

Agisoft Metashape

Processing Report

16 October 2020



Survey Data

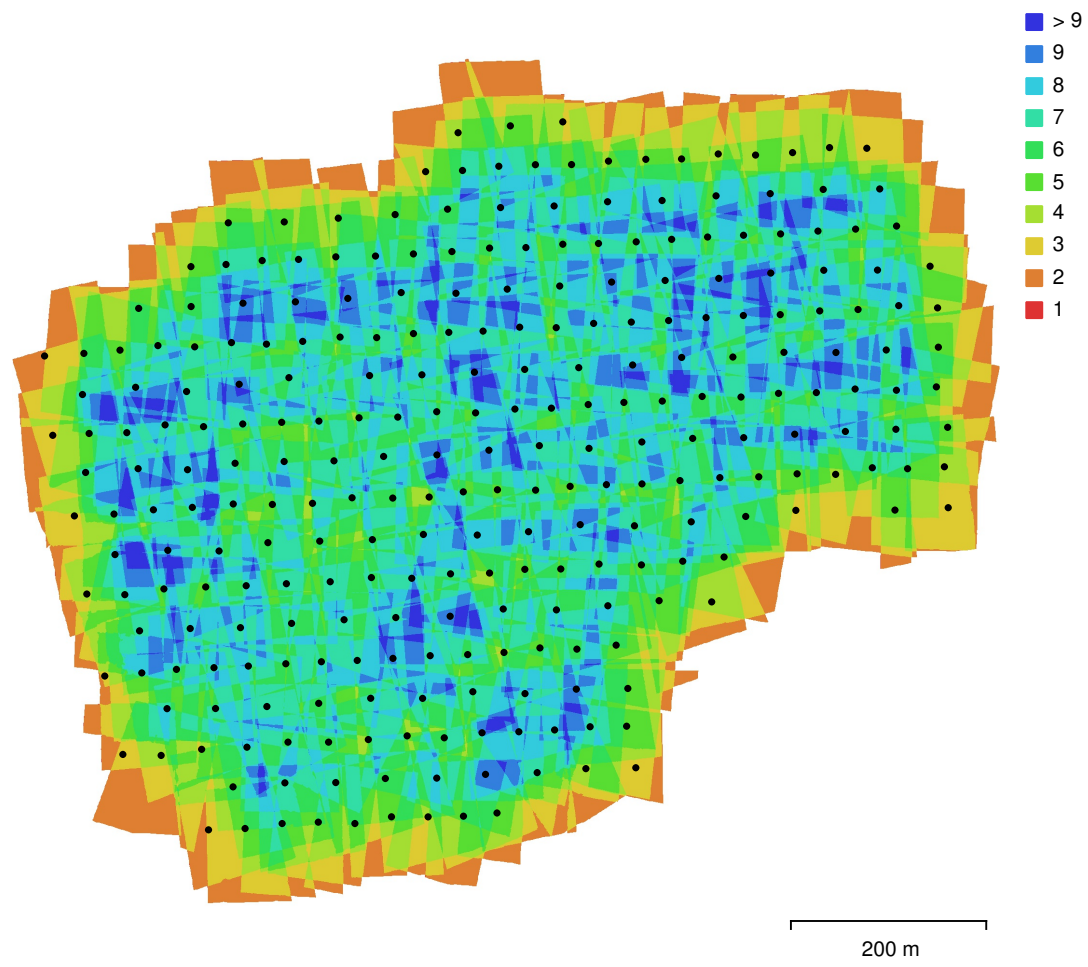


Fig. 1. Camera locations and image overlap.

Number of images:	279	Camera stations:	275
Flying altitude:	106 m	Tie points:	84,014
Ground resolution:	2.71 cm/pix	Projections:	271,488
Coverage area:	0.605 km ²	Reprojection error:	0.926 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
DSC-WX220 (4.45mm)	4896 x 3672	4.45 mm	unknown	No

Table 1. Cameras.

Camera Calibration

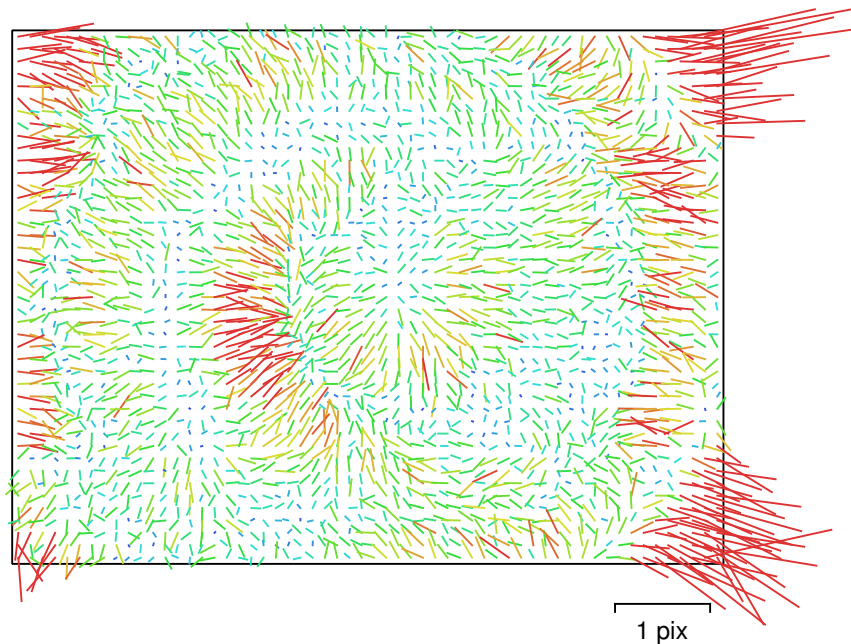


Fig. 2. Image residuals for DSC-WX220 (4.45mm).

DSC-WX220 (4.45mm)

279 images

Type	Resolution	Focal Length	Pixel Size
Frame	4896 x 3672	4.45 mm	unknown

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	3602.29	0.71	1.00	0.52	-0.80	-0.02	-0.09	0.17	0.19	0.11
Cx	94.0464	0.14		1.00	-0.44	0.00	-0.05	0.08	0.36	0.03
Cy	17.9394	0.2			1.00	-0.02	0.09	-0.15	-0.16	0.06
K1	0.00768649	8.2e-05				1.00	-0.94	0.88	0.05	-0.10
K2	-0.0543983	0.00027					1.00	-0.98	-0.04	-0.01
K3	0.0539116	0.00027						1.00	0.07	0.02
P1	0.00644604	5.1e-06							1.00	-0.09
P2	0.000766449	4.6e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Ground Control Points

