# The first data scientist

DS2000: Programming with Data

Johannes Kepler

Johannes Kepler
1571 - 1630
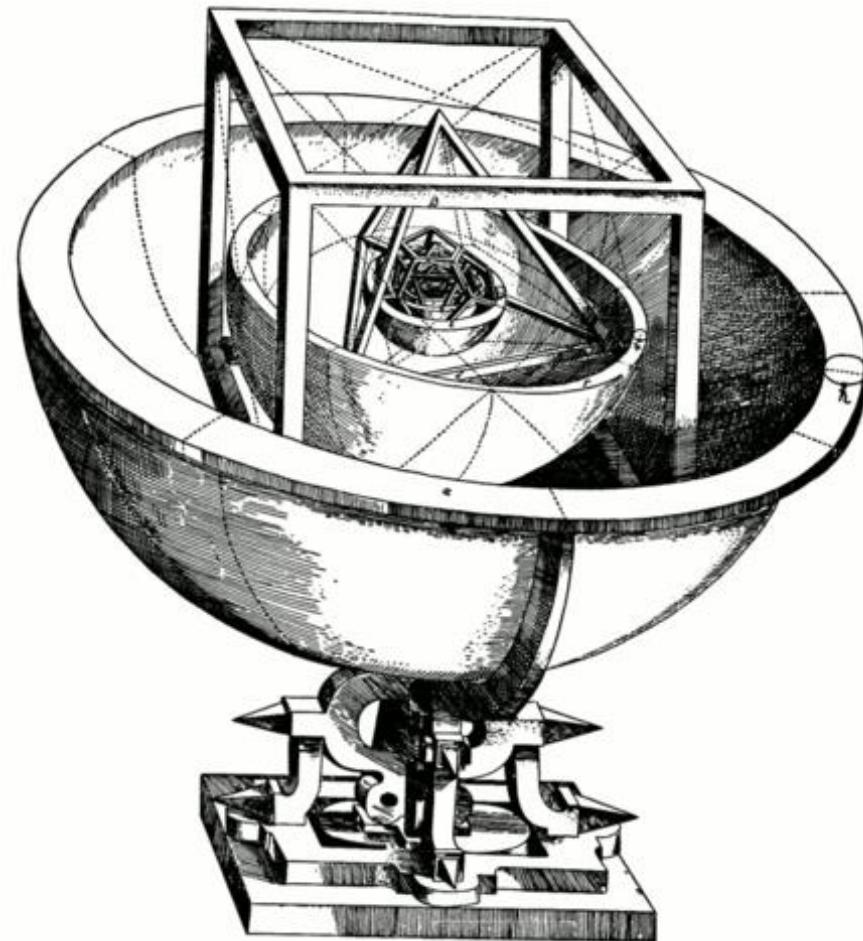
Mysterium Cosmographicum (1596)

# Collaboration with Tycho Brahe
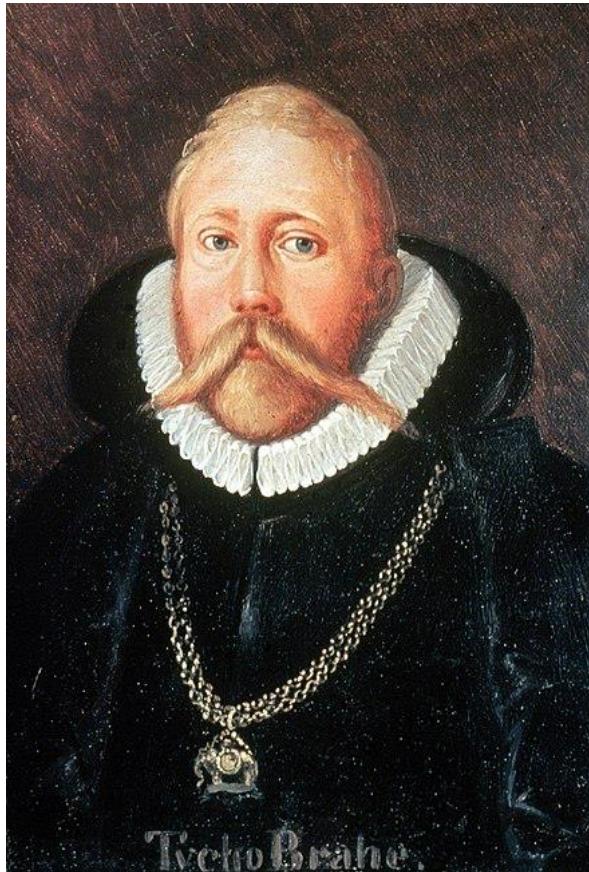
Tycho Brahe
1546-1601
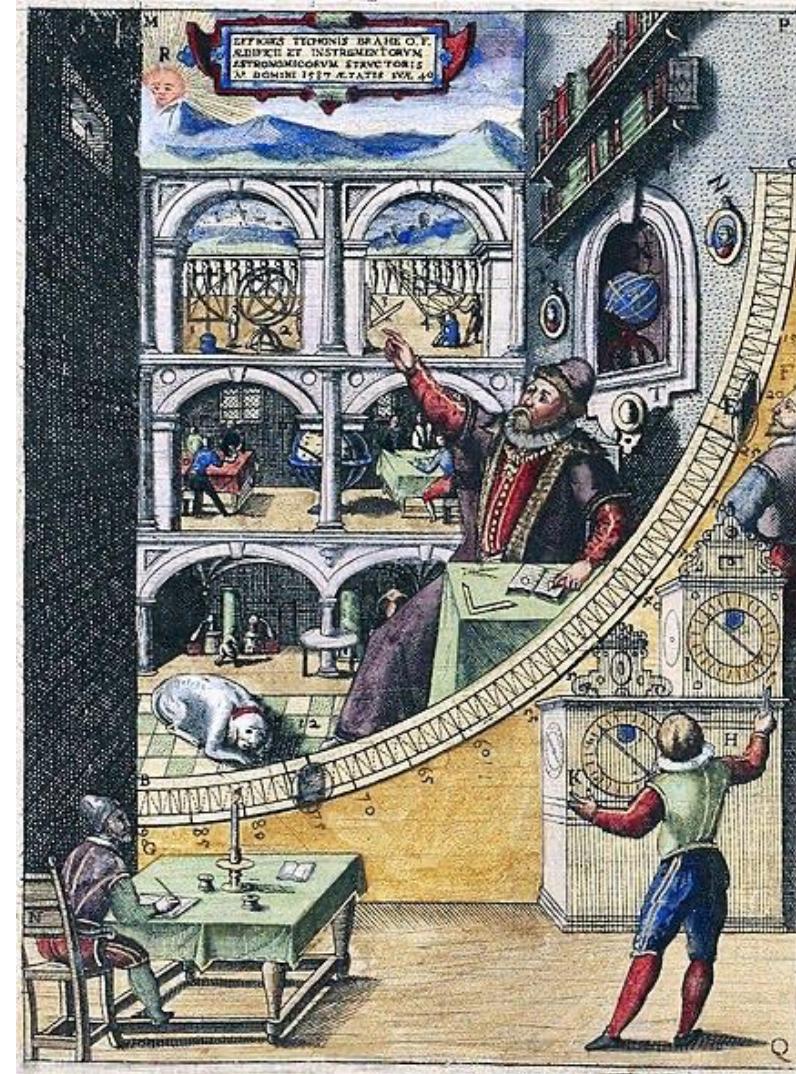
Kepler's Three Laws of Planetary Motion

