



**Data Collection & Product Report for 2018 Seed Project:
Interpreting Fluvial Processes from the Ancient Rock Record:
Linking Geomorphology to Stratigraphy Using 3-D Outcrops of
Exhumed Channel-Belt Deposits, Eastern Utah, USA**

PI: Cole M. Speed (cspeed7@utexas.edu)
University of Texas, Department of Geological Sciences
2275 Speedway Stop, C9000, Austin, TX 78712

Data Collection Summary:

Collection Dates, Flights:	September 14–15, 2019 (DOY 257–258) comprising two (2) flights
Aircraft, Equipment:	Piper PA-31 Navajo Chieftain (N640WA) with Optech Titan Lidar (14SEN340)
Flight Plan Parameters:	Flying Height: 800 m AGL, Speed: 140 kt, Overlap: 50%
Equipment Parameters:	PRF: 100 kHz, Scan Angle: $\pm 30^\circ$, Scan Frequency: 26 Hz
Imagery Flight Plan Parameters:	N/A
Collected Area:	58.2 km ²

GNSS Reference Station Summary:

Station Name	Operating Agency	Control Coordinates (NAD83(2011) epoch 2010.00/Ellipsoid)
BRAN	NCALM	38°45'36.31133" N, 109°44'38.75100" W, 1374.558 m
BRAN_2	NCALM	38°45'36.30450" N, 109°44'38.73210" W, 1374.511 m
CAST	UNAVCO	39°11'27.66098" N, 110°40'38.28115" W, 2245.893 m

Data Processing Summary:

Scan Angle Cutoff:	$\pm 1^\circ$
Intensity Normalization:	800 m
Data Adjustments:	Line-by-line/channel-by-channel roll orientation and elevation correction, project elevation shift of -28.7 cm
Ground Classification:	N/A
Elevation Model Generation:	Calculated from average Z TIN model

Data Accuracy Summary

Strip-to-Strip Average	0.027 m
GCP Residual RMS	N/A

Data Product Summary:

Horizontal / Vertical Datum:	NAD83(2011) epoch 2010.00 / NAVD88 (Geoid12B)
Projection / Units:	UTM Zone 12N / meters
Point Cloud Tiles:	500-m \times 500-m tiles in LAS format (Version 1.4) with unclassified points (1) and filtered noise (7) returns
First-Surface Elevation Model:	ESRI FLT format & GeoTIFF @ 1-m resolution with canopy and buildings included
First-Surface Hillshade:	ESRI-created raster @ 1-m resolution

Area of Interest:



Location of survey polygon (in red), aircraft trajectories, and GNSS reference stations (in yellow)

The requested survey area consisted of one polygon located south of Green River, UT, and northwest of Moab, UT. The polygon enclosed approximately 40.0 km² (15.4 mi²).

Notes:

An unclassified point cloud was requested to meet research demands. No ground classification was run on the project.

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