

Metadata Report

Project Name

2019 Ridgecrest, CA M7.1 Earthquake structure from motion data (off base)

Summary

Topographic model of the M 7.1 earthquake in Ridgecrest, California produced from ~4,500 UAV derived aerial photographs. This model shows the surface deformation on the length of the publicly accessible rupture, south of the China Lake Naval Air Base. These images document the fragile features of the right-lateral rupture that are quickly degraded. The purpose of collection was to preserve a record of these features and provide a detailed fracture map, which is now publicly available (Pierce et al., 2020). <https://doi.org/10.1785/0220190289>

Personnel

- PI(s) - Richard Khoeler
- Field staff – Ian Pierce, Alana Williams, Colin Chupik
- Additional team members - Jayne Bormann, Sinan Akciz, Chelsea Scott, Grace Carlson, Simone Bello

Site Information

- Site conditions

Bright, sunny, 105-110F

- Date/time spent at each site

Initial post-earthquake response on July 7– 10, 2019 followed by a second survey on September 10-14, 2020.

Survey Results

- Equipment used

Photos collected by Phantom 4 UAV



- GPS solutions

Georeferenced using Google Earth imagery, (Trimble R10 GPS coordinates are coming soon)

Products

- Date of dataset collection

July 7, 2019 & September 10, 2019

- Coordinate system of datasets

WGS 84 4326

- Horizontal Accuracy

1.89211 m error

- Vertical Accuracy

4.08669 m error

- Data formats: LAS

- Data processing methods

Point cloud and imagery products processed using Agisoft Photoscan

Misc Notes

Point density (pts/m²): 327

Raster resolution: 5.53 cm/pix

Avg flying altitude: 37.7 m