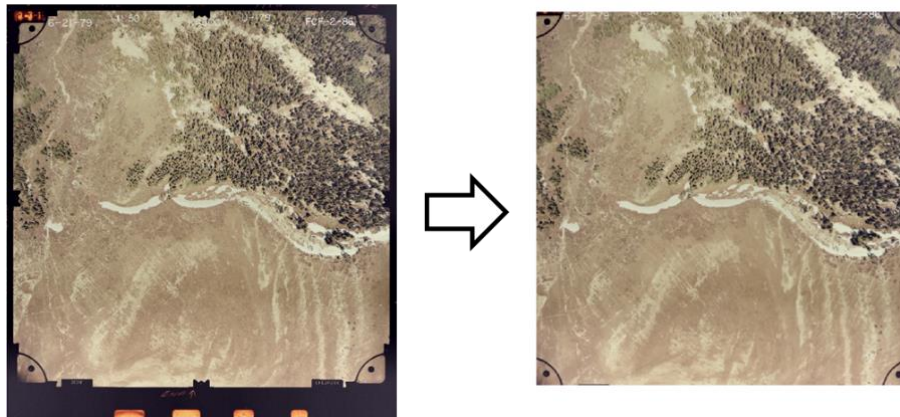


Processing Scanned Aerial Imagery: Preparing images with ERDAS Imagine (part 1)



Introduction

Before processing the scanned images in Agisoft Metashape, we need to clip the scanned images to all be the same dimensions (number of rows and columns). This allows Metashape to calibrate the imagery as a single block of images, which helps to remove distortions. Clipping the images also allows us to remove the unwanted black borders, which can cause incorrect tie points if not removed.

In this exercise, we will use the Subset tool within ERDAS Imagine to batch clip the scanned images. If you are using your own imagery, it is important that all fiducials are visible on the scanned images since we'll use them to help center the AOI directly over the image's principal point. This workflow also assumes that the scanning extent was similar from one image to the next, thus allowing us to use a single AOI to batch clip the images. If your imagery was acquired using more than one camera or if the scanning extent varies, you'll need to group them accordingly and create a custom AOI for each group.

Objectives

- Learn how to batch clip scanned images using ERDAS Imagine.

Required Data

- Metashape_scanned_aerial.zip – this zip file contains 22 images taken in 1979 of Manti-La Sal National Forest. It also contains other files for this exercise and the part 2 exercise.

Prerequisites

- ERDAS Imagine (version 2015 or newer) is needed for completing this exercise. ERDAS Imagine can be downloaded from the GTAC website at fsweb.rsac.fs.fed.us/index.php?option=com_content&view=article&id=119&Itemid=256.

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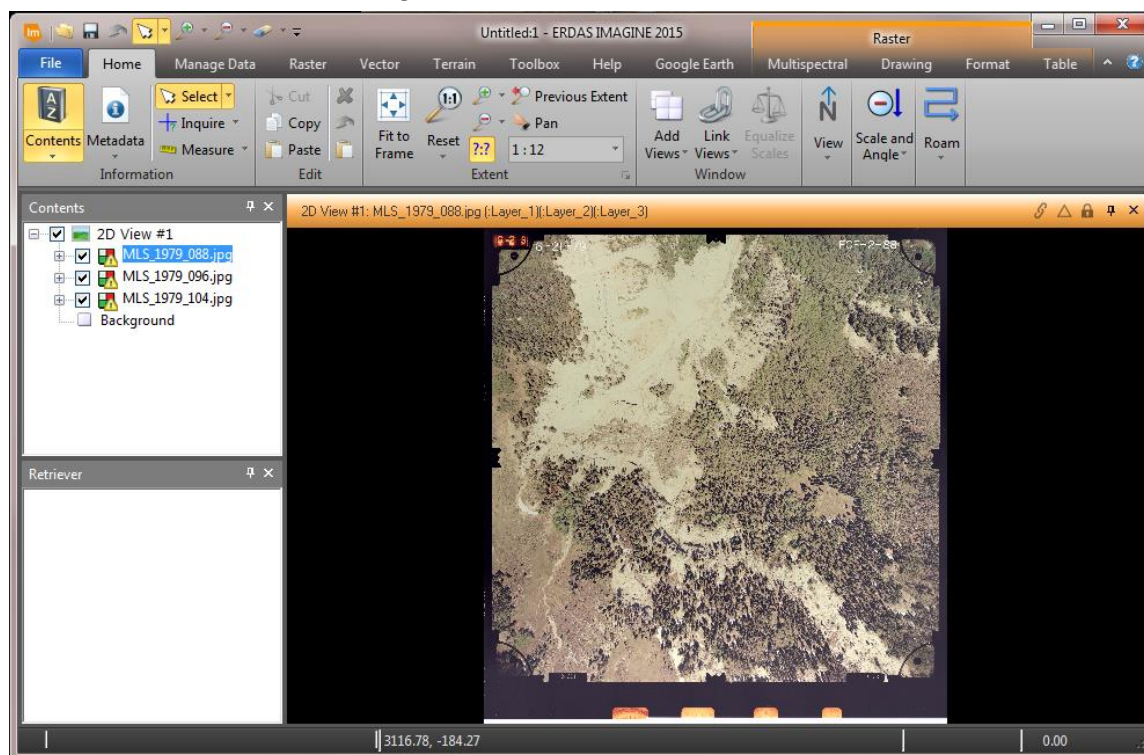
Part 1: Setting up ERDAS Imagine

In this section, we will load a few images into ERDAS and determine an appropriate clipping extent.

1. Launch ERDAS Imagine (version 2015 or newer) from the start menu by clicking **Start, All Programs, and ERDAS Imagine**.
2. Add a few scanned images (...Metashape_02_data/01_images/MLS_1979_086.jpg ...) to the Imagine viewer by either dragging them in from the File Explorer or by clicking on **File, Open, Raster Layer**, and navigating to the files and clicking **OK** (see following note).

NOTE: We don't need to review every image, but it is a good idea to randomly select and review a few of them to ensure that we specify an appropriate clipping extent. Keep in mind that changes in the scanning set up, such as switching out rolls of film or rotating the images may change the positioning of the image space.

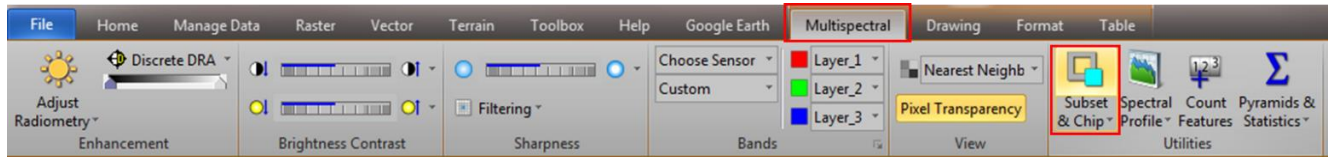
3. In the Contents panel, turn on and off the newly added images while keeping an eye on the fiducial positions. Check to make sure that the fiducials stay in approximately the same location from one image to the next.



