

Map Blending Using Combiners

Map to Image Combinations

Version 1.1 Mark Lucas 9 May 2008

Overview

Studying the different combiner modes in OSSIM

OSSIM and ImageLinker provide several ways to combine geo-spatial data sets. This exercise will demonstrate simple mosaics, blends, and feathers with a map and image of the San Francisco area. The data sets in this example are part of the sample data set that is available on <ftp.remotesensing.org>.

Preparation and Setup

Data can be found at <http://ossim.telascience.org/ossimdata/Data> download the demodata.tgz file from the site and unpack.

The resulting folder should unpack to:

demodata

sanfran_ccf

sanfran.ccf

sanfran.geom

sanfran.his

sanfran_map

sanfran_map.geom

sanfran_map.omd

sanfran_map.ovr

sanfran_map.tif

These files will be used to demonstrate some of the basics of ImageLinker.

So start up ImageLinker and follow the following steps:

Open the source files

Open the source code files for the map and Landsat image of San Francisco. Note, navigate to where your source files are and open them. Drag and drop (or use the File/Open menu item to open up the sanfran.ccf and sanfran_map.tif files.

Managing Windows

In this introductory tutorial we will get a feel for some of the window management and display commands. Each project in ImageLinker lives in its own canvas. Standard maximize, minimize and collapse icons work on the project canvas within the desktop. The display windows within the project treat the canvas as their desktop. Each display can be minimized, maximized, or collapsed. Additionally, there are a couple of useful commands for organizing the windows. Lets try a couple.

Select **Window->Cascade**

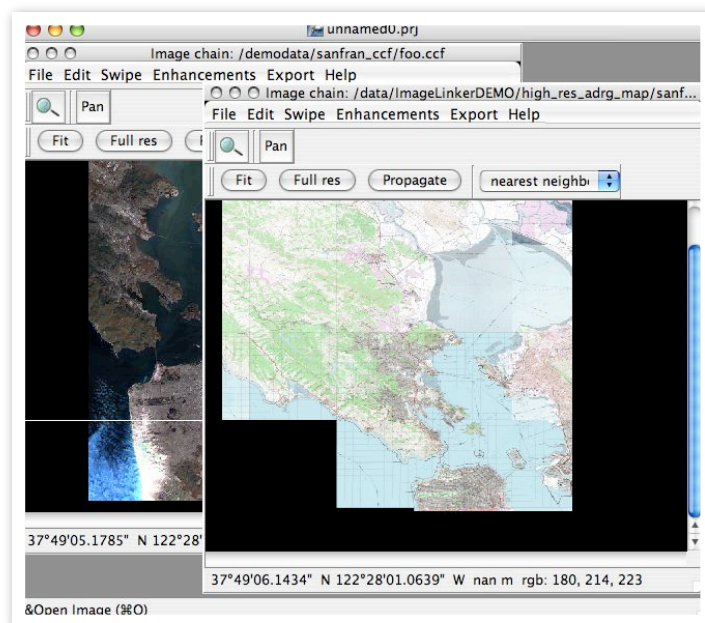
The open displays are cascaded within the project canvas.

Select **Window->Minimize All**

Collapses the displays into the bottom of the Canvas.

Place the images side by side by using the Tile menu command

Select **Window->Restore All**



Select **Window->Tile**

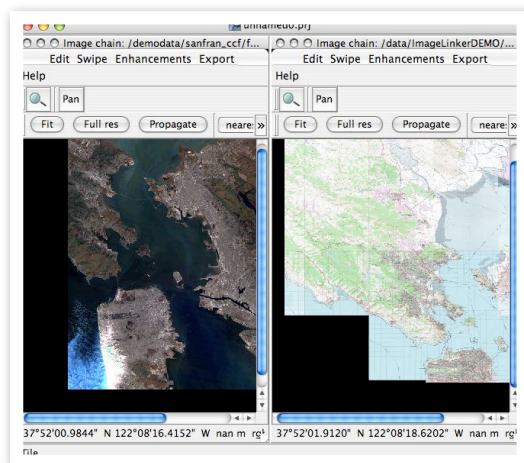
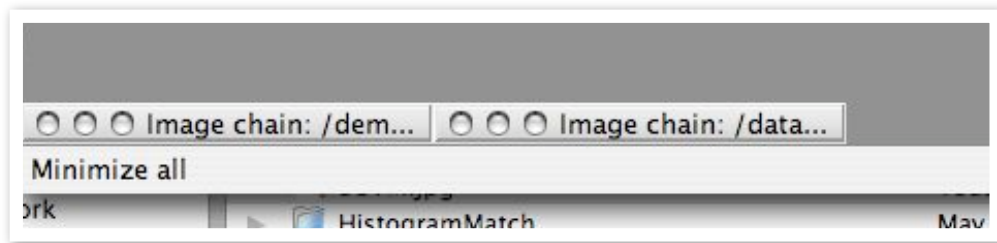
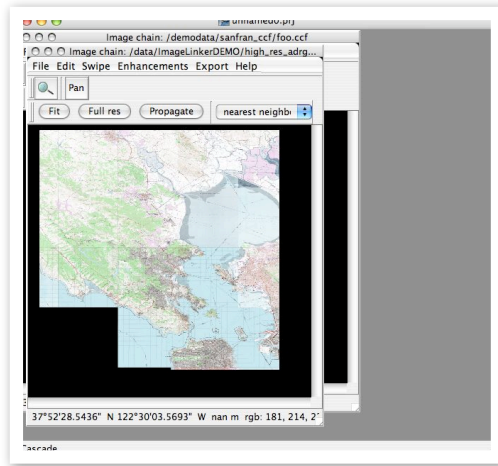
Pan, Zoom and Propagate in the Displays

The displays have several modes and capabilities that make it easy to navigate and synchronize displays within a project. In the center of the Landsat scene is Treasure Island, place the cursor over the island and click. Note that the Latitude and Longitude of the mouse click is displayed at the bottom of the window.

Click on Treasure Island

Click on the Full res button

You should see a display similar to that shown above. Note the tracking cursor lines in the map display track the geographic location of your cursor. Tracking cursors will appear in all geographically coincident windows within a project.

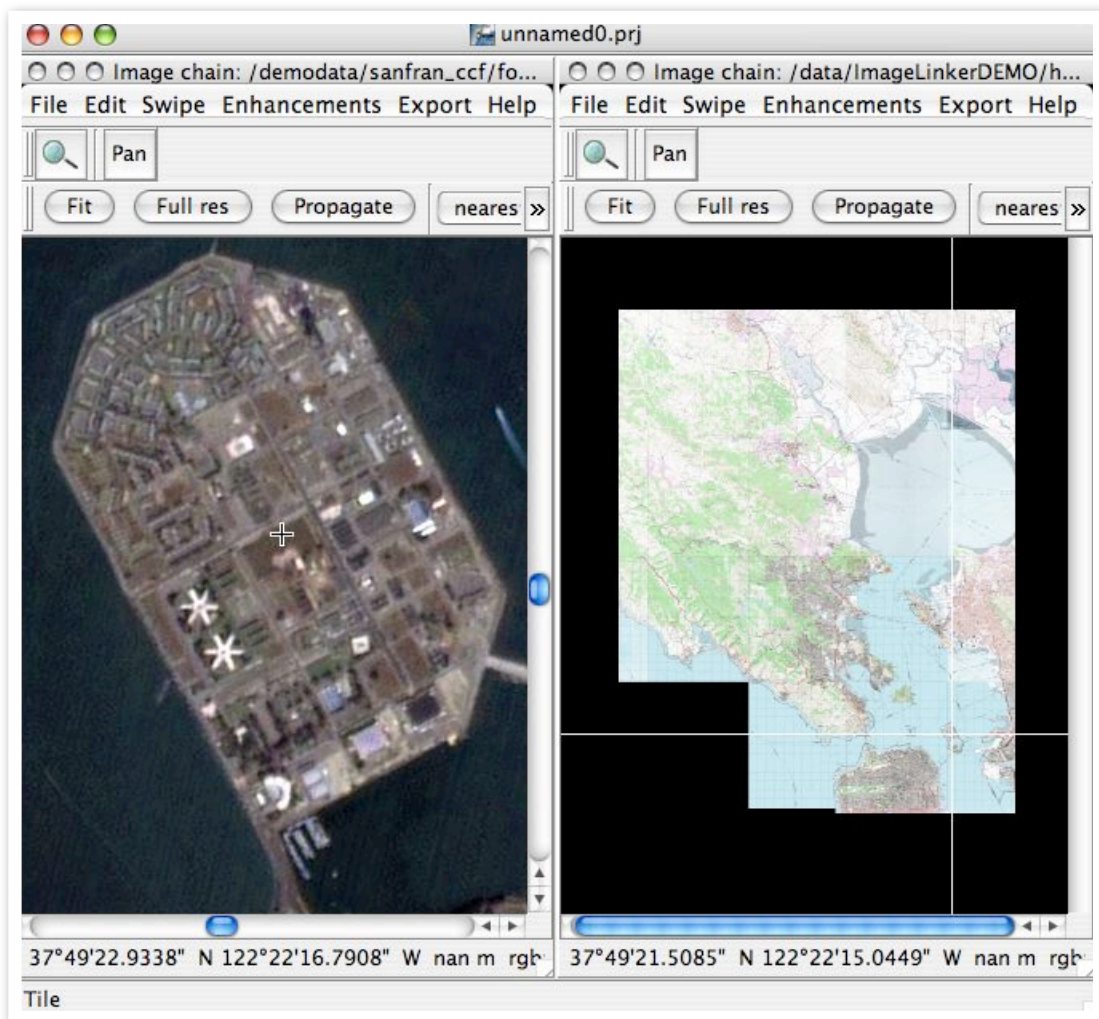


In the Image Window Press the **Propagate** Button

The geometric view is updated in all open windows to the same scale and orientation. You can toggle the cursor modes between zoom and Pan with the icon buttons at the top of the display for general navigation.

With the displays zoomed to treasure island as shown above. Lets start with a blend display. In the main menu select Blend under the Combine submenu under the Layer menu.

