

DISCOVER-AQ OUTLOOK -- September 21, 2013

Today (Saturday): Hard down day.

Sunday: Possible fly day, though winds should be breezy which will likely keep ozone low.

Monday & beyond: Conditions should be conducive to flights on Monday – Thursday, though clouds may impact the area on occasion. Winds should be lighter during this period.










9/21/2013 Weather Briefing

Ryan Stauffer










Recommendations

- Sunday: **No Fly Day**. While cloud conditions look ok for flight, particularly north, breezy winds are a factor
- Monday/Tuesday (and beyond): **Likely Fly Days**. Low weakens and slowly continues eastward, but will have to monitor coastal locations for clouds and slight precip chances, upper level ridge takes control by mid-week










Conroe:

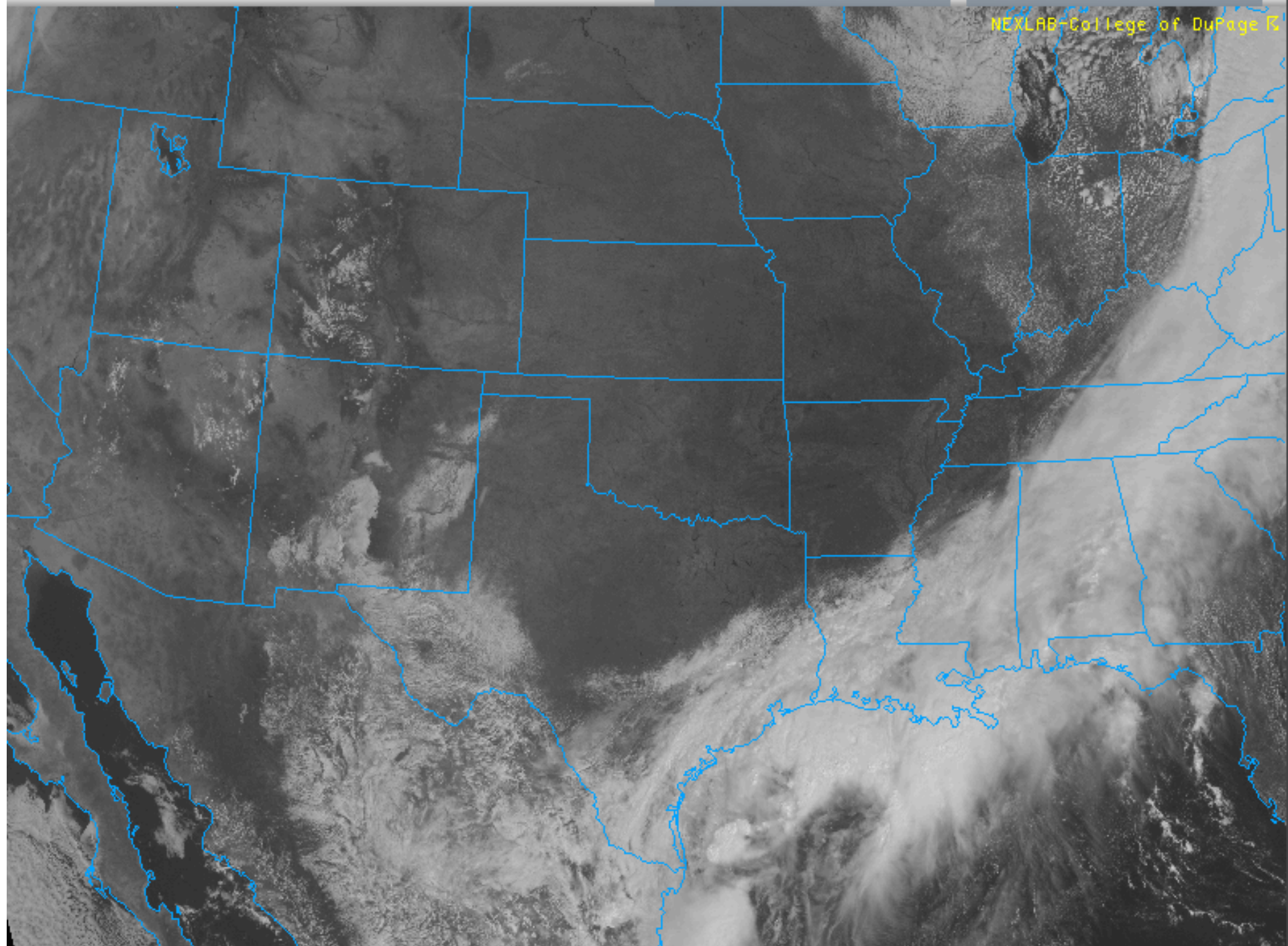
THIS AFTERNOON	TONIGHT	SUNDAY	SUNDAY NIGHT	MONDAY	MONDAY NIGHT	TUESDAY	TUESDAY NIGHT	WEDNESDAY
 30%	 20%			 20%				
Chance Showers High: 80 °F	Slight Chc Thunderstorms Low: 66 °F	Mostly Sunny High: 84 °F	Partly Cloudy Low: 66 °F	Slight Chc Thunderstorms High: 87 °F	Partly Cloudy Low: 66 °F	Mostly Sunny High: 92 °F	Partly Cloudy Low: 69 °F	Mostly Sunny High: 93 °F

Houston Hobby:

THIS AFTERNOON	TONIGHT	SUNDAY	SUNDAY NIGHT	MONDAY	MONDAY NIGHT	TUESDAY	TUESDAY NIGHT	WEDNESDAY
 40%				 20%				
Chance Showers High: 80 °F	Mostly Cloudy Low: 69 °F	Partly Sunny High: 85 °F	Mostly Cloudy Low: 69 °F	Slight Chc Thunderstorms High: 87 °F	Mostly Cloudy Low: 72 °F	Partly Sunny High: 91 °F	Mostly Cloudy Low: 72 °F	Partly Sunny High: 92 °F

Galveston:

THIS AFTERNOON	TONIGHT	SUNDAY	SUNDAY NIGHT	MONDAY	MONDAY NIGHT	TUESDAY	TUESDAY NIGHT	WEDNESDAY
 70%	 20%		 20%	 30%	 20%	 20%		
Showers Likely High: 81 °F	Slight Chc Showers Low: 74 °F	Breezy High: 84 °F	Slight Chc Thunderstorms Low: 74 °F	Chance Thunderstorms High: 86 °F	Slight Chc Thunderstorms Low: 78 °F	Slight Chc Thunderstorms High: 88 °F	Mostly Cloudy Low: 78 °F	Partly Sunny High: 88 °F



dBZ

75

65

55

45

35

25

15

5

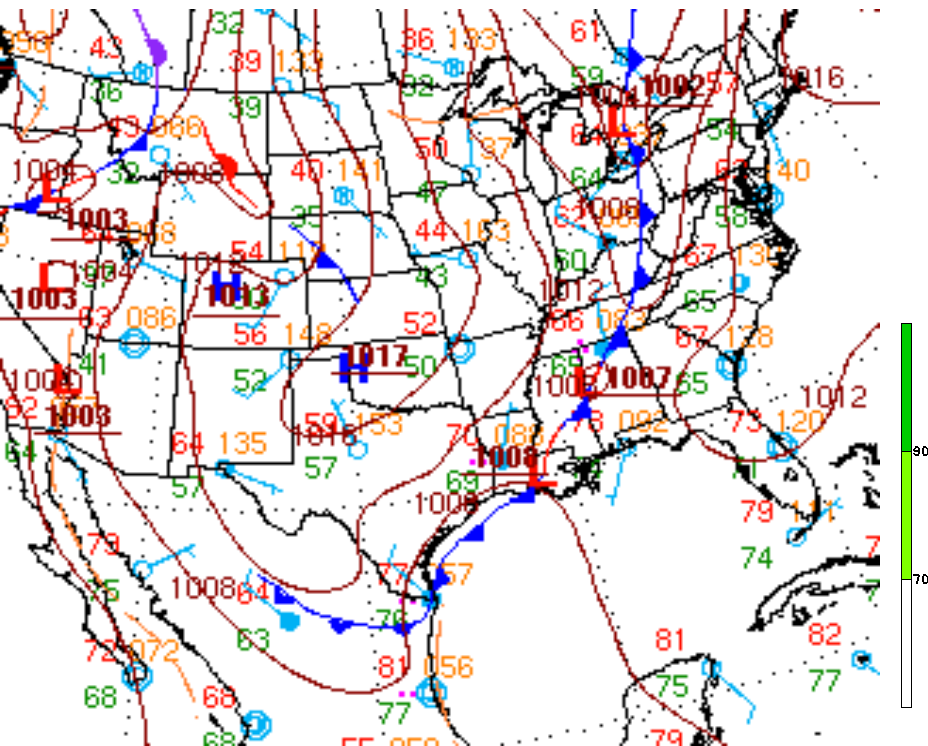
-5

-15

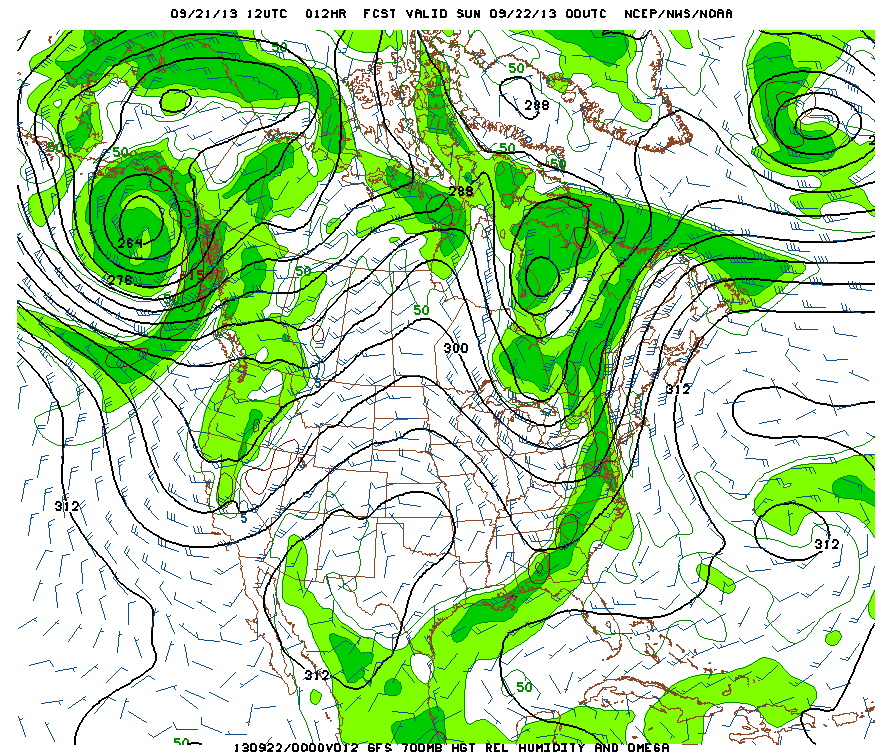
-25

Today: Cold front that was yesterday forecast to run through Galveston at this time is sitting 50 miles off the coast as of 12z. We may even see partial clearing by sunset

12z Sfc analysis

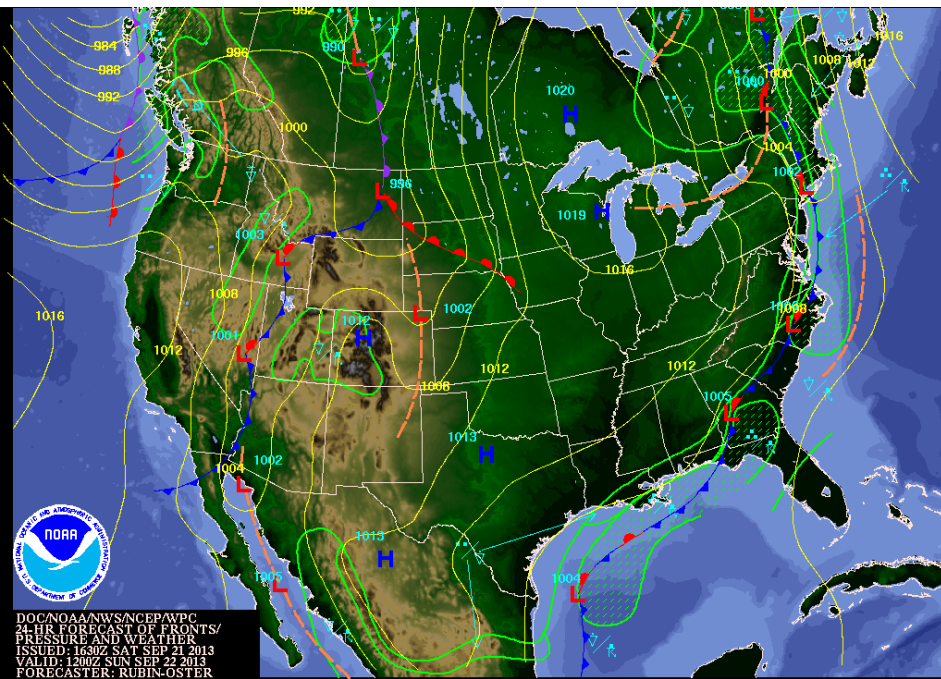


7 PM CDT GFS 700 hPa RH forecast



Tomorrow: Low pressure sits well offshore, with mostly sunny skies to north, scattered clouds south but a chance of precip and more clouds offshore

12z Sfc forecast



10 m winds at 1 PM tomorrow

WRF 3-KM
Fest: 36 h

Init: 06 UTC Sat 21 Sep 13
Valid: 18 UTC Sun 22 Sep 13 (13 CDT Sun 22 Sep 13)

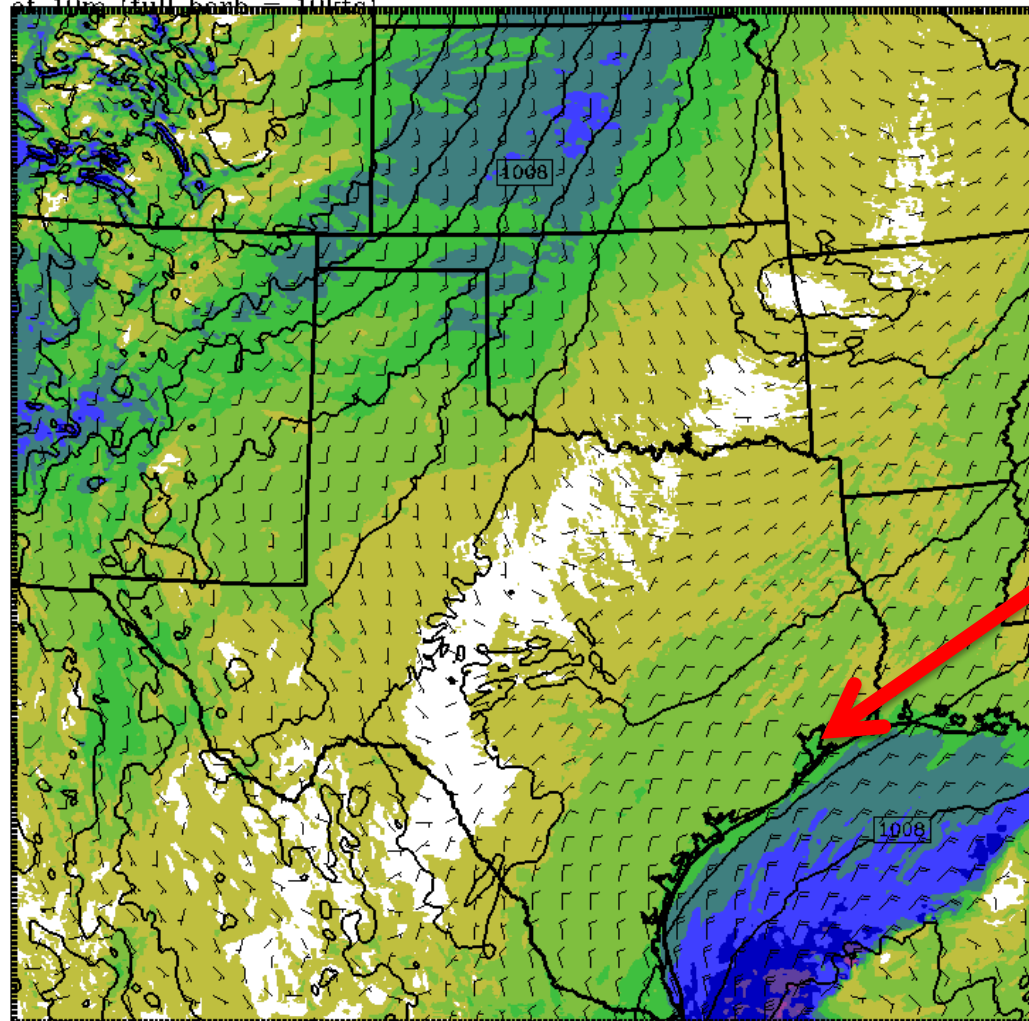
Sigma1 Windspeed (m/s)

Sea Level Pressure (hPa)

Wind at 10m (full barb = 10kts)

100 W

90 W



~15kts sustained
wind at Smith
Point and
Galveston,
~10kts elsewhere

30 N

CONTOURS: UNITS=hPa LOW= 998.00 HIGH= 1014.0 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

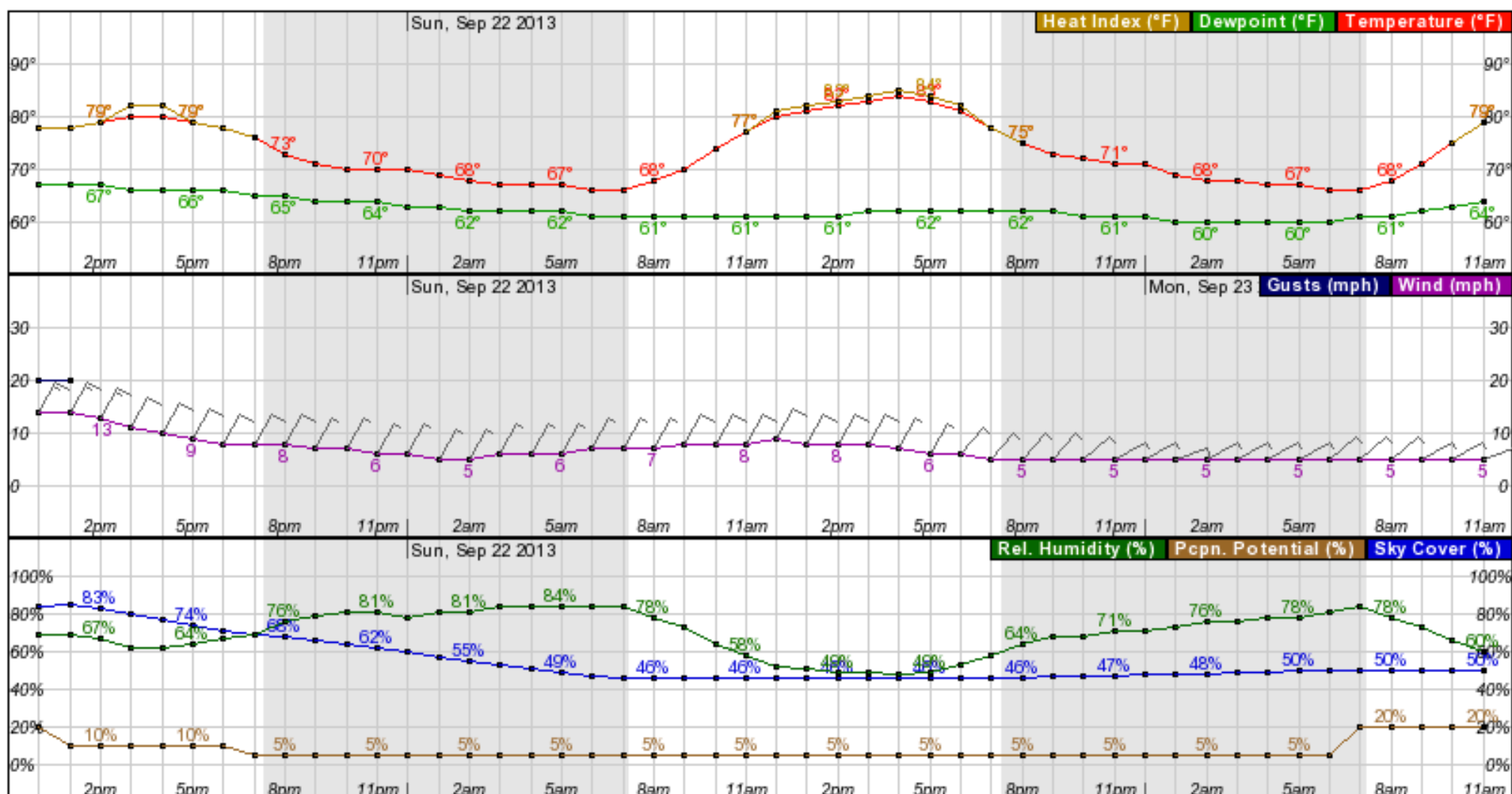
Conroe

Today: Clearing skies

Tomorrow: Mostly sunny

Today→

Tomorrow→

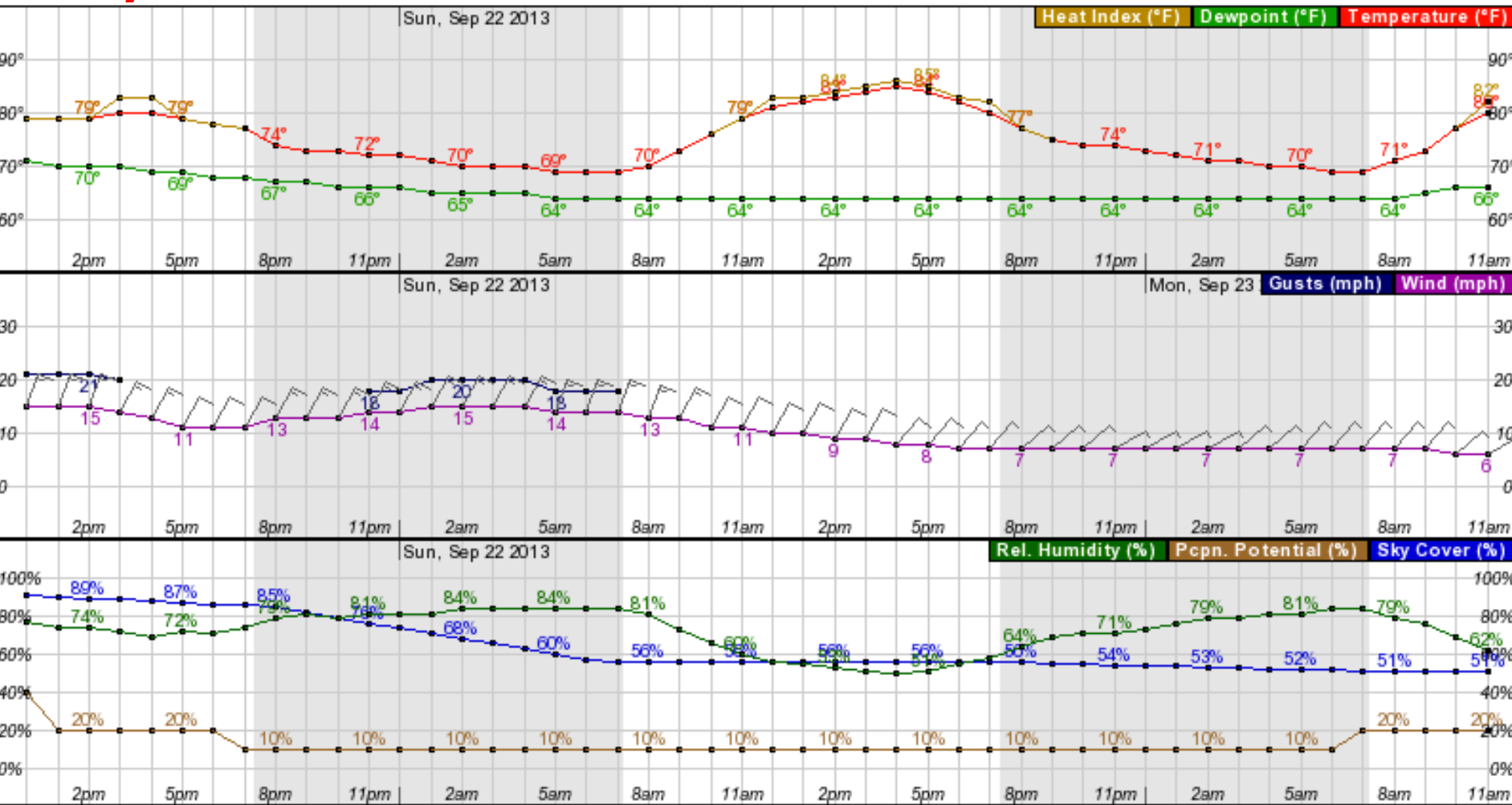


Houston Hobby

Today: Decreasing clouds

Tomorrow: Clouds and sun

Today→ Tomorrow→

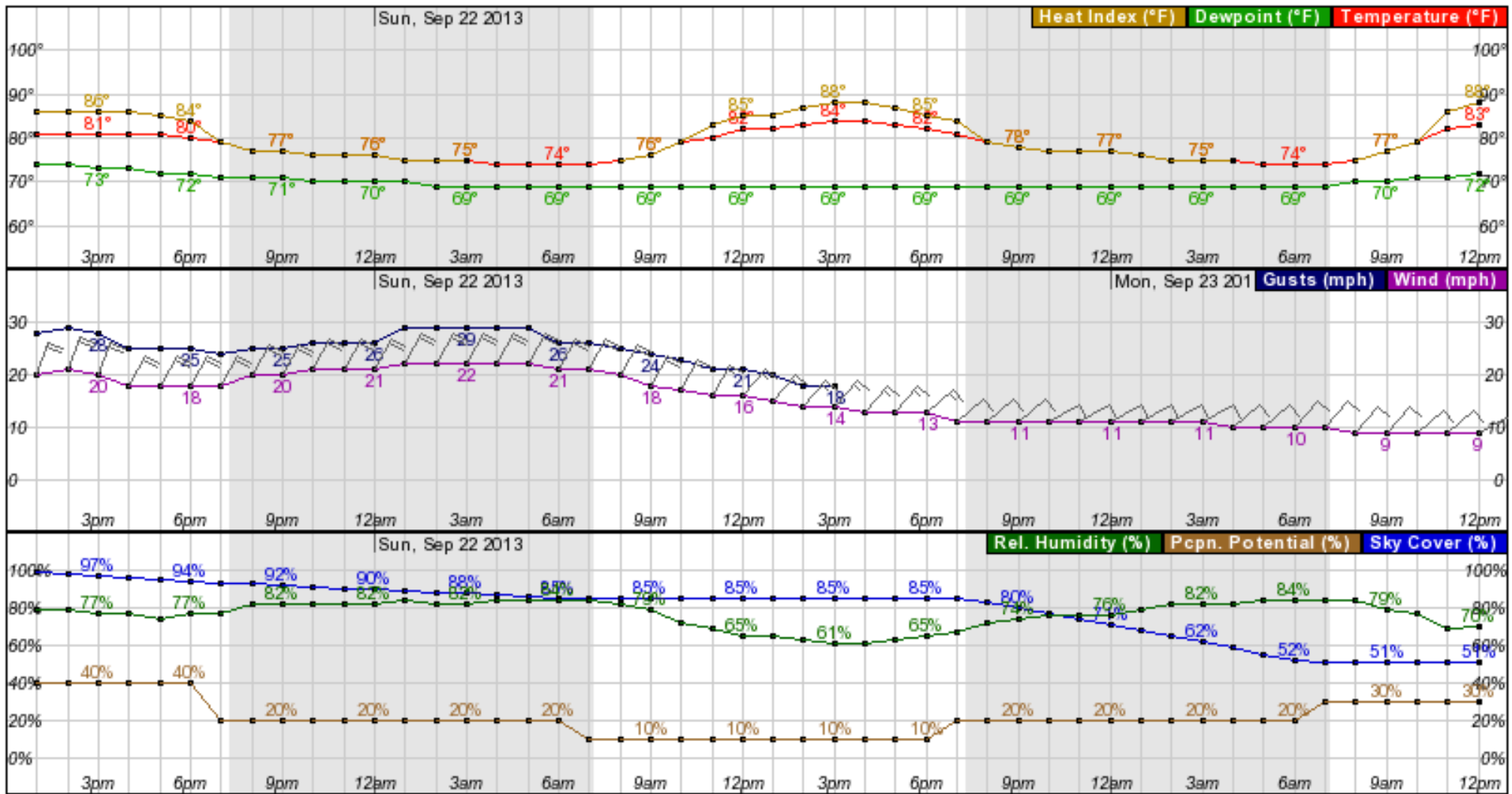


Galveston

Today: Overcast

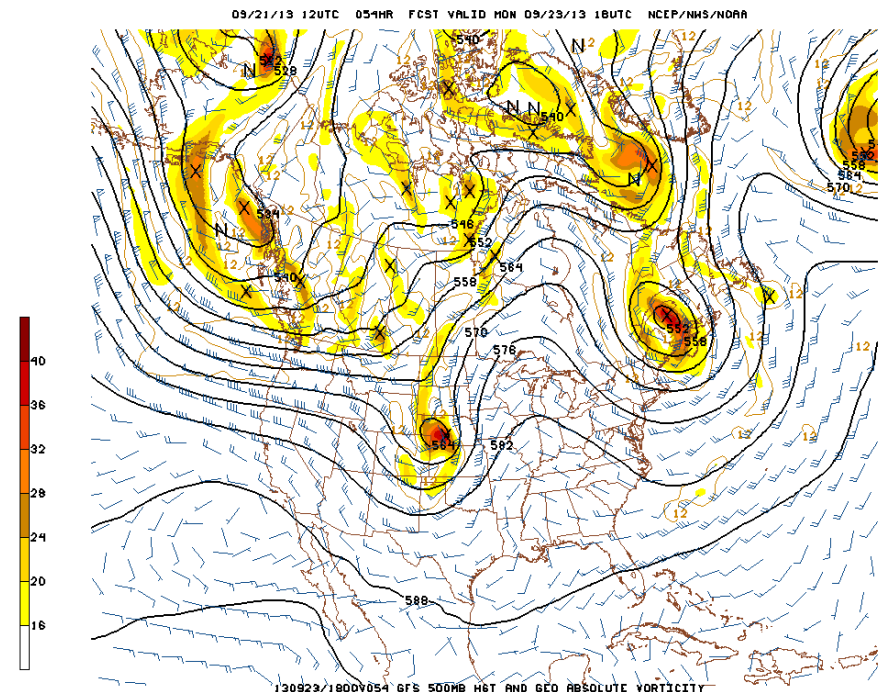
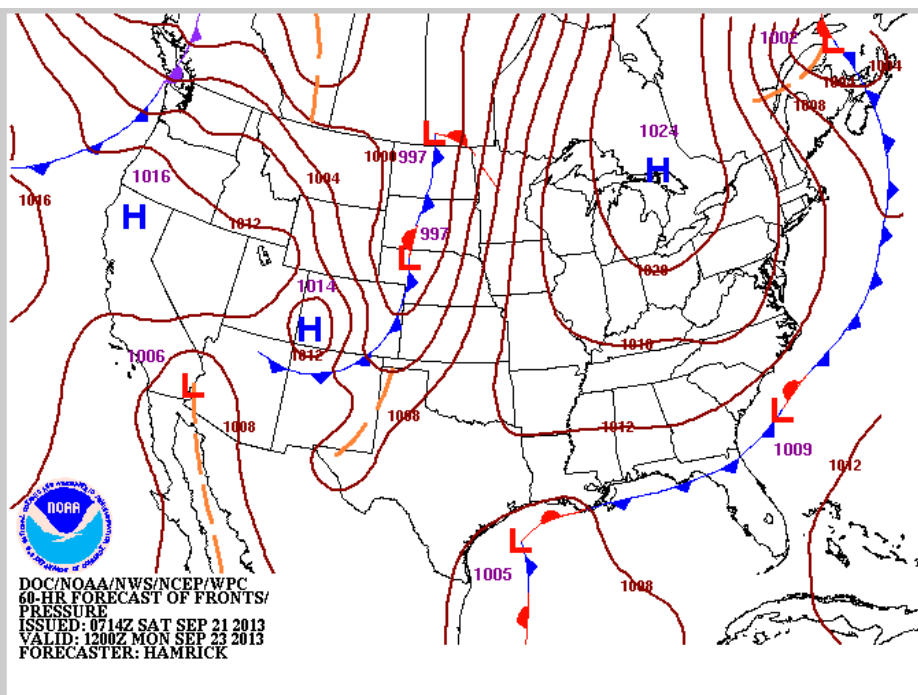
Tomorrow: Some clouds expected

Today→ Tomorrow→



Monday: Surface low is slow to move out of region. Position isn't all that different from Sunday

1 PM CDT
500 mb vorticity



10 m winds at 1 PM Monday

WRF 3-KM

Fcst: 60 h

Init: 06 UTC Sat 21 Sep 13

Valid: 18 UTC Mon 23 Sep 13 (13 CDT Mon 23 Sep 13)

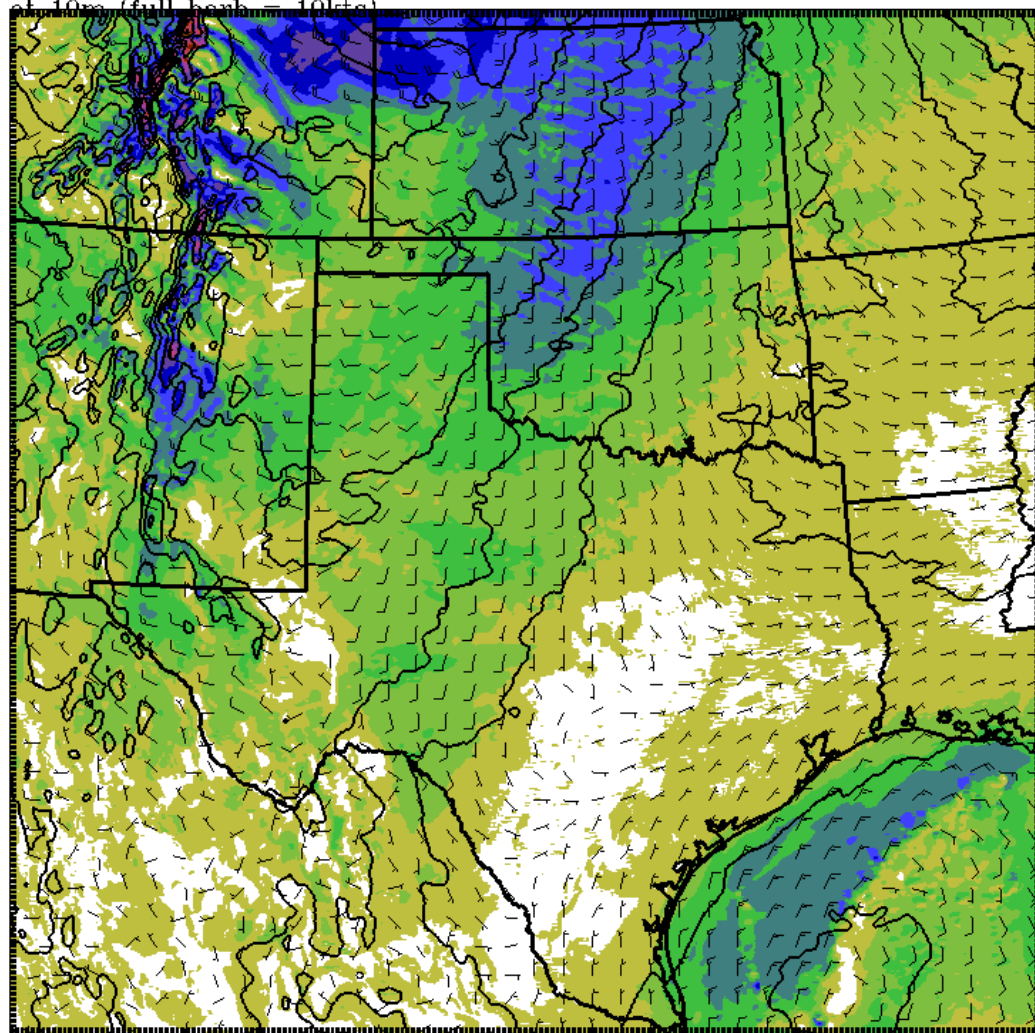
Sigma1 Windspeed (m/s)

Sea Level Pressure (hPa)

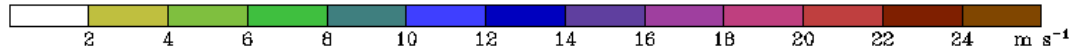
Wind at 10m (full barb = 10kts)

100 W

90 W



CONTOURS: UNITS=hPa LOW= 998.00 HIGH= 1016.0 INTERVAL= 2.0000



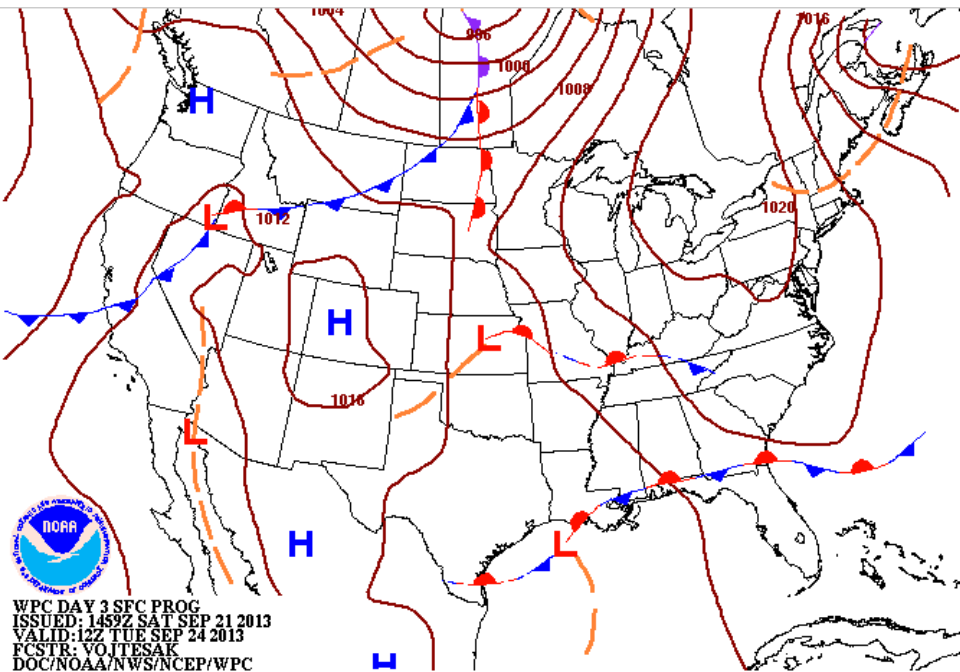
Model Info: V3.3

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

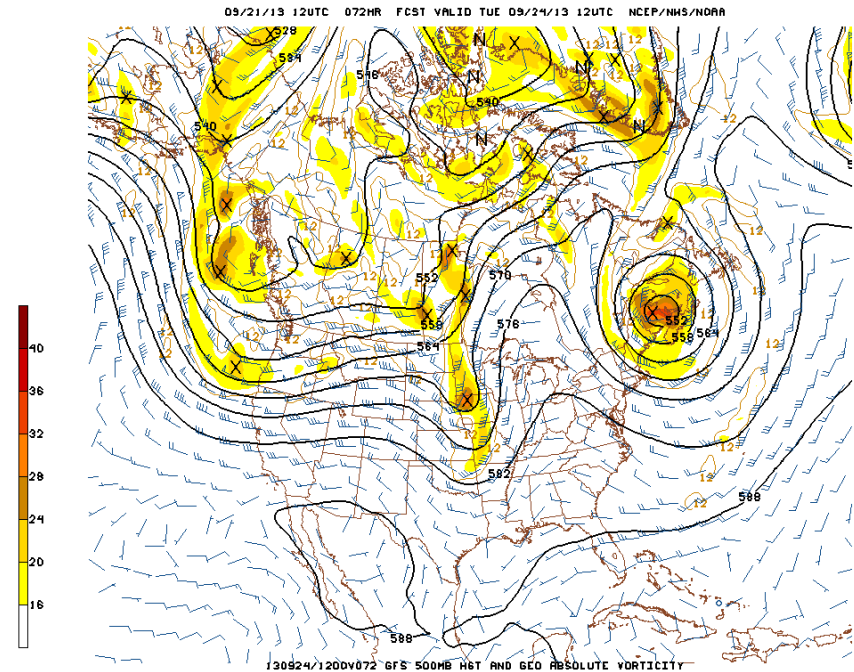
~5kts domain-
wide

Tuesday: Surface low weakens and exits region. Upper level ridge begins to take over

