

= April 2014 lunar eclipse =

A total lunar eclipse took place on April 15 , 2014 . It was the first of two total lunar eclipses in 2014 , and the first in a tetrad (four total lunar eclipses in a series) . Subsequent eclipses in the tetrad are those of October 8 , 2014 , April 4 , 2015 , and September 28 , 2015 .

The eclipse was visible in the Americas and the Pacific Ocean region , including Australia and New Zealand . During the 5 hour , 44 minute @-@ long eclipse , the Moon passed south of the center of the Earth 's shadow . As a result , the northern part of the Moon was noticeably darker than the southern part . Totality lasted for 1 hour 18 minutes . The eclipse occurred during the ascending phase of the Moon 's orbit , part of lunar saros 122 . Mars was near opposition .

This is the 56th member of Lunar Saros 122 . The previous event was the April 1996 lunar eclipse . The next event will be April 2032 lunar eclipse .

= = Background = =

A lunar eclipse occurs when the Moon passes within Earth 's umbra (shadow) . As the eclipse begins , the Earth 's shadow first darkens the Moon slightly . Then , the shadow begins to " cover " part of the Moon , turning it a dark red @-@ brown color (typically - the color can vary based on atmospheric conditions) . The Moon appears to be reddish because of Rayleigh scattering (the same effect that causes sunsets to appear reddish) and the refraction of that light by the Earth 's atmosphere into its umbra .

The following simulation shows the approximate appearance of the Moon passing through the Earth 's shadow . The Moon 's brightness is exaggerated within the umbral shadow . The northern portion of the Moon was closest to the center of the shadow , making it darkest , and most red in appearance .

= = Description = =

On April 15 , 2014 , the Moon passed through the southern part of the Earth 's umbral shadow . It was visible over most of the Western Hemisphere , including east Australia , New Zealand , the Pacific ocean , and the Americas . In the western Pacific , the first half of the eclipse occurred before moonrise . In Europe and Africa , the eclipse began just before moonset . Mars , which had just passed its opposition , appeared at magnitude -1.5 about 9 @.@ 5 ° northwest of the Moon . Spica was 2 ° to the west , while Arcturus was 32 ° north . Saturn was 26 ° east and Antares 44 ° southeast .

The Moon entered Earth 's penumbral shadow at 4 : 54 UTC and the umbral shadow at 5 : 58 . Totality lasted for 1 hour 18 minutes , from 7 : 07 to 8 : 25 . The moment of greatest eclipse occurred at 7 : 47 . At that point , the Moon 's zenith was approximately 3 @, @ 000 kilometres (1 @, @ 900 mi) southwest of the Galápagos Islands . The Moon left the umbra shadow at 9 : 33 and the penumbra shadow at 10 : 38 .

The peak umbral magnitude was 1 @. @ 2907 , at which moment the northern part of the moon was 1 @. @ 7 arc @-@ minutes south of the center of Earth 's shadow , while the southern part was 40 @. @ 0 arc @-@ minutes from center . The gamma of the eclipse was -0.3017 .

The eclipse was a member of Lunar Saros 122 . It was the 56th such eclipse .

= = Timing = =

* The penumbral phase of the eclipse changes the appearance of the Moon only slightly and is generally not noticeable .

? The Moon was not visible during this part of the eclipse in this time zone .

The timing of total lunar eclipses are determined by its contacts :

P1 (First contact) : Beginning of the penumbral eclipse . Earth 's penumbra touches the Moon 's outer limb .

U1 (Second contact) : Beginning of the partial eclipse . Earth 's umbra touches the Moon 's outer limb .

U2 (Third contact) : Beginning of the total eclipse . The Moon 's surface is entirely within Earth 's umbra .

Greatest eclipse : The peak stage of the total eclipse . The Moon is at its closest to the center of Earth 's umbra .

U3 (Fourth contact) : End of the total eclipse . The Moon 's outer limb exits Earth 's umbra .

U4 (Fifth contact) : End of the partial eclipse . Earth 's umbra leaves the Moon 's surface .

P4 (Sixth contact) : End of the penumbral eclipse . Earth 's penumbra no longer makes contact with the Moon .

= = Viewing events = =

Many museums and observatories planned special events for the eclipse . The United States National Park Service sponsored events at Great Basin National Park and Sleeping Bear Dunes National Lakeshore . The University of Hawaii 's Institute for Astronomy held events at two locations on the islands . The Griffith Observatory in Los Angeles , California streamed the eclipse live on the Internet .

NASA hosted two live question @-@ and @-@ answer sessions online . The first happened roughly 12 hours before the eclipse via Reddit 's Ask Me Anything . The second was a web chat hosted on NASA 's site just before the eclipse began . NASA also streamed the eclipse live on their website . NASA TV provided 3 hours of live coverage beginning at 2 a.m. EDT .

= = Gallery = =

= = Relation to prophecy = =

Starting in 2008 , Christian pastors John Hagee and Mark Biltz began teaching " blood moon prophecies " : Biltz said the Second Coming of Jesus would occur at the end of the tetrad that began with the April 2014 eclipse , while Hagee said only that the tetrad is a sign of something significant . The idea gained popular media attention in the United States , and prompted a response from the scientific radio show Earth & Sky . According to Christian Today , only a " small group of Christians " saw the eclipse as having religious significance , despite the attention .

= = = Related eclipses = = =

The April 15 eclipse was the first eclipse in a tetrad ; that is , four consecutive total eclipses with no partial eclipses in between . There will be another eclipse every six lunar cycles during the tetrad ? on October 8 , 2014 , April 4 , 2015 , and September 28 , 2015 . The lunar year series repeats after 12 cycles , or 354 days , causing a date shift when compared to the solar calendar . This shift means the Earth 's shadow will move about 11 degrees west in each subsequent eclipse .

This tetrad started during the ascending node of the Moon 's orbit . It is the first tetrad since the 2003 ? 04 series , which started in May . The next series will be from 2032 to 2033 , starting in April .

= = = Half @-@ Saros cycle = = =

A lunar eclipse will be preceded and followed by solar eclipses by 9 years and 5 @.@ 5 days (a half saros) . This lunar eclipse is related to two hybrid total / annular solar eclipses of solar saros 129 .