

Accessing and Using GFS LAMP Products

**National Weather Service
Meteorological Development Laboratory
Mesoscale Prediction Branch**

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Table of Contents

- [GFS LAMP Background](#)
- [NWS Server and NOAAPort/SBN Data](#)
- [GFS LAMP in AWIPS D2D](#)
- [GFS LAMP in AWIPS AvnFPS](#)
- [GFS LAMP Website](#)
- [Case Studies](#)
- [Summary](#)

Click on one of the topics above to jump to that part of the presentation, or click anywhere else to advance to the next slide.

GFS LAMP Background

- The *Localized Aviation MOS Program* (LAMP) is a system of objective analyses, simple models, regression equations, and related thresholds which together provide guidance for sensible weather forecasts.
- LAMP provides hourly updates to GFS MOS by bridging the gap between the observations and the MOS forecast.
- LAMP provides probabilistic and non-probabilistic guidance for 17 weather elements.
- LAMP guidance focuses on aviation weather elements.

GFS LAMP Guidance Details

- LAMP guidance is in the range of 1- 25 hours in 1 hour projections
- LAMP provides station-oriented guidance for:
 - All 17 LAMP forecast elements
 - ~1600 stations
 - CONUS, Alaska, Hawaii, Puerto Rico
- LAMP provides gridded-oriented guidance for:
 - Thunderstorms:
 - Probability of thunderstorm occurrence in a 2 hour period in a 20-km grid box
 - Best Category Yes/No of thunderstorm occurrence in a 2 hour period in a 20-km grid box
 - CONUS only
- Eventually will run 24 times a day (every hour)
- Visit the website to check the latest availability of LAMP cycles:
<http://www.nws.noaa.gov/mdl/lamp/index.shtml>

Example of a GFS LAMP Text Bulletin

KBUF	BUFFALO				GFS LAMP GUIDANCE																2/19/2008				1200 UTC																								
UTC	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13
TMP	21	22	21	22	Probability of Precipitation Occurrence on the hour																								16	16	15	16																	
DPT	12	12	12	12	Yes/No Precipitation Occurrence on the hour																								11	10	10	9																	
WDR	25	25	25	25	Probability of Thunderstorms during 2-Hour period																								25	25	25	25																	
WSP	20	18	19	18	Yes/No Thunderstorm Occurrence during 2-Hour period																								3	3	3	3																	
WCS	27	26	26	25	Wind Direction																								36																				
PPO	74	69	72	62	Wind Speed																								27																				
PCO	Y	Y	Y	Y	Visibility																								0	0	0	0																	
P06					Cover																								N	N	N	N																	
TP2	0	0	0	0	Conditional Visibility																								0	1	1	1																	
TC2	N	N	N	N	Obstruction to Vision																								00	99	99	99																	
POZ	0	0	0	0	Ceiling Height																								S	S	S	S																	
POS	99	99	99	99	Probability of Snow																								6	6	6	6																	
TYP	S	S	S	S	Probability of Freezing																								7	7	7	7																	
CLD	OV	OV	OV	OV	Precipitation Type																								5	5	5	5																	
CIG	6	6	6	5																									6	6	6	6																	
CCG	5	5	5	5																									6	6	6	6																	
VIS	7	7	7	7																									7	7	7	7																	
CVS	6	5	5	5																									5	5	5	5																	
OBV	N	N	N	N																									N	N	N	N																	

GFS LAMP Weather Element Types

KBUF	BUFFALO											GFS LAMP GUIDANCE					2/19/2008					1200 UTC				
UTC	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	
TMP	21	22	21	22	22	22	22	22	22	22	21	21	20	20	20	20	20	19	19	18	17	16	16	15	16	
DPT	12	12	12	12	12	12	12	13	12	12	12	12	13	13	13	13	13	12	12	11	11	11	10	10	9	
WDR	25	25	25	25	25	25	24	24	24	25	25	25	25	25	25	24	24	25	25	25	25	25	25	25	25	
WSP	20	18	19	18	19	18	19	19	20	19	18	17	15	13	12	12	11	10	09	09	09	08	08	08	08	
WGS	27	26	26	25	26	26	26	27	27	26	25	24	21	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	
PPO	74	69	72	63	64	59	68	74	74	67	60	55	50	51	48	49	49	49	48	47	46	48	48	48	50	
PCO	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
P06						40						35					36							27		
TP2			0	0	0	0	0	0		0		0		0		0		0		0		0		0		
TC2			N	N	N	N	N	N		N		N		N		N		N		N		N		N		
POZ	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	1	1	1	1	1	1	1	
POS	99	99	99	100	100	100	100	100	100	100	100	100	100	100	99	100	100	100	100	99	99	99	99	99	99	
TYP	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
CLD	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	
CIG	6	6	6	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
CCG	5	5	5	5	5	4	4	4	4	4	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
VIS	7	7	7	7	7	7	6	5	5	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
CVS	6	5	5	5	5	5	5	5	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	
OBV	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	

23--Contiguous Elements

Overview of Available Products

- Sent out on SBN/NOAAPort and NWS FTP Server
 - ASCII text bulletin
 - BUFR data
 - GRIB2 thunderstorm data
- AWIPS
 - Displayable in D2D
 - Local menu
 - Volume Browser
 - Guidance available for display and Terminal Aerodrome Forecast (TAF) preparation via the Aviation Forecast Preparation System (AvnFPS)
- GFS LAMP Website
 - <http://www.nws.noaa.gov/mdl/gfslamp/gfslamp.shtml>

Retrieving Data From NWS Server

- 1) ftp to *tgftp.nws.noaa.gov*
- 2) username is *anonymous*
- 3) Supply email address for the password
 - For text data, set type to *ascii*
 - For BUFR and GRIB2, set type to *binary*
- 4) Data and locations (HH= cycle hour):
 - ASCII Text Bulletin
 - *SL.us008001/DF.anf/DC.lampgfs/cy.HH.txt*
 - BUFR Data
 - *SL.us008001/DF.bf/DC.lampgfs/cy.HH.bin*
 - GRIB2 Thunderstorm Probabilities
 - *SL.us008001/ST.opnl/DF.gr2/DC.ndgd/GT.lampgfs/AR.conus/ds.pts02.bin*
 - GRIB2 Thunderstorm Occurrence (Yes/No)
 - *SL.us008001/ST.opnl/DF.gr2/DC.ndgd/GT.lampgfs/AR.conus/ds.ots02.bin*

GFS LAMP BUFR Data

- Includes all text bulletin weather elements
- Also contains additional LAMP forecast data types and elements not in the text bulletin
 - Ex: complete suite of probabilities, POP12, precipitation characteristics
- Stored in netcdf in AWIPS
- For more information, visit the LAMP BUFR Guidance page:

<http://www.nws.noaa.gov/mdl/gfslamp/docs/BufrLAMPintro05.shtml>

GFS LAMP GRIB2 Data

- Includes gridded thunderstorm guidance for probabilistic (%) and categorical (Yes/No) forecasts
- Thunderstorm guidance is provided on the 5-km NDFD grid
- Each thunderstorm product has its unique WMO heading
- For more information, visit the LAMP GRIB2 Encoding Details Website:

<http://www.nws.noaa.gov/mdl/gfslamp/docs/lampgrib2.shtml>

GFS LAMP IN AWIPS D2D

To view the step-by-step processes for accessing these products, consult the GFS LAMP jobsheets at:

<http://www.nws.noaa.gov/mdl/gfslamp/docs/jobsheets.shtml>

Text Bulletin in D2D

The screenshot displays a software window titled "Text I: AWIPS:LAVBWI". The window has a menu bar with "File", "Edit", "Options", "Version", "Tools", "Scripts", and "Products". Below the menu bar is a toolbar with buttons for "AFOS Browser", "Load History", "WMO Search", "Enter Editor", "Accum", "Update Obs", and "Clear". The main area shows a text bulletin for station KBWI at 160900 UTC on 1/16/2007. The bulletin includes various meteorological parameters such as temperature (TMP), dewpoint (DPT), wind (WDR), and pressure (PPO). An "AFOS Cmd:" field is visible at the top of the main area.

AFOS Cmd: WMO TTAai CCCC: AWIPS ID: LAVBWI

FOUS11 KBWI 160900
KBWI GFS LAMP GUIDANCE 1/16/2007 0900 UTC
UTC 10 11 12 13 14 15 16 17 18 19 20 21 22 23 00 01 02 03 04 05 06 07 08 09 10
TMP 56 54 52 49 48 46 46 45 45 44 42 41 39 37 35 35 35 35 34 33 32 31 31 30 29
DPT 44 41 38 35 33 32 30 29 27 26 25 23 22 21 21 20 18 18 16 16 15 15 14 13 13
WDR 32 31 31 31 32 32 32 31 31 31 31 31 31 31 31 31 31 31 31 30 30 30 30 30 30
WSP 11 13 13 12 12 13 12 13 13 13 11 12 12 13 14 15 15 14 14 13 13 12 11 10 10
WGS 18 20 20 20 20 21 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20
PPO 5 8 11 23 10 16 6 3 1 16
PCO N N N N N N N N N
P06
TP2 0 0 0 0 0
TC2 N N N N N
POZ 5 4 4 3 1 0 1 0 0
POS 7 12 16 28 33 45 46 50 58
TYP R R R R R S R S S
CLD OV OV OV OV OV OV OV OV OV
CIG 6 6 6 6 6 6 6 6 6
CCG 6 6 6 6 6 6 6 6 6
VIS 7 7 7 7 7 7 7 7 7
CVS 7 7 7 7 7 7 7 7 7
OBV N N N N N N N N N

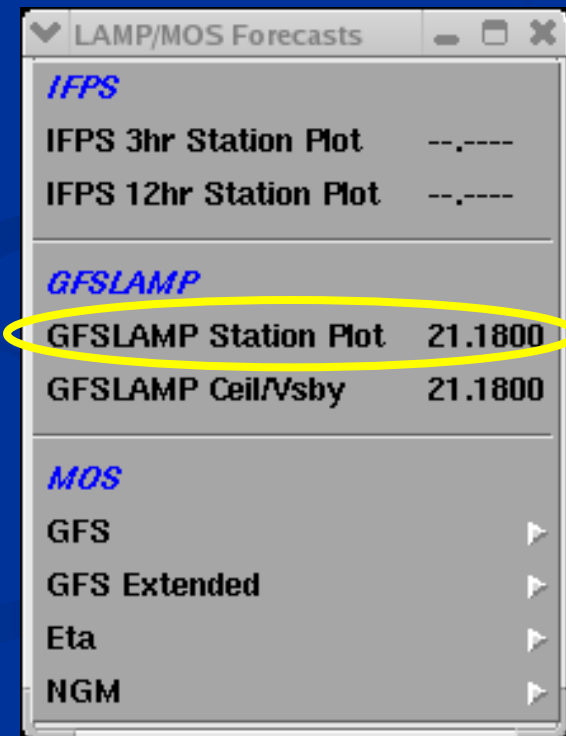
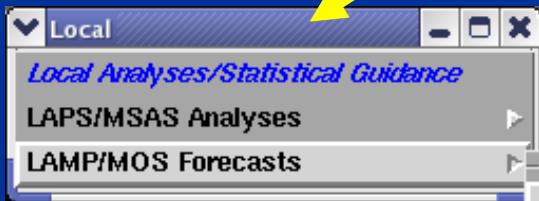
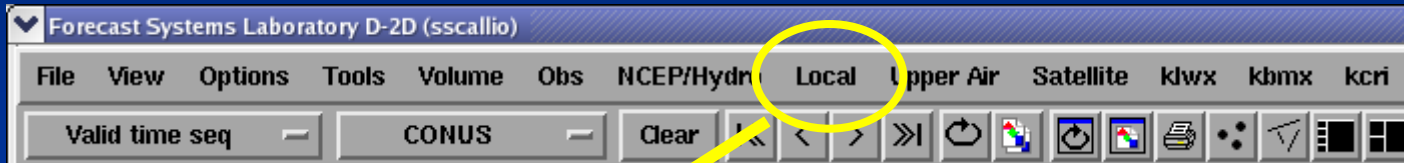
Text I WMO Search

AWIPS ID	TTAAii	CCCC	DDHHMM(Inventory)	BBB
LAVBWI	FOUS11	KBWI	160900	NOR
			160300	
			152100	
			151500	
			150900	
			150300	
			142100	
			140900	
			140300	
			132100	

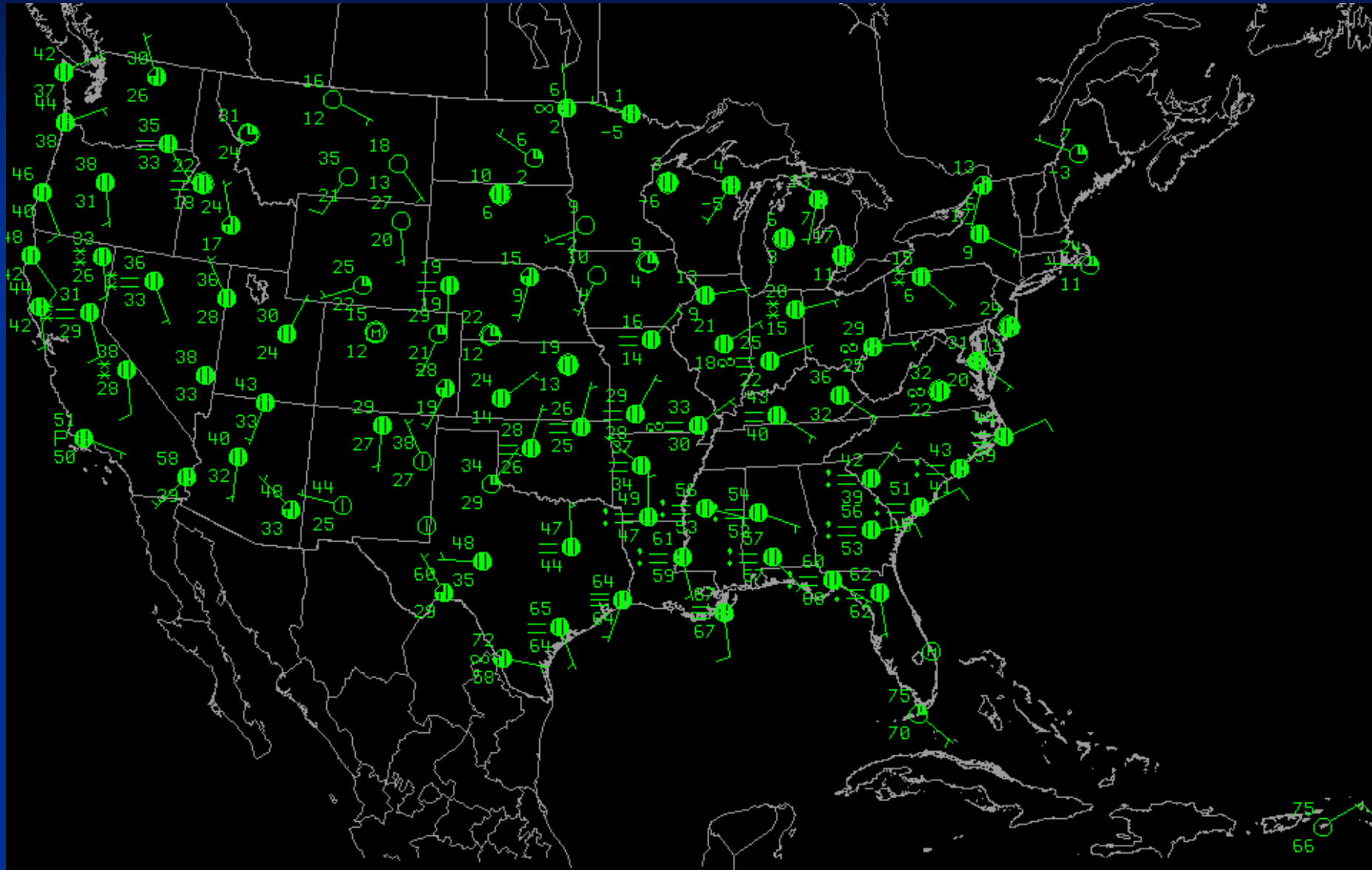
Load and Continue Load and Close Close

*Use AWIPS PIL - LAV

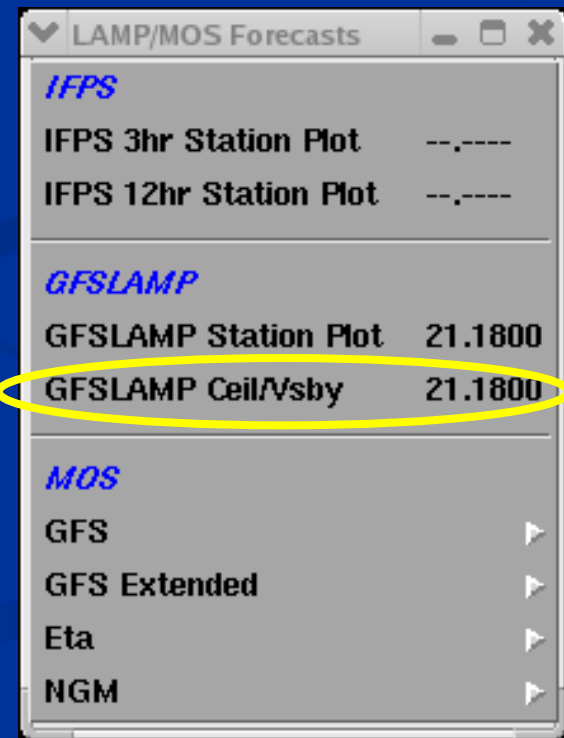
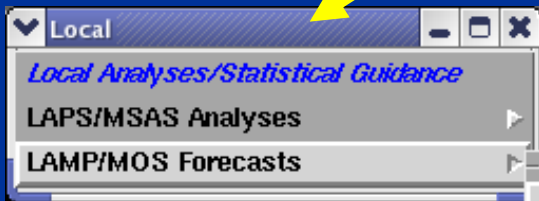
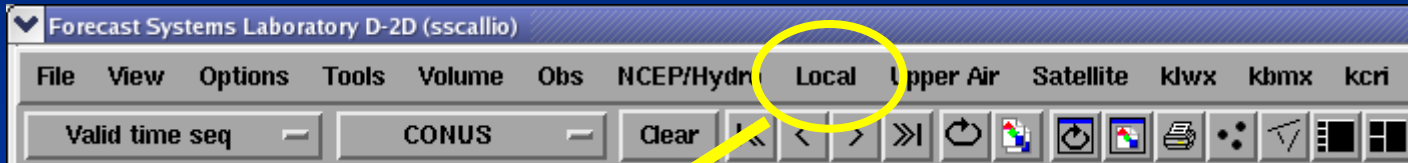
Station Plots Under the Local Menu



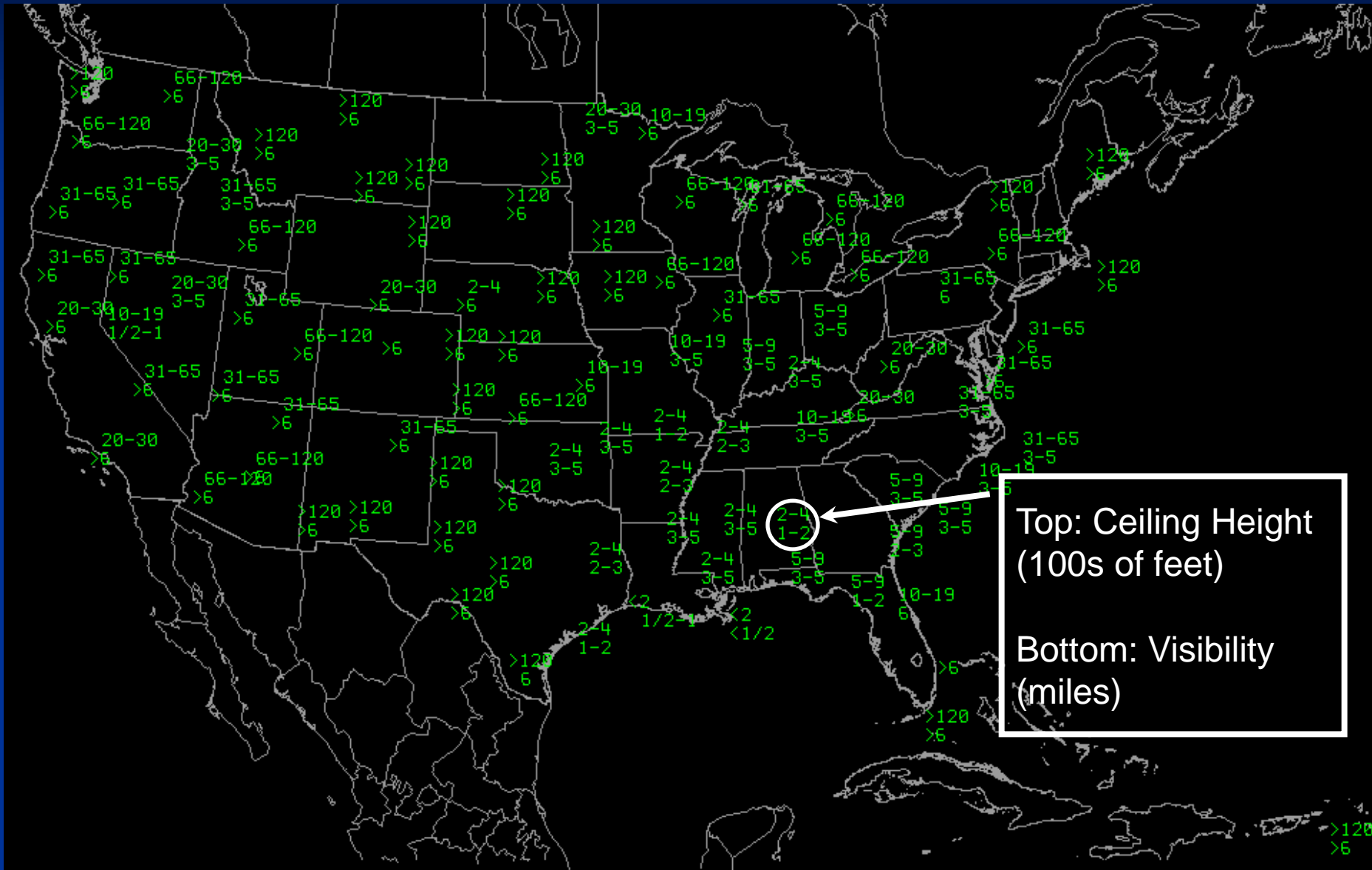
GFS LAMP Station Plots



Ceiling Height/Visibility Plots Under the Local Menu



GFS LAMP Ceiling/Visibility Plots



Time Series of LAMP Forecasts in Volume Browser

Volume Browser

File Edit Tools Time series Point A Help

Sources Fields Planes

Grid Other Basic Derived Sfc/2D Other Ensemble Pres Theta Hgt Misc Lyrs

GFSLAMP-St Temperature
Dewpoint
POP
Categorical POP
Freezing Precip POP

Surface

Times Product Selection List Inventory

--- GFSLAMP-Stn pointA Surface Temperature TSer(F)
--- GFSLAMP-Stn pointA Surface Dewpoint TSer(F)
--- GFSLAMP-Stn pointA Probability of precip TSer(%)
--- GFSLAMP-Stn Categorical pointA precip TSer0
--- GFSLAMP-Stn pointA Probability of freezing precip TSer(%)
--- GFSLAMP-Stn pointA Probability of frozen precip TSer(%)
--- GFSLAMP-Stn pointA Surface Precip Type TSer0

