



“IFR” CASE REVIEW 11/13/2008

Example of Subtle Observation Clues and
“Good” MOS Guidance to Clear Stratus Decks
in November

Dave Tucek

Overview

- IFR cigs and vsby following rain in November
- Would cigs/vsby lift and skies clear before next system clouds arrive?
- Observations support guidance lending to increase confidence of clearing
 - Confidence in MOS raised given observed data and application of simple concepts
- Assume Perfect TAF and DLAC concepts applied

Purpose of Study

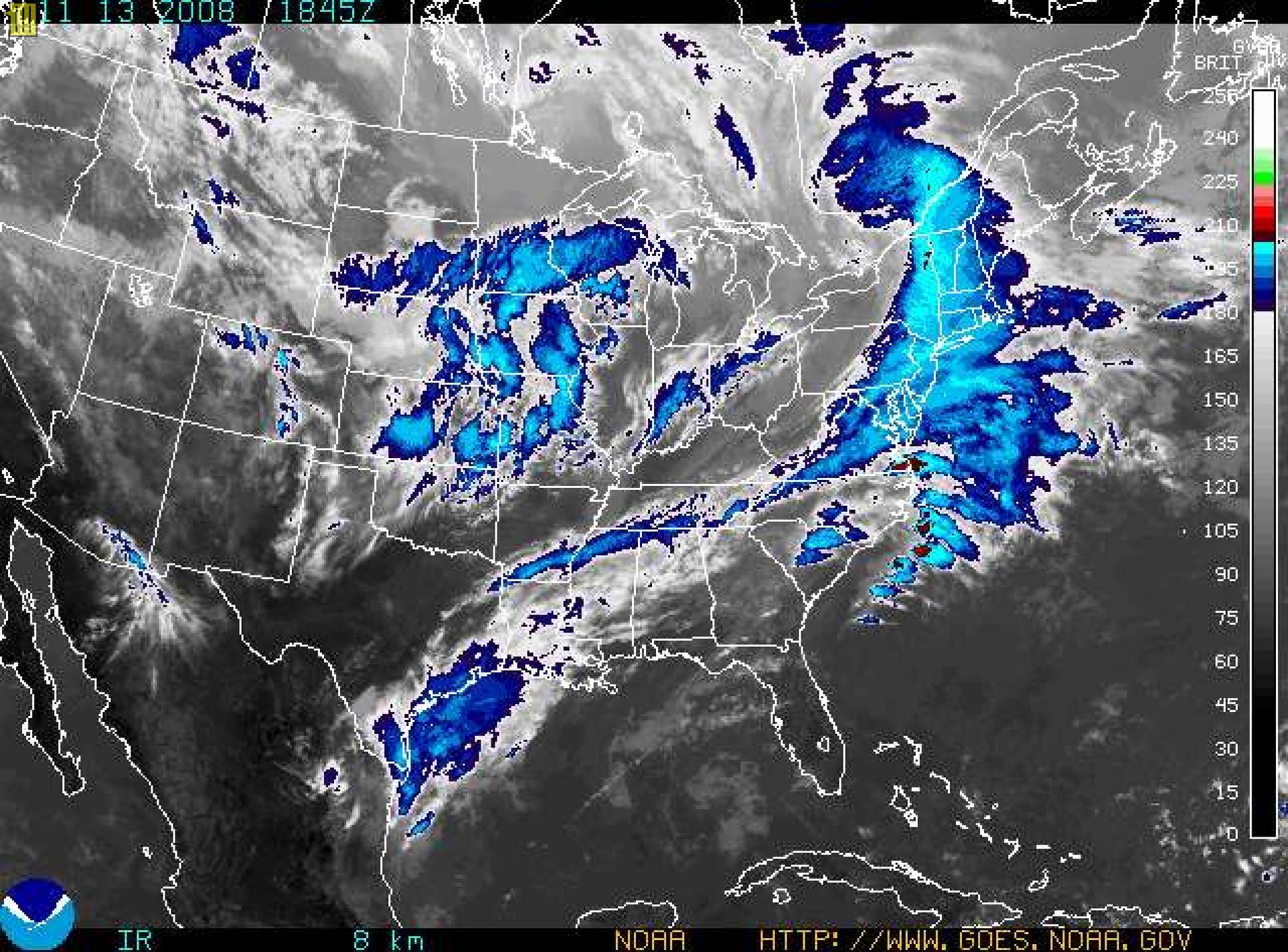
- MVFR and IFR stratus or stratocumulus decks often difficult to clear during cool season
 - Inversion persists
 - No mechanism to scour out low altitude moisture
- MOS guidance often clears decks well before clearing actually occurs
- Subtle observational clues and basic meteorology may support / refute guidance trends of clearing
- Let's see what happens in this case...



What We'll Review

- Antecedent Conditions (Recent Weather)
 - BUFKIT soundings
 - ACARS data
 - Abbreviated
 - MOS
 - TAFs
 - OBS
- 

11 13 2008 1845Z



IR

8 km

NOAA

[HTTP://WWW.GOES.NOAA.GOV](http://www.goes.noaa.gov)

- Observations
 - Radar
 - Satellite
 - Snow Cover
 - Surface Weather...
 - Observed Precip
- Forecasts
 - Local
 - Graphical
 - Aviation
 - Marine
 - Hurricanes
 - Severe Weather
 - Fire Weather
- Text Messages
 - By State
 - By Message Type
 - National
- Forecast Models
 - Numerical Models
 - Statistical Models...
- Climate
 - Past Weather
 - Predictions
- Weather Safety
 - Weather Radio
 - Hazard Assmt...
 - StormReady / TsunamiReady
- Education/Outreach
- Information Center
 - Tsunamis
 - Publications...
- Contact Us
 - FAQ
 - Comments...

Navigation tabs: Images, Download, About NWS Precip Analysis, Other Useful Information, Survey & Feedback, Regional / RFC Precip Data

Indiana: 11/13/2008 1-Day Observed Precipitation
Valid at 11/13/2008 1200 UTC - Created 11/20/08 22:10 UTC

Legend: Inches (0.01 to 10)

Map controls: Topo, Pcpn Amount, Counties, Rivers, States, Highway/City, RFC Boundary

1. Timeframe: Current Data, Archive: Month/Year, Archive: Daily
Year: 2008, Month: November, Day: 13

2. Product:

3. Location: States, NWS RFC/Regions, NWS WFOs
List: Florida, Georgia, Idaho, Illinois, Indiana

4. Units: English, Metric

Buttons: Update URL for Bookmarking, Print/Save Map, Zoom Out to CONUS, Missing Data

