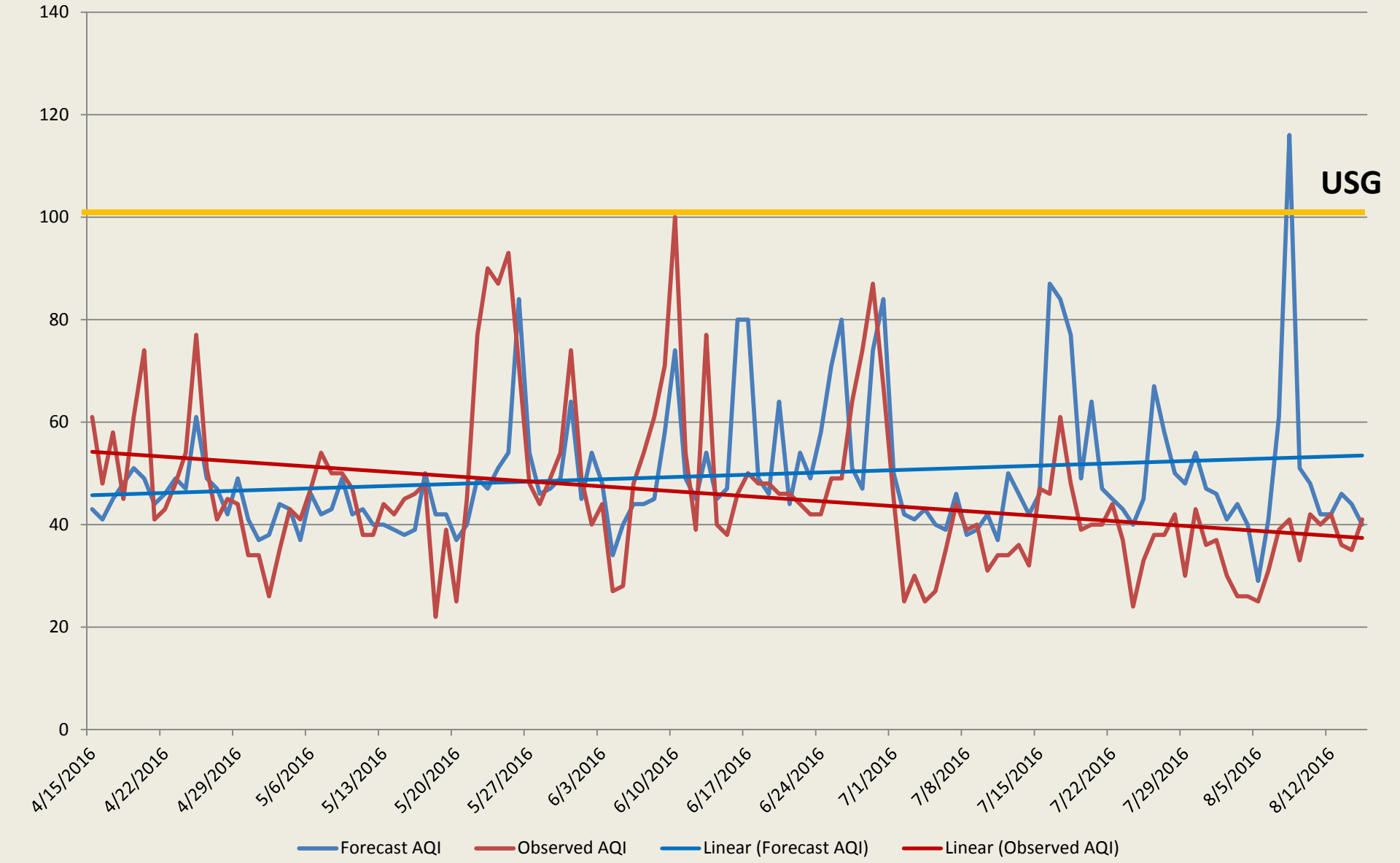
2016 NOAA Model Performance in Alabama

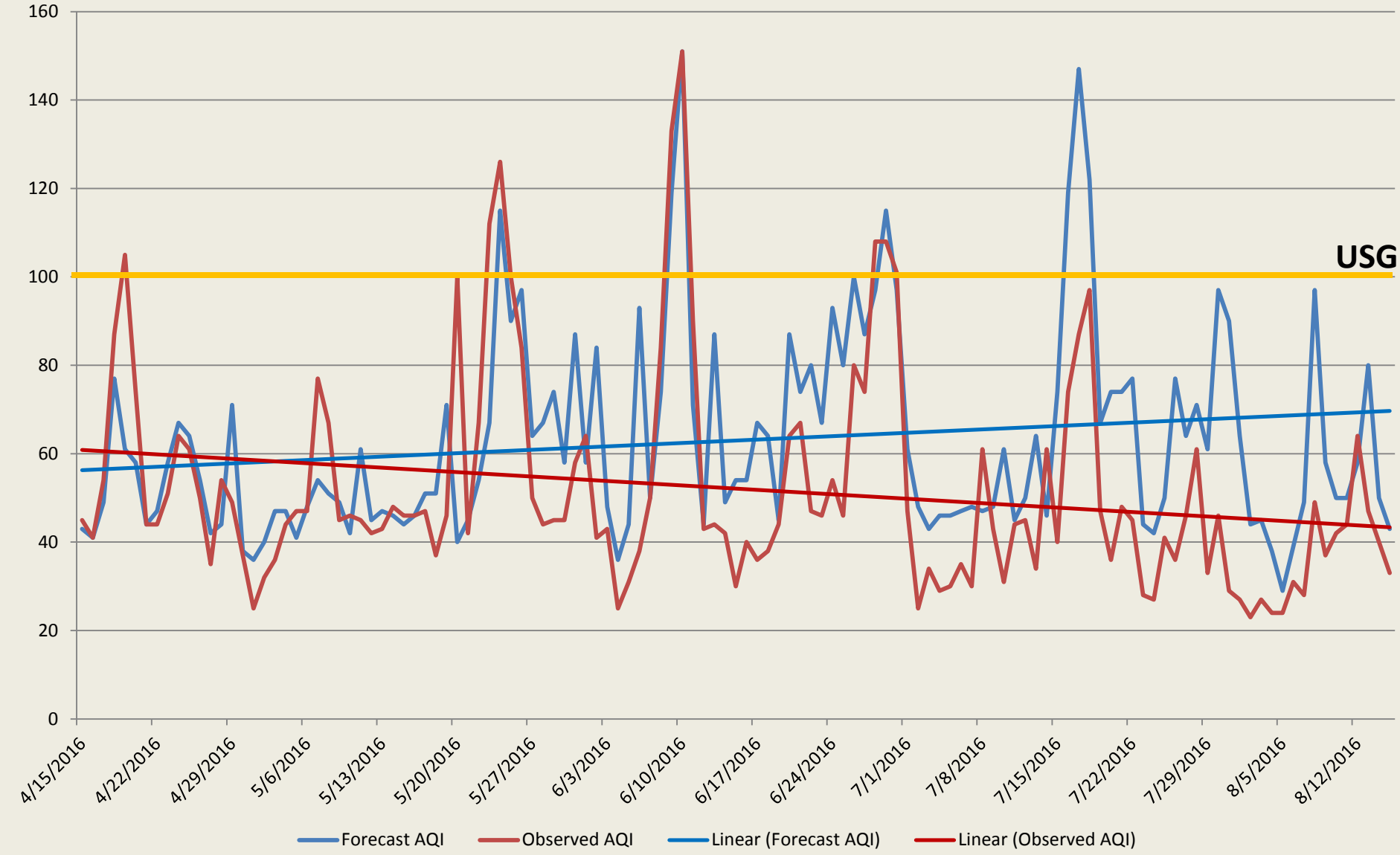
Megan Travis
Michael Leach
Geoff Healan

ADEM Alabama Department of Environmental Management

