Oasis montaj Colour Imaging

The system provides a variety of capabilities for colour imaging. This How-To Guide introduces you to these concepts.

💡 *This tutorial assumes you have a Geosoft project open with a database and map available.*

Creating Colour Shaded Images

The shaded relief image is a common method used to present geophysical and other types of data. This presentation technique creates a 3-dimensional effect using 2-dimensional rendering or plotting capabilities. The result is useful for checking the quality of the data and for data interpretation. An example is shown below.
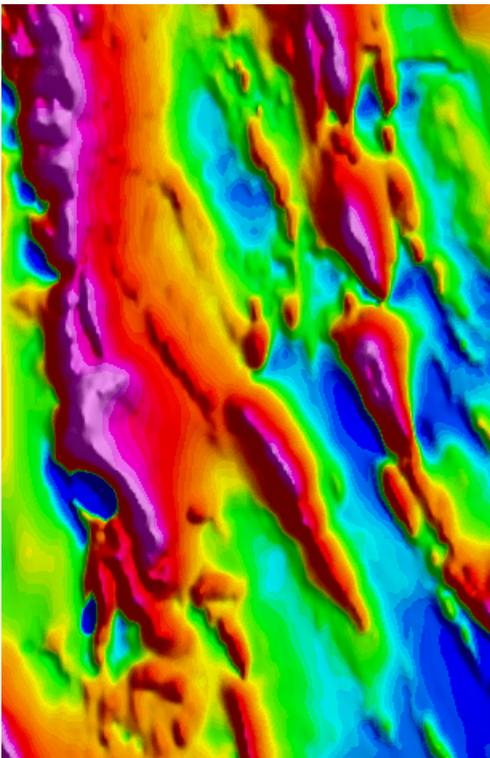
When you create a shaded relief map the system automatically creates a new grid file for that map with **_s** after the original grid name. For example, **mag.grd** will become **mag_s.grd.**

Shaded relief maps can be created interactively using **Run Dynamic Shadowing** from the *Colour Tool* dialog.

💡 *You can also manually create a shaded grid using the Colour-Shaded Grid option from the Grid and Image menu.*

To Create a Colour Shaded Image

1. On the *Grid and Image* menu, select **Display** and then select **Colour-Shaded Grid**.
   The *Colour-shaded grid image* dialog appears.
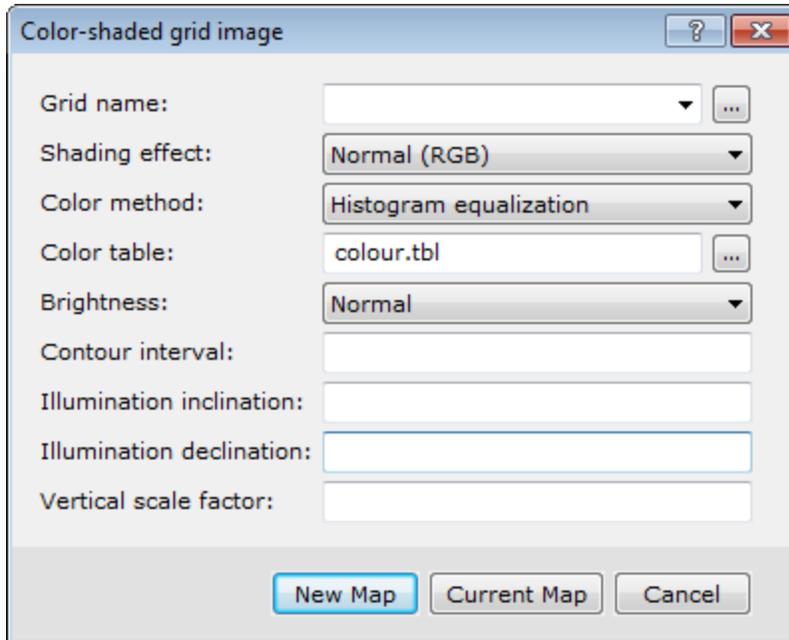
2. Use the *Browse* button to select the *Grid name*.