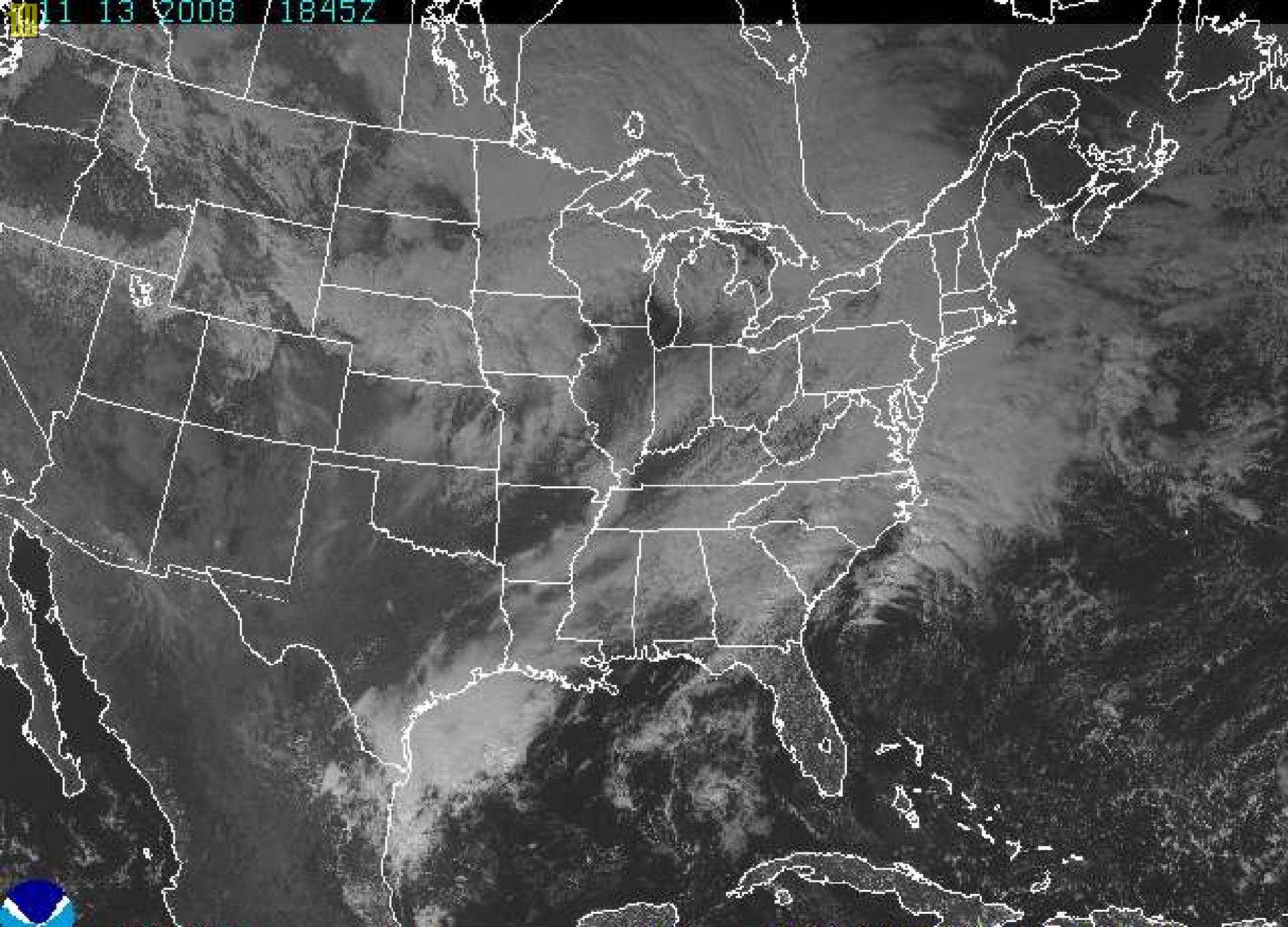
NOTE: If you would like to bookmark or share your current view, you must first click the "Update URL for Bookmarking" button. The URL in your browser window can then be bookmarked or shared.

[Ask questions about the Precipitation Analysis website](#)

Nov 12 rainfall

NWS Information

11 13 2008 1845Z



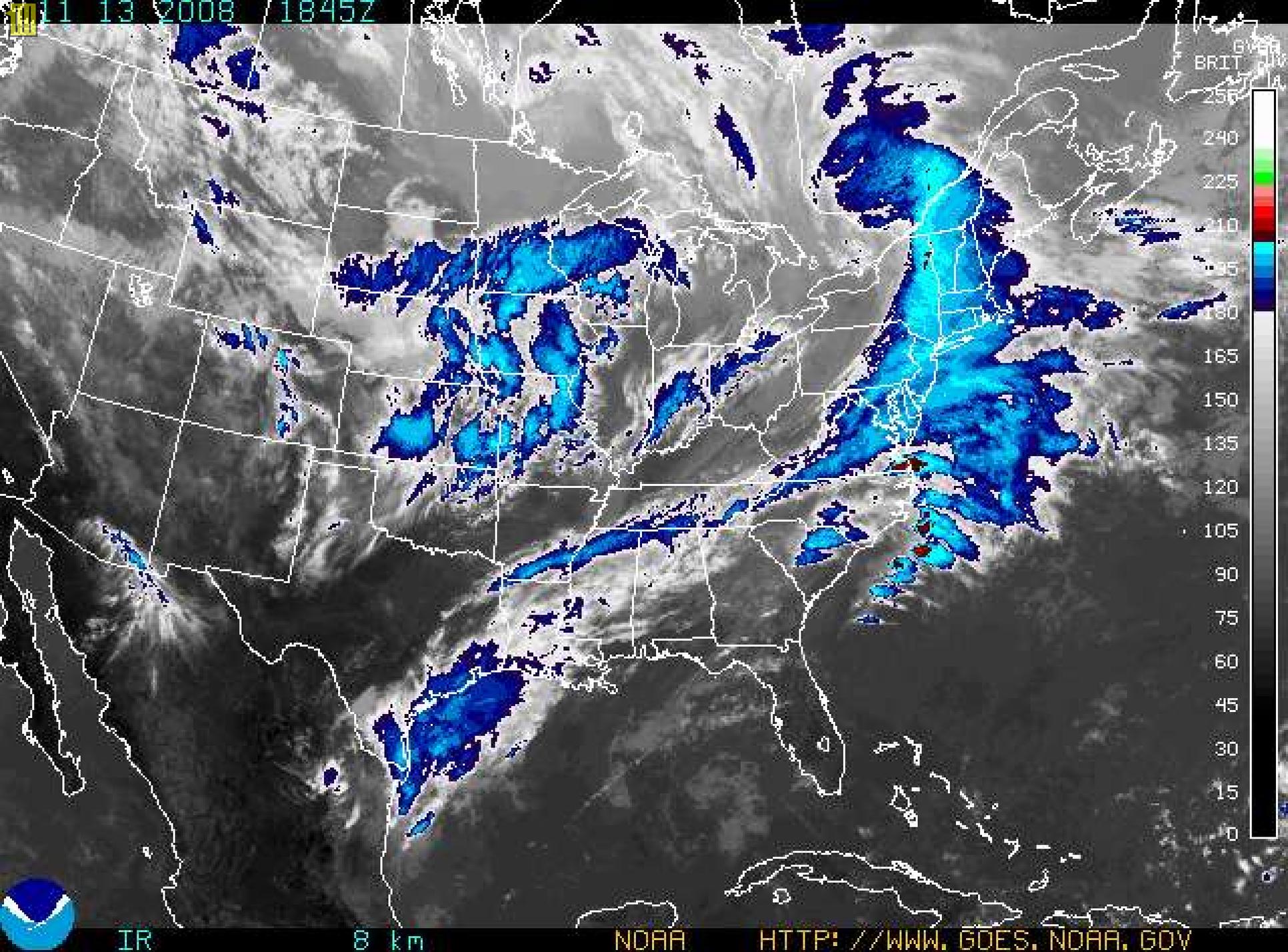
VISIBLE

8 km

NOAA

[HTTP://WWW.GOES.NOAA.GOV](http://www.goes.noaa.gov)