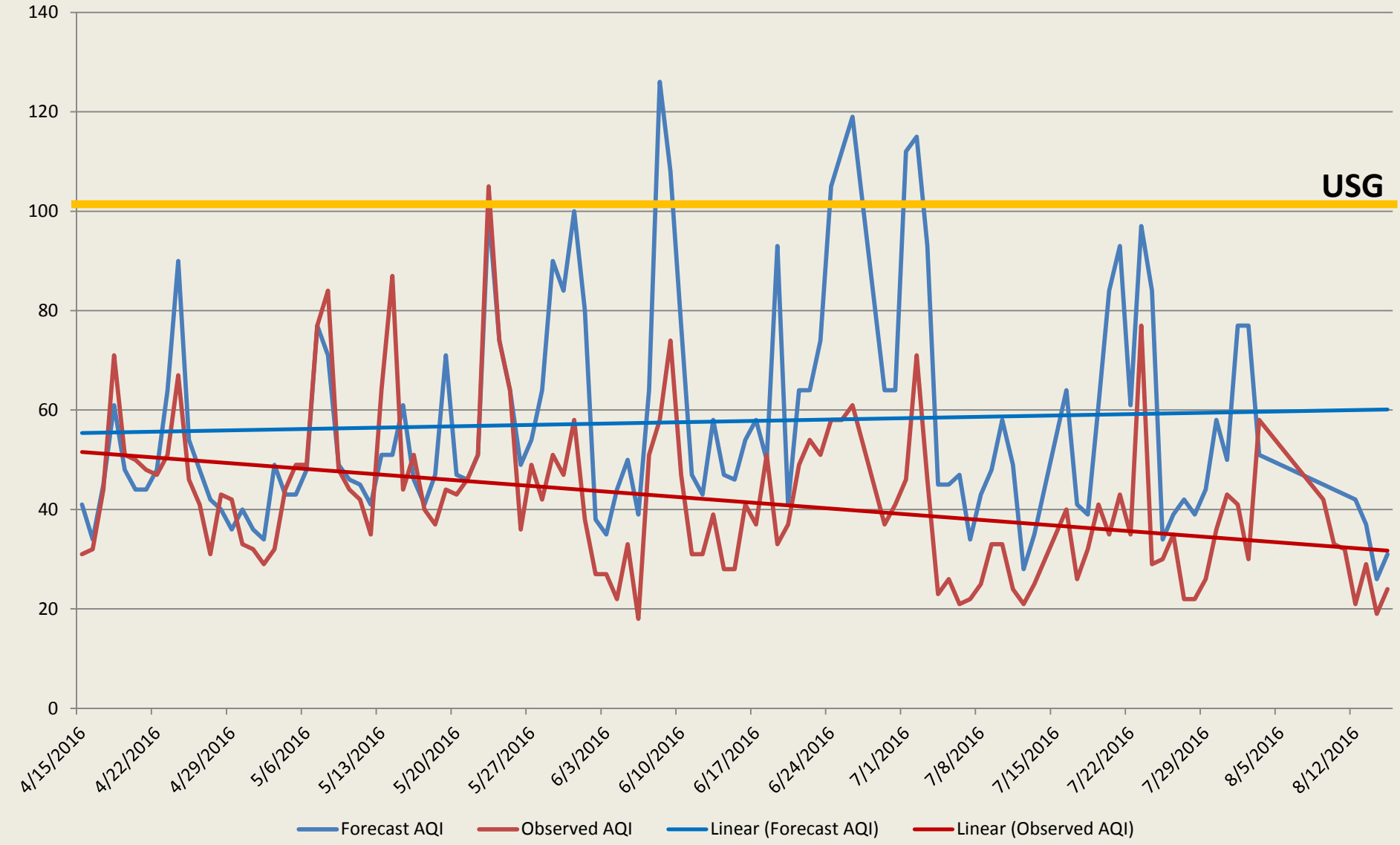
Huntsville Forecast vs. Observed



Birmingham Forecast vs. Observed



Mobile Forecast vs. Observed



Model Statistics

