

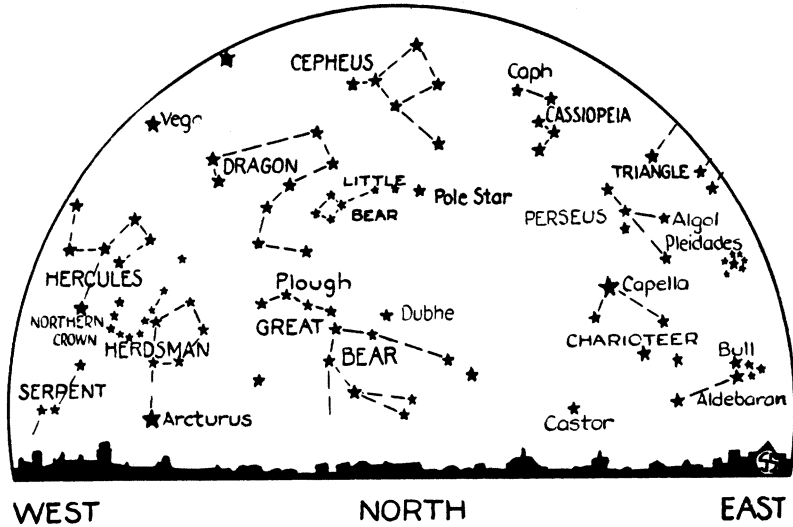
Begin Constellation Study Now

Astronomy

By JAMES STOKLEY

If you do not already know the stars and constellations, October is a good time to begin to learn them. High in the southern sky is the "Great Square of Pegasus," four stars of approximately equal brightness, which form the corners of quite a perfect square. Actually, only three of them are in the constellation of Pegasus—the one towards the northeast is in the neighboring constellation of Andromeda. Pegasus, the winged horse, extends westward from the square, while Andromeda, the chained lady, is to the northeast. So when you identify the square, you already have two constellations added to your repertoire.

Now follow along the curved row of stars in Andromeda—after three bright ones you come to Perseus. North of Andromeda is the W-shaped group, now on its side, of Cassiopeia, the Queen in her chair. To the east of her is Cepheus, the King. Southwest of Cepheus is Cygnus, the swan, or, as it is sometimes known, the "Northern Cross." Deneb is the bright star that marks the top of the cross. East of Deneb is the brilliant Vega, which marks the constellation of the lyre, Lyra; while south of Vega is the brilliant Altair, in Aquila, the eagle. The bright star low in the south, almost on a line with the eastern side of the square, is Fomalhaut, in Piscis Austrinus, the southern fish. Fomalhaut is the most southerly of all the first magnitude stars that we see in these latitudes. Between Pegasus and Piscis Austrinus is Aquarius, the water-carrier. In the old star maps he is represented as emptying a jug of water, which flows into the mouth



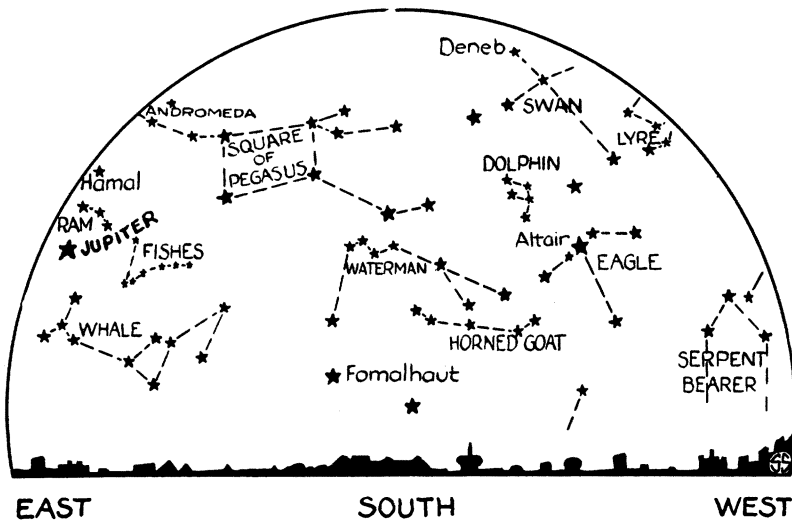
of the southern fish! To the southeast of Pegasus; that is, the square, are the fishes, Pisces, which are neither drinking nor swimming but are represented as two fishes tied together. These are some of the principal constellations of the October evening sky—all of them, and others, are shown on the maps.

To the ancients, these constellations had particular significance, associated with the origin of their names. The names are mostly ones that have no apparent connection with the arrangement of the stars. Even when we look at some of the old star maps and see how a winged horse was drawn around those of the Great Dipper, it does not become any clearer. In fact, one might wish just as much reason draw any of a variety of things around the square of Pegasus and the other stars in the constellation.

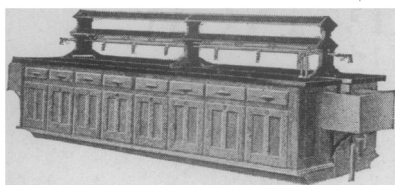
Only the front half of the horse is represented and, strange to say, he is inverted. This might suggest that the constellation name originated in the southern hemisphere, where the horse would appear right side up, but there does not seem to be any historical justification for this idea. The four rather faint stars extending southwestwards from the corner of the square form the horse's head and neck, the group from the corner towards Cygnus his forefeet, and the southeastern corner his wings.