Planet

Sun
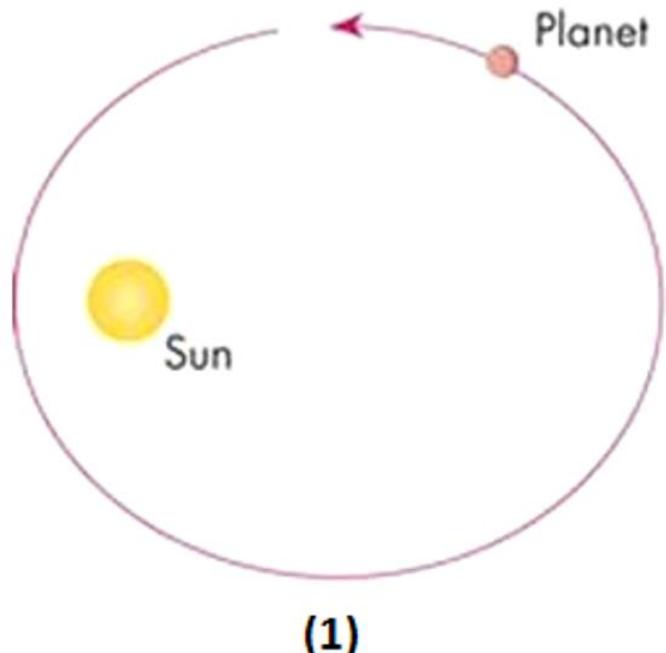
(1)
The orbits are ellipses

6 months

6 months
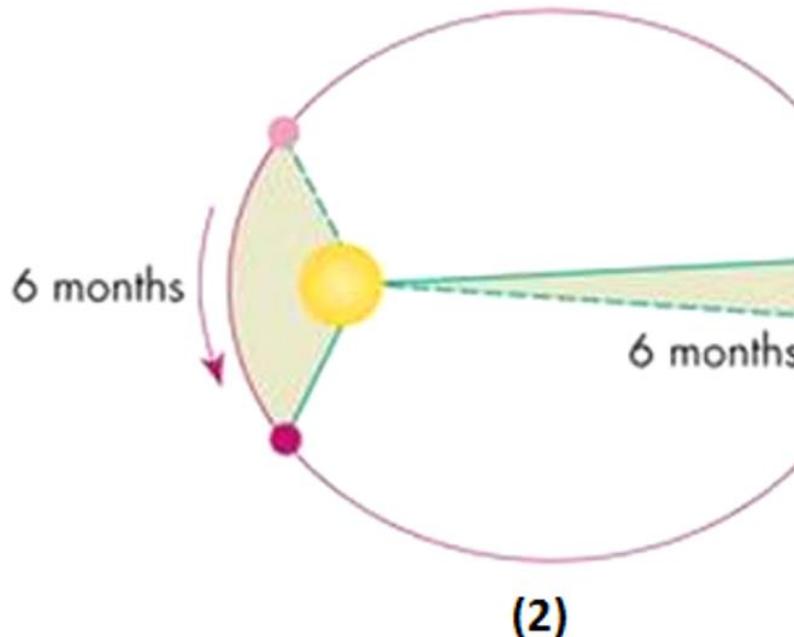
(2)
Equal areas in equal time

T

b

$b^2 = a^2(1 - e^2)$

θ

Sun

a
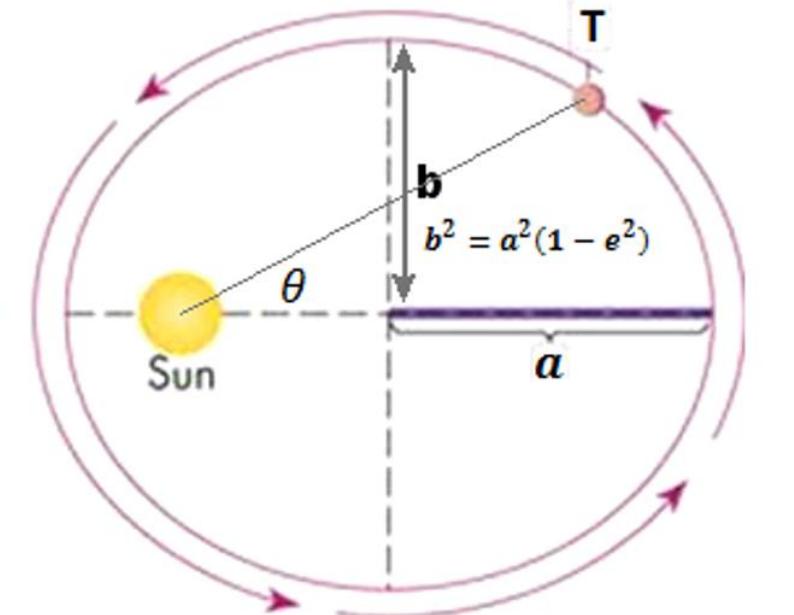
(3)
$T^2 \propto a^3$
T = time to complete orbit
a = semi-major axis

