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Image Processing Training

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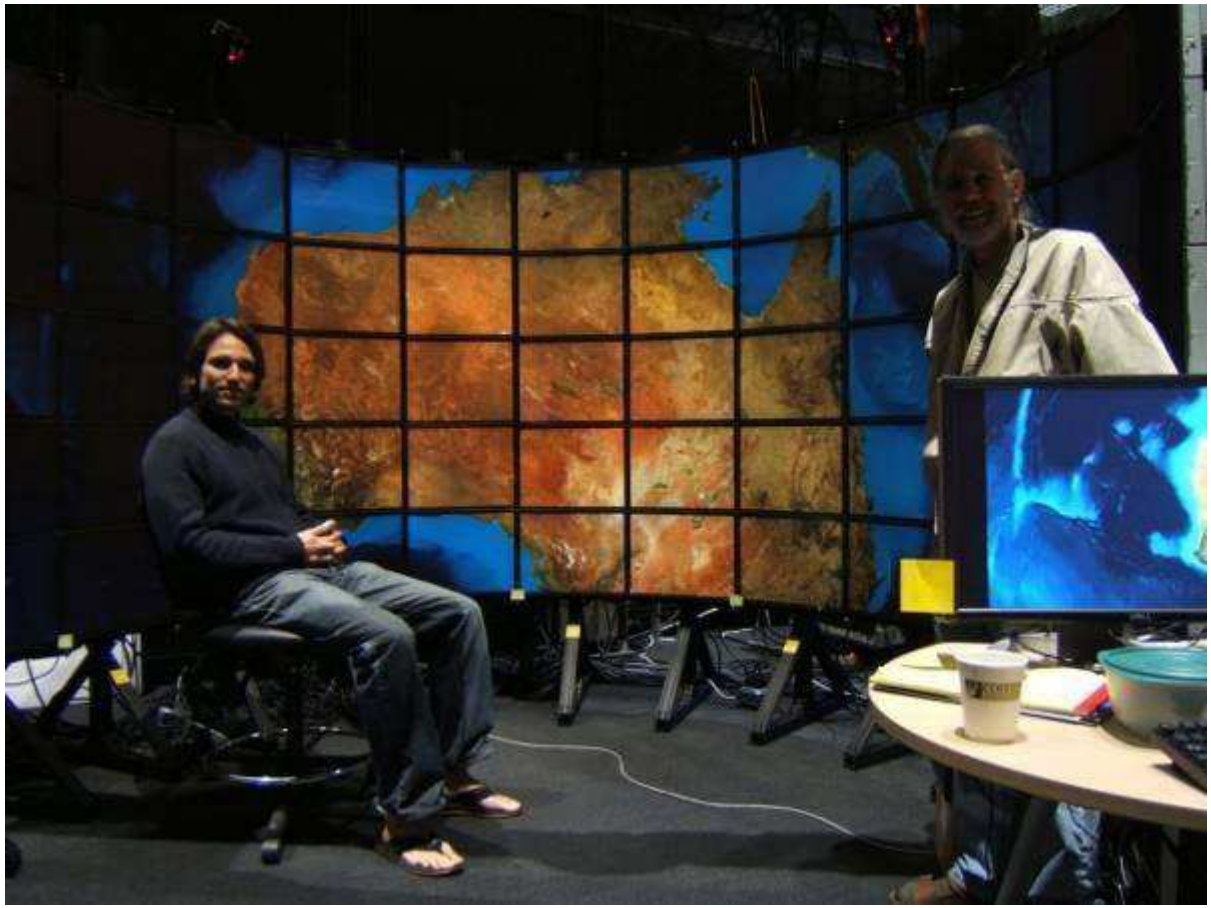
ossimPlanet Tutorial and Applications

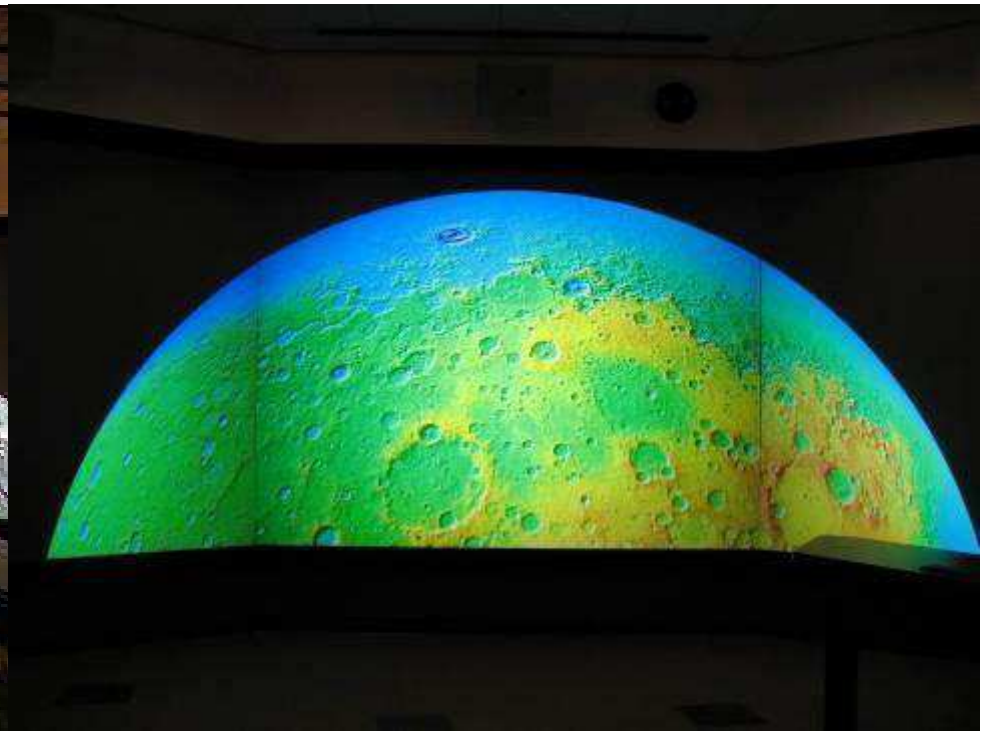
ossimPlanet

ossimPlanet - is an accurate 3D global geo-spatial viewer. It provides native geo-spatial access to a wide range of commercial and government data formats with high performance visualization and collaboration capabilities.



