**Mass of Kepler Exoplanet Candidates and Benford's Law of First Digits.** Thomas W. Hair (twhair@fgcu.edu), Florida Gulf Coast University, 10501 FGCU Blvd., Fort Myers, Florida 33965.

**Abstract:** Benford's Law refers to the frequency distribution of the first digits found in many natural and human-constructed sources of data. In this distribution, the number 1 occurs as the leading digit approximately 30% of the time, while larger numbers occur in that position with decreasing frequency. This distribution of first digits is the same as the widths of gridlines on a logarithmic scale and its results have been applied to a wide variety of data sets. From pulsar rotation rates to accounting fraud detection, this distribution tends to be most accurate when values within the data set are distributed across multiple orders of magnitude.

Kepler Space Telescope exoplanet mass data, both confirmed and candidate exoplanets, from the *Exoplanet Orbit Database* are analyzed for goodness-of-fit with the predicted distribution of the first digits implied by Benford's Law. The surprisingly close match between the confirmed exoplanets and Benford's distribution suggests a limited predictive ability for the mass distribution of exoplanets while a similarly close match of exoplanet candidates provides further evidence that the majority of these candidates, in fact, represent actual exoplanets.

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