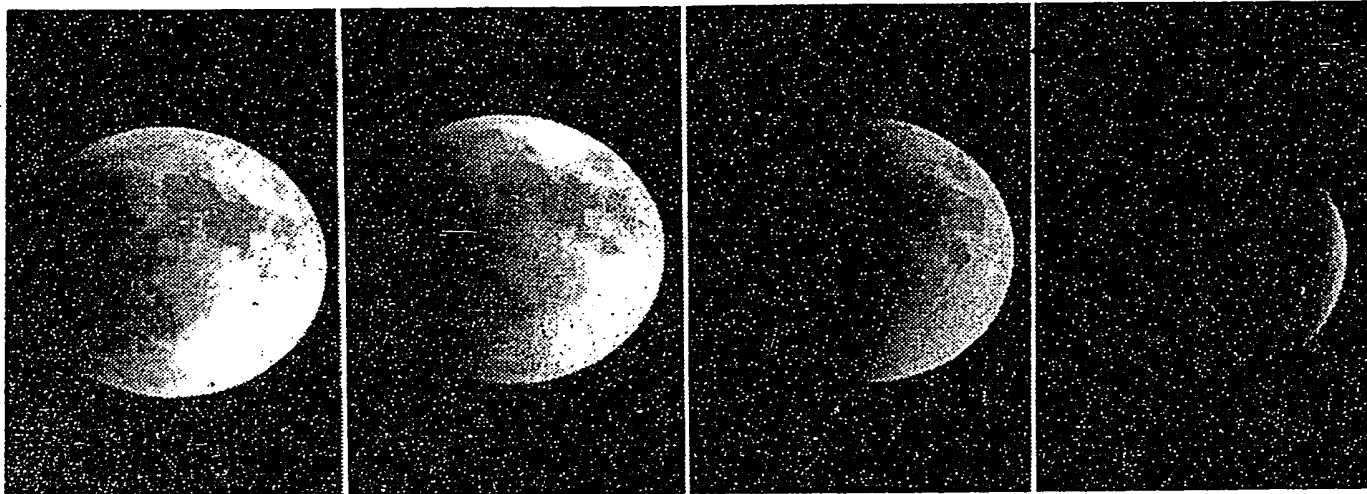


# Total Lunar Eclipse Seen in Cloudless Skies Here

By ROBERT REINHOLD

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Associated Press

The moon passing into the shadow of the earth during the lunar-eclipse last night. From left, the photographs were taken at 10:12, 10:25, 10:50 and 11:10 P.M. Eastern standard time, respectively. Total eclipse occurred at 11:22.

By ROBERT REINHOLD

Amateur skygazers and a scattering of professional astronomers throughout the Western Hemisphere turned out last night to watch a total eclipse of the moon, the last such eclipse to be widely visible until 1971.

The weatherman obliged with cloudless skies over New York and most of the nation and the moon responded with a spectacular disappearing act easily visible all over North and South America.

At 10:10 P.M., the earth's long shadow in space dutifully began to nibble at the bright creamy full moon and by 11:22 it was completely obscured.

It was an exceptionally bright eclipse. Sunlight refracted by the earth's atmosphere lent a dull copper glow to the darkened lunar surface, shielded from direct sunlight.

After 50 minutes of darkness, during which time the temperature of the moon's surface plunged from 250 degrees above to about -150 degrees, a sliver of light appeared along the left edge of the moon as the eclipse began to pass. By 2:25 A.M., the moon was once again fully visible.

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### 700 on Empire State

At the Empire State Building, 700 persons bought tickets for the view from the wind-swept 86th floor observation deck, above much of the smog and haze. Thousands of other New Yorkers watched from roofs and parks, including about 200 persons in Washington Square Park.

When the eclipse began, the moon was 35 degrees above the horizon and slightly east of south. By the time the event was over, the moon had almost invisibly described a small arc in the sky and moved to a position slightly west of south.

The wide visibility was due to the time and position of the eclipse. East Coast residents will not have such an opportunity to observe a total lunar eclipse again until Feb. 10, 1971. An eclipse on Oct. 6 of this year will be observable only on the Pacific Coast. The

last lunar eclipse over New York, on Oct. 18, 1967, was largely obscured by clouds.

Among the observers at the Empire State Building were nine shaggy-haired teenage boys and a girl, all members of the Amateur Observers Society.

With three telescopes, an assortment of binoculars, cameras, radios and a guitar, they recorded the event with considerably more excitement than they had last year, when their vigil throughout a raw October night was rewarded with only a fleeting glimpse of the lunar eclipse through heavy clouds and fog.

### Little Scientific Interest

Although lunar eclipses are not as common as eclipses of the sun, last night's eclipse attracted only routine scientific interest. A few observatories photographed the event, more for the record than to obtain new scientific data.

A total lunar eclipse occurs only when the sun, earth and a full moon fall into a direct line. At this time, the moon, which orbits at about 238,000 miles from the earth, passes through a cone-shaped shadow that extends 860,000 miles into space

Usually the full moon passes above or below the shadow cone every month.

According to Dr. Kenneth L. Franklin, assistant chairman of the American Museum-Hayden Planetarium, eclipses have been of value in the past in studies of the lunar surface. Through infrared photography, it has been found that certain spots on the surface remain relatively warm as the moon cools during the eclipse.

This suggests that these spots are sites of large chunks of rock that extend well below the surface and bring up heat.

In its orbit, the moon travels east in relation to the earth's surface. However, the earth spins around its own axis to the east at a faster speed. Therefore, the moon appears to move in the sky from east to west.

The faint color of the moon during the eclipse is considered an indicator of the condition of the earth's atmosphere. Generally, if the air is clear, the eclipse will have a copper glow as it did last night. If the earth has a heavy cloud cover, less light will pass through the atmosphere and the moon will be very dark.