Kevin M. **Gaastra**

Geophysicist · Geologist

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Experience

Undergraduate Research, Paleomagnetism (Prof. Swanson-Hysell)

Berkely, California

Researcher and Developer

May 2014 - Present

- I preformed sample preparation, data collection, and data analysis.
- I acted as lead in-house code developer. I contributed greatly to the PmagPy project's demag GUI which was used for analysis of demagnetization data in a number of labs.
- I installed, modified, and ran an impact hydrocode simulation for the Slate Islands project, for which I also performed a large amount of data post-processing.
- I have assisted in running a number of thermal demagnetization experiments, a thellier experiment, and a rock magnetization experiment.

Undergraduate Research, Seismology (Prof. Dreger)

Berkely, California

Researcher

May 2014 - Jan. 2015

- I worked on inverting an earthquake sequence from Oklahoma that occurred in 2014 and an earlier sequence from 2011. The purpose of this work was to look at the percent CLVD of the sequence and determine the degree to which waste water injection was a plausible forcing mechanism. To this purpose, I used data from Incorporated Research Institutions for Seismology (IRIS) and used provided software to invert for the moment tensor of the sequences.
- Work with newer students entering lab in SAC (Seismic Analysis Code) and and running inversion software.

Student Learning Center, Science Department

Berkely, California

Physics Tutor

Aug. 2013 - Dec. 2014

- Provided drop-in assistance in collegiate calculus and algebra based physics
- For the semester of Fall 2014 I also acted as a lecturer for a study group on algebra based mechanics

Education

University of California Berkeley

Berkeley, California

B.A. in Geophysics and B.A. in Geology

Aug. 2012 - Aug. 2016

- GPA: 3.6

Manuscripts and Abstracts

Absolute Paleointensity of the 1.1 Ga Midcontinent Rift with implications for the evolution of the geomagnetic field

To be submitted to Geophysical Journal International

Contributing Author

In Progress

- C. Sprain, N. Swanson-Hysell, **K. Gasstra**

A Thermal Origin for Impact-induced Magnetization at the Slate Islands Impact Structure, Canada

To be submitted to Nature Geoscience

Contributing Author

In Progress

- S. Tikoo, N. Swanson-Hysell, L. Fairchild, **K. Gaastra**, D. Shuster, P. Renne

The strength of the Mesoproterozoic geomagnetic field: new absolute paleointensity estimates from 1.1 billion-year-old Midcontinent Rift volcanics

AGU

Contributing Author

Fall 2016

- C. Jean-Sprain, N. Swanson-Hysell, L.Fairchild, **K. Gaastra**

PmagPy: Software package for paleomagnetic data analysis and a bridge to the Magnetics Information Consortium (MagIC) Database — *Geochemistry, Geophysics, and Geosystems*

CONTRIBUTING AUTHOR — *Manuscript Sent to Production*

- L. Tauxe, R. Shaar, L. Jonestrask, N. Swanson-Hysell, R. Minnett, A.A.P. Koppers, C.G. Constable, N. Jarboe, **K. Gaastra**, and L.Fairchild

When Did Midcontinent Rift Volcanism End and Where Was Laurentia at that Time? — *AGU*

CONTRIBUTING AUTHOR — *Fall 2015*

- L. Fairchild, N. Swanson-Hysell, J. Ramezani, C. Jean-Sprain, **K. Gaastra**, and S. Bowring

Field Work

Panum Crater, Benton Range, and Long Valley Caldera — *EPS 118*

4 WEEKS — *June 2016 - July 2016*

- Mapping and stratigraphy of the above regions as well as data analysis of a gravity survey, a small scale seismic survey, and a small scale dc resistivity survey

Saratoga Springs, Death Valley — *EPS 115*

1 WEEK — *Mar. 2016*

- Time series analysis of the parasequences of the Beck Springs Formation

Other Courses with Field Work:

EPS 101, EPS 100B, EPS 119

Skills

Programming	Python, Matlab/Octave, Java, Bash, Git, SAC, Scheme, Logic, Markdown, LaTeX
Systems	Years experience with Unix dominantly Ubuntu and Debian as well as most other systems. Basic use of Adobe Illustrator for creation of scientific figures.
Laboratory	Thin section creation, X-ray diffraction, petrographic analysis
Field	Geomapper and FieldMoveClino as field mapping systems. QGIS for map creation and processing. Seismic refraction, gravitational anomaly inversion, and DC resistivity surveying (schlumberger array)
Languages	English, Basic Spanish