ossimPlanet

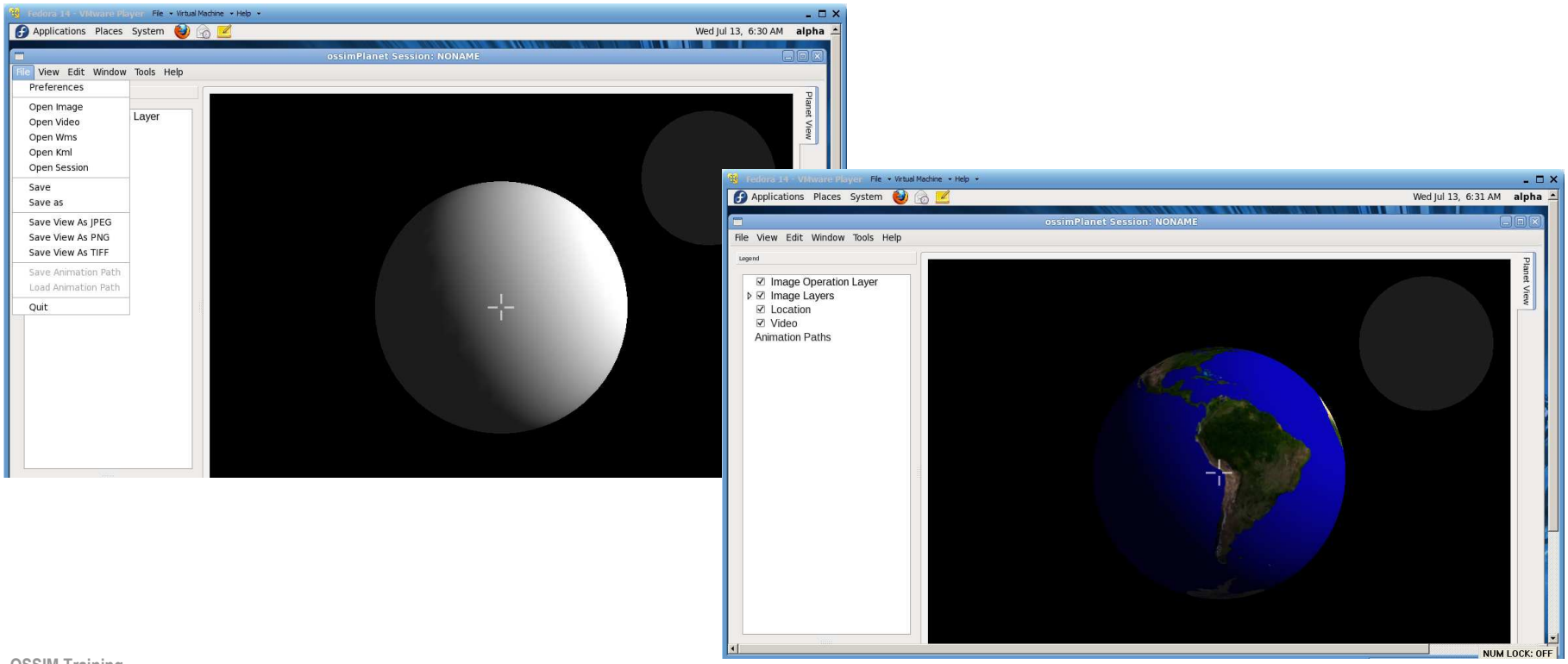
- Based on OSSIM distribution
- Advanced 3D geo visualization
- OGC WMS interfaces
- High performance (double precision) and 3D accuracy
- WorldWind Server Support
- KML/KMZ Support



ossimPlanet setup

- Use a low resolution map of the earth, first open OSSIM Planet
- /opt/alpha/ossim_planet_build/bin/ossimplanet

- File → Open Image
- /opt/alpha/Day 3/earth/earth.jpg



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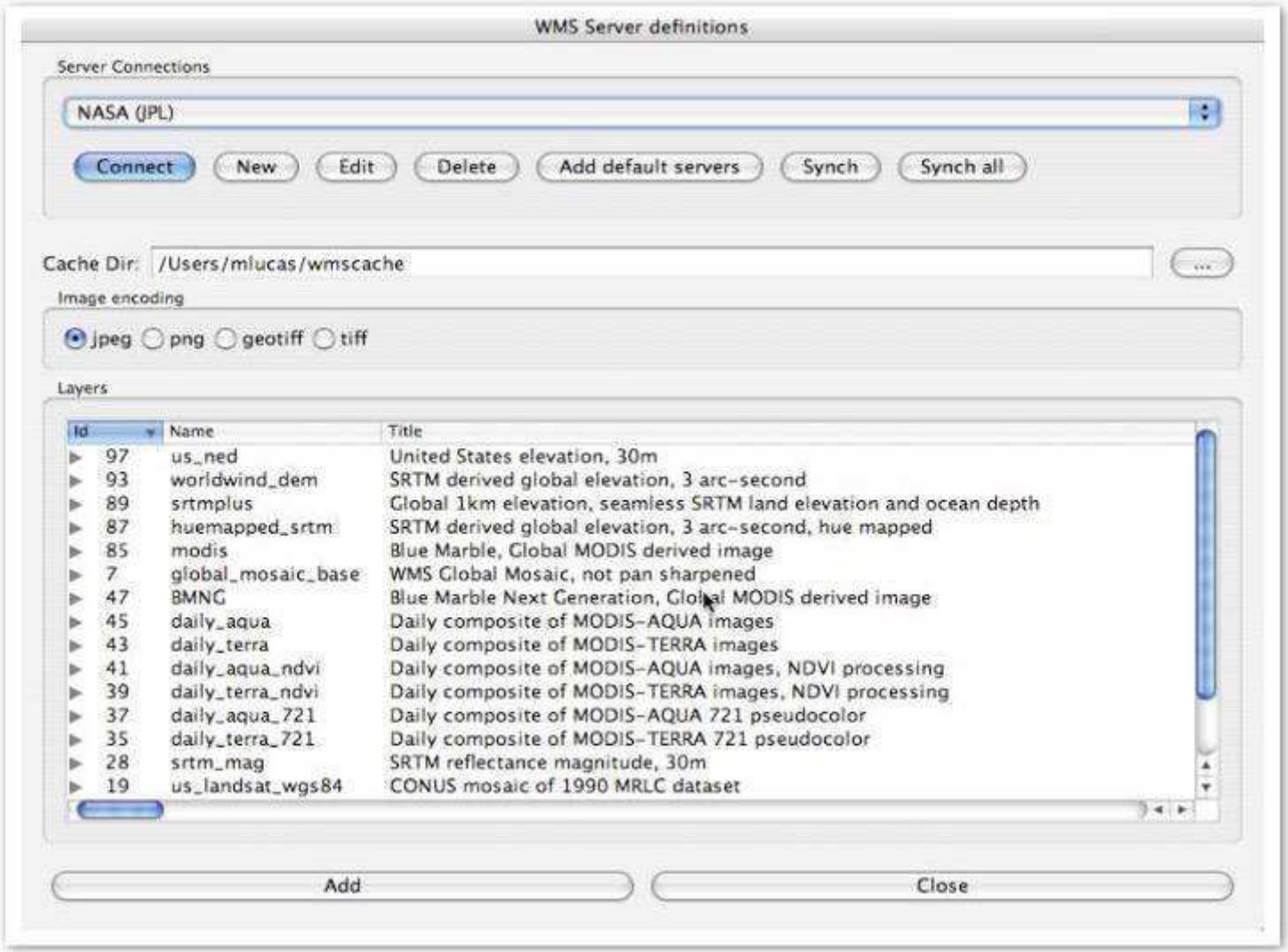
ossimPlanet – WMS Support

