

Agisoft Metashape

**Processing Report
18 November 2019**



Survey Data

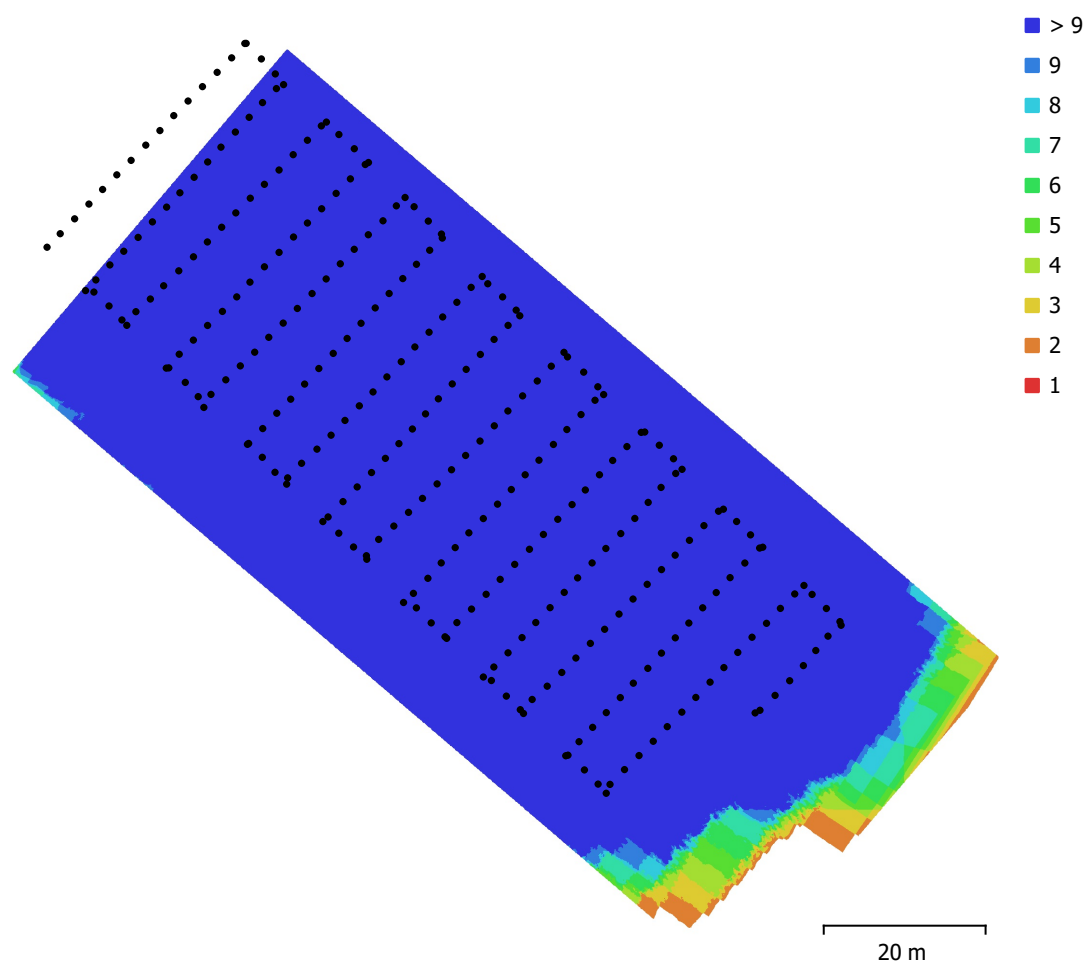


Fig. 1. Camera locations and image overlap.

Number of images:	287	Camera stations:	287
Flying altitude:	37.5 m	Tie points:	326,528
Ground resolution:	6.74 mm/pix	Projections:	888,164
Coverage area:	5.94e+003 m ²	Reprojection error:	0.539 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC6310S (8.8mm)	5472 x 3648	8.8 mm	2.41 x 2.41 μm	No

Table 1. Cameras.