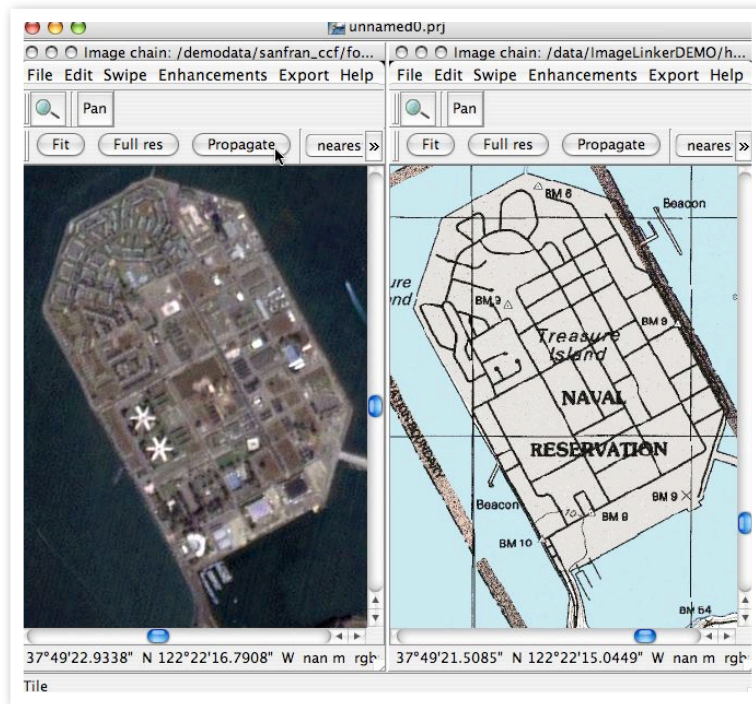
Layer->Combine->Blend



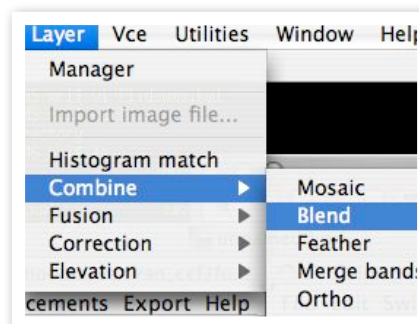
A dialog box will appear with a list of image chains that can be combined. Select both the map and the image and press the Apply button.

Apply

A new display appears that is blended, press the **Fit** button on the new display to get an overview.



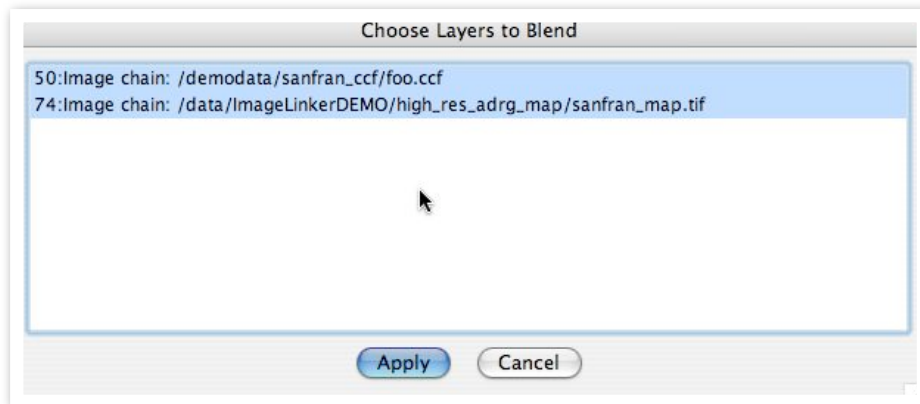
You will notice that the data sets are blended together in the overlap area.



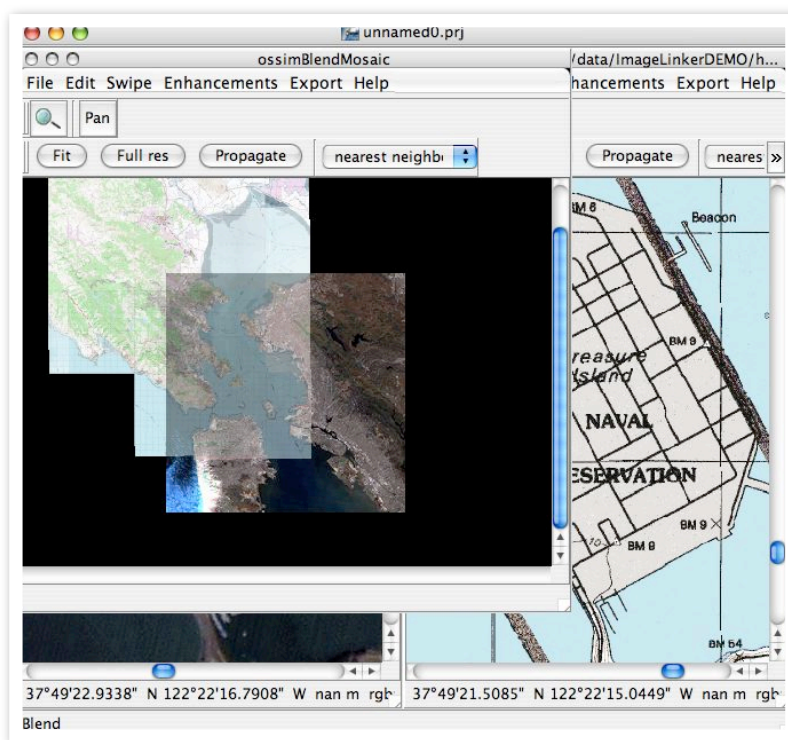
Window-->Tile and in the Landsat image window press the **Propagate** button

The view is propagated to the blend and map windows.

