

ASTRONOMY

# Spring Comes on March 20

Will be welcomed by three planets in evening sky. Mars and Saturn pass each other because the orbit of Mars is smaller and nearer the sun.

By JAMES STOKLEY

► THREE PLANETS in the March evening sky join with the stars to welcome the coming of spring, which begins at 1:49 p.m., EWT, on Monday, March 20, when the sun on its northward journey in the heavens is directly over the earth's equator.

Two of the planets, both of which we have been seeing for a number of months past, are very close together; indeed, one passes the other. These are Mars and Saturn, both to the west in the constellation of Taurus, the bull. This star group, like the others now visible in the evening, is shown on the accompanying maps. They are drawn to depict the appearance of the heavens at about 11 p.m., war time, on March 1, and 10 p.m. in the middle of the month.

At the beginning of March Mars is west of Saturn, but since it moves in an orbit that is smaller and nearer the sun than Saturn, it moves through the sky more rapidly. Thus, though both planets are traveling in an easterly direction among the stars we see in the background, Mars overtakes Saturn on March 7 at 11 a.m. EWT. At this time, of course, they will be invisible, but on that night, as on the evening of the 6th, they will be very close together. On the maps, they are indicated about as they will be on March 15.

### Other Planet Is Jupiter

The other planet is Jupiter, to the southeast, in the constellation of Leo, the lion, near the bright star Regulus. Jupiter, of magnitude minus 2, is by far the brightest star or planet that is visible these evenings. Mars and Saturn are considerably fainter, with magnitudes plus 0.9 and 0.3 respectively. In terms of relative brilliance, Saturn is now about one-and-three-fourths as bright as Mars, but Jupiter is eight-and-one-third times as bright as Saturn.

Planets, of which the earth is one, have no luminosity of their own, but their illumination comes from the sun. The stars, however, are bodies similar to the sun—glowing globes of gas which

shine by their own incandescence. They are kept alive, according to modern theory, by a process of transmutation, in which hydrogen is changed to helium in the presence of carbon which is unchanged.

Sirius, to the southwest in Canis Major, the great dog, is one of the nearest stars, and, by virtue of its proximity, is the most brilliant in appearance. Actually, however, it is not particularly bright intrinsically. Far more brilliant in actual candlepower is Rigel, the lower of the two brightest stars in Orion, the warrior, now seen in the southwest. Rigel is below the three stars that form the belt of Orion, while Betelgeuse is above.

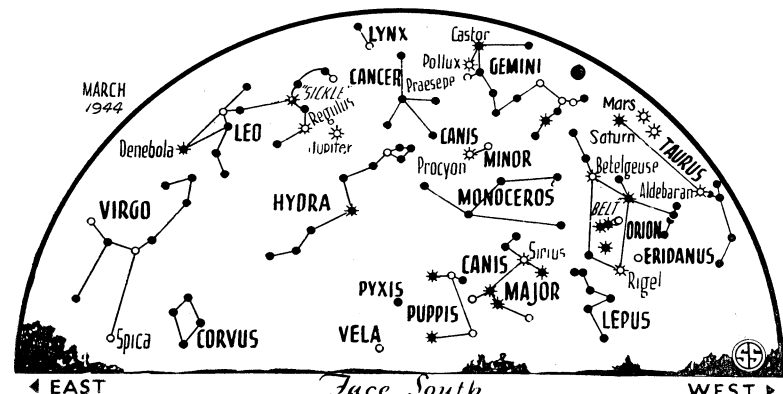
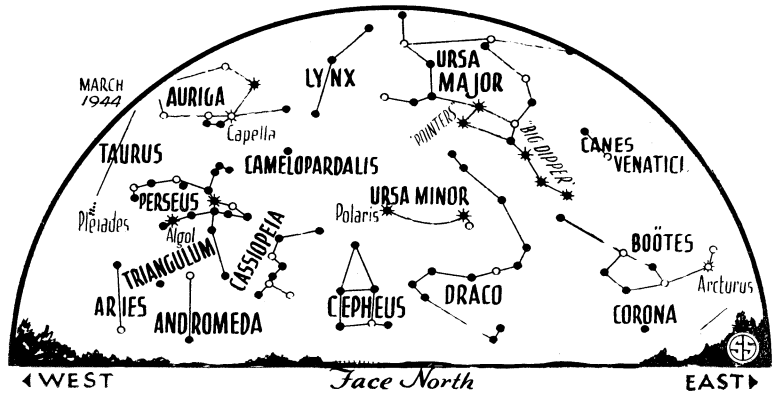
Higher in the sky than Canis Major is the lesser dog, Canis Minor, in which Procyon shines. Still higher is Pollux, one of the twins, Gemini. These are

hardly identical twins, because Castor, Pollux's brother, is considerably fainter, and does not rate as first magnitude. Another first magnitude star, however is Aldebaran, in Taurus the bull, seen in the west below Mars and Saturn. And still another is Regulus, in Leo, close to which Jupiter shines.

