

Moon Occults Saturn Next Friday

The first of the interesting astronomical events scheduled for 1927 will take place Friday morning, January 28, when the moon occults Saturn. The earth's satellite, in its wanderings, will pass between the earth and the planet, and, as the moon is not transparent, the planet will be hidden. It is like an eclipse of the sun, with Saturn pinch-hitting for the sun. While this astronomical event has not the great scientific importance that is attached to a solar eclipse, it is rare and interesting enough to be well worth watching. Every astronomer in the area where the occultation will be visible will be watching, provided the weather is clear.

The last time that Saturn vanished behind the lunar disc was over ten years ago on August 25, 1916. Then the phenomenon occurred very early in the morning. On Friday, the occultation will begin at about sunrise, in the eastern states, so that the sky will be too bright for the disappearance to be visible to the unaided eye. With even a small telescope, however, the planet will be visible, and it can be seen gradually to approach the edge of the moon, and then slowly disappear behind it. This is called by astronomers the "immersion." About an hour later, Saturn will reappear on the opposite side of the moon. This reappearance is the "emersion," when the planet will seem to pop out from nowhere. The moon will be past the last quarter, and in the crescent phase, when the moon is moving to a position between the earth and the sun. As the sun is the moon's only source of illumination, the lighted area that we see forms the crescent shape, the inner edge of the crescent being merely the edge of the shadow on the dark side of the moon, the side away from the sun.

The immersion of Saturn takes place at the bright edge of the moon, but the emersion occurs from behind the shaded edge. As this part of the moon is invisible, the planet will seem to appear without warning. Through a telescope the edge of the rings which encircle the planet will first be seen, finally followed by the whole planet.

Though the occultation occurs near sunrise in the eastern states, at a time when people are more apt to be up, it is in the Middle West and Northwest that it will be most spectacular as a naked eye phenomenon.

In this area the sunrise will be late enough and the sky will be dark enough, to permit Saturn to be seen without telescopic aid. Of course, even in the west unaided eye observations will miss the beauty of Saturn's rings since they are only visible through telescopes. The planet will appear merely as a bright star. In the southwestern part of the country the occultation will not be visible at all, and Saturn will merely draw close to the moon and then draw away again.

In one respect, the occultation of Saturn will differ from those of bright stars. Saturn has appreciable area, as we see it, so that as it slowly passes behind the moon, it will gradually diminish in brilliance, and as it reappears, it will gradually brighten. A star, on the other hand, through even the most powerful telescope, appears as a point of light, and therefore vanishes and reappears instantaneously behind the moon. Even the disappearance of a star would be gradual, however, but for the fact that the moon is devoid of an atmosphere.

On the rare occasions when another planet, such as Jupiter, occults a star, the star vanishes somewhat gradually, because there is some sort of a gaseous shell around Jupiter. The same phenomenon makes the sun seem fainter at sunset, because then its light has to pass through a greater layer of the air which surrounds the earth. The lack of a lunar atmosphere, however, does have one effect in the occultation of Saturn; we see the details of the planet sharply right up to the lunar disc.

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ARCHÆOLOGY

No Bronze Age in Siberia

Settlements of men of the Old Stone Age found in southwestern Siberia are reported by Waldemar Jochelson, Professor of Ethnology at Leningrad University, now in the United States writing a book on the archæology of Kamchatka for the Carnegie Institution of Washington. He believes that in Manchuria, Mongolia and Siberia, the late Stone Age passed directly over into the Iron Age without passing through the Bronze Age which intervenes in Western Europe.

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Times of Saturn's Occultation

City	Begins	Ends	Sun Rises	Place of Reappearance (see note)
Atlanta.....	7:08	8:19	7:36	16 min.
Boston.....	7:24	8:47	7:02	13
Buffalo.....	7:10	8:30	7:34	13
Chicago.....	5:58	7:13	7:05	13
Denver.....	4:49	5:34	7:13	15
New York.....	7:19	8:42	7:11	14
St. Louis.....	5:57	7:06	7:08	14
Seattle.....	3:40	4:15	7:45	15
Wash., D. C.....	7:14	8:36	7:11	14

Note—As Saturn will reappear on the dark side of the moon, you will have to know where to look for its reappearance in order to see it. Imagine that the moon is full and shows a complete circle instead of a crescent, and further that it is covered with a clock face, the figure 12 at the top. A minute hand on the clock, indicating the number of minutes after the hour given in last column, would point to the place where Saturn will emerge from occultation.

Times given are standard for cities listed.

The occultation will not be visible in California, Nevada (excepting the northern part), Arizona, New Mexico (except the northeastern corner), and Texas, south of the Brazos River. In these regions, Saturn will pass close by the moon.

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MEDICINE

Disease From Raw Fish

The Chinese preference for eating fish uncooked lays millions in the regions around Canton open to attacks of a serious parasitic disease. The source of the malady, says Dr. Ernest C. Faust, of the Peking Union Medical College, in reporting a recent survey of the parasitic diseases of China to the Archives of Pathology, is a fluke or worm that passes one stage of its existence in fresh-water fishes.

The parasite preys on the cat and dog population of almost every province in China according to Dr. Faust. It gains access to the fish through which it reaches man by means of the common snail wherein it passes one period of its varied career. In man the flukes attack the bile duct and in cases of severe infestation produce grave disturbances of the liver.

Dr. Faust and his co-workers have found that doses of the indicator dye, gentian violet, small enough not to be harmful to the host, act as a fairly effective specific in killing off the parasites. The only really efficacious method, however, for getting rid of the disease he declares, would be to teach some twenty millions of Chinese that fish should not be eaten until it is properly cooked.

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