TERRESTRIAL FIELD GEOPHYSICS DATA MANAGEMENT AND REPOSITORY IN SUPPORT OF PLANETARY ANALOG STUDIES. P. L. Whelley[1,2], J. A. Richardson[1,2], D. M. H. Baker[2], S. S. Jazayeri[3], E. Bell[1], M. E. Rumpf[4], M. Fouch[5], S. Kruse[3], N. Schmerr[1], [1] University of Maryland – College Park (patrick.l.whelley@nasa.gov) [2]NASA Goddard Space Flight Center. [3]University of South Florida, [4]USGS Astrogeology Science Center, [5]Samara Data.

Introduction: Field data management, including preparing data for public repositories and archives, is important to any field campaign but one that is often overlooked and underfunded [e.g., 1]. In a year without new field expeditions, three science teams virtually came together to prepare geophysics data for internal team use, and to build a community accessible long-term repository. NASA's SSERVI (Solar System Exploration Research Virtual Institute) GEODES (Geophysical Exploration Of the Dynamics and Evolution of the Solar System), the Goddard Instrument Field Team (GIFT), and the USGS Astrogeology Science Center, used a combination of existing institutional resources, web-based maps, and new tools to build a geophysical data repository.

Procedure: We used in-hand cloud-based tools to assemble our data directories, write meta data files (*i.e.,* ReadMes) and make data available for team use. When the data and the associated files were ready for public use, they were (and continue to be) migrated to institutional repositories. To link multiple repositories in one interface, we built a web-map.

Collecting Data. Our team riled on data from predecessor projects including TubeX (PI-K. Young), GILA MONSTER (PI-N. Schmerr), and others. Data are subject to use policies and "rules of the road" documents from the project where they were collected.

Preparing Data and Meta Data: Data accessibility and usability rely on data being properly formatted and well-described through standardized metadata. Data were formatted into types commonly used for the community. A common directory structure was used for each field site collection of data, from a top-level directory of main field site location to low-level sub-sites, measurement type, and processing levels. We developed top-level ReadMe templates for each field site, capturing essential information necessary for a user's understanding of all data contained in the data collection. This information includes: expedition objectives, team members, contacts, geospatial boundaries of each subsite, keywords, directory structure, file naming conventions, methods, measurement and instrument descriptions, and description of tools and processing software included in the collection. A data management guidance document was prepared for team members' reference when preparing their data contributions to the team repository.

Web-based maps. While the data *live* in a static repository, we built an interactive web-based map for each field site to serve as a geographical user interface. The web-maps were built using ArcGIS Online [*e.g.,* 2] through an institutional NASA license. Once published, the maps are free to use by anyone with a web browser or a smart phone. Content can be downloaded locally using the free ArcGIS Explorer app for easy use in the field.

Data Repository: This project is ongoing. We are currently migrating data from the internal team Google Drive to the public repository. To date we have collected ~230 GB of data in the Google Drive and have linked to a pre-existing repository at the University of South Florida [3]. The types of data we are depositing include: Terrestrial Laser Scanner (TLS), Ground Penetrating Radar (GPR), Gravimetry, Magnetometry, Seismometry, Field Photos, and GPS. To view the data, visit the GEODES Team Website [3] or the ArcGIS Online web-map [2]. As more data become available, the links will be updated.

Lessons Learned: 1) A dedicated team of scientists committed to data management is essential to the organization and public dissemination of data. 2) It is important to provide both a "raw" version of the data (*i.e.,* readings directly from the instrument), as well as a processed version that can be used by a scientist from a different team. 3) Producing metadata takes time, requires funding, and is made simpler with good field notes and processing notes. 4) Some repositories have data size limits that will require breaking data sets into multiple files. It would be best that the divisions are along logical data boundaries rather than arbitrary points in the data files.

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References:

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