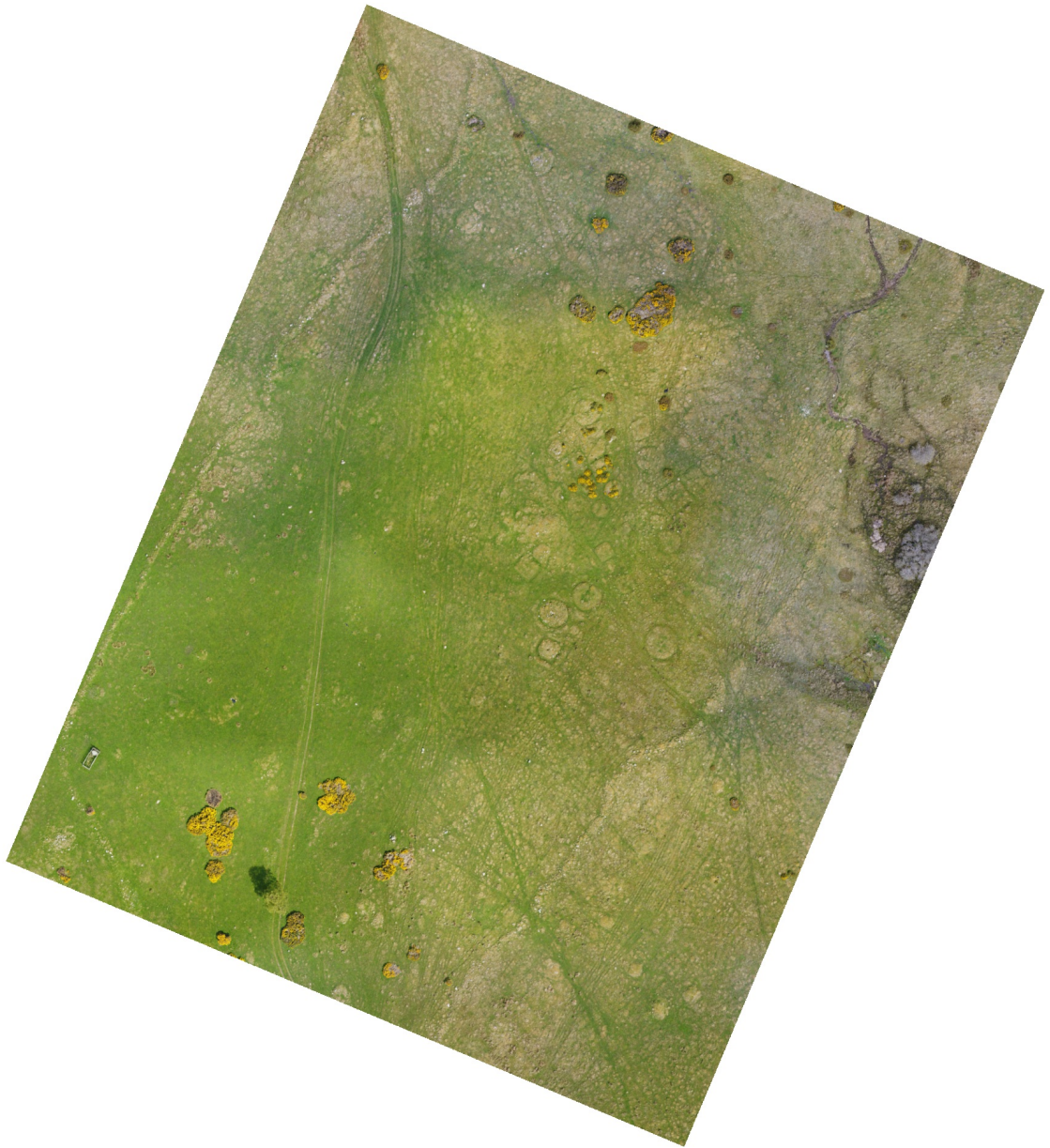


Agisoft PhotoScan

Processing Report, Garbeg
24 December 2020



Survey Data

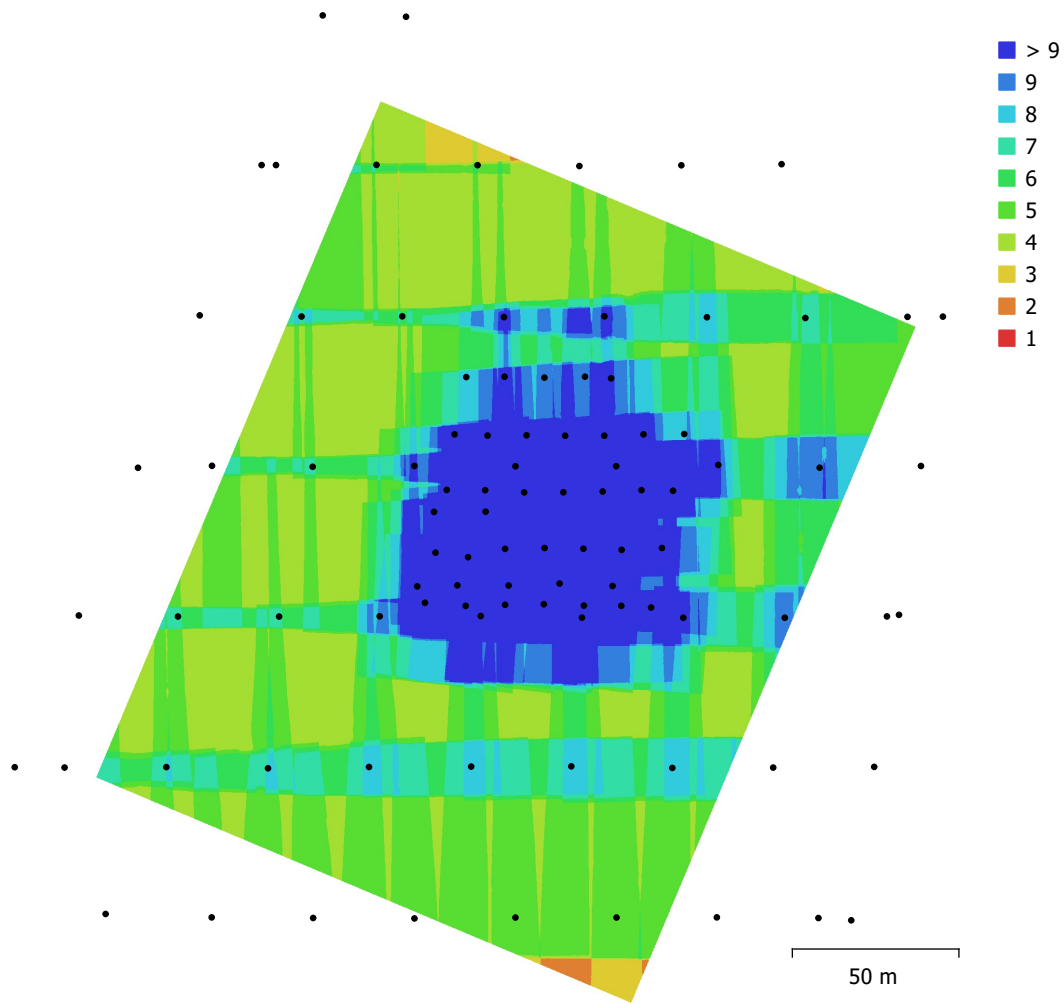


Fig. 1. Camera locations and image overlap.

Number of images:	96	Camera stations:	96
Flying altitude:	59.2 m	Tie points:	123,138
Ground resolution:	1.17 cm/pix	Projections:	363,683
Coverage area:	0.0383 km ²	Reprojection error:	0.507 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC6540 (16mm)	6016 x 4008	16 mm	3.99 x 3.99 μm	No

Table 1. Cameras.

Camera Calibration

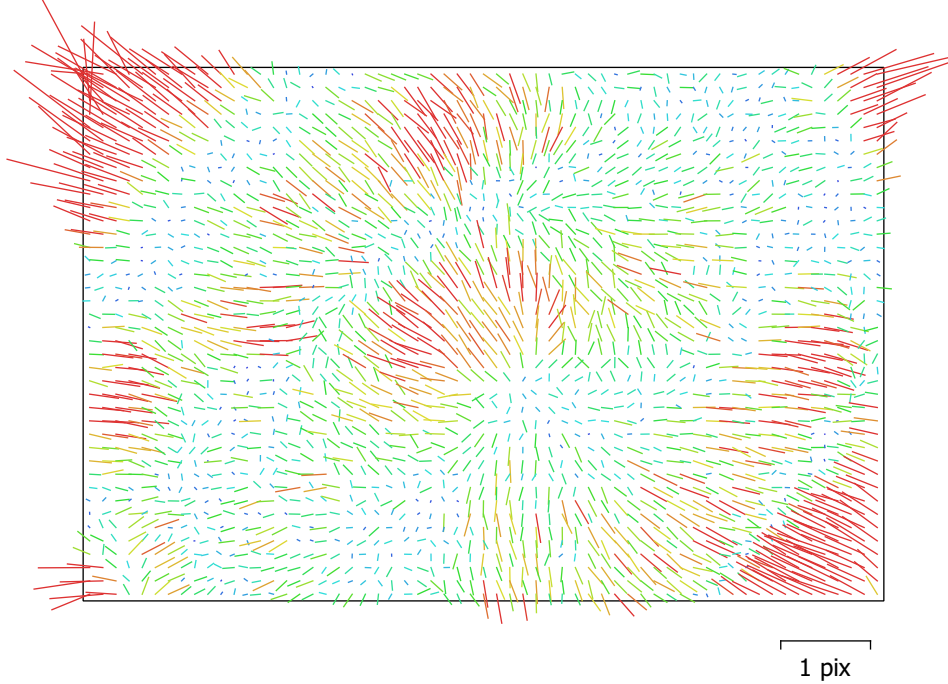


Fig. 2. Image residuals for FC6540 (16mm).

FC6540 (16mm)

96 images

Type
Frame

Resolution
6016 x 4008

Focal Length
16 mm

Pixel Size
3.99 x 3.99 μm

	Value	Error	B1	B2	K1	K2	K3	P1	P2
F	4009.85								
B1	5.11233	0.11	1.00	0.01	0.01	-0.02	0.03	0.05	0.16
B2	-2.55332	0.11		1.00	0.02	0.00	-0.00	-0.19	0.04
K1	0.00312108	4.2e-05			1.00	-0.86	0.82	-0.01	-0.03
K2	-0.0202746	0.00011				1.00	-0.98	0.00	-0.01
K3	0.0190511	9.7e-05					1.00	0.00	0.01
P1	-0.000391235	8e-06						1.00	0.02
P2	-0.000350902	6.8e-06							1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