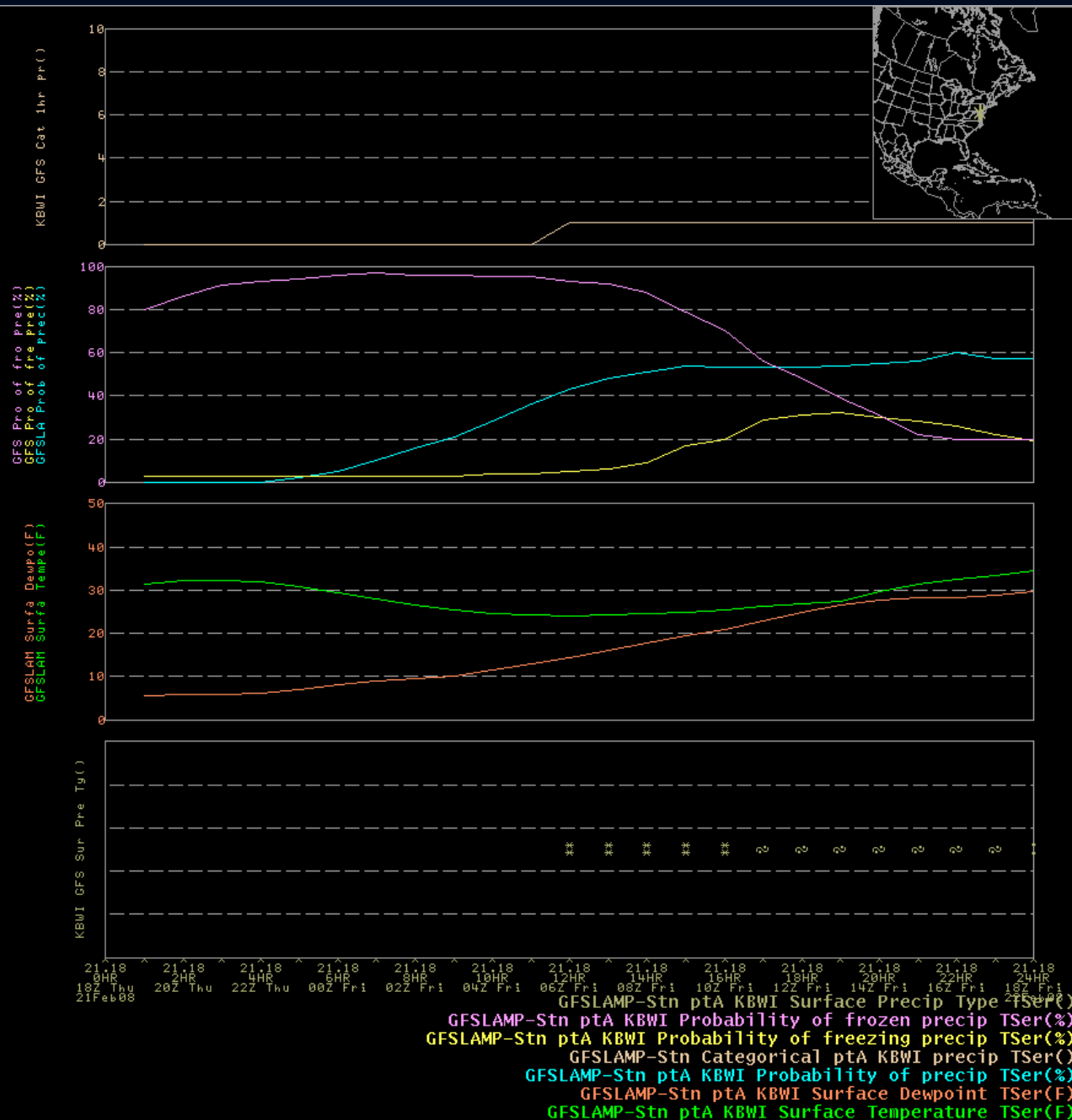
Products: 7 Selected for loading: 7

Diff Load

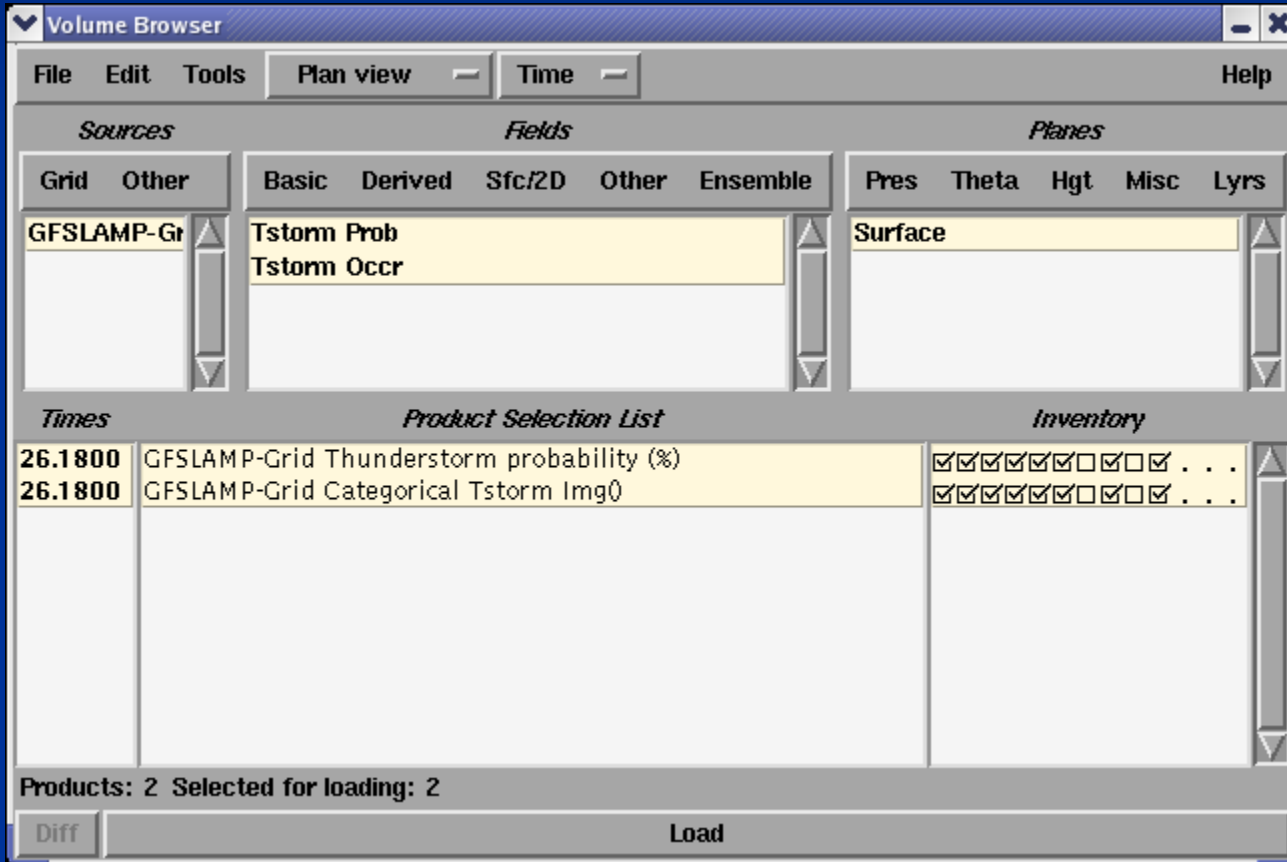
Points are assigned by clicking and dragging a labeled point on the US map or using "Choose by Station ID" under the Tools dropdown menu.

Time-Series Station Plot

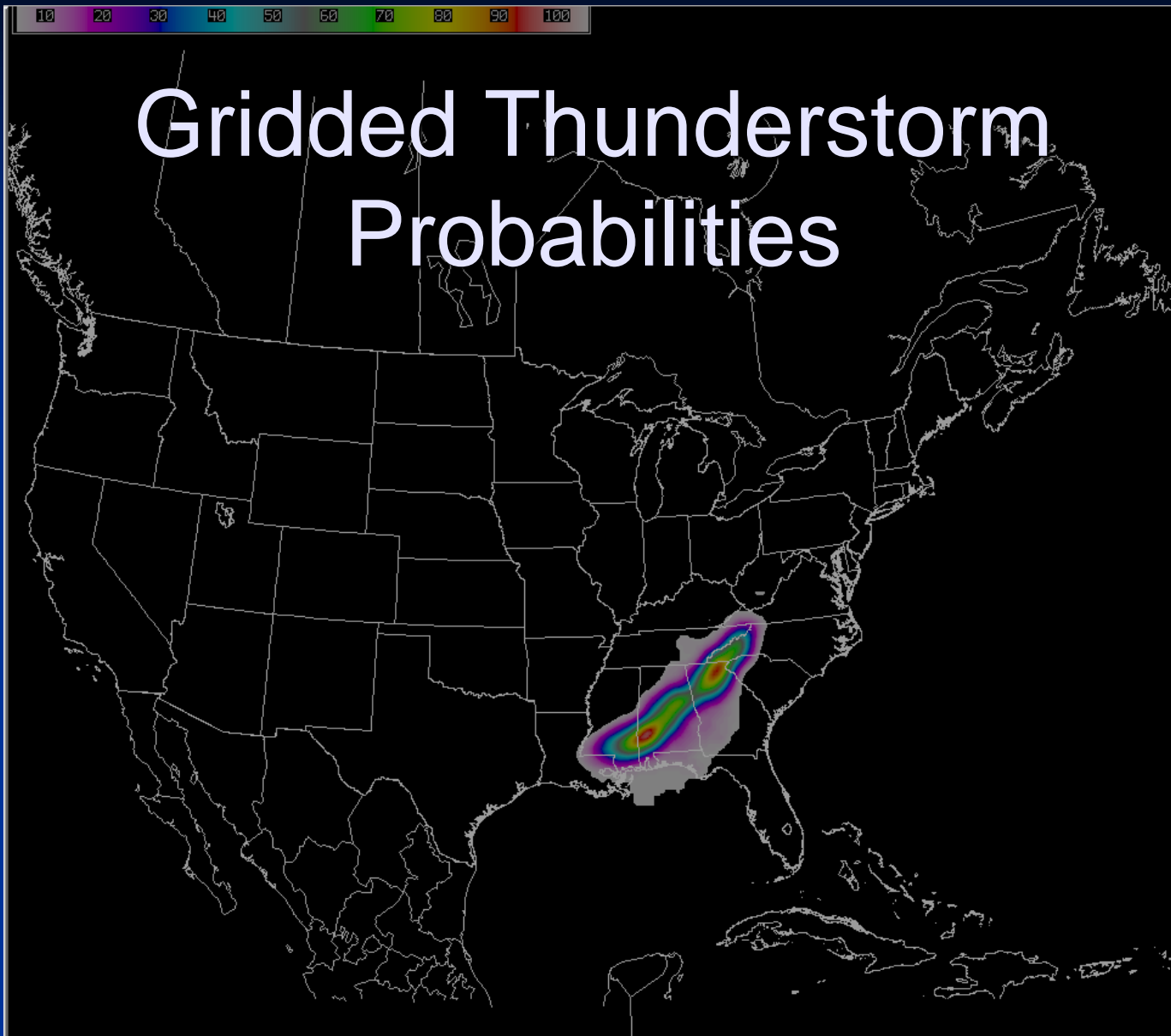
The user can also plot the observations to see real-time verification of a LAMP forecast



GFS LAMP Gridded Thunderstorms in the Volume Browser

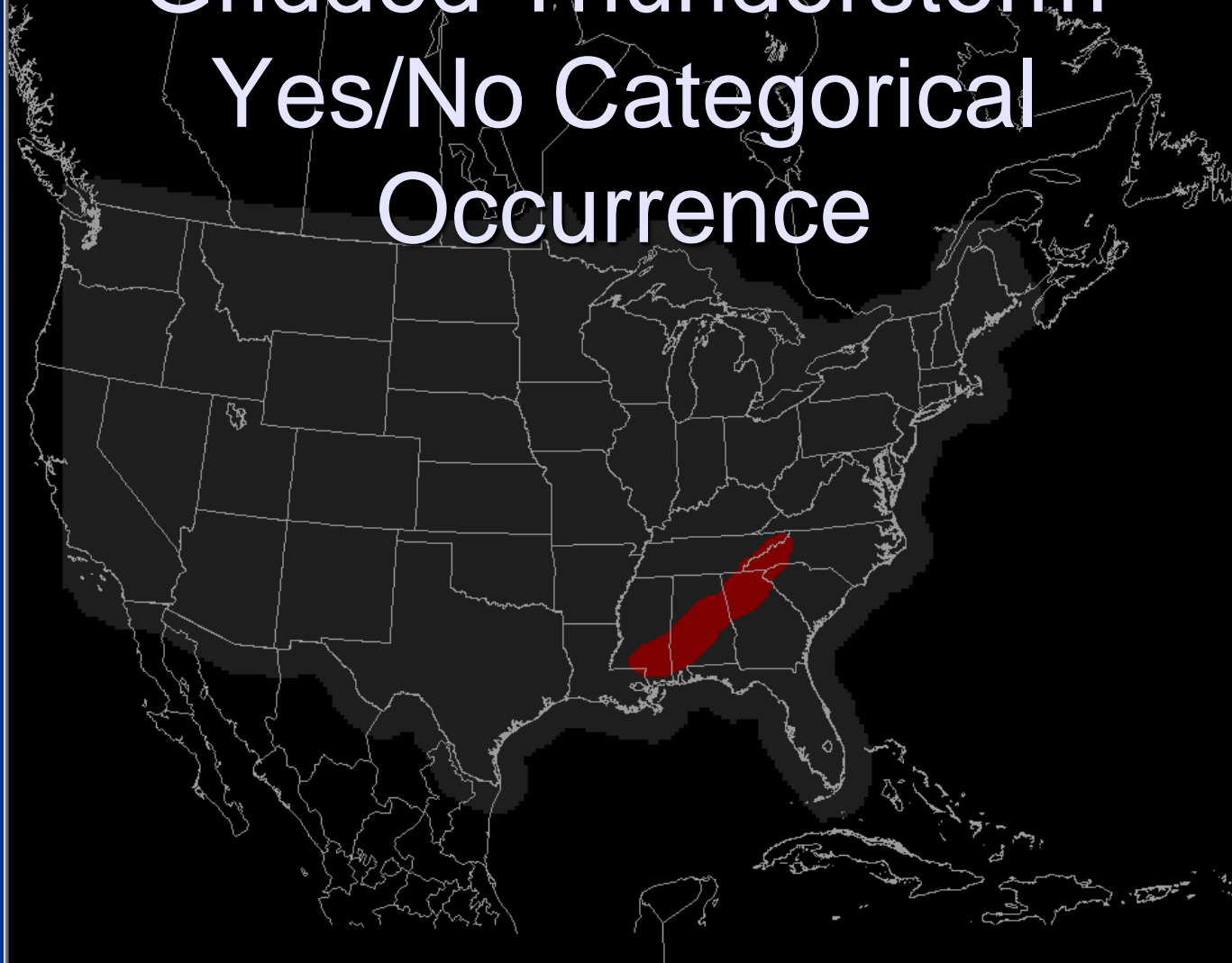


Gridded Thunderstorm Probabilities



GFS-LAMP-Grid Thunderstorm probability Img(%) 26.11 3HR Tue 14:00Z 26-Feb-08
GFS-LAMP-Grid Thunderstorm probability (%) 26.11 3HR Tue 14:00Z 26-Feb-08

