## MODEL ANALYSES AND GUIDANCE (MAG) Web Site

**User Manual** 

(Documentation Version 2.1)

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#### Introduction

The Model Analysis and Guidance website displays the graphical output of National Weather Service (NWS) Numerical Weather Prediction guidance. The website offers a professional and interactive interface, which showcases the NWS observational database and suite of numerical model analysis and guidance products.

In an effort to respond to user needs, to protect life and property, and support the nation's growing need for environmental information, a streamlined graphical approach displaying products in making forecasts serves not only NWS Offices but also the Private and Public Sectors.

The Model Analyses and Guidance (MAG) website is available at <a href="http://mag.ncep.noaa.gov">http://mag.ncep.noaa.gov</a>

## MAG home page



Figure 1: MAG home page

The main index page of the website (Figure 1) presents the user with a choice of three categories listed below:

- **Model Guidance**: provides access to the National Weather Service's (NWS) numerical model output including both regional and global models
- Observations and Analyses: provides access to the Real-Time Mesoscale Analysis(RTMA) products, Upper Air (UAIR) Height Plots, and Upper Air Sounding Plots (Skew T plots)
- **Tropical Guidance**: provides access to the National Weather Service's Tropical Cyclone model output when tropical cyclones exist over the Atlantic or Pacific Oceans

The user can obtain a description for each category by hovering over them. A tool tip appears describing the category.

When the user clicks on the map, an information pop up appears alerting the user to "Select Model Guidance, Observations and Analyses, or Tropical Guidance".

Documentation to assist the user can be found in the Latest News menu. Simply hover over the link in the right hand corner that says +Latest News. A menu appears and users can select one of the following documents:

- Latest News
- Upcoming Changes
- User's Guide
- Frequently Asked Questions
- Training
- Product Description Document

The Message of the Day box contains a link to information about the next scheduled upgrade, an important update or any issues with the site.

Users can send comments and suggestions by clicking on the "Website Questions" link at the bottom left corner of the main page. The user will then be redirected to a form as shown in Figure 2.

поня	National Weather Service  NCEP Central Operations						
211	Home	News	Org	ganization			
Local forecast by "City, St"  City, St Go  Search HCEP  Go  Current Hazards Watches/Warnings Outlooks Hational Current Conditions Observations Satellite Images Radar Imagery Lakes & Rivers Space Weather Environmental Models Product Info Current Status Model Analyses & Forecasts Forecasts Current 6 to 10 Day Aviation	E-Mail the Mo Please enter any comment comments" button when yo NOTE: Submission of name and we cannot provide a reply.  Your Full Name: Your E-mail Address:  Please enter any comment addresses you are referring	odel Analyses are s you might have in the spa u are finished.  Voremail address is optional. A	nd Guidanc ice below, and pres	e Helpdesk ss the "Send complete e-mail address			
Hurricane Marine Tropical Marine Fire Weather	Erase Comments	Send Comments					
Climate Climate Prediction Climate Archives HOAA Central Library Photo Library Public Affairs Employment Image of the Day Contact MAG Helpdesk	NOAA/ National Weather Servi National Centers for Environme 5200 Auth Road Camp Springs, Maryland 20746 NCEP Internet Services Team Page last modified: 6/10/10 1:0:	ntal Prediction	Disclaimer Credits Glossary	Privacy Policy About Us Career Opportunities			

Figure 2: Website Questions / Contact MAG Helpdesk

# **Model Guiance Page:**

The user arrives on this page by clicking on the 'Model Guidance' category from the main index page. (See Figure 3)

- The default Model Area is North America (NAMER)
  - o Initially the seven model types available for the North America Region are available for selection.
  - o Selecting another Model Area, resets the available model types available.
- Select the model type of choice from the model type list
- Click on the button 'Reset Selection' to clear all choices.
- Click on the 'Back' button to go back to previous page.
- Click on the 'Home' to return to the main index page.
- To get a brief description of any of the models/regions, hover over the model/region names, and a tool tip will appear with a description.

After the user has made the selection for Model and Region, the Parameter page (see Figure 4) for the chosen model/region is displayed.

