Real Orbital Implementation of Visual Binary Through an Analysis of the Orbital Elements

Han, Do Gyun (School: Incheon Jinsan Science High School)
Shim, Myoungbo (School: Incheon Jinsan Science High School)
Lee, Joon Soo (School: Incheon Jinsan Science High School)

In this research, we want to explore how to represent the actual orbit from the observational orbit of an visual binary. A total of two studies were conducted, and the first was a mathematical exploration of the actual orbit of the visual binary, which determines the orbital long radius of the ellipse, the single radius of the ellipse, the eccentricity of the ellipse, and the difference between the apparent orbit and the actual orbitals. The second research is to explore the production of visualization devices (primary and secondary) that can project direct orbits through light sources. The study results showed that the ratio of the long and short radius to the long radius was constant regardless of the angle of slope, which showed that the value of the visual binary was the same as the actual orbit and apparent orbit, and that the long axis of the actual orbital ellipse was the same as the diameter of the eccentric. It was also possible to implement actual orbits from observational orbits, which could be seen in primary visualization devices and secondary visualization devices.

Awards Won: