

ASTRONOMY

Jupiter Rivals Venus

Mars, approaching earth, is on view early mornings, and will brighten to eight-tenths of a magnitude by March's end. Year brings closest brush of earth and Mars since 1924.

By JAMES STOKLEY

➤ WITH THE COMING of March, the planet Venus continues to brighten and climb higher into the evening sky.

Soon after the sun goes down, and before any other star or planet appears, it can be seen as a brilliant jewel in the west. At the middle of the month it is some 60 times brighter than a typical first magnitude star.

Another planet, Jupiter, rivals Venus, for it is about a fifth as bright—still far more brilliant than any other star or planet. Both of these shining orbs are shown on the accompanying maps, where the sky is depicted as it looks about ten o'clock, your own kind of standard time, at the first of March; about 9:00 p.m. on the 15th and 8:00 p.m. on the 31st.

Venus is in the constellation of Aries, the ram, while Jupiter, high in the south, stands among the stars of Leo, the lion.

Jupiter is seen just to the right of a part of Leo called the sickle, because the stars are arranged in the form of this implement. Regulus, a star of the first magnitude, is at the end of the handle, which points downward, while the blade curves around so that it points toward the southwest.

Ten First Magnitude Stars

Altogether, ten first magnitude stars are visible on March evenings, more than at any other time of year.

Below Leo is Virgo, the virgin, in which we see Spica. Although first magnitude, in its present position on account of the absorption of its light in passing through the atmosphere, it appears somewhat fainter.

To the left of Virgo is Bootes, the bear-driver, in which we find Arcturus. Another way to locate this bright star is to look in the northeast for the big dipper, part of Ursa Major, the great bear.

The dipper is now inverted, and the pointers, which are in the bowl, indicate the direction of Polaris, the pole star, which is only of the second magnitude. If you follow the curved line of the dipper's handle toward the south, it will bring you to Arcturus.

The most brilliant stars of the evening sky appear in the southwest, where we can still see the array that shone so brightly in the southern evening sky in January.

There is Orion, the warrior, a group which contains two stars of the first magnitude. These are Betelgeuse and Rigel,

which can be seen, respectively, above and below the three stars that make up the belt of Orion.

To the left, and a little lower, is Canis Major, the greater dog, with Sirius, the dog star, brightest that we can see in the evening sky.

It is still many times fainter than either Venus or Jupiter, but these are not stars but planets, which shine by reflected sunlight. The stars, in contrast, are far distant suns, each shining by its own light.

Above Canis Major is the lesser dog, Canis Minor, with Procyon, and still higher we find Pollux, one of the twins, in the constellation of Gemini. A little farther around to the right is Auriga, the charioteer, with Capella.

Below this is Taurus, the bull, with a star distinctly red in color, Aldebaran, to mark the animal's eye. Just below Taurus is Aries, in which Venus now stands.

Saturn Appears at Midnight

About midnight another planet, Saturn, appears in the southeast, in the constellation of Scorpius, the scorpion. It is a little fainter than Procyon, although brighter than Aldebaran.

By about 3:00 a.m. Mars has come into view above the southeastern horizon, in the constellation of Sagittarius, the archer, where it will remain during the month. Its distance from the earth will decrease from 146,239,000 miles on the first to 121,627,000 miles on March 31.

On the first its magnitude is 1.2, about the same as Pollux, but at the end of March it will brighten to 0.8 magnitude, an increase of nearly 50%.

During spring and summer it will come still nearer until September, when it will

be 35,120,000 miles away, nearer than it has been since 1924.

This month's full moon comes on March 26. Observed at that time the so-called "seas" are easily visible. These are the dark markings that form the face of the "man in the moon," and the other fanciful figures people have imagined they saw there.

Actually there is no water on the moon; these were called seas by Giovanni Battista Riccioli, an Italian astronomer who thought there was. In 1651 he published his great work, known as the "Almagestum Novum," or the "New Almagest." The original Almagest was a famous astronomical work written about the second century, A. D., by Claudius Ptolemaeus of Alexandria.

Fanciful Names for Seas

For his book, Riccioli made some very fine engravings of the moon, as well as a map of its features as seen through his telescope.

The seas he gave rather fanciful names, such as Sea of Rains, which is one of the largest, the Sea of Clouds, the Sea of Tranquility, the Marsh of Sleep and the Lake of Dreams. All these names are still used by lunar observers.

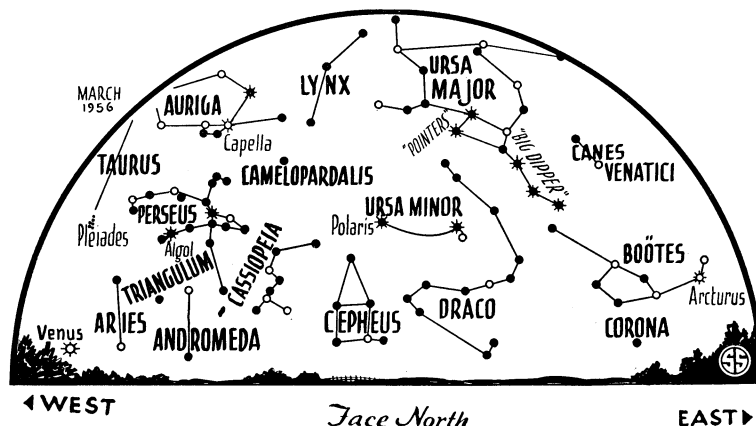
The eye of the face of the "man in the moon" to the right is formed by the Sea of Tranquility and the other eye by the Sea of Rains. The Sea of Clouds is his mouth.