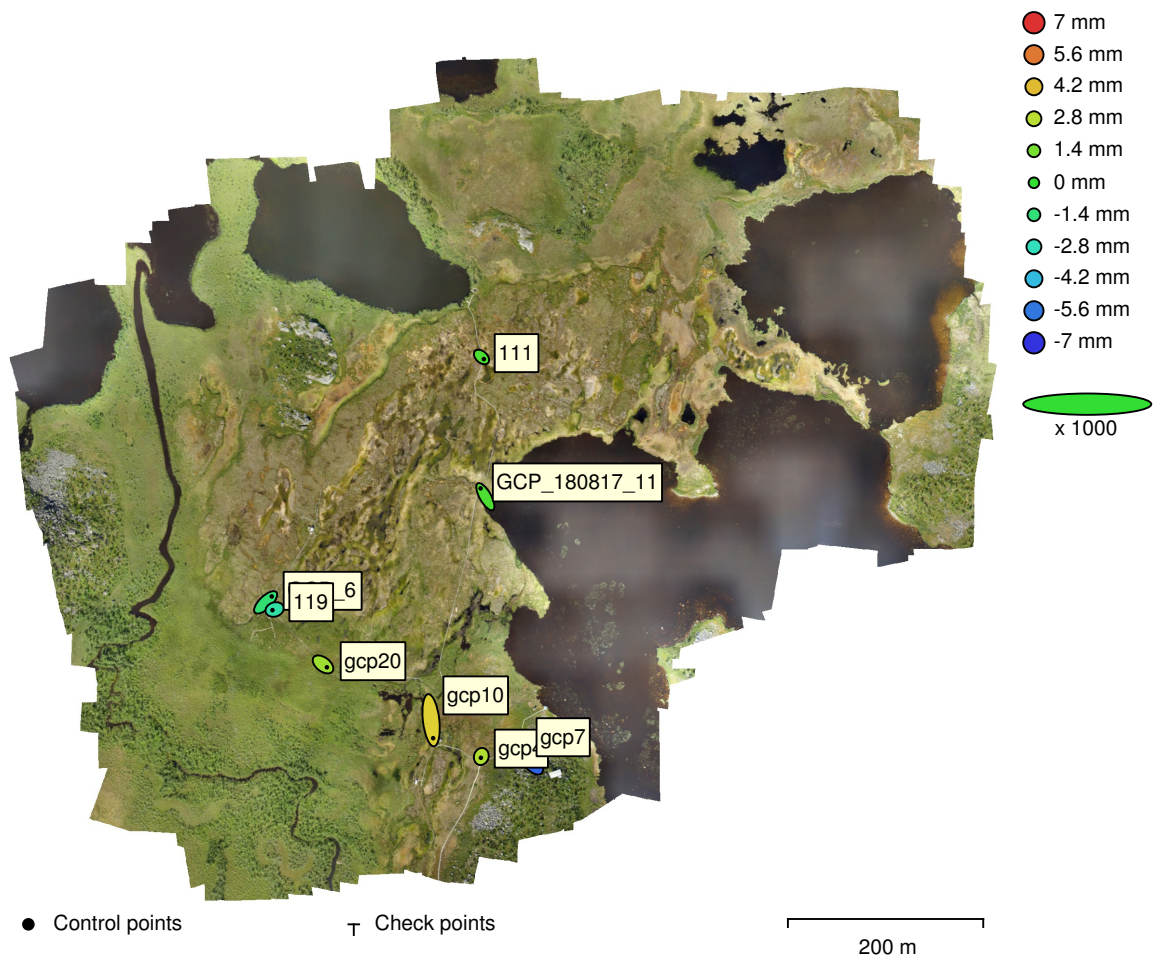


Fig. 3. GCP locations and error estimates.

Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.

Estimated GCP locations are marked with a dot or crossing.

Count	X error (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total (cm)
8	0.852479	1.70006	0.295059	1.90182	1.92457

Table 3. Control points RMSE.

X - Easting, Y - Northing, Z - Altitude.

Label	X error (cm)	Y error (cm)	Z error (cm)	Total (cm)	Image (pix)
GCP_6	1.25338	1.20709	-0.129923	1.74496	1.290 (5)
GCP_180817_11	-0.970811	1.70291	0.0544756	1.96096	1.305 (6)
gcp4	-0.0847477	-0.264094	0.258957	0.379456	2.193 (9)
gcp7	-1.43989	2.16816	-0.601325	2.67129	1.482 (8)
gcp10	0.413557	-3.66729	0.378208	3.70986	3.086 (6)
gcp20	0.78993	-0.588938	0.219211	1.0094	0.913 (8)
111	0.479786	-0.42481	0.0529544	0.64301	0.894 (9)
119	-0.441201	-0.133035	-0.232557	0.516178	0.620 (6)
Total	0.852479	1.70006	0.295059	1.92457	1.637

Table 4. Control points.
X - Easting, Y - Northing, Z - Altitude.

