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Thomas W. Hair* (twhair@fgcu.edu). *Benford's Law of First Digits and the Mass of Exoplanets.*

Benford's Law refers to the frequency distribution of first digits 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 a data set are distributed across multiple orders of magnitude. Exoplanet mass data from the Exoplanet Orbit Database is analyzed for goodness-of-fit with the predicted distribution of first digits implied by Benford's Law. The surprisingly close match between the two suggests a limited predictive ability for the mass distribution of exoplanets. (Received June 15, 2013)