

Setting up a Mars Project in Canvas w/ GIS Extension, v1
-Trent Hare, Aug 2007

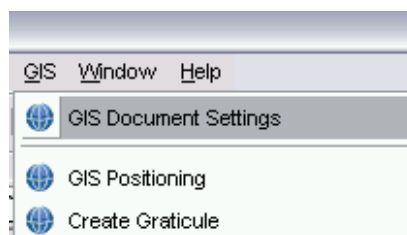
Reference: http://www.deneba.com/support-canvas/tutorials/gis_mapping/gis_mapping.html

This tutorial attempts to walk the user through setting up a martian Canvas w/ GIS document. Some of the tasks seem redundant but it is the only method I could get everything to position and scale correctly. One false move and doom will surely follow or you may just end up mapping in the wrong place which usually can be corrected.

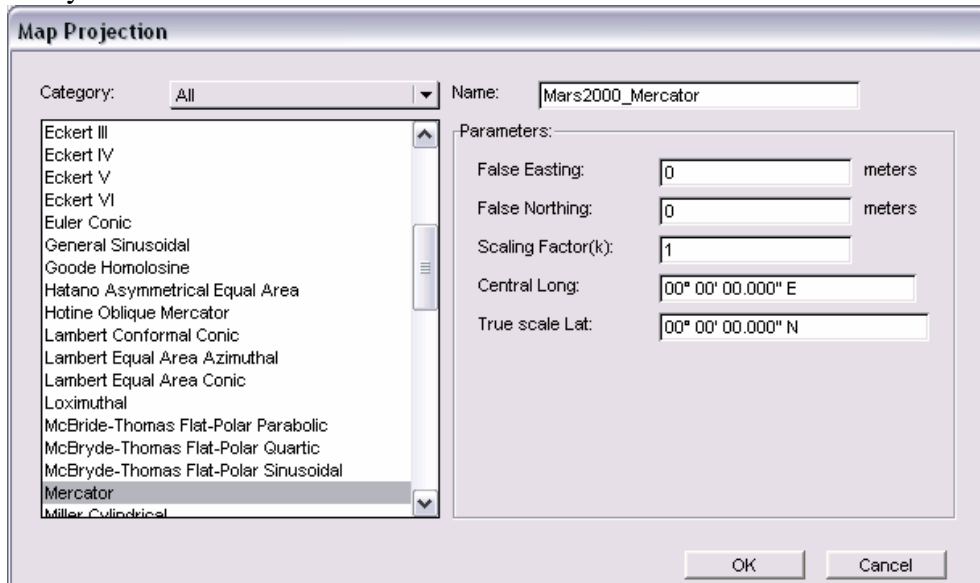
- 1.) Open Canvas and start a New Document using the settings below. The page size and scale needs to match your intended size and map scale. Units should be meters.



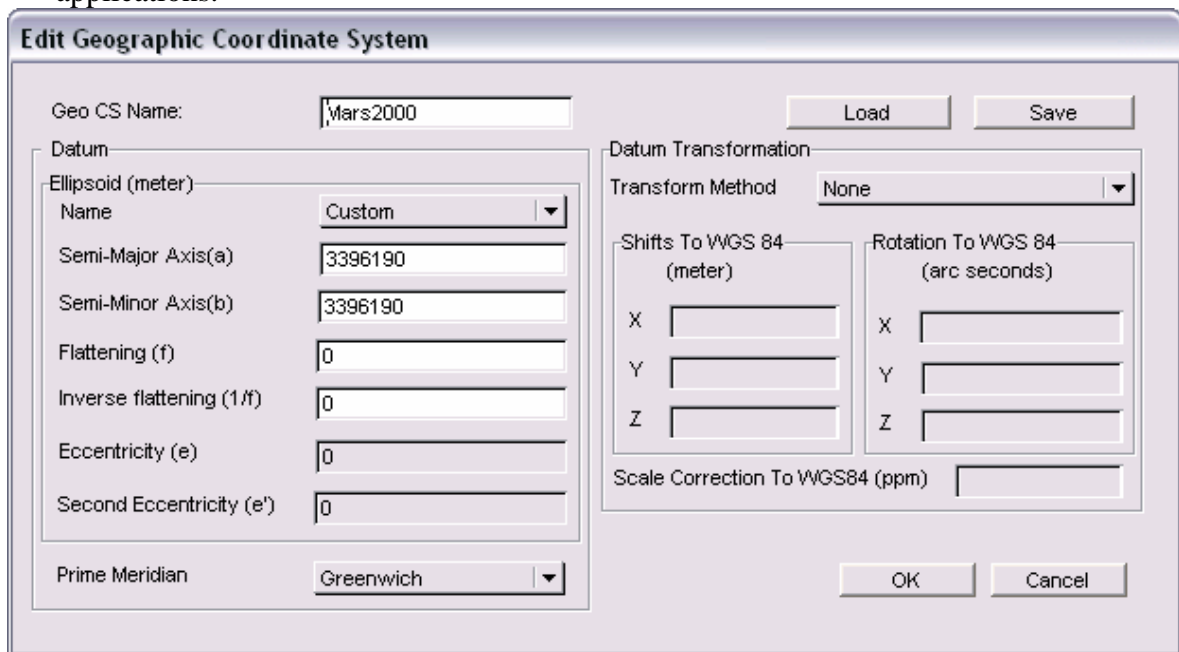
- 2.) Under GIS, select "GIS Document Settings".



