On May 10, 2013, the sun experienced what's called an annular eclipse. This happens when the moon moves directly in front of the sun, but doesn't completely cover the face of the sun. This leaves a thin, fiery ring, called the annulus, visible around the outside. This eclipse was only visible from the South Pacific, Australia, Papua New Guinea, the Solomon Islands and the Gilbert Islands.

The picture shown above was taken by the Hinode X-ray satellite on Jan. 4, 2011 of a previous annular solar eclipse as seen from space. The brilliant corona of the sun can be seen as it glows in X-ray light. The moon appears completely black in front of the sun's surface.

Problem 1 – About two solar eclipses can be seen somewhere on Earth each year. The ones in 2013 occur on May 10 and November 3. In 2014 a pair will occur on April 29 and October 23. The two eclipses in 2015 occur on May 20 and September 13. The one on October 23, 2014 will be visible from North America. On average, about how many days separate the 6 solar eclipses?

Problem 2 – Solar eclipses happen because the size of the Moon from Earth's surface appears the same size as the Sun's disk. If the Sun is located 400 times farther from Earth than the Moon, and the Moon has a diameter of 3,500 kilometers, what is the diameter of the Sun? (Hint: Use a simple proportion)

Answer Key

Answer Key

Annular Eclipse on May 10

May 10, 2013

http://www.nasa.gov/topics/solarsystem/features/2013-annular.html

Problem 1 – About two solar eclipses can be seen somewhere on Earth each year. The ones in 2013 occur on May 10 and November 3. In 2014 a pair will occur on April 29 and October 23. The two eclipses in 2015 occur on May 20 and September 13. The one on October 23, 2014 will be visible from North America. On average, about how many days separate the 6 solar eclipses?

Answer: 178 days, 178 days, 178 days, 210 days, 107 days. **Average = 170 days.**

Problem 2 – Solar eclipses happen because the size of the Moon from Earth's surface appears the same size as the Sun's disk. If the Sun is located 400 times farther from Earth than the Moon, and the Moon has a diameter of 3,500 kilometers, what is the diameter of the Sun? (Hint: Use a simple proportion)

Answer:

$$\frac{\text{Solar Diameter}}{\text{Lunar Diameter}} = \frac{400}{1}$$

so   Solar Diameter =   400 x Lunar Diameter = **1,400,000 km**