Data Collection & Product Report for 2018 Seed Project: A Bird's Eye View of Lava Domes: Airborne Laser Swath Mapping of Lassen Volcanic Center, Lassen Volcanic National Park, CA

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Data Collection Summary:

Collection Dates, Flights:	September 21, 2019 (DOY 264) comprising one (1) flight
Aircraft, Equipment:	Piper PA-31 Navajo Chieftain (N640WA) with Optech Titan Lidar (14SEN340)
Flight Plan Parameters:	Flying Height: 500 m AGL, Speed: 160 kt, Overlap: 50%
Equipment Parameters:	PRF: 75 kHz, Scan Angle: ± 25°, Scan Frequency: 32 Hz
Imagery Flight Plan Parameters:	N/A
Collected Area:	54.8 km²

GNSS Reference Station Summary:

Station Name	Operating Agency	Control Coordinates (NAD83(2011) epoch 2010.00/Ellipsoid)
BRAN	NCALM	40°30'31.18172" N, 122°18'01.73520" W, 125.505 m
P669	UNAVCO	40°29'31.63452" N, 121°36'13.57600" W, 1843.409 m
P671	UNAVCO	40°24'32.89394" N, 121°25'41.49505" W, 1959.312 m

Data Processing Summary:

Scan Angle Cutoff:	± 1°
Intensity Normalization:	500 m
Data Adjustments:	Line-by-line/channel-by-channel roll orientation and elevation correction, project elevation shift of -28.6 cm
Ground Classification:	One iteration of moderate ground determination, one iteration of aggressive ground determination, manual classification of misclassified ground, vegetation-free peak classified as exclusively ground to preserve structure
Elevation Model Generation:	First-return calculated from average Z TIN model, bare-earth calculated from Kriging

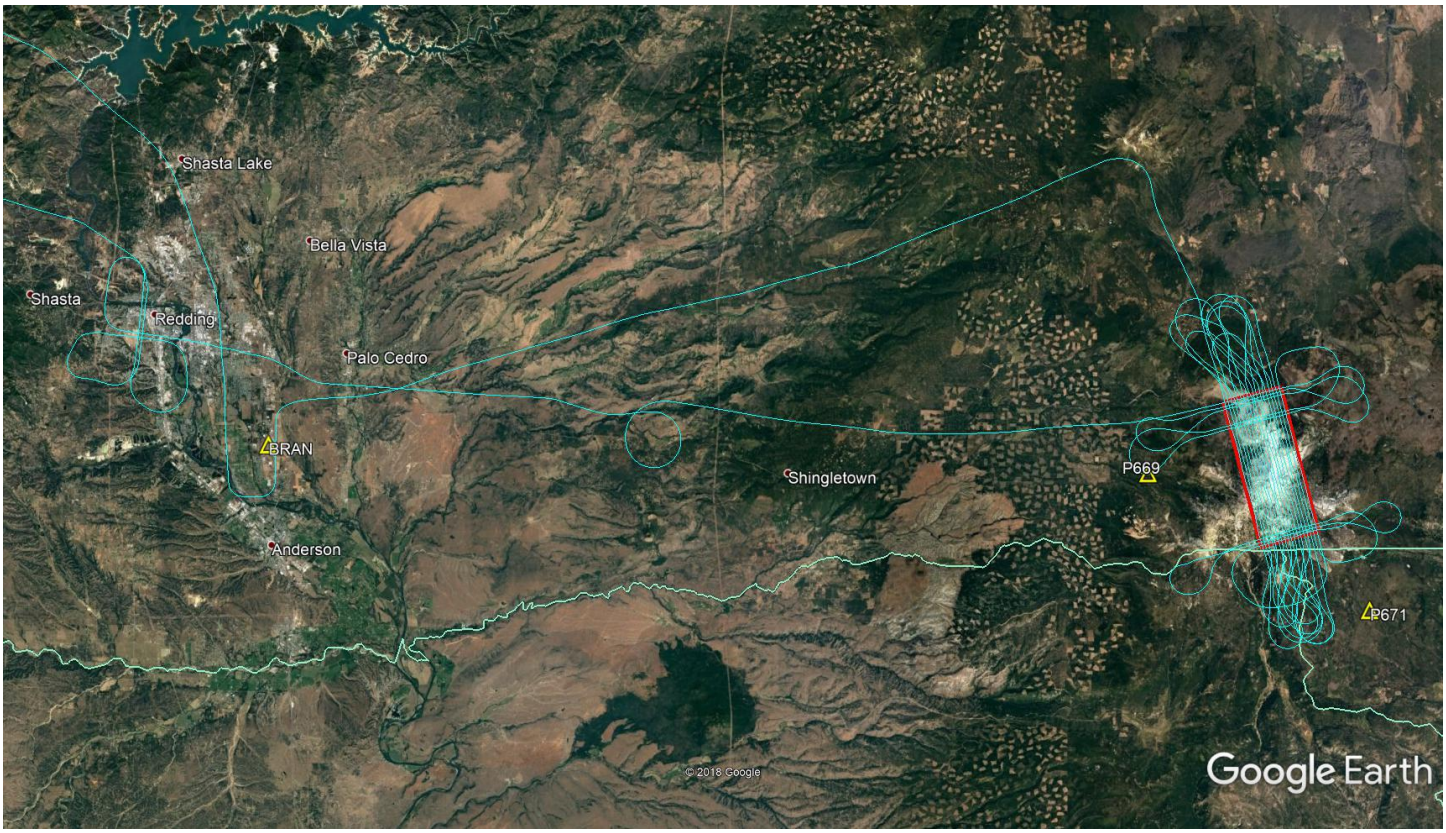
Data Accuracy Summary

Strip-to-Strip Average	0.067 m
GCP Residual RMS	N/A

Data Product Summary:

Horizontal / Vertical Datum:	NAD83(2011) epoch 2010.00 / Ellipsoid
Projection / Units:	UTM Zone 10N / meters
Point Cloud Tiles:	500-m × 500-m tiles in LAS format (Version 1.4) with non-ground (1), ground (2), low point (7), and high point (18) returns
Bare-Earth Elevation Model:	GeoTIFF @ 1-m resolution from classified ground points
First-Surface Elevation Model:	GeoTIFF @ 1-m resolution with canopy and buildings included

Area of Interest:



Location of survey polygon, aircraft trajectory, and GNSS reference stations

The requested survey area consisted of one polygon located over Lassen Peak, east of Redding, CA. The polygon enclosed approximately 39.7 km^2 (15.3 mi^2).

Notes:

No visible imagery was collected over the site due to an instrument malfunction.