

Abstract Submitted
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Transit Evolution of HD189733b PHILIP LENZEN, RICHARD OLENICK, ARTHUR SWEENEY, University of Dallas — Significant physical parameters are known about the exoplanet HD189733b that was discovered in 2005: mass $m = 1.142$ Jupiter masses, period $P = 2.21857$ days, and semi-major axis $a = 0.03142$ AU for its orbit around the spectral type K star. We investigate the evolution of the transits through a combination of historical data and photometric data taken in 2017 in the R-band with a 16-in remote telescope at the Dark Skies Observatory Collaborative in West Texas. The data are reduced and modeled to extract measurements and to deduce transit parameters. We examine trends in the transit midpoint timing, depth, width and asymmetry of the curves of HD189733b. We present a summary of changes in these parameters in relation to heating and bow shock around the planet.

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