12z Sfc Forecast



1pm CDT GFS 500 mb vorticity



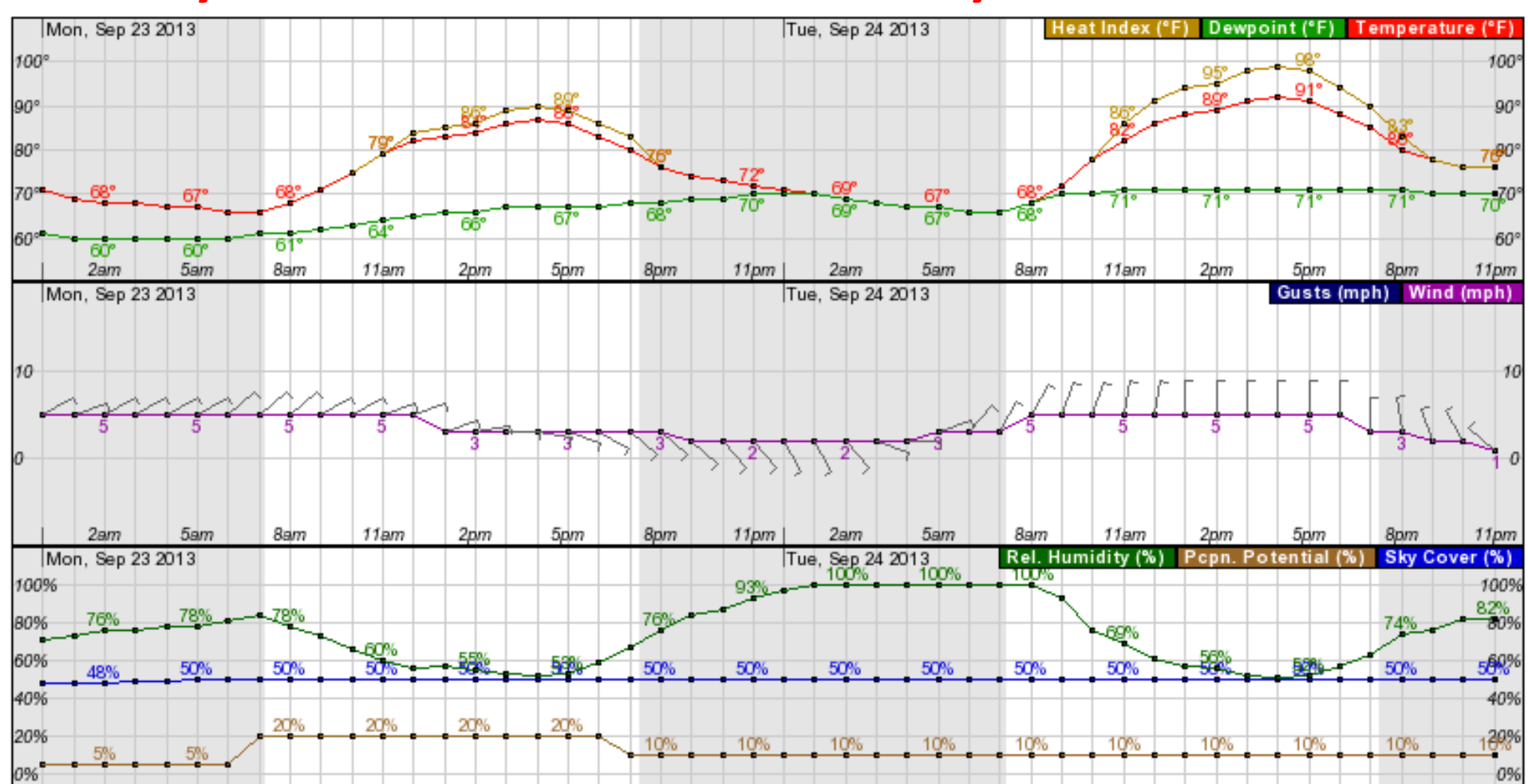
Conroe

Monday: Low precip chances

Tuesday: Similar to Monday with less precip chances

Monday→

Tuesday→



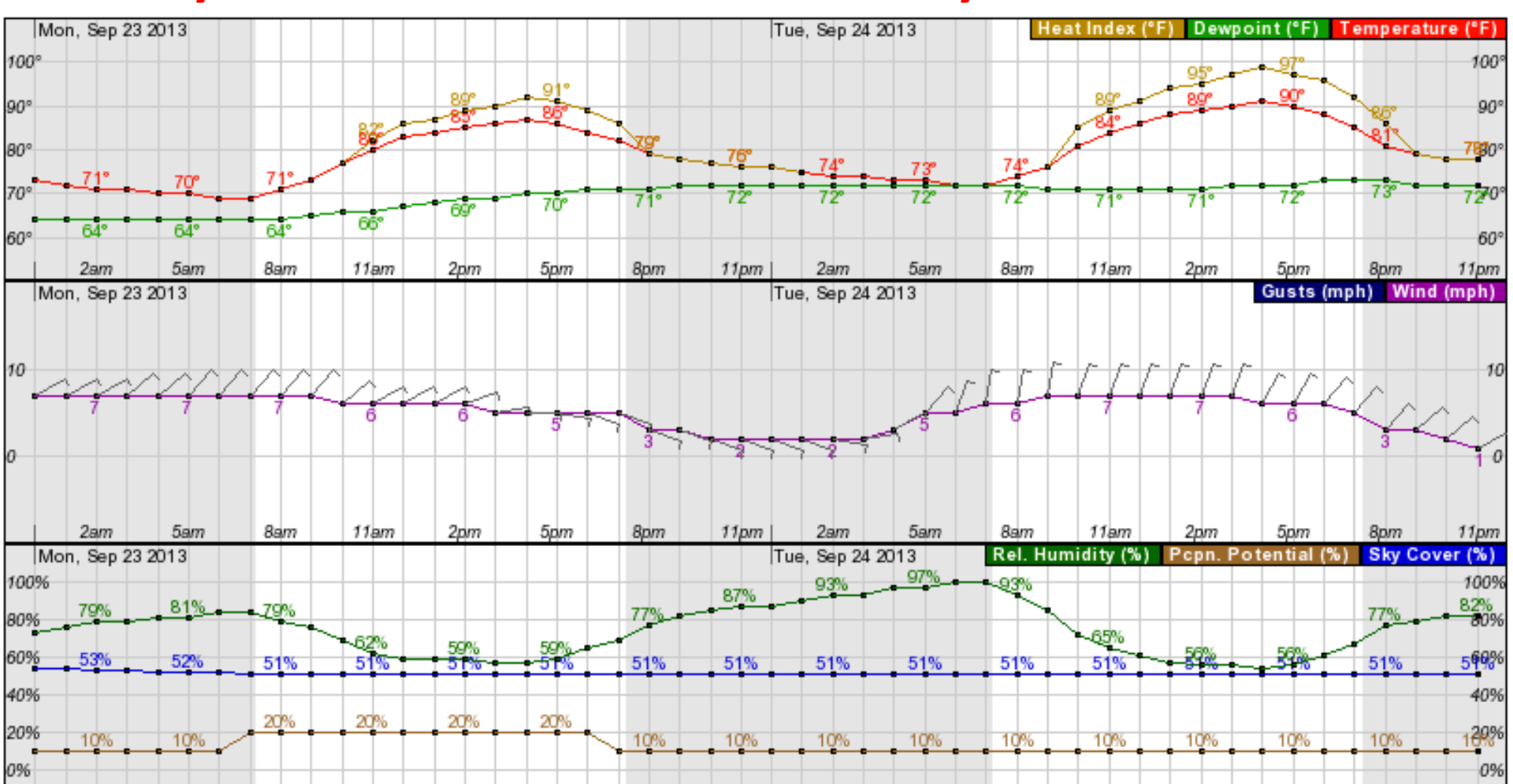
Houston Hobby

Monday: Clouds and sun

Tuesday: Same story

Monday→

Tuesday→



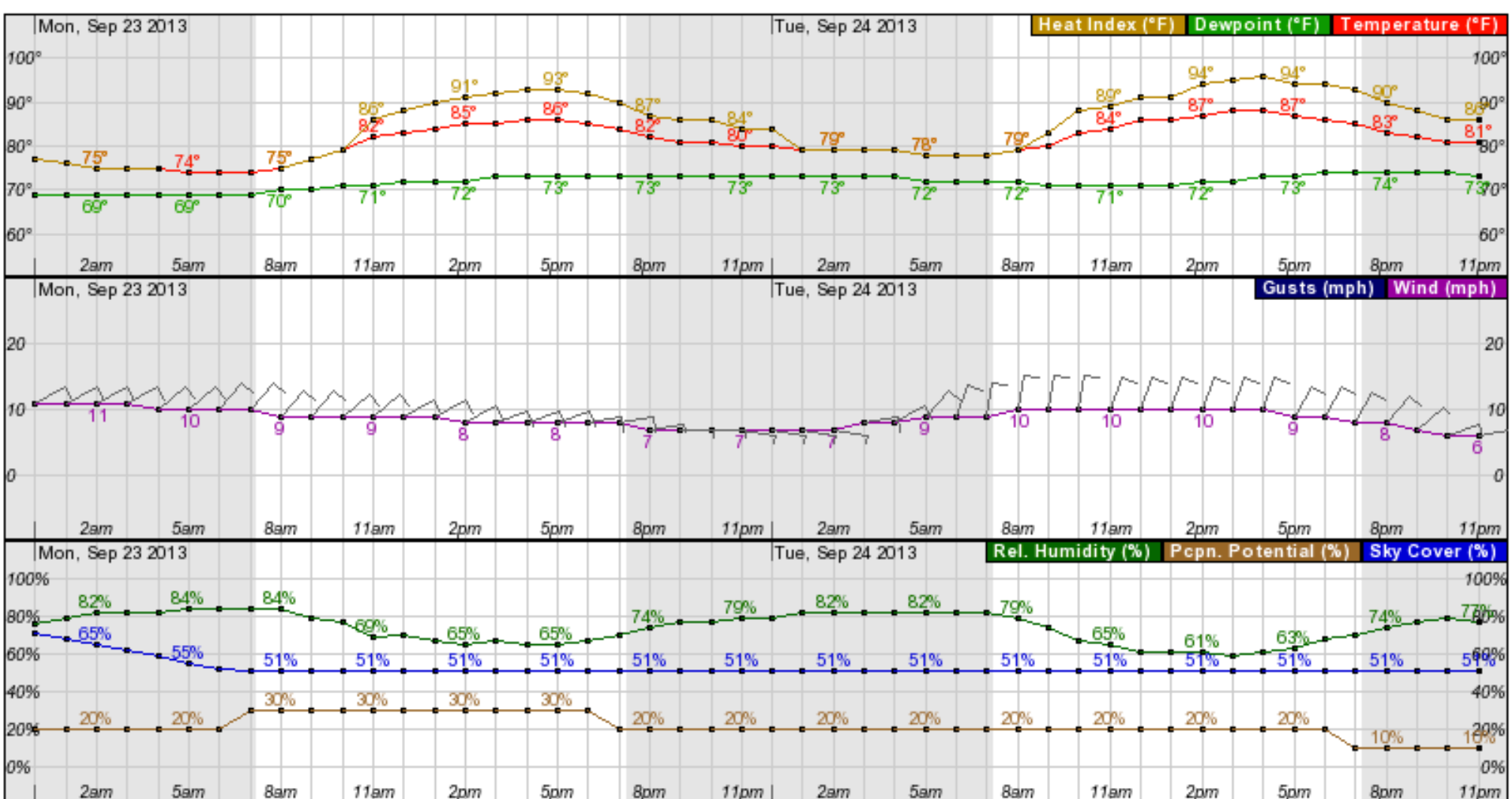
Galveston

Monday: Slight chance of scattered showers

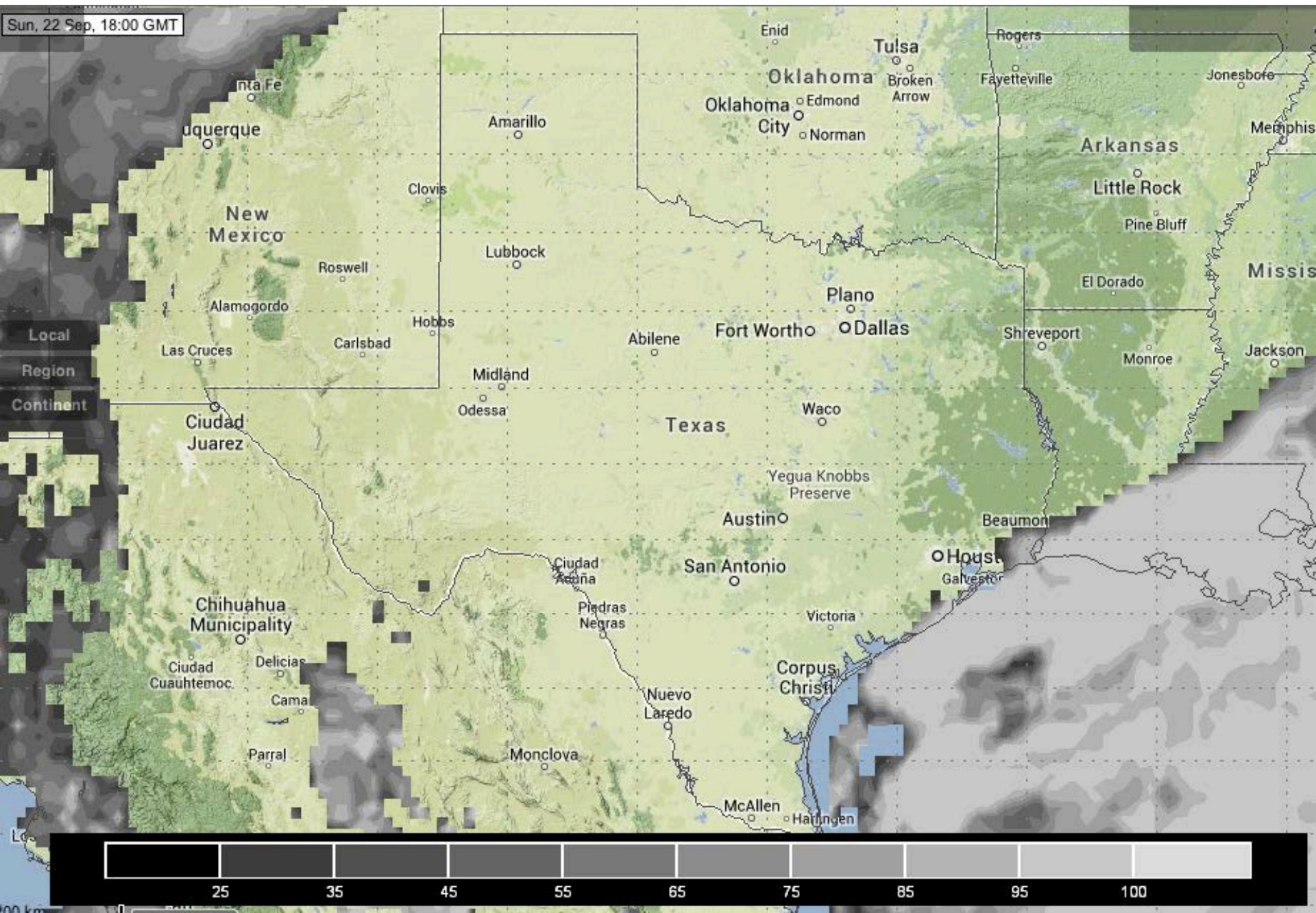
Tuesday: Continuing improvement

Monday→

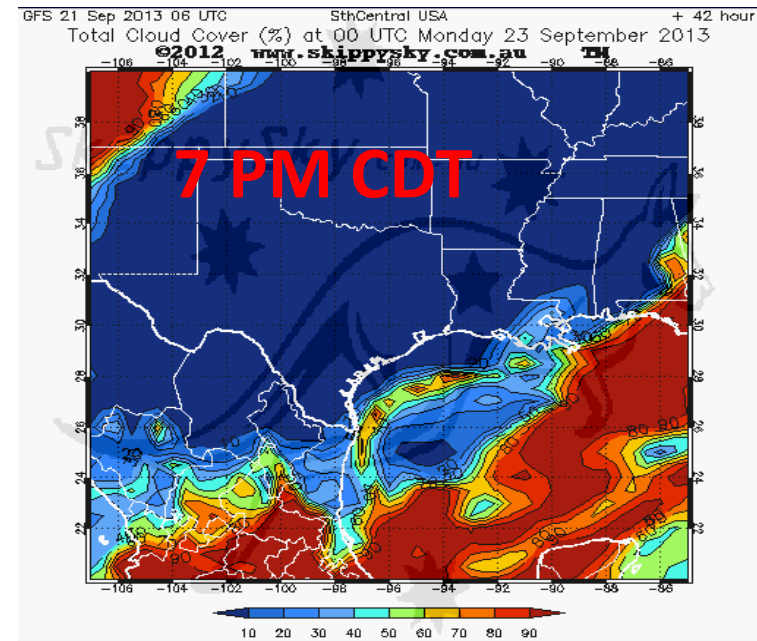
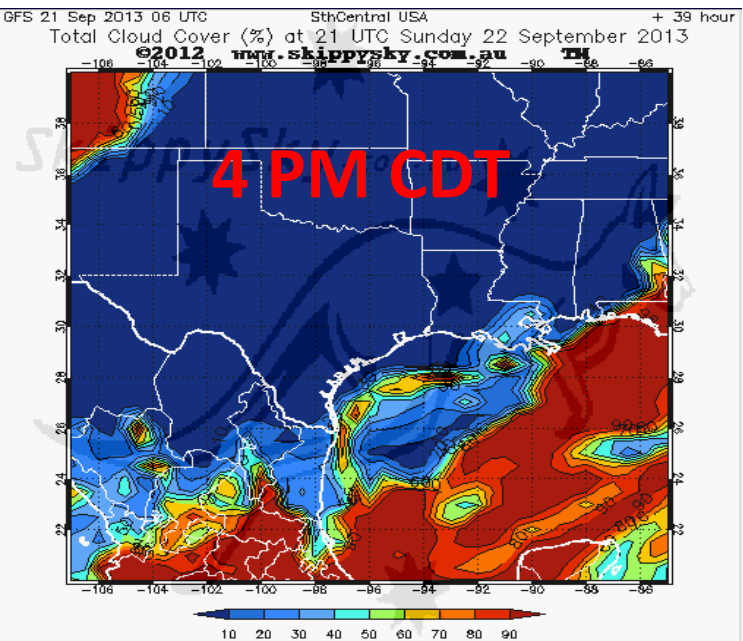
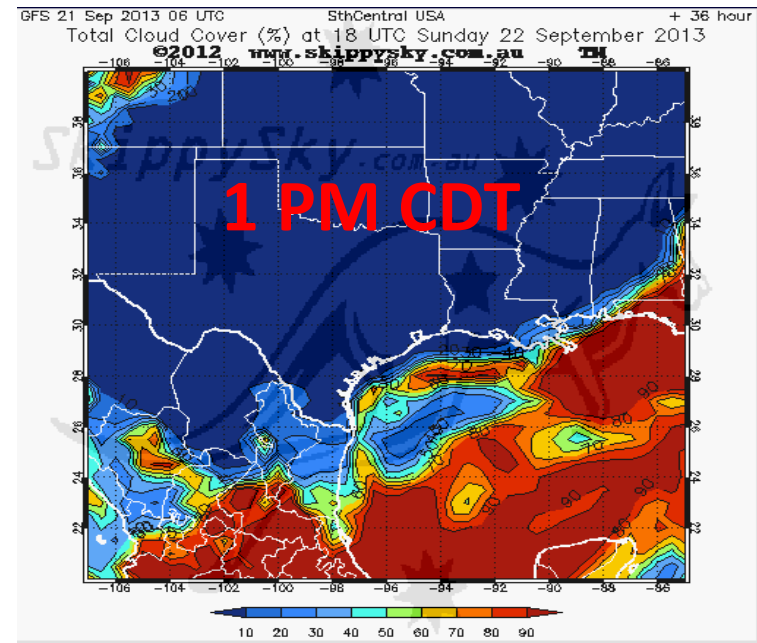
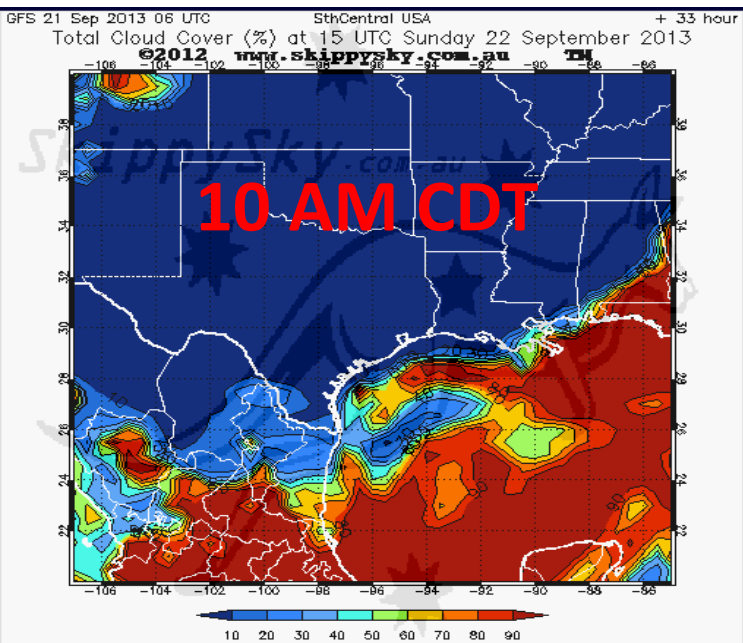
Tuesday→



