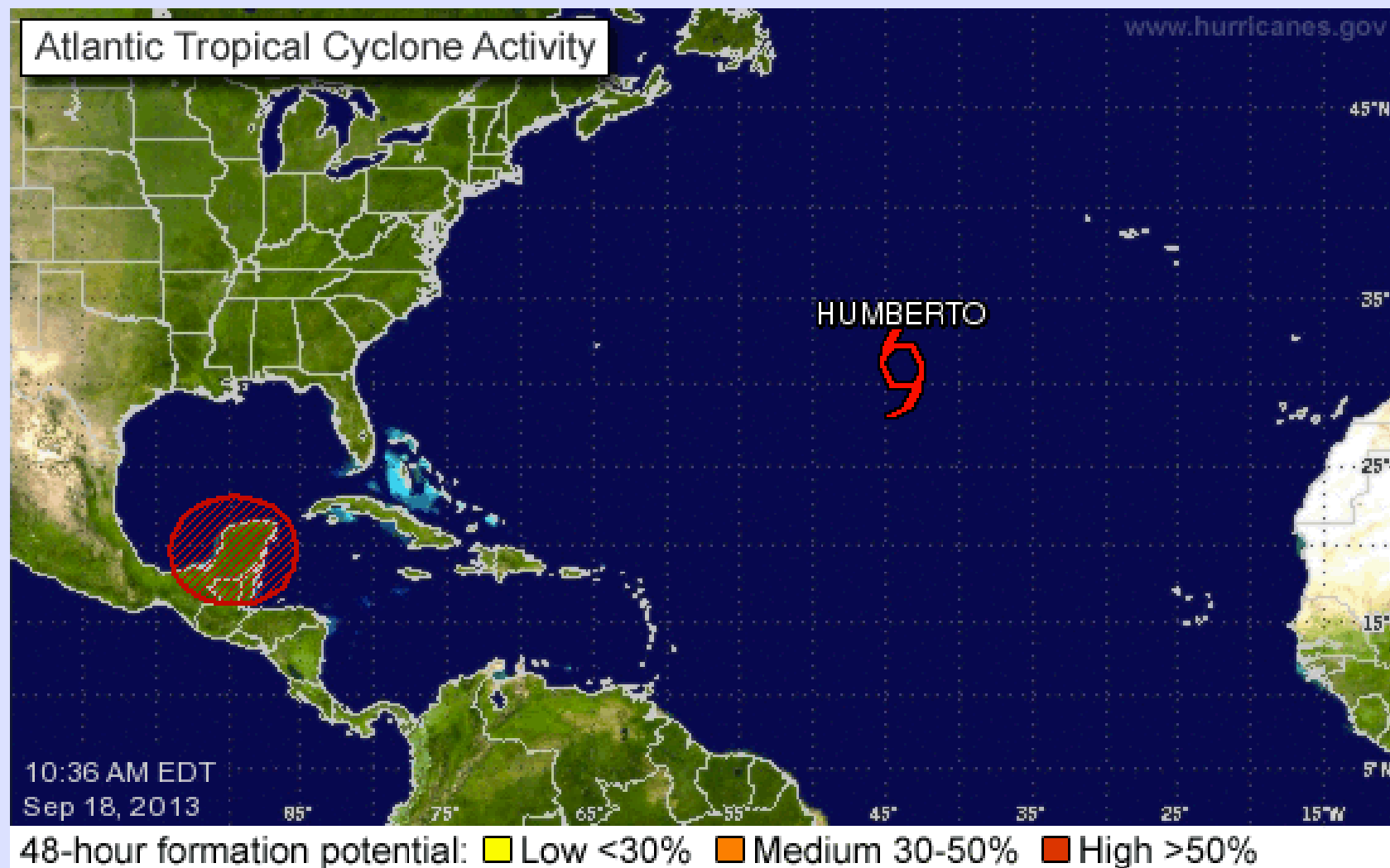
4 pm

7 pm



Eastern Pacific

Atlantic



[Graphical Tropical Weather Outlook](#) | [Active Storms](#) | [Marine Forecasts](#)

DISCOVER-AQ Air Quality Outlook

September 18, 2013

Bryan Duncan

Mariel Friberg

AQ SUMMARY

TCEQ AQ Forecast:

TODAY-SATURDAY: Code Green – Good 😞

AQ Observations:

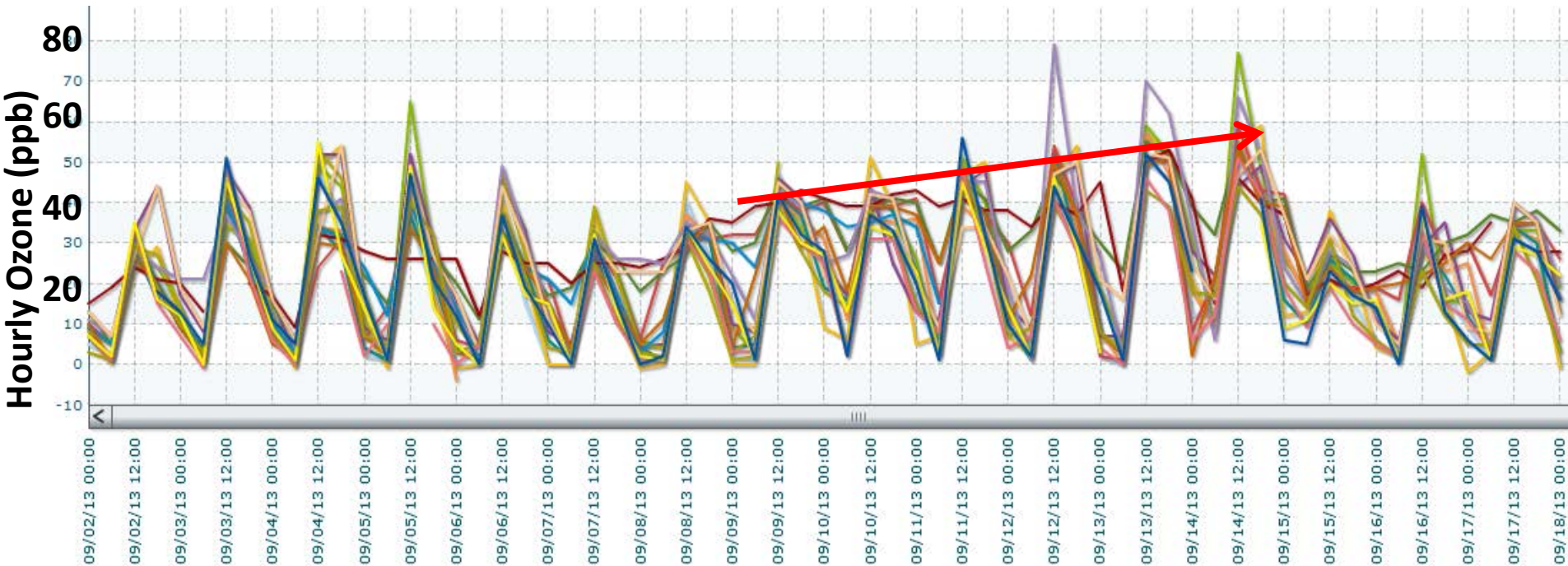
TODAY: Low Ozone & PM 😞

AQ Model Forecasts:

TOMORROW: Low Ozone & PM 😞

Hourly Ozone (airnowtech.org)**

September 2nd – 17th ** EVERY 6th HOUR PLOTTED!!!!



◆ Houston Aldine C8/O3 - 44201/1 Hr/2	◆ Northwest Harris Co. C26/C110/C154/O3 - 44201/1 Hr/2
◆ Houston Westhollow C410/O3 - 44201/1 Hr/1	◆ Houston Deer Park C35/O3 - 44201/1 Hr/1
◆ Manvel Croix Park C84/O3 - 44201/1 Hr/1	◆ Seabrook Friendship Park C45/O3 - 44201/1 Hr/1
◆ Conroe Relocated C78/O3 - 44201/1 Hr/1	◆ Texas City C620/O3 - 44201/1 Hr/1
◆ West Houston C554/O3 - 44201/1 Hr/1	◆ La Porte Sylvan Beach C556/O3 - 44201/1 Hr/1
◆ Galveston Airport C1034/O3 - 44201/1 Hr/1	◆ Sugarland C696/O3 - 44201/1 Hr/1
◆ Coastal Center C697/O3 - 44201/1 Hr/1	◆ Jones Forest C698/O3 - 44201/1 Hr/1
◆ West Liberty C699/O3 - 44201/1 Hr/1	◆ Channelview C15/O3 - 44201/1 Hr/3
◆ Clinton C403/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.

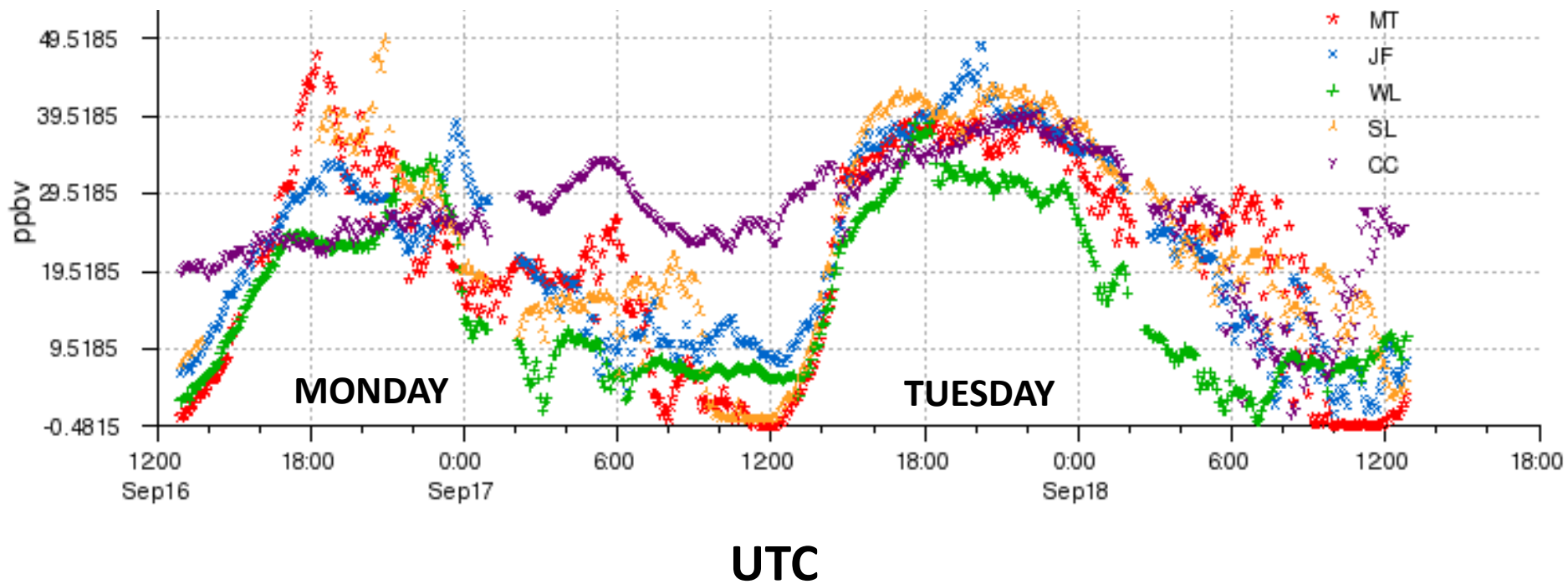
Currently, **five sites** have been set up in

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

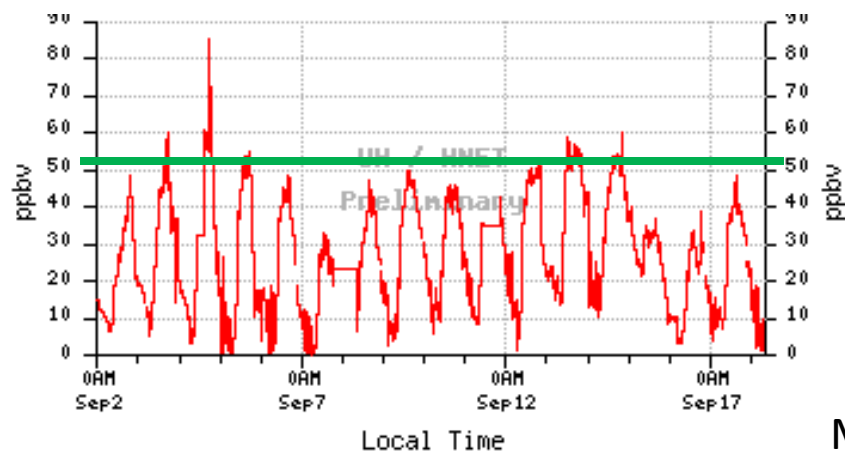
[More about this project.](#)



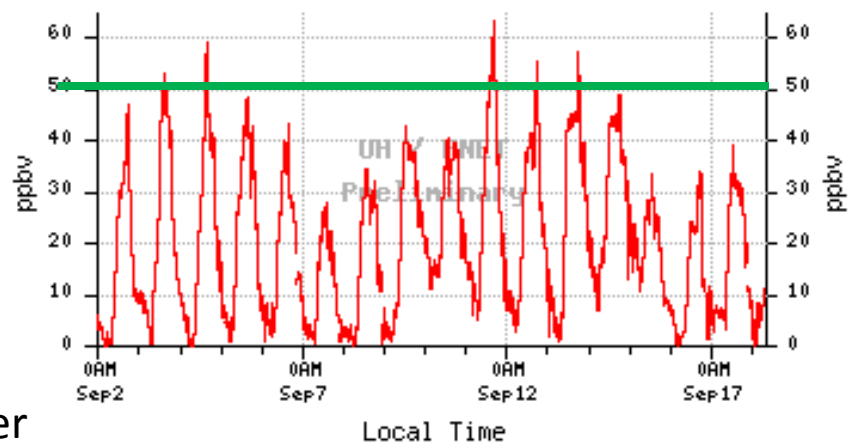
Ozone (ppbv)



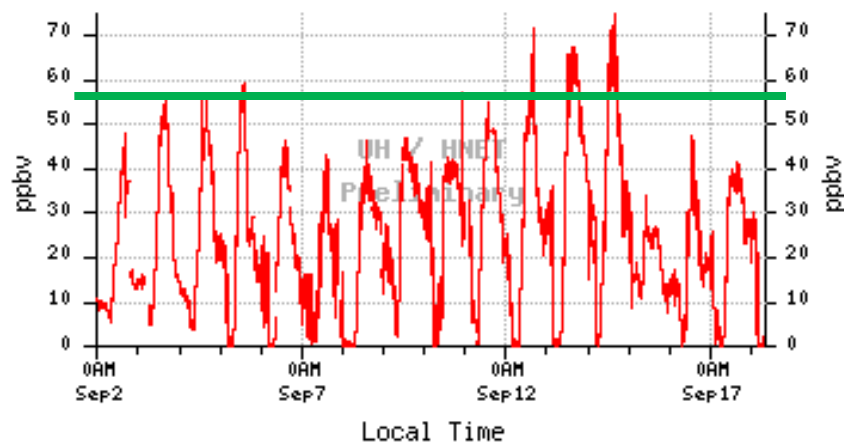
Jones Forest



West Liberty



Moody Tower

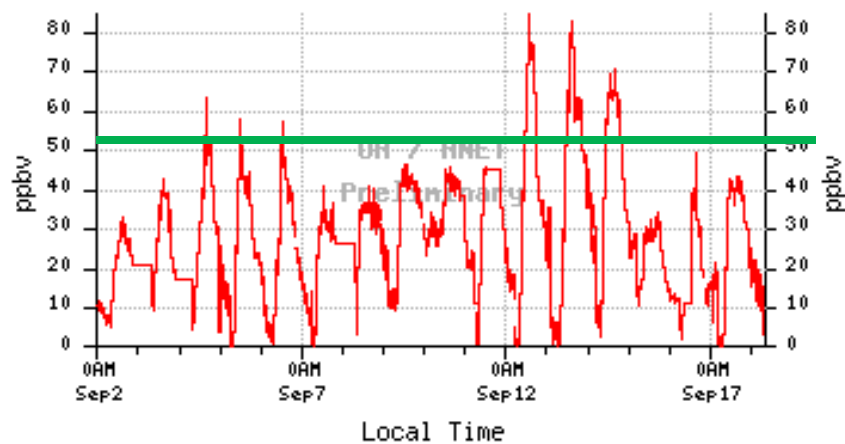


O₃ (ppbv) – 15 min avg
September 2nd – 17th

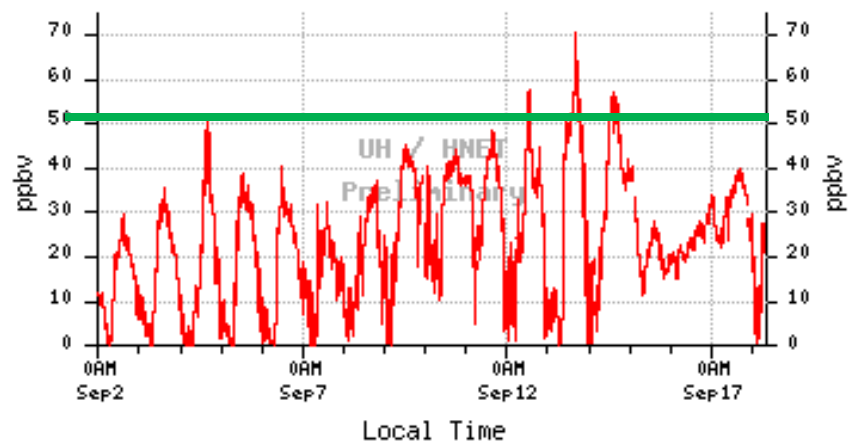
———— = 50 ppbv

**Houston – Network of
 Environmental Towers
 (H-NET)**

Sugar Land



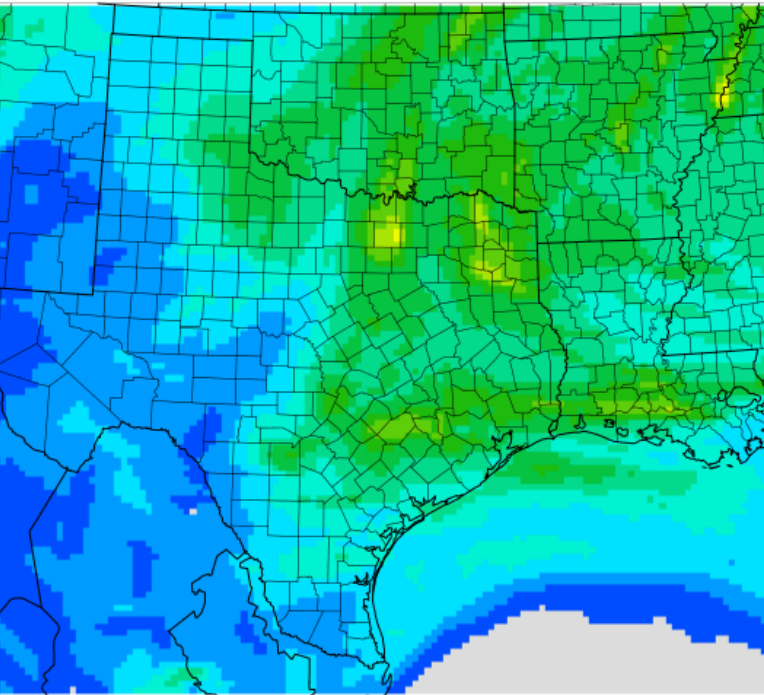
Coastal Center



CAMx : Surface Ozone :

Thursday

Ozone
Best Case

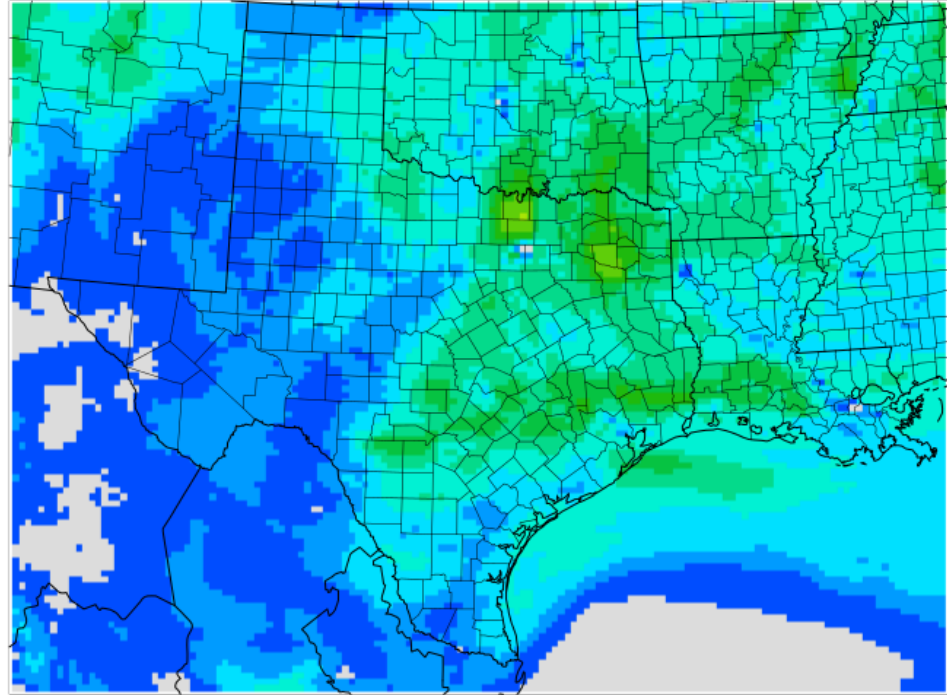


Min(100,2) = 24.8, Max(135,95) = 79.3

Thu September 19 14:00 CST

2 pm

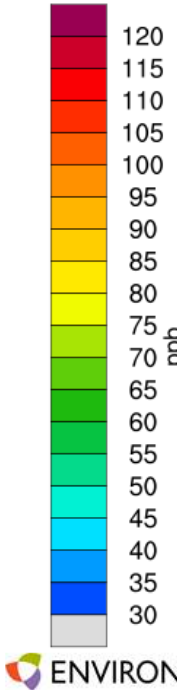
Ozone
Best Case



Min(50,30) = 17.9, Max(82,76) = 70.4

Thu September 19 17:00 CST

5 pm



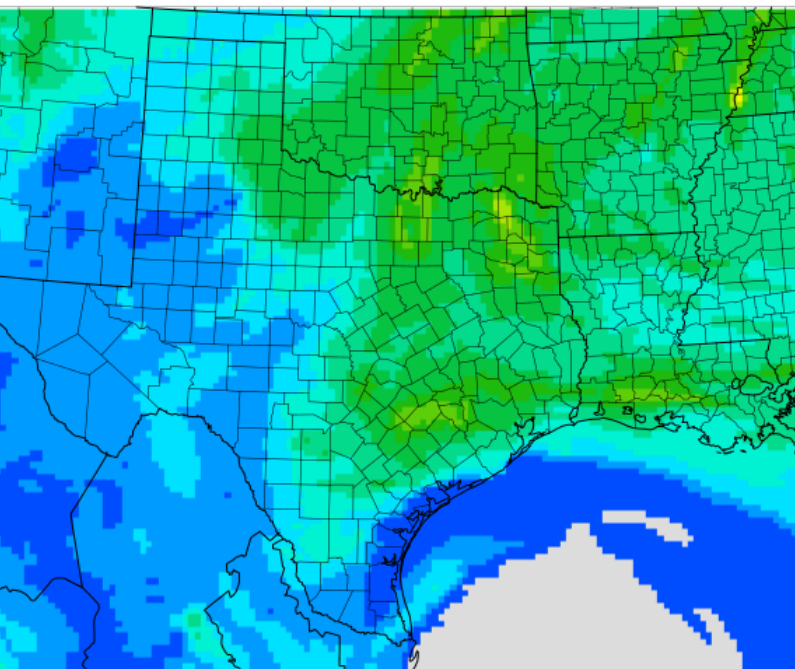
ENVIRON

CAMx : 1.5 KM Ozone :

Thursday

Ozone

Best Case: CAMx Layer 14



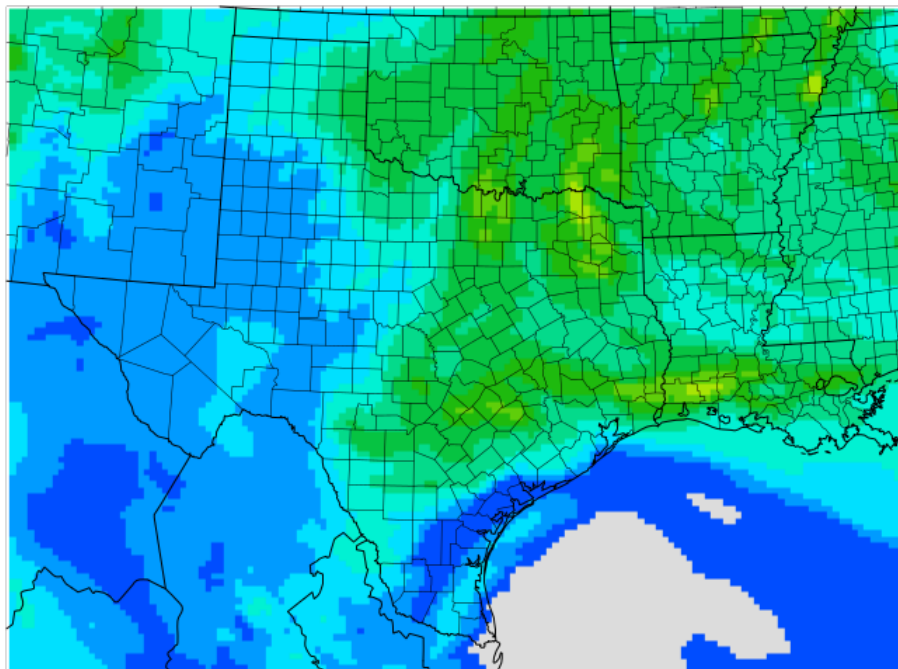
Min(97,2) = 23.9, Max(135,95) = 78.6

Thu September 19 14:00 CST

2 pm

Ozone

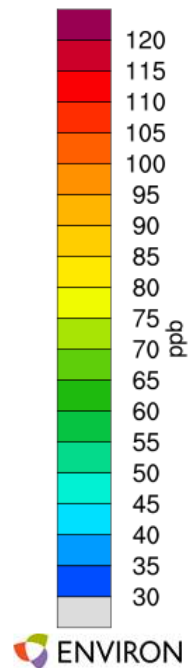
Best Case: CAMx Layer 14



Min(94,2) = 23.3, Max(133,97) = 74.2

Thu September 19 17:00 CST

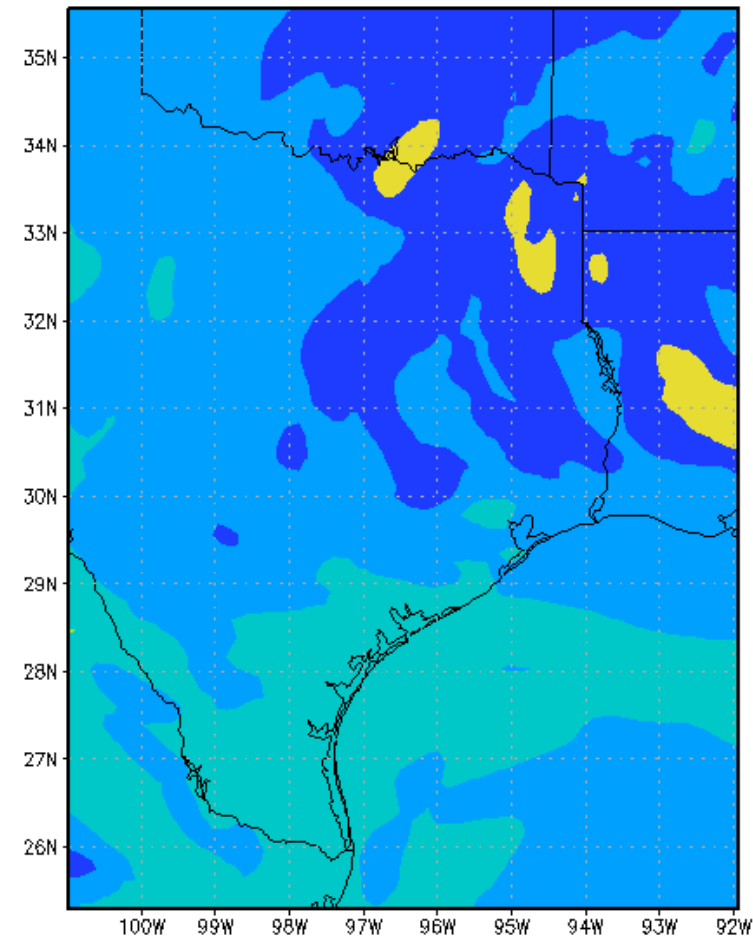
5 pm



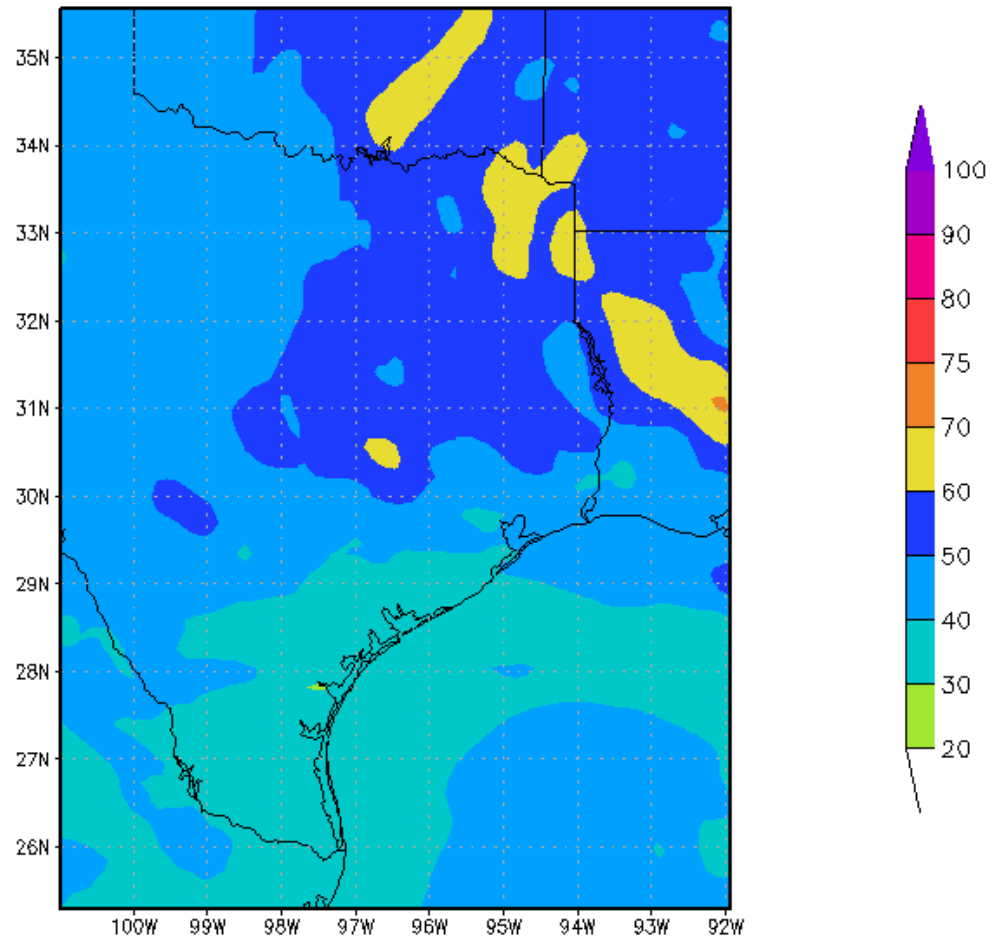
ENVIRON

NOAA EXPERIMENTAL CMAQ : Surface Ozone : Thursday

pb] at 1013 [hPa] Valid 19Z SEP 103 [ppb] at 1013 [hPa] Valid 22Z SEP 19 2013



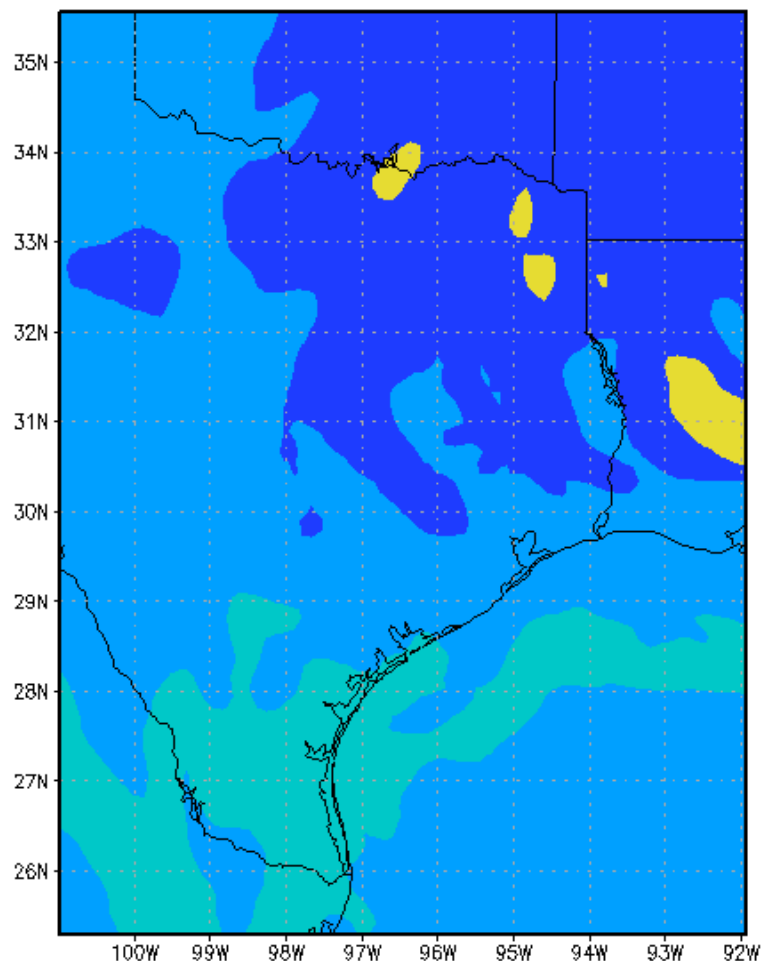
2 pm



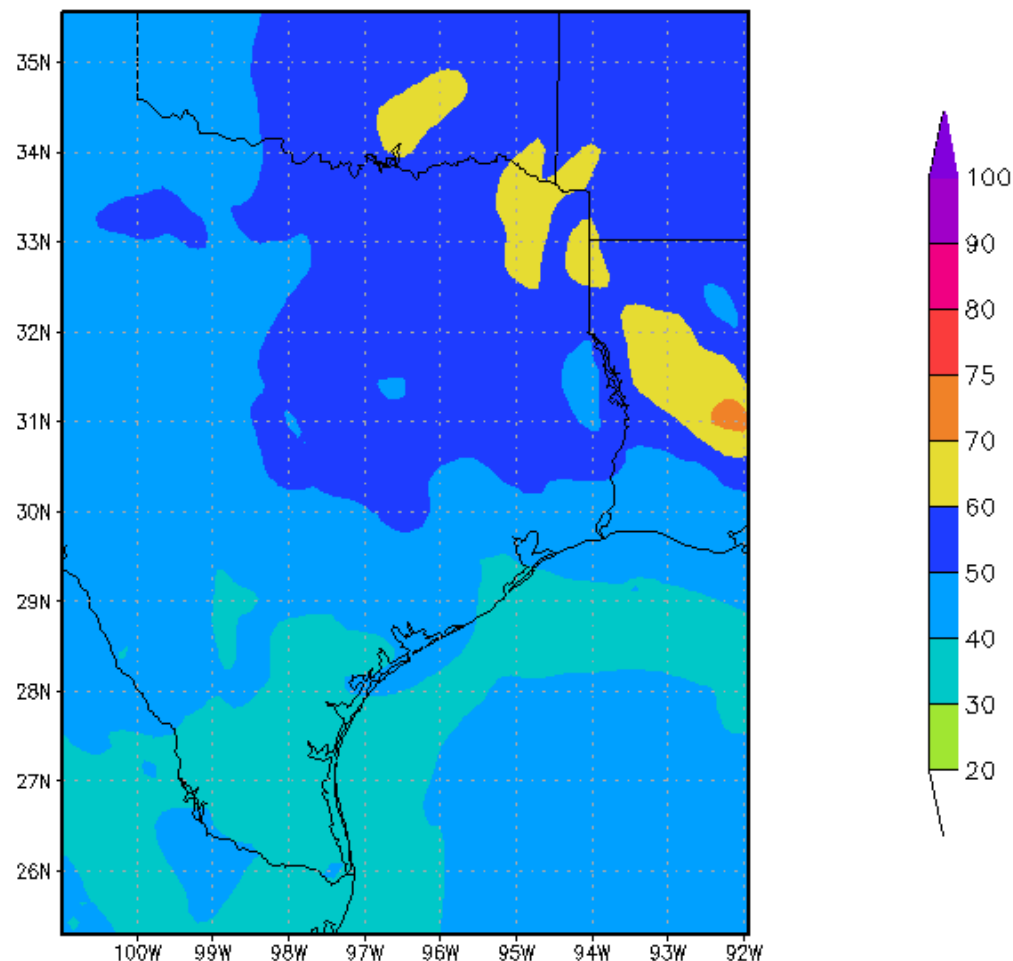
5 pm

NOAA EXPERIMENTAL CMAQ : 1.5 KM: Thursday

[ppb] at 850 [hPa] Valid 19Z SEP 19 ppb] at 850 [hPa] Valid 22Z SEP 19 2013



2 pm

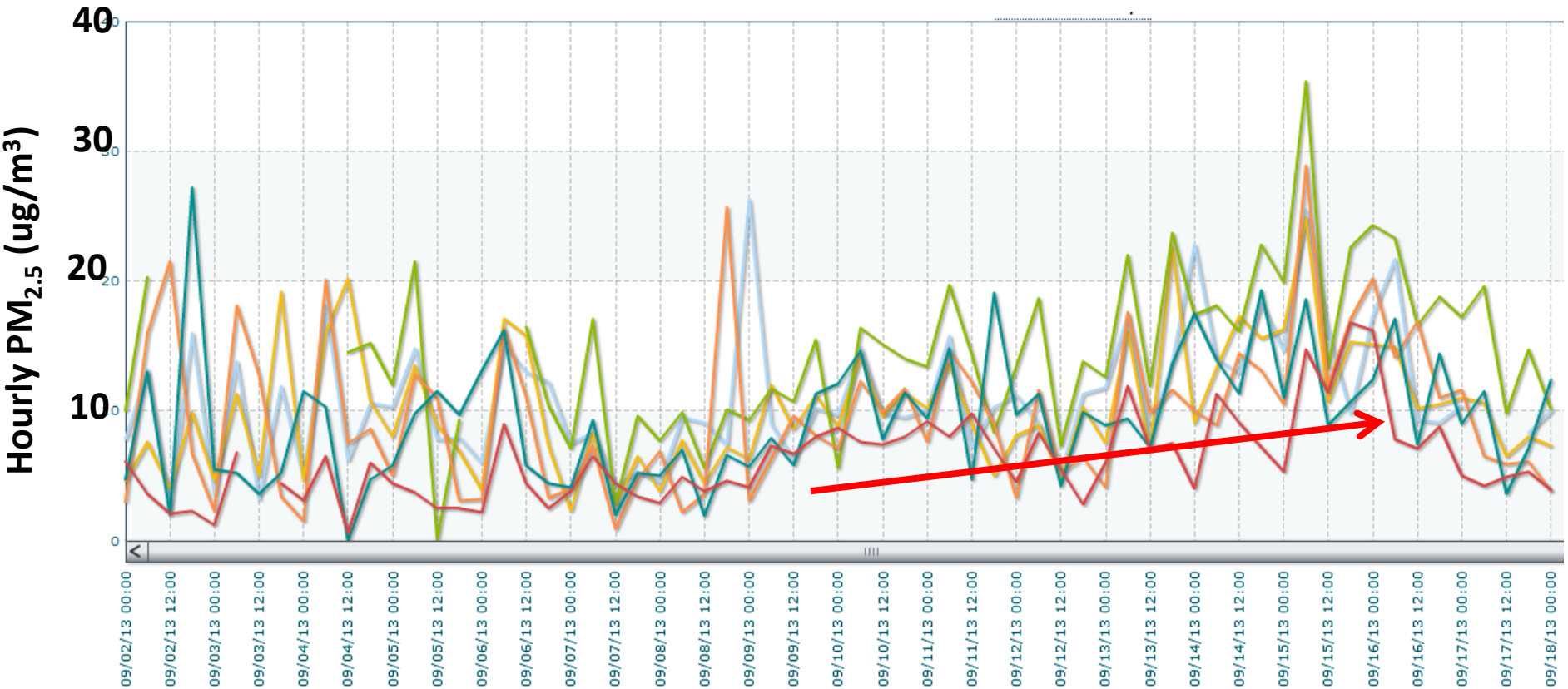


5 pm

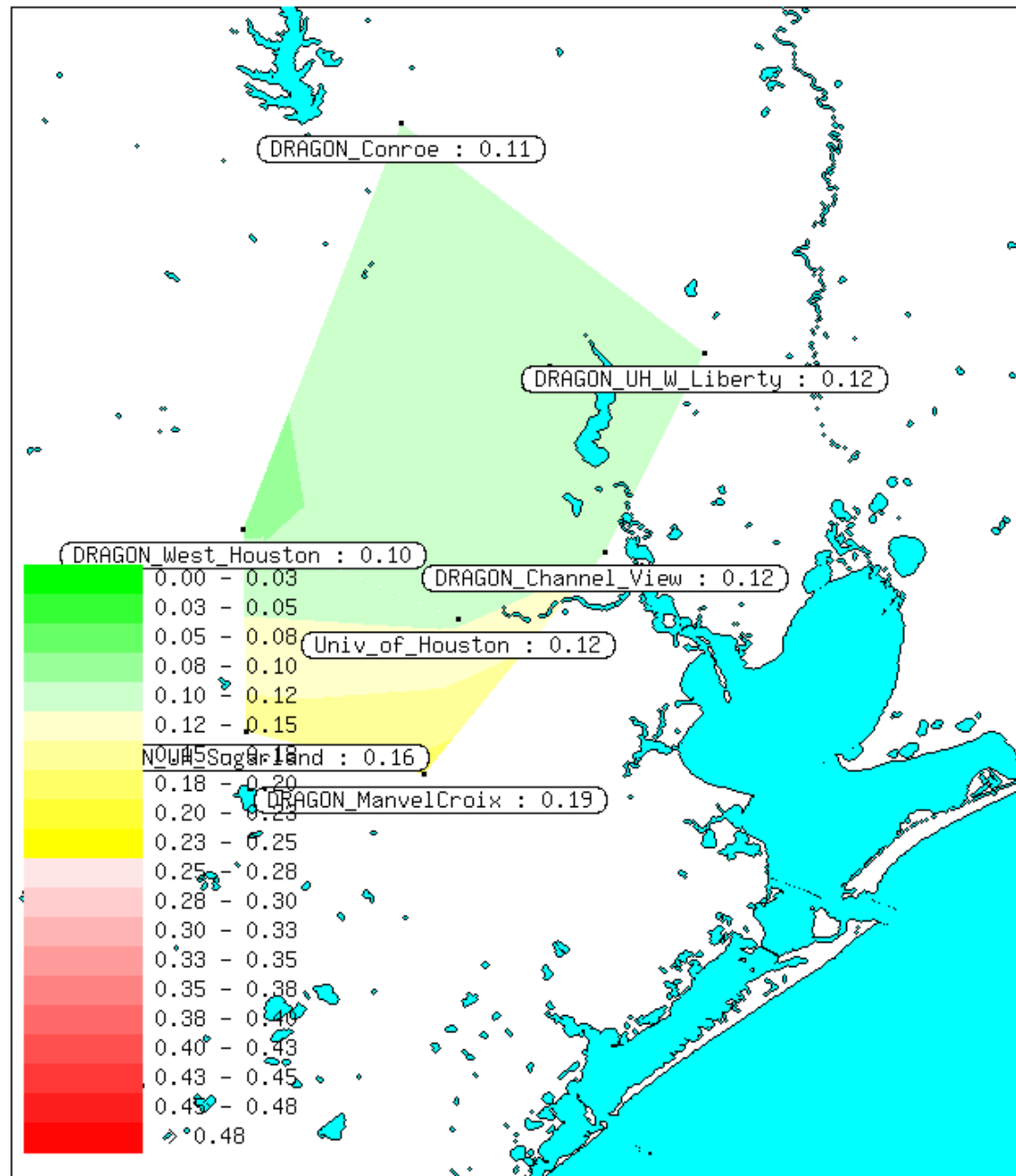
Hourly PM_{2.5} (airnowtech.org)**

September 2nd – 17th

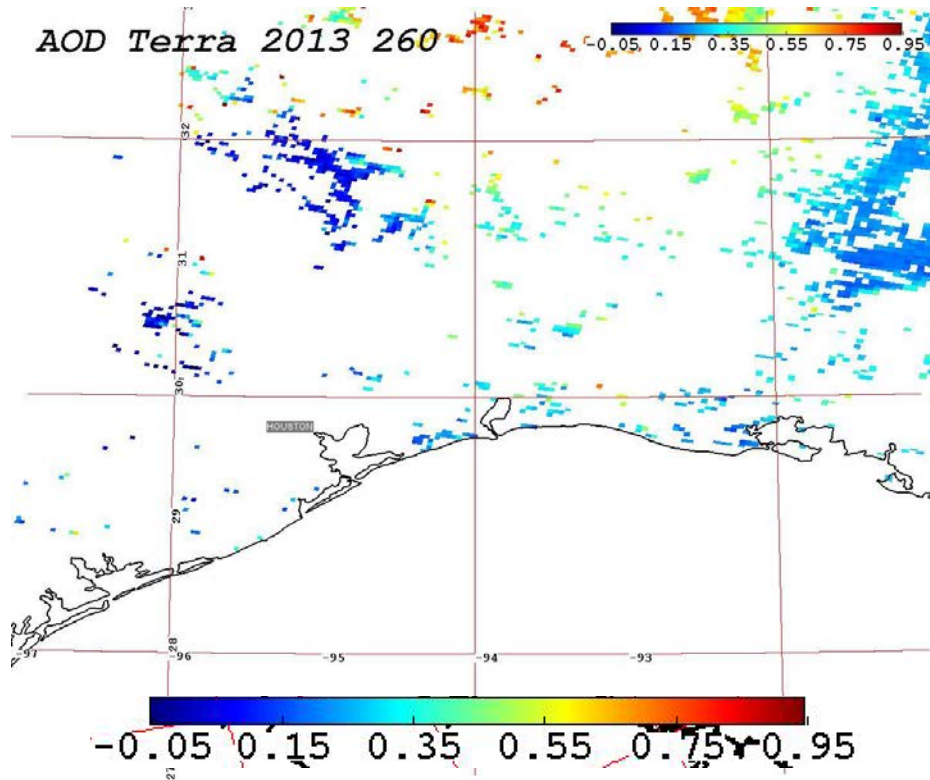
**** EVERY 6th HOUR PLOTTED!!!!**



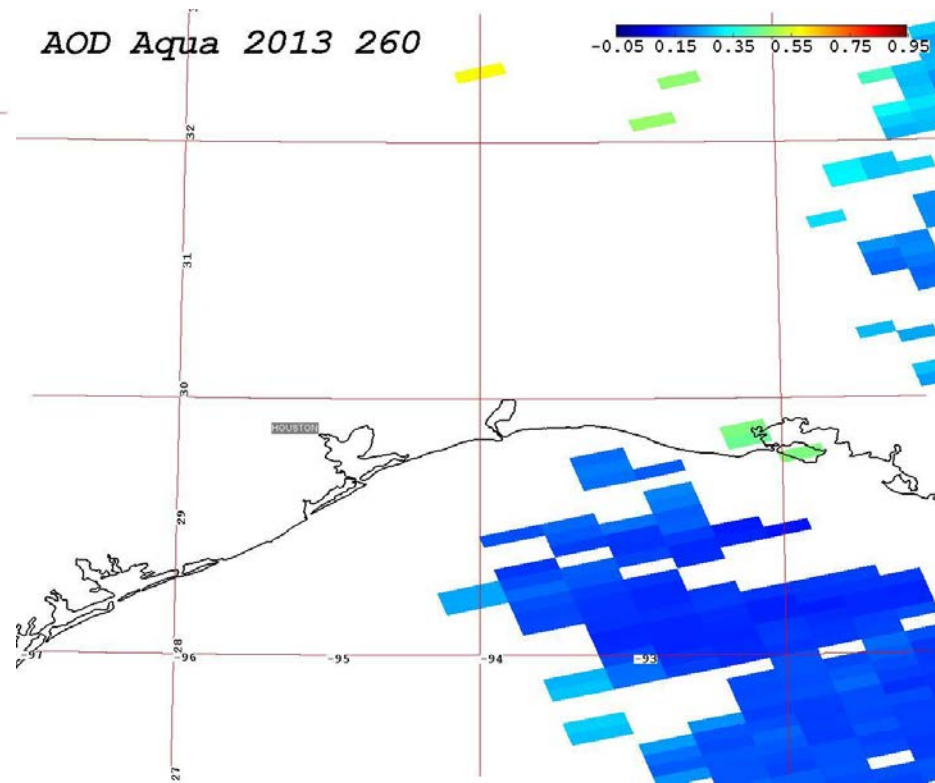
DRAGON : September 18th (Wednesday) at Level 1.5



Terra AOD - Yesterday

