How much can the revolution of the moon be explained by the second law of Kepler?

*Kana Uchida¹, *Haruki Kobata¹, *Toa Hattori¹, Shuhei Asano¹, Mamiko Usui¹

1. GIZAN SENIOR HIGH SCHOOL

We have been researching the phases of the moon since 2016.

We researched with the ratio of the shining part of the moon which changes with the moon cycle. We called this ratio "luminous rate" .

First, a model experiment was conducted to obtain a formula for explaining the change in the luminous surface ratio.

Then, the value obtained by this formula was compared with the light emission area obtained from the image of the actual moon.

As a result, we confirmed that the change of the distance between the earth and the moon was not constant.

It was thought that the cause was influenced by Kepler's second law.

We hope to find a formula for each pattern, we compare the pattern of luminous rate per cycle for each moon cycle.

For that purpose, we compared the values of the astronomical almac and the calculated values, And also made a graph of the values of the astronomical almac and the distance.

Keywords: Waxing and waning of the Moon, Orbit of the Moon, Kepler's laws