ASTRONOMY

Astronomers Can Predict

Celestial Happenings Can Be Foreseen Better Than Those On Earth; Four Eclipses Scheduled for 1939

By JAMES STOKLEY

IT IS, unfortunately, impossible to predict what is going to happen on the earth during the coming year, but there are some things which will happen in the sky, that we can foretell.

Not all celestial happenings are anticipated, however. For instance, no one knows when a very bright comet, rivalling the famous ones of the past, may come into our sky. Some of the most brilliant of previous years have been entirely unexpected.

Eclipses, however, can be foretold with great accuracy. There will be four in 1939, two of which will be seen from the United States.

The first will be on April 19, when the moon will come between the earth and the sun. This happens when the moon is rather more distant than average, so its apparent size will not be great enough to cover the sun. Hence, even where the eclipse is greatest, a ring of the sun's edge will remain visible, producing what is called an "annular" eclipse.

This ring effect will only be seen along a path across Alaska. Over Canada, and all the United States except the southern tip of Florida, there will be a partial eclipse, with the moon's disc partly covering the sun. The nearer the observer is to Alaska, the greater will be the eclipse.

May 3 is the date of the second eclipse. This is of the moon, and total, because the moon will then completely enter the earth's shadow. It will not, however, be seen from the United States, but the region of visibility will include Alaska, the Pacific Ocean, Australia, Asia, Africa and eastern Europe.

A total eclipse of the sun comes on October 12, when the moon will hide the sun for as much as a minute and a half. This would attract great astronomical attention were it not for the unfortunate fact that the region traversed by the moon's shadow, along which it will be seen, lies in the Antarctic, close to the South Pole. In the southern tip of Africa, and in southeastern Australia, it will be visible as a partial eclipse.

The last eclipse of the year is another of the moon, visible over all of North and South America, most of Europe, eastern Asia and Australia. It will not actually be total but more than 99 per cent. of the moon's diameter will be immersed in the earth's shadow, so it will be practically a total eclipse.

Of even greater interest than these eclipses during the year will be the planet Mars, for during the summer it will be closer than for centuries to come, or than it has been since 1924. In that year, on August 23, it was 35,000,000 miles from us.

Last July it was on the opposite side of the sun, a distance of 248,000,000 miles. On January first, its distance is 178,000,000 miles. During the year it draws closer and closer until, on July 27, it reaches the minimum distance of 36,024,300 miles, when it will shine with great brilliance in the night time sky.

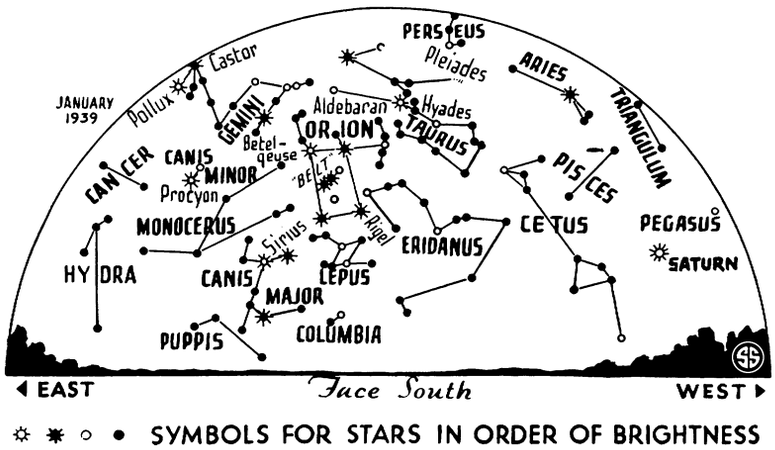
Then, many observatories will make careful studies. Using new photographic material, and techniques developed since 1924, it is likely that important facts may be learned, some of which may have a bearing on the perennially interesting problem of possible life on this neighboring world.

During this month two bright planets have joined the stars which make glorious the January evening skies. In the early evening Jupiter can be seen in the west. Its brilliance exceeds any other star or planet now apparent, but it sets before the times for which the accompanying maps are drawn, namely, 10:00 p. m., January 1; 9:00 p. m., January 15 and 8:00 p. m., January 31. Saturn, however, which is fainter, is indicated in the figure of Pegasus.

In addition to Jupiter and Saturn, three other planets are visible to the unaided eye. These can all be seen this month in the early morning. Brightest of the trio is Venus, in the constellation of Scorpius, which appears in the southeast a few hours before the sun. The great brilliance of Venus leaves no doubt as to its identity. Higher, and farther south, in the constellation of Libra, the scales, Mars is visible, red in color and very much fainter. For a few days, at the beginning of the month, Mercury will also appear very low in the morning twilight.

On January 14 the moon passes Mars, less than one lunar diameter to the south. The moon passes Venus on the 16th, Jupiter on the 23rd and Saturn on the 26th. On January 3, at 5:00 p. m., the earth is at perihelion, its nearest distance to the sun during the whole year.

Science News Letter, December 31, 1938



☼ ✸ ○ • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS