Review of October 8, 2014 Storm in Northern Harris County, TX

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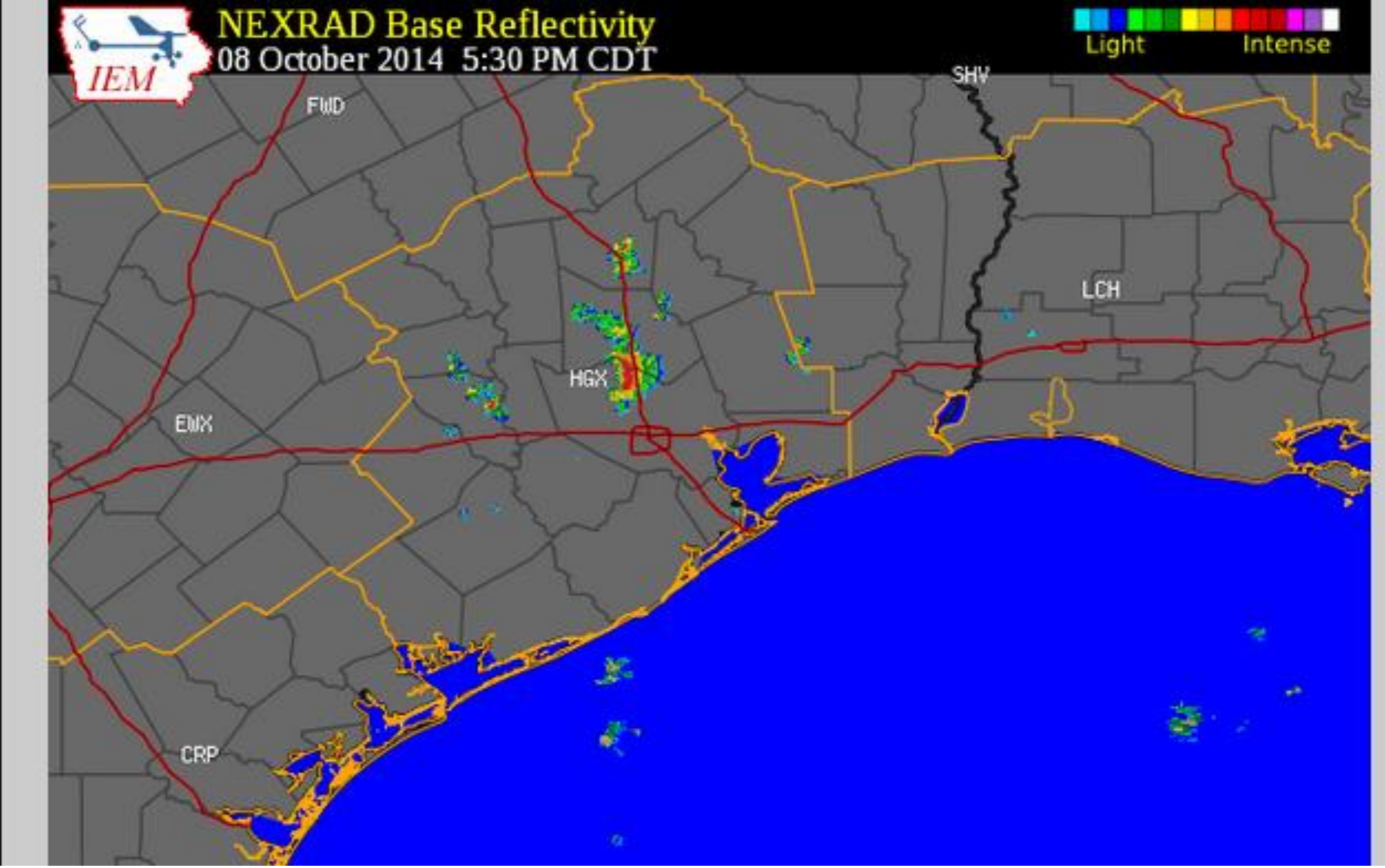
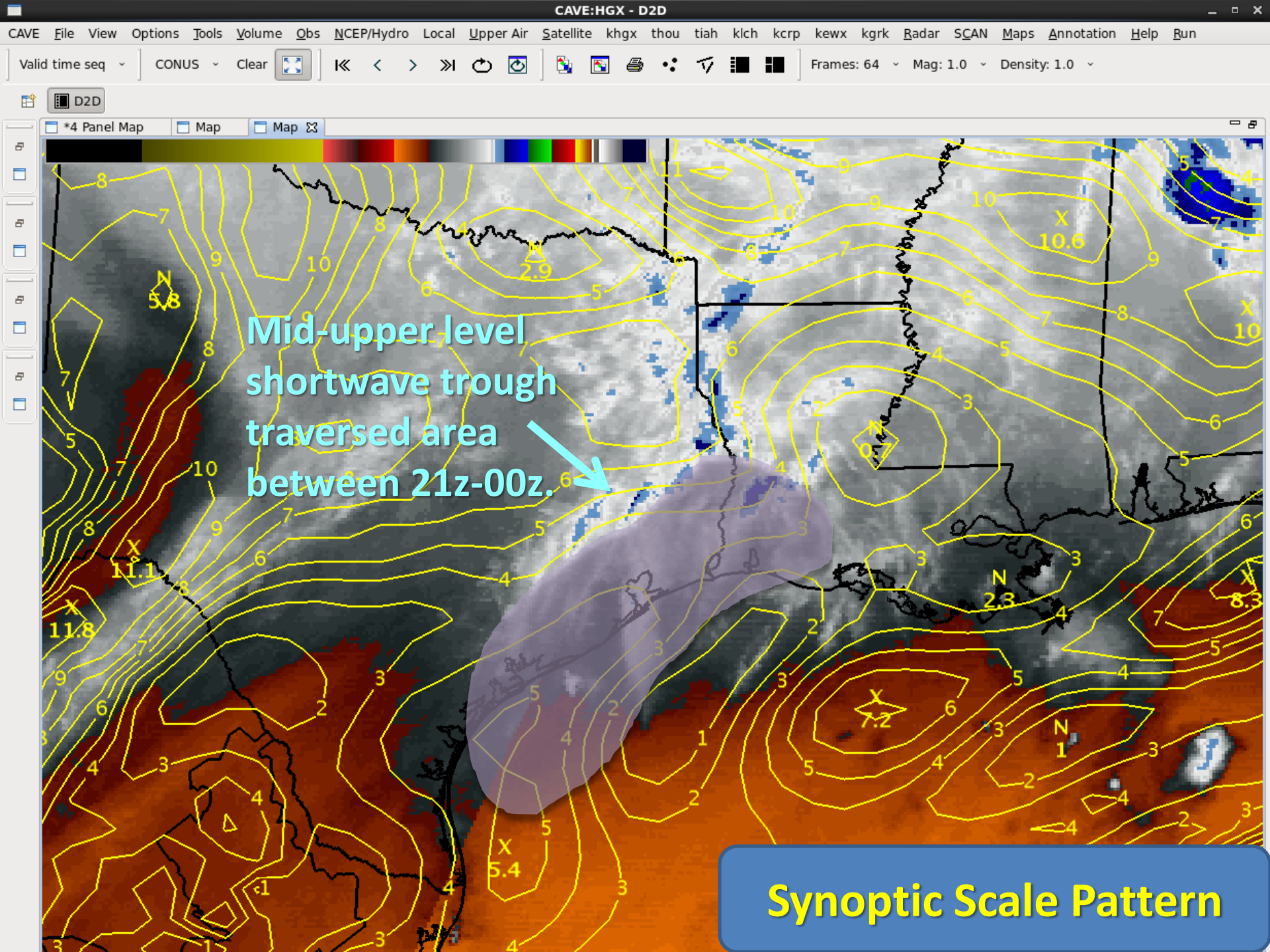
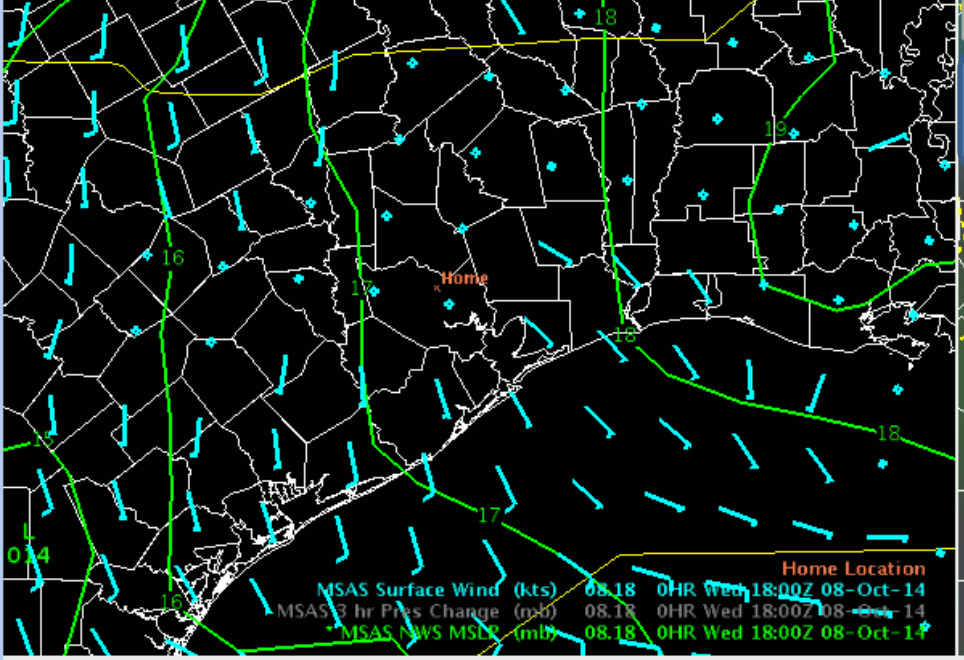
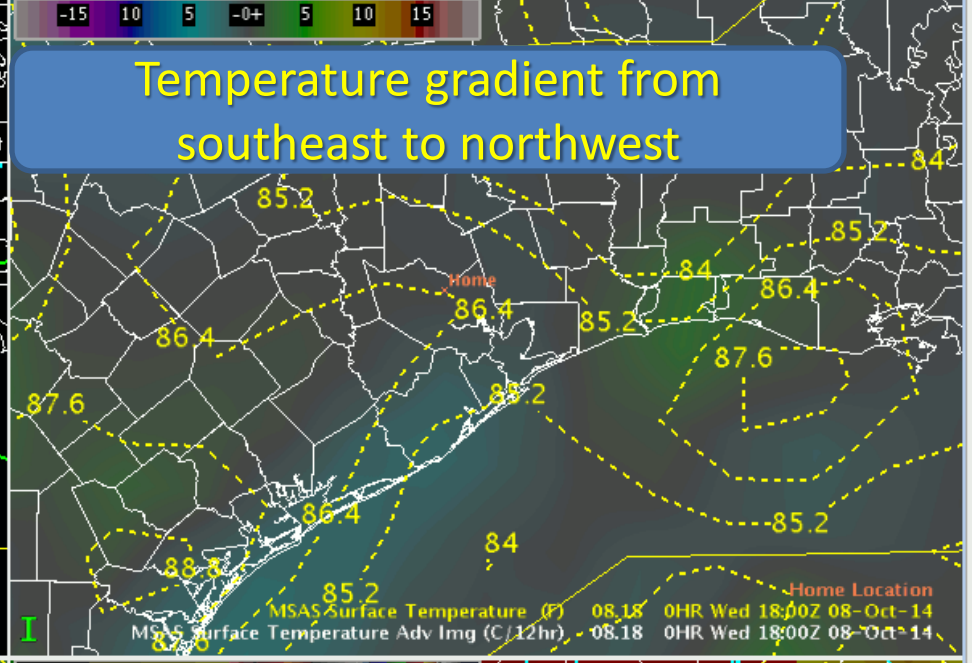


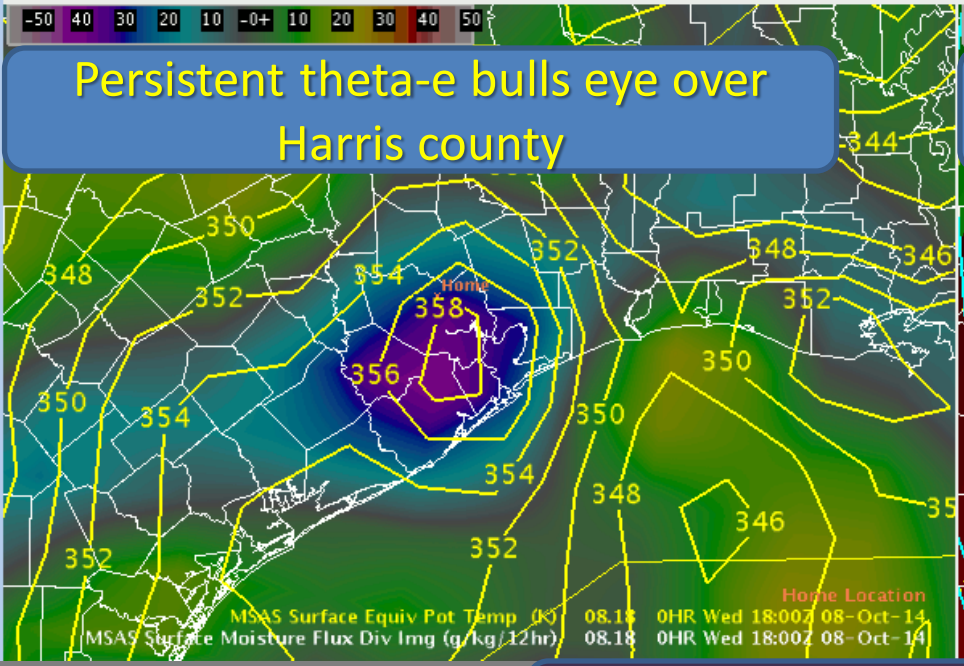
A persistent, strong thunderstorm impacted northern Harris county, between Houston Intercontinental Airport (KIAH) and David Wayne Hooks Airport (KDWH) between 4:00 and 7:00 PM (21Z-00Z). Click on the following link for time lapse of this storm:

