

out of plane and kidney bean orbits

The Whorl list — 1 messages, 1 voices, 05 Apr 2000

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Michael Andre-Driussi — 05 Apr 2000, 13:48

Another problem with using a highly elliptical orbit (better known as orbital eccentricity) on a scale using significant fractions of an Astronomical Unit is that the world will have gross "seasonal" effects as it moves closer and further from the primary. (Seasonal in quotes because our seasons are all just a result of axial tilt rather than the Earth getting closer and further from the sun.)

Out of plane orbit. This avoids the problem of gross seasonal effects, but there is still the familiar problem that the orbits will intersect at two points rather than just one, and it is hard to see how "six local years" could figure in any immediately helpful way: both worlds will have the same orbit, and thus the same orbital speed, more or less (as I understand it).

(I think) one visual effect would be that (from the northern hemisphere) the out-of-plane planet would look like a star in the north above the primary (in fact, would it be visible? Even "daystar" and "evening star" Venus/Mercury are within the plane: at right angles, an out-of-plane planet would compete directly with the primary, and that is no contest!), then it would loom large over a few months, then it would sink below the horizon and vanish for half a year; then it would come back up, like a giant playing peek-a-boo, and begin shrinking as it climbed up to that point above the primary.

Oh, wait! It would be a crescent near the primary, then half-light/half-dark at the mid-way point, then full (or dark) at encounter (depends on if it is coming long or short; if dead on, then half/half is maximum): its time as a visual disk would only be at or near the encounter, if at all.

Kidney-bean orbits. These are weird, all right. Easier for me to see in cases of big gravity wells, like multiple star systems. Or a similar thing with smaller scale: asteroids doing the gravity dance between Jupiter, Sun, and Earth, etc. But Blue and Green are similar Earth-like planets.

All this reminds me of Jack Vance's THE DRAGON MASTERS, where the alien "star" Coralyne comes close to planet Aerlith every once in a while, and each time waves of grephs come over to mess with the humans.

(But of course, there was an sf magazine in the '30s or '40s that had a story about devil-like aliens swimming down from a moon or a world. Was it a cover story? Well, there was an illustration--probably was a cover. Has anybody found that magazine; know the name of that story? It was a major inspiration for the Short Sun, but that's another story for another time.)

=mantis=

*This is WHORL, for discussion of Gene Wolfe's Book of the Long Sun.