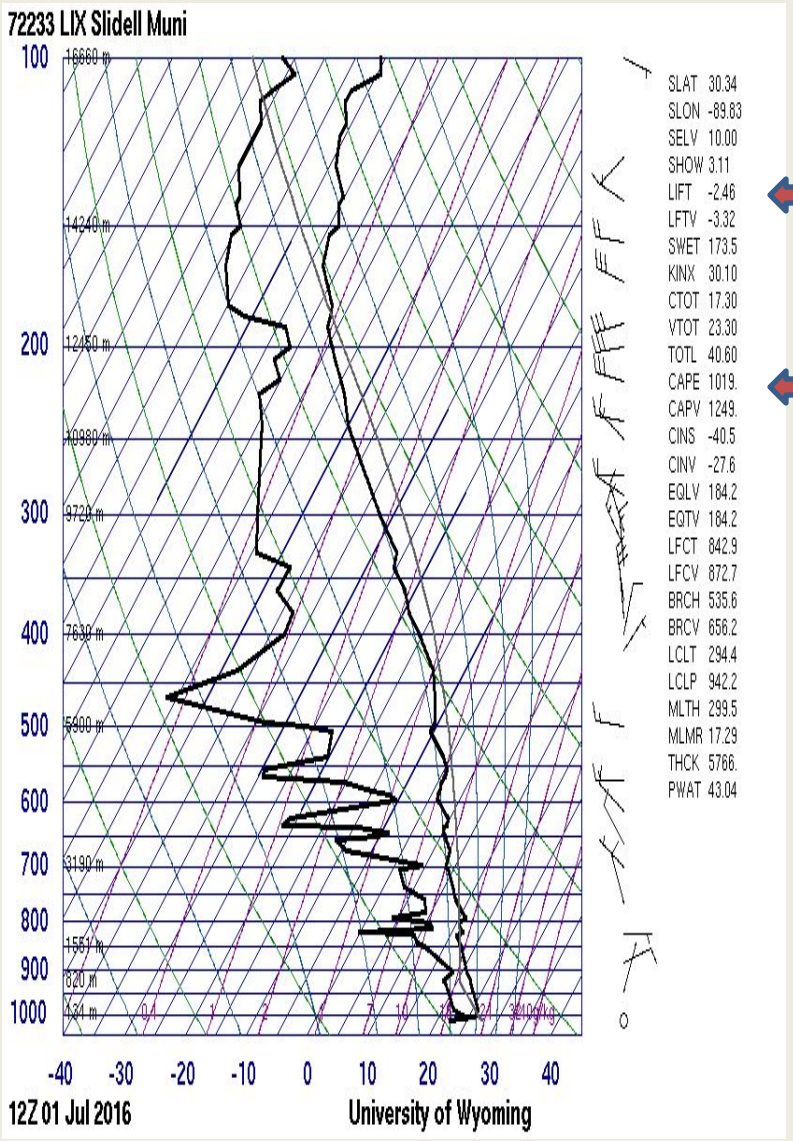
Forecast City	NOAA Model Percent Correct (Color Code)	NOAA Model Bias (AQI)	NOAA FAR
Huntsville	76%	1.08	0%
Huntsville (PM)	70%		0%
Birmingham	66%	1.81	43%
Mobile	74%	1.89	100%

