Georeferencing in Agisoft Metashape

J Ramón Arrowsmith
School of Earth and Space Exploration
Arizona State University

Data collected with Erin N. DiMaggio
Pennsylvania State University

Tutorial notes
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OpenTopography
High-Resolution Topography Data and Tools
Step 1: Add Folder of photos
Step 2: Align photos (=SIFT plus Structure from Motion)

In this case, the image locations are bad. So, in the Reference pane select all the images and then uncheck. That way the software won’t be confused.

Then, Align Photos from the Workflow menu. Unselect the Generic and Reference preselection. Don’t be too greedy on accuracy.
Satellite RTK for ~dm positioning

### WGS84 Marker Locations

<table>
<thead>
<tr>
<th>#</th>
<th>H rms</th>
<th>V rms</th>
<th>Longitude</th>
<th>Latitude</th>
<th>Elliptical Elevation</th>
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</table>
Step 3: External georeferencing

Import CSV file with marker locations

Adjust column numbers

Yes to All
Step 3: External georeferencing

Double click on DJI_241 and then zoom in (middle mouse button)

This is marker 13. Right click and place marker right in the middle of it
Step 3: External georeferencing, cont’d

Double click on DJI_091 and then zoom in (middle mouse button)

This is marker 13 with an estimate of where it should be (red dashed line). Right click and place marker right in the middle of it.
Step 3: External georeferencing, cont’d

Double click on DJI_058 and then zoom in (middle mouse button)

This is marker 11 (left front bumper of the Landcruiser). Right click and place marker right in the middle of it
Double click on DJI_080 and then zoom in (middle mouse button).

This is marker 3. Left click and correct the position.
Step 3: External georeferencing, cont’d

Move through all the photos a couple of time and add and update the markers

Then, Click on update to apply the transformations to the camera positions
Step 4: Reset the current alignment
Step 4: Reset the current alignment, cont’d

Note the estimated camera positions now (view Estimated)
Step 5: Build the dense cloud (multiview stereo)

Don’t be too greedy on quality.
Step 6: Build the mesh

Don’t be too greedy on quality.

Click here when done to display
Step 7: Build the texture

Don’t be too greedy on quality.

Click here when done to display
Step 8: Rerun to increase quality and create derived products

After you have run through everything, keep saving and then you can start again through the sequence, progressively increasing quality.

You will probably want to Build a DEM, and Build the Orthomosaic.

Mind the coordinate system.
Step 8: Rerun to increase quality and create derived products

DEMIs and Orthophotos have to be built before they are exported.

You could change the coordinate system here on export as well.
Step 9: Quick check with ArcMap if the exported product is in the right place