Why are the stars in the universe spherical and not square or rectangular?

The stars and planets in the universe have different sizes and masses, but they are all spherical. So why are they all spherical and not any other shape?

The answer is gravity, a universal force that causes all objects to attract each other.

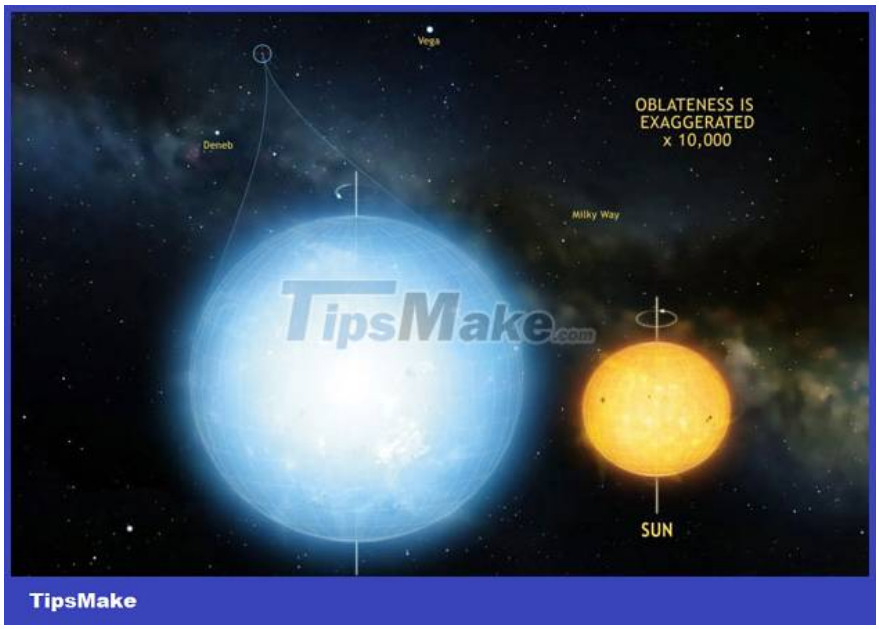
Small-mass asteroids and comets will have irregular shapes because their masses are not large enough to generate enough gravity to uniformly flatten them in space.

When a celestial body has enough mass, its gravity will become very strong, enough to pull all parts of the object towards the center. Therefore, after millions, billions of years, the celestial body becomes rounder and rounder. Thus, massive objects will be spherical, although not perfectly spherical.

The Earth is not a perfect sphere, it is completely flattened at the poles and slightly inflated at the equator. Due to the rotation of the Earth, the distance from the center of the Earth to the equator is 20 km greater than the distance to the poles.

Meanwhile, asteroids and meteorites have very different shapes and are not fixed rather than spherical. One of the reasons is that because their mass is so small, gravity is also very weak not enough to deform layers of matter. In addition, the planets took shape early in their formation, when they were so hot that the matter seemed to have melted away. Its layers have been stabilized and shaped since the beginning because asteroids are fragments of collisions.

In short, the objects in the universe with more mass and stronger gravity will come closer to a perfect sphere such as a black hole that is rounder than the Sun, the Sun is rounder than the Earth and Jupiter.



The most perfectly spherical object in the universe discovered by humans is Kepler 11145123 (or KIC 11145123) discovered by NASA's Kepler space telescope. According to the researchers, Kepler 11145123 is 5,000 light-years from Earth, with a diameter difference of only 6 km between the equator and the poles, even though the diameter of this star is 3 million km.