

## July Skies

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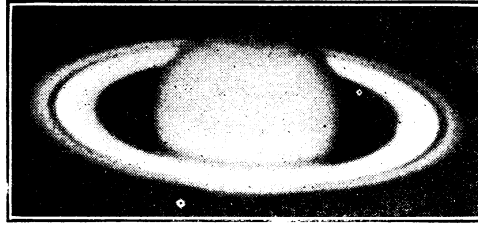
is the planet Venus. On the fifth of July this planet will engage in a little show of its own when it comes close to Regulus, the bright star at the end of the handle of the "Sickle" in Leo, the lion. Regulus is almost directly west about 8:30 p. m., at this time, and Venus will be to the north a distance about equal to the diameter of the full moon. Though Regulus is a first magnitude star, Venus will be a great deal brighter.

Mars, one of the two other naked eye planets now visible in the evening sky, is also in this part of the heavens, and on the twenty-third of the month it will also be near Regulus, but about twice the diameter of the moon away. Mars, however, will be about a magnitude fainter than Regulus.

Saturn is probably the most interesting of the planets now in the evening sky, though to appreciate fully its features one needs a small telescope. Saturn is now in the southern sky, directly south about 8:30 p. m. Most conspicuous about it is the famous system of rings, shown in the illustration in a photograph made at the Mt. Wilson Observatory. These rings were first noticed by Galileo, who, in 1610, was the first man to examine the heavens with a telescope, but he did not realize just what they were. It was not until 1656 that Huyghens, the Dutch astronomer, and inventor of the pendulum clock, discovered their true nature.

### Saturn's Giant Rings

The rings are enormous things. The planet itself is about 74,100 miles in diameter, but the outermost ring is 171,000 miles from one edge to the



SATURN—the ringed planet

opposite, while the innermost ring is 88,100 miles in its internal diameter. To a person on the planet's surface at the equator, therefore, the nearest part of the ring system would be about 7,000 miles overhead, nearly a distance great enough to permit the earth to pass through them.

Yet despite the great diameter of the rings, they are very thin. Their thickness is not over 10 miles, so thin that if we were to make a model of them to the scale of 10,000 miles to the inch, which would make the outer ring about 17 inches in diameter, the thinnest tissue paper would be too thick to represent them properly.

As Saturn reappears in the evening sky year after year, the rings take on a different aspect. Sometimes they seem to be spread out, much more nearly circular than at other times, when they are very thin and may even disappear for a time. This is a result of the planet's revolution in its orbit, and the fact that the plane of the rings is not the same as the plane in which the planet itself moves. Sometimes the earth is directly in line with the rings; this happened in 1921, when the rings appeared at best as a thin line. Since then, however, the rings have been spreading out until now they are nearly as far open as in the illustration, while by 1936 they will again be seen on edge.

### Planet Occulted

On July 10, the moon, which will than be in a gibbous phase between first quarter and full moon, will come close to Saturn, finally passing in front of it. This is called occultation. At 4:30 p. m., eastern standard time, on the 10th, which is a Sunday, despite the blue laws in some parts of the country, the planet will disappear behind the lunar disc. As this is several hours before sunset, it will not be possible to see Saturn with the naked eye, though the moon will be easily visible, in the southeast. However, with a small telescope, the planet should be picked up as it vanishes. Then, at 5:30 p. m., eastern standard time, comes the emersion, when the planet reappears on the opposite side of the moon.

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## ASTRONOMY

### Eclipse Cloudy In Norway

Partial success of the observations of the total eclipse of the sun of June 29 in England and the failure of expeditions to Norway because of clouds have again proven the fallibility of advance weather prospects. The English chances of clear weather were estimated months ago as only one in three, while in Norway, they were said to be even. Yet the eclipse was seen in England, partly through light clouds, while in Norway thick clouds completely obscured the view. Dr. S. A. Mitchell, director of the McCormick-Chaloner expedition to Norway, the only scientific party from the United States, was unable to make any observations. This was his seventh eclipse, yet the magic number failed to bring him luck.

Dr. L. J. Comrie, of the British Nautical Almanac Office, who made the official advance calculations of the path of the eclipse over Britain, was at Southport, near Liverpool. He reports that the eclipse was seen from there through thin clouds, which concealed the faint outer extensions of the corona that were so noticeable at the eclipse of January, 1925, visible in New York. The corona is the outermost part of the sun, consisting at least partly of fine "dust" particles, and can only be seen at the time of a total eclipse. However, the bright inner corona, and the ring of the chromosphere, the sun's outer layer, or "atmosphere," could be seen behind the black disc of the moon. A large prominence, or red flame of hydrogen, was observed from the upper part of the sun.

Gerald Merton, British astronomer and former war aviator, observed the eclipse from his own airplane, and succeeded in rising above two layers of clouds, at 4,000 and 9,000 feet altitude. He flew at 10,000 feet and while another layer of clouds was 5,000 feet above him, he had a fair view of the phenomenon. He also observed the shadow of the moon sweeping across the clouds beneath him.

At Giggleswick, where Sir Frank Dyson, astronomer royal, located his instruments, a rift in the clouds appeared opportunely a few minutes before the total eclipse commenced. It was observed with a clear sky from that point. Even this was not as narrow an escape as that of a party from the Lick Observatory to Goldendale, Washington, to observe the eclipse in June, 1918.

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