

EGU22-13330

<https://doi.org/10.5194/egusphere-egu22-13330>

EGU General Assembly 2022

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



## **EARTHd: an effort to make East African tephra geochemical data available and accessible**

**Erin DiMaggio**<sup>1</sup>, Sara Mana<sup>2</sup>, and Cora VanHazinga<sup>2</sup>

<sup>1</sup>Department of Geosciences, Penn State University, University Park, PA, USA (dimaggio@psu.edu)

<sup>2</sup>Department of Geological Sciences, Salem State University, Salem, MA, USA

Tephra deposits are excellent chronostratigraphic markers that are prolific and widespread in portions of the East African Rift (EAR). Arguably one of the most powerful applications of tephrochronology is the establishment of regional chronological frameworks, enabling the integrated study of the timescales and interaction of the geosphere, hydrosphere, and biosphere. In order for these disparate disciplines to integrate and fully utilize the growing number of available tephra datasets, infrastructural efforts that centralize and standardize information are required. Of particular importance to these efforts is digitizing and standardizing previously published datasets to make them discoverable in alignment with current FAIR data reporting practices.

EARTHd is a NSF funded data compilation project that has integrated and standardized geochemical and geochronological data from over 400 published scientific papers investigating tephra datasets from the East African Rift. Our team has trained 15 undergraduate students in spreadsheet data entry and management, data mining, scientific paper comprehension, and in East African tephrochronology. We utilize an existing NSF-supported community-based data facility, Interdisciplinary Earth Data Alliance (IEDA), to store, curate, and provide access to the datasets. We are currently working with IEDA to ensure that data generated from EARTHd is ingested into the IEDA Petrological Database (PetDB) and ultimately EarthChem, making it broadly available. Here we demonstrate our data entry process and how a user can locate, retrieve, and utilize EARTHd tephra datasets. With this effort we aim to preserve available geochemical data for posterity, fulfilling a crucial data integration role for researchers working in East Africa --especially those working at paleontological and archeological sites where tephra dating and geochemical correlations are critical. The EARTHd compilation also enables data synthesis efforts required to address new science questions.