



# ossimPlanet Users Manual

An accurate 3D Global Visualization System

*ossimPlanet Version 1.7.13*

## Overview

ossimPlanet is an accurate 3D global geo-spatial viewer that is build on top of the OSSIM, OpenSceneGraph, and Trolltech QT open source software libraries. It provides native geo-spatial access to a wide range of commercial and government data formats with high the high performance visualization and collaboration capabilities. ossimPlanet is one of the key components of the Large Data Joint Capabilities and Technology Development project. This document describes the installation and use of ossimPlanet.



ossimPlanet provides accurate 3D global visualization and collaboration. Instances of ossimPlanet can be synchronized for distributed collaboration. Native file access, on the fly elevation tree topography, and online access to OGC WMS and Worldwind sites is provided.

## Requirements

ossimPlanet currently requires a 3 button mouse for navigation.

Mac OS 10.4 or later is required. ossimPlanet is a universal binary that runs natively on both PowerPC and Intel-based Macs. The installer provides all of the required frameworks and dependencies. Installing ossimPlanet

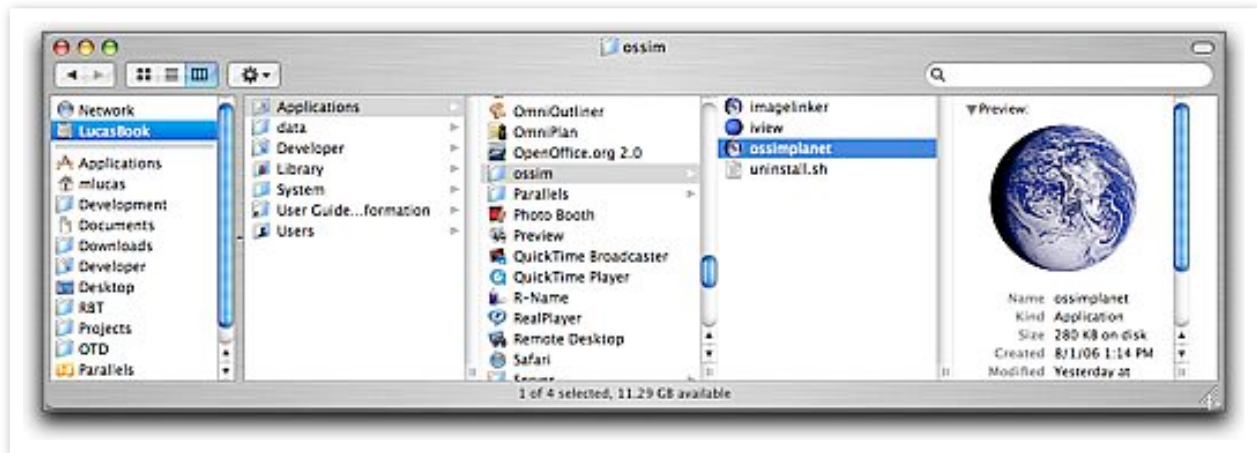
Binary installers are available for various platform including MacOSX, Windows, and Linux. Double click on the Installer package and follow the instructions. The binary installer contains all of the dependencies need to run the program. It installs three double clickable applications in /Applications/ossim. Frameworks and supporting files are installed in appropriate system locations - /Library/Frameworks and /Library/Applications Support/ossim. Additionally, several command line utilities are installed in /usr/local/bin. Under Linux the root directory is .ossim instead of /Library/Applications Support .

Supported Data Sets
OSSIM Geo-Spatial Formats
GDAL Geo-Spatial Formats
OGC WMS Interface
WorldWind Servers
Pixia NUI format
kml/kmz files
Predator UAV mpg clips

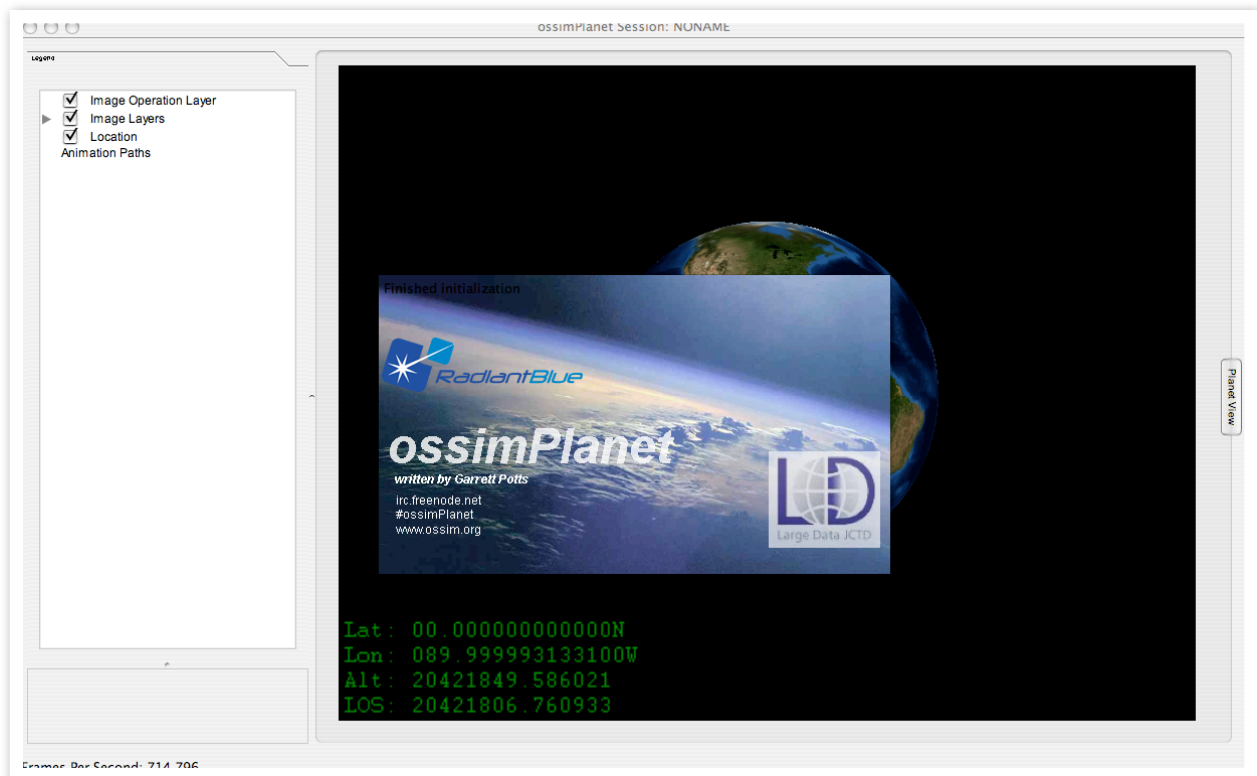
## *Operating ossimPlanet*

### **Running ossimPlanet**

ossimPlanet is installed as a double clickable application in the Applications folder in an ossim sub-folder. Navigate to /Applications/ossim/ossimPlanet and double click the ossimPlanet icon to start the program.



Starting ossimPlanet from the Finder



### ossimPlanet startup

If the program is properly installed, a display similar to the one shown above will appear after double clicking the ossimPlanet icon in the Applications/ossim directory. The ossimPlanet splash screen is initially displayed. Click on the splash screen to dismiss it after the program has started up.

### **getting some data**

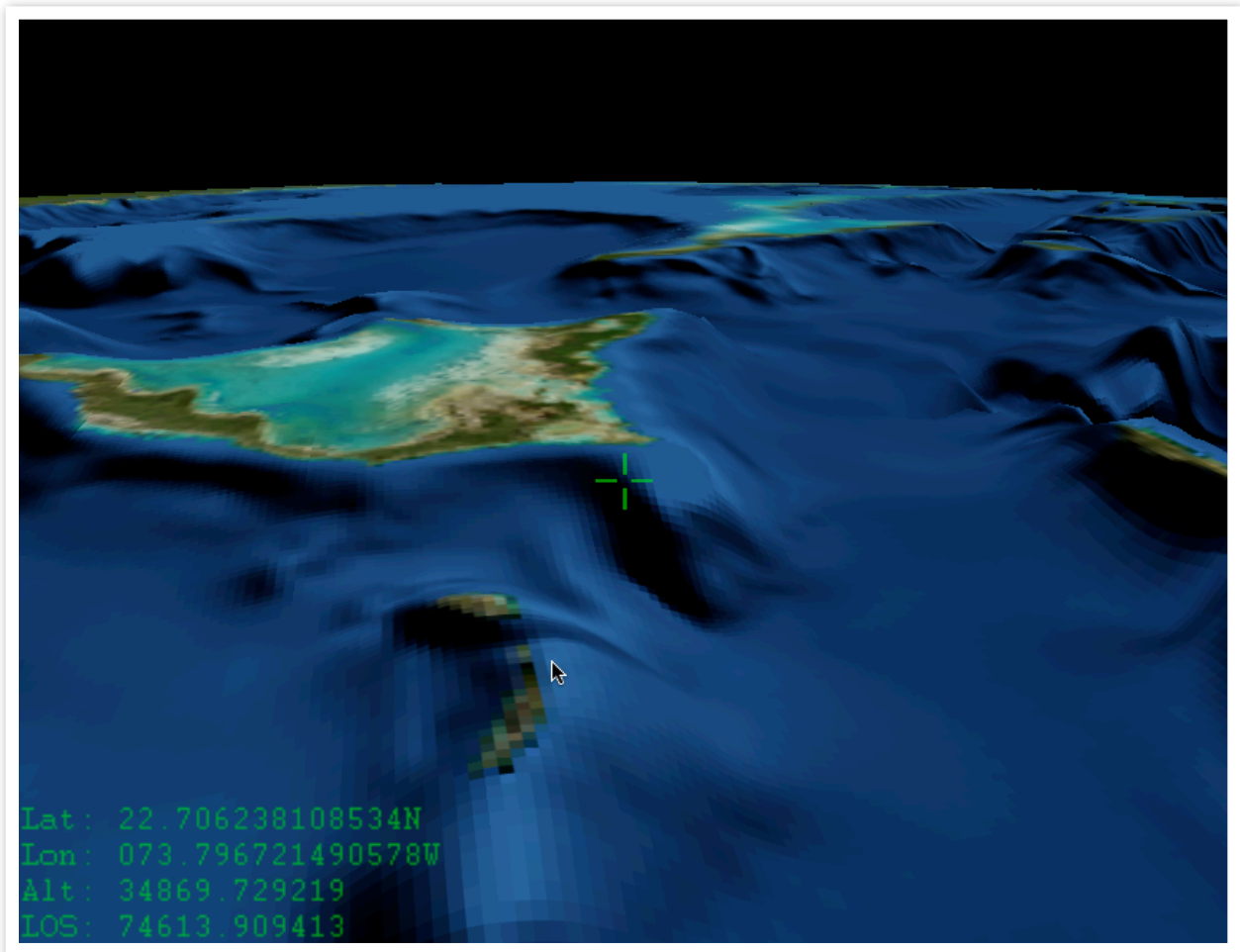
Some sample data sets are available at <http://ossim.telascience.org/ossimdata> . ossimPlanet can also fetch data from OGC WMS servers or NASA Worldwind servers. If you installed with the binary installer a copy of earth.xml has been installed in /Library/Applications Support/ossim/files/WorldWind - alternatively you can download the same file from the link above and the Data directory. Drag and drop this xml file into the legend area of the planet to trigger the setup for multiple WorldWind layers. By default all of the layers are enabled, you will want to deselect and view the layers one at a time to fetch and load various imagery and map layers from the remote server. You will need internet access for this to work.

Improved Blue Marble Next Generation backdrops are available at [http://telascience.sdsc.edu/tela\\_data/BM/geotiff](http://telascience.sdsc.edu/tela_data/BM/geotiff)

These larger data sets can replace the earth backdrops in the ossim preferences folder. /Library/Applications Support/ossim/images/reference/

Global elevation and bathymetry is available in the general raster format at <http://ossim.telascience.org/ossimdata/Data/>

download the general\_raster.tgz file, uncompress and install in /Library/Applications Support/ossim/elevation/general\_raster/



*SRTMPlus general raster elevation with the enhanced Blue Marble Next Generation backdrops available for download. Elevation is exaggerated in this example.*

## *Navigating*

The current version requires an external 3 button mouse for three dimensional navigation of the planet.

**Note:** You will want to disable dashboard activation on mouse clicks from the Systems Preferences Dialog. Under the Apple menu, select the Dashboard and Expose dialog to change the default settings. Make sure the Dashboard isn't invoked on mouse clicks as it will intercept navigation controls to ossimPlanet. Also set the mousebutton mapping in the mouse control to a standard 3 mouse button configuration.

Event	Action
Left mouse drag	rotates the globe
Middle mouse drag	Rotate around center of interest
Right mouse drag	Zoom in and out to center of interest
Shift Middle mouse drag	Moves up and down (elevator mode)
Shift Left mouse drag	Pivots around eye point
Space Bar	Resets view to default position
'w' key	Toggles between textured, wire frame, and point modes
'u' key	Changes orientation to North up
'U' key	Changes orientation to North up and NADIR view
'l' key (lower case L)	Toggles directed light source (currently disabled)
Apple f	Toggles full screen mode
Apple ,	Brings up preferences panel
Arrow keys	Starts constant rotation (accumulates with additional key presses)
Return Key	Freezes all motion

## *Menus and Menu Items*

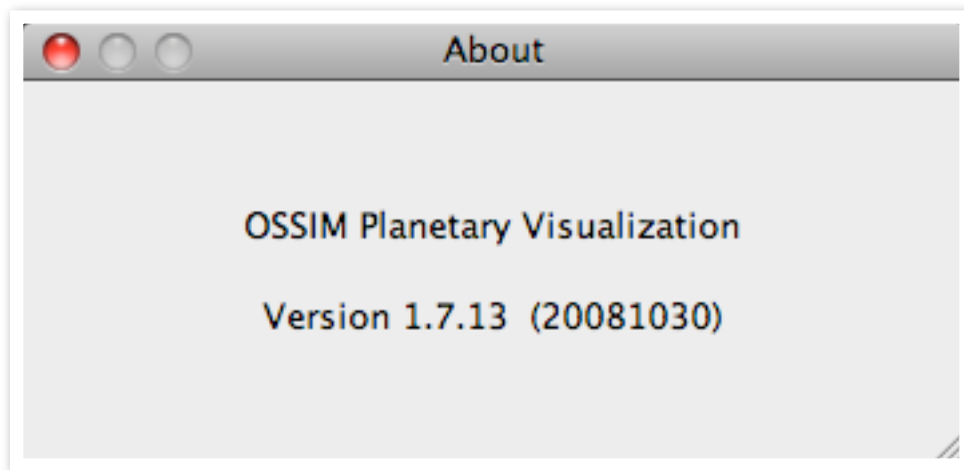
This section describes each of the menus and menu items in ossimPlanet.