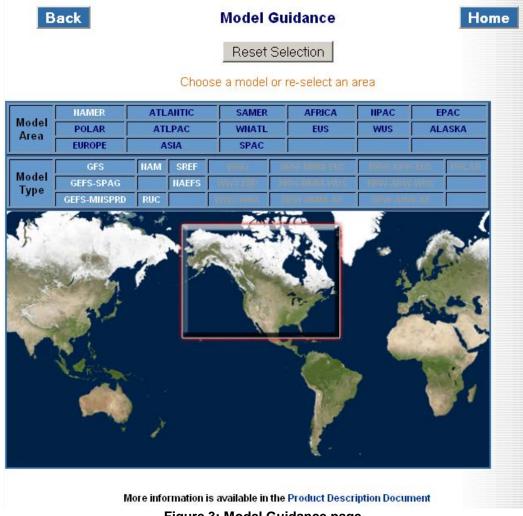


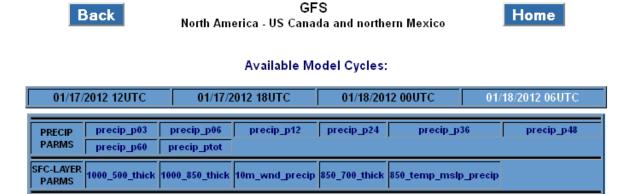
Figure 3: Model Guidance page

# **Model Guidance Parameter Page:**

The user is presented with the parameter page after the Model and Region are chosen from the Model Guidance page. In this section, the Parameter Page is presented after the user chooses a model (i.e. GFS) and region (i.e. Namer).

The Parameter Page presents the user with

- The parameter names available for a selected Model and Region.
- The available model cycles. Note: the cycles are displayed with the latest cycle as the default and is displayed on the right most cell and is highlighted in white
- The available forecast hours will be displayed in a row and column format once the parameter is chosen (see Figure 5).
- Loop option choices are in the right most column, these range from an animation of all available sequential forecast guidance times, to multiple day(s) loops.



250\_wnd\_ht

850 rh ht

700\_rh\_ht, 10m\_wnd\_precip

Default latest model cycle

300\_wnd\_ht, 850\_vort\_ht,

300\_wnd\_ht

850\_stream

500\_rh\_ht

850\_temp\_ht

500\_vort\_ht

850vor 500ht 200wd

Figure 4: Parameter page for model = "GFS" and region = "Namer"

To view the graphics for any parameter:

200\_wnd\_ht

700 rh ht

850\_vort\_ht

200\_wnd\_ht, 500\_vort\_ht,

1000\_500\_thick, 850\_temp\_ht

UPPER AIR

PARMS

**FOUR** 

PANEL

CHARTS

- Select the
  - 1. parameter name
  - 2. model cycle (default is last cycle available)
  - 3. forecast hour or loop animation

250\_stream

850 pw ht

The user selection is highlighted in white.

Note: The forecast hours matrix lists all the forecast hours available for the selected parameter of the selected model. Hours available might change based on what parameter is selected.

- Once all the above selections are made the page redirects to the graphics display page.
  - o If the forecast hour is 'Loop All' or "1/2/3/4/5... Day loop", then the user is presented with a Flash animation applet page that loops through all the images for all forecast hours as shown in Figure 6.
  - o If a distinct forecast hour is chosen, the user is shown a gif image as seen in Figure 7.

