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Studying the Polarization of Astrophysical Bow Shocks AUSTIN A. LIN, MANISHA SHRESTHA, TRISTAN WOLFE, ROBERT E. STENCEL, JENNIFER L. HOFFMAN, Univ of Denver — When a star with stellar wind moves through the interstellar medium (ISM) at a relative supersonic velocity, an arch like structure known as a stellar wind bow shock is formed. These structures can further our understanding of evolved stars and the ISM through observational and computational study. Observations of these structures have been performed for some time, but the recent discovery of many bow shock structures have opened more ways to study them. These stellar wind bow shocks display an aspherical structure, which can polarize the light scattering through the dense shock material. We selected HD 230561 for observation using a catalog compiled from previous studies and observed it in polarized light using the Denver University Small Telescope Polarimeter (DUSTPol). Along with observation, we have simulated the polarization behavior using the Monte Carlo radiative transfer code SLIP. We will present the data from our observations and comparisons between the observational data and the simulation.

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