Tomorrow: EC – 1pm CDT, some scattered clouds south

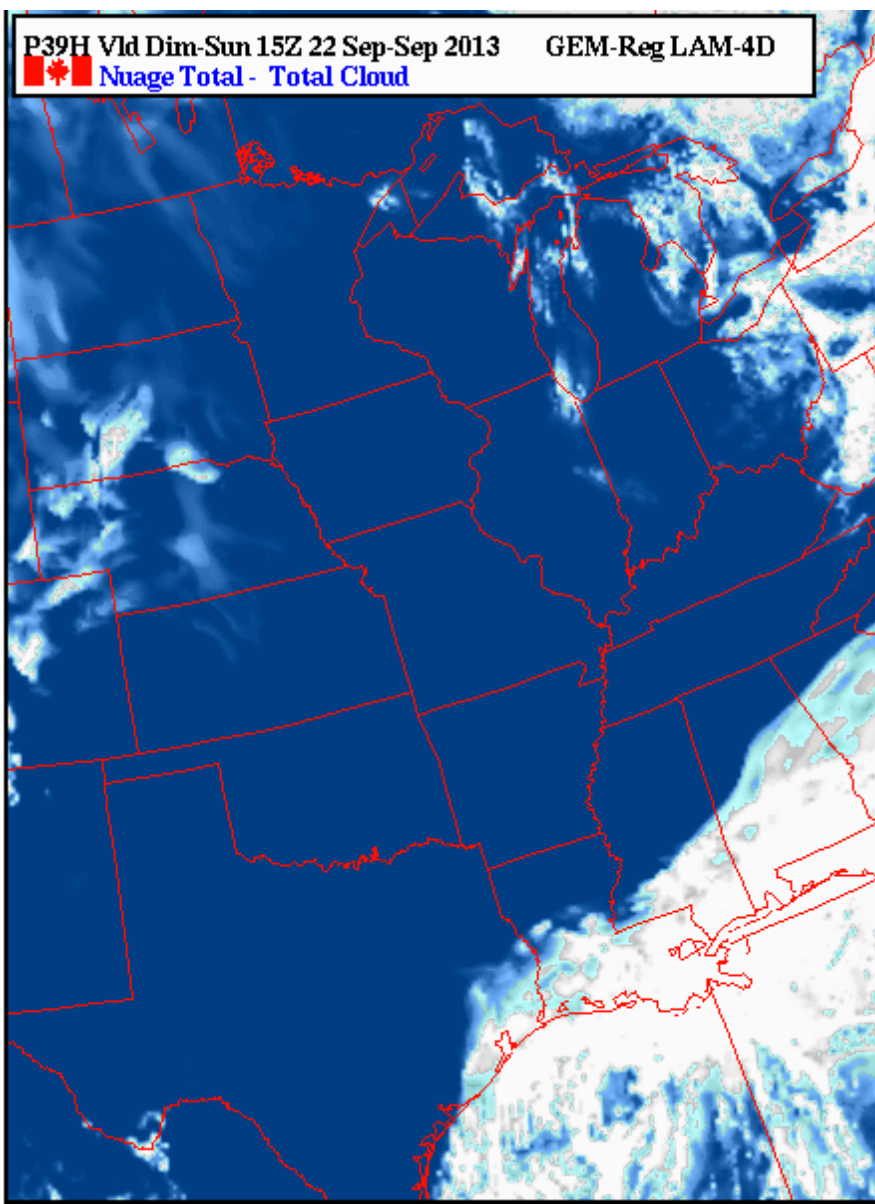


Tomorrow: GFS – fewest clouds of all models

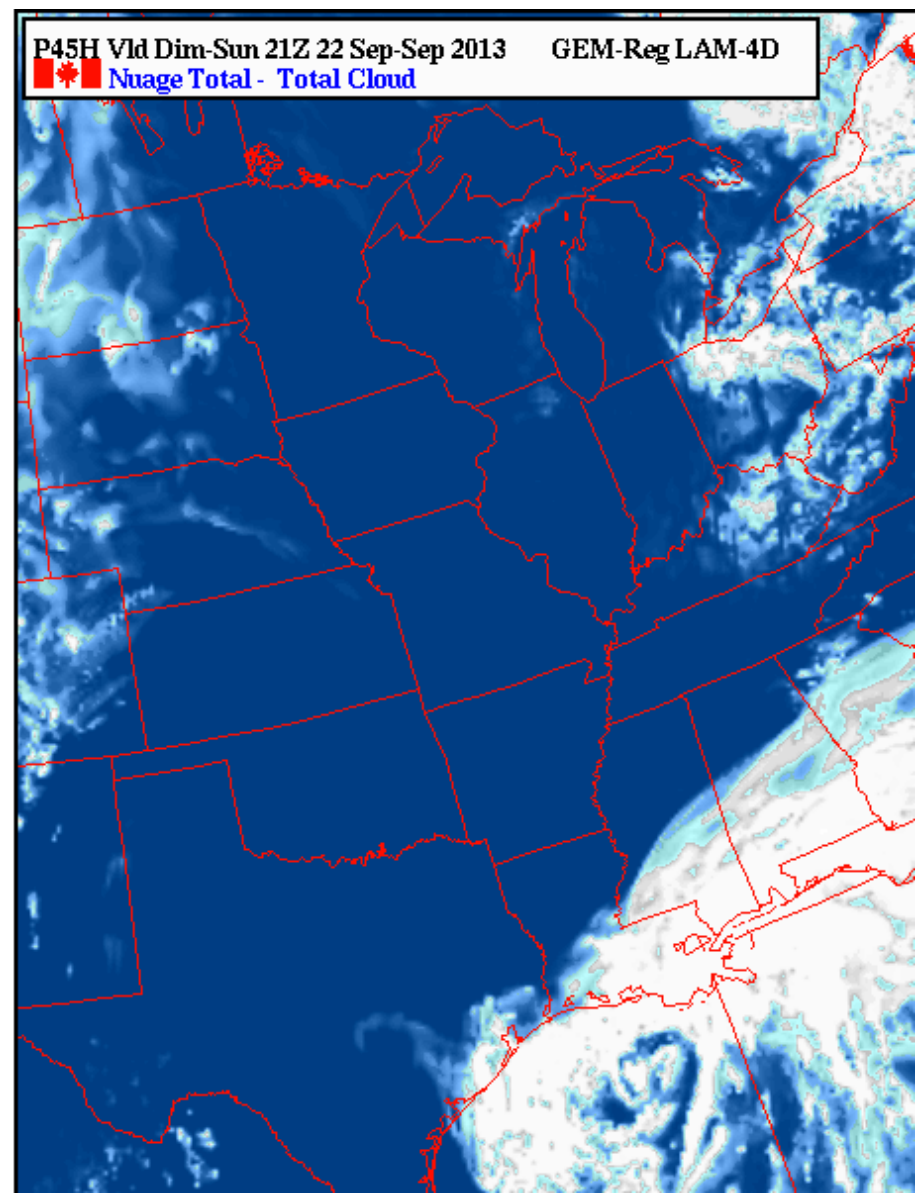


Tomorrow: Canadian – clear to the north, scattered clouds south

10 AM CDT

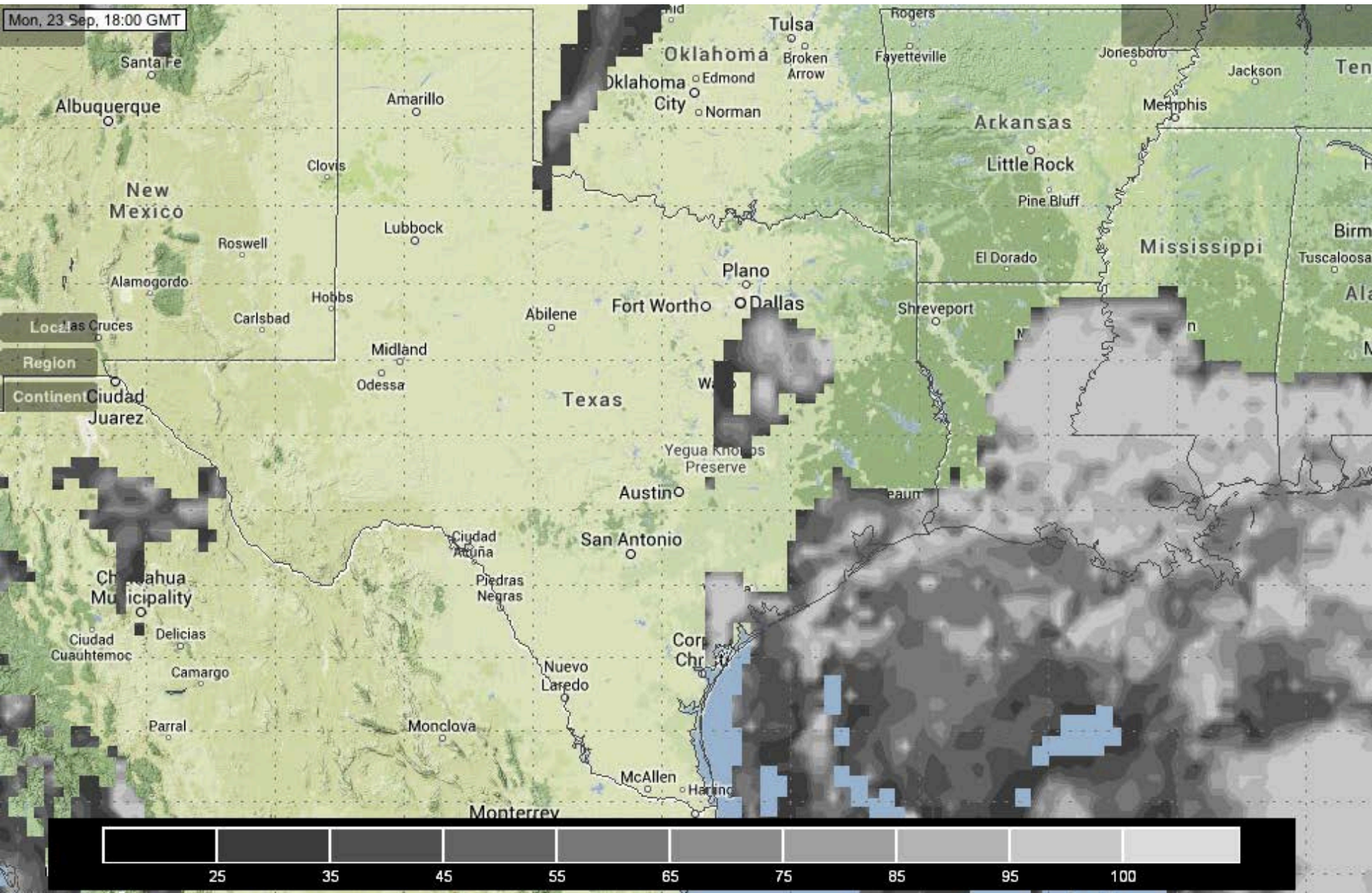


1 PM CDT



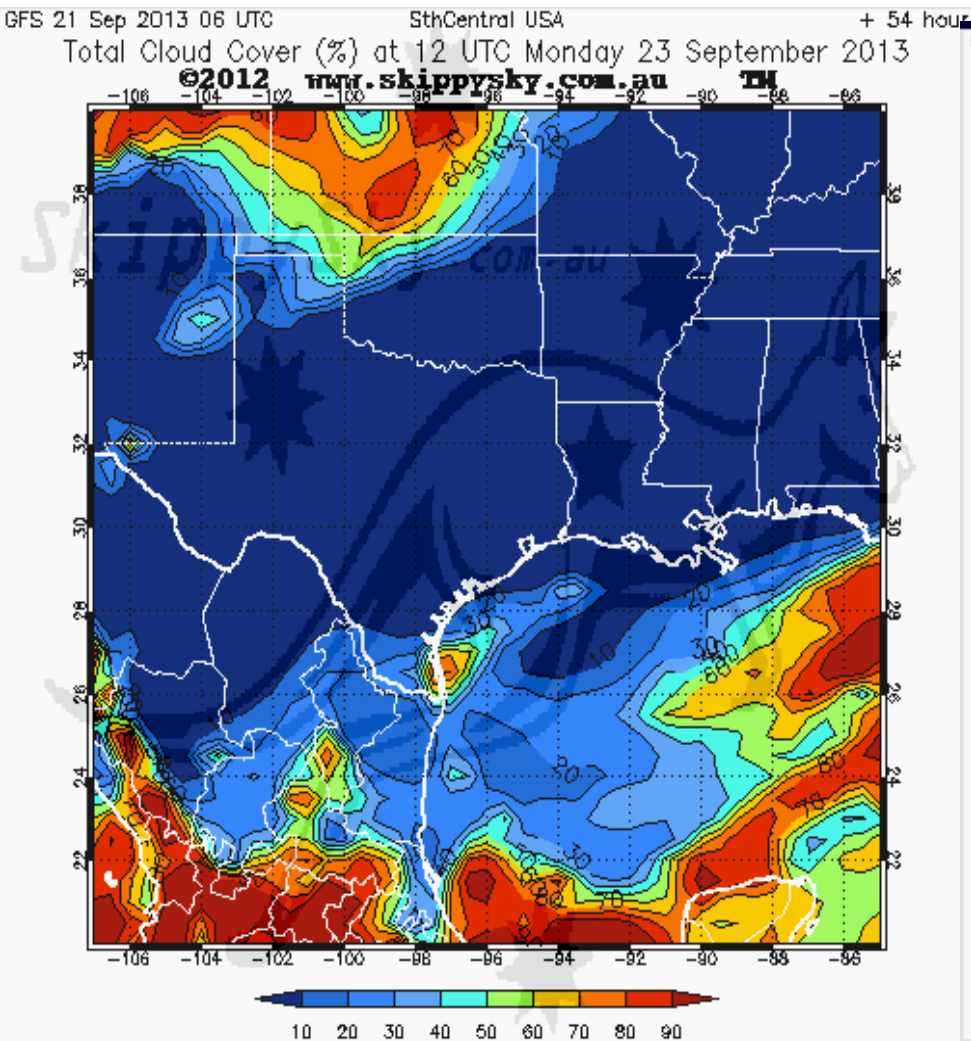
Monday: EC-

1 PM CDT

