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Perspective

Frequency and Occurrence of Lunar Eclipse

Planey Bryaan *

Department of Earth and Planetary Sciences, University of California, Santa Cruz, USA

DESCRIPTION

A lunar eclipse occurs when Earth is between the Sun and the Moon it covers the moon's surface with a shadow. They are a common phenomenon for sky watchers around the world because they can only happen during a full Moon and don't require any specialised equipment to appreciate. Depending on how the Sun, Earth, and Moon are positioned at the time of the occurrence there are three different types of lunar eclipses. Complete lunar eclipse: The entire lunar surface is covered by the Earth's shadow. A partial lunar eclipse: During a partial lunar eclipse a portion of the moon only partially passes under Earth's shadow, giving the impression that it is "biting" into the lunar surface. On the side of the moon that faces Earth, Earth's shadow will appear dark. According to NASA how the Sun, Earth, and Moon align will determine how much of a "bite" we experience. Penumbral lunar eclipse: On the surface of the Moon is cast a faint outer portion of Earth's shadow. This kind of eclipse might be challenging to witness and is not as stunning as the other two. A lunar eclipse happens when the Sun, Earth, and Moon are roughly lined up in a straight line. An eclipse cannot occur if the moon's surface is not covered by the shadow of the Earth.

LUNAR TETRAD

A lunar tetrad is a grouping of four consecutive total lunar eclipses without any penumbral or partial eclipses in between. In recent years, eclipses that occur during a lunar tetrad have also gained the moniker "Blood Moons". It is believed that this usage of the phrase has Biblical roots and lacks any technical or astronomical foundation. The Moon enters the umbra, or inner region, of Earth's shadow. The Moon's surface receives some of the sunlight that travels through Earth's atmosphere and is weakly illuminated. Blues and violets, which have shorter wavelengths than red and orange, scatter more readily than colours with longer wavelengths. During a lunar eclipse, the Moon appears orange or reddish because longer wavelengths penetrate Earth's atmosphere while shorter wavelengths have scattered away. Reflectors positioned on the Moon during the Apollo and Lunokhod missions allow for extremely precise laser-ranging measurements to be made today during lunar eclipses. This has made it possible to estimate the acceleration of the moon and the Earth's rotation more precisely. It has also been demonstrated that atmospheric ozone is restricted to a layer between 50 and 80 kilometres above the surface of the Earth and analysis of the light that the Earth's atmosphere bends when there is a moon eclipse.

CONCLUSION

Due to the great temperature of the corona, Grotrian demonstrated that these puzzling transitions actually depict iron in a very high state of ionisation (iron has lost nine electrons for the red coronal line and 13 electrons for the green coronal line). Scientists can measure the Sun's diameter precisely during solar eclipses and look for fluctuations over a wide time range. Geophysicists measure eclipse-induced phenomena in the upper atmosphere. Studying the solar corona teaches us a lot about the Sun's surface and its regional variations since the formations in the corona resemble the patterns around magnets. Images of eclipses captured at various times show how the corona's morphology is changing as a result of the solar cycle's reorganisation of the surface magnetic field. Reexamining old eclipse records and documents might clarify long-term changes in the solar magnetic field. The rate at which the Moon's surface cools during the eclipse depends on the soil's composition, which varies across the lunar surface. During totality, several moon patches occasionally continue to shine brighter than their surroundings particularly in terms of their emission of infrared radiation possibly because they have less heat conductivity.

Correspondence to: Planey Bryaan, Department of Earth and Planetary Sciences, University of California, Santa Cruz, USA, Email: bryaan101@gmail.com

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