

Running NMAP2

To run NMAP2, type NMAP2 at the prompt in a LINUX terminal.

The first thing you'll want to do whenever you open NMAP is to turn on tool-tips (the little icons that pop up when you move the mouse over a button). To do that, go to Option – Icon Tips – On. This will make everything else easier when using the program.

Important Blue Buttons across the top:

DATA: We have all kinds of data available at Albany, and almost all of it is linked somehow into GEMPAK – model fields, satellite, radar, surface and upper-air observations. The trick is knowing where to find everything. To begin, click on the data button, and then on new source in the pop-up box. Let's do the above list in reverse order:

Upper-air Obs: Go to UAIR_OBS, then UAIR, then the level you want. GEMPAK defaults to running a filter on the observations so they don't overlap. To change the filter, click on edit source. You can change the level, filter, and the makeup of the station observation.

Surface Obs: Go to SURF_OBS, then METAR (for land-based obs). Then, you can choose the parameters you want to see. Standard and monochrome are in the traditional format. Color_temp only plots temperatures, but colors the temperature based on its value (good for finding thermal gradients). Winter and summer each have different variables plotted; play around with them if you want, but make sure you know what you're looking at! You can see what's actually plotted at the bottom of the screen.

Radar: There's two main types of radar you need to be able to access. The first is for a given site (like ENX for Albany). To do that, go to Image and then RAD. This will give you a list of radar sites; select one, and you get a choice of different scan levels, and reflectivity vs. radial velocity and other features. If you see a feature that you want to look at on radar but don't know the identifier of the nearby station, don't fret...read the section on the Locator (below) and you'll see a simple solution.

The other main type of radar is a national composite, and it's found in a different place. When you go to new source, go to grid. Scroll down to and select nexr, then the most recent time, then radar. You should have a choice between Radar Reflectivity and Radar Reflectivity QC – QC means quality controlled. However, I haven't noted a significant difference between the two short of noise and ground clutter, so it doesn't matter much which one you use.

Satellite: The other option under Image was SAT, and that leads to the different satellite choices. Pick the satellite you want to use (GOES-10 is the Western US, and GOES-12 is the Eastern US). The fl1 and fl2 are floaters which can zoom in further but whose location constantly changes for interesting weather (although sometimes the locations make no sense). Select water vapor, infrared, or visible from here, and then choose the wavelength. Satellite images are where the zoom and enhancement features can really play a useful role (see below). NOTE: The satellite will change your projection and area when it opens.

Model Fields: These are selectable from the Grid menu. We don't have every model on the list, and you will find a bunch of holes. However, the main models you'd use will be ETA212, AVN, and RUC. For past data, there's a model grid called FNL. These are the final analyses from the GFS at 0000 and 1200 UTC, collected over the past 30 days. This is extremely useful for pointing out major features which can affect current and future forecasts.

There's a bunch of options under each model: standard, surface, QPF, etc. Look through them and find plots which interest you. There's most every standard plot out there (like 500 mb height and vorticity), but there's also some other fields you may find interesting or useful (like 850 mb moisture transport, height, and boundary layer θ_e). Play around with the different fields, and try to figure out why someone would consider a certain plot important.

Now that you have your data field selected, you can select the times which you want to display. You can turn single frames on or off by clicking on the colored box. You can select a group of frames by enclosing them inside the black surrounding box. You can also choose to skip a certain number of frames using the skip selector. Dominant source tells NMAP which time spacing to go by (if you have multiple fields in the selected loop).

One other very useful feature can be found in the data window. There are options at the top for saving and restoring data settings. If you find you like a few certain plots that you look at every day (like the Albany radar), you can make the different loops, and then store it so GEMPAK knows to bring them up again next time. Click save data settings and give it a name. When you open up NMAP the next time, you can restore those settings and they will still be there for you, with all the data loaded. It will not keep the zoom you selected, but it will maintain the projection.

AUTO-UPDATE ON: You likely won't see this on the screen, but it appears as an option for satellite and radar data. Basically, the program will check for new observations, and will update the loop for you as new images come in. This does not work, however, for most current observations or model data.

MAP: This changes your map view window and projection. This can be extremely useful, especially when you want to focus on a particular area of the world. Go to custom, and you can change projections and familiarize yourself with the most preferable view for your data.

The other important feature on the map window is the overlays. Here is where you can tell GEMPAK to show major roads, rivers, county boundaries, and other features. This has proven very nice for base support for storm-chasing, but is also useful to help pinpoint features on the radar. You can change the color and shape of most of these features by clicking directly on the name; to turn on the overlay, click the checkbox next to it.

L with fronts: This is the product generation feature, which is cool but beyond the scope of what I can cover today. At some point later in the semester, I may show you some of how this works.

Print: This is the best way to save an image from the screen. Click on print, and select "Print to File". Name the file *yourfilename.ps*, and you'll be able to open and print it in UNIX.

Zoom/Unzoom: Zoom lets you draw a box which becomes the guidelines for a closer view of your initial window. You can keep zooming closer and closer if you so desire. However, unzoom ONLY goes back out to the original map. Thus, be careful that you don't zoom in too far...

Loop: You can have different plots open in up to 16 windows in NMAP. However, more than 6 or so loops can really bog down the system here (although we have pretty good SUN machines, they're not supercomputers). Make sure you stop the current loop before you switch plots – otherwise it will try to keep every loop going. You can restart the loop much more quickly once the new window is up.

Yellow Buttons on Top:

In order, they are Hide Loop, First Frame, Loop Backwards, One Frame Back, One Frame Forward, Loop Forward, Rock, and Last Frame. Rock loops forward to the end, then loops backward to the beginning, then repeats. To stop a loop, re-click the loop button.

Status Bar at the bottom:

Only the left and right corners at the bottom are really useful.

Left corner (loop status): Tells you what image of the loop your looking at, and the total number of frames. Next to that is the current time of the displayed image.

Right Corner (Locator): This lets you set what appears in the box in the bottom right corner of the screen. When you start NMAP, it defaults to lat/lon. However, this can be changed to many other fields, including county, nearest city, nearest surface observation, nearest NEXRAD site, or nearest volcano. To pull up the selector list, click on the up or down blue arrow in the corner. I'm not sure what some of the settings are, but play around with them...it can make a forecast more interesting when you can tell us both the nearest radar and what cities the storm may approach next.

Under the Option Menu:

Icon Tips have already been discussed, but here are some of the other useful fields.

Enhancement: This is especially useful for radar and satellite, and gives color values to different fields (i.e. low or high water vapor, or cloud top heights). Play around with the schemes and find one you like.

Dwell Rate: This is how you change the speed of the loop. You can either use the defaults using the slow to fast selector at the bottom, or hand-set the individual pieces.

There's plenty of other things you can do with NMAP, so go ahead and play around. These are just a few of the primary features you'll deal with.