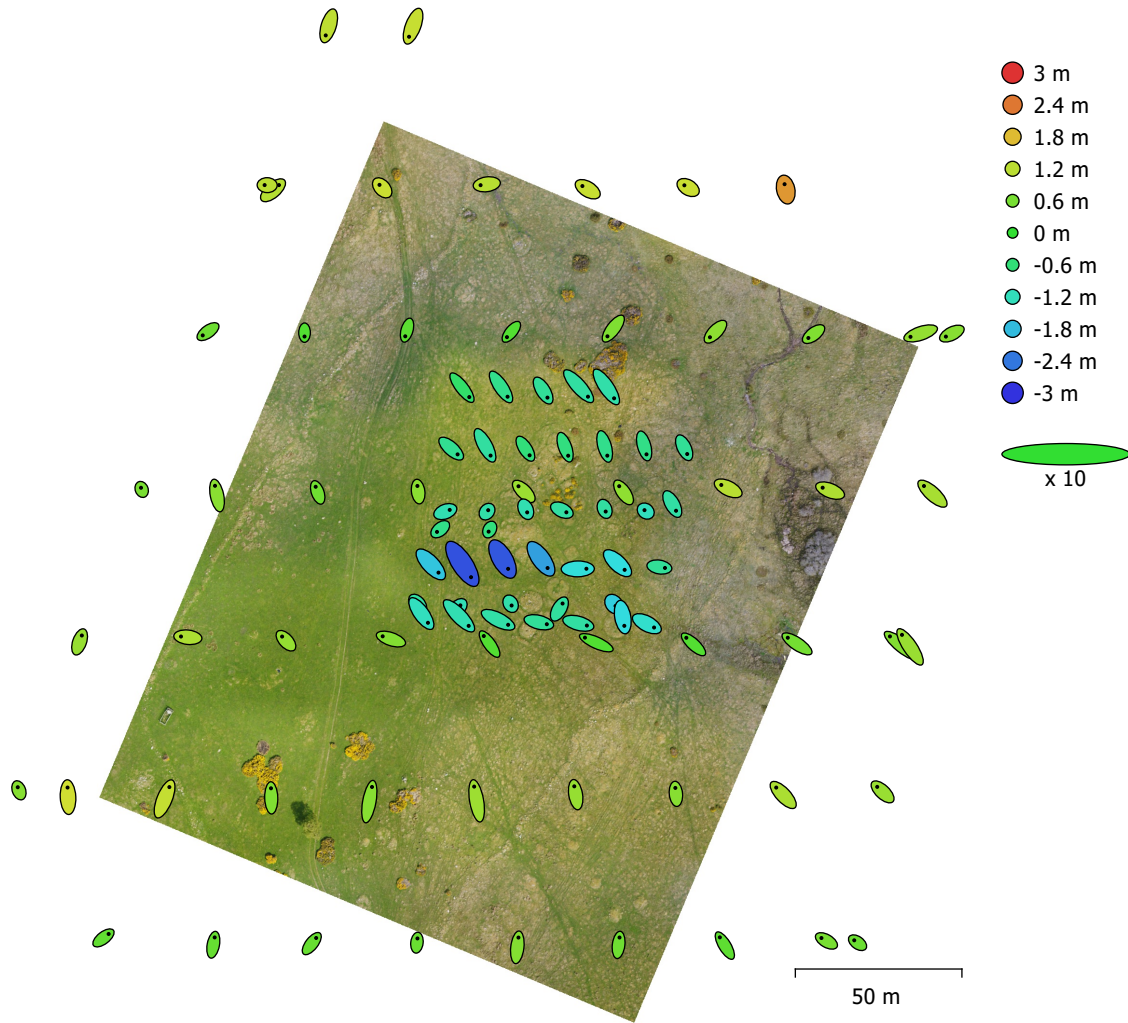


Fig. 3. Camera locations and error estimates.

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

Estimated camera locations are marked with a black dot.

X error (m)	Y error (m)	Z error (m)	XY error (m)	Total error (m)
0.324631	0.406604	1.04179	0.5203	1.16449

Table 3. Average camera location error.

