

Land of Extremes

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LUNAR ECLIPSE

Shining some light on the 'supermoon'



Color during eclipses comes from the aerosols in our atmosphere. PHOTO COURTESY OF STEVE BENTON

BY NEIL V. HITCH | Special to this Newspaper/Imperial Valley

On Sunday, there's a good chance you were out watching the lunar eclipse. Sunday, after all, was the first supermoon lunar eclipse in 30 years.



Star gazers brought lounge chairs to watch the entire eclipse, which lasted 1 hour, 12 minutes. PHOTO COURTESY OF NEAL V. HITCH

Desert Museum and the night sky

Light pollution is the biggest key keeping us from seeing celestial events. Even in the Imperial Valley, just by getting a few miles away from cities, the sky can open up into a magnificent field of stars. The Desert Museum has hosted a series of events surrounding unique night sky observations, and Sunday was no exception. Over 450 people came out to Ocotillo to observe the total lunar eclipse. And it was very impressive.



Four hundred fifty visitors watched the eclipse from the porticos of the Desert Museum. PHOTO COURTESY OF NEAL V. HITCH

Science of an eclipse

If the moon's orbit wasn't tilted slightly compared to earth's orbit, we would see a total eclipse of every full Moon. The slight tilt causes the moon to miss the Earth's shadow, except for a few occasions.

Lunar and solar eclipses are both caused by the alignment of the moon, Earth, and the sun. For a lunar eclipse, Earth is in the middle and the moon passes into Earth's shadow. But the moon does not completely black out — it is hit by sunlight bending around Earth's atmosphere. This is where the colors during an eclipse come from.

The colors change with each eclipse depending on Earth's atmosphere. When levels of dust and other aerosols are low, we see the eclipsed moon in bright yellows and oranges. When the aerosols are high, like after a volcanic eruption, we see colors ranging from gray to almost black. Part of the fun of watching an eclipse is in not knowing what colors to expect until the moon fully enters Earth's shadow.

What makes a moon super?

Some full moons called "supermoons." The moon travels around Earth in an elliptical orbit instead of a circular orbit, so sometimes the moon is closer to Earth than usual. The average distance between Earth and the moon is 240,000 miles. But at its closest point to Earth, it is just 221,752 miles. A "supermoon" is a full moon that occurs during the moon's apogee. It seems unusually brighter than "regular" full moons and the human eye sees it 13 percent larger than a "regular" full moon.

While lunar eclipses are visible two to three times a year somewhere on the globe, "supermoon" eclipses are rare. The last one occurred in 1982, and we will not see another until 2033! The next regular lunar eclipse, however, is not that far away. The Pacific coast can see the next lunar eclipse January 31, 2018 — so mark your calendars!



The moon entered the Earth's shadow for a full lunar eclipse. PHOTO COURTESY OF STEVE BENTON

Rare supermoon lunar eclipse, rising over the Imperial Valley. PHOTO COURTESY OF NEAL V. HITCH