Camera Calibration

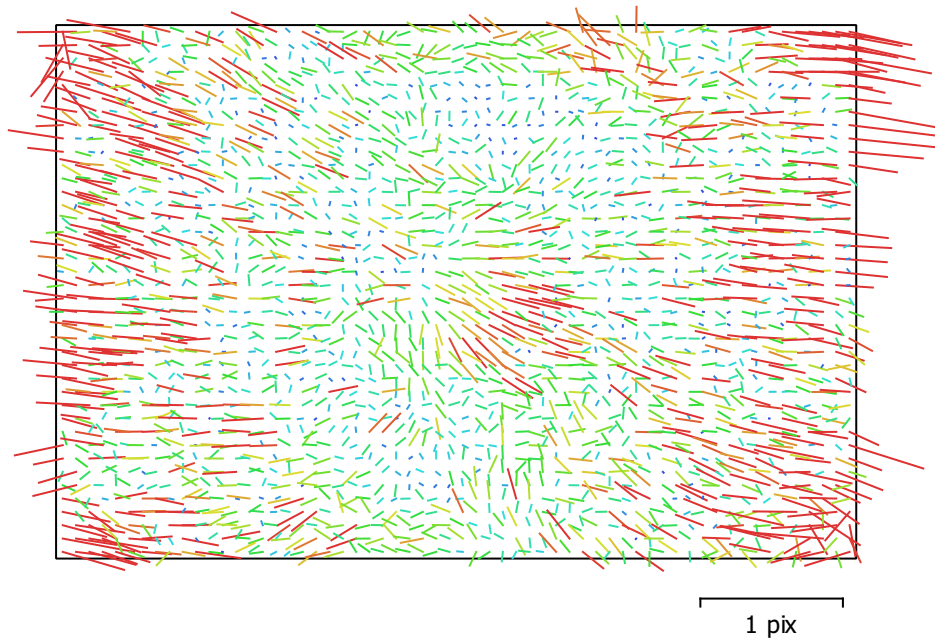


Fig. 2. Image residuals for FC6310S (8.8mm).

FC6310S (8.8mm)

287 images

Type
Frame

Resolution
5472 x 3648

Focal Length
8.8 mm

Pixel Size
2.41 x 2.41 μm

	Value	Error	F	Cx	Cy	B1	B2	K1	K2	K3	K4	P1	P2	P3	P4
F	5233.79	9.7	1.00	0.81	0.01	-0.01	0.44	0.53	-0.59	0.70	-0.75	0.35	0.45	0.33	-0.24
Cx	40.9255	0.24		1.00	0.09	-0.09	0.50	0.44	-0.49	0.57	-0.61	0.51	0.37	0.26	-0.19
Cy	7.86716	0.15			1.00	-0.28	-0.06	0.02	-0.01	0.01	-0.01	0.09	0.40	-0.23	0.15
B1	0.264438	0.01				1.00	-0.03	0.01	-0.02	0.01	-0.01	-0.03	-0.12	0.07	-0.05
B2	0.445829	0.011					1.00	0.24	-0.27	0.32	-0.34	0.24	0.19	0.16	-0.12
K1	0.0285432	0.00024						1.00	-0.96	0.91	-0.86	0.23	0.23	0.20	-0.14
K2	-0.182522	0.0023							1.00	-0.98	0.95	-0.21	-0.25	-0.21	0.16
K3	0.623726	0.0098								1.00	-0.99	0.25	0.31	0.25	-0.18
K4	-0.703728	0.014									1.00	-0.26	-0.33	-0.26	0.18
P1	0.000348792	2.8e-006										1.00	0.43	-0.18	0.18
P2	0.0033071	1.2e-005											1.00	-0.62	0.57
P3	2.79993	0.032												1.00	-0.95
P4	-2.03012	0.059													1.00

Table 2. Calibration coefficients and correlation matrix.

