# Agisoft Metashape

**Processing Report**

**29 April 2025**

# Survey Data
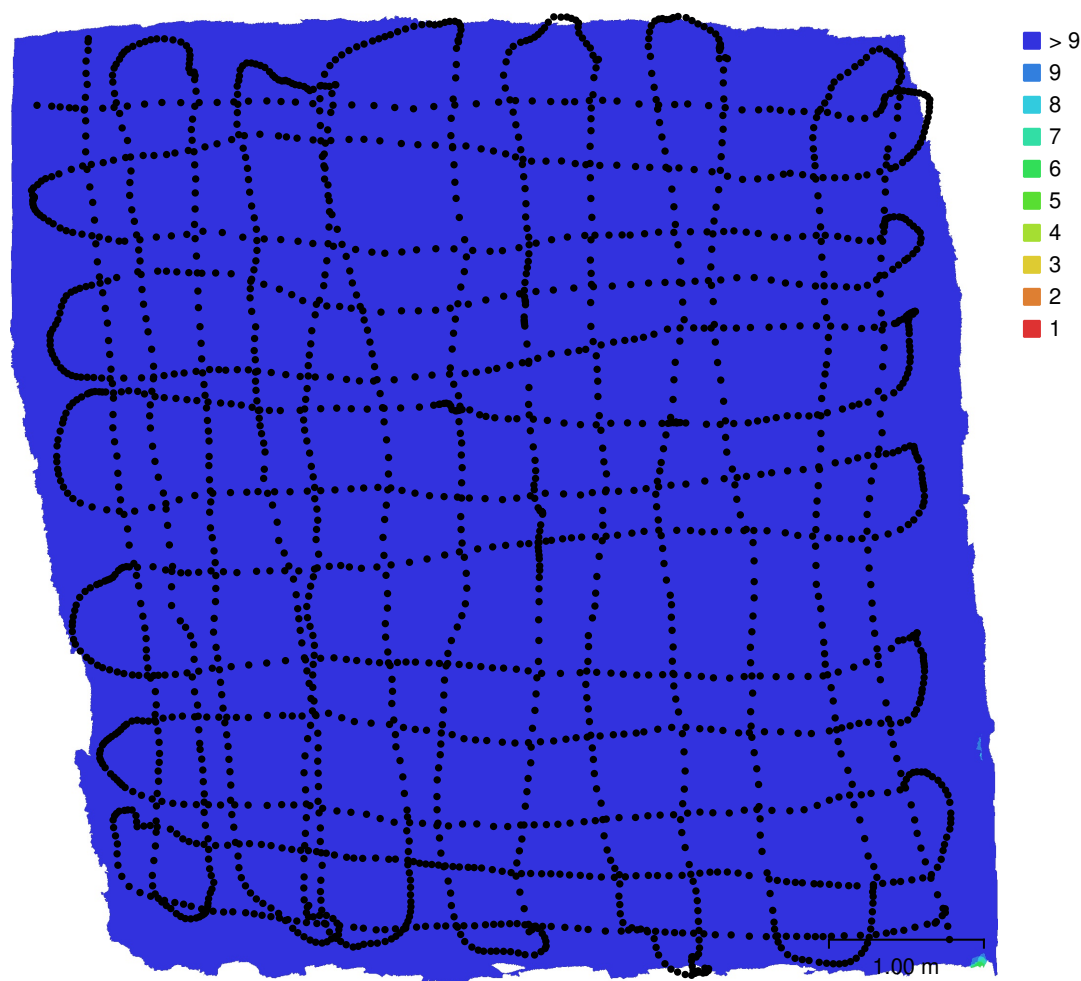


Fig. 1. Camera locations and image overlap.

| | | | |
|---|---|---|---|
| Number of images: | 2,247 | Camera stations: | 2,247 |
| Flying altitude: | 77.7 cm | Tie points: | 550,313 |
| Ground resolution: | 0.248 mm/pix | Projections: | 6,635,573 |
| Coverage area: | 36.0 m² | Reprojection error: | 4.56 pix |

| Camera Model | Resolution | Focal Length | Pixel Size | Precalibrated |
|---|---|---|---|---|
| unknown | 5312 x 4648 | unknown | unknown | No |

Table 1. Cameras.

# Camera Calibration



9 pix
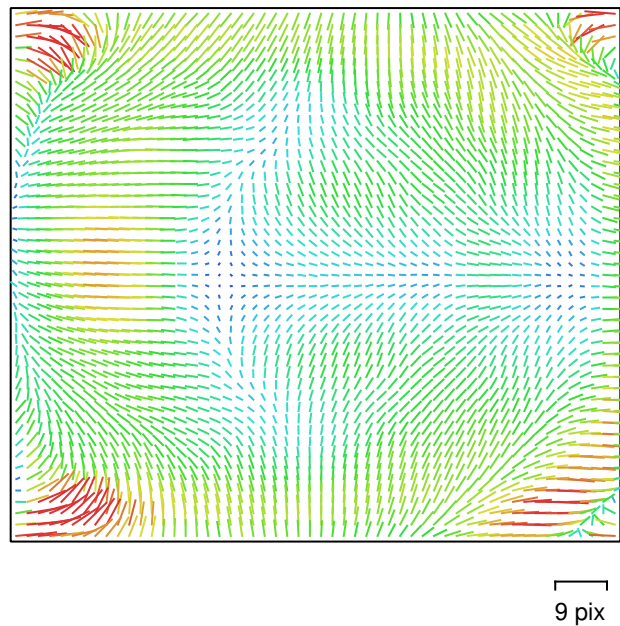
Fig. 2. Image residuals for unknown.

**unknown**

2247 images

| Type | Resolution | Focal Length | Pixel Size |
|------|------------|--------------|------------|
| **Frame** | **5312 x 4648** | **unknown** | **unknown** |

| | Value | Error | F | Cx | Cy | K1 | K2 | K3 | P1 | P2 |
|---|-------|-------|---|----|----|----|----|----|----|----|
| **F** | **3131.57** | 0.091 | 1.00 | 0.06 | 0.20 | -0.07 | 0.27 | -0.05 | -0.07 | 0.06 |
| **Cx** | **-28.8685** | 0.02 | | 1.00 | 0.00 | 0.05 | -0.06 | 0.10 | 0.72 | -0.01 |
| **Cy** | **-5.45192** | 0.019 | | | 1.00 | 0.01 | 0.02 | 0.01 | -0.02 | 0.72 |
| **K1** | **-0.0995433** | 3.4e-05 | | | | 1.00 | -0.91 | 0.89 | 0.02 | 0.04 |
| **K2** | **0.0989165** | 6.9e-05 | | | | | 1.00 | -0.96 | -0.05 | 0.00 |
| **K3** | **-0.00230622** | 4.3e-05 | | | | | | 1.00 | 0.06 | 0.01 |
| **P1** | **-0.00513033** | 2.3e-06 | | | | | | | 1.00 | -0.01 |
| **P2** | **-0.000681214** | 2.2e-06 | | | | | | | | 1.00 |

Table 2. Calibration coefficients and correlation matrix.

# Scale Bars

| Label | Distance (m) | Error (m) |
|---|---|---|
| point 1_point 2 | 4.90886 | -0.0911395 |
| point 2_point 3 | 5.16937 | 0.169365 |
| point 3_point 4 | 4.91741 | -0.082589 |
| point 1_point 4 | 4.99531 | -0.00468938 |
| point 5_point 6 | 0.203786 | 0.00378585 |
| point 7_point 8 | 0.13565 | 0.00565005 |
| **Total** | | **0.0855183** |

Table 3. Control scale bars.

