

1086-G5-841 **Andrew J Simoson*** (ajsimoso@king.edu), King College, Mathematics Department, 1350 King College Road, Bristol, TN 37620. *Tracking the transit of Venus.*

Every 120 years or so, Venus crosses directly in front of the Sun with respect to the Earth, a phenomenon that Halley in 1716 realized could be observed, whereupon the time lapses for Venus's shadow to cross the Sun from two widely separated, north to south, vantage points on Earth would be enough to quantify the actual length of an astronomical unit, the distance between the Sun and the Earth. Using linear algebra in a CAS setting, we dynamically model this motion and subsequent analysis, making plentiful use of inverse, projection, and rotation matrices—all in all providing a nice application example for the linear algebra classroom. (Received September 13, 2012)