

Agisoft Metashape

Processing Report

27 June 2024



Survey Data

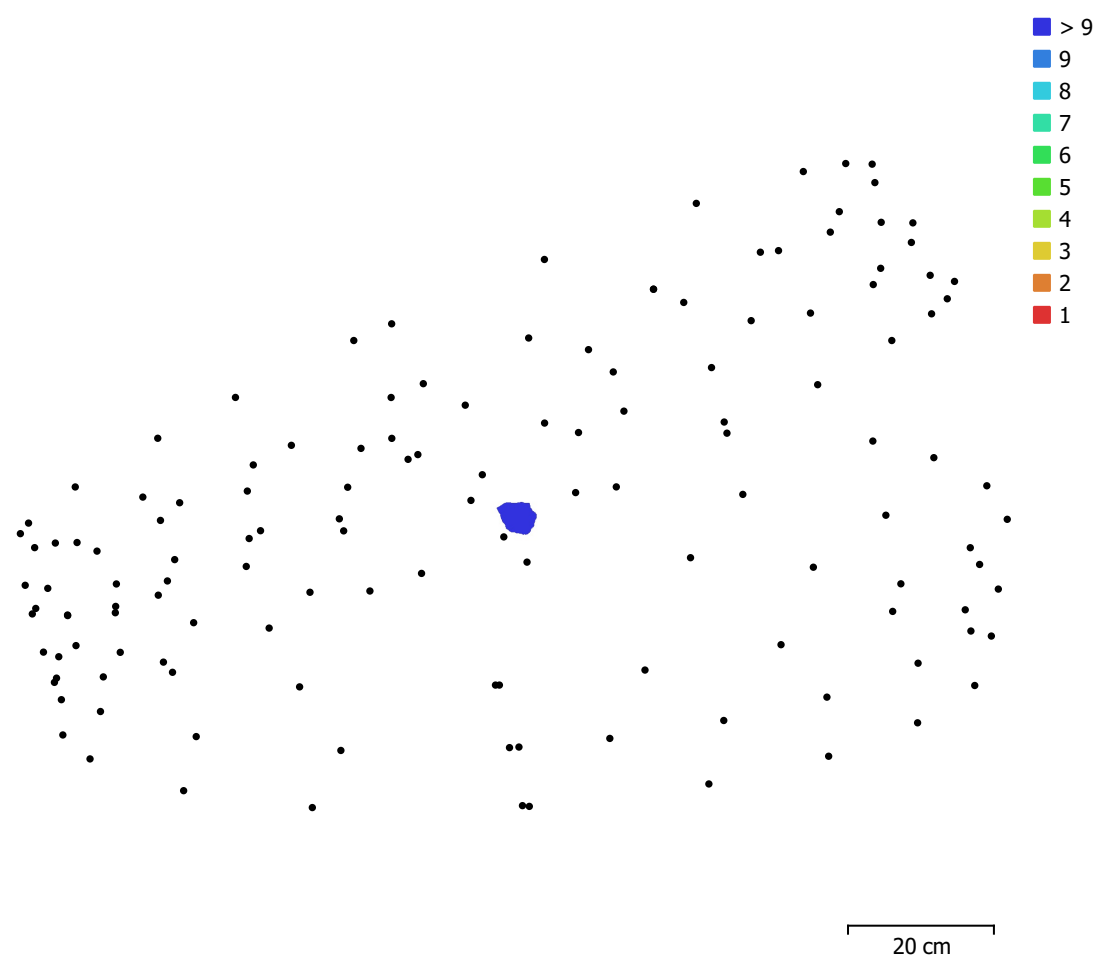


Fig. 1. Camera locations and image overlap.

| | | | |
|--------------------|----------------------|---------------------|-----------|
| Number of images: | 138 | Camera stations: | 138 |
| Flying altitude: | 65.3 cm | Tie points: | 99,966 |
| Ground resolution: | 0.042 mm/pix | Projections: | 356,932 |
| Coverage area: | 17.8 cm ² | Reprojection error: | 0.686 pix |

| Camera Model | Resolution | Focal Length | Pixel Size | Precalibrated |
|---------------|-------------|--------------|----------------|---------------|
| DMC-G7 (60mm) | 4592 x 2584 | 60 mm | 3.79 x 3.79 μm | No |
| DMC-G7 (60mm) | 4592 x 2584 | 60 mm | 3.79 x 3.79 μm | No |

Table 1. Cameras.