11 13 2008 1845Z



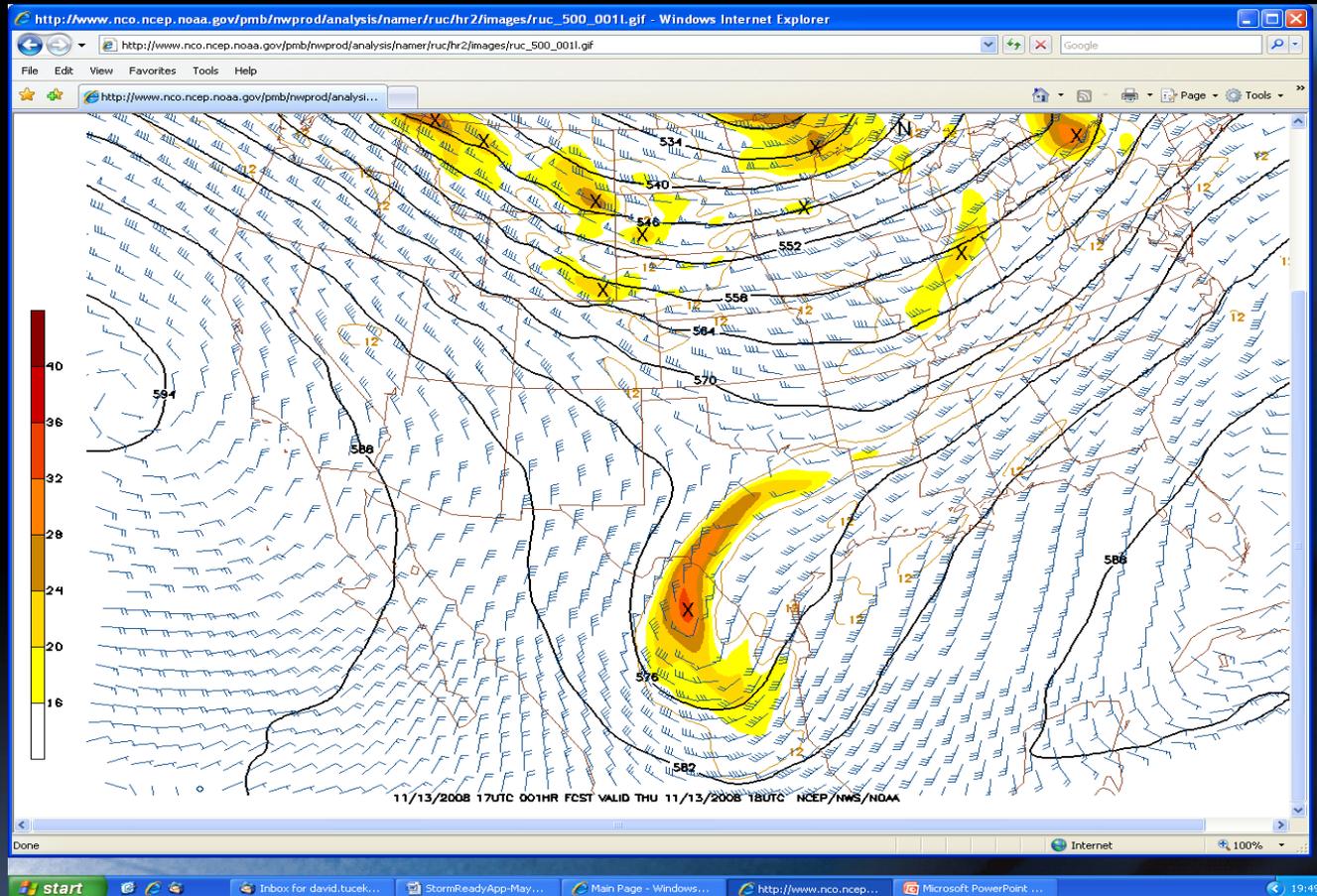
IR

8 km

NOAA

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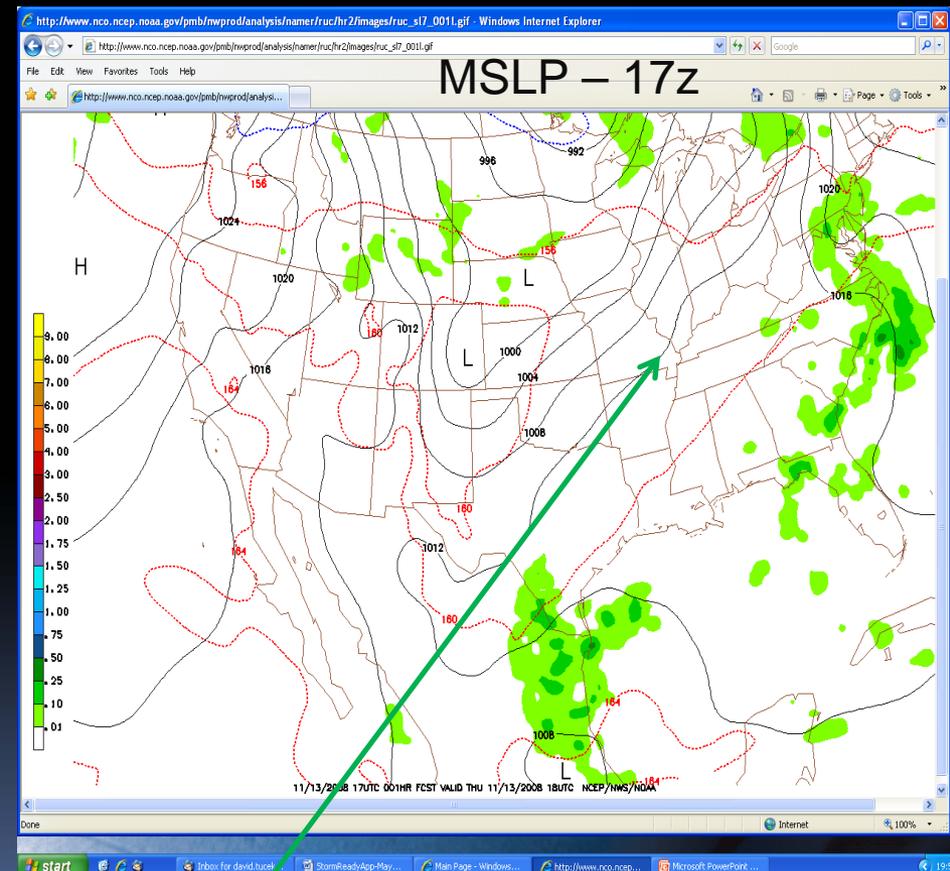
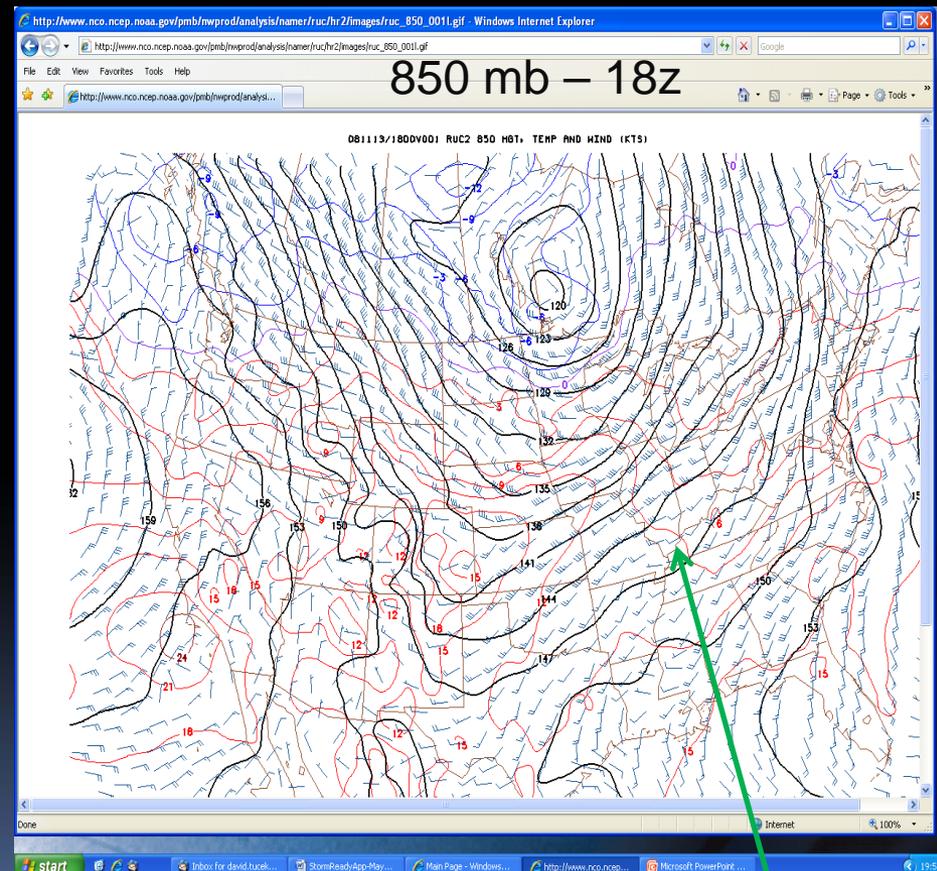
RUC - VT18Z 1hr fcst 500mb



