

## **Eclipse Dates in 2020**

The scientific point of view:- An eclipse occurs when one object gets in between you and another object and blocks your view. From Earth, we routinely experience two kinds of eclipses: an eclipse of the Moon and an eclipse of the Sun.

Eclipses of the Moon:- Sometimes, as the Earth orbits the Sun, it comes between the Sun and the Moon. When this happens, the Earth throws a dark shadow across the Moon. This is known as an eclipse of the Moon, or a lunar eclipse.

Eclipses of the Sun:- Sometimes, the Moon passes between the Earth and the Sun. The Moon blocks the light of the Sun and a shadow of the Moon is cast on the Earth's surface. This is an eclipse of the Sun, or a solar eclipse.

There are three types of a solar eclipse: total, partial, and annular. During a total eclipse, the Moon completely covers our view of the Sun. A total eclipse is only visible from a narrow strip (about 150 km wide) of the Earth's surface at any one time. From the areas outside this narrow strip, the Sun appears to be only partially covered and a partial eclipse is seen. A partial eclipse will also occur if the Sun, Moon, and Earth are not precisely lined up. The eclipse cannot be total unless the center of the Moon's shadow is able to strike the Earth. The eclipse type that occurs when the Moon is at its farthest distance from the Earth is an annular eclipse. The Moon then appears too small to completely block out the disk of the Sun.

During a solar eclipse, the Moon actually casts two shadows toward Earth. One shadow is called the umbra which becomes smaller as it reaches the Earth. This is the dark center of the Moon's shadow. The second shadow is called the penumbra. This shadow becomes larger as it reaches the Earth. A total solar eclipse, or a complete blocking out of the Sun's light, can only be seen by those who live in the area covered by the umbra. People who live in the area of the Earth covered by the penumbra will see a partial eclipse.

A total solar eclipse can only occur when two events happen at the same time. The first event is a new Moon. This phase of the Moon occurs when the Sun is almost directly behind the Moon, and we see only a sliver of the Sun's light reflected by the Moon. During this time the Moon and the Sun appear close together. The second event that must occur is that the Moon must be in the right position, directly in the line of sight between the Earth and the Sun. These two events occur at the same time about once every year and a half.

### **2020 Lunar Eclipse's**

10<sup>th</sup> January = Visible in S.A between 19h07 to 23h12.  
5<sup>th</sup> June = Visible in S.A between 19h45 to 23h04.  
5<sup>th</sup> July = Visible in S.A between 05h07 to 07h52.  
30<sup>th</sup> November = Eclipse NOT visible in S.A.

### **2020 Solar Eclipse's**

21<sup>st</sup> June = Eclipse NOT visible in S.A.  
14<sup>th</sup> December = Eclipse Partially visible in Western to middle S.A. (refer to pages 5-6)

An Eclipse Never Comes Alone:- A solar eclipse always occurs about two weeks before or after a lunar eclipse. Usually, there are two eclipses in a row, but other times, there are three during the same eclipse season.

## **10<sup>th</sup> January 2020 — Penumbra Lunar Eclipse.**

**(VISIBLE IN SOUTH AFRICA = between 19h07 to 23h12)**

Keen observers in Asia, Australia, Europe, and Africa may see the Moon turn a shade darker during the maximum phase of this penumbral lunar eclipse. Most penumbral lunar eclipses cannot be easily distinguished from a usual Full Moon.



EVENT	UTC TIME	TIME IN S.A.
Penumbra Eclipse begins	10 Jan, 17:07:44	10 Jan, 19:07:44
Maximum Eclipse	10 Jan, 19:10:02	10 Jan, 21:10:02
Penumbra Eclipse ends	10 Jan, 21:12:19	10 Jan, 23:12:19

## **5<sup>th</sup> June 2020 — Partial Lunar Eclipse.**

**(VISIBLE IN SOUTH AFRICA = 19h45 to 23h04)**

If you reside in Asia, Australia, Europe, and Africa, you might see the Moon turn a shade darker during the maximum phase of this penumbral lunar eclipse, which is the second of four such eclipses in 2020. Penumbral lunar eclipses are hard to distinguish from a normal Full Moon.

**Regions seeing, at least, some parts of the eclipse:** Much of Europe, Much of Asia, Australia, Africa, South/East South America, Pacific, Atlantic, Indian Ocean, Antarctica.

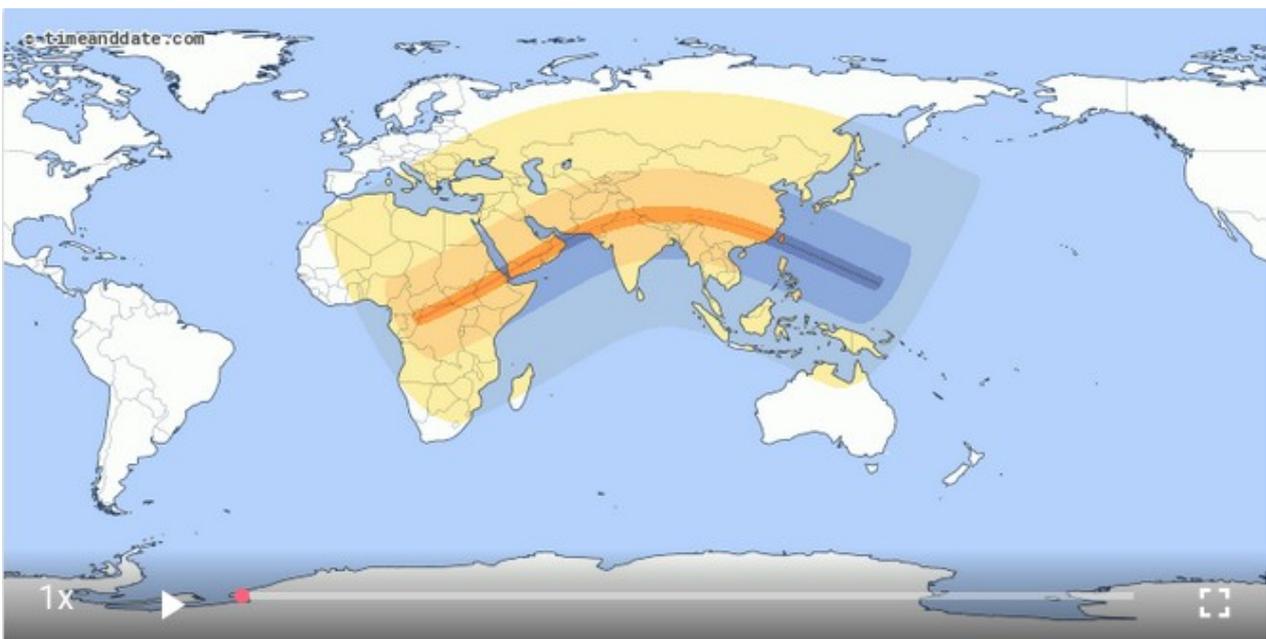


Event	UTC Time	Time in S.A*
Penumbra Eclipse begins	5 Jun, 17:45:51	5 Jun, 19:45:51
Maximum Eclipse	5 Jun, 19:24:55	5 Jun, 21:24:55
Penumbra Eclipse ends	5 Jun, 21:04:03	5 Jun, 23:04:03

**21<sup>st</sup> June 2020 — Solar Eclipse.**

**(NOT VISIBLE IN SOUTH AFRICA)**

The annular phase of this solar eclipse is visible from parts of Africa including the Central African Republic, Congo, and Ethiopia; south of Pakistan and northern India; and China. Weather permitting, people in these areas will see the characteristic ring of fire.



DO NOTE:- When an Eclipse is not visible in your area (even weather permitting) then nothing needs to be observe for South Africans for this Solar Eclipse.

**Regions seeing, at least, a partial eclipse:** South/East Europe, Much of Asia, North in Australia, Much of Africa, Pacific, Indian Ocean.