### ossimPlanet

Under the ossimplanet menu the following items are available:



#### **About ossimplanet**

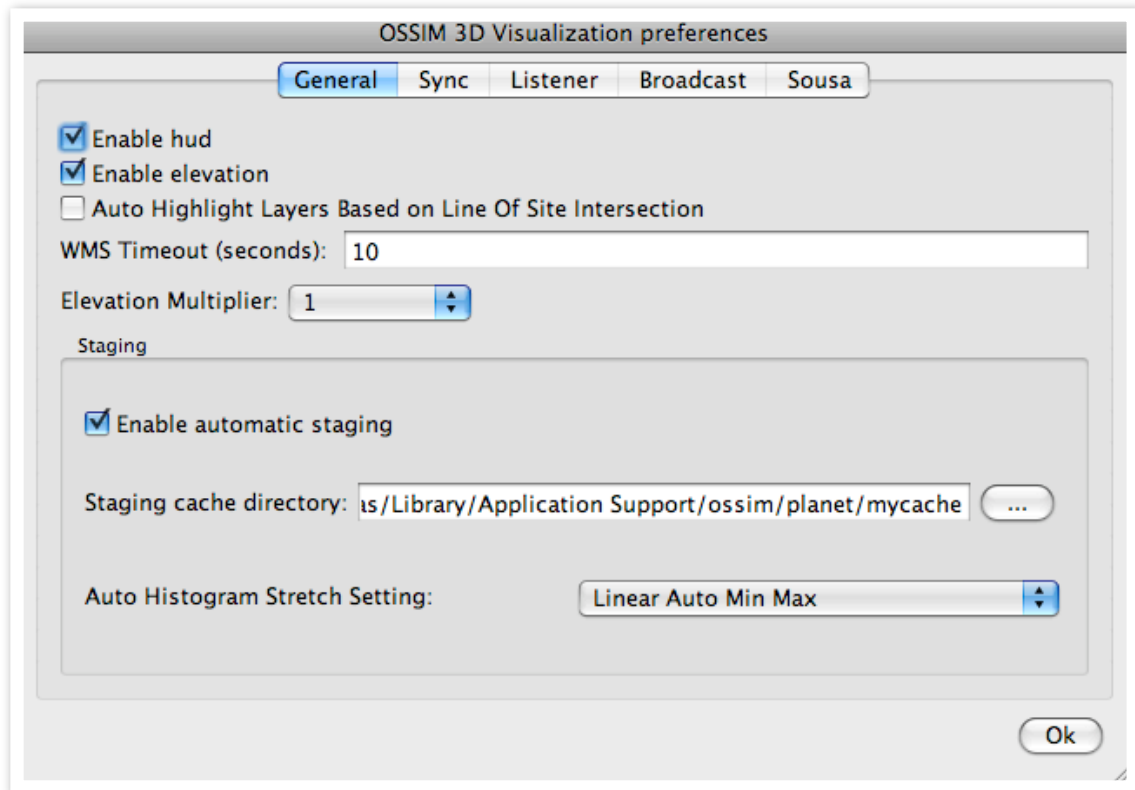


The About box will display the current version and build date.

## Preferences

The preferences modal dialog allows the user to enable various features of ossimPlanet. The preferences has multiple tabs at the top to select the available views.

**General** tab displays the following options:



### Enable HUD -

Enables the Heads Up Display (HUD) for ossimPlanet. The HUD includes the cross hairs at the center of the image and the latitude, longitude, elevation, and height readout at the bottom left hand corner of the display.

### Enable elevation

Turns on or off elevation processing for topographic relief and visualization in ossimPlanet. Elevation processing requires that elevation data sets be staged through the Application Support directory for ossim. DTED and SRTM file structures for elevation can be automatically parsed and retrieved by the software. See the section on staging supporting data sets in this document for setup details.



### Auto Highlight Layers Based on Line of Site Intersection

Enabling this option will show which data sets are intersecting with the cross hairs in the center of the screen. Intersected layers will be highlighted in the layer legend to the left of the globe.

### WMS Timeout (seconds)

This field can be modified to change the OGC WMS timeout period.

### Elevation Multiplier

A pull down menu applies an elevation scaling factor. The higher the number, the more exaggerated the topography. The value is persistent and will be automatically saved.

### Staging Cache Directory

This field and its associated browse button allow the user to set an alternate directory for saving and retrieving overview and histogram files. This is useful for loading files which are in read only directories. When an image file is loaded into ossimPlanet a quick check is made to see if overview (reduced resolution) and histogram files already exist. If they do not exist in the source directory, an attempt will be made to read them from the cache directory. If they do not exist, a background job is started to create them in the source directory. If writing is not allowed in the source directory the files will be written into the cache directory.

### Auto Histogram Stretch Setting

If a histogram file exists in either the source or cache directory it will be used for automatic histogram stretching. The Auto Histogram Stretch Setting sets a preference for the default stretch setting to be applied to loaded imagery. The pull down menu provides the following options:



Automated histogram stretching typically will improve the displayed brightness and contrast of the loaded image. Note that the setting can be changed for selected imagery by right clicking the layers in the display. The available settings are:

**None** - No stretching applied

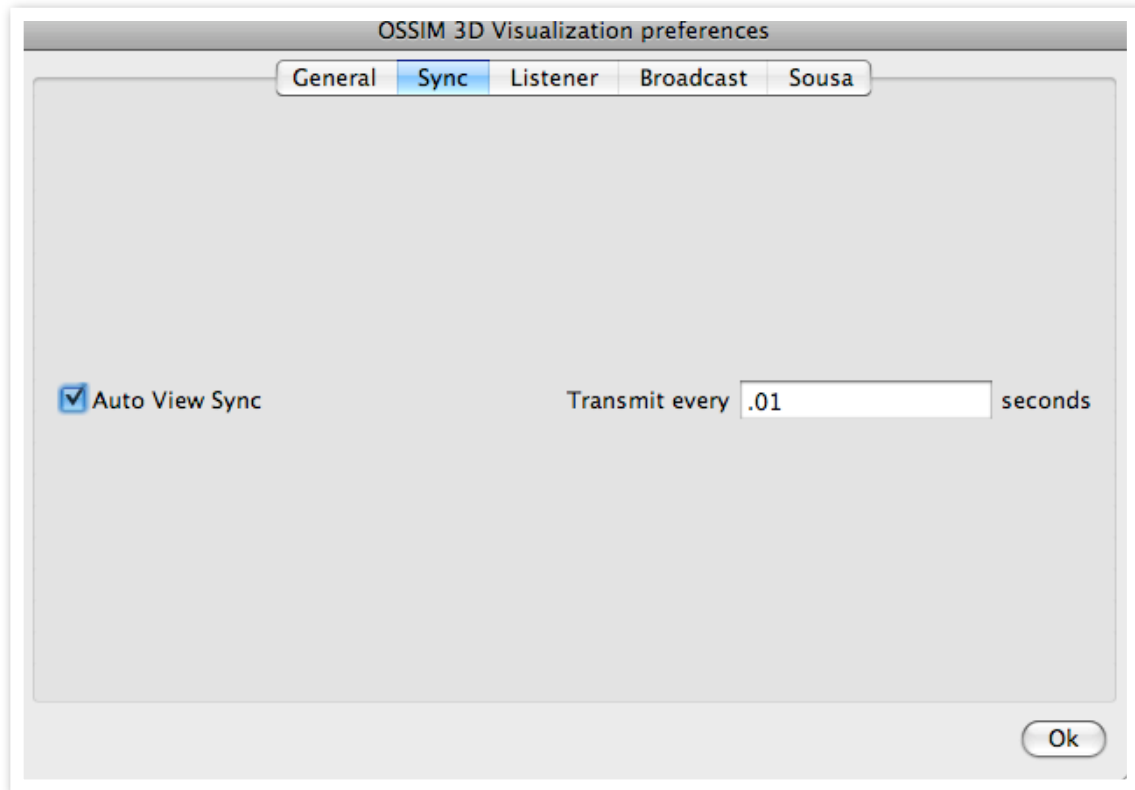
**Linear Auto Min Max** - Each channel is stretched linearly from the lowest to highest input value

**1 Standard Deviation** - clip points are set to one standard deviation from the min/max points

**2 Standard Deviation** - clip points are set to two standard deviations from the min/max points

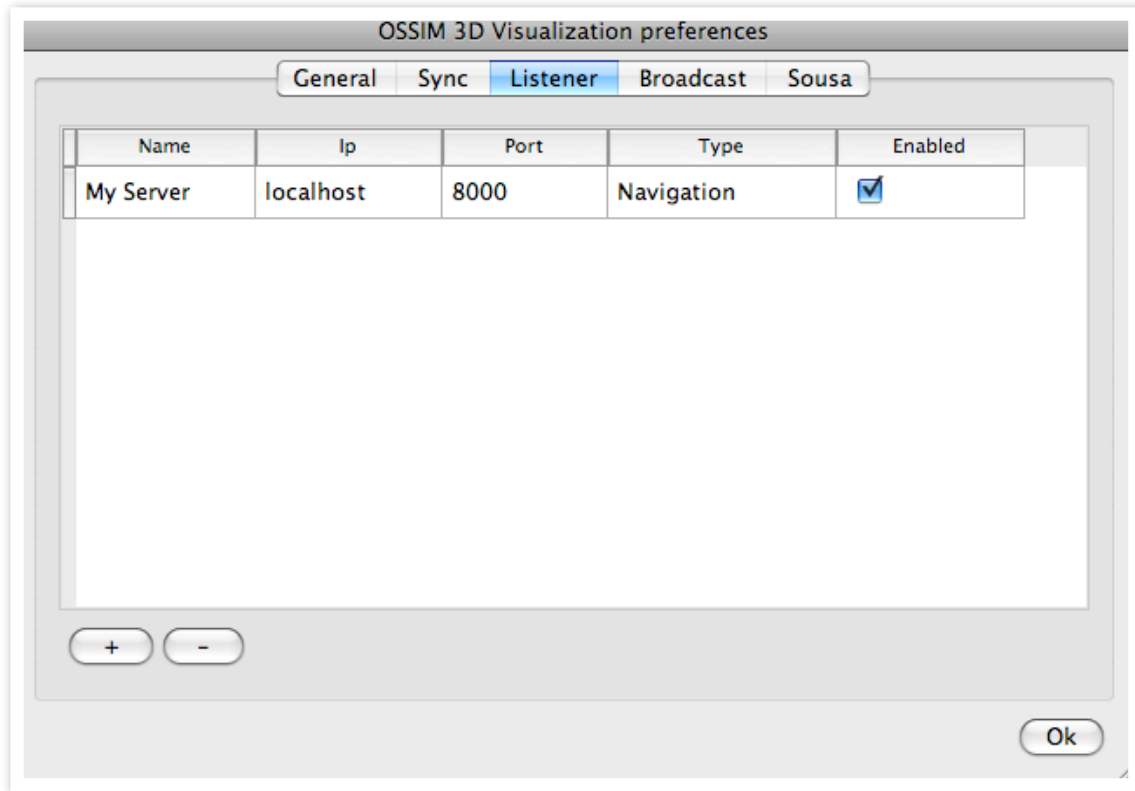
**3 Standard Deviation** - clip points are set to three standard deviations from the min/max points

### Sync Tab



**Auto View Sync** - this checkbox enables automatic transmission of navigation commands. When selected the position of the view will be automatically transmitted when it changes through the navigation ports in the Broadcast panel. The frequency of this transmission can be adjusted in the field shown on the right. If Auto View Sync is deselected it will only transmit navigation if the user sends a specific go to command. This controls all Broadcast navigation channels that are enabled.

## Listener Tab



The Listener allows the user to open up ports for remote control and messages. ossimPlanet will listen on these channels for commands and respond accordingly. The plus and minus buttons at the bottom of the panel will add or remove channels. Data in this dialog is persistent - it will be automatically stored and retrieved in future ossimPlanet runs.

The simplest use is to sync up the navigation of multiple planets - the broadcast channel will transmit position information to the IP address ossimPlanet application listening on the same channel.

**Name** - a user defined name for the listening channel. Only used to help the user identify the channel.

**IP** - Specifies the IP port on which to listen. Defaults to localhost, but can be set to a specific IP address to support machines with multiple network interfaces.

**Port** - this is the communication port where the computer is listening for messages. It must be the same value as the port identified in the remote transmitting computer. It will be necessary for the port to be open (not blocked by a firewall) for communications to occur.

**Type** - A pull down menu to select the communication type:

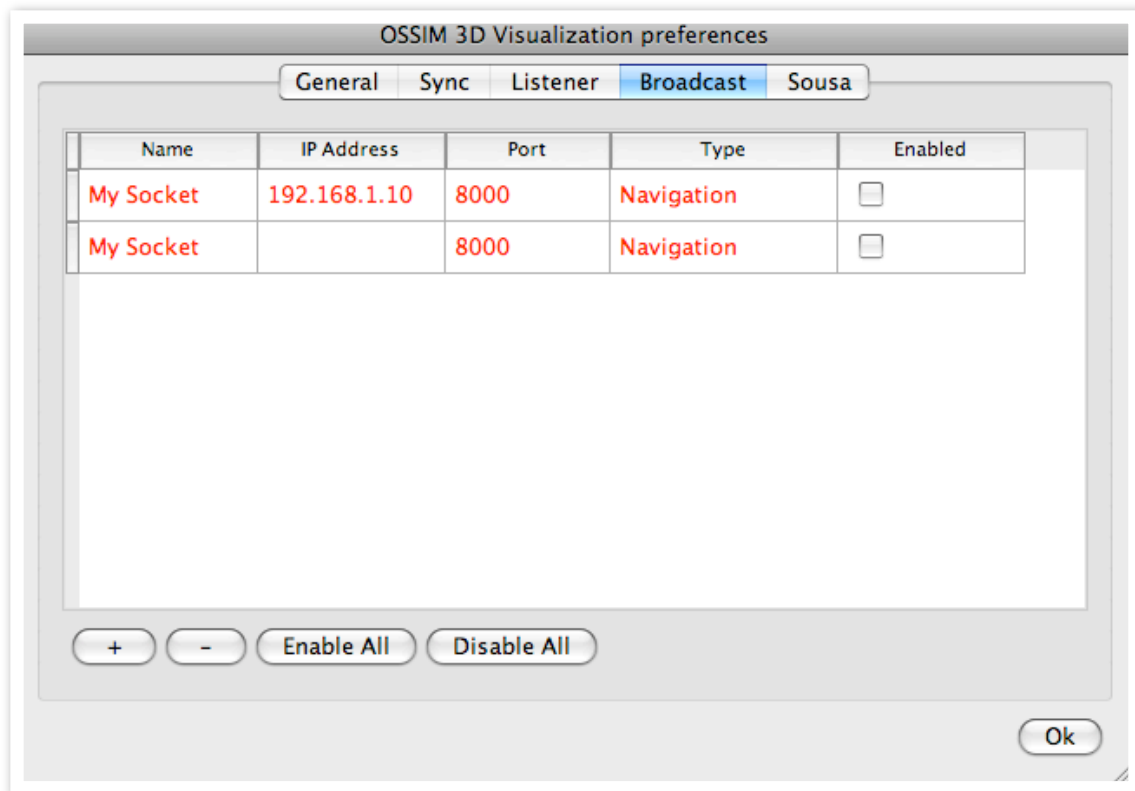
Navigation - listens for navigation commands (udp protocol)

Data - listens for data transmissions (tcp protocol)

**Enabled** - this checkbox enables and disables listening on the communications channel

## Broadcast Tab

The broadcast tab reveals the set up for ossimPlanet command broadcasting. Position and orientation commands are transmitted to all listening ossimPlanets through these open channels.



Channels can be added or removed in this dialog. The (+) and (-) buttons add and delete broadcast channels in the dialog. The state of this dialog is persistent and automatically saved for future use.

**Name** - a user defined name for the channel. It is used only to help the user identify what the channel is being used for.

**IP Address** - this is the IP address of dns name of the remote machine you are sending to.

**Port** - the port number to use for communications.

**Type** - pull down menu

Navigation - used for sending navigation commands (uses udp protocol)

Data - used for sending data transmissions (tcp protocol)

**Enabled** - Enables or disables the port

### Sousa Tab

Sousa is an intelligent agent system that can control and communicate with distributed applications. ossimPlanet can interface directly with Sousa for the automated exchange of data, events and navigation synchronization. Sousa is in the process of being released as an open source project once the initial beta testing is completed. Dave Talmage is the author of Sousa.

