DeltaCad Users Group Member Submitted File Instructions/Comments/Info.
Drawing File Download Title: "Geared Planets"
Created/Shared by: "jw48"
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TITLE: (suggested title in DeltaCad) "Geared Planets" or, more appropriately, the original file title "Ptolemaic Orrery Outer Planets"

DESCRIPTION: A Ptolemaic Orrery (Wikipedia link)

An Orrery is an instrument for demonstrating the motions of the planets. It is so called after the Earl of Orrery for whom one was made in the early 18th Century.

Orrerys are usually constructed on the Copernican system, with the Sun at the centre and the planets rotating around it. More elaborate examples will also show the moons known at the time of construction.

Before Nicolaus Copernicus (1473-1543) postulated that the Sun is at the centre of the Solar System (the heliocentric system) it was believed that all the heavenly bodies rotated around the Earth (the geocentric system). To account for the observed motions of the planets as seen from Earth, the Alexandrian astronomer Ptolemy (AD90-AD168) developed an elaborate geometrical explanation, known after him as the Ptolemaic system.

The drawing shown here is of an Orrery designed to demonstrate the motions of the outer planets under the Ptolemaic system. The motions of the inner planets appear so different from those of the outer planets as seen from Earth that a second, separate mechanism is needed to show them. These mechanisms were designed by Stuart Malin, to whom I am indebted for allowing me to publish this drawing. Neither of the mechanisms has yet been constructed and they were offered as conjectural designs but Stuart now tells me he is cutting metal. The drawings were prepared by me from Stuart's drafts, using DeltaCad, at his request and together with other drawings formed part of his article published in the Horological Journal. There is some artistic licence in the positioning of the wheels to make clearer the relationships between them.

From the DeltaCad point of view, the greatest difficulty was in coping with the colours of the various wheels in the plan view. The wheels are nested several deep in places and overlap to produce various odd shapes to fill. I longed for an ability in DeltaCad to 'fill to any closed boundary' but I suspect that this is not possible in a vector-based program. It also became quite difficult to keep track of the Z-order and I wish DeltaCad had some means of visually displaying the Z-order at any one place on a drawing. Apart from these minor drawbacks, DeltaCad proved ideal for these drawings as the simplicity of use means that one can work very quickly.