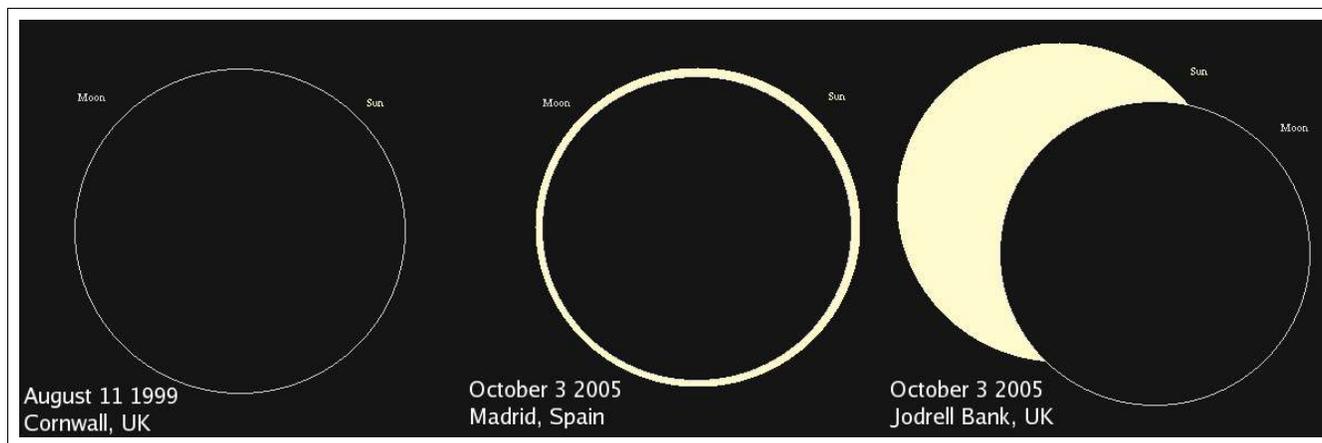


# Annular Eclipse - 3<sup>rd</sup> October 2005

Welcome to Jodrell Bank for the partial annular eclipse 2005. There are telescopes set up to allow you to view the event safely (it is not safe to view the Sun directly through any kind of optical aid, you *will* damage you eyesight irreparably) and astronomers around to answer any questions you may have. This sheet provides some background information on the different types of eclipse.

A solar eclipse occurs when the Moon directly passes in front of the Sun, blocking the light. This only happens at New Moon when the Moon is in the same direction as the Sun for an observer on the Earth. We don't see an eclipse every month, even though there is a New Moon every month, because the alignment of the orbits has to be just right. If the Moon is a little bit too high or low then it fails to block the Sun entirely, most of the time it misses completely.

The Moon has an elliptical orbit around the Earth. Sometimes it is closer to us and sometimes it is further away. A total eclipse occurs when the Moon is near enough to us that it completely obscures the disk of the Sun during totality, the time of maximum eclipse. The eclipse of August 11<sup>th</sup> 1999, which was visible from Cornwall, was a total eclipse. Today's event, however, is an annular eclipse. This happens when the Moon is a bit further away from us in it's orbit and does not appear quite large enough to completely cover the Sun. The images below illustrate the different kinds of eclipse.



The image on the left shows the total eclipse which occurred in Cornwall in 1999. In this case, the Moon was large enough to completely cover the Sun's disk and the corona (the Sun's atmosphere which is not normally seen as is much fainter than the surface) became visible. The centre image shows the annular eclipse of today as you would see it if you lucky enough to be in Madrid. Here the Moon is further away from us so it is not large enough to completely obscure the Sun and we see a bright ring of sunlight surrounding the Moon, even at mid-eclipse. This ring of sunlight is so bright that it still outshines the corona. The image on the right shows the extent of today's eclipse as seen from Jodrell Bank at mid-eclipse, the point where the maximum amount of the Sun's disk is obscured. This occurs at 10:00am when 63% of the Sun will be hidden from view.