Topic 3 - Deep Space Astronomy - Flipped Videos 5

5) Ellipses (Kepler's Laws) (6:49) Hommocks ES Department

https://www.youtube.com/watch?v=loc-gCWXy2U&list=PL37057D7BFD1608CB&index=13

What is an ellipse (0:16)

How do we measure this? (0:58)
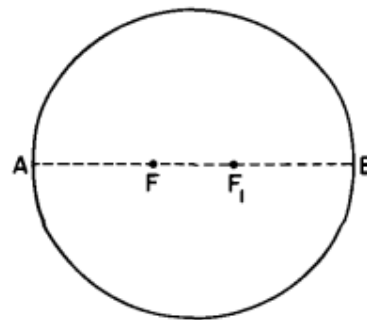
Kepler's First Law (1:10)

What is eccentricity? (1:37)

A _____ has an eccentricity of 0.

A _____ has an eccentricity of 1.

(1:48)

How do we calculate eccentricity? (2:00)

Eccentricity = _____

Label d and L on the diagram to the right

(2:59) NOTE:

When calculating eccentricity always go to _____ decimal places after the decimal point.
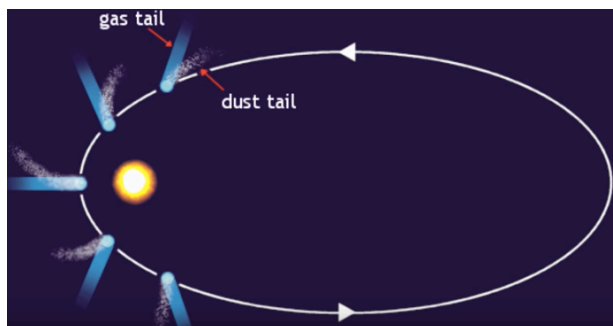
Always go to the _____ place. (e= . ____ _____ _____) (3:40)

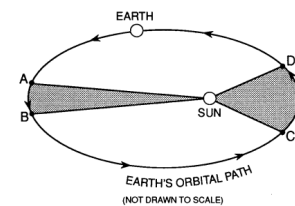Eccentricity values can be found on page _____ of the ESRT. (3:58)

_____ has the highest eccentricity. (e = .206) (4:07)

_____ has the roundest orbit with e = . _____ _____ _____ , which is

closest to _____ .   (4:14)

_____ have the

most elliptical orbits in the solar system. (4:24)

gas tail
dust tail

Kepler's Second Law (4:43)

EARTH
A
B
D
SUN
C
EARTH'S ORBITAL PATH
(NOT DRAWN TO SCALE)

Planets travel faster when they are _____ to the Sun. (5:20)

Planets travel slower (smaller velocity) when they are _____ .

Kepler's Third Law (5:52)

You may want to experiment with the following animation which allows you to investigate all 3
of Kepler's Laws.   Planetary Orbit Simulator