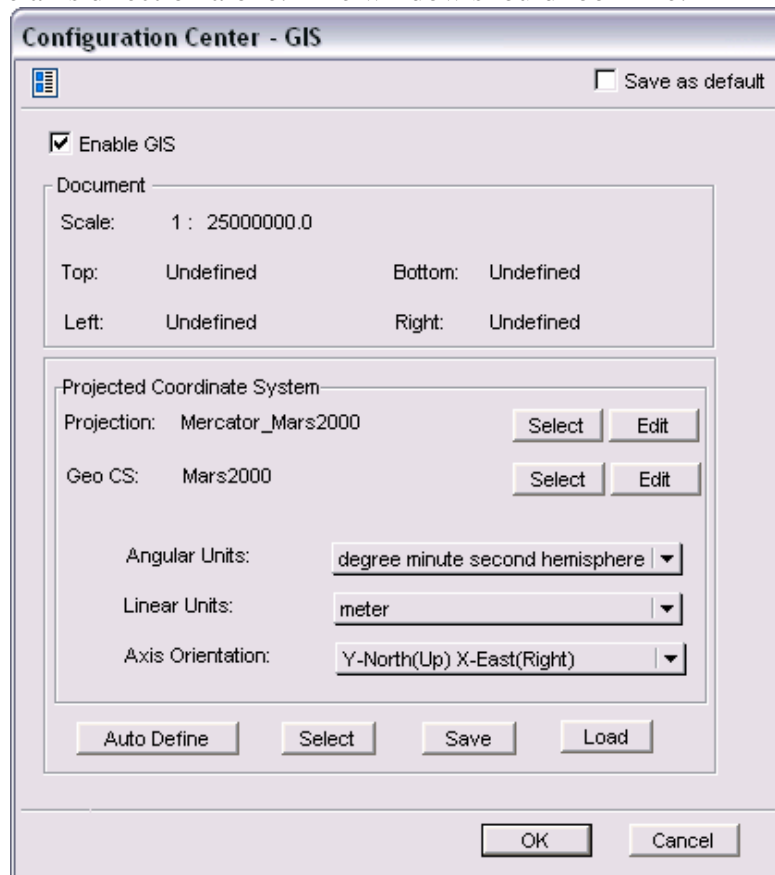
- 3.) In the next box check the “enable GIS” box, now next to projection hit the edit button. I am going to test out Mercator. Make sure to always use positive East longitudes for the Central Long (aka Central Meridian). Here I set it to zero. Hit okay to close the window.



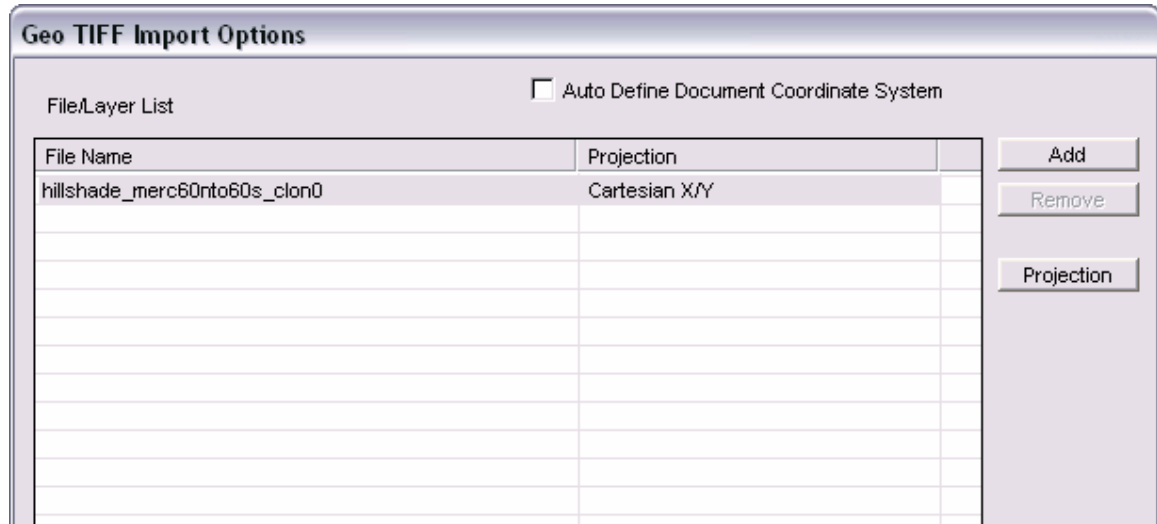
- 4.) Now hit the Edit button for the “Geo CS”. For most projection we need to use a sphere for Mars because most datasets are available using a planetocentric latitude system. Here I am using 3396190 m for the Mars 2000 IAU approved radius. It is weird, but leave the Prime meridian to Greenwich. This also crops up in other applications.