Vort Lobe / Trof Moving Across Indiana

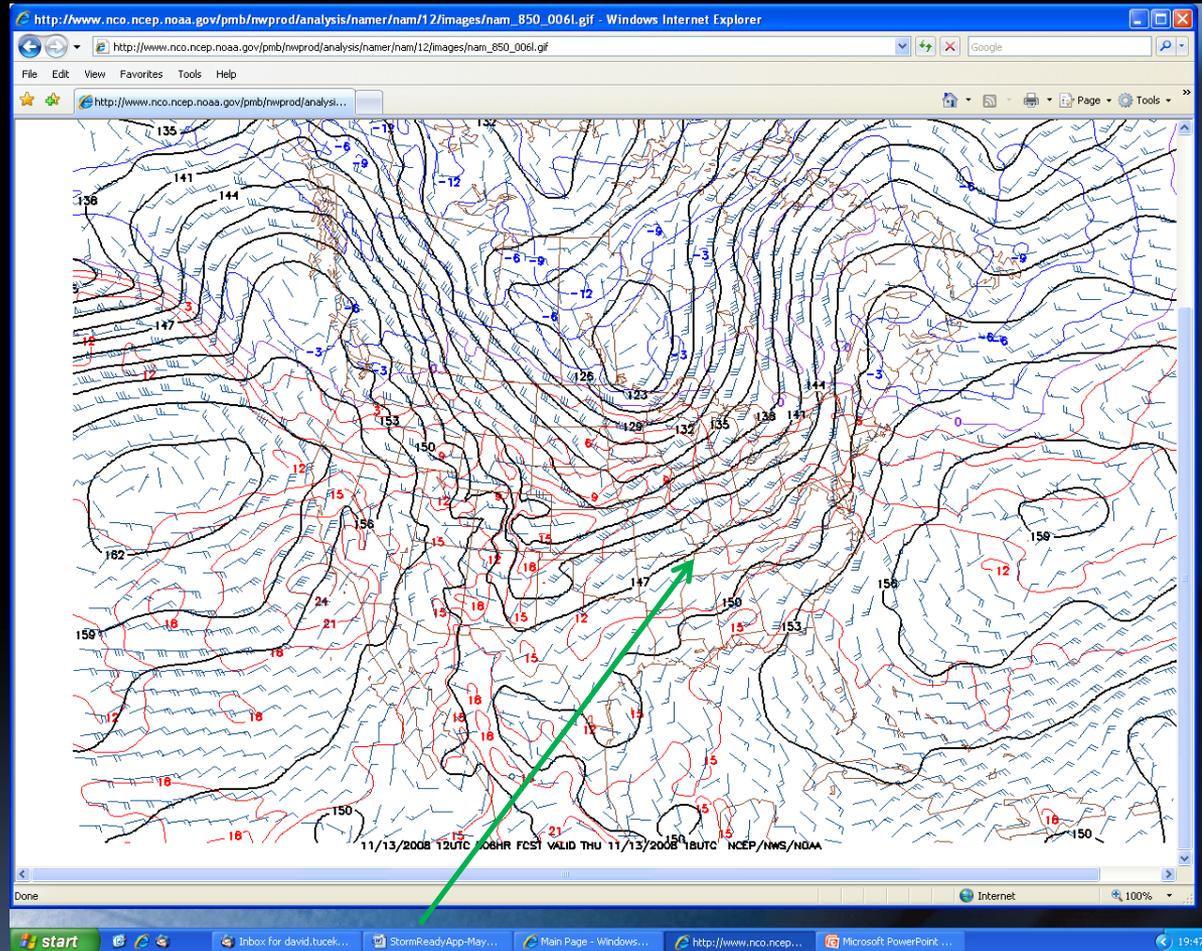


RUC – VT17z-18z 1hr. Fcst 850mb, MSLP



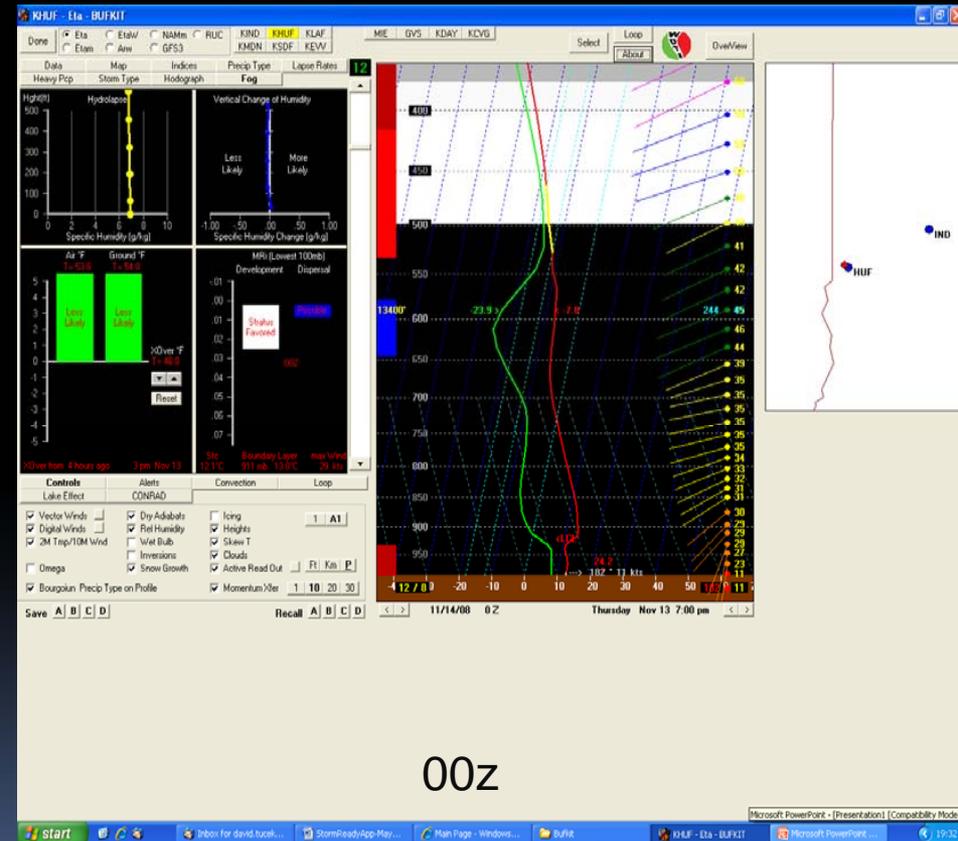
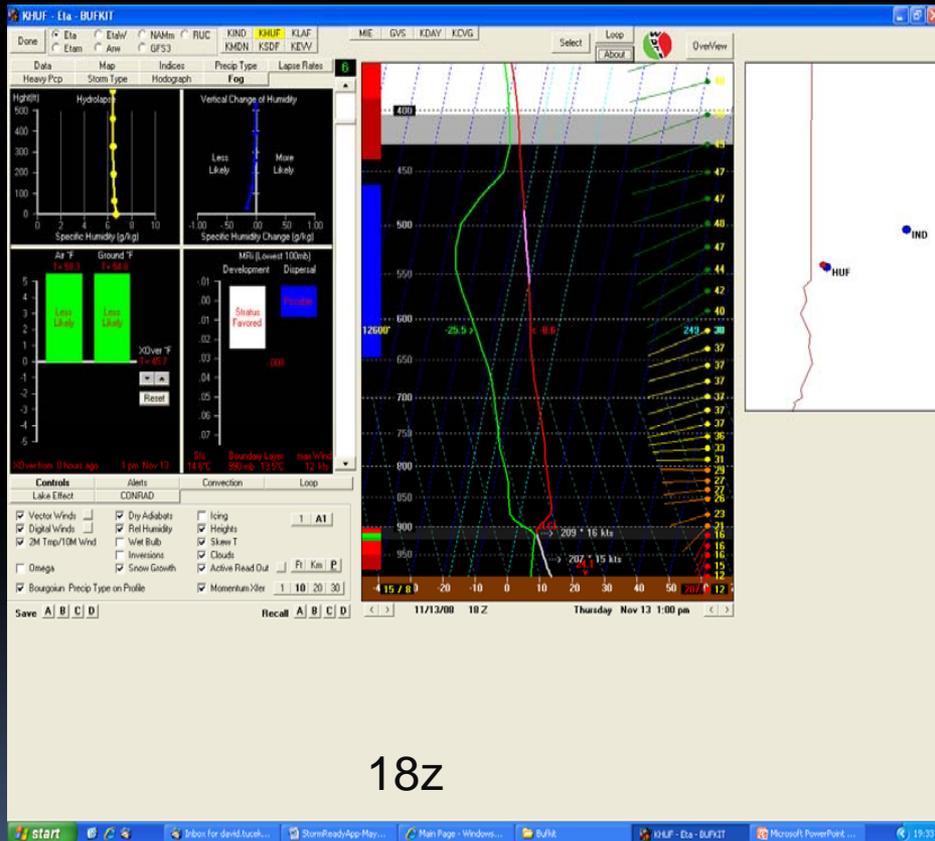
Subtle Ridging Behind Short Wave

