



# GE110 Fall 2008 - Lab 7

November 10, 2008

## ArcScene vs ArcGlobe

Viewing data in three dimensions gives you new perspectives. 3D viewing can provide insights that would not be readily apparent from a planimetric map of the same data. For example, instead of inferring the presence of a valley from the configuration of contour lines, you can actually see the valley and perceive the difference in height between the valley floor and a ridge. ArcGlobe and ArcScene allow you to build multilayered 3D environments and control how each layer is symbolized, positioned in 3D space, and rendered.

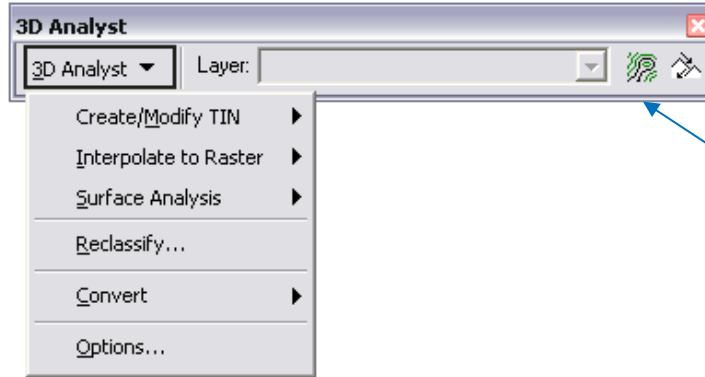
### Functional Differences between ArcGlobe and ArcScene

Description	ArcGlobe	ArcScene
3D Analyst Toolbar (i.e. contour, steepest path, line of sight, profile, etc.)	Not supported	Supported
Ability to handle large volumes of data via caching	Supported	Not supported
Terrain surfaces	Supported	Not supported
Consuming TINs as elevation sources	Supported	Supported
Displaying TINs	Not supported	Supported
Dynamic hillshading	Not supported	Supported
Annotation feature classes	Supported	Not supported
Stereo viewing	Not supported	Supported
Complex 3D symbology	Not supported	Supported
Animation (move layer along path)	Not supported	Supported
Non-projected data	Not supported	Supported
VRML support	Can import	Can import/export
Representation symbology	Supported for rasterized layers	Not supported

# Working Directory D:\GE110\Lab\_7

## Line of Site DEMO

### Toolbars



Create Steepest Path

Create Contours



Change Depth Priority

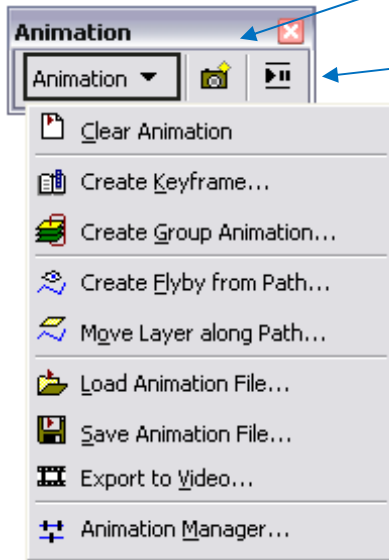
Layer Transparency

Shading Mode: Allows you to define the type of shading (smooth or flat) to use for the layer

Layer Face Culling: Sets the type of front and back face culling used for the layer currently selected


















Layer Lighting

Capture View to Animation



Open Animation Controls



	Navigate	Navigates the scene
	Fly	Flies through the scene
	Zoom In/Out	Dynamically zooms in and out on the scene
	Center on Target	Centers the view on the selected target
	Zoom to Target	Zooms to the selected target
	Set Observer	Sets observer position to the selected point
	Zoom In	Zooms in on the scene
	Zoom Out	Zooms out on the scene
	Narrow Field of View	Narrows the field of view for the viewer
	Expand Field of View	Expands the field of view for the viewer
	Pan	Pans the scene
	Full Extent	Displays the scene at full extent
	Select Features	Allows you to select features by clicking
	Select Graphics	Allows you to select graphics drawn in your scene
	Identify	Identifies scene elements
	Find features	Opens the Find dialog box to find features in the scene
	HTML Pop-up	Triggers HTML pop-ups from features

## ▽ ArcScene

### Base Heights

- ✓ Set Base Heights for the dem\_30m
- ✓ Set Base Heights for topos
- ✓ Exaggerate Heights

### Navigating Around the Scene

- ✓ View your scene from different angles using the navigate tool
  - Single click and drag rotates scene
  - Mouse wheel zooms in and out
  - Both mouse buttons pan

**Hint: If you ever get lost while navigating through ArcScene, click on Full Extent to bring you back to center.**

- ✓ Fly through your scene
  - Right click to slow down
  - Left click to speed up

### 3D Effects

- ✓ Work with the 3D effects tools to see how it changes the look of your scene
- ✓ Pick the setting you like best

### Create Animation

- ✓ Use Capture Tool
  - Collect several locations throughout your scene
  - Open your animation manager to make changes to your video
  - Play your video

### Extrude Features

- ✓ Right-click on earthquake.shp
- ✓ Set the Base Heights
- ✓ Click the Extrusion Tab
- ✓ Calculate Extrusion Expression – Depth \*100

## ▽ ArcGlobe

### Setup

- ✓ Tools > Options
  - Default Layers tab
  - TOC tab

### Table of Contents – Type

ArcGlobe categorizes layers according to their type. Layers are classified as either elevation, draped, or floating. Elevation layers provide relief to the globe's surface. Draped layers use the globe surface as the source of their base heights. Floating layers display independently of the globe surface and can be draped on discrete surfaces or derive their elevation from attributes or a constant value. Now, look how the default layers are categorized – they are both listed as draped layers and therefore display directly on the globe surface.

- ✓ Add ASTER imager from Lab\_4
  - Where what it placed in the TOC?

### Navigating in ArcGlobe – Globe Mode

ArcGlobe has two viewing modes: Globe and Surface. Globe mode allows you to navigate your data in the realm of the whole globe and sets the camera target to the center of the globe. Surface mode lets you work with your data at a lower elevation, allows additional perspective viewing characteristics, and sets the camera target on the surface of the globe.

- ✓ Use the navigation tools to move around the Globe

### Spinning in ArcGlobe

- ✓ Turn on the Spin Toolbar
- ✓ Work with the tools

### Find places in the Globe

- ✓ Click on the Globe Find button
- ✓ Type in a place, select from the results list

### Navigating in ArcGlobe – Surface Mode

- ✓ Zoom to ASTER image
- ✓ Center on Target
- ✓ Zoom to Target
- ✓ Navigate ASTER image

## Globe Properties

- ✓ Double click on Globe layers in TOC

## Add Elevation to Your Globe

- ✓ Open Lab7\_ArcGlobe.3dd
- ✓ Right click on Globe layers > Add Data > Add draped data > angelus oaks.tif, press ctrl and click social\_mosaic.sid
- ✓ Right click on Globe layers > Add Data > Add elevation data > sw\_usa\_grid
- ✓ Zoom to angelus oaks layer
- ✓ Click Center on Target
- ✓ Look at the terrain

## Add Floating Layers

- ✓ Right click on Globe layers > Add Data > Add floating data > o3\_99x10k
- ✓ Open Layer Properties > Elevation
- ✓ Select > Layer floats independent of the globe surface, draped on: o3\_99x10k
- ✓ Offset – 5000
- ✓ Symbology Tab > Select red to blue color ramp > Invert
- ✓ Zoom to o3\_99x10k
- ✓ Click the Navigation Mode button
- ✓ Double click on Globe layers in TOC
- ✓ Change Vertical Exaggeration Of floating layers: 10

## Extrusion

- ✓ Right click on Globe layers > Add Data > Add draped data > usgs\_US\_1994\_40.shp
- ✓ Open layer properties for usgs\_US\_1994\_40.shp
- ✓ Global Extrusion tab > [Depth] \*1000