Camera Calibration

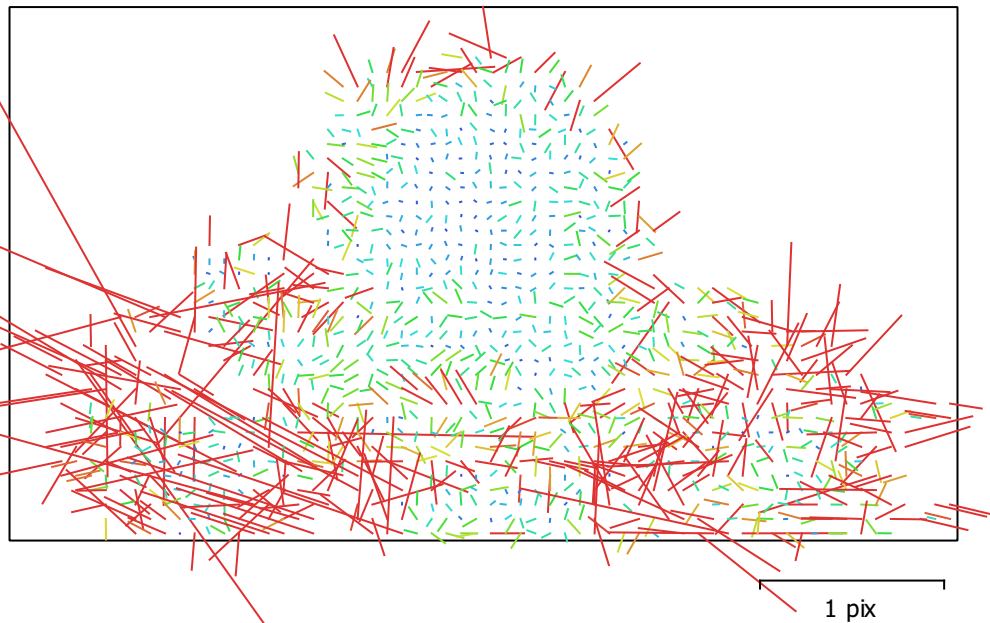


Fig. 2. Image residuals for DMC-G7 (60mm).

DMC-G7 (60mm)

65 images

Type

Resolution

Focal Length

Pixel Size

Frame

4592 x 2584

60 mm

3.79 x 3.79 μ m

| | Value | Error | F | Cx | Cy | K1 | K2 | K3 | P1 | P2 |
|-----------|-------------------|---------|------|------|-------|-------|-------|-------|-------|-------|
| F | 15553.6 | 11 | 1.00 | 0.26 | 0.02 | -0.16 | -0.00 | 0.05 | 0.15 | -0.08 |
| Cx | 587.485 | 13 | | 1.00 | -0.06 | 0.11 | -0.45 | 0.59 | 0.85 | -0.34 |
| Cy | 349.401 | 13 | | | 1.00 | -0.24 | 0.06 | -0.03 | -0.08 | 0.63 |
| K1 | -0.101627 | 0.0094 | | | | 1.00 | -0.82 | 0.66 | 0.24 | 0.04 |
| K2 | 16.0931 | 0.79 | | | | | 1.00 | -0.95 | -0.41 | 0.06 |
| K3 | -396.364 | 23 | | | | | | 1.00 | 0.55 | -0.15 |
| P1 | 0.015998 | 0.00038 | | | | | | | 1.00 | -0.25 |
| P2 | 0.00751144 | 0.00031 | | | | | | | | 1.00 |

