INTRODUCING STUDENTS TO THE STARRY SKY AND CONSTELLATIONS

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ABSTRACT

This article explains how to teach students about the starry sky and constellations through clear examples.

Keywords: starry sky, constellations, Pole of the Universe, Polar star.

INTRODUCTION

In this lesson, it is best to start the students with the Poles of the Universe, one of the cardinal points of the celestial sphere. Among the poles, knowledge of the northern pole of the universe is required with special attention. In the ancient East, people divided the brightest stars of the sky into separate groups and called them constellations in order to look at the lights at night. Constellations are named by people based on the appearance of their bright star cluster (an object or animal), their similarities (for example, Big Bear, Swan, Lion, Dragon or triangle, Libra, Cho'mich, etc.), sometimes they are related to ancient Roman or Greek legends. (Cassiopeia, Pegasus, Andromeda, etc.) In order to find them in the sky, seven bright stars in the Big Dipper constellation, known to many readers and called "Etti robbers" and "Chomich" in the popular language, are found.

These stars are always above the horizon during the lunar month in the Uzbek territory. After finding the alpha and beta stars of Big Dipper (they are among the brightest stars of the constellation) (the outline of the constellation starts from these stars), a line is drawn through these lines. This line is five times the angular distance between alpha and beta interstellar if it is placed, a star located near it will die out of g ' stars (Figure 1). It should be reminded to the readers that this star, called Pole Star, is the brightest star of the constellation called Ursa Minor, and actually lies at an angular distance of 58' from the North Pole of the Universe , because there is no star closer to the North Pole of the Universe.

Figure 1.

It is best to conduct such a lesson outdoors on a starlit night. The pole star lies at an angular distance of about 25° from the alpha star Ursa Major. The arrangement of the seven bright stars of Ursa Minor is also reminiscent of the basin, and therefore easy to find, as are the bright stars of Ursa Major. If you connect the two stars at the end of the Great Bear's bowl and continue it towards the mouth of the bowl, take the distance between the two stars at the ends of the bowl as a unit, and if you continue five of them along the mentioned line, it will reach the Pole Star as mentioned. From here Qutb If the hypothetical line drawn towards the star is continued again, it will meet five bright stars in the shape of a "W" not inferior to the bright stars of the Big Dipper in terms of brightness - a star on the edge of the Cassiopeia constellation. Then, using the star map, the Northern Crown, Khokhizbogar, Aravakash, Asad and Javaz constellations are found around the Ursa Major constellation. Readers are reminded that the celestial sphere is divided into a total of 88 constellations.

Thus, the lesson is further "enlivened" by conveying to the students the legends in which the main stars of the constellations, whose names are sealed, gave the image of the hero. For example, legends related to constellations such as Ursa Major, Hulkar, Cassiopeia, Cepheus and Andromeda will be memorable for readers.

Then it works well if students are given an independent task to learn to find a few other constellations (mainly bright star constellations) using a star atlas.

the visible movement of the stars in the sky during the day, by choosing a few bright stars (on the east and west sides of the meridian), their positions are initially determined in relation to certain objects on the horizon (tree, mercury, television antenna installed on the building, etc.). Then 10-15 minutes later, by observing these stars again, you can feel them moving. In this case, it will be possible to see that while the stars in the southern hemisphere of the sky move to the west and initially increase in height, the height of the stars in the southwest side of the sky, on the contrary, decreases. The diurnal movements of the stars can be noticed even faster by observing them with a telescope.

Pole Star - Despite the fact that the Earth rotates around its axis, it does not move from its place, unlike all other stars, it does not participate in the apparent diurnal movement.

This can be verified by noting that the altitude of the Pole Star at the observation site is equal to the geographic latitude of the site, and then measuring this angle during the observation.

For students to quickly master the elements of spherical astronomy, including the main points, lines and circles of the celestial sphere, these elements are divided into the axis of the Earth, If it is explained as an analogy to its parallels, equator and meridians, it will give a positive result. taking the geographic coordinate system as an analogy for accepting the coordinate systems of the sky is also a good idea . While introducing students to the horizontal and equatorial coordinate systems, the advantages of the equatorial coordinate system over the horizontal system are noted separately. Giving information about the possibility of switching from one of these coordinate systems to another, Informing them about the life and scientific heritage of the scientists of the ancient East and Middle Asia and their services in this field plays a big role in the formation of qualities such as responsibility, knowledge, and humanity in students. At the same time, acquaintance with modern methods and instruments of astronomy will be interesting for students. It is known that today's astronomy has regained its reputation and

attention thanks to its achievements in this field, and is making a great contribution to the progress made in the development of atomic and nuclear physics.

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