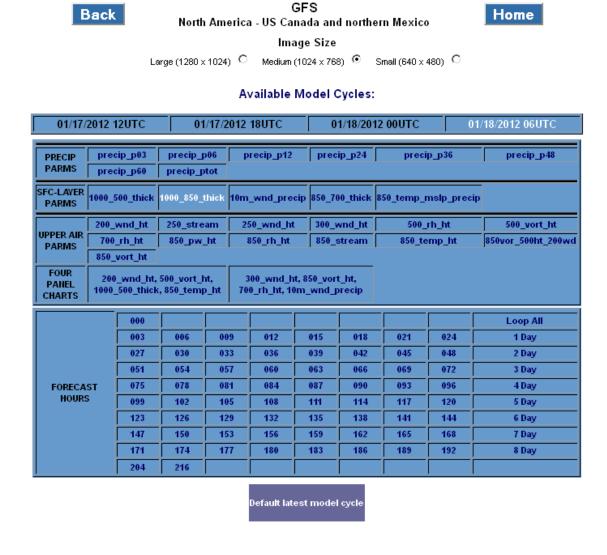


Figure 5: Parameter page with forecast hour matrix

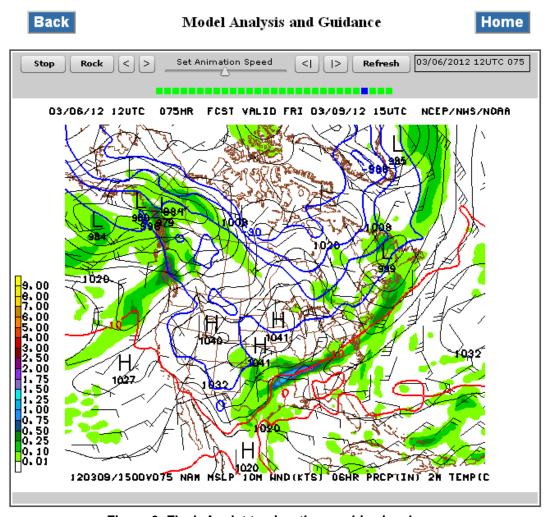


Figure 6: Flash Applet to view the graphics in a loop

The Flash animation applet (FlAniS) used for looping thought the images was developed by: Tom Whittaker, University of Wisconsin-Madison Space Science & Engineering Center (SSEC).

Stop

The Start/Stop button toggles between Start and Stop state. In the Stop state, the images can be viewed one by one. In Start state, the images can be looped or rocked at various speeds and in different directions.

Rock

The Loop/Rock button toggles between Loop mode and Rock mode. In Loop mode, the available images are animated in one direction until it reaches the end/beginning. In Rock mode, the available images are animated in one direction until it reaches the end/beginning, then the direction is reversed. The animation repeats until stopped.

Note that Start/Stop and Loop/Rock are toggle buttons. The label indicates what action you can perform, not which is already selected. By clicking stop, you can stop the animation. Start will now appear on the button, indicating clicking it will start the animation again.



The < and > buttons can be used to go back and forth between images in stop mode or change direction in start mode.



The "animation speed" slider bar can increase/decrease the pace of progression through the images in the animation.



The <| and |> buttons will take you either to the first or last image in the set, as well as turn on stop mode if currently in start mode. (This will turn on the first or last image if it's currently turned off).

#### Refresh

Refresh will clear out the disabled tiles, and turn on all the images in the progression.

# 03/06/2012 12UTC 030

The time frame on the right indicates which forecast hour is being displayed.

\*There is a known bug that after hitting refresh, the time frame will freeze at whatever hour was selected before hitting the refresh button. Backing out and reselecting the loop will return the time frame to correctly looping through the hours.

#### \_\_\_\_\_

The green boxes indicate the image tiles that can be viewed in the animation. The blue box indicates which tile is currently being displayed. If all the are green (with the exception of the current tile), the animation will cycle through all of them. Clicking on a green box turns off that tile. While looping/rocking or flipping through images, it will skip over this tile. As many/few tiles as desired can be turned off or on. Clicking the refresh button will turn them all on again.

More information about the software can be found at http://www.ssec.wisc.edu/flanis.

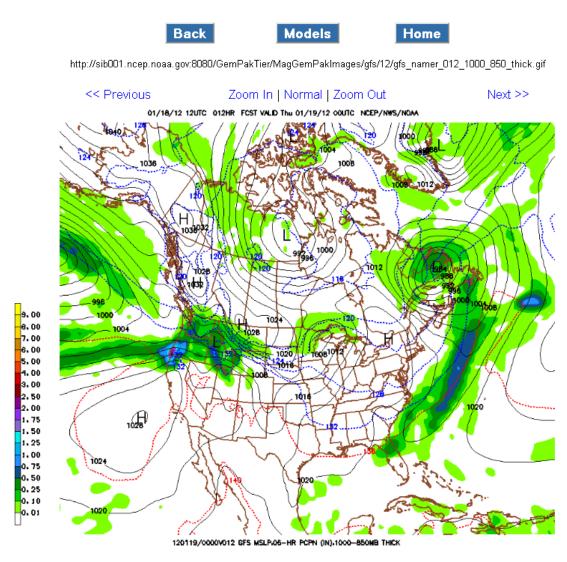


Figure 7: Graphics page for a selected forecast hour

The user can zoom-in/zoom-out or choose a Normal (original) size of the image by pointing to the "Zoom In | Normal | Zoom Out" links, provided just above the image.

The static URL to view the image is provided just below the title of the page.

Previous and Next controls on either side of the top of the page display the next or previous forecast hour's image with relation to the current image. Keys 'J' and 'K' perform the same function as the Previous and Next controls without use of the mouse.

# **Observations and Analyses Page:**

The user can choose the "Observations and Analyses" category from the MAG home page to get to the Observations and Analyses page.

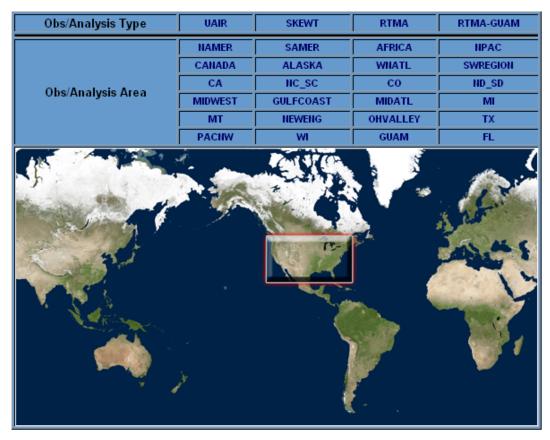
Back

### **Observations and Analyses**

Home

Reset Selection

To view Observations or RTMA images, select a Type and Area



More information is available in the Product Description Document

Figure 8: Observations and Analyses page

This page (see Figure 8) provides the user with three types for Obs/Analyses:

- UAIR (Upper Air)
- SKEWT (Skew-T plots)
- RTMA (Real Time Mesoscale Analysis)
- RTMA-GUAM (Real Time Mesoscale Analysis for the Guam region)

# Observations and Analysis page for UAIR

When the user selects UAIR, the regions corresponding to Upper Air are highlighted in white and the other regions are disabled and greyed out as shown in Figure 9.

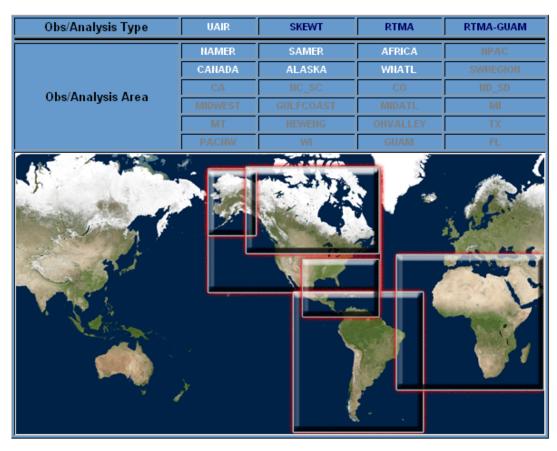
Back

#### **Observations and Analyses**

Home

Reset Selection

Choose an area



More information is available in the Product Description Document

Figure 9: Observations and Analyses page for UAIR

To view the Upper Air Parameters, select a region.

Note: The user can also choose a region first, and the corresponding Obs/Analysis Type is highlighted in white. The other types are disabled.

# **UAIR** parameter page:

In this section, the Upper Air parameter page is available when the user selects North America (Namer), South America (Samer), Africa, Canada, Alaska, or Western Atlantic (WNATL) (see Figure 10). The page presents all the available model cycles in one row. The next row presents the available mandatory levels in millibars.

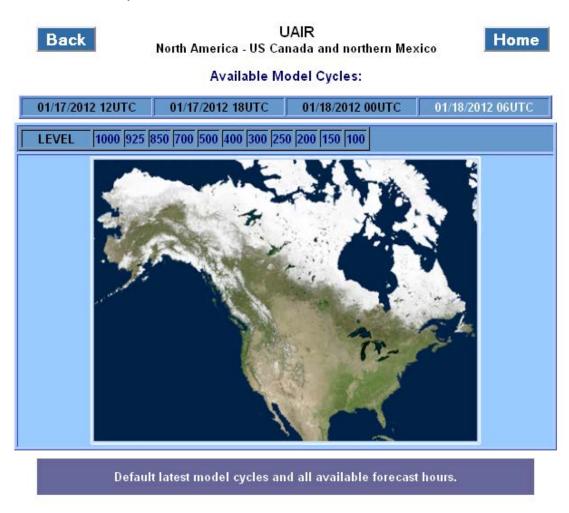


Figure 10: UAIR page for region 'NAMER'

- Select any 'Available Model Cycles'. Note: the default is always highlighted in white and displayed in the right most cell.
- Select a mandatory level.
- The user is presented with the graphic similar to what is shown in Figure 11.