### Connection Tab

OSSIM 3D Visualization preferences

General Sync Listener Broadcast **Sousa**

**Connection** Archive Mapping

Identity

User name:

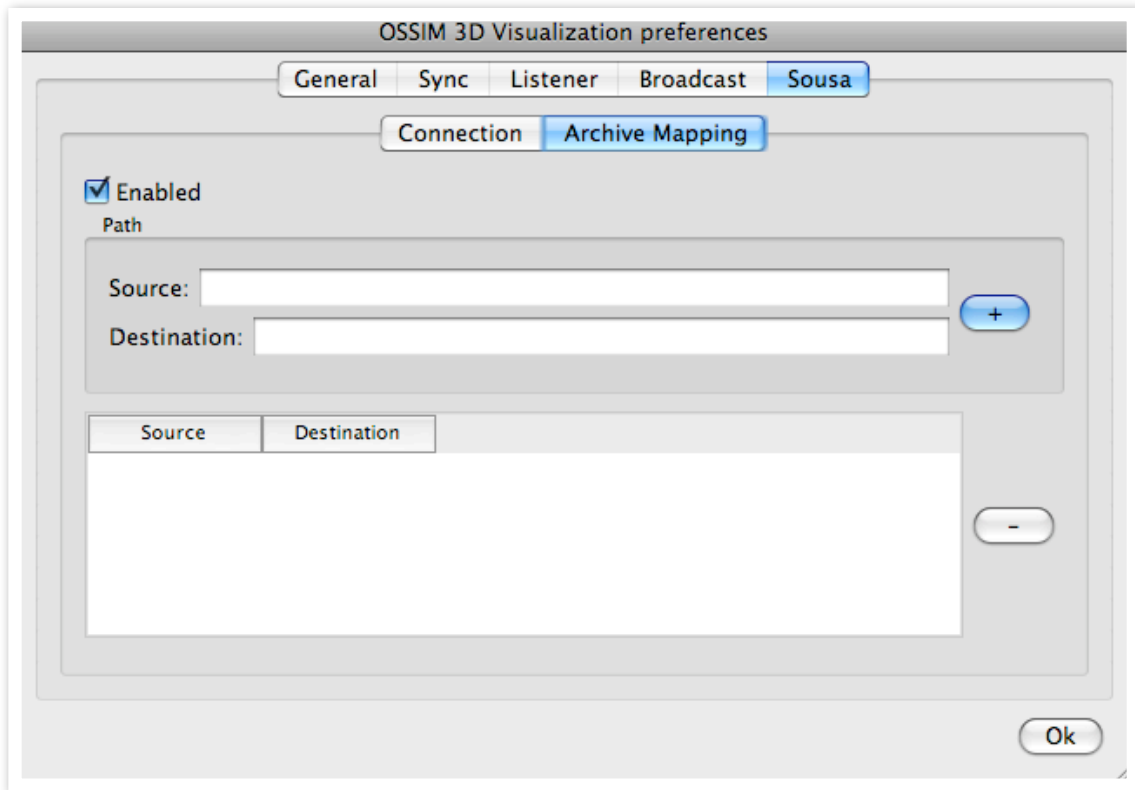
Domain:

Server

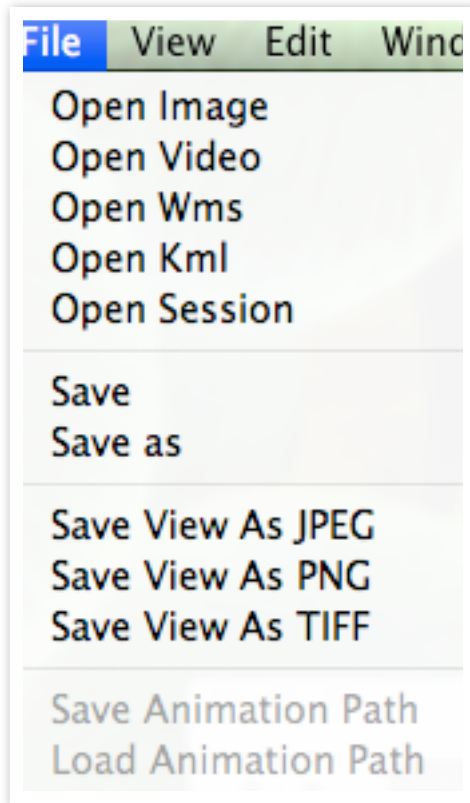
Ip:

Port:    Auto Connect on Start

### Archive Mapping Tab



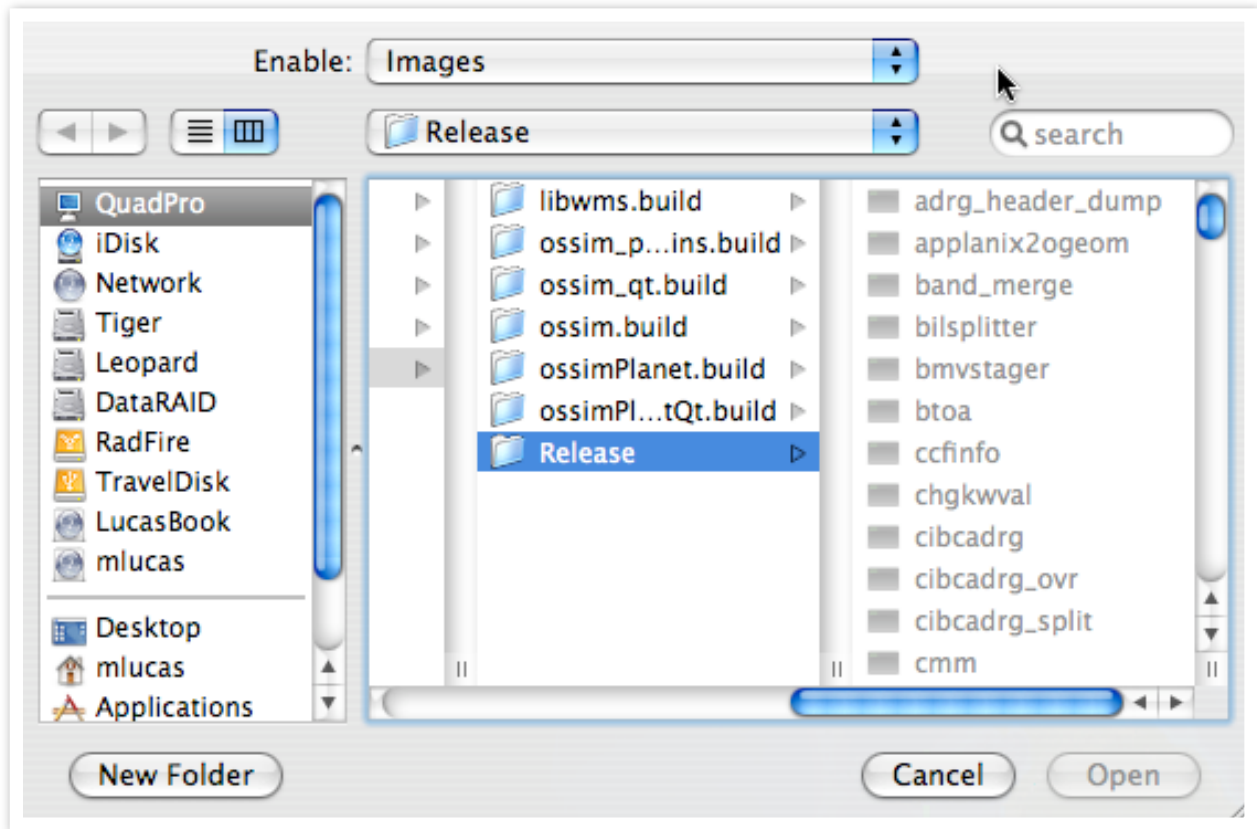
## File Menu



The file menu contains the menu items for loading imagery into ossimPlanet.

### Open Image

The Open Image menu item is used to access and load geo-spatial data files into the planet. Most commercial and government geo-spatial data formats are supported. ossimPlanet also supports drag and drop capabilities from the operating system onto the layer panel. For a complete list of supported files refer to the ossim and GDAL project documentation.

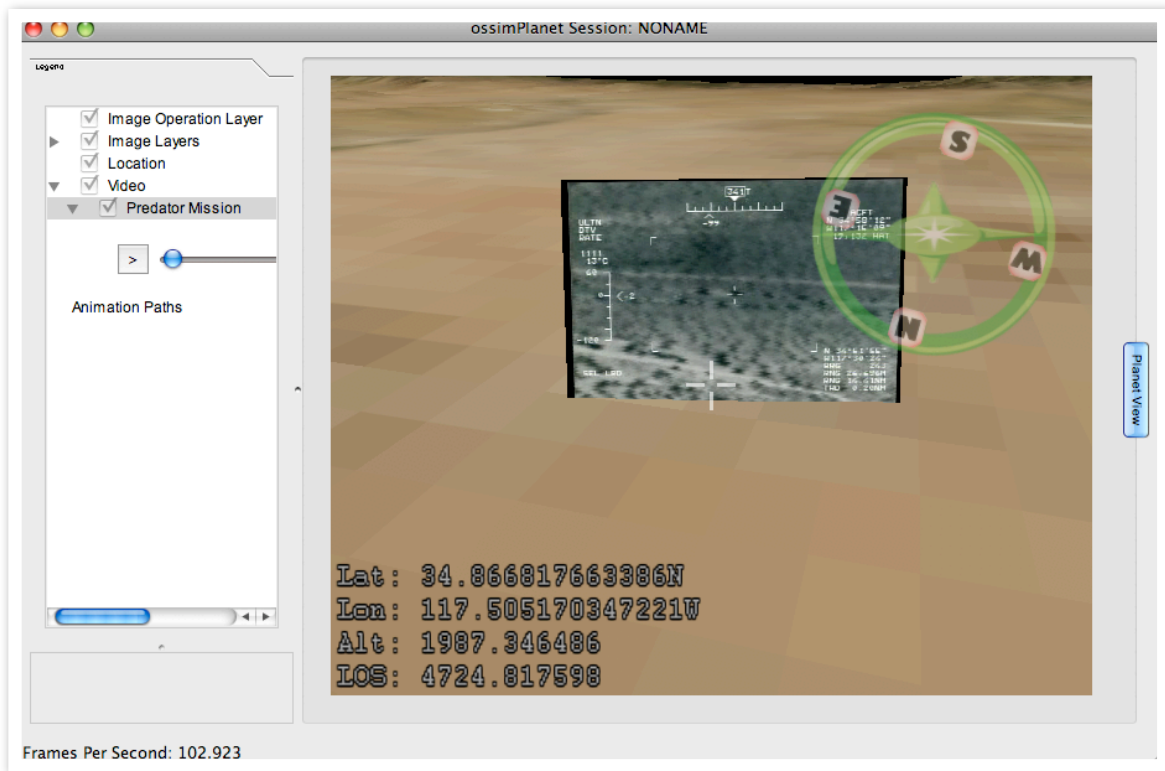


### Open Video

The development team is following the specifications of the Motion Imagery Standards Board (MISB) for UAV video. MISB compliant video can be loaded, positioned, and displayed in ossimPlanet. This menu item will load the selected MISB compliant mpg video file.

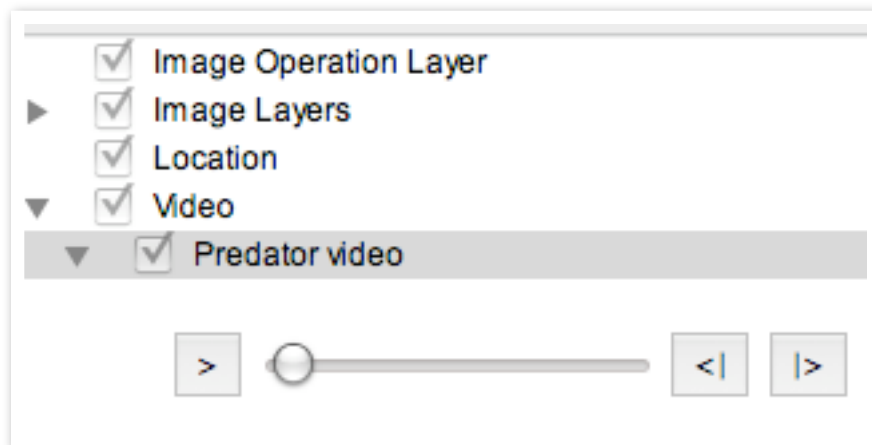


## Predator UAV Video Support



*Predator video 3D billboard playing in the ossimPlanet view*

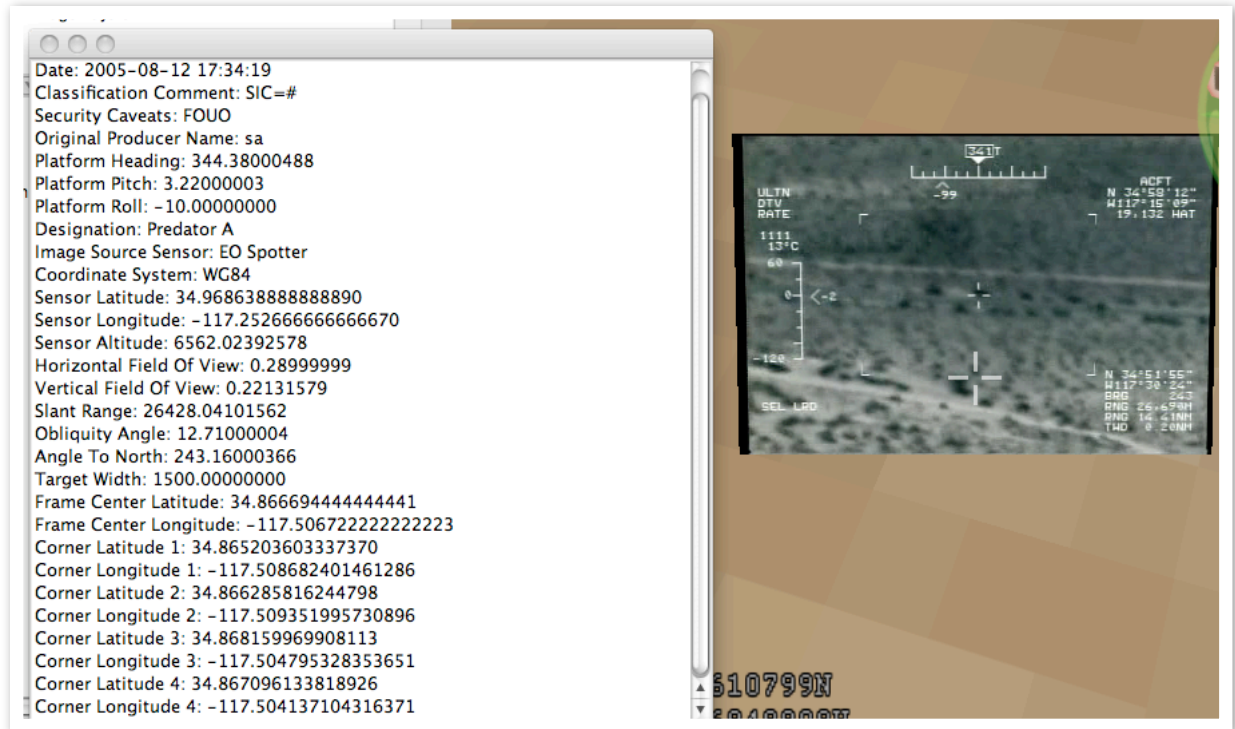
Support for Predator UAV mpg clips is now supported in ossimPlanet. Drag and drop predator clips on to the planet and they will appear as 3D video billboards located at the point of collection. Opening the reveal triangle next to the Video layer will reveal labels and controls for each of the loaded clips.