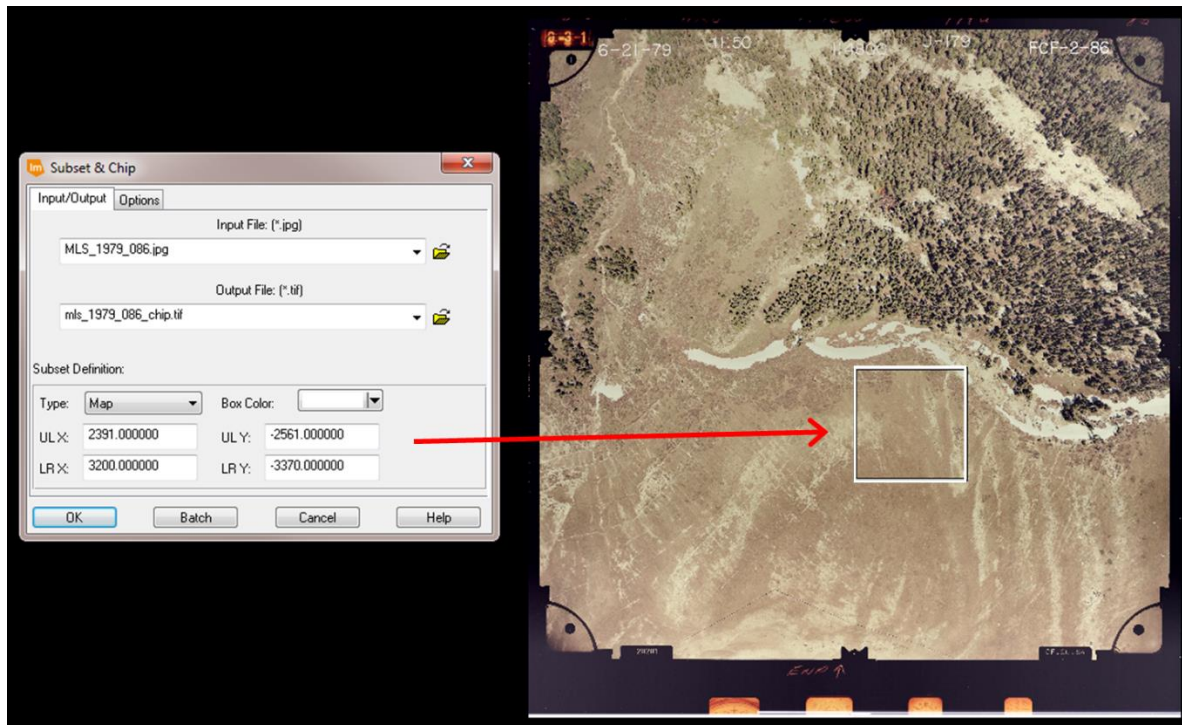
Part 2: Clipping out the images

In this section, we will run the chip tool to define the clip extent and to batch clip the entire set of images.

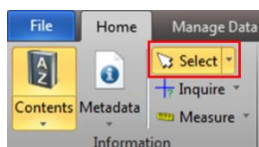
1. With the first image in the Contents panel selected, click on the **Multispectral** tab and then click on the **Subset & Chip** button (see following figure).



2. In the Subset & Chip window, the **Input File** should already be set to the correct one since it uses the image selected in the Contents panel. However, you'll need to change the location and file type for the Output File. Do this by doing the following steps:
 - i. Click on the folder button next to **Output File** and navigate to the 02_clipped_images folder in the exercise data.
 - ii. Name the output file the same as the original, but with the suffix of "chip.tif" (for example, mls_1979_088_chip.tif). Change the File Type to **TIFF** if it isn't already.
 - iii. Click **OK**.
3. In the main viewer, look for a white box (see following figure). This is the rectangle that defines the clipping extent.

