

Total Lunar Eclipse August 28, 2007

What is Happening?

On the evening of Tuesday, August 28 there will be a **total eclipse of the Moon**. Lunar eclipses occur when the Moon passes through Earth's shadow. Lunar eclipses don't occur often, and for Australians this is the best eclipse for 7 years. If the sky is clear, this will be a most beautiful sight. You don't need anything special to watch the eclipse, just your eyes.

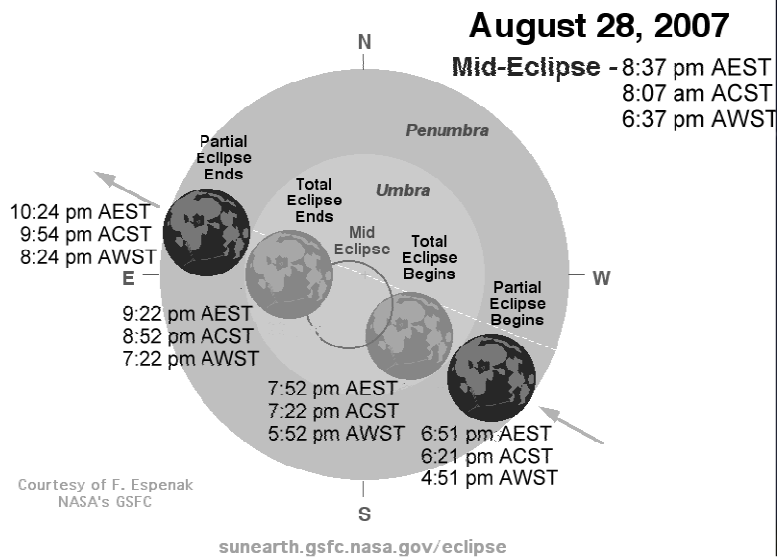
What Time can I see it?

The Moon rises in the east at around 5:20 pm in eastern Australia, 5:40 pm in central Australia and 5:50 in Western Australia. In Eastern and Central states it is already in the outer part of Earth's shadow (the penumbra) when it rises. However, this shadow is faint and will not darken the Moon very much. In WA the Moon rises with the eclipse underway. See the diagram below for state specific times (AEST, Australian Eastern Standard Time).

The Moon enters the darkest part of the Earth's shadow (the Umbra on the diagram) roughly an hour after sunset in the eastern and central states. The sky is still not fully dark at this time, but you should be able to see a visible "chip" on the bottom of the Moon (The right hand image is of the Moon halfway through the partial phase).

Over the next hour you will see the shadow slowly creep over the Moon's face until the Moon is completely covered by the shadow of the Earth. The Moon will not be completely dark, but will be a deep red colour.

Total Eclipse of The Moon

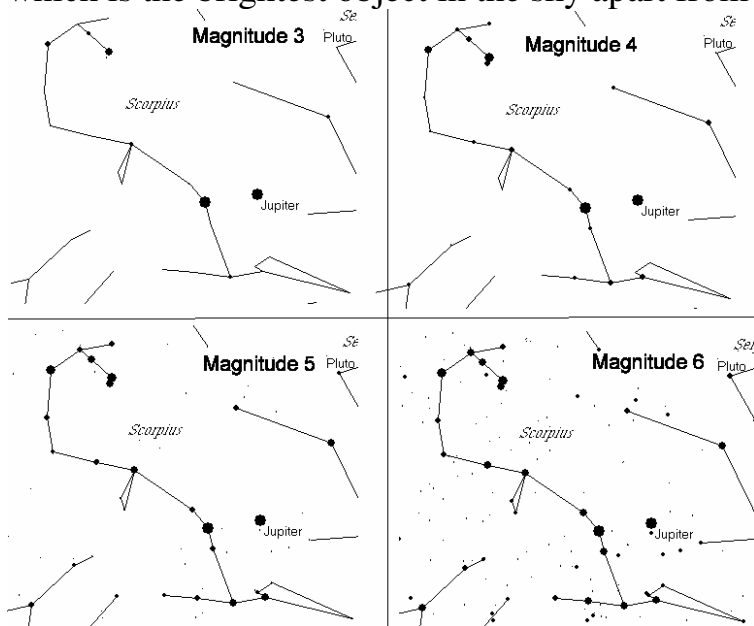


Things to Do:

Model your own eclipse. For this you will need a torch and two balls. The torch will represent the Sun and the two balls the Earth and the Moon. Place the torch on a table and turn it on. Place one ball on the table in the path of the torch beam (this represents earth). One side of the ball will be lit up, and the other side dark. You should see the shadow of the first all on the table. Place the second ball (representing the Moon, try and make it a smaller ball than the one representing the Earth) on the table to one side of the first ball, but also in the beam of the torch. One side of this ball will be lit up as well. Now move the second ball behind the first ball, as it goes behind the first ball, it dims as it enters the shadow. Just as we see with a real lunar eclipse.

Things to think about: Why don't we have an eclipse every full Moon? Why doesn't the Moon go completely dark during the eclipse? A website where you can learn more: **Mr. Eclipse** <http://www.mreclipse.com/Special/LEprimer.html>

How dark does the sky get during the eclipse? As the Moon gets darker, you can see more stars. How many can you see at mid eclipse? The diagram below shows the constellation of Scorpius. It looks like a big question mark in the western sky (the part of the sky on the opposite side to the Moon). It is very easy to spot because the planet Jupiter, which is the brightest object in the sky apart from the Moon, is right next to it.



If you can only see the bright middle star of Scorpius, and a few of the tail stars, the sky is so bright that only moderately bright stars (magnitude 3) can be seen. If you can see all the stars in Scorpius, then the sky is very dark. Compare the number of stars you see at mid-eclipse with the number of stars you see the following night during the nearly full Moon, and a night with no Moon. Is the sky as dark during the eclipse as a Moonless night?

Make eclipse biscuits: Kids, get an adult to help you make some plain vanilla biscuits using a healthy recipe, then put different amounts of chocolate icing on them to make it look like the Moon at different times of the eclipse.