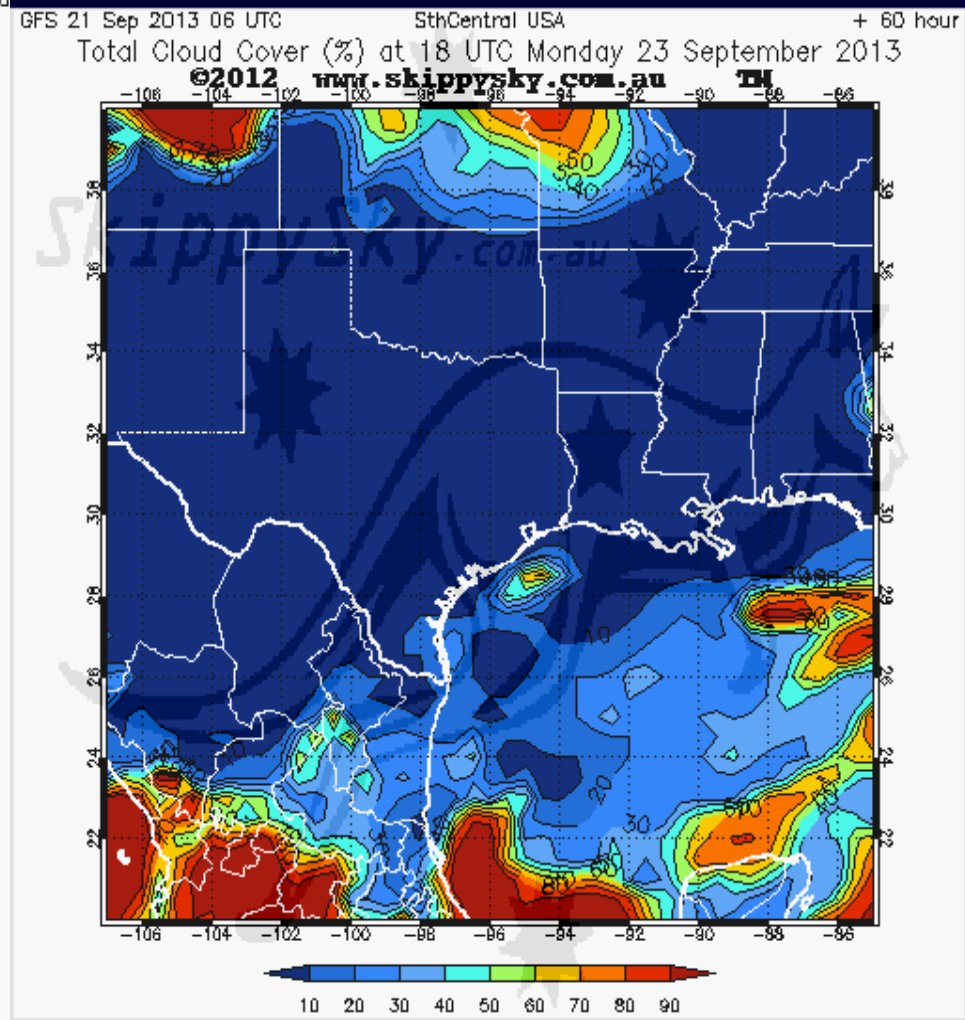


Monday: GFS – stays cloud free on Monday. Doubtful it turns out this clear with likely some clouds south

8 AM CDT

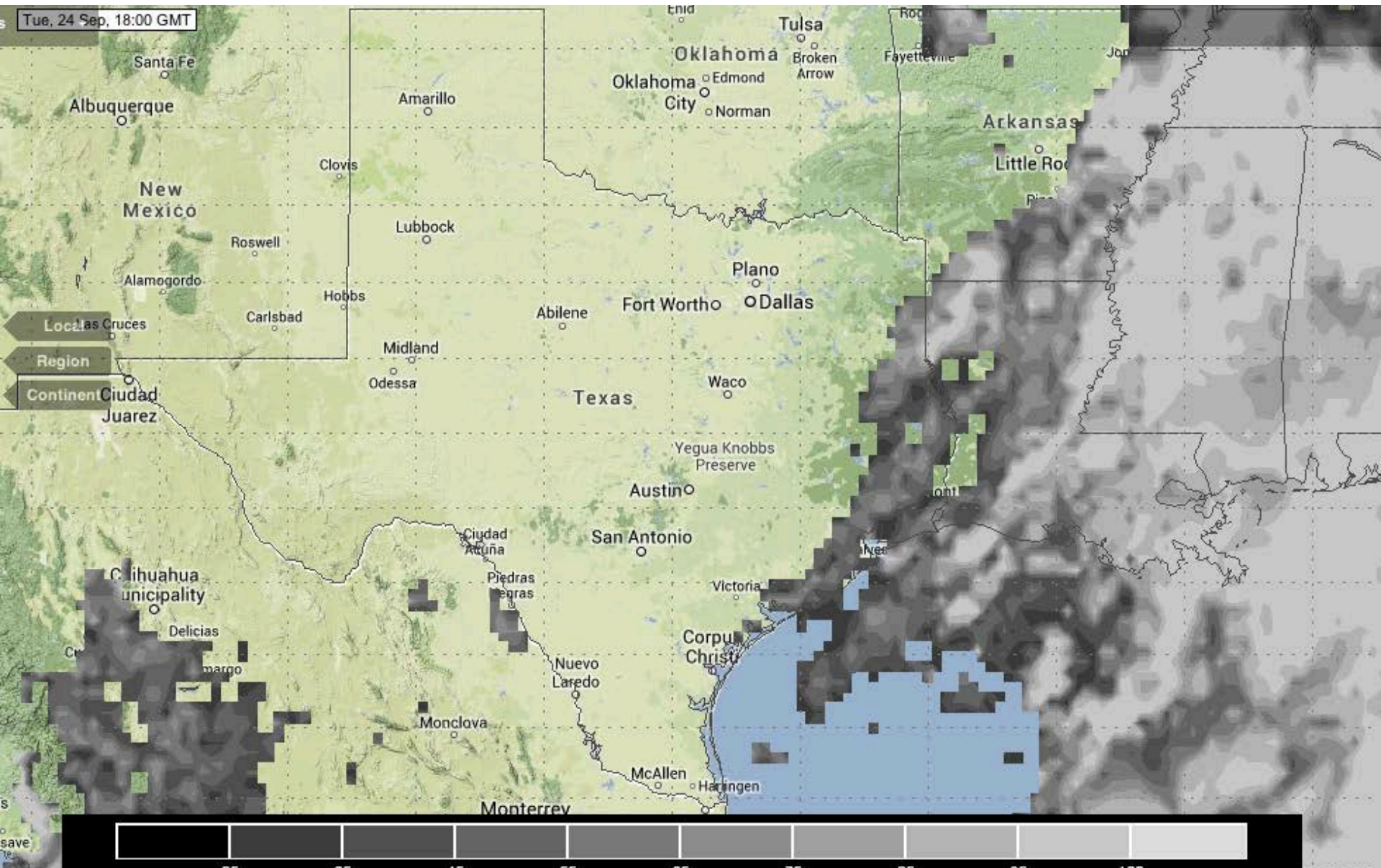


1 PM CDT



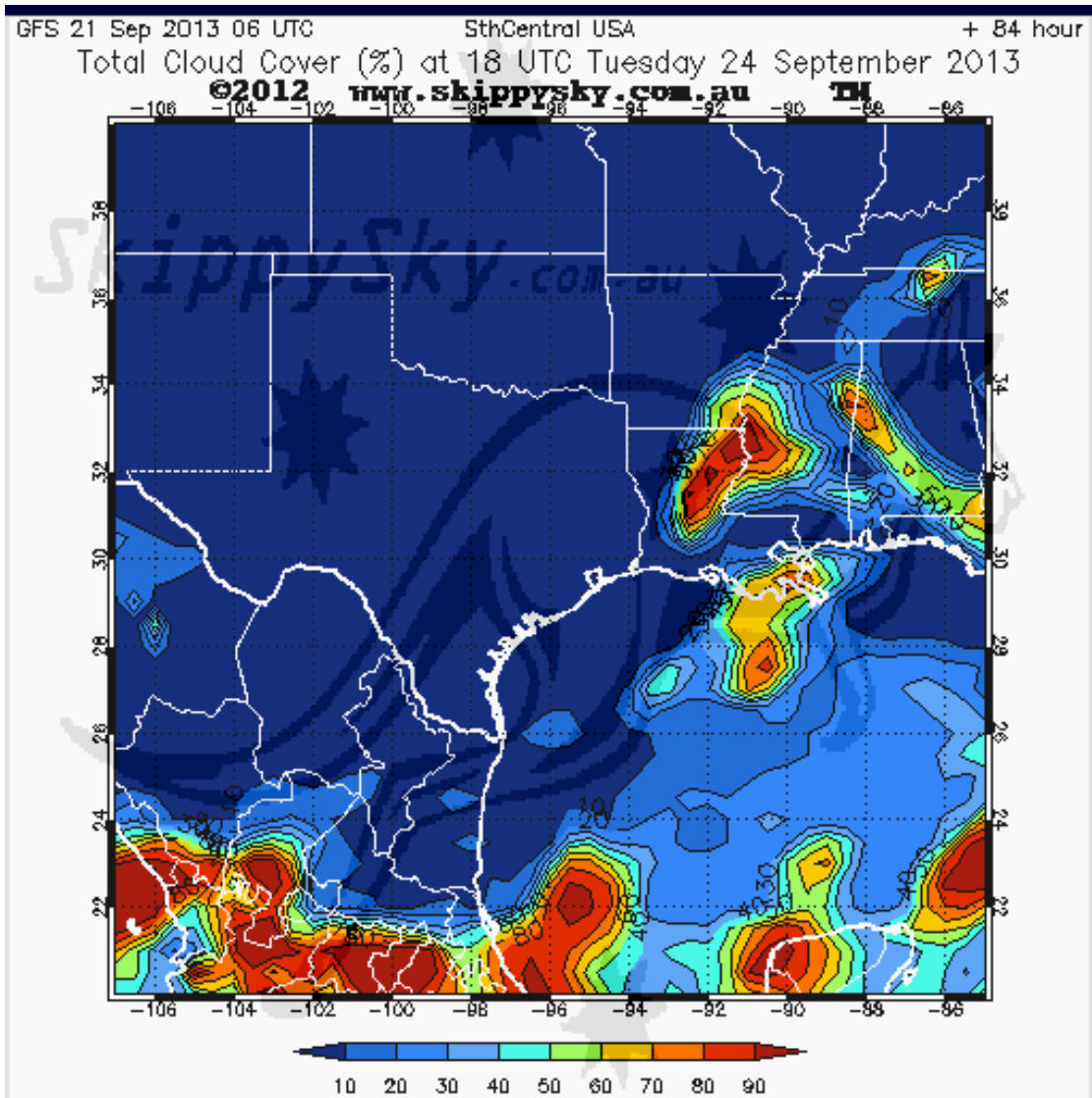
Tuesday: EC – scattered/few clouds throughout domain

1 PM CDT

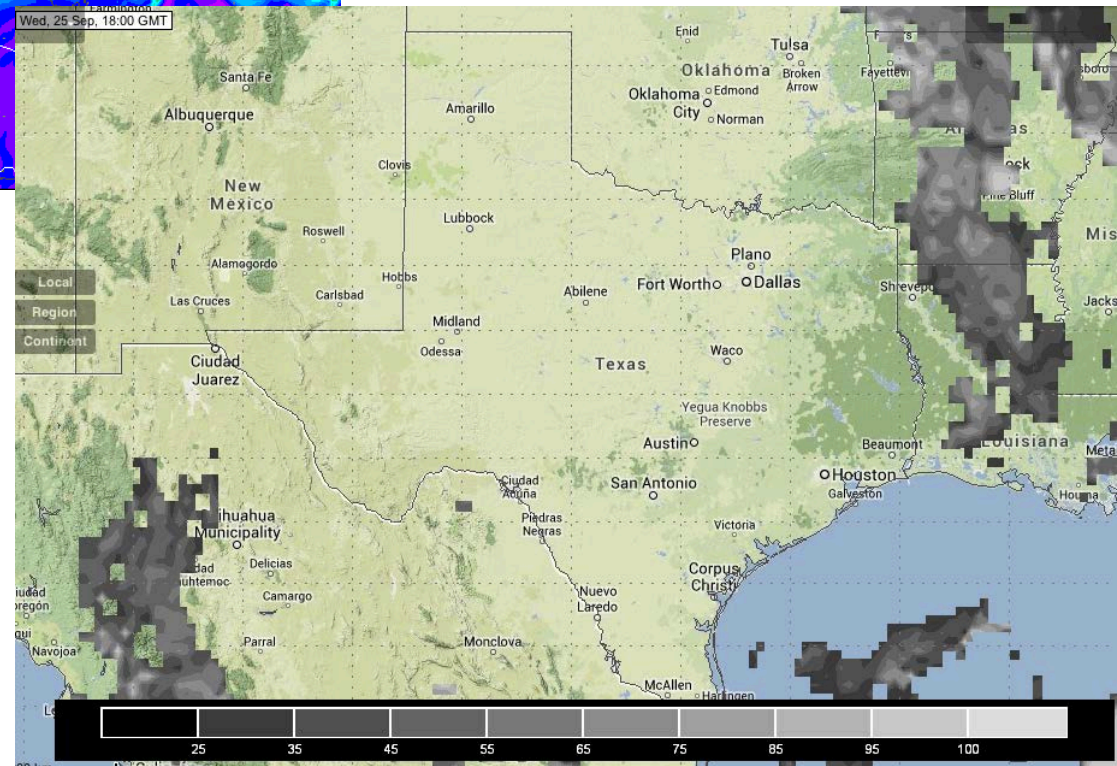
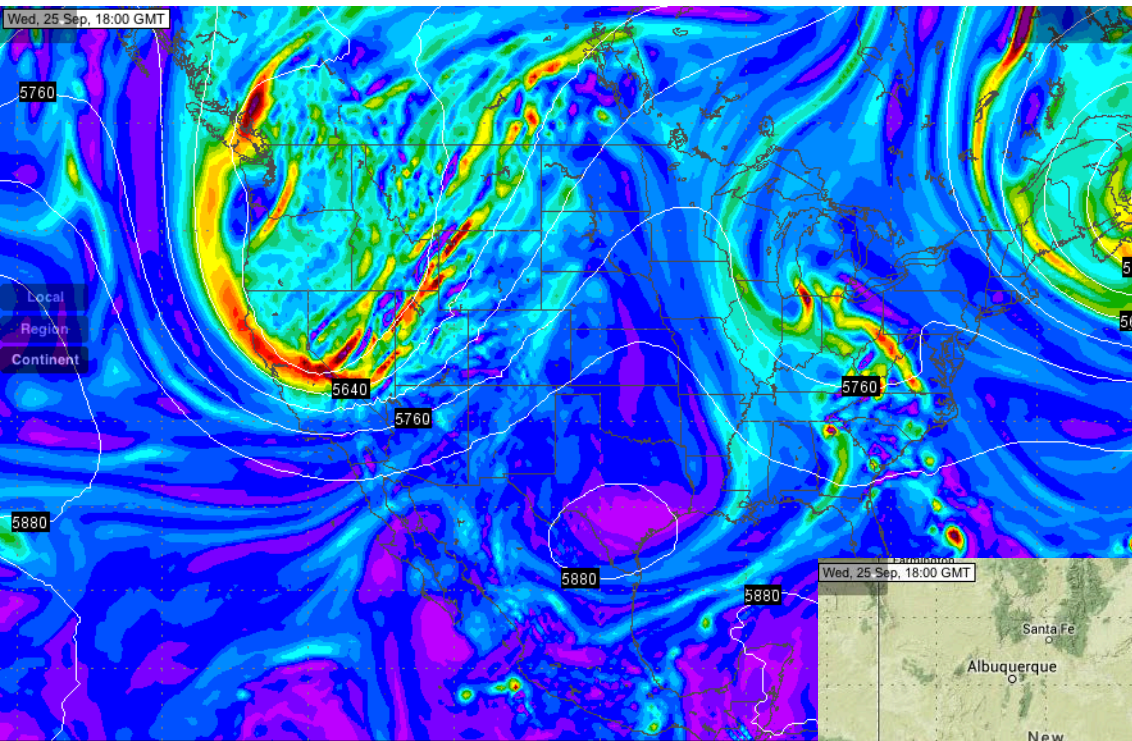


