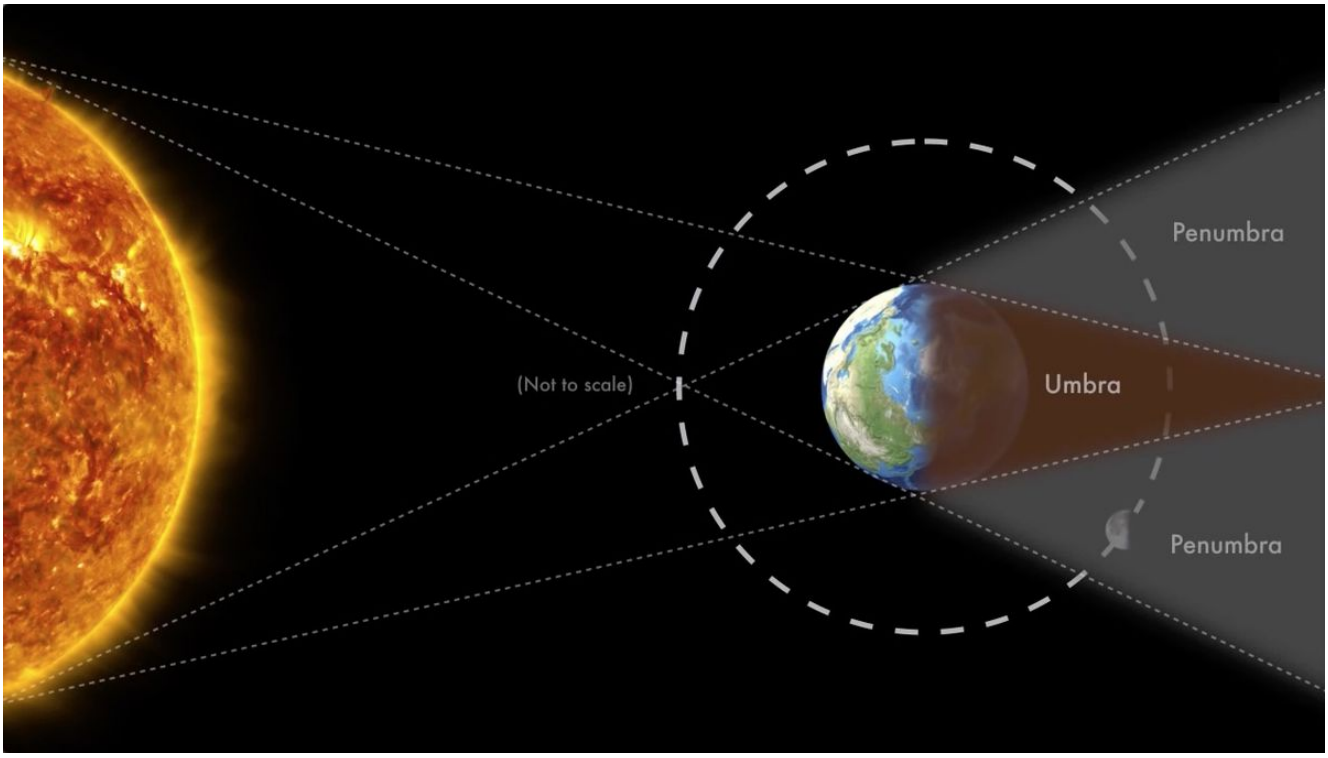
How to watch the only total lunar eclipse of 2019 this weekend

The first – and only – total lunar eclipse of 2019 is happening on Sunday, January 20th, and those who live in North and South America will have a front row seat to the whole bloody show. During the eclipse, the Moon will turn a creepy shade of red, which is why these events are often referred to as Blood Moons. This particular eclipse is even more special than usual, as the Moon will be a tad closer to us than it normally is.

There's a lot going on with this event, so let's break down this particular eclipse. Here's how these events happen, what makes this one special, and why some people are calling this eclipse a "Super Blood Wolf Moon." No, really.

Sorry, please explain to me what a lunar eclipse is again?

A lunar eclipse occurs when the Earth passes directly between the Sun and the Moon. When that happens, the Earth blocks most of the light from the Sun, and the Moon is then plunged into our planet's shadow, also called the umbra. However, the Moon doesn't go fully black like the Sun does during a solar eclipse. That's because sunlight still slips past the outer edges of the Earth and hits the Moon.



A graphic of what happens during a lunar eclipse (not to scale).
Image: NASA

But the light that *does* sneak past Earth is mostly reddish-orange. That's because the sunlight has been scattered. The light creeping around the sides of our planet is passing through a lot of atmosphere, and all of the molecules in our air cause certain types of light to, well, scatter. Light will bump up into tiny particles of nitrogen and oxygen, which flings the light outward in all directions. But this effect is more pronounced for light on the blue end of the spectrum, which has much shorter wavelengths. It bumps into all these molecules more easily, while red light, with it's much longer and more stretched-out wavelengths, can slip through.

the Moon doesn't go fully black like the Sun does during a solar eclipse

This scattering effect is the same reason why our sky is blue during the day, and reddish-orange at sunset. When the Sun is high in the sky, blue light gets scattered the most in all directions, with a lot of it getting directed toward our eyes. But when the Sun is at a low angle on the horizon, its light has to pass through a lot more atmosphere to reach our eyes,

and that filters out blue light even more. So that’s why the reds and yellows make it through.

And you said this Moon is super, too. Does it have powers?

Sorry, but our Moon is the same old Moon its been for millennia. The name just means that this is a full Moon that will be at its closest distance to Earth on its trip around our planet. See, the Moon doesn’t revolve around Earth in a perfect circle, but more of an ellipse. That means its distance from Earth changes throughout its orbit. Supermoons are when the Moon is about 225,744 miles, or 363,300 kilometers, away. That makes them appear about 14 percent bigger and 30 percent brighter than your average full Moon.