*Layer view for Predator playback showing playback controls*

Double clicking on the layer name will navigate the view to look at the billboard. The billboard is positioned on the planet based on the metadata in the mpg stream. The controls activate play and pause buttons and the slider works across the timeline.

Predator data complies with the KLV standard and documented by the Motion Imagery Standards Board (MISB). Clicking on the billboard will display a metadata summary:

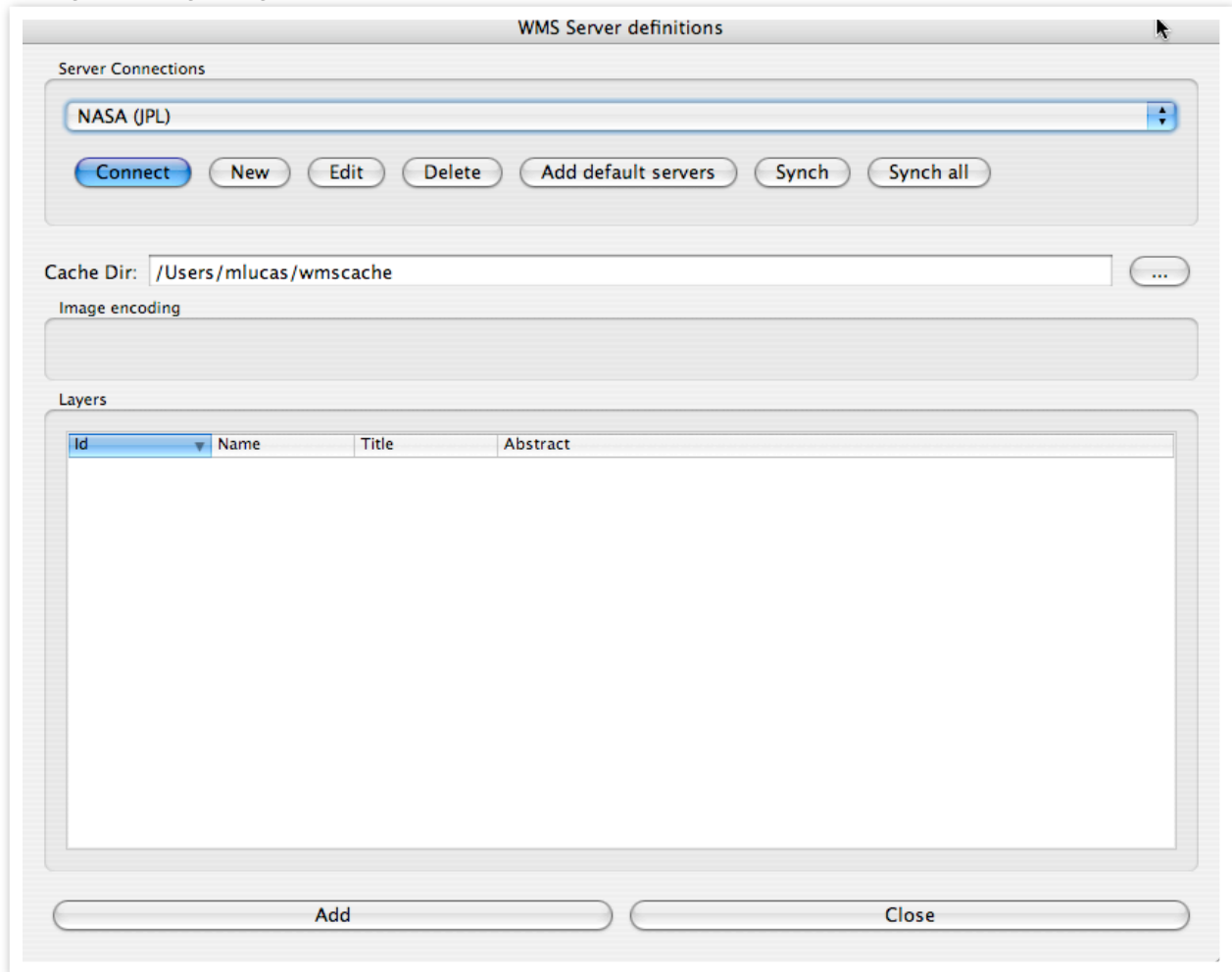


### *Predator metadata summary window*

The display will automatically turn on and off based on distance from the ground point. The 3D billboard is implemented to always face towards the viewer and stop zooming once full resolution is achieved.

## Open WMS

The OGC Web Mapping Services interface is supported in ossimPlanet. The menu item will open a dialog box for getting WMS access to online servers.

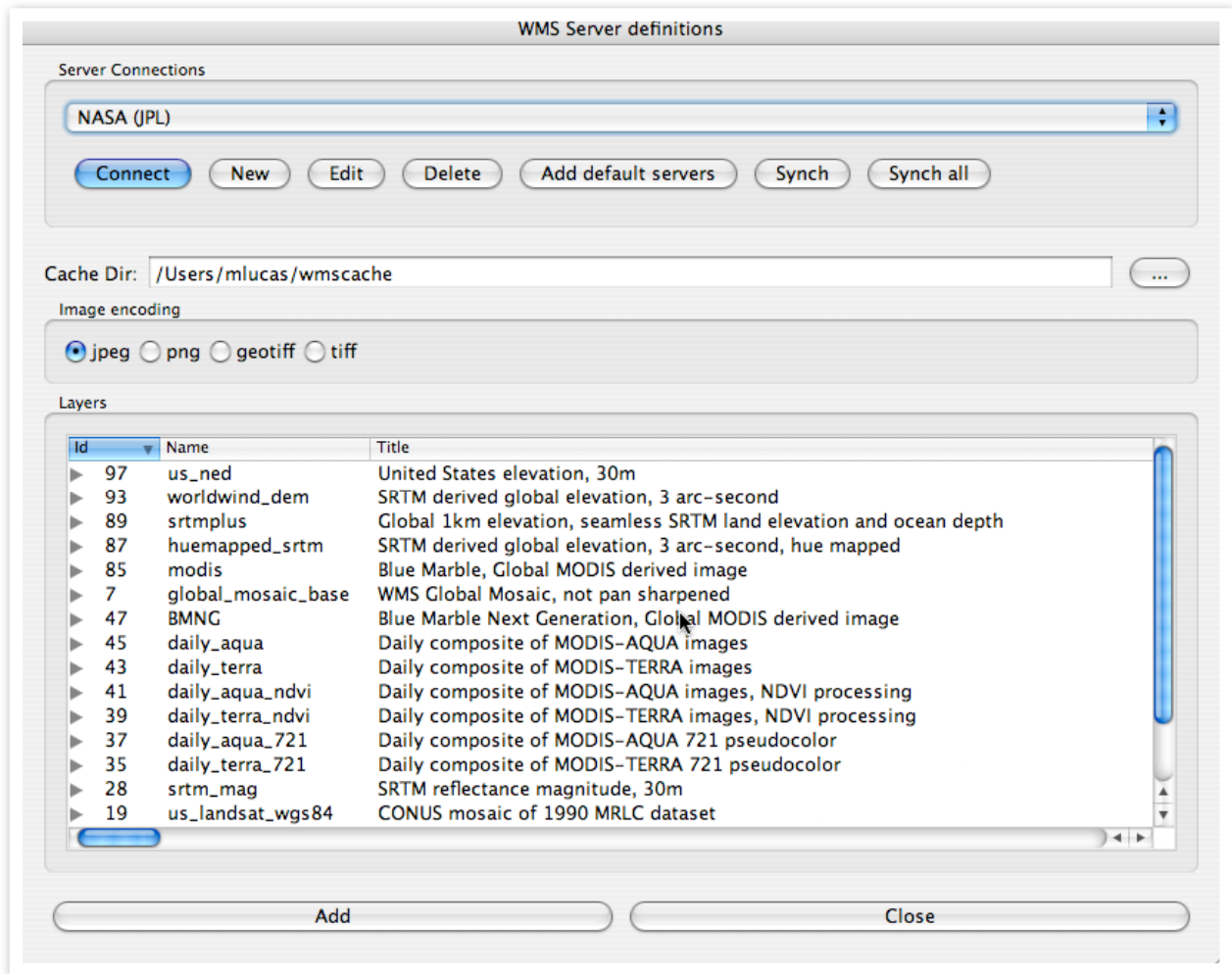


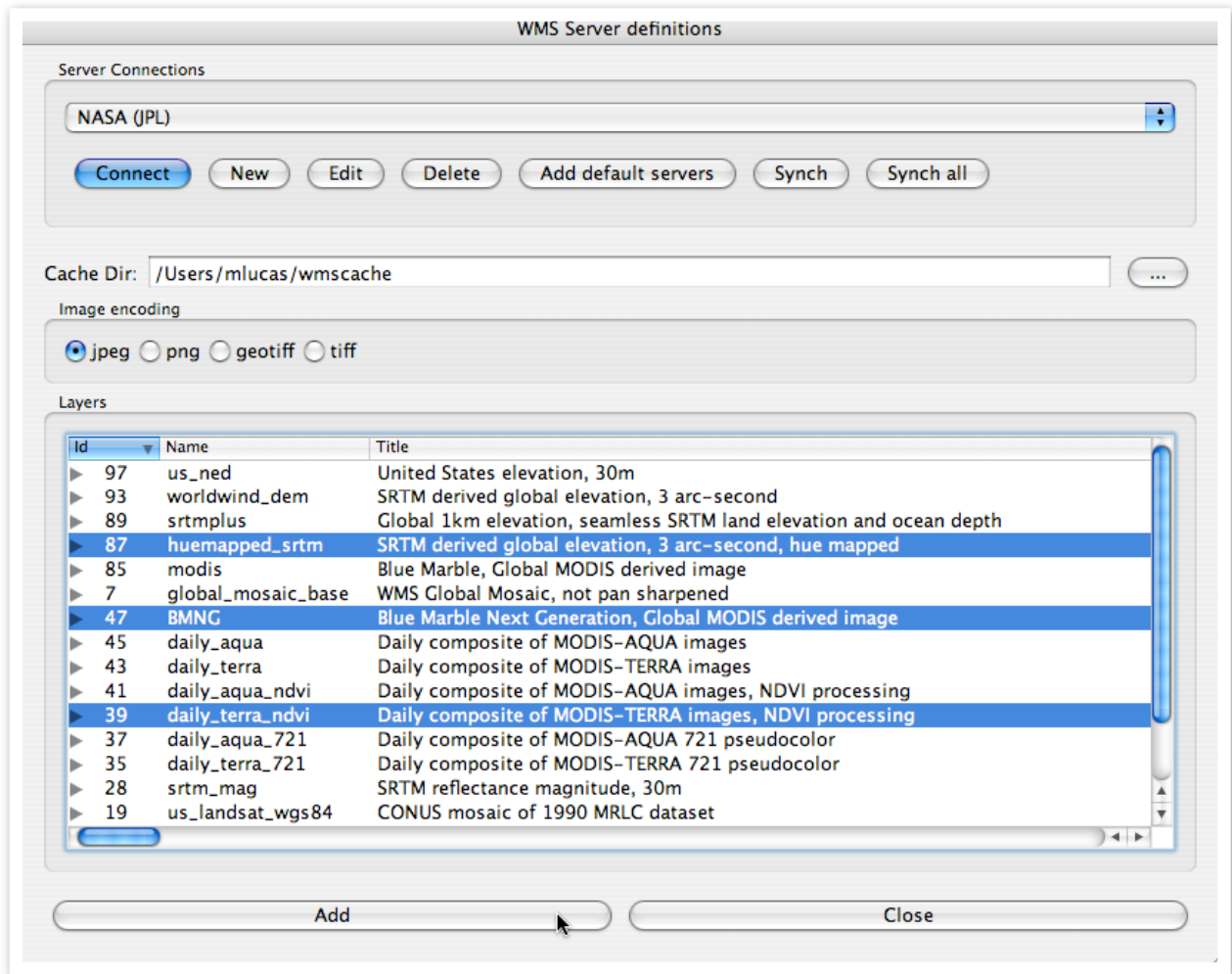
*Dialog for setting up WMS servers and layers.*

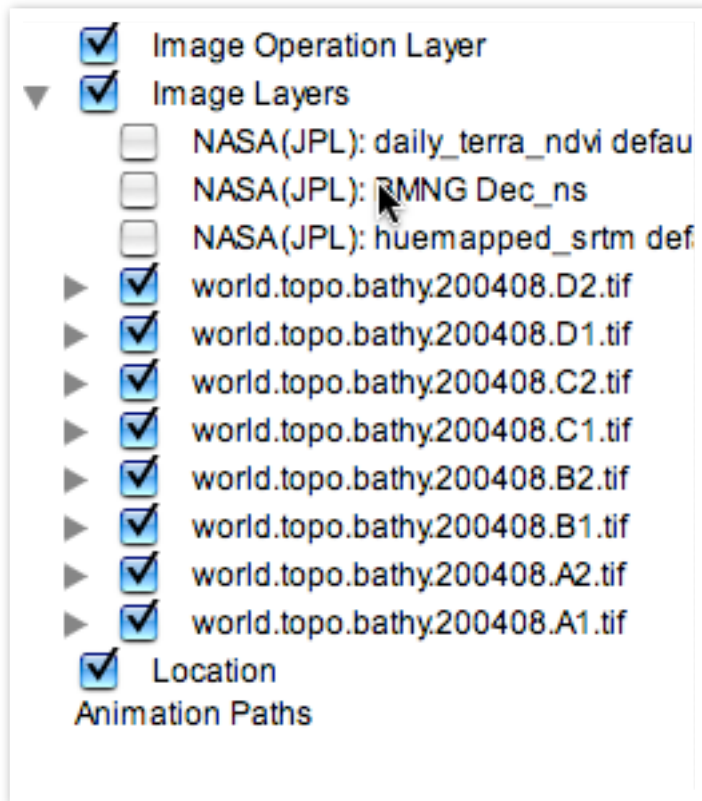
This dialog helps the user construct OGC WMS (Web Mapping Services) requests for online data retrieval. The default installation includes several WMS servers that can be selected from the pop up menu. New servers will be added to the pop up menu for future selection.

## Connect

This button will make a WMS GetCapabilities request to the server selected in the pop up. A Get-Capabilities request determines what data layers and capabilities are available.

