

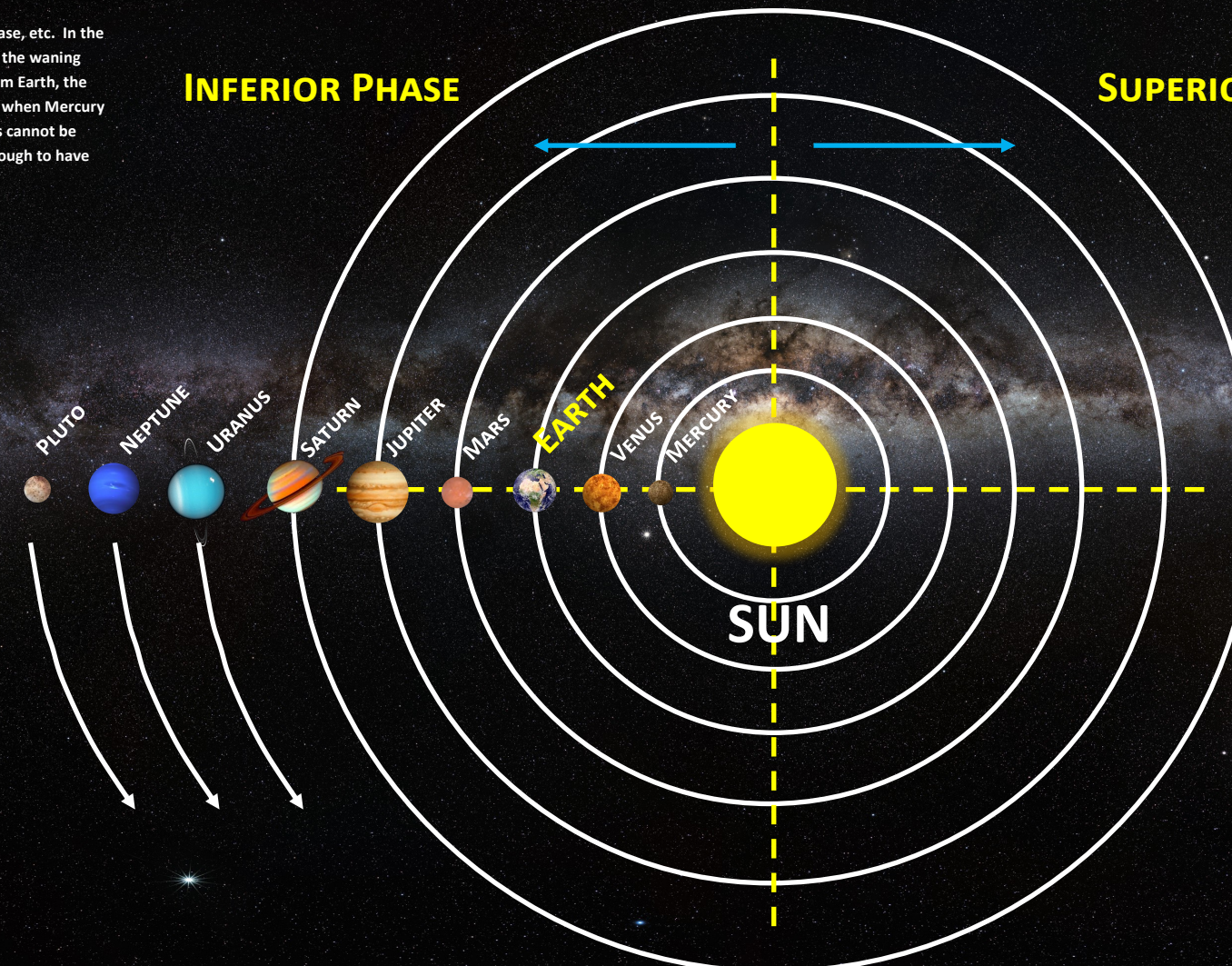
ANCIENT ASTRONOMY 10

The purpose of this illustration is to describe the motion of the planets and their phases, in particular the phases called the 'Crowns'. The depiction will be from a top view of the Solar System with the Sun at the center. The various concentric circles represent the various orbits of the planets from the Sun. They are from Mercury to Pluto although Pluto has been down-graded to a pseudo-planet. The reference point is assumed to always be from the perspective of the Earth, etc. The emphases will be on the visible planets that can be seen from the naked-eye. Each planet has its own elliptical orbit around the Sun along with its frequency of retrograde motion. Like the prior study of the Moon and how its lunar orbit rotates around the Earth, so too do the various planetary orbits move around the Sun. All the planetary orbits occur at a counter-clockwise fashion. In a similar manner, in general all the planets rotate in a counter-clockwise rotation.

THE BASIC FEATURES OF THE SOLAR SYSTEM

Like the Moon, planets go through phases, from a crescent then waxing to waning phase, etc. In the ancient times, the predominate phases noted were the crescent or 'Horn' phases and the waning called the 'Crown' phases for example. Due to the various distances of the planets from Earth, the phases vary in terms of time, either lasting longer or shorter times. In some instances when Mercury and or Venus are in direct alignment with Earth with reference to the Sun, the planets cannot be seen due their respective phases. It is only after the planets rotate around the Sun enough to have what is called a 'Crown' or waning phase.

FULL RANGES OF PHASES



TOP VIEW



From a top view perspective and when the layout is quarter-off in sections with an X and Y Axis, all the planets to the right of the Solar System are considered to be in Superior position from Earth's perspective. Conversely, those planets east or to the left of the X, Y Axis are considered to be in the Inferior position or orbit. However, have in mind that the imaginary X,Y lines are not fixed to the Sun's position but rather to the Earth's. This X,Y Axis line rotates around the Sun with respect to Earth's position which means that regardless of where the Earth is at, the Superior and Inferior sides are relative.

However when the planets are in their Superior position and in full phase, they are not able to be seen at all because they are directly opposite the Sun or behind the Sun from Earth's perspective. Take note that Mercury and Venus are the only 2 planets that have a full phase cycle like the Moon because they are the only 2 planets closer to the Sun in their orbits than the Earth. This is also why these 2 planets also experience the various 'Transits of the Sun' as they cross the Sun's Disk, etc.

What is interesting is that the planets of Mars, Jupiter and Saturn never go through a full phase cycle, which are called 'Crowns'. They are either in a half phase or full phase and then back to half phase, in general. However Jupiter and Saturn mostly remain in their full phases as they rotate around the Sun from Earth's perspective.