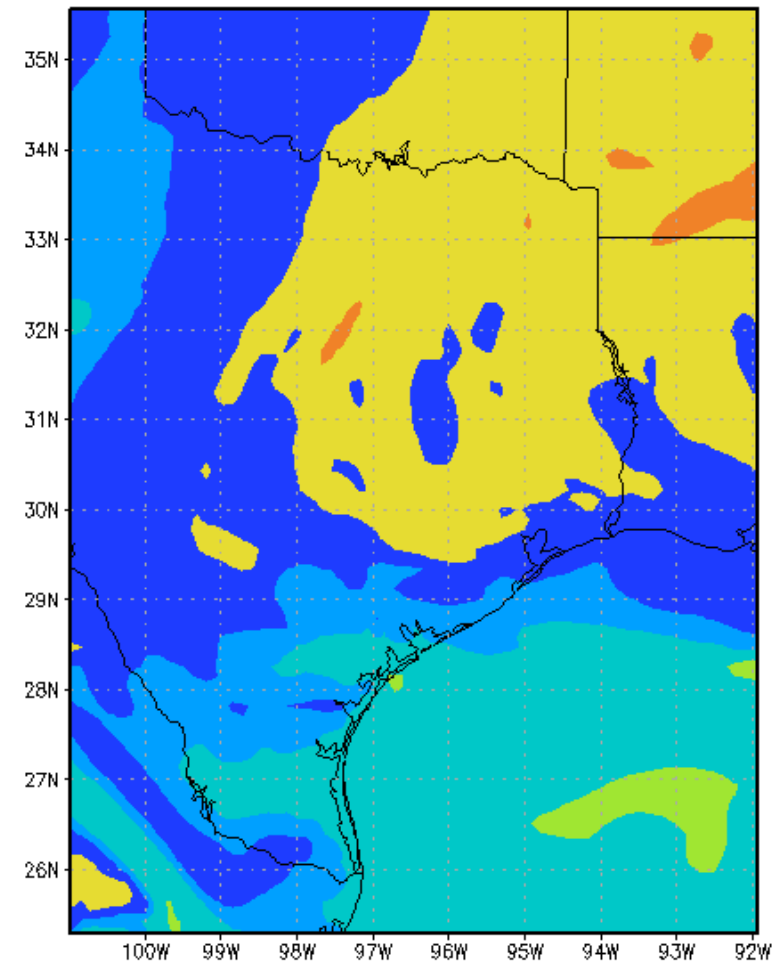


Aqua AOD - Yesterday

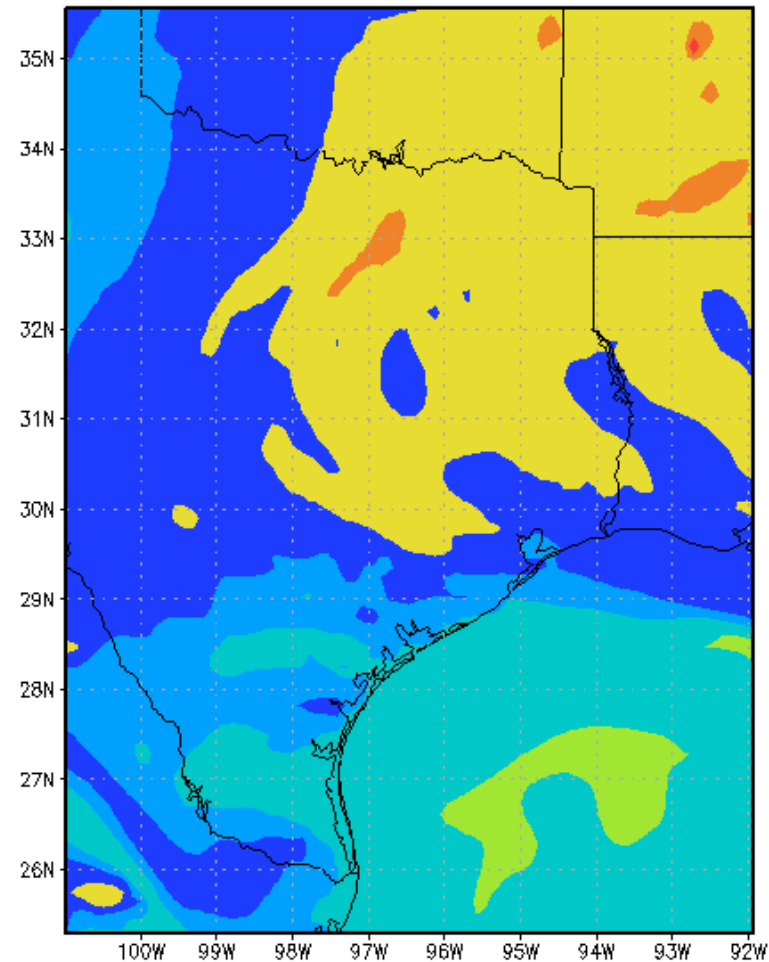


NOAA EXPERIMENTAL CMAQ : Surface PM_{2.5} : Thursday

c pm25 37H VALID 19Z 19 SEP2013 [μ pm25 40H VALID 22Z 19 SEP2013 [$\mu\text{g}/\text{m}^3$]



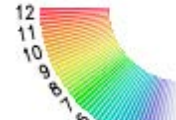
2 pm



5 pm

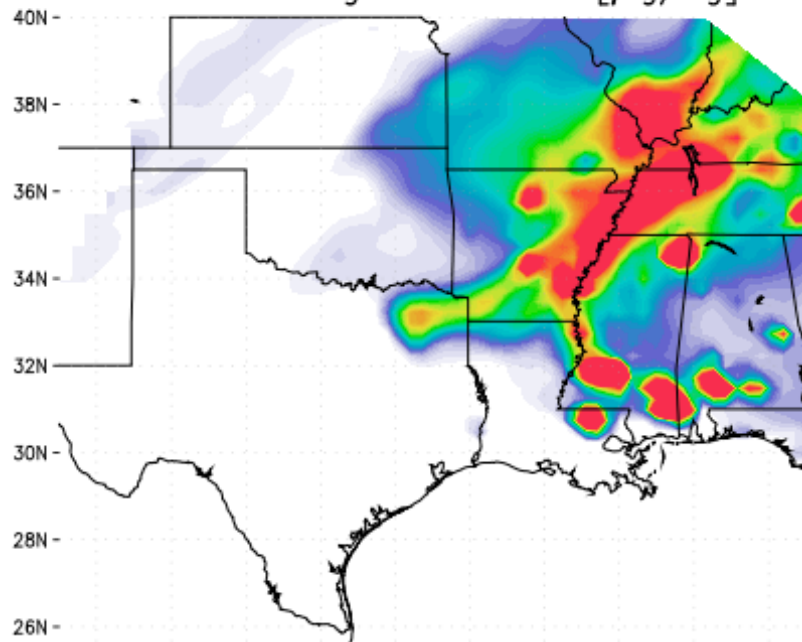
AOD low too.

