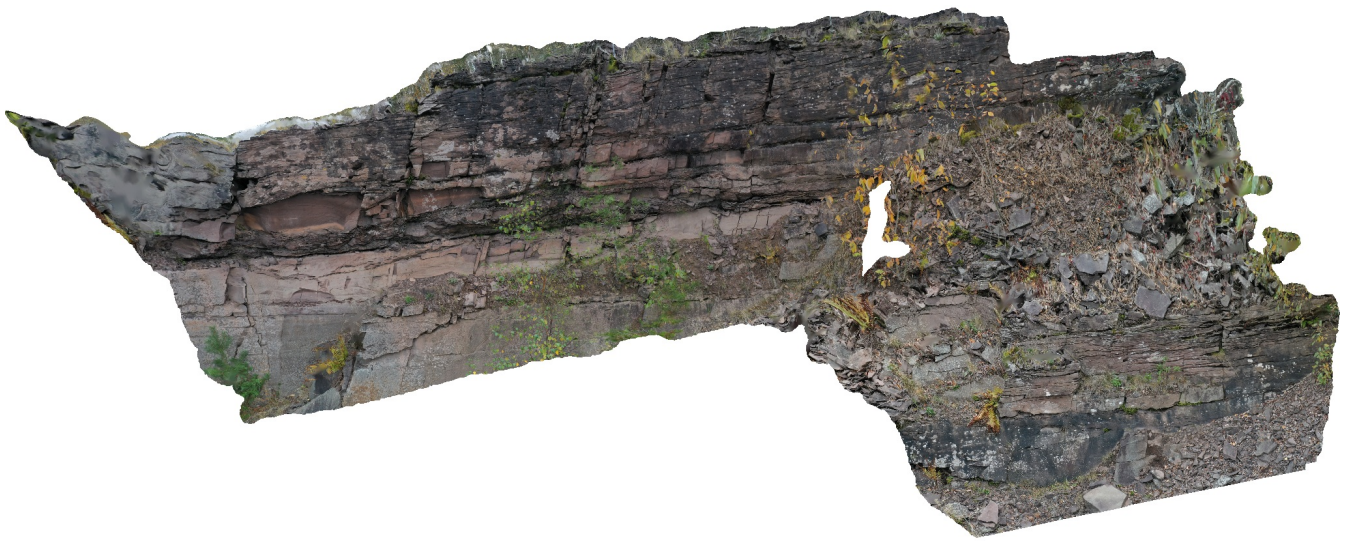


# Outcrop 4

Processing Report

19 April 2022



# Survey Data



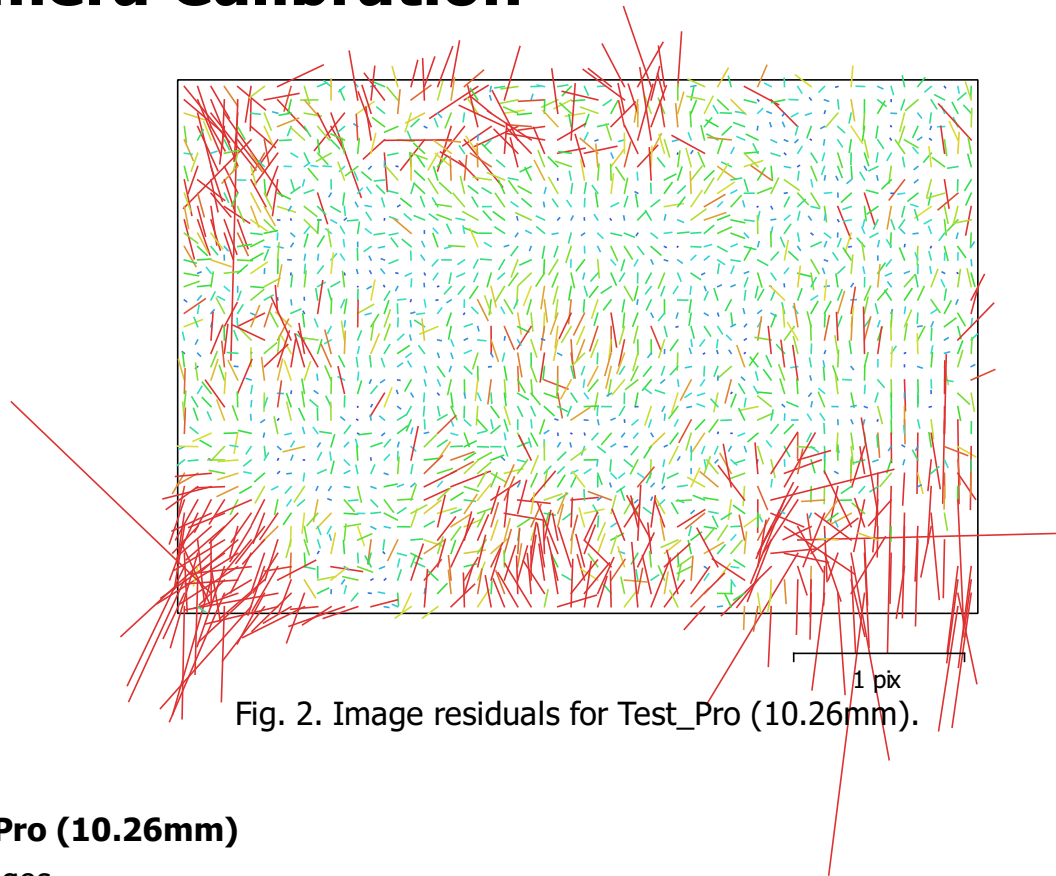
Fig. 1. Camera locations and image overlap.