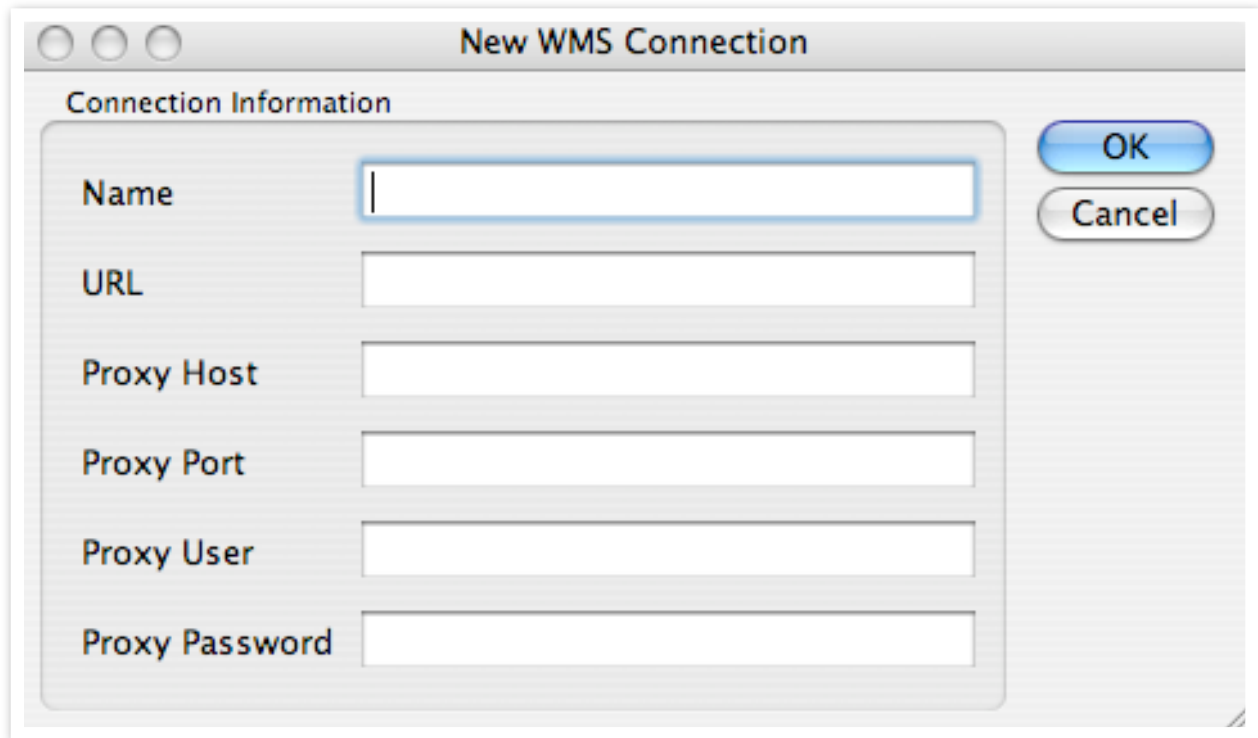






## New

*The New button will allow the user to enter a URL for a new OGC Web Mapping Server. That URL and name will be added to the popup list.*

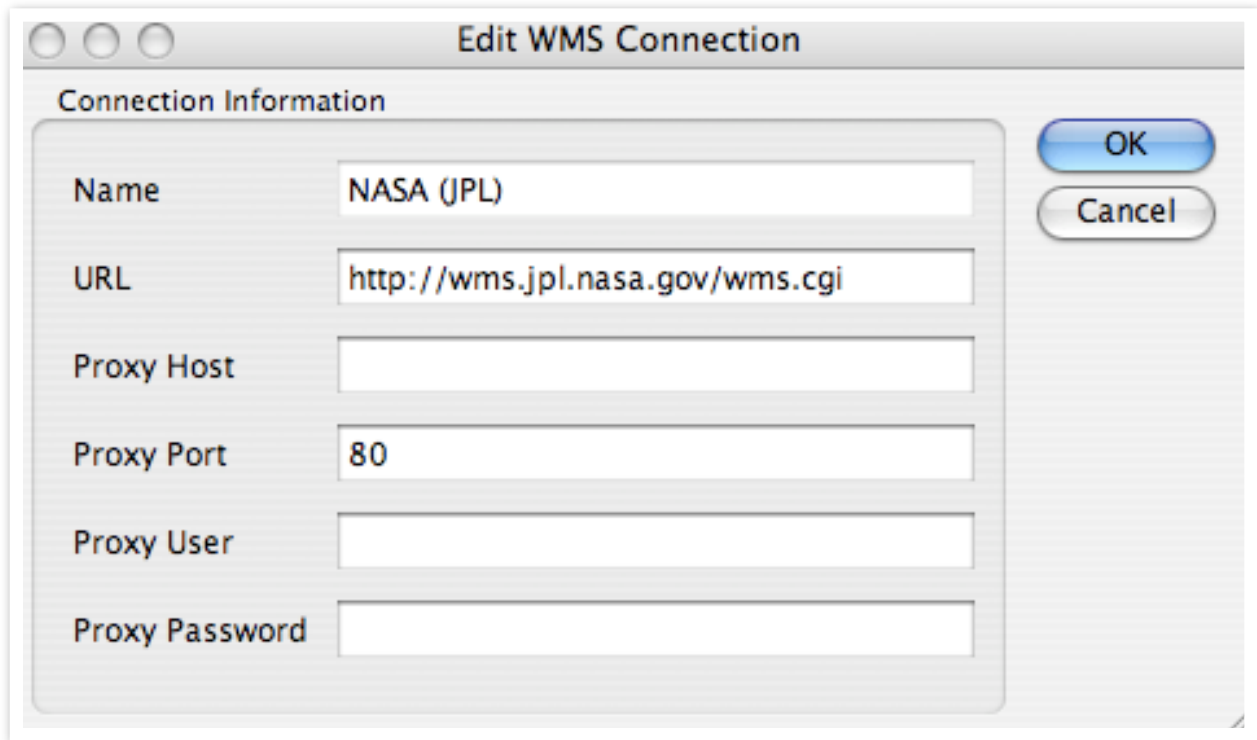


*New or Edit buttons will provide this dialog for setting up WMS servers*

This dialog is used for entering the parameters for a new OGC WMS web server. Support is available for direct access or access through a proxy server.

### **Edit**

Edits the currently selected WMS server in the pop up list.



### **Delete**

Deletes the currently selected WMS server in the pop up list.

### **Add default servers**

A list of default servers is distributed with the initial installation. Pressing the Add default servers button will add them to the pop up list.

### **Sync**

Pressing the sync button will transmit the setup information for the currently selected WMS server through any enabled broadcast data channels.

### **Sync All**

Pressing the Sync All button will transmit all of the available WMS server setups through any enabled broadcast data channels.

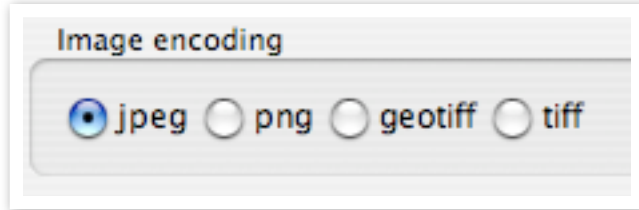
### **Cache Dir:**

The Cache Dir: specifies the path where the retrieved data is to be stored on the local machine. Once image tiles are fetched from the internet they are stored locally in the cache directory. Before retrieving a new tile from the WMS server, ossimPlanet first checks to see if it is locally available in the cache.



### Image encoding

Options for file format and image encoding will appear in this area after the server responds. For example, a server may provide pngs, jpgs, geotiffs as options.



### Layers

When the connect button is pressed a WMS GetCapabilities request is made to the remote server. It will answer back with the layers and capabilities that can be provided. The following examples shows the response from the NASA WMS server:

Id	Name	Title	Abstract
▶ 90	MODAL2_E_CLD_WP	Cloud Water Content (8 day - Terra/MODIS)	
▶ 88	MYDAL2_M_CLD_WP	Cloud Water Content (1 month - Aqua/MODIS)	
▶ 86	MODAL2_M_CLD_WP	Cloud Water Content (1 month - Terra/MODIS)	
▼ 84	MYDAL2_D_CLD_RD	Cloud Particle Radius (1 day - Aqua/MODIS)	
...	rgb	RGB Style	
▶ 82	MODAL2_D_CLD_RD	Cloud Particle Radius (1 day - Terra/MODIS)	
▶ 80	MYDAL2_E_CLD_RD	Cloud Particle Radius (8 day - Aqua/MODIS)	
▶ 8	MODAL2_D_AER_OD	Aerosol Optical Thickness (1 day - Terra/MODIS)	
▶ 78	MODAL2_E_CLD_RD	Cloud Particle Radius (8 day - Terra/MODIS)	
▶ 76	MYDAL2_M_CLD_RD	Cloud Particle Radius (1 month - Aqua/MODIS)	
▶ 74	MODAL2_M_CLD_RD	Cloud Particle Radius (1 month - Terra/MODIS)	
▶ 72	MYDAL2_D_CLD_OT	Cloud Optical Thickness (1 day - Aqua/MODIS)	
▶ 70	MODAL2_D_CLD_OT	Cloud Optical Thickness (1 day - Terra/MODIS)	
▶ 68	MYDAL2_E_CLD_OT	Cloud Optical Thickness (8 day - Aqua/MODIS)	
▶ 66	MODAL2_E_CLD_OT	Cloud Optical Thickness (8 day - Terra/MODIS)	
▶ 64	MYDAL2_M_CLD_OT	Cloud Optical Thickness (1 month - Aqua/MODIS)	

Select the layers that you wish to work with. The Add button will add those layers to ossimPlanet.

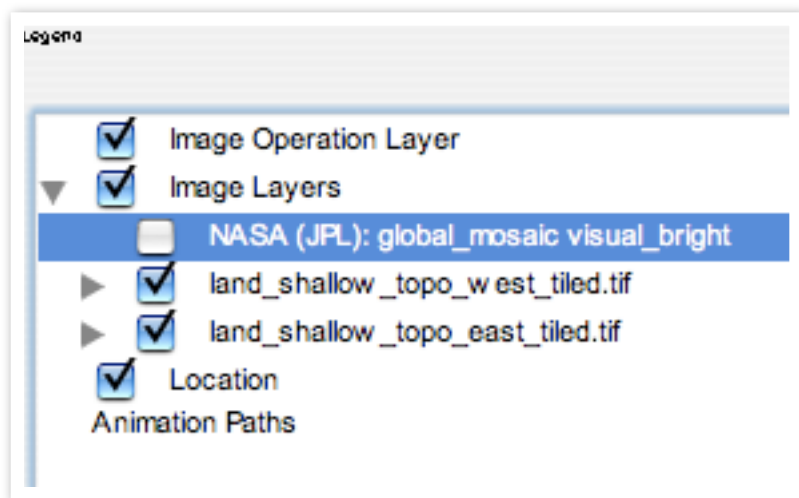
### Add

After selecting the layers that you wish to work with, press the Add button to add them to the Layers Legend in the left panel of the main window.

### Close

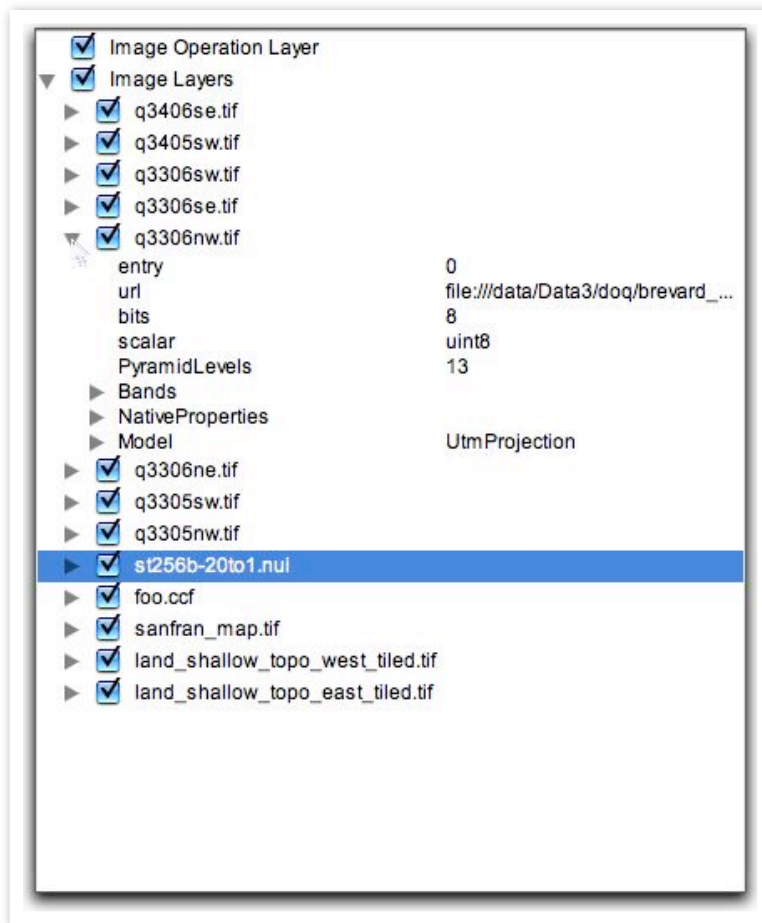
This button closes the dialog.

Returning to the main window the WMS layers will be displayed in their own category. Disclose triangles can be opened to drill down into the selected layers. By default, added layers are not enabled. Enable the check box to make them active.



*WMS Layers need to be enabled with the checkbox*

Image layers are also used to display associated meta data. Meta data tags are automatically parsed and displayed with their associated values in the legend area. Simply open the reveal triangles next to the images to reveal the metadata.

