

Interesting facts about the shape of the earth

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In everyday life, if it comes to the form of the Earth, then most often you can hear that it is spherical. However, if we speak more about and more accurately about the form of the Earth, you can make a somewhat very interesting and very interesting comments.

So, here are three interesting fact about the form of the Earth:

Honestly, if you do not get very difficult, then by and large, in a certain approximation, the statement about the shag-formation of the Earth is actually true, and quite sufficient for simple reasoning and solving problems, where the accuracy of calculations does not exceed 0.5%. But:

First, we, of course we understand that the surface of the earth is not absolutely smooth, and therefore, it can not be exactly a spherical. It meets a lot of mountains and depressions that violate a strict definition for such a figure as a ball, where each point on the surface must be equal to the center.

Secondly, even if they neglect the irregularities on the surface of the Earth, nevertheless, it is also well known that the earth is slightly closed from the pole to the pole (we are talking about geographic poles). It is connected with the daily rotation of the Earth around its axis. Thus, the cross section of the earth, speaking more accurately, is not a circle, but rather an ellipse (or oval). A three-dimensional figure representing a flattened ball is called the ellipsoid of rotation. Thus, the Earth has the form of an ellipsoid, which is nonetheless, so weakly expressed that it is impossible to distinguish it from the ball visually.

Sometimes they also say that the Earth has a form of a geoid. By definition, the geoid is a surface, everywhere the normal strength of gravity. And although even the name of this figure has occurred from the Greek phrase, literally meaning "something like Earth" (i.e., not the earth here has the form of a geoid, but a geoid - the form of the Earth), however, if we say very strictly and meticulously, Earth still does not have a shape even a geoid. The fact is that due to the influence of other major celestial bodies, primarily the moon, which constantly act on the surface of the earth causing tides and flows, the shape of the Earth is generally completely a little bit, but still changes depending on the mutual location in relation to To the moon and other planets.

Sometimes you can face the opinion that it is still almost in the 15th century, people considered the land flat, and only the opening of America and the first round-the-world travels, held at the turn of the 15th and 16th centuries, proved the opposite. However, it is not. Travel data was made to achieve very other purposes. And the fact that the earth is not flat, but has the shape of the ball, was not a secret already in the VI century BC.

The ancient Greek philosophers and thinkers, watching how the ships go beyond the horizon, how the lunar eclipses occur (when the round shadow of the Earth falls on the moon), how the celestial bodies are moving in the sky and how the picture of the starry sky changes if the observer will move on the ground or southIt has long been understood that the earth is spherical.

Apparently, the first to express the idea about the shag-formation of the Earth ancient Greek scientist Parmenid. Also, Pythagoras and his teacher Anaximandr Miletsky did not doubt this (which also claims the title of discoverer in this matter). All these philosophers lived as already mentioned in the distant VI century to our era. And since then, no one seriously tried to disprove the fact about the softness of the Earth, there were not even discussions about it, they simply were just all civilized and educated people knew that the earth had a shape of a ball.

Moreover, in the III century BC Eratosthen, knowing the distance from Alexandria to Siena and using the length of the shadow-measured shadow of the Alexandria library (whose height was also known to him) during the position of the Sun over Siena in Zenith, managed to measure the length of the earth meridian and calculate the radius Earth. Apparently, then he counted in modern units of 6287 kilometers. The modern studies show that the radius of the Earth is on average 6371 kilometers. Thus, the accuracy of the calculations of Eratosphen simply amazes. Well, the first one showed that the Earth actually has the form of the ellipsoid was Isaac Newton.

Well, finally, another interesting remark about the form of the Earth. The fact is that there are no objective grounds to expect that the form of the Earth is exactly what we see it and we feel exactly our inhabitants. For example, solar radiation particles, being quite material objects, and sometimes moving at a speed very close to the speed of light, can also be completely rightly considered as objective observers. So in the reference system associated with these particles, the Earth, according to the theory of relativity, will be compressed in the direction of the movement of these particles. And if some particle will move at a speed of equal, for example, 99,99999991% of the speed of light, then the Earth will be completely truly a disk of the thickness of the entire pair of tens of meters. A visual demonstration of the Earth shape, depending on the speed of the observer, is also presented in the figure below. However, this all does not mean that for us the land ceases to be spherical, or, more precisely, to have an ellipsoid or geoid form.

Note between the case that the circle is a flat figure. Round, for example, are pancakes, plates, musical disks and so on. Often you can hear: "Round Earth." This will really be a mistake (of course, if it says not a particle of solar cure, moving almost at the speed of light), because this is the same thing to say that the land is flat. Round can only be the cross section of the earth with some plane. It is correct to say that the earth has a ball shape. The ball is a bulk figure. Sharo-shaped are, for example, balls, oranges, planets, and so on.