GEOMETRICIAN'S VIEWS

TOPIC: SPHERE

RESEARCHER VIEW

Sphere

Students' works on the topic of spheres are the result of students' research and an excellent combination of art and mathematics. Students play with perspective by following the lines of spherical geometry and very faithfully depict the real world (city, room) inside the sphere (5-point perspective). Works with spherical chessboards have exceptional mathematical value because they show how the 3D object of the sphere very realistically pops out of the 2D paper. Students investigate the laws of refraction of light by photographing an image through a spherical lens, independently come to conclusions, and go one step further - they derive the focal length formula. The use of the digital tool GeoGebra for researching the area and volume of the planets of the Solar System is appropriate and expedient.

Researcher
Željka Dijanić
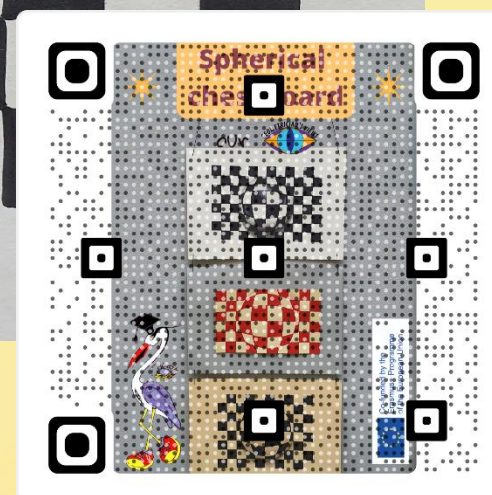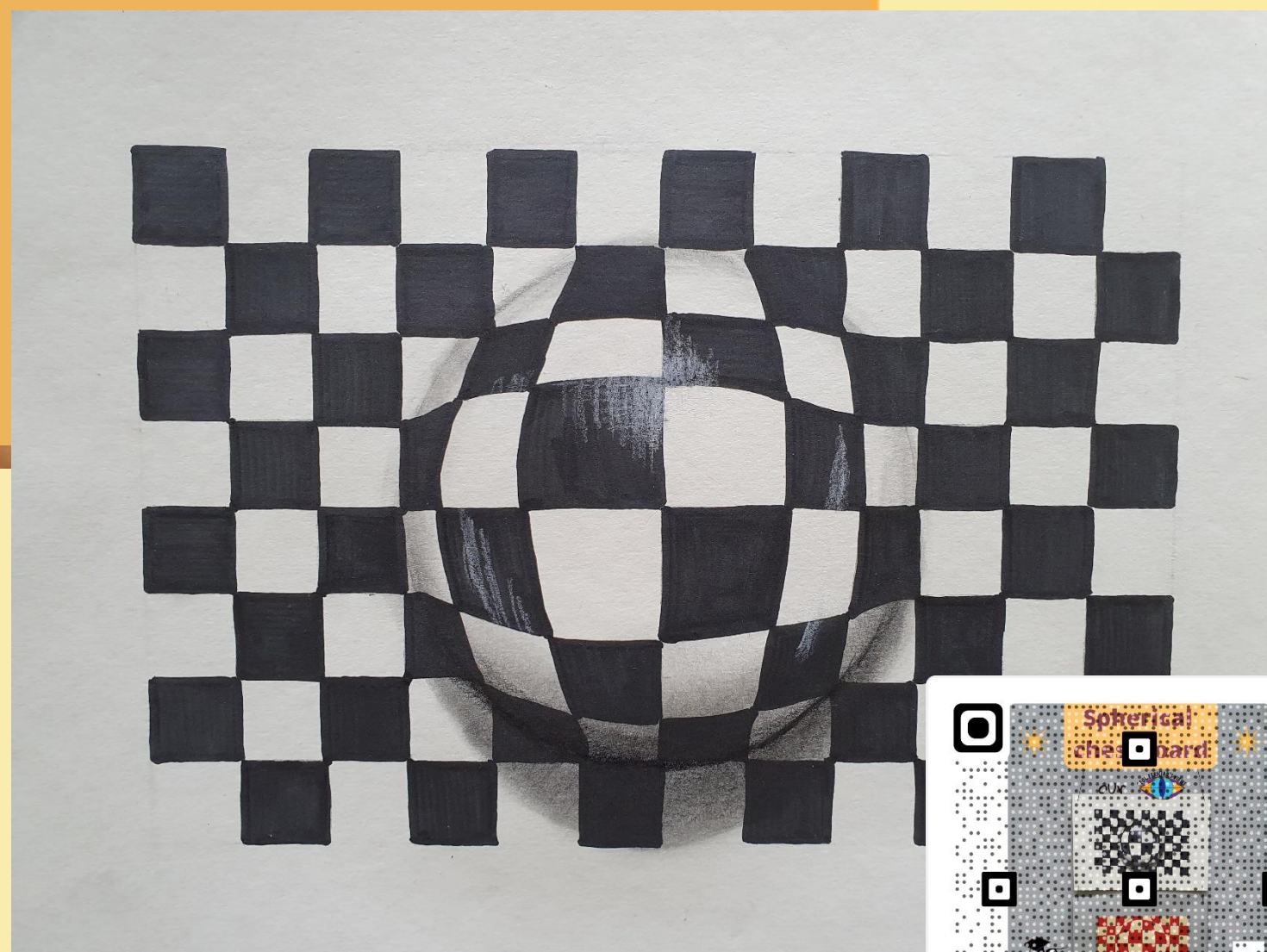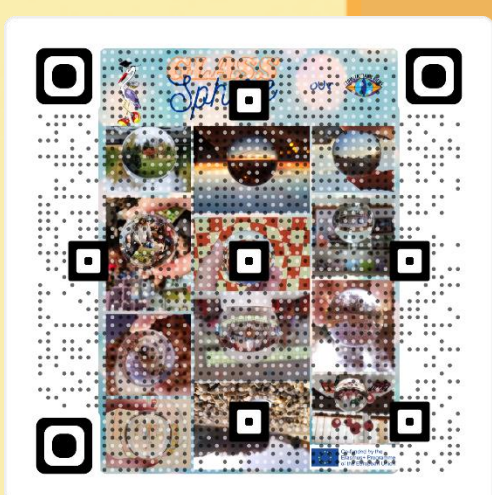
ARTISTIC VIEW

