Abstract Submitted
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Fred Young Submillimeter Telescope Field of View Rotation: Visualizing Image Plane Rotation on the Sky[1] BAILEY FILER, SUNY Geneseo, THOMAS NIKOLA, GORDON STACEY, CHRISTOPHER ROONEY, CODY LAMARCHE, CATIE BELL, MAHIRO ABE, Cornell, ASTRONOMY DEPARTMENT, CORNELL COLLABORATION — h $-abstract-$\pardThe Fred Young Submillimeter Telescope (previously CCAT-Prime), an upcoming observatory which will be placed in Northern Chile in 2021. It is designed for sub-millimeter to millimeter wavelengths with a 6 meter diameter telescope. The whole structure turns 360 degrees at its base, while the telescope itself, essentially a massive box containing mirrors, tilts from 0 to 90 degrees. The curvature of the mirrors causes a field of view rotation at the focus directly proportional to the angle at which the sky is being observed. This rotation will be disruptive to results, necessitating visualization code which will demonstrate the rotation in order to account for it when taking data. Python was learned and utilized over an eight week period, and this visualization code was created. The process involved plotting a simple circle in Right Ascension vs. Declination coordinates. This plot, including each coordinate on this circle was then transformed into Altitude vs. Azimuth coordinates. Finally, matrix multiplication was utilized to rotate this circle based on an observation angle and location on the earth which were both pre-determined. The next steps are accounting for this rotation in the program. This code will be built off in order to take measurements pertaining to the age of distant galaxies and many other projects in the future. \pard/abstract-\

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