

## ASTRONOMY

# Jupiter Still Prominent

Jupiter, high in the south, continues to be prominent in February evening skies, outshining even Sirius, the most brilliant star visible in the nighttime sky.

By JAMES STOKLEY

► AS IT HAS BEEN in recent months, Jupiter continues to be a prominent planet in the evening sky during February. It outshines the brilliant winter stars that surround it.

The position of Jupiter is shown on the accompanying maps, which depict the sky as it looks about 10:00 p.m., your own kind of standard time, on Feb. 1. It looks the same an hour earlier at mid-month, and two hours earlier as March begins.

Jupiter is high in the south, above the bright stars of the familiar constellation of Orion, the warrior, which has two stars rated by astronomers as first magnitude. Betelgeuse, the upper, is about one-twelfth as bright as Jupiter, and Rigel, the lower, is about one-seventh. Between them are three somewhat fainter stars in a row. These form Orion's belt.

Actually, Jupiter is in the constellation of Taurus, the bull, close to a third magnitude star called zeta Tauri, which is supposed to mark one of the bull's horns. Lower is the red and brilliant Aldebaran, which marked the bull's eye in ancient star maps.

Below and to the left of Orion stands the larger dog, Canis Major. In it is the most brilliant star visible in the nighttime sky—Sirius, often called the dog star. However, even Sirius is only about two-thirds as brilliant as Jupiter.

## Other Bright Stars Visible

Several other first magnitude stars are also visible. More bright stars are seen in the evening sky at midwinter than at any other time of year. Above Sirius is the lesser dog, Canis Minor, with the star Procyon. Above this group are the twins, Gemini, with the bright star Pollux. Overhead, shown partly on the map of the southern sky and partly on the one for the north, is Auriga, the charioteer, with Capella.

Another bright star shines in the east, in the constellation of Leo, the lion. This is Regulus, which forms the end of the handle of the sickle, a prominent group of six stars.

To the north are the "circumpolar" constellations, which never set from most latitudes of the United States. As all other stars do, they appear to circle daily around Polaris, the pole star.

Polaris itself is part of Ursa Minor, the smaller bear. To the right stands the greater bear, Ursa Major, with the well known group of seven stars that form the Big Dipper. This dipper never sets, but some of the fainter stars in the greater bear do go below the horizon. Winding between the

two bears and below the smaller one is a serpentine figure known as Draco, the dragon. Farther to the left are the constellations Cepheus and Cassiopeia, representing a king and queen of ancient Ethiopia.

Higher in the sky, just below Auriga, is another circumpolar figure. This is a very faint one called Camelopardalis, the camelopard, an old name for the giraffe. This constellation is not an ancient one, but was introduced in 1614 by an astronomer named Bartsch.

In addition to Jupiter, Mars and Saturn are also visible. They do not show on the maps because they appear earlier in the evening than the map times. Mars will be hard to locate because it is close to the sun. Saturn, however, is more easily located. At the beginning of the month it sets soon after sunset. In the early evening, as soon as the sky is dark, it can be seen low in the southwest in Aquarius, the water carrier. Venus, during February, will shine brilliantly low in the east, just before sunrise, and will continue to be visible until the sky is quite bright. Mercury will not be easily visible, since it is behind the sun on Feb. 5.

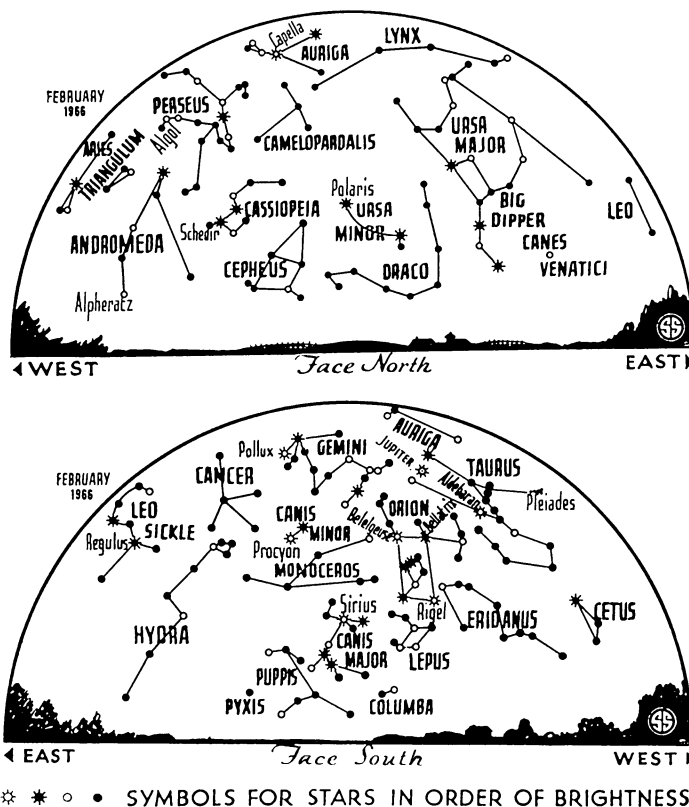
Jupiter, which is so prominent in the south on February evenings, is a fascinating object when seen through even a small telescope. It has 12 known satellites, the largest number for any planet. Most of them are tiny objects, ranging from less than 10 to about 100 miles in diameter. Two of them are bigger than our moon, and two others only slightly smaller.

At least three of the large ones, perhaps all four, have been seen without a telescope, but very keen eyesight and excellent conditions are needed to accomplish such a feat. A good pair of binoculars can sometimes reveal them, but usually a telescope is needed.

## Moons Discovered by Galileo

The large moons were discovered in 1610 by Galileo, who wanted to name them after members of the famous Medici family. However, astronomers call them by names given by a German astronomer, Simon Marius. These are Io, Europa, Ganymede and Callisto, characters from mythology.

Actually, Marius saw them before Galileo did, but failed to realize that they were satellites revolving around Jupiter. Galileo's discovery was made without any knowledge of the prior observations. After he made his announcement, Marius claimed priority, but Galileo is now given full credit for this—the first astronomical discovery made with the newly invented telescope.



These moons revolve around Jupiter, in periods ranging from one day 18 hours for Io, the innermost of the four larger moons, to 16 days 17 hours for Callisto, the farthest. Their distances from the planet range from 262,000 to 1,171,000 miles.

Ganymede is the largest, 3,120 miles in diameter. It is also brightest, with an astronomical magnitude of 4.5. This is four times as bright as a star of the sixth magnitude, generally considered the faintest that can be detected with the naked eye. Thus there would be little difficulty in seeing it with the naked eye were it not for the glare from Jupiter itself, so close to it.

Jupiter itself is 88,700 miles in diameter, larger than all the other planets. Viewed with a long telescope, Jupiter shows changing details and color—mostly orange, red and brown—in its cloudy atmosphere. About 8,000 miles below the visible surface, according to a generally accepted theory, there seems to be a layer of ice. More than 17,000 miles farther down is the solid core.

Since its deep atmosphere consists largely of ammonia gas and methane (natural gas), Jupiter would not be a very hospitable place for astronauts to land. However, Callisto or one of the other moons might make a good landing place—one from which superb observations of the planet could be made.

### Celestial Timetable for February

FEB. EST

1	7:00 p.m.	Moon passes north of Jupiter
5	10:58 a.m.	Full moon
	5:00 p.m.	Moon nearest, distance 221,500 miles
	10:00 p.m.	Mercury behind sun
12	3:53 a.m.	Moon in last quarter
16	3:20 a.m.	Algol (variable star in Perseus) at minimum brightness
17	7:00 a.m.	Moon passes south of Venus
18	midnight	Algol at minimum
19	4:00 p.m.	Moon farthest, distance 252,700 miles
20	5:50 a.m.	New moon
21	11:00 a.m.	Moon passes south of Mars
	noon	Moon passes south of Saturn
	8:50 p.m.	Algol at minimum
22	8:00 a.m.	Mars passes north of Saturn
23	11:00 a.m.	Mercury passes north of Saturn
24	8:00 a.m.	Mercury passes north of Mars
	5:40 p.m.	Algol at minimum
28	5:16 a.m.	Moon in first quarter

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

• Science News Letter, 89:58 January 22, 1966

## Do You Know?

A machine that photographs the roof of the mouth while speech sounds are being made is being used in a study of *language*.

"Oinbo," meaning *white man* in Yoruba, the main language of Western Nigeria, literally means "he who has been peeled."

Chippewa Indians grew an *herb tea* to induce abortion.

• Science News Letter, 89:58 January 22, 1966

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