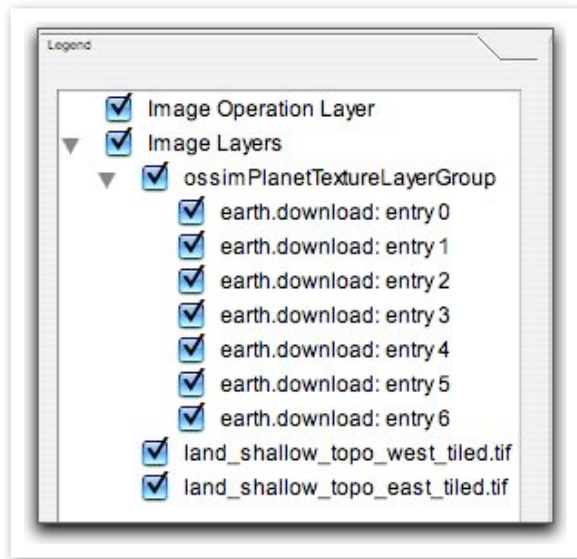


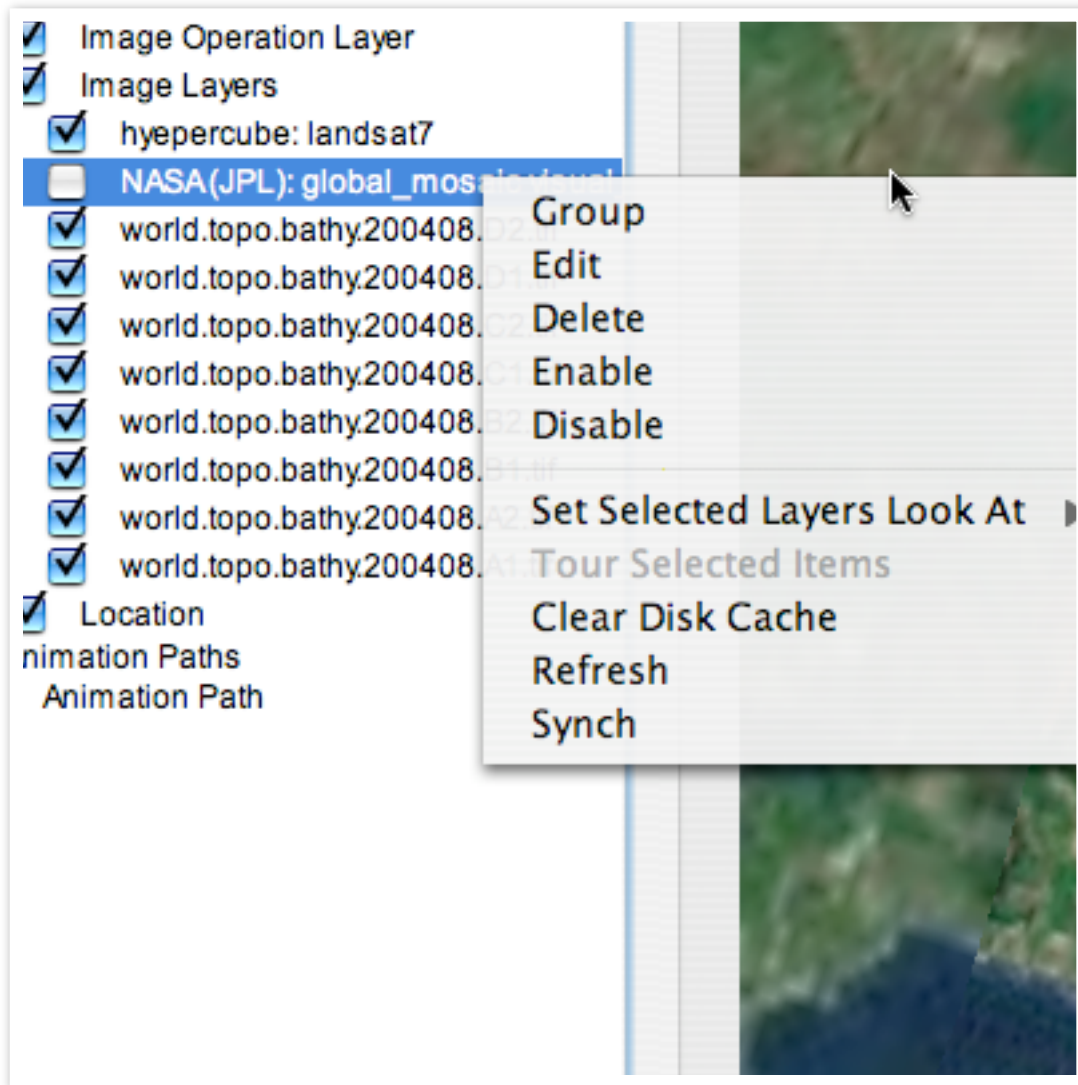
### Drag and Drop support

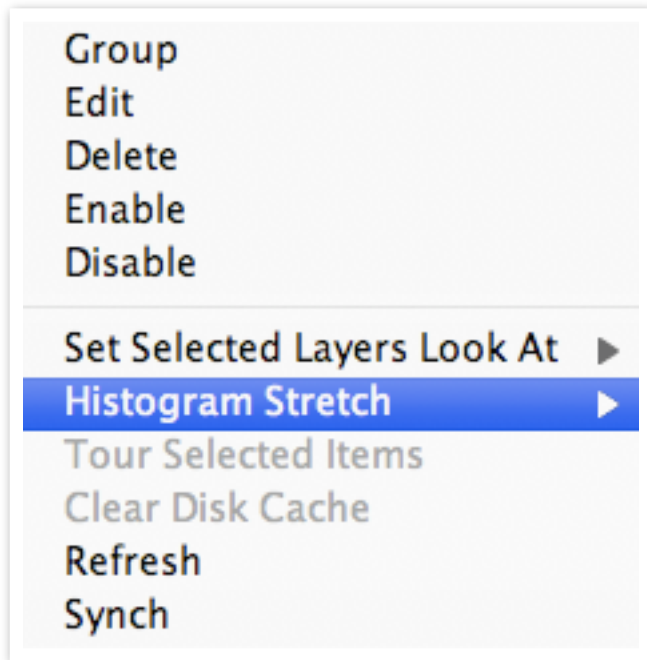
ossimPlanet also supports drag and drop from the desktop into the Layer panel.

### Loading WorldWind Servers

Direct downloading from WorldWind Servers is also supported. Included in the distribution is an earth.xml file. This file is located in /Library/Application Support/ossim/files/Worldwind/earth.xml. Opening this file or dragging it into the legend area will open download channels with several WorldWind servers and layers. These layers will be added under Image Layers in a sub-heading named ossimPlanetTextureLayerGroup as shown below. Expand the disclosure triangle to toggle on or off the display of these layers. As you navigate the globe data from these servers will be downloaded and displayed given your viewing area. Note, this also will work in the other included applications - imagelinker and iview.







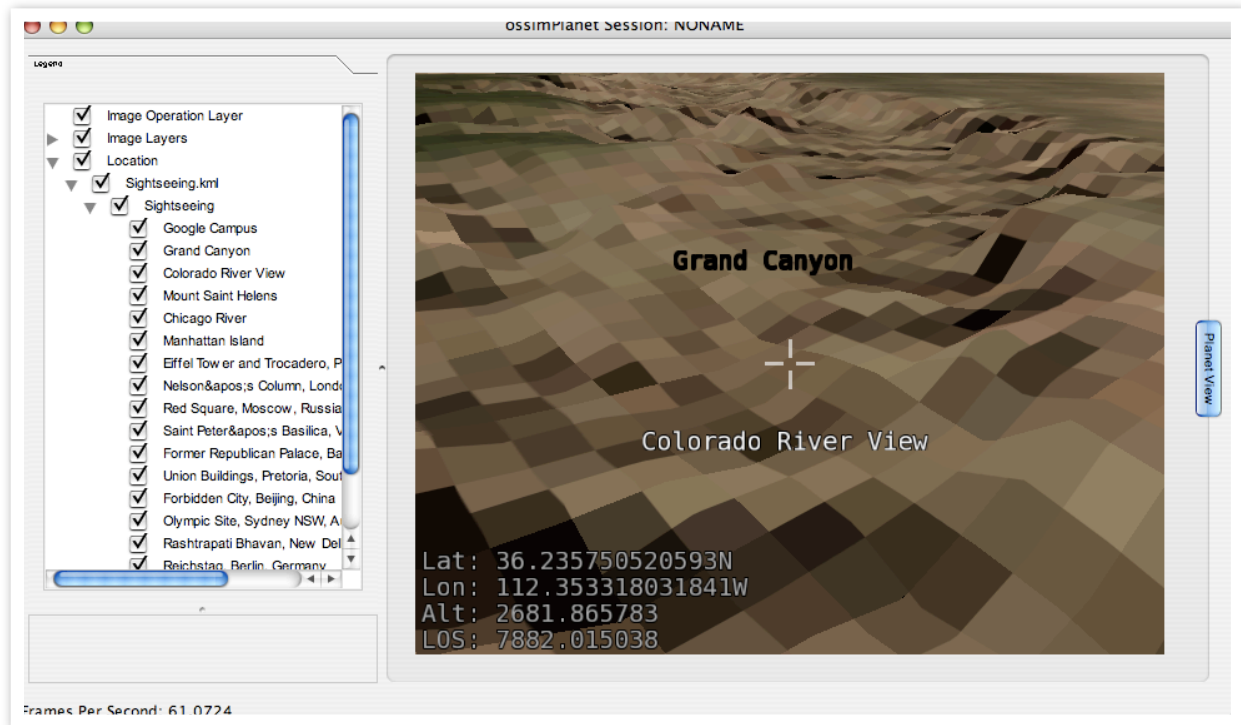
Items in the legend can display additional options. Select an item and press the right mouse key for a pop up menu of commands. Items can be grouped, renamed, deleted, enabled and disabled. Specific view parameters can be associated with each item or group. Forced refresh and sync commands are also available.

### **Open Session**

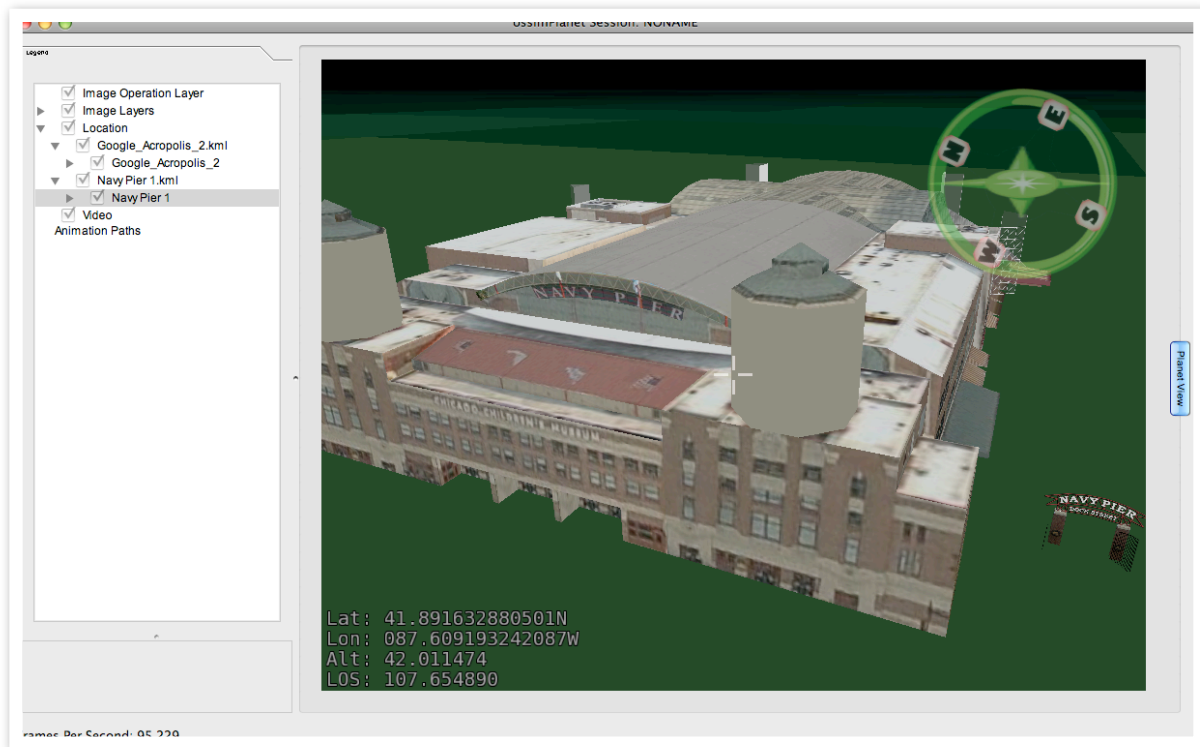
A Session is an xml file that contains the state of the program including data that has been loaded and the current view. The Open Session command retrieves this file from disk, loads the data, and navigates to the saved view. The state of the program is preserved in the session file. In addition to loaded images and external server settings, the current position and any saved animation paths are also preserved.

### **KML and KMZ files**

Placenames saved from Google Earth in either kml or kmz format can now be directly loaded into ossimPlanet. Simply drag and drop the kml or kmz file to the layers area and they will be loaded. Click the disclosure triangle to open the placenames - double click any placename to navigate to that location. Currently kml and kmz files are loaded, parsed, and stored internally within ossimPlanet. Development has just commenced on displaying the various attributes on the planet. Currently Placenames and descriptions with embedded links is functioning. Initial work on LineStyles has also commenced.



Simple placenames loaded from a kml file



Google Earth Models from the Google Warehouse

## **Save**

The Save command saves a session given the current state and view of the program. The first time it is run it will prompt the user for a name, subsequent saves will simply overwrite the file with the new state. Sessions save the current state of the program including loaded data, servers, current view, and loaded animation paths.

## **Save As...**

The Save As.. command will open a dialog for saving a session and prompt for a new file name. Use the Save As... command to save additional sessions.

## **Save View as JPEG**

Saves the current view as a jpeg file.

## **Save View as PNG**

Saves the current view as a png file.

## **Save View as TIFF**

Saves the current view as a tiff file.

## **Save Animation Path**

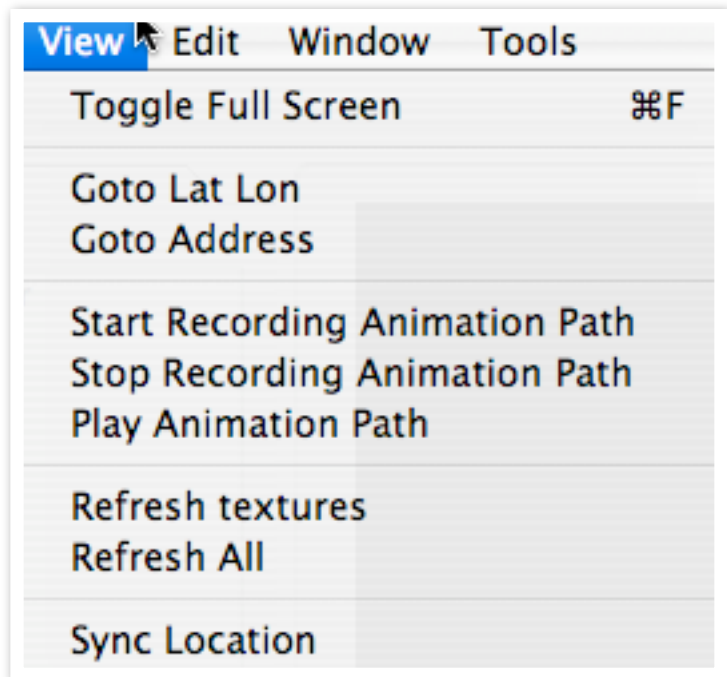
Allows the user to save a recorded animation path to disk.

## **Load Animation Path**

Allows the user to retrieve a saved animation path from disk.



## View Menu

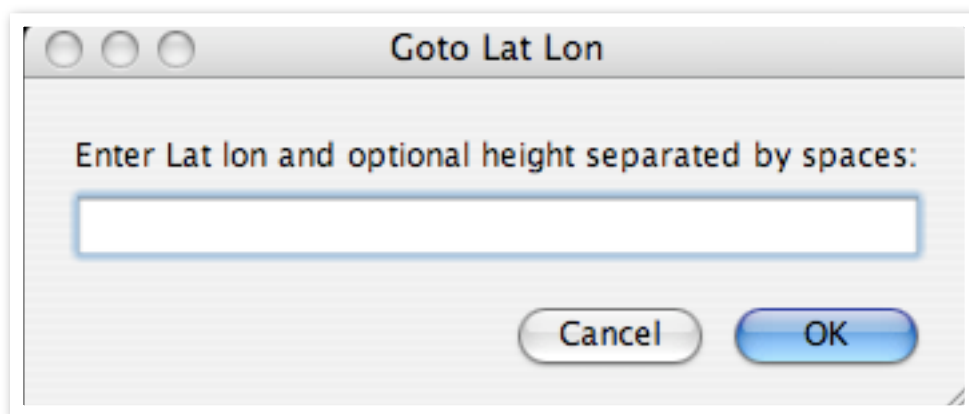


### Toggle Full Screen

Selecting this menu item or pressing the Apple F key combination will toggle the display between full screen and windowed view.

### Goto Lat Lon

Entering a Latitude, Longitude and optionally an altitude will navigate to that position.



### **Start Recording Animation Path**

Selecting this item will start recording all navigation commands. Recording will continue until the Stop Recording Animation Path menu item is selected.

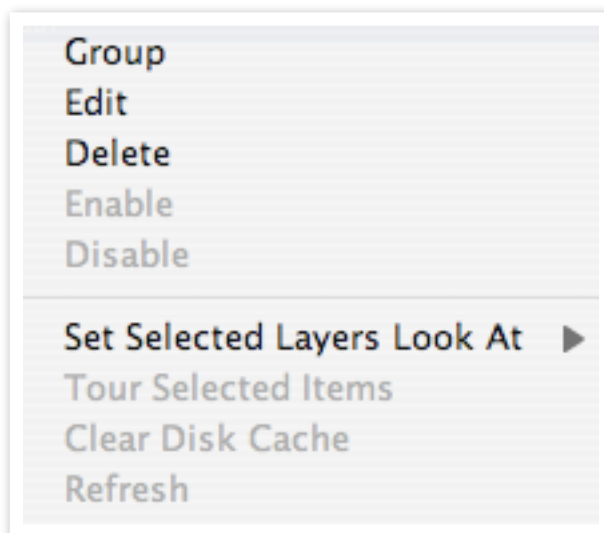
### **Stop Recording Animation Path**

Stops recording the animation path and adds an animation path to the animation path category in the left legend. Opening the disclose triangle in this category will expose all recorded animation paths. Note, when you save a session file the currently saved animation path will be written with the session file.

