

# Solar Eclipse Problem

Using the small-angle formula, what is the angular diameter of the sun and the moon?

(Hint: You need to re-arrange the formula)

Moon: Linear Diameter - 3,476 km  
Distance From Earth - 384,000 km

Sun: Linear Diameter -  $1.39 \times 10^6$  km  
Distance From Earth -  $1.50 \times 10^8$  km

## KEY

$\alpha$  = Angular Diameter

$d$  = Distance From Observer

$D$  = Linear Diameter

206,265 = Constant

## Formula

$$D = \frac{\alpha \cdot d}{206,265}$$

Question: Now that you know about the angular diameters of both the sun and moon from Earth. Explain why and how eclipses occur.