SOLAR ECLIPSES 101

"I fell in to a burning ♫ ring of fire..." ♫

A solar eclipse occurs when the moon passes between the Earth and the sun. Depending on alignment, the eclipse can be total, partial, or annular.

📅 Mark Your Calendar

11.3.2013
Total Solar Eclipse

4.29.2014
Annular Solar Eclipse

➡️ *Did you know?*

The longest duration for a total solar eclipse is 7.5 minutes.

The next total eclipse exceeding seven minutes in duration will not occur until June 25, 2150.

Total Solar Eclipse

Total solar eclipses are rare events. Although they occur somewhere on Earth every 18 months on average, it is estimated that they recur at any given place only once every 360 to 410 years!

How It Happens:

While the sun's diameter is 400 times greater than our moon, the moon is 400 times closer to the sun than earth.

As a result, when the orbital planes intersect and the distances align favorably, the moon can appear to completely block out the sun.

Annular Solar Eclipse

Like total solar eclipses, annular solar eclipses are quite rare. They can only be observed during New Moon.

How It Happens:

Occurs when the Sun and Moon are exactly in line, but the apparent size of the Moon is smaller than that of the Sun. Hence the Sun appears as a very bright ring, or "ring of fire," surrounding the Moon.

Partial Solar Eclipse

Partial solar eclipses can be observed more often than total solar eclipses because the Moon's distance from Earth is irrelevant and the area in which a partial eclipse can be viewed is much larger.

How It Happens:

Unlike during a total solar eclipse, the Moon covers the Sun only partly during a partial solar eclipse, as seen from Earth. The extent of the eclipse varies depending on the observer's location but regardless of a viewer's position, the Sun is only partially eclipsed.

ECLIPSE FACTS

18 MONTHS
AVERAGE OCCURENCE OF A SOLAR ECLIPSE

5,000 MPH
SPEED THE ECLIPSE SHADOW CAN TRAVEL NEAR THE POLES

3,000 MILES
MAXIMUM NUMBER OF MILES A PARTIAL SOLAR ECLIPSE CAN BE SEEN

167 MILES
MAXIMUM WIDTH OF THE PATH OF TOTALITY

5 SOLAR ECLIPSES
MAXIMUM NUMBER OF SOLAR ECLIPSES PER YEAR

20 DEGREES
LOCAL TEMPERATURE DROP NEAR TOTALITY

REALGOODS SOLAR