Gridded Thunderstorm Yes/No Categorical Occurrence



GFS LAMP IN AWIPS AVNFPS

AvnFPS TAF Editor

File Options Edit Help

Viewer Editor

Text Editor

Show Headers Num TAFs 1

Site ID: KHOU Flight Categories: VFR MVFR IFR LIFR

Metars GFS-MOS TAF/LAMP LAMP ETA-MOS NGM-MOS NAM-WRF profile Grids

All Routine Format table long short

KHOU	GFS LAMP		Guidance				03/13/08				1200 UTC														
	hour	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12
TMP	57	60	64	68	71	72	72	71	70	70	69	68	67	67	67	67	66	66	66	66	66	65	65	65	65
DPT	54	57	59	60	61	61	62	62	62	62	63	63	64	65	65	66	66	65	65	65	65	64	63	62	62
WDR	140	140	150	160	170	170	170	170	170	170	160	160	160	170	180	180	190	190	200	200	210	220	220	230	230
WSP	04	06	08	11	13	14	14	13	12	13	12	11	11	10	10	09	08	08	06	05	05	04	04	03	03
WGST	00	00	00	00	20	21	21	21	19	20	19	00	00	00	00	00	00	00	00	00	00	00	00	00	00
VIS	5	6	7	7	7	7	7	7	7	7	5	5	5	5	6	5	5	5	5	5	5	3	2	2	1
CVIS	5	5	5	6	6	7	7	7	6	5	5	3	3	5	5	3	4	4	3	5	2	3	2	2	1
OBVIS	BR	HZ									BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	FG	FG
CLD	BKN	BKN	BKN	BKN	OVC	OVC	OVC	OVC	OVC	OVC	OVC	OVC	OVC	OVC	OVC	OVC	BKN	SCT	BKN	BKN	OVC	BKN	OVC	OVC	BKN
CIG	8	7	7	6	6	5	5	5	4	4	4	3	3	3	3	3	3	3	3	3	3	3	2	2	2
CCIG	5	6	6	6	6	6	5	5	5	4	4	4	3	2	3	2	1	2	1	1	1	1	2	2	2
PTYPE	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA
POS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
POZ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PP0	0	0	0	1	3	4	9	14	18	19	19	19	15	14	11	5	1	0	0	0	0	0	0	0	0
PC0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TP2			2	2	3	3	6	8		13		16		8		6		4		4		3		2	
TC2			0	0	0	0	0	0		0		0		0		0		0		0		0		0	

This tab is selected for LAMP guidance

For choosing displayable format of data

LAMP Guidance in Table Format

Site ID: **KHOU** Flight Categories: **VFR** **MVFR** **IFR** **LIFR**

Metars GFS-MOS TAF/LAMP LAMP ETA-MOS NGM-MOS NAM-WRF-profile Grids

All Routine Format table long short Flight Categories Probabilities

KHOU hour	GFS 13	LAMP 14	Guidance 15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13
TMP	57	60	64	68	71	72	72	71	70	70	69	68	67	67	67	66	66	66	66	66	65	65	65	65	
DPT	54	57	59	60	61	61	62	62	62	62	63	63	64	65	65	66	66	66	66	65	65	64	63	62	62
WDR	140	140	150	160	170	170	170	170	170	170	160	160	160	170	180	180	190	190	200	200	210	220	220	230	
WSP	04	06	08	11	13	14	14	13	12	13	12	11	11	10	10	08	08	06	05	05	04	04	03	03	
WGST	00	00	00	00	20	21	21	21	19	20	19	00	00	00	00	00	00	00	00	00	00	00	00	00	
VIS	5	6	7	7	7	7	7	7	7	7	5	5	5	6	5	5	5	5	5	5	5	5	5		
cat1	2	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3	5	8	12	14	16	18	20	22	
cat2	2	0	0	0	0	0	0	0	0	0	0	0	1	4	5	6	7	8	12	14	16	18	20	22	
cat3	3	1	0	0	1	1	1	1	1	1	1	1	1	2	3	4	4	5	8	10	12	14	16	18	
cat4	5	2	0	0	2	2	2	2	2	2	2	2	3	4	5	6	7	8	12	14	16	18	20	22	
cat5	46	30	7	3	4	4	4	4	4	4	4	4	5	6	7	8	9	10	12	14	16	18	20	22	
cat6	69	46	17	8	9	9	9	9	9	9	9	9	10	11	12	13	14	15	16	18	20	22	24	26	
CVIS	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
cat1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
cat2	1	3	3	0	0	3	0	1	4	3	4	4	4	5	5	9	8	6	4	8	8	8	8	8	
cat3	2	11	6	0	0	7	4	3	8	13	17	15	13	7	10	18	13	15	20	10	10	10	10	10	
cat4	8	20	15	12	13	10	10	14	14	24	25	25	17	17	16	22	22	22	29	16	18	18	18	18	
cat5	43	56	56	47	37	36	37	33	41	49	58	61	52	51	40	50	58	48	49	48	50	51	54	58	
cat6	69	67	64	59	51	41	42	41	53	54	64	73	69	65	57	64	65	56	61	60	68	65	65	60	
OBVIS	BR	HZ										BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	
CLD	BKN	BKN	BKN	BKN	OVC	OVC	OVC	OVC	OVC	OVC	OVC	OVC	OVC	OVC	OVC	BKN	SCT	BKN	BKN	OVC	BKN	OVC	OVC	BKN	
PSKC	0	0	0	0	0	0	0	0	0	0	0	0	1	12	20	28	34	38	34	26	20	18	18	22	
PFEW	9	9	7	4	2	0	0	0	0	1	3	5	7	10	11	11	12	11	9	8	6	6	7	9	
P5CT	23	20	19	15	10	6	3	1	1	2	3	5	6	4	4	4	5	7	9	11	12	12	11	9	
PBKN	46	44	42	41	40	38	34	31	29	25	22	20	15	12	11	7	10	8	10	13	15	16	17	17	
POVC	22	28	32	41	48	56	63	68	70	73	72	71	70	63	55	50	40	36	39	42	47	47	48	44	
CIG	8	7	7	6	6	5	5	5	4	4	4	3	3	3	3	3	3	3	3	3	3	3	2	2	
cat1	0	0	0	0	0	0	0	0	0	1	1	1	2	3	4	5	7	9	11	12	14	16	18	18	
cat2	1	1	0	0	1	1	2	2	2	3	4	6	8	9	10	11	12	12	11	10	10	11	11	10	
cat3	1	3	2	3	3	4	6	8	9	13	16	19	21	23	20	21	19	17	16	13	12	13	12	11	
cat4	2	4	7	9	12	14	15	16	18	20	20	20	20	19	18	17	14	10	10	12	13	12	11	11	
cat5	3	4	8	13	18	20	22	22	21	17	15	13	11	9	9	6	5	3	3	2	2	5	6	6	
cat6	6	9	12	17	23	29	34	36	34	29	23	18	16	12	11	7	3	4	2	0	0	0	3	2	
cat7	25	23	20	18	17	15	15	15	16	15	14	13	9	5	2	0	0	0	0	0	0	0	0	0	
cat8	61	57	52	40	27	16	7	2	0	2	6	10	15	20	26	32	39	46	47	49	49	47	43	42	
CCIG	5	6	6	6	6	6	5	5	4	4	4	4	3	2	3	2	1	2	1	1	1	2	2	2	
cat1	3	3	1	0	0	0	0	0	0	0	1	1	2	4	5	12	14	12	13	13	17	15	12	13	
cat2	1	0	0	0	0	0	1	3	1	3	5	8	13	21	14	17	20	16	17	17	14	11	14	16	
cat3	2	8	1	0	2	4	4	5	7	13	23	26	27	23	25	25	18	17	13	6	10	9	6	2	

Toggles LAMP Probabilities

Toggles Flight Categories color background

GFS LAMP Guidance in TAF Format (long)

Site ID: KHOU Flight Categories: VFR MVFR IFR LIFR

Metars GFS-MOS TAF/LAMP LAMP ETA-MOS NGM-MOS NAM-WRF-profile Grids

All Routine Format table long short Flight Categories Probabilities

GFSLAMP Guidance 03/13/08 1200 UTC

TAF

KHOU 131720Z 131818 17014G21KT P6SM OVC025

FM1900	17014G21KT	P6SM	OVC025
FM2000	17013G21KT	P6SM	OVC025
FM2100	17012G19KT	P6SM	OVC015
FM2200	17013G20KT	P6SM	OVC015
FM2300	16012G19KT	4SM BR	OVC015
FM0000	16011KT	4SM BR	OVC007
FM0100	16011KT	4SM BR	OVC007
FM0200	17010KT	4SM BR	OVC007
FM0300	18010KT	6SM BR	OVC007
FM0400	18009KT	4SM BR	OVC007
FM0500	19008KT	4SM BR	BKN007
FM0600	19008KT	4SM BR	SCT250
FM0700	20006KT	4SM BR	BKN007
FM0800	20005KT	4SM BR	BKN007
FM0900	21005KT	4SM BR	OVC007
FM1000	22004KT	1 1/2SM BR	BKN007
FM1100	22004KT	1/2SM FG	OVC003
FM1200	22003KT	1/2SM FG	OVC003
FM1300	23003KT	1/4SM FG	BKN003=

Long version of GFS LAMP guidance TAF

GFS LAMP Guidance in TAF Format (short)

Site ID: KHOU Flight Categories: VFR MVFR IFR LIFR

Metars GFS-MOS TAF/LAMP LAMP ETA-MOS NGM-MOS NAM-WRF-profile Grids

All Routine Format table long short Flight Categories Probabilities

GFSLAMP Guidance 03/13/08 1200 UTC

TAF
KHOU 131720Z 131818 17013G20KT P6SM 0VC015
FM2300 16012G19KT 4SM BR 0VC015
FM0000 16010KT 4SM BR 0VC007
FM0300 18010KT 6SM BR 0VC007
FM0400 18008KT 4SM BR BKN007
FM0600 19008KT 4SM BR SCT250
FM0700 20005KT 4SM BR 0VC007
FM1000 22004KT 1 1/2SM BR BKN007
FM1100 22003KT 1/2SM FG 0VC003
FM1300 23003KT 1/4SM FG BKN003=

Condensed version of GFS LAMP guidance TAF

GFS LAMP Products on the Web

To view these products online, visit:

<http://www.nws.noaa.gov/mdl/gfslamp/gfslamp.shtml>

GFS LAMP Website

NOAA's National Weather Service
Meteorological Development Lab

Site Map News Organization

GFS-LAMP Realtime Products

This web site is not supported 24/7 so the files on this server may not always be the most recent.
-- Disclaimer --

Subscribe to our [LAMP Products Mailing List](#) to receive new updates on LAMP changes.

Product	Latest Cycle	Issue Time
LAMP Analyses: Current Analyses	Tuesday, February 5 17 UTC	17:31 UTC
LAMP Forecast Bulletins: Full Text Message LAMP Forecast Bulletins: Station Text by State LAMP Forecast Bulletins: Single Station Text by State	Tuesday, February 5 15 UTC	15:31 UTC
LAMP Forecast Java Meteograms: Current Station Meteogram	Tuesday, February 5 15 UTC	15:31 UTC
New LAMP Station Forecasts: Current Station Images	Tuesday, February 5 15 UTC	15:37 UTC
LAMP Tstorm Forecasts: Current Tstorm Images	Tuesday, February 5 15 UTC	15:44 UTC

NWS FTP Server Products

LAMP Data available on the NWS FTP server ([Details](#)):

- [ASCII Text Bulletins for the last 24 hours](#)
- [BUFR data for the last 24 hours](#)
- [GRIB2 data for the last available cycle](#)

Left Sidebar Navigation:

- LAMP HOME
- GFS-LAMP Products
 - All Products
- Text Forecasts
 - Full Message
 - By Station
 - By State
- Graphics
 - Analysis Images
 - Meteograms
 - Station Plots
 - Thunderstorms
- Verification
 - Overall Scores
- Reference
 - Documentation Page
 - GFS LAMP Docs
- Descriptions
 - GFS LAMP
- FAQs
 - GFS LAMP FAQ
- Recent Changes
- Join the Mailing List
- Contact Us

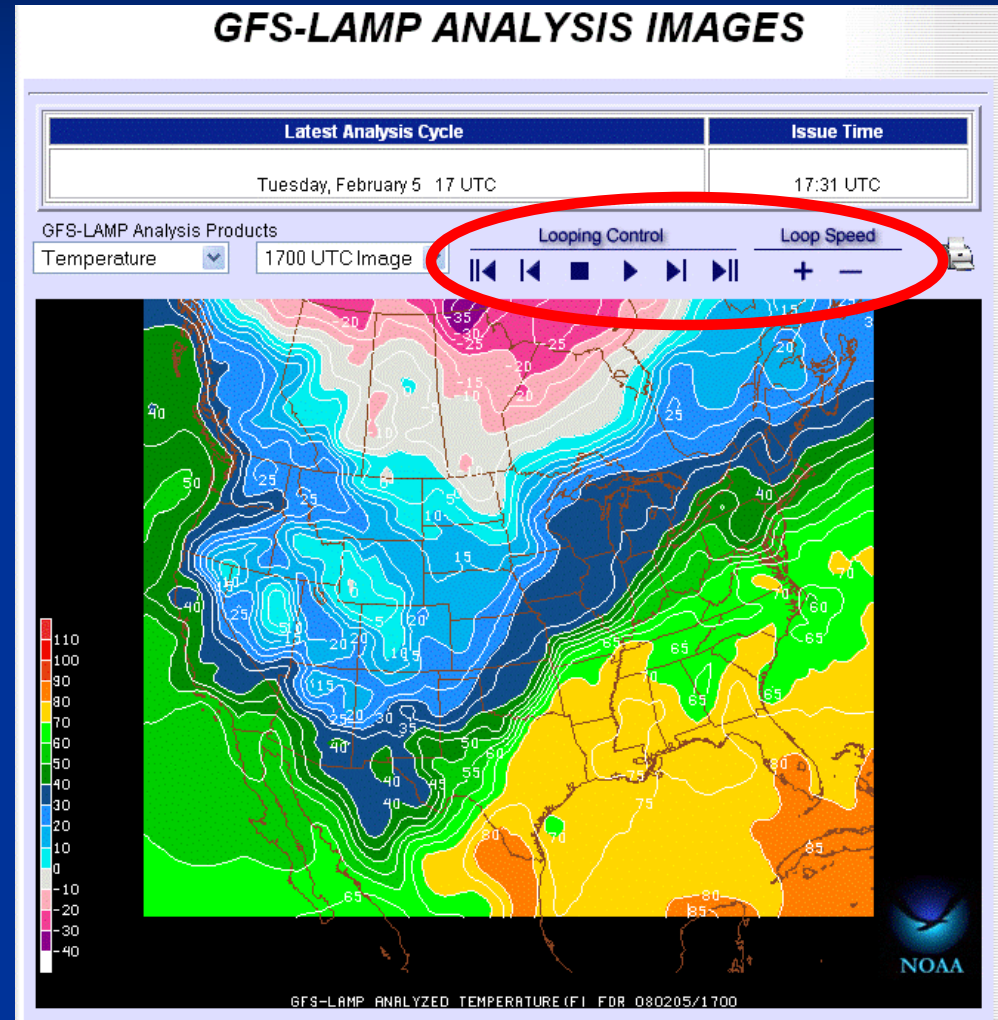
- Analysis Images
- Text Bulletins
- Station Meteograms
- Station Plots
- Thunderstorm Images
- Verification Images

GFS LAMP Analysis Page

Analyzed elements are:

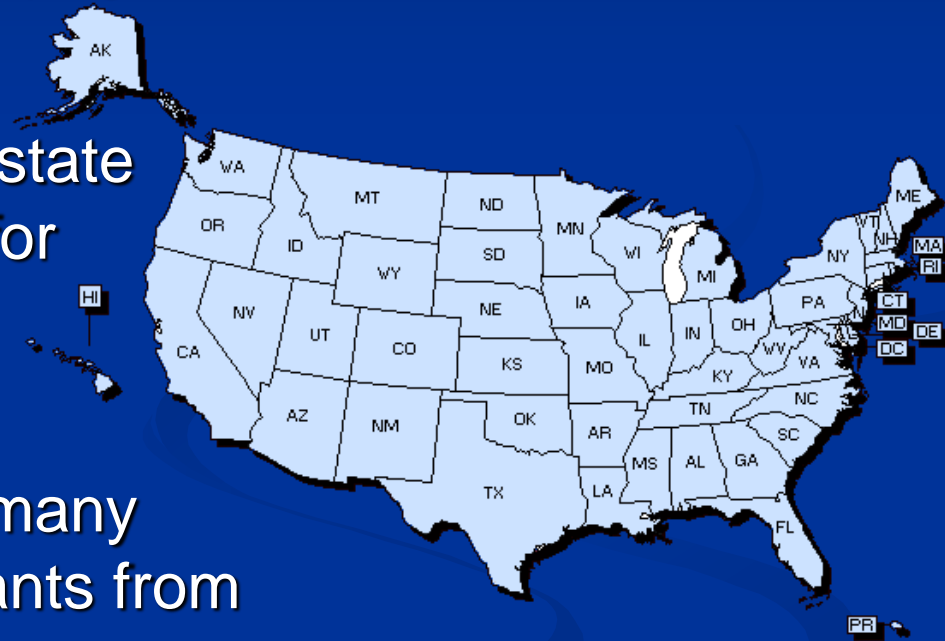
- Temperature
- Dewpoint
- Theta-E
- Mixing Ratio
- Saturation Deficit
- Radar
- Sea Level Pressure & Winds

*The looping control on the analysis page animates images for the previous 23 hours up to the current time



Options for Viewing Text Bulletins

- Full Text Message
 - Includes all sites on one page
- By State
 - The user can click on a state to display text bulletins for all of its stations
- Custom station list
 - The user can select as many stations as he or she wants from a list organized by state



GFS LAMP Station Meteograms



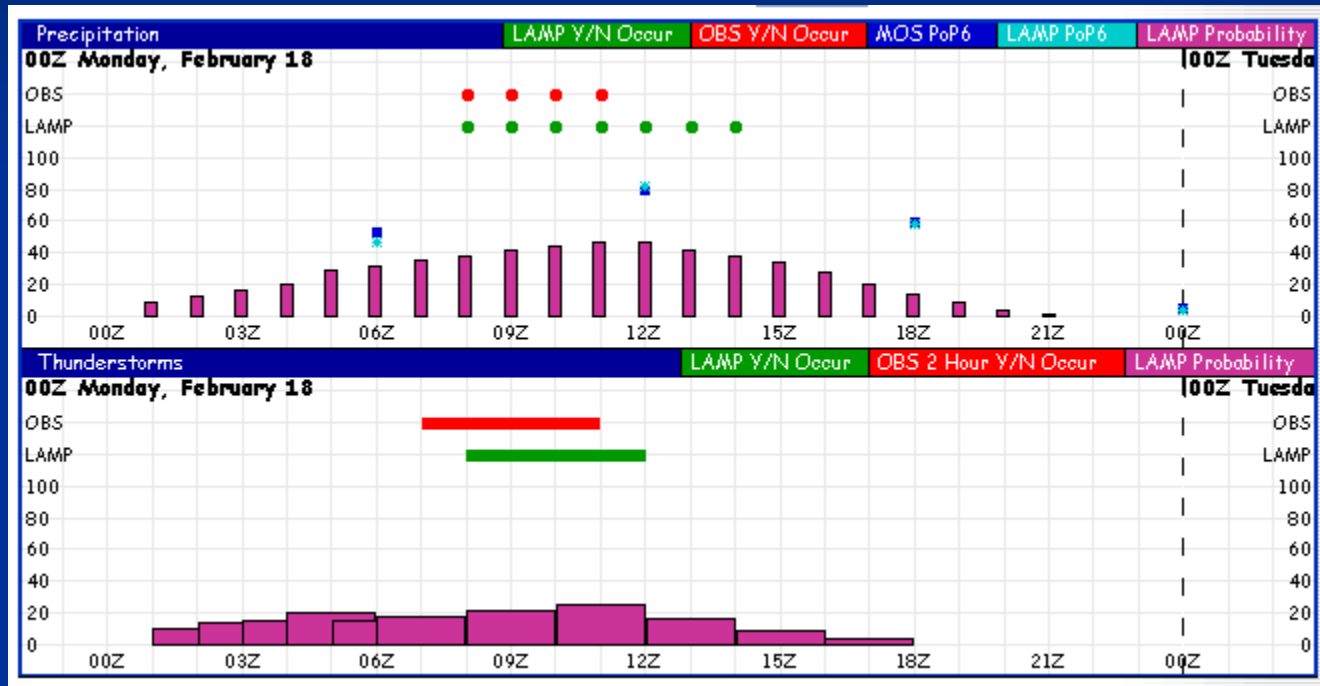
Features

- Up to 12 displayable GFS LAMP forecast elements
- Real-time verification of current and past cycles
- Verification of completed past cycles including the corresponding GFS MOS forecast

Meteogram Case Studies

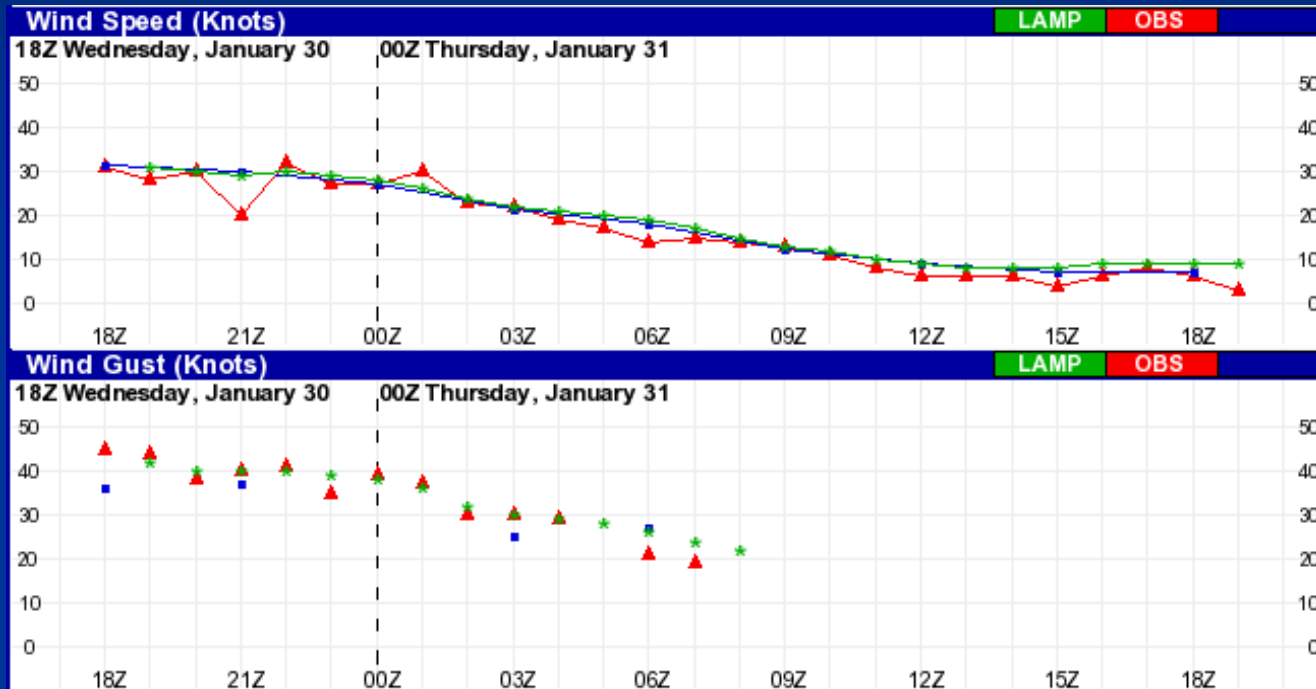
A closer look highlighting helpful ways to utilize this product...

Case Study #1: Timing of a Weather Event



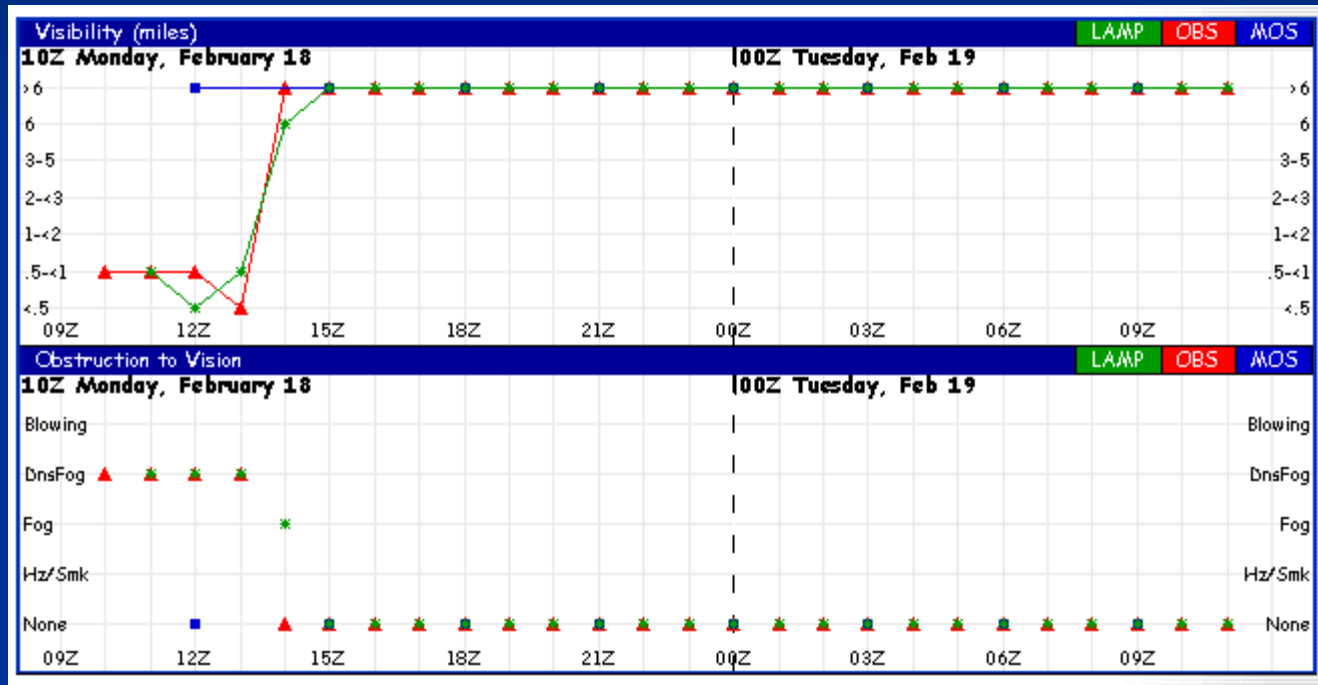
The meteograms can be helpful in determining the timing of a particular weather event. In the example above, LAMP correctly forecasted that precipitation would begin at 08Z Monday, which was eight hours before the event, but missed the onset of the thunderstorms by one hour.