Digital Elevation Model

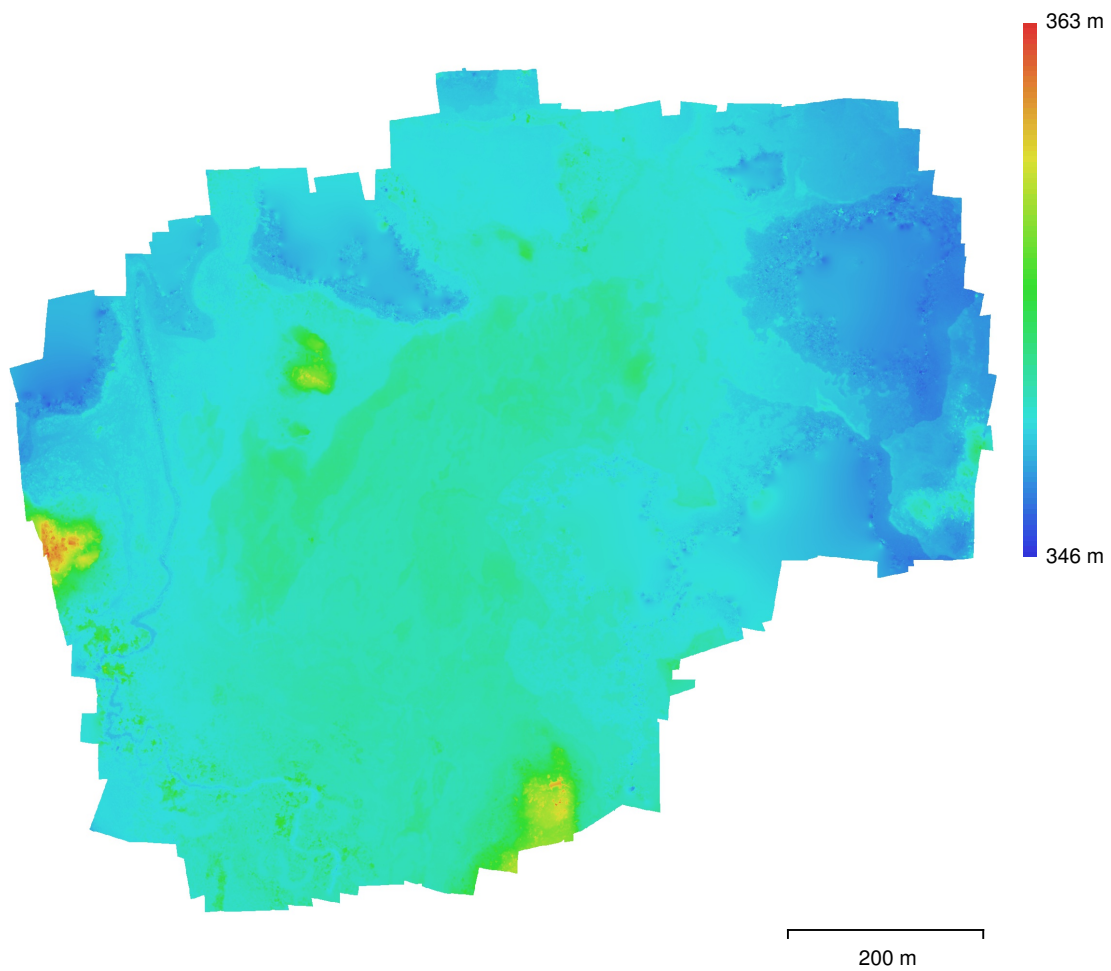


Fig. 4. Reconstructed digital elevation model.

Resolution: 5.42 cm/pix
Point density: 340 points/m²

Processing Parameters

General

Cameras	279
Aligned cameras	275
Markers	8
Coordinate system	SWEREF99 TM (EPSG::3006)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	84,014 of 89,150
RMS reprojection error	0.213803 (0.926322 pix)
Max reprojection error	1.0209 (20.7376 pix)
Mean key point size	4.38771 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.29607

Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	Source
Key point limit	100,000
Tie point limit	1,000
Guided image matching	No
Adaptive camera model fitting	No
Matching time	3 minutes 44 seconds
Matching memory usage	1.23 GB
Alignment time	21 seconds
Alignment memory usage	119.49 MB

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	0 seconds
Software version	1.6.2.10247

Depth Maps

Count	275
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Depth maps generation parameters

Quality	High
Filtering mode	Aggressive
Processing time	13 minutes 37 seconds
Software version	1.6.2.10247

Dense Point Cloud

Points	195,820,804
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	High
Filtering mode	Aggressive
Processing time	13 minutes 37 seconds

Dense cloud generation parameters

Processing time	13 minutes 42 seconds
Software version	1.6.2.10247

DEM

Size	30,147 x 26,956
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Coordinate system	SWEREF99 TM (EPSG::3006)
Reconstruction parameters	
Source data	Dense cloud
Interpolation	Enabled
Processing time	3 minutes 22 seconds
Software version	1.6.2.10247
Orthomosaic	
Size	37,255 x 31,839
Coordinate system	SWEREF99 TM (EPSG::3006)
Colors	3 bands, uint8
Reconstruction parameters	
Blending mode	Mosaic
Surface	DEM
Enable hole filling	Yes
Processing time	6 minutes 37 seconds
Software version	1.6.2.10247
System	
Software name	Agisoft Metashape Professional
Software version	1.6.2 build 10247
OS	Linux 64 bit
RAM	1007.58 GB
CPU	Intel(R) Xeon(R) CPU E5-2690 v4 @ 2.60GHz
GPU(s)	Tesla P100-PCIE-16GB