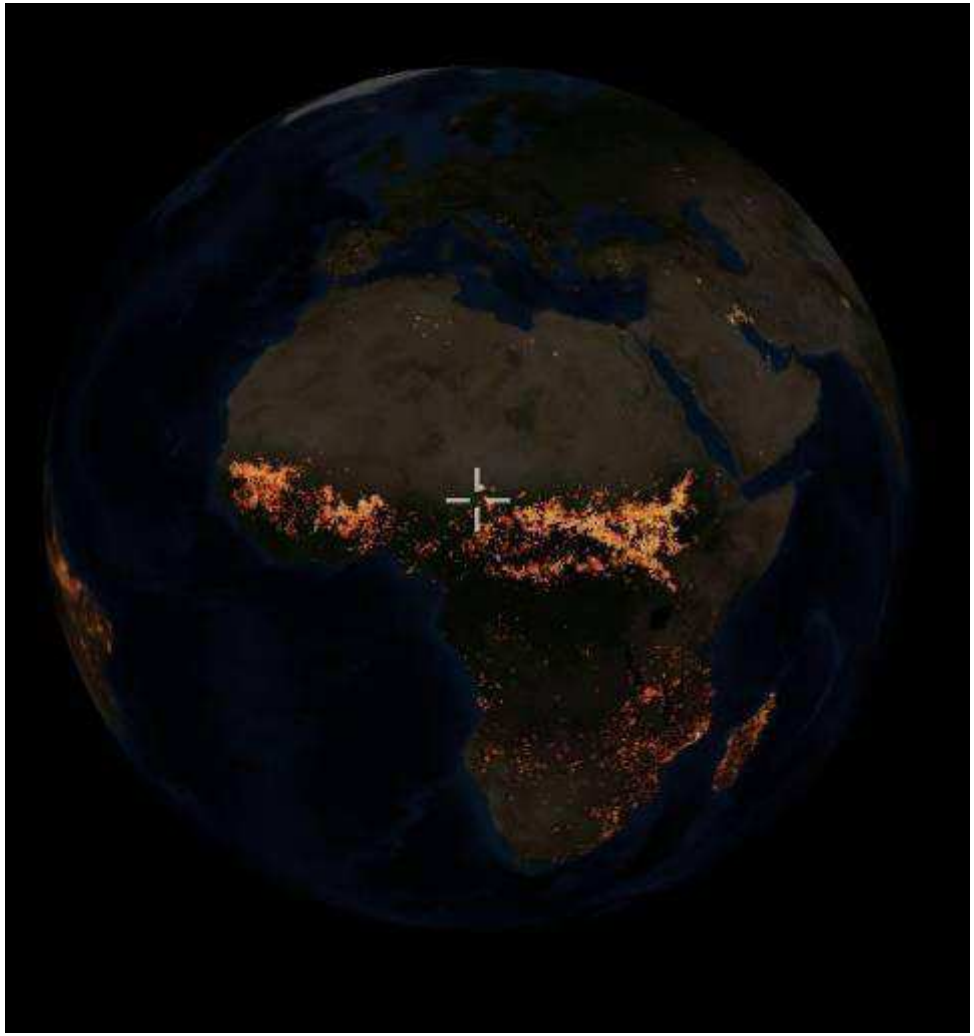


ossimPlanet – WMS Servers

- Load ossimPlanet
- Goto: File → Open WMS
- Choose: NEW
- Type “MODIS North Africa” for the Name
- Type http://firefly.geog.umd.edu/wms/wms?SERVICE=WMS&VERSION=1.1.1&REQUEST=GETCAPABILITIES&BBOX=-27,-10,52,37.5 for URL (can cut and paste from 2 slides forward)
- Click OK
- Select that entry you just made from the pull-down menu
- Press CONNECT
- Choose Fires – Past 24 hours
- Click Add, then Close
- Go back to ossimPlanet and expand Image Layers
- Checkmark the layer you just added
- You can also double click them to zoom right to them

ossimPlanet – WMS Servers

MODIS North Africa Fires – 24 hours



ossimPlanet – Other WMS Servers

WMS Links for Africa

- Africa Servir (Country Borders) – might have to open port 80 on windows firewall, and link that to the WMS
http://mapserver.mnp.nl/wmsconnector/com.esri.wms.Esrimap?request=GetCapabilities&service=WMS&ServiceName=GRIP_VS1&

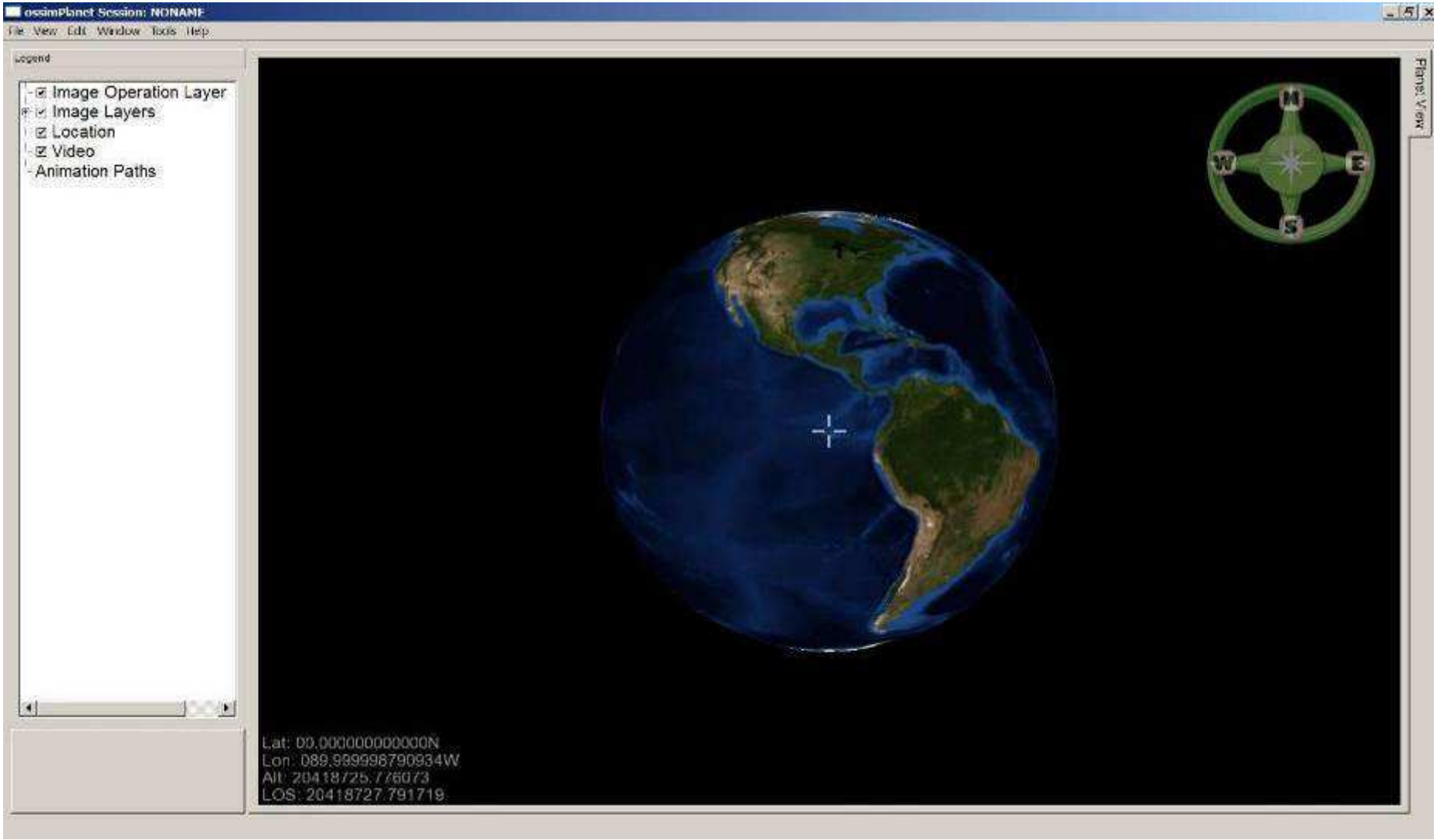
- MODIS Global Fire

North Africa 24hr http://firefly.geog.umd.edu/wms/wms?SERVICE=WMS&VERSION=1.1.1&REQUEST=GETCAPABILITIES&BBOX=-27,-10,52,37.5;
North Africa 48hr http://firefly.geog.umd.edu/wms/wms?SERVICE=WMS&VERSION=1.1.1&REQUEST=GETCAPABILITIES&BBOX=-27,-10,52,37.5;
South Africa 24hr http://firefly.geog.umd.edu/wms/wms?SERVICE=WMS&VERSION=1.1.1&REQUEST=GETCAPABILITIES&BBOX=10,-36,58.5,-4;
South Africa 48hr http://firefly.geog.umd.edu/wms/wms?SERVICE=WMS&VERSION=1.1.1&REQUEST=GETCAPABILITIES&BBOX=10,-36,58.5,-4;

- Integrated CEOS European Data Server (Bad Image)
http://iceds.ge.ucl.ac.uk/cgi-bin/icedswms?SERVICE=WMS&REQUEST=GetCapabilities

- NASA (default on ossimPlanet)
(Cabon Monoxide, Active Fires, Land Surface Temperature, Water Vapor, Vegetation Index, Population Index, Net Radiation)

ossimPlanet – Overlaying Imagery



Note – Files Output

Imagelinker and ossimplanet need to write out 3 files every time you open an image:

HIS – histogram of image
OVR – reduced resolution set or overview file (lets the image load fast in the future)
OMD – ossim metadata file

This makes it impossible to load an image from a CD, since you need to be able to write these images.