3. From the dropdown list, select the *Shading effect*. The options are *Normal* or *Wet-look*.

4. Accept the default parameters for the *Illumination inclination* and *declination* angles. This simply means the sun illumination angles.

5. Click **New Map** or **Current Map**. Selecting *Current map* will overwrite your current map with colour shading.

6. If you select *New Map*, the *Map Exists* dialog appears. This is a safety feature built into the system to make sure that you that you do not overwrite your map.

7. Click *No* so that you do not overwrite your current map. The system prompts you for a *New map name*.

8. Type the name of the new map.

9. Click **OK**. The system will create a colour-shaded image from the grid file and place the image in a new map window.

Interactive Colour Imaging and Shadowing

Oasis montaj provides a *Colour Tool* that enables you to modify colour grid zoning interactively on the screen, store custom colour configurations in a specialized colour palette file and apply these to all of your grid image products. The system supports the following transform methods for zoning the data.

- **Linear** - Divides the range of grid values linearly into even increments
- **Normal** - Assumes your grid data are normally distributed and determines zones based on the distribution for a standard bell curve
- **Equal Area (Histogram)** - Evaluates your grid values and statistically determines the zones, such that each colour occupies an equal area of the map

To Activate the Colour Tool

1. Verify the map and grid are selected in your project.

2. Click *Map Group Mode*.

3. Right-click and select *Image Colour Tool*from the pop-up menu.
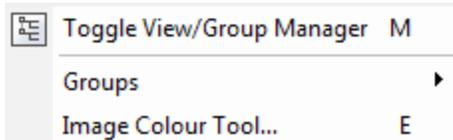
The *Colour Tool* dialog appears. This dialog shows the data distribution relative to the selected colour table.
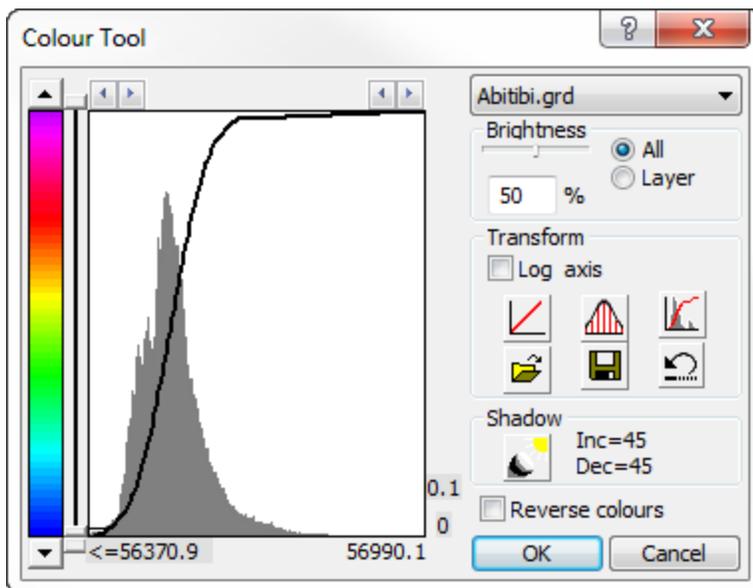
4. From this dialog, you can select to *Transform* the data based on *Linear*, *Normal*, or *Equal-Area* distribution.

To Manipulate the Colour Spectrum / Percentile Groups

1. Press and hold your left mouse button on the left or right arrows at the top corners of the transform box. This will expand or contract your view of the transform in the window.

2. Click on the up or down arrows on the colour slide bar and notice how the colours compress and stretch through the data range. The percentile value is displayed on the right-hand side of the colour tool bar. Also notice how the colour values change at the same time on your map.
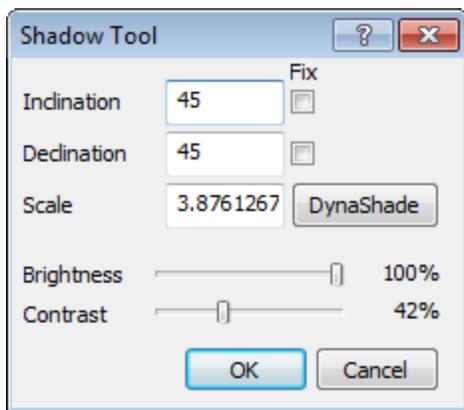
💡 Click **Reset** to set the colours back to their original settings.

