

ASTRONOMY

Jupiter Joins Saturn

Jupiter, shining brightly in the constellation Taurus in the east, and Saturn in Aquarius to the south, will be visible in October evening skies.

By JAMES STOKLEY

► WITH THE COMING of October we have two planets joining the stars of the autumn evening.

To the south, in the constellation of Aquarius, the water carrier, stands Saturn. And in the east, about 15 times as brilliant, you can see Jupiter in Taurus, the bull.

Both planets, as well as the stars, are shown on the accompanying maps. These maps show the sky as it looks about 11:00 p.m., your own kind of daylight saving time, at the beginning of October—an hour earlier at mid-month and two hours earlier at the end.

The "great square" in the constellation of Pegasus, high in the south, is an outstanding grouping, although it contains none of the brightest stars that astronomers classify as first magnitude. The star called Markab is in the lower right-hand corner and extending from it to the right is a row of stars that marks the head of this mythical winged horse.

Just underneath these stars is Aquarius, now more conspicuous than usual because of the presence of Saturn. Still lower is the bright star Fomalhaut, in Piscis Austrinus, the southern fish.

To the right of Aquarius is Aquila, the eagle, with Altair. Above this group, and a little to the right, stands Cygnus, the swan. Most of this constellation is shown on the northern sky map, including the brightest star, Deneb. Below it is Lyra, the lyre, with brilliant Vega.

Andromeda in Northern Sky

High in the northeast is Andromeda, said to represent a chained princess, a constellation that extends from the star Alpheratz, which is in the upper left corner of the square of Pegasus. Andromeda's mythological mother, the queen Cassiopeia, is just below. Her royal spouse, the king Cepheus, is just to the left, a little below Cygnus. And below him stands the little bear, Ursa Minor, with Polaris, the pole star.

Ursa Major, the big bear, of which the big dipper is part, is now poorly placed for viewing. It is very low in the north, and some of the constellation is hidden below the horizon.

Low in the east (shown on the map of the northern skies) is Taurus, the bull, in which Jupiter now stands and shines far more brightly than any other star or planet. The group is also marked by the star Aldebaran. To the left of Taurus is Auriga, the charioteer, with first magnitude Capella.

Above Auriga is Perseus, representing a champion, with the star Algol, a famous "eclipsing binary." Actually it is two stars,

one much fainter than the other. Every 2 days 21 hours, the faint star partly eclipses its brighter companion, temporarily dimming it.

Mars rises in the east about 2:00 a.m., in Cancer, the crab. It is about half as bright as Saturn. Then, about three hours ahead of the sun Venus rises, shining even more brightly than Jupiter. Mercury is not visible in October.

No one knows today the origin of most of the constellation figures but apparently they were formed thousands of years ago by the people who lived in the Tigris-Euphrates valley. A number of features about them seem to indicate that originally there was some sort of system to their names and arrangement.

A good example of this is the group of constellations visible in the south on October evenings, all of which have something to do with water. In fact, in this ancient astronomy, that part of the sky was called "The Sea."

First, there is Aquarius, where Saturn now stands. From time immemorial this has been represented as a man, or sometimes a boy, pouring water from a bucket or urn. The Arabs, whose religious law forbade depicting the human figure, showed it as a

mule carrying two water barrels, or simply as a water bucket.

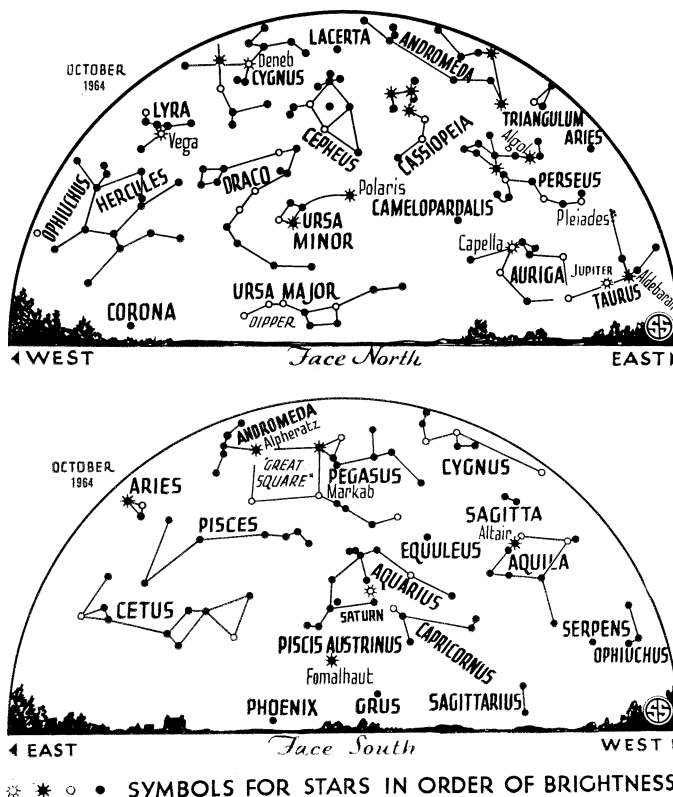
Of course, as with most of the constellation figures, it is hard to see this in the stars. The water jar, however, was supposed to be represented by the three stars quite close together that are shown on our map a bit above Saturn. The curved row of stars extending down from the jar forms the stream of water that flows, very appropriately, toward Piscis Austrinus, the southern fish.

Very curiously, however, the fish is not swimming in the water, as you might expect. He is drinking it!

Another watery constellation is just to the right of Aquarius: Capricornus, the horned goat. This creature is represented as the horned head of a goat attached to the body and tail of a fish.

Aquatic Animals in Patterns

A little higher, marked by only one star on our map, is Equuleus, the colt. Dr. Donald H. Menzel, director of Harvard College Observatory, suggests that this is really a sea horse! Above it, not shown on the map, is the faint constellation of Delphinus, the dolphin, still another aquatic animal. And to the left of Aquarius there are more. There is Cetus, the whale, and Pisces, the fishes, which are tied together, according to the pictures on old star charts. Even Grus, the crane, near the southern horizon, has a connection with water, for the crane is a wading bird.



These do not exhaust the inhabitants of the celestial sea. East of Cetus (not shown on the map, but visible later in the night) there is the long, winding constellation of Ehidanus, the river.

Still farther to the east is the water monster, Hydra.

Farther south in the sky, not visible from the U.S., is the great ship Argo, so huge that astronomers divide it into four constellations. These are Carina, the keel; Puppis, the stern; Vela, the sails; and Pyxis, the mariner's compass. Still more southerly are Volans, the flying fish, and Dorado, a fish.

However, these are not really ancient constellations. They were added to the sky in 1603 by Johann Bayer, a German astronomer who published a book of star maps and filled in some of the blank spaces.

It is hard to believe that only coincidence accounts for so many watery constellations. Perhaps their originators intended them to picture some connected story. If so, mankind has forgotten what it was.

Celestial Timetable for October

OCT. EDT

1	11:00 p.m.	Moon passes Venus
5	12:20 p.m.	New Moon
10	11:50 p.m.	Algal at minimum
11	11:00 p.m.	Moon farthest; distance 251,300 miles
13	12:57 p.m.	Moon in first quarter
	8:40 p.m.	Algal at minimum
15	3:00 p.m.	Mercury behind Sun
16	2:00 p.m.	Moon passes Saturn
	5:30 p.m.	Algal at minimum
21	12:46 a.m.	Full Moon
22	7:00 p.m.	Moon passes Jupiter
23	6:00 p.m.	Moon nearest; distance 226,800 miles
27	5:59 p.m.	Moon in last quarter
29	5:00 a.m.	Moon passes Mars
31	1:30 a.m.	Algal at minimum
	7:00 p.m.	Moon passes Venus

Subtract one hour for CDT, two hours for MDT, and three hours for PDT.

• Science News Letter, 86:202 Sept. 26, 1964

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• Science News Letter, 86:203 Sept. 26, 1964

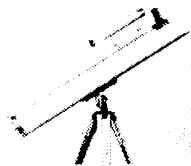
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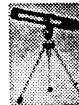
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