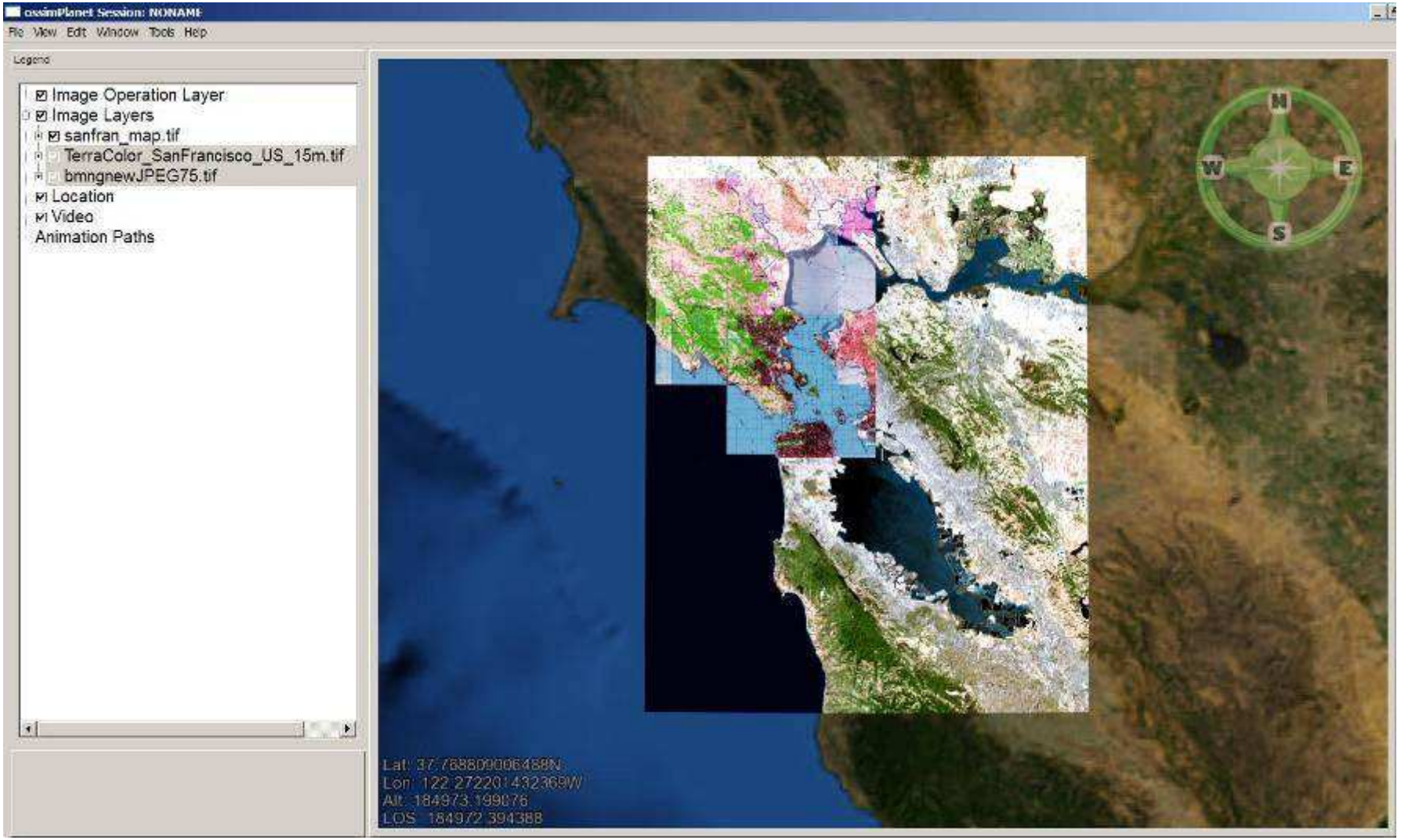
ossimPlanet – Overlaying Several Layers

- Load ossimPlanet
- Goto: File → Open Image
- Choose \San Francisco Example\sanfran_map.tif
- Choose \San Francisco Example\TerraColor_SanFrancisco_US_15m.tif
- Go back to ossimPlanet and expand Image Layers
- Checkmark the images you just loaded
- You can also double click them to zoom right to them

NOTE: The order that the imagery is loaded is important!!! Often times you might obscure one image with another!!!

Move The sanfran_map.tif image up above the TerraColor image to see it.