Tuesday: GFS –

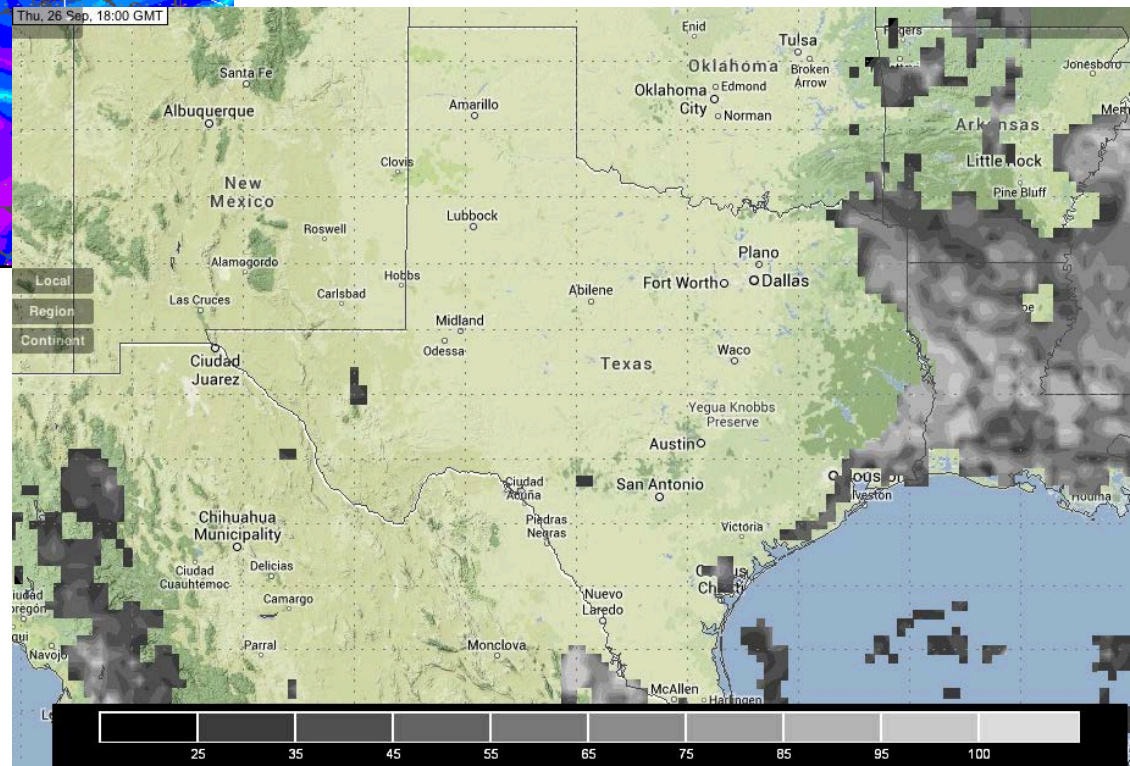
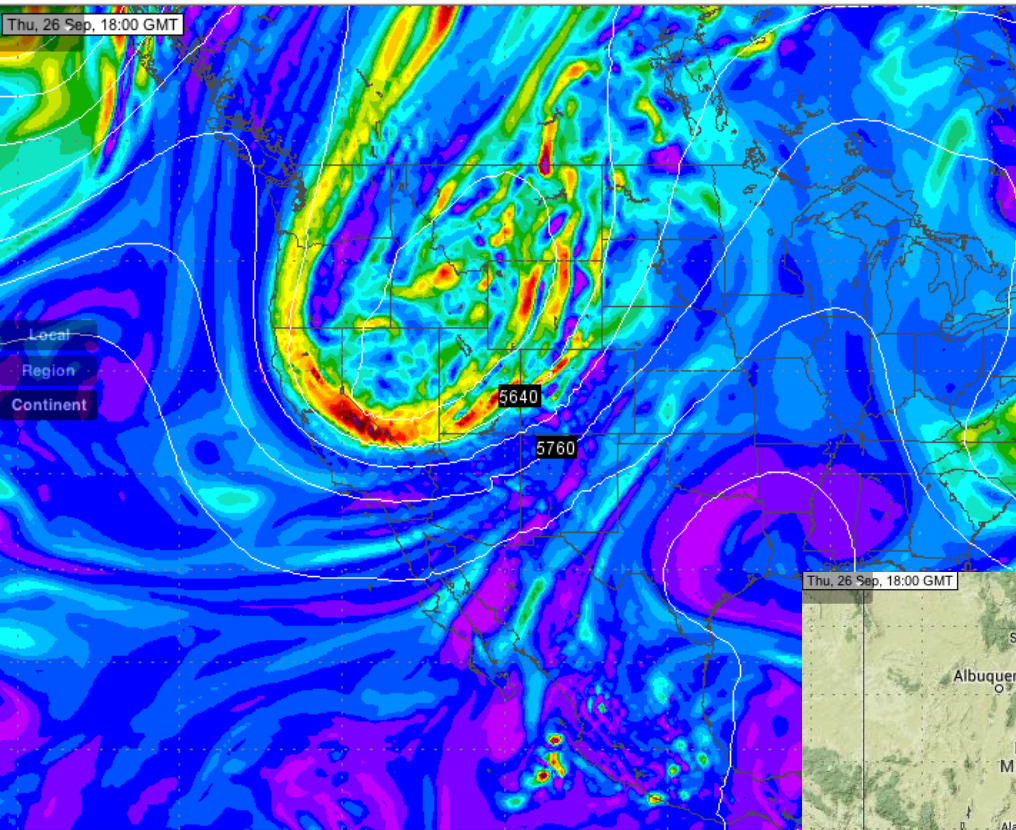
1 PM CDT



Wednesday: EC – mostly clear throughout domain



Thursday: EC – scattered/few clouds throughout domain



Summary

- Sunday: **Recommended No Fly Day**. Clouds will be ok for flight, but high winds may compel us to start a flight streak on Monday
- Monday/Tuesday (and beyond): **Likely Fly Days**. Low slowly moves eastward. Need to monitor coastal locations (Galveston/Smith Point) for clouds, upper level ridge takes control by mid-week with higher temps and clearer skies Wed/Thur

DISCOVER-AQ Air Quality Outlook

September 21, 2013

Bryan Duncan

Mariel Friberg

Bryan's expectations for coming week:

Northerly and northeasterly flow (i.e., continental air) should prevail over the upcoming week, so peak ozone could occur south and southwest of Houston.

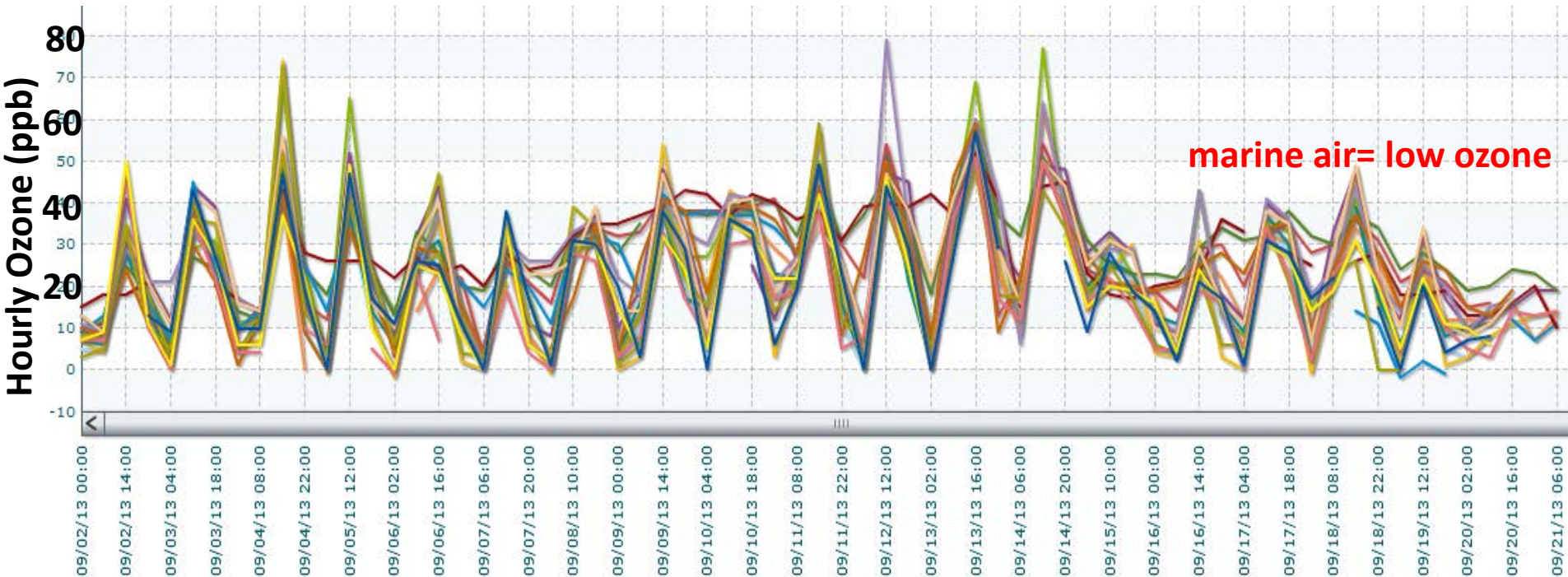
Winds should be light enough Monday-Thursday to allow some ozone to build in and downwind of Houston. Breezy on Sunday.

Agricultural fires may be less in the coming week due to the heavy rain over the Mississippi Valley yesterday and overnight.

Hourly Ozone (airnowtech.org)**

September 2nd – 20th

**** EVERY 7th 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.

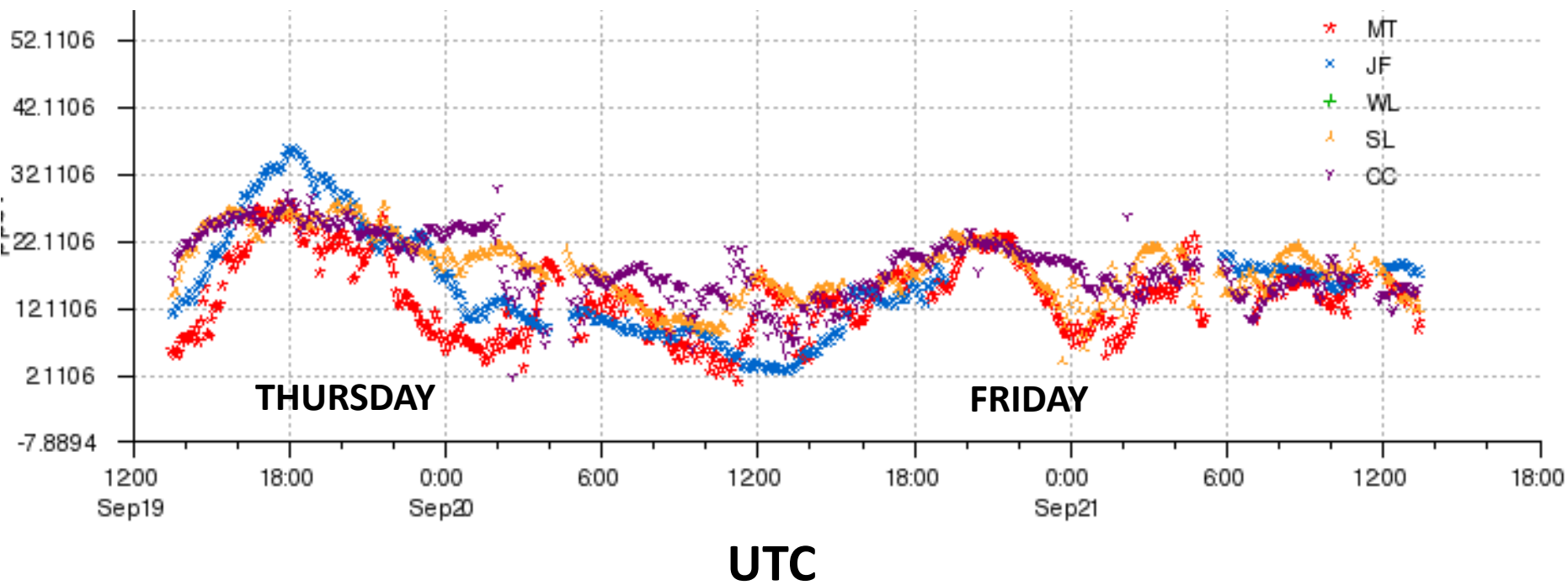
Currently, **five sites** have been set up in