Exoplanet detection: (Radial Velocity Method)
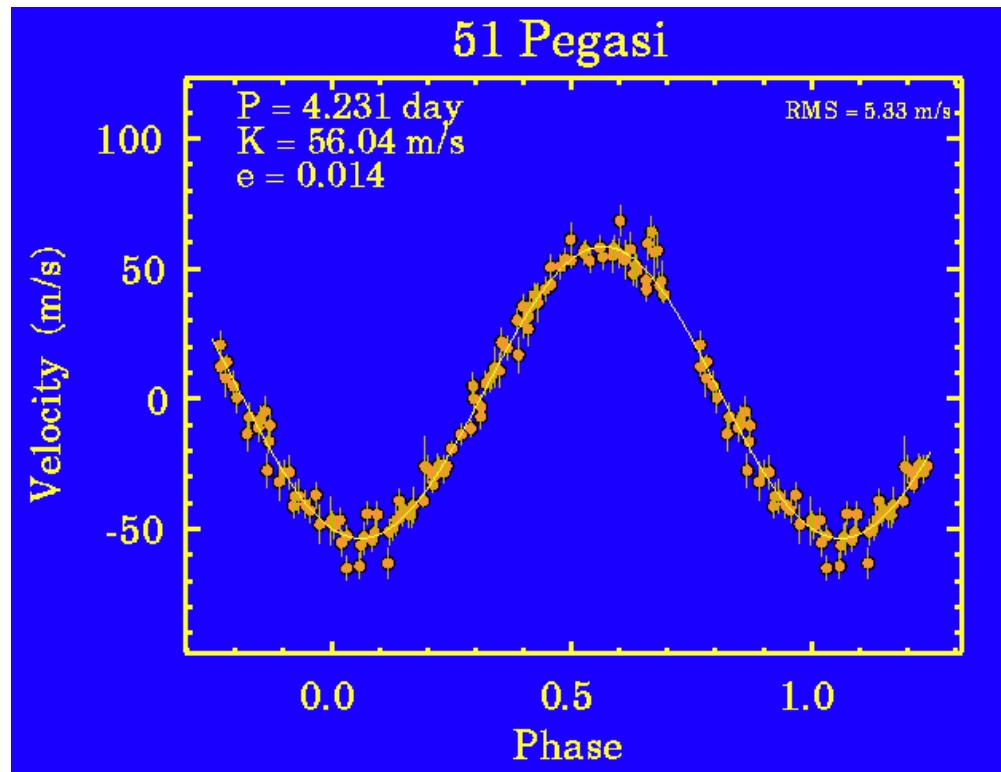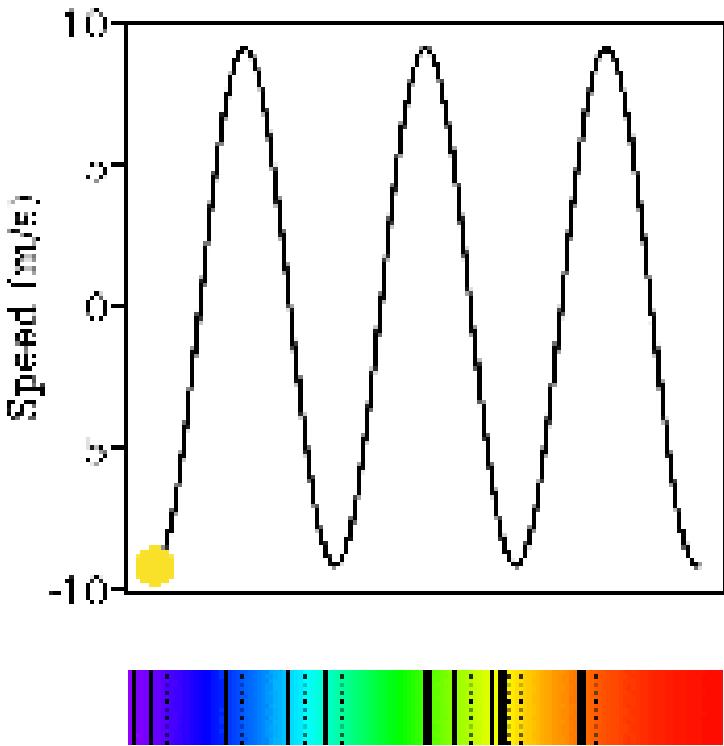