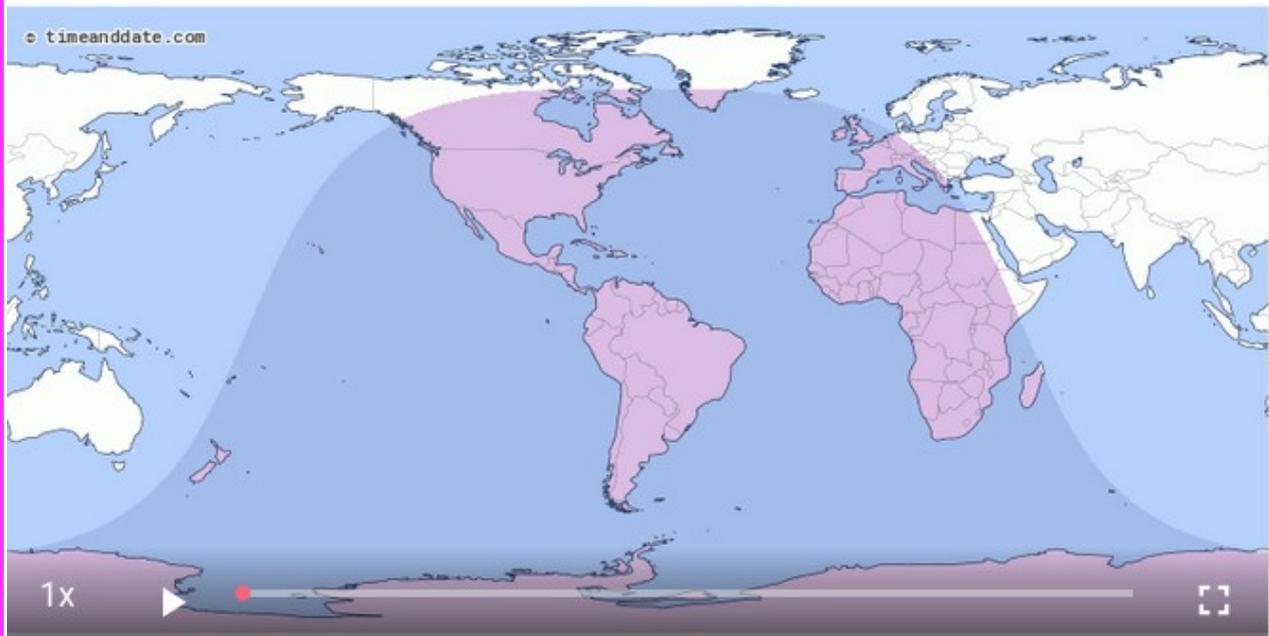
Event	UTC Time	Time in S.A.*
Penumbra Eclipse begins	21 Jun, 03:45:58	21 Jun, 05:45:58
Maximum Eclipse	21 Jun, 06:40:04	21 Jun, 08:40:04
Penumbra Eclipse ends	21 Jun, 09:34:01	21 Jun, 11:34:01

**5<sup>th</sup> July 2020 — Lunar Eclipse.**

**(VISIBLE IN SOUTH AFRICA = 05h07 to 07h52)**

The Moon may turn slightly darker than a usual Full Moon for those in much of North and South America, and Africa during the maximum phase of this penumbral lunar eclipse.

**Regions seeing, at least, some parts of the eclipse:** South/West Europe, Much of Africa, Much of North America, South America, Pacific, Atlantic, Indian Ocean, Antarctica.



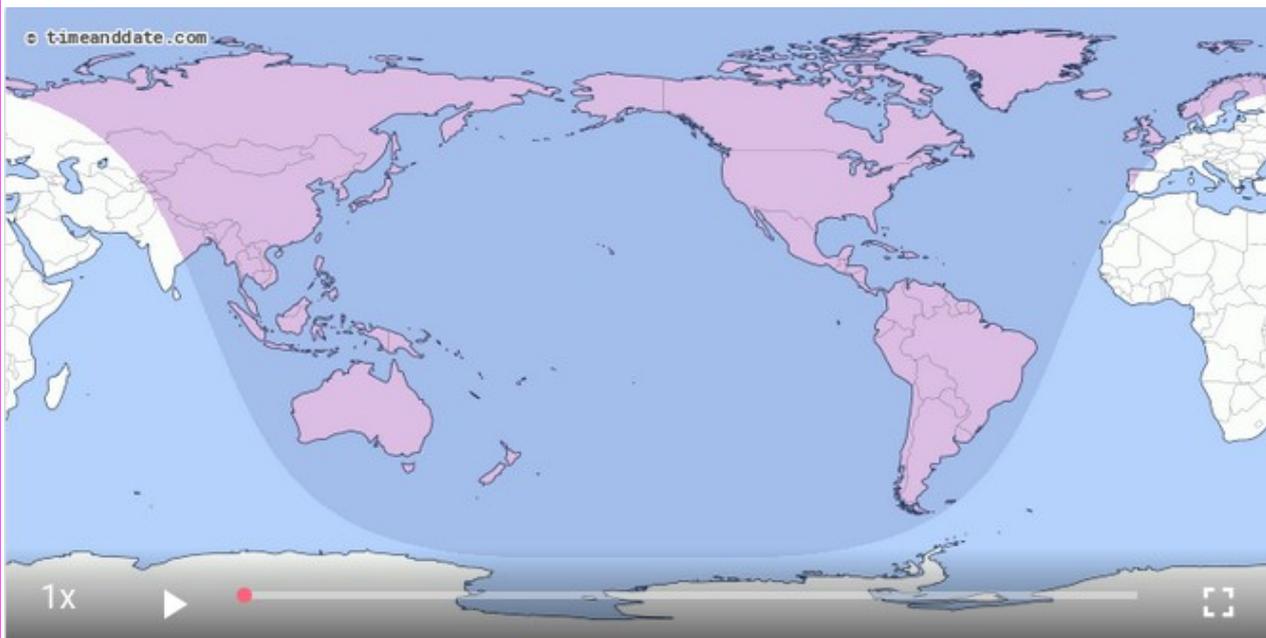
Event	UTC Time	Time in S.A.*
Penumbra Eclipse begins	5 July, 03:07:23	5 July, 05:07:23
Maximum Eclipse	5 July, 04:29:51	5 July, 06:29:51
Penumbra Eclipse ends	5 July, 05:52:21	5 July, 07:52:21

