

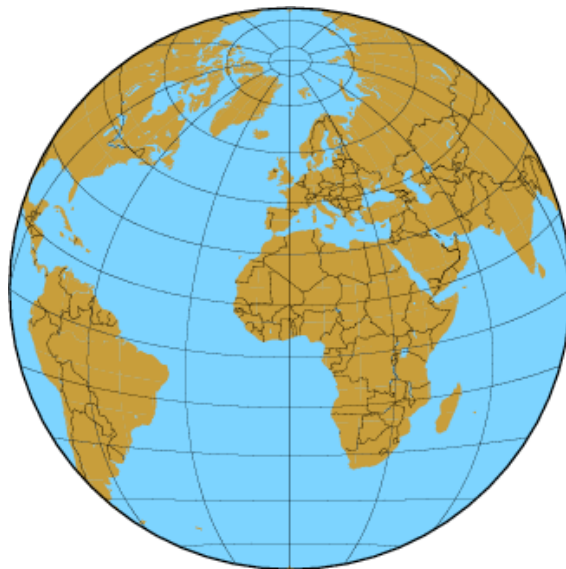
Lab 7 Tutorial

-- GMT: CREATING A SIMPLE GLOBE --

To create a simple globe using GMT, use the following command (1 single line):

```
pscoast -JA0/20/2.5i -R0/360/-90/90 -Bg30/g15:."Global Map": -Dl  
-G187/142/46 -S109/202/255 -N1 -P > simple_globe.ps
```

This produces a map like the following:



Let's look at the switches used to create the image.

Map Projection (-J)

The projection is specified with the **-J** switch. In this example, we used **-JA0/20/2.5i**. This selects the projection (*Lambert Azimuthal Equal Area*) and sets the **longitude** to 0 degrees, the **latitude** to 20 degrees, and the **width of the map** to 2.5 inches. Note that either **-J** or **-j** can be used. Specifying uppercase indicates that the last parameter (in our case 2.5i) is width. Had we used a lowercase "j", GMT would interpret the last parameter as a scale value. Widths can be specified using **c**, **i**, **p**, or **m**, which correspond to centimeters, inches, points (1/72 of an inch), and meters. To get a list of the projections available, enter the `pscoast` command by itself in your X-window, without any arguments. You have also

been given a handout with full documentation of the **pscoast** command

Region (-R)

The other major switch used in generating the globe is **-R**. This specifies the extent of the map we want to generate. In the case of the globe, we obviously wanted the entire planet, so we specified an **x range** of 0 to 360 degrees and a **y range** of -90 to 90. The range is specified as **west/east/south/north**. In the next example, we will use **-R** to constrain our map to a smaller area.

Map Boundary Grid Lines (-B)

The **-B** switch defines the intervals for the boundary tick marks. In the globe case, these are the lines of longitude and latitude. The arguments to the **-B** switch indicate a **gridline spacing (g)** of 30 degrees in the **x (longitude)** direction and 15 degrees in the **y (latitude)** direction. Note how the x and y settings are separated by a forward slash (/).

Resolution (-D)

The **-D** switch selects the resolution of the data set used in creating the globe. The available choices are **f, h, i, l, and c** which correspond to full, high, intermediate, low, and crude. Some of these options may not be available to you if not all of the data sets are installed with GMT. For the globe, we used the low resolution data set.

Fill Land Color (-G)

The fill color used for the countries is specified using the **-G** switch. The color can be specified using **RGB notation**, a shade of gray (0-255, black-white), or a pattern can be used. In the globe, we used 187/142/46 to create a light brown color.

Fill Water Color (-S)

The fill water (or “wet”) color used for the oceans is specified using the **-S** switch. The color can be specified using **RGB notation**, a shade of gray (0-255, black-white), or a pattern can be used. In the globe, we used 109/202/255 to create a light blue color.

Draw National Boundaries (-N)

The other switch of interest is **-N1**. This tells GMT to draw **national boundaries** in addition to the **coastline**. Other arguments to **-N** allow you to draw state boundaries within the Americas and marine boundaries.

Plot Portrait View

The **-P** switch simply sets the page orientation to **portrait**. Landscape is the default.