# Digital Elevation Model
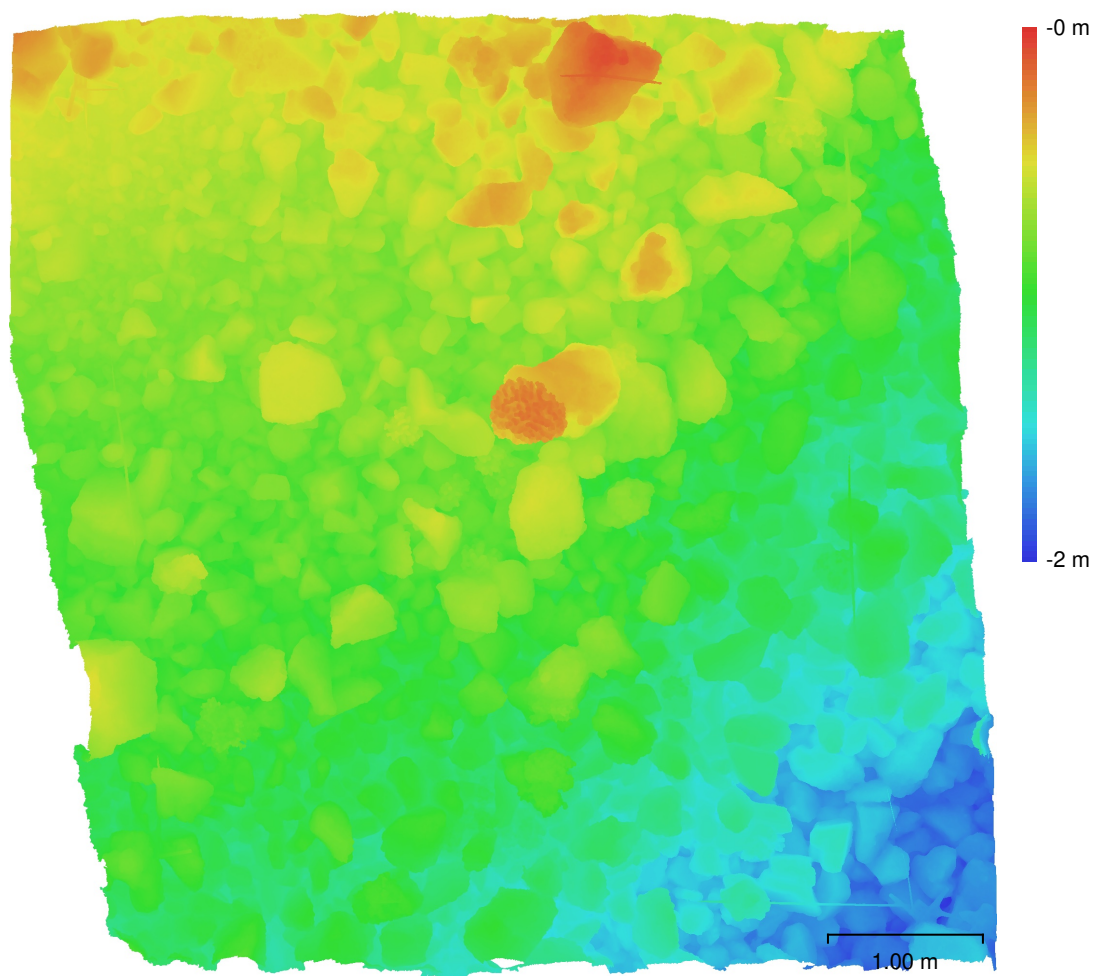


Fig. 3. Reconstructed digital elevation model.

Resolution:           unknown

Point density:        unknown

# Processing Parameters

**General**

| | |
|---|---|
| Images | 2247 |
| Aligned images | 2247 |
| Markers | 8 |
| Scale bars | 6 |
| Coordinate system | Local Coordinates (m) |
| Rotation angles | Yaw, Pitch, Roll |

**Tie Points**

| | |
|---|---|
| Points | 550,313 of 792,048 |
| RMS reprojection error | 0.605089 (4.55756 pix) |
| Max reprojection error | 1.83135 (98.8079 pix) |
| Mean key point size | 7.81806 pix |
| Point colors | 3 bands, uint8 |
| Key points | 7.22 GB |
| Average tie point multiplicity | 13.8815 |

    **Alignment parameters**

| | |
|---|---|
| Accuracy | Medium |
| Generic preselection | Yes |
| Reference preselection | No |
| Key point limit | 40,000 |
| Key point limit per Mpx | 1,000 |
| Tie point limit | 4,000 |
| Exclude stationary tie points | Yes |
| Guided image matching | No |
| Adaptive camera model fitting | No |
| Matching time | 55 minutes 5 seconds |
| Matching memory usage | 4.09 GB |
| Alignment time | 2 hours 37 minutes |
| Alignment memory usage | 1.88 GB |
| Date created | 2025:04:23 12:57:17 |
| Software version | 2.2.0.19890 |
| File size | 7.81 GB |