Ground Control Points

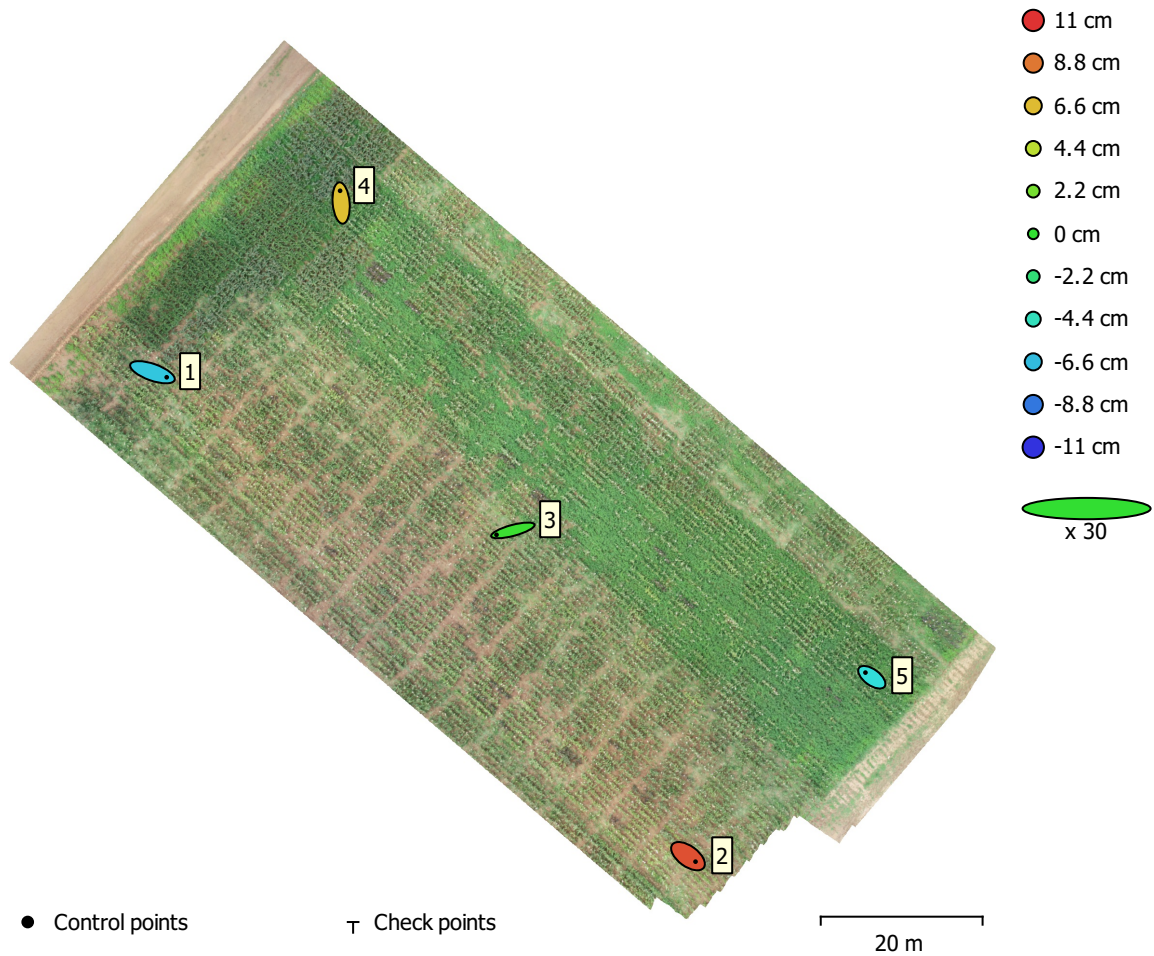


Fig. 3. GCP locations and error estimates.

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)
5	8.78509	5.77256	6.49968	10.5119	12.359

Table 3. Control points RMSE.

X - Longitude, Y - Latitude, Z - Altitude.

Label	X error (cm)	Y error (cm)	Z error (cm)	Total (cm)	Image (pix)
1	11.745	-4.14819	-6.24946	13.9359	0.179 (5)
2	6.1932	-4.5197	10.0495	12.6402	0.048 (2)
3	-13.4678	-3.61145	0.315121	13.9472	0.151 (10)
4	-0.863895	10.0671	6.47877	12.0028	0.084 (7)
5	-5.24028	3.81939	-5.3951	8.43537	0.402 (9)
Total	8.78509	5.77256	6.49968	12.359	0.240

