Metadata Report

Note: This is a suggested template for descriptive metadata for datasets uploaded to the OpenTopography Community Dataspace. Information below is optional, but please fill in fields as appropriate. The goal of this document is to enable data reuse, so please provide as much information as possible.

Project Name Hebron Fault, Namibia, Feb 2017

Summary

Raster DEM of the Hebron fault scarp in south-western Namibia. Pan-sharpened (0.33 m pixel resolution) Worldview-3 stereo imagery was processed using the ERDAS IMAGINE 2018 Photogrammetry suite. A minimum of 5 ground control points (GCPs) were collected between 9/11/2018 and 11/11/2018 using two Leica 1200 GNSS GPSs in a base-rover configuration.

Processing was carried out by Guy Salomon (University of Cape Town, now at the University of Victoria) and Julian Smit (University of Cape Town) supported by Alastair Sloan (University of Cape Town) and funded by the National Research Foundation of South Africa (NRF) grant numbers; 110780 and 118831.

The Imagery was purchased using a small grant from COMET (Centre for Observation and Modelling of Earthquakes, Volcanoes and Tectonics) funded by the NERC.

Personnel

PI(s)

Alastair Sloan[1]

Field staff

Robert Muir[1]
Victoria Stevens[1]

- assisted with the collection of the GCPs

Additional team members

Julian Smit[1]

- assisted with the image processing and DEM generation.

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Site Information

- **Site description**
- **Site objective**
- **Site location (GPS cords and/or map)**

Location of Ground Control Points

NAME	POINT TYPE	DATE	LATITUDE	LONGITUDE	HEIGHT
BASE	Control	11/9/18 8:59	-24.61683585	15.98691628	964.6949
GCP3	Measured	11/9/18 9:43	-24.60099993	15.98765473	978.6362
GCP10	Measured	11/9/18 10:34	-24.59338854	15.98627096	996.8895
BASE1	Control	11/9/18 12:40	-24.61683585	15.98691628	964.6949
GCP9	Measured	11/9/18 13:09	-24.61254243	15.95267064	892.0382
AGCP11	Measured	11/9/18 14:43	-24.48542483	15.82871176	826.7447
AGCP13	Measured	11/9/18 15:41	-24.51332341	15.80717894	816.9627
GCP5	Measured	11/9/18 17:42	-24.65621125	15.98787391	932.8272
BASE2	Control	11/10/18 8:05	-24.61683585	15.98691628	964.6949
GCP8	Measured	11/10/18 8:46	-24.51464998	15.91714119	902.8108
GCP16	Measured	11/10/18 10:32	-24.52034664	15.83777449	836.5312
GCP15	Measured	11/10/18 12:17	-24.51767651	15.86197528	861.1671
GCP14	Measured	11/10/18 13:10	-24.50379704	15.85379159	850.3033
GCP12	Measured	11/10/18 14:06	-24.48943235	15.81179133	819.5203
AGCPX	Measured	11/10/18 16:00	-24.56244723	15.91702439	879.8125
AGCP7	Measured	11/10/18 16:57	-24.58470943	15.9203831	867.2478
AGCPX2	Measured	11/10/18 18:10	-24.72197633	16.05984855	1050.9484
BASE3	Control	11/11/18 7:19	-24.61683585	15.98691628	964.6949
GCP11	Measured	11/11/18 8:27	-24.55041739	15.92531657	897.9711
GCP1	Measured	11/11/18 14:53	-24.78299245	16.10846029	1242.891
GCP2	Measured	11/11/18 15:55	-24.74897565	16.11798849	1200.5084
AGCP2	Measured	11/11/18 17:10	-24.70896521	16.08619841	1079.2521

- **Site conditions**
- **Date/time spent at each site**

40 minutes after establishing a good connection.

Survey Results

- ### Equipment used

2 x Leica 1200 GNSS GPSs

- ### GPS solutions

- ### Errors

- ### Alignments

- ### Collection methods

The ground control points were collected using the GPSs in a base - rover configuration, with 40 minutes spent at each rover site after connection to the satellites was established to ensure horizontal and vertical accuracies of 10 mm. The GCPs were located near the edges of the DEM scenes,

Products

- ### Date of dataset collection:

The imagery was collected on 17 February 2017

- ### Coordinate system of datasets

WGS 84 UTM Zone 33S

- ### Spatial resolution

Pixel resolution = 0.5 m

- ### Horizontal Accuracy

0.23 m (Hu et al, 2016)

- ### Vertical Accuracy

0.27 m (Hu et al, 2016)

- ### Data formats

Geotiff

- ### Data processing methods

ERDAS Imagine Photogrammetry Suite was used to process the data, specifically the Automatic Terrain Extraction (eATE) Tool. The DEM was generated using pan-sharpened WorldView-3 stereo-imagery (0.33 m resolution) with a minimum of 50 tie points per scene,

and a minimum of 5 ground control points (located near the corners and center of each scene). The imagery was divided into three unique regions, each of which was used to produce a DEM. The three DEMs were then merged using the mosaic tool in ArcGIS.

Misc Notes

Hu, F., Gao, X.M., Li, G.Y. and Li, M., 2016. DEM extraction from Worldview-3 stereo-images and accuracy evaluation. *International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences*, *41*.