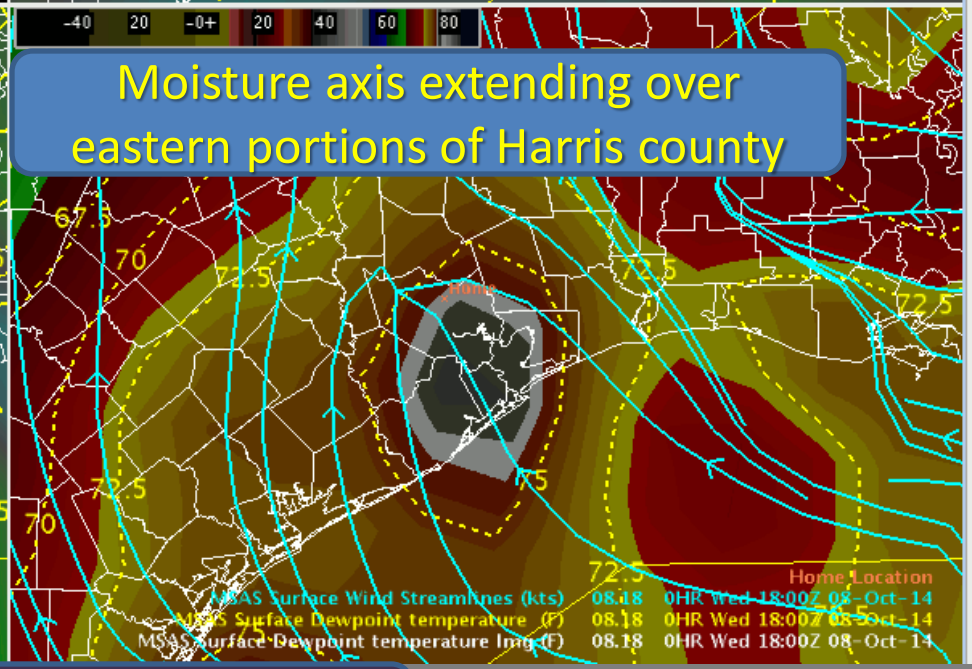
Storm Time Lapse


CAVE:HGX - D2D
CAVE File View Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Annotation Help Run
Valid time seq
CONUS
Clear
Frames: 64
Mag: 1.0
Density: 1.0
D2D
*4 Panel Map
Map
Map
Mid-upper level shortwave trough traversed area between 21z-00z.
Synoptic Scale Pattern