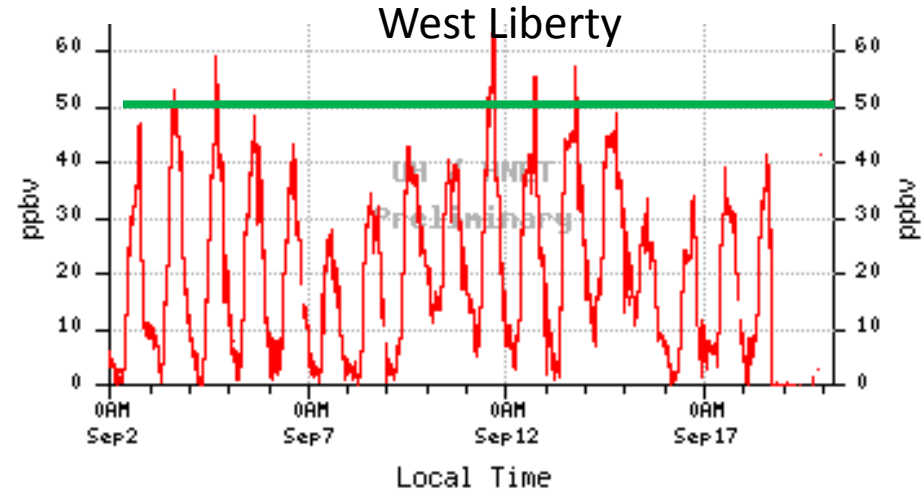
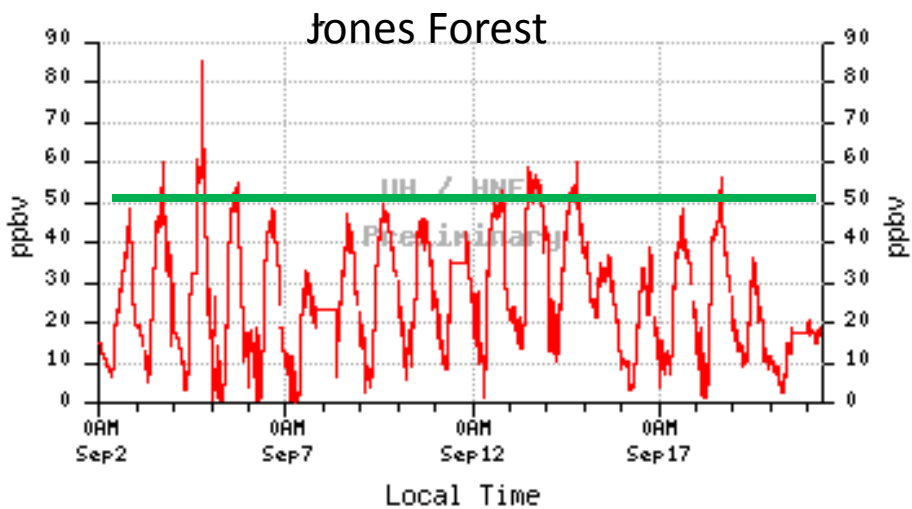
- **UH - Main Campus** (695)
- **Jones State Forest** (698)
- **West Liberty Airport** (699)
- **UH - Sugar Land** (696)
- **UH - Coastal Center** (697)

[More about this project.](#)



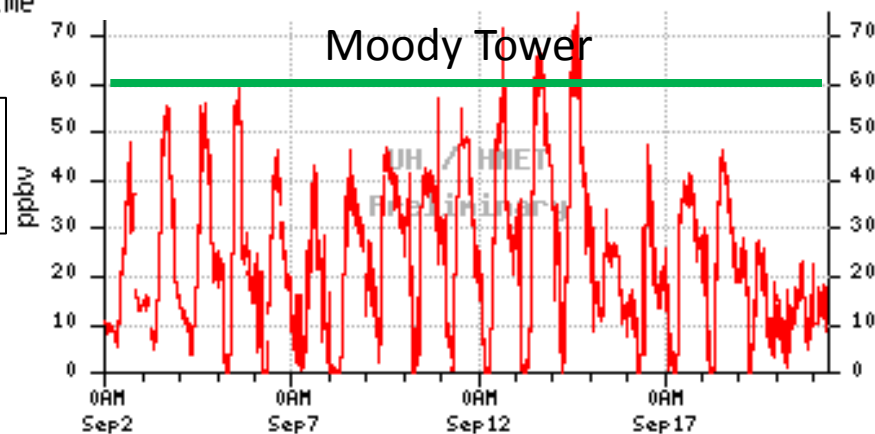
Ozone (ppbv)



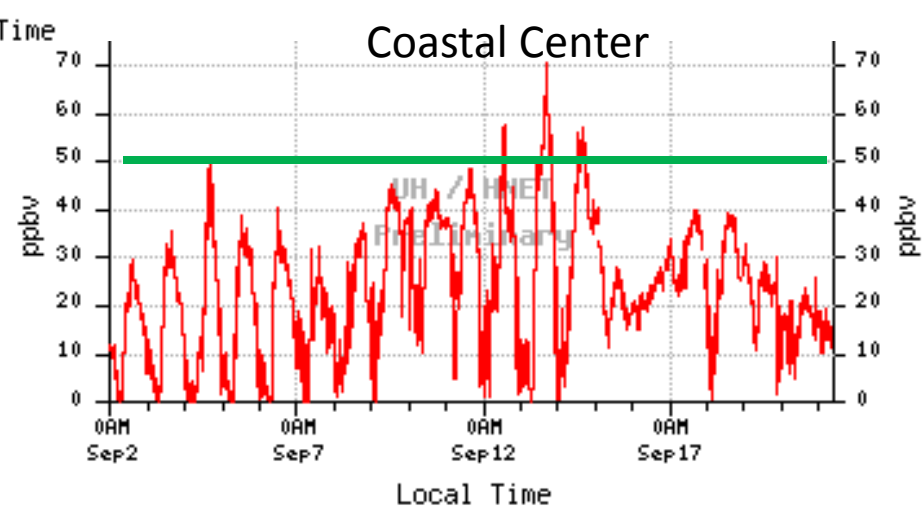
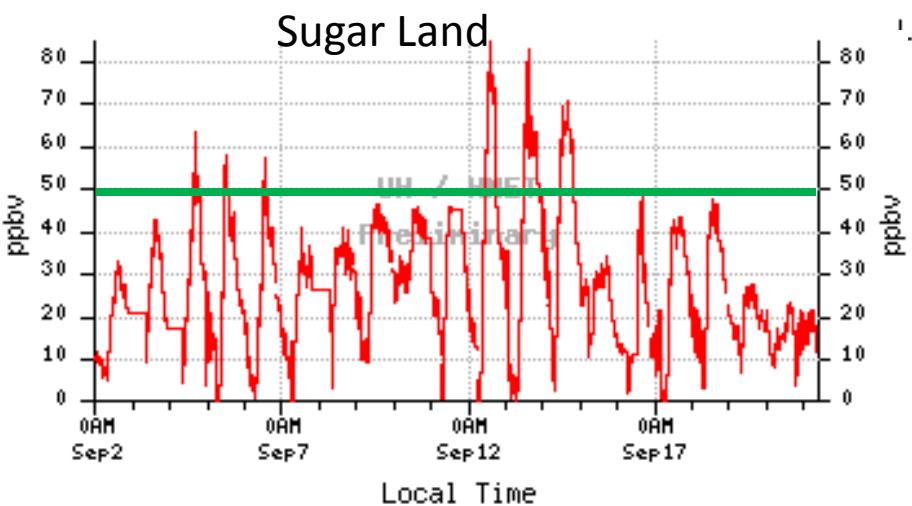


O₃ (ppbv) – 15 min avg
September 2nd – 20th

———— = 50 ppbv



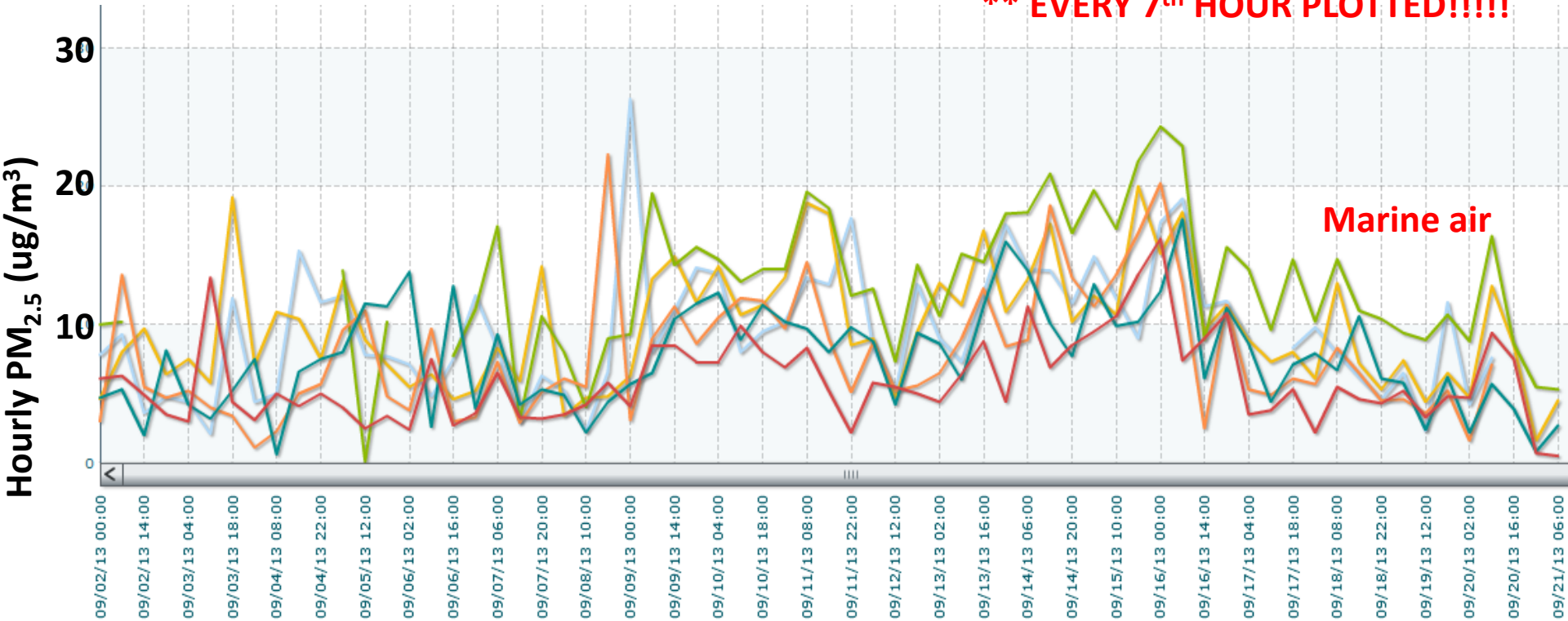
**Houston – Network of
Environmental Towers
(H-NET)**



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

September 2nd – 20th

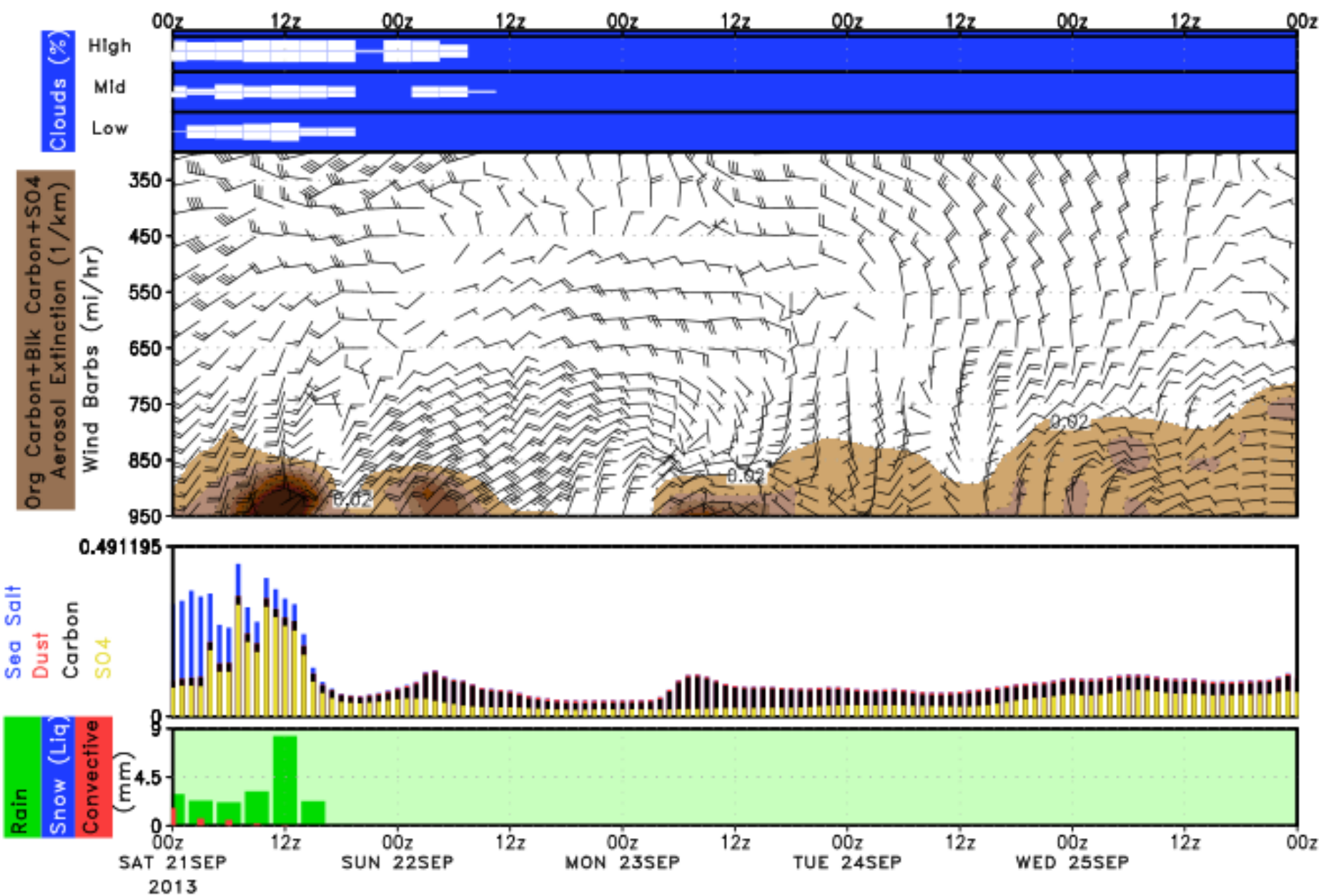
** EVERY 7th HOUR PLOTTED!!!!



- | | |
|--|---|
| Houston Aldine C8/PM2.5-88502 - 88502/1 Hr/3 | Clinton C403/PM2.5-88502 - 88502/1 Hr/3 |
| Houston Deer Park C35/PM2.5-88502 - 88502/1 Hr/3 | Seabrook Friendship Park C45/PM2.5-88502 - 88502/1 Hr/3 |
| Conroe Relocated C78/PM2.5-88502 - 88502/1 Hr/3 | Galveston Airport C1034/PM2.5-88502 - 88502/1 Hr/3 |

CONROE

Low AOD expected.



GALVESTON