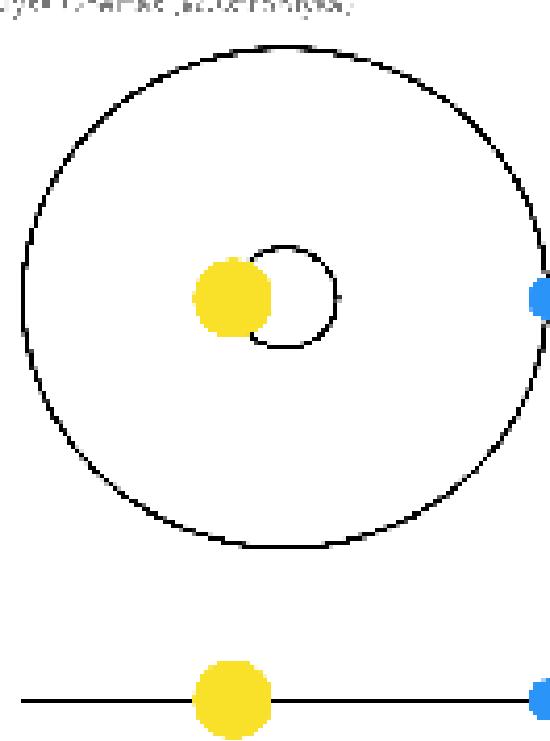
The Kepler Mission
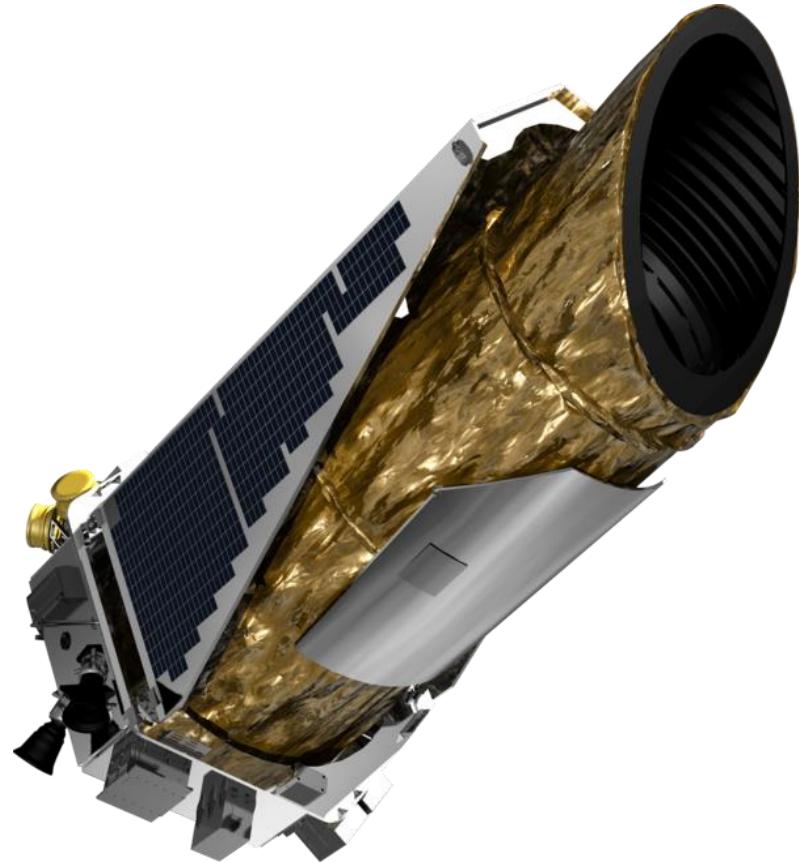