Minimize the source windows for the map and Landsat image by clicking in their display minimize



buttons. This should leave only the blended display. Now we will create feathered and mosaic displays.

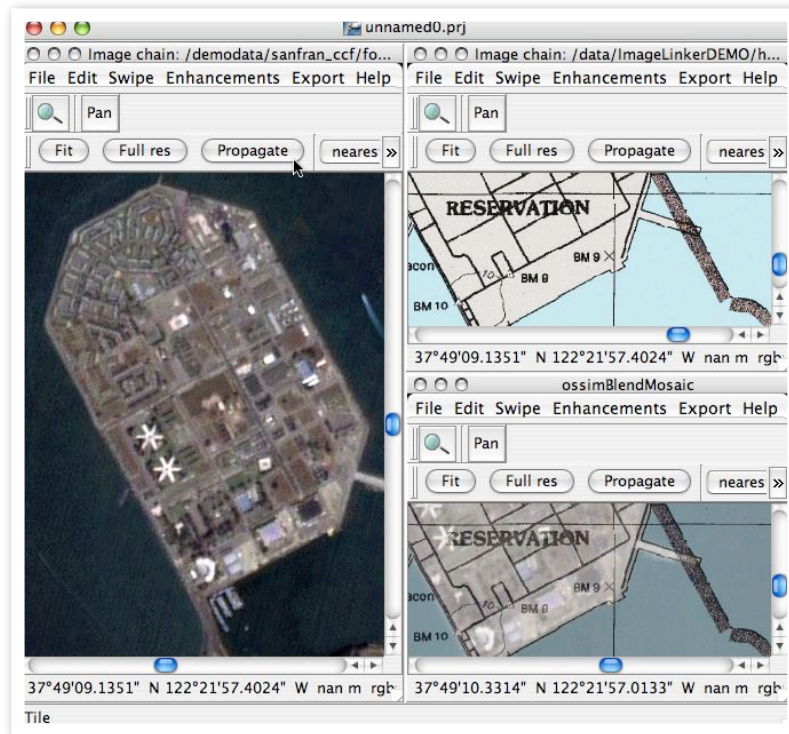


Layer-Combine->Mosaic and select just the map and Landsat image chains

Press the **Apply** button

Next we will go ahead and create a feathered display as well. In similar fashion select

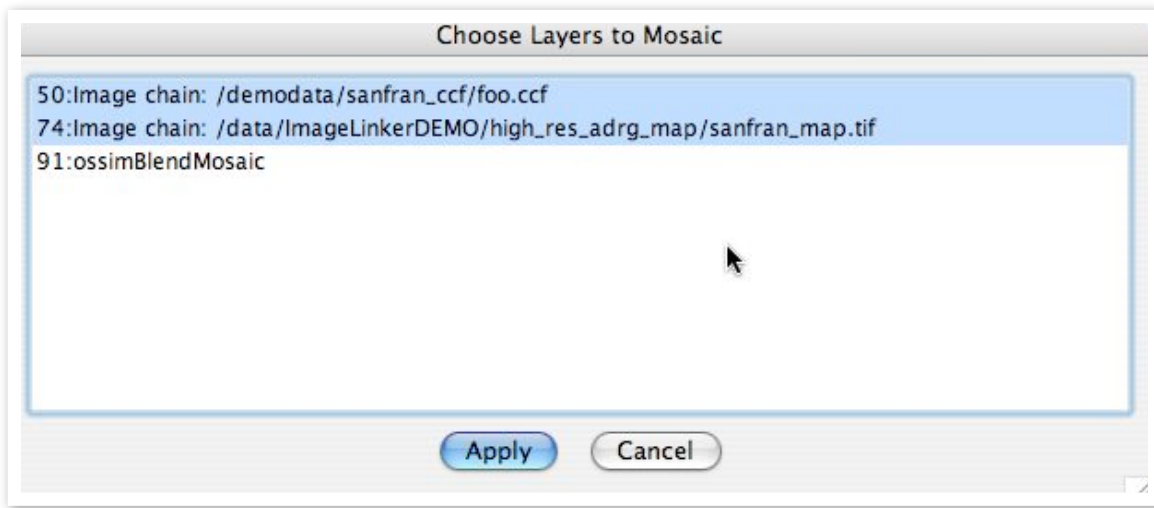
Layer->Combine->Feather



Again, just select the first two lines - the source files and press the Apply button. Clean up the displays by selecting **Window->Tile**

Select any of the displays, press the **Fit** button, then press the **Propagate** button and you should end up with something similar to this:

The difference between these three combiners is how it treats pixels in the overlap area. A mosaic

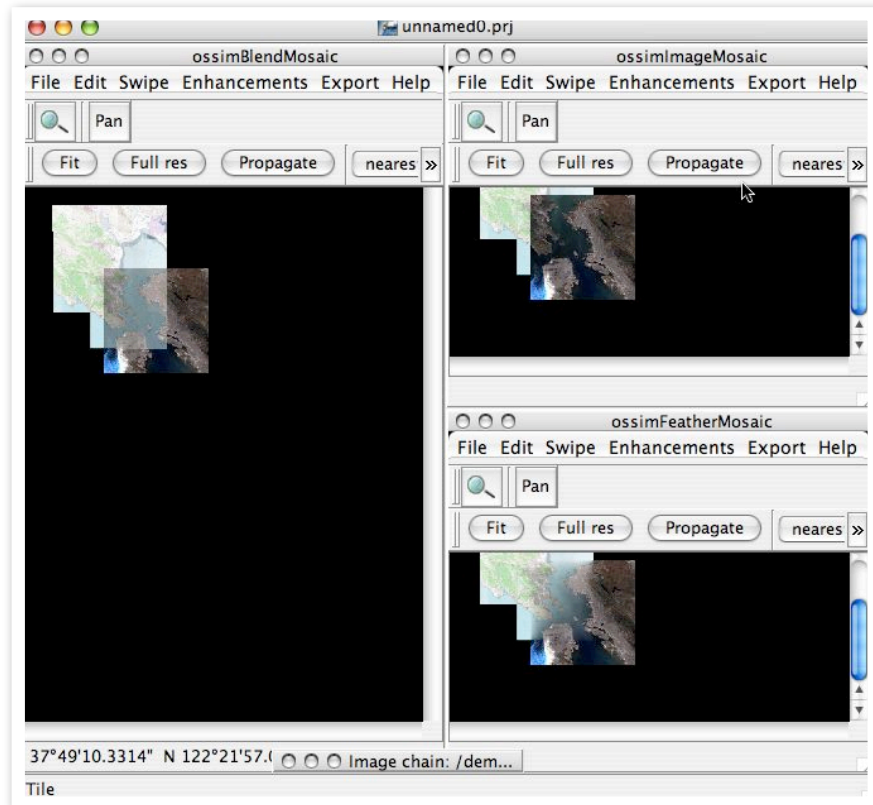


simply chooses one source over the others, the blend averages the values of the pixels, and the

feather changes the blend gradually as the distance from the seam increases. To change the weighting, sources, or any relevant adjustable parameters. Select the desired display and **Edit->Layers** to bring up the appropriate dialog box.

Save your project

File->Save Project as mapblend.prj.



Summary

This completes an overview of the various combiner methods available in OSSIM and ImageLinker. Using a map and image of San Francisco we demonstrated basic navigation of displays and window management tools in ImageLinker followed by the creation of various types of mosaics and overlap area combiners. These types of products are very easy to create in the tool sets. OSSIM automatically handles differences in input resolution, map project, file formats and radiometry types. Transformations are performed automatically to produce the product needed by any given display. Adjustable parameters can be accessed and modified through the Layer->Edit menu of any display. Though not covered in this tutorial, any display can generate a product through the Export->igen command.