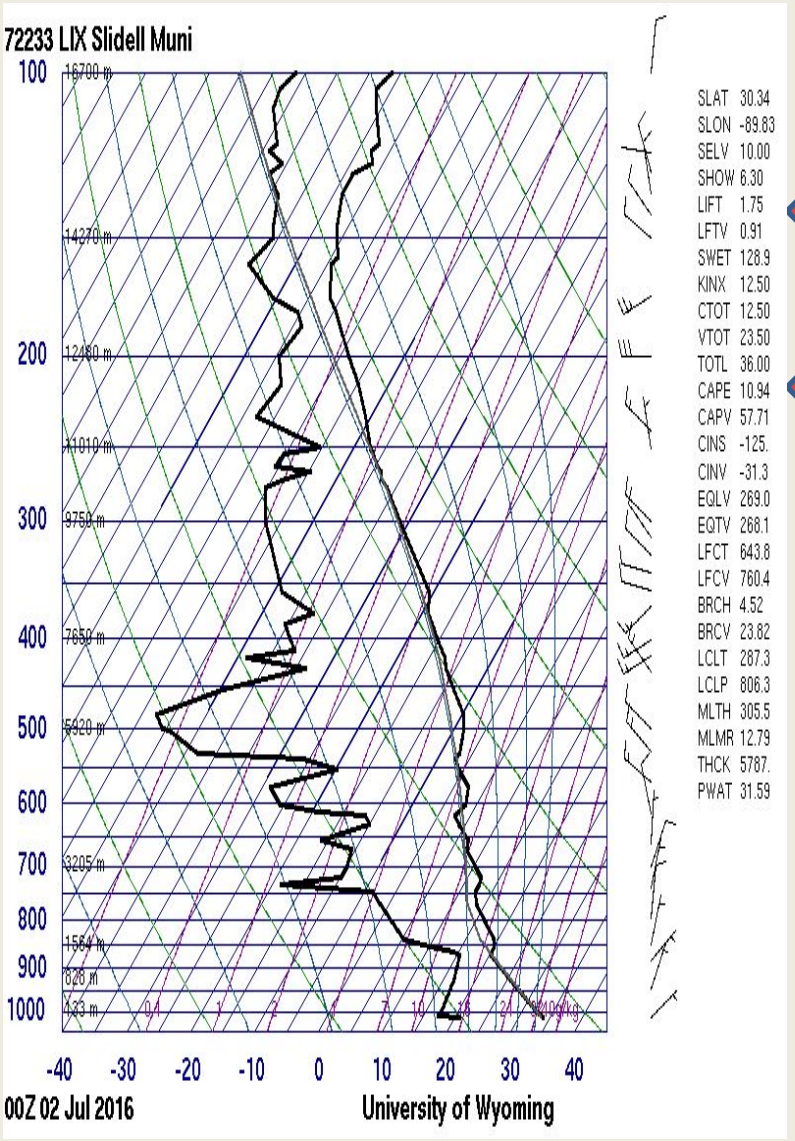
Model Statistics 2015 vs. 2016

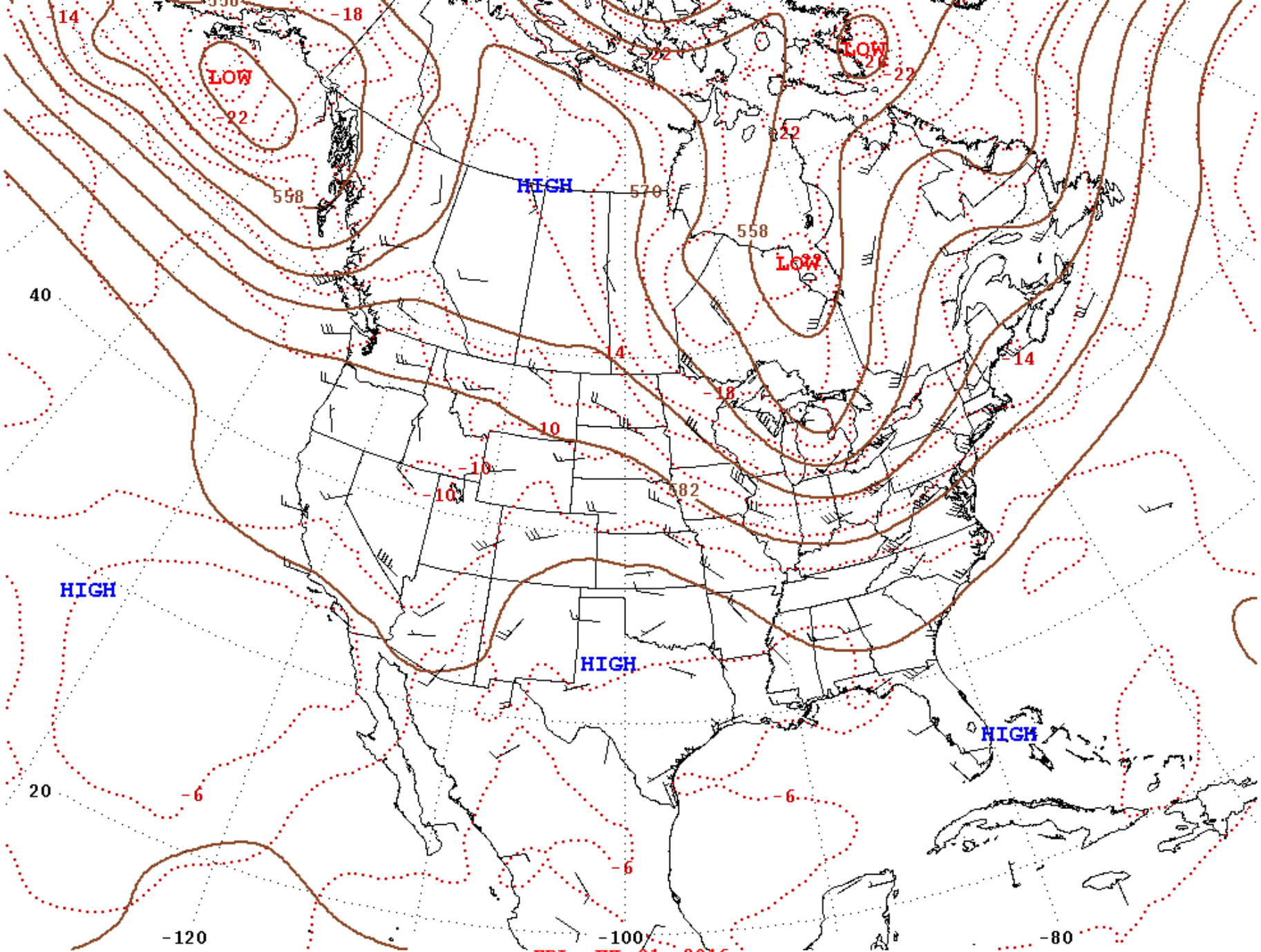
Forecast City	NOAA Model Percent Correct (Color Code)	NOAA Model Bias (AQI)	NOAA FAR
Huntsville (2016)	76%	1.08	0%
Huntsville (2015)	87%	0.64	100%
Birmingham (2016)	66%	1.81	43%
Birmingham (2015)	83%	1.71	50%
Mobile (2016)	74%	1.89	100%
Mobile (2015)	74%	2.83	100%