Number of images:	10	Camera stations:	10
Flying altitude:	6.35 m	Tie points:	21,549
Ground resolution:	1.39 mm/pix	Projections:	52,332
Coverage area:	111 m <sup>2</sup>	Reprojection error:	0.377 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
Test_Pro (10.26mm)	5472 x 3648	10.26 mm	2.41 x 2.41 μm	No

Table 1. Cameras.

# Camera Calibration



## Test\_Pro (10.26mm)

10 images

Type  
Frame

Resolution  
**5472 x 3648**

Focal Length  
**10.26 mm**

Pixel Size  
**2.41 x 2.41  $\mu\text{m}$**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
<b>F</b>	<b>4358.28</b>	0.36	1.00	0.12	0.26	0.09	0.05	-0.04	0.09	0.26
<b>Cx</b>	<b>-29.9666</b>	0.98		1.00	-0.24	-0.00	-0.00	0.00	0.98	-0.23
<b>Cy</b>	<b>-31.199</b>	0.33			1.00	0.11	0.06	-0.08	-0.22	0.83
<b>K1</b>	<b>-0.0029861</b>	0.00013				1.00	-0.93	0.88	-0.01	0.13
<b>K2</b>	<b>0.0245139</b>	0.00057					1.00	-0.98	0.01	0.07
<b>K3</b>	<b>-0.0320312</b>	0.00075						1.00	-0.01	-0.10
<b>P1</b>	<b>-0.0014425</b>	5.5e-05							1.00	-0.22
<b>P2</b>	<b>-0.00207647</b>	1.6e-05								1.00

Table 2. Calibration coefficients and correlation matrix.