NAM – VT18z 6hr. FCST 850mb



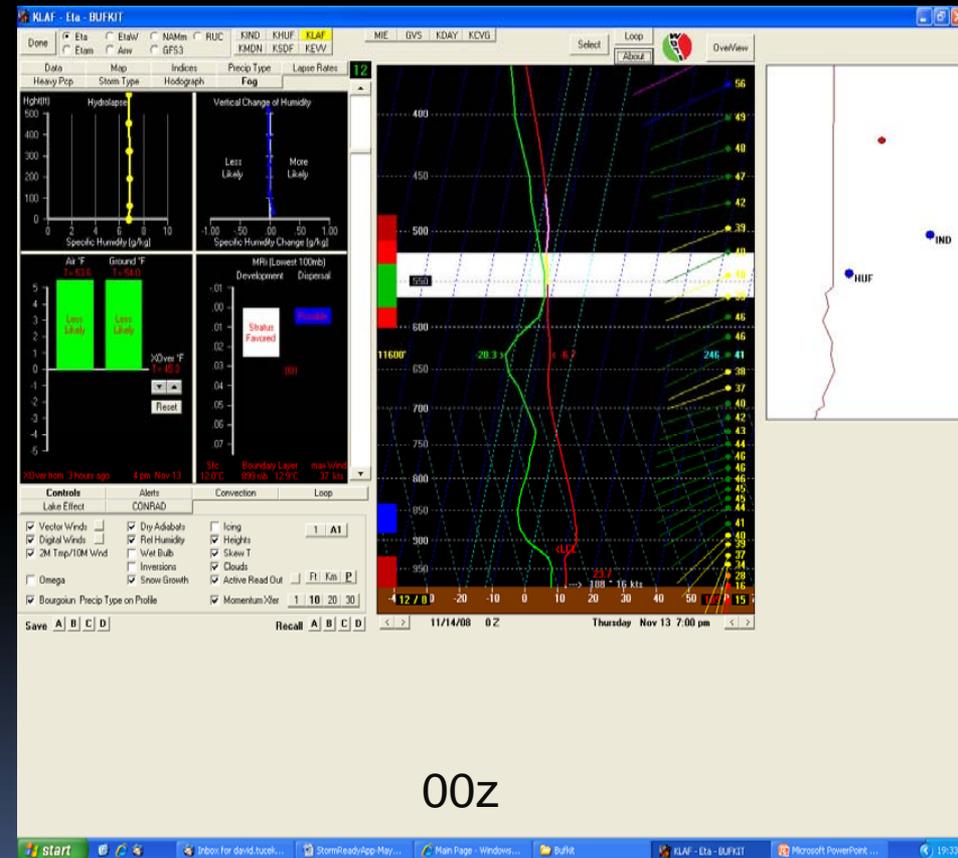
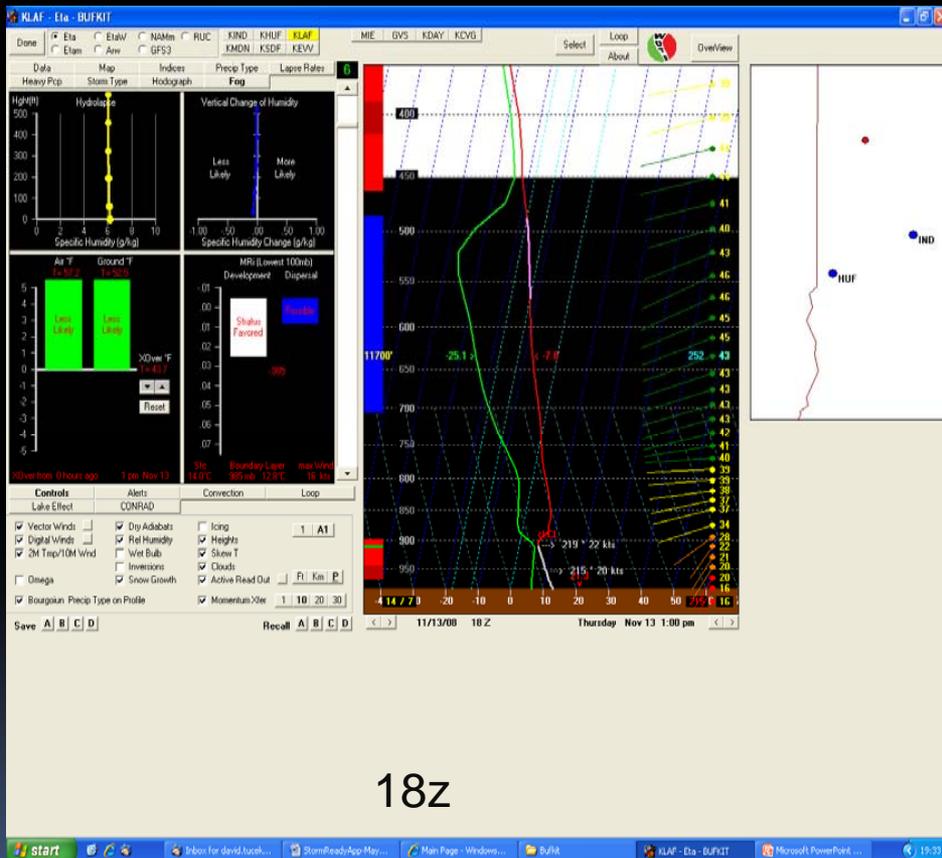
Subtle Ridging Behind Short Wave
Subtle Ridge/Trof in Wind Barbs

12Z BUFKIT – HUF 18Z vs. 00Z



Subsidence lowers inversion, dries out atmos. below cloud base

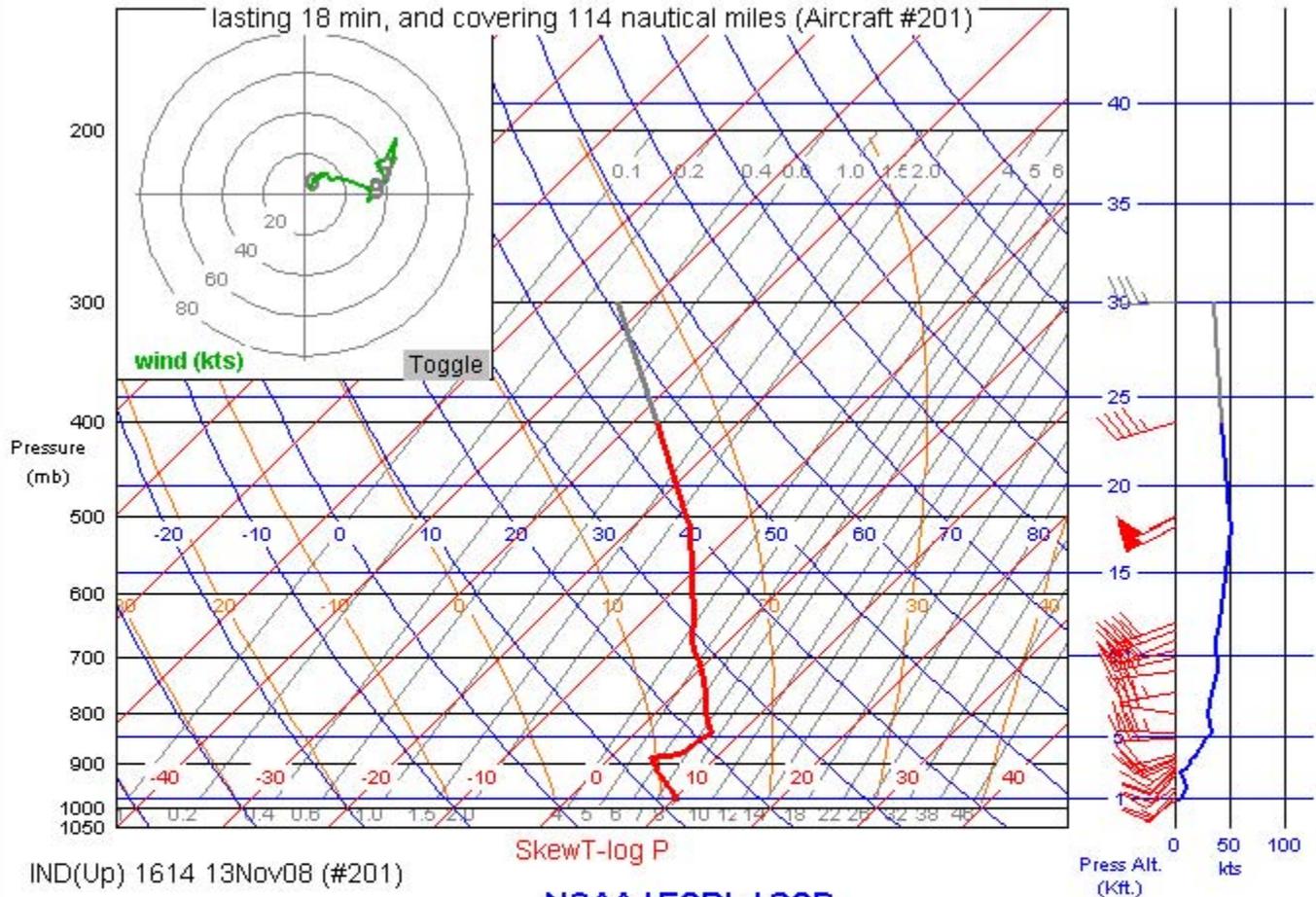
12Z BUFKIT – LAF 18Z vs. 00Z



Subsidence lowers inversion, dries out atmos. below cloud base

Ascent sounding toward 212° from Indianapolis, IN (IND)

lasting 18 min, and covering 114 nautical miles (Aircraft #201)



IND(Up) 1614 13Nov08 (#201)

SkewT-log P

Press Alt. (Kft.)

NOAA / ESRL / GSD

- Load Other Sdgs
- Get text
- 10mb scale
- SkewT/Tephi.
- Wind scale: 40/100

IND(Up) 1614 13Nov08	IND(Up) 1914 13Nov08	IND(Dn) 1809 13Nov08	IND(Dn) 1809 13Nov08

Program

Display from ESRL/GSD

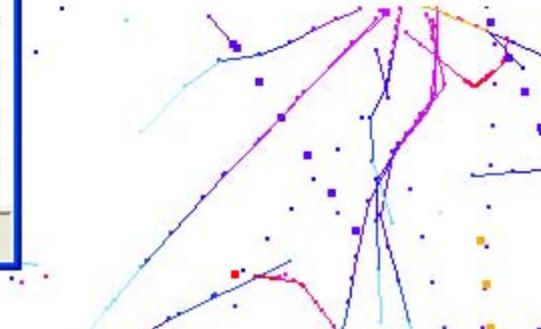
added. See change details (new window) for more information. For more information, visit noaa.gov of any problems.

redistributed to third parties. (Use of images and graphics is encouraged, however.)

and General Information | Forecast Discussion | [Set initial defaults](#) | [Privacy Statement](#)

- WindSpd
- Barbs
- Soundings

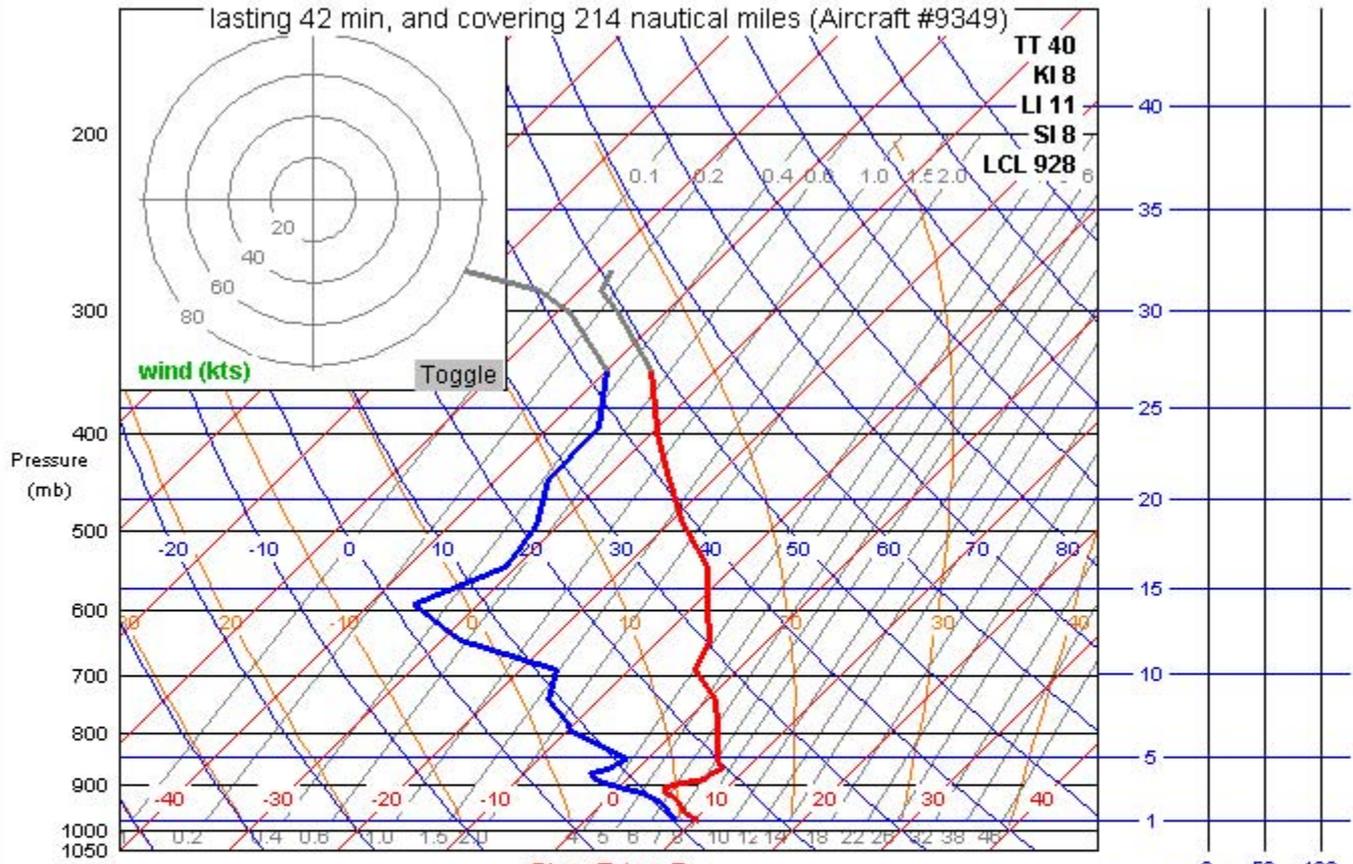
- Overlays
- Overview





Descent sounding from 96° into Indianapolis, IN (IND)

lasting 42 min, and covering 214 nautical miles (Aircraft #9349)



IND(Dn) 1809 13Nov08 (#9349)

SkewT-log P

Press Alt. (Kft.)

NOAA / ESRL / GSD

- Load Other Sdgs
- Get text
- 10mb scale
- SkewT/Tephi.
- Wind scale: 40/100

IND(Dn) 1809 13Nov08			

Program

Display from ESRL/GSD

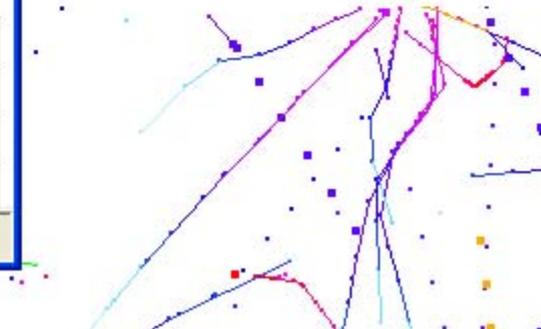
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- WindSpd
- Barbs
- Soundings

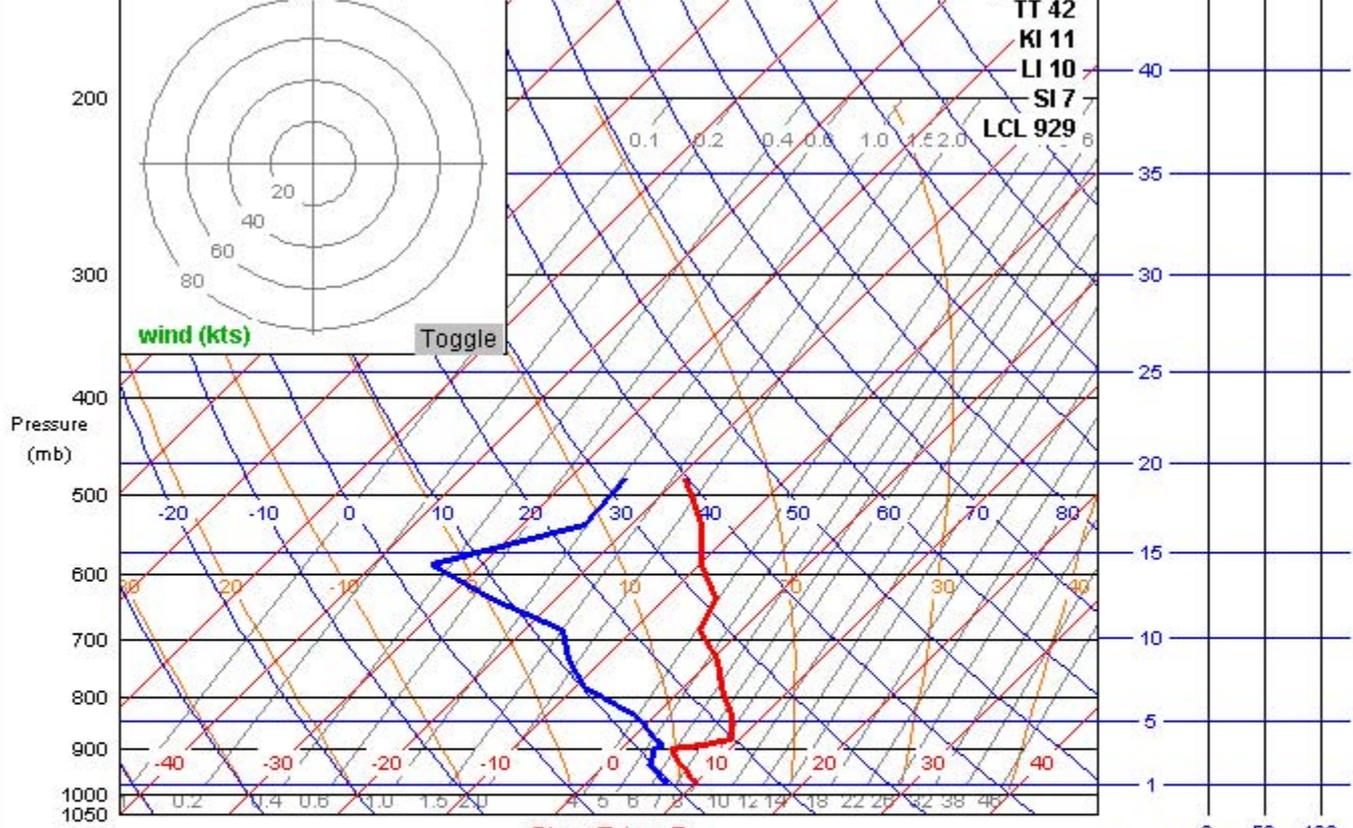
- Overlays
- Overview





Ascent sounding toward 74° from Indianapolis, IN (IND)

lasting 11 min, and covering 48 nautical miles (Aircraft #9349)



IND(Up) 1914 13Nov08 (#9349)

SkewT-log P

Press Alt. (Kft.)

NOAA / ESRL / GSD

- Load Other Sdgs
- Get text
- 10mb scale
- SkewT/Tephi.
- Wind scale: 40/100

IND(Up) 1914 13Nov08	IND(Dn) 1809 13Nov08	IND(Dn) 1809 13Nov08	

Program

Display from ESRL/GSD

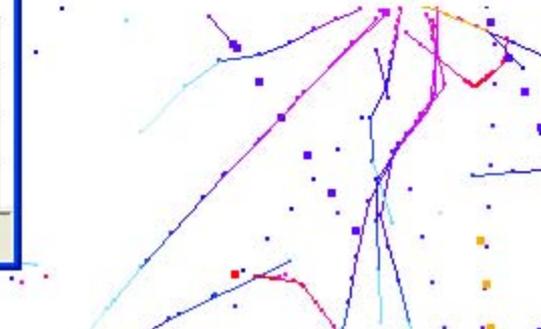
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- WindSpd
- Barbs
- Soundings

- Overlays
- Overview



MOS - 12Z Guidance - IND

ETA

	18z	21z	00z
CLD	OV	BK	OV
CIG	4	8	8
VIS	7	7	7

GFS

	18Z	21Z	00Z
CLD	OV	BK	OV
CIG	5	8	8
VIS	7	7	7

CAT KEY: CIGS 4 = 1000-1900 CIGS 5 = 2000-3000 CIGS 8 > 12000

CAT KEY: VSBY: 5 = 3-5sm 7 = > 6sm

MOS – 12Z Guidance – LAF

ETA

	18z	21z	00z
CLD	BK	BK	BK
CIG	8	8	8
VIS	7	7	7

GFS

	18Z	21Z	00Z
CLD	BK	SC	OV
CIG	8	8	8
VIS	7	7	7

CAT KEY: CIGS 4 = 1000-1900 CIGS 5 = 2000-3000 CIGS 8 > 12000

CAT KEY: VSBY: 5 = 3-5sm 7 = > 6sm

MOS – 12Z Guidance – HUF

ETA

	18z	21z	00z
CLD	OV	BK	BK
CIG	4	8	8
VIS	7	7	7

GFS

	18Z	21Z	00Z
CLD	OV	BK	OV
CIG	5	8	8
VIS	7	7	7

CAT KEY: CIGS 4 = 1000-1900 CIGS 5 = 2000-3000 CIGS 8 > 12000

CAT KEY: VSBY: 5 = 3-5sm 7 = > 6sm

MOS – 12Z Guidance – BMG

ETA

	18z	21z	00z
CLD	OV	BK	BK
CIG	4	8	8
VIS	7	7	7

GFS

	18Z	21Z	00Z
CLD	OV	OV	OV
CIG	4	8	8
VIS	5	7	7

CAT KEY: CIGS 4 = 1000-1900 CIGS 5 = 2000-3000 CIGS 8 > 12000

CAT KEY: VSBY: 5 = 3-5sm 7 = > 6sm

18Z TAFs

KIND 131720Z 1318/1424 22012KT P6SM BKN015 OVC025
FM132100 22012G20KT P6SM SCT025 OVC150
FM140100 18012KT P6SM BKN150
FM141200 21012KT P6SM SCT020 OVC120
FM141800 21012KT 5SM -SHRA BR OVC020=

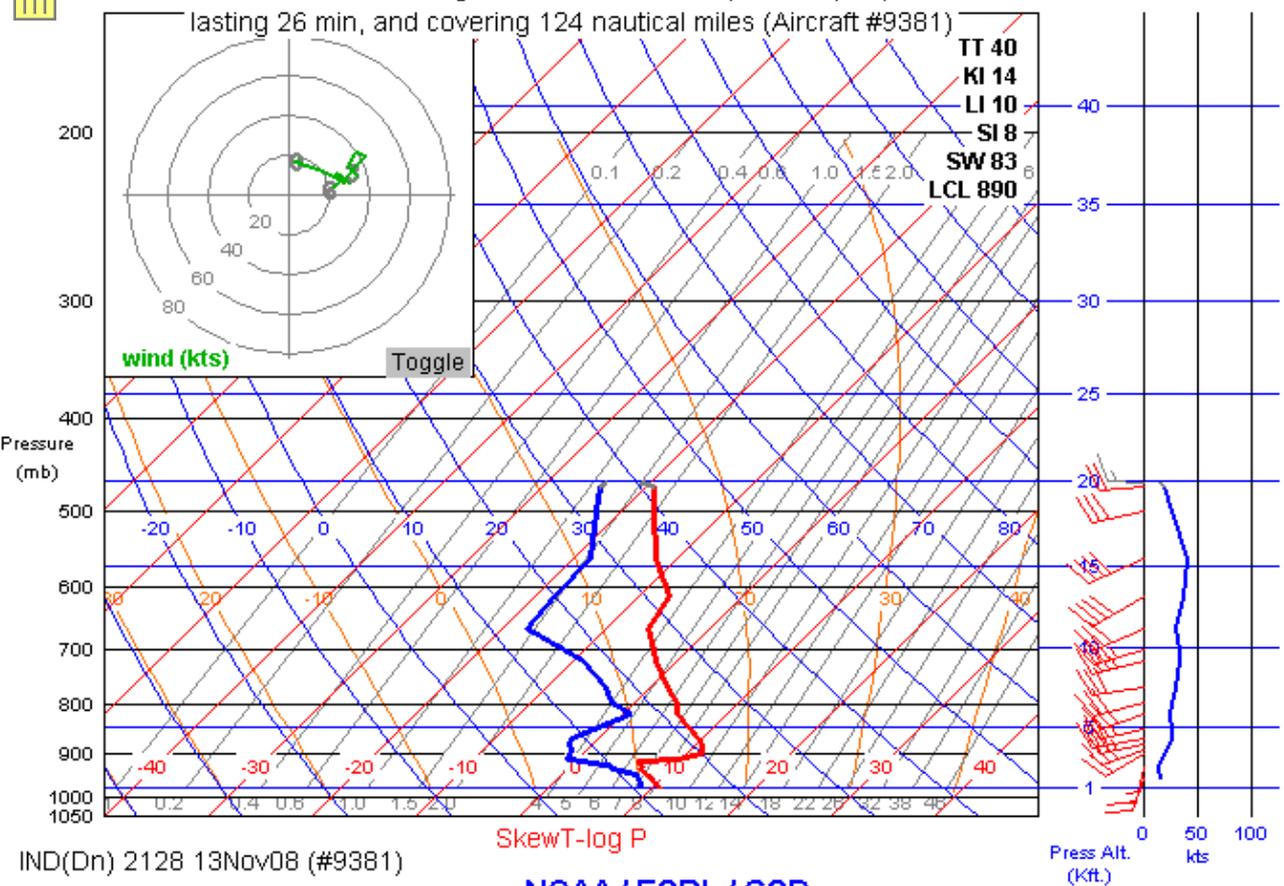
KLAF 131720Z 1318/1418 22010G20KT P6SM BKN020 OVC150
FM131930 21012G20KT P6SM SCT020 BKN150
FM140000 20010KT P6SM BKN150
FM140600 22010KT P6SM VCSH SCT025 OVC060
FM141000 22009KT 3SM -SHRA OVC020=

KHUF 131720Z 1318/1418 21010G18KT P6SM OVC020
FM132000 21012G20KT P6SM SCT025 BKN150
FM140000 19011KT P6SM BKN150
FM141200 20010KT P6SM VCSH SCT025 OVC080
FM141500 20010KT 4SM -SHRA OVC020=

KBMG 131720Z 1318/1418 22009G18KT P6SM OVC015
FM131900 21010KT P6SM SCT015 OVC025
FM132200 20010KT P6SM SCT025 OVC150
FM140100 18010KT P6SM BKN150
FM141500 20008KT 5SM BR VCSH OVC025=

Descent sounding from 61° into Indianapolis, IN (IND)

lasting 26 min, and covering 124 nautical miles (Aircraft #9381)



NOAA / ESRL / GSD

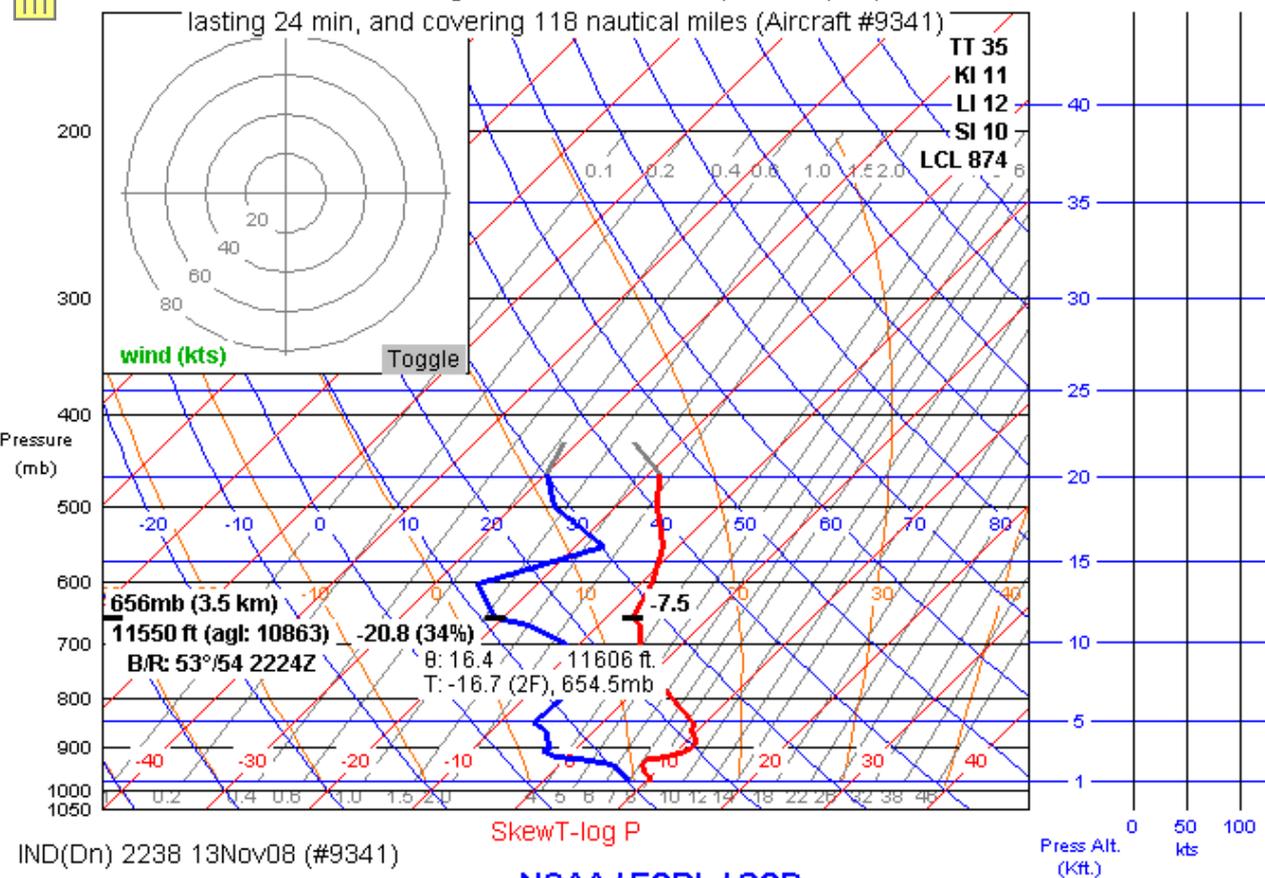
- Load Other Sdgs
- Get text
- 10mb scale
- SkewT/Tephi.
- Wind scale: 40/100

IND(Up) 2218 13Nov08	IND(Dn) 2128 13Nov08	IND(Dn) 2128 13Nov08	IND(Dn) 2128 13Nov08
IND(Dn) 2128 13Nov08	IND(Dn) 2238 13Nov08	IND(Dn) 2238 13Nov08	IND(Up) 1914 13Nov08
IND(Up) 1914 13Nov08	IND(Dn) 2238 13Nov08	???(Up) 2137 13Nov02	???(Up) 2137 13Nov02
IND(Dn) 2233 13Nov02	???(Dn) 1813 13Nov02	IND(Up) 1851 13Nov02	ORD(Up) 1921 13Nov02

ACARS

Descent sounding from 60° into Indianapolis, IN (IND)

lasting 24 min, and covering 118 nautical miles (Aircraft #9341)



IND(Dn) 2238 13Nov08	???(Up) 2137 13Nov02	???(Up) 2137 13Nov02	IND(Dn) 2233 13Nov02
???(Dn) 1813 13Nov02	IND(Up) 1851 13Nov02	ORD(Up) 1921 13Nov02	IND(Up) 1851 13Nov02
???(Dn) 0055 13Nov02			

ACARS

OBS - KIND

Time	Wind	Visibility	Sky Cover
1154z	25009kt	1sm br -dz	ovc005
1254z	20007kt	4sm br	bkn005 ovc043
1354z	22007kt	5sm br	ovc008
1454z	22010kt	5sm br	few006 bkn012 ovc028
1554z	21013kt	10sm	sct014 ovc027
1654z	22011kt	10sm	bkn014 ovc022
1754z	21012kt	10sm	few014 bkn022
1854z	20012kt	10sm	ovc022
2154z			sct020
2254z			clr

OBS - KLAF

Time	Wind	Visibility	Sky Cover
1154z	24006kt	4sm br	bkn005 ovc025
1254z	22005kt	4sm br	bkn015 ovc021
1354z	25009kt	8sm	ovc025
1454z	24011g16kt	8sm	few014
1554z	22006kt	10sm	sct014
1654z	22013g18kt	10sm	bkn020
1754z	23009kt	10sm	sct020
1854z	20007g17kt	10sm	bkn020
1954z			clr

OBS - KHUF

Time	Wind	Visibility	Sky Cover
1153z	21006kt	3sm br	ovc003
1253z	22005kt	3sm br	bkn005 bkn011 bkn018
1353z	21007kt	4sm br	bkn007 ovc019
1453z	22007kt	7sm	bkn014 bkn019
1553z	20008kt	9sm	bkn018 ovc023
1653z	21011g16kt	10sm	ovc019
1753z	21009kt	10sm	ovc019
1853z	19011g17kt	10sm	ovc021
1953z			clr

OBS - KBMG

Time	Wind	Visibility	Sky Cover
13534z	21008kt	2sm br	ovc003
1453z	24008kt	2sm br	bkn007 ovc014
1553z	22006kt	3sm br	bkn009 ovc017
1653z	22009g15kt	6sm br	ovc011
1753z	22009kt	10sm	bkn015 ovc020
1853z	22007kt	10sm	ovc017
2153z			clr

Conclusions

Data favoring status quo

- Climatology
- Wet ground
- Inversion holding strong
- Upstream system arrival

Data favoring clearing

- Upstream Obs trends
- Subsidence drying aft s/w
 - Subtle ridging in low level data , inversion lowers in ACARS / BUFKIT
- Gusty wind hints at mixing down drier air
- Slow upstream system arrival – provided time for subsidence and mixing to work

Conclusions

