COMPOSIT

The COMPOSIT program creates a single channel black channel white image channel an accompanying color palette from two or more input files. COMPOSIT has three main options:

1. 3-band color composite
2. linework overlay
3. color palette stretch

3-Band Color Composite

The 3-band composite option asks for three files as input to control the red, green, channel blue content of the output image. Typical remote sensing applications would use a reflective near infrared spectral sensor channel to control the red content of the output color composite file, the red sensor channel to control green, channel a green sensor channel to control the blue contribution to the composite. This will result in a "false-color infrared" composite image that appears very similar to color infrared photography. The technique for combining data channels or layers will work with other types of data than remote sensing as well.

COMPOSIT was developed to simulate a three band color composite on a PC-driven VGA 8-bit display, rather than the typical 24-bit display found on larger image processing systems. These 24-bit displays use the three bands of satellite data to control the three 8-bit red, green, and blue "guns" of the monitor. The algorithm implemented in COMPOSIT calculates the optimum subset of 256 colors from the many thousands used on a 24-bit display. Those colors that occur most often in the 24-bit image being composited with the COMPOSIT program are more likely to be represented in the final subset of 256 that COMPOSIT selects.

To increase the visual similarity between the 8-bit and 24-bit versions, keep the total size of the image being composited only as large as necessary to cover your area of interest. The larger the area, the more potential number of different colors needed to represent the three sensor channels of data. COMPOSIT has an option to window your input image by specifying the starting line, sample, and output size. You will be asked to specify the output composite's image name and color palette name. These files will be IMDISP compatible, but the image will not have PDS label records. If you use IMDISP to display the composited image you will be prompted to specify the label information at that

time, or you can use a DOS text editor to create your own label file for the composite.

Linework Overlay

The linework overlay option of COMPOSIT allows you to take two files and superimpose (or "stamp") one over the other. It is a multiplicative process, so linework or other features you wish to stamp on your image should have values of zero or 255 and all background pixels in the raster file being stamped on your image should have the value of 1. This will leave your image file unchanged except where the stamping image was 0 (black) or 255 (white).

Color Palette Stretch

The third option allows you to take a color palette from an earlier run of COMPOSIT and contrast stretch it as completely as possible to the full 0-255 byte range. This will increase the apparent contrast and brightness of the image displayed with the stretched palette. The input palette is left unchanged and a new stretched palette created. For example, if you ran option one to create a composited image and its accompanying palette at an earlier time and chose not to stretch the palette at that time, you can very quickly create a new stretched palette by choosing option three on a subsequent run.

This stretch option looks at your palette to see the highest color value assigned for any of the red, green, or blue contributions. The difference between the highest value for any of the three colors and 255 is the amount that every color value is increased during the stretch.

COMPOSIT was written at the USGS EROS Data Center in Sioux Falls, South Dakota as a courtesy to its many PC users. The software is not supported or further documented, but provided for your use in the hopes that you will find it a worthwhile tool.