

Supplementary Document: Partner Institutions and Roles

Listed below are the partner institutions that are to be funded via subawards, along with the role of each in the project.

University of California, Berkeley

issue contracts for fab, shipping, and deployment of antennas, analog electronics, nodes, correlator, and infrastructure. Issue subcontracts to other institutions. Develop node, correlator, and dish design, and code for compressing data on correlator hardware. Develop & apply software for power spectrum data analysis based on AIPY/delay spectrum/covariance diagonalization techniques. hardware commissioning delay-based power spectrum software pipeline cross-talk phase switch in node

University of Pennsylvania

deploy field data management system (disks, servers, etc.) that interfaces to correlator hardware for data compression and storage. Upgrade and support computing cluster & storage for data analysis. Perform polarization-oriented software development and data analysis, characterizing polarized sky. computing and data storage/transport systems quality assurance systems polarized sky and leakage evaluation

Massachusetts Institute of Technology

support site manager (penciled in as Goeke?), develop hex FFT correlator prototype in GB, which will be adopted into SA deployment as available. Perform data calibration, sanity checks, and imaging. Develop and apply optimal estimator techniques for power spectrum analysis. Characterization of low-frequency sky & prospects for dark-ages science. optimal estimators data product distribution operational data analysis manufacturability optimization & project engineering transient science low-frequency dark ages science cross-correlation with other data sets

University of Washington

develop and apply FHD & related techniques for imaging and power spectrum analysis, focusing on direction-dependent gain/leakage issues. Characterize primary beam based on celestial sources. monitor/control client calibration and model subtraction software subtraction-based power spectrum pipeline

National Radio Astronomy Observatory

transition PAPER analog electronics to 50Ohm, develop new feed optimized for dish illumination and minimization of polarization leakage, prototyped on 2 HERA dishes deployed in GB. Perform foreground & EoR science based on direct imaging with CASA/AIPS software. Develop

CASA software with enhancements for imaging with wide-field, wide-band, etc. data. feed development foreground science support for CASA software

Arizona State University

Develop and apply In-situ beam calibration systems (octocopter?) and develop some absolutely-calibrated balun/receivers. Application of higher-order statistics to 21cm reionization science. science commissioning total-power balun development octocopter beam calibration data calibration

University of California, Los Angeles

Furlanetto will contribute to the HERA project during the final stage of data analysis, building a tool to bridge the gap between the data products and the physics questions of galaxy formation and evolution. Specifically, Furlanetto will provide a grid of simulations of the sources of the spin-flip background, identifying and varying the key parameters. The experimental data will then be compared to this grid in order to extract quantitative constraints on these parameters. This work will be done by Furlanetto and a graduate student (to be named), for whom this project will constitute their PhD thesis.