Modeling the Giant Lensed Arc in Abell 370[1] LANA EID, CHARLES KEETON, CATIE RANEY, Rutgers University — Gravitational lensing by galaxy clusters magnifies and distorts distant galaxies, which can let us study them at higher resolution than otherwise possible. In order to determine the morphology of the source, the observed images need to be de-lensed. Lens models are generally constrained using image positions and assuming point sources. We use giant arcs to study the effects of an extended source model on both the cluster mass model and the reconstructed source galaxy. A giant arc provides more constraints than images from an unresolved point source, but it requires a more complex model that accounts for the structure of the source. We seek to determine whether improvements to the lens model and reconstructed source merit the difficulty of handling the extra constraints. We present an analysis of the giant arc in Abell 370 using an analytic model consisting of an elliptical Sersic source. In future work, we will extend the analysis using pixelated source reconstruction.

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Date submitted: 03 Nov 2021   Electronic form version 1.4