

Z110a VERTECS: Science Goal and Observation Plan

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VERTECS (Visible Extragalactic background RadiATion Exploration by CubeSat) is the first satellite specialized for observing diffuse light sources in visible wavelength. It is a 6U CubeSat equipped with a small telescope whose aperture is $\phi 35$ mm size. The wide field-of-view of 3×3 degree² in each wavelength band enables us to improve the photometry precision by averaging surface brightness. Our science goal is to constrain the surface brightness of Extragalactic Background Light (EBL) in four visible bands ($\lambda=400-800$ nm in total). The EBL comes from outside of our galaxy and, therefore, several types of foreground light obscure the EBL. We need to model the spatial distribution of each foreground component and subtract them from the surface brightness of blank-sky (a region without point sources brighter than the detection limit).

For the modeling of foregrounds and the derivation of EBL brightness, we selected candidates of target coordinate and made a tentative observation schedule. We proceeded the software simulation of foreground modeling and examined the expected accuracy of the derived EBL brightness, by preparing mock images in accordance with our observation plan. In this talk, we introduce our strategy to archive the science goal and summarize our recent activities to fix the observation schedule.