### Arcturus and Spica

Then there are two more toward the east. There is Arcturus, in Bootes, and Spica, in Virgo, the virgin. On the map, Spica is shown by the symbol for a fainter star. This is because, when as low as here indicated, much of its light is absorbed by the earth's atmosphere. Not until it rises higher in the sky do we see it at full brilliance.

As for the planets Mercury and Venus, which have not thus far been mentioned, the former is too nearly in the direction of the sun to be seen this month, though it will come into view as an evening star in April. Venus is now a morning star, rising in the east about



☼ \* ○ ● SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

an hour before the sun and not nearly as conspicuous as it was a few months ago.

The ecliptic, the path along which the sun seems to move around the sky from west to east once a year among the stars, passes through 12 constellations which make up the zodiac. The planets, too, stay close to this line. Of the 12 zodiacal constellations—Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricornus, Aquarius and Pisces—Cancer, the crab, is the faintest. On March evenings it is in its best position to view, high in the south, where it is indicated on the maps. It contains no star of the first, nor even of the second or third magnitude. The brightest stars in it are of magnitude four, or about a fortieth as bright as the typical star of the first magnitude.

**Praesepe Not a Star**

On the map, in the constellation of Cancer, is the name "Praesepe," and near the foot of the initial letter is a small cross. Praesepe is not a star, but a cluster of stars. Its true nature was first realized by Galileo, the Italian astronomer who in 1610 was the first to look knowingly at the heavens with a telescope. In his book, the *Sidereus Nuntius* (*Starry Messenger*) in which he gave his discoveries to the world, he referred to "the nebula called Praesepe, which is not one star, only, but a mass of more than 40 small stars." These can be seen with a pair of opera glasses, or binoculars. Large telescopes reveal several hundred stars.

**Called "the Beehive"**

A common name for Praesepe is "the Beehive," the origin of which is uncertain. Another is "the Manger," and as such is connected with two nearby stars. One of these is shown on the map as the one from which the several lines of the constellation radiate. The other is a still fainter one, not shown, which is a short distance above. These are called the Aselli—the "asses"—supposed to be feeding from the manger.

Praesepe has long been regarded as a weather portent, for Pliny wrote that "If Praesepe is not visible in a clear sky it is a presage of a violent storm." An ancient Latin poet, Aratos, wrote in similar vein: "A murky manger with both stars" (that is, the Aselli) "shining unaltered is a sign of rain." A curious name that was given to it by the Chinese was "Exhalation of Piled-Up Corpses"!

**Celestial Time Table for March**

March	EWT	
1	4:40 p.m.	Moon in first quarter.
2	4:16 a.m.	Moon passes Mars.
	8:35 a.m.	Moon passes Saturn.
6	2:59 a.m.	Algol at minimum.
7	7:00 a.m.	Moon passes Jupiter.
	11:00 a.m.	Mars passes Saturn.
8	3:00 a.m.	Moon farthest, distance 252,400 miles.
	11:50 p.m.	Algol at minimum.
9	8:28 p.m.	Full moon.
11	8:37 p.m.	Algol at minimum.
17	4:05 p.m.	Moon in last quarter.
20	1:49 p.m.	Sun crosses equator. Spring commences.
22	11:58 a.m.	Moon passes Venus.
23	6:00 a.m.	Moon nearest, 223,000 miles.
	11:00 a.m.	Neptune nearest, 2,719,000,000 miles.
24	7:36 a.m.	New moon.
	4:39 p.m.	Moon passes Mercury.
29	1:33 a.m.	Algol at minimum.

6:45 p.m. Moon passes Saturn.  
 30 2:19 p.m. Moon passes Mars.  
 31 8:34 a.m. Moon in first quarter.  
 10:22 p.m. Algol at minimum.  
 Subtract one hour for CWT, two hours for MWT, and three for PWT.  
*Science News Letter, February 26, 1944*

One pound of *aluminum* has the volume of three pounds of steel and one pound of magnesium the volume of about four and one-half pounds of steel.

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