The Kepler Spacecraft
2009 - 2018
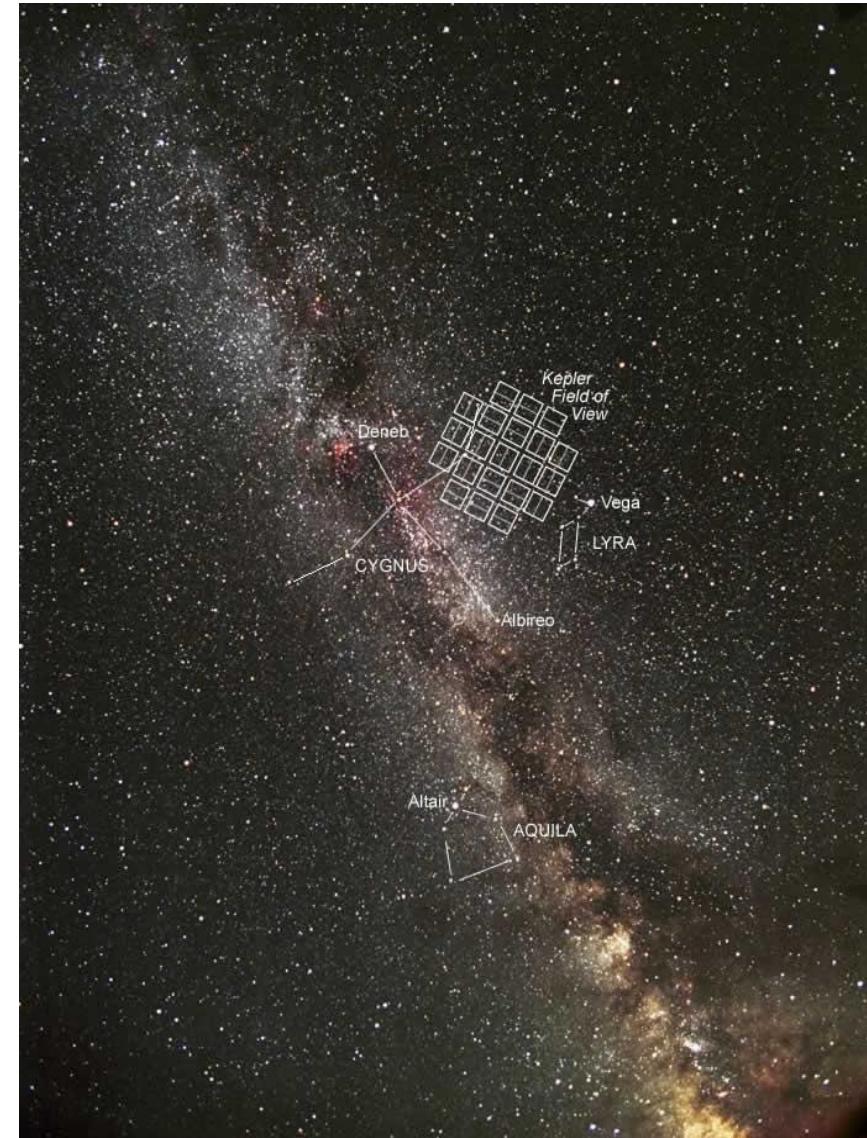
Northeastern University