In the ancient Græco-Roman mythology, Cepheus, Cassiopeia, Perseus, Andromeda and Pegasus are all connected. Cassiopeia was the queen of Ethiopia and Cepheus the king. They were the parents of Andromeda. Cassiopeia was a lady of wondrous beauty. Realizing this, she once boasted that she was fairer than Juno, the wife of Jupiter, or the Nereids, the sea nymphs. This angered the sea ladies, so they complained to Neptune, who sent a sea monster to the coast of her country for her insolence. Jupiter placed her in the sky in such a position that for half the year she hangs head downwards, adding to her shame.

As a further punishment and to appease Neptune's wrath, she was required to sacrifice her daughter to him, so Andromeda was chained to a rock on the Ethiopian coast to await the coming of the sea monster to devour her. Cetus, the whale, a constellation now below Andromeda in the southeast, represents the monster. But she was finally rescued by the great hero, Perseus. Having slain the Medusa, whose beholders were turned to stone, and riding on his steed Pegasus, he showed the Me- (Turn to next page)



HOLD THESE MAPS IN FRONT OF YOU. The upper then shows you the northern and the lower the southern sky as it appears on October evenings



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October Star Story—Continued

dusa's head to the sea monster, who was turned to stone also, and thus he rescued Andromeda. He had slain the Medusa, as is well known, by the device of watching her reflection in his polished shield.

With these figures so well known, and dating from such remote antiquity, it seems surprising that anyone has ever tried to supplant them. But about the sixteenth or seventeenth centuries there were several new schemes proposed by which a Christian mythology was introduced into the heavens, and the stars associated with Biblical characters and objects. One such system, devised by a pious astronomer, named Schickardus, kept the old names and attached Christian significance to them. He made the figure of Perseus with the Medusa's head into David holding the head of Goliath, a very slight change. Aries remained a ram, but became the ram that Abraham offered in sacrifice for Isaac.

But evidently this was not sufficient, so along came another even more pious astronomer, who threw away the old figures entirely. This was Julius Schillerus. Since there were the same number of apostles as there were signs of the zodiac, the path through which move the sun, moon and planets, he rather naturally turned these constellations into the twelve apostles. Aries, first of the groups, of course, became St. Peter, leader of the apostles. Pisces became St. Matthias, while Aquarius metamorphosed into St. Jude. Pesagus, which is not a zodiacal group, became St. Gabriel.

Schillerus even went so far as to rename the sun, moon and planets. The sun, obviously, he called Christ; the moon, the Virgin Mary. Mercury was made Elias; Venus, St.

John the Baptist; Mars, Joshua; Jupiter, Moses; and Saturn, Adam. Of course, Uranus and Neptune had not been discovered at that time, so there is no way of telling what they might have been called. But these names never came into extensive use, and Schillerus' book, "Coelum Stellatum Christianum," is now extremely rare. These names are now only of historical interest. As a matter of fact, the same could be said of even the old pagan names. The modern astronomer sometimes uses them, but in star lists, he is more likely to refer to them in some such way as this: B. D.—11 degrees 3736, which refers to its number in the Bonn Durchmusterung, one of the most famous of star catalogs.

As for the planets in October, Venus is now visible low in the west for about an hour after sunset. It is moving eastwards from the sun, and so in the coming months it will be conspicuous in the western sky. Saturn is also visible in the western evening sky, for perhaps an hour or so after Venus has set. It is no longer in the favorable position that it has been during the summer. These two planets are not shown on the maps. Jupiter, however, is represented. It is seen low in the eastern sky in the early evening, rising higher as the night progresses, until by midnight it is in the south. It is the brightest thing in this part of the sky, except for the moon, at certain times of the month, and so is not hard to identify. A little later in the night Mars appears, but not until after midnight is it high enough to be easily visible. At 4.45 a. m., it is directly south.

Science News-Letter, October 6, 1928

Religion and Science

General Science

REV. FREDERICK C. GRANT, D. D., Dean Western Theological Seminary (Episcopal), in the *Chicago Tribune*:

A true religion has nothing to fear from a true science, from a science willing to admit the limited and really abstract range of its investigations, and to recognize that for a full and complete account of existence, other facts, values, and hypotheses are necessary in addition to those with which science ordinarily deals. It is only the fear of new ideas, an intellectual lazy conservatism, or even a covert skepticism, that has terrorized religious minds when confronted with the scientific account of the world. On the

other hand, a true science has nothing to fear at the hands of a true religion. Many of the great names in modern scientific history, including the science of today, are those of religious men; and if you call the roll of the real leaders in Christian history, including the present, i. e., the true prophets, the creative minds, the men in whom the genius of the Christian religion is genuinely expressed, how many of them have been or are persecutors or antagonists of science? As Newman Smyth once remarked in a Yale laboratory, "How would Butler, Aquinas and Augustine have revealed in modern scientific research!"

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