GEOS-5: 850 mb Organic Carbon ($\mu\text{g}/\text{kg}$) : Thursday



ASA/GMAO — GEOS-5 Forecast Initialized on 06z 2013-09-18

850 hPa Organic Carbon [$\mu\text{g}/\text{kg}$]

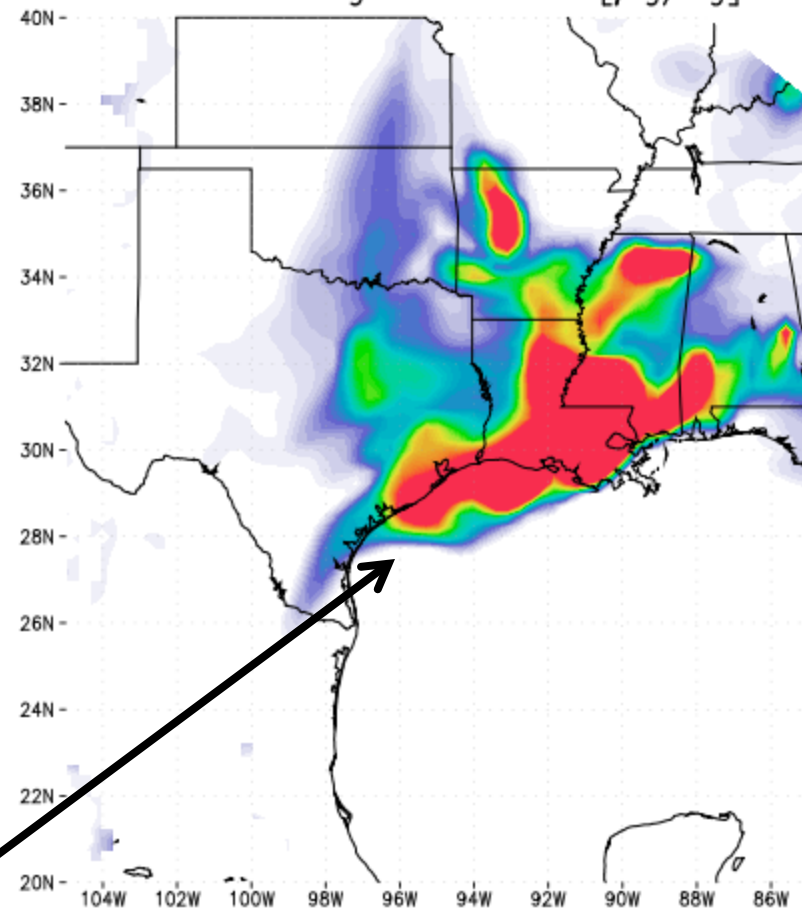


1 pm Thursday

Keep an eye on aerosols after clearing
on Sunday-Monday-Tuesday.

NASA/GMAO — GEOS-5 Forecast Initialized on 06z 2013-09-18

850 hPa Organic Carbon [$\mu\text{g}/\text{kg}$]

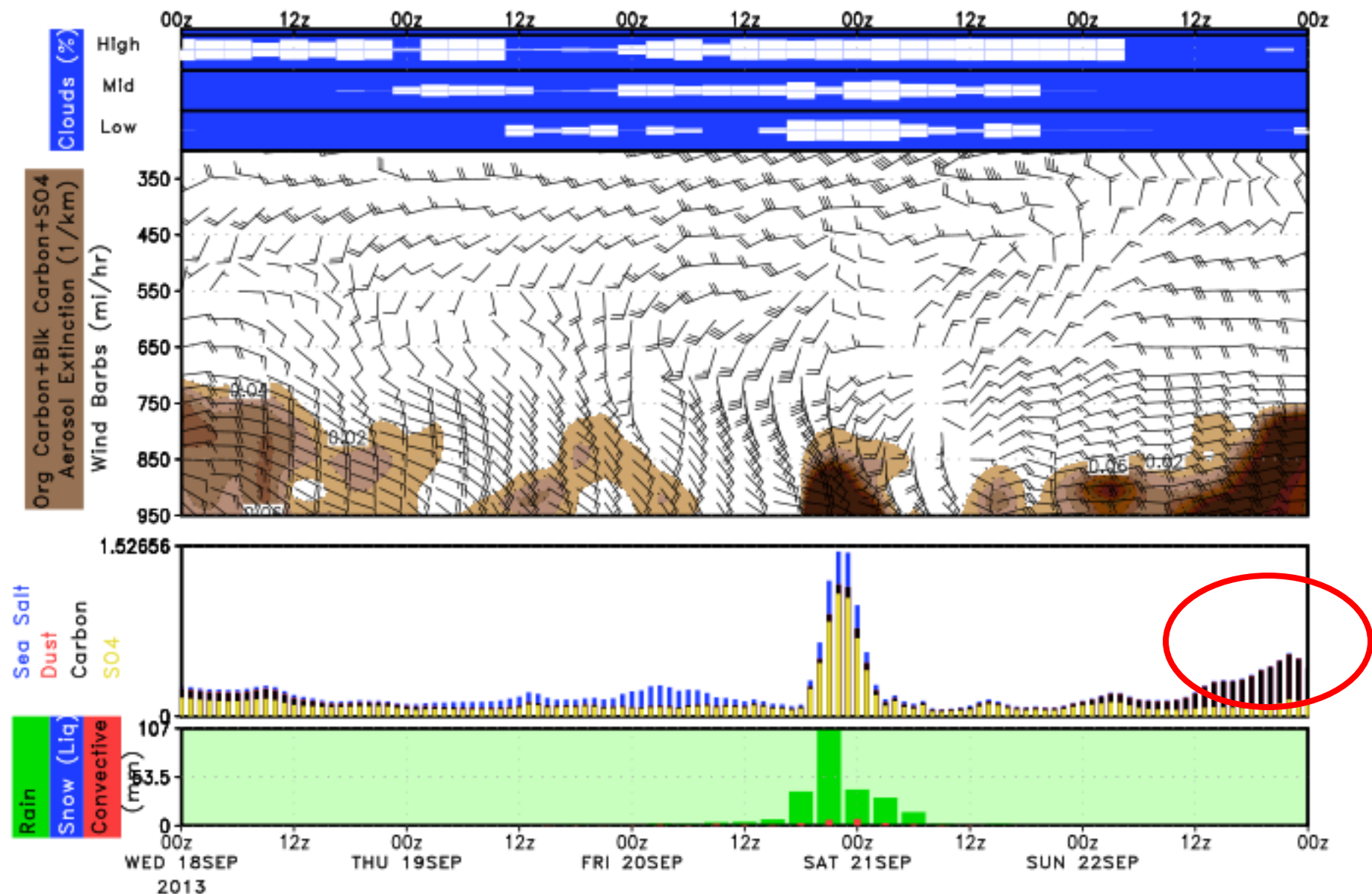


Valid: Mon 06z 2013-09-23 ($\tau = 120$)

Midnight Monday

CONROE

Keep an eye on aerosols after clearing on Sunday-Monday.



GALVESTON