# Exoplanet Detection (Transit Method)
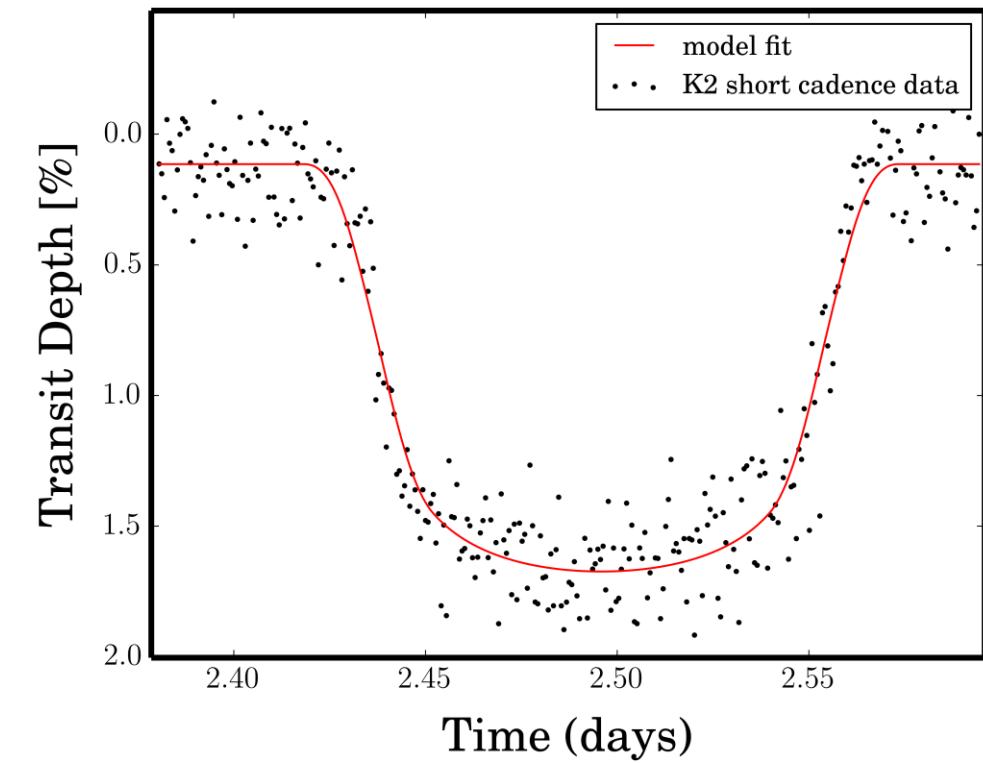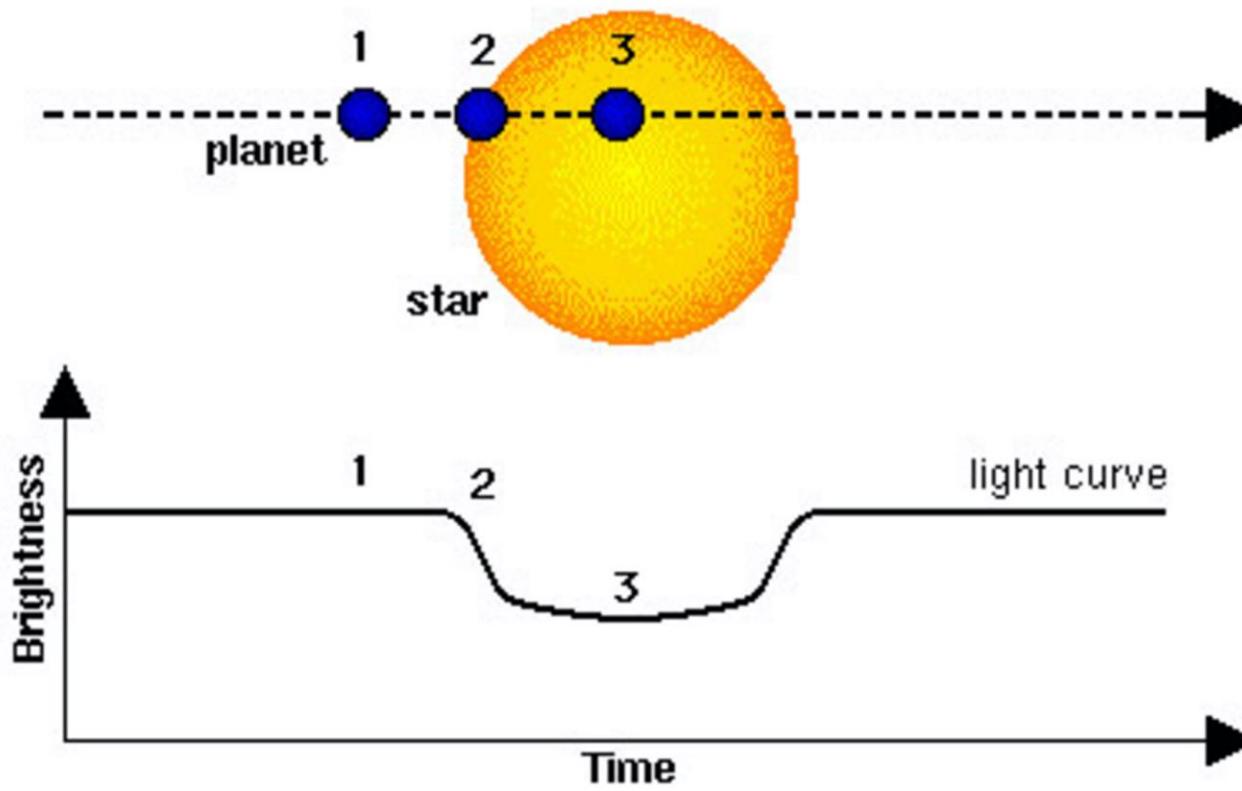