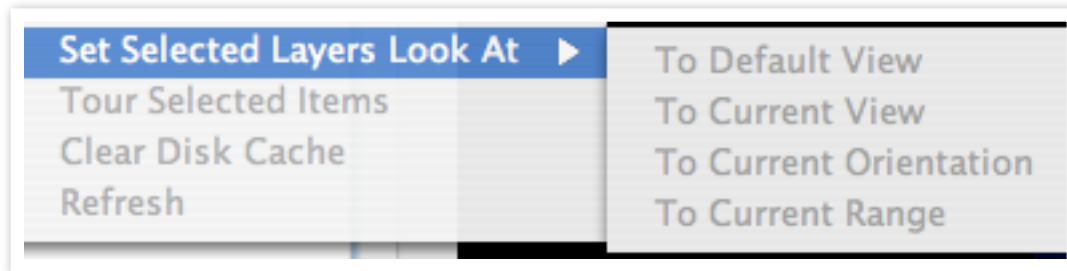
### **Play Animation Path**

Will start looping through the last recorded animation path. Will continue until the user begins to navigate again.

Animation paths are now available in the legend. Their status is saved when session files are saved. A right click on a selected animation path will display a context menu for:



Use this menu to Edit or rename your animation paths and or layer items. Items can now be grouped. Double clicking on an animation path starts playback of the animation path. Double clicking on a image layer takes you to the default view for that layer. Initially the default view is an overview, but that can be changed to an arbitrary view with the Set Selected Layers Look At sub-menu.



To Default View - bird's eye overview

To Current View - Range and orientation of the currently displayed view.

To Current Orientation - Saves roll, pitch, and yaw of the camera

To Current Range - Saves distance to target (eyepoint)

### **Refresh Textures**

Causes the imagery texture to be reloaded and displayed.

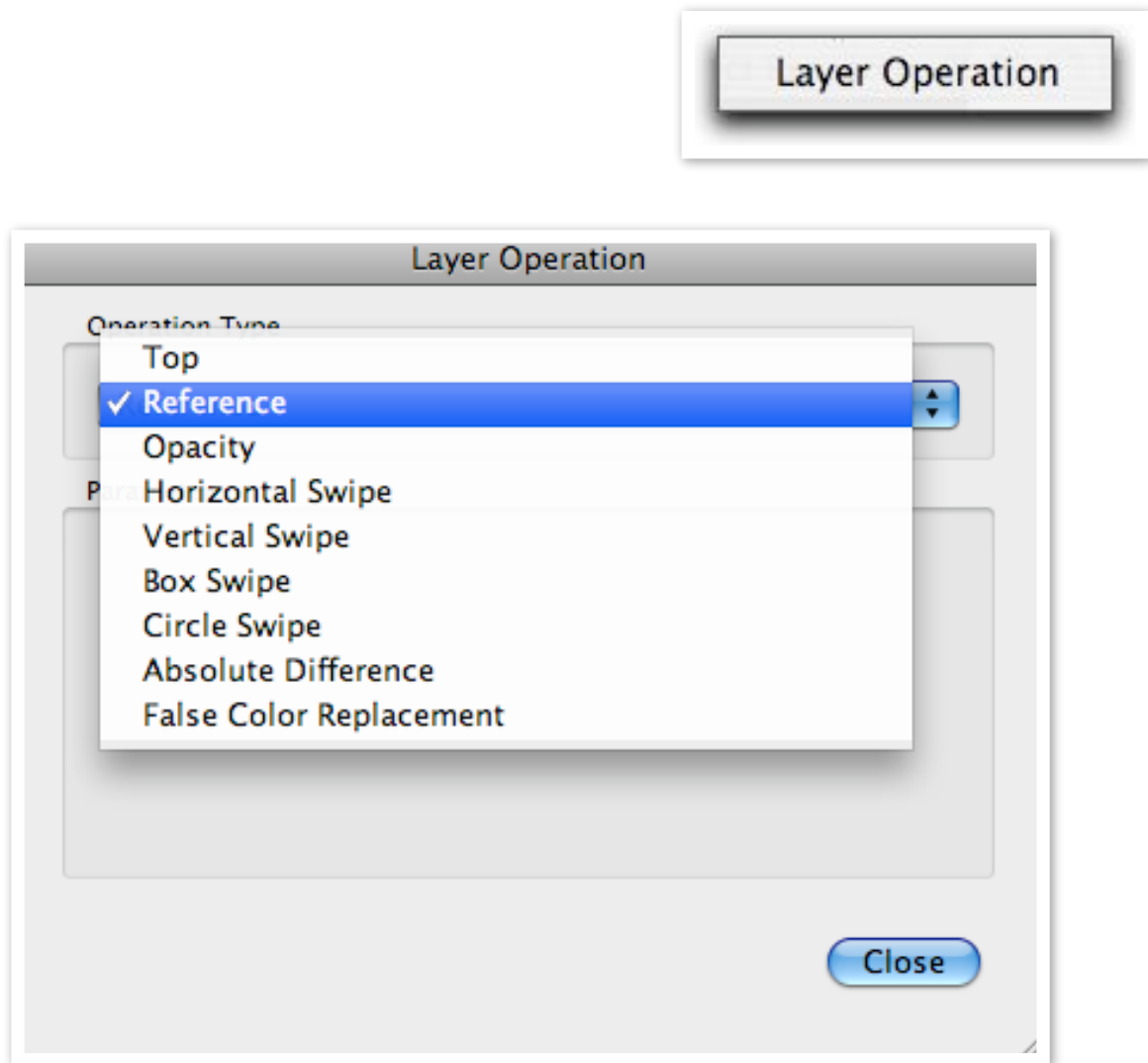
### **Refresh All**

Refreshes the view conditions for the display.

### **Sync Location**

This sends a goto location command out any enabled broadcast navigation channels. The receiving ossimPlanet will then smoothly navigate to the location.

## Edit menu

**Layer Operations**

This menu item implements various layering transitions in ossimPlanet.

These include the various swipes, blends, and change detection algorithms that are shown in the dialog pop up menu shown below. All of these operations are performed in the the Graphics Processing Unit (GPU) and operate on multiple OpenGL textures.

The Layers in the Legend panel are divided into two sub-categories - Image Operations Layer and Image Layers. Individual image layers can be arbitrarily ordered and moved between these layer categories. ossimPlanet collapses each category into OpenGL textures for the operations.

**Reference**

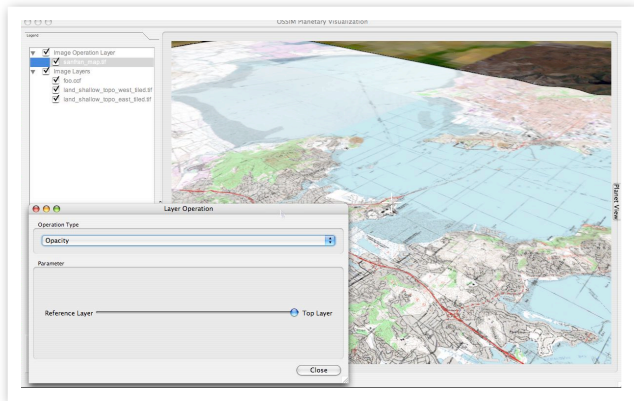
Selecting this option will display only those layers in the reference subfolder of the Legends panel.

## Top

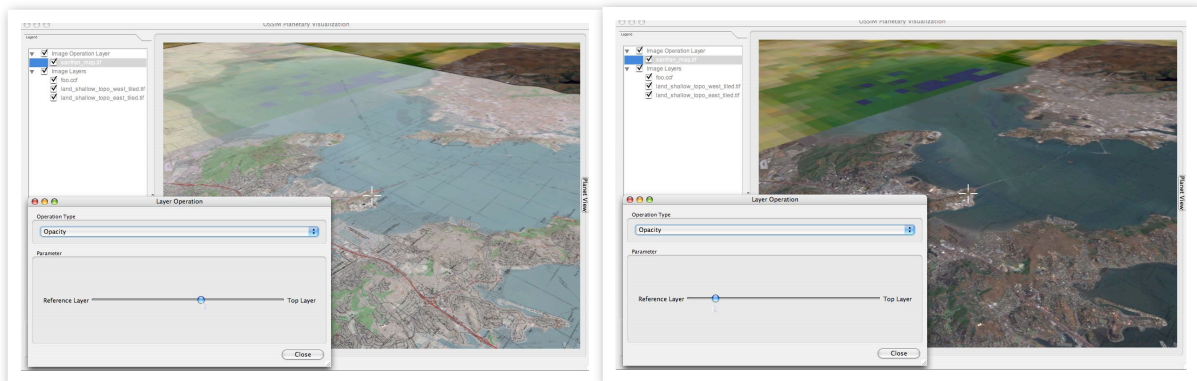
Selecting this option will display only those layers that have been positioned in the layers operations subfolder in the Legend panel.

## Opacity

The Opacity of the operations layer is adjusted with the slider performing a blending operation with the reference texture.



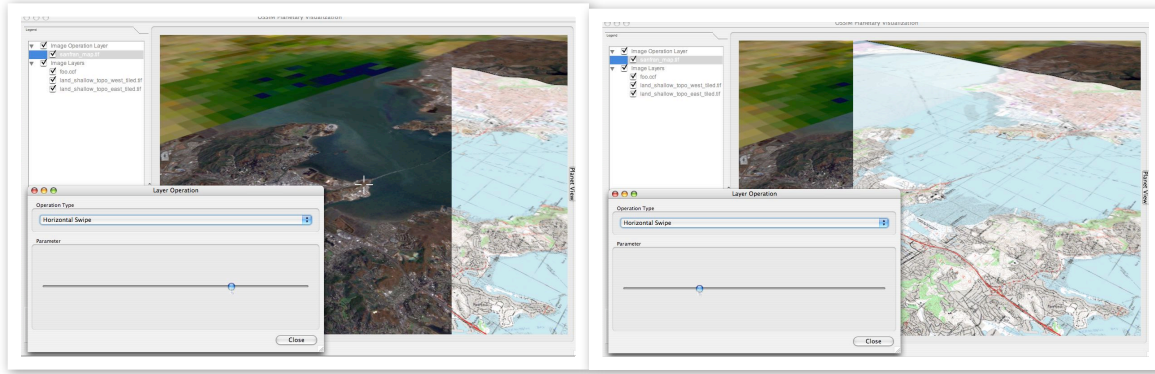
The map layer is totally opaque with the slider control on the right. Moving the slider back and forth will change the opacity of the top layer revealing the reference layer underneath.



Blending set so that the reference layer dominates the blend.

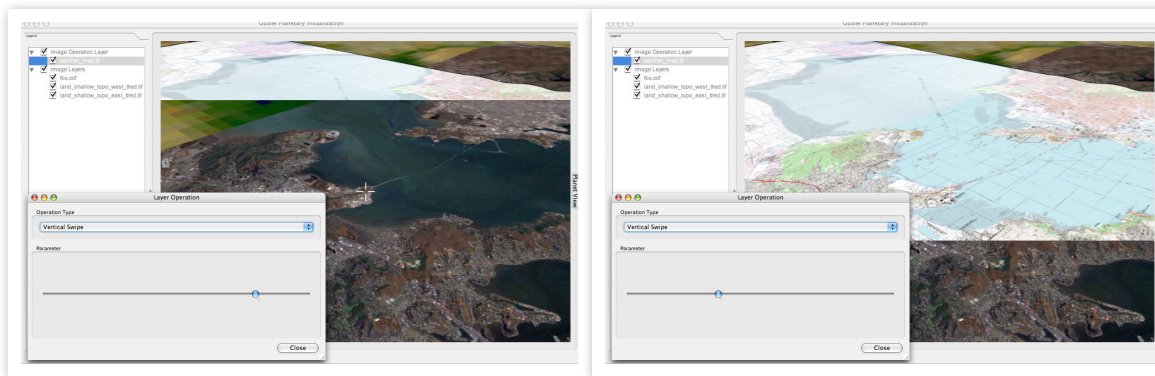
## Horizontal Swipe

The application contains several swipe modes for revealing the reference layers under the operations layer. The Horizontal swipe mode moves a horizontal edge back and forth over the two textures as shown in the two examples below:



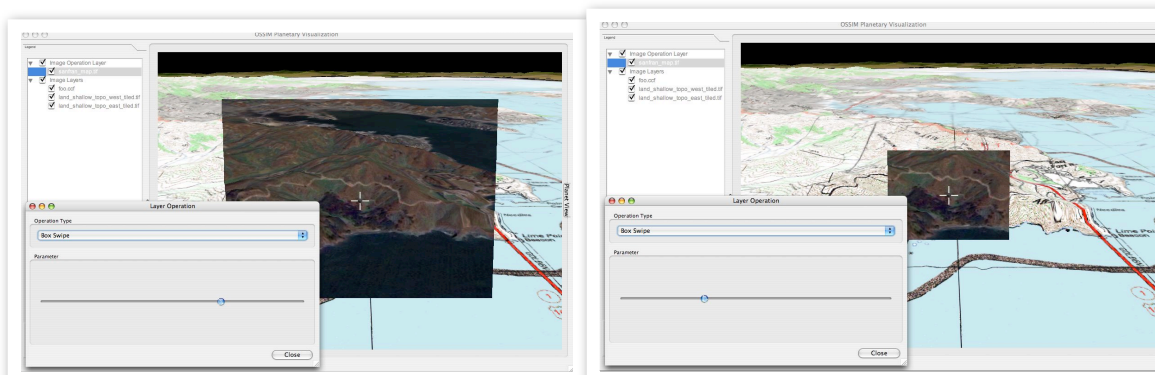
### Vertical Swipe

The vertical swipe operates in a similar fashion with a vertical edge.



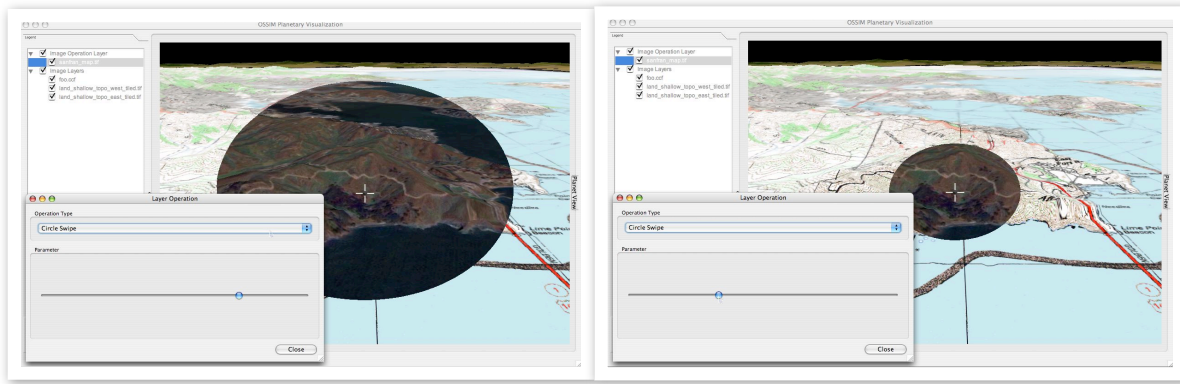
### Box Swipe

The box swipe mode sets up a rectangular reveal area at the center of the view display. Moving the slider enlarges and collapses the rectangular reveal area.