The size of a supermoon (L) compared to the Moon when it is farthest away from Earth on its orbit (R).
Image: NASA

What’s this I hear about a Super

Blood Wolf Moon?

Yes, some have been referring to this event as a Super Blood Wolf Moon. But the “wolf” part of the name simply refers to the fact that this is a full Moon in January. Indigenous tribes in North America used to keep track of the seasons by observing the full Moons, according to the *Farmer’s Almanac*, so they would give these events names. This title supposedly refers to all the wolves that “howled in hunger outside the villages” in January, according to the *Almanac*.

Of course, “Super Blood Wolf Moon” is a bit of a mouthful to say, so feel free to stick with “lunar eclipse.”

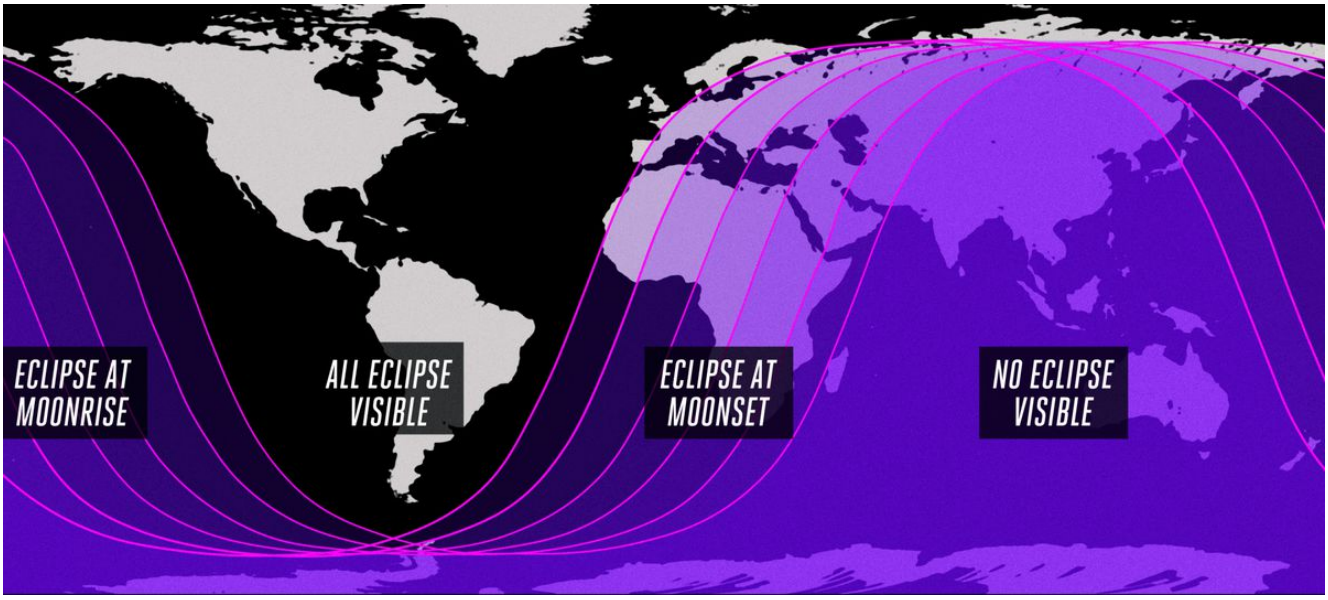
When and where can I see this thing?

Things get underway at 9:36PM ET, when the Moon enters Earth’s penumbra, or the outer part of the shadow. At that time, the Moon will start to dim, but only slightly. About an hour later at 10:33PM ET, the Moon starts to enter the umbra, the bulk of Earth’s shadow. That’s when things get juicy, because it will look like half of the Moon has disappeared.

easily visible for anyone living in North America or South America
And then an hour after *that*, if you’ve managed to stick it out for that long, the full Blood Moon will emerge at 11:41PM ET. At that point, the Moon will be fully immersed inside the umbra. And this will last for a while, too, as the Moon won’t start to leave the umbra until 12:43AM ET. So just to have it all in one place, here are all the major events to watch out for, according to NASA:

9:36PM ET: Moon enters Earth’s penumbra.
10:33PM ET: Moon enters umbra.
11:41PM ET: Moon is fully inside umbra.

12:43AM ET: Moon leaves umbra.
1:50AM ET: Moon completely out of the umbra.
2:48AM ET: Moon completely out of the penumbra. The show's over!



Where the eclipse will be visible on January 20th/21st
Image: Will Joel, using data from NASA

The total lunar eclipse will be easily visible for anyone living in North America or South America, weather permitting. But parts of Europe, Africa, and Asia will be able to see some of the event, too. For those outside of the Americas, the eclipse will coincide with Moon rise and Moon set. That means it may be hard to see, because the Moon will be too low in the sky or the pesky Sun will make things too bright. Check out how your location fares in the map below.

Okay I have plans, though. Is this really the only lunar eclipse of the year?

Well, it's the only *total* lunar eclipse of the year. There's a partial lunar eclipse in July, which means the Moon won't be fully inside Earth's shadow. But plenty of it will be covered. That one will be easily seen from Africa, Europe, and parts of Asia. So for those in North America, this one is your best bet

for 2019, and for a good chunk of 2020, too.

And if lunar eclipses are too weak for you, there’s always a total solar eclipse coming up this year in July. Those located in Chile and Argentina will get a great view of that one just before sunset. So start making your vacation plans now.

https://www.theverge.com/2019/1/18/18186751/total-lunar-eclipse-super-blood-wolf-moon-january-20