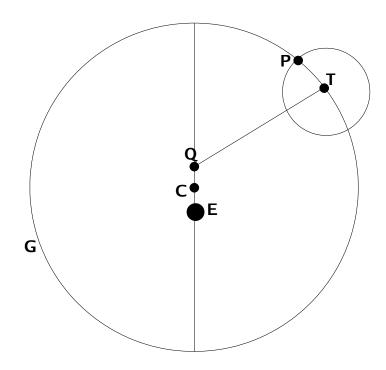# Ptolemaic System

C = Center of large circle G
G = Orbit of planet
P = Planet
T = Center of Epicycle
E = Earth
Q = Equant

The Ptolemaic System shown above allowed Ptolemy to account for retrograde planetary motion. The system uses three basic constructs:

1. It places Earth (E) slightly off center (C). In doing so, Ptolemy bent the rule of his day that Earth was at the center of the universe and all planetary motions.
2. He put each planet (P) on an epicycle, which rotated on the circumference of theplanet's orbit (G). Point T above shows the center of planet P's epicycle. When the direction and speed rotation of circle G and epicycle of planet P were properly determined, planet P, as viewed from Earth (E), would stop, reverse its direction, and then move forward again.
3. In order to bring his model into even closer agreement with observations, Ptolemy added an equant (Q). This was the point around which planet P moved at a uniform rate.