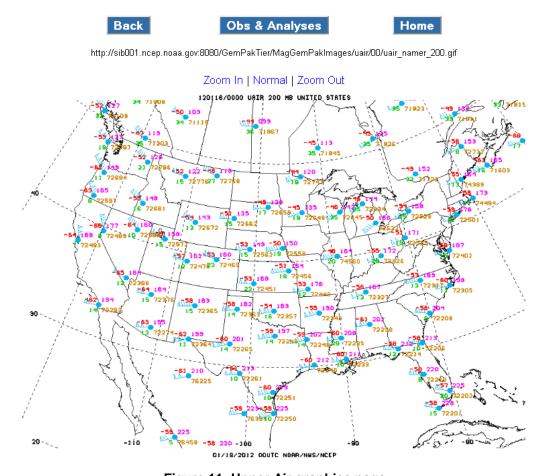


Figure 11: Upper Air graphics page

The user can zoom-in/zoom-out or choose a Normal size of viewing the image by pointing to the "Zoom In | Normal | Zoom Out" links provided just above the image.

The static URL to view the image is provided just below the title of the page.

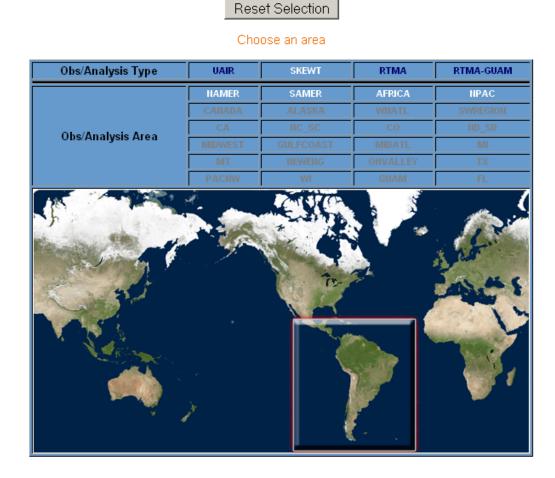
The Obs & Analyses button will return user to the observation and analyses model selection page. Selecting back will go to the UAIR parameter page. Home returns the user to the main MAG menu.

# **Observations and Analysis page for Skewt-t Plots**

Back

This section describes the use of the MAG application to view Skew-t plots. Select the Observations/Analyses Type "SKEWT" from the Observations and Analyses page (See Figure 12)

**Observations and Analyses** 



More information is available in the Product Description Document

Figure 12: Obs/Analyses page for Skew-t plots

The regions that correspond to the SKEWT type are highlighted in white. Select a region.

Home

# **Skew-T Parameter Page**

Figure 13 below shows the Skew-t page for region Africa. The page presents the available cycles, with the latest cycle displayed in the right most cell highlighted in white.

There is also the ability to select between viewing the stations in a map or a table. This can be done by choosing the appropriate format above the listed cycles.

Select the desired cycle and format (or keep the defaulted map), and the user is presented with the skewt-t available stations in either map form as shown in Figure 14 or table form as shown in Figure 15.

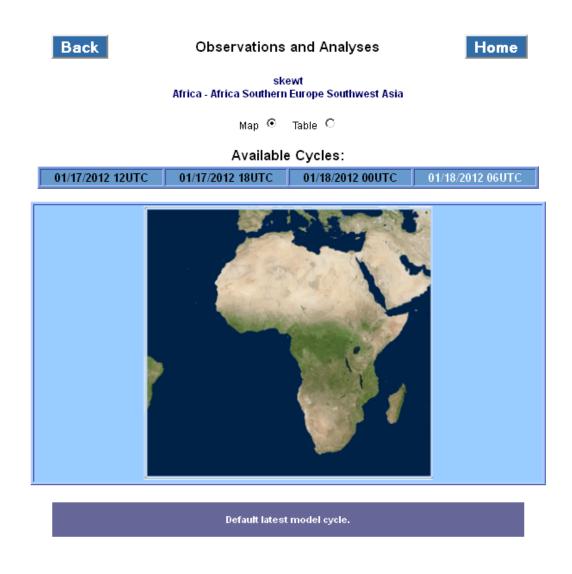


Figure 13: Skew-T page for region "SAMER"

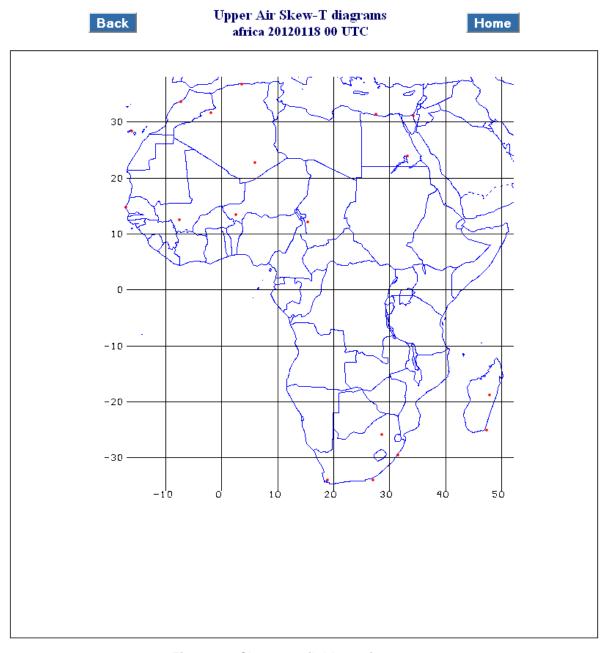


Figure 14: Skew-t available stations map

Hovering over a red dot gives more information about that station: station ID, WMO number, latitude and longitude. The user can click on the red dots, which represent various stations, to view the graphic. The user is presented with skew-t graphics as shown in Figure 15. The home button will return users to the main menu of the MAG whereas the back button returns to the skew-T parameter page.

Back

# Upper Air Skew-T diagrams africa 20120118 00 UTC

ID	Latitude	Longitude	Country code	WMO block/station
FAPE	-33.98	26.62	ZA	688420
FACT	-33.97	18.60	ZA	688160
FALE	-29.61	31.12	ZA	68592
<u>FAIR</u>	-25.92	28.22	ZA	682630
FMSD	-25.03	46.95	MG	671970
<u>FMMI</u>	-18.80	47.48	MG	670830
FTTJ	12.13	15.03	CD	647000
GABS	12.53	-7.95	МІ	612910
DRRN	13.48	2.17	NR	610520
GOOY	14.73	-17.50	SG	616410
60680	22.78	5.52	AL	60680
<u>HESN</u>	23.97	32.78	EG	624140
60018	28.32	-16.38	CR	60018
<u>HEAR</u>	31.08	33.83	EG	623370
<u>HEMM</u>	31.33	27.22	EG	623060
DAOR	31.62	-2.23	AL	605710
<u>GMMC</u>	33.57	-7.67	MC	601550
DAAG	36.72	3.25	AL	603900

Figure 15: Station table for Skew-T graphics

The user can click on the station code to view the skew-T graphic. Skew-T graphic is shown as in figure 16. The back button leads back to the skew-T page and home returns to the main menu.



http://mag.ncep.noaa.gov/GemPakTier/MagGemPakImages/skewt/00/skewt\_SBVH\_skt.gif

## Zoom In | Normal | Zoom Out

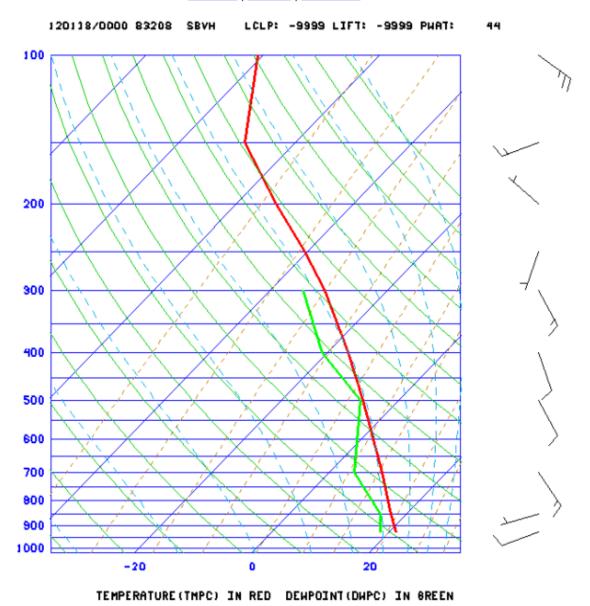
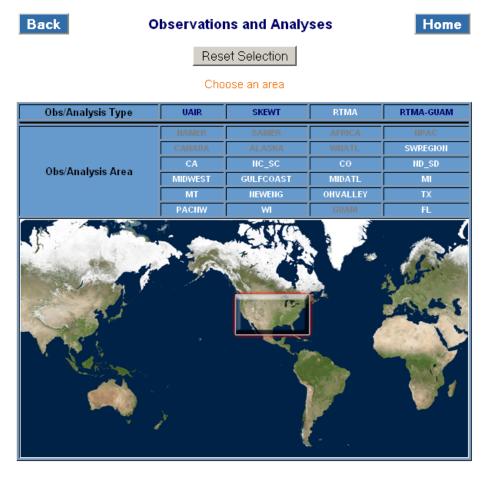


Figure 16: Skew- T Graphics

# Observations and Analysis page for RTMA (Real-time Mesoscale Analysis Model) and RTMA-GUAM

When the user selects the 'RTMA' Obs/Analyses type from the Observations and Analyses page, the corresponding regions available for RTMA are highlighted in white. The remaining regions are disabled. When the user selects a region, they are presented with the RTMA page as shown in Figure 17.

RTMA-GUAM is another model type provided specifically for the Guam region. The user interface provided for the Guam region is the same as other regions for the RTMA.



More information is available in the Product Description Document

Figure 17: Observations and Analyses page for "RTMA"

# RTMA/RTMA-GUAM Parameter page

The RTMA page presents the user with the available cycles with the default being latest cycle which is highlighted in white and is displayed in the right most cell as shown in Figure 18. The available Surface Parameter names are displayed above the map. When the user selects one of the parameters, the product image is displayed as shown in Figure 19.

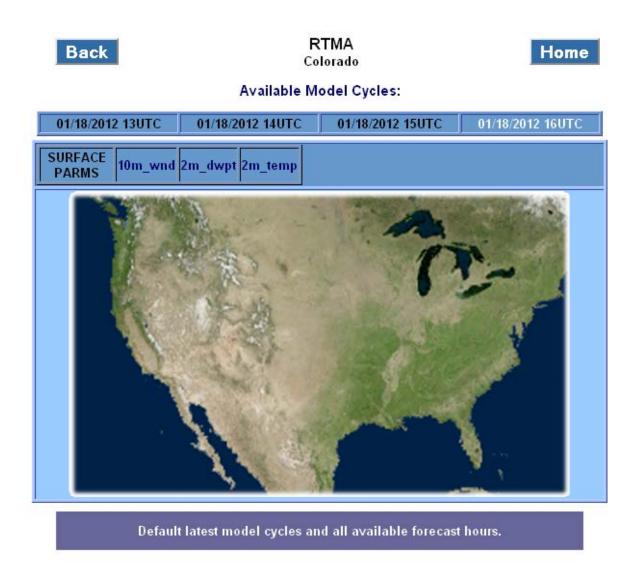


Figure 18: RTMA page



http://sib001.ncep.noaa.gov:8080/GemPakTier/MagGemPakImages/rtma/16/rtma\_co\_000\_2m\_dwpt.gif

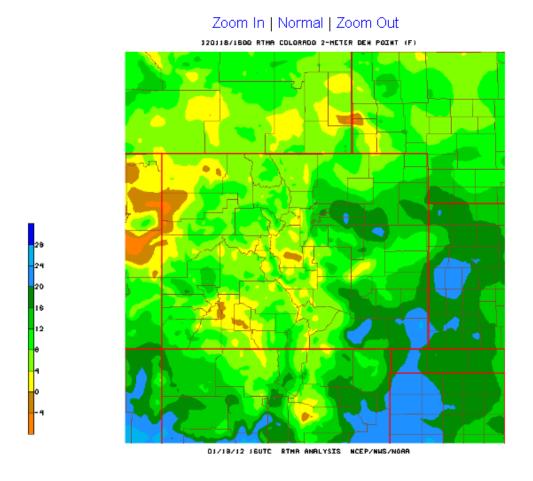


Figure 19: RTMA graphic

The user can zoom-in/zoom-out or choose a Normal size of viewing the image by pointing to the "Zoom In  $\mid$  Normal  $\mid$  Zoom Out" links provided just above the image.

The static URL to view the image is provided just below the title of the page.

# **Tropical Guidance Page**

The Tropical Guidance Page displays the available Model type and the Storm name as shown in Figure 19. When the user selects a model the corresponding storm name is highlighted in white.

After the users select the desired storm name, then they are directed to the Tropical Guidance parameter page as shown in Figure 21.