## **30<sup>th</sup> November 2020 — Lunar Eclipse.**

**(NOT VISIBLE IN SOUTH AFRICA)**

This is the last penumbral lunar eclipse of 2020. Residents of North and South America, Australia, and parts of Asia might see a darker Full Moon during the maximum phase of this eclipse.

**Regions seeing, at least, some parts of the eclipse:** Much of Europe, Much of Asia, Australia, North America, South America, Pacific, Atlantic, Arctic.



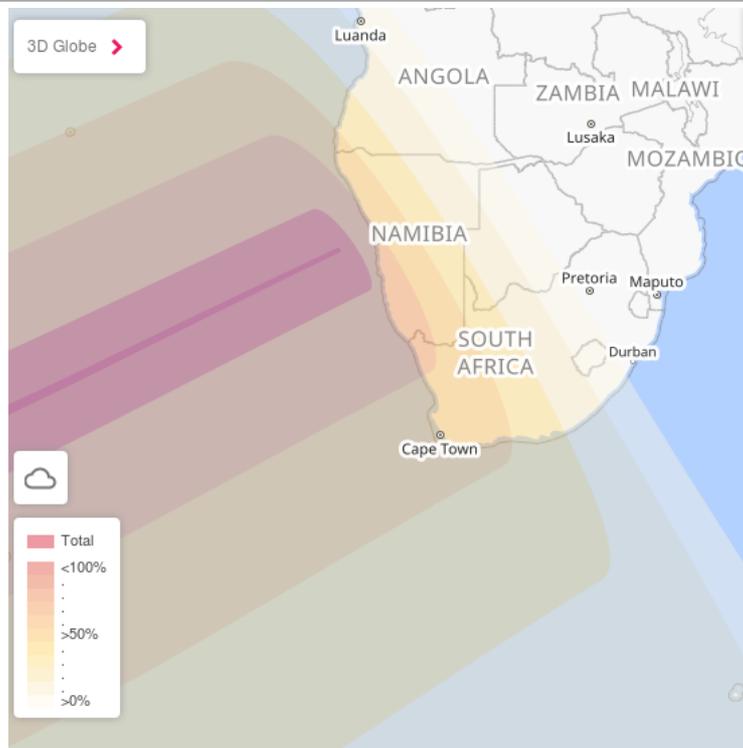
<b>Event</b>	<b>UTC Time</b>	<b>Time in S.A.*</b>
Penumbra Eclipse begins	30 November, 07:32:22	30 November, 09:32:22
Maximum Eclipse	30 November, 09:42:53	30 November, 11:42:53
Penumbra Eclipse ends	30 November, 11:53:22	30 November, 13:53:22

## **14<sup>th</sup> December 2020 — Partial Solar Eclipse in S.A..**

**(PARTLY VISIBLE IN western to middle SOUTH AFRICA)**

This total solar eclipse, the last eclipse of 2020, is visible from Chile and some parts of Argentina in the afternoon. Some regions in southern South America, south-west Africa, and Antarctica will see a partial solar eclipse, if the weather permits.

**Regions seeing, at least, a partial solar eclipse:** South-west parts of Africa namely Namibia, Western Cape, Port Elizabeth, East London, Bloemfontein **BUT NOT** visible in Durban, Pretoria, Johannesburg. Much of South America, Pacific, Atlantic, Indian Ocean, Antarctica.



### Event

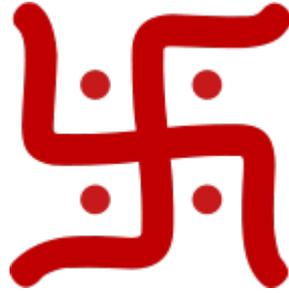
### UTC Time

### Time in western Parts of S.A.\*

First location to see the partial eclipse begin	14 Dec, 13:33:55	14 Dec, 15:33:55
First location to see the full eclipse begin	14 Dec, 14:32:34	14 Dec, 16:32:34
Maximum Eclipse	14 Dec, 16:13:28	14 Dec, 18:13:28
Last location to see the full eclipse end	14 Dec, 17:54:18	14 Dec, 19:54:18
Last location to see the partial eclipse end	14 Dec, 18:53:03	14 Dec, 20:53:03

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