W. Edwards Deming (1900 – 1993)
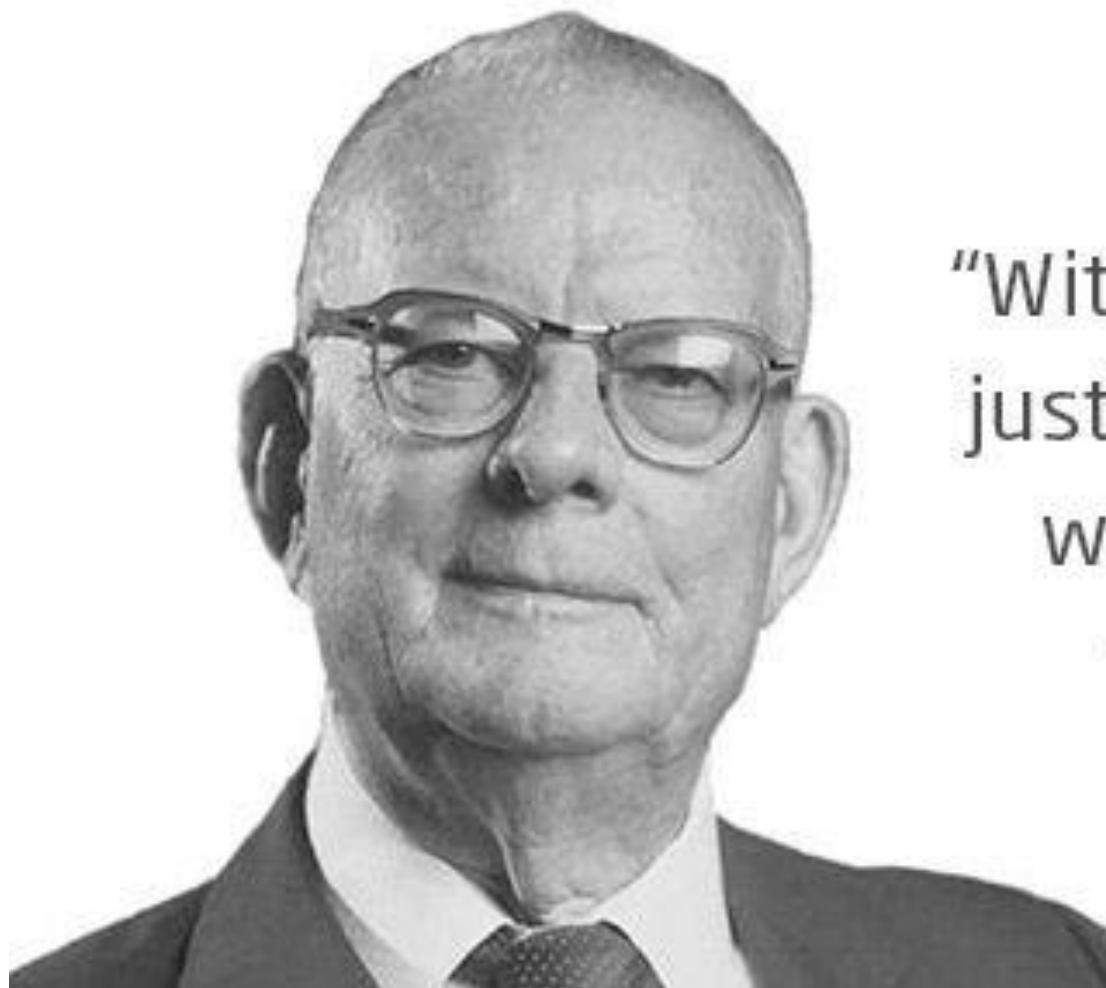
"Without data you're just another person with an opinion"

W. Edwards Deming