ossimPlanet – Overlaying Several Layers

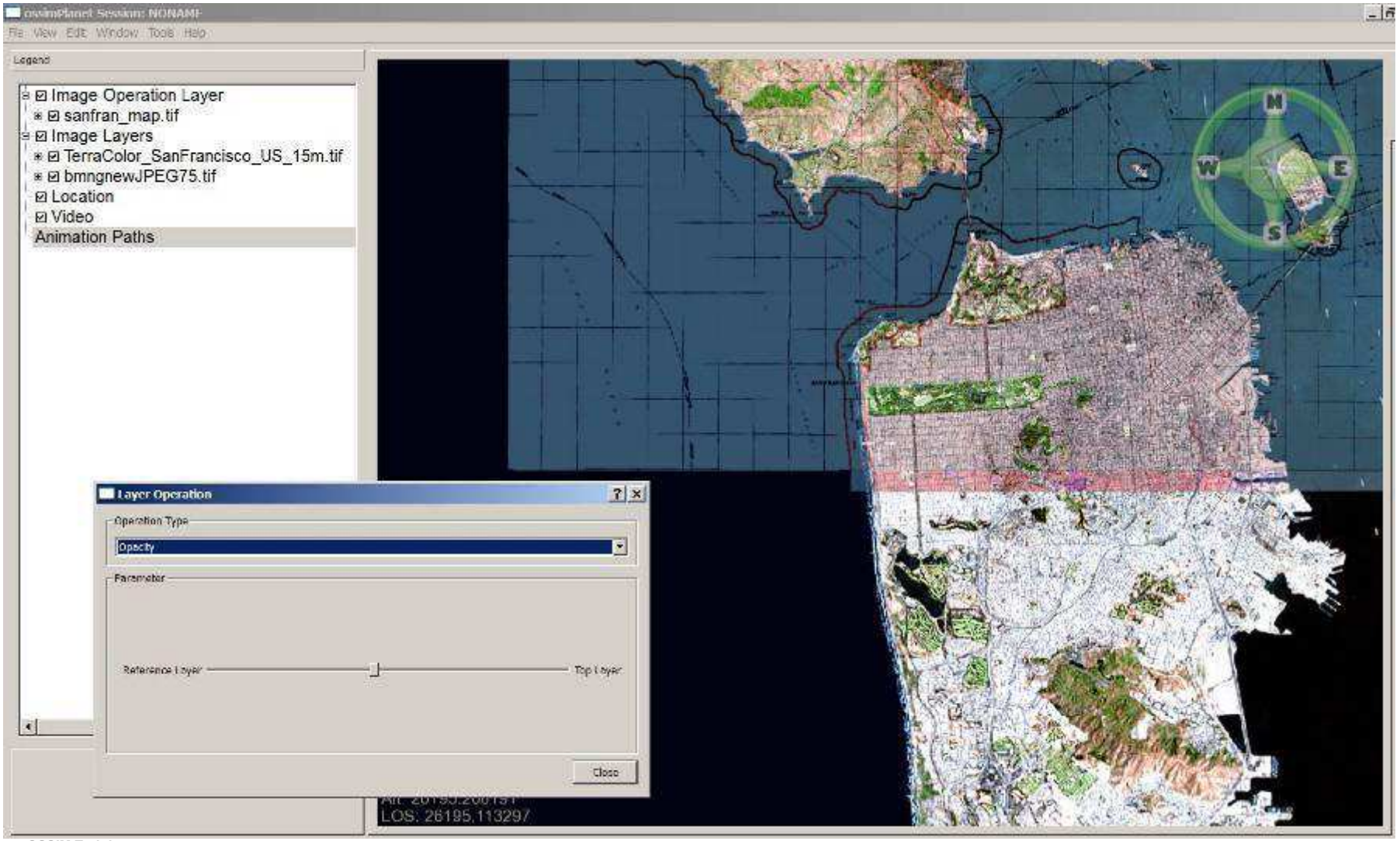


ossimPlanet – Changing Opacity

- After having opened
- \San Francisco Example\sanfran_map.tif
- \San Francisco Example\TerraColor_SanFrancisco_US_15m.tif
- move sanfran_map.tif up to the Image Operation Layer
- Choose Edit → Layer Operation
- Choose Opacity
- Manipulate the slider bar.

* This is great for comparing before/after images, and making sure coastlines line up correctly.