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

Digital Elevation Model

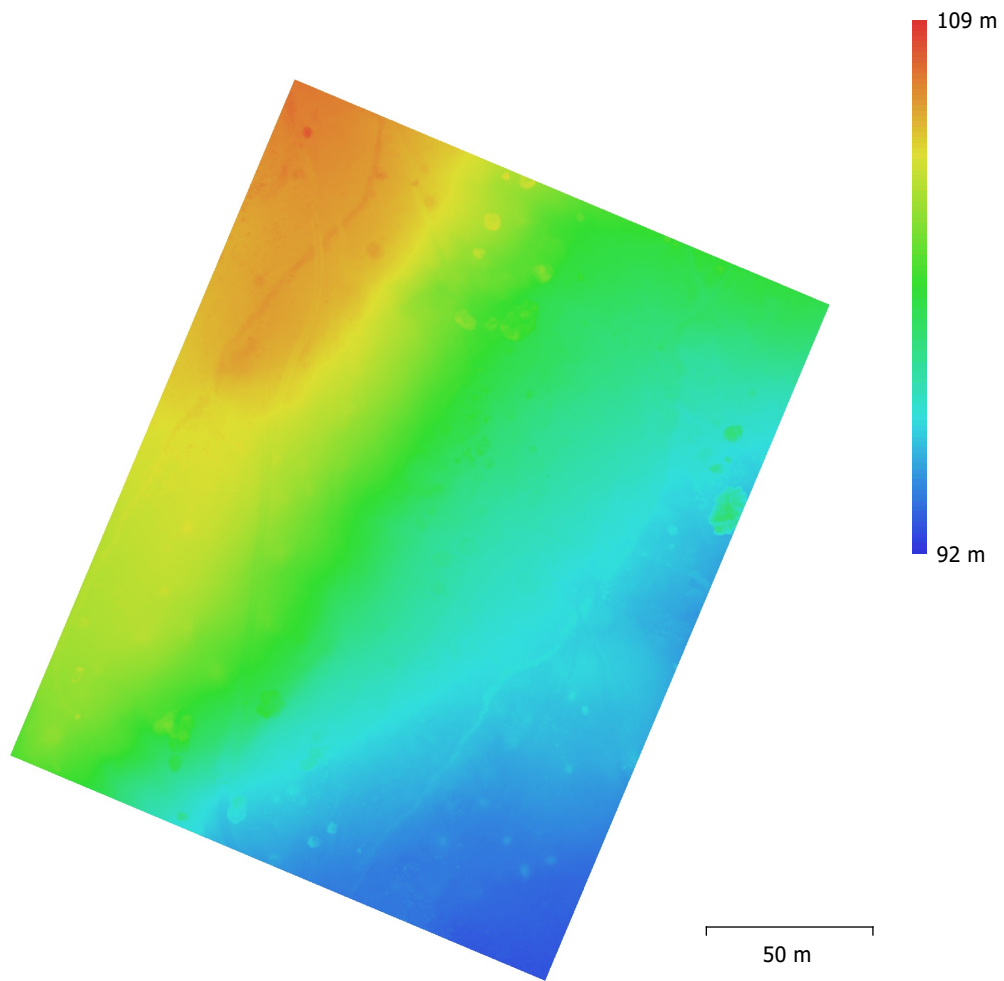


Fig. 4. Reconstructed digital elevation model.

Resolution: 4.67 cm/pix
Point density: 458 points/m²

Processing Parameters

General

Cameras	96
Aligned cameras	96
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	123,138 of 129,779
RMS reprojection error	0.182818 (0.506874 pix)
Max reprojection error	0.622164 (9.43523 pix)
Mean key point size	2.76642 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.03309

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	1 minutes 39 seconds
Alignment time	27 seconds

Optimization parameters

Parameters	b1, b2, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	1 seconds

Depth Maps

Count	94
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Depth maps generation parameters

Quality	Medium
Filtering mode	Aggressive
Processing time	4 minutes 49 seconds

Dense Point Cloud

Points	17,906,229
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	Medium
Filtering mode	Aggressive
Processing time	4 minutes 49 seconds

Dense cloud generation parameters

Processing time	4 minutes 7 seconds
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Model

Faces	1,778,799
Vertices	890,198
Vertex colors	3 bands, uint8
Texture	8,192 x 8,192, 4 bands, uint8

Depth maps generation parameters

Quality	Medium
Filtering mode	Aggressive

Reconstruction parameters

Surface type	Height field
Source data	Dense cloud
Interpolation	Enabled
Processing time	4 minutes 37 seconds
Texturing parameters	
Mapping mode	Orthophoto
Blending mode	Mosaic
Texture size	8,192
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	8 seconds
Blending time	3 minutes 45 seconds
DEM	
Size	5,373 x 5,847
Coordinate system	OSGB 1936 / British National Grid (EPSG::27700)
Reconstruction parameters	
Source data	Dense cloud
Interpolation	Enabled
Processing time	25 seconds
Software version	1.6.3.10732
Orthomosaic	
Size	21,043 x 23,151
Coordinate system	WGS 84 (EPSG::4326)
Colors	3 bands, uint8
Reconstruction parameters	
Blending mode	Mosaic
Surface	DEM
Enable hole filling	Yes
Processing time	3 minutes 15 seconds
System	
Software name	Agisoft Metashape Professional
Software version	1.6.3 build 10732
OS	Windows 64 bit
RAM	190.63 GB
CPU	Intel(R) Xeon(R) Silver 4116 CPU @ 2.10GHz
GPU(s)	Quadro P4000