

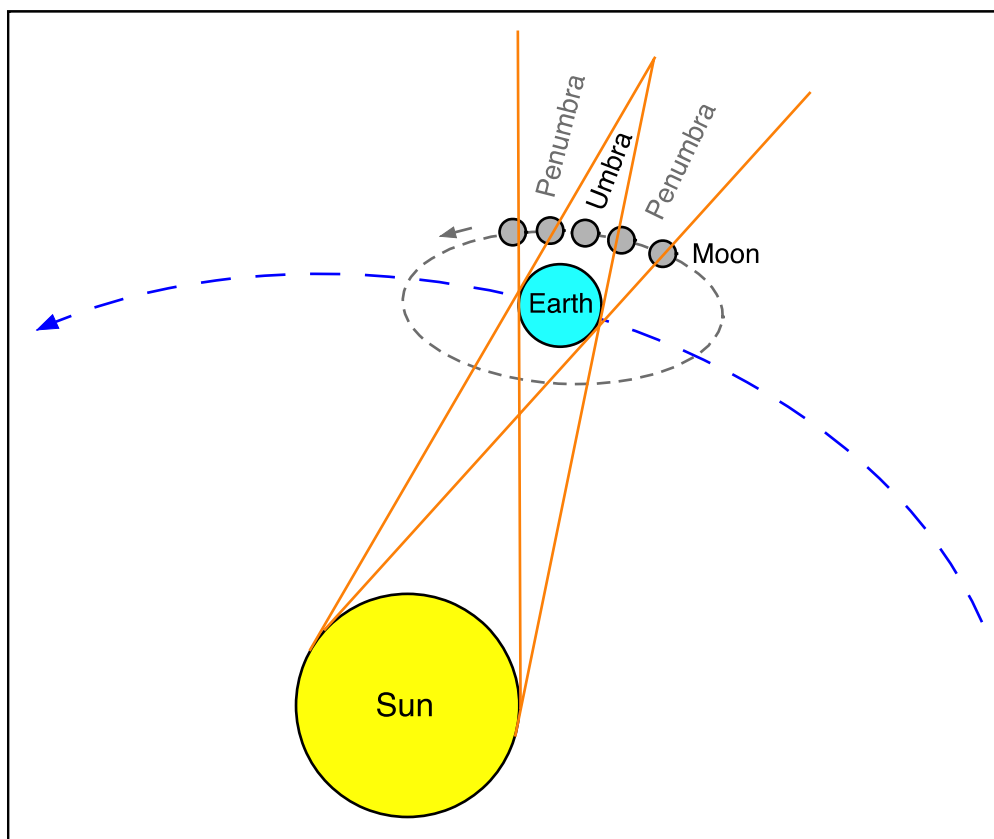
Total Lunar Eclipse: Wed 26th May 2021

Lunar eclipses occur when a **Full Moon** passes through the Earth's shadow. The Earth's shadow consists of the **Umbra** (the darker inner shadow) and the **Penumbra** (the brighter outer shadow). A total lunar eclipse occurs when the Moon passes completely into the Earth's Umbra.

When light from the Sun passes through the Earth's atmosphere, its component wavelengths disperse differently. Blue light is scattered in all directions by the atmosphere whilst the less-scattered red light is refracted into the Earth's shadow giving an eclipsed Moon a ruddy or reddish colour. An eclipsed reddish Moon is also called a **Blood Moon**.

A **Super Moon** is a Full Moon that nearly coincides with perigee – the closest point of the Moon in its orbit about the Earth. This results in a larger apparent size of the lunar disk viewed from Earth. A **Micro Moon** occurs when the Moon is furthest away. At perigee (closest point), the Moon's distance is about 350,000km whilst at apogee (furthest point) it is 406,000km. Due to the difference, a Supermoon will appear about 14% larger in diameter than a Micro Moon and 30% brighter.

A **Blood Super Moon** will occur in our skies on May 26th.



Approximate times of events (Sydney):

Moon's leading limb (edge) enters Penumbra 6:48pm.
Moon's leading limb enters Umbra (start of partial eclipse) at 7:45pm.
Moon totally eclipsed 9:12pm to 9:26pm. Maximum eclipse 9:19pm.
Moon's trailing limb exits Umbra (end of partial eclipse) at 10:52pm.
Moon's trailing limb exits Penumbra at 11:50pm.

Event duration times:

Any part of Moon in the Penumbra or Umbra 11:50-6:48 ~ 5 hours.
Any part of Moon in the Umbra (partial or total eclipse) 10:52-7:45 ~ 3 hours.
Total eclipse 9:26-9:12 ~ 14 minutes.

When the Moon enters the penumbra there is a subtle darkening of the Moon's surface. This is referred to as a penumbral eclipse but is difficult to notice.