ossimPlanet – Changing Opacity

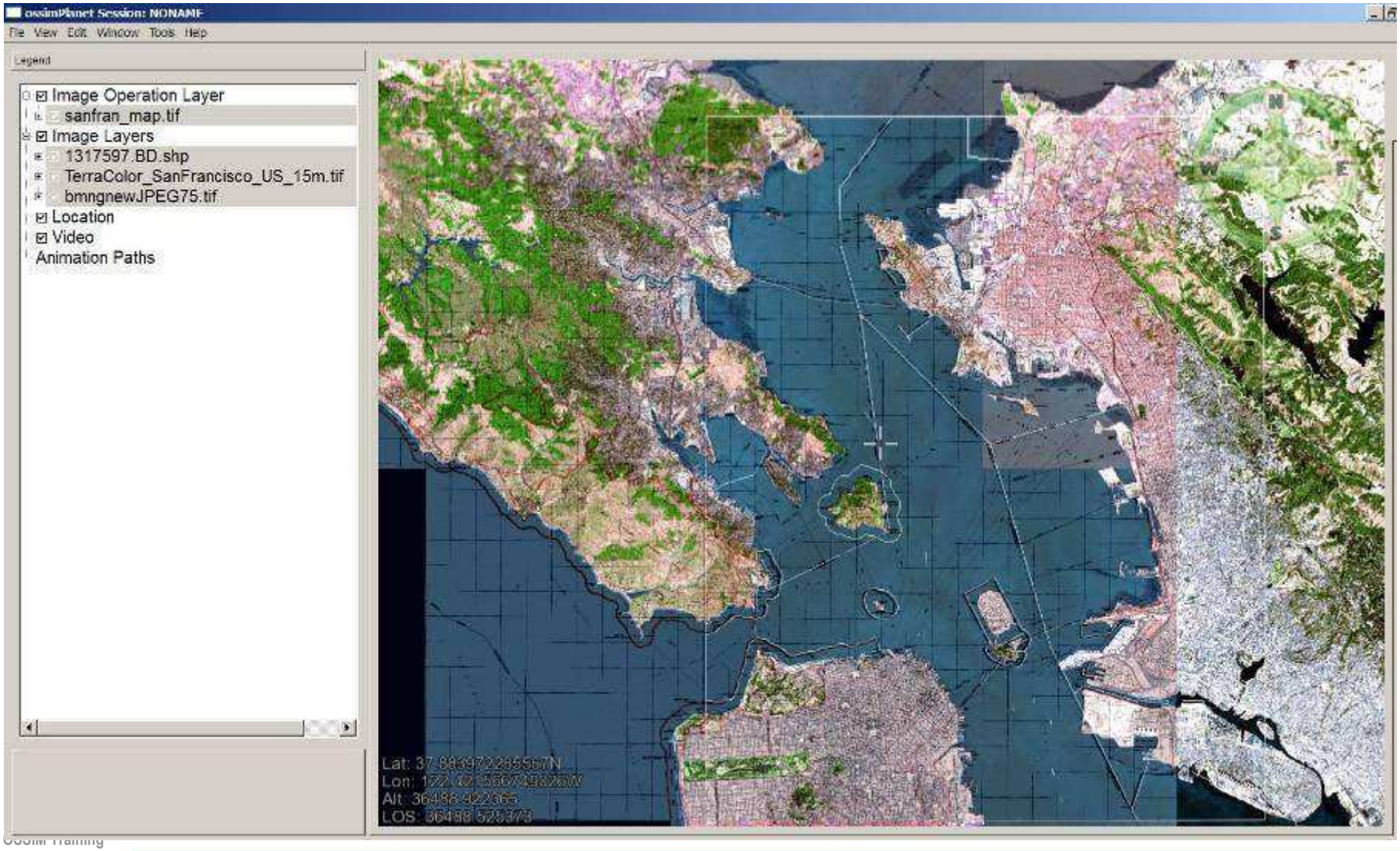


ossimPlanet – SHP Support

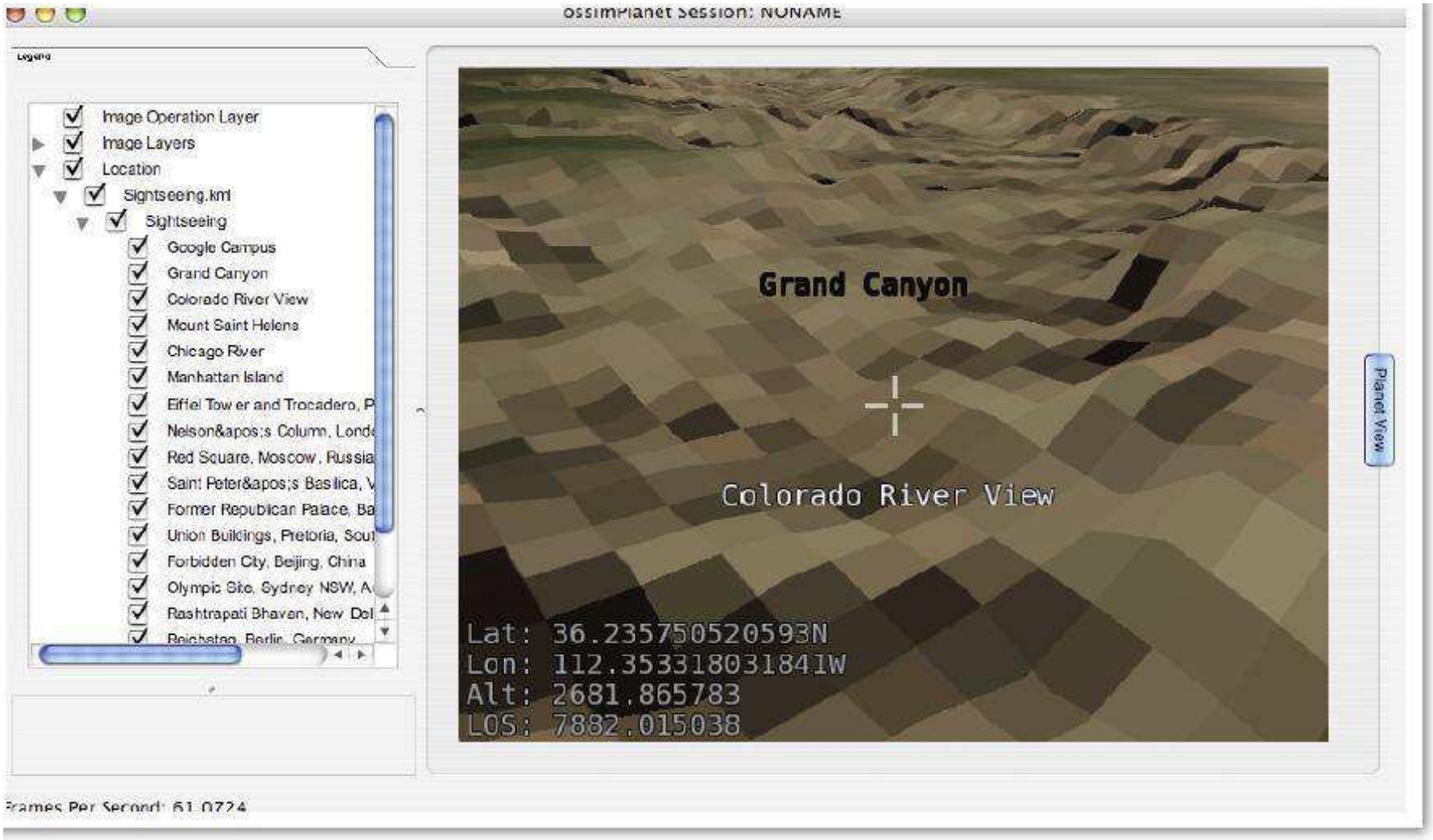
- Load ossimPlanet
- Goto: File → Open Image
- Choose the File Type Vectors(*.shp)
- Choose \San Francisco Example\1317597.BD.shp
- Go back to ossimPlanet and expand Image Layers
- Checkmark the shapefile you just loaded
- You can also double click them to zoom right to them

NOTE: The order that the imagery is loaded is important!!! Often times you might obscure one image with another!!!

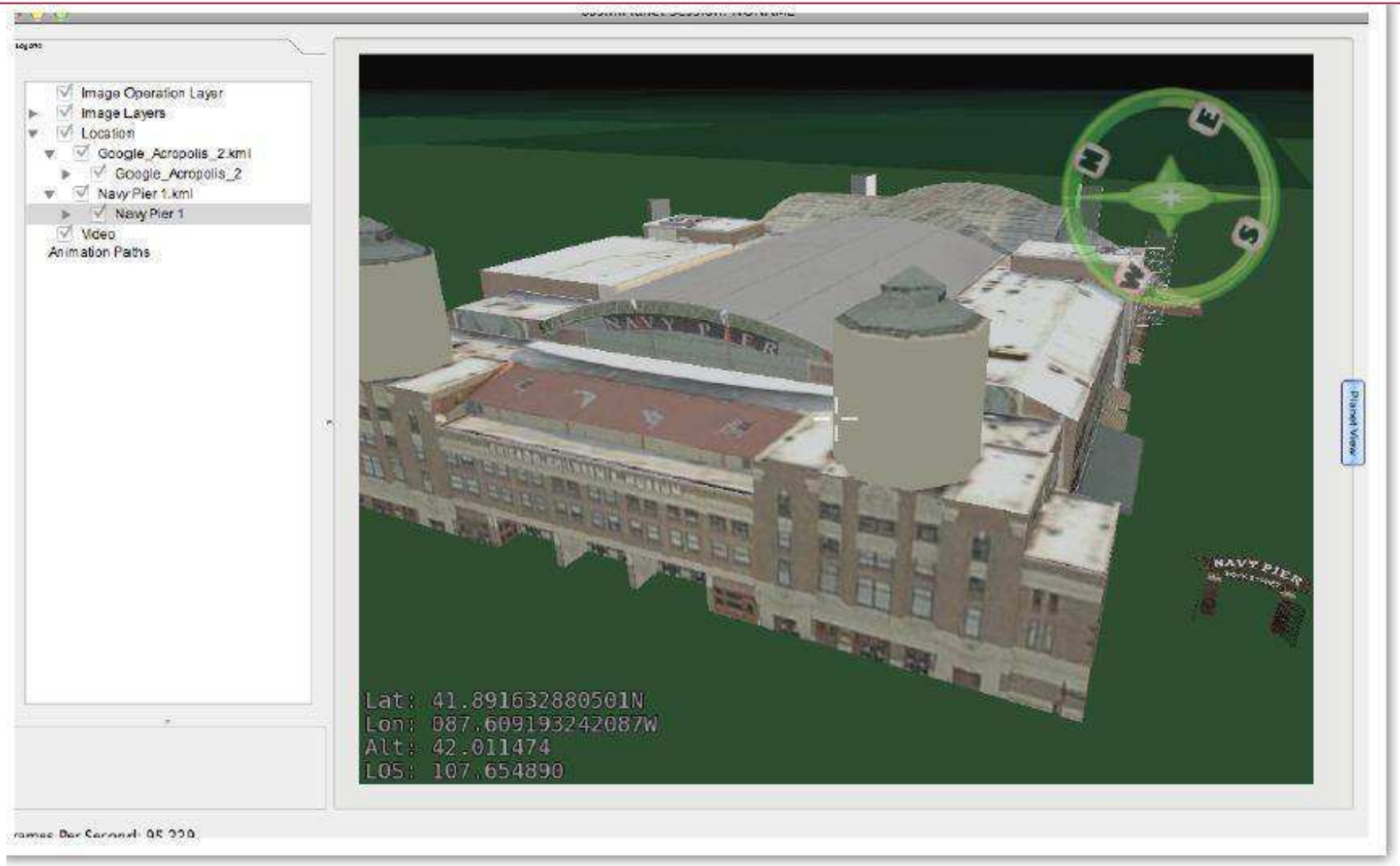
ossimPlanet – SHP Support



ossimPlanet – KML Support



ossimPlanet – KML Support



ossimPlanet – KML Support

- Load ossimPlanet
- Goto File → Open KML
- Navigate to a KML file
- Choose \San Francisco Example\quads\quads\doc.kml
- Go back to ossimPlanet and expand Locations
- Checkmark the KML you just loaded (under the Locations Layer)
- You can also double click them to zoom right to them