Table 4. Control points.
X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

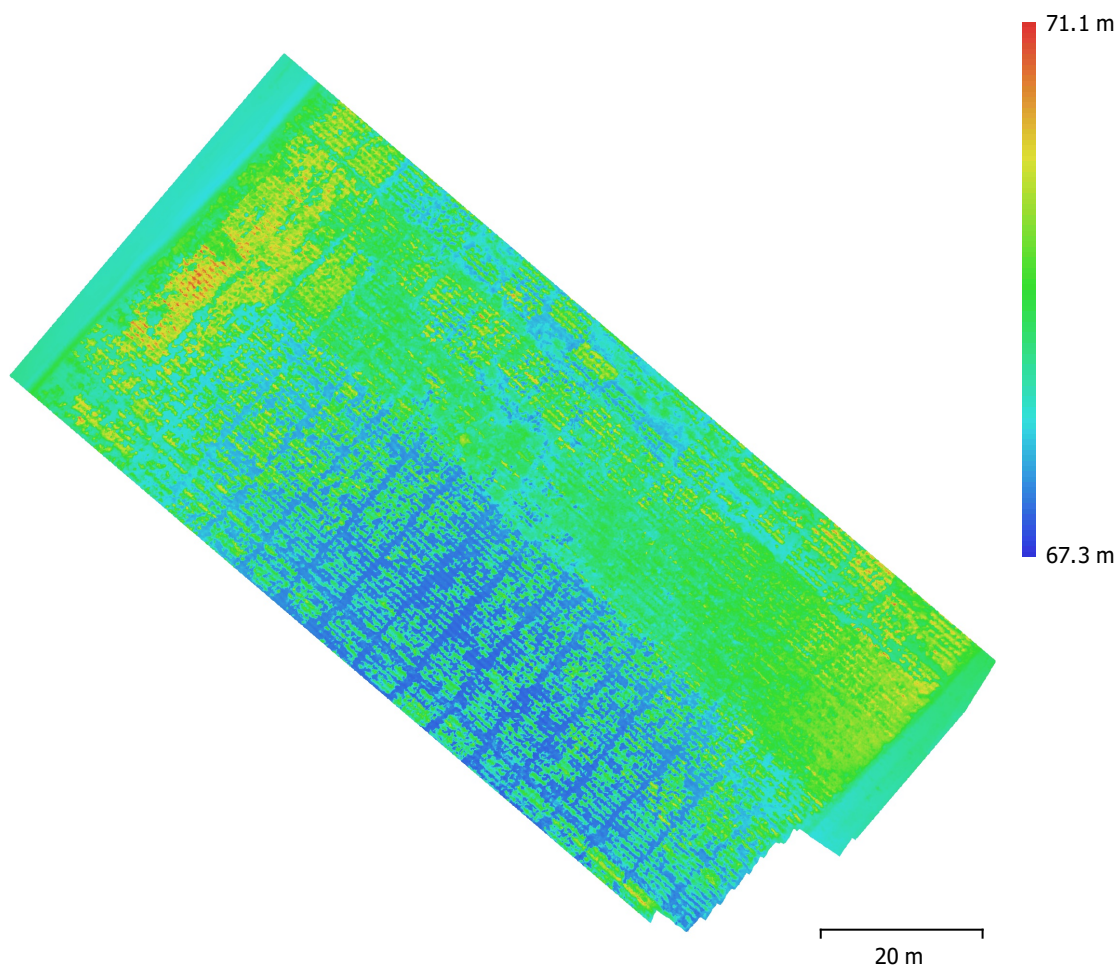


Fig. 4. Reconstructed digital elevation model.

Resolution: 1.35 cm/pix
Point density: 0.55 points/cm²

Processing Parameters

General

Cameras	287
Aligned cameras	287
Markers	5
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	326,528 of 343,139
RMS reprojection error	0.169503 (0.538693 pix)
Max reprojection error	3.34369 (12.5089 pix)
Mean key point size	3.35582 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	2.90366

Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	Yes
Key point limit	40,000
Tie point limit	4,000
Adaptive camera model fitting	Yes
Matching time	6 minutes 19 seconds
Alignment time	4 minutes 12 seconds

Optimization parameters

Parameters	f, b1, b2, cx, cy, k1-k4, p1-p4
Adaptive camera model fitting	No
Optimization time	36 seconds
Software version	1.5.3.8469

Dense Point Cloud

Points	133,712,045
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	High
Filtering mode	Mild
Processing time	1 hours 13 minutes

Dense cloud generation parameters

Processing time	2 hours 49 minutes
Software version	1.5.3.8469

DEM

Size	9,133 x 8,616
Coordinate system	WGS 84 (EPSG::4326)

Reconstruction parameters

Source data	Dense cloud
Interpolation	Enabled
Processing time	53 seconds
Software version	1.5.3.8469

Orthomosaic

Size	18,183 x 16,197
Coordinate system	WGS 84 (EPSG::4326)
Colors	3 bands, uint8

General**Reconstruction parameters**

Blending mode	Mosaic
Surface	DEM
Enable hole filling	Yes
Processing time	11 minutes 28 seconds
Software version	1.5.3.8469

Software

Version	1.5.3 build 8469
Platform	Windows 64