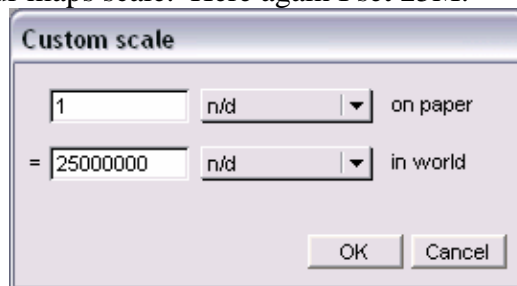
5.) Leave the axis direction alone. The window should look like:



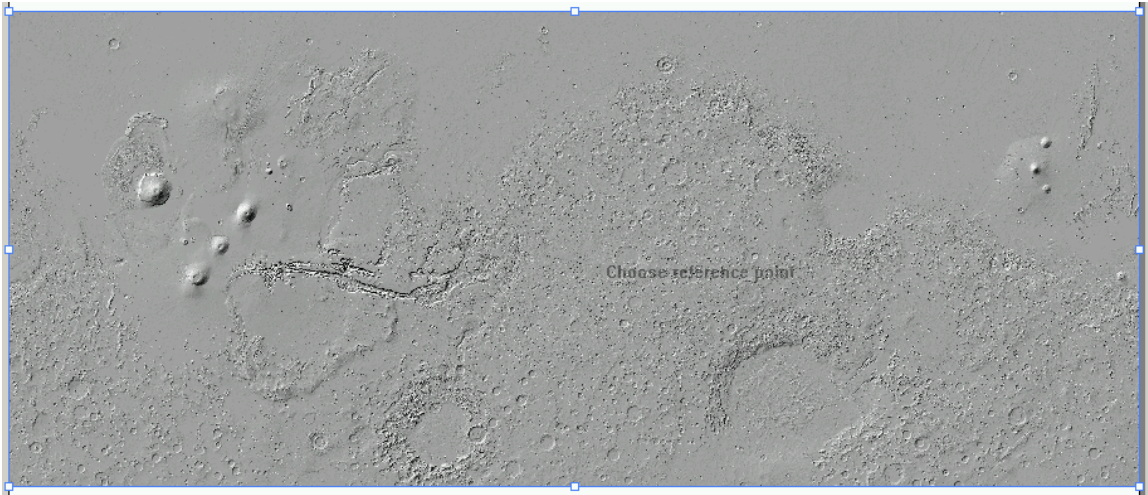
- 6.) Let's add a base image. I need this image to be in the same projection as the project I just setup (Mercator). As long as I have a worldfile you don't need to assign the projection for each loaded dataset. Allow the projection to default to "Cartesian X,Y". I can do this because it is in the same projection as the defined Mercator projection above. Turn off "Auto define..." – not sure exactly what that does.



- 7.) In my experience, the image will **NOT** come in at the scale you set, it will fill in the paper size and reset the scale – arg. To fix this do the follow.
- 8.) Click on the page such that the scale in toolbar is visible. Select choose custom scale and reset your maps scale. Here again I set 25M.



- 9.) Now under the top GIS menu choose “GIS Reference Point”. I set the middle of the page, not the image, for this document. In the next dialog window that will appear, set only the New Location (lat,lon) to 0, 0. Make sure to select “Preserve objects positions” before hitting OK. This should shift your map to where you set.



GIS Reference Point

Original location	New location
Units: <input type="radio"/> Linear <input checked="" type="radio"/> Angular	Units: <input type="radio"/> Linear <input checked="" type="radio"/> Angular
Latitude: <input s"="" type="text" value="0° 05' 49.466000"/>	Latitude: <input n"="" type="text" value="00° 00' 00"/>
Longitude: <input e"="" type="text" value="00° 05' 53.948000"/>	Longitude: <input e"="" type="text" value="00° 00' 00"/>

Preserve objects positions
 Apply to objects on hidden layers

OK Cancel

- 10.) All layers you add now should be referenced to the correct Mercator location. This includes layers you create and add too.

- 11.) To test your handy work, make sure the degree readout at the bottom is correct when you hover over the image. Let's also try to create a separate lat/lon grid with labels. Under the top GIS menu choose "Create Graticule". You will probably want to select Custom. Next set the bounds of the

Graticule settings

Custom Precision: N.x2

Unit: degree

Longitude

Start: -180.000 °
End: 180.000 °
Spacing: 30.000 °
Divisions: 12

Latitude

Start: -60.000 °
End: 60.000 °
Spacing: 30.000 °
Divisions: 4

Labels

Arial 16 Horizontal Offset: 0 pt
 Latitude: Rotate 90 deg Vertical Offset: 0 pt
 Frame With Ticks

Apply OK Cancel

Results:

