

Abstract Submitted
for the TSS09 Meeting of
The American Physical Society

Orbital Modeling of the Trans-Neptunian Dwarf Planets Using Celestia SHIVAKUMAR SURENDRANATH, DOUGLAS YOUNG, Angelo State University — The goal of this project was to find a way to visualize the orbital data for the Trans-Neptunian (TN) dwarf planets. To accomplish this, we chose the free open-source space simulation program, Celestia. By default, Celestia does not simulate all of the TN dwarf planets. However, Celestia allows users to add smaller programs (i.e. add-ons) to include additional objects in the simulation. This poster will focus on how we created an add-on that was used to visualize the TN dwarf planets' orbits. Using the add-on, some surprising results stood out. For example, the variations of the orbital inclinations of the TN dwarf planets drastically differ. This is in stark contrast to the larger planets in the solar system which nearly lie in the same plane. Another example is the Pluto-Charon system's peculiar orbit. Pluto and Charon revolve around the center of mass of this system which lies well outside of Pluto. Hence, Pluto does not orbit the Sun directly as is typically assumed by the general public. Instead, it is the center of mass of the Pluto-Charon system that orbits the Sun.

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Date submitted: 26 Mar 2009

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