Initial Project Plan

January 27th, 2026

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Project Idea The USGS has been deploying magnetic variometers at many seismic stations around the United States. The goal of this project would be to use seismic and magnetic data from the variometers and geomagnetic observatories to collocate and help scientists at the Albuquerque Seismological Lab (ASL) develop metrics for quality-control.

Timeline Data is readily available, but the USGS has offered the opportunity to deploy a variometer at the Boulder (BOU) geomagnetic observatory. This field work would not impact our data analysis, so we are flexible to the time of this installation. Tentatively, we would like to follow the following schedule:

- Week of January 19th: Pre-project meeting. Discuss potential ideas and options for field installation.
- Week of January 26th: Gain access to magnetometer lab. Begin looking at pre-processed data.
- Week of February 2nd: Exploratory data analysis.
- Week of February 9th: Exploratory data analysis & initial visualizations
- Week of February 16th: Check-in meeting with advisors.
- Week of February 23rd: Boulder field work & preperation for introduction presentation.
- Week of March 2nd: Preperation for introduction presentation.
- Week of March 9th: Algorithm and metric development.
- Week of March 16th: Algorithm and metric development.
- Week of March 23rd: Check in meeting with advisors.
- Week of March 30th: Algorithm and metric development.
- Week of April 6th: Figure development.
- Week of April 13th: Beging working on final report.
- Week of April 20th: Check-in meeting with advisors.
- Week of April 27th: Final report and presentation preperation.
- Week of May 4th: Final report and presentation preperation.
- Week of May 11th: Final touches!

Field Equipment Our group will not need any field equipment from Mines. All installation equipment will be provided by the USGS.

Advisors Faculty Advisor: Rich Krahenbuhl

USGS Advisors: Brian Shiro, Josh Rigler, & Adam Ringler