The five point perspective

Through the visual sense, which makes up 70% of the collected information, and through our perception of the world we are looking at, we can convey or interpret it with a mathematical geometric expression.

The students presented their everyday encounters with the sphere or spheres in an interesting way. They presented all those familiar motifs such as the glass sphere and the reflection of the image in the sphere in an interesting way, and also incorporated their intimate subjective and imaginary observations into the representations of these drawings and paintings.

So that almost every work that describes this topic gained from the double "monumentality" or 3D representation of the sphere and the dimensions of the image in the sphere, and also the images outside the sphere as an object in the outer space that is imaginary inside or outside it. In these examples, students used their works to fragment the micro macro reflection of the world in a spherical (5-point perspective) view.

The student's faithful copy of the work of the famous Dutch artist M.C. Escher, which the student connected with the topic of 5-point perspective, is also very interesting and has a great artistic value.

Artist
Ivana Komel
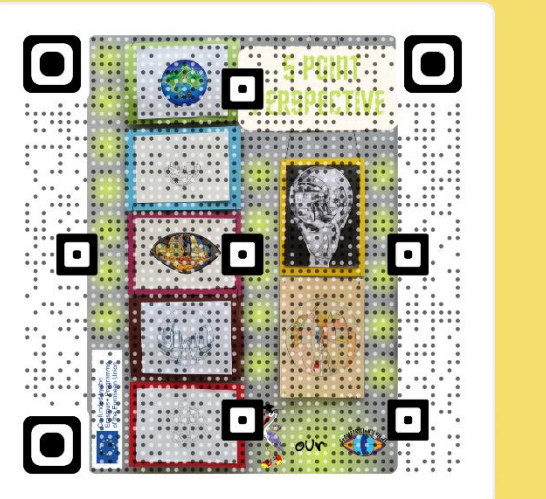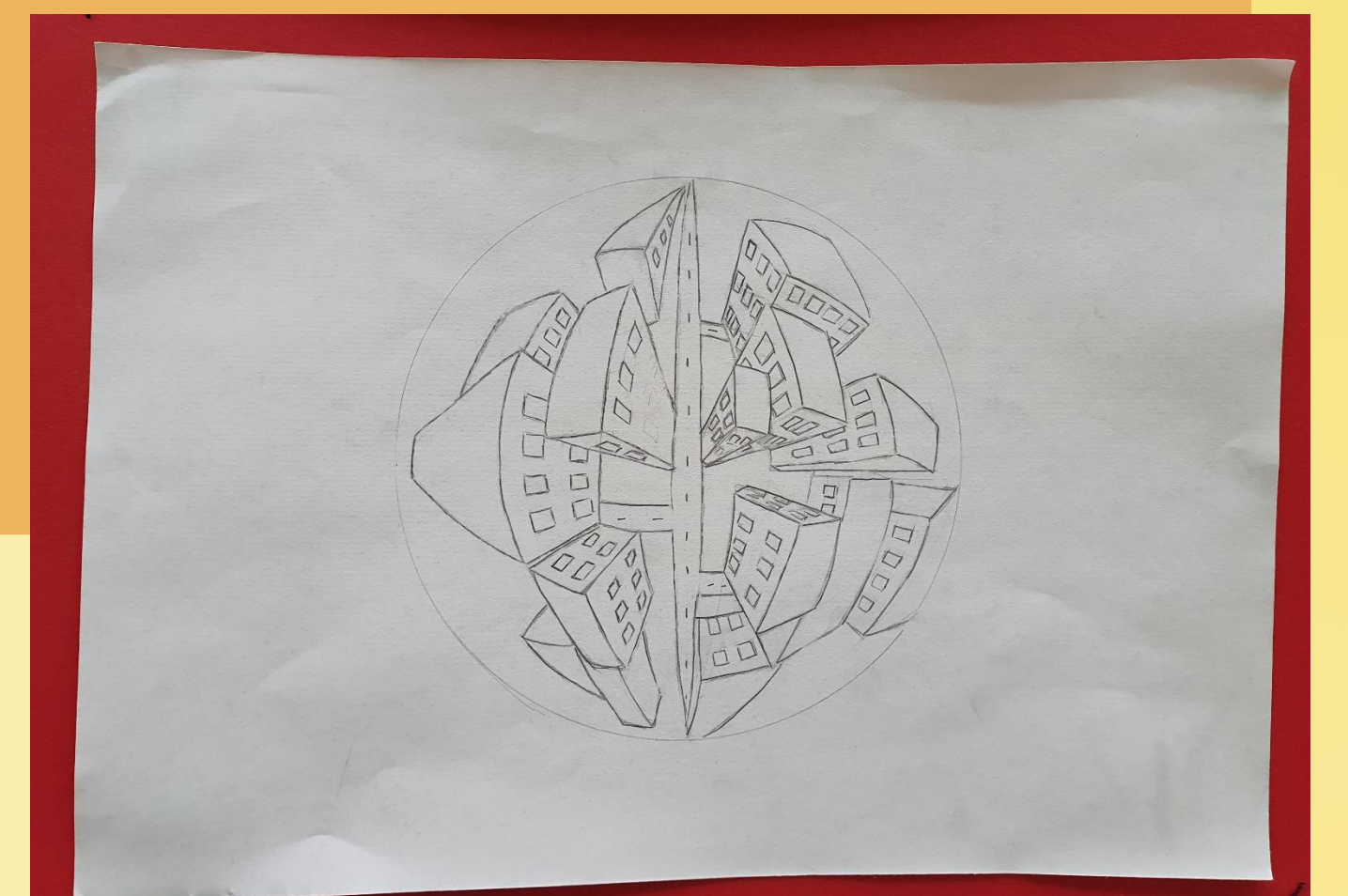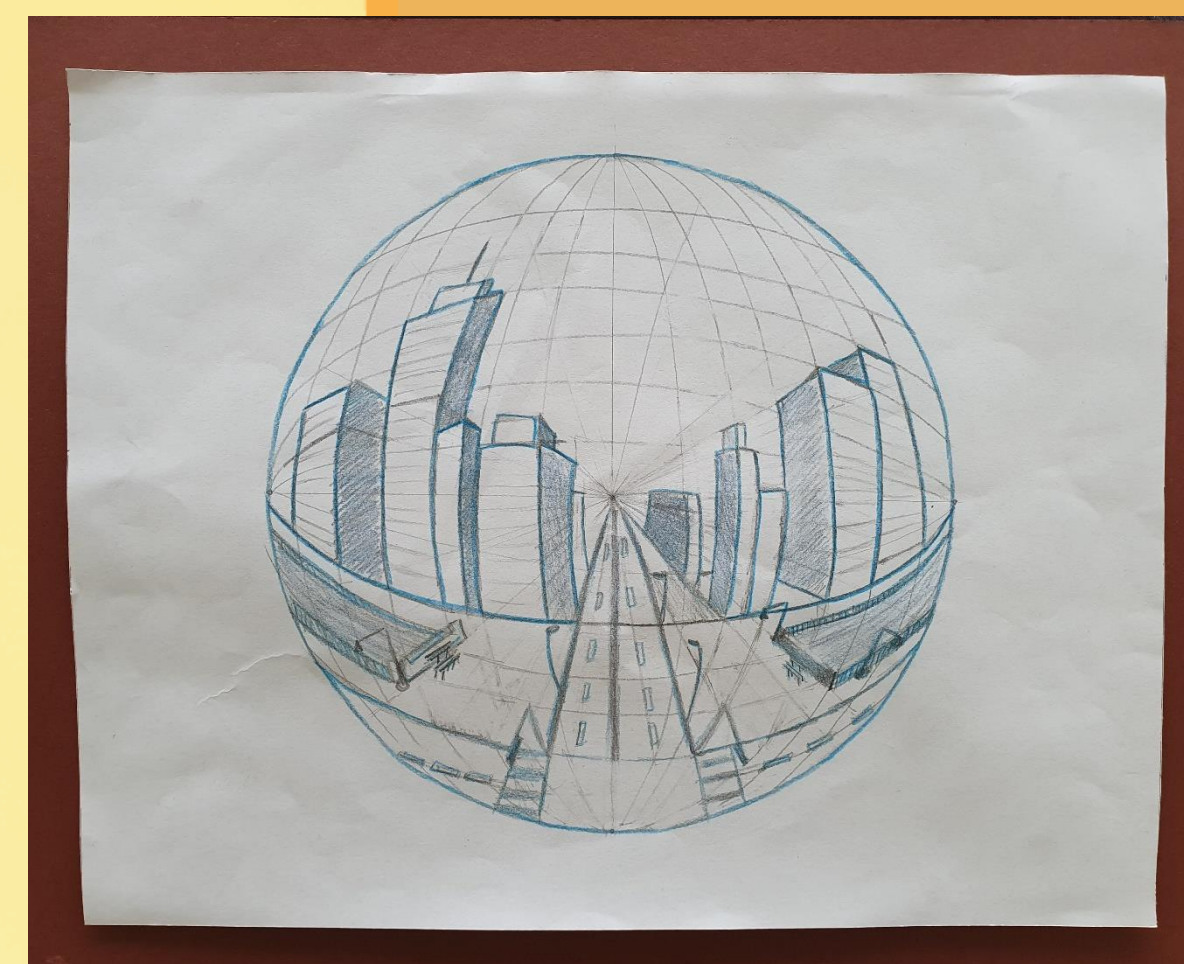
COMMON VIEW
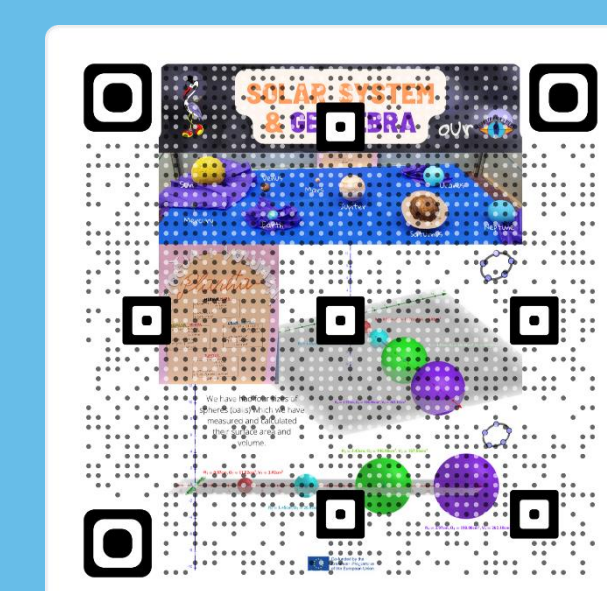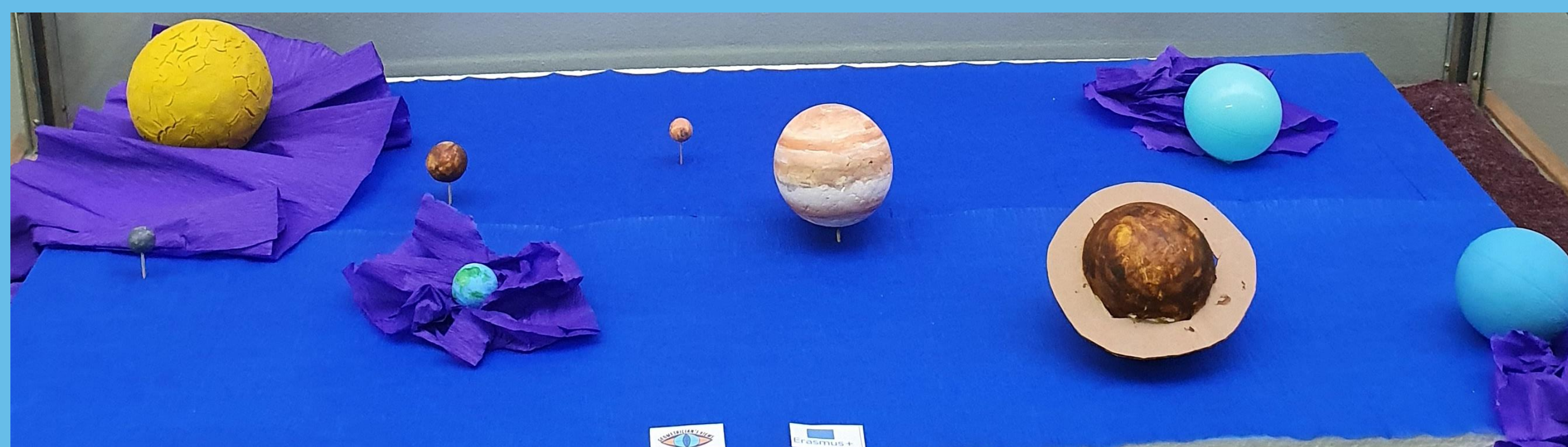
The sphere was thought to be the perfect shape. Because of that, Pythagoras developed the idea that all Space objects are spheres, despite the standard view that Earth is flat and lies on the back of some giant creature. Also, he has developed the idea that Space objects circle around Earth, as circling is the perfect way of moving.

Today, we know that Earth and other giant Space objects are mainly spherical, and in our Solar system planets revolve around the Sun not in a circular path, but in an elliptical one.

Thanks to Science we are able to calculate the volumes and areas of celestial bodies, and much more.

Therefore, the sphere is a shape that has tickled the minds of many throughout history and still is doing that.

Once upon a time, Archimedes said: „Noli turbare circulos meos!" / „Don't touch my circles"

So, leave Earth and other planets and stars to be spherical in shape.