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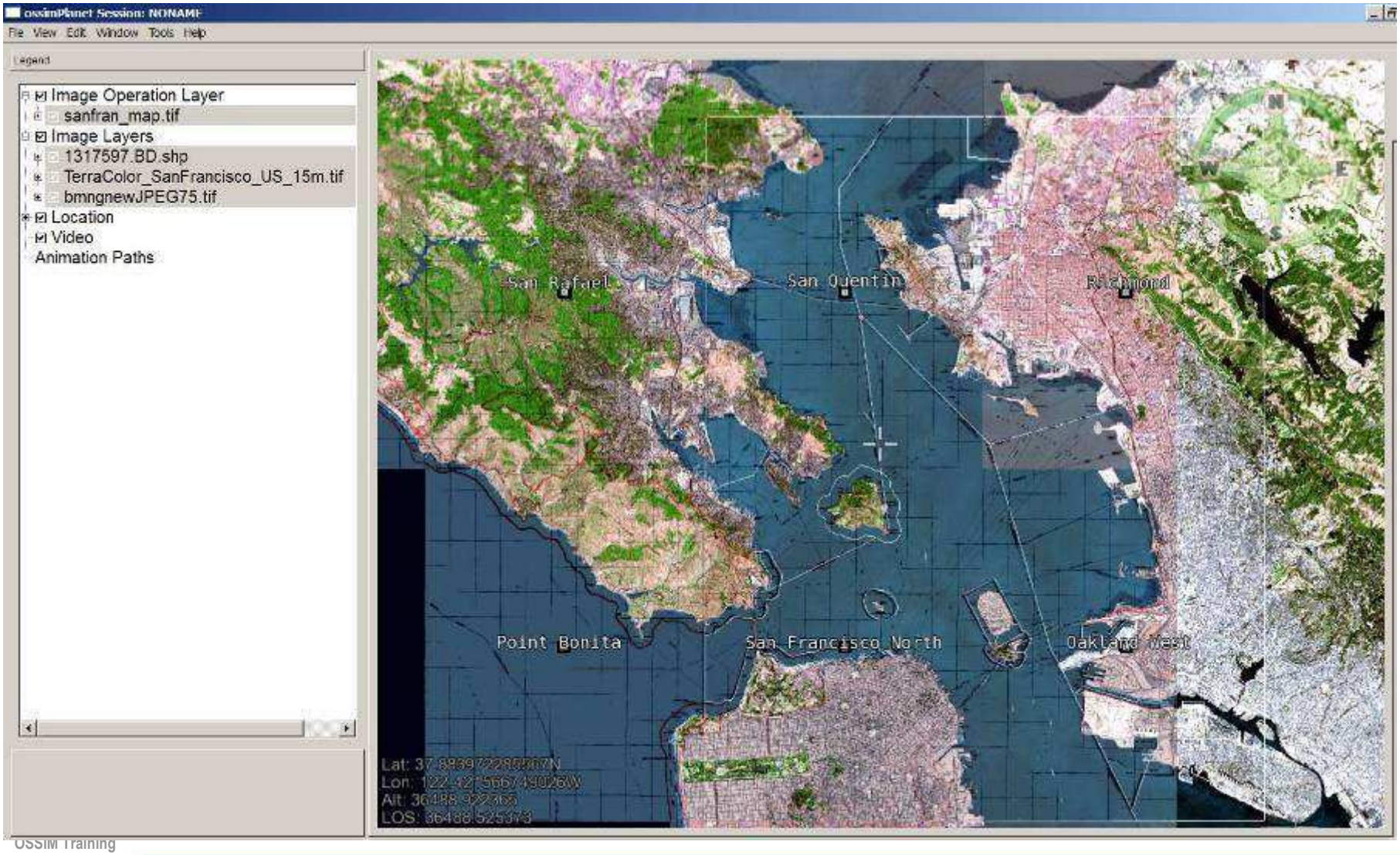
ossimPlanet – KML Support



ossimPlanet – African Example

Uncheck your previous layers – to clear screen

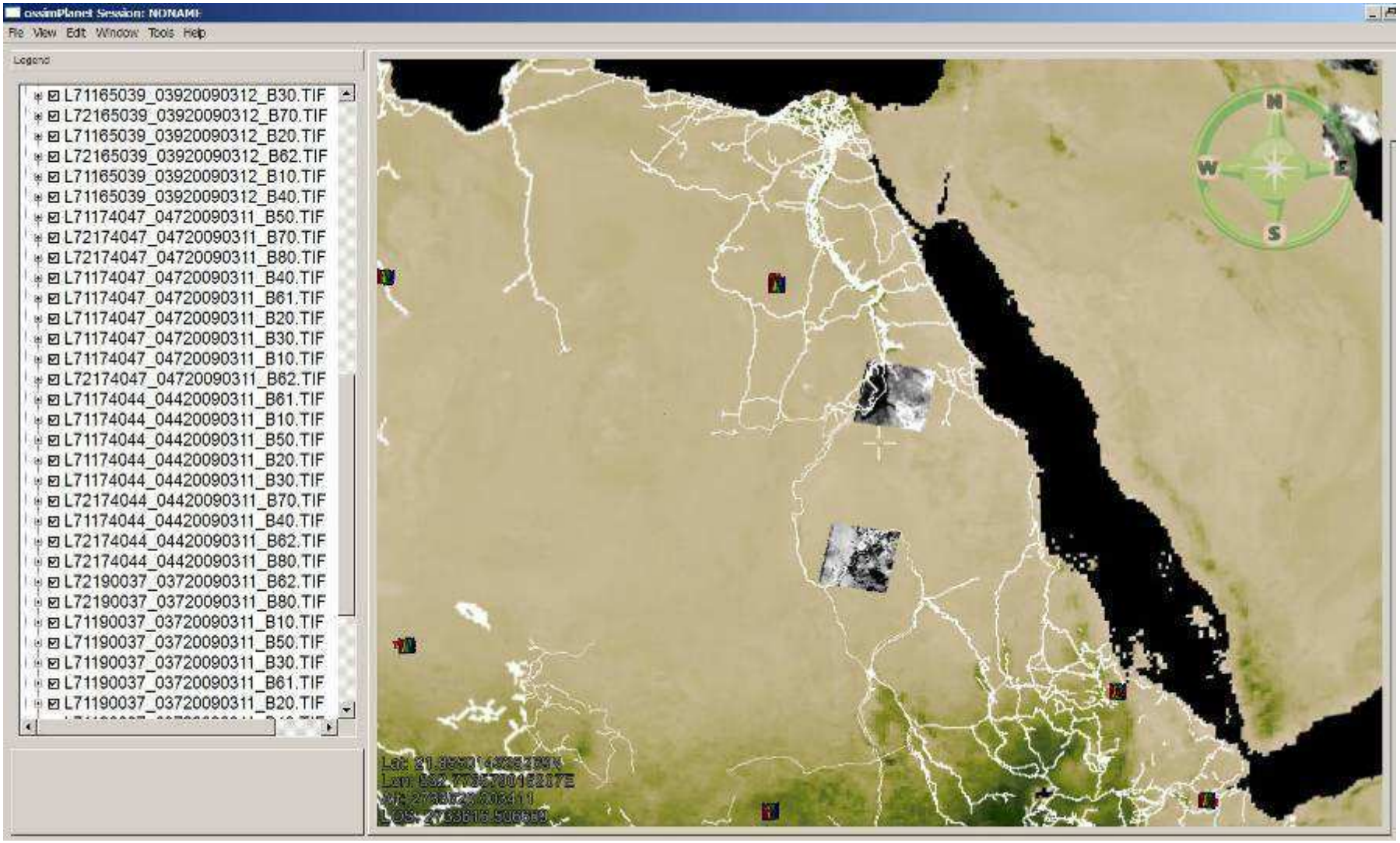
1) First upload the WMS
File > Open WMS
Choose the "NASA" Server
Find the "Vegetation Index [NDVI] (16 day - Terra/MODIS)" and click Add
Check mark it to add it as an overlay

2) Upload the Shape File
Drag and drop \Shapefile for ossimPlanet\waterways.shp onto OssimPlanet (and roads.shp)

3) Upload the LandSat Images
Drag and drop \Landsat Africa Imagery\L72174044_04420090311_B80.TIF onto OssimPlanet (or load all TIFs in that directory!!!)
Can zoom to each image