# Camera Locations

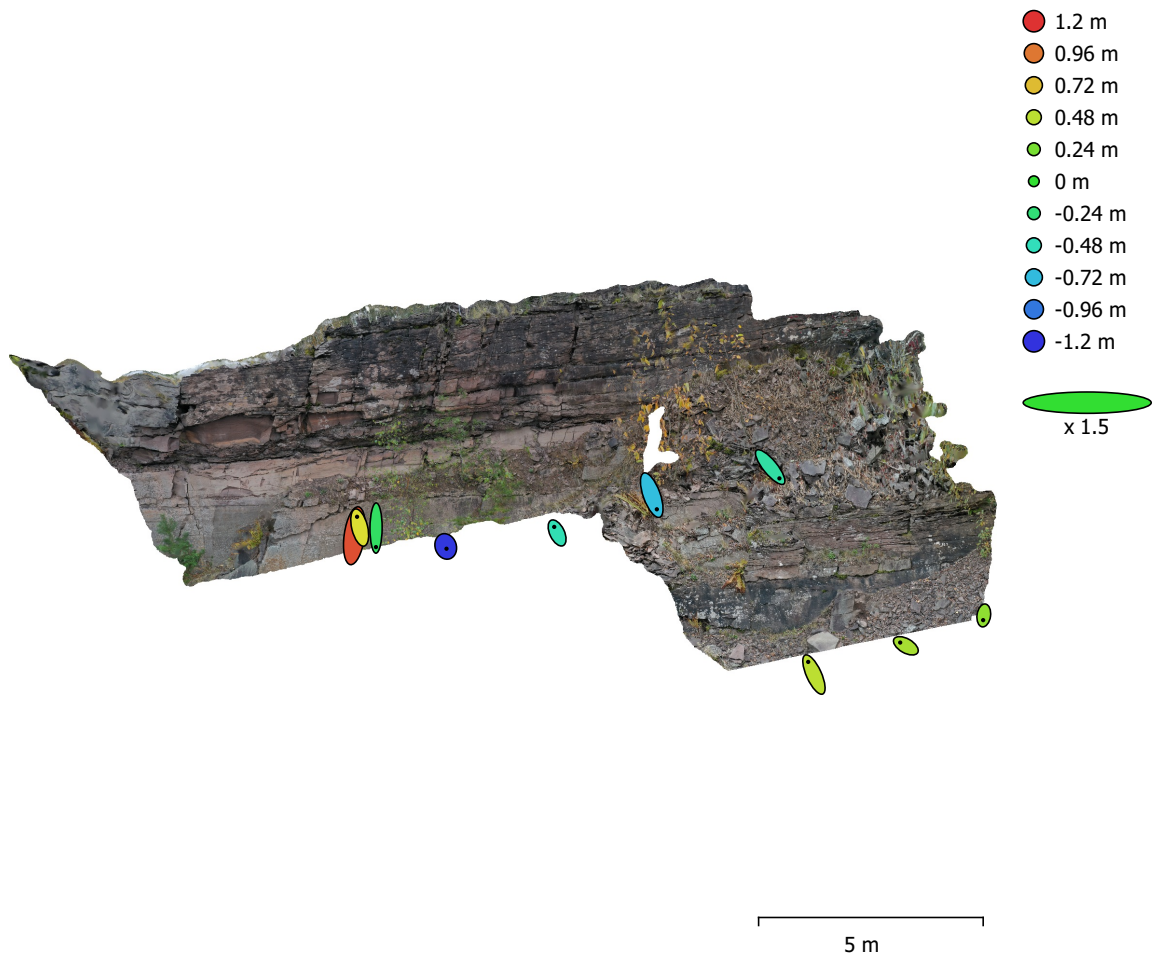


Fig. 3. Camera locations and error estimates.

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 (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total error (cm)
13.2478	35.0308	65.9365	37.4521	75.8306

Table 3. Average camera location error.  
X - Longitude, Y - Latitude, Z - Altitude.