Case Study July 1, 2016
Mobile, Alabama

NOAA Forecast AQI for July 1 was 112

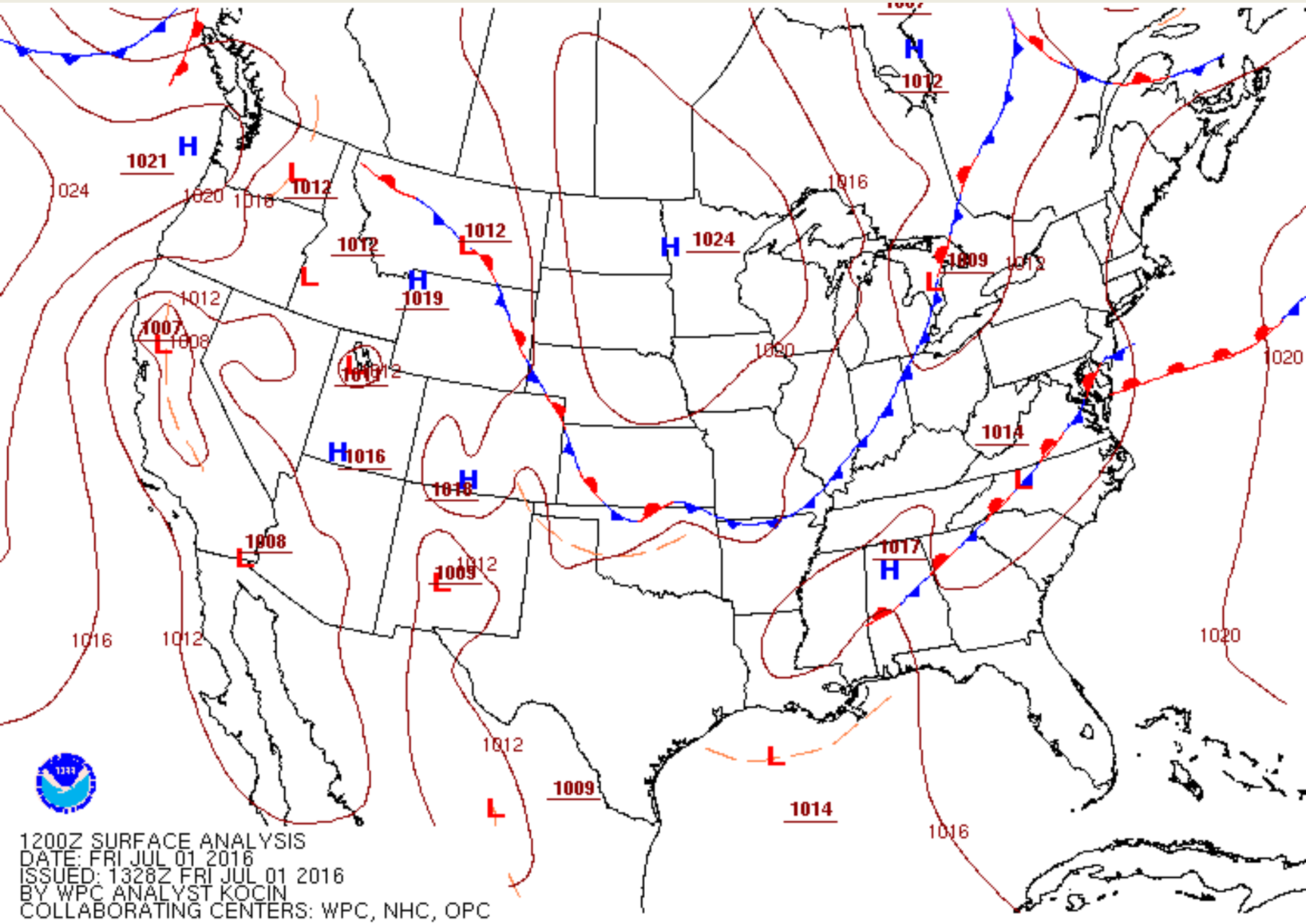


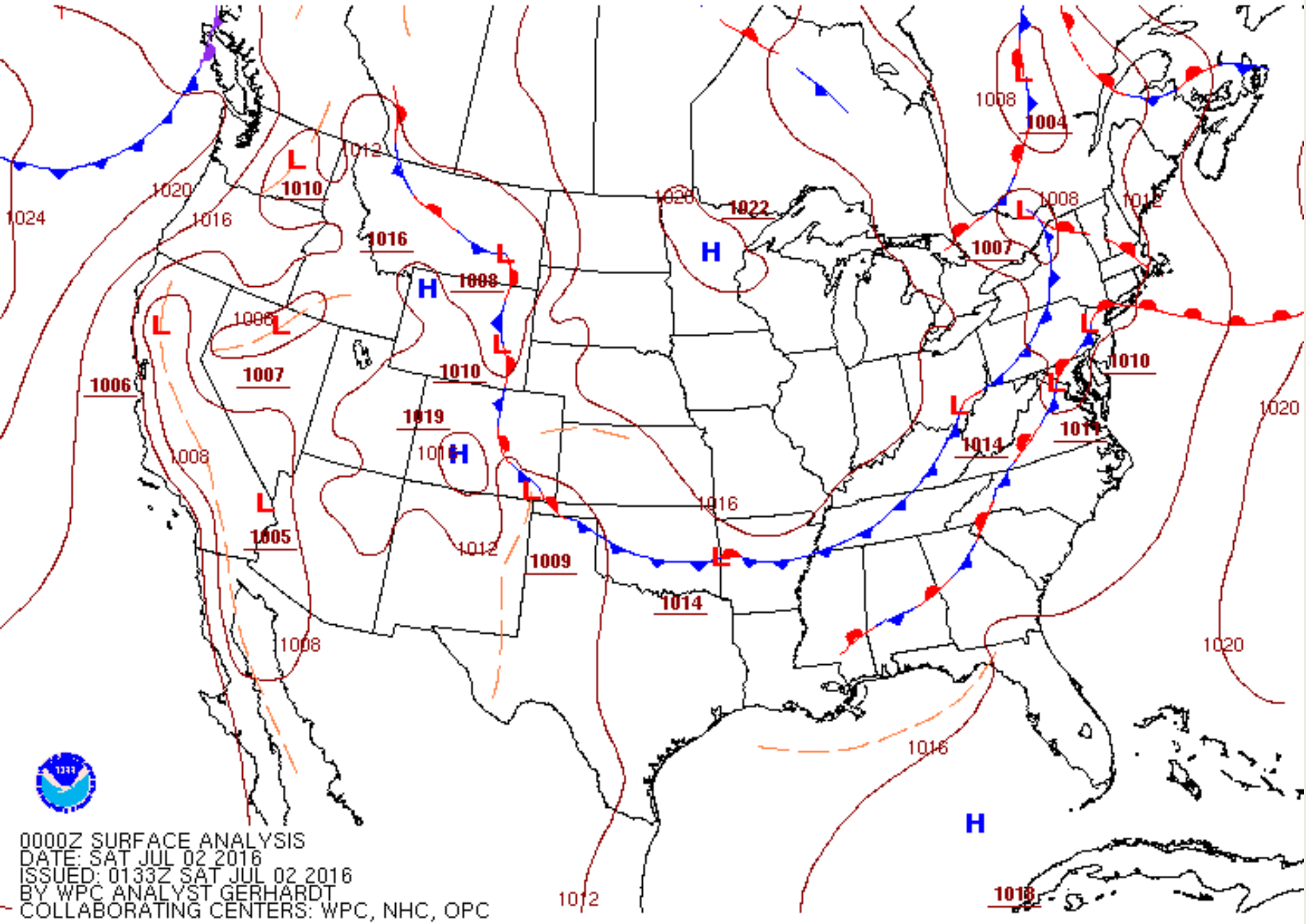


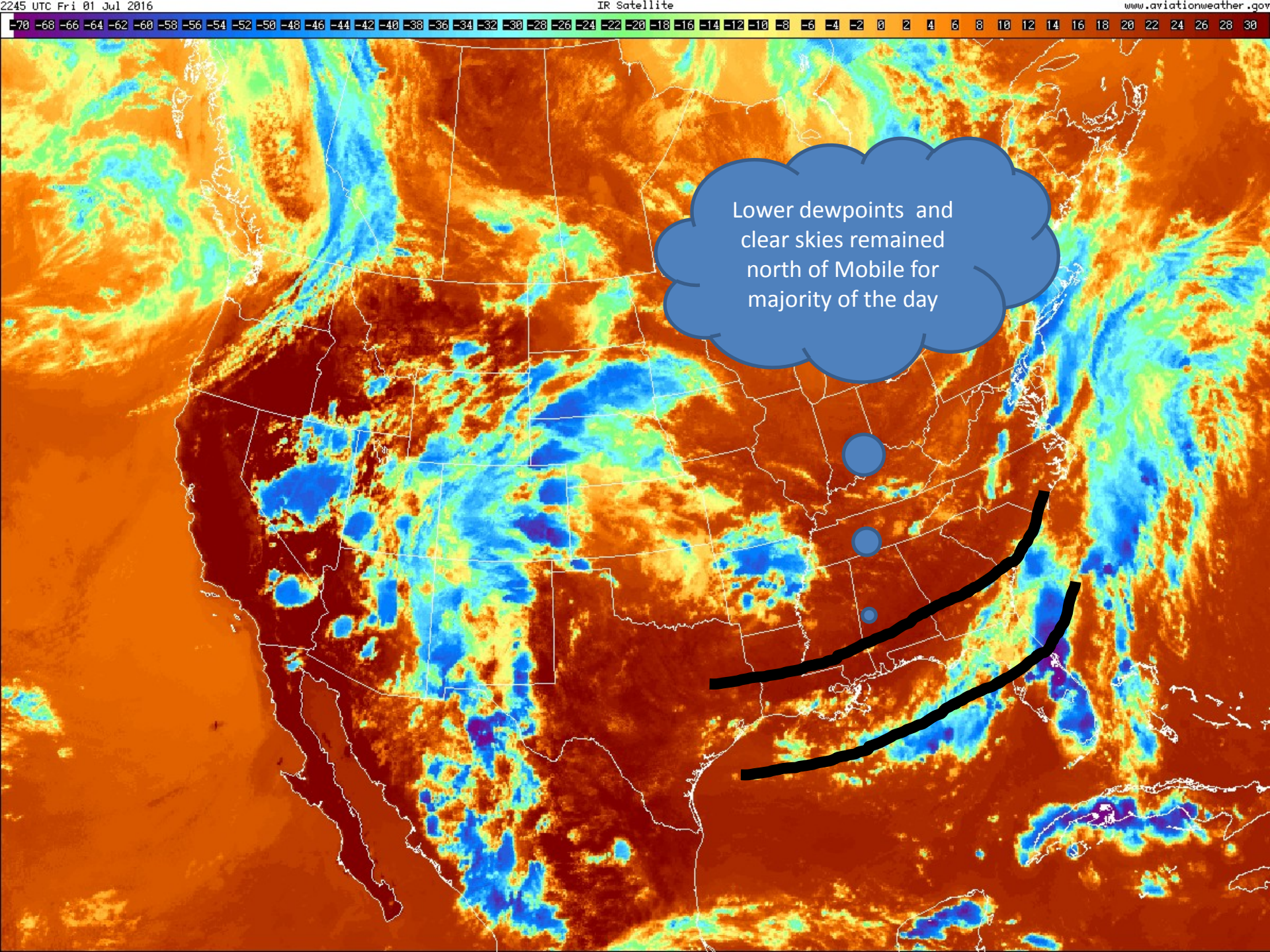


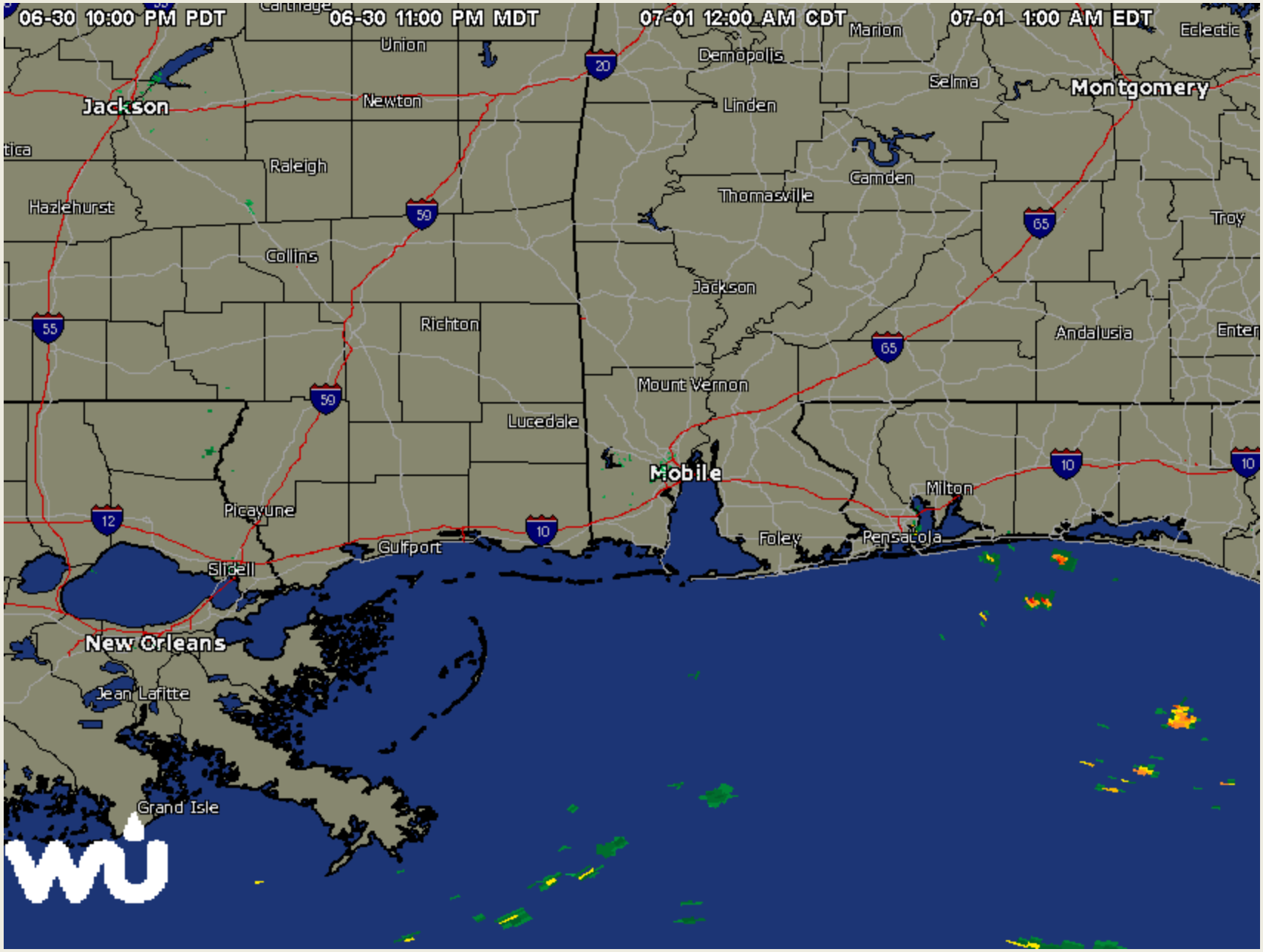
FRI, JUL 01, 2016

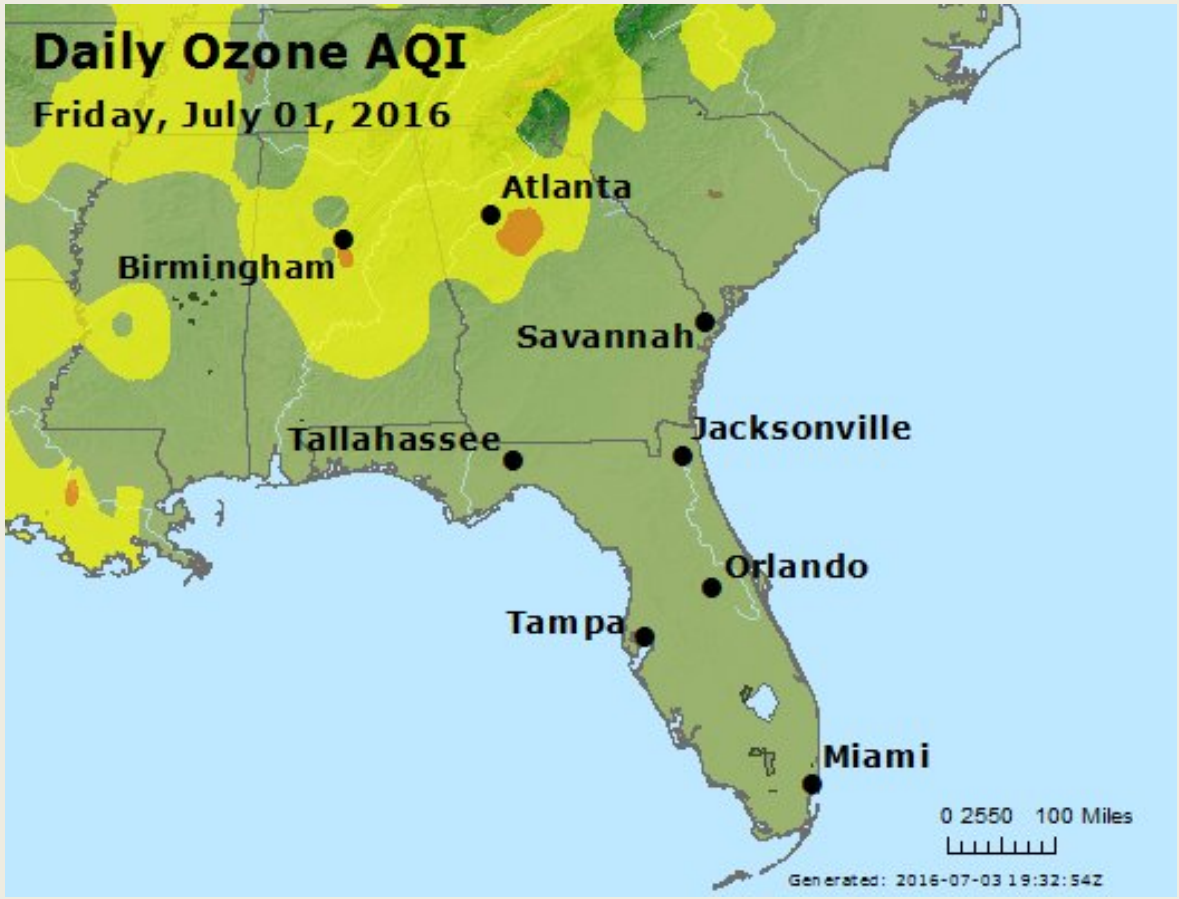
500-Millibar Height Contours at 7:00 A.M. E.S.T.


1200Z SURFACE ANALYSIS
DATE: FRI JUL 01 2016
ISSUED: 1328Z FRI JUL 01 2016
BY WPC ANALYST KOCIN
COLLABORATING CENTERS: WPC, NHC, OPC


0000Z SURFACE ANALYSIS
DATE: SAT JUL 02 2016
ISSUED: 0133Z SAT JUL 02 2016
BY WPC ANALYST GERHARDT
COLLABORATING CENTERS: WPC, NHC, OPC


2245 UTC Fri 01 Jul 2016
IR Satellite
www.aviationweather.gov
-70 -68 -66 -64 -62 -60 -58 -56 -54 -52 -50 -48 -46 -44 -42 -40 -38 -36 -34 -32 -30 -28 -26 -24 -22 -20 -18 -16 -14 -12 -10 -8 -6 -4 -2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
Lower dewpoints and clear skies remained north of Mobile for majority of the day


06-30 10:00 PM PDT
06-30 11:00 PM MDT
07-01 12:00 AM CDT
07-01 1:00 AM EDT
Union
Marion
Eclectic
Demopolis
Selma
Montgomery
Jackson
Newton
Linden
Raleigh
Camden
Hazlehurst
Thomasville
Troy
Collins
Jackson
Richton
Andalusia
Mount Vernon
Lucedale
Mobile
Milton
Picayune
Foley
Pensacola
Gulfport
Slidell
New Orleans
Jean Lafitte
Grand Isle
20
59
65
55
10
12



Agency	City	Date	NOAA AQI	Observed AQI
Mississippi DEQ	Mississippi Gulf Coast	7/1/2016	112	46
Florida DEP	Pensacola	7/1/2016	101	44
ADEM	Mobile	7/1/2016	112	46

Conclusions

- The NOAA model did a decent job of forecasting for Alabama over the summer of 2016. Although not as well as 2015.
- Typically as you progress farther south in Alabama, the forecast tends to be less accurate as you approach the Gulf of Mexico.
- We believe there needs to be more emphasis placed on dew points and land/sea breeze interaction along the coast.