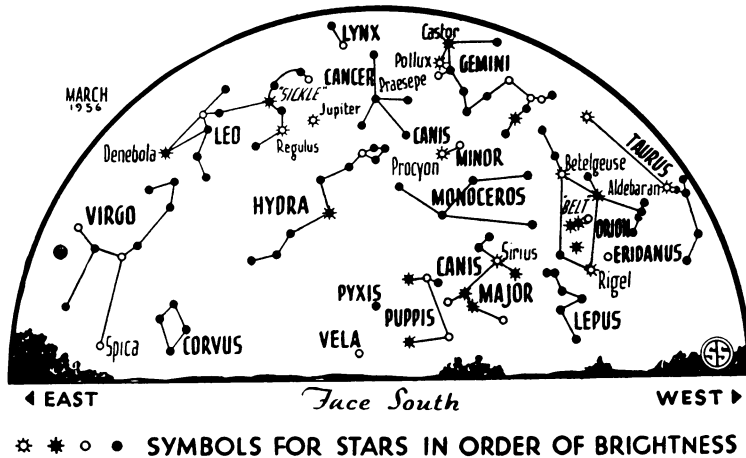
Craters Visible With Binoculars

About March 19, when the moon is at first quarter, one can easily see that the edge of the sunlit portion is not entirely smooth. Looking through a small telescope, or even a good pair of binoculars, some of the larger craters become visible.

These are far larger than any volcanic craters on earth. Some are well over a hundred miles in diameter.

In his map, Riccioli named these craters after famous astronomers of his time and earlier, not forgetting to put himself there





Celestial Time Table for March

March EST

3	9:44 a.m.	Moon passes Saturn
4	6:53 a.m.	Moon in last quarter
6	12:11 a.m.	Moon passes Mars
	8:00 a.m.	Moon farthest, distance 251,500 miles
10	2:07 a.m.	Algol, variable star in Perseus, at minimum brightness
12	8:36 a.m.	New moon
	10:56 p.m.	Algol at minimum
15	7:46 p.m.	Algol at minimum
	10:41 p.m.	Moon passes Venus
19	12:13 p.m.	Moon in first quarter
20	10:21 a.m.	Vernal equinox (beginning of spring in Northern Hemisphere)
21	7:00 p.m.	Moon nearest, distance 229,200 miles
23	9:41 a.m.	Moon passes Jupiter
26	8:11 a.m.	Full moon
30	5:55 p.m.	Moon passes Saturn

Subtract one hour for CST, two hours for MST, and three for PST.

Science News Letter, February 25, 1956

NATURAL RESOURCES

Oilmen and Miners Agree To Respect Each Other

► OIL OPERATORS are not going to drill on top of potash miners and potash miners are not going to mine under the drillers any more in southeast New Mexico.

In the past, in Eddy and Lea counties of New Mexico where oil and potash reserves are found together, both miners and drillers have thought the others' operations presented a danger to them.

Secretary of the Interior Douglas McKay has now reported that both parties working with the U. S. Geological Survey and other agencies have agreed that no mining would be conducted where it would endanger oil operations and no drilling would take place where it would endanger mining operations.

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as well as his friends. There are so many craters on the moon that he could not see all of them with his early telescope, and he missed some that were large enough for him to observe.

Since then, other astronomers have published books on the moon and accompanying maps. With better optical equipment, they have been able to observe more objects, and to designate them more names have been added.

Following the example of the Italian pioneer, these have generally been named after astronomers, explorers and other scientists.

Benjamin Franklin has a crater, so does Charles T. Yerkes, the Chicago millionaire who gave the money for the Yerkes Observatory of the University of Chicago. This institution, which opened in 1895, has the largest refracting telescope in the world, with a 40-inch lens.

James Lick, who established the Lick Observatory of the University of California, also has a crater.

Large, New Moon Map

One of the important events in astronomical circles in the past year has been the publication of a new book on the moon, by two English astronomers, H. P. Wilkins and Patrick Moore, who have observed the moon through several of the world's great telescopes. (See SNL, Dec. 17, 1955, p. 396.)

Their map, 300 inches in diameter, and printed in sections in the book, is perhaps the most complete yet issued, and their descriptions of the features make the work one that should remain authoritative for a long time to come.

Like their predecessors, they have taken advantage of their opportunity to add some new names, 99 in all. One is Fisher, after Clyde Fisher, first director of the Hayden Planetarium in New York, who died in 1949.

Another is after Bernard Lyot, a French astronomer who developed a method of photographing the sun to show its outer layer, the corona, without waiting for a total eclipse.

Several Arctic and Antarctic explorers,

Nansen, Shackleton, Peary, Amundsen and Scott are now on the moon. Appropriately, they have craters near the lunar poles.

Frederick E. Wright, who made observations of the moon from the Mt. Wilson Observatory, gets a crater. So does Russell W. Porter, an amateur astronomer of Vermont, who aided thousands of other amateurs in making their own telescopes. Later he helped plan and build the 200-inch Hale telescope on Mt. Palomar. Albert G. Ingalls, former editor of *Scientific American*, now retired, who spread knowledge of Porter's work in books, also has a crater.

Both Wilkins and Moore themselves are on the map, but they got on the moon prior to the publication of this new book.

There are still many features on the moon that have no special name, so perhaps there is still hope for others to be added to this distinguished list.

However, the big ones are all taken, and future people who want lunar craters will have to be content with small ones perhaps only a few miles in diameter.

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