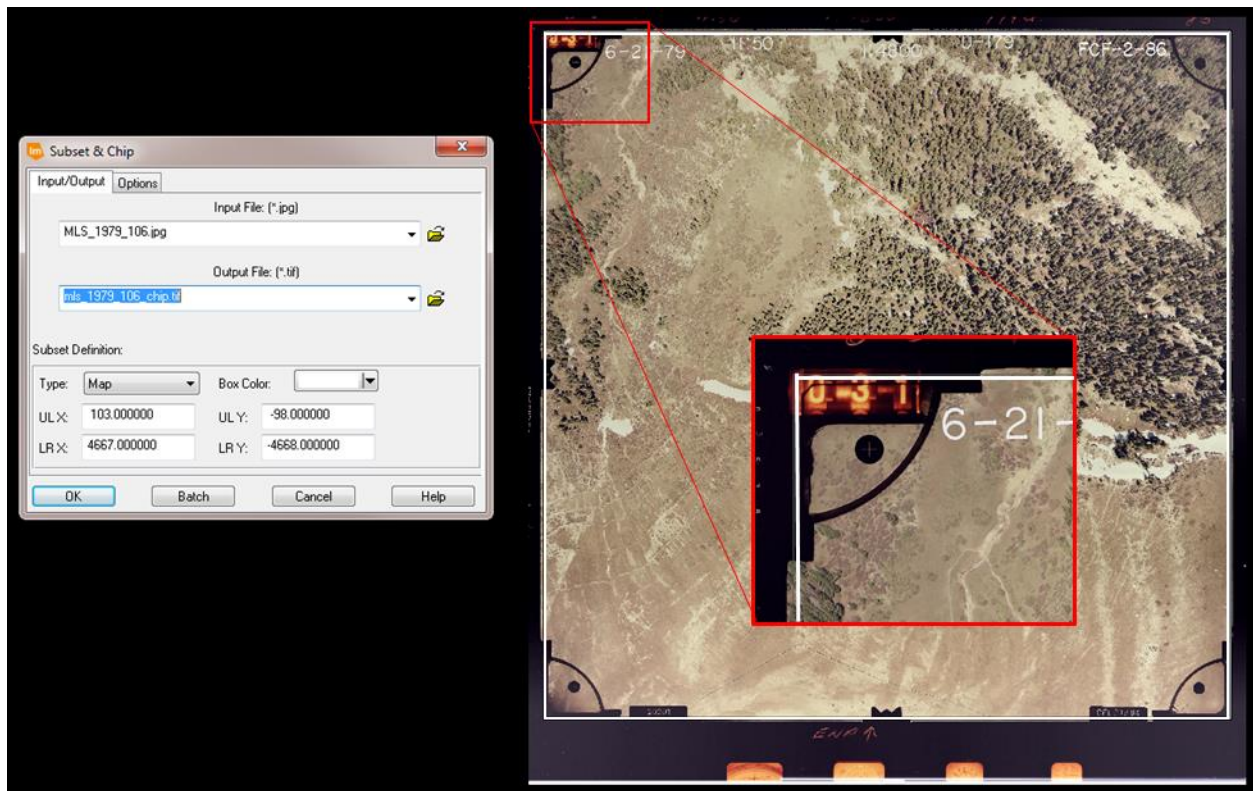


4. With the Select tool active (see following figure), click and drag the corners of the rectangle towards the edges of the image (see following note). You can also click and drag within the rectangle to move it.



NOTE: When selecting the clip extent, try to keep the image centered within the rectangle. You'll want to clip off most of the outer border, but try to keep the fiducials and the title block within the clipping extent if possible. Such information is good to retain and usually doesn't cause issues when processing the images in Metashape.

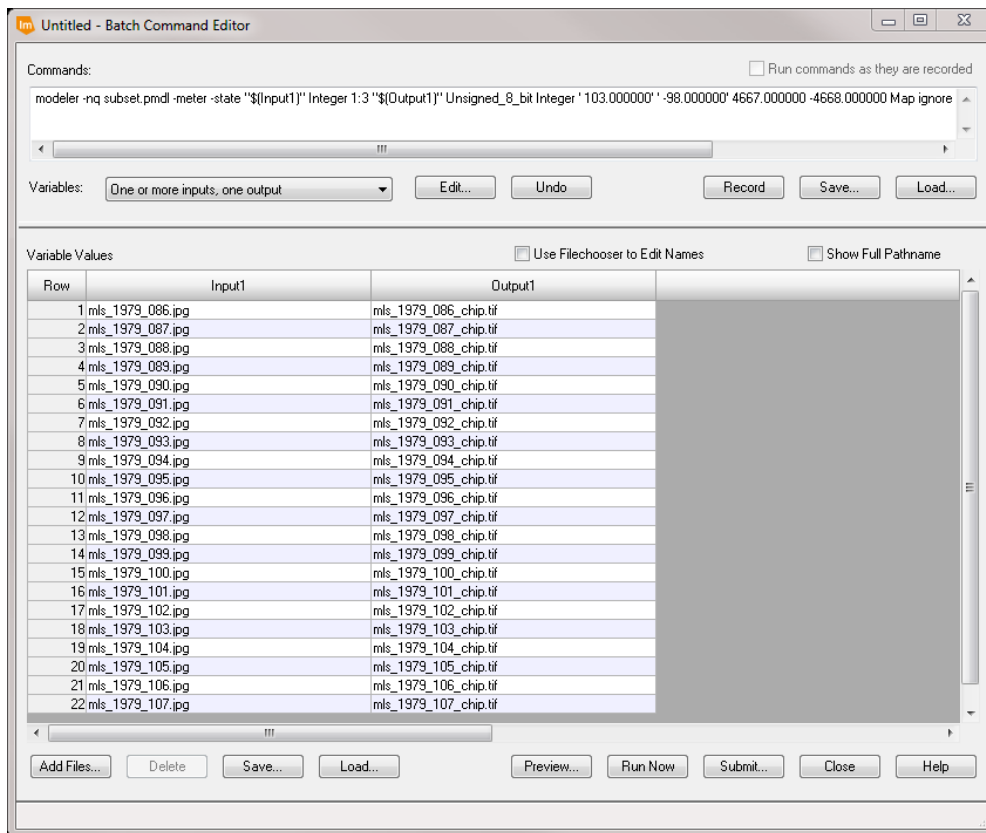
- Continue to adjust the rectangle until it looks similar to the following image. Also, as you adjust the rectangle, notice that the tool is updating the Subset Definition coordinates.



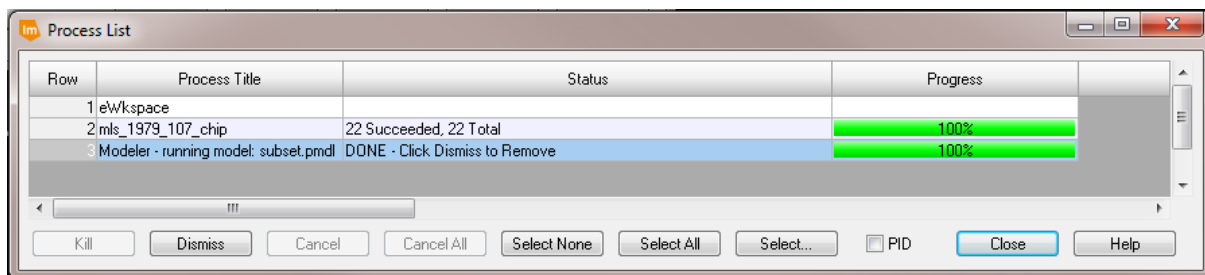
- Once again, turn on and off the images in the Contents panel to make sure that the clip extent is appropriate for the set of images. Make adjustments to the rectangle if needed.
- Once you are satisfied with the clip extent, click on the **Batch** button.
- In the Batch Command Editor, select the **Variables** dropdown and select **One or more inputs, one output**. The **Add Files** button should now be activated on the bottom.
- Click on the **Add Files** button, navigate to the exercise data, and select the images you wish to clip (click on the first image, hold down shift, and click on the last image). Click **OK** to add the files to the batch command list (see following note).

NOTE: If your images aren't showing up in the Add Files window, you may need to change the File Type to either JFIF (for JPEG) or All Files.

- Since you selected all of the images, the first row on your list will be a duplicate. Go ahead and delete this first row by clicking on Row 1 to select it, right clicking on 1, and selecting **Delete Selection**. Your table should look similar to the following figure, with a total of 22 rows.



11. Click the **Run Now** button to begin clipping the images. A **Process List** window will open shortly afterwards showing the status of the clipping.
12. Processing will take a few minutes. Go ahead and close the Process list window after the last image is clipped (see following figure).



13. Navigate to the output directory (02_clipped_images) and make sure that all the clipped TIFFs were created.
14. Drag and drop a few of them into Imagine to make sure the clipping extent appears appropriate and that the images were created correctly.
15. Go ahead and close out of all the ERDAS Imagine windows. You are now ready to process the images in Metashape!

Congratulations! You have successfully completed this exercise and the images are now all the same dimensions and ready to process in Metashape. You also learned how to run a batch command on a series of images within ERDAS Imagine.