

Mirador Observes Eclipse On Schedule

Observers at Mirador witnessed the lunar eclipse in the early morning hours of Tuesday, May 14. It occurred exactly in accordance with the predicted schedule of events.

At no time was the totality of the eclipse visible in Baguio. The moon had set in the China Sea before the total phase of the eclipse was reached. But when the moon was last seen, a fair estimate rated the part of the moon not yet engulfed by the earth's shadow as approximately ten percent.

According to Father J. J. Hennessey, S.J., Director of the Manila Observatory at Mirador, both solar and lunar eclipses involve the three bodies: the sun, the earth and the moon. The earth and the moon are opaque and non-luminous objects. The moon is seen by the light of the sun reflected from the moon's surface. When the moon comes directly between the sun

and the earth there is a solar eclipse. When the earth comes between the sun and the moon we speak of a lunar eclipse. In an eclipse of the sun the moon is away from the earth in the direction of the sun so it must be at *new moon*. In a lunar eclipse the moon is in the opposite direction and so the moon is *full*.

A lunar eclipse takes place because the moon passes through the earth's shadow. Because the sun is a large area rather than a point of illumination, parts of the shadow are referred to as the penumbra and the umbra. When the moon is in the penumbra, light from a part of the sun's surface is cut off by the earth but at umbra the moon, in the geometric shadow of the earth, might be expected to be cut off entirely from sunlight. However, even at totality, when the moon is within the um-

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bra, it can still be seen faintly as a copper-red object. This is due to the bending or refraction of the sun's rays in the earth's atmosphere. This causes the rays to curve into the shadow with the longer red colors more in evidence.

There can be three lunar eclipses in a calendar year. However, there may be none, or one, or two. The orbit of the earth is not in the same plane as the orbit of the moon. This accounts for variety in lunar eclipses.

It may seem strange that solar eclipses are more frequent than lunar eclipses. But for any one position on the earth, lunar eclipses vastly exceed, in number, solar eclipses. The reason for this difference is based on the following fact: a solar eclipse is visible only on a very restricted part of the earth while a lunar eclipse can be seen from at least a hemisphere at one occurrence. Because a lunar eclipse may last as much as three hours and forty minutes from the time of first contact with the umbra until the last contact, the eclipse is visible in some partial stage to more than half the earth.

At Baguio the moon began to enter the penumbra at 3:42 a.m. There was a very slight darkening of the moonlight. At 4:45 the umbra appeared to start its engulfing of the moon. If we consider the

moon as a clock, to an observer at Baguio, the apparent entrance of the shadow was on the clock face at about 10:30 position. The shadow moved across the face of the sun indicating the round curvature of the earth. Totality of the eclipse was scheduled for 5:52 but moon-set came first at 5:30.

As the moon was setting the sun was rising. The setting moon was giving less light due to the eclipse, while the sun at dawn was brightening the sky with its fingers of light. The high mountains to the east of Baguio delayed the apparent sunrise for about five minutes.

During the eclipse, photographs were taken by Father Richard Miller, S.J., the Observatory astronomer.

Baguio experienced only a partial eclipse. Observers at other locations, not in the Philippines, could have watched the moon in total eclipse for an hour and eighteen minutes. The interval of total and partial eclipse by the umbra was very favorable being more than three hours and a half.

After six months, November 7, 1957, when the moon is full again there will be another total lunar eclipse. This should afford Philippine observers with an opportunity to see a lunar eclipse in all its phases.