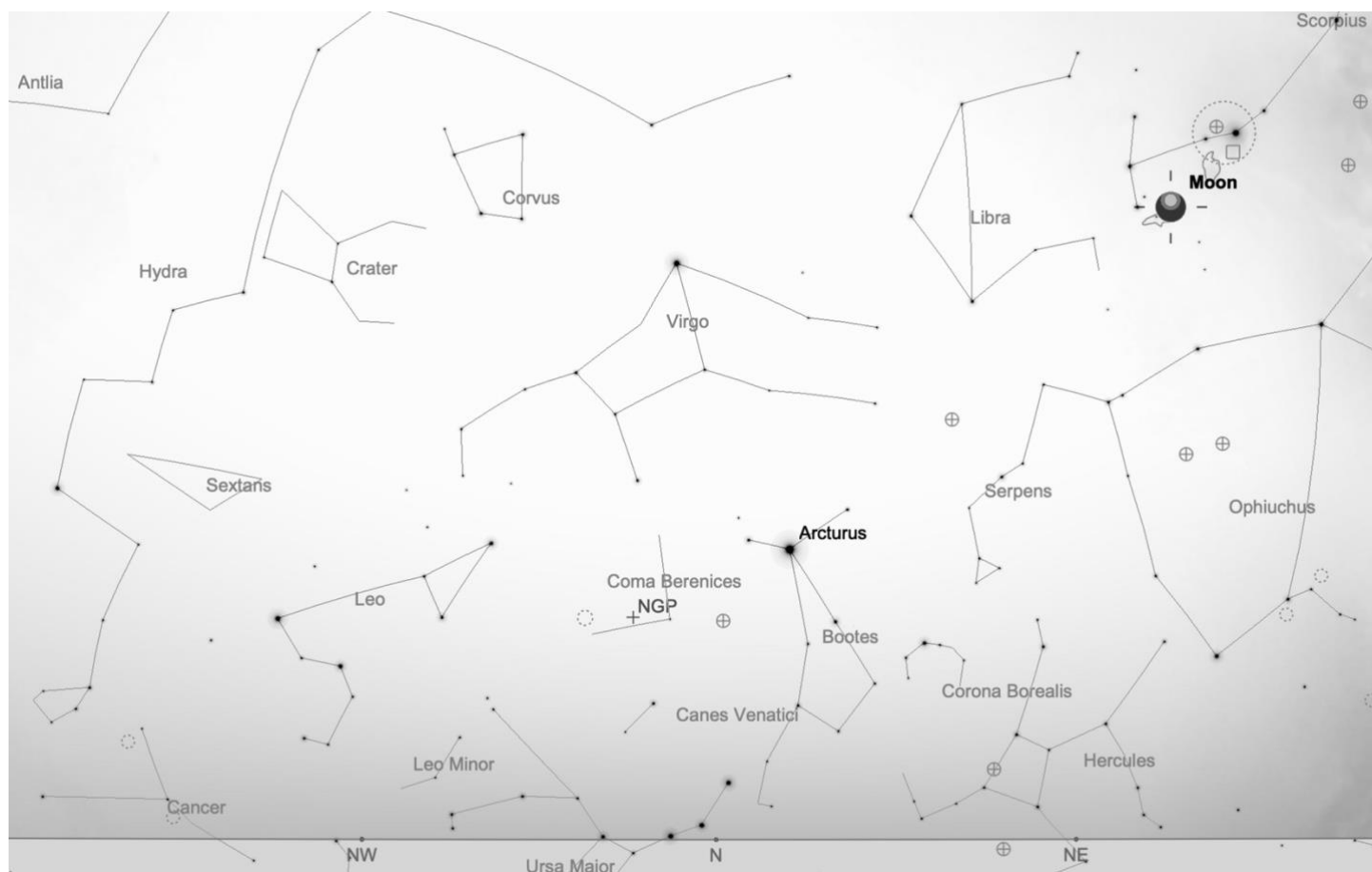
When the Moon enters the umbra, the darkening is much more pronounced and referred to simply as a partial eclipse. When the Moon is totally in the umbra we have a total eclipse. The maximum eclipse occurs when the Moon is closest to the centre of the umbra.

For Sydney, Moonrise on the 26th May is about 4:49pm. Sunset is around 5pm.

The altitude of the Moon at the start of the umbral eclipse at 7:45pm is about 34 degrees. The altitude of the Moon at the end of the umbral eclipse at 10:52pm is about 70 degrees.

Maximum eclipse at 9:19pm occurs at an altitude of about 53 degrees.

This is a SkySafari inverted screen clip of the Moon's position at maximum eclipse (9:19pm).



The event can, of course, be observed naked eye from your own backyard or veranda perhaps. The Moon will look even better in binoculars or a small telescope. Some members may be interested in imaging the Moon during the eclipse.

Rob Horvat (WSAAG)