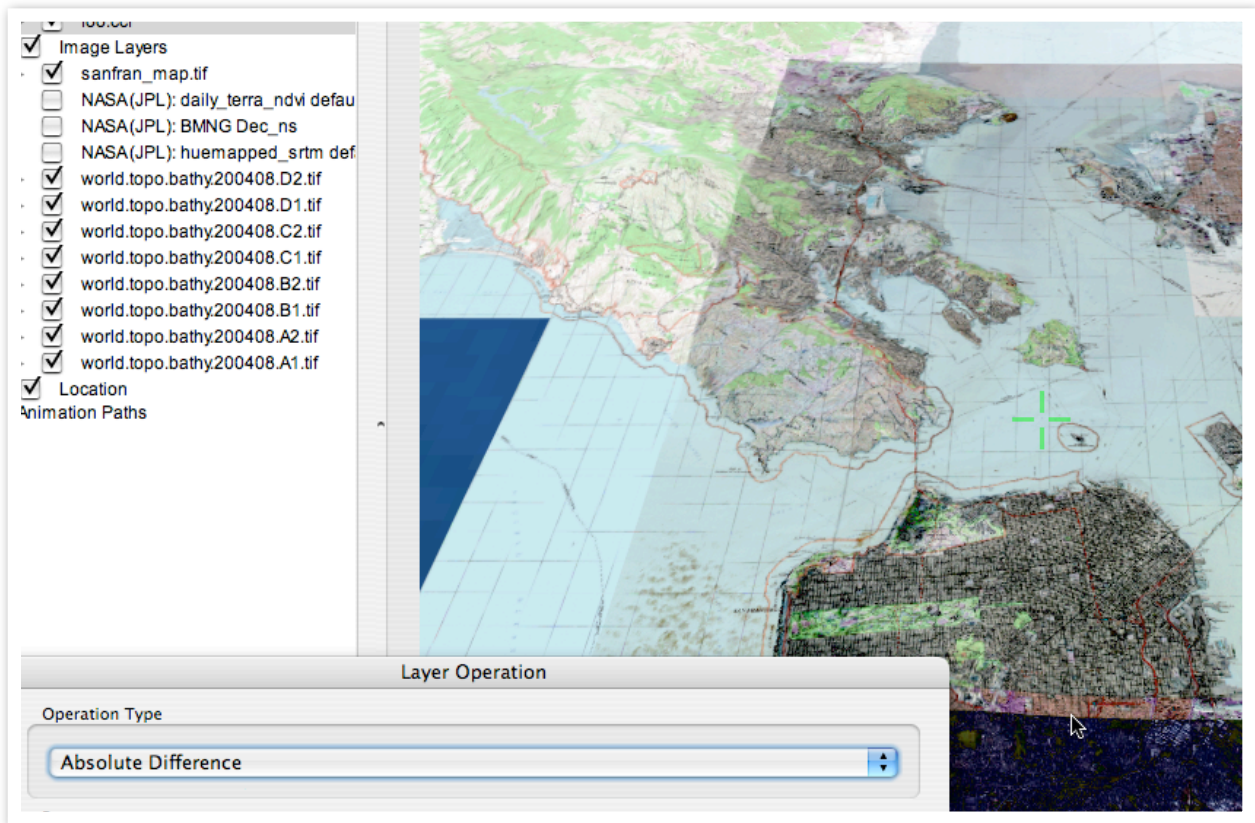
### Circle Swipe

The circular swipe mode sets up a circular reveal mask that expands and collapses as the slider is adjusted.



### Absolute Difference

The absolute difference mode performs a simple pixel subtraction between the top and reference layers and displays the deltas between the channels. Therefore if the top and bottom images are equal the result would be a black image.



### False Color

The false color mode is constructed by converting the reference and top layers into grey scale and mapping the takes the gray scale of the top layer and puts it into the green channel of the resulting image.

ossimPlanet OSX documentation

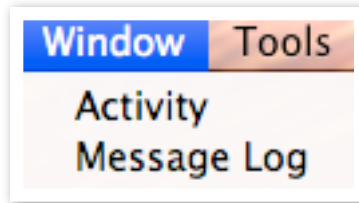
red - gray scale of bottom

green - gray scale of top

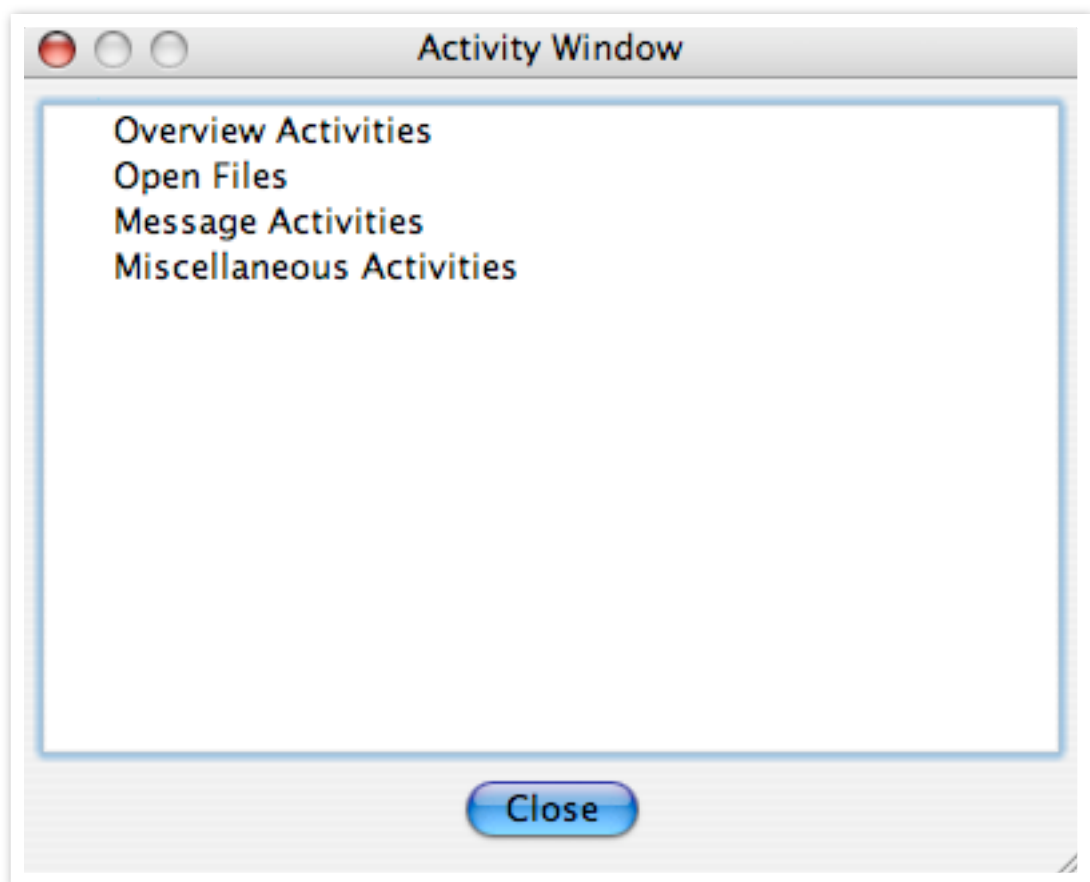
blue - gray scale of bottom



## Window Menu

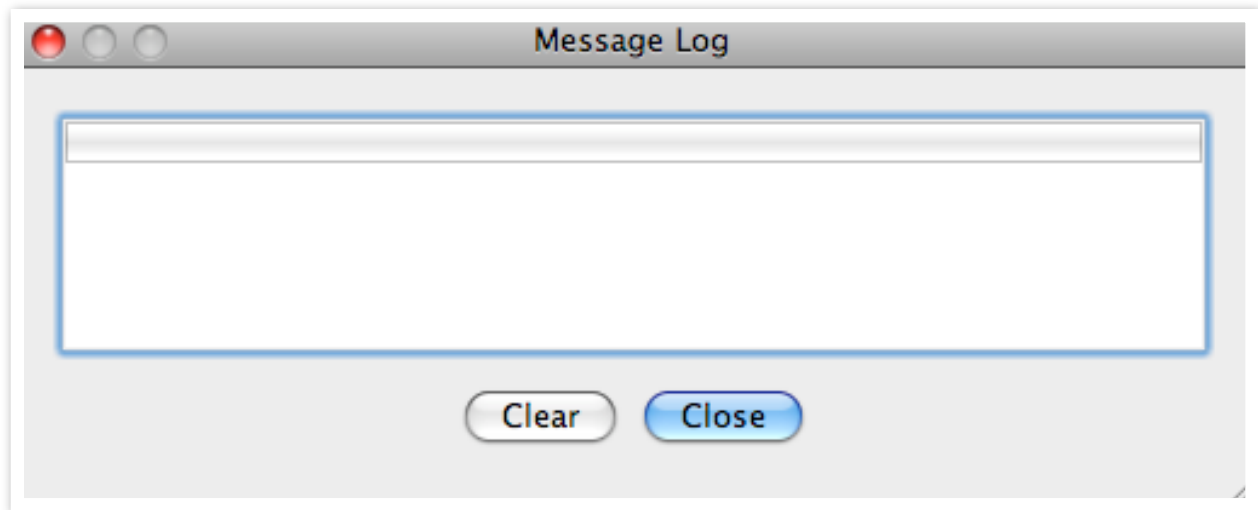


## Activity Window



*This window shows activity status of various background operations.*

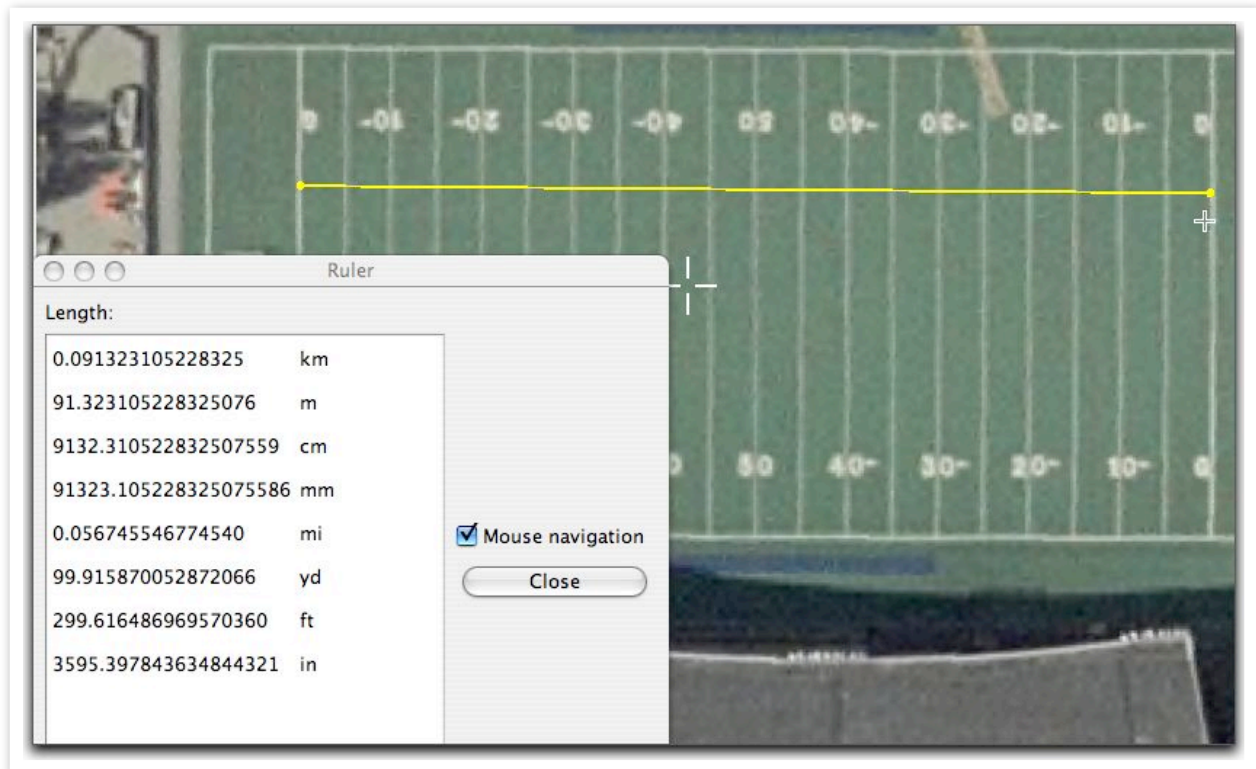
## Message Log



The message log shows ossimplanet status and error messages.



The Ruler menu item places ossimPlanet into mensuration mode. Two points can be selected and the geographic intersections with the planet will be used to calculate the distance in between.



In the above example two clicks were made on each goal line. The dialog displays the calculated distance in various units. When Mouse navigation is selected the user clicks at the desired end points. If Mouse navigation is not selected - drag and release between the two points to indicate the line. The close button will terminate the ruler mode and return to normal navigation.

## System Locations - MacOSX

Default data sets for imagery and elevation, and dynamically loaded plugins are installed in standards system locations. These locations should be used to add default elevation trees, background textures, and new loadable plugins.

/Library/Application Support/ossim

geoids

geoid1996

elevation

link to top of elevation tree

general\_raster

strmplus

images

reference

files or links

bluemarble earth backdrop data

plugins

libossimgdal\_plugin.dylib

libossimnui\_plugin.dylib

libossimreg\_plugin.dylib

libossimworldwind\_plugin.dylib

files

Worldwind

earth.xml

planet

binds.act

-/Library/Application Support/ossim

elevation

images

ossimPlanet OSX documentation

reference

kml

planet

sessions

wms

On Linux the same directory structure is located in a .ossim file in the user home.

### *About OSSIM*

ossimPlanet is part of the OSSIM open source software project located at <http://www.ossim.org>.

### *About the Large Data JCTD*

The Large Data JCTD is a three-year initiative that will demonstrate the integration of technologies and operational concepts to significantly improve the deployed joint warfighter's situational awareness by enabling rapid access, integration, and display of very large heterogeneous data with special emphasis on fusing geospatially and temporally referenced data. The effort will conduct spiral demonstrations leading to Joint Military Utility Assessments (JMUA) for this advanced "large data-to-the-warfighter" technology concept, and transition the technology to organizations and/or programs of record. To the extent possible, open technologies and open source software will be used in the development of this capability.

### *About RadiantBlue Technologies Inc*

Founded in 2005, RadiantBlue Technologies is a small business headquartered in Colorado Springs with regional offices in Chantilly, VA and Melbourne, FL.

RadiantBlue develops and integrates intelligent information technology applications that support our customers' high priority needs and emerging capabilities in countering terrorism and protecting our country.

RadiantBlue provides development and support for the OSSIM baseline.

Additional information is available at <http://www.radiantblue.com>



Version	Date	Comments
0.1	18 oct 2006	Initial release coinciding with 1.6.6rc7 - mlucas
0.2	25 Jan 2007	Updating to the 1.6.6rc16 release - mlucas
0.3	8 Feb 2007	Added alerts and remote navigation
0.4	2 Mar 2007	tcp/udp communications, new manipulator modes, set path and loop (rc19)
0.5	14 Mar 2007	Shift modes, initial kml/kmz file support 1.6.6rc21 release
0.6	13 Apr 2007	PLW models, CADRG fixes, tuning, xcode rework rc22
0.7	2 Jul 2007	Animation paths, new WMS interface, legend grouping and editing, kml/kmz improvements
0.8	Aug 14, 2007	WMS proxy server, data and navigation sync, improved broadcast, listen dialogs. Elevation general raster support. Improved fade text for kml. (version 1.6.9)
0.9	12 Feb, 2008	Added UAV Predator clip support, the program now supports a router/action system that allows control of functionality through communications channels. This allows agents, servers, and other clients to send messages to ossimPlanet.
1	Mar 18, 2008	Internal XML based router/action structure for interface with SOUSA and dashboard widgets, ability to specify IP address on listening channel (defaults to localhost), ability to specify alternate cache for overviews. Automated histogram stretch, automated histogram generation. Fix for multiple entries when loading an atoc - table of contents.
1.7.13	Nov 18, 2008	Updating documentation to match 1.7.13 release, documentation and version numbers will now be in sync. Many internal fixes, Sousa interfaces, and router/action improvements since the last documented release.