4) Upload a KMZ File
Choose any from the files I attached, some take longer to load.
The fastest kmz to load is \KML for ossimPlanet\Africa.kmz

ossimPlanet – African Example



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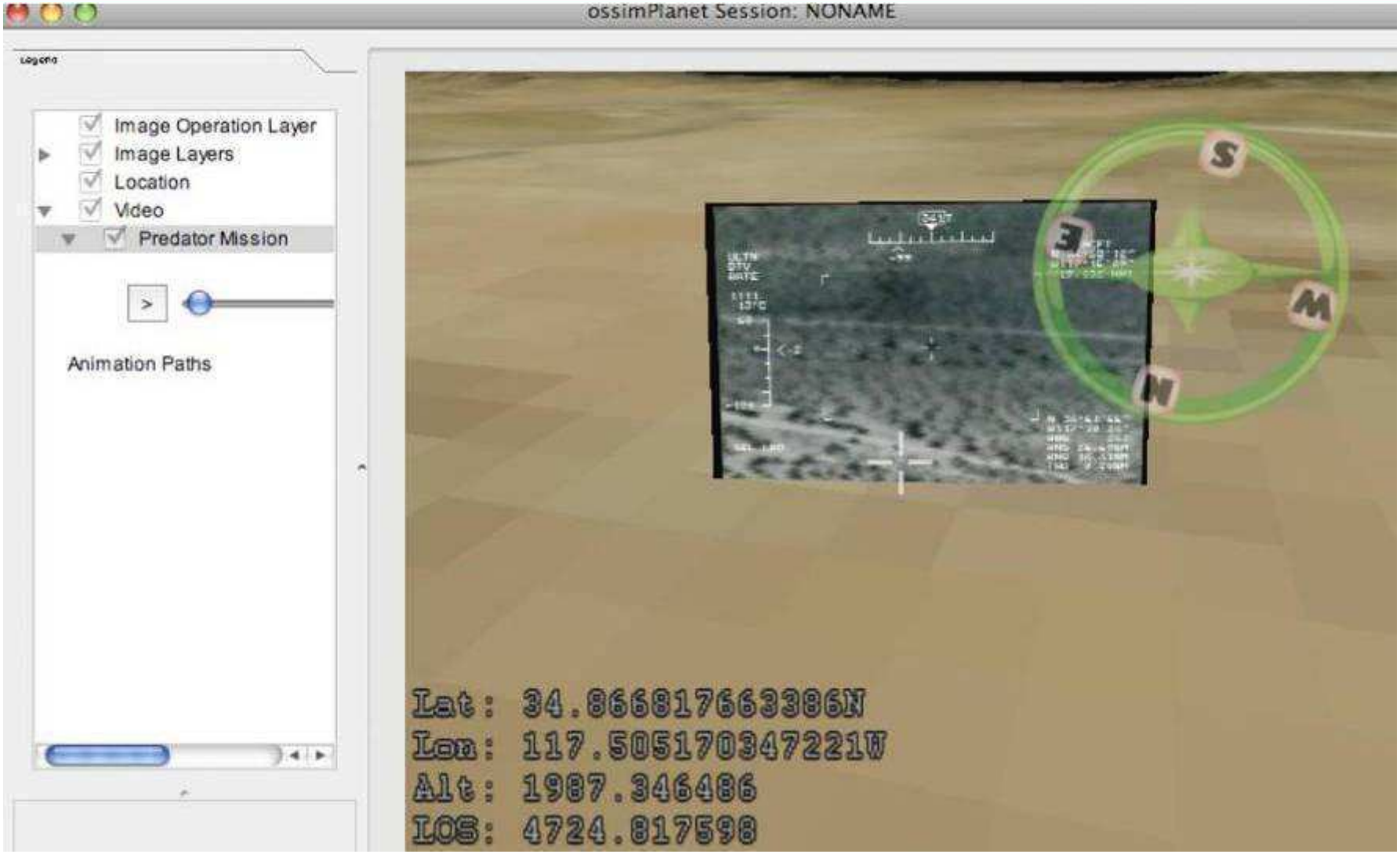
ossimPlanet – UAV Video



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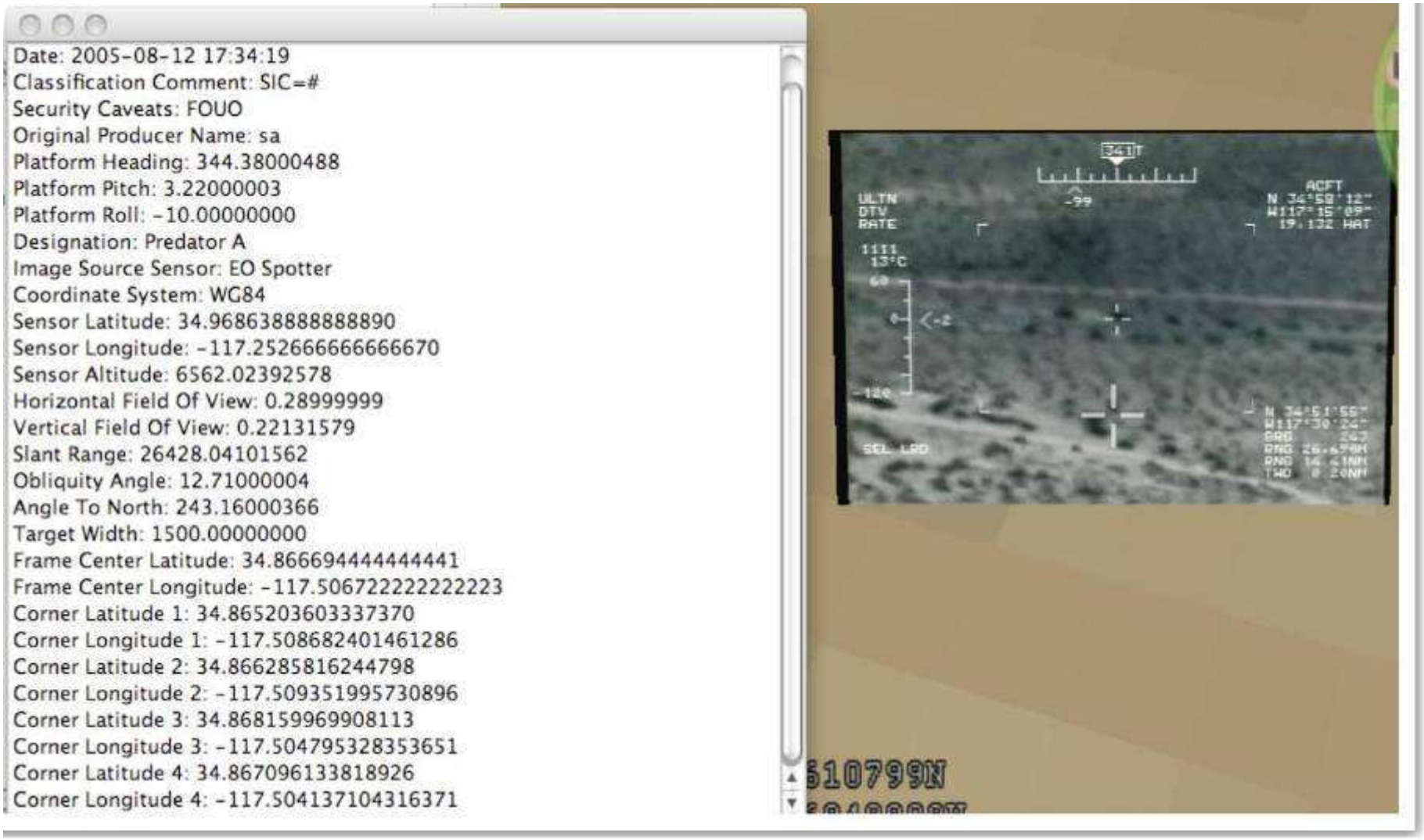
ossimPlanet – UAV Video



ossimPlanet – Summary

- Free and highly accurate Google Earth
- Supports extremely large imagery data (up to 4GB in size)
- Highly accurate 3D image and geospatial data manipulation tool
- Support many unique data formats