To Activate the Interactive Colour Shading Tool

1. Ensure that the *Colour Tool* is active.

2. Select the image to be used by the *Colour Tool* from the dropdown list that displays the available grids. A new image

transform is displayed.

3. Click the *Dynamic shadowing* icon ( ). The *Shadow Tool* dialog appears.

4. Click *DynaShade*. Your cursor will turn into a sun icon.

5. Click the mouse around the image to change the sun illumination relative to the centre of your map window. When you have adjusted the sun angle as desired, click **Stop**. The cursor returns to normal.

⚠ *The illumination is relative to the centre of the map window and not the centre of the image.*

6. You can also manually set the *Brightness* and *Contrast* settings.

7. When you have completed your shadow adjustments, click **OK**. You are returned to the *Colour Tool* dialog box.

8. Click **OK** to save your changes.

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## Oasis montaj Advanced Imaging

It is often helpful for interpretation to combine multiple types of data together using special colour schemes. It is possible to create maps and add images to them, including single colour grid images, colour-shaded grid images, and JPG (or other image format) files. In addition, the system also supports a variety of advanced options that you can access via the *Display* option from the *Grid and Image* menu.

Two common methods of combining grid images are:
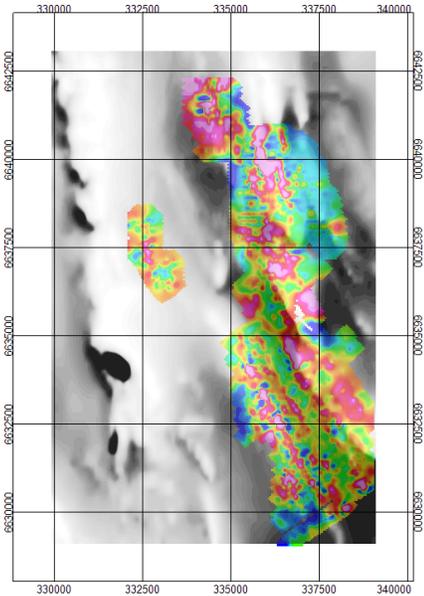
2-Grid Composite Map

This map uses two grids with varying colours. In this example (shown above) we see a greyscale colour shaded grid of topographic data overlain by a colour grid of magnetic data.
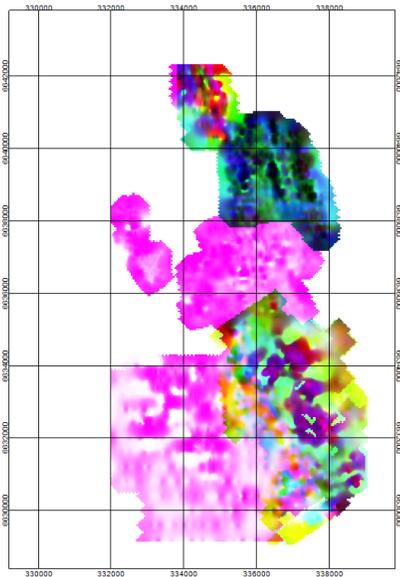

Ternary Diagram Presentation

This map uses three grids with varying colours. The map (shown above),includes three separate data grids that are using either a cyan-magenta-yellow (CMY) or red-green-blue (RGB) colour model. This display method is commonly used with airborne radiometric data.

Create Advanced Images

The following workflow describes how to create 2 and 3 grid composite images, as shown in the images above.

2-Grid Composite Map

1. Open the database and the map.

2. From the *View/Group Manager Tool*, hide all *Data* groups except the coordinates group. If your map does not have all these groups (path, profile, etc.) you will not need to hide them.

3. On the *Grid and Image* menu, select *Display* and then select **2-Grid Composite**.
   The *Display 2 grid composite on map* dialog appears.
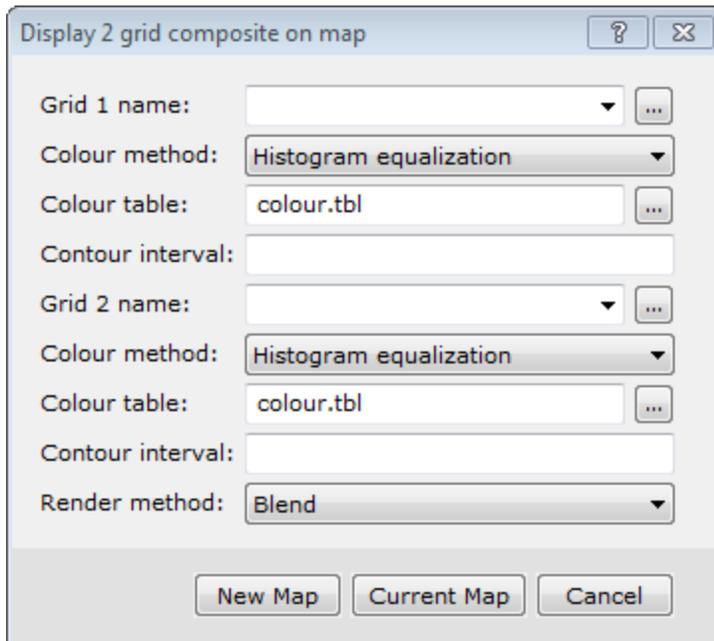
4. Select the first *Grid name* from the dropdown list (or use the "browse" button to load the desired grid into the project, if you haven't done so already).

5. Select the second *Grid name* from the dropdown list.

6. Specify *Colour* parameters for each grid. In order to differentiate between the grids, each grid should be displayed using different colour tables.

   ⚠️ *To replicate the example above, one grid would be mapped using the grey.tbl Colour table option. The other grid would use the default colour.tbl.*

7. Select the *Render method* from the dropdown list. This determines how the colours interact on the map. The default is *Blend*.

8. Click **Current Map** to load the map into the currently open map or **New Map** to create a new map using the specified settings.

3-Grid Ternary Plot

Before you create a 3-grid ternary plot, you must have created grid files, (*.grd) for the 3 channels from the selected database.

1. Open the database and the map.

2. From the *View/Group Manager Tool*, hide all *Data* groups except the coordinates group. If your map does not have all these groups (path, profile, etc.) you will not need to hide them.

3. On the *Grid and Image* menu, Select *Display* and then select **Ternary Image**.
   The *Ternary colour image* dialog appears.
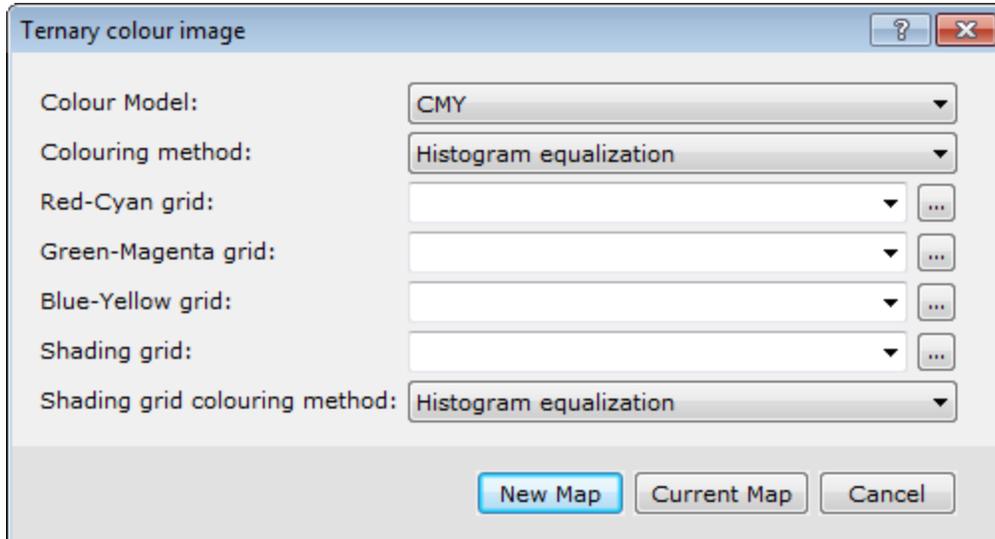
4. Select the *Colour Model* from the dropdown list. This determines which colour tables will be used to draw the map. The default is *CMY*.

