Highlight

# Tracking Jupiter with a Trapezoid: Geometrical Methods in Ancient Babylonian Astronomy

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On four Babylonian clay tablets written between 350 and 50 BCE, the distance travelled by Jupiter along the ecliptic is computed as the area of a figure in time-velocity space (2016, Science 351, 482–484). This figure, which has the form of a trapezoid, describes Jupiter's changing velocity for an interval of 60 days, while its area yields the total distance covered during that time. On these tablets the moment when Jupiter has covered half the total distance is also computed geometrically by partitioning the trapezoid into two smaller ones of equal area. These findings challenge the widely accepted view that Babylonian astronomers only used arithmetical methods, unlike their ancient Greek colleagues. However, the geometrical approach to motion attested in the Babylonian tablets is unknown from ancient Greek astronomy and was previously thought to have been invented by European scholars in the 14th century AD.