Abstract Submitted
for the CUWIP22 Meeting of
The American Physical Society

Polarization Angles for Simons Observatory Detectors[1] RAINIER NAYLOR, Whitman College, SIMONS OBSERVATORY COLLABORATION — This poster chronicles the investigation into polarization angles of detectors for the Large Aperture Telescope Receiver tester (LATRt), which is being installed in Atacama, Chili. The LATRt group at University of Chicago has been working for several years testing various properties of the detectors of an optical tube to ensure that theyre in working order when the telescope is constructed. In this project, I used a sparse wire grid polarizer (SWGP) to determine the polarization angle of individual detectors in the LATRt optics tube. The SWGP was placed directly atop the test cryostat and rotated a constant pace. From the combination of detector measurements and the spatial rotation of grid, I plotted sine waves of grid angle vs intensity of signal. These sine waves were fitted to determine the offset angle, which corresponds to the initial polariza-tion angle. I was able to map the locations of detectors to their corresponding polarization angles, ensuring that the projected angles match the design. The project additionally tested the best way to run the wire grid polarizer, giving the development team a chance to advance their product before it goes to the field, to be used as calibration for further polarization

[1]NFS REU, University of Chicago

Rainier Naylor
Whitman College

Date submitted: 07 Jan 2022 Electronic form version 1.4