5. Select the *Colouring method*.

6. Select the grid to control the *Red-Cyan* colour from the dropdown list (or use the "browse" button to load the desired grid into the project, if you haven't done so already).

7. Select the grid to control the *Green-Magenta* colour from the dropdown list.

8. Select the grid to control the *Blue-Yellow* colour from the dropdown list.

9. The *Shading grid* is an optional grid that controls the shading colour. Specify shading parameters, if desired.

10. Click **Current Map** to load the map into the currently open map or **New Map** to create a new map using the specified settings.

To Add a Ternary Legend to a Ternary Map

A Ternary Legend is a triangle legend added to the map which allows you to designate a label for the map colours. An example is shown below.
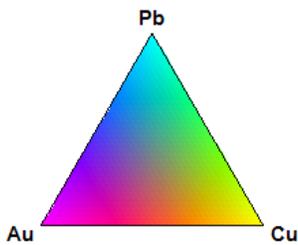
1. On the *Grid and Image* menu, select *Display* and then select **Ternary Legend**.
   The *Ternary Colour Legend* dialog box appears .
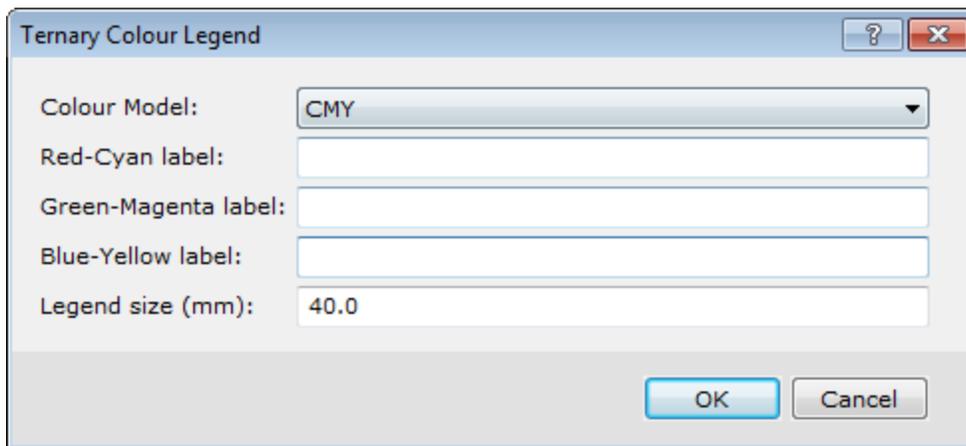
2. Select the *Colour Model* from the drop-down list. This should match the colour model selected for the map.

3. Enter the *labels* for the colours. This should reflect the grids chosen for the specific colours.

4. Specify the *Legend size*.

5. Click **OK**.
   The *Locate Legend* dialog appears.
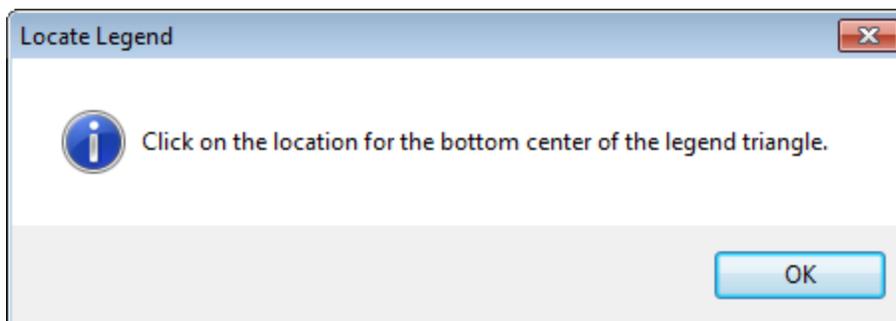
6. Click **OK** and left-click the desired location on the map to display the legend. The system creates and displays the ternary legend on your map.

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