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration

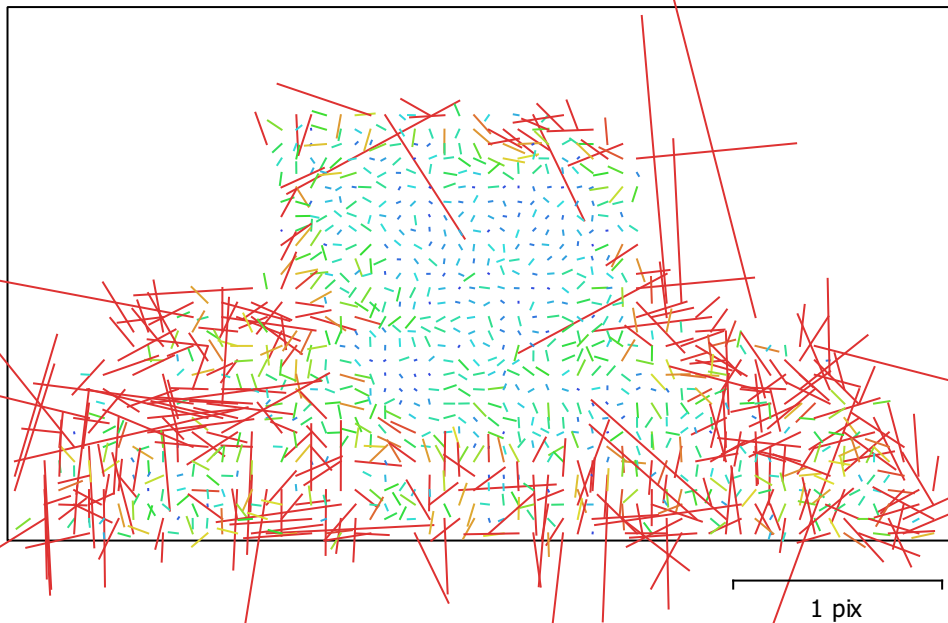


Fig. 3. Image residuals for DMC-G7 (60mm).

DMC-G7 (60mm)

73 images

| | | | |
|--------------|--------------------|--------------|--------------------------------------|
| Type | Resolution | Focal Length | Pixel Size |
| Frame | 4592 x 2584 | 60 mm | 3.79 x 3.79 μm |

| | Value | Error | F | Cx | Cy | K1 | K2 | K3 | P1 | P2 |
|-----------|--------------------|---------|------|------|-------|-------|-------|-------|-------|-------|
| F | 15505.3 | 8.8 | 1.00 | 0.02 | -0.51 | 0.04 | -0.06 | 0.11 | 0.01 | -0.51 |
| Cx | -16.2951 | 17 | | 1.00 | 0.04 | -0.03 | -0.00 | -0.10 | 0.98 | 0.04 |
| Cy | 290.569 | 25 | | | 1.00 | -0.17 | 0.10 | -0.17 | 0.04 | 0.97 |
| K1 | 0.0147713 | 0.0069 | | | | 1.00 | -0.89 | 0.79 | -0.03 | -0.11 |
| K2 | 5.68591 | 1 | | | | | 1.00 | -0.96 | 0.00 | 0.07 |
| K3 | -238.967 | 34 | | | | | | 1.00 | -0.11 | -0.14 |
| P1 | 0.00118141 | 0.0004 | | | | | | | 1.00 | 0.04 |
| P2 | -0.00103594 | 0.00049 | | | | | | | | 1.00 |

Table 3. Calibration coefficients and correlation matrix.

Scale Bars

| Label | Distance (m) | Error (m) |
|---------------------|--------------|--------------|
| target 19_target 20 | 0.05 | -4.64906e-16 |
| Total | | 4.64906e-16 |

Table 4. Control scale bars.

Digital Elevation Model

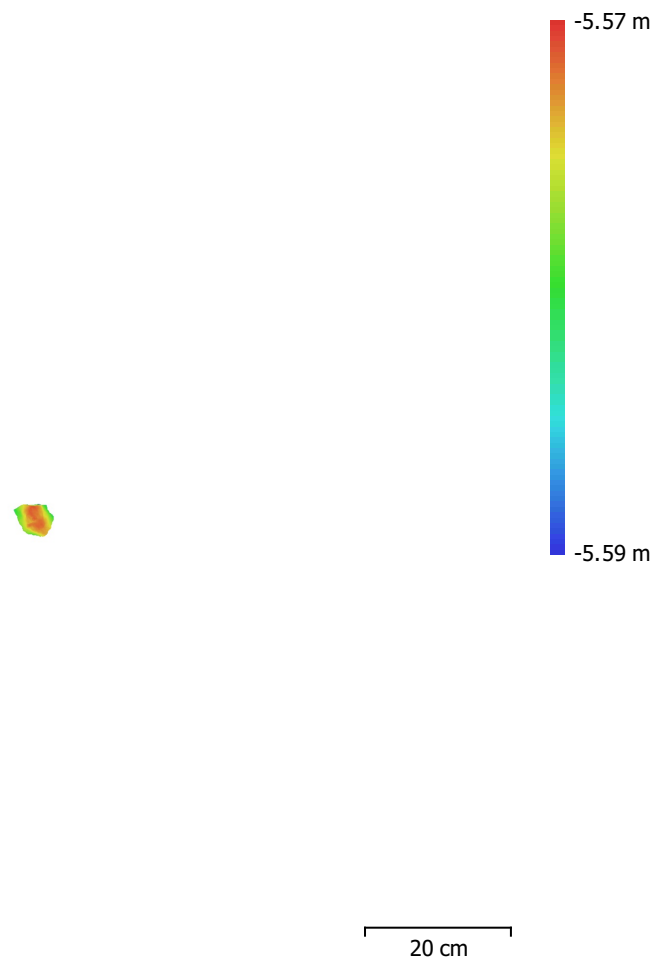


Fig. 4. Reconstructed digital elevation model.

Resolution: 0.345 mm/pix
Point density: 8.41 points/mm²

Processing Parameters

General

| | |
|-----------------|-----|
| Cameras | 138 |
| Aligned cameras | 138 |
| Markers | 6 |
| Scale bars | 1 |

Tie Points

| | |
|--------------------------------|-------------------------|
| Points | 99,966 of 115,547 |
| RMS reprojection error | 0.196208 (0.685543 pix) |
| Max reprojection error | 0.601877 (41.6319 pix) |
| Mean key point size | 3.19594 pix |
| Point colors | 3 bands, uint8 |
| Key points | No |
| Average tie point multiplicity | 3.92463 |
| File size | 9.56 MB |

Model

| | |
|---------------|-------------------------------|
| Faces | 50,000 |
| Vertices | 25,002 |
| Vertex colors | 3 bands, uint8 |
| Texture | 8,192 x 8,192, 4 bands, uint8 |

Texturing parameters

| | |
|---------------------------|------------|
| Mapping mode | Generic |
| Blending mode | Mosaic |
| Texture size | 8,192 |
| Enable hole filling | Yes |
| Enable ghosting filter | Yes |
| UV mapping time | 13 seconds |
| UV mapping memory usage | 88.21 MB |
| Blending time | 37 seconds |
| Blending memory usage | 4.28 GB |
| Blending GPU memory usage | 1.87 GB |
| File size | 31.15 MB |

System

| | |
|------------------|---|
| Software name | Agisoft Metashape Standard |
| Software version | 2.1.1 build 17821 |
| OS | Windows 64 bit |
| RAM | 15.70 GB |
| CPU | Intel(R) Core(TM) i9-9980HK CPU @ 2.40GHz |
| GPU(s) | Quadro T2000 |