# Digital Elevation Model

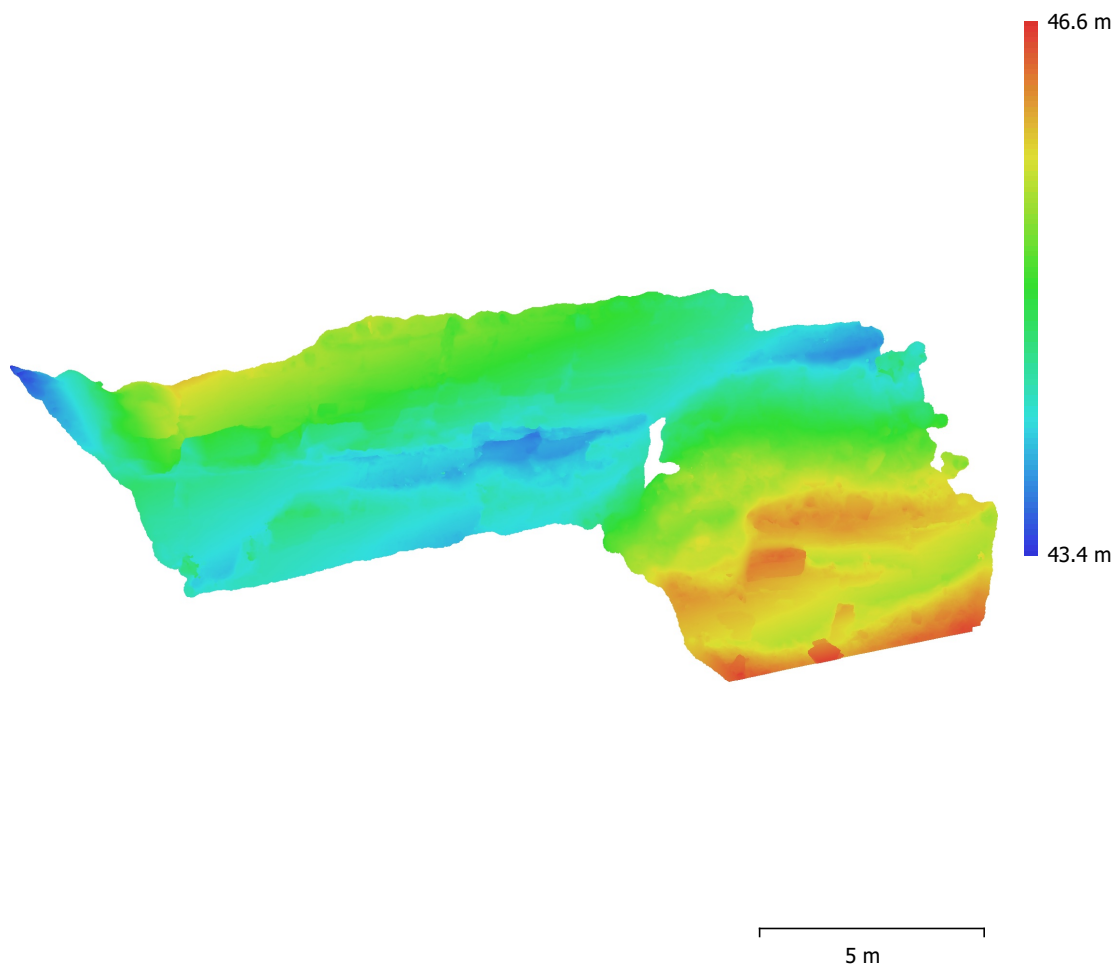


Fig. 4. Reconstructed digital elevation model.

Resolution: 5.54 mm/pix  
Point density: 3.26 points/cm<sup>2</sup>

# Processing Parameters

## General

Cameras	10
Aligned cameras	10
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	21,549 of 25,743
RMS reprojection error	0.0885936 (0.377472 pix)
Max reprojection error	0.267197 (5.98901 pix)
Mean key point size	4.00835 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	2.424

## Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	Source
Key point limit	40,000
Key point limit per Mpx	1,000
Tie point limit	0
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	No
Matching time	10 seconds
Matching memory usage	250.35 MB
Alignment time	5 seconds
Alignment memory usage	21.15 MB
Date created	2021:11:25 14:15:11
Software version	1.7.3.12426
File size	1.52 MB

## Depth Maps

Count	10
<b>Depth maps generation parameters</b>	
Quality	Medium
Filtering mode	Mild
Processing time	20 seconds
File size	15.55 MB

## Dense Point Cloud

Points	3,951,779
Point colors	3 bands, uint8

## Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Processing time	20 seconds

## Dense cloud generation parameters

Processing time	10 seconds
Date created	2021:11:25 14:18:09
Software version	1.7.3.12426
File size	51.56 MB

## Model

Faces	250,870
Vertices	127,281
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096, 4 bands, uint8
<b>Depth maps generation parameters</b>	
Quality	Medium
Filtering mode	Mild
Processing time	20 seconds
<b>Reconstruction parameters</b>	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	2 minutes 54 seconds
Memory usage	2.26 GB
<b>Texturing parameters</b>	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	3 minutes 11 seconds
UV mapping memory usage	169.09 MB
Blending time	30 seconds
Blending memory usage	4.18 GB
Date created	2021:11:25 14:19:09
Software version	1.7.3.12426
File size	40.39 MB
<b>System</b>	
Software name	Agisoft Metashape Professional
Software version	1.7.3 build 12426
OS	Windows 64 bit
RAM	63.91 GB
CPU	Intel(R) Xeon(R) CPU E5-2643 v3 @ 3.40GHz
GPU(s)	Quadro M4000