



EUROSTRONOMIA 2017-2020

Rotational motion

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Within the framework of the Erasmus+ Project "Eurostronomia" during November 2017 about 10 students worked on two interactive animations: **Orbital motion** - with purpose to investigate the nature of an elliptical orbit of a planet or other satellite about the Sun or some central body and **Uniform circular motion** - with purpose to explore the characteristics of the motion of an object in a circle at a constant speed. Students were first and second year.

Everyone knows that the planets orbit the Sun in a circular orbit, right? Well ... not exactly. A 17th century mathematician by the name of Johannes Kepler was able to show that the orbits of planets about the sun are elliptical in shape. Students in these two interactive animations investigated the nature of an elliptical orbit.

Students also made investigations and gave answers on next questions: How can the motion of an object in a circle at a constant speed be described? Is such an object accelerating or not? If there is an acceleration, then what direction is it and why does it not change the object's speed? How does a change in mass, speed, or radius of the circle affect quantities such as the acceleration and net force?

At the end they wrote a conclusion to these activities in which they completely describe the characteristics of an object that is traveling in uniform circular motion and the features of a satellite's elliptical orbit.