**Depth Maps**

| | |
|---|---|
| Count | 2247 |

    **Depth maps generation parameters**

| | |
|---|---|
| Quality | Medium |
| Filtering mode | Mild |
| Max neighbors | 16 |
| Processing time | 59 minutes 59 seconds |
| Memory usage | 2.22 GB |
| Date created | 2025:04:24 09:09:09 |
| Software version | 2.2.0.19890 |
| File size | 5.82 GB |

**Point Cloud**

| | |
|---|---|
| Points | 118,951,111 |
| Coordinate precision | 0.252 mm |

    **Point attributes**

| | |
|---|---|
| Color | 3 bands, uint8 |
| Normal | |
| Confidence | 1 - 112 |

**Point classes**
    Created (never classified)                  118,951,111

**Depth maps generation parameters**

| | |
|---|---|
| Quality | Medium |
| Filtering mode | Mild |
| Max neighbors | 16 |
| Processing time | 59 minutes 59 seconds |
| Memory usage | 2.22 GB |

**Point cloud generation parameters**

| | |
|---|---|
| Source data | Depth maps |
| Processing time | 14 hours 15 minutes |
| Memory usage | 8.83 GB |
| Date created | 2025:04:24 23:25:25 |
| Software version | 2.2.0.19890 |
| File size | 1.66 GB |

**Model**

| | |
|---|---|
| Faces | 5,467,083 |
| Vertices | 2,738,675 |
| Vertex colors | 3 bands, uint8 |
| Texture | 8,192 x 8,192, 3 bands, uint8 |

**Depth maps generation parameters**

| | |
|---|---|
| Quality | Medium |
| Filtering mode | Mild |
| Max neighbors | 16 |
| Processing time | 59 minutes 59 seconds |
| Memory usage | 2.22 GB |

**Reconstruction parameters**

| | |
|---|---|
| Surface type | Arbitrary |
| Source data | Depth maps |
| Interpolation | Enabled |
| Strict volumetric masks | No |
| Processing time | 46 minutes 26 seconds |
| Memory usage | 9.82 GB |

**Texturing parameters**

| | |
|---|---|
| Mapping mode | Generic |
| Blending mode | Mosaic |
| Texture size | 8,192 |
| Page count | 1 |
| Enable hole filling | Yes |
| Enable ghosting filter | Yes |
| UV mapping time | 5 minutes 3 seconds |
| UV mapping memory usage | 2.28 GB |
| Blending time | 26 minutes 14 seconds |
| Blending memory usage | 4.48 GB |
| Blending GPU memory usage | 2.46 GB |
| Date created | 2025:04:29 10:24:11 |
| Software version | 2.2.0.19890 |
| File size | 331.32 MB |

**DEM**

| | |
|---|---|
| Size | 6,351 x 6,897 |
| Resolution | 1.01 mm/pix |
| Coordinate system | Local Coordinates (m) |

**Reconstruction parameters**

| | |
|---|---|
| Source data | Point cloud |
| Interpolation | Enabled |
| Processing time | 41 seconds |

| | |
|---|---|
| Memory usage | 305.21 MB |
| Date created | 2025:04:29 08:02:58 |
| Software version | 2.2.0.19890 |
| File size | 146.13 MB |

**Orthomosaic**

| | |
|---|---|
| Size | 12,786 x 13,885 |
| Resolution | 0.500 mm/pix |
| Coordinate system | Local Coordinates (m) |
| Colors | 3 bands, uint8 |
| Orthophotos | 3.38 GB |

**Reconstruction parameters**

| | |
|---|---|
| Blending mode | Mosaic |
| Surface | DEM |
| Enable hole filling | Yes |
| Enable ghosting filter | No |
| Processing time | 37 minutes 35 seconds |
| Memory usage | 1.58 GB |
| Date created | 2025:04:29 08:37:29 |
| Software version | 2.2.0.19890 |
| File size | 3.54 GB |

**System**

| | |
|---|---|
| Software name | Agisoft Metashape Professional |
| Software version | 2.2.0 build 19890 |
| OS | Linux 64 bit |
| RAM | 251.28 GB |
| CPU | Intel(R) Xeon(R) W-2223 CPU @ 3.60GHz |
| GPU(s) | NVIDIA RTX A5000 |