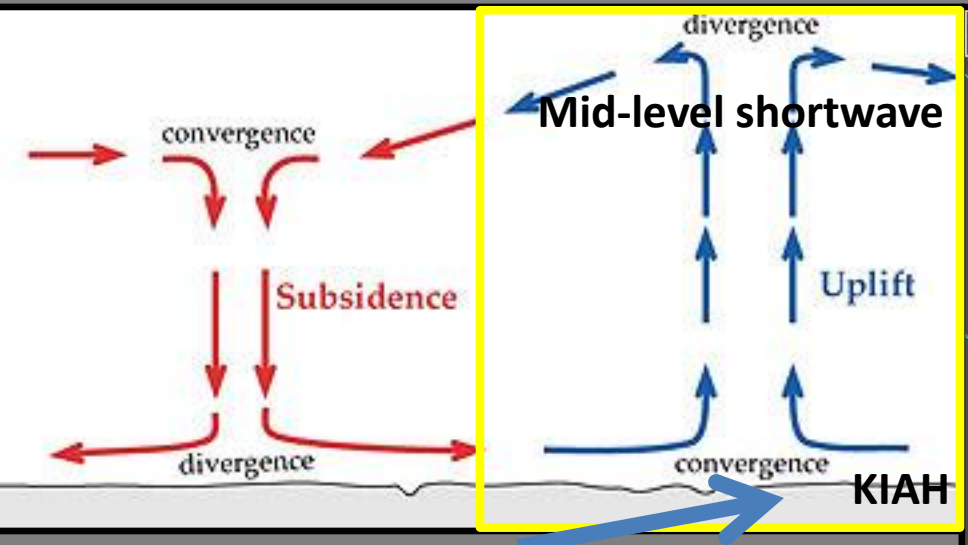


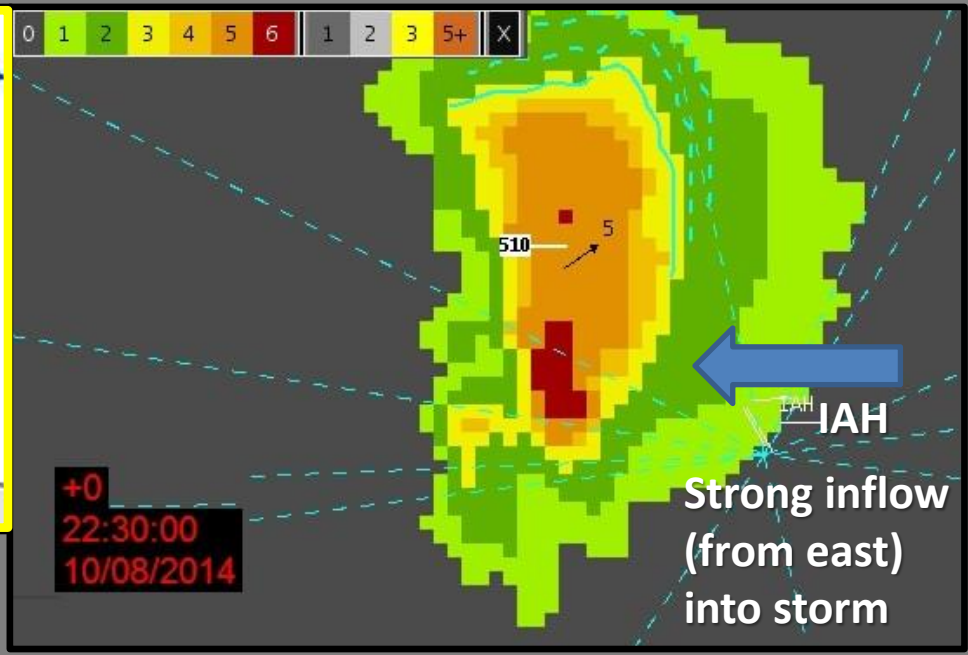




Mesoscale Pattern

KIAH 090053Z 13009KT 10SM FEW025 SCT050 BKN250 26/23 A3000 AO2 SLP157 T02610233
KIAH 082353Z 12013KT 10SM FEW025 SCT070 BKN250 27/23 A2998 AO2 SLP152 CB DSNT N 60006 T02670233 10322 20256 55001
KIAH 082253Z COR 13013KT 10SM FEW030 SCT045 BKN250 28/23 A2997 AO2 CB DSNT NW SLP149 T02830233
KIAH 082153Z 11012KT 10SM FEW035 SCT044 BKN250 28/23 A2997 AO2 TSE2058RAE04 SLP148 TS MOV N CB DSNT NW P0000 T02830233
KIAH 082059Z 00000KT 10SM -RA SCT030 BKN040 BKN250 26/23 A2998 AO2 TSE58 TS MOV N CB DSNT NW P0000
KIAH 082053Z 28003KT 10SM TSRA BKN035CB BKN250 26/23 A2999 AO2 TSB22RAB15 SLP153 OCNL LTGIC TS W-NW MOV N PK WND 24027/17
KIAH 082022Z 25012G27KT 10SM -TSRA BKN035CB BKN250 27/22 A3000 AO2 PK WND 24027/2017 TSB22RAB15 OCNL LTGIC TS W-NW MOV N P
KIAH 082018Z 24020G27KT 10SM -RA BKN035CB BKN250 29/23 A3000 AO2 PK WND 24027/2017 RAB15 WSHFT 15 CB W-NW MOV N P0000
KIAH 081953Z 11011KT 10SM BKN036CB BKN250 30/23 A2999 AO2 SLP154 CB SW-W MOV N VCSH SW-W T03000228
KIAH 081853Z 15005KT 10SM BKN035 BKN250 30/23 A3001 AO2 SLP162 TCU SHRA DSNT SW T03000228





Strong upper level divergence accompanying a mid-level shortwave trough, coupled with very unstable conditions, resulted in strong uplift. This caused winds at KIAH to increase to 15 to 20 knots from the east-southeast (storm inflow) during this event as storms developed between KIAH and KDWH.

One-hour lightning plots ending 22, 23 & 00Z

What can we learn from this event?

1. Although convective season normally runs through end of September, it is not uncommon for convective activity to extend into October. In this case, temperatures climb into the lower 90s across a large area of our air space.
2. Any thunderstorm development near the airport can have a profound impact on departures and arrivals. In this case, thunderstorms persisted for several hours (much longer than was anticipated). This resulted in delays that could have been prevented as FAA agencies had to switch to different runway configuration.
3. Thunderstorm development west of KIAH airport may yield strong easterly (inflow) winds at the airport not associated with the sea-breeze. Again, these winds may be short-lived or last for several hours.