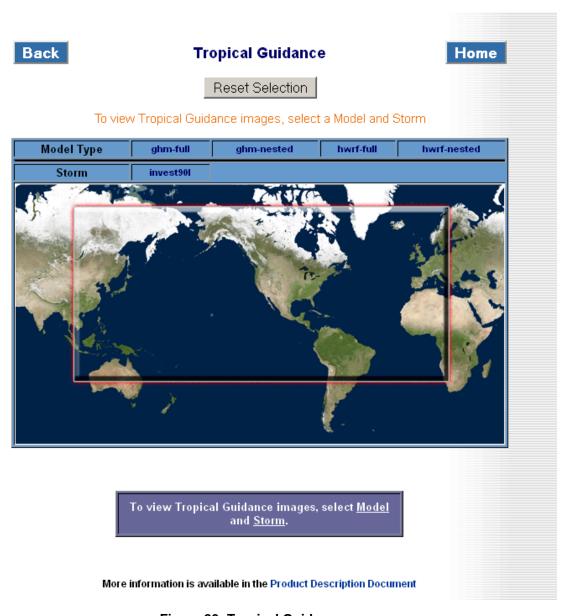


Figure 20: Tropical Guidance page

# **Tropical Guidance Parameter page:**

This page presents the user with:

- The parameter names available for a selected Model and Storm name.
- The available model cycles. Note: the cycles are displayed with the latest cycle as the default and is displayed on the right most cell and is highlighted in white
- The available forecast hours will be displayed in a row and column format once the parameter is chosen (see Figure 21).
- Loop option choices are in the right most column, these range from an animation of all available sequential forecast guidance times, to multiple day(s) loops.

•

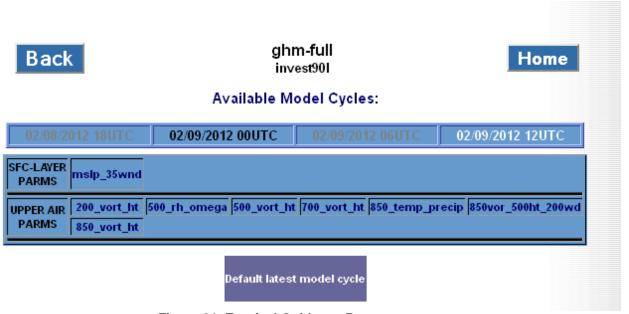


Figure 21: Tropical Guidance Parameter page

To view the graphics for any parameter:

- Select the
  - Model cycle
  - Forecast hour
  - Parameter name

User selection is highlighted in white.

• Once all the above three selections have been made the page automatically redirects to the graphics display page. If the forecast hour is 'Loop All' or "1/2/3/... Day loop", then the user is presented with a Flash based applet page that loops through all the images for all forecast hours. If a distinct forecast hour is chosen from the drop down list, the user is shown a gif image as shown in Figure 22.

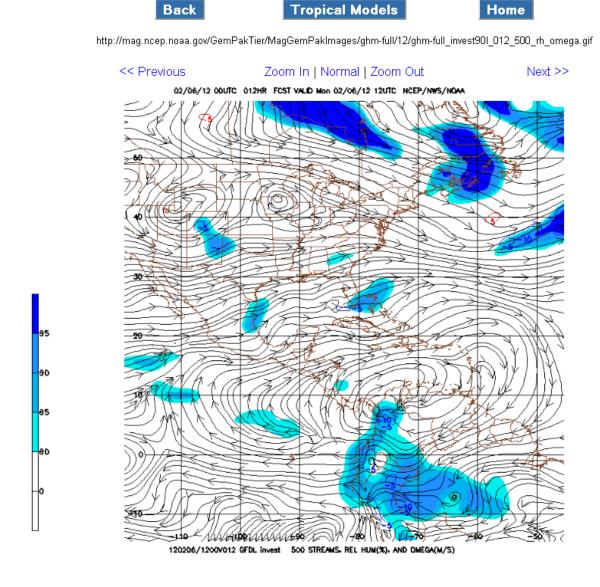


Figure 22: Applet for Tropical Guidance parameter

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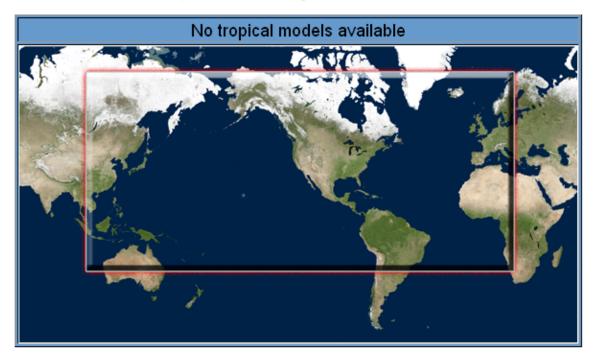
When there are no active storms the page will be displayed as shown below in Figure 22.

Back

# **Tropical Guidance**

Home

To view Tropical Guidance images, select a Model and Storm



To view Tropical Guidance images, select <u>Model</u> and <u>Storm</u>.

More information is available in the Product Description Document

Figure 23: Tropical Guidance page