## January 30, 2023 MSE 2101 topics

- Case study: the motion of planets in the solar system
  - Ptolemy's geocentric model
  - o Copernicus' heliocentric model
  - Galileo's dispelling of "heavenly perfection"
  - Tycho Brahe's observations
  - Kepler's laws of planetary motion
  - o Newton's law of gravity explains (nearly) everything
- 1st Kepler's law: circles? Nope, ellipses!
- 2<sup>nd</sup> Kepler's law: equal times? Equal areas!
- 3<sup>rd</sup> Kepler's law: distance from the Sun connected with period!
- Newton's law: masses and distance