

ASTRONOMY

Jupiter Still Prominent

Mars also visible low in the west in the constellation Aries, the ram. It is faint, however, because it is more than 176,000,000 miles from the earth.

By JAMES STOKLEY

▶ ALTHOUGH CONSTELLATIONS suggestive of spring are now visible in the evening skies of March, the brilliant array of star groups which made the midwinter heavens so bright is still with us, now toward the southwest. And among these orbs Jupiter still shines high in the south as the most prominent star or planet to be seen.

All these are on the accompanying maps which show the skies' appearance at about 10 p.m., your own kind of standard time, on March 1, an hour earlier at the middle of the month and two hours earlier at the end.

The planet Jupiter is seen in Gemini, the twins, just below the stars Castor and Pollux.

Lower down is Procyon, in Canis Minor, the lesser dog, and still lower the greater dog, Canis Major. In this figure we find Sirius, the dog-star, brightest of all the stars in the nighttime sky.

Orion's Belt

Toward the southwest Orion, the warrior, is easily recognized because of the three stars in a row that form his belt and the two first-magnitude stars associated with it. One is Betelgeuse, above the belt, which marks one of Orion's shoulders, while the other, Rigel, is below and located in one of his knees.

To the right of Orion is Taurus, the bull, with the ruddy star Aldebaran, also of the first magnitude. A little higher and farther to the right — shown on the map of the northern skies — is Capella, in Auriga, the charioteer.

Another planet now visible is Mars, which

is low in the west in Aries, the ram. It is now rather faint because it has receded to a distance of more than 176,000,000 miles, far beyond the close approach of less than 40,000,000 miles that it made during the past summer.

An hour or so before midnight Saturn rises, equal to a bright star of the first magnitude. It is in the constellation of Libra, the scales, which is next to Virgo in the zodiac, the belt of 12 constellations through which the planets, like the sun and the moon, seem to move.

Constellations more typical of spring than of winter can be found toward the east. High in the southeast, for example, is Leo, the lion, with the star Regulus.

This is at the end of the handle of a subgroup called the sickle since it has the shape of that useful agricultural implement. As a lion, the blade of the sickle forms the head, while Regulus is in his shoulder. The second-magnitude star Denebola, farther east, is supposedly in the animal's tail.

Below Denebola is Virgo, the virgin, and at the bottom part of this group, close to the horizon, is Spica. This is another star of the first magnitude, although it is greatly dimmed in this position on account of its low altitude.

In the northeast can be seen the great dipper, a part of Ursa Major, the great bear. The two stars in the bowl of the dipper away from the handle are well known as the pointers, since a line drawn through them toward the north leads to Polaris, the pole star, which stands almost directly over the north pole of the earth.

The handle of the dipper, too, can be used as a guide. Following the line of its curve one comes to Arcturus, in the group of

Bootes, the bear-driver.

A further continuation of this line goes on to Spica.

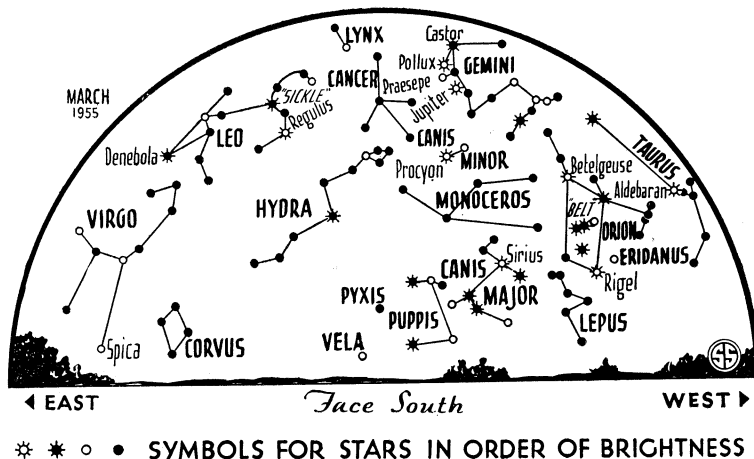
Jupiter, which is visible as soon as it gets dark, sets about four a.m. at the beginning of March, and shortly afterwards an even more brilliant planet rises in the east. This is Venus, now in the constellation of Capricornus. It is so bright that it can be followed well into the dawn, long after all the other stars and planets have vanished.

With Jupiter standing among the bright stars of Gemini, its movement can easily be followed. At the beginning of the year, for example, it was practically in line with Castor and Pollux but now it is well to the west of that line. In recent months it has been moving westerly, but on March 16 this movement ceases.

Jupiter Moves East

After that it will move toward the east. By the end of May once again it will be in line with Castor and Pollux. During the summer months it will be so nearly in the sun's direction as to make it invisible.

By the beginning of autumn it will reappear as a morning star, rising before sunrise, and on Nov. 8 will pass at a distance less than the moon's apparent diameter to the north of Regulus. But on Dec. 18 this eastward motion will halt, and Jupiter will seem to turn and move to the west once more.



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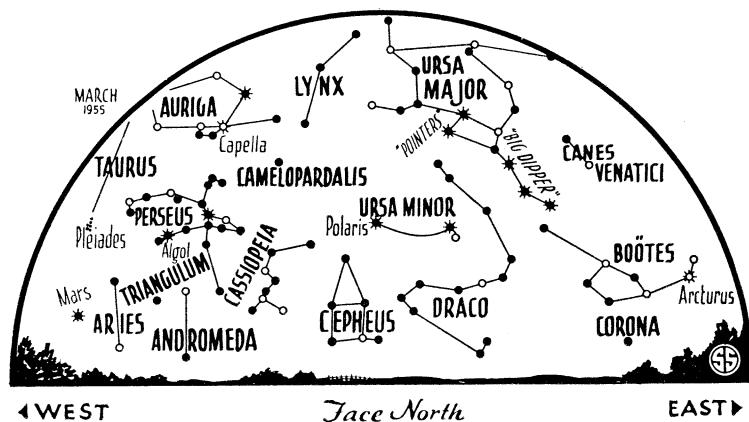
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In ancient times men watched the movements of the planets among the stars. When they saw this sort of thing happening regularly they found it hard to explain, since they supposed that the earth was at the center of the universe and that the sun, moon, planets and stars all moved around us as a center.

By the second century, A.D., there was developed the Ptolemaic theory, named after Claudius Ptolemy, the Alexandrian astronomer who proposed it. This had each planet moving in a little circle, called an epicycle, the center of which moved in a large circle around the earth.

Thus, the general movement of Jupiter, for example, would be to the east, but periodically its motion in the epicycle would take it westward, as it has been doing in recent months. As more accurate observations were made, it was found that even this did not suffice, so more and more epicycles had to be added, increasing the complexity of the celestial machinery.

Our modern concept, proposed by Copernicus in 1543, has the sun at the center and the earth revolving around it along with the other planets. The planets nearer the sun go faster both in miles per hour and in the time required for a complete revolution. Earth's speed is 18.5 miles per second while that of Jupiter is only 8.1, which takes it once around its orbit in a little less than 12 of our years.

With our higher speed, the earth catches up to Jupiter every 400 days and as we over-

take it that planet seems to go backward in the sky.

The effect is exactly the same that one often notices on a passenger train when passing a freight train on the next track. To the faster-moving passengers, it seems as if the freight is going backwards, although both are actually going in the same direction.

That is what has been happening with Jupiter in recent months, but now as we draw well away, its direct motion becomes apparent again.

Celestial Time Table for March

Mar. EST

1	7:40 a.m.	Moon in first quarter.
4	5:04 a.m.	Moon passes Jupiter.
8	10:41 a.m.	Full moon.
9	1:23 a.m.	Algol (variable star in Perseus) at minimum brightness.
10	7:00 p.m.	Mercury farthest west of sun.
11	10:13 p.m.	Algol at minimum.
13	5:07 p.m.	Moon passes Saturn.
14	4:00 p.m.	Moon farthest, distance 251,300 miles.
	7:02 p.m.	Algol at minimum.
16	11:36 a.m.	Moon in last quarter.
20	9:08 p.m.	Moon passes Venus.
21	4:36 a.m.	Sun over equator, spring commences.
23	10:42 p.m.	New moon.
26	11:00 a.m.	Moon nearest, distance 226,400 miles.
27	5:34 a.m.	Moon passes Mars.
29	3:08 a.m.	Algol at minimum.
30	3:10 p.m.	Moon in first quarter.
31	10:42 a.m.	Moon passes Jupiter.
	11:57 p.m.	Algol at minimum.

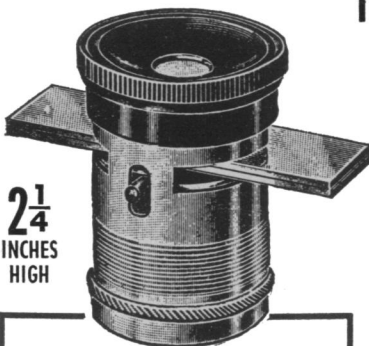
Subtract one hour for CST, two hours for MST, and three for PST.

Science News Letter, February 26, 1955

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