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An Investigation of Five Mass Transferring Binary Systems KATE JAMISON, EMILY GEIST, MATTHEW BEAKY, Juniata College — An eclipsing binary is a type of variable star whose changes in brightness are caused by periodic eclipses of the two stars in the system. A mass transfer eclipsing binary consists of two stars in close proximity where one star is transferring mass to the other, causing a change in the orbital period. They provide a stringent test of astrophysical theories of stellar evolution. We used the 31-inch Lowell telescope at Lowell Observatory in Flagstaff, Arizona to observe the eclipsing binary system V0579 Lyr, and the 16-inch Meade LX200GPS telescope with a SBIG ST-8XME CCD camera at Juniata College to capture images of four more eclipsing binaries: KN Vul, V0406 Lyr, V2240 Cyg, and MS Her. The images were analyzed to create a light curve, which is a graph of magnitude vs. phase. From the light curve, a model that includes size, temperature, shape, inclination angle, and various other physical parameters was made for each eclipsing binary system.

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