Its principal star—what astronomers call its *lucida* —is one of the four brightest stars that we ever see. There is no other one nearly as bright anywhere near it, and there are two small ones quite close to it making an equilateral triangle with it. This makes it a very easy object to distinguish. Its constellation name is Alpha Lyræ, but it is sometimes called simply Lyra. It is one of the few stars which still keeps its old Arabic name. This is sometimes written Vega and sometimes Wega.

Vega is first magnitude and more. That is, it is brighter than the average first magnitude star; twice as bright in fact, and so its magnitude is properly 0.2 instead of 1. (If that "and so" bothers you drop us a card; and so with any other botheration you find in these articles.)

During November there are two average first magnitude stars in sight, with which you may compare Vega; and there is another one above the average. Whether this one or Vega is the brighter you will have to settle for yourselves. And while you are at it, you may as well settle also what the colors of the four are. On this matter astronomers seem to be quite well agreed, but amateur star-gazers are not. The four are Vega, Altair, Aldebaran, and Capella.

Take a celestial globe or a suitable star-map and find the position of the pole of the ecliptic. It is on the XVIII. hour line of right ascension and about $23\frac{1}{2}^{\circ}$ from the north pole. With this point as centre and its distance from the north pole as radius describe a circle. This circle is the path in which the north pole of the equator is moving around the north pole of the ecliptic. At present the former north pole—the north pole of ordinary speech—is near what we call the pole star, Alpha Ursæ Minoris. That is the pole star now, has been so for a long time, and will be so for a long time to come. But it has not always been so, and it will not always be so. Run your eye along the circle towards Draco, and you will find that the curve passes very near Alpha of that constellation. That was the pole star when the Pyramid of Cheops was built. Run round still farther, and you will pass near Vega. That's where the north pole was about 14,000 years ago, and where it will be again about 12,000 years hence. And then Vega will be the pole star.

And what a grand pole star it will make! More than five times as bright as our present one, which is only second magnitude. And perhaps by that time Vega will be far brighter than it is now, for it lies in that quarter of the heavens towards which the solar system is moving. But on the other hand, perhaps it will be far fainter than it is now, for there are lots of things about the stars that we know nothing about. Perhaps, indeed, it will have ceased to exist before then. Perhaps it has ceased to exist now, for the light by which we now see it started on its journey to us about the time that the Prussians and Austrians were fighting at Sadowa.

That's its distance in light-years according to the latest determinations of its parallax. One of the early determinations brought out a negative parallax. According to that, Vega must have been, as was said at the time, "somewhere on the other side of nowhere."

One more item about Vega. Taking its brightness and its distance, and doing a little figuring with them, you will find that if it was as near us as the sun is it would give us *seventy* times as much light as he gives; and, if the sun was as far from us as Vega is, he would be only a fourth magnitude star to us.

Now go out and look at Vega, and think of these things as you look.

Then take a good look at the two small stars forming the triangle with Vega. One is Epsilon and the other is Zeta. If the night is dark, and the sky is clear, and Lyra is well up from the horizon, and if moon or street or window-light don't interfere, you should see one of the two not as a mere point of light but a slightly elongated streak. That one is Epsilon. If your eye is very good you may see it split into two stars. If not, point your glass at it and you will easily double it. It is a pair of fifth magnitude stars —a very close pair to the best eye, but a very easy pair to the poorest glass. With a good telescope of three-inch aperture or more each member of the pair is doubled. So Epsilon-Lyræ is doubly double, and as it is the best known of this kind it is called the Double-Double Star.

The two members of a pair may or may not be physically connected. If not, if they seem double simply because they lie nearly in the same direction from us, they are said to be *optically* double. If there is some physical connection between them as between the sun and the earth, if one revolves around the other, or both around a common centre, then they are *physically* double, and the pair is called a binary star. Each component of Epsilon Lyræ is a binary with periods of about 300 and 500 years, and the two components form a grand compound binary with a period of probably many thousands of years.

Zeta is also double but not so easy to split as Epsilon. Epsilon's components are $3\frac{1}{2}$ minutes of arc apart, Zeta's only three-quarters of a minute. But a good field glass will show the two when the conditions are favorable. If your's won't do it the first time, it may some other time. Besides the