Case Study #2: Another Timing of a Weather Event



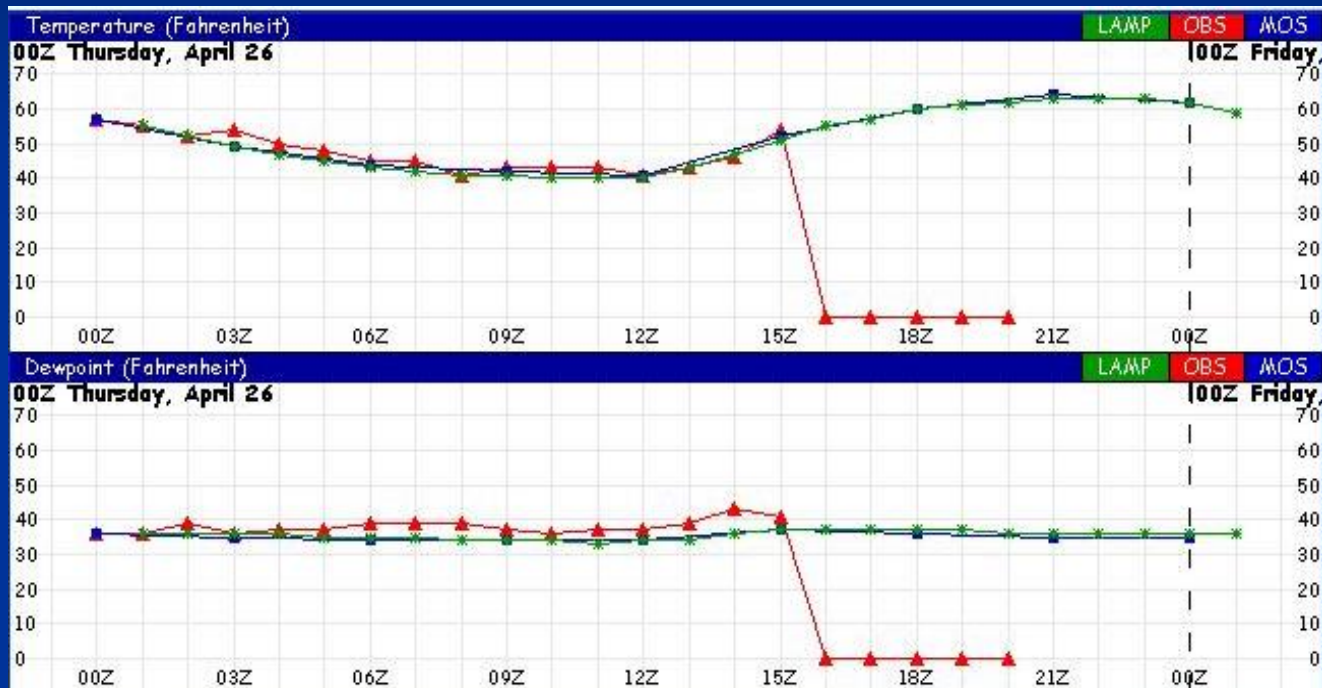
In another example, these meteograms show LAMP handling the timing of a high wind event by correctly forecasting 40 knot gusts and diminishing the high winds in the overnight hours.

Case Study #3: The Influence of the Observation (Improvement)



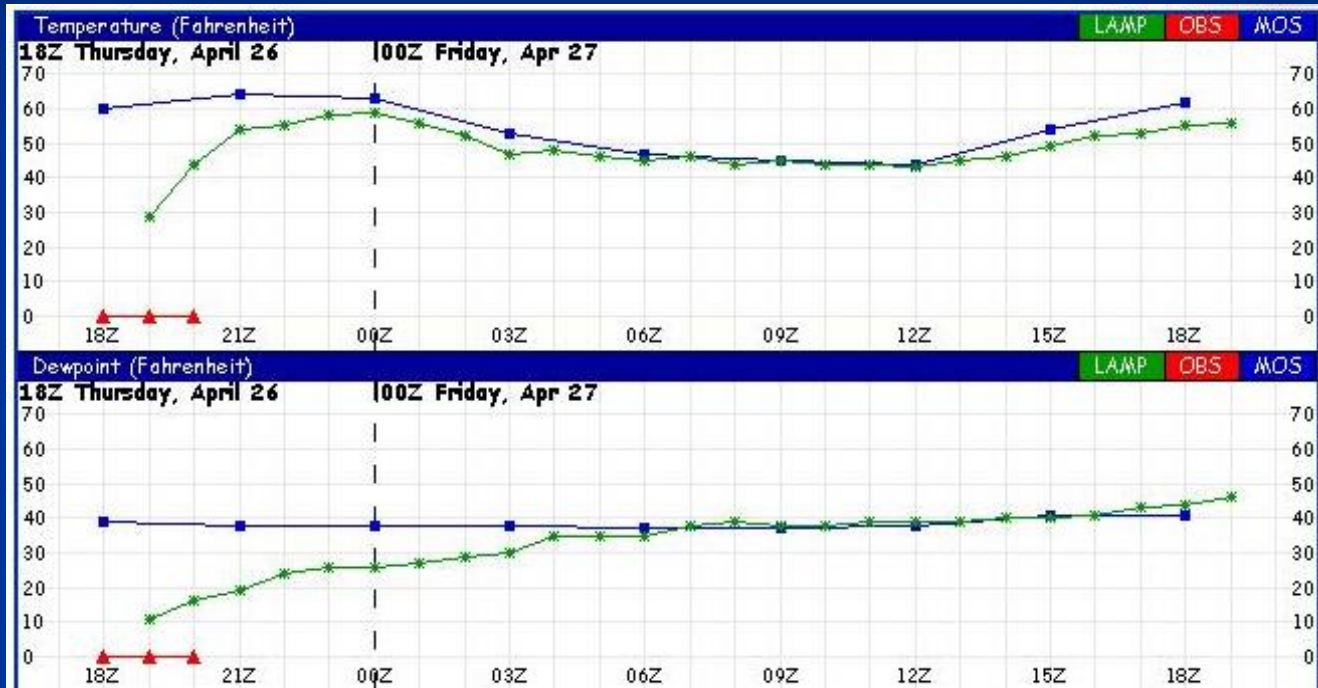
LAMP was able to catch this dense fog event on Monday morning, when the 06Z MOS had no reduced visibilities. The influence of the observed dense fog allowed the LAMP to “update” the MOS forecast and correctly depict this event.

Case Study #4: The Influence of the Observation (Degradation)



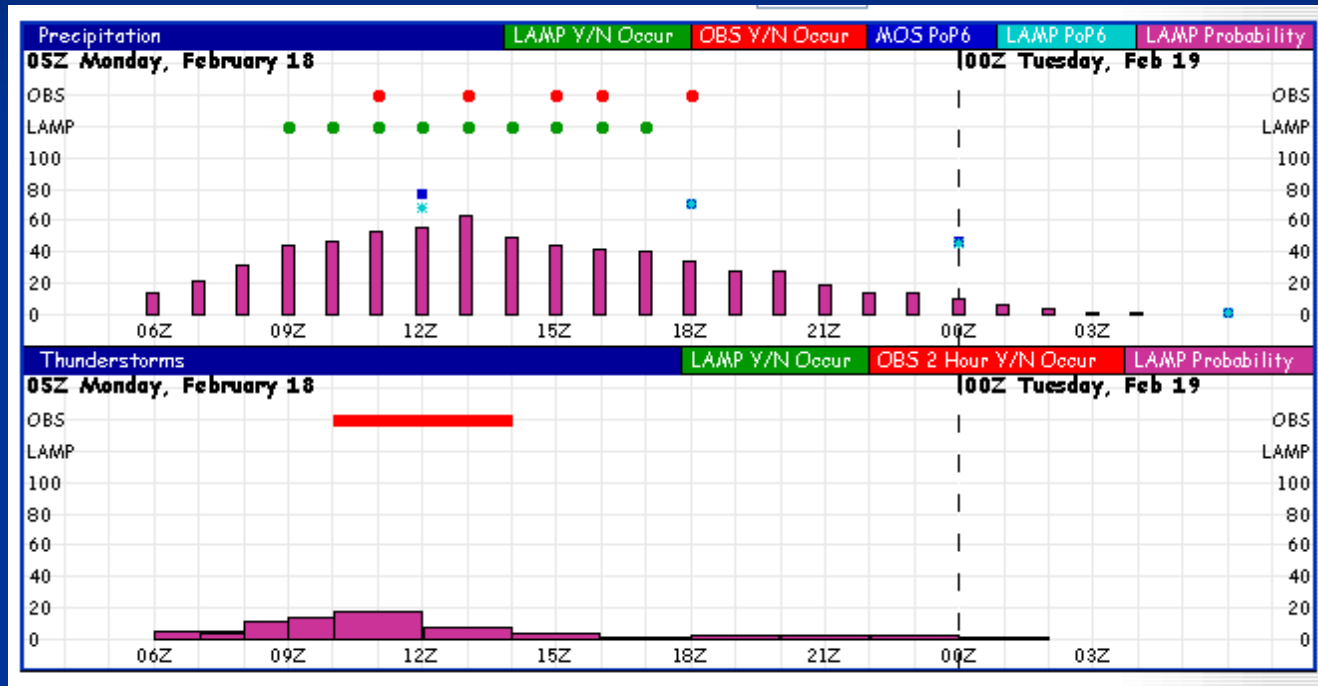
The above image shows the 00Z LAMP temperature and dewpoint meteograms with the corresponding GFS MOS forecast and the verifying observation. You'll notice that the observation becomes bad after 15Z. On the next slide, we will see how this impacts the temperature and dewpoint forecasts at the 18Z cycle.

Case Study #4 Continued



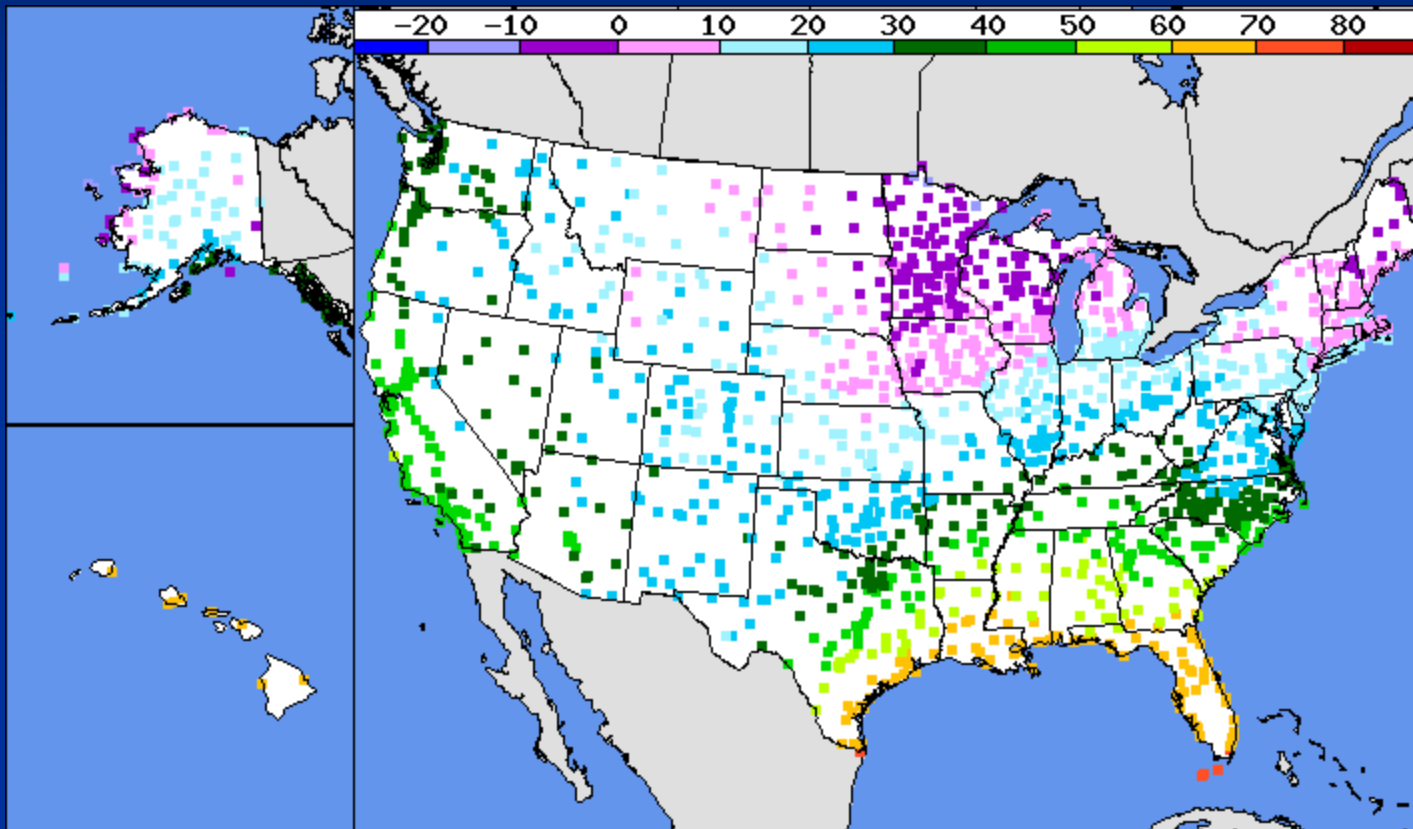
With bad observations still being reported at 18Z, we see a negative influence on the temperature and dewpoint forecasts. The influence of this observation causes the LAMP forecasts to be unreasonably lower than MOS at many of the forecast projections.

Case Study #5: Using POPO and Thunderstorm Probabilities



In this example, the LAMP categorical forecast missed observed thunderstorms during 10 - 14Z. However, the probabilistic thunderstorm forecast shows significant values (below the threshold) during 10Z – 12Z. Thus, forecasters can infer the chance of thunderstorms, even with a “no” categorical forecast.

GFS LAMP Station Plots



12 UTC GFS-LAMP Dewpoint
19 HOUR FORECAST VALID FOR 02-22-2008 07 UTC



Elements

- Flight Category
- Ceiling Height
- Visibility
- Obstruction to Vision
- Total Sky Cover
- Precipitation Type
- Probability of Precipitation
- Wind Speed
- Wind Gust
- Wind Direction
- Temperature
- Dewpoint

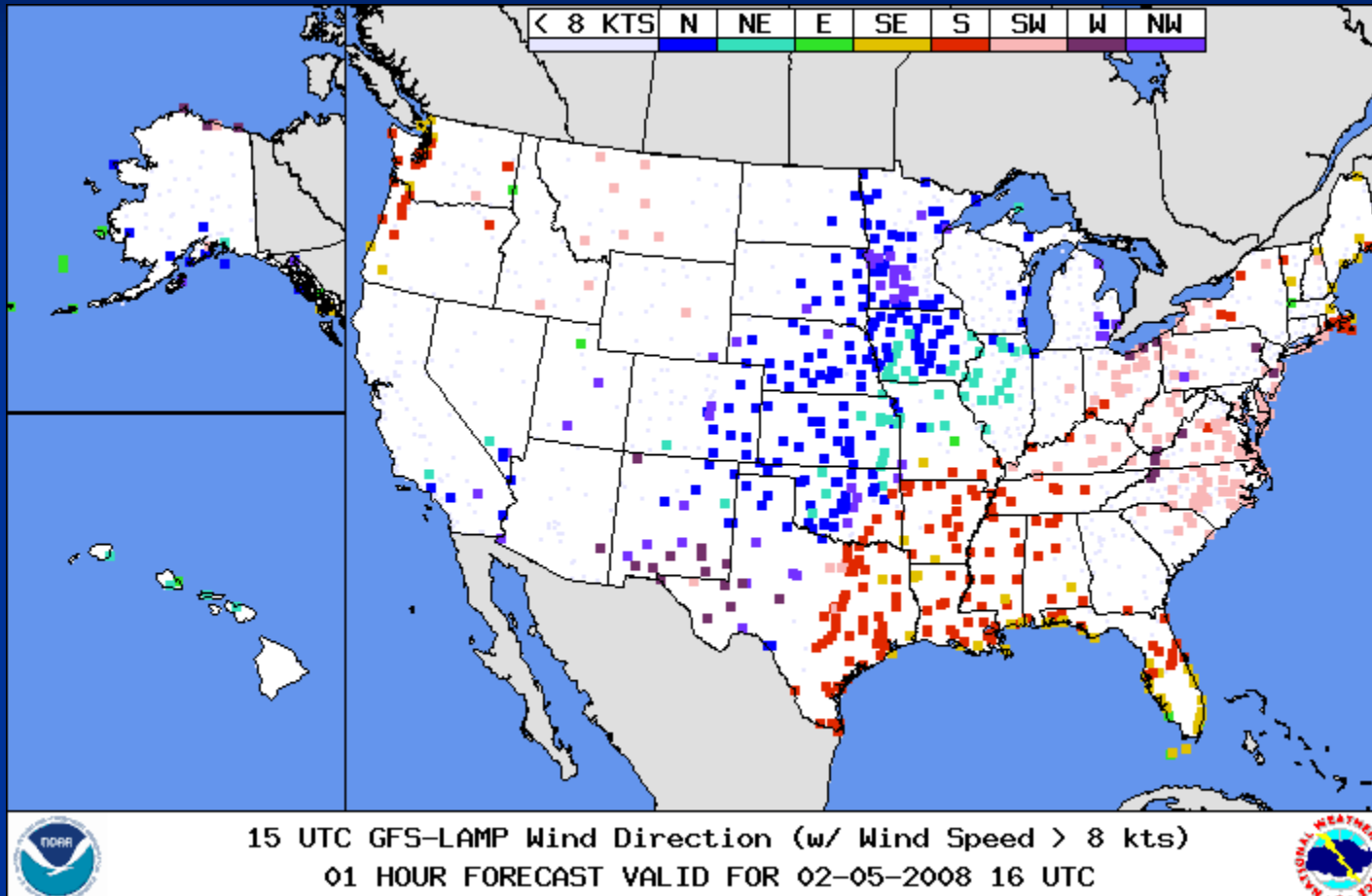
[Click an element name on this slide to see its plot](#)



A closer look at the station plots...

Two examples of how to use the station plot images

Identifying a Frontal Boundary



Wind Direction

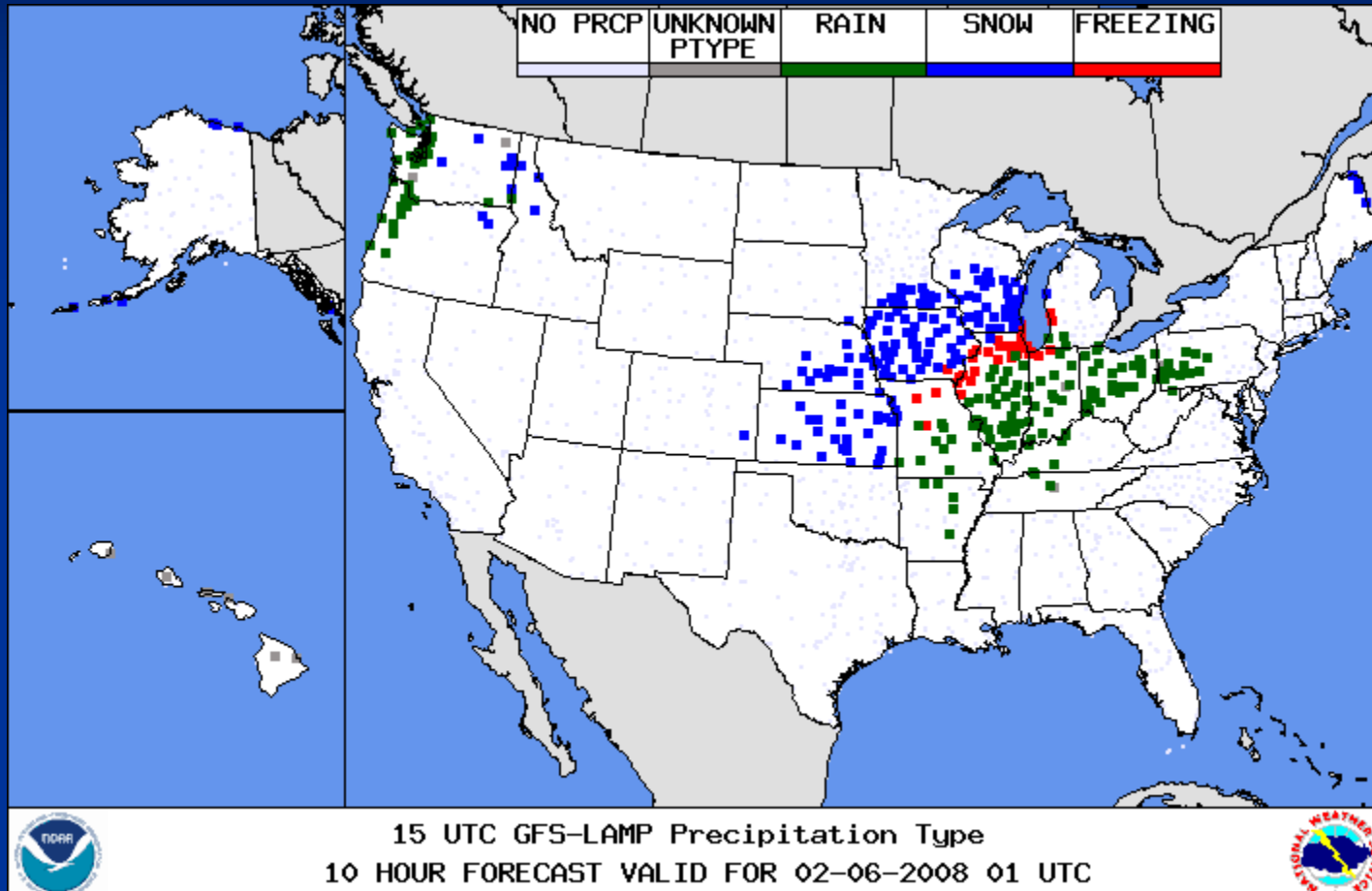
Dewpoint

12Z Surface Map

*Click on one of
the above
choices to see
its plot*

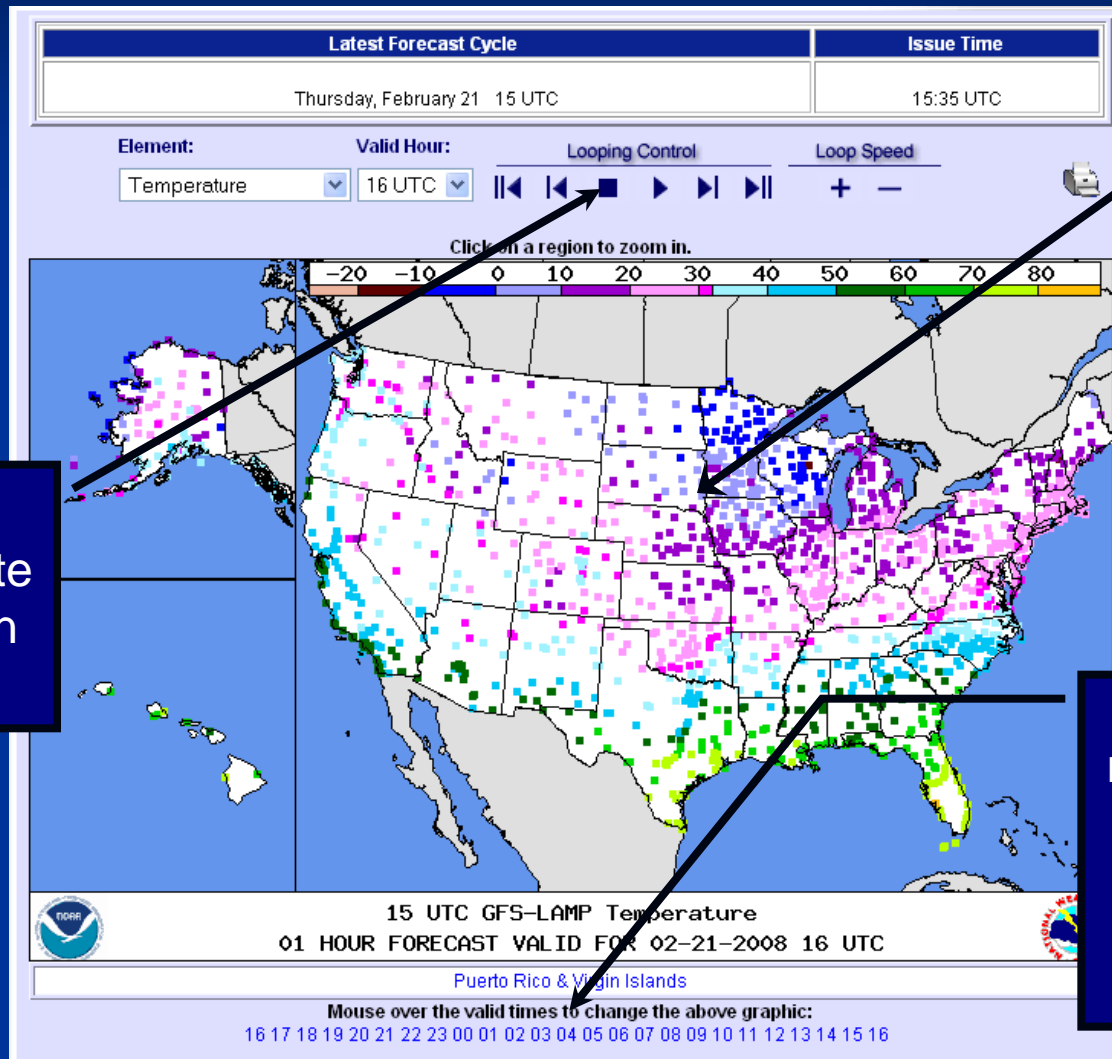
Notice the sharp dewpoint gradient and wind shift in the central United States, helping to identify the presence of a cold front.

Locating the Rain/Snow Line



The station plots allow the user to get a spatial understanding of the station-based forecasts. This could prove useful in precipitation type forecast.

Other Station Plots Features

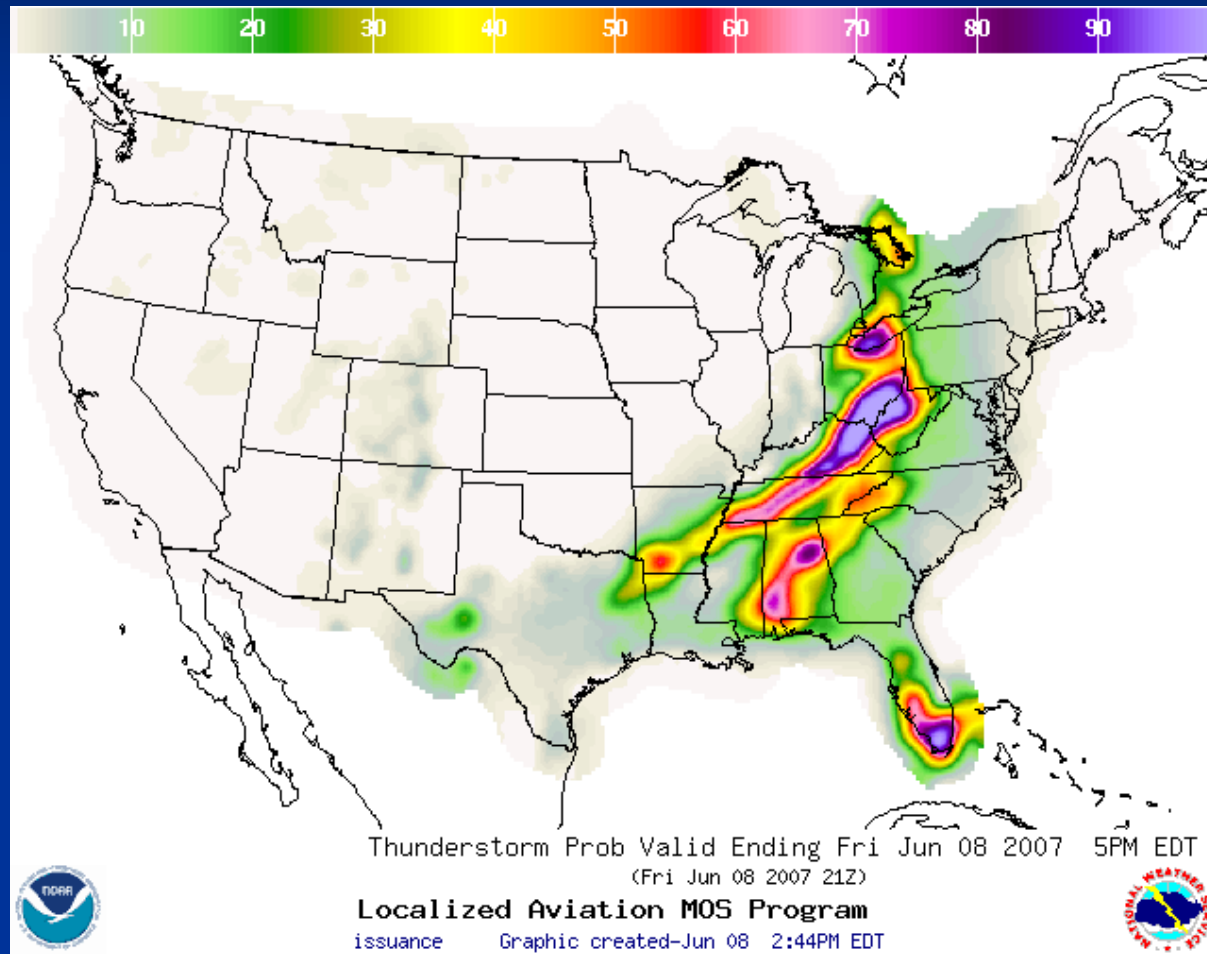


The looping controls animate plots in time on the webpage

On the webpage, click on the map to zoom into a region

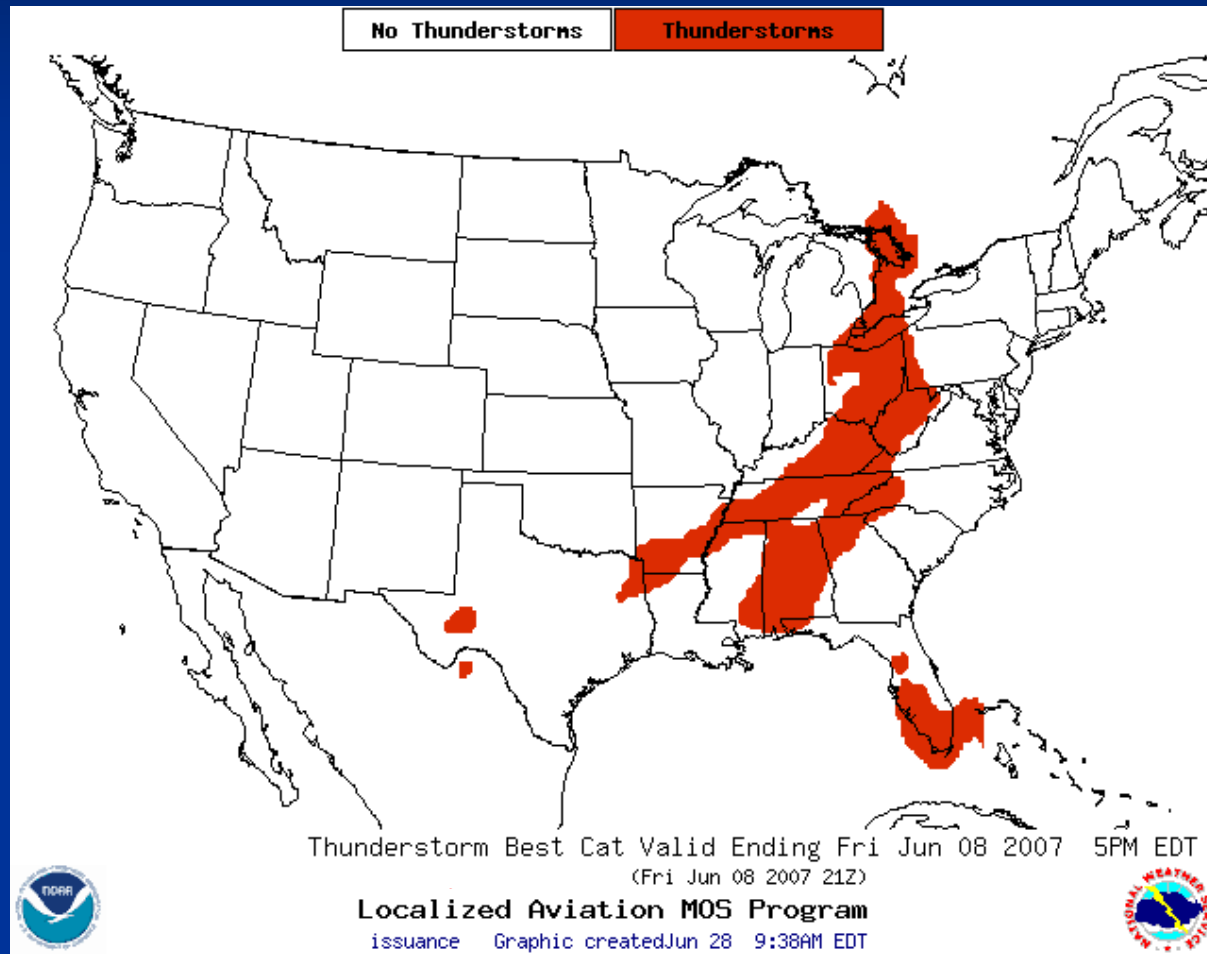
The user can mouseover valid times for an alternate way to display a new plot

GFS LAMP Thunderstorm Images



Probability of a Thunderstorm during a 2-Hour Period

GFS LAMP Thunderstorm Images



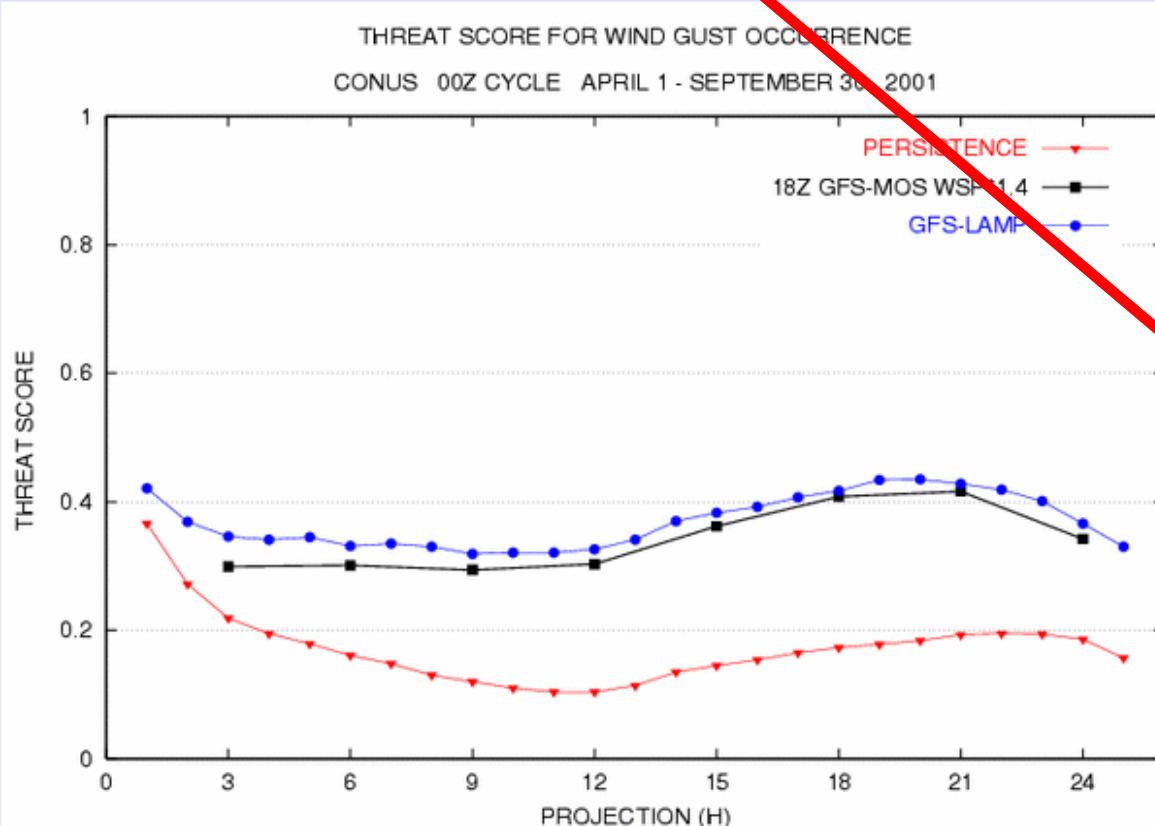
Categorical Yes/No Thunderstorm Forecast during a 2-Hour Period

Viewing GFS LAMP Verification

GFS LAMP VERIFICATION

For more information about this page, click [HERE](#) to view GFS-LAMP Verification FAQ Page.

Wind Gust Threat Score Warm 0000 UTC Cycle



- The user can view the verification scores for GFS LAMP elements at each implemented cycle and season.
- On the website, clicking here will bring up the FAQ page for specific information on these plots.

Summary

- LAMP offers a diverse selection of graphical and textual depictions of its forecast elements.
- These products are available through the SBN/NOAAPort, the NWS FTP Server, D2D in AWIPS, AvnFPS in AWIPS, and the website.
- Although there is some overlap, each method of accessing LAMP guidance contains unique products and weather element information.
- Full use of these products can provide a more complete understanding of the GFS LAMP forecast in a synoptic and temporal context, as well as insights into the strengths and weaknesses of the guidance.
- For more information